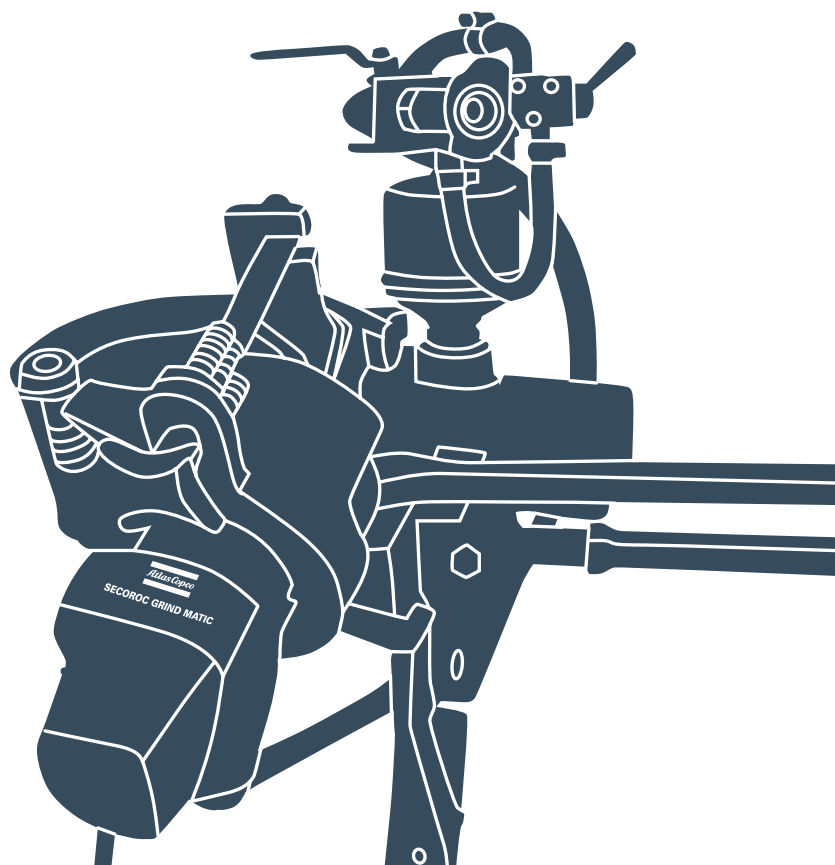


Grind Matic Swing

Operator's instructions
Spare parts list



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It can be dangerous to use this machine if the maintenance instructions are not followed carefully.



Before using the machine, read through the following instructions carefully, and keep them handy for future reference.

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Safety instructions

- Before starting, read all instructions carefully.
- The instructions contain important sections on safety.
- Special attention must be paid to the safety information contained in frames and accompanied by a warning symbol (a triangle) and a signal word, as shown below.

DANGER

Indicates an immediate risk that WILL result in serious injury or death if the warning is not observed.

WARNING

Indicates hazards or hazardous procedures which COULD result in serious injury or death if the warning is not observed.

CAUTION

• Indicates hazards or hazardous procedures which COULD result in injury or damage to equipment if the caution is not observed.

- Use approved spare parts only. Any damage or malfunction caused by the use of parts not approved by Secoroc is not covered by the Warranty or Product Liability.

The following general safety instructions must also be observed:

- Make sure that there are no other personnel close to the grinding machine while grinding is in progress.
- Always wear protective goggles, protective clothing, protective gloves and ear protectors during grinding. Any local regulations must also be observed.
- Wear an approved dust mask or arrange an effective dust extraction system. This is especially important when dry grinding indoors.
- The machine must not be used for any work other than that for which it is intended i.e. that which is described under the heading. See "Applications" on page 3.
- The machine must not be modified without the permission of the manufacturer. Modifications not approved by Secoroc can incur the risk of serious injury to yourself and others.
- Before intervening in the air system, make sure there is no pressure in the system. High pressure air can blow out with the risk of injury to the eyes and skin.

Beware of the risk of fire and/or explosion that could be initiated by sparks from the grinding work.

Technical data

Grinding machine	Product No.
Secoroc Swing	87002482
Air pressure, max	7 bar (101.5 psi)
Air consumption (at 6 bar, 85 psi)	1500 l/min
Cutting-edge angle	110°
Cutting-edge radius	80 mm (3.15 in)
Hose connections, air	12,5 mm (0.5 in)
Hose connections, water	6,3 mm (0.25 in)
Idling speed	4500 r/min
Power output	1,1 kW
Grinding wheel, dimensions (mm)	125 × 63 × 32 80 × 50
Grinding wheel, dimensions (in)	4,9 × 2.5 × 1,25 3,15 × 2.0
Spindle diameter	16 mm (0.6 in)
Max. peripheral speed (wheel)	35 m/s (115 ft/s)
Weight*	27,5 kg (61 lbs)
Sound pressure level during grinding**	85 dB(A)
Vibration level during grinding***	less than 2,5 m/s ²
Suitable lubricator	BLG 30

* Includes grinding wheel and 1,5 m water hose.

** Equivalent continuous A-weighted sound pressure level, measured at operator's ear level during grinding. Possible spread due to measuring method and production variables, 3 dB(A).

