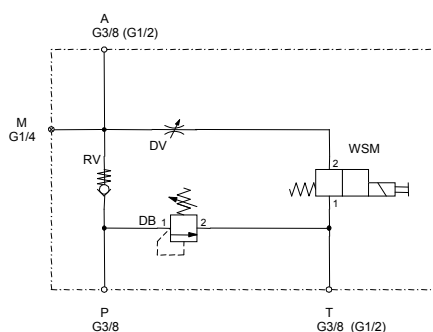




Lift-lowering manifold HSB-Z-030 and -040 with load-dependent speed control for lift-lowering applications

SYMBOL



Q_{max} = 40 l/min
P_{max} = 350 bar

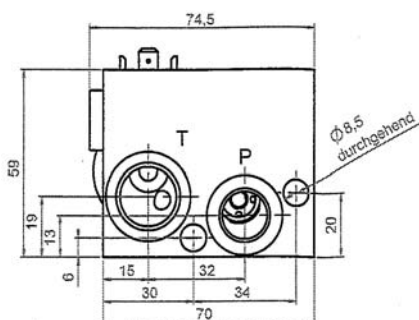
The operating pressure and the flow rate are dependent on the built-in solenoid poppet valve:

Symbol Y, Z = 40 l/min / 350 bar

Symbol V = 20 l/min / 350 bar

Symbol W = 19 l/min / 250 bar

INTERFACE



FEATURES

- Application: for simple, load dependent lift-lowering controls e.g. scissor lifts, small forklifts and walky stackers
- Load dependent lowering of the lifted load via 2/2 solenoid poppet valve, combined with adjustable needle valve
- HSB manifolds for the lift-lowering hydraulics are tailored to the complex and varied demands of the lifting technology sector
- Permitted load is safeguarded by a built-in pressure relief valve
- Built-in check valve prevents uncontrolled lowering
- Flange-mounting onto a subplate is possible
- The 2/2 solenoid poppet valve includes an emergency lowering cable-pull type manual override (self-resetting), (optional with plastic knob Part-No. 6019472 for manual operation)

SPECIFICATIONS

| | |
|------------------------------|---|
| Operating pressure: | max. 350 bar |
| Nominal Flow: | max. 40 l/min |
| Fluids: | Hydraulic oil to DIN 51524 Part 1 and 2 |
| Media operating temp. range: | -20°C up to +100°C |
| Ambient temperature range: | -20°C up to +60°C |
| Viscosity range: | 10 – 400 mm ² /s is recommended |
| Filtration: | Class 21/19/16 according to ISO4406 or cleaner |
| Ports 030: | A, P, T: G 3/8" M: G 1/4" |
| Ports 040: | A, T: G 1/2" M: G 1/4" P: G 3/8" |
| Mounting: | 2x M8 10.9, torque 20 Nm pipe connection or flange-mounted onto subplate (Part 3510081 NBR) |
| Material: | steel, zinc-plated |
| Weight: | 2.5 kg incl. valves |

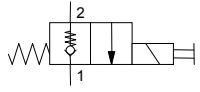
Electrical data: (solenoid poppet valve)

| | |
|---------------------------|---|
| Type of voltage: | DC solenoid, AC voltage is rectified using a bridge rectifier built-in the coil |
| Nominal current at 20° C: | 0.8A at 24 V DC, 30 Ohm 0.1A at 230 V AC, 2137 Ohm |
| Voltage tolerance: | +/- 15 % of nominal voltage |
| Response time: | 100% ED Continuous up to 115% of nominal voltage at 60°C ambient temperature |

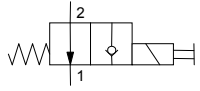
Standard models
 HSB-Z-030-350V-24DG
 HSB-Z-040-350V-24DG
 other types on request

Part No.
 3327182
 3327274

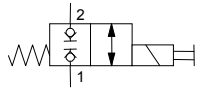
Available solenoid poppet valves:



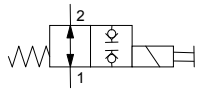
WSM06020Z-01J
 See brochure 5.943.3



WSM06020Y-01M
 See brochure 5.947.2



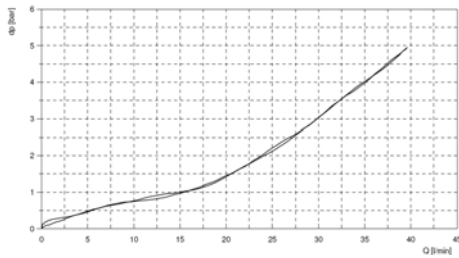
WSM06020W-01M
 See brochure 5.949.2



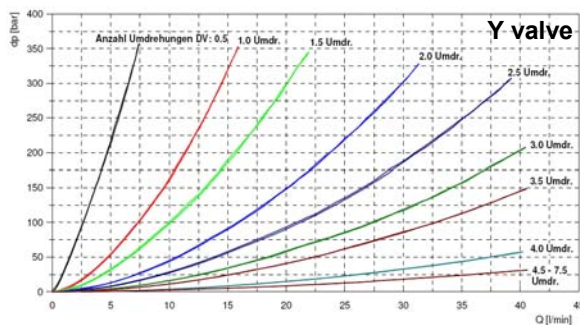
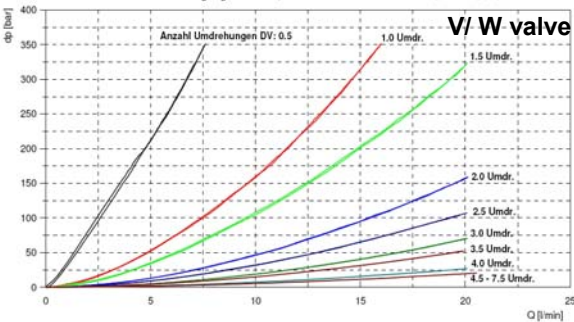
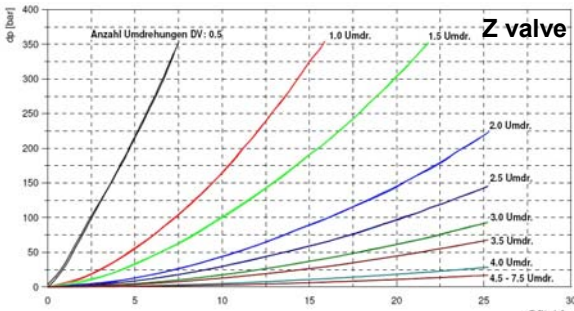
WSM06020V-01M
 See brochure 5.949.1

PERFORMANCE

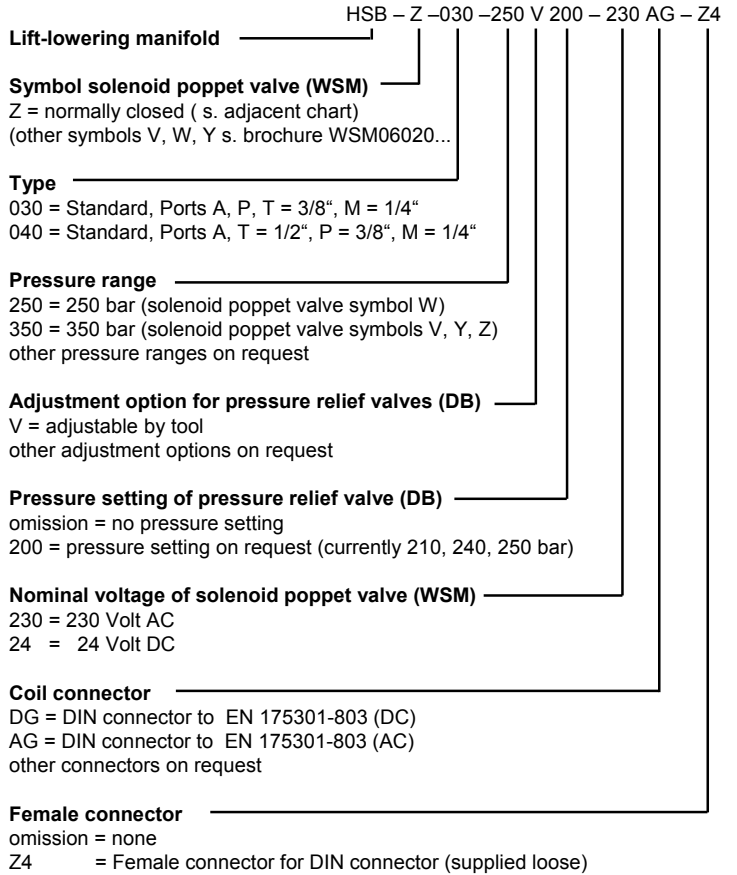
dp-Q curve from P to A (lifting)



