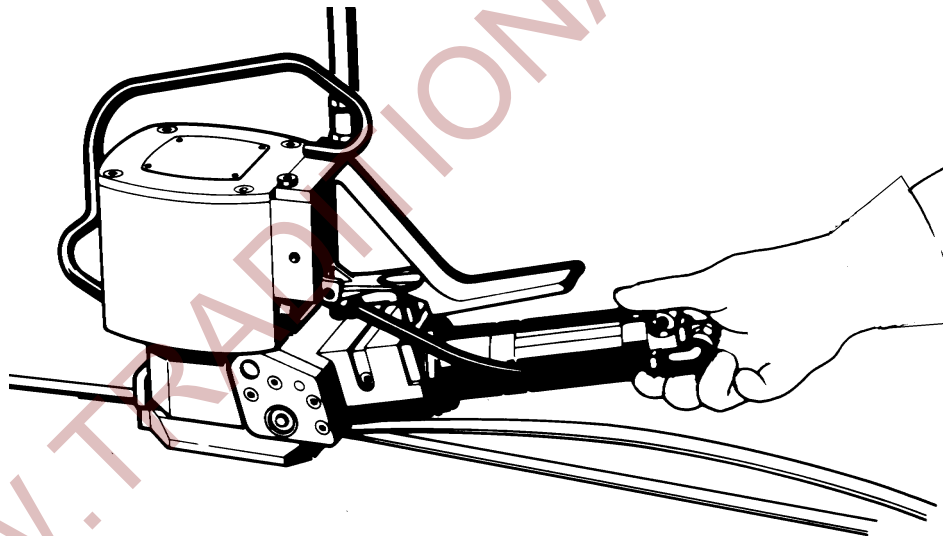


## FROMM

OPERATION MANUAL / SPARE PARTS LIST

### PNEUMATIC STEEL STRAPPING TOOL MODEL A3H.0003

13.6070.02



#### CE Declaration of conformity

We declare that the machine A3H  
is in conformity with the following standard or  
standardised documents:  
98/37/EEC

FROMM Holding AG  
Hinterbergstrasse 26  
CH - 6330 Cham  
28.02 2005

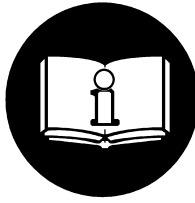
  
R.Fromm  
Director



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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 A3H 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 TECHNICAL DATA

### 4.1 Dimensions

	Tool	Package
Length:	454 mm / 17.87"	500 mm / 19.69"
Width:	120 mm / 4.72"	300 mm / 11.81"
Height:	255 mm / 10.03"	250 mm / 9.84"
Weight:	Net	Gross
	8.5 kg / 18.7 lbs	9.65 kg / 21.3 lbs

## 4.2 Compressed air

Joining thread:	G 1/4"	
Air-tube:	Min. inside diam. = 8 mm / 5/16"	
Max. air pressure:	5 bar / 70 psi	
Air consumption:	Tensioning	Sealing
	450 NI / 15.8 cu.ft per minute with the air motor running.	5 NI / 0.17 cu.ft per cycle

## 4.3 Steel strap

Width:	9.5-20 mm / 3/8"-3/4" (see chart of types)
Thickness:	0.38-0.60 mm / 0.015-0.024"
Quality:	Fundamentally the A3H allows the use of all current steel straps with tensile strengths ranging from 700 to 850 N/mm <sup>2</sup> (100 000 - 123 000 psi). Straps with a low breaking elongation are unsuitable for the A3H tool.

## Joint strength

Approx. 80% of the strap's tensile strengths

## 4.4 Sound information

The A-weighted equivalent continuous sound level at the work place of the machine operator is typical 82 dB (A).

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

## 4.5 Vibration information

The weighted effective value of the acceleration typically amounts to less than 2,5m/s<sup>2</sup>.

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

# 5 INSTALLATION

## 5.1 Compressed air connection

The compressed air is connected to the hose angle N6.5108 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.

### For special attention:

The allowed maximum pressure adjusted at the manometer of the air unit is 5 bar/ 70 psi.

## 5.2 Suspension of tool

The tool should always be suspended on a balancer. The suspension bracket A3H.1803 which is supplied with the tool as a standard item allows the use of the tool in the normal and vertical position. Using the tool in the horizontal position the suspension bracket A3H.1811 should be ordered as an optional item. The suspension bracket A3H.1812 is offered for using the tool in both positions.

**6 CHART OF TYPES**

**6.1 A3H.0003**

Item No.	Model	Strap width	Strap thickness	Max.Tension	Tension. speed
13.6052	A3H/9.5/0.38-0.60/2.5	9.5 mm / 3/8"	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6062	A3H/10/0.38-0.60/2.5	10 mm	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6070	A3H/12.7/0.38-0.60/4.5	12.7 mm / 1/2"	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s
13.6072	A3H/12.7/0.38-0.60/2.5	12.7 mm / 1/2"	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6080	A3H/13/0.38-0.60/4.5	13 mm	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s
13.6082	A3H/13/0.38-0.60/2.5	13 mm	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6090	A3H/16/0.38-0.60/4.5	16 mm / 5/8"	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s
13.6092	A3H/16/0.38-0.60/2.5	16 mm / 5/8"	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6093	A3H/16/0.38-0.60/1.2	16 mm / 5/8"	0.38-0.60 mm / .015-.024"	1200N / 270 lbs	350 mm / s
13.6110	A3H/19/0.38-0.60/4.5	19 mm / 3/4"	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s
13.6112	A3H/19/0.38-0.60/2.5	19 mm / 3/4"	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6130	A3H/20/0.38-0.60/4.5	20 mm	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s

