

OWNER'S MANUAL

Spin - XL

**with pneumatic driven
blast-head**

24407D

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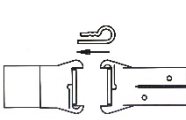






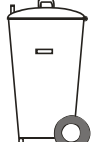


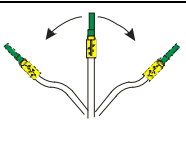

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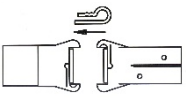

INDEX

1	SHORTCUTS, DEFINITIONS, SYMBOLS AND ICONS.....	3
2	PRODUCT DESCRIPTION	4
2.1	CONVENTIONAL UTILIZATION AND RESTRICTIONS	4
2.2	NO CONVENTIONAL UTILISATION – WARNINGS FOR MISUSE	4
2.3	OPERATING MODE OF COMPLETE SYSTEM.....	4
2.4	DESCRIPTION	4
2.4.1	Complete system	4
2.4.2	Operating elements	5
2.5	ENERGY CONSUMPTION	5
2.6	EMISSIONS.....	5
3	SET-UP AND OPERATION	6
3.1	TRANSPORT	6
3.2	UNPACKING AND DISPOSE OF PACKING MATERIAL.....	6
3.2.1	Elimination, recycling, disposal of equipment.....	6
3.3	STORAGE.....	6
3.4	SET-UP FOR INITIAL INSTALLATION / OPERATION	6
4	INSTRUCTION HANDBOOK.....	7
4.1	OPERATION.....	7
4.1.1	Standard operation	7
4.1.2	Shutdown	7
5	MAINTENANCE AND CLEANSE	7
5.1	GENERAL.....	7
5.2	MAINTENANCE CYCLES	8
5.3	AFTER OTHER PERIODS OF TIME	8
6	TROUBLESHOOTING	8
7	ADMITTED MODIFICATIONS FOR USERS.....	8
8	REPLACEMENT PARTS	9
9	SUMMARY, REST HAZARD AND SAFETY PRECAUTIONS.....	11
9.1	NOISE POLLUTION.....	11
9.2	DUST POLLUTION.....	11
9.3	ESCAPE OF SPED BLAST MEDIA OF WEAR PARTS.....	11
10	APPENDIXES	12
10.1	MANUAL FOR AIR MOTOR TYPE MRD, STALL-PROOF, OIL FREE	12

1 Shortcuts, definitions, symbols and icons

	Whipping hose Interlock coupling.		Electrostatic strokes. Ground!
	Noise > 85dB(A)! Wear ear protection.		Explosion hazard caused by dust! Ground!
	Explosion hazard! Connect only max. admitted pressure.		Risk of injury! Discharge completely pressure during maintenance jobs.
	Recycling		Garbage
	Change within Europe		Complete blast protective clothing.
	Whipping hose! Hold tight end of hose.	 $X(m) = 10 \times P(\text{bar})$	Dangerous area! Without protective clothing keep out of area of 10x of pressure.

Used pictograms

	 Warning	Risk of escaping blast media. Mortal danger! Wear blast helmet, protective clothing, clothes
	 Warning	Risk of whipping hose and escaping blast media. Mortal danger! Interlock coupling.

2 Product description

2.1 Conventional utilization and restrictions

Parts to be blasted

- Inside of pipes
- Inside of cylindrical parts

Operating conditions

- indoor or outdoor
- acceptable temperature: -5° ... 40°C
- acceptable humidity: 0 ... < 100% (no rain!)

Compressed Air

- pressure: 6 to 8bar
- pressure air category 4, DIN ISO 8573
- air volume: see table 1
- air service unit for air motor:
 - max. part size: 15µm
 - max. part density: 8mg/m³
 - dry air: water content max. 6g/m³
 - oil free!

