LANCIER
CABLE GMBH

Operating instruction

MICROCAT Order-no. 72476

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Content

Safety instructions

General

Generally, the operator of the machine is responsible for the equipment`s perfect condition and operation, while observing all necessary safety regulations.
The machine has been constructed in accordance with the newest level of technology while recognizing all necessary safety-related requirements. Nevertheless, while operating the machine there is a risk of bodily harm to the operator as well as damage to the machine and other properties.

Operate the machine only if it

- is used for the task it was designed for
- is in perfect working condition and safe to use.

Observe the technical data of the machine, especially in regards to the environmental temperatures. The designated area of use is clearly described in a chapter below.
Prerequisite for the safe and the uninterrupted operation of the machine is the knowledge of the basic safety regulations.

Additionally, all current regulations for a safe operational area, for accident-prevention guidelines of mechanical installations, as well as noise suppression demands must be observed. During any maintenance or repair work a clean working area is recommended.

Arbitrary changes made to the equipment, which alters its designated use, voids the the warranty and cancels the manufacturers liability.

The machine is not insulated to protect against an electrical power surge. It is not recommended to use this machine in explosive hazardous environments.

Owners obligation

The owner is obliged to only let persons operate the equipment, who

- are familiar with basic work environment safety rules and accident-preventing regulations. Also, those persons must have been instructed in the correct use of the equipment.
- have read and understood all safety and warning notifications in the operating instruction booklet, as well as all other documentation pertaining to this equipment.
- check and confirm at regular intervals, that a safety oriented operation is guaranteed.

Only qualified and authorized personnel is allowed to operate, maintain and repair this machine. A malfunction, which impairs operator safety, must be immediately removed.

Operator obligation

Personnel, who is engaged in the operation of the equipment, must always be committed to

- observe the basic safety and accident preventing regulations,
- read and abserve the safety and warning notifications of this operation instruction booklet.

Warranty and liability

Unless otherwise specified, our „General Sales and Delivery Conditions“ apply. Warranty and liability claims in regards to persons or machine damages are invalid, if one or several of the following causes apply:

- Use of the machine in a non-designated application.
- Improper installation, operation, service or maintenance of the machine.
- Operation of the machine with either defective or removed safety and protection devices.

- Structural change or adjustment on the machine to a non-designated use.
- Inadequate supervision of wear parts.
- Improper repair, inspection or maintenance.
- Catastrophic reasons because of a war, acts of god or other reasons which are beyond our control.

Observe Environmental Regulations

When working on or with the machine, it is imperative to observe all requirements in regards to waste-disposal and proper recycling.

Especially during installation, repair or maintenance, water damaging agents such as lubricating grease and oil, hydraulic fluid, cooling agents and solvent-containing cleaning agents must not leak into the ground or into teh sewage system!
Such materials must be stored, transported, contained and recycled in suitable containers.

Product description

The cable blowing machine type MICROCAT may be used for the installation of sensitive micro-cables into micro-duct in just one procedure by compressed air.
During the blow-in operation the micro-cable is passing the cabling caterpillar. The integrated compressed-air connector consists of a two-piece aluminium casing.
Split sealing washers hermetically surround the cable to be blown-in.
The cable is driven forward by the air supplied from a suitable compressor. Air regulation is done by a valve which is integrated into the machine.
Two drive belts guarantee an excellent closed linkage to the cable. The upper belt can manually be moved up and down.
The aluminium-frame construction of the caterpillar guarantees stability, long operating life and light weight.