**6.2 A3H.0003/D (throttle valve)**

Item No.	Model	Strap width	Strap thickness	Max.Tension	Tension. speed
13.6056	A3H/9.5/0.38-0.60/2.5/D	9.5 mm / 3/8"	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6066	A3H/10/0.38-0.60/2.5/D	10 mm	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6074	A3H/12.7/0.38-0.60/4.5/D	12.7 mm / 1/2"	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s
13.6076	A3H/12.7/0.38-0.60/2.5/D	12.7 mm / 1/2"	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6084	A3H/13/0.38-0.60/4.5/D	13 mm	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s
13.6086	A3H/13/0.38-0.60/2.5/D	13 mm	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6094	A3H/16/0.38-0.60/4.5/D	16 mm / 5/8"	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s
13.6096	A3H/16/0.38-0.60/2.5/D	16 mm / 5/8"	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6114	A3H/19/0.38-0.60/4.5/D	19 mm / 3/4"	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s
13.6116	A3H/19/0.38-0.60/2.5/D	19 mm / 3/4"	0.38-0.60 mm / .015-.024"	2500 N / 560 lbs	170 mm / s
13.6134	A3H/20/0.38-0.60/4.5/D	20 mm	0.38-0.60 mm / .015-.024"	4500 N / 1010 lbs	100 mm / s

## 7 OPERATION

### 7.1 Feeding the strap around the package

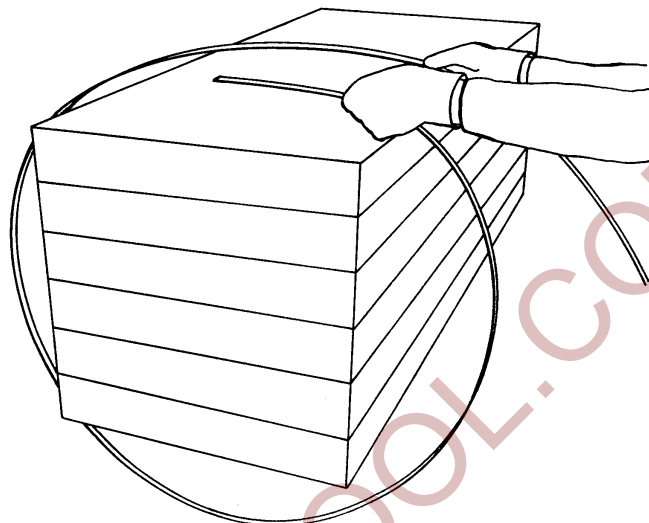
The strap is fed around the package in the direction as shown in the illustration. The end of the strap is held tightly with the left hand and pulled firmly towards the operator with the right hand.



Always wear safety glasses with side shields which conform to ANSI Standard Z87.1.

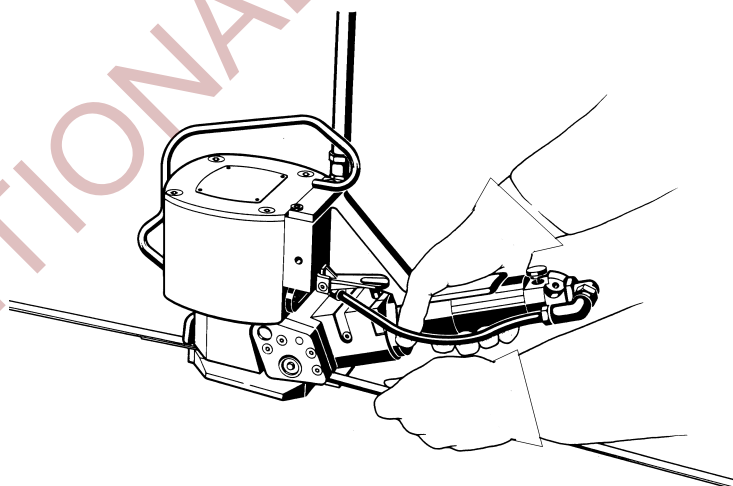


When handling strap, always wear protective gloves.



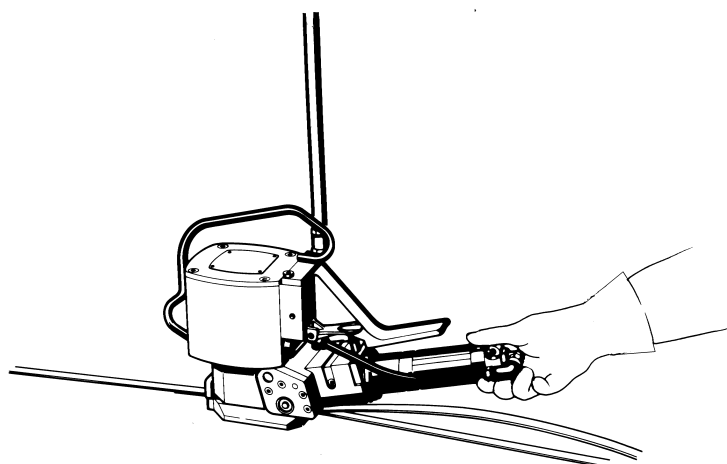
### 7.2 Loading the strap

The air motor is raised with the right hand. Insert both straps into the tool with the left hand till they border on the strap stop. Lower the air motor; be certain that the strap is held by the strap guide.



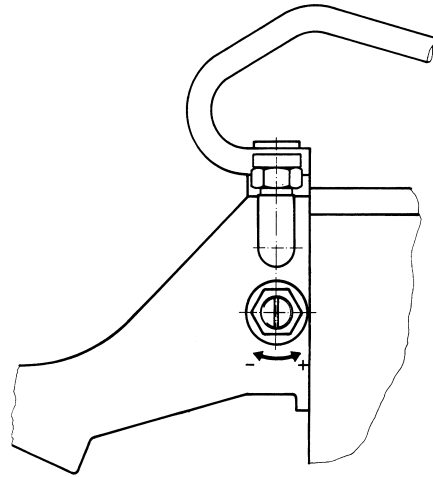
### 7.3 Tensioning the strap

The strap is tensioned by pressing the button on the air motor. The strap can be tensioned until the air motor stalls.



