

Welded ladles of standard quality steel, with two lips

Please observe the instructions below!

1) Handle ladles (handles see below)

Size	1	2	3	4	5	6
Capacity (alu) abt. kg	3	5	7	8	10	13
Top dia. mm	160	180	200	210	230	240
Bottom dia. mm	120	145	155	160	180	180
Height mm	150	190	205	230	230	260
Wall/bottom thckn.	Item No.					
2/2 mm	001.011*	001.021*	001.031*	-	-	-
2/3 mm	001.012	001.022	001.032	001.041*	001.051	001.061
3/3 mm	-	-	-	-	001.052*	001.062*
3/4 mm	001.013	001.023	001.033	001.042	001.053	001.063
4/5 mm	001.014	001.024	001.034	001.043	001.054	001.064

2) Fork ladles (carrying forks see p. 2)

Size	7	8	9	10	11	12	13
Capacity (alu) abt. kg	17	23	25	33	40	50	70
Top dia. mm	255	275	300	330	350	350	380
Bottom dia. mm	215	225	240	255	260	290	300
Height mm	250	275	275	300	330	360	400
Wall/bottom thckn.	Item No.						
4/4 mm	001.071*	001.081*	001.091*	001.101*	001.111*	001.121*	001.131*
4/5 mm	001.072	001.082	001.092	-	-	-	-

* Standard thickness

All sizes are external dims.

Other sizes and wall thicknesses upon request. Quantity should be specified.



Welded ladles

heat resistant, with two lips

Please observe the instructions below!

Steel qualities available:

HB heat resistant stainless steel (nonscaling property up to abt. 800°C)

HHB highly heat resistant stainless steel (nonscaling property up to abt. 1050°C)

S-HHB special alloy, highly heat resistant stainless steel (nonscaling property up to abt. 1200°C)

1) Handle ladles (handles see below)

Size	1	2	3	4	5	6
Capacity SM abt.* kg	10	15	20	25	30	40
Top dia. mm	160	180	200	220	230	240
Bottom dia. mm	120	150	160	170	180	190
Height mm	150	200	205	220	230	240
Wall/bottom thckn. mm	2/3	2/3	2/3	2/3	3/3	3/3
Quality	Item No.					
HB	002.011	002.021	002.031	002.041	002.051	002.061
HHB	002.012	002.022	002.032	002.042	002.052	002.062
S-HHB	002.013	002.023	002.033	002.043	002.053	002.063

2) Fork ladles (carrying forks see p. 2)

Size	7	8	9	10	11	12	13
Capacity SM abt.* kg	50	70	75	100	125	150	200
Top dia. mm	255	275	300	330	350	350	380
Bottom dia. mm	215	225	240	255	260	290	300
Height mm	240	275	275	300	350	360	400
Wall/bottom thckn. mm	4/4	4/4	4/4	4/5	4/5	4/5	4/5
Quality	Item No.						
HB	002.071	002.081	002.091	002.101	002.111	002.121	002.131
HHB	002.072	002.082	002.092	002.102	002.112	002.122	002.132
S-HHB	002.073	002.083	002.093	002.103	002.113	002.123	002.133

* Capacity related to copper always. All sizes are outside dims.
Other sizes and wall thicknesses upon request. Quantity should be specified.

Remarks with regard to item 001 & 002: sizes 1 to 6 are available

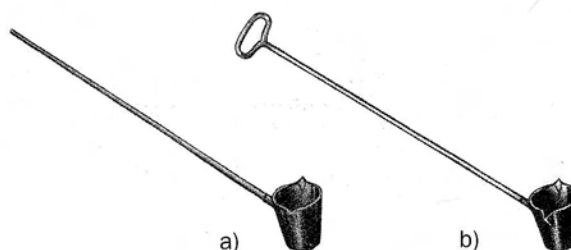
- a) with gas-pipe handle (Item No. 001.200) or
 - b) with solid D-handle (Item No. 001.300)
- handle length: 1,250 mm

INSTRUCTIONS for the use of foundry tools:

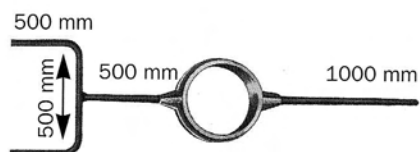
Coat well!

Do not overheat, do not allow to cool and reheat tools too often as decarburization and embrittlement would result.

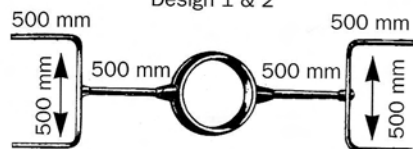
Remark: Coatings see items 435 - 441.



003



Design 1 & 2



Design 3



Design 4 (dimensions as design 3)

Carrying forks for ladles (ladles see p. 1)

in four designs:

- 1) fork of welded tubing
- 2) fork of solid steel
- 3) double-fork of welded tubing
- 4) fork of tubing (rotatable)

Size	7	8	9	10	11	12	13
Ring dia. mm	235	250	270	295	305	320	340
Thickness inch	3/4	3/4	3/4	1	1	1	1 1/4
Available design	Item No.						
1)	003.071	003.081	003.091	003.101	003.111	003.121	003.131
2)	003.072	003.082	003.092	003.102	003.112	003.122	003.132
3)	003.073	003.083	003.093	003.103	003.113	003.123	003.133
4)	003.074	003.084	003.094	003.104	003.114	003.124	003.134

004



Welded siphon-ladles (upon request)

Available in all sizes as mentioned under handle and fork-type ladles, Item No. 002.

Type **A** with welded radial pipe

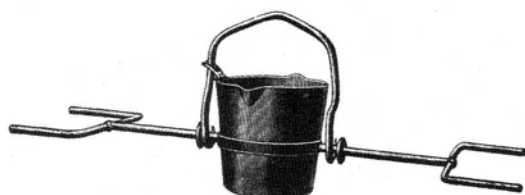
Type **B** with parallel pipe

Type **C** with welded partition as siphon

These ladles are specially made for the customer. Therefore they cannot be exchanged or returned.

Suitable **carrying forks** are also available.

005



Welded crane ladles of standard quality steel with double-fork, bail and ratchet

Item No.	005.101	005.201	005.301	005.401	005.501
Capacity* kg	300	400	500	750	1000
Top dia. mm	450	450	540	590	690
Bottom dia. mm	400	400	500	550	650
Height mm	450	540	550	650	680
Wall/bottom thicken. mm	4/6	5/6	5/6	6/8	6/8
Accessories	Item Nr.				
Double-fork	005.102	005.202	005.302	005.402	005.502
Bail	005.103	005.203	005.303	005.403	005.503
Ratchet	005.104	005.204	005.304	005.404	005.504

* Capacity related to iron. All sizes are outside dims. All parts are available individually.

The ladle body is also available in heat resistant steel quality (see Item No. 002).

006



Melting crucible (upon request)

Especially for magnesium casting, welded inside and outside with special electrodes: shell thickness up to 12 mm; bottom thickness up to 15 mm.

Size and shape in accordance with customer's specifications and drawing. Please specify quantity!

Insulating shells for ladles

no preheating required; substantial energy savings;
metal remains liquid for a longer period; improved quality of castings.
Shell and bottom thickness 30 mm.

007

Item No.	Capacity ltr.	Inside dia. mm		Height mm inside
		top	bottom	
007.302	7,3	220	150	275
007.306	9,9	230	200	275
007.307	15,7	324	194	300
007.308	21,8	332	232	350
007.301	30,7	355	310	355
007.303	30,7	342	272	416
007.300	36,3	362	298	426
007.309	47,1	402	332	446
007.304	47,9	402	322	466
007.305	70,5	488	397	460
007.310	96,9	548	457	490



Pouring ladles of standard quality steel

for the above insulating shells

007A

Item No.	For shell	Top dia. mm	Bottom dia. mm	Height mm	Shell thickn. mm	Bottom thickn. mm
007.402	007.302	300	230	315	4	4
007.406	007.306	310	280	315	4	4
007.407	007.307	405	275	340	4	4
007.408	007.308	415	315	390	4	4
007.401	007.301	435	390	400	4	4
007.403	007.303	425	355	460	4	4
007.400	007.300	445	380	470	4	4
007.409	007.309	485	415	485	4	4
007.404	007.304	485	405	510	4	4
007.405	007.305	580	480	500	4	4
007.410	007.310	650	560	540	5	5



Suitable **carrying forks** are also available.

We recommend to fill appr. 20 mm of sand between the pouring ladle and the ladle shell to compensate for any diameter differences. We also recommend to put a 25 mm thick layer of ramming or pouring compound on the bottom of the shell to extend the service life of the shell.

We also supply **fibrous mortar** or **refractory patch compound** for lining existing pouring ladles.

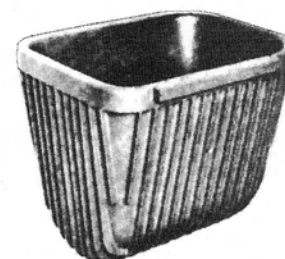
Melting crucibles of refractory cast iron or stainless steel

008

for die casting machines; suitable for melting aluminium, zinc, lead, Zamak etc.

We supply all kinds of cast crucibles **to your specifications**.

Please attach a drawing or sketch to your inquiry or order and specify quantities.

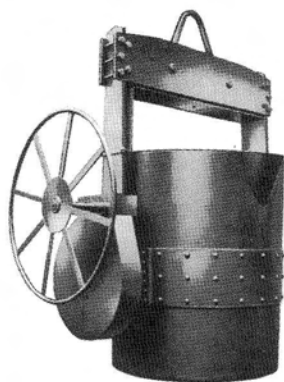


Crane ladles

Our heavy-duty crane ladles are especially made for use in foundries and metallurgical plants. The ladles are equipped with an oil-lubricated planetary gearing.

The ladle capacity given is for grey cast iron (in kgs); convert other melts in accordance with the specific weights given below (f.ex. aluminium, cast steel or nodular cast iron).

grey cast iron = 7, cast steel = 6,8, nodular cast iron = 6, aluminium = 2,5

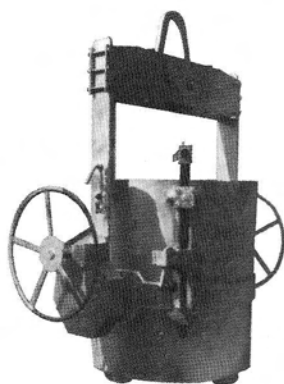


Cast iron- cap.	Diameter		height	Thickness		Cast iron cap.	Diameter		height	Thickness	
	top	bottom		wall	bottom		top	bottom		wall	bottom
kg	mm	mm	mm	mm	mm	kg	mm	mm	mm	mm	mm
350	500	450	550	5	5	2500	875	800	950	6	10
500	540	500	550	5	6	3000	975	900	950	8	12
750	640	600	620	5	7	4000	1080	1000	1025	10	12
1000	650	600	720	5	8	5000	1200	1100	1100	10	13
1250	750	700	700	6	8	6300	1280	1200	1200	10	14
1500	750	700	800	6	8	8000	1300	1200	1400	12	15
2000	850	800	800	6	10	10000	1400	1300	1500	12	15

Stopper ladles

of the same design as described before, however, equipped with a stopper lifting device and bayonet closing device.

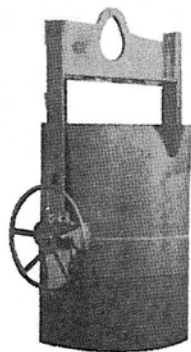
The capacities given in the following table are for cast steel.



Cast steel cap.	Diameter		height	Thickness		Cast steel cap.	Diameter		height	Thickness	
	top	bottom		wall	bottom		top	bottom		wall	bottom
kg	mm	mm	mm	mm	mm	kg	mm	mm	mm	mm	mm
400	540	500	550	5	5	2500	975	900	975	8	12
500	640	600	620	5	7	3000	1080	1000	1025	10	12
800	650	600	720	5	8	4000	1200	1100	1100	10	13
1000	750	700	700	6	8	5000	1280	1200	1200	10	14
1250	750	700	800	6	8	6300	1300	1200	1400	12	15
1500	850	800	800	6	10	8000	1400	1300	1500	12	15
2000	875	800	950	6	10						

Treatment ladles

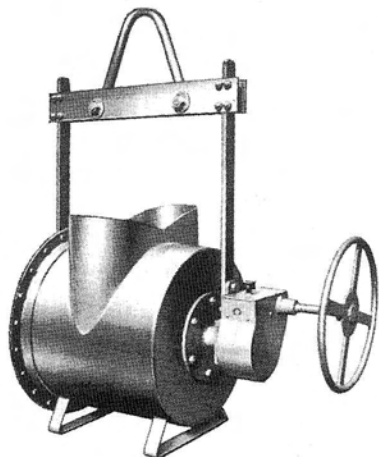
of the same design as described before. Such ladles are also available as bottom-pour ladles. The capacities given in the following table are for nodular cast iron.



Nod.cast iron cap.	Diameter		height	Thickness		Nod.cast iron cap.	Diameter		height	Thickness	
	top	bottom		wall	bottom		top	bottom		wall	bottom
kg	mm	mm	mm	mm	mm	kg	mm	mm	mm	mm	mm
600	615	565	1180	6	8	2500	1000	900	1685	7	10
800	665	615	1260	6	8	3000	1075	925	1765	8	12
1000	725	675	1340	7	10	4000	1150	1000	1885	10	12
1500	835	785	1470	7	10	5000	1250	1000	1985	12	15
2000	860	800	1600	7	10	6000	1350	1200	2075	12	15

Crane casting drums

of the same design as described before. One drum wall can be screwed off; all drums come with stand. The capacities given in the following table are for cast iron.



Cast iron cap.	Drum diameter	Drum length	Thickness		Cast iron cap.	Drum diameter	Drum length	Thickness	
			wall	bottom				wall	bottom
kg	mm	mm	mm	mm	kg	mm	mm	mm	mm
300	500	560	5	7	1250	750	775	6	10
500	600	550	5	8	1500	855	750	6	12
600	600	600	5	8	2000	900	800	6	12
750	600	720	5	8	2500	900	900	8	12
1000	750	700	5	10	3000	1000	900	8	12

Special-design ladles

Besides the above mentioned standard ladles and drums, we can also supply ladles for transportation by fork lift trucks as well as other custom-made ladles.

ONE-PIECE FOUNDRY TOOLS (drawn)

Please observe the INSTRUCTIONS FOR USE below!

Pouring bowls No. 1300

Quality IV, semispherical, without handle; without or with one or two lips

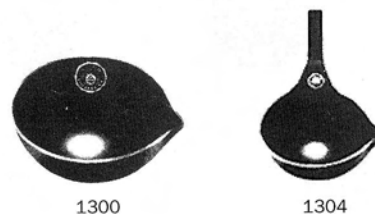
010

Pouring spoons No. 1304

Quality IV, semispherical, with a flat handle; with one or two lips

Outside dia. mm	50	60	70	80	90	100	110	120	130	140	150	160
Wall thckn. mm	2	2	2	2	2	2	3	3	3	3	3	3
Design	Item No.											
1300	010.105	010.106	010.107	010.108	010.109	010.110	010.111	010.112	010.113	010.114	010.115	010.116
1304	010.205	010.206	010.207	010.208	010.209	010.210	010.211	010.212	010.213	010.214	010.215	010.216

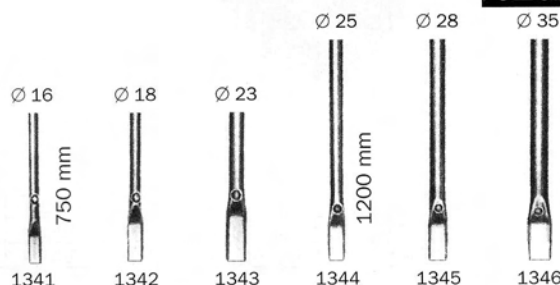
Outside dia. mm	170	180	190	200	210	220	230	240	250	260	280	300
Wall thckn. mm	4	4	4	4	4	5	5	5	5	5	5	5
Design	Item No.											
1300	010.117	010.118	010.119	010.120	010.121	010.122	010.123	010.124	010.125	010.126	010.128	010.130
1304	010.217	010.218	010.219	010.220	010.221	010.222	010.223	010.224	010.225	010.226	010.228	010.230



Steel pipe handles (for spoon No. 1304)

For dimensions see illustrations

Handle No.	For spoon Ø	Item No./Design			
		sep.	welded	riveted	screwed
1341	50 - 70 mm	010.301	010.302	010.303	010.304
1342	80 - 100 mm	010.401	010.402	010.403	010.404
1343	110 - 160 mm	010.501	010.502	010.503	010.504
1344	170 - 220 mm	010.601	010.602	010.603	010.604
1345	230 - 260 mm	010.701	010.702	010.703	010.704
1346	280 - 300 mm	010.801	010.802	010.803	010.804



Pouring spoon No. 1302

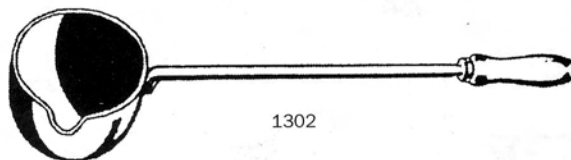
Quality IV, semispherical, with welded round handle (length 400 mm), with or without wooden handle and one or two lips

Outside dia. mm	50	60	70	80	90	100	110	120
Wall thckn. mm	2	2	2	2	2	2	3	3
Item-No.	011.105	011.106	011.107	011.108	011.109	011.110	011.111	011.112

Outside dia. mm	130	140	150	160	170	180	190	200
Wall thckn. mm	3	3	3	3	4	4	4	4
Item-No.	011.113	011.114	011.115	011.116	011.117	011.118	011.119	011.120

Spare wooden handles available at extra charge:

Item-No.	011.701	011.702
For spoon dia. mm	50 - 90	100 - 200

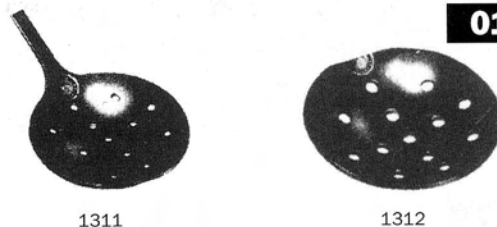


Skimmers, Quality IV, 1/4 sphere

No. 1311 with flat handle

No. 1312 without handle

Outside dia. mm	120	150	180	200	220	240	300	340
Wall thckn. mm	6	6	6	6	8	8	8	8
No. of holes	5	5	9	9	13	13	13	13
Hole dia. mm	12	12	12	12	12	12	20	20
Design	Item-No.							
1311	012.112	012.115	012.118	012.120	012.122	012.124	012.130	012.134
1312	012.212	012.215	012.218	012.220	012.222	012.224	012.230	012.234



Immersion bells, Quality IV, wall thickness 8 mm, 8 holes - diameter 12 mm

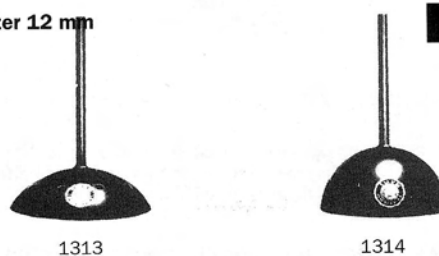
a) with welded round iron handle, dia. 18 mm, length 1000 mm

b) without handle

No. 1313 1/3 sphere

No. 1314 1/2 sphere

Outside dia. mm	120	150	180	200	230	250
Design	Item-No.					
1313 with handle	013.112	013.115	013.118	013.120	013.123	013.125
without handle	013.212	013.215	013.218	013.220	013.223	013.225
1314 with handle	013.312	013.315	013.318	013.320	013.323	013.325
without handle	013.412	013.415	013.418	013.420	013.423	013.425



INSTRUCTIONS for the use of foundry tools:

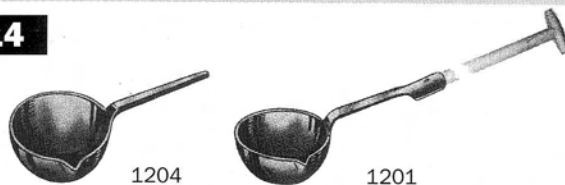
Coat well! Do not overheat, do not allow to cool and reheat tools too often as decarburization and embrittlement would result.

Remark: Coatings see Item Nos. 435 - 441

ONE-PIECE FOUNDRY TOOLS (forged)

Please observe the INSTRUCTIONS FOR USE below!

014



Pouring spoons No. 1204, semispherical

with flat handle; with one or two lips
wall thickness 2 to 3 mm; quality III = 1000°C

Pouring spoons No. 1201 Spoon as described under
No. 1204, with socket and beech T-handle, length 1000 mm

Outside dia. mm	60	80	100	120	140	160	180	200	220	240	260	280	300
Design	Item No.												
1204	014.106	014.108	014.110	014.112	014.114	014.116	014.118	014.120	014.122	014.124	014.126	014.128	014.130
1201	014.206	014.208	014.210	014.212	014.214	014.216	014.218	014.220	014.222	014.224	014.226	014.228	014.230

015



Pouring spoons No. 1205, semispherical

with square handle; with 1 or 2 lips, to be welded to gas pipe handles,
wall thickness 5 mm (thinner walls upon request!)

Quality I – red marking
highly heat resistant 1400°C for heavy metals

Quality II – blue marking
heat resistant 1200°C for heavy metals

Quality III – without marking
resistant 1000°C for aluminium

Outside dia. mm	60	80	100	120	140	160	180	200	220	240	260	280	300
Design	Item No.												
Qual. I	015.106	015.108	015.110	015.112	015.114	015.116	015.118	015.120	015.122	015.124	015.126	015.128	015.130
Qual. II	015.206	015.208	015.210	015.212	015.214	015.216	015.218	015.220	015.222	015.224	015.226	015.228	015.230
Qual. III	015.306	015.308	015.310	015.312	015.314	015.316	015.318	015.320	015.322	015.324	015.326	015.328	015.330

016

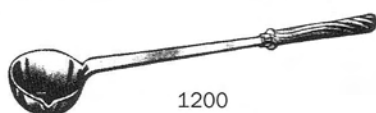


Pouring spoons No. 1203, semispherical

with hook handle, left lip, wall thickness 5 mm, quality III = 1000°C

Outside dia. mm	60	80	100	120	140	160	180	200	220	240	260	280	300
Item No.	016.106	016.108	016.110	016.112	016.114	016.116	016.118	016.120	016.122	016.124	016.126	016.128	016.130

017



Pouring spoons No. 1200, semispherical

with left lip and tapered handle, length 400 mm, with or without wooden
handle, quality III = 1000°C

a) wall thickness 2 mm = No. 1200 A

b) wall thickness 5 mm = No. 1200 B

Outside dia. mm	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
Design	Item No.																			
1200A without handle	017.106	017.107	017.108	017.109	017.110	017.111	017.112	017.113	017.114	017.115	017.116	017.117	017.118	017.119	017.120	017.121	017.122	017.123	017.124	017.125
with handle	017.206	017.207	017.208	017.209	017.210	017.211	017.212	017.213	017.214	017.215	017.216	017.217	017.218	017.219	017.220	017.221	017.222	017.223	017.224	017.225
1200B without handle	017.306	017.307	017.308	017.309	017.310	017.311	017.312	017.313	017.314	017.315	017.316	017.317	017.318	017.319	017.320	017.321	017.322	017.323	017.324	017.325
with handle	017.406	017.407	017.408	017.409	017.410	017.411	017.412	017.413	017.414	017.415	017.416	017.417	017.418	017.419	017.420	017.421	017.422	017.423	017.424	017.425

017A



Wooden handles for pouring spoons No. 1200

Item No.	Length	Diameter	For spoon dia.
017.501	16cm	23mm	60 – 90 mm
017.502	30cm	32mm	100 – 250 mm

INSTRUCTIONS for the use of spoons, bells and skimmers etc.:

Coat well!

Quality I & II: quench tools in a cold liquid several times daily to prevent decarburization and formation of cracks.

Quality III: do not overheat, do not allow to cool and reheat tools often as decarburization and embrittlement would result.

Remark: Coatings see Item Nos. 435 – 441

Capacities of pouring spoons in kgs (for aluminium):

semispherical

Dia.	60	80	100	120	140	160	180	200	220	240	260	280	300	mm
Depth	30	40	50	60	70	80	90	100	110	120	130	140	150	mm
Cap.	0,08	0,25	0,5	1,0	1,5	2,5	3,5	4,0	6,5	8,6	11,0	14,0	17,5	kg

ONE-PIECE FOUNDRY TOOLS (forged)

Please observe the INSTRUCTIONS FOR USE on page 6!

Pouring bowls No. 1100

semispherical, with or without lip, wall thickness 5 mm, quality III = 1000°C

Outside dia. mm	60	80	100	120	150	180	200
Item No.	018.106	018.108	018.110	018.112	018.115	018.118	018.120



1100

018

Melting bowls No. 1102

wall thickness 10 mm, quality III = 1000°C. Also available with lip and 80 mm flange at extra charge

Outside dia.* mm	250	300	350	400	* without flange	
Design	Item No.					
Without lip	019.125	019.130	019.135	019.140		
With lip	019.225	019.230	019.235	019.240		
With 80 mm Rim	019.325	019.330	019.335	019.340		



1102 with rim

019

Lead melting bowls No. 1101

with lip, wall thickness 6 to 10 mm, quality III = 1000°C

- a) with bail
- b) with lateral shank

Can also be supplied with 3 legs at extra charge.

Outside dia. mm	150	180	200	220	240	260	280	300
Design	Item No.							
With bail	020.115	020.118	020.120	020.122	020.124	020.126	020.128	020.130
With lateral shank	020.215	020.218	020.220	020.222	020.224	020.226	020.228	020.230
Extra charge for 3 legs	020.301							



1101 with bail

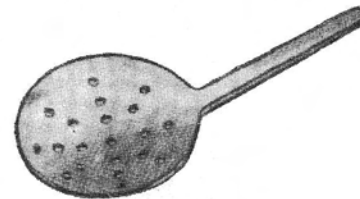
020

Skimmers No. 1211

with square handle, hole diameter 12 mm, wall thickness 6 mm, 1/4 sphere

Quality I – red marking
 Nicotherm – highly heat resistant 1400°C, for heavy metals
Quality II – blue marking
 Thermax – heat resistant 1200°C, for heavy metals
Quality III – without marking
 Ferrum – resistant 1000°C, for aluminium

Dia. mm	120	160	200	250	300
No. of holes	5	5	9	13	18
Design	Item No.				
Qual. I	021.112	021.116	021.120	021.125	021.130
Qual. II	021.212	021.216	021.220	021.225	021.230
Qual. III	021.312	021.316	021.320	021.325	021.330



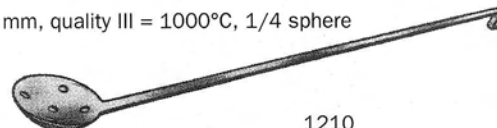
1211

021

Skimmers No. 1210

with hook handle, length 1000 mm, hole diameter 12 mm, wall thickness 5 mm, quality III = 1000°C, 1/4 sphere

Dia. mm	120	160	200
No. of holes	5	5	9
Item No.	022.112	022.116	022.120



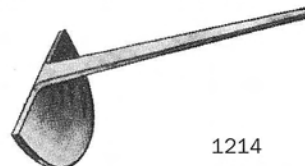
1210

022

Crucible scrapers No. 1214

90° offset, wall thickness 10 mm, with square handle, hemispherical

Width mm	120	160	200
Item No.	023.112	023.116	023.120



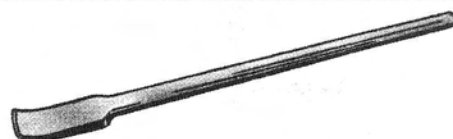
1214

023

Chipping irons No. 1215

of hardened steel, chipping edge ground, handle dia. approx. 15 mm, chipping edge width approx. 20 mm

Length mm	300	400	500
Item No.	024.130	024.140	024.150



1215

024

Also available in **chrome-vanadium-steel!** Please specify length and quantity in your inquiry.

INSTRUCTIONS for the use of spoons, bells and skimmers etc.: See page 6
Remark: Coatings see Item Nos. 435 – 441

025**Immersion bells No. 1213, forged**

wall thickness 5 mm, with 4 holes (dia. 12 mm) and welded round steel handle (St. 37), dia. 18 mm, length 1000 mm

Also available without handle (price reduction)

a) 1/3 sphere b) 1/2 sphere

Bell

Quality I – red marking

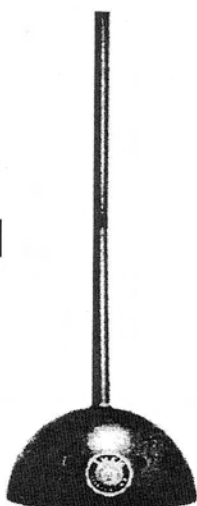
Nicotherm – highly heat resistant 1400°C, for heavy metal

Quality II – blue marking

Thermax – heat resistant 1200°C, for heavy metal

Quality III – without marking

Ferrum – resistant 1000°C, for aluminium

025A

1213
1/2 sphere



1213/1213A
1/3 sphere

Immersion bells No. 1213A

Design as mentioned under item 1213, 1/3 sphere

however, bell and handle of quality I Nicotherm

highly heat resistant 1400°C, red marking, for heavy metals

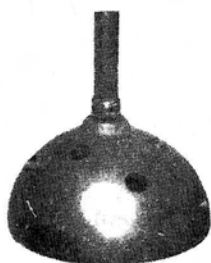
Dia. mm		120	160	200
Design 1213		Item No.		
1/3 sphere	Qual. I	025.111	025.112	025.113
	Qual. II	025.121	025.122	025.123
	Qual. III	025.131	025.132	025.133
1/2 sphere	Qual. I	025.211	025.212	025.213
	Qual. II	025.221	025.222	025.223
	Qual. III	025.231	025.232	025.233
1213A	Qual. I	—	025.301	—

INSTRUCTIONS for the use of forged immersion bells:**Coat well!**

Qualities I & II: quench tools in a cold liquid several times daily to prevent decarburization and formation of cracks.

Quality III: do not overheat, do not allow to cool and reheat tools too often as decarburization and embrittlement would result.

Remark Coatings see Item Nos. 435 – 441

026**Immersion bells of spheroidal graphite iron**

highly heat resistant, wall thickness 10 mm

a) without handle

b) with screwed pipe handle, length 1500 mm, diameter 25 mm

Size	1	2	3	3A
Outside dia. mm	140	170	210	220
Depth	1/2	1/2	1/2	1/3
No. of holes	11	11	12	8
Hole dia. mm	13	15	20	20
Design	Item No.			
Without handle	026.101	026.102	026.103	026.103A
With handle	026.201	026.202	026.203	026.203A

027**Immersion bells of graphite for melt refinement, with handle**

Item No.	Size	Bell height		Top outside dia. mm	Bottom outside dia. mm	Handle length mm
		outside mm	inside mm			
027.100	Ia	100	55	60	80	400
027.101	I	180	120	60	86	400
027.102	II	180	120	60	86	800
027.103	III	220	160	80	120	800
027.104	IV	250	185	98	160	800

Foundry tongs No. 1216

leg dia. abt. 10 mm, riveted

Item No.		028.118	028.122	028.126
Leg length	mm	180	220	260
Jaw length	mm	70	80	90
Weight	kg	0,2	0,3	0,4

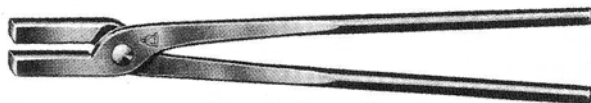


028

Foundry tongs No. 1217

leg dia. abt. 16 mm, riveted

Item No.		028.222	028.230	028.238
Leg length	mm	220	300	380
Jaw length	mm	80	100	120
Weight	kg	1,0	1,3	1,5



028A

Withdrawal tongs 'D'

of chrome-vanadium steel, leg dia. 10 mm, riveted
jaw inside with crosscut

Item No.		029.001
Leg length	mm	320
Jaw length	mm	110
Weight	kg	0,8



029

Jaw tongs

riveted

Item No.		030.130	030.140	030.150	030.160
Leg length	mm	300	400	500	600
Jaw length	mm	45	50	65	70
Weight	kg	0,5	0,8	1,2	1,6
Jaw capacity	mm	1 - 8	3 - 12	6 - 20	15 - 30



030

Ingot tongs

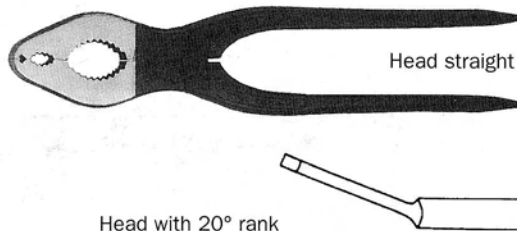
of special tool steel, oil hardened, head polished

1) heavy-duty design, straight head

Item No.		031.125	031.150
Length	mm	225	250
Head thickn.	mm	10	12
Weight	kg	0,4	0,5

2) light-duty design

Item No.		031.220	031.226	031.320
Length	mm	200	260	200
Head thickn.	mm	3,5	6,0	3,5
Head		straight	straight	head with 20° rank
Weight	kg	0,2	0,5	0,2



031

Charging tongs

leg thickness abt. 15 mm, flat jaw thickness 8 to 10 mm, riveted

Item No.		032.001	032.002
Size		I	II
Leg length	mm	600	1000
Jaw to rivet	mm	140	180
Jaw width	mm	80	150
Weight	kg	2,0	5,0



032

Crucible tongs

for gripping small crucibles

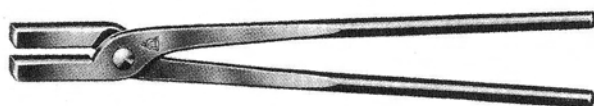
leg thickness 10 mm, leg length abt. 500 mm

Jaw size abt. 20 x 5 mm, riveted

Item No.		032.100	032.101	032.102	032.103	032.104
Size		0	1	2	3	4
Jaw dia. abt.	mm	70	80	90	100	120
For crucible cap.	kg	1/4 - 3/4	1 - 1,5	2 - 4	5 - 7	8 - 10
Weight	kg	0,75	1,1	1,1	1,6	1,7



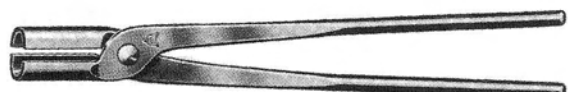
032A



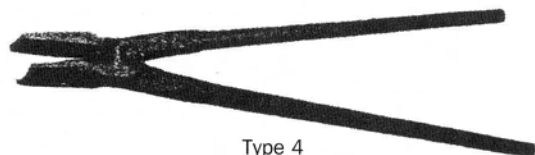
Type 1



Type 2



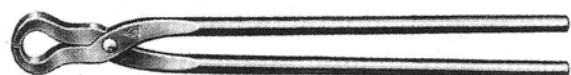
Type 3



Type 4



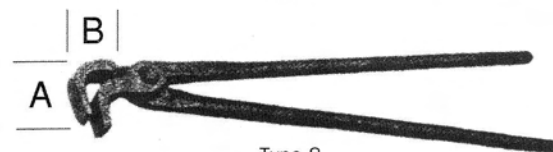
Type 5



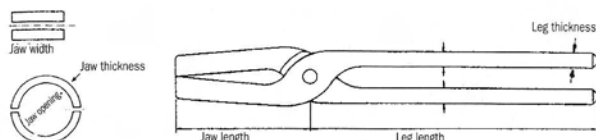
Type 6



Type 7



Type 8



Forged tongs

of prime quality steel, heat-treated (strength of 135 to 140 kgs/mm²), light-weight tongs with excellent grip and long life, with half-round rivet, no re-riveting required

Type 1 Flat tongs

Item No.		033.130	033.140	033.150	033.160
Length	mm	300	400	500	600
Jaw length	mm	45	50	65	70
Weight	kg	0,5	0,75	1,2	1,6
For material	mm	1 - 4	8 - 10	13 - 14	17 - 18

Type 2 Lap jaw tongs

Item No.		033.250
Length	mm	500
Jaw length	mm	65
Weight	kg	1,75
For material dia.	mm	11 - 13 x 21 - 23

Type 3 Round-jaw tongs

Item No.		033.330	033.340	033.350	033.360
Length	mm	300	400	500	600
Jaw length	mm	45	50	65	70
Weight	kg	0,5	0,75	1,2	1,65
For material dia.	mm	8	12	16	20

Type 4 Oval jaw tongs

Item No.		033.430	033.440	033.450	033.460
Length	mm	300	400	500	600
Jaw length	mm	45	50	65	70
Weight	kg	0,5	0,75	1,2	1,6
For material	mm	8 x 4	12 x 6	16 x 8	20 x 10

Type 5 Riveting tongs

Item No.		033.540	033.550	033.560
Length	mm	400	500	600
Jaw length	mm	50	65	70
Weight	kg	0,5	0,85	1,3
For material dia.	mm	9	13	18

Type 6 Avuil tongs

Item No.		033.640	033.650	033.660
Length	mm	400	500	600
Jaw length	mm	50	65	70
Weight	kg	0,75	1,2	1,7
For material	mm	20	25	40

Type 7 Mandrel tongs

Item No.		033.730	033.740	033.750	033.760
Length	mm	300	400	500	600
Jaw length	mm	45	50	65	70
Weight	kg	0,5	0,75	1,2	1,7
For material dia.	mm	13 - 15	19 - 20	25 - 28	33 - 36

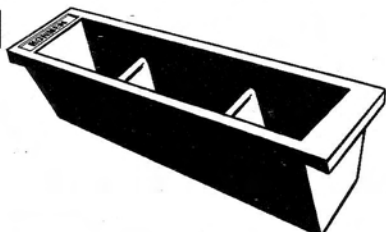
Type 8 Knee tongs

Item No.		033.830	033.840	033.850	033.860
Length	mm	300	400	500	600
Jaw A x B	mm	40 x 37	55 x 40	70 x 60	80 x 63
Weight	kg	0,5	0,75	1,2	1,7
For material	mm	4	6	8	10

The following data are required for supplying tongs in other sizes and shapes:

• jaw length • jaw width • jaw thickness • jaw opening • leg length • leg thickness (flat or round)

Minimum quantity to be ordered: **10 tongs** per type.



Pig moulds

of cast iron, tapered

Item No.	Size	Top length inside mm	Top width inside mm	Depth inside mm	Partitions	Wall thckn. abt. mm	Weight abt. kg	Cap. abt. ltr.
034.001	1	345	80	70	2	15	8,0	1,2
034.002	2	530	90	70	1	15	13,5	2,4

Moulds must always be well coated!

Other moulds and sizes (in accordance to drawing or sample) also available upon request!

Pouring spoons, press molded, stress free

035

smooth surface, with forged lip

Designs:*

A) bowl without handle
with or without lip

B) bowl with welded handle shank
length 130 mm, with 1 or 2 lips

C) bowl with welded handle, length 350 mm,
and wooden handle (up to a dia. of 200 mm), with 1 or 2 lips

Longer handles (up to 1000 mm) are available at extra charge.

Also available without wooden handle (price reduction).

(All diameters given are inside diameters)

Please observe INSTRUCTIONS for use (s. p. 12)

Spoon No.*	D mm	h mm	S mm	H mm	Spoon No.*	D mm	h mm	S mm	H mm
035.2400	40	20	2	-	035.2850	85	43	2	-
035.2405	-	-	2	25	035.2855	-	-	2	53
035.3400	-	20	3	-	035.3850	-	43	3	-
035.3405	-	-	3	25	035.3855	-	-	3	53
035.4400	-	20	4	-	035.4850	-	43	4	-
035.4405	-	-	4	25	035.4855	-	-	4	53
035.2450	45	23	2	-	035.2900	90	45	2	-
035.2455	-	-	2	28	035.2905	-	-	2	55
035.3450	-	23	3	-	035.3900	-	45	3	-
035.3455	-	-	3	28	035.3905	-	-	3	55
035.4450	-	23	4	-	035.4900	-	45	4	-
035.4455	-	-	4	28	035.4905	-	-	4	55
035.2500	50	25	2	-	035.2950	95	48	2	-
035.2505	-	-	2	30	035.2955	-	-	2	58
035.3500	-	25	3	-	035.3950	-	48	3	-
035.3505	-	-	3	30	035.3955	-	-	3	58
035.4500	-	25	4	-	035.4950	-	48	4	-
035.4505	-	-	4	30	035.4955	-	-	4	58
035.2550	55	28	2	-	035.2100	100	50	2	-
035.2555	-	-	2	35	035.2105	-	-	2	60
035.3550	-	28	3	-	035.3100	-	50	3	-
035.3555	-	-	3	35	035.3105	-	-	3	60
035.4550	-	28	4	-	035.4100	-	50	4	-
035.4555	-	-	4	35	035.4105	-	-	4	60
035.2600	60	30	2	-	035.2110	110	55	2	-
035.2605	-	-	2	38	035.2115	-	-	2	65
035.3600	-	30	3	-	035.3110	-	55	3	-
035.3605	-	-	3	38	035.3115	-	-	3	65
035.4600	-	30	4	-	035.4110	-	55	4	-
035.4605	-	-	4	38	035.4115	-	-	4	65
035.2650	65	33	2	-	035.2120	120	60	2	-
035.2655	-	-	2	40	035.2125	-	-	2	70
035.3650	-	33	3	-	035.3120	-	60	3	-
035.3655	-	-	3	40	035.3125	-	-	3	70
035.4650	-	33	4	-	035.4120	-	60	4	-
035.4655	-	-	4	40	035.4125	-	-	4	70
035.2700	70	35	2	-	035.2130	130	65	2	-
035.2705	-	-	2	45	035.2135	-	-	2	75
035.3700	-	35	3	-	035.3130	-	65	3	-
035.3705	-	-	3	45	035.3135	-	-	3	75
035.4700	-	35	4	-	035.4130	-	65	4	-
035.4705	-	-	4	45	035.4135	-	-	4	75
035.2750	75	38	2	-	035.2140	140	70	2	-
035.2755	-	-	2	48	035.2145	-	-	2	80
035.3750	-	38	3	-	035.3140	-	70	3	-
035.3755	-	-	3	48	035.3145	-	-	3	80
035.4750	-	38	4	-	035.4140	-	70	4	-
035.4755	-	-	4	48	035.4145	-	-	4	80
035.2800	80	40	2	-	035.5140	-	70	5	-
035.2805	-	-	2	50	035.5145	-	-	5	80
035.3800	-	40	3	-					
035.3805	-	-	3	50					
035.4800	-	40	4	-					
035.4805	-	-	4	50					

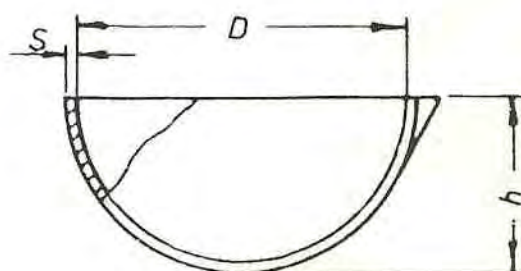
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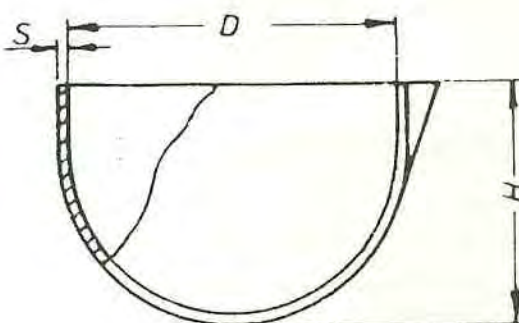
Design B)



Design C)



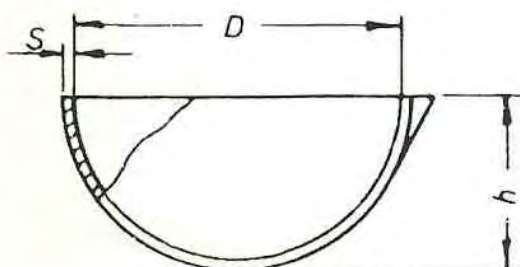
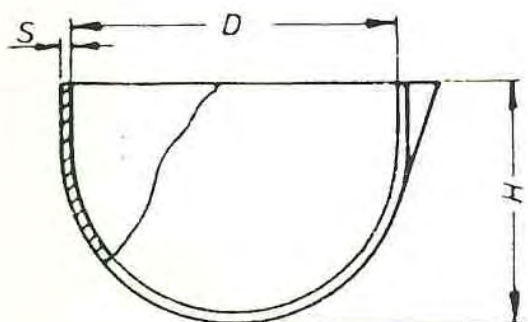
1. Semispherical shape



2. With higher rim

*Please add handle design A, B or C (f. ex. 035.2110B = with short handle), (035.2110 C = with long handle) to item no.
The spoons are not stocked. Therefore certain delivery times should be taken into account. Exchange or return should be agreed with us.

035

1. Semispherical shape

2. With higher rim


Pouring spoons, press molded (continued)

(All diameters given are inside diameters)

Please observe INSTRUCTIONS below

Spoon No.*	D mm	h mm	S mm	H mm	Spoon No.*	D mm	h mm	S mm	H mm
035.2150	150	75	2	-	035.4220	220	110	4	-
035.2155		-	2	85	035.4225		-	4	125
035.3150		75	3	-	035.5220		110	5	-
035.3155		-	3	85	035.5225		-	5	125
035.4150		75	4	-	035.6220		110	6	-
035.4155		-	4	85	035.6225		-	6	125
035.5150	160	75	5	-	035.4240	240	120	4	-
035.5155		-	5	85	035.4245		-	4	135
035.2160		80	2	-	035.5240		120	5	-
035.2165		-	2	90	035.5245		-	5	135
035.3160		80	3	-	035.6240		120	6	-
035.3165		-	3	90	035.6245		-	6	135
035.4160	180	80	4	-	035.4250	250	125	4	-
035.4165		-	4	90	035.4255		-	4	145
035.5160		80	5	-	035.5250		125	5	-
035.5165		-	5	90	035.5255		-	5	145
035.4180		90	4	-	035.6250		125	6	-
035.4185		-	4	105	035.6255		-	6	145
035.5180	200	90	5	-	035.4280	280	140	4	-
035.5185		-	5	105	035.4285		-	4	160
035.6180		90	6	-	035.5280		140	5	-
035.6185		-	6	105	035.5285		-	5	160
035.4200		100	4	-	035.6280		140	6	-
035.4205		-	4	115	035.6285		-	6	160
035.5200	200	100	5	-					
035.5205		-	5	115					
035.6200		100	6	-					
035.6205		-	6	115					

*Please add handle design A, B or C (f. ex. 035.2110 B = with short handle), (035.2110 C = with long handle) to item no.

The spoons are not stocked. Therefore certain delivery times should be taken into account. Exchange or return should be agreed with us.

036


Scoops No. 5556, of stainless steel, drawn

Semispherical, without lip, with flat steel handle with hook, wall thickness 1 mm

Diameter	60	70	80	90	100	110	120	140	160	200 mm
Handle length	25	25	30	30	36	36	41	45	45	47 cm
Item No.	036.106	036.107	036.108	036.109	036.110	036.111	036.112	036.114	036.116	036.120

036A


Bowls No. 5709

of stainless steel, drawn

Semispherical, without lip, wall thickness 1 mm

Diameter	60	80	90	100	120	140	160	200 mm
Item No.	036.206	036.208	036.209	036.210	036.212	036.214	036.216	036.220

INSTRUCTIONS for the use of foundry tools:

Coat well!

Do not overheat, do not allow to cool and reheat tools too often as decarburization and embrittlement would result.

Remark: Coatings see Item Nos. 435 - 441

Spoon capacities in kg for aluminium (inside dia.)

1) Semispherical shape

Dia.	40	60	80	100	120	140	160	180	200	220	240	250	280 mm
Depth	20	30	40	50	60	70	80	90	100	110	120	125	140 mm
Cap.	0,05	0,15	0,35	0,70	1,20	2,00	2,50	4,15	5,60	7,50	9,75	11,00	15,50 kg

2) With higher rim

Dia.	40	60	80	100	120	140	160	180	200	220	240	250	280 mm
Depth	25	38	50	60	70	80	90	105	115	125	135	145	160 mm
Cap.	0,08	0,20	0,45	0,90	1,50	2,35	3,45	5,10	6,30	9,10	11,60	13,65	18,80 kg

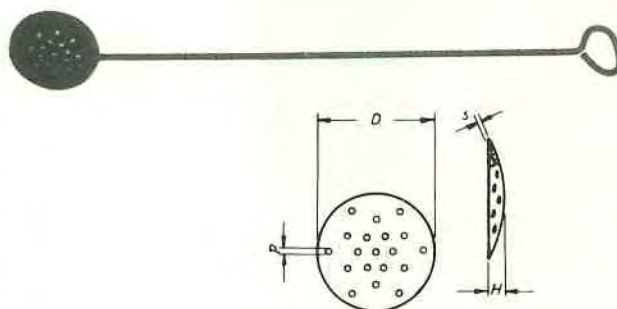
Please observe INSTRUCTIONS for use given below

Skimmers, press-molded

037

A) without handle B) with welded handle shank, length abt. 120 to 150 mm C) with hook handle, length abt. 1000 mm

Item No. *)	D mm	s mm	d mm	No. of holes	H mm
037.5120	120	5	12	12	15
037.6120		6	12	12	15
037.1120		10	12	12	25
037.5150	150	5	12	12	15
037.6150		6	12	12	15
037.1150		10	12	12	25
037.5180	180	5	12	12	18
037.6180		6	12	12	18
037.1180		10	12	12	28
037.5200	200	5	12	13	18
037.6200		6	12	13	18
037.1200		10	12	13	28
037.5250	250	5	12	13	20
037.6250		6	12	13	20
037.1250		10	12	13	30
037.5300	300	5	12	20	20
037.6300		6	12	20	20
037.1300		10	12	20	30



*Please add handle design A, B or C (f. ex. 037.5150 A = without handle), (037.5150 C = with hook handle) to item No.

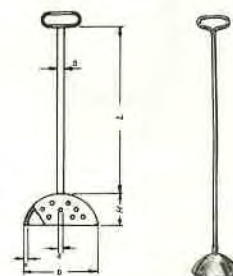
The spoons are not stocked. Therefore certain delivery times should be taken into account. Exchange or return should be agreed with us.

Plunger, press-molded

038

A) without handle B) with handle and hand ring, length 1000 mm C) with handle and hand ring, length 1500 mm

Item No. *)	D mm	s mm	H mm	d mm	No. of holes	L mm	S mm
038.5120	120	5	55	15	10	1000 / 1500	15
038.6120	120	6	55	15	10	1000 / 1500	15
038.5150	150	5	70	15	10	1000 / 1500	15
038.6150	150	6	70	15	10	1000 / 1500	15
038.5180	180	5	85	15	12	1000 / 1500	18
038.6180	180	6	85	15	12	1000 / 1500	18
038.5200	200	5	95	15	12	1000 / 1500	18
038.6200	200	6	95	15	12	1000 / 1500	18
038.5230	230	5	110	15	12	1000 / 1500	20
038.6230	230	6	110	15	12	1000 / 1500	20
038.5250	250	5	120	15	12	1000 / 1500	20
038.6250	250	6	120	15	12	1000 / 1500	20



*Please add handle design A, B or C (f. ex. 038.5150 A = without handle), (038.5150 C = with handle length 1500 mm) to item No.

The spoons are not stocked. Therefore certain delivery times should be taken into account. Exchange or return should be agreed with us.

Pouring spoons of cast iron with batching feature for ingot and die casting machines

039

In different designs available for various makes (f. ex. MSB Sprötze, Schmitz + Apelt, Bühler, Italpress etc.) upon request.



Sample cups of spheroidal graphite (GGG 40)

040

Item No. 040.001

With handle shank and one lip, hemispherical, outside dia. 90 mm, depth inside 40 mm, wall thickness 9 to 10 mm, weight abt. 700 gr.

Other shapes available upon request, please specify quantity.



Sample cups of ceramic fibers

040A

Suitable for cast iron, aluminium and copper melts, good heat insulation and temperature resistance, melt not affected by coating, lightweight, long durability, can be used several times.

Diameter	1,5"	2,5"	3,5"	5,0"	6,0"
Capacity	50	150	250	1000	1500 cm³
Item No.	040.101	040.102	040.103	040.105	040.106



Skimmers of malleable cast iron Item No. 041.220

041

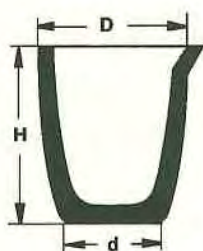
Dia. 220 mm, wall thickness 7 mm, with 163 5-mm-holes, handle length 120 mm, weight abt. 1900 gr.

Other designs upon request, specify quantity.



**Shape A**

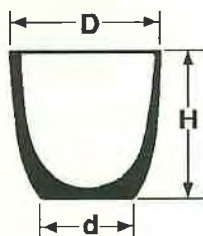
with lip

for stationary furnacesfor light and
heavy metals**Shape BU**

without lip

**for casting and
holding furnaces**

for light metals



High-performance melting crucibles of graphite

When placing an order for a melting crucible, please state the **metal to be melted** as well as the **type of heating system** (gas, oil, coke, inductive or resistance heating system). Remark with regard to **size tolerances**: Possible size tolerances $\pm 3\%$.

Shape A

Item No.	Heavy metal cap. in kg or No.	H Outside height mm	D Top outside dia. mm	d Bottom outside dia. mm	Cap. liter
042.101	6/0	29	25	19	0,004
042.102	5/0	35	32	25	0,009
042.103	4/0	51	41	27	0,022
042.104	3/0	54	48	32	0,036
042.105	2/0	57	52	36	0,041
042.106	1/0	72	60	42	0,076
042.107	1/4	75	65	45	0,092
042.108	1/2	80	74	50	0,133
042.109	3/4	90	80	50	0,165
042.110	1	90	90	55	0,208
042.111	1 1/2	100	95	60	0,283
042.112	2	110	102	65	0,357
042.113	3	130	110	70	0,481
042.114	4	140	115	75	0,616
042.115	5	150	125	85	0,806
042.116	6	165	130	90	0,975
042.117	7	175	140	95	1,08
042.118	8	180	155	110	1,46
042.120	10	200	160	115	1,74
042.121	12	210	170	120	1,90
042.122	14	220	175	120	2,10
042.123	15	230	180	120	2,40
042.126	20	255	200	140	3,18
042.128	25	260	220	150	3,9
042.129	30	290	230	160	4,9
042.130	35	300	240	170	5,7
042.131	40	310	260	190	7,4
042.132	45	325	265	190	8,5
042.133	* 50	330	270	195	8,5
042.135	* 60	345	285	200	9,9
042.136	* 70	360	295	205	11,2
042.137	* 80	375	305	215	12,3
042.138	* 90	380	315	225	13,3
042.139	* 100	400	325	240	14,7
042.141	* 120	410	345	245	17,5
042.142	* 130	420	350	245	17,7
042.143	* 150	450	370	260	23,4
042.144	* 175	480	380	270	25,6
042.145	* 200	500	400	285	29,3
042.146	* 250	515	420	295	33,0
042.147	* 300	540	440	315	42,5
042.148	* 350	590	475	330	49,0
042.149	* 400	600	500	340	61,0
042.150	* 500	650	510	350	66,5
042.151	* 600	680	530	380	78,7
042.152	* 800	800	560	380	100,0
042.153	*1000	820	635	420	132,0
042.154	*1100	890	650	475	159,0

*) These sizes are also available as **isostatically press-molded crucibles** (please specify when ordering).

Shape BU

Item No.	Size	Ref. size	Light metal capacity kg	H Outside height mm	D Top outside dia. mm	d Bottom outside dia. mm
042.302	BU 50	BC 174	50	394	397	216
042.303	BU 60	BC 176	60	432	397	216
042.305	*BU 75	BC 164	75	375	464	279
042.306	*BU 100	BC 166	100	402	527	305
042.307	*BU 125	BC 167	125	451	527	305
042.308	*BU 150	BC 168	150	492	527	305
042.309	*BU 175	BC 169	175	551	527	305
042.310	*BU 200	BC 171	200	600	527	305
042.312	*BU 250	BC 302	250	630	615	356
042.313	*BU 300	BC 401	300	700	615	356
042.314	*BU 350	BC 402	350	800	615	356
042.315	*BU 400	-	400	900	615	356
042.316	*BU 500	BC 247	500	750	775	435
042.317	*BU 600	BC 263	600	900	780	435
042.318	*BU 700	-	700	1000	780	435
042.319	*BU 750	-	750	880	880	470
042.320	*BU 800	-	800	1000	890	450
042.321	*BU 900	-	900	1000	950	550

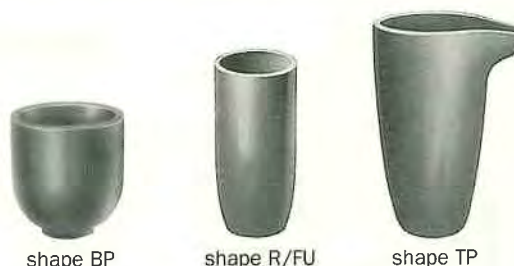
*) These sizes are also available as **isostatically press-molded crucibles** (please specify when ordering).

*) Can also be supplied with **pyrometer pocket**.

Crucibles of graphite

- Shape BP
- Shape C
- Shape R/FU
- Shape TP
- Shape BUK

• Retorts
available in all standardized sizes



042A

Special crucibles

for the precious-metal industry made of: clay, aluminium oxide, Mullite, Zirconiummullite or Zirconiumoxide, round shape, with or without lip, with lid or stand

Height

50 60 80 100 120 150 170 190 210 230 260 280 310 mm

Top outside dia.

40 50 60 70 80 100 120 140 150 160 170 200 210 mm

Depending on the composition of the crucible material, suitable for nickel, molybdenum, cadmium, bismuth, platinum, palladium, rhodium, vanadium, iridium, chrome. Available on request!



042B

Crucible accessories of graphite

- stands
- headpieces
- lid with knob
- furnace lids
- ducts
- pipes
- plugs

can be supplied in accordance with specimen or drawing



043

Insulating stands

of highly insulating material, preventing loss of heat, lightweight, for the use in electric melting furnaces for aluminium, for temperatures up to 1.000° C,

Sizes available:

Height	40	50	65	80	100 mm
Dia.	Item No.				
305 mm	043.101	-	-	043.104	043.105
360 mm	043.201	-	-	043.204	043.205
435 mm	043.301	043.302	043.303	043.304	043.305



043A

Scoops of graphite, without handle

Item No.	Capacity ltr.	inside dia. mm	Depth dia. mm	Connector thread
044.001	0,13	90	56	M 10
044.002	0,33	104	75	M 16
044.003	0,50	125	75	M 16
044.004	0,60	125	85	M 16
044.005	0,75	125	100	M 16
044.006	1,50	146	130	M 16
044.007	1,20	170	100	M 16
044.008	2,20	190	125	M 16
044.009	3,20	230	140	M 16

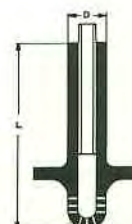


044

Gassing lances of ceramic

for degassing aluminium melts by means of nitrogen or argon through 22 2-mm-holes which are arranged at the circumference of the lance in three levels, dish diameter 200 mm

Item No.	L mm	D mm	Pipe
044.104	750	60	1/2"
044.106	1000	60	1/2"
044.105	1300	60	1/2"
044.108	1500	60	1/2"



044A

045



Design 1



Design 2

Graphite pyrometer pipes

1) standard pipes

Item No.	Length mm	Outside dia. mm	Inside dia. mm	Descr.
045.001	435	40	19	without groove
045.002	500	40	19	without groove
045.003	600	40	19	without groove
045.004	500	50	20	without groove
045.005	600	50	20	without groove
045.006	450	50	30	with flange
045.007	800	40	19	with flange
045.008	660	50	20	with 2 grooves

2) with iron pipe and threaded connectors

Item No.	Pipe outside dia. mm	Pipe inside dia. mm	Connector thread	Prot. pipe dia. mm
045.201	17	12	3/8"	50
045.202	21	15	1/2"	50
045.203	27	21	3/4"	60

045.201 – 045.203 available in the following lengths:

150 255 305 405 460 500 560 610 700 760 915 1070 1220 mm

Pyrometer pipes of SiC (silicon-carbide), Syalon, cast iron or heat-resisting steel and other dimensions on request!

046



047

Crucible cement in 50 kg bags Item No. 046.001

for repairing defective crucible glazing and smoothing over small surface defects

Crucible powder in 50 kg bags Item No. 047.001

for crucible stands, to prevent them from sticking to the crucible

048

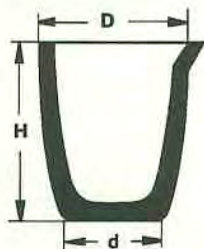


Shape AC

with lip

for stationary furnaces

for light and heavy metal

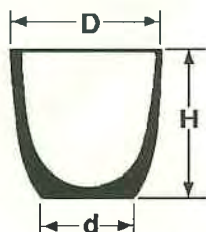


Shape BUC

without lip

for casting and holding furnaces

for light metals



SIC-melting crucibles (isostatically press-molded)

Shape AC Item No.	Size	Heavy metal cap. kg	H mm	D mm	d mm
048.101	AC 2	2	110	102	65
048.102	AC 4	4	140	115	72
048.102A	AC 6	6	165	129	82
048.103	AC 8	8	180	156	82
048.103A	AC 10	10	200	158	110
048.104	AC 12	12	210	172	110
048.104A	AC 14	14	220	175	117
048.105	AC 16	16	230	197	117
048.105A	AC 18	18	240	198	126
048.106	AC 20	20	255	200	126
048.107	AC 25	25	260	220	126
048.108	AC 30	30	290	230	146
048.109	AC 35	35	300	240	154
048.110	AC 40	40	310	260	175
048.111	AC 50	50	330	270	190
048.112	AC 60	60	345	285	195
048.113	AC 70	70	360	295	188
048.114	AC 80	80	370	305	197
048.115	AC 90	90	380	322	203
048.116	AC 100	100	400	325	220
048.117	AC 120	120	410	345	220
048.118	AC 150	150	450	370	239
048.119	AC 175	175	470	370	270
048.120	AC 200	200	500	400	270
048.121	AC 250	250	515	420	285
048.122	AC 300	300	540	440	295
048.123	AC 350	350	590	475	315
048.124	AC 400	400	600	510	360
048.126	AC 500	500	650	516	360

Shape BUC Item No.	Size	Ref. size	Light metal cap. kg	H mm	D mm	d mm
048.302	BUC 50	BC 174	50	394	397	216
048.303	BUC 60	BC 176	60	432	397	216
048.304	BUC 75	BC 164	75	375	464	279
048.305	BUC 100	BC 166	100	402	527	305
048.306	BUC 125	BC 167	125	451	527	305
048.307	BUC 150	BC 168	150	492	527	305
048.308	BUC 175	BC 169	175	551	527	305
048.309	BUC 200K	BC 171	200	600	527	305
048.310	BUC 200	BC 177	215	620	527	314
048.312	BUC 250	BC 302	250	630	615	356
048.313	BUC 300	BC 401	300	700	615	356
048.314	BUC 350	BC 402	350	800	615	356
048.315	BUC 350H	BC 402/900	400	900	615	356
048.316	BUC 500	BC 247	500	750	775	435
048.317	BUC 600	BC 263	600	900	780	435

Other sizes upon request.

