



**Pneumatic, hydraulic
universal riveting tool
PNP 90 SNW XT2**

Instruction manual



WZS-TKR-00000180

Translation of the original instructions

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1.1 Information regarding this manual

Information

Legislation stipulates that workers handling hydraulically-driven riveting tools must be trained in their use.

State-of-the-art

This riveting tool represents state-of-the-art technology. To ensure the functionality of the equipment, it must be operated in a proper and safe manner.

Technical modifications

In the interests of quality assurance, we reserve the unrestricted right to proceed to technical modifications arising out of further developments in technology and product improvements, without prior notification.

Read instruction manual

Read the instruction manual carefully before using the riveting tool.

Handling

All handling necessary to ensure correct operation is described in the instruction manual. No work method other than that expressly approved by the manufacturer may be used.

















Faults

In the event of a fault, the user or owner may only carry out repair work for faults for which the relevant maintenance process is laid out in the instruction manual.

1.2 Explanation of symbols

In this instruction manual, some sections use internationally known warning symbols, warning notes and general instructional symbols.

The individual symbols are explained below. Follow all instructions and safety rules.

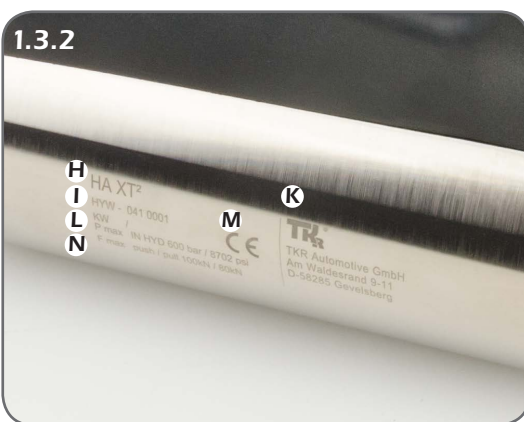
	Instruction manual general instructions		Warning General source of danger		Please note the following!
	Observe general instructions		Warning Hand could become trapped		Arrow to clarify compres- sion
	Wear face mask		Warning Fingers could become trapped		Arrow showing direction
	Wear gloves		Warning Danger of environ- mental contamination		For further information see chapter...
	Set the pressure limiting valve to ...		Warning System under pressure		Audible engaging
	ISO 9001 certification				

1.3 Markings



Pump

- A Symbol to read the Instruction manual
- B Type designation
- C Manufacturer's mark
- D Serial number
- E CE mark
- F Production date
- G Maximum permissible output pressure, oil/ input pressure air



Hydraulic actuator

- H Type designation
- I Serial number
- K Manufacturer's mark
- L Production date
- M CE mark
- N Maximum permissible input pressure, oil
- O Warnings

1.4 Scope of supply and accessories



Scope of delivery – basic kit PNP 90 SNW XT²

- P 1x Riveting tool kit "Riveting"
- Q 1x Pressure booster PNP 90 SNW XT²
- R 1x Riveting tool kit "Punching"
- S 1x Duo-hose package DN4
- T 1x Hydraulic actuator HA XT²
- U 1x Rivet clamp NB 45
- V Owner's Manual
- W 1x Adapter set 60 kN
- X 1x Handle

Optional accessories (not provided as part of the PNP 90 SNW XT² basic kit)



1.5 Safety instructions



The hydraulic tool kit is strictly approved only for the purposes intended by the manufacturer.



Only genuine accessories may be used. There is a high risk to safety if use is made of non-original tools or non-original accessories.



Ensure that only trained and instructed personnel use the equipment!



Use of the equipment by personnel that have not been trained and instructed is prohibited.



Make sure that the instruction manual is made available to operating personnel and that they become well acquainted with it.



Observe the applicable national regulations for the prevention of accidents.



Do not use any hoses or fittings that are not permitted for the equipment's operating pressure of 600 bar.

1.5 Safety instructions



Protective gloves and a face mask must strictly be worn for all applications of the equipment, because metallic parts can break up and fly off with high energy if the tool is faulty or operated incorrectly.



As a result, there is a risk of severe bodily injury! See also ANSI Z87.1-1989.



Never throw the tool or allow it to fall. Never misuse the tool or lend it to untrained personnel.



The tool must only be used in ambient temperatures of above 5°C and up to a maximum of 45°C. The tool must never be used in potentially explosive areas.

1.6 Maintenance instructions



The tool's hydraulic system, pneumatic control systems, hoses and couplings must all be kept free of dirt and other contamination. Foreign bodies in the hydraulic fluid or in the control air will cause the tool system to malfunction.



All maintenance and service work on the pump must only be performed with air disconnected and oil drained.

Normally, pump maintenance only entails a regular oil change (see 2.1 for permissible oils).

→ 5.1 Hydraulic pump maintenance

Interval	Maintenance work
Every 6 months or when necessary	Cleaning of the exterior by the customer
	Check the oil level and top up if necessary
Every 12 months	Changing oil
24 months	Complete servicing by a service partner (recommended)



All other necessary maintenance work and/or repairs must be performed by the manufacturer or properly trained personnel only.



Make sure that used oil is disposed of as required by national environmental legislation.

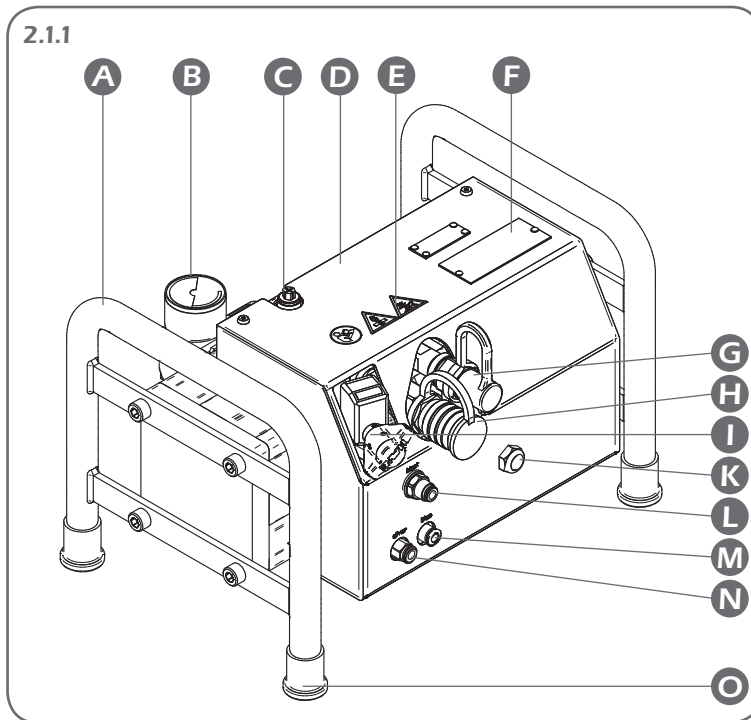
Oil that is not properly disposed of could harm the environment.

The user must only perform the maintenance and repair measures outlined in this instruction manual.

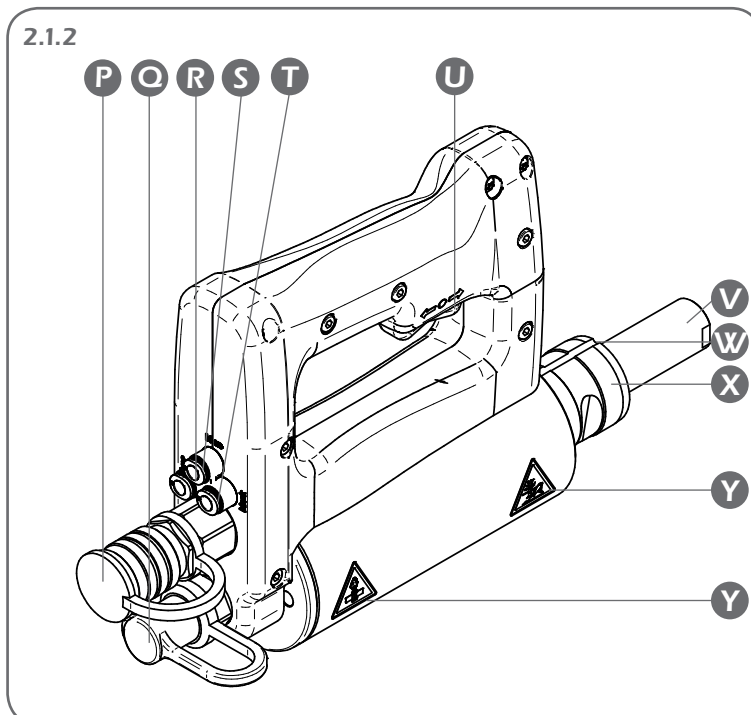


Maintenance and repair work not covered in this instruction manual may only be performed by professionals with proper training by the manufacturer. For further information on servicing and training, please contact us your service partner.

