

Operation Manual / Air Saver Unit ASC/ASO 500 Series



Operating Manual

Thank you for your choice of Parker product. Please read this operating manual carefully and use the product correctly. Keep this operating manual in case questions arise about this product in the future. If this operating manual becomes unreadable or lost, consult our distributors or Parker sales offices.

For Safety Use

The following safety precautions are provided to prevent damage and injury to personnel and to provide instructions on the correct usage of this product. These precautions are classified into 3 categories: "CAUTION", "WARNING", and "DANGER" according to the severity of possible injury or damage and the likelihood of such injury or damage. Be sure to comply with all precautions. Also comply with safety regulations such as ISO 4414(*1), Industrial Safety and Health Law, and High Pressure Gas Safety Law.

| | | |
|--|----------------|--|
| | Danger | Indicates an impending hazardous situation which may arise due to improper handling or operation and could result in serious personal injury or death. |
| | Warning | Indicates a potentially hazardous situation which may arise due to improper handling or operation and could result in serious personal injury or death. |
| | Caution | Indicates a potentially hazardous situation which may arise due to improper handling or operation and could result in personal injury or property-damage-only accidents. |

*1 ISO 4414: Pneumatic fluid power recommendations for the application of equipment to transmission control system

Warning

- **The applicability of pneumatic equipment to the intended system should be judged by the pneumatic system designer or the personnel who determined specifications for such system.**

As operating conditions for products contained in this instruction are diversified, the applicability of pneumatic equipment to the intended system should be determined by the pneumatic system designer or the personnel who determined specifications for such system after conducting an analysis or testing as necessary. Before making a system, the system designer should thoroughly examine all specifications for such a system and also take into consideration the possibility of any trouble with the equipment.

- **The pneumatic equipment should be handled by persons who have sufficient knowledge and rich experience.**

Improper handling of compressed air will result in danger. Assembling, operation and maintenance of machinery using pneumatic equipment should be performed by persons who have sufficient knowledge and rich experience.

- **Never operate machinery nor remove the equipment until safety is assured.**

Before checking or servicing machinery and equipment, be sure to check that steps for prevention of dropping or runaway of the driven component have been completely taken. When removing the equipment, make sure that the above-mentioned safety measures have been done beforehand. Then turn off air supply and power to the system and purge compressed air in the system. When restarting machinery and equipment, check that proper prevention of malfunction has been provided for and then restart carefully.

- **When using the pneumatic equipment in the following conditions or environments, take the proper safety measures and consult Parker beforehand.**

- Conditions and environments other than specified and outdoor use.
- Applications to nuclear power equipment, railroads, aircraft, vehicles, medical equipment, equipment connected with food and drink, amusement facilities and safety devices such as emergency interruption devices, clutch/brake circuits for a press and the likes.
- Applications which require extreme safety and will also greatly affect human and property.

1. General Information

This product is a pulse air generation unit with built-in soft seal pneumatic valve. This product is mainly for reducing air consumption in air blowing applications.

2. Ordering Instructions

ASC500 - 1W - 01

| | ① | ② | ③ |
|-----------------|---|---|---|
| ①Model No. | ASC500: Normal close (2-position single solenoid) | | |
| | ASO500: Normal open (2-position single solenoid) | | |
| ②Voltage/Wiring | 1W: 24VDC, e-CON standard 4-polar socket | | |
| ③Port size | 01: BSPT1/8, 10: BSPP1/8, 90: NPT1/8 | | |

3. Specifications

| Model No. | Unit | ASC/ASO500 |
|---------------------------------|------------|---|
| Function | - | Normal close Normal open |
| Fluid | - | Non-lubricated/lubricated air |
| Port size | - | 1/8 |
| Flow | L/min(ANR) | 450 (at 5 bar) |
| Pressure range | bar | 2 to 7 ^{Note 2} 2 to 5 ^{Note 2} |
| Blow | - | Pulse blow/ Continuous blow |
| Ambient temperature | °C | -5 ~ 50 ^{Note 1} |
| Rated voltage | V | DC24 |
| Power consumption | W | 1.2 |
| Insulation grade | - | JIS Grade E |
| Permissible voltage fluctuation | % | +/-10 |
| Wiring | - | Specific 4-polar socket |
| Weight | g | 210 |

Note 1) When ambient temperature of the unit goes below 5°C, complete dry air shall be supplied to prevent freezing.

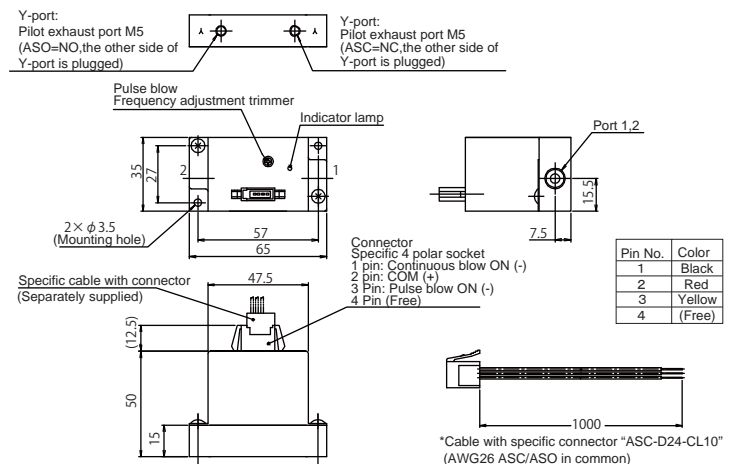
Note 2) ASC500/ASO500 series are internal pilot operated units. Therefore, during air blow operation, the supply pressure should be more than 2 bar.

