

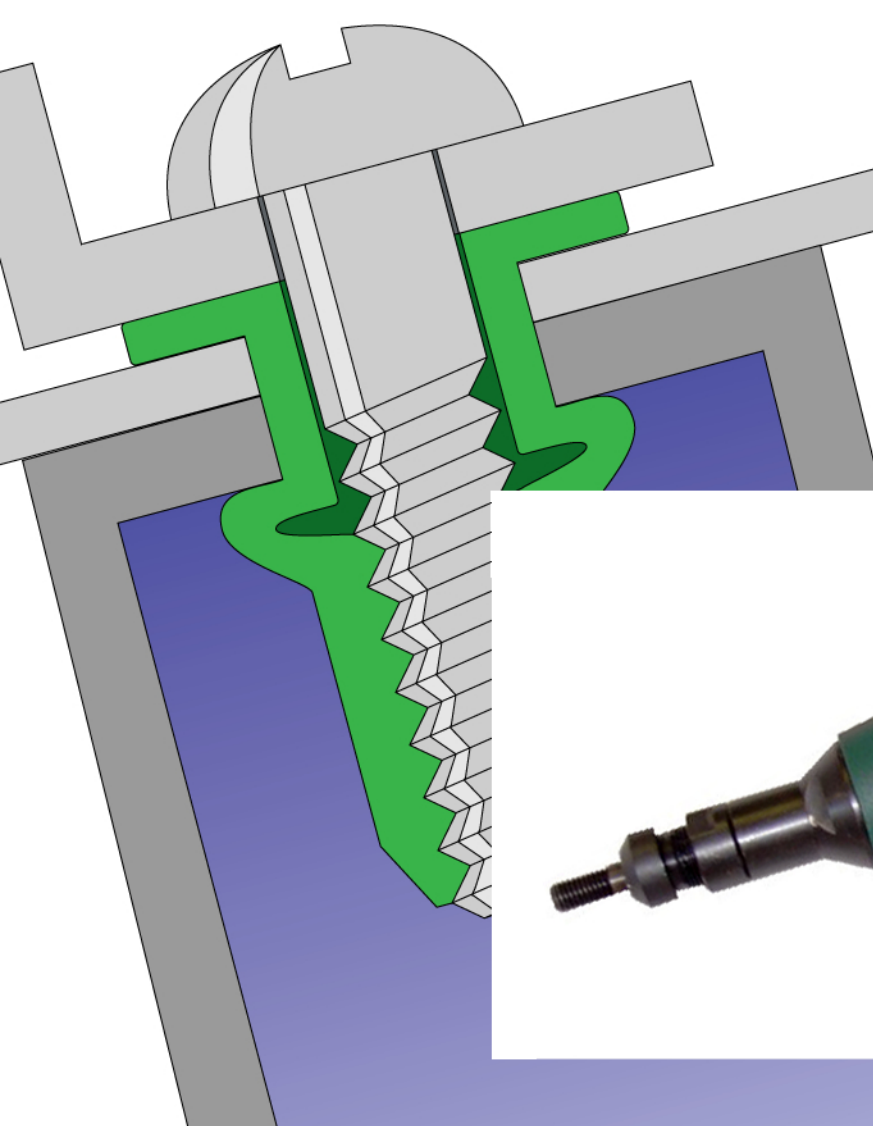
**RIVETEC** 

TITGEMEYER Group

Riveting Tool

**RL 100**

Operating Manual



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## Guiding instructions

<b>Instruction</b>	The legislator prescribes that the user must be well trained for using compressor-driven riveting tools. If desired, the training programme can be conducted at RIVETEC or directly at the client's place.
<b>Technological level</b>	This riveting tool is as per the latest technological standards. Professional and safety conscious operation is a must for the riveting tool to function safely.
<b>Reading the guiding instructions</b>	Before using the riveting tool for the first time, read the guiding instructions carefully.
<b>Procedures</b>	All the procedures necessary for the operation have been described in these guiding instructions. You may carry out only those procedures, which have been described here.
<b>Obstructions</b>	In case of obstructions, you may repair only those obstructions, which have been marked with an O (Operator).
<b>Illustrations and position-codes</b>	All the illustrations and position-codes in the individual diagrams take reference from the list of parts in the last pages.
<b>Table for torque values</b>	You find a table with the torque values for all screw and thread sizes on Page 33.

## Cautions and instructions in the operating manual

Please follow the instructions and safety informations.

In this operating manual, some sections have been further illustrated through diagrams.

Please acquaint yourself well with these diagrams and their meanings:



**Caution** Hazard of injury! This marking indicates a potential hazard.



**Attention** Material damage! This marking points at a procedure, which may cause damage to the riveting tool or the work-piece.



**Note** This marking indicates useful information

- This point (•) marks every paragraph, which requires you to act by yourself.

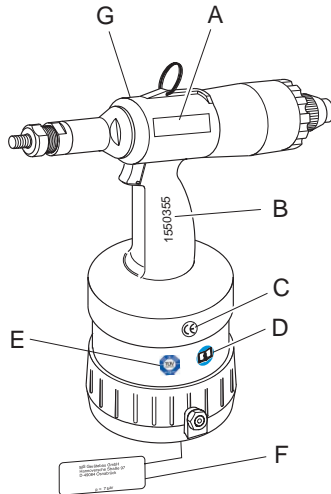


**Attention** Environmental hazard! This marking indicates a potential environmental hazard.

### Markings on the riveting tool



This pictogram indicates that you must read the operating manual before using the riveting tool.



**A** Marking of the type

**B** Serial number

**C** CE-marking

**D** Instruction for reading the operating manual

**E** TÜV-Mark (safety checked)

**F** Name of the manufacturer as well as the value of the maximum operating pressure

**G** Supplier

## Safety instructions

### Application as per the purpose

The riveting tool has solely been foreseen for the insertion of blind rivet studs. The riveting tool RL 100 is designed to process blind rivet nuts of the sizes M8 to M16. If desired, the mandrels can also be supplied with other thread sizes, e.g. UNC/ UNF.

This riveting tool must be used only as a hand-held device!

The client is fully responsible for any modifications to the riveting tool!

### Improper use

Never throw away or drop the riveting tool!

### Clean and dry compressed air

Please take care that only clean and dry compressed air is let into the riveting tool. Moisture and dirt can damage the riveting tool. Use only such compressed air, which falls into class 2 of air quality as per ISO 8573-1.



**Caution** Hazard of injury because of explosion! Never use the riveting tool in an atmosphere prone to explosions. Ensure that the workplace is well lit and clean.

Hazard of injury due to the openly moving compressed air hose. Connect and lay the compressed air hose properly.

Hazard of injury due to tripping over! Lay the compressed air hose in such a way that nobody should trip over it.



**Attention** Material damage! The maximum operating pressure is 7 bar. For increasing the durability of the riveting tool, it is recommended to fit a compressed air-maintenance unit in the compressed air hose.

### Basic requirements while dealing with the riveting tool



**Caution** Follow the prevalent guidelines for the prevention of accidents in the respective country.

Use only those fittings and hoses, which have been approved for the operating pressure.

Disconnect the compressed air supply from the riveting tool at the time of installation or maintenance.

Wear personal safety gear (safety glasses and safety helmet).



**Attention** Heed the details on the blind rivet nut packaging.

Use the riveting tool only at operating temperatures above 5°C and 45°C.

Use the prescribed mandrels and nose pieces for each thread size.

Do not throw away the riveting tool.



- Maintenance and servicing** The operator may only carry out the maintenance and repair work described in this operating manual
- Service instructions** Maintenance and service work not described in this operating manual may only be carried out by trained specialists following instruction by RIVETEC on the basis of the service instructions which also exist. See the address on page 42 for more information on service instructions and training.
- **Note** The manufacturer accepts no liability for damage resulting from incorrect repairs or the use of spare parts from other sources
- At the time of leaving the workplace, do not leave the riveting tool with pressure on.
- Guarantee** A guarantee is void, if any repair work carried out on the riveting tool has lead to any damage of the riveting tool.
- Declaration of conformity** The riveting tool RL 100 has been checked and manufactured according to European guidelines. The declaration of conformity can be found on the second last page.
- GS-checked** The riveting tool was additionally tested by TÜV Product Service GmbH Hanover and certified (TÜV/ Technical Control Board mark) and issued with the GS sign.

