

FROMM

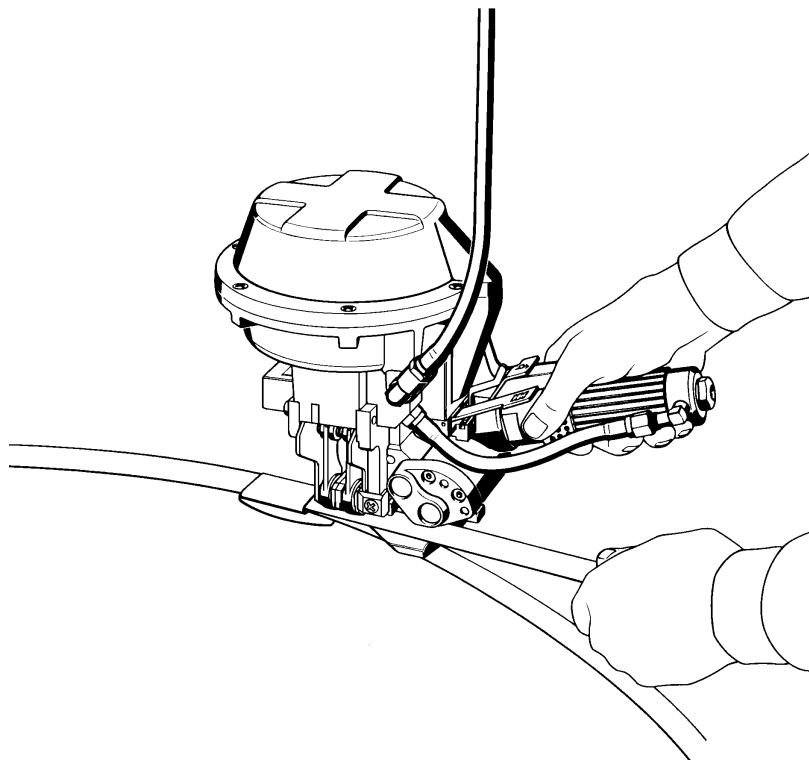
OPERATION MANUAL / SPARE PARTS LIST

PNEUMATIC COMBINATION

PUSHER TYPE TOOL

MODEL A482

13.4630.01



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Columbus, OH, 43212

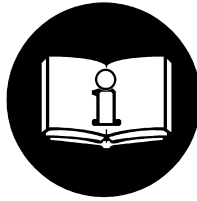


	INDEX	PAGE
1	SAFETY INSTRUCTIONS	3
2	WARRANTY CONDITIONS AND LIABILITY	4
3	APPROPRIATE USE	4
4	CHART OF TYPES	4
5	TECHNICAL DATA	4
5.1	Tool size (without suspension bracket)	4
5.2	Compressed air	5
5.3	Steel strap	5
5.4	Seals	5
5.5	Joint	5
5.6	Sound information	5
5.7	Vibration information	5
6	INSTALLATION	5
7	OPERATION	6
7.1	Feeding the strapping	6
7.2	Introducing the tool	6
7.3	Tensioning the strapping	7
7.4	Sealing the strapping	7
7.5	Releasing the tool	7
7.6	Tension regulation	7
8	SPARE PARTS LIST 13.4630.01	10
9	JOINT CONTROL	13
10	MAINTENANCE	13
10.1	Air-unit	13
10.2	Cleaning	13
10.3	Lubrication	13
11	EXCHANGE OF WEARING PARTS	14
11.1	Exchange of tensioning wheel and slide plate.	14
11.2	Exchange of cutter, cutter jack, cutting jaws and notching knives.	14

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1 SAFETY INSTRUCTIONS

Read these instructions carefully. Failure to follow these instructions can result in severe personal injury.



Eye injury hazard

Failure to wear safety glasses with side shields can result in severe eye injury or blindness. Always wear safety glasses with side shields which conform to ANSI Standard Z87.1.



Operation

Tool must not be used by persons not properly trained in their use. Before tensioning strap, read and understand the tool operating instructions. Failure to follow the operating instructions or improper load positioning could result in strap breakage. Become familiar with your tool and keep fingers away from areas that can pinch or cut.

Joints

You are fully responsible to review the joints made by your tool. Become familiar with the seal control and seal adjustment described in this operation manual. Misformed joints may not secure the load and could cause serious injury. Never handle or ship any load with improperly formed joints.

Dispensing strap

Only dispense strap from a dispenser specifically designed for strap. Tuck strap end back into dispenser when not in use.

Protective gloves

When handling strap, always wear protective gloves.



Strap warnings

Never use strap as a means of pulling or lifting loads. Failure to follow these warnings can result in severe personal injury.

Strap breakage hazard

Improper operation of the tool, excessive tensioning, using strap not recommended for this tool or sharp corners on the load can result in a sudden loss of strap tension or in strap breakage during tensioning, which could result in the following:

- A sudden loss of balance causing you to fall.
- Both tool and strap flying violently towards your face.

