NG6 Sandwich Valves and Sub-Plates

NG6 (D03) valve stacks, up to 320 bar

Series: NG6-D03



Overview

Products	NG6 sandwich valves, sub-plates with 1 to 8 stations, blanking plate, solenoid coil
Interface	NG6 (D03): DIN 24340-A6, ISO 4401-03, CETOP R 35 H-03, NFPA D03
Operating pressure	Sandwich valves up to 320 bar, sub-plates up to 315 bar
Flow	Sandwich valves: up to 40 l/min recommended. Sub-plates: up to 30 l/min (H228C: 50 l/min)
Medium	Hydraulic oil with a mineral oil base

Application

NG6 (D03) is a standard mounting interface for hydraulic valves of nominal size 6, defined in ISO 4401-03, CETOP 3 and NFPA D03. All valves with this interface fit the same sub-plates and can be stacked. This lets you build a hydraulic control from modules instead of connecting each valve with pipes.

NG6 valve stacks control the force, movement and speed of hydraulic cylinders and hydraulic motors. They are typical on machines where one pump supplies several actuators. Each valve station controls one actuator, and the stack forms a complete circuit in a small space with little piping.

Each valve station is built as a stack: a sub-plate provides the P, T, A and B ports, one or more sandwich valves add functions to that station only, and an NG6 directional valve starts, stops and reverses the flow to the actuator. Directional valves are not included in this datasheet. The mounting screws run through the whole stack, so each added sandwich valve needs longer screws.

Products in This Datasheet

- Pressure relief valves limit the pressure in one line or in both actuator lines of a station, for example to give one cylinder a lower force than the rest of the system.
- Pressure reducing valves hold one station at a constant, lower pressure, so one pump can supply stations that need different pressures.
- Throttle check valves set the actuator speed on one station. They throttle the flow in one direction and let the return flow pass freely.
- Pilot-operated check valves hold a load in position, for example a lifting cylinder. Combine them with a directional valve whose centre position connects A and B to tank.
- Sub-plates hold 1 to 8 valve stations and connect them to the pump, tank and actuator lines. Versions with a pressure relief valve protect the whole plate.
- The blanking plate closes an unused station, for example one kept free for a later extension.

Selection

Start with the directional function for each actuator, add the sandwich valves needed for each station, and then choose a sub-plate with enough stations, plus one spare for later extensions.

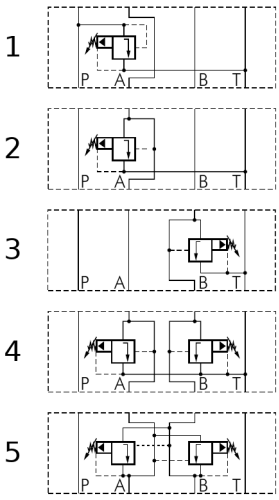
Sandwich Valves

NG6 sandwich valves go between an NG6 directional valve and the sub-plate. Each sandwich valve adds one hydraulic function to one valve station. The functions control the force, the movement and the speed of a hydraulic cylinder or a hydraulic motor. You can stack more than one sandwich valve at one station.

Interface	NG6 (D03) on the two sides: DIN 24340-A6, ISO 4401-03, CETOP R 35 H-03, NFPA D03
Body material	Ductile iron
Internal parts	Steel
Seal material	NBR
Medium	Hydraulic oil with a mineral oil base
Viscosity	20 to 400 mm²/s
Temperature	-30 °C to +80 °C
Operating pressure	0 to 320 bar
Flow	Up to approx. 60 l/min, related to the valve. Recommended: up to 40 l/min
Clamping length	40 mm (pressure reducing valves: 45 mm)
Mounting	Through the stack, with 4 M5 socket head screws, property class 12.9
Scope of delivery	Valve with seals, without screws

Pressure Relief Valves

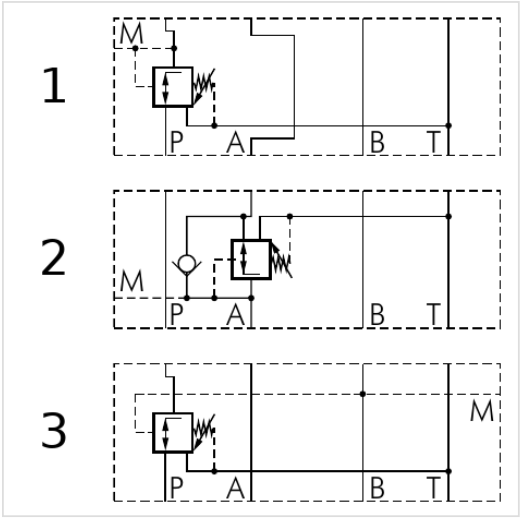
A pressure relief valve limits the pressure in one line, or in the two consumer lines. The number gives the circuit symbol.