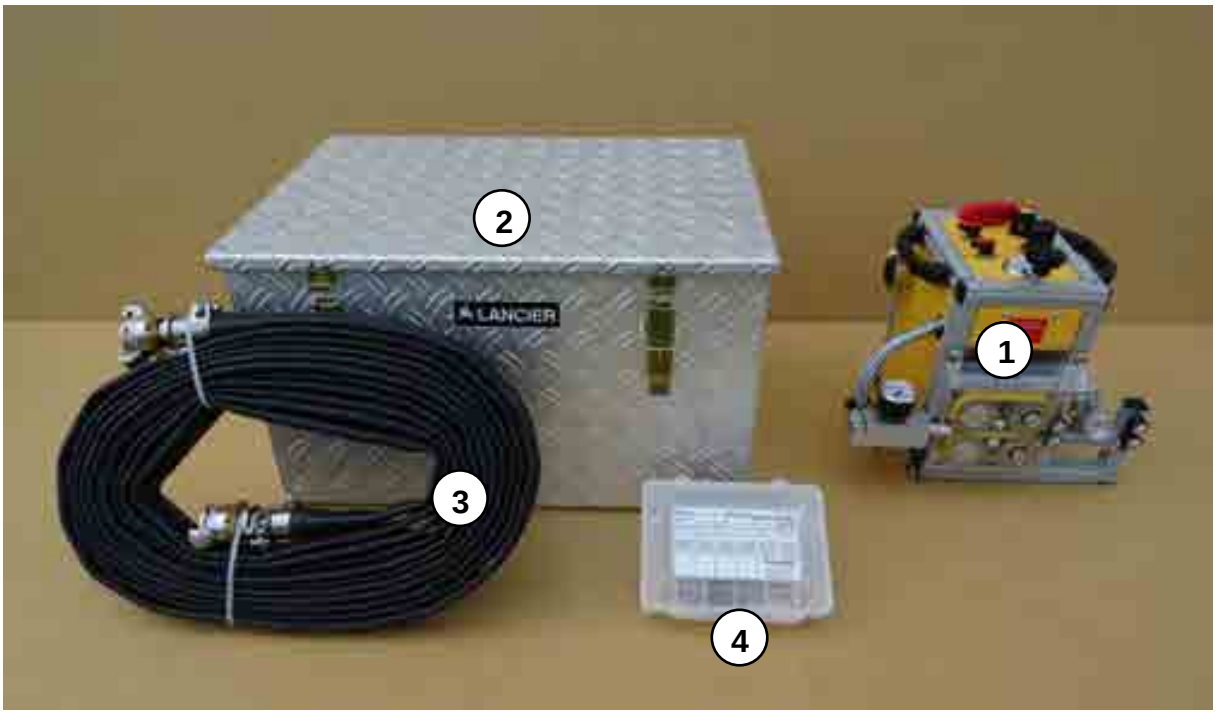


Fig. 1

1) MICROCAT

2) Transport box

3) Compressed air hose

4) MODEL:m17a

Operation

Preparation

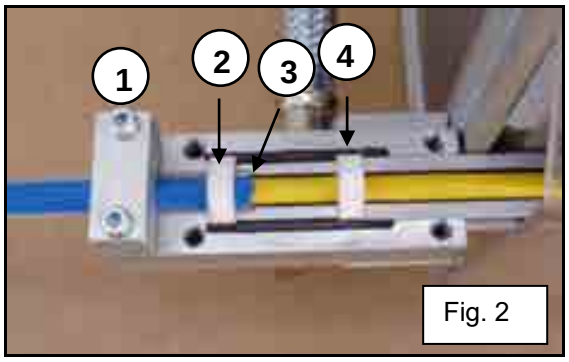


Fig. 2

If desired cable lubricant may be filled into the micro duct. Use an appropriate plastic bottle with nozzle for this.

The duct into which the cable may be blow-in must be fixed by the bracket (1 fig. 2). Observe that the sealing (2 fig. 2) fits correct into the seat of the connecting piece and that the duct reaches exactly the buffer area (3 fig. 2).

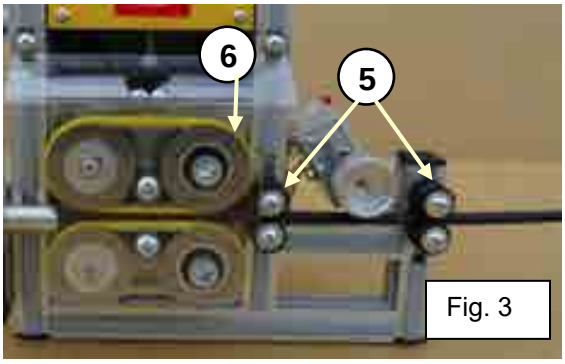


Fig. 3

Loosen the screws of the upper guide rollers (5 fig. 3) at the rear of the machine and push them upward. The upper drive belt can be lifted upwards by turning the adjustment button (2 fig. 4) on top of the machine. Push the micro-cable into the cable duct for a few meters. Guide the cable through the rollerpair and the drive belts (6 fig.3). Observe that the cable is sealed by a suitable sealing (4 fig. 2)

(If a cable should be blown into two directions it may be necessary to cut the sealing. Nevertheless the sealing can still be used as before).