Note as follows:

- If the load corners are sharp, use edge protectors.
- Place the strap correctly around a properly positioned load.
- Positioning yourself in-line with the strap, during tensioning and sealing, can result in severe personal injury from flying strap or tool. When tensioning or sealing, position yourself to one side of the strap and keep all bystanders away.
- Use the correct strap quality, strap width, strap gauge and strap tensile strength recommended in this manual for your tool. Using strap not recommended for this tool can result in strap breakage during tensioning.

Cutting tensioned strap

When cutting strapping, use the proper strapping cutter and keep other personnel and yourself at a safe distance from the strap. Always stand to side of the strap, away from the direction the loosened strap end will fly. Use only cutters designed for strap and never hammers, pliers, hacksaws, axes, etc.

Fall hazard

Keep your working area tidy. Untidiness of your working area may cause a risk of injury. Maintaining improper footing and/or balance when operating the tool can cause you to fall. Before tensioning and especially in elevated areas, always establish good balance. Both feet should be securely placed on a flat, solid surface, especially when working in elevated areas. Do not use the tool when you are in an awkward position.

Pay attention to the rules and regulations for preventions of accident which are valid for the work place.

Tool hazards

A well maintained tool is a safe tool!

Check tool regularly for broken or worn parts. Do not operate a tool with broken or worn parts.

Never modify any tool. Modification can result in severe bodily injury.

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2 WARRANTY CONDITIONS AND LIABILITY

FROMM Holding AG warrants all its strapping tools and machine heads during a period of 90 days from the date of sale. The warranty includes all deficiencies clearly resulting from poor manufacturing or faulty materials. Damage claims as a result of production shutdowns and claims for damage to persons and to property resulting from warranty deficiencies cannot be asserted by the customer.

The warranty excludes:

- wearing parts
- deficiencies resulting from improper installing, incorrect handling and maintaining the tool
- deficiencies resulting from using the tool without or with defective security- and safety devices
- disregard of directions in the operation manual
- arbitrary modifications of the tool
- deficient control of wearing parts
- deficient repair works of the tool
- Use of consumable products not recommended by FROMM Holding AG

We reserve the right to modify the product at any time in order to improve its quality.

3 APPROPRIATE USE

The tool model A482 has been designed to strap packages with steel strapping exclusively.

The warranty / liability excludes:

- non appropriate use of the tool,
- disregard of directions in the operation manual,
- disregard of control- and maintenance instructions.

4 CHART OF TYPES

Item-No.	Model	Strap width	Strap thickness	Strap - quality	Max. tension		Speed	
					N	lbs.	mm/s	inch/s
13.4610	A482/19/0.63-0.80/ULT/4.0	19 mm / 3/4"	0.63-0.80 mm / .025"-.031"	ULT	4000	900	125	4.9
13.4620	A482/19/0.80/ULT/7.0	19 mm / 3/4"	0.80 mm / .031"	ULT	7000	1570	70	2.7
13.4630	A482/19/0.70-0.90/UNI/4.0	19 mm / 3/4"	0.70-0.90 mm / .027"-.035"	UNI	4000	900	125	4.9
13.4640	A482/19/0.70-0.90/UNI/7.0	19 mm / 3/4"	0.70-0.90 mm / .027"-.035"	UNI	7000	1570	70	2.7

UNI = Uniflex (Regular Duty max. 850 N/mm² / 123`000 psi)

ULT = Ultraflex (High Tensile max. 1100 N/mm² / 160`000 psi)

5 TECHNICAL DATA

5.1 Tool size (without suspension bracket)

	Tool:	Package:
Length:	350 mm / 13.7"	460 mm / 18.1"
Width:	180 mm / 7.0"	420 mm / 16.5"
Height:	240 mm / 9.4"	220 mm / 8.7"

Weight

Without suspension bracket: 6.5 Kg / 14.3 lbs

With suspension bracket: 7.0 Kg / 15.4 lbs

Package: 1.3 Kg / 2.9 lbs

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5.2 Compressed air

Working pressure: 5.0 bar / 72.5 psi

Maximum air pressure: 6.0 bar / 87 psi

Air consumption

Tensioning: ~ 8 NI/sec. / 0.28 cu.ft./sec.

Sealing: ~ 7 NI / 0.24 cu.ft./cycle

5.3 Steel strap

Width: 19 mm / 3/4" (see chart of types)

Thickness: 0.63 - 0.90 mm / .025 - .035" (see chart of types)

Quality: The A482 model allows the use of all current steel straps with tensile strengths ranging from 600 - 1100 N/mm² / 87 000 - 160 000 psi (see chart of types). Straps with a low breaking elongation are unsuitable.

