ALFRA®

www.alfra.de

PUNCHING

DRILLING

CUTTING

DEBURRING

2. REVISED EDITION

QUALITY TOOLS AND MACHINES

100 PART B

WELCOME!

We take pride in our achievement - over 60% in-house manufacturing in four locations in Germany and a further 35.000 m² production facility in France. From our home town in the motorcar race city of Hockenheim, we ship our products on a regular basis to over 120 countries around the world. Our network of agents ensures that practically anybody - really anybody - can use our high-quality products and benefit from their various advantages.

What do we do at ALFRA? - To put it simple: We make holes!

This means, that we manufacture and sell implements, machines and tools for punching and drilling. These are mainly intended for applications in the field of metal-working, with material thickness ranging from 0.8 to more than 100 mm.
On top of that, our product range includes many supplementary items, e.g. in the field of cutting and deburring technology, etc.

Come and test us - we look forward to seeing you among our many satisfied customers.

Made in Germany - Made by ALFRA
Don't be satisfied with less!

Get our latest news from **www.alfra.de.**
Visit our new YouTube channel,
www.youtube.com/alfratools,
for the latest product and application videos.

Simply scan this QR code with your smartphone or tablet:

Made in Germany

JOIN US IN PROMOTING "MADE IN GERMANY", FOR REASONS WHICH ARE TODAY EVEN MORE IMPORTANT AND VALID THAN EVER BEFORE:

- JOB SECURITY
- PROMOTION OF JOB TRAINING
- COMMUNICATION
- QUALITY MANAGEMENT
- ENVIRONMENTAL AWARENESS
- SAFEGUARDING THE FUTURE

TÜVRheinland® CERT ISO 9001

Metal Core Drilling Machines
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Deburring Machines/
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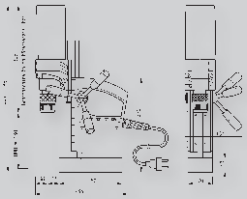

Dimensions
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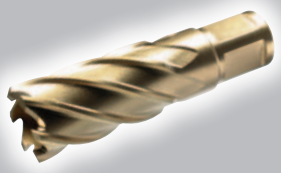

Cutters - HSS-Co-Eco
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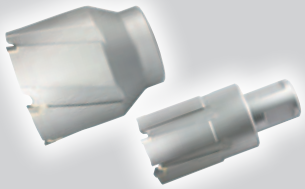

Cutters - TCT AL
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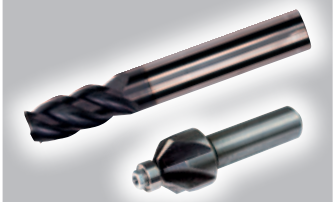

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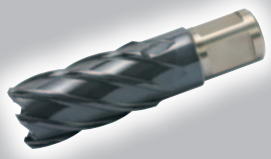

Cutters - HSS-Co RQX
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for FEIN + Hitachi
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for FEIN + Hitachi
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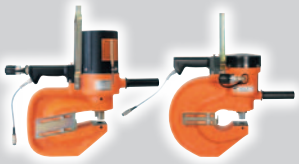

Hydraulic Punching Units,
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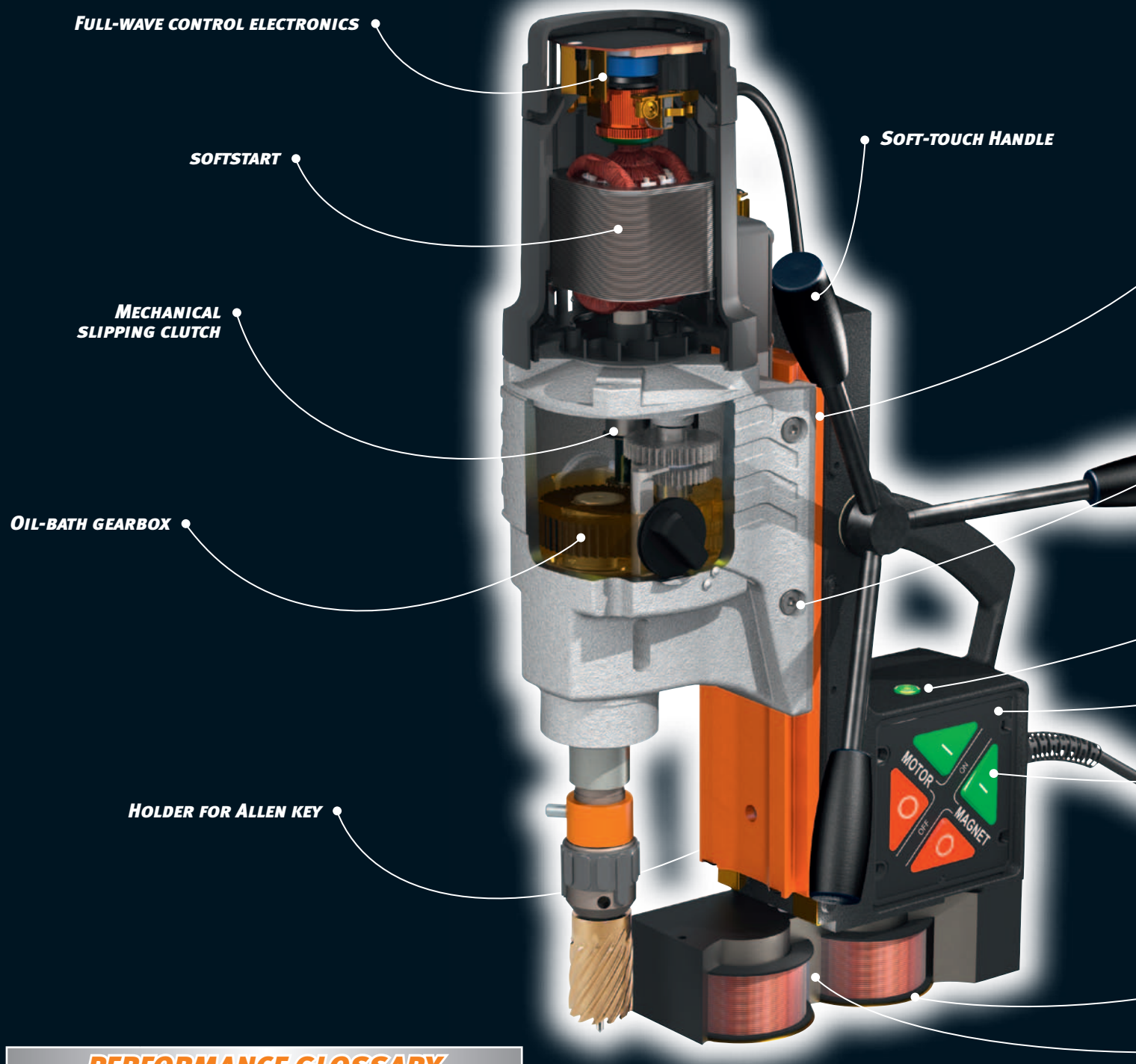
Metal Core Drilling with ALFRA ROTABEST®

Metal Core Drilling with ALFRA ROTABEST®

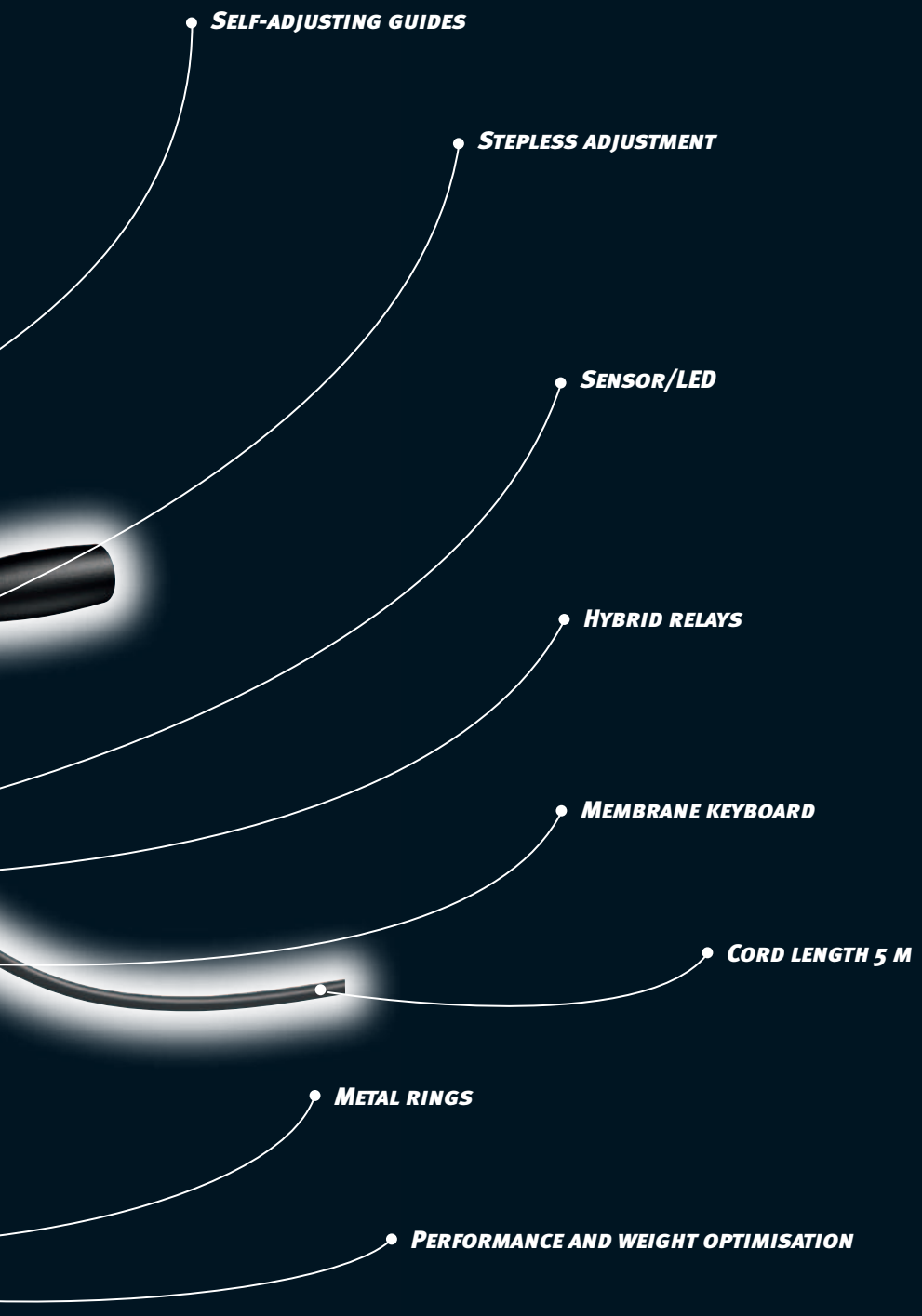


B

PERFORMANCE GLOSSARY

Motor	
Smooth start	Minimises wear of motor, gearbox and electronics.
Hybrid relays	Drastically reduces contact burning on the relays. The life of the switching elements is significantly increased. Voltage fluctuations are reduced by approx. 10%.
Full-wave control electronics	Allow maximum power output from the motor.
Right/left run	Extends the range of application.

Gearbox	
Oil-bath gearbox	Reduces wear on the gearbox significantly, even under extreme conditions.
Mechanical slipping clutch	Protects the gearbox from overload and comes into action automatically.
Slide	
Stepless adjustment	The stroke can be increased continuously.
Self-adjusting guides	Self-locking comes into action automatically for perfect guiding.



Operation	
Soft-touch grips	Perfect "grip" on the handles - even with oily gloves.
Membrane keyboard	Perfect ergonomics with large keys. The entire keyboard is located in a protected area (even if the machine dops).
Holder for Allen key	Integrated Allen key-holder. No searching for the key.
Cord length 5 m	Extension cord and cable drums mostly not required.

Magnet	
Sensor/LED	Is there sufficient magnetic material under the drill? Are you pressing too hard, or is the tool blunt? Various LED displays on states of switching protect you and your machine.
Metal rings	Perfect protection for the magnets against penetration by metallic objects (chips, welding sputter, milling dust, etc...)
Performance and weight optimisation	Weight, dimensioning and coil sizing are ideally matched. This maximises the ToolForce (TM).
MADE IN GERMANY	

ALFRA ROTABEST® METAL CORE DRILLING MACHINES – OVERVIEW

RB 35 X

PICCOLO 35/50 X

RB 50 X

40 RL-E

Page	B/10		B/11		B/12		B/13	
Prod.-No.	230 V: 18700	110 V: 18700.110	230 V: 18701	110 V: 18701.110	230 V: 18750	110 V: 18750.110	230 V: 18611	110 V: 18611.110
Cutter dimension	Ø 12.0 - 35.0 mm		Ø 12.0 - 35.0 mm		Ø 12.0 - 50.0 mm		Ø 12.0 - 50.0 mm	
Cutting depth	50.0 mm		50.0 mm		50.0 mm		50.0 mm	
Twist drill	Ø 1.0 - 13.0 mm DIN 1897 short		Ø 1.0 - 13.0 mm DIN 338		Ø 1.0 to 16.0 mm with MT 2 quick-release chuck to Ø 20.0 mm with MT 2 DIN 345 direct		Ø 1.0 to 16.0 mm with MT 2 quick-release chuck to Ø 20.0 mm with MT 2 DIN 345 direct	
Counterbore	Ø 10.0 - 40.0 mm		Ø 10.0 - 40.0 mm		Ø 10.0 - 40.0 mm		Ø 10.0 - 40.0 mm	
Tapping	-		-		with tapping attachment: M3 - M20		with tapping chuck: M3 - M14 with tapping attachment: M3 - M20	
Arbor	19 mm Weldon shank		19 mm Weldon shank		MT2		MT 2	
Stroke	120 mm		129 mm		190 mm		170 mm	
Height adjustment	-		86 mm		100 mm		100 mm	
Gearbox – on-load speed	450 rpm.		450 rpm.		1. Gear 250 rpm. 2. Gear 450 rpm.		Right/left 1. Gear 100 - 250 rpm. 2. Gear 180 - 450 rpm.	
Power consumption	1.100 W		1.100 W		1.200 W		1.200 W	
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz		230 V 50/60 Hz / 110 V 50/60 Hz		230 V 50/60 Hz / 110 V 50/60 Hz		230 V 50/60 Hz / 110 V 50/60 Hz	
Tool Force (10 mm) / magnetic holding force	2.100 N / 9.000 N		2.100 N / 9.000 N		3.500 N / 11.000 N		3.800 N/ 16.000 N	
Min. Material Thickness	6 mm		6 mm		8 mm		10 mm	
Magnet foot	70 x 185 mm		70 x 185 mm		92 x 220 mm		80 x 230 mm	
Weight	10.6 kg		12 kg		15.0 kg		16.0 kg	
Motor								
Smooth start	✔		✔		✔		✔	
Hybrid relays	✔		✔		✔		-	
Full-wave control electronics	-		-		-		✔	
Right/left run	-		-		-		✔	
Gearbox								
Oil-bath gearbox	-		-		✔		✔	
Mechanical slipping clutch	-		-		-		✔	
Slide								
Stepless adjustment	-		✔		✔		✔	
Self-adjusting guides	✔		✔		✔		-	
Operation								
Soft-touch grips	✔		✔		✔		✔	
Membrane keyboard	✔		✔		✔		✔	
Holder for Allen key	✔		✔		✔		-	
Cord length 5 m	✔		✔		✔		✔	
Magnet								
Sensor/LED	✔		✔		✔		-	
Metal rings	✔		✔		✔		✔	
Performance and weight optimisation	✔		✔		✔		-	
MADE IN GERMANY	✔		✔		✔		✔	

	 **RB 80 X**	 **60 RL-E**	 **100 RL-E**	 **130**	 **V 32**
	B/14	B/15	B/16	B/18	B/17
	230 V: 18780 / 110 V: 18780.110	230 V: 18626 / 110 V: 18626.110	230 V: 18634 / 110 V: 18634.110	230 V: 18645 / 110 V: 18645.110	230 V: 18710 / 110 V: 18710.110
	Ø 12.0 - 80.0 mm / Ø 20.0 - 50.0 mm (extra long 110 mm)	Ø 12.0 - 80.0 mm / Ø 20.0 - 50.0 mm (extra long 110 mm)	Ø 12.0 - 100.0 mm / Ø 20.0 - 50.0 mm (extra long 110 mm)	Ø 12.0 - 130.0 mm / Ø 20.0 - 50.0 mm (extra long 110 mm)	Ø 12.0 - 32.0 mm
	50.0 mm / 110.0 mm	50.0 mm / 110.0 mm	50.0 mm / 110.0 mm	50.0 mm / 110.0 mm	25.0 mm
	Ø 1.0 - 16.0 mm with chuck to Ø 32.0 mm with MT 3 DIN 345	Ø 1.0 - 16.0 mm with chuck to Ø 32.0 mm with MT 3 DIN 345	Ø 1.0 - 16.0 mm with chuck to Ø 32.0 mm with MT 3 DIN 345	to Ø 45.0 mm with MT 4 DIN 345	-
	Ø 10.0 - 55.0 mm	Ø 10.0 - 55.0 mm	Ø 10.0 - 55.0 mm	Ø 10.0 - 80.0 mm	Ø 10.0 - 32.0 mm
	with tapping attachment: to M30	with tapping chuck: to M30 with tapping attachment: to M30	with tapping chuck: to M30 with tapping attachment: to M30	with tapping attachment: to M42	-
	MT3	MT 3	MT 3	MT 4	19 mm Weldon
	190 mm	190 mm	245 mm	230 mm	-
	100 mm	60 mm	116 mm	100 mm	-
	1. Gear 110 rpm. 2. Gear 175 rpm. 3. Gear 245 rpm. 4. Gear 385 rpm.	right/left 1. Gear 50 - 110 rpm. 2. Gear 75 - 175 rpm. 3. Gear 105 - 245 rpm. 4. Gear 165 - 385 rpm.	right/left 1. Gear 50 - 110 rpm. 2. Gear 75 - 175 rpm. 3. Gear 105 - 245 rpm. 4. Gear 165 - 385 rpm.	1. Gear 30 - 80 rpm. 2. Gear 50 - 120 rpm. 3. Gear 130 - 350 rpm. 4. Gear 210 - 550 rpm.	450 rpm.
	1.800 W	1.800 W	2.500 W (230 V) 2.400 W (110 V)	2.500 W	900 W
	230 V 50/60 Hz / 110 V 50/60 Hz	230 V 50/60 Hz / 110 V 50/60 Hz	230 V 50/60 Hz / 110 V 50/60 Hz	230 V 50/60 Hz / 110 V 50/60 Hz	230 V 50/60 Hz / 110 V 50/60 Hz
	4.000 N / 13.000 N	4.200 N / 20.000 N	4.000 N / 20.000 N	5.000 N / 32.000 N	- / 16.000 N
	10 mm	10 mm	10 mm	10 mm	6 mm
	92 x 220 mm	80 x 230 mm, 30° adjustable, right and left, 10 mm front and rear	80 x 230 mm, 30° adjustable, right and left, 10 mm front and rear	90 x 400 mm	95 x 200 mm
	19.5 kg	22.0 kg	28.0 kg	34.5 kg	12.5 kg
	✔	-	-	-	**Compact, horizontal**
	✔	-	-	-	
	-	✔	✔	-	
	-	✔	✔	-	
	✔	✔	✔	✔	**Compact mitre gear**
	✔	✔	✔	✔	
	✔	✔	✔	-	**2-sided pillar guidance**
	✔	-	-	-	
	✔	✔	✔	✔	**Space-saving – via ratchet**
	✔	✔	✔	✔	
	✔	-	-	-	
	✔	✔	✔	✔	✔
	✔	-	-	-	-
	✔	✔	✔	✔	✔
	✔	-	-	-	✔
	✔	✔	✔	✔	✔

ALFRA Rotabest®– RB 35 X

35 mm

DRILLING RANGE UP TO Ø 35 MM

TF 10 TOOL FORCE MM

RB 35 X	
Cutter dimension	Ø 12.0 - 35.0 mm
Cutting depth	50.0 mm
Twist drill	Ø 1.0 - 13.0 mm DIN 1897 short
Counterbore	Ø 10.0 - 40.0 mm
Tapping	-
Arbor	19 mm Weldon shank
Stroke	120 mm
Height adjustment	-
1-speed gearbox On-load speed	450 rpm.
Power consumption	1.100 W
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz
Tool Force (10 mm) / magnetic holding force	2.100 N / 9.000 N
Magnet foot	70 x 185 mm
Weight	10.6 kg

Motor	
Smooth start	✔
Hybrid relays	✔
Slide	
Self-adjusting guides	✔
Operation	
Soft-touch grips	✔
Membrane keyboard	✔
Holder for Allen key	✔
Cord length 5 m	✔
Magnet	
Sensor/LED	✔
Metal rings	✔
Performance and weight optimisation	✔
MADE IN GERMANY	✔

Scope of Supply:

- Metal core drilling machine RB 35 x
- Carrying case
- Safety belt
- Coolant equipment
- Operating manual

		Prod.-No.
ALFRA Rotabest® RB 35 X	230 Volt	18700
ALFRA Rotabest® RB 35 X	110 Volt	18700.110

ALFRA ROTABEST® – PICCOLO 35/50 X

35 mm

DRILLING RANGE UP TO Ø 35 MM

PICCOLO 35/50 X

Cutter dimension	Ø 12.0 - 35.0 mm
Cutting depth	50.0 mm
Twist drill	Ø 1.0 - 13.0 mm DIN 338
Counterbore	Ø 10.0 - 40.0 mm
Tapping	-
Arbor	19 mm Weldon shank
Stroke	129 mm
Height adjustment	86 mm
1-speed gearbox On-load speed	450 rpm.
Power consumption	1.100 W
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz
Tool Force (10 mm) / magnetic holding force	2.100 N / 9.000 N
Magnet foot	70 x 185 mm
Weight	12 kg

Motor	
Smooth start	✔
Hybrid relays	✔
Slide	
Stepless adjustment	✔
Self-adjusting guides	✔
Operation	
Soft-touch grips	✔
Membrane keyboard	✔
Holder for Allen key	✔
Cord length 5 m	✔
Magnet	
Sensor/LED	✔
Metal rings	✔
Performance and weight optimisation	✔
MADE IN GERMANY	✔

B

Scope of Supply:

- Metal core drilling machine Piccolo 35/50 X
- Carrying case
- Safety belt
- Coolant equipment
- Operating manual

			Prod.-No.
ALFRA Rotabest®	Piccolo 35/50 X	230 Volt	18701
ALFRA Rotabest®	Piccolo 35/50 X	110 Volt	18701.110

ALFRA Rotabest®– RB 50 X

50 mm

DRILLING RANGE UP TO Ø 50 MM

RB 50 X	
Cutter dimension dimension	Ø 12.0 - 50.0 mm
Cutting depth	50.0 mm
Twist drill	Ø 1.0 to 16.0 mm with MT 2 quick-release chuck to Ø 20.0 mm with MT 2 DIN 345 direct
Counterbore	Ø 10.0 - 40.0 mm
Tapping	with tapping attachment: M3 - M20
Arbor	MT2
Stroke	190 mm
Height adjustment	100 mm
2-speed gearbox On-load speed	1. Gear 250 rpm. 2. Gear 450 rpm.
Power consumption	1.200 W
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz
Tool Force (10 mm) / magnetic holding force	3.500 N/ 11.000N
Magnet foot	92 x 220 mm
Weight	15.0 kg

Motor	
Smooth start	✔
Hybrid relays	✔
Gearbox	
Oil-bath gearbox	✔
Slide	
Stepless adjustment	✔
Self-adjusting guides	✔
Operation	
Soft-touch grips	✔
Membrane keyboard	✔
Holder for Allen key	✔
Cord length 5 m	✔
Magnet	
Sensor/LED	✔
Metal rings	✔
Performance and weight optimisation	✔
MADE IN GERMANY	✔

Scope of Supply:

- Metal core drilling machine RB 50 x
- MT 2 tool holder with no internal cooling (Prod.-No. 18001)
- Carrying case
- Drilling spray
- Safety belt
- Operating manual

		Prod.-No.
ALFRA Rotabest® RB 50 X	230 Volt	18750
ALFRA Rotabest® RB 50 X	110 Volt	18750.110
Accessories:		
Coolant container		189412029
Tool holder AMT 2 with internal cooling		18003

ALFRA ROTABEST®-40 RL-E

50 mm

DRILLING RANGE UP TO Ø 50 MM

40 RL-E	
Cutter dimension	Ø 12.0 - 50.0 mm
Cutting depth	50.0 mm
Twist drill	Ø 1.0 to 16.0 mm with MT 2 quick-release chuck to Ø 20.0 mm with MT 2 DIN 345 direct
Counterbore	Ø 10.0 - 40.0 mm
Tapping	with tapping chuck: M3 - M14 with tapping attachment: M3 - M20
Arbor	MT 2
Stroke	170 mm
Height adjustment	100 mm
2-speed gearbox	right/left 1. Gear 100 - 250 rpm. 2. Gear 180 - 450 rpm.
Power consumption	1.200 W
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz
Tool Force (10 mm) / magnetic holding force	3.800 N / 16.000 N
Magnet foot	80 x 230 mm
Weight	16.0 kg

Motor	
Smooth start	✔
Full-wave control electronics	✔
Right/left run	✔
Gearbox	
Oil-bath gearbox	✔
Mechanical slipping clutch	✔
Slide	
Stepless adjustment	✔
Operation	
Soft-touch grips	✔
Membrane keyboard	✔
Cord length 5 m	✔
Magnet	
Metal rings	✔
MADE IN GERMANY	✔

B

Scope of Supply:

- Metal core drilling machine 40 RL-E
- Carrying case
- Coolant equipment
- Drilling spray
- Quick-release chuck, 1 to 16 mm, MT 2
- Chip hook
- Safety belt
- Operating manual

		Prod.-No.
ALFRA Rotabest® 40 RL-E	230 Volt	18611
ALFRA Rotabest® 40 RL-E	110 Volt	18611.110

ALFRA ROTABEST®– RB 80 X

80 mm

DRILLING RANGE UP TO Ø 80 MM

RB 80 X	
Cutter dimension	Ø 12.0 - 80.0 mm / Ø 20.0 - 50.0 mm (extra long 110 mm)
Cutting depth	50.0 mm / 110.0 mm
Twist drill	Ø 1.0 - 16.0 mm with chuck to Ø 32.0 mm with MT 3 DIN 345
Counterbore	Ø 10 - 55.0 mm
Tapping	with tapping attachment: to M30
Arbor	MT3
Stroke	190 mm
Height adjustment	100 mm
4-speed gearbox On-load speed	1. Gear 110 rpm. 2. Gear 175 rpm. 3. Gear 245 rpm. 4. Gear 385 rpm.
Power consumption	1.800 W
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz
Tool Force (10 mm) / magnetic holding force	4.000 N / 13.000 N
Magnet foot	92 x 220 mm
Weight	19.5 kg

Motor	
Smooth start	✔
Hybrid relays	✔
Gearbox	
Oil-bath gearbox	✔
Mechanical slipping clutch	✔
Slide	
Stepless adjustment	✔
Self-adjusting guides	✔
Operation	
Soft-touch grips	✔
Membrane keyboard	✔
Holder for Allen key	✔
Cord length 5 m	✔
Magnet	
Sensor/LED	✔
Metal rings	✔
Performance and weight optimisation	✔
MADE IN GERMANY	✔

Scope of Supply:

- Metal core drilling machine RB 80 x
- AMT 3 tool holder with no internal cooling (Prod.-No. 18002)
- Carrying case
- Drilling spray
- Safety belt
- Operating manual

		Prod.-No.
ALFRA Rotabest® RB 80 X	230 Volt	18780
ALFRA Rotabest® RB 80 X	110 Volt	18780.110
Accessories:		
Coolant container		189412029
Tool holder AMT 3 with internal cooling		18025

ALFRA ROTABEST®– 60 RL-E

80 mm

DRILLING RANGE UP TO Ø 80 MM

60 RL-E	
Cutter dimension	Ø 12.0 - 80.0 mm / Ø 20.0 - 50.0 mm (extra long 110 mm)
Cutting depth	50.0 mm / 110.0 mm
Twist drill	Ø 1.0 - 16.0 mm with chuck to Ø 32.0 mm with MT 3 DIN 345
Counterbore	Ø 10 - 55.0 mm
Tapping	with tapping chuck: to M30 with tapping attachment: to M30
Arbor	MT 3
Stroke	190 mm
Height adjustment	60 mm
4-speed gearbox	right/left 1. Gear 50 - 110 rpm. 2. Gear 75 - 175 rpm. 3. Gear 105 - 245 rpm. 4. Gear 165 - 385 rpm.
Power consumption	1.800 W
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz
Tool Force (10 mm) / magnetic holding force	4.200 N / 20.000 N
Magnet foot	80 x 230 mm, 30° adjustable, right and left, 10 mm front and rear
Weight	22.0 kg

Motor	
Full-wave control electronics	✔
Right/left run	✔
Gearbox	
Oil-bath gearbox	✔
Mechanical slipping clutch	✔
Slide	
Stepless adjustment	✔
Operation	
Soft-touch grips	✔
Membrane keyboard	✔
Cord length 5 m	✔
Magnet	
Metal rings	✔
MADE IN GERMANY	✔

Scope of Supply:

- Metal core drilling machine 60 RL-E
- Carrying case
- Coolant equipment
- Drilling spray
- Quick-release chuck, 1 to 16 mm, MT 3
- Chip hook
- Safety belt
- Operating manual

		Prod.-No.
ALFRA Rotabest® 60 RL-E	230 Volt	18626
ALFRA Rotabest® 60 RL-E	110 Volt	18626.110

B

ALFRA ROTABEST® – 100 RL-E

100 mm

DRILLING RANGE UP TO Ø 100 MM

100 RL-E	
Cutter dimension	Ø 12.0 - 100.0 mm / Ø 20.0 - 50.0 mm (extra long 110 mm)
Cutting depth	50.0 mm / 110.0 mm
Twist drill	Ø 1.0 - 16.0 mm with chuck to Ø 32.0 mm with MT 3 DIN 345
Counterbore	Ø 10.0 - 55.0 mm
Tapping	with tapping chuck: to M30 with tapping attachment: to M30
Arbor	MT 3
Stroke	245 mm
Height adjustment	116 mm
4-speed gearbox	right/left 1. Gear 50 - 110 rpm. 2. Gear 75 - 175 rpm. 3. Gear 105 - 245 rpm. 4. Gear 165 - 385 rpm.
Power consumption	2.500 W (230 V) 2.400 W (110 V)
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz
Tool Force (10 mm) / magnetic holding force	4.000 N / 20.000 N
Magnet foot	80 x 230 mm, 30° adjustable, right and left, 10 mm front and rear
Weight	28.0 kg

Motor	
Full-wave control electronics	✔
Right/left run	✔
Gearbox	
Oil-bath gearbox	✔
Mechanical slipping clutch	✔
Slide	
Stepless adjustment	✔
Operation	
Soft-touch grips	✔
Membrane keyboard	✔
Cord length 5 m	✔
Magnet	
Metal rings	✔
MADE IN GERMANY	✔

Scope of Supply:

- Metal core drilling machine 100 RL-E
- Carrying case
- Coolant equipment
- Chip hook
- Safety belt
- Drilling spray
- Quick-release chuck

		Prod.-No.
ALFRA Rotabest® 100 RL-E	230 Volt	18634
ALFRA Rotabest® 100 RL-E	110 Volt	18634.110

ALFRA ROTABEST®– V32

32 mm

DRILLING RANGE UP TO Ø 32 MM

V32	
Core drill	Ø 12.0 - 32.0 mm
Cutting depth	25.0 mm
Counterbore	Ø 10.0 - 32.0 mm
Arbor	19 mm Weldon
1-speed gearbox	450 rpm.
Power consumption	900 W
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz
Tool Force (10 mm) / magnetic holding force	- / 16.000 N
Magnet foot	95 x 200 mm
Weight	12.5 kg

Motor	
Compact, horizontal	
Gearbox	
Compact mitre gear	
Slide	
2-sided pillar guidance	
Operation	
Space-saving – via ratchet	
Cord length 5 m	✔
Magnet	
Metal rings	✔
Performance and weight optimisation	✔
MADE IN GERMANY	✔

B

Scope of Supply:

- Metal core drilling machine V 32
- Coolant pressure flask
- Carrying case
- Allen key for Weldon shank
- Safety belt
- HSS Co cutter Ø 18 mm, cutting depth 25 mm
- Ejector pin 6.35 x 74 mm (specially for Rotabest® V32)
- Operating manual

		Prod.-No.
ALFRA Rotabest® V32	230 Volt	18710
ALFRA Rotabest® V32	110 Volt	18710.110

ALFRA ROTABEST®– 130

130 mm

DRILLING RANGE UP TO Ø 130 MM

B

TF 10 TOOL FORCE MM

130 mm

DRILLING RANGE UP TO Ø 130 MM

130	
Cutter dimension	Ø 12.0 - 130.0 mm / Ø 20.0 - 50.0 mm (extra long 110 mm)
Cutting depth	50.0 mm / 110.0 mm
Twist drill	to Ø 45.0 mm with MT 4 DIN 345
Counterbore	Ø 10.0 - 80.0 mm
Tapping	with tapping attachment: To M42
Arbor	MT 4
Stroke	230 mm
Height adjustment	100 mm
4-speed gearbox	1. Gear 30 - 80 rpm. 2. Gear 50 - 120 rpm. 3. Gear 130 - 350 rpm. 4. Gear 210 - 550 rpm.
Power consumption	2.500 W
Voltage	230 V 50/60 Hz / 110 V 50/60 Hz
Tool Force (10 mm) / magnetic holding force	5.000 N / 32.000 N
Magnet foot	90 x 400 mm
Weight	34.5 kg

Gearbox	
Oil-bath gearbox	✔
Mechanical slipping clutch	✔
Operation	
Soft-touch grips	✔
Membrane keyboard	✔
Cord length 5 m	✔
Magnet	
Metal rings	✔
MADE IN GERMANY	✔

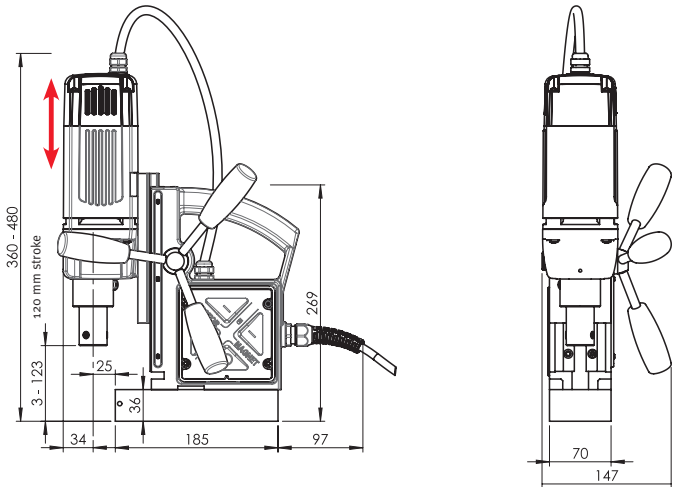
B

Scope of Supply:

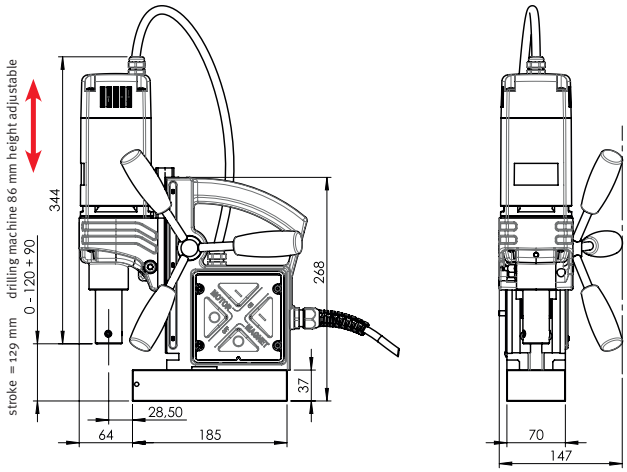
- Metal core drilling machine 130
- Carrying case
- Coolant container
- Chip hook
- Safety belt
- Operating manual

		Prod.-No.
ALFRA Rotabest® 130	230 Volt	18645
ALFRA Rotabest® 130	110 Volt	18645.110

