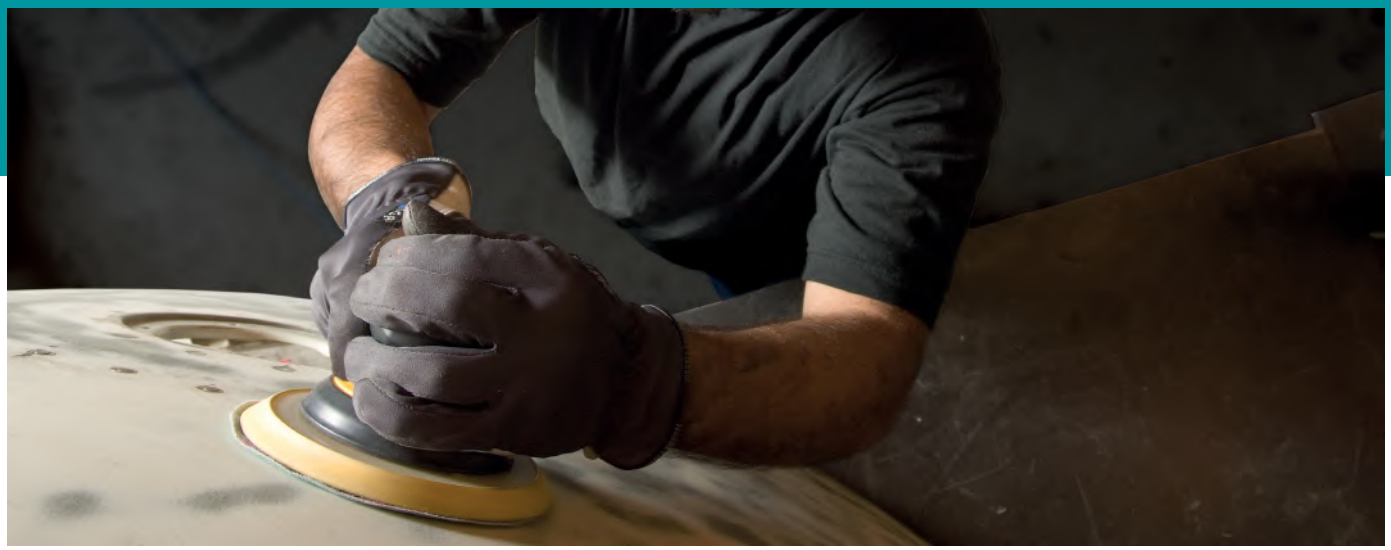


Surface Sanding and Polishing

Purpose

In rough grinding, the focus is on the amount or rate of material removal rather than surface finish. However, in surface sanding and polishing applications, much more attention is paid to surface quality. Main examples include sanding, cleaning, light deburring, polishing, and finishing. These operations are sometimes referred to as surface conditioning, which aims to improve the surface without changing the basic shape or dimension of the workpiece. Material removal should be minimal and reasonably uniform, often involving several stages.

There are few hard and fast divisions in material removal, covering a broad spectrum of related applications with gradual and often subjective transitions between grinding and sanding. This overlap can be seen in the equipment and techniques used. For example, sanding with abrasives such as flap wheels or coarse fiber discs can remove as much material as rough grinding but leave a much better surface.

Every surface, when magnified under a powerful microscope, looks like a cross-section of a mountain landscape. To obtain a smoother, more even surface, the contours have to be removed – the "peaks" leveled. This can be done by rubbing an abrasive back and forth over the surface, covering a larger area instead of concentrating on a spot. When a very smooth surface is required, using a liquid is an effective, low-friction way of removing the 'spent' grains and rubbing the surface finer. The liquid acts as a coolant. The highest gloss can be obtained by polishing an already smooth surface. A paste with abrasive additives can be applied using a soft bonnet or mop.

Settings: Rotational Speeds

The same basic grinding principle applies to surface applications. Coarser abrasives and higher speeds remove more material. Contact at high speed between the abrasive and surface spreads the feed force over a larger area and more grains, which retain their sharpness and stay attached to the backing longer. The speed shouldn't be so fast that the grains don't penetrate the cracks or hollows. If this happens, only the topmost edges will be removed, and the surface will not be totally smooth.