SIC-melting crucibles (silicon-carbide) in other shapes and accessories upon request!

Crucible shanks No. 1002

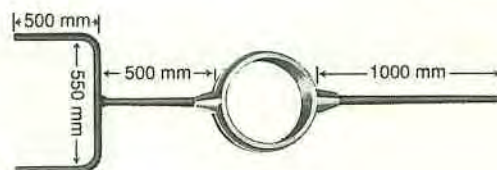
049

strong welded structure of piping, for crucibles of shape **A**

Also available with double fork, rotatable on one side, with crane bail.

Crucible cap.	50	80	100	150	200 kg
Ring dia.	260	290	310	360	385 mm
Pipe dia.	3/4"	3/4"	1"	1"	1 1/4"
Design	Item No.				
Pipe structure	049.101	049.102	049.103	049.104	049.105
Double fork structure	049.201	049.202	049.203	049.204	049.205
Crane bails f. all sizes	049.301				

Please check diameter of existing crucible when ordering!



Hand tongs for crucibles No. 1000

050

forged of one piece, with single or double grips welded to the jaw, for crucibles of shape **A**

Crucible cap.	50	80	100	150	200 kg
Jaw height	200	230	260	300	400 mm
Jaw dia.	230	260	280	310	360 mm
Design	Item No.				
Single grips	050.101	050.102	050.103	050.104	050.105
Double grips	050.201	050.202	050.203	050.204	050.205



Crane tongs for crucibles No. 1001

051

forged of one piece, with single or double grips welded to the jaw, for crucibles of shape **A**

Crucible cap.	100	120	150	200	300	500 kg
Jaw height	260	270	300	400	410	420 mm
Jaw dia.	280	290	310	360	380	450 mm
Design	Item No.					
Single grips:						
Without ratchet	051.101	051.102	051.103	051.104	051.105	051.106
With ratchet	051.201	051.202	051.203	051.204	051.205	051.206
Double grips:						
Without ratchet	051.301	051.302	051.303	051.304	051.305	051.306
With ratchet	051.401	051.402	051.403	051.404	051.405	051.406

Your inquiry or order for **other** crucible tongs should specify the following data:

- | | |
|---|---|
| a) outside dimensions of the crucible: top dia., bottom dia., height, shape | d) distance from the rim of the crucible where the grips should hold the crucible (both dims for double-grip tongs) |
| b) single or double grips | e) crucible diameter at this point |
| c) with or without ratchet | f) inside diameter of the furnace |



Crucible changing slings

052

firm grip, new crucibles are not damaged

Employ on cold or moderately warm crucibles only!

1) Type TZ (with steel ropes)

Item No.	Application range for crucibles	Dimensions (see picture)			Max. load
		a	b	c	
052.004	BU 35-75; A 100-300; R 100-500	295-465	420	320	125 kg
052.005	BU 100-150	550	380	340	125 kg
052.006	BU 175-250; A 500-1000; R 600-1000	485-635	450	370	165 kg
052.006A	BU 300-350	615	550	370	180 kg
052.007	BU 500	775	450	400	180 kg
052.008	BU 600-700	780	750	450	330 kg
052.008A	BU 800-1000	890	750	450	330 kg
052.009	BU 1100-1310	1000	800	450	400 kg
052.009A	BU 1510	980	1000	500	480 kg
052.010	dia. 1100 x 1200 mm	1100	900	500	480 kg

2) Type NOLTILIFT

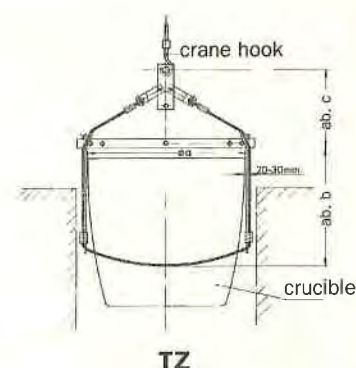
with padded grips and adjustable screw for crucibles up to a wall thickness of 55 mm

Item No. 052.101: carrying cap. 300 kg

Item No. 052.102: carrying cap. 205 kg – especially for restricted furnace spaces (**38 mm required**) between crucible outside wall and furnace inside wall

3) Type MW with automatically extending rubber padded carrying arms, which hold the crucible **inside**, therefore no space required between furnace and crucible, length 1300 mm, weight 25 kg

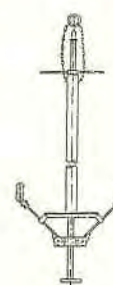
Item No.	Range	For crucibles
052.201	up to 525 mm	BU 100-200
052.202	up to 615 mm	BU 210-350
052.203	up to 780 mm	BU 350-600



TZ



NOLTILIFT



MW

053



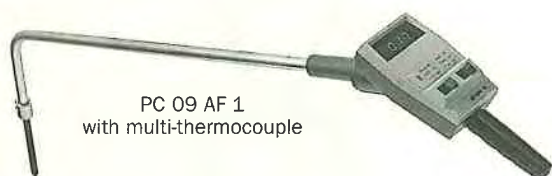
PC 06 AF 1



pipe type thermocouple



fork type thermocouple



PC 09 AF 1
with multi-thermocouple



PC 07 AF 1



immersion-thermocouple

Immersion-type pyrometers 'Gispo-d'

with digital display

Handy, battery-powered temperature indicator with four digits, 7-segment LEDs, height of digits 1.1 mm, easily readable. This instrument can either perform a continuous reading or measurements with storage of the peak value. The electronics, indicators and controls are mounted in a robust cast aluminium housing. Measuring lance and immersion head and the measuring element are easily exchangeable.

1) Type PC 06 AF 1, Item No. 053.001

measuring range up to **1200°C**, response time approx. 10 seconds
pipe length 480 mm

The following thermocouples (NiCr-Ni) are available:

	pipe type thermocouple for copper, brass and bronze melts	fork type thermocouple for lead, tin, zinc and aluminium melts
Length	Item No.	
500 mm	053.101	053.201
750 mm	053.102	053.202
1000 mm	053.103	053.203

Terminals with different diameter to ensure correct polarity.

Recommended immersion depth:

pipe thermocouple 30 cm fork thermocouple 20 cm

2) Type PC 09 AF 1, Item No. 053.002

Measuring range up to **1300°C**, suitable for measuring temperatures of **all non-ferrous metals – with the exception of phosphore bronze**
response time approx. 40 seconds

Total length: 1050 mm angle length: abt. 200 mm

Suitable **multi-thermocouple** (NiCr-Ni) for all non-ferrous metals – with the exception of phosphore bronze.

Length	200	380	610 mm
Item No.	053.301	053.302	053.303

Lead with colour marking to ensure correct polarity.

In order to reduce the measuring time and thus increase the service life of the thermocouple, the thermocouple should be constantly moved through the melt.

To obtain the shortest reaction time, the thermocouple should be immersed 2/3 of its total length in the melt.

Remark:

The service life of the thermocouple can be extended considerably by preheating and coating it.

3) Type PC 07 AF 1, Item No. 053.003

Measuring range up to **1750°C**, suitable for measurements in **cast iron and steel**

response time 4 – 6 seconds

total length: 1050 mm angle length: abt. 200 mm

Other lengths available upon request!

The following **immersion-thermocouples** (Pt 10% Rh/Pt) are available:

Item No.	Type	Use	Length
053.401	M10-200FE	single measurement	200 mm
Design	with steel protective cap and cardboard protective shell		
053.402	MHR10-10-200	for 5 – 8 measurements	200 mm
Design	with 35 mm long bent glass pipe without prot. cap and cardboard prot. shell, protective coating 100 mm long and addl. spatter protector		

Other designs and lengths upon request!

053A



Immersion-type pyrometer 'Portaprobe'

Item No. 053.501

Very reasonable digital immersion-type pyrometer, **measuring up to 1370°C**, for all non-ferrous metals; to be used combined with the multi-thermocouples 053.301 – 053.303 (see above).

Operated by a 9V-transistor battery.

Consists of the thermometer, housed in a high-impact plastic-case, a special handle and the 1.100 mm long chrome-iron protection tube for the thermocouples, angle 45°.

Radiation Pyrometer Optix S Item No. 054.101

For non-contact temperature measurement from 600°C up to 3000°C
(but **not** suitable for aluminium)

Features:

- Microprocessor controlled measurement
- Optical aiming sight with internal display
- Min.- and Max.-storage
- RS 232 interface
- Dust and water proof aluminium-housing even for rough conditions



054

Infrared handheld thermometer ST 6LS

Item No. 054.201

The ideal instrument for non-contact measurement of temperature permanent moulds. **Temperature range – 32 to 500°C (– 25 to 932°F)**; adjustable emissivity, recall of last reading, as well as maximum-, minimum- or alarm-function; laser-operated. Delivery will contain hard case with belt clip.



054A

Magnetic high-temp thermometer

For quick and exact measurement of temperatures from 0 to 400°C. Big, clear readable graduation. No problem to place even on hot core-boxes or pattern-plates because of the magnetic system built-in.

Item No. 054.301 Range 0 to 400°C



054B

Digital thermometer HOCOTEMP

Item No. 055.101

Reasonable thermometer

to be used in connection with measuring lances (item 055A) or surface sensors (item 055B) for measuring the temperature of molten aluminium or on permanent moulds.

Power: 9V battery
Lifetime of battery: about 150 h
Operating temperature: 0 to 150°C
Dimensions: 147 x 70 x 39 mm
Weight: 210 g



055

Suitable measuring lances for the Hocotemp instrument

length appr. 1200 mm, dia. 6 mm, with wooden handle and 1000 mm cable. Lance top coated, immersion depth max. 5 to 8 mm, regularly coat lance with white coating for longevity.

Item No. 055.102



055A

Precision surface sensors

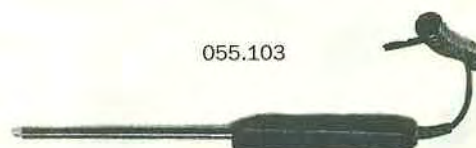
of Ni Cr-Ni (DIN 43710), measuring range up to 500°C. For temperature measurements on ingots and moulds in connection with the Hocotemp-Instrument.

The measuring head comprises thin, flexible strip sensor elements which conform to the shape of any measuring point.

Response time between 0.5 to 4 sec. Head dia. 15 mm

Item No. 055.103: straight

Item No. 055.104: 90° offset



055.103

055B

Tempilstiks

Tempilstiks are made of materials with melting-points calibrated to a guaranteed tolerance of $\pm 1\%$. There is a total of 179 temperature ratings with melting-points between 100°F (38°C) and 2500°F (1371°C).

Application: Mark the workpiece before or during the heating. The dry opaque mark will change to a distinct melted mark which will occur when the temperature rating of the selected crayon has been reached. **Caution: Any colour change that may occur during heating is insignificant!**

Crayons available:

1) Item No. 056.001: Set with 20 sticks:

52, 66, 79, 93, 107, 121, 135, 149, 163, 177, 191, 204, 218, 232, 246, 260, 288, 316, 371 and 427°C.

2) Item No. 056.101: Single stick:

In 105 steps from 38 to 1371°C.

Please indicate the temperature you want to control!



056

057



We also supply chaplets of **pure copper, pure aluminium or stainless steel or acid-resistant steel (VA)**. Please specify quantity, plate size, thickness, leg dia. and height.

Tinned chaplets

prime quality, unparalleled design, of selected material

1) With 1 leg (grooved 10 mm and up; below 10 mm with smooth leg)

Plate size x thickness mm	Leg dia. mm	Height mm	Min. qty. to be ordered
15 x 15 x 1	4	5 - 20	1000
20 x 20 x 1	5	5 - 20	1000
25 x 25 x 1	5	8 - 30	100
	6	32 - 40	500
30 x 30 x 1	6, 8	10 - 50	500

2) With 2 legs (grooved 10 mm and up; below 10 mm with smooth leg)

Plate size x thickness mm	Leg dia. mm	Height mm	Min. qty. to be ordered
50 x 25 x 1	5	8 - 30	100
	6	32 - 40	500
	8	10 - 50	500
60 x 30 x 1	6, 8	10 - 50	500
60 x 30 x 1,5	8, 10, 12	12 - 50	250
80 x 40 x 1,5	8, 10, 12	12 - 70	250
80 x 40 x 2	10, 12, 15, 18, 20, 25	15 - 100	250

The following sizes are carried **in stock**:

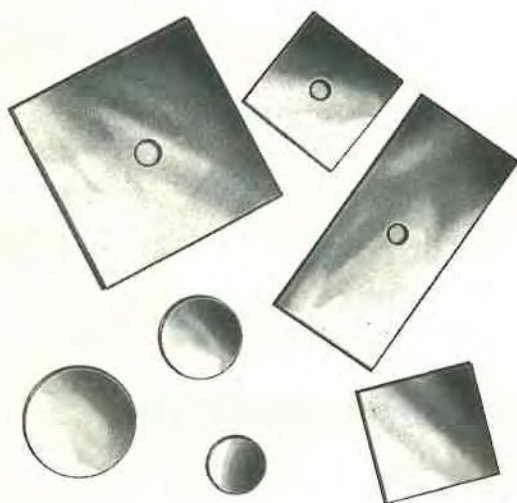
Type	Plate size mm	Leg dia. mm	Height mm/Item No.						
			8	10	12	14	15	16	18
1 leg	25 x 25 x 1	5	057.108	057.110	057.112	057.114	057.115	057.116	057.118
	30 x 30 x 1	8	-	-	-	-	057.135	-	057.138
2 legs	50 x 25 x 1	5	057.208	057.210	057.212	057.214	057.215	057.216	057.218

Type	Plate size mm	Leg dia. mm	Height mm/Item No.					
			20	22	25	28	30	35
1 leg	25 x 25 x 1	5	057.120	057.122	057.125	-	057.130	-
	30 x 30 x 1	8	057.140	-	057.145	057.148	-	057.155
2 legs	50 x 25 x 1	5	057.220	057.222	057.225	057.228	057.230	-

With regard to all other dimensions and designs, certain delivery times should be taken into account, min. quantities should also be observed.

Other sizes upon request!

058



Tin-plated shims

Size mm	Thickness mm / Item No.				Min. qty. pcs.
	0,5	1,0	1,5	2,0	

1) sq. and rectang., with hole - 25 x 25 mm and larger, smaller without hole

10 x 10	058.011	-	-	-	20.000
15 x 15	058.021	058.022*	-	-	10.000
20 x 20	-	058.032*	-	-	-
25 x 25	-	058.042*	-	058.044	2.500
30 x 30	-	058.052	058.053	058.054	1.000
40 x 40	-	058.062	058.063	-	2.000
50 x 25	-	058.072*	-	058.074*	-
60 x 30	-	058.082	058.083	058.084	1.500
80 x 40	-	058.092	058.093	058.094	1.000

2) round, available with and without hole

Dia. 10	058.401	058.501	-	-	15.000
Dia. 14	058.402	058.502	-	-	10.000
Dia. 15	058.403	058.503	-	-	10.000

* stocked

With regard to all other sizes, certain delivery times should be taken into account, min. quantities should also be observed.

Other sizes as well as untinned shims are available upon request.

058A



Tin-plated trays

of press-moulded sheet metal, rims toothed, with angular corners; fuses entirely and thus prevents porosities.

1) square

Size mm	Plate thckn. mm	Min. quantity
25 x 25	0,5 -	2500
50 x 25	0,5 1,0	1000
60 x 30	0,5 1,0	500
80 x 40	0,5 1,0	500

2) round

Size mm	Plate thckn. mm	Min. quantity
10 dia.	0,3	2.500
15 dia.	0,3	2.500
20 dia.	0,3	2.500
25 dia.	0,3	2.500

Other sizes upon request, please specify quantity.

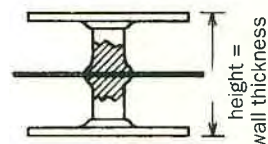
Not stocked, please observe minimum quantities when ordering.

Tin-plated KS chaplets with center plate for tight castings

KS chaplets with center plate guarantee tight castings; tight against water, steam, oil, gas, fuel etc.

KS chaplets feature **the plate** in the middle of the wall of the casting where it ensures perfect welding (highest temperature of the liquid metal), thus guarantees tightness of the casting.

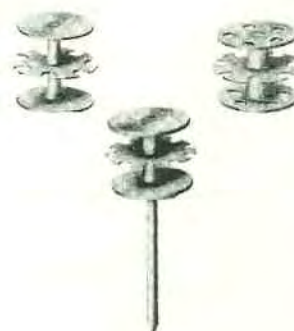
It is perfectly protected against damage, corrosion, impacts, fettling, sand-blasting and machining.



1) with round plates (smooth or perforated)

Plate dia. x thickness mm	Leg dia. mm	Center plate size mm	Height mm	Min. quantity
10 x 0,4	1,6; 2,5	11 x 0,3	5 - 20	1000
14 x 0,5	2,5	16 x 0,3	6 - 20	1000
15 x 1,0	3,0; 3,5; 4,0	16 x 0,3	8 - 25	1000
20 x 1,0	4,0; 5,0	23 x 0,5	10 - 25 (height increments=1 mm)	500
25 x 1,0	5,0; 6,0	23 x 0,5	10, 12, 15, 18, 20, 22, 25, 28, 30	500

The round chaplets with center plate are also available with **welded pin**.



2) with square plates and 1 leg

Plate dia. x thickness mm	Leg dia. mm	Center plate size mm	Height mm	Min. quantity
15 x 15 x 1,0	4	16 x 0,3	10 - 20	500
20 x 20 x 1,0	5	16 x 0,5	10 - 25	500
20 x 20 x 1,0	5	23 x 0,5	10 - 25 (height increments=1 mm)	500
25 x 25 x 1,0	5	23 x 0,5	10, 12, 15, 18, 20, 22, 25, 28, 30	500



3) with rectangular plates and 2 legs

Plate dia. x thickness mm	Leg dia. mm	Center plate size mm	Height mm	Min. quantity
50 x 25 x 1,0	5	54 x 27 x 0,5	10, 12, 15, 18, 20, 22, 25, 28, 30	500
60 x 30 x 1,0	6	60 x 30 x 0,5	12, 15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40	200
60 x 30 x 1,5	8 10 12	60 x 30 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50	200
80 x 40 x 1,5	8 10 12	80 x 40 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50, 55, 60	100
80 x 40 x 2,0	10 12 15	80 x 40 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50, 55, 60	100

Intermediate heights upon request.



4) with rectangular plates, 2 legs and an extended bottom plate with fixing holes

Top plate mm	Bottom plate mm	Leg dia. mm	Center plate size mm	Height mm	Min. quantity
50 x 25 x 1,0	66 x 25 x 1,0	5	54 x 27 x 0,5	10, 12, 15, 18, 20, 22, 25, 28, 30	500
60 x 30 x 1,0	80 x 30 x 1,0	6	60 x 30 x 0,5	12, 15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40	200
60 x 30 x 1,5	80 x 30 x 1,5	8 10 12	60 x 30 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50	200
80 x 40 x 1,5	100 x 40 x 1,5	8 10 12	80 x 40 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50, 55, 60	100
80 x 40 x 2,0	100 x 40 x 2,0	10 12 15	80 x 40 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50, 55, 60	100



Not stocked! Please observe the min. quantities!

060

Tin-plated studs with round plates

Designs:

- 1) smooth plate, smooth leg (standard) 3) perforated plate, smooth leg
2) smooth plate, grooved leg 4) perforated plate, grooved leg



Design 1)



Design 4)

Plate dia. mm	Plate thickness mm	Leg dia. mm	Height mm	Min. quantity
10	0,4	1,6	3 - 20	100
10	0,4	2,5	4 - 20	5000
12	0,5	1,6	4 - 20	5000
14	0,5	2,5	5 - 20	100
15	1,0	3,0	5 - 20	2500
15	1,0	4,0	6 - 20	5000
20	1,0	4,0	8 - 25	5000
20	1,0	5,0	8 - 30	5000
25	1,0	4,0	8 - 30	2000
25	1,0	5,0	10 - 40	2000

Other sizes upon request!

The following types are available **from stock** in the standard version = 1)

Plate size mm	Leg dia. mm	Height mm / Item No.												
		3	4	5	6	7	8	9	10	11	12	13	14	15
10 x 0,4	1,6	060.103	060.104	060.105	060.106	060.107	060.108	060.109	060.110	060.111	060.112	060.113	060.114	060.115
14 x 0,5	2,5	-	-	060.205	060.206	060.207	060.208	060.209	060.210	060.211	060.212	060.213	060.214	060.215

With regard to all other sizes and heights, certain delivery times should be taken into account, min. quantities should also be observed.

061



Studs of aluminium with round plates

(also available in copper, please specify quantity)

smooth plates, smooth leg, 10 x 0,4 mm plate dim., 1,6 mm leg dia.

Height mm	4	5	6	8	10
Item No.	061.104	061.105	061.106	061.108	061.110

Other sizes upon request!

062



Tin-plated studs with fixing pin

1) with plug-in type fixing pin

Plate dia. x thickn. mm	Leg dia. mm	Height mm	Fixing pin mm
8 x 0,4	1,5	3 - 15	1,5 x 12
10 x 0,4	1,6	4 - 15	1,6 x 13
10 x 0,4	2,5	5 - 15	2,5 x 13
14 x 0,5	2,5	5 - 15	2,5 x 13

2) with welded fixing pin

Plate dia. x thickn. mm	Leg dia. mm	Height mm	Fixing pin mm
10 x 0,4	1,6	3 - 15	1,5 x 25
10 x 0,4	2,5	4 - 15	1,8 x 25
14 x 0,5	2,5	4 - 15	1,8 x 25
15 x 1,0	3,0	5 - 20	1,8 x 35

Other sizes upon request!

Not stocked! Min. quantity: 5000 pieces per size.

063



Tin-plated core clamps

perforated or smooth

Size mm	Length mm	Height mm
10 x 0,5	25	3 - 10
15 x 0,5	30	5 - 15

Size mm	Length mm	Height mm
12 x 1,0	40	5 - 20
18 x 1,0	50	10 - 25

Height in parallel position of both limbs.

Not stocked! Min. quantity: 5000 pieces per size.

064



straight shape



curved shape

Tin-plated anchor chaplets

straight or curved, perforated

Width x thickness	Height	Min. quantity
10 x 0,5 mm	3 - 15 mm	100 p.
15 x 0,5 mm	4 - 15 mm	5000 p.
25 x 0,5 mm	4 - 20 mm	5000 p.

The following heights in size **10 x 0,5 mm** are stocked.

Design	Height mm / Item No.									
	4	5	6	7	8	9	10	12	13	15
Straight	064.104	064.105	064.106	064.107	064.108	064.109	064.110	064.112	064.113	064.115
Curved	064.204	064.205	064.206	064.207	064.208	064.209	064.210	064.212	064.213	064.215

With regard to all other sizes and heights, certain delivery times should be taken into account, min. quantities should also be observed.

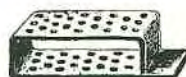
Tin-plated perforated chaplets

straight or curved, perforated

Width x thickness	Height	Min. quantity
5 x 10 x 0,5 mm	3 - 10 mm	5000 p.
10 x 10 x 0,5 mm	3 - 12 mm	100 p.
10 x 20 x 0,5 mm	3 - 15 mm	100/5000 p.
15 x 20 x 0,5 mm	4 - 15 mm	5000 p.
25 x 25 x 0,5 mm	4 - 18 mm	5000 p.

The following heights are stocked.

Dimensions / Design	4	Height mm / Item No.							
		5	6	7	8	9	10	12	15
10 x 10 x 0,5 straight		065.104	065.105	065.106	065.107	065.108	065.109	065.110	065.112
10 x 10 x 0,5 curved		065.204	065.205	065.206	065.207	065.208	065.209	065.210	065.212
10 x 20 x 0,5 straight		065.304	065.305	065.306	065.307	065.308	065.309	065.310	065.312



straight shape



curved shape

With regard to all other sizes and heights, certain delivery times should be taken into account, min. quantities should also be observed.

065

Chaplets of aluminium

10 x 10 x 0,5 mm, straight, not perforated

Height mm	4	5	6	8	10
Item No.	066.104	066.105	066.106	066.108	066.110

Other dimensions upon request, also available in copper. Please specify quantity.



066

Ready-glued studs and chaplets

One plate or surface at the chaplets is coated with solvent-free adhesive placed on siliconised paper.

No gasing because of the solvent-free glue. Strong bond to sand and coating.

All types and sizes of studs and chaplets with ref. 057 to 066 may be delivered ready glued!

We kindly ask for your inquiry. Quantity should be specified!



067

Polystyrene K-Chaplets for aluminium casting

Made of extruded polystyrene, cylindrical. Vaporize during casting so that a completely homogeneous casting will be achieved.

When used in the 'drag' position it is possible that the chaplet will be compressed. So a bigger height should be chosen.

Dimensions available:

Dia. mm	Height mm	Min. quantity pieces
12	4, 5, 6, 7, 8, 10, 12, 13	1000
20	4, 5, 6, 7, 8, 10, 12, 13	1000

All dimensions are available:

- 1) ready glued
- 2) without glue



067A

We have the following heights with 12 mm dia. ready-glued in stock:

Height mm	4	5	6	7	8	10	12
Item No.	067.104	067.105	067.106	067.107	067.108	067.110	067.112

With regard to all other sizes, certain delivery times should be taken into consideration, min. quantity should also be observed.

Tin-plated pin studs

grooved, with straight or curved plates

Standard length: 200 mm, other lengths upon request.

Pin dia. mm	Plate size mm	Item No.	
		straight	curved
3	25 x 15 x 1,0	068.103	068.203
4	30 x 20 x 1,0	068.104	068.204
5	45 x 25 x 1,0	068.105	068.205
6	50 x 30 x 1,5	068.106	068.206
8	65 x 40 x 2,0	068.108	068.208

Pin dia. mm	Plate size mm	Item No.	
		straight	curved
10	80 x 40 x 2,0	068.110	068.210
12	85 x 45 x 3,0	068.112	068.212
15	100 x 60 x 3,0	068.115	068.215
18	120 x 70 x 3,0	068.118	068.218
20	150 x 80 x 3,0	068.120	068.220

Minimum quantity: 100 pieces per size.



068

Special core supports

- shoulder core supports
- core clips
- core holder
- radiator core supports
- sleeves

Upon request



069

Tin-plated skimming gates

with or without hole or perforated

30 40 45 55 60 70 73 80 90 110 mm dia.

Thickness: 0,20; 0,32; 0,52; 0,80; 1,00 mm

Not stocked! Minimum quantity: 1000 pieces.



070

071

Vent pipes of sheet metal

perforated or smooth, bright or tinned

Your inquiry should specify length, diameter and wall thickness.

Not stocked! Minimum quantity per size: 1000 pieces.

072

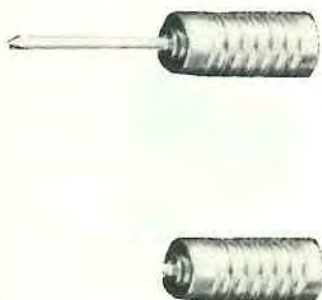
Slotted pipes bright, untinned

of sheet metal, wall thickness 0,5 mm, slot width 1,5 mm

Standard length 2000 mm (also available in 1000 mm length).

Item No.	072.104	072.105	072.106	072.108	072.110
Diameter mm	4,0	5,0	6,3	8,2	10,0

Not stocked! Minimum quantity: 100 m.

073

Tin-plated cooling nails, grooved, with tip

Length mm (without tip)	Body dia. mm / Item No.					
	5	6	8	10	12	15
10	073.001	073.101	-	-	-	-
15	073.002	073.102	073.201	073.301	073.401	-
20	073.003	073.103	073.202	073.302	073.402	073.501
25	073.004	073.104	073.203	073.303	073.403	073.502
30	073.005	073.105	073.204	073.304	073.404	073.503
40	-	073.106	073.205	073.305	073.405	073.504
50	-	-	073.206	073.306	073.406	073.505
60	-	-	073.207	073.307	073.407	073.506
70	-	-	073.208	073.308	073.408	073.507
80	-	-	073.209	073.309	073.409	073.508
90	-	-	-	073.310	073.410	073.509
100	-	-	-	073.311	073.411	073.510

Other sizes upon request.

Not stocked! Minimum quantity to be ordered: 200 per size.

Also available **without** tip or of **stainless or acid-resistant steel (V2A)**, with or without tip.

074

Design 1a)



Design 1b)



Design 2a)



Design 2b)

Tin-plated chills

a) with tip up to 100 mm long

b) without tip up to 500 mm long

1) Herringbone shaped

Width mm	12	17	22	26	30	35	45
Thickn. mm	1,0	1,0	1,0	1,0	1,0	1,0	2,0
	-	-	1,5	1,5	1,5	1,5	-
	-	-	2,0	2,0	2,0	2,0	-

2) Ripped

Width mm	13	22	26	35
Thickn. mm	1,0	1,0	1,0	1,0
	-	-	-	1,5

Not stocked! Minimum quantity: 100 per size.

075

Tin-plated chill coils

500 mm long (Other lengths upon request)

Wire dia. mm	Outside dia. mm				Wire dia. mm	Outside dia. mm						
1,0 mm	8	10	-	-	3,0 mm	25	30	35	40	45	50	
1,5 mm	10	15	20	-	4,0 mm	30	35	40	45	50	60	
2,0 mm	15	20	25	30	5,0 mm	30	35	40	45	50	60	
2,5 mm	20	25	30	40								

Not stocked! Minimum quantity: 100 per size.

076

Tin-plated chill cages

Wire dia. mm	Outside dia. of cage mm				Height (not incl. tip) mm
1,0	8	10	-	-	15 - 40
1,5	15	20	-	-	20 - 50
2,0	15	20	25	30	25 - 50

Wire dia. mm	Outside dia. of cage mm					Height (not incl. tip) mm
2,5	20	25	30	-	-	30 - 100
3,0	25	30	35	40	50	30 - 100
4,0	30	35	40	50	-	40 - 100
5,0	40	50	-	-	-	50 - 100

Not stocked! Minimum quantity: 100 per size.

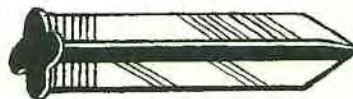
Tin-plated chill nails

077

Advantages of the 'star-profile': large surface area – excellent cooling effects
fully embedded, tight, pipeless castings

Profile 3,5 mm: 20 – 120 mm length; with or without hook head

Profile 6,5 mm: 20 – 120 mm length; with or without head (however no hook head)



Core wire, annealed (soft)

078

Package size 25 kg, endless or in 1000 mm lengths

Type	Diameter mm / Item No.				
	2,0	3,0	4,0	5,0	6,0
Endless	078.102	078.103	078.104	078.105	078.106
1000 mm length	078.202	078.203	078.204	078.205	078.206



Core wire, not annealed (bright-hard)

079

Package size 25 kg, endless or in 1000 mm lengths

Type	Diameter mm / Item No.				
	2,0	3,0	4,0	5,0	6,0
Endless	079.102	079.103	079.104	079.105	079.106
1000 mm length	079.202	079.203	079.204	079.205	079.206

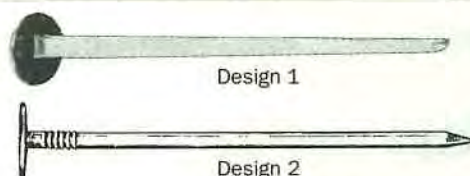


Tin-plated core nails, square

with large, flat head, in 5 kg packages

Designs:

- 1) machine forged, tapered with tip (**shape 11**)
preferred in the foundry industry
- 2) press molded, cylindrical, notched



080

Length mm	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	200
Design	Item No.															
Tapered up to 250 kg	080.104	080.105	080.106	080.107	080.108	080.109	080.110	080.111	080.112	080.113	080.114	080.115	080.116	080.117	080.118	080.120
over 250 kg	080.204	080.205	080.206	080.207	080.208	080.209	080.210	080.211	080.212	080.213	080.214	080.215	080.216	080.217	080.218	080.220
Cyl.	080.304	080.305	080.306	080.307	080.308	080.309	080.310	080.311	080.312	080.313	080.314	080.315	080.316	080.317	080.318	080.320

Core nails are also available **bright** untinned or of **pure aluminium** or **pure copper**.

Moulder's pins, in 5 kg packages

081

Standard design: with large, flat head, without tip
on request available with tip and without head or with hook head



Standard design

Standard dimensions:

Length mm	Width mm				
	1,0	1,1	1,2	1,4	1,6
Item No.					
20	081.001	-	-	-	-
25	081.002	-	-	-	-
30	081.003	-	-	-	-
40	081.004	081.101	-	081.300	-
50	-	-	081.201	-	-
55	-	-	081.202	-	-
60	-	-	081.203	081.301	-
65	-	-	-	081.302	-
70	-	-	-	081.303	-
80	-	-	081.204	081.304	081.401
90	-	-	-	-	081.402
100	-	-	-	081.305	081.403
110	-	-	-	-	-
120	-	-	-	-	081.404
130	-	-	-	-	081.405
140	-	-	-	-	-
150	-	-	-	-	081.406

Length mm	Width mm				
	1,8	2,0	2,2	2,5	2,8
Item No.					
100	081.501	081.601	-	-	-
110	081.502	-	-	-	-
120	081.503	081.602	-	-	-
130	081.504	-	081.701	-	-
140	081.505	081.603	-	-	-
150	081.506	081.604	081.702	-	-
160	-	-	081.703	-	-
170	-	-	-	081.801	-
180	-	081.605	081.704	081.802	-
190	-	-	-	081.803	-
200	-	-	081.705	081.804	081.901
220	-	-	-	-	081.902
240	-	-	-	-	081.903
260	-	-	-	-	081.904
280	-	-	-	-	081.905
300	-	-	-	-	081.906

The above sizes are standard sizes, we also supply other sizes up to 400 mm long.

Also available in **pure aluminium**, **pure copper**, **brass** or **stainless steel**; please specify quantities.

Sleekers of steel

(Length L = overall length)

1) Spoon-type sleekers

Item No.	Sleeker dims. mm	L = mm	Spoon dims. mm
082.113	90 x 37	275	85 x 30
082.115	80 x 32	250	75 x 25
082.117	70 x 27	230	70 x 23
082.117A	70 x 27	230	65 x 23
082.119	65 x 25	220	65 x 21
082.119A	55 x 19	205	55 x 18
082.121	50 x 18	190	55 x 17
082.121A	50 x 18	190	33 x 23
082.130	65 x 25	210	52 x 30
082.130A	70 x 27	230	55 x 35
089.024	30 x 12	150	30 x 12
089.024A	30 x 13	150	35 x 11
089.025	45 x 15	160	30 x 14

2) Shovel-type sleekers

Item No.	Sleeker dims. mm	L = mm	Shovel dims. mm
082.112	90 x 37	275	75 x 35
082.114	80 x 32	250	65 x 31
082.116	70 x 27	230	60 x 27
082.118	65 x 25	230	57 x 25
082.118A	55 x 20	205	55 x 18
082.120	50 x 18	190	45 x 12
082.120A	50 x 18	190	40 x 16

3) Sleekers of various types

Item No. 082.087	65 x 44 mm	L = 210 mm	53 x 30 mm
Item No. 082.087A	50 x 36 mm	L = 170 mm	45 x 23 mm

Item No. 082.093A	54 x 17 mm	L = 210 mm	48 x 14 mm
Item No. 082.093B	42 x 10 mm	L = 215 mm	50 x 8 mm

Item No. 082.122	65 x 25 mm	L = 190 mm	Fußbr. 14 mm
Item No. 082.122A	50 x 18 mm	L = 160 mm	Fußbr. 10 mm

Item No. 082.124	135 x 26 mm	L = 260 mm	Head dia. 24 mm
Item No. 082.124A	115 x 22 mm	L = 215 mm	Head dia. 19 mm

Item No. 082.152	50 x 18 mm	L = 200 mm	Width 12 mm
Item No. 082.152A	55 x 12 mm	L = 205 mm	Width 7 mm
Item No. 082.153	65 x 25 mm	L = 250 mm	Width 14 mm

Item No. 082.220	31 x 15 mm	L = 165 mm	40 x 8 mm
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Trowels of steel with wooden handle

The dimensions given are the dimensions of the shovel blade.

Item No. 083.080	160 x 55 mm	Item No. 083.081	150 x 50 mm
Item No. 083.080A	115 x 55 mm	Item No. 083.082	130 x 35 mm
Item No. 083.080B	180 x 60 mm	Item No. 083.082B	130 x 40 mm

Item No. 083.083	130 x 35 mm	Item No. 083.083B	100 x 35 mm
Item No. 083.083A	130 x 40 mm	Item No. 083.083C	130 x 20 mm

Item No. 083.084	120 x 25 mm
Item No. 083.084A	160 x 40 mm
Item No. 083.084B	130 x 40 mm

Item No. 083.085	90 x 55 mm	Item No. 083.086A	125 x 60 mm pointed – oval
Item No. 083.085G	80 x 50 mm	Item No. 083.086H	130 x 20 mm pointed – oval – concave
Item No. 083.086	100 x 60 mm		

Item No. 083.085A	90 x 55 mm
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with cranked and curved handle (without wooden handle)

Spare wooden handles for trowels

Item No. 084.001
dia. 35 mm, length 100 mm, with metal collar

Vent prickers with hard-wood handle Item No. 085.001

of quality steel, round, length 300 mm, dia. 6 mm

**085****Calipers**

with sturdy flat legs, without scale

1) No. 416 Inside caliper **2) No. 417** Outside caliper

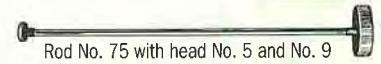
Length	150 mm	200 mm	250 mm	300 mm	400 mm	500 mm	600 mm	750 mm	1000 mm
Meas. width	200 mm	260 mm	325 mm	390 mm	520 mm	650 mm	780 mm	975 mm	1300 mm
Type	Item No.								
No. 416	661.015	661.020	661.025	661.030	661.040	661.050	661.060	661.075	661.100
No. 417	661.215	661.220	661.225	661.230	661.240	661.250	661.260	661.275	661.300



No. 416 No. 417

086**'Colonne'-steel rod No. 75****1) Rod No. 75** Item No. 087.075**2) suitable heads (Nos. 5 & 9 see above)**

Material/Design	Item No.									
Steel	087.001	087.002	087.003	087.004	087.005	087.006	-	-	-	-
Bronze	087.101	087.102	-	-	-	-	087.107	087.108	087.109	087.110
Dia. mm	31	31	17	17	17	24	41	41	50	50
Width mm	8	8	14	14	3	8	14	14	16	16
Edges	sharp	rounded	sharp	rounded	rounded	rounded	sharp	rounded	sharp	rounded

**087****Jaggers of steel (Length given L = overall length)****1) Cranked**

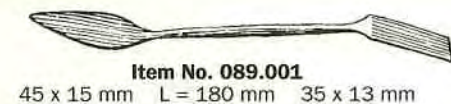
Item No.	088.097	400 x 25 mm	Item No.	088.107	260 x 10 mm
Item No.	088.099	350 x 20 mm	Item No.	088.107A	330 x 10 mm
Item No.	088.101	300 x 18 mm	Item No.	088.107H	450 x 10 mm
Item No.	088.101A	390 x 18 mm	Item No.	088.109	200 x 12 mm
Item No.	088.103	300 x 13 mm	Item No.	088.111	210 x 7 mm
Item No.	088.105	260 x 14 mm	Item No.	088.111A	300 x 7 mm
Item No.	088.105A	330 x 14 mm			

**2) Uncranked**

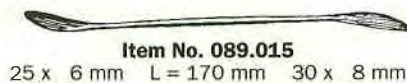
Item No.	088.101B	390 x 18 mm	Item No.	088.147B	350 x 20 mm
Item No.	088.147	350 x 15 mm	Item No.	088.147C	400 x 10 mm
Item No.	088.147A	345 x 10 mm			

**3) Blunt food**

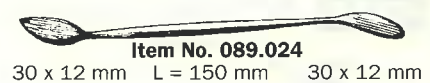
Item No.	088.096	400 x 25 mm	Item No.	088.104A	330 x 14 mm
Item No.	088.098	350 x 20 mm	Item No.	088.106	260 x 10 mm
Item No.	088.100	300 x 18 mm	Item No.	088.106A	330 x 10 mm
Item No.	088.100A	390 x 18 mm	Item No.	088.108	200 x 12 mm
Item No.	088.102	300 x 13 mm	Item No.	088.110	210 x 7 mm
Item No.	088.104	260 x 14 mm	Item No.	088.110A	300 x 7 mm

**088****Small moulder tools of steel (Length given L = overall length)****Item No. 089.001**

45 x 15 mm L = 180 mm 35 x 13 mm

**Item No. 089.015**

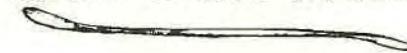
25 x 6 mm L = 170 mm 30 x 8 mm

**Item No. 089.024**

30 x 12 mm L = 150 mm 30 x 12 mm

**Item No. 089.002**

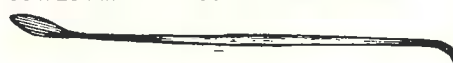
30 x 13 mm L = 150 mm 27 x 13 mm

**Item No. 089.016**

25 x 7 mm L = 170 mm 25 x 6 mm

**Item No. 089.024A**

30 x 13 mm L = 150 mm 35 x 11 mm

**Item No. 089.007**

30 x 13 mm L = 200 mm 30 x 3 mm

**Item No. 089.016A**

30 x 7 mm L = 160 mm 30 x 12 mm

**Item No. 089.025**

45 x 15 mm L = 160 mm 30 x 14 mm

**Item No. 089.008**

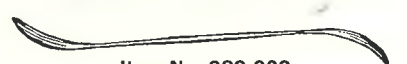
30 x 4 mm L = 170 mm 30 x 4 mm

**Item No. 089.017**

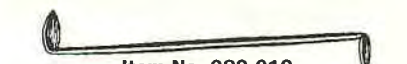
25 x 4 mm L = 175 mm 30 x 5 mm

**Item No. 089.012**

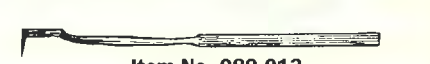
20 x 4 mm L = 180 mm 90 x 5 mm

**Item No. 089.009**

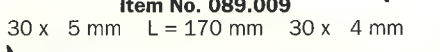
30 x 5 mm L = 170 mm 30 x 4 mm

**Item No. 089.019**

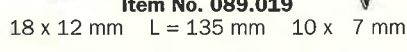
18 x 12 mm L = 135 mm 10 x 7 mm

**Item No. 089.013**

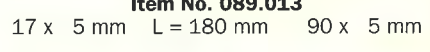
17 x 5 mm L = 180 mm 90 x 5 mm

**Item No. 089.010**

30 x 5 mm L = 170 mm 30 x 6 mm

**Item No. 089.022**

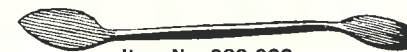
40 x 16 mm L = 170 mm 30 x 13 mm

**Item No. 089.020**

20 x 6 mm L = 185 mm 100 x 6 mm

**Item No. 089.014**

25 x 8 mm L = 175 mm 30 x 8 mm

**Item No. 089.022A**

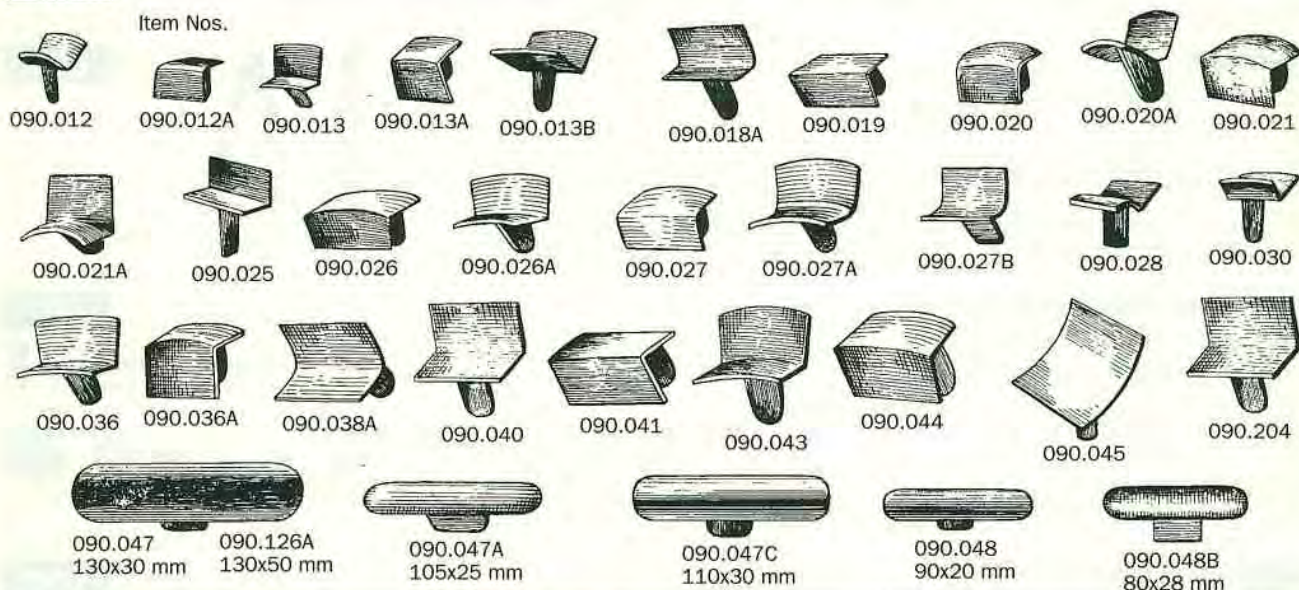
30 x 11 mm L = 170 mm 30 x 8 mm

**Item No. 089.021**

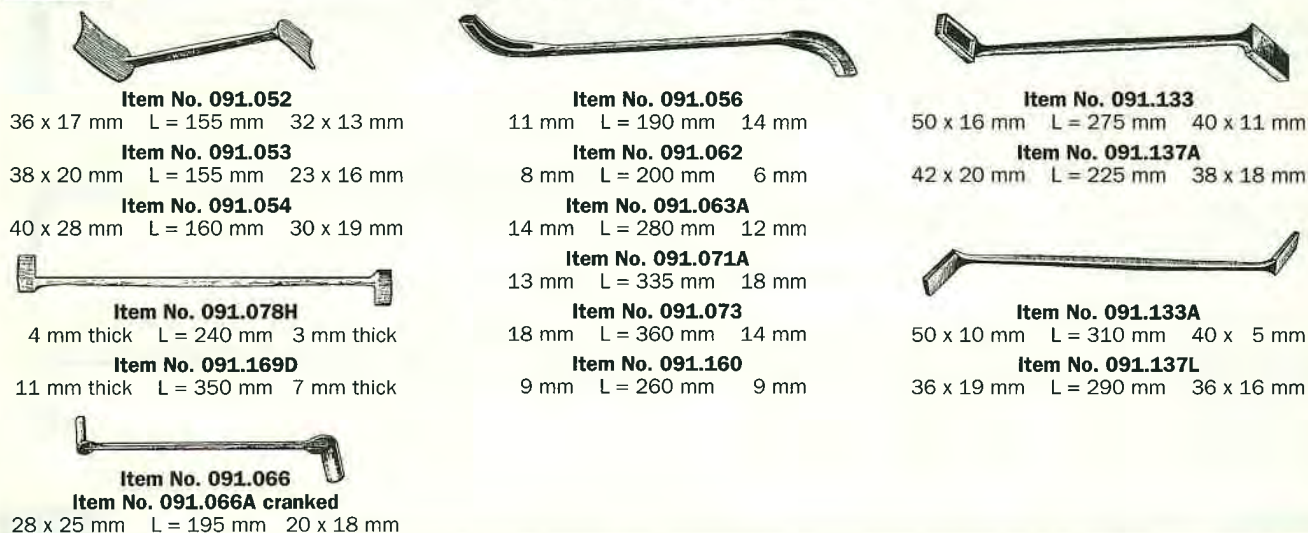
18 x 6 mm L = 185 mm 100 x 6 mm

089

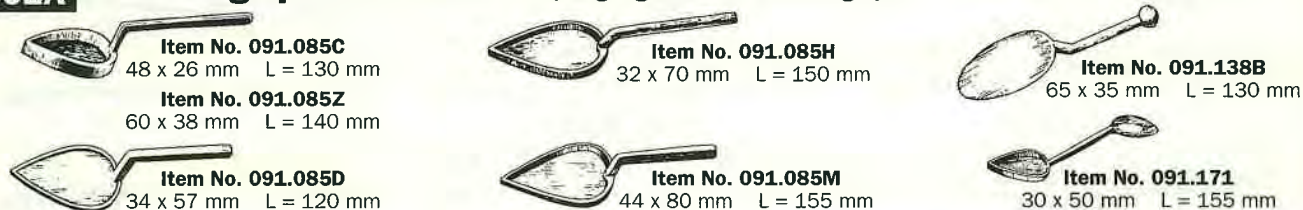
090 Finishing buttons of bronze (ill. depicts 1/3 of the actual size)



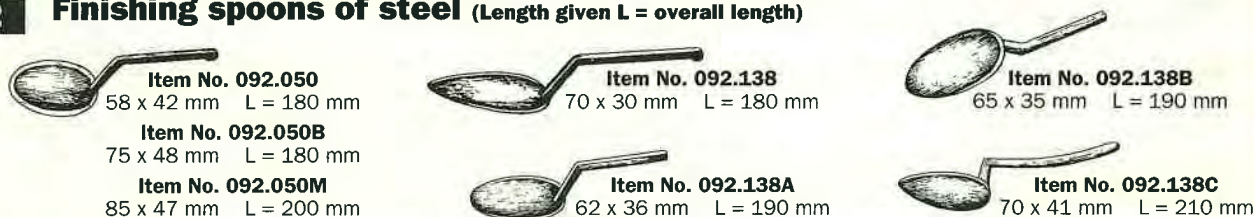
091 Finishing tools of bronze (Length given L = overall length)



091A Finishing spoons of bronze (Length given L = overall length)



092 Finishing spoons of steel (Length given L = overall length)



093 Metal tool boxes

with tray and handles, sturdy design, with 2 locks, inside and outside, with baking enamel, size: appr. 508 x 216 x 241 mm **Item No. 093.101**



Cutting pliers

with polished head, heavy-duty type

Item No.	094.001	094.002	094.003	094.004
Length	160 mm	180 mm	200 mm	230 mm



094

Precision spirit levels of light metal

Length	300	400	500	600	800	1000 mm
Item No.	095.101	095.102	095.103	095.104	095.105	095.106



095

Moulders brushes

1) Round brush with quill sleeve

Type 680 (goat hair = red sleeve)

Type 605 (squirrel hair = green sleeve)

Size	0	2	4	6	8	10	12	14	16	18	20	22	24	26
Collar dia.	4	6	8	10	12	14	16	18	20	22	24	26	28	30 mm
Hair length	23	26	32	36	39	42	46	51	54	56	59	61	64	68 mm
Type	Item No.													
680	096.100	096.102	096.104	096.106	096.108	096.110	096.112	096.114	096.116	096.118	096.120	096.122	096.124	096.126
605	096.200	096.202	096.204	096.206	096.208	096.210	096.212	096.214	096.216	096.218	096.220	096.222	096.224	096.226



096

2) Round brush with metal sleeve

Type 683 (goat hair)

Type 610 (squirrel hair)

No.	2	4	6	8	10	12	14	16	18	20	22	24
Collar dia.	8,5	10	13	17	20	23	26	29	32	36	39	43 mm
Hair length	23	28	32	40	44	50	55	60	62	65	70	75 mm
Type	Item No.											
683	096.302	096.304	096.306	096.308	096.310	096.312	096.314	096.316	096.318	096.320	096.322	096.324
610	096.402	096.404	096.406	096.408	096.410	096.412	096.414	096.416	096.418	096.420	096.422	096.424



Angle brushes

Type 681 (goat hair)

Type 606 (squirrel hair)

No.	6	10	14	18	22
Collar dia.	10	14	18	22	26 mm
Hair length	36	42	51	56	61 mm
Type	Item No.				
681	097.106	097.110	097.114	097.118	097.122
606	097.206	097.210	097.214	097.218	097.222



097

Flat brushes

Standard handle length: 12 – 17 cm (longer handles at extra charge)

Width	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
1) Type 686 (goat hair)								
Item No.	098.005	098.007	098.010	098.015	098.020	098.025	098.030	098.040
HL mm	32	33	35	40	43	45	48	52
Thickn. mm	3,5	3,5	3,5	4,5	5,5	6,0	6,5	8,5

2) Type 621 (squirrel hair)

Item No.	098.105	098.107	098.110	098.115	098.120	098.125	098.130	098.140
HL mm	30	30	32	36	38	40	42	48
Thickn. mm	3,5	3,5	3,5	4,5	5,5	6,0	6,5	8,5

3) Type 845 (half-white bristles)

Item No.	098.205	098.207	098.210	098.215	098.220	098.225	098.230	098.240
BL mm	26	29	31	33	35	38	40	45
Thickn. mm	5,0	5,0	5,0	5,5	6,5	6,5	8,0	8,5

4) Type 860 (similar to 845, however, substantially stronger)

Item No.	098.305	098.307	098.310	098.315	098.320	098.325	098.330	098.340
BL mm	35	36	37	40	45	52	56	64
Thickn. mm	6,0	6,0	6,0	6,5	7,0	7,5	9,0	9,5

5) Type 820 (half-white bristles) with round handle

Item No.	098.401	098.402	098.403	098.404	098.405	098.406
Width appr.	12	13,5	17	19	21	23 mm
BL appr.	30	30	30	35	35	40 mm
Thickn. appr.	5,0	5,0	5,0	6,0	7,0	7,0 mm



098

099**Pointed brushes**

half-white bristles, with metal sleeve

Type 270, round **Type 705**, flat

Size	2	4	6	8	10	12
Type 270 Dia.	2,25	3,25	4	4,75	6	7 mm
Item No.	099.102	099.104	099.106	099.108	099.110	099.112
Type 705 Width	2,8	4,5	6,3	8,3	10	12 mm
Item No.	099.202	099.204	099.206	099.208	099.210	099.212

Size	14	16	18	20	22	24
Type 270 Dia.	8,5	10,5	12	14	16	17 mm
Item No.	099.114	099.116	099.118	099.120	099.122	099.124
Type 705 Width	14,3	16,8	18	21	23,8	26,8 mm
Item No.	099.214	099.216	099.218	099.220	099.222	099.224

100**Annular brushes Type 1040**

standard bristles, with plastic collar

Size	2	4	6	8	10	12	14	16
Collar dia.	20	25	30	35	40	45	50	55 mm
BL	60	65	65	70	75	80	85	85 mm
Item No.	100.102	100.104	100.106	100.108	100.110	100.112	100.114	100.116

101

Type 1405

101A

Type 1415

Tapered brushes**Type 1405**

standard bristles

Size	8	12	16	20	24	8	10	12	14	16
Collar dia.	25	31	36	40	44	17	20	23	26	29 mm
BL	48	55	60	70	75	42	42	45	50	55 mm
Item No.	101.108	101.112	101.116	101.120	101.124	101.208	101.210	101.212	101.214	101.216

Tapered brushes**Type 1415**

half-white bristles

102**Radiator brushes Type 1200**

standard bristles, curved, handle length 360 mm, length of bristles 10 mm

Width	1"	1 1/2"	2"	2 1/2"	3"
Bristle length	41	42	46	48	55 mm
Item No.	102.110	102.115	102.120	102.125	102.130

103**Water droplet brushes Item No. 103.001**

prime horsehair, with wire handle, 24 mm collar dia., 350 mm total length, 125 mm long horse hair

104**Mason brushes of fibers**

good quality, short handle

Diameter	55	60	65 mm
Bristle length	90	95	95 mm
Item No.	104.001	104.002	104.003

105**Hand brooms**

with wooden handle

Item No.	105.001	105.002
Material	horsehair	coco fibers

106**Workshop brooms of coco fibers or horsehair**length of bristles 90 mm, 5 rows, wood 300 x 65 mm
(larger brooms also available)

Item No.	106.001	106.002
Material	horsehair	coco fibers

106A**Workshop brooms, narrow**

- 1) with fine, black-grey fibers 'Arenga' (similar to coco fibers)
- 2) with red, smooth plastic bristles of 'Elaston'

Width	40	50	60	80	100 cm
Material	Item No.				
Arenga	106.201	106.202	106.203	106.204	106.205
Elaston	106.301	106.302	106.303	-	-

107**Pattern brushes, prime quality horsehair**

handle length 150 mm, length of horsehair 80 mm

Item No.	107.001	107.002
Diameter	60 mm	80 mm

Control mirrors **Item No. 108.001**

108

flexible, with light, overall length 520 mm

Design: With three replaceable round mirrors, mirror dia. 14, 23 and 30 mm. Chrome-plated mirror holder with bulb, flexible, chrome-plated metal shaft, plastic handle housing with a 1,5 V battery. The light is reflected by the mirror onto the area to be checked. 14 and 23 mm dia mirror magnifying, 30 mm mirror plane.

Spare lamps are available! (**Item No. 108.100**)



Halogen magnetic lamps

109

with flexible arm, Item No. 109.001

with prot. glass, special reflector, total reflector dia. 70 mm, length 600 mm, with a 12 Volt/20 Watt halogen bulb, built-in transformer and clamping attachment (230 V/50 cps) can be connected to the mains.



Water atomisers

110

with brass riser and handle

Cap. ltr.	0,5	1,0
Design	Item No.	
Tin plate	110.101	110.102
Brass plate	110.201	-



Water atomisers

111

with **light-metal reservoir, top part and spray pipe galvanized, riser and nozzle of brass**

Nozzle dia.	0,5	0,8	1,0	1,5	2,0	3,0 mm	Spares		
Cap.	Item No.						Top part	Reservoir	Riser
0,5 ltr.	111.101	111.102	111.103	111.104	111.105	111.106	111.401	111.411	111.421
0,3 ltr.	111.201	111.202	111.203	111.204	111.205	111.206	111.402	111.412	111.422
Spare Nozzle	111.301	111.302	111.303	111.304	111.305	111.306	-	-	-



Measuring jugs

112

with handle, of hard pl. material, natural colour, with scale

Cap.	Ltr.	0,1	0,25	0,5	1,0	2,0	3,0	5,0
Height	mm	80	120	135	170	205	230	267
Scale lucrement	ml	10	50	50	100	100	100	100
Material		PP	PP	PP	PE	PE	PE	PE
Item No.		112.001	112.002	112.005	112.010	112.020	112.030	112.050



Plasticine (modeling compound)

113

non toxic and non-smearing, temperature resistant, in 250 gr packages (red also in 1 kg packages)

Item No.	916.001	916.002	916.003	916.004	916.005	916.006	916.007	916.008	916.009	916.101
Colour	green	brown	yellow	blue	red	grey	black	white	violet	red (1 kg p.)



Industry plasticine (Design Clay) **Item No. 916.201**

113A

inherently stable modeling compound, after heating to 50° – 60°C soft and pliable, between – 30° to + 40°C absolutely stable, surfaces can be smoothed after cooling, even plaster casts can be made from the original pattern, therefore also ideal for rapid prototyping, in 2,3 kg packages.



Super plasticine

114

considerably **softer and of greater plasticity** than the standard plasticine, excellent workability, 650 gr packages (compl. carton contains 32 p.)

Item No.	917.001	917.002
Colour	yellow	red



Highly heat-resisting plasticine

114A

beige modeling compound for use with silicones and elastomers which set at **105 to 115°C**. Can be set to two different degrees of hardness (very soft/hard).

Item No.	917.101	917.102	917.103
Weight of stick	0,5	1,0	5,0 kg



115



pear shape



cyl. shape

Bellows

Design	Pear-shaped, of hard wood			Cyl. shape
Dimensions	200 x 280 mm	220 x 320 mm	250 x 360 mm	dia. 80x500 mm lg.
Item No.	115.101	115.102	115.103	115.201

116



'Vulkan'-handles for ingots

very firm grip, no breaking or splicing

Item No.	Diameter	Length
116.002	28 mm	125 mm
116.003	35 mm	125 mm

117



Water or blacking pots

galvanized, pot with handle and lugs

Item No.	Diameter	Height	Capacity
117.001	120 mm	120 mm	1,0 ltr.
117.002	140 mm	140 mm	2,0 ltr.
117.003	170 mm	155 mm	3,0 ltr.
117.005	200 mm	200 mm	6,0 ltr.

Other sizes upon request.

