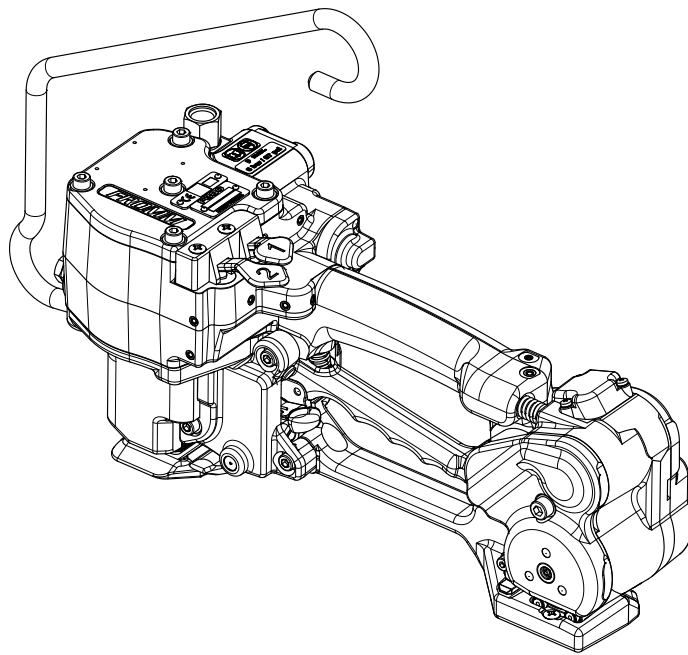


# **FROMM**

SERVICE MANUAL

## **PNEUMATIC PLASTIC STRAPPING TOOL**

### **MODEL P380**



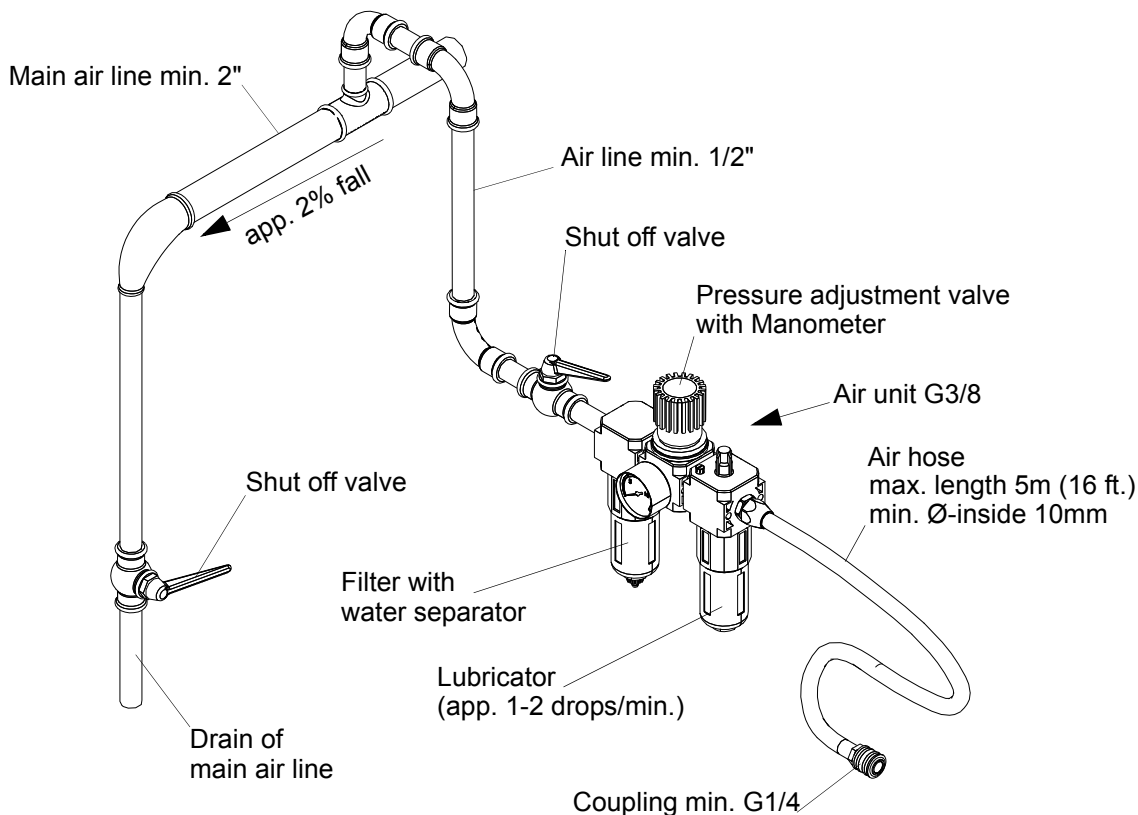
**Manual for authorized dealers and service points**

