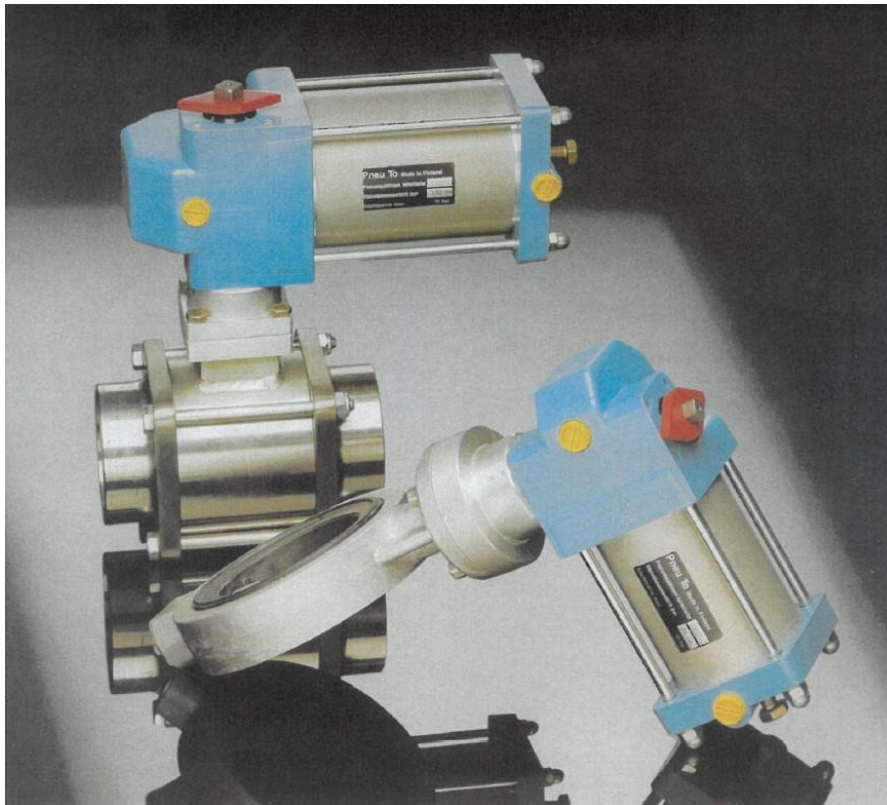


Original

## INSTRUCTIONS FOR USE AND MAINTENANCE



T50-2, T63-2, T80-2, T100-2  
T63-1, T80-1, T100-1

## JOLINE PNEUMATIC ACTUATOR

**Jouka Oy**

Manufacturer

Jouka Oy

Address

Somerotie 4

Place of establishment

33470 Ylöjärvi,  
FINLAND

Telephone

+358 3 359 7500

Author of the instructions for  
use

[www.iodec.fi](http://www.iodec.fi)

**JODEC**

## Table of contents

1.	JOLINE PNEUMATIC ACTUATOR .....	3
	Manufacturer .....	3
	General .....	3
	Technical specifications .....	4
	Actuator torque diagram.....	5
	Actuator dimensions.....	6
	Actuator components: .....	7
	Appropriate use.....	7
2.	SAFETY .....	8
	Qualifications of personnel .....	8
	Emergency stop .....	8
	Safety instructions.....	9
3.	INSTALLATION .....	10
	Installing the actuator .....	10
4.	MAINTENANCE AND DISMANTLING.....	12
	Maintenance.....	12
	Replacement of actuator seals.....	12
	Breakage.....	16
	Dismantling .....	16
5.	DECLARATION OF INCORPORATION .....	17


### NOTE



This user manual contains information for the safe use of the actuator. Please read the user manual carefully before using the device. Always keep the user manual nearby

# 1. JOLINE PNEUMATIC ACTUATOR

## Manufacturer

Manufacturer:	Jouka Oy Somerotie 4, 33470 Ylöjärvi	
---------------	--	---

## General

The Joline actuator is available either as a double-acting or single-acting actuator. The actuator rotates around its axis by a quarter turn, so it can be used, for example, to open and close ball valves, and for other applications where the rotation is 90°.