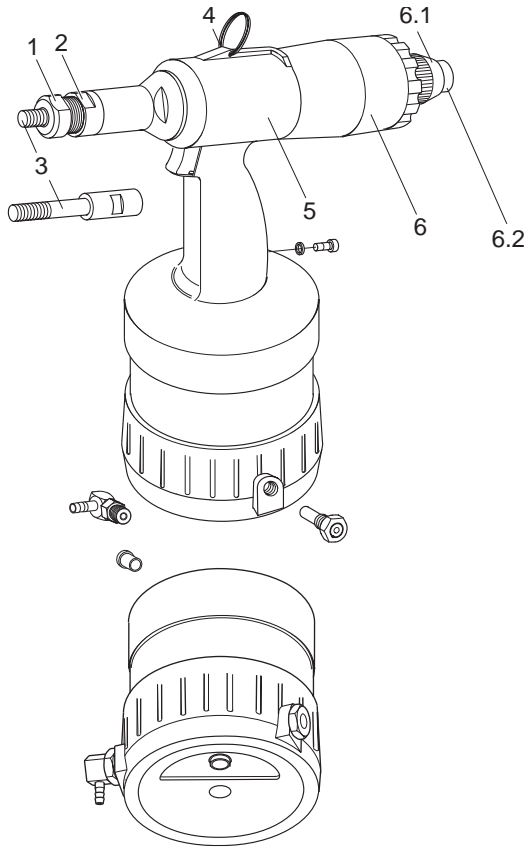
### Noise and vibration levels of the RL 100

**Noise level** The emission sound pressure level at a workplace is  $L_{PAI} = 86\text{dB(A)}$  according to ISO 10843 and DIN EN ISO 3744.  
The main noise is generated by the air motor. Through correct use, the air motor can be switched off between times, and therefore the noise level can be lastingly reduced.



**Note** For safety reasons, however, we recommend the wearing of ear protection

**Vibration level** The effective value measured on acceleration with the handle, as per ISO/ FDIS 8662-11, is  $a_{hw} < 2.5\text{m/s}^2$ .



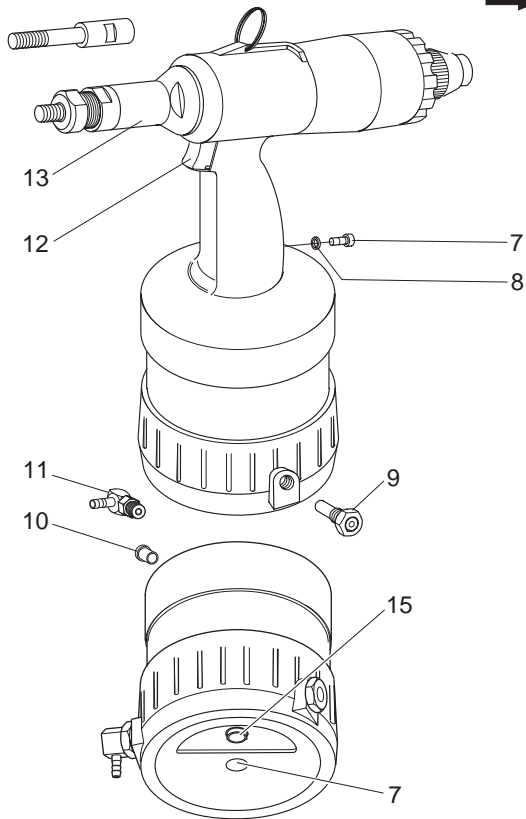
## Description of the riveting tool

The riveting tool RL 100 is pneumatically - hydraulically actuated and has an air motor.

It consists of the following operation-related components:

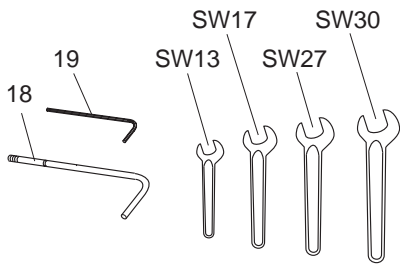
- |            |                   |  |
|------------|-------------------|--|
| <b>1</b>   | Nose piece        | for threads M8, M10, M12 and M16   |
| <b>2</b>   | Lock nut          | for fixing the nose pieces   |
| <b>3</b>   | Mandrel           | for threads M8, M10, M12 and M16 of blind rivet nuts   |
| <b>4</b>   | Hang-up eyelet    | for hanging up on a hook whenever stationary   |
| <b>5</b>   | Hydraulic housing | the pneumatic and the hydraulic units are located in the hydraulic housing                         |
| <b>6</b>   | End cap           | is a complete unit enabling the switching of the rotation of the air motor to left-handed rotation |
| <b>6.1</b> | Adjustment screw  | is used for adjusting the end stop for the automatic switching to the left-handed rotation         |
| <b>6.2</b> | Button            | manually release the left-handed rotation  |

## Description of the riveting tool



**Note** The socket head screw (7) and the O-ring (8) are screwed tightly into the grip. The socket head screw (7) must not be loosened, else the hydraulic oil will leak.

- |  |  |
|--|--|
| <b>7</b> Socket head screw                 | locking for the hydraulic oil system<br>Opening serves as an oil inlet                         |
| <b>8</b> O-Ring                            | Sealing of the hydraulic oil system  |
| <b>9</b> Safety valve                      | (Brass) In case of very high pressures approx. 8 bar or more), it opens, and lets the air out. |
| <b>10</b> Plug                             | serves the purpose of protection of the thread and also against dirt                           |
| <b>11</b> Swivel-joint                     | serves as the connection for compressed air hoses (operating pressure 6 bar)                   |
| <b>12</b> Trigger                          | — starts right-handed rotation<br>— triggers a riveting action<br>— stops left-handed rotation |
| <b>13</b> Nose cap                         | covered mandrel  |
| <b>15</b> Stroke adjustment screw          | is used to adjust the stroke   |
| <b>7</b> Socket head screw in device floor | closes the opening to pull back the pneumatic rod  |



## Required tools

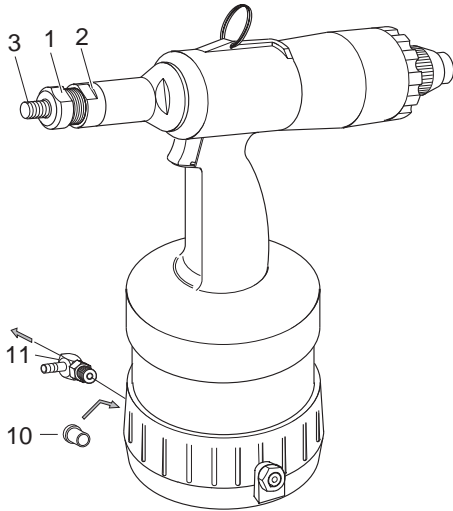
You will require the following tools for all installation, servicing and maintenance work.

### Tools

- Crank (18)
- Wrench<sup>1</sup>
- Internal hex key (19)

SW13, SW17, SW27, SW30  
SW4

<sup>1</sup>No delivery possibility



## Storing the riveting tool

### Until first use

If you do not use the riveting tool immediately, store it inside the original packing, dry and dust-free.

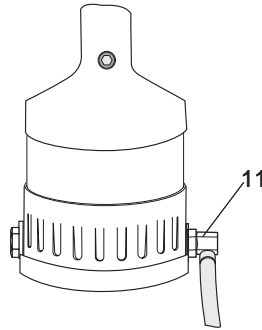
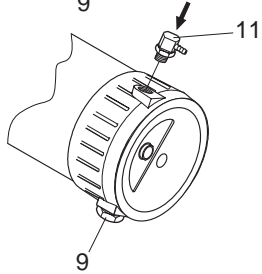
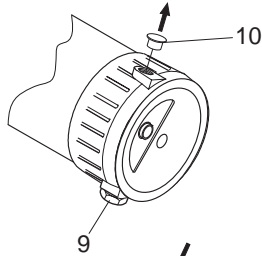
### Long term storage after usage

Clean nose piece (1), lock nut (2), mandrel (3) and lubricate with acid-free grease. Screw out the swivel joint (11) and close the opening with a plug (10). If possible, store all pieces in the original packing.

### After long-term storage

After long-term storage (about 3 years), change the hydraulic oil before re-use.

A hydraulic oil change may only be carried out by trained specialist with the help of the service instructions. For further information regarding service instructions and training, please see the address on page 42.



## Preparing the riveting tool

**Package insert** The components ordered by you are marked as per the checklist found inside the packing.

➔ **Note** Please check the contents of the packing, for completeness of the checklist

In every case, please carry out a visual check of the riveting tool before starting any work:

- for external damages,
- for oil leakage from the riveting tool.