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**Only trained and instructed personnel is authorized to perform servicing and maintenance works!**

## 1.1 TECHNICAL DETAILS

### 1.1.1 Air supply



#### Air pressure

The maximum air pressure allowed is 6.0 bars / 87 psi

#### Air flow of air unit

min. 520 NI/min / 18.4 cu.ft/min with a maximum pressure drop of 0.5 bar / 7.25 psi.

#### Air consumption

Tensioning: approx. 4.9 NI / 0.18 cu.ft uncompressed air per second.

Sealing: approx. 8.6 NI / 0.30 cu.ft uncompressed air per second.

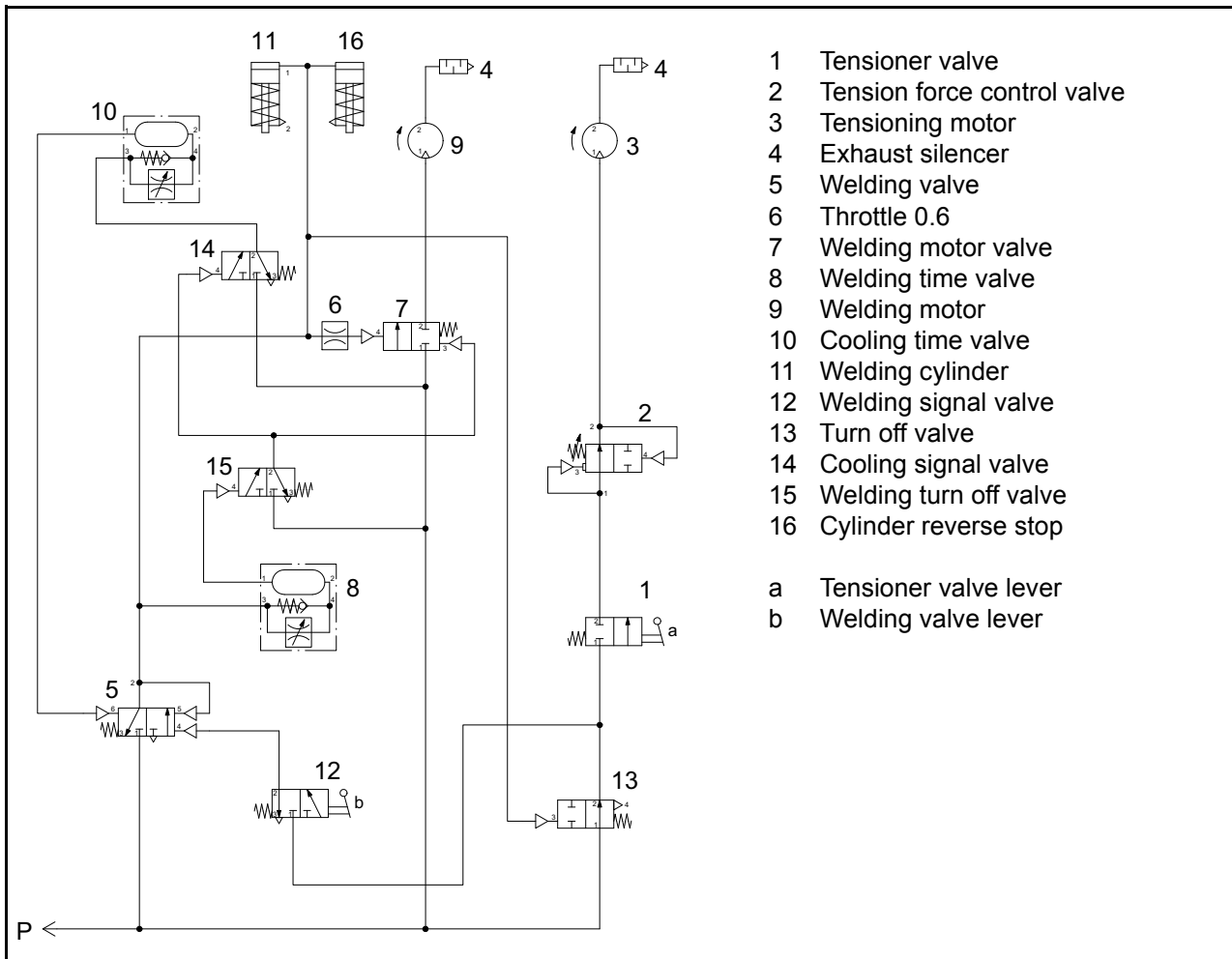
#### Maintenance

- Checking the air-pressure daily
- Checking oil-level daily
- The water separator must be drained depending on developed water amount (unless automatic)
- The filter has to be cleaned regularly 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