2.1 Equipment components



- A** Frame
- B** Pressure gauge with connection for pneumatic supply
- C** Oil filler plug
- D** Cover
- E** Safety instructions
- F** Type plate
- G** Hydraulic male coupling
- H** Hydraulic coupling
- I** Pressure limiting valve with setting value display and adjuster screw
- K** Exhaust air damper
- L** Black pneumatic connection
- M** Blue pneumatic connection
- N** Silver pneumatic connection
- O** Rubber foot

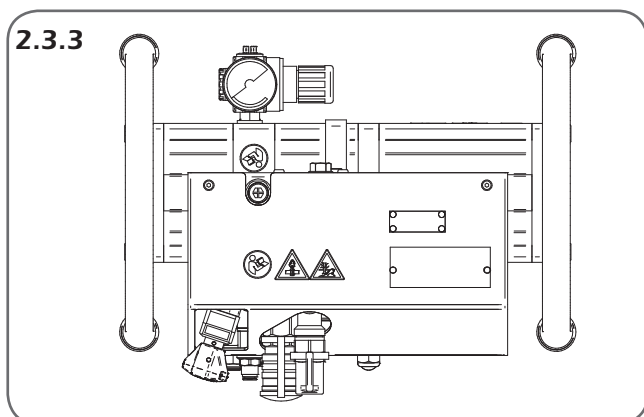
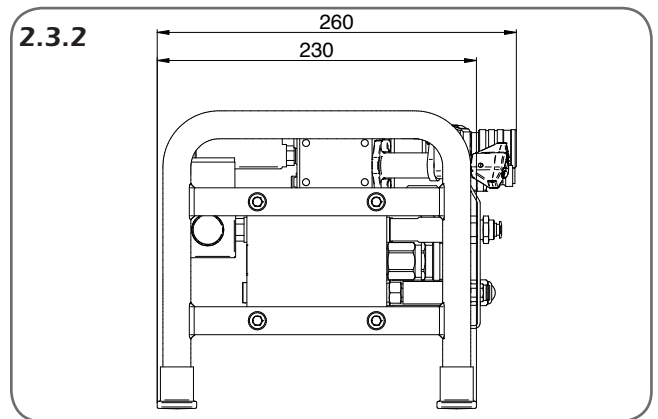
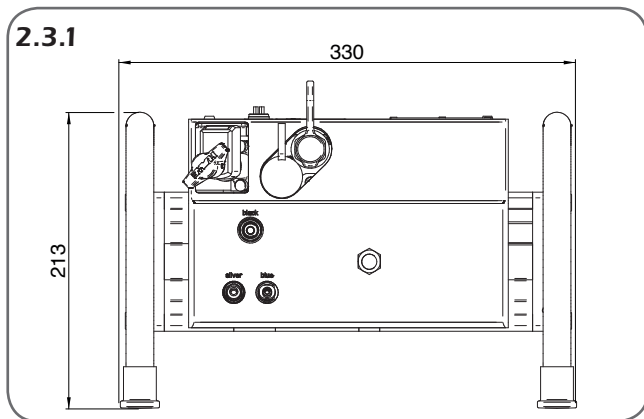


- P** Hydraulic coupling
- Q** Hydraulic male coupling
- R** Silver pneumatic connection
- S** Blue pneumatic connection
- T** Black pneumatic connection
- U** Rocker switch "forward - back"
- V** Hydraulic cylinder
- W** Guide groove
- X** Rivet clamp socket
- Y** Safety instructions

2.2 Technical specifications

Permissible hydraulic oil	Capacity 320 ml HLP-D 68 or HLP-HM 68 Viscosity 68 m ² /s at 40°C
Max. input pressure, pneumatic	6 bar / 87 psi
Max. operating pressure, hydraulic	600 bar
Compressed air	Quality class 2 as per ISO 8573-1
Ambient temperature	5–45 °C / 41 –113 °F
prescribed safety clothing	Protective gloves, face mask (personal protective equipment)
Noise emissions level	LPAI < 75 db(A)
Vibration emissions level	a < 2,5 m/s ²

2.3 Technical data, pump PNP 90 SNW XT²

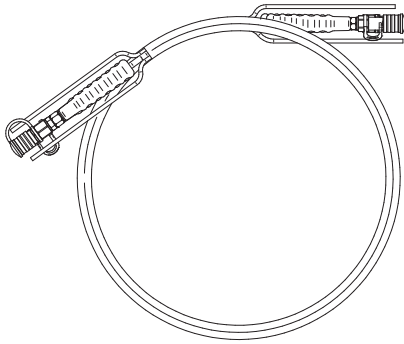


Pump PNP 90 SNW XT²

Length	330 mm
Width	260 mm
Height (incl. handle)	213 mm
Weight	10,6 kg
Max. input pressure pneumatic	6 bar
Max. operating pressure hydraulic	600 bar

2.4 Technical data, hose package

2.4.1

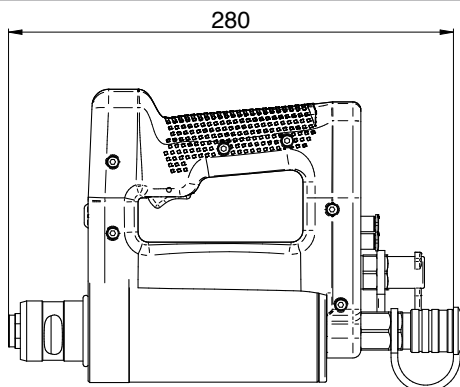


Duo-hose package DN4

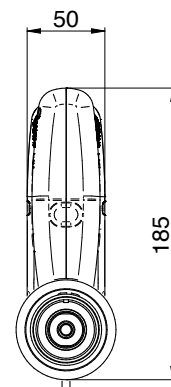
Hose length	3700 mm
Hose Ø	ca. 22 mm
Weight	2,0 kg
Max. operating pressure, hydraulic	700 bar

2.5 Technical data, hydraulic actuator HA-XT²

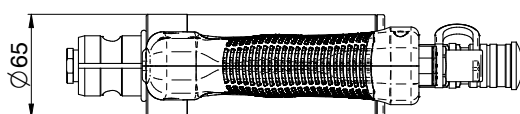
2.5.1



2.5.2



2.5.3

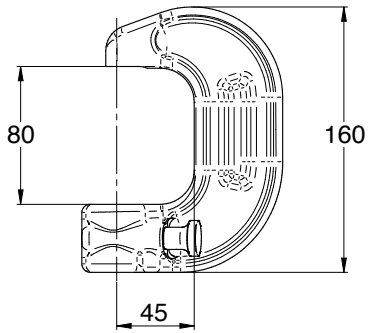


Hydraulic actuator HA XT²

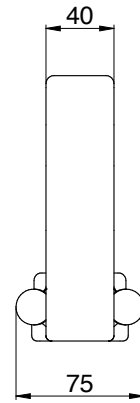
Length	280 mm
Width	65 mm
Height (incl. handle)	185 mm
Weight	4,6 kg
Max. operating pressure, hydraulic	600 bar
Travel	50 mm
Max. setting force, "extend"	100 kN
Max. setting force, "retract"	80 kN

2.6 Technical data, rivet clamp

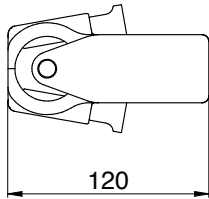
2.6.1



2.6.2



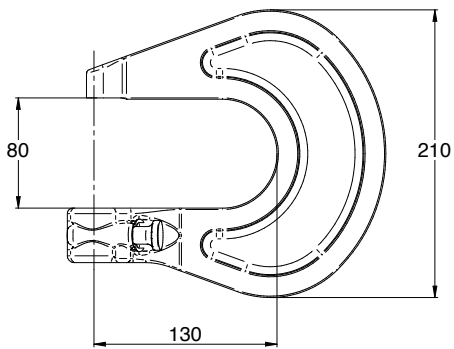
2.6.3



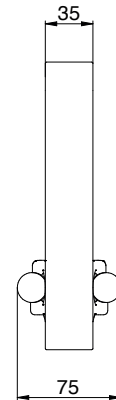
Rivet clamp NB 45 (No. 1)



