

FROMM

OPERATION MANUAL / SPARE PARTS LIST

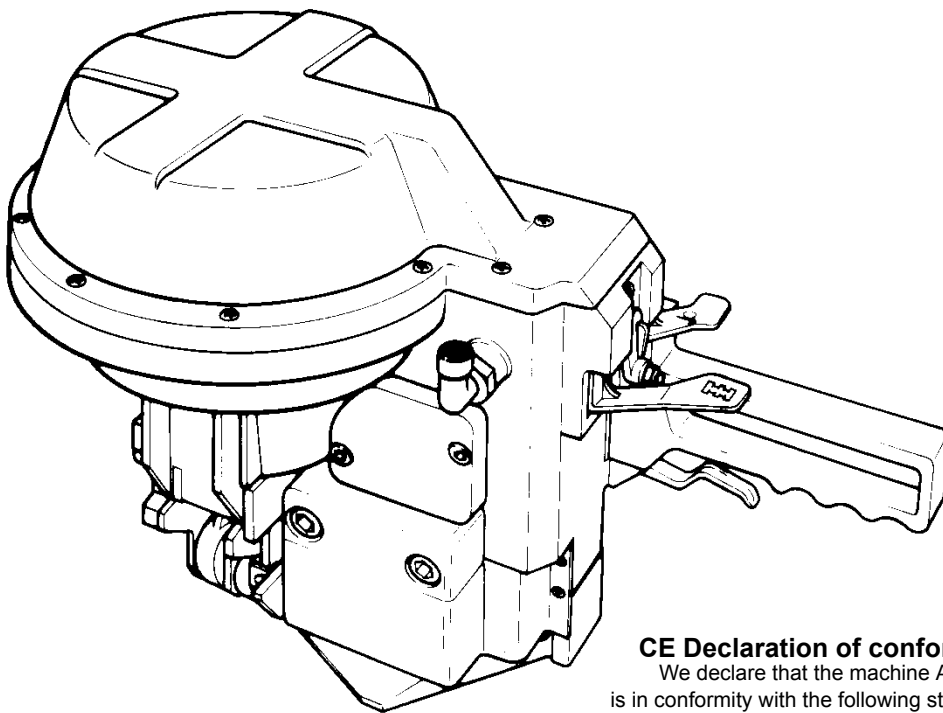
PNEUMATIC COMBINATION

PUSHER TYPE TOOL

SEMI - AUTOMATIC

MODEL A483.0001

13.4770.01



CE Declaration of conformity

We declare that the machine A483
is in conformity with the following standard or
standardised documents:

2006/42/EC

Technical file at:

M.Rauch

FROMM System GmbH

Neulandstrasse 10

D-77855 Achern

23.09.2010

A stylized signature of R. Fromm, consisting of a series of loops and a long horizontal stroke.

R.Fromm

Director

FROMM Holding AG

Hinterbergstrasse 26

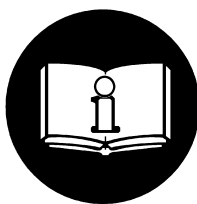
CH - 6330 Cham



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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.

2 WARRANTY CONDITIONS AND LIABILITY

FROMM Holding AG warrants all its strapping tools and machine heads during a period of 24 months from the date of installation at the end-user's sight by the distributor, however, not later than 30 months from the date of shipment to the distributor of FROMM Holding AG.

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 A483 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

4.1 A483.0001 Semi-automatic

Item-No.	Model	Strap width	Strap thickness	Strap - quality	Max. tension		Speed	
					N	lbs.	mm/s	inch/s
13.4710	A483/25/0.80-0.90/ULT/7.0	25 mm / 1"	0.8-0.9 mm / .031"-.035"	ULT	7000	1570	200	8.0
13.4730	A483/25/0.80-1.00/UNI/7.0	25 mm / 1"	0.8-1.0 mm / .031"-.040"	UNI	7000	1570	200	8.0
13.4750	A483/32/0.80-0.90/ULT/7.0	32 mm / 1 1/4"	0.8-0.9 mm / .031"-.035"	ULT	7000	1570	200	8.0
13.4760	A483/32/0.80-0.90/ULT/9.0	32 mm / 1 1/4"	0.8-0.9 mm / .031"-.035"	ULT	9000	2020	160	6.5
13.4770	A483/32/0.80-1.00/UNI/7.0	32 mm / 1 1/4"	0.8-1.0 mm / .031"-.040"	UNI	7000	1570	200	8.0
13.4780	A483/32/0.80-1.00/UNI/9.0	32 mm / 1 1/4"	0.8-1.0 mm / .031"-.040"	UNI	9000	2020	160	6.5
13.4790	A483/32/1.00/ULT/9.0	32 mm / 1 1/4"	1.0 mm / .040"	ULT	9000	2020	160	6.5

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:	412 mm / 16.2"	435 mm / 17.1"
Width:	238 mm / 9.4"	265 mm / 10.4"
Height:	278 mm / 11"	355 mm / 13.9"

Weight:	18.0 kg / 39.7 lbs	4 kg / 8.8 lbs
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5.2 Steel strap

Width: 25 - 32 mm / 1 - 1 1/4" (see chart of types)
 Thickness: 0.8-1.0 mm / .031 -.039" (see chart of types)
 Quality: The A483 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 not suitable for the A483 tool.

5.3 Seals

Strap width	Seal
25 mm / 1"	25x0.9x45 mm / 1"x.035"x1 3/4", push-type with overlapping flanges
32 mm / 1 1/4"	32x0.9x45 mm / 1"x.035"x1 3/4", push-type with overlapping flanges

5.4 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.

5.5 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).



