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BETRIEBSANLEITUNG UND SICHERHEITSVORSCHRIFTEN
OPERATING AND SAFETY INSTRUCTIONS
MODE D'EMPLOI ET DE SÉCURITÉ
ISTRUZIONI PER L'USO E DI SICUREZZA

OR-H 20 A

Ab Serie-Nr. 100

From serie no 100

A partir du no de série 100

A partire dal no. di serie 100

Handgerät zum Umreifen mit Stahlband

Hand tool for steel strapping

Appareil pour le cerclage par feuillard d'acier

Apparecchio per reggiare con reggetta d'acciaio

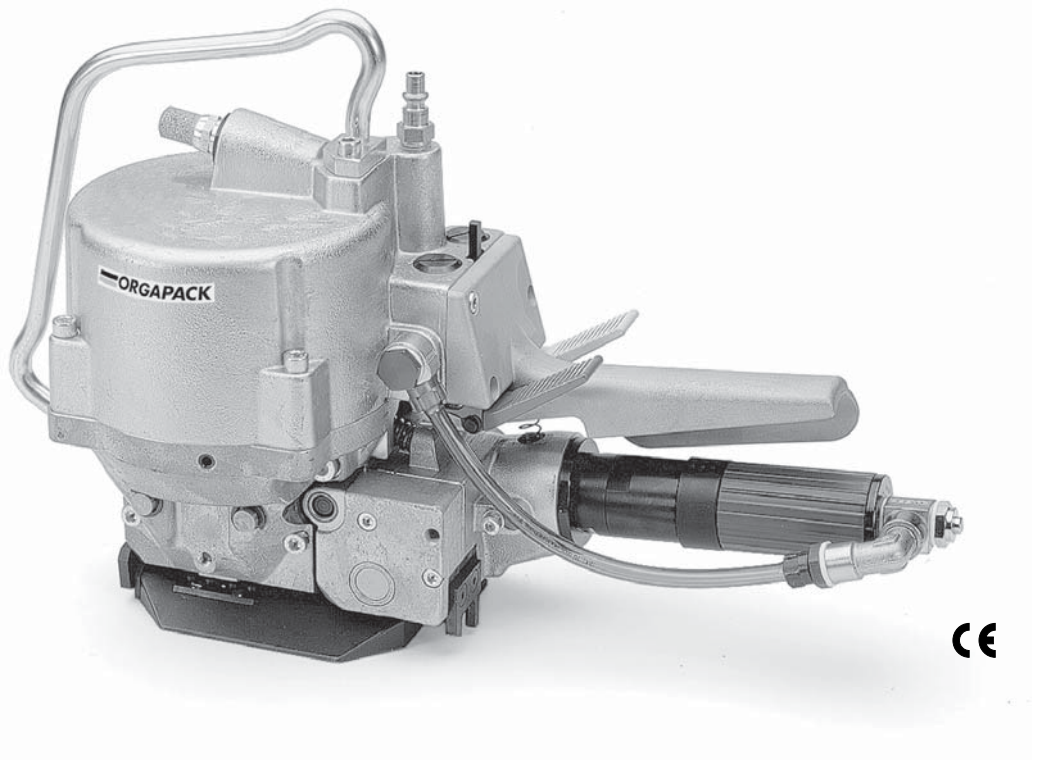


Vor dem Gebrauch des Gerätes die Betriebsanleitung aufmerksam lesen.

Before using the tool, read the operating instructions carefully.

Avant l'utilisation de l'appareil, consultez soigneusement le mode d'emploi.

Prima d'utilizzare l'apparecchio, leggere attentamente le istruzioni per l'uso.



PACKAGING

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1

TECHNICAL DATA

Weight	9.7 kg (21.3 lbs)
Dimensions	Length 310 mm (12.2") Width 105 mm (4.1") Height 240 mm (9.5")
Tension force	Up to approx. 4000 N
Tension speed	115 mm/s (4.53"/s)
Air pressure	Maximum 6 bar static
Air consumption	
– Tensioning	6 NI/s
– Sealing	6 NI
Air connection	G 1/4" (1/4" NPT)
Sealing	Sealless notched joint
Emission sound pressure levels, measurement type A (EN ISO 11202)	L_{pA} 76 dB (A)
Vibrations at handle (EN ISO 8662-1)	$a_{h,w}$ < 2,5 ms ⁻²
STEEL STRAP	
Strap width	13, 16 mm (1/2", 5/8")
Normal quality:	
Strap thickness	Up to 0.60 mm (.023")
Tensile strength	Up to approx. 850 N/mm ² (120'000 lbs/in ²)
High strength quality:	
Strap thickness	Up to 0.50mm (.019")
Tensile strength	Up to approx. 1100 N/mm ² (157'000 lbs/in ²)

DECLARATION OF AGREEMENT

We take sole responsibility in declaring that the tool OR-H 20 A, to which this declaration refers, is in full accordance with the current requirements of the guidelines laid down by the council on 22th June 1998 (98/37/EEC), „Machine Guidelines“.

According to norm:
EN 292-1, EN 292-2, EN 349, EN 983, EN 1050, prEN 792-2

CH-8953 Dietikon, May 2001

Manager
Sales & Marketing:



R. Kieffer

Manager
Engineering:



M. Binder

2

GENERAL INFORMATION

These operating instructions are intended to simplify familiarisation with the strapping tool and the possibilities of application for the intended purpose. The operating instructions contain important information concerning the safe, proper and efficient use of the strapping tool. Observation of the information will help to avoid danger, reduce repairs and stoppages and increase the reliability and service life of the strapping tool.

The operating instructions must always be available at the place of operation of the strapping tool. They must be read and observed by all persons concerned with work on the strapping tool. This work specifically includes operation, refilling of operating material, fault elimination and maintenance.

In addition to the operating instructions and the regulations for accident prevention effective in the country of use and place of application, the recognised technical regulations for safety and proper working must also be observed.



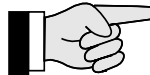
CAUTION!

Used where there is danger to life and health.



WARNING!

Used for danger which can cause material damage.



NOTE!

Used for general information and information which if not followed can cause faults in the operating sequence.

2.1 INFORMATION ON ENVIRONMENTAL PROTECTION

This tool is manufactured without any physical or chemical substances which could be dangerous to health. For disposal of all the parts, the governmental instructions must be observed.

3

SAFETY INSTRUCTIONS



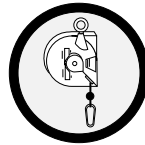
Inform yourself!
Read the operating instructions carefully.



