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PUNCHING



DRILLING



LIFTING



CUTTING



DEBURRING



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A/2016 EN



We started producing our own hole punches for control cabinet and switch gear construction in Germany more than 40 years ago.

By this stage we had already gathered a lot of experience in the sales of such tools.

Thanks to our closeness to our customers, we have been able to continuously integrate their requirements and suggested improvements into further developments.

This resulted in the production of additional, new products:

hydraulic manual punches for energy-saving actuation of hole punches, cutting devices for mounting rails, machines and tools for busbar production, stationery punching machines for efficient control cabinet and housing production, and much more.

The starting shot for top quality "Made in Germany" products was actually fired many years ago. Now, many customers worldwide are profiting from the company's history.

An ALFRA Type TriCut™ hole punch has three cutters which means that the possibility of canting during punch breakthrough can be completely ruled out. The materials and finish have been carefully selected to provide users with the quality and durability that they have come to expect.

Our joint screws are completely new! The bearing is packed into an aluminium cage in an elaborate production process. The unit is completely protected against dust, dirt and external mechanical influences. The benefits are a minimum of force application and long-wearing tools for optimum cost/usage affect.



The articles named above have been continuously developed over many decades. You will be able to find them in our new catalogue - in a completely up-to-date improved version.

The articles are produced at our production facilities in Hockenheim and Stahnsdorf near Berlin. This is a practical expression of company philosophy, it protects jobs and protects you from defective goods. We don't want to supply you with anything less.

We use this process to set quality standards by which you as a welcome and much appreciated customer can judge us at any time.

ALFRA offers you decades of accumulated know-how in the technology of hole punches, screw holes, hole crackers etc. Our range of equipment for "hole making" is extremely varied and unique.

MonoCut™, TwinCut™, TriCut™ and TriCut+™ in addition to FormCut™ and FormCut+™, associated with more than 100 years of company history, speak for themselves.





**Over the last 4 years we have reduced our CO₂ emissions by almost 400 tonnes!
We have produced 600 megawatt-hours of power for our own use!**

Only if you manufacture in-house, can you control and shape the entire manufacturing process.

We have consistently implemented a resource-saving approach to our environment into daily practice in recent years and developed a heightened awareness of "what comes from where" and how to effectively make use of these valuable resources.

With the use of alternative energy, i.e. photovoltaics, we have achieved almost climate-neutral production process in recent years.

And lest we forget: we are, of course, certified according to ISO Standards since 1997!

This means that you can feel good about our tools – not just because they are so technically advanced and are so durable.

But also because the entire production cycle has been carefully designed to ensure that our tools won't leave any traces which could pollute the environment or leave problems for the generations that will follow us.



TÜVRheinland®
CERT
ISO 9001

TOOLS AND MACHINES FOR CONTROL ENGINEERING



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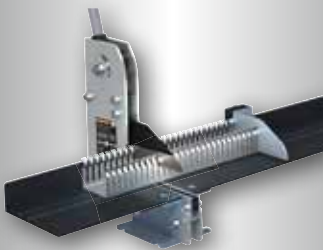
Notched groove tongs

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Cutting device for Profile rails

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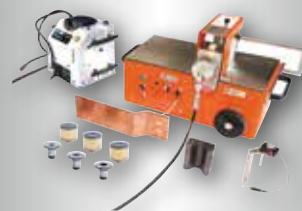
Wiring duct cutting device

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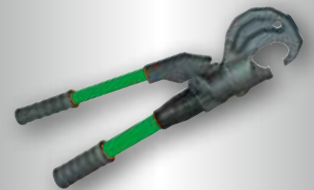
Assembly tables AMT 150, AMTE 200/250

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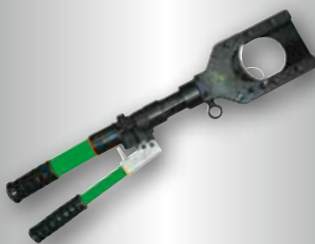
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ALFRA PRESS

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	 ALFRA HOLE PUNCHES® MonoCut™	 ALFRA HOLE PUNCHES® TriCut™	 ALFRA HOLE PUNCHES® TriCut+™	 ALFRA HOLE PUNCHES® TwinCut™
Suitable for				
Sheet steel S235 F ≈ 370 N/mm ²	✓	✓	✓	✓
Stainless steel F ≈ 600 N/mm ²	-	-	✓	✓
Material thickness when using				
Ø 6 mm draw bolt	-	1.5 mm	-	-
Ø 9.5 mm draw bolt	2 mm	2 mm	-	2 mm
Ø 11.1 mm draw bolt	-	-	2 mm	2.5 mm
Ø 19 mm draw bolt	3 mm	3 mm	2.5 mm	3 mm
Diameter				
	12.7 mm/M12/PG7 - 152 mm	12.5 mm/M12/PG7 - 63.5 mm/M63	15.2 mm/PG9 - 63.5 mm/M63	12.7 mm/M12/PG7 - 63.5 mm/M63
custom-made products	✓	✓	✓	✓
Ø for predrilling				
Ø 6 mm draw bolt	-	6.2 mm	-	-
Ø 9.5 mm draw bolt	11 mm	10 mm	-	10 mm
Ø 11.1 mm draw bolt	-	-	11.5 mm	11.5 mm
Ø 19 mm draw bolt	20.5 mm	19.5 mm	19.5 mm	19.5 mm
Ø 28.3 mm draw bolt	30.5 mm	-	-	-
Machining possibilities using				
wrench or ratchet	✓ up to Ø 89 mm	✓	✓	✓
Hydraulic drive	✓	✓	✓	✓

- ① High-tensile bolts for the toughest operating conditions
- ② Protrusion of ball bearing outside protective ring ensures perfect force transmission to wrench or punching tool
- ③ Ball bearings encapsulated in aluminium rings
Extremely long-life and perfectly protected against soiling
- ④ UNF fine thread



1

Hole punch MonoCut™ for sheet steel (S235)

1 With UNF fine thread

2 With 4 crosshair markings for simple, central alignment

2

2

Made in Germany



"The max. material thickness for which a hole punch can be used always depends on the screw and draw bolts used."

Usable up to a material thickness of:

- 3.0 mm sheet steel with 3/4" (19.0 mm) screw or draw bolt
- 2.0 mm sheet steel with 3/8" (9.5 mm) screw or draw bolt

Hole punch MonoCut™ – sets










All sets are supplied in heavy-duty practical plastic cases.

Ø mm	12.7	15.2	16.2	18.6	19.0	20.4	22.5	25.4	28.3	30.5	31.7	32.5	34.6	37.0	38.0	40.5	43.2	47.0	49.6	50.5	54.0	60.0	61.5	63.5
Ø metric	M12	-	M 16	-	-	M 20	-	M 25	-	-	-	M 32	-	-	-	M 40	-	-	-	M 50	-	-	-	M 63
Ø PG	7	9	-	11	-	13	16	-	21	-	-	-	-	29	-	-	-	36	-	-	42	48	-	-
Ø Inch	1/2"	-	-	-	3/4"	-	7/8"	1"	-	1-7/32"	1-1/4"	-	-	-	1-1/2"	-	1-11/16"	-	1-15/16"	-	2-1/8"	-	2-3/8"	2-1/2"
	0.5	0,598	0,638	0,732	0,748	0,803	0,886	1.0	1,114	1,201	1,248	1,280	1,362	1,457	1,496	1,594	1,701	1,850	1,953	1,988	2,126	2,362	2,421	2.5
Ø Conduit	-	-	-	-	-	-	1/2"	-	3/4"	-	-	-	1"	-	-	-	1 1/4"	-	1 1/2"	-	-	-	-	-

Prod.-No.																								
01290			•			•		•				•				•								
01291			•			•		•				•				•				•				•
01298	•	•		•		•	•		•	•				•				•			•	•		
01459							•		•				•				•		•					•
01463	•				•			•			•				•					•				
01451		•		•		•	•		•															

+ 2 joint screws Ø 9.5 x 50.0 mm, 1 pre-drill HSS Ø 11.0 mm, 1 tube lubricating paste

Ø in mm	Max. Material thickness in mm (S235)	Size Metric	Size PG	Size Inch	Size Conduit & Pipe Size			 matching draw bolt	 matching draw bolt	 matching draw bolt with ball bearing
						Punches and dies				
						draw bolt with ball bearing	draw bolt			
Prod.-No.										
12.7	2.0	M 12	7	1/2"	0,500	-	01002	01001	02003	01335
14.3	2.0	-	-	9/16"	0,563	-	01014	01013		
15.2	2.0	-	9	-	0,598	-	01006	01005		
16.0	2.0	-	-	-	0,630	-	01016	01015		
16.2	2.0	M 16	-	-	0,638	-	01010	01009		
17.5	2.0	-	-	11/16"	0,689	-	01018	01017		
18.6	2.0	-	11	-	0,732	-	01022	01021		
19.0	2.0	-	-	3/4"	0,748	-	01026	01025		
20.0	2.0	-	-	-	0,787	-	01030	01029		
20.4	2.0	M 20	13	-	0,803	-	01034	01033		
20.6	2.0	-	-	13/16"	0,811	-	01038	01037		
22.0	2.0	-	-	-	0,866	-	01042	01041		
22.5	2.0	-	16	7/8"	0,886	1/2"	01046	01045		
23.8	2.0	-	-	15/16"	0,937	-	01050	01049		
25.0	2.0	-	-	-	0,984	-	01054	01053		
25.4	2.0	M 25	-	1"	1,000	-	01058	01057		
27.0	2.0	-	-	1-1/16"	1,063	-	01078	01077		
28.3	2.0	-	21	-	1,114	3/4"	01070	01069		
28.3	3.0	-	21	-	1,114	3/4"	01074	01073	02002	01337
28.6	2.0	-	-	1-1/8"	1,126	-	01080	01079	02003	01336
30.1	2.0	-	-	-	1,185	-	01086	01085		
30.5	2.0	-	-	1-7/32"	1,201	-	01094	01093		
31.7	2.0	-	-	1-1/4"	1,248	-	01102	01101		
32.5	2.0	M 32	-	-	1,280	-	01106	01105	02002	01337
33.4	2.0	-	-	1-5/16"	1,315	-	01110	01109		
34.6	3.0	-	-	1-11/32"	1,362	1"	01118	01117		
35.0	2.0	-	-	1-3/8"	1,378	-	01122	01121	02003	01336
35.0	3.0	-	-	1-3/8	1,378	-	01126	01125	02002	01338
37.0	3.0	-	29	-	1,457	-	01130	01129		
38.0	3.0	-	-	1-1/2"	1,496	-	01134	01133		
40.5	3.0	M 40	-	-	1,594	-	01150	01149		
41.3	3.0	-	-	1-5/8"	1,626	-	01154	01153		
42.8	3.0	-	-	-	1,685	-	01158	01157		
43.2	3.0	-	-	1-11/16"	1,701	1 1/4"	01162	01161		
44.5	3.0	-	-	1-3/4"	1,752	-	01164	01163		
47.0	3.0	-	36	-	1,850	-	01166	01165		
47.6	3.0	-	-	1-7/8"	1,874	-	01182	01181		
49.6	3.0	-	-	1-15/16"	1,953	1 1/2"	01170	01169		
50.5	3.0	M 50	-	-	1,988	-	01178	01177		
54.0	3.0	-	42	2-1/8"	2,126	-	01190	01189		
57.2	3.0	-	-	2-1/4"	2,252	-	01194	01193		
60.0	3.0	-	48	-	2,362	-	01202	01201		
61.5	3.0	-	-	2-3/8"	2,421	2"	01206	01205		
63.5	3.0	M 63	-	2-1/2"	2,500	-	01210	01209		
66.7	3.0	-	-	2-5/8"	2,626	-	01214	01213		
Above ø 68.0 mm we recommend the use of hydraulic equipment.										
68.0	3.0	-	-	-	2,677	-	01242	01241	02002	01338
70.0	3.0	-	-	2-3/4"	2,756	-	01222	01221		
70.6	3.0	-	-	-	2,780	-	01220	01219		
74.0	3.0	-	-	2-7/8"	2,913	2 1/2"	01234	01233		
75.5	3.0	M 75	-	2-7/8"	2,972	-	01226	01225		
76.2	3.0	-	-	3"	3,000	-	01230	01229		
80.0	3.0	-	-	3-1/8"	3,150	-	01238	01237		
82.0	3.0	-	-	-	3,228	-	01246	01245		
Above 89.0 mm, the use of hydraulic equipment is generally required.						 Punch	 Die	Required accessories:		
								draw bolt	special draw bolt	counternut
89.0	3.0	-	-	3-1/2"	3,504	3"	01251	01252	01398	01398L
92.0	3.0	-	-	3-5/8"	3,622	-	01253	01254		
100.5	3.0	-	-	-	3,957	-	01257	01258		
115.5	3.0	-	-	4-1/2"	4,547	4"	01265	01266		
120.0	3.0	-	-	-	4,724	-	01267	01268		



Split hole punch TriCut™ for sheet steel (S235)

- 1 With 3-fold split
- 2 With UNF fine thread
- 3 With 4 crosshair markings for simple, central alignment



"The max. material thickness for which a hole punch can be used always depends on the screw and draw bolts used."

Usable up to a material thickness of:

- 3.0 mm sheet steel with 3/4" (19.0 mm) screw or draw bolt
- 2.0 mm sheet steel with 3/8" (9.5 mm) screw or draw bolt
- 1.5 mm steel sheet with M6 (6.0 mm) screw or draw bolt

Split hole punch TriCut™ - sets



All sets are supplied in heavy-duty practical plastic cases.

Ø mm	12.5	15.2	16.2	18.6	19.0	20.4	22.5	25.4	28.3	30.5	31.7	32.5	34.6	37.0	38.0	40.5	43.2	47.0	49.6	50.5	54.0	60.0	61.5	63.5
Ø metric	M12	-	M 16	-	-	M 20	-	M 25	-	-	-	M 32	-	-	-	M 40	-	-	-	M 50	-	-	-	M 63
Ø PG	7	9	-	11	-	13	16	-	21	-	-	-	-	29	-	-	-	36	-	-	42	48	-	-
Ø Inch	1/2"	-	-	-	3/4"	-	7/8"	1"	-	1-7/32"	1-1/4"	-	-	-	1-1/2"	-	1-11/16"	-	1-15/16"	-	2-1/8"	-	2-3/8"	2-1/2"
	0.5	0,598	0,638	0,732	0,748	0,803	0,886	1.0	1,114	1,201	1,248	1,280	1,362	1,457	1,496	1,594	1,701	1,850	1,953	1,988	2,126	2,362	2,421	2.5
Ø Conduit	-	-	-	-	-	-	1/2"	-	3/4"	-	-	-	1"	-	-	-	1 1/4"	-	1 1/2"	-	-	-	2"	-
Prod.-No.																								
01762			•			•		•				•				•								
01757			•			•		•				•				•				•				•
01760							•		•				•				•		•				•	
01761	•				•			•			•				•					•				
01754	•		•			•		•				•				•								
+ 1 ball bearing screw Ø 6.0 x 40.0 mm, 1 ball bearing screw Ø 9.5 x 50.0 mm, 1 ball bearing screw Ø 19.0 x 55.0 mm, 1 pre-drill HSS Ø 10.0 mm, 1 can lubricating paste																								
01755			•			•		•				•				•				•				•
+ 2 ball bearing screws Ø 9.5 x 50.0 mm, 1 ball bearing screw Ø 19.0 x 55.0 mm, 1 ball bearing screw Ø 19.0 x 75.0 mm, 1 pre-drill HSS Ø 10.0 mm, 1 can lubricating paste																								
01750		•		•		•	•		•	•														
+ 2 ball bearing screws Ø 9.5 x 50.0 mm, 1 pre-drill HSS Ø 10.0 mm, 1 tube lubricating paste																								
01751		•		•		•	•		•	•				•				•			•	•		
+ 2 ball bearing screws Ø 9.5 x 50.0 mm, 1 ball bearing screw Ø 19.0 x 55.0 mm, 1 ball bearing screw Ø 19.0 x 75.0 mm, 1 pre-drill HSS Ø 10.0 mm, 1 can lubricating paste																								

Ø in mm	Max. Material thickness in mm (S235)	Size Metric	Size PG	Size Inch	Size Conduit & Pipe Size				
Prod.-No.									
12.5	1.5	M 12	7	1/2"	0,500	-	01674	01770	02022
15.2	2.0	-	9	-	0,598	-	01680	01771	02003
16.2	2.0	M 16	-	-	0,638	-	01683	01772	
18.6	2.0	-	11	-	0,732	-	01686	01773	
20.4	2.0	M 20	13	-	0,803	-	01689	01774	
22.5	2.0	-	16	7/8"	0,886	1/2"	01692	01775	
25.4	2.0	M 25	-	1"	1,000	-	01695	01776	
28.3	2.0	-	21	-	1,114	3/4"	01698	01777	
28.3	3.0	-	21	-	1,114	3/4"	01701	01778	02002
30.5	2.0	-	-	1-7/32"	1,201	-	01703	01779	02003
32.5	3.0	M 32	-	-	1,280	-	01708	01780	02002
34.6	3.0	-	-	1-11/32"	1,362	1"	01711	01788	
37.0	3.0	-	29	-	1,457	-	01713	01781	
40.5	3.0	M 40	-	-	1,594	-	01715	01782	
43.2	3.0	-	-	1-11/16"	1,701	1 1/4"	01718	01789	
47.0	3.0	-	36	-	1,850	-	01720	01783	
49.6	3.0	-	-	1-15/16"	1,953	1 1/2"	01723	01790	
50.5	3.0	M 50	-	-	1,988	-	01736	01784	01341
54.0	3.0	-	42	2-1/8"	2,126	-	01727	01785	
60.0	3.0	-	48	-	2,362	-	01729	01786	
61.5	3.0	-	-	2-3/8"	2,421	2"	01732	01791	
63.5	3.0	M 63	-	2-1/2"	2,500	-	01739	01787	



Split hole punch TriCut+™ for sheet steel (S235) and stainless steel

- 1 With 3-fold split
- 2 With UNF fine thread
- 3 With 4 crosshair markings for simple, central alignment



"The max. material thickness for which a hole punch can be used always depends on the screw and draw bolts used."

Usable up to a material thickness of:

- 2.5 mm steel sheet with 3/4" (19.0 mm) screw or draw bolt
- 2.0 mm steel sheet with 7/16" (11.1 mm) screw or draw bolt

Split hole punch TriCut+™ - sets



All sets are supplied in heavy-duty practical plastic cases.

Ø mm	15.2	16.2	18.6	19.0	20.4	22.5	25.4	28.3	30.5	31.7	32.5	34.6	37.0	38.0	40.5	43.2	47.0	49.6	50.5	54.0	60.0	61.5	63.5
Ø metric	-	M 16	-	-	M 20	-	M 25	-	-	-	M 32	-	-	-	M 40	-	-	-	M 50	-	-	-	M 63
Ø PG	9	-	11	-	13	16	-	21	-	-	-	-	29	-	-	-	36	-	-	42	48	-	-
Ø Inch	-	-	-	3/4"	-	7/8"	1"	-	1-7/32"	1-1/4"	-	-	-	1-1/2"	-	1-11/16"	-	1-15/16"	-	2-1/8"	-	2-3/8"	2-1/2"
	0,598	0,638	0,732	0,748	0,803	0,886	1.0	1,114	1,201	1,248	1,280	1,362	1,457	1,496	1,594	1,701	1,850	1,953	1,988	2,126	2,362	2,421	2.5
Ø Conduit	-	-	-	-	-	1/2"	-	3/4"	-	-	-	1"	-	-	-	1 1/4"	-	1 1/2"	-	-	-	2"	-
Prod.-No.																							
01652		•			•		•				•				•								
01653		•			•		•				•				•				•				•
01645						•		•				•				•		•				•	
01646				•			•			•				•					•				

Ø in mm	Max. Material thickness in mm (VA)	Size Metric	Size PG	Size Inch		Size Conduit & Pipe Size				
							Punches and dies, draw bolt with ball bearing	Punches and dies	matching draw bolt	matching draw bolt with ball bearing
Prod.-No.										
15.2	2.0	-	9	-	0,598	-	01465	01600	02007	01342
16.2	2.0	M 16	-	-	0,638	-	01466	01656		
18.6	2.0	-	11	-	0,732	-	01467	01603		
20.4	2.0	M 20	13	-	0,803	-	01468	01606		
22.5	2.0	-	16	7/8"	0,886	1/2"	01469	01609		
25.4	2.5	M 25	-	1"	1,000	-	01470	01659		
28.3	2.5	-	21	-	1,114	3/4"	01471	01612	02002	01340
30.5	2.5	-	-	1-7/32"	1,201	-	01472	01615		
32.5	2.5	M 32	-	-	1,280	-	01473	01662		
34.6	2.5	-	-	1-11/32"	1,362	1"	01474	01618		
37.0	2.5	-	29	-	1,457	-	01475	01621		
40.5	2.5	M 40	-	-	1,594	-	01476	01665		01341
43.2	2.5	-	-	1-11/16"	1,701	1 1/4"	01477	01624		
47.0	2.5	-	36	-	1,850	-	01478	01627		
49.6	2.5	-	-	1-15/16"	1,953	1 1/2"	01479	01630		
50.5	2.5	M 50	-	-	1,988	-	01480	01668		
54.0	2.5	-	42	2-1/8"	2,126	-	01481	01633		
60.0	2.5	-	48	-	2,362	-	01482	01636		
61.5	2.5	-	-	2-3/8"	2,421	2"	01483	01640		
63.5	2.5	M 63	-	2-1/2"	2,500	-	01484	01671		

Split hole punch TwinCut™ for sheet steel (S235) and stainless steel

- 1 With 2-fold split
- 2 With UNF fine thread
- 3 With 4 crosshair markings for simple, central alignment



EDELSTAHL
STAINLESS STEEL

"The max. material thickness for which a hole punch can be used always depends on the screw and draw bolts used."