Place the cable sealing (4 fig. 2) into the corresponding seat and fix the upper part of the air connecting piece.

The selection of the right sealing is very important. In case the seal should be too small in diameter, the friction between cable and seal will be very high so that the blowing-in result may become insufficient.

In any case, after installation of the cable into the machine and fixing the upper part of the air connecting piece onto the lower it must be tested by pushing the cable by hand to ensure that the cable moves easily forward.

Adjustments

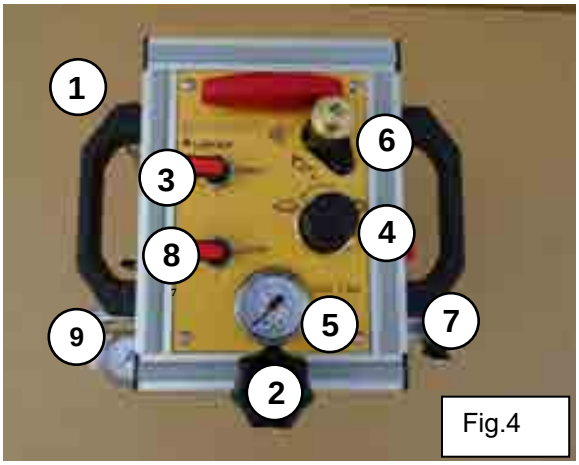


Fig.4

The compressed air hose (1) must be connected between the compressor and the MICROCAT. Make sure that the safety screw joint of the air hose has been carefully tightened.

Check if the upper drive belt has been set in the upper position otherwise turn the adjustment button (2 fig. 4) so that the belt moves upward.

Open the air supply from the compressor to the MICROCAT and make sure that the pressure may be not higher than 15 bar.

Open the valve (3 fig. 4) and regulate the pressure for the drive motors. Turn the hand wheel of the pressure regulating valve (4 fig. 4) to let the motors running faster or slower.

The pressure of the compressor should be 2 bar above the desired pressure for the motor.

Before adjusting the pressure, slightly raise the hand wheel (4 fig. 4) and turn it anticlockwise

in order to relieve the pressure in the pressure reducer. Now turn it clockwise until the pressure gauge indicates the desired operation pressure. Re-secure the hand wheel by downward pressure.

It is recommended to set the pressure to a relative low pressure in order to start with a low cable transport speed.

The actual pressure can be read-off the gauge (5 fig. 4).

The minimum pressure is 0,5 bar. Adjust the oil flow rate (drops per minute) during operation by means of the metering screw (6 fig. 4), turning the screw in the oiler attachment approximately 1 turn anticlockwise. Dripping can be seen in the sight glass. Approximately 2 drops per minute are sufficient to grease the motors.

Set the mechanical counter (7 fig. 4) to „O“.

Blowing-in the cable

Lower the upper drive belt onto the cable. The cable will be clamped between the upper and lower belt drive. Depending on the clamping force and the friction factor between the cable and the belt a maximum pushing force can be transmitted to the cable.

If a to high clamping force has been selected either the belts or the cable coating can be damaged.
If the transport belts are slipping on the cable sheath it may be necessary to increase the pressure on the cable by turning the adjustment knob.

For starting the installation of the cable open the valve (3 fig. 4); the motors will push the cable forward. Take care that the MICROCAT has been set up in a stable way, hold the machine in a tight position, or use tightening-straps to secure the machine. Otherwise the starting forces could tilt the machine.

To keep the pull-off forces from the cable drum low, the drum axle should have a corresponding bearing and additionally somebody should support the uncoiling of the cable and also the necessary braking of the drum.

The pushing speed can be adjusted by regulating the air supply to the motors.

Depending on the diameter and stiffness of the cable usually the pressure can be set to approx. 5 bar. Only if the blowing-in speed drops the compressed air may be switched on. For this open valve (8 fig. 4). The compressed air will pass the compressed air connector and stream into the micro duct where it will support the pushing force of the motors.