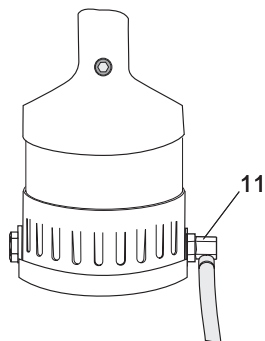
- Remove the plug (10) from the connection port and store in the original packing.

➔ **Note** The swivel joint (11) and the safety valve (9) can be alternatively fitted on both the sides of the hydraulic housing. The diagram below shows the arrangement for a right-hander.

➔ **Note** In case of all screw-fittings, observe the table for torque values in the chapter “Maintaining the riveting tool”

- Screw on the swivel joint (11) and tighten using the wrench SW17 (see page 33 “Table for torque values”).

## Preparing the riveting tool



### Note

Depending on the type of compressed air supply, it may be necessary to connect a fitting different from the one provided, to the riveting tool. For this, you need to have a fitting having a 1/4" Withworth-pipe-thread as per ISO 228.



### Caution

Danger of injury by running riveting tool. In this event, lightly touch the trigger to stop the riveting tool.



### Attention

Material damage by compressed air!  
As per norm ISO 8573-1, class 2, compressed air must be dry and clean. We recommend that you fit a compressed air-maintenance unit to the riveting tool.

- Compressed air hose should be connected to the swivel joint (11), as prescribed.



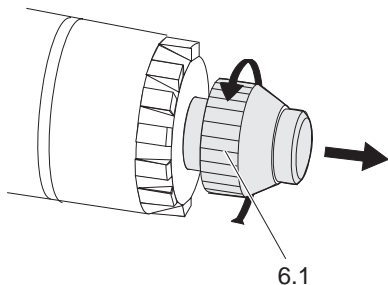
### Attention

Too narrow clearance can cause damage to material. If you do not know the stroke setting, unscrew the adjustment screw (6.1) for the automatic switching into the left-handed rotation a few turns (ca. 5 mm). You thus make sure that the rod does not strike the rear and the riveting tool is not damaged.

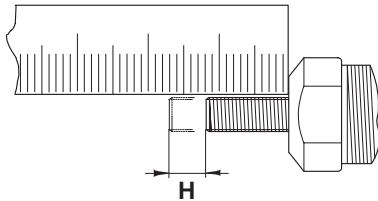


### Note

The operating pressure must be between a minimum of 5 and a maximum of 7 bar!







## Adjusting the riveting tool



**Note** The standard fitting of the riveting tool is a mandrel M10. Align the riveting tool to your conditions by replacing the mandrel and/ or adjusting the stroke (H).

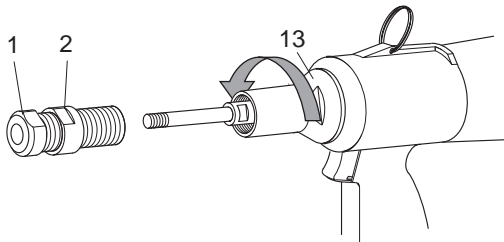
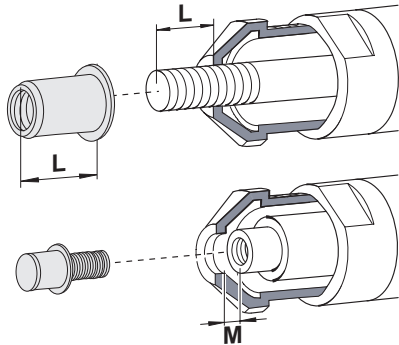
## Changing the mandrel



**Caution** Risk of injury by crushing and shearing due to an accidental working stroke! Always disconnect the compressed air supply before unscrewing the nose cap (13).

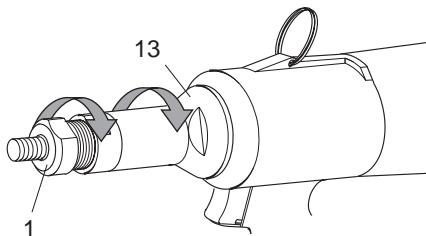
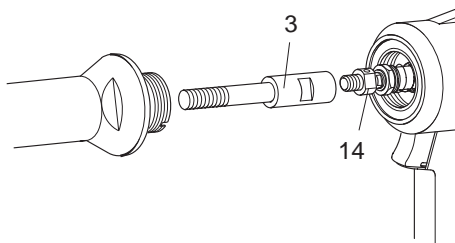


**Attention** Material damage! You have to readjust the length L (mandrel) and the operating stroke (H) after every change. In addition to this, the adjustment screw for the automatic switch over into left-handed rotation (6.1) needs to be adjusted to the new stroke.



- Select the corresponding mandrel and lubricate.
- Unscrew lock nut (2) with open wrench SW27.
- Unscrew nose piece (1).
- Loosen nose cap (13) with open wrench SW30 and screw off.

## Adjusting the riveting tool



- Place open wrench SW13 on mandrel (3).
- Hold up locknut (14) to loosen mandrel and screw out.

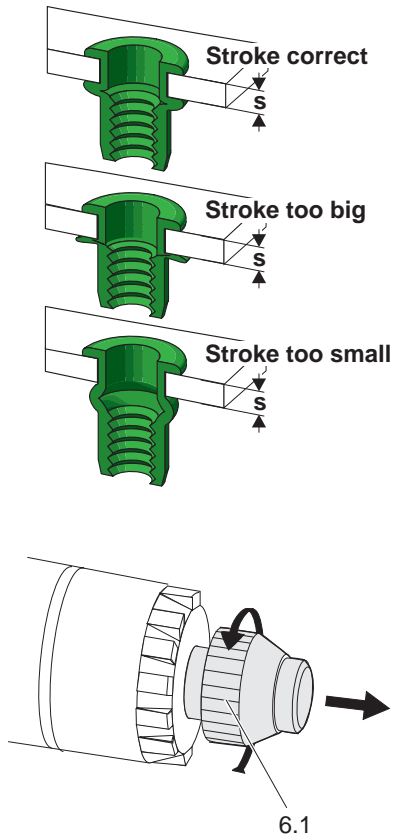


**Note** Apply a little acid-free grease to the new mandrel. Follow the table for tightening torques in the Chapter “Maintaining the riveting tool”.

- Screw on new mandrel (3) (at least 6 turns) and tighten while holding up the lock nut (14) (see page 33 “Table for torque values”).
- Screw on nose cap (13) and tighten with open wrench SW30 (see page 33 “Table for torque values”).
- Screw in appropriate nose piece (1).



**Note** Now first adjust the stroke. Then adjust the length L of the mandrel (compare illustration on Page 17).



## Adjusting stroke (H)



**Note** The correct stroke (H) depends on the type of blind rivet nut, the thread size and material thickness (s). You will find standard values for the stroke in the table “Stroke adjustment dependent on grip range” on page 23-24. The values given in the table apply for blind rivet nuts that are sold by RIVETEC. If you use blind rivet nuts of other manufacturers, get information from the manufacturer if you do not have the applicable specifications.

If the strength of the material deviates from the values, you must adjust the stroke (H) accordingly:

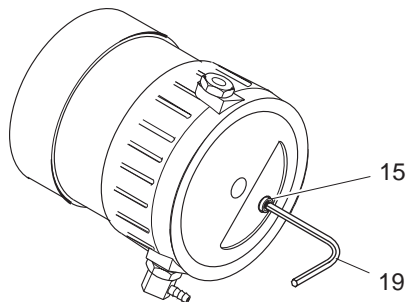
- thinner material requires a larger stroke,
- thicker material requires a smaller stroke.



**Attention** Too narrow clearance can cause damage to material. If you do not know the stroke setting, unscrew the adjustment screw (6.1) for the automatic switching into the left-handed rotation a few turns (ca. 5 mm). You thus make sure that the rod does not strike the rear and the riveting tool is not damaged.

**Attention** Material damage! Carry out test riveting after every adjustment and check the deformation of the blind rivet nut. In the above picture you can see the correct setting of a riveting, taking a blind rivet nut as an example.

## Adjusting the riveting tool



The adjustment to another working stroke follows on the underside of the riveting tool. For this you need the spanner for internal hex key SW4 (19).