Acceptable medias/ abrasives

- mineral and metallic blast media
- acceptable size see table 1
- dry and pourable
- use of Aluminium Oxide and Silicium Carbide causes high wear

Suggestion for parameters

see table 1

Table 1:

for inner diameter (mm)	nozzle-Ø	Size of blast media (µ)	Min. air volume (m ³ /min)
400 - 700	8,0	400-800	10,0 (353 CFM)
700 - 1500	9,5	(400) 800-1200	15,0 (530 CFM)

2.2 No conventional utilisation – Warnings for misuse

Utilization is interdicted:

- in explosion hazard zones
- for blasting parts, where hazardous materials were released
 - o by explosion hazards
 - o which causes damages caused to somebody's health during a defective dust collector

2.3 Operating mode of complete system

- place Spin XL at the end of the pipe
- switch on system
- air motor turns blast head
- air-blast media mixture escapes radial
- pull back equipment manually: inner surface of pipe gets blasted/ cleaned
- blastmedia-dust mixture gets exhausted at end of pipe (option)

2.4 Description

2.4.1 Complete system

To get the CE-conformance Clemco recommends the following components/ activities:


- Blast pot with
 - + Remote control RMS 2000
 - + Separate control of:
 - * Air for blasting
 - * Air for air motor
 - * Media metering
 - + Diameter of hose or lance: 32 ... 38mm, length max. 20m
 - + Pneumatic metering valve (e.g. PT)
- Spin-XL with carriage
- Air service unit for air motor, oil free!, (use included filter/ air service unit) with air hose (inner diameter: min. 9mm, length max. 20m) for air supply
- Safety precautions for blast media emission, dust and noise exposure

Further description is based on above mentioned equipment configuration.

2.4.2 Operating elements

	Where	Comment/ Function
Pressure regulation of air motor	Air service unit at blast pot	3 ... 6... max. 7bar ON/ OFF at remote control handle
Pressure regulation of blast nozzle	Blast pot	4 - 7bar ON/ OFF with slide valve at remote control handle
Metering media	Metering valve at pot	ON/ OFF with slide valve at remote control handle
ON / OFF	Remote control handle	Activating: <ul style="list-style-type: none"> • air motor • blast air • metering blast media

2.4.3 Air service unit for air motor

	<p>Mount included air service unit for air motor and connect it in vertical position with air supply. Use green air hose to connect outlet with air motor.</p>
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2.5 Energy consumption

Pressure air consumption:

- nozzle see 2.1 table 1
- air motor: 5,6l/s at 6bar operating pressure

2.6 Emissions


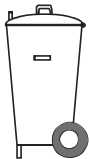

- Noise: > 80dB(A)
- Dust: in unacceptable high concentration → sanctions such as housing and aspiration

3 Set-up and operation


3.1 Transport

Weight	app. 40kg
Protect from beats	Observe instruction of complete system

3.2 Unpacking and dispose of packing material

	Recycling		Garbage
	Change within Europe		



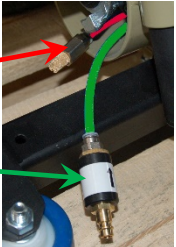


3.2.1 Elimination, recycling, disposal of equipment

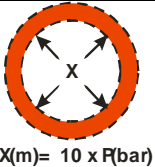

	Disassemble equipment and separate for materials
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3.3 Storage

	Storage in dry area	Observe instruction of complete system
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3.4 Set-up for initial installation/ operation

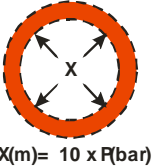



A1	Adjust carriage to pipe diameter	See also chapter 8, table 2.
	 Warning	Risk of whipping hose! Mortal danger! Interlock coupling.
A2	Connect Spin XL with blast hose and pot.	
A3	Connect air motor with green air hose and upstream air service unit.	
A4	Position Spin XL in pipe.	
A5	Function test without blast media.	
A6	Set air motor under pressure.	Blast head turns.
A7	Adjust pressure of air motor (6bar at motor → app. 90min ⁻¹)	max. 7bar at motor (attend pressure drop of long hoses!)
A8	Activate blast pot.	Air comes out at nozzle.
A9	Function test with blast media.	
	 Warning	Risk of escaping blast media. Mortal danger! Wear blast helmet, protective clothing, gloves.

 X(m)= 10 x P(bar)		Dangerous area! Without protective clothing keep out of area of 10x of pressure.
A6-8	Activate air motor and blast pot.	
A10	Open metering valve.	Air and blast media mixture comes out at nozzle
A11	Adjust blast media at metering valve.	Blast media should only be visible as a fine fog!