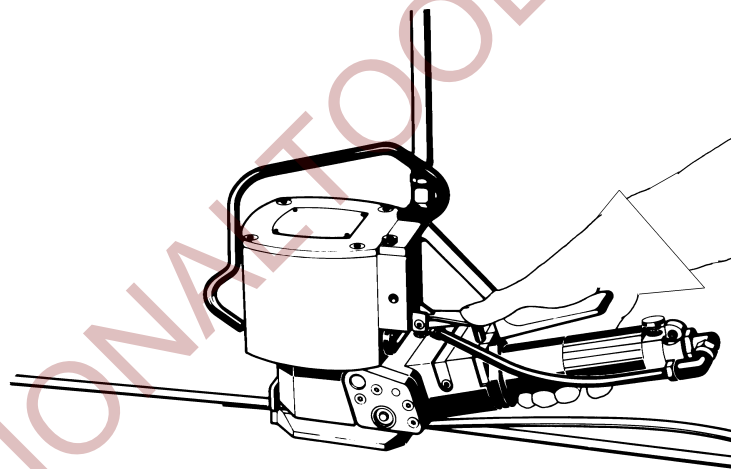
**Throttle valve**

On all tools provided with the throttle valve the air supply can be adjusted on the throttle screw A3H.1810.



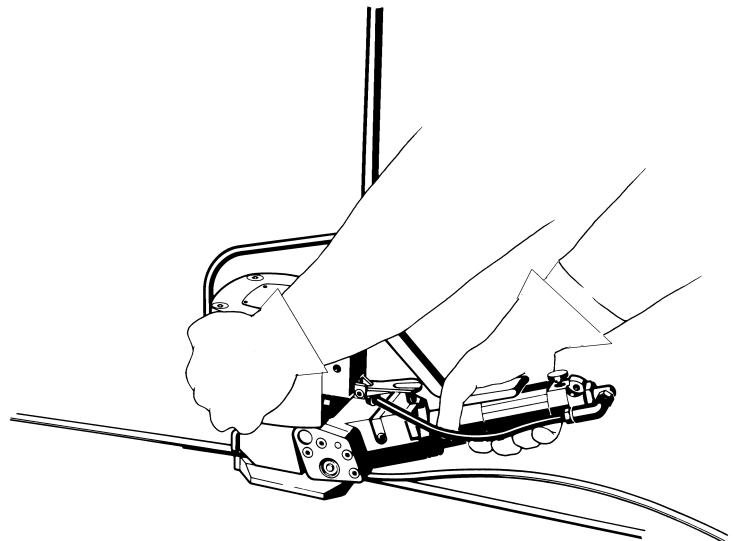
**7.4 Sealing the strap**

Press the valve lever with the thumb of the right hand until the seal is done.



**7.5 Removing the tool from the tensioned and sealed strap.**

After the seal is done the operator lifts the air motor with the right hand and slides the tool to the right to remove. At the same time the operator holds the sheared strap with the left hand.



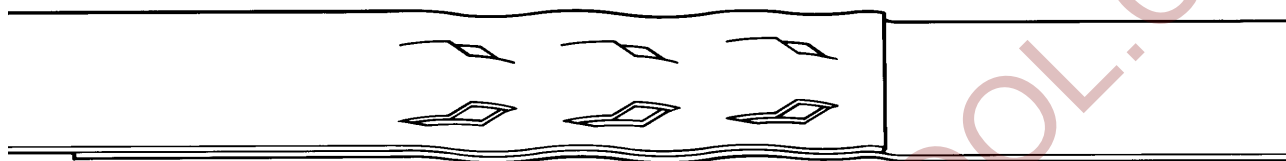


## 8 SEAL CONTROL

A regular control of the seal is necessary. The seal can be checked visually and the person controlling can easily judge the quality of the seal. When checking the seal the following illustrations must be compared.

### 8.1 Correct seal

A correct seal must conform to the illustration. This means that the depth with which the upper strap hooks into the lower one must be 1 - 1.5 mm in min. and 2 mm in max.. The upper strap must be sheared clean and the cutter must not leave scratch marks on the lower strap.



### 8.2 Incorrect seal (the sealing mechanism is adjusted too high)

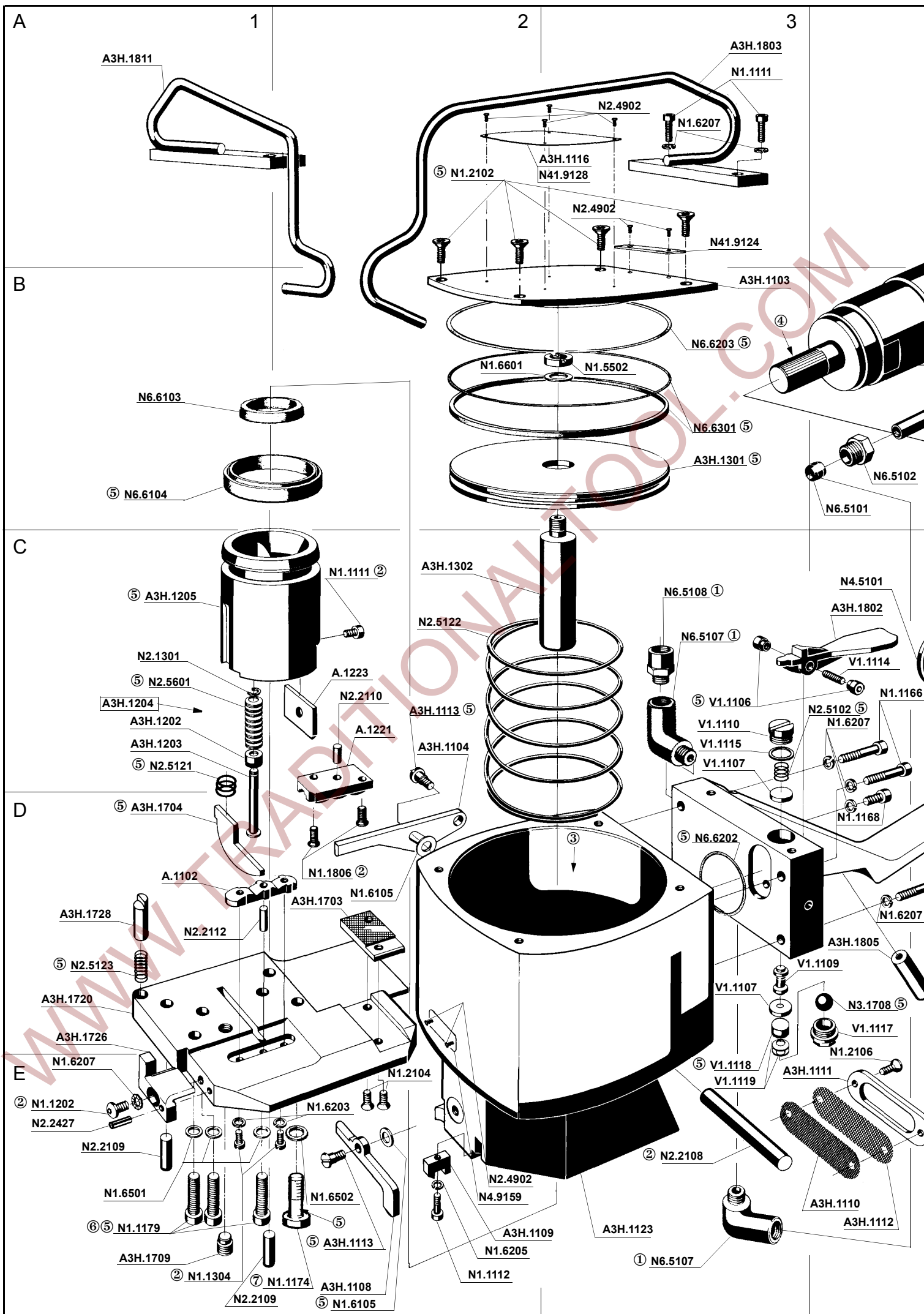
This stamped seal is not deep enough and the upper strap is not sheared. The tensile strength of this seal is not sufficient and the strapping must be taken away from the package. The tool must be readjusted immediately (see SEAL ADJUSTMENT).