This user manual covers both 1- and 2-acting actuators.

The device is a partly completed product. It should not be connected to machinery or equipment that does not comply with the requirements of the Machine Directive 2006/42/EC.

Terms and conditions:

Pneumatic actuator: later also "device".

User: the person who installs, uses, adjusts, maintains, cleans, repairs or moves the device

1-acting: actuators with spring return (T63-1, T80-1, T100-1)

2-acting: actuators where both piston movements are performed pneumatically (T50-2, T63-2, T80-2, T100-2)

Delivery:

The actuator is delivered fully assembled. As standard, the actuator is mounted with pneumatic couplings and the single-acting actuators with dampers.

Additional accessories, such as limit switches or installation indicators, are installed by Jouka.

Manufacturer	Address	Place of establishment	Telephone	Author of the instructions for use
Jouka Oy	Somerotie 4	33470 Ylöjärvi, FINLAND	+358 3 359 7500	<a href="http://www.iodec.fi">www.iodec.fi</a>

## Technical specifications

Table 2 Technical specifications

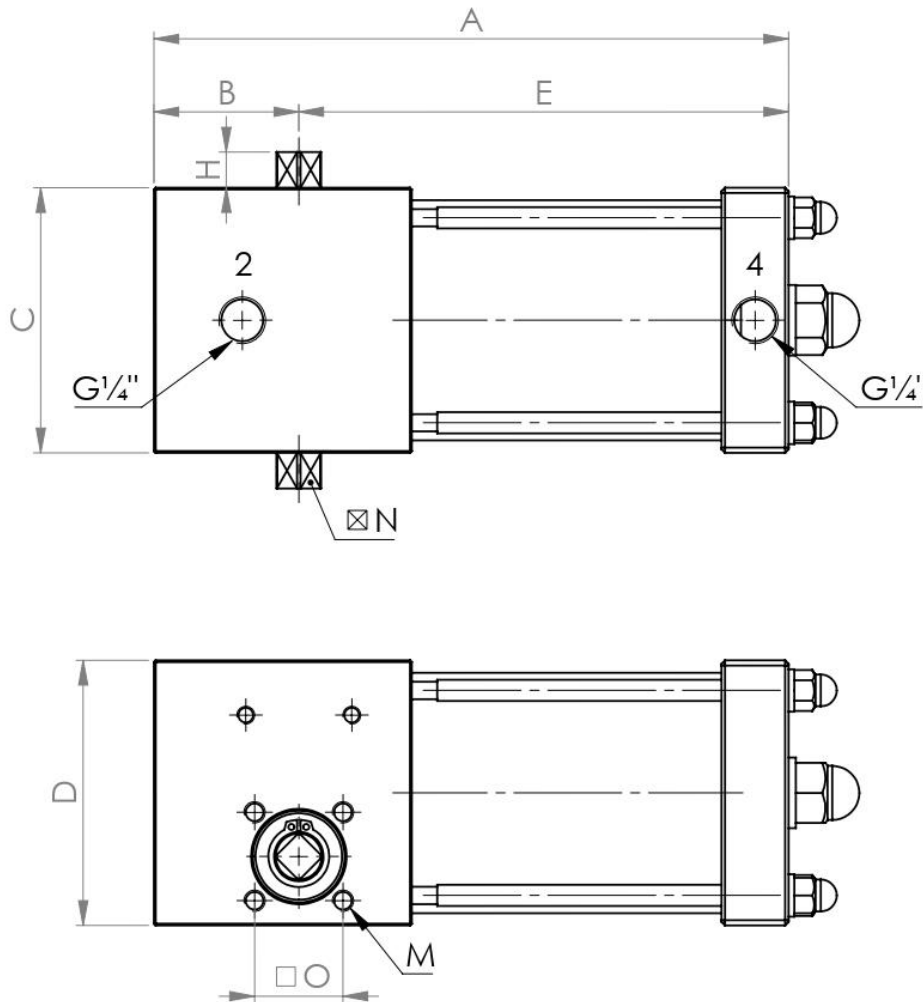
	Actuator	Note
Working power	Pneumatics	Air, neutral gas
Max. working pressure	1 MPa (10 bar)	
Angle of rotation	90°	Special structures: adjustable -30°...+2°
Operating temperature max.	+70°C	
Operating temperature min.	-10°C	
Spring return (1- action)	Coil spring	
Lubrication	Not needed	The device has lubricant-free bearings and seals