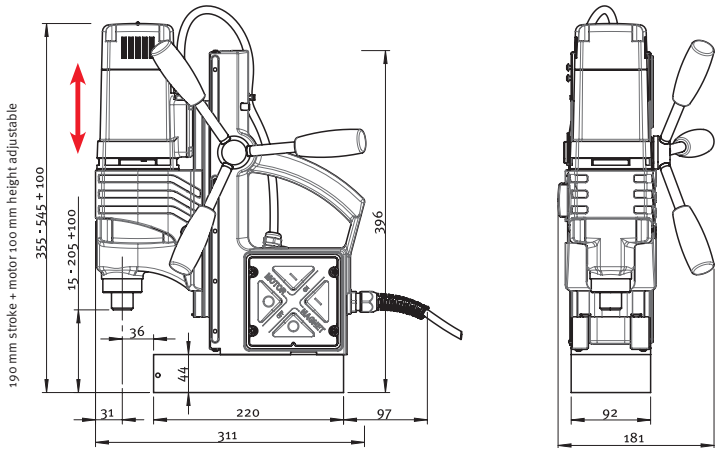
RB 35 X



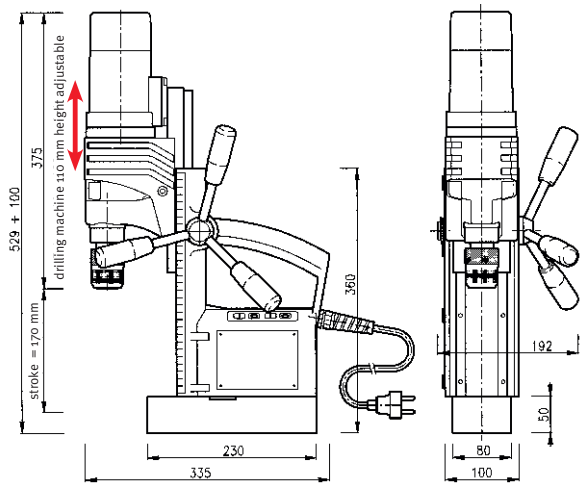
Piccolo 35/50 X



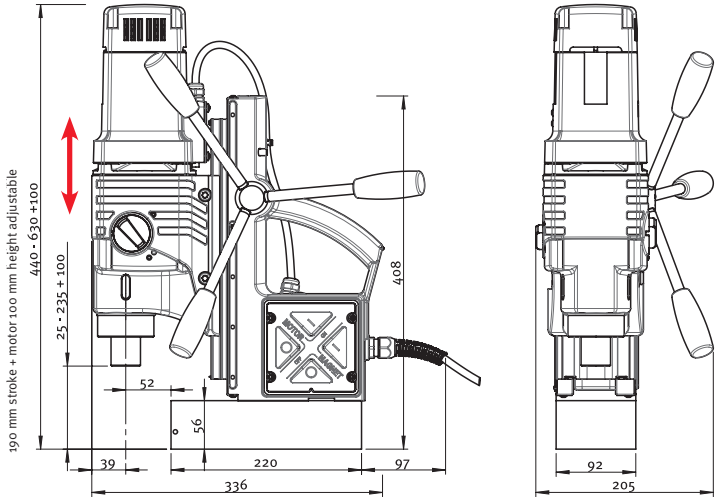
RB 50 X



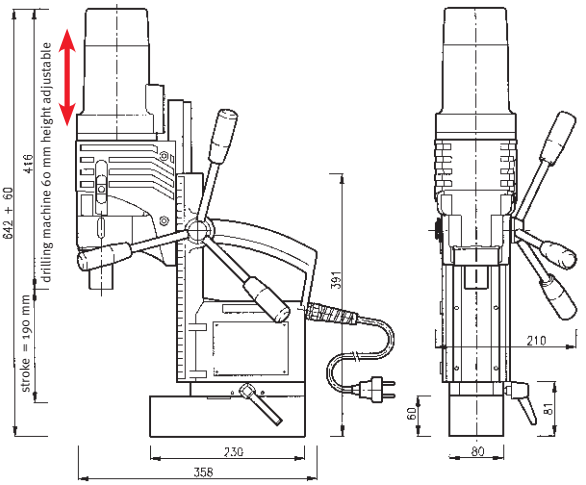
40 RL-E



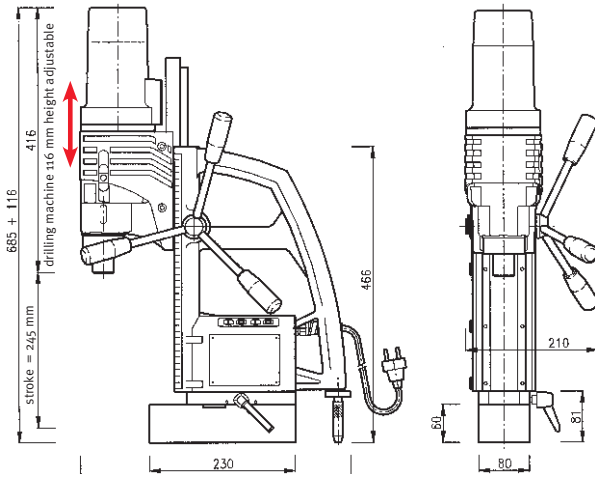
RB 80 X



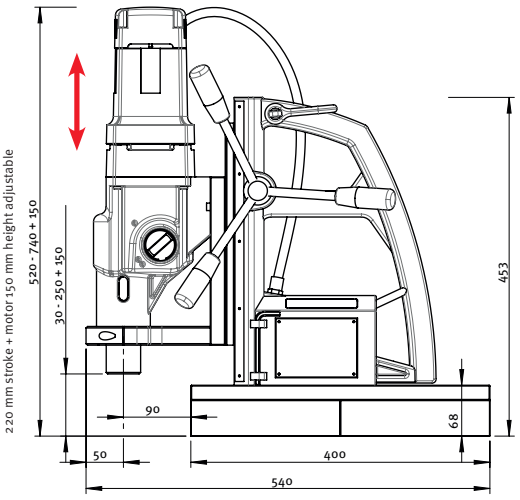
60 RL-E



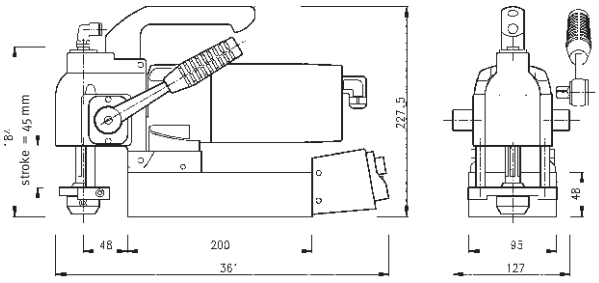
100 RL-E



130



V 32

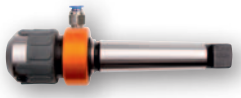


B

Description	Prod.-No.	RB 35 X Piccolo 35/50 X	RB 50 X 40 RL-E	RB 80 X 60 RL-E	100 RL-E
Quick-release chuck with Weldon shank for twist drill Ø 1 -13 mm	18107	■			
Quick-release chuck with Morse taper 2 for twist drill Ø 1 - 16 mm	18008		■	■ With Adapter sleeve MT 3/2	■ With Adapter sleeve MT 3/2
Quick-release chuck with Morse taper 3 for twist drill Ø 1 - 16 mm	18009			■	■
AMT-2 tool holder – Morse taper 2 for cutter With Weldon shank Ø 12 - 60 mm With automatic internal cooling – Suitable for all machines with MT 2 drill spindle	18003		■	■ With Adapter sleeve MT 3/2	■ With Adapter sleeve MT 3/2
AMT-2 tool holder with no internal cooling	18001		■	■ With Adapter sleeve MT 3/2	■ With Adapter sleeve MT 3/2
MT 3/2 adapter sleeve	18023			■	■
AMT-3 tool holder with no internal cooling	18002		■	■	
AMT-3 tool holder – Morse taper 3 for cutter with Weldon shank Ø 12 - 60 mm with automatic internal cooling – suitable for all machines with MT 3 drill spindle	18025		■	■	
AMT-3 tool holder – extended version with Weldon shank Ø 12 - 50 mm, cutting depth 110 mm with automatic internal cooling – suitable for all machines with MT 3 drill spindle	18025L			■	■
AL3 tool holder - Morse taper 3 for heavy-duty cutters, Ø 51 - 100 mm, with keyway with automatic internal cooling	20230			■	■
Rota-Quick® quick-change tool-holder Morse taper 2 with automatic internal cooling – suitable for all machines with MT 2 drill spindle **Application range up to maximum 40 mm of cutter Ø**	18650		■	■ With Adapter sleeve MT 3/2	■ With Adapter sleeve MT 3/2
Rota-Quick® quick-change tool-holder Morse taper 3 with automatic internal cooling – suitable for all machines with MT 3 drill spindle **Application range up to maximum 40 mm of cutter Ø**	18651			■	■

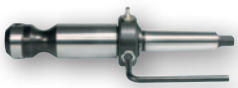

Prod.-No. 18107

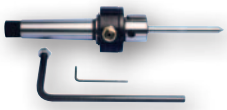

Prod.-No. 18008 / 18009


Prod.-No. 18003 / 18025


Prod.-No. 18001 / 18002


Prod.-No. 18023

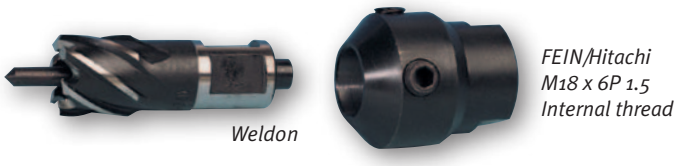

Prod.-No. 18025L


Prod.-No. 20230


Prod.-No. 18650 + 18651

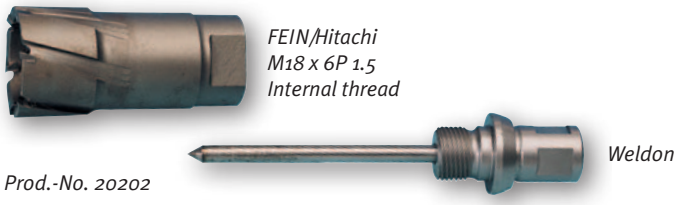
- **You use FEIN Magnet Drilling Machines?**
- **You do not want to do without ALFRA Rotabest® Cutters?**
- **No Problem – we have the suitable adaptors**

	Prod.-No.
Adapter with internal thread, M18 x 6P 1.5 Adapter for use with Rotabest® HSS-Co-Eco and HSS-Co RQX cutters with Ø 12.0 - 32.0 mm and Rotabest carbide-cutters with Ø 14.0 - 32.0 mm on: FEIN core drilling machines, type KBM 542	20201



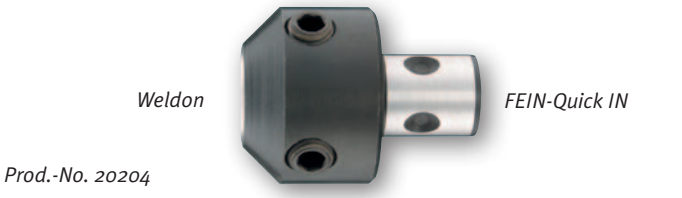
Prod.-No. 20201

Adapter with external thread (incl. ejector pin) Adapter for use with FEIN cutters with internal thread, M18 x 6P 1.5 on metal core drilling machines with Weldon shank.	20202
Ejector pin suitable for Prod.-No. 20202 – individual	20203



Prod.-No. 20202

Adapter Adapter for use with all cutters with Weldon shank on Fein Quick IN quick-change system. This adapter eliminates the need to use our HSS-Eco cutter series prod.-no. 1909... and 2009...	20204
Ejector pin for HSS cutter cutting depth 25 mm Ejector pin for HSS cutter cutting depth 50 mm	1950500 1975500



Prod.-No. 20204

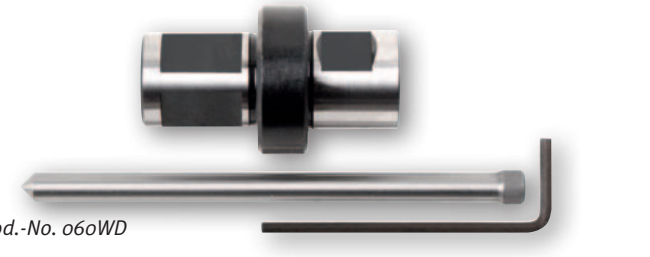
Extension adapter With Weldon shank and ejector pin. For use with cutters with 25 – 35 – 50 mm cutting depths, when the outer surface of the material to be drilled is lower than the standing surface of the machine. The first ejector pin triggers the second ejector pin, and the coolant flows through the bore hole to the cutter. Total length of adapter: 80 mm Diameter: 30 mm Ejector pin: 6.35 x 77 mm Prod.-No. 1926500	20206

Prod.-No. 20206

Adapter cpl. with ejector pin + Allen key Adapter for use with cutters with FEIN-Quick IN shank on metal core drilling machines with Weldon holder.	20210
Replacement ejector pin (for adapter only) 6.35 x 125 mm	1936501

Prod.-No. 20210

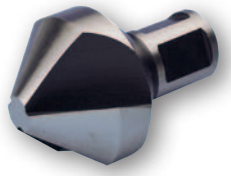
Adapter for carbide-tipped compass saws, type MBS on metal core drilling machines with Weldon holder (including ejector pin Prod.-No. 1950500)	060WD



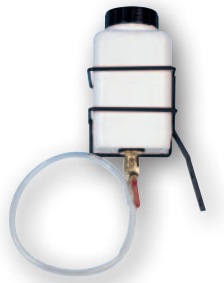
Prod.-No. 060WD

ACCESSORIES – COUNTERBORE / COOLANT

Description	Prod.-No.	RB 35 X Piccolo 35/50 X	RB 50 X 40 RL-E	RB 80 X 60 RL-E	100 RL-E
HSS taper and deburring counterbore with Weldon shank Ø 25 mm	18533	■	■ With tool holder 18003/18025 18650+18651	■ With tool holder 18003/18025 18650+18651	■ With tool holder 18003/18025 18650+18651
HSS taper and deburring counterbore with Weldon shank Ø 30 mm	18536	■	■ With tool holder 18003/18025 18650+18651	■ With tool holder 18003/18025 18650+18651	■ With tool holder 18003/18025 18650+18651
HSS taper and deburring counterbore with Weldon shank Ø 40 mm	18534	■	■ With tool holder 18003/18025 18650+18651	■ With tool holder 18003/18025 18650+18651	■ With tool holder 18003/18025 18650+18651
HSS taper and deburring counterbore with Weldon shank **Ø 55 mm**	18537			■	■
Coolant system for Piccolo 35/50 X, 40 RL-E, 60 RL-E, 100 RL-E, 130	18104	■	■	■	■
Coolant system for RB 35 X	189311241	■			
Coolant system for RB 50 X and 80 X Suitable for tool holder with internal cooling AMT-2 (Prod.-No. 18003) and AMT-3 (Prod.-No. 18025)	189412029		■	■	
Coolant pressure bottle, 0.5 litre suitable for Rotabest® **V32**	18103				
ALFRA 2000 Cutting and drilling spray Tin, 405 ml	21010				
ALFRA 4000 High-performance cutting oil spray Tin, 300 ml	21040				
High-performance wax crayon Ideal for core-drilled holes in walls or ceilings (overhead drilling), as paste adheres to the cutting edge.	09012				



Prod.-No. 18533



Prod.-No. 18104

Prod.-No. 189311241

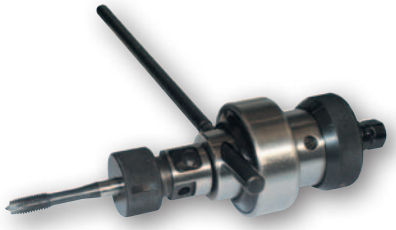
Prod.-No. 189412029

Prod.-No. 18103

Prod-No. 21010, 21040, 09012

B

Description	Shank	Prod.-No.	RB 50 X	RB 80 X	100
Tapping attachment M3 - M12 Scope of Supply: With Rota-Quick® and MT 2, replaceable, plastic case, operating manual	MT2 + RotaQuick®	18652	■	■ With Adapter sleeve MT 3/2	■ With Adapter sleeve MT 3/2
Tapping attachment M10 - M20 Scope of Supply: with Rota-Quick® and MT 2, replaceable, plastic case, operating manual	MT2 + RotaQuick®	18653	■	■ With Adapter sleeve MT 3/2	■ With Adapter sleeve MT 3/2
Adapter sleeve for Tapping attachment		18023			



Prod.-No. 18652 + 18653

Prod.-No. 18023

Tapping chuck with quick-change inserts for Rotabest® RL-E, models with right/left rotation.

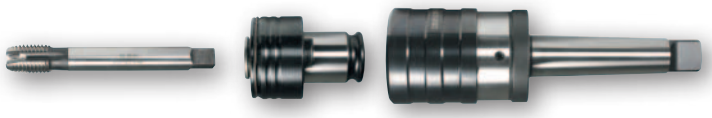
Tapping set Gr. 1 in wooden case Consisting of: Tapping quick-change chuck Gr. 1 **MT 2** Per 1 x quick-change insert Gr. 1 M3 – M4 – M5 – M6 – M8 – M10 – M12 – M14		18660
Tapping set Gr. 2 in wooden case Consisting of: Tapping quick-change chuck Gr. 2 **MT 3** Per 1 x quick-change insert Gr. 2 M6 – M8 – M10 – M12 – M14 – M16 – M18 – M20 – M22		18680
Tapping quick-change chuck **Gr. 1** MT 2, individual		18661
Tapping quick-change chuck **Gr. 2** MT 3, individual		18681

Prod.-No. 18680

Prod.-No. 18682 (M6) *Prod.-No. 18681*

Tap Collets with clutch

		Shank Ø	Square	Screw tap	
Gr. 1	M3	3.5	2.7	DIN 371	18662
Gr. 1	M4	4.5	3.4	DIN 371	18663
Gr. 1	M5	6.0	4.9	DIN 371	18664
Gr. 1	M6	6.0	4.9	DIN 371	18678
Gr. 1	M8	8.0	6.2	DIN 371	18665
Gr. 1	M10	10.0	8.0	DIN 371	18666
Gr. 1	M12	9.0	7.0	DIN 376	18667
Gr. 1	M14	11.0	9.0	DIN 376	18668
Gr. 2	M6	6.0	4.9	DIN 371	18682
Gr. 2	M8	8.0	6.2	DIN 371	18683
Gr. 2	M10	10.0	8.0	DIN 371	18684
Gr. 2	M12	9.0	7.0	DIN 376	18685
Gr. 2	M14	11.0	9.0	DIN 376	18686
Gr. 2	M16	12.0	9.0	DIN 376	18687
Gr. 2	M18	14.0	11.0	DIN 376	18688
Gr. 2	M20	16.0	12.0	DIN 376	18689
Gr. 2	M22	18.0	14.5	DIN 376	18690

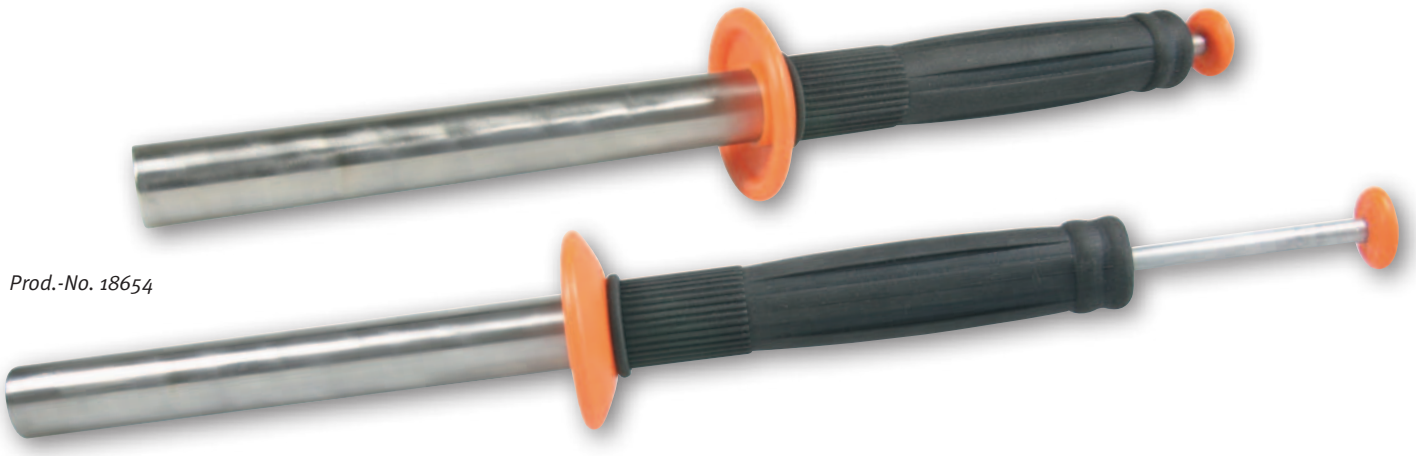


Prod.-No. 18681 – See assembly instructions

ALFRA – Magnetic Chip Remover

Based on a magnet moving in a stainless cylindrical pipe. The powerful magnet attracts the metal chips - pull the rod on top and the chips fall off. For greater cleanliness on your worksite.

	Prod.-No.
ALFRA magnetic chip remover, length 400 mm	18654



Prod.-No. 18654

B

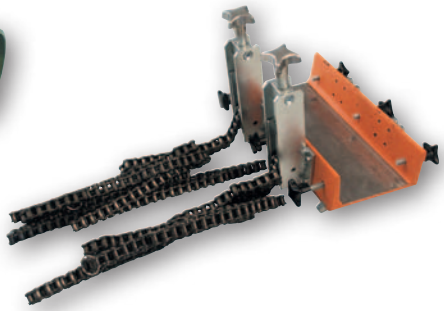
Accessories – Mechanical Pipe-Fixing System

For all types

Description	Prod.-No.
For application on round surfaces. Our mechanical attachment for clamping pipes with tension chains enables the use of Magnetic Core Drilling Machines on pipes from Ø 80 mm. The adjustment is carried out by means of clamping jaws. For pipes of various Ø.	
Attachment for Clamping Pipes with 1 tension chain Ø 80 - 300 mm Base plate for magnet foot 100 x 235 mm, Weight 7.5 kg	18019
Attachment for Clamping Pipes with 2 tension chains Ø 80 - 900 mm Base plate for magnet foot 100 x 280 mm, Weight 12 kg	18020
Attachment for Clamping Pipes with tension belt Ø 80 - 900 mm Base plate for magnet foot 100 x 235 mm, Weight 6.5 kg	18021

Tension range with double tension belt up to 2000 mm pipe Ø on request Prod.-No. 18022

Prod.-No. 18019



Prod.-No. 18020

Prod.-No. 18021

Rotabest® – Vacubest Vacuum Attachment

For all types

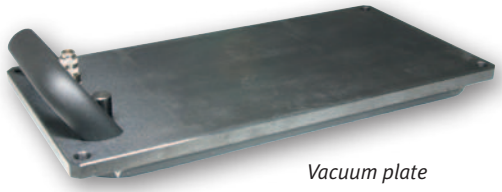
Description	Prod.-No.
Vacuum Attachment Vacubest	18150

Application on **non-magnetic** surfaces such as aluminium, copper, brass, stainless steel, plastics, structured materials (e.g. bulb or checker plate)

Vacuum capacity:	1.5 m³/h - 25 l/min.
Max vacuum:	200 mbar (abs)
Overpressure:	300 mbar
Dimension of vacuum plate:	400 x 200 mm

Scope of Supply:
Pump (230 V, 50Hz), vacuum plate, vacuum hose 3m

TIP:
Name your application problem - we will be pleased to advise.



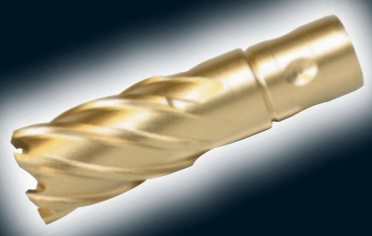
Vacuum plate

Pump

Metal Core Cutters have got a name

ALFRA ROTABEST®

- HSS-BASIC
- HSS-CO-Eco
- HSS-CO RQX coated
- ASP-30 RAIL
- Twist drill with Weldon shank



B

Advantages of ALFRA ROTABEST® Cutters

Design Specially designed cutting geometry
Advantages
- Immediate centering
- No running off center
- Good concentricity
- Suitable for NC and CNC machines

35 years of manufacturing expertise

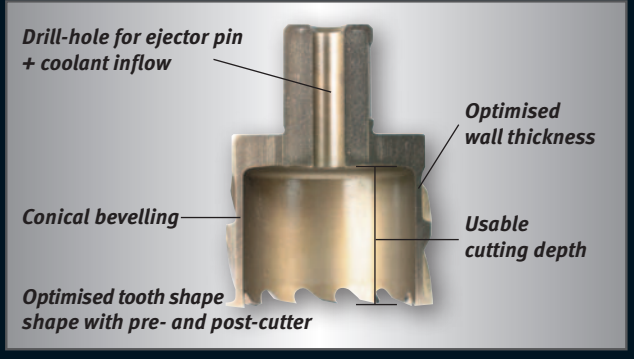
Design Optimum regular chip break
Advantages
- Smooth cutting
- Excellent cutting capacity
- Good chip production at each tooth
- Regular chip flow

Design Minimum cross section of chip removing surface
Advantages
- Easy cutting
- Low torque
- Minimum demand for energy

Design High tooth hardness due to optimum raw material and special heat treatment
Advantages
- Long tool life
- Also suitable for material difficult to cut

Design High tenacity of cutter, specially graduated hardness
Advantages
- Low risk of tool break,
- especially under rough working conditions

Industrial scale manufacturing by state-of-the-art CNC technology
- Best reproducibility
- Constant quality



ALFRA ROTABEST® – HSS BASIC CUTTERS

With 19.0 mm Weldon shank

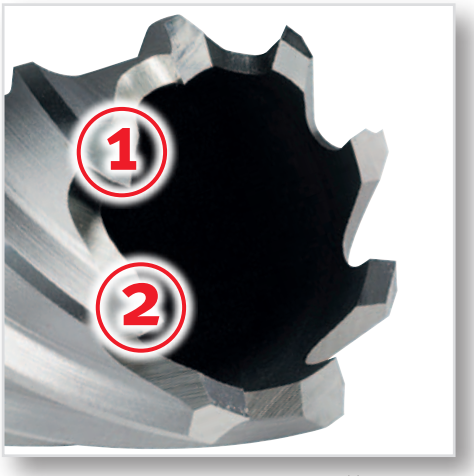
- With 19.0 mm Weldon shank,
  2 clamping surfaces, 1 counterbore for RotaQuick®
- Internal bore 6.35 mm
- Steel quality: Special super-high performance high-speed steel
- Polished section: with pre- and post-cutting

Ø in mm Cutting depth	Prod.-No. 25 mm	Prod.-No. 50 mm
12.0	1907012025	1907012050
13.0	1907013025	1907013050
13.5	1907013525	1907013550
14.0	1907014025	1907014050
15.0	1907015025	1907015050
15.5	1907015525	1907015550
16.0	1907016025	1907016050
17.0	1907017025	1907017050
17.5	1907017525	1907017550
18.0	1907018025	1907018050
19.0	1907019025	1907019050
19.5	1907019525	1907019550
20.0	1907020025	1907020050
21.0	1907021025	1907021050
22.0	1907022025	1907022050
23.0	1907023025	1907023050
24.0	1907024025	1907024050
25.0	1907025025	1907025050
26.0	1907026025	1907026050
26.5	1907026525	1907026550
27.0	1907027025	1907027050
28.0	1907028025	1907028050
29.0	1907029025	1907029050
30.0	1907030025	1907030050
31.0	1907031025	1907031050
32.0	1907032025	1907032050
33.0	1907033025	1907033050
34.0	1907034025	1907034050
35.0	1907035025	1907035050
36.0	1907036025	1907036050
37.0	1907037025	1907037050
38.0	1907038025	1907038050
39.0	1907039025	1907039050
40.0	1907040025	1907040050
41.0	1907041025	1907041050
42.0	1907042025	1907042050
43.0	1907043025	1907043050
44.0	1907044025	1907044050
45.0	1907045025	1907045050
46.0	1907046025	1907046050
47.0	1907047025	1907047050
48.0	1907048025	1907048050
49.0	1907049025	1907049050
50.0	1907050025	1907050050
51.0	–	1907051050
52.0	1907052025	1907052050
53.0	–	1907053050
54.0	–	1907054050
55.0	1907055025	1907055050
56.0	–	1907056050
57.0	–	1907057050
58.0	–	1907058050
59.0	–	1907059050
60.0	1907060025	1907060050
Ejector pin	1926500	1950500
Dimensions	6.35 x 77	6.35 x 102

Suitable for:
ALFRA-Rotabest® (Weldon), ALFRA-RotaQuick® quick-change system, BDS, Bux, Ruko, Magnetor, Euroboor, Universal, Nitto, Jancy, Hougen, Magtron, Promac, Rotabroach and all other magnetic drilling machines with Weldon shank.

Dimensions in inches available upon request

Counterbore for RotaQuick® *Weldon*



High-performance toothing with pre- (1) and post-cutting (2)

ALFRA ROTABEST® – HSS BASIC CUTTER SETS

With 19.0 mm Weldon shank

- An assortment of commonly used cutters in a sturdy plastic case.
- Effective protection for the teeth during rough use during assembly and in the workshop.
- Upon request we can make individual sets with diameters ranging from Ø 12.0 mm to 30.0 mm.

Dimensions in inches available upon request

Prod.-No. 1907125

HSS BASIC Cutter Set

Cutting depth **25 mm** — **Prod.-No.** 1907125

3-pc cutter set:
comprising 1 x **Ø 14.0 - 18.0 - 22.0 mm**
In a robust box
Including 1 ejector pin Prod.-No. 1926500

Prod.-No. 1907003025

HSS BASIC Cutter Set

Cutting depth **25 mm** — **Prod.-No.** 1907003025

6-pc cutter set:
comprising 1 x **Ø 12.0 - 14.0 - 16.0 - 18.0 - 20.0 - 22.0 mm**
in a sturdy case
including 1 ejector pin Prod.-No. 1926500

Prod.-No. 1907001025

HSS BASIC Cutter Set

Cutting depth **25 mm** — **Prod.-No.** 1907001025

10-pc cutter set:
Comprising **Ø 2 x 14.0 - 2 x 12.0 - 2 x 14.0 - 1 x 16.0 - 2 x 18.0 - 1 x 20.0 - 2 x 22.0 mm**
in a sturdy case
Including 2 ejector pins Prod.-No. 1926500

HSS BASIC Cutter Set

Cutting depth **50 mm** — **Prod.-No.** 1907003050

6-pc cutter set:
comprising 1 x **Ø 14.0 - 16.0 - 18.0 - 20.0 - 22.0 - 26.0 mm**
in a sturdy case
including 1 ejector pin Prod.-No. 1950500

Prod.-No. 1907003050

HSS BASIC Cutter Set

Cutting depth **50 mm** — **Prod.-No.** 1907001050

10-pc cutter set:
Comprising **Ø 2 x 14.0 - 1 x 16.0 - 2 x 18.0 - 1 x 20.0 - 2 x 22.0 - 1 x 24.0 - 1 x 26.0 mm**
in a sturdy case
including 2 ejector pins Prod.-No. 1950500

Prod.-No. 1907001050

ALFRA ROTABEST® – HSS-Co-Eco Cutters

With 19.0 mm Weldon shank

- With 19.0 mm Weldon shank, 2 clamping surfaces, 1 counterbore for RotaQuick®
- Internal bore 6.35 mm
- Steel quality: Special high-capacity speed steel, cobalt
- Polished section: with pre- and post-cutting

Dimensions in inches available upon request

Suitable for:
ALFRA-Rotabest® (Weldon), ALFRA-RotaQuick® quick-change system, BDS, Bux, Ruko, Magnetor, Euroboor, Universal, Nitto, Jancy, Hougen, Magtron, Promac, Rotabroach and all other magnetic drilling machines with Weldon shank.

Ø in mm Cutting depth	Prod.-No. 25 mm	Prod.-No. 35 mm	Prod.-No. 50 mm	Prod.-No.* 110 mm
12.0	1901012025	1901012035	1901012050	–
13.0	1901013025	1901013035	1901013050	–
13.5	1901013525	–	1901013550	–
14.0	1901014025	1901014035	1901014050	–
15.0	1901015025	1901015035	1901015050	–
15.5	1901015525	–	1901015550	–
16.0	1901016025	1901016035	1901016050	–
17.0	1901017025	1901017035	1901017050	–
17.5	1901017525	–	1901017550	–
18.0	1901018025	1901018035	1901018050	–
19.0	1901019025	1901019035	1901019050	–
19.5	1901019525	–	1901019550	-
20.0	1901020025	1901020035	1901020050	1901020110
21.0	1901021025	1901021035	1901021050	–
22.0	1901022025	1901022035	1901022050	1901022110
23.0	1901023025	1901023035	1901023050	–
24.0	1901024025	1901024035	1901024050	1901024110
25.0	1901025025	1901025035	1901025050	1901025110
26.0	1901026025	1901026035	1901026050	1901026110
26.5	1901026525	–	1901026550	–
27.0	1901027025	1901027035	1901027050	–
28.0	1901028025	1901028035	1901028050	1901028110
29.0	1901029025	1901029035	1901029050	–
30.0	1901030025	1901030035	1901030050	1901030110
31.0	1901031025	1901031035	1901031050	–
32.0	1901032025	1901032035	1901032050	1901032110
33.0	1901033025	1901033035	1901033050	–
34.0	1901034025	1901034035	1901034050	–
35.0	1901035025	1901035035	1901035050	1901035110
36.0	1901036025	1901036035	1901036050	–
37.0	1901037025	1901037035	1901037050	–
38.0	1901038025	1901038035	1901038050	–
39.0	1901039025	1901039035	1901039050	–
40.0	1901040025	1901040035	1901040050	1901040110
41.0	1901041025	–	1901041050	–
42.0	1901042025	–	1901042050	–
43.0	1901043025	–	1901043050	–
44.0	1901044025	–	1901044050	–
45.0	1901045025	–	1901045050	1901045110
46.0	1901046025	–	1901046050	–
47.0	1901047025	–	1901047050	–
48.0	1901048025	–	1901048050	–
49.0	1901049025	–	1901049050	–
50.0	1901050025	–	1901050050	1901050110
51.0	–	–	1901051050	–
52.0	1901052025	–	1901052050	–
53.0	–	–	1901053050	–
54.0	–	–	1901054050	–
55.0	1901055025	–	1901055050	–
56.0	–	–	1901056050	–
57.0	–	–	1901057050	–
58.0	–	–	1901058050	–
59.0	–	–	1901059050	–
60.0	1901060025	–	1901060050	–
Ejector pin	1926500	1935500	1950500	2001502
Dimensions	6.35 x 77	6.35 x 87	6.35 x 102	8 x 160

Counterbore for RotaQuick® *Weldon*

High-performance toothing with pre- (1) and post-cutting (2)

* Important: HSS-Co-Eco cutters with a cutting depth of 110 mm can now be used with AMT 2 L (Prod.-No. 18003 L) or AMT 3 L (Prod.-No. 18025 L) tool holders.

ALFRA ROTABEST® – HSS-Co-Eco Cutter Sets

With 19.0 mm Weldon shank

- An assortment of commonly used cutters in a sturdy plastic case.
- Effective protection for the teeth during rough use during assembly and in the workshop.
- Upon request we can make individual sets with diameters ranging from Ø 12.0 mm to 30.0 mm.

Dimensions in inches available upon request

Prod.-No. 1901125

HSS-Co-Eco Cutter Set

Cutting depth **25 mm**

Prod.-No. 1901125

3-pc cutter set:
comprising 1 x **Ø 14.0 - 18.0 - 22.0 mm**
in a robust box
including 1 ejector pin Prod.-No. 1926500

Prod.-No. 1901003025

HSS-Co-Eco Cutter Set

Cutting depth **25 mm**

Prod.-No. 1901003025

6-pc cutter set:
comprising 1 x **Ø 12.0 - 14.0 - 16.0 - 18.0 - 20.0 - 22.0 mm**
in a sturdy case
including 1 ejector pin Prod.-No. 1926500

Prod.-No. 1901001025

HSS-Co-Eco Cutter Set

Cutting depth **25 mm**

Prod.-No. 1901001025

10-pc cutter set:
comprising 1 x **Ø 2 x 12.0 - 2 x 14.0 - 1 x 16.0 - 2 x 18.0 - 1 x 20.0 - 2 x 22.0 mm**
in a sturdy case
including 2 ejector pins Prod.-No. 1926500

HSS-Co-Eco Cutter Set

Cutting depth **50 mm**

Prod.-No. 1901003050

6-pc cutter set:
comprising 1 x **Ø 14.0 - 16.0 - 18.0 - 20.0 - 22.0 - 26.0 mm**
in a sturdy case
including 1 ejector pin Prod.-No. 1950500

Prod.-No. 1901003050

HSS-Co-Eco Cutter Set

Cutting depth **50 mm**

Prod.-No. 1901001050

10-pc cutter set:
Comprising **Ø 2 x 14.0 - 1 x 16.0 - 2 x 18.0 - 1 x 20.0 - 2 x 22.0 - 1 x 24.0 - 1 x 26.0 mm**
in a sturdy case
including 2 ejector pins Prod.-No. 1950500

Prod.-No. 1901001050

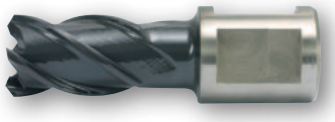
B

ALFRA ROTABEST® – HSS-Co CUTTERS RQX COATED

With 19.0 mm Weldon shank

- With 19.0 mm Weldon shank, 2 clamping surfaces, 1 counterbore for RotaQuick®
- Internal bore 6.35 mm
- Steel quality: Special super-high performance high-speed steel cobalt, **coated**
- Polished section: with pre- and post-cutting

Suitable for:
ALFRA-Rotabest® (Weldon), ALFRA-RotaQuick® quick-change system, BDS, Bux, Ruko, Magnetor, Euroboor, Universal, Nitto, Jancy, Hougen, Magtron, Promac, Rotabroach and all other magnetic drilling machines with Weldon shank.



Dimensions in inches available upon request

Ø in mm	Cutting depth 25 mm Prod.-No.	Ø in mm	Cutting depth 50 mm Prod.-No.
12.0	1902012025	12.0	1902012050
13.0	1902013025	13.0	1902013050
14.0	1902014025	14.0	1902014050
15.0	1902015025	15.0	1902015050
16.0	1902016025	16.0	1902016050
17.0	1902017025	17.0	1902017050
18.0	1902018025	18.0	1902018050
19.0	1902019025	19.0	1902019050
20.0	1902020025	20.0	1902020050
21.0	1902021025	21.0	1902021050
22.0	1902022025	22.0	1902022050
23.0	1902023025	23.0	1902023050
24.0	1902024025	24.0	1902024050
25.0	1902025025	25.0	1902025050
26.0	1902026025	26.0	1902026050
27.0	1902027025	27.0	1902027050
28.0	1902028025	28.0	1902028050
29.0	1902029025	29.0	1902029050
30.0	1902030025	30.0	1902030050
31.0	1902031025	31.0	1902031050
32.0	1902032025	32.0	1902032050
33.0	1902033025	33.0	1902033050
34.0	1902034025	34.0	1902034050
35.0	1902035025	35.0	1902035050
36.0	1902036025	36.0	1902036050
37.0	1902037025	37.0	1902037050
38.0	1902038025	38.0	1902038050
39.0	1902039025	39.0	1902039050
40.0	1902040025	40.0	1902040050
41.0	1902041025	41.0	1902041050
42.0	1902042025	42.0	1902042050
43.0	1902043025	43.0	1902043050
44.0	1902044025	44.0	1902044050
45.0	1902045025	45.0	1902045050
46.0	1902046025	46.0	1902046050
47.0	1902047025	47.0	1902047050
48.0	1902048025	48.0	1902048050
49.0	1902049025	49.0	1902049050
50.0	1902050025	50.0	1902050050
51.0		51.0	1902051050
52.0		52.0	1902052050
53.0		53.0	1902053050
54.0		54.0	1902054050
55.0		55.0	1902055050
56.0		56.0	1902056050
57.0		57.0	1902057050
58.0		58.0	1902058050
59.0		59.0	1902059050
60.0		60.0	1902060050
Ejector pin 6.35 x 77 mm	1926500	Ejector pin 6.35 x 102 mm	1950500

Counterbore for RotaQuick® **Weldon**

High-performance toothing with pre- (1) and post-cutting (2)

B

ALFRA ROTABEST® – HSS-Co CUTTER RQX SETS

With 19.0 mm Weldon shank

- An assortment of commonly used cutters in a sturdy plastic case.
- Effective protection for the teeth during rough use during assembly and in the workshop.
- Upon request we can make individual sets with diameters ranging from Ø 12.0 mm to 30.0 mm.