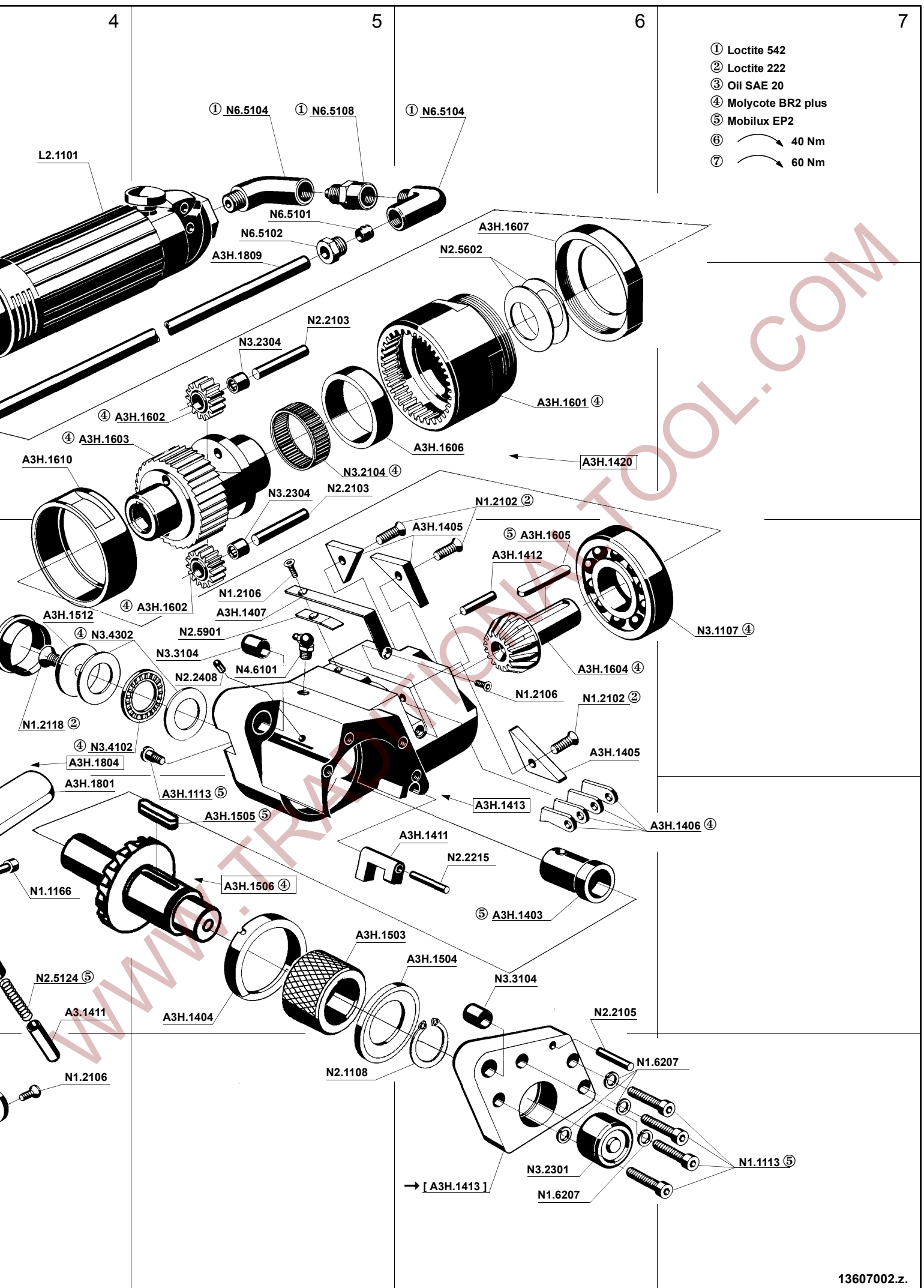
### 8.3 Incorrect seal (the sealing mechanism is adjusted too low)

This stamped seal is too deep and the lower strap is scratched by the cutter. Although the tensile strength of this seal is sufficient the strapping must be taken away from the package because of the scratched lower strap. The tool must be readjusted immediately (see SEAL ADJUSTMENT).





