

3.1.1 TECHNICAL DATA

MAX OPERATING PRESSURE (PS): 360 bar

PRESSURE TEST (PT): 1.43 x PS

NOMINAL CAPACITIES:

0.2 - 0.7 - 1 - 1.5 - 3 - 5 - 10 - 15 - 20 - 25 - 35 - 55 litres

WORKING TEMPERATURE: -40 ÷ +150 °C

COMPRESSION RATIO (Po : P2): max. 1 : 4

FLUID VISCOSITY RANGE: 10 ÷ 400 cSt

RECOMMENDED VISCOSITY: 36 cSt

FLUID CONTAMINATION DEGREE:

class 21/19/16 according to ISO 4406/99

BODY MATERIAL:

- carbon steel shell painted with rust inhibitor RAL 8012
- nickel coating 25 - 40 µ
- stainless steel AISI 316L
- internal and external coating with RILSAN th. 0.6 mm

VALVES MATERIAL:

- phosphated or galvanized carbon steel in compliance with Directive 2002/95/EC (RoHS) to resist to corrosion
- stainless steel AISI 316L
- nickel coating 25-40 µ

BLADDER MATERIAL:

- P = Nitrile rubber (NBR)
- F = Low temp. nitrile rubber
- H = Nitrile for hydrocarbons
- K = Hydrogenated nitrile (HNBR)
- B = Butyl (IIR)
- E = Ethylene-propylene (EPDM)
- N = Chloroprene (Neoprene)
- Y = Epichlorohydrin (ECO)
- V = Fluorocarbon (FPM)

See Table 3.1c and/or Chapter 1.5

FILLING VALVE CONNECTION:

- 5/8"-UNF std
- 7/8" UNF
- 1/4" BSP

FLUID PORT CONNECTION: see 3.1dc - 3.1df -

3.1eb - 3.1ec - 3.1fb - 3.1fd

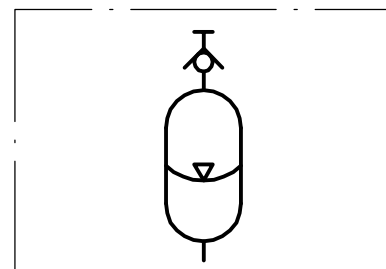
FLOW RATE: see Table 3.1db

WEIGHT: see Table 3.1db - 3.1df



3.1a

3.1.2 HYDRAULIC SYMBOL



3.1b

3.1.3 “AS and ASP” BLADDER ADVANTAGES

- dirt tolerant
- light weight
- compact
- simple construction
- quick response
- works well on water, low lubricity fluids
- quick, easy installation
- low cost

3.1.4 DESCRIPTION

Bladder-type accumulators consist of a seamless cylindrical pressure vessel made of high-tensile steel.

The accumulator is subdivided into a gas and fluid side by an elastic bladder mounted in the interior of the vessel.

The bladder is charged with nitrogen to the specified gas charge pressure P0 by means of gas valve.

When the fluid is pressed into the accumulator, the gas in the bladder is compressed and hence the pressure increased.

The gas volume reduces and on the fluid side, the fluid can flow into the accumulator. As soon as the pressure on the fluid side falls below the gas pressure, the accumulator is emptied.

Oil valve is provided in the oil port of the bladder-type accumulator and closes when the pressure on the gas side is higher than the one on the fluid side.

This prevents draining of the bladder into the oil channel and thus the bladder from being destroyed.

When the minimum operating pressure is reached, a small oil volume is to be maintained between the bladder and the fluid volume (approx. 10% of the nominal capacity of the hydraulic accumulator), in order that the bladder does not hit the valve during every expansion process.

Gas valve consists of external caps, sealing cap, filling valve, gas valve body and rubber coated washer. These parts can be replaced separately. The nameplate shows the technical data and features of the hydraulic accumulator.

3.1.5 EUROPE MARKET

All hydraulic accumulators are pressure vessels and are subject to the national regulations and directives valid at the place of installation. Bladder accumulator type AS, up to and including 1 litre, must not be CE marked.

Bladder accumulator type ASP, up to and including 1 litre and max. pressure less than 200 bar, must not be CE marked.