* Cable with e-CON connector (ASC-D24-CL10) will be ordered separately.

3. Dimensions

ASC500-1W-** / ASO500-1W-**

Unit(mm)



(Piping)

Port 1 : Supply port (Compressor side)

Port 2 : Outlet port (Blow nozzle side)

Y port : Pilot exhaust port * In order to avoid dust, air muffler is recommended to attach.

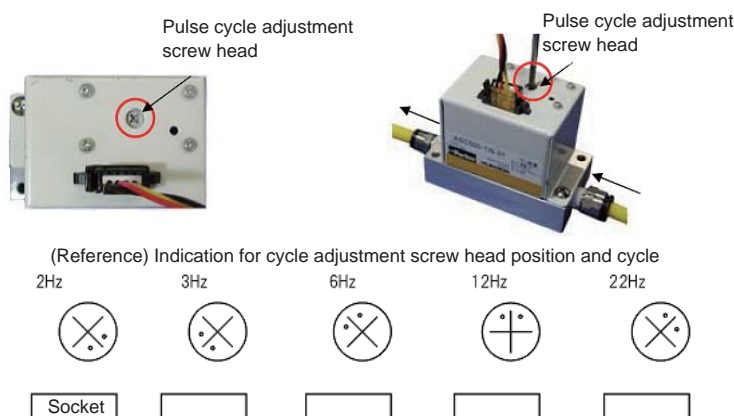
Power distribution/ Air output

Continuous blow: Pin 1(-), Pin 2(+)

Pulse blow: Pin 2(+), Pin 3(-)

How to adjust pulse cycles

The pulsed air cycle is adjusted by turning cycle adjustment screw head on the top of this unit. If screw head is rotated clockwise (CW), pulse cycle speed up. Use cross slot screwdriver to rotate the screw head. If screw head is rotated counter clockwise (CCW), pulse cycle slow down. Pulse cycle speed range is about 2 to 22Hz, and pulse air ON:OFF duty ratio is 1:1



5. Notes for usage

- A) Before piping
Thoroughly flush the inside of any pipes to remove chips, coolant, dust and etc.
- B) Air quality
 - 1) Air Saver requires an air filter with filtration of 5μm or finer.
 - 2) If it is difficult to make filter drain management periodically, Parker recommends setting up an air filter with automatic drain mechanism.
 - 3) Be sure to take proper maintenance for a compressor. If sludge produced in compressor oil enters pneumatic equipment, it will cause operation failure of pneumatic equipment. Parker recommends setting up a coalescing filter after a filter.
- C) Pneumatic circuit
ASC/O500 series is internal pilot operated valve unit. To avoid malfunctions due to pressure drops, supply air pressure must be more than 2 bar at all times. To avoid pressure drops during air blowing process, set up relatively higher pressure and use tubes with proper diameter.
- d) Lubrication
This unit does not require lubrication. **Do not lubricate.**

6. Failure and trouble shooting

a) Failure and countermeasure

| Failure condition | Cause | Countermeasure |
|--|---|---|
| The unit cannot be operated. | Supply air might be less than 2 bar during operation. | Adjust supply air pressure properly. |
| | Valve part is contaminated with dust or sludge. | 1) Replace the product. 2) If an air filter is not used, use an air filter. 3) If problem is sludge, use a coalescing filter. |
| Operating frequency is getting slower. | Dust or high viscosity oil is trapped in the valve and it obstructs the spool. | 1) Replace the product. 2) If air filter is not used, use an air filter. |
| | Contaminant is caught inside of the pneumatic circuit, and it blocks up the flow. | Replace the logic element. |
| | Contaminant accumulated in the exhaust port, obstructing the air flow. | Clean air mufflers or replace them. |
| Substantial air leakage is observed. | From main valve part | Spool seal rings are damaged. Replace the master valve. |
| | From base gasket | Tightening torque for mounting screws is not enough to mount valve. Tighten mounting screws to appropriate torque. |

7. Maintenance and disassembly

Regarding repair and maintenance, please consult Parker.

As a general rule, do not attempt maintenance or disassemble. If it is absolutely necessary to do maintenance work, keep the following points in mind.

- 1) Make sure that the actuators such as cylinders will not cause damage if they move.
- 2) Cut off electricity.
- 3) Cut off pneumatic pressure and exhaust air in the line.
- 4) Clean up the surroundings of the valve.

Caution

Any attempt to repair and/or disassembling of the product by the user violates the warranty and Parker. Does not take any responsibility for damage and injury caused by it.

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