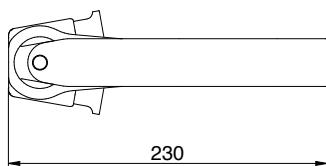
2.6.4



2.6.5

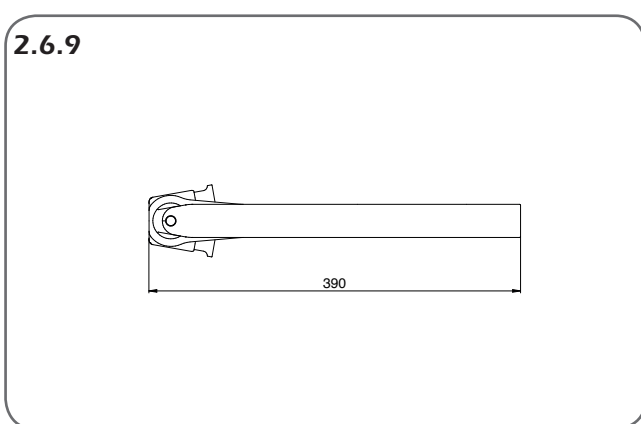
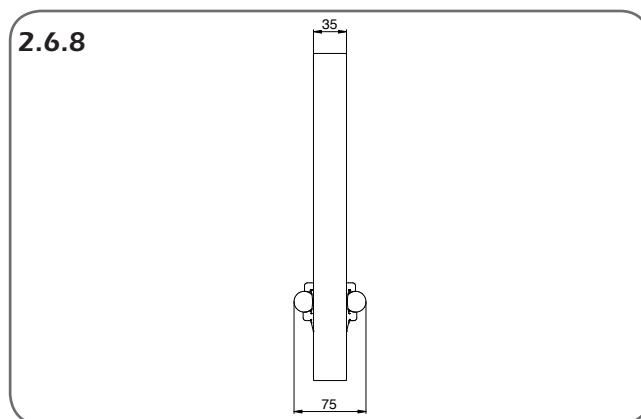
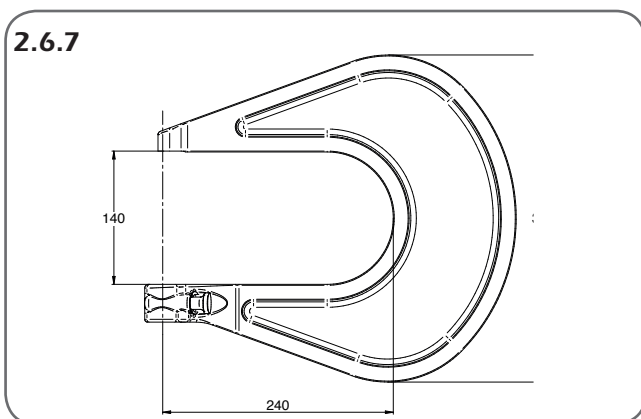


2.6.6



Rivet clamp NB 130 (No. 2)





Technical data

	NB 45¹ (No. 1)	NB 130 (No. 2)	NB 240 (No. 3)
Article number	BGR-TKR-00001085	BGR-TKR-00001086	BGR-TKR-00001087
Length*	120 mm	230 mm	390 mm
Width	75 mm	75 mm	75 mm
Height	160 mm	210 mm	350 mm
Clamp aperture	80 mm	80 mm	140 mm
Aperture depth	45 mm	130 mm	240 mm
Weight	2,5 kg	6,2 kg	11,6 kg

¹Included in the basic kit









*Length and weight data does not include the hoses

2.7 Technical data, riveting tool

2.7.1 WZS-TKR-00000167














Riveting tool kit 1 "Punching"

Pos./Marking/Article number		Pos./Marking/Article number	
A Stamping die \varnothing 6 mm Marking: green 25-00000004		B Stamping die \varnothing 8 mm Marking: yellow 25-00000007	
C Stamping punch \varnothing 6 mm Marking: green 25-00000003		D Stamping punch \varnothing 8 mm Marking: yellow 25-00000006	
E Slide bushing \varnothing 6 mm Marking: green 25-00000002		F Slide bushing \varnothing 8 mm Marking: green 25-00000005	
G Punch retainer 25-00000008		H Wrench set SW 16/SW 20 25-00000018	

2.7.2 WZS-TKR-00000168



Riveting tool kit 2 "Flow form riveting"

Pos./Marking/Article number		Pos./Marking/Article number	
A Flow form punch Ø 6 mm Marking: blue 25-0000009		B Flow form die Ø 6 mm Marking: blue 25-0000010	
C Flow form punch Ø 8 mm Marking: orange 25-0000012		D Flow form die Ø 8 mm Marking: orange 25-0000013	
E Reshaping punch Marking: violet 25-0000015		F Wrench set SW 16/SW 20 25-0000018	
G Shaping mandrel Ø 6 mm Marking: green 25-0000011		H Shaping mandrel Ø 8 mm Marking: yellow 25-0000014	
I Receiving socket 25-0000032			
K Extraction die Marking: red 25-0000017		L Extraction mandrel Marking: red 25-0000016	

3.1 Intended use

The pneumatic, hydraulic universal stamping and riveting tool PNP 90 SNW XT² is specifically designed for all common riveting operations for sandwich panels, thin sheet and high-strength sheet.

The equipment's universal technology enables adaptation of various attachments for different applications.

The basic tool kit comprises the pneumo-hydraulic pressure intensifier PNP 90 SNW XT² and a hydraulic actuator HA XT² with duo-hose package. The kit can be supplemented with rivet clamp NB 45 and two fully equipped riveting tool kits for punching, pressing, calibrating, shaping and flow forming.

The hydraulic pump is a pneumatically-driven pressure intensifier with a ratio of 1:100. This means that a hydraulic secondary pressure of 600 bar is generated by a primary air pressure of 6 bar. When the equipment's preset final pressure is reached, the pump stops automatically and keeps this pressure constant. The hydraulic pump has a pneumatically-controlled pressure relief valve.

The hydraulic actuator is connected to the hydraulic pump by means of a duo-high pressure hose. The hose is connected to the pump via leak-free quick release couplings. The couplings can only be connected to the equipment when it is depressurised.

The three pneumatic control lines are also connected to the pump. Make sure that the black, blue and silver hoses are attached to the coupling with the corresponding marking.



Compressed air can be connected to the equipment as soon as the hydraulic hose and the control lines are connected to the pump.

A control valve installed on the hydraulic actuator activates the function of the pump when a rocker switch is operated.

If the rocker switch is pressed forward, the pump begins to run and the hydraulic piston extends. If it is pressed rearward, the piston retracts.

When the rocker switch is released, the pump is deactivated and the hydraulic piston stops.

3.2 Principles for Handling PNP 90 SNW XT tool kit²



Risk of injury

Route all supply lines in a manner that prevents people from tripping over them. Correctly route and attach the compressed air hose. If a compressed air hose whips around wildly, it could cause severe bodily injury.



Before starting work, check the preset air pressure! Incorrectly set air pressure could cause equipment damage or bodily injury!



Max. air pressure

Make sure that the maximum permissible operating air pressure of 6 bar/87 psi is never exceeded. Check the setting of the pressure regulating valve before each riveting operation!



Clean compressed air

Make sure that the pump is only supplied with clean and dry compressed air. Moisture and contamination could cause equipment malfunction and/or damage. Only use compressed air of quality class 2 as per ISO 8573-1.



Always disconnect the riveting tool from pressure when leaving the work site!



Warranty

The manufacturer accepts no liability for damage or injury caused by improper repair or use of foreign replacement parts.



Incorrect usage of the riveting tool that leads to equipment damage invalidates the warranty.



6.4 Declaration of Conformity

Riveting tool PNP 90 SNW XT² has been tested and manufactured in accordance with European guidelines. The Declaration of Conformity has been included with this instruction manual.

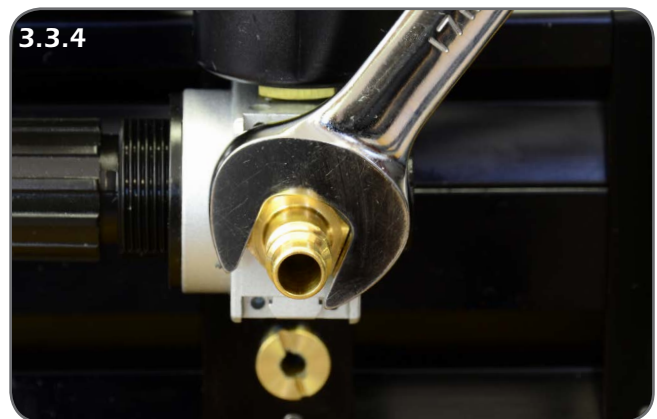
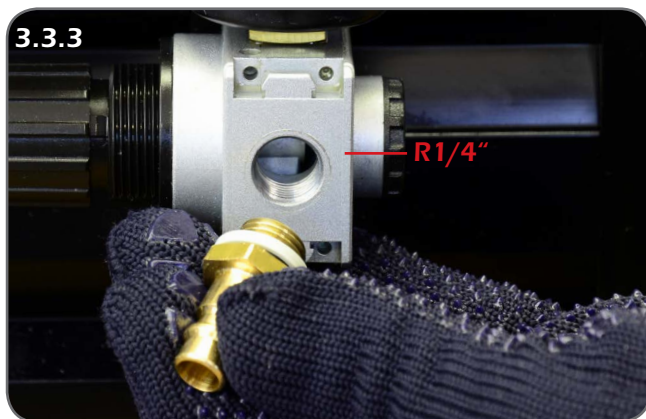
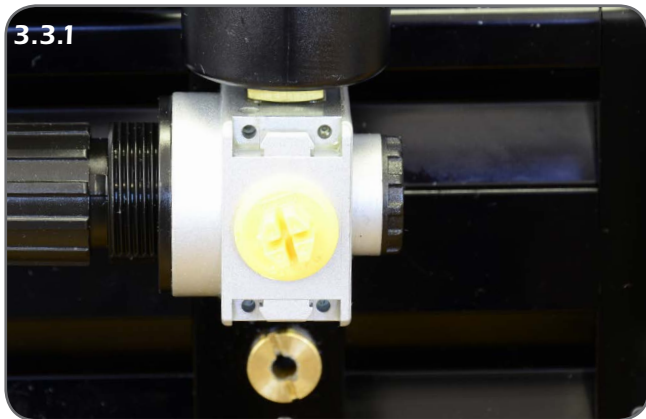


The compressed air supply must be disconnected from the equipment before any adjustment or maintenance work is performed.