For bladder accumulator type AS, greater than 1 litre and, in the case of ASP, greater than 1 litre but with max. pressure higher than 200 bar every shipping batch is complete of a conformity declaration and instruction of use and maintenance and/or all documents requested.

All vessel categories (see Table 3.1e) must be protected by means of a pressure relief valve in accordance with Directive 97/23/EC.

3.1.6 ACCESSORIES

For support equipment, see Cap. 7

For gas side's safety equipment, see Cap. 8

For fluid side's safety equipment, see Cap. 9

For pre-loading and charging set, see Cap. 11

For other components, see Cap. 12

3.1.7 BLADDER-TEMPERATURE-LIQUID COMPATIBILITY

When selecting the accumulator variant, pay attention to the following non-binding notes with regard to hydraulic fluid, bladder material and the permissive temperature range. (see Section 1.5)

| Code letter | Polymer | ISO | Temperature range (°C) | Some of the liquids compatible with the polymer |
|-------------|-----------------------------|------|------------------------|--|
| P | Standard nitrile (Perburan) | NBR | -20 ÷ +80 | Aliphatic hydrocarbons (propane, butane, gasoline, oils, mineral greases, diesel fuel, fuel oil, kerosene), mineral greases and oils, HFA - HFB - HFC fluids, many dilute acids, alkalis, saline solutions, water, water glycol. |
| F | Low temperature nitrile | NBR | -40 ÷ +70 | The same as with standard nitrile + a number of different types of Freon. (This contains less acrylonitrile than the standard and is therefore more suitable for low temperatures, but its chemical resistance is slightly lower). |
| H | Nitrile for hydrocarbons | NBR | -10 ÷ +90 | Regular and premium grade slightly aromatic gasoline (and all the liquids for standard nitrile). |
| K | Hydrogenated nitrile | HNBR | -30 ÷ +130 | The same as with standard nitrile but with excellent performance at high and low temperatures. |
| B | Butyl | IIR | -30 ÷ +100 | Hot water up to 100°C, glycol-based brake fluids, many acids and bases, salt solutions, polar solvents such as alcohols, ketones and esters, polyglycol-based hydraulic fluids (HFC fluids) and bases of esters of phosphoric acid (HFD-R fluids), silicone oils and greases, Skydol 500 and 7000, resistance to ozone, aging and weathering. |
| E | Ethylene-Propylene | EPDM | -30 ÷ +100 | Hot water up to 100°C, glycol-based brake fluids, many organic and inorganic acids, detergents, solutions of sodium and potassium, phosphate ester-based hydraulic fluids, (HFD-R), silicone oils and greases, many polar solvents (alcohol, ketones, esters), Skydol 500 and 7000, resistance to ozone, aging and weathering. |
| N | Chloroprene (Neoprene) | CR | -30 ÷ +100 | Mineral oils of paraffin, silicone oils and greases, water and aqueous solutions, refrigerants (ammonia, carbon dioxide, Freon), naphthenic mineral oils, low molecular aliphatic hydrocarbons (propane, butane, fuel), brake fluids based on glycol, better resistance to ozone, weathering and aging compared to NBR rubber. |
| Y | Epichloridrin | ECO | -30 ÷ +110 | Mineral oils and greases, aliphatic hydrocarbons (propane, butane and gasoline), silicone oils and greases, water at room temperature, resistance to ozone, aging and weathering. |
| V | Fluorocarbon | FPM | -10 ÷ +150 | Mineral oils and greases, non-flammable fluids of HFD group, silicone oils and greases, animal and vegetable oils and greases, aliphatic hydrocarbons (gasoline, butane, propane, natural gas), aromatics hydrocarbons (benzene, toluene), chlorinated hydrocarbons (Tetrachloroethylene, carbon tetrachloride), fuel (regular, super and containing methanol), excellent resistance to ozone, weathering and aging. |

For other hydraulic fluid and/or temperatures, please consult us.