HI / CL ISO VG10

**1.1.2 Pneumatic schematic**



**1.1.3 Functional description**

**Zero position**

- When connecting the tool to the air line, compressed air flows through the Turn off valve (13) to the Tensioner valve (1) and to the Welding signal valve (12).
- Directly from the main connector P compressed air is lead also to the Welding valve (5), to the Welding motor valve (7), to the Welding turn off valve (15) and to the Cool down signal valve (14).

**Actuating the Valve lever for tensioning (a)**

- The Turn off valve (13) is held by spring force in the home position and is therefore opened.
- By persistent pressing of the Valve lever for tensioning (a) the Tensioner valve (1) is held in open position. The compressed air flows through the Tension force control valve (2) (with adjustment knob) to the tensioning motor (3), powers the motor and is leaving it in the decompressed status through the Exhaust silencer (4).
- If a certain back up pressure of the Tensioning motor (3), determined by the adjustment knob, is reached, the Tension force control valve (2) throttles the air supply to the Tensioning motor (3). This allows an adjustment of the tensioning force.
- The Valve lever for tensioning can be released now. The tension force is held by the needle free wheeling N3.4509.

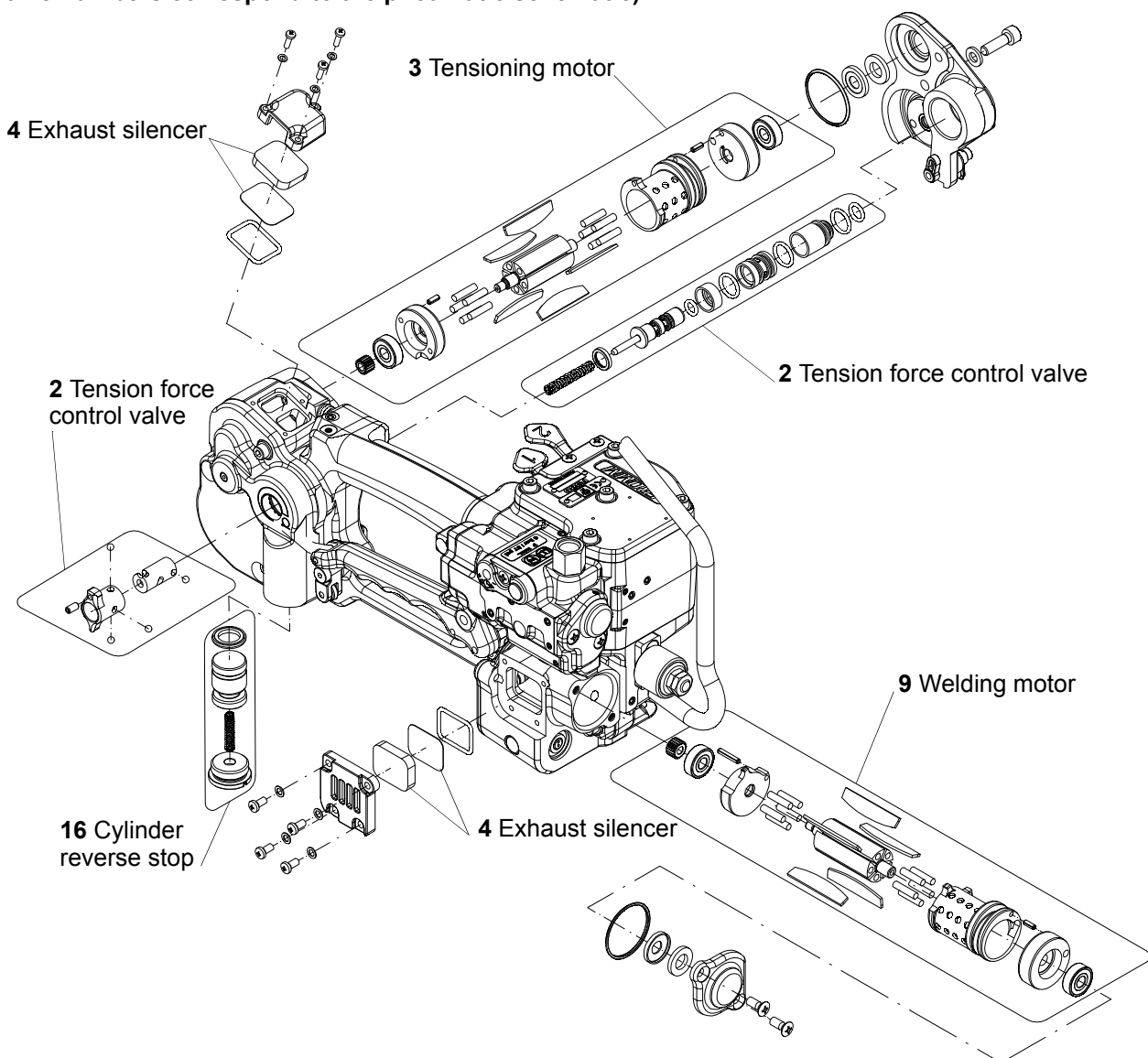
**Actuating the Valve lever for welding (b)**

