CONTROL VALVES
for mounting on orbital motors
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CONTROL VALVES for MOUNTING on DANFOSS MOTORS

GENERAL INFORMATIONS

This valves are manufactured to be mounted directly on board of the Danfoss motors. Valves production is achieved using sophisticated procedures: a project begin using CAD station, and valves are produced using automatic machines.

This valve series include all the necessary control functions that a hydraulic system require and are for flange mounting directly on board of the orbit motors.

They are divided into:

- **Pressure Relief Valves**
  Control and protect plant or single application.
  Available in direct and differential version.

- **Antishock Valves**
  Allows pressure relief on motor delivery line.
  When the actuator is braking, the included check valves allow for anticavitation.

- **Check Valves**
  When the actuator is braking, the check valves allow for anticavitation.

- **Overcenter and Motion Control Valves**
  Modulate and check movements of unstable loads, guarantee integrity and physical safety of the operator, in accordance with required safety rules.

- **Flow Control Valves**
  Available in 2 or 3 way pressure compensated version to provide a flow adjustment.

- **Special Valves**
  Our technical staff have long experience in hydraulic and this means that projects for integrated valves and personalizations of standard product can be undertaken to comply with specific customer requirements.

FILTRATION

**General Information:** Very often the cause of failure in hydraulic system and components is found to be excessive fluid contamination.

The hard contaminant particles in the fluid wear the hydraulic components and prevent the poppets from re-seating with consequent internal leakage and system inefficiency.

For the correct operations with our valves it is necessary to ensure a fluid cleaning class as follow:

- **High Pressure Systems (210 – 350 bar)**
  Class 16 / 13 ISO 4406

- **Medium Pressure Systems (up to 210 bar)**
  Class 18 / 14 ISO 4406

- **Low Pressure Systems**
  Class 19 / 15 ISO 4406

unless otherwise specified in the relevant components technical data sheet.

Contamination Class ISO 4406 it’s expressed by two scale number representing the number of particles larger than 5 micron and larger than 15 micron contained in 1 ml of fluid.
# PRESSURE RELIEF VALVES INDEX

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**PRESSURE RELIEF VALVES (SAUER-DANFOSS MOTOR)**

**VAIF /D5S/03 38/OMM**

**DIMENSIONS (mm)**

- **n° 4 WASHER 22x16,8x1,5**
  - Cod. 4RD1161501

- **n° 2 BANJO BOLTS**
  - Cod. 3RC1120700

**HYDRAULIC DIAGRAM**

**ASSEMBLY DIAGRAM**

**CROSS SECTION**

**DESCRIPTION**

Single cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMM series, including banjo bolts and washers.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**

- **Maximum flow:** 10 l/min.
- **Maximum Pressure:**
  - 210 bar (aluminium valves)
  - 350 bar (steel valves)
- **Application range with standard springs:**
  - 5 - 50 bar: pressure increase = 4 bar/turn (test setting: 30 bar at 15 l/min.)
  - 50 - 200 bar: pressure increase = 52 bar/turn (test setting: 150 bar at 5 l/min., STANDARD)
  - 180 - 350 bar: pressure increase = 63 bar/turn (test setting: 250 bar at 5 l/min.)

- **Hysteresis:** 90% of the valve setting for 1 L. flow capacity per minute.

To perform setting of the valve see the pressure drop / flow diagram.

**Working temperature:**

- min. -25°C max. 90°C with standard EVA/ IVON gaskets
- min. -20°C max. 120°C with optional VITON gaskets

**Spare Parts KIT:**

- Banjo bolt (Ordering code: 3PR3130510)
- External Seals for cartridge type MC08A (Ordering code: 5KT0082000)
RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see General Information

Weight:
- 0.9 kg aluminium valves
- 1.3 kg steel valves

Cartridge used: consult our Technical Department.

Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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PRESSURE RELIEF VALVES (SAUER-DANFOSS MOTOR)
VAIF /D5S/VA/03 38/OMM

• DESCRIPTION
Single cross-line relief valve with anti-cavitation. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMM series, including banjo bolts and washers.

• OPERATION
Allows pressure relief on delivery pipes to engines and cylinders. When the actuator is braking, the check valve allows for anti-cavitation on delivery side.

• PERFORMANCE
Maximum flow: 10 l/min.
Maximum Pressure:
- 210 bar (aluminium valves)
- 350 bar (steel valves)

Application range with standard springs:
- 50 bar; pressure increase = 4.8 bar/litre (test setting: 40 bar at 5 l/min.)
- 50 + 200 bar; pressure increase = 52 bar/litre (test setting: 150 bar at 5 l/min.) STANDARD
- 180 + 350 bar; pressure increase = 63 bar/litre (test setting: 250 bar at 5 l/min.)

Hysteresis: 90% of the valve setting for 1 l flow capacity per minute.

To perform testing of the valve see the pressure drop / flow diagram.

Working temperature:
- -25°C max. 90°C with standard BUNA gaskets
- -20°C max. 120°C with optional VITON gaskets

Spare Parts Kit:
A) Banjo bolt (Ordering code: 3RC1120700)
B) External Seats for cartridges type MC08A and UCOBA (Ordering code: 5KT(082000))
RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see General Informations

Weight:
- 0.9 kg aluminium valves
- 1.3 kg steel valves

Cartridge used: consult our Technical Department

Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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• DIMENSIONS (mm)

• HYDRAULIC DIAGRAM

• ASSEMBLY DIAGRAM

• CROSS SECTION

• DESCRIPTION
Dual cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMM series, including banjo bolts and washers.

• OPERATION
Allows pressure relief on delivery pipes to engines and cylinders.

• PERFORMANCE
Maximum flow: 10 l/min.
Maximum pressure:
- 210 bar (aluminium valves)
- 350 bar (steel valves)
Application range with standard springs:
- 5 - 50 bar; pressure increase= 4.8 bar/turn (test setting: 30 bar at 5 l/min.)
- 50 - 200 bar; pressure increase= 52 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
- 150 - 350 bar; pressure increase= 63 bar/turn (test setting: 250 bar at 5 l/min.)
Hysteresis: 90% of the valve setting for 1 L. flow capacity per minute.
To perform setting of the valve see the pressure drop/flow diagram.
Working temperature:
- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets
Spare Parts KIT:
A) Banjo bolt (Ordering code: 3RC1120700)
B) External Seals for cartridge type MC06A (Ordering code: 5KT00082000)

• RECOMMENDATIONS
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

A.1110.150

HANSA-TMP s.r.l. MODENA-ITALY
Filter: see General Informations

Weight:
- 1 kg aluminium valves
- 1,4 kg steel valves

Cartridge used: consult our Technical Department

Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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PRESSURE RELIEF VALVES (SAUER-DANFOSS MOTOR)
VAIF/D1S/12/OMR

**DIMENSIONS (mm)**

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<td>D1</td>
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<td>TCEI MBx35</td>
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<tr>
<td>25 Nm</td>
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**HYDRAULIC DIAGRAM**

- Diagram showing hydraulic components.

**ASSEMBLY DIAGRAM**

- Diagram showing assembly details.

**CROSS SECTION**

- Diagram showing cross-sectional view.

**DESCRIPTION**

Single cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor. OMP-OMPL-OMR series, including O-rings and screws.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**

- **Maximum flow:** 50 l/min.
- **Maximum Pressure:**
  - 210 bar (aluminium valves)
  - 350 bar (steel valves)
- **Application range with standard springs:**
  - 0 - 80 bar; pressure increase = 12 bar/turn (test setting: 20 bar at 5 l/min.)
  - 50 - 130 bar; pressure increase = 19.5 bar/turn (test setting: 60 bar at 5 l/min.)
  - 120 - 250 bar; pressure increase = 37.5 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
- **Hysteresis:** 90% of the valve setting for 1 L. flow capacity per minute.
- To perform setting of the valve see the pressure drop / flow diagram.
- **Working temperature:**
  - min. -25°C max. 90°C with standard BUNA gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
- **Spare Parts KIT:**
  - Screws and Seals (Ordering code: 5K1M00OMR00)
**RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see General Informations

Weight:
- 0.7 kg aluminium valves
- 1.3 kg steel valves

Cartridge used: consult our Technical Department.

Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**RATING DIAGRAMS**

[Graph showing pressure and flow characteristics]

Oil viscosity 46 cSt

---

**ADJUSTMENTS**

[Diagram showing adjustment mechanism]

---

**CODE NUMBER**

[Diagram showing code number format]

Pressure settings (bar) | Adjustment | Body material
--- | --- | ---
TB 0-80 | S | Aluminium
TV 50-130 | W | Steel
TS 120-250

---
HANSA-TMP s.r.l.  MODENA-ITALY

PRESSURE RELIEF VALVES (SAUER-DANFOSS MOTOR)
VAIF/5/D1S/12/OMR

• DIMENSIONS (mm)

![Dimensions Diagram]

• HYDRAULIC DIAGRAM

![Hydraulic Diagram]

• ASSEMBLY DIAGRAM

![Assembly Diagram]

• CROSS SECTION

![Cross Section]

• DESCRIPTION

Single cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMR series, including O-rings and screws.

• OPERATION

Allows pressure relief on delivery pipes to engines and cylinders.

• PERFORMANCE

Maximum flow: 35 l/min.
Maximum Pressure:
- 210 bar (aluminum valves)
- 350 bar (steel valves)

Application range with standard springs:
- 5 to 40 bar: pressure increase: 4.8 bar/turn (test setting: 30 bar at 5 l/min.)
- 20 to 80 bar: pressure increase: 15.6 bar/turn (test setting: 60 bar at 5 l/min.)
- 50 to 220 bar: pressure increase: 52 bar/turn (test setting: 160 bar at 5 l/min.) STANDARD
- 160 to 350 bar: pressure increase: 83 bar/turn (test setting: 260 bar at 5 l/min.)

Hysteresis: 85% of the valve setting for 1 l flow capacity per minute.
To perform setting of the valve see the pressure drop/flow diagram.

Working temperature:
- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

Spare Parts KIT:
Screws and Seals (Ordering code: 5KTM0OMR01)
RECOMMANDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see General Informations.

Weight:
- 0,45 kg aluminium valves
- 0,9 kg steel valves

Cartridge used: consult our Technical Department.

Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**
Single cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMS series, including O-rings and screws.

**OPERATION**
Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**
- **Maximum flow:** 35 I/min.
- **Maximum Pressure:**
  - 210 bar (aluminum valves)
  - 360 bar (steel valves)
- Application range with standard springs:
  - 5 - 60 bar; pressure increase = 9.4 bar/turn (test setting: 60 bar at 5 I/min.)
  - 40 - 150 bar; pressure increase = 30.5 bar/turn (test setting: 120 bar at 5 I/min.)
  - 140 - 150 bar; pressure increase = 40.4 bar/turn (test setting: 150 bar at 5 I/min.) STANDARD
  - 180 - 350 bar; pressure increase = 101 bar/turn (test setting: 260 bar at 5 I/min.)
- **Hysteresis:** 8% of the valve setting for 1 L flow capacity per minute.

To perform setting of the valve see the pressure drop / flow diagram.

**Working temperature:**
- min. -25°C max. 90°C with standard BUNA N gaskets.
- min. -20°C max. 120°C with optional VITON gaskets.

**Spare Parts KIT:**
Screws and Seats (Ordering code: 5KT000MR00)
RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see General Informations.

Weight:
- 0.45 kg aluminium valves
- 0.9 kg steel valves

Cartridge used: consult our Technical Department.

Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**Pressure Relief Valves (Sauer-Danfoss Motor)**

**VAIF/D1D/12/OMR**

**Dimensions (mm)**

```
- 5
- 10
- 28
- 35
- 40
- 64
- 92

n' 2 OR 130
22,22x2,62 70SH

TOEI M8x35
25 Nm

C1/2

D1

D2
```

**Hydraulic Diagram**

**Assembly Diagram**

**Cross Section**

**Description**

Dual cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMP-OMPL-OMR series, including O-rings and screws.

**Operation**

Allows pressure relief on delivery pipes to engines and cylinders.

**Performance**

- Maximum flow: 50 l/min.
- Maximum Pressure:
  - 210 bar (aluminium valves)
  - 350 bar (steel valves)

Application range with standard springs:

- 0 - 50 bar; pressure increase: 12 bar/lum (test setting: 20 bar at 5 l/min.)
- 50 - 130 bar; pressure increase: 19.5 bar/lum (test setting: 60 bar at 5 l/min.)
- 120 - 250 bar; pressure increase: 37.5 bar/lum (test setting: 150 bar at 5 l/min.) STANDARD

Hysteresis: 90% of the valve setting for 1 L. flow capacity per minute.