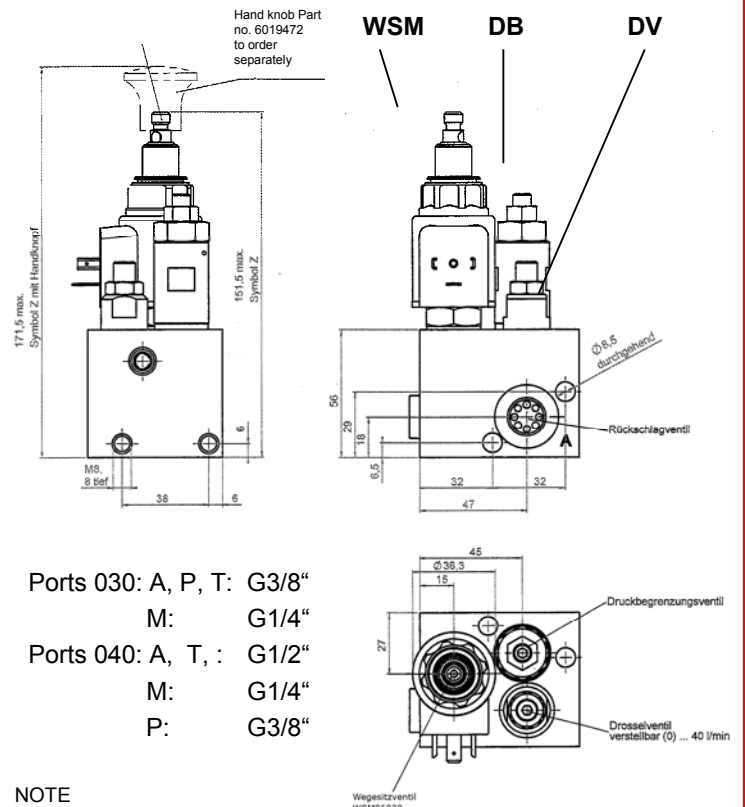
dp-Q curves from A to T (lowering)



MODEL CODE



DIMENSIONS



Ports 030: A, P, T: G3/8"
 M: G1/4"
 Ports 040: A, T, : G1/2"
 M: G1/4"
 P: G3/8"

NOTE

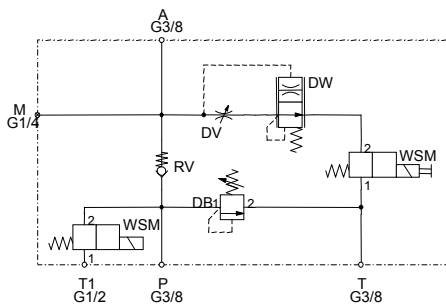
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Lift-lowering manifold HSB-Z-020 with load independent speed control and circuit valve for lift-lowering applications

SYMBOL

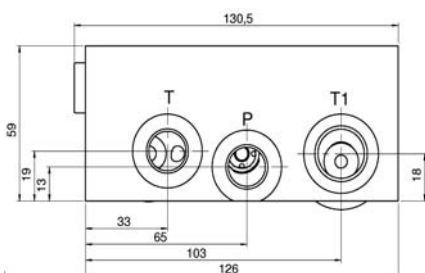


Q_{max} = 40 l/min
P_{max} = 350 bar

The operating pressure and the flow rate are dependent on built-in solenoid poppet valve:

Symbol **Y, Z** = 40 l/min / 350 bar
Symbol **V** = 20 l/min / 350 bar
Symbol **W** = 19 l/min / 250 bar

INTERFACE



FEATURES

- Application: for load independent lift-lowering controls e.g. scissor lifts, small forklifts and walky stackers
- Load independent lowering of the lifted load via 2/2 solenoid poppet valve, combined with flow control valve
- Additional valve for switching to unpressurized flow when using a fixed displacement pump
- HSB manifolds for the lift-lowering hydraulics are tailored to the complex and varied demands of the lifting technology sector
- Permitted load is safeguarded by a built-in pressure relief valve
- Built-in check valve prevents uncontrolled lowering
- The 2/2 solenoid poppet valve includes an emergency lowering cable-pull type manual override (self-resetting), (optional with plastic knob Part-No. 6019472 for manual operation)

SPECIFICATIONS

| | |
|------------------------------|---|
| Operating pressure: | max. 350 bar |
| Nominal Flow: | max. 40 l/min |
| Fluids: | Hydraulic oil to DIN 51524 Part 1 and 2 |
| Media operating temp. range: | -20°C up to +100°C |
| Ambient temperature range: | -20°C up to +60°C |
| Viscosity range: | 10 – 400 mm ² /s is recommended |
| Filtration: | Class 21/19/16 according to ISO4406 or cleaner |
| Ports: | A, P, T: G 3/8" M: G 1/4" T1: G 1/2" |
| Mounting: | 2x M8 10.9, torque 20 Nm pipe connection or flange-mounted onto subplate (Part 3510081 NBR) |
| Material: | steel, zinc-plated |
| Weight: | 3.0 kg incl. valves |

Electrical data: (solenoid poppet valve)

| | |
|---------------------------|---|
| Type of voltage: | DC solenoid, AC voltage is rectified using a bridge rectifier built-in the coil |
| Nominal current at 20° C: | 1.5A at 12 V DC 0.8A at 24 V DC, 30 Ohm 0.1A at 230 V AC, 2137 Ohm |
| Voltage tolerance: | +/- 15 % of nominal voltage |
| Response time: | 100% ED Continuous up to 115% of nominal voltage at 60°C ambient temperature |

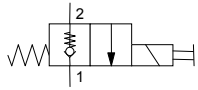
Standard models

HSB-Z-Y-020-350V-24DG-Z4
other types on request

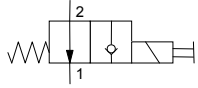
Part No.