4 Instruction handbook

4.1 Operation

4.1.1 Standard operation

A1	Protect workplace.	- Dust emission - Noise - Sped up blast media
 X(m)= 10 x P(bar)		Dangerous area! Without protective clothing keep out of area of 10x of pressure.
		Risk of escaping blast media. Mortal danger! Wear blast helmet, protective clothing, clothes
A2	Position Spin-XL.	
A3	Switch on.	First air of air motor Than air of blast pot At last blast media.
A4	Pull back Spin XL.	According to request of degree of purification.
A5	Switch off.	First blast media Than air of blast pot At last air motor.

4.1.2 Shutdown

4.1.2.1 After end of work

	No special activity.	Observe instruction of complete system
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4.1.2.2 Shut down by longer interruption of work or moving equipment

	No special activity.	Observe instruction of complete system
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5 Maintenance and cleanse

5.1 General

Blast equipment subjects to strong wear. Safety and high efficiency is only ensured when maintained regularly!

Maintenance cycles are strongly regulated by operating parameters. Stated times are experiences, that have to be reduced or extended in individual case.

5.2 Maintenance cycles

Maintenance cycles for steel shot (working hours)		Risk of wear! Demolition of equipment.
max. 8h	Nozzles and blast head.	Check and replace if necessary sealing of nozzles and blast head.
max. 16h	Plastic sealing.	Check and replace if necessary.
	Carbide insert head.	Check and replace if necessary.
	Shaft and felt seal.	Check and replace if necessary. Shaft seal position: open side to back!
max. 30h	Ball bearings.	Check and replace if necessary.
max. 50h	Moisture separator.	Clean only with soap and warm water.
	Air and blast hoses.	Gaskets of couplings for wear. Blast hose by hand for soft spots.
	Blast pot.	Pop up valve for wear by hand.
max. 300h	Air motor.	Maintenance by Clemco or service man of producer.

5.3 After other periods of time

Article	replace (even without wear) after maximal
Blast hoses	6 years
Remote control hoses	6 years
Air hoses – external air supply	6 years
O-rings	5 years
Pop up valve (blast pot)	5 years
Gaskets	5 years

