

## Air/Oil Tanks for industrial shock absorbers

**For high cycle rates and extreme temperatures with limited mounting space**

**Shock absorbers convert the introduced energy into heat. The more frequently a shock absorber is stressed per hour, the hotter the oil volume becomes over time. If the requirements placed on the impact frequency of a shock absorber are especially high the use of an air-oil tank is just the right thing.**

Thanks to the increased oil volume and the resulting heat dissipation, the upper limit of the possible hourly energy capacity of the shock absorber increases significantly.

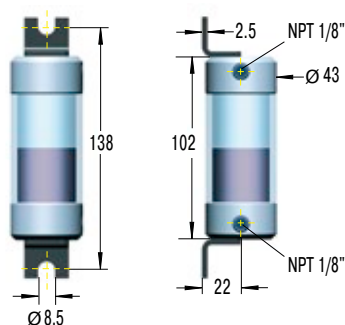
Another characteristic of the air-oil tank is the opportunity for controlled piston return if no permanent return force through an integrated spring in the shock absorber is desired.

### Air/Oil Tanks AO

#### A01

Oil capacity 20 cm<sup>3</sup>

Material: Aluminium caps

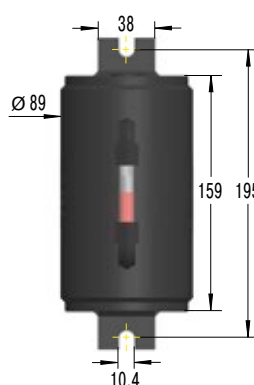


Detail drawings on request

#### A03

Oil capacity 370 cm<sup>3</sup>

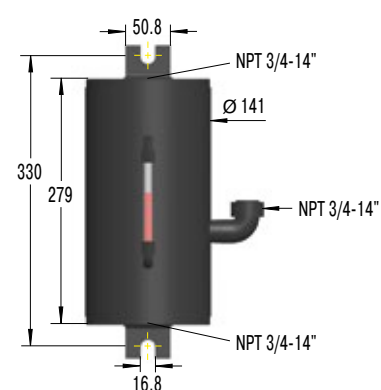
Material: Steel



#### A06

Oil capacity 2,600 cm<sup>3</sup>

Material: Steel



### Technical Data

**Operating pressure:** Max. 8 bar

**Operating temperature range:** 80 °C

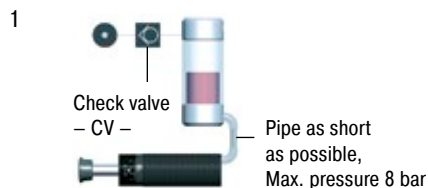
**Damping medium:** ATF-Oil 42 cSt at 40 °C

Mount air/oil tank higher than shock absorber.  
Bleed all air from system before operating.

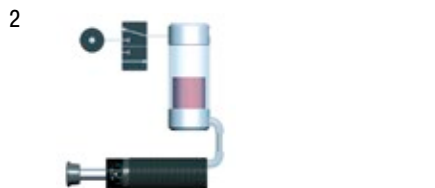
**Safety instructions:** Exhaust tank before carrying out service. Check valve holds pressure!

**Suggested air/oil tanks in accordance with W<sub>4</sub> ratings**

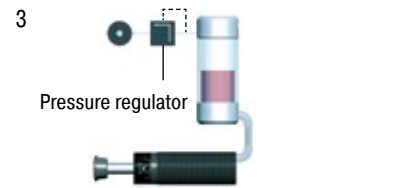
### Connection Examples



Piston rod returns immediately to extended position when load moves away. Operation without main air supply possible for short periods.



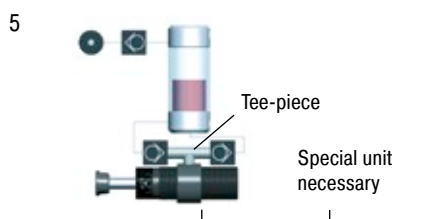
Return stroke may be sequenced by pneumatic valve at any desired time. No return force until valve energised.



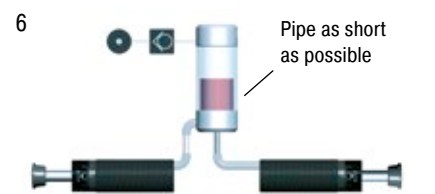
Return force can be adjusted by pressure regulator. Ensure safe minimum pressure to return shock absorber.



Spring return with air/oil tank. No air supply connected. Note: Will extend return time.



Oil recirculation circuit for extreme high cycle rates. Warm oil is positively circulated through air/oil tank for increased heat dissipation.



Oil recirculation circuit for extreme high cycle rates. Warm oil is positively circulated through air/oil tank for increased heat dissipation.

### Selection Chart Air/Oil Tanks

| Shock Absorber Type | With Tank<br>Example 1 to 4 |             | With Recirc. Circuits<br>Example 5 to 6 |             | Min. Conn. Pipe Ø<br>mm | Thread Sizes for Connection to<br>Air/Oil Tank |                             |
|---------------------|-----------------------------|-------------|-----------------------------------------|-------------|-------------------------|------------------------------------------------|-----------------------------|
|                     | Tank                        | Check Valve | Tank                                    | Check Valve |                         | Thread<br>Bottom                               | <sup>2</sup> Thread<br>Side |
| MCA, MAA, MLA33...  | AO1                         | CV1/8       | AO3                                     | CV1/4       | 4                       | <sup>1</sup> 1/8-27 NPTF inside                | 1/8-27 NPTF inside          |
| MCA, MAA, MLA45...  | AO1                         | CV1/8       | AO3                                     | CV3/8       | 6                       | 1/8-27 NPTF inside                             | 1/8-27 NPTF inside          |
| MCA, MAA, MLA64...  | AO3                         | CV1/4       | AO6                                     | CV3/4       | 8                       | 1/4-18 NPTF inside                             | 1/4-18 NPTF inside          |
| CAA, AA2...         | AO6                         | CV3/4       | AO82                                    | CV3/4       | 15                      | —                                              | —                           |
| CAA, AA3...         | AO6                         | CV3/4       | AO82                                    | CV3/4       | 19                      | —                                              | —                           |
| CAA4...             | AO82                        | CV3/4       | AO82                                    | CV3/4       | 38                      | —                                              | —                           |

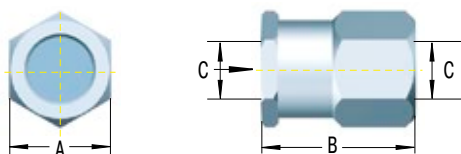
AO82 and connection accessories: Details on request

<sup>1</sup> adapted

<sup>2</sup> on request (add suffix -PG/-P)

### Check Valves CV

Through an oil circuit fresh oil is drawn in from the industrial shock absorber and warm oil is pumped off (see example 5). To obtain this function, ACE offers suitable check valves of the CV series.



### Technical Data

**Operating pressure:** 20 bar

**Operating temperature range:** 95 °C

**Suitable for:** Oil, air, water

**Material:** Aluminium

### Check Valves – Dimensions

| Type<br>Part Number | A<br>mm | B<br>mm | C<br>mm    |
|---------------------|---------|---------|------------|
| CV1/8               | 19      | 24      | 1/8-27 NPT |
| CV1/4               | 29      | 33      | 1/4-18 NPT |
| CV3/8               | 29      | 33      | 3/8-18 NPT |
| CV1/2               | 41      | 40      | 1/2-14 NPT |
| CV3/4               | 48      | 59      | 3/4-14 NPT |