3284426

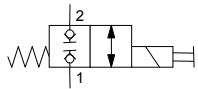
Available solenoid poppet valves for lowering:



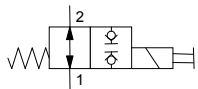
WSM06020Z-01J
See brochure 5.943.3



WSM06020Y-01M
See brochure 5.947.2

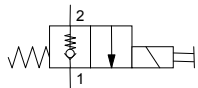


WSM06020W-01M
See brochure 5.949.2

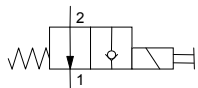


WSM06020V-01M
See brochure 5.949.1

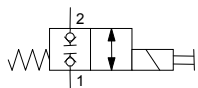
Available solenoid poppet valves for circuit:



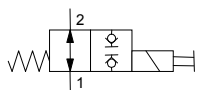
WSM06020Z-01J
See brochure 5.943.3



WSM06020Y-01M
See brochure 5.947.2



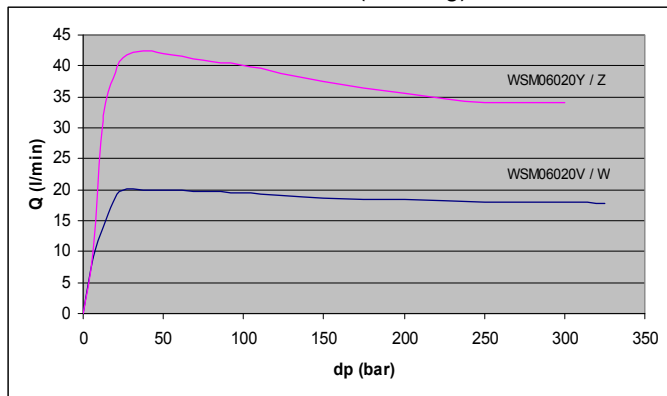
WSM06020W-01M
See brochure 5.949.2



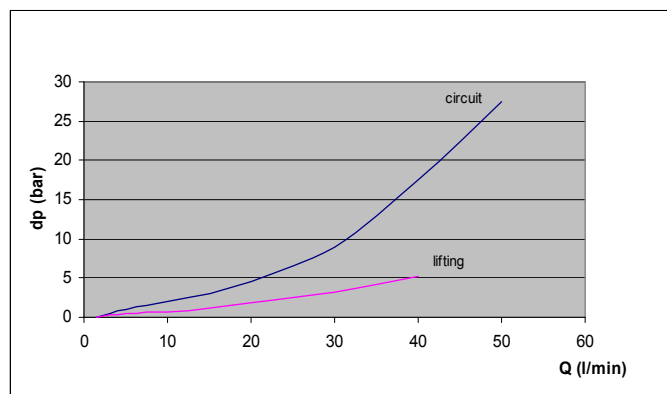
WSM06020V-01M
See brochure 5.949.1

PERFORMANCE

Flow control curve from A to T (lowering)



dp-Q curve from P to A (lifting)
dp curve P to T1 (circuit)



MODEL CODE

HSB - Z - Y - 020 - 250 V 200 - 230 AG - Z4

Lift-lowering manifold _____

Symbol solenoid poppet valve (lowering)
Z = normally closed (s. adjacent chart)
(other symbols V, W, Y s. brochure WSM06020)

Symbol solenoid poppet valve (circuit)
Y = normally open (s. adjacent chart)
(other symbols V, W, Z s. brochure WSM06020...)