**If any abnormality is identified, the tool must not be used.
Please contact Service.**

3.3 Start-up



The equipment is supplied from the factory without a compressed air connection. The pressure regulator has a G1/4" (internal thread) connection thread.

3.3.1/3.3.2

The pressure regulator is supplied with a closing cap fitted. Remove the closing cap.

3.3.3/3.3.4

Use a compressed air connection with R1/4" thread and seal. Screw this into the pressure regulator.

3.4 Preparing PNP 90 SNW XT² and connecting the hose package



3.4.1 – 3.4.4

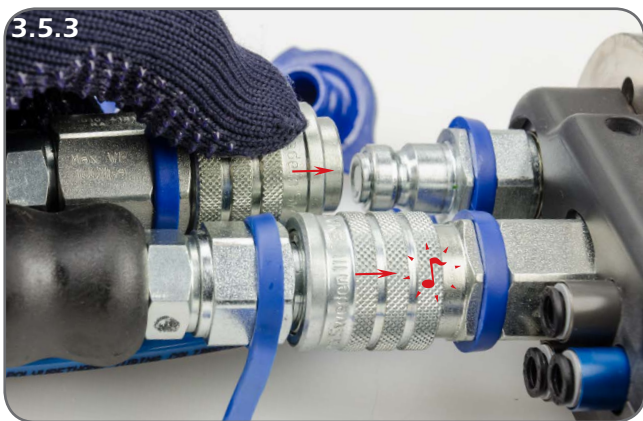
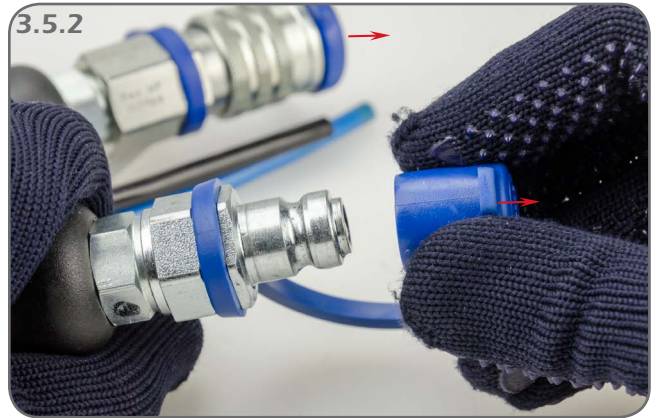
The pump connections and the two hose package connections are fitted with caps. Remove the caps from the respective couplings and connect the pneumatic control hoses (black, silver and blue). Make sure that each hose is connected to the coupling with the corresponding marking.

3.4.5, 3.4.6

Then connect the hydraulic couplings of the duo hose package to the couplings of the PNP 90 SNW XT². Connect the pump to the hose by pulling the quick couplings rearwards and holding it while connecting. When the quick coupling is released it will audibly engage.



3.5 Connecting the hydraulic actuator to the hose



3.5.1/3.5.2

The hydraulic actuator connections and the two hose package connections are fitted with caps. Remove the closing caps from the corresponding couplings.

3.5.3

Connect the hydraulic actuator with the hose by pulling the quick couplings rearwards and holding them while inserting. When the quick coupling is released it will audibly engage.



3.5.4/3.5.5

When connecting the pneumatic control hoses, make sure that the blue, silver and black hose are each connected to the coupling with the same colour marking. The pneumatic hoses must be inserted right up to the stop.



Before using the equipment, check the condition of the hydraulic actuator, hoses and couplings.

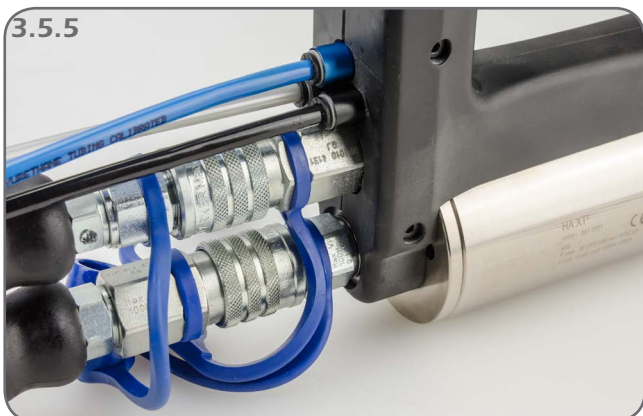
In the event of any noticeable damage, the components must be replaced.



Damaged hoses or couplings could cause severe injury!



Incorrectly attached hoses could come loose and cause severe bodily injury.



3.6 Safe set-up and positioning of the equipment



Ensure that the high-pressure pump is always placed on a non-slip surface and that the hoses are routed in a way that prevents them from getting damaged or disconnected. The hoses must also be routed in a way that prevents people from tripping over them.



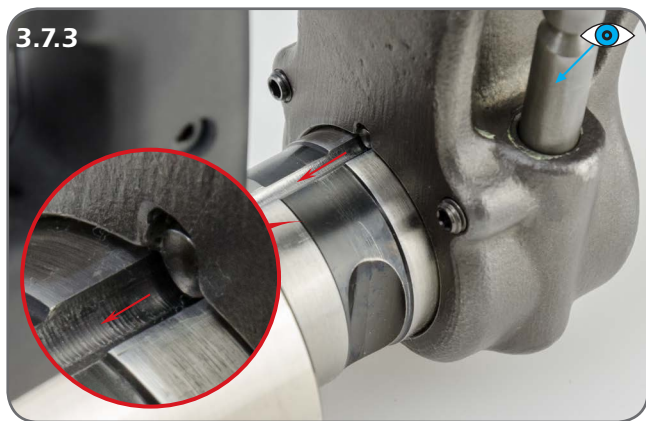
Make sure that the pump and hydraulic actuator are set up in a work area that is free from heat sources (max. 45°C/ 113°F), corrosive liquids, greases and oils.



Before using the equipment, make sure that the pump is standing on a secure surface.



3.7 Fitting the rivet clamp to the hydraulic actuator



3.7.1 – 3.7.3

Select a rivet clamp and carefully push it onto the mounting adapter using the mounting hole. The guide pin in the rivet clamp (1) must be inserted in the corresponding guide groove in the hydraulic actuator (2). Do not use force. Make sure it does not twist.



Warning

The mounting adapter on the hydraulic actuator must be clean and free from damage. The locking pins must also be free from contaminants and damage.

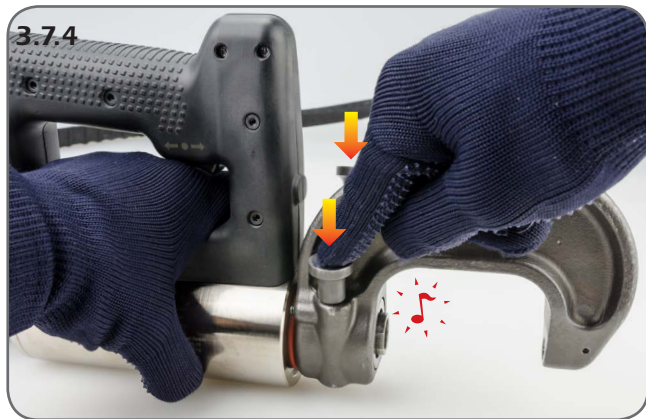
3.7.4

Note that the rivet clamp must lie vertically so that the locking pins can be inserted from above.



Warning

Damaged or defective locking pins must not be used.



3.7.4.

Once the rivet clamp has been fitted up to the stop on the hydraulic actuator mounting, fit the two locking pins up to the end until they audibly engage.

Once fitted, the locking pins must automatically lock and no longer fall out of the hole.



3.7.5

The supplied handle can be screwed into the opening of the rivet clamp for easier handling.

3.8 Fitting the riveting tool – Option 1: “Punching”



Three rivet clamps are available for use with the riveting tool:

Rivet clamp	Art. No.	Depth of engagement
NB 45 ¹	BGR-TKR-00001085	up to 45 mm
NB 130	BGR-TKR-00001086	up to 130 mm
NB 240	BGR-TKR-00001087	up to 240 mm

¹Included in the basic kit

3.8.1

For the “Punching” process, screw the required punch retainer into the hydraulic cylinder all the way to the contact surface and then hand-tighten with the supplied wrench set. Do not use force.

3.8.2, 3.8.3

Then insert the stamping punch required for stamping up to the contact surface of the punch retainer and fit the slide bushing. Take note of the colour coding and marking (e.g. Ø 6).

3.8.4

Screw in the corresponding stamping die (take note of the colour coding) on the opposite side of the hydraulic cylinder (rivet clamp) up to the contact surface and hand-tighten with the supplied wrench set. Do not use force!

If necessary, the riveting tools between the hydraulic cylinder and the rivet clamp can be switched.



Each time rivet inserts are to be fitted, you must first check that the punch and die match:

- Ø 6 mm = green ●
- Ø 8 mm = yellow ●

See also the application matrix in the case of the riveting tool kit.