- ① Loctite 542
- ② Loctite 222
- ③ Oil SAE 20
- ④ Molycote BR2 plus
- ⑤ Mobilux EP2
- ⑥  40 Nm
- ⑦  60 Nm



**9 SPARE PARTS LIST 13.6070.02**

13.6070.02	A3H/12.7/0.38-0.60/4.5		A3H.0003.02		22.02.06	
Item-No.		in group	Pcs.	Description	Dimension	Field
A3H.1103			1	CYLINDER COVER		B3
A3H.1104			1	STRAP GUIDE LEVER		C2
A3H.1108	*		1	STRAP LIMITER		E2
A3H.1109			1	GUIDE KEY		E2
A3H.1110			1	FILTER NETTING		E4
A3H.1111			1	NETTING FRAME		E4
A3H.1112			1	PROTECTION NETTING		E4
A3H.1113			3	COLLAR SCREW		C2+
A3H.1116			1	LABEL	MAX. 5 BAR	A3
A3H.1123			1	SEALING BODY		E3
A3H.1202		A3H.1204	1	SUPPORTING SOCKET		C1
A3H.1203		A3H.1204	1	SPRING BOLT		C1
[A3H.1204]			1	SPRING PACKAGE		C1
A3H.1205			1	DIE AND CUTTER SUPPORT		C1
A3H.1301			1	PISTON		B3
A3H.1302			1	PLUNGER		C2
A3H.1403		A3H.1413	1	SLIDE-BEARING		D6
A3H.1404		A3H.1420	1	COVER RING		D5
A3H.1405		A3H.1420	3	SECURITY ANGLE		C6
A3H.1406		A3H.1420	4	CATCH PAWL		D7
A3H.1407		A3H.1420	1	MASKING PLATE		C5
A3H.1411	*	A3H.1420	1	STRAP GUIDE		D6
A3H.1412		A3H.1420	1	RATCHET BOLT		C6
[A3H.1413]		A3H.1420	1	GEAR BODY		D6
[A3H.1420]			1	GEAR		B6
A3H.1503	*	A3H.1420	1	TENSIONING WHEEL		D5
A3H.1504		A3H.1420	1	SPACER RING		D6
A3H.1505		A3H.1506	1	KEY		D5
[A3H.1506]		A3H.1420	1	BEVEL WHEEL		D5
A3H.1512		A3H.1506	1	DISK		C4
A3H.1601		A3H.1420	1	GEAR RIM		B6
A3H.1602		A3H.1420	2	SATELLITE		B5+
A3H.1603		A3H.1420	1	SATELLITE SUPPORT		B4
A3H.1604		A3H.1420	1	PINION		C6
A3H.1605		A3H.1420	1	KEY		C6
A3H.1606		A3H.1420	1	BEARING RING		B6
A3H.1607		A3H.1420	1	TAPPED RING		A6
A3H.1610		A3H.1420	1	SPACER RING		B4
A3H.1703	*		1	GRIPPER		D2
A3H.1704			1	EJECTOR		D1
[A3H.1709]			1	ADJUSTING SCREW		E1
A3H.1720			1	BASE PLATE		D1
A3H.1726	*		1	STRAP STOP		D1
A3H.1728			1	GUIDE BUSH		D1
A3H.1801		A3H.1804	1	VALVE BODY		D4
A3H.1802		A3H.1804	1	LEVER		C4
[A3H.1803]			1	SUSPENSION BRACKET		A3
[A3H.1804]			1	VALVE BODY		C4
A3H.1805			1	BUSHING		D4
A3H.1809			1	NYLON TUBE		B5
A3.1411			1	CARTRIDGE		D4

[ ] = Group

\* = Wearing parts

13.6070.02	A3H/12.7/0.38-0.60/4.5		A3H.0003.02		22.02.06	
Item-No.		in group	Pcs.	Description	Dimension	Field
A.1102	*		1	PUNCH		D1
A.1221	*		1	DIE		C2
A.1223	*		1	SHEAR BLADE		C2
[L2.1101]			1	AIR MOTOR		A4
[L2.1103]		L2.1101	1	PLANET SHAFT		--
L2.1201		L2.1101	1	EXHAUST RING		--
L2.1203		L2.1212	1	PLASTIC JACKET		--
L2.1206		L2.1101	1	ADAPTOR		--
L2.1208		L2.1101	1	SEALING SCREW		--
[L2.1212]		L2.1101	1	HOUSING		--
L2.1213		L2.1101	1	BUTTON		--
L2.1214		L2.1101	1	VALVE PISTON		--
L2.1215		L2.1101	1	VALVE HEAD		--
L2.1301		L2.1321	1	END PLATE		--
L2.1302		L2.1321	1	PARALLEL PIN		--
L2.1304	*	L2.1321	5	VANE		--
L2.1305		L2.1321	1	ROTOR		--
L2.1308		L2.1101	1	DAMPER		--
L2.1309		L2.1103	1	PLANET SHAFT		--
L2.1310		L2.1103	2	NEEDLE CAGE		--
L2.1311		L2.1103	2	GEAR WHEEL		--
L2.1312		L2.1103	2	SHAFT		--
L2.1313		L2.1101	1	BEARING RING		--
L2.1314		L2.1321	1	END PLATE		--
[L2.1321]		L2.1101	1	MOTOR CELL		--
L2.1322		L2.1321	1	CYLINDER		--
L2.1401		L2.1101	1	PLANET SHAFT		--
L2.1402		L2.1101	32	BEARING NEEDLE		--
L2.1403		L2.1101	2	GEAR WHEEL		--
L2.1404		L2.1101	2	SHAFT		--
L2.1405		L2.1101	1	BEARING RING		--
L2.1505		L2.1321	1	KEY		--
L2.2221		L2.1101	1	JOINT		--
N1.1111			3	SCREW	M5 X 12	A3+
N1.1112			1	SCREW	M4 X 20	E2
N1.1113		A3H.1413	4	SCREW	M5 X 20	E7
N1.1166			3	SCREW	M5 X 30	D4+
N1.1168			1	SCREW	M5 X 16	D4
N1.1174			1	SCREW	M10 X 1 X 40	E2
N1.1179			3	SCREW	M8 X 1 X 40	E1
N1.1202			1	SCREW	M5 X 10	E1
N1.1304			2	SCREW	M3 X 8	E1
N1.1806			2	SCREW	M4 X 10	D2
N1.2102			4	COUNTERSUNK SCREW	M6 X 20	A2
N1.2102		A3H.1420	3	COUNTERSUNK SCREW	M6 X 20	B6+
N1.2104			2	COUNTERSUNK SCREW	M4 X 12	E2
N1.2106			2	COUNTERSUNK SCREW	M4 X 8	D4+
N1.2106		A3H.1420	2	COUNTERSUNK SCREW	M4 X 8	C5+
N1.2118		A3H.1506	1	COUNTERSUNK SCREW	M6 X 0.75 X 12 - LH	C4
N1.5502			1	SLOTTED NUT	M8	B3
N1.6105			2	WASHER	6.1 X 18 X 0.8	D2+
N1.6203			2	SPRING LOCK WASHER	M3	E2
N1.6205			1	SPRING LOCK WASHER	M4	E2