*** Measuring of vibration according to EN/ISO 8662.

Optional accessories	Product No.
Grinding wheel, Grind Master Soft	87002811
Pin wrench	
Protective goggles	
Operator's instruction and spare parts list	

Accessories delivered with machines	Product No.
Grinding wheel, Grind Master Hard	87002589
Grinding wheel, Grind Master Soft	87002811
Chuck bushing wear gauge, H19 (0.75 in)	87002667
Chuck bushing wear gauge, H22 (0.85 in)	87002668
Chuck bushing wear gauge, H25 (1 in)	87002669

General

The Secoroc Swing is a light and efficient grinding machine intended for integral steels with chisel-type inserts. Simple design makes the machine very easy to handle, while low weight and small dimensions make it easily portable. The Secoroc Swing is designed to grind 19, 22 and 25 mm ($\frac{3}{4}$ " , $\frac{7}{8}$ " and 1") integral drill steels without the need for adjustment. Gauge grinding can also be performed without having to adjust the machine. On worksites with no access to water, dry grinding is permissible, provided that a somewhat coarser grinding wheel is selected (see section "Changing the grinding wheel").

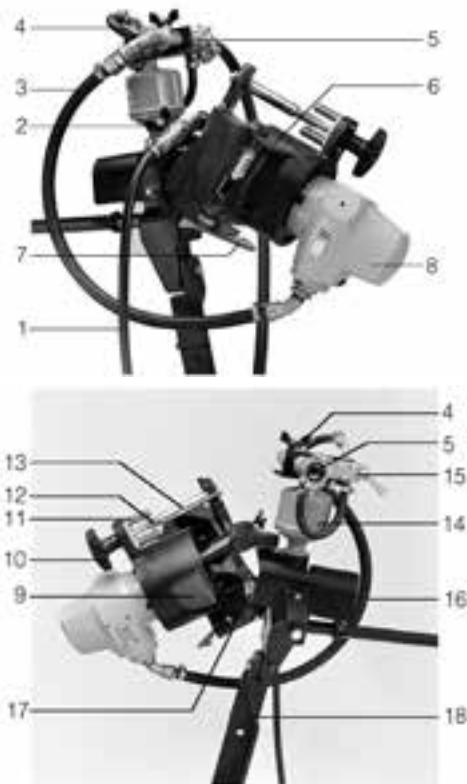
N.B. Beware of the risk of burning the insert when dry grinding. The system has low vibration levels.

Applications

The Secoroc Swing is intended for grinding integral steels with chisel bits only.

Technical description

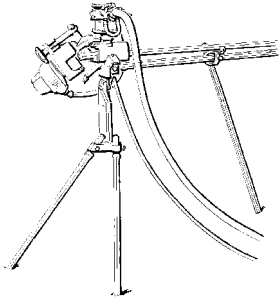
The Secoroc Swing grinding machine consists of two main parts: a frame and a swing-arm that is moved back and forth during grinding. On the frame there is a pneumatic clamping device for securing the drill steel, as well as two ON/OFF valves, one for the air motor and one for the clamping device. Attached to the swing-arm are the air motor, cup-type grinding wheel and feeding device. The feeding device is spring-assisted to maintain an even feed pressure. The air motor is of the vane type, and is equipped with a speed regulator to keep the motor speed constant. During gauge grinding or transportation of the grinder, the swing-arm is locked in position by means of a catch. A drill steel support is also supplied with the machine. The Secoroc Swing is intended for a maximum operating air pressure of 6–7 bar, which should never be exceeded.



1. Cooling-water hose, 6,3 mm
2. Cooling-water valve
3. Compressed-air hose, 12,5 mm
4. Compressed-air valve
5. Compressed-air inlet for 12,5 mm hose
6. Swing-arm / Wheel-guard
7. Swing-arm catch
8. Air motor
9. Grinding wheel
10. Feed wheel
11. Springs for evening-out the feed pressure
12. Feed screw
13. Feed nut
14. Pressure drum for pneumatic drill-steel clamping device
15. Valve for drill-steel clamping device
16. Guard
17. Drill-steel clamping device
18. Frame

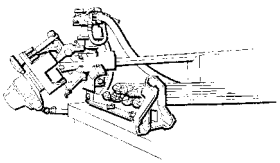
Setting up for grinding

The Secoroc Swing can be set up in several different ways, and thereby adapted to suit the demands at different worksites.



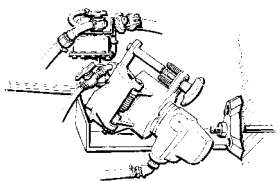
Mounting on drill steels

Four discarded integral steels (three 800 mm and one 1600 mm) can be used to make a stable stand for the machine. Two 800 mm steels are inserted into the holes in the bottom of the frame, and secured by means of the screws provided. The shank of the 1600 mm steel is then inserted into the hole in the top of the frame, and secured in the same way. The drill-steel support is attached to the other end of the long steel. Finally, the third 800 mm steel is inserted and secured into the underside of the drill steel support.



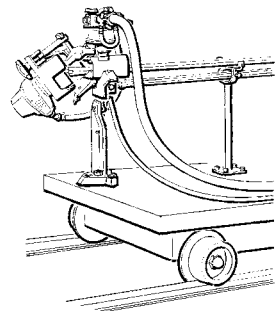
Mounting on a work bench

When the machine is to be mounted on a work bench, the two holes in the bottom of the frame are used for attachment.