Do not use a bottled air or gas source!
Do not operate this tool by using a bottled air or gas source.



Protect yourself!
When operating the tool, wear eye, face and hand protection (cut-proof gloves).



For suspending the tool, only spring balancers which conform to the safety regulations should be used.



Warning:
Strap will snap forward!
When cutting the strap, hold the upper portion and stand safely away from the strap.
Caution:
The lower strap will snap forward.



Original ORGAPACK spare parts must be used exclusively!
Not using original spare parts will dissolve the warranty and the liability.



Warning:
Strap could break!
Do not stand in line with the strap while it is tensioned. The strap could break!

Use for the intended purpose
The tool is intended for strapping flat packages, pallet loads etc.

This tool was designed and manufactured for safe handling during the strapping operation.



Caution:
Danger of squeezing!
Do not put your fingers into the tension wheel area.

The tool processes steel straps only.

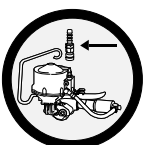
Possible misuse
The use of plastic straps is not possible.



Caution:
Only strap packed goods!
Do not put hands or other parts of the body between the strap and the package during the strapping process.



Do not exceed the air pressure!
Do not exceed the recommended air pressure.



Use safety coupling!
For connecting the air hose to the tool, use only a safety coupling.

4

DESCRIPTION

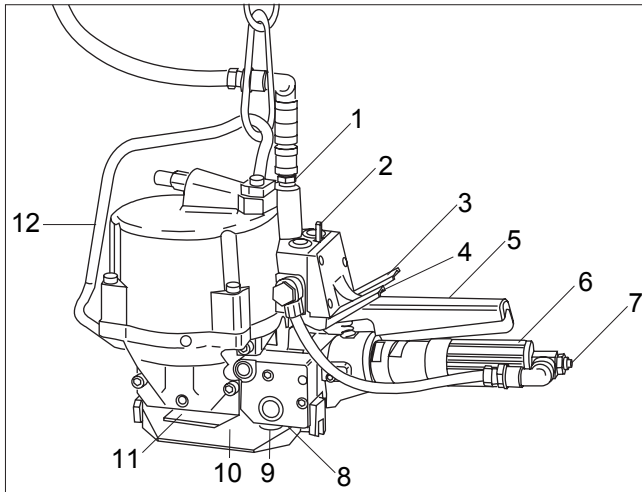


Fig. 1

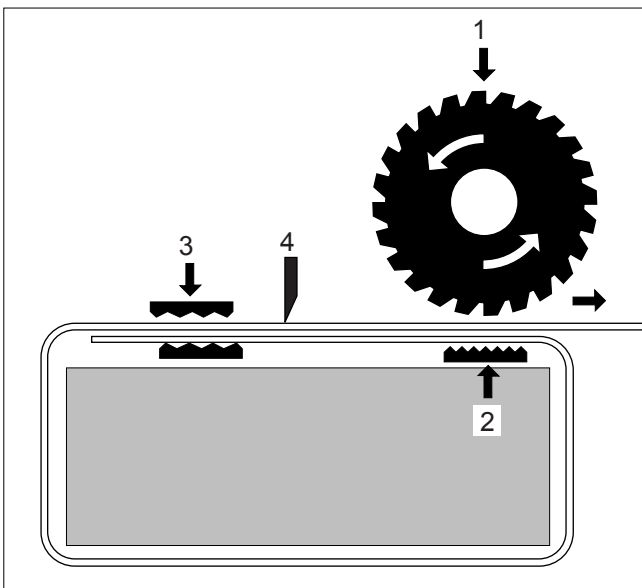


Fig. 2

4.1 DESIGN

- 1 Compressed air connection
- 2 Pawl (Interrupting tensioning process)
- 3 Yellow button (Sealing)
- 4 Green button (Tensioning)
- 5 Handle
- 6 Compressed air motor
- 7 Pressure reducing valve
- 8 Tension wheel
- 9 Tension plug
- 10 Base plate
- 11 Sealing jaws
- 12 Suspension bow

4.2 FUNCTION

- Strap clamped by pressure on toothed plate (2/2).
- Tensioning by feed wheel principle (2/1).
- Sealing by punching strap (2/3).
- Strap cut with knife (2/4).

5

INITIAL OPERATION

5.1 SUSPENDING THE TOOL

The tool can be suspended on a spring balancer with the suspension bracket (3/1) supplied. The suspension bracket is designed to operate the tool horizontally or vertically.

Optionally a suspension bracket is available to operate the tool also sideways.

5.2 COMPRESSED-AIR CONNECTION

Motor and sealing piston are lubricated by oil mist of the compressed air. Properly prepared compressed air is therefore essential for troublefree operation of the tool. This can only be ensured by a reliably functioning maintenance unit, consisting of water separator, pressure reducing valve with pressure gauge and oil mist lubricator.

The air pressure at the pressure reducing valve should be set at 5–6 bar. The oil mist lubricator should supply sufficient oil.

The length of the hose between the OR-H 20 A tool and the maintenance unit should not exceed 5 m (15 ft). The internal diameter of the pipe should be at least 10 mm ($\frac{3}{8}$ ""). It must be ensured that the hose does not form loops, where oil can collect.

