

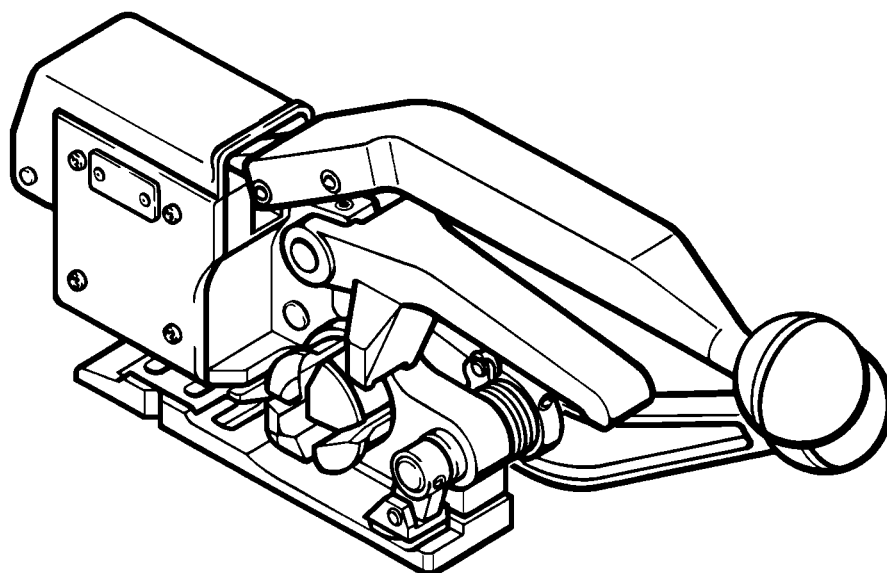
FROMM

OPERATION MANUAL / SPARE PARTS LIST

MANUAL PLASTIC STRAPPING TOOL

MODEL P403

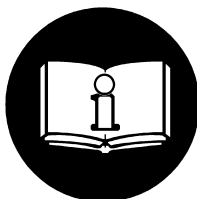
43.0403.02



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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.

Make sure that no other persons are present in the area endangered by tensioning the strap.

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.

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.

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.

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.

Tool hazards

To execute maintenance work is allowed for qualified personal only.

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 TECHNICAL DATA

Dimensions

	Tool	Package
Length:	337 mm / 13.3"	370 mm/ 14.6"
Width:	105 mm / 4.1"	220 mm/ 8.7"
Height:	149 mm / 5.9"	180 mm/ 7.1"

Weight

Tool:	3.3 Kg / 7.3 lbs
Tool incl. package:	3.8 Kg/ 8.4 lbs

Strap Dimensions

Widths: 11 - 13 mm / 0.4 - 0.5"
Thicknesses: 0.4 - 0.9 mm / 0.016 - 0.035"

Strap Qualities

Polypropylene, plain or embossed
Polyester, plain or embossed
The plastic strap must be according to DIN EN 13394.

Seals

P403 / 13 mm

Item No.: 41.5081

Joint strength

Depending on the strap quality the seal efficiency varies between 40 to 80% of the breaking strength of the strap.

Using low gauge straps, the joint strength is relatively high whereas high gauge straps tend to have a lower joint strength.