5.4 Seals

19 X 0.9 X 45 mm / 3/4" X.035 X 1 3/4", push-type with overlapping flanges

5.5 Joint

Joint strength: approx. 75% of the tensile strength of the steel strap

A double-notch (two pairs of cut notches) is made per cycle.

5.6 Sound information

The A-weighted equivalent continuous sound level at the work place of the machine operator is typical 83 dB (A).

This value was determined according to DIN 45 635 T3 (11.85).

5.7 Vibration information

The weighted effective value of the acceleration typically amounts to less than 2,5m/s².

This value was determined according to DIN EN 28 662 T1 (01.93).

6 INSTALLATION

Compressed air connection

The compressed air is connected to the hose angle N6.5624 using a coupling.

An air- unit consisting of a separator for water and dirt, a pressure regulator with a manometer and a lubricator should be installed within a range of 15 ft / 5 meters.

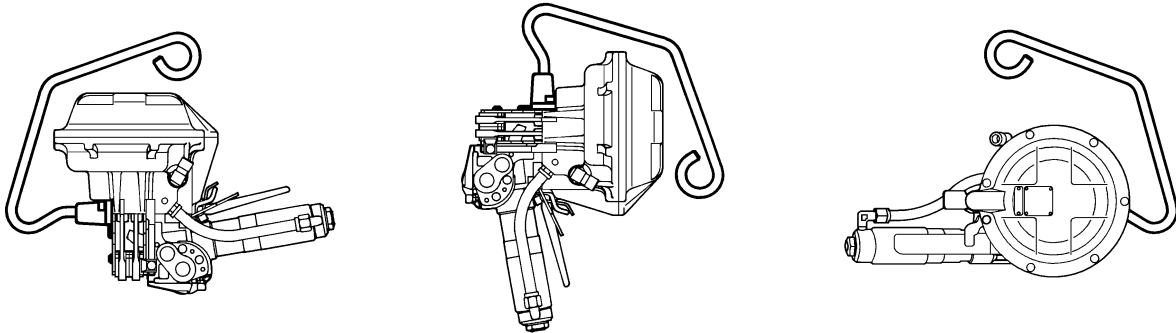
The compressed air must be free from dirt, rust and moisture.

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Suspension of tool

It is possible to suspend the tool on a spring loaded balancer using the suspension bracket A48.2303. By swivelling the bracket the tool can be suspended in its three main working positions.

The suspension bracket is attached to the cover plate A48.2135 using the screws N1.1106 and the spring lock washers N1.6220 supplied with the tool.



7 OPERATION



When handling strap, always wear protective gloves and safety glasses with side shields which conform to ANSI Standard Z87.1.

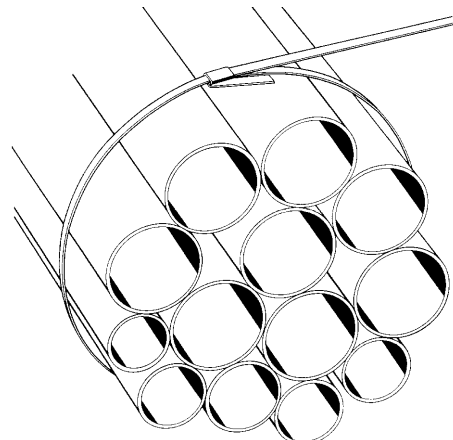


7.1 Feeding the strapping

The strap is fed through the seal, around the package to be strapped and again through the seal.

The strap end is then bent.

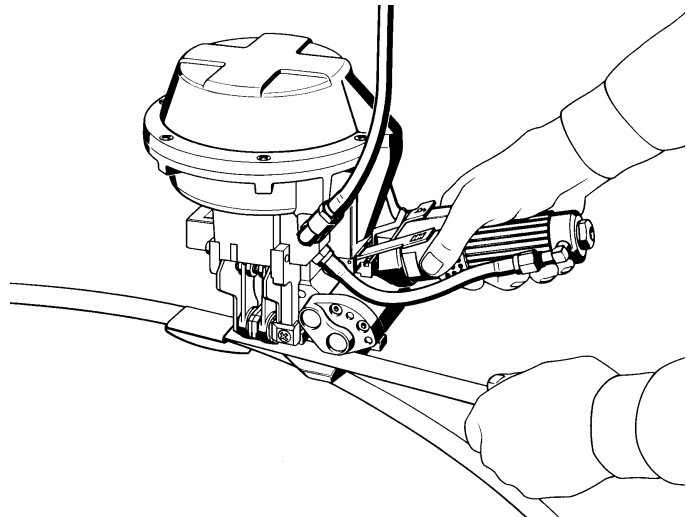
The operator then tensions the loose hoop manually making sure that the bent strap end is adjacent to the object to be strapped.



7.2 Introducing the tool

The upper strap is held with the left hand; the right hand lifts the air motor and introduces the tool from the right to the left and from the rear to the front.