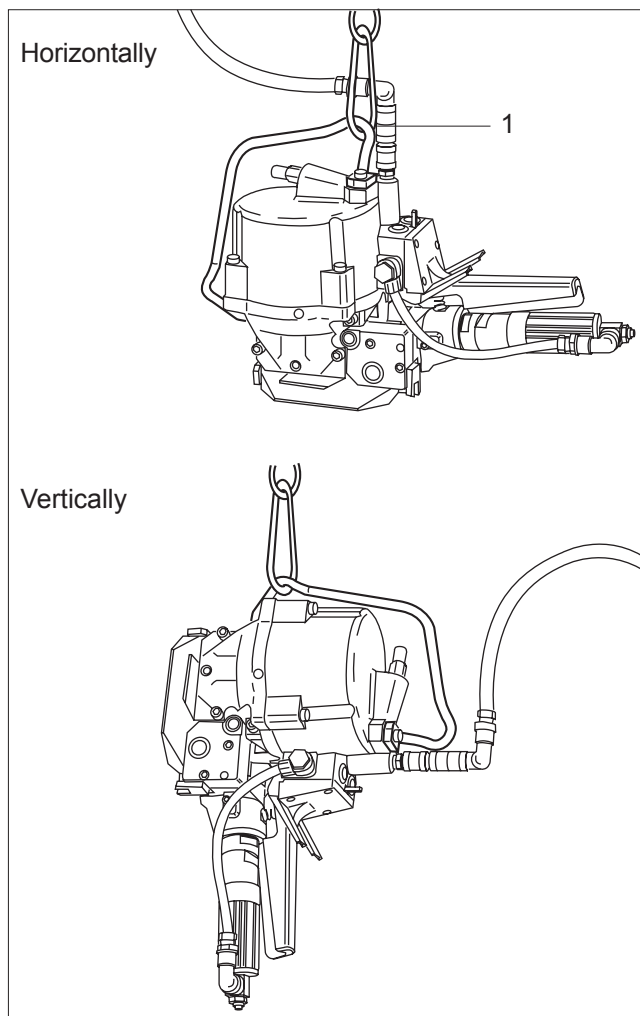


Fig. 3

6

OPERATING INSTRUCTIONS

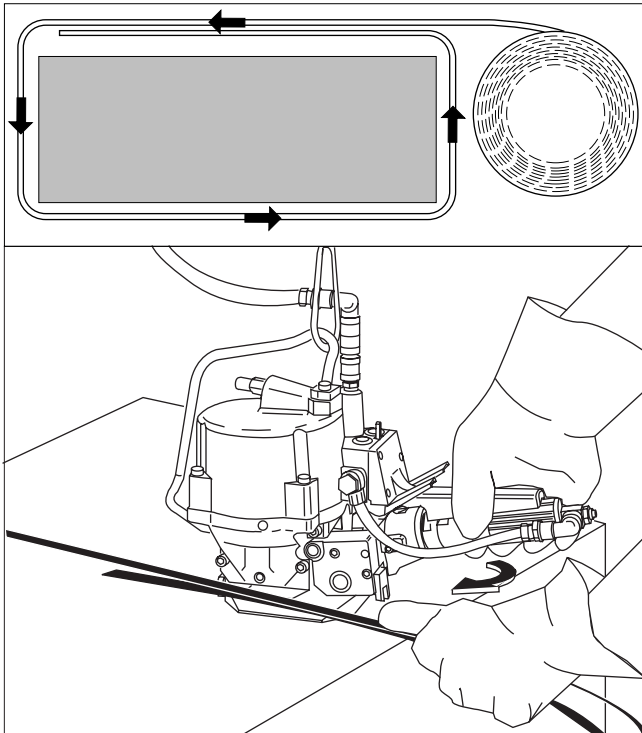


Fig. 4

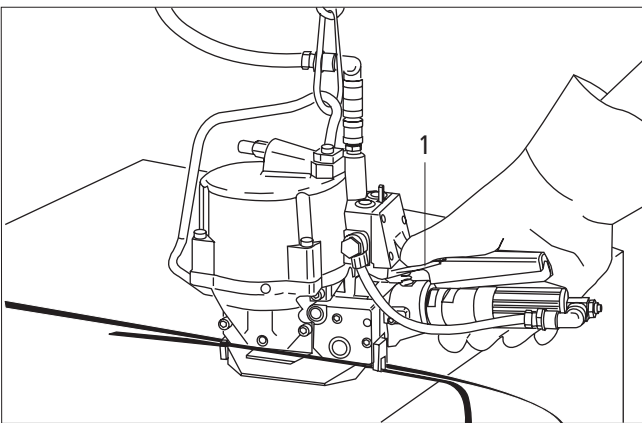


Fig. 5

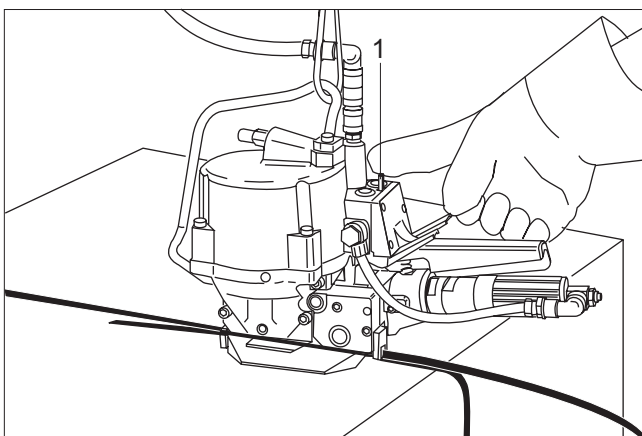



Fig. 6
08.03/WE


6.1 OPERATING THE TOOL

- Draw strap from reel and place tightly around the package. Grip strap with the left hand approx. 30 cm (12") from the beginning of the strap.
- Hold the handle of the tool in the right hand and raise the motor up to the stop.
- Move the tool towards the straps up to the stop. The beginning of the strap projects approx. 5 cm (2") outside the front of the tool.
- Release the motor.

 The straps are now clamped and inserted in the tool. If the straps are not correctly inserted, tensioning is not possible.


Tensioning

- Press the green button (5/1) completely down with the thumb of the right hand. Release green button. The strap is tensioned until the air motor stops.

 The tensioning force can be infinitely adjusted (see chapter 7.1).

Interrupting the tensioning process

- Press catch (6/1) to the left, green button rises and tensioning is interrupted.

 If the items to be strapped are mainly delicate products, it is recommended to remove the catch. The green button will then no longer be locked when pressed down.

Sealing

- Press the yellow button (7/1) with the right thumb until the strap is cut off.

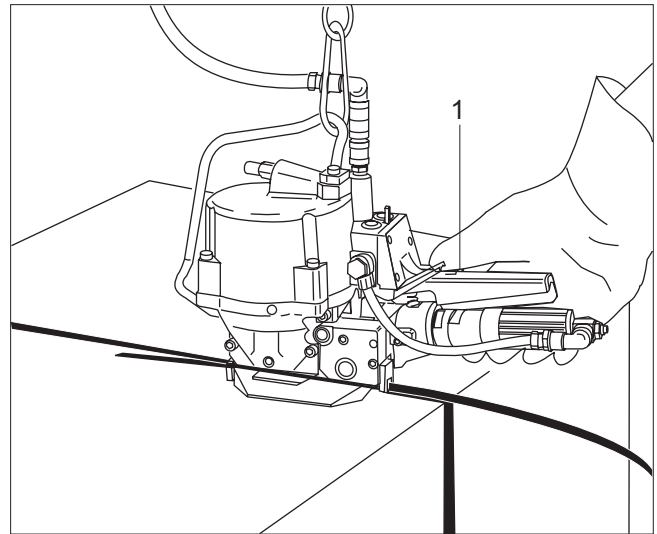


Fig. 7

- Raise the motor to the stop and swing the tool away to the right.

