MAINTENANCE AND SPARE PART KITS

Spare part kits

General operating and maintenance instructions

SPARE PARTS KITS

General

ASCO Numatics offers spare parts kits for most of its products. Each kit contains the internal parts that would require replacement in normal service :
- discs, springs, diaphragms, seals, etc.
- coils (see Section "**Coils & Accessories**")

Solenoid operator parts (enclosure etc.), the solenoid valve base, the body and the cover are not normally included in the kits. Special kits with the solenoid operator's component parts and mounting brackets are available (see catalogue pages or consult ASCO Numatics).

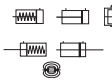
To order ASCO Numatics spare parts kits

Refer to the catalogue pages for the catalogue numbers of the spare parts and accessories.

For an example, 449 Series, section "**Cylinders & Actuators**":

COMPACT CYLINDERS
Ø 20 to 100 mm - single and double acting
ISO 21287
with single/through rod, antirotation device

Series **449**



GENERAL

Detection	**Equipped for magnetic position detectors**
Fluid	Air or inert gas, filtered, lubricated or not
Operating pressure	10 bar, max. [1 bar =100 kPa]
Ambient temperature	-20°C to +70°C (for higher temperature, see HTP option)
Max. speed rate	0,5 m/s
Standards	449 series comply with ISO 21287 Diameters 32-100 are also compatible with ISO 15552 (distances between the centres of the mounting holes)
Minimum pressure to compress the spring (single acting version)	Ø20-50 = 1 bar Ø63-100 = 0,65 bar
The return of the piston rod must be without load (single acting version)	

CONSTRUCTION

Barrel	Hard anodized aluminium alloy
Front and rear ends	Aluminium alloy
Bearing	Self-lubricating metal
Rod	Ø 20-25: stainless steel

Ø (mm)	SPARE PARTS KITS CODE 1 + 2 + 3 (1)
20	**97802870**
25	**97802871**
32	**97802872**
40	**97802873**
50	**97802874**
63	**97802875**
80	**97802876**
100	**97802877**

(1) For best results, use grease supplied in each kit. Supplementary tube (11 cm^3) available on request, catalogue number: **97802100**

If you need help in ordering spare parts kits or cannot find the exact listing of your valve catalogue number, contact your nearest ASCO Numatics source.

GENERAL OPERATING AND MAINTENANCE INSTRUCTIONS

These general instructions complete the specific instructions for each device, and the operating instructions or documents delivered with ASCO, ASCO Numatics, Numatics products here after named "ASCO Numatics products".
Malfunctions, damage, or injury may occur if these instructions are not followed.
See our technical documentation and installation instructions at www.asco.com.

General

ASCO Numatics components are designed to be operated in accordance with the limits specified on the nameplate, in the operating and maintenance instructions, or in the documents delivered with the product. All applicable directives, legislation, orders and standards, as amended from time to time, as well as state-of-the-art practices and procedures must be observed for the intended scope of application of the product. Where applicable, take all appropriate measures to ensure the requirements are met.
All assembly, operation, use, and maintenance must be performed by qualified, authorised personnel.
Personnel working with the components must be familiar with the applicable safety regulations and requirements relating to the components, apparatus, machinery and electrical installations (for valves, solenoid valves, electronic control equipment, air service equipment).

Assembly

- ***Preparation***

- Check the preliminary storage conditions required for the component. They must be in accordance with the product's specifications.
- Carefully remove the components from their packaging.
- **Power off and depressurise the apparatus**, machinery, or installation designed to receive the component. Stipulate power off and depressurisation requirements to guard against any unauthorised intervention.
- Make sure that the unit, its components, and their environment are clean, and protect them against deterioration.
- Do not modify the device.
- Make sure that the fluid is compatible with the materials it contacts. Air, water, or oil is used in general (in cases where oil is used as a fluid, make sure that it does not vaporise within the component's operating temperature range).
  The operator or user must make sure that the gas or liquid group corresponds to the product's classification. (Oxygen is a hazardous group 1 gas. It can lead to higher classifications: contact us for more information.)

