RIV991

PNEUMATIC PUNCHING TOOL FOR HEXAGONAL HOLES

OPERATING INSTRUCTIONS

CE

PennEngineering®

ATLAS®

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GENERAL INFORMATION

ASSISTANCE
In case you need any assistance concerning the use and the maintenance of the tool, or in case you need to order any spare parts, you shall contact your local authorized dealer specifying the identification/serial numbers of the tool, written on its outer casing.

CERTIFICATION AND EC MARKING
The tool is manufactured in compliance with the European Directives, which are in force when the tool itself is put on the market.

WARRANTY
The warranty has a validity of 12 months, as of the date indicated on the invoice.
The warranty only covers replaced parts; labor is not included.
The following are not covered by warranty: standard accessories and tool damages caused by:
- transport and/or handling, user's mistakes,
- failed servicing/maintenance, as indicated in this manual,
- faults and/or breakages that are not attributable to tool anomalies,
- normal consumption of consumables.

The warranty is invalidated both in case of unauthorized tampering/replacements of tool components and in case of use of accessories, tools or consumables different to those recommended by the manufacturer, which could even cause injuries to the tool's user.
PennEngineering assumes responsibilities only if the tool is originally defective, but declines all forms of responsibility if the user fails to follow the instructions given.

MANUAL STRUCTURE
This instruction manual must be read with particular attention by the Customer, as the correct pre-arrangement, installation and use of the tool, are the correct basis for a good relationship between Manufacturer and Customer.

PURPOSE AND CONTENTS
The manual herein has the purpose of providing the Customer with all the information needed not only to use the tool correctly, but also to manage it self-sufficiently and safely. It includes information concerning technical aspects, operation, maintenance, spare parts and safety.
Users and Qualified Technicians must read the instructions given herein thoroughly before starting to use the tool. If you have any doubts on the meaning of the instructions given, please do not hesitate to contact us for further explanations.

RECEIVERS
The manual herein has been written for both the operators and the technicians enabled to service the tool.
Operators must not carry out jobs reserved to service and/or qualified technicians.
PennEngineering is not liable for any damage deriving from the failed observance of this rule.

PLACING OF THE MANUAL
This instruction manual must be kept near the tool, inside a dedicated container and, above all, away from liquids or anything else that may compromise its legibility.

OPERATING SYSTEM
The hydro-pneumatic hexcutter tool for hexagonal holes, RIV991, is used for hexagonal rivet nuts.

The hydro-pneumatic system and the mechanical components used in the inside structure of RIV991, when compared with other riveting tools, result to be much more reliable. A tool feature is a reduction of the problems caused by the wear and tear of the components, and consequently the tool will last much longer and work better. The technical solutions adopted make the RIV991 more compact and lighter: the result is a very handy tool.

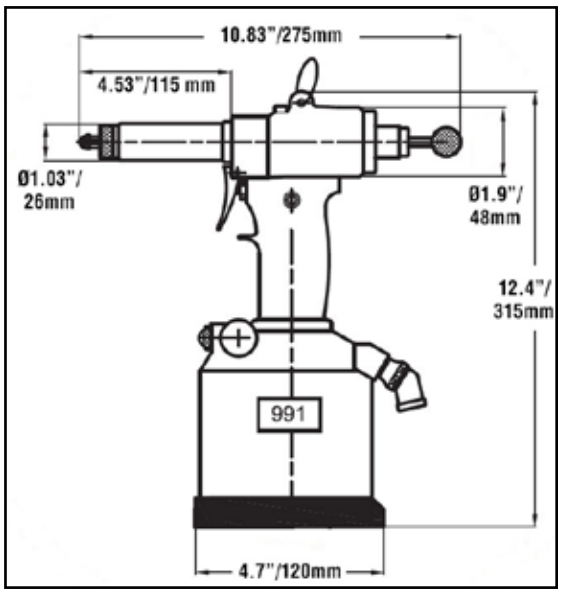
VIBRATION
When used correctly, the tool does not produce any dangerous vibration.