To perform setting, the valve see the Pressure drop/flow diagram.

Working temperature:

- Min. -25°C max. 90°C with standard BUNA N gaskets
- Min. -20°C max. 120°C with optional VITON gaskets

Spare Parts Kit: Screws and Seals (Ordering code: 5KTM0CMR03)
• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see General Informations.

Weight:
- 0.9 kg aluminium valves
- 1.5 kg steel valves

Cartridge used: consult our Technical Department.

Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**
Dual cross-line relief valve, direct acting, poppet type, face mounting for Sauer-Danfoss motor OMP-OMPL-OMR series, including O-rings and screws.

**OPERATION**
Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**
- Maximum flow: 35 l/min.
- Maximum Pressure:
  - 210 bar (aluminum valves)
  - 350 bar (steel valves)
- Application range with standard springs:
  - 5 - 40 bar; pressure increase = 4.8 bar/turn (test setting: 30 bar at 5 l/min.)
  - 20 - 90 bar; pressure increase = 15.6 bar/turn (test setting: 60 bar at 5 l/min.)
  - 50 - 220 bar; pressure increase = 52 bar/turn (test setting: 160 bar at 5 l/min.) STANDARD
  - 160 - 350 bar; pressure increase = 63 bar/turn (test setting: 280 bar at 5 l/min.)
- Hysteresis: 85% of the valve setting for 1 l flow capacity per minute. To perform setting of the valve see the pressure drop/flow diagram.
- Working temperature:
  - min. -25°C max. 90°C with standard BUNA gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
- Spare Parts KIT:
  Screws and Seals (Ordering code: 5KTM00MRD1)

---

**DIMENSIONS (mm)**

**HYDRAULIC DIAGRAM**

**ASSEMBLY DIAGRAM**

**CROSS SECTION**

---

A.1110.255 18 HANSA-TMP s.r.l. MODENA-ITALY
RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter: see General Informations.

Weight:
- 0.55 kg aluminium valves
- 1 kg steel valves

Cartridge used: consult our Technical Department.

Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**

Dual cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMS series, including O-rings and screws.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**

- **Maximum flow:** 35 l/min.
- **Maximum Pressure:**
  - 210 bar (aluminium valves)
  - 350 bar (steel valves)
- **Application range with standard springs:**
  - 5 = 80 bar; pressure increase = 9.4 bar/turn (test setting: 60 bar at 5 l/min.)
  - 40 = 150 bar; pressure increase = 30.5 bar/turn (test setting: 120 bar at 5 l/min.)
  - 140 = 190 bar; pressure increase = 40.4 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
  - 180 = 350 bar; pressure increase = 101 bar/turn (test setting: 260 bar at 5 l/min.)
- **Hysteresis:** 85% of the valve setting for 1 l flow capacity per minute.
- To perform setting of the valve see the pressure drop / flow diagram.
- **Working temperature:**
  - min. -25°C max. 90°C with standard BUNA gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
- **Spare Parts KIT:**
  - A) Screws and Seals (Ordering code: 5KT000MR01)
RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter: see General Informations.
Weight:
- 0.55 kg aluminium valves
- 1 kg steel valves
Cartridge used: consult our Technical Department.
Material: internal components made out of high grade steel duly treated and fabricated.
For more information please ask our Technical Department.
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RATING DIAGRAMS

ADJUSTMENTS

CODE NUMBER
**DIMENSIONS (mm)**

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**DESCRIPTION**

Dual cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMS series, including O-rings and screws.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**

- **Maximum flow:** 60 l/min.
- **Maximum Pressure:**
  - 210 bar (aluminium valves)
  - 350 bar (steel valves)
- **Application range with standard springs:**
  - 5 - 40 bar: pressure increase = 5.2 bar/turn (test setting: 30 bar at 5 l/min.)
  - 20 - 90 bar: pressure increase = 6.6 bar/turn (test setting: 60 bar at 5 l/min.)
  - 50 - 220 bar: pressure increase = 58.3 bar/turn (test setting: 160 bar at 5 l/min.) STANDARD
  - 180 - 350 bar: pressure increase = 73.1 bar/turn (test setting: 280 bar at 5 l/min.)
- **Hysteresis:** 65% of the valve setting for 1 l flow capacity per minute.

To perform setting of the valve see the pressure drop / flow diagram.

**Working temperature:**

- min. -25°C max. 90°C with standard BU/NA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

**Spares Parts Kit:**

Screws and Seals (Ordering code: 5KT00/OMR01)
**RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- 0.8 kg aluminium valves
- 1.4 kg steel valves

**Cartridge used:** consult our Technical Department.

**Material:** internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**PRESSURE RELIEF VALVES (SAUER-DANFOSS MOTOR) VAIF/12/S12/OMS**

**DIMENSIONS [mm]**

**DESCRIPTION**
Single cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMS series, including O-rings and screws

**OPERATION**
Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**
- **Maximum flow:** 35 l/min.
- **Maximum Pressure:**
  - 210 bar (aluminum valves)
  - 350 bar (steel valves)
- **Application range with standard springs:**
  - 5 + 40 bar; pressure increase = 1.59 bar/turn (test setting: 30 bar at 5 l/min.)
  - 20 + 80 bar; pressure increase = 7.03 bar/turn (test setting: 60 bar at 5 l/min.)
  - 50 + 220 bar; pressure increase = 24.15 bar/turn (test setting: 160 bar at 5 l/min.) STANDARD
  - 180 + 350 bar; pressure increase = 72.24 bar/turn (test setting: 250 bar at 5 l/min.)
- **Hysteresis:** 85% of the valve setting for 1 L flow capacity per minute.
To perform setting of the valve see the pressure drop / flow diagram.

**Working temperature:**
- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

**Spare Parts KIT:**
- Screws and Seals (Ordering code: 5KTMD0M500)
- External Seals for cartridges type VMP 12 (Ordering code: 5KT1000301)
**RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- 0.6 kg aluminium valves
- 1.2 kg steel valves

**Cartridge used:** consult our Technical Department.

**Material:** internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**RATING DIAGRAMS**

- **P (bar)** vs **Q (l/min.)**
- **P (bar)** vs **Q (l/min.)**
- Oil viscosity 46 cSt

**ADJUSTMENTS**

**CODE NUMBER**

VAIF 12/S12/OMS / [ ] / [ ] / [ ]

- **Pressure settings (bar):**
  - TB: 5-40
  - TV: 20-80
  - TS: 50-220
  - TR: 180-350

- **Adjustment:**
  - S
  - W

- **Body material:**
  - Aluminium
  - Steel
**DESCRIPTION**
Dual cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMS series, including O-rings and screws.

**OPERATION**
Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**
- **Maximum flow:** 35 l/min.
- **Maximum Pressure:**
  - 210 bar (aluminium valves)
  - 350 bar (steel valves)
- **Application range with standard springs:**
  - 5 + 40 bar; pressure increase = 1.59 bar/l/min (test setting: 30 bar at 5 l/min.)
  - 20 + 80 bar; pressure increase = 7.03 bar/l/min (test setting: 60 bar at 5 l/min.)
  - 50 + 220 bar; pressure increase = 24.15 bar/l/min (test setting: 160 bar at 5 l/min.) STANDARD
  - 180 + 350 bar; pressure increase = 72.24 bar/l/min (test setting: 250 bar at 5 l/min.)
- **Hysteresis:** 85% of the valve setting for 1 l flow capacity per minute.
  To perform setting of the valve see the pressure drop / flow diagram.
- **Working temperature:**
  - min. -25°C max. 90°C with standard BUNA N gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
- **Spare Parts KIT:**
  - Screws and Seals (Ordering code: 5KT1000000)
  - External Seals for cartridges type VMP 12 (Ordering code: 5KT10000301)
**RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- 0.8 kg aluminium valves
- 1.4 kg steel valves

**Cartridge used:** consult our Technical Department.

**Material:** internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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---

**RATING DIAGRAMS**

**ADJUSTMENTS**

**CODE NUMBER**

**VAIF 12/D12/OMS**

- **Pressure settings (bar):**
  - TB) 5-40
  - T) 20-80
  - TS) 50-220
  - TR) 180-350

- **Adjustment:**
  - S
  - W

- **Body material:**
  - Aluminium
  - Steel
• DESCRIPTION
Dual cross-line relief valve. Direct acting, poppet type, face mounting for Sauer-Danfoss motor
OMS series, including O-rings and screws.

• OPERATION
Allows pressure relief on delivery pipes to engines and cylinders.

• PERFORMANCE
Maximum flow: 35 l/min.
Maximum Pressure:
- 210 bar (aluminum valves)
- 350 bar (steel valves)
Application range with standard springs:
- 5 - 40 bar: pressure increase = 4.8 bar/lpm (test setting: 30 bar at 5 l/min.)
- 20 - 80 bar: pressure increase = 15.6 bar/lpm (test setting: 60 bar at 5 l/min.)
- 50 - 220 bar: pressure increase = 52 bar/lpm (test setting: 160 bar at 5 l/min.) STANDARD
- 180 - 350 bar: pressure increase = 63 bar/lpm (test setting: 280 bar at 5 l/min.)
Hysteresis: 85% of the valve setting for 1 L flow capacity per minute.
To perform setting of the valve see the pressure drop/flow diagram.
Working temperature:
- Min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets
Spare Parts KIT:
Screws and Seats (Ordering code: 5KTM0OMS00)
**RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- 0.7 kg aluminium valves
- 1.2 kg steel valves

**Cartridge used:** consult our Technical Department.

**Material:** internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**

Single cross-line relief valve. Direct acting, poppet type, with shuttle valve, face mounting for Sauer-Danfoss motor OMP-OMP1-OMR series, including O-rings and screws.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders. The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**

- **Maximum flow:** 35 l/min.
- **Maximum Pressure:**
  - 210 bar (aluminium valves)
  - 350 bar (steel valves)
- **Application range with standard springs:**
  - 5 - 80 bar; pressure increase = 9.4 bar/turn (test setting: 60 bar at 5 l/min.)
  - 46 - 150 bar; pressure increase = 30.5 bar/turn (test setting: 120 bar at 5 l/min.)
  - 140 - 180 bar; pressure increase = 48.4 bar/turn (test setting: 160 bar at 5 l/min.) STANDARD
  - 180 - 350 bar; pressure increase = 101 bar/turn (test setting: 280 bar at 5 l/min.)
- **Hysteresis:** 80% of the valve setting for 1 l. flow capacity per minute.
- To perform setting of the valve see the pressure drop/flow diagram.

**Working temperature:**
- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional Viton gaskets

**Spare Parts KIT:** Screws and Seal (Ordering code: 5KTMDOMR02)
**RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- 1 kg aluminium valves
- 2.2 kg steel valves

**Cartridge used:** consult our Technical Department.

**Material:** internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**
Dual cross-line relief valve. Direct acting, poppet type, with shuttle valve, face mounting for Sauer-Danfoss motor OMP-OMPL-OMR series, including O-rings and screws.

**OPERATION**
Allows pressure relief on delivery pipes to engines and cylinders. The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**
Maximum flow: 35 l/min.
Maximum Pressure:
- 210 bar (aluminium valves)
- 350 bar (steel valves)
Application range with standard springs:
- 5 = 80 bar; pressure increase=9.4 bar/l/min (test setting: 60 bar at 5 l/min.)
- 40 = 150 bar; pressure increase=30.5 bar/l/min (test setting: 120 bar at 5 l/min.)
- 140 = 190 bar; pressure increase=101 bar/l/min (test setting: 150 bar at 5 l/min.) STANDARD
- 180 = 350 bar; pressure increase=101 bar/l/min (test setting: 250 bar at 5 l/min.)
Hysteresis: 85% of the valve setting for 1 L flow capacity per minute.
To perform setting of the valve see the pressure drop / flow diagram.
Working temperature:
- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets
Spare Parts KIT:
Screws and Seals (Ordering code: 5K1M1K60/2).
**RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- 1.1 kg aluminium valves
- 2.4 kg steel valves

**Cartridge used:** consult our Technical Department.

**Material:** internal components made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**RATING DIAGRAMS**

**ADJUSTMENTS**

**CODE NUMBER**

VAIF 5Y/D1D/12/SF/OMR / □□ . □ / □□

Pressure settings (bar) | Adjustment | Body material
--- | --- | ---
TB) 5-80 | S | Aluminium
TV) 40-150 | W | Steel
**DESCRIPTION**
Single cross-line relief valve. Differential control, conical seat, face mounting for Sauer-Danfoss motor OMS series, including O-Ringa and screws.