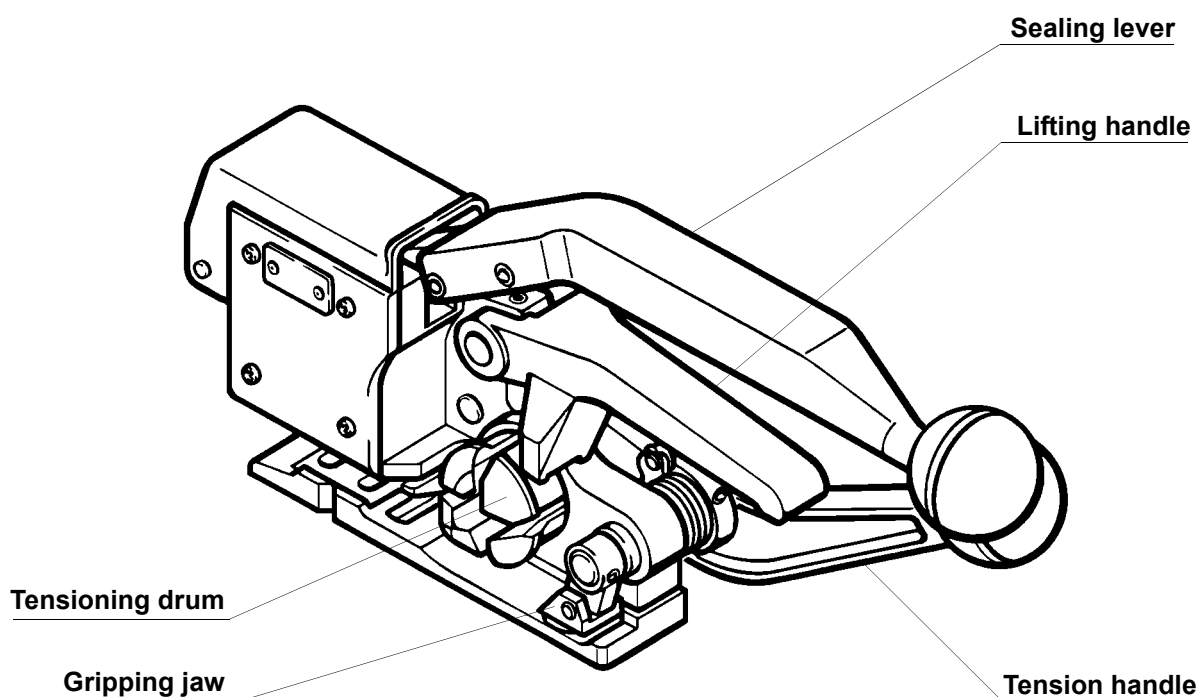
Tension force

The tension force is calculated by the applied manual force multiplied by 9.

Thus the tension force is $200\text{ N} \times 9 = 1800\text{ N}$ if the applied manual force is 200 N at the tension lever.

When applying tension, the tension force must not exceed the breaking strength of the seal joint.

3 OPERATION ELEMENTS

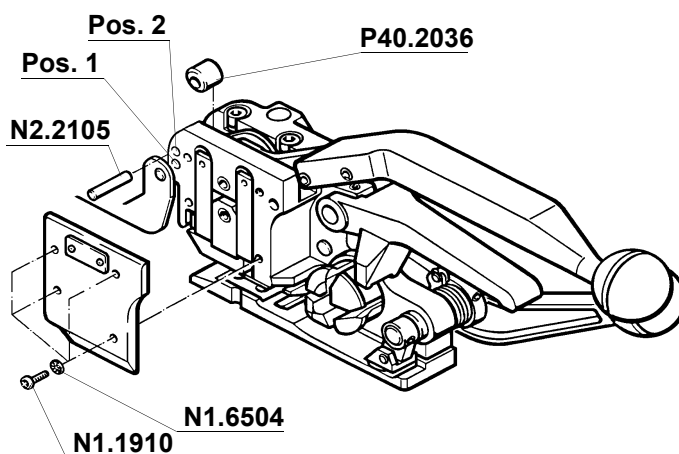


ATTENTION! Before starting using the tool it has to be adjusted to the strap thickness used!

4 ADJUSTMENT OF THE STRAP THICKNESS

In order to achieve the highest possible seal efficiency the tool must be adjusted to the respective strap thickness through the use of the parallel pin N2.2105 and the stop P40.2036. Please proceed as follows:

- remove the side plate
- bring the parallel pin N2.2105 and if necessary the stop P40.2036 into the correct position of the strap thickness used
- reattach the side plate
- in order to avoid the strap slipping between gripper and gripping jaw the shims underneath the gripping jaw have to be assembled according to below table.



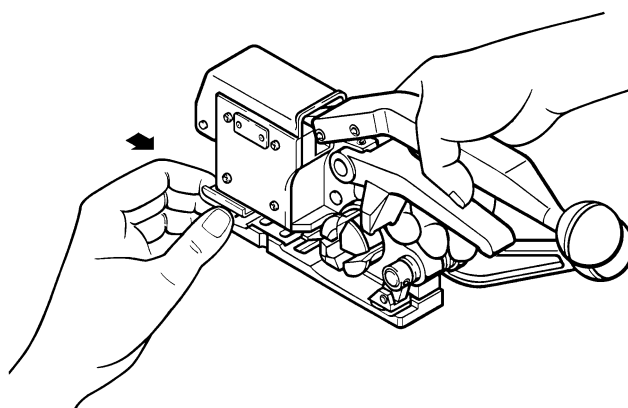
Strap thickness	Stop	Shim*
0.40 - 0.64 mm / 10.2 - 16.3"	N2.2105 in Pos. 1	2 x P40.2052
0.65 - 0.75 mm / 16.5 - 19.1"	N2.2105 in Pos. 2	1 x P40.2052
0.76 - 0.90 mm / 19.3 - 22.9"	N2.2105 and P40.2036 in Pos. 2	0

* See 7.2 changing of gripper and gripping jaw.

5 OPERATION

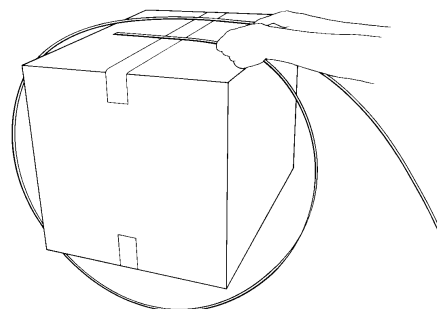
Introducing the seal

The seal is introduced into the tool from the rear side until it hits the strap stop. Use the left hand.