5.6 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

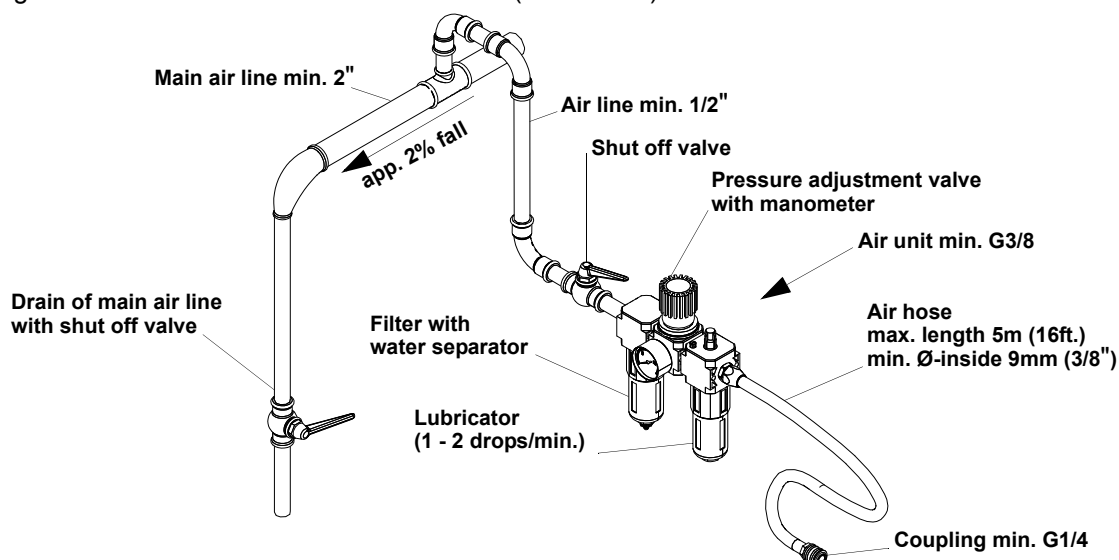
Joining thread:	G1/4
Working pressure:	5.5 bar / 79.75 psi (for tools with 32x0.8 Ultraflex Steel strap)
Maximum air pressure:	6.0 bar / 87 psi
Air flow of air unit:	min. 910 NI/min / 32 cu.ft / min with a maximum pressure drop of 0.5 bar / 7.25 psi.

Air consumption

Tensioning:	~ 11 NI/sec. / 0.37 cu.ft./sec.
Sealing:	~ 10 NI / 0.35 cu.ft./cycle

Compressed air connection

The compressed air is connected to the hose angle N6.5624 using a coupling.
 It is very important to clean the compressed air with an air unit consisting of a separator for water and dirt, a pressure regulator with a manometer and a lubricator (see sketch).



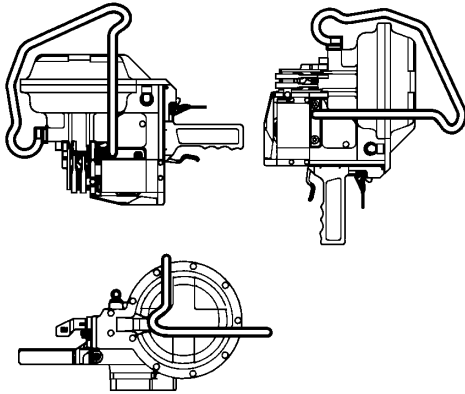
Suspension of tool

It is possible to suspend the tool on a spring loaded balancer using various suspension brackets.

The following four types of suspension brackets can basically be used for all three working positions; their difference is in the working comfort. If the tool is frequently changed to a second or a third working position the appropriate suspension bracket should be mounted. Please refer to the sketches.

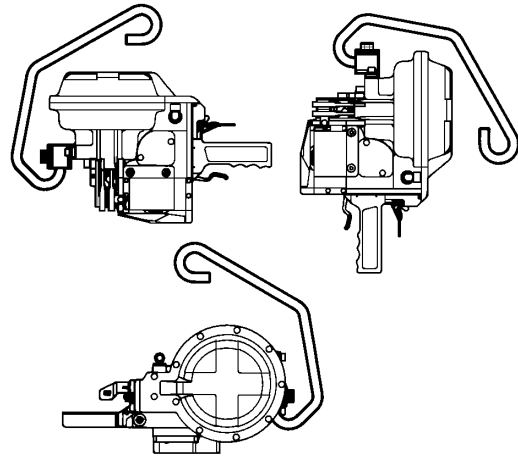
A48.3401

Not suitable for frequent swivelling.



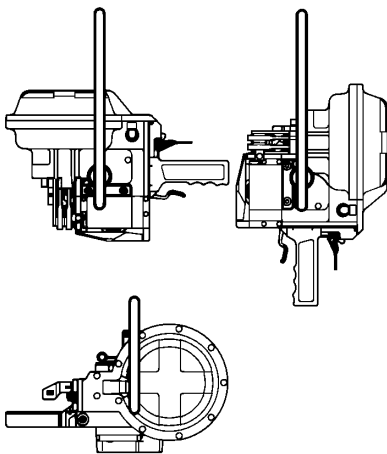
A48.3406

Suitable for frequent swivelling from „normal“ to „horizontal“.