The key challenge is balancing the speed of our tools. At high speeds, the force is spread over a larger area, which can be efficient. However, at lower speeds, the abrasive can penetrate deeper into cracks. Finding the right speed ensures a thorough sanding and polishing job. This is done by setting the correct operating speed based on several factors: coarseness and flexibility of the abrasive, shape of the backing, and whether a liquid coolant or paste is used.

Technique

To get a smooth, even surface, the pad or abrasive should never be kept still at one spot during surface grinding. If it is, the abrasive tends to dig into the material, and the surface will not be satisfactory. The feed force should be continuously adjusted to the rotational speed, which should be kept at 60-80% of the maximum rotational speed of the tool. When the surface has been made as smooth as possible with a coarse coated abrasive, a finer quality or a nylon-coated abrasive can be used for finishing.

Grind, deburr, blend and polish, on metal, plastic, fiberglass, composites, rubber, glass and more with our belt sanders.

Description

Make a huge difference in small spaces and eliminate burrs and unnecessary costs with our versatile belt sanders. Perfect for cleaning welds, rust removal, or precision sanding in hard-to-reach areas (such as spherical surfaces and tubes), our belt sanders boast a robust framework with enhanced functionality, minimal vibration, and a high power-to-weight ratio. Our belt sanders feature exchangeable support arms, allowing you to change the dimension of the abrasive used. The arm attachment design even accommodates non-Atlas Copco arms for increased flexibility. To make these tools ideal for your applications, we offer arms, abrasives, and felt belts in different sizes, including 3-13mm x 305mm (for the LMB27) and 19mm x 520mm (for the LMB35).

Features

- High power-to-weight ratio
- Speed governor for optimal sanding speed
- Rubber grip on handle for insulation
- Quick and simple grinding belt replacement
- Integrated safety start lever
- Adjustable sanding arm

Benefits

- Reduced risk of vibration related injuries
- Excellent operator comfort and accessibility
- Minimum sound levels
- Excellent accessibility

Belt Sanders

LMB27 Details

LMB35 Details

LMB27 AND LMB35

Model	Max free speed	Belt speed	Belt dimension	Max output	Weight	Air consumption at free speed	Rec hose size	Air inlet thread BSP/NPT	Ordering No.
	r/min	m/min	mm	kW	kg	l/s	mm	in	
LMB27 S014	25000	1400	13x305	0.275	0.9	10	10	1/4	8423 0305 10
LMB35 S015	22000	1500	19x520	0.350	1	11	10	1/4	8423 0305 20