Usable up to a material thickness of:

- 3.0 mm steel sheet with 3/4" (19.0 mm) screw or draw bolt
- 2.5 mm steel sheet with 7/16" (11.1 mm) screw or draw bolt
- 2.0 mm steel sheet with 3/8" (9.5 mm) screw or draw bolt

Split hole punch TwinCut™ - sets



All sets are supplied in heavy-duty practical plastic cases.

Ø mm	12.7	15.2	16.2	18.6	19.0	20.4	22.5	25.4	28.3	30.5	31.7	32.5	34.6	37.0	38.0	40.5	43.2	47.0	49.6	50.5	54.0	60.0	61.5	63.5
Ø metric	M12	-	M 16	-	-	M 20	-	M 25	-	-	-	M 32	-	-	-	M 40	-	-	-	M 50	-	-	-	M 63
Ø PG	7	9	-	11	-	13	16	-	21	-	-	-	-	29	-	-	-	36	-	-	42	48	-	-
Ø Inch	1/2"	-	-	-	3/4"	-	7/8"	1"	-	1-7/32"	1-1/4"	-	-	-	1-1/2"	-	1-11/16"	-	1-15/16"	-	2-1/8"	-	2-3/8"	2-1/2"
	0.5	0,598	0,638	0,732	0,748	0,803	0,886	1.0	1,114	1,201	1,248	1,280	1,362	1,457	1,496	1,594	1,701	1,850	1,953	1,988	2,126	2,362	2,421	2.5
Ø Conduit	-	-	-	-	-	-	1/2"	-	3/4"	-	-	-	1"	-	-	-	1 1/4"	-	1 1/2"	-	-	-	2"	-
Prod.-No.																								
01566							•		•				•				•		•				•	
01567	•				•			•			•				•					•				

Ø in mm	Max. Material thickness in mm (VA)	Size Metric	Size PG	Size Inch	Size Conduit & Pipe Size				
Prod.-No.									
12.7	2.0	M 12	7	1/2"	0,500	01576	01510	02003	01339
15.2	2.0	-	9	-	0,598	01577	01513		
16.2	2.0	M 16	-	-	0,638	01578	01516		
18.6	2.5	-	11	-	0,732	01579	01519		
20.4	2.5	M 20	13	-	0,803	01580	01522	02007	01342
22.5	2.5	-	16	7/8"	0,886	01581	01525		
25.4	2.5	M 25	-	1"	1,000	01582	01528		
28.3	3.0	-	21	-	1,114	01583	01531		
30.5	3.0	-	-	1-7/32"	1,201	01584	01534	02002	01340
32.5	3.0	M 32	-	-	1,280	01585	01537		
34.6	3.0	-	-	1-11/32"	1,362	01586	01561		
37.0	3.0	-	29	-	1,457	01587	01540		
40.5	3.0	M 40	-	-	1,594	01588	01543		01341
43.2	3.0	-	-	1-11/16"	1,701	01589	01562		
47.0	3.0	-	36	-	1,850	01590	01546		
49.6	3.0	-	-	1-15/16"	1,953	01591	01563		
50.5	3.0	M 50	-	-	1,988	01592	01549		
54.0	3.0	-	42	2-1/8"	2,126	01593	01552		
60.0	3.0	-	48	-	2,362	01594	01555		
61.5	3.0	-	-	2-3/8"	2,421	01595	01564		
63.5	3.0	M 63	-	2-1/2"	2,500	01596	01558		

Hole punch FormCut™ for sheet steel (S235)

- ① with sideways punch part ejection
- ② With UNF fine thread
- ③ With 4 crosshair markings for simple, central alignment



"The max. material thickness at which a square or rectangular hole punch (or even special tool) can be used always depends on the draw bolt and the cross-section of the tool (length x width or special shape)."

Size in mm	Max. Material thickness in mm (S235)	For use in	pre-drilling in mm					
		 		incl.  - 	 draw bolt	 counternut	 Ball bearing pressure nut	 Adapter for hydraulic

Hole punch FormCut™ - square - for sheet steel (S235)

					Prod.-No.					
12.7 x 12.7	1.75	●	●	10	01300	01348	01355	01352	01353	
15.8 x 15.8	1.75	●	●	10	01301					
19.0 x 19.0	2.0	●	●	14	01302	01347	01351			
22.2 x 22.2	2.0	●	●	14	01303					
24.0 x 24.0	2.0	●	●	14	01331					
25.4 x 25.4	2.0	●	●	17	01304	01360	01354	01359	01361	
45.5 x 45.5	3.0		●	20	01313	01345	01350			
46.0 x 46.0	3.0		●	20	01305					
50.8 x 50.8	3.0		●	24	01306	01344				
68.0 x 68.0	3.0		●	24	01308		01349			
92.0 x 92.0	3.0		●	30	01309	01343		01356		
125.0 x 125.0	3.0		●	30	01431					
138.0 x 138.0	3.0		●	30	01311					

Size in mm	Max. Material thickness in mm (S235)	Number of poles	For use in	pre-drilling in mm					
			 		incl.  - 	 draw bolt	 counternut or bridge	 Ball bearing pressure nut	 Adapter for hydraulic

Hole punch FormCut™ - rectangular - for sheet steel (S235)

						Prod.-No.				
17.0 x 19.0	2.0		●	●	14	01317	01347	01351	01352	01353
21.8 x 25.8	2.0		●	●	17	01318	01360		01359	01361
22.0 x 30.0	2.0		●	●	17	01319				
22.0 x 42.0	2.0		●	●	17	01320				
25.0 x 50.0	2.0		●	●	17	01332		01418		
45.0 x 92.0	2.0			●	24	01314	01344	01349		
46.0 x 92.0	2.0			●	24	01329				
68.0 x 138.0	3.0			●	30	01330			01358	

Hole punch FormCut™ - rectangular - for heavy plug connectors (S235) - for sheet steel (S235)

36.0 x 52.0	2.0	6-pole		●	24	01325	01344	01350		
36.0 x 65.0	2.0	10-pole		●	24	01326				
36.0 x 86.0	2.0	16-pole		●	24	01327				
36.0 x 91.0	2.0			●	24	01323		01349		
36.0 x 112.0	2.0	24-pole		●	24	01328		01357		
46.0 x 86.0	2.0			●	24	01322	01343	01349		
46.0 x 112.0	2.0			●	30	01324				

Hole punch FormCut+™

for sheet steel (S235) and stainless steel

- ① with sideways punch part ejection
- ② With UNF fine thread
- ③ With 4 crosshair markings for simple, central alignment




③
①

①
①



③

"The max. material thickness at which a square or rectangular hole punch (or even special tool) can be used always depends on the draw bolt and the cross-section of the tool (length x width or special shape)."

Size in mm	Max. Material thickness in mm (VA)	For use in	pre- drilling in mm	 incl. ① - ④	①  draw bolt	②  counternut	③  Ball bearing pressure nut	④  Adapter for hydraulic
		 						

Hole punch FormCut+™ - square - for stainless steel (VA)

					Prod.-No.			
12.7 x 12.7	1.25	●	●	10	013001	01348	01355	01352
15.8 x 15.8	1.25	●	●	10	013011			
19.0 x 19.0	1.5	●	●	14	013021	01347	01351	01353
22.2 x 22.2	1.5	●	●	14	013031			
24.0 x 24.0	1.5	●	●	14	013311	01360	01354	01359
25.4 x 25.4	1.5	●	●	17	013041			
45.5 x 45.5	2.0		●	20	013131	01345	01350	
46.0 x 46.0	2.0		●	20	013051			
50.8 x 50.8	2.0		●	24	013061	01344	01349	
68.0 x 68.0	2.0		●	24	013081			
92.0 x 92.0	2.0		●	30	013091	01343	01356	
125.0 x 125.0	2.0		●	30	014311			
138.0 x 138.0	2.0		●	30	013111		01356	

Size in mm	Max. Material thickness in mm (VA)	Number of poles	For use in	pre- drilling in mm	 incl. ① - ④	①  draw bolt	②  counternut or bridge	③  Ball bearing pressure nut	④  Adapter for hydraulic
			 						

Hole punch FormCut+™ - rectangular - for stainless steel (VA)

						Prod.-No.				
17.0 x 19.0	1.5		●	●	14	013171	01347	01351	01352	01353
21.8 x 25.8	1.5		●	●	17	013181	01360		01359	01361
22.0 x 30.0	1.5		●	●	17	013191				
22.0 x 42.0	1.5		●	●	17	013201		01418		
25.0 x 50.0	1.5		●	●	17	013321				
45.0 x 92.0	2.0			●	24	013141	01344	01349		
46.0 x 92.0	2.0			●	24	013241				
68.0 x 138.0	2.0			●	30	013301	01343	01358		

Hole punch FormCut+™ - rectangular - for heavy plug connectors - for stainless steel (VA)

36.0 x 52.0	2.0	6-pole		●	24	013251	01344	01350		
36.0 x 65.0	2.0	10-pole		●	24	013261				
36.0 x 86.0	2.0	16-pole		●	24	013271				
36.0 x 91.0	2.0			●	24	013231		01349		
36.0 x 112.0	2.0	24-pole		●	24	013281	01343	01357		
46.0 x 86.0	2.0			●	24	013221		01349		
46.0 x 112.0	2.0			●	30	013241				



ALFRA HOLE PUNCHES® – SANITARY

- For punching out holes in washbasins

Size mm	Designation	Bolt size mm	Prod.-No.
Ø 28.3	Hole punch complete	M 10 x 1	01293
Ø 31.7	Hole punch complete	M 10 x 1	01294
Ø 35.0	Hole punch complete	M 10 x 1	01295
Ø 37.0	Hole punch complete	M 10 x 1	01292
	Draw bolt	M 10 x 1	01299



Prod.-No. 01450

Hole punch set - sanitary

Prod.-No.

01450

In plastic case

Contents: 3 hole punches 28.3 + 31.7 + 35.0 mm

3 draw bolts M 10.0 x 1

1 ring open-ended wrench 17

ALFRA DUAL HOLE PUNCHES – SANITARY

- For punching out holes in washbasins

- Spanner actuation size 19 mm

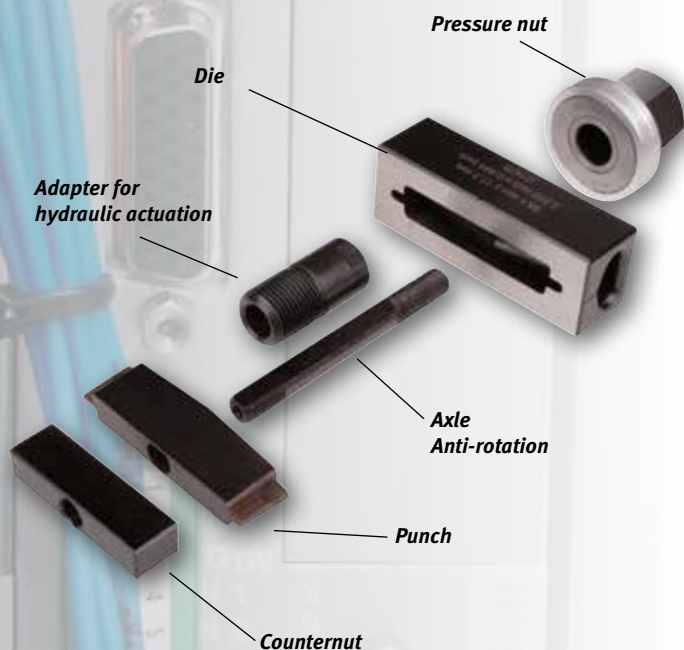
Size mm	Designation	Bolt size mm	Prod.-No.
28 and 32	hole punches cpl.	10 x 55 special	01456
32 and 35	hole punches cpl.	10 x 55 special	01460
	Draw bolt	10 x 55 special	01457



- For "Sub-Min-D" multiple plug connectors - for sheet steel (S235) and stainless steel
- For punching out the cutout for 9-50-pole plug connectors.
Anti-rotation axles for punches and dies are used as draw bolts.
- All hole punches are fitted with side ejection for the waste piece. No jamming in the die.
- The hole punches are supplied in heavy duty, practical plastic cases.



Prod.-No. 01369



Size in mm	Max. Material thickness in mm (S235)/VA	Number of poles	For use in	pre-drilling in mm	incl. 1 - 4			
					draw bolt	counternut or bridge	Ball bearing pressure nut	Adapter for hydraulic

Hole punch Sub-Mini-D - rectangular


						Prod.-No.			
19.8 x 11.3	2.0 x 1.5	9-pole	●	●	10	01366	01438	01442	01352
28.2 x 11.3	2.0 x 1.5	15-pole	●	●	10	01367		01443	
41.9 x 11.3	1.75 x 1.25	25-pole	●	●	10	01368		01447	
58.4 x 11.3	1.75 x 1.25	37-pole	●	●	10	01369		01444	
55.7 x 13.9	1.65 x 1.0	50-pole	●	●	10	01370		01445	
									01353

- All hole punches are fitted with side ejection for the waste piece. No jamming in the die.
- The hole punches are supplied in heavy duty, practical plastic cases.






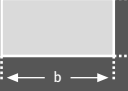



Size in mm	Max. Material thickness in mm (S235)/VA	For use in		pre- drilling in mm	 incl. 1 - 4	1	2	3	4
						 draw bolt	 counternut or bridge	 Ball bearing pressure nut	 Adapter for hydraulic

Hole punches special forms

					Prod.-No.				
 Ø 22.5 with 3 mm lug	2.0 x 1.5	●	●	14	01420	01333	01351	01352	01353
 Ø 22.5 2-sided flattened to 18.5 mm	2.0 x 1.5	●	●	14	01421	01347			
 Ø 22.5 4-sided flattened to 20.1 mm	2.0 x 1.5	●	●	14	01422				
 33.3 x 17.0 x 10.0 for profile cylinder	2.0 x 1.5	●	●	14	01423				
 Ø 16.3 4-sided flattened to 14.1 mm	1.75 x 1.0	●	●	11	01427	01348	01355		

- We can make any form of circular, square, rectangular hole punch to your drawings at short notice.
- Please state whether your enquiry is for manual or hydraulic actuation in addition to the sheet thickness and material number.
- Ask for our technical support.

Hole punch custom-made products

 Circular	Ø diameter d				Material thickness		Material type	
	mm				mm		Sheet steel (S235)	<input type="checkbox"/>
							Stainless steel (VA)	<input type="checkbox"/>
 Circular with lugs	Ø diameter d		Number of lugs	Lug width	Material thickness		Material type	
	mm			mm	mm		Sheet steel (S235)	<input type="checkbox"/>
							Stainless steel (VA)	<input type="checkbox"/>
 Square	Edge length a				Material thickness		Material type	
	mm				mm		Sheet steel (S235)	<input type="checkbox"/>
							Stainless steel (VA)	<input type="checkbox"/>
 Rectangle	Width b		Height h		Material thickness		Material type	
	mm		mm		mm		Sheet steel (S235)	<input type="checkbox"/>
							Stainless steel (VA)	<input type="checkbox"/>
 Circular flattened on one side	Ø diameter d		Flattened to		Material thickness		Material type	
	mm		mm		mm		Sheet steel (S235)	<input type="checkbox"/>
							Stainless steel (VA)	<input type="checkbox"/>
 Circular flattened on two sides	Ø diameter d		Flattened to		Material thickness		Material type	
	mm		mm		mm		Sheet steel (S235)	<input type="checkbox"/>
							Stainless steel (VA)	<input type="checkbox"/>
 Square with 4 flattened corners	Edge length a		Corners flattened to		Material thickness		Material type	
	mm		mm		mm		Sheet steel (S235)	<input type="checkbox"/>
							Stainless steel (VA)	<input type="checkbox"/>

MANUAL PUNCHES





- Up to 750 bar pressure
- Up to 138 x 138 mm square
- Up to 152 mm round
- Only 1.45 kg

Compact™ manual punch straight

for use in construction of switch gear and control cabinets - suitable for all hole punch types
Loading only takes place in the tension direction and makes work considerably easier

- ① Precisely-matched overpressure valve
- ② Reinforced handle - soft touch
- ③ Body hard-anodised, stable grip, elegant
- ④ Weighs only 1.45 kg
- ⑤ High-compression cylinder bore surface
- ⑥ Lasered production code on rear
- ⑦ High punching force of 75 kN






Ø mm	15,2	16,2	18,6	20,4	22,5	25,4	28,3	32,5	37	40,5	47	50,5	54	60	63,5
Ø metric	-	M 16	-	M 20	-	M 25	-	M 32	-	M 40	-	M 50	-	-	M 63
Ø PG	9	-	11	13	16	-	21	-	29	-	36	-	42	48	-
Ø Inch					7/8"	1"							2-1/8"		2-1/2"
	0.598	0.638	0.732	0.803	0.886	1.000	1.114	1.280	1.457	1.594	1.850	1.988	2.126	2.362	2.500

Item no

Set MonoCut™ - for sheet steel (S235):

1 Compact™ manual punch straight / MonoCut™ punches and dies / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 9,5 mm / 1 HSS pre-drill Ø 11 mm / 1 spacer sleeve set (3-part)

	02006	•		•	•	•		•		•		•		•	
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Set TriCut™ - for sheet steel (S235):

1 Compact™ manual punch straight / TriCut™ punches and dies / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 9,5 mm / 1 HSS pre-drill Ø 10 mm / 1 spacer sleeve set (3-part)

	01752	•		•	•	•		•		•		•		•	•
	01765		•		•		•		•		•				
	01758		•		•		•		•			•			•


Set TriCut+™ - for sheet steel (S235) and stainless steel sheeting:

1 Compact™ manual punch straight / TriCut+™ punches and dies / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 11,1 mm / 1 HSS pre-drill Ø 11,5 mm / 1 spacer sleeve set (3-part)

	01650	•		•	•	•		•		•		•		•	
	01642		•		•		•		•		•				
	01654		•		•		•		•		•		•		•


Set TwinCut™ - for sheet steel (S235) and stainless steel sheeting:

1 Compact™ manual punch straight / TwinCut™ punches and dies / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 9,5 mm / 1 draw bolt Ø 19 x 11,1 mm / 1 HSS pre-drill Ø 11,5 mm / 1 spacer sleeve set (3-part)

	01570		•		•		•		•		•				
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Compact™ manual punch straight:

1 Compact™ manual punch straight / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 9,5 mm / 1 HSS pre-drill Ø 11 mm / 1 spacer sleeve set (3-part)

	02001	without punches and dies													
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CompactCombi™ manual punch 90°

for use in construction of switch gear and control cabinets - suitable for all hole punch types
Loading only takes place in the tension direction and makes work considerably easier

- 1 Precisely-matched overpressure valve
- 2 Reinforced handle - soft touch
- 3 Body hard-anodised, stable grip, elegant
- 4 Weighs only 1.75 kg
- 5 High-compression cylinder bore surface
- 6 Lasered production code on rear
- 7 High punching force of 75 kN






Ø mm	15,2	16,2	18,6	20,4	22,5	25,4	28,3	32,5	37	40,5	47	50,5	54	60	63,5
Ø metric	-	M 16	-	M 20	-	M 25	-	M 32	-	M 40	-	M 50	-	-	M 63
Ø PG	9	-	11	13	16	-	21	-	29	-	36	-	42	48	-
Ø Inch					7/8"	1"							2-1/8"		2-1/2"
	0.598	0.638	0.732	0.803	0.886	1.000	1.114	1.280	1.457	1.594	1.850	1.988	2.126	2.362	2.500

Item no

Set MonoCut™ - for sheet steel (S235):

1 CompactCombi™ manual punch 90° / MonoCut™ punches and dies / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 9,5 mm / 1 HSS pre-drill Ø 11 mm / 1 spacer sleeve set (3-part)

	02052	•		•	•	•		•		•		•		•	•	
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Set TriCut™ - for sheet steel (S235):

1 CompactCombi™ manual punch 90° / TriCut™ punches and dies / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 9,5 mm / 1 HSS pre-drill Ø 10 mm / 1 spacer sleeve set (3-part)

	01753	•		•	•	•		•		•		•		•	•	
	01766		•		•		•		•		•					
	01759		•		•		•		•		•		•			•


Set TriCut+™ - for sheet steel (S235) and stainless steel sheeting:

1 CompactCombi™ manual punch 90° / TriCut+™ punches and dies / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 11,1 mm / 1 HSS pre-drill Ø 11,5 mm / 1 spacer sleeve set (3-part)

	01651	•		•	•	•		•		•		•		•		
	01643		•		•		•		•		•					
	01655		•		•		•		•		•		•			•


Set TwinCut™ - for sheet steel (S235) and stainless steel sheeting:

1 CompactCombi™ manual punch 90° / TwinCut™ punches and dies / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 9,5 mm / 1 draw bolt Ø 19 x 11,1 mm / 1 HSS pre-drill Ø 11,5 mm / 1 spacer sleeve set (3-part)

	01575		•		•		•		•		•					
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CompactCombi™ manual punch 90°:

1 CompactCombi™ manual punch 90° / 1 draw bolt Ø 19 mm / 1 draw bolt Ø 19 x 9,5 mm / 1 HSS pre-drill Ø 11 mm / 1 spacer sleeve set (3-part)

	02050	without punches and dies													
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Akku-Compact Flex™

for use in construction of switch gear and control cabinets - suitable for all hole punch types
Loading only takes place in the tension direction and makes work considerably easier

- 1 Handle inset soft touch
- 2 High-pressure hose - flexible, elastic
- 3 USB interface for readable pressure values, service intervals etc....
- 4 Pressure sensor - automatic detection of punch breakthrough. Once the material has been punched through, the punch can not damage the die.



Practical manual hydraulics with 18 V Li-ion battery for punching circular, square and rectangular cutouts in control cabinet and switch gear construction. Extremely easy to handle and light thanks to high-tensile aluminium head.