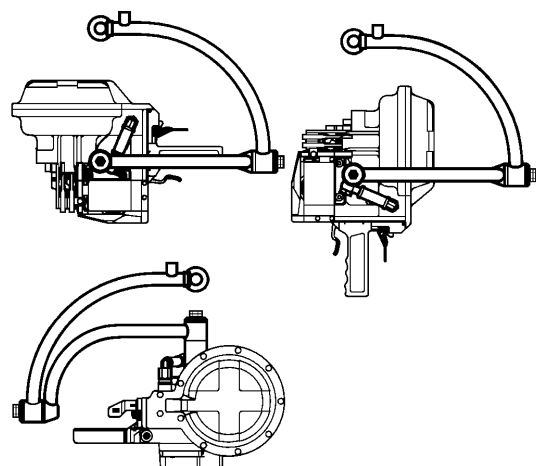
A48.3413

Suitable for frequent swivelling from „normal“ to „vertical“.

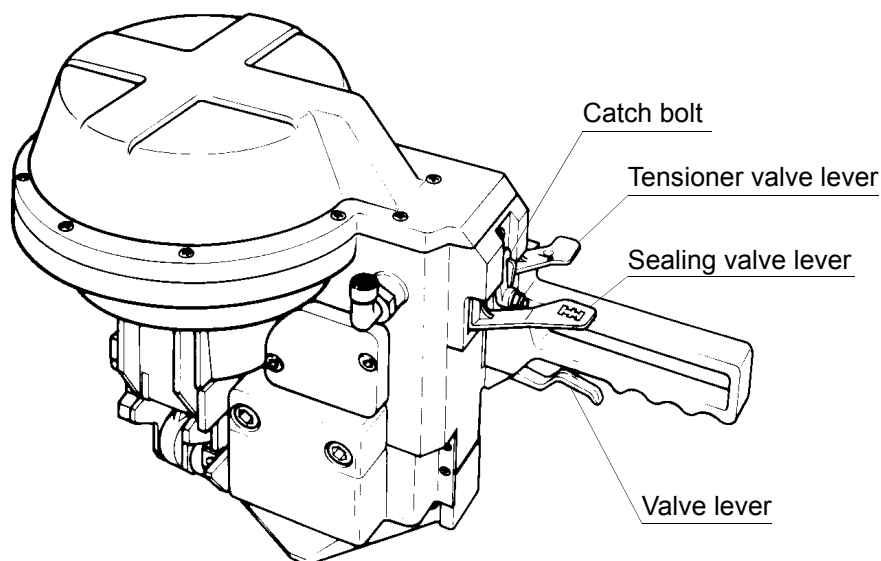


A48.3419

Suitable for frequent swivelling from „normal“ to „vertical“ and to „horizontal“.
Incl. air supply



7 OPERATING CONTROLS



8 OPERATION

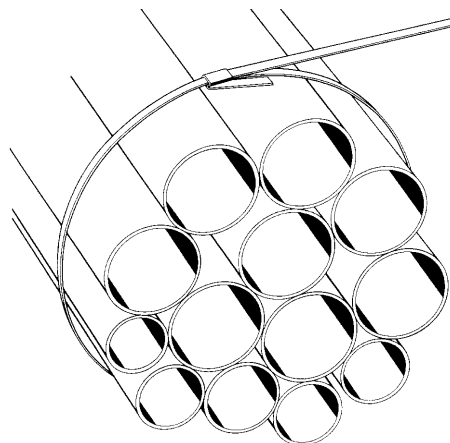


When handling strap, always wear protective gloves and safety glasses with side shields which conform to ANSI Standard Z87.1.



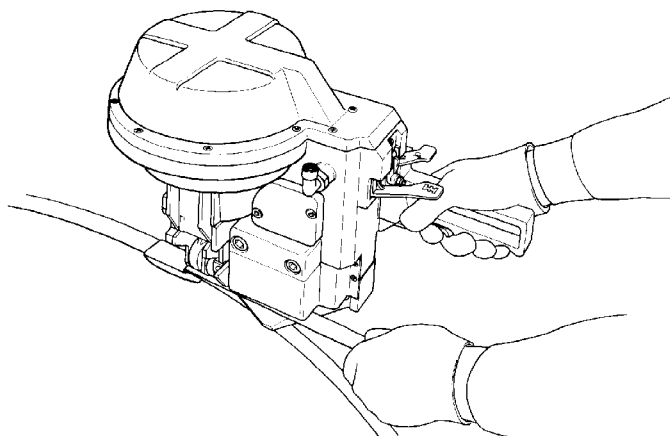
8.1 Feeding the strapping

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.



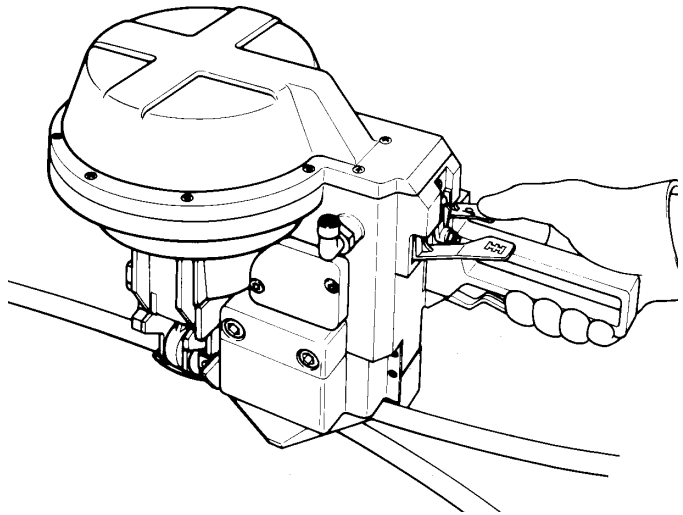
8.2 Introducing the tool

The upper strap is held with the left hand. With the index finger of the right hand the valve lever is activated (pulled) and the tool is introduced from right to left and from back to front resp. The valve lever is then released.