3.1c

3.1.8 ORDER CODE

| 1 | 2 | 3 | 4 | 5 | 6 | 7-8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | | | | | | | | | | | | | | |
|--|----|---|-----|---|---|---|---|---|----|---|----|--|----|---|-----------|--|--|---|--|--|--|---|--|--|--|---|--|--|--|
| AS | 25 | P | 360 | C | R | G4 | V | - | 8 | - | C | 0 | C | 0 | R250 / 30 | | | | | | | | | | | | | | |
| 1 Series Bladder accumulator = AS Bladder accumulator for fluid gr. 1 (dangerous) = ASP | | 2 Nominal capacity 0.2 lt = 0.2 0.7 lt = 0.7 1 lt = 1 1.5 lt = 1.5 3 lt = 3 5 lt = 5 10 lt = 10 15 lt = 15 20 lt = 20 25 lt = 25 35 lt = 35 55 lt = 55 | | 3 Bladder material Nitrile rubber (NBR) = P Nitrile for low temp. = F Nitril for hydrocarbons = H Hydrogenated nitrile (HNBR) = K Butyl (IIR) = B Ethylene-propylene (EPDM) = E Chloroprene (Neoprene) = N Epichlorohydrin (ECO) = Y Fluorocarbon (FPM) = V | | 4 Max working pressure (PS) See the table on front page | | 5 Body material Carbon steel = C Nickel coated carbon steel 25 μ = N Nickel coated carbon steel 40 μ = M Stainless steel = X Rilsan coating = V | | 6 Fluid port connection See the table on front page | | 7-8 Dimension of the connection fluid or 7+8 table See the table on front page | | 9 Type of filling valve Standard filling valve 5/8" UNF thread = V Standard filling valve with 5/8" UNF thread in stainless steel = VX Without filling valve (thread hole M12x1.5) = V0 Brass filling valve 1/4" BSP = V2 Filling valve 7/8" UNF = V4 | | 10 Test and certification Factory testing = 0 TR (Russia) = 1 Australian Standard = 2 ML (China) = 3 RINA = 4 PED97/23/EC (for capacities greater than 1 l) = 8 ATEX 94/9EC = 9 DNV = 10 RTN Passport (Ukraine) = 11 Algeria passport = 12 Standard regulation (NR13) (Brazil) = 13 Tunisia passport = 14 | | 11 Fluid valve material Carbon steel = C Nickel coated carbon steel 25 μ = N Nickel coated carbon steel 40 μ = M Stainless steel = X | | 12 Variants of fluid side Standard = 0 Adapter in stainless steel (R) = 1 Button and spring in stainless steel = 2 Other numbers/variants to be requested EPE | | 13 Gas valve material Carbon steel = C Nickel coated carbon steel 25 μ = N Nickel coated carbon steel 40 μ = M Stainless steel = X | | 14 Variants of gas side Standard = 0 Only cap in stainless steel = 1 Brass nameplate = 2 Other numbers/variants to be requested EPE | | 15 Other variants See the table on front page | | 16 Precharge pressure (bar) Standard 30 bar = 0 ÷ 300 (< PS) | |

Special variants upon request

| 4 Max working pressure (PS) | | |
|-----------------------------|--|----------------------------|
| Capacity litres | Carbon steel | Stainless steel |
| 0,2 ÷ 3 | 360 (100 only for ASP type) | 150 - 210 - 360 |
| 1 ÷ 3 | 343 (for Certification RINA [4]) | - |
| 5 ÷ 55 | 360 (100 only for ASP type: 210 only for the version with connection L or other pressure related to connections B or U) | 80 - 150 - 210 -360 |
| 5 ÷ 55 | 343 (for Certification RINA [4]) | - |

| 6 Fluid port connection | | |
|-------------------------|--|------------|
| For AS0.7÷55 | BSP ISO 228 with chamfer for OR (std) | = A |
| For AS0.2 | BSP ISO 228 (std) | = G |
| For AS3+55 | Metric | = M |
| For AS0.7÷55 | NPT-F | = P |
| For AS3+55 | internal thread SAE | = S |
| For AS3+55 | adapter for flange SAE 3000 Psi | = L |
| For AS3+55 | adapter for flange SAE 6000 Psi | = H |
| For AS0.7÷55 | flange ANSI | = B |
| For AS0.7÷55 | flange UNI - DIN | = U |
| For AS0.7÷55 | square flange | = Q |
| For AS0.7÷55 | adapter * | = R |