- Light and easy to handle, only 2.5 kg including battery

Technical data:

Punching

Circular holes:

up to 82 mm Ø

3.0 mm sheet steel (S235)

2.0 mm stainless steel (F = 600 N/mm²)

89 - 152 mm Ø only with special traction bolt* and spacer*

2.0 mm sheet steel (S235)

1.5 mm stainless steel (F = 600 N/mm²)

Shaped holes:

68 x 68 mm

3.0 mm sheet steel (S235),

2.0 mm stainless steel (F = 600 N/mm²)

92 x 92 mm only with special traction bolt* and spacer*

2.0 mm sheet steel (S235)

1.5 mm stainless steel (F = 600 N/mm²)

Drive

Max. punching force: 75 kN

Max. hydraulic pressure: 680 bar

Battery

Charging time: 18 V Li-ion / 1.5 Ah

Use: 30 mins. after full discharge

- 10° - + 40° C

Battery charger

Charges all batteries 18 - 28 V, compatible for NiCD, NiMH and Li-ion batteries.

Automatic temperature monitoring. Battery cell overcharging is prevented by switchover from rapid charging to trickle charging.

The charging state is shown by the LED display.

The PCB is completely enclosed.

Punching capacity with 1.5 Ah battery

195 x Ø 22.5 mm MonoCut™ to 2.5 mm S235

165 x Ø 22.5 mm TriCut™ to 2.5 mm S235

105 x Ø 63.5 mm MonoCut™ to 2.5 mm S235

65 x Ø 63.5 mm TriCut™ to 2.5 mm S235

170 x Ø 22.5 mm TwinCut™ to 1.5 mm V2A

95 x Ø 63.5 mm TwinCut™ to 1.5 mm V2A

Weight

2.5 kg including battery

Scope of delivery:

Prod.-No.

ALFRA Akku-Compact Flex™ manual hydraulics

02082

with 1 battery 18 V, charger 18 - 28 V

Draw bolts – 9.5 x 19 mm – Prod.-No. 02003

Draw bolts – 19 x 120 mm – Prod.-No. 02002

Spacer sleeve set 3-part – Prod.-No. 02004

Pre-drill 11 mm Ø – Prod.-No. 08023

in heavy duty, practical plastic case

Spare parts:

Prod.-No.

Replacement battery

02082-01

Battery charger 220 V - 240 V

02082-03

* Special draw bolt for square holes 92 x 92 mm

01395

* Special draw bolt for round holes 89 x 152 mm

01398L

* Special spacer sleeve

01396



Prod.-No. 02082



Prod.-No. 02072



Prod.-No. 02071

Compact Flex™ manual hydraulics

for use in construction of switch gear and control cabinets - suitable for all hole punch types
Loading only takes place in the tension direction and makes work considerably easier

- ① Precisely-matched overpressure valve
- ② Reinforced handle - soft touch
- ③ Body hard-anodised, stable grip, elegant
- ④ Weighs only 2 kg
- ⑤ High-compression cylinder bore surface
- ⑥ Lasered production code on rear
- ⑦ High punching force of 75 kN
- ⑧ High-pressure hose flexible - elastic



Punching capacity

Circular holes up to Ø 152 mm
Square holes up to 68 x 68 mm

Punching force: 75 kN
Operating pressure max.: 680 bar
Hydraulic hose length: 600 mm
Weight: 2.0 kg

Scope of delivery:

- 1 Compact Flex™ manual hydraulic punch
- 1 draw bolt Ø 19.0
- 1 draw bolt Ø 19.0 x 9.5 mm
- 1 HSS pre-drill Ø 11.0 mm
- 1 spacer sleeve set 3-part

Compact Flex™ manual hydraulics
in heavy duty, practical plastic case

Prod.-No.
02065

Practical manual hydraulics with 18 V NiMH battery for punching circular, square and rectangular cutouts in control cabinet and switch gear construction. Extremely easy to handle and light thanks to high-tensile aluminium head.

- Light and easy to handle, only 3.7 kg with battery package
- With overpressure valve.
- High-performance drive motor with ergonomically-designed "soft touch" handle
- Battery packages can be pushed in from both sides, therefore weight compensation.

Technical data:

Punching

Circular holes:

up to 82 mm Ø

3.0 mm sheet steel (S235)

2.0 mm stainless steel (F = 600 N/mm²)

89 - 152 mm Ø only with special traction bolt* and spacer*

2.0 mm sheet steel (S235)

1.5 mm stainless steel (F = 600 N/mm²)

Shaped holes:

68 x 68 mm

3.0 mm sheet steel (S235),

2.0 mm stainless steel (F = 600 N/mm²)

92 x 92 mm only with special traction bolt* and spacer*

2.0 mm sheet steel (S235)

1.5 mm stainless steel (F = 600 N/mm²)

Drive

Punching force:

75 kN with overpressure valve

Battery

18 V, 3.0 Ah NiMH

Charging time:

45 mins. after full discharge

Charging cycles:

~ 500 under normal conditions

Use:

0° - + 40° C, capacity loss below 0° C

Battery charger

Charges all batteries 18 - 28 V, compatible for NiCD, NiMH and Li-Ion batteries.

Automatic temperature monitoring. Battery cell overcharging is prevented by switchover from rapid charging to trickle charging.

The charging state is shown by the LED display.

The PCB is completely enclosed.

Punching time/Punching capacity

Ø 22.5 mm	2 mm sheet steel (S235)	5 sec.	190 holes/battery
Ø 63.5 mm	2 mm sheet steel (S235)	7 sec.	100 holes/battery
68 x 68 mm	2 mm sheet steel (S235)	7 sec.	70 holes/battery

Weight

3.7 kg with battery

2.7 kg without battery

Weight cpl. 7.8 kg without punching tools

Scope of delivery:

ALFRA Akku-Compact manual hydraulics

with 2 batteries 18 V, charger 18 - 28 V

Draw bolts - 9.5 x 19 mm - Prod.-No. 02003

Draw bolts - 19 x 120 mm - Prod.-No. 02002

Spacer sleeve set 3-part - Prod.-No. 02004

Pre-drill 11 mm Ø - Prod.-No. 08023

in heavy duty, practical plastic case

Prod.-No.

02070

Spare parts:

Replacement battery

Prod.-No.

02071

Battery charger 220 V - 240 V

02072

* Special draw bolt for square holes 92 x 92 mm

01395

* Special draw bolt for round holes 89 x 152 mm

01398L

* Special spacer sleeve

01396



Prod.-No. 02070



Prod.-No. 02072



Prod.-No. 02071

Recommended combination ■ ■						
Possible combination ■	<i>AHP-M</i>	<i>AHP-S</i>	<i>DSP-120</i>	<i>LHP 700</i>	<i>FOOT PUMP</i>	<i>ALH 600</i>
Prod.-No.	03855	03854	02027	02140	02121	03190
 Prod.-No. 02012 / 02013	■ *	■ ■	■	■	■ ■	■
 Prod.-No. 03200SET	■ ■	■				■
 Prod.-No. 03250	■ ■ *	■	■	■	■	■
 Prod.-No. 03256	■ ■ *	■	■	■	■	■
 Prod.-No. 03258	■ ■ *	■	■	■	■	■
 Prod.-No. 03260	■ ■ *	■	■	■	■	■
 Prod.-No. 03300	■ ■ *	■	■	■	■	■
 Prod.-No. 03360/03380	■ ■ *	■	■		■ ■	■ ■
 AP 250		■				■ ■
 AP 400		■				■ ■

* in combination with optional footswitch/hand switch



ALFRA ELECTRO-HYDRAULIC PUMP AHP S

Technical data:

Max. pressure:	700 bar
Max. flow rate:	0.58 l/min
Oil type:	HLP 32
Filling volume:	3.2 l
Working volume:	2.2 l
Weight:	27 kg
Voltage / frequency:	230 V / 50 Hz
Power:	0.75 kW
Current consumption:	3.26 A
Motor speed:	2800 rpm

Electro-hydraulic pump AHP S
incl. hand switch

Prod.-No.
03854



ALFRA ELECTRO-HYDRAULIC PUMP AHP M

Technical data:

Max. pressure:	700 bar
Max. flow rate:	1.1 l/min
Oil type:	HLP 32
Filling volume:	3.2 l
Working volume:	2.2 l
Weight:	29 kg
Operating voltage:	230 V / 50 Hz
Power:	1.3 kW
Current consumption:	5.65 A
Motor speed:	2800 rpm

Electro-hydraulic pump AHP M
optional hand switch for AHP S and AHP M

Prod.-No.
03855
03859



Prod.-No. 03859 optional



- Max. operating pressure 700 bar
- Fitted pressure limiting valve.
- For all circular, square, rectangular and special shape hole punches.
- The foot pump leaves both hands free for precise positioning and punching on the control cabinet. The foot pump carrying frame is splayed. This guarantees steady working with no risk of tipping.

Tank volume: 270 cm³
 Usable oil volume: 210 cm³
 Delivery volume: 1.7 cm³ per piston stroke

Contents: 1 hydraulic cylinder with quick coupling
 1 hydraulic hose 2.8 m
 1 draw bolt Ø 19.0 and 19.0 x 9.5 mm
 1 spacer sleeve set 5-part
 1 pre-drill Ø 11.0 mm

Prod.-No.

Set foot pump with hydraulic cylinder and accessories

02120

Foot pump only, with 2.8 m hydraulic hose

02121



Prod.-No. 02120





ALFRA ELECTRO-HYDRAULIC PUMP DSP-120

Compact electro-hydraulic pump, two-stage operation with holding function for single-action hydraulic cylinder.

Technical data

Operating voltage:	230 V/50 Hz
Motor power:	0.4 kW
max. operating pressure:	700 bar
Flow rate 0 - 20 bar:	2.0 l/min
Flow rate 20 - 700 bar:	0.2 l/min
Tank volume:	1.2 l
Usable oil volume:	0.8 l
Weight approx.:	7.5 kg

Prod.-No.

Electro-hydraulic pump with accessories

02025

Contents: 1 hydraulic cylinder SKP-1

1 hydraulic hose 1.8 m

1 draw bolt Ø 19.0 and 19.0 x 9.5 mm

1 spacer sleeve set multi-part

1 pre-drill Ø 11.0 mm

1 hand switch

Electro-hydraulic pump only, 220 V, with 1.8 m
hydraulic hose, quick coupling and hand switch

02027

Foot switch 2-pedal

02029

Hand switch

02030



Prod.-No. 02025

ALFRA AIR-HYDRAULIC PUMP - LHP 700

Air-hydraulic pump for the operation of single-action hydraulic cylinders for whole punches, cable cutters, presses or similar applications.

- Heavy-duty tank
- Tank venting filter
- Reduced noise levels
- Oil level indicator on tank
- Precise start-up under load possible
- Precise activation - the drain valve activated by the foot pedal allows precise lowering of the load.
- Hydraulic hose 2.0 m with quick coupling

Technical data

max. operating pressure:	700 bar
(at a feed line pressure of 7 bar)	
Feed pressure/working range:	2.8 - 10 bar
Air connection:	1/4" thread
Flow rate depressurised:	1.0 l/min
Flow rate p max.	
(with 7 bar air):	0.1 l/min
Tank volume:	2.4 l
Usable oil volume:	2.1 l
Weight:	6.3 kg

Prod.-No.

Air-hydraulic pump

02140

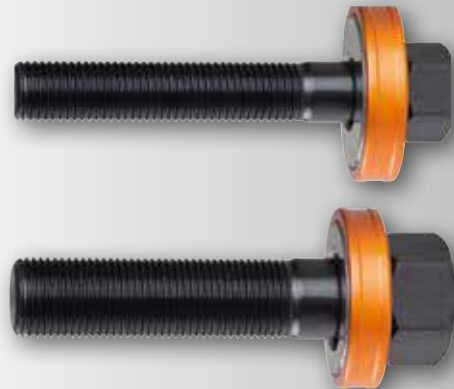


Prod.-No. 02140

	Size in inch	Size in mm	Prod.-No.
Draw bolt	-	6.0	02024
Adapter	-	19.0 / 6.0	02023
Draw bolt cpl.	-	19.0 / 6.0	02022
Draw bolt	3/8"	9.5	02009
Adapter	3/4" / 3/8"	19.0 / 9.5	01353
Draw bolt compl.	3/4" / 3/8"	19.0 / 9.5	02003
Draw bolt	3/4" / 3/8"	19.0 / 9.5*	02010
Draw bolt	7/16"	11.1	01424
Adapter	3/4" / 7/16"	19.0 / 11.1	01425
Draw bolt compl.	3/4" / 7/16"	19.0 / 11.1	02007
Draw bolt	3/4" / 7/16"	19.0 / 11.1*	02011
Draw bolt	3/4"	19.0	02002

* draw bolts made of high-alloy tool steel for higher loading

	Ø x l in inch	Ø x l in mm	Prod.-No.
Draw bolt with ball bearing	-	6.0 x 46 mm	01334
Draw bolt with ball bearing	3/8" x 2-15/16"	9.5 x 75 mm	01339
Draw bolt with ball bearing	3/4" x 2-4/16"	19.0 x 55 mm	01340
Draw bolt with ball bearing	7/16" x 2-15/16"	11.1 x 75 mm	01424
Draw bolt with ball bearing	3/4" x 2-15/16"	19.0 x 75 mm	01341
Draw bolt with ball bearing	3/4" x 4-3/4"	19.0 x 120 mm	01342



- 1 High-tensile bolts for the toughest operating conditions
- 2 Protrusion of ball bearing outside protective ring ensures perfect force transmission to wrench or punching tool
- 3 Ballbearings encapsulated in aluminium rings
Extremely long-life and perfectly protected against soiling
- 4 UNF fine thread



		Prod.-No.
Hydraulic hose for foot pump	2.80 m	02122
Hydraulic hose for LHP 700	2.00 m	02112
Hydraulic hose for DSP 120	2.50 m	02026
Hydraulic hose for AHP S	2.00 m	02116



Prod.-No. 02112

HYDRAULIC CYLINDERS AND ACCESSORIES

	Prod.-No.
Hydraulic cylinder SKP-1 with quick coupling (up to 11 t)	02012
Weight 2.5 kg	
Hydraulic cylinder SKP-1 Mini with quick coupling (up to 7 t)	02013
Weight 0.86 kg	
Spacer sleeve set 3-part	02004
Spacer sleeve set 5-part	02014
Pre-drill Ø 10.0 mm	08036
Pre-drill Ø 11.0 mm	08023
Pre-drill Ø 11.5 mm	08035
Pre-drill SVB with 5 drill Ø 8.5/11.5/12.5/16.5/21.0 mm	08016



Prod.-No. 02013



Prod.-No. 02014



Prod.-No. 08023



Prod.-No. 08016



Prod.-No. 02012



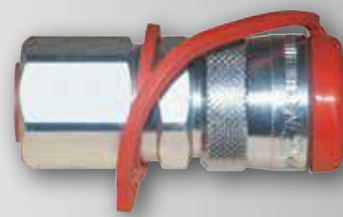
QUICK-CONNECT COUPLINGS – FOR ALFRA HYDRAULIC EQUIPMENT

- Non-drip coupling and decoupling
- Easy-to-use operability
- Dust protection cap

	Prod.-No.
Connection coupling with internal thread R 1/4" (for fitting to hose end)	01452
Connection coupling with internal thread R 3/8" (for fitting to hose end)	014523/8NPT
Connection nipple with internal thread R 1/4" (for fitting to cylinder)	01453
Adapter R 1/4" external thread	01454



Prod.-No. 01453



Prod.-No. 01452

HYDRAULIC OIL – FOR ALFRA HYDRAULIC PUMPS

	Prod.-No.
1 litre hydraulic oil HLP 46	01455

Caution:
Ensure everything is completely clean when refilling hydraulic equipment!



Prod.-No. 01455

ALFRA – SPECIAL METAL LUBRICATING PASTE

Application areas:

- Prevents seizing up, wear, cold-welding, solidifying and fretting corrosion on threads of screws, nuts, bolts, tube threads and fittings.
- ALFRA special metal lubricating paste is also particularly suitable for the lubrication of cutting points on punching tools and high-loading bearings and sliding surfaces.
- Release-active and silicone-free.
- Contents: 120 g

	Prod.-No.
ALFRA special metal lubricating paste	33005

Completely recommended for the use of hole punches using wrenches.



Prod.-No. 33005

- Punches notched grooves in sheet steel up to 2.0 mm thick simply and quickly (S235).
- Saves time-consuming filing of grooves for non-twist securing of pushbuttons, switches and instruments.
- Notched grooves possible in sizes of 3.2 mm and 4.8 mm.
- Replaceable notched groove punch.
- Easy punching due to large lever arm.
- Plastic-coated handle.
- Weight 1.3 kg.

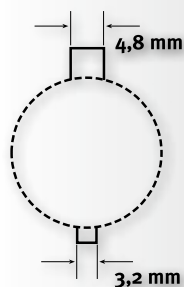


Prod.-No. 03015

The notched groove punch is introduced to the pre-punched opening, aligned to the crosshair markings and then the notched groove tongs are actuated.

Your clean groove is finished!

ALFRA notching pliers	Prod.-No. 03015
Spare part	Prod.-No.
Notch punch with rivet pin	030151





- Handle: reinforced - soft touch
- Limit stop with mm/inch laser-engraved
- Burr-free, precise 90° cuts
- Lowest-possible cutting play





1

- 1 Handle: reinforced - soft touch
- 2 Limit stop with mm/inch laser-engraved
- 3 2 separate profiles for burr-free precise 90° cuts - s
profile guiding
- 4 Profile throughput is optimised
for lowest-possible cutting play

2

Prod.-No. 03199

3

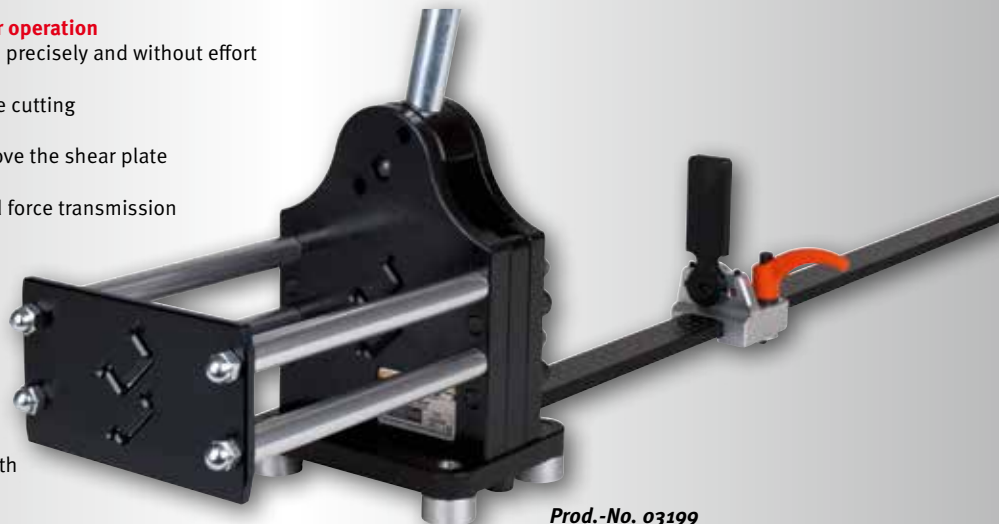


4

For common mounting rails with hand lever operation

Cuts both profile rails TS 35/7.5 + 35/15 mm precisely and without effort

- With guide support for 90°-angle precise cutting
- With reinforced cam located directly above the shear plate
- Lower force application due to improved force transmission
- Maintenance-free
- Cutting to length without waste
- Shear plate re-grindable
- Anodised, laser-engraved longitudinal limit stop 1000 mm with guidance fixture for precise angled cutting to length with millimetre and inch scaling.
- Easy to install on the workbench
- Scale divisions metric and inches



Prod.-No. 03199

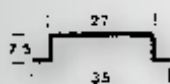
Prod.-No.

03199

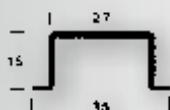
ALFRA profile rail cutting device® – PSG Duo®

Profile rails

Mounting rail 35 mm/7.5
as per EN 60 715



Mounting rail 35 mm/15
as per EN 60 715



Custom-made products for special profiles such as cable ducting on request!



Your required
profile made
to drawings or
samples



1

- 1 Handle: reinforced - soft touch
- 2 Limit stop with mm/inch laser-engraved
- 3 Profile throughput is optimised for lowest-possible cutting play

2

Prod.-No. 03004



3

For hand-operated mounting rails

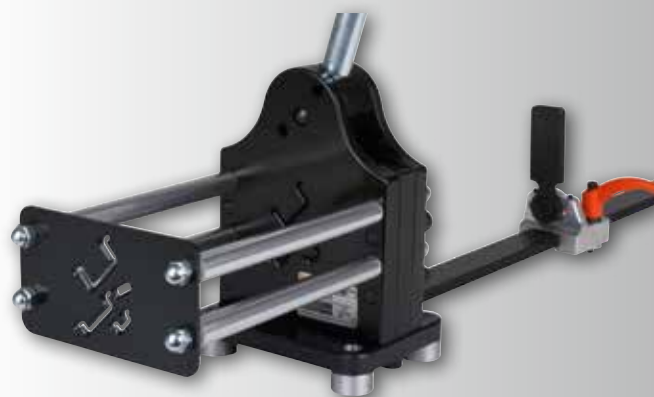
Cuts profile and ground rails precisely and without effort.

Standard version for TS 35/7.5 - 35/15 - 15/5.5 - Cu 10.0 x 3.0 mm

- With reinforced cam located directly above the shear plate
- Lower force application due to improved force transmission
- Burr-free cutting to length without waste
- Maintenance-free
- Anodised, laser-engraved length limit stop 1000 mm with guiding device for precise angled cutting to length, with millimetre and inch scaling.
- Shear plate re-grindable
- Guidance fixture for 90° angle-precise cutting
- Easy to install on the workbench
- Custom-made products are also possible (please send us a sample rail of about 1000 mm length).

ALFRA profile rail cutting device® – PSG 4®

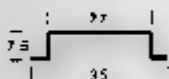
Prod.-No. 03004



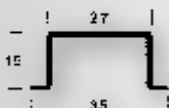
Guidance fixture for 90° angle-precise cutting

Standard version

Mounting rail 35 mm/7.5
as per EN 60 715



Mounting rail 35 mm/15
as per EN 60 715



Mounting rail 15 mm/5.5
as per EN 60 715



Copper ground rails
10 mm x 3 mm



Prod.-No. 03004





1

- 1 Handle: reinforced - soft touch
- 2 Limit stop with mm/inch laser-engraved compatible with PSG series
- 3 Profile throughput is optimised for lowest-possible cutting play

2

Prod.-No. 03001



3

For mounting rails, for hand lever operation for **cutting to length and hole punching longitudinally and transversely** on the depicted mounting rails.

