



The only full range of
intensifying solutions!



MINIMUM SIZE – MAXIMUM POWER

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Formerly Iversen Hydraulics ApS

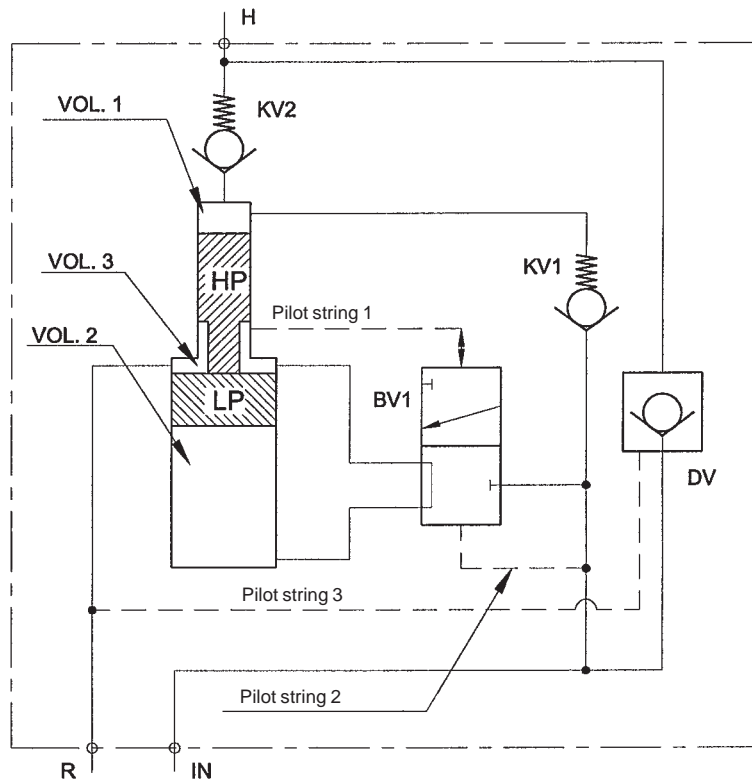
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How does miniBOOSTER work?



Function Diagram

High performance intensification

miniBOOSTER are oscillating boosters. They automatically intensify system pressure giving a higher outlet pressure and will compensate for oil loss on the high pressure side. This function of the miniBOOSTER is based on the patented system as shown above.

The basic design incorporates a low-pressure piston (LP), a high-pressure piston (HP) and a bistable reversing valve (BV1).

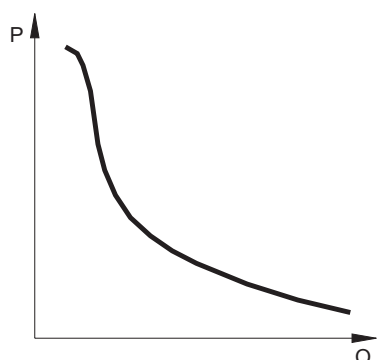
The dump valve (DV) is an optional feature.

Hydraulic fluid at system pressure is supplied to port IN. It flows freely past check valves KV1, KV2 and DV (if included) via port H. At this point all flow goes through the booster, and a cylinder on the high pressure side H will move fast forward. As the cylinder meets resistance pressure increases in the high pressure side H equal to the pump supply pressure. This causes check valves KV1 and DV to close and the oil is directed to Vol 1. The bistable valve BV1 connects Vol 2 to tank via Vol 3. As pump pressure is applied to Vol 1 the pistons move down.

When the piston has fully moved down, Pilot string 1 is energized operating the bistable valve BV1 changing its position. Fluid is led to Vol 2 moving the pistons upward delivering fluid at higher pressure. The resultant pressure is determined by the ratio in area of the low pressure piston LP to the high pressure piston HP.

Once the high pressure piston HP has moved up, Pilot string 1 is connected to tank, the bistable valve BV1 returns to its original position and the cycle is repeated until the required end pressure has been established. At that point the intensifier stops and will only start again to maintain the pressure at the high pressure side of H. Pressure can be relieved from the high pressure side through the pilot operated check valve DV (if included). By connecting port R to the supply pressure and port IN to tank, Pilot string 3 will be pressurized, allowing the fluid from the high pressure side H to flow back to tank.