Mounting on a rock wall

With the aid of a rock bolt, the machine can be bolted to a rock wall, e.g. in a tunnel. In this case, a separate drill steel support, which usually consists of a bolt, must be obtained.



Mounting on a bogie, trolley

The Secoroc Swing can of course also be mounted on a bogie, trolley or some other kind of vehicle.

CAUTION

- Exhaust air from air-driven grinders contains oil, which can be injurious to your health if inhaled. Always adjust the lubricator so that the machine receives the correct dosage.
- Make sure that the grinding station or worksite is well ventilated.
- Always wear goggles, protective clothing, gloves and ear protectors during grinding.
- Wear an approved dust mask or arrange an effective dust extraction system. This is especially important when dry grinding indoors.

Caring for your grinder

- Keep the machine clean.
- The compressed air should be clean and dry.
- Use the correct hose sizes (see "Technical data", page 3).
- Always blow clean the compressed air hose before connecting it to the machine.
- Be careful and thorough when connecting the air hose.
- Lubricate the grinding machine regularly. Follow the lubrication instructions carefully.
- Check the idling speed of the grinding machine regularly. It must be 4500 rev/min. It is especially important to check the speed when the machine has been reassembled after disassembly.
- When changing the grinding wheel, fit the new wheel carefully and tighten the screw properly to a torque of 14 Nm. Use the pin key (A, section Changing the grinding wheel).
- Always use grinding wheels of the correct grade and quality, so that the cemented-carbide inserts are not damaged.
- When the machine is to be left idle for long periods of time, make sure that it is generously lubricated.
- The incoming air hose must always be vented and disconnected before the machine is moved.

Grinding

Safety rules

DANGER

- Before grinding, make sure that there are no traces of explosive in the flushing hole at the bit end of the steel. To clean the flushing hole, use only a wooden rod, copper wire or flushing water.
- When fitting a grinding wheel to the machine, make sure that the wheel is not cracked. This can be checked by suspending the grinding wheel and tapping it lightly. If the wheel is undamaged, it should emit a clear ringing tone. See full instructions in section Changing the grinding wheel).
- Check that the maximum speed of the machine does not exceed the maximum permissible speed of the grinding wheel (the wheel should be approved for a peripheral speed of 35 m/s, 115 ft/s). Never use a grinding wheel intended for speeds lower than the maximum speed of the grinding machine (4500 rev/min at 6 bar, 85 psi).
- The speed of the air motor must not exceed 4500 rev/min at an air pressure of 6 bar (85 psi). Higher speeds can cause the grinding wheel to burst, which can result in serious injury or death.
- Never use the grinding machine if the speed regulator is not working properly. (See section Air motor parts).
- Do not remove the paper blotters (label) from the grinding wheel. They serve as gaskets and compensate for any irregularities that might be in the wheel. The max. permissible rotation speed and peripheral speed of the grinding wheel are stated on one or both of the paper blotters. If one or both blotters are missing, the grinding wheel must be discarded.
- Do not remove the grinding guard from the machine.
- When starting the machine, always position yourself so that you are protected by the machine's wheel guard.
- When grinding outdoors, beware of the risk of water accumulation and ice formation in the grinding wheel. It can cause an imbalance, which could cause the wheel to burst.

CAUTION

- Before changing the grinding wheel, always vent and disconnect the incoming air hose.
- The grinding machine must not be connected to air pressures higher than 7 bar (100 psi).
- Always wear goggles, protective clothing, gloves, ear protectors and a dust mask during grinding.

General rules

If possible, use cooling water during grinding and when dressing the grinding wheel.

Choose the right grinding wheel

Use a ceramically bonded silicon-carbide grinding wheel of the correct shape and size.

“Hard” for wet grinding, and “Soft” for dry grinding.

Do not overheat the cemented-carbide insert

Apply a suitable feed pressure and keep moving the grinding wheel from side to side in a sweeping motion during grinding by means of the swing-arm, so that the cemented-carbide insert does not discolour (i.e. burn). Make sure that the grinding wheel does not become clogged by particles of metal. Dress the grinding wheel when necessary.

Avoid rapid cooling

The drill steel must not be cooled rapidly in water or snow.

After grinding

Use an old grinding wheel to hone the edges of the insert and remove any sharp corners.

When you have finished grinding

When you have finished grinding, let the machine run for a few minutes to spin out any cooling water from the grinding wheel. When using cooling water, be sure to shut off the water when the grinding wheel is still.

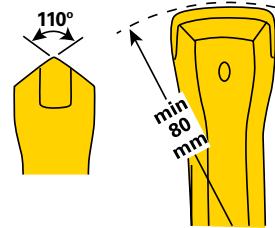
Grinding tips



Centralized edge

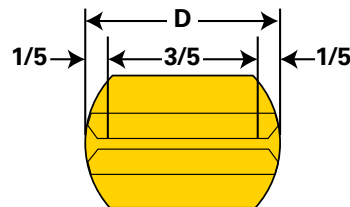
The insert edge must be straight and at the centre of the insert. Grind equally on both sides.

Correct angle and insert radius



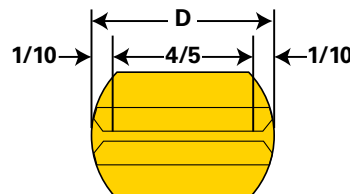
The insert angle should be 110° and the insert radius at least 80 mm (3.15 in).