* assembled on the fluid valve connection type A

| 7 Dimension of the fluid connection | | |
|--|-------------------------|--------------------|
| For the type of connection: | | |
| A (0.7÷1.5 l) ¾" | | = 5 |
| (3÷5 l) 1" ¼" | | = 7 |
| (10÷55 l) 2" | | = 9 |
| G (0.2 l) ½" | | = 4 |
| M (3÷5 l) 40x1.5 | | = 40/1.5 |
| (10÷55 l) 50x1.5 | | = 50/1.5 |
| P (0.7÷1.5 l) ¾" | | = 5 |
| (3÷5 l) 1" ¼" | | = 7 |
| (10÷55 l) 2" | | = 9 |
| S (0.7÷1.5 l) 1" 1/16 12UN | | = 1 1/16-12 |
| (3÷5 l) 1" 5/8 12UN | | = 1 5/8-12 |
| (10÷55 l) 1" 7/8 12UN | | = 1 7/8-12 |
| L (3÷5 l) 1" ¼ SAE3000 | | = 7 |
| (10÷55 l) 1" ½ SAE 3000 | | = 8 |
| 2" SAE 3000 | | = 9 |
| H (3÷5 l) 1" ¼ SAE6000 | | = 7 |
| (10÷55 l) 1" ½ SAE 6000 | | = 8 |
| 2" SAE 6000 | | = 9 |
| B (0.7÷55 l) | DIMENSION/RATING | |
| Former. 1" ANSI 1500 = 1/1500 (Pmax = 250 bar) | | |
| U (0.7÷55 l) | DN/PN | |
| Former. DN50 PN100 = 50/100 (Pmax = 100 bar) | | |
| Q (3÷5 l) 1" ¼ | | = 7 |
| (10÷55 l) 2" | | = 9 |
| R (0.7÷55 l) Blind | | = 0 |
| R (0.7÷55 l) internal thread | BSP ISO 228 | = G* |
| | NPT-F | = P* |
| | BSPT | = N* |
| | SAE | = S* |
| | Metric | = M* |

*Variant in table 8

| 15 Other variants | |
|---|-----------------|
| Adapter + rupture disc set at xxx bar | = Rxxx |
| (see Section 8.2) | |
| Adapter + Safety valve, type VS224/TX set at xxx bar | = Gxxx |
| Adapter + Needle Valve of ¼" BSP | = EG2 |
| Adapter + Stainless steel needle Valve of ¼" BSP | = EG2X |
| Adapter + excluding device with with full scale pressure gauge of xxx bar | = EMxxx |
| Adapter + excluding device of 90° with full scale pressure gauge of xxx bar | = ELMxxx |
| Flushing with degree of contamination ≤ x | = Fx |
| 75-80 μ thick polyurethane paint with colour to be specified | = Wxxx |
| Off-shore paint with colour to be specified | = Zxxx |
| NORSOK System 1 paint with colour to be specified | = K1 |
| NORSOK System 7 paint with colour to be specified | = K7 |
| other variants upon request | |