[ ] = Group

\* = Wearing parts

13.6070.02	A3H/12.7/0.38-0.60/4.5		A3H.0003.02			22.02.06
Item-No.		in group	Pcs.	Description	Dimension	Field
N1.6207			7	SPRING LOCK WASHER	M5	A3+
N1.6207		A3H.1413	4	SPRING LOCK WASHER	M5	E6
N1.6501			3	SAFETY WASHER	M8	E1
N1.6502			1	SAFETY WASHER	M10	E2
N1.6601			1	SCREW LOCKING	M8	B2
N1.6701		L2.1101	2	TOOTH LOCK WASHER		--
N2.1108		A3H.1420	1	SECURITY RING	20	E5
N2.1301		A3H.1204	1	CIRCLIP	6	C1
N2.2103		A3H.1420	2	PARALLEL PIN	6 m6 X 28	B5+
N2.2105		A3H.1413	1	PARALLEL PIN	6 m6 X 30	D6
N2.2108			1	PARALLEL PIN	12 m6 X 90	E3
N2.2109			2	PARALLEL PIN	8 m6 X 30	E1
N2.2110			1	PARALLEL PIN	4 m6 X 10	C2
N2.2112			1	PARALLEL PIN	3 m6 X 12	D1
N2.2215		A3H.1413	1	PARALLEL PIN	4 h8 X 32	D6
N2.2408		A3H.1420	1	DOWEL PIN	3 X 6	C5
N2.2414		L2.1101	1	DOWEL PIN	2 X 12	--
N2.2427			1	DOWEL PIN	3.5 X 14	E1
N2.4902			8	HAMMER HEAD BOLT	1.85 X 4.76	A3+
N2.5102		A3H.1804	1	PRESSURE SPRING	0.6 X 8 X 14/6	C4
N2.5102		L2.1101	1	PRESSURE SPRING	0.6 X 8 X 14/6	--
N2.5121			1	PRESSURE SPRING	2.5 X 13.5 X 17/4.5	C1
N2.5122			1	PRESSURE SPRING	4 X 72 X 135/6	C2
N2.5123			1	PRESSURE SPRING	1 X 8 X 40/12.5	D1
N2.5124			1	PRESSURE SPRING	1 X 8 X 75/25	D4
N2.5601		A3H.1204	40	CUP SPRING	12.5 X 6.2 X 0.7	C1
N2.5602		A3H.1420	2	CUP SPRING	31.5 X 16.3 X 0.8	A6
N2.5901		A3H.1420	1	PLATE SPRING	42 X 12 X 0.5	C5
N3.1102		L2.1101	4	BALL BEARING	15 X 32 X 9	--
N3.1107		A3H.1420	1	BALL BEARING	20 X 47 X 14	C7
N3.1108		L2.1321	1	BALL BEARING	6 X 19 X 6	--
N3.1109		L2.1321	1	BALL BEARING	8 X 22 X 7	--
N3.1708		A3H.1804	1	BALL	10 MM	D4
N3.2104		A3H.1420	1	NEEDLE CAGE	K 25 X 29 X 10	B5
N3.2301		A3H.1413	1	NEEDLE CASE	15 X 21 X 14	E6
N3.2304		A3H.1420	2	NEEDLE CASE	6 X 10 X 8	B5+
N3.3104		A3H.1413	2	SLIDE-BEARING	12 X 14 X 15	C5+
N3.4102		A3H.1420	1	THRUST BEARING CAGE	15 X 28 X 2	C4
N3.4302		A3H.1420	2	SLIDING DISK	15 X 28 X 2.75	C4
N41.9124			1	LABEL	<<A3H>>	A3
N41.9128			1	ADHESIVE LABEL	30 X 10 X 0.1	A3
N4.5101		A3H.1420	1	CAP COVER	34 X 31.7 X 9.5	C4
N4.6101		A3H.1413	1	LUBRICATOR NIPPLE	M 6	C5
N4.9159			1	LABEL	<<CE>>	E2
N6.5101			2	CLAMPING RING		A5+
N6.5102			2	SLEEVE NUT		A5+
N6.5104			2	FITTING		A5+
N6.5107			1	FITTING		E3
N6.5107		A3H.1804	1	FITTING		C3
N6.5108			1	REDUCING SOCKET		A5
N6.5108		A3H.1804	1	REDUCING SOCKET		C3
N6.6103			1	SEAL	18 X 25 X 5	B1
N6.6104			1	SEAL	50 X 42 X 8	B1