Normal wear

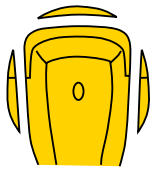


Do not grind the insert sharp all the way out to the edges. Grind sharp over 3/5 of the insert diameter (D) only.

Heavy wear at the corners

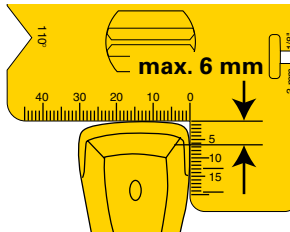


Certain kinds of rock cause heavy wear to the corners of the insert. In such conditions, grind a little more, leaving only 1/10 of the insert diameter (D) not sharp on each side.

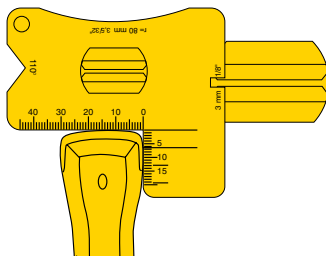


Removing an anti-taper

If the bit develops an anti-taper, it should be reduced through a combination of frontal- and gauge grinding, or by means of frontal grinding alone.



Grind until the height of the anti-taper is no greater than 6 mm (0.25 in). After grinding, check the insert diameter and sort the integral steel into an appropriate series.



Grind in good time

Check the insert wear using an Secoroc grinding gauge. Even if there are no visible signs of wear, grind the integral steel every 100–150 drillmetres (325–450 ft).

In the case of frontal wear

The insert should be ground when the width of the wear flat reaches 3 mm (0.12 in), measured 5 mm (0.2 in) from the outer edges of the insert. (In the case of H19 integral steels for light rock drills, it is time to grind when the width of the wear flat reaches 2 mm (0.08 in)).

In the case of gauge wear

It is time to start gauge grinding when the height of the anti-taper on the bit reaches 8 mm (3.2 in) (max. 5–6 mm, 0.2–0.25 in, in soft rock). The height of the anti-taper is measured from the tip of the insert to the point at which the anti-taper begins.

Frontal grinding

Procedure

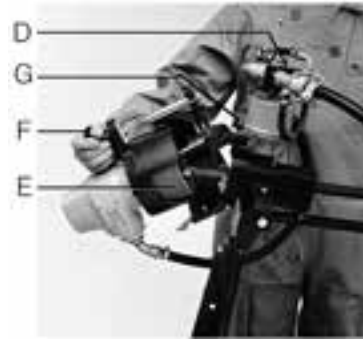
1. Slide the integral steel through the clamping device (A) until the insert touches the V-shaped stop (B) on the swing-arm (C).



2. Clamp the integral steel in the clamping device by opening the valve (D). Check that the supports in the clamping device are not worn. Worn supports can cause crooked grinding, and must therefore be changed.

3. Turn out the grinding wheel (E) by means of the feed wheel (F) until there is no danger of it biting directly into the insert when grinding begins. Now start the motor.

4. Open the water valve if usage of hard wheel.



5. Move the grinding wheel back and forth over the insert 1 to 2 times per second, at the same time turning the feed wheel (F) gradually. The grinding wheel should be moved far enough each way so that it passes beyond the edges of the insert completely. The number of passes on each side of the insert will depend on the amount of wear, but usually varies between 5 and 15.

6. Never apply too much feed. The grinding wheel can damage the cemented-carbide insert.

7. Release the integral steel when one side of the insert has been ground. Turn the steel through 180° and grind the other side of the insert in the same way.

8. Make sure that the edge ends up in the middle of the insert. Always grind equal amounts on each side of the insert.

9. When grinding is complete, the edge and any sharp corners on the insert must be honed to a width of 0,5–1 mm (0.02–0.04 in). A piece of an old grinding wheel can be used for this purpose.

CAUTION

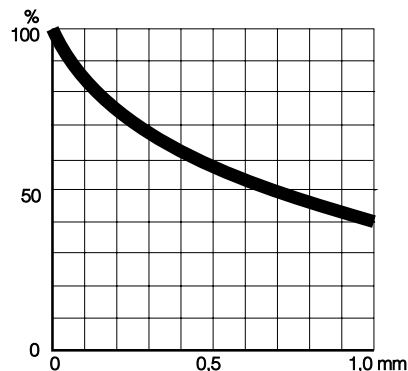
- Mind your fingers when clamping the drill steel!

Gauge grinding



Grind the periphery of the bit when the height of the anti-taper reaches 8 mm (0.3 in), measured from the tip of the insert to the point at which the anti-taper begins (see page 6). Gauge grinding is necessary to stop the corners of the bit from becoming rounded. It is done by locking the swing-arm in position by means of the catch and rotating the periphery of the bit against the grinding wheel.

Grinding economy



Always grind integral drill steels in good time. This will substantially reduce the risk of insert breakage while significantly increasing the service life of the integral steel.

It is bad economy to grind the insert sharp all the way out to the edges. Sharp corners are quickly worn down to the same shape as if

they had not been ground at all.

The diagram illustrates the reduction in service life if the height of the insert is ground down too much every time the integral steel is reground.