Specification of materials:		
Standard structure:		
Frame and head	Al-alloy	
Piston	Al-alloy	
Cylinder tube	Hard-anodised high precision Al- tube	
Bearings	Teflonised dry bearing	
Piston seal	Teflon/o-ring combination	Reaching a little starting friction
Slip rings	Teflon alloy	
Pivot pins	Tempered and ground special steel	
O-rings	Nitril rubber	In standard structures
Special structures:		
Cylinder barrel, surface bolts and shafts	Oxygen resistant steel	
Seals	Cold and heat resistant	



Figure 1

Actuator dimensions



2-acting actuator											
Type	Nm/5 bar	A	B	C	D	E	H	□ O	⊠ N	M	Weight (kg)
T50-2	20	152	31	60	65	121	10	25	9,5	M6	1,1
T63-2	35	180	41	75	75	139	10	25	9,5	M6	1,8
T80-2	75	230	55	95	100	175	15	35	12	M6	4,0
T100-2	150	274	66	114	114	208	17	35	14,3	M8	6,1
1-acting actuator (spring return)											
Type	Nm/5 bar	A	B	C	D	E	H	□ O	⊠ N	M	Weight (kg)
T63-1	15	290	41	75	75	250	10	25	9,5	M6	3,3
T80-1	30	330	55	95	100	275	15	35	12	M6	6,3
T100-1	55	417	66	114	114	351	17	35	14,3	M8	11

Manufacturer

Address

Place of establishment

Telephone

Author of the instructions for use

Jouka Oy

Somerotie 4

33470 Ylöjärvi,  
 FINLAND

+358 3 359 7500

[www.iodec.fi](http://www.iodec.fi)

### Actuator components:

See: Attachment BOM

### Appropriate use

This actuator is a device to be incorporated into a pneumatic system. The device uses a simple joint mechanism to convert a straight-line movement into a 90° rotational movement. The device is intended for applications such as ball and flapper valves, as well as other applications where the rotational movement is 90°. The device uses a simple joint mechanism to convert a straight-line movement into a rotational movement.

Any other use or use in excess of this is considered inappropriate.

Misuse is considered:

- Loads that exceed the declared values
- Using defective equipment
- Use in a system that does not comply with the requirements of the Machine Directive 2006/42/EC
- Use by inadequately qualified personnel
- Use as an actuator in a way which presents a hazard to people around the device

## 2. SAFETY

### Qualifications of personnel

All persons working with the equipment must be appropriately qualified for the job.

Operational staff:

- Adequately experienced in the functional and operational phases
- Knowledge of the competences of the task to be performed.

Service personnel:

- Basic knowledge about mechanical engineering and pneumatics.
- Basic information on the structure and functionality of the device.

The owner of the equipment must ensure that all persons involved in the installation, operation, maintenance or repair of the equipment have read and understood the relevant parts of the instructions from beginning to end.

### Overall safety

The device is safe to use. Nevertheless, it can still present a danger to people or it can be damaged. For this reason, this instruction manual must always be observed.

The user manual is the manufacturer's procedural guide intended for the owner of the equipment and all persons involved in the installation, maintenance and repair of the equipment.

### Emergency stop

An emergency stop must be arranged before using the equipment.



## Safety instructions



### Observe caution during maintenance operations

- Make sure that the appliance is disconnected from power sources during maintenance.
- While performing maintenance work, wear eye/face protection.
- Protect your hands with gloves.



### WARNING!

- Do not use a broken, defective or not inspected device.



### Partly completed product

- The device should not be connected to machinery or equipment that does not comply with the requirements of the Machine Directive 2006/42/EC.

### 3. INSTALLATION



**NOTE!**

- The maximum pressure should be limited to 10 bar.