[ ] = Group

\* = Wearing parts

13.6070.02	A3H/12.7/0.38-0.60/4.5		A3H.0003.02		22.02.06	
Item-No.		in group	Pcs.	Description	Dimension	Field
N6.6201		L2.1101	1	O-RING	4.3 X 1.4	--
N6.6202			1	O-RING	25 X 2.5	D3
N6.6203			1	O-RING	109 X 2	B3
N6.6205		L2.1101	1	O-RING	9.2 X 1.78	--
N6.6206		L2.1101	1	O-RING	4.3 X 2.4	--
N6.6301			1	SEAL	" 110	B3
V1.1106		A3H.1804	2	TOUCH CONTACT NUT		C3
V1.1107		A3H.1804	2	VALVE DISK		C3+
V1.1109		A3H.1804	1	SLIDING VALVE STEM		D4
V1.1110		A3H.1804	1	VALVE CAP		C3
V1.1114		A3H.1804	1	TOUCH CONTACT SCREW		C4
V1.1115		A3H.1804	1	VALVE PACKING		C3
V1.1117		A3H.1804	1	BALL HOLDER		D4
V1.1118		A3H.1804	1	CAM		E3
V1.1119		A3H.1804	2	CUP SPRING		E3

[ ] = Group

\* = Wearing parts

## 10 SEAL ADJUSTMENT

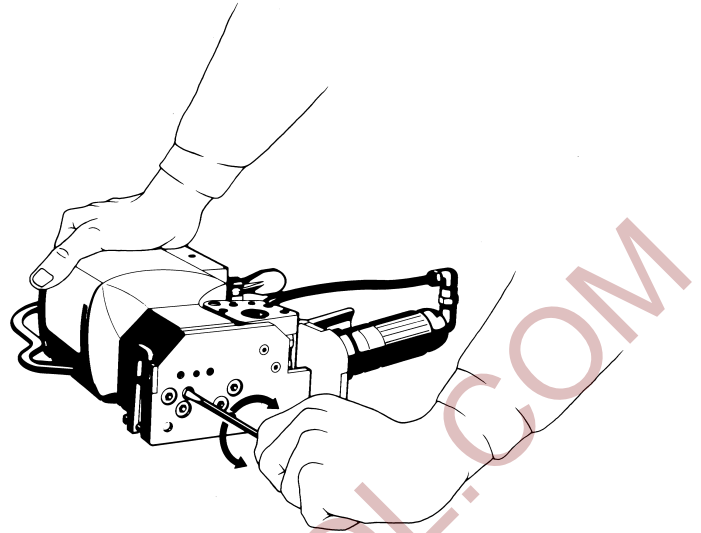
The sealing- and cutting depth of the sealing mechanism and the cutter can be adjusted with a screw driver by turning the adjusting screw A3H.1709.

### Sealing depth is excessive

Turning the adjusting screw A3H.1709 clockwise reduces the sealing depth. A turn of 90° equals adjustment of 0.25 mm / .010".

### Sealing depth is not sufficient

Turning the adjusting screw counter-clockwise increases the sealing depth. A turn of 90° equals adjustment of 0.25 mm / .010".



## 11 MAINTENANCE

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

### 11.1 Air-unit

- Checking the air pressure daily
- 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

### 11.2 Cleaning

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

### 11.3 Lubrication

The worm gear is filled with grease when it's assembled.

The slide bearing A3H.1403 has to be greased periodically (after 10 000 cycles at the latest) at the nipple N4.6101 by using a grease gun.



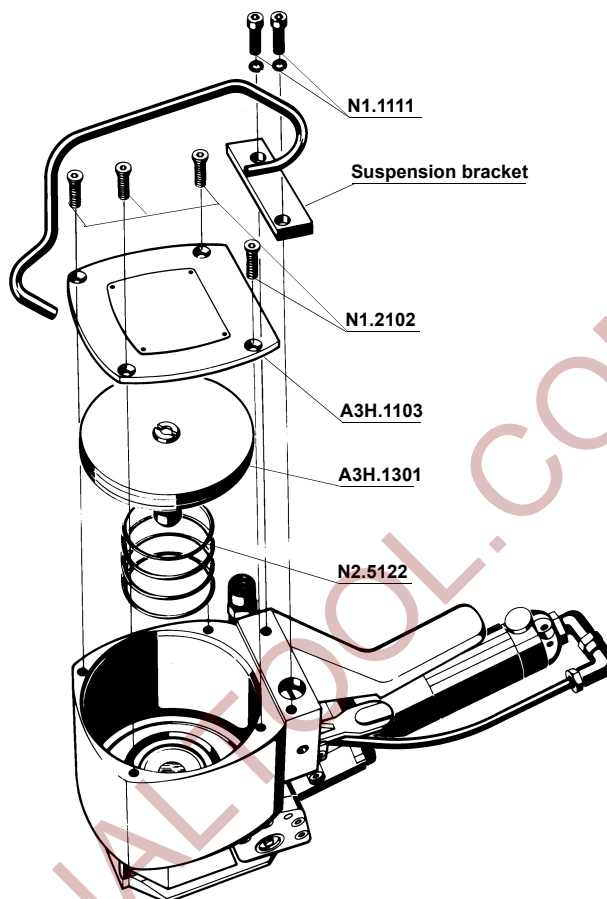
## 11.4 Control of oil level

According to the use of the tool the oil-level must be checked periodically and the inside of the cylinder must be cleaned at the same time. This oil control is necessary because it prevents that due to oil losses over a certain period of time the sealing mechanism does not reach the necessary stroke.

Procedure:

- Unscrew the screws N1.1111 and disassemble the suspension bracket.
- Unscrew the screws N1.2102 and disassemble the cylinder cover A3H.1103.
- Disassemble the piston A3H.1301 together with the plunger A3H.1302 and the pressure spring N2.5122
- Check oil-level (oil must be even with the upper rim of the boring in the sealing body). If necessary oil must be refilled. Use oil SAE 20 only.
- Assembling in opposite order.