**Note** The stroke is approx. 9.0 mm when the stroke adjustment screw (15) has been screwed out to the limit by left-handed rotations

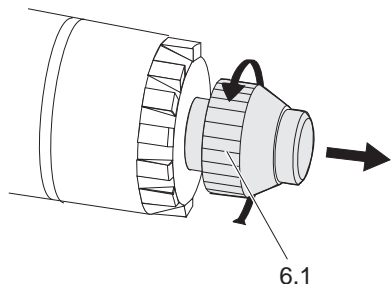
- Check if the compressed air hose is connected. If not, connect the compressed air supply.

Using the spanner for hexagon nuts SW4 (19) turn the stroke adjustment screw (15) in the relevant direction:

- right “-” reduce the stroke
- left “+” increase the stroke



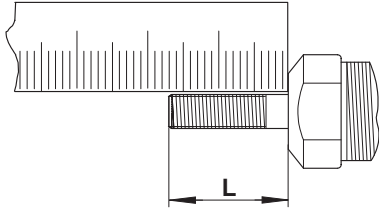
**Note** Four turns of the stroke adjustment screw (15) correspond to a stroke adjustment of 1 mm



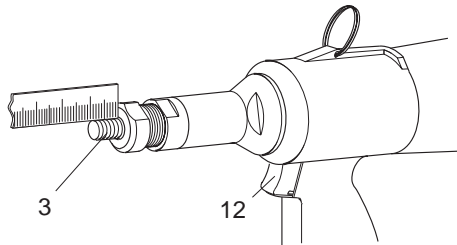
**Attention** Material damage! If you do not know the stroke setting, unscrew the adjustment screw (6.1) a few turns (ca. 5 mm) for the automatic switch over to the left-handed rotation. This is to ensure that the piston will not hit the back and the riveting tool will not be damaged.

You must now measure the stroke (H) (see page 21).

## Measuring stroke (H)



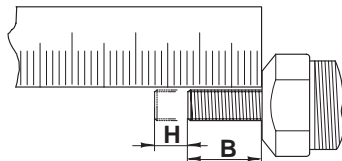
**Attention** Material damage! If you do not know the stroke setting, unscrew the adjustment screw (6.1) a few turns (ca. 5 mm) for the automatic switch over to the left-handed rotation. This is to ensure that the piston will not hit the back and the riveting tool will not be damaged.



- Establish an air supply (max. 7 bar).
- Measure protruding length L of the mandrel (3).
- Press the trigger (12) right through and hold.
- Measure remaining length B of the mandrel (3).
- Release the trigger (12).
- Strike trigger (12) gently (left-handed rotation stops).

**Length L minus length B gives the actual stroke H ( $L-B=H$ ).**

- If necessary correct the stroke (H)  
(see “Adjusting stroke H” on page 19).
- Adjust the adjustment screw (6.1) (no illustration).



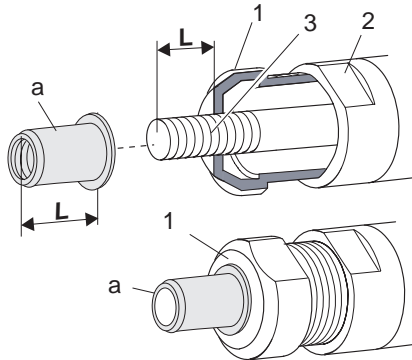
**Attention** Material damage! Readjust the length L of the mandrel after every stroke adjustment (see page 22). Perform a sample riveting to check if sound riveting is possible (see page 19).



**Note** Check the stroke adjustment every 300 rivetings or after 25 operating hours

## Adjusting the riveting tool

### Adjusting length L of the mandrel



**Note** The mandrel (3) must cover the whole length L of the blind rivet nut (a). The head of the blind rivet nut must be adjacent to the nose piece (1).

- Loosen the lock nut (2) with the open wrench SW27.
- Unscrew the blind rivet nut (a) so that the whole length L of the blind rivet nut is exposed. It may become necessary to screw the nose cap a little into the nose piece.
- Turn the nose piece (1), so that the head of the blind rivet nut (a) lies adjacent to the nose piece.
- Firmly tighten the blind rivet nut (2) (see page 33 "Table for torque values").



**Attention** Material damage! Perform a sample riveting to check if sound riveting is possible (see illustration on page 19).

**Table stroke adjustment dependent on the grip range**

Type	Grip range (mm)	Aluminium Stroke (mm)	Steel Stroke (mm)	Special Steel Stroke (mm)
M8	1.0	3.0	4.0	4.0
	3.0	2.0	2.5	2.5
	3.0	4.0	4.0	—
	5.5	2.0	2.5	—
M10	5.5	4.0	4.0	—
	8.0	2.0	2.5	—
	1.0	—	—	3.5
	3.0	—	—	2.5
	1.0	4.0	4.5	—
	3.5	2.5	2.5	—
	3.5	5.0	4.0	—
	6.0	3.0	2.5	—
	1.0	—	4.5	—
	3.5	—	2.5	—
M12	3.5	—	5.5	—
	6.0	—	3.0	—
	1.0	—	5.5	—
	4.0	—	4.0	—
	4.0	—	5.5	—
	7.0	—	4.0	—

In this table you find the standard values to pre-select the stroke on the riveting tool for blind rivet nuts of the company RIVETEC.

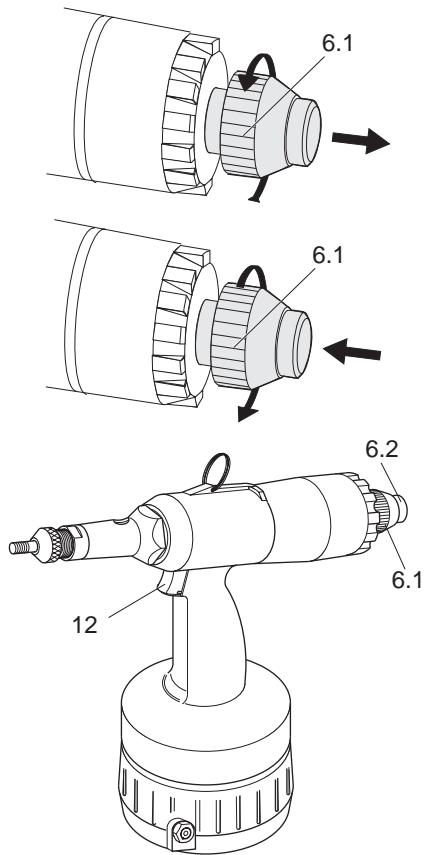
If you use blind rivet nuts of other manufacturers you need the respective values.

## Adjusting the riveting tool

Table stroke adjustment dependent on the grip range

Type	Grip range (mm)	Aluminium Stroke (mm)	Steel Stroke (mm)	Special Steel Stroke (mm)
M16	0.5 3.5	—	7.0 6.0	—
	3.5 6.0	—	6.0 4.0	—
	6.0 8.5	—	4.0 3.0	—
	8.5 11.0	—	3.0 2.5	—





## Operating the riveting tool

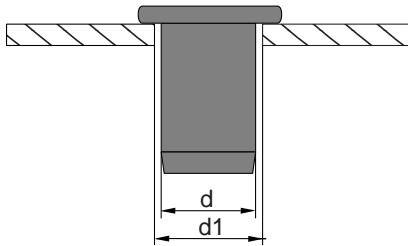
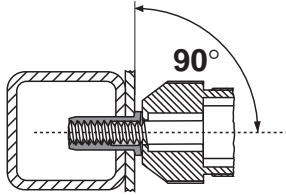
### Check function



**Attention** Too narrow clearance can cause damage to material. If you do not know the stroke setting, unscrew the adjustment screw (6.1) for the automatic switching into the left-handed rotation a few turns (ca. 5 mm). You thus make sure that the rod does not strike the rear and the riveting tool is not damaged.

- Connect the air supply to the riveting tool.
- Push the trigger (12) through and hold.
- Gently screw in the adjustment screw (6.1) as far as it can go: The automatic switch over to left-handed rotation is now set.
- Release the trigger (12).
- Gently push down the trigger (12) (first level): The air motor is rotating in a right-handed direction.
- Release the trigger (12): the air motor stops.
- Again press the trigger (12) down to the first level: The air motor rotates in a right-handed direction.
- Push the trigger (12) right through and hold (second level): The mandrel is pulled to the rear; the air motor stops.
- Release the trigger (12): the air motor rotates to the left; the mandrel moves forward.
- Gently tap the trigger (12): The air motor stops.
- Push button (6.2): The air motor rotates towards the left.
- Gently tap the trigger (12): The air motor stops.