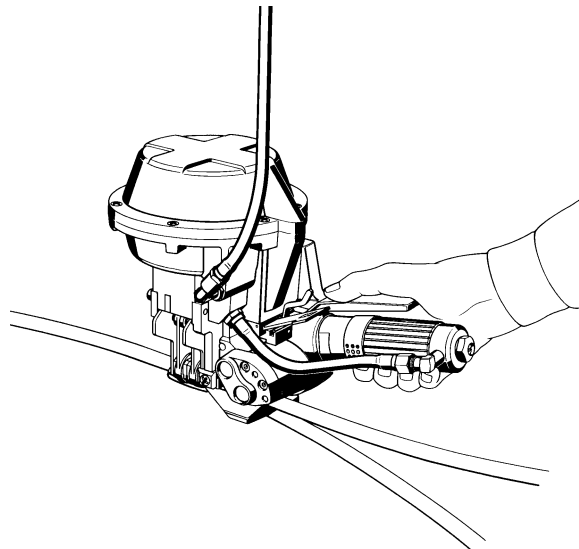
The air motor is then released.



7.3 Tensioning the strapping

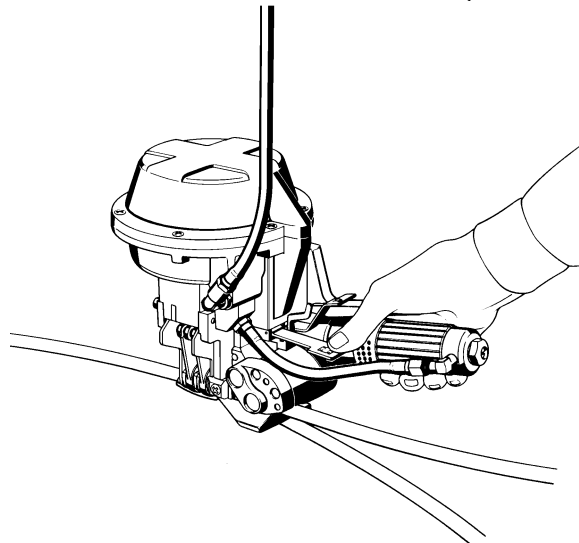
The tension valve lever is pressed down. The lever is caught completely and the strap is tensioned until the air motor stalls.

If the cycle has to be interrupted the catch bolt has to be pressed to the left.



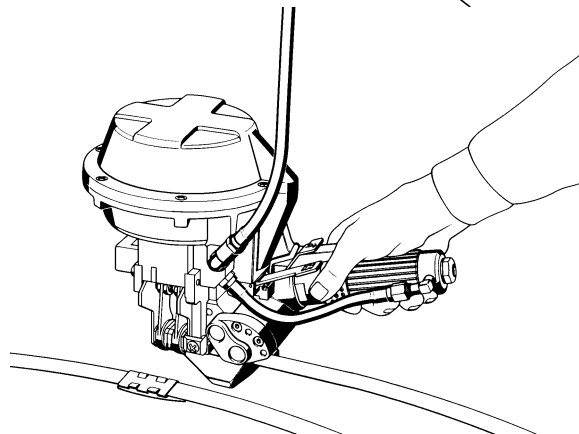
7.4 Sealing the strapping

The sealing valve lever is pressed down until the seal is cut and the upper strap sheared; the tensioning process is interrupted automatically.



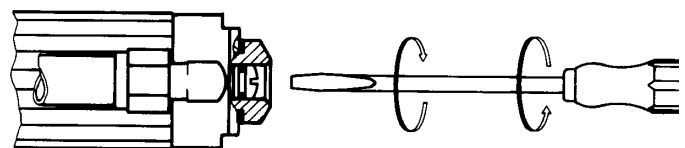
7.5 Releasing the tool

The tool can be released from the strapping without any further action after completing the strapping cycle. By lifting the air motor the strap end is removed from the tool.