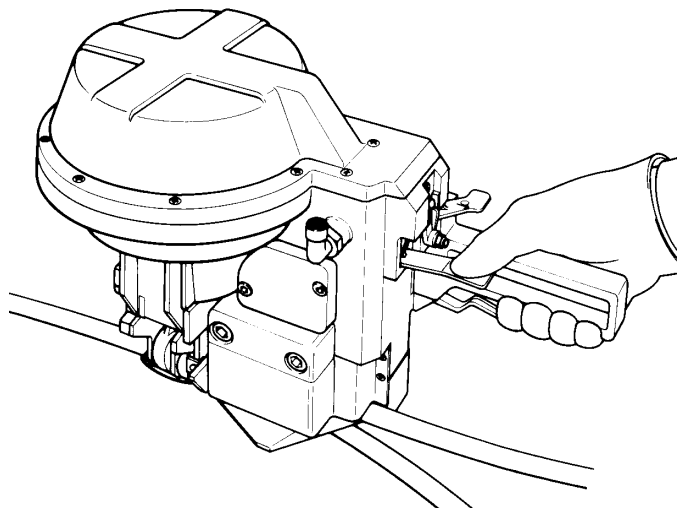
8.3 Tensioning the strapping

With the thumb of the right hand the tensioner valve lever is pressed so that it catches. The strap is tensioned until the air-motor stalls.
If for any particular reason the tensioning cycle has to be interrupted the catch bolt has to be pressed to the left.



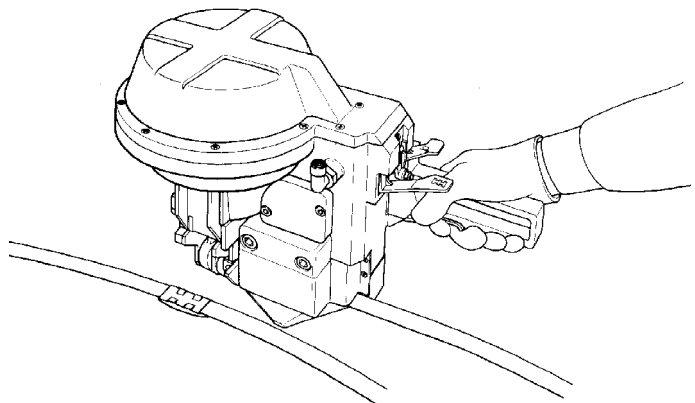
8.4 Sealing the strapping

With the thumb of the right hand the sealing valve lever is pressed so that it catches. The tensioning cycle is then interrupted automatically, the sealing process is executed and the strap is cut off.



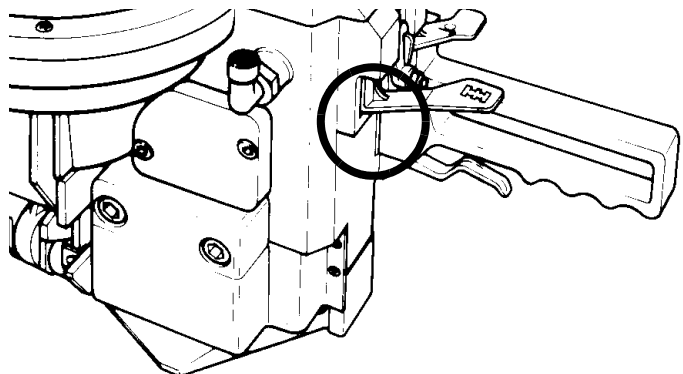
8.5 Releasing the tool

When the sealing process has been completed the tool can be released from the tensioned strap without any further action.
By lifting the valve lever again, the strap end can be removed from the tool.



8.6 Tension regulation

Turning the set screw under the sealing valve lever in a clockwise direction results in a higher tension.
The range of adjustment is within approx. 25 %.



9 MAINTENANCE

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

9.1 Air-unit

- Checking the air-pressure daily (never exceed 87 psi / 6.0 bar).
- Checking the oil-level daily.
- Draining the separator daily (unless automatic).
- Cleaning the filter following the instructions of the manufacturer of the air-unit
- Check the function and proper adjustment of the lubricator daily (approximately 1-2 drops/min.)

Oil for the air unit

HL or CL ISO-VG 10

9.2 Cleaning

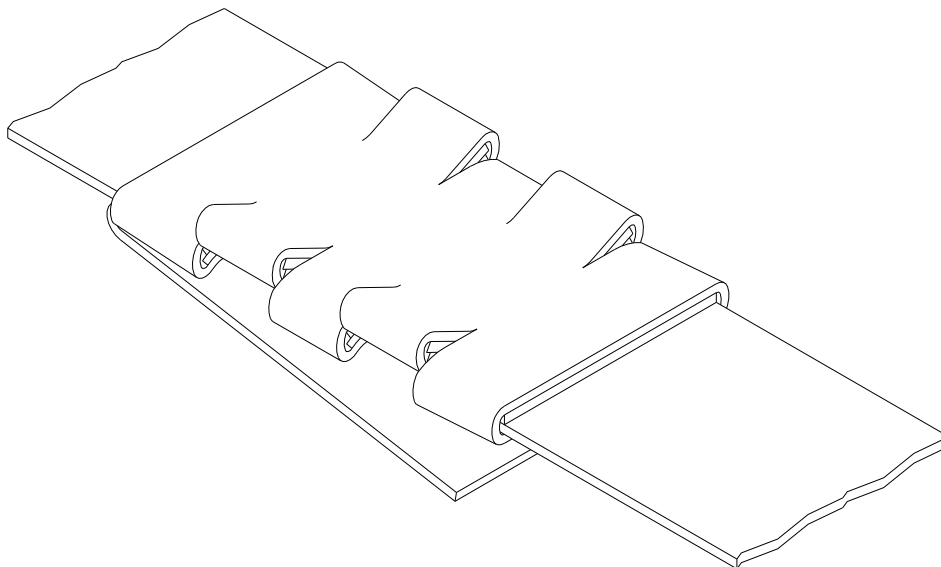
If impact of dirt and dust is considerable and if painted straps are used the feed wheel must be cleaned regularly. Normally it is sufficient to blow it out by the use of an air gun.