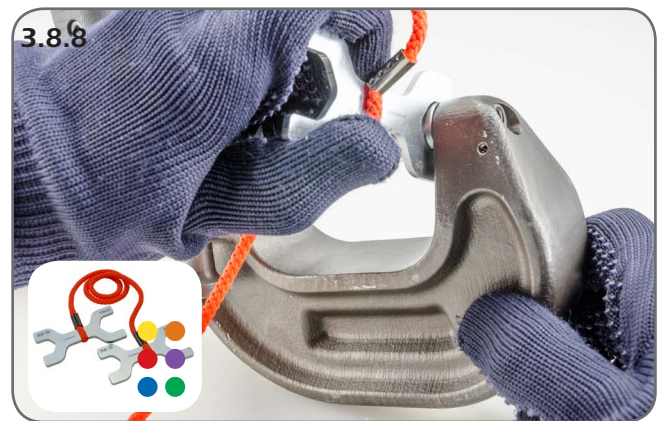


Check that the punch and die are firmly seated after each riveting operation. Rivet inserts that have come loose present a hazard and can lead to destruction of the equipment.



All riveting tools must only be fitted/removed with compressed air connected.

3.8 Fitting the riveting tool – Option 2: “Flow form riveting”



3.8.5, 3.8.6

For the “Flow form riveting” process, screw the required receiving socket (25-00000032) into the hydraulic cylinder and hand-tighten with the supplied wrench set. Do not use force. Then screw in the punch required for the process up to the contact surface in the receiving socket and hand-tighten with the supplied wrench set.



All riveting tools must only be fitted/removed with compressed air connected.

3.8.7

Screw the corresponding counter-piece of the punch into the rivet clamp receiving socket up to the contact surface and hand-tighten with the supplied wrench set. Do not use force! If necessary, the riveting tools between the hydraulic cylinder and the rivet clamp can be switched.



Each time rivet inserts are to be fitted, you must first check that the punch and die match!

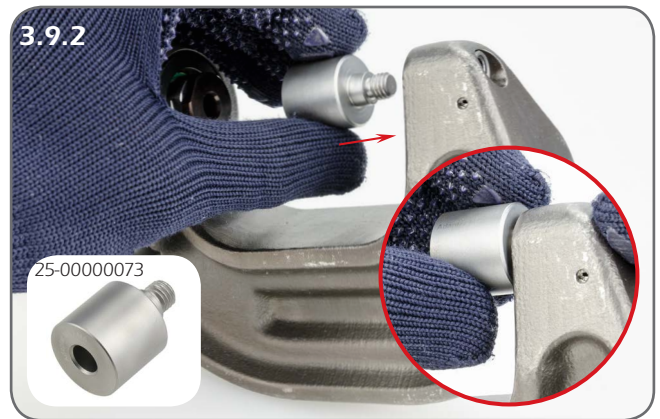
Ø 6 mm flow form	= blue	●
Ø 8 mm flow form	= orange	●
Ø 6 mm shaping	= green	●
Ø 8 mm shaping	= yellow	●
Ø 6 mm extraction	= red	●
Reshaping	= violet	●

See also the application matrix in the case of the riveting tool kit.



Check that the punch and die are firmly seated after each riveting operation. Rivet inserts that have come loose present a hazard and can lead to destruction of the equipment. Gerätes führen.

3.9 Using the riveting tools from the RIVKIT UN 2.0 kit



3.9.1, 3.9.2
To use existing riveting tools from the RIVKIT UN 2.0 kit, an adapter must be used.

Adapter	Art.-Nr.
Receiving socket	25-00000074
Adapter	25-00000073

Screw the receiving socket (25-00000074) in the hydraulic cylinder up to the contact surface and hand-tighten with the wrench set. Do not use force. Then screw the adapter (25-00000073) into the rivet clamp receiving socket up to the contact surface and hand-tighten.



All riveting tools must only be fitted/removed with compressed air connected.

3.9.3
Then screw in the riveting tool punch required for the process into the receiving socket (25-00000074) and hand-tighten with the supplied wrench set.



3.9.4
Screw the corresponding counter-piece of the punch into the adapter (25-00000073) in the rivet clamp receiving socket and hand-tighten with the supplied wrench set. Do not use force!
If necessary, the riveting tools between the hydraulic cylinder and the rivet clamp can be switched.

3.10 Adjusting the pressure limiting valve



3.10.1

Set the pressure limiting valve to the required value by turning the adjuster screw to the right or the left.



Note that the setting value

300 corresponds to a force of 100 kN.



Always use the pressure setting specified for the particular work process.

3.10.2

Carry out the function test by opening the pressure limiting valve to the value 100 (test setting).



3.11 Connecting compressed air



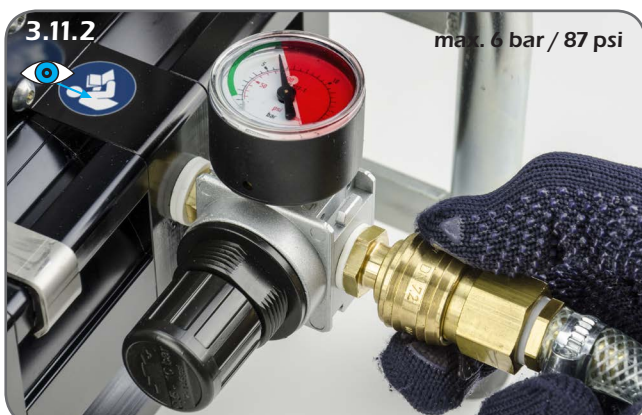
3.11.1

After completing all installation work, connect compressed air to the pressure regulator and set the pressure to 6 bar.



3.11.2

Never apply a pressure above the permitted value of 6 bar or 87 psi. This could cause damage to the equipment or even bodily injury.



3.13 Function test checklist

1. Personal protective equipment (goggles, gloves, etc.) worn? ➔ 1.2, 1.5 Yes No

Comments: _____

2. Pneumatic control hoses properly connected? ➔ 3.4 Yes No

Comments: _____

3. Hydraulic hoses, incl. high-pressure couplings properly connected? ➔ 3.4/3.5 Yes No

Comments: _____

4. Pressure limiting valve open to a value of 100 (test setting)? ➔ 3.10 Yes No

Comments: _____

5. Compressed air supply (6 bar/87 psi) present? ➔ 3.11 Yes No

Comments: _____

6. Piston moves out and back in when the rocker switch is actuated? ➔ 3.13 Yes No

Comments: _____

The equipment cannot be put into operation until it is possible to answer "Yes" to all of the points.

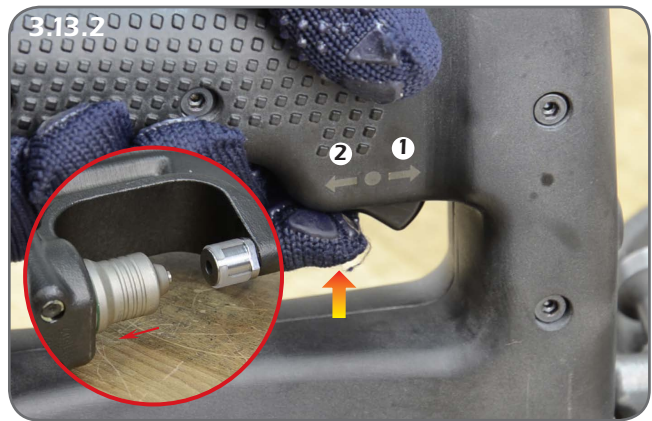
7. Has the compressed air supply been disconnected to continue assembly work? Yes No

No installation work may be performed on the pump while compressed air is connected.

3.13 Operating the rocker switch

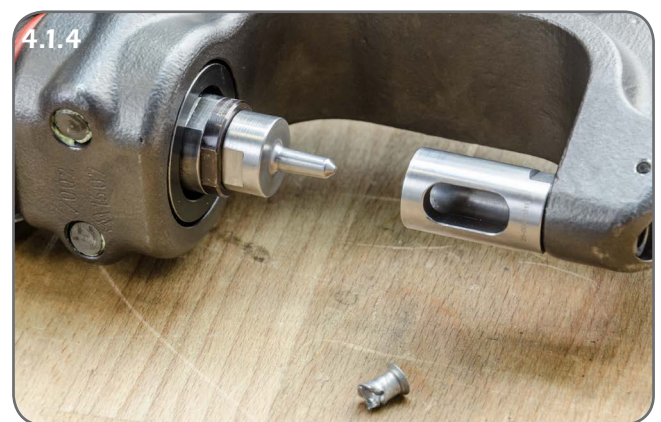
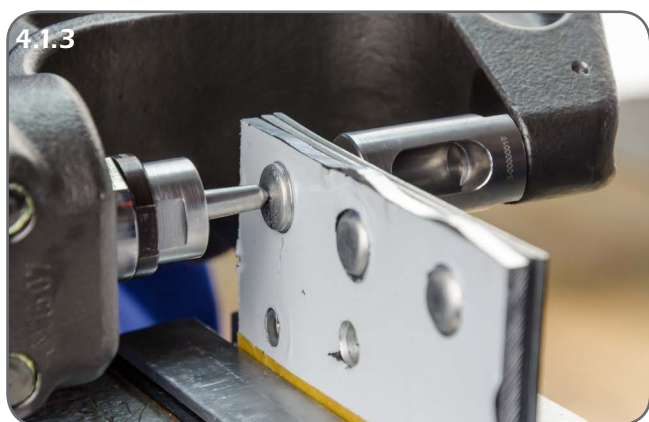


3.13.1
Press the rocker switch (pos. 1) on the hydraulic actuator towards the rivet clamp to extend the piston.



3.13.2
Press the rocker switch (pos. 2) on the hydraulic actuator away from the rivet clamp to retract the piston.

4.1 Pressing out rivets



Old or defective rivets often need to be removed from the sheet metal structure in the event of a repair to body panels.