Feeding the strapping around the package

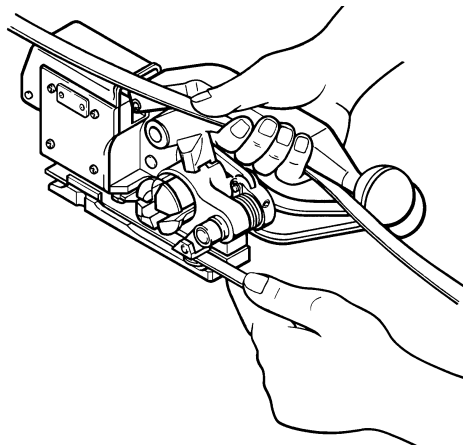
The plastic strapping is fed around the package as shown in the illustration.



Inserting the lower strap

The lifting handle is raised with the right hand. The lower strap is inserted into the seal and the stop behind the gripper respectively. The strap end should slightly protrude the seal.

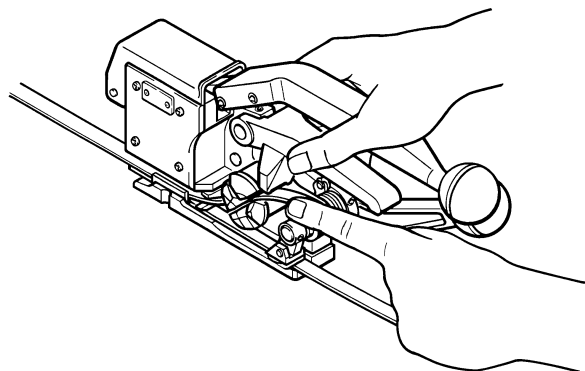
By lowering the lifting handle the strap is clamped in its position.



Inserting the upper strap

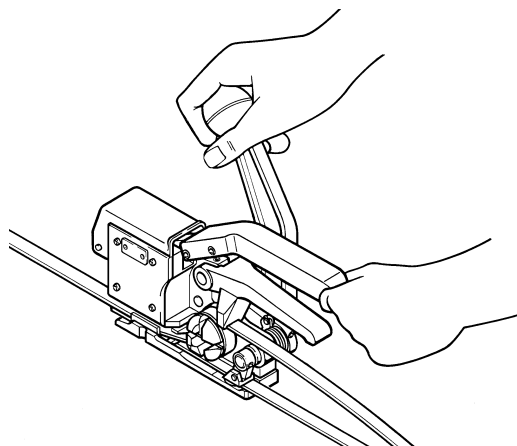
The tool is held with the right hand. The left hand inserts the upper strap into the seal, through both cutters and into the tensioning drum.

Notice: the strap may be inserted into the tool in the best possible way if the tensioning drum has been brought into the position shown.



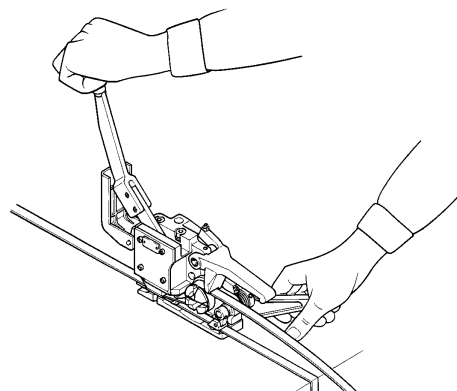
Tensioning of the plastic strap

By operating the tension handle, the strap is tensioned to the desired amount of tension.



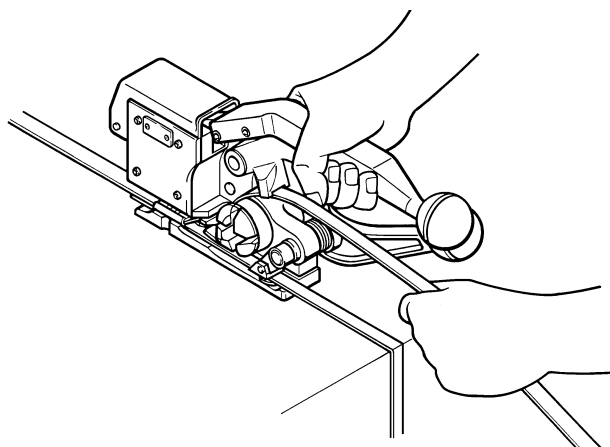
Sealing the strapping

The seal is closed by a forward movement to the stop of the sealing lever.



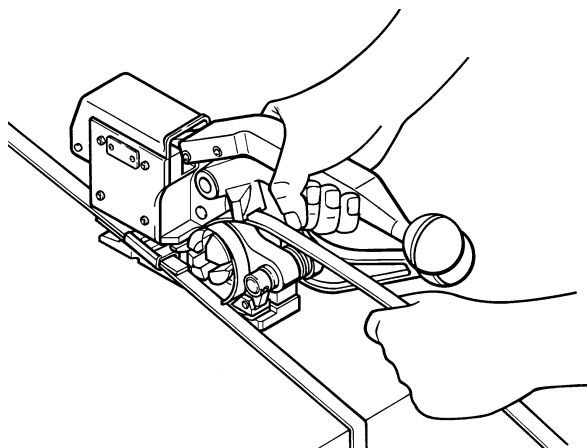
Cutting off the plastic strap

By raising the lifting handle the gripper is released and the plastic strap is cut off.