- With reinforced cam located directly above the shear plate
- Lower force application due to improved force transmission
- Burr-free cutting to length without waste
- Maintenance-free
- Anodised, laser-engraved length limit stop 1000 mm with guiding device for precise angled cutting to length, with millimetre and inch scaling.
- Shear plate can be re-ground, punch replaceable
- Custom-made products are also possible (please send us a sample rail of about 1000 mm length).

Scope of delivery standard version

with transverse and longitudinal hole punch 12 x 6.4 mm, 1000 mm length limit stop and guidance fixture incl. C-profile 3415

Prod.-No.
03001

with transverse and longitudinal hole punch 12 x 6.4 mm, 1000 mm length limit stop and guidance fixture incl. G-profile as per EN 60715

03001G

as 03001, however with round hole punch Ø 5.5 or 6.0 mm

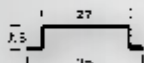
03002

as 03001, however with hydraulic cylinder

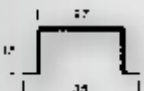
03003

Standard version

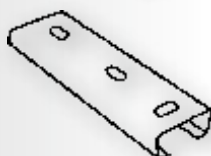
Mounting rail 35 mm/7.5
as per EN 60715



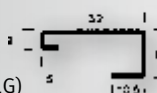
Mounting rail 35 mm/15
as per EN 60715



C-profile 3415
(included in Prod.-No. 03001)



G-profile
as per EN 60715
(included in Prod.-No. 03001G)



Mounting rail 15 mm/5.5
as per EN 60715



Copper ground rails
10 mm x 3 mm



Spare parts for universal cutting and punching device

Spare punch + die 12 x 6.4 mm f. longitudinal hole

Prod.-No.

03005

Spare punch + die 12 x 6.4 mm f. transverse hole

03006

Spare punch + die 5.5 mm f. round hole

03007

Spare punch + 6.0 mm f. round hole

03008

Special versions for mounting rails or flat rails,

03011

also in stainless steel or aluminium or plastic on request



Prod.-No. 03001

Tool for fixing holes (longitudinal and transverse) integrated. Guidance fixture for 90° angle-precise cutting



Prod.-No. 03003

We recommend our pump type AHP S (Prod.-No. 03854) as a drive



- ① Enlarged opening height
(also suitable for ducting with special webs)
- ② Full-surface supporting table
(no sagging ducts)
- ③ Length stop
laser-engraved in metric/inch
- ④ Ergonomic hand lever
for optimum force transmission
- ⑤ Foldable, sprung cutter protector

ALFRA cable ducting cutting device – VKS 125

Cuts cable ducting and covers up to 125 mm wide in seconds precisely and without effort. Fixing tabs for easy fitting to the Workbench are attached to the device and to the longitudinal limit stop.

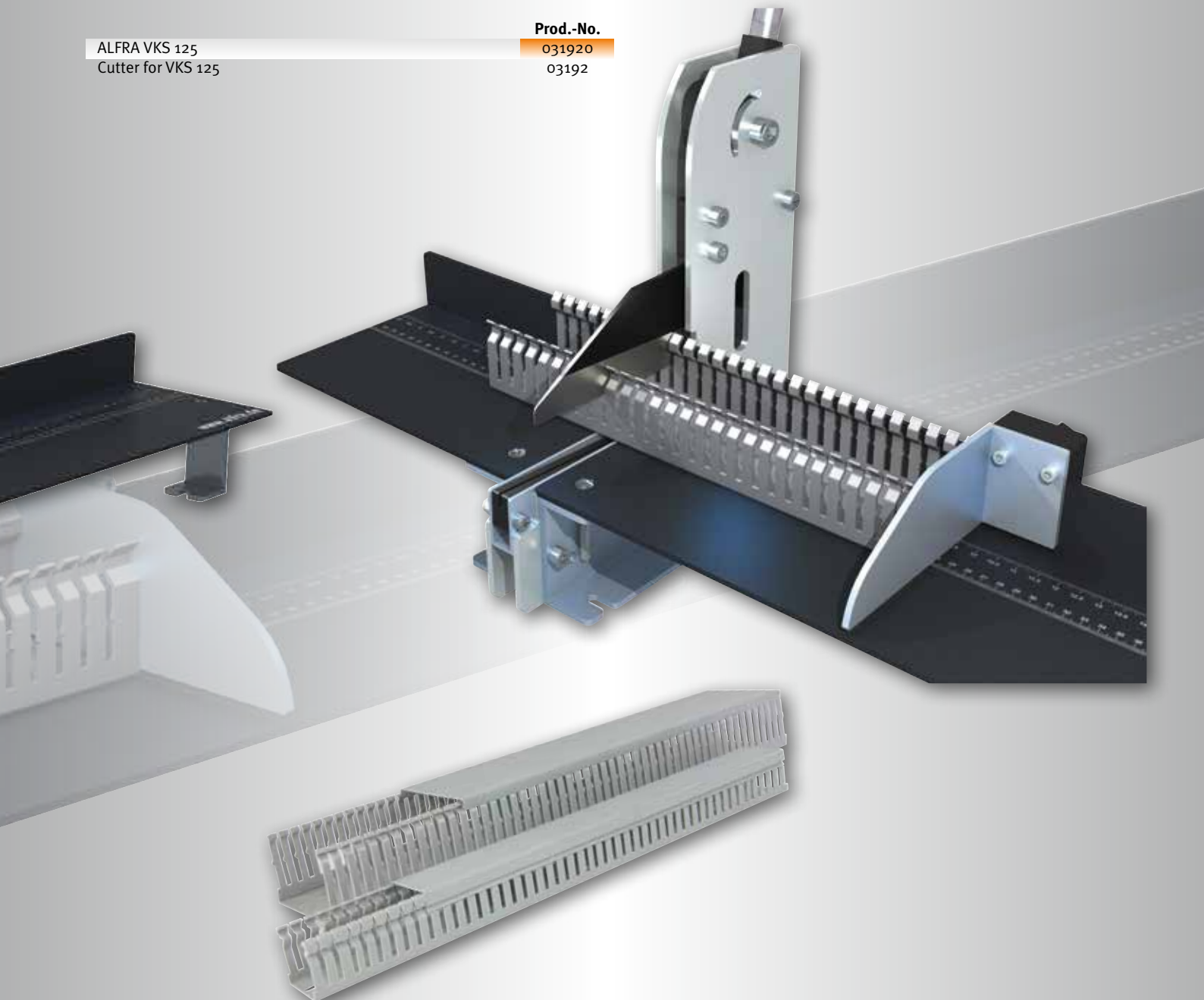
The VKS 125 is fitted with a sprung cutter protector which covers the cutter when it is not being used.

- Burr-free cutting to length without waste
- 90° angle-precise cutting
- Maintenance-free
- Easy to install on the workbench

"... no more plastic swarf and no more deburring!"

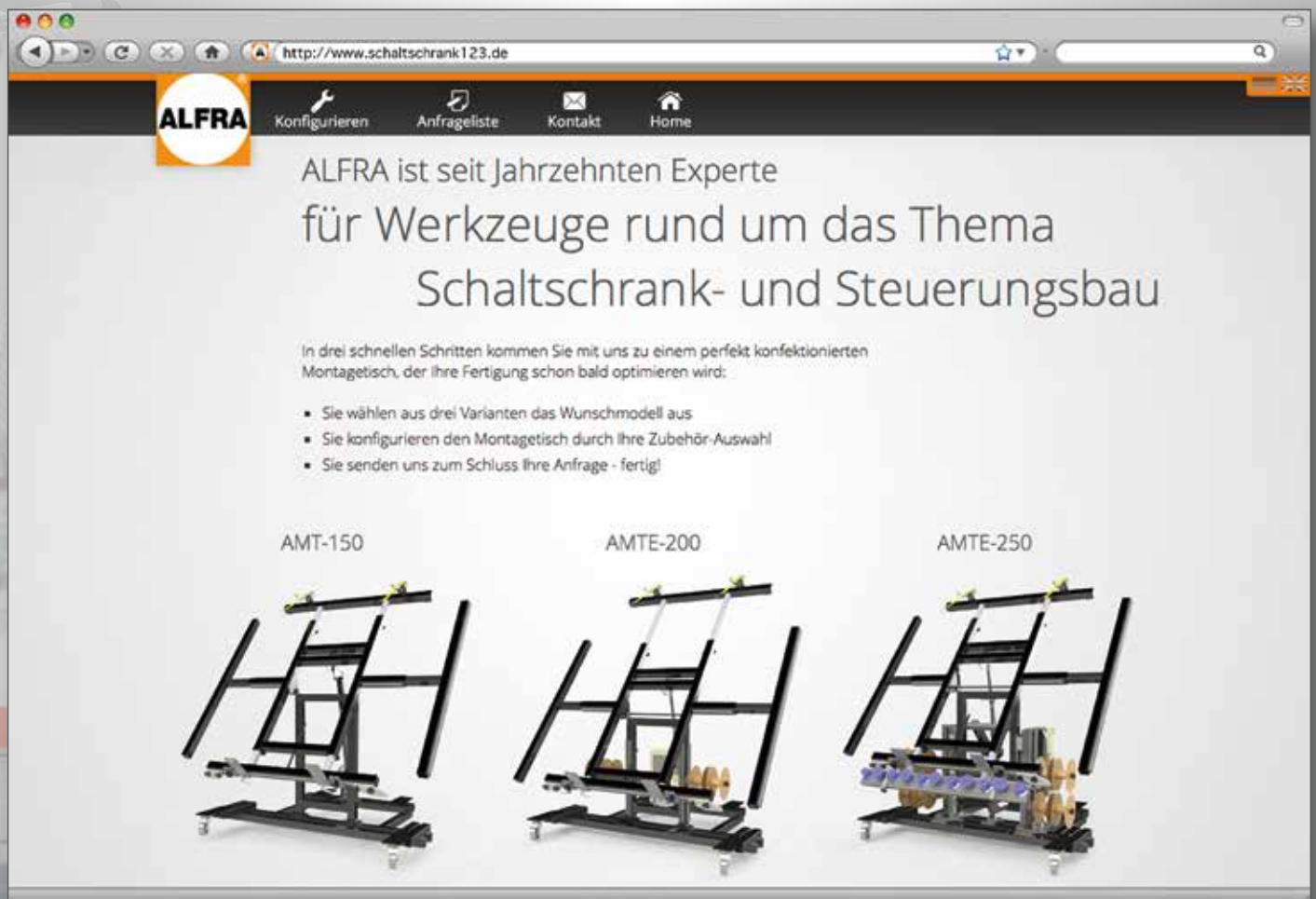
ALFRA VKS 125
Cutter for VKS 125

Prod.-No.
031920
03192





**Simply put together your desired assembly table with its accessories on our website and then request a quotation by clicking:
www.schaltschrank123.de**



The screenshot shows a web browser window with the URL <http://www.schaltschrank123.de>. The website features the ALFRA logo and navigation links: Konfigurieren, Anfrageliste, Kontakt, and Home. The main text reads: "ALFRA ist seit Jahrzehnten Experte für Werkzeuge rund um das Thema Schaltschrank- und Steuerungsbau". Below this, it states: "In drei schnellen Schritten kommen Sie mit uns zu einem perfekt konfektionierten Montagetisch, der Ihre Fertigung schon bald optimieren wird:" followed by a list of steps:

- Sie wählen aus drei Varianten das Wunschmodell aus
- Sie konfigurieren den Montagetisch durch Ihre Zubehör-Auswahl
- Sie senden uns zum Schluss Ihre Anfrage - fertig!

Three models of assembly tables are displayed: AMT-150, AMTE-200, and AMTE-250.





AMT 150

Prod.-No.	03100	
Simple, variable fixing of mounting panels using quick-action clamp.	✓	
Intelligent release system enables unrestricted processing of the entire mounting panel	✓	
Infinitely variable adjustment from vertical to horizontal	using handcrank or battery drill	
Infinitely variable height adjustment	via angle of inclination	
Electric motor	-	
Battery-operated	-	
Adjustable angle of inclination	0 - 80°	
Working height	fixed: 100 cm	
4 guide rollers with total fixing	✓	
Max. size mounting panels W x H	1,100 x 1,900 mm	
Max. useful load	200 kg	
Space requirement	1,400 x 1,200 mm	
Weight	83 kg	
Scope of delivery	Assembly table AMT 150 2 x clamping unit with bolt 2 x clamping unit with quick lock Screw adapter for operating with battery drill	

OPTIONS FOR ALL AMTs



EXTENSION SET
Table width extension for horizontal support of mounting panels
Prod.-No. 03100-001



CLAMPING UNIT WITH QUICK LOCK
Prod.-No. 03100-003



CLAMPING UNIT WITH BOLT
Prod.-No. 03100-002

OPTION FOR AMT 150

SCREW ADAPTER AMT 150
for operation with battery drill
Prod.-No. 03100-004



AMTE 200



AMTE 250

031002



using battery-operated electric motors

by angle of inclination using
battery-operated electric motors



0 - 80°

fixed: 90 cm



1,100 x 1,900 mm

200 kg

1,400 x 1,200 mm

93 kg

Electric assembly table AMTE 200
2 x clamping unit with bolt
2 x clamping unit with quick lock
external charging station for the battery

031001



using battery-operated electric motors

using battery-operated electric motors



0 - 80°

variable: 80 - 110 cm



1,100 x 1,900 mm

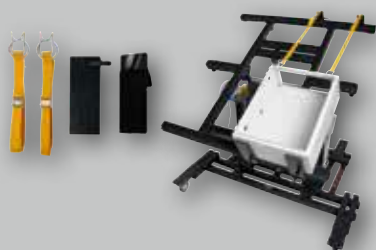
300 kg

1,400 x 1,200 mm

140 kg

Electric assembly table AMTE 250
2 x clamping unit with bolt
2 x clamping unit with quick lock
external charging station for the battery

OPTIONS FOR ALL AMTs

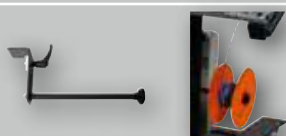


CONTROL CABINET SET
Prod.-No. 03100-005

OPTIONS FOR AMTE 200 / 250



CABLE GUIDANCE
Prod.-No. 031001-003



CABLE ROLL HOLDER
Prod.-No. 031001-002

OPTION FOR AMTE 250



ROLLER CONVEYOR
for sideways insertion of the mounting panel
into the control cabinet
Prod.-No. 031001-004

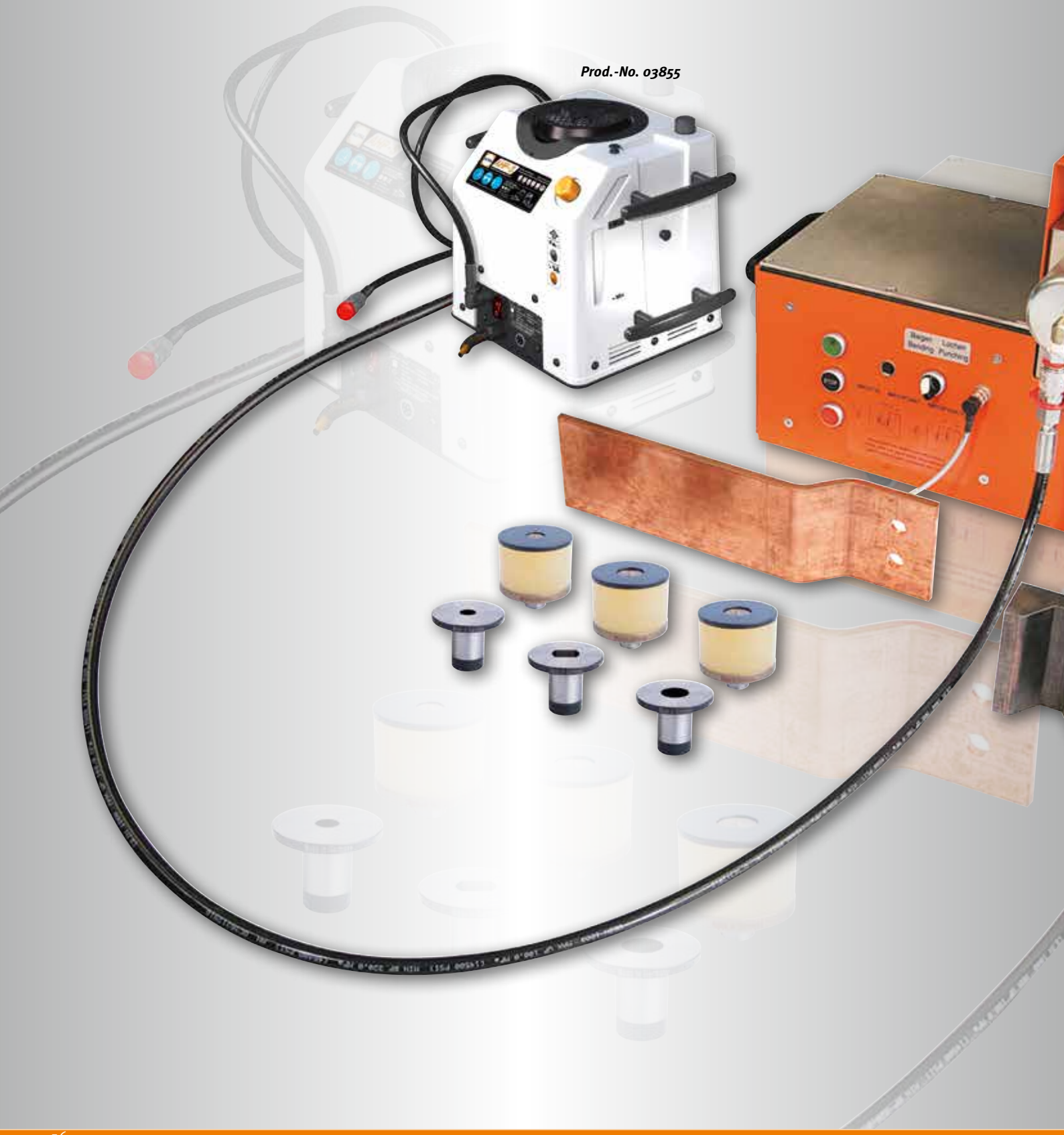
OPTIONS FOR AMTE 200 / 250

SPARE BATTERY
Prod.-No. 031001-001

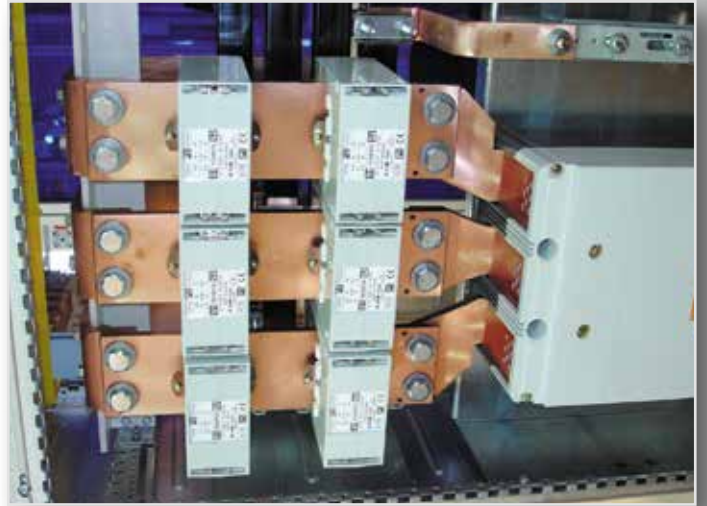
CHARGING PLUG
for 110 V 60 Hz
Prod.-No. 031001-0011

MACHINING

Prod.-No. 03855



Prod.-No. 03200



Busbars at 120 x 12 mm (160 x 10 mm on request) can easily be bent using a universal working cylinder, and holes of Ø 6.6 up to 21.5 mm including longitudinal holes can be punched through the simple insertion of hole punches

Bending busbars

Turn switch to "bend".

To bend busbars, the bending die is inserted in the hydraulic piston and the electric angle measurer is placed in the round guidance crew on the counter block. The contact cable is connected to the electric motor. The required angle is fixed on the angle scale using an adjusting screw. Since copper springs back, we recommend making a setting 1° - 3° above the required angle depending on the material thickness. You should check the first bending angle. This bending angle can be reproduced as often as required since the bending process is automatically interrupted on achieving the angle by the electrical contact switch.

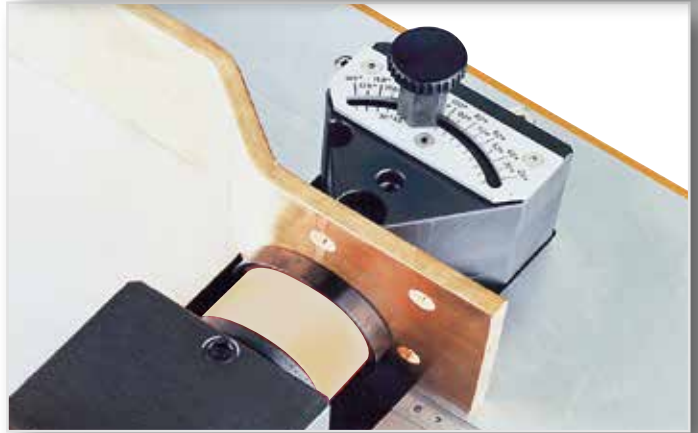


Perforating busbars

Switch setting to "perforate".

The punch with the neoprene scraper and the matching die are placed in the locating hole. The punch is fixed sideways using a grub screw. Depending on the busbar width and the required hole arrangement, the processing block can be infinitely variably raised or lowered hydraulically using the handwheel. A counter attached to the handwheel shows the height of the hole centre in millimetres. We recommend centre-punching the busbar and then aligning the punch centring point above the centre punch to guarantee a precise hole location.

