Industrial Rivet & Fastener Co.

RIVET KING®

OPERATIONS MANUAL

FOR THE PNEUMATIC - HYDRAULIC RIVETING TOOL

RK-55SPS

N-8340000001124

TABLE OF CONTENT:

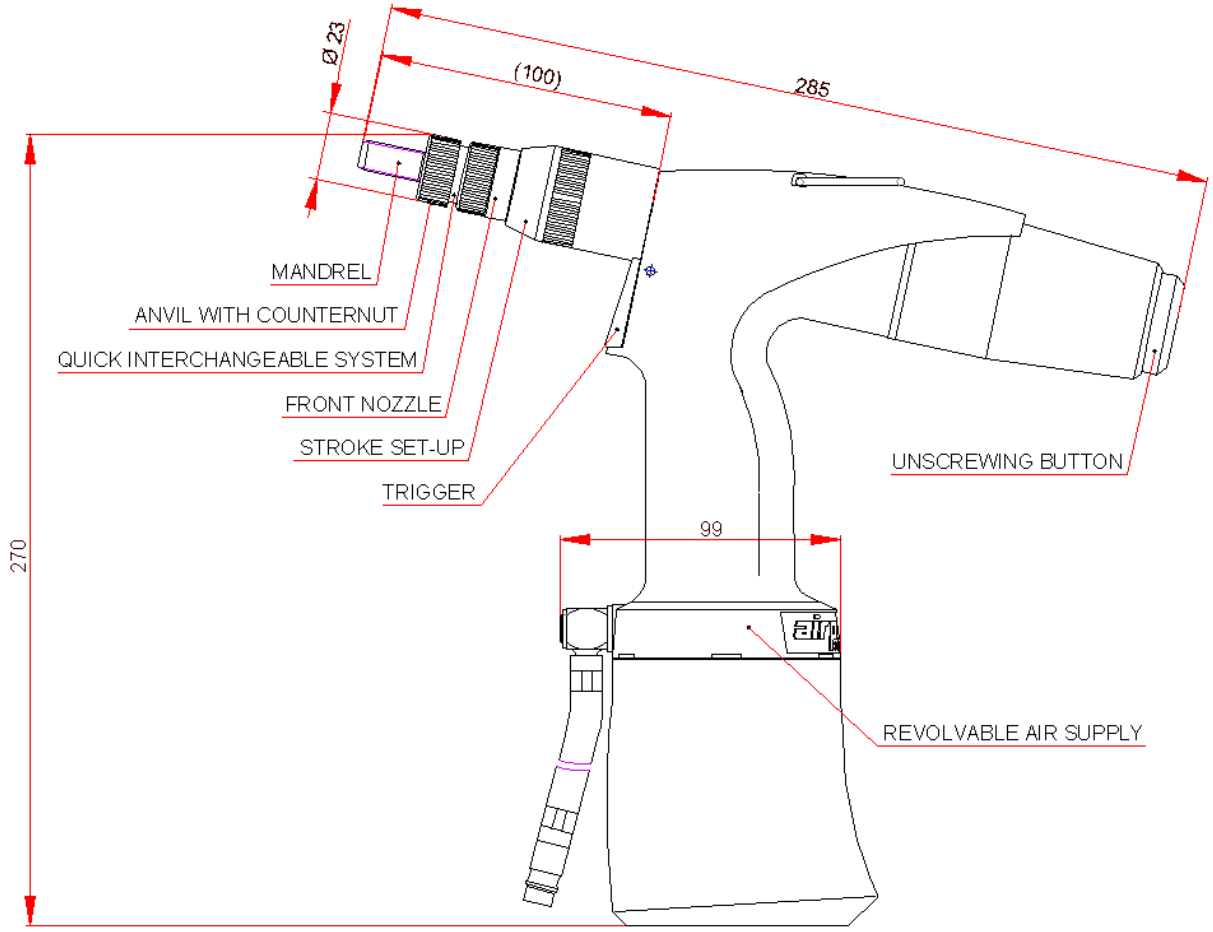
1. GENERAL SAFETY INSTRUCTIONS AND PRINCIPLES 

ATTENTION! Read all instructions and principles carefully. Every person installing, operating or maintaining the tool must be first thoroughly acquainted with this operations manual and is obliged to adhere to the following safety instructions and principles:

- The tool must not be used for other purposes than those for which it was designed.
- The tool must not be used in a different manner than that recommended by the manufacturer
- Any alterations of the tool, its accessories or spare parts remain in sole responsibility of the customer. After agreement the manufacturer provide technical support in designing and making additional alterations.
- The tool must be kept in top condition and regularly tested for damage and proper operation. The tool must be repaired only by an authorized technician or by a person trained by the manufacturer or supplier. Should you have any demand for training, please contact your sales agent.
- The tool must always be operated in accordance with respective sanitary and safety regulations.
- All queries regarding proper and safe operation of the tool should be addressed to your sales agent.
- Safety principles that must be adhered to in connection with operation of this tool must be known to all workers who operate the tool.
- When handling the tool take extra care to avoid unwanted activation and possible injury.
- The tool must be during any kind of maintenance or repair (does not apply to replacing nose-pieces and emptying the mandrel container) disconnected from the source of compressed air.
- Before operating the tool always take up firm posture and steady position.
- It is necessary to prevent break-away shanks endangering safe operation of the tool.
- Never aim with the tool at another person.
- Always check that the vent holes are not blocked or covered and that the supply hose are in good condition.
- Working pressure must not exceed 0,7 MPa.
- Oxygen or other flammable gasses from pressure cylinders must not serve as a driving agent.
- When operating the tool it is recommended to use safety glasses and utility gloves.
- If the continuous cycle of riveting exceeds 8 hours per day, it is recommended that the operators use ear protectors.
- When working with the tool the operator must not have loose parts of wear as e.g. a tie, long hair, jewellery etc. to avoid getting caught by the tool.
- Same safety instructions apply for persons standing close to the tool.
- Avoid unnecessary contact with the hydraulic fluid to prevent possible allergy reaction of the skin.
- The tool is equipped with permanent magnet, the magnetic pole may influence electronic and even some mechanic machines. So it is necessary to warn about the possibility of the influence on the operation of electronic implants (e.g. pacemakers, insulin pumps etc.) with potential fatal effect for the users of these implants. The magnetic pole may also damage information on magnetic appliances (audio and video cassettes, diskettes, credit cards etc.) and it can destroy the forever. While using (and storing) the tool, please, keep distance with these sensitive appliances, in this case 0,5 m is considered as the save distance.
- The tool is not designed for outdoor and explosive environment.
- After the service life, discard the tool according to the Disposal Act no. 185/01 Coll.

2. DESCRIPTION OF THE TOOL

2.1. Basic characteristics



2.2. Technical data

Weight.....	1,65 kg
Working pressure.....	95 – 95 PSI
Stroke force at 0,6 MPa.....	18,5 Kn (4,158 lb)
Air consumption.....	1,5 l / stroke
Stroke.....	7 mm
Height.....	270 mm
Length.....	285 mm
Width (over the aircoupling).....	99 mm

2.3. Range of usage

The pneumatic-hydraulic tool is designed for riveting with:

- rivet nuts M3 – M12 (steel)
- rivet bolts 6-32 – ½-13 (steel)

2.4. Tool operation

The manufacturer equipped the tool with a anvil and mandrel for rivet nuts M8. For riveting of rivets with a different dimension it is necessary to exchange the anvil and mandrel and change basic set up and regulation of the tool as following:

RK-55-SP has a valve for switching the air supply on and off to save air when the tool is not in use.

1) Loosen the counternut of the anvil
2) Screw out the anvil from the front nozzle
3) Screw out the mandrel from the sleeve
4) Choose appropriate anvil and mandrel, see the following chart:

Rivet nuts	Anvils and mandrels	Spare part Nr.
M3	Mandrel for rivet nuts M3	RK55SPS-1-M3
	Anvil for mandrel M3	RK55SPS-2-M3
M4	Mandrel for rivet nuts M4	RK55SPS-1-M4
	Anvil for mandrel M4	RK55SPS-2-M4
M5	Mandrel for rivet nuts M5	RK55SPS-1-M5
	Anvil for mandrel M5	RK55SPS-2-M5
M6	Mandrel for rivet nuts M6	RK55SPS-1-M6
	Anvil for mandrel M6	RK55SPS-2-M6
M8	Mandrel for rivet nuts M8	RK55SPS-1-M8
	Anvil for mandrel M8	RK55SPS-2-M8
M10	Mandrel for rivet nuts M10	RK55SPS-1-M10
	Anvil for mandrel M10	RK55SPS-2-M10
M12	Mandrel for rivet nuts M12	RK55SPS-1-M12
	Anvil for mandrel M12	RK55SPS-2-M12