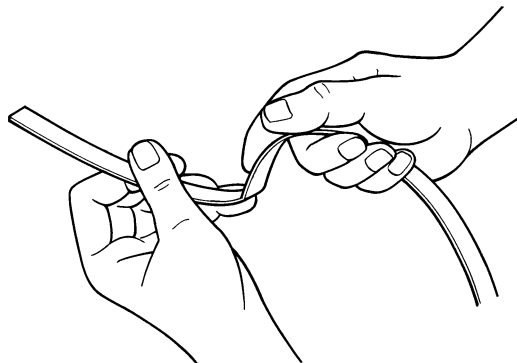
Removing the tool

Remove the tool from the strap to the right with the lifting handle in a raised position.



Straightening the plastic strap

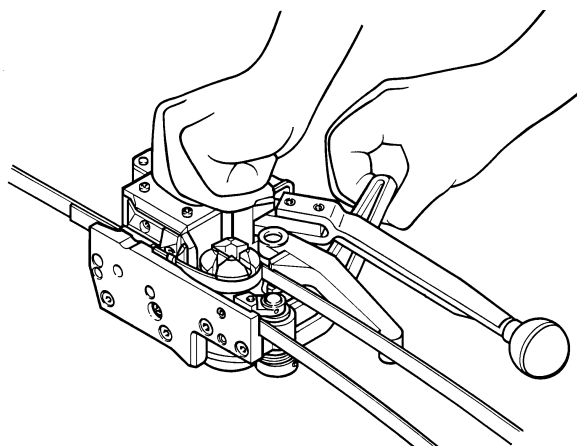
Remove the strap from the tensioning drum and straighten the strap bent by the winding of the tensioning drum.

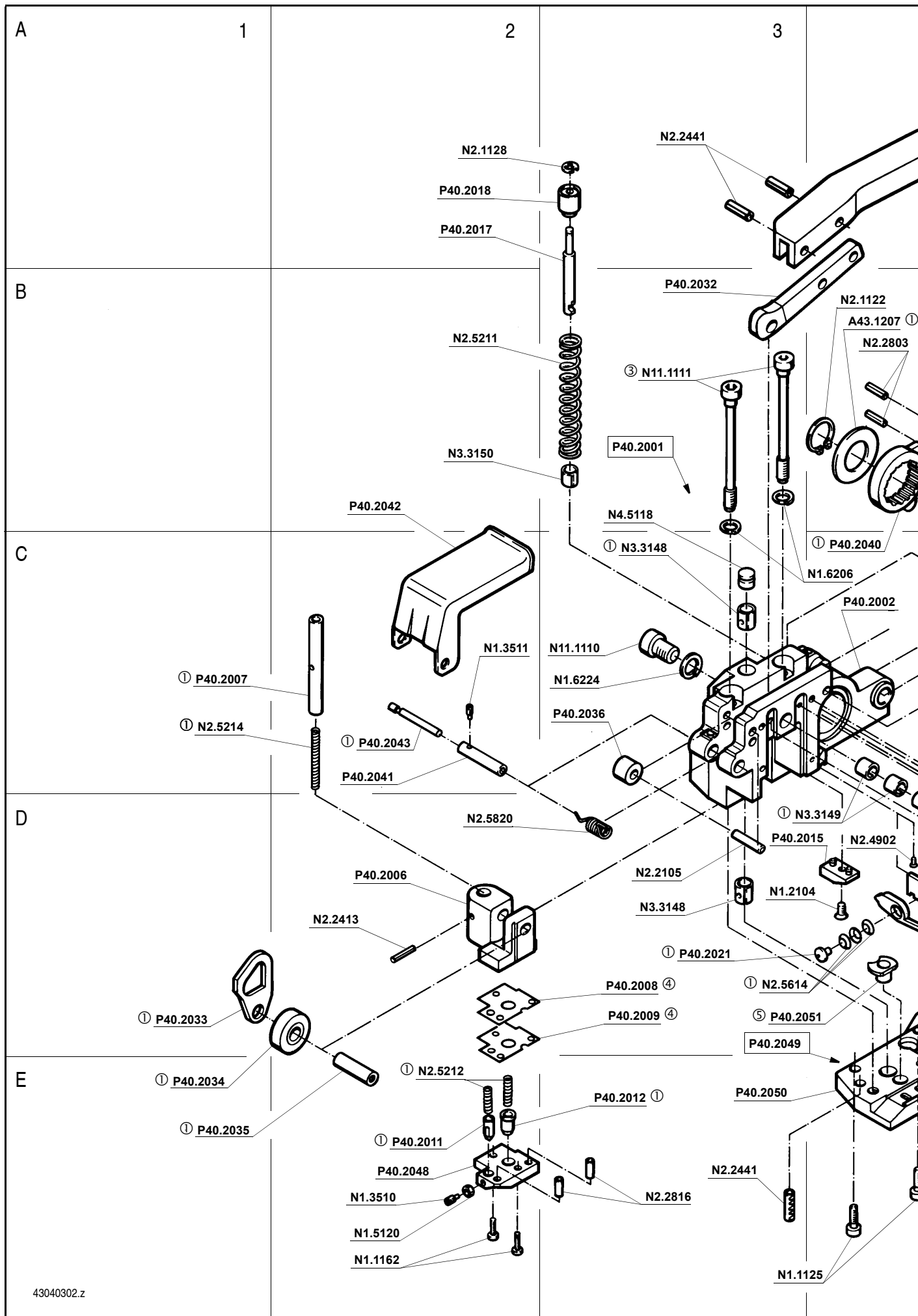


Operation of the tool with a horizontal handle

Upon request the tool can be provided with a horizontal handle P40.2046 consisting of a plug P40.2047 and the grip ball N4.1118.