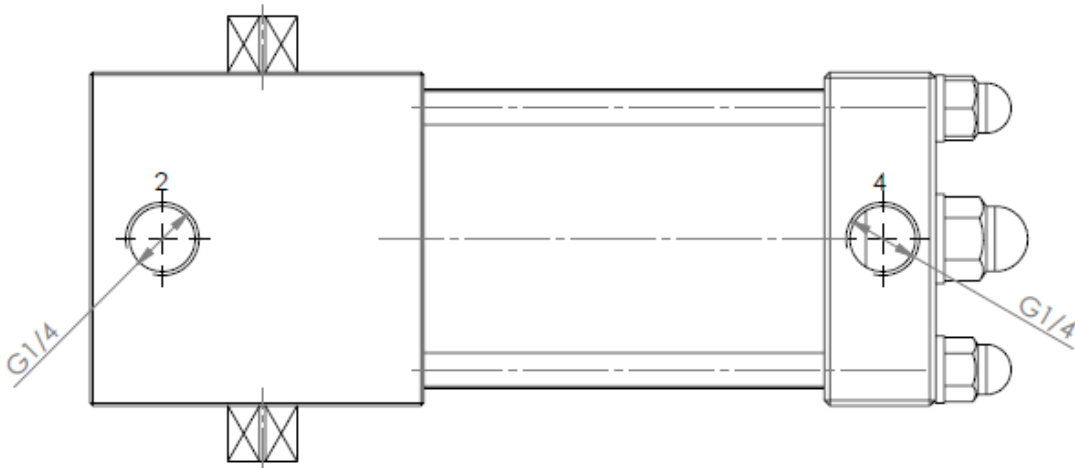
**NOTE!**

- The device may not be used below -10°C temperature.

#### Installing the actuator

The compressed air connections are shown below (Figure 2) marked 2 and 4. In a spring-return single-acting valve, pressure is applied from terminal 2 and the silencer is installed into terminal 4. The connectors have a ¼ inch pipe thread (G¼). The connections are physically marked with numbers 2 and 4 on the actuator.

Figure 2 Compressed air connections



At the bottom of the page you will find a table with the ordering code of the fitting set corresponding to the DN size of the valve. Installation kits include:

- 1-2 pieces of mounting beams,
- between the switch valve and the actuator, and
- the required mounting bolts and nuts.

Installation and dismantling can be carried out, for example, with hexagon socket wrenches and ring spanner set. The installation does not require any special tools, as all the fasteners used are commonly available. ISO 5211:2017 levels can be found in some of the installation kits.



When using the actuator for other valves or other reversing applications, please contact the manufacturer.

Ordering codes for installation kits in table format:

	Joline 2-acting	Beam Joline	Beams Valve	Coupling	Installation kit	Joline 1-acting	Beam Joline	Beam Valve	Kytty	Installation kit
<b>DN15</b>	T50-2	DPA08627	DPA08042	YXX12256	00040022	T63-1	DPA08627	DPA08042	YXX12256	00040022
<b>DN25</b>	T50-2	DPA08627	DPA08042	YXX12256	00040022	T63-1	DPA08627	DPA08042	YXX12256	00040022
<b>DN32</b>	T63-2	DPA08627	DPA11129	YXX12256	00040024	T80-1	DPA16974	DPA11129	YXX12341	00040025
<b>DN50</b>	T63-2	DPA08627	DPA11129	YXX12256	00040024	T80-1	DPA16974	DPA11129	YXX12341	00040025
<b>DN65</b>	T80-2	NBX26393		YXX25564	00040030	T100-1	NBX26393		YXX23076	00040033
<b>DN80</b>	T80-2	NBX26393		YXX25564	00040030	T100-1	NBX26393		YXX23076	00040033
<b>DN100</b>	T100-2	NBX26393		YXX11861	00040035	For this size and larger Pneuton actuators				