The air-pressure may be read-off at the manometer at the beginning of the duct. (9 Fig. 4) abgelesen werden.

During the operation of the machine make sure that nothing can get in between the belt drive.
Do not take off the protection plate!

Optional Equipment

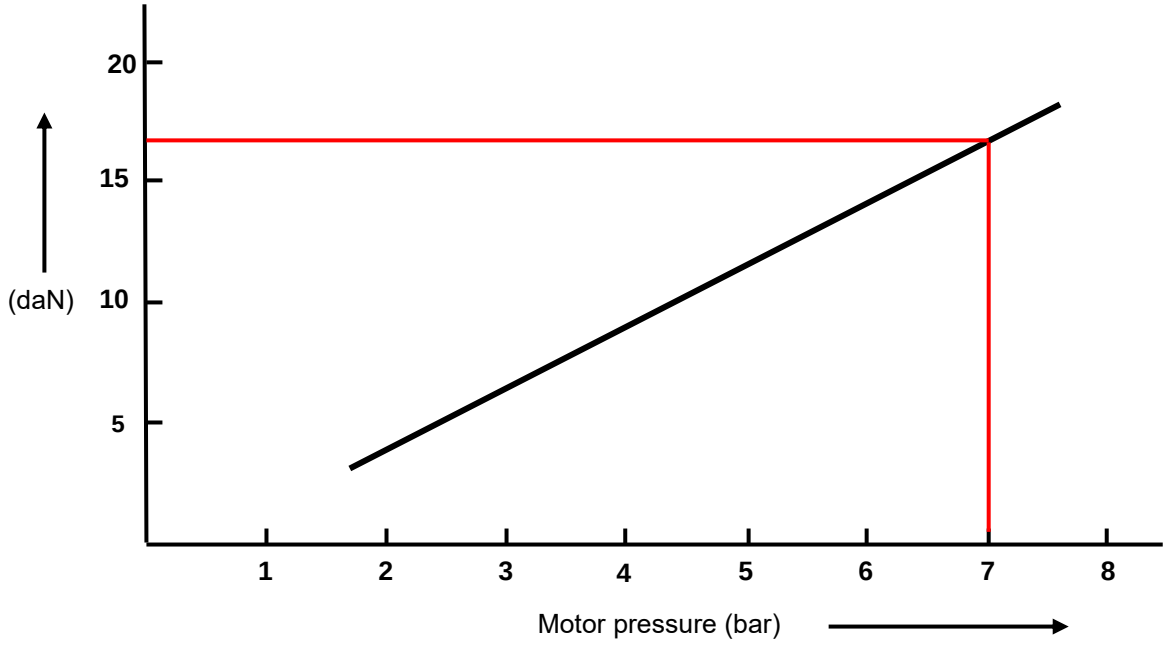
The belt material of the belt drive mechanism is an optimum between friction factor and needed pressure on the cable

If cable covered with lubricant should be blown-in, it may be necessary to change the belt drive mechanism against metallic driving and guide wheels. The two driven rollers are equipped with a knurled surface which guarantee an excellent closed linkage to the cable.For the part-no of these wheels please see the spare parts list.

Technical data

L x W x H	330 x 220 x 280 mm
Weight	7 kg
Air consumption of the motors	3,3 l/s (0,2 m^3/min)
Air pressure for the motors	7 bar
Speed	approx. 100 m/min
Max. pushing force	approx. 180 N

Pushing force



Maintenance

Risk of material damage!

Follow the maintenance instructions to keep the MICROCAT in good operation conditions!

Adhere to the recommended maintenance intervals!

The machine may only be maintained by personnel which are educated for this kind of work!

Apply only original LANCIER CABLE spare parts.

Accident Prevention!

After the maintenance works tighten all loosed connections.

Check all tubes, hoses and connections regularly for leaks and external damages!
Repair all damages immediately!

Change the air hoses within the recommended period also in case no damages are visible!

When changing the belt drive make sure that the driving discs are mounted in the correct way. If they are mounted too near to the frame plate they will touch the frame and the motors cannot operate with full power.

Operating instruction for the air treatment unit for the MICROCAT

The life of the air motor depends primarily on the preconditioning of the compressed air supply.
For this reason a combined filter/pressure reducer and lubricator are used as air supply conditioning units; these must, however, be properly used and maintained.