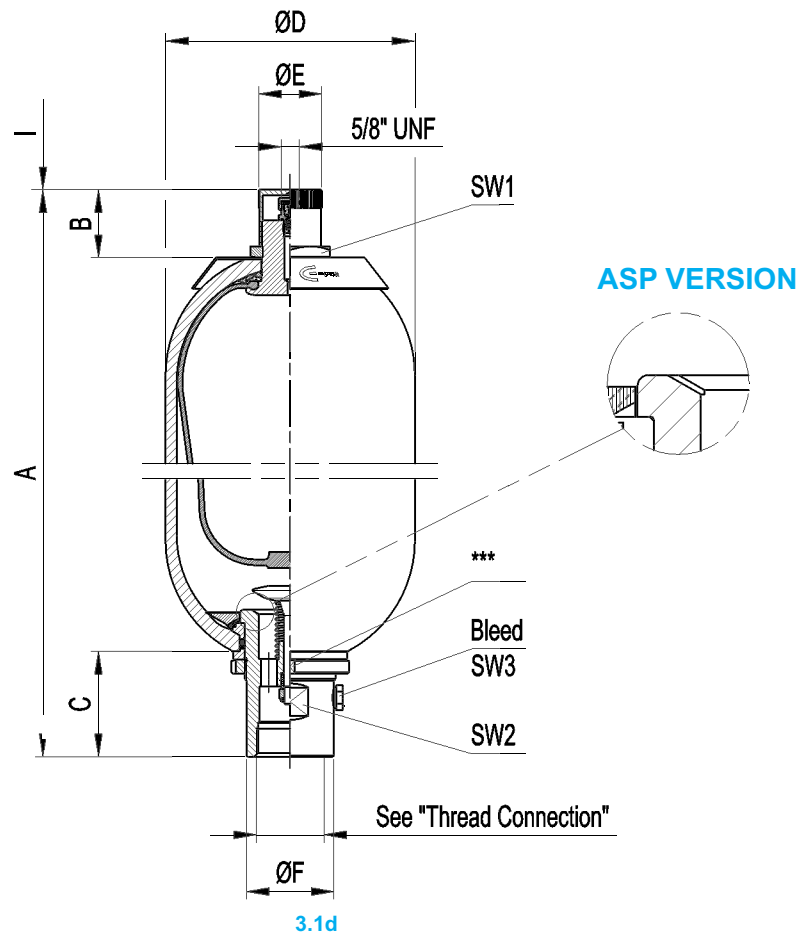
| 8 Dimension | | | |
|-------------|------------|-------|------------|
| 1/8" | = 1 | 4/4" | = 5 |
| 1/4" | = 2 | 1" | = 6 |
| 3/8" | = 3 | 1" ¼" | = 7 |
| 1/2" | = 4 | 1" ½" | = 8 |

Dimension in inch - No. of pitch for inch

Diameter/pitch

Special variants on request

3.1.9 DIMENSIONS



| Acc. type AS-ASP in carbon steel | Nominal gas volume litres | Effective gas volume litres | Working pressure bar | Ped. cat. fluids of group 2 AS | Ped. cat. fluids of group 1 ASP | Max.diff. pressure P2-P1 bar | Flow rate l/min | Max.comp. ratio P0/P2 | A mm | B mm | C mm | ØD mm | ØE mm | ØF mm | I mm | SW 1 mm | SW 2 mm | SW 3 mm | Bleed | Acc. dry weight kg |
|---|------------------------------------|--------------------------------------|----------------------------|---|--|---------------------------------------|-----------------------|-----------------------------|-----------|---------|---------|----------|----------|----------|---------|------------|------------|------------|----------|-----------------------------|
| AS/ASP 0,2 | 0,2 | 0,2 | 360 | Art.3 (3) | III | 100 | 160 | 1:4 | 252 ± 2 | 23 | 40 | 53 | 20 | 26 | 140 | 24 | 23 | 4* | M5 | 1,7 |
| AS/ASP 0,7 | 0,7 | 0,65 | 360 | Art.3 (3) | III | 100 | 300 | 1:4 | 280 ± 1,5 | 47 | 52 | 90 | 25 | 36 | 140 | 32 | 32 | 4* | M5 | 4,2 |