4.1.1 – 4.1.3

To avoid having to drill out these rivets, the old rivet can be pressed out of the sheet metal structure using the extraction mandrel, art. no. 25-00000016, and the extraction die, art. no. 25-00000017, thereby minimising damage.

4.1.4

Remove the collected rivet from the retaining area on the die.



Always be sure to use the correct pairing based on the colour combination/engraved marking.

red ●

See also the application matrix in the case of the riveting tool kit.

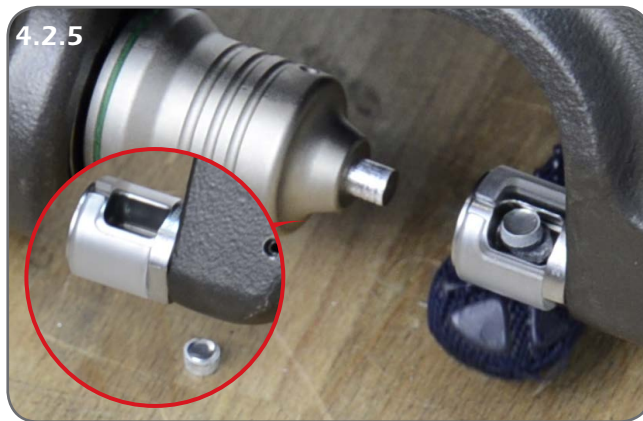
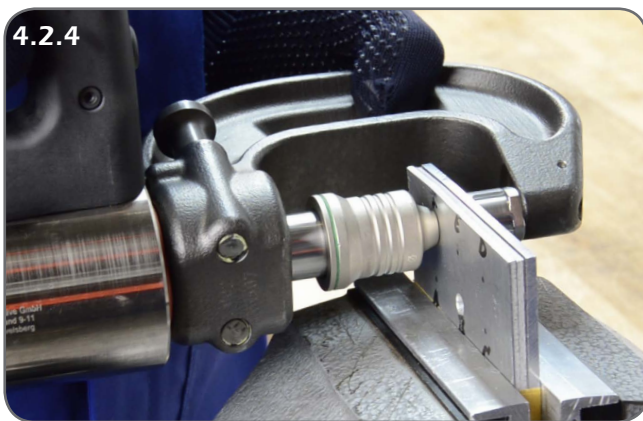
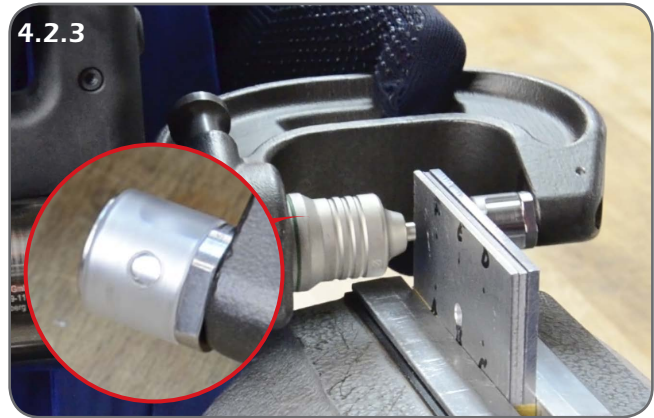


Note that the retaining area has a limited capacity. Failure to empty this area could lead to severe damage to the tool.



Please empty the retaining area after each extraction.

4.2 Punching and calibration of holes for Flow Form Rivets



4.2.1 – 4.2.6

There is no need to drill holes in sheet joints when using flow form rivets. The punch and stamping die enable the precise punching and simultaneous calibration of rivet holes. After using the stamping die, fit the plastic cap of the riveting tool to close the opening.

Operate the rocker switch → to move forward and make the punch.

Operate the rocker switch ← to return to the starting position.



Warning

Before each punching operation, fit the cap to the stamping die.



After each punching operation, open the stamping die cap and remove the punched slug from the retaining area.



Always be sure to use the correct pairing based on the colour combination/engraved marking.

Ø 6 mm = green ●

Ø 8 mm = yellow ●

See also the application matrix in the case of the riveting tool kit.

4.3 Reshaping



4.3.1 – 4.3.4

To reshape the punched or extracted rivet hole, use the receiving socket and the two reshaping punches from kit 2.



Be sure to use the correct pairing based on the colour combination/engraved marking:

violet



See also the application matrix in the case of the riveting tool kit.



4.4 Shaping



4.4.1 – 4.4.5

To shape the punched rivet hole, use the receiving socket and the shaping mandrel from kit 2 together with the stamping die from kit 1.



Be sure to use the correct pairing based on the colour combination/engraved marking:

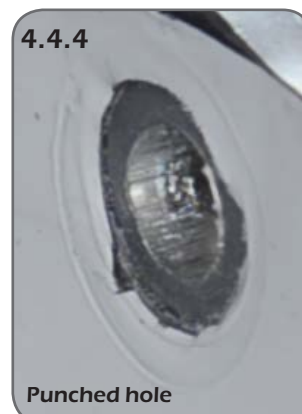
Ø 6 mm = green



Ø 8 mm = yellow



See also the application matrix in the case of the riveting tool kit.



4.5 Setting flow form rivets

4.5.1



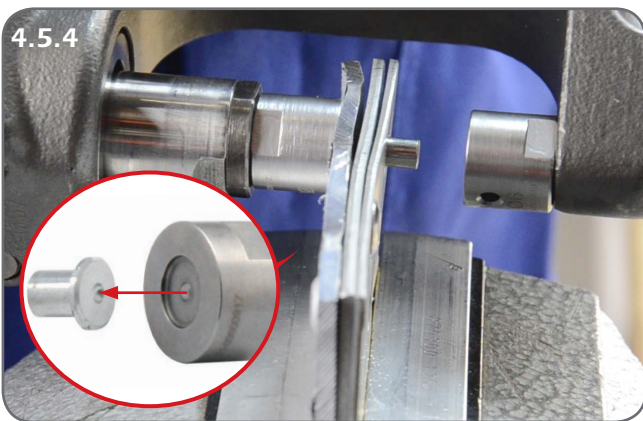
4.5.2



4.5.3



4.5.4



4.5.1 – 4.5.3

Flow form rivets are machined with the flow form die and corresponding flow form punch for $\varnothing 6$ or $\varnothing 8$ mm.



Always be sure to use the correct pairing based on the colour combination/engraved marking.

$\varnothing 6$ mm = blue

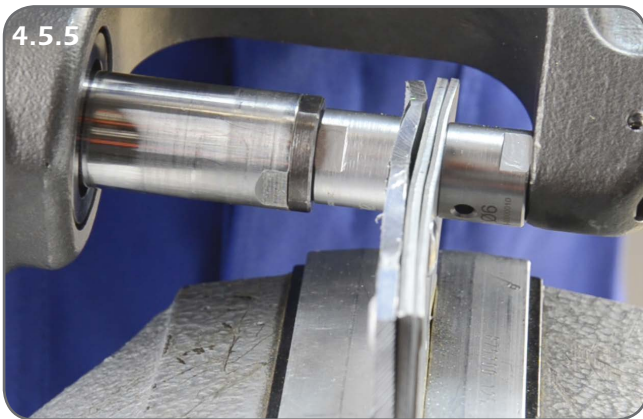


$\varnothing 8$ mm = orange



See also the application matrix in the case of the riveting tool kit.

4.5.5



4.5.4

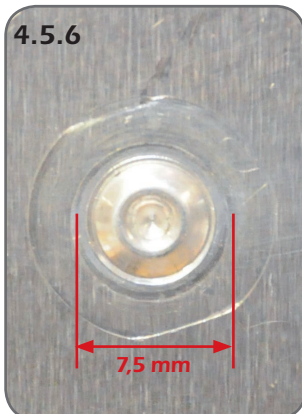
It is important that the flow form punch engages with the centring lug in the rivet recess provided for this purpose.

4.5.5 – 4.5.7

During the riveting operation, position the die head (flow form punch) on the rivet until the closing head (flow form die) has reshaped and hardened the rivet. The diameter of the closing head should be at least 7.5 mm for a 6 mm rivet.

The die has a relief hole for adhesive residue. After the riveting operation, this hole must be blown clean. Otherwise, the riveting process cannot proceed reliably.

4.5.6



4.5.7



Make sure that the pressure limiting value has the correct pressure setting.