Pressure reducers with air filter

The compressed air reducer maintains the operating pressure at a generally constant level.

The compressed air filter (1 Fig. 5) removes moisture and solid particles from the air delivered by the compressor. A filter element of 50 – 75 µm is installed.

Maintenance: Before greasing the O-Rings, shut off the compressed air supply and de-pressurize the unit. Unscrew and remove the screw cap, remove the conical nipple and grease the O-ring and guide pin (approximately every year).
Resecure the container, ensure that the O-ring is correctly positioned. Grease the O-ring if necessary.

Drain condensation regularly via the screw plug (2 Fig. 5).

Fig. 5

Lubricator

The compressed air lubricator add a fine mist of oil to the compressed air, thus achieving the continuous, dependable lubrication of the motor.

The oil level can be seen in the container (3 Fig. 5). For filling up unscrew and remove the filler cap (4 Fig. 5) and fill the container with oil. Close the container with the filler cap. Make sure that the O-ring sealing (10 x 3 mm) has been placed correctly. The lubricator is now ready for use.

Drive belt tension

The drive-belts should always be tightened well otherwise they may spin off the drive-wheels at higher loads and the cable may be damaged.

For tightening the drive-belt loosen the 2 fixing-screws (arrow Fig. 6) of the corresponding motor take-up and distort the motor in tensioning direction.

Thereafter tighten the fixing-screws again.

Motor

Check the motor on a regular basis for external damage.

Check the air treatment unit on a regular basis, make sure that sufficient oil is in the lubricator and that the adjustment is correct. We recommend to use LANCIER oil; order-no. 73695 for one litre.

After disassembly and cleaning of the gear grease the gear prior to re-assembly with ball bearing grease.

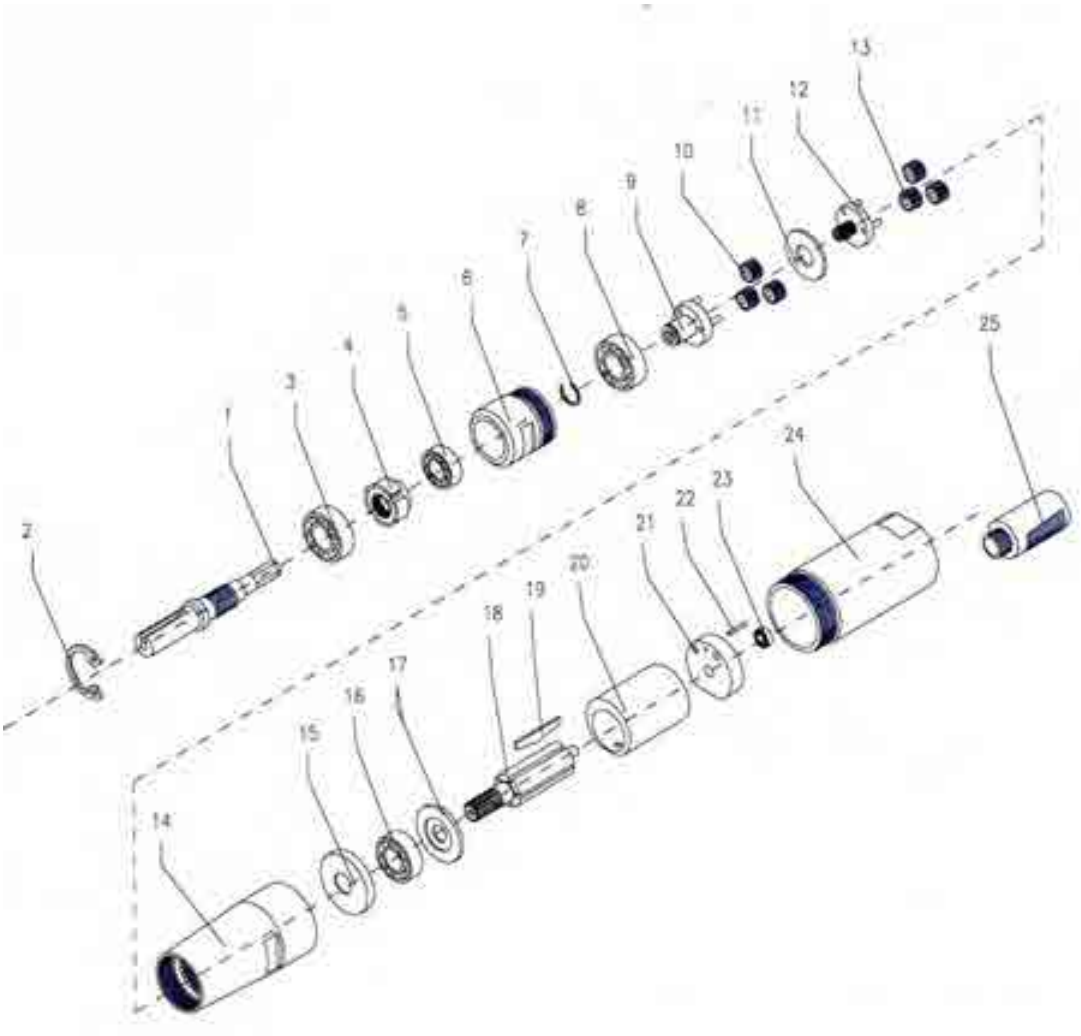
After assembly fill a few drops of oil into the air inlet nipple.