**JOLINE + JOUKA ALUMINIUM VALVES**

	Joline 2-acting	Beam Joline	Beam Valve	Coupling	Installation kit	Joline 1-acting	Beam Joline	Beam Valve	Coupling	Installation kit
<b>DN25</b>	T50-2	DPA08627	DPA08627	YXX12256	00040026	T63-1	DPA08627	DPA08627	YXX12256	00040026
<b>DN32</b>	T63-2	DPA08627	DPA08627	YXX12256	00040026	T63-1	DPA08627	DPA08627	YXX12256	00040026
<b>DN50</b>	T63-2	DPA08627	DPA08042	YXX12256	00040029	T80-1	DPA16974	DPA08042	YXX12341	00040032
<b>DN65</b>	T80-2	NBX26393		YXX25564	00040031	T100-1	NBX26393		YXX23076	00040034
<b>DN80</b>	T80-2	NBX26393		YXX25564	00040031	T100-1	NBX26393		YXX23076	00040034
<b>DN100</b>	T100-2	NBX26393		YXX23076	00040034	For this size and larger Pneuton actuators				



**Installation by professional personnel only**

- The device must be installed and put into service only by professional personnel who are familiar with the installation, commissioning and use of this product.

## 4. MAINTENANCE AND DISMANTLING

### Maintenance



**Maintenance should always be carried out when the device is disconnected from the power sources.**



#### NOTE!

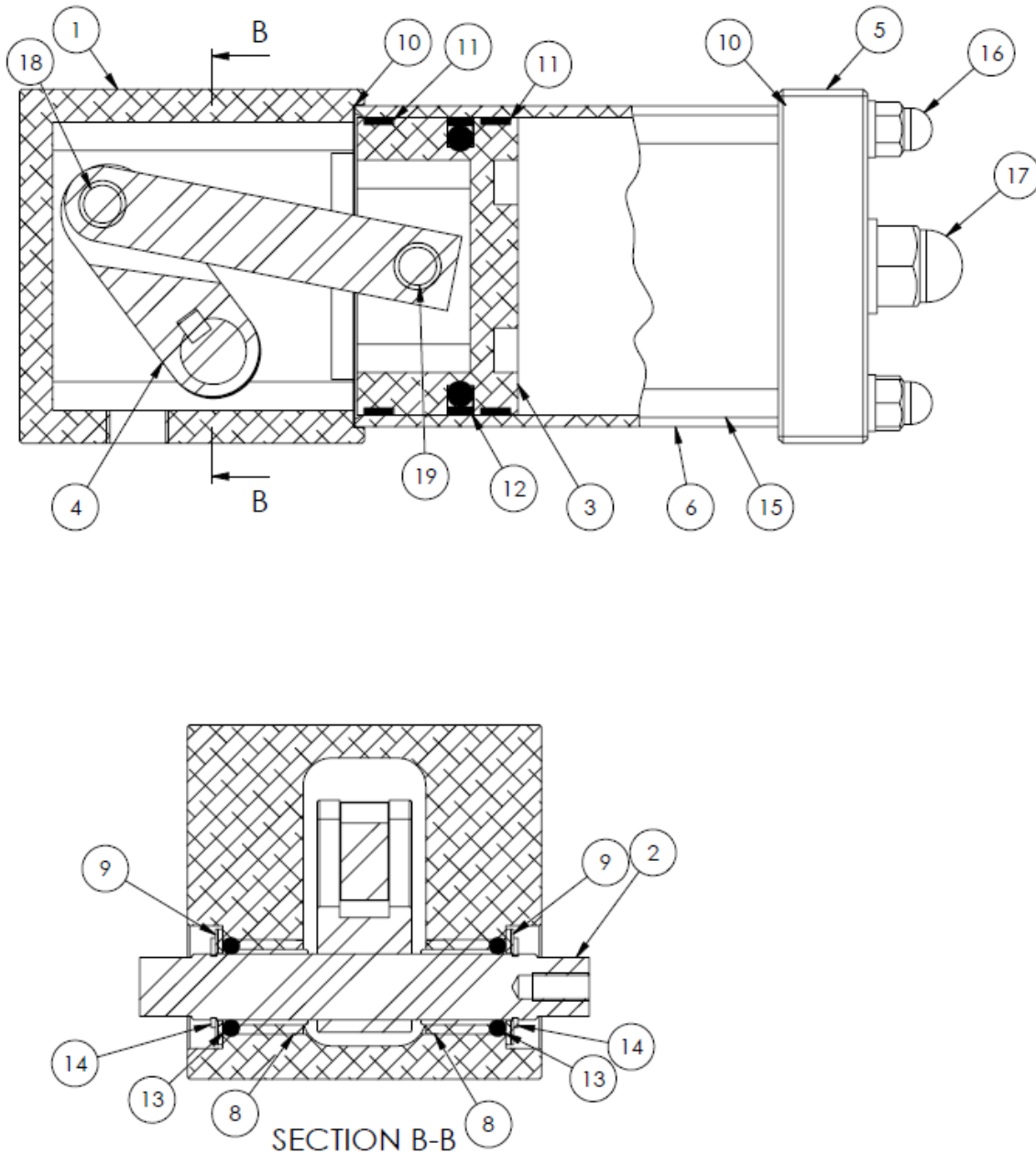
Spring return Joline types T63-1, T80-1 and T100-1 contain two springs which are tensioned! **The manufacturer does not recommend opening the actuator head!** In case of maintenance needs, contact the manufacturer.