## Operating the riveting tool



### Setting blind rivet nut



**Attention** Material damage! Under no circumstance may the blind rivet nuts be riveted several times (re-riveting). This could damage the riveting tool and the work piece.



**Attention** Material damage! Always position the riveting tool at right angles (90°) on the work piece to be riveted. Inclined bedding leads to erroneous riveting or damage to the mandrel.

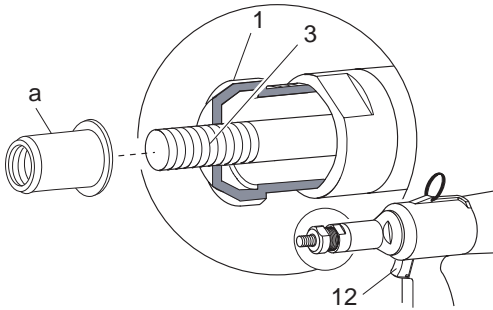


**Note** Use bore size ( $\varnothing d1$ ) in the catalogue information of the manufacturer or calculate it according to the following formula:

$$\varnothing d1 = \varnothing d + (0.1 - 0.2) \text{ mm}$$



**Attention** Material damage! If the diameter of the bore is too large or if the bore is oval, faulty rivetings will result.



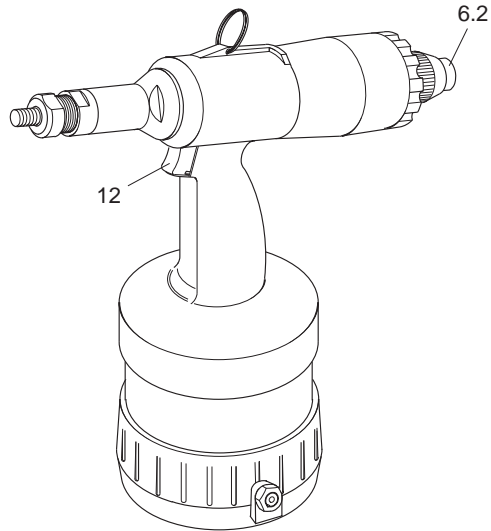
➔ **Note** Apply a little acid-free oil to mandrel (3) so the blind rivet nut can be screwed on and off smoothly

- Place the blind rivet nut (a) on mandrel (3).
- Gently press the trigger (12) down and hold (first level): Blind rivet nut screwed on automatically by right-handed rotation of the air motor.

➔ **Note** The right-handed rotation stops automatically when the head of the blind rivet nut (a) lies on the nose piece (1)

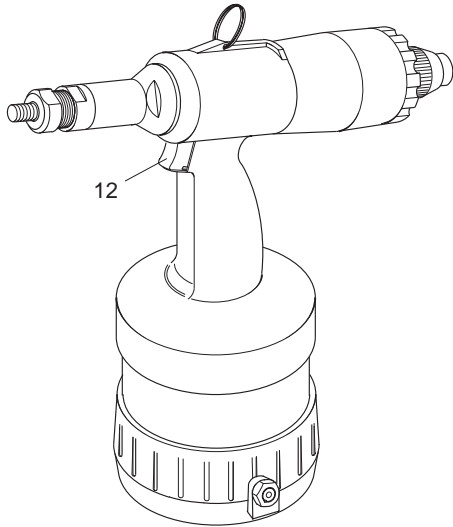
- Insert the screwed on blind rivet nut (a) into the prepared bore (not illustrated).
- Push the trigger (12) through as far as possible and hold; the rivet shaft is upset thereby fastening the blind rivet nut.
- Release the trigger (12): The device goes into left-handed rotation automatically; the mandrel is screwed out of the blind rivet nut.
- Tap the trigger (12): The left-handed rotation stops.

## Operating the riveting tool



### Trigger left-handed rotation manually

- Connect the air supply.
- Push the button (6.2):  
The air motor rotates in the left-handed direction.
- Quickly touch the trigger (12):  
The air motor stops.



## Maintaining the riveting tool

**Caution** Hazard of injury if handled in an improper manner! Servicing, maintenance and repairs of the riveting tools must be carried out professionally. On completing this work, there should not be any more hazard to the operator, if used as per the regulations. The operator may only carry out the operations mentioned here.

### Bleeding the hydraulic section

It is necessary to bleed the hydraulic section or to refill the hydraulic oil when:

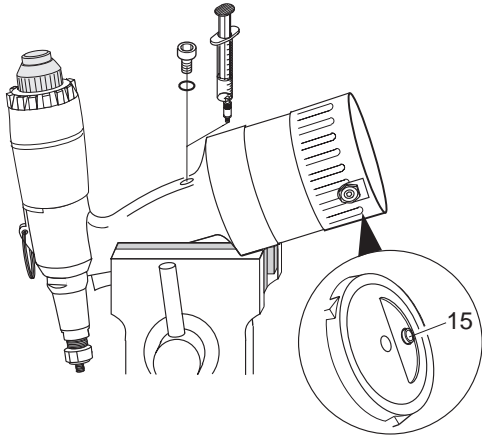
- oil is leaking from defective O-rings,
- after an oil-change at the time of an overhaul (either after a maximum of 3 years, or after 2000 working hours).



**Attention** Material damage! Immediately replace defective sealings. Maintenance and service work not described in this operating manual may only be carried out by trained specialists following instruction by RIVETEC on the basis of the service instructions which also exist. See the address on page 42 for more information on service instructions and training.

- Detach the compressed air connection.
- Tap trigger (12): You will bleed the inside of the compressed air systems; pistons are in a neutral position.

## Maintaining the riveting tool

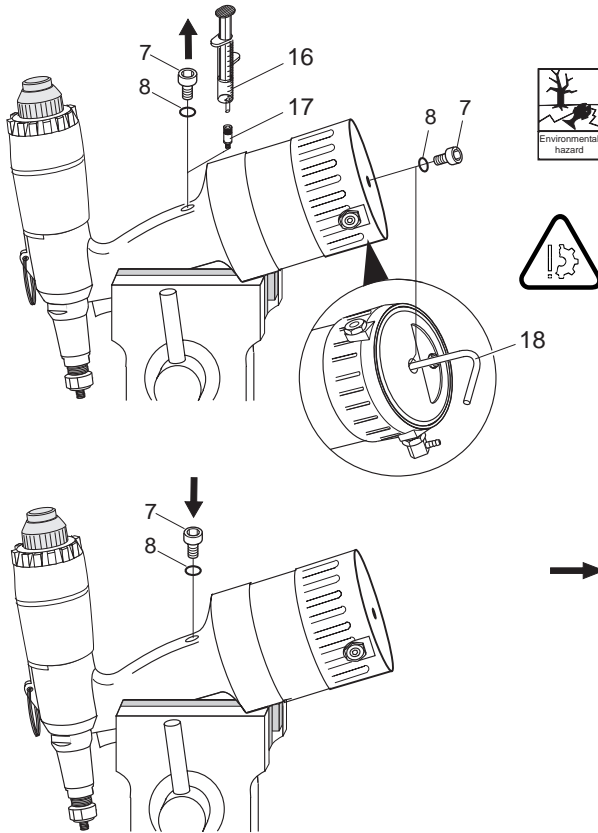


- ➔ **Note** Before you fill up the hydraulic oil you must bleed the hydraulic section (see “Bleeding the hydraulic section” on page 29)
- ➔ **Note** If you clamp the riveting tool into a vice, then insert a soft material in-between (Alu/ wood)

- Tilt the riveting tool forwards and secure it, e.g. in a vice (see illustration).

This position is critical, where the trapped air can escape when necessary (bleeding the hydraulic section).

- Adjust operating stroke to maximum stroke turn stroke adjustment screw (15) out in direction + all the way to the limit stop (see Page 19 “Adjusting stroke (H)”).



## Refilling hydraulic oil

**Attention** Environmental hazard! Always use a large bowl for collecting oil. Please observe all the environmental regulations prevalent in the respective area.

**Attention** Material damage! Do not let the O-ring (8) be damaged. If the O-ring gets damaged, then replace immediately.