| AS/ASP 1 | 1 | 1 | 360 | Art.3 (3) | III | 100 | 300 | 1:4 | 296 ± 5 | 47 | 52 | 114 | 25 | 36 | 140 | 32 | 32 | 4* | M5 | 5,2 |
| AS/ASP 1,5 | 1,5 | 1,5 | 360 | II | III | 100 | 300 | 1:4 | 355 ± 5 | 47 | 52 | 114 | 25 | 36 | 140 | 32 | 32 | 4* | M5 | 6,3 |
| AS/ASP 3 | 3 | 2,95 | 360 | III | IV | 100 | 600 | 1:4 | 554 ± 8 | 47 | 65 | 114 | 25 | 53 | 140 | 32 | 50 | 4* | M5 | 11 |
| AS/ASP 5 | 5 | 5 | 360 | III | IV | 100 | 600 | 1:4 | 458 ± 10 | 47 | 65 | 168 | 25 | 53 | 140 | 32 | 50 | 4* | M5 | 15 |
| AS/ASP 10 | 10 | 9,1 | 360 | IV | IV | 100 | 1000 | 1:4 | 569 ± 10 | 60 | 101 | 220 | 60 | 77 | 140 | 70 | 70 | 19** | 1/4" BSP | 33 |
| AS/ASP 15 | 15 | 14,5 | 360 | IV | IV | 100 | 1000 | 1:4 | 719 ± 10 | 60 | 101 | 220 | 60 | 77 | 140 | 70 | 70 | 19** | 1/4" BSP | 43 |
| AS/ASP 20 | 20 | 18,2 | 360 | IV | IV | 100 | 1000 | 1:4 | 879 ± 10 | 60 | 101 | 220 | 60 | 77 | 140 | 70 | 70 | 19** | 1/4" BSP | 48 |
| AS/ASP 25 | 25 | 23,5 | 360 | IV | IV | 100 | 1000 | 1:4 | 1044 ± 15 | 60 | 101 | 220 | 60 | 77 | 140 | 70 | 70 | 19** | 1/4" BSP | 59 |
| AS/ASP 35 | 35 | 33,5 | 360 | IV | IV | 100 | 1000 | 1:4 | 1393 ± 15 | 60 | 101 | 220 | 60 | 77 | 140 | 70 | 70 | 19** | 1/4" BSP | 78 |
| AS/ASP 55 | 55 | 50 | 360 | IV | IV | 100 | 1000 | 1:4 | 1904 ± 15 | 60 | 101 | 220 | 60 | 77 | 140 | 70 | 70 | 19** | 1/4" BSP | 108 |