Rivet nuts	Anvils and mandrels	Spare part Nr.
6-32	Mandrel for rivet nuts 6-32	RK55SPS-1-632
	Anvil for mandrel 6-32	RK55SPS-2-632
8-32	Mandrel for rivet nuts 8-32	RK55SPS-1-832
	Anvil for mandrel 8-32	RK55SPS-2-832
10-32	Mandrel for rivet nuts 10-32	RK55SPS-1-1032
	Anvil for mandrel 10-32	RK55SPS-2-1032
¼-20	Mandrel for rivet nuts ¼-20	RK55SPS-1-1420
	Anvil for mandrel ¼-20	RK55SPS-2-1420
5/16-18	Mandrel for rivet nuts 5/16-18	RK55SPS-1-51618
	Anvil for mandrel 5/16-18	RK55SPS-2-51618
3/8-16	Mandrel for rivet nuts 3/8-16	RK55SPS-1-3816
	Anvil for mandrel 3/18-16	RK55SPS-2-3816
½-13	Mandrel for rivet nuts ½-13	RK55SPS-1-1213
	Anvil for mandrel ½-13	RK55SPS-2-1213

5) Screw the mandrel on to the sleeve (to the backstop) and then turn it back, so that the flats of the hexagons of the screw-plug gauge and sleeve are matching.

6) Slide on the anvil to the hexagons of the mandrel and sleeve.

7) Screw on the anvil to the front nozzle.

8) Set-up the anvil:

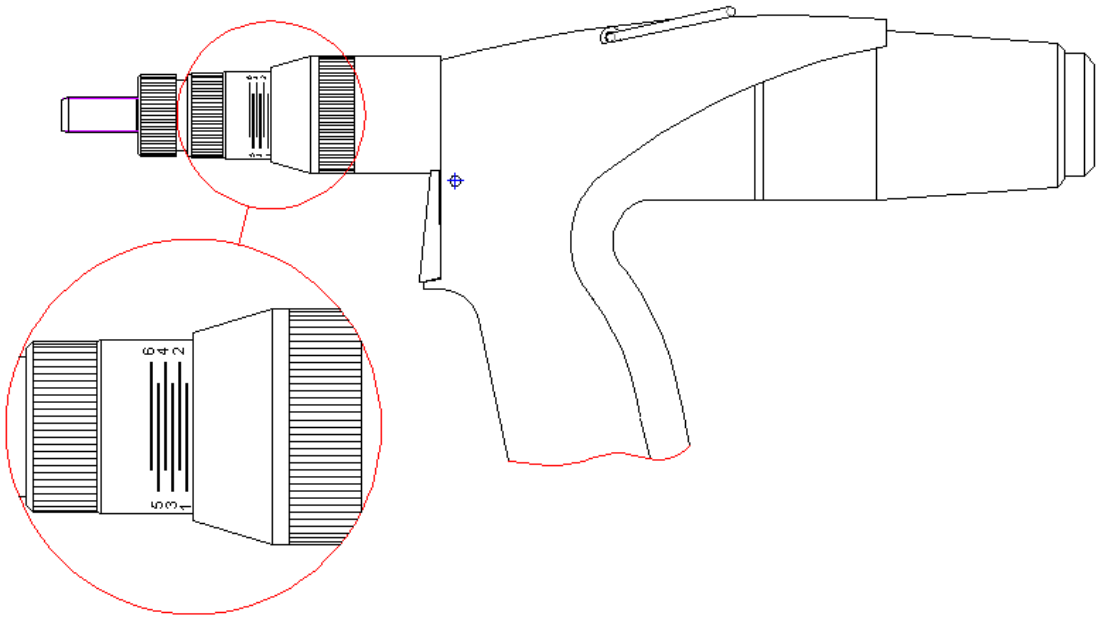
- For rivet nuts - the rivet nut is screwed on the whole length of the thread on the mandrel and the front of the rivet nut leans on the anvil. Fasten the position of the anvil with a counternut.

- for rivet bolts - set-up the anvil so that there is a cca 1 mm space between the outer side of the rivet bolt and inner side of the anvil. Do it as following: screw on the anvil to the backstop to the mandrel and then screw it back one or two turns. Fasten the position of the anvil with a counternut.

9) Basic stroke set-up as following (does not apply for all types of rivet nuts):

Rivet nut	M3 (6-32)	M4 (8-32)	M5(10-32)	M6(1/4-20)	M8(5/16-18)	M10(3/8-16)	M12(1/2-
Basic stroke	1,5	2	2,5	3	4	5	6

- to set-up the stroke turn the covering sleeve of the front nozzle, value of the stroke are indicated between the scale on the body of the front nozzle and the edge of the covering sleeve of the front nozzle, digits indicate the stroke into millimeters, see the following picture:



10) Adjust revolvable air supply into any required position and connect the tool to the source of the compressed air.