On average, the cost of grinding wheels amounts to no more than 5% of the cost of the drill steels. This means that it is not economical to increase the number of grindings per wheel by using a grinding wheel that is too hard or too finely grained. The wrong choice of grinding wheel can easily damage the cemented-carbide insert.

Changing the grinding wheel



The fitting of a new grinding wheel must be carried out or supervised by someone who has the necessary knowledge and experience of this kind of work.

Before changing the grinding wheel, vent and disconnect the incoming air hose.

Turn the feed wheel a few turns anti-clockwise so that the motor and

grinding wheel can be swung aside to give access to the locknut for the grinding wheel. Loosen the nut with the aid of the pin key supplied with the machine.

Before fitting the new grinding wheel, always check that it is perfectly intact, with no cracks. This is done by means of a visual inspection and a "ring" test. The ring test is carried out by hanging the grinding wheel on a length of string, or by supporting it with your forefinger inserted through the central hole, and tapping it lightly with a non-metallic implement such as the handle of a screwdriver.

- An undamaged grinding wheel emits a clear ringing sound.
- If the grinding wheel emits a dull tone, it must be scrapped.

For the ring test to be properly effective, the grinding wheel must

be dry and free of sawdust. Brush the wheel clean before performing the ring test.

Check that the grinding wheel is fitted with paper blotters (labels) on both sides. If either of the blotters is missing, the grinding wheel must not be used.

The blotter serves four purposes:

- It states the grinding-wheel data, such as the max. speed and max. peripheral speed.
- It compensates for any irregularities between the flange and the grinding wheel.
- It reduces the risk of slipping.
- It distributes the axial clamping force.

Make sure that the new grinding wheel is approved for a peripheral speed of 35 m/s (115 ft/s). If not, the grinding wheel must not be used.

Fit the new grinding wheel very carefully. Make sure that the flange washers and nuts are intact, free of any residue from old blotters, and correctly fitted. If the grinding wheel is fitted with a bushing in the shaft hole, the bushing must not stick out beyond the edges of the hole. Tighten to a torque of 14 Nm the locknut that secures the grinding wheel.

After fitting, adjust the position of the grinding wheel (by means of the feed wheel) so that it does not bite into the insert when grinding begins.

Check that the grinding wheel is in balance.

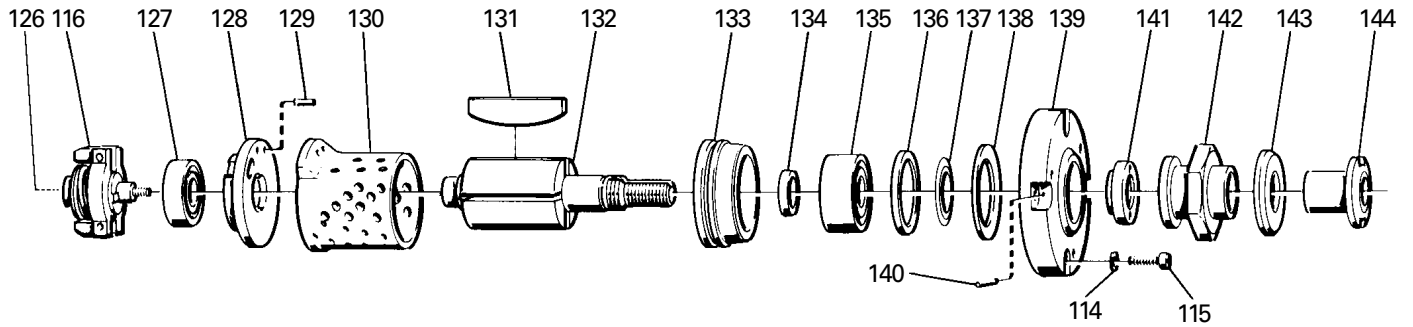
After a new grinding wheel has been fitted, the machine should be run on idle for a few minutes before being put back to work.

When starting the machine with a newly fitted grinding wheel, the operator must always stand to the side of the machine in case the new grinding wheel should burst.

Grinding wheels	
Grinding wheel, dimensions (mm)	125 × 63 × 32 80 × 50
Grinding wheel, dimensions (in)	4.9 × 2.5 × 1.25 3.15 × 2.0

Grinding wheels	Product No.
"Hard", for wet grinding	87002589
"Soft", for dry grinding	87002811

Air motor parts*



114. Washer	131. Vane	138. Cup spring
115. Screw	132. Rotor	139. Flange
116. Speed regulator compl.	133. End plate, front	140. Pin
127. Ball bearing	134. Spacer ring	141. Lock nut
128. End plate, rear	135. Ball bearing	142. Flange washer
129. Pin	136. Washer	143. Flange washer
130. Cylinder	137. Seal ring	144. Nut

*) For air motor parts please contact your local Epiroc office.

Handling and storage of grinding wheels

When silicon-carbide grinding wheels are delivered, the packaging must be inspected carefully. If there is any damage to the carton, the

grinding wheels must be examined extra carefully before being released for use.

Grinding wheels must be handled and stored in such a way that the risk of damage is eliminated. Grinding wheels are brittle and must not be dropped on the floor or subjected to impact or shock.

Storage should be at normal indoor temperature and humidity

levels, so that the risk of damp, frost, large temperature differentials and mechanical damage is avoided. Grinding wheels should be stored in the original packaging until such time as they are fitted to the grinding machine.