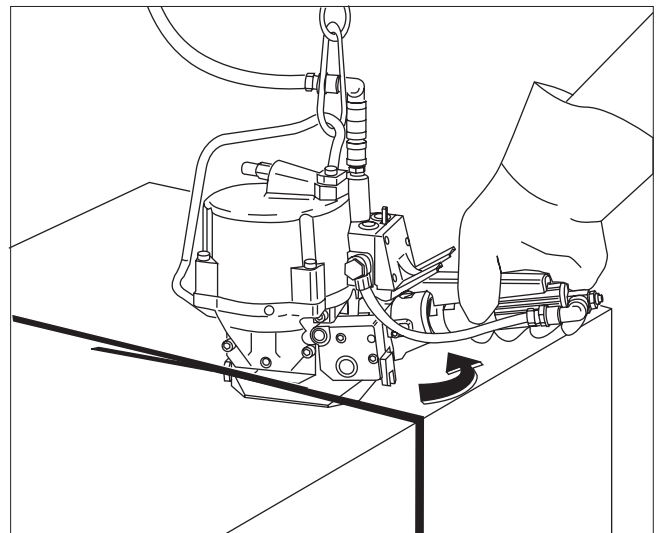


Fig. 8

Check of seal

To obtain the maximum seal efficiency, the notches have to be cut properly into the straps and should interlock at least 1 mm (.039").

If these notches are not correctly cut, the dies and the die plate have to be replaced (see chapter 7.6).

The cut-off depth must be adjusted so that the lower strap is not damaged. For adjusting the cut-off depth (see chapter 7.3).

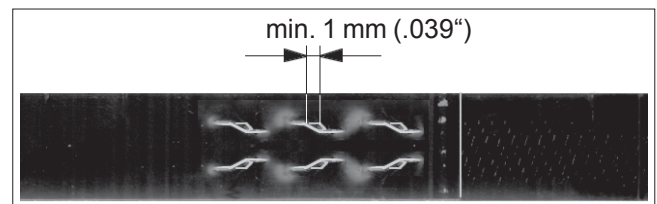


Fig. 9

7

PREVENTIVE AND CORRECTIVE MAINTENANCE

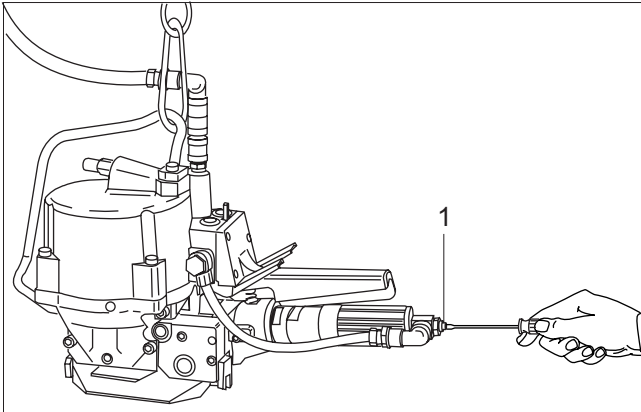



Fig. 10

7.1 ADJUSTING TENSIONING FORCE/ TENSIONING SPEED

- Set air pressure at pressure reducing valve of maintenance unit to 4–6 bar.
- With a screwdriver adjust pressure reducing valve (10/1) of air motor, so that the motor stops when the required tension is reached. It should be ensured that the seal is notched properly and that the strap is cut off.

 A correctly punched seal is interlocked only when the strap is tensioned.

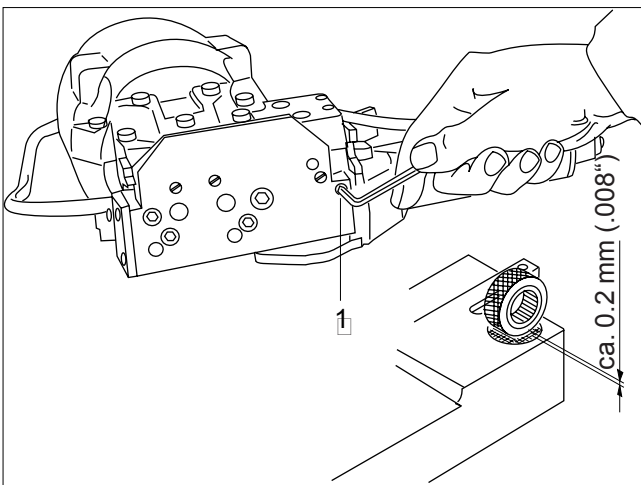

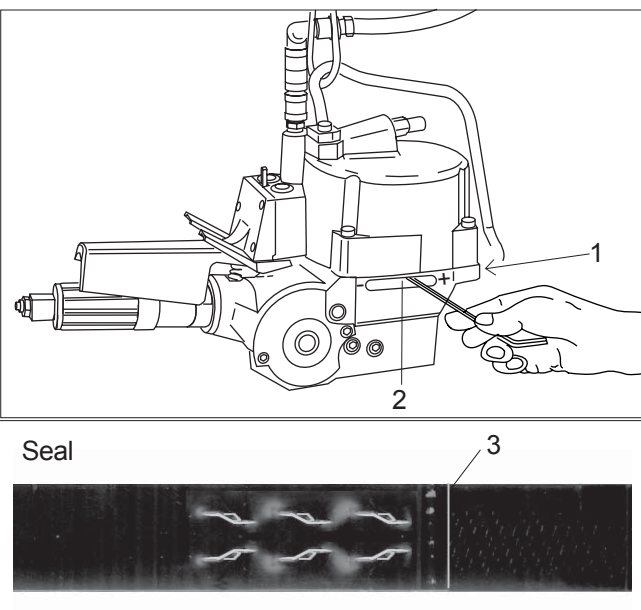


Fig. 11


7.2 SETTING CLEARANCE BETWEEN TENSIONWHEEL AND TENSION PLUG

- Disconnect tool from air supply.
- Set cylinder screw (11/1) with Allen key, so that the clearance between tensioning wheel and toothed plate is approx. 0.2 mm (.008"). Turning clockwise increases the clearance, turning counterclockwise decreases the clearance.

 Tensioning wheel and toothed plate must not touch. If they are too far apart, the tensioning wheel slips before the final tension is reached.



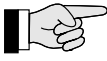
7.3 SETTING THE CUT-OFF DEPTH

 The setting of the cut-off depth must correspond to the thickness of the strap used. If the cut-off depth is not correctly adjusted the seal efficiency could be negatively affected.