After the removal of the protection plug N4.5120 the horizontal handle can be screwed into the body.



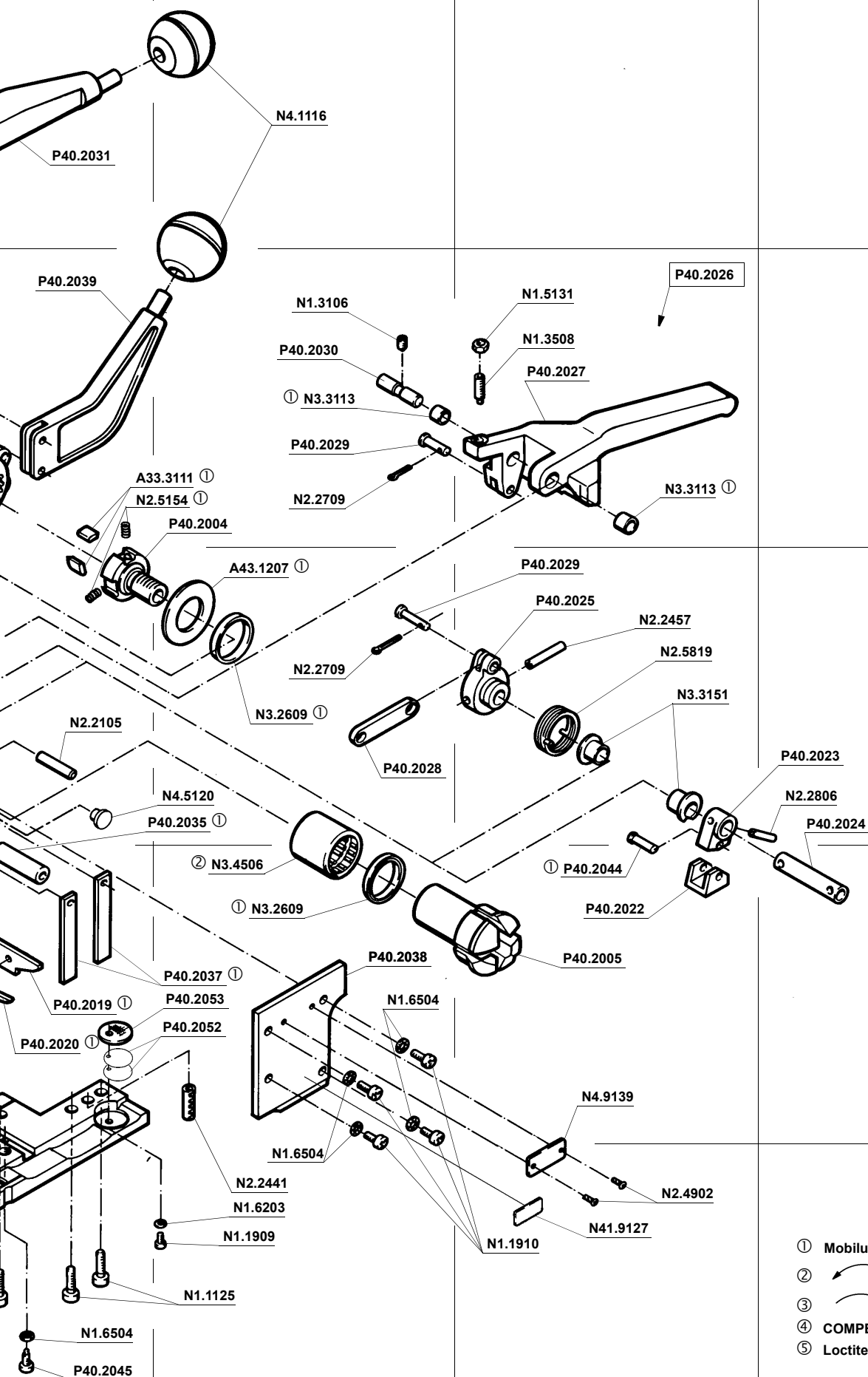


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6 SPARE PARTS LIST 43.0403.02