Maintenance

The air motor should be stripped every 6 months for a thorough cleaning and careful inspection. At the slightest sign of a fault, the air motor must be taken out of operation and checked.

DANGER

- Before starting to service or repair the machine, the incoming compressed-air hose must be vented and disconnected.
- The speed of the air motor must be checked once a week. It must not exceed 4500 r/min at an air pressure of 6 bar (85 psi).
- Higher speeds can cause the grinding wheel to burst.
- The speed regulator must never be disassembled. If it has a fault, then the complete regulator must be changed.

Cylinder and cylinder end plates

If the cylinder (130) in the air motor is scored, it should be polished using a fine abrasive cloth or grinding paste (grain size 500). If the cylinder end plates (128 and 133) are scored, they should be polished using a fine abrasive cloth on a flat plate.

Rotor vanes

The rotor vanes (131) should be lapped as necessary. To do this, use a fine emery cloth spread out on a flat plate. When dressing the end surfaces, all vanes must be fixed in a file clamp and lapped together. This will ensure that all vanes have the same length, and that they retain the correct angles. Do not rub down the vanes too much. The vane length should not be noticeably less than that of the rotor. Change the vanes if necessary. Take great care not to let dirt or other foreign matter enter the motor, since this could result in breakdown with damage to the cylinder and end plates.

Assembly

- Before assembly, all parts must be thoroughly cleaned and checked. They should then be oiled generously. The bearings must be smeared with fresh grease.
- Fit the rotor (132) and cylinder (130).
- Fit the speed regulator (116) and tighten it securely.
- Fit the cup spring (138), making sure that it faces the correct direction, i.e. the cupped side facing downward against the flange (139). It is the cup spring that holds the motor unit in the correct position.
- Fit the motor unit and check that the spindle can be turned easily after assembly. If not, it could mean that the nuts have been tightened unevenly, or that there has been some other error in assembly.
- After assembly, the machine should be test run for about one minute to check that it is functioning correctly.

DANGER

- If the cup spring (138) is fitted the wrong way round, the speed regulator will be put out of function. This will result in too high rotation speed, which can cause the grinding wheel to burst, with the risk of serious or fatal injury.

Lubrication

The grinding machine is lubricated by means of a separate lubricator, which must be connected into the air line for the machine. At the start of each shift, check that the lubricator is full of oil.

The ball bearing should be greased twice a week (every 20 hours of operation) via the grease nipple.

During regular overhauling of the motor every 6 months, the regulator and ball bearing must be smeared with fresh grease.

Recommended lubricants

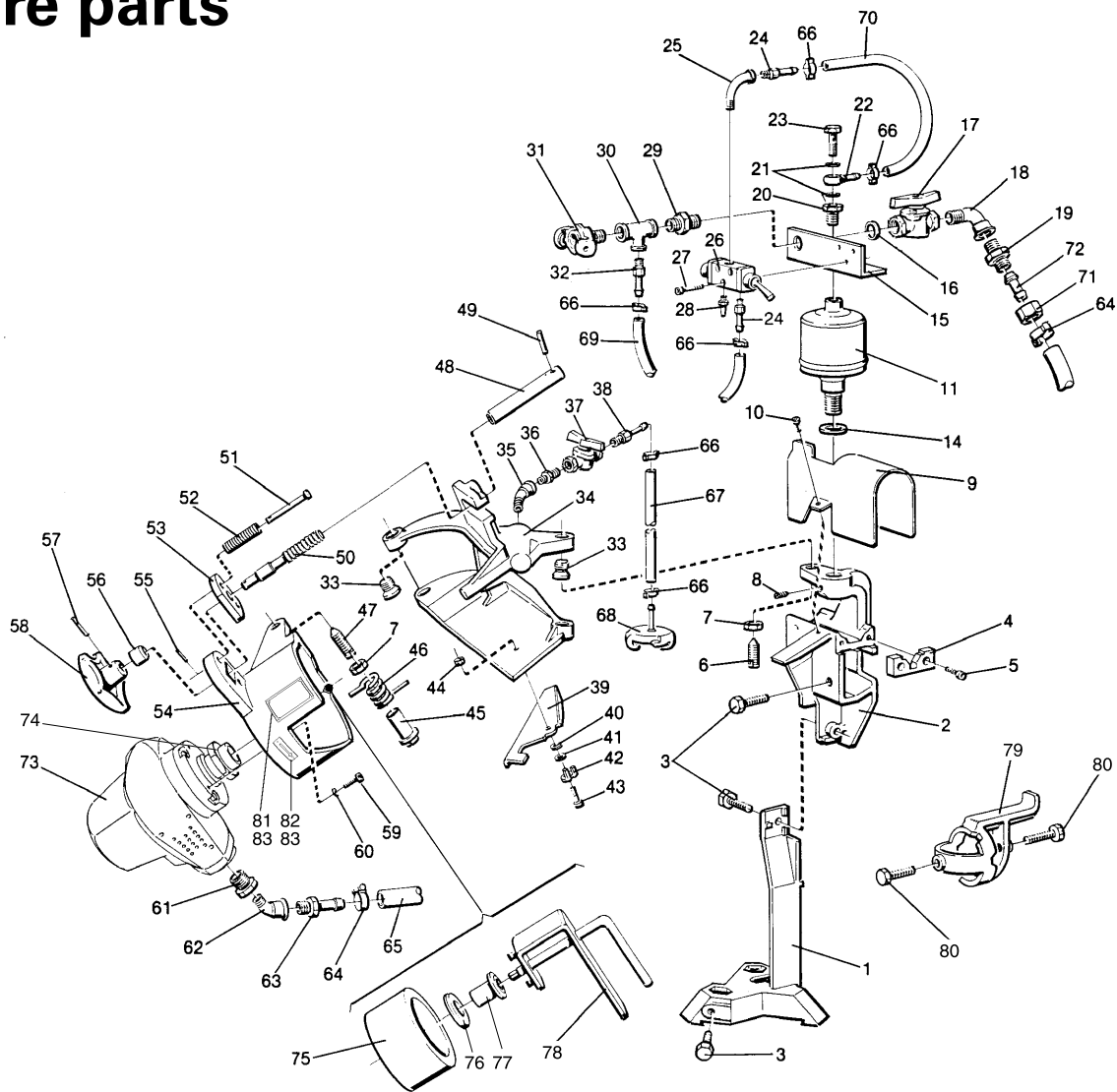
Temperature range °C (approx.)	
-30° to + 50°	Atlas Copco air oil
-15° to + 10°	Air-tool oil or hydraulic oil, ISO VG15 (or engine oil SAE 10W/30)
0° to + 30°	Air-tool oil or hydraulic oil, ISO VG32-68 (or engine oil SAE 10W/30)
If risk of freezing	Add max. 5% isopropyl alcohol to the oil.
Ball bearings	Instrument grease, in which the constituent base oil has the viscosity 10–20 cSt at 40 °C