118



Dust bags

with rounded edges

Item No.	Material	Dimensions
118.001	fine muslin	27 x 15 cm
118.002	coarse linen	30 x 20 cm
118.003	coarse jute	30 x 20 cm

119



Hard metal scribers

for hard materials, such as steel and castings

1) with replaceable tips, dia. of needle 4 mm

with knurled handle, dia. 8 mm

Item No.	Design	Length	Spare needles
666.103	1 straight needle	180 mm	666.105
666.104	1 straight and cranked needle	250 mm	666.105 (straight) 666.106 (cranked)

2) Lead pencil shape No. 3540

Item No.	Design	Length	Spare needles
667.001	HM-insert with feeder	150 mm	667.002

120



Metal etching pen Item No. 906.001

Each handy pen always contains two interchangeable, transparent cartridges. Writes and marks simply, cheaply and instantaneously; for permanent or temporary use. Distinctive black marking also on hardened, thin walled or delicate components. May be used on steel, copper, nickel and other non-ferrous metals (but **not** on aluminium).

Spare cartridges are available (Item No. 906.002)

Folding rules with springs

121

Material	Length	Width	Elem.	Grad.	1% shrink.	1.5% shrink.	2% shrink.	mm/mm
Wood	1 m	16 mm	6	Item No.	668.110	668.115	668.120	668.100
Wood	2 m	16 mm	10		668.210	-	668.220	668.200
Plastic	1 m	13 mm	10		-	-	-	668.300

Remark: 1,5% shrinkage is being discontinued and therefore available in limited quantities only.



Roll-tape measures with shrinkage graduation length 2 mtrs.

121A

Tape measure of hardened steel, built in an impact housing, auto-roll back and stop-key, shrinkage graduation at the lower edge, accuracy acc. to DIN 866, stop at the 0-position.

Graduation	1,0%	1,25%	1,5%	2,0%
Item No.	668.410	668.412	668.415	668.420

Other shrinkage graduations upon request!



Wooden rammers with flat head

122

shaft dia. 28 mm, thickness 15 mm

Total length	mm	250	500	750	1000	1250
Width	top	90	90	100	100	100
	bottom	80	80	80	80	80
Head length	mm	120	130	170	180	180
Item No.		122.001	122.002	122.003	122.004	122.005



Strickles, strong design

123

25 mm triangular steel

Length cm	40	50	60	70	80	100
Item No.	123.001	123.002	123.003	123.004	123.005	123.006

Other length upon request.



Simplex – soft headed hammers with malleable cast iron clamping housing,

124

with replaceable hammer elements and amazonas wood handle

Following **elements** are available in all combinations:

TPE-soft, blue (soft) Plastic, red (hard)
 Rubber compound, black (medium) Nylon, white (extremely hard)
 Super plastic, white (medium) Soft metal, silver (high strength)



Size = Head dia.	Head length	Hammer length	Type / Item No.											
			TPE-soft		Rubber compound		Super plastic		Plastic		Nylon		Soft metal	
			complete	element	complete	element	complete	element	complete	element	complete	element	complete	element
30 mm	90	300 mm	124.003	124.030	124.203	124.230	124.403	124.430	124.503	124.530	124.603	124.630	124.703	124.730
40 mm	110	310 mm	124.004	124.040	124.204	124.240	124.404	124.440	124.504	124.540	124.604	124.640	124.704	124.740
50 mm	135	350 mm	124.005	124.050	124.205	124.250	124.405	124.450	124.505	124.550	124.605	124.650	124.705	124.750
60 mm	145	405 mm	124.006	124.060	124.206	124.260	124.406	124.460	124.506	124.560	124.606	124.660	124.706	124.760
80 mm	175	490 mm	-	-	124.208	124.280	124.408	124.480	-	-	124.608	124.680	124.708	124.780

Item No. of spare parts

Type	Size = Head diameter				
	30	40	50	60	80 mm
Housing	124.903	124.904	124.905	124.906	124.908
Handles	124.913	124.914	124.915	124.916	124.918
Wrench	124.923	124.924	124.925	124.926	124.928

Simplex – sledge hammer with malleable cast iron housing

125

and replaceable inserts and hickory wood handle

Size = Head dia.	mm	80	100	125	140
Head length	mm	175	200	215	215
Hammer length	mm	800	1000	1040	1045
Handle length	mm	700	900	900	900
Weight	kg	3,2	5,3	6,9	7,1

Size = Head dia.	Type / Item No.						
	Super plastic		Rubber compound		Spare		
	complete	element	complete	element	housing	handles	wrench
80 mm	125.108	125.180	125.008	125.080	125.208	125.308	125.408
100 mm	125.110	125.181	-	-	125.210	125.310	125.410
125 mm	125.112	125.182	-	-	125.212	125.312	125.412
140 mm	125.114	125.183	-	-	125.214	125.314	125.414



126



Supercraft-Nylon hammers

no kick-back, no striking power loss

Head diameter	Handle/Item No.			Spares	
	Hickory	Steel pipe	Fiber glass	Inserts	Hickory handles
20 mm	126.020	—	—	126.220	126.320
25 mm	126.025	126.125	126.425	126.225	126.325
30 mm	126.030	126.130	126.430	126.230	126.330
35 mm	126.035	126.135	126.435	126.235	126.335
40 mm	126.040	126.140	126.440	126.240	126.340
45 mm	126.045	126.145	—	126.245	126.345
50 mm	126.050	126.150	126.450	126.250	126.350
60 mm	126.060	126.160	126.460	126.260	126.360
70 mm	126.070	126.170	—	126.270	126.370
80 mm	126.080	—	—	126.280	126.380

127



Rubber hammers with wooden handle

barrel-shaped, one side spherical, the other side flat

Item No.	127.001	127.002	127.003	127.004	127.005
Head dia. mm	40	54	68	82	96
Head length mm	80	100	120	140	160
Weight with handle gr	140	275	525	850	1290

Spare handles available.

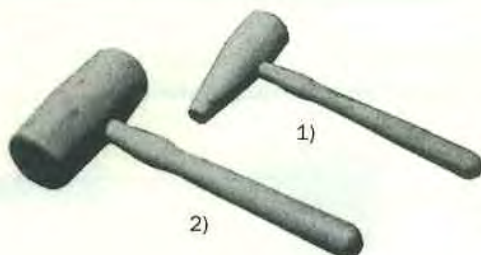
128



Aluminium hammers No. 335 with ash handle

Item No.	128.125	128.135	128.150	128.175	128.200	128.250
Weight gr	250	350	500	750	1000	1500
Head dia. mm	40	40	50	60	60	70
Head length mm	75	105	92	98	128	140

129



Wooden mallets without metal shell

of prime hardwood, with handle

1) Item No. 129.101 tapered

height 130 mm, head dia. 50 x 20 mm, handle length 23 cm

2) barrel shape

Item No.	129.201	129.202	129.203	129.204	129.205	129.206
Height mm	100	120	140	160	180	200
Diameter mm	50	60	70	80	90	100
Handle length cm	20	20	26	26	30	32

130



Wooden mallets 'Triumph' with oval ash handle

and pressed on metal shell

1) white beech wood

Item No.	130.101	130.102	130.103	130.104	130.105	130.106
Height mm	100	120	140	160	180	200
Diameter mm	50	60	70	80	90	100
Handle length cm	28	31	32	35	38	40
Weight appr. kg	0,2	0,4	0,55	0,8	1,1	1,5

2) hardwood

Item No.	130.106A	130.107	130.108	130.109	130.110	130.111
Height mm	200	240	270	270	270	270
Diameter mm	100	120	140	150	160	180
Handle length cm	80	90	90	100	100	100
Weight appr. kg	2,0	2,5	4	5	6	7

131

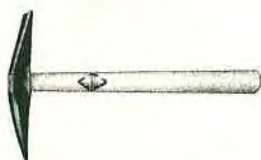


Fitters hammers (No. 1)

with ash handle

Item No.	131.020	131.030	131.040	131.050	131.060	131.080	131.100	131.150	131.200
Hammer weight gr.	200	300	400	500	600	800	1000	1500	2000
Handle length cm	28	30	32	32	33	35	36	38	40

132



Fettling hammers Item No. 132.001

with ash handle

long shape

400 gr. head

with cutting edge at 90° to the handle

handle length 32 cm

Sledge hammers

with or without ash handle

	Weight / Item No.					
Size	3	4	5	6	8	10 kg.
Without handle	133.003	133.004	133.005	133.006	133.008	133.010
With handle	133.103	133.104	133.105	133.106	133.108	133.110



133

Hand hammer with ash handle DIN 6475

Item No.	134.100	134.150	134.200	134.300	134.500
Weight gr.	1000	1500	2000	3000	5000



134

Pick-axes

with oval handle hole, DIN 20109, with or without ash handle

	Weight / Item No.				
Size	1,5	2,0	2,5	3,0	3,5 kg
Without handle	135.001	135.002	135.003	135.004	135.005
With handle	135.101	135.102	135.103	135.104	135.105



135

Crowbar, straight edge and tip, dia. 30 mm

Item No.	135.210	135.212	135.215	135.217	135.220
Length mm	1000	1250	1500	1750	2000
Weight kg	4,5	6,5	8,0	9,5	11,0



135A

Watering cans, galvanized, Item No. 136.001

with rose, 10 l capacity
of extra thick sheet metal
with handle, dia. 220 mm, height 270 mm



136

Plastic buckets

1) without lip, with handle and scale, heavy-duty version

Cap. ltr.	2,5	5	10	12
Top dia. mm	170	200	270	280
Bottom dia. mm	130	150	185	205
Height mm	150	200	240	260
Item No.	137.102	137.105	137.110	137.112

2) with lip, of polyethylene, with handle and scale
heavy-duty version, acid-resistant

Item No. 137.215 Cap. 15 ltr., top dia. 280 mm
bottom dia. 230 mm, height 330 mm



137

Galvanized buckets, tapered, with handle

Item No.	Cap.	Lid	Top dia.	Bottom dia.	Height
138.114	14 ltr.	without	300 mm	200 mm	270 mm
138.211	11 ltr.	with	280 mm	200 mm	300 mm

Remark: Bucket with lid especially suitable for inflammable liquids!



138.114

138.211

138

Wire baskets

each wire cross electrically welded, fully galvanized

Item No.	Top dia. mm	Bottom dia. mm	Height mm	Weight appr. kg	Carryg. cap. appr. kg
139.030	420	300	240	1,8	15
139.050	460	350	330	3,0	25
139.075	500	350	430	3,8	37



139

140



Magdeburg-shovel



Holstein-shovel



Dutch-shovel



Frankfurt-shovel



Rim shovel



Halle-rim shovel

Moulder's shovel of prime sheet metal

Item No.	Description	Size	Shovel dim.	Weight
Magdeburg-shovel				
140.001	black finish	4	270 x 250 mm	1,25 kg
Holstein-sand shovel				
140.002	black finish	2	270 x 250 mm	1,00 kg
140.003		3	280 x 260 mm	1,10 kg
140.102	red finish, oil-hardened	2	270 x 250 mm	1,00 kg
140.103		3	280 x 260 mm	1,10 kg
Dutch-sand shovel				
140.004	black finish	2	300 x 250 mm	1,10 kg
140.104	red finish, oil-hardened	2	300 x 250 mm	1,10 kg
Frankfurt-shovel				
140.005	black finish	5	300 x 270 mm	1,10 kg
140.105	red finish, oil-hardened	5	300 x 270 mm	1,10 kg
Rim shovel				
140.006	black finish	5	340 x 260 mm	1,60 kg
Halle-rim shovel with strengthened socket				
140.007	black finish	7	340 x 325 mm	1,60 kg
140.008	black finish	9	380 x 380 mm	2,00 kg

140A



Lightweight rim shovel

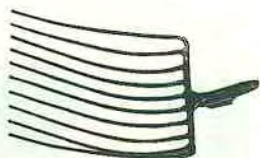
of hard-aluminium, stainless, lightweight, strong as steel, with protective edge of steel

Item No.	Description	Size	Shovel dim.	Steel protect. edge	Weight
Rim shovel					
140.201		5	340 x 270 mm	without	0,70 kg
140.202				with	0,75 kg
Halle-rim shovel					
140.203		7	340 x 325 mm	without	0,80 kg
140.204				with	0,85 kg
140.205		9	380 x 380 mm	without	0,95 kg
140.206				with	1,00 kg

Spares available:

steel protective edges, galvanized, with holes and rivets.

141



Coke forks

with slotted socket, pointed square tines, tine ends flattered

Item No.	No. of tines	Tine length/width at tip	Spacing between the tines at tip	Weight
141.010	10	41/35 cm	30 mm	2,40 kg
141.012	12	44/37 cm	25 mm	2,80 kg

141A



Gravel forks

with slotted sockets, round tines, tine ends flattered

Item No.	No. of tines	Tine length/width at tip	Spacing between the tines at tip	Weight
141.309	9	33/25 cm	22/20 mm	1,65 kg

Remark: Handles see page 37.

Shovel handles (long handle)

130 cm long, curved, beech, with round head

Item No. 142.001



142

D-shovel handles

85 cm long, curved, beech

Item No. 143.001



143

Ax handles, cow-foot shape

80 cm long, 62 x 25 mm, ash

Item No. 144.001



144

Pickax handles

90 cm long, 74 x 42 mm, oval, ash

Item No. 145.001



145

Sledge hammer handles

80 cm long, 47,4 x 27,4 mm, oval, ash

Item No. 146.001

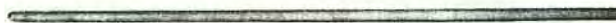


146

Broom handles

1400 x 24 mm, ash, with round head

Item No. 147.001



147

Hammer handles, ash

Item No.	148.026	148.028	148.030	148.032	148.035	148.036	148.038	148.040
Length cm	26	28	30	32	35	36	38	40
For hammers gr.	100	200	300	500	800	1000	1500	2000
Head end size mm	17 x 10	19 x 11	21 x 12	26 x 15	29 x 17	31 x 18	33 x 20	37 x 22



148

Hand hammer handles, ash

Item No.	148.126	148.128	148.130
Length cm	26	28	30
For hands gr.	1000	1500	2000
Head end size mm	31 x 18	33 x 20	37 x 22



148A

THURA-flexible handles, DIN 5111/12

practically unbreakable durability 15 to 20 times of conventional handles

a) Thura-hammer handles

Item No.	149.026	149.028	149.030	149.032	149.033	149.035	149.036	149.038	149.040
Length cm	26	28	30	32	33	35	36	38	40
For hammer gr.	100	200	300	500	600	800	1000	1500	2000
Head end size mm	17 x 10	19 x 11	21 x 12	26 x 15	28 x 16	29 x 17	31 x 18	33 x 20	37 x 22

b) Thura-sledge hammer handles

Item No.	149.060	149.080	149.180	149.090	149.190	149.290
Length cm	60	80	80	90	90	90
For hammer kg	3 u. 4	5 u. 6	6	8	8, 9 u. 10	12 u. 15
Head end size mm	42 x 25 (oval)	47 x 27 (oval)	42 x 32 (sq.)	52 x 31 (oval)	59 x 35 (oval)	50 x 35 (sq.)

c) Thura-hand hammer handles

Item No.	149.326	149.328	149.330
Length cm	26	28	30
For hands gr.	1000	1500	2000
Head end size mm	31 x 18	35 x 20	37 x 22

d) Thura-pickax handles

Item No.	149.095
Length cm	95
Head end size mm	74 x 42



149

Metal wedges 'SFIX' (hammer wedges)

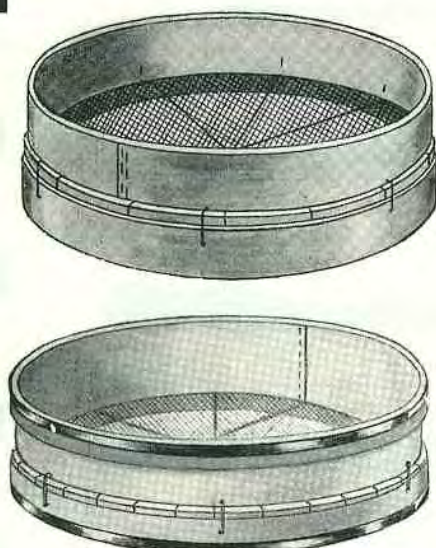
for fast and firm attachment of hammer heads to handles

Item No.	150.001	150.002	150.003	150.004	150.005	150.006	150.007	150.008	150.009
Size	00	0	1	2	3	4	5	5,5	6
For handle length cm	28	30	31 - 33	35	36 - 38	40	60 - 70	80 - 90	90
Wedge width mm	13	16	20	23	26	29	33	40	50



150

151



Moulder's riddles

A) with smooth beech rim

and beech reinforcements at the bottom rim as well as galvanized strong wire meshing and bracing wires

B) with outer iron hoop at the bottom rim

C) with outer iron hoop at the top rim

D) with outer iron hoop at the bottom and top rim

Mesh width	Diameter / Item No.*				
	400	450	500	550	600 mm
1 mm	151.101	151.121	151.141	151.161	151.181
2 mm	151.102	151.122	151.142	151.162	151.182
3 mm	151.103	151.123	151.143	151.163	151.183
4 mm	151.104	151.124	151.144	151.164	151.184
5 mm	151.105	151.125	151.145	151.165	151.185
6 mm	151.106	151.126	151.146	151.166	151.186
8 mm	151.107	151.127	151.147	151.167	151.187
10 mm	151.108	151.128	151.148	151.168	151.188
12 mm	151.109	151.129	151.149	151.169	151.189
16 mm	151.110	151.130	151.150	151.170	151.190
20 mm	151.111	151.131	151.151	151.171	151.191

* Please add 'A', 'B', 'C' or 'D' for the rim version to the Item No., f. ex. 151.145A.

152



Dust riddles with smooth beech rim

A) of galvanized steel wire mesh

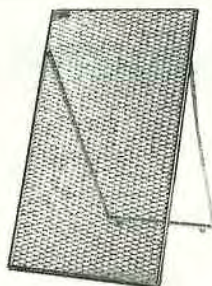
B) of brass wire mesh

C) of brass wire mesh and galvanized protective bottom

Mesh width	Diameter / Item No.*				
	400	450	500	550	600 mm
0,75 mm	152.101	152.111	152.121	152.131	152.141
0,60 mm	152.102	152.112	152.122	152.132	152.142
0,50 mm	152.103	152.113	152.123	152.133	152.143
0,43 mm	152.104	152.114	152.124	152.134	152.144

* Please add 'A', 'B' or 'C' for the mesh version to the Item No., f. ex. 152.112B.

153



Screens

width 1000 mm,
height 1500 mm,
with supporting legs
of 20 mm dia., steel pipe,
mesh of galvanized wire.

Item No.	153.006	153.008	153.010	153.012	153.016	153.020	153.030
Mesh width	6	8	10	12	16	20	30 mm
Wire dia.	1,4	1,6	1,8	2,0	2,2	3,0	3,0 mm

154



Wire mesh

galvanized or bright

copper mesh

brass mesh

ondulated wire mesh

Available upon request

155



Stainless steel in accordance with ISO 3310-1

Sieve mesh of stainless steel, wire with soft solder seam, temperature-resistant up to 170°C,
mesh width: 0,02 – 125 mm in all standard increments.

Also available: st. steel lids and collecting vessels.

Diameter mm	100	150	200	200	300	400	500
Height inside mm	45	50	25	50	55	60	80
Item No. sieve	155.010	155.015	155.020	155.021	155.030	155.040	155.050
Item No. lid	155.110	155.115	155.120	155.121	155.130	155.140	155.150
Item No. vessel	155.210	155.215	155.220	155.221	155.230	155.240	155.250

Core box and ingot mould locks

galvanized, complete with screw adjustment feature and fixing holes

Model	Adjustable length	Thread	Max. width	Design	Item No.
530S-00	80 - 100 mm	M6	27 mm	punched	528.000
1042-10	100 - 125 mm	M6	34 mm	punched	528.001
420-00	200 - 225 mm	M8	65 mm	punched	528.002
101 C	72 - 78 mm	M5	35 mm	forged	528.003
102 C	100 - 115 mm	M6	50 mm	forged	528.004
103 C	120 - 140 mm	M8	70 mm	forged	528.005



1042-10
530S-00



420-00



101-103C

156

Suitable hooks:

Type C

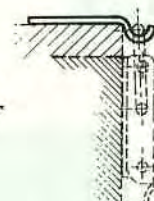
Model	Width x length mm	Suitable for locks	Item No.
C 15-01	15 x 45	530S-00	528.100
C 18-01	18 x 45	1042-10	528.101
C 28-01	28 x 40	420-00	528.103
30 C	25/15 x 20	101 C	528.105
31 C	30/18 x 20	102 C	528.107
41 C	45/22 x 30	103 C	528.109

Type D

Model	Width x length mm	Suitable for locks	Item No.
D 15-00	25 x 15	530S-00	528.100A
D 18-00	18 x 50	1042-10	528.102
D 28-01	28 x 85	420-00	528.104
50 C	15 x 53	101 C	528.106
10 C	30 x 55	102 C	528.108
20 C	40 x 70	103 C	528.110



Type C



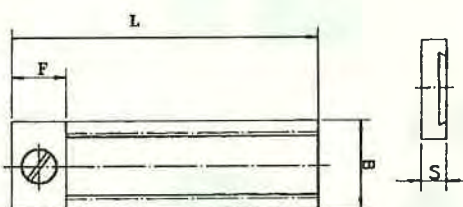
Type D

Remark: Please order lock and hook separately!

Date plates, showing the casting date

I) slide-in frame of brass, with dovetail groove and platelet with 5 mm-screw

Letter size A mm	4	6	8	10	13	20
Frame width B mm	10	15	20	20	25	30
Suitable for	Length L mm					
for 4 letters/figures	26	34	42	48	58	92
Item No.	553.041	553.061	553.081	553.101	553.131	553.191
for 5 letters/figures	30	40	50	57,7	69,5	110
Item No.	553.042	553.062	553.082	553.102	553.132	553.192
for 6 letters/figures	34	46	58	67	81	128
Item No.	553.043	553.063	553.083	553.103	553.133	553.193
for 7 letters/figures	38	52	66	76,5	92,5	146
Item No.	553.044	553.064	553.084	553.104	553.134	553.194
for 8 letters/figures	42	58	74	86	104	164
Item No.	553.045	553.065	553.085	553.105	553.135	553.195
for 10 letters/figures	50	70	90	105	127	200
Item No.	553.046	553.066	553.086	553.106	553.136	553.196
Platelet complete with screw						
Width F mm	10	10	10	10	12	20
Item No.	553.048	553.068	553.088	553.108	553.138	553.197



157

Other sizes upon request!

II) Letters & figures: 0 to 9, A to Z, point, colon, blank, platelet, slash & hyphen (other letters upon request)

1) cast of babbit metal, raised characters

Available:

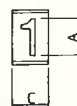
2) milled of brass, sunk characters

a) block type

3) milled of brass, raised characters

b) mirror image type

Letters height A mm	4	6	8	10	13	20
Design	Item No.					
1a) babbit metal, raised	553.204	553.206	553.208	553.210	553.213	553.220
1b) babbit metal, raised	553.224	553.226	553.228	553.230	553.233	553.240
2a) brass, sunk	553.304	553.306	553.308	553.310	553.313	553.320
2b) brass, sunk	553.324	553.326	553.328	553.330	553.333	553.340
3a) brass, raised	553.344	553.346	553.348	553.350	553.353	553.360
3b) brass, raised	553.364	553.366	553.368	553.370	553.373	553.380
Platelet width C mm	4	6	8	9,5	11,5	18
Platelet thickness mm	1,5	2	2	2	2	2
Raised: babbit metal mm	1,0	1,0	1,2	1,4	1,8	2,0
brass mm	1,0	1,0	1,0	1,0	1,0	1,0
Sunk: brass mm	0,9	1,0	1,2	1,2	1,2	1,3



158

Pattern Clocks of blue plastics

for showing the casting date on wood and resin patterns. Fix clock by means of a screw and set month so that the year marker points to the appropriate month.

Item No.	554.001	Clock, dia. 20 mm
Item No.	554.002	Arrow, length 8 mm



159

Ingot mould clocks of steel

for showing the casting date on ingot moulds. Fix clock to ingot mould and set to the appropriate month.

Item No.	555.001	Clock, dia. 20 mm
Item No.	555.002	Year, dia. 8 mm



Other sizes and designs upon request.

160

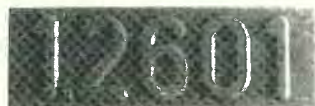


Logos

Can be supplied in any design in accordance with sample or drawing:

- 1) of plastic
- 2) of babbitt metal, cast
- 3) as slide-in characters
- 4) of brass sheet metal, with base or without holes
- 5) of brass sheet metal, with pins
- 6) of plywood (for individual logos)

161



Material quality plates

of blue plastic, to be glued to the mould, with rectangular base

Plate type	0.2091	0.2601	0.6015	0.6020	0.6025	0.6025C	0.6025CM
Charact.size mm	16, 25	13, 16, 25	13	13, 20, 25, 32, 40	13, 16, 20, 25, 32, 40	13, 20	20
Plate type	0.7038	0.7040	0.7042	0.7045	0.7050	0.7060	0.7070
Charact.size mm	20, 25	13	13, 20, 25, 40	13, 16, 20, 32	16, 20, 25, 40	13, 20, 25, 40	25
Plate type	1.0416	1.0443	1.0553	1.2363	1.2379	1.2601	1.2769
Charact.size mm	13, 20	13, 16, 20	13, 20	10, 13, 16, 20, 25	13, 16, 25	13, 16, 20	10, 13, 16, 20, 25
	20						20
Plate type	1.6020	1.6025C	1.7050	1.7225	CrMo	DN	PN
Charact.size mm	20	20	13	20	13, 16, 20, 25, 40	4, 5, 10, 13	4, 5, 10, 13
							CrNiMo
Size mm	10 mm	13 mm	16 mm	20 mm	25 mm	32 mm	40 mm
Item No.	560.010	560.013	560.016	560.020	560.025	560.032	560.040

Other types and sizes upon request.

162



Special signs 'material quality' of blue plastic, to be glued to the mould, vacuum casting

Sign type	GG or GGG	GGL	GG 20, GG 25 or GG 30	GGG 40, GGG 50 or GGG 60	GGG 70
Character size mm	4, 5, 10, 13, 16	10	6, 8, 10, 13, 16, 20, 25	4, 6, 8, 10, 13, 16, 20, 25	6, 10, 16
Sign type	Meehanite cast iron		Meehanite sph. graph. iron		Vacuum cast iron
Character size mm	8, 10, 13, 15, 17, 20, 22, 26, 30, 34		10, 15, 20, 25, 30		20, 25, 30

Signs available f. ex. with base, web or rim. Other types and sizes upon request, also in accordance with the new **EN-Standard**.

163



Pattern signs of plastic

signs vaporize completely, without holes, suitable for glueing to the mould

- 1) of blue plastic (standard version) **available in**
- 2) of black plastic (low-cost alternative!) **a) block type** A-Z, 0-9, a-z, &, point, comma, +
b) mirror image block type A-Z, 0-9 only

Character height	4 mm	5 mm	6 mm	8 mm	10 mm	13 mm	16 mm	20 mm	25 mm	32 mm	40 mm
Design	Item No.										
Blue block type	543.104	543.105	543.106	543.108	543.110	543.113	543.116	543.120	543.125	543.132	543.140
mirror type	543.204	543.205	543.206	543.208	543.210	543.213	543.216	543.220	543.225	543.232	543.240
Black block type	543.304	543.305	543.306	543.308	543.310	543.313	543.316	543.320	543.325	543.332	543.340
mirror type	543.404	543.405	543.406	543.408	543.410	543.413	543.416	543.420	543.425	543.432	543.440

163A



Special adhesive for plastic pattern signs Item No. 163

1-component quick setting adhesive (within seconds)

Type	Viscosity	Cont.	Item No.
HC 1	thin	25 gr.	937.125
		50 gr.	937.150
HC 2	viscous	25 gr.	937.225
		50 gr.	937.250

164



Lettering sets of galvanized metal

block letters 0-9, A-Z, a-z

Height	Item No.		
	0 - 9	A - Z	a - z
10 mm	565.010	565.110	565.210
20 mm	565.020	565.120	565.220
30 mm	565.030	565.130	565.230
40 mm	565.040	565.140	565.240
50 mm	565.050	565.150	565.250
60 mm	565.060	565.160	565.260
80 mm	565.080	565.180	565.280
100 mm	565.100	565.200	565.300

You will find our complete pattern sign program in our catalogue 'Pattern making supplies 99 M'!

Die sets, standard quality

Letters and numbers in plastic boxes, precise lettering
for material strength up to appr. 800 n/mm²

165

Height	1 mm	2 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	15 mm
(Z) x Lg.	6 x 65 mm	6 x 65 mm	6 x 65 mm	7 x 65 mm	8 x 65 mm	9 x 75 mm	11 x 76 mm	12 x 80 mm	14 x 80 mm	18 x 85 mm
Design	Item No.									
0 - 9	566.001	566.002	566.003	566.004	566.005	566.006	566.008	566.010	566.012	566.015
A - Z, &	566.101	566.102	566.103	566.104	566.105	566.106	566.108	566.110	566.112	566.115
a - z, +	566.201	566.202	566.203	566.204	566.205	566.206	566.208	566.220	566.212	566.215

Mirror image characters also available at extra price.
(Individual dies also available)



Precision stamps Type TB

for material up to appr. 1600 n/mm²
hardness of engraving 58 - 60 HRC

166

Height	1 mm	1,5 mm	2 mm	2,5 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm
1/2 x Lg.	7 x 75 mm	7 x 75 mm	7 x 75 mm	7 x 75 mm	7 x 75 mm	8 x 78 mm	9 x 80 mm	11 x 80 mm	12 x 85 mm	14 x 90 mm
Ausf.	Item No.									
1) Stamps for standard lettering										
0 - 9	567.010	567.015	567.020	567.025	567.030	567.040	567.050	567.060	567.080	567.100
A - Z, &	567.110	567.115	567.120	567.125	567.130	567.140	567.150	567.160	567.180	567.200
2) stamps for mirror image lettering										
0 - 9	567.310	567.315	567.320	567.325	567.330	567.340	567.350	567.360	567.380	567.400
A - Z, &	567.410	567.415	567.420	567.425	567.430	567.440	567.450	567.460	567.480	567.500



Individual dies also available

Special stamps

In a variety of versions upon request!

166A



Embossing press M 11 Item No. 568.001

Strong heavy-duty press for embossing of aluminium, copper or stainless steel tapes. Can also be used for embossing 12 mm plastic strips, with leather bag.

Tapes available:

Item No.	568.101	568.102	568.103	568.104	568.105	568.106	568.107	568.108
Material	Aluminium	Aluminium	Steel	Copper	Plastic			
Colour	silver	silver	silver	reddish	red	green	blue	black
Adhesive coat	with	without	without	without	with			
Strip length	3,65 m	4,80 m	6,40 m	6,40 m	3,00 m			



56789 ABCDEF

167

Embossing press 2300 Item No. 568.301

Embosses clear characters on a 19 mm wide strip, **character heights 10.8 and 13.2 mm**, characters are set quickly and easily. Embosses **capital letters, small letters and 0-9**.

Accessories: spare dial, Item No. 568.313

plastic embossing tapes, 19 mm wide, 10 m long, with adhesive coating:

Item No.	568.321	568.322	568.323	568.324
Colour	red	green	blue	black



167A

ROOVER-letter embossing presses

ideal for numbering pattern and core boxes, **high raised characters**, robust design, simple to operate

Embossing press			Aluminum embossing tapes			
Item No.	Type	Letter height	Item No.	Tape width	Thickn. appr.	Length appr.
568.201	T 10 A	6,35 mm (1/4")	568.211	12,7 mm (1/2")	0,35 mm	36,5 mtr.
568.202	T 20	9,55 mm (3/8")	568.222	22,2 mm (7/8")	0,55 mm	24,5 mtr.



167B

Inventory labels

of aluminium, steel, stainless steel, brass, copper or galvanized metal, with or without holes, in all sizes and with all inscriptions; please specify quantity!



168

Pattern contour signs

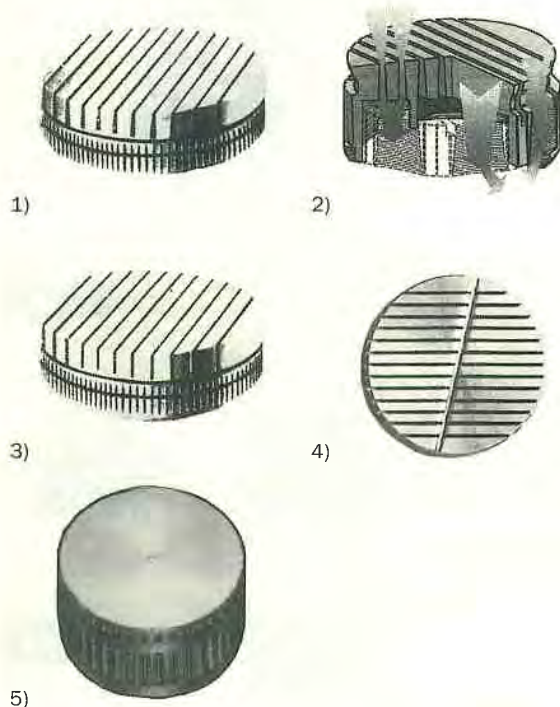
of anodised aluminium, background silver, lettering black, size 80 x 40 x 1,0 mm, acute corners, 4 holes.

Available in 4 designs:

Design:	Item No.
Stamp outside contour (see ill.)	570.001
Stamp inside contour	570.002
Die outside contour	570.003
Die inside contour	570.004



169



Brass slotted vents

with concave bottom and knurled rim

1) self-cleaning with **0.3 mm conical slots**, up to 6 mm with one, 18 mm dia. and up with two reinforcing rings

2) **Super-ring vents** – with up to **68 % more venting surface** thanks to conical ring slots and conical vent channels, other features as described under 1)

3) with **0.3 mm straight slots** and reinforcing ring (10 mm dia. and up)

4) with **0.3 mm conical slots and reinforced front**

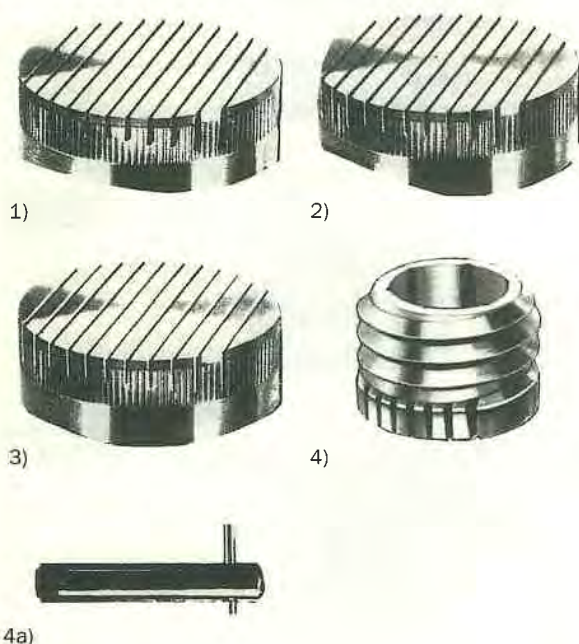
5) **Blind vents** (without slots)

Each package contains **100 p. per dia.**

Diameter	3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	9 mm	10 mm	12 mm
Height	7 mm								
Bottom thickn.	2 mm								2,5 mm
Design	Item No.								
1)	571.103	571.104	571.105	571.106	571.107	571.108	571.109	571.110	571.112
2)	–	–	–	–	–	571.208	–	571.210	571.212
3)	571.303	571.304	571.305	571.306	571.307	571.308	571.309	571.310	571.312
4)	–	–	–	–	–	571.408	–	571.410	571.412
5)	571.503	571.504	571.505	571.506	571.507	571.508	571.509	571.510	571.512

Diameter	13 mm	14 mm	15 mm	16 mm	18 mm	20 mm	25 mm	26 mm	30 mm
Height	7 mm						8 mm		
Bottom thickn.	2,5 mm								
Design	Item No.								
1)	571.113	571.114	571.115	571.116	571.118	571.120	571.125	571.126	571.130
2)	–	571.214	571.215	571.216	571.218	571.220	571.225	–	–
3)	571.313	571.314	571.315	571.316	571.318	571.320	571.325	571.326	571.330
4)	–	571.414	571.415	571.416	571.418	571.420	571.425	–	571.430
5)	571.513	571.514	571.515	571.516	571.518	571.520	571.525	571.526	571.530

Remark: These vents are also available with a **different slot width** (0,2 mm and up) and a **different bottom thickness** or with **center hole** at extra charge.



Steel slotted vents

for Croning and hotbox core boxes, bottom thickness 2 mm, height 10 mm

Each package contains **100 p. per dia.**

1) with **0.3 mm conical slots** self-cleaning

2) with **0.3 mm straight slots** for light duties

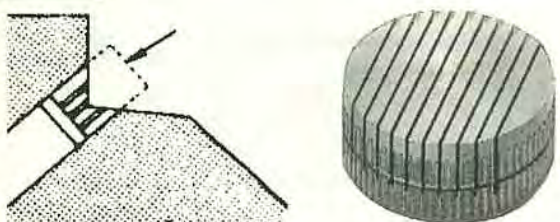
3) with **0.2 mm straight slots** (ingot vents)

4) with **0.3 mm conical slots, external thread and hexagonal recess**

4 a) **key** for screwing in the vent

Diameter	3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	9 mm	10 mm	12 mm
Type	Item No.								
1)	572.103	572.104	572.105	572.106	572.107	572.108	572.109	572.110	572.112
2)	572.203	572.204	572.205	572.206	572.207	572.208	572.209	572.210	572.212
3)	572.303	572.304	572.305	572.306	572.307	572.308	572.309	572.310	572.312
4)	–	572.404	–	572.406	–	572.408	–	572.410	572.412
Key	–	572.504	–	572.506	–	572.508	–	572.510	572.512

Diameter	14 mm	15 mm	16 mm	18 mm	20 mm	25 mm	26 mm	30 mm
Type	Item No.							
1)	572.114	572.115	572.116	572.118	572.120	572.125	572.126	572.130
2)	572.214	572.215	572.216	572.218	572.220	572.225	–	–
3)	572.314	572.315	572.316	572.318	572.320	572.325	572.326	–
4)	572.414	–	572.416	572.418	572.420	–	–	–
Key	572.514	–	572.516	572.518	572.520	–	–	–



Deep slotted vents of steel

with a bottom **thickness of 6 mm**, slot width 0.3 or 0.2 mm, height 10 mm, for use in ingot moulds and low-pressure casting.

These vents can be installed in corners, at radii or grooves thanks to the large bottom thickness (can be ground off).

Diameter	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm
Slot width	Item No.						
0,3 mm	572.710	572.712	572.714	572.715	572.716	572.718	572.720
0,2 mm	572.730	572.732	572.734	572.735	572.736	572.738	572.740

Each package contains **100 p. per diameter.**

Vents with a larger height and thicker bottom upon request.

Sintered vents made of steel

171B

used for very difficult venting problems in gravity or low-pressure die-castings.
A **maximum of venting** results from a large number of straight, parallel and uniform pores.

Pore diameter: 0.3 or 0.5 mm (for injections molding also 0.1 or 0.03 mm)

Dia. mm	No. of pores	Pore dia. 0.5 mm		No. of pores	Pore dia. 0.3 mm	
		Item No.			Item No.	
		height 10 mm	height 15 mm		height 10 mm	height 15 mm
3	37	572.823	—	—	—	—
4	37	572.824	—	—	—	—
5	61	572.825	—	89	572.805	572.845
6	61	572.826	572.866	89	572.806	572.846
8	96	572.828	572.868	200	572.808	572.848
10	200	572.830	572.870	340	572.810	572.850
12	200	572.832	572.872	340	572.812	572.852
14	341	—	572.874	550	—	572.854
16	341	—	572.876	—	—	—
18	553	—	572.878	—	—	—
20	550	—	572.880	—	—	—
28	970	—	572.888	—	—	—



Brass vents

with mesh of stainless steel wires (Monel-metal) with a particularly high venting capacity, height 8 mm, **mesh width 0.4 mm**.

Package with 100 p. per diameter.

Diameter	6 mm	8 mm	10 mm	12 mm	14 mm	16 mm	18 mm	20 mm	25 mm
Item No.	573.006	573.008	573.010	573.012	573.014	573.016	573.018	573.020	573.025



172

Screen vents 'Super Vent'

self-cleaning thanks to undulated wire openings, the air can escape through more than 43% of the surface area.

Mesh width 0.25 mm, package with 100 p. per diameter.

Height	Diameter / Item No.											
	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm
6 mm	574.103	574.104	574.105	574.106	574.108	574.110	574.112	—	—	—	—	—
8 mm	—	—	—	574.206	574.208	574.210	574.212	574.214	574.215	574.216	574.218	574.220
10 mm	—	—	—	574.306	574.308	574.310	574.312	574.314	574.315	574.316	574.318	574.320



173

Plastic vents, height 8 mm

Slot width	Diameter / Item No.							
	6 mm	8 mm	10 mm	12 mm	15 mm	20 mm	25 mm	30 mm
0.3 mm	575.106	575.108	575.110	575.112	575.115	575.120	575.125	575.130
0.6 mm	575.206	575.208	575.210	575.212	575.215	575.220	575.225	575.230



174

Vents for polystyrene

of **brass or aluminium**, with **0.3 mm straight slots**, knurled rim, without reinforcing rings, bottom thickness 2.0 mm.

Package with 100 p. per diameter.

Material	Diameter / Item No.															
	3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	9 mm	10 mm	12 mm	13 mm	14 mm	15 mm	16 mm	18 mm	20 mm	25 mm
Brass	576.103	576.104	576.105	576.106	576.107	576.108	576.109	576.110	576.112	576.113	576.114	576.115	576.116	576.118	576.120	576.125
Aluminium	576.203	576.204	576.205	576.206	576.207	576.208	576.209	576.210	576.212	576.213	576.214	576.215	576.216	576.218	576.220	576.225



175

Perforated vents of aluminium

with holes and knurled rim, hole dia. 0.8 mm

Diameter	Height	No. of holes	Item No.	Qty. per package
4 mm (4-sq.)	6.5 mm	4	577.104	1.000 p.
5 mm	6.0 mm	5	577.105	1.000 p.
6 mm	7.0 mm	6	577.106	1.000 p.
8 mm	6.0 mm	12	577.108	1.000 p.
10 mm	6.0 mm	22	577.110	1.000 p.
		28	577.210	1.000 p.
12 mm	6.0 mm	21	577.112	1.000 p.
		36	577.212	1.000 p.
13 mm	6.0 mm	36	577.113	1.000 p.
15 mm	6.0 mm	30	577.115	500 p.



176

Perforated vents 'Regitz system' of plastic

for cold-box, CO₂ and vacuum-method, max. temperature 80°C, self-cleaning (conical holes widening from 0.4 to 0.8 mm), height 6 mm

Diameter	6 mm	10 mm
Item No.	578.006	578.010



177

178



Vent cleaner

for slotted vent of all kinds

a) spare blades

Item No. 579.001

Item No. 579.002

179

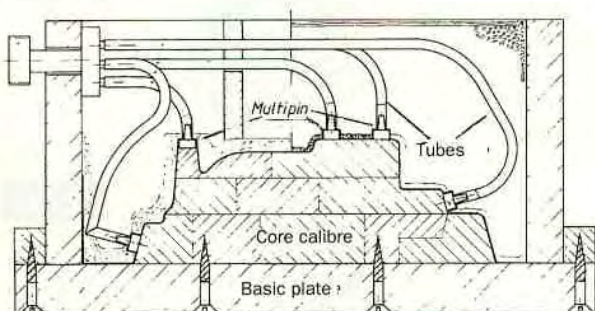


Special HSS-step drills

for drilling vent holes in wood, resin, cast iron and steel

For vent dia.	Step dia.	Step length	Total length	Shaft dia.	Item No.
3 mm	2,5 mm	15 mm	100 mm	3 mm	580.003
4 mm	3,5 mm	20 mm	120 mm	4 mm	580.004
5 mm	4,0 mm	30 mm	132 mm	5 mm	580.005
6 mm	5,0 mm	30 mm	139 mm	6 mm	580.006
7 mm	6,0 mm	30 mm	156 mm	7 mm	580.007
8 mm	6,0 mm	30 mm	165 mm	8 mm	580.008
9 mm	7,0 mm	30 mm	175 mm	9 mm	580.009
10 mm	8,0 mm	30 mm	185 mm	10 mm	580.010
12 mm	10,0 mm	30 mm	205 mm	12 mm	580.012
13 mm	11,0 mm	30 mm	205 mm	13 mm	580.013
14 mm	12,0 mm	30 mm	215 mm	14 mm	580.014
15 mm	13,0 mm	30 mm	220 mm	15 mm	580.015
16 mm	14,0 mm	30 mm	227 mm	16 mm	580.016
18 mm	16,0 mm	30 mm	240 mm	16 mm	580.018
20 mm	18,0 mm	30 mm	254 mm	16 mm	580.020
25 mm	23,0 mm	30 mm	230 mm	16 mm	580.025
30 mm	28,0 mm	30 mm	240 mm	16 mm	580.030

179A



Multipin

The Multipin-system allows to get places for vents and degassing-systems during production and **before** using resins. There's no more need for drilling the finished core-box.

Advantages: Benefit of time up to 80%, saving of tools. Vents may be placed in an optimal position.

The system is available as follows:

1) Multipin-system-box, complete (Item No. 580.101)

containing all accessories:

25 pcs. Multipin each of vents-diameter 4, 6, 8, 10, 12, 15, 18, 20, 25, 30 mm

15 pcs. Multifill (to close not used holes)

each of the same diameter as Multipin

2 mtr. tubes, each of diameter 2, 4, 6, 8 mm

1,5 mtr. plastic wire each of diameter 2 and 3 mm (to eject Multipin)

1 pc. cutting gauge (for tubes)

1 pc. cutter (for tubes)

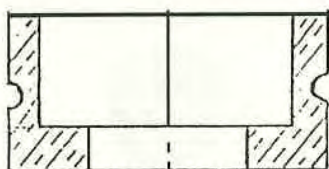
1 tube rapid glue (for tubes)

1 pc. screw each of long, medium and short type

2) Spare parts:

For vents dia.	4 mm	6 mm	8 mm	10 mm	12 mm	15 mm	18 mm	20 mm	25 mm	30 mm
Item No. MULTIPIN	580.104	580.106	580.108	580.110	580.112	580.115	580.118	580.120	580.125	580.130
MULTIFILL	580.304	580.306	580.308	580.310	580.312	580.315	580.318	580.320	580.325	580.330
Tube	580.202	580.204			580.206			580.208		

179B



Supports for core-box vents

These supports for the core-box vents will be placed during the production of resin core-boxes where the vents shall be placed later on.

So later boring is no longer necessary and the vents may be placed on **optimal** positions (also on positions where it would be very difficult to place borings).

Besides this gain of time and facilitation of work the supports will render possible a **quick and simple change of vents** when these will be damaged.

The dimension of the supports are fitting perfectly to the core-box vents made of brass with conical slots.

Fitting **tubes** are also available.

For vent dia.	6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm
Boring back-side	4 mm	5 mm	7 mm	8 mm	10 mm	10 mm	10 mm	13 mm	16 mm
Item No.	580.506	580.508	580.510	580.512	580.514	580.515	580.516	580.518	580.520
Ref. No. of tube	580.604	580.605	580.607	580.608		580.610		580.613	580.616

Core box clamps

of light metal and Conidur perforated sheet
for sealing lateral core box openings

1) Gooseneck-shapes

Diameter	36 mm	48 mm	60 mm	70 mm	80 mm	110 mm	125 mm	160 mm
Item No.	581.001	581.002	581.003	581.004	581.005	581.006	581.007	581.008

(diameter from c/l hole to c/l recess on the opposite side)

2) Rectangular shape

Length x width	50 x 40 mm	60 x 50 mm	70 x 60 mm	100 x 80 mm	110 x 90 mm
Item No.	581.021	581.022	581.023	581.024	581.025

(net body length **without** lateral projections)

The rectangular shape will be discontinued, available in limited quantities only!



180

Perforated brass sheet metal

pickled and straightened

Thickness	Hole dia.	Sheet size / Item No.		
		440 x 310 mm	1000 x 500 mm	2000 x 600 mm
0,6 mm	0,8 mm	—	—	581.101
3 mm	0,3 mm	581.201	581.205	—
	0,5 mm	581.202	581.206	—
4 mm	0,3 mm	581.203	581.207	—
	0,5 mm	581.204	581.208	—
Remark:		no cuts available		cuts available



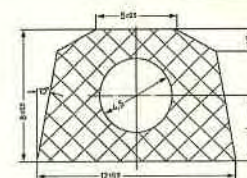
180A

Special sealing rope for gassing plates

for cold and thermo-setting method, of silicon, trapezoidal shape (for insertion into the milled groove)

Item No. 181.001

Size: 12 x 10 x 5 mm; 10 degrees, 8 mm high, 4,5 mm hole diameter



181

Dovetail cutter for sealing rope Item No. 181

Item No. 181.101, carbide-tipped, shank dia. 12 mm



181A

Truing devices Item No. 583.001

for grinding wheels, with guard and steel handle, length 39 cm, with four 50 mm-dia. wheels, hole dia. 10 mm and two spacers.

a) complete set of spare wheels: Item No. 583.002



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Truing wheels

1) of prime-quality special cast iron, deburred, corrugated

2) of prime-quality steel, hardened, with 16 to 20 teeth

Diameter	30 mm	40 mm	50 mm	50 mm	60 mm
Hole dia.	7 mm	10 mm	10 mm	13 mm	10 mm
Material	Item No.				
Cast iron	—	—	583.101	—	583.102
Cast steel	583.201	583.202	583.203	583.204	—



182A

183



(Clamp w/tommy
777.400)

Malleable cast iron screw clamps

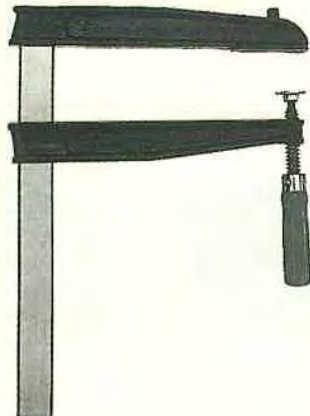
up to 300 mm

Profile rail fluted on both sides, spindle galvanized, with plastic protectors up to 400 mm clamping width. **Firm grip**, with wooden handles.

Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
777.010	U 10- 5	100	50	15 x 5	0,24
777.012	U 12- 6	120	60	20 x 5	0,46
777.016	U 16- 8	160	80	25 x 6	0,72
777.020	U 20-10	200	100	27 x 7	1,10
777.025	U 25-12	250	120	29 x 9	1,57
777.030	U 30-14	300	140	32 x 10	2,17
777.040	U 40-17,5	400	175	32 x 10	2,74
777.050	UK 50-12	500	120	35 x 11	2,90
777.060	UK 60-12	600	120	35 x 11	3,15
777.080	UK 80-12	800	120	35 x 11	3,67
777.100	UK 100-12	1000	120	35 x 11	4,18
777.125	UK 125-12	1250	120	35 x 11	4,83
777.150	UK 150-12	1500	120	35 x 11	5,47
777.180	UK 180-12	1800	120	35 x 11	6,24
777.200	UK 200-12	2000	120	35 x 11	6,75
777.220	UK 220-12	2200	120	35 x 11	7,27
777.250	UK 250-12	2500	120	35 x 11	8,04
777.300	UK 300-12	3000	120	35 x 11	9,32

Intermediate sizes or clamps with tommy also available (see ill.).

184



Extra wide screw clamps

with rail fluted on both sides, spindle galvanized, with red varnish handle

Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
778.030	D 30-20	300	200	35 x 11	3,15
778.040	D 40-20	400	200	35 x 11	3,45
778.050	D 50-20	500	200	35 x 11	3,80
778.060	D 60-20	600	200	35 x 11	4,15
778.080	D 80-20	800	200	35 x 11	4,75
778.100	D 100-20	1000	200	35 x 11	5,40
778.130	D 30-25	300	250	45 x 12	3,55
778.140	D 40-25	400	250	45 x 12	3,95
778.150	D 50-25	500	250	45 x 12	4,25
778.160	D 60-25	600	250	45 x 12	4,55
778.180	D 80-25	800	250	45 x 12	5,25
778.200	D 100-25	1000	250	45 x 12	5,85

Clamps with larger reach and intermediate sizes as well as tommy also available.

185



Clamp carts

heavy-duty design holds about 100 clamps
Length x width 80 x 65 cm Total height 155 cm

Item No.	Type	Lateral clamp holder	Weight kg
779.070	TW 70	without	31
779.701	TW 701	1	32
779.702	TW 702	2	33

186



Fully-steel screw clamps

annealed, high-polish galvanized

forged slider, spindle black finished, with wooden handle

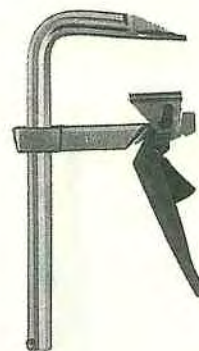
Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
780.010	GV 10- 5	100	50	11,5 x 5,7	0,20
780.012	GV 12- 6	120	60	13,5 x 6,5	0,32
780.016	GV 16- 8	160	80	16 x 7,5	0,53
780.020	GV 20-10	200	100	19,5 x 9,5	0,95
780.025	GV 25-12	250	120	22 x 10,5	1,30
780.030	GV 30-14	300	140	25 x 12	1,90
780.040	GV 40-12	400	120	25 x 12	2,00
780.050	GV 50-12	500	120	25 x 12	2,20
780.060	GV 60-12	600	120	25 x 12	2,45
780.080	GV 80-12	800	120	27 x 13	3,10
780.100	GV 100-12	1000	120	27 x 13	3,60
780.125	GV 125-12	1250	120	27 x 13	4,30

Full-steel lever clamp annealed and high-polish galvanized

187

bow and forged slider of special steel, lever with plastic coating, large steel pressure plate, galvanized

Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
781.016	GZH 16-8	160	80	16 x 7,5	0,68
781.020	GZH 20-10	200	100	19,5 x 9,5	0,98
781.025	GZH 25-12	250	120	27 x 13	1,50
781.030	GZH 30-12	300	120	27 x 13	2,03
781.040	GZH 40-12	400	120	27 x 13	2,25
781.050	GZH 50-12	500	120	27 x 13	2,49
781.060	GZH 60-12	600	120	27 x 13	2,75
781.080	GZH 80-12	800	120	27 x 13	3,23
781.100	GZH 100-12	1000	120	27 x 13	3,65

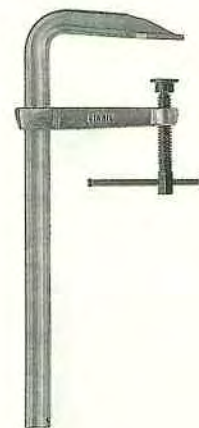


Full-steel clamps extra heavy-duty design

188

annealed, high polish galvanized, strength and breakage tested, special pressure plate, easily moveable and replaceable, spindle hardened, **clamping force appr. 220 kp** at 150 mm clamping width

Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
782.130	GVB 30-17,5	300	175	40 x 20	5,53
782.140	GVB 40-17,5	400	175	40 x 20	6,04
782.150	GVB 50-17,5	500	175	40 x 20	6,53
782.160	GVB 60-17,5	600	175	40 x 20	7,05
782.180	GVB 80-17,5	800	175	40 x 20	8,05
782.200	GVB 100-17,5	1000	175	40 x 20	9,05
782.225	GVB 125-17,5	1250	175	40 x 20	10,30
782.250	GVB 150-17,5	1500	175	40 x 20	11,50

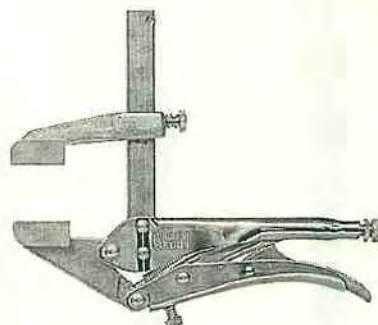


Grip clamps 'Z'

189

Clamping jaws of chrome-vanadium steel, hardened and chrome-plated, beam heat-treated and chrome-plated. Universal jaws for clamping all kinds of workpieces. Parallelism easily adjusted by means of a knurled head screw.

Item No.	Type	Clamping width mm	Reach mm	Weight kg
189.010	Z 10	100	75	1,05

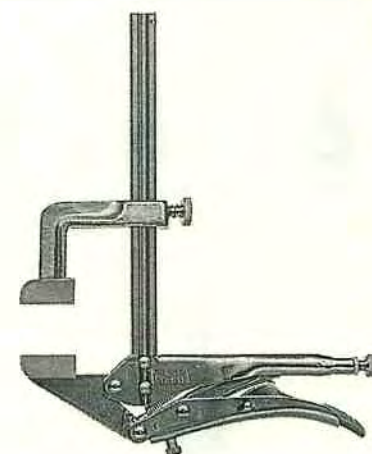


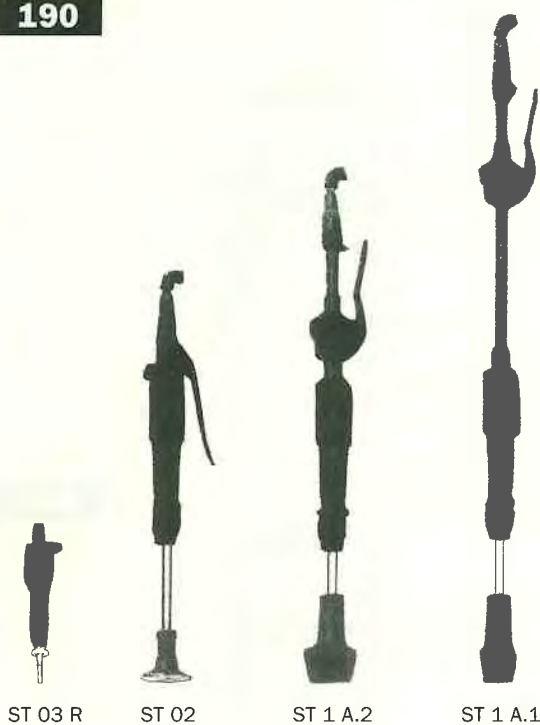
Grip clamps 'ZG'

189A

Design features as described under Grip clamps 'Z', however, with cranked sliding jaw, clamping depth up to 50 mm.

Item No.	Type	Clamping width mm	Reach mm	Weight kg
189.116	ZG 16	160	75	1,20
189.192	ZG 92	120	90	1,27





ST 03 R

ST 02
ST 1

ST 1 A.2

ST 1 A.1



ST 1 AP.1G

ST 2

ST 20 with silencer

ST 38

Compressed-air rammers 'F & K'

Approved and renowned in foundries and in the refractory industry

Rammers available:

- with round or guided piston
- polygonal (triangular with rounded edges) or square
- with safety air valve with lever
- with rotatable air hose connector
- smooth operation, high performance, excellent reliability
- economical and efficient
- Types ST 1 A to ST 20 with silencer
- Types ST 1 AP.1G and ST 2P.1G with vibration damper, strain reduction 75%

Type	Item No.		Weight		Length mm	Piston			
	without silencer	with silencer	kg	Ram max. kg		Dia. mm	Stroke mm	MK	Shape
ST 03 R	190.001	–	1,0	0,30	230	16	40	Metr. 10	round
ST 02 R	190.002	–	2,5	0,75	365	23	70	1	round
ST 02 V	190.003	–	2,5	0,75	365	23	70	1	square
ST 1 R.2	190.004	–	5,0	0,85	515	26	125	2	round
ST 1 P.2	190.005	–	5,0	0,85	515	26	125	2	polyg.
ST 1 AR.2	190.006	190.006 S	5,2	0,85	665	26	125	2	round
ST 1 AP.2	190.007	190.007 S	5,2	0,85	665	26	125	2	polyg.
ST 1 AR.1	190.008	190.008 S	5,6	0,85	915	26	125	2	round
ST 1 AP.1	190.009	190.009 S	5,6	0,85	915	26	125	2	polyg.
ST 1 AP.1G	–	190009 GS	8,7	0,85	900	26	125	2	polyg.
ST 2 R.1	190.010	190.010 S	8,8	1,80	1190	32	180	2	round
ST 2 P.1	190.011	190.011 S	8,8	1,80	1190	32	180	2	polyg.
ST 2 P.1G	–	190011 GS	12,7	1,80	1030	32	180	2	polyg.
ST 20 R.1	190.012	190.012 S	9,4	1,80	1190	32	240	2	round
ST 20 P.1	190.013	190.013 S	9,4	1,80	1190	32	240	2	polyg.
ST 38 P	190.014	–	12,5	3,0	1340	38	215	2	polyg.

Type	No. of strokes	Air cons.	Air con.	Hose i. d.	Type of valve
	1/min	m ³ /min		mm	
ST 03 R	2500	0,20	R 1/4"i	10	Button
ST 02 R	1900	0,40	R 1/4"i	10	Lever hood
ST 02 V	1900	0,40	R 1/4"i	10	Lever hood
ST 1 R.2	900	0,50	R 3/8"i	13	Lever hood
ST 1 P.2	900	0,50	R 3/8"i	13	Lever hood
ST 1 AR.2	900	0,50	R 3/8"i	13	Lever valve
ST 1 AP.2	900	0,50	R 3/8"i	13	Lever valve
ST 1 AR.1	900	0,50	R 3/8"i	13	Lever valve
ST 1 AP.1	900	0,50	R 3/8"i	13	Lever valve
ST 1 AP.1G	900	0,50	R 3/8"i	13	Lever valve
ST 2 R.1	800	0,65	R 3/8"i	13	Lever valve
ST 2 P.1	800	0,65	R 3/8"i	13	Lever valve
ST 2 P.1G	800	0,65	R 3/8"i	13	Lever valve
ST 20 R.1	750	0,70	R 3/8"i	13	Lever valve
ST 20 P.1	750	0,70	R 3/8"i	13	Lever valve
ST 38 P	750	0,75	R 1/2"i	13	Lever valve

Spare parts available.
Scope: hose fittings and connectors as well as rammer heads must be ordered separately.

Rammer heads
see p. 49

Compressor air hoses
see p. 65

Hose fittings
see p. 67



Pneumatic tools servicing cartridge

Item No. 190.201

for cleaning, lubricating and protecting compressed air tools to ensure full service and reliability, even after extended periods of standstill.

Each package comprises 50 pieces.