- Loosen set screw (12/1) with Allen key.
- With Allen key slide adjusting nut (12/2) in direction "-" or "+", so that the lower strap (12/3) is not damaged when cutting off.
- "-" Reduces the cut-off depth,
- "+" Increases the cut-off depth.
- Tighten set screw (12/1).

Fig. 12
08.03/WE

7.4 REPLACING TENSION WHEEL


 If the tension wheel spins before the required strap tension is reached, the tension wheel must be replaced (precondition: clearance set correctly, see chapter 7.2).

Remove

- Disconnect tool from air supply.
- Remove counter sunk screw (13/1).
- Remove two cylinder screws (13/3).
- Remove bearing plate (13/2).
- Raise motor and remove tensioning wheel (13/6) with tension shaft (13/4).
- Remove tensioning wheel with counter washers (13/5) and (13/7) from the tension shaft.
- Replace tensioning wheel.

Install

- Install the parts in reverse order.

 Lubricate internal teeth of tensioning wheel (13/6) **lightly** with Klüber grease GBU Y 131 (Microlube). The chamfer on the tensioning wheel should point in direction of the housing.

- After assembly, adjust clearance between tensioning wheel and toothed plate (see chapter 7.2).

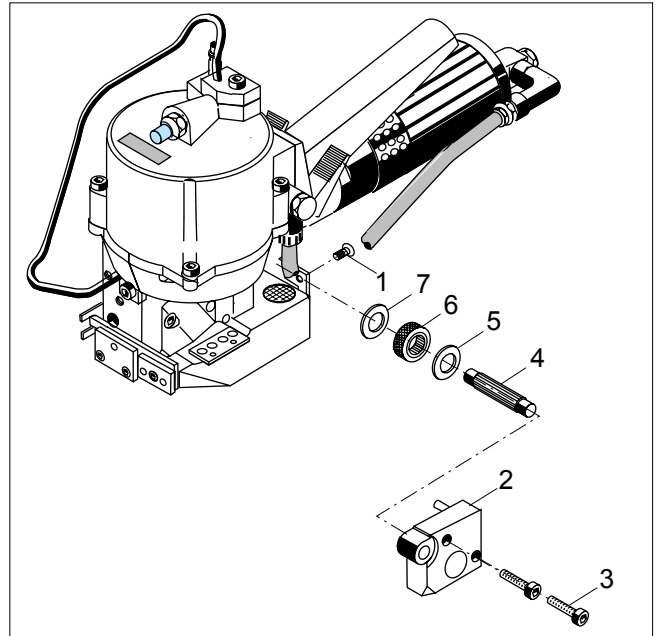



Fig. 13

7.5 REPLACING THE TOOTHED PLATE

- Disconnect tool from air supply.
- Remove tensioning wheel (see chapter 7.4).
- Remove safety wire (14/1).
- Push out toothed plate (14/2) and shim plate (14/3) from below. Replace toothed plate.
- Clean the hole in the base plate.

Install

- Install the parts in reverse order.

 Place shim plate (14/3) with radiused side on top. Mount new safety wire (14/1).

- After assembly, adjust clearance between tensioning wheel and toothed plate (see chapter 7.2).

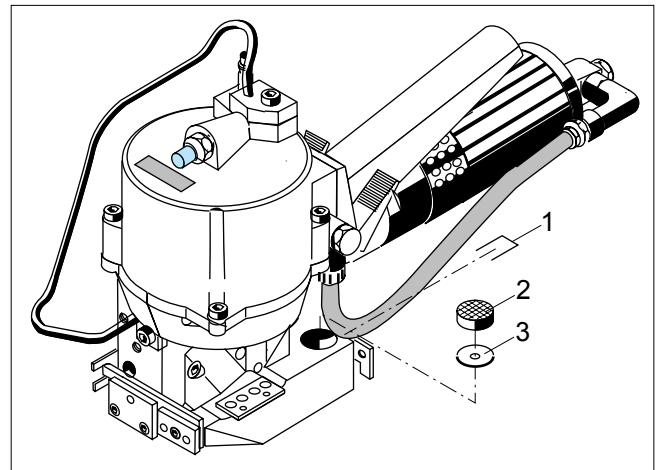


Fig. 14

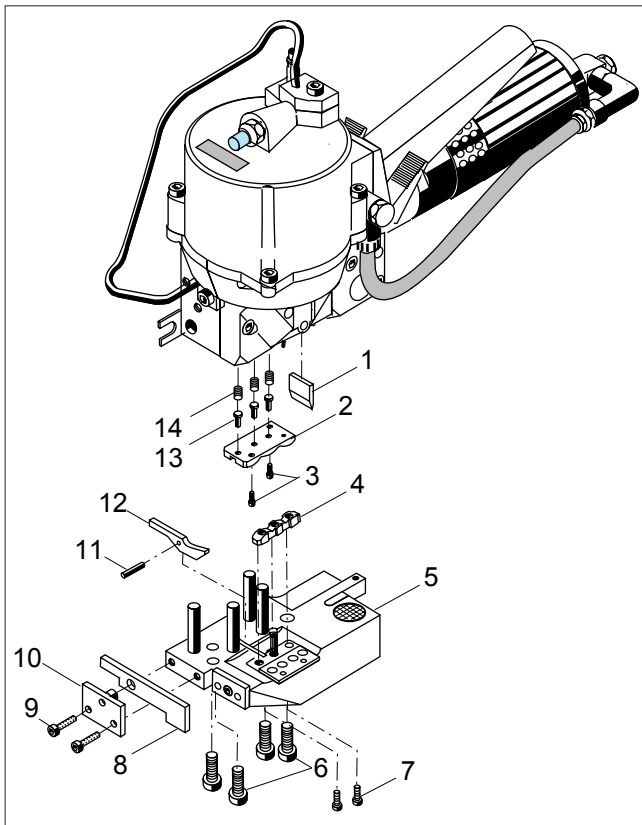


Fig. 15

7.6 REPLACING KNIFE, DIE AND DIE PLATE

Remove

- Disconnect tool from air supply.
- Remove two cylinder screws (15/9), stop plate (13/10) and strap holding pawl (15/8).
- Remove four cylinder screws (15/6).
- Withdraw base plate (15/5) from housing.
- Loosen two cylinder screws (15/3) and remove and replace die plate (15/2).



Ejector bolts (15/13) and springs (15/14) could falling out.

- Loosen two cylinder screws (15/7) and carefully remove and replace die (15/4).
- Remove and replace knife (15/1).

Install

- Install the parts in reverse order.



Secure new cylinder screws (15/3), (15/6) and (15/7) with Loctite 243. Before mounting the base plate (15/5), ensure that the milled surface of the bolt 15/11) points downwards.