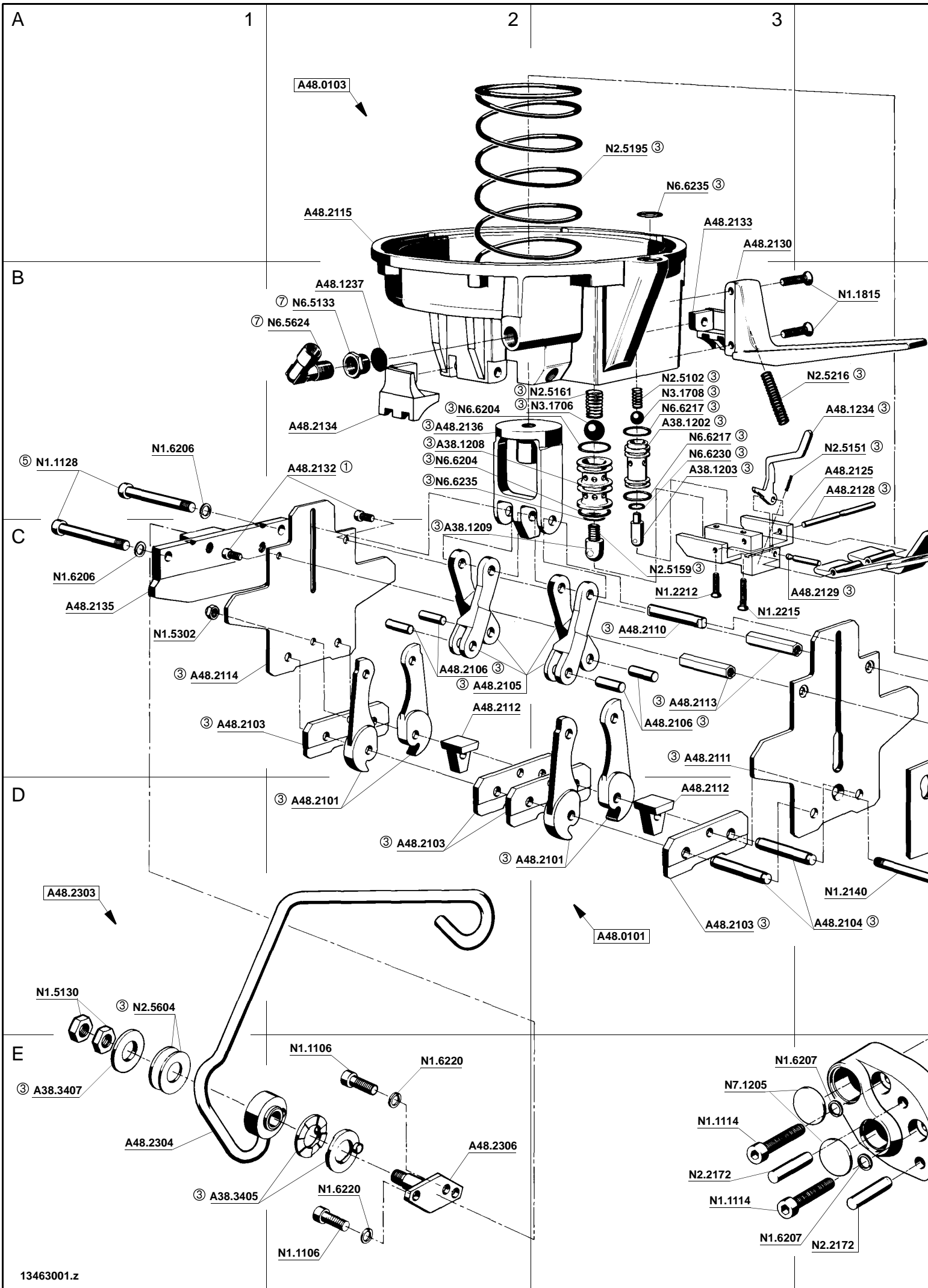


7.6 Tension regulation

The tension is regulated by the continuous adjustment of the throttle screw. The air supply is reduced by turning the screw clockwise. The throttle screw is located at the rear end of the air motor.



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8 SPARE PARTS LIST 13.4630.01