Type _____
020 = Standard with NBR seals

Pressure range _____
250 = 250 bar (solenoid poppet valve Symbol W)
350 = 350 bar (solenoid poppet valve symbols V, Y, Z)
other Pressure ranges on request

Adjustment option for pressure relief valves (DB) _____
V = adjustable by tool
other adjustment options on request

Pressure setting of pressure relief valve (DB) _____
omission = no pressure setting
200 = pressure setting on request

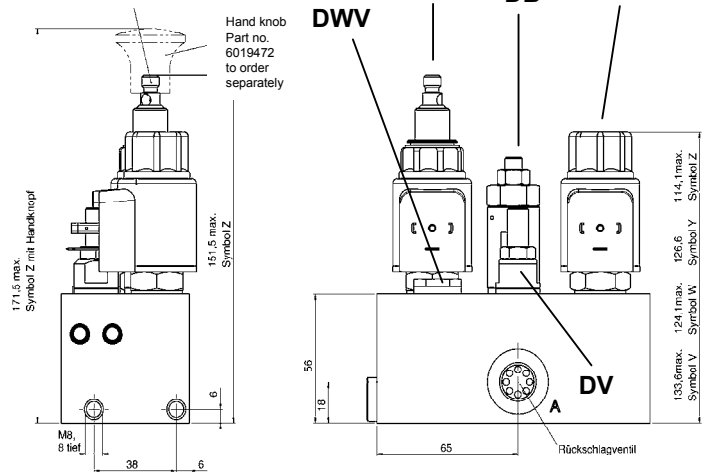
Nominal voltage solenoid poppet valve (WSM) _____
230 = 230 Volt AC
24 = 24 Volt DC

Coil connector _____
DG = DIN connector to EN 175301-803 (DC)
AG = DIN connector to EN 175301-803 (AC)

Female connector _____
omission = none
Z4 = Female connector for DIN connector (supplied loose)

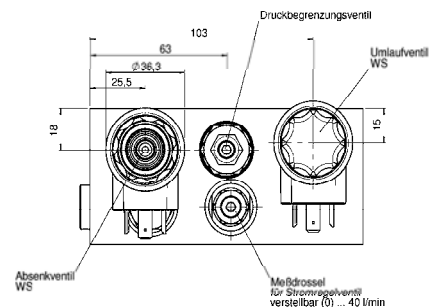
DIMENSIONS

Symbol Z - Manual override
Actuation by pulling and holding



Ports:

A, P, T: G3/8"
M: G1/4"
T1: G1/2"



NOTE

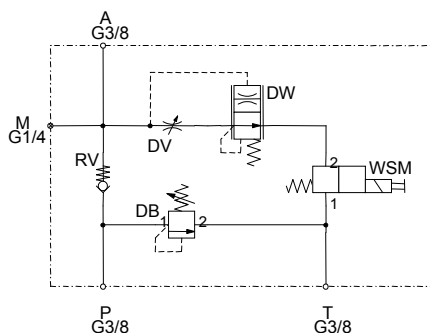
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Lift-lowering manifold HSB-Z-010 with load independent speed control for lift-lowering applications

SYMBOL



Q_{max} = 40 l/min
P_{max} = 350 bar

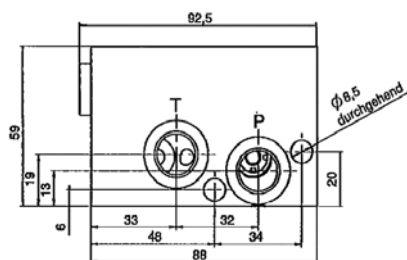
The operating pressure and the flow rate are dependent on built-in solenoid poppet valve:

Symbol **Y, Z** = 40 l/min / 350 bar

Symbol **V** = 20 l/min / 350 bar

Symbol **W** = 19 l/min / 250 bar

INTERFACE



FEATURES

- Application: for load independent lift-lowering controls e.g. scissor lifts, small forklifts and walky stackers
- Load independent lowering of the lifted load via 2/2 solenoid poppet valve, combined with flow control valve
- HSB manifolds for the lift-lowering hydraulics are tailored to the complex and varied demands of the lifting technology sector
- Permitted load is safeguarded by a built-in pressure relief valve
- Built-in check valve avoids uncontrolled lowering
- Flange-mounting onto a subplate is possible
- The 2/2 solenoid poppet valve includes an emergency lowering cable-pull type manual override (self-resetting), (optional with plastic knob Part-No. 6019472 for manual operation)

SPECIFICATIONS

| | |
|------------------------------|---|
| Operating pressure: | max. 350 bar |
| Nominal Flow: | max. 40 l/min |
| Fluids: | Hydraulic oil to DIN 51524 Part 1 and 2 |
| Media operating temp. range: | -20°C up to +100°C |
| Ambient temperature range: | -20°C up to +60°C |
| Viscosity range: | 0 – 400 mm ² /s is recommended |
| Filtration: | Class 21/19/16 according to ISO4406 or cleaner |
| Ports: | A, P, T: G 3/8" |
| | M: G 1/4" |
| Mounting: | 2x M8 10.9, torque 20 Nm pipe connection or flange-mounted onto subplate (Part 3510081 NBR) |
| Material: | steel, zinc-plated |
| Weight: | 3.0 kg incl. valves |

