

SN-10

**Air/ Hydraulic
Rivet Nut Tool**

1. APPLICATION

RIVET NUTS		
aluminium	steel	stainless steel
M5	M5	M5
M6	M6	M6
M8	M8	M8
M10	M10	M10
M12	M12	M12

2. SPECIFICATIONS

Weight	2.45 kg
Length	313 mm
Height	276 mm
Stroke	max. 9 mm
Air consumption per stroke	max. 2.7 litres
Operating pressure	5 - 7 bar
Traction power at 6 bar	29800N
Nose holder dia. x L	25 x 75 mm

3. STANDARD EQUIPMENT

- nose pieces:
- mandrels for rivet nuts :
- one bottle hydraulic oil
- one bottle lubricating oil
- one filling syringe

M5 - M6 - M8 - M10 - M12
M5 - M6 - M8 - M10 - M12

PACKAGE



4 SAFETY INSTRUCTIONS

Anyone who operates or maintains the SN-10 riveter must first read this User Manual carefully, paying extra attention to the instructions below.

Never dismantle the tool without first having thoroughly studied the instructions given in this User Manual and applying them.

- Always use the tool in accordance with the specified safety instructions.
- Direct any queries regarding optimal and safe operation or use of the tool to seller.
- The safety instructions must be made clear to all persons involved.
- Never connect the tool to any medium other than compressed air.
- Hold the air hose firmly when disengaging to prevent it from hurtling to and fro due to the escaping air.
- Use the tool only for the installation of blind rivet nuts/bolts. The tool must never be used for giving blows or impacting or as a hammer.
- Do not make any modification(s)/change(s). Any modifications to the tool or (supplied) parts and their consequences are completely outside the liability of
- The tool must be constantly maintained and examined/inspected at regular intervals.
- Maintenance shall be performed by staff trained for that purpose. Do not perform any maintenance before reading this User Manual.
- Always use the tool in accordance with the specified safety instructions.
- The safety instructions must be made clear to all persons involved.
- Always shut off the air supply before replacing the mandrel/adaptor or nose piece.
- Always disconnect the tool from the air supply before carrying out repairs or maintenance. Disconnect the tool in case of failure before investigating the reason.
- Never aim the tool at any person or object other than the material to be riveted.
- Adopt a stable position and location before operating the tool.
- The air discharge openings (at the bottom and back) must never be covered or blocked. Ensure that air hoses are in good condition and can withstand a minimum compressed air pressure of 10 bar.
- Never exceed the maximum air pressure of 7 bar.
- Always wear eye protection when using the riveter. Eye protection must be worn not only by the user but also by everyone at the working place.
- Prevent excessive contact with hydraulic oil which could produce a rash.
- To prevent accidental operation the trigger must never be touched when the tool is being relocated.
- Ensure that loose garments, ties, long hair, rags, etc. cannot be caught by the moving parts of the tool.
- Hearing protection is advised.

5 INITIAL START-UP

The tool must be connected to an air filter-/separator unit; this unit filters the compressed air to separate dirt and condensate.

A pressure regulator with a preferred setting of 6 bar (min. 5 bar, max. 7 bar) must be installed if the operating pressure of the compressed air exceeds (or might exceed) 7 bar.

Use dry and clean materials (hoses, couplings, fittings, etc.) to connect the tool to the filter/separator unit.

Check whether any leakage occurs anywhere in the compressed air supply. If so, replace the damaged hoses or coupling.

Check the compressed air supply pressure to the tool; this may be max. 7 bar.

Drain the condensate from the filter/separator unit. Also check the dirt filter.

The riveter is supplied ready for use. The tool need not be filled with oil prior to initial start-up.

6 DESCRIPTION OF THE SN-10

The following can be found at the bottom of the tool:

-Compressed air supply hose (0.5 m length, 6 mm ID), with union coupling (item 56, see fig. 6.1).

-Pressure relief valve (item 48) acting as safety valve to prevent overloading of the tool. The valve opens if the compressed air pressure exceeds 7 bar.