Grease the gearing, the ball- and needle bearing, as well as the o-rings every 500 operating hours, or at least once a year with suitable grease.

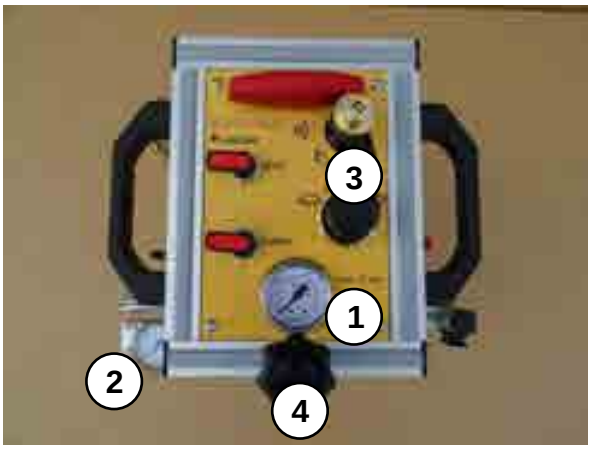
If the machine has not been used for a longer period of time, drip a couple of oil into the air inlet and let the motor run for about 10 seconds.

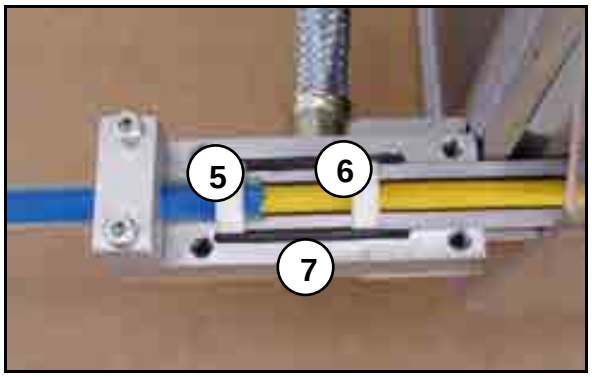
If the motor gets to much oil from the lubricator during operation, it will come out at the front of the motor shaft. In this case the motor will not be defect. Only reduce the oil supply from the lubricator.