No.	Function	Setting range	SKU
1	P to T	0 to 100 bar	H226U
1	P to T	0 to 320 bar	H226V
2	A to T	0 to 100 bar	H226W
2	A to T	0 to 320 bar	H226X
3	B to T	0 to 100 bar	H226Y
3	B to T	0 to 320 bar	H226Z
4	A to T and B to T	0 to 100 bar	H2272
4	A to T and B to T	0 to 320 bar	H2273
5	A to B and B to A (crossover)	0 to 100 bar	H2274
5	A to B and B to A (crossover)	0 to 320 bar	H2275

Pressure Reducing Valves

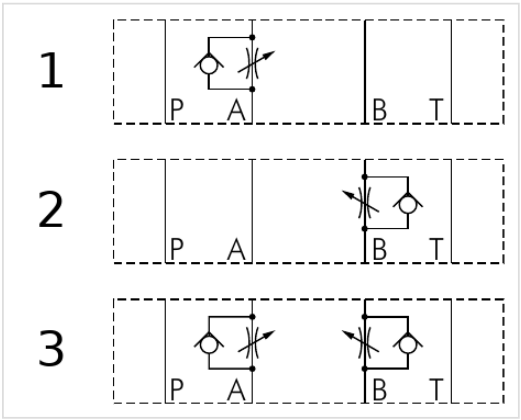
A pressure reducing valve keeps a lower, constant pressure in one line. M is the gauge port, G 1/4" female. The number gives the circuit symbol.



No.	Function	Setting range	SKU
1	Reduces the pressure in P	0 to 100 bar	H2276
1	Reduces the pressure in P	0 to 210 bar	H2277
2	Reduces the pressure in A, check valve for free return flow	0 to 100 bar	H2278
2	Reduces the pressure in A, check valve for free return flow	0 to 210 bar	H2279
3	Reduces the pressure in P, controlled by the pressure in B	0 to 100 bar	H227A
3	Reduces the pressure in P, controlled by the pressure in B	0 to 210 bar	H227B

Throttle Check Valves

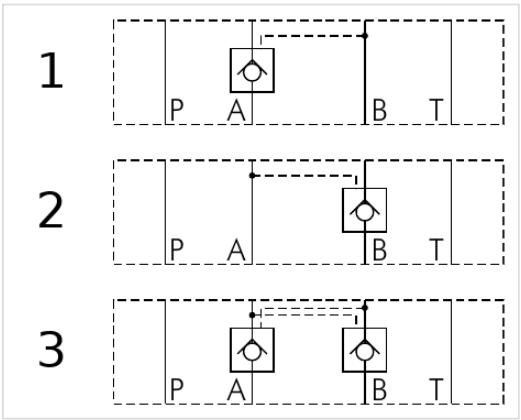
A throttle check valve sets the speed of a cylinder or motor. It throttles the flow in one direction. The check valve lets the flow in the opposite direction go through freely. Turn the plate over to change the throttle direction. The number gives the circuit symbol.



No.	Throttle in line	SKU
1	A	H227C
2	B	H227D
3	A and B	H227E

Pilot-Operated Check Valves

A pilot-operated check valve holds a cylinder or motor in position. It blocks the return flow until the pressure in the opposite line opens it. The number gives the circuit symbol.



No.	Check valve in line	SKU
1	A	H227F
2	B	H227G
3	A and B	H227H

Installation

1 **Stack the valves**
Put the sandwich valves between the directional valve and the sub-plate.

2 **Calculate the screw length**
Screw length = screw length of the directional valve + the clamping lengths of the sandwich valves (40 mm each, pressure reducing valves 45 mm).

> ⚠ **Warning**
> Attach the valves with screws of property class 12.9 only.

3 **Tighten the screws**
Use 4 M5 socket head screws per station. Tighten them to 8.9 Nm.

Sub-Plates

A sub-plate holds 1 to 8 NG6 valves or valve stacks. Each station has its own consumer ports A and B on the side. The P and T channels go through the plate, and you can connect them at the two ends. On H228C (1 station without pressure relief valve), P and T do not go through. The sub-plates H2284 – H228B have a pressure relief valve that limits the system pressure.

Valve interface	NG6 (D03): DIN 24340-A6, ISO 4401-03, CETOP R 35 H-03, NFPA D03
Body material	Cast iron
Pressure relief valve	Galvanised steel, NBR seals. Setting range 100 to 315 bar (H2284 – H228B)
Medium	Hydraulic oil with a mineral oil base
Temperature	-20 °C to +80 °C
Operating pressure	Maximum 315 bar
Flow	Maximum 30 l/min (H228C: 50 l/min)
Ports	A and B: G 3/8" on the side of each station. P and T: G 1/2" (H228C: G 3/8")
Valve mounting thread	M5, 8 mm deep
Mounting	4 × M8 thread on the ends, or through-holes for M5 screws. H228C: 4 holes, Ø 7 mm, from above
Scope of delivery	Sub-plate, without screws

With Pressure Relief Valve

Pressure relief valve setting range: 100 to 315 bar. L = total length, LB = hole distance.