**Attention!** Make sure the O-ring N6.6203 is not jammed and damaged when being reassembled.

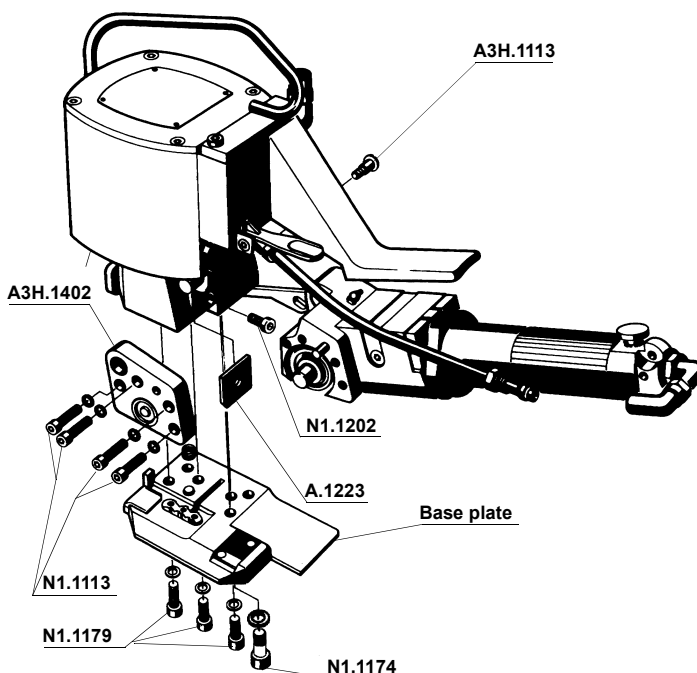


## 12 EXCHANGE OF WEARING PARTS

### 12.1 Shear blade

- Unscrew the screws N1.1174 and N1.1179 and remove the base plate.
- Unscrew the screws N1.1113 and disassemble together with the end cover A3H.1402.
- Unscrew the screws A3H.1113 and take away the whole gear box including the air motor.
- Unscrew the screws N1.1202 and exchange the shear blade A.1223.
- Assembling in opposite order.

**Attention!** The screws N1.1179 have to be tightened with 40 Nm and N1.1174 with 60 Nm by using a torque wrench.

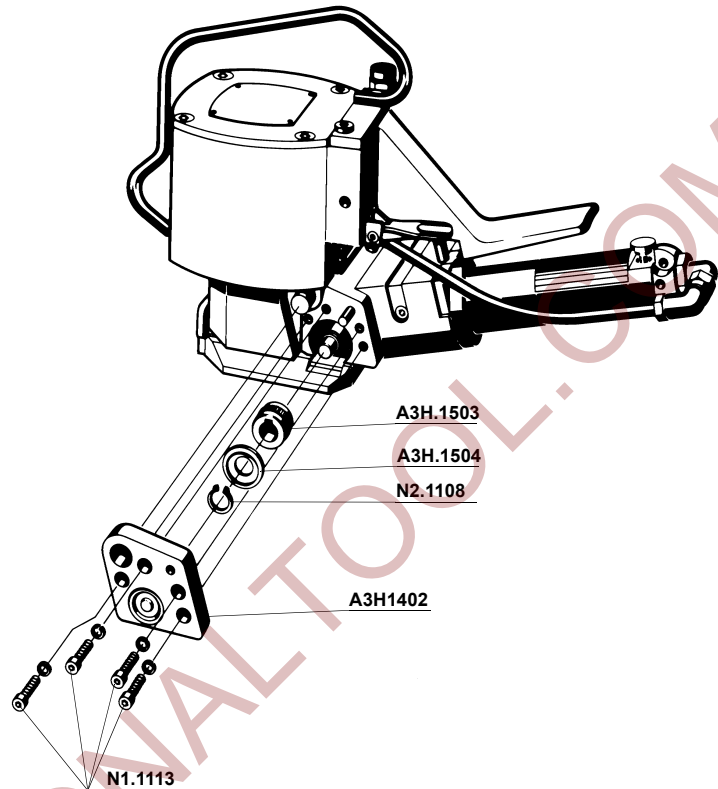


## 12.2 Tensioning wheel

The tensioning wheel should be exchanged if its teeth are dull and the wheel revolves without transporting the strap.

Procedure:

- Unscrew the screws N1.1113 and disassemble the end cover.
- Disassemble the security ring N2.1108.
- Disassemble the spacer ring A3H.1504 and the tensioning wheel A3H.1503.
- Assembling in opposite order.

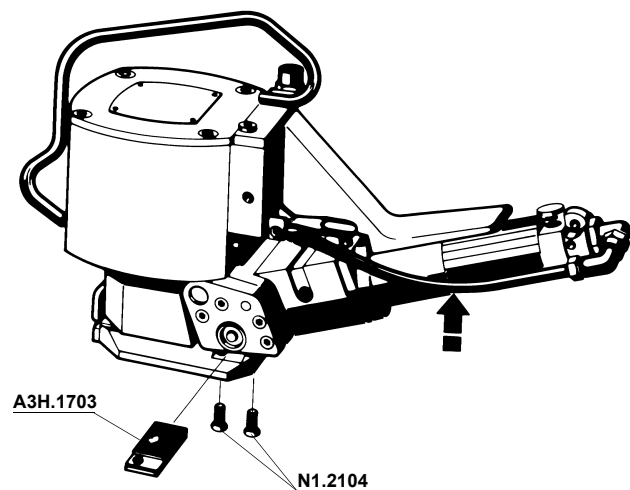


## 12.3 Square gripper

The square gripper has to be changed if its teeth are dull and the lower strap can not be held during the strap is tensioned.

Procedure:

- Unscrew the screws N1.2104.
- Lift the air motor and exchange the square gripper A3H.1703.



## 12.4 Punch and die

If it's impossible to make a correct seal although the adjustment of the adjusting screw is correct (see SEAL CONTROL) the base plate has to be disassembled and the wearing of the stamp tools has to be checked. If the cutting edges are damaged or blunted (Attention! The cutting edges are also slightly rounded off when they are new) the used parts have to be exchanged.

Procedure:

- Unscrew the screws N1.1174 and N1.1179 and remove the base plate.
- Unscrew the punch screws and disassemble the damaged punch.
- Clean the punch groove and set in a new punch.
- Unscrew the screws N1.1806 and disassemble the damaged die.
- Clean the groove in the die and cutter support and set in a new die.
- Assembling in opposite order.

**Attention!** The screws N1.1179 have to be tightened with 40 Nm and N1.1174 with 60 Nm by using a torque wrench.