Dimensions in inches available upon request

HSS-Co Cutter RQX Set

Cutting depth **25 mm** — Prod.-No. 1902003025

6-pc cutter set:
comprising 1 x **Ø 12.0 - 14.0 - 16.0 - 18.0 - 22.0 - 26.0 mm**
in a plastic case
including 1 ejector pin Prod.-No. 1926500

Prod.-No. 1902003025

HSS-Co Cutter RQX Set

Cutting depth **25 mm** — Prod.-No. 1902001025

10-pc cutter set:
comprising Ø **2 x 12.0 - 2 x 14.0 - 1 x 16.0 - 2 x 18.0 - 2 x 22.0 - 1 x 26.0 mm**
In plastic case
including 2 ejector pins Prod.-No. 1926500

Prod.-No. 1902001025

HSS-Co Cutter RQX Set

Cutting depth **50 mm** — Prod.-No. 1902003050

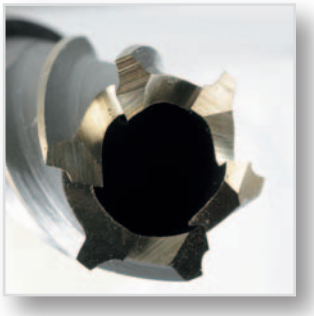
6-pc cutter set:
comprising 1 x Ø **14.0 - 16.0 - 18.0 - 20.0 - 22.0 - 26.0 mm**
In a plastic case
including 1 ejector pin Prod.-No. 1950500

Prod.-No. 1902003050

HSS-Co Cutter RQX Set

Cutting depth **50 mm** — Prod.-No. 1902001050

10-pc cutter set:
comprising Ø **2 x 14.0 - 1 x 16.0 - 2 x 18.0 - 1 x 20.0 - 2 x 22.0 - 1 x 24.0 - 1 x 26.0 mm**
In plastic case
including 2 ejector pins Prod.-No. 1950500



Prod.-No. 1902001050

HSS-Co cutter with special geometries for processing stacked metal plates (multi-layer drill) upon request!
(Standard-cutters are not suitable for this purpose.)

ALFRA ROTABEST® – ASP-30 RAIL

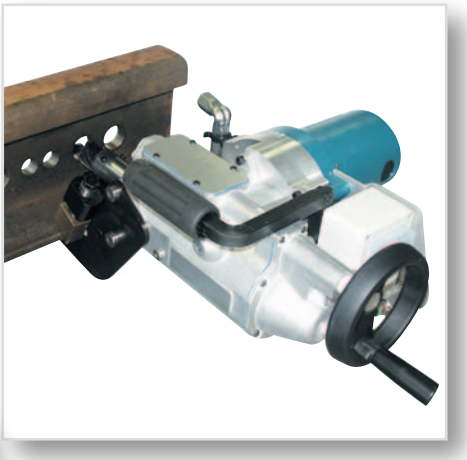
With 19.0 mm Weldon shank

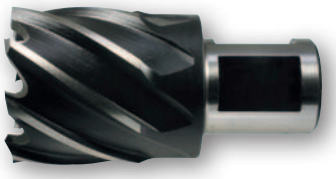
- With 19.0 mm Weldon shank,
- Internal bore 6.35 mm
- Steel quality: Powder-metallurgical based cobalt high-performance high-speed steel with optimal purity and improved toughness compared to traditional powder steel.
- Excellently suitable for intensive-use applications such as on railway tracks.
- These tools can also be used on all magnet drilling machines, especially with Weldon shank.

Suitable for:
All portable magnetic drilling machines with 19 mm Weldon shank, especially for rail drilling units from the following manufacturers:

- Cembre
- Erico
- KKT
- Dubuis
- Universal
- Magtron
- Rotabroach

Dimensions in inches available upon request





Ø in mm	Cutting depth 25 mm	Prod.-No.
14.0		1905014025
16.0		1905016025
17.0		1905017025
18.0		1905018025
19.0		1905019025
20.0		1905020025
22.0		1905022025
23.0		1905023025
24.0		1905024025
25.0		1905025025
26.0		1905026025
27.0		1905027025
27.5		1905027525
28.0		1905028025
30.0		1905030025
31.0		1905031025
32.0		1905032025
33.0		1905033025
34.0		1905034025
36.0		1905036025
Ejector pin 6.35 x 77 mm		1926500

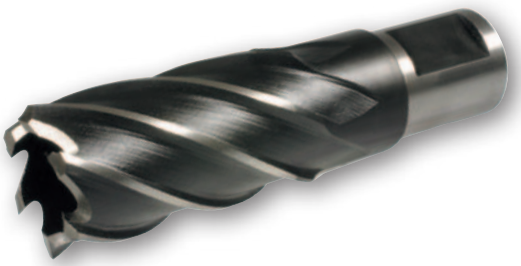
Ø in mm	Cutting depth 50 mm	Prod.-No.
14.0		1905014050
16.0		1905016050
17.0		1905017050
18.0		1905018050
19.0		1905019050
20.0		1905020050
22.0		1905022050
23.0		1905023050
24.0		1905024050
25.0		1905025050
26.0		1905026050
27.0		1905027050
27.5		1905027550
28.0		1905028050
30.0		1905030050
31.0		1905031050
32.0		1905032050
33.0		1905033050
34.0		1905034050
36.0		1905036050
Ejector pin 6.35 x 102 mm		1950500

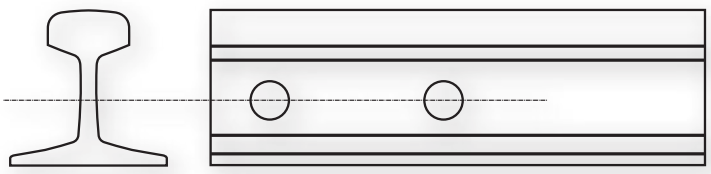
Tip:

Well-proven for drilling Hardox and similar high-tensile steels. Name your drilling problem, we will be pleased to advise.

And another tip:

ASP-60 for "impossible" drilling applications upon request.



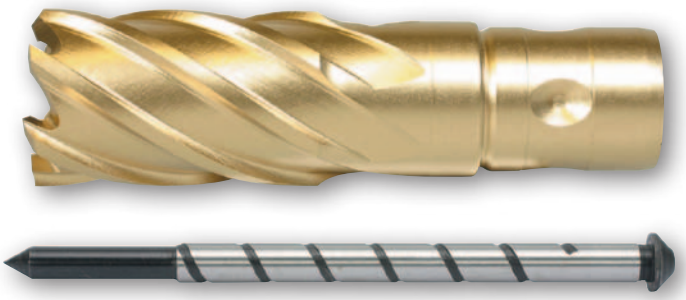


ALFRA – HSS-Co-Eco Cutters for FEIN-QUICK IN

Suitable for FEIN magnetic drilling machines

- **Suitable for FEIN magnetic drilling machines with Quick IN arbor.**
- You are using FEIN magnetic drilling machines and do not want to do without your ALFRA-Rotabest® cutters? Take a look at our selection of HSS and carbide-tipped cutters suitable for the various types of FEIN machines.
- Special shank, 18.0 mm with 4 bearing recesses
- Steel quality: Special high-capacity speed steel, cobalt
- Internal bore 6.4 mm
- Suitable for: FEIN Quick-IN quick-change arbor, FEIN core drilling machines with KBM 32 Q, KBM 50 Q, KBM 65 Q, KBM 65 QF Quick-IN quick-change systems

Ø in mm	Cutting depth 35 mm	Prod.-No.
12.0		1909012035
13.0		1909013035
14.0		1909014035
15.0		1909015035
16.0		1909016035
17.0		1909017035
18.0		1909018035
19.0		1909019035
20.0		1909020035
21.0		1909021035
22.0		1909022035
23.0		1909023035
24.0		1909024035
25.0		1909025035
26.0		1909026035
27.0		1909027035
28.0		1909028035
29.0		1909029035
30.0		1909030035
31.0		1909031035
32.0		1909032035
Ejector pin 6.35 x 106 mm		1936500



Prod.-No. 1936500

Dimensions in inches available upon request

High-performance toothing with pre- and post-cutting

B

ALFRA – HSS-Co-Eco Cutters Suitable for FEIN + Hitachi

- **Threaded arbor, internal thread, M18 x 6P 1.5.**
- **Also compatible with Hitachi machines.**

Ø in mm	Cutting depth 50 mm	Prod.-No.
12.0		1908012050
13.0		1908013050
14.0		1908014050
15.0		1908015050
16.0		1908016050
17.0		1908017050
18.0		1908018050
19.0		1908019050
20.0		1908020050
21.0		1908021050
22.0		1908022050
23.0		1908023050
24.0		1908024050
25.0		1908025050
26.0		1908026050
27.0		1908027050
28.0		1908028050
29.0		1908029050
30.0		1908030050

HSS-TWIST DRILLS

With 19.0 mm Weldon shank

- **Suitable for magnetic drilling machines with Weldon shank.**
- Ideal for drilling smaller diameters, ‹ Ø 12 mm.

HSS twist drill

Ø in mm	HSS twist drill with Weldon shank	**Prod.-No.**
6.0		0802606
8.0		0802608
9.0		0802609
10.0		0802610
11.0		0802611
12.0		0802612

Prod.-No. 0802606

Prod.-No. 0802608

Prod.-No. 0802609

Prod.-No. 0802610

Prod.-No. 0802611

Prod.-No. 0802612

HSS twist drill set

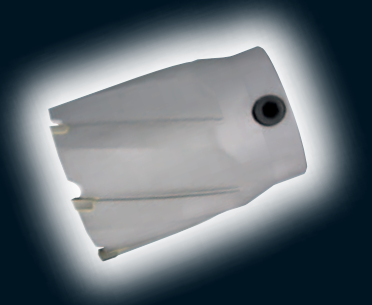
	Prod.-No.
6-pc HSS twist drill set with Weldon shank comprising 1 x **Ø 6.0 - 8.0 - 9.0 - 10.0 - 11.0 - 12.0 mm** In a plastic case	08026

Prod.-No. 08026

B

Metal Core Cutters have got a name
ALFRA ROTABEST®

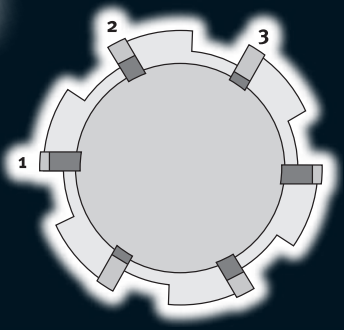
► Carbide-tipped



Applicable on magnetic and column drills. For structural steels, difficult-to-machine materials such as chrome-nickel steels and for non-ferrous metals such as aluminium or Cu-Zn alloys, and much more.

Advantages of ALFRA ROTABEST® TCT Cutters

- High concentricity due to solid design
- CAD-optimised cutting geometry for steady flow of chips
- Uniquely shaped chip grooves to prevent chip jamming
- Instant centring
- No running off center
- Minimal torque
- Low energy consumption
- Rapid drill core removal by ejector pin
- Extended tool life



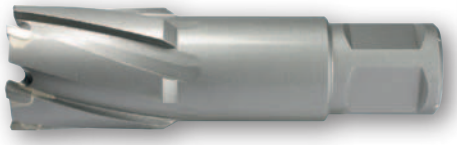
ALFRA "Chip-Breaker System"
Extremely precise drilling in 3 simple steps.
1 Pre-cutter
2 Middle cutter
3 Post-cutter

ALFRA ROTABEST® – TCT CUTTERS

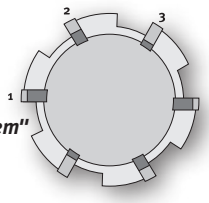
With 19.0 mm Weldon shank

- With 19.0 mm Weldon shank,
- Internal bore: Ø 14 - 17 mm = 6.35 mm
  Ø 18 - 50 mm = 8.0 mm
- Polished section: pre-, middle- and post-cutters
- For the highest standards in cutting and lifespan.

Suitable for:
All magnetic drilling machines with Weldon shank. ALFRA-Rotabest® (Weldon), ALFRA-RotaQuick® quick-change system, for BDS, Bux, Ruko, Magnetor, Euroboor, Universal, Nitto, Jancy, Hougen, Magtron, Promac, Rotabroach, etc.



Ø in mm	Cutting depth 35 mm Prod.-No.	Ø in mm	Cutting depth 50 mm Prod.-No.
14.0	2003014035	14.0	2003014050
15.0	2003015035	15.0	2003015050
16.0	2003016035	16.0	2003016050
17.0	2003017035	17.0	2003017050
18.0	2003018035	18.0	2003018050
19.0	2003019035	19.0	2003019050
20.0	2003020035	20.0	2003020050
21.0	2003021035	21.0	2003021050
22.0	2003022035	22.0	2003022050
23.0	2003023035	23.0	2003023050
24.0	2003024035	24.0	2003024050
25.0	2003025035	25.0	2003025050
26.0	2003026035	26.0	2003026050
27.0	2003027035	27.0	2003027050
28.0	2003028035	28.0	2003028050
29.0	2003029035	29.0	2003029050
30.0	2003030035	30.0	2003030050
31.0	2003031035	31.0	2003031050
32.0	2003032035	32.0	2003032050
33.0	2003033035	33.0	2003033050
34.0	2003034035	34.0	2003034050
35.0	2003035035	35.0	2003035050
36.0	-	36.0	2003036050
37.0	-	37.0	2003037050
38.0	-	38.0	2003038050
39.0	-	39.0	2003039050
40.0	-	40.0	2003040050
41.0	-	41.0	2003041050
42.0	-	42.0	2003042050
43.0	-	43.0	2003043050
44.0	-	44.0	2003044050
45.0	-	45.0	2003045050
46.0	-	46.0	2003046050
47.0	-	47.0	2003047050
48.0	-	48.0	2003048050
49.0	-	49.0	2003049050
50.0		50.0	2003050050
-			
Ejector pin for Ø 14 - 17 mm, 6.35 x 87 mm	1935500	Ejector pin for Ø 14 - 17 mm, 6.35 x 102	1950500
Ejector pin for Ø 18 - 50 mm, 8 x 87 mm	2001500	Ejector pin for Ø 18 - 50 mm, 8 x 102 mm	2001501



ALFRA "Chip-Breaker System"
1 Pre-cutter
2 Middle cutter
3 Post-cutter

B

ALFRA ROTABEST® – TCT CUTTERS

Suitable for all core drilling, pillar drilling and milling machines

- Heavy industry design with **keyway and feather key**
- Long-term tests series have shown that this specialised design with keyway and feather key has proved outstanding compared to a standard 32 mm Weldon shank. Optimal containment of high torsion forces.
- Polished section: pre-, middle- and post-cutters.
- Required: Tool holder with internal cooling

AL 3	MT 3	Prod.-No. 20230
AL 4	MT 4	Prod.-No. 20240
AL 5	MT 5	Prod.-No. 20250

- Upon request, cutting depth of 100 mm with ejector pin 8 x 160 mm Prod.-No. 2001502

Dimensions in inches available upon request

Ø in mm	Cutting depth 50 mm	Prod.-No.
51.0 ■		2002051050
52.0 ■		2002052050
53.0 ■		2002053050
54.0 ■		2002054050
55.0		2002055050
56.0 ■		2002056050
57.0 ■		2002057050
58.0 ■		2002058050
59.0 ■		2002059050
60.0		2002060050
61.0 ■		2002061050
62.0 ■		2002062050
63.0 ■		2002063050
64.0 ■		2002064050
65.0		2002065050
66.0 ■		2002066050
67.0 ■		2002067050
68.0 ■		2002068050
69.0 ■		2002069050
70.0		2002070050
71.0 ■		2002071050
72.0 ■		2002072050
73.0 ■		2002073050
74.0 ■		2002074050
75.0		2002075050
76.0 ■		2002076050
77.0 ■		2002077050
78.0 ■		2002078050
79.0 ■		2002079050
80.0		2002080050
81.0 ■		2002081050
82.0 ■		2002082050
83.0 ■		2002083050
84.0 ■		2002084050
85.0		2002085050
86.0 ■		2002086050
87.0 ■		2002087050
88.0 ■		2002088050
89.0 ■		2002089050
90.0		2002090050
91.0 ■		2002091050
92.0 ■		2002092050
93.0 ■		2002093050
94.0 ■		2002094050
95.0		2002095050
96.0 ■		2002096050
97.0 ■		2002097050
98.0 ■		2002098050
99.0 ■		2002099050
100.0		2002100050

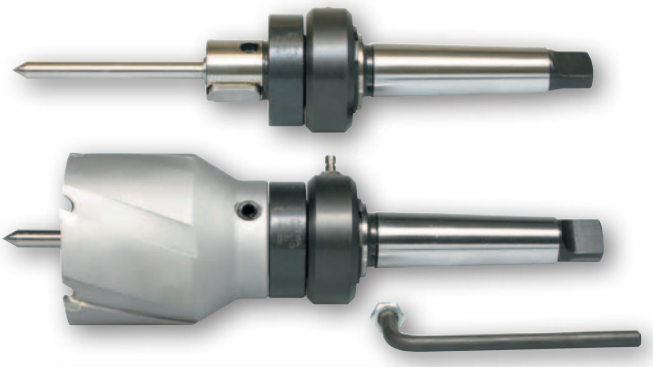
■ No mass production

Ejector pin 8 x 102 mm	2001501
AL 2/MT 2 tool holder	20220
AL 3/MT 3 tool holder	20230
AL 4/MT 4 tool holder	20240
AL 5/MT 5 tool holder	20250

Shorter and sturdier tool design. ALFRA design. Excellent running precision.

Advantages of "Heavy Industry Design" ALFRA TCT Cutters

- Perfect cutting behaviour – even at the first drill-hole
- Excellent centring properties
- Low cutting pressure – low power use
- Vibration-free working
- Chip distribution – no chip jamming
- Drilling depth can be reached in a single operation
- Drill core can be easily ejected



Prod.-No. 20230

B

Not suitable for automatic feed.

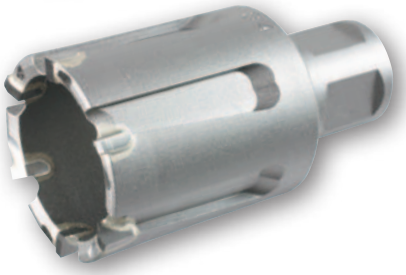
ALFRA ROTABEST® – TCT CUTTERS RAIL

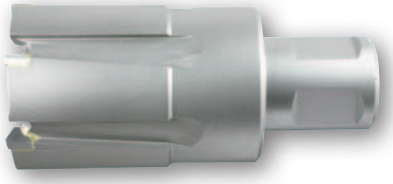
With 19.0 mm Weldon shank

- With 19.0 mm Weldon shank,
- Internal bore 6.35 mm
- For the highest standards in cutting and lifespan when drilling railway tracks
- Polished section: pre-, middle- and post-cutters

Suitable for:
All portable magnetic drilling machines with 19 mm Weldon shank, especially for rail drilling units from the following manufacturers:

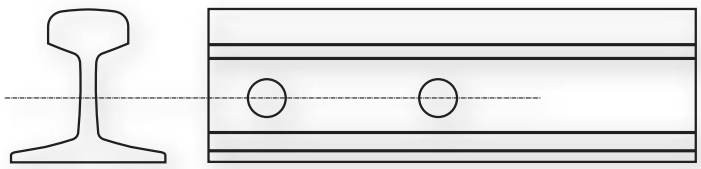
- Cembre
- Erico
- KKT
- Dubuis
- Universal
- Magtron
- Rotabroach

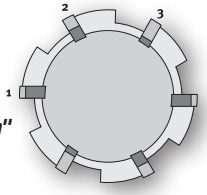




Ø in mm	Cutting depth 25 mm	Prod.-No.
19.0		2005019025
20.0		2005020025
21.0		2005021025
22.0		2005022025
23.0		2005023025
24.0		2005024025
25.0		2005025025
26.0		2005026025
27.5		2005027525
28.0		2005028025
30.0		2005030025
31.0		2005031025
32.0		2005032025
33.0		2005033025
34.0		2005034025
36.0		2005036025
Ejector pin 6.35 x 77 mm		1926500

Ø in mm	Cutting depth 50 mm	Prod.-No.
19.0		2005019050
20.0		2005020050
21.0		2005021050
22.0		2005022050
23.0		2005023050
24.0		2005024050
25.0		2005025050
26.0		2005026050
27.5		2005027550
28.0		2005028050
30.0		2005030050
31.0		2005031050
32.0		2005032050
33.0		2005033050
34.0		2005034050
36.0		2005036050
Ejector pin 6.35 x 102 mm		1950500



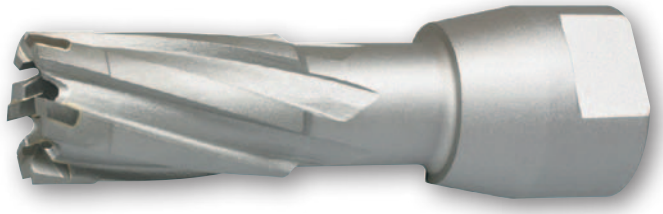


ALFRA "Chip-Breaker System"
1 Pre-cutter
2 Middle cutter
3 Post-cutter

ALFRA – TCT Cutters suitable for FEIN + Hitachi

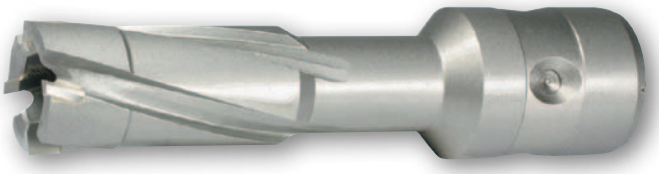
- 2008... with Threaded arbor, internal thread, M18 x 6P 1.5.
- Also compatible with Hitachi machines.
- 2009... with Quick IN Arbor.
- Suitable for FEIN magnetic drilling machines with Quick IN arbor.

Ø in mm	Prod.-No. M18 x 6P 1.5 Cutting depth 50 mm	Prod.-No. Quick IN Cutting depth 35 mm
12.0	2008012050	2009012035
13.0	2008013050	2009013035
14.0	2008014050	2009014035
15.0	2008015050	2009015035
16.0	2008016050	2009016035
17.0	2008017050	2009017035
18.0	2008018050	2009018035
19.0	2008019050	2009019035
20.0	2008020050	2009020035
21.0	2008021050	2009021035
22.0	2008022050	2009022035
23.0	2008023050	2009023035
24.0	2008024050	2009024035
25.0	2008025050	2009025035
26.0	2008026050	2009026035
27.0	2008027050	2009027035
28.0	2008028050	2009028035
29.0	2008029050	2009029035
30.0	2008030050	2009030035
31.0	2008031050	2009031035
32.0	2008032050	2009032035
33.0	2008033050	2009033035
34.0	2008034050	2009034035
35.0	2008035050	2009035035
36.0	2008036050	2009036035
37.0	2008037050	2009037035
38.0	2008038050	2009038035
39.0	2008039050	2009039035
40.0	2008040050	2009040035
41.0	2008041050	2009041035
42.0	2008042050	2009042035
43.0	2008043050	2009043035
44.0	2008044050	2009044035
45.0	2008045050	2009045035
46.0	2008046050	2009046035
47.0	2008047050	2009047035
48.0	2008048050	2009048035
49.0	2008049050	2009049035
50.0	2008050050	2009050035
51.0	2008051050	2009051035
52.0	2008052050	2009052035
53.0	2008053050	2009053035
54.0	2008054050	2009054035
55.0	2008055050	2009055035
57.0	2008057050	2009057035
58.0	2008058050	2009058035
59.0	2008059050	2009059035
60.0	2008060050	2009060035
61.0	2008061050	2009061035
62.0	2008062050	2009062035
63.0	2008063050	2009063035
64.0	2008064050	2009064035
65.0	2008065050	2009065035
Ejector pin 6.35 x 106 mm	-	1936500

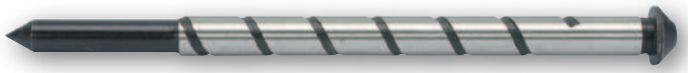


Prod.-No. 2008...

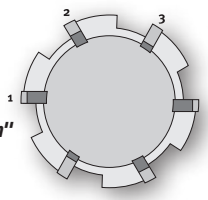
Threaded arbor, M18 x 6P1.5



Prod.-No. 2009...



Prod.-No. 1936500



ALFRA "Chip-Breaker System"

1 Pre-cutter
2 Middle cutter
3 Post-cutter

B

ALFRA ROTASPEED®

Ergonomically designed hand grip

Horizontal lying motor with speed-stop and softstart

Continuously adjustable mitre up to 45°

Solid base plate

Automatic saw blade protection

Safety switch

Spindle lock for easy saw blade replacement

Light lamp in the mitre adjustment

Tool-less cutting height adjustment

ALFRA-RotaSpeed® – Metal Circular Saw RS 230

Hand-operated

The ideal machine for construction sites and workshops, for low-burr cutting without cooling.

For rapid, clean cuts in tubes, threaded rods, profiles, cable ducts, corrugated and trapezoid sheeting, sandwich sheets, drywall profiles and much more.

The advantages at a glance:

- 1.800 Watt high-performance motor for exact cutting without cooling.
- Quick, easy saw-blade change.
- Continuously adjustable cutting depth up to 82 mm.
- The saw shoe can be adjusted for mitre cuts of up to 45°.
- Chip collection container.
- The ideal machine for side assembly companies, facade builders, repair shops, locksmitheries, rack builders, roofers, booth builders, welding shops, and heating and ventilation contractors.
- Ideal applicable where angle grinders are not strong enough, or clean enough.
- Mitre cutting also makes it deal for weld preparation.
- With optical laser for proper alignment of cuts.

ALFRA RotaSpeed® RS 230

Saw blade diameter:	230 (9")
Saw blade arbor:	25.4 mm (1")
Rating:	1.800 Watt
RPM min^{-1} :	2.300
Mitre:	0 - 45°
Cutting capacity, mm 0°:	82
Cutting capacity, mm 45°:	56
Max. material thickness (dependent on material):	6 - 8 mm
Volt:	230 - 50 Hz
Weight:	9.5 kg

	Prod.-No.
Alfra RotaSpeed® RS 230	22412

Scope of Supply:
Machine with 2 TCT Saw blades (premium quality), operating manual, rip fence, tool set, spacer piece for saw blade arbor, carrying case.

Prod.-No. 22412

B

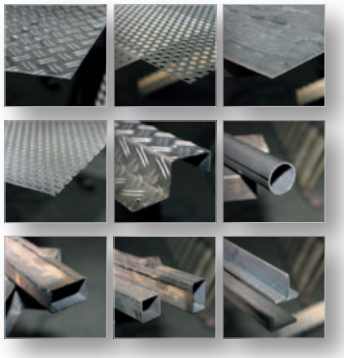
ALFRA-Circular Saw Blades – RotaSpeed®

Carbide-tipped • Made in Germany

- Tungsten carbide tipped, suitable for metal cutting saws from: ALFRA, Flex, Euroboor, Evolution, Hitech, Jepson, Metallkraft, Ridgid, etc.
- These special TCT circular saws ensure fast and clean cuts in pipes, threaded rods, profiles, corrugated and trapezoidal sheets, wire ducts, sandwich panels, dry mortarless construction profiles, fastening profiles (DIN rails), grates using dry cutting method.
- For use on metals, CrNi steel*, aluminium.
- High cutting performance and tool life. The excellent price/performance ratio makes these saws highly economical.
- **The corresponding manufacturer's machine guidelines and notes on use must be observed when using these saw blades.**

Premium quality

Cutting-Ø mm	Application	Dimensions mm	No. of teeth	Prod.-No.
180/7"	Steel	180 x 20	34	22205
200/8"	Steel	200 x 20	42	22255
230/9"	Steel	230 x 25.4	48	22305
230/9"	Aluminium	230 x 25.4	62	22306
230/9"	For trapezoid sheeting	230 x 25.4	80	22307



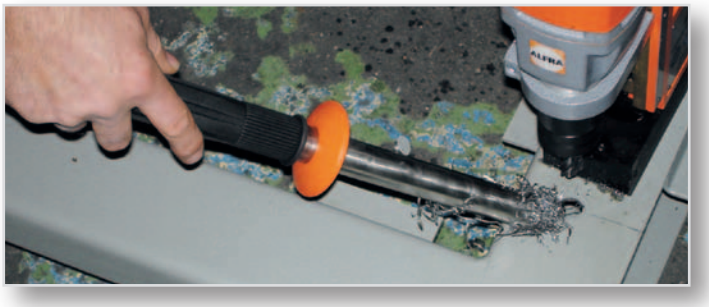
B

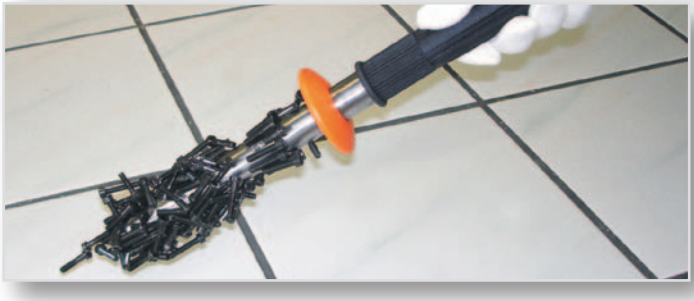
Magnetic Chip Remover

In a stainless steel round rod, you can move a magnet back and forth. The strong magnet picks up metal chips - pull a knob and the chips fall off. For more cleanliness in the work place.

	Prod.-No.
ALFRA magnetic chip remover, length 400 mm	18654

Prod.-No. 18654





ALFRA-RotaDry® – Metal Dry Cutter 355

Overwhelming quality, performance and price:

- for low-burr cutting of profiles and tubes, in steel, iron, copper, brass, aluminium, plastics, composites and stainless steel with no cooling.
- for use in applications such as metal-working, in joineries, for interior construction, etc.
- with depth adjustment for precise cutting
- angle and rip fence for mitre cuts of up to 45°
- with removable chip collection box
- with arbor adjustment for changing the saw blade
- easy to transport

ALFRA RotaDry® 355

Motor	230 V/50 Hz	
Power consumption	2.200 W	
RPM	1.300 min^{-1}	
Cutting area 90°	13 mm wall thickness	180 x 105 mm ▱
Cutting area 90°	13 mm wall thickness	120 x 120 mm ▯
Cutting area 90°	13 mm wall thickness	135 mm ∅
Cutting area 45°	13 mm wall thickness	110 x 100 mm ▱
Cutting area 45°	13 mm wall thickness	100 x 100 mm ▯
Cutting area 45°	13 mm wall thickness	105 mm ∅
Saw blade diameter	355 mm	
Weight	23 kg	

	Prod.-No.
Alfra RotaDry® 355, with 1 TCT Saw blade 72 T	22420

Prod.-No. 22420

Accessories:

Robust prismatic jaws The ideal assistant, especially when cutting tubes with thin walls	22421
Work table RCT 6542	22601

Prod.-No. 22601

B

Spare TCT saw blades

Also suitable for cutters such as:

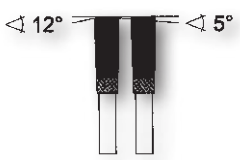
Jepson/Global/Ridgid/Ryobi

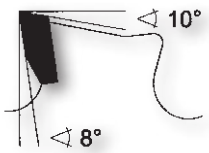
The universal TCT Saw blade for rapid cutting in:
Steel – Copper – Aluminium – Profiles – Cables – Sheeting – Solid materials

- without coolant
- regrindable
- low noise thanks to laser ornaments

Dimensions		Steel	Stainless steel	Prod.-No.
305 x 2.2 x 25.4 mm	60 T	•		32100
305 x 2.2 x 25.4 mm	80 T	•		32101
355 x 2.4/2.0 x 25.4 mm	72 T	•		32108
355 x 2.6 x 25.4 mm	80 T	•		32103
355 x 2.6 x 25.4 mm	90 T	•		32102
355 x 2.6 x 25.4	90 T	coated	•	32105

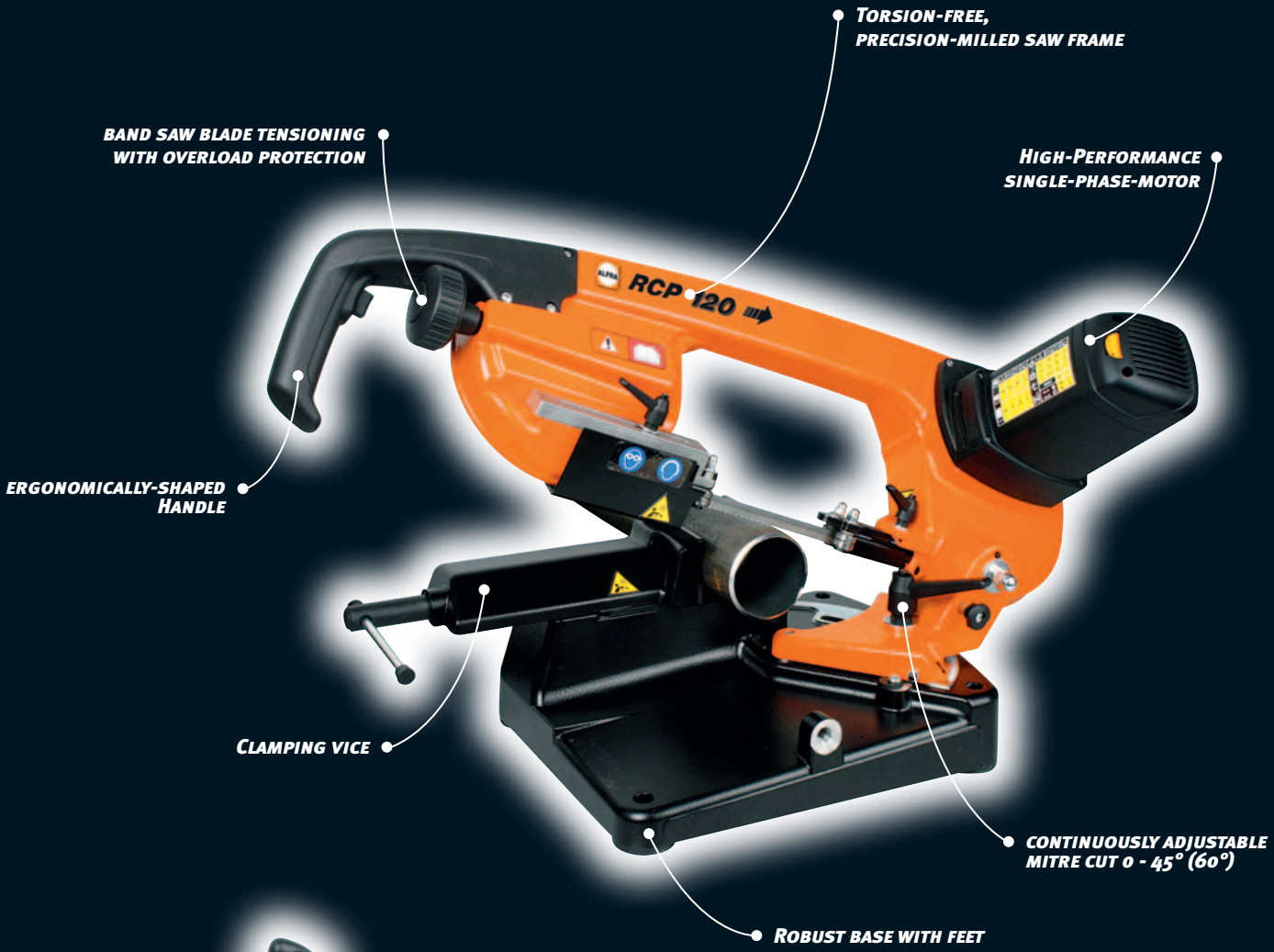
Other tooth counts upon request.





355 x 2.6 x 25.4 • 90 Z • coated

ALFRA ROTACUT®



B

Portable Band Saw Machines for Professionals

There is a variety of portable band saw machines, but only a few of them are suitable for industrial applications or at a construction site.
Pricing is usually being more important than reliability and durability.

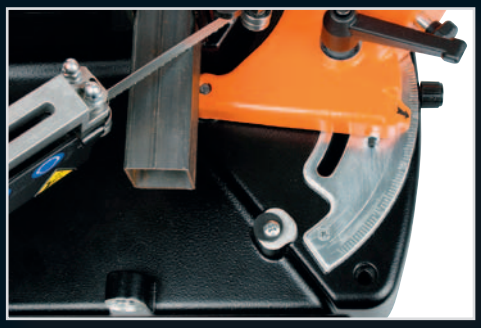
Our new machines have an excellent price-performance-ratio and are setting new standards. The robust and compact design makes it ideal for handling in the machine shop or the construction site.

Ideally qualified for locksmiths, plumbing, metal-, heating-, pipeline- and mechanical workshops. Also for construction companies, public utilities with or without mobile workshops, power stations, schools, technical learning and teaching facilities.