NOISE LEVEL
The tool is designed and manufactured in such a way that the noise level is very low. The weighed equivalent continuous acoustic pressure level A in the operator position is indeed below 80 dB (A).
This information can allow the tool user to better evaluate the possible risks of danger.

TECHNICAL DATA
The following table provides the technical data and features of the tool, to which you must refer when contacting the ATLAS® Technical Assistance Department at PennEngineering.

TECHNICAL DATA AND FEATURES

AIR WORKING PRESSURE	90 PSI / 6 BAR
MAX AIR PRESSURE	70 to 100 PSI / 5 to 7 BAR
AIR CONSUMPTION PER CYCLE AT 6 BAR	152 cu. in. 2.5 liter
MAX STROKE	.472” / 12 mm
DRIVING FORCE	4721 lbs. @ 90 PSI 21 kN @ 6 BAR
WEIGHT	5.3 lbs. / 2.4 kg
VIBRATIONS	< 2.5 m/s2
NOISE LEVEL	80 dB (A)



EQUIPMENT

The equipment stated hereafter refers to standard tools.
Any special tool could consequently require special parts, different than those listed.

REF.	PART NUMBER	QTY	DESCRIPTION
1	4630400	1	RIV991-HYDRO-PNEUMATIC PUNCHING TOOL (IN CASE)
2	3064400	1	HYDRAULIC OIL TYPE ISO VG 32 100CC
3	3077300	1	PLASTIC CASE
–	–	1	INSTRUCTION MANUAL

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OPTIONAL TOOLING

The tool can be supplied with the following options:

PART NUMBER	DESCRIPTION		
2974900	M5 HEXAGONAL PUNCH FOR RIVET NUT	HEXAGON 7	
2925000	M6 HEXAGONAL PUNCH FOR RIVET NUT	HEXAGON 9	
2975000	M8 HEXAGONAL PUNCH W/RING NUT FOR RIVET NUT	HEXAGON 11	
2975300	M5 DIE WITH RING NUT FOR PUNCH	HEXAGON 7	
2925100	M6 DIE WITH RING NUT FOR PUNCH	HEXAGON 9	
2975400	M8 DIE WITH RING NUT FOR PUNCH	HEXAGON 11	
4631900	M10 COMPLETE KIT FOR RIVET NUT	HEXAGON 13	
4669200	M12 COMPLETE KIT FOR RIVET NUT	HEXAGON 16	

HOLES SIZES AND PLATE THICKNESS

Size	Predrilled * inches / mm ◯	Hexagon * inches / mm ⬡	Plate Thickness		
			Aluminum inches / mm	Steel inches / mm	Stainless Steel inches / mm
#10-32 / M5	.285 / 7.25	.276 / 7	.020-.197 / 0.5-5.0	.020-.118 / 0.5-3.0	.020-.059 / 0.5-1.5
1/4-20 / M6	.364 / 9.25	.354 / 9	.020-.236 / 0.5-6.0	.020-.118 / 0.5-3.0	.020-.059 / 0.5-1.5
5/16-18 / M8	.443 / 11.25	.433 / 11	.020-.236 / 0.5-6.0	.020-.118 / 0.5-3.0	.020-.059 / 0.5-1.5
3/8-16 / M10	.522 / 13.25	.512 / 13	.020-.236 / 0.5-6.0	.020-.118 / 0.5-3.0	.020-.059 / 0.5-1.5
1/2-13 / M12	.640 / 16.25	.630 / 16	.020-.236 / 0.5-6.0	.020-.118 / 0.5-3.0	.020-.059 / 0.5-1.5

** Hole sizes are for the ATLAS® FM™ full metric inserts.*

COMPLETE KIT FOR HEXAGON 13 FOR M10 RIVET NUT

REF.	PART NUMBER	QTY	DESCRIPTION
1	4631900	1	KIT991-10 - COMPLETE KIT FOR HEXAGON 13 FOR M10 RIVET NUT

KIT COMPOSITION

1 *2* *3* *4*

REF.	PART NUMBER	QTY	DESCRIPTION
1	2975500	1	DIE WITH RING NUT FOR PUNCH HEXAGON 13
2	4644500	1	SLEEVE FOR M10
3	4669500	1	HEXAGONAL PUNCH FOR M10 RIVET NUT HEXAGON 13 WITH RING NUT
4	4527500	1	PISTON CONNECTION

COMPLETE KIT FOR HEXAGON 16 FOR M12 RIVET NUT

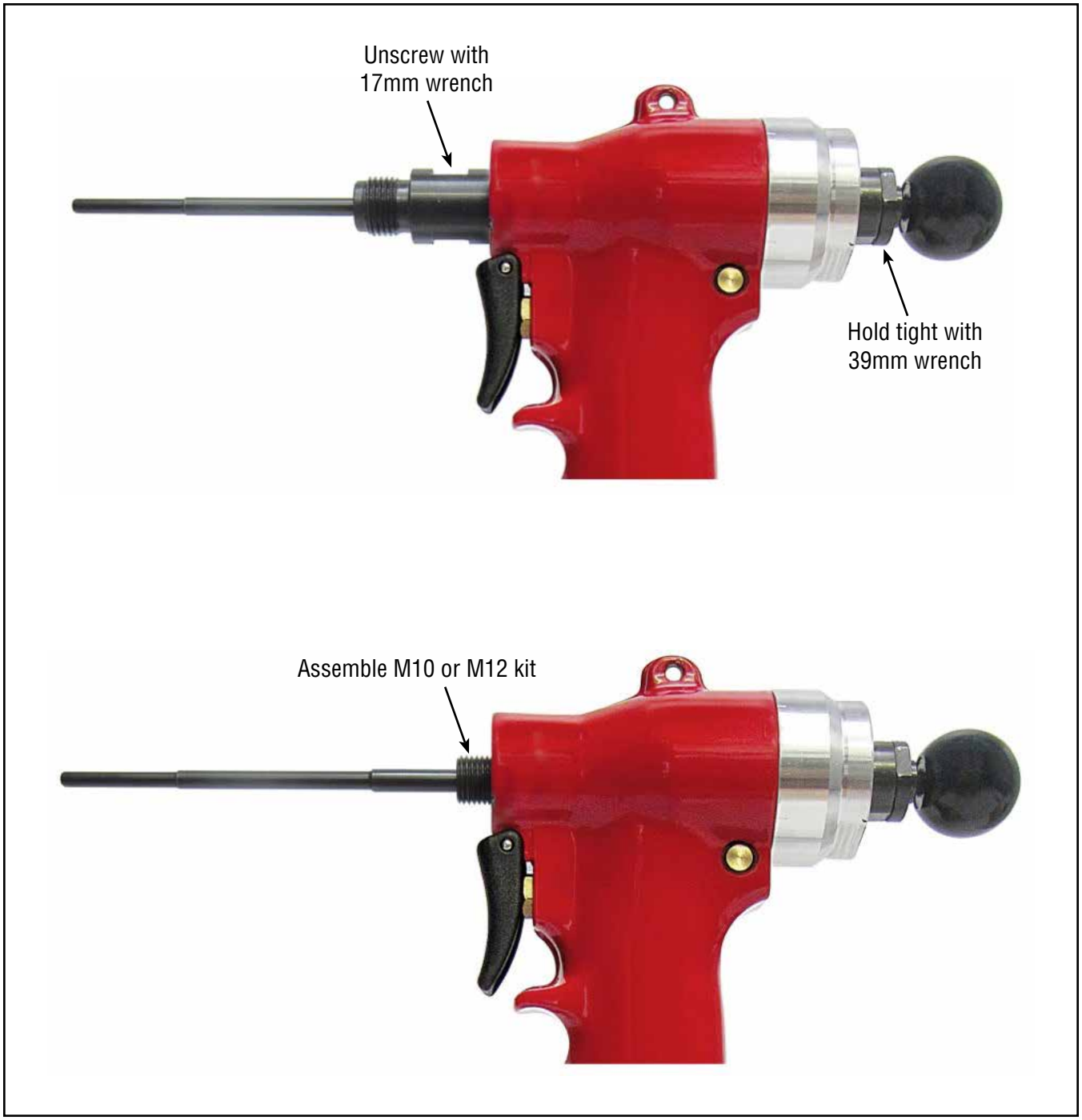
REF.	PART NUMBER	QTY	DESCRIPTION
1	4669200	1	KIT991-12 - COMPLETE KIT FOR HEXAGON 16 FOR M12 RIVET NUT

KIT COMPOSITION

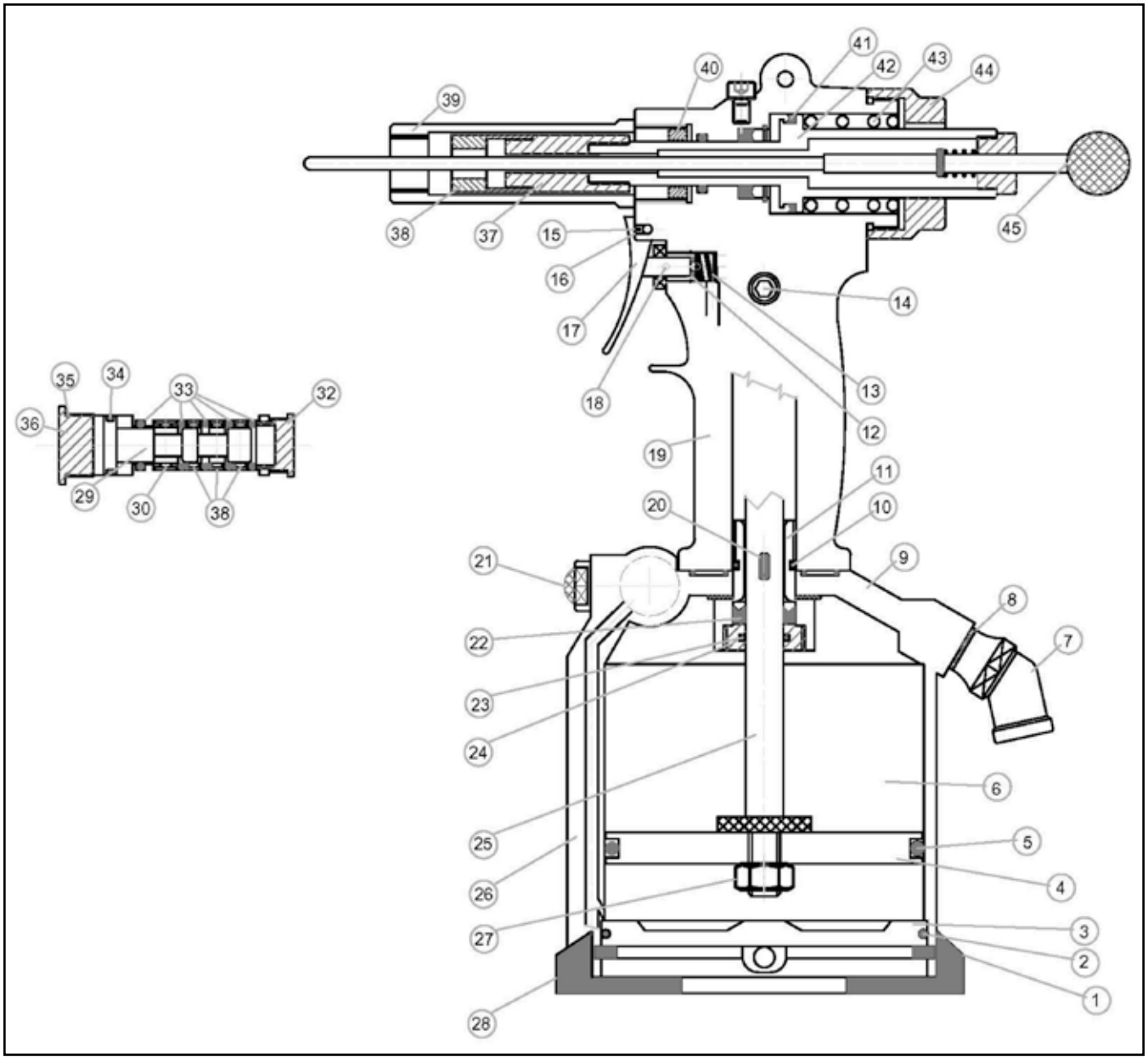
1 *2* *3* *4*

REF.	PART NUMBER	QTY	DESCRIPTION
1	4669300	1	DIE WITH RING NUT FOR PUNCH HEXAGON 16
2	4644600	1	SLEEVE FOR M12
3	4669400	1	HEXAGONAL PUNCH FOR M12 RIVET NUT HEXAGON 16 WITH RING NUT
4	4527500	1	PISTON CONNECTION

ASSEMBLY FOR M10 KIT (4631900) AND M12 KIT (4669200)



SPARE PARTS

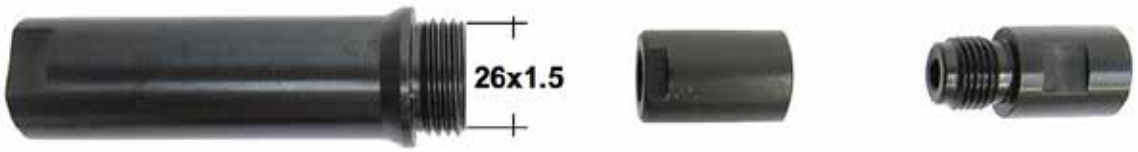


Only local authorized dealers are allowed to repair the tool.
Contact ATLAS® customer service for more information.

TABLE FOR SPARE PARTS DIAGRAM

REF.	PART NUMBER	QTY	DESCRIPTION	REF.	PART NUMBER	QTY	DESCRIPTION
1	3066500	1	SNAP RING	24	3067500	2	O-RING 113
2	3066400	1	O-RING	25	3065900	1	STEM
3	3066300	1	BOTTOM	26	4617400	1	PNEUMATIC CASING
4	4616900	1	AIR PISTON	27	3072600	1	NUT
5	3066100	1	O-RING	28	3066600	1	RUBBER BASE
6	3066000	1	SHOCK ABSORBER	29	3070900	1	SPOOL
7	3235500	1	CONNECTION THREAD 1/4" + 1/4" GAS + ALUMINUM WASHER	30	3069400	1	CAGE
8	3538300	1	SEAL WASHER	31	3071300	3	CAGE
9	3068400	2	O-RING	32	3071100	1	THREAD CAP
10	3068500	1	O-RING	33	3071000	5	O-RING
11	3068600	1	STEM GUIDE	34	3070800	1	O-RING
12	3068700	1	O-RING	35	3070700	1	O-RING
13	3068800	1	SPRING	36	3070600	1	THREAD CAP
14	3095200	1	OIL CAP	37	3119800	1	PISTON CONNECTION
15	3095600	1	POINTED NUT M3 X 3	38	3119900	1	RING NUT
16	3096100	1	PIN	39	4644000	1	SLEEVE
17	3070300	1	TRIGGER	40	4631400	1	STOPPING DEVICE WITH O-RING
18	3070400	1	TRIGGER PIN	41	4631500	1	GASKET
19	5033800	1	HYDRAULIC CASING	42	4631600	1	HYDRAULIC PISTON
20	3094900	1	PIN	43	4631700	1	SPRING
21	3072800	1	MUFFLER	44	4631800	1	BOTTOM
22	3098300	2	GASKET	45	3118800	1	M10 PLIERS OPENER BAR FOR M4 - M10 RIVET NUTS
23	3068200	1	RING NUT				

NOTE: When placing an order, please indicate the REF. number and the DESCRIPTION.



1 *2* *3*

REF.	PART NUMBER	QTY	DESCRIPTION
1	4644400	1	SLEEVE
2	3119900	1	RING NUT
3	3119800	1	PISTON CONNECTION

GENERAL WARNINGS

The operator must read carefully the information given in the present manual, especially with regard to the safety precautions listed in this chapter. The operator must also observe the warnings listed below:

- The tool shall be used exclusively by trained personnel.
- The tool and the work area shall be kept clean and tidy.
- The tool shall be rested upright on the rubber base on a flat surface to prevent it from falling.
- The tool shall only be used in normal operating conditions.
- The user shall wear suitable clothing taking care to avoid entanglement of loose parts, ties, long hair, cleaning rags etc. in the tool itself.
- When using the tool, the operator and others nearby should wear safety glasses to protect against fastener ejection. We also recommend wearing gloves when using the tool.
- The user shall use the accessories supplied when servicing and/or adjusting the tool.
- The plates applied on the tool shall not be removed or altered.
- Unauthorized personnel shall not be allowed to touch the tool.
- Make sure that the air supply hoses are correctly sized.
- Do not drag the tool holding it by the hose when it is connected to the power supply. Keep the hose away from sources of heat and from sharp objects.
- Remember to remove service or adjustment keys after having making a repair and/or adjustment.
- Before disconnecting the compressed air hose from the tool, ensure it is not pressurized.
- Disconnect the air supply before cleaning or making tool repairs.
- Air supply must be disconnected before making tool repairs and cleaning.
- When filling with oil, only use fluids with the characteristics indicated herein.
- If you should accidentally spill oil on your skin, rinse and wash thoroughly with soap and water.
- Where possible, you are recommended to use a safety balance to support the tool.
- Pay attention to possible risk of whiplash with the air supply hoses.
- Do not operate the tool when it is directed towards anyone.

INTENDED USE

The tool is designed exclusively to transform round holes into hexagonal.

UNINTENDED USE

The tool shall not be used:

- In explosive or aggressive atmosphere or when there is an excessive amount of dust or oil in the air.
- In atmosphere subject to the risk of fire.
- When it is exposed to weather conditions.

RESIDUE RISK

During the normal working cycle and when servicing the tool, the operators are exposed to some residue risks which, due to the nature of the operations to be carried out, cannot be totally eliminated.
It is therefore absolutely crucial not to exceed the maximum pressure indicated in the technical data section on page 3.

IDENTIFICATION/SERIAL NUMBER

HANDLING

The tool can be hand carried. It is recommended to store the tool in its case after using it.
The tool can be transported safely if is has been correctly put away in its case.

Damages to the tool caused during transport and/or handling are not covered by WARRANTY.
Repairs or replacements of damaged parts are at Customer's charge.

STORAGE

If you are not going to use the tool for a long time, you must put it away according to the following suggestions:

- Store the tool indoors.
- Protect the tool from impacts and stresses by keeping it in its case.
- Protect the tool from damp and excessive heat.
- Keep the tool away from corrosive substances.

CONNECTIONS

To avoid problems when starting the tool, observe the following:

PNEUMATIC

The pneumatic line is connected by a quick-release coupling hose to be attached to the air connection, thread size 1/4" + 1/4" gas, supplied with the tool. The air supply hose must be flexible and must meet the safety requirements of the tool.

AIR SUPPLY

The air supply line must be free from dirt and moisture to prevent early wear of moving components on the tool. Therefore, it is recommended to use dry air: i.e. not greased.

PRELIMINARY CHECKS

Before putting the tool into service you need to make a few inspections and checks in order to prevent errors or accidents while starting it.

- Check if the tool has been damaged during transportation.
- Check if the compressed air hose is accurately connected to the air supply line.
- Check if the tool turns freely and if the motor runs freely.

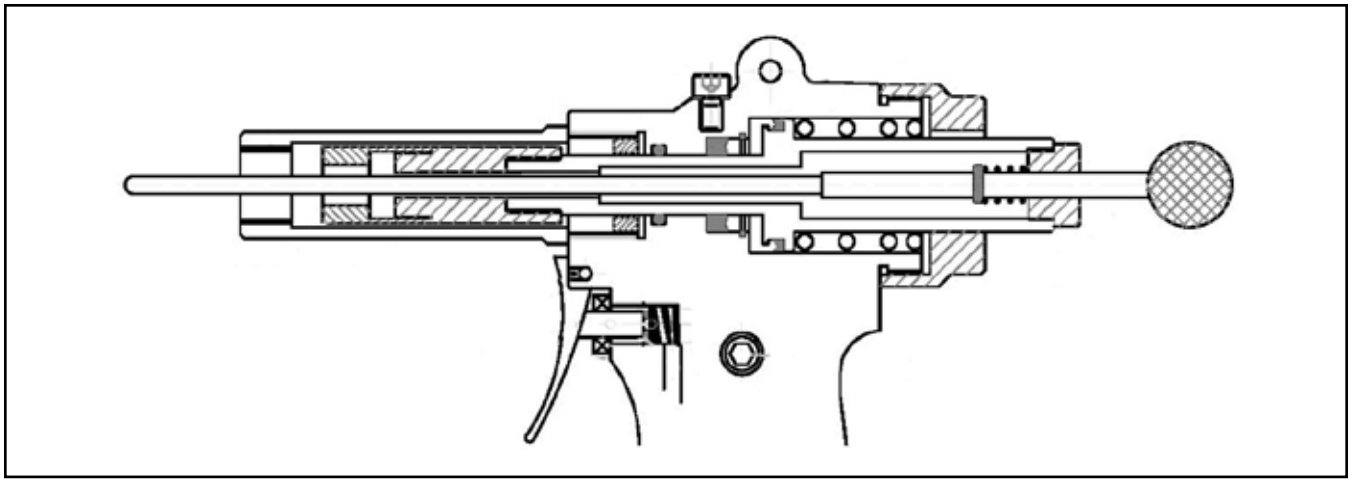
OPERATORS

The tool is designed to be used by one operator only.
Tool operators must satisfy the requirements stated hereafter (or they must be informed and trained accordingly).
They must be aware of the manual herein and of all information relevant to safety:

- They must have some general and technical education, to a sufficient level to be able to understand the manual and to interpret the drawings and the diagrams correctly.
- They must be acquainted with the safety rules, and with the industrial-safety and technical instructions.
- They must have an overall knowledge of the line and of the factory in which the tool is installed.
- They must know how to act in case of emergency, where to find the individual protection means and how to use them correctly.

Together with the above-mentioned requirements, the service technicians must also have appropriate technical training.

TOOL PREPARATION



Warning: Disconnect the air line before setting up the tool.

SERVICING THE TOOL AND REPLACING THE PUNCHES AND DIE

(See diagram above)
Before using the tool and after every size change, you need to:

- Take the sleeve off
- Insert the punch inside the proper ring nut
- Screw the sleeve on but don't cover the cylindrical end of the punch

MAINTENANCE

Maintenance operations must be carried out with the tool stopped and disconnected from the pneumatic supply line.

Warnings:

- *The tool maintenance instructions must be followed carefully.*
- *To ensure safety and perfect tool efficiency, it is recommended to use exclusively ORIGINAL spare parts.*

CLEANING

It is a good rule to completely clean and grease the tool on a periodic basis (depending on the type and frequency of use). These operations must be carried out at least once a year.

Shut-off all sources of power to the tool.

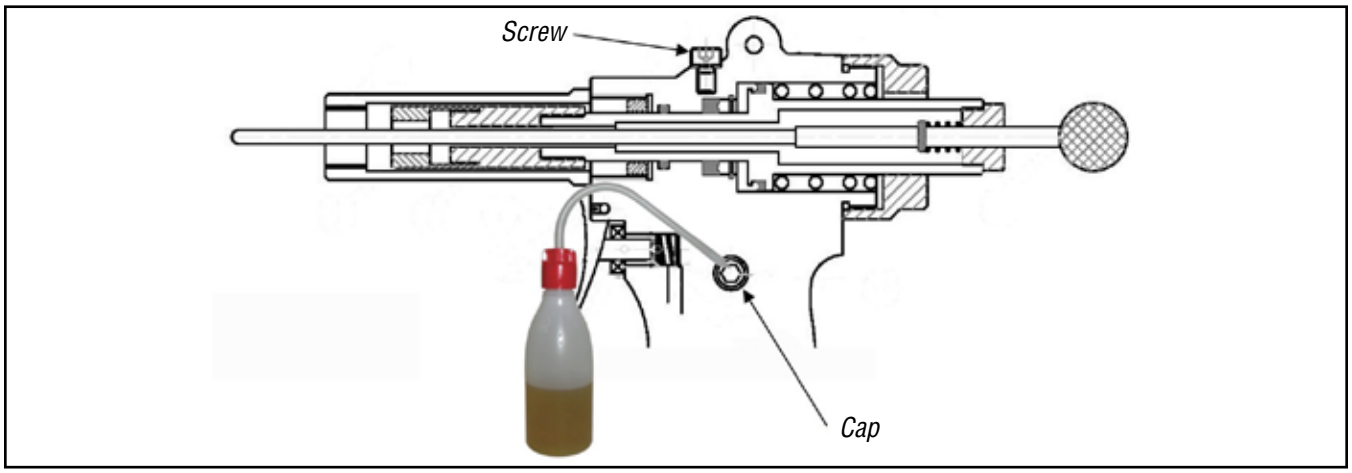
The operator must wear and use suitable personal protections before starting to clean the tool.

ORDINARY MAINTENANCE

In order to prevent stoppages and faults of the tool, an ordinary maintenance (including inspections, checks and operations) must be scheduled to keep the following under systematic control:

- ***State of lubrication of the tool.***
- ***State of wear of consumable parts.***

REFILLING THE HYDRAULIC CIRCUIT WITH OIL



Disconnect air line to prime tool. Proceed as follows (see photo above):

- Disconnect the airline from the tool inlet.
- Unscrew the screw.
- Remove the cap.
- Put the tool in a horizontal position and slowly pour the hydraulic oil (32˚ viscosity) in the cap until the circuit is full.
- Block the screw.
- Screw cap back on.
- Connect the tool to compressed air line and start up a couple of idle cycles.

Wear gloves when managing the oil.

Do not throw the old oil outdoors. Hand it over to an authorized waste disposal center.

Warning!: *If you should accidentally spill oil on your skin, wash and rinse thoroughly with soap and water.*

PARTS SUBJECT TO WEAR

On a periodic basis check the rubber base for wear, as this is what ensures the stability of the tool. If it should need replacing, order the spare base from ATLAS® customer service indicating the year/serial number of the tool.
On a periodic basis check the wear of both the punch and hexagonal die.

FAULT DIAGNOSIS AND REPAIRS

REPAIRS

To ensure the operational efficiency and safety of the tool, all repair jobs shall be carried out exclusively by the local authorized dealer or by ATLAS® Technical Assistance Service.

REQUESTING ASSISTANCE

For any information concerning Use, Maintenance, Installation, Repair etc., contac ATLAS® customer service.
When making inquiries, the customer is requested to be absolutely clear and to always refer to this Manual.

DISMANTLING INSTRUCTIONS

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When disposing the tool you need to separate the plastic parts, which are to be disposed of in compliance with current Regulations.
As for the bulk metal part of the tool, simply split-up the steel parts from those in other metals or alloys and send to be melted down and recycled.
The oil drained from the tool must not be thrown outdoors but handed over to an authorized oil disposal center.

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