Electrical data: (solenoid poppet valve)

| | |
|---------------------------|---|
| Type of voltage: | DC solenoid, AC voltage is rectified using a bridge rectifier built-in the coil |
| Nominal current at 20° C: | 1.5A at 12 V DC 0.8A at 24 V DC, 30 Ohm 0.1A at 230 V AC, 2137 Ohm |
| Voltage tolerance: | +/- 15 % of nominal voltage |
| Response time: | 100% ED Continuous up to 115% of nominal voltage at 60°C ambient temperature |

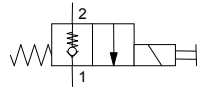
Standard models

HSB-Z-010-250V-230AG-Z4
 HSB-Z-010-250V-24DG-Z4
 HSB-Z-010-350V-230AG-Z4
 HSB-Z-010-350V-24DG-Z4
 other types on request

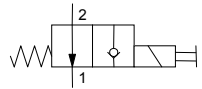
Part No.

3355029
 3355025
 3355026
 3279410

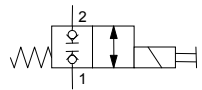
Available solenoid poppet valves:



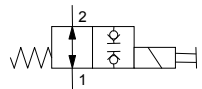
WSM06020Z-01J
 See brochure 5.943.3



WSM06020Y-01M
 See brochure 5.947.2



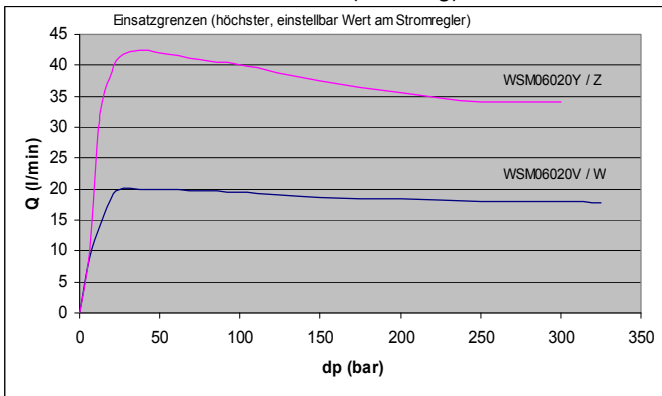
WSM06020W-01M
 See brochure 5.949.2



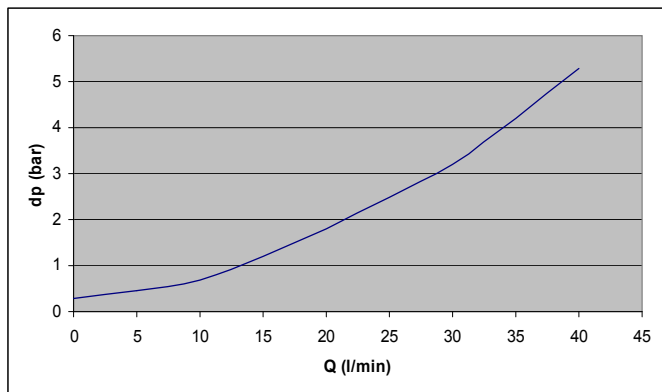
WSM06020V-01M
 See brochure 5.949.1

PERFORMANCE

Flow control curve from A to T (lowering)



Dp-Q curve from P to A (lifting)



MODEL CODE

HSB - Z - 010 - 250 V 200 - 230 AG - Z4

Lift-lowering manifold _____

Symbol solenoid poppet valve (WSM) _____
 Z = normally closed (s. adjacent chart)
 (other symbols V, W, Y s. brochure WSM06020...)

Type _____
 010 = Standard with NBR seals

Pressure range _____
 250 = 250 bar (solenoid poppet valve Symbol W)
 350 = 350 bar (solenoid poppet valve symbols V, Y, Z)
 other Pressure ranges on request

Adjustment option for pressure relief valves (DB) _____
 V = adjustable by tool
 other adjustment options on request

Pressure setting of pressure relief valve (DB) _____
 omission = no pressure setting
 200 = pressure setting on request