- Set cut-off depth after assembly (see chapter 7.3).

7.7 CLEANING THE TOOL

- The tool should be regularly cleaned. Especially the tension wheel and the jaw unit should be kept clean. The easiest way to do this, is to use compressed air and to blow out the dust (wear eye protection).

8

PARTS LIST 1831.002.002/1

When ordering please indicate part number and quantity

Explosion drawing see page 30

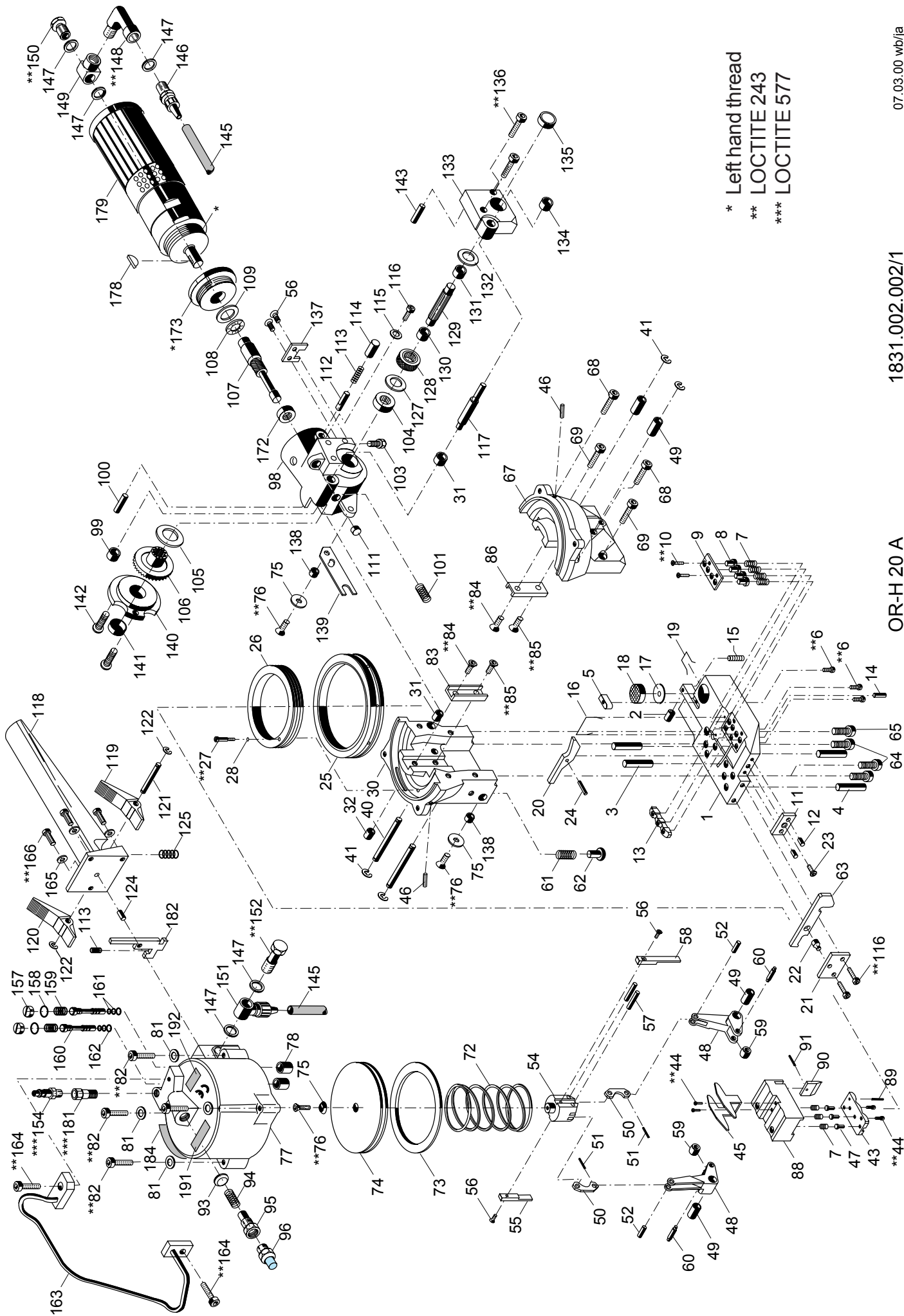
* Recommended spare parts

Pos.	Part no	Part name	Quantity	
1	1173.940.002	Base plate	13 mm	
		incl. pos. 2-4	1	
1	1173.950.005	Base plate	16 mm	
		incl. pos. 2-4	1	
2	1820.020.193	Bushing	1	
3	1820.030.347	Guide bolt	2	
4	1921.308.400	Cylindric pin, \varnothing 8 x 40	2	
5	1173.500.004	Strap stop	1	
*	6	1910.803.108	Cylinder screw, M 3 x 10	3
7	1820.010.160	Compression spring	7	
8	1173.500.070	Ejector bolt bottom	4	
9	1173.500.068	Cover plate	1	
*	10	1911.703.087	Counter sunk screw, M 3 x 8	2
11	1173.500.079	Front plate	1	
12	1921.404.141	Spiral pin, \varnothing 4 x 14	2	
*	13	1173.700.147	Die	13 mm 1
*	13	1173.700.148	Die	16 mm 1
14	1922.103.121	Ridget pin, \varnothing 3 x 12	1	
15	1910.606.162	Set screw, M 6 x 16	1	
16	1173.500.026	Cutting wire	1	
17	1820.020.181	Shim	1	
*	18	1820.040.094	Toothed plate	1
*	19	1830.000.287	Safety wire	1
20	1173.500.066	Ejector	1	
21	1173.940.001	Stop plate	13 mm 1	
21	1173.950.004	Stop plate	16 mm 1	
22	1820.030.409	Bolt	1	
23	1911.905.102	Counter sunk screw, M 5 x 10	1	
24	1820.030.346	Bolt	1	
25	1820.020.239	Adjusting nut	1	
26	1820.020.240	Stop ring	1	
27	1820.030.378	Stop screw	1	
28	1927.600.310	O-Ring, \varnothing 3 x 1,5	1	
29				
30	1173.600.011	Housing right, incl. pos. 31, 32, 40, 41	1	
31	1937.312.203	Cylindric bearing, \varnothing 12 x 20	1	
32	1937.310.103	Cylindric bearing, \varnothing 10 x 10	1	
33				
34				
35				
36				
37				
38				
39				
40	1173.500.077	Guide pin	2	
41	1920.108.102	Retaining ring, \varnothing 8	2	
42				
*	43	1173.540.003	Die plate	13 mm 1
*	43	1173.550.003	Die plate	16 mm 1
*	44	1910.803.088	Cylinder screw, M 3 x 8	4