Special features:

- Fully portable
- For mitre cuts 0 - 45° (60°) continuously adjustable
- Extremely rapid saw belt replacement
- Secure material tensioning
- Robust high-performance motor, RPM continuously adjustable (also ideal for stainless steel)
- Adjustable ball-bearing belt-guide for exact, precise angle-cutting
- Patented belt-tensioning with overload protection


Practical carrying handle


Mitring, continuously adjustable to 45° (60°)


Fine-tuned, adjustable belt guide

Patented belt-tensioning

Prod.-No. 22600

Band saw RC 105

	Prod.-No.
Band saw RC 105	22600

Technical specifications:

Single-phase motor	950 W
Voltage	230 Volt
Cutting speed	30 to 80 min^{-1}
(continuously adjustable with thermal and overload protection)	
Mitring	0 - 45°
Belt dimensions	1.335 x 13 x 0.65 mm
Weight	16 kg

Scope of Supply:

- Portable Band Saw Machine RC 105 - 230 V
- Complete with HSS bi-metal saw band
- Operating manual

Optional:

	Prod.-No.
Small worktable for stand-up-sawing	22601

CUTTING CAPACITY

	∅	▭	▭
0°	105 mm	95 x 95 mm	100 x 85 mm
45°	65 mm	65 x 65 mm	65 x 60 mm

BAND SAW BLADES HSS BI-METAL FOR RC 105

Prod.-No.	Dimensions
341-13065-1335-0600	1335x13x0.65 mm 6 Z
341-13065-1335-0812	1335x13x0.65 mm 8/12 Z
341-13065-1335-1400	1335x13x0.65 mm 14 Z

DRY-CUT

CUTTING -60% TIME

PATENTED

Prod.-No. 22620

Band saw RCP 120

	Prod.-No.
Band saw RCP 120	22620

Technical specifications:

Single-phase motor	1.300 W
Voltage	230 Volt
Cutting speed	35 to 80 min^{-1}
(continuously adjustable with thermal and overload protection)	
Mitring	0 - 60°
Belt dimensions	1.440 x 13 x 0.65 mm
Weight	18 kg

Scope of Supply:

- Portable Band Saw Machine RCP 120 - 230 V
- Complete with HSS bi-metal saw band
- Operating manual

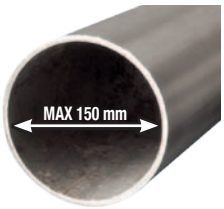
CUTTING CAPACITY

	∅	▯	▱
0°	120 mm	112 x 112 mm	120 x 102 mm
45°	80 mm	78 x 78 mm	78 x 78 mm
60°	50 mm	43 x 43 mm	50 x 43 mm

BAND SAW BLADES HSS BI-METAL FOR RCP 120

Prod.-No.	Dimensions
341-13065-1440-0600R	1440x13x0.65 mm 6 Z
341-13065-1440-0812R	1440x13x0.65 mm 8/12 Z
341-13065-1440-1400R	1440x13x0.65 mm 14 Z

ALFRA BAND SAW – RCP 150



DRY-CUT

CUTTING -40% TIME

PATENTED

Prod.-No. 22630

B

Band saw RCP 150

	Prod.-No.
Band saw RCP 150	22630

Technical specifications:

Single-phase motor	2.000 W
Voltage	230 Volt
Cutting speed	35 to 80 min^{-1}
(continuously adjustable with thermal and overload protection)	
Mitring	0 - 45°
Belt dimensions	1.735 x 13 x 0.9 mm
Weight	35 kg

Scope of Supply:

- Portable Band Saw Machine RCP 150 - 230 V
- complete with HSS bi-metal saw band
- Operating manual

Optional:

	Prod.-No.
Small worktable for stand-up-sawing	22601

CUTTING CAPACITY

	∅	▭	▱
0°	150 mm	150 x 150 mm	160 x 140 mm
45°	100 mm	100 x 100 mm	120 x 100 mm

BAND SAW BLADES HSS BI-METAL FOR RCP 150

Prod.-No.	Dimensions
341-13090-1735-0600R	1735x13x0.9 mm 6 Z
341-13090-1735-0610R	1735x13x0.9 mm 6/10 Z
341-13090-1735-1400R	1735x13x0.9 mm 14 Z

DRY-CUT

PATENTED

Prod.-No. 22660

B

Band saw

	Prod.-No.
Band saw RC 210	22660

Technical specifications:

Single-phase motor	1.850 W
Voltage	230 Volt
Cutting speed (constant due to electr. control)	60 / 80 min^{-1}
Mitring	0 - 45°
Belt dimensions	2.140 x 20 x 0.9 mm
Weight	59 kg

Mobile Band Saw Machine, ideal for use on the move in a construction site.

Scope of Supply:

- Portable Band Saw Machine RC 210 - 230 V
- complete with HSS bi-metal saw band
- Operating manual

CUTTING CAPACITY

	∅	▯	◫
0°	175 mm	150 x 150 mm	213 x 150 mm
45°	140 mm	140 x 140 mm	145 x 80 mm

BAND SAW BLADES HSS BI-METAL FOR RC 210

Prod.-No.	Dimensions
341-20090-2140-0406	2140x20x0.9 mm 4/6 Z
341-20090-2140-0610	2140x20x0.9 mm 6/10 Z
341-20090-2140-1400	2140x20x0.9 mm 14 Z

ALFRA Band saw blades HSS-Bi-Metal

Suitable for	Dimensions	Prod.-No.
 ROTACUT RC 105	1335x13x0.65 mm 6 Z	341-13065-1335-0600
	1335x13x0.65 mm 8/12 Z	341-13065-1335-0812
	1335x13x0.65 mm 14 Z	341-13065-1335-1400
 ROTACUT RCP 120	1440x13x0.65 mm 6 Z	341-13065-1440-0600R
	1440x13x0.65 mm 8/12 Z	341-13065-1440-0812R
	1440x13x0.65 mm 14 Z	341-13065-1440-1400R
 ROTACUT RCP 150	1735x13x0.9 mm 6 Z	341-13090-1735-0600R
	1735x13x0.9 mm 6/10 Z	341-13090-1735-0610R
	1735x13x0.9 mm 14 Z	341-13090-1735-1400R
 ROTACUT RC 210	2140x20x0.9 mm 4/6 Z	341-20090-2140-0406
	2140x20x0.9 mm 6/10 Z	341-20090-2140-0610
	2140x20x0.9 mm 14 Z	341-20090-2140-1400

B

Prod.-No. 22601

Work table RCT 6542

	Prod.-No.
Work bench RCT 6542	22601

The advantages at a glance:

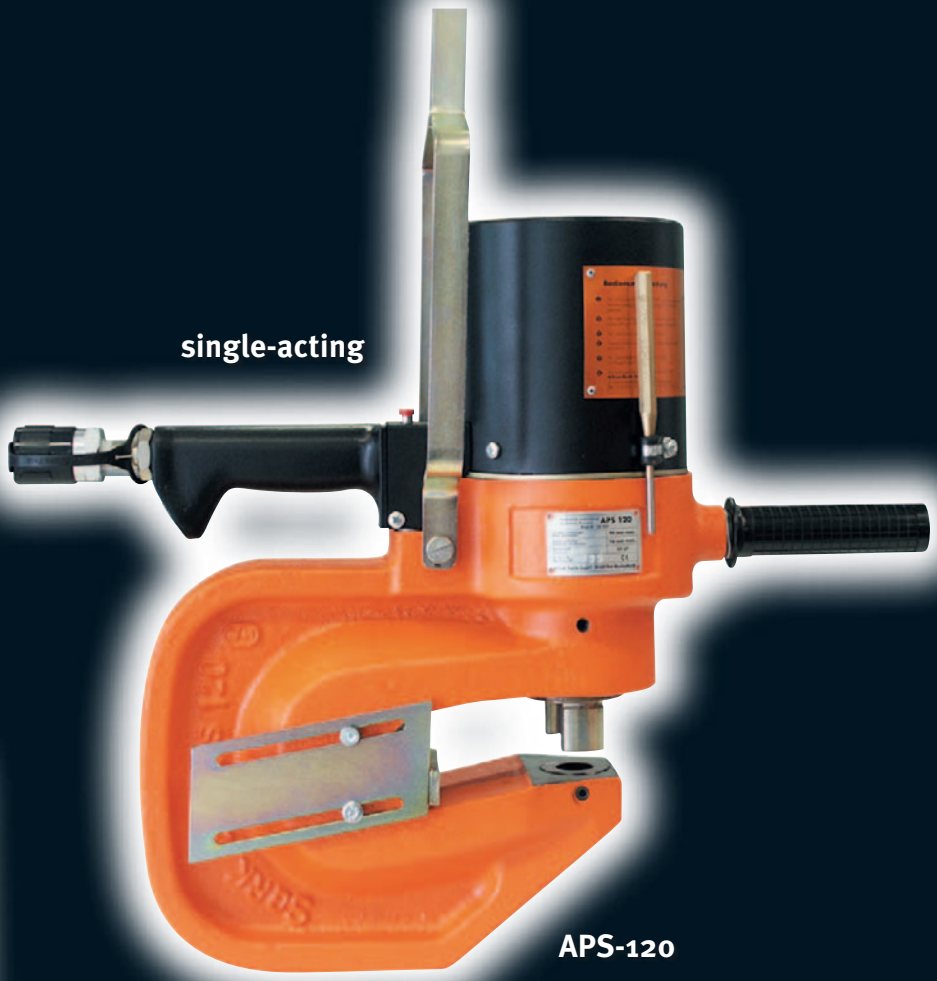
- cost-effective, sturdy, fully collapsible work bench
- ideal for the construction site
- made of steel profiles
- height-adjustable in three steps: 740 - 820 - 870 mm
- for a wide variety of applications
- table size 650 x 420 mm
- for all portable Rotacut® and RotaDry® band saws
- fully collapsible, portable
- weight 11 kg

Scope of Supply:

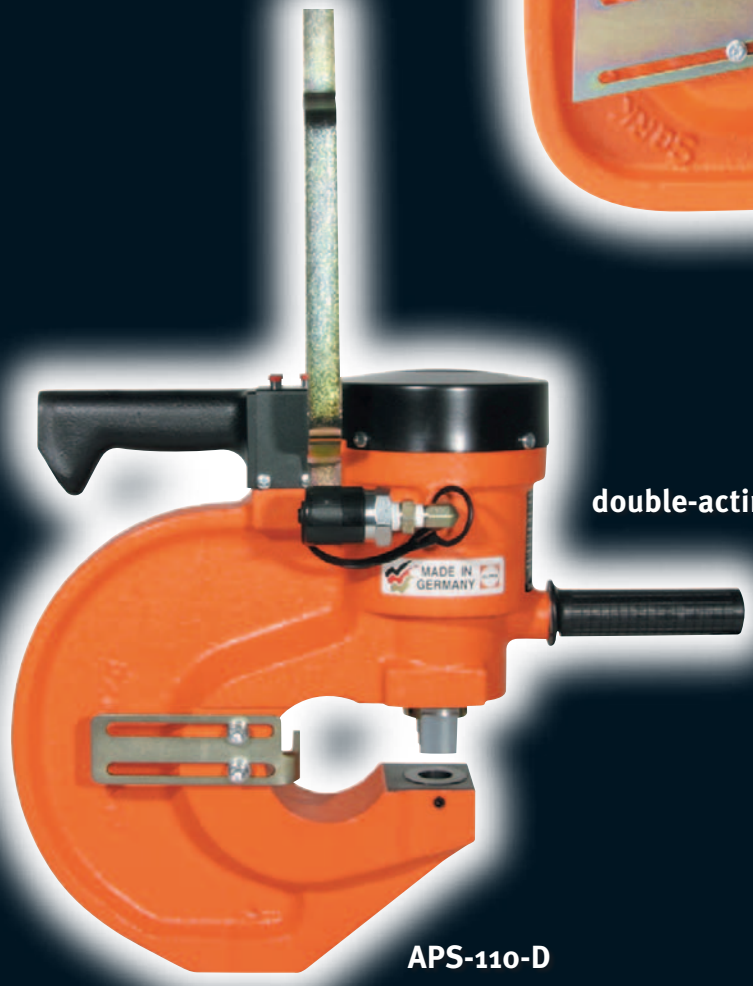
- Portable work bench RCT 6542
- Operating manual

ALFRA PRESS

single-acting



APS-120



double-acting

APS-110-D

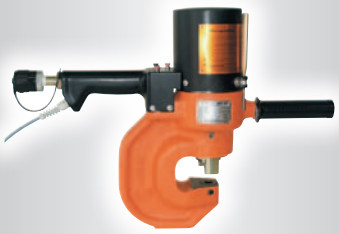
ALFRA Hydraulic Punching Units

- Easily portable, fully automatic Hydraulic Punching Units for steel-, bridge-, container, crane- and metal construction
- Mobile use, no transport of material
- Almost noiseless punching
- Easy Positioning through Stop-function of punch
- For choice:
  Single or Double Action

B

ALFRA-PRESS Hydraulic Punches – Overview

Made in Germany by ALFRA



APS 60

APS 70

	APS 60	APS 70	
Page	B/60	B/60	
Prod.-No.	23001	23002	
Max. hole Ø	18 mm 11/16“	22 mm 7/8“	
Max. oblong hole	– –	22 x 14 mm 7/8” x 9/16”	
Max. material thickness (S235)	10 mm 3/8”	13 mm 1/2“	
Overall punch time with pump ...	SC 05 II-B: approx. 7 sec. SC 17: approx. 4 sec.	SC 05 II-B: approx. 10 sec. SC 17: approx. 4 sec.	
Throat depth	60 mm 2-3/8“	70 mm 2-3/4“	
Max. pressure	700 bar 10.150 psi	700 bar 10.150 psi	
Punching force	22 t	30 t	
Punch stroke	16 mm 5/8“	18 mm 11/16“	
Weight	20.8 kg / 45.8 lbs	29.9 kg / 65.9 lbs	
Scope of Supply	Hydraulic hose, 5 m / spanner Punch/die Ø 14 mm	Hydraulic hose, 5 m / spanner Punch/die Ø 18 mm Depth adjustment, suspension bracket	

HYDRAULIC PUMPS FOR

SC 05 II-B

	SC 05 II-B	
Page	B/61	
Prod.-No.	23007	
Max. pressure	750 bar / 10.670 psi	
Pumping capacity	0.94 l/min at 2.770 rpm	
Motor power	1.100 W, 230V (50 Hz)* * upon request: 230V (60 Hz); 110 V (50 Hz); 110V (60 Hz)	
Oil flow	5 l	
Weight including oil fill volume	28.2 kg / 62.2 lbs	

ALFRA-PRESS Hydraulic Punches – Overview

Made in Germany by ALFRA

	APS 120	APS 110 D
		
	B/60	B/62
	23004	23181
	25 mm 1-1/16“	25 mm 1-1/16“
	25 x 18 mm 1” x 11/16”	25 x 18 mm 1” x 11/16”
	16 mm 5/8“	16 mm 5/8“
	SC 05 II-B: approx. 16 sec. SC 17: approx. 5 sec.	SC 17 D: approx. 8 sec.
	110 mm 4-3/8“	110 mm 4-3/8“
	700 bar 10.150 psi	700 bar 10.150 psi
	44 t	44 t
	25 mm 15/16“	25 mm 15/16“
	47.3 kg / 104.2 lbs	38.5 kg / 84.8 lbs
	Hydraulic hose, 5 m / spanner Punch/die Ø 22 mm Depth adjustment, suspension bracket	Hydraulic hose, 5 m / spanner Punch/die Ø 22 mm Depth adjustment, suspension bracket

B

APS 60 / 70 / 120	HYDRAULIC PUMPS FOR APS 110D
	
SC 17	SC 17 D
B/61	B/62
23170	23186
750 bar / 10.670 psi	750 bar / 10.670 psi
1.5 l/min at 1.370 rpm	1.4 l/min at 1.370 rpm
1.500 W, 230V (50 Hz)* * upon request: 230V (60 Hz); 110V (50 Hz); 110V (60 Hz)	1.500 W, 230V (50 Hz)* * upon request: 230V (60 Hz); 110V (50 Hz); 110V (60 Hz)
17 l	17 l
64 kg / 141 lbs	67 kg / 148 lbs

ALFRA-Press – Hydraulic Punches, Single-Action

Made in Germany by ALFRA

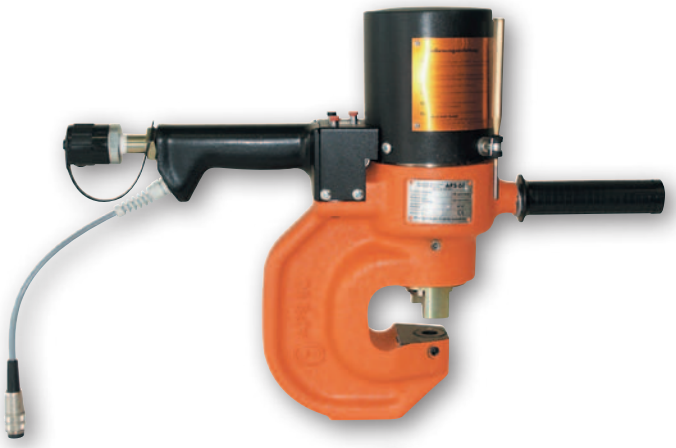
ALFRA-Press APS 60

	Prod.-No.
Hydraulic punching unit with Automatic return using Neoprene spring	23001

Technical specifications:

max. hole Ø mm	18 mm
max. material thickness as per DIN S275	10 mm
total punch time	
with pump SC 05 II B	approx. 7 sec.
with pump SC 17	approx. 4 sec.
throat depth	60 mm
max. pressure	700 bar (10.000 psi)
punching force	22 t
punch stroke	16 mm
weight	20.8 kg

Scope of Supply:
Punching unit, control cable, hydraulic hose 5 m, spanner,
1 x punch and die each, Ø 14 mm



Prod.-No. 23001

ALFRA-Press APS 70

	Prod.-No.
Hydraulic punching unit with Automatic return using Neoprene spring	23002

Technical specifications

max. hole Ø mm	22 mm
max. oblong holes	22 x 14 mm
max. material thickness as per DIN S275	13 mm
total punch time	
with pump SC 05 II B	10 sec.
with pump SC 17	4 sec.
throat depth	70 mm
max. pressure	700 bar (10.000 psi)
punching force	30 t
punch stroke	18 mm
weight	29.9 kg

Scope of Supply:
Punching unit, control cable, hydraulic hose 5 m, spanner,
1 x punch and die each Ø 18 mm, 1 depth adjustment, 1 suspension bracket

Prod.-No. 23002

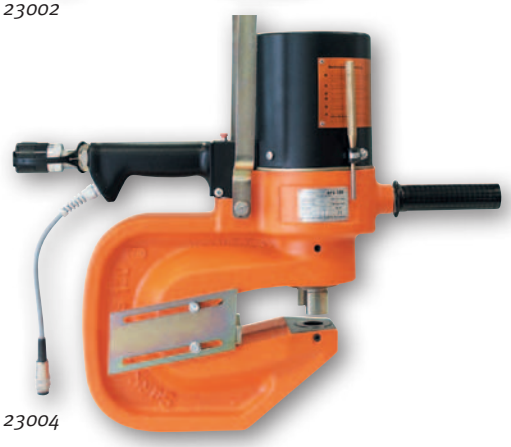
ALFRA-Press APS 120

	Prod.-No.
Hydraulic punching unit with automatic return using Neoprene spring	23004

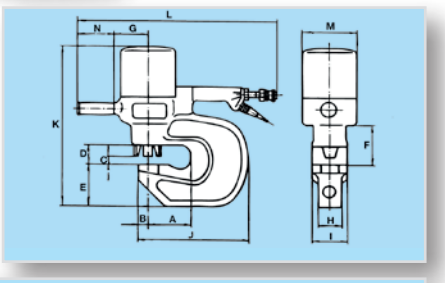
Technical specifications

max. hole Ø mm	25 mm
max. oblong holes	25 x 18 mm
max. material thickness as per DIN S275	16 mm
total punch time	
with pump SC 05 II B	16 sec.
with pump SC 17	5 sec.
throat depth	110 mm
max. pressure	700 bar (10.000 psi)
punching force	44 t
punch stroke	25 mm
weight	47.3 kg

Scope of Supply:
Punching unit, control cable, hydraulic hose 5 m, spanner,
1 x punch and die each Ø 22 mm, 1 depth adjustment, 1 suspension bracket



Prod.-No. 23004



Important technical notice:
Standard punching units are not normally suitable for punching high-strength tooling steel, stainless steels or boiler-plate steel. Refer to us for technical advice for punching work in this application range.

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N
APS 60	60	17	12	51	73	92	75	40	74	162	360	552	110	135
APS 70	70	24	15	51	85	100	80	40	80	204	382	562	125	135
APS 120	110	25	18	51	111	110	90	68	100	285	442	585	144	135

B

Two hydraulic pumps are fitted to operate the punching unit

ALFRA Hydraulic Pump SC 05 II-B for APS 60, 70, 120

		Prod.-No.
ALFRA hydraulic pump SC 05 II-B	230V 50 Hz	23007
ALFRA hydraulic pump SC 05 II-B	230V 60 Hz	23007.230-60Hz*
ALFRA hydraulic pump SC 05 II-B	110V 50 Hz	23007.110-50Hz*
ALFRA hydraulic pump SC 05 II-B	110V 60 Hz	23007.110-60Hz*

Technical specifications:

max. operating pressure	750 bar (10.670 psi)
pump output	0.94 l/min at 2.770 rpm.
oil fill amount	5.0 l
single-phase motor, 2.770 rpm.	1.100 W 110v or 230v 50 Hz or 60 Hz
weight incl. oil fill volume	28.2 kg

* Upon request

Prod.-No. 23007

ALFRA Hydraulic Pump SC 17 for APS 60, 70, 120

		Prod.-No.
ALFRA hydraulic pump SC 17	230V 50 Hz	23170
ALFRA hydraulic pump SC 17	230V 60 Hz	23170.230-60Hz*
ALFRA hydraulic pump SC 17	110V 50 Hz	23170.110-50Hz*
ALFRA hydraulic pump SC 17	110V 60 Hz	23170.110-60Hz*

Complete with control system and switching cases.

These new hydraulic pumps were developed in order to drastically reduce punching times. These are particularly suited to workshop use.

Technical specifications:

max. operating pressure	750 bar (10.670 psi)
pump output	at 50 Hz, 1.50 l/min. at 1.370 rpm.
oil fill amount	17 l
single-phase motor, 1.450 rpm.	1.500 W 230 V 50 Hz
weight including oil fill volume and transport rollers	64 kg
dimensions L x W x H	550 x 370 x 560 mm

* Upon request

Prod.-No. 23170

SC 17

B

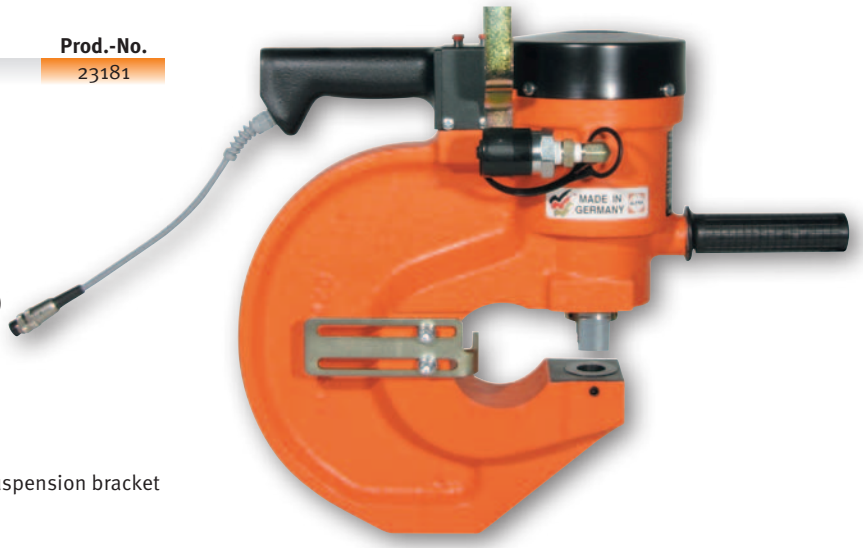
ALFRA-Press APS 110D

	Prod.-No.
Hydraulic punching unit with automatic return	23181

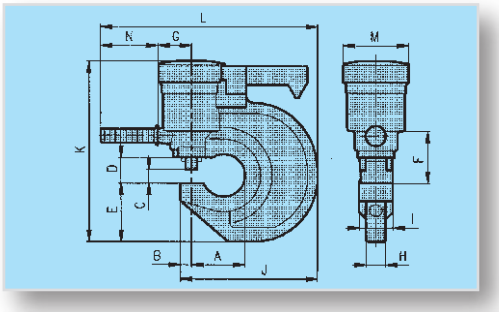
Technical specifications

max. hole Ø mm	25 mm
max. oblong holes	25 x 18 mm
max. material thickness as per DIN S275	16 mm
total punch time	
with pump SC 17-D	8 sec.
throat depth	110 mm
max. pressure	700 bar (10.000 psi)
punching force	44 t
punch stroke	25 mm
weight	38.5 kg

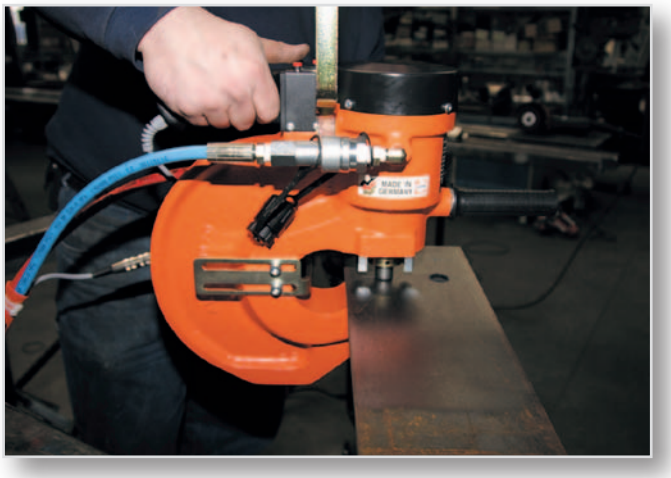
Scope of Supply:
Punching unit, control cable, hydraulic hose 5 m, spanner,
1 x punch and die each Ø 22 mm, 1 depth adjustment, 1 suspension bracket



Prod.-No. 23181



Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N
APS 110D	110	24	18	55	90	112	73	41	78	295	387	468	141	124



Important technical notice:
Standard punching units are not normally suitable for punching high-strength tooling steel, stainless steels or boiler-plate steel.
Refer to us for technical advice for punching work in this range of application.

ALFRA Hydraulic Pump SC 17D for APS 110D

Dual-action

		Prod.-No.
ALFRA hydraulic pump SC 17D	230V 50 Hz	23186
ALFRA hydraulic pump SC 17D	230V 60 Hz	23186.230-60Hz*
ALFRA hydraulic pump SC 17D	110V 50 Hz	23186.110-50Hz*
ALFRA hydraulic pump SC 17D	110V 60 Hz	23186.110-60Hz*

Complete with control system and switching cases.
* Upon request

Connection for double hose package

With connection for double hose package
These new hydraulic pumps were developed in order to drastically reduce punching times. These are particularly suited to workshop use.

Technical specifications:

max. operating pressure	750 bar (10.670 psi)
pump output	50 HZ 1.40 l/min. at 1.370 rpm.
oil fill amount	17 l
single-phase motor, 1.450 rpm.	1.500 W 230 V 50 Hz
weight including oil fill volume and transport rollers	67 kg
dimensions L x W x H	550 x 370 x 560 mm

Prod.-No. 23186

SC 17 D

APS Go

For all types of APS hydraulic punching units.

For all types of APS hydraulic punching units

APS GO enables you to easily move our punching units over the steel bar.

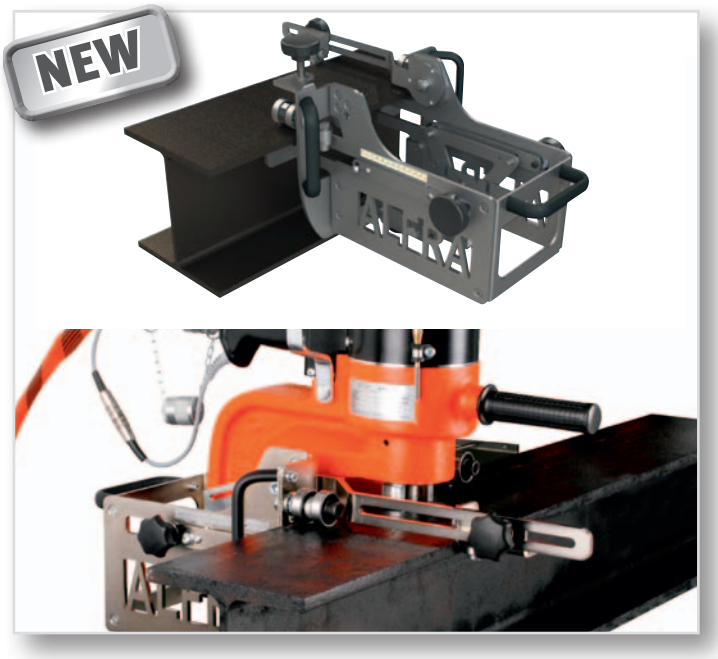
An adapter plate connects the punching unit to the moving system, and allows this to be removed at any time.

This generates enormous time savings, especially when punching at identical space intervals, as the measurement needs only to be set once, and the interval lengths are easy to measure.

Massive, solid heavy-duty rollers and the side-mounted hand grips enable completely effortless movement over the steel bar.

Dimensions (L x W x H): 700 x 355 x 280 mm
Weight: 14 kg / 30.8 lbs

	Prod.-No.
APS Go	23155



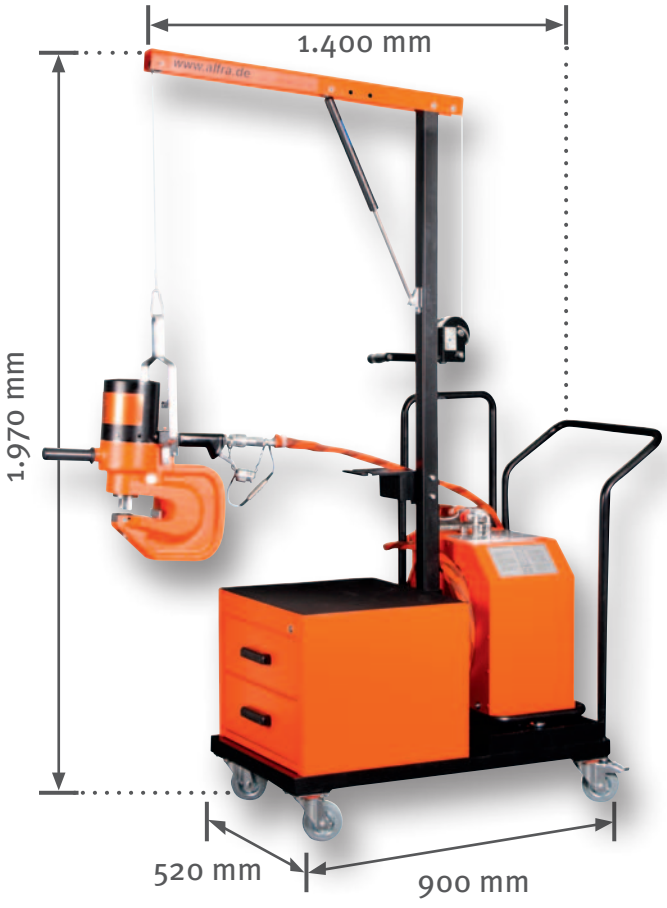
Service-Boy

For all types of APS hydraulic punching units

This practical, time and energy-saving trolley makes handling of our ALFRA Press hydraulic punching units much easier.
Absolutely necessary for every steel and metal worker wherever punching units are already in use.

- Gas pressure shock absorbers allow the easy positioning of the punching head on the steel bar.
- The hydraulic pump remains on the trolley, and must not be dragged along behind you.
- Work tool cabinet with drawers for the clear arrangement of punching work tools and accessories.
- Solid and secure, TÜV-tested design – and more cost-effective than any "DIY-build".
- Dimensions (L x W x H): 900 x 520 x 1.970 mm
- Weight: 74 Kg / 163 lbs

	Prod.-No.
Service-Boy Complete with tool cabinet and drawers	23160



Prod.-No. 23160 (no punching unit /pump + accessories)

B

For ALFRA-Press hydraulic hole punches

		Prod.-No.
With **clamping device**, spring fracture safety device, wire rope hoist, 2.0 m		
9362 B	15 - 20 kg	23150
9363 B	20 - 25 kg	23151
9366 B	35 - 45 kg	23152
9367 B	45 - 55 kg	23154
according to EN 15112		

Note:

The spring balancer should only be operated when the punching unit is suspended and/or under load.

Prod.-No. 23152

Punch for

APS 120 / APS 110D	APS 70	APS 60	Ø mm	Ø Inches	Prod.-No.
■	■	■		1/4"	23-01-06-IN
■	■	■	7		23-01-07
■	■	■		5/16"	23-01-08-IN
■	■	■	8		23-01-08
■	■	■	9		23-01-09
■	■	■		3/8"	23-01-10-IN
■	■	■	10		23-01-10
■	■	■	11		23-01-11
■	■	■		7/16"	23-01-11-IN
■	■	■	12		23-01-12
■	■	■		1/2"	23-01-13-IN
■	■	■	13		23-01-13
■	■	■	14		23-01-14
■	■	■		9/16"	23-01-14-IN
■	■	■	15		23-01-15
■	■	■		5/8"	23-01-16-IN
■	■	■	16		23-01-16
■	■	■	17		23-01-17
■	■	■		11/16"	23-01-17-IN
■	■	■	18		23-01-18
■	■	-	19		23-01-19
■	■	-		3/4"	23-01-19-IN
■	■	-	20		23-01-20
■	■	-		13/16"	23-01-21-IN
■	■	-	21		23-01-21
■	■	-	22		23-01-22
■	■	-		7/8"	23-01-23-IN
■	-	-	23		23-01-23
■	-	-		15/16"	23-01-24-IN
■	-	-	24		23-01-24
■	-	-	25"		23-01-25
■	-	-		1"	23-01-25-IN

*) with lock nut, Prod.-No. 23004-056 B

Dies for

APS 120 / APS 110D	APS 70	Ø mm	Ø Inches	Prod.-No.
■	■		1/4"	23-02-06-IN
■	■	7		23-02-07
■	■		5/16"	23-02-08-IN
■	■	8		23-02-08
■	■	9		23-02-09
■	■		3/8"	23-02-10-IN
■	■	10		23-02-10
■	■	11		23-02-11
■	■		7/16"	23-02-11-IN
■	■	12		23-02-12
■	■		1/2"	23-02-13-IN
■	■	13		23-02-13
■	■	14		23-02-14
■	■		9/16"	23-02-14-IN
■	■	15		23-02-15
■	■		5/8"	23-02-16-IN
■	■	16		23-02-16
■	■	17		23-02-17
■	■		11/16"	23-02-17-IN
■	■	18		23-02-18
■	■	19		23-02-19
■	■		3/4"	23-02-19-IN
■	■	20		23-02-20
■	■		13/16"	23-02-21-IN
■	■	21		23-02-21
■	■	22		23-02-22
■	■		7/8"	23-02-23-IN
■	-	23		23-02-23
■	-		15/16"	23-02-24-IN
■	-	24		23-02-24
■	-	25"		23-02-25
■	-		1"	23-02-25-IN

Prod.-No. 23-01-..

Prod.-No. 23-02-..

Dies for

APS 60	Ø mm	Ø Inches	Prod.-No.
■	7		23-03-07
■	8		23-03-08
■	9		23-03-09
■	10		23-03-10
■	11		23-03-11
■	12		23-03-12
■	13		23-03-13
■	14		23-03-14
■	15		23-03-15
■	16		23-03-16
■	17		23-03-17
■	18		23-03-18

When selecting your tool, please note:
For material DIN S233: maximum material thickness = 0.8 x hole Ø
For material DIN S275: maximum material thickness = 0.5 x hole Ø

Tip:
Punches and dies can be replaced and used for Nitto / Selfer Punching systems.

Tip:
Please oil punch from time to time, when material is heavily oxidized.

5°-bevelled dies for

APS 120 APS 110D	APS 70	Ø mm	Prod.-No.
■	■	10	23-04-10
■	■	11	23-04-11
■	■	12	23-04-12
■	■	13	23-04-13
■	■	14	23-04-14
■	■	15	23-04-15
■	■	16	23-04-16
■	■	17	23-04-17
■	■	18	23-04-18
■	■	19	23-04-19
■	■	20	23-04-20
■	■	21	23-04-21
■	■	22	23-04-22
■	-	23	23-04-23
■	-	24	23-04-24
■	-	25	23-04-25

Prod.-No. 23-04-.. (For girders with angled flanges)

Oblong punches for

mm	APS 120 APS 110D	APS 70	Punch Prod.-No.	Die Prod.-No.
16 x 8	■	■	23-01-1608	23-02-1608
18 x 9	■	■	23-01-1809	23-02-1809
18 x 11	■	■	23-01-1811	23-02-1811
20 x 10	■	■	23-01-2010	23-02-2010
20 x 12	■	■	23-01-2012	23-02-2012
20 x 14	■	■	23-01-2014	23-02-2014
22 x 11	■	■	23-01-2211	23-02-2211
22 x 14	■	■	23-01-2214	23-02-2214
24 x 12	■	-	23-01-2412	23-02-2412
25 x 9*	■	-	23-01-2509	23-02-2509
25 x 12*	■	-	23-01-2512	23-02-2512
25 x 13*	■	-	23-01-2513	23-02-2513
25 x 14*	■	-	23-01-2514	23-02-2514
25 x 18*	■	-	23-01-2518	23-02-2518

Prod.-No. 23-02-..

Prod.-No. 23-01-..

*) with lock nut, Prod.-No. 23004-56B
Other dimensions are available upon request

Spare parts

	Prod.-No.
Spare HD connection cable, **5 m** complete with control cable and coupling	23015
Spare HD connection cable, ***10 m** complete with control cable and coupling	23016
Spare HD connection cable, ***15 m** complete with control cable and coupling	23017
Spare HD connection cable, **5 m** For APS 110D (dual-action) complete with control cable and coupling	23020

Prod.-No. 23015

Prod.-No. 23020

Note:
The pressure build-up extends at 10 m to approx. 4 sec., and at 15 m to approx. 6 sec.