13.4630.01	A482/19/0.70-0.90/UNI/4.0		A482.0001.01		25.02.00	
Item-No.		in group	Pcs.	Description	Dimension	Field
A38.1202		A48.0103	1	SECURITY VALVE SHELL		B3
A38.1203		A48.0103	1	VALVE BOLT		B3
A38.1208		A48.0103	1	SEALER VALVE SHELL		B2
A38.1209		A48.0103	1	VALVE BOLT		C2
A38.3405		A48.2303	2	RATCHET DISK		E1
A38.3407		A48.2303	1	THRUST WASHER		E1
[A48.0101]			1	JAW ASSEMBLY		D3
[A48.0103]			1	CYLINDER BOTTOM		A2
[A48.0104]			1	TENSIONING UNIT		B7
A48.1133			2	TONG GUIDE		D4+
A48.1213	*	A48.0104	1	SLIDE PLATE		D5
A48.1226		A48.0104	1	BEARING JACKET		D7
A48.1234		A48.0103	1	CATCH		B4
A48.1237		A48.0103	1	SIEVE		B2
A48.2101	*	A48.0101	4	CUTTING JAW		D2+
A48.2103	*	A48.0101	4	NOTCHING KNIFE		D2+
A48.2104		A48.0101	2	JAW PIN		D4
A48.2105		A48.0101	4	FRONT TOGGLE LINK		C2
A48.2106		A48.0101	4	LEVER BOLT		C2+
A48.2110		A48.0101	1	ROD BAR BOLT		C3
A48.2111		A48.0101	1	SIDE PLATE		C3
A48.2112		A48.0101	2	DISTANCE SUPPORT		C2+
A48.2113		A48.0101	2	SPACER BUSH		C3
A48.2114		A48.0101	1	SIDE PLATE		C1
[A48.2115]		A48.0103	1	CYLINDER BOTTOM		A2
A48.2117			1	PISTON PLATE		B5
A48.2118			1	CYLINDER COVER		A5
A48.2119	*		1	CUTTER		C4
A48.2120	*	A48.0104	1	CUTTER JACK		D4
[A48.2121]		A48.0104	1	CONNECTION PLATE		C5
A48.2125		A48.0103	1	LEVER BODY		B4
A48.2126		A48.0103	1	SEALING VALVE LEVER		C4
A48.2127		A48.0103	1	TENSIONER VALVE LEVER		B4
A48.2128		A48.0103	1	LEVER SHAFT		B4
A48.2129		A48.0103	1	CATCH PIN		C4
A48.2130			1	HANDLE		A3
A48.2131			1	DIAPHRAGM		A5
A48.2132		A48.0101	4	SCREW		B2+
A48.2133			1	JAW GUIDE		A3
A48.2134			1	JAW GUIDE		B2
A48.2135			1	COVER PLATE		C1
A48.2136		A48.0101	1	PISTON ROD		B2
A48.2137		A48.2121	2	BOLT		D5
[A48.2201]	*	A48.0104	1	TENSIONING BODY		D5
A48.2204		A48.0104	2	CENTERING BUSH		C5
[A48.2205]		A48.0104	1	GEAR BODY		C6
A48.2207		A48.0104	1	TENSION SHAFT		C6
A48.2208		A48.0104	1	WORM WHEEL		C7
A48.2210		A48.0104	1	END COVER		C7
A48.2211	*	A48.0104	1	TENSIONING WHEEL		E5
A48.2212		A48.0104	1	PIVOT PIN		D4

[] = Group

* = Wearing parts

13.4630.01	A482/19/0.70-0.90/UNI/4.0		A482.0001.01			25.02.00
Item-No.		in group	Pcs.	Description	Dimension	Field
A48.2213		A48.0104	1	END COVER		E4
A48.2215		A48.0104	1	WORM		C7
[A48.2217]		A48.0103	1	HOSE		D6
[A48.2303]			1	SUSPENSION BRACKET		D1
[A48.2304]		A48.2303	1	SUSPENSION BRACKET		E1
A48.2306		A48.2303	1	FLANGE SHAFT		E2
[L2.1109]			1	AIR MOTOR		D7
L2.1201		L2.1109	1	EXHAUST RING		--
L2.1203		L2.1212	1	PLASTIC JACKET		--
[L2.1212]		L2.1109	1	HOUSING		--
L2.1301		L2.1109	1	END PLATE		--
L2.1302		L2.1109	1	PARALLEL PIN		--
L2.1303		L2.1109	1	CYLINDER		--
L2.1304	*	L2.1109	5	VANE		--
L2.1305		L2.1109	1	ROTOR		--
L2.1306		L2.1314	1	KEY		--
L2.1308		L2.1109	1	SILENCER		--
L2.1313		L2.1109	1	BEARING RING		--
[L2.1314]		L2.1109	1	END PLATE		--
L2.1315		L2.1109	1	PLANET SHAFT		--
L2.1316		L2.1109	2	GEAR WHEEL		--
L2.1317		L2.1109	2	NEEDLE CAGE		--
L2.1318		L2.1109	2	SHAFT		--
L2.1319		L2.1109	1	INTERMEDIATE WHEEL		--
L2.1402		L2.1109	32	BEARING NEEDLE		--
L2.1403		L2.1109	2	GEAR WHEEL		--
L2.1404		L2.1109	2	SHAFT		--
L2.1405		L2.1109	1	BEARING RING		--
L2.1408		L2.1109	1	PLANETARY CAGE		--
L2.1409		L2.1413	1	AIR INLET RING		--
L2.1410		L2.1413	1	TENSION SCREW		--
L2.1411		L2.1413	1	THROTTLE HEAD		--
L2.1412		L2.1413	1	THROTTLE SCREW		--
[L2.1413]		L2.1109	1	AIR INLET HEAD		--
L2.1505		L2.1109	1	KEY		--
N1.1106		A48.2303	2	SCREW	M6 X 20	E2
N1.1114		A48.0104	2	SCREW	M5 X 25	E3
N1.1128			2	SCREW	M8 X 60	B1
N1.1521		A48.0104	1	HEXAGON SCREW	M5 X 16	D5
N1.1813			2	SCREW	M5 X 16	A4+
N1.1814			7	SCREW	M5 X 25	A4+
N1.1815			2	SCREW	M6 X 25	B4
N1.1816		A48.0104	2	SCREW	M4 X 16	C7
N1.2108		A48.0104	2	COUNTERSUNK SCREW	M6 X 16	C4
N1.2109		A48.0104	1	COUNTERSUNK SCREW	M5 X 10	D5
N1.2140		A48.0101	1	COUNTERSUNK SCREW	M5 X 45	D4
N1.2141			1	COUNTERSUNK SCREW	M8 X 30	B5
N1.2212		A48.0103	1	COUNTERSUNK SCREW	M4 X 25	C3
N1.2215		A48.0103	1	COUNTERSUNK SCREW	M4 X 30	C3
N1.5130		A48.2303	2	HEXAGON NUT	M10	D1
N1.5131		A48.0104	1	HEXAGON NUT	M5	D5
N1.5302		A48.0101	1	RETAINING NUT	M5	C1
N1.6206			2	SPRING LOCK WASHER	M8	B1+