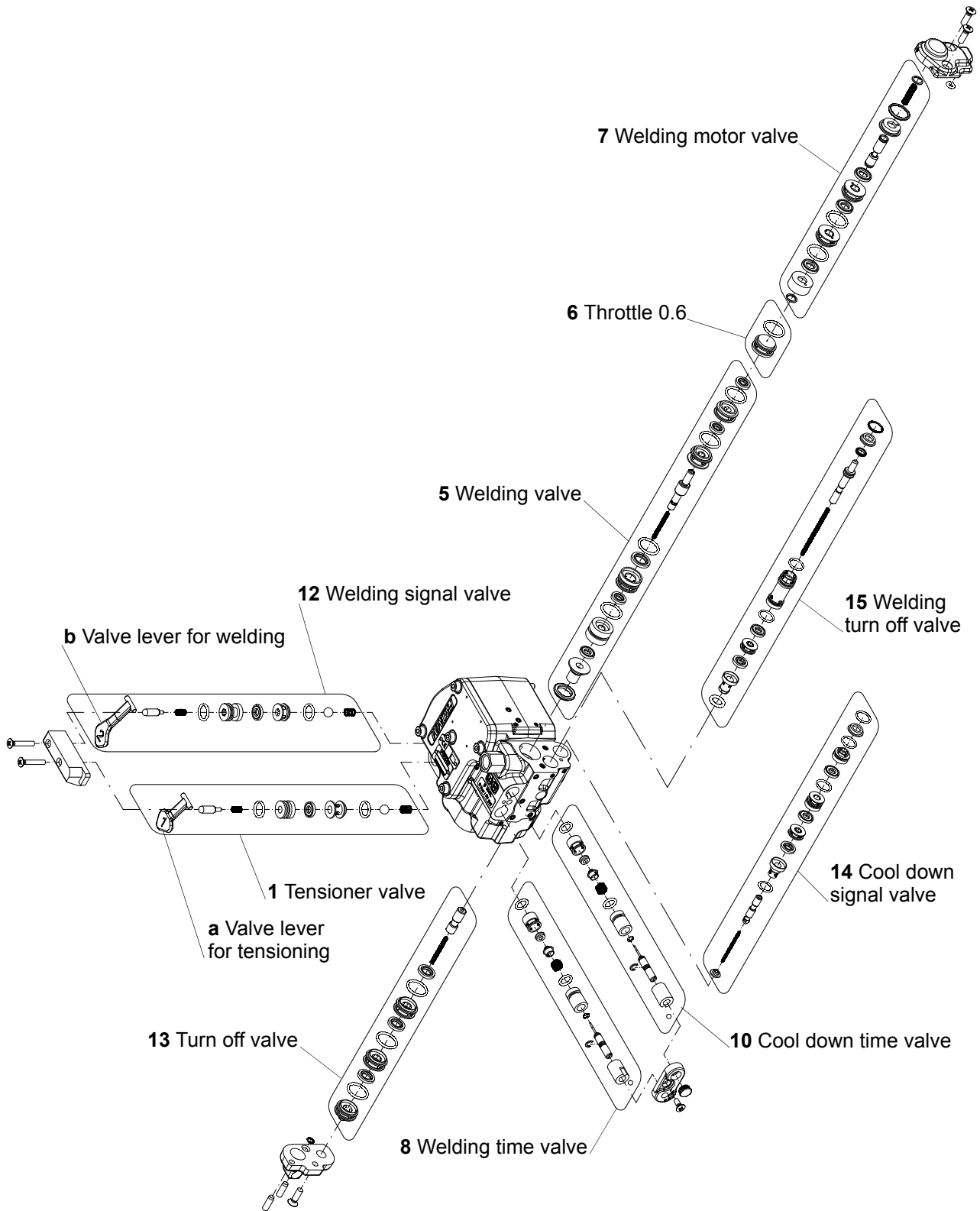
- The valve lever for welding (b) is pressed until the lower stop and immediately released. This is starting a sequence of automatically run down processes.
- The compressed air coming from connection P flows through the Turn off valve (13), flows through the Welding signal valve (12) and is switching the Welding valve (5). This is going into self locking mode.