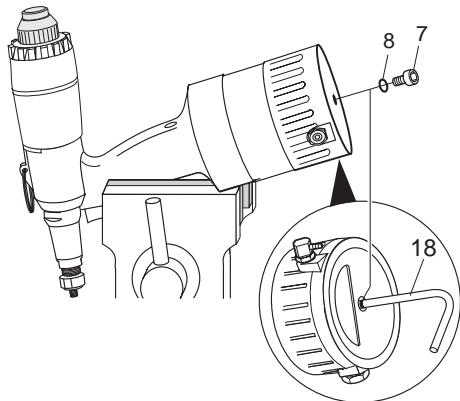
- Unscrew the socket head screw (7) in the hydraulic housing carefully, using the internal hex key SW4 (19).
- Screw the oil refill adapter screw (17) into the free opening.
- Set the filled oil gun (16).
- Screw socket head screw (7) out of the device floor with the internal hex key SW4 (19).
- Insert the crank (18) into the free opening and screw up to the limit.
- Pull crank (18) out until the marking is flush with with the floor plate.



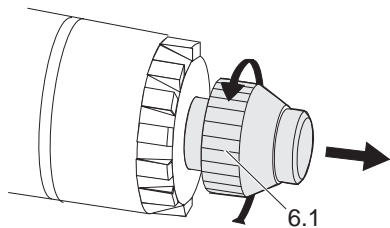
**Note** By this piston movement hydraulic oil (e.g. ELFOLNA 46 or equivalent) is drained into the hydraulic area from the plugged in oil gun

- Press oil gun (16) remove and screw out oil refill adapter screw (17).
- Screw socket head screw (7) with O-ring (8) into hydraulic housing and tighten with internal hex key SW4 (19) (see page 33 "Table for torque values").

## Maintaining the riveting tool



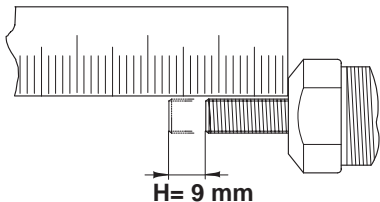
- Screw crank (18) out.
- Screw socket head screw (7) with O-ring (8) into device floor and tighten with internal hex key SW4 (19) (see page 33 “Table for torque values”).
- Rub the riveting tool dry.
- Adjust operating stroke corresponding to application (see pages 23/ 24 “Table stroke adjustment dependent on the grip range”).



**Attention** Too narrow clearance can cause damage to material. If you do not know the stroke setting, unscrew the adjustment screw (6.1) a few turns (ca. 6 mm).

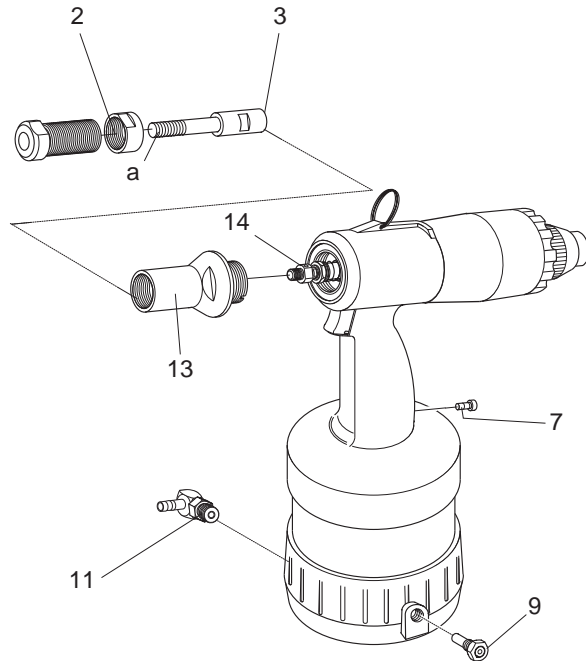


**Note** The maximum working stroke may only vary between  $\pm 0.2$  mm. If the maximum working stroke is too narrow, you must fill up the hydraulic oil.



- Reconnect the air supply.
- Carry out work cycle without blind rivet nut.  
The maximum working stroke (ca. 9 mm) must be available.





## Table for torque values

In the following table, you will find torque values, which you are required to adhere to while tightening the screws/ nuts.

Pos.	Name	Threading	Torque value MA in Nm
2	Lock nut	Metrical M18	10
3	Mandrel	Metrical M8	7
7	Socket head screw (also in the device floor)	Metrical M6	4
9	Safety valve	Withworth-pipe-thread 1/4"	20
11	Swivel joint	Withworth-pipe-thread 1/4"	20
13	Nose cap	Metrical M27	20
14	Lock nut	Metrical M8	7

a = thread without instructions for a tightening torque

## Servicing and cleaning the riveting tool



**Caution** Hazard of injury if handled in an improper manner! On completing this work, there should not be any more hazard to the operator, if used as per the regulations. The operator may only carry out the operations mentioned here. Maintenance and service work not described in this operating manual may only be carried out by trained specialists following instruction by RIVETEC on the basis of the service instructions which also exist. See the address on page 42 for more information on service instructions and training.  
Hazard of injury if the riveting tool falls down! The hydraulic housing must always be kept dry, clean and oil- and fat-free.



**Attention** Material damage due to corrosion! Do not use any highly active cleaning agents or combustible liquids for cleaning purpose!

The following routine is recommended:

Grease the mandrels with a drop of non-corrosive oil at regular intervals (see page 35 "Maintenance Intervals").

The riveting tool must be cleaned and checked for mechanical defects as per the respective application type.

After the riveting tool has been cleaned and when it is to be stored for a longer period of time, lightly grease all metal outside components with non-corrosive grease.

## Maintenance Intervals

Intervall	Activity	How?	Who?	Remark
Daily before use	Check nose piece and mandrel for wear and tear	Visual check	Operator	—
Daily before use	Check the riveting tool for wear	Visual check/ Functional check	Operator	Replace nose piece, mandrel respectively, if necessary
Daily before use	Check the air discharged from the tool	Visual check, remove dirt	Operator	Only specialists should change the worn parts
Daily before use	Check for oil leaks from the riveting tool	Visual check, if necessary refill the oil, bleed the hydraulic system	Operator	Do maintenance work when required
Daily after use	Oil mandrel thread	Grease the thread with a drop of non-corrosive oil	Operator	—
Daily after use	Clean riveting tool	With a rag	Operator	—
Daily after use	Oil moving parts (not Trigger (12))	With acid-free oil e.g. ELFOLNA 46	Operator	—
Every 300 rivetings/ 25 operating hours	Check the stroke setting	Measuring stroke (H)	Operator	Readjust the nose piece after every stroke adjustment
Every 5-10 000 rivetings/ 500 operating hours	Change the hydraulic oil	With acid-free oil e.g. DEA Astron HLP 32	Professional	Oil changes should only be carried out by specialists

## Trouble shooting

Operations, which may be carried out by the operator, are marked with the letter **O**.

Work which may only be carried out by a specialist is identified with the letter **P**.



**Caution** Hazard of injury! In any case, keep the compressed air supply detached till the source of the problem is eliminated.



**Attention** Material damage! The work marked by the letter **O** should only be carried out by trained specialists with the aid of the service instructions. Alternatively the tool should be sent for overhauling.

Any replacement of original spare parts may be carried out only by well-trained experts.



**Note** After every instance of problem-removal, a thorough functional check must be carried out

Problems	Cause	Solution
Blind rivet nut is not, respectively not correctly riveted	<p>Supply of compressed air is too rare</p> <p>Stroke (H) is not correct</p> <p>Oil deficiency</p>	<p>(O) Check compressed air supply</p> <p>(O) Set the air at the maintenance level of 6 bar</p> <p>(P) If the operating pressure is o.k., send the riveting tool for overhauling</p> <p>(O) Readjust Stroke (H) (see page 19)</p> <p>(O) Fill up the oil (see page 29)</p>
Safety valve gets blown off	<p>Compressed air pressure is too high</p> <p>Valve is defective</p>	<p>(O) Check and adjust compressed air setting</p> <p>(O) Replace safety valve</p>
Excessive loss of oil from riveting tool	Leaking and worn joints	<p>(P) Have trained specialists repair the riveting tool or send it for overhauling</p>
Air bubbles in the hydraulic system	<p>O-ring is leaking</p> <p>Not correctly vented/ bled</p>	<p>(O) Bleed the hydraulic section (see page 29 "Maintaining the riveting tool")</p> <p>(P) Detect leakage (refer to corrective maintenance)</p>
Loss of hydraulic oil due to leakage	Defective O-rings in the riveting tool	<p>(O) Detect leakage</p> <p>(O) Change O-ring (8)</p> <p>(P) Send the riveting tool for overhauling</p>