The neoprene scraper and a fitted electronic sensor ensure automatic punch retraction.



Technical data:

Bending

Bending Cu max:	120 x 12 mm
Bending up to:	more than 90°
smallest leg length:	50 mm
smallest U-bend:	100 mm
smallest Z-bend:	72 mm (depending on material thickness)
The values stated are based on copper rails 120 x 10 mm	

Punching

Punching Cu:	6.6 - 21.5 mm
	also longitudinal hole up to max. L = 21 mm
Material thickness Cu max:	12 mm
Material width up to:	110 mm central
External dimensions L x W x H:	700 x 410 x 410 mm
Weight:	60 kg

Special version for processing of busbars up to 160 x 10 mm available on request.



	Prod.-No.
ALFRA busbar bending and hole punching device with electrical angle measurer R10, bending die R10 and length limit stop	03200SET
Electrical angle measurer R10	03201
Bending die R10	03202
Length limit stop	03203
Bending die with movable jaws (120 x 10 mm Cu)	03228
Digital angle measurer	03229
Stage bending tool with 2 pairs of pressure plates for 5 and 10 mm stages (max. range: 100 x 5 mm / 60 x 10 mm Cu)	03246



Prod.-No. 03200SET

Electro-hydraulic pump AHP M

Technical data:

Max. pressure:	700 bar
Max. flow rate:	1.1 l/min
Oil type:	HLP 32
Filling volume:	3.2 l
Working volume:	2.2 l
Weight:	29 kg
Operating voltage:	230 V / 50 Hz
Power:	1.3 kW
Current consumption:	5.65 A
Motor speed:	2800 rpm



Prod.-No. 03229

Freely-programmable digital angle measurer
Can be used for devices
Prod.-No. 03200 and 03980



Prod.-No. 03202

	Prod.-No.
Electro-hydraulic pump AHP M optional hand switch for AHP S and AHP M	03855 03859



Prod.-No. 03228



Prod.-No. 03201

Electro-hydraulic pump AHP S

Technical data:

Max. pressure:	700 bar
Max. flow rate:	0.58 l/min
Oil type:	HLP 32
Filling volume:	3.2 l
Working volume:	2.2 l
Weight:	27 kg
Voltage / frequency:	230 V / 50 Hz
Power:	0.75 kW
Current consumption:	3.26 A
Motor speed:	2800 rpm

	Prod.-No.
Electro-hydraulic pump AHP S incl. hand switch	03854



Prod.-No. 03855



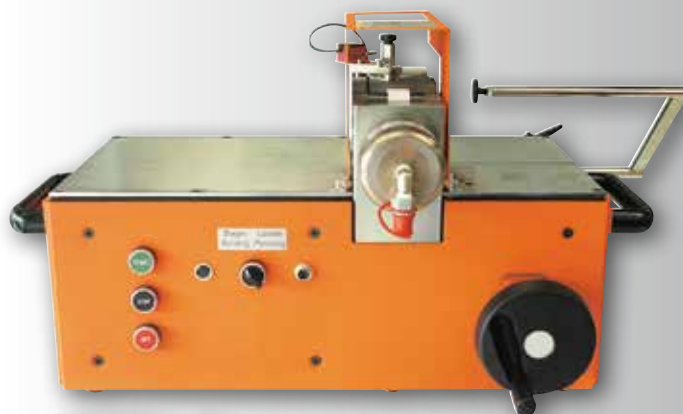
Prod.-No. 03854

ALFRA busbar set 1:

Prod.-No.

03911

- Prod.-No. 03200SET
ALFRA busbar bending and hole punching device with electrical angle measurer R10, bending die R10 and length limit stop
- Prod.-No. 03855
electro-hydraulic pump **AHP M**



Prod.-No. 03911

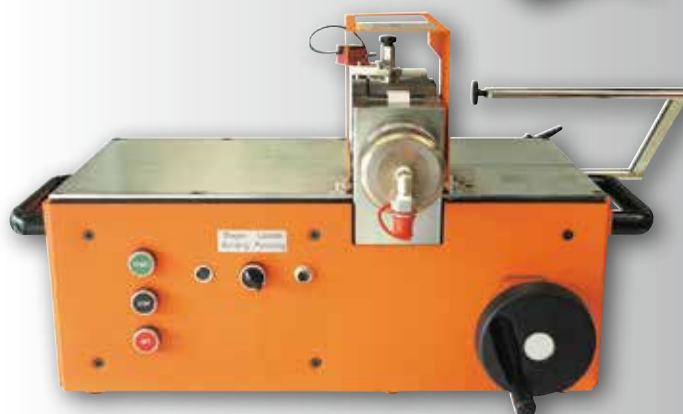


ALFRA busbar set 2:

Prod.-No.

03921

- Prod.-No. 03200SET
ALFRA busbar bending and hole punching device with electrical angle measurer R10, bending die R10 and length limit stop
- Prod.-No. 03854
electro-hydraulic pump **AHP S**



Prod.-No. 03921



Accessories

Available punches and dies

Punch Ø in mm	Metric Screw connection	Max. Material thickness in mm	Prod.-No.
6.6	6.0	5.0	03204
9.0	8.0	6.0	03205
9.5	8.0	6.0	03206
11.0	10.0	12.0	03207
11.5	10.0	12.0	03208
13.5	12.0	12.0	03209
14.0	12.0	12.0	03210
17.5	16.0	12.0	03211
18.0	16.0	12.0	03212
21.0	20.0	12.0	03213
21.5	20.0	12.0	03214

Die ØMax. in mm	Material thickness in mm	Prod.-No.
6.6	5.0	03230
9.0	6.0	03231
9.5	6.0	03232
11.0	12.0	03233
11.5	12.0	03234
13.5	12.0	03235
14.0	12.0	03236
17.5	12.0	03237
18.0	12.0	03238
21.0	12.0	03239
21.5	12.0	03240

Punches and dies for longitudinal holes up to max. L x W = 21 x 18 mm Prod.-No.

03241



longitudinal hole punches and dies

Round punches and dies



ALFRA BUSBAR CUTTING DEVICE – S 125

**For clean, burr-free cutting of copper busbars
125 x 12 mm.**

- Ideal supplementary device for busbar bending and hole punching device.
- Cutting time with electro-hydraulic pump depending on rail width 5 - 15 sec.
- Hold-down device and guidance fixture for central, precise cutting.
- Top cutter replaceable and resharpenable.
- Weight: 16 kg

ALFRA busbar cutting device – S 125	Prod.-No. 03250
Replacement top cutter	03251
With use of electro-hydraulic pump AHP M in direct connection with the cutting device, we recommend the use of a footswitch with START – STOP – OFF function.	
Footswitch with START – STOP – OFF (direct connection to basic device 03200)	03865
Footswitch with START – STOP – OFF (direct connection to hydraulic pump 03855)	03863
As a drive we recommend	
electro-hydraulic pump AHP M	03855



Prod.-No. 03250

ALFRA – WORKSHOP TROLLEY

**For the bus bar bending and hole punching device 03200SET and the
busbar cutting device 03250**

Ideal for transportation - also in vans with standard fittings

Specially-developed workshop trolley for storing both processing devices and saving space. The electro-hydraulic pump can be connected to a fitted 2-way valve in the trolley. The processing devices are connected to each other with hydraulic hoses.

2 support rollers fitted to the side of the table make bending and cutting of long rails easier.

The trolley has an additional drawer with tool compartments for storing all punches and dies. The trolley runs on 4 casters, 2 of which have a locking device.

The fittings include a single and double power socket in addition to a self-rolling 230 V connecting cable at 3 m length.

Table size: 1,050 x 700 mm
Dimensions: L=1150, W=700, H=900 mm
Weight: 100 kg without devices

Workshop trolley, with 2-way valve, coupling, Drawer with tool compartments	Prod.-No. 03950
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Prod.-No. 03950 illustration shows fitted workshop trolley

for bending busbars at 120 x 12 mm,
 - for perforating busbars Ø 6.6 - 21.5 mm,
 - for cutting busbars 125 x 12 mm,
 - two additional hydraulic outputs
 for various applications

- The processing stations for busbar cutting and hole punching and for cutting are recessed in the table. This enables quick, clean working.
- You can use a hand wheel to infinitely variably raise and lower the universal working cylinder by hydraulic power according to the hole pattern to be punched.
- The processing devices are connected to a hydraulic central unit fitted to the inside of the trolley.
- A support extension, which can be pulled out of the side, is provided as a support for longer rails.
- Press heads (e.g. press head 10 - 300 mm² Prod.-No. 03360) and hydraulic cylinder Prod.-No. 02012 can be connected to 2 hydraulic hoses fitted to the side for hole-punching.
- 1 footswitch including connecting cable is included in delivery. Up to 3 additional foot switches can be connected to the various stations.
- 4 tool drawers with compartments for punches and dies are fitted to the trolley.
It runs on 4 casters, 2 of which have a locking device.

Technical data:

Motor voltage:	230 V / 50 Hz
Motor power:	2.2 kW
max. operating pressure:	700 bar
Flow rate:	max. 1.7 l/min.
Tank volume:	3.2 l
Usable oil volume:	2.2 l
Weight approx.:	240 kg
Table size:	1,150 x 700 mm
Dimensions L x W x H:	1,250 x 760 x 1,210 mm

Prod.-No.
03980

ALFRA 4-Station processing trolley

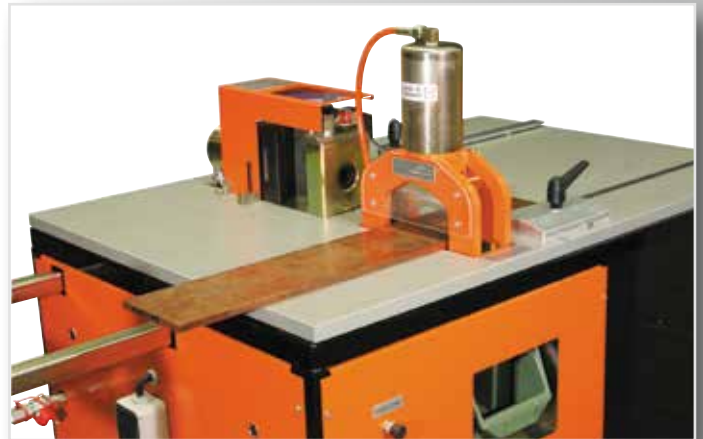
Required extra accessories

Punches and dies Ø 6.6 - 21.5 mm
 Punch: Prod.-No. 03204 - 03214
 Die: Prod.-No. 03230 - 03240

Hydraulic press head 10 - 300 mm ²	03360
Hydraulic cylinder	02012
Footswitch with connecting cable, 3-pole	03861



Prod.-No. 03980 supplied without additional devices



4 tool draws with compartments for punches and dies are fitted to the trolley.

Bending busbars up to 120 x 12 mm Perforating busbars Ø 6.6 up to 21.5 mm

The device consists of a base frame made of torsion-free aluminium profile with a mounting for the base bodies for bending and perforating. A length limit stop makes adjustment of the hole arrangement easier during punching. To make working with longer copper rails easier, the insert frame with support frame can be extended to up to around 700 mm. All limit stops and support frames are quick and easy to fix using clamping levers.

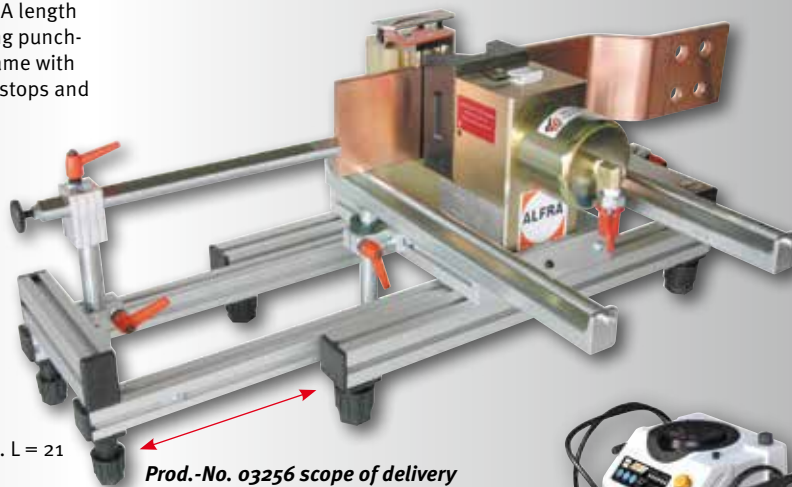
Technical data:

Bending:

Bending Cu max: 120 x 12 mm
Bending up to: more than 90°
smallest leg length: 50 mm
smallest U-bend: 100 mm
smallest Z-bend: 72 mm
The values stated are based on copper rails 120 x 10 mm

Punching:

Punching Cu: Ø 6.6 - 21.5 mm
also longitudinal hole up to max. L = 21 mm
Material thickness Cu max: 12 mm
Material width up to: 110 mm central
Dimensions L x W x H: 615 x 370 x 315 mm
Weight: 44 kg



Prod.-No. 03256 scope of delivery without punches and dies



*We recommend our electro-hydraulic pump AHP S
Prod.-No. 03854 as a drive*

ALFRA busbar bending and hole punching device – LPV

Prod.-No.
03256

Accessories

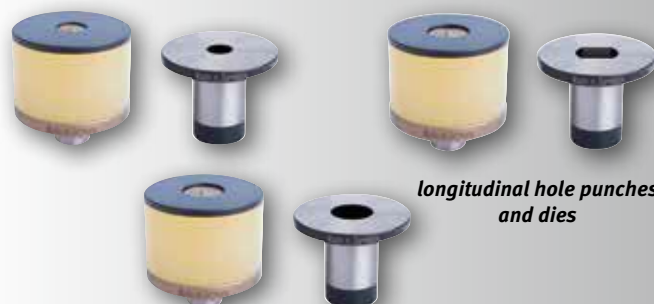
Available punches and dies

Punch Ø in mm	Metric Screw connection	Max. Material thickness in mm	Prod.-No.
6.6	6.0	5.0	03204
9.0	8.0	6.0	03205
9.5	8.0	6.0	03206
11.0	10.0	12.0	03207
11.5	10.0	12.0	03208
13.5	12.0	12.0	03209
14.0	12.0	12.0	03210
17.5	16.0	12.0	03211
18.0	16.0	12.0	03212
21.0	20.0	12.0	03213
21.5	20.0	12.0	03214



Die ØMax. in mm	Material thickness in mm	Prod.-No.
6.6	5.0	03230
9.0	6.0	03231
9.5	6.0	03232
11.0	12.0	03233
11.5	12.0	03234
13.5	12.0	03235
14.0	12.0	03236
17.5	12.0	03237
18.0	12.0	03238
21.0	12.0	03239
21.5	12.0	03240

Punches and dies for longitudinal holes up to max. L x W = 21 x 18 mm **Prod.-No.**
03241



*longitudinal hole punches
and dies*

Round punches and dies

- The device consists of a base frame made of special aluminium and a hydraulic cylinder up to 600 bar.
- Using bending dies R=11 mm and R=5 mm and height adjustment, all busbars of up to max. 160 mm width can be bent to various angles.
- The angle measurement is engraved on the top section.
- Changing over to bending and hole-punching is easy and simple.

Technical data:

Bending

Bending Cu max.:	160 x 12 mm
Bending angle up to:	92°
smallest leg length:	50 mm internal dimension
smallest U-bend:	160 mm internal dimension
smallest Z-bend:	55 mm (material-dependent) internal dimension

Punching/perforating

Punching Cu max.:	Ø 6.6 - 21.5 mm
	also longitudinal hole up to max. L = 21 mm
Material thickness Cu max.:	12 mm
Material width up to:	160 mm central
Dimensions L x W x H:	390 x 150 x 330 mm
Weight:	20 kg

Recommended drive type

Electro-hydraulic pump AHP S	Prod.-No. 03854
Air-hydraulic pump LHP 700	Prod.-No. 02140
Foot pump	Prod.-No. 02121

Prod.-No.

ALFRA BS 160 with bending die and bending punch R=11 mm for busbars 9-12 mm

03258

Accessories

Bending punch R=5 mm for busbars 3-8 mm

03259

Available punches and dies

Punch Ø in mm	Metric Screw connection	Max. Material thickness in mm	Prod.-No.
6.6	6.0	5.0	03204
9.0	8.0	6.0	03205
9.5	8.0	6.0	03206
11.0	10.0	12.0	03207
11.5	10.0	12.0	03208
13.5	12.0	12.0	03209
14.0	12.0	12.0	03210
17.5	16.0	12.0	03211
18.0	16.0	12.0	03212
21.0	20.0	12.0	03213
21.5	20.0	12.0	03214

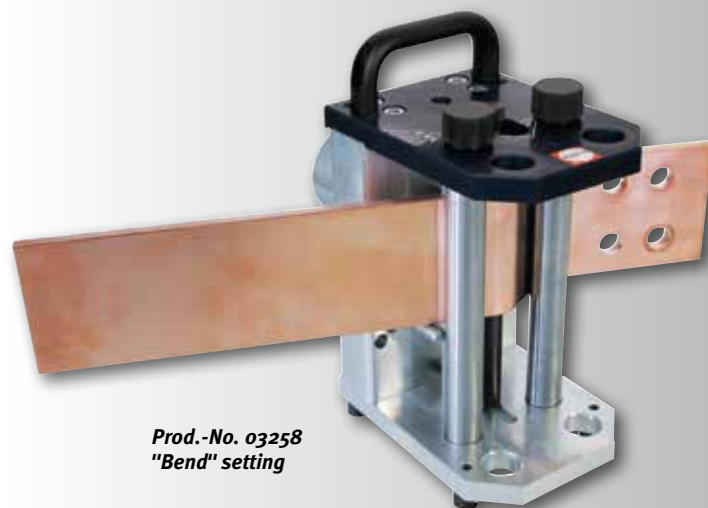
Die ØMax. in mm	Material thickness in mm	Prod.-No.
6.6	5.0	03230
9.0	6.0	03231
9.5	6.0	03232
11.0	12.0	03233
11.5	12.0	03234
13.5	12.0	03235
14.0	12.0	03236
17.5	12.0	03237
18.0	12.0	03238
21.0	12.0	03239
21.5	12.0	03240

Punches and dies for longitudinal holes up to max. L x W = 21 x 18 mm Prod.-No. 03241

Bending busbars up to 160 x 12 mm
Perforating busbars Ø 6.6 - 21.5 mm



Prod.-No. 03258
"Perforate" setting



Prod.-No. 03258
"Bend" setting



Prod.-No. 03258
Complete (without punches and dies)

for punching (without insulation) and cutting of flexible supply bars

Thickness up to 10 mm (without insulation)

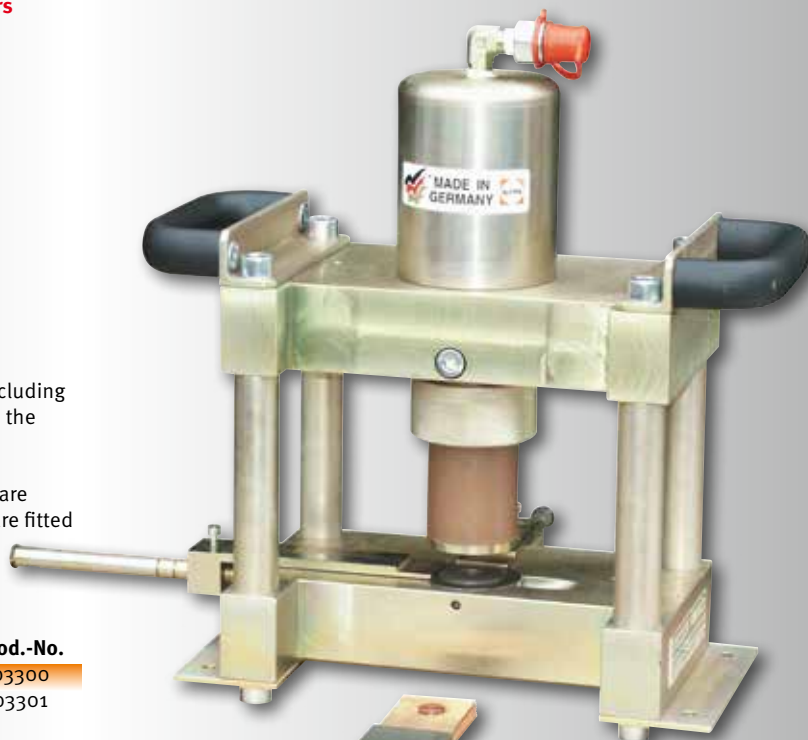
Width up to 100 mm (without insulation)

Application areas:

- Cutting and perforation of ribbed copper rails
- Cutting thickness: max. 10 mm
- Hole range: Through holes for bolts M6 – M14
- Dimensions L x W x D: 400 x 250 x 150 mm (without limit stop)
- Weight: 32 kg

Basic device

- Used for mounting of: cutting block and perforating tools
- The pressure unit, consisting of hydraulic piston and cylinder including punch mounting in the top section, is permanently integrated in the basic unit.
- The concentric locating hole for the die and cutting block insert are located in the bottom section. In addition, foldable limit stops are fitted to the front and side for hole punching in the device.



Prod.-No. 03300

ALFRA ribbed busbar processing device
Cutting block

Prod.-No.
03300
03301

Accessories

Punch with neoprene and pressure plates:

Ø 6.0 mm	03304
Ø 9.0 mm	03305
Ø 11.0 mm	03306
Ø 14.0 mm	03307

Die:

Ø 6.0 mm	03309
Ø 9.0 mm	03310
Ø 11.0 mm	03311
Ø 14.0 mm	03312

Other diameters on request.



Prod.-No. 02121

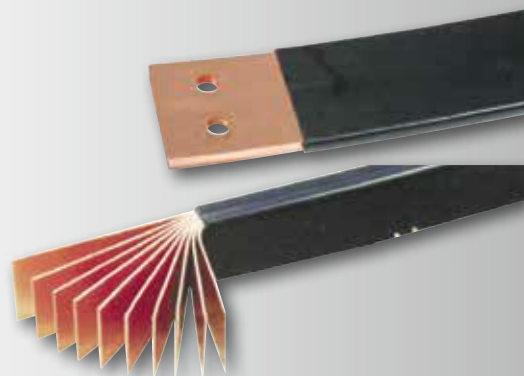


Prod.-No. 03854



Prod.-No. 03301 cutting block with length limit stop.