- At the same time the Turn off valve (13) is driven by compressed air from the left side, switches and thus is blocking the air connection to the Tensioner valve (1). Also the upper piston surface of the welding cylinder (11) and the cylinder reverse stop (16) is ventilated. Both cylinders extend. The straps between welding gripper and welding stop gripper are compressed.
- Additionally the welding motor valve (7) is provided with compressed air over the throttle (6) and switches. Through the welding motor valve (7) coming from connection P the welding motor (9) is provided with compressed air. The welding motor is powered and the compressed air escapes through the silencer (4). Now the upper strap is cut off.
- Furthermore the compressed air flowing through the Welding valve (5) is reaching through the Welding time valve (8) time delayed the Welding turn off valve (15). This is switched and is driving the Welding motor valve (7) in home position. The welding motor (9) stops.
- If the Welding turn off valve (15) is switching, there is also compressed air flowing to the Cooling down signal valve (14). It is switching and the compressed air is flowing through the adjustable Cool down time valve (10) time delayed to the Welding valve (5). The welding valve (5) is switched into home position again. Hereby the upper piston surface of the welding cylinder (11) and the cylinder reverse stop (16) is exhausted. The welding cylinder (11) and the cylinder reverse stop (16) move into home position. At the same time the turn off valve (13), the cool down signal valve (14) and the welding turn off valve (15) move again into home position.

### 1.1.4 Details of the pneumatic control system

Valve numbers correspond to the pneumatic schematic)





## 1.2 CONVERSION PARTS

When converting strap thickness or strap width the following parts must be exchanged:

Tool Item-No.	49.3801	49.3802	49.3811	49.3812	49.3821
Strap dimension	13mm x 0.40-0.64	13mm x 0.65-1.05	15mm x 0.40-0.64	15mm x 0.65-1.05	16mm x 0.40-0.64
Tensioning wheel	P35.3202	P35.3203	P35.3202	P35.3203	P35.3202
Cutter	P38.1168	P38.1169	P38.1168	P38.1169	P38.1168
Gripper	P38.1170	P38.1172	P38.1170	P38.1172	P38.1170
Welding gripper	P38.1197	P38.1198	P38.1197	P38.1198	P38.1197
Strap stop	P38.1154	P38.1154	P38.1156	P38.1156	P38.1156
Strap guide	P38.1158	P38.1158	P38.1158	P38.1158	P38.1159
Strap guide	P38.1160	P38.1160	P38.1162	P38.1162	P38.1164
Strap guide	P38.1161	P38.1161	P38.1163	P38.1163	P38.1165
Base plate	P38.1188	P38.1188	P38.1190	P38.1190	P38.1192

Tool Item-No.	49.3822	49.3831	49.3832	49.3833
Strap dimension	16mm x 0.65-1.05	19mm x 0.40-0.64	19mm x 0.65-1.05	19mm x 1.06-1.35
Tensioning wheel	P35.3203	P35.3202	P35.3203	P35.3203
Cutter	P38.1169	P38.1168	P38.1169	P38.1169
Gripper	P38.1172	P38.1170	P38.1172	P38.1172
Welding gripper	P38.1198	P38.1197	P38.1198	P38.1198
Strap stop	P38.1156	P38.1157	P38.1157	P38.1157
Strap guide	P38.1159	P38.1159	P38.1159	P38.1159
Strap guide	P38.1164	P38.1166	P38.1166	P38.1166
Strap guide	P38.1165	P38.1167	P38.1167	P38.1167
Base plate	P38.1192	P38.1194	P38.1194	P38.1196



**Attention!**

**When converting tools always change the item number on the type label.**

**Replace following parts:  
Type label N43.9179  
2 x hammer head bolts N2.4902**

**Enclose the suitable operation manual with the tool after each conversion.**

**(see paragraph Ordering manuals)**

## 1.3 PERIODIC MAINTENANCE AND CONTROL

Carry out 12- months cycles doing one shift work. Doing multiple shift work respectively more often.