**OPERATION**
Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**
Maximum flow: 60 l/min.
Maximum Pressure:
- 210 bar aluminium valve
- 350 bar steel valve
Application range with standard springs:
- 5 = 210 bar; pressure increase = 4.7 bar/ℓ/min (test setting: 150 bar at 5 l/min.) STANDARD
- 50 = 350 bar; pressure increase = 99 bar/ℓ/min (test setting: 250 bar at 5 l/min.)
To perform setting of the valve see the pressure drop/flow diagram.
Hysteresis: 85% of the valve setting for 1 L flow capacity per minute.
Oil leak between P and T: disregarding.
Working temperature:
- min. -25°C max. 90°C with standard BUNA-N gaskets
- min. -20°C max. 120°C with optional VITON gaskets
Spare parts KIT:
A) Screws and Seals (Ordering code: 5KT1000300)
B) External Seals for cartridges type VMPD 12 (Ordering code: 5KT1200300)
- **DESCRIPTION**
  Dual cross-line relief valve. Differential control, conical seat, face mounting for Sauer-Danfoss motor OMS series, including O-Rings and screws.

- **OPERATION**
  Allows pressure relief on delivery pipes to engines and cylinders.

- **PERFORMANCE**
  Maximum flow: 60 l/min.
  Maximum Pressure:
  - 210 bar aluminium valve
  - 350 bar steel valve
  Application range with standard springs:
  - 5 - 210 bar; pressure increase = 47 bar/l/min (test setting: 150 bar at 5 l/min) STANDARD
  - 50 - 350 bar; pressure increase = 98 bar/l/min (test setting: 250 bar at 5 l/min)
  To perform setting of the valve see the pressure drop / flow diagram.
  Hysteresis: 65% of the valve setting for 1 l. Flow capacity per minute.
  Oil leak between P and T: disregardable.
  Working temperature:
  - min. -25°C max. 90°C with standard BU/NAN gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
  Spare parts KIT:
  A) Screws and Seals (Ordering code: 5KTMO/OMS00)
  B) External Seals for cartridges type VMPD 12 (Ordering code: 5KT1200300)
RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see General Informations.

Weight:
- aluminium valves 1.14 kg
- steel valves 2.00 kg

Cartridge used: consult our Technical Department.

Material: made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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RATING DIAGRAMS

![Graph](image)

Oil viscosity 46 cSt

---

CODE NUMBER

VADDF/OMS/D/12/ □□ □□ □□

Pressure settings (bar)
- TS) 5-210
- TR) 50-350

Body material
- Aluminium
- Steel
**DESCRIPTION**

Dual cross-line relief valve. Differential control, conical seat, with shuttle valve, face mounting for Sauer-Danfoss motor OMS series, including O-Rings and screws.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders. The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**

Maximum flow: 60 l/min.

Maximum Pressure:

- 210 bar aluminium valve
- 350 bar steel valve

Application range with standard springs:

- 5 = 210 bar; pressure increase = 47 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
- 50 = 350 bar; pressure increase = 99 bar/turn (test setting: 250 bar at 5 l/min)

To perform setting of the valve see the pressure drop flow diagram.

Hysteresis: 85% of the valve setting for 1 l flow capacity per minute.

Oil leak between P and T: disregardable.

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

Spare parts KIT:

A) Screws and Seals (Ordering code: SKT100OMS1)
B) External Seals for cartridges type VMPD 12 (Ordering code: SKT1200300)
• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter: see General Informations.
Weight:
- aluminium valves 2.5 kg
- steel valves 4.85 kg
Cartridge used: consult our Technical Department.
Material: made out of high grade steel duly treated and fabricated.
For more information please ask our Technical Department.
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• RATING DIAGRAMS

![Graph showing P(bar) versus Q/(l/min.) with oil viscosity 46 cSt.]

• CODE NUMBER

VADDF/OMS/D/SF/12/ □□ . S / □□
Pressure settings (bar)
TS: 5-210
TR: 50-350
Body material
- Aluminium
- Steel
**PRESSURE RELIEF VALVES (SAUER-DANFOSS MOTOR)**

**VADDF/OMT/S 34**

---

**DIMENSIONS (mm)**

- Diagram showing dimensions with specific measurements and notes.

**DESCRIPTION**

Single cross-line relief valve. Differential control, conical seat, face mounting for Sauer-Danfoss motor OMT series, including O-Rings and screws.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**

- **Maximum flow:** 100 l/min.
- **Maximum Pressure:**
  - 210 bar aluminium valve
  - 350 bar steel valve
- **Application range with standard springs:**
  - 5 – 210 bar, pressure increase = 37 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
  - 50 – 350 bar, pressure increase = 63 bar/turn (test setting: 250 bar at 5 l/min.)
- To perform setting of the valve see the pressure drop/flow diagram.
- **Hysteresis:** 85% of the valve setting for 1 l flow capacity per minute.
- **Oil leak between P and T:** disregarded.
- **Working temperature:**
  - min. -25°C max. 90°C with standard BUNA N gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
- **Spare parts KIT:**
  A) Screws and Seals (Ordering code: 5KT1200MT01)
  B) External Seals for cartridges type VMPO 34 (Ordering code: 5KT1200400)

---

A.1120.400

HANSA-TMP s.r.l. MODENA-ITALY
**RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- aluminium valves 2.2 kg
- steel valves 5.8 kg

**Cartridge used:** consult our Technical Department.

**Material:** made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**
Dual cross-line relief valve. Differential control, conical seal, face mounting for Sauer-Danfoss motor OMT series, including O-Rings and screws.

**OPERATION**
Allows pressure relief on delivery pipes to engines and cylinders

**PERFORMANCE**
Maximum flow: 100 (min).

Maximum Pressure:
- 210 bar; aluminum valve
- 350 bar; steel valve

Application range with standard springs:
- 5 + 210 bar, pressure increase = 37 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
- 50 + 350 bar, pressure increase = 63 bar/turn (test setting: 250 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

Hysteresis: 85% of the valve setting for 1 L. flow capacity per minute.

Oil leak between P and T: disregardable.

Working temperature:
- min. -25°C max. 90°C with standard BUNA gaskets
- min. -20°C max. 120°C with optional VITON gaskets

Spare parts KIT:
A) Screws and Seals (Ordering code: 5KT12000400)
B) External Seals for cartridge type VMP34 (Ordering code: 5KT12000400)
**RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- aluminium valves 2.8 kg
- steel valves 6.3 kg

**Cartridge used:** consult our Technical Department.

**Material:** made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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---

**RATING DIAGRAMS**

![Graph](image)

Oil viscosity 46 cSt

---

**CODE NUMBER**

**VADDF/OMT /D/ 34 / □□.□ / □□**

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HANSA-TMP s.r.l. MODENA-ITALY