Lock nut for punch Ø 7 - 24 mm	23004-056A
Lock nut for punch Ø 25 mm (APS 120 / 110D only)	23004-056B
Lock nut for punch Ø 26 mm (upon request)	23004-056C

*Prod.-No. 23004-056A
For punches Ø 7 - 24 mm*

*Prod.-No. 23004-056B
for punches Ø 25 mm*

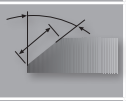
▶ Universal edge-milling and deburring device

ALFRA Edge-Milling and Deburring Devices – Overview

Made in Germany by ALFRA

KFV

KFH 150

	KFV	KFH 150
Page	B/72	B/74
Prod.-No.	25260	25100
Prism mounting	–	L = 150 mm / B = 20/40 mm
End mill Ø	45° or straight Ø 6 mm or 8 mm	TCT as per DIN, Ø 8 mm
Maximum bevel width ► **in multiple operations** 	1 - 3 mm , with fine adjustment	1 - 5 mm, depending on material, with fine adjustment
Edge angle	45° and radii	45°
High-performance motor	✔	✔
Motor power	500 Watt	1.050 Watt
Stepless RPM control	11.000 - 25.000 min^{-1} with softstart	8.000 – 25.000 min^{-1}
Full-wave control electronics	✔	✔
Clamping neck Ø	43 mm	43 mm
Voltage	230 V, 50 – 60 Hz + 110 V, 50 – 60 Hz	230 V, 50 – 60 Hz + 110 V, 50 – 60 Hz
Weight	1.8 kg	3.5 kg
Dimensions (L x W x H)	260 x 190 x 150 mm	340 x 150 x 110 mm
Cord length	3.0 m	3.0 m

MOTORS

Prod.-No.	230V: 25193	110V: 25193.110	230V: 25191	110V: 25191.110

ALFRA Edge-Milling and Deburring Devices – Overview

Made in Germany by ALFRA

	KFT 250	KFH 250	KFT 500
			
	B/76	B/78	B/80
	25110	25130	25140
	L = 250 mm / B = 40 mm	L = 250 mm / B = 70 mm	L = 500 mm / B = 70 mm
	TCT as per DIN, Ø 8 mm	TCT as per DIN, Ø 12 mm	TCT as per DIN, Ø 12 mm
	1 - 5 mm, depending on material , with fine adjustment	14 mm DIN S233-S235 6.5 mm stainless steel , with fine adjustment	1.5 - 14 mm , with fine adjustment
	45°	Continuously adjustable, 30° - 45° - 30° Right and left for 60° welding bevels. Also for radii R = 3.0, 4.0 and 5.0 using radius TCT cutter	45°
	✔	✔	✔
	1.050 Watt	1.800 Watt	1.800 Watt
	8.000 – 25.000 min^{-1}	2.500 – 22.500 min^{-1}	2.500 – 22.500 min^{-1}
	✔	✔	✔
	43 mm	63 mm	63 mm
	230 V, 50 – 60 Hz + 110 V, 50 – 60 Hz	230 V, 50 – 60 Hz + 110 V, 50 – 60 Hz	230 V, 50 – 60 Hz + 110 V, 50 – 60 Hz
	5.0 kg	12.8 kg	18 kg
	360 x 250 x 110 mm	480 x 315 x 145 mm	450 x 500 x 160 mm
	3.0 m	3.0 m	3.0 m
	MOTORS		
			
	230V: 25191 / 110V: 25191.110	230V: 25192 / 110V: 25192.110	230V: 25192 / 110V: 25192.110

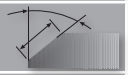
B

ALFRA Edge-Milling and Deburring Devices – Overview

Made in Germany by ALFRA

KFK 5

SKF 63-15

	KFK 5	SKF 63-15	
Page	B/84	B/86	
Prod.-No.	25200	25010	
Prism mounting	–	Guide mounting with rollers 240 x 80 mm / 220 x 75 mm	
End mill Ø	Inserts	Inserts	
Maximum bevel width ▶ **in multiple operations** 	45°: Steel 0 - 5 mm, aluminium 0 - 8 mm 30°: Steel 0 - 4 mm, aluminium 0 - 6 mm	15 mm max	
Edge angle	45° (optional 30°, 60°) Radii R = 2.5	15° - 20° - 30° - 45° - 60° adjustable	
High-performance motor	✔	✔	
Motor power	1.530 Watt	1.100 Watt	
Stepless RPM control	4200 - 11.000 min^{-1} with softstart	2870 min^{-1}	
Full-wave control electronics	✔ with thermal and overload protection	✔ with thermal and overload protection	
Right/left run	–	–	
Voltage	230 V, 50 – 60 Hz + 110 V, 50 – 60 Hz	230 V, 50 Hz + 110 V, 50 – 60 Hz	
Weight	4.2 kg	21.0 kg	
Dimensions (L x W x H)	L = 450 mm	440 x 200 x 280 mm	
Cord length	3.0 m	3.0 m	

	 SKS-15 AUTO
	B/88
	25950
	–
	Shearing blades: Ø 100 mm
	0.5 - 15 mm
	15° - 50° continuously adjustable
	–
	1.500 Watt
	2800 min^{-1}
	–
	–
	220/380V, 50 – 60 Hz
	88 kg
	450 x 400 x 820 mm
	–

ALFRA Edge Deburring Unit

KFV

Four applications – one device

Prisms, free-hand

Prisms, stationary

Contours, stationary

Contours, free-hand

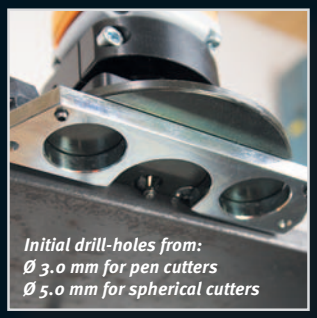
B

ALFRA KFV Edge Deburring Unit

Made in Germany by ALFRA

Drive motor (with clamping flange Ø 43 mm) 500 Watt, RPM control 11.000 - 25.000 rpm, quick-change-fitting for use with attachments.

- Contour milling fitting with support table, 72 x 64 mm
- Table milling fitting with support plate, Ø 120 mm
- Tool-less milling height setting.
- Handy and powerful.
- For construction steel, stainless steel, aluminium and other material.
- Also for radii



Technical specifications:

Bevel angle:	45°
Bevel width 45°:	1 - 3 mm, continuously adjustable
Radius:	R = 1.0 – 1.5 – 2.0
Motor voltage:	230 V 50-60Hz; 110V 50-60Hz
Rating:	500 W
Speed:	11.000 - 25.000 min^{-1} with softstart with thermal and overload protection
Feed:	manual
Weight:	1.8 kg

Scope of Supply:

- KFV deburring and bevelling device, drive motor with clamping flange, Ø 43 mm
- Quick-change fitting for use with attachments
- Contour milling fitting with support table, 72 x 64 mm
- Table milling fitting with support plate, Ø 120 mm
- Prism milling fitting with guide rails, 150 mm length
- Tensioning shank for vice
- Collet 6 mm (mounted), collet 8 mm (included)
- One set of operating tools
- Carrying case
- Guide stop for outer edges
- 1 Operational manual

		Prod.-No.
Edge-milling unit, KFV, complete	230V 50-60Hz	25260
Edge-milling unit, KFV, complete	110V 50-60Hz	25260.110

ALFRA Edge Deburring Unit

KFH 150

B

ALFRA Edge Deburring Unit – KFH 150

Made in Germany by ALFRA

The unit enables work pieces to be worked wherever machined edge milling is too expensive.

Hand-operated model for 45° deburring of larger work pieces, profiles, supports, sheet metal panels, with 90° mounting.

- Hand-operated, for 45° bevels.
- Optimal guidance and safe handling.
- Commercially available solid carbide cutter Ø 8 mm.

Cost reduction:
Most of the cutting area can be accessed by moving the milling cutter in the collet.

Technical specifications:

Prism mounting 45°:	L = 150 mm W = 20/40 mm
End mill:	Solid carbide as per DIN, Ø 8 mm
Maximum bevel width:	1 - 5 mm, dependent on material with fine adjustment
High-performance motor	With full-wave control electronics
Motor voltage:	230V 50-60Hz; 110V 50-60Hz
Motor power:	1.050 W
Electronics:	8.000 – 25.000 min^{-1}
Clamping neck Ø:	43 mm
Weight:	3.5 kg

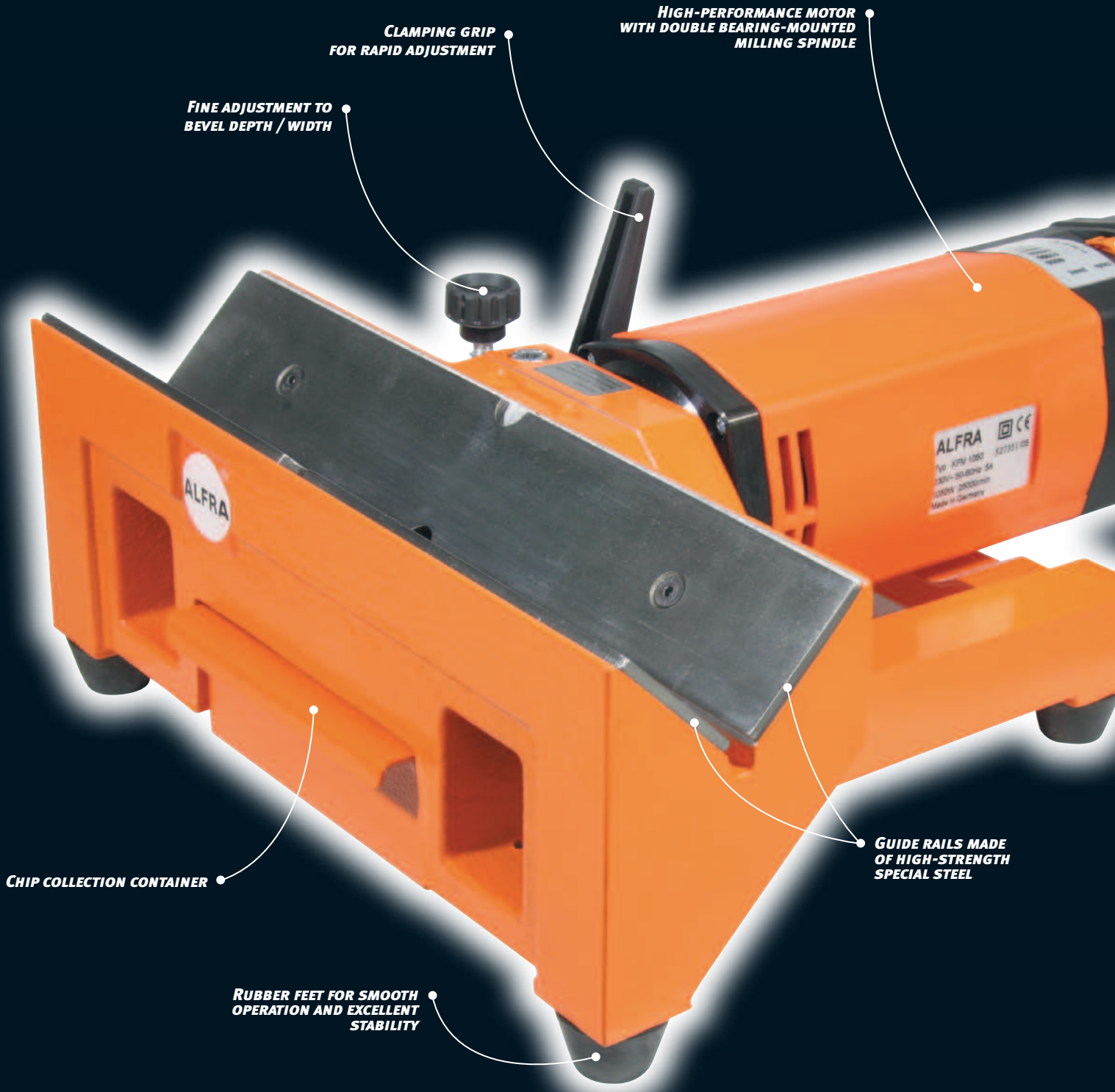
Scope of Supply:

- Deburring unit KFH 150
- 1 set of guide rails
- 1 collet 8 mm Ø and clamping nut
- 1 set of operating manual

		Prod.-No.
Deburring unit KFH 150	230V 50-60Hz	25100
Deburring unit KFH 150	110V 50-60Hz	25100.110
Adapter head for deburring unit KFH 150		25109

ALFRA Edge Deburring Unit

KFT 250



B

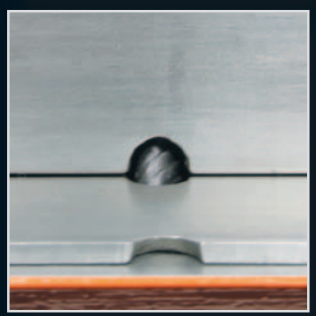
ALFRA Edge Deburring Unit – KFT 250

Made in Germany by ALFRA

Simple, cost-effective deburring unit for light to medium use.

To obtain perfectly milled surfaces with DIN 6527 solid carbide end mills in rolling sections with no secondary milling.

Position I: Material thickness from 4.5 mm



Position II: Material thickness from 1.0 mm

Technical specifications:

Milling area:	Bevel angle 45°
Prism mounting position I:	Material thickness from 4.5 mm
Position II:	Material thickness from 1.0 mm
Prism mounting:	L = 250 mm
Guide rail:	W = 40 mm
Maximum bevel width:	5 mm, dependent on the material. Also for stainless steel when selecting a suitable-milling cutter and RPM control, and cuts (spray edges with cutting oil).
Weight:	5.0 kg

High-performance drive motor: 1.050 W
Triple bearing
Double bearing-mounted milling spindle
Spindle bearings with high-speed lubrication

Standard clamping flange Ø:	43 mm
Stepless RPM control:	8.000 - 25.000 min^{-1}
Motor voltage:	230V 50-60Hz; 110V 50-60Hz

Full-wave control electronics –
When under load, the tachogenerator provides additional power.

Foot switch (optional)
Prod.-No. 25116

Scope of Supply:

- Deburring unit KFT 250 with fine milling depth adjustment
- 1 set of guide rails
- 1 collet 8 mm Ø and clamping nut
- 1 chip collection container
- 1 set of operating tools
- 1 set of operating manual

Cost reduction:
Most of the cutting area can be accessed by moving the milling cutter in the collet.

		Prod.-No.
Deburring unit KFT 250	230V 50-60Hz	25110
Deburring unit KFT 250	110V 50-60Hz	25110.110

Table for deburring unit KFT 250	25111

Special Accessories:

ALFRA foot switch with device cable socket	230V	25116
ALFRA foot switch with device cable socket	110V	25116.110

ALFRA Edge Deburring Unit

KFH 250

B

ALFRA Edge Deburring Unit – KFH 250

Made in Germany by ALFRA

Hand-held model specially developed for working on edges (visible edges) and bevelling up to 60° on large rectangular work pieces.

- A vital accessory for mechanical engineering.
- Wide speed range for different materials.
- Individually adjustable milling depth.
- Easy to handle and guide with two support rollers.

Clamping grip for rapid adjustment

Guide rollers facilitate feeding

Fine adjustments to milling depth/bevel width

Cost reduction:
Most of the cutting area can be accessed by moving the milling cutter in the collet.

Technical specifications:

Prism mounting:	L = 250 mm W = 70 mm
Shank cutter Ø:	12 mm DIN 6527
Maximum bevel width:	14 mm (dependent on the material)
Edge angle:	continuously adjustable swivelling, 30°-45°-30°, right and left. Also for radii r = 3.0, 4.0, 5.0 using radius-solid-carbide milling cutter
Rating:	1.800 W (high-quality motor for difficult deburring tasks)
Stepless RPM control:	2.500 – 22.500 min^{-1}
Full-wave control electronics – When under load, the tachogenerator provides additional power.	
Clamping neck Ø:	63 mm
Motor voltage:	230V 50-60Hz; 110V 50-60Hz
Weight:	12.8 kg

Scope of Supply:

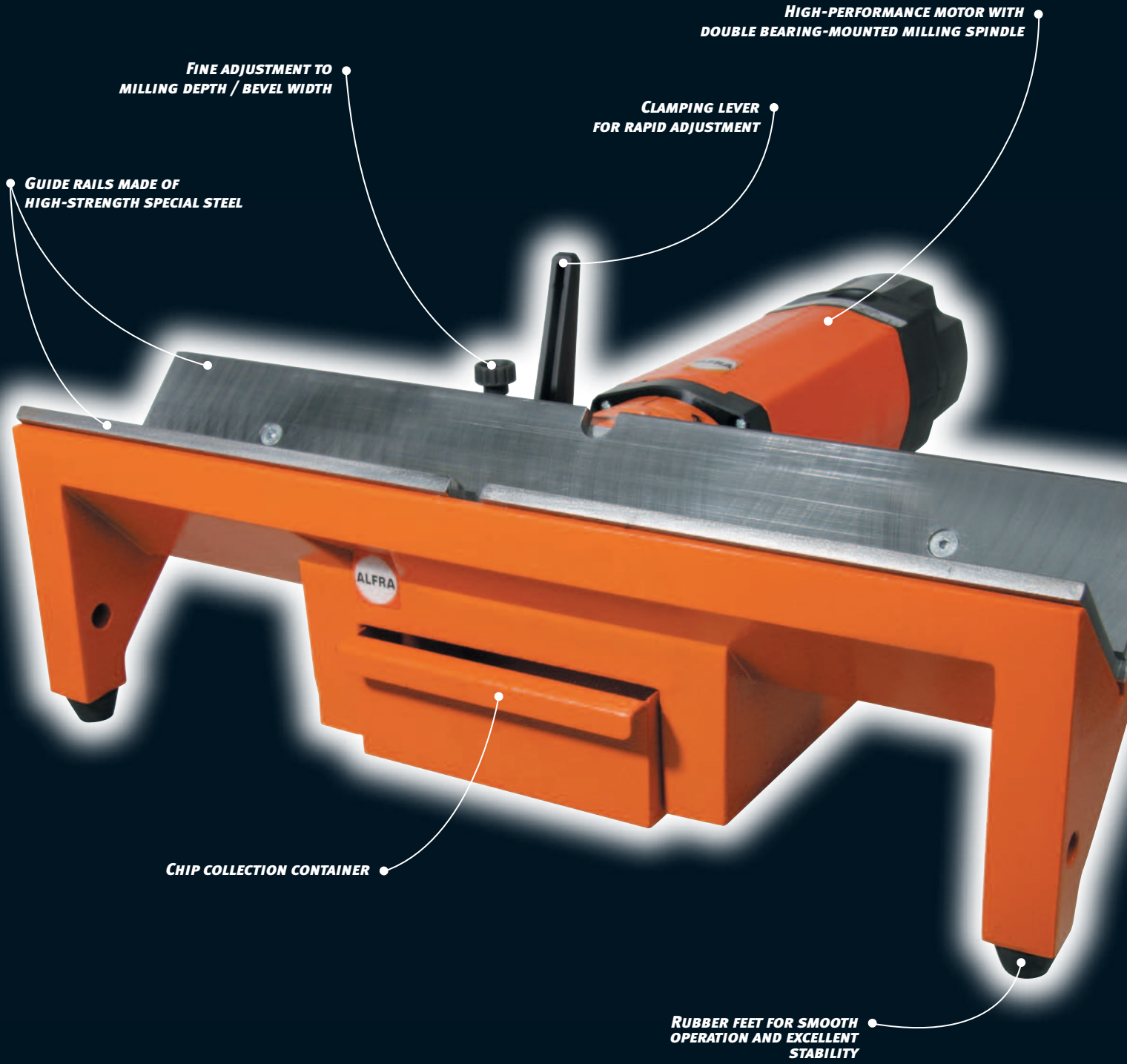
- Deburring unit KFH 250 with fine milling depth adjustment
- 1 set of guide rails with two support rollers
- 1 collet Ø 12 mm and clamping nut
- 1 set of operating tools
- 1 set of operating manual

		Prod.-No.
Deburring unit KFH 250	230V 50-60Hz	25130
Deburring unit KFH 250	110V 50-60Hz	25130.110
Adapter head for deburring unit KFH 250		25131

Prism mounting and support rollers made of wear-resistant plastic upon request.

ALFRA Edge Deburring Unit

KFT 500



B

ALFRA Edge Deburring Unit – KFT 500

Made in Germany by ALFRA

For medium- and large-sized work pieces.
Maximum bevel width 14 mm

To obtain perfectly milled surfaces with solid carbide end mills in rolling sections with no secondary milling.

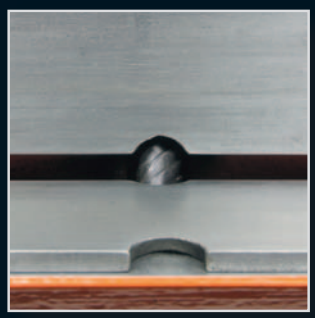
Exact deburring with with self-generating milling cutter

Foot switch (optional) Prod.-No. 25116

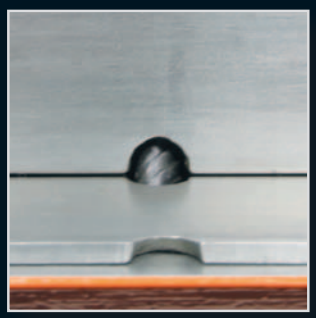
Fine adjustments to milling depth/ bevel width

Technical specifications:

Deburring area:	Bevel angle 45°
Prism mounting position I:	Material thickness 6 - 14 mm
Position II:	Material thickness from 1.5 mm
Prism mounting:	L = 500 mm
Guide rail:	W = 70 mm
Maximum bevel width:	14 mm, dependent on the material Also for stainless steel when selecting a suitable milling cutter and RPM control, and cut division (spray edges with cutting oil). Also for radii R 3.0, 4.0, 5.0 using radius solid carbide cutter
High-performance drive motor:	1.800 W
Triple bearing, double bearing-mounted milling spindle	
Spindle bearings with high-speed lubrication	
Clamping neck Ø:	63 mm
Stepless RPM control:	2.500 – 22.500 min^{-1}
Motor voltage:	230V 50-60Hz; 110V 50-60Hz
Full-wave control electronics – when under load, the tachogenerator provides additional power	
Weight:	18 kg



Position I: Material thickness 6 - 14 mm



Position II: Material thickness from 1.5 mm

Scope of Supply:

- Deburring unit KFT 500 with fine milling depth adjustment
- 1 set of guide rails
- 1 collet Ø 12 mm and clamping nut DIN 6499
- 1 chip collection container
- 1 set of operating tools
- 1 set of operating manual

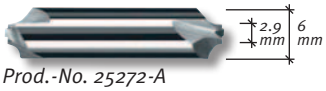
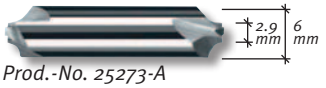
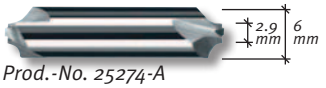
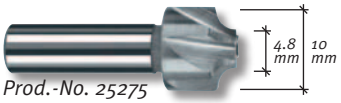
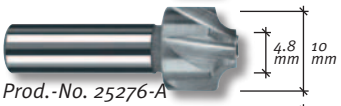
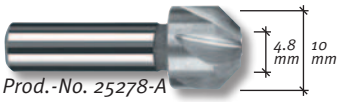
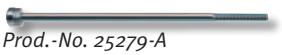
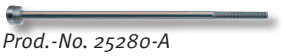
Cost reduction:
Most of the cutting area can be accessed by moving the milling cutter in the collet.

		Prod.-No.
Deburring unit KFT 500	230V 50-60Hz	25140
Deburring unit KFT 500	110V 50-60Hz	25140.110
Table for deburring unit KFT 500		25141
ALFRA foot switch with device cable socket	230V	25116
ALFRA foot switch with device cable socket	110V	25116.110

Shorter run times and motor-saving work.
Function: Foot switch pressed – socket is live
Foot switch released – power supply interrupted

ALFRA – Carbide Deburring End Mills for KFV

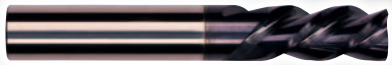
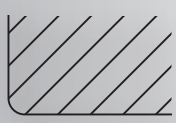
Made in Germany

Description	Prod.-No.				
Deburring end mill 45° Ø 6 mm, tip Ø 2.5 mm, length 31 mm, 3 cuts Suitable for: stainless steel, cast iron	25270-A	■	■		 Prod.-No. 25270-A
Deburring end mill 45° Ø 6 mm, tip Ø 2.5 mm, length 31 mm, 5 cuts Suitable for: stainless steel, cast iron	25271-A	■	■		 Prod.-No. 25271-A
Deburring end mill, radius R = 0.5 Ø 6 mm, tip Ø 2.9 mm, length 31 mm, 3 cuts Radius R = 0.5 Suitable for: stainless steel, cast iron	25272-A	■	■		 Prod.-No. 25272-A
Deburring end mill, radius R = 1.0 Ø 6 mm, tip Ø 2.9 mm, length 31 mm, 3 cuts Suitable for: stainless steel, cast iron	25273-A	■	■		 Prod.-No. 25273-A
Deburring end mill, radius R = 1.5 Ø 6 mm, tip Ø 2.9 mm, length 31 mm, 3 cuts Suitable for: stainless steel, cast iron	25274-A	■	■		 Prod.-No. 25274-A
Deburring end mill, radius R = 1.0 Ø 10 mm, tip Ø 4.8 mm, length 30 mm, 6 cuts Suitable for: stainless steel, cast iron	25275-A	■	■		 Prod.-No. 25275
Deburring end mill, radius R = 1.5 Ø 10 mm, tip Ø 4.8 mm, length 30 mm, 6 cuts Suitable for: stainless steel, cast iron	25276-A	■	■		 Prod.-No. 25276-A
Deburring end mill, radius R = 2.0 Ø 10 mm, tip Ø 4.8 mm, length 30 mm, 6 cuts Suitable for: stainless steel, cast iron	25277-A	■	■		 Prod.-No. 25277-A
Deburring end mill 45° Ø 10 mm, tip Ø 4.8 mm, length 30 mm, 6 cuts Suitable for: stainless steel, cast iron	25278-A	■	■		 Prod.-No. 25278-A
Axes with thrust bearing (Axis: Ø 1.5 mm - bearing: Ø 3.0 mm) Suitable for deburring mills with tips - Ø 2.5 - 2.9 mm	25279-A	■	■		 Prod.-No. 25279-A
Axes with thrust bearing (Axis: Ø 1.5 mm - bearing: Ø 5.0 mm) Suitable for deburring mills with tips - Ø 4.8 mm	25280-A	■	■		 Prod.-No. 25280-A
Deburring end mill with serration Ø 8 mm, 4 cuts Suitable for: Steel, stainless steel, cast iron	25281			■	 Prod.-No. 25281
Deburring end mill with serration Ø 8 mm, 6 cuts Suitable for: Steel, stainless steel, cast iron	25282			■	 Prod.-No. 25282
Deburring end mill with serration Ø 8 mm, 12 cuts Suitable for: Steel, stainless steel, cast iron	25283			■	 Prod.-No. 25283

B

ALFRA – Carbide Deburring End Mills for KFH/KFT

Made in Germany

ALFRA Solid Carbide End Mill - Deburring End Mill (similar to DIN 6527) ■ This solid carbide end mill was developed for perfect deburring. ■ The chips are removed from the motor spindle into the chip collection container ■ or the chip duct. ■ Total length 60 mm or 80 mm. ■ **Coated design**						
						
	ø	Cutting edges	Prod.-No.	Prod.-No.	Prod.-No.	Prod.-No.
Carbide mill End mill with larger chip spaces, suitable for large bevels on soft materials such as **aluminium**, as well as brass, copper, and plastics. Universal application for steel and stainless steel.						
	8 mm	3	25150P	25150P		
	12 mm	3			25160P	25160P
Carbide mill End mill with larger chip spaces, suitable for larger bevels. Universal application such as for **stainless steel**, as well as steel, cast iron, non-ferrous metals, plastics						
	8 mm	4	25151P	25151P		
	12 mm	4			25161P	25161P
Carbide mill Roughing, fine cord. For attaching welding bevels. For **steel**, as well as cast iron, stainless steel (universal milling cutter)						
	8 mm	4	25154P	25154P		
	12 mm	4			25163P	25163P
Solid Carbide Radius End Mill* ■ Solid Carbide Radius End Mill with 2 radius grooves for dual use ■ For rounding off work piece edges ■ Universally applicable. For hard materials, the radii should be created in successive steps with increasing milling depths. ■ The fine adjustment of the contour of the radii to the edge of the work piece is achieved using the axial displacement of the motor in the clamping holes.						
 	R 3.0	12 mm	5	-	-	25165	25165
	R 4.0	12 mm	5	-	-	25166	25166
	R 5.0	12 mm	5	-	-	25167	25167

*Delivery time upon request.

B

ALFRA Edge Deburring Unit

KFK 5

ALFRA Edge Deburring Unit – KFK 5

Made in Germany by ALFRA

For deburring inner and outer edges, bevelling metal parts, milling radii and holes from Ø 20 mm.
Specially developed to produce clean visible edges and weld preparation.

- **Tool-less bevel height setting.**
- **Handy and powerful.**
- **For structural steel, stainless steel, aluminium and other materials.**
- **Multiple insert holders, 45° (optional 30°).**
- **Also for radii R = 2.5**

Start holes from Ø 20 mm.

Technical specifications:

Bevel angle:	**45° (optional 30°, 60°)**
Bevel width 45°:	**Steel 0 – 5 mm 400 N/mm² continuously adjustable**
	Aluminium 0 – 8 mm 250 N/mm² continuously adjustable
Bevel width 30°:	**Steel 0 – 4 mm 400 N/mm² continuously adjustable**
	Aluminium 0 – 6 mm 250 N/mm² continuously adjustable
Radius:	**R = 2.5**
Motor voltage:	**230V 50-60Hz; 110V 50-60Hz**
Rating:	**1.530 W**
Speed:	**4.200 - 11.000 min^{-1} with softstart**
	with thermal and overload protection
Feed:	**manual**
Weight:	**4 kg**

Prod.-No. 25207

Scope of Supply:

- **KFK 5 – Deburring and bevelling unit**
- **1 pc. 45° milling tool with inserts**
- **1 tool set**
- **Carrying case**
- **1 set of operating manual**

		Prod.-No.
Deburring unit KFK 5 – with 45° milling head	230V 50-60Hz	25200
Deburring unit KFK 5 – with 45° milling head	110V 50-60Hz	25200.110
Deburring unit KFK 5 – with 30° milling head	230V 50-60Hz	25201
Deburring unit KFK 5 – with 30° milling head	110V 50-60Hz	25201.110

Additional accessories:

45° replacement milling head/radius R=2.5 (no inserts)	25202
30° replacement milling head (no inserts)	25203
60° replacement milling head (no inserts) upon request	25213
Adjustable guide stop for outer edges	25207

Tools:

Insert PM25M for steel 13.47 x 3 coated	25206
Radius insert 2.5 mm	25205
Insert K10 for aluminium/cast iron	25208
Insert BK84 for steel/stainless steel	25209
Torx screws, individual, for replacement inserts	25210

ALFRA Bevel Milling Machine

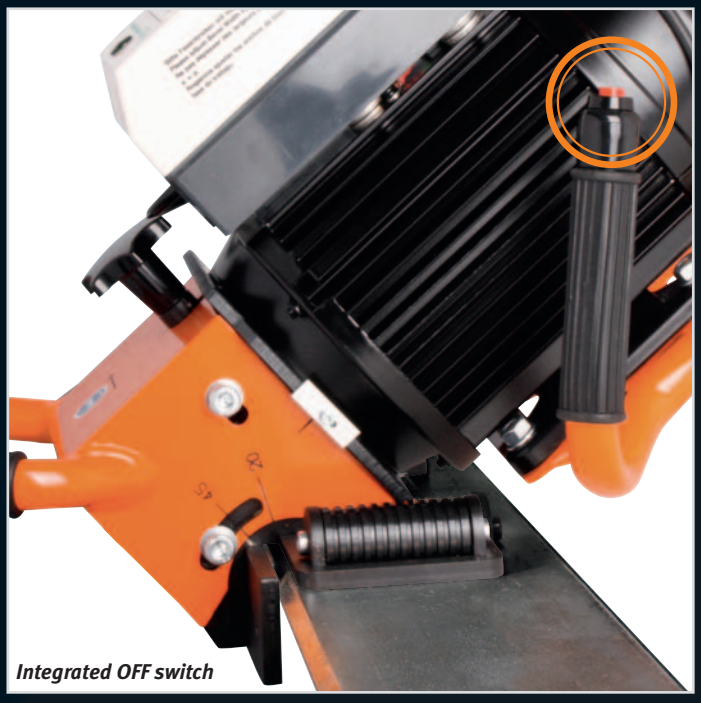
SKF 63-15

B

ALFRA Bevel Milling Machine – SKF 63-15

Made in Germany by ALFRA • For bevel widths up to maximum 15 mm and with continuously variable angle adjustment 15 - 60°

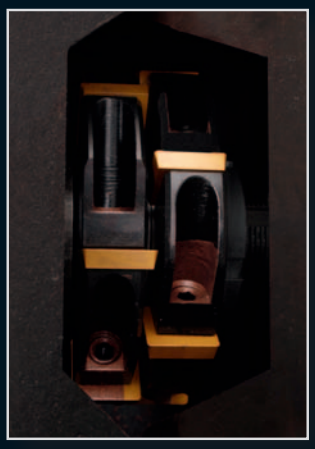
- The ALFRA bevel milling machine was specially developed for weld preparation and for milling metallic materials.
- Universally applicable in construction areas thanks to its light weight and direct use on the work piece.
- Designed for one-man operation, the machine is placed on a 90° angle on the work piece, a light downward pressure applied, and guided along manually.
- The design of this side milling cutter, which uses commercially available inserts and a rotation speed of 2.870 rpm, guarantees chatter-free, uniform bevel milling.
- The roller guide rails are made of hardened steel and guarantee excellent feed rates.
- Simple, safe operation with overload protection and restart interlock.
- OFF switch integrated into the right-side hand grip (illustration).
- Pipes from Ø 160 mm to 390 mm can be externally milled by means of an additional device.
- Optional device for larger pipes, Ø of 1.000 - 1.500 - 2.000 mm upon request.



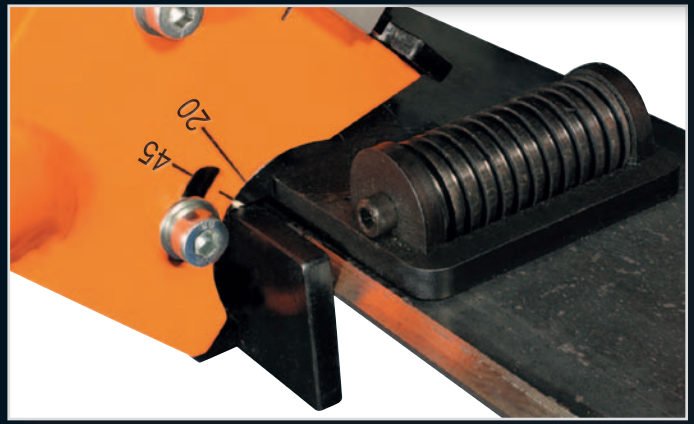
Integrated OFF switch

Technical specifications:

Motor voltage:	**230 V 50Hz; 230 V 60Hz; 110V 50Hz; 110V 60Hz**
Rating:	**1.100 Watt**
Speed:	**2.870 min^{-1}**
Bevel width:	**15 mm max.**
Bevel angle:	**15 - 20 - 30 - 45 - 60° adjustable**
Weight:	**21 kg**
Dimensions (L x W x H):	**440 x 200 x 280 mm**



2 milling disks together with 6 inserts each



Scope of Supply:

- **Deburring unit SKF 63-15**
- **1 Set of operating tools**
- **Operating manual**
- **Carrying case**

		Prod.-No.
Bevel milling machine SKF 63-15	230V 50Hz	25010
Bevel milling machine SKF 63-15	230V 60Hz	25010.230-60Hz
Bevel milling machine SKF 63-15	110V 50Hz	25010.110-50Hz
Bevel milling machine SKF 63-15	110V 60Hz	25010.110-60Hz

Options:

SKF 63/15 with reduced RPM of 1.400 rpm for use on stainless steel available upon request.

Optional accessories:

Tube insert for processing tube outer bevelling	25014

from Ø 160 mm to 390 mm
Optional device for larger Ø up to 1.000 - 1.500 - 2.000 mm upon request.

Replacement parts:

Replacement milling head	25011

Consisting of: 2 milling disks and 6 high-speed inserts

Replacement milling disks, individual, with no insert	25012
Carbide insert, TiAlN/TiN-PVD multi-layer coating	25013

Universal for steel and inox, clearance angle 11°

Carbide insert, TiAlN/TiN-PVD multi-layer coating	25010.15036B

For steel < 850 N/mm²; inox <> 900 N/mm², clearance angle 20°

Carbide insert, TiAlN/TiN-PVD multi-layer coating	25010.15036E

For steel < 1400 N/mm²; inox <> 900 N/mm², clearance angle 11°

Auxiliary assembly device	25019

For equipping the milling disks with inserts.

ALFRA

Automatic Weld Edge Shearing Machine

SKS-15 AUTO

B

ALFRA Automatic Weld Edge Shearing Machine
SKS-15 Auto

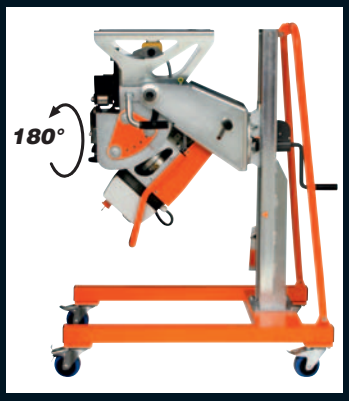
For producing weld edges in mechanical engineering, boilers, apparatus, ship-building, welding technology teaching, container construction, etc.

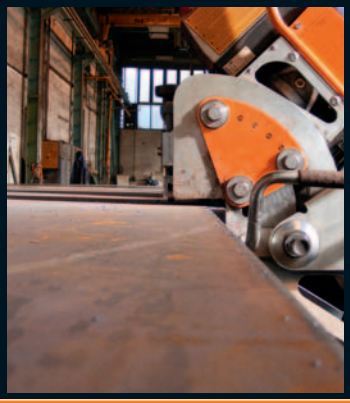
In the development of our machines we are guided by our many years of practical experience. Many details come more or less straight from the user.

The result is a transportable, compact and extremely powerful weld edge shearing machine with a bevel width capacity of up to 15 mm and a continuously adjustable milling angle of 15° - 50°.

The weld is prepared by shearing the material using a shearing blade. The unit's operating principle is very efficient, and it runs smoothly and silently.

Universally applicable:
- Stationary or self-feeding on long steel plates. The machine works by itself along the edge of the work piece.
- The following are required for this: Crane attachment or running, mobile lifting table XT (optional).
- For steel with a tensile strength of approx. 370 N/mm² up to 520N/mm² - also for stainless steel and aluminium. As the tensile strength of the material to be processed increases, the bevel width must be reduced, and/or the final "target bevel width" must if necessary be created in multiple steps.





Technical specifications:

Maximum bevel width:	0.5 to 15 mm for S235, the maximum bevel width of 8 mm should not be exceeded in any single work step
Feed:	approx. 3 m/min.
Bevel angle:	15° - 50°, continuously adjustable
Material thickness:	min. 6 mm to max. 40 mm
Minimum material width:	70 mm With hand wheel for material thickness Rapidly adjustable
Minimum material length:	150 mm
Shearing blade:	regrindable
Lifespan of shearing blade:	approx. 1.500 - 2.000 m with 5x regrinding and grinding removal of approx. 7/10 (S235 and 8 mm bevel width)
Motor power:	220/380 V / 50/60 Hz/ 1500 Watt, 2800 min^{-1}
Electric:	dust-protected, EC-compliant
Dimensions:	L = 450 mm, W = 400 mm, H = 820 mm
Weight:	88 kg

The data given above is dependent on the material being processed, and the bevel width.

Scope of Supply:
- SKS-15 Auto, 220/380 V, ready to use, with
- 1 shearing blade, Eco quality
- 1 wrench for angle adjustments
- 1 stripping tool for blade replacement
- 1 set of spacer disks * 0.5, 1.0, 2.0 mm
- Operating manual

* The mass removed during regrinding must be compensated for using appropriate spacer disks.

	Prod.-No.
SKS-15 AUTO, 220/380 V	25950

Accessories:

XT Mobile lift table, swivelling 180°	25960

- Unevenness is compensated for by "floating" mounting.
- Access to the underside also when the floor height is very small, but extremely wide height adjustment range.
- 180° adjustable for topside/underside grinding in two passes.
- Simple height levelling
- Manual control for machine operation during overhead milling.