Pos.	Part no	Part name	Quantity	
45	1173.500.012	Holder	1	
46	1910.608.122	Set screw, M 8 x 12	2	
47	1173.500.069	Ejector bolt top	3	
48	1173.500.007	Angular lever	2	
49	1935.510.200	Slide bearing, \varnothing 10 x 20	2	
50	1173.500.024	Link	2	
51	1921.801.122	Roll pin, \varnothing 2 x 12	2	
52	1820.030.313	Bolt	2	
53				
54	1173.500.019	Pusher	1	
55	1173.500.013	Guide rail right	1	
56	1911.905.122	Counter sunk screw, M 5 x 12	4	
57	1820.030.337	Bolt	2	
58	1173.500.014	Guide rail left	1	
59	1820.020.184	Roller	2	
60	1820.030.310	Shoulder bolt	2	
61	1820.010.153	Compression spring	1	
62	1923.608.162	Rivet, \varnothing 8 x 16	1	
*	63	1173.540.007	Strap guide lever	13 mm 1
*	63	1173.550.007	Strap guide lever	16 mm 1
*	64	1911.008.202	Cylinder screw, M 8 x 20	3
*	65	1173.500.022	Cylinder screw	1
66				
67	1173.600.012	Housing left	1	
68	1911.008.308	Cylinder screw, M 8 x 30	2	
69	1911.106.358	Cylinder screw, M 6 x 35	2	
70				
71				
72	1820.010.152	Compression spring	1	
73	1928.011.250	K-Ring, \varnothing 125	1	
74	1173.500.018	Piston	1	
75	1917.906.388	Washer, M 6	3	
76	1911.906.202	Counter sunk screw, M 6 x 20	3	
77	1173.900.009	Cylinder	1	
78	1820.100.029	Bushing	2	
79				
80	1910.408.062	Set screw, M 8 x 6	6	
81	1919.606.072	Lock washer, M 6	4	
82	1911.106.458	Cylinder screw, M 6 x 45	4	
83	1173.500.076	Guide right	1	
84	1911.906.102	Counter sunk screw, M 6 x 10	2	
85	1911.906.122	Counter sunk screw, M 6 x 16	2	
86	1173.500.075	Guide left	1	
87				
88	1173.500.015	Sealing block	1	
89	1921.604.121	Spiral pin, \varnothing 4 x 12	1	
*	90	1173.500.061	Knife "A"	1
91	1921.403.121	Spiral pin, \varnothing 3 x 12	1	
92				
93	1820.070.014	Collar packing	1	

Pos.	Part no	Part name	Quantity
94	1820.010.123	Compression spring	1
95	1820.030.308	Air release screw	1
96	1940.401.720	Silencer, G 1/4"	1
97			
98	1173.900.006	Gear housing, incl. pos. 99, 100	1
99	1937.312.163	Cylindric bearing, \varnothing 12 x 16	1
100	1921.403.101	Spiral pin, \varnothing 3 x 10	1
101	1820.010.213	Compression spring	1
102			
103	1911.505.088	Hex screw, M 5 x 8	1
104	1933.722.200	Needle bearing, \varnothing 22 x 20	1
105	1935.632.150	Thrust bearing, \varnothing 32/54 x 1,5	1
106	1820.060.064	ZTA-Wheel	1
107	1820.060.080	ZTA-Pinion	1
108	1934.310.170	Thrust needel bearing, \varnothing 17/30 x 2,8	1
109	1934.450.200	Counter washer, \varnothing 20/34,5 x 3	1
110			
111	1933.908.080	Needle bushing, \varnothing 8 x 8	1
112	1820.050.075	Blocking pawl	1
113	1820.010.010	Compression spring	1
114	1820.020.183	Bushing	1
115	1917.803.056	Washer, M 5	1
116	1911.005.108	Cylinder screw, M 5 x 10	3
117	1820.030.333	Rocker shaft	1
118	1821.080.004	Handle	1
119	1821.084.006	Lever green	1
120	1821.084.007	Lever yellow	1
121	1820.030.405	Shaft	1
122	1920.104.072	Retaining ring, \varnothing 4	2
123			
124	1921.305.120	Cylindric pin, \varnothing 5 x 12	1
125	1820.010.144	Compression spring	1
126			
127	1934.430.190	Counter washer, \varnothing 19/31,5 x 0,8	1
* 128	1820.040.082	Tensioning wheel	1
129	1173.500.060	Tension shaft	1
130	1935.000.171	Internal ring, \varnothing 8 x 12,5	1
131	1935.000.311	Internal ring, \varnothing 12 x 12,5	1
132	1934.450.150	Counter washer, \varnothing 15/27,5 x 3	1
133	1173.600.016	Bearing plate	1
134	1937.310.203	Cylindric bearing, \varnothing 10 x 20	1
135	1934.015.120	Needle bushing, \varnothing 15 x 12	1
136	1911.005.308	Cylinder screw, M 5 x 30	2
137	1173.540.002	Strap guide	13 mm 1
137	1173.550.002	Strap guide	16 mm 1
138	1820.020.145	Bushing	2
139	1173.500.056	Pawl lever	1
140	1173.900.002	Bearing lid	1
141	1934.012.120	Needle bearing, \varnothing 12 x 12	1
142	1911.905.162	Counter sunk screw, M 5 x 16	2
143	1921.306.240	Cylindric pin, \varnothing 6 x 24	1
144			
* 145	1173.900.014	Hose	1
146	1941.101.040	Fitting, G 1/4"	1
147	1941.210.720	Gasket, G 1/4"	5
148	1940.122.720	Angular fitting, G 1/4"	1