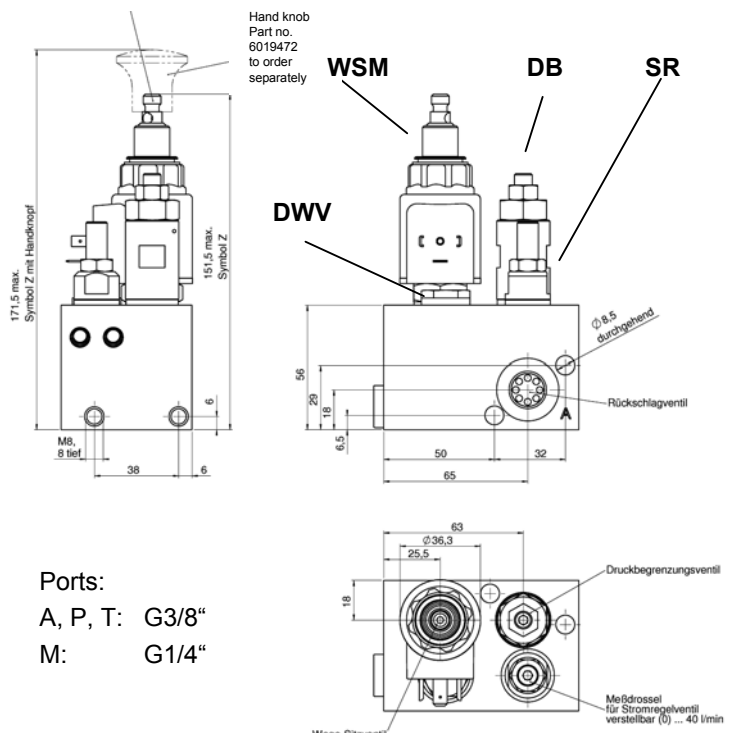
Nominal voltage solenoid poppet valve (WSM) _____
 230 = 230 Volt AC
 24 = 24 Volt DC

Coil connector _____
 DG = DIN connector to EN 175301-803 (DC)
 AG = DIN connector to EN 175301-803 (AC)
 other connectors on request

Female connector _____
 omission = none
 Z4 = Female connector for DIN connector (supplied loose)

DIMENSIONS

Symbol Z Manual override
 Actuation by pulling and holding



Ports:

A, P, T: G3/8"

M: G1/4"

NOTE

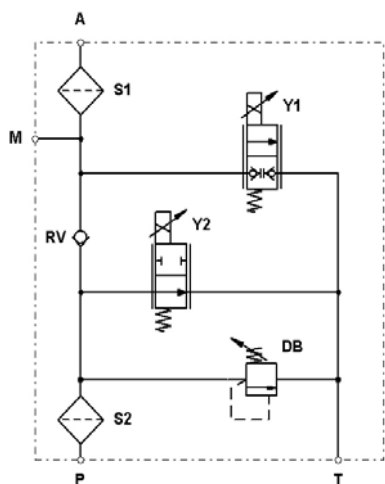
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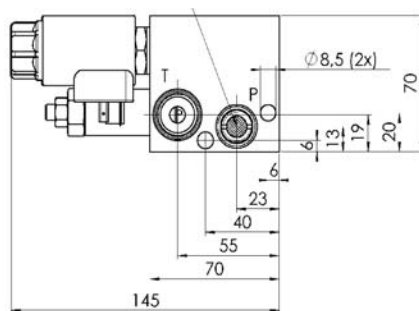
Lift-lowering manifold HSB-P-010 with load independent, proportional speed control for lift-lowering applications

SYMBOL



Q_{max} = 25 l/min
P_{max} = 250 bar

INTERFACE



FEATURES

- Application: for load independent lift-lowering controls e.g. scissor lifts, small forklifts and walky stackers
- Load independent and sensitive lowering of the lifted load via proportional flow control valves
- HSB manifolds for the lift-lowering hydraulics are tailored to the complex and varied demands of the lifting technology sector
- Permitted load is safeguarded by a built-in pressure relief valve
- Built-in check valve avoids uncontrolled lowering
- Flange-mounting onto a subplate is possible
- Emergency lowering integrated in proportional valve Y1

SPECIFICATIONS

| | |
|------------------------------|--|
| Operating pressure: | max. 250 bar |
| Nominal Flow: | max. 25 l/min |
| Fluids: | Hydraulic oil to DIN 51524 Part 1 and 2 |
| Media operating temp. range: | -20°C up to +100°C |
| Ambient temperature range: | -20°C up to +40°C |
| Viscosity range: | 10 – 400 mm ² /s is recommended |
| Filtration: | Class 18/16/13 according to ISO4406 or cleaner |
| Ports: | A, T: G 1/2" M: G 1/4" P: G 3/8" |
| Mounting: | pipe connection or flange-mounted onto subplate (see interface) |
| Material: | steel, zinc-plated |
| Weight: | 2.5 kg incl. valves |