Air motor with planetary gears

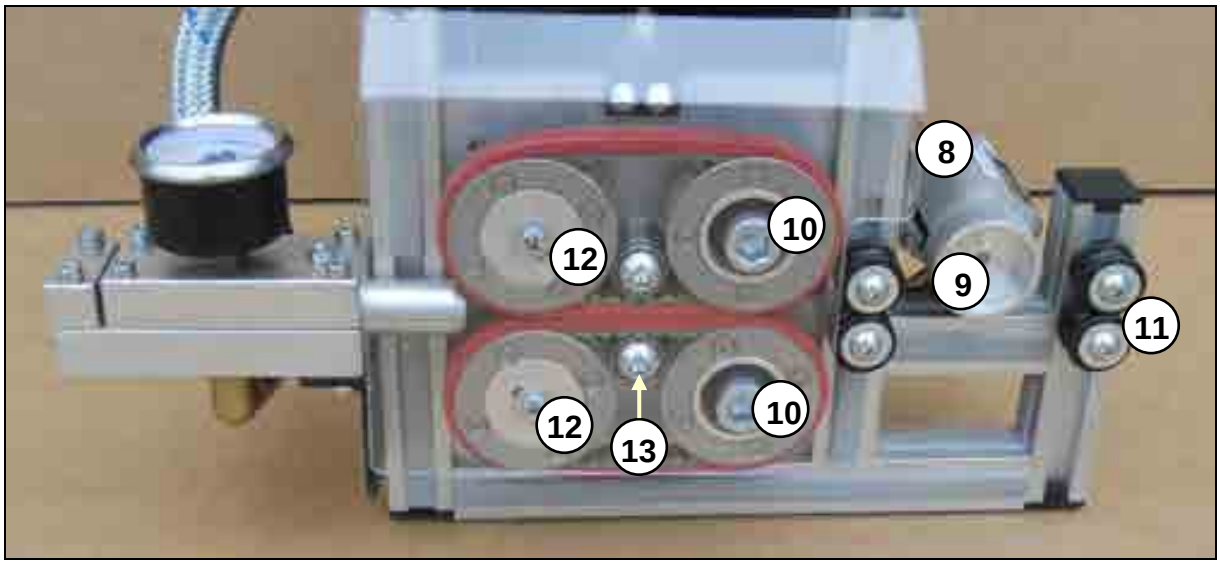


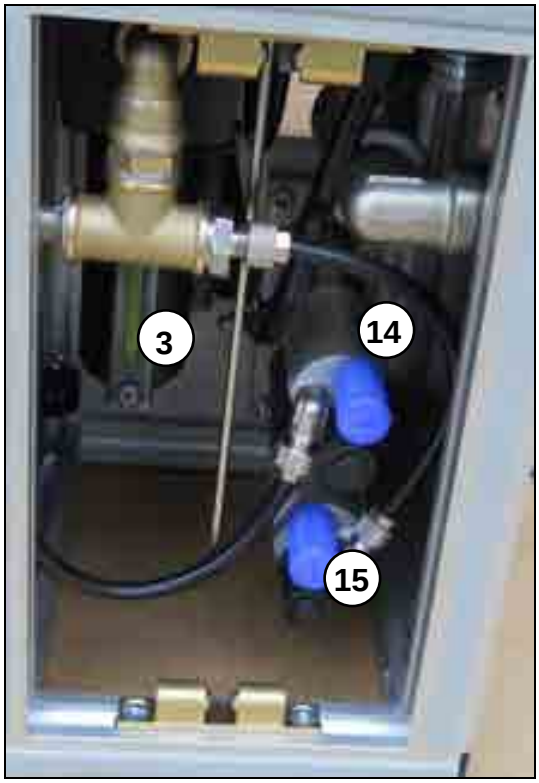
Spare parts





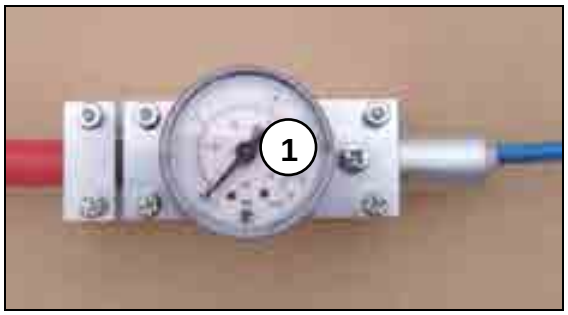
Pos.	Description	Order-no.
1	Gauge	50562
2	Gauge	50562
3	Oiler/water separator for the motor --oil; 1litre in a bottle	75164 73695
4	Turning handle	55881
5	Sealing for the micro duct 16 x 6 with 9,8 mm hole	72804
6	Cable sealing 16 x 6 with 6,0 mm hole with 6,5 mm hole with 7,0 mm hole	 72805 72806 72807
7	X-sealing; 0,5 m long	73300