Set the pressure limiting valve to the value required for the operation by turning the adjuster screw to the right or the left.

e.g. scale value: 200

4.6 Cleaning the riveting tools

4.6.1

Remove adhesive residue from all contaminated tools after each completed riveting operation.

4.6.2

To do this, remove all affected tool components and clean using acetone or other solvents.



If adhesive residue is allowed to remain on the riveting tool, it will eventually cause malfunction. Before starting work, any rivet punches requiring replacement must be replaced with genuine replacement parts.



4.7 Completing an Operation and Riveting Tool Storage



4.7.1

Always disconnect the compressed air supply from the pump following riveting or while work is interrupted.

4.7.2

Then disconnect the control hoses and seal the ports.



Make sure that the disconnected hoses never make contact with the dirty floor or the ground.



4.7.3

Before and after each operation, check the system for oil leaks. An oil leak indicates a fault in the system. In this case, discontinue work and locate the fault, or hand the equipment in for repair at an authorised specialist dealer.

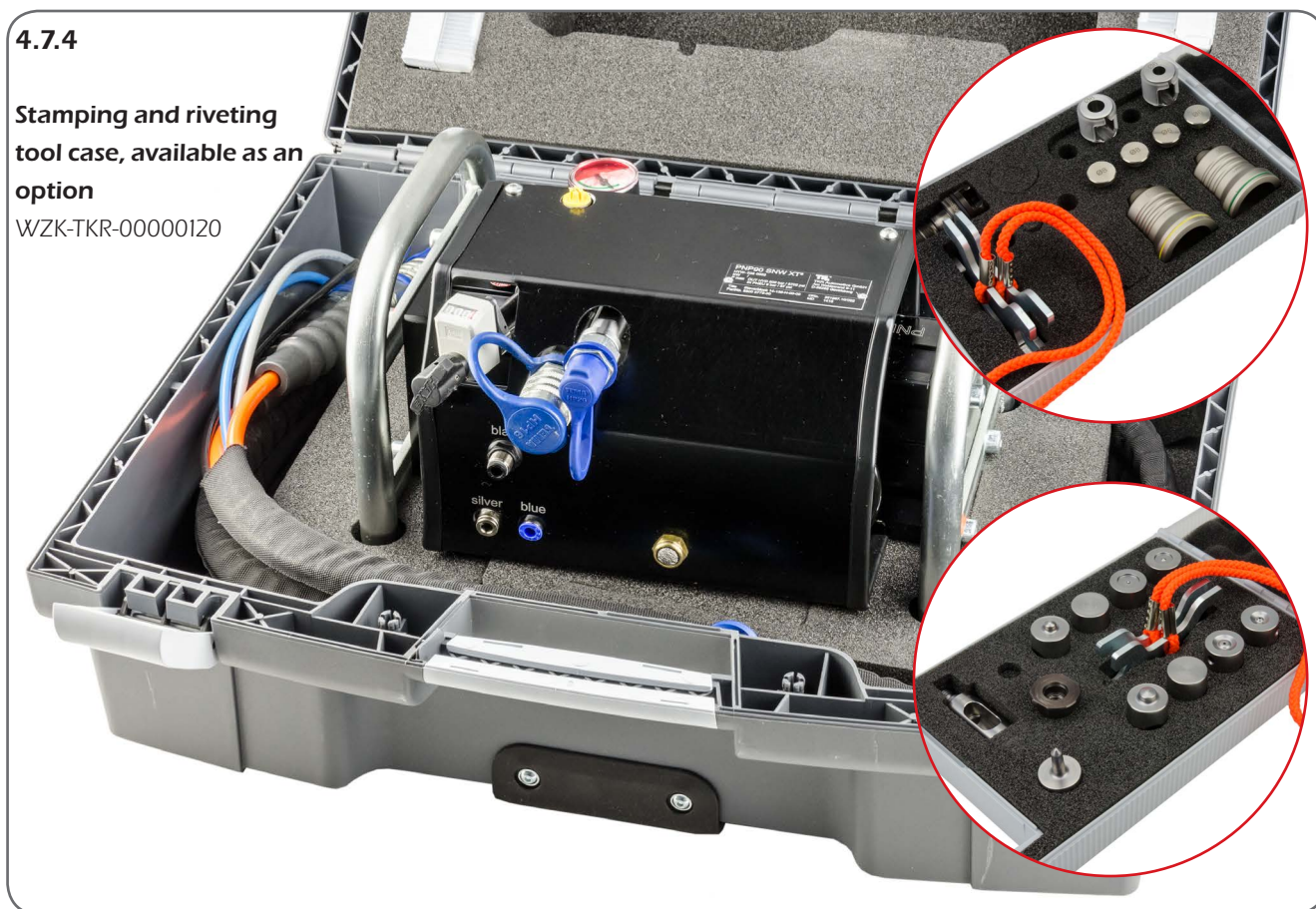


Foreign bodies or contamination in the hydraulic oil or in the control lines could cause the equipment to malfunction.

4.7.4

Stamping and riveting tool case, available as an option

WZK-TKR-00000120



4.7.4

To provide better protection, you can store the tool in the transport case (WZK-TKR-00000120), which is available as an option. Make sure that the hoses do not become kinked!



Never transport the tool by the hoses!

5.1 Hydraulic pump maintenance

5.1.1



5.1.2



5.1.3



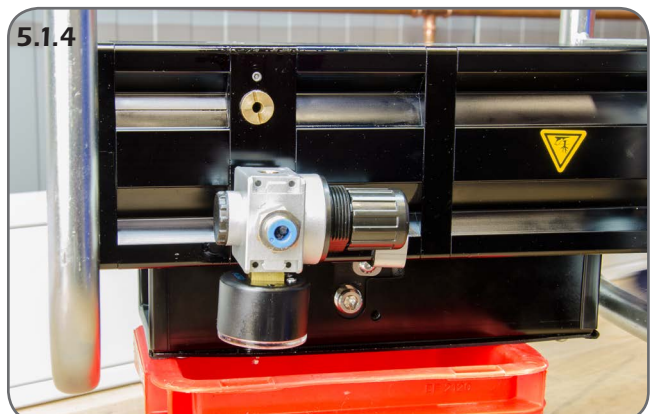
5.1.2 – 5.1.4 Draining oil



Before beginning work, run the hydraulic tool to its starting position. Otherwise, excess oil could leak out of the pump during operation. Then disconnect the pump from the compressed air.

Undo the sealing plug on the top of the pump and let the used hydraulic fluid flow into a suitable container.

5.1.4





5.1.5, 5.1.6 Filling oil

Using a funnel, fill with fresh oil that complies with the specifications. The nominal capacity is around 320 ml. This process may take a few minutes.

5.1.7

The oil level should reach the filler port when filling, but the thread of the sealing plug must remain visible. Re-seal the filler port with the sealing plug.



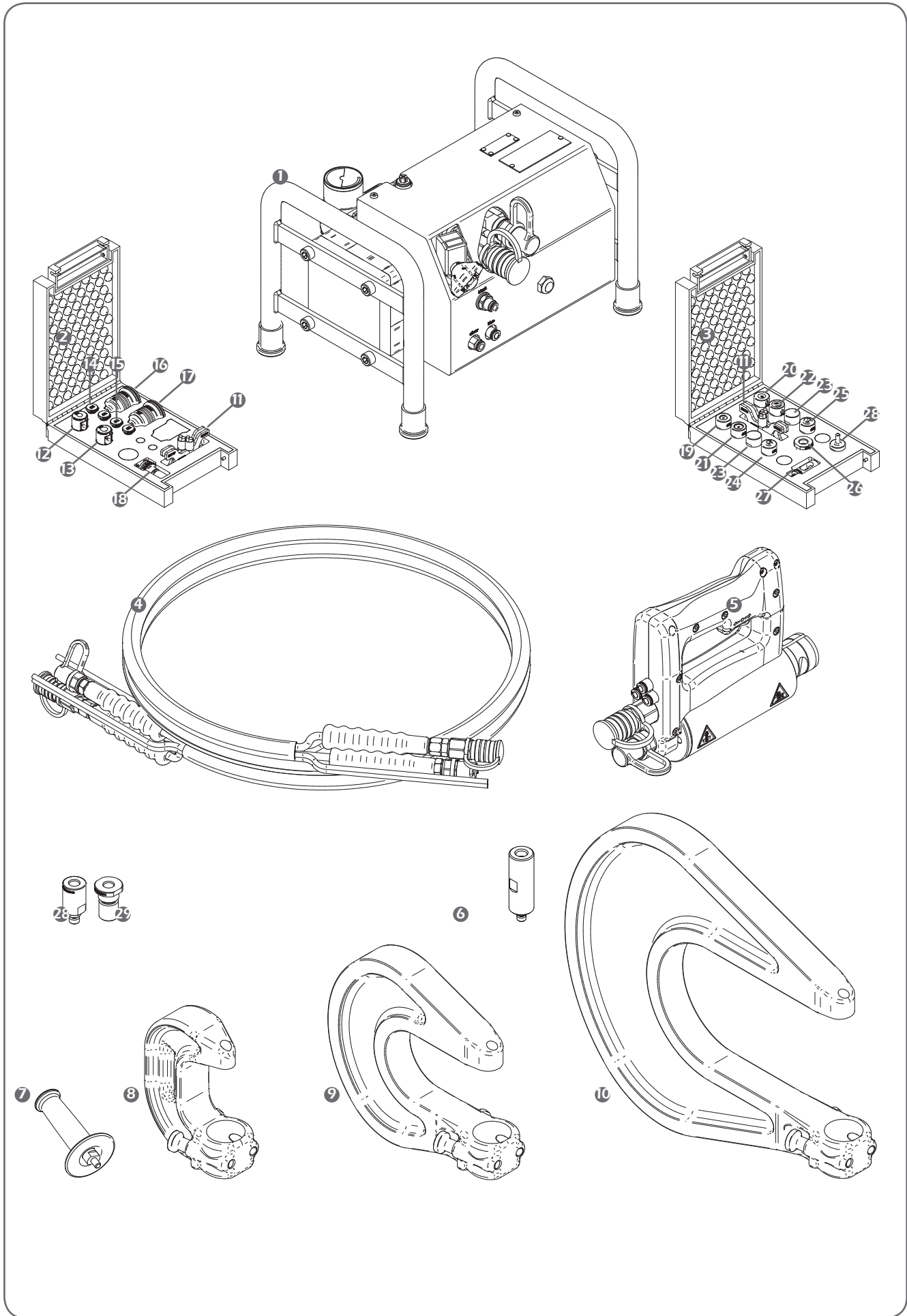
Note that the oil must be free from contamination. Make sure that no dirt or foreign bodies enter the pump reservoir when changing oil!