Stations	L (mm)	LB (mm)	Max. flow	SKU
1	120	108	30 l/min	H2284
2	170	158	30 l/min	H2285
3	220	208	30 l/min	H2286
4	270	258	30 l/min	H2287
5	320	308	30 l/min	H2288
6	370	358	30 l/min	H2289
7	420	408	30 l/min	H228A
8	470	458	30 l/min	H228B

Without Pressure Relief Valve

L = total length, LB = hole distance.

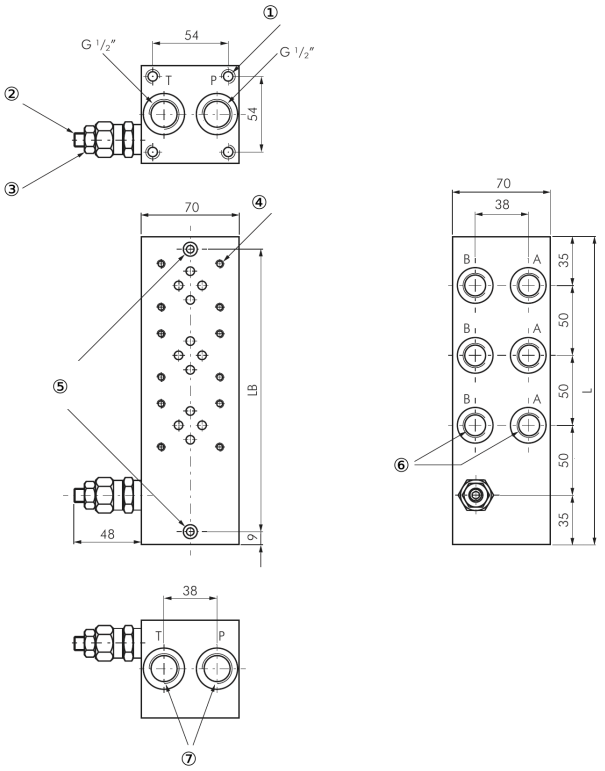


Stations	L (mm)	LB (mm)	Max. flow	SKU
1	80	57	50 l/min	H228C
2	120	108	30 l/min	H228D
3	170	158	30 l/min	H228E
4	220	208	30 l/min	H228F
5	270	258	30 l/min	H228G
6	320	308	30 l/min	H228H
7	370	358	30 l/min	H228J
8	420	408	30 l/min	H228K

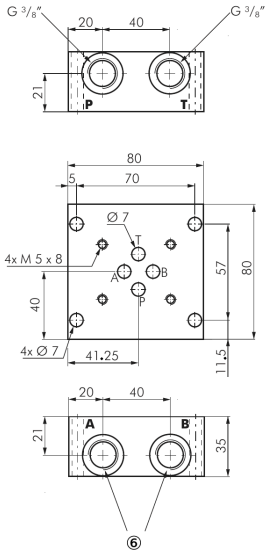
Dimensions

Dimensions in mm. The SKUs are above each drawing. H2284 – H228B have a pressure relief valve. L and LB: see the sub-plate tables. ① Mounting thread, 4 × M8, 12 mm deep. ② Pressure relief valve, adjust with a 5 mm Allen key. ③ Lock nut, 7 mm across flats. ④ Valve mounting thread M5, 8 mm deep. ⑤ Mounting holes for M5 socket head screws (DIN 912). ⑥ Consumer ports A and B, G 3/8". ⑦ P and T ports, G 1/2".

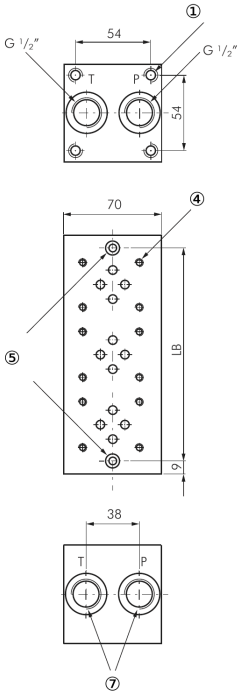
H2284 – H228B

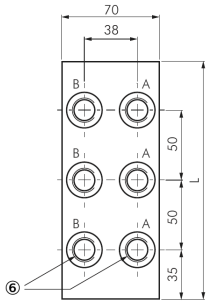


H228C



H228D – H228K





Accessories

A blanking plate closes a station that has no valve.

SKU	Product	Data
H226G	Blanking plate for unused NG6 valve stations	Steel, NBR seals. Screws not supplied
H226H	Solenoid coil 12 V DC for Argo-Hytos RPE3 NG6 valves	30 W, 100 % duty cycle, ±10 %, IP65, DIN-A connection. Connector not supplied

Installation

1

Close unused stations
Install a blanking plate on each station that has no valve.

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