A.1120.420
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<td></td>
</tr>
</tbody>
</table>
```

**HYDRAULIC DIAGRAM**

![Hydraulic Diagram]

**ASSEMBLY DIAGRAM**

![Assembly Diagram]

**DESCRIPTION**

Dual cross-line relief valve. Differential control, conical seat, with shuttle valve, face mounting for Sauer-Danfoss motor OMT series, including O-Rings and screws.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders.
The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**

Maximum flow: 100 l/min.

- **Maximum Pressure:**
  - 210 bar aluminum valve
  - 350 bar steel valve

- **Application range with standard springs:**
  - 5 = 210 bar, pressure increase = 37 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD.
  - 50 = 350 bar, pressure increase = 63 bar/turn (test setting: 250 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

- **Hysteresis:** 85% of the valve setting for 1 L, flow capacity per minute.
- **Oil leak between P and T:** disregarded.
- **Working temperature:**
  - min. -25°C max. 90°C with standard BUNAN gaskets
  - min. -20°C max. 120°C with optional VITON gaskets

- **Spare parts KIT:**
  A) Screws and Seals (Ordering code: 5KTMOMT01)
  B) External Seals for cartridge type VMPD MS (Ordering code: 5KT1200400)

---

**CROSS SECTION**

![Cross Section]
RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter: see General Informations.
Weight:
- aluminium valves 3.2 kg
- steel valves 7.2 kg
Cartridge used: consult our Technical Department.
Material: made out of high grade steel duly treated and fabricated.
For more information please ask our Technical Department.
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• RATING DIAGRAMS

- CODE NUMBER

VADDF/OMT/D/SF 34 / □□ . S / □□

Pressure settings (bar)
TS) 5-210
TR) 50-350

Body material
Aluminium
Steel
**DESCRIPTION**
Single cross-line relief valve. Differential control, conical seat, face mounting for Sauer-Danfoss motor OMV series, including O-Rings and screws.

**OPERATION**
Allows pressure relief on delivery pipes to engines and cylinders.

**PERFORMANCE**
- Maximum flow: 180 l/min.

**Maximum Pressure:**
- 210 bar aluminum valve
- 350 bar steel valve

**Application range with standard springs:**
- 5 - 210 bar, pressure increase = 46 bar/min (test setting: 150 bar at 5 l/min.) STANDARD
- 50 - 350 bar, pressure increase = 66 bar/min (test setting: 250 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

**Hysteresis:** 3% of the valve setting for 1 L. flow capacity per minute.

**Oil leak between P and T:** disregardsable

**Working temperature:**
- min. -25°C max. 90°C with standard BUNA-N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

**Spare parts KIT:**
A) Screws and Seals (Ordering code: 5KTM0OMV00)
B) External Seals for cartridges type VMPD 100 (Ordering code: 5KTD1200002)
**RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see General Informations.

Weight:
- aluminium valves 3.3 kg
- steel valves 7.1 kg

Cartridge used: consult our Technical Department.

Material: made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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### Description
Dual cross-line relief valve, Differential control, conical seat, face mounting for Sauer-Danfoss motor OMV series, including O-Rings and screws.

### Operation
Allows pressure relief on delivery pipes to engines and cylinders.

### Performance
Maximum flow: 180 l/min.

<table>
<thead>
<tr>
<th>Maximum Pressure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 210 bar aluminum valve</td>
</tr>
<tr>
<td>- 350 bar steel valve</td>
</tr>
</tbody>
</table>

**Application range with standard springs:**
- 5 - 210 bar, pressure increase = 46 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
- 50 - 350 bar, pressure increase = 96 bar/turn (test setting: 250 bar at 5 l/min.)

To perform setting of the valve see the pressure drop/flow diagram.

**Hysteresis:** 85% of the valve setting for 1 L flow capacity per minute.

**Oil leak between P and T:** disregartable.

**Working temperature:**
- min.-25°C max. 90°C with standard BUNAN gaskets
- min.-20°C max. 120°C with optional VITON gaskets

**Spare parts KIT:**
A) Screws and Seals (Ordering code: 5KT000OMV00)
B) External Seals for cartridges type VMPD 100 (Ordering code: 5KT1200502)
RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see General Informations.

Weight:
- aluminium valves 3.9kg
- steel valves 7.7 kg

Cartridge used: consult our Technical Department.

Material: made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**RATING DIAGRAMS**

![Graph showing pressure settings and oil viscosity.](image)

**CODE NUMBER**

VADD/F OMV/D 100 / [ ] .S / [ ]

Pressure settings (bar)

- TS 5-210
- TR 50-350

Body material

- Aluminium
- Steel
**DESCRIPTION**

Dual cross-line relief valve with anti caviation. Direct acting, poppet type, face mounting for Sauer-Danfoss motor OMS series, including washers and banjo bolts.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders. When the actuator is braking, two check valves allow for anti caviation on delivery side.

**PERFORMANCE**

- Maximum flow: 35 l/min.
- Maximum Pressure:
  - 210 bar (aluminum valves)
  - 350 bar (steel valves)
- Application range with standard springs:
  - 5 - 40 bar: pressure increase = 1.59 bar/turn (test setting: 30 bar at 5 l/min.)
  - 20 - 80 bar: pressure increase = 7.03 bar/turn (test setting: 60 bar at 5 l/min.)
  - 50 - 220 bar: pressure increase = 24.15 bar/turn (test setting: 160 bar at 5 l/min.) STANDARD
  - 160 - 350 bar: pressure increase = 72.24 bar/turn (test setting: 250 bar at 5 l/min.)
- Hysteresis: 85% of the valve setting for 1 L. flow capacity per minute.

To perform setting of the valve see the pressure drop / flow diagram.

**Working temperature:**

- min. -25°C max. 90°C with standard BUNAN gaskets
- min. -20°C max. 120°C with optional VITON gaskets

**Spare Parts Kit:**

- Banjo bolts (Ordering code: 3BR3130510)
- External Seals for cartridges type VMP 12 (Ordering code: 5KT1000301)
RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter: see General Informations.
Weight:
- 2.5 kg aluminium valves
- 3.3 kg steel valves
Cartridge used: consult our Technical Department.
Material: internal components made out of high grade steel duly treated and fabricated.
For more information please ask our Technical Department.

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## ANTISHOCK VALVES INDEX

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<tr>
<td>Antishock valve with anti-cavitation</td>
<td>VAA / RU / DF 34 / OMT</td>
<td>A.1150.400</td>
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<tr>
<td>Antishock valve with anti-cavitation</td>
<td>VAA / RU / DF 100 / OMV</td>
<td>A.1150.500</td>
<td>60</td>
</tr>
</tbody>
</table>
**Description**

Antishock valve with anti-cavitation and single pressure adjustment. Differential control, conical seat, face mounting for Sauer Danfoss motor OMR series, including O-Rings and screws.

**Operation**

Allows pressure relief on delivery pipes to engines and cylinders. When the actuator is braking, two-check valves allow for anti-cavitation on delivery side.

**Performance**

- **Maximum flow**: 60 l/min.
- **Maximum Pressure**:
  - 210 bar (aluminum valve)
  - 350 bar (steel valve)
- **Application range with standard springs**:
  - 
    - 5 = 210 bar: pressure increase = 47 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
    - 50 = 350 bar: pressure increase = 99 bar/turn (test setting: 250 bar at 5 l/min.)
- To perform setting of the valve see the pressure drop flow diagram.
- **Hysteresis**: 8% of the valve setting for 1 l/min. flow capacity per minute.
- **Oil leak between P and T**: disregartable.
- **Working temperature**:
  - min. -25°C max. 90°C with standard BUNA N gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
- **Spare parts kit**:
  - A) Screws and Seals (Ordering code: 5KT1000MR01)
  - B) External Seals for cartridges type VMPD 12 (Ordering code: 5KT1200300)
• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter: see General Informations.
Weight:
- aluminium valves 1.85 kg
- steel valves 3.8 kg
Cartridge used: consult our Technical Department.
Material: made out of high grade steel duly treated and fabricated.
For more information please ask our Technical Department.
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**DESCRIPTION**
Antishock valve with anti-cavitation and single pressure adjustment. Differential control, conical seat, face mounting for Sauer Danfoss motor OMS series, including O-Rings and screws.

**OPERATION**
Allows pressure relief on delivery pipes to engines and cylinders. When the actuator is braking, two check valves allow for anti-cavitation on delivery side.

**PERFORMANCE**
- **Maximum flow**: 60 l/min.
- **Maximum Pressure**:
  - 210 bar (aluminum valve)
  - 350 bar (steel valve)
- **Application range with standard springs**:
  - 5 – 210 bar, pressure increase = 47 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
  - 50 – 350 bar, pressure increase = 99 bar/turn (test setting: 250 bar at 5 l/min.)
- To perform setting of the valve see the pressure drop / flow diagram.
- **Hysteresis**: 85% of the valve setting for 1 L flow capacity per minute.
- **Oil leak between P and T**: disregardable.
- **Working temperature**:
  - min. -25°C max. 90°C with standard BUNA N gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
- **Spare parts KIT**:
  - A) Screws and Seals (Ordering code: 5KT12000502)
  - B) External Seals for cartridges type VMPD 12 (Ordering code: 5KT1200300)

---

**DIMENSIONS (mm)**

**HYDRAULIC DIAGRAM**

**ASSEMBLY DIAGRAM**

**CROSS SECTION**

---

A.1150.300 56  HANSA-TMP s.r.l. MODENA-ITALY
- **RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- aluminium valves 1.6 kg
- steel valves 3.3 kg

**Cartridge used:** consult our Technical Department.

**Material:** made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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ANTISHOCK VALVES (SAUER-DANFOSS MOTOR)
VAA/RU/DF 34/OMT

- DIMENSIONS (mm)

- HYDRAULIC DIAGRAM

- ASSEMBLY DIAGRAM

- CROSS SECTION

- DESCRIPTION

Antishock valve with anti-cavitation and single pressure adjustment. Differential control, conical seat, face mounting for Sauer Danfoss motor OMT series, including O-Rings and screws.

- OPERATION

Allows pressure relief on delivery pipes to engines and cylinders. When the actuator is braking, two-check valves allow for anti-cavitation on delivery side.

- PERFORMANCE

Maximum flow: 100 l/min.
Maximum Pressure:
- 210 bar (aluminum valve)
- 350 bar (steel valve)
Application range with standard springs:
- 5 x 210 bar; pressure increase = 37 bar/min (test setting: 150 bar at 5 l/min.) STANDARD
- 9 x 350 bar; pressure increase = 63 bar/min (test setting: 250 bar at 5 l/min.)
To perform setting of the valve see the pressure drop / flow diagram.
Hysteresis: 95% of the valve setting for 1 l/min flow capacity per minute.
Oil leak between P and T: disregardable.
Working temperature:
- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets
Spare parts Kit:
A) Screws and Seals (Ordering code: 5KTM00MT01)
B) External Seals for cartridges type VMPD 34 (Ordering code: 5KT1200400)

A.1150.400

HANSA-TMP s.r.l. MODENA-ITALY
• **RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- aluminium valves 2.5 kg
- steel valves 4.7 kg

**Cartridge used:** consult our Technical Department.

**Material:** made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**RATING DIAGRAMS**

![Rating Diagram](image)

- Oil viscosity 46 cSt

---

**CODE NUMBER**

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<th>VAA/ RU/DF/34/ OMT /</th>
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<th>Check valve seat</th>
<th>Body material</th>
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</thead>
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<td>TS) 5–210</td>
<td>See body</td>
<td>Aluminium</td>
</tr>
<tr>
<td></td>
<td>TR) 50–350</td>
<td>VRR) Hardened</td>
<td>ac Steel</td>
</tr>
</tbody>
</table>

HANSA-TMP s.r.l. MODENA-ITALY 59 A.1150.400
**DIMENSIONS (mm)**

![Diagram showing dimensions in millimeters]

**DESCRIPTION**

Anti-shock valve with anti-cavitation and single pressure adjustment. Differential control, conical seat, face mounting for Sauer Danfoss motor OMV series, including O-Rings and screws.

**OPERATION**

Allows pressure relief on delivery pipes to engines and cylinders. When the actuator is braking, two check valves allow for anti-cavitation on delivery side.

**PERFORMANCE**

- Maximum flow: 180 l/min.
- Maximum Pressure:
  - 210 bar (aluminum valve)
  - 350 bar (steel valve)
- Application range with standard springs:
  - 5 - 210 bar, pressure increase = 46 bar/turn (test setting: 150 bar at 5 l/min.) STANDARD
  - 50 - 350 bar, pressure increase = 96 bar/turn (test setting: 250 bar at 5 l/min.)
- To perform setting of the valve see the pressure drop / flow diagram.
- Hysteresis: 85% of the valve setting for 1 L flow capacity per minute.
- Oil leak between P and T: disregardable.
- Working temperature:
  - min. -25°C max. 90°C with standard BUNA gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
- Spare parts kit:
  - A) Screws and Seals (Ordering code: 5KT06CMV00)
  - B) External Seals for cartridges type VMPD 100 (Ordering code: 5KT1200502)
RECOMMENDATIONS

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter:** see General Informations.

**Weight:**
- aluminium valves 4.75 kg
- steel valves 9.2 kg

**Cartridge used:** consult our Technical Department.

**Material:** made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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# CHECK VALVES INDEX

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</thead>
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<td>VANT / F12 / OMS</td>
<td>A.1410.300</td>
<td>64</td>
</tr>
<tr>
<td>Shuttle valve, ball type</td>
<td>VTF / OMR 12</td>
<td>A.1450.200</td>
<td>66</td>
</tr>
<tr>
<td>Shuttle valve, ball type</td>
<td>VTF / OMS 12</td>
<td>A.1450.300</td>
<td>68</td>
</tr>
</tbody>
</table>