You can see the pressure with the green indicator (item 48a)

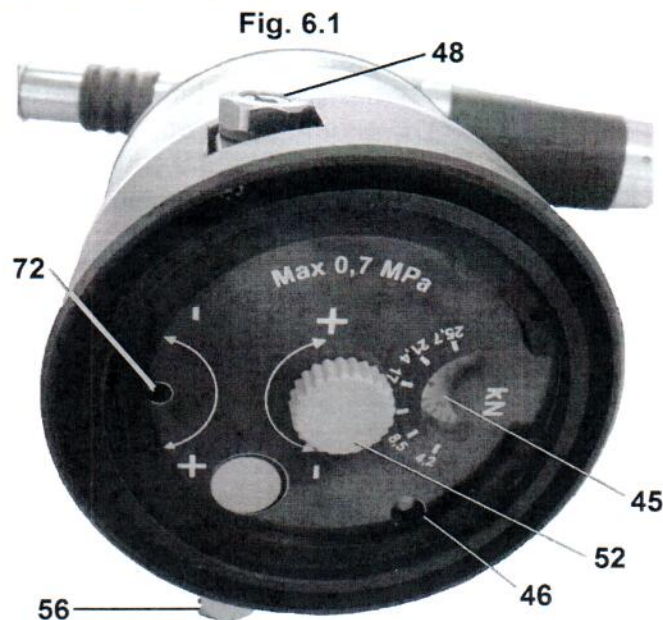
It is possible to fit the supply hose to the other side (at the location of the pressure relief valve). The pressure relief valve is then relocated to the supply hose connection.

-Set pressure regulation screw (item 52).

-Pressure indicator (item 45).

-Oil level indicator (item 46).

-Needle valve for time of return (item 72).



6.1 OPERATION

Fit the correct threaded mandrel/adaptor (item 1, please see drawing) and nose piece (item 2) to the tool (see section 6.2 for threaded mandrel/adaptor or nose piece replacement). Set the nose piece. The nose piece is correctly set if the mandrel protrudes by one thread from the back of the nut (see section 6.2, item 7 for setting the nose piece). Connect the tool to the compressed air supply using the quick-action coupling. Ensure that the filter/separator unit is set at an operating pressure between 5 and 7 bar. Set the correct pressure. The pressure can be adjusted by the pressure regulation screw (item 52) at the bottom of the tool (see section 6.3 for setting the pressure).

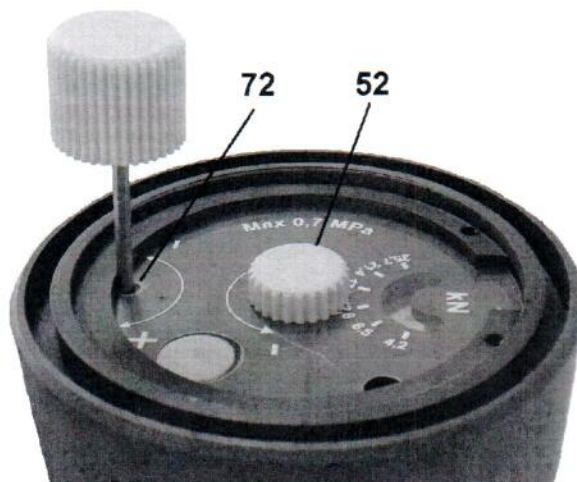
The SN-10 is provided with a fully automatic air motor for screwing nuts/bolts on and off. First screw the nut/bolt one turn on the mandrel/adaptor. By pushing the nut/bolt straight against the mandrel/adaptor (see Fig. 6.1.1), the mandrel/adaptor will start to rotate in clockwise direction to screw the nut/bolt on. Ensure that the collar of the nut/bolt is facing towards the nose piece. The rotation stops automatically when the nut/bolt hits the nose piece. Place the nut/bolt in the material. Be sure to use the correct hole size (consult the catalogue for the hole sizes to be used). The following rule of thumb applies: the hole size in the material is 0.1 mm larger than the outside diameter of the nut/bolt. The nut/bolt is installed by operating the trigger. The mandrel/adaptor automatically rotates anti-clockwise and comes off the nut/bolt when the trigger is released. The next nut/bolt can now be placed on the tool.

The time of anti-clockwise rotation can be set by turning the adjustment screw (item 72, see Fig. 6.1.2). By turning the screw clockwise the time of rotation is enlarged. By pushing the push button (item 34), extra anti-clockwise rotation is possible.