Pos.	Part no	Part name	Quantity
149	1941.112.720	L-Fitting, G 1/4"	1
150	1940.070.723	One way restrictor, G 1/4"	1
151	1941.102.720	Fitting, G 1/4"	1
152	1941.102.722	Hollow screw, G 1/4"	1
153			
154	1940.311.721	Air plug, G 1/4"	1
155			
156			
157	1890.200.022	Locking screw	2
158	1890.200.028	O - Ring, \varnothing 15,3 x 2,4	2
159	1820.010.175	Compression spring	2
160	1820.100.028	Tappet	2
161	1927.600.610	O-Ring, \varnothing 6 x 1,5	4
162	1890.311.030	O-Ring, \varnothing 5,3 x 2,4	2
163	1173.900.008	Suspension bracket	1
163	1173.600.020	Suspension bracket universal	1
164	1911.006.168	Cylinder screw, M 6 x 16	2
165	1919.605.062	Lock washer, M 5	3
166	1911.005.128	Cylinder screw, M 5 x 12	3
167			
168			
169			
170			
171			
172	1933.722.162	Needle bushing, \varnothing 22 x 16	1
173	1173.900.013	Flange	1
174			
175			
176			
177			
178	1895.312.003	Key	1
179	1894.332.000	Compressed air motor LZB 22 A 008-50	1
179	1894.352.000	Compressed air motor LZB 22 A 022-56	(1)
180			
181			
182	1173.900.017	Pawl	1
183			
184	1820.090.068	Oil plate	1
185			
186			
187			
188			
189			
190			
191	1820.090.198	Name tag	1
192	1820.090.172	Name tag "Made in Switzerland"	1
		Variation USA/CAN	
154	1820.100.019	Air connector, 1/4"-18 NPT	1
181	1820.100.017	Transition connection, G 1/4" x 1/4" NPT	1



* Left hand thread
 ** LOCTITE 243
 *** LOCTITE 577

OR-H 20 A

1831.002.002/1

07.03.00 wb/ja

08.03/WE

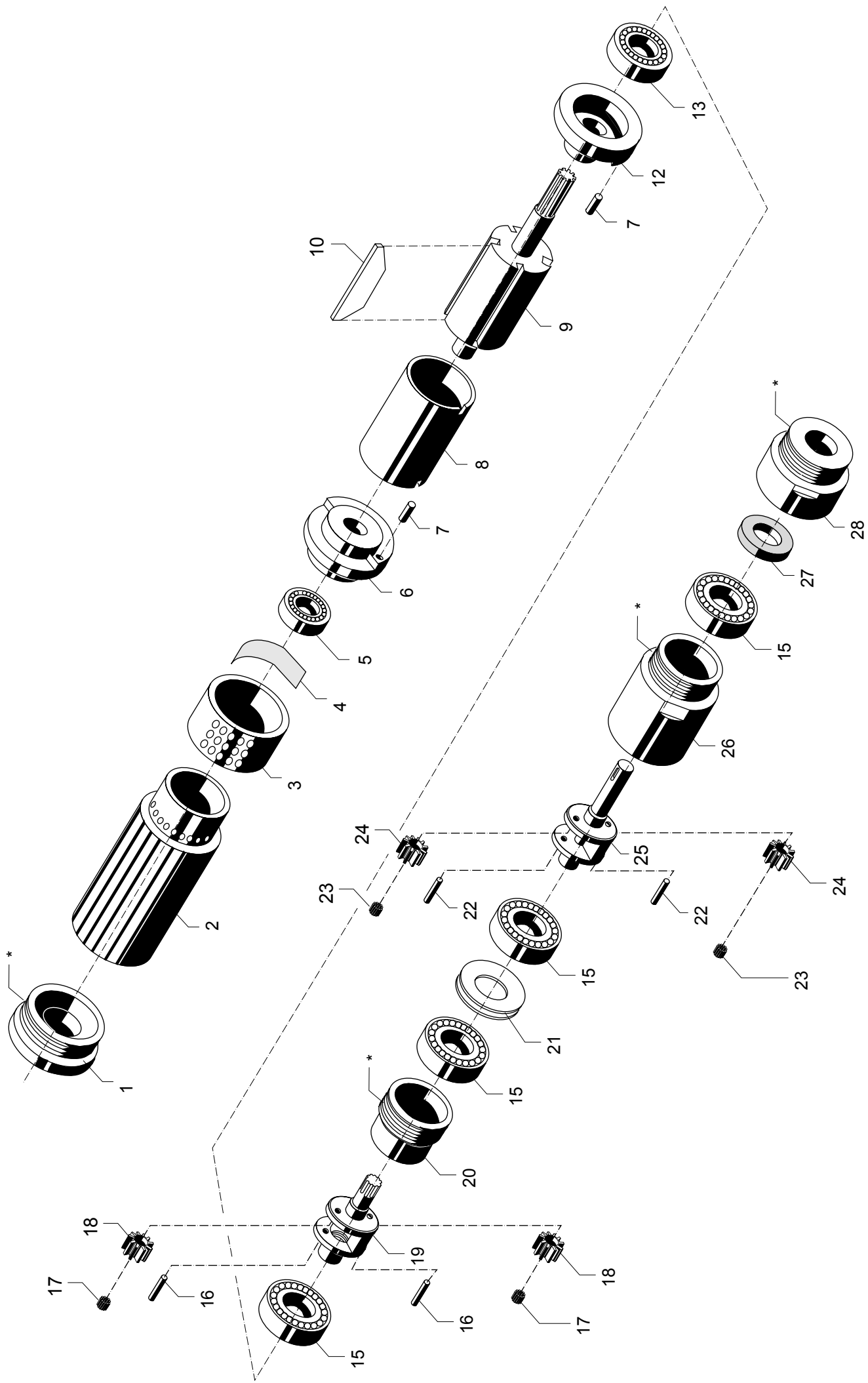
9

PARTS LIST COMPRESSED AIR MOTOR 1894.332.000/2

When ordering please indicate part number and quantity

Explosion drawing see page 32

Pos.	Part no	Part name	Quantity
1	1894.332.011	End plate	1
2	1894.332.010	Gear housing (Rear side)	1
3	1894.332.013	Silencer	1
4	1894.332.033	Mesh screen	1
5	1894.332.002	Ball bearing	1
6	1894.332.003	Bearing plate rear	1
7	1894.332.001	Pin	2
8	1894.332.005	Cylinder	1
9	1894.332.004	Rotor	1
10	1894.332.032	Blade	5
11			
12	1894.332.009	Bearing plate front	1
13	1894.332.008	Ball bearing	1
14			
15	1894.332.014	Ball bearing	4
16	1894.332.015	Shaft	2
17	1894.332.016	Bearing needle	2
18	1894.332.017	Planetary wheel	2
19	1894.332.019	Planetary cage	1
20	1894.332.020	Threaded bushing	1
21	1894.332.021	Saucer spring	2
22	1894.332.022	Shaft	2
23	1894.332.024	Bearing needle	24
24	1894.332.023	Planetary wheel	2
25	1894.332.026	Planetary cage	1
26	1894.332.029	Gear housing (Front side)	1
27	1894.432.020	Gasket	1
28	1894.332.028	Front part	1



* Left-handed thread

LZB 22 A008-50

1894.332.000/2

28.08.98 wb/ja