Solid rubber rammer heads for compressed air rammers

191

Type	Shape	Dimensions	Weight abt. gr.	Item No.		
				MK1	MK2	MK3
1	rectangular	45 x 75 mm	480	191.101	191.201	-
2	sq.	80 x 80 mm	700	191.102	191.202	-
2a	sq.	100 x 100 mm	1260	-	-	191.322
3	round	75 mm dia.	690	191.103	191.203	-
4	round	40 mm dia.	400	191.104	191.204	-
5a*	round	30 mm dia.	340	191.105	191.205	-
6a*	round	25 mm dia.	340	191.106	191.206	-
7a*	round	20 mm dia.	340	191.107	191.207	-
8	round	50 mm dia.	450	191.108	191.208	-
8a	round	60 mm dia.	640	191.118	191.218	-
9	wedge-shape	50 x 50 mm	460	191.109	191.209	-
10	wedge-shape	50 x 70 mm	510	191.110	191.210	-
11	wedge-shape	25 x 50 mm	460	191.111	191.211	-
11a	wedge-shape	25 x 60 mm	490	191.121	191.221	-
12	wedge-shape	25 x 75 mm	480	191.112	191.212	-

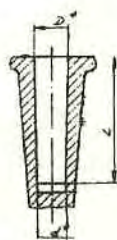
*Remark:

Solid rubber heads No. **5a, 6a and 7a** comprise steel top part with Morse-taper (MK 1 or MK 2) and screwed bottom part of rubber.

IMPORTANT!

Please specify **Morse-taper** when ordering!

Morse taper	Top dia. mm = D	Bottom dia. mm = d	Hole depth mm = L
MK 1	12	10	48
MK 2	18	15	57
MK 3	24	20	72



Type 1



2 and 2a



3



Type 4



5a - 7a



8 and 8a



Types 9 and 10



11 and 11a



12

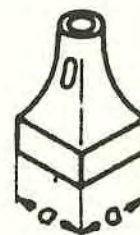
Metal rammer heads for compressed air rammers

191A

Shape	Morse taper	Dimensions mm	Steel		Aluminium	
			Weight kg	Item No.	Weight kg	Item No.
Round	metr. 10	25 Ø	0,05	191.7182	-	-
		30 Ø	0,10	191.7183	-	-
	MK 1	30 Ø	-	-	0,11	191.9009
		40 Ø	0,20	191.9010	0,13	191.9019
		50 Ø	-	-	0,16	191.9029
		60 Ø	0,50	191.9030	-	-
		80 Ø	-	-	0,34	191.9039
		40 Ø	0,30	191.9210	-	-
	MK 2	50 Ø	-	-	0,16	191.9229
		60 Ø	0,57	191.9230	-	-
		80 Ø	0,85	191.92501	-	-
		100 Ø	1,45	191.9260	-	-
	MK 3	100 Ø	-	-	0,60	191.9369
Square	metr. 10	40 x 40	0,10	191.7190	-	-
	MK 1	40 x 40	0,24	191.9014	-	-
		60 x 60	0,43	191.9034	-	-
	MK 2	40 x 40	0,36	191.9214	-	-
		60 x 60	0,59	191.9234	-	-
		80 x 80	0,85	191.9254	-	-
		100 x 100	1,50	191.9264	-	-
	MK 3	100 x 100	1,50	191.9364	-	-
Rectangular	MK 1	60 x 20	0,25	191.9060	-	-
		60 x 20	0,75	191.92311	-	-
	MK 2	70 x 15	0,80	191.9241	-	-
		75 x 50	0,78	191.9252	-	-



round



square



rectangular

192



B 80



B 83



B 85



B 89

Moulding boxes of sectional steel

B 80

box of 8-mm sectional steel, with two double-guide brackets and two handles

B 83

box of 8-mm sectional steel, with two double-guide brackets/handles (registered design) with guide pin and guide hole with steel bushing.

B 85

box of 7,5-mm sectional steel, with two double-guide brackets/handles (registered design) with round hole with steel bushing and oblong hole.

B 89

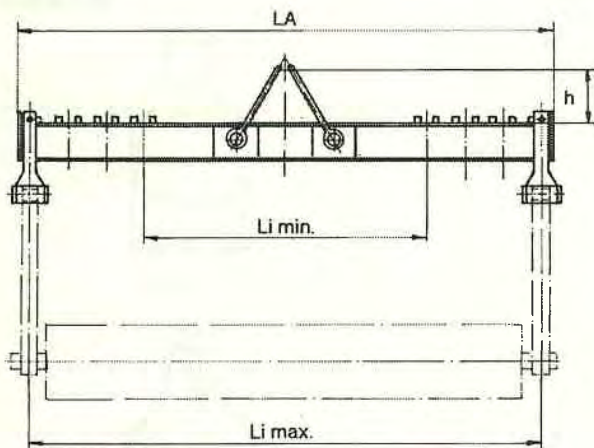
complete two-piece mould box of 7-mm sectional steel, with four fixed pin guides, handle on each narrow side.

● We supply all kinds of mould-box designs, sizes and sectional steels.

Please specify in your inquiry or order:

Quantity, inside dimensions (length, width, height), center-line distance, hole dia., guide cam, handle details, clamp, lifting cam and crossbar details.

193



Moulding box lifting gear

The complete moulding box lifting gear comprises the following:

steel girder with two-point suspension and a number of welded cams on the top side of the girder to adjust the gear to any desired working width and to allow for balancing of the system in case of an offset center of gravity;

two non-twisting lifting belts (guaranteed overload safety factor of 800%) with rollers (the system can also be equipped with chains).

The mould box can be turned smoothly with the lifting gear.

Please specify in your inquiry or order:

carrying capacity of the system
maximum and minimum working width
length of lifting belt or chains (endless)

Remark:

We can also supply all components of the **lifting gear** to be used in connection with existing girders.

193A



Lifting belts

1) Endless lifting belts

galvanized and additionally vulcanized, absolutely non-twisting, shortest length 1 m (circumference).

2) Polyester lifting belts

in accordance with DIN 61360, PU-impregnated, endless, two layers.

Item No.	Carryg. cap.	Belt width x thickness
193.015	1500 kg	40 x 10 mm
193.025	2500 kg	50 x 10 mm
193.040	4000 kg	80 x 13 mm
193.060	6000 kg	80 x 13 mm
193.120	12000 kg	120 x 15 mm
193.240	24000 kg	150 x 25 mm

Item No.	Carryg. cap.	Belt width x thickness	Shortest length
193.310	1000 kg	36 x 3,8 mm	1 m circumf.
193.320	2000 kg	50 x 5,2 mm	1 m circumf.
193.340	4000 kg	75 x 6,2 mm	1 m circumf.
193.350	5000 kg	100 x 5,8 mm	2 m circumf.
193.360	6000 kg	140 x 4,8 mm	2 m circumf.
193.400	10000 kg	200 x 5,4 mm	2 m circumf.

Belts can be supplied in any length.

Lifting device for pattern-plates

Especially designed for the quick and care taking change of 1/1, 1/2 or 1/4 pattern-plates. Existing plates may be adapted by fitting threads. The lifting device is placed on the plate and fixed with lifting screw within the thread bushes. The frame contains a drive-screw, driving a chain and thus moving 4 chain-wheels used as nuts. This guarantees a parallel lifting and avoids damages of the plate.

On request. Please specify the size of your moulding-boxes!



194

Mould box pins of steel

for round and oblong holes, with variable diameter

Secure positioning in the top box as the pin is spring-loaded. No backlash between pin and hole. Pressure is released by actuating the handle. Pin can easily be retracted (pin is tapered).

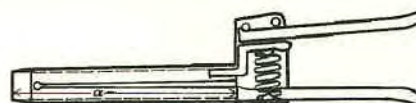
Diameter: 19 – 30 mm

Guide pin length: 100 – 500 mm

The following mould pin sizes are stocked:

Length	150 mm	200 mm	250 mm	300 mm
Diameter	Item No.			
20 mm	195.206	195.211	195.216	195.217
22 mm	195.406	195.411	195.416	195.417

Certain times of delivery must be taken into account for other sizes.



195

Mould box pins of steel

with three springs, for round holes

Easy to introduce and to remove; flexible, stable and durable connection.

Diameter: 22 – 25 mm

Guide pin length: 100 – 350 mm

The following mould pin sizes are stocked:

Length	150 mm	200 mm	250 mm	300 mm
Diameter	Item No.			
22 mm	196.409	196.414	196.419	196.420

Certain times of delivery must be taken into account for other sizes.



196

Rigid mould box bolts of steel

hardened and ground,
for round and oblong holes.

Please specify all
dimensions required
(see drawing).

Table of dimensions available.

Not stocked, certain times of delivery should be taken into account.



197

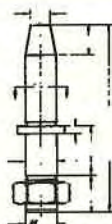
Rigid pattern plate pins of steel

hardened and ground,
for round and oblong holes
(also available with internal thread).

Please specify all
dimensions required
(see drawing).

Table of dimensions available.

Not stocked, certain times of delivery should be taken into account.



197A

Steel guide bushes for mould boxes

hardened, with round or oblong hole

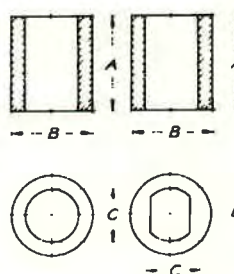
Standard dimensions in mm:

Round hole bush				Oblong hole bush		
A	B	C	Item No.	C	D	Item No.
40	30	18	198.001	18	24	198.101
40	30	19	198.002	19	24	198.102
40	32	20	198.003	20	25	198.103
40	35	21	198.004	21	26	198.104
40	35	22	198.005	22	27	198.105
40	38	25	198.006	25	30	198.106
40	45	30	198.007	30	37	198.107

Other sizes upon request!

Table of dimensions available.

Not stocked, certain times of delivery should be taken into account.



Round hole
bush

Oblong hole
bush



198

198A

Plastic guides for flaskless moulding, consisting of two parts

Item No. 198.200

To be placed on the pattern-plate. The female part is to be centered by a pin, the male one by a hole in the pattern-plate. Big negativ draught to get maximum hold to the moulding-material. The joint of the guide is hold together using a special cement meanwhile normal core-glue should be applied to one of the mould-halves.

Holding power: about 350 kg per guide, normally two guides are enough per mould.

Advantages: Closer casting-tolerances, optional feeding systems, no weights needed to fix the moulds, vertical pouring in the parting joint is possible without complicated clamping-equipment, save about 30% of time, very reasonable.

Dimensions: Peg diameter 40 mm, max. diameter 70 mm, height of male part 83 mm, height of female part 65 mm, height of jointed guide 125 mm.

199

Guiding bushes for mould plates

of die cast aluminium, Fit H 7, for use in plywood plates, top dia. 65 mm, bottom dia. 38 mm, with three countersunk holes (dia. 5 mm).

Item No.	199.016	199.017	199.018	199.019	199.020	199.021
Inside dia.	16 mm	17 mm	18 mm	19 mm	20 mm	21 mm

Item No.	199.022	199.023	199.024	199.025	199.026	199.028	199.030
Inside dia.	22 mm	23 mm	24 mm	25 mm	26 mm	28 mm	30 mm

Also available as **turned** bush.

199A

Cylindrical boring bits for Item No. 199

38 mm dia., shank 16 x 50 mm, 140 mm long

Design	HSS	HM
Item No.	514.238	514.338

199B

Cylindrical boring bits Item No. 199.101

(for Item No. 199)

carbide tipped, dia. 65 mm, with MK 3, however, 115 mm long, total length 165 mm, exchangeable **pilot 38 x 21 mm**, collar 22 x 4 mm, wrench size 32 x 9 mm, thread M 16 x 1,5 x 15 mm

At extra charge boring bits for use on CNC-machines
(Item No. 199.102)

200

Reinforcing plates, round

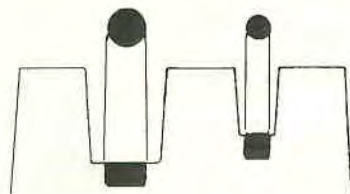
of forged iron

for moulding plates and core boxes with countersunk holes

Item No.	538.001	538.002	538.003	538.004	538.005
Dia. x thickness	30 x 5 mm	32 x 5 mm	50 x 5 mm	50 x 8 mm	60 x 6 mm
Center hole	-	-	-	20 mm	20 mm
Screw holes	1 à 6 mm	1 à 6 mm	1 à 6 mm	3 à 6 mm	3 à 6 mm

Other sizes and designs also available; please specify quantity.

Lifting disks and plates as well as boring bits see 'Pattern making supplies - Catalogue 99P'!

201

Pattern ejectors of plastic

for automatic moulding machinery (for example Disamatic)

for holes which are mouldable with extreme difficulty

a) of black hard plastic b) of white silicon

Diameter	5 mm	6 mm	7 mm	8 mm	10 mm	12 mm	14 mm
Material	Item No.						
Plastic black	201.005	201.006	201.007	201.008	201.010	201.012	201.014
Silicon white	201.205	201.206	201.207	201.208	201.210	201.212	201.214

Diameter	15 mm	16 mm	18 mm	20 mm	25 mm	30 mm
Material	Item No.					
Plastic black	201.015	201.016	201.018	201.020	201.025	201.030
Silicon white	201.215	201.216	201.218	201.220	201.225	201.230

Minimum quantity per size: 100 each.

Holding magnets

I) Bar magnets, round

useable for steel or iron

1) Normal type with round AlNiCo-magnetic-core

straight, with fitting tolerances; magnetic screening. Max. operation temperature 450°C.

Item No.	Dimensions mm			Weight gr.	Holding force N
	d	H	h*		
529.106	6	10	2	2	1,7
529.108	8	12	3	4	4
529.110	10	16	6	9	8,5
529.113	13	18	6	17	12
529.116	16	20	6	29	20
529.120	20	25	6	57	50
529.125	25	30	10	110	115
529.132	32	35	5	200	200
529.140	40	45	5	420	240
529.150	50	50	2	720	420
529.163	63	60	5	1340	600

Tolerances: for d: h6; for H: $\pm 0,2$ mm

* Dim. h gives the length which can be reduced from the opposite side of the bar magnet's adhesive surface without affecting the adhesive power.

The adhesive surface shouldn't be shortened more than 2 mm to avoid loss of the holding force.

2) of SmCo (SECOLIT) with a holding force which is five times stronger than the normal type.

The magnet bars are fitted with a brass casing. Max. operation temperature 200°C.

Item No.	Dimensions mm			Weight gr.	Holding force N	Distance to iron mm**
	d	H	h*			
529.206	6	20	10	4	6	1,5
529.208	8	20	10	8	10	1,5
529.210	10	20	8	12	40	2
529.213	13	20	6	20	60	2,5
529.216	16	20	2	32	125	3
529.220	20	25	5	60	250	4
529.225	25	35	7	140	400	5
529.232	32	35	5	265	600	6

Tolerances: for d: h9; for H: $\pm 0,2$ mm

* Dim. h gives the length which can be reduced from the opposite side of the bar magnet's adhesive surface without affecting the adhesive power.

Mounting devices:

To avoid magnetic short circuits it is very important to maintain the above mentioned determined distances between the coat of the magnet and a iron surrounding.

II) Flat magnets, without thread liner

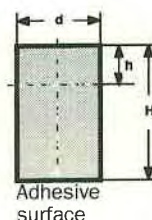
Item No.	Dimensions mm		Weight gr.	Holding force N
	d	H		
529.310	10	4,5	3	5
529.313	13	4,5	5	12
529.316	16	4,5	6	30
529.320	20	6	10	40
529.325	25	7	17	49
529.332	32	7	28	90
529.340	40	8	52	130
529.350	50	10	100	220
529.363	63	14	220	300
529.380	80	18	460	550

Flat magnets with thread liner on special demand.

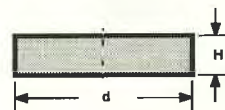
Load lifting magnets Type MT, manuel magnetic pole change

for ferromagnetic parts, flat and round stock. Maximum transfer of force, even or rough and uneven surfaces. Load cannot be unintentionally released.

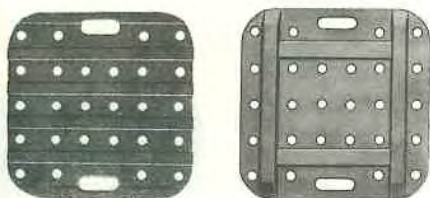
Item No.	Techn. data		Adm. carrying capacity							
			Flat stock				Tubing and round stock			
	Size mm	Weight kg	Carryg.cap. kg	Thickn. min. mm	Length max. mm	Air gap mm	Carryg.cap. kg	Dia. mm	Wall thickn. min. mm	Length max. mm
202.002	200 x 141 x 223	20	200	15	1500	0,65	100	65 - 160	8	1500
202.005	281 x 209 x 278	53	500	20	2000	0,60	250	100 - 250	20	2000
202.010	335 x 295 x 343	125	1000	30	3000	1,00	500	160 - 350	30	3000
202.020	450 x 410 x 500	290	2000	45	3000	1,25	1000	160 - 600	30	3000



** These distances are valid for the casing and the reverse in case dim. h is cut from the bar magnet, but not for the magnetic base.



203



Roller track plates of light metal, beech wood or heat-resistant fibroconcrete

lightweight, very durable, wide variety of shapes, rectangular, square, with round edges, with holes and ribs, or only with ribs, with and without hand hole.

Please specify quantity!

203A



Light-metal core drying plates

for use in the core-shop, torsion-proof

Practical, light-weight, long-life, in several models and dimensions.

On request. Please specify quantity!

204



Pattern plates made of laminated resin/wood (plywood)

for all types of molding and compaction systems.

We supply: a) standard sizes, not machined in different thicknesses 6 to 100 mm

b) standard sizes machined (cut sizes and/or machined to exact required thickness)

c) machined ready to use acc. to your drawing or description, drilled or fitted with bushes.

On request! Please specify quantity, sizes and type of machining.

204A



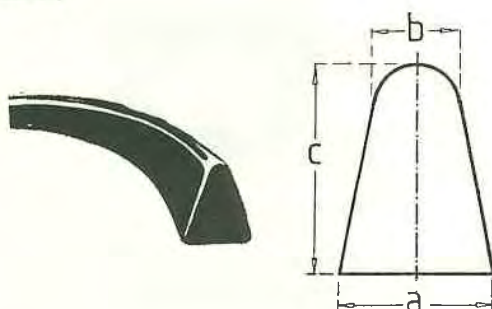
Moldingplates/Gassingplates

made of material 'S', technical and economical reasonable, high abrasion resistance, slow slide friction coefficient, no moisture absorption, density 0,96, absolutely tight against gas.

Sizes: 500 x 1000, 1000 x 1000, 1000 x 2000, 650 x 6000 mm

Thicknesses 2 – 250 mm or according to your drawing, also machined ready to use.

205



Casting ducts

of soft PVC

sold per meter, max. temperature 100°C, durable and reusable. The ducts can easily be fixed on moulding plates; they can easily be removed from the mould thanks to its smooth, wear-resistant surfaces. Bending these ducts does not produce creases.

Item No.	Base (a) mm	Radius (b) mm	Height (c) mm	Cross section mm ²
205.001	10	3,5	10	75
205.002	12	4,0	13	116
205.003	14	4,0	17	168
205.004	20	5,0	22	294
205.005	22	6,0	23	346
205.006	24	7,0	26	438
205.007	30	10,0	35	782

206



Sealing ropes, asbestos-free

(for sealing mould boxes)

ready for use in cardboard boxes containing 80 cm lengths, consisting primarily of modified mineral oil fractions and selected silicates, practically unlimited storage life, stays flexible and soft – even under extreme temperature fluctuations, perfectly seals mould box halves, guarantees accurate and precise castings, prevent losses and intrusion of liquid metal into air ducts.

Item No.	206.003	206.004	206.0045	206.005	206.006	206.007	206.008	206.009
Dia.	3 mm	4 mm	4,5 mm	5 mm	6 mm	7 mm	8 mm	9 mm
Pack. cont.	672 mtr	604 mtr	499 mtr	414 mtr	307 mtr	394 mtr	312 mtr	249 mtr

Item No.	206.010	206.012	206.014	206.016	206.018	206.020	206.024
Dia.	10 mm	12 mm	14 mm	16 mm	18 mm	20 mm	24 mm
Pack. cont.	211 mtr	158 mtr	112 mtr	83 mtr	67 mtr	62 mtr	36 mtr

Nylon vent ropes

for discharging air and gases from moulds and cores.

207

Item No.	207.002	207.003	207.004	207.005	207.006	207.007	207.008	207.010
Diameter	2 mm	3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	10 mm
Rope length	100 mtr	100 mtr	100 mtr	100 mtr	50 mtr	50 mtr	50 mtr	50 mtr

Item No.	207.012	207.015	207.018	207.020	207.022	207.025	207.030
Diameter	12 mm	15 mm	18 mm	20 mm	22 mm	25 mm	30 mm
Rope length	25 mtr	25 mtr	25 mtr	25 mtr	25 mtr	25 mtr	25 mtr



Waxed vent ropes (white) with jute core

to be fitted in the immediate proximity to mould cavities during moulding.

208

Item No.	208.002	208.003	208.004	208.005	208.006	208.008	208.010
Diameter	2 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mtr

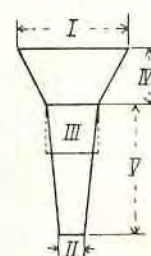
Larger diameters upon request.



Rubber pouring funnels, solid

209

Item No.	I mm	II mm	III mm	IV mm	V mm	Total length mm	Item No.	I mm	II mm	III mm	IV mm	V mm	Total length mm
209.001	85	30	45	35	95	130	209.021	100	40	55	105	245	350
209.002	65	28	40	35	65	100	209.022	70	29	35	40	70	110
209.003	55	23	30	45	40	85	209.023	60	25	30	40	70	110
209.004	40	18	25	33	50	83	209.024	60	15	25	25	100	125
209.005	70	22	40	50	80	130	209.025	50	10	25	25	60	85
209.006	80	25	40	60	115	175	209.026	60	15	25	25	60	85
209.007	50	23	32	45	80	125	209.027	70	15	25	40	50	90
209.008	45	23	32	20	50	70	209.028	55	23	28	45	105	150
209.009	55	23	30	40	90	130	209.029	72	26	40	35	100	135
209.010	55	23	30	40	110	150	209.030	50	21	28	35	70	105
209.011	55	23	30	40	135	175	209.031	50	20	26	30	70	100
209.012	60	23	32	40	45	85	209.032	60	26	30	30	60	90
209.013	60	25	32	40	55	95	209.033	30	25	52	30	90	120
209.014	60	25	32	40	75	115	209.034	40	23	32	30	60	90
209.015	60	25	32	40	95	135	209.035	60	19	30	30	90	120
209.016	80	25	40	60	140	200	209.036	60	25	30	50	70	120
209.017	70	25	45	30	60	90	209.037	100	50	70	40	80	120
209.018	55	25	35	60	190	250	209.038	90	20	30	40	210	250
209.019	80	37	52	50	210	260	209.039	60	25	30	40	160	200
209.020	85	35	60	80	220	300							



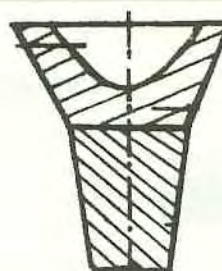
Pouring funnels 'Flexi' of a rubber-plastic compound

top part of soft rubber with cavity, shaft of hard plastic so that the lower section will not bend or be deformed during ramming.

Available in all sizes mentioned under Item No. 209.

Other sizes also available upon request; please specify dimensions and quantities.

Minimum quantity 5 pieces per size



209A

Guiding pots

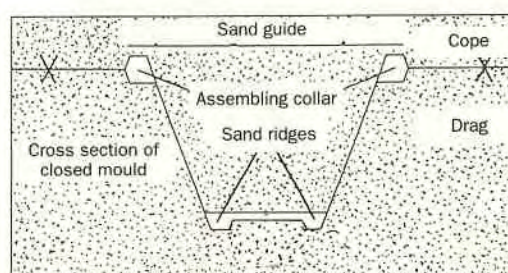
for production of sand guides, made of acid-safe plastic with releasing effect.

Consists of 2 parts for cope and drag. Sand guides, preventing stowing of moulds, may be produced very simple. May used with nearly all moulding systems. Both parts have a collar that ensures the right assembly depth in the pattern plates and may be used as sand ridge.

Assembly dia. 45mm
Collar dia. (for sand ridges) 50 mm

Guiding dia. 40/32 mm (conical)
Guiding height 20 mm

Item No. 209.300



209B

210**Rubber risers, wedge-shaped/rectangular**

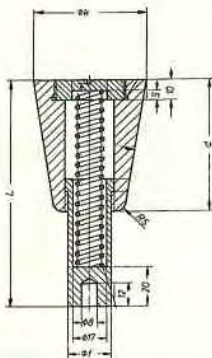
Item No.	Top mm	Bottom mm	Height mm
210.001	75 x 53	50 x 20	140
210.002	80 x 60	50 x 20	195
210.003	65 x 45	50 x 20	100

211**Rubber risers, round/tapered**

Item No.	D mm	d mm	L mm	Item No.	D mm	d mm	L mm
211.001	25	16	95	211.013	60	55	50
211.002	30	22	105	211.014	50	40	50
211.003	40	25	147	211.015	60	25	55
211.004	55	25	90	211.016	66	60	66
211.005	60	50	140	211.017	32	24	130
211.006	70	30	130	211.018	60	50	100
211.007	45	10	90	211.019	60	50	80
211.008	88	68	155	211.020	60	40	110
211.009	58	30	135	211.021	60	40	80
211.010	80	50	60	211.022	40	20	40
211.011	65	25	43	211.023	53	43	40
211.012	73	53	80	211.024	60	38	110

212**Rubber pouring basin**

Item No.	Length mm	Width mm	Height mm
212.001	205	83	72
212.002	150	61	80

213**Spring loaded funnel (entirely of brass) round shape**

Item No.	L mm	d mm	f mm	k mm	No. of spring windings	Item No.	L mm	d mm	f mm	k mm	No. of spring windings
213.085	85	50	20	57	14	213.150	150	82	24	57	28
213.095	95	55	20	57	16	213.165	165	90	24	65	31
213.105	105	62	22	57	18	213.175	175	100	24	65	35
213.110	110	64	22	57	19	213.180	180	110	24	80	36
213.115	115	67	22	57	20	213.190	190	112	24	80	38
213.120	120	69	22	57	21	213.195	195	115	24	80	39
213.125	125	69	22	57	22	213.245	245	123	24	80	50
213.135	135	72	24	57	25	213.300	300	145	30	80	64

This item cannot be returned as it is custom made!

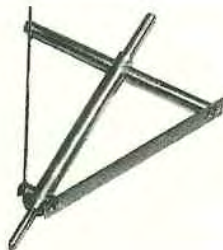
214**Cylindrical brass pipes**for pouring funnels
wall thickness 1 mm, seamless pipe

Length: 300 mm



Item No.	214.001	214.002	214.003	214.004	214.005	214.006	214.007	214.008	214.009
Diameter	10 mm	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm	50 mm

Other lengths upon request.

214A**JAKO funnel drill**

Facilitates a lot the cutting of funnels. The front knife cuts the sand, while the backside knife represses and smoothes it. This avoids a loose surface and mould's breaking off. May be operated by manual or stationary boring machines. The long point is used for guiding and fixation in the pre-moulded funnel. The body is cast of aluminium, the knives are made of steel.

Available with two different boring depths and three different angles:

Size	Depth	Max. dia.	Item No.
I	115 mm	70 mm	214.101
		110 mm	214.102
		160 mm	214.103
II	205 mm	120 mm	214.201
		200 mm	214.202
		300 mm	214.203

Insulating risers

of mineral (silicate) fibres, brown, harmless, contain no dangerous substances. Also rising dusts are harmless.

This quality is equivalent to those of ceramic fibres. They may be used up to 1250°C permanent temperature.

High strength and exact size of the inside diameters.

The excellent insulating effect allows a important reduction of the riser's size.

On request we still also deliver risers of ceramic fibres.

1) Pipe-shaped riser

I.D. mm	WS mm	Length H 150 mm		Length H 300 mm	
		Item No.	Carton contains	Item No.	Carton contains
20	9	215.011MF	648	-	-
30	9	215.012MF	378	215.012MFL	176
40	9	215.001MF	270	215.001MFL	126
60	9	215.002MF	135	215.002MFL	72
80	9	215.003MF	84	215.003MFL	36
100	10	215.004MF	60	215.004MFL	28
120	10	215.005MF	45	-	-

2) Dome-shaped riser with center hole, w. th. 9 mm

I.D. mm	H mm	Item No.	Carton contains
41	60	215.101MF	468
54	80	215.102MF	315
64	94	215.103MF	164
75	112	215.104MF	84

3) Ovale riser, w. th. 9 mm, H 150 mm

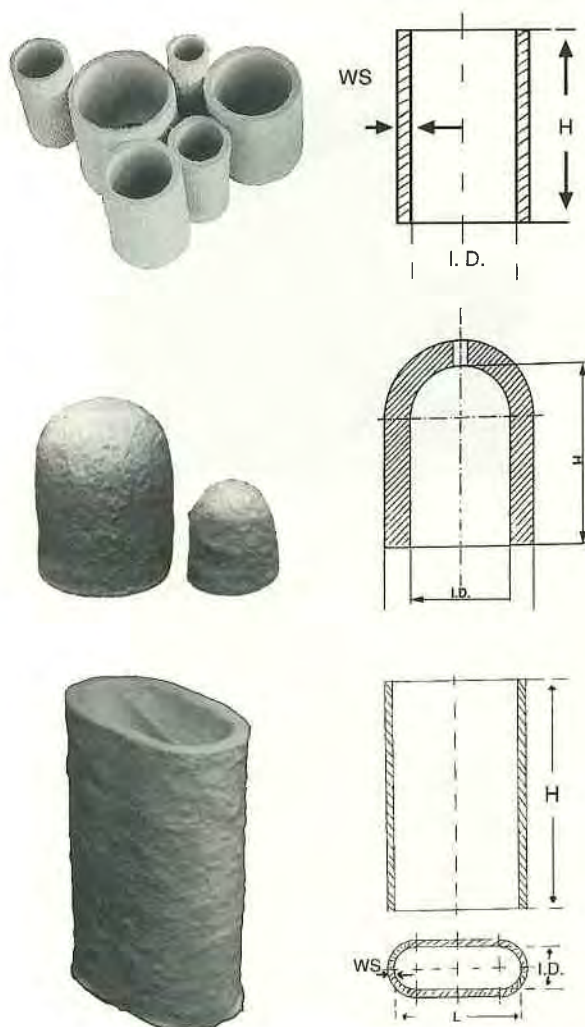
I.D. mm	L mm	Item No.	Carton contains
40	80	215.202MF	150
40	120	215.203MF	105
60	145	215.204MF	72

Other dimensions and designs upon request!

Also available:

Insulating risers with integrated filters.

Please specify dimensions and quantities.



Exothermic riser 'T'

Product description: quick ignition, highly exothermic with a high pressure strength, highly effective

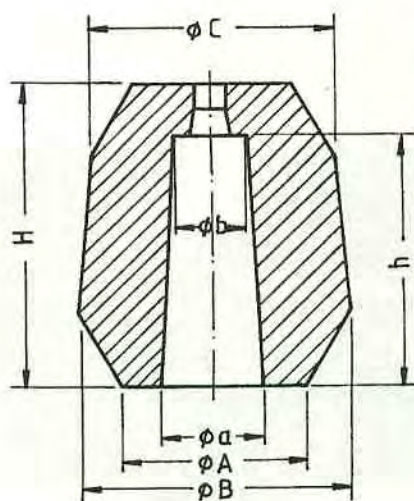
Fields of application:

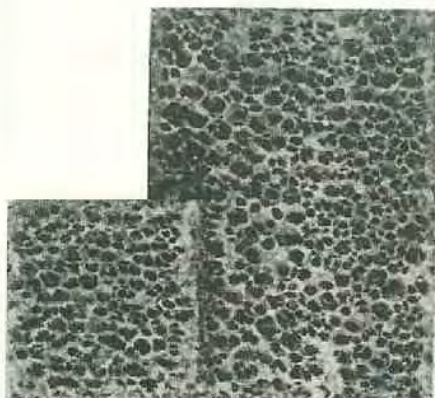
cast iron with spherical or lamellar graphite, cast steel and cast heavy metals

Design: with or without core

Item No.	Type	Exoth. mod.	Volume cm ³	Weight kg	a mm	b mm	A mm	B mm	h mm	H mm
216.201	T 50	0,75	8	0,06	16	13	28	50	50	58
216.202	T 120	0,85	14	0,10	21	19	40	60	50	62
216.203	T 190	0,95	27	0,20	25	20	40	60	70	80
216.204	T 200	1,30	25	0,18	21	18	36	78	85	100
216.205	T 270	1,30	38	0,27	25	23	36	78	85	100
216.206	T 320	1,30	47	0,32	27	24	40	78	92	100
216.207	T 400	1,40	56	0,39	32	28	60	88	80	90
216.208	T 541	1,40	77	0,54	40	37	60	88	70	90
216.209	T 610	1,70	83	0,61	36	32	60	88	97	110
216.210	T 740	1,92	106	0,74	40	35	65	108	110	135
216.212	T 1110	2,20	159	1,11	50	40	90	130	100	122
216.213	T 1640	2,20	238	1,64	60	50	90	130	100	122
216.214	T 1330	2,50	191	1,34	50	40	100	140	120	140
216.215	T 1930	2,80	276	1,93	58	48	100	140	125	140
216.216	T 2370	3,20	339	2,38	65	55	95	150	120	145
216.217	T 2860	3,40	408	3,20	59	50	80	149	175	210
216.218	T 5400	4,20	771	5,40	80	70	110	168	175	210
216.219	T 6550	4,20	942	6,60	90	70	110	168	184	210

Other sizes and other exothermic products upon request.





Ceramic foam filters

for filtration of cast iron or light metals

Properties:

Porous, ceramic filter material, large filtering surface due to the structure of the material.

Even very fine impurities in the melt can be strained by the ceramic filter thanks to the mechanical and physical filtering properties of the material.

1) Quality SKF for cast iron up to 1450°C and heavy metals

- a) Porosity 10 ppi for grey cast iron (GG) and sph. graphite (GGG)
- b) Porosity 20 ppi for grey cast iron (GG) and malleable cast iron (GT)
- c) Porosity 30 ppi for malleable cast iron (GT)

2) Quality AOF for light metals up to 1200°C

- a) Porosity 10 ppi for standard castings
 - b) Porosity 20 ppi for sensitive castings
 - c) Porosity 30 ppi for high-quality castings
- ppi: Pores per Inch

Standard thickness 22 mm – other thicknesses (from 15 mm) upon request.

Standard dimensions – other dimensions upon request.

1) rectangular types

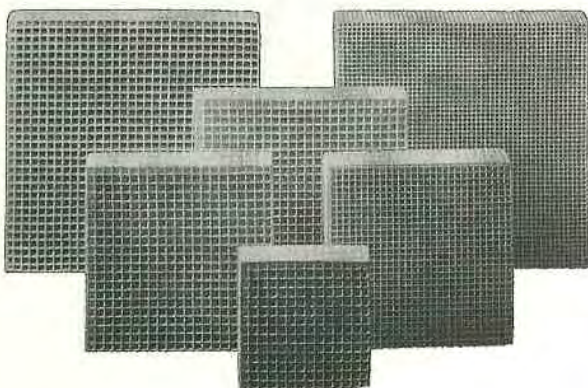
	Item No.						Carton contains pieces
Dimensions	Quality SKF			Quality AOF			
mm	10 ppi	20 ppi	30 ppi	10 ppi	20 ppi	30 ppi	
35 x 35	217.101	217.102	217.103	217.201	217.202	217.203	1200
50 x 30	217.111	217.112	217.113	217.211	217.212	217.213	1000
50 x 50	217.121	217.122	217.123	217.221	217.222	217.223	600
50 x 75	217.131	217.132	217.133	217.231	217.232	217.233	400
50 x 100	217.141	217.142	217.143	217.241	217.242	217.243	300
75 x 75	217.151	217.152	217.153	217.251	217.252	217.253	240
75 x 100	217.161	217.162	217.163	217.261	217.262	217.263	200
100 x 100	217.171	217.172	217.173	217.271	217.272	217.273	120

2) round types

	Item No.						Carton contains pieces
Dia. mm	Quality SKF			Quality AOF			
	10 ppi	20 ppi	30 ppi	10 ppi	20 ppi	30 ppi	
40	217.301	217.302	217.303	217.401	217.402	217.403	1000
50	217.311	217.312	217.313	217.411	217.412	217.413	600
55	217.321	217.322	217.323	217.421	217.422	217.423	500
60	217.331	217.332	217.333	217.431	217.432	217.433	400
75	217.341	217.342	217.343	217.441	217.442	217.443	400
80	217.351	217.352	217.353	217.451	217.452	217.453	200
90	217.361	217.362	217.363	217.461	217.462	217.463	180
100	217.371	217.372	217.373	217.471	217.472	217.473	120
110	217.381	217.382	217.383	217.481	217.482	217.483	120

Other designs (f. ex. floating) upon request.

217A



Extruded ceramic metal filters

These filters are produced by continuous pressing of ceramic material through the matrix of the desired cross-selection of die. Subsequently the ceramic material is cut and fired to the required size or thickness. They are produced with a variety of opening sizes for various foundry requirements; 100 or 300 CSI (cell per square inch). Many cross sections are possible, by extruding very thin walls.

Designed for filtration of ferrous and non-ferrous metals up to 1450°C temperature of casting.

Standard sizes:

		Item No.		Pieces contained in a box
Size mm	cells/sq. inch			
	100csi	300csi		
37 x 37 x 12,7	217.501	217.503	500	
43,5 x 43,5 x 12,7	217.511	-	400	
50 x 50 x 12,7	217.521	-	290	
55 x 55 x 12,7	217.531	217.533	250	
66 x 66 x 12,7	217.541	217.543	170	
75 x 75 x 12,7	217.551	-	114	
81 x 81 x 12,7	217.561	-	100	
133 x 133 x 19,0	217.571	-	50	

Other sizes upon request!

Pressed ceramic filters

217B

High mechanical and heat resistance

exact openings for constant and calculable times of casting.

1) **Round hole filters RLF** for casting of aluminium, magnesium or cast iron up to 1470°C

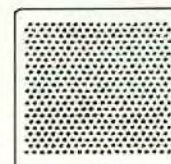
Item No.	Size mm	Hole dia. mm	No. of holes	Open area mm ²	Packing pcs.
217.606	37 x 37 x 12,7	2,2	168	639	584
217.607	40 x 40 x 15	2,14	161	579	400
217.608	40 x 40 x 22	2,14	161	579	275
217.609	50 x 50 x 11	2,24	247	982	370
217.610	50 x 50 x 15	2,24	247	982	260
217.611	50 x 50 x 18	2,14	314	1129	180
217.612	50 x 50 x 22	2,24	247	982	180
217.613	50 x 75 x 22	2,2	377	1433	126
217.614	50 x 100 x 22	2,2	494	1878	90
217.615	67 x 67 x 12,7	2,18	541	2052	170
217.616	75 x 75 x 22	2,14	634	2280	80
217.617	75 x 100 x 22	2,14	850	3057	56
217.618	81 x 81 x 12,7	2,2	662	2630	126
217.619	100 x 100 x 22	2,19	941	3544	36

Other sizes upon request!

2) **AKF filters** with round holes

especially designed for gravity or low pressure die castings up to 1200°C

Item No.	Size	Hole dia.	No. of holes	Open area
217.650	80 x 22 x 3,6 mm	1,8 mm Ø	270	687 mm ²



RLF



AKF

Ceramic strainer cores, round

of a special material, heat resistant up to 1470°C

For building up a defined accumulation of liquid metal

- for steadying the flow of liquid metal
- for effectively separating slag before the metal enters the mould
- for facilitating topping up the casting system
- for putting refining and other treatment agents on the screen. Thanks to the reduced velocity of the liquid metal flow a high effectiveness is guaranteed; the agent is distributed evenly throughout the liquid metal.

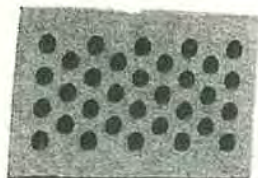
218



Item No.	Type	Dia. mm	Height mm	No. of holes x dia. mm	Cross section mm ²
218.201	10/ 160	40	6,0	8 x 5,0	160
218.202	10/ 200	46	6,0	10 x 5,0	200
218.203	10/ 250	51	7,0	11 x 5,4	250
218.204	10/ 300	55	7,0	19 x 4,7	330
218.205	10/ 301	53	7,5	12 x 5,3	265
218.206	10/ 302	50	6,0	19 x 4,5	302
218.207	10/ 410	55	6,0	46 x 3,4	410
218.208	10/ 430	60	7,5	15 x 5,2	320
218.209	10/ 440	60	7,0	37 x 4,0	440
218.210	10/ 451	62	7,5	19 x 5,3	420
218.211	10/ 490	60	8,0	31 x 4,5	493
218.212	10/ 500	66	8,0	16 x 6,3	500
218.213	10/ 580	62	7,5	35 x 4,9	538
218.214	10/ 600	65	8,0	35 x 4,7	600
218.215	10/ 601	82	8,5	59 x 3,6	601
218.216	10/ 690	67	8,0	64 x 3,7	690
218.217	10/ 700	68	7,0	35 x 5,1	715
218.218	10/ 710	60	7,0	36 x 5,0	710
218.219	10/ 710-10	60	10,0	36 x 5,0	710
218.220	10/ 730	70	8,0	19 x 7,0	730
218.221	10/ 800	80	9,0	35 x 5,4	800
218.222	10/ 831	72	9,5	35 x 5,5	831
218.223	10/ 870	74	9,0	31 x 6,0	870
218.224	10/ 880	60	7,0	38 x 5,3	840
218.225	10/ 881	60	10,0	37 x 5,5	880
218.226	10/ 890	76	8,0	42 x 5,4	960
218.227	10/ 950	72	9,5	20 x 7,8	955
218.228	10/1100	82	9,0	59 x 5,1	1100
218.229	10/1350	82	9,0	59 x 5,4	1350
218.230	10/1800	110	10,0	113 x 4,5	1800
218.231	10/2000	120	10,0	287 x 3,0	2026

Item No.	Type	Dia. mm	Height mm	No. of holes x dia. mm	Cross section mm ²
218.241	11/ 300	40	10,0	19 x 4,5	300
218.242	11/ 370	50	10,0	19 x 5,0	370
218.243	11/ 400	45	10,0	13 x 6,0	400
218.244	11/ 450	46	10,0	13 x 6,0	400
218.245	11/ 530	75	14,0	19 x 6,0	530
218.246	11/ 590	65	10,0	21 x 6,0	590
218.247	11/ 600-7	50	7,0	13 x 7,5	575
218.248	11/ 600	50	10,0	19 x 6,5	630
218.249	11/ 650	75	10,0	19 x 6,5	630
218.250	11/ 800-7	55	7,0	19 x 7,3	800
218.251	11/ 800	55	10,0	19 x 7,3	800
218.252	11/ 801	80	11,0	22 x 7,0	801
218.253	11/ 810	91	12,0	115 x 3,0	810
218.254	11/ 855	70	10,0	121 x 3,0	855
218.255	11/ 910	70	10,0	17 x 8,5	908
218.256	11/1177	90	12,0	60 x 5,0	1177
218.257	11/1177-16	90	16,0	60 x 5,0	1177
218.258	11/1200	90	12,0	31 x 7,0	1200
218.259	11/1201	70	10,0	31 x 7,2	1260
218.260	11/1250	88	14,0	31 x 7,2	1260
218.261	11/1800	80	11,0	31 x 8,3	1680
218.262	11/2200	90	12,0	31 x 9,0	2200
218.263	11/2740	110	14,0	43 x 9,0	2740
218.264	11/3000	150	20,0	217 x 4,7	3760
218.265	11/4000	150	20,0	132 x 6,5	4380
218.266	11/5000	150	20,0	65 x 10,0	5100
218.267	11/6000	150	20,0	19 x 20,0	5970

218A



b) with round corners

Item No.	Type	Size mm	Height mm	No. of holes x dia. mm	Cross section mm ²
218.321	12/1150	120 x 45	11,0	42 x 6,0	1150
218.322	12/1490	115 x 80	10,0	211 x 3,0	1490
218.323	12/1700	120 x 66	11,0	77 x 5,3	1700
218.324	12/2600	138 x 60	12,0	75 x 6,6	2600
218.325	12/2800	122 x 90	15,0	97 x 6,0	2800
218.326	12/3300	133 x 100	18,0	119 x 5,7	3300
218.327	12/5000	92 x 186	19,0	88 x 9,0	5600

Ceramic strainer cores, rectangular

of special material, heat resistant up to 1470°C

a) with sharp angles

Item No.	Type	Size mm	Height mm	No. of holes x dia. mm	Cross section mm ²
218.301	12/ 300	65 x 30	7,5	22 x 4,0	280
218.302	12/ 450	65 x 37	10,0	30 x 4,0	380
218.303	12/ 700	70 x 40	6,0	32 x 5,2	700
218.304	12/ 700- 9	70 x 40	9,0	32 x 5,2	700
218.305	12/ 800	104 x 52	10,0	21 x 7,0	800
218.306	12/ 805	80 x 70	6,5	64 x 4,0	805
218.307	12/ 805- 9	80 x 70	9,0	64 x 4,0	805
218.308	12/ 880	135 x 37	10,0	70 x 4,0	880
218.309	12/1200	90 x 58	13,0	81 x 4,5	1200
218.310	12/1500	114 x 66	10,0	120 x 4,0	1500
218.311	12/1500-19	114 x 66	19,0	120 x 4,0	1500
218.312	12/1800	118 x 63	11,0	81 x 5,3	1800
218.313	12/2020	105 x 60	16,0	87 x 5,5	2020
218.314	12/2350	114 x 66	20,0	99 x 5,5	2350
218.315	12/2500	108 x 80	15,0	115 x 5,2	2440
218.316	12/3325	92 x 88	11,0	35 x 11,0	3325

218B



1) round types

Item No.	Outside dia. mm	Inside dia. mm	Height mm
218.401	60	15	6
218.402	60	30	6
218.403	80	40	8
218.404	90	35	5
218.405	95	40	5
218.406	100	30	6
218.407	100	35	6
218.408	100	40	6
218.409	120	30	8
218.410	120	40	6
218.411	120	50	8

Ceramic collar separators

(separating cores from risers)

of special material, heat resistant up to 1470°C

permit the reduction of the cross section of the riser without inducing negative effects.

If ceramic separators are used with exothermic risers, the surface produced with separators is, in fact, in many cases better than the surface produced by the mould. Thanks to the blade-type separating edge, the risers of less ductile materials, such as cast iron graphite or malleable cast iron, can simply be knocked off – without the risk of breaking pieces off. The separator indicates to the fettler where to cut off the risers on castings of tough materials.

Item No.	Outside dia. mm	Inside dia. mm	Height mm
218.412	140	45	6
218.413	140	50	8
218.414	150	25	9
218.415	150	50	9
218.416	160	45	6
218.417	170	50	8
218.418	180	50	7
218.419	200	50	6
218.420	200	50	9
218.421	250	50	8

2) rectangular types

with rectangular holes

Item No.	Outside dimensions length x width mm	Inside dimensions length x width mm	Height mm
218.501	70 x 50	40 x 20	4,5
218.502	120 x 90	60 x 30	6,5
218.504	320 x 150	80 x 50	15,0

b) with round holes

Item No.	Outside dimensions length x width mm	Inside diameter mm	Height mm
218.510	150 x 90	30	7,0
218.511	250 x 150	50	10,0
218.520	150 x 90	without hole	7,0

219



Fibreglass strainers for light metal castings

1) sold by the sq. m from rolls (1,00 to 1,47 m width) – depending on availability

2) Cut-to-size (any size and shape)

Please specify when ordering: quantity, size, shape, type of netting.

Type	G 13	G 61	G 45	G 90	G 67	G 65
Mesh width mm	1,2 x 1,5	1,0 x 0,8	1,2 x 1,5	2,5 x 2,5	1,3 x 1,5	1,0 x 0,8
Colour	black	brown	yellow	yellow	black	black
Quality	gas-free	evolving gas	evolving gas	evolving gas	gas-free	gas-free
Item No.						
Sold by sq.m.	219.213	219.261	219.260	219.225	219.267	219.265
Cut-to-size	219.213A	219.261A	219.260A	219.225A	219.267A	219.265A

Fibreglass strainers up to 1600°C (also for heavy metal) upon request.

220



Fibre mats, ropes and seals

of heat-resistant ceramic fibre (asbestos-free)

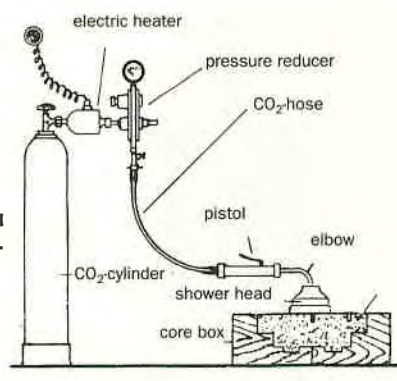
Please specify in your inquiry:

1) Quantity 2) temperature 3) application 4) dimensions

Fittings and accessories for CO₂-solidification process

221

The illustration shows the complete equipment required for manual gassing by means of a shower head.



- 1) **Electric heater**, preventing freezing, 220 V complete with 3-pole plug and 2 m long cable
Item No. 221.001 100 Watt, gas flow appr. 10 Nm³/h
Item No. 221.002 500 Watt, gas flow appr. 24 Nm³/h
 Other type upon request!

1a) Spares

- Item No. 221.003** = 2 m long cable with plug
Item No. 221.004 = spare heating element 100 Watt
Item No. 221.005 = spare heating element 500 Watt



2) Pressure reducer of brass Item No. 221.006

- with spring safety valve
 Cylinder pressure manometer 0 – 315/200 kp/cm²
 Working pressure manometer 0 – 16/10 kp/cm²

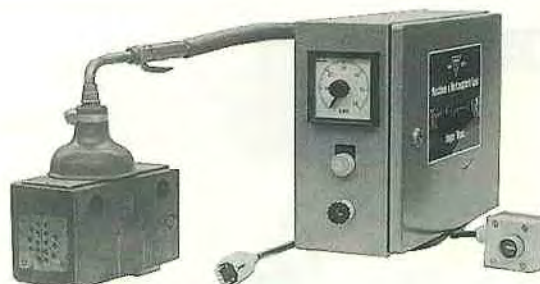


3) Dosing unit Item No. 221.007

Comprising:

control unit with built-in-timer and contactor, range 2 to 60 sec., solenoid valve 1/4", pilot lamp, button, armored cable, length 2 meters, between unit and button and 2 m long rubber cable with plug between unit and 220 V mains.

It is imperative to ensure that **only the reduced pressure** (working pressure) is admitted to the unit.



4) Pistol Item No. 221.008

to be connected to hose, 10 mm ins. dia., with 5/8" connector

4a) Suitable rubber seal – Item No. 221.009



5) Brass elbow Item No. 221.010

with 5/8" connection nut and M 12x1 connector



6) Rubber shower head with built-in nozzle internal thread M 12x1

Item No.	221.011	221.013	221.014	221.015
Diameter	60 mm	130 mm	115 mm	135 mm
Colour	red	black	red	red



7) Brass lance

with 5/8" connection nut

Item No.	Dia.	Length	Item No.	Dia.	Length
221.016	4 mm	400 mm	221.019	6 mm	600 mm
221.017	4 mm	600 mm	221.020	6 mm	800 mm
221.018	6 mm	400 mm	221.021	6 mm	1000 mm



8) Co₂-hose Item No. 221.022

orange-red
 Inside dia. 10 mm, wall thickness 3 mm



222



GAEBEL-mixers

blacking mixing & spraying machine

Blacking can be prepared in this mixer without problems. The system produces blacking which is very economical in use and gives excellent casting surface finish.

Due to the eccentric position of the mixing tools and the intensive mixing action, blackings and coatings are dissolved and kept in solution.

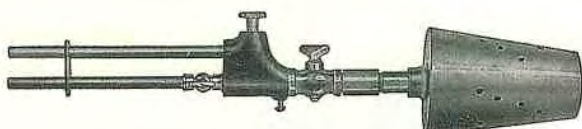
Sizes available:

Item No.	222.001	222.002	222.003	222.004
Cap.	170 l	375 l	540 l	1.000 l

Please ask for special leaflet!

Other blacking mixers upon request.

223



Blow lamp with tube

Compressed air oil blowlamps 'Perplex'

with safety and oil valve, oil nozzle dia. 2mm (upon request also 1 mm), oil consumption 32 l/hr (max.). Can be connected directly to a compressed air system (constant air pressure abt. 6 bar).

The complete equipment comprises:

a) oil burner 'Perplex' with valves and handle

Item No.	223.001	223.002
Nozzle dia.	2 mm	1 mm

b) 1 detachable flame tube **Item No. 223.100**

c) 2,5 m long compressed air hose 9 x 3,5 mm **Item No. 223.101**

d) 2,5 m oil hose 9 x 3,5 mm **Item No. 223.102**

e) 10 l spill-proof oil can with detachable lid and suction pipe

(dia. 9 mm) to which the oil hose is connected **Item No. 223.103**

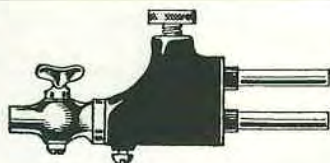
223A



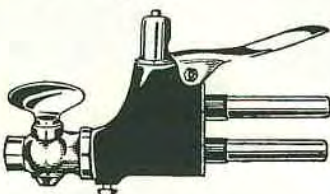
Spare flame tubes **Item No. 223.100**

for 'Perplex'-blowlamp

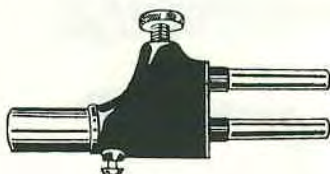
224



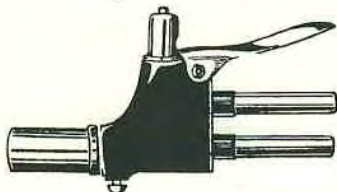
Type A



Type A1



Type B & B2



Type B1

Compressed air blacking systems 'Original'

to be connected to compressed air systems (pressure appr. 6 bar)

1.) with one set of air and blacking hoses (2 m long)

2.) without hoses

Type A = 4 mm nozzle

with valve
and 9 mm connector
for medium-size and large moulds

Type A 1 = 4 mm nozzle

with valve
and quick-stop lever valve
and 9 mm connector
for small moulds

Type B = 7 mm nozzle

without valve,
9 mm connector
for large moulds

Type B 1 = 7 mm nozzle

without valve, however
with quick-stop lever valve
and 9 mm connector
for large moulds

Type **B 2** is as Type B, but with 13 mm connector
for Gaebel-Mixers (see above).

Type	A	A 1	B	B 1	B 2
Item No. without hose	224.001	224.002	224.003	224.004	224.005
Item No. with hose	224.101	224.102	224.103	224.104	—

Sets of spare seals also available: **Item No. 224.110**

224A



Type A & A1



Type B, B1 & B2

Spare spraying head of brass

for blacking systems 'Original'

Item No.	224.201	224.202
For type	A, A 1	B, B 1, B 2

224B



Blacking can **Item No. 224.301**

for blacking systems 'Original'

10 l spill-proof can, with detachable lid and 9 mm suction pipe.

Compressed air spraying pistols with light metal reservoir and bayonet coupling

for blackings and coatings

1 l capacity, 3 mm nozzle, pipe length 300 mm (standard), extension upon request, hose connector 8 mm

SP 1 with rigid, straight pipe **Item No. 225.001**

SP 2 with bent swivel pipe **Item No. 225.002**

SP 3 with straight pipe and swivel nozzle to facilitate spraying hard-to-reach parts (moulds, ingot moulds etc.) **Item No. 225.003**

Can also be delivered with a 0,7 l plastic reservoir (instead of the aluminium reservoir).



225

Spraying pistols

heavy-duty design, easy and handy to operate, self-priming step valve allows the workpiece to be blown out first and to be sprayed with lubricant subsequently.

1) Model DAG 087-F

a) Pistol without spraying pipe: Item No. 226.001

Remark: Pistol with 2 hose adapters each of 6 mm and 10 mm for the air agent connection.

b) Spraying pipe:

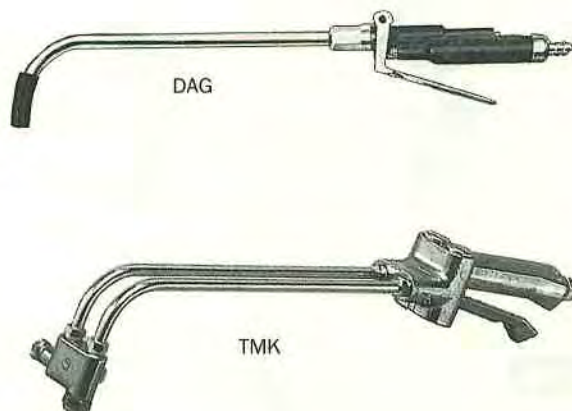
Item No.	226.010	226.011	226.012	226.020	226.021	226.022
Pipe head		90°			T-Head*	
Length	300 mm	500 mm	1000 mm	300 mm	500 mm	1000 mm

* (not self-priming)

2) Model MAFA-TMK

air and agent connector 1/4" ext. thread
angle 90°

Item No.	226.800	226.801	226.802
Length	450 mm	750 mm	900 mm



226

SURE-SHOT-spraying cans especially for parting compounds

No propellant, just compressed air

Can be refilled; refill liquid and admit compressed air (pressure 6 to 15 bar) can be used for all liquids under 10 SAE

Item No.	227.001	227.002
Cap.	1 ltr.	0,15 ltr.

Accessories:

Extensions:	Set of nozzles (for the 1 l can)			
Item No.	227.101	227.102	227.103	227.200
Length	75 mm	100 mm	300 mm	with coarse, fine, wide and special nozzle



227

Parting compound spraying cans SG

for liquids parting compounds

Without propellant, environmentally friendly, as compressed air is used, max. pressure 10 bar, optimum pressure 7,5 bar, volume up to 0,7 l parting compound. Different spray and jet nozzles are included in the scope of supply; can be refilled and reused.

Item No.	975.001	975.002
Cont.	0,7 ltr.	0,5 ltr.

Set of spares Item No. 975.101 comprises valve, 200 mm long extension tube as well as 4 different spray heads



227A

Special spraying pistols Type 'Condor'

for applying liquid parting compounds, with agent regulator

Item No.	228.003	228.004	228.005	228.006
Nozzle dia.	1,2 mm	1,4 mm	1,6 mm	1,8 mm

Accessories:

Reservoir COB 500 ccm complete with lid and stop valve

Suction pipe CO-13 with return valve and quick-connector (10 or 25 kg canister)

Special nozzle head COS-13 (spray directed to the left or right)

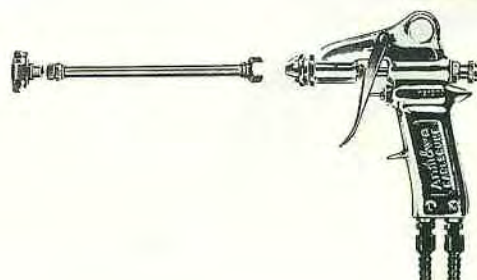
Extension pipe:

Item No.	228.102	228.103	228.104	228.105	228.106	228.107
Length	100 mm	150 mm	200 mm	250 mm	300 mm	350 mm

Item No. 228.109

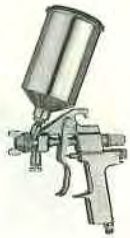
Item No. 228.110

Item No. 228.101



228

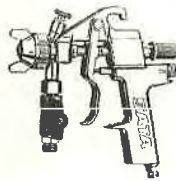
229



LM/B-92



LM/H-92



LM/K-92

Compressed air spraying pistols 'SATA'

for blackings, coatings and parting compounds

with built-in compressed air micrometer, infinitely adjustable round/wide spray and volume adjustment, air connector R 1/4" a.

SATA LM/B-92 0,75 l alu-reservoir

SATA LM/H-92 1 l alu-reservoir

SATA LM/K-92 for connection to sep. reservoirs, with ball valve

Nozzle dia.	0,8 mm	1,0 mm	1,3 mm	1,6 mm	1,8 mm	2,0 mm	2,5 mm	3,0 mm
Item No.	B-92	229.001	229.002	229.003	229.004	229.005	229.006	229.007
	H-92	-	-	229.103	229.104	229.105	229.106	-
	K-92	-	-	229.203	229.204	229.205	229.206	-

Extensions with round, wide or inclined spray as well as angle-head available.

230



Pilot IV



Pilot IV EM

Compressed air spraying pistols 'Pilot'

for blackings, coatings and parting compounds

with built-in air micrometer, infinitely adj. spray and volume adjustment, air connector 1/4" a.

Pistol body of brass, handle of hardwood, 1/2 l reservoir

a) **Pilot IV** with round/wide spray head

Extensions:

straight, 45° or 90° offset

b) **Pilot IV EM** with round spray head for spraying pulpy compounds

Nozzle dia.	0,5 mm	0,8 mm	1,0 mm	1,2 mm	1,5 mm	1,8 mm	2,0 mm
Item No.	Pilot IV	230.001	230.002	230.003	230.004	230.005	230.006
	Pilot IV	230.008	230.009	230.010	-	-	-
Item No.	Pilot IV EM	230.101	230.102	230.103	230.104	230.105	230.106

230A



Compressed air spraying pistols

No. 9022F/STA Item No. 230.201

Low cost, robust pistol of aluminium, nozzle and nozzle needle of steel, nozzle head self-centering, for round, wide and flat sprays. Nozzle dia. 1,5 mm

Plastic reservoir holding 0,5 l and quick-connect/-disconnect air coupling

231



Blasting nozzles Standard version

Nozzle dia. 2 mm

Hose connector mm	6 mm	10 mm	13 mm	15 mm
Material	Item No.			
Light metal	231.001	231.002	231.003	231.004
Brass	231.101	231.102	231.103	231.104

232



Blasting nozzles with rubber nozzle

Nozzle dia. 3 mm

Valve opens by depressing the rubber mouthpiece, closes automatically

Hose connector mm	6 mm	8 mm	10 mm	13 mm
Part	Item No.			
Compl. valve	232.001	232.002	232.003	232.004
Hose connector	232.011	232.012	232.013	232.014
Rubber piece	232.021			

233



Blasting pistols of light metal

Nozzle dia. 2 mm

Robust, handy, especially suitable for continuous service, with galvanized steel nozzle, long lever, suspension lug

Available types:

1) **Standard version**, as described above;

2) **Safety version**, with round spray which prevents particles from being blown back at the operator;

3) **Soft version** with a special, low noise level nozzle at 5 bar pressure 62 dB(A) instead of 84 dB(A);

4) **Maxi version**, with 300% higher air flow, very high performance, also if used with small capacity compressors;

5) **Heavy-duty industrial version**, robust, especially suitable for rough service; nozzle especially for use with water atomizer.