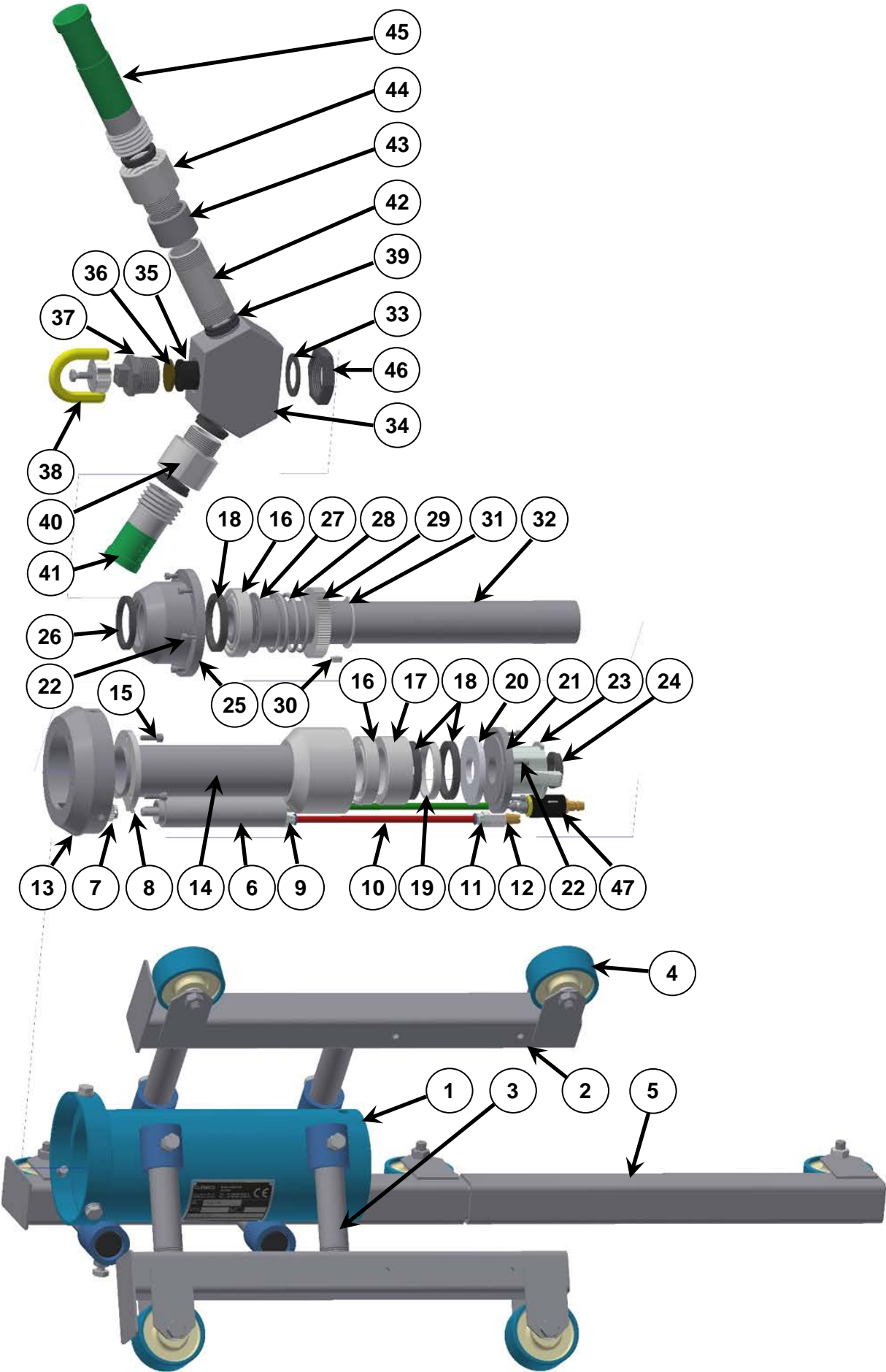
6 Troubleshooting

Problem	Probable cause	Remedy
Blast head does not turn or too slowly	1. Volume or pressure of air at motor is too less.	Increase volume/ pressure of air for air motor.
	2 Leakage/ bend in supply hose of air motor.	Replace or place straight.
	3. Width/ length of supply hose unsuitable.	Width of hose 6mm: max. 10m Width of hose 9mm: max. 20m
	4. Entered dust interlocks axle.	Felt seal/ shaft seal/ ball bearing wear → replace
Irregular blast result.	1. Pulsing blast media.	Reduce metering.
	2. Moist blast media.	Replace blast media with dry one.
Vibrations.	1. One nozzle blocked.	Eliminate blockage.
	2. Different sizes of nozzles.	Use equal nozzles (length and diameter).
	3. Fixture wheels loose.	Tighten screws.

7 Admitted modifications for users

Only with the improvement of the producer! Otherwise the installation will loose guarantee and CE-certification