43.0403.02	P403/11-13/0.40-0.90			P403.0001.02		12.01.00
Item-No.		in group	Pcs.	description	Dimension	Field
A33.3111			2	CATCH PAWL		B4
A43.1207			2	DISK		B4+
N11.1110			1	SCREW	M12 X 16	C3
N11.1111			2	SCREW	M8 X 90	B3
N1.1125			4	SCREW	M6 X 16	E4
N1.1162			2	SCREW	M3 X 12	E2
N1.1909			1	FLAT HEAD SCREW	M3 X 5	E5
N1.1910			4	FLAT HEAD SCREW	M4 X 12	E6
N1.2104			1	COUNTERSUNK SCREW	M4 X 12	D3
N1.3106			1	SOCKET SET SCREW	M5 X 6	B5
N1.3508			1	SOCKET SET SCREW	M5 X 20	B6
N1.3510			1	SOCKET SET SCREW	M3 X 5	E2
N1.3511			1	SOCKET SET SCREW	M4 X 10	C2
N1.5120			1	HEXAGON NUT	M3	E2
N1.5131			1	HEXAGON NUT	M5	B6
N1.6203			1	SPRING LOCK WASHER	M3	E5
N1.6206			2	SPRING LOCK WASHER	M8	C4
N1.6224			1	SPRING LOCK WASHER	M12	C3
N1.6504			5	SAFETY WASHER	M4	D5+
N2.1122			1	SECURITY RING	E21	B4
N2.1128			1	SECURITY RING	E4	A2
N2.2105			2	PARALLEL PIN	6 m6 X 30	C4+
N2.2413			1	DOWEL PIN	4 X 20 MM	D2
N2.2441			4	DOWEL PIN	6 X 20 MM	A3+
N2.2457			1	DOWEL PIN	5 X 28	C6
N2.2709			2	SPLIT PIN	1,6 X 10 MM	B5+
N2.2803			2	DOWEL PIN	6 X 14 MM	B4
N2.2806			1	DOWEL PIN	5 X 16 MM	C7
N2.2816			2	DOWEL PIN	4 X 10 MM	E3
N2.4902			3	HAMMER HEAD BOLT	1.85 X 4.76	D4+
N2.5154			2	PRESSURE SPRING	0.45 X 3.9 X 7	B5
N2.5211			1	PRESSURE SPRING	1,2X13X92,7/17.5	B2
N2.5212			2	PRESSURE SPRING	0,4X3,6X18,3/14.5	E2
N2.5214			1	PRESSURE SPRING	0,5X4,5X71/34,5	C1
N2.5614			3	CUP SPRING	10X4,2X0,6	D3
N2.5819			1	TORSION SPRING	2,2/22,8	C6
N2.5820			1	TORSION SPRING	1 / 9	D2
N3.2609			2	PACKING RING		C5+
N3.3113		P40.2026	2	SLIDE-BEARING		B5+
N3.3148		P40.2001	1	SLIDE-BEARING		C3
N3.3148		P40.2049	1	SLIDE-BEARING		D3
N3.3149		P40.2001	2	SLIDE-BEARING		D4
N3.3150		P40.2001	1	SLIDE-BEARING		B2
N3.3151		P40.2001	2	HEADED PRESS FIT BUSH		C6
N3.4506			1	NEEDLE FREE WHEELING		D5
N41.9127			1	ADHESIVE LABEL		E6
N4.1116			2	GRIP BALL		A5
N4.5118			1	SEALING PLUG		B3
N4.5120			1	PROTECTION PLUG		C5
N4.9139			1	LABEL	<<P403>>	D6
[P40.2001]			1	HOUSING		B3

[] = Group

* = Wearing Parts

43.0403.02	P403/11-13/0.40-0.90			P403.0001.02		12.01.00
Item-No.		in group	Pcs.	description	Dimension	Field
[P40.2002]		P40.2001	1	HOUSING		C4
P40.2004			1	TENSION SHAFT		B5
P40.2005			1	TENSIONIG DRUM		D6
P40.2006			1	PUNCH SUPPORT		D2
P40.2007			1	PILLAR		C1
P40.2008			1	SHIM	0,2 MM	D3
P40.2009			1	SHIM	0,3 MM	D3
P40.2011			1	PAWL		E2
P40.2012			1	HOLDING-DOWN CLAMP		E3
P40.2015			1	STOP		D3
P40.2017			1	ROD BAR		A2
P40.2018			1	BUSH		A2
P40.2019	*		1	SHEAR BLADE		D4
P40.2020	*		1	SHEAR BLADE		D4
P40.2021			1	BOLT		D3
P40.2022	*		1	GRIPPING JAW		D6
P40.2023			1	CLAMPING LEVER		C7
P40.2024			1	SHAFT		C7
P40.2025			1	LEVER		C6
[P40.2026]			1	ROCKER		B6
P40.2027		P40.2026	1	ROCKER		B6
P40.2028			1	HINGE		C5
P40.2029			2	SPLIT-PIN BOLT		B5+
P40.2030			1	SHAFT		B5
P40.2031			1	SEALING HANDLE		A4
P40.2032			1	SEALING CAM		B3
P40.2033			1	EYE		D1
P40.2034			1	PRESSURE ROLLER		E1
P40.2035			2	SHAFT		E1+
P40.2036			1	STOP		C3
P40.2037			2	GUIDE GIB		D5
P40.2038			1	SIDE PLATE		D5
P40.2039			1	TENSION HANDLE		B4
P40.2040			1	DRIVER		C4
P40.2041			1	DOWEL		C2
P40.2042			1	COVER		B2
P40.2043			1	SHAFT		C2
P40.2044			1	GRIPPING JAW PIN		D6
P40.2045			1	SCREW		E4
P40.2048	*		1	PUNCH		E2
[P40.2049]			1	BASE PLATE		D3
P40.2050		P40.2049	1	BASE PLATE		E3
P40.2051		P40.2049	1	GUIDE BUSH		D3
P40.2052			2	LINER		D5
P40.2053	*		1	GRIPPER		D5