We recommend our electro-hydraulic pump AHP S as a drive
Prod.-No. 03854 or our foot pump Prod.-No. 02121.



- Specially developed for assembly work. Compact, strong construction. Easily portable - flexible in use.
- For punching steel and copper
- Application areas: Punching busbars, general punching tasks in steel and bridge construction, scaffolding etc.

Technical data:

Piston stroke: 18 mm
Punching force: 270 kN

Overhang:

Working pressure max.: 700 bar
Punching range:
Punch Ø 5.5 - 10 mm
Material thickness max. 8 mm, (S235)
Punch Ø 10 - 21 mm
Material thickness max. 10 mm, (S235)
Weight: 16 kg
Dimensions: 220 x 110 x 335 mm

Prod.-No.

Hydraulic punch AP-65

03260

Tools for copper, aluminium and steel

Ø mm	max. material thickness	Prod.-No. Punch	Prod.-No. Die
5.5	5 mm	03265	03275
6.6	6 mm	03266	03276
8.0	6 mm	03285	03290
9.0	8 mm	03267	03277
11.0	10 mm	03268	03278
14.0	10 mm	03269	03279
18.0	10 mm	03270	03280
21.0	10 mm	03271	03281

other diameters on request where edge holes are possible



Prod.-No. 03854

We recommend our electro-hydraulic pump as a drive
AHP S Prod.-No. 03854.

Prod.-No. 03260



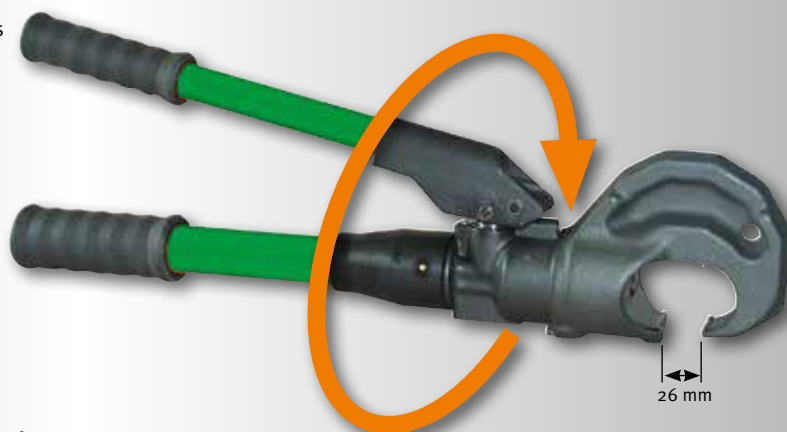
Punches and dies for AP-65

C-shape for simple handling

- C-shape, press head rotatable through 320°, hydraulics integrated in handle. Automatic switchover from rapid feed to press feed.
- Fitted pressure limiting valve.
- Replaceable hexagonal press inserts, semicircular.
- Supplied in plastic case.

Technical data:

Pressing force:	130 kN
Pressing power:	700 bar
Weight:	5.4 kg
Opening width:	26 mm
Length:	545 mm



Prod.-No.

Hydraulic crimping unit

03361

Prod.-No. 03361 head can be rotated through 320°

Hexagonal press inserts

Semicircular pressing shape for cable shoes and connectors

suitable for pressing units 03360/03380/03361

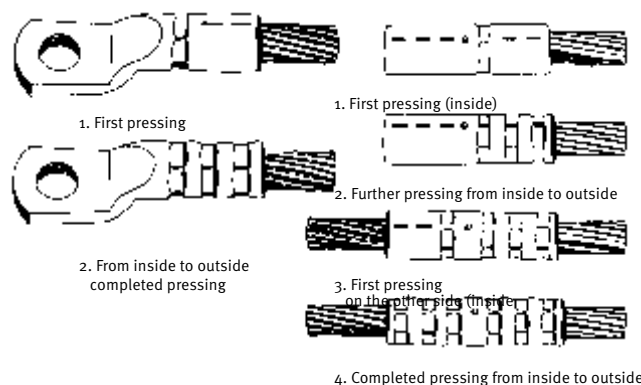
Tool Ref.no.	Press width mm	Copper Cross-section in mm²	Aluminium Cross-section in mm²	Prod.-No.
8	14	16	–	03365
10	14	25	–	03366
12	12	35	25	03367
14	12	50	35	03368
16	12	70	50	03369
18	12	95	70	03370
20	12	120	–	03371
22	14	150	95 + 120	03372
25	14	185	150	03373
28	14	240	185	03374
30	5	–	–	03375
32	5	300	240	03376
34	5	–	300	03377



Hexagonal press inserts

Notes on hexagonal pressings

(Manufacturer information is definitive)

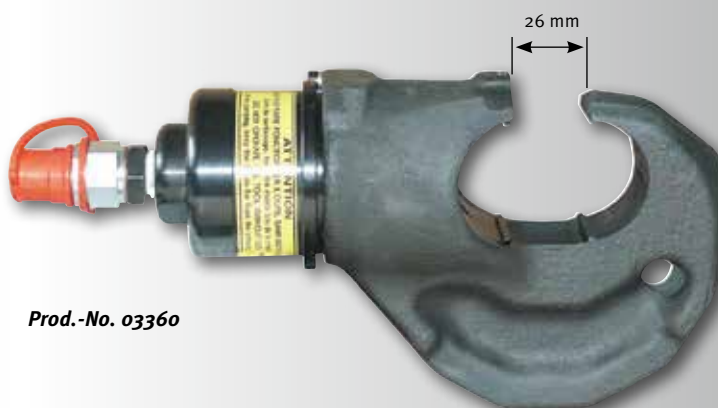


C-shape for simple handling

- pressing cable shoes and connectors made of copper and aluminium of between 10 – 300 mm².
- Hexagonal press inserts semicircular.
- Supplied in sheet steel transport boxes.
- Electro-hydraulic pump Prod.-No. 03854 or foot pump 02121 can be used to operate both press heads.

Technical data:

Pressing force:	130 kN
Pressing power:	700 bar
Weight:	3.9 kg
Opening width:	26 mm
Length:	245 mm



Prod.-No. 03360

Prod.-No.

03360

Hydraulic press head

Technical data:

Pressing force:	130 kN
Pressing power:	700 bar
Weight:	4.6 kg
Opening width:	38 mm
Length:	275 mm



Prod.-No. 03380

Prod.-No.

03380

Hydraulic press head

Hexagonal press inserts

Semicircular pressing shape for cable shoes and connectors

suitable for pressing units 03360/03380/03361

Tool Ref.no.	Press width mm	Copper Cross-section in mm ²	Aluminium Cross-section in mm ²	Prod.-No.
8	14	16	–	03365
10	14	25	–	03366
12	12	35	25	03367
14	12	50	35	03368
16	12	70	50	03369
18	12	95	70	03370
20	12	120	–	03371
22	14	150	95 + 120	03372
25	14	185	150	03373
28	14	240	185	03374
30	5	–	–	03375
32	5	300	240	03376
34	5	–	300	03377



Hexagonal press inserts



ALFRA HYDRAULIC CABLE CUTTER – AKS 85

Ideal for cutting cables up to Ø 85 mm

Advantages

- Guided cutter blade.
- Independent, can be used in any location.
- Clean cuts at minimal deformation.

Application areas:

Power supply companies, power distribution construction, telecommunications, municipal utilities and their providers, crane construction, mining, shipbuilding, maintenance or repair etc.

Technical data:

Cutting force:	55 kN
Cutting pressure:	700 bar
Weight:	6.3 kg
Length:	450 mm

Cutting performance:

telephone cable:	up to Ø 85 mm
electric cable with armouring:	up to Ø 85 mm
insulated aluminium cable:	3 x 240 mm ²
(earthing cable)	
insulated aluminium cable:	630 mm ²
(single-core)	
aluminium wire:	up to Ø 46 mm
copper wire:	up to Ø 28 mm



Prod.-No. 04002

Prod.-No.

04002

hydraulic cable cutter AKS 85
supplied in sailcloth bag

ALFRA HYDRAULIC MANUAL CABLE CUTTER – HKS 85

With built-in manual hydraulics for cutting cables up to Ø 85 mm

The most ergonomic working position can be selected thanks to the integrated hydraulics in the rotating handle.

The cable cutter can be used on scaffolds, on high tension pylons or in manholes etc. independently of hydraulic pumps.

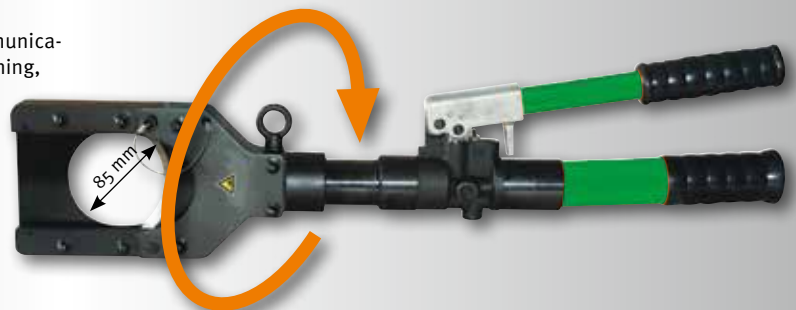
Application areas:

Power supply companies, power distribution construction, telecommunications, municipal utilities and their providers, crane construction, mining, shipbuilding, maintenance or repair etc.

Technical data:

Cutting force:	55 kN
Cutting pressure:	700 bar
Weight:	6.6 kg
Length:	740 mm

The cutting performance is equivalent to Type AKS 85.



Prod.-No.

04015

Prod.-No. 04015 head can be rotated through 320°

Hydraulic manual cable cutter HKS 85
supplied in sailcloth bag







ALFRA PRESS AP 250



ALFRA PRESS AP 400

	Page 74	Page 78	
	Control cabinet housing, Control cabinet doors, Mounting panels	Control cabinet housing, Control cabinet doors, Mounting panels	
Prod.-No.	03170	03195	
Overhang with limit stop in mm	250	400	
Overall height in mm	820	1,700	
Total weight in kg approx.	50 (without base)	220	
Space requirement in mm	1,000 x 1,000	1,200 x 800	
Tool dimension in mm:			
Circular Ø	3.2 – 40.5	3.2 – 40.5	
Square up to	28.0 x 28.0	28.0 x 28.0	
Max. diagonals of	40.0	40.0	
Max. material thickness in mm:			
Sheet steel S235 / stainless steel	2.5 / 2.0	2.5 / 2.0	
Aluminium / plastic	4.0	4.0	
Hydraulic system:			
Mode of action	single-action	single-action	
Punching force F	46 kN at 600 bar	46 kN at 600 bar	
Punching stroke in mm	50	50	
Operating voltage in V	-	-	
Workpiece fold in mm	22	22	



ALFRA PRESS AP 500



ALFRA PRESS AP 600-2



ALFRA PRESS AP 800

	Page 82	Page 86	Page 90
	Control cabinet doors, Mounting panels, various control cabinet housings	Control cabinet doors, Mounting panels	Control cabinet doors, Mounting panels
	03093	03090	03400
	500	600	800
	1,500	1,600	1,700
	200	360	850
	1,500 x 1,500 mm	2,000 x 3,000	2,360 x 4,440
	3.2 – 63.5	3.2 – 70.0	3.2 – 120.0
	46.0 x 46.0	68.0 x 68.0	110.0 x 110.0
	60.0	90.0	140.0
	3.0 / 2.0	3.0 / 2.0	3.0 / 2.0
	4.0	4.0	4.0
	double-action	double-action	double-action
	48 kN at 130 bar	60 kN at 165 bar	135 kN at 190 bar
	66	66	72
	220	400	400
	30	30	40

APress 250

Overhang 250 mm



For rapid punching-out of circular, square, rectangular or special forms without pre-drilling in control cabinet doors, terminal boxes, cable ducts, housings, cable management panels etc. right up to margins. Simple tool change carried out in seconds.

Description:

- Flexible in use - on mobile base (optional) or stationary, fitted on the workbench.
- Rapid tool change helps in problem areas with a wide range of break-through types.
- A range of die mountings is available, even for punching very close to margins.
- Rows of punch-outs are no problem thanks to attachable folding stops.
- Tip: Use a laser pointer as an option - no scribing, no centre punching, a simple crosshair with the pin is sufficient.
- Operation using a manual pump is sufficient as a "starter solution" - this makes "punching without pre-drilling" possible at low cost.

Technical data:

Overhang with limit stop:	250 mm
Overhang without limit stop:	265 mm
Punching stroke:	50 mm
Punching force F:	46 kN at 600 bar
Hydraulic connection:	R 1/4"
Weight without base:	50 kg
Weight with base:	120 kg
Space requirement with base approx.:	1,000 mm x 1,000 mm

Punching capacity:

Circular:	Ø 3.2 - 40.5 mm
Square:	28.0 x 28.0 mm
Rectangle:	22.0 x 30.0 mm
Special forms up to a max. diagonal of:	40.0 mm

Material thicknesses (max):

Sheet steel (S235):	2.5 mm
Stainless steel (F = 600 N/mm²):	2.0 mm
Aluminium (F = 22 N/mm²):	4.0 mm
Punchable plastics:	4.0 mm

Prod.-No.

ALFRA PRESS AP 250 (without options)

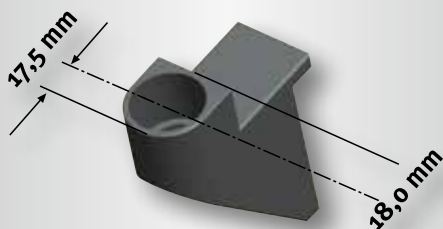
03170

Note:

- All circular tools for ALFRA PRESS punches AP 250 - AP 800 are made of special tool steel and have a special cutting geometry developed by ALFRA.

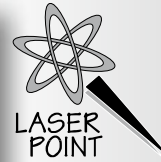
Special tools can be manufactured in our own toolmaking works at short notice!

Technical features when punching close to margins with die holder Type I



Smallest-possible axial dimension (border spacing) when using die holder Type I

Prod.-No. 03174



Laser pointer for optical display of tool centre



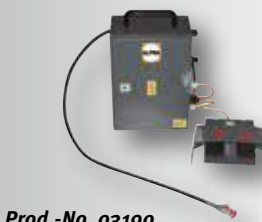
Tool drawer, pivoting



Length and depth limit stop with foldable add-on stops



Pivoting support arms, height adjustable, each with 2 rubber supports (option)



We recommend our electro-hydraulic pump ALH-600 Prod.-No. 03190 as a drive unit.

Prod.-No. 03190

APress 250

Overhang 250 mm

Stationary hole punch - AP 250

Type	Designation	Prod.-No.
Machine	Punching yoke ALFRA PRESS 250 with hydraulic cylinder and quick coupling, cylinder piston with non-twist device for insertion of all punch sockets	03170
Pump	Electro-hydraulic pump ALH 600	03190
Special fitting	Laser pointer with power unit for electro-hydraulic pump ALH 600	03181
	Laser pointer, cpl. with power unit and connector plug for separate mains cable 230V/50Hz	03182
	Combined length and depth limit stops with 2 adjustable limit stops per axis. The limit stops in the X direction are foldable and are suitable as an add-on limit stop for rows of punch-outs.	03177
	Pivoting support arms (pairs) height adjustable, each with 2 rubber supports	03179
	Limit switch for stroke limitation (only in combination with hydraulic pump ALH-600)	03183
	Mobile base	03189
Punch socket	with scraper and centring pin Ø 3.2 - 30.5 mm with mounting shaft for AP 250 - 400	03171
	with scraper and centring pin for round punch Ø 32.5 - 40.5 mm with 19 mm Female thread for AP 250 - 400	03172
Die holder	Type I Dies Ø 3.2 - 22.5 mm for punching right up to margins for AP 250 - 400	03174
	Type II Dies Ø 3.2 - 30.5 mm and moulding tool up to 21 x 21 mm (30.5 mm max. diagonals) for AP 250 - 400	03175
	Type IV Dies Ø 30.6 - 40.5 mm and moulding tool up to 28 x 28 mm (40.0 mm max. diagonals) AP 250 - 400	03176

Square and rectangular hole punches - AP 250 (with mounting shaft and centring point, including die)

Type	Designation	Prod.-No.	AP 250	AP 400	AP 500	AP 600	AP 800
Square holes	21.0 x 21.0 mm for AP 250 - 400	03087	●	●			
	25.4 x 25.4 mm for AP 250 - 400	03088	●	●			
Rectangular holes	22.0 x 30.0 mm for AP 250 - 400	03089	●	●			
Special holes	Ø 22.5 mm with 4 lugs for AP 250 - 400	03086	●	●			
Spare neoprene scraper	for punch socket (03171) Ø 3.2 - 30.5 mm	03185	●	●			
	for punch socket (03172) Ø 30.6 - 40.5 mm	03186	●	●			

Circular punches and dies - AP 250

Type	Mounting holder	Ø in mm	Size Metric	Size PG	Prod.-No.	AP 250	AP 400	AP 500	AP 600-2	AP 800
Punch Ø 3.2 - 30.5 mm		3.2			03131	●	●	●	●	●
		4.5			03132	●	●			
		5.4			03133	●	●	●	●	●
		6.5			03134	●	●	●	●	
		8.5	M8		03135	●	●	●	●	●
		10.5	M10		03136	●	●	●	●	●
		12.7	M12	PG7	03137	●	●	●	●	●
		15.2		PG9	03138	●	●	●	●	●
		16.2	M16		03139	●	●	●	●	●
		18.6		PG11	03140	●	●	●	●	●
		20.4	M20	PG13	03141	●	●	●	●	●
		22.5		PG16	03142	●	●	●	●	●
		25.4	M25		03143	●	●	●	●	●
		28.3		PG21	03144	●	●	●	●	●
		30.5			03145	●	●	●	●	●
Punch Ø 32.5 - 40.5 mm		32.5	M32		03146	●	●	●	●	●
		37.0		PG29	03158	●	●	●	●	●
		40.5	M40		03147	●	●	●	●	●
Die Ø 3.2 - 22.5 mm	TYPE I	3.2			03500	●	●			
		4.5			03501	●	●			
		5.4			03502	●	●			
		6.5			03503	●	●			
		8.5	M8		03504	●	●			
		10.5	M10		03505	●	●			
		12.7	M12	PG7	03506	●	●			
		15.2		PG9	03507	●	●			
		16.2	M16		03508	●	●			
		18.6		PG11	03509	●	●			
		20.4	M20	PG13	03510	●	●			
		22.5		PG16	03511	●	●			
Die Ø 3.2 - 30.5 mm	TYPE II	3.2			03063	●	●	●	●	●
		4.5			03066	●	●	●	●	●
		5.4			03068	●	●	●	●	●
		6.5			03074	●	●	●	●	●
		8.5	M8		03076	●	●	●	●	●
		10.5	M10		03079	●	●	●	●	●
		12.7	M12	PG7	03022	●	●	●	●	●
		15.2		PG9	03023	●	●	●	●	●
		16.2	M16		03084	●	●	●	●	●
		18.6		PG11	03024	●	●	●	●	●
		20.4	M20	PG13	03025	●	●	●	●	●
		22.5		PG16	03026	●	●	●	●	●
		25.4	M25		03085	●	●	●	●	●
		28.3		PG21	03110	●	●	●	●	●
		30.5			03111	●	●	●	●	●
Die Ø 30.6 - 40.5mm	TYPE IV	32.5	M32		03165	●	●			
		37.0		PG29	03166	●	●			
		40.5	M40		03167	●	●			

APress **400**

Overhang 400 mm



For rapid punching-out in circular, square, rectangular or special forms without pre-drilling in control cabinet doors, terminal boxes, cable ducts, housings, cable management panels etc. right up to margins. Simple tool change carried out in seconds.

Description:

- Flexible in use - on mobile base.
- Rapid tool change helps in problem areas with a wide range of break-through types.
- A range of die mountings is available, even for punching very close to margins.
- Rows of punch-outs are no problem thanks to attachable folding stops.
- Tip: Use a laser pointer as an option - no scribing, no centre punching, a simple crosshair with the pin is sufficient.
- Operation using a manual pump is sufficient as a "starter solution" - this makes "punching without pre-drilling" possible at low cost.

Technical data:

Overhang with limit stop:	400 mm
Overhang without limit stop:	430 mm
Punching stroke:	50 mm
Punching force F:	46 kN at 600 bar
Hydraulic connection:	R 1/4"
Weight:	220 kg
Space requirement with base approx.:	1,200 x 800 mm

Punching capacity:

Circular from:	Ø 3.2 - 40.5 mm
Square up to:	28.0 x 28.0 mm
Rectangular up to:	22.0 x 30.0 mm
Special forms up to a max. diagonal of:	40.0 mm

Material thicknesses (max):

Sheet steel (S235):	2.5 mm
Stainless steel (F = 600 N/mm ²):	2.0 mm
Aluminium (F = 22 N/mm ²):	4.0 mm
Punchable plastics:	4.0 mm

Prod.-No.

ALFRA PRESS AP 400 (without options)

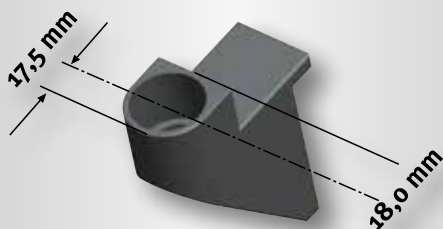
03195

Note:

- All circular tools for ALFRA PRESS punches AP 250 - AP 800 are made of special tool steel and have a special cutting geometry developed by ALFRA.

Special tools can be manufactured in our own toolmaking works at short notice!

Technical features when punching close to margins with die holder Type I



Smallest-possible axial dimension (border spacing) when using die holder Type I

Prod.-No. 03174



Laser pointer for optical display of tool centre



Die holder Type II



Tool drawer, pivoting



Length and depth limit stop with foldable add-on stops (Option)



Pivoting support arms, height adjustable, each with 3 rubber supports (Option)



We recommend our electro-hydraulic pump ALH-600 Prod.-No. 03190 as a drive unit.