150 mm-extensions also available!

Item No.		
Hose connector		
6 mm	10 mm	13 mm
233.001	233.002	233.003
233.101	233.102	233.103
233.201	233.202	233.203
233.301	233.302	233.303
233.401	233.402	233.403

Safety blasting pistols

233A

With valve for stepless air flow control, nozzle dia. 2,5 mm

Made of robust, impact-resistant plastic, handy, lightweight, low noise level, hose connector 1/4" int. thread

Item No.	233.501	233.511	233.521	233.531
Version	straight			bent
Pipe length	20 mm	320 mm	490 mm	90 mm

Accessories:

Item No. 233.541 by-pass extension with lateral air discharge (pressure reduction)

Item No. 233.542 silencer nozzle

Item No. 233.543 chip protector



Hermetikus blasting nozzles of light metal or brass

234

Size	Outer diameter	Nozzle diameter	Hose connector	Item No.	
				Light metal	Brass
0	18 mm	2 mm	6 mm	234.001	234.101
			10 mm	234.002	234.102
1	24 mm	3 mm	10 mm	234.003	234.103
			13 mm	234.004	234.104
2	28 mm	5 mm	13 mm	234.005	234.105
			16 mm	234.006	234.106



Hermetikus extension nozzles of brass

234A

Size	Thread	Length	Nozzle diameter	Item No.	
				straight	bent
0	M 8 x 1	160 mm	2 mm	234.201	234.202
1	M 10 x 1	185 mm	3 mm	234.203	234.204



Hermetikus low noise level nozzles of aluminium

234B

reduce the noise level considerably – below the permissible limits, replace the standard single-hole nozzles.

Size	Model	Thread	Wrench size	Item No.
0	A	M 8 x 1	13 mm	234.301
1	A	M 10 x 1	14 mm	234.302
2	B	M 24 x 1,5	27 mm	234.303



model A



model B

Industrial hoses

235

on 40 m rolls or partial lengths

1) Compressed air hoses

black, tough standard quality, with pressure-resistant reinforcements

Item No.	235.001	235.002	235.003	235.004	235.005
Size	10 x 4 mm	13 x 5 mm	15 x 6 mm	19 x 6 mm	25 x 7 mm

2) Compressed air hoses 'Trix-Blaustrahl'

for highest requirements with cord reinforcements

Item No.	235.101	235.102	235.104
Size	10 x 5 mm	13 x 5 mm	19 x 6 mm

3) Sand blasting hoses

black, with a strong rubber core and strong pressure-resistant fabric reinforcements

Item No.	235.201	235.202	235.203	235.204	235.205
Size	13 x 7 mm	15 x 7 mm	25 x 7 mm	32 x 8 mm	38 x 9 mm

4) Water hoses

red outside, black inside, with fabric reinforcements

Item No.	235.301	235.302	235.303	235.304	235.305
Size	10 x 3 mm	13 x 3 mm	16 x 3,5 mm	19 x 4 mm	25 x 4 mm

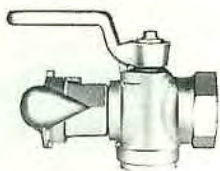
5) Autogenous welding hoses

Item No.	Size	Colour	Application
235.401	6 x 5 mm	blue	Oxygen
235.402	9 x 3,5 mm	red	Gas



Important:

The dimensions given are **inside** diameter and wall thickness; the **outside** diameter of the hose is obtained adding 2 x wall thickness to the inside diameter. For example: 10 x 5 means 10 mm inside diameter and 5 mm wall thickness; outside diameter is 20 mm.



Compressed air fittings of malleable cast iron galvanized, jaw spacing 42 mm

1) Single cocks DIN 3486 with screwed-on coupling

Thread	1/2" l. thr.	3/4" l. thr.	1" l. thr.	1" A. thr.
Gasket	Item No.			
Rubber	236.101	236.102	236.103	236.104
Brass	236.111	236.112	236.113	236.114



2) Double cocks DIN 3487 with screwed-on coupling

Internal thread	3/4"	1"
Gasket	Item No.	
Rubber	236.201	236.202
Brass	236.211	236.212



3) Jaw-type hose coupling DIN 3483

Hose connector	6 mm	10 mm	13 mm	15 mm	19 mm	25 mm	32 mm
Gasket	Item No.						
Rubber	236.301	236.302	236.303	236.304	236.305	236.306	236.307
Brass	-	-	236.311	236.312	236.313	236.314	-



4) Jaw-type internal thread couplings DIN 3482

Each package contains 10 p. per type

Internal thread	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"
Gasket	Item No.					
Rubber	236.401	236.402	236.403	236.404	236.405	236.406
Brass	-	-	236.411	236.412	236.413	-



5) Jaw-type external thread couplings DIN 3481

Each package contains 10 p. per type

External thread	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"
Gasket	Item No.					
Rubber	236.501	236.502	236.503	236.504	236.505	236.506
Brass	-	-	236.511	236.512	236.513	-

Spare rubber gaskets for items. 1 to 5: Item No. 236.600



1) Coupling



2) Connector



3) Connector

Compressed air quick-connect/disconnect couplings

especially robust design

Each package contains 10 p. per type

Size	Item No.	Thread	WR. mm	Dia. mm
------	----------	--------	-----------	------------

1) Coupling of galvanized steel

0	237.001	1/4" a	17	27
	237.002	3/8" a	19	27
1	237.003	3/8" a	24	38
	237.004	1/2" a	24	38

2) Connector of galvanized steel

0	237.201	1/4" a	17	-
	237.202	3/8" a	19	-
1	237.203	3/8" a	22	-

Size	Item No.	WR. mm	Dia. mm
------	----------	-----------	------------

3) Connector of galvanized steel

0	237.101	6	14,5
	237.102	9	14,5
1	237.104	6	22
	237.105	9	22
	237.106	11	22
	237.107	13	22

Hose fittings, galvanized

238

- 1) external thread sleeve of steel,**
for secure connection of hoses to compressed air tools
Package contains 10 p. per type

Inside hose dia.	Thread / Item No.				
	1/4"	3/8"	1/2"	3/4"	1"
10 mm	238.101	238.102	—	—	—
13 mm	238.103	238.104	238.105	238.106	—
15 mm	—	—	238.107	238.108	—
19 mm	—	—	238.109	238.110	238.111
25 mm	—	—	—	238.112	238.113



- 2) Hose connecting sleeves, DIN 20038, of galvanized steel**

Item No.	238.201	238.202	238.203	238.204	238.205	238.206	238.207	238.208
Inside hose dia.	10 mm	13 mm	15 mm	19 mm	25 mm	32 mm	38 mm	53 mm



- 3) Hose claws of steel**

Item No.	238.301*	238.302*	238.305	238.306
Inside hose dia.	6 mm	8 mm	15 mm	19 mm

* These sizes are being discontinued and will be available in limited quantities only!



- 4) 2-piece hose clips, DIN 3017, of steel, 9 mm clip width**

Item No.	238.401	238.402	238.403	238.404	238.405	238.406
Clamping range	8 – 12 mm	10 – 16 mm	12 – 20 mm	16 – 25 mm	20 – 32 mm	25 – 40 mm
Item No.	238.407	238.408	238.409	238.410	238.411	238.412
Clamping range	32 – 50 mm	40 – 60 mm	50 – 70 mm	60 – 80 mm	70 – 90 mm	80 – 100 mm



- 5) 2-piece hose clips, DIN 20039A, of malleable cast iron**

Item No.	238.501	238.502	238.503	238.504	238.505
Clamping range	22 – 29 mm	28 – 34 mm	32 – 40 mm	39 – 49 mm	48 – 60 mm
Package	10 St.	10 St.	10 St.	10 St.	5 St.
Item No.	238.506	238.507	238.508	238.509	238.510
Clamping range	60 – 76 mm	77 – 94 mm	94 – 115 mm	115 – 145 mm	135 – 155 mm
Package	5 St.	5 St.	1 St.	1 St.	1 St.



One-hand quick connect/disconnect couplings (type DN 7,2) of brass

239

Package contains 10 p. per type

Item No.	Thread	I.D. mm	WR. size mm	Dia. mm
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- 1) Coupling with external thread**

239.001	1/8"	—	22	27
239.002	1/4"	—	22	27
239.003	3/8"	—	22	27
239.004	1/2"	—	24	27

- 2) Coupling with internal thread**

239.101	1/8"	—	22	27
239.102	1/4"	—	22	27
239.103	3/8"	—	22	27
239.104	1/2"	—	24	27

- 3) Coupling with hose sleeve**

239.201	—	6	—	27
239.202	—	9	—	27
239.203	—	13	—	27

Item No.	Thread	I.D. mm	WR. size mm	Dia. mm
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- 4) Plug-in nipple with external thread**

239.301	1/8"	—	13	—
239.302	1/4"	—	17	—
239.303	3/8"	—	19	—
239.304	1/2"	—	24	—

- 5) Plug-in nipple with internal thread**

239.401	1/8"	—	13	—
239.402	1/4"	—	17	—
239.403	3/8"	—	19	—
239.404	1/2"	—	24	—

- 6) Plug-in sleeve**

239.501	—	6	—	12
239.502	—	9	—	12
239.503	—	13	—	15



Coupling
with external thread



Plug-in nipple
with external thread



Coupling
with internal thread



Plug-in nipple
with internal thread



Coupling
with hose
sleeve



Plug-in sleeve

240



FK 101.1
FK 111.1



FK 101.3
FK 111.3



FK 101.2
FK 111.2



FK 101.4
FK 111.4



FK 102.4/ FK 103.4



FK 102.5 and FK 103.5 with closed steel handle.
The higher weight dampens vibrations – for ease of handling.

Compressed air chisels

sensitive regulating valve, recoil dampening construction, sound-dampening exhaust ring, easy to service, upon request with separate stepless adjustment

Type		FK 101.1	FK 111.1	FK 101.2	FK 111.2	FK 101.3	FK 111.3
Weight	kg	0,71	0,82	0,72	0,83	0,77	0,88
Piston dia.	mm	16	16	16	16	16	16
Stroke	mm	30	45	30	45	30	45
No. of strokes	1/min	6300	4500	6300	4500	6300	4500
Length	mm	170	195	180	205	190	215
Air consumption	m³/min	0,34	0,32	0,34	0,32	0,34	0,32
Air connection	IG	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Hose inside dia.	mm	8	8	8	8	8	8
Shape of handle		Pistol grip		Straight with button		Straight with lever	
Tool holder		Spring cap, oval, stop ring					
Chisel bush		Item No.					
S 12,5 x 36		240.001	240.003	240.005	240.007	240.009	240.011
R 10,3 x 36		240.002	240.004	240.006	240.008	240.010	240.012

Type		FK 101.4	FK 111.4	FK 102.4	FK 103.4	FK 102.5	FK 103.5
Weight	kg	1,15	1,26	1,6	1,85	3,1	3,35
Piston dia.	mm	16	16	20	20	20	20
Stroke	mm	30	45	60	90	60	90
No. of strokes	1/min	6300	4500	3200	2600	3200	2600
Length	mm	200	220	290	330	310	350
Air consumption	m³/min	0,34	0,32	0,42	0,42	0,42	0,42
Air connection	IG	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Hose inside dia.	mm	8	8	10	10	10	10
Shape of handle		Open		Open		Closed	
Tool holder		Spring cap, oval 31 x 18 mm, with stop ring		Spring cap, 23 mm dia. with stop ring		Spring cap, 23 mm dia. with stop ring	
Chisel bush		Item No.					
S 12,5 x 36		240.013	240.015	–	–	–	–
R 10,3 x 36		240.014	240.016	–	–	–	–
RS 14,3		–	–	240.017	240.019	240.021	240.023
RS 14,3 x 50		–	–	240.018	240.020	240.022	240.024

Scope: hose fittings and plug-in tools have to be ordered separately.

Servicing cartridge (Item No. 190.201) see page 48.

Spare part lists are also available!

240A



Chisel shaft



Pointed chisel



Flat chisel

Plug-in tools with collar suitable for Item No. 240

Tool shank drawing						
Description	Useful length mm	Width mm	S 12,5 x 36	R 10,3 x 36	RS 14,3	R 14,3 x 50
Chisel shaft	125	–	240.101	240.102	–	–
	150	–	–	–	240.113	240.114
Pointed chisel	125	–	240.201	–	–	–
	135	–	–	–	240.213	240.214
	200	–	240.221	–	240.223	–
	250	–	–	–	240.233	240.234
Flat chisel	125	15	240.301	240.302	–	–
	135	20	–	–	240.313	240.314
	135	30	–	–	240.323	–
	180	40	–	–	240.333	–
	195	15	240.341	240.342	–	–
	200	20	–	–	240.353	–
	250	15	240.361	240.362	–	–
	250	20	–	–	240.373	240.374

Other dimensions upon request.

Compressed air chisels

Easy to handle: Smooth surfaces facilitate handling the tool; excellent handling means greater safety and better performance.

Low noise level: Thanks to a high-quality plastic silencer the noise level is reduced to a low level; the air can be discharged into any direction by rotating the exhaust ring.

Vibration dampening: Thanks to a vibration-dampening connection between cylinder and handle, the effects of the vibrations are substantially diminished. The operator can work the chisel for longer periods as no-load strokes are much easier to cope with.

Ease of service: The simple construction facilitates maintenance; the use of proven materials extends service life and reduces maintenance and repair expenses as well as down-time costs.

Type	FK 2.3	FK 3.3	FKG 4.3	FK 4.3	FK 5.3	FK 6.3
Weight kg	3,7	4,1	5,6	5,9	6,5	7,6
Piston dia. mm	23	23	27	30	30	30
Stroke mm	56	85	60	77	109	134
No. of strokes 1/min	2700	2000	2900	2200	1800	1400
Length mm	312	347	361	376	416	461
Air consumption m ³ /min	0,28	0,4	0,4	0,5	0,53	0,55
Air connection IG	R 3/8" i	R 3/8" i	R 3/8" i	R 3/8" i	R 3/8" i	R 3/8" i
Inside hose dia. mm	10	10	13	13	13	13
Tool holder	Spring cap, oval					
Chisel bush DIN 8530	Item No.					
RS 17,5	241.001	241.011	241.021	241.031	241.041	241.051
R 17,5 x 60	241.002	241.012	241.022	241.032	241.042	241.052
RS 20	241.003	241.013	241.023	241.033	241.043	241.053
R 20 x 60	241.004	241.014	241.024	241.034	241.044	241.054

Type	FK 2	FK 3	FK 4	FK 5
Weight kg	4,0	4,4	6,1	7,0
Piston dia. mm	23	23	30	30
Stroke mm	56	86	77	109
No. of strokes 1/min	2700	2000	2200	1800
Length mm	335	370	390	430
Air consumption m ³ /min	0,3	0,4	0,5	0,5
Air connection IG	R 3/8" i	R 3/8" i	R 3/8" i	R 3/8" i
Inside hose dia. mm	13	13	13	13
Tool holder	Screw-on cap			
Chisel bush DIN 8530	Item No.			
RS 17,5	241.061	241.071	241.081	241.091
RS 20	241.062	241.072	241.082	241.092

Scope: Hose fittings and plug-in tools have to be ordered separately. Servicing cartridge (Item No. 190.201) see page 48. Spare parts lists are also available!



Pneumatic chisel with spring cap

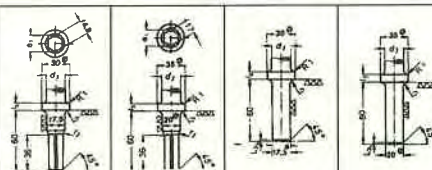


Pneumatic chisel with screw-on cap

Plug-in tools with collar suitable for Item No. 241

241A

Tool shank drawing



Description	Useful length mm	Width mm	RS 17,5	RS 20	R 17,5 x 60	R 20 x 60
Item No.						
Chisel shaft	250	—	241.301	241.302	241.303	—
	350	—	—	—	—	241.314
Pointed chisel	250	—	241.401	241.402	241.403	241.404
	350	—	241.411	241.412	—	240.414
	450	—	241.421	241.422	241.423	—
Flat chisel	250	30	241.501	241.502	241.503	241.504
	350	30	241.511	241.512	—	—
	450	30	241.521	241.522	—	—
	600	30	241.531	241.532	—	—
	750	30	241.541	241.542	241.543	—
	1000	30	—	241.552	—	—
Wide chisel	210	40	241.601	—	241.603	—
	210	60	241.611	241.612	—	—
	210	90	241.621	—	—	—
	750	90	—	241.632	—	—

Other dimensions upon request.



Chisel shaft



Pointed chisel



Flat chisel



Wide chisel

242



Compressed air straight grinder

- 900 Watt
- Air consumption 1,3 m³/min
- Supply and exhaust air hose included
- Straight grinder with universal tool carrier
- Exhaust air released to the rear
- Hose inside dia. 12 mm

Maschine weight 2,4 kg
Standard chuck included in the supply: 6 mm
(or alternatively 8 mm; 10 mm, 1/4", 3/8" or 5/16")

Type No.	242.003	242.004	242.005	242.006
Type	PG 12/120V	PG 12/120V-HV	PG 12/70V	PG 12/70V-HV
Valve type	Rotary v.	Lever v.	Rotary v.	Lever v.
Revs. 1/min.	12.000	12.000	7.000	7.000

243



Compressed air angular grinder

1) Type PW 12 Robust design for heavy-duty application

- 900 Watt
- Air consumption 1,3 m³/min
- Spindle M 14
- Tool carrier 22,2 mm
- Supply and exhaust air hose included in the supply
- Exhaust air released to the rear
- Hose inside dia. 12 mm
- Very powerful
- Beveled grinder head

Machine weight 2,5 kg

Item No.	243.001	243.002
Type	PW 12/120	PW 12/120HV
Valve type	Rotary v.	Lever v.
Revs. 1/min.	12.000	12.000

2) Type PW 3/120 HV Item No. 243.101

- For grinding and finishing work with all COMBI-DISC tools (see Item No. 299A)
- Speed 12.000 revs/min.
- 220 Watt
- Exhaust air released to the front
- Air consumption 0,35 m³/min
- Flat grinder head for working in otherwise inaccessible places
- Stepless speed adjustment by controlling the supply air valve lever
- Hose inside dia. 8 mm
- Spindle 1/4"
- Easy to handle, compact
- High torque

Maschine weight 0,4 kg

244



Steel wire hand brushes

Wood slightly curved, total length appr. 290 mm, bristle area appr. 150 mm, steel bristle height 25 mm

No. of rows	Width mm		Steel wire, round 0,30/0,35 mm (STANDARD)	Steel wire, flat 1,1 x 0,25 mm	Undulated, round 0,2 mm	Undulated, round 0,3 mm
2	22	Item No.	244.592	-	244.512	244.522
3	30	Item No.	244.593	244.533	244.513	244.523
4	35	Item No.	244.594	-	244.514	244.524
5	40	Item No.	244.595	-	-	-
6	45	Item No.	244.596	-	-	-

244A

Special hand brushes

Wood slightly curved, total length appr. 290 mm, bristle area appr. 150 mm, steel bristle height 25 mm

No. of rows	Width mm		Und. steel wire V2A 0,2 mm	brass wire smooth 0,3 mm	Und. brass wire			Und. phosphorbronze wire	
					0,1 mm	0,15 mm	0,2 mm	0,15 mm	0,20 mm
2	22	Item No.	-	-	244.452	244.472	244.482	-	-
3	30	Item No.	244.353	-	244.453	244.473	244.483	244.643	244.653
4	35	Item No.	244.354	244.434	244.454	244.474	244.484	244.644	244.654
5	40	Item No.	244.355	-	244.455	244.475	244.485	244.645	244.655

245



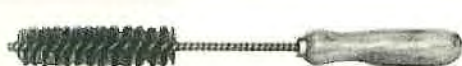
Fettling brushes, flat steel wire, 1,1 x 0,25 mm

Size 310 mm, height of steel bristles 50 mm

Item No.	Rows
245.194	4
245.196	6

(Item will be phased out!)

246



Round brushes, round cast steel wire, 300 mm long

Item No.	246.010	246.015	246.020	246.022	246.025	246.030	246.035
Diameter	10 mm	15 mm	20 mm	22 mm	25 mm	30 mm	35 mm

Wire scrubbing brushes

Wood size: 220 x 60 mm, 6 rows, height of bristles 25 mm

Item No.	Wire material
247.001	smooth steel wire 0,30-0,40 mm
247.004	undulated brass wire 0,20 mm



247

Steel wire brooms

Wood size: 310 x 60 mm, 6 rows, bristle height 70 mm

Item No.	Wire material
248.066	smooth steel wire 0,40-0,60 mm
248.166	flat steel wire 1,1x0,25 mm
248.266	flat steel wire 1,8x0,45 mm



248

Die brushes 1) Standard version, with wooden handle,

height of bristles 15 to 18 mm, ond. brass or steel wire

Item No.	No. of rows	Material	Length
249.023	3	Steel wire 0,15 mm	150 mm
249.123	3	Brass wire 0,15 mm	150 mm
249.024	4	Steel wire 0,20 mm	180 mm
249.124	4	Brass wire 0,20 mm	180 mm
249.025	5	Steel wire 0,20 mm	180 mm
249.125	5	Brass wire 0,20 mm	180 mm

2) Cup-shaped brush, with wooden handle, Item No. 249.276
wood length 100 mm, height of bristles 20 mm, collar dia. 37 mm,
undulated brass wire 0,20 mm



Design 1



Design 2

249

Wire brushes for lubricating and parting compounds

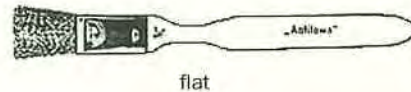
Undulated wire, with wooden handle, absorbent, durable, highly heat-resistant

1) of phosphor bronze wire

Design	Item No.					
	flat			round		
Handle length	1/2"	3/4"	1"	1 1/2"	No. 2 = 8 mm dia.	No. 4 = 10 mm dia.
appr. 200 mm	250.101	250.102	250.103	250.104	250.111	250.112
appr. 320 mm	250.121	250.122	250.123	250.124	250.131	250.132

2) of stainless steel wire

Design	Item No.			
	flat			
Handle length	1/2"	3/4"	1"	1 1/2"
appr. 200 mm	250.201	250.202	250.203	250.204
appr. 320 mm	250.211	250.212	250.213	250.214



flat



round

250

Fuel and oil brushes with twisted wire handle and lug

1) undulated brass wire

Item No.	Collar dia.	Length
251.070	12 mm	240 mm

2) genuine ross hair

Item No.	Collar dia.	Length
251.701	6 mm	145 mm
251.702	8 mm	210 mm
251.703	10 mm	230 mm



251

Soldering brushes, pure bristles

1) tin plate sleeve

Item No.	Width of sleeve	Length
252.691	9 mm	120 mm
252.692	13 mm	135 mm
252.693	15 mm	150 mm
252.694	21 mm	175 mm

2) metal clamp with round wooden handle

Item No.	Width of sleeve	Length
098.401	12 mm	160 mm
098.402	13,5 mm	160 mm
098.403	17 mm	160 mm
098.404	19 mm	165 mm
098.405	21 mm	165 mm
098.406	23 mm	170 mm



1)



2)

252

Core scratcher Item No. 253.001

wire width 52 mm, overall width 56 mm, steel bristle height 10 mm,
band thickness 4 mm



253

Core brushes with hard wooden handle



1) Item No. 254.001
with multiplast backing
200 x 55 mm



2) Item No. 254.002
with flexible steel pins
165 x 50 mm



3) Item No. 254.003
with embedded steel pins
165 x 60 mm

254

High-performance rotary brushes

Firmly gripped to steel pipe; with lateral disks and axle hole

Type I 'Birol', undulated steel wire

Brush dia.	Brush width	Axle hole dia.	Pipe dia.	Wire thickness	
				0,30 mm	0,50 mm
100 mm	16 mm	13 mm	40 mm	255.101	255.201
	25 mm			255.102	255.202
	33 mm			255.103	255.203
125 mm	16 mm	13 mm	50 mm	255.111	255.211
	25 mm			255.112	255.212
	33 mm			255.113	255.213
150 mm	18 mm	20 mm	60 mm	255.121	255.221
	27 mm			255.122	255.222
	36 mm			255.123	255.223
175 mm	18 mm	20 mm	77 mm	255.131	255.231
	27 mm			255.132	255.232
	36 mm			255.133	255.233



Other material qualities, wire thicknesses or brush diameters upon request; please specify quantities.

Type II 'Universal'

Brush dia.	Brush width	Axle hole dia.	Pipe dia.	Und. steel wire			Und. st.-steel wire V2A	
				0,20 mm	0,30 mm	0,50 mm	0,20 mm	0,30 mm
100 mm	20 mm	13 mm	40 mm	255.301	255.401	—	255.601	255.701
125 mm	22 mm	13 mm	50 mm	255.311	255.411	—	—	255.711
150 mm	21 mm	20 mm	60 mm	255.321	255.421	—	255.621	255.721
	30 mm			255.322	255.422	255.522	255.622	255.722
178 mm	23 mm	20 mm	77 mm	255.331	255.431	—	255.631	255.731
	32 mm			255.332	255.432	255.532	255.632	255.732
200 mm	20 mm	20 mm	96 mm	255.341	255.441	255.541	255.641	255.741
	30 mm			255.342	255.442	—	255.642	255.742
250 mm	28 mm	25 mm	96 mm	255.351	255.451	—	255.651	255.751
	38 mm			—	255.452	255.552	—	—
300 mm	32 mm	30 mm	96 mm	255.361	255.461	—	—	—
	44 mm			255.362	255.462	—	255.662	255.762

Other material qualities, wire thicknesses or brush diameters upon request; please specify quantities.

Decarburizing brushes with clamping shank, dia. 6 mm

Shank length appr. 30 mm, can be used on high-speed tools, for removing rust, scale, enamel, burrs and impurities on internal surfaces and hard-to-reach places.

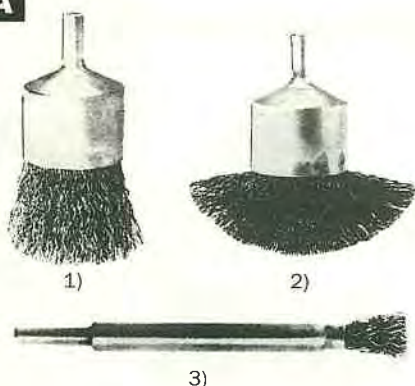


Brush dia.	Brush width	Undulated steel wire			Und. st.-steel wire V2A		Und. brass wire
		0,15 mm	0,20 mm	0,30 mm	0,20 mm	0,30 mm	0,20 mm
30 mm	6 mm	—	256.211	256.311	256.511	—	—
	10 mm	256.112	256.212	—	256.512	—	256.712
	16 mm	—	256.213	—	—	—	—
40 mm	9 mm	—	256.221	—	—	—	—
	14 mm	—	256.222	—	256.522	—	256.722
	20 mm	—	256.223	—	—	—	—
50 mm	10 mm	—	256.231	256.331	256.531	256.631	—
	18 mm	256.132	256.232	256.332	256.532	256.632	256.732
	25 mm	—	256.241	256.341	256.541	—	—
60 mm	18 mm	256.142	256.242	256.342	256.542	256.642	256.742
	25 mm	—	—	256.343	—	—	—
	—	—	256.251	256.351	256.551	256.651	—
70 mm	18 mm	256.152	256.252	256.352	256.552	256.652	256.752
	25 mm	—	—	256.353	256.553	256.653	—

Other material qualities, wire thicknesses or brush diameters upon request; please specify quantities.

Rotary wire brushes with 6 mm dia. shank

Especially suitable for treating moulds and castings with hard-to-reach places, such as corners and recesses. Length of cap and shaft appr. 45 mm



Other wire thicknesses and qualities upon request; please specify quantities.

Brush dia.	Cap dia.	Visible wire length	Max. speed	Und. steel wire			Und.st. steel wire	Und. brass wire
				0,20 mm	0,30 mm	0,50 mm	0,30 mm	0,30 mm
1) Standard shape				Item No.				
10 mm	10 mm	20 mm	18.000	256.801	256.811	–	256.831	256.841
17 mm	15 mm	20 mm	18.000	256.802	256.812	256.822	256.832	–
25 mm	22 mm	25 mm	18.000	256.803	256.813	256.823	256.833	256.843
30 mm	28 mm	25 mm	15.000	256.804	256.814	256.824	256.834	–
2) Wide version				Item No.				
50 mm	22 mm	n.a.	15.000	–	256.815	–	–	–
70 mm	28 mm	n.a.	15.000	–	256.816	–	–	–
3) Extra long version (length of cap & shank abt. 100 mm)								
12 mm	11 mm	18 mm	10.000	256.808	256.818	–	256.838	–

Precision files for metal treatment

Cut 1 = coarse – cut 6 = extra fine

Each package unit contains 5 files; single files available at extra charge.

Cut 1 = coarse, cut 2 = semi coarse, cut 3 = medium, cut 4 = medium fine, 5 = fine, cut 6 = extra fine

Flat bunt precision files

257

1) Normal width shape (1112 P)

Dimensions mm	Item No.					
	Cut 1	2	3	4	5	6
100 x 10 x 2,5	708.111	708.112	708.113	708.114	708.115	–
125 x 12,5 x 3,2	708.121	708.122	708.123	708.124	–	–
150 x 16 x 4	708.131	708.132	708.133	708.134	708.135	708.136
200 x 20 x 5	708.141	708.142	708.143	708.144	708.145	708.146
250 x 25 x 6,3	708.151	708.152	708.153	708.154	–	–
300 x 30 x 7	708.161	708.162	708.163	–	–	–



2) Semi-narrow shape (1113 P)

Dimensions mm	Item No.		
	Cut 1	2	3
150 x 12 x 4	708.231	708.232	708.233
200 x 15 x 5	708.241	708.242	708.243
250 x 18 x 5	708.251	708.252	708.253

3) Narrow shape (1114 P)

Dimensions mm	Item No.				Dimensions mm	Item No.		
	Cut 1	2	3	4		Cut 1	2	3
125 x 8 x 3	708.321	708.322	708.323	–	250 x 15 x 5	708.351	708.352	708.353
150 x 10 x 3,4	708.331	708.332	708.333	708.334	300 x 18 x 5	708.361	–	708.363
200 x 12 x 4	708.341	708.342	708.343	708.344				

Triangular precision files

258

1) Normal, pointed shape (1136 P)

Dimensions mm	Item No.				Dimensions mm	Item No.		
	Cut 1	2	3	4		Cut 1	2	3
100 x 5,5	709.111	709.112	709.113	–	200 x 13	709.141	709.142	709.143
125 x 8	709.121	709.122	709.123	–	250 x 16	709.151	709.152	709.153
150 x 9	709.131	709.132	709.133	709.134				



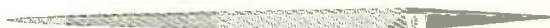
2) Narrow shape (1135 P)

Dimensions mm	Item No.		
	Cut 1	2	3
150 x 5,5	–	709.232	709.233
200 x 7	709.241	709.242	709.243

Square precision files (1146 P)

259

Dimensions mm	Item No.			Dimensions mm	Item No.		
	Cut 1	2	3		Cut 1	2	3
100 x 4	710.111	710.112	710.113	200 x 8	710.141	710.142	710.143
125 x 5	710.121	710.122	710.123	250 x 10	710.151	710.152	710.153
150 x 6,3	710.131	710.132	710.133				



Knife-shaped precision files (1176 P) back without cut

260

Dimensions mm	Item No.			Dimensions mm	Item No.		
	Cut 1	2	3		Cut 1	2	3
100 x 10 x 3,5	–	711.112	–	200 x 20 x 6,4	711.141	711.142	711.143
150 x 16 x 5,2	711.131	711.132	711.133	250 x 25 x 6,5	–	711.152	–



Birds tongue-shaped precision files (1196 P) unequally rounded

261

Dimensions mm	Item No.		Dimensions mm	Item No.			
	Cut 2	3		Cut 1	2	3	4
100 x 12 x 3,5	712.112	712.113	150 x 15 x 4,5	712.131	712.132	712.133	712.134
125 x 13 x 4	712.122	712.123	200 x 21 x 6	712.141	–	712.143	–



Half round precision files

262

1) Normal, pointed shape (1156 P)

Dimensions mm	Item No.				
	Cut 1	2	3	4	5
100 x 12 x 3,5	713.111	713.112	713.113	713.114	–
125 x 13 x 4	713.121	713.122	713.123	713.124	–
150 x 19 x 5,5	713.131	713.132	713.133	713.134	713.135
200 x 22 x 6,5	713.141	713.142	713.143	713.144	–
250 x 26 x 8	713.151	713.152	713.153	–	–

2) Narrow, pointed shape (1155 P)

Dimensions mm	Item No.			
	Cut 1	2	3	4
125 x 10 x 3	–	713.222	–	–
150 x 12 x 3,5	713.231	713.232	713.233	713.234
200 x 15 x 4,5	713.241	713.242	713.243	–
250 x 15 x 4,5	713.251	713.252	713.253	–



Round precision files

263

1) Normal, pointed shape (1166 P)

Dimensions mm	Item No.				Dimensions mm	Item No.		
	Cut 1	2	3	4		Cut 1	2	3
100 x 4	714.111	714.112	714.113	–	200 x 7,5	714.141	714.142	714.143
125 x 5	714.121	714.122	714.123	–	250 x 9,5	714.151	714.152	714.153
150 x 6	714.131	714.132	714.133	714.134				

2) Cylindrical shape (1164 P)

Dimensions mm	Item No.
	Cut 2
150 x 6	714.332
200 x 7,5	714.342



Remarks for item Nos. 257 – 263: Supplied without handle. Handles see page 74. Item No. 267.

Files for metal working (Cut 0 = extra course)

264



265



266



Special files for light metals

(aluminium files) cut 0

1) flat, blunt (1312)

both flat sides and one narrow side with cut
a) standard width shape

Dimensions mm	150 x 16 x 4	200 x 20 x 5	250 x 25 x 6,3	300 x 30 x 7
Item No.	717.130	717.140	717.150	717.160

b) narrow shape

Dimensions mm	150 x 8 x 3	200 x 10 x 3,5
Item No.	717.230	717.240

2) half-round (1352)

a) standard width shape

Dimensions mm	150 x 18 x 5,5	200 x 22 x 6,5	250 x 26 x 8	300 x 29 x 10
Item No.	717.330	717.340	717.350	717.360

b) narrow shape

Dimensions mm	150 x 10,3 x 3,3	200 x 12,5 x 4,2
Item No.	717.430	717.440

3) round

Dimensions mm	150 x 6 dia.	200 x 8 dia.
Item No.	717.530	717.540



Special files for soft metals

(tin files) cut 0

1) flat, blunt (1612 w)

both flat sides and one narrow side with cut

Dimensions mm	200 x 20 x 5	250 x 25 x 6,3	300 x 30 x 6,7
Item No.	718.140	718.150	718.160

2) half-round (1652 w)

Dimensions mm	200 x 20 x 6,7	250 x 24 x 7	300 x 29 x 10
Item No.	718.240	718.250	718.260



Hardness testing files, triangular (1133), extra hard

All three faces with special double cut; edges with single cut.
Application: for testing the hardness of hardened materials;
max. hardness 63 HRC

	Item No.		
Size	125 x 7 mm	150 x 9 mm	200 x 11 mm
Cut 2	266.022	266.032	-
Cut 3	-	266.033	266.043

Package contains 5 files.
Single files available at extra price.

Remark for Item Nos. 264 – 266: Supplied without handle. Handles see below!

267



File handles

1) **hardwood handle** in accordance with DIN 395,
ground and waxed, with clamp

Item No.	715.108	715.110	715.112	715.114	715.116
Length of handle	80 mm	100 mm	120 mm	140 mm	160 mm
for file length	100 mm	125 – 175 mm	200 mm	250 – 300 mm	400 mm

2) **plastic handle**, handy, impact resistant, excellent grip
Sizes 110 and 120 can be used on both sides.

Item No.	715.210	715.211	715.212
Length of handle	100 mm	110 mm	120 mm
For file length	100 – 150 mm	200 – 250 mm	250 – 300 mm

268



File brushes

For easily cleaning files and for removing filings, thus increasing the performance.

Item No.	716.134	716.334
Length mm	115	115
Width mm	40	55

Milled hand files (milled cut)

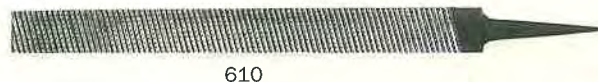
269

cut 1 = coarse cut 2 = medium cut 3 = fine

Package contains 5 files. Single files available at extra price.

1) No. 610 flat, blunt, diagonal toothing, both flat sides and one narrow side toothed

	Item No.			
Dimensions mm	250 x 26 x 7	300 x 31 x 8	350 x 68 x 9	400 x 39 x 10
Cut 1	719.151	719.161	719.171	719.181
Cut 2	719.152	719.162	719.172	-
Cut 3	719.153	719.163	-	-



610

2) No. 611 flat, blunt, radial toothing, both flat sides and one narrow side with radial cut

	Item No.		
Dimensions mm	250 x 24 x 6,2	300 x 29 x 8	350 x 34 x 9,2
Cut 1	719.251	719.261	719.271
Cut 2	719.252	719.262	719.272



611

3) No. 630 triangular, all three sides toothed

	Item No.	
Dimensions mm	250 x 17	300 x 20
Cut 1	719.351	719.361
Cut 2	719.352	719.362
Cut 3	719.353	719.363



630

4) No. 640 square, all four sides toothed

	Item No.	
Dimensions mm	250 x 10	300 x 12
Cut 1	719.451	719.461
Cut 2	719.452	719.462
Cut 3	719.453	719.463



640

5) No. 650 half-round, concave, curved, externally toothed only

	Item No.		
Dimensions mm	250 x 23	300 x 27	350 x 30
Cut 1	719.551	719.561	719.571
Cut 2	719.552	719.562	-



650

6) No. 660 round, tapered

	Item No.	
Dimensions mm	250 x 10	300 x 12
Cut 1	719.651	719.661
Cut 3	719.653	719.663



660

Mini-multi-purpose files (1102 MZ)

270

with PVC-coated steel handle

Special cut for dressing soft metals, plastics and wood.

Shape	Total length	Cut length	Width x thickness	Item No.
Flat, blunt	200 mm	100 mm	10 x 4 mm	703.100



Multi-purpose files (1104 MZ)

270A

with special cut, one face coarse (roughing), the other side fine (smoothing), for dressing steel, non-ferrous metals, soft metals, plastics and wood.

Shape	Dimensions	Item No.
Flat, blunt	200 x 20 x 5 mm	703.220
	250 x 25 x 6,3 mm	703.225



Remark for Item Nos. 269 – 270A: Supplied without handle. Handles see page 75, Item No. 267.

Hand deburring tool Item No. 719.800

271

complete set with universal handle, tool holder and one tool

No. 719.810 u. 719.820

Tools available (shaft dia. 2,6 mm, each package contains 10 pieces):

Item No.	Application
719.810	universal-HSS-tool for steel and aluminium
719.815	tin-coated-HSS-tool with greater hardness
719.814	HM-tool for long shavings materials
719.811	diamond-coated tool for hardened steel
719.820	light HSS-tool for brass and plastics
719.822	tin-coated-HSS-tool with incr. hardness
719.821	HM-tool for short shavings materials
719.830	light HSS-tool for deburring holes in steel and aluminium
719.860	HSS-tool for deburring places which are hard to reach



719.810/815



719.811



719.820/822



719.830



719.814



719.821



719.860

272

Saw files, triangular (sharpening files)

with blank tip, single cut, cut 2

1) No. 1232, most common version

Length of cut x width mm	100 x 9	113 x 10	125 x 11	150 x 13	175 x 14	200 x 16
Item No.	704.110	704.111	704.112	704.115	704.117	704.120

2) No. 1237, small, thin

Length of cut x width mm	100 x 6,3	113 x 7,1	125 x 7,5	150 x 9	175 x 11,2	200 x 12
Item No.	704.210	704.211	704.212	704.215	704.217	704.220

272A

Fine saw files No. 1240, parallel, single cut, cut 3

Length of cut x width mm	100 x 9 x 4
Item No.	705.100

273

Band saw files, triangular

No. 1231, round edges, cut 2

Length of cut x width mm	125 x 13	150 x 15	175 x 16	200 x 17
Item No.	706.112	706.115	706.117	706.120

273A

'ÖBERG'-band saw files, triangular

No. 192, round edges, cut 2

Length of cut x width mm	150 x 11	200 x 14
Item No.	706.215	706.220

Remark for Item Nos. 272 – 273A: Supplied without handle. Handles see page 74, Item No. 267.

274

Machine band saw files, triangular

single cut, No. 3231

with rounded edges, cut 2, without tongue and slot

Length of cut x width mm	215 x 16	215 x 10
Item No.	707.100	707.200

275

Surform-tools

for working hardwood and softwood as well as plastics of all kinds, soft metals and for smooth fillers

1) Multi-purpose plane

Item No. 726.122

can be used as a plane with upright handle or otherwise as a file; red plastic handle, black metal body

2) Standard plane

Item No. 726.296

with a plane handle of black plastic, black metal body

3) Standard file

Item No. 726.295

ideal file shape; black plastic handle, black metal body

4) Round file

Item No. 726.297

for enlarging holes and for working and smoothing round edges, ideal for turnery, strong plastic handle

5) Block plane

Item No. 726.399

handy tool for working corners and small surfaces; red metal body, with adjustable blade

6) Scraper

Item No. 726.115

handy plastic handle; increased cutting action by slightly curved blade; blade exchangeable within seconds

7) Spare blades

Item No.	Description	Size	For tool No.
726.293	Standard blade	250 x 42 mm	726.122, 726.296, 726.295
726.393	Fine blade	250 x 42 mm	726.122, 726.296, 726.295
726.299	Half-round blade	250 x 42 mm	726.122, 726.296, 726.295
726.291	Round blade	250 x 15 mm	726.297
726.398	Blockplane blade	140 x 42 mm	726.399
726.515	Scraper blade	60 x 42 mm	726.115



Light-duty files for metal working

with high precision cuts

Type 1 to 74, in two different sizes:

Size B = 150 mm total length

Size E = 170 mm total length

Cut 1 = coarse (pref. for alu-working)

Cut 2 = medium

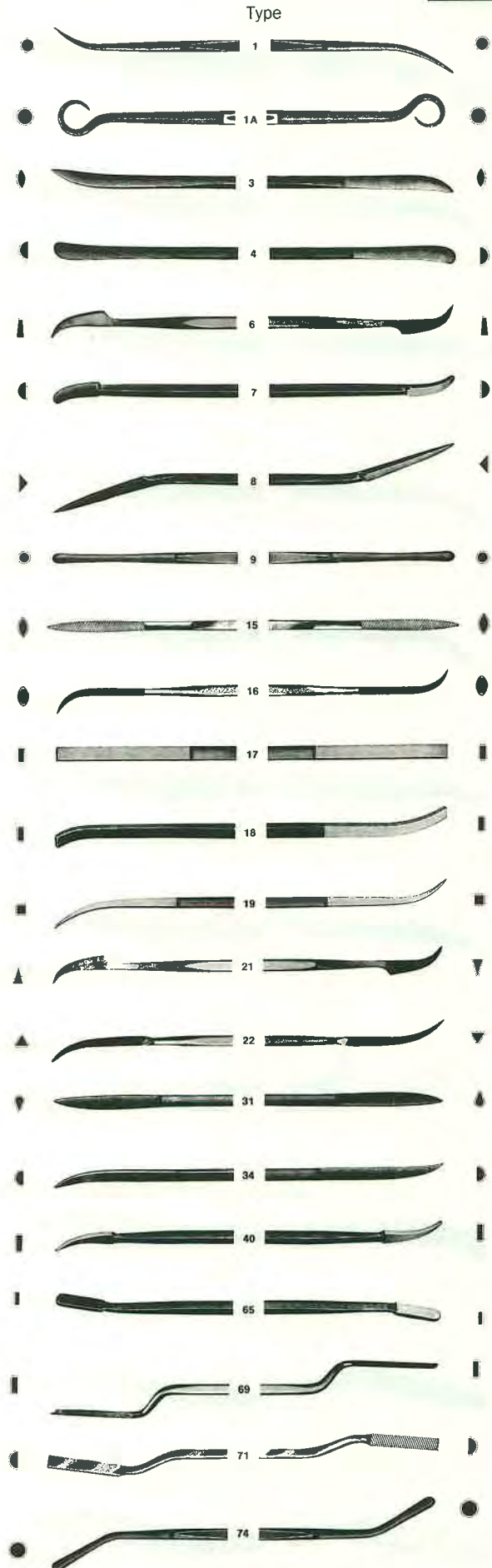
Cut 3 = fine

Cut is adapted to the size of the file; cut 1 of size B is for example finer than cut 1 of size E

Type	Size	Cut 1	Cut 2	Cut 3
		Item No.		
1	B	720.01B1	720.01B2	720.01B3
	E	720.01E1	720.01E2	720.01E3
1A	B	720.1AB1	720.1AB2	720.1AB3
	E	720.1AE1	720.1AE2	720.1AE3
3	B	720.03B1	720.03B2	720.03B3
	E	720.03E1	720.03E2	720.03E3
4	B	720.04B1	720.04B2	720.04B3
	E	720.04E1	720.04E2	720.04E3
6	B	720.06B1	720.06B2	720.06B3
	E	-	720.06E2	-
7	B	720.07B1	720.07B2	720.07B3
	E	720.07E1	720.07E2	-
8	B	720.08B1	720.08B2	-
	E	720.08E1	720.08E2	-
9	B	720.09B1	720.09B2	720.09B3
	E	720.09E1	720.09E2	-
15	B	-	720.15B2	720.15B3
	E	720.15E1	720.15E2	720.15E3
16	B	-	720.16B2	720.16B3
	E	720.16E1	720.16E2	-
17	B	720.17B1	720.17B2	720.17B3
	E	720.17E1	720.17E2	720.17E3
18	B	720.18B1	720.18B2	720.18B3
	E	720.18E1	720.18E2	720.18E3
19	B	720.19B1	720.19B2	720.19B3
	E	720.19E1	720.19E2	-
21	B	720.21B1	720.21B2	720.21B3
	E	720.21E1	720.21E2	-
22	B	720.22B1	720.22B2	720.22B3
	E	720.22E1	720.22E2	720.22E3
31	B	-	720.31B2	720.31B3
	E	720.31E1	720.31E2	720.31E3
34	B	720.34B1	720.34B2	720.34B3
	E	720.34E1	720.34E2	720.34E3
40	B	720.40B1	720.40B2	720.40B3
	E	720.40E1	720.40E2	-
65	B	720.65B1	720.65B2	720.65B3
	E	720.65E1	720.65E2	720.65E3
69	B	-	720.69B2	-
	E	720.69E1	720.69E2	720.69E3
71	B	-	720.71B2	720.71B3
	E	720.71E1	720.71E2	-
74	B	-	720.74B2	720.74B3
	E	720.74E1	720.74E2	-

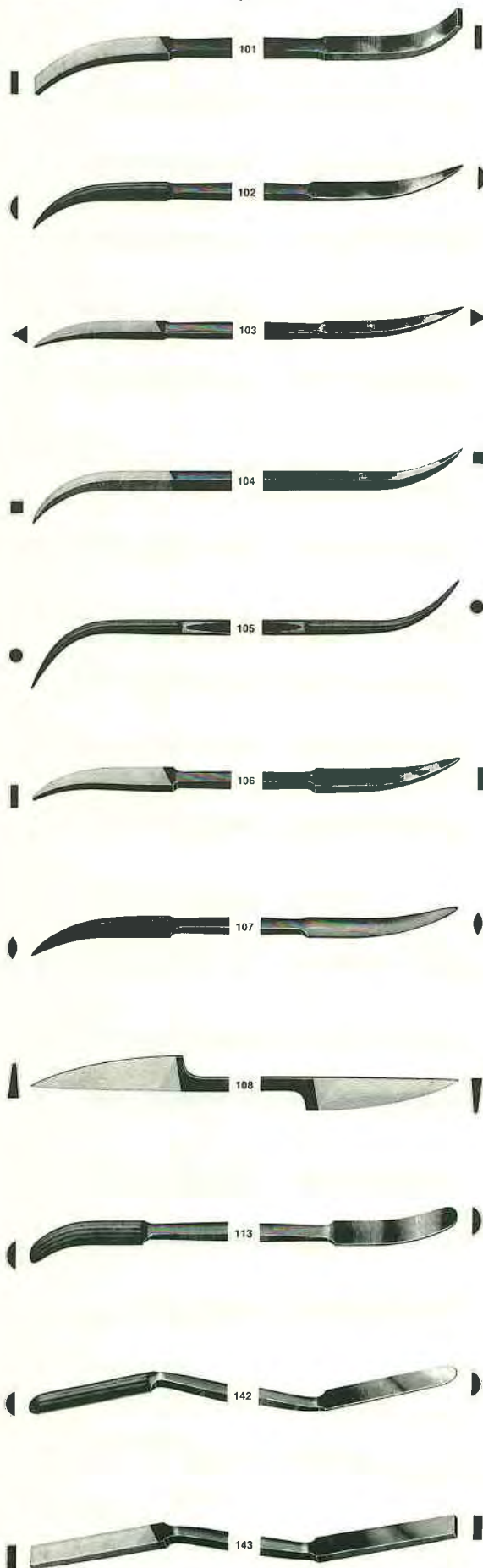
Files of size E, cut 1 are available from stock.

Min. quantities for all other types is 5 pieces per type.



276A

Type



Heavy-duty files for metal working

with high precision cuts

Type 101 to 143, in three different sizes:

Size F = 180 mm total length

Size G = 200 mm total length

Size R = 315 mm total length

Cut 1 = coarse (**pref. for alu-working**)

Cut 2 = medium

Cut 3 = fine

Cut is adapted to the size of the file; cut 1 of size F is for example finer than cut 1 of size R

Type	Size	Item No.		
		Cut 1	Cut 2	Cut 3
101	F	720.101F1	720.101F2	720.101F3
	G	720.101G1	—	720.101G3
	R	720.101R1	—	—
102	F	720.102F1	720.102F2	—
	G	720.102G1	—	720.102G3
	R	720.102R1	—	—
103	F	720.103F1	720.103F2	720.103F3
	G	720.103G1	—	720.103G3
	R	720.103R1	—	—
104	F	720.104F1	720.104F2	—
	G	720.104G1	—	720.104G3
	R	720.104R1	—	—
105	F	720.105F1	720.105F2	720.105F3
	G	720.105G1	—	720.105G3
	R	720.105R1	—	—
106	F	720.106F1	720.106F2	—
	G	720.106G1	—	720.106G3
	R	720.106R1	—	—
107	F	720.107F1	720.107F2	—
	G	720.107G1	—	720.107G3
	R	720.107R1	—	—
108	F	720.108F1	720.108F2	720.108F3
	G	720.108G1	—	720.108G3
	R	720.108R1	—	—
113	F	720.113F1	720.113F2	—
	G	720.113G1	—	720.113G3
	R	720.113R1	—	—
142	F	720.142F1	720.142F2	—
	G	720.142G1	—	—
	R	720.142R1	—	—
143	F	720.143F1	720.143F2	720.143F3
	G	720.143G1	—	720.143G3
	R	720.143R1	—	—

Files of size F, cut 1, are available from stock.

Min. quantity for all other types is 5 pieces per type.

Needle point files with round handle











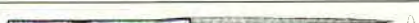

277

Shaft dia. 2,25 mm

Cuts: 00 (coarse), 2 (medium) or 4 (fine)

(Other cuts upon request)

Minimum quantity per shape and cut: 5 pieces

Type	Shape	Total length	100 mm	140 mm	160 mm	180 mm	200 mm	
		Length of cut	50 mm	70 mm	80 mm	90 mm	100 mm	
				Item No.				
2112	flat, blunt	Cut 00	—	721.120	721.130	721.140	721.150	
		2	721.112	721.122	721.132	721.142	721.152	
		4	—	721.124	721.134	721.144	721.154	
2113	flat, blunt with rounded edges	Cut 2	721.162	721.172	721.182	721.192	721.202	
2122	flat, pointed	Cut 00	—	—	721.230	—	—	
		2	721.212	721.222	721.232	721.242	721.252	
		4	—	—	722.234	—	—	
2123	flat, pointed with rounded edges	Cut 2	721.262	721.272	721.282	721.292	721.602	
2132	triangular	Cut 00	—	—	721.330	721.340	721.350	
		2	721.312	721.322	721.332	721.342	721.352	
		4	—	721.324	721.334	—	721.354	
2142	square	Cut 00	—	—	721.430	721.440	721.450	
		2	721.412	721.422	721.432	721.442	721.452	
		4	—	721.424	721.434	—	721.454	
2152	half-round	Cut 00	—	—	721.530	721.540	721.550	
		2	721.512	721.522	721.532	721.542	721.552	
		4	—	721.524	721.534	721.544	721.554	
2162	round	Cut 00	—	721.620	721.630	721.640	721.650	
		2	721.612	721.622	721.632	721.642	721.652	
		4	—	721.624	721.634	721.644	721.654	
2172	knife	Cut 00	—	—	721.730	721.740	721.750	
		2	721.712	721.722	721.732	721.742	721.752	
		4	—	721.724	721.734	—	—	
2182	sword	Cut 2	721.812	721.822	721.832	721.842	721.852	
2192	birds tongue	Cut 2	721.912	721.922	721.932	721.942	721.952	
2102	cant	Cut 00	—	—	721.030	—	721.050	
		2	721.012	721.022	721.032	721.042	721.052	
		4	—	721.024	721.034	—	721.054	

Set of needle point files

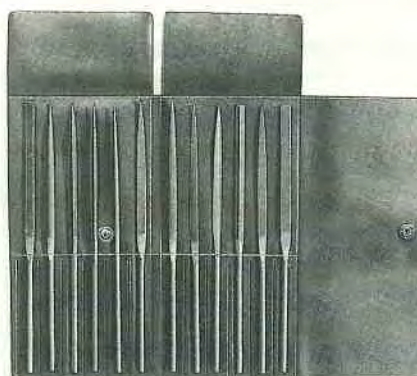
277A

comprising 12 different shapes, shapes are listed under No. 277 cut 2

1) in a plastic case, No. 2100

2) in a plastic box, No. 2101

Total length	Item No.				
	100 mm	140 mm	160 mm	180 mm	200 mm
Type 2100	721.960	721.964	721.966	721.968	721.970
Type 2101	—	721.974	721.976	—	—



Plastic handles

277B

with collet, total length 80 mm, for needle point files (total length 140 – 200 mm)

Item No. 721.980



278



Diamond files

for working hardened steel, hard metal, ceramic and other hard materials. Indispensable in tool and jig making. Just apply **light pressure** as high pressure increases the wear, but not the performance, clean files with a metal brush in petroleum.

1) Multi-purpose-diamond files

Handle with comfortable **PVC-coating**

Grain D 126 (medium) – for multi-purpose application)

Length available:

Total length mm

160

200

215

length with coating mm

50

80

80

Model	Length	160 mm	200 mm	215 mm
	Shape	Item No.		
2312	flat, blunt	722.011	722.012	722.013
2332	triangular	722.021	722.022	722.023
2342	square	722.031	722.032	722.033

Model	Length	160 mm	200 mm	215 mm
	Shape	Item No.		
2352	half-round	722.041	722.042	722.043
2362	round	722.051	722.052	722.053
2300	compl. 5-p.-set	722.061	722.062	722.063



2) Needle point diamond files

shapes as illustrated under Needle point files – Item No. 277

3 different grain sizes:

D 91 (fine, for fine filing);

D 126 (medium, for multi-purpose);

D 151 (coarse, for rough filing)

Total length 140 mm, length with diamond coating 70 mm, shaft dia. 3 mm

Model	Grain	D 91	D 126	D 151
	Shape	Item No.		
D 2112	flat, blunt	722.111	722.112	722.113
D 2113	flat, blunt with trimmed edges	722.115	722.116	722.117
D 2122	flat, pointed	722.121	722.122	722.123
D 2123	flat, pointed with trimmed edges	722.125	722.126	722.127
D 2132	triangular	722.131	722.132	722.133

Model	Grain	D 91	D 126	D 151
	Shape	Item No.		
D 2142	square	722.141	722.142	722.143
D 2152	half-round	722.151	722.152	722.153
D 2162	round	722.161	722.162	722.163
D 2172	knife	722.171	722.172	722.173
D 2182	sword	722.181	722.182	722.183
D 2192	birds tongue	722.191	722.192	722.193
D 2102	cant	722.201	722.202	722.203

279



VALTITAN®-needle point files

with **yellow** shaft (Swiss make)

hardened (1200 HV), for working extremely hard materials such as titanium, molybdenum or polyester, acrylic or similar materials

Stainless, non-clogging, simply beat out to remove filings

Cuts available: Swiss cut

0 2

equal to German cut

1 3

Total length 180 mm, shaft dia. 3,8 mm

Model	Cut	0	2
	Shape	Item No.	
LAV 2401	flat, blunt	722.310	722.312
LAV 2402	half-round	722.320	722.322
LAV 2406	flat, pointed	722.330	722.332

Model	Cut	0	2
	Shape	Item No.	
LAV 2407	triangular	722.340	722.342
LAV 2408	square	722.350	722.352
LAV 2410	round	722.360	722.362

Package contains 12 pieces

Individual files are available at extra charge

279A



HABILIS-files with integrated handle (Swiss make)

with cylindrical forged tongue which makes the use of a handle obsolete. Especially suitable for tool and jig making. Thanks to its narrow shape hard-to-reach-places can be worked. More robust than needle point files, therefore higher working pressure can be applied.

Cuts available: Swiss cut

00 1

equal to German cut

0 2

Total length 215 mm, length of cut 105 mm

Model	Cut	00	1
	Shape	Item No.	
LH 2601	flat, blunt	722.410	722.411
LH 2602	half-round	722.420	722.421
LH 2607	triangular	722.430	722.431

Model	Cut	00	1
	Shape	Item No.	
LH 2608	square	722.440	722.441
LH 2610	round	722.450	722.451
LH 2630	5-p.-set	722.460	722.461

Package contains 12 pieces. Individual files are available at extra charge (with the exception of set 2630)

279B



Set of warding files Item No. 723.001 (1187 S)

assortment of 6 shapes, with wooden handle, in a plastic case, length of cut 100 mm, cut 2

Shapes						
	flat, blunt	half-round	triangular	square	round	flat, pointed
Width x thickness mm	10 x 1,4	9 x 2,5	5	3,2	3,2	10 x 1,4

All shapes are also available individually.

Tapered shank-type cutters for light metal, plywood and plastics

for use in the patternmaking shop, face-cutting, 35° spiral-fluted cutter,
Material: HSS-E (5 % Co.)

1) with straight shank, 3 cutting edges, No. 2100

Pos.	Item No.	Shank dia. h 8 mm	Angle	Min. dia. (face dia.) mm	Max. dia. mm	Cutting length mm	Total length mm
1	737.101	8	0°	8,0	8,0	40	90
2	737.102	8	30°	7,3	8,0	40	90
3	737.103	8	1°	6,6	8,0	40	90
4	737.104	8	1° 30'	5,9	8,0	40	90
5	737.105	8	2°	5,2	8,0	40	90
6	737.106	8	3°	3,8	8,0	40	90
7	737.107	8	5°	4,0	11,0	40	90
8	737.108	10	0°	10,0	10,0	60	110
9	737.109	10	30°	8,95	10,0	60	110
10	737.110	10	1°	7,9	10,0	60	110
11	737.111	10	1° 30'	6,86	10,0	60	110
12	737.112	10	2°	5,81	10,0	60	110
13	737.113	10	3°	5,21	11,5	60	110
14	737.114	10	5°	5,21	15,7	60	110
15	737.115	12	0°	12,0	12,0	70	125
16	737.116	12	30°	10,78	12,0	70	125
17	737.117	12	1°	9,55	12,0	70	125
18	737.118	12	1° 30'	8,33	12,0	70	125
19	737.119	12	2°	7,11	12,0	70	125
20	737.120	12	3°	5,16	12,5	70	125
21	737.121	12	5°	5,16	17,4	70	125
22	737.122	14	0°	14,0	14,0	75	130
23	737.123	14	30°	12,7	14,0	75	130
24	737.124	14	1°	11,4	14,0	75	130
25	737.125	14	1° 30'	10,07	14,0	75	130
26	737.126	14	2°	8,7	14,0	75	130
27	737.127	14	3°	6,2	14,0	75	130
28	737.128	14	5°	6,2	19,3	75	130

Other tapers (6° to 20°) upon request.

We also supply cutters with different angles of taper:

2.5, 6, 7, 8, 10, 12, 15, 20, 25, 30 and 45 degrees in different diameters

Please ask for special catalogue 'Tapered die-sinking cutters'!

2) with Morse-taper and thread, No. 2110

up to pos. 14 with 3 cutting edges, all other cutters with 4 edges.