[] = Group

* = Wearing Parts

7 EXCHANGE OF WEARING PARTS

7.1 Exchange of the cutter

Disassembly

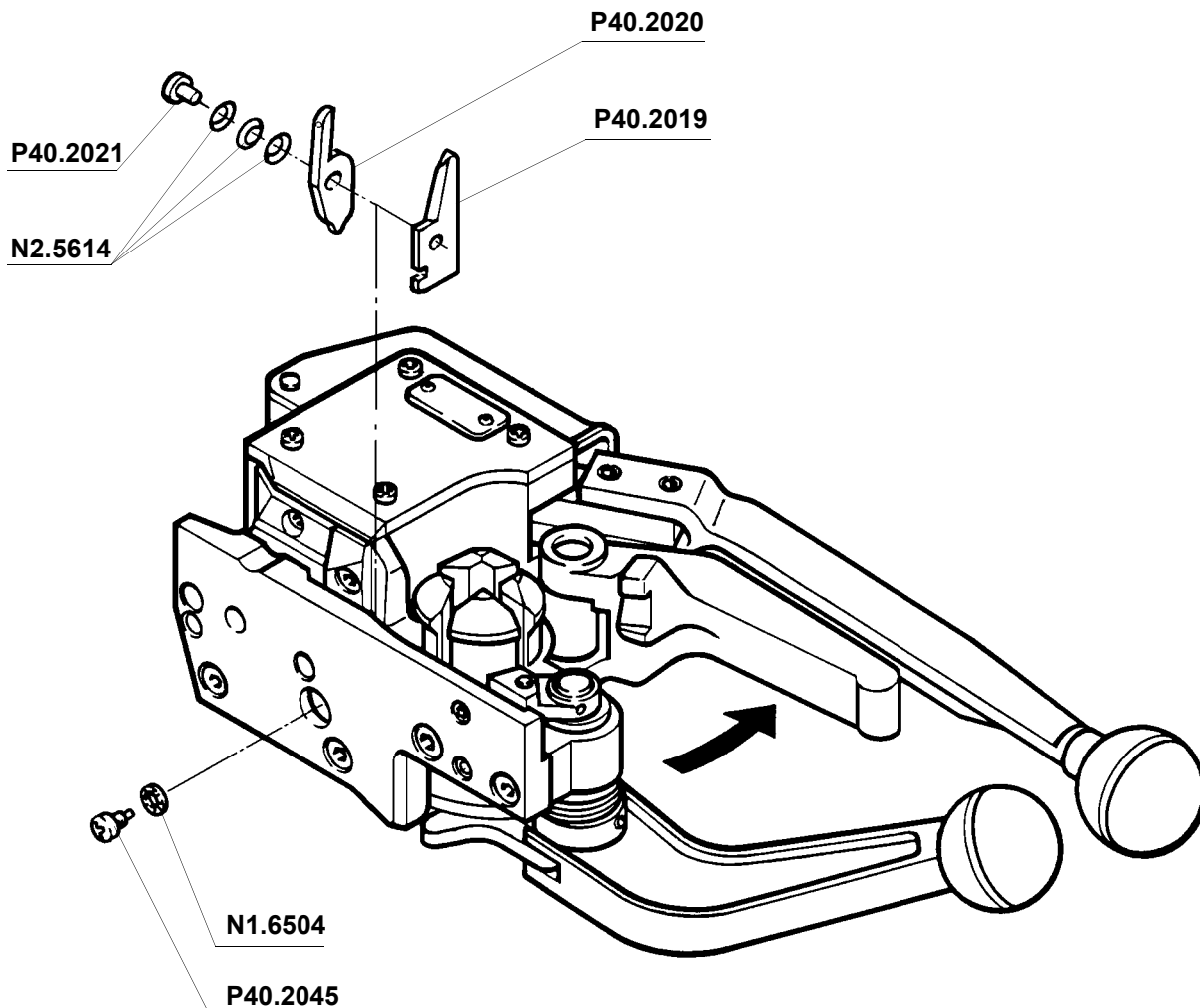
- Remove screw with pivot P40.2045 including safety disk N1.6504.
- The lower cutter P40.2020 is lifted against the sealing lever by operating the lifting handle.
- Insert a screw driver into the boring of the lower side of the cutter.
- Lift out the cutters complete with bolt P40.2021 and the cup springs N2.5614 from the support.