Prod.-No. 03190

APress 400

Overhang 400 mm

Stationary hole punch - AP 400

Type	Designation	Prod.-No.
Machine Pump	Punching yoke ALFRA PRESS 400 E with hydraulic cylinder and quick coupling, cylinder piston with non-twist device for insertion of all punch sockets	03195
	Electro-hydraulic pump ALH 600	03190
Special fitting	Laser pointer with power unit for electro-hydraulic pump ALH 600	03181
	Laser pointer, with power unit and connector plug for separate mains cable 230V/50Hz	03182
	Combined length and depth limit stops with 2 adjustable limit stops per axis. The limit stops in the X direction are foldable and are suitable as an add-on limit stop for rows of punch-outs.	03196
	Pivoting support arms (pairs) height adjustable, each with 2 rubber supports	03197
Punch socket	with scraper and centring pin Ø 3.2 - 30.5 mm with mounting shaft for AP 250 - 400	03171
	with scraper and centring pin for round punch Ø 32.5 - 40.5 mm with 19 mm Female thread for AP 250 - 400	03172
Die holder	Type I Dies Ø 3.2 - 22.5 mm for punching right up to margins for AP 250 - 400	03174
	Type II Dies Ø 3.2 - 30.5 mm and moulding tool up to 21 x 21 mm (30.5 mm max. diagonals) for AP 250 - 400	03175
	Type IV Dies Ø 30.6 - 40.5 mm and moulding tool up to 28 x 28 mm (40.0 mm max. diagonals) AP 250 - 400	03176

Square and rectangular hole punches - AP 400 (with mounting shaft and centring point, including die)

Type	Designation	Prod.-No.	AP 250	AP 400	AP 500	AP 600	AP 800
Square holes	21.0 x 21.0 mm for AP 250 - 400	03087	●	●			
	25.4 x 25.4 mm for AP 250 - 400	03088	●	●			
Rectangular holes	22.0 x 30.0 mm for AP 250 - 400	03089	●	●			
Special holes	Ø 22.5 mm with 4 lugs for AP 250 - 400	03086	●	●			
Spare neoprene scraper	for punch socket (03171) Ø 3.2 - 30.5 mm	03185	●	●			
	for punch socket (03172) Ø 30.6 - 40.5 mm	03186	●	●			

Circular punches and dies - AP 400

Type	Mounting holder	Ø in mm	Size Metric	Size PG	Prod.-No.	AP 250	AP 400	AP 500	AP 600-2	AP 800
Punch Ø 3.2 - 30.5 mm		3.2			03131	●	●	●	●	●
		4.5			03132	●	●			
		5.4			03133	●	●	●	●	●
		6.5			03134	●	●	●	●	
		8.5	M8		03135	●	●	●	●	●
		10.5	M10		03136	●	●	●	●	●
		12.7	M12	PG7	03137	●	●	●	●	●
		15.2		PG9	03138	●	●	●	●	●
		16.2	M16		03139	●	●	●	●	●
		18.6		PG11	03140	●	●	●	●	●
		20.4	M20	PG13	03141	●	●	●	●	●
		22.5		PG16	03142	●	●	●	●	●
		25.4	M25		03143	●	●	●	●	●
		28.3		PG21	03144	●	●	●	●	●
		30.5			03145	●	●	●	●	●
Punch Ø 32.5 - 40.5 mm		32.5	M32		03146	●	●	●	●	●
		37.0		PG29	03158	●	●	●	●	●
		40.5	M40		03147	●	●	●	●	●
Die Ø 3.2 - 22.5 mm	TYPE I	3.2			03500	●	●			
		4.5			03501	●	●			
		5.4			03502	●	●			
		6.5			03503	●	●			
		8.5	M8		03504	●	●			
		10.5	M10		03505	●	●			
		12.7	M12	PG7	03506	●	●			
		15.2		PG9	03507	●	●			
		16.2	M16		03508	●	●			
		18.6		PG11	03509	●	●			
		20.4	M20	PG13	03510	●	●			
		22.5		PG16	03511	●	●			
Die Ø 3.2 - 30.5 mm	TYPE II	3.2			03063	●	●	●	●	●
		4.5			03066	●	●	●	●	●
		5.4			03068	●	●	●	●	●
		6.5			03074	●	●	●	●	●
		8.5	M8		03076	●	●	●	●	●
		10.5	M10		03079	●	●	●	●	●
		12.7	M12	PG7	03022	●	●	●	●	●
		15.2		PG9	03023	●	●	●	●	●
		16.2	M16		03084	●	●	●	●	●
		18.6		PG11	03024	●	●	●	●	●
		20.4	M20	PG13	03025	●	●	●	●	●
		22.5		PG16	03026	●	●	●	●	●
		25.4	M25		03085	●	●	●	●	●
		28.3		PG21	03110	●	●	●	●	●
		30.5			03111	●	●	●	●	●
Die Ø 30.6 - 40.5 mm	TYPE IV	32.5	M32		03165	●	●			
		37.0		PG29	03166	●	●			
		40.5	M40		03167	●	●			

APress **500**

Overhang 500 mm



The stationary hole punch has been developed for control cabinet and switch gear makers and is suitable for quick punching-out of circular, square, rectangular or special forms in sheet metal and control cabinet doors up to 2000 mm x 1000 mm and 30 mm margin fold height. Punching possible right up to margins. Simple, rapid tool change carried out in seconds.

Control cabinets/housings up to 300 mm in depth can also be processed.

Description:

- Stable press body with adjustable stand feet.
- Dual-action hydraulic cylinder, flanged force-locking and form-locking to machine body.
- Anti-twist piston rod \varnothing 55 mm made of tempered stainless steel with tool holder.
- Die bed, fixed force-locking to press body.
- Rapid tool change helps in problem areas with a wide range of break-through types.
- Hold-down device with safety function, fixed with electrical safety lock for accident prevention.
- Height-adjustable length and depth limit stops - available in 2 versions.
- Tape measure display for length and depth limit stops.
- Dual-circuit hydraulic unit with electric pump, oil container and solenoid valves (very low noise).
- Safety footswitch with double pedal for infinitely variable operation of punching and return stroke.

Technical data:

Overhang with limit stop:	500 mm
Overhang without limit stop:	540 mm
Punching stroke:	66 mm
Punching force F:	48 kN at 130 bar
Motor power:	0.37 kW
Operating voltage:	220 V
Weight approx.:	200 kg
Overall height:	1,500 mm
Working height:	1,000 mm
Width of punch body:	130 mm
Depth of punch body:	950 mm
Length of limit stock rails:	1,500 mm
Space requirement approx.:	1,500 x 1,500 mm

Punching capacity:

Circular from:	\varnothing 3.2 - 63.5 mm
Square up to:	46.0 x 46.0 mm
Special forms up to a max. diagonal of:	60.0 mm

Material thicknesses (max):

Sheet steel (S235):	3.0 mm
Stainless steel ($F = 600 \text{ N/mm}^2$):	2.0 mm
Aluminium ($F = 22 \text{ N/mm}^2$):	4.0 mm
Punchable plastics:	4.0 mm

Prod.-No.

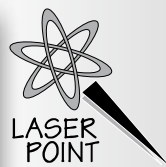
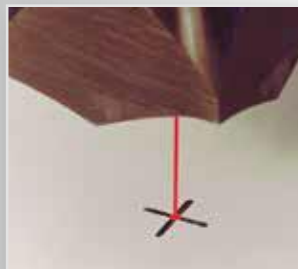
ALFRA PRESS AP 500 (without options)

03093

Note:

- All circular tools for ALFRA PRESS punches AP 250 - AP 800 are made of special tool steel and have a special cutting geometry developed by ALFRA.

Special tools can be manufactured in our own toolmaking works at short notice!



Laser pointer for optical display of tool centre



Electrical safety lock for accident prevention.



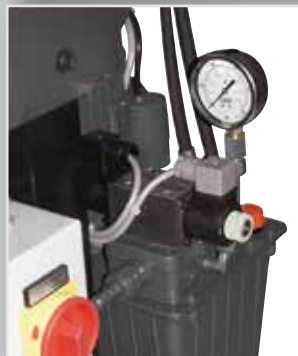
Limit stop system in Y direction
Mobile, 2 guide shafts
in press body.



Die holder



Tape measures display for Y-axis



Dual-circuit hydraulic unit

APress 500

Overhang 500 mm

Stationary hole punch - AP 500

Type	Designation	Prod.-No.
Machine	Stationary hole punch ALFRA PRESS 500 LPV with hydraulic cylinder, dual-action Hydraulic unit, adjustable stand feet, safety footswitch	03093
Special fitting	Laser pointer for optical display of tool centre	03021
	Length and depth limit stops movable in Y direction	03094
	Length and depth limit stops movable in X and Y direction	03095
	Pivoting double joint arm for supporting workpiece (individual)	03078
Punch socket	with scraper and centring pin for round punch with mounting shaft AP 500 - 600 Ø 3.2 - 30.5 mm	03036
	AP 500 - 600 Ø 32.5 - 40.5 mm	03035
Die holder	Type A Circular die Type A Ø 3.2 - 25.4 mm	03040
	Type B Circular die Type A Ø 28.3 - 40.5 mm	03041
	Type C Circular die Type A Ø 40.6 - 63.5 mm	03077

Square and rectangular hole punches - AP 500 (with mounting shaft and centring point, including die)

Type	Designation	Prod.-No.	AP 250	AP 400	AP 500	AP 600	AP 800
Square holes	12.7 x 12.7 mm for AP 500 - 600	03042			●	●	
	19.0 x 19.0 mm for AP 500 - 600	03044			●	●	
	22.2 x 22.2 mm for AP 500 - 600	03045			●	●	
	25.4 x 25.4 mm for AP 500 - 600	03046			●	●	
	46.0 x 46.0 mm for AP 500 - 600	03047			●	●	
	68.0 x 68.0 mm for AP 600	03050				●	
Rectangular holes	22.0 x 30.0 mm for AP 500 - 600	03048			●	●	
	22.0 x 42.0 mm for AP 500 - 600	03049			●	●	
Special holes	Ø 22.5 mm 1 lug 3.2 mm for AP 500 - 600	03051			●	●	
	Ø 22.5 mm with 2 lugs 3.2 mm for AP 500 - 600	03052			●	●	
	Ø 22.5 mm, flattened on 4 sides to 20.1 mm for AP 500 - 600	03055			●	●	

Circular punches and dies - AP 500

Type	Mounting holder	Ø in mm	Size Metric	Size PG	Prod.-No.	AP 250	AP 400	AP 500	AP 600-2	AP 800
Punch Ø 3.2 - 30.5 mm		3.2			03131	●	●	●	●	●
		4.5			03132	●	●	●	●	●
		5.4			03133	●	●	●	●	●
		6.5			03134	●	●	●	●	●
		8.5	M8		03135	●	●	●	●	●
		10.5	M10		03136	●	●	●	●	●
		12.7	M12	PG7	03137	●	●	●	●	●
		15.2		PG9	03138	●	●	●	●	●
		16.2	M16		03139	●	●	●	●	●
		18.6		PG11	03140	●	●	●	●	●
		20.4	M20	PG13	03141	●	●	●	●	●
		22.5		PG16	03142	●	●	●	●	●
		25.4	M25		03143	●	●	●	●	●
		28.3		PG21	03144	●	●	●	●	●
		30.5			03145	●	●	●	●	●
Punch Ø 32.5 - 40.5 mm		32.5	M32		03146	●	●	●	●	●
		37.0		PG29	03158	●	●	●	●	●
		40.5	M40		03147	●	●	●	●	●
		47.0		PG36	03159			●	●	●
		50.5	M50		03148			●	●	●
		54.0		PG42	03160			●	●	●
		60.0		PG48	03161			●	●	●
		63.5	M63		03149			●	●	●
Die Ø 3.2 - 25.4 mm	TYPE A	3.2			03063	●	●	●	●	●
		4.5			03066	●	●	●	●	●
		5.4			03068	●	●	●	●	●
		6.5			03074	●	●	●	●	●
		8.5	M8		03076	●	●	●	●	●
		10.5	M10		03079	●	●	●	●	●
		12.7	M12	PG7	03022	●	●	●	●	●
		15.2		PG9	03023	●	●	●	●	●
		16.2	M16		03084	●	●	●	●	●
		18.6		PG11	03024	●	●	●	●	●
		20.4	M20	PG13	03025	●	●	●	●	●
		22.5		PG16	03026	●	●	●	●	●
		25.4	M25		03085	●	●	●	●	●
Die Ø 28.3 - 40.5 mm	TYPE B	28.3		PG21	03027			●	●	●
		30.5			03028			●	●	●
		32.5	M32		03163			●	●	●
		37.0		PG29	03029			●	●	●
		40.5	M40		03164			●	●	●
Die Ø 47.0 - 63.5 mm	TYPE C	47.0		PG36	03030			●	●	●
		50.5	M50		03168			●	●	●
		54.0			03031			●	●	●
		60.0		PG48	03032			●	●	●
		63.5	M63		03169			●	●	●



Punching without pre-drilling

APress **600-2**

Overhang 600 mm



The stationary hole punch has been developed for control cabinet and switch gear makers and is suitable for quick punching-out of circular, square, rectangular or special forms in sheet metal and control cabinet doors up to 2200 mm x 1000 mm and 30 mm margin fold height. Punching possible right up to margins. Simple, rapid tool change carried out in seconds - even on fitted door. Limit stop system can be moved in X and Y directions.

Description:

- Stable press body in heavy-duty, torsionally-stiff welded construction.
- Dual-action hydraulic cylinder, flanged force-locking and form-locking to machine body.
- Anti-twist piston rod \varnothing 55 mm made of tempered stainless steel with tool holder.
- Die bed, fixed force-locking to press body.
- Rapid tool change helps in problem areas with a wide range of breakthrough types.
- Hold-down device with safety function, fixed with electrical safety lock for accident prevention.
- Length and depth limit stops movable in X and Y directions, bearings in hardened double ball bearing slides for smooth mobility.
- Tape measure display for length and depth adjustment.
- Digital measuring indicator optionally available for X and Y axes.
- Dual-circuit hydraulic unit with electric pump, oil container and solenoid valves (very low noise).
- Safety footswitch with double pedal for infinitely variable operation of punching and return stroke.

Technical data:

Overhang with limit stop:	600 mm
Punching stroke:	66 mm
Punching force F:	60 kN at 165 bar
Motor power:	0.75 KW
Operating voltage:	400 V
Weight approx.:	360 kg
Overall height:	1,600 mm
Working height:	1,000 mm
Width of punch body:	310 mm
Depth of punch body:	1,150 mm
Length of limit stock rails:	1,500 mm
Space requirement approx.:	2,000 x 3,000 mm

Punching capacity:

Circular from:	\varnothing 3.2 - 70.0 mm
Square up to:	68.0 x 68.0 mm
Special forms up to a max. diagonal of:	90.0 mm

Material thicknesses (max):

Sheet steel (S235):	3.0 mm
Stainless steel ($F = 600 \text{ N/mm}^2$):	2.0 mm
Aluminium ($F = 22 \text{ N/mm}^2$):	4.0 mm
Punchable plastics up to:	4.0 mm

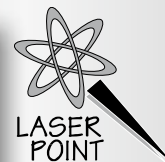
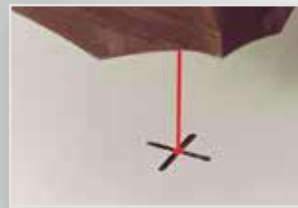
Prod.-No.
03090

ALFRA PRESS AP 600-2 (without options)

Note:

- All circular tools for ALFRA PRESS punches AP 250 - AP 800 are made of special tool steel and have a special cutting geometry developed by ALFRA.

Special tools can be manufactured in our own toolmaking works at short notice!



Laser pointer for optical display of tool centre



Stable piston rod (\varnothing 55 mm) with tool anti-twist device



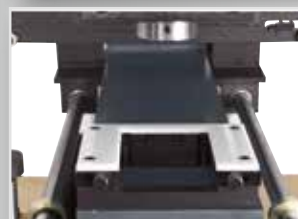
Tool drawer with compartments



Dual-circuit hydraulic unit in cabinet base



Reciprocal quick-clamping system for edge folds either top or bottom



Die bed holder. Tool changes can also be carried out when control cabinet door is fitted.



Length and depth limit stops guided in double ball bearing slides on both sides. 2 adjustable limit stops right and left on the Y-axis.

APress 600-2

Overhang 600 mm

Stationary hole punch - AP 600-2

Type	Designation	Prod.-No.
Machine	Stationary hole punch ALFRA PRESS 600-2 with hydraulic cylinder, cabinet base, length and depth limit stops movable in X and Y directions, cylinder pistons with anti-twist device for use with all punch sockets, dual-action hydraulic unit, safety footswitch.	03090
Special fitting	Laser pointer for optical display of tool centre	03021
	Digital measuring indicator Y-axis	03091
	Digital measuring indicator X-axis	03092
	Pivoting double joint arm for supporting workpiece (individual)	03078
Punch socket	with scraper and centring pin for round punch with mounting shaft for AP 500 - 600 Ø 3.2 - 30.5 mm	03036
	with scraper and centring pin for round punch with 19 mm female thread for AP 500 - 600 Ø 32.5 - 40.5 mm	03035
Die holder	Type A Circular die Type A Ø 3.2 - 25.4 mm	03040
	Type B Circular die Type A Ø 28.3 - 40.5 mm	03041
	Type C Circular die Type A Ø 40.5 - 63.5 mm	03077

Square and rectangular hole punches - AP 600-2 (with mounting shaft and centring point, including die)

Type	Designation	Prod.-No.	AP 250	AP 400	AP 500	AP 600	AP 800
Square holes	12.7 x 12.7 mm for AP 500 - 600	03042			●	●	
	19.0 x 19.0 mm for AP 500 - 600	03044			●	●	
	22.2 x 22.2 mm for AP 500 - 600	03045			●	●	
	25.4 x 25.4 mm for AP 500 - 600	03046			●	●	
	46.0 x 46.0 mm for AP 500 - 600	03047			●	●	
	68.0 x 68.0 mm for AP 600	03050				●	
Rectangular holes	22.0 x 30.0 mm for AP 500 - 600	03048			●	●	
	22.0 x 42.0 mm for AP 500 - 600	03049			●	●	
Special holes	Ø 22.5 mm 1 lug 3.2 mm for AP 500 - 600	03051			●	●	
	Ø 22.5 mm with 2 lugs 3.2 mm for AP 500 - 600	03052			●	●	
	Ø 22.5 mm, flattened on 4 sides to 20.1 mm for AP 500 - 600	03055			●	●	

Circular punches and dies - AP 600-2

Type	Mounting holder	Ø in mm	Size Metric	Size PG	Prod.-No.	AP 250	AP 400	AP 500	AP 600-2	AP 800
Punch Ø 3.2 - 30.5 mm		3.2			03131	●	●	●	●	●
		4.5			03132	●	●	●	●	●
		5.4			03133	●	●	●	●	●
		6.5			03134	●	●	●	●	●
		8.5	M8		03135	●	●	●	●	●
		10.5	M10		03136	●	●	●	●	●
		12.7	M12	PG7	03137	●	●	●	●	●
		15.2		PG9	03138	●	●	●	●	●
		16.2	M16		03139	●	●	●	●	●
		18.6		PG11	03140	●	●	●	●	●
		20.4	M20	PG13	03141	●	●	●	●	●
		22.5		PG16	03142	●	●	●	●	●
		25.4	M25		03143	●	●	●	●	●
		28.3		PG21	03144	●	●	●	●	●
		30.5			03145	●	●	●	●	●
		32.5	M32		03146	●	●	●	●	●
Punch Ø 32.5-40.5 mm		37.0		PG29	03158	●	●	●	●	●
		40.5	M40		03147	●	●	●	●	●
		47.0		PG36	03159			●	●	●
		50.5	M50		03148			●	●	●
		54.0		PG42	03160			●	●	●
		60.0		PG48	03161			●	●	●
		63.5	M63		03149			●	●	●
Die Ø 3.2 - 25.4 mm	TYPE A	3.2			03063	●	●	●	●	●
		4.5			03066	●	●	●	●	●
		5.4			03068	●	●	●	●	●
		6.5			03074	●	●	●	●	●
		8.5	M8		03076	●	●	●	●	●
		10.5	M10		03079	●	●	●	●	●
		12.7	M12	PG7	03022	●	●	●	●	●
		15.2		PG9	03023	●	●	●	●	●
		16.2	M16		03084	●	●	●	●	●
		18.6		PG11	03024	●	●	●	●	●
		20.4	M20	PG13	03025	●	●	●	●	●
		22.5		PG16	03026	●	●	●	●	●
		25.4	M25		03085	●	●	●	●	●
Die Ø 28.3 - 40.5 mm	TYPE B	28.3		PG21	03027			●	●	●
		30.5			03028			●	●	●
		32.5	M32		03163			●	●	●
		37.0		PG29	03029			●	●	●
		40.5	M40		03164			●	●	●
Die Ø 47.0 - 63.5 mm	TYPE C	47.0		PG36	03030			●	●	●
		50.5	M50		03168			●	●	●
		54.0			03031			●	●	●
		60.0		PG48	03032			●	●	●
		63.5	M63		03169			●	●	●

APress 8000

Overhang 800 mm



The stationary hole punch has been developed for control cabinet and switch gear makers and is suitable for quick punching-out of circular, square, rectangular or special forms in sheet metal and control cabinet doors up to 2200 mm x 1000 mm and 40 mm margin fold height. Punching possible right up to margins. Simple, rapid tool change carried out in seconds - even on fitted door. Limit stop system can be moved in X and Y directions.