[] = Group

* = Wearing parts

13.4630.01	A482/19/0.70-0.90/UNI/4.0		A482.0001.01			25.02.00
Item-No.		in group	Pcs.	Description	Dimension	Field
N1.6207		A48.0104	2	SPRING LOCK WASHER	M5	E3+
N1.6220		A48.2303	2	SPRING LOCK WASHER	M6	E2
N1.6701		L2.1109	2	TOOTH LOCK WASHER		--
N2.2115		A48.0104	1	PARALLEL PIN	6 m6 X 20	D4
N2.2172		A48.0104	2	PARALLEL PIN	5 m6 X 30	E3+
N2.3205		A48.0104	1	WOODRUFF KEY	5 X 7.5 X 18.57	C7
N2.4902			4	HAMMER HEAD BOLT	1.85 X 4.76	--
N2.5102		A48.0103	1	PRESSURE SPRING	0.6 X 8 X 14/6	B3
N2.5151		A48.0103	1	PRESSURE SPRING	0.3 X 2.8 X 11/11.5	B4
N2.5159		A48.0103	1	PRESSURE SPRING	0.5 X 7 X 18/7.5	C3
N2.5161		A48.0103	1	PRESSURE SPRING	1 X 12 X 20/6.5	B3
N2.5195			1	PRESSURE SPRING	3.6 X 63.6 X 140/6.5 (LINKS)	A2
N2.5196			1	PRESSURE SPRING	4.5 X 82.5 X 160/6.5 (LINKS)	B5
N2.5216			1	PRESSURE SPRING	1.6 X 9.6 X 76/25.5	B4
N2.5604		A48.2303	2	CUP SPRING	31.5 X 16.3 X 1.25	D1
N3.1102		L2.1109	4	BALL BEARING	15 X 32 X 9	--
N3.1108		L2.1109	1	BALL BEARING	6 X 19 X 6	--
N3.1109		L2.1109	1	BALL BEARING	8 X 22 X 7	--
N3.1131		A48.0104	1	BALL BEARING	12 X 32 X 10	D7
N3.1706		A48.0103	1	BALL	15 MM	B3
N3.1708		A48.0103	1	BALL	10 MM	B3
N3.2313		A48.0104	1	NEEDLE CASE	12 X 18 X 12	C5
N3.2342		A48.0104	1	NEEDLE CASE	17 X 23 X 12	C7
N3.2343		A48.0104	1	NEEDLE BUSH	17 X 23 X 12	D5
N3.2405		A48.0104	1	INNER RACEWAY	12 X 16 X 16	D4
N3.2608		A48.0104	1	PACKING RING	17 X 23 X 3	E5
N3.3144		A48.0104	1	SLIDE-BEARING	15 X 17 X 23 X 17	E4
N3.4108		A48.0104	1	THRUST BEARING CAGE	17 X 30 X 2	C6
N3.4311		A48.0104	2	THRUST RACE	17 X 30 X 1	C7
N41.9128			1	ADHESIVE LABEL	30 X 10 X 0.1	--
N41.9129			1	ADHESIVE LABEL	p max. 6 bar/87 psi	--
N4.9137			1	NUMBER PLATE	<<A482>>	--
N4.9159			1	LABEL	<<CE>>	--
N6.5133		A48.0103	1	REDUCING COUPLING		B2
N6.5195		A48.0104	1	FITTING		E7
N6.5624		A48.0103	1	ANGLE	G 1/4	B2
N6.6204		A48.0103	2	O-RING	18 X 2	B2
N6.6217		A48.0103	2	O-RING	15 X 2	B3
N6.6230		A48.0103	1	O-RING	8 X 1.5	B3
N6.6234		L2.1413	1	O-RING	7.1 X 1.6	--
N6.6235			1	O-RING	12 X 2	A3
N6.6235		A48.0103	1	O-RING	12 X 2	B2
N6.6253		A48.0104	1	O-RING	42 X 1,5	C7
N6.6505		L2.1413	1	FLAT SEAL	21 X 17 X 1,5	--
N7.1205		A48.0104	2	SEALING DISK	18	E3