### 1.3.1 Procedure

#### **Before using check tool for following possible faults:**

- Visual test of the tool for loose, lost or damaged parts
- Clean all dirty parts of the tool, especially strap abrasion in the tensioning or the welding unit by using compressed air. (Never use any hard tools like a wire brush or a screw driver for cleaning)
- Condition of the tensioning wheel, the welding grippers and the tensioning grippers

#### **Connect tool to the air supply and perform some test strappings.**

#### **Check the following:**

- Tightness of the pneumatic system
- Strap guidance
- Strap take up and strap tensioning
- Tensioning force adjustment minimal and maximal (see operation manual P380)
- Cutting of the upper strap
- Welding time adjustment (see operation manual P380)
- Seal quality (see operation manual P380)

Proceed according to paragraph „Troubleshooting“after a fault appears.



**Attention!**  
**Before maintenance always remove the tool from the compressed air supply.**

**For exchange of wearing parts see operation manual P380.**

**Never use water or solvents for cleaning the tool.**



### 1.3.2 Troubleshooting

**A sufficient compressed air supply and the use of the tool's specific strap should be guaranteed before each tool repair.**

SYMPTOM	CAUSE	REMEDY
Tool doesn't tension, Tensioning motor runs	The tensioning wheel is packed with strap residue or is worn and mills on the strap	Clean tensioning wheel with compressed air or replace it
	Wrong tensioning wheel or tensioning wheel is assembled reversed	Correct assembling or use the correct tensioning wheel.
	Grippers are dirty, worn or wrongly assembled	Replace grippers, clean them with compressed air or assemble correctly
	Gearing parts from the tensioning gear are defective	Check tensioning gear and replace defect parts
	Return stop unlocked	Check piston
Tensioning motor doesn't run	Tensioning motor defective	Check component parts and replace damaged ones
	Tensioning gear defective	Check component parts and replace damaged ones
	Pneumatic control system is defective	Check component parts and replace damaged ones
	Needle free wheeling assembled reversed	Assemble correctly
Tensioning wheel turns back immediately after the tensioning cycle	Defective needle free wheeling N3.4509	Überprüfen und gegebenenfalls ersetzen
Tool doesn't weld, welding motor runs	Welding gripper is dirty or worn	Clean and check welding gripper and replace damaged one
	Welding stop gripper is dirty or worn	Clean and check welding stop gripper and replace damaged one
	Pinion P32.1023 lose at the motor or welding eccentric, resp. The journal at the welding eccentric is broken off.	Check component parts and replace damaged ones
	Welding piston P38.0101 not down	Check component parts and replace damaged ones
Welding motor doesn't run	Welding motor defective	Check component parts and replace damaged ones
	Welding mechanism defective	Check component parts and replace damaged ones
	Pneumatic control system is defective	Check component parts and replace damaged ones
Gear noise	Tensioning or welding gear is worn	Check component parts and replace damaged ones

<b>SYMPTOM</b>	<b>CAUSE</b>	<b>REMEDY</b>
Welding motor does not stop	Turn off valve or welding motor valve jam, resp. the welding time valve is blocked.	Check and clean parts, exchange damaged parts
	Diameter of the air supply hose is too small.	Install air supply hose with a minimum inner diameter of 10mm
	Not enough air volume	Take care that there is enough air volume (see paragraph 1.1.1 Air supply)
Tool badly cuts the strap or doesn't cut at all	Cutter is worn or damaged	Replace cutter
	Welding gripper is worn	Replace welding gripper
	Welding time too short	Change adjustment (see operation manual P380)
Welding time not adjustable	Welding time valve dirty or damaged	Clean and check component parts and replace damaged ones
Tensioning force not adjustable	Tension force control valve dirty or damaged	Clean and check component parts and replace damaged ones

### 1.3.3 Checklist

Carry out several test strappings and check the following items:

- Connect the tool to the compressed air supply and check if air escapes
- Insertion of the strap
- Strap guidance
- Strap take up and strap tension
- Tension force adjustment minimal and maximal (see operation manual P380)
- Cutting of the upper strap
- Welding time adjustment (see operation manual P380)
- Seal quality (see operation manual P380)
- Type label