8 Replacement parts



Nr.	Art.-Nr.	Bezeichnung
	24407D	Basis Rohrinnenstrahlgerät Spin XL mit pneumatisch angetriebenem Strahlkopf, inkl. Spin XL Fahrgestell 400-580 (Art. 24443D), Filterregler und 10m Luftschlauch.
1	24439D	Halterung Räder
2	24440D	Gestell Räder (ohne PU-Rollen)
3	24445D	Rohr 1" - 160mm (in "Fahrgestell 400-580")
	24449D	Rohr 1" - 275mm (in "Fahrgestell 580-800")
	24452D	Rohr 1" - 635mm (in "Fahrgestell 790-1500")
	24446D	Kappe
4	24441D	PU-Rolle D80
5	24453D	Gestellverlängerung (ohne Rad) empfohlen für Ø > 800mm (enthalten in Fahrgestell 790-1500)
6	27192D	DL-Motor, abwürefest + ölfrei
7	24435D	Stirnzahnrad Z20
8	90592D	Madenschraube M4x6
9	24433D	Elsa gerade 8-1/8 A
10	27224D	PA-Schlauch 8/6 rot, pro Meter - 0,25m
	27225D	PA-Schlauch 8/6 grün, pro Meter - 0,25m
11	24434D	Elsa gerade 8-1/4 A
12	27198D	Schalldämpfer 1/4"
13	24428D	Deckel Antrieb
14	24413D	Mantelrohr
15	90155D	Zylinderkopfschraube M6x18
16	24414D	Kugellager
17	24415D	Mantelrohr Einsatz
18	24417D	Wellendichtring 50x68x8
19	24416D	Mantelrohr Distanzring
20	24430D	Dichtung Kunststoff
21	24429D	Anschlussflansch
22	24431D	Zylinderkopfschraube M5x16
23	24232D	CFT-Kupplung 1 1/2"
24	08416D	Dichtung CQG 32
25	24426D	Kopf Antrieb
26	24427D	Filzdichtung 6x6-177
27	24424D	Hülse Feder
28	24425D	Druckfeder
29	24421D	Stirnzahnrad Z80
30	24420D	Paßfeder 6x6x14
31	24419D	Sicherungsring 50x2
32	24418D	Welle
33	24412D	Dichtung Kopf Eingang PU
34	24408D	Strahlkopf
35	24409D	HM-Einsatz Kopf
36	24410D	Dichtung Kopf PU
37	24411D	Blindstopfen 1 1/4" mit M8
38	100956	Anschlagpunkt
39	91025D	Düsendichtung NW32
	91023D	Düsendichtung NW25
40	24444D	Düsenhalter 25
41	*)	Kurzdüse mit NW25
42	90437D	Rohr 1 1/4" - 95 (in "Fahrgestell 790-1500")
	90435D	Rohr 1 1/4" - 285 (in "Fahrgestell 790-1500")
43	24451D	Muffe 1 1/4" (in "Fahrgestell 790-1500")
44	24448D	Düsenhalter 32 (in "Fahrgestell 790-1500")
45	*)	Strahldüse mit NW32
46	27194D	Kontermutter 1 1/2"
47	27200D	Vorfilter DL-Motor
	24438D	Filterregler 5µm, G1/4" für DL-Motor
	90381D	Luftschlauch 9mm x 10m, inkl. Kupplungen
	90073D	Luftschlauch 9mm x 20m, inkl. Kupplungen

*) Auswahl Strahldüsen siehe Preisliste oder fragen Sie Ihren Händler. Range of blast nozzles see price list or ask your distributor.

Tabelle 2

Inner diameter of pipe [mm]	Extension nozzles	Kind of nozzle	Length of rod for frame [mm]	Spin XL carriage ...
400 ... 580 (15,5" - 23")	/	Short nozzle with NW25	160	400-580 (24443D)
				Spin XL carriage extensions
580 ... 800 (22,5" - 31,5")	/	Long nozzle with NW32	275	580-800 (24447D)
790 ... 1200 (31" - 47")	95mm (90437D)	Long nozzle with NW32	635	790-1500 (24450D)
1200 ... 1500 (47" - 59")	285mm (90435D)	Long nozzle with NW32	635	790-1500 (24450D)

9 Summary, rest hazard and safety precautions

9.1 Noise pollution

Noise levels > 80dB(A) can occur → use ear protection.

9.2 Dust pollution

Adequate methods have to be chosen to meet the acceptable contamination.

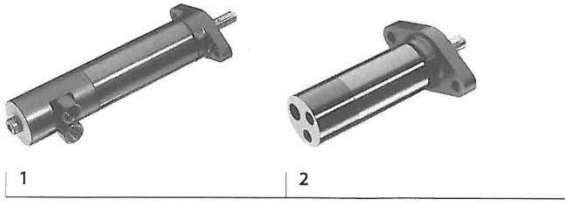
9.3 Escape of sped blast media of wear parts

Blasting subjects to strong wear that can cause hazards. Therefore the required maintenance cycles of chapter 5 have to be followed exactly!

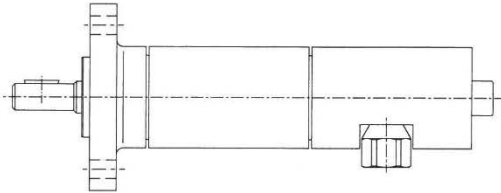
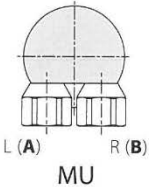
Especially the blast hose has to be checked to reduce existing hazard.