9.3 Lubrication

The gears are filled with MOLYKOTE BR2 PLUS. Use the same type of grease after repairs. When being exchanged, all valve parts and other movable parts have to be lubricated with grease of type Mobilux EP2 or with any equivalent product. The diaphragm must always be rubbed in with TALCUM before being installed.

10 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:



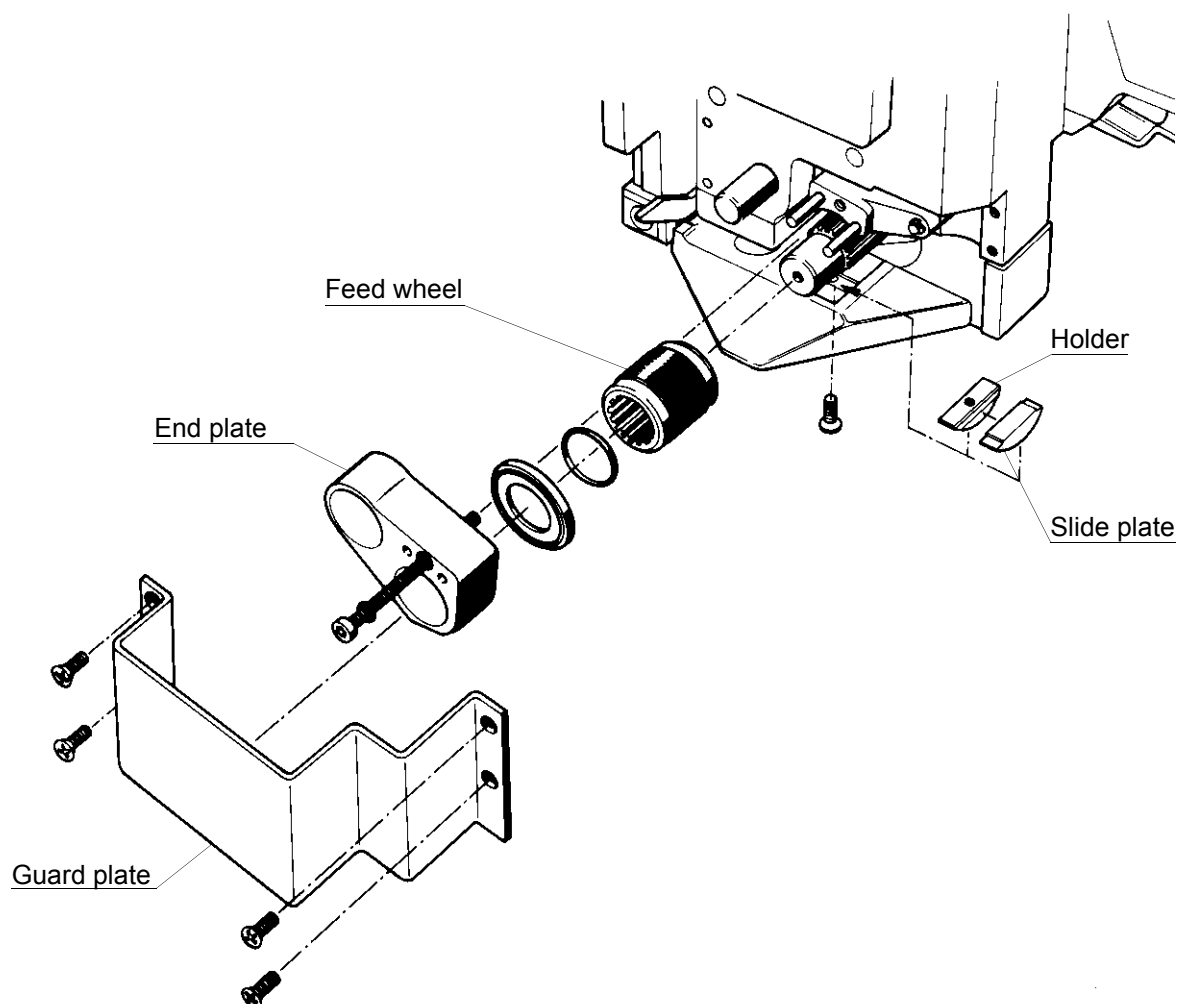
Sharp edged or misformed joints which do not appear as shown have to be taken away from the load immediately. The tensile strength of these joints is insufficient and they could cause serious injury. Having faulty joints proceed as follows:

- Checking the sealing cycle for improper use.(see 8. 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.

11 EXCHANGE OF WEARING PARTS

11.1 Exchange of feed wheel and slide plate

- Unscrew guard plate (4 recessed countersunk head screws N1.1808).
- Unscrew end plate (1 socket head cap screw N1.1169).
- Remove front distance ring and O-ring.
- Exchange feed wheel (please check correct position; inner toothing has to face towards end plate).
- To exchange the slide plate the holder has to be removed in addition (1 recessed countersunk head screw N1.1807).
- Reassemble in opposite order!