- ***Connection***

- Connect all the ports of the component that may come in contact with the fluid.
- Clean the conduits that will connect to the component.
- Be sure to observe the direction of flow of the fluid.
- Use only the provided connection possibilities.
- Ensure that no foreign matter enters the circuit, in particular when making the connection leakproof.
- Be sure to observe the allowed bend radius for tubing; do not restrict the ports for fluid circulation.
- Tubes and connection elements must not exert any force, torque, or strain on the product.
- For instant fittings, use calibrated tube according to NFE 49-100 or NFE 49-101 or CETOP RP P.
- Use appropriate tools and locate assembly tools as close as possible to the connection point.
- Be sure to observe the recommended torque when tightening tubing connections.
- Connections must be made to last.

⚠ **Improper installation may cause undesirable hydraulic effects that can reduce the life of the device (erosion, cavitation, waterhammer etc.)**

- ***Operation***

Operation is authorised only after having duly verified that the apparatus, machinery or installation in which the component has been incorporated complies with the applicable directives, legislation, orders and standards, as amended from time to time.

- ***Use***

- Do not subject the components to loads or forces other than those for which they are designed.
- Do not operate the component under pressure unless its ports are connected to conduits.
- This component is not designed to operate submerged in a liquid. Make sure that water cannot enter the control system.
- Make sure to prevent the device from freezing in the event that temperatures fall below +5°C.

- ***Maintenance***

We recommend you to periodically check the correct operation of the components and clean them. The checking and cleaning frequency depends on the type of fluids used, and the operating and environmental conditions.
Before any maintenance work is done, **power off and depressurise** the component, apparatus, machinery or installation to prevent any unauthorised intervention.
Make sure that the component and its environment are clean.

- ***Environment***

Components must be disposed of in compliance with applicable environmental regulations when taking apparatus or machinery out of service and carrying out their final destruction, or dismantling the installation.
UE RoHS 2 - 2011/65/EU: Declaration and products RoHS compliant are available in our WEB site: **www.asco.com**
CHINA RoHS 2: Products compliant status and hazardous substance disclosure table are available on our WEB site: **www.asco.com**

- **Special instructions**

SOLENOID VALVES

Remarks concerning voltage spikes:
Due to their physical design, all solenoids, solenoid-actuated valves, or relays have a coil which produces an inductance.
Switching off the current will create inductive voltage spikes liable to cause electrostatic discharge in nearby wiring.
The only way to eliminate these parasitic voltages is for the user to use appropriate attenuation devices such as, in particular, diodes, Zener diodes, varistors, RC (resistor/capacitor) components, or filters.
The characteristics and wiring of these devices depend exclusively on specific requirements, which can only be determined individually by the user. Additional protective measures may be required according to the assembly method and the location where the device is used.
Our solenoid valves and pilot valves are designed to operate with devices compliant with EN 61131-2.
⚠ **If the solenoid valve is fitted with a solenoid operator for explosive atmospheres, it must be installed in compliance with the general rules set out in the European Standard EN 60079-0, EN 60079-14 and the particular standards relating to its mode of protection. For compliance with ATEX Directive, refer to the specific operating instructions delivered with our products.**
Assembly:
- In order to protect the equipment, install an adequate strainer or filter upstream from and as close as possible to the component.
- All power cables must have a sufficient cross-section and a sufficient insulation. They must be installed in a compliant manner.
- All electrical connections must be made by trained and qualified personnel only and be in accordance with your local regulations and standards.
- **Before starting any work, turn off the electrical current to power off the components.**
- All screw terminals must be tightened to the appropriate torque prior to operation.
- Depending on the voltage, electrical components must be grounded according to local standards and regulations.

The electrical connection is either made by detachable spade plug connectors with an IP65 protection rating (when properly mounted), by screw terminals embedded in a coil with metal enclosure, by spade terminals, or by flying leads/cables embedded in the coil.
Operation: Before pressurising the system, first carry out an electrical test. Apply power to the coil several times and listen for the metallic „click“ indicating the solenoid operator is working. Personnel working with the components must be familiar with electric controls, such as redundancies and feedback (electronic controls), where applicable.
Use: The coils are designed for continuous operation and may therefore become hot.
If the solenoid valve is easily accessible, provide for means of protection to prevent accidental contact that may cause burns.
Maintenance: Before any maintenance work is done, turn off the electrical current to power off the components.

AIR SERVICE EQUIPMENT

Assembly: All ports on the device that may come in contact with pressurised fluids must be connected to a conduit or an associated component (example: exhaust silencer, etc.).
Use: Personnel working with the components must be familiar with electric controls, such as redundancies and feedback (electronic controls), where applicable.
Environment: In order to prevent noise nuisance due to system purging by certain components (especially with compressed air), it is recommended to use noise reduction systems.