10 Appendixes

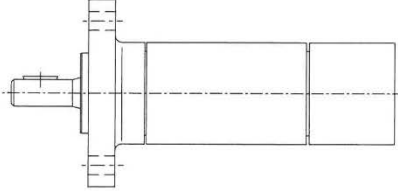
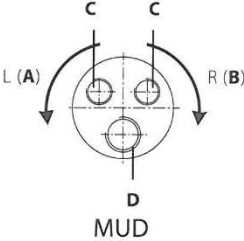
10.1 Manual for air motor type MRD, stall-proof, oil free



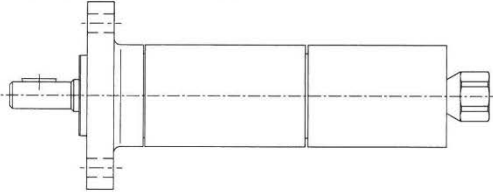
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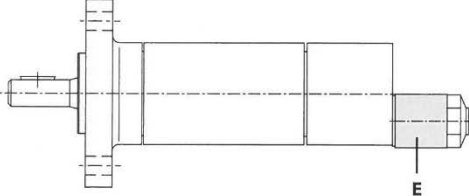
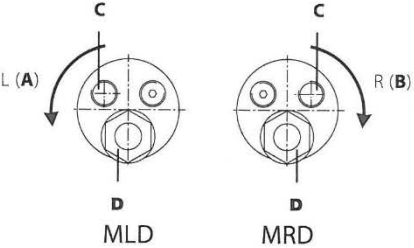
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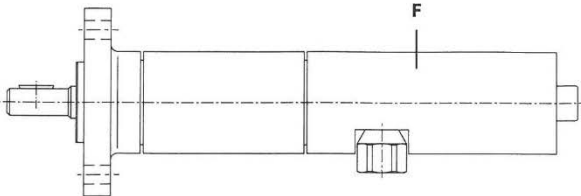
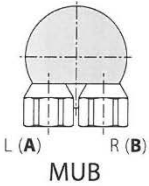
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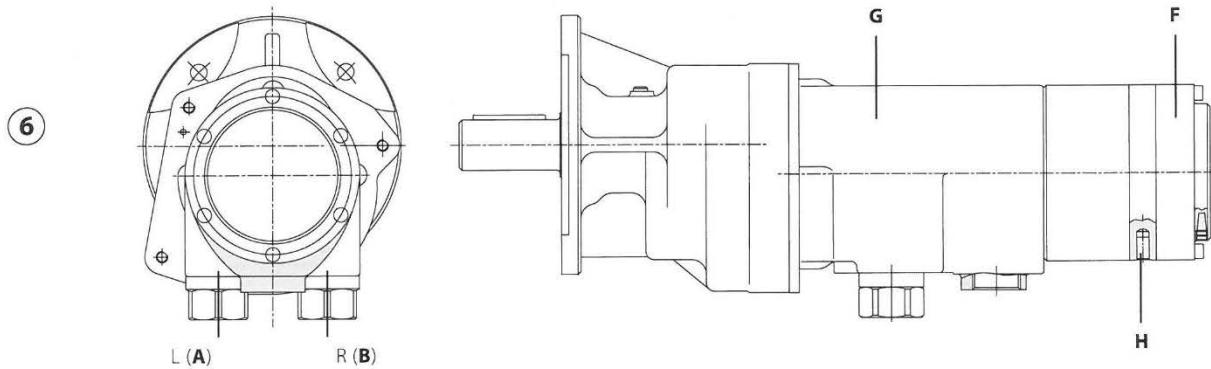
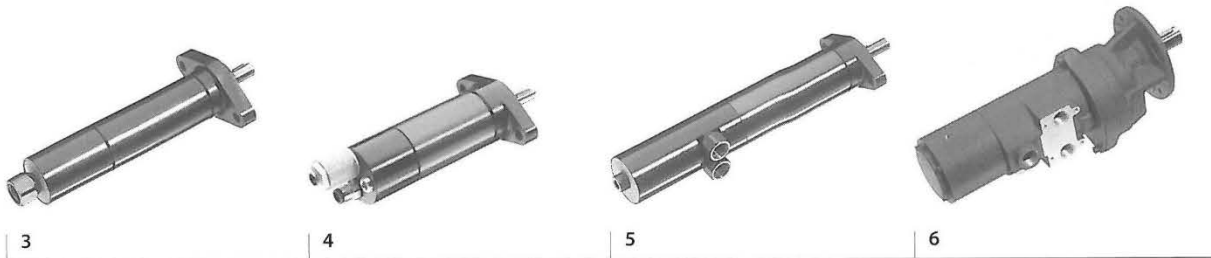