11.2 Exchange of cutting jaws, notching knives and cutter

- Unscrew cylinder cover A48.3111 (11 recessed countersunk head screws N1.1815).
- Remove diaphragm A48.3109.
- Unscrew piston plate A48.3107 (1 socket head cap screw N1.2114), push piston plate against the pressure springs at the same time).
- Remove disc and pressure springs.
- Unscrew cover plate A48.3105 (2 socket head cap screws N1.1198).
- Unscrew both cutting jaw guides A48.3106 (1 each recessed countersunk screw N1.1813).
- Remove cutting jaw assembly downwards in a diagonal position.
- Exchange cutter.
- In order to be able to exchange the notching knives and the cutting jaws one side plate of the cutting jaw assembly has to be unscrewed too (1 recessed countersunk head screw N1.2108 as well as 2 socket head cap screws A48.2132).
- Reassemble in opposite order!
-

When reassembling make sure that:

The screws N1.1198 on the cover plate are tightened with 83 Nm.

The piston rod must be assembled meeting the groove of the piston plate.

All screws screwed in steel are secured with Loctite 222.

11.3 Exchange of tension body / strap stop

- Slightly loosen cover plate A48.3105 (2 socket head cap screws N1.1198).
- Unscrew tension body (2 screws N1.1174) and pull it out towards the bottom.
- Remove and exchange strap stop by pulling out the 4 mm cylinder bolt from the tension body.
- Exchange tension body. Release 2 cylinder bolts, pressure spring, holder and slide plate.
- Reassemble in opposite order!

When reassembling make sure that you:

The screws N1.1174 on the tension body are tightened with 90 Nm.

The screws N1.1198 on the cover plate are tightened with 83 Nm.

All screws screwed in steel are secured with Loctite 222.

12 SPARE PARTS LIST 13.4770.01

13.4770.01	A483/32/0.80-1.00/UNI/7.0			A483.0001.01		21.03.13
Item-No.		in group	Pcs.	Description	Dimension	Field
[A38.0132]			1	MOTOR CELL	EXC. 3,0	A19
A38.1148			1	SHAFT		C27
A38.1207		A48.0205	1	TENSIONER VALVE SHELL		A17
A38.1209		A48.0205	1	VALVE BOLT		B17
A38.1215		A48.0209	1	GUIDE RING		C21
A38.1216		A48.0209	5	SUSTAINING RING		C21+
A38.1217		A48.0209	1	GUIDE RING		D21
A38.1218		A48.0209	1	VALVE PISTON		C22
A38.1219		A48.0209	1	BRIDGE		B21
[A38.1220]		A48.0209	1	VALVE LEVER		C22
[A38.1348]		A38.0132	1	ROTOR		--
A38.1351	*	A38.0132	8	VANE		B20
A38.1352		A38.0132	1	END PLATE		A19
A38.1361		A48.0209	1	PINION		B23
A38.1376		A38.1348	1	ROTOR		B20
A38.1377		A38.1348	1	COUPLING		A19
A38.1378		A38.1348	1	DOWEL		A19
A38.2301		A38.0132	1	END PLATE		B19
A38.2302		A38.0132	1	JACKET		A19
[A38.2308]		A48.0207	1	TENSION SHAFT		B29
A38.2310	*		1	TENSIONING WHEEL		C27
A38.2311			1	SPACER RING		D26
[A38.2317]			1	HOLDER		C10
A38.2318			1	SPACER RING		C27
A41.2120		A48.0204	1	ROD BAR BOLT		D10
A46.2117		A48.0204	2	JAW PIN		C2
[A46.2118]		A48.0204	4	FRONT TOGGLE LINK		A3
A46.2132		A48.0209	1	LEVER SHAFT		C23
A46.2145		A48.0204	4	LEVER BOLT		A3+
[A48.0204]			1	JAW ASSEMBLY	32/0,8-1,0	A4
[A48.0205]			1	CYLINDER BOTTOM		A13
[A48.0207]			1	INTERMEDIATE GEAR		A28
[A48.0209]			1	GEAR	146.9	A24
A48.1237		A48.0205	1	SIEVE		B11
A48.2113		A48.0204	2	SPACER BUSH		B4
[A48.2120]	*		1	CUTTER JACK		D6
[A48.2132]		A48.0204	4	SCREW		A2+
[A48.3102]			1	CONNECTION PLATE		C6
A48.3104	*		1	CUTTER	32 MM	C5
[A48.3105]			1	COVER PLATE		A1
[A48.3106]			2	TONG GUIDE		D5+
[A48.3107]			1	PISTON PLATE		B8
A48.3108			1	DISK		B8
[A48.3109]			1	DIAPHRAGM		A8
A48.3110			1	SEAL PLATE		B11
[A48.3111]			1	CYLINDER COVER		A8
[A48.3114]	*	A48.0204	4	CUTTING JAW	32X0.8-1.0	B2+
A48.3116	*	A48.0204	4	NOTCHING KNIFE	32 MM	C2+
A48.3117		A48.0204	1	PISTON ROD		D9
[A48.3119]		A48.0204	1	DISTANCE SUPPORT		C3
[A48.3121]		A48.0204	1	SIDE PLATE		B5
[A48.3123]		A48.0204	1	SIDE PLATE		B1