Fig. 6.1.1



Fig. 6.1.2



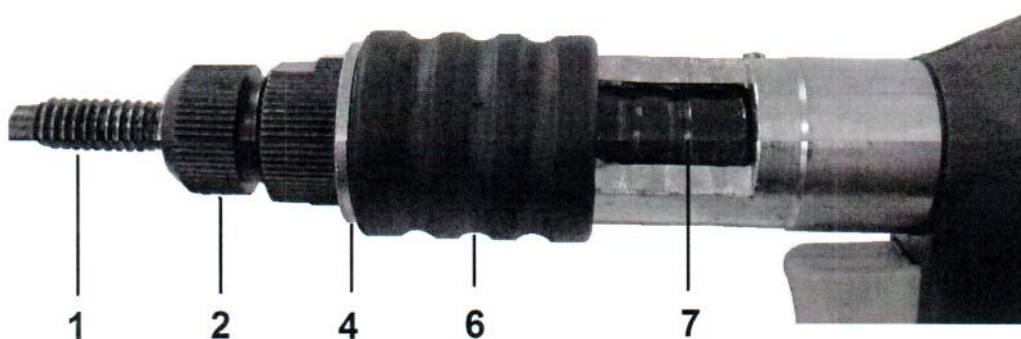
6.2 THREADED MANDREL, ADAPTER AND NOSE REPLACEMENT

1. Disconnect the tool from the compressed air supply.
2. Unscrew the lock nut of the nose piece (item 2) from the nose piece holder (item 4)
3. Screw the nose piece with the lock nut right out of the nose piece holder. The lock nut remains on the nose piece.
4. Push the protective sleeve (item 6) forward.
5. Push the security part (item 7) backwards.
6. In this position, release the mandrel/adapter by turning it anti-clockwise.
7. In this position, screw the selected mandrel/adapter until it stops by turning clockwise. You have the correct mandrel/adapter if its thread corresponds to that of the nut/bolt.
8. Release the security part (item 7) and ensure that the retaining device covers the hexagon of the mandrel/adapter well.
9. Push the protective sleeve (item 6) backwards and secure it.
10. Screw the relevant nose piece with the lock nut into the nose piece holder. You have the correct nose piece if it fits tightly round the thread of the mandrel or bolt.
11. Adjusting the nose piece (item 2).
 - A For nuts.

Screw a nut up to its collar against the nose piece on the mandrel and adjust the nose piece. The nose piece is set properly if the thread of the mandrel protrudes 1 thread from the back of the nut screwed on the mandrel. Retain the nose piece and lock it with the lock nut.
 - B For bolts.

Connect the tool to the compressed air supply. Screw the nose piece against the adapter. The air motor should not start running (if it does, unscrew the nose piece until it stops). Now unscrew the nose piece by another 1½ turns. Disconnect the tool from the compressed air supply. Retain the nose piece and lock it with the lock nut.
12. Replacement of the mandrel/adapter with nose piece is now completed. Then the riveter must be set at the correct pressure belonging to the nut/bolt and the clamping capacity (see section 6.3 setting the pressure).

Fig. 6.2



6.3 SETTING THE PRESSURE

The pressure can be adjusted by the pressure regulation screw (item 52 see Fig. 6.3.1) at the bottom of the tool. The tool is set at its minimum pressure when it leaves the factory.

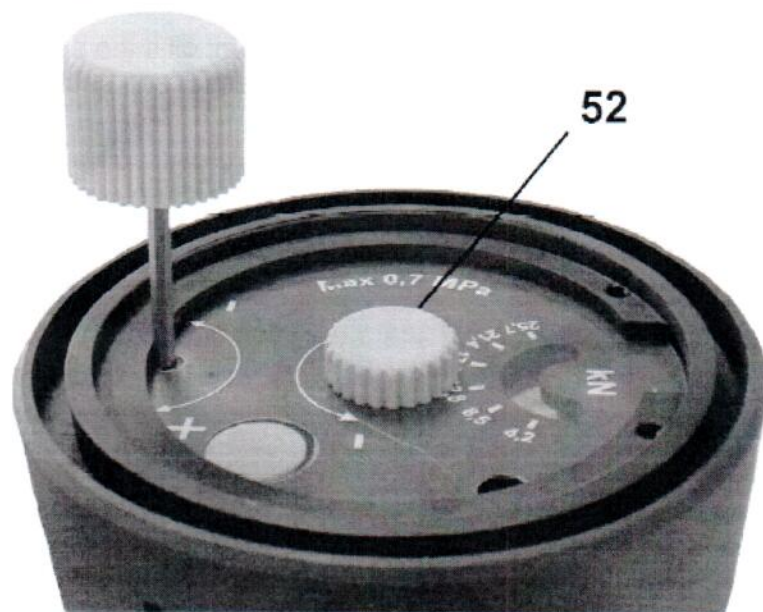
Turn the set screw clockwise to increase the pressure. Turn the set screw anti-clockwise to reduce the pressure. When reducing the pressure, always operate the trigger to let the pressure release.