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	A	B	C	D	E	F	G	H
Deutsch → Seite 04	Linkslauf	Rechtslauf	Zuluft	Abluft	Drossel	Bremse	Standard	Anschluß für die Steuerleitung der Bremse
English → Page 06	Counter-clockwise	Clockwise	Air inlet	Air outlet	Throttle	Brake	Standard	Connection for brake control line
Français → Page 08	Marche à gauche	Marche à droite	Air d'arrivée	Air d'évacuation	Bobine	Frein	Standard	Raccord de la conduite de commande du frein
Español → Pagina 10	Marcha a la izquierda	Marcha a la derecha	Aire de entrada	Aire de salida	Inductancia	Frenos	Estándar	Connexión para línea de manejo de los frenos
Italiano → Pagina 12	Corsa sinistrorsa	Corsa destrorsa	Alimentazione aria	Scarico aria	Valvola	Freno	Standard	Allacciamento per condotto di comando freno
Português → Pagina 14	Movimento à esquerda	Movimento à direita	Entrada de ar	Saida de ar	Restritor	Travão	Padrão	Conexão para o conduto de comando do travão
Nederlands → Pagina 16	Linkse loop	Rechtse loop	Toevoerlucht	Afvoerlucht	Smookklep	Rem	Standaard	Aansluiting voor de stuurleiding van de rem
Suomi → Sivu 18	Käynti vasemmalle	Käynti oikealle	Tuloilma	Poistoilma	Kuristin	Jarru	Standardi	Jarrun ojausjohdon liitäntä
Svenska → Sid 20	Vänsterrotation	Högerrotation	Tilluft	Frånluft	Spjäll	Broms	Standard	Anslutning för bromsens styrledning

Instructions and maintenance

1 Safety instructions

- Please read through these instructions thoroughly before starting the motor and then follow them precisely during operation.
- Motor and accessories may not be used for other purposes.
- For reasons to do with product liability and operating safety, all changes made to the motor and / or accessories must be approved by the manufacturer's corresponding technician.
- No liability is assumed for damage caused by failure to comply with the instructions or improper repairs, together with the use of not original spare parts.
- Subject to modifications in the interest of technical progress.

1.1 **Using the motor**

- Standard motors may **not** be used in potentially explosive areas. Please order our information sheet "Explosion-proof compressed air motors (in accordance with ATEX guidelines for certified motors)" for these areas.

1.2 **To avoid injuries and damage, please note:**

- Always disconnect the motor from the compressed air pipe before changing the motor adjustments / settings!
- Protect your hands, hair and clothing from getting trapped by rotating parts.
- Use suitable filters or silencers to reduce noise development. Here we recommend various silencers which can be purchased from us.

2 **Instructions and installation**

2.1 **Air quality and connection conditions**

- The motor may only be operated up to a max. flow pressure of 7 bar. Pipe length max. 3 m. Always note the resulting pressure loss from overlong pipes.
- Always ensure that clean, dry compressed air is used. Provide prescribed air quality as per DIN ISO 8573-1, quality class 4.
- Use a maintenance unit mounted as close as possible to the motor.

- Pay attention to the correct inner diameter of the compressed air pipe! Also consult the *technical data* for the motor.
- Before connecting the motor, the compressed air pipe (hose) should be blown through thoroughly to remove any possible dirt particles.
- Before connecting the motor, check the water level in your compressed air. Water, corrosion etc. in the pipes can cause rust in the motor and thus high motor wear or failure.