Assembly

- Assemble the individual components (cutting edges closed).
- Press the lifting handle against the sealing lever.
- Insert the cutter into the support until it hits the stop.
The cutters are correctly positioned if the lower cutter can be moved up and down by lifting and lowering the lifting handle and the screw with pivot can be screwed into the groove of the cutter P40.2019.

Adjustment of the cutter

- Press the lifting handle against the sealing lever.
The blades of the cutters should now overlap by 1 to 2 mm (.040" to .080").
- The adjustment is made by the set screw N1.3508 and the counter nut N1.5131 in the lifting handle.

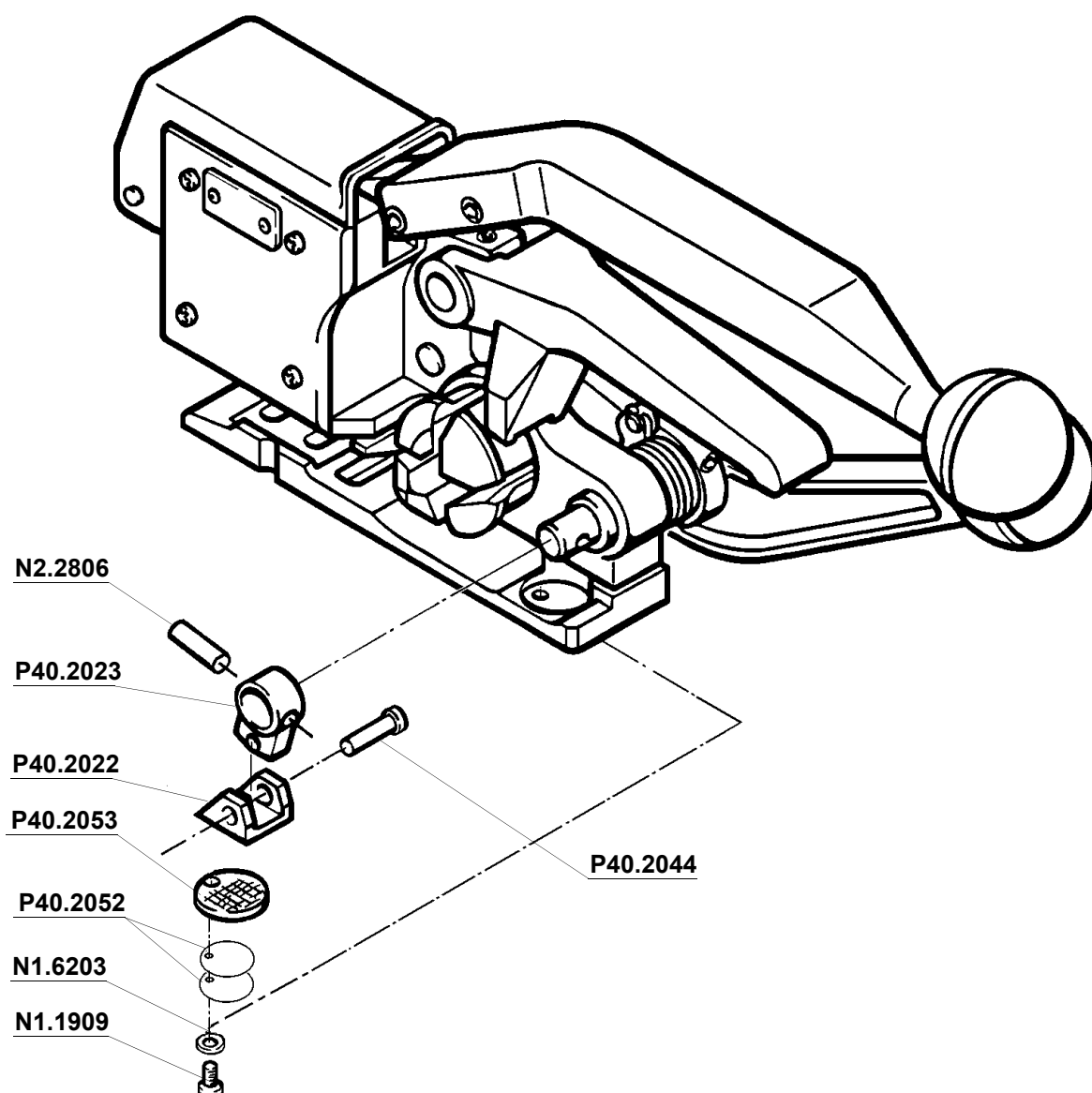


7.2 Exchange of gripper and gripping jaw

- Drive out the spirally rolled pin N2.2806 using a split pin driver.
- Remove the clamping lever P40.2023 with the pin P40.2044 and the gripping jaw P40.2022.
- Screw off and exchange the gripper P40.2053.
- Reassemble in the opposite order.

*Depending on the strap thickness 2, 1 or no shim P40.2052 must be assembled under the gripping jaw.
See 4. adjustment of the strap thickness.

Assembly in opposite direction.



8 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.

9 APPROPRIATE USE

The tool model P403 has been designed to strap packages with plastic strapping exclusively. For the use in hazardous areas the tool is not suitable.

The warranty / liability excludes:

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