➔ 1.6 Maintenance instructions



Interval	Maintenance work
Every 6 months or when necessary	Cleaning of the exterior by the customer
	Check the oil level and top up if necessary
Every 12 months	Changing oil
24 months	Complete servicing by a service partner (recommended)





5.2 Replacement part list

Item no.	Art.-No.	Title
1	HYW-TKR-00000038	PNP-90 Pressure booster (pump)
2	WZS-TKR-00000167	Riveting tool kit 1 XT ² "Punching"
3	WZS-TKR-00000168	Riveting tool kit 2 XT ² "Flow form riveting"
4	BGR-TKR-00001128	Hydraulic hose DN4 Duo
5	HYW-TKR-00000041	Hydraulic actuator XT ²
6	01-00003747	Spacing bolt
7	50-00001800	Handle
8	BGR-TKR-00001085	Rivet clamp NB 45
9	BGR-TKR-00001086	Rivet clamp NB 130
6 + 10	BGR-TKR-00001087	Rivet clamp NB 240, incl. spacing bolt

5.3 Consumables

Item no.	Art. No.	Title
11	25-00000018	Wrench set SW16/SW20
12	25-00000004	Stamping die Ø 6 mm
13	25-00000007	Stamping die Ø 8 mm
14	25-00000003	Stamping punch Ø 6 mm
15	25-00000006	Stamping punch Ø 8 mm
16	25-00000002	Slide bushing Ø 6 mm
17	25-00000005	Slide bushing Ø 8 mm
18	25-00000008	Punch retainer
19	25-00000009	Flow form punch Ø 6 mm
20	25-00000010	Flow form die Ø 6 mm
21	25-00000012	Flow form punch Ø 8 mm
22	25-00000013	Flow form die Ø 8 mm
23	25-00000015	Reshaping punch
24	25-00000011	Shaping mandrel Ø 6 mm
25	25-00000014	Shaping mandrel Ø 8 mm
26	25-00000032	Receiving socket
27	25-00000017	Extraction die
28	25-00000016	Extraction mandrel
29	25-00000073	Adapter
30	25-00000074	Receiving socket

5.4 Troubleshooting

Problem	Cause	Remedy	Page
Pump does not run	No air connected	Connect compressed air	24
	Control lines not connected or incorrectly connected	Connect control lines correctly and make sure they are properly seated	17
	Insufficient air pressure	Check air supply	24
	Hydraulic hoses not connected	Connect hydraulic hose as described in the instruction manual	17, 18
	Air pressure not correctly set	Set air pressure to prescribed value (6 bar)	24
	Defective drive piston	Have repaired by manufacturer/service partner	–
Hydraulic pump will not shut off	Control hoses incorrectly connected or mixed up	Connect control hoses as described in the instruction manual	17
	Defective control valves	Have repaired by manufacturer/service partner	–
Flow form rivet not affixed correctly	Mandrel or die defective	Replace mandrel or die	21
	Mandrel or die not functional due to adhesive residue	Clean or replace mandrel and/or die	31
	Insufficient press pressure	Too little air pressure or air pressure incorrectly set / Adjust regulator indicator	24
	Press cylinder does not travel far enough	Too little oil in the pump. Check oil level and top up if necessary.	34
	Oil leak from the pump	Have repaired by manufacturer/service partner	–
	Air leak from the pump and/or control valve	Have repaired by manufacturer/service partner	–
	Wrong rivet length	Observe repair guidelines	–
Piston moves out/in too slowly or not at all	Too little oil in the pump	Check oil level and top up if necessary	34
	Hydraulic seal in the pump is worn	Have repaired by manufacturer/service partner	–
	Defective valves in the pump	Have repaired by manufacturer/service partner	–
Air leak	Defective hose	Have repaired by manufacturer/service partner	–
	Defective couplings	Have repaired by manufacturer/service partner	–
	Defective seals	Have repaired by manufacturer/service partner	–

Problem	Cause	Remedy	Page
Oil leak	Defective hose	Have repaired by manufacturer/service partner	–
	Defective coupling	Have repaired by manufacturer/service partner	–
	Pump loses oil	Have repaired by manufacturer/service partner	–
Hydraulic pump leaking / Tool does not move to starting position	Too much oil in the system	Drain some (not all!) of the hydraulic oil. Then close the oil cap, return the tool to the starting position, detach the hose package, and top up the hydraulic oil as described.	34
Cannot fit clamp	Clamp not inserted into the groove on the adapter	Fit the clamp as described in the instruction manual	20

6.1 Disposal



Equipment and machinery and components of equipment and machinery must be disposed of in accordance with the laws, regulations and other stipulations of that country in which they are located.

We recommend that disposal be undertaken by licensed professional operators..

6.2 Liability



The TKR Group has unlimited liability for damaged caused by the company or its employees, representatives, agents or vicarious agents through a deliberate or grossly negligent act or neglect.

If the damage is caused by simple negligence on the part of the TKR Group or its employees, representatives, agents or vicarious agents, then TKR Group is liable – except in the case of injury to life, limb or health – only if essential contractual obligations (cardinal obligations) are impacted. The liability is limited to typical and foreseeable damage.

Except in the case of loss of life, physical injury or harm caused to health, in the case of simple negligence liability is excluded for direct and unforeseeable damages, loss of production and use, lost profits, anticipated savings not achieved and damage to property on the basis of claims submitted by third parties.

Irrespective of the legal nature of the claim submitted, any further liability is excluded. However, the foregoing liability limitations and exclusions do not apply to the no-fault liability mandated by law (e.g. under the German Product Liability Act) or the liability under a no-fault warranty.

Where liability is excluded or limited under the foregoing provisions, this also applies to the personal liability of the employees, representatives, agents or vicarious agents of the TKR Group.

The jurisdiction for all claims against the TKR Group is its head office.

6.3 Warranty

Stamping and riveting tools from TKR Automotive GmbH come with a 12-month warranty against material and manufacturing defects.

The wearing parts, namely the rivet inserts of the "Punching" and "Riveting" kits, the spacing bolt and the spacing sleeve, are excluded from the warranty, as is the hydraulic oil.

The warranty period begins on the date of delivery, as specified on the invoice or delivery note.

The warranty is valid for the user/customer provided that the tool is obtained from an authorised sales outlet and is used as described in the instructions and for the purposes for which it was designed.

The warranty becomes invalid if the tool is used for purposes other than those for which it was designed.

In addition, the warranty becomes invalid if the tool is not used as described in the instruction manual.

In the event of defect or fault, your service partner shall only repair or replace faulty parts at its own discretion.

Service address

EU Declaration of Conformity

In accordance with EU Machinery Directive
2006/42/EC

Manufacturer: TKR Automotive GmbH
Am Waldesrand 9-11
58285 Gevelsberg, Germany

Contact partner: Thorsten Weyland, Head of Development
Technical documentation

Tool type: Pneumatic/hydraulic stamping and riveting tool
Type designation: PNP 90 SNW XT²

Developed and manufactured in
accordance with the standards and
guidelines listed below by

TKR Automotive GmbH
Am Waldesrand 9-11
58285 Gevelsberg (Germany)

Referenced harmonised standards: German Product Safety Act (ProdSG)
EN 693; EN 11148-1; EN 11148-10; EN 792-13;
EN ISO 4413; EN ISO 4414; ISO 11200;
ISO 11202; EN ISO 12100

EU Machinery Directive: 2006/42/EC

As manufacturer, we declare that The products marked accordingly
comply with the requirements of the referenced
guidelines and standards.



Gevelsberg, 26.11.2015 Thorsten Weyland
Head of Development