* Allen wrench

** Ex. wrench

*** see chapter 3.1.12.2 table 3.1ab

3.1db

* The maximum differential pressure is the maximum allowable difference between the maximum pressure and the minimum working pressure (P2-P1) to have an infinite life cycle of the accumulator (greater than 2,000,000 cycles).

** Flow rate measured using mineral oil with viscosity of 36 cSt at 50°C and ΔP = 5 bar

3.1.9.1 STANDARD THREAD CONNECTIONS

| Dimensions | Connection Type | Accumulator type | Complete spare valve order code | Ød | ØD mm | ØF mm | H mm |
|------------|---|------------------|---------------------------------|---------------|-------|-------|---------------------|
| | A BSP ISO 228 with chamfer for OR | AS/ASP 0,2 | - | - | - | - | - |
| | | AS/ASP 0,7 | V 2023-A5-**/* | 3/4" BSP | 28,8 | 36 | 19 |
| | | AS/ASP 1 | V 2024-A5-**/* | | | | |
| | | AS/ASP 1,5 | | 1" 1/4 BSP | 46 | 53 | 25 |
| | | AS/ASP 3 | V 2025-A7-**/* | | | | |
| | | AS/ASP 5 | V 2044-A7-**/* | | | | |
| | | AS/ASP 10 ÷ 55 | V 2064-A9- **/* | 2" BSP | 63,35 | 77 | 28 |
| | G BSP ISO 228 | AS/ASP 0,2 | V 2004-G4-**/* | 1/2" BSP | - | 26 | 15 |
| | | AS/ASP 0,7 | - | - | - | - | - |
| | | AS/ASP 1 | - | - | - | - | - |
| | | AS/ASP 1,5 | - | - | - | - | - |
| | | AS/ASP 3 | - | - | - | - | - |
| | | AS/ASP 5 | - | - | - | - | - |
| | | AS/ASP 10 ÷ 55 | - | - | - | - | - |
| | M Metric | AS/ASP 0,2 | - | - | - | - | |
| | | AS/ASP 0,7 | | | | | |
| | | AS/ASP 1 | | | | | |
| | | AS/ASP 1,5 | | M40x1,5 | - | 53 | 25 |
| | | AS/ASP 3 | V 2025-M40x1.5-**/* | | | | |
| | | AS/ASP 5 | V 2044-M40/1.5-**/* | | | | |
| | | AS/ASP 10 ÷ 55 | V 2064-M50/1.5-**/* | M50x1,5 | - | 77 | 28 |
| | P NPT-F | AS/ASP 0,2 | - | - | - | - | |
| | | AS/ASP 0,7 | V 2023-P5-**/* | 3/4" NPT-F | - | 36 | Thread plug gage |
| | | AS/ASP 1 | V 2024-P5-**/* | | | | |
| | | AS/ASP 1,5 | | 1" 1/4 NPT-F | - | 53 | |
| | | AS/ASP 3 | V 2025-P7-**/* | | | | |
| | | AS/ASP 5 | V 2044-P7-**/* | | | | |
| | | AS/ASP 10 ÷ 55 | V 2064-A9- **/* | 2" NPT-F | - | 77 | |
| | S SAE thread | AS/ASP 0,2 | - | - | - | - | |
| | | AS/ASP 0,7 | V 2023-S1 /16-12-**/* | 1" 1/16 12 UN | 29,16 | 36 | 19 |
| | | AS/ASP 1 | V 2024-S1 /16-12-**/* | | | | |
| | | AS/ASP 1,5 | | 1" 5/8 12 UN | 43,5 | 53 | 23 |
| | | AS/ASP 3 | V 2025-S1 5/8-12-**/* | | | | |
| | | AS/ASP 5 | V 2044-S1 5/8-12-**/* | | | | |
| | | AS/ASP 10 ÷ 55 | V 2064-S1 7/8-12-**/* | 1" 7/8 12 UN | 49,84 | 77 | 26 |