Pos.	Item No.	MK shank thread	Angle	Min. dia. (face dia.) mm	Max. dia. mm	Cutting length mm	Total length mm
1	737.201	2/M10	0°	18,0	18,0	85	164
2	737.202	2/M10	30°	16,5	18,0	85	164
3	737.203	2/M10	1°	15,0	18,0	85	164
4	737.204	2/M10	1° 30'	13,55	18,0	85	164
5	737.205	2/M10	2°	12,0	18,0	85	164
6	737.206	2/M10	3°	10,0	19,0	85	164
7	737.207	2/M10	5°	10,0	25,0	85	164
8	737.208	3/M12	0°	24,0	24,0	115	216
9	737.209	3/M12	30°	22,0	24,0	115	216
10	737.210	3/M12	1°	20,0	24,0	115	216
11	737.211	3/M12	1° 30'	17,98	24,0	115	216
12	737.212	3/M12	2°	16,0	24,0	115	216
13	737.213	3/M12	3°	12,0	24,0	115	216
14	737.214	3/M12	5°	12,0v	32,0	115	216
15	737.215	4/M16	0°	35,0	35,0	150	307
16	737.216	4/M16	30°	32,4	35,0	150	307
17	737.217	4/M16	1°	30,0	35,2	150	307
18	737.218	4/M16	1° 30'	27,64	35,5	150	307
19	737.219	4/M16	2°	25,0	35,5	150	307
20	737.220	4/M16	3°	20,0	35,7	150	307
21	737.221	4/M16	5°	20,0	46,2	150	307

3) with steep angle, taper and thread, 4 cutting edges, No. 2140

Pos.	Item No.	ISO- shank thread	Angle	Min. dia. (face dia.) mm	Max. dia. mm	Cutting length mm	Total length mm
1	737.501	40/M16	0°	35,0	35,0	150	275
2	737.502	40/M16	30°	32,4	35,0	150	275
3	737.503	40/M16	1°	30,0	35,2	150	275
4	737.504	40/M16	1° 30'	27,64	35,5	150	275
5	737.505	40/M16	2°	25,0	35,5	150	275
6	737.506	40/M16	3°	20,0	35,7	150	275
7	737.507	40/M16	5°	20,0	46,2	150	275



Other sizes upon request.



We also sharpen cutters!



Tapered shank-type cutters for cast iron and steel

for use in the patternmaking shop, face cutting, 30° spiral-fluted cutter
Material: HSS-EM 42 (8% Co.)

1) with straight shank, No. 2120

up to pos. 14 with 4 cutting edges, all other cutters with 5 edges

Pos.	Item No.	Shank h 8 mm	Scale	Min. dia. (face dia.) mm	Max. dia. mm	Cutting length mm	Total length mm
1	737.301	8	0°	8,0	8,0	30	80
2	737.302	8	30'	7,5	8,0	30	80
3	737.303	8	1°	7,0	8,0	30	80
4	737.304	8	1° 30'	6,43	8,0	30	80
5	737.305	8	2°	5,9	8,0	30	80
6	737.306	8	3°	4,9	8,0	30	80
7	737.307	8	5°	5,9	11,0	30	80
8	737.308	10	0°	10,0	10,0	40	90
9	737.309	10	30'	9,3	10,0	40	90
10	737.310	10	1°	8,6	10,0	40	90
11	737.311	10	1° 30'	7,9	10,0	40	90
12	737.312	10	2°	7,2	10,0	40	90
13	737.313	10	3°	5,8	10,0	40	90
14	737.314	10	5°	6,0	13,0	40	90
15	737.315	14	0°	14,0	14,0	50	105
16	737.316	14	30'	13,1	14,0	50	105
17	737.317	14	1°	12,3	14,0	50	105
18	737.318	14	1° 30'	11,38	14,0	50	105
19	737.319	14	2°	10,5	14,0	50	105
20	737.320	14	3°	8,8	14,0	50	105
21	737.321	14	5°	9,0	17,6	50	105

Other tapers (6° to 20°) upon request.

We also supply cutters with different angles of taper:

2.5, 6, 7, 8, 10, 12, 15, 20, 25, 30 and 45 degrees in different diameters

Please ask for special catalogue 'Tapered die-sinking cutters'!

2) with Morse-taper and thread, No. 2130

5 cutting edges.

Pos.	Item No.	MK shank thread	Angle	Min. dia. (face dia.) mm	Max. dia. mm	Cutting length mm	Total length mm
1	737.401	2/M10	0°	18,0	18,0	65	144
2	737.402	2/M10	30'	16,9	18,0	65	144
3	737.403	2/M10	1°	15,7	18,0	65	144
4	737.404	2/M10	1° 30'	14,6	18,0	65	144
5	737.405	2/M10	2°	13,5	18,0	65	144
6	737.406	2/M10	3°	12,3	19,0	65	144
7	737.407	2/M10	5°	13,6	25,0	65	144
8	737.408	3/M12	0°	24,0	24,0	90	191
9	737.409	3/M12	30'	22,4	24,0	90	191
10	737.410	3/M12	1°	20,9	24,0	90	191
11	737.411	3/M12	1° 30'	19,29	24,0	90	191
12	737.412	3/M12	2°	17,7	24,0	90	191
13	737.413	3/M12	3°	14,6	24,0	90	191
14	737.414	3/M12	5°	16,6	32,0	90	191
15	737.415	4/M16	0°	35,0	35,0	120	277
16	737.416	4/M16	30'	32,4	35,0	120	277
17	737.417	4/M16	1°	31,0	35,2	120	277
18	737.418	4/M16	1° 30'	29,22	35,5	120	277
19	737.419	4/M16	2°	27,1	35,5	120	277
20	737.420	4/M16	3°	23,1	35,7	120	277
21	737.421	4/M16	5°	24,7	45,7	120	277

3) with steep-angle taper and thread, 5 cutting edges, No. 2140

Pos.	Item No.	ISO- shank thread	Angle	Min. dia. (face dia.) mm	Max. dia. mm	Cutting length mm	Total length mm
8	737.508	40/M16	0°	35,0	35,0	120	245
9	737.509	40/M16	30'	32,4	35,0	120	245
10	737.510	40/M16	1°	31,0	35,2	120	245
11	737.511	40/M16	1° 30'	29,22	35,5	120	245
12	737.512	40/M16	2°	27,1	35,5	120	245
13	737.513	40/M16	3°	23,1	35,7	120	245
14	737.514	40/M16	5°	24,7	44,2	120	245

We also sharpen cutters!

Turbo-cutters of HSS with straight shank

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Types of serration and applications

Serration 1



light metals (long chips),
light metal alloys, lead, tin,
plastics

Serration 2



light metals (short chips),
brass, copper alloys

Serration 3



steel and cast steel,
alloyed and unalloyed,
cast iron and
malleable cast iron

Serration 5



steel and cast
steel, alloyed and
unalloyed

Cyl. shape 'AS' with face serration



Type	AS 0304	AS 0607	AS 0616	AS 0820	AS 1013	AS 1225	AS 1625
Head size	3 x 4 mm	6 x 7 mm	6 x 16 mm	8 x 20 mm	10 x 13 mm	12 x 25 mm	16 x 25 mm
Serration/ 1	-	-	742.031	-	-	742.061	742.071
Item No. 2	-	-	742.032	-	742.052	742.062	742.072
3	-	-	742.033	742.043	742.053	742.063	742.073
5	742.015	742.025	742.035	-	742.055	-	-

Pointed arch shape G



Type	G 0618	G 1220	G 1225	G 1230	G 1630
Head size	6 x 18 mm	12 x 20 mm	12 x 25 mm	12 x 30 mm	16 x 30 mm
Serration/ 1	742.211	742.221	-	742.241	742.251
Item No. 2	742.212	742.222	-	742.242	742.252
3	742.213	742.223	742.233	742.243	742.253
5	742.215	-	-	742.245	742.255

Spherical shape D



Type	D 0302	D 0403	D 0504	D 0605	D 0807	D 1009	D 1210	D 1614
Head dia.	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	16 mm
Serration/ 1	-	-	-	-	742.451	-	742.471	742.481
Item No. 2	-	-	-	742.442	742.452	742.462	742.472	742.482
3	742.413	742.423	742.433	742.443	742.453	742.463	742.473	742.483
5	-	-	-	-	742.455	742.465	-	-

Flame shape H



Type	H 0305	H 0608	H 0820	H 1230	H 1635	H 1750
Head size	3 x 5 mm	6 x 8 mm	8 x 20 mm	12 x 30 mm	16 x 35 mm	17 x 50 mm
Serration/ 1	-	-	-	-	-	742.551
Item No. 3	-	-	742.523	742.533	742.543	-
5	742.505	742.515	-	-	-	-

Acute taper shape M



Type	M 0304	M 0607	M 0618	M 0820	M 1020	M 1225	M 1230
Head size	3 x 4 mm	6 x 7 mm	6 x 18 mm	8 x 20 mm	10 x 20 mm	12 x 25 mm	12 x 30 mm
Serration/ 1	-	-	742.831	-	-	742.861	742.871
Item No. 2	-	-	742.832	-	742.852	742.862	742.872
3	-	-	742.833	742.843	742.853	742.863	742.873
5	742.815	742.825	742.835	-	742.855	-	742.875

rounded cyl. shape 'C'



Type	C 0304	C 0620	C 0850	C 1020	C 1225
Head size	3 x 4 mm	6 x 20 mm	8 x 50 mm	10 x 20 mm	12 x 25 mm
Serration/ 1	-	742.121	742.131	-	742.151
Item No. 2	-	742.122	742.132	-	742.152
3	-	742.123	-	742.143	742.153
5	742.115	742.125	-	-	742.155

Drop shape E



Type	E 0607	E 1220	E 1625
Head size	6 x 7 mm	12 x 20 mm	16 x 25 mm
Serration/ 1	-	742.321	742.331
Item No. 2	-	742.322	742.332
3	-	742.323	742.333
5	742.315	-	-

Club shape K



Type	K 0620	K 1230
Head size	6 x 18 mm	12 x 20 mm
Serration/ 2	742.612	742.622
Item No. 3	742.613	742.623

Round taper shape L



Type	L 1020	L 1230	L 1630
Head size	10 x 20 mm	12 x 30 mm	16 x 30 mm
Serration/ 1	-	-	742.731
Item No. 2	742.712	-	742.732
3	742.713	742.723	742.733
5	-	-	742.735

Angle shape N










Type	N 0303	N 0606	N 1213	N 1230
Head size	3 x 3 mm	6 x 6 mm	12 x 13 mm	12 x 30 mm
Serration/ 1	-	-	742.931	-
Item No. 2	-	-	742.932	-
3	-	-	742.933	742.943
5	742.915	742.925	-	-

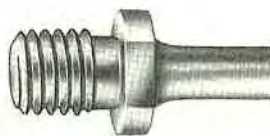
Turbo-cutters (with internal thread) of HSS

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types of toothing and fields of application see above Fitting cutter bolts see Item 282 A, page 84

	Cyl. form AS with face serration				Pointed arch shape G		Round taper shape L	
								
Type	AS 2215		AS 3030		G 2045	G 3555	L 2055	
Head size	22 x 15 mm		30 x 30 mm		20 x 45 mm	35 x 55 mm	20 x 55 mm	
Intern.thread			M 8 M 10			M 10	M 12 M 10	
Serration/ 1	-		-		-	744.221	744.611	
Item No. 2	-		744.122		744.212	-	-	
3	744.113		-		-	-	-	
	Spherical shape D				Drop shape E		Flame shape H	Acute taper sh. M
								
Type	D 2018	D 2522	D 3027	D 3532	E 2535	H 2055	M 2540	
Head size	20 mm dia.	25 mm dia.	30 mm dia.	35 mm dia.	25 x 35 mm	20 x 55 mm	25 x 40 mm	
Intern.thread	M 8	M 10	M 12	M 12	M 12	M 10	M 10	
Serration/ 1	744.411	744.421	-	-	-	744.511	-	
Item No. 2	-	744.422	-	-	-	744.512	-	
3	744.413	-	744.433	744.443	744.313	-	744.713	

282A



Cutter bolts for internal-thread cutters

(see page 83, Item 282)

Item No.	744.801	744.802	744.803	744.811	744.812	744.821
Shank dia.	6 mm			8 mm		10 mm
Thread	M 10	M 12	M 8	M 10	M 12	M 10
Total length	52 mm	54 mm	50 mm	52 mm	54 mm	52 mm

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Turbo-files of HSS

Cuts and applications



Cut 1

steel, cast iron, malleable cast iron






Cut 2





steel and cast steel, alloyed and unalloyed



Cut 3

steel and cast steel, alloyed and unalloyed

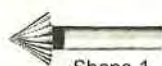
	Cyl. shape A			Rounded cyl. shape C		Spherical shape D	
							
Type	A 0616FH	A 1225FH	A 1625FH	C 0620FH	C 1225FH	D 0807FH	D 1009FH
Head size	6 x 16 mm	12 x 25 mm	16 x 25 mm	6 x 20 mm	12 x 25 mm	8 mm dia.	10 mm dia.
Cut/ 1	745.111	745.121	745.131	-	745.221	-	-
Item No. 2	745.112	745.122	-	-	745.222	745.312	745.322
3	745.113	-	-	745.213	-	745.313	-

	Oval shape E	Pointed tree shape G			Cone radius end L	Conical shape M	
							
Type	E 1220FH	G 0618FH	G 1230FH	G 1630FH	L 1535FH	M 0816PH	M 1230FH
Head size	12 x 20 mm	6 x 18 mm	12 x 30 mm	16 x 30 mm	15 x 35 mm	8 x 16 mm	12 x 30 mm
Cut/ 1	745.411	745.511	745.521	745.531	745.611	-	-
Item No. 2	-	745.512	745.522	-	-	745.712	745.722
3	-	745.513	745.523	-	-	-	-

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Engraving cutters of HSS with straight shanks

Serration 5 (see ill.) Shaft: 3 x 40 mm



Shape 1

Item No.	Head dia. x length mm
748.827	4 x 2,8
748.828	5 x 3,5
748.829	6 x 4,2
748.830	7 x 5
748.831	8 x 5,5
748.837	6 x 6
748.839	8 x 8



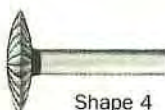
Shape 3

Item No.	Head dia. mm
748.848	1,6
748.849	2,3
748.850	3,2
748.851	4,0
748.852	5,0
748.853	6,0
748.854	7,0
748.855	8,0



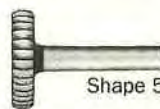
Shape 2

Item No.	Head dia. x length mm
748.840	1,6 x 2,8
748.841	2,3 x 4
748.842	3,2 x 5,6
748.843	4 x 7
748.844	5 x 8,7
748.845	6 x 10,5
748.846	7 x 12,5
748.847	8 x 14



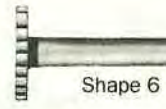
Shape 4

Item No.	Head dia. x thickn. mm
748.864	8 x 2
748.865	10 x 2,5
748.866	12 x 3
748.867	14 x 3,5



Shape 5

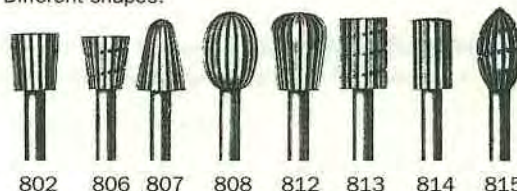
Item No.	Head dia. x thickn. mm
748.868	8 x 2
748.869	10 x 2,3
748.870	12 x 2,6
748.871	14 x 3



Shape 6

Item No.	Head dia. x thickn. mm
748.872	6 x 1
748.873	8 x 1
748.874	10 x 1

Different shapes:



Item No.	Head dia. x length mm
748.802	7 x 8
748.806	7 x 7,5
748.807	7 x 10
748.808	8 x 11

Item No.	Head dia. x length mm
748.812	8 x 11
748.813	7 x 10
748.814	6 x 10
748.815	7 x 12

The above engraving millers cannot be resharpened!

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Reducers (adapters)

The above reducers are required when using 3-mm shank tools on machines with 6-mm chucks.



Item No.	749.001
Outside dia. mm	6
Inside dia. mm	3
Total length mm	25

Engraving cutters in different profiles (see opposite ill.)

1) made of tungsten carbide (K10)
for steel, iron, non-ferrous metals and plastics

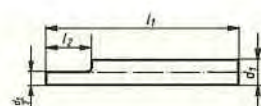
Dimensions mm			Profile/Item No.		
d ₁	l ₁	l ₂	A	D	F
2	40	6	750.011	750.012	750.013
3	40	6	750.021	750.022	750.023
3	100	6	750.031	-	-
4	40	6	750.041	750.042	750.043
4	60	6	750.051	750.052	750.053
4	100	6	750.061	750.062	750.063
5	50	8	750.071	-	-
5	100	8	750.081	-	-
6	70	8	750.091	750.092	750.093
6	100	8	750.101	750.102	750.103
8	80	12	750.111	750.112	-
8	100	12	750.121	-	-
8	150	12	750.131	-	-
10	80	14	750.141	-	-
10	100	14	750.151	750.152	-
10	150	14	750.161	-	-
12	80	16	750.171	-	-
12	100	16	750.181	-	-
12	150	16	750.191	-	-

Packing unit: 1 pc.

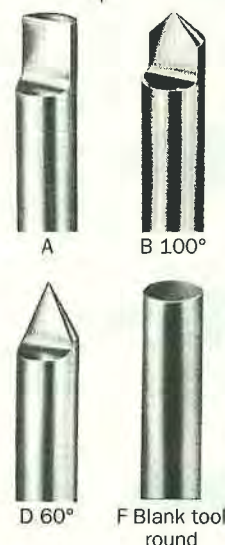
2) made of HSS 50
for steel, iron, non-ferrous metals and plastics

Dimensions mm			Profile/Item No.		
d ₁	l ₁	l ₂	A	B	F
2,5	40	6	750.211	750.212	-
3	40	6	750.221	-	-
4	60	10	750.231	750.232	750.233
4	100	10	750.241	-	750.243
5	60	10	750.251	750.252	-
6	80	14	750.261	750.262	750.263
6	100	14	750.271	-	750.273
6	160	14	-	750.282	750.283
8	90	16	750.291	750.292	-
8	125	16	750.301	-	750.303
8	160	16	-	750.312	-
10	125	18	750.321	-	750.323
10	160	18	750.331	-	-
12	125	18	750.341	-	750.343
12	160	18	750.351	-	-
14	140	20	750.361	-	750.363
16	160	20	750.371	-	-
16	200	20	750.381	750.382	750.383
20	200	20	750.391	-	-

Packing unit: 5 pcs. up to 10 mm dia.,
others: 2 pcs.



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Other profiles and qualities are also available! Quantities should be specified.

Remark: The cutting edges are semi-finished on length l₂ for the half of the shank diameter
(does not apply to profile F = blank tool round)

Marking pen MST 31, compressed-air operated

Item No. 285.001

Patented pneumatic engraving pen working on a new principle at about three times the frequency of existing similar products.

For engraving markings in metal, glass, plastics and even heat-treated tool steel (with fine needle). Does not transmit harmful vibrations to the hand.

Delivery contains tungsten carbide engraving needle medium.

Front exhaust

Air consumption 25 – 30 m³/min

For 4 mm ID air supply hose

Frequency: 500 – 600 strokes/sec.

Hose length 3000 mm

Operating pressure 6 – 7 bar

Supplied complete with

air supply



285A



Additional needles:

Needle type	Coarse	Medium	Fine
Item No.	285.101	285.102	285.103

Tungsten carbide miniature burrs with 3 mm shank

A high stock removal capability over the entire tool life ensures maximum results within a minimum of time. Thus, PFERD quality burrs and rotary cutters will help you to reduce labour costs.



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Cut 3 PLUS (3P)



- Universal use on ferrous and non-ferrous metals and plastics.
- Fettling of castings.
- Surface machining.
- No loading problems.
- Produces even, smooth surfaces.

Cut 5



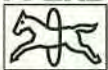
- For hardened and high-strength materials, die steels and steel castings.
- For tough welded claddings, weld seam dressing.
- Deburring and chamfering.
- Cut 5 produces smoother surface than cut 3.

Type	Cylindrical AS with end cut				Flame shape B		Cylindrical radius end C			Ball shape D		
	AS 0210	AS 0313	AS 0607	AS 0613	3B 0307	3B 0613	C 0210	C 0313	C 0613	D 0302	D 0403	D 0605
Head dim.	2 x 10 mm	3 x 13 mm	6 x 7 mm	6 x 13 mm	3 x 7 mm	6 x 13 mm	2 x 10 mm	3 x 13 mm	6 x 13 mm	3 mm dia.	4 mm dia.	6 mm dia.
Cut/ 3P	751.002	751.012	751.022	751.032	-	-	751.062	751.072	751.082	751.122	751.132	751.142
Item No. 5	751.005	751.015	751.025	751.035	751.045	751.055	751.065	751.075	751.085	751.125	751.135	751.145
Type	Oval shape E		Tree shape F		Pointed tree shape G			Conical M			Inverted cone shape KN	
	E 0307	E 6010	F 0307	F 0613	G 0307	G 0313	G 0613	M 0307	M 0311	M 0613	KN 0307	KN 0607
Head dim.	3 x 7 mm	6 x 10 mm	3 x 7 mm	6 x 13 mm	3 x 7 mm	3 x 13 mm	6 x 13 mm	3 x 7 mm	3 x 11 mm	6 x 13 mm	3 x 7 mm	6 x 7 mm
Cut/ 3P	751.112	751.232	751.182	751.222	751.192	751.202	751.212	751.152	751.162	751.172	751.092	751.102
Item No. 5	751.115	751.235	751.185	751.225	751.195	751.205	751.215	751.155	751.165	751.175	751.095	751.105

Remark: 6-mm dia. reducers for 3-mm shank tools see page 84, item no. 284 A

286A Tungsten Carbide Burrs with straight shank

PFERD



A high stock removal capability over the entire tool life ensures maximum results within a minimum of time. Thus, PFERD quality burrs and rotary cutters will help you to reduce labour costs.

Recommendation: The harder the material the finer the cut should be.

Cut ALU



- Greasy aluminium alloys, all soft non-ferrous metals and structural thermoplastics.
- Deburring.
- No loading of flutes, even with greasy materials.
- Robotized use on aluminium castings.

Cut Alu PLUS



- For aluminium, other soft non-ferrous metals, thermoplastics.
- High stock removal rate.
- Special tooth geometry designed for coarse machining applications.
- Optimum cutting performance at low r.p.m.

Cut 1



- Easily machineable light metal alloys, non-ferrous alloys, soft stainless steels, plastics.
- Deburring.
- Weld dressing on light alloy parts.
- Coarse plastic fettling work.
- High cutting performance, suitable for high r.p.m.

Cut 3



- For high-strength steels, die steels, steel castings, tough welded claddings, weld seams.
- Deburring work (including robotized).
- Without chip breaker, for scratch-free surfaces.

Cut 3 PLUS (3P)



- Universal use on ferrous and non-ferrous metals and plastics.
- Fettling of castings.
- Surface machining.
- No loading problems.
- Produces even, smooth surfaces.

Cut 4



- For high-strength and ductile material, high-strength stainless steels, alloyed steel castings, fibre-reinforced plastics.
- Edge and surface work.
- Minimum axial forces due to short cutting.
- For enhanced surface qualities facilitating subsequent surface coating.

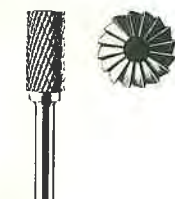
Cut 5



- For hardened and high-strength materials, die steels and steel castings.
- For tough welded claddings, weld seam dressing.
- Deburring and chamfering.
- Cut 5 produces a smoother surface than cut 3.



Shape A



Shape AS



Shape C



Shape D



Shape F

Type/ Shank	Head dim. mm	Cut/Item No.						
		Alu	Alu-plus	1	3	3Plus	4	5
Cylindrical A (without end cut)								
A 0413/6	4 x 13	-	-	-	751.243	751.242	751.244	751.245
A 0616/6	6 x 16	-	751.256	-	751.253	751.252	751.254	751.255
A 0820/6	8 x 20	-	-	-	751.263	751.262	751.264	751.265
A 1013/6	10 x 13	-	-	-	751.273	751.272	751.274	751.275
A 1020/6	10 x 20	-	-	751.281	751.283	751.282	751.284	751.285
A 1020/8	10 x 20	-	-	-	-	-	751.289	-
A 1025/6	10 x 25	-	-	-	-	751.292	751.294	-
A 1225/6	12 x 25	-	-	751.301	751.303	751.302	751.304	751.305
A 1225/8	12 x 25	-	751.310	-	751.308	751.307	751.309	-
A 1625/6	16 x 25	-	-	-	751.313	751.312	751.314	-
A 1625/8	16 x 25	-	-	-	-	751.317	-	-
Cylindrical AS (with end cut)								
AS0413/6	4 x 13	-	-	-	751.323	751.322	751.324	751.325
AS0616/6	6 x 16	-	-	-	751.333	751.332	751.334	751.335
AS0820/6	8 x 20	-	-	-	751.343	751.342	751.344	751.345
AS1013/6	10 x 13	-	-	-	-	751.352	751.354	751.355
AS1020/6	10 x 20	-	-	-	751.363	751.362	751.364	751.365
AS1020/8	10 x 20	751.370	-	-	-	-	-	-
AS1025/6	10 x 25	-	-	-	751.373	751.372	751.374	-
AS1225/6	12 x 25	-	-	-	751.383	751.382	751.384	751.385
AS1225/8	12 x 25	751.390	-	-	751.388	751.387	-	-
AS1625/6	16 x 25	-	-	-	751.393	751.392	751.394	751.395
Cylindrical radius end C								
C 0413/6	4 x 13	-	-	-	-	751.432	751.434	751.435
C 0616/6	6 x 16	751.440	751.446	751.441	751.443	751.442	751.444	751.445
C 0820/6	8 x 20	-	-	751.451	751.453	751.452	751.454	751.455
C 1020/6	10 x 20	-	-	751.461	751.463	751.462	751.464	751.465
C 1020/8	10 x 20	-	-	-	-	751.467	751.469	-
C 1025/6	10 x 25	-	-	-	751.473	751.472	751.474	751.475
C 1225/6	12 x 25	-	-	751.481	751.483	751.482	751.484	751.485
C 1225/8	12 x 25	751.486	751.488	-	-	751.487	751.489	-
C 1625/6	16 x 25	-	-	751.491	751.493	751.492	751.494	-
C 1625/8	16 x 25	-	-	-	-	751.497	-	-
Ball shape D								
D 0403/6	4 dia.	-	-	-	-	751.502	-	751.505
D 0605/6	6 dia.	-	-	751.511	751.513	751.512	751.514	751.515
D 0807/6	8 dia.	-	751.526	751.521	751.523	751.522	751.524	751.525
D 1009/6	10 dia.	-	-	751.531	751.533	751.532	751.534	751.535
D 1210/6	12 dia.	-	-	-	751.543	751.542	751.544	751.545
D 1210/8	12 dia.	751.546	751.549	-	-	751.547	-	-
D 1614/6	16 dia.	-	-	751.551	-	751.552	751.554	751.555
D 1614/8	16 dia.	-	-	-	-	751.557	-	-
D 2018/6	20 dia.	-	-	-	751.563	751.562	-	-
D 2018/8	20 dia.	-	-	-	-	751.567	-	751.569
Tree shape F								
F 0618/6	6 x 18	751.660	-	-	751.663	751.662	751.664	751.665
F 0820/6	8 x 20	-	-	-	751.673	751.672	751.674	-
F 1020/6	10 x 20	-	-	751.681	751.683	751.682	751.684	751.685
F 1225/6	12 x 25	-	-	751.691	751.693	751.692	751.694	751.695
F 1225/8	12 x 25	751.696	-	-	-	751.697	-	-
F 1630/6	16 x 30	-	-	-	751.703	751.702	751.704	-
F 1630/8	16 x 30	-	-	-	-	751.707	-	-

Tungsten Carbide Burrs (continued)

Toothing illustrated on page 86

Type/ Shank	Head dim. mm	Cut/Item No.						
		Alu	Alu-plus	1	3	3Plus	4	5
Pointed tree shape G								
G 0618/6	6 x 18	-	-	751.711	751.713	751.712	751.714	751.715
G 1020/6	10 x 20	-	-	751.721	751.723	751.722	751.724	751.725
G 1020/8	10 x 20	-	-	-	751.728	751.727	-	-
G 1225/6	12 x 25	-	-	751.731	751.733	751.732	751.734	751.735
G 1225/8	12 x 25	-	-	-	751.738	751.737	751.739	-
G 1230/6	12 x 30	-	-	751.741	751.743	751.742	751.744	751.745
G 1230/8	12 x 30	-	-	-	-	751.747	-	-
G 1630/6	16 x 30	-	-	751.751	751.753	751.752	751.754	-
G 1630/8	16 x 30	-	-	751.756	-	751.757	-	-
Cone radius end L								
L 1020/6	10 x 20	-	751.766	-	751.763	751.762	751.764	751.765
L 1225/6	12 x 25	-	-	-	751.773	751.772	751.774	-
L 1225/8	12 x 25	-	-	-	-	751.777	-	-
L 1230/6	12 x 30	-	-	751.781	751.783	751.782	751.784	751.785
L 1230/8	12 x 30	751.786	751.788	-	-	751.787	-	-
L 1630/6	16 x 30	-	-	-	751.793	751.792	751.794	-
L 1630/8	16 x 30	-	751.798	-	-	-	-	-
Oval shape E								
E 0610/6	6 x 10	-	-	-	-	751.822	751.824	751.825
E 0813/6	8 x 13	-	-	-	-	751.832	751.834	751.835
E 1016/6	10 x 16	-	-	-	-	751.842	751.844	751.845
E 1220/6	12 x 20	-	-	751.851	751.853	751.852	751.854	751.855
E 1220/8	12 x 20	-	-	-	751.858	751.857	751.859	-
E 1625/6	16 x 25	-	-	751.861	-	751.862	751.864	-
E 1625/8	16 x 25	-	-	-	-	751.867	-	-
Conical M								
M 0618/6	6 x 18	-	-	751.571	751.573	751.572	751.574	751.575
M 1020/6	10 x 20	-	-	751.581	751.583	751.582	751.584	751.585
M 1225/6	12 x 25	-	-	751.591	751.593	751.592	751.594	751.595
M 1225/8	12 x 25	-	-	-	-	751.597	-	-
Conical cone J/K								
J 0605/6*	6x 5/60°	-	-	-	751.603	-	-	-
K 0603/6*	6x 3/90°	-	-	-	751.613	-	-	-
J 1008/6	10x13/60°	-	-	-	751.623	-	-	-
K 1005/6	10x10/90°	-	-	-	751.633	-	-	-
J 1613/6	16x16/60°	-	-	-	751.643	-	-	751.645
K 1608/6	16x13/90°	-	-	751.651	751.653	-	-	751.655
K 1608/8	16x13/90°	-	-	-	751.658	-	-	-

* KSJ 0605 and KSK 0603 are toothed at both head ends.

Type/ Shank	Head dim. mm	Cut/Item No.	
		3	3Plus
Flame shape B			
B 0820/6	8 x 20	751.403	751.402
B 1230/6	12 x 30	751.413	751.412
B 1635/6	16 x 35	-	751.422



Shape B

Type/ Shank	Head dim. mm	Item- No.
Concave radius burrs V, cut 3		
V 1015/6	10 x 15	751.883
V 1215/6	12 x 15	751.893
V 1315/6	13 x 15	751.903

With 10 mm cut radius.



Shape V

Type/ Shank	Head dim. mm	Item- No.
Rim shape N, cut 3		
N 2503/8	25 x 3/90°	751.803
N 2506/8	25 x 6/90°	751.813



Shape N

Type/ Shank	Head dim. mm	Item- No.
Inverted cone shape KN, cut 3		
KN 1013/6	10 x 13/10°	751.913
KN 1213/6	12 x 13/20°	751.923
KN 1613/6	16 x 13/20°	751.933
KN 2013/8	20 x 13/20°	751.943



Shape KN

Type/ Shank	Head dim. mm	Item- No.
Miniatur burrs X		
X 0204/3	2,5 x 4	751.954
X 0408/3	4 x 8	751.964
X 0610/6	6 x 10	751.974
X 0810/6	8 x 10	751.984
X 1010/6	10 x 10	751.994

Available only with diamond cut, similar to cut 4, but significantly finer



Shape X

Type/ Shank	Head dim. mm	Cut radius	Item- No.
Radius burrs R			
R 1618/8	16 x 18	6,0 mm	751.870
R 0615/6	n.a.	1,5 mm	751.871
R 0830/8	n.a.	3,0 mm	751.872

Special cut



R 1618



R 0615/0830

286A

PFERD



Shape G



Shape L



Shape E



Shape M



Shape J/K



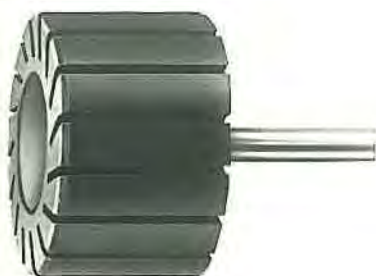
J 0605/K 0603

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PFERD



Designs:



cylindrical



tapered

Rotary grinding tools (suitable grinders see Item No. 287A)

5 elements per package

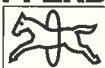
Item No.	Type	Dia. x height mm	Shank dia. mm	Max. speed rpm	Min. speed rpm
Cylindrical shapes					
758.009	GK 0410/3	4 x 10	3	55000	30000
758.010	GK 0410/6	4 x 10	6	55000	30000
758.019	GK 0610/3	6 x 10	3	55000	30000
758.020	GK 0610/6	6 x 10	6	55000	30000
758.029	GK 0810/3	8 x 10	3	44000	30000
758.030	GK 0810/6	8 x 10	6	44000	30000
758.040	GK 1010/6	10 x 10	6	44000	30000
758.050	GK 1020/6	10 x 20	6	44000	30000
758.060	GK 1310/6	13 x 10	6	36000	30000
758.070	GK 1325/6	13 x 25	6	36000	30000
758.080	GK 1510/6	15 x 10	6	36000	25000
758.090	GK 1530/6	15 x 30	6	36000	25000
758.100	GK 1925/6	19 x 25	6	30000	20000
758.110	GK 2220/6	22 x 20	6	26000	18000
758.110H	GK 2220/6H	22 x 20	6	26000	18000
758.120	GK 2525/6	25 x 25	6	22900	16000
758.130	GK 3020/6	30 x 20	6	19100	13000
758.140	GK 3030/6	30 x 30	6	19100	13000
758.140H	GK 3030/6H	30 x 30	6	19100	13000
758.150	GK 3825/6	38 x 25	6	15100	10000
758.160	GK 4530/6	45 x 30	6	12700	9000
758.160H	GK 4530/6H	45 x 30	6	12700	9000
758.170	GK 5125/6	51 x 25	6	11200	8000
758.180	GK 6030/6	60 x 30	6	9500	6500
758.188	GK 6030/8	60 x 30	8	9500	6500
758.190	GK 7530/8	75 x 30	8	7600	5000
758.200	GK 10040/8	100 x 40	8	5700	4000
Tapered shapes					
758.210	GK 292230/6	29 / 22 x 30	6	19100	13000
758.220	GK 201463/6	20 / 14 x 63	6	22000	15000
758.230	GK 362260/6	36 / 22 x 60	6	15900	10000

Rubber hardness 'H': Rubber holders marked by the letter 'H' have a greater hardness for increased working pressures. They are less elastic and therefore suitable for edge breaking.

Remark: Reducers 6 mm dia. for 3-mm shank tools see page 84, Item No. 284 A.

287A

PFERD



Rotary grinders (for the above grinding tools)

Design: Backing of an artificial resin bonded material with high tearing strength guaranteeing a long service life.

Remark: We recommend that grease or grinding oil should be added, especially when working light metals. Recommended circumferential speed: appr. 20 m/sec.

Type	Suitable for tool	Grains /Item No.					Contents p. package
		40	60	80	150	240	
Cylindrical shapes							
KSB 0410	GK 0410	—	—	—	758.014	—	25 pcs.
KSB 0610	GK 0610	—	—	—	758.024	—	25 pcs.
KSB 0810	GK 0810	—	—	—	758.034	—	25 pcs.
KSB 1010	GK 1010	—	—	758.043	758.044	—	25 pcs.
KSB 1020	GK 1020	—	—	758.053	758.054	758.055	25 pcs.
KSB 1310	GK 1310	—	—	758.063	758.064	—	25 pcs.
KSB 1325	GK 1325	—	—	758.073	758.074	—	25 pcs.
KSB 1510	GK 1510	—	758.082	758.083	758.084	—	25 pcs.
KSB 1530	GK 1530	—	758.092	758.093	758.094	758.095	25 pcs.
KSB 1925	GK 1925	—	758.102	758.103	758.104	758.105	25 pcs.
KSB 2220	GK 2220	—	758.112	758.113	758.114	758.115	25 pcs.
KSB 2525	GK 2525	—	758.122	758.123	758.124	758.125	25 pcs.
KSB 3020	GK 3020	758.131	758.132	758.133	758.134	—	25 pcs.
KSB 3030	GK 3030	758.141	758.142	758.143	758.144	758.145	25 pcs.
KSB 3825	GK 3825	758.151	758.152	758.153	758.154	—	25 pcs.
KSB 4530	GK 4530	758.161	758.162	758.163	758.164	758.165	10 pcs.
KSB 5125	GK 5125	758.171	758.172	758.173	758.174	—	10 pcs.
KSB 6030	GK 6030	758.181	758.182	758.183	758.184	—	10 pcs.
KSB 7530	GK 7530	758.191	758.192	758.193	758.194	—	10 pcs.
KSB 10040	GK 10040	758.201	758.202	758.203	758.204	—	10 pcs.
Tapered shapes							
KSB 292230	GK 292230	758.211	758.212	758.213	758.214	758.215	25 pcs.
KSB 201463	GK 201463	758.221	758.222	758.223	758.224	758.225	25 pcs.
KSB 362260	GK 362260	758.231	758.232	758.233	758.234	—	25 pcs.

POLICAP-rotary grinding tools

consisting of slotted rubber element and seamless grinder cap. Due to the centrifugal force the grinder sits firmly on the rubber element; easily exchangeable. **Each package contains 5 tools of each type.**

Item No.	Type	Dia. x height mm	Shank dia. mm	Rec. speed rpm
Shape A				
759.010	PCT 0510 A	5 x 10	3	40000
759.020	PCT 0712 A	7 x 12	3	30000
759.030	PCT 1015 A	10 x 15	3	20000
759.040	PCT 1317 A	13 x 17	6	16000
759.050	PCT 1626 A	16 x 26	6	12000
Shape C				
759.060	PCT 0511 C	5 x 11	3	40000
759.070	PCT 0713 C	7 x 13	3	30000
759.080	PCT 1015 C	10 x 15	3	20000
759.090	PCT 1317 C	13 x 17	6	16000
759.100	PCT 1626 C	16 x 26	6	12000
Shape G				
759.110	PCT 0511 G	5 x 11	3	40000
759.120	PCT 0713 G	7 x 13	3	30000
759.130	PCT 1015 G	10 x 15	3	20000
759.140	PCT 1317 G	13 x 17	6	16000
759.150	PCT 1626 G	16 x 26	6	12000
Shape L				
759.160	PCT 0515 L	5 x 15	6	40000
759.170	PCT 1125 L	11 x 25	6	20000
759.180	PCT 1632 L	16 x 32	6	12000
759.190	PCT 2140 L	21 x 40	6	9500

Remark: Reducers 6 mm dia. for 3-mm shank tools see page 84, Item No. 284 A.



Shape A



Shape C



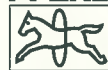
Shape G



Shape L

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PFERD



POLICAP-grinder caps for the above grinding tools

Each package contains 50 caps per type

Type	Suitable for tool	Grain/Item No.		
		60	150	280
Shape A				
PC 05 A	PCT 0510 A	759.011*	759.012	759.013
PC 07 A	PCT 0712 A	759.021	759.022	759.023
PC 10 A	PCT 1015 A	759.031	759.032	759.033
PC 13 A	PCT 1317 A	759.041	759.042	759.043
PC 16 A	PCT 1626 A	759.051	759.052	759.053
Shape C				
PC 05 C	PCT 0511 C	759.061*	759.062	759.063
PC 07 C	PCT 0713 C	759.071	759.072	759.073
PC 10 C	PCT 1015 C	759.081	759.082	759.083
PC 13 C	PCT 1317 C	759.091	759.092	759.093
PC 16 C	PCT 1626 C	759.101	759.102	759.103
Shape G				
PC 05 G	PCT 0511 G	759.111*	759.112	759.113
PC 07 G	PCT 0713 G	759.121	759.122	759.123
PC 10 G	PCT 1015 G	759.131	759.132	759.133
PC 13 G	PCT 1317 G	759.141	759.142	759.143
PC 16 G	PCT 1626 G	759.151	759.152	759.153
Shape L				
PC 05 L	PCT 0510 L	759.161*	759.162	759.163
PC 11 L	PCT 1125 L	759.171	759.172	759.173
PC 16 L	PCT 1632 L	759.181	759.182	759.183
PC 21 L	PCT 2140 L	759.191	759.192	759.193

* gr. 80



Shape A



Shape C



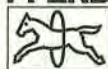
Shape G



Shape L

288A

PFERD



POLICAP-tools for grinding sleeves

Each package contains 5 tools

Item No.	Type	Dia. x height mm	Shank dia. mm	Rec. speed
760.010	PCT 0585 L	8 x 85	6	12000
760.020	PCT 1185 L	13 x 85	6	12000
760.030	PCT 1685 L	18 x 85	6	12000
760.040	PCT 2185 L	23 x 85	6	12000



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PFERD



POLICAP-rotary grinding sleeves for Item No. 760

Each package contains 10 sleeves

Type	Suitable for tool	Grain/Item No.		
		60	150	280
PCH05 L	PCT 0585L	760.011	760.012	760.013
PCH11 L	PCT 1185L	760.021	760.022	760.023
PCH16 L	PCT 1685L	760.031	760.032	760.033
PCH21 L	PCT 2185L	760.041	760.042	760.043



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PFERD



290**PFERD**

Shape PR



Shape PRK

POLIROLL-rotary grinding rolls

for deburring and surface grinding, excellent performance with polishing effect. Do not use the entire surface, but only the tip, as otherwise the bond may be damaged by the heat.

Each package contains 20 rolls.

Type	Dia. x height mm	Grain/Item No.			Suitable holder	Max. speed
		50	80	150		
Cylindrical shape						
PR 0625	6 x 25	—	761.011	761.012	3 u. 6-18-3	25000
PR 0635	6 x 35	—	761.021	761.022	6-24-3	25000
PR 0925	9 x 25	—	761.031	761.032	6-18-3	23000
PR 0935	9 x 35	—	761.041	761.042	6-24-3	23000
PR 1225	12 x 25	761.050	761.051	761.052	6-18-3	17000
PR 1235	12 x 35	761.060	761.061	761.062	6-24-3	17000
PR 1835	18 x 35	761.070	761.071	761.072	6-25-5	12000
PR 1850	18 x 50	761.080	761.081	761.082	6-30-5	12000
Tapered shape						
PRK 1025	10 x 25	—	761.091	761.092	3 u. 6-18-3	23000
PRK 1225	12 x 25	761.100	761.101	761.102	6-18-3	17000
PRK 1235	12 x 35	761.110	761.111	761.112	6-24-3	17000
PRK 1535	15 x 35	761.120	761.121	761.122	6-24-3	15000

290A**PFERD**

Shape PCO

POLICO-rotary grinding cones

for deburring bores or hard-to-reach places; self-chucking due to fluted conical holder.

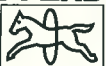
Each package contains 20 cones per grain

Type	Dia. x height mm	Grain/Item No.		Suitable holder	Max. speed	Taper
		80	150			
PCO 1050	10 x 50	761.201	761.202	6-50-8	23000	5°

291**PFERD**

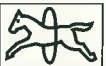
Holders for POLIROLL- and POLICO-grinding tools

Item No.	762.318	762.618	762.624	762.625	762.630	762.650
Type	3-18-3	6-18-3	6-24-3	6-25-5	6-30-5	6-50-8
Shank dia. mm	3	6	6	6	6	6
Suitable for	PR 0625	PR 0625	PR 0635	PR 1835	PR 1850	PCO 1050
POLIROLL	PRK 1025	PR 0925	PR 0935			
PR = cylindrical		PR 1225	PR 1235			
PRK = tapered		PRK 1025	PRK 1235			holder taper 5°
POLICO PCO		PRK 1225	PRK 1535			

292**PFERD**

Rotary grinding pads tools are used for bores and fillets, 4 layers. **Each package contains 20 pads of each type.**

Item No.	Type	Dia. mm	Grain	Suitable holder	Max. speed rpm
763.311	KS 30-4	30	80	6-50	12.000
763.321	KS 50-4	50	80	6-40	8.000

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Holders for grinding pads

Item No.	Type	Shank dia.	Length	Thread	Suitable for
764.640	6-40	6 mm	40 mm	1/4"	KS 50-4
764.650	6-50	6 mm	40 mm	1/8"	KS 30-4

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Sandflex universal cleaners

soft cleaning compound with abrasive; for polishing and matting; addition of water, soap, petroleum or other liquids or paste increases the effectiveness.

Size mm	Grain/Item No.		
	60	120	240
80 x 50 x 20	765.106	765.112	765.124
150 x 80 x 20	765.206	765.212	765.224

POLINOX-grinding tools, shank dia. 6 mm

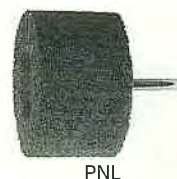
1) Type PNL: The abrasive elements of type 'PNL' are aligned radially. The abrasive elements are available with abrasive **A (corundum)** or **C (silicon-carbide)** for grinding surfaces.

2) Type PNR: The abrasive elements of type 'PNR' are aligned axially, therefore good adaption to contours.

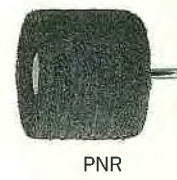
3) Type PNZ: The abrasive elements are radially aligned and they produce a coarser grinding pattern and increase the performance.

Each package contains 10 tools per type.

Type	Dia. x height mm	Grains (A = corundum; C = sil.-carb.)/Item No.				
		A 100	A 180	A 280	C 180	C 280
PNL 4020	40 x 20	766.110	766.111	766.112	766.114	766.115
PNL 5030	50 x 30	766.120	766.121	766.122	766.124	766.125
PNL 6050	60 x 50	766.130	766.131	766.132	766.134	766.135
PNL 8050	80 x 50	766.140	766.141	766.142	766.144	766.145
PNR 6050	60 x 50	766.210	766.211	766.212	-	-
PNR 8050	80 x 50	766.220	766.221	766.222	-	-
PNZ 4020	40 x 20	766.310	766.311	-	-	-
PNZ 6050	60 x 50	766.320	766.321	-	-	-
PNZ 8050	80 x 50	766.330	766.331	-	-	-
PNZ 10050	100 x 50	766.340	766.341	-	-	-



PNL



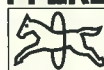
PNR



PNZ

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PFERD



Rotary surface grinder tools 'F'

for grinding radii, smaller surfaces or hard-to-reach places.

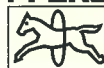
Each package contains 10 tools per type.

Type	Dia. x height mm	Shank dia. mm	Grain/Item No.						
			60	80	120	150	180	240	320
F2010/3	20 x 10	3	-	-	767.014	767.015	767.016	-	-
F2010/6	20 x 10	6	-	767.023	767.024	767.025	767.026	-	-
F2515/6	25 x 15	6	-	767.033	767.034	767.035	767.036	-	-
F2525/6	25 x 25	6	-	767.043	767.044	767.045	767.046	-	-
F3005/3	30 x 5	3	767.052	767.053	767.054	767.055	767.056	767.057	767.058
F3005/6	20 x 10	6	767.062	767.063	767.064	767.065	767.066	767.067	767.068
F3010/3	30 x 10	3	767.072	767.073	767.074	767.075	767.076	767.077	767.078
F3010/6	30 x 10	6	767.082	767.083	767.084	767.085	767.086	767.087	767.088
F3015/6	30 x 15	6	767.102	767.103	767.104	767.105	767.106	767.107	767.108
F3030/6	30 x 30	6	767.112	767.113	767.114	767.115	767.116	767.117	767.118
F4010/6	40 x 10	6	767.122	767.123	767.124	767.125	767.126	767.127	-
F4015/6	40 x 15	6	767.132	767.133	767.134	767.135	767.136	767.137	767.138
F4020/6	40 x 20	6	767.142	767.143	767.144	767.145	767.146	767.147	-
F5010/6	50 x 10	6	767.152	767.153	767.154	767.155	767.156	767.157	767.158
F5015/6	50 x 15	6	767.162	767.163	767.164	767.165	767.166	767.167	767.168
F5020/6	50 x 20	6	767.172	767.173	767.174	767.175	767.176	-	767.178
F5030/6	50 x 30	6	767.182	767.183	767.184	767.185	767.186	767.187	767.188
F6015/6	60 x 15	6	767.192	767.193	767.194	767.195	767.196	767.197	767.198
F6020/6	60 x 20	6	767.202	767.203	767.204	767.205	767.206	767.207	767.208
F6030/6	60 x 30	6	767.212	767.213	767.214	767.215	767.216	767.217	767.218
F6040/6	60 x 40	6	767.232	767.233	767.234	767.235	767.236	767.237	767.238
F6050/6	60 x 50	6	767.242	767.243	767.244	767.245	767.246	767.247	767.248
F8015/6	80 x 15	6	767.252	767.253	767.254	767.255	767.256	-	-
F8020/6	80 x 20	6	767.262	767.263	767.264	767.265	767.266	-	-
F8030/6	80 x 30	6	767.272	767.273	767.274	767.275	767.276	767.277	767.278
F8040/6	80 x 40	6	767.292	767.293	767.294	767.295	767.296	767.297	-
F8050/6	80 x 50	6	767.302	767.303	767.304	767.305	767.306	767.307	767.308



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PFERD

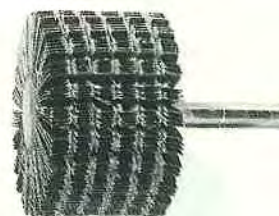


Rotary surface grinding brushes 'FB'

slotted disk shape arrangement of the abrasive elements to increase flexibility, can also be used for circumferential grinding.

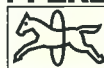
Each package contains 10 brushes per type.

Type	Dia. x height mm	Shank dia. mm	Grain/Item No.		
			120	240	320
FB4020/3	40 x 20	3	768.010	768.011	-
FB5020/6	50 x 20	6	768.020	768.021	-
FB5030/6	50 x 30	6	768.030	768.031	768.032
FB6020/6	60 x 20	6	768.040	768.041	-
FB6030/6	60 x 30	6	768.050	768.051	-



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PFERD



Rotary surface grinding tools 'FT'

cut-shaped, for face grinding and circumferential grinding.

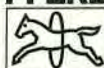
Each package contains 10 tools per type. This item will be discontinued!

Type	Dia. x height mm	Shank dia. mm	Grain/Item No.				
			60	80	120	150	240
FT 6030/6	60 x 30	6	769.010	769.011	769.012	769.013	769.014



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PFERD



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PFERD



Complete holder



Shank



Chuck



Supporting disk



Grinding disks

ATADISC-grinding disk holders

Thanks to the patented chucking system, the grinding disks can be exchanged in a matter of seconds. No slipping of the grinding disk, no glueing.

Types of supporting disks: **standard**, flexible, for arched surfaces
inflexible, for surface grinding

Shank dia. 6 mm

Item No.	Type	Complete holder suitable grinding disks	Suitable components and spares			
			shank	chuck	supporting disk	
770.010	SH 2000	2005, 2505, 3505-2	770.110	770.210	flexible	inflexible
770.020	SHT 2025	2505, 3505-2			770.320	770.420
770.030	SHT 2035	3505-2			770.330	770.430
770.040	SH 3500	3505, 5005, 7505	770.140	770.240	flexible	inflexible
770.050	SHT 3550	5005, 7505			770.350	770.450
770.060	SHT 3575	7505			770.360	770.460

ATADISC-grinding disks

disks in: **A corundum** brown
Z zirk.-corundum blue

Each package contains 50 disks per type.

Type	Dia. mm	Suitable chucks	Grain/Item No.						
			A 60	A120	A180	A320	Z60	Z80	
AD 2005	20	770.210	770.510	770.511	770.512	770.513	-	-	
AD 2505	25		770.520	770.521	770.522	770.523	-	-	
AD 3505-2	35		770.530	770.531	770.532	770.533	-	-	
AD 3505	35	770.240	770.540	770.541	770.542	770.543	-	-	
AD 5005	50		770.550	770.551	770.552	770.553	770.554	770.555	
AD 7505	75		770.560	770.561	770.562	770.563	770.564	770.565	

299A

PFERD



Holder



Grinding sheet



Grinding disk

COMBI-DISC-grinding tools

ideal composition of reusable holder and grinding sheets or grinding disks by means of a **metal screw connection**, very easy to handle, quick tool change.

1) COMBI-DISC-holder in 3 degrees of hardness

soft for contours; **medium** for radii; **hard** for surfaces

Item No.	Type	Dia. mm	Degree of hardn.	Shank dia.	Max. speed
770.601	SBH 38 W	38	soft	6	25.000
770.602	SBH 50 W	50		6	19.000
770.603	SBH 75 W	75		6	12.000
770.611	SBH 20 M	20	medium	6	40.000
770.612	SBH 25 M	25		6	40.000
770.613	SBH 38 M	38		6	30.000
770.614	SBH 50 M	50		6	24.000
770.615	SBH 75 M	75		6	16.000
770.621	SBH 38 H	38	hard	6	30.000
770.622	SBH 50 H	50		6	30.000
770.623	SBH 75 H	75		6	20.000

2) COMBI-DISC-grinding sheets of

corundum A, dark brown, for normal use

zirc.-corundum Z, blue, for excellent removal of metal (make sure to use only hard or medium-hard holders)

Type	Dia. mm	Grain/Item No.								Pack. cont.
		A 60	A 80	A120	A180	A320	Z 36	Z 60	Z 80	
CD 20	20	770.631	770.632	770.633	770.634	770.635	-	-	-	100
CD 25	25	770.641	770.642	770.643	770.644	770.645	-	-	-	100
CD 38	38	770.651	770.652	770.653	770.654	770.655	-	-	-	100
CD 50	50	770.661	770.662	770.663	770.664	770.665	770.667	770.668	770.669	50
CD 75	75	770.671	770.672	770.673	770.674	770.675	770.677	770.678	770.679	50

3) COMBI-DISC-grinding disks in two degrees of hardness

hard: for all kinds of surface working, open structure, flexibility determined by the degree of hardness of the holder

soft: for finely grinding surfaces and contours, very open structure

Type	Dia. mm	Degree of hardn.	Grain/Item No.				Pack. cont.
			coarse	medium	fine	very fine	
VRH 20	20	hard	-	-	-	770.704	50
VRH 25	25		770.711	770.712	-	770.714	50
VRH 38	38		770.721	770.722	-	770.724	50
VRH 50	50		770.731	770.732	-	770.734	50
VRH 75	75		770.741	770.742	-	770.744	25
VRW 50	50	soft	-	770.752	770.753	770.754	50
VRW 75	75		-	770.762	770.763	770.764	25

Rubber supporting disks and plane grinding disks

1) self-adhering

a) rubber supporting disk 'GTH'

Item No.	Type	Diameter	Shank dia. x length mm	Max. speed rpm
771.110	GTH018.03	18	3 x 30	20.000
771.120	GTH030.03	30	3 x 30	12.500
771.130	GTH030.06	30	6 x 40	12.500
771.140	GTH045.06	45	6 x 40	10.000
771.150	GTH060.06	60	6 x 40	8.000
771.160	GTH075.06	75	6 x 40	6.000
771.170	GTH120.06	120	6 x 25	4.000
771.180	GTH120.08	120	8 x 25	4.000

5 per package (2 per package 75 mm dia. and up)

b) self-adhering plane grinding disks 'PSH'

Type	Dia. mm	Grain/Item No.							
		60	80	120	150	180	240	320	
PSH018A	21	771.111	771.112	771.113	771.114	771.115	771.116	771.117	
PSH030A	33	771.121	771.122	771.123	771.124	771.125	771.126	771.127	
PSH045A	48	771.141	771.142	771.143	771.144	771.145	771.146	-	
PSH060A	63	771.151	771.152	771.153	771.154	771.155	771.156	771.157	
PSH075A	78	771.161	771.162	771.163	771.164	771.165	771.166	771.167	
PSH120A	125	771.171	771.172	-	-	-	-	-	

Package contains 100 pieces per type

2) self-adhesive

a) rubber disk 'GTK'

Item No.	Type	Dia. mm	Shank dia. x length mm	Max. speed rpm
771.210	GTK018.03	18	3 x 30	20.000
771.220	GTK030.03	30	3 x 30	12.500
771.230	GTK030.06	30	6 x 40	12.500
771.240	GTK045.06	45	6 x 40	10.000
771.250	GTK060.06	60	6 x 40	8.000
771.260	GTK075.06	75	6 x 40	6.000

5 per package (2 per package 75 mm dia. and up)

b) self-adhesive plane grinding disks 'PSK'

Type	Dia. mm	Grain/Item No.							
		60	80	120	150	180	240		
PSK018A	21	771.211	771.212	771.213	771.214	771.215	771.216		
PSK030A	33	771.221	771.222	771.223	771.224	771.225	771.226		
PSK045A	48	771.241	771.242	771.243	771.244	771.245	771.246		
PSK060A	63	771.251	771.252	771.253	771.254	-	-		
PSK075A	78	771.261	771.262	771.263	771.264	-	-		

Package contains 100 pieces per type

Remark: 6 mm dia. reducers for 3-mm shank tools see p. 60, Item No. 285

Ceramic grinding tools

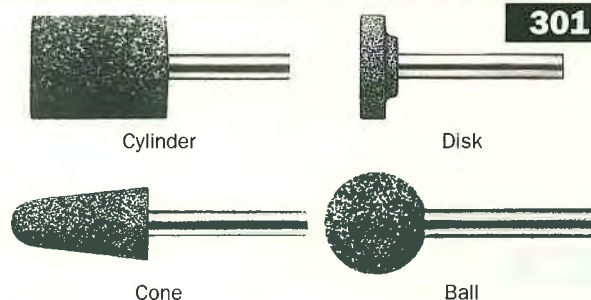
of electro-corundum, pink colour, hardness 'N', for steel and cast iron, grinding speed appr. 30 to 50 m/sec.

Min. quantity 20 per type

We can also supply ceramic grinding tools in different degrees of hardness and of different materials and different shapes, provided that at least 100 per type are ordered.

1) with straight shank, dia. 6 mm, length 40 mm

Cylinder		Disk	
Item No.	Head dia. x length	Item No.	Head dia. x length
772.101	3 x 6 mm	772.121	20 x 6 mm
772.102	4 x 8 mm	772.122	25 x 6 mm
772.103	5 x 10 mm	772.123	40 x 10 mm
772.104	6 x 10 mm	Cone	
772.105	8 x 10 mm		
772.106	10 x 10 mm	Item No.	Head dia. x length
772.107	13 x 13 mm	772.131	20 x 32 mm
772.108	16 x 16 mm	772.132	20 x 40 mm
772.109	10 x 40 mm	Cone	
772.110	13 x 32 mm		
772.111	16 x 40 mm	Item No.	Head dia.
772.112	20 x 40 mm	772.141	16 mm
772.113	32 x 20 mm	772.142	32 mm
772.114	40 x 20 mm		



2) with straight shank, diameter 3 mm, length 25 mm

Cylinder		Disk	
Item No.	Head dia. x length	Item No.	Head dia. x length
772.201	1,5 x 4 mm	772.221	13 x 3 mm
772.202	2,5 x 5 mm	772.222	16 x 4 mm
772.203	3 x 6 mm	772.223	20 x 6 mm
772.204	4 x 8 mm	Ball	
772.205	5 x 10 mm		
772.206	6 x 10 mm	Item No.	Head dia.
772.207	8 x 10 mm	772.241	6 mm
772.208	8 x 16 mm	772.242	8 mm
772.209	10 x 10 mm	772.243	10 mm
772.210	10 x 13 mm	772.244	13 mm
772.211	13 x 13 mm		

Remark: 6 mm dia. reducers for 3-mm shank tools see p. 84, Item No. 284A

302



Polishing tools, rubber bonded

Quality P1 rubber-bonded polishing tools, gr. 100

for fine polishing cast metals, hardened and unhardened, alloyed and unalloyed steels; max. circumferential speed 50 m/sec.

Quality P2 soft rubber-bonded flexible polishing tools, gr. 120

for fine and high polishing prefinished surfaces; very fine finish; max. circumferential speed 15 m/sec.

Min. quantity 20 per type.

Cylinder

Head dia. x lg. mm	Shank dia. mm	Item No.		Head dia. x lg. mm	Shank dia. mm	Item No.	
		Qual. P1	Qual. P2			Qual. P1	Qual. P2
4 x 8	3	773.101	773.201	13 x 20	6	773.109	773.209
5 x 10	3	773.102	773.202	16 x 16	3	773.110	773.210
6 x 10	3	773.103	773.203	16 x 20	6	773.111	773.211
8 x 10	3	773.104	773.204	16 x 32	6	773.112	773.212
8 x 16	6	773.105	773.205	20 x 20	6	773.113	773.213
10 x 10	3	773.106	773.206	20 x 32	6	773.114	773.214
10 x 20	6	773.107	773.207	32 x 10	6	773.115	773.215
13 x 13	3	773.108	773.208	40 x 20	6	773.116	773.216

Remark: 6 mm dia. reducers for 3-mm shank tools see p. 84, Item No. 284A

303



Grinder blocks of silicon carbide, for trimming and shaping grinding tools

Item No.	Width mm	Height mm	Length mm
303.001	25	15	50
303.002	30	15	100
303.003	50	25	100
303.004	50	25	150

Package contains 5 pieces per size.