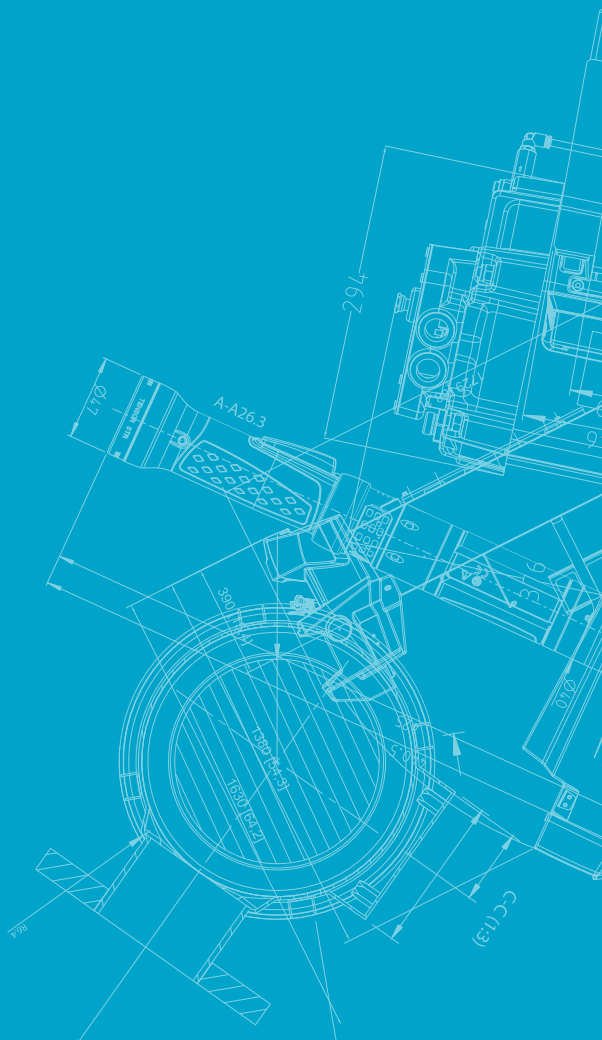
Accessories

	8423 1640 14	8423 1640 22	Ordering No.
Included			
Adapter - 1/4" BSP	✓	✓	4112 1120 00
Adapter - NPT (only for North American market)	✓	✓	4112 1303 00
Optional			
Contact arm sanding belts - 13 x 305 mm (1/2" x 12")(std arm)	✓	-	4112 3007 88
Contact arm sanding belts - 3 and 6 x 305 mm (1/8" and 1/4" x 12")	✓	-	4112 3007 78
Contact arm felt belts - 13 x 305 mm (1/2" x 12")	✓	-	4112 3007 79
Contact arm sanding belts - 19 x 520 mm (3/4" x 20-1/2")(std arm)	-	✓	4112 3008 83
Contact arm sanding belts - 19 x 460 mm (3/4'' x 18'')	-	✓	4112 3008 81
3M Scotch-brite felt belt kit COARS - 10 pcs, 13 x 305 mm (1/2"x12")	✓	-	4170 1210 00
3M Scotch-brite felt belt kit MEDIUM - 10 pcs, 13 x 305 mm (1/2"x12")	✓	-	4170 1210 01
3M Scotch-brite felt belt kit VERY FINE - 10 pcs, 13 x 305 mm (1/2"x12")	✓	-	4170 1210 02
3M Sanding belt kit GRIT SIZE 40+ / 20 pcs, 6 X 305 mm (1/4"x12")	✓	-	4170 1208 00
3M Sanding belt kit GRIT SIZE 60+ / 20 pcs, 6 X 305 mm (1/4"x12")	✓	-	4170 1208 02
3M Sanding belt kit GRIT SIZE 80+ / 20 pcs, 6 X 305 mm (1/4"x12")	✓	-	4170 1208 03
3M Sanding belt kit GRIT SIZE 120+ / 20 pcs, 6 X 305 mm (1/4"x12")	✓	-	4170 1208 04
3M Sanding belt kit GRIT SIZE 40+ / 20 pcs, 13 X 305 mm (1/2"x12")	✓	-	4170 1208 05
3M Sanding belt kit GRIT SIZE 60+ / 20 pcs, 13 X 305 mm (1/2"x12")	✓	-	4170 1208 06
3M Sanding belt kit GRIT SIZE 80+ / 20 pcs, 13 X 305 mm (1/2"x12")	✓	-	4170 1208 07

Continued on the next page (LMB 27 & LMB 35)

Accessories

	8423 1640 14	8423 1640 22	Ordering No.
Optional			
3M Sanding belt kit GRIT SIZE 120+ / 20 pcs, 13 X 305 mm (1/2"x12")	✓	-	4170 1208 08
3M Sanding belt kit GRIT SIZE 40+ / 20 pcs, 19 X 520 mm (3/4"x20-1/2")	-	✓	4170 1208 13
3M Sanding belt kit GRIT SIZE 60+ / 20 pcs, 19 X 520 mm (3/4"x20-1/2")	-	✓	4170 1208 14
3M Sanding belt kit GRIT SIZE 80+ / 20 pcs, 19 X 520 mm (3/4"x20-1/2")	-	✓	4170 1208 15
3M Sanding belt kit GRIT SIZE 120+ / 20 pcs, 19 X 520 mm (3/4"x20-1/2")	-	✓	4170 1208 16
Service kits - Service kit motor	✓	-	4081 0501 90
Service kits - Service kit motor	-	✓	4081 0520 90
Servive kits - Motor casing kit	✓	✓	4081 0519 90
Service kits - Service kit belt support	✓	-	4081 0503 90
Service kits - Service kit belt support	-	✓	4081 0521 90
MULTIFLEX-1/4-NPT (For North America)	✓	✓	8202 1350 26
MULTIFLEX-1/4 cover	✓	✓	8202 1350 41
MULTIFLEX-1/4	✓	✓	8202 1350 20
Productivity kit (MIDI-FRL-1/2-BSP EQ08-C10)	✓	✓	8202 0850 03



Atlas Copco AB

(publ) SE-105 23 Stockholm, Sweden
Phone: +46 8 743 80 00
Reg. no: 556014-2720

atlascopco.com