General specifications for miniBOOSTER



Flow/Pressure curve

High flow - low pressure

Low flow - high pressure performance

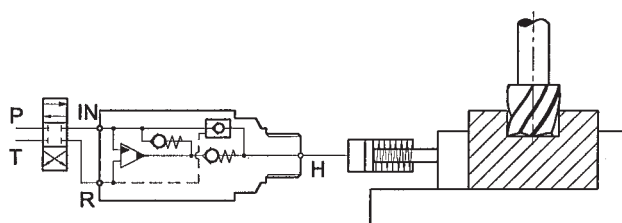
As shown on the chart miniBOOSTER has a dual flow/pressure feature. Initially when fluid is supplied to the booster it flows straight through to the high pressure side. At this point all the supplied flow (up to the max. allowed inlet flow) goes to the actuator allowing it to operate fast in the desired direction. As soon as inlet pressure is reached in the actuator, the flow will then be supplied via the high pressure piston until intensified pressure is reached.

Temperature range	- 40°C to 120°C
Maximum inlet flow	See performance data for each model
Fluids	Recognized hydraulic and transmission fluids compatible with Buna-N seals For other fluids please contact technical sales
Inlet pressure	Min. 20 Bar (290 psi), Max. 200 Bar (2.900 psi) Note: Outlet pressure must never exceed 800 Bar (11.600 psi), Except for the HC8.
Filtration	10 micron nominal; Max. 19/16 according to ISO 4406
Connections	See data for each model.
Materials	Bodies, cast iron, internal components, steel: External surface, zinc chromate finish; Static seals, Nitrile; <i>No dynamic seals</i>
Advantages summarized	<ul style="list-style-type: none"> ▶ Gives high pressure whenever needed ▶ Expensive high pressure pumps not required ▶ Expenditure saved on tubing ▶ Increase expensive high pressure by simply increasing inexpensive low pressure ▶ Low pressure is changed into high pressure with hardly any use of energy or heat generation ▶ Leakages on the high pressure side compensated dynamically ▶ System works with labyrinthine tubing which gives a longer life ▶ No rotating parts ▶ Light weight ▶ Small size - big performance

General specifications for miniBOOSTER

Typical clamping circuit

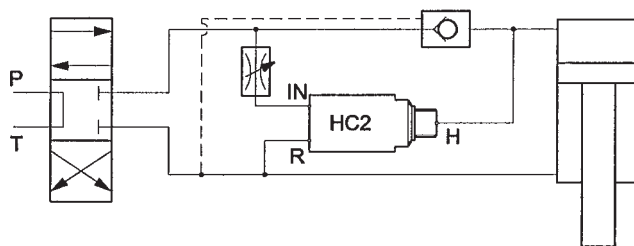
The HC2 is used to boost the pressure in an existing hydraulic circuit, e.g. in a machining centre to ensure a sufficient clamping force. As the HC2 can be directly fitted in the work holding equipment, high pressure connections can be avoided.