The set pressure can be read from the pressure indication (see Fig. 6.3.1).

For adjusting the pressure belonging to the nut/bolt:

- first adjust to the minimum pressure and then slowly increase;
- place a nut/bolt on the mandrel/adaptor;
- operate the trigger and increase the pressure by turning the pressure regulation screw (item 52) clockwise until the nut/bolt deforms.

Fig. 6.3.1



If problems should occur with the setting of the pressure, disconnect the tool from the compressed air supply, to release the tool from the pressure.

TESTING THE PRESSURE

Checking the pressure setting in a field test is recommended. A number of blind riveting nuts or bolts are installed into the original material or a test plate for this purpose. This test plate must have the same thickness and hole diameter; also ensure that the test plate and the work piece are made of the same material.

7 MAINTENANCE OF THE SN-10

7.1 DAILY MAINTENANCE

- Check the mandrel/adaptor for damage. The threads must not be damaged.
- Check the pressure setting (see section 6.3 for setting the pressure).
- Check if there is any leakage in the compressed air supply. If yes, replace the damaged hoses or couplings.
- Check the compressed air supply pressure; this may be max. 7 bar.
- Drain the condensate from the filter/separator unit. Also check the dirt filter.

7.2 WEEKLY MAINTENANCE

- Check the oil level. There may be insufficient oil if the stroke of the tool is insufficient for correct fitting of the nut/bolt. Add oil in that case (see section 7.4 adding oil).

7.3 OVERHAUL

Overhaul shall be performed after every 300,000 rivet nuts/bolts or once every 3 years. The tool is then completely dismantled and all seals and worn parts are replaced.

7.4 ADDING OIL

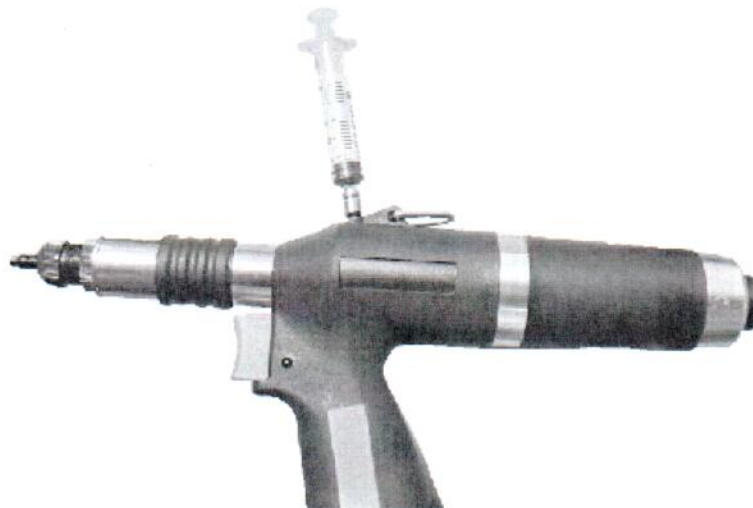
There may be insufficient oil if the stroke of the tool is too small for proper installation of nuts/bolts.

(First check whether the stroke setting is correct; see section 6.3 for setting the stroke).