2.1.1 **Lubricants**

- As **lubricating oil**: Resin- and acid-free oil in viscosity class HL 32.
- As **lubricating grease**: Multi-purpose grease for roller bearings, plain bearings and gears, resin- and acid-free. NLGI class: 2 | Saponification: Lithium | Drop point: 185° C | Worked penetration: 265 – 295

Applications in the food industry:

- Food oil: Oil that complies to USDA-H1 or FDA 178.3570 viscosity class 32
- Lubricating grease: USDA-H1 or FDA 178.3570, NLGI class: 2 – DIN 51818

2.2 **Oil-free motors**

In the case of completely dry compressed air without any added oil, the neutral speed may drop depending on the running time of the motor. However if the compressed air does contain small quantities of oil, the functional capability is not affected.

2.3 **Direction of rotation of the motors**

Depending on the motor type, different directions of rotation are possible depending on the connection.

2.3.1 **Reversible compressed air motors**

type MU (page 02, fig. 1)

The reversible motor has two air connections: L for counter-clockwise and R for clockwise operation. When connecting up the motor, ensure that the side not subject to pressure is vented. If the motor is used for only *one direction of rotation*, ensure that the second air connection is not sealed. This would cause the motor to malfunction. For silencing in this case, we recommend using a silencer available from the manufacturer.

**2.3.2 Reversible compressed air motors
type MUD (page 02, fig. 2)**

For type MUD motors, it is also possible for a speed throttle or silencer to be connected. *Note:* In type MUD motors, the waste air is divided approx. $\frac{2}{3}$ via the exhaust connection and $\frac{1}{3}$ via the non-pressurised side.

**2.3.3 Clockwise | counter-clockwise compressed air motors
type MR, ML (page 03, fig. 3)**

**2.3.4 Clockwise | counter-clockwise compressed air motors
type MRD, MLD (page 03, fig. 4)**

If the motor is operated with a speed throttle or silencer, then this is fitted to the exhaust connection of the motor. The air intake not required in this case is sealed in the factory. *Note:* it is *not* possible to changeover from counter-clockwise to clockwise respectively from clockwise to counter-clockwise!

**2.3.5 Motors with adherence-actuated | friction brake
type MUB**

Control of the adherence-actuated brake, construction series MUB, MUBZ (page 03, fig. 5)

The integrated adherence-actuated brake is triggered directly by the motor working air at the valid operating pressure.

Control of the friction brake, construction series MUB 300 – 600 (page 03, fig. 6)

The integrated friction brake is controlled by a separate control line. Here the spring-loaded single-disk brake must be vented with at least 4.8 bar pressure to open the brake, i. e. the brake is activated when no pressure is applied.

3 Stall-proof | not stall-proof motors

3.1 Stall-proof motors

Stall-proof motors can be operated down to a standstill, i. e. no damage is caused to motor and gear when the motor is stopped while running and when under pressure.

3.2 Not stall-proof motors – especially low speeds

These motors **cannot** be operated until standstill, i. e. only up to the max. stated torque. To ensure that the permitted torque is not exceeded, we recommend fitting an overload clutch / torque limiter. Please consult the *technical data* for the tolerable torques.

4 Maintenance

We recommend maintenance after 12 months or 500 operating hours to guarantee a long service life for the motor. The maintenance intervals should be shortened for extreme operating conditions. It is advisable for maintenance to be carried out by the manufacturer's service technicians. If you proceed with maintenance yourself, the planetary gears, needle bearings and motor seals must be lubricated with a suitable grease (see lubricants). Please note that a long service life of the lamella is not guaranteed when the compressed air is totally dry.



Warning

The motor lamellae contain PTFE. Please comply with the normal health and safety recommendations for these materials. Avoid open flames to prevent any ignition/fumes forming from particles detached from the lamellae. Fumes caused by PTFE particles can cause allergic reactions under certain conditions.



Important

After you have performed any maintenance work on the motor, check that it will work properly. To do so, drip 2–3 drops of oil in the air intake and let the motor run for a few seconds in idle mode.

Guarantee

The manufacturer grants a 12 months guarantee on material and design faults for compressed-air motors used in single-shift operation. Damage caused by wear, overload or improper handling and by failure to comply with the instructions is not covered by the guarantee.

Complaints can only be dealt with if the motor is sent *undismantled* to the manufacturer and only if original parts were used during any maintenance work.