[] = Group

* = Wearing parts

13.4770.01	A483/32/0.80-1.00/UNI/7.0			A483.0001.01		21.03.13
Item-No.		in group	Pcs.	Description	Dimension	Field
[A48.3125]		A48.0205	1	CYLINDER BOTTOM		B10
A48.3127		A48.0205	1	VALVE STEM		B15
A48.3128		A48.0205	1	EXHAUST RING		B15
A48.3129		A48.0205	1	SUSTAINING RING		A14
A48.3130		A48.0205	1	CYLINDER SLEEVE		B16
A48.3131		A48.0205	1	END RING		B16
[A48.3132]		A48.0205	1	LEVER BODY		C18
A48.3133		A48.0205	1	LEVER SHAFT		C18
[A48.3134]		A48.0205	1	TENSIONER VALVE LEVER		D18
[A48.3135]		A48.0205	1	SEALING VALVE LEVER		D17
A48.3136		A48.0205	1	CATCH SHAFT		C16
[A48.3137]		A48.0205	1	CATCH LEVER		C18
A48.3138		A48.0205	1	PISTON ROD		B26
A48.3139		A48.0205	1	SEALING PLUG		B26
[A48.3140]			1	FORK		C27
[A48.3141]			1	GIB		C9
A48.3142		A48.0205	1	PISTON		B15
A48.3143		A48.0205	1	VARIABLE PISTON		C15
A48.3144		A48.0205	1	VALVE FACE RING		C15
A48.3145		A48.0205	1	VALVE SUPPORT		C16
A48.3146		A48.0205	1	ADJUSTING SCREW		C17
A48.3148		A48.0205	1	COVER DISK		B17
[A48.3157]			1	JAW GUIDE		B11
[A48.3158]			1	JAW GUIDE		C10
A48.3201			1	PIVOT PIN		C26
[A48.3202]			1	CAM ARM		C26
A48.3203			1	FORK BOLT		D26
[A48.3204]		A48.3227	1	END COVER		C25
[A48.3205]			1	GUARD-PLATE		D9
A48.3206			1	COUPLING		B30
A48.3207			1	SEAL PLATE		C11
[A48.3208]			1	MOTOR COVER		C19
A48.3209	*		1	SLIDE JAW		C11
[A48.3211]			1	STRAP STOP	32 MM	D10
[A48.3213]	*		1	TENSIONING BODY	32 MM	D11
[A48.3214]		A48.3225	1	INTERMEDIATE GEAR BODY		C28
[A48.3215]		A48.3226	1	INTERMEDIATE GEAR COVER		B30
A48.3216		A48.0207	1	PINION		B29
[A48.3217]		A48.0209	1	GEAR BODY		C23
[A48.3218]		A48.3217	1	GEAR BODY		C22
[A48.3219]		A48.0209	1	GEARING COVER		C24
[A48.3220]		A48.3219	1	GEARING COVER		B24
[A48.3221]		A48.0209	1	INTERMEDIATE WHEEL	2-3	B22
[A48.3222]		A48.0209	1	GEAR WHEEL	3	C23
[A48.3223]		A48.0209	1	LEVER BODY		D22
A48.3224		A48.0209	1	INTERMEDIATE WHEEL	1-2	B22
[A48.3225]		A48.0207	1	INTERMEDIATE GEAR BODY		D28
[A48.3226]		A48.0207	1	INTERMEDIATE GEAR COVER		C30
[A48.3227]			1	END COVER		B25
N1.1123			2	SCREW	M8 X 30	D8
N1.1169			1	SCREW	M5 X 60	C25
N1.1174			2	SCREW	M10 X 1 X 40	D11
N1.1180			2	SCREW	M6 X 90	B19
N1.1198			2	SCREW	M10 X 65	A1

[] = Group

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13.4770.01	A483/32/0.80-1.00/UNI/7.0			A483.0001.01		21.03.13
Item-No.		in group	Pcs.	Description	Dimension	Field
N1.1807			1	RAISED CTRS. HEAD SCREW	M5 X 12	D10
N1.1808			4	RAISED CTRS. HEAD SCREW	M4 X 10	D8
N1.1811			3	RAISED CTRS. HEAD SCREW	M6 X 40	B21+
N1.1813			2	RAISED CTRS. HEAD SCREW	M5 X 16	C6+
N1.1814		A48.0205	2	RAISED CTRS. HEAD SCREW	M5 X 25	C18
N1.1814		A48.0207	4	RAISED CTRS. HEAD SCREW	M5 X 25	B30+
N1.1814		A48.0209	2	RAISED CTRS. HEAD SCREW	M5 X 25	A24
N1.1815			11	RAISED CTRS. HEAD SCREW	M6 X 25	A8
N1.1817		A48.0209	4	RAISED CTRS. HEAD SCREW	M5 X 40	B24
N1.2108		A48.0204	2	COUNTERSUNK SCREW	M6 X 16	B1+
N1.2114			1	COUNTERSUNK SCREW	M10 X 40	B8
N1.2212		A48.0209	3	COUNTERSUNK SCREW	M4 X 25	D22
N1.5301		A48.0205	1	RETAINING NUT	M6	A14
N1.5302		A48.0205	1	RETAINING NUT	M5	C18
[N1.5608]		A48.0205	1	SLOTTED ROUND NUT	M8 X 1	B28
N1.6103		A48.0205	1	WASHER	5.3 X 9.5 X 1	C18
N1.6114		A48.0205	1	WASHER	6.4 X 12 X 1.6	B15
N1.6201			2	SPRING LOCK WASHER	M10	A1
N1.6206			2	SPRING LOCK WASHER	M8	C8
N1.6207			1	SPRING LOCK WASHER	M5	C25
N1.6220			2	SPRING LOCK WASHER	M6	B19
N1.6502			2	SAFETY WASHER	M10	D10
N2.1125			4	SECURITY RING	3.2	C27+
N2.1219		A48.0205	1	SECURITY RING	J34	B26
N2.1701		A48.0205	1	SECURITY RING	17	B28
N2.2109			2	PARALLEL PIN	8 m6 X 30	D11
N2.2125			1	PARALLEL PIN	4 m6 X 20	C9
N2.2155			2	PARALLEL PIN	5 h6 X 70	D26
N2.2164		A48.0204	1	PARALLEL PIN	6 m6 X 41.8	C4
N2.2172		A48.0207	2	PARALLEL PIN	5 m6 X 30	B29+
N2.2174		A48.0209	2	PARALLEL PIN	6 m6 X 60	B23
N2.2175			2	PARALLEL PIN	6 m6 X 22	D5+
N2.2175		A48.0209	1	PARALLEL PIN	6 m6 X 22	B23
N2.2413		A38.0132	1	DOWEL PIN	4 X 20	A20
N2.2445		A38.0132	1	DOWEL PIN	2.5 X 6	B19
[N2.3208]		A48.0205	1	WOODRUFF KEY	2 X 2.6 X 6.76	C17
N2.4407		A48.0209	4	RIVET	2 X 3	B22
N2.4902			4	HAMMER HEAD BOLT	1.85 X 4.76	A9+
N2.5160		A48.0209	1	PRESSURE SPRING	1 X 12 X 26/6.5	B21
N2.5161		A48.0205	1	PRESSURE SPRING	1 X 12 X 20/6.5	A16
N2.5176			1	PRESSURE SPRING	0.6 X 5.5 X 31/17.5	C10
N2.5201			1	PRESSURE SPRING	4.5 X 74.5 X 195	A11
N2.5202			1	PRESSURE SPRING	5 X 98 X 220	C8
N2.5203		A48.0205	1	PRESSURE SPRING	1 X 6 X 24	C16
N2.5609			2	CUP SPRING	45 X 22.4 X 1.75	B20
N2.5815		A48.0205	1	TORSION SPRING	1 X 9/2.5	C18
N3.1102		A48.3225	1	BALL BEARING	15 X 32 X 9	B28
N3.1109		A48.3217	1	BALL BEARING	8 X 22 X 7	B22
N3.1109		A48.3219	1	BALL BEARING	8 X 22 X 7	B23
N3.1123		A38.0132	1	BALL BEARING	10 X 26 X 8	A20
N3.1133		A38.0132	1	BALL BEARING	10 X 30 X 14	B19
N3.1144		A48.3217	1	BALL BEARING	25 X 37 X 7	B22
N3.1144		A48.3219	1	BALL BEARING	25 X 37 X 7	B23
N3.1144		A48.3226	1	BALL BEARING	25 X 37 X 7	B29