**DESCRIPTION**
Anti-cavitation valve, face mounting for Sauer Danfoss motor OMS series, including O-Rings and screws.

**OPERATION**
When the actuator is braking, the check valve allows for anti-cavitation on delivery side.

**PERFORMANCE**
- Maximum flow: 70 l/min.
- Maximum Pressure:
  - 210 bar (aluminium valve)
  - 350 bar (steel valve)
- Hysteresis: 85% of the valve setting for 1 L flow capacity per minute.
- Working temperature:
  - min. -25°C max. 90°C with standard BUNA N gaskets
  - min. -20°C max. 120°C with optional VITON gaskets
- Spare parts KIT:
  A) Screws and Seals (Ordering code: 5KT/M0CMS00)

**RECOMMENDATIONS**
- Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
- Filter: see page 2.9000 000.
- Weight:
  - aluminium valves 0.85 kg
  - steel valves 2 kg

A.1410.300 64
**Fluid**: best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter**: see General Informations.

**Cartridge used**: parts in body.

**Material**: made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**
Shuttle valve, ball type, face mounting for Sauer-Danfoss motor OMR series, including O-Rings and screws.

**OPERATION**
Oil flow is produced from D1 to F or D2 to F with priority to the way with the bigger pressure.

**PERFORMANCE**
- Maximum flow: 50 l/min.
- Maximum Pressure:
  - 210 bar aluminium valve
  - 350 bar steel valve
- Working temperature:
  - minimum -25°C and max +90°C with standard BUNA gaskets
  - minimum -20°C and max +120°C with special VITON gaskets on request
- Spare parts KIT:
  - Screws and Seals (Ordering code: 5KTM00MR00)

**RECOMMENDATIONS**
- Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
- Filter: see page Z 9000 000.
- Weight:
  - aluminium valves 0.52kg
  - steel valves 1.3 kg
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter: see General Informations.
Cartridge used: parts in body.
Material: made out of high grade steel duly treated and fabricated.
For more information please ask our Technical Department.
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- **DIMENSIONS (mm)**

- **HYDRAULIC DIAGRAM**

- **ASSEMBLY DIAGRAM**

- **CROSS SECTION**

- **DESCRIPTION**
Shuttle valve, ball type, face mounting for Sauer-Danfoss motor OMS series, including O-Rings and screws.

- **OPERATION**
Oil flow is produced from D1 to F or D2 to F with priority to the way with the bigger pressure.

- **PERFORMANCE**
  - **Maximum flow:** 50 l/min.
  - **Maximum Pressure:**
    - 210 bar aluminium valve
    - 350 bar steel valve
  - **Working temperature:**
    - minimum –25°C and max +90°C with standard BUNA gaskets
    - minimum –20°C and max +120°C with special VITON gaskets on request
  - **Spare parts KIT:**
    - Screws and Seals (Ordering code: 5KTM0OMS00)

- **RECOMMENDATIONS**
  - Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
  - Filter: see page Z.9000.000.
  - **Weight:**
    - aluminium valves 0.45 kg
    - steel valves 1.3 kg
  - **Material internal components:** made out of high grade steel duly treated and fabricated.
**Fluid**: best use mineral oil with viscosity ranging between 10 and 200 cSt.

**Filter**: see General Informations.

**Cartridge used**: parts in body.

**Material**: made out of high grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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## OVERCENTER VALVES INDEX

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<td>A.1640.250</td>
<td>100</td>
</tr>
</tbody>
</table>
**DESCRIPTION**

Single overcenter valves, face mounting for Sauer Danfoss motor OMR series.

**OPERATION**

The oil flow is allowed from D1 to U1 and is stopped in the opposite way (from U1 to D1) up to the spring setting value. Free oil flow from U1 to D1 is strictly possible when the pilot pressure in D2 and U2 is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[ \text{valve setting - load pressure} + \text{pilot ratio} = \text{pilot pressure} \]

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. \[(250 \text{ bar} - 130 \text{ bar}) ÷ 4 = 30 \text{ bar}]\.

Should counterpressure arise in D1, the setting value of the valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

**PERFORMANCE**

- **Maximum flow:** 40 l/min
- **Maximum Pressure:**
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- **Application range with standard springs:**
  - 5 - 210 bar pressure increase = 26 bar/turn (test setting: 170 bar at 5 l/min)
  - 50 - 350 bar pressure increase = 87 bar/turn (test setting: 280 bar at 5 l/min) STANDARD
- **Oil leaks from U1 to D1:** 0.25 cc/minute (5 drops) at 210 bar and 90% of the spring setting value with oil viscosity of 46 cSt
- **Pilot ratio:**
  - 1:4 (standard type)

---

**DIMENSIONS (mm)**

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---

**HYDRAULIC DIAGRAM**

---

**ASSEMBLY DIAGRAM**

---

**CROSS SECTION**

**PARTS IN BODY**

---

A.1610.200
OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VOSL/SC/F 12/OMR

Working temperature:
- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: SKTM00MR03)

RECOMMENDATIONS
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.
Weight:
- aluminium valves 1.5 kg
- steel valves 3.5 kg
Material: made out of high-grade steel duly treated and fabricated.
For more information please ask our Technical Department.
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• RATING DIAGRAMS

- Oil viscosity 45 cSt

• CODE NUMBER

VOSL/SC/F 12/OMR S PG

Pressure settings (bar)
TS) 5-210
TR) 50-350 (standard)

Pilot ratio
p4) 1-4 (standard)

Check valve seat
VRR) Sae body
Hardened steel

Body material
_Aluminium
_ac Steel
OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VODL/SC/F 12/OMR

**DIMENSIONS (mm)**

**DESCRIPTION**
Dual overcenter valves, face mounting for Sauer Danfoss motor OMR series.

**OPERATION**
The oil flows from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to stop the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[
\text{valve setting – load pressure} + \text{pilot ratio} = \text{pilot pressure}
\]

For example:
If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load. \((250 \text{ bar} – 130 \text{ bar}) + 4 = 30 \text{ bar})\).

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

**PERFORMANCE**
- **Maximum flow**: 40 l/min
- **Maximum Pressure**:
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- Application range with standard springs:
  - 5 – 210 bar pressure increase = 26 bar/turn (test setting: 170 bar at 5 l/min)
  - 50 – 350 bar pressure increase = 87 bar/turn (test setting: 280 bar at 5 l/min) STANDARD
- Oil leaks from U1 (U2) to D1 (D2): 0.25 cm³/minute (5 drops) at 210 bar and 80% of the spring
Working temperature:
- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KT0OMR03)

- RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.

Weight:
- aluminium valves 1.75 kg
- steel valves 3.75 kg

Material: made out of high-grade steel duly treated and fabricated.
For more information please ask our Technical Department.

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• RATING DIAGRAMS

• CODE NUMBER

VODL/SC/F 12/OMR/□□□.□□.□□.PG.□□/□□

Pressure settings (bar)
(TS) 5÷210
(TR) 50÷350 (standard)

Pilot ratio
p4) 1:4 (standard)

Check valve seat
See body VRR
Hardened steel

Body material
Aluminium ac Steel
**DESCRIPTION**
Single overcenter valves, face mounting for Sauer Danfoss motor OMS series.

**OPERATION**
The oil flow is allowed from D1 to U1 and is stopped in the opposite way (from U1 to D1) up to the spring setting value. Free oil flow from U1 to D1 is strictly possible when the pilot pressure in D2 and U2 is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}\]

For example:
If your pilot ratio is 1:3, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. \([250 \text{ bar} - 130 \text{ bar}] \div 3 = 40 \text{ bar}]\).

Should counterpressure arise in D1, the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

**PERFORMANCE**
Maximum flow: 70 l/min
Maximum Pressure:
- Aluminium body: 210 bar
- Steel body: 350 bar

Application range with standard springs:
- 5 - 210 bar pressure increase = 36 bar/mm (test setting: 170 bar at 5 l/min)
- 50 - 350 bar pressure increase = 90 bar/mm (test setting: 280 bar at 5 l/min) STANDARD

Oil leaks from U1 to D1: 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

Pilot ratio:
- 1.4 (standard type)
- 1:7 (on request only)

**Working temperature**
- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

**Spare parts KIT:**
Screws and Seals (Ordering code: SKTM0OMS03)

- **RECOMMENDATIONS**
  - **Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt
  - **Filter:** see General Informations.
  - **Weight:**
    - aluminium valves 2.2 kg
    - steel valves 5.2 kg
  - **Material:** made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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---

**RATING DIAGRAMS**

![Diagram 1](image1)

- Oil viscosity 45 cSt

---

**CODE NUMBER**

VOSL/SC/F 12/OMS/□□ . S . □□ . PG . □□ /□□

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<th>Pressure settings (bar)</th>
<th>Pilot ratio</th>
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<th>Body material</th>
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<td>p4) 1:4</td>
<td>See body VRR</td>
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<td>TR)50=350 (standard)</td>
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**DESCRIPTION**

Dual overcenter valves, For mounting for Sauer Danfoss motor OMS series.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[
\text{(valve setting – load pressure)} \div \text{pilot ratio} = \text{pilot pressure}
\]

For example:

If your pilot ratio is 1.7, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load. \((250 \text{ bar} - 130 \text{ bar}) \div 1.7 = 17 \text{ bar}\).

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

**PERFORMANCE**

- **Maximum flow:** 70 l/min
- **Maximum Pressure:**
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- **Application range with standard springs:**
  - 5 - 210 bar pressure increases 36 bar/l/min (test setting: 170 bar at 5 l/min)
  - 200 - 350 bar pressure increases 90 bar/l/min (test setting: 260 bar at 5 l/min) STANDARD
  - Oil leaks from U1 (U2) to D1 (D2): 0.26 cm³/minute (5 drops) at 210 bar and 60% of the spring setting value with oil viscosity of 46 cSt
OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VODL/SC/F 12/OMS

Pilot ratio:
- 1:7 (standard type)
- 1:3 (on request only)

Working temperature:
- Minimum -25°C max 90°C with standard BUNA gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM00M05)

- RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.

Weight:
aluminium valves 2.6 kg
steel valves 5.6 kg

Material: made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VOSL/SC/F 34/T/OMT

**DESCRIPTION**
Single overcenter valves, face mounting for Sauer Danfoss motor OMT series.

**OPERATION**
The oil flow is allowed from D1 to U1 and is stopped in the opposite way from U1 to D1 up to the spring setting value. Free oil flow from U1 to D1 is strictly possible when the pilot pressure in D2 and U2 is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

(valve setting + load pressure) + pilot ratio = pilot pressure

For example:
If your pilot ratio is 1:7, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load. 

\[(250 \text{ bar} - 130 \text{ bar}) + 7 = 17 \text{ bar}\]

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure will be negatively affected (1:1 ratio).

**PERFORMANCE**
- Maximum flow: 120 l/min
- Maximum pressure:
  - aluminium body: 210 bar
  - steel body: 350 bar
- Application range with standard springs:
  - 5 - 210 bar pressure increase: 36 bar/turn (test setting: 170 bar at 5 l/min)
  - 50 - 350 bar pressure increase: 90 bar/turn (test setting: 280 bar at 5 l/min) STANDARD
- Oil leaks from U1 to D1: 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.
- Pilot ratio: 1:7
Working temperature:
- minimum -25°C max 90°C with standard BUNA gaskets
- minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
screws and seals (Ordering code: 5KT.........)

- RECOMMENDATIONS
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.
Weight:
- aluminium valves 4.5 kg
- steel valves 9.5 kg
Material: made out of high-grade steel duly treated and fabricated.
For more information please ask our Technical Department.
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- RATINGS DIAGRAMS

- CODE NUMBER

VOSL/SC/F 34/T/OMT [S. PG. /] / [ ]
Pressure settings (bar):
TS) 5 to 10
TR) 50 to 350 (standard)
Pilot ratio: p7) 1:7
Check valve seat: See body VRR) Hardened steel
Body material: Aluminium ac Steel
**OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VODL/SC/F 34/OMT**

**DESCRIPTION**
Dual overcenter valves, face mounting for Sauer-Danfoss motor DMT series

**OPERATION**
The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[(\text{valve setting - load pressure}) \div \text{pilot ratio} = \text{pilot pressure}\]

For example:
If your pilot ratio is 1:3, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load. \([250 \text{ bar} - 130 \text{ bar}] \div 3 = 40 \text{ bar}\)

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

**PERFORMANCE**
Maximum flow: 120 l/min
Maximum Pressure:
- aluminum body: 210 bar
- steel body: 350 bar

Application range with standard springs:
- 5 - 210 bar pressure increase = 36 bar/min (test setting: 170 bar at 5 l/min)
- 30 - 350 bar pressure increase = 90 bar/min (test setting: 260 bar at 5 l/min) STANDARD

Oil leaks from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

Pilot ratio:
- 1:3 (standard type)
- 1:7 (on request only)

A.1610.450
OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VODL/SC/F 34/OMT

Working temperature:
- minimum -25°C max 90°C with standard BUNA gaskets
- minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
screws and seals (Ordering code: 5KTM00OMT03)

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.

Weight:
- aluminium valves 4.5 kg
- steel valves 9.5 kg

Material: made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**HANSA-TMP s.r.l.**

**OVERCENTER VALVES (SAUER-DANFOSS MOTOR)**

**VOSL/SC/F/A 12/OMR**

**DIMENSIONS (mm)**

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**HYDRAULIC DIAGRAM**