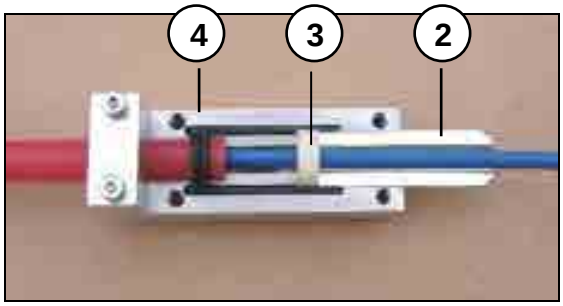




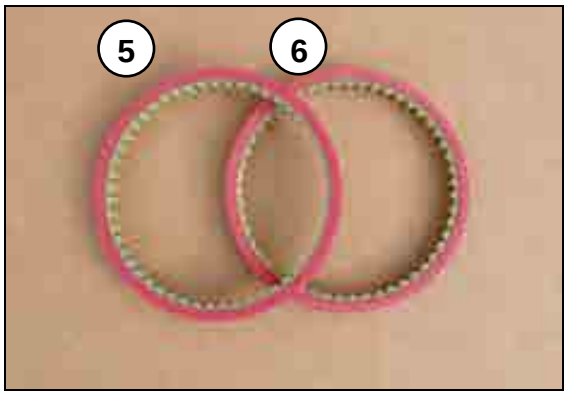
Pos.	Benennung	Bestell-Nr.
8	Measuring device	70418
9	Measuring wheel	77139
10	Rear belt wheel --Ball bearing --Securing ring	73114 02629 11695
11	Plastic guide roller	72777
12	Front belt wheel	74215
13	Bearing for the guide roller	74407
14	Air motor	74150
15	Silencer	72776

Accessories



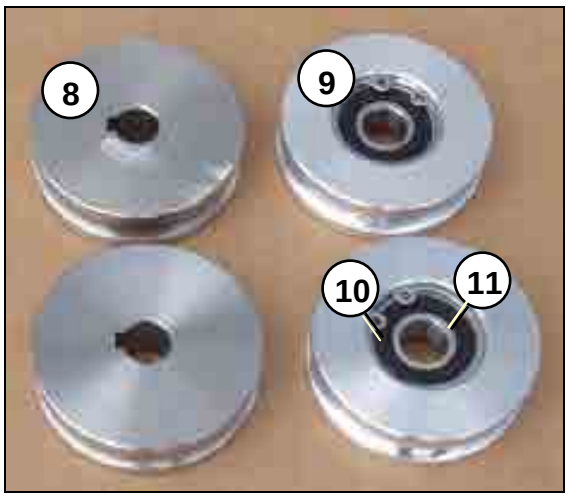


Pos.	Description	Order-no.
1	Blowing-head for PE-HD micro ducts -- for 7 mm External-duct-Ø -- for 8 mm External-duct-Ø -- for 10 mm External-duct-Ø -- for 12 mm External-duct-Ø -- for 14 mm External-duct-Ø -- for 16 mm External-duct-Ø -- for 20 mm External-duct-Ø	 73963 73244 72814 73108 73955 73249 74175
2	Cable guide -- with 4 mm hole -- with 6 mm hole -- with 8 mm hole -- with 10 mm hole	 73234 74748 72755 73253
3	Sealing for micro duct and cable: Measure 16 x 6 mm -- with bore hole 2,5 mm -- with bore hole 3,5 mm -- with bore hole 4,0 mm -- with bore hole 5,0 mm -- with bore hole 6,0 mm -- with bore hole 6,5 mm -- with bore hole 7,0 mm -- with bore hole 8,0 mm -- with bore hole 9,8 mm	 73233 73252 76058 74408 72805 72806 72807 73251 72804
4	O-ring-sealing for micro-duct with 12 mm Ø O-ring-sealing for micro-duct with 14 mm Ø	60895 46554



Pos.	Description	Order-no.
5	Driving belt, with groove	72749
6	Driving belt, without groove	73216

Retrofit set drive wheels; order-no. 74233 for cable diameter 5 to 7 mm



Pos.	Description	Order-no.
8	Drive wheel, knurled for cable- Ø 4 bis 8 mm (2 mm groove) Option drive wheel, knurled for cable-Ø from approx. 2,5 mm Ø (1 mm groove) Option drive wheel, knurled for cable-Ø of min. 2 mm (0,7 mm groove)	74219 74218 74217
9	Guide wheel, complete -- Guide wheel -- 10 Bearing -- 11 Securing ring	74743 74221 02629 11695