Example with single acting cylinder

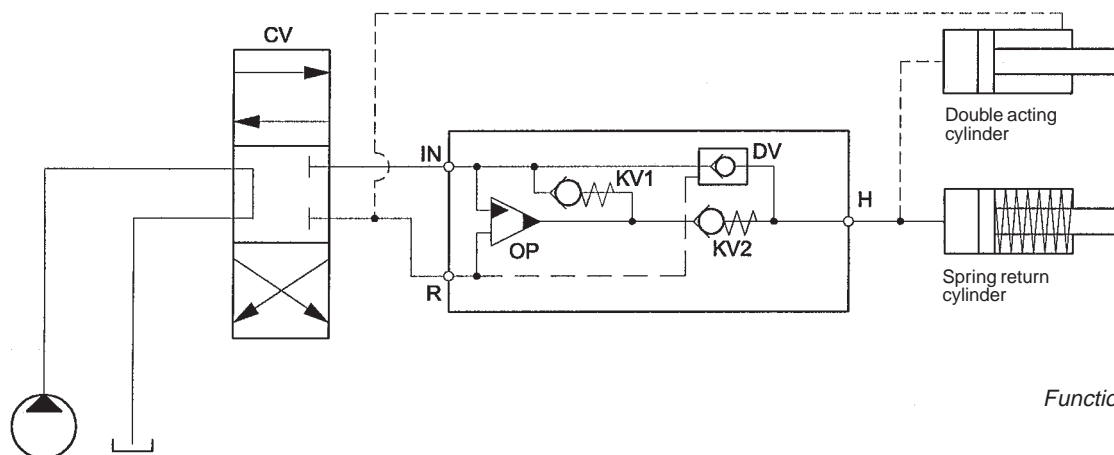
Applications with larger flowrates

In applications where the pump supplies a flow exceeding the maximum permissible supplied flow to the HC2, the HC2 is installed in parallel with a pilot operated check valve. This check valve is dimensioned to allow for all the flow supplied from the pump. The inlet flow to the HC2 is limited to the maximum permissible flow for the particular intensification ratio. As the cylinder moves forward, all the flow from the pump is used. When the pump pressure is established in the cylinder the check valve closes, and the end pressure is built up through the HC2. The cylinder is retracted by changing the position of the directional valve, whereby the pump is connected to the other side of the cylinder and the DV opens, allowing the fluid to return to the tank.



Example with external pilot operated check valve

Function diagram



Function diagram

Product range

The complete range of miniBOOSTER

miniBOOSTER Hydraulics offers a comprehensive range of hydraulic pressure boosters which are used worldwide in a variety of applications. There are several major advantages in using hydraulic boosters from miniBOOSTER Hydraulics.

The compact size of the miniBOOSTER allow installation at point where high pressure is needed. They are

easily incorporated in existing or new systems.

Less expensive low pressure components are used except exactly where high pressure is needed. Pressure up to 2.000 bar can be obtained from any low pressure hydraulic power source.

The HC1 miniBOOSTER – Typical applications

- ▶ Hydraulic Workholding
- ▶ Machine Tools
- ▶ Special Machines
- ▶ Hydraulic Hand Tools
- ▶ Plastic Injection Molding Machines
- ▶ Offshore Applications
- ▶ Pressure Diecasting Machines
- ▶ Mobile Hydraulics
- ▶ Railway Equipment



The HC2 miniBOOSTER – Typical applications

- ▶ Hydraulic Workholding
- ▶ Molding Machines
- ▶ Machine Tools
- ▶ Power Packs
- ▶ Hydraulic Cutters & Spreaders
- ▶ Hydraulic Presses
- ▶ Offshore Applications
- ▶ Testing Equipment
- ▶ Mobile Hydraulics
- ▶ Railway Equipment



The HC3 miniBOOSTER – Typical applications

- ▶ Hydraulic Workholding
- ▶ Molding Machines
- ▶ Machine Tools
- ▶ Power Packs
- ▶ Hydraulic Presses
- ▶ Offshore Applications
- ▶ Testing Equipment
- ▶ Mobile Hydraulics



Product range

The HC4 miniBOOSTER – Typical applications

- ▶ Hydraulic Workholding
- ▶ Molding Machines
- ▶ Machine Tools
- ▶ Power Packs
- ▶ Hydraulic Cutters & Spreaders
- ▶ Hydraulic Presses
- ▶ Offshore Applications
- ▶ Testing Equipment
- ▶ Mobile Hydraulics



The HC5 miniBOOSTER – Typical applications

- ▶ Double Acting Cylinders
- ▶ Railway Equipment
- ▶ Construction Tools
- ▶ Hydraulic Rescue Tools
- ▶ Test Benches
- ▶ Rotary Actuators



The HC6 miniBOOSTER – Typical applications

- ▶ Demolition Tools
- ▶ Molding Machines
- ▶ Mobile Hydraulics
- ▶ Hydraulic Presses
- ▶ Hydro Forming
- ▶ Hydraulic Cranes
- ▶ Filter Presses



The HC8 miniBOOSTER – Typical applications

- ▶ Bolt Tensioning Tools
- ▶ Torque Wrenches
- ▶ Power Packs
- ▶ Special Machines
- ▶ Pressure Testing
- ▶ Hydro Forming



The HC1 miniBOOSTER



Description

The HC1 is the most compact miniBOOSTER unit weighing only 0.7 kg. It is ideal for use in applications where it is desirable to mount the unit on or in a tool, power pack, or other device. The HC1 raises supplied pressure to a higher outlet pressure and automatically compensates for consumption of oil to maintain the high pressure. Adjustment