* Gasket material

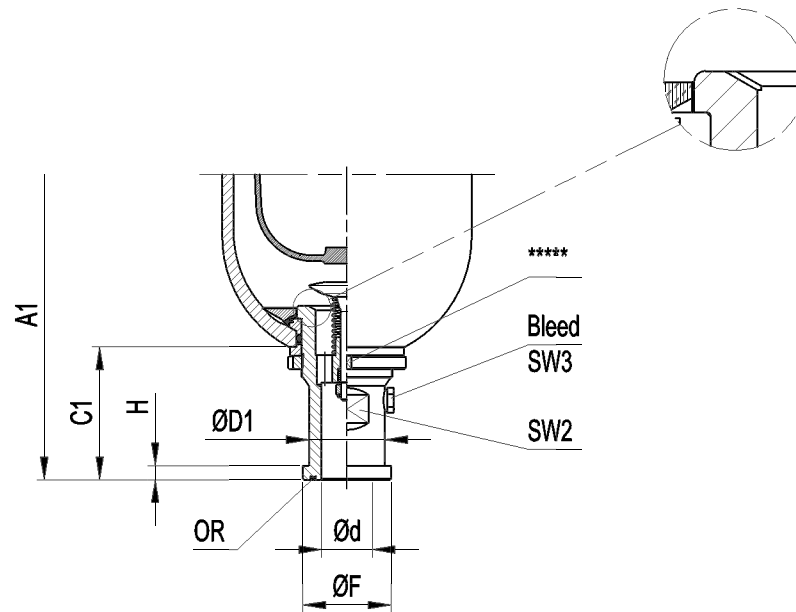
** Component material

For "ASP" version valve order code become V xxxxP - thread version

3.1dc

3.1.9.2 ADAPTER FOR FLANGE SAE 3000/6000 PSI (L/H)

ASP VERSION



3.1de

| Acc. type AS-ASP in carbon steel | Dim. | A1 mm | C1 mm | SW2 mm | SW3 mm | Bleed | Ød mm | SAE 3000 (L) | | | | SAE6000 (H) | | | | OR (Included) | Acc. dry weight kg |
|--|--------|-----------|----------|-----------|---------------|-------|---------------|---------------------------|---------------|----------|---------------|---------------------------|-------------|-------------|---------|------------------|-----------------------------|
| | | | | | | | | Spare valve order code | ØD1 mm | ØF mm | H mm | Spare valve order code | ØD1 mm | ØF mm | H mm | | |
| AS / ASP 0,2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AS / ASP 0,7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AS / ASP 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AS / ASP 1,5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AS / ASP 3 | 1" | 589 ± 8 | 100 | 38 | 4*** | M5 | - | - | - | - | - | V 2025-H6-*** | 38 | 47,6 | 9,5 | 0010R4131-* | 11 |
| | 1 1/4" | 578 ± 8 | 89 | 31 | V 2025-L7-*** | 43 | 50,8 | 8 | V 2025-H7-*** | 44 | 53,3 | 10,3 | 0010R4150-* | | | | |
| AS / ASP 5 | 1" | 493 ± 10 | 100 | 38 | 4*** | M5 | - | - | - | - | - | V 2044-H6-*** | 38 | 47,6 | 9,5 | 0010R4131-* | 15 |
| | 1 1/4" | 482 ± 10 | 89 | 31 | V 2044-L7-*** | 43 | 50,8 | 8 | V 2044-H7-*** | 44 | 53,3 | 10,3 | 0010R4150-* | | | | |
| AS / ASP 10 | 1 1/2" | 583 ± 10 | 115 | 42 | 19**** | 1/4" | 32 | V 2064-L8-*** | 50 | 60,3 | 8 | V 2064-H8-*** | 51 | 63,5 | 12,5 | 0010R4187-* | 33 |
| | 2" | | | 55 | BSP | 45 | V 2064-L9-*** | 62 | 71,5 | 9,5 | V 2064-H9-*** | 67 | 77,6 | 0010R4225-* | | | |
| AS / ASP 15 | 1 1/2" | 733 ± 10 | 115 | 42 | 19**** | 1/4" | 32 | V 2064-L8-*** | 50 | 60,3 | 8 | V 2064-H8-*** | 51 | 63,5 | 12,5 | 0010R4187-* | 43 |
| | 2" | | | 55 | BSP | 45 | V 2064-L9-*** | 62 | 71,5 | 9,5 | V 2064-H9-*** | 67 | 77,6 | 0010R4225-* | | | |
| AS / ASP 20 | 1 1/2" | 893 ± 10 | 115 | 42 | 19**** | 1/4" | 32 | V 2064-L8-*** | 50 | 60,3 | 8 | V 2064-H8-*** | 51 | 63,5 | 12,5 | 0010R4187-* | 48 |
| | 2" | | | 55 | BSP | 45 | V 2064-L9-*** | 62 | 71,5 | 9,5 | V 2064-H9-*** | 67 | 77,6 | 0010R4225-* | | | |
| AS / ASP 25 | 1 1/2" | 1058 ± 15 | 115 | 42 | 19**** | 1/4" | 32 | V 2064-L8-*** | 50 | 60,3 | 8 | V 2064-H8-*** | 51 | 63,5 | 12,5 | 0010R4187-* | 59 |
| | 2" | | | 55 | BSP | 45 | V 2064-L9-*** | 62 | 71,5 | 9,5 | V 2064-H9-*** | 67 | 77,6 | 0010R4225-* | | | |
| AS / ASP 35 | 1 1/2" | 1408 ± 15 | 115 | 42 | 19**** | 1/4" | 32 | V 2064-L8-*** | 50 | 60,3 | 8 | V 2064-H8-*** | 51 | 63,5 | 12,5 | 0010R4187-* | 78 |
| | 2" | | | 55 | BSP | 45 | V 2064-L9-*** | 62 | 71,5 | 9,5 | V 2064-H9-*** | 67 | 77,6 | 0010R4225-* | | | |
| AS / ASP 55 | 1 1/2" | 1918 ± 15 | 115 | 42 | 19**** | 1/4" | 32 | V 2064-L8-*** | 50 | 60,3 | 8 | V 2064-H8-*** | 51 | 63,5 | 12,5 | 0010R4187-* | 108 |
| | 2" | | | 55 | BSP | 45 | V 2064-L9-*** | 62 | 71,5 | 9,5 | V 2064-H9-*** | 67 | 77,6 | 0010R4225-* | | | |

* Gasket material ** Component material *** Allen wrench **** Ex. Wrench ***** see chapter 3.1.12.2 table 3.1ab

For "ASP" version valve order code become V xxxxP - thread version

3.1df