If the use of special synthetic lubricants (which often contain glycols) is required, then all old oil must first be drained from the lubricator.

Transportation

For transportation of the grinding machine, the swing-arm must be locked securely to the frame. This is achieved by means of the catch. The lower part of the frame, which can be fixed in the desired position, must be turned 90° toward the motor. The machine now forms a compact unit that is easy to transport. The feed wheel can be used as a carrying handle.

Spare parts

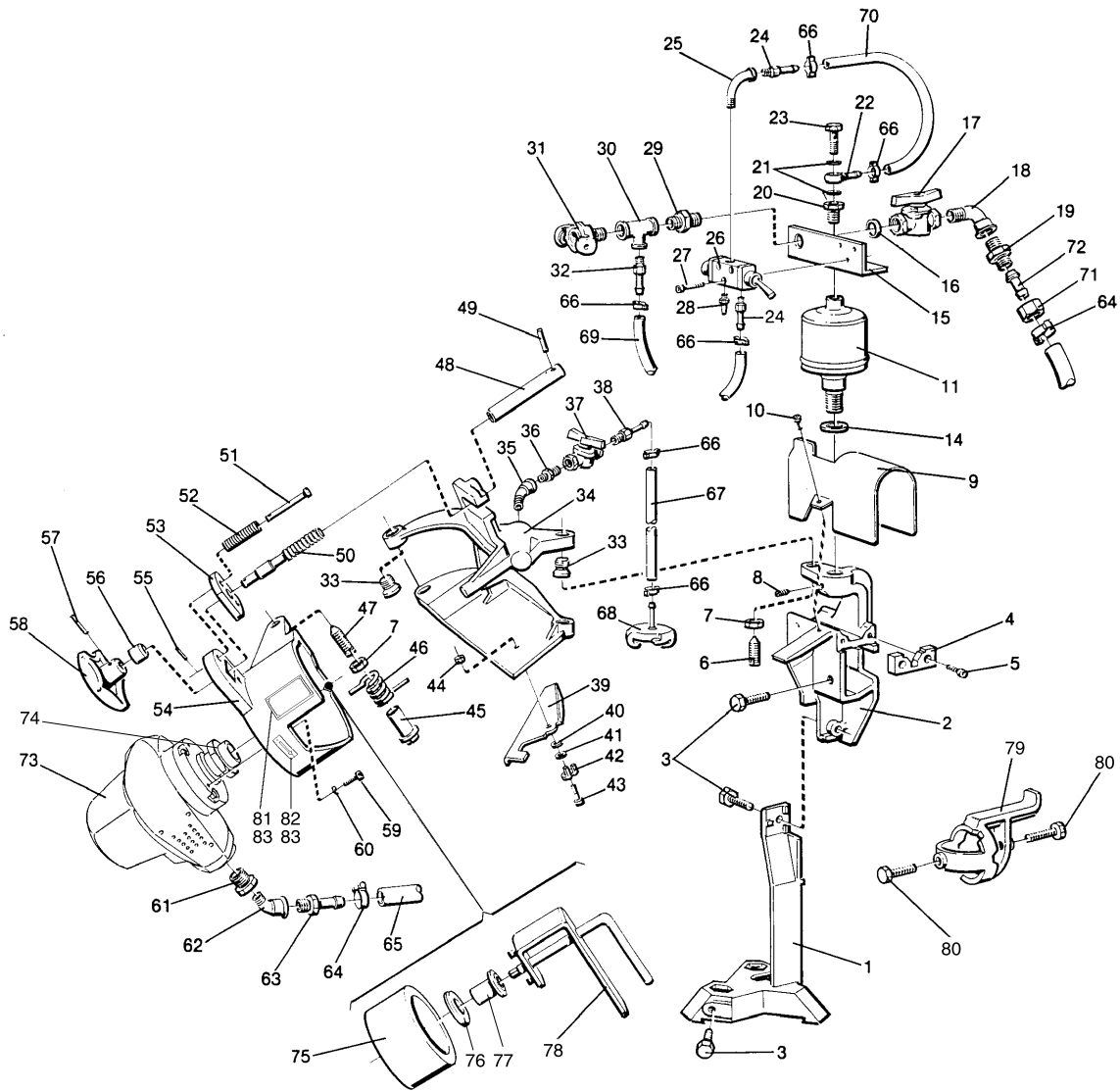


When ordering spare parts, please state the type designation of the grinding machine, description and product code of the spare part (not the Ref.No.) as well as serial number given on the grinder.

Use only authorized parts. Any damage or malfunction caused by the use of unauthorized parts is not covered by warranty or product liability.

Ref. No.	Product No.	Qty	Description	Specification
1	87000033	1	Frame	
2	87000032	1	Drill holder	
3	87000030	4	Screw	12 × 40
4	87000036	2	Support plate	
5	87000009	4	Screw	8 × 16
6	87000037	3	Alignment screw	
7	87000024	4	Nut	3/8"
8	87000007	1	Screw	8 × 10
9	87000056	1	Protective cover	
10	87000004	2	Screw	6 × 6
11	87000063	1	Pressure cylinder, compl.	
14	87000012	1	Washer	
15	87000028	1	Bracket	
16	87000027	1	Washer	21.5 × 28 × 2.5
17	87000061	1	Valve	
18	87000017	1	Elbow	1/2" × 1/2"

Ref. No.	Product No.	Qty	Description	Specification
19	87000071	1	Nipple	1/2" - 5/8"
20	87000023	1	Bushing	1/4" - 1/8"
21	87000026	2	Gasket	10 × 14 × 1
22	87000067	1	Banjo connection	1/4"
23	87000025	1	Pressure screw	1/8"
24	87000064	2	Hose nipple	1/8"
25	87000018	1	Elbow	1/8" - 1/8"
26	87000062	1	Valve	
27	87000008	3	Screw	5 × 30
28	87001063	1	Silencer	1/8"
29	87000021	1	Nipple	1/2"
30	87000019	1	T-pipe	1/2" × 1/4"
31	87129946	1	Claw coupling	1/2"
32	87000065	1	Hose nipple	1/4"
33	87000041	4	Bushing	
34	87000047	1	Bracket	
35	87000015	1	Pipe	1/4"