```
U1

U2

D1

F

D2
```

**ASSEMBLY DIAGRAM**

```

PARTS IN BODY
```

**DESCRIPTION**

Single overcenter valves, face mounting for Sauer Danfoss motor OMR series with connection gate for hydraulic brake release.

**OPERATION**

The oil flow is allowed from D1 to U1 and is stopped in the opposite way (from U1 to D1) up to the spring setting value. Free oil flow from U1 to D1 is strictly possible when the pilot pressure in D2 and U2 is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

(valve setting - load pressure) + pilot ratio = pilot pressure

**For example:**

If your pilot ratio is 1:3, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. (250 bar - 130 bar) + 3 = 40 bar).

Should counterpressure arise in D1, the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**

- Maximum flow: 40 l/min
- Maximum Pressure:
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- Application range with standard springs:
  - 5 - 210 bar pressure increase= 26 bar/turn (test setting: 170 bar at 5 l/min)
  - 50 - 350 bar pressure increase= 47 bar/turn (test setting: 280 bar at 5 l/min) STANDARD
- Oil leaks from U1 to D1: 0.25 cc/minute (5 drops) at 210 bar and 60% of the spring setting value with oil viscosity of 46 cSt
- Pilot ratio: 1:3 (standard type)
**OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VOSL/SC/F/A 12/OMR**

**Working temperature:**
- Minimum -25°C max 90°C with standard BUNA gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

**Spare parts KIT:**
Screws and Seals (Ordering code: SKTM0OMR02)

**RECOMMENDATIONS**

**Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt

**Filter:** see General Informations.

**Weight:**
- aluminium valves 1.7 kg
- steel valves 3.6 kg

**Material:** made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**RATING DIAGRAMS**

- Oil viscosity 46 cSt

**CODE NUMBER**

- Pressure settings (bar): 5-210
- Pilot ratio: p3 1:3 (standard)
- Check valve seat: See body VRR
- Body material: Aluminium ac Steel
**DIMENSIONS (mm)**

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<tr>
<td>M4</td>
<td>32</td>
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**HYDRAULIC DIAGRAM**

**ASSEMBLY DIAGRAM**

**DESCRIPTION**

Dual overcenter valves, face mounting for Sauer Danfoss motor OMR series with connection gates for hydraulic brake release.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve popped.

Use the following formula to assert the applicable pilot pressure:

\[(\text{valve setting - load pressure}) \div \text{pilot ratio} = \text{pilot pressure}\]

For example:

If your pilot ratio is 1.3, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load. \([(250 \text{ bar} - 130 \text{ bar}) \div 3 = 40 \text{ bar}]\)

Should counterpressure arise in D1 (D2), the setting value of valve popped (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**

- Maximum flow: 40 l/min
- Maximum Pressure:
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- Application range with standard springs:
  - 5 - 210 bar pressure increase: 26 bar/turn (test setting: 170 bar at 6 l/min)
  - 50 - 350 bar pressure increase: 28 bar/turn (test setting: 280 bar at 5 l/min) STANDARD
- Oil leaks from U1 (U2) to D1 (D2): 0.26 cm³/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

A.1620.250

HANSA-TMP s.r.l. MODENA-ITALY
Pilot ratio: 1:3 (standard type)

Working temperature:
- Minimum -25°C max 90°C with standard BUNA gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KT0OMR02)

RECOMMENDATIONS
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Information.

Weight:
- aluminium valves 2 kg
- steel valves 3.8 kg

Material:
made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**

Single overcenter valves, face mounting for Sauer Danfoss motor OMS series with connection gate for hydraulic brake release.

**OPERATION**

The oil flow is allowed from D1 to U1 and is stopped in the opposite way (from U1 to D1) up to the spring setting value. Free oil flow from U1 to D1 is strictly possible when the pilot pressure in D2 and U2 is strong enough to pilot the valve poppet.

Use the following formula to insert the applicable pilot pressure:

\[(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}\]

For example:

If your pilot ratio is 1:3, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 35 bar pilot pressure in order to displace the load: \((250 \text{ bar} - 130 \text{ bar}) \div 3 = 40 \text{ bar}\).

Should counterpressure arise in D1, the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

The special shuttle valve allows relasing of the hydraulic parking brakes.

**PERFORMANCE**

- **Maximum flow:** 70 l/min
- **Maximum Pressure:**
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- **Application range with standard springs:**
  - 5 - 210 bar pressure increases: 36 bar/turn (test setting: 170 bar at 5 l/min).
  - 50 - 350 bar pressure increases: 90 bar/turn (test setting: 210 bar at 5 l/min) STANDARD
- **Oil leaks from U1 to D1:** 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.
OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VOSL/SC/F/A 12/OMS

Pilot ratio:
- 1:3 (standard type)
- 1:7 (on request only)

Working temperature:
- Minimum -25°C max 90°C with standard BUNA gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: SKTM00MS03)

• RECOMMENDATIONS
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.
Weight:
- aluminium valves 2.25 kg
- steel valves 5.3 kg
Material: made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.
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• RATING DIAGRAMS

- Aluminium
- Steel

• CODE NUMBER

VOSL/SC/F/A 12/OMS/S/PG/ / / / / / / / /

Pressure settings (bar)
TS) 5-210
TR) 50-350 (standard)
Pilot ratio
P3) 1:3 (standard)
P7) 1:7
Check valve seat
See body VRR) Hardened steel
Body material
- Aluminwn
**DESCRIPTION**
Dual overcenter valves, face mounting for Sauer Danfoss motor OMS series with connection gate for hydraulic brake release.

**OPERATION**
The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[ \text{Valve setting} - \text{load pressure} = \text{pilot ratio} \times \text{pilot pressure} \]

For example:
If your pilot ratio is 1.3, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load: \((250 \text{ bar} - 130 \text{ bar}) / 3 = 40 \text{ bar}\).

Should counterpressure arise in D1 (D2), the setting value of the valve poppet (1:1 ratio) will increase, and the pilot pressure will be negatively affected (1:1 ratio).
The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**
Maximum flow: 70 l/min
Maximum Pressure:
- Aluminium body: 210 bar
- Steel body: 350 bar
Application range with standard springs:
- 5 - 210 bar pressure increase= 36 bar/min (test setting: 170 bar at 5 l/min)
- 50 - 350 bar pressure increase= 90 bar/min (test setting: 280 bar at 5 l/min) STANDARD
Oil leaks from U1 (U2) to D1 (D2): 0.25 comminate (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.

A.1620.350
OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VODL/SC/F/A 12/OMS

Pilot ratio:
- 1:3 (standard type)
- 1:7 (on request only)

Working temperature:
- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM0/OMS05)

- RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.

Weight:
- aluminium valves 2.7 kg
- steel valves 5.7 kg

Material: made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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- RATING DIAGRAMS

- CODE NUMBER

VODL/SC/F/A 12/OMS/□ □ □ □ □ . S □ □ □ PG □ □ / □ □

Pressure settings (bar)
- TS 5-210
- TR 50-350 (standard)

Pilot ratio
- p3 1:3 (standard)
- P7 1:7

Check valve seat
- See body VRR

Body material
- Aluminium
- Steel
OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VOSL/SC/F/A 34/OMT

**DIMENSIONS (mm)**