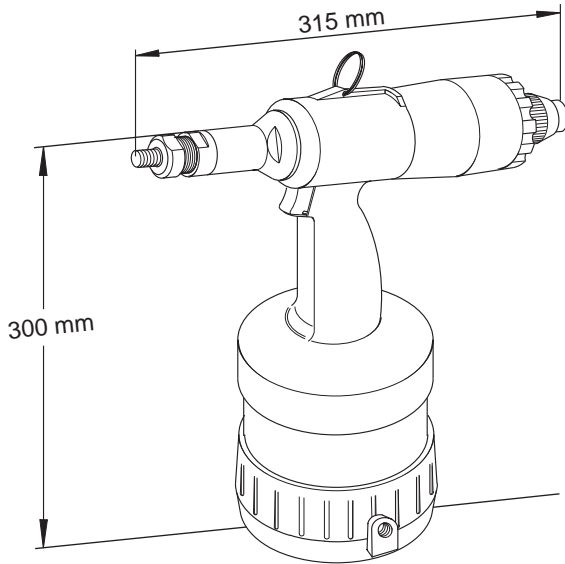
## Trouble shooting

<b>Problems</b>	<b>Cause</b>	<b>Solution</b>
Air motor does not rotate to the left.	Supply of compressed air is too rare  Falsely adjusted adjustment screw (6.1)  Oil deficiency	(O) Check the air supply (O) Set the air at the maintenance level of a maximum of 7 bar (O) Readjust the adjustment screw (6.1)  (O) Refill the oil (see page 31)
Air motor does not rotate to the right	Supply of compressed air is too rare  Valve thread worn or O-ring defect.  Unclean air, pollution of the air flow in the valve slide	(O) Check the air supply (O) Set the air at the maintenance level of a maximum of 7 bar  (P) Test the parts and change them if necessary, or send the riveting tool to be overhauled.  (P) Remove the valve slide and clean or send the riveting tool for overhauling

## Disposing of the riveting tool

Ensure that the hydraulic oil is inside the riveting tool. Dispose it off in an environmentally friendly manner.

Send the riveting tool back to the manufacturer in it's original packing, if still available.



## Technical data

Type of riveting tool:	RL 100
Height:	300 mm
Width:	315 mm
Weight:	2.9 kg
Operating pressure:	6 bar
Compressed air supply	
Nominal diameter:	DN 6
Power output (at 6 bar):	ca. 24.4 kN
Operating stroke:	ca. 9.0 mm
Air consumption per riveting:	7.0 l
Engine air consumption:	23.3 l/min.
Field of work	
Blind rivet nuts:	M8...M16
Sound emission level in the workplace:	$L_{PAI}=86dB(A)$
Vibration level:	$a_{hw}<2.5m/s^2$

## **Guarantee**

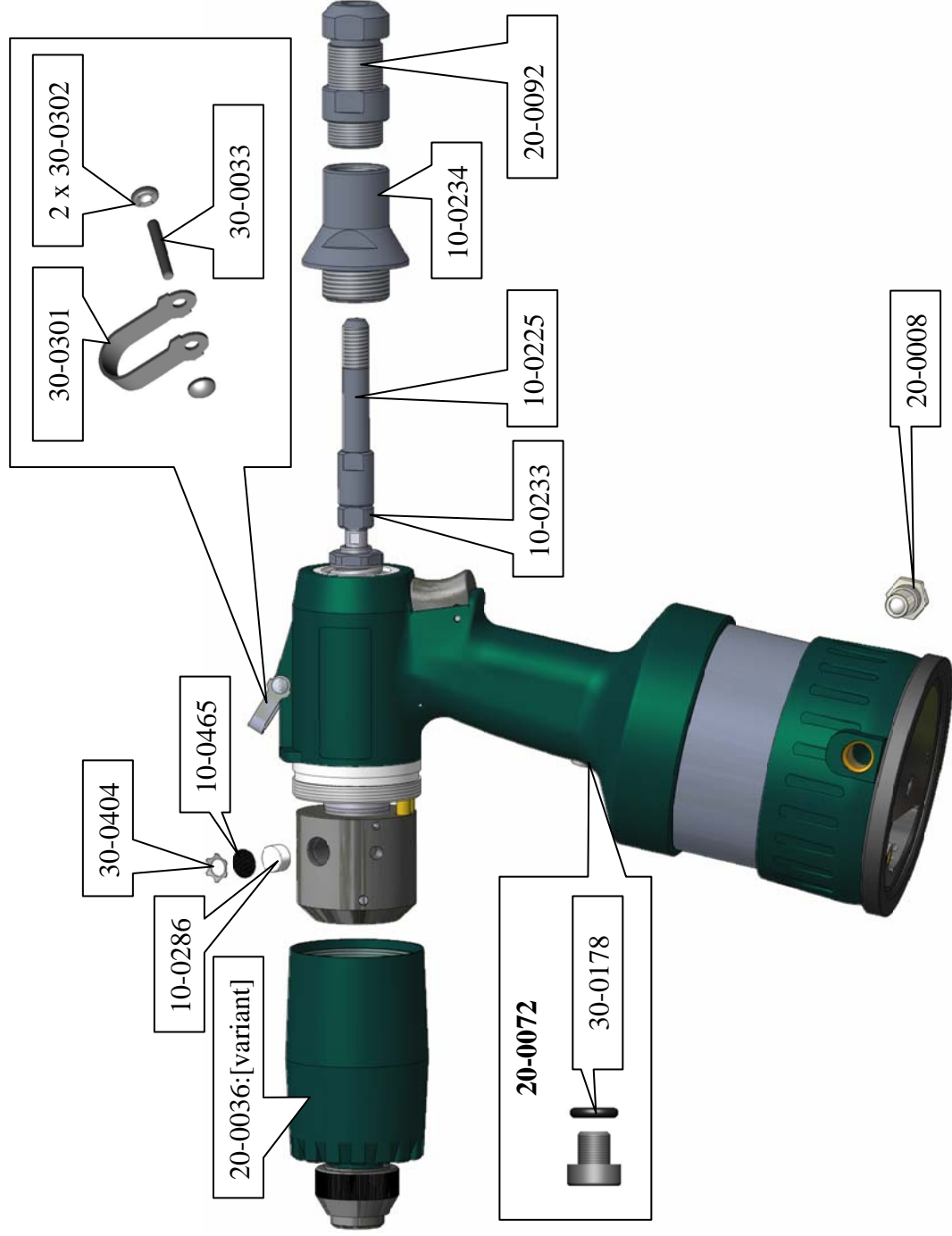
Other than the official guarantee (6 months), the company RIVETEC also offers a guarantee of an additional 6 months from the date of purchase (The bill being the proof thereof).



The following working parts are excluded from the guarantee agreement:

- Mandrel (3)
- Nose piece (1)
- Socket head screw (7) with O-ring (8)