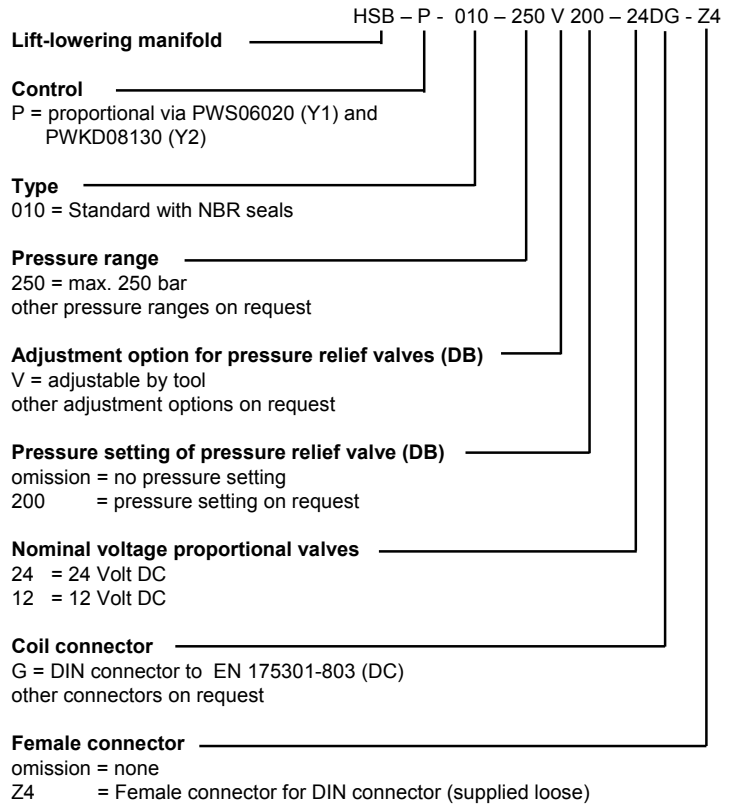
Electronics: (Proportional valves)

| | |
|-----------------------------------|---|
| Nominal voltage: | 24 Volt (optional 12 Volt) |
| Coil resistance R ₂₀ : | 14.2 Ohm +/- 0.71 Ohm |
| PWM frequency: | 150 – 250 Hz |
| Control current: | 0 – 1300 mA (Prop. poppet valve Y1) 0 – 900 mA (Prop. spool valve Y2) |
| Dead current: | approx. 200 mA (Prop. poppet valve Y1) approx. 100 mA (Prop. spool valve Y2) |

Standard models
 HSB-P-010-250V-DG24
 other types on request

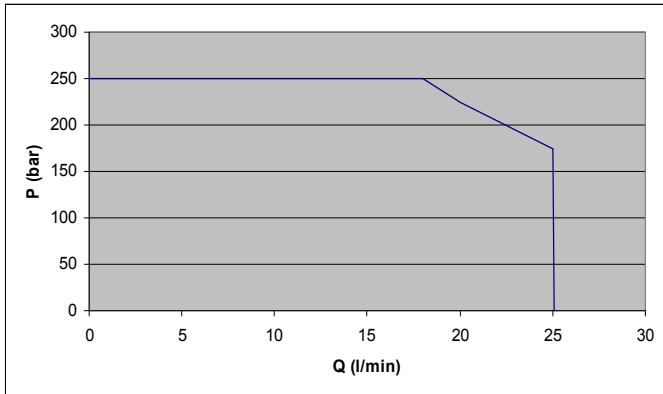
Part No.
 3026635

MODEL CODE

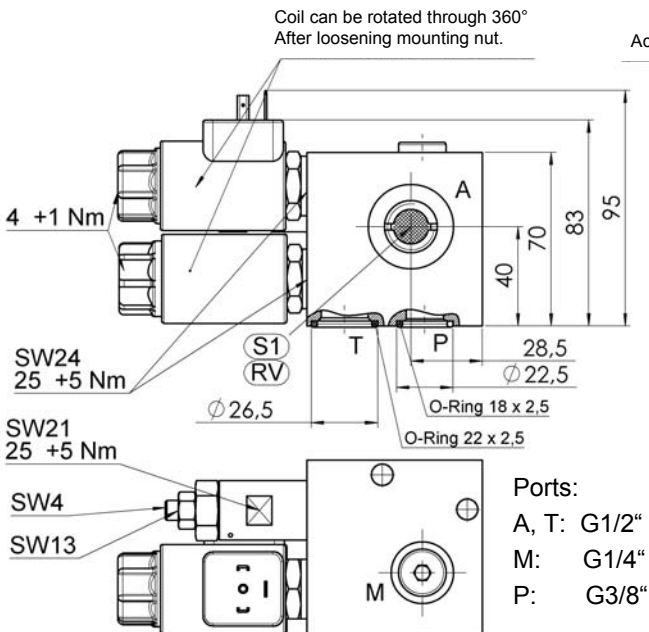


PERFORMANCE

Switching performance P to A



DIMENSIONS



NOTE

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