```
78 58
43.2 45
G1/4
37.5 23
25
56.5
31.6 40
43.2 64.4
136
```

**HYDRAULIC DIAGRAM**

```
U1
D1
F
D2
U2
```

**ASSEMBLY DIAGRAM**

```
D1
F
D2
```

**DESCRIPTION**

Dual overcenter valves, face mounting for Sauer-Danfoss motor OMT series with connection gate for hydraulic brake release.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is slighlty possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[(\text{valve setting} - \text{load pressure}) + \text{pilot ratio} = \text{pilot pressure}\]

For example:

If your pilot ratio is 1:3, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load. \([250 \text{ bar} - 130 \text{ bar}] = \frac{3}{4} \times 40 \text{ bar} = 30 \text{ bar}\]

Should counterpressure arise in D1 (D2), the setting valve of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**

- **Maximum flow:** 120 l/min
- **Maximum Pressure:**
  - Aluminum body: 210 bar
  - Steel body: 350 bar
- Application range with standard springs:
  - 5 - 210 bar pressure increase: 36 bar/turn (test setting: 170 bar at 5 l/min)
  - 50 - 350 bar pressure increase: 90 bar/turn (test setting: 260 bar at 5 l/min) STANDARD

Oil leaks from U1 (U2) to D1 (D2): 0.25 ccm/mnute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.
Pilot ratio:
- 1:3 (standard type)
- 1:7 (on request only)

Working temperature:
- Minimum -25°C max 90°C with standard BUNA gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM0OMT02)

- RECOMMENDATIONS
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.
Weight:
- aluminium valves 4.5 kg
- steel valves 9.5 kg

Material: made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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- RATING DIAGRAMS

![Graphs showing pressure vs. flow rate for different viscosity oils]

Oil viscosity 46 cSt

- CODE NUMBER

VOSL/SC/F/A 34/OMT/□□ □□ □□ □□ □□

Pressure settings (bar)
TS) 5-210
TR) 50-350 (standard)

Pilot ratio
p3) 1:3 (standard)
p7) 1:7

Check valve seat
See body
VRRI) Hardened steel

Body material
Aluminium
ac Steel
**OVERCENTER VALVES (SAUER-DANFOSS MOTOR)
VODL/SC/F/A 34/OMT**

**DESCRIPTION**
Dual overcenter valves, face mounting for Sauer Danfoss motor OMT series with connection gate for hydraulic brake release.

**OPERATION**
The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting valve. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[(\text{valve setting} - \text{load pressure}) \times \text{pilot ratio} = \text{pilot pressure}\]

For example:
If your pilot ratio is 1:3, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load. 
\[(250 \text{ bar} - 130 \text{ bar}) \times 3 = 40 \text{ bar}]\.

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**
- **Maximum flow:** 120 l/min
- **Maximum Pressure:**
  - Aluminium body: 240 bar
  - Steel body: 360 bar

**Application range with standard springs:**
- 5 - 210 bar pressure increases 36 bar/turn (test setting: 170 bar at 6 l/min)
- 50 - 350 bar pressure increases 90 bar/turn (test setting: 250 bar at 5 l/min) STANDARD

**Oil leaks from U1 (U2) to D1 (D2):** 0.25 ccm/minute (5 drops) at 210 bar and 60% of the spring setting value with oil viscosity of 46 cSt

---

**A.1620.450**

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Pilot ratio:
- 1:3 (standard type)
- 1:7 (on request only)

Working temperature:
- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM00MT03)

RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see General Informations.

Weight:
- aluminium valves 4.5 kg
- steel valves 9.5 kg

Material: made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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RATING DIAGRAMS

- Oil viscosity 46 cSt

CODE NUMBER

VODL / SC / F / A 34 / OMT / □ □ . S . □ □ . PG . □ □ / □ □
OVERCENTER VALVES (SAUER-DANFOSS MOTOR)

HANSA-TMP s.r.l.
MODENA-ITALY

VOSL/SC/F/A/100/OMV

- DIMENSIONS (mm)

- HYDRAULIC DIAGRAM

- ASSEMBLY DIAGRAM

- CROSS SECTION

- DESCRIPTION
Dual overcenter valves, face mounting for Sauer Danfoss motor OMV series with connection gate for hydraulic brake release, including OR and Screws.

- OPERATION
The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting valve. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet. Use the following formula to assert the applicable pilot pressure:

\[
\text{pilot pressure} = \frac{\text{valve setting} - \text{load pressure}}{\text{pilot ratio}}
\]

For example:

If your pilot ratio is 1:3, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load. \([250 \text{ bar} - 130 \text{ bar}] = 3 \times 40 \text{ bar}]

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

The special shuttle valve allows releasing of the hydraulic parking brakes.

- PERFORMANCE
  Maximum flow: 180 l/min
  Maximum Pressure:
  - Aluminium body: 210 bar
  - Steel body: 350 bar
  Application range with standard springs:
  - 5 - 210 bar, pressure increase=45 bar/turn (test setting: 170 bar at 5 l/min)
  - 50 - 350 bar, pressure increase=90 bar/turn (test setting: 280 bar at 5 l/min) STANDARD
  Oil leaks from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 90% of the spring setting value with oil viscosity of 46 cSt

A.1620.500 96

HANSA-TMP s.r.l. MODENA-ITALY
Pilot ratio:
- 1:3 (standard type)
- 1:7 (on request only)

Working temperature:
- Minimum -25°C max 90°C with standard BUNA gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM00MV01)

**RECOMMENDATIONS**
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter: see General Informations.

Weight:
- aluminium valves 9 kg
- steel valves 17.5 kg

Material: made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.
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**DESCRIPTION**

Dual overcenter valves, face mounting for Sauer Danfoss motor OMV series with connection gate for hydraulic brake release, including OR and Screws.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[
\text{valve setting} - \text{load pressure} = \text{pilot ratio} = \text{pilot pressure}
\]

For example:

If your pilot ratio is 1.3, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. \([250 \text{ bar} - 130 \text{ bar}] \times 1.3 = 30\text{ bar}]\).

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**

- **Maximum flow:** 180 l/min
- **Maximum Pressure:**
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- **Application range with standard springs:**
  - 5 - 210 bar, pressure increase = 45 bar/turn (test setting: 170 bar at 15 l/min)
  - 50 - 350 bar, pressure increase = 96 bar/turn (test setting: 280 bar at 15 l/min) STANDARD
- **Oil leaks from U1 (U2) to D1 (D2):** 0.25 cm³/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.

A.1620.550
Pilot ratio:
- 1:3 (standard type)
- 1:7 (on request only)

Working temperature:
- Minimum -25°C max 90°C with standard BUNA gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM0OMV01)

**RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see General Informations.

Weight:
- aluminium valves 9 kg
- steel valves 17.5 kg

Material: made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**
Dual overcenter valves for closed centre, head mounting for Sauer-Danfoss motor OMR Series, including OR and Screws.

**OPERATION**
The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way, from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assemble the applicable pilot pressure:

\[(\text{Valve setting} - \text{load pressure}) + \text{pilot ratio} = \text{pilot pressure}\]

For example:
If your pilot ratio is 1/4, your setting pressure is 250 bar and your load pressure is 130 bar, then you will need 30 bar pilot pressure in order to displace the load [(250 bar - 130 bar) + 4 = 30 bar].

Should counterpressure arise in D1 (D2), the pilot pressure (1:1 ratio) be negatively affected.

**PERFORMANCE**
Maximum flow: 90 l/min
Maximum Pressure:
- Aluminum body: 216 bar
- Steel body: 350 bar

Application range with standard springs:
- 50 - 220 bar, pressure increase = 36.7 bar/min, test setting: 180 bar at 5 l/min, STANDARD
- 150 - 380 bar, pressure increase = 76 bar/min, test setting: 250 bar at 5 l/min

Oil leaks from U1 (U2) to D1 (D2): 0.25 cm³/min (5 bar pressure at 210 bar and 60% of the spring setting value without viscosity of 46 cSt.)
Pilot ratio: 1:4
Working temperature:
- Minimum -25°C max 90°C with standard BUNA gaskets
- Minimum -20°C max 120°C with optional VITON gaskets
Spare parts KIT:
Screws and Seals (Ordering code: 5KTM0OMR04)

**RECOMMENDATIONS**
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.
Weight:
- aluminium body 3 kg
- steel body 5.9 kg
Material: made out of high-grade steel duly treated and fabricated.
For more information please ask our Technical Department.
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## MOTION CONTROL VALVES INDEX

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**DIMENSIONS (mm)**

![Dimension Diagram]

**HYDRAULIC DIAGRAM**

![Hydraulic Diagram]

**ASSEMBLY DIAGRAM**

![Assembly Diagram]

**DESCRIPTION**

Cross line, relief valves for motion control, anti-shock and anti-cavitation, face mounting for Sauer-Danfoss motor OMR Series including OR and Screws.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet. Use the following formula to assert the applicable pilot pressure:

(valve setting – load pressure) / (pilot ratio = pilot pressure)

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. [(250 bar – 130 bar) / 4 = 30 bar].

Counterpressure in D1 (D2) increase the setting value (1:1 ratio) of the poppet spring and negatively affect the pilot pressure (1:1 ratio). Use of two check-valves between D1 (D2) and T avoids cavitation on the pressure line during relief operation.

**PERFORMANCE**

- Maximum flow: 40 l/min
- Maximum Pressure:
  - aluminium body 210 bar
  - steel body 350 bar
- Application range with standard springs:
  - 5 - 210 bar, pressure increase 26 bar/turn (test setting 170 bar at 6 l/min)
  - 50 - 350 bar, pressure increase 87 bar/turn (test setting 280 bar at 5 l/min)
- Oil leaks from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.

A.16H0.200

HANSA-TMP s.r.l. MODENA-ITALY
Pilot ratio: 1:4
Working temperature:
- minimum -25°C max 90°C with standard BUNA N gaskets
- minimum -20°C max 120°C with optional VITON gaskets
Spare parts KIT:
screws and seals (Ordering code: SKTM00MR05)

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.
Weight:
- aluminium body: 3.1 kg
- steel body: 6 kg
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.
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**DESCRIPTION**

Cross-line, relief valves for motion control, anti-shock and anti-cavitation, face mounting for Sauer-Danfoss motor OMS Series including OR and Screws.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[(\text{valve setting} - \text{load pressure}) + \text{pilot ratio} = \text{pilot pressure}\]

For example:

If your pilot ratio is 1:7, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 50 bar pilot pressure in order to displace the load. \([250 \text{ bar} - 130 \text{ bar}] - 7 = 17 \text{ bar}\]"

Counterpressure in D1 (D2) increase the setting value (1:1 ratio) of the poppet spring and negatively affect the pilot pressure (1:1 ratio). Use of two check-valves between D1 (D2) and T avoids cavitation on the pressure line during relief operation.

**PERFORMANCE**

- Maximum flow: 70 l/min
- Maximum Pressure:
  - Aluminium body 210 bar
  - Steel body 350 bar
- Application range with standard springs:
  - 8 - 210 bar, pressure increase= 47 bar/turn (test setting: 170 bar at 5 l/min)
  - 50 - 350 bar, pressure increase= 90 bar/turn (test setting: 260 bar at 5 l/min)

A.16H0.300
Oil leaks from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.

Pilot ratio: 1.7

Working temperature:
- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM0OMS04)

**RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see General Informations.

Weight:
- aluminium body: 3.5 kg
- steel body: 6.9 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**

Cross-line, relief valves for motion control, anti-shock and anti-cavitation, face mounting for Sauer-Danfoss motor OMT Series including OR and Screws.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[(\text{valve setting} - \text{load pressure}) + \text{pilot ratio} = \text{pilot pressure}\]

For example:

If your pilot ratio is 1.7, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. \[\left(250\text{ bar} - 130\text{ bar}\right) + 7 = 17\text{ bar}\].

Counterpressure in D1 (D2) increase the setting value (1:1 ratio) of the poppet spring and negatively affect the pilot pressure (1:1 ratio).

Use of two check valves between D1 (D2) and T avoids cavitation on the pressure line during relief operation.

**PERFORMANCE**

- Maximum flow: \(100 \text{ l/min}\)
- Maximum Pressure:
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- Application range with standard springs:
  - 5 - 210 bar, pressure increase: 37 bar/turn (test setting: 170 bar at 6 l/min)
  - 50 - 350 bar, pressure increase: 63 bar/turn (test setting: 280 bar at 5 l/min) STANDARD
- Oil leaks from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 40% of the spring
setting value with oil viscosity of 46 cSt.

Pilot ratio: 1:7

Working temperature:
- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM0OMT04)

**RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see General Informations.

Weight:
- aluminium body: 4.8 kg
- steel body: 9.5 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**

Cross-line, relief valves for motion control, anti-shock and anti-cavitation, face mounting for Sauer-Danfoss motor OMV Series including OR and Screws.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is slowed in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[(\text{valve setting} - \text{load pressure}) \times \text{pilot ratio} = \text{pilot pressure}\]

For example:

If your pilot ratio is 1:7, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. \[(250 \text{ bar} - 130 \text{ bar}) \times 7 = 17 \text{ bar}\].

Counterpressure in D1 (D2) increases the setting value (1:1 ratio) of the poppet spring and negatively affect the pilot pressure (1:1 ratio).

Use of two check-valves between D1 (D2) and T avoids cavitation on the pressure line during relief operation. To obtain immediate valve response and no pressure drop, preferably mount this valve next to the application to check.

**PERFORMANCE**

Maximum flow: 180 l/min
Maximum Pressure:
- aluminium body 210 bar
- steel body 350 bar

Application range with standard springs:
- 5 - 210 bar, pressure increase = 35 bar/turn (test setting: 170 bar at 5 l/min)
- 50 - 350 bar, pressure increase = 89 bar/turn (test setting: 280 bar at 5 l/min) STANDARD
Oil leaks from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.

Pilot ratio: 1:7

Working temperature:
- minimum -25°C max 90°C with standard BUNA N gaskets
- minimum -20°C max 120°C with optional VITON gaskets

Spare parts Kit: screws and seals (Ordering code: 5KTM0OMV01)

- RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see General Informations.

Weight:
- aluminium body: 9.5 kg
- steel body: 18kg

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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- RATING DIAGRAMS

- CODE NUMBER
**DIMENSIONS (mm)**

- 30
- 70Nm
- 210
- 110
- 30
- 70Nm
- 210
- 110
- 30
- 70Nm
- 210
- 110
- 30
- 70Nm
- 210
- 110

**HYDRAULIC DIAGRAM**

- U1
- U2
- D1
- F
- T
- D2

**ASSEMBLY DIAGRAM**

**DESCRIPTION**

Cross-line, relief valves for motion control, anti-shock and anti-cavitation with connection for hydraulic brakes release, face mounting for Sauer-Danfoss motor OMR Series including OR and Screws.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[(\text{valve setting} - \text{load pressure}) + \text{pilot ratio} = \text{pilot pressure}\]

For example:

If your pilot ratio is 1.3, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. [(250 bar - 130 bar) * 1.3 = 46 bar]

Counterpressure in D1 (D2) increase the setting value (1:1 ratio) of the poppet spring and negatively affects the pilot pressure (1:1 ratio). Use of two check valves between D1 (D2) and T avoids cavitation on the pressure line during relief operation. The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**

- Maximum flow: 40 l/min
- Maximum pressure:
  - Aluminium body: 210 bar
  - Steel body: 250 bar

Application range with standard springs:

- 5 - 210 bar, pressure increase = 26 bar/turn (test setting: 170 bar at 5 l/min)
- 50 - 350 bar, pressure increase = 67 bar/turn (test setting: 280 bar at 5 l/min)
Oil leaks from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.

Pilot ratio:
- 1:3 Standard
- 1:1.2

Working temperature:
- minimum -25°C max 90°C with standard BUNA N gaskets
- minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
screws and seals (Ordering code: 5KTM0OMR05)

**RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see General Informations.

Weight:
- aluminium body: 3.1 kg
- steel body: 6 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**

Cross-line, relief valves for motion control, anti-shock and anti-cavitation with connection for hydraulic brakes release, face mounting for Sauer-Danfoss motor OMS Series including OR and Screws.

**OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[
\text{valve setting} - \text{load pressure} + \text{pilot ratio} = \text{pilot pressure}
\]