Remote control - only for older models!	25961

Complete with cable and connector, including box)

Shearing blades

Shearing blades, premium quality	25951

Serrated, HSS steel, coated
Ø = 100 mm, e = 29 mm

Shearing blades, Eco quality	25952

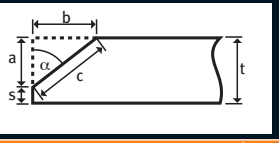
Serrated, HSS steel
Ø = 100 mm, e = 29 mm

Shearing blades for other brands

Shearing blades, suitable for	25954

CEVISA (CHP6, CH-12, CHP12G)
GBC (CHALLENGE 15)
GERIMA (MSA200, MSA400)
Serrated, Ø 93.2 mm (D)
Blade thickness = 20 mm (E)

s = web height
a = bevel height
b = bevel depth
c = bevel width
t = material thickness
α = bevel angle



B

ALFRA HSS Bi-Metal Hole Saws

Features:

- M42
- High concentricity
- With solid base plate, thus more threads and higher stability as well as concentric running exactness.
- For material from 2 mm – with positive chipping and cutting angles as well as combi-toothing 4/6 tpi. This variable spacing provides a more even cut, for a minor generation of vibrations and heat. Lower expenditure of energy when cutting.
- Cutting Depth: 38 mm (1-1/2“).
- Lateral slots help to remove the core.
- Suitable for unalloyed steel (up to 700 N/mm2), nonferrous metals, light metals, plastics, gypsum, pulp wood- and plywood boards, lightweight building boards and general wood processing.
- Drill bit exchangeable with other commercially available arbors.

Also steel/stainless steel up to approx. 3 mm, can be worked easily (for frequent use, we recommend our TCT Hole Saws).

... designed to work on softwoods.

ALFRA – HSS-Bi-Metal Hole Saws

ALFRA HSS-Bi-Metal Hole Saws are applicable in portable and pillar drilling machines. When using pillar drilling machines, use manual feed only.

Features:

- M42
- High concentricity.
- With solid base plate, thus more threads and higher stability as well as concentric running exactness.
- With positive chipping and cutting angles as well as combi-toothing 4/6 tpi. This variable spacing provides a more even cut, for a minor generation of vibrations and heat. Lower expenditure of energy when cutting.
- Cutting Depth: 38 mm (1-1/2“).
- Lateral slots help to remove the core.
- Suitable for unalloyed steel (up to 700 N/mm2), nonferrous metals, light metals, plastics, gypsum, pulp wood- and plywood boards, lightweight building boards and general wood processing.
- Drill bit exchangeable with other commercially available arbors.

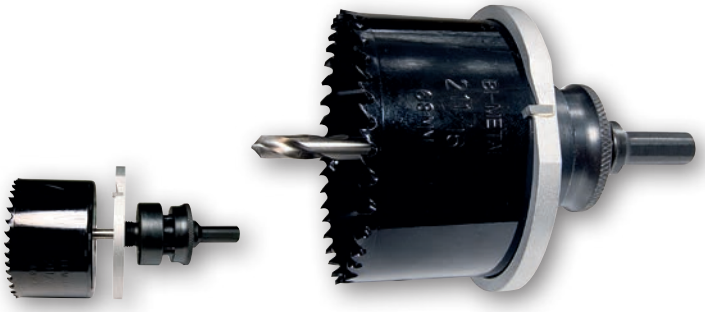
Tip:
Start drilling operation with light pressure. Continue with light and steady pressure, avoid pendulum motion, follow the speed chart, use coolant. When cutting wood or wood substitutes, remove drill dust in time.

Combi toothing 4/6 tpi

from Ø 14.0 to 210 mm available

Saw Ø mm	Inches	Prod.-No.
14.0	9/16"	0500014
16.0	5/8"	0500016
17.0	11/16"	0500017
19.0	3/4"	0500019
20.0	15/19"	0500020
21.0	13/16"	0500021
22.0	7/8"	0500022
24.0	15/16"	0500024
25.0	1"	0500025
27.0	11/16"	0500027
29.0	1-1/8"	0500029
30.0	1-3/16"	0500030
32.0	1-1/4"	0500032
33.0	1-5/16"	0500033
35.0	1-3/8"	0500035
37.0	1-7/16"	0500037
38.0	1-1/2"	0500038
40.0	1-9/16"	0500040
41.0	1-5/8"	0500041
43.0	1-11/16"	0500043
44.0	1-3/4"	0500044
46.0	1-13/16"	0500046
48.0	1-7/8"	0500048
51.0	2"	0500051
52.0	2-1/16"	0500052
54.0	2-1/8"	0500054
57.0	2-1/4"	0500057
59.0	2-5/16"	0500059
60.0	2-3/8"	0500060
64.0	2-1/2"	0500064
65.0	2-9/16"	0500065
67.0	2-5/8"	0500067
68.0	2-11/16"	0500068
70.0	2-3/4"	0500070
73.0	2-7/8"	0500073

Saw Ø mm	Inches	Prod.-No.
74.0	2-11/12"	0500074
76.0	3"	0500076
79.0	3-1/8"	0500079
83.0	3-1/4"	0500083
86.0	3-3/8"	0500086
89.0	3-1/2"	0500089
92.0	3-5/8"	0500092
95.0	3-3/4"	0500095
98.0	3-7/8"	0500098
102.0	4"	0500102
105.0	4-1/8"	0500105
108.0	4-1/4"	0500108
111.0	4-3/8"	0500111
114.0	4-1/2"	0500114
121.0	4-3/4"	0500121
127.0	5"	0500127
140.0	5-1/2"	0500140
152.0	6"	0500152
From Ø 160.0 mm only suitable for wood and wood substitutes.		
160.0	6-5/16"	0500160
168.0	6-10/16"	0500168
177.0	7"	0500177
210.0	8-5/16"	0500210



Prod.-No. 0501013 with bi-metal hole saw Ø 68 mm + A2-SS

Arbors

with pilot drill

Saw-Ø mm	Saw-Ø inch	Type	Shank-Ø	Prod.-No.
14 - 30	9/16 - 1 3/16	A 6-SS	9.5 hexagon	0501001
14 - 30	9/16 - 1 3/16	A 6-SDS	SDS	0501002
32 - 152	1 1/4 - 6	A 2-SS	9.5 hexagon	0501003
32 - 152	1 1/4 - 6	A 2-SDS	SDS	0501005
32 - 210	1 1/4 - 8 5/16	A 3-SS	11.11 hexagon	0501006
32 - 210	1 1/4 - 8 5/16	A 5-SS	16.0 hexagon	0501008

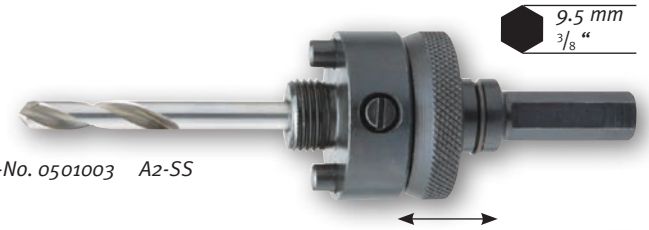
Accessories:

Rim countersink for Ø 68 mm (with TCT-teeth)	0501013
Extension shaft 300 mm x 9.5 mm for A 6-SS + A 2-SS, A3-SS	0501010
Spare Center Drill HSS Ø 6.35 mm x 80 mm for A 6-SS + A 6-SDS + A 2-SS + A 2-SDS + A 3-SS + A 5-SS	0502001
Ejector Spring	0502004

Important: Disable impact drill position when using SDS-shanks!

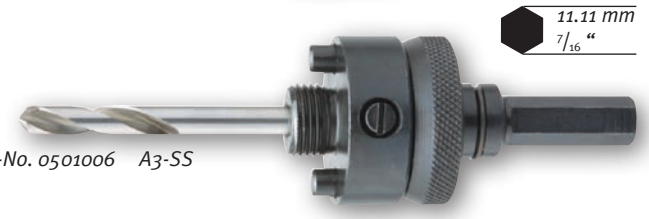
Prod.-No. 0501001 A6-SS

Prod.-No. 0501002 A6-SDS



Prod.-No. 0501003 A2-SS

Prod.-No. 0501005 A2-SDS

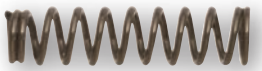


Prod.-No. 0501006 A3-SS

Prod.-No. 0501013

Prod.-No. 0501010

Prod.-No. 0502001



Prod.-No. 0502004

ALFRA – HSS Bi-Metal Hole Saw Sets

The following HSS-Bi-Metal Hole Saw Sets enlarge our range. These sets were especially compiled for electricians, mechanics, plumbers and for general, universal applications. These sets improve the presentation. Storage in solid tool cases.

Hole Saw Set Standard

Prod.-No. 0503006

Contents:
Ø 16 mm (5/8")
Ø 19 mm (3/4")
Ø 22 mm (7/8")
Ø 29 mm (1 1/8")
Ø 35 mm (1 3/8")
Ø 44 mm (1 3/4")
Ø 52 mm (2 1/16")
Ø 57 mm (2 1/4")
Ø 67 mm (2 5/8")
Arbor A6-SS, Arbor A2-SS, Spare Twist Drill

Prod.-No. 0503006

Hole Saw Set Professional

Prod.-No. 0503007

Contents:
Ø 16 mm (5/8")
Ø 19 mm (3/4")
Ø 22 mm (7/8")
Ø 25 mm (1")
Ø 29 mm (1 1/8")
Ø 32 mm (1 1/4")
Ø 35 mm (1 3/8")
Ø 38 mm (1 1/2")
Ø 44 mm (1 3/4")
Ø 51 mm (2")
Ø 64 mm (2 1/2")
Ø 76 mm (3")
Arbor A6-SS, Arbor A2-SS, Spare Twist Drill

Prod.-No. 0503007

Hole Saw Set Electro

Prod.-No. 0503008

Contents:
Ø 22 mm (7/8")
Ø 29 mm (1 1/8")
Ø 35 mm (1 3/8")
Ø 44 mm (1 3/4")
Ø 51 mm (2")
Ø 64 mm (2 1/2")
Ø 68 mm (2 11/16")
Arbor A6-SS, Arbor A2-SS, Spare Twist Drill

Prod.-No. 0503008

Hole Saw Set Sanitary

Prod.-No. 0503009

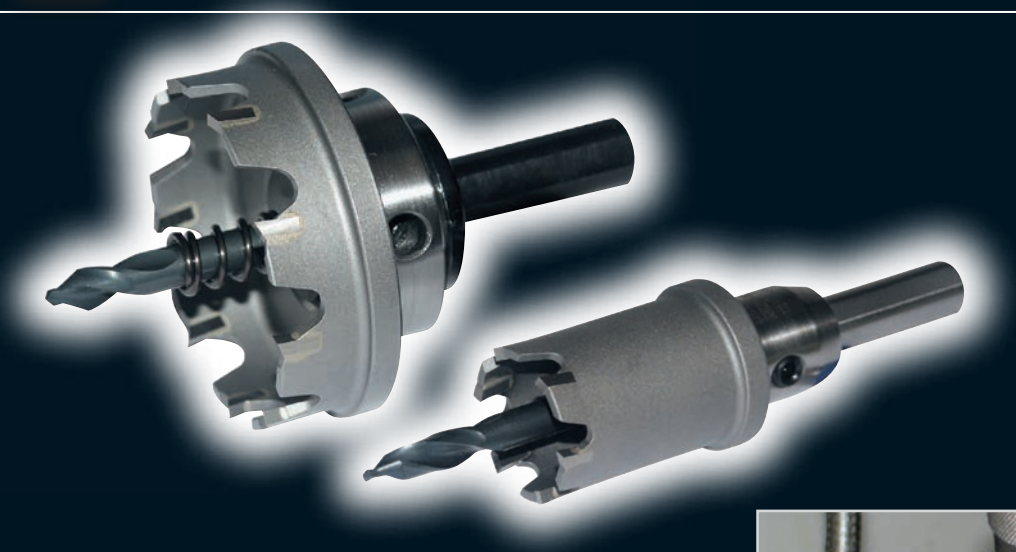
Contents:
Ø 16 mm (5/8")
Ø 19 mm (3/4")
Ø 24 mm (15/16")
Ø 29 mm (1 1/8")
Ø 38 mm (1 1/2")
Ø 44 mm (1 3/4")
Ø 57 mm (2 1/4")
Ø 67 mm (2 5/8")
Arbor A6-SS, Arbor A2-SS, Spare Twist Drill

Prod.-No. 0503009

ALFRA Hole Saws

The quality is in the detail

TCT-Hole Saws in use



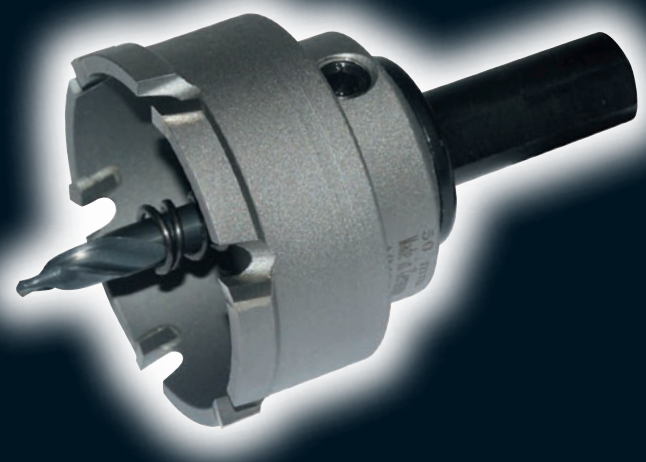
TCT-Hole Saws – short-/long type

Stainless steel

Plastic

TCT-Hole Saws – FRP

Poroton brick stone

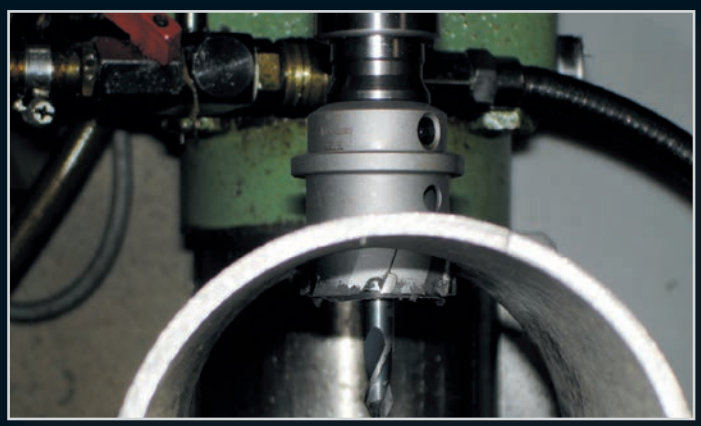


TCT-Hole Saws – MBS type

Sanitary pipes – type SML

MBS Pro
Use on Rotabest Magnetic Drilling Machine
with MT3 – Arbor Prod.-No.: 0734003

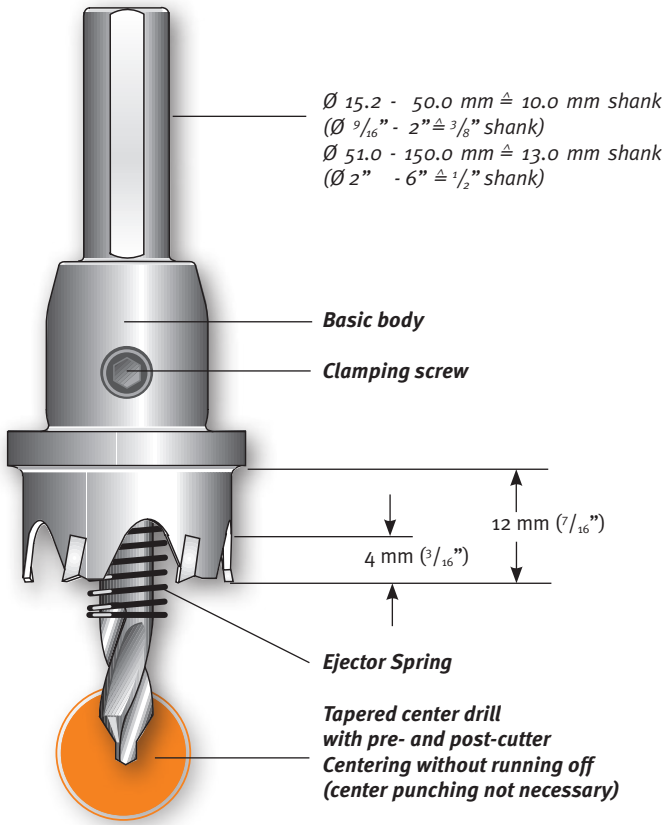
Checker plate (stainless steel)

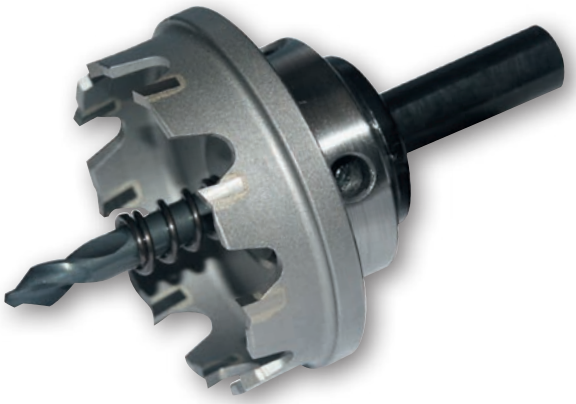


Sanitary pipes – type SML

ALFRA TCT-Hole Saws – Short Type

Made in Germany by ALFRA





The application area of TCT Hole Saws differs from HSS-Bi-Metal Hole Saws. With ALFRA TCT Hole Saws, suitable to economically process stainless steel up to 2 mm (1/16"), unalloyed steels up to 4 mm (3/16"), plastics, PVC, aluminium, zinc, gypsum plaster boards and lightweight building boards, as well as asbestos. Do not use automatic feed, when working with pillar drilling machines. For the use on portable- and pillar drilling machines.Do not use automatic feed, when working with pillar drilling machines.

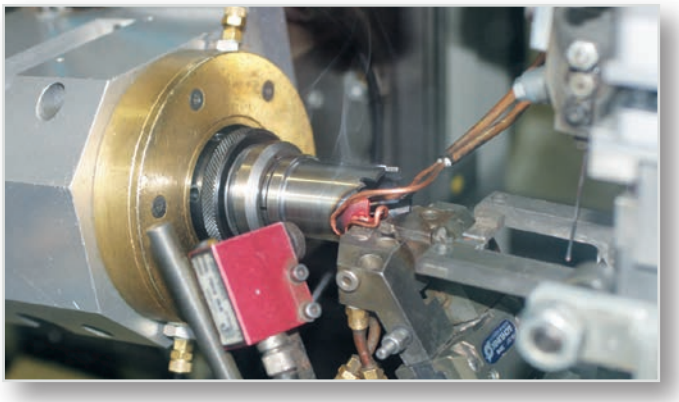
Features:

- High concentric running exactness through solid construction.
- CAD-optimized cutting angles with specially ground section ensures high cutting capacity and long tool life.
- Quick removal of drilled core through ejector spring for all hole saws up to 150 mm (5-29/32") Ø.
- Carbide tipping enables repeated re-grinding.
- ALFRA hole saws are repairable. In the event of a tooth breaking, it can easily be replaced and resharpened.
- Exchangeable center pin.
- Use of MT tool holders from Ø 31 mm (1-7/32").
- For use on hand drilling machines (recommended up to max. Ø 40 mm; 1-9/16") or stationary machines.

Tips:

- At thicker materials: cut 2-3 mm per cutting process, remove chips afterwards.
- When cutting metals, a high- grade cutting oil should be used. Exception: Do not use cutting oil when using cast iron, use parrafin instead of oil when cutting aluminium.
- **Keep in mind: Always wear safety goggles.**

Another special technical feature:
From Ø 15.2 mm (3/16") to 30.0 mm (1 1/8"), the hole saw is made of one piece.
From Ø 31.0 mm (1-3/16") we use specially hardened tool holders to compensate for the torsional power in case of heavy operation, which avoids early shearing off of the tool holder shank.
In terms of construction not comparable with any other make.



Ø mm	Ø Inches	No. of teeth	Prod.-No. mm
Ø 15.2	15	4	0600152
Ø 16.0	5/8"	4	0600160
Ø 17.0		4	0600170
Ø 18.0	11/16"	4	0600180
Ø 18.6		4	0600186
Ø 19.0	3/4"	4	0600190
Ø 20.0		5	0600200
Ø 20.4		5	0600204
Ø 21.0	13/16"	5	0600210
Ø 22.0		5	0600220
Ø 22.5		5	0600225
Ø 23.0	7/8"	5	0600230
Ø 24.0	15/16"	5	0600240
Ø 25.0		5	0600250
Ø 26.0	1"	5	0600260
Ø 27.0	1-1/16"	5	0600270
Ø 28.0		5	0600280
Ø 28.3		5	0600283
Ø 29.0	1-1/8"	5	0600290
Ø 30.0	1-3/16"	5	0600300
Ø 31.0		6	0600310
Ø 32.0	1-1/4"	6	0600320
Ø 33.0		6	0600330
Ø 34.0	1-5/16"	6	0600340
Ø 35.0	1-3/8"	6	0600350
Ø 36.0		6	0600360
Ø 37.0	1-7/16"	7	0600370
Ø 38.0		7	0600380
Ø 39.0	1-1/2"	7	0600390
Ø 40.0	1-9/16"	7	0600400
Ø 41.0		8	0600410
Ø 42.0	1-5/8"	8	0600420
Ø 43.0	1-11/16"	8	0600430
Ø 44.0		8	0600440
Ø 45.0	1-3/4"	8	0600450
Ø 46.0		8	0600460
Ø 47.0	1-13/16"	9	0600470
Ø 48.0	1-7/8"	9	0600480
Ø 49.0		9	0600490
Ø 50.0	1-15/16"	9	0600500
Ø 51.0	2"	9	0600510
Ø 52.0		10	0600520
Ø 53.0	2-1/16"	10	0600530
Ø 54.0	2-1/8"	10	0600540
Ø 55.0		10	0600550
Ø 56.0	2-3/16"	10	0600560
Ø 57.0	2-1/4"	10	0600570
Ø 58.0		10	0600580
Ø 59.0	2-5/16"	10	0600590
Ø 60.0	2-3/8"	10	0600600
Ø 61.0		11	0600610
Ø 62.0	2-7/16"	11	0600620
Ø 63.0		11	0600630
Ø 64.0	2-1/2"	11	0600640
Ø 65.0		11	0600650
Ø 66.0	2-9/16"	12	0600660
Ø 67.0	2-5/8"	12	0600670
Ø 68.0		12	0600680
Ø 69.0	2-11/16"	12	0600690
Ø 70.0	2-3/4"	12	0600700
Ø 71.0		12	0600710
Ø 72.0	2-13/16"	13	0600720
Ø 73.0	2-7/8"	13	0600730
Ø 74.0	2-15/16"	13	0600740
Ø 75.0		13	0600750
Ø 76.0	3"	13	0600760

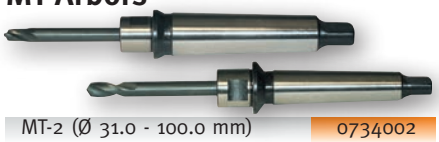
Ø mm	Ø Inches	No. of teeth	Prod.-No. mm
Ø 77.0		13	0600770
Ø 78.0	3-1/16"	14	0600780
Ø 79.0	3-1/8"	14	0600790
Ø 80.0		14	0600800
Ø 81.0	3-3/16"	14	0600810
Ø 82.0		14	0600820
Ø 83.0	3-1/4"	14	0600830
Ø 84.0	3-5/16"	15	0600840
Ø 85.0		15	0600850
Ø 86.0	3-3/8"	15	0600860
Ø 87.0	3-7/16"	15	0600870
Ø 88.0		15	0600880
Ø 89.0	3-1/2"	16	0600890
Ø 90.0	3-9/16"	16	0600900
Ø 91.0		16	0600910
Ø 92.0	3-5/8"	16	0600920
Ø 93.0		16	0600930
Ø 94.0	3-11/16"	16	0600940
Ø 95.0	3-3/4"	17	0600950
Ø 96.0		17	0600960
Ø 97.0	3-13/16"	17	0600970
Ø 98.0	3-7/8"	17	0600980
Ø 99.0		17	0600990
Ø 100.0	3-15/16"	17	0601000
Ø 105.0	4"	18	0601050
Ø 110.0		18	0601100
Ø 115.0	4-1/2"	20	0601150
Ø 120.0		20	0601200
Ø 125.0		20	0601250
Ø 130.0	5"	20	0601300
Ø 135.0		24	0601350
Ø 140.0	5-1/2"	24	0601400
Ø 145.0		24	0601450
Ø 150.0		24	0601500

HSS-Spare Drill

with tapered center tip

from Ø 15.2 - 100.0	Ø 6x50 mm	0602650
from Ø 101.0 - 150.0	Ø 8x50 mm	0602850

MT Arbors



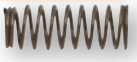
MT-2 (Ø 31.0 - 100.0 mm)	0734002
MT-3 (Ø 31.0 - 150.0 mm)	0734003

SDS Arbor

SDS arbor shank (for use with Ø 31.0 - 100.0 mm)	060sds6

Spare Ejector

from Ø 15.2 - 150.0 Ø 6 mm	0602006



Coolant ALFRA

ALFRA BIO 2000	
For mild steel DIN S233, 405 ml	21010
ALFRA 3000	
For chromium nickel steel	
520 ml	21030
ALFRA 4000	
For titanium and manganese-carbon steels	
300 ml	21040

Prod.-No. 0600001

Set Metric

	Prod.-No.
Set Metric	0600001

Contents:
1 each of Ø 16/20/25/32/40 mm
2 Allen Keys

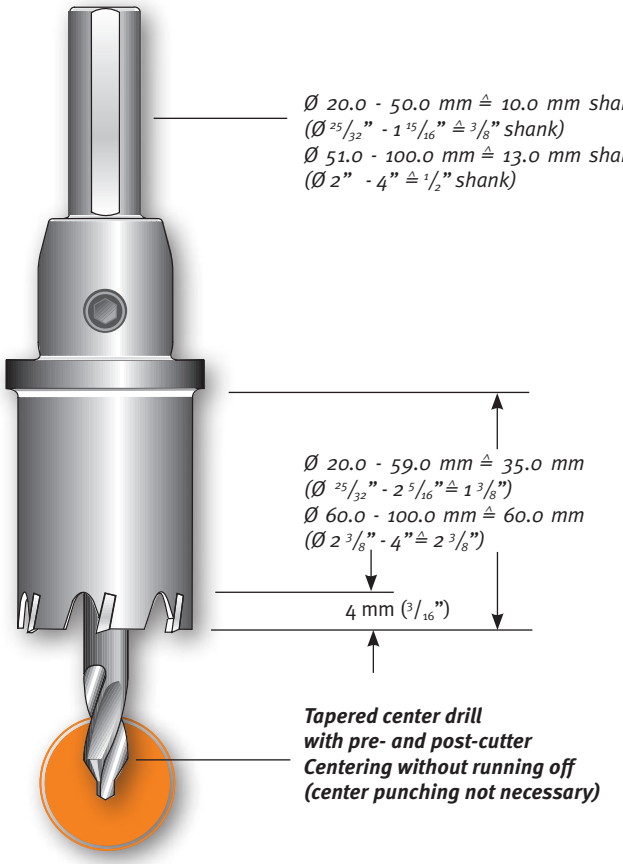
Prod.-No. 21010

Prod.-No. 21030

Prod.-No. 21040

ALFRA TCT-Hole Saws – Long Type

Made in Germany by ALFRA

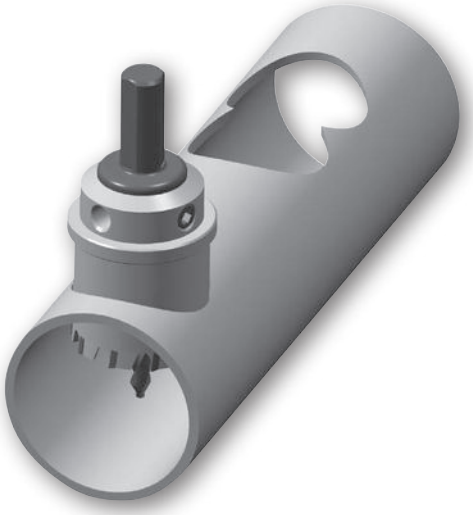


Features:

- Especially developed for the use on pipes, vaulted materials, for unalloyed and alloyed steels, nonferrous metals, plastics as well as glass fibre reinforced plastic.
- For material thickness up to 4 mm (3/16"), 2 mm (1/16") stainless steel.
- For use on hand drilling machines, recommended up to max. Ø 40 mm (1-9/16") or stationary machines.

Tips:

- Start drilling operation with light pressure, when drilling pipes. Avoid pendulum motions.
- Keep in mind: Always wear safety goggles.



Special tools for special applications on request!

ALFRA TCT-Hole Saws – Long Type

Made in Germany by ALFRA

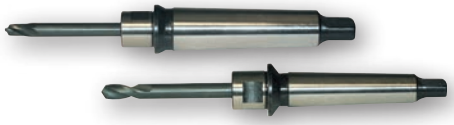
Ø mm	Ø Inches	No. of teeth	Prod.-No. mm
Ø 16.0	5/8"	4	0700160
Ø 17.0		4	0700170
Ø 18.0	11/16"	4	0700180
Ø 19.0	3/4"	4	0700190
Ø 20.0		5	0700200
Ø 21.0	13/16"	5	0700210
Ø 22.0		5	0700220
Ø 23.0	7/8"	5	0700230
Ø 24.0	15/16"	6	0700240
Ø 25.0		6	0700250
Ø 26.0	1"	6	0700260
Ø 27.0	1-1/16"	6	0700270
Ø 28.0		6	0700280
Ø 29.0	1-1/8"	6	0700290
Ø 30.0	1-3/16"	6	0700300
Ø 31.0		8	0700310
Ø 32.0	1-1/4"	8	0700320
Ø 33.0		8	0700330
Ø 34.0	1-5/16"	8	0700340
Ø 35.0	1-3/8"	8	0700350
Ø 36.0		8	0700360
Ø 37.0	1-7/16"	8	0700370
Ø 38.0		8	0700380
Ø 39.0	1-1/2"	8	0700390
Ø 40.0	1-9/16"	10	0700400
Ø 41.0		10	0700410
Ø 42.0	1-5/8"	10	0700420
Ø 43.0	1-11/16"	10	0700430
Ø 44.0		10	0700440
Ø 45.0	1-3/4"	10	0700450
Ø 46.0		10	0700460
Ø 47.0	1-13/16"	10	0700470
Ø 48.0	1-7/8"	10	0700480
Ø 49.0		10	0700490
Ø 50.0	1-15/16"	12	0700500
Ø 51.0	2"	12	0700510
Ø 52.0		12	0700520
Ø 53.0	2-1/16"	12	0700530
Ø 54.0	2-1/8"	12	0700540
Ø 55.0		12	0700550
Ø 56.0	2-3/16"	12	0700560
Ø 57.0	2-1/4"	12	0700570
Ø 58.0		12	0700580
Ø 59.0	2-5/16"	12	0700590
Ø 60.0	2-3/8"	14	0700600
Ø 61.0		14	0700610
Ø 62.0	2-7/16"	14	0700620
Ø 63.0		14	0700630
Ø 64.0	2-1/2"	14	0700640
Ø 65.0		14	0700650
Ø 66.0	2-9/16"	14	0700660
Ø 67.0	2-5/8"	16	0700670
Ø 68.0		16	0700680
Ø 69.0	2-11/16"	16	0700690
Ø 70.0	2-3/4"	16	0700700
Ø 71.0		16	0700710
Ø 72.0	2-13/16"	16	0700720
Ø 73.0	2-7/8"	16	0700730
Ø 74.0	2-15/16"	16	0700740
Ø 75.0		16	0700750
Ø 76.0	3"	18	0700760
Ø 77.0		18	0700770
Ø 78.0	3-1/16"	18	0700780
Ø 79.0	3-1/8"	18	0700790
Ø 80.0		18	0700800
Ø 81.0	3-3/16"	18	0700810
Ø 82.0		18	0700820
Ø 83.0	3-1/4"	18	0700830
Ø 84.0	3-5/16"	20	0700840
Ø 85.0		20	0700850
Ø 86.0	3-3/8"	20	0700860
Ø 87.0	3-7/16"	20	0700870
Ø 88.0		20	0700880
Ø 89.0	3-1/2"	20	0700890
Ø 90.0	3-9/16"	20	0700900
Ø 91.0		20	0700910
Ø 92.0	3-5/8"	20	0700920
Ø 93.0		20	0700930
Ø 94.0	3-11/16"	22	0700940
Ø 95.0	3-3/4"	22	0700950
Ø 96.0		22	0700960
Ø 97.0	3-13/16"	22	0700970
Ø 98.0	3-7/8"	22	0700980
Ø 99.0		22	0700990
Ø 100.0	3-15/16"	22	0701000

HSS-Spare Drill

with tapered center tip

von Ø 20.0 - 59.0 Ø 6x80 mm	0702680
von Ø 60.0 - 100.0 Ø 8x100 mm	0702800

MT Arbors



MT-2 (ab Ø 31.0)	0734002
MT-3 (ab Ø 31.0)	0734003

SDS Arbor

SDS arbor shank (for use with Ø 31 - 59 mm)	060sds6

Highly recommendet accessories – coolant and lubricant!

ALFRA 2000

ALFRA 2000 is a fully synthetic cutting oil, developed for high-quality cutting, threading and drilling of metals of any degree of hardness, ferrous metal, steel alloys, stainless steel, copper, aluminium and their alloys.
ALFRA BIO 2000 is free of hydrocarbon, sulphur and chlorine.

	Prod.-No.
Aerosol can 405 ml	21010
5 ltr. Plastic container	21012
60 ltr. Barrel	21021

ALFRA 3000

Universal metal working oil free of chlorine. High-performance drilling, broaching and cutting fluid, petroleum-based, for moderately difficult and difficult to cut steels. With a high proportion of active ingredients to ensure optimum cutting performance and significantly reduced tool wear. It meets occupational health and safety requirements.
We recommend to use ALFRA 3000 especially for the drilling and threading of high-alloy steel and chrome nickel steel.

	Prod.-No.
Aerosol can 520 ml	21030
5 ltr. Plastic container	21031
60 ltr. Barrel	21032

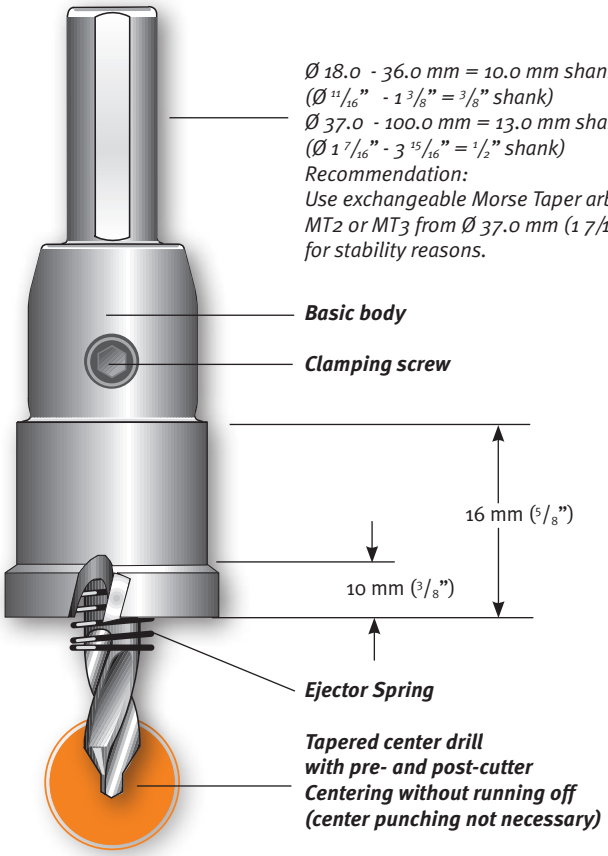
ALFRA 4000

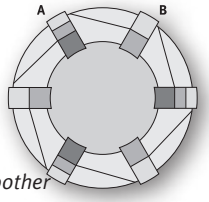
Suitable for core drilling applications with ALFRA cutters. Also ideal for twist drilling, thread tapping, reaming, countersinking, and difficult cutting applications. It meets to the requirements of work hygiene and safety.
ALFRA 4000 is a pump spray, free from propellant gas ideal for drilling and tapping of high-alloy, stainless steels; chromium nickel steels; titanium and manganese-carbon steels

	Prod.-No.
Aerosol can 300 ml	21040

ALFRA TCT-Hole Saws – MBS-Light

The TCT Multirange Hole Saw • Registered Utility Model No. 202 03 232 9 • Made in Germany by ALFRA





Cutting geometries
Variable teeth, less Vibration, longer tool life, smoother cutting.

MBS – for almost limitless use

This TCT Hole Saw is a multi-range Hole Saw for the universal use up to a material thickness of max. 10 mm (3/8") (without ejector spring). Through its solid construction and an enhanced cutting geometry (Registered Utility Model No. 202 03 232 9), an improved cutting behaviour combined with a high cutting capacity and tool life, is achieved.

For the use on flat steel, as well as on pipes and vaulted materials. Cutting of overlapping holes is possible.

For use on stationary and hand drilling machines (recommended up to max. Ø 40 mm; 1 9/16").

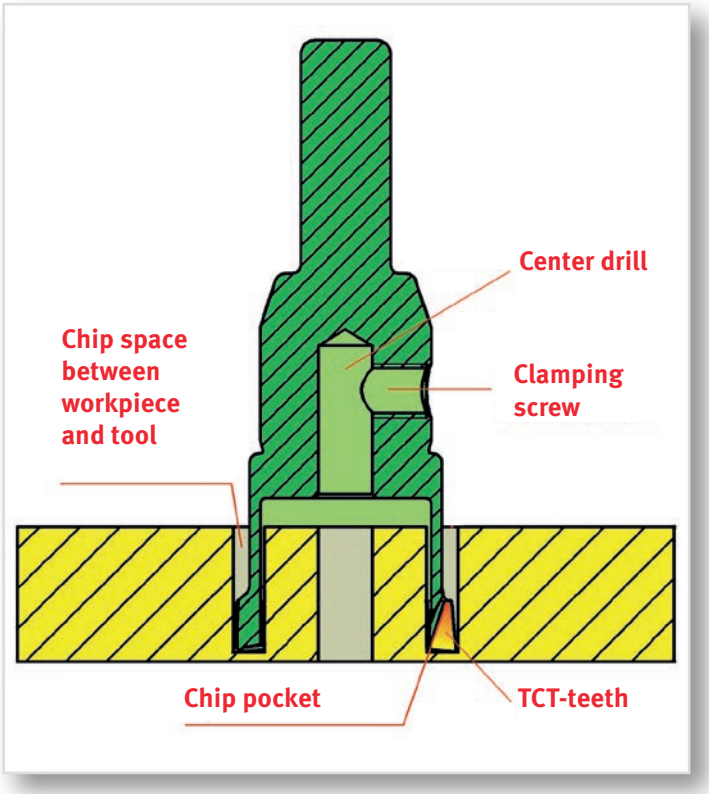
- **Portable drilling Machines: up to 4 mm (1/8") material thickness**
- **Stationary drilling Machines: up to 10 mm (3/8") material thickness (for material thickness over 6 mm (15/64"), it is necessary to settle and empty the chips several times).**

In case of heavy operation, we recommend Morse Taper Tool Holders, which are suitable from Ø 37 mm (1 7/166").