304

PFERD



Flexible shaft power tools 'Mammut'

powerful tools, multi-purpose application for milling, grinding and polishing

7 speed ranges: 12.000; 8.000; 5.700; 3.200; 2100; 1.600; 850 rpm

2 motor types: three-phase motor, 220/380 V, or ac 110/220 V (see below)

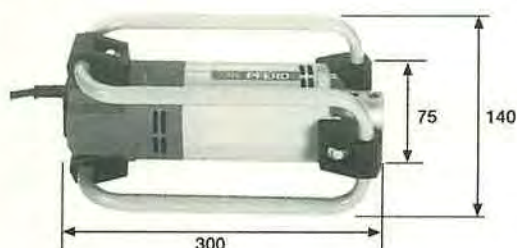
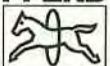
Motor design	Three-phase curr. 50 Hz 220/380 V	Weight kg	Altern. current 50 Hz 110/220 V	Weight kg
Mammut	Item No.		Item No.	
– Motor with base (see. ill.)	774.100	16,5	774.200*	16,9
– Suspension-type mounting	774.101	16,0	–	–
– Suspension-type and mobile mount.	774.102	17,0	–	–
– Mobile-carriage-type mounting	774.103	44,5	–	–
Wattage/horsepower (output)	736 / 1		552 / 0,75	
Wattage/horsepower (input)	1000 / 1,36		800 / 1,1	
Dimensions (L x W x H) mm	460 x 160 / 240 x 400			
Insulation coupling	DIN 10			
Tool holder	6 mm collet			
Shaft connector	DIN 10			
Standard shaft	10 ZG DIN 10 (see Item 306)			
Additional shafts				
a) for light duty	4 ZG DIN 10; 7 ZG DIN 10 (see Item 306)			
b) for heavy duty	12 ZG DIN 10 (see Item 306)			

The machines are supplied **without** plug and shaft.

* machine is equipped with centrifugal switch, starting and running capacitors for direct starting under load.

305

PFERD



Universal drive motor for flexible shafts (RUER 10/250SI)

Elektronic tacho controller ensures constant speed, even under load.

Flexible application as motor can be connected to 230 V alternating current or 230 V 50 cps generators.

High performance for cutting, grinding and polishing. Smooth start for protecting mechanic and electronic components. Sturdy tubular frame protects the machine in any position. Drive motor is used in tool and pattern making, in precision mechanics as well as in DIY and hobby applications.

Item No. 775.101

Speed	25.000 – 11.000 min ⁻¹
Voltage	230 Volt
Wattage	1050 Watt
Dimensions L x W x H	300 x 75 x 140 mm
Shaft connector	DIN 10
Standard shaft	7 ZGU DIN 10 (see Item 306)
Addl. shaft for light work	4 ZG DIN 10 (see Item 306)

Accessory tools for Item No. 304 to 305

- 1) Flexible shafts** (connector to motor acc. to DIN 10), **cpl. with handle**
Core of piano wire, core coupling M 10. Protective hose of oil-resistant rubber, hose coupling 30 mm dia.

Core or protective hose cannot be repaired.

Item No.	776.101	776.102	776.103	776.104	776.105
Type	4 ZG DIN 10	7 ZG DIN 10	7 ZGU DIN 10	10 ZG DIN 10	12 ZGA DIN 10
Core dia. x length mm	4 x 1250	7 x 1500	7 x 2000	10 x 1500	12 x 2000
Hose dia. mm	13	18	18	22	25
Handle Item No.	4 ZGB	7 ZGA	7 ZGA	10 ZGE	12 ZGA
Handle size dia. x length mm	19,5 x 110	27 x 130	27 x 130	33 x 170	33 x 162
Handle connector	G 16	G 22	G 22	G 28	G 28
Handle coupling dia. mm	16	22	22	28	28
Standard collet mm	6	6	6	6	12
Opt. available collets mm	1/1,5/2/2,5/3/3,5/4/5	1/2/2,5/3/3,5/4/5/7/8/9			3/4/5/6/7/8/9/10
Max. speed revs/min.	40.000	25.000	25.000	18.000	12.000
Weight kg	0,6	1,5	2,0	2,5	4,25

Rigid or flexible extensions available upon request!

2) Ready-to-be-installed cores

Item No.	776.601	776.602	776.603	776.604	776.605
For shaft	4 ZG	7 ZG	7 ZGU	10 ZG	12 ZGA

3) Angle tool holder

Item No.	776.201	776.202	776.204
Type	WZ 4A	WZ 7B	WZ 10B
For shaft	4 ZG	7 ZG / 7 ZGU	10 ZG / 12Z GA
Head height x length mm	43 x 111	55 x 157	55 x 166
Max. speed revs/min.	20.000	17.000	17.000
Weight kg	0,27	0,60	0,58

4) Chuck

Item No.	776.301	776.302
Type	207	208 A
Shank dia. mm	6	12
Chuck range mm	0 - 6	0 - 13
Weight kg	0,14	0,40

5) Flexible shaft grease

- a) hose brushes for the shafts
b) non-fuzzing cleaning towels (package contains 2)
c) shaft grease FT 4 (app. 450 gr. tin)

Item No.	776.402	776.403	776.404
For shaft	4 ZG	7 ZG / 7 ZGU	10 ZG / 12 ZGA

Pneumatic vice

with foot pedal valve

for fast and safe clamping, expedient, time saving and easy to use, vice opens to the rear.

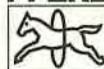
Consisting of: vice of perlitic cast metal, pneumatic cylinder, metal-sheathed hose and foot pedal valve, stepless stroke length adjustment from 0 to 8 mm, speed of the moving jaw 10 mm/sec. at 6 bar. Should the compressed air system break down, the clamping force is maintained. After releasing the pressure, the vice can be reclamped by hand. The foot pedal control leaves **both hands free** for tool and workpiece.

	Item No.			
Pneumatic vice	307.024	307.044	307.026	307.046
Jaw width mm	125		150	
Clamping width mm	180		220	
Clamping stroke mm	0 – 8			
Clamping force N	7.000	14.000	7.000	14.000
Weight kg	26	29	46	49
Overall length incl. cylinder mm	745	745	915	915
Cylinder length with shaft mm	200	200	200	200
Cylinder length without shaft mm	100	110	100	110
Cylinder diameter mm	135	180	135	180
Air connector	1/4"			

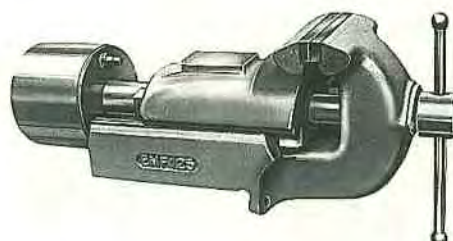
Spare part lists are available!

306

PFERD



307



308



Operating constructions are available!

Portable sand blasting equipment, Type 'TF'

operating pressure 2 to 6 bar, for metallic and non-metallic blasting media.

The blasting media is sucked in by means of compressed air. After use the blasting media falls into the vessel through the screen for reuse and refeeding.

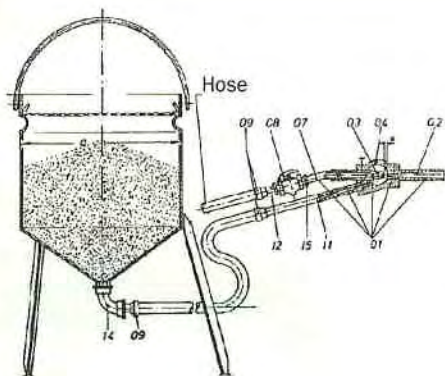
Scope of supply: complete, ready for use, blasting equipment including vessel, pedestal, carrying strap and screen, blasting pistol complete with air and blasting nozzles, 3 m long blasting media hose and 3 m long air hose.

TF 10 = cont. 10 l blasting media vessel dia. 250 mm, height 440 mm **TF 50** = cont. 50 l blasting media vessel dia. 400 mm, height 700 mm

Nozzle diameter to be determined in accord. with the following table:

Air nozzle dia.	3,0 mm	4,0 mm	7,5 mm
Blasting nozzle dia.	6,0 mm	8,0 mm	13,0 mm
Air consumption at 6 bar: m ³ /h	36	60	210
Item No.			
Unit	TF 10	308.011	308.012
	TF 50	308.051	308.052
			308.053

308A



Spares and wearing parts

Part No.	Air nozzle dia.	3,0 mm	4,0 mm	7,5 mm
as	blasting nozzle dia.	6,0 mm	8,0 mm	13,0 mm
per ill.	Description	Item No.		
01	complete system	308.101	308.102	308.103
02	blasting nozzle	308.111	308.112	308.113
03	complete air nozzle	308.121	308.122	308.123
04	nozzle head (without nozzle)	3 0 8 . 1 3 1		
07	bent pipe	3 0 8 . 1 3 4		
08	two-way valve	3 0 8 . 1 3 5		
09	hose clip	3 0 8 . 1 3 6		
11	hose connector 265 mm	3 0 8 . 1 3 8		
12	hose connector 90 mm	3 0 8 . 1 3 9		
14	elbow	3 0 8 . 1 4 1		
15	reducer	3 0 8 . 1 4 2		

309



Operating instructions also available!

Portable sand blasting equipment, Type SIKS

operating pressure 6 to 16 bar, for metallic and non-metallic blasting media.

The blasting media is sucked by means of compressed air. After use the blasting media falls into the vessel through the screen for reuse and refeeding.

Scope of supply: complete with vessel with handle, legs, sieve, blasting pistol, air nozzle and blasting nozzle, 2-m long blasting medium hose and 4-m long compressed air hose.

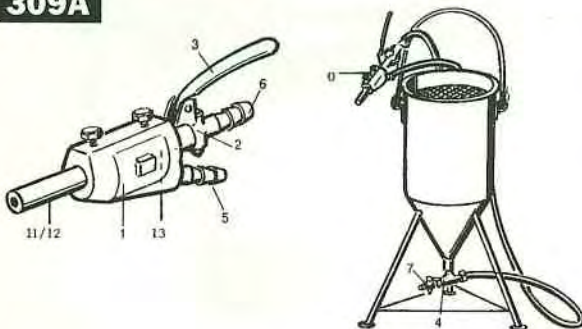
vessel capacity: appr. 18 l.

vessel diameter: 260 mm height: 620 mm

Nozzle diameter to be determined in accord. with the following table:

Air nozzle dia.	2,0 mm	2,5 mm	3,0 mm	3,5 mm
Blasting nozzle dia.	5,0 mm	6,0 mm	7,0 mm	8,0 mm
Air consumption at 6 bar: m ³ /h	15	24	34	45
Item No.				
Complete unit	309.002	309.003	309.004	309.005

309A



Other blasting equipment available upon request!

Protective clothing see page 108.

Spares and wearing parts

Part No.	Air nozzle dia.	2,0 mm	2,5 mm	3,0 mm	3,5 mm
as	Blasting nozzle dia.	5,0 mm	6,0 mm	7,0 mm	8,0 mm
per ill.	Description	Item No.			
0	complete blasting pistol	309.012	309.013	309.014	309.015
11*	blasting nozzle	309.022	309.023	309.024	309.025
12*	borcarbide-blasting nozzle	309.042	309.043	309.044	309.045
13	air nozzle	309.032	309.033	309.034	309.035
1	cast iron body	3 0 9 . 1 0 1			
2	lever valve	3 0 9 . 1 0 2			
3	lever for lever valve	3 0 9 . 1 0 3			
4	blasting hose connector with vacuum regulator	3 0 9 . 1 0 4			
5	blasting hose connector 13 mm	3 0 9 . 1 0 5			
6	air hose connector 9 mm	3 0 9 . 1 0 6			
7	vacuum regulator	3 0 9 . 1 0 7			

* Standard blasting nozzle service life appr. 20 hrs.

Borcarbide-nozzle service life appr. 300 - 400 hrs.

Blasting pistols for small workpieces

1) Item No. 310.001

with 5 mm blasting nozzle, 300 l/min. air consumption, for 5 to 9 bar,
10 mm hose connector, with 1,5 l vessel

Spare blasting pipe: Item No. 310.101

2) Item No. 310.002

low cost pistol, with 6 mm blasting nozzle, low air consumption, min.
pressure 4 bar, 6 mm hose connector, with 1 l aluminium vessel

Spare blasting pipe:

Item No. 310.102 standard pipe, hardened and galvanized

Item No. 310.103 pipe of special material, considerably longer life.



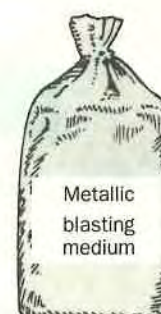
No. 310.001



No. 310.002

Blasting medium, in 25 kg bags

Type	Cast steel blasting media GS-R, round	Steel wire bits StD-Z, cyl.	Chilled iron blasting media GH-K, square	Light metal blasting media GRANAL
Field of appl.	fettling of castings (scoop wheel system)		fettling of castings (compr. air system)	fettling in compr. air and scoop wheel systems
Hard- ness	HV1, 0, 420 – 480 \pm HRc 42, 7 – 47.7	HV 450 \pm 1580/1770 N	HV1, 0, 650 – 850 \pm HRc 58 – 66	HV0, 2, 90 – 120
Particle size available	Item No. mm	particle size mm	Item No. mm	particle size mm
	311.002	0,1 – 0,2	311.204	0,4
	311.003	0,2 – 0,3	311.206	0,6
	311.004	0,2 – 0,4	311.209	0,9
	311.006	0,3 – 0,6	311.212	1,2
	311.008	0,4 – 0,8	311.215	1,5
	311.010	0,6 – 1,0		
	311.013	0,8 – 1,3		
	311.016	1,0 – 1,6		
	311.020	1,3 – 2,0		
	311.022	1,6 – 2,2		
	311.028	2,0 – 2,8		
	311.032	2,4 – 3,2		
			311.302	0,1 – 0,2
			311.303	0,2 – 0,3
			311.304	0,2 – 0,4
			311.306	0,3 – 0,6
			311.308	0,4 – 0,8
			311.310	0,6 – 1,0
			311.313	0,8 – 1,3
			311.316	1,0 – 1,6
			311.320	1,3 – 2,0
			311.322	1,6 – 2,2
			311.328	2,0 – 2,8
			311.332	2,4 – 3,2
			311.404	0,2 – 0,4
			311.408	0,4 – 0,8
			311.412	0,8 – 1,2
			311.418	1,2 – 1,8
			311.425	1,8 – 2,5



Non-metallic blasting media

Type	Slag granules TESTRA	Glass beads MGL	Glass grains	Walnut shells
Field of appl.	fettling of castings	cleaning of ingot moulds and moulds		surface treatment non-abrasive
Hard- ness	Mohs 7 HRc 47	Knoop 515	Mohs 5 – 6	Mohs 2, 5
Particle size available	Item No. mm	particle size mm	Item No. mm	particle size mm
	312.005	0,09 – 0,50	312.105	0,00 – 0,05
	312.007	0,25 – 0,70	312.108	0,04 – 0,08
	312.010	0,25 – 1,00	312.111	0,05 – 0,11
	312.012	0,25 – 1,20	312.115	0,08 – 0,15
	312.014	0,25 – 1,40	312.121	0,10 – 0,21
	312.020	0,25 – 2,00	312.125	0,15 – 0,25
	312.030	0,50 – 1,00	312.130	0,18 – 0,30
	312.032	0,50 – 1,20	312.142	0,25 – 0,42
	312.034	0,50 – 1,40	312.159	0,42 – 0,59
	312.040	0,50 – 2,00	312.184	0,42 – 0,84
	312.050	1,00 – 2,00		
Contents	50 kg bags	25 kg bags	50 kg bags	50 kg bags



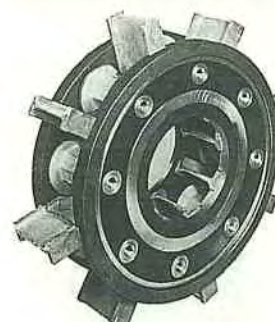
Other blasting media on request.

Our blasting media pose **no health hazard**. They are neither silicogenous nor carcinogen nor toxic. The blasting media are in accordance with the German regulations concerning dangerous substances at the workplace.

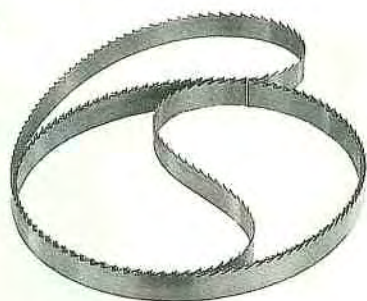
Wearing parts for scoop wheel blasting systems

for example scoop wheels of CrNi-cast steel for various makes.

Please state make and part number in your inquiry.



314



Tooth shape S (standard toothing) for universal use for steel, cast iron or hard non-ferrous metals



Tooth shape K (claw teeth) outstanding efficiency for non-ferrous metals and steels of lower strength

High-performance metal band saw blades

with flexible back

tooth shape S or K, ready for use, sharpened and set.

Saw blades available:

- 1) 30 or 100 m rolls
- 2) cut-to-size, also ready-welded blades
(min. quantity 5 blades per size).

A) Type 510 of tungsten-silicon alloy steel with annealed back, cannot be resharpened

Width x thickness mm	Item No.		Teeth per inch (tpi)	
	roll	endless	tooth shape S	tooth shape K
2,5 x 0,65	832.302	832.402	14,18	–
3 x 0,65	832.303	832.403	10,14,18	–
4 x 0,65	832.304	832.404	10,14,18	–
6 x 0,65	832.306	832.406	6,8,10,14,18	6
8 x 0,65	832.308	832.408	4,6,8,10,14,18	4,6
10 x 0,65	832.310	832.410	4,6,8,10,14,18	3,4,6
13 x 0,65	832.313	832.413	4,6,8,10,14,18	3,4,6
16 x 0,65	832.316	832.416	4,6,8,10	3,4,6
16 x 0,80	832.317	832.417	3,4,6,8,10	3,4,6
20 x 0,80	832.320	832.420	3,4,6,8,10	3,4,6
25 x 0,90	832.325	832.425	3,4,6,8,10	2,3,4,6
32 x 1,10	832.332	832.432	3,4,6,8,10	2,3,4

Please specify tooth shape and tpi as well as length (for **endless** blades).

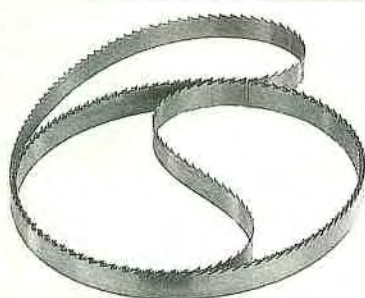
B) Type 526 of cobalt-bi-metal, teeth of HSS, band of flexible steel, for highest requirements, can be resharpened up to 10 tpi. C/carbide tipped blades upon request.

Width x thickness mm	Item No.		Teeth per inch (tpi)	
	roll	endless	tooth shape S	tooth shape K
4 x 0,90	832.504	832.604	10,14	–
6 x 0,65	832.506	832.606	14	6
6 x 0,90	832.507	832.607	8,10,14	4,6
10 x 0,90	832.510	832.610	8,10,14	4,6
13 x 0,65	832.513	832.613	10,14	4,6
13 x 0,90	832.514	832.614	6,8,10,14	3,4,6
20 x 0,90	832.520	832.620	4,6, 8,10,14	3,4,6
27 x 0,90	832.527	832.627	3,4,6,8,10	2,3,4,6
34 x 1,10	832.534	832.634	3,4,6,8,10	2,3,4

Please specify tooth shape and tpi as well as length (for **endless** blades).

C) Carbide-tipped saw blades on request!

315



Tooth shape A

Metal band saw blades for aluminium

of genuine Swedish steel

tooth shape A, ready for use, set and sharpened, can be resharpened.

Saw blades available:

- 1) 50 or 100 m rolls
- 2) cut-to-size, also ready-welded blades
(min. quantity 2 blades per size).

Width x thickness mm	Item No.		Teeth spacing appr. mm
	roll	endless	
10 x 0,60	833.010	833.110	4
25 x 0,80	833.025	833.125	6

Please specify length.

316



Saw rests for band saws

Item No. 834.001

tiltable by 40° to both sides, can also be used on grinding machines, very strong, easy to install and fast to remove, can be set at any angle, protects the blade.

Rest dimensions: 440 x 260 mm

Height: 100 mm

Band saw blade guides (1057)

with ball bearing rear roller, with replaceable wear resistant tread, lateral rollers with microadjustment and lubrication for life.

For metal as well as wood band saws.

Size	III	IV	VI
Wheel dia. mm	600 – 800	800 – 900	900 – 1000
Top guide	Item No.		
	836.018	836.120	836.222
Bottom right	836.019	836.121	836.223
Bottom left	836.020	836.122	–

Twin guides (1040)

with ball bearing rear roller, roller with replaceable, wear resistant tread, **two lateral rollers** with microadjustment and lubrication for life; special design for very accurate cuts and heavy-duty operation; especially recommended for use with feed devices and for cutting thick materials.

Size	III	IV	VI
Wheel dia. mm	600 – 800	800 – 900	900 – 1000
Top guide	Item No.		
	837.024	837.025	837.026

Use normal bearing grease for the rear roller ball bearings whereas special oil (1059) should be used for the lateral rollers (see Item No. 320).

Twin guides can only be supplied for the top guide; bottom guide see No. 1057.

Spares for saw blade guides 1057 and 1040

Part No.	Size	III	IV	VI
	dia. of rear roller	58 mm	65 mm	78 mm
	Description	Item No.		
K/2	ball bearing rear roller (top) with sleeve & cap	839.168	839.169	839.170
K/3	ball bearing rear roller (top) with sleeve & cap	839.171	839.172	839.173
K/1	spare treads with screws	839.174	839.175	839.176

Special oil 1059 for band saw guides

Only this oil should be used for lubricating lateral and rear roller bearings. A different oil of ball bearing grease influences the smooth motion of the rollers and the special oil extends the life of the saw guides.

Item No. 840.059 in 20 ml bottles

Cooling lubricant stick 'Manitou Easy Cut'

used in metal-cutting and metal forming.

Reduces friction between tool and workpiece, excellent adhesion, economical in use for sawing, grinding and thread-cutting.

Item No. 840.100 in sticks of appr. 350 gr.

Rubber cork lining for band saw wheels

of a special flexible quality, thickness 5 mm

Item No.	841.020	841.025	841.030	841.035	841.040	841.045
Width	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm
Item No.	841.050	841.055	841.060	841.065	841.070	841.080
Width	50 mm	55 mm	60 mm	65 mm	70 mm	80 mm

Can be supplied in the following lengths or also per meter:

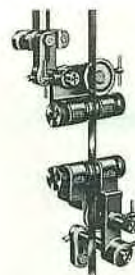
Wheel dia. mm	300	400	500	600	700	800	900	1000
Length mm	1000	1320	1620	1950	2280	2600	2900	3200

Cork lining cement Type 1014

for glueing cork linings to band saw wheels.

Item No.	842.250	842.500
Contents	250 gr.	650 gr.

317



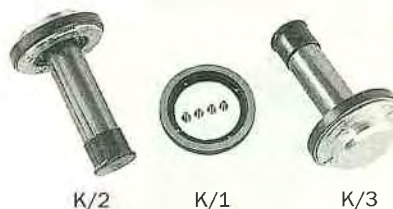
318

Twin guides



Bottom guide

319



320



320A



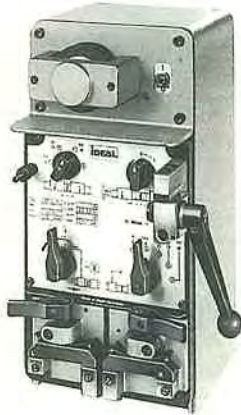
321



322



323



Band saw welding device

for blunt-welding of band saw blades and knives without solder and flux; fast welding of saw blades, lasting and high-strength joints, simple to operate, minimum of maintainance required.

For welding bimetal saw blades, welding devices can be equipped with an electronic heating attachment.

Available for voltages from 110 to 380 V, 50/60 cps, with additional transformer also up to 500 V, 50/60 cps.

Welding devices BSS 040 to BSS 060 must be equipped with water-cooled electrodes for welding tungsten-alloy saw blades.

Type	Saw blades for		Wattage kVA	Item No.			
	metal mm	wood mm		basic device	device w/shears	w/shears & grinding attachmt	w/heating attachment
BSS 016	6 - 12	3 - 16	2	-	843.016	843.017	843.018
BSS 025	6 - 19	4 - 25	3	-	843.025	843.026	843.027
BSS 040	6 - 27	6 - 40	4	843.040	843.041	843.042	843.043
BSS 050	6 - 34	6 - 50	8	843.050	-	-	843.051
BSS 060	6 - 34	6 - 60	8	843.060	-	-	843.061

323A

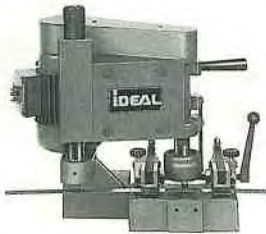


Shears for Item No. 323

The band shears have been especially developed for burless, straight and rectangular cuts guarantee clean cuts and no twisting. A clean and rectangular end is a prerequisite for immaculate butt welding.

Item No.	Type	For band width	For welding machine
844.025	AHM 025	bis 25 mm	BSS 016/025 (incl.)
844.040	AHM 040	bis 40 mm	BSS 040 (f. attachmt.)
844.050	AHE 050	bis 50 mm	BSS 050 (separate)
844.060	AHE 060	bis 60 mm	BSS 060 (separate)

323B



Grinding machines for No. 323

Filing devices and grinding machines are used for redressing blade welds. The grinding machine grinds the welds of butt welded blades or facets the blade ends for overlap soldering.

Item No.	Type	For band width	For welding machine
845.025	ESM 025	bis 25 mm	BSS 016/025 (av. built-in)
845.040	ESM 040	bis 40 mm	BSS 040 (av. built-in)
845.060	SMH 060	bis 60 mm	BSS 050/060 (separate available)

324



Filing devices

for filing welds of butt welded blades and for faceting blade ends for overlap soldering.

Item No.	Type	For band width
846.035	FAE 035	up to 35 mm
846.060	FAE 060	up to 60 mm

325



Blade solder

Item No.	Description
847.089	solder with flux 10 mm (1,4 m)
847.270	silver solder 10 mm (3,0 m)
847.280	silver solder 15 mm (3,0 m)
847.290	flux, 100 g tin
847.295	flux, 500 g tin

326



Setting device for band saw blades Type 1026

Item No. 848.001

for manual operation, for setting band saw blades with a width of 6 to 50 mm and tooth spacing of 2 to 24 mm.

Up to a tooth spacing of 12 mm, any second tooth can remain as a broaching tooth.

Accurate setting as the guide jaws automatically clamp the blade during setting. Any setting depth and width can be adjusted.

Net weight appr. 9,3 kg.

Band saw blade setting and levelling device 'WELLUS'

for setting and resetting band saw blades (width 10 to 45 mm) on the sawing machine.

Item No.	Type	Teeth spacg. up to
849.500	1500	3 mm
849.501	1501	3 - 6 mm
849.502	1502 *	7 - 11 mm
849.503	1503	10 - 13 mm

* Standard type

Item No.	Spares
849.504	1 pair of rollers for No. 1500
849.505	1 pair of rollers for No. 1501
849.506	1 pair of rollers for No. 1502
849.507	1 pair of rollers for No. 1503
849.508	roller holder w/two-knurled head screws
849.510	back roller with pin



327

Band saw sharpening equipment Item No. 850.001

Typ EL-R/B, table machine

Easy to adjust and operate; the machine passes over broken-off teeth; the device is fully enclosed, thus preventing the ingress of metal particles and dust.

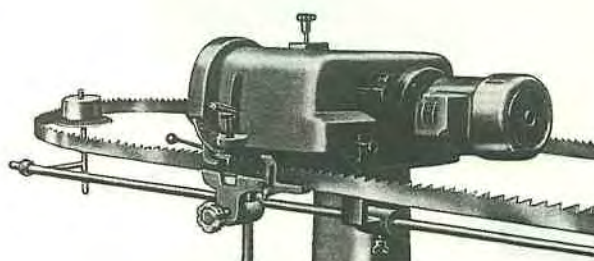
The machine is equipped with a three-phase motor in the standard version; it can also be equipped with an AC motor at extra charge.

Technical data:

band blades	up to 40 mm wide	grinding disk dia.	150 mm
tooth spacing	up to 30 mm	power	0,37 kW-0,5 HP
tooth height	up to 25 mm	net weight	appr. 50 kg
sharpening speed	65 teeth per min.		

Accessories available:

Item No.	Description
850.101	fixing device for circular saw blades, dia. 100 to 600 mm center hole dia. 15 to 45 mm
850.103	machine stand with tool shelf, lockable main switch and band saw blade supports
850.104	exhaustor compl.
850.105	grinding disk, dia. 150 mm



328

Impact hardness tester 'POLDI' Item No. 329.001

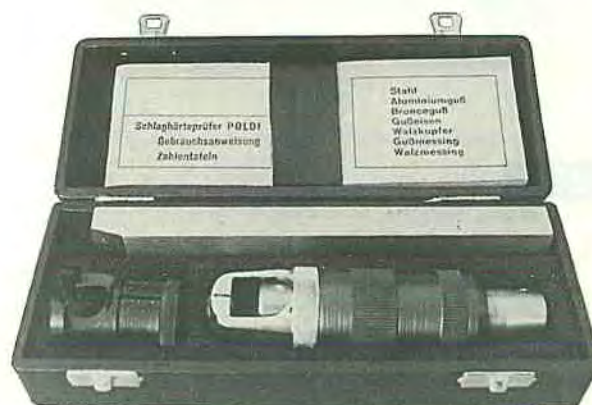
This pocket size instrument enables you to verify the Brinell hardness by comparison of stroke of hammer to the workpiece and a gauge bar. It may be used everywhere for pieces with weight of more than 5 kg.

Complete with magnifier, gauge bar, tables, manual and case (175 x 65 x 35 mm) for workpieces with hardness between 35 and 220 kg/sqmm = 100 - 600 Brinell.

Gauge bars: 12,5 x 12,5 x 150 mm hardness: 70 kp/sqmm
valid for 40 - 50 tests.

Spare parts:

Item No.	Description
329.002	gauge bars 12,5 x 12,5 x 150 mm, 70 kp / sqmm
329.003	comparison table
329.004	holder with ball
329.005	impact housing
329.006	single striker
329.007	spare spring
329.008	8 times magnifier



329

Impact hardness tester COMBI Item No. 329.101

This instrument is based on the same method as the POLDI-tester (see above). The penetrating tool is constructed in such manner that even small parts with a thickness of a few mm may be tested. The table is sufficient for all metals.

Complete with DUCON twin-cone, POLDI head, COMBI table, POLDI table, gauge bar, microscope (magnification 20 times) and case (185 x 145 x 75 mm).

Spare parts:

Item No.	Description
329.102	gauge bar 12,5 x 12,5 x 150 mm, 70 kp / sqmm
329.003	POLDI table
329.103	POLDI head
329.104	COMBI table
329.105	twin-cone
329.106	holder for twin-cone
329.107	case
329.108	microscope (magnification 20 times) with light



329A

330



EQUOTIP Hardness Tester

Lightweight, portable metal hardness testers, battery-operated. Based on a novel dynamic rapid test procedure. Wide measuring range, high precision combined with simple handling and low test expenditure. Slim workpieces and those weighing between 2 and 5 kg must be placed on a solid baseplate for testing in such manner that the force of the impact neither shifts them nor causes them to flex, since otherwise the readings could be falsified.

Basic units and applications:

Unit D Item No. 330.001

for workpieces with hardness not exceeding 940 HV, i.e. 68 HRC.

Cast iron: 90 – 380 Brinell

Aluminium casting: 30 – 160 Brinell

Workpieces of compact form and a weight of more than 5 kg can be tested without special preparation.

Unit G Item No. 330.002

Special feature: Enlarged test tip, increased impact energy (approx. 9 times that of type D). Low demands on measuring surface finish. For measurements in the Brinell range only (max. 650 HB). Application: Solid components e.g. heavy castings and forgings.

Further spare parts:

Coils, impact bodies, test blocks, coupling paste, indicating devices, connection to RS 232 C interfaces, printer and connections to printers upon request!

331



Moisture testing instrument C-M

for the fast determination of the moisture content of foundry sands

The C-M-instrument uses the following system for determining and measuring the moisture content of the sand: carbide is dissociated by water by which acetylene evolves which increases the pressure in the steel cylinder. The water content of the sample can be determined from the pressure increase and the weight of the sample by means of the table.

1) C-M-instrument with case Item No. 331.001

comprising all instruments required for carrying out measurements: stainless steel pressure vessel with manometer, hammer, chisel, scales, mortar and tin with 20 capsules of calcium-carbide, testing medium for manometer and seals as well as manual (all components also available individually).

2) Capsules with calcium-carbide

Item No. 331.003 tin containing 100 capsules

Item No. 331.004 tin containing 20 capsules

332



Moisture testing balance UX 2011

for moulding sands

Item No. 332.001

For almost all solid and liquid substances.

The principle is drying by means of infrared radiation with simultaneous weighing, the lost of weight will be indicated in percentage.

All parameters that can be preselected for the application-oriented operations can be displayed as a menu on an LCD as well as the radiation intensity.

The UX 2011 is available alternatively with or without in-built printer. The printout of all important data is GLP compliant.

Item No. with printer: 332.001D

Furthermore, all data are put out through the standard V24/RS 232 interface for separate printers or PC's or for printing.

Technical data:

Weighing range	60 / 120 / 310 g
Increment	0,001 / 0,002 / 0,005 g
Radiator performance	250 watt or 375 watt
Sample weight	appr. 1 g and more
Sample volume	max. 95 cm ³
Drying pan	dia. 110 mm (re-usable!)
Power supply	230 V – 20%/+15%
Power frequency	48 – 63 Hz
Power consumption	275 or 400 VA
Dimensions	appr. width 360 x depth 280 x height 415 mm
Weight	appr. 7,5 kg

Screening instrument type PSA Item No. 333.001

electro-magnetic vibration shifter with amplitude control, timer, a set of 10 sieves with bottom and lid (dia. 200 mm, mw 1,4 – 0,063 mm)

For determining grain size composition by screening the silt-free and dry foundry sand.

Height appr. 670 mm, width appr. 284 mm, depth appr. 383 mm

Voltage 220 V AC, power consumption 40 watt

Accessories:

Wet screening device PSB for analysing silt content

Item No. 333.002

Remarks: Sieves see page 38, Item No. 155



333

Ramming instrument type PRA Item No. 334.001

for producing cylindrical sand specimen (tensile test and bending test specimen)

Height appr. 643 mm, width appr. 205 mm, depth appr. 216 mm

Accessories:

Item No.	Type	Application
334.002	PMU	det. of sand height in test tube
334.003	PFB	det. of sand flow ability
334.004	PBK	prod. of bedding test specimen
334.005	PAB	discharge of test bodies & cleaning of the test body tube



334

Permeability testing instrument type PDU Item No. 335.001

for measuring the permeability of the sand to gas.

Height appr. 480 mm, width appr. 230 mm, depth appr. 403 mm

Item No. 335.001



335

Strength testing instrument type PFG Item No. 336.001

Hand operated hydraulic press for determining the crushing and shearing strength of cylindrical specimen.

Height appr. 430 mm, width appr. 613 mm, depth appr. 180 mm

Accessories:

Item Nor.	Type	Application
336.002	PSP	clearage strength and dry
336.003	PQS	tensile strength testing
336.004	PBV	shearing strength testing
336.005	PHD	crushing strength testing up to 2500 N/cm ²



336

Set of testing instruments PKS Item No. 336.101

for carrying out periodic function tests on devices 'PRA', 'PDU' and 'PFG'



336A

Other sand testing equipment upon request.

337

Aluminium-speed-tester Item No. 337.001

for testing aluminium melts with **four test methods**:

- a) hydrogen test
- b) density test
- c) Dross-test
- d) Straube-Pfeiffer-test

337A

Thermo-analysis system TA 7604 LC

Item No. 337.101

Static device for monitoring AlSi melts by means of thermal analysis. Modification, grain refinement and all the thermal data governing the structure of the metal are determined automatically within a few moments.

Further test equipments for aluminium melts upon request!

338

Electronic mould strength tester

Type PFP Item No. 338.101

For examination of the compaction effect of moulding machines and the compaction susceptibility of moulding sands. Measurement is carried out by means of a crystal oscillator sensing element. The force measured corresponds to the actual penetration resistance as a measure of the mould strength. This device measures and memorizes the maximum reading, automatically calibrates the zero point and is disconnected also automatically with the last measured value remaining stored.

Technical data:

Measuring range:	0,2 – 34,5 N/cm ²
Resolution:	1 N (power)
Reproducibility:	+/- 1 Digit
Weight:	0,125 kg
Dimensions:	130 x 30 x 22 mm
Battery capacity:	ab. 2.500 measurements

339

Viscosity measuring instrument ('Ford-cup')

Handy cup (cont. 100 ml) of aluminium for measuring the viscosity and time of drop-out of all kinds of chemical liquids.

Instruction:

Dip the cup into the liquid until it will be full. Take out the cup and stop the time until the nozzle will be visible.

Item No.	339.004	339.002	339.003	339.005	339.006	339.008
Dia. of nozzle	4 mm (standard)	2 mm	3 mm	5 mm	6 mm	8 mm

Stand for the cup: **Item No. 339.010**

339A

Mould SK 02



Mould SK 03



Mould SK 04



Mould SK 05



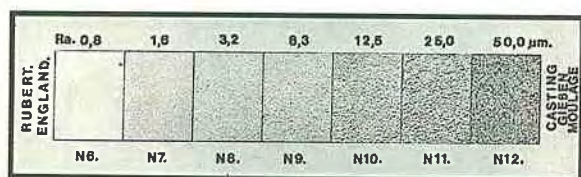
Mould SK 06



Mould SK 07

Moulds for sample taking

Item No.	Mould	Application	Sample dimensions:
339.102	SK 02	For non-ferrous metal alloy samples with a tendency for precipitations and segregations. The flow gate is removed and the sample is milled or turned.	6 x 45 mm dia.
339.103	SK 03	For high purity Fe-, Ni-, Co-, Cu-base samples with low segregation. No pin cutting is necessary. The base of the sample is ground, milled or turned.	20 x 40 mm dia.
339.104	SK 04	For high purity Fe-, Ni-, Co-, Cu-base samples with low segregation. The side of the sample is ground, milled or turned.	20 x 40 x 40 mm dia.
339.105	SK 05	Mould with asymmetric funnel for pig and cast iron samples.	4 x 40 mm dia.
339.106	SK 06	Rotating mould with ceramic funnel for pig and cast iron samples. Successively two samples can be taken. The base of the sample is ground with a swing grinder.	6 x 27 mm dia.
339.107	SK 07	Mould for pig and cast iron samples with increased collar. Easy handling in automated systems. The base of the sample is ground with a circular sander or a belt grinder.	11 x 5 x 38 mm dia.

340

Surface-control-gauge

Item No. 340.001

For checking and determination of the surface quality of castings made of any ferrous or non-ferrous metal for all casting systems by means of simply comparison of touching and viewing; made of stainless steel and long-life.

The 7 pieces of the set represent the normal surface qualities which may be obtained by casting from die-casting (class N6/Ra 0,8 my) along investment and gravity-die-casting down to hand-moulded sand-casting (N12/ra 50 my) according to DIN 4766 T2, as well as all metals (light-metals, cast iron and heavy metals).

An additional surface structure produced by the die-casting-die or gravity-die is superposed on the roughness samples N6, N7 and N8.

Mixer for core sand Type M 35 F Item No. 341.001

multi-purpose mixer with two solid rubber wheels.

For resin bonded moulding masses and moulding and core sands with binders. Robust and reliable construction with aluminium base in which the drive and the electrical systems are incorporated. Push-button controlled, mixing bowl detachable, with mixing tool, smooth surfaces, facilitating cleaning, short mixing time, intensive mixing – the ideal mixer for small quantities!

Motor with overload protection.

The mixing bowl is firmly attached to the drive flange by means of a hook.

The mixing arm with blade is introduced into a square tube. After mixing the arm is removed and re-introduced at 90°. The mixing bowl can now be removed and emptied.

Technical data:

Dimensions:

length 650 mm, width 426 mm, height 850 mm, weight appr. 77 kg, motor 0,75 kW, 220 – 380 V, 3 m long cable with plug.

Mixing bowl:

height 400 mm, diameter 400 mm, 3 mm thick steel sheet, capacity appr. 35 l.

Separately available:

- a) **Mixing bowl** as described above
- b) **Mixing tool** as shown

Item No. 341.002

Item No. 341.003



341

ZYKLOS-Forced-flow-mixers

The offset mixing star rotates synchronously with the mixing pan thus producing high levels of shearing effect and kinetic energy release. Due to the high relative velocity of the batch a homogenous mixture is quickly achieved. Statically mounted mixing tools on the gear arm effect a horizontal and vertical stirrance within the batch.

A wall scraper continuously removes batch residues from the wall pan and deposits this back into the batch flow stream.

The pressure of the batch against the wall and the bottom of the mixing pan, produced by the mixing tools, makes the mixing pan turn co-currently without any extra drive. This rotation can be supported – if necessary – by an additional pan drive. In order to intensify the mixing process, we can supply high speed agitators (as an option).

Model range

Item No.	341.131	341.150	341.175	341.250	341.251	341.350
Type	ZK 30	ZK 50 HE	ZZ 75 HE	ZZ 150 HE	ZK 150	ZK 250
Batch capacity ¹⁾ [L] (ready made mix)	30	50	75	150	150	250
Max. dry charge ¹⁾						
[L]	40	56	108	170	170	365
[kg]	50	80	120	240	240	400
Mixing pan						
diameter [mm]	512	597	800	900	900	1250
height [mm]	294	300	322	392	392	446
Design	manually tiltable	electr. tiltable	transportable	transportable	hydraul. tiltable	hydraul. tiltable
Gear arm movement	manual	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
Drive performance						
mixing star [kW]	1,5	1,5	2,2	4	4	7,5
hydraulics [kW]	–	1,1	1,1	1,1	1,5	4
mixing pan [kW]	–	0,75	–	–	1,5 ²⁾	1,5 ²⁾
agitator ²⁾ [kW]	0,37	0,37	1,5	4	4	4
Connected loads						
voltage [V]	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz
safety fuse [A]	16	16	16	16	16 (32)	32
Approx. weight [kg]	180	450	460	600	800	1400

1) The batch capacity depends on the product, the data applies to normal concrete.

2) Special equipment.

For further technical information please ask for individual prospectus for the mixers.

Other sand mixers upon request!



ZK 250



ZK 150



ZZ 150 HE



ZZ 75 HE



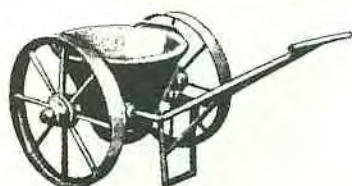
ZK 30



ZK 50 HE

341A

342



Slag car

for taking and transporting liquid slag, capacity 105 liters, with reinforced rim and overflow baffle, two wheels of profile steel, dia. 860 mm, with cast hub, roller bearings and hub protectors.

1. Model B with a detachable, cone-shaped ladle Item No. 342.001

The ladle can be set down at the furnace, undercarriage with rigid support and pole. For emptying the ladle one jaw with hole. When empty, the ladle veers around, width 1160 mm, total length 2000 mm

2. Model M with a firmly fitted ladle Item No. 342.002

with double-arm pole and adjustable support, width 1000 mm, total length 1600 mm

3. Spares

Description	Item No.	
	For model B	For model M
spare ladle	342.102	—
spare wheel	342.104	342.103

343



Capito-wheelbarrows 'Industry'

especially designed for heavy-duty application, strong frame of angle steel, wheelbarrow trough of thick-walled sheet metal, welded, rim with reinforcements, capacity 85 liters, **3 mm thick sheet metal**

Trough: 820 mm long, front width 680 mm, rear width 655 mm

Item No.	Model	Wheel design	Wheel size	Wheel bearing
343.001	1.17.01	tire wheel	400/100 mm	ball bearings
343.004	1.17.04	solid rubber wheel	400/ 90 mm	roller bearings
343.010	1.17.10	iron wheel	325 mm dia.	ball bearings

Also available:

Description	Item No. for type		
	1.17.01	1.17.04	1.17.10
spare wheel	343.101	343.104	343.110
spare trough		343.105	
add. wooden bottom		343.102	
add. sheet metal bott.		343.103	
spare handles		343.120	

344



Capito-wheelbarrows 'Matador'

strong frame of angle steel, wheelbarrow trough of sheet metal, welded.

Trough: 850 mm long, front width 640 mm, rear width 570 mm

Item No.	Model	Wheel design	Wheel size	Wheel bearing
344.001	1.15.01	tire wheel	400/100 mm	plastic ball bearings
344.002	1.15.02	tire wheel	400/100 mm	ball bearings
344.021	1.15.21	solid rubber wheel	400/ 90 mm	roller bearings
344.038	1.15.38	iron wheel	325 mm dia.	ball bearings

Also available:

Description	Item No. for type			
	1.15.01	1.15.02	1.15.21	1.15.38
spare wheel	344.101	344.102	344.121	344.138
spare trough		344.105		
add. wooden bottom		344.103		
add. sheet metal bott.		344.104		
spare handles		344.140		

345



Capito-wheelbarrows 'Export'

galvanized trough, non-warping frame, reinforced run, capacity 85 l, **1,20 mm thick sheet metal**

Trough: 880 mm long, front width 680 mm, rear width 625 mm

Item No.	Model	Wheel design	Wheel size	Wheel bearing
345.006	1.10.06	tire wheel	400/100 mm	plastic slide bearings
345.007	1.10.07	tire wheel	400/100 mm	ball bearings
345.017	1.10.17	solid rubber wheel	400/ 90 mm	roller bearings

Also available:

Description	Item No. for type		
	1.10.06	1.10.07	1.10.17
spare wheel	345.106	345.107	345.117
spare trough		345.120	
tipping bracket		345.108	
spare handle		345.122	

Capito-deep trough 'Eurocar'

sturdy wheelbarrow with **deep trough**, easily filled with a shovel, can be emptied **completely**, trough galvanized, flat trough bottom, **tipping bracket**, low load weight at handles, easy to empty, contents **100 liters**, **sheet metal thickness 1,0 mm**.

Trough size: length 880 mm, width front 590 mm, width rear 550 mm

Item No.	Model	Wheel design	Wheel size	Wheel bearing
345.620	1.16.20	tire wheel	400/100 mm	plastic side bearing
345.619	1.16.19	tire wheel	400/100 mm	ball bearings
345.622	1.16.22	solid rubber wheel	400/ 90 mm	roller bearings

Also available:

Description	Item No. for type		
	1.16.20	1.16.19	1.16.22
spare wheel	345.650	345.651	345.652
spare trough	3 4 5 . 6 6 0		
spare handles	3 4 5 . 6 7 0		



345A

Fagro-wheelbarrows

wheelbarrow for heavy-duty application trough enameled

trough rim with reinforcement, extra strong wheelbarrow frame, trough 25 mm thick deep-drawn sheet metal

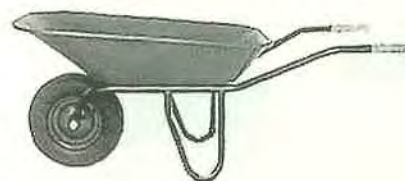
Size of trough 346.085/185: length 890 mm; front width 720 mm; rear width 640 mm

Size of trough 346.095/195: length 1020 mm; front width 750 mm; rear width 50 mm

Item No.	Cont.	Wheel design	Wheel size	Wheel bearing
346.085	85 ltr.	tire wheel	400/100 mm	ball bearing
346.185	85 ltr.	solid rubber wheel	400/ 80 mm	ball bearings
346.095	95 ltr.	tire wheel	400/100 mm	ball bearing
346.195	95 ltr.	solid rubber wheel	400/ 80 mm	ball bearing

Also available:

	Item No. for type			
Description	346.085	346.185	346.095	346.195
spare wheel	346.301	346.302	346.301	346.302
spare trough	346.285		346.295	
spare handles	346.303			



346

Capito-wheelbarrows „Compact“

easy to handle and move, even when fully loaded, easy to tip up, 100% discharge, wheelbarrow frame of angle steels, wheels with roller bearings

Item No.	Model	Carrying cap.	Dimensions (l x w x h mm)	Wheel design	Wheel size
347.100	1.21.00	150 ltr.	1526 x 780 x 710	tire wheel	400/100 mm
347.101	1.21.01			solid rubber wheel	400/ 90 mm
347.103	1.21.03			tire wheel	615 mm dia.
347.104	1.21.04			solid rubber wheel	650/ 50 mm
347.200	1.22.00	200 ltr.	1580 x 780 x 810	tire wheel	400/100 mm
347.201	1.22.01			solid rubber wheel	400/ 90 mm
347.203	1.22.03			tire wheel	615 mm dia.
347.204	1.22.04			solid rubber wheel	650/ 50 mm
347.300	1.23.00	250 ltr.	1630 x 780 x 900	tire wheel	400/100 mm
347.301	1.23.01			solid rubber wheel	400/ 90 mm
347.303	1.23.03			tire wheel	615 mm dia.
347.304	1.23.04			solid rubber wheel	650/ 50 mm

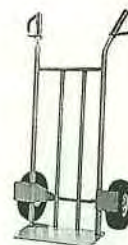


347

Capito-bag trucks

crossbar curved, PVC-enamel, safety handles, wheels with roller bearings

Item No.	Model	Carrying cap.	Dimensions. (l x w mm)	Shovel size mm	Wheel design	Wheel size
348.000	1.30.00	300 kg	1100 x 600	400 x 160	tire wheel	260/ 85 mm
348.001	1.30.01				solid rubber wheel	250/ 50 mm
348.100	1.31.00	400 kg	1200 x 600	400 x 160	tire wheel	260/ 85 mm
348.101	1.31.01				solid rubber wheel	250/ 50 mm
348.500	1.35.00	500 kg	1200 x 630	500 x 130	tire wheel	400/100 mm



348

Barrel stands Item No. 349.001

for holding, conveying and decanting 200 l iron-hoop drums and corrugation barrels. The drum can be rotated easily by hand, tubular steel frame, drum rests on four 60 mm dia. rollers, lever arm, length 1200 mm, detachable, 2 wheels and 2 caster wheels

Length 830 mm, width 690 mm, filling height 550 mm



349

350

Shotblast respiratory protector 5510

Type 5510 shotblast respiratory protector offers the wearer optimum protection and safety during all shot and sand blasting work.

Head protection consists of a deep-seated aluminium helmet with soft internal padding. The apparatus is foam-lined internally to reduce noise level. An protective overall can be supplied which considerably increases the operational life of the apparatus and also reduces noise level greatly from rebounding sand and shot.

The convex-shaped visor with transparent plastic visor plate and steel mesh is fitted onto a rubber sealing frame on the helmet. This ensures a particularly wide field of vision.

The visor is sealed tight onto the frame by three quick-release clamps which enable the visor plate to be exchanged easily.

There is a choice of accompanying jackets.

Item No.	Type	Design
350.001	DKO	of plastic-covered textile and canvas, without sleeves
350.002	DKM	as DKO, but with sleeves
350.003	DAM	of air-permeable Avilastik, with sleeves

Spare parts:

Item No.	Description
350.100	Filter for compressed air ALK 2021
350.101	Face shield for helmet (cont. 10 pcs.)
350.102	Plastic shield for helmet (cont. 10 pcs.)
350.103	Steel mesh for window
350.106	Hose for compressed air 9 mm diam. with acc.

351

AIRSTREAM anti-dust helmets

Respirator, safety-helmet and face protection in one product!

Powered by a belt mounted battery the integral motor fan draws contaminated air through filters in the helmet. It then directs a cooling stream of clean air over the wearer's face.

For extremely contaminated or oxygen-lacking air compressed-air operated helmets are available! Upon special request!

352

Respiratory protective hood 5001 MFH

The hood covers head and shoulders. The front side is made of plastic-coated textile fabric and the reverse of canvas. There is a visor above the built-in half mask which has an easy to clean laminated safety glass and an anti-dim glass which prevents misting of the visor.

Depending of the type of filter the following versions are available:

Item No. 352.001 with filter 35-24 P2-35/70 cpl.
(housing, filter against coarse dust, particle-filter of class P2)

Item No. 352.002 with filter 35-25 P3-35/70 cpl.
(housing, filter against coarse dust, particle-filter of class P3)

Spare parts:

Item No.	Description
352.101	Glass-shield 145 x 108 x 3 mm (cont. 10 pcs.)
352.102	Anti-dim plastic shield 145 x 108 x 0,3 mm (cont. 10 pcs.)
352.103	Safety glass-shield 140 x 108 x 3 mm
352.104	Filter-housing 5570/35
352.105	Filter 24 - class P 2 (cont. 5 pcs.)
352.106	Filter 25 - class P 3 (cont. 5 pcs.)
352.107	Filter 35/70 against coarse-dust (cont. 20 pieces)

353

Sand blasting suits

of cotton-canvas, grey

1) Jacket with collar, buttoned up, with buttons.

2) Trousers with two pocket slits.

alt.: with changeable leather strengthening 20 x 54 cm.

3) Overall (1-piece)

with collar, buttoned up, with button, 2 pocket slits and adjustable belt.

Design/ Version	Size/Item No.						
	48	50	52	54	56	58	60
Jacket	353.048	353.050	353.052	353.054	353.056	353.058	353.060
Trousers without leather	353.148	353.150	353.152	353.154	353.156	353.158	353.160
Trousers with leather	353.248	353.250	353.252	353.254	353.256	353.258	353.260
Overall	353.348	353.350	353.352	353.354	353.356	353.358	353.360

Protective foundry clothing

Protection against molten metal drops at low radiant heat. The new Titan material is a light weight Kevlar-Viscose cloth (240 g/sqm) which provides total comfort throughout an 8 hour's shift. Titan's material resistance to burn through has been tested in accordance with DIN 54366/660863 and reaches level SA.

- 1) **Protective jacket** length 750 mm, 3 pockets, outside with flaps
- 2) **Protective trousers** length 1000 mm, 2 side pockets
- 3) **Foundryman's shirt** length 750 mm, inset sleeves and opening in the mid.

Type	Size/Item No.							
	46	48	50	52	54	56	58	60
Jacket	354.046	354.048	354.050	354.052	354.054	354.056	354.058	354.060
Trousers	354.146	354.148	354.150	354.152	354.154	354.156	354.158	354.160
Shirt	354.246	354.248	354.250	354.252	354.254	354.256	354.258	354.260



1 / 2

354

3

Asbestos-free heat protective clothing

Design A: of special fabric 'ARAMOLL' 8258 ZM (yellow), weighs appr. 580 gr/sqm, with muslin lining (with flame-retardant finishing) up to appr. 300° C

Design B: as described above, however, with an **aluminium coating** (protection against radiation heat)

	Item No.	
	Design A	Design B
1) One-piece overall with collar	355.011	-
2) Trousers with shoulder straps, however, without bib		
1.000 mm long	355.021	355.221
1.150 mm long	355.022	355.222
3) Dungarees with shoulder straps		
1.000 mm long	355.031	355.231
1.150 mm long	355.032	355.232
4) Jackets		
780 mm long	355.041	355.241
1.000 mm long	355.042	355.242

When ordering please specify size.

5) Hoods without shoulder protection standard size, without sight glass	355.061	355.261
5 a) Hoods with shoulder protection standard size, with sight glass of laminated glass (150 x 90 mm) spare glass	355.071 355.075	355.271
6) Apron with long sleeves poppers fastening sides held together at the back by means of a brass chain, width 1000 mm front 1.100 mm long front 1.300 mm long	- -	355.257 355.257A
6 a) Aprons with bib and straps		
length x width		
800 x 1.000 mm	355.051	355.251
1.000 x 1.000 mm	355.052	355.252
1.100 x 1.000 mm	355.053	355.253
1.200 x 1.000 mm	355.054	355.254
1.300 x 1.000 mm	355.055	355.255



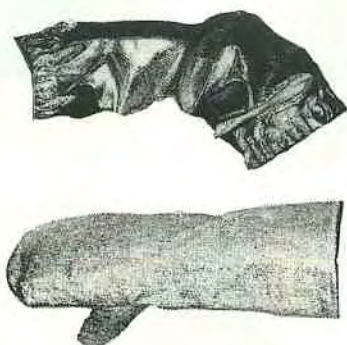
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Continued on page 110

Asbestos-free heat protective clothing

Design A: of special fabric 'ARAMOLL' 8258 ZM (yellow), weighs appr. 580 gr/sqm, with muslin lining (with flame-retardant finishing) up to appr. 300° C

Design B: as described above, however, with an **aluminium coating** (protection against radiation heat)



	Item No.	
	Design A	Design B
7) Sleeves with elastic at both ends 430 mm long 500 mm long	355.081 355.082	355.281 —
8) Mittens with thumb lat. with reinforcement for the palm 290 mm long 430 mm long 650 mm long	355.091 355.092 355.093	355.291 355.292 355.293
8 a) Mittens as descr. (8), however, with reinforcement for the palm 290 mm long 430 mm long 650 mm long	355.094 355.095 355.096	355.294 355.295 355.296
8 b) Mittens as descr. (8), however, with leather reinforcement for the palm and thumb 290 mm long 430 mm long 650 mm long	355.097 355.098 355.099	355.297 355.298 355.299
8 c) Mittens as descr. (8), however, with add. wool lining 290 mm long 430 mm long 650 mm long	355.100 355.101 355.102	355.300 355.301 355.302
9) Three-finger gloves (thumb, index and middle fingers and small finger together) 290 mm long 430 mm long 650 mm long	355.111 355.112 355.113	355.311 355.312 —
10) Five-finger gloves 290 mm long 430 mm long	355.121 355.122	355.321 355.322
11) Bags without thumb 300 x 180 mm 430 x 200 mm 630 x 200 mm	355.131 355.132 355.133	— — —
12) Spats with extra large foot protection, appr. 385 mm long with straps with velcro-fastening	355.141 355.142	355.341 355.342
13) Boots with wooden sole 350 mm long 450 mm long	355.151 355.152	355.351 355.352

Hightemp heat protective gloves

all models have flame-retardant cotton insulation and lining and are also very hard-wearing.

1) for short-term use up to 500°C

made of Kevlar-fabric KK-4 (650 g/sqm)

Item No.	Type	Length	Additional insulation
a) Mitts, can be worn on both sides			
356.101	051.0678	290 mm	-
356.102	053.0878	400 mm	-
356.121	051.1278	290 mm	flame-retardant
356.122	053.1178	400 mm	wool-fabric
356.131	054.1985	400 mm	cotton terry
b) Five-finger gloves			
356.111	062.0378	330 mm	-
356.112	062.1278	400 mm	-

2) for short-term use up to 600°C

made of Kevlar-/Carbon-fabric SMKR-4 (640 g/sqm)

Item No.	Type	Length	Additional insulation
Mitts, can be worn on both sides			
356.141	051.2080	290 mm	flame-retardant
356.142	053.5080	400 mm	wool and cotton terry

3) for short-term use up to 1000°C

made of PBI-/Kevlar-fabric PK-1 (620 g/sqm)

Item No.	Type	Length	Additional insulation
Mitts, can be worn on both sides			
356.151	051.3123	290 mm	flame retardant
356.152	053.7123	400 mm	wool-fabric and quilted glass fibre

Typ 053.7123 has a gauntlet of Kevlar-fabric KK-4 (650 g/sqm)

4) Combi gloves consisting of an insulation part and an outer part which can be changed when it is no longer suitable.

This considerably extends the life of the insulation part.

(This will also **save expenses!**)

a) Insulation parts, mitts which may be worn on both sides

with add. insulation of flame-retardant wool-fabric.

Item No.	Type	Length	Material	Gauntlet
356.161	051.2278	290 mm	Kevlar-fabric	-
356.162	053.5978	400 mm	KK-4 650 g/sqm	Kevlar-/Viscose-felt
356.163	051.2287	290 mm	Kevlar-Vis-	-
356.164	053.5987	400 mm	cose-felt	Kevlar-/Viscose-felt

b) Outer mitts

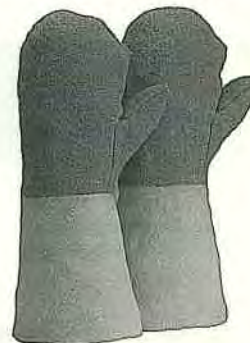
Item No.	Type	Length	Material	Heat resistant
356.171	051.2481	290 mm	Kevlar-K-6 (360 g/sqm)	500°C
356.172	051.2423	290 mm	PBI-Kevlar-PK-2 (620 g/sqm)	1000°C



051 0678



062 0378



053 7123



053 5987



051 2423

Heat resistant 5-finger-gloves

for core makers

resistant **up to 280°C** contact heat, esp. designed for the production of **hot-box-cores**, excellent insulation by terry-cloth fabric, long-life type, hard-wearing, very reasonable.

Standard size for men

Item No.	Type	Length
356.201	GP-8203-S	250 mm
356.202	GP-8205-S	300 mm



5-Finger-gloves of heat-resisting leather

made of red, impregnated skiver, thickness ab. 1,3 mm, gauntlet of the same leather, sewed with Kevlar-yarn.

Produced according to DIN EN 420, 407.

Item No.	Type	Length	Size	Lining	Heat-resistant
356.301	6541-35-F3	350 mm	9/F 3	-	150°C
356.302	6541-35-F4	350 mm	10/F 4	-	
356.303	6542-35-F4	350 mm	10/F 4	cotton	200°C



357

Leather mittens for use on either hand

Length	Cuff	Design/Item No.		
		Grain leather	Skiver	Skiver w/reinforcement on both sides
23 cm	without	357.123	357.223	357.323
28 cm	with	357.128	357.228	357.328
35 cm	with	357.135	357.235	357.335

All gloves are also available with rivets!

Gloves in accordance DIN-EN 420, 407, 388 with safety certification, extra heavy-duty version upon request!

358

Leather three-finger gloves right/left, with cuff

Length	Design/Item No.			
	Grain leather right/left	Grain leather either hand	Skiver right/left	Skiver either hand
28 cm	358.128	358.228	358.328	358.428
35 cm	358.135	358.235	358.335	358.435

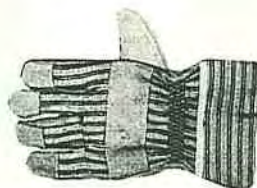
Gloves in accordance DIN-EN 420, 407, 388 with safety certification, extra heavy-duty version upon request!