For example:

If your pilot ratio is 1:7, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 38 bar pilot pressure in order to displace the load: \([250 \text{ bar} - 130 \text{ bar}] + 7 \times 17 \text{ bar}\].

Counter-pressure in D1 (D2) increases the setting value (1:3 ratio) of the poppet spring and negatively affect the pilot pressure (1:1 ratio).

Use of two check-valves between D1 (D2) and T avoids cavitation on the pressure line during relief operation. The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**

- Maximum flow: 70 l/min
- Maximum Pressure:
  - Aluminium body 210 bar
  - Steel body 350 bar

Application range with standard springs:

- 5 - 210 bar, pressure increase 47 bar/mm (test setting: 170 bar at 5 l/min)
- 50 - 350 bar, pressure increase 59 bar/mm (test setting: 280 bar at 5 l/min)

Oil leaks from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring
setting value with oil viscosity of 46 cSt.

Pilot ratio:
- 1:7 (standard)
- 1:3

Working temperature:
- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM000504)

RECOMMENDATIONS
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.

Weight:
- aluminium body: 3,5 kg
- steel body: 6,9 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**
Cross-line, relief valves for motion control, anti-shock and anti-cavitation, face mounting for Sauer-Danfoss motor OMT Series including OR and Screws.

**OPERATION**
The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

\[
\text{valve setting} - \text{load pressure} \times \text{pilot ratio} = \text{pilot pressure}
\]

For example:
If your pilot ratio is 1:3; your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. [(250 bar - 130 bar) ÷ 3 = 40 bar].

Counterpressure in D1 (D2) increases the setting value (1:1 ratio) of the poppet spring and negatively affect the pilot pressure (1:1 ratio).

Use of two check valves between D1 (D2) and T avoids cavitation on the pressure line during relief operation. The special shuttle valve allows releasing of the hydraulic parking brakes.

**PERFORMANCE**
Maximum flow: 1000 l/min
Maximum Pressure:
  - Aluminium body 210 bar
  - Steel body 350 bar

Application range with standard springs:
  - 5 - 210 bar, pressure increase=37 bar/turn (best setting: 170 bar at 5 l/min)
  - 50 - 250 bar, pressure increase=63 bar/turn (best setting: 280 bar at 5 l/min) STANDARD

Oil leaks from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 60% of the spring
setting value with oil viscosity of 46 cSt.

Pilot ratio:
1:3

Working temperature:
- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

Spare parts KIT:
Screws and Seals (Ordering code: 5KTM0OMT04)

- RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see General Informations.

Weight:
- aluminium body: 4.8 kg
- steel body: 9.5 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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FLOW CONTROL VALVES (SAUER-DANFOSS MOTOR)
VSRB/F/12/OMR

- PERFORMANCE
  Maximum flow: 25 l/min.
  Maximum Pressure: 350 bar
  Working temperature: minimum -25°C max 90°C with standard BUNAN gaskets
  Spare parts KIT: screws and Seals (Ordering code: 5KTOMR00)

- RECOMMENDATIONS
  Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
  Filter: see General Informations.
  Weight:
  - Aluminium body: 0.6kg;
  - Steel body: 1kg
  Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

Variations and modifications of technical features and dimensions are reserved. HANSA-TMP s.r.l. also reserves the right to stop production of each and any model listed in the catalogue with no notice.
**DESCRIPTION**
2-way flow regulator, pressure compensated, face mounting for Sauer-Danfoss motor OMR Series, including OR and Screws.

**OPERATION**
The valve is designed to provide flow adjustment from D1-U1 to D2-U2 by a variation of the oil flow section. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow.

**PERFORMANCE**
- Maximum flow: 50 l/min.
- Maximum Pressure: 210 bar.
- Steel body 350 bar.
- Maximum pressure compensation error: see performance graphs.
- Working temperature:
  - Minimum -25°C max 90°C with standard BUNAN gaskets
  - Minimum -29°C max 120°C with VITON gaskets on request
- Spare parts KIT:
  - Screws and Seals (Ordering code: 5KTM00MR03)

**RECOMMENDATIONS**
- Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
- Filter: see page 2 of the manual.
- Weight:
  - Aluminium body: 1.7 kg
  - Steel body: 3.4 kg
- Material: internal components made out of high-grade steel duly treated and fabricated.

**DIMENSIONS (mm)**

**HYDRAULIC DIAGRAM**

**ASSEMBLY DIAGRAM**

**CROSS SECTION**

**PARTS IN BODY**
For more information please ask our Technical Department.

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**FLOW CONTROL VALVES (SAUER-DANFOSS MOTOR)**

**VPR /2/SLS/12 OMR/SIX**

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**RATING DIAGRAMS**

- Q(l/min.)
  - 20
  - 15
  - 10
  - 5
- P(bar) °C
  - 0
  - 30
  - 60
  - 90
  - 120
  - 150

Oil viscosity 46 cSt

---

**CODE NUMBER**

VPR /2/ SLS/12 OMR/SIX / □□, V

Body material
- Aluminium
- Steel
FLOW CONTROL VALVES (SAUER-DANFOSS MOTOR)

VPR /2/ SLS/12 OMR/DEX

- DIMENSIONS (mm)

- HYDRAULIC DIAGRAM

- ASSEMBLY DIAGRAM

- CROSS SECTION

- DESCRIPTION

  2-ways flow regulator, pressure compensated, face mounting for Sauer-Danfoss motor OMR Series, including OR and Screws.

- OPERATION

  The valve is designed to provide flow adjustment from D1-U1 to D2-U2 by a variation of the oil flow section. Best performance of the valve is assured when the flow in D1-U1 is at least 10% bigger than in D2-U2. Pressure variations in D2-U2 do not alter the checked oil flow.

- PERFORMANCE

  Maximum flow: 50 l/min.
  Maximum Pressure:
  - Aluminium body 210 bar
  - Steel body 350 bar
  Maximum pressure compensation error: see performance graphs.
  Working temperature:
  - Minimum -25°C max 90°C with standard BUNA N gaskets
  - Minimum -20°C max 120°C with VITON gaskets on request
  Spare parts KIT:
  Screws and Seats (Ordering code: SKTMOMR00)

- RECOMMENDATIONS

  Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
  Filter: see page Z 9000.000.
  Weight:
  - Aluminium body 1.7 kg
  - Steel body 3.4 kg

A.1850.201
**Material:** internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**

3-ways flow regulator, pressure compensated, face mounting for Sauer-Danfoss motor OMR Series, including OR and Screws.

**OPERATION**

The valve is designed to provide flow adjustment from D1 to U1 by a variation of the oil flow section. Exceeding flow is concurrently discharged in D2-U2 while a pressure built-in relief valve provides operative pressure control on U1. Best performance of the valve is assured when the flow in D1 is at least 10% bigger than in U1. Pressure variations in U1 do not alter the checked oil flow. On the contrary, eventual back pressure in D2-U2 may cause inconstant capacity in U1.

**PERFORMANCE**

- Maximum flow: 50 l/min.
- Maximum Pressure:
  - Aluminum body: 210 bar
  - Steel body: 350 bar

**Maximum pressure compensation error:** see performance graphs.

**Working temperature:**

- Minimum, -25°C max 80°C with standard BUNAN gaskets
- Minimum, -20°C max 120°C with VITON gaskets on request

**Spare parts KIT:** screws and seals (Ordering code: 5KTM00MR02)

**RECOMMENDATIONS**

- Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
- Filter: see page Z 5000 000
- Weight: aluminum body 1.5 kg - steel body 3 kg
- Material: internal components made out of high-grade steel duly treated and fabricaed.
For more information please ask our Technical Department.
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**DESCRIPTION**

3-way flow regulator, pressure compensated, with built-in relief valve on the choked way and exceeding flow to tank, face mounting for Sauer-Danfoss motor OMR Series, including OR and Screws.

**OPERATION**

The valve is designed to provide flow adjustment from D1 to U1 by a variation of the oil flow section. Exceeding flow is concurrently discharged in D2-U2 while a pressure built-in relief valve provides operative pressure control on U1. Best performance of the valve is assured when the flow in D1 is at least 10% bigger than in U1. Pressure variations in U1 do not alter the choked oil flow. On the contrary, eventual back pressure in D2-U2 may cause inconstant capacity in U1.

**PERFORMANCE**

- Maximum flow: 50 l/min.
- Maximum Pressure:
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- Maximum pressure compensation error: see performance graphs.
- Working temperature:
  - Minimum: -25°C max 90°C with standard BUNA N gaskets
  - Minimum: -20°C max 120°C with VITON gaskets on request
- Spare parts KIT:
  - Screws and Seals (Ordering code: 5KTM00GR02)
• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see General Informations.

Weight:
- aluminium body 1.5 kg
- steel body 3 kg

Relief cartridge valve: consult our Technical Department.

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**

3-way proportional flow regulator, pressure compensated and exceeding flow to pressure, face mounting for Sauer-Danfoss motor OMM Series, including OR and screws.

**OPERATION**

The valve is designed to keep constant flow in U1 and concurrently discharge in D2-U2 exceeding flow for other applications. Best performance of the valve is assured when the flow in D1 is at least 10% bigger than in U1. Pressure variations in U1 and D2-U2 do not alter the constant flow in U1. Make sure that a pressure relief valve is always used between the pump and the valve.

**PERFORMANCE**

- Maximum flow: 30 l/min.
- Maximum Pressure:
  - aluminium body 210 bar
  - steel body 350 bar
- Maximum pressure compensation error: see performance graphs.
- Working temperature:
  - Minimum -25°C max. 90°C with standard BUNA N gaskets
  - Minimum -20°C max. 120°C with VitON gaskets on request
- Spare parts KIT:
  - banjo bolt (ordering code: 3BR11120450)
  - external seals PP10W (ordering code: SKT01030000)

**RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter: see General Informations.

Weight:
- aluminium body 0.8kg
- steel body 1.4 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DESCRIPTION**

3-way flow regulators, pressure compensated, with exceeding flow to pressure, face mounting for Sauer-Danfoss motor OMR Series, including OR and Screws.

**OPERATION**

These valves are designed for oil flow adjustment in C and exceeding flow in R to pressure for other different applications. To assure top performance, 10% higher flow should be available in E more than in C. The oil flow in C doesn’t change when pressure in C and R increases/decreases. Make sure that a pressure relief valve is always mounted between the pump and the flow regulator.

**PERFORMANCE**

- **Maximum flow:** 50 l/min in E and 30 l/min in C
- **Maximum Pressure:**
  - Aluminium body: 210 bar
  - Steel body: 350 bar
- **Maximum pressure compensation error:** see performance graph.
- **Working temperature:**
  - Minimum: -25°C max 90°C with standard BUNA N gaskets
  - Minimum: -20°C max 120°C with optional VITON gaskets
- **Spare parts KIT:**
  - Screws and seals (ordering code: SKTM00MR01)
  - External seals (ordering code: SKT0103009)

**RECOMMENDATIONS**

- **Fluid:** best use mineral oil with viscosity ranging between 10 and 200 cSt
- **Filter:** see page Z.9000.000
- **Installation:** make sure to provide suitable gasket lubrication with clean oil before screwing the
cartridge on the valve body. Also make sure to screw the cartridge manually in to reach against the gaskets in the valve body.

Weight:
- Aluminium body: 1.1 kg
- Steel body: 2.2 kg

Cartridge used: consult our Technical Department.
Material: high-grade steel duly treated and fabricated.
For more information please ask our Technical Department.

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**DIMENSIONS (mm)**

- n' 2 OR 130
- 22,22 x 2,62 70SH
- 40
- 100
- 36
- 20
- 44
- 25 Nm
- TCEI M6x40
- 27
- 35 Nm

**DESCRIPTION**

3-way proportional flow regulator, pressure compensated and exceeding flow to pressure. Face mounting for Sauer-Danfoss motor OMR Series, including OR and Screws.

**OPERATION**

The valve is designed to keep constant flow in C and concurrently discharge in R, exceeding flow for other applications. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C and R do not alter the constant flow in C. Make sure that a pressure relief valve is always used between the pump and the valve.

**PERFORMANCE**

- Maximum flow: 30 l/min.
- Maximum Pressure:
  - aluminium body 210 bar
  - steel body 350 bar
- Maximum pressure compensation error: see performance graphs.
- Working temperature:
  - Minimum -25°C max 90°C with standard BUNA N gaskets
  - Minimum -20°C max 120°C with VITON gaskets on request
- Spare parts KIT:
  - screws and seals (Ordering code: 5KT000MR01)
  - external seals PP10W (Ordering code: 5KT013000)

**RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt
Filter: see General Informations.

Weight:
- aluminium body 1.3 kg
- steel body 2.6 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**DIMENSIONS (mm)**

- 3-way flow regulators, pressure compensated, with exceeding flow to pressure, face mounting for Sauer-Danfoss motor OM2 Series, including OR and screws.

**DESCRIPTION**

**OPERATION**

These valves are designed for oil flow adjustment in U2 and exceeding flow in D1-U1 to pressure for other different applications. To assure top performance, 10% higher flow should be available in D2 more than in U2. The flow in U2 doesn't change when pressure in U2 and D1-U1 increases/decreases. Make sure that a pressure relief valve is always mounted between the pump and the flow regulator.

**PERFORMANCE**

- **Maximum flow:** 90 l/min in D2 and 50 l/min in U2
- **Maximum Pressure:**
  - Aluminum body: 210 bar
  - Steel body: 350 bar
- **Maximum pressure compensation error:** see performance graph.
- **Working temperature:**
  - Minimum -25°C max 90°C with standard BUNA N gaskets
  - Minimum -20°C max 120°C with optional VITON gaskets
- **Spare parts KIT:**
  - Screws and seals (ordering code: 5KTM00MR02)
  - External seals PP12A (ordering code: 5KT0120000)

Cartridge Type: PP12A/AM06
see page: K.5000.300
• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see General Information.

Installation: make sure to provide suitable gasket lubrication with clean oil before screwing the cartridge on the valve body. Also make sure to screw the cartridge manually in to reach against the gaskets in the valve body.

Weight:
- Aluminium body: 1.2kg
- Steel body: 2.4 kg

Cartridge used: consult our Technical Department.

Material: high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

Variations and modifications of technical features and dimensions are reserved. HANSA-TMP s.r.l. also reserves the right to stop production of each and any model listed in the catalogue with no notice.

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• RATING DIAGRAMS

[Graph showing fluid flow rate vs. pressure difference]

• CODE NUMBER

VPR/3/EP/12/OMR/VG/ □□

Body material
- Aluminium
- Steel
**DESCRIPTION**
3-way flow regulators, pressure compensated, with exceeding flow to pressure, face mounting for Sauer-Danfoss motor OMS Series, including OR and Screws.

**OPERATION**
These valves are designed for oil flow adjustment in U2 and exceeding flow in D1-U1 to pressure for other different applications. To assure top performance, 10% higher flow should be available in D2 more than in U2. The oil flow in U2 doesn't change when pressure in U2 and D1-U1 increases/decreases. Make sure that a pressure relief valve is always mounted between the pump and the flow regulator.

**PERFORMANCE**
- Maximum flow: 60 l/min in D2 and 50 l/min in U2
- Maximum Pressure:
  - Aluminum body: 210 bar
  - Steel body: 350 bar
- Maximum pressure compensation error: see performance graph.
- Working temperature:
  - Minimum -25°C max 90°C with standard BUNAN gaskets
  - Minimum -20°C max 120°C with optional VITON gaskets
- Spare parts KIT:
  - banjo bolt (Ordering code: 3BR1130490)
  - external seals PP12A (Ordering code: 5KT0123000)

**RECOMMENDATIONS**
- Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.
- Filter: see page Z.9000.000.
Installation: make sure to provide suitable gasket lubrication with clean oil before screwing the cartridge on the valve body. Also make sure to screw the cartridge manually in to reach against the gaskets in the valve body.

Weight:
- Aluminium body: 1,1 kg
- Steel body: 2,2 kg

Cartridge used: consult our Technical Department.

Material: high-grade steel duly treated and fabricated.

For more information please ask our Technical Department.

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**FLOW CONTROL VALVES (SAUER-DANFOSS MOTOR)**

**VPR /3/ EP 12/OMS**

**RATING DIAGRAMS**

![Diagram]

- Body material
  - Aluminium
  - Steel

**CODE NUMBER**

VPR /3/ EP 12/OMS / □□
As HANSA-TMP has a very extensive range of products and some products have a variety of applications, the information supplied may often only apply to specific situations.

If the catalogue does not supply all the information required, please contact HANSA-TMP.
In order to provide a comprehensive reply to queries we may require specific data regarding the proposed application.

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