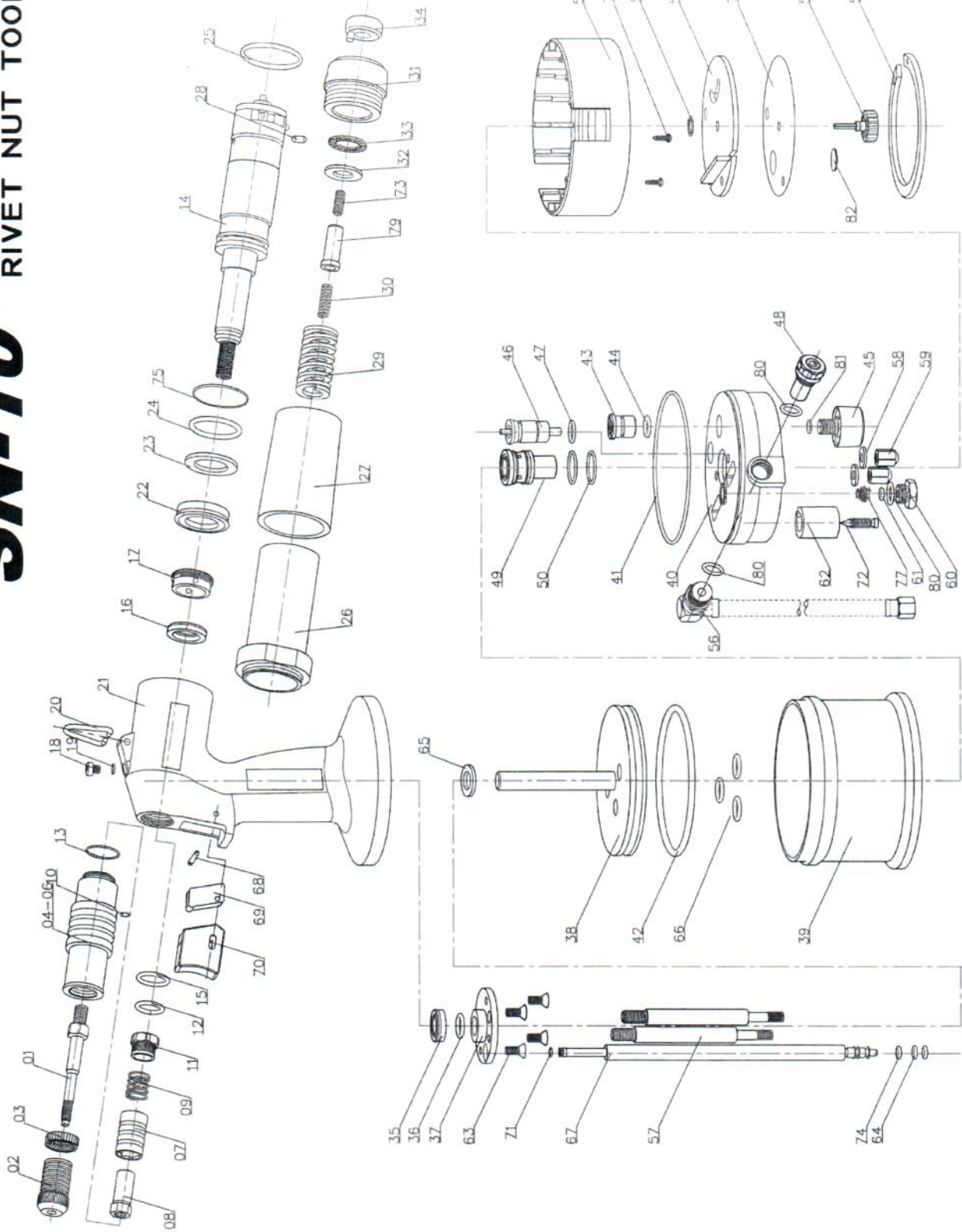
The oil level indicator (item 46) shows whether loss of oil has occurred. The tool has lost oil if the oil level indicator pin no longer protrudes.

Proceed as follows to add oil:

1. Keep the tool upright during all operations.
Disconnect the tool from the air supply.
2. Unscrew the M5 cap screw (item 18) from the body (item 21) using the size 3 mm Allen key. Check whether the O-ring (item 19) remains in the hole.
3. Fill the (supplied) syringe with hydraulic oil (a bottle is also supplied with the tool).
4. Screw the filled syringe up to the O-ring in the hole. Then slowly inject the oil into the tool (ensure no air is injected). Adequate oil has been added as soon as resistance is sensed. The tool now has its optimal stroke again. The excess oil will flow back when the syringe is released if more oil is added than necessary.
5. Unscrew and remove the syringe from the body. Check whether the O-ring remains in the hole.
6. Screw the M5 cap screw into the hole using the size 3 mm Allen key.
7. Wipe off the excess oil.