Advantage: All MBS-Light type TCT Hole Saws are equipped with an ejector spring.
The cut material is self-ejecting. The cut material is self-ejecting.

Another special technical feature:
From Ø 37 mm (1 7/16"), specially hardened tool holders are used to compensate for the torsional power in case of heavy operation which avoids early shearing off of the tool holder shank.

In terms of construction not comparable with any other make.



Ø mm	Ø Inches	No. of teeth	Prod.-No. mm
Ø 18.0	11/16"	6	0730018
Ø 19.0	3/4"	6	0730019
Ø 20.0		6	0730020
Ø 21.0	13/16"	6	0730021
Ø 22.0		6	0730022
Ø 23.0	7/8"	6	0730023
Ø 24.0	15/16"	6	0730024
Ø 25.0		6	0730025
Ø 26.0	1"	6	0730026
Ø 27.0	1-1/16"	6	0730027
Ø 28.0		6	0730028
Ø 29.0	1-1/8"	6	0730029
Ø 30.0	1-3/16"	6	0730030
Ø 31.0		6	0730031
Ø 32.0	1-1/4"	6	0730032
Ø 33.0		6	0730033
Ø 34.0	1-5/16"	6	0730034
Ø 35.0	1-3/8"	6	0730035
Ø 36.0		6	0730036
From Ø 37.0 mm (1-7/16") we recommend the use of MT arbors			
Ø 37.0	1-7/16"	6	0730037
Ø 38.0		6	0730038
Ø 39.0	1-1/2"	6	0730039
Ø 40.0	1-9/16"	6	0730040
Ø 41.0		6	0730041
Ø 42.0	1-5/8"	6	0730042
Ø 43.0	1-11/16"	6	0730043
Ø 44.0		6	0730044
Ø 45.0	1-3/4"	6	0730045
Ø 46.0		6	0730046
Ø 47.0	1-13/16"	6	0730047
Ø 48.0	1-7/8"	6	0730048
Ø 49.0		6	0730049
Ø 50.0	1-15/16"	6	0730050
Ø 51.0	2"	6	0730051
Ø 52.0		6	0730052
Ø 53.0	2-1/16"	6	0730053
Ø 54.0	2-1/8"	6	0730054
Ø 55.0		6	0730055
Ø 56.0	2-3/16"	6	0730056
Ø 57.0	2-1/4"	6	0730057
Ø 58.0		6	0730058
Ø 59.0	2-5/16"	6	0730059
Ø 60.0	2-3/8"	8	0730060
Ø 61.0		8	0730061
Ø 62.0	2-7/16"	8	0730062
Ø 63.0		8	0730063
Ø 64.0	2-1/2"	8	0730064
Ø 65.0		8	0730065
Ø 66.0	2-9/16"	8	0730066
Ø 67.0	2-5/8"	8	0730067
Ø 68.0		8	0730068
Ø 69.0	2-11/16"	8	0730069
Ø 70.0	2-3/4"	8	0730070
Ø 71.0		10	0730071
Ø 72.0	2-13/16"	10	0730072
Ø 73.0	2-7/8"	10	0730073
Ø 74.0	2-15/16"	10	0730074
Ø 75.0		10	0730075
Ø 76.0	3"	10	0730076
Ø 77.0		12	0730077
Ø 78.0	3-1/16"	12	0730078
Ø 79.0	3-1/8"	12	0730079
Ø 80.0		12	0730080
Ø 81.0	3-3/16"	12	0730081

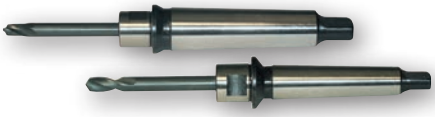
Ø mm	Ø Inches	No. of teeth	Prod.-No. mm
Ø 82.0		12	0730082
Ø 83.0	3-1/4"	12	0730083
Ø 84.0	3-5/16"	12	0730084
Ø 85.0		12	0730085
Ø 86.0	3-3/8"	14	0730086
Ø 87.0	3-7/16"	14	0730087
Ø 88.0		14	0730088
Ø 89.0	3-1/2"	14	0730089
Ø 90.0	3-9/16"	14	0730090
Ø 91.0		14	0730091
Ø 92.0	3-5/8"	14	0730092
Ø 93.0		14	0730093
Ø 94.0	3-11/16"	14	0730094
Ø 95.0	3-3/4"	14	0730095
Ø 96.0		14	0730096
Ø 97.0	3-13/16"	14	0730097
Ø 98.0	3-7/8"	14	0730098
Ø 99.0		14	0730099
Ø 100.0	3-15/16"	14	0730100

HSS-Spare Drill

with tapered center tip

from Ø 18.0 - 60.0 Ø 6x50 mm	0602650
from Ø 61.0 - 100.0 Ø 8x50 mm (old design)	0602850

MT Arbors



MT-2 (Ø 31.0 - 100.0 mm)	0734002
MT-3 (Ø 31.0 - 150.0 mm)	0734003

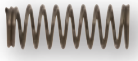
Weldon adaptor

from Ø 37.0 mm (inc. ejector pin Prod. No. 1950500)	060WD

Spare Ejector

For tapered center drill

from Ø 18.0 - 100.0 mm Ø 6 mm	0732006
from Ø 61.0 - 100.0 mm Ø 8 mm	0732008



Drilling in checker sheet

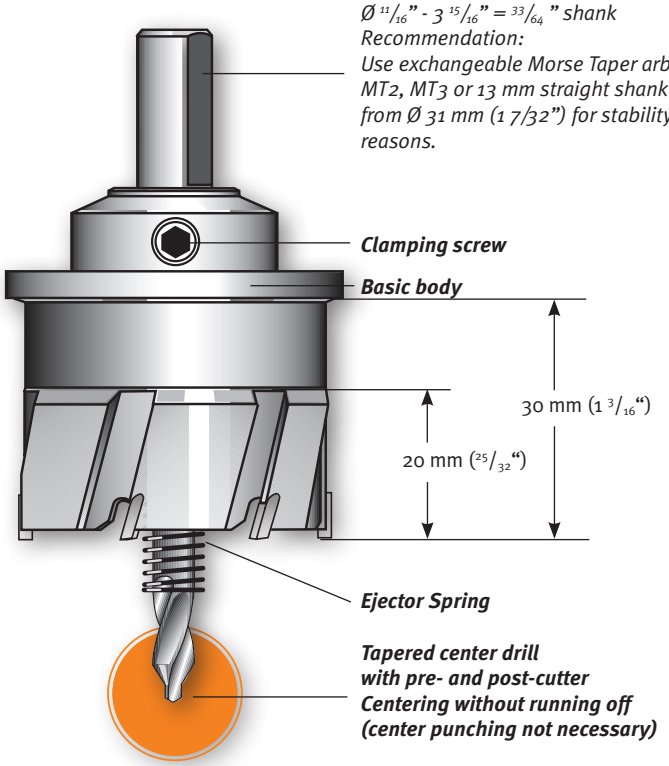
Drilling in square profiles

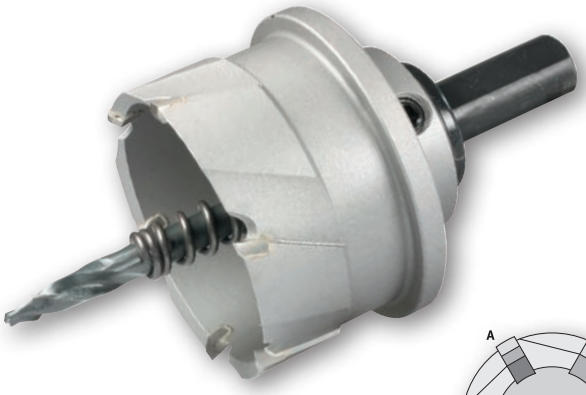
Drilling in flat steel

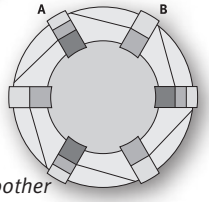
Drilling in pipes

ALFRA TCT-Hole Saws – MBS-Pro

The TCT Multi-Range Hole Saw • Made in Germany by ALFRA







Cutting geometries
Variable teeth, less Vibration, longer tool life, smoother cutting.

MBS-Multirange Hole Saws for universal use. **Max. cutting depth 20 mm (25/32")**

Suitable for flat materials but also for pipes and curved surfaces. Cutting of overlapping holes is possible. CAD optimized precision tools with high cutting performance and durability.

For use on stationary and portable drilling machines
(recommended up to max. Ø 40 mm; 1 9/16")

- **Portable drilling Machines: up to 6 mm (15/64") material thickness**
- **Stationary drilling Machines: up to 20 mm (25/32") material thickness at cutting depths from 6 mm (15/64") we recommend clearing the chips.**

MBS hole saws can be resharpened, and it is possible to replace broken out teeth depending on the condition of the hole saw.

Advantages: All Alfra TCT Hole Saws MBS-Pro type are equipped with an ejector spring.
The cut material is self-ejecting. The cut material is self-ejecting.

Another special technical feature:
From Ø 31 mm (1 7/32"), we use specially hardened tool holders to compensate for the torsional power in case of heavy operation, which avoids early shearing off of the tool holder shank.

In terms of construction not comparable with any other make.

MBS – for almost limitless use

e.g., on Rotabest Magnetic Drilling Machine (with MT2 or MT3 – arbors) and Weldon adaptor Prod.-No. 060WD on Machines with Weldon Shank.

Ø mm	Ø Inches	No. of teeth	Prod.-No. mm
Ø 18.0	11/16"	6	0760018
Ø 18.6		6	07600186
Ø 19.0	3/4"	6	0760019
Ø 20.0		6	0760020
Ø 20.4		6	07600204
Ø 21.0	13/16"	6	0760021
Ø 22.0		6	0760022
Ø 22.5		6	07600225
Ø 23.0	7/8"	6	0760023
Ø 24.0	15/16"	6	0760024
Ø 25.0		6	0760025
Ø 26.0	1"	6	0760026
Ø 27.0	1-1/16"	6	0760027
Ø 28.0		6	0760028
Ø 28.3		6	07600283
Ø 29.0	1-1/8"	6	0760029
Ø 30.0	1-3/16"	6	0760030
As from Ø 31.0 mm (1-7/32") we recommend the use of MT arbors			
Ø 31.0		6	0760031
Ø 32.0	1-1/4"	6	0760032
Ø 33.0		6	0760033
Ø 34.0	1-5/16"	6	0760034
Ø 35.0	1-3/8"	6	0760035
Ø 36.0		6	0760036
Ø 37.0	1-7/16"	6	0760037
Ø 38.0		6	0760038
Ø 39.0	1-1/2"	6	0760039
Ø 40.0	1-9/16"	6	0760040
Ø 41.0		6	0760041
Ø 42.0	1-5/8"	6	0760042
Ø 43.0	1-11/16"	6	0760043
Ø 44.0		6	0760044
Ø 45.0	1-3/4"	6	0760045
Ø 46.0		6	0760046
Ø 47.0	1-13/16"	6	0760047
Ø 48.0	1-7/8"	6	0760048
Ø 49.0		6	0760049
Ø 50.0	1-15/16"	6	0760050
Ø 51.0	2"	6	0760051
Ø 52.0		6	0760052
Ø 53.0	2-1/16"	6	0760053
Ø 54.0	2-1/8"	6	0760054
Ø 55.0		6	0760055
Ø 56.0	2-3/16"	6	0760056
Ø 57.0	2-1/4"	6	0760057
Ø 58.0		6	0760058
Ø 59.0	2-5/16"	6	0760059
Ø 60.0	2-3/8"	8	0760060
Ø 61.0		8	0760061
Ø 62.0	2-7/16"	8	0760062
Ø 63.0		8	0760063
Ø 64.0	2-1/2"	8	0760064
Ø 65.0		8	0760065
Ø 66.0	2-9/16"	8	0760066
Ø 67.0	2-5/8"	8	0760067
Ø 68.0		8	0760068
Ø 69.0	2-11/16"	8	0760069
Ø 70.0	2-3/4"	8	0760070
Ø 71.0		10	0760071
Ø 72.0	2-13/16"	10	0760072
Ø 73.0	2-7/8"	10	0760076
Ø 74.0	2-15/16"	10	0760074
Ø 75.0		10	0760075

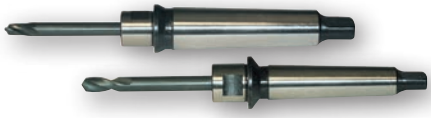
Ø mm	Ø Inches	No. of teeth	Prod.-No. mm
For drilling stainless steel from Ø 76.0 mm we recommend using Rotabest AL cutters (Prod.-No. 200205....)			
Ø 76.0	3"	10	0760076
Ø 77.0		12	0760077
Ø 78.0	3-1/16"	12	0760078
Ø 79.0	3-1/8"	12	0760079
Ø 80.0		12	0760080
Ø 81.0	3-3/16"	12	0760081
Ø 82.0		12	0760082
Ø 83.0	3-1/4"	12	0760083
Ø 84.0	3-5/16"	12	0760084
Ø 85.0		12	0760085
Ø 86.0	3-3/8"	14	0760086
Ø 87.0	3-7/16"	14	0760087
Ø 88.0		14	0760088
Ø 89.0	3-1/2"	14	0760089
Ø 90.0	3-9/16"	14	0760090
Ø 91.0		14	0760091
Ø 92.0	3-5/8"	14	0760092
Ø 93.0		14	0760093
Ø 94.0	3-11/16"	14	0760094
Ø 95.0	3-3/4"	14	0760095
Ø 96.0		14	0760096
Ø 97.0	3-13/16"	14	0760097
Ø 98.0	3-7/8"	14	0760098
Ø 99.0		14	0760099
Ø 100.0	3-15/16"	14	0760100

HSS-Spare Drill

with tapered center tip

from Ø 18.0 - 60.0 Ø 6x80 mm	0732680
from Ø 61.0 - 100.0 Ø 8x80 mm (old design)	0732880

MT Arbors



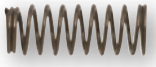
MT-2 (Ø 31.0 - 100.0 mm)	0734002
MT-3 (Ø 31.0 - 100.0 mm)	0734003

Weldon adapter

from Ø 31.0 mm (incl. ejector pin Prod. No. 1950500)	060WD

Spare Ejector

For tapered center drill



from Ø 15.2 - 100.0 Ø 6 mm suitable for spare drill Ø 6 mm	0762006

Drilling structured sheet metals

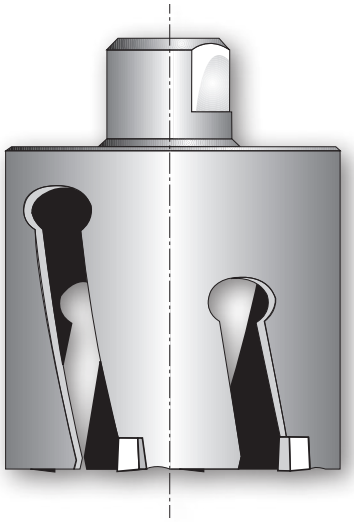
Drilling tubes

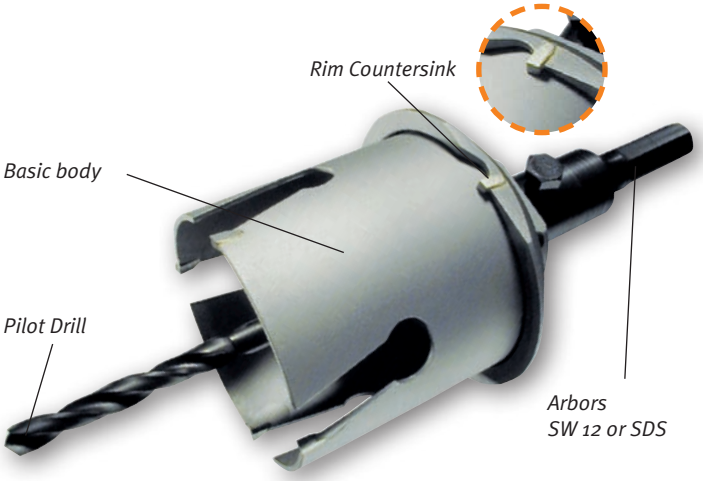
Drilling flat steels

Free-hand drilling up to Ø 30 mm

ALFRA TCT-Hole Saws – FRP

The TCT Multi-Range Hole Saw • Made in Germany by ALFRA

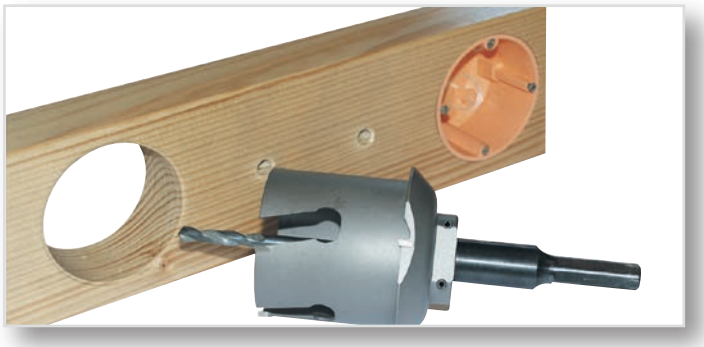




Prod.-No. 0740068060 – FRP Ø 68 mm with tool holder and rim countersink

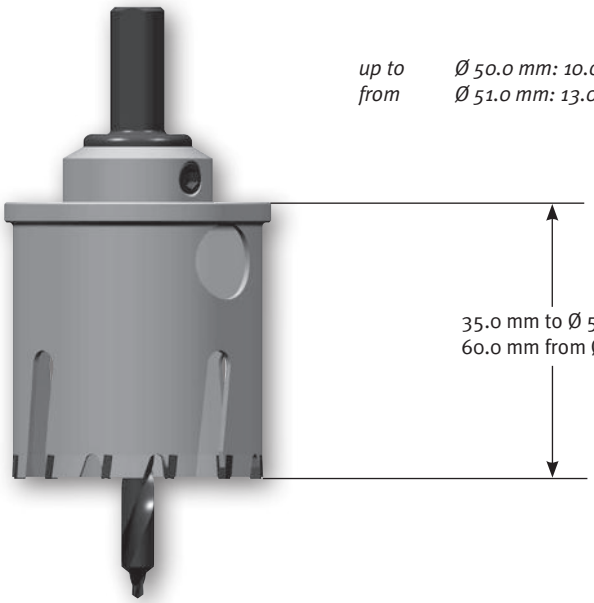
Cutting depth 60 mm (2-3/8”)

- Specially designed for wood, plain, laminated and coated chip board, plywood, paper-base laminate, PVC, glass fibre reinforced plastic, gas concrete, Ytong stone, plasterboard, hollow gauged brick/stones.
- No blocking due to optimal cutting geometry.
- Simple drill core removal based on new chip space design.
- In the event of a tooth breaking, it can easily be replaced and re-sharpened.
- Only use when rotating, switch off hammer action.
- Ideal for electricians, plumbers and heating engineers, carpenters and cabinet makers, stair construction and kitchen furniture fitters.



Perfect assembly of sockets in e.g. wood, gypsum plaster board,...

ALFRA TCT-Hole Saws – FRP Multi-Tooth



with arbor shank

- Cutting depth 35.0/60.0 for sandwich-composite material, wood and chipboard coated with insulation and sheet metal (also stainless), e.g., counters and refrigerators.

Please indicate material and thickness!

Ø mm	inch	TCT-Hole Saws FRP single drill bit, cutting depth 60 mm	Prod.-No.
25.0		Sanitary and heating pipes	0740025060
25.0		Sanitary and heating pipes	0740025060
35.0	1-3/8"	Sanitary and heating pipes	0740035060
		Cavity wall branch box, halogen reflector lamp	
40.0		Sanitary drain pipes	0740040060
45.0		Water and heating pipes	0740045060
50.0		with insulation	0740050060
55.0		Recessed lights Ø 55 mm	0740055060
58.0		Recessed lights Ø 58 mm	0740058060
60.0		Recessed lights Ø 60 mm	0740060060
63.0		Switch box Ø 60 mm	0740063060
65.0		Cavity wall box Ø 65 mm	0740065060
68.0		Cavity wall box Ø 68 mm	0740068060
70.0		Cavity wall branch boxes Ø 70 mm	0740070060
74.0		Cavity wall branch box Ø 74 mm	0740074060
80.0		Junction boxes, cable gland covers, Recessed lights Ø 80 mm	0740080060
85.0		Recessed lights Ø 85 mm	0740085060
90.0		Recessed lights Ø 90 mm	0740090060
105.0		Discharge air pipes	0740105060

Rim countersink for Ø 68 mm 0741068000

Tool Holder wrench size 12 0742000001

Tool Holder SDS 0742000002

Spare center drill HSS 7.2 mm 0742000003

FRP Hole Saw Set Electrician

Content: 0743000001
1 each of Ø 35/ 68/74
1 Tool Holder wrench size 12
1 HSS drill

FRP Hole Saw Set Lighting

Content: 0743000002
1 each of Ø 35/60/68/80/85 mm
1 Tool Holder wrench size 12
1 HSS drill

Ø mm	TCT-Hole Saws FRP Multi-tooth No series production. Delivery on request. with arbor, cutting depth 35/60 mm.	Prod.-No.
40.0	Sanitary drain pipes	0750040040
40.0	Water and heating pipes	0750045040
50.0	with insulation	0750050040
55.0		0750055040
60.0		0750060060
63.0	Switch boxes, diameter 60 mm	0750063060
65.0		0750065060
68.0	socket drill	0750068060
70.0		0750070060
74.0	Junction boxes, diameter 70 + 74 mm	0750074060
75.0		0750075060
80.0	Junction boxes	0750080060
85.0		0750085060
90.0		0750090060
95.0		0750095060
100.0		0750100060
105.0	Discharge air pipes	0750105060
Intermediate sizes and other cutting depths on request		0759 ... ...

HSS spare drill for FRP Multi-tooth

Ø 30.0 - 59.0 mm = 8 x 80	0752880
Ø 61.0 - 105.0 mm = 8 x 100	0752800

Prod.-No. 0743000001

Prod.-No. 0743000002

ALFRA-Precision Multi-Step Drills

- Spiral grooved, each step with axial and radial relief grinding according to its diameter
- Laser-etched scale in the chip space
- Special drill tip enables centering and drilling even through thin-walled materials
- Burr-free drilling with no deformation of the sheet
- Regrindable
- Available in HSS and HSS with TiAlN coating

Multi-Step Drills – HSS DM 05

More precise hole diameter through cylindrical steps. Hole deburring through the next step.

Application area:
The ideal tool for sheet metal forming, for the electrical industry, HVAC or the common engineering or the switchboard industry.

Suitable for all materials such as nonferrous metals, stainless steel sheets, thermoplastic and thermosetting plastics, as well as for steel sheets up to a max. material thickness of 6 mm.

With the Multi-Step Drills, sheet metals can be centered, drilled and subsequently deburred in one work step.

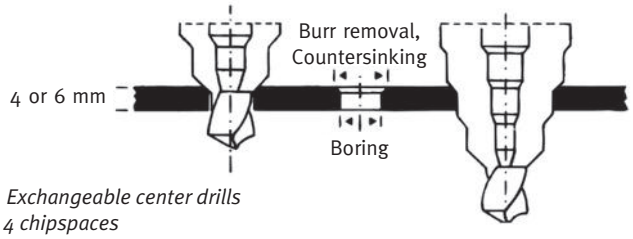
- A break of the drill tip mostly occurs through high feed forces at the start of the drilling operation. Multi-step drills with fixed drill tips are worthless then. A broken center drill in an ALFRA multi-step drill can be easily replaced. This more than compensates for the higher price.
- Each stage is equipped with a radially adjusted relief grinding corresponding to its diameter.
- Each stage is provided with an axial relief grinding and a relief angle on its cutting edge.
- All step diameters are laser marked on the tool.

Benefits of multi-step drills with keyway and 3 cutting edges:
- The keyway allows the drill to make a chipping cut during drilling for better chip removal.
- The special keyway geometry, arranged around the drill, makes for a longer cutting edge compared to the usual straight groove and noticeably easier cutting.
- Spiral cut chip spaces guarantee an absolute running smoothness and a high cutting capacity.

Tip:
The tool life can be considerably prolonged by using of ALFRA Cutting Spray or ALFRA Coolant Stick.

Advantages of TiAlN hard coating:
- Suitable for use on very hard materials (VA).
- Offers optimal tool life with the same use at the highest cutting speeds.
- Very high microhardness HV 0.05 of 3200 – so that the blue-black hard coating is more than 20% harder than conventional gold-yellow TIN coating.
- Maximum working temperature: 800°C.

Description	Shank Ø	Prod.-No.
AMS	10.0	08080
For general machine construction, drills circular holes in metals up to 4 mm thick, through application with hand drills, indispensable on the work-site. 3 chip spaces, spiral grooved, replaceable center drill **Steps Ø 9 - 12 - 15 - 18 - 21 - 24 - 27 - 30 - 33 - 36 mm (Step „40" is for deburring)**		
AMS – TiAlN coated	10.0	08081
3 chip spaces, spiral grooved, replaceable center drill TiAlN coated **Steps Ø 9 - 12 - 15 - 18 - 21 - 24 - 27 - 30 - 33 - 36 mm (Step „40" is for deburring)**		
AM 1	12.0	08002
Steps Ø 25 - 28 - 31 - 34 - 37 - 40 - 43 - 46 - 49 - 52 - 55 - 58 mm		
PVD	10.0	08003
For the electrical industry, matched to holes for armoured conduit thread clearance holes, saves considerable time when producing borings for PG **Steps Ø PG 7 - PG 9 - PG 11 - PG 13 - PG 16 - PG 21 - 33 mm - PG 29 - 40 mm**		



■ *Exchangeable center drills*
✖ *4 chipspaces*

Prod.-No. 08080 ■

Prod.-No. 08081 ■

Prod.-No. 08002 ■ ✖

Prod.-No. 08003 ■ ✖

Multi-Step Drills – HSS DM 05

More precise hole diameter through cylindrical steps. Hole deburring through the next step.

Description	Shank Ø	Prod.-No.
PVD-TiN-coated	10.0	08004
PVK Like PVD, but for armoured conduit thread **core hole PG** **Steps Ø PG 7 - PG 9 - PG 11 - PG 13 - PG 16 - PG 21**	10.0	08005
SVB Pre-drill specifically for punches & dies **Steps Ø 8.5 - 11.5 - 12.5 - 16.5 - 21.0**	10.0	08016
DKS 32 3 chip spaces, spiral grooved, replaceable center drill **Clearance holes Ø 12.5 - 16.5 - 20.5 - 25.5 - 32.5** **Core holes Ø 10.5 - 14.5 - 18.5 - 23.5 - M12 - M16 - M20 - M25 - M32**	12.0	08082
DKS 32 TiAlN coated 3 chip spaces, spiral grooved, replaceable center drill **Clearance holes Ø 12.5 - 16.5 - 20.5 - 25.5 - 32.5** **Core holes Ø 10.5 - 14.5 - 18.5 - 23.5 - M12 - M16 - M20 - M25 - M32**	12.0	08083
DKS 40 3 chip spaces, spiral grooved, replaceable center drill, for metric borings acc. to EN, **Core - and clearance holes M 10 - M 40** **Steps Ø 10.5 - 12.5 - 14.5 - 16.5 - 18.5 - 20.5 - 25.5 - 32.5 - 38.5 - 40.5**	10.0	08084
DKS 40 – TiAlN coated 3 chip spaces, spiral grooved, replaceable center drill For metric borings acc. to EN 50262 **Core - and clearance holes M 10 - M 40** **Steps Ø 10.5 - 12.5 - 14.5 - 16.5 - 18.5 - 20.5 - 23.5 - 25.5 - 32.5 - 38.5 - 40.5**	10.0	08085
DKI-VA 4 chip spaces, replaceable center drill of HSS-Co 5 steel. For stainless steel to 3 mm thick **Core - and clearance holes M 10 - M 40** **Steps Ø 10.5 - 12.5 - 14.5 - 16.5 - 18.5 - 20.5 - 23.5 - 25.5 - 32.5 - 38.5 - 40.5**	10.0	08032
Spare center drill suitable for AMS – PVD – PVK – DKI – DKS		08007
Spare center drill TiAlN suitable for AMS – PVD – PVK – DKI – DKS		08008

Prod.-No. 08004 ■ ✖

Prod.-No. 08005 ■ ✖

Pre-drill specifically for punches & dies

Prod.-No. 08016

Prod.-No. 08082 ■

Prod.-No. 08083 ■

Prod.-No. 08084 ■

Prod.-No. 08085 ■

Prod.-No. 08032 ■ ✖

Prod.-No. 08007

Prod.-No. 08008

■ *Replaceable center drill* ✖ *6 With 4 chip spaces*

Multi-Step Drills – HSS DM 05

More precise hole diameter through cylindrical steps. Hole deburring through the next step.

Standard execution with 2 chip spaces, spiral grooved.

- More precise hole diameter through cylindrical steps.
- Immediate deburring through the next step
- Drilling of sheet metals as thin as 4 mm possible.
- Use coolant stick!
- The keyway allows the drill to make a chipping cut during drilling for better chip removal.
- Longer cutting edge compared to the usual straight groove and noticeably easier cutting.
- Laser-etched scale in the chip space to indicate the bore diameter achieved.

Description	Bore range	Shank Ø	Length	Prod.-No.
AM-12	4 - 12 mm x 1 mm	6.0	70 mm	08070
AM-20	6 - 20 mm x 2 mm	9.0	77 mm	08071
AM-30	6 - 30 mm x 2 mm	10.0	98 mm	08072
Set in plastic case				08073
Contents: 1 of each Type AM-12/AM-20/AM-30				
High-performance coolant stick				09012

Prod.-No. 08072

Prod.-No. 09012

Prod.-No. 08073

Standard values for the use of ALFRA Multi-step drills

This drill was developed to bore perfectly round and deburred holes in sheet metal from 4 - 6 mm thick. The transition forms a radius which serves to deburr or bevel the hole at the same time. While conical one-lip bits drill a slightly tapered hole, our ALFRA multi-step drill achieves a cylindrical hole. The tools have axial-radial relief grindings and can be lightly reground on the breast of the cutting tooth.

We recommend the use of pillar drilling machines, however, the small ALFRA Multi-step drills can be used on adjustable hand drilling machines. Sufficient cooling using ALFRA coolant stick or a bore emulsion is imperative.

Speed chart rpm

Type		sheet steel S235	stainless steel sheets	non-ferrous metals	plastics (soft)
AM	drill	800	360	1000	1000
	countersink	500 - 180	50 - 70	800 - 400	1000 - 400
AM-1	drill	800	360	1000	1000
	countersink	200 - 100	100 - 50	500 - 200	600 - 250
PVD+PVK+DKI	drill	800	360	1000	1000
PVD-VA + SVB	countersink	400 - 200	200 - 100	800 - 500	1000 - 600

Precision Conical One-Lip Bits – HSS DM 05

With laser-etched scale

ALFRA Precision Conical One-Lip Bits are the ideal tools for general sheet metal working. Fields of applications include HVAC, electronic industries, engineering and panel building.

To be used on non-ferrous metals, stainless steels, thermo- and duroplastic plastics, as well as on all common sheet steels up to a material thickness of max. 4 mm. With ALFRA Conical One-Lip Bits, you can center, spot drill and bore up in one work step.

If treated carefully, can be reground many times.

The tool life can considerably be prolonged by using ALFRA Cutting Oil or Coolant Stick.

Packing: separately in plastic box with operation manual.

Size	Range	Shank-Ø	Prod.-No.
1	3.0 - 14.0	6.0	09001
2	6.0 - 20.0	8.0	09002
3	16.0 - 30.5	10.0	09003
4	26.0 - 40.0	12.0	09004
5	35.0 - 50.0	12.0	09005
6	46.0 - 60.0	13.0	09006
7 L	4.0 - 30.5	10.0	09007
8*	6.0 - 22.5	8.0	09008
Set 1	Size. 1 + 2 + 3 + Stift		09009
Coolant stick, separately			09011

***Special Antenna-Bit**

- Conical one-lip bit with cylindrical end section to drill holes for car antennas.
- Burr-free, no deformation, no countersinking, dimensional accuracy
- Size 6.0 - 22.5 mm.

Precision Conical One-Lip Bit Set

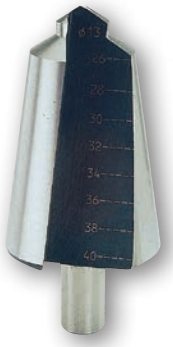
	Prod.-No.
Tin box	09009

Contents:
1 x Size 1
1 x Size 2
1 x Size 3

Prod.-No. 09001

Prod.-No. 09002

Prod.-No. 09003



Prod.-No. 09004

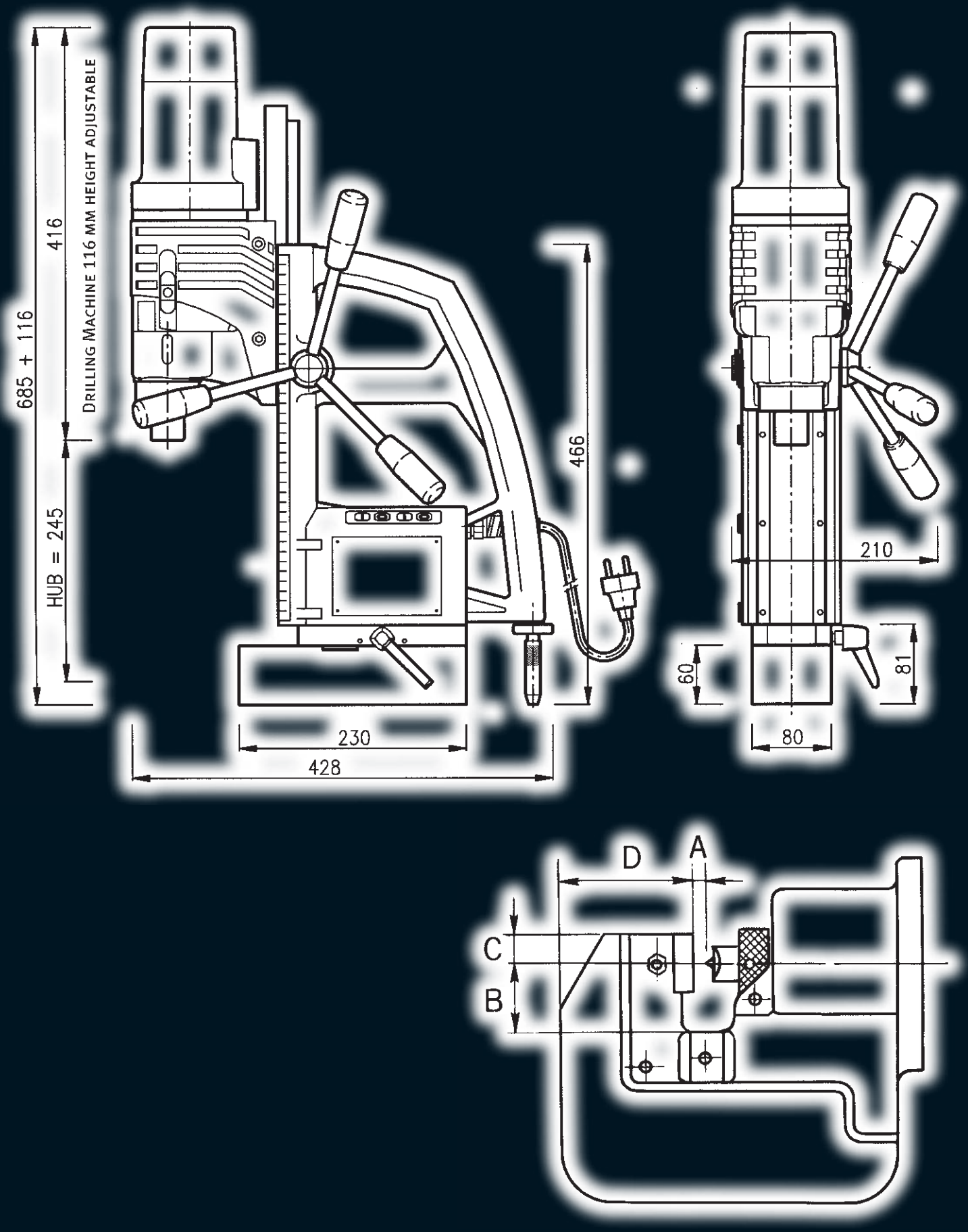
Prod.-No. 09005

Prod.-No. 09006

Prod.-No. 09007

*Prod.-No. 09008**

Prod.-No. 09009

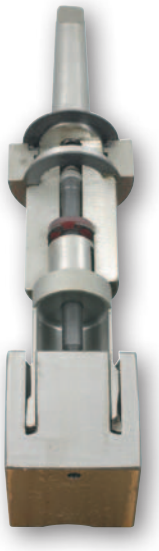

685 + 116
416
DRILLING MACHINE 116 MM HEIGHT ADJUSTABLE
HUB = 245
466
230
428
210
60
81
80
D
A
C
B

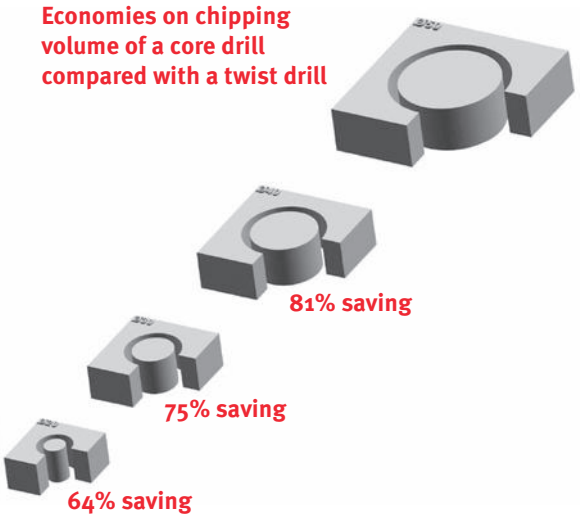
THE CORE DRILLING PRINCIPLE

Metal core drilling was introduced in Germany by ALFRA

- Core Drills machine only a fraction of the material at the same bore diameter than a twist drill
- The remaining core is ejected after finishing the drilling process.
- Thereby minor power and feed pressures are required.
- When using twist drills, it is possibly required to pre-drill. This is entirely omitted when using core drills, you can directly drill with the requested diameter.