36	87127883	1	Nipple	
37	87000060	1	Valve	1/4"
38	87000065	1	Hose nipple	1/4"
39	87000077	1	Catch	
40	87000055	2	Cup spring	
41	87000078	1	Washer	
42	87000076	1	Lock washer	
43	87000006	1	Screw	6 × 20



When ordering spare parts, please state the type designation of the grinding machine, description and product code of the spare part (not the Ref.No.) as well as serial number given on the grinder.

Use only authorized parts. Any damage or malfunction caused by the use of unauthorized parts is not covered by warranty or product liability.

*) Hose delivered in one piece (2,0 m).

**) For air motor parts please contact your local Epiroc office.

Ref. No.	Product No.	Qty	Description	Specification
44	87000011	1	Nut	6
45	87000040	1	Spring guide	
46	87000039	1	Spring	
47	87000038	1	Alignment screw	3/8"
48	87000052	1	Feed nut	
49	87000001	1	Pin	8 x 32
50	87000053	1	Feed screw	
51	87000049	2	Holder	
52	87000050	2	Spring	
53	87000042	1	Yoke	
54	87000048	1	Swing-arm / Guard	
55	87000003	2	Pin	3.2 x 16
56	87000051	1	Ball joint	
57	87000002	1	Pin	3 x 24
58	87000046	1	Feed wheel	
59	87000005	3	Screw	6 x 16
60	87000079	3	Washer	6
61	87000022	1	Bushing	3/4" x 1/2"
62	87000016	1	Elbow	1/2" x 1/2"

Ref. No.	Product No.	Qty	Description	Specification
63	87000066	1	Hose nipple	1/2"
64	87000014	2	Hose clamp	19-25
65	87000073	1	Air hose	1/2" L=0,7 m
66	87000013	6	Hose clamp	13-15
67	87000072	1	Air hose	1/4" L=1,5 m
68	87000068	1	Claw coupling	1/4"
69	87000072	1	Air hose	1/4" L=0,21 m
70	87000072	1	Air hose	1/4" L=0,14 m
71	87000070	1	Nut	1/2"
72	87000069	1	Hose nipple	1/2"
73	87000059		Motor, compl.	LZB 53 (new) LZB 64 (old)
74	87000057	1	Flange washer	
75	87002589	1	Grinding wheel	125 x 63 x 32 mm, 80 x 50 mm
76	87000031	1	Flange washer	
77	87000058	2	Nut	
78	87000029		Pin key	
79+80	87000035	1	Drill steel support compl.	
81	87003255	1	Data plate	
82	87003126	1	Rotational direction plate	
83	87000891	6	Rivet	

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