Description:

- Stable press body in heavy-duty, torsionally-stiff welded construction, fitted on stands with rubber-bonded metal feet.
- Pivoting control panel with digital display, emergency stop button, electrical operating buttons and two-hand operation.
- Dual-action hydraulic cylinder, flanged force-locking and form-locking to machine body.
- Anti-twist piston rod Ø 63 mm made of tempered stainless steel with tool holder.
- Die bed, fixed force-locking to press body.
- Time relay for piston return saves working time.
- Hold-down device/scrapper combination with figure protection.
- X – Y limit stop system, easily movable in heavy-duty, precise profile roller guides.
- Form and force-fitting workpiece mounting and clamping device.
- Pivoting workpiece mounting left of press body for easy raising of workpiece.
- Locking of limit stop system using electrically-operated hydraulic brakes.
- Digital path measurement and display of X and Y travel with a display accuracy of 0.1 mm and a measuring accuracy of 1%.
- Rapid tool change helps in problem areas with a wide range of break-through types.
- Dual-circuit hydraulic unit with electric pump, oil container and solenoid valves (very low noise).

Technical data:

Overhang with limit stop:	800 mm
Punching stroke:	72 mm
Punching force F:	135 kN at 190 bar
Motor power:	1.5 kW
Operating voltage:	400 V
Weight approx.:	850 kg
Overall height:	1,700 mm
Working height:	1,000 mm
Width of punch body:	280 mm
Depth of punch body:	1,700 mm
Space requirement approx.:	2,360 x 4,440 mm

Punching capacity:

Circular from:	Ø 3.2 - 120.0 mm
Square up to:	110.0 x 110.0 mm
Special forms up to a max. diagonal of:	140.0 mm

Material thicknesses (max):

Sheet steel (S235):	3.0 mm
Stainless steel (F = 600 N/mm ²):	2.0 mm
Aluminium (F = 22 N/mm ²):	4.0 mm
Punchable plastics up to:	4.0 mm

Prod.-No.

03400

ALFRA PRESS AP 800 (without options)

Special tools can be manufactured in our own toolmaking works at short notice!



Pivoting control panel with two-hand operation



Form and force-locking workpiece mounting with quick-action clamping system



Tool holder, anti-twist in piston rod, hold-down device / scraper combination



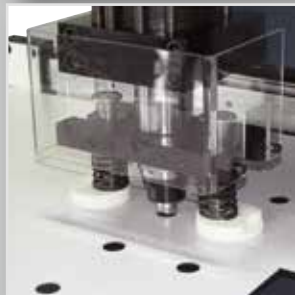
Die holder, tool change also possible with fitted control cabinet door



Path measurement of X and Y travel



Dual-circuit hydraulic unit



Hold-down device/scrapper combination

APress 800

Overhang 800 mm

Stationary hole punch - AP 800

Type	Designation	Prod.-No.
Machine	Stationary hole punch ALFRA PRESS 800 LPV in heavy duty welded construction, dual-action hydraulic cylinder, limit stop system can be moved in X and Y directions, hold-down device/scrapper combination with safety function, cylinder pistons with anti-twist device for use with all punch sockets, dual-circuit hydraulic unit, movable control panel, time relay for piston return, pivoting workpiece mounting, die holder, rubber-bonded metal feet.	03400
Special fitting	Laser pointer for optical display of tool centre	03021
Punch socket	with centring pin for round punch with mounting shaft	03413
	with scraper and centring pin for round punch with 19 mm female thread	03411
Die holder	Type A Ø 3.2 - 25.4 mm	03405
	Type B Ø 28.3 - 40.5 mm	03406
	Type C Ø 40.6 - 63.5 mm	03407
	Ø 64.0 - 80.0 mm	03408
	Ø 80.1 - 100.0 mm	03409

Square and rectangular hole punches - AP 800 (with mounting shaft and centring point, including die)

Type	Designation	Prod.-No.	AP 250	AP 400	AP 500	AP 600	AP 800
Square holes	46.0 x 46.0 mm	03425					•
	68.0 x 68.0 mm	03491					•
	92.0 x 92.0 mm	03435					•
Rectangular holes	22.0 x 30.0 mm	03417					•
	24.0 x 36.0 mm	03419					•
	22.0 x 42.0 mm	03421					•
	35.0 x 65.0 mm	03428					•
	46.0 x 92.0 mm	03433					•
Special holes	Ø 22.5 mm with 2 lugs 3.2 mm	03452					•
	Ø 30.5 mm with 2 lugs 3.2 mm	03454					•
	Double louvre tool 100.0 x 8.0 mm up to 2.0 mm material thickness	03456					•

Circular punches and dies - AP 800

Type	Mounting holder	Ø in mm	Size Metric	Size PG	Prod.-No.	AP 250	AP 400	AP 500	AP 600-2	AP 800
Punch Ø 3.2 - 30.5 mm		3.2			03131	●	●	●	●	●
		4.5			03132	●	●	●	●	●
		5.4			03133	●	●	●	●	●
		6.5			03134	●	●	●	●	●
		8.5	M8		03135	●	●	●	●	●
		10.5	M10		03136	●	●	●	●	●
		12.7	M12	PG7	03137	●	●	●	●	●
		15.2		PG9	03138	●	●	●	●	●
		16.2	M16		03139	●	●	●	●	●
		18.6		PG11	03140	●	●	●	●	●
		20.4	M20	PG13	03141	●	●	●	●	●
		22.5		PG16	03142	●	●	●	●	●
		25.4	M25		03143	●	●	●	●	●
		28.3		PG21	03144	●	●	●	●	●
		30.5			03145	●	●	●	●	●
		32.5	M32		03146	●	●	●	●	●
Punch Ø 32.5 - 40.5 mm		37.0		PG29	03158	●	●	●	●	●
		40.5	M40		03147	●	●	●	●	●
		47.0		PG36	03159			●	●	●
		50.5	M50		03148			●	●	●
		54.0		PG42	03160			●	●	●
		60.0		PG48	03161			●	●	●
		63.5	M63		03149			●	●	●
Die Ø 3.2 - 25.4 mm	TYPE A	3.2			03063	●	●	●	●	●
		4.5			03066	●	●	●	●	●
		5.4			03068	●	●	●	●	●
		6.5			03074	●	●	●	●	●
		8.5	M8		03076	●	●	●	●	●
		10.5	M10		03079	●	●	●	●	●
		12.7	M12	PG7	03022	●	●	●	●	●
		15.2		PG9	03023	●	●	●	●	●
		16.2	M16		03084	●	●	●	●	●
		18.6		PG11	03024	●	●	●	●	●
		20.4	M20	PG13	03025	●	●	●	●	●
		22.5		PG16	03026	●	●	●	●	●
		25.4	M25		03085	●	●	●	●	●
Die Ø 28.3 - 40.5 mm	TYPE B	28.3		PG21	03027			●	●	●
		30.5			03028			●	●	●
		32.5	M32		03163			●	●	●
		37.0		PG29	03029			●	●	●
		40.5	M40		03164			●	●	●
Die Ø 47.0 - 63.5 mm	TYPE C	47.0		PG36	03030			●	●	●
		50.5	M50		03168			●	●	●
		54.0			03031			●	●	●
		60.0		PG48	03032			●	●	●
		63.5	M63		03169			●	●	●

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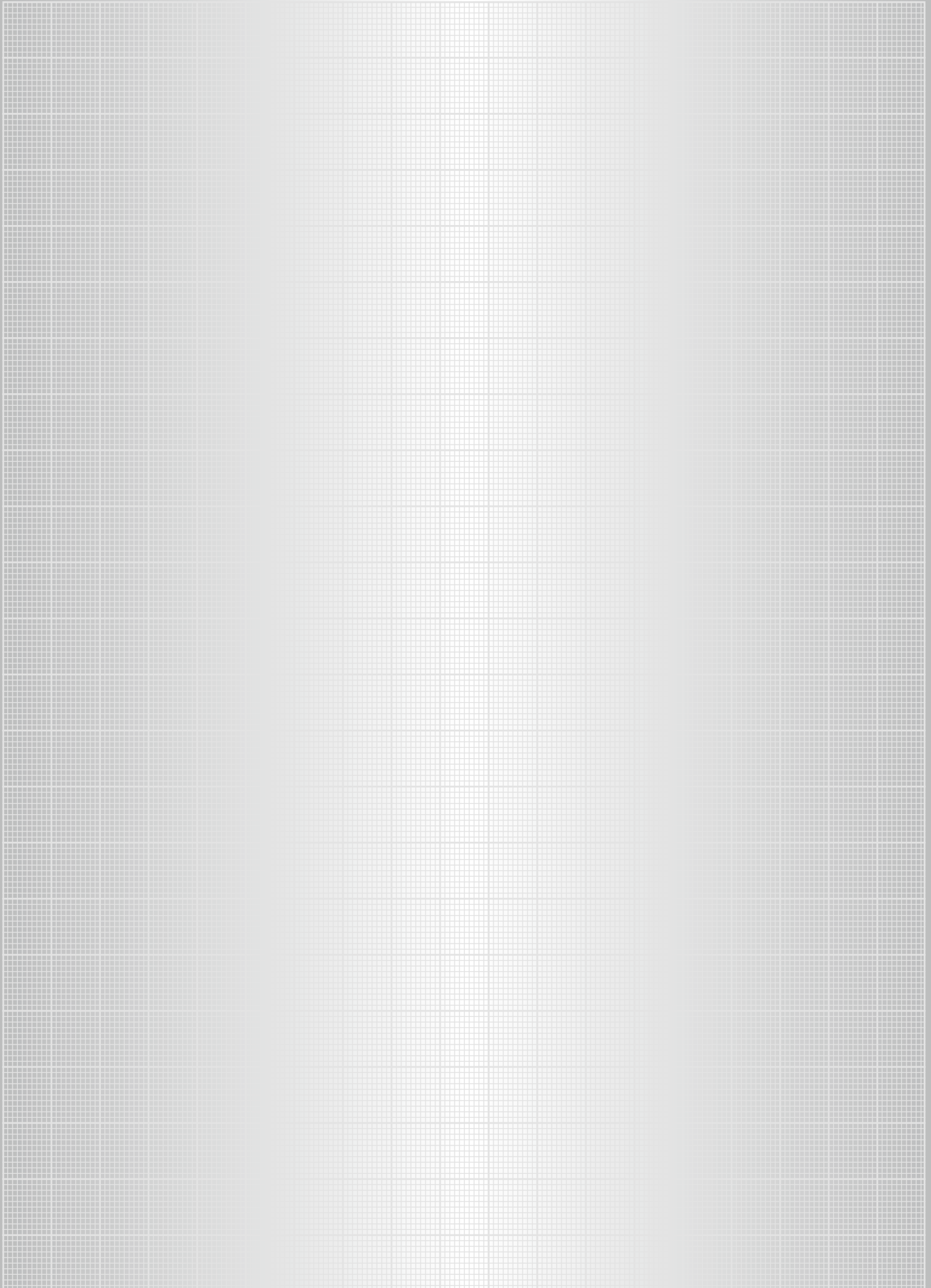
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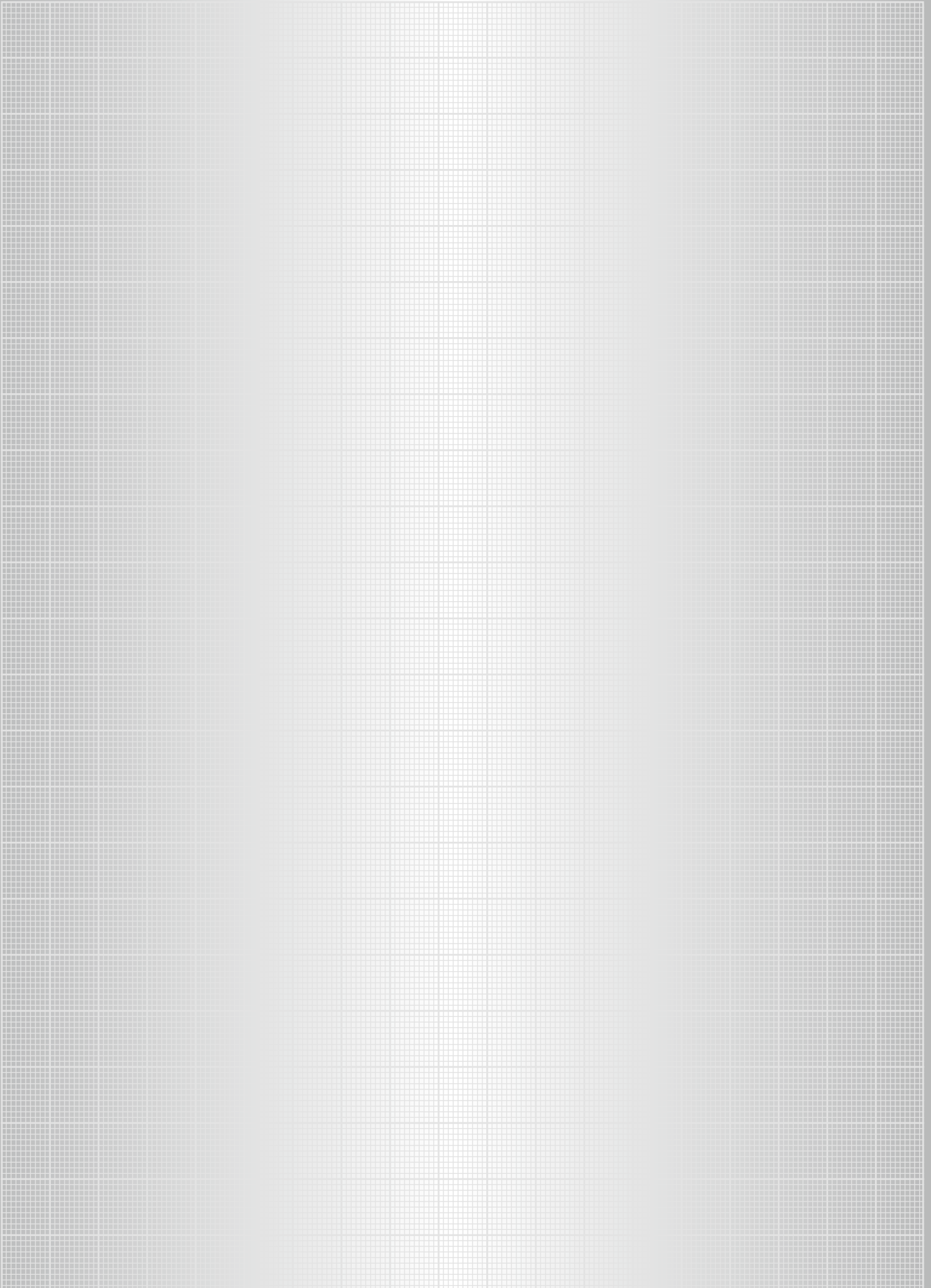
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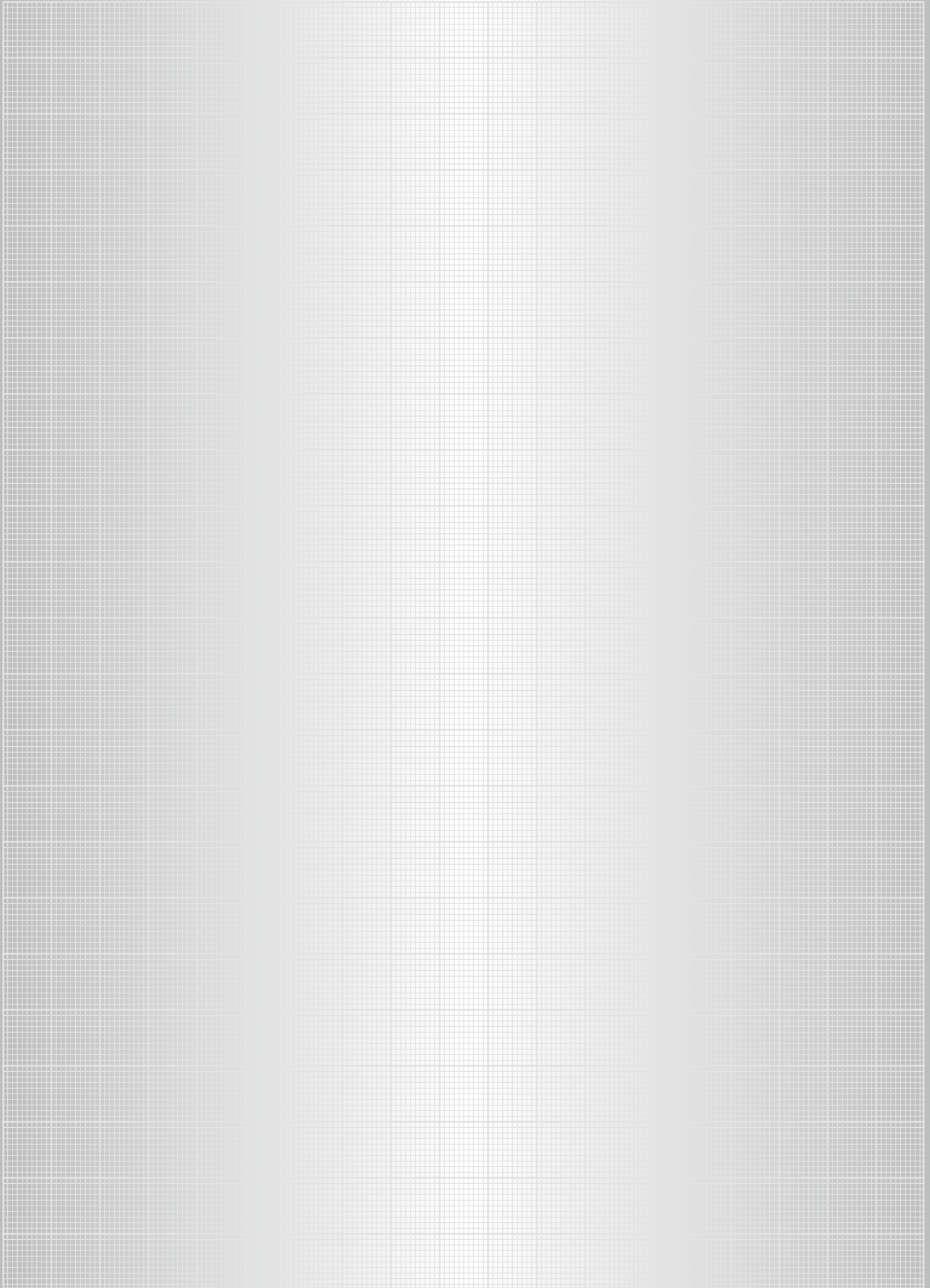
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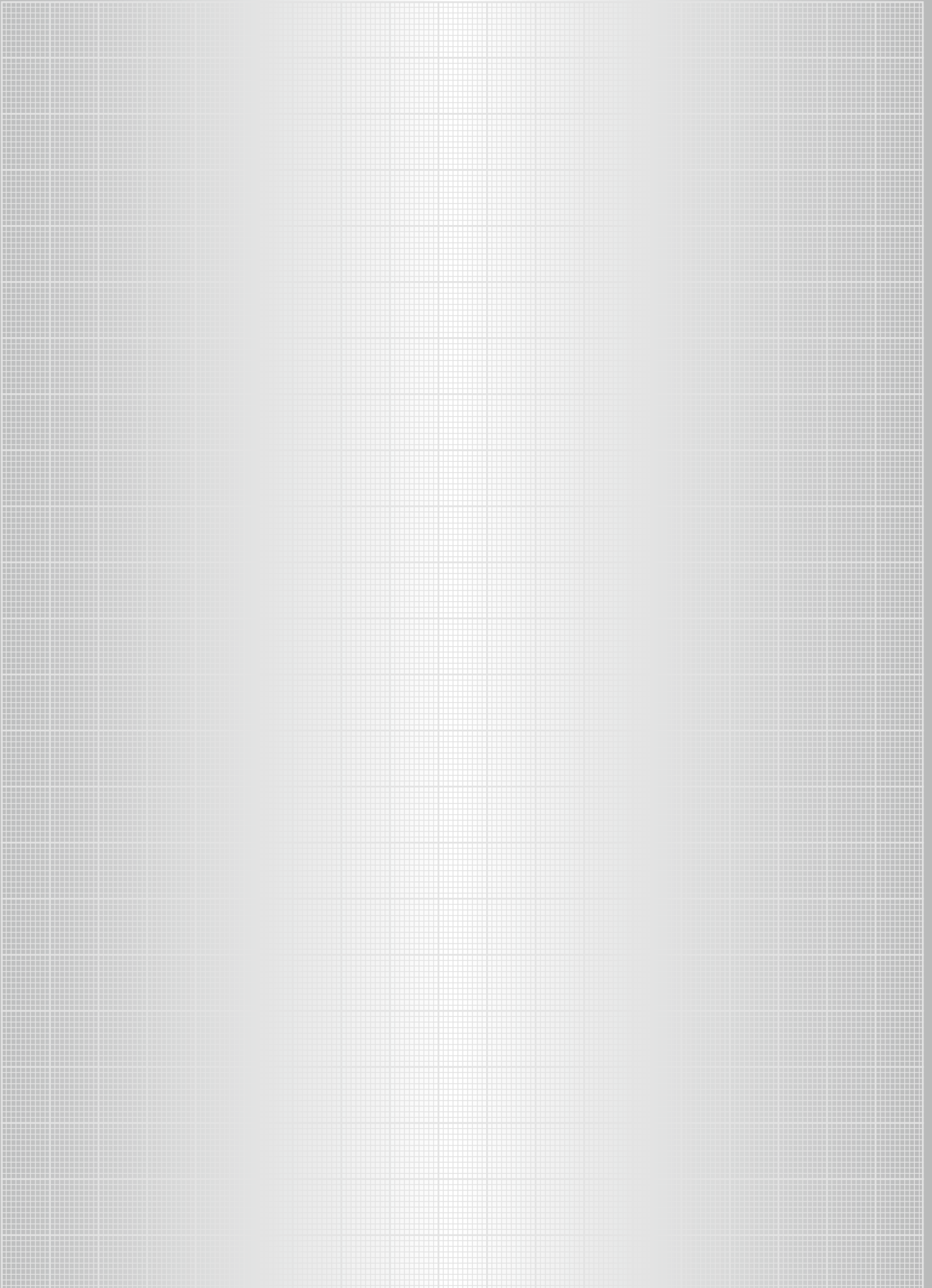
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