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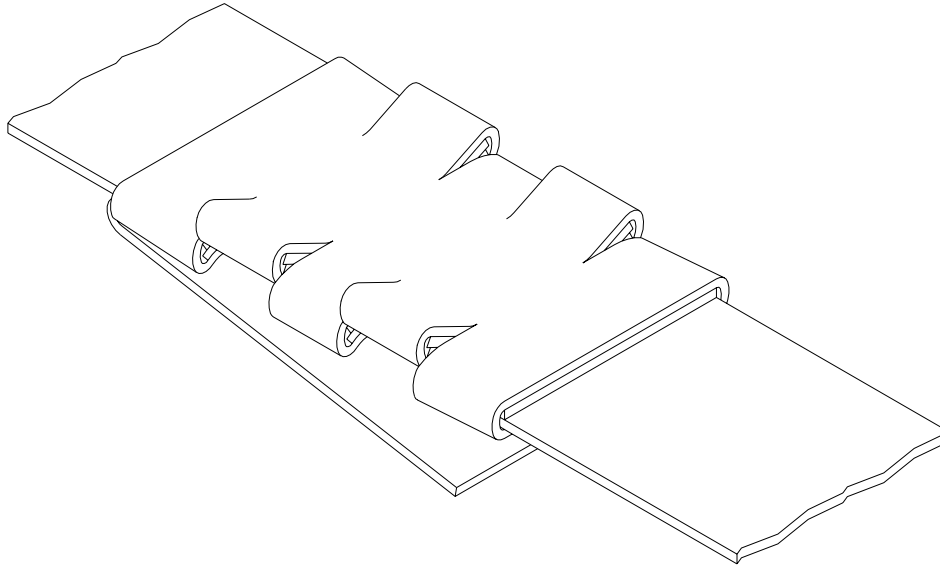
[] = Group

* = Wearing parts

9 JOINT CONTROL

A regular control of the joint is necessary.

The joint can be checked visually and the person controlling can easily judge the quality of the joint. Following illustration shows a proper joint:



Sharp edged or misformed joints which do not appear as shown have to be taken away from the load immediately. The tensile strength of these joints is insufficient and they could cause serious injury.

Having faulty joints proceed as follows:

- Checking the sealing cycle for improper use.(see 7. OPERATION)
- Having faulty joints in spite of proper use inspect the tool for worn or damaged parts. In case of wearing out or damaging replace tool parts as needed.

10 MAINTENANCE

Depending on the working conditions and the use of the tool the following maintenance has to be made periodically:

10.1 Air-unit

- Checking the air-pressure daily (never exceed 87 psi / 6.0 bar).
- Checking the oil-level daily.
- The water separator must be emptied before it is full (unless automatic).
- The filter has to be cleaned following the instructions of the manufacturer of the air- unit.

Oil for the air unit

HL or CL ISO-VG 10

10.2 Cleaning

If impact of dirt and dust is considerable and if painted straps are used the feed wheel must be cleaned regularly. Normally it is sufficient to blow it out by the use of an air gun.

10.3 Lubrication

The worm gear is filled with MOLYKOTE BR 2 PLUS.

Use the same type of grease after repairs.

When being exchanged, all valve parts and other movable parts have to be greased with grease of type ESSO BEACON 2 or with any equivalent product.

The diaphragm must always be rubbed with TALCUM before being installed.

11 EXCHANGE OF WEARING PARTS

All screws screwed in steel are secured with Loctite 222.

11.1 Exchange of tensioning wheel and slide plate.

- Unscrew end cover A48.2213.
- Remove tensioning wheel A48.2211 from the tension shaft.
- Unscrew slide plate A48.1213.
- Reassemble in opposite order (observe the position of the tensioning wheel).

11.2 Exchange of cutter, cutter jack, cutting jaws and notching knives.

- Unscrew cylinder cover A48.2118.
- Remove diaphragm A48.2131.
- Unscrew piston plate A48.2117 by pushing the piston plate against the pressure springs.
- Unscrew cover plate A48.2135.
- Unscrew both cutting jaw guides A48.1133.
- Remove cutting jaw assembly downwards in a diagonal position.
- Exchange cutter A48.2119.
- If in addition the cutter jack A48.2120 has to be replaced, the cylinder bottom must be removed from the connection plate A48.2121 and the connection plate must be unscrewed from the tensioning body A48.2201.
- In order to be able to replace the cutting jaws and the notching knives a side plate must be removed from the cutting jaw assembly.

Reassemble in opposite order.

Do not forget to secure the screws (LOCTITE 222)!

Tighten the screws N1.1128 in the cover plate using a force of 41 Nm!

Distributed By:
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