The actuator is permanently lubricated with silicone grease. It does not need any regular maintenance. Oil pumps for the intake air are not necessary, although they will slightly increase the durability of the seals.

### Replacement of actuator seals

1. Remove the actuator from the valve. Mark the direction of the actuator position and remove the actuator unit.
2. Unscrew the screws and remove the mounting piece. Mark the mutual position.
3. Loosen the cover nut (Figure 3, parts 16), the middle nut (part 17) does not need to be loosened.
4. Remove the cover (part 5) and pull out the cylinder tube (part 6).
5. The piston (part 3) is now visible. Replace the piston seal (part 12). The seal is a Shamban-type two-piece seal, which includes an o-ring and a PTFE ring. Be careful not to stretch the outer ring too much during the installation. Lubricate the seals with silicone grease (this will increase their service life).
6. Replace the guide tapes (parts 11). Lubricate the strips with silicone grease.
7. Lubricate the pivot joints (parts 19) with oil.
8. Replace the paper seals (parts 10).
9. Remove the retaining rings (parts 14).
10. Remove the support rings (parts 9).
11. Replace the o-ring (part 13).

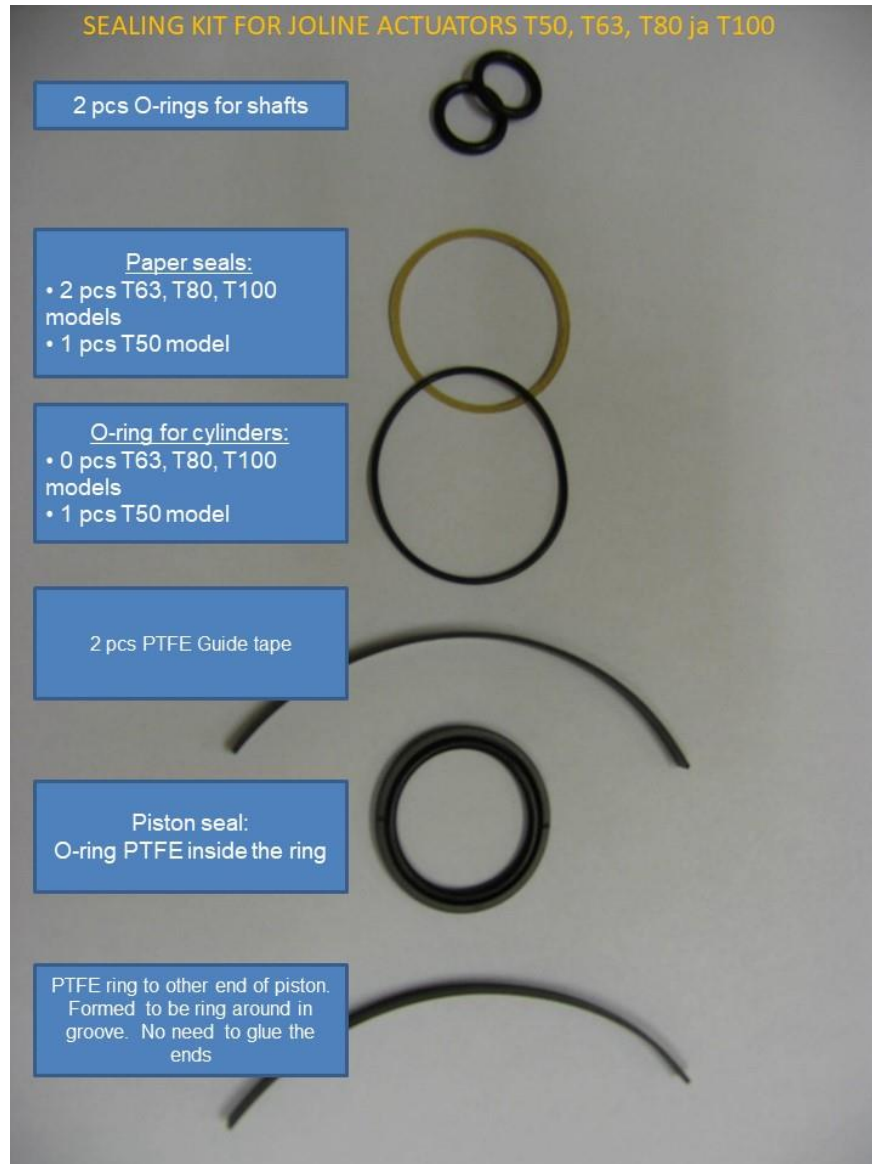
Figure 3 Actuator components:



ITEM NO.	PART		QTY.
1	Frame		1
2	Shaft		1
3	Piston		1
4	Articulated jib		1
5	Head		1
6	Cylinder tube		1
8	Bearing		2
9	Support rings		2
10	Paper seal	Included in the seal kit	2
11	Guide tape	Included in the seal kit	2
12	Piston seal	Included in the seal kit	1
13	O-ring	Included in the seal kit	2
14	Retaining ring		2
15	Threaded pin		4
16	DIN1587 M6		4
17	DIN1587 M10		1
18	Pivot joint		1
19	Pivot joint		1

Ordering codes for sealing kits in a table:

Type	Order code	Nomination
T50	UA008290	TST050S
T63	UA008292	TST063S
T80	UA008293	TST080S
T100	UA008295	TST100S



**No changes may be made to the device by yourself!**

- Modifying the structure of a device without the manufacturer's permission can render it dangerous.
- Unauthorised modifications to the device mean that the manufacturer can no longer guarantee the safety of the device.

## Breakage

In case of breakage, the manufacturer should be contacted.  
The device should not be used before reparations are carried out.



### ATTENTION!

- When taking the device into use after the storage, check its condition and correct functionality before using it.

## Dismantling

The materials used in the device include:

- See: Technical specifications table



### INFO!

- Further information on the materials of the device can be obtained from the manufacturer, if necessary.

When the device is finally taken out of service, it is scrapped and the parts are sent for recycling.



### RESPECT THE ENVIRONMENT!

- When decommissioning the device, please note the environmental aspects.
- Send the recoverable material for recycling.





## **Declaration of Incorporation of partly completed machinery**

Complying with Machinery Directive 2006/42/EC Annex IIB

### **Jouka Oy**

Address:  
Somerotie 4,  
33470 Ylöjärvi, Finland

### **declares that**

Joline Pneumatic Actuator

models:  
T50-2, T63-2, T80-2, T100-2  
T63-1, T80-1, T100-1

### **complies with the requirements of the following directive:**

- Machinery Directive 2006/42/EC

### **In addition, the following harmonized standards have been applied:**

- SFS-EN ISO 12100
- SFS-EN ISO 4414

**The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Machinery Directive 2006/42/EC.**

A handwritten signature in blue ink is written over a blue circular stamp. The stamp contains the text "VAT FI18136782" at the top, "JOUKA" in the center, "OY" below it, and "FINLAND" at the bottom. There are small asterisks on either side of "JOUKA".

16.01.2023  
Peter Lillqvist  
CEO