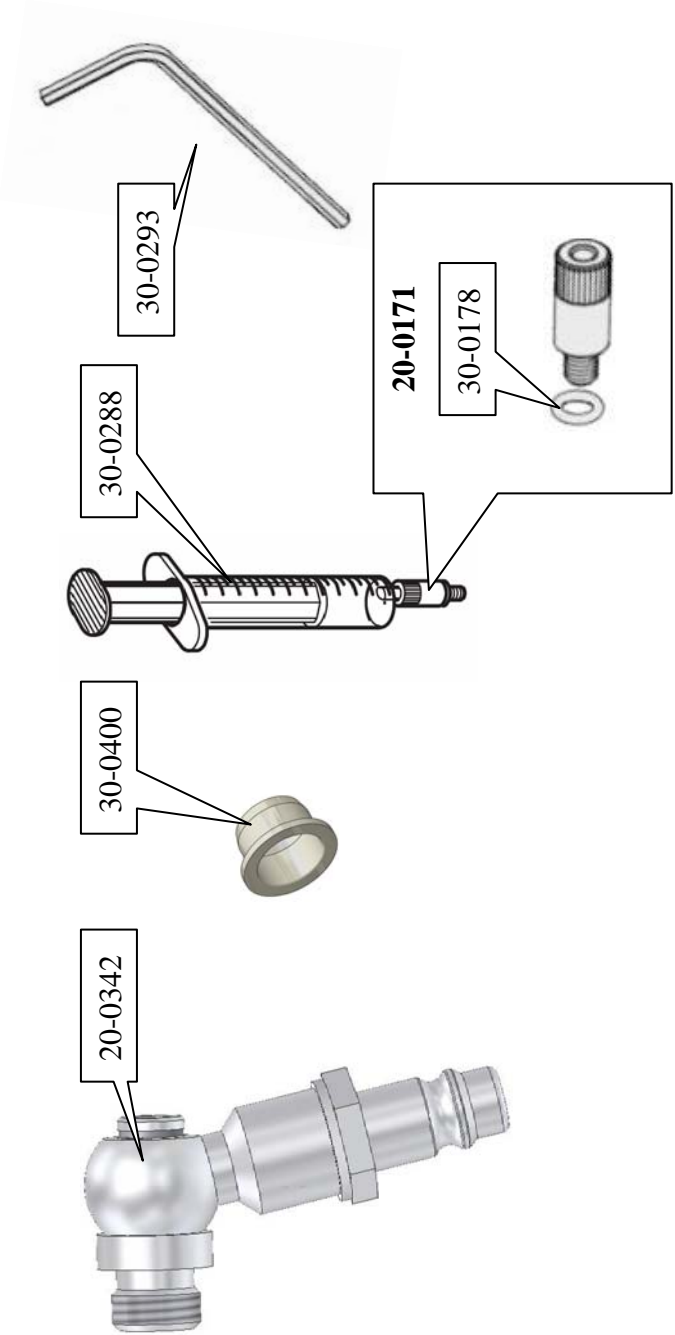


# 20-0102: [variant]

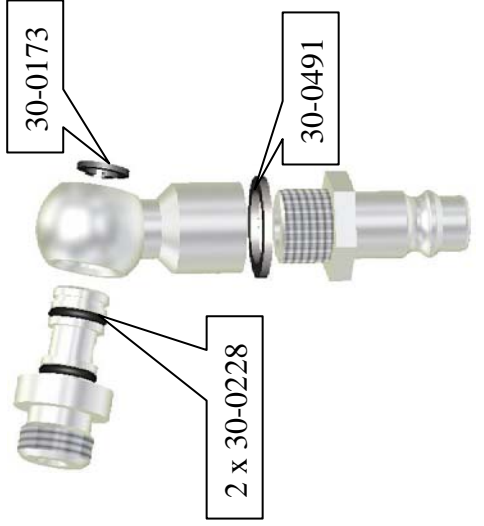


Standart	M6	M8	M10	M12	M14	M16
	20-0553	20-0090	20-0091:0	20-0092	20-0027	20-0093
	10-0794	10-0223	10-0224:0	10-0225	10-0226	10-0227

# Accessories for connecting, upkeep, stowage



## 20-0342



# Overview

Objednáací číslo Part No.	Název	Description	Ks Pcs	V
10-0223	Závitový trn M 8	Mandrel M8	1	V
10-0224:0	Závitový trn M 10	Mandrel M10	1	V
10-0225	Závitový trn M 12	Mandrel M12	1	V
10-0226	Závitový trn M 14	Mandrel M14	1	V
10-0227	Závitový trn M 16	Mandrel M16	1	V
10-0233	Pojistná matka	Lock Nut	1	
10-0234	Hubice	Nose Cap	1	
10-0286	Tlumič výfuku	Exhaust Silencer	1	V
10-0465	Sítka tlumiče	Sifter	1	
10-0794	Závitový trn M 6	Mandrel M6	1	V
20-0008	Pojistný ventil komplet	Safety Valve, cpl.	1	V
20-0027	Náustek 14 komplet	Nose piece 14, cpl.	1	V
20-0036:zelená	Kryt motoru komplet	End cap. cpl.	1	
20-0072	Těsnící šroub komplet	Fill Screw cpl.	1	
20-0090	Náustek 8 komplet	Nose piece 8, cpl.	1	
20-0091:0	Náustek 10 komplet	Nose piece 10, cpl.	1	V
20-0092	Náustek 12 komplet	Nose piece 12, cpl.	1	V
20-0093	Náustek 16 komplet	Nose piece 16, cpl.	1	V
20-0171	Plnicí šroub komplet	Oil Refill Adapter Screw	1	
20-0342	Vzduchový přípoj - komplet	Swivel-joint, cpl.	1	
20-0553	Náustek 6 komplet	Spool for sensor 200Z	1	V
30-0033	Kolík válcový 3 x 20	Cylindrical Pin 3x20	1	
30-0173	Pojistný kroužek pro hřídele	Retained Ring	1	
30-0178	O-kroužek 5x2	OR 5x2 90 Shore	1	
30-0228	O-kroužek 7.1x1.6	OR 7,1x1.6 70 Shore	2	
30-0288	Stříkačka na olej	Oil Syringe	1	V
30-0301	Závěs	Lifting Attachment	1	V
30-0302	Starlock D=3	Starlock D=3	2	V
30-0400	Zátka	Stopper	1	V
30-0404	Inlock D= 3	Inlock D=3	1	V
30-0491	Těsnění 1/4" - bílé	Seal	1	V

\*V – díly, na které se nevztahuje záruka / Guarantee doesn't apply to these spare-parts

Název produktu:  
Product Name: **RL 100**  
Kat. číslo:  
Cat. Number: **99-0025**

Určení produktu:  
Specifications: pneumaticko-hydraulické nýtovací nářadí pro usazování jednostranný nýtů  
air-hydraulic riveting tool for installing blind rivets

Výrobce

Manufacturer

RIVETEC s.r.o.  
Albrechtice nad Vltavou 16  
CZ-39816 Albrechtice nad Vltavou  
IČ 60647761

prohlašuje, že výše uvedený výrobek odpovídá následujícím evropským normám a směrnici a byl navržen, vyroben a posouzen ve shodě s platnou legislativou ČR:

declares that the product listed is in conformity with the essential requirements and provisions of following Council Directives and conforms to the following standards:

ČSN EN ISO 12100 Bezpečnost strojních zařízení  
ČSN EN 349 Bezpečnost strojních zařízení – Nejmenší mezery k zamezení sličených částí lidského těla  
ČSN EN 953 Bezpečnost strojních zařízení – Ochranné kryty  
ČSN CR 954-100 Bezpečnost strojních zařízení: části řídicích systémů  
ČSN EN 983 Bezpečnost strojních zařízení – Bezpečnostní požadavky pro fluidní zařízení a jejich součásti – Pneumatika  
ČSN EN 999 Bezpečnost strojních zařízení – Umístění ochranných zařízení s ohledem na rychlosti přiblížení částí lidského těla  
ČSN EN 61000-6-1 ed. 2 Elektromagnetická kompatibilita – Odolnost  
ČSN EN 61000-6-4 ed. 2 Elektromagnetická kompatibilita – Emise  
ČSN EN 60204-1 Bezpečnost strojních zařízení – Elektrické zařízení strojů – Všeobecné požadavky  
ČSN EN ISO 13850 Bezpečnost strojních zařízení – Nouzové zastavení – Zásady pro konstrukci  
ČSN EN ISO 13857 Bezpečnost strojních zařízení – Bezpečné vzdálenosti k zamezení dosahu k nebezpečným místům horními a dolními končetinami  
ČSN EN ISO 1037 Bezpečnost strojních zařízení – Zamezení neočekávanému spuštění  
ČSN EN 614-1 Bezpečnost strojních zařízení – Ergonomické zásady navrhování – Část 1  
ČSN EN 60439-1 ed. 2 Rozvaděče nn – Část 1  
2006/95/ES Elektrická zařízení určená pro používání v určitých mezích napětí  
2004/108/ES Elektromagnetická kompatibilita  
2006/42/ES Směrnice o strojích a zařízeních

Zákon č. 22/1997 Sb. o technických požadavcích  
Zákon č. 71/2000 Sb. (změna zákona č. 22/1997 Sb.)  
Zákon č. 205/2002 Sb. (změna zákona č. 22/1997 Sb.)  
Zákon č. 226/2003 Sb. (změna zákona č. 22/1997 Sb.)  
Zákon č. 102/2001 Sb. o obecné bezpečnosti výrobků  
Zákon č. 227/2003 Sb. (změna zákona č. 102/2001 Sb.)  
Nařízení vlády č. 18/2003 Sb. o požadavcích na výrobky z hlediska jejich elektrické kompatibility  
Nařízení vlády č. 204/2003 Sb. o technických požadavcích na strojní zařízení

Místo a datum:  
Place and date: **Albrechtice nad Vltavou**  
**27.11.2008**

Jméno, funkce a podpis autorizované osoby:  
Name, Title and Signature of Authorized Person: **Ing. Antonín Solfronk**  
**Managing Director**





*TITGEMEYER Group*

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