SN-10 HYDRO-PNEUMATIC RIVET NUT TOOL



LI#	PART NO.	DESCRIPTION	Qty (pcs) Required	LI#	PART NO.	DESCRIPTION	Qty (pcs) Required	LI#	PART NO.	DESCRIPTION	Qty (pcs) Required
01	SN-10-01	Mandrel	5	36	SN-10-36	O-RING	1	70	SN-10-70	TRIGGER	1
02	SN-10-02	Nosepiece	5	37	SN-10-37	BOTTOM RING	1	71	SN-10-71	O-RING	1
03	SN-10-03L	Large SET NUT for M8/M10/M12	1	38	SN-10-38	PNEUMATIC PLUNGER	1	72	SN-10-72	NEEDLE VALVE FOR TIME OF RETURN	1
03	SN-10-03S	Small SET NUT for M5/M6	1	39	SN-10-39	PNEUMATIC CYLINDER	1	73	SN-10-73	CAP SCREW	1
04-06	SN-10-04, 05 & 06	FRONT SLEEVE COMPLETE	1	40	SN-10-40	COVER RING	1	74	SN-10-74	O-RING	1
07	SN-10-07	SECURITY PART	1	41	SN-10-41	O-RING	1	75	SN-10-75	O-RING	1
08	SN-10-08	SPRING HOLDER	1	42	SN-10-42	O-RING	1	76	SN-10-76	PLASTIC BOARD	1
09	SN-10-09	SPRING	1	43	SN-10-43	COUPLING FOR PRESSURE GAUGE	1	77	SN-10-77	COMPRESSION SPRING	1
10	SN-10-10	PIN CYLINDRICAL	1	44	SN-10-44	O-RING	1	78	SN-10-78	TAPPING SCREW	2
11	SN-10-11	LOCK NUT	1	45	SN-10-45	PESSURE INDICATOR	1	79	SN-10-79	ADJUSTING PUSHER	1
12	SN-10-12	O-RING	1	46	SN-10-46	OIL LEVEL INDICATOR	1	80	SN-10-80	O-RING	3
13	SN-10-13	O-RING	1	47	SN-10-47	O-RING	1	81	SN-10-81	O-RING	1
14	SN-10-14	HYDRAULIC PLUNGER COMPLETE	1	48	SN-10-48	PRESSURE RELIEF VALVE	1				
15	SN-10-15	O-RING	1	49	SN-10-49	PRESSURE REGULATION VALVE	1				
16	SN-10-16	LIP SEAL	1	50	SN-10-50	O-RING	2				
17	SN-10-17	BUFFER RING	1	51	SN-10-51	RETAINING RING	1				
18	SN-10-18	CAP SCREW	1	52	SN-10-52	PRESSURE REGULATION SCREW	1				
19	SN-10-19	O-RING	1	53	SN-10-53	COVERING	1				
20	SN-10-20	HANGER	1	54	SN-10-54	RETAINING RING	1				
21	SN-10-21	HYDRAULIC BODY	1	55	SN-10-55	BOTTOM RING	1				
22	SN-10-22	LIP SEAL	1	56	SN-10-56	UNION COUPLING	1				
23	SN-10-23	GUIDE RING	1	57	SN-10-57	CONNECTING BOLT	2				
24	SN-10-24	O-RING	1	58	SN-10-58	COPPER WASHER FOR CONNECTING BOLT	2				
25	SN-10-25	O-RING	1	59	SN-10-59	CAP NUT FOR CONNECTING BOLT	2				
26	SN-10-26	SLEEVE	1	60	SN-10-60	BOLT BELOW VALVE PIN	1				
27	SN-10-27	PROTECTIVE SLEEVE	1	61	SN-10-61	O-RING	1				
28	SN-10-28	PIN CYLINDRICAL	1	62	SN-10-62	SLEEVE FOR NEEDLE VALVE	1				
29	SN-10-29	COMPRESSION SPRING	1	63	SN-10-63	MUFFLER	4				
30	SN-10-30	COMPRESSION SPRING	1	64	SN-10-64	O-RING	2				
31	SN-10-31	REAR SCREWED JOINT	1	65	SN-10-65	ADJUSTING RING	1				
32	SN-10-32	RING FOR COMPRESSION SPRING	1	66	SN-10-66	O-RING	3				
33	SN-10-33	MUFFLER	1	67	SN-10-67	VALVE PIN	1				
34	SN-10-34	PUSH BUTTON	1	68	SN-10-68	PIN CYLINDRICAL	1				
35	SN-10-35	LIP SEAL	1	69	SN-10-69	ECCENTRIC TRIGGER	1				

SN-10 HYDRO-PNEUMATIC RIVET NUT TOOL