359

Leather five-finger gloves for use right/left, with cuff

Length	Design/Item No.	
	Grain leather	Skiver
28cm	359.128	359.228
35cm	359.135	359.235

Gloves in accordance DIN-EN 420, 407, 388 with safety certification, extra heavy-duty version upon request!

360

Leather five-finger gloves model 'Export' for use right/left, with fabric cuffs

back of the hand of cotton fabric, appr. 26 cm long

Design Item No.	Grain leather standard size 10	Grain leather size 12	Skiver standard qual. size 10	Skiver - extra strong quality size 10
	360.001	360.002	360.003	360.004

361

Leather-fabric five-finger gloves for use right/left, with knitted cuffs

skiver on the inside, back of white cotton drill. For light work, especially in die casting

Item No.	Type	Appr. length/size
361.001	CLT/F	23 cm, ladies size
361.002	CLT/M	25 cm, men size

362

Nappa-leather five-finger gloves

of extra soft **sheep nappa**

For use right/left, without cuff, 24 cm long

Design	Size/Item No.			
	7	8	9	10
Of nappa	362.107	362.108	362.109	362.110
With fabric back	362.207	362.208	362.209	362.210

363

Hand leather

3 to 4 mm thick, 210 x 150 mm

Design	Grain leather	Skiver
Item No.	363.001	363.002

Five-finger gloves, of white cotton fabric

for use on one hand only, 28 cm long

- 1) of a light tricot-tissue
- 2) of a heavy jersey-fabric

Design	Size/Item No.	
	small (8)	large (12)
Tricot	364.001	364.002
Jersey	364.101	364.102



364

Five-finger gloves, yellow Type BESCLEAR-Superflex

Special vinyl-coating, with cotton lining
for use on one hand only, with knitted cuff

Item No.	Type	Length	Design
365.001	753	25 cm	fully coated
365.002	753P	25 cm	with fabric back
365.003	756	42 cm	fully coated



365

Rubber 5-finger gloves Type 720

medium heavy-duty glove, appr. 300 mm long, inside with velour lining
dark grey, resistant against many organic and anorganic acids, oil and grease

well flexible at low temperature, heat resistant up to about 120°C.

Item No.	366.307	366.308	366.309	366.310	366.311
Size	7	8	9	10	11



366

Leather sleeve

with strap and button as well as strap and buckle above the wrist, total height appr. 55 cm

Design	Grain leather	Skiver
Item No.	367.001	367.002



367

Leather spats with shoe protection

Design	Grain leather		Skiver		
	15 cm	35 cm	15 cm	20 cm	35 cm
Fastening	Item No.				
Straps	368.115	368.135	368.315	–	368.335
Velcro-fastening	368.215	368.235	368.415	–	368.435
Hooks and eyes	–	–	–	368.520	–



368

Leather aprons

- 1) with bib and straps, 80 x 100 cm
- 2) without bib, with straps, 60 x 70 cm

Size	Design/Item No.	
	Grain leather	Skiver
80 x 100 cm	369.101	369.102
60 x 70 cm	369.201	369.202



369

Guttasyn aprons (MB 5/11) Item No. 370.001

of thermoplastic soft PVC, black, with fabric backing and bib, 80 x 110 cm, 0,5 mm thick, durable and chemically resistant



370

Canvas aprons

red-brown, with bib, 80 x 100 cm

Item No.	371.001	371.002
Design	standard	belly with add. leather strengthening



371

372



INAP Star-6



INTEX



INAP PCG

Protective helmets in accordance with DIN EN 397

INAP Star-6, progressive shape with large rebound zone and large front area for company logos, straight shell made of PE, side slots for ear muffs, holes for effective ventilation, with 6-point webbed harness KAN/90/6 with highly absorbent sweatband and angled neckband for perfect fit. Adjustable size: ranging from 51 – 63 cm.

Item No.	372.101	372.102	372.103	372.104	372.105
Colour	white	yellow	blue	green	red

INTEX-1, made of phenolic resin fabric, straight shell, secure, very comfortable 6-point webbed harness KAN-W with genuine leather sweatband and foam cushion band, adjustable ventilation. **Colour: natural brown**, easy identifiable as **heat protection helmet**. Varnished or metal coated on request, durability 5 years, anti-static, conforming with Category III of EU-regulations No. 89/688/ETU.

Item No. 372.201

INAP-PCG, made of glass fibre reinforced polycarbonate, straight shell with rainwater groove, extremely rigid sides, secure, very comfortable 6-point webbed harness KAN 90-6 with highly absorbent sweatband, holes for ventilation on request. Standard colours: white and yellow, other colours on request. Durability: 10 years, very suitable for use in **hot zones** (detailed information and comparative tests on request).

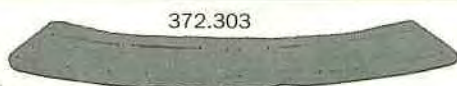
Additional testing: MM-test against metal splashings, conforming with category III of EU-regulations No. 89/686/ETU.

Item No.	372.401	372.402
Colour	white	yellow

372A



372.301/2



372.303



372.304

Spares and accessories for Item No. 372

Item No.	Description
372.301	internals KAN-90/6 for INAP-STAR & PCG-helmets
372.302	internals KAN-W for INTEX-helmets
372.303	leather sweatband for all helmets
372.304	neck protection of skiver appr. 480 x 200 mm for all helmets

373



Shield holder Item No. 373.001

for attaching face shields (Item no. 374) to helmets (Item No. 372)

Holder of aluminium U-sections, swing-up strap of aluminium T-section which can be locked in three positions.

374



374.401



374.410



374.402/403



374.412

Wire screen protectors

attachable to the helmet holders, Item No. 373.001 of galvanized gauze, back with glare-free black finish

- 1) **with integrated glass holder and aluminium rim**
 - a) **Item No. 374.401**
Neue Bochumer Brille (without glasses) 240 x 130 mm, for glasses dia. 50 mm
 - b) **Item No. 374.402**
Neue Bochumer Brille (without glasses) 240 x 130 mm, for glasses 120 x 60 mm
 - c) **Item No. 374.403**
Neue Bochumer Brille (without glasses) 300 x 180 mm, for glasses 120 x 60 mm
- 2) **without glass holder**
 - a) **Item No. 374.410**
with aluminium rim 300 x 180 mm
 - b) **Item No. 374.412**
500 x 300 mm, with flanged rims, with bevelled corners

Shatterproof protective glasses:

Design	Size/Item No.	
	60 x 120 mm	50 mm dia.
Achrom. furnace glasses		
degr. of prot. 4-5A DIN	374.501	374.502
Atherm. glass		
degr. of prot. 5	374.511	374.512
Colourless glass	374.521	374.522

If other degrees of protection or reflecting coatings are required, please state in your inquiry!

374A



374.420-22



374.423-25

Face shields of polycarbonate

1 mm thick attachable to the helmet holders Item No. 373.001

- 1) **crystal clear**
 - a) **Item No. 374.420**
280 x 220 mm
 - b) **Item No. 374.421**
350 x 300 mm
 - c) **Item No. 374.422**
500 x 250 mm, curved
- 2) **gold vaporized**
 - a) **Item No. 374.423**
500 x 250 mm, curved
 - b) **Item No. 374.425**
350 x 300 mm

Protective goggles of plastic, model 'Perlex'

375

strong, everlasting, flexibel, heat resistant, excellent protection against spatters and sparks, glass size 60 x 52 mm, with easily replaceable side protectors and glasses

Model	Bow-design	Glasses/Item No.		
		Polycarb. glasses 2 mm thick, colourless	Shatterproof glasses colourless	Ath. DIN 5
1425	not adjustable	375.101	375.201	375.205
1427	length adjustable	375.301	375.401	375.405
Pair of spare glasses		375.501	375.601	375.605
Pair of side protectors		375.701		

Other glasses upon request.



Aluminium protective goggles with shatterproof glasses

376

Proven goggle for a wide variety of applications, absolutely tight fit, practically undestructable, glasses easily exchangeable. The goggles are equipped with a leather nose and an adjustable elastic band, glass dia. 50 mm

Model	Glass holder	Padding	Glasses/Item No.			
			colourless	Ath. DIN 4	Ath. DIN 5	Ath. DIN 6
1164	metal clips	rubber hose paddg.	376.001	376.004	376.005	376.006
1144	screw cap	rubber hose paddg.	376.201	376.204	376.205	376.206
1145		moss rubber paddg.	376.301	376.304	376.305	376.306
1146		rubber hose paddg. with leather rim	376.401	376.404	376.405	376.406
Spare glasses			376.501	376.504	376.505	376.506

Other classes upon request.



1164



1144 - 1146

Fettler goggles with shatterproof glasses

377

Item No.	Model	Description	Spare glasses
377.001	1130	extra light weight fine wire gauze, soft with leather trimmed moss rubber collar, wide adjustable rubber head band, fits over all types of specs, dia. 50 mm	376.501



Dust protective goggles with shatterproof glasses Item No. 378.001

378

with wire gauze ventilation, soft moss rubber collar, laminated safety glasses 60 x 52 mm, easily exchangeable, colourless, excellent ventilation due to brass wire gauze.

Pair of spare glasses: Item No. 378.099



Swing-up protective glasses for spectacle-wearers, with shatterproof glasses

379

extremely lightweight, front of heat resistant aluminium, body of flame retardant plastic material, with concealed ventilation openings for excellent ventilation, dia. of glasses 50 mm

Model	Padding	Glasses internal	External glasses/Item No.		
			colourless	Ath. DIN 5	Ath. DIN 6
1128	plastic body	without	379.001	379.005	379.006
		colourless	379.101	379.105	379.106
1138	moss rubber	without	379.201	379.205	379.206
		colourless	379.301	379.305	379.306
			Spare glasses		

Other glasses upon request.



Full-vision goggles

380

Item No. 380.001

with replaceable, crystal-clear plastic glass 155 x 75 mm, non-clouding, protecting against dust and liquid spatters, fits over all types of specs, excellent fit, with soft, transparent frame with vent openings.

Non-clouding spare glasses: Item No. 380.099



381



Inspection glasses for cupola furnaces

Standard size: dia. 50 mm x 2 mm (other sizes upon request)

Item No.	381.005	381.006	381.007	381.008
Class of protection	4 – 5A DIN	4 – 6A DIN	4 – 7A DIN	4 – 8A DIN

382



Mica glasses

bright, 0,15 – 0,20 mm thick

Item No.	382.035	382.040	382.045	382.050	382.055	382.060	382.070	382.080
Dia.	35 mm	40 mm	45 mm	50 mm	55 mm	60 mm	70 mm	80 mm

383



Head guard

Item No. 383.001

made of aluminium-coated Kevlar/glass-fabric. Fits to our INTEX- and other helmet-models. Face shield with aluminium frame for 100 x 220 mm wide-angle window. Will be delivered without windows, which should be ordered separately (see below).

Special shaped shoulders, rubber band at back. Length at front and back 60 cm from bottom edge of helmet. Loop for hanging.

Available windows 100 x 220 mm:

Item No.	Design
383.101	furnace inspection glass, curved, prot.-level 4 – 7A DIN
383.102	as above, but gold-coated laminated glass
383.103	gold-coated polycarbonate, flexible

384



5216000



5217100

Goggle mask

effective protection against heat radiation and reflection radiation, leaves both hands free, allows for free movement, extremely lightweight, of soft and supple leather, fits over all types of specs, swing-up glass holder for external glasses.

Model	Design	Item No.		
		Internal glasses	External glasses	
			without	Ath. DIN 9
5216000	standard	without	384.001	384.009
		colourless	–	384.019
5216200	w/add. leather hood	without	384.101	384.109
		colourless	–	384.119
5216400	w/add. leather hood & neck protect.	without	384.201	384.209
		colourless	–	384.219
5217100	alu-vaporized*, w/add. ear protection	without	384.301	384.309
		colourless	–	384.319
Spare glasses		376.501	–	384.509

*Aluminium-vaporized fibreglass fabric for extreme heat radiation up to 600°C.

Other glasses upon request.

386



Model 5294



Model 5362



Model 5363

Protective shields for welders

supplied without glasses; order glasses separately

Model 5294 of glass fibre reinforced plastic and polyester, heat resistant up to 180°C,
Item No. 386.101

Model 5362 head shield with helmet (welder helmet Item No. 388)
Item No. 386.111

Model 5363 as described above, however, with swing-up front part
Item No. 386.121

Glasses for welders shields 90 x 110 mm:

Design	colourless shatter pr.	Class of protection			With refl. coating		
		DIN 9	DIN 10	DIN 12	DIN 9	DIN 10	DIN 12
Item No.	386.401	386.409	386.410	386.412	386.509	386.510	386.512

Other glasses upon request.

Protective masks for welders

387

Model 5260 of leather, swing-up feature, with helmet ring so the mask can be attached to any protective helmet.
Size of the glass 90 x 110 mm

Model 5250 same mask as described above, however, of vulcanized fibre

Model	Glass/Item No.				
	without	DIN 9	DIN 10	DIN 11	DIN 12
5260	387.101	387.109	387.110	387.111	387.112
5250	387.201	387.209	387.210	387.211	387.212
Spare glasses	Item No.				
	colourless	DIN 9	DIN 10	DIN 11	DIN 12
90 x 110 mm	387.120	387.129	387.130	387.131	387.132
160 x 100 x 60 mm	387.220	387.229	387.230	387.231	387.232



5260



5250

Protective helmets for welders with electro-optical cassette

388

switches from degree of protection 4 – 5 to 9 – 12 (depending on model) within 0,075 sec. guaranteeing full UV- & IP-protection. Full vision thanks to large size cassette.

Item No.	Description
388.010	helmet with internal & external glasses, without cassette
388.011	electro-optical protection cassette, adjustable from 9 – 12, without glasses, solar powered
388.012	external glasses (package of 10)
388.013	internal glasses (package of 10)

Please ask for leaflet.



Swing-up protective shields

389

of crystal-clear plastic (flame retardant), excellent protection against chips, splinters and spatters; head band of vulcanized fibre with soft foam padding; shield easily exchangeable.

Shield size: 42 cm wide, 29 cm high, thickness 1 mm.

Item No.	Model	Description
389.001	5524	standard design
389.002	5527	with additional dust hood
389.003	5124	with holder for protective helmet
389.101		spare shields (standard design) for all helmets
389.102		shield of polycarbonate



5524



5527

Respirator half-masks Type 212

390

acc. to EN 140 / DIN 58646 / 2

Wide range of filters covers all operation areas.

The faceblank is made of skin-compatible and age-resistant material. Slim shape with broad and soft inturred lip, 2 exhalation valves, all DIN/EN-screw filters may be used, universal filter housing of coarse dust.

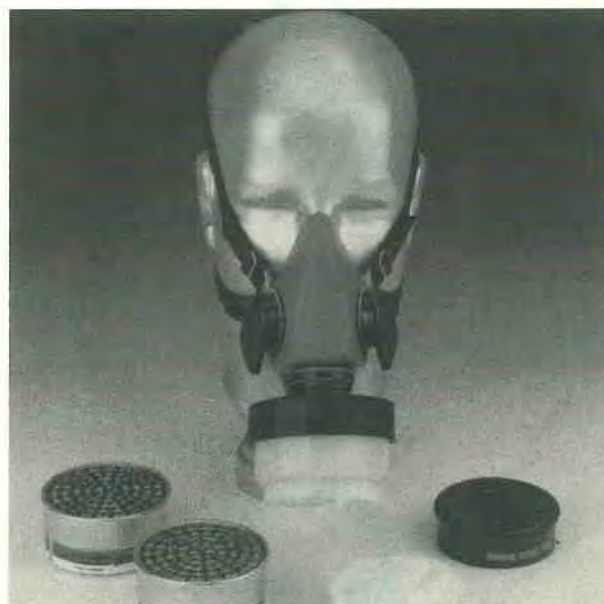
Filter classes

Filter type	Filter class	Protection against
Gas filter	A 1	gases & vapors
Particle filter	P 2	solid & liquid particles of harmful substances
	P 3	solid & liquid particles of toxic & highly toxic substances
Combined filter	A 1 – P 2	gases & vapors plus solid & liquid particles of harmful substances
	A 1 – P 3	gases & vapors & solid & liquid particles of toxic & high toxic substances

Half mask incl. filter	Filter class	Item No.	Spare insert filter	Cont.	Item No.
212 St/24	P2	390.001	24 P2	5	390.011
212 St/25	P3	390.002	25 P3	5	390.012
212 A/24	A1	390.003	24 A0	5	390.013
212 AS/39	A1-P2	390.004	39 AS	1	390.014
212 AS/40	A1-P3	390.005	40 AS	1	390.015

Accessories:

Prefilter 2003/75 **Item No. 390.021** (cont. 20 pcs.)
against coarse dust, fitting to all masks.



391



8710 E



8825



8835

Particulate respirators

no protection against gasses and vapours

No. 8710-E (Item No. 391.002)

against particulates up to factor 4 of allowed concentration, protection class FFP 1 (acc. EN 149). Very lightweight (only 8 gr.), excellent fit, reliable, effective protection without limitation of sight, hygienic, economical in use.

No. 8825 (Item No. 391.003)

against fine dusts, oil or water-based mists and metal fume up to factor 10 of allowed concentration, protection class FFP 2SL (acc. EN 149). Lightweight (29 gr.), comfortable with soft sealing ring, cool flow valve. Packing: 5 pieces per box.

No. 8835

Available in two sizes: **Item No. 391.004L** (medium – large)

Item No. 391.004S (small – medium)

against fine dusts, oil or water-based mists and metal fume up to factor 30 of allowed concentration, protection class FFP 3SL (acc. EN 149). Lightweight (30 gr.), comfortable with soft sealing ring, expanded filter area, reduced breathing resistance. Packing: 5 pieces per box.

Model	Protection against							
	Coarse dust	Fine dust	Metal fume	Low toxic dust	Asbestos	Oil mist	Toxic dust	Virus or microbes
8710-E	●	●	–	–	–	–	–	–
8825	●	●	●	●	●	●	–	–
8835	●	●	●	●	●	●	●	●

391A



8500

Mouth masks model 8500

(Item No. 391.001)

protection from coarse dust. No protection against gasses and vapours, super light (4 gr. only), no restriction, hygienic, kind to the skin, low-cost mask.

Box contains 50 masks.

392



H 6 A



H 6 B



H 6 P 3 A



817 NST

Hearing protectors

in accordance with EN 352-1 and EN 352-3

Excellent sound muffling, comfortable fit, for intermittent noise situations.

Model H 6 A with headband (Item No. 392.002)

Light hearing protector (130 gr.) with flat muffs; wide padded headband guarantees a comfortable fit; muffs can be swivelled and adjusted to any height, thus optimal adaptability to any head shape.

Sound attenuation value 24 dB

Model H 6 B with neckband (Item No. 392.003)

Very light (115 gr.), flat, muffs similar to model H6A; strong neckband with plastic coating guarantees excellent fit; especially suitable when head protection and/or shield must be worn.

Sound attenuation value 24 dB

Model H 6 P 3 A for helmet wearers (Item No. 392.004)

Light (195 gr.). This model can be attached to nearly any protective helmet. If not required, it can be swung up thanks to the rotatable helmet mounts, pressure and height-adjustable.

Sound attenuation value 22 dB

Model 817 NST (Item No. 392.005)

Natural and undistorted noise reproduction (natural sound technology) – flat attenuation curve, particularly for low and medium noise levels. Flat caps with sufficient space for the ears, comfortable fit, wide padded headband, soft replaceable sealing pads.

Weight 178 gr.; sound attenuation value 24 dB

(Hearing protectors with higher sound attenuation values also available!)

EAR-plugs

393

1) Classic

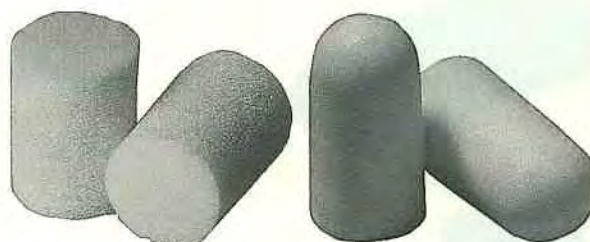
of soft polymeric foam, excellent sound attenuation, easy to wear, hygienic safe, easy fit and economical; sound attenuation value 28 dB

Item No.	393.001	393.002
Package	Containing 5 pairs	Dispenser containing 200 pairs (packed in pairs)

2) Supersoft-Plus

conically shaped, especially soft, comfortable, good sound attenuation; sound attenuation value 34 dB

Item No.	393.011	393.012
Package	Containing 1 pair	Dispenser containing 200 pairs (packed in pairs)



Classic

Supersoft-Plus

EAR-headband ear plugs

393A

1) EAR-Caboflex Item No. 393.101

Extremely light (only weighs 13 gr.), ideal for intermitting noise situations, soft plug of EAR-foam with silicone coating; fit into any auditory canal, easily cleaned; sound attenuation value 21 dB

2) EAR-Caps Item No. 393.102

protection against all noise ranges, ideal for visitors, only weighs 8 gr., comfortable to wear, easily cleaned; sound attenuation value 23 dB



Caboflex

EAR-Caps

Bilsom ear plugs

394

1) Bilsom P.O.P.

Premoulded cotton plug enclosed in perforated foil, approved, particularly good value product, good noise attenuation, causing no communication problems, hygienic, comfortable fit, can be used in both stationary and mobile noisy workplaces; sound attenuation value 19 dB

Item No.	394.001	394.002
Package	Pocket package with 10 pairs	Refill package for BILSOMAT with 500 pairs

2) Bilsom 202

Comfortable-to-wear-plug with a high noise attenuation value of soft cotton with soft hygienic coating. No communication problems, no over-protection. Available in 2 sizes: S (small) for narrow auditory canals, L (large) for medium to wide auditory canals; sound attenuation value 26,7 dB

Package	Type/Item No.	
	202 S (small)	202 L (large)
Pocket package with 10 pairs	394.201	394.101
Refill package for BILSOMAT with 400 pairs	394.202	394.102

3) Bilsom 303

Plug of polyurethane foam with a high noise attenuation value, available in two sizes: S (small) for narrow auditory canals, L (large) for medium to wide auditory canals; sound attenuation value 37,9 dB.

Package	Type/Item No.	
	303 S (small)	303 L (large)
Pocket package with 10 pairs	394.311	394.321
Refill package for BILSOMAT with 400 pairs	394.312	394.322



BILSOMAT-ear plug dispensers Item No. 394.401

394A

Approved dispenser for Bilsom-ear plugs, easy to refill (refill packages of Bilsom-ear plugs).

Sturdy plastic dispenser, dimensions 288 x 353 x 130 mm.



BILSOM 556 – reusable ear plugs in two sizes

395

Extremely comfortable ear plug with safety band, consisting of the strong shaft for inserting and extracting the ear plug, super-soft lamella for optimum fit, available in 2 sizes: L (large) for medium to wide auditory canals, S (small) for narrow auditory canals, comes with a useful, patented storage box; sound attenuation value 28,6 dB.

Item No.	395.101	395.102
Size	med./large	small
Colour	blue	green



396

Ergotex

Protective footwear 'Atlas' (acc. EN 345)

Ergotex: functional lining

All items marked by 'Ergotex' have a new, breathing lining. It doesn't store humidity and will dry very quickly.

Power Point

All models have the articulation-save 'Power Point'-damping system. The step will be calmed effectfully and this guarantees a comfortable work all the day.

Power Point

I.) Shoes

1. Nevada 450

acc. DIN EN 345 S2,
very lightweight, brown, trekking-design, oiled Bukleather, Power Point-system, **new Ergotex-lining**, for comfortable wearing, sole of PU
heat resistant up to 100°C

2. Ergotex 400

acc. DIN EN 345 S1,
solid neat-leather, petrol, velcro-fastening, ring and tongue stuffed, leather-lining, leather sole, steel cap, orthopaedic insole, round heel, Power Point-system, sole of PU
heat resistant up to 100°C

heat resistant up to 100°C

3. Ergotex 450

acc. DIN EN 345 S2,
waterproof-leather, black, ring and tongue stuffed, leather-lining, leather sole, steel cap, orthopaedic insole, **new Ergotex-lining**, round heel, Power Point-system, sole of PU
heat resistant up to 100°C

heat resistant up to 100°C

4. Ergotex 480

acc. DIN EN 345 S2,
this shoe is similar to Ergotex 450, but has the cut- and metal-chip-resisting DUOSOFT sole
heat resistant up to 200°C

heat resistant up to 200°C

II.) Boots

5. Duosoft 760

foundrymen's boots, black, acc. DIN EN 345 S2,
solid neat-leather, ring and tongue stuffed, leather-lining, leather sole, steel cap and protection cap, orthopaedic insole, round heel, Power Point-system, DUOSOFT sole
heat resistant up to 200°C

heat resistant up to 200°C

6. Duosoft 750

acc. DIN EN 345 S2;
solid neat-leather, black, ring and tongue stuffed, leather-lining, leather sole, steel cap, orthopaedic insole, round heel, Power Point-system, DUOSOFT sole
heat resistant up to 200°C

heat resistant up to 200°C

7. Duosoft 910

foundrymen's boots, acc. DIN EN 345 S2,
solid neat-leather, black, ring and tongue stuffed, leather-lining, leather sole, steel cap, orthopaedic insole, round heel, Power Point-system, DUOSOFT sole
heat resistant up to 200°C

heat resistant up to 200°C

8. Ergotex 750

acc. DIN EN 345 S2,
waterproof leather, black, ring and tongue stuffed, leather-lining, leather sole, steel cap, orthopaedic insole, **new Ergotex-lining**, round heel, Power Point-system, DUOSOFT sole
heat resistant up to 200°C

heat resistant up to 200°C



Nevada 450



Ergotex 400



Ergotex 450



Ergotex 480



Duosoft 760



Duosoft 750



Duosoft 910



Ergotex 750

System of Item Nos.

Type	Size 39	Size 40	Size 41	Size 42	Size 43	Size 44	Size 45	Size 46	Size 47
1)	396.139	396.140	396.141	396.142	396.143	396.144	396.145	396.146	396.147
2)	396.239	396.240	396.241	396.242	396.243	396.244	396.245	396.246	396.247
3)	396.339	396.340	396.341	396.342	396.343	396.344	396.345	396.346	396.347
4)	396.439	396.440	396.441	396.442	396.443	396.444	396.445	396.446	396.447
5)	396.539	396.540	396.541	396.542	396.543	396.544	396.545	396.546	396.547
6)	396.639	396.640	396.641	396.642	396.643	396.644	396.645	396.646	396.647
7)	396.739	396.740	396.741	396.742	396.743	396.744	396.745	396.746	396.747
8)	396.839	396.840	396.841	396.842	396.843	396.844	396.845	396.846	396.847

Other sizes and models on request!

397**Coal dust** in 35 kg bags

Lustrous carbon formers for bentonite-bonded green sand moulds.

On account of a low oxygen content and a special treatment, only small quantities of carbon monoxide are released on decomposition in the moulding sand.

Type	Description	Chemical analysis		
Item No. 397.001	Of a selected stone coal quality so that only 80 to 90 % of the conventional addition must usually be added to the moulding sand, ample deposition of lustrous carbon, good softening behaviour.	coking residue	% waf	66-70
IKO-N		volatile constituent	% waf	30-34
		lustrous carbon	% wf	10
		sulfur	% wf	0,9
Item No. 397.002	Synthetic coal dust, consisting of a mixture of different coal grades and additives; less ash and sulfur, 200 % improved softening behaviour, forms especially high amounts of lustrous carbon.	coking residue	% waf	56-59
IKO-S		volatile constituent	% waf	41-44
		lustrous carbon	% wf	16-18
		sulfur	% wf	0,8
Item No. 397.005	Consists of special bitumen and coal dust; selected raw materials which achieve best results in the foundry industry; quantity to be added: only 50 %.	coking residue	% waf	59-61
Combiadditive active		volatile constituent	% waf	39-41
		lustrous carbon	% wf	16-18
		sulfur	% wf	0,9

Mixtures of lustrous carbon formers and bentonite

Upon request

Please specify the desired carbon-system, quality of bentonite, mixing ratio and quantity!

Coke dust and fines in 25 kg bags

Upon request

0,7 to 1 % sulfur, of pure coke, in various grain sizes

Carborizing graphite

Upon request

poor in sulfur, in various grain sizes

Lamp black in 25 kg bags

Item No. 399.001

used as ingot mould lubricant, carburizing and reduction medium

Mould blacking in 50 kg bags

Item No. 400.001

graphite-based, high carbon content, to be stirred into water, high yield, ready for use, apply with a brush or with spraying equipment, resistance to abrasion, gives excellent casting surface finish, for thin and thickwalled castings, can also be used for dusting moulds, without impurities

Silver powder graphite in 25,5 kg bags

Item No. 401.001

pure quality, very finely ground, carbon content 85 to 90 %, without impurities

Bohemian graphite in 25 kg bags

Item No. 402.001

prime refined product, carbon content 50 to 55 %, ground

Beech charcoal

- a) charcoal lumps in 15 kg bags
b) charcoal grit in all grain sizes in 25 kg bags
c) finely ground charcoal dust in 50 kg bags

Item No. 403.001

Item No. 403.002

Item No. 403.003

Slag binders in 25 kg bags

AlSi-based, isolating, no loss of temperature. To be applied on the molten metal surface as reaction agent for the slag, which will be bounded so it may easily be skimmed.

a) for cast iron and steel above of 1350°C, grain size 0,8 – 2,5 mm

Item No. 403.101

b) for heavy metals up to 1300°C, grain size 0,5 – 0,8 mm

Item No. 403.102

Bayer-special moulding gypsum in 50 kg bags

Item No. 404.001

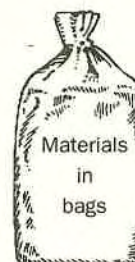
excellent hardness (80 N/mm²), minimum swelling (0,30 %), especially high density, maximum precision, mixing ratio gypsum/water 2,13/1**Heliodur 40-gypsum** in 50 kg bags

Item No. 404.002

Brinell-hardness 74 N/mm², swelling 0,24 %, mixing ratio gypsum/water 2,13/1**Alabastrite for patternmaking SUPRADURO**

Item No. 405.001

in 50 kg bags

Brinell-hardness 46,0 N/mm², swelling 0,24%, mixing ratio gypsum/water 1,61/1. Special quality, finely burnt.**397A****398****398A****399****400****401****402****403****403A****404****404A****405**

406

Clay finely ground and dried, in 50 kg bags

Item No. 406.001

407

Kaolin washed and finely ground quality, in 50 kg bags

Item No. 407.001

408

Mould powder, white in 50 kg bags

Item No. 408.001

(lycopodium substitute) guaranteed silicid acid free (therefore posing no danger to health), finely ground, no residue, does not stick, to be applied wafer-thin, giving a very smooth surface of the casting

409

Pure lycopodium, for art castings

Item No. 409.001

in quantities of 1 kg and more

screened three times, without impurities, guaranteed pure

410

Talcum (very finely ground)1) **Grade A**, grey-green, standard grade

in 25 kg bags

Item No. 410.001

2) **Grade B**, white, fine

in 25 kg bags

Item No. 410.002

3) **Grade C**, super white, very fine and smooth

in 25 kg bags

Item No. 410.003

411

Bentonite (moulding sand binder) in 50 kg bags

Item No. 411.001

activated calcium-bentonite, as binding agent for green sand moulding, high temperature stability, high strength at low percentage of addition, high water retaining ability, high swelling, excellent coating of quartz grains, good wet tensile strength, practically insensitive to under- or over-wetting of the moulding sand, reduced scabbing



412

Zircon sand fine grained, light colour, in 50 kg bags

Item No. 412.001

Standard analysis: ZrO₂: min. 65 %, TiO₂: max. 0,30 %, Fe₂O₃: max. 0,25 %

413

Antipiping powder

to prevent the formation of shrink holes by temperature loss etc.; for producing homogenous and tight castings. Please ask for directions for use.

a) for cast iron steel

in 20 kg bags

Item No. 413.001

b) for aluminium

in 25 kg bags

Item No. 413.002

c) for brass, aluminium-bronze and red brass,
do not use for pure copper!

in 25 kg bags

Item No. 413.003

414

Iron oxyde grade II 235 in 50 kg bags

Item No. 414.001

Fe₂O₃ content appr. 92 %

415

Zircon coating in 50 kg bags

Item No. 415.001

highly refractory coating for cast steel and iron, giving smooth, impeccable surface finish

416

Oil sand in 50 kg bags

Item No. 416.001

chemically prepared fine sand, guarantees very smooth surfaces and precision, also for making plaster patterns and artificial resin patterns, ready-made, do not add water, do not use blackings or coatings!

416 A

Regeneration agents for oil sand

If the oil sand might loses plasticity and/or compressive strength after several uses, the sand can be regenerated in a pan grinder or a core sand mixer

1) **Regenerating oil**

addition 0,1 %

5 kg canister

Item No. 416.101

10 kg canister

Item No. 416.102

2) **Regenerating paste**

addition 0,1 %

5 kg bucket

Item No. 416.103

10 kg bucket

Item No. 416.104

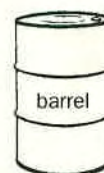
Mould sealer

additive for hardening the surfaces of natural or synthetic moulding sands; primarily used in light metal casting for treating wet sand moulds, prevent sand from being flushed out, prevents scabbing, improves dimensional accuracy, regulates the water content, hardens mould surface

- a) in canisters of 35 kg
b) in barrels of 220 kg

Item No. 417.001

Item No. 417.002



417

Sodium silicate 37/40 °BE

binder for the CO₂-procedure f. ex.

- a) in receptacle of 60 kg
b) in receptacle of 30 kg

Item No. 418.101

Item No. 418.102

418

Core adhesive in tubes of 1 kg

(or in hobbocks containing 35 tubes)

multi-purpose adhesive for the CO₂, no-bake, cold-box and hot-box procedures, also for sealing mould halves, non flammable, odourless, cold setting, non-toxic, to be diluted with water

Item No. 419.001

419



Fusion adhesive pistol MS 150

heat and shockproof housing, low weight, non dripping tip, can also be used in almost inaccessible places, with integrated stand and suspension eye, short heating-up time, ergonomic shape, exact thermostat temperature control

- a) with standard tip 1,75 mm dia.
b) with slotted tip 18 x 0,5 mm

Item No. 419.301

Item No. 419.302



419A

Fusion adhesive SMK 26080 for cores

for the above pistol
in 25 kg bags

Item No. 419.401

419B

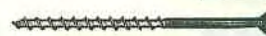
Core screws

cross slotted screw with **coarse thread** (pitch 4,6 mm)

- a) dia. 5,5 mm x 70 mm long Item No. 419.507
b) dia. 5,5 mm x 100 mm long Item No. 419.510

Max. quantity: 5000 pieces per dia.

419C



Alloys in rods

environmentally friendly, easy to use, does not form scum, dissolving quickly, high yield, long survival time, remeltable (please ask for detailed information)



420

Item No.	Product	Composition-	Properties	Instruction for use in crucibles	Available in / addition per 100 kg melt
420.001	grain refiner AlTiB	5 % titanium, 1 % boron, balance 99,7 % aluminium	highly effective refining flux for aluminium alloys, such as G-ALSi5-12, G-ALCU4Ti, G-ALMgSi etc.	charge metal and melt, temperature 700 – 750°C, degas as required, add flux and skim, melt stir thoroughly modification process as required grain refining effect within 30 sec., effect over appr. 2 - 3 hrs.	in rods: 500 mm long 100 gr. add.: 2 - 5 rods
420.003	purifier AlSr 10 %	10 % strontium, balance 99,7 % aluminium	highly effective purification for hypereutectic AlSi-alloys	charge metal and melt, temperature 700 – 750°C, degas as required, add flux and skim, melt add grain refinement rods as required and stir (melt surface to be skimmed before) purifying effect within 1 min., effect over about 3 hrs. Important: When using Sr, do not treat melt with phosphor, fluoride or chloride	in rods: 330 mm long 70 gr. add.: 2 - 7 rods
420.004	phosphor- copper rods	6,8 – 7 % phosphor, balance pure electrolytic copper	highly effective purifying rods for a permanent grain refinement of Si in near or hypereutectic AlSi-alloys	charge metal and melt, temperature 780 – 840°C, degas, flux and skim, melt again, stir and degas melt effect within 20 - 30 min. effect over more than 12 hrs., (effect is influenced by sodium and strontium)	in rods: 500 mm long 130 gr. add.: 1 - 4 rods
420.005	ALCUP- phosphor- rods	19 % electrolytic copper, 1,4 % phosphor balance 99,7 % aluminium	highly effective purifying rods for a permanent grain refinement of Si in eutectic and hypereutectic AlSi-alloys	add after the usual purifying of the melt, immediately before casting at normal melt temp., effect over more than 2 hours (effect is influenced by Na, Sr and Ca)	in rods: 1200 mm long 300 gr. add.: 1 rod

Fluxes in other shapes, f. ex. so-called waffle-plates, also available.

421

Melting, covering and refining fluxes

(please ask for leaflets and instructions for use)

Item No.	Product	Purpose	Colour	Melt	Addition	Remarks	Packing
1) for light metals							
421.010	PROBAT-FLUSS-AL 224	purifying/degassing fusing skimming	blue powder	Al-Si-cast alloys Mg < 5 %	0,2 %	intensive purification of oxides and degassing	25 kg
421.011	PROBAT-FLUSS-AL 209	fusing skimming/purifying covering	blue powder	Al-Si-cast alloys	0,2 %	binding of oxides in the slag reduces the metal content of the dross	25 kg
421.012	PROBAT-FLUSS-AL T 1	purifying degassing	blue tablets	Al-Si-cast alloys Mg < 5 %	0,2 %	binding of oxides cont. no hexachloreth.	32,4 kg
421.013	ARSAL 2125	fusing skimming covering	blue granulate	Al-Si-cast alloys Al-knead alloy	0,1 %	binding of oxides in the slag no dust environment-safe	25 kg
421.014	EUTEKTAL T 200 SPEZIAL	NA-modification	grey tablets	Al-Si-cast alloys	0,2 %	sure modification, quick reaction very small dust	28,8 kg
421.015	MIKROSAL-AL T 200	grain refiner	grey tablets	Al-Si-cast alloys. Al-Mg-cast alloys Al-knead alloy	0,2 %	intensive grain refinement by most fine diffused crystallisators	32,4 kg
421.016	DEGASAL T 200	nitrogen degassing	grey tablets	all Al-cast- and knead alloys	0,2 %	produces 200 ltrs. of nitrogen by one tablet	32,4 kg
421.102	COVERAL 105	purifying reduction of oxids	grey powder	Al with Mg < 5 %	from 0,2 %	good reduction of oxids metal-poor scum	25 kg
421.103	NITRAL 10 MG	purifying nitrogen degassing	reddish tablets	Al with Mg > 3 %	0,1 %	also for already modified molten metal	21,6 kg
421.105	COVERAL GR 2410	skimming purifying	grey granulate	Al-cast alloys except AlMg	0,1 %	min. dust and fume wide range of application	25 kg
2) for heavy metals							
421.020	PROBAT-FLUSS-EXTRA	purifying, degassing fusing	reddish powder	brass gun metal, bronze	0,5 %	multi-purpose salt (reducing) very dry scum	25 kg
421.021	PROBAT-FLUSS-EXTRA SE	removing of sulphur	black powder	brass gun metal, bronze	0,5 %	effective removing of sulphur for all copper-alloys	25 kg
421.022	ALU-FIX	removing of aluminium	reddish powder	brass copper-tin-alloys	1,0 %	effective removing of aluminium good refinement	25 kg
421.023	PROBAT-FLUSS-EXTRA CARBON N	covering of molten metal, purifying	black-grey powder	copper and copper-alloys	2 cm on molten metal's surface	long-ending covering (week-end) reasonable replacement of charcoal reduces the furnace-cleaning-efforts	20 kg
421.104	CUPREX 100	degassing purifying	black powder	copper-alloys free of Zn & Al except brass & phosphor bronze	0,5 %	simple system of oxidation	50 kg

422



Phosphor copper

for heavy-metal melts, deoxidising effect, in accordance to DIN 17657 or other specifications

Percentage	P-cont./Item No.		
	8 %	10 %	15 %
Checkered plates	422.111	422.001	422.101
Granulated	422.112	422.002	422.102
Tablets	—	422.003	—

422A



Silicon copper

copper alloy for adding silicon, deoxidising agent, available in

- 1) 10 % contact **Item No. 422.201**
- 2) 20 % contact **Item No. 422.202**

423



Brass and red brass blocks

in accordance with DIN or other specifications

424



Metallic sodium

in 1 kg petroleum container for light metal melts (inflammable), in cubes and wrapped, to be put onto the melt and then immersed by means of an immersion bell, for purifying and degassing **Item No. 424.001**

424A



NAVAC

sodium, melted under vacuum, ready for use, in air-tight aluminium tin, for AlSi-alloys.

After degassing, immersed by means of an immersion bell to the bottom of the ladle.

Item No.	Na-qty.	Weight of melt	Carton contains
424.112	12,5 gr	25 kg	400 p.
424.125	25 gr	50 kg	250 p.

Other sizes upon request.

Partial quantities cannot be supplied due to safety reasons!

Products for art and investment casting (i.e. the lost wax moulding process)



Investment products

425

1) Type 'H.D.' Item No. 425.001 in drums of 45 kg

synthetic gypsum bonded, for Al-alloys

Instruction: Add the measured powder to the water and mix thoroughly by hand or mechanically for 1 min. Avoid air-inclusions. Pour the material quickly into the cavity. Respect the time of heating to avoid cracking.

2) Type 910 X Investment (R&R) Item No. 425.101 in bags of 25 kg

Calcium sulfate bonded pourable material for the investment-casting of Al- and Cu-alloys.

May be used as moulding as well as core material. May be combined as core with ceramic shell. Excellent surface quality.

Instruction: Add the measured powder to the water and mix thoroughly by hand or mechanically for 1 min. Avoid air-inclusions. Pour the material quickly into the cavity.

Dewaxing may start after about 2 hours.



Pattern and sculpture waxes for art castings

426

1) CARA-CM 6 Item No. 426.006

dark-brown, ideal quality for fine and easy work. It has a low sticking effect to the fingers; having a slight settlement if melted, it should be continuously stirred.

Melting point 72,5°C, softening point 40 – 45°C, shrinkage 0,8 %.

2) CARA-CUC 17 Item No. 426.017

dark-brown opak, clean burnout, for fine detail work. Can be poured or injected into moulds. Selective blending of raw materials has produced a wax with the proper hardness and plasticity for working with hand tools even after long storage. Melting point 71,1°C.

Other waxes on request!



Silicon rubber, condensation-curing

427

1) CARA-506 with catalyst T 46

reasonable, pale grey, multi-purpose, pourable, good flow, hardness Shore A 25, linear shrinkage 0,5 %, outstanding resistance to casting resins, particularly to polyesters, especially suitable for reproducing models with extensive undercuts in casting resins. Other materials, such as wax and plaster, can be processed also without any problem. If the rubber is to be applied to vertical surfaces, it can be rendered non-sag by adding 1 – 2 % w/w of **Thixotropic Add. M** to the catalysed mass (rubber base plus catalyst).

2) Elastosil M 1470 with catalyst T 40

kneadable, especially for making moulds from low structured surfaces, hardness Shore A 55, low shrinkage (0,2 %), therefore excellent moulding accuracy, high mechanical strength. Add 5 % catalyst, working time 20 min., demoulding may start after about 2 hrs., pink colour.

3) Elastosil M 4470 with catalyst T 40

pourable, high heat resistance and thermal conductivity, for low melting point metals and alloys (tin), hardness Shore A 60, shrinkage 0,8 %, excellent flow, working time 20 – 40 min., demoulding may start after 2 or 4 hours (depending on the added quantity of catalyst, which should be between 2 and 3 % w/w), red-brown.

4) Elastosil M 4440 with catalyst T

pourable, flexible, light grey, of medium hardness (Shore A 45), shrinkage 0,4 %, working time 20 – 40 min. (depending on the added quantity of catalyst which should be between 2 and 4 % w/w), demoulding may start after 2 or 4 hours.

5) Elastosil M 2471 with catalyst T40

brushable, no flowing on vertical surfaces, light-grey, hardness Shore A 55, shrinkage 0,4 %, working time 20 – 50 min. (depending on the added quantity of catalyst which should be between 2 and 3 % w/w), demoulding may start after 2 or 4 hours.

Rubber type	Cont./Item No.	
	1 kg	5 kg
CARA-506	427.201	427.202
M 1470	427.001	427.002
M 4470	427.101	427.102
M 4440	427.401	427.402
M 2471	427.301	427.302

Catalyst-type	Cont./Item No.			
	40 gr.	50 gr.	200 gr.	250 gr.
T 46	—	427.211	—	427.212
T 40	427.011	—	427.012	—
T	427.411	—	427.412	—
Thix. Add. M	20 gr.		40 gr.	
Item No.	427.221		427.222	



428



Fillet mastic VITOLUX (11.401)

easy to use, excellent bond, no cracking, minimal shrinkage, quick drying (1 hr per 1 mm radius), suitable for wood, metal and resin patterns, one-component mastic

in 1,5 kg containers	Item No. 933.001
in 1 kg tin	Item No. 933.002

Thinner No. 10.009 in 1 l container

Item No. 933.501

429



Wood wool ropes

tight and uniformly twisted

Item No.	429.001	429.002	429.003	429.004
diameter	15 mm	20 mm	25 mm	30 mm
length	250 m	200 m	150 m	125 m

430



Rattler stars of chilled iron

for use in tumbling barrels

Item No.	430.001	430.002	430.003	430.004	430.005	430.006
size	A	B	D	E	F	VF
weight	8 gr.	25 gr.	50 gr.	65 gr.	110 gr.	30 gr.

431



Dye penetrant inspection medium 'MET-L-CHECK'

for the surface inspection of parts without demolition. The surface must be cleaned by the NPU-product, then apply the penetrant VP 30, wait acc. to temp. and material for 5 – 30 min., clean off the penetrant, dry surface and then apply the developer D 70 very thin. After short the penetrant will appear in the discontinuities such as cracks or shrinkage holes.

a) Penetrant Dye VP 30 red

b) Developer D 70 white

c) Cleaning agent NPU

Packing size	Product/Item No.		
	VP 30	D 70	NPU
Spray cans 400 ml	431.001	431.101	431.201
Bottles 1000 ml	431.002	431.102	431.202

432



Aluminium soft solder in rods

Item No. 432.001 melting point 190 to 320°C

for filling holes and flaws in light metal castings;

heat area to 300°C, then ream to achieve a permanent joint, rod diameter appr. 6 mm, rod length appr. 50 cm, weight appr. 100 gr.

433



Repair compound AVOLITH 3-components

for repairing shrinkage holes or weldings, may be used as filler or primer.

The pourable or brushable AVOLITH liquids becomes pasty after adding max. 10 parts of AVOLITH-powder. Viscosity may be varied by changing the quantity of powder. To harden mixture 2 – 3 % catalyst paste must be added and mixed thoroughly – avoid air-inclusions – until the colour becomes homogenous. Working time 3 to 5 min., machinable after 20 or 30 min.

Item	Mat. cpl = 3-comp.	Liquid (1,5 l)	Powder (0,2 kg)	Catalyst (35 gr.)
Item No.	433.001	433.002	433.003	433.004

433A



Filling compound Atlas S 476

dark grey filling compound in paste form for the elimination of casting and surface defects on metal and plastic parts. Convenient processing, quick setting, strong adhesion to metal, excellent mechanical strength values after curing. By adding suitable colouring material the metal-like colour can be matched to the individual workpiece.

Appr. processing time of mixture 5 to 10 min., mechanical processing possible after 10 to 20 min.

Item	Fillg comp. (1 kg without hardener)	Hardener paste (28 gr.)
Item No.	433.300	433.301

433B



WOLEX Plastic-metals 2-components

Quick setting plastic-metals for the repairing of shrinkage holes and other faults in castings, also for producing small patterns, high compression strength, heat resistant up to 150°C.

Machinable like metal, less powder = pasty, more powder = pourable.

Type FE – for iron

Type FE-hard – for iron (extremely high resistant to abrasion)

Type AL – for aluminium

Type	FE à 2 kg	FE-Hard à 2 kg	AL à 1kg
Item No.	433.401	433.402	433.403

DIAMANT-Metal-Plastics, cements and mastics

DIAMANT-Multimetal

DIAMANT-DICHTOL



434

Types	Metal cont. in % appr.	Application	Properties	Item No.
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1) Metal-Plastics metal powder & setting agent, 2-components, temperature resistant up to 200°C

Very easy to process:

stir setting agent into powder (more powder = pasty; less powder = pourable), mix and apply; when set can be machined in the same way as metal, setting time 15 – 30 min., contents 1 – 1,5 kg

Ferro-plastic A	92	cast iron	for repairing castings which are painted or sprayed	434.001
Ferro-plastic A/A	92	cast iron	for repairing castings, depending on alloy matching to base metal after machining	434.011
Ferro-plastic superior darkl	96	cast iron	for repairing castings which are machined, after machining	434.021
Ferro-plastic superior lightl	96	cast iron	excellent matching to metal and metal structure	434.031
Steel-plastic A	92	cast steel	for repairing castings which are painted or sprayed	434.041
Steel-plastic A/A	92	cast steel	for repairing castings, depending on alloy matching to base metal after machining	434.051
Steelplastic superior	96	cast steel	for repairing castings which are machined, after machining	434.061
Aluminium-plastic A	92	cast aluminium	excellent matching to metal and metal structure	434.071
Aluminium-plastic A/A	92	cast aluminium	for repairing castings	434.081
Aluminium-plastic superior	96	cast aluminium	for repairing castings, depending on alloy matching to base metal after machining	434.091
Bronze-plastic A	92	bronze	for repairing castings and castings which are machined	434.101
Brass-plastic A	92	brass	excellent matching to metal and structure	434.111
Red brass-plastic A	92	red brass	can be machined with all tools in the same way as base metal	434.121
Copper-plastic A	92	copper		434.131
Iron plastic oxide	96	cast iron & steel	rusts as base metal	434.141
Alloy plastic	98	iron, steel & stainless steel	very fine metal structure (esp. for ground surfaces)	434.151
Setting agent – fast	–	for all metal plastics	esp. for emergency repairs	434.161
Setting agent – slow	–		esp. for normal repairs	434.162
Setting agent – heat resistant	–		esp. for high perm. temp. (up to about 250°C)	434.163
Bond additive 03	–		to achieve a better bond	434.164

2) Polishable metal mastic 1-component, ready to use, setting time 45 – 60 min., contents 1 – 1,25 kg

Liquid iron	–	cast iron	for small flaws in unmachined castings	434.201
Liquid aluminium	–	cast aluminium	with good colour matching to metal, temp. resistant up to 500°C	434.202
Thinner	–	for liquid iron	for thinning liquid iron	434.203
Thinner	–	for liquid aluminium	for thinning liquid aluminium	434.204
Mastic light	80	cast iron & steel		434.210
Mastic superior light	90	cast iron & steel	for repairing castings, well matching to metal structure after machining,	434.220
Mastic dark	80	cast iron	high temperature resistance appr. 750 – 800°C,	434.230
Mastic superior dark	90	cast iron	matches metal when brushed, type Superior especially suitable	434.240
Mastic aluminium	75	cast aluminium	for polishing, with best metal effect	434.250
Mastic superior aluminium	90	cast aluminium		434.260
Special thinner	–	for all polishable mastics	for thinning non-set metal mastics and levelling not yet hardened mastics	434.270

3) Pourable mastic 1-component, metal powder, to which water is added, temp. res. up to 1200°C, setting time 10 – 15 min.

Types	Metal content in % appr.	Application	Properties	Cont.	Colour / Item No.		
					black-grey	blue-grey	light-grey
Pourable iron mastic superior	80	cast iron & steel	for repairing blemish, simple and low-cost mastic	5 kg	434.301	434.311	434.321
				10 kg	434.302	434.312	434.322
				20 kg	434.303	434.313	434.323

4) Multi Metal 2-components, chemical cold welding, temperature resistant up to 150°C, setting time 2 – 3 hrs.

Types	Metal content in % appr.	Application	Properties	Item No.
Iron	–	cast iron	mix both components, can be shaped by hand, pot time appr. 1 hr., sets within 3 hrs., no cracks, no shrinkage, even on thick layers, optimum chemical and mechanical resistance, metallic character	434.401
Steel	–	cast steel		434.411
Aluminium	–	aluminium		434.421

5) Dichtol 1-component, ready to use

Dichtol liquid	—	all castings	low-priced, highly effective filler for micropores and microflaws, apply by brushing, spraying or dipping (without pressure or vacuum), sets after 24 hrs. at normal temperature, pressure tight up to 350 bar, temp. res. from abt. – 40°C to 360/400°C (for short periods), for perm. temp. max. 120 to 140°C	1 l	434.501
Dichtol spray	—	all castings		10 l	434.502
				0,5 l	434.511
Dichtol WF	—	all castings	as Dichtol, for perm. temp. max. + 200°C	1 l	434.521
				10 l	434.522



Ingot mould coatings

apply with brush or sprayer, dilute with water to the required consistence for **heavy-metal casting** (can also be used for light metal casting)

1) Hydrokollag

graphite coating, black, for highest temperatures

Item No.	435.001	435.002
Content	1 kg	20 kg

2) Aqualon

black, graphite coating

Item No.	435.101	435.102
Content	1 kg	30 kg

3) GA 120

black, graphite coating

Item No.	435.201	435.202
Content	10 kg	25 kg

II) especially for light metals

1) Iso-coating NT

white, talcum based, especially for small surfaces and intricate castings with a very smooth surface

Item No.	435.402
Content	25 kg

2) DAG 193 T

white, Vermiculit based, especially for a slightly rougher surface or risers in low pressure casting

Item No.	435.602
Content	25 kg

3) Deltacast 565

light-brown, mix of special, insulating minerals, medium-coarse, for castings with large and plane surfces and narrow cross sections

Item No.	435.701
Content	5 kg

4) SIMSON-coating

white, Al-MG-silicate based, guarantees extremely smooth, clean and sharp-edged castings, reduces the rate of rejects

Item No.	435.801
Content	4,5 kg

5) Alu-coating

white, bentonite based

Item No.	435.901	435.902
Content	1 kg	25 kg

6) Cillolin AL 285

white, ceramic based, especially for aluminium low-pressure casting, for uniform surface texture, optimum adhesion to all ingot mould parts

Item No.	435.910	435.911
Content	1 kg	15 kg

7) Cillolin AL 285 G

as described before, however, gives a uniform **coarser surface**

Item No.	435.920	435.921
Content	1 kg	15 kg



WOHO-ingot mould coatings in 5 kg containers

1) for light metal castings

white Woho for small castings with thin walls

Item No. 436.101

green-white Woho for medium-size castings with thin walls

Item No. 436.102

super Woho for large castings with thin walls

Item No. 436.103

black Woho for small castings with thick walls

Item No. 436.104

2) for light and heavy metal castings

Hydrosol-Woho immersion coating for cores and ingot moulds (excellent surface quality)

Item No. 436.105

3) for cast steel

grey Woho for steel and iron ingot moulds

Item No. 436.106

4) crucible coating

crucible Woho protective coating for crucibles and scoops

Item No. 436.107

Boron Nitride Coating 'WP'

ready for use, stable in air up to 900°C, excellent release properties, esp. for light metals, low inclusions of iron in the melt, very high adhesion. Can be applied by brushing, dipping or spraying.

Application: Foundry tools (ladles, skimmers, etc.), measuring lances, pyrometer pipes, crucibles, impeller-systems and refractory components.

Item No.	437.302	437.305	437.310
Contents	2,5 kg	5 kg	10 kg

**437**

Boron Nitride Suspension 'WS'

water-based coating on boron-nitrid basis with medium adhesion.

Stable in air up to 900°C. High thermal conductivity, good electrical insulation and release property.

May be applied by brushing.

Application fields: Release agent, coating

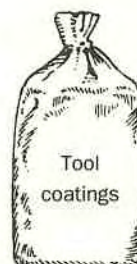
Item No.	438.001	438.002	438.005	438.010
Contents	1 kg	2,5 kg	5 kg	10 kg

**438**

Tool coating 'MR' Item No. 439.001

red powder, to protect ladles, scoops, immersion bells and other tools against corrosion caused by aluminium. Mixing ratio: immersion 1/2,5; spraying 1/5. Stir well, apply a thin layer, immerse several times (red-hot), redry at 450°C, avoid blistering.

in 25 kg bags

**439**

Ladle coating Item No. 440.001

white MgO-based coating, for protecting foundry tools against corrosion by aluminium, no sticking of aluminium (repellent), insulating effect. Mix 1 kg powder in appr. 5 l water. Also for risers and ladles.

in 20 kg bags

440

Bone ash Item No. 441.001

finely ground, for coating moulds and ingot moulds as well as scoops, ladles, immersion bells, skimmers etc. up to 1100°C.

Mixing ratio: ash/water – 1/4, suitable for application by spraying pistols and atomizers

in 50 kg bags

441

Oildag EU (colloidal graphite lubricant)

for lubricating drop forges, forging presses and extrusion presses for steel and non-ferrous metals, moulds and draw dies; coating for light metal die casting or for high temperature forging. Dilution: mineral oil, terpentine etc.

Item No.	442.010	442.020
Content	1 kg	25 kg

**442**

Metallic lubricant

temperature resistant up to 1400°C, excellent adhesion to all metals, excellent resistance against acids, lyes etc., stands pressure up to 2350 kp/cm², safe and economical in use, low friction coefficient, excellent protection against corrosion, does not contain nickel or copper.

Item No.	443.001	443.002	443.003
Available in	400 ml spray tins	as paste in 350 gr. tins	as paste in 1000 gr. tins

**443**

443A**ALU-Spray** Item No. 443.101

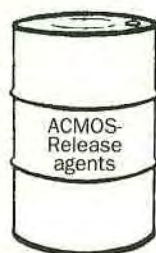
quick drying protection varnish, covers reparations in welded or filled aluminium castings. Also usable as cooling spray for moulds and cores where shrink marks may appear and other cooling systems are not possible. in spray cans of 500 ml

444**Antilöwa 'W' for die casting**

(viscous lubricating and parting compound)

pasty, colour: blue-black, not containing graphite, for all light metal, zinc and brass parts. After a short time moulds, dies and ingot moulds have a smooth, black glossy surface with good antifriction properties. Parts, cores and castings separate easily from the moulds and dies treated with this compound; no tearing of cores and castings, reduction of rejects rate.

Item No.	444.001	444.002	444.003	444.004
Content	1 kg	5 kg	10 kg	50 kg

445**AC MOS release agents for sand castings**

Developed for the special requirements of foundries. **One single application** will normally be sufficient **for repeated demoulding**.

Type	Application range	Special properties	Colour	Item No./ Packing
118-76	green-sand cold setting methods (Cold-Box, CO ₂ a.s.o.) investment casting	multi-purpose release agent	yellowish clear	445.021 20 kg can 445.022 150 kg drum
118-2476	same product in spray tins of 400 ml			445.023
118-225	green-sand	highly resistant against heat and moisture	yellowish clear	445.011 20 kg can 445.012 160 kg drum
118-222	green-sand	extremely adhesive, good sliding properties, contains silicon, high release reserve	yellowish	445.001 20 kg can 445.002 160 kg drum
118-22	cold setting methods, furan or phenolic resin bonded sand	contains wax, forms a tough but flexible parting film	white cloudy	445.041 18 kg can 445.042 140 kg drum
118-2422	same product in spray tins of 400 ml			445.043
118-63	cold setting methods (Cold-Box, CO ₂ , BETA-SET, a.s.o.)	outstanding releasing properties, contains silicon	colourless	445.051A 18 kg can 445.052A 140 kg drum
118-2463	same product in spray tins of 400 ml			445.053A
118-92	cold setting methods, furan or phenolic resin bonded sand	wax dispersion, containing silver aluminium pigments	silver	445.031A 18 kg can
118-2492	same product in spray tins of 400 ml			445.033A
118-5055	cold and hot setting methods (Croning, Hot-Box a.s.o.)	water-miscible, contains silicon, high release reserve	white milky	445.081 20 kg can 445.082 200kg drum 445.083
118-2855	same product in spray tins of 400 ml*			445.083
118-5059	heat-curing sands (Croning, Hot-Box a.s.o.)	water-miscible, contains silicon	white milky	445.091 20 kg can 445.092 200 kg drum

* because of the propellant only usable for cold-setting methods

445A**AC MOS release agents for non-ferrous die-casting**

Excellent and environment-safe release agents for die-casting, **water-miscible**, satisfying high requirements as to the protection at work as well as of the environment. Physiological harmless, no allergic reactions. Excellent combination of releasing and lubricating properties.

Type	Ratio to mix with water	Colour	Item No./ Packing
110-72	for Alu 1:20 – 1:100 for Zinc 1:30 – 1:100	white	445.101 / 20 kg can 445.102 / 180 kg drum
110-82	1:40 – 1:200	white	445.111 / 20 kg can 445.112 / 180 kg drum
110-92	1:100 – 1:250	white	445.121 / 20 kg can 445.122 / 180 kg drum

445B**Releasing spray DEMOTEX-S**

for all common cold-setting methods (Cold-box, furan resin, CO₂ a.s.o.) and green-sand systems, contains aluminium pigments.

Item No. 445.201 in spray cans of 500 ml

VITOL-silver 4/G parting compound

quick drying parting and lubricating compound for facilitating mould removal, for all moulding methods, especially for cold-setting sands (phenolic and furan resin sands).

Item No.	933.801	933.805	933.810	933.825
Content	1 ltr.	5 ltr.	10 ltr.	25 ltr.



446

Aluminium-paste-Silver-Ink T 1005

parting agent for the cold-box and CO₂-methods, easy mould removal, apply by dabbing to achieve a uniform coating.

	Cont./Item No.			
Product	1 kg	5 kg	25 kg	50 kg
Silver-Ink	447.001	447.002	-	447.003
Solvent	447.101	447.102	447.103	-



447