The primary drilling time is abbreviated considerably depending on the cutting diameter.





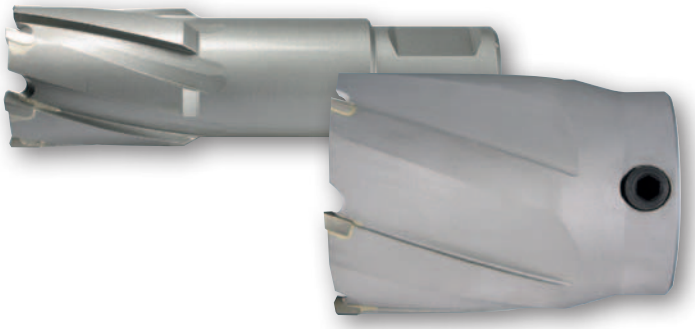
ALFRA Cutters – RPM-Chart

For HSS and HSS-Co Cutter

Material		Unalloyed steel up to 700 N/mm²	Alloyed steel up to 1000 N/mm²	Alu-alloy
Vc=m/min		30	20	30
Lubricants		Cutting oil	Cutting oil	Cutting oil
Ø mm	Ø inch	rpm	rpm	rpm
Not suitable for automatic feed!				
12	15/32	796	531	796
13	33/64	735	490	735
14	35/64	682	455	682
15	19/32	637	425	637
16	5/8	597	398	597
17	43/64	562	375	562
18	45/64	531	354	531
19	3/4	503	335	503
20	25/32	478	318	478
21	53/64	455	303	455
22	7/8	434	290	434
23	29/32	415	277	415
24	15/16	398	265	398
25	63/64	382	255	382
26	1 1/32	367	245	367
27	1 1/16	354	236	354
28	1 3/32	341	227	341
29	1 9/64	329	220	329
30	1 3/16	318	212	318
31	1 7/32	308	205	308
32	1 17/64	299	199	299
33	1 19/64	290	193	290
34	1 11/32	281	187	281
35	1 3/8	273	182	273
36	1 27/64	265	177	265
37	1 29/64	258	172	258
38	1 1/2	251	168	251
39	1 17/32	245	163	245
40	1 37/64	239	159	239
41	1 39/64	233	155	233
42	1 21/32	227	152	227
43	1 11/16	222	148	222
44	1 47/64	217	145	217
45	1 25/32	212	142	212
46	1 13/16	208	138	208
47	1 55/64	203	136	203
48	1 57/64	199	133	199
49	1 15/16	195	130	195
50	1 31/32	191	127	191
60	2 3/8	159	106	159

While drilling Hardox, we recommend the use of our ASP 30/ASP 60 cutters. Please use while drilling Hardox, pure cutting oil and reduce the rotation speed by 10%. Consult the column „alloyed steel“ until 1.000 N/mm². Please, use only magnet drilling machines with a high adhesion force or pillar drilling machines or milling machines.

For TCT Cutter



Material		Unalloyed steel up to 700 N/mm²	Alloyed steel up to 1000 N/mm²	Alu-alloy
Vc=m/min		50	35	60
Lubricants		Cutting oil	Cutting oil	Cutting oil
Ø mm	Ø inch	rpm	rpm	rpm
Not suitable for automatic feed!				
18	45/64	885	619	1062
19	3/4	838	587	1006
20	25/32	796	557	955
21	53/64	758	531	910
22	7/8	724	507	869
23	29/32	692	485	831
24	15/16	663	464	796
25	63/64	637	446	764
26	1 1/32	612	429	735
27	1 1/16	590	413	708
28	1 3/32	569	398	682
29	1 9/64	549	384	659
30	1 3/16	531	372	637
31	1 7/32	514	360	616
32	1 17/64	498	348	597
33	1 19/64	483	338	579
34	1 11/32	468	328	562
35	1 3/8	455	318	546
36	1 27/64	442	310	531
37	1 29/64	430	301	531
38	1 1/2	419	293	503
39	1 17/32	408	286	490
40	1 37/64	398	279	478
41	1 39/64	388	272	466
42	1 21/32	379	265	455
43	1 11/16	370	259	444
44	1 47/64	362	253	434
45	1 25/32	354	248	425
46	1 13/16	346	242	415
47	1 55/64	339	237	407
48	1 57/64	332	232	398
49	1 15/16	325	227	390
50	1 31/32	318	223	382
55	2 5/32	290	203	347
60	2 3/8	265	186	318
65	2 9/16	245	171	294
70	2 3/4	227	159	273
75	2 61/64	212	149	255
80	3 5/32	199	139	239
85	3 11/32	187	131	225
90	3 35/64	177	124	212
95	3 47/64	168	117	201
100	3 15/16	159	111	191

TAPPING – RECOMMENDED DIMENSIONS (ISO 26H-TOLERANCE)

Recommendet characteristics for the use of drills with tapping attachments

Tapping: the tap must be adjusted on the prepared boring in the workpiece. Put down spindle, until the tap touches the surface and the process can be started. Please comply with below chart for metric ISO thread.

Bore Hole Chart metric ISO-thread

Dimension	Thread Pitch	drill-Ø
M3	0.5	2.5
M4	0.7	3.3
M5	0.8	4.2
M6	1	5
M8	1.25	6.8
M10	1.5	8.5
M12	1.75	10.2
M14	2	12
M16	2	14
M18	2.5	15.5
M20	2.5	17.5

Metric Fine Thread

Dimension	Thread Pitch	drill-Ø
M8x1	1	7
M10x1	1	9
M12x1	1	11
M12x1.5	1.5	10.5
M14x1	1	13
M14x1.5	1.5	12.5
M16x1	1	15
M16x1.5	1.5	14.5
M20x1	1	19
M20x1.5	1.5	18.5

Tips for tapping

1. **Clearance Hole**
   For Clearance Holes we recommend alongside mentioned taps, which safely conveys the chips out of the hole. The specially shaped grinding guarantees a safe re-mounting, when the tap opted out of the thread hole and returns in left hand rotation.

2. **Tapped Blind Holes**
   For Tapped Blind Holes we recommend alongside mentioned taps. The chips are conveyed out of the hole contrary to the cutting direction. Important: do not run aground with tap, as otherwise the automatic return run won't be activated. A correspondingly larger pre-drilling depth must be carried out.

   In case of a disregard, the tap must be manually released.

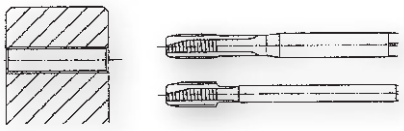
3. **Pocket Holes up to 1.5 x D**
   Taps according to alongside mentioned image are suitable. Here as well, the chips are conveyed out of the hole contrary to the cutting direction. Important: do not run aground with tap. A correspondingly larger pre-drilling depth must be carried out.

   In case of a disregard, the tap must be manually released.

Beside our taps with reinforced shanks, other taps according to DIN 376 with tapper shank are suitable as well

Please work with sufficient recommended for tapping by the corresponding manufacturer.

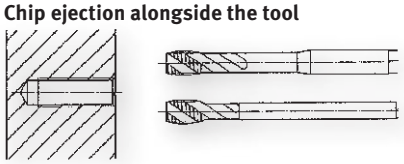
Chip ejection downwards trough the bore



DIN 371 with reinforced shank Shape B, with spiral face inclination, 3.5 to 5 convolutions.

DIN 376 with tapper shank
Tap depth 3 x D

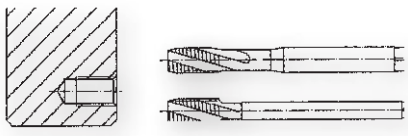
Chip ejection alongside the tool



DIN 371 with reinforced shank spiral grooved, ca. 35° right hand twist, Section chape C, ca. 3 convolutions

DIN 376 with tapper shank
Tap depth 2.5 x D

Chip ejection alongside the tool



DIN 371 with reinforced shank spiral grooved, ca. 17° right hand twist, Section chape C, ca. 3 convolutions

DIN 376 with tapper shank
Tap depth 1.5 x D

The choice of the proper tool size at a given material thickness is a usual question in daily practice.

For customary punch models, an old rule says that the minimum tool size is the material thickness.

This rule is no more valid for our hydraulically actuated punches.

The rule only still applies for fast moving mechanical presses: Thicker materials could cause the punch to break.

With our ALFRA PRESS APS-punches, the process is carried out by a smooth, slow motion allowing the punching of holes with a diameter smaller than the material thickness.

But still, a certain minimum diameter has to be respected. For that reason, we have carried out tests, and the results are demonstrated in fig.1. Example:

You want to punch holes into a steel plate made from DIN S233. Which is the correct ratio of material thickness to tool size?

The shear strength of the material is at 30 kg/mm² approx. The recommended ratio is represented by line A. The corresponding value on the ordinate is 1.3.

Result: The recommended ratio is 1.3.

The **upper** tolerance limit for that ratio is represented by line B which at this point gives an ordinate value of 1.7. Hence, it is possible to punch holes with a diameter of only 1/1.7 of the material thickness. You may use this tolerance value for exception, but the service life of the tool will be significantly reduced.

We would like to remind you only to use line A for the correct determination of the ratio of material thickness to hole size.

Minimum tool size at a given material thickness

At a given material thickness, fig. 2 can be used for the rapid determination of the tool size. The values for Al, Cu, DIN S233 and St 70 are indicated.

Example:

You want to punch holes into a steel plate of DIN S233; the material thickness is 20 mm. Which is the minimum hole diameter to be punched?

Look for the corresponding value on the solid line.

Result: Minimum hole diameter is 15 mm.

The dashed line represents the upper tolerance values, which can be used only for exception (reduced tool life).

We recommend you to select the hole size by means of the solid line.

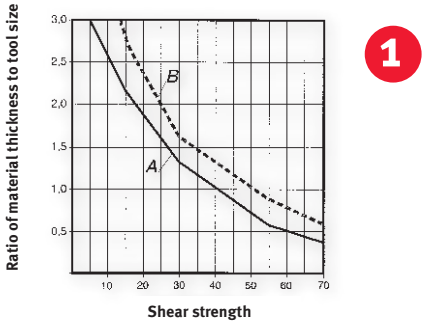
ALFRA punches and dies are made of high-quality materials. But still, sometimes a tool may break.

The following reasons have to be taken into account:

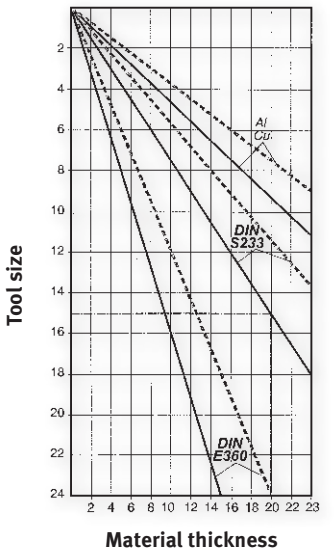
1. Incorrect selection of the ratio of tool size to material thickness.
2. The material is not aligned straight on the die.
3. Disturbing movements during the punch process.
4. The hold-down is damaged, or its height is not adjusted correctly, so that the material will be tilted during the removing of the punch.
5. The distance between hold-down and tool is too large. Thin sheets can be bended during the removing of the punch. In such cases, the tool breaks at the cutting edge in the form of thin leaves.

   In that case we recommend the hold-down to be equipped with a bridge or the utilization of a special hold-down.

Proper ratio at a given shear strength



1



2

B

ALFRA Punching Unit APS – Working Range

Material DIN S275

	Material thickness mm	Required force for punching [kN] (10 kN ... approx. 1 ton) • Punch diameter (mm)																				
		7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	Material DIN S233	APS 60											APS 70/70D				APS 120/110D						
APS 60 (DIN S275)	3	25	28	32	35	39	43	46	50	53	57	60	64	67	71	74	78	82	85	89	92	96	99
	4	33	38	43	47	52	57	61	66	71	76	80	85	90	94	99	104	109	113	118	123	128	132
	5	41	47	53	59	65	71	77	83	89	94	100	106	112	118	124	130	136	142	148	154	159	165
	6	50	57	64	71	78	85	92	99	106	113	120	128	135	142	149	156	163	170	177	184	191	198
	7	58	66	74	83	91	99	107	116	124	132	141	149	157	165	174	182	190	198	207	215	223	232
	8		76	85	94	104	113	123	132	142	151	161	170	180	189	198	208	217	227	236	246	255	265
	9			96	106	117	128	138	149	159	170	181	191	202	213	223	234	245	255	266	276	287	298
	10				118	130	142	154	165	177	189	201	213	224	236	248	260	272	283	295	307	319	331
APS 70 APS 70D (DIN S275)	11					143	156	169	182	195	208	221	234	247	260	273	286	299	312	325	338	351	364
	12						170	184	198	213	227	241	255	269	283	298	312	326	340	354	369	383	397
	13							200	215	230	246	261	276	292	307	322	338	353	369	384	399	415	430
APS 120 APS 110D (DIN S275)	14								232	248	265	281	298	314	331	347	364	380	397	413	430	447	463
	15									266	283	301	319	337	354	372	390	408	425	443	461	478	496
	16										302	321	340	359	378	397	416	435	454	472	491	510	529
	17											341	361	382	402	422	442	462	482	502	522	542	562
	18												383	404	425	447	468	489	510	532	553	574	595

Actual punching force

APS	60	70	120	70D	110D
in kN	225	313	470	454	508

	DIN S233	DIN S275	DIN S355	DIN E335	C 25	C 35	C 45	C 60
Rm max (sheet metal)	470	510	630	710	600	700	800	900
Tau max = 0.85 * Rm max	376	408	504	568	480	560	640	720
coef. (Steel X / DIN S233)	1.00	1.09	1.34	1.51	1.28	1.49	1.70	1.91

Example 1: **punching instrument APS 70D, F max=454 kN**
Punch diameter Ø=20 mm
Material thickness T=8 mm
Material C 45, R_m max=800 N/mm²

Calculation 1: **F = F(DIN S233) * coeff.(C 45/DIN S233)**
F = 189 * 1.70 = 321.3 kN
F is smaller than F max, punching force is sufficient

Example 2: **punching instrument APS 70, F max=313 kN**
Punch diameter Ø=21 mm
Material thickness T=12 mm
Material DIN S275, R_m max=510 N/mm²

Calculation 2: **F = F(DIN S233) * coeff.DIN S275/DIN S233)**
F = 298 * 1.09= 324.8 kN
F is smaller than F max;
Punching force is not sufficient;
Please select our APS 120

B

Conversion – Pressure

- Pascal (pa) =1 Newton (N) /m²
- 1 Bar (bar) =
  10 hoch 5 Pa = 10 hoch 5 N/m² = 10 N/m² = 750.06 Quecksilbersäule (QS)
- 1 bar = 1.019 bar = 0.1 N/mm² = 14.5 psi
- 1 kg /cm2 (atu) = 0.981 bar = 0.0981 N/mm2 = 14.2234 psi
- 1 bar = 1.02 technical atmospheres (at) = 1.02 kp/cm2 = 10 N/cm2
- 1 physical atmospheres (atm) =
  1.013 bar = 1.033 bar = 760 mm WC = 760 torr
- 1 torr = 1.332 mbar
- 1 m water column (mWC = 0.0980665 bar
- 1 mmWC = 0.0980665 mbar = 9.80655 Pa
- 1 N/mm2 = 10 bar = 10.19 bar = 145 psi
- 1 psi = 0.069 bar = 0.0703 bar 00.0069 N/mm2

Conversion Table – Units of Pressure

Converting the pressure units “bar” and “psi”

bar	psi	psi	bar
1	14.5	1	0.068965517
10	145	100	6.896551724
100	1450	100	6.896551724
500	7250	5000	344.8275862
1000	14500	10000	689.6551724
1200	17400	10500	724.137931

ALFRA – TIPS FOR RIGHT DEBURRING

Model KFH 150, KFH 250, KFT 250, KFT 500

Our precision high performance motors are continuously adjustable. We recommend to start with a low engine speed and to raise it continuously when milling.

The optimal engine speed can be detected by the running noise of the milling cutter and by the infeed.

The tool depending cutting speed, can be found out with the help of a well known formula and therefore the revolution can be adjusted in advance:

$$n = \frac{V_c \ 1000}{d \times 3.14} \text{ U/min}$$

d = cutter-Ø, n = rpm, 3.14 = Pi

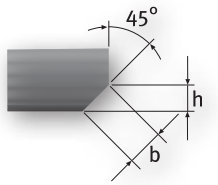
Responsible for the milling cutter speed (N) and the cutting speed (Vc) are first of all the used material, the bevel height and the cutting geometry of the solid carbide-milling cutter.

The bevel height (h)

For choosing the right solid carbide-milling cutter the bevel height is determining. When using the table based models KFT 250 and KFT 500 it must be considered, that the tool needs to be hold and controlled manually. If the milling power is too high, especially for little work pieces, the bevel height should be reached by several production steps.
Don't do bigger bevels in one go!

Bevel width (b)

The bevel width can be measured by use of the formula (b = h x 1.414)



Rotating direction

When machining the work pieces on the table based models, the rotating direction must be obeyed.

When using the hand operated models (KFH 150, KFH 250) the running direction (compare arrow) must be considered.
Synchronous milling is only applicable for a very small bevel height.

Surface finish

The surface finish of the bevel is depending on the used solid carbide milling cutter and the material as well as on the chosen infeed. If the chips start to glow, the infeed was too high or the milling cutters too thin.

Tool saving costs

In combination with the above mentioned models also standard solid carbide-end mill with face grinding can be used. By moving the milling cutter inside the arbor, the milling cutter can be consumed totally.

Cost reduction:
The bigger part of the End Mill´s cutting range can be used by moving the End Mill in the collet.

B

ALFRA BEVEL MILLING MACHINE – SKF 63-15

Material	Advance Recommendation
General construction steels up to 850 N/mm2	**0.8 - 1.0 m/min**
Hardened steels over 850 N/mm2	**0.75 m/min**
Stainless and acid-proof steels up to 600 N/mm2	**0.5 m/min**
Steel casting up to 450 N/mm2	**0.6 m/min**
Cast iron up to 400 N/mm2	**0.8 - 1.0 m/min**
Aluminium	**0.4 m/min**

(special indexable inserts required, available on separate request)

ALFRA – Carbide Milling Plates for Bevel Milling Machine SKF-63-15

	Prod.-No.
Carbide Milling plates, TiAlN/TiN-PVD multilayer coating Universal for steel and stainless steel Clearance angle 11°	25013
Carbide Milling plates, TiAlN/TiN-PVD multilayer coating for steel ‹ 850 N/mm²; stainless steel ‹› 900 N/mm² Clearance angle 20°	25010.15036B

	Prod.-No.
Carbide Milling plates, TiAlN/TiN-PVD multilayer coating for steel ‹ 1400 N/mm²; stainless steel ‹› 900 N/mm² Clearance angle 11°	25010.15036E
Carbide Milling plates, high gloss polished for aluminium and NE-metals Clearance angle 11°	25010.15036.C

Clearance Angle

Is the angle between the TCT tooth and the material to be cut. ALFRA TCT Cutters are equipped with serveral clearance angles at a cutting edge.

Cutting Depth
Is the maximum material thickness which might be cut with the particular tool (not to be mistaken with the constructive height of the tool).

Chip Flute
Takes the generated chips and advances this out of the bore.

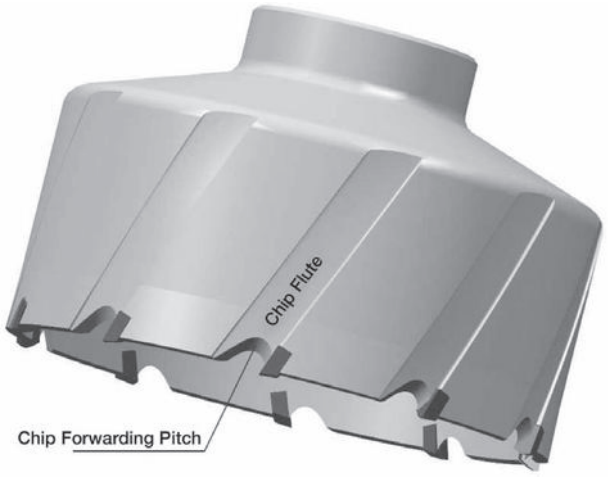
Chip Forwarding Pitch
Forwards the chips from the TCT tooth to the chip flute.

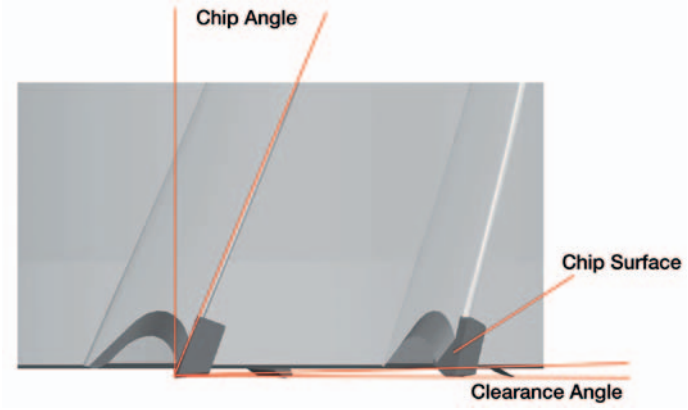
Chip Surface
On this surface the chip is formed.

Chip Angle
Is the angle between tool axis and chip surface.

Tooth Excess Length
Is the carbide excess to the basic body.

Tooth Height Difference
Acts as a chip breaker.





RPM, cutting speed and feed (approximate value)
Rotabest®-TCT cutter
Not suitable for automatic feed

Material	m/min	mm/rpm
Constructional steel 50 kp/m²	40-60	0.08-0.12
Steel 50-70 kp/m²	30-50	0.08-0.12
Stainless steel	18-45	0.8-0.10
Cast iron	65-95	0.12-0.20
Non-ferrous metals, Aluminium	100-550	0.22-0.45
Exotic alloys	10-30	0.05-0.08

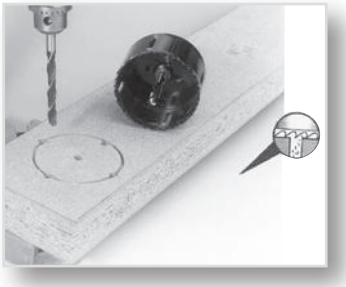
Exactness (approximate value)/input/+ 0.10 mm Output /±0 mm

HSS Bi Metal Hole Saws – Notes on use

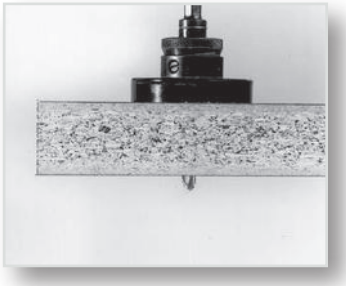
To achieve the best results:

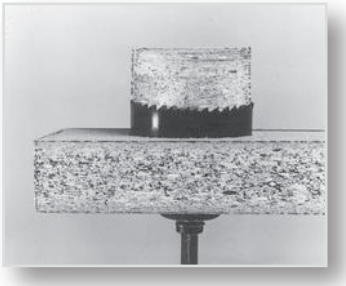
1. Use the hole saws at the recommended cutting speed, see guide table on the packaging.
2. Do not apply excess pressure. Apply a little more pressure for a harder material and less pressure for a softer material.
3. In order to achieve good centring, the centre drill must project approximately 6 mm beyond the teeth. It is recommended that the hole is first predrilled with a twist drill and then the centre drill is used in the adapter as a centring pin.
4. Use a good cutting oil when drilling metal. This extends the hole saw's service life and prevents premature blunting of the tooth tips.
5. The arbor of the adapter must be firmly clamped with the flattened sides correctly seated in the chuck.
6. The hole saw must cut into the workpiece at a right angle. Avoid tilting. Risk of accident.
7. If large hole saw diameters are used in hand-held drills, the hand-held drill must be held particularly firmly. A drill stand should be used where possible.
8. The adapter must be firmly screwed into the hole saw with all its thread and the driver pins must be firmly seated in the driver holes.
9. Secure the driver pins with the rotating ring or lock in the case of a quick-change adapter.
10. Wear protective goggles when working with the bi-metal hole saws and keep hands away in case saw runs out. Never attempt to stop with your hands a saw that is running off.
11. Lift the saw clear frequently, especially when cutting timber, chipboard and wood substitutes and remove the sawdust and chips. If this is not done, the tooth tips can burn and the hole saw will jam in the cut.
12. We recommend the following procedure when drilling timber, chipboard and wood substitutes:

Drill a number of holes immediately inside the cut. This helps carry the chips away and avoids frequent interruptions in cutting to clean the tooth tips.



If the workpiece is especially thick ...
... it is also recommended that you cut from both sides, or drill a number of holes immediately inside the circular cut. This helps carry the chips away and avoids frequent interruptions in cutting to clean the tooth tips.





Enlarging existing holes

Existing holes 32 mm (1-1/4") or more in diameter may be enlarged with a simple trick: Take a 32 mm diameter hole saw and screw this inside the hole saw on the projecting thread of the A2 adapter. The inner hole saw then acts as a kind of guiding hole saw for extending existing holes, see photo.

What you absolutely must avoid:

1. Drilling at too fast or too slow a cutting speed. The teeth will glide over the material and become prematurely blunt.
2. Avoid bringing the saw teeth abruptly down on the workpiece, the teeth will break off.
3. Never cut metallic materials dry. Always use a cutting oil.
4. Never bring the saw up to the workpiece on a slant. There is a risk of injury when hand drills are used. The saw can break up or the arbor could be damaged.
5. Ensure that the hole saw is running true. Check the chuck as necessary.
6. Never screw the adapter's guide pins only partially into the hole saw guide holes. The thread of the hole saw could be torn out.
7. Never regrind the hole saw freely by hand. Have hole saws reground by a specialist. Care must be taken to ensure sufficient residual setting and a uniform tooth height.
8. If the tool arbor is pushed into the chuck or if the arbor shears off, the advance pressure is too great.
9. If the hole saw is unevenly worn on the outside, then the saw is not running true or the material to be sawn was not correctly clamped.
10. If the tooth tips are blued, the saw has been used without cutting oil, or at too high a cutting speed.

HSS Bi-Metal Hole Saws – Speed Chart

Recommended Speed for various materials (RPM)

Diameter mm	Mild Steel	Cast Iron	Tool steel + stainless steels	Brass	Aluminium	Wood
14	580	400	300	790	900	3000
16	550	365	275	730	825	3000
17	500	330	250	665	750	3000
19	460	300	230	600	690	3000
20	440	290	220	580	660	3000
21	425	280	210	560	635	3000
22	390	260	195	520	585	3000
24	370	245	185	495	555	3000
25	350	235	175	470	525	2700
27	325	215	160	435	480	2700
29	300	200	150	400	450	2700
30	285	190	145	380	425	2400
32	275	180	140	380	410	2400
33	260	175	135	345	390	2400
35	250	165	125	330	375	2400
37	240	160	120	315	360	2400
38	230	150	115	300	345	2400
40	220	145	110	290	330	2100
41	210	140	105	280	315	2100
43	205	135	100	270	305	2100
44	195	130	95	260	295	2100
46	190	125	95	250	285	2100
48	180	120	90	240	270	2100
51	170	115	85	230	255	2000
52	165	110	80	220	245	2000
54	160	105	80	210	240	2000
57	150	100	75	200	225	2000
59	145	100	75	195	225	2000
60	140	95	70	190	220	2000
64	135	90	65	180	205	1800
65	130	85	65	175	200	1800
67	130	85	65	170	195	1800
70	125	80	60	160	185	1800
73	120	80	60	160	180	1800
76	115	75	55	150	170	1500
79	110	70	55	140	165	1500
83	105	70	50	140	155	1500
86	100	65	50	130	150	1200
89	95	65	45	130	145	1200
92	95	60	45	120	140	1200
95	90	60	45	120	135	1200
98	90	60	45	120	135	1200
102	85	55	40	110	130	1000
105	80	55	40	110	120	1000
108	80	55	40	110	120	900
111	80	50	40	100	120	900
114	75	50	35	100	105	900
121	75	50	35	95	95	900
127	65	45	30	90	90	800
133	60	40	25	86	85	800
140	60	40	25	85	85	800
146	55	35	25	75	75	800
152	55	35	25	75	75	800

These speeds are benchmarks. The speed can we higher or lower, this depends on the material type and the cutting behaviour.
Attention: Do not use cutting oil, if you are cutting cast iron. If you are cutting aluminium use paraffin wax or paraffin.

Calculation of the Cutting Speed

n = Speed (1/min)
v_c = Cutting speed (m/min)
d = Tool diameter (mm)

$$v_c = \frac{\pi \times d \times n}{1000}$$

TCT-Hole Saws – Speed Chart

Speed calculation

n = Speed (1/min)
v_c = Cutting Speed (m/min)
d = Tool diameter (mm)

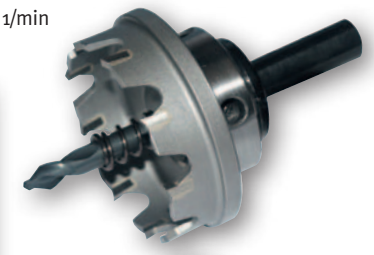
$$n = \frac{v_c \times 1000}{d \bullet \pi}$$

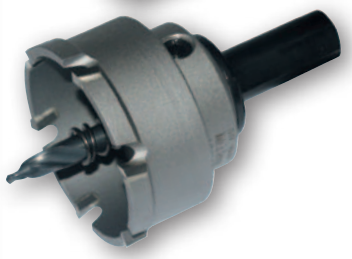
Worked sample:

d = 20 mm
v_c = 50 m/min

$$n = \frac{50000}{20 \bullet \pi} = 795.77 \text{ 1/min}$$

Tool Ø	Cutting speed (m/min)												
		Stainless steel material				Mild steel - ST material							
	20	25	30	35	40	45	50	55	60	65	70	75	80
16	398	498	597	697	796	896	995	1095	1194	1294	1393	1493	1592
18	354	442	531	619	708	796	885	973	1062	1150	1238	1327	1415
20	318	398	478	557	637	717	796	876	955	1035	1115	1194	1274
22	290	362	434	507	579	651	724	796	869	941	1013	1086	1158
24	265	332	398	464	531	597	663	730	796	863	929	995	1062
26	245	306	367	429	490	551	612	674	735	796	857	919	980
28	227	284	341	398	455	512	569	626	682	739	796	853	910
30	212	265	318	372	425	478	531	584	637	690	743	796	849
32	199	249	299	348	398	448	498	547	597	647	697	746	796
34	187	234	281	328	375	422	468	515	562	609	656	703	749
36	177	221	265	310	354	398	442	487	531	575	619	663	708
38	168	210	251	293	335	377	419	461	503	545	587	629	670
40	159	199	239	279	318	358	398	438	478	518	557	597	637
42	152	190	227	265	303	341	379	417	455	493	531	569	607
44	145	181	217	253	290	326	362	398	434	470	507	543	579
46	138	173	208	242	277	312	346	381	415	450	485	519	554
48	133	166	199	232	265	299	332	365	398	431	464	498	531
50	127	159	191	223	255	287	318	350	382	414	446	478	510
52	122	153	184	214	245	276	306	337	367	398	429	459	490
54	118	147	177	206	236	265	295	324	354	383	413	442	472
56	114	142	171	199	227	256	284	313	341	370	398	427	455
58	110	137	165	192	220	247	275	302	329	357	384	412	439
60	106	133	159	186	212	239	265	292	318	345	372	398	425
62	103	128	154	180	205	231	257	283	308	334	360	385	411
64	100	124	149	174	199	224	249	274	299	323	348	373	398
66	97	121	145	169	193	217	241	265	290	314	338	362	386
68	94	117	141	164	187	211	234	258	281	304	328	351	375
70	91	114	136	159	182	205	227	250	273	296	318	341	364
72	88	111	133	155	177	199	221	243	265	288	310	332	354
74	86	108	129	151	172	194	215	237	258	280	301	323	344
76	84	105	126	147	168	189	210	230	251	272	293	314	335
78	82	102	122	143	163	184	204	225	245	265	286	306	327
80	80	100	119	139	159	179	199	219	239	259	279	299	318
82	78	97	117	136	155	175	194	214	233	252	272	291	311
84	76	95	114	133	152	171	190	209	227	246	265	284	303
86	74	93	111	130	148	167	185	204	222	241	259	278	296
88	72	90	109	127	145	163	181	199	217	235	253	271	290
90	71	88	106	124	142	159	177	195	212	230	248	265	283
92	69	87	104	121	138	156	173	190	208	225	242	260	277
94	68	85	102	119	136	152	169	186	203	220	237	254	271
96	66	83	100	116	133	149	166	182	199	216	232	249	265
98	65	81	97	114	130	146	162	179	195	211	227	244	260
100	64	80	96	111	127	143	159	175	191	207	223	239	255





FRP Hole Saws

Ø mm	Timber Chipboard	Plastics	Masonry	Wall tiles*
25/30/35	1000	800	800	500
40/45/50	800	600	700	400
58 to 74	600	400	600	400
80/105	400	300	300	300

* Drilling in tiles only up to a scratch hardness of 6, mark centre, set the centre drill and drill through the glaze with at a low speed, allow the saw teeth to penetrate the glazing uniformly, running as smoothly and level as possible, so that the edge of the hole is made without chipping. Continue drilling at a normal drilling speed. Tiles with a scratch hardness greater than 6 may only be cut with diamond or carbide hole saws.

Notes on use
- Use rotation only. Switch off impact or hammer drill.
- Impact and shock on the sharp, ground carbide cutters can lead to small carbide splinters and thus to a severe loss of performance.
- Do not tilt the hole saw in the hole.
- Remove the drill core after each operation. Remove the sawdust when drilling timber and timber products.

Notes on use
For multipurpose hole saw with rim countersink
- The rim countersink is placed between hole saw and adapter and the carbide cutter is used to make a countersink in timber and timber substitutes. This makes it possible to fit sockets flush.

Important notes on use
- The hole saw with rim countersink may not be stopped before it is removed.
- Advance with care, to prevent the cut edges tearing.

Speed Chart – Multi-Step Drills/Conical One-Lip Bits

ALFRA-Multi-step drills

These drills were especially to drill perfectly round and simultaneously deburred holes insheet metals of 4 - 6 mm. The radius transition simultaneously deburrs or bezels the holes. While conical one-lip bits drill slightly conical holes, cylindrical holes can be drilled with ALFRA Multi-step drills. The tools are axial-radially relief ground and ccan be resharpened at the breast of the cutting tooth.

We recommend the use of pillar drilling machines, however, the small ALFRA Multi-step drills can be used on adjustable hand drilling machines.
Imperatively use sufficient cooling **(ALFRA coolant stick or bore emulsion)?**

ALFRA HSS DM 05 precision Multistep Drill

- **Take notice of the cuttig speed**
- **Grease the cutting lips in case of application**

The holes are deburred on both sides by the multistep drills. The multistep drill drills holes in thin materials, enlarges existing holes, makes inclined holes, drills pipes, makes holes penetrating each other. Suitable for any hand drill. For steel — PVC — polystrol — polyester — Plexiglas — card — plywood and similar materials. Can be reground many times, if treated carefully.

Material	Mild steel ‹ 700	Mild steel › 700	Alloy steel ‹ 1000	Cast iron ‹ 250	Cast iron › 250	Stainless steel	CuZn alloy brittle	CuZn alloy tough	AL alloy	Thermo-plastic	Duro-plastic	Wood
	N/mm²	N/mm²	N/mm²	N/mm²	N/mm²				‹ 11% Si			
Material gauge	5.0 mm	5.0 mm	5.0 mm	5.0 mm	5.0 mm	3.0 mm	5.0 mm	5.0 mm	5.0 mm	5.0 mm	5.0 mm	25.0 mm
Lubricant	Drilling paste	Drilling paste	Drilling paste	Air	Air	Drilling paste	Air	Air	Drilling paste	H_2O	Air	Air
Vc = m/min	25	20 - 25	20	15	10	5	60	35	30	20	15	› 40
Ø mm	rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm
4.0 - 12.0	1900 - 600	1700 - 580	1550 - 520	1190 - 400	800 - 250	400 - 130	4700 - 1550	2750 - 920	2350 - 790	1550 - 520	1190 - 400	3000 - 1000
4.0 - 20.0	1900 - 400	1700 - 350	1550 - 300	1190 - 240	800 - 160	400 - 80	4700 - 950	2750 - 550	2350 - 470	1550 - 300	1190 - 240	3000 - 650
12.0 - 20.0	600 - 400	600 - 350	520 - 300	400 - 240	250 - 160	130 - 80	1550 - 950	920 - 550	790 - 470	520 - 300	400 - 240	1000 - 650
4.0 - 24.0	1900 - 300	1700 - 280	1550 - 250	1190 - 200	800 - 130	400 - 65	4700 - 790	2750 - 460	2350 - 400	1550 - 250	1190 - 200	3000 - 550
6.0 - 30.0	1300 - 250	1200 - 230	1000 - 200	780 - 150	530 - 100	250 - 50	3150 - 630	1850 - 370	1590 - 310	1000 - 200	780 - 150	2100 - 420
20.0 - 30.0	400 - 250	350 - 230	300 - 200	230 - 150	160 - 100	80 - 50	950 - 630	550 - 370	470 - 310	300 - 200	230 - 150	650 - 420
6.0 - 36.0	1300 - 220	1200 - 200	1000 - 170	780 - 130	530 - 90	250 - 45	3150 - 530	1850 - 300	1590 - 260	1000 - 170	780 - 130	2100 - 350
30.0 - 40.0	250 - 200	230 - 180	200 - 150	150 - 120	100 - 80	50 - 40	630 - 470	370 - 280	310 - 240	200 - 150	150 - 120	420 - 310
40.0 - 50.0	200 - 160	180 - 140	150 - 125	120 - 90	80 - 65	40 - 30	470 - 380	280 - 220	240 - 190	150 - 125	120 - 90	310 - 250
50.0 - 60.0	160 - 130	140 - 110	125 - 100	90 - 80	65 - 50	30 - 25	380 - 310	220 - 185	190 - 150	125 - 100	90 - 80	250 - 210

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Issued: October 2014

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