[] = Group

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13.4770.01	A483/32/0.80-1.00/UNI/7.0			A483.0001.01		21.03.13
Item-No.		in group	Pcs.	Description	Dimension	Field
N3.1703		A48.0205	1	BALL	5 MM	C17
N3.1706		A48.0205	1	BALL	15 MM	A16
N3.2322		A48.3217	1	NEEDLE CASE	8 X 12 X 10	B20
N3.2322		A48.3219	1	NEEDLE CASE	8 X 12 X 10	B24
N3.2323		A48.3217	1	NEEDLE CASE	12 X 16 X 10	C20
N3.2323		A48.3219	1	NEEDLE CASE	12 X 16 X 10	B24
N3.3130		A48.3226	1	HEADED PRESS FIT BUSH	12 X 14 X 20 X 9	C29
N3.3140		A48.3225	1	HEADED PRESS FIT BUSH	25 X 28 X 35 X 21.5	C28
N3.3141		A48.3227	1	HEADED PRESS FIT BUSH	20 X 23 X 30 X 16.5	D26
N4.9138			1	NUMBER PLATE	<<A483>>	C9
N4.9159			1	LABEL	<<CE>>	A9
N41.9128			1	ADHESIVE LABEL	30 X 10 X 0.1	A8
N41.9129			1	ADHESIVE LABEL	p max. 6 bar/87 psi	A8
N6.3207		A48.0209	1	JOINT		B21
[N6.3405]		A48.0205	1	PISTON PLATE	32 X 8	B28
N6.3504		N6.3405	1	INNER PACKING	8.3 X 12.1 X 4	B28
N6.3509		N6.3405	1	EXTERNAL PACKING RING	32	B28
N6.5133		A48.0205	1	REDUCING COUPLING		A11
N6.5624		A48.0205	1	ANGLE	G 1/4	A11
N6.6113		A48.0205	1	PACKING RING	10 X 16 X 4.5	B28
N6.6117		A48.0209	5	SEAL	6 X 13 X 2.3	C21+
N6.6121		A48.0205	1	SEAL	8 X 15 X 2.3	B17
N6.6122		A48.0205	1	SEAL	20 X 13 X 2.3	B16
N6.6146		A48.0205	1	SEAL	15 X 22 X 2.3	B16
N6.6147		A48.0205	1	SEAL	10 X 17 X 2.3	C16
N6.6148		A48.0205	1	SEAL	18 X 25 X 4.5	B14
N6.6202			1	O-RING	25 X 2.5	C27
N6.6204		A48.0205	4	O-RING	18 X 2	A16+
N6.6210		A48.0205	1	O-RING	30 X 2	B26
N6.6213			1	O-RING	20 X 2	D27
N6.6217		A48.0209	7	O-RING	15 X 2	B21+
N6.6223			1	O-RING	50 X 2	A20
N6.6233		A48.0205	1	O-RING	6 X 2	B15
N6.6235		A48.0205	1	O-RING	12 X 2	B17
N6.6241		A38.0132	2	O-RING	46 X 2	B19
N6.6255		A48.0205	4	O-RING	21 X 2	A14+
N6.6255		A48.0207	1	O-RING	21 X 2	B29
N6.6803		A48.3217	1	PACKING RING	10 X 19 X 7/ 9.8	B20
N7.1106		A48.3225	1	BUSH	15 X 22 X 16	C27
N7.1106		A48.3227	1	BUSH	15 X 22 X 16	D26
N7.1204		A48.3227	2	SEALING DISK	25	D25
N7.1205		A48.3226	1	SEALING DISK	18	C30

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