11) Put the rivet on the mandrel and push towards the anvil, this will screw on the rivet.

12) Put the screwed rivet into the prepared hole.

13) Press the trigger and the rivet will be riveted in.

14) Relieve the trigger, the mandrel will screw out from the rivet (if it is not fully screwed out, use the unscrewing button).

15) Check the fastened rivet

- if the rivet is not fully fastened it is necessary to increase the stroke.
- if the rivet is too fastened, which results in deformation of the rivet and the mandrel is hard to unscrew out from the rivet, it is necessary to decrease the stroke.

16) Check the setting-up of the anvil according to the step 8).

The tool, which is set up a prepared this way is ready for riveting.

3. TOOL MAINTENANCE

During maintenance the tool must be disconnected from the source of compressed air!!!

3.1. Daily maintenance

Before starting work, apply several drops of lubricating oil (we recommend hydraulic oil HYSPIN AWHM 32 CASTROL) into the air inlet of the tool, on condition there is no lubricating device connected in the air distribution.
Check the tool for air leakage, if necessary replace damaged hoses and clasps.
If the pressure regulator is not equipped with a filter, blow through the air hose before its connection to the tool in order to get rid of impurities and water. If the pressure regulator has a filter, dry it out.
Check whether the fixed nose-piece corresponds to the BR diameter and that all screw threads and joints are tightened properly.
Check whether the air outlets are really empty.

3.2. Weekly maintenance

Cleaning of the tool and replacement of worn or non-functional parts.

Unscrew the anvil and mandrel according to the chapter 2.4., point 1) to 3) and clean them thoroughly. Visually check - especially the mandrel, anvil and front nozzle - if worn or damaged, replace them. Dismounted parts should be reinstalled according to the chapter 2.4., points 5) to 7) including setting up according to the point 8).

3.3. General maintenance

General maintenance should be performed after about 500 000 strokes or once every three years. The tool must be completelly disassembled and all seals and worn parts must be replaced. This repair may be carried out by an authorized technician only or a person trained by the manufacturer or supplier.

4. SPARE PARTS

4.1. Ordering

Order the spare parts exclusively from the manufacturer or from your sales agents.

The order must contain:

a) tool serial number
b) number of ordered part
c) number of pieces
d) name of your company and precise address
e) your tax identification number and identification number

4.2. List of quickly expendable parts

All types and dimensions of mandrels and anvils ..... see chart in paragraph 2.4.

Front nozzle complete RK55SPSS-600

Joint sleeve RK55SPSS-400

5. STORAGE

The pneumatic-hydraulic tool embedded in a shipping container must be stored in environment with relative humidity to 70% and temperature ranging from +5°C to +40°C, without aggressive evaporation of salts, acids and caustics.

6. COMPLETE TOOL EQUIPMENT

Replaceable anvils and mandrels located in a plastic bag, Operations manual, Certificate of warranty.

7. OPERATIONS AND WARRANTY CONDITIONS

7.1. Operation conditions

For reliable function of the tool we recommend to use treated compressed air. Treated compressed air means compressed atmospheric air bare of solid particles and water, reduced to required pressure and lubricated with anti-corrosive oil. Immediately before the tool there must be a regulation valve set to maximum outlet pressure of **0,7 MPa**, air filter and lubrication in the circuit of compressed air.

Sound-pressure level of impulse noise L_{pAI} does not exceed 85 dB(A), still it is recommended to use ear protectors during continuous and long-term operation. Average overall vibration total effective value

$a_{hv,8h} = 1{,}5\ m.s^{-2}$.

The trigger enables safe control of the tool with a force max. 10 N < 50 N without releasing the grip-handle according to the health regulation.

7.2. Warranty conditions

For reliable and safe function of the tool it is necessary to adhere to instructions and principles stated above.

For the warranty period the customer must not perform any alterations other than those permitted by the manufacturer, see paragraph 2.1, 3.1, 3.2. Other non-detachable parts are secured with paint. In case of neglecting this protection the manufacturer shall not admit possible warranty repairs. To admit warranty repair the customer must submit confirmed warranty certificate of the tool, Certificate of quality and completeness or proof of purchase. The warranty period is 24 months from the day of purchase confirmed in the Warranty certificate if the purchase contract does not state otherwise.

Warranty is valid provided that the following:

- General safety instruction and principles (paragraph 1)
- Tool operation (paragraph 2.4)
- Daily and weekly maintenance (paragraph 3.1 and 3.2)
- Storage (paragraph 5)
- Operations and waranty conditions (paragraph 7)

Warranty does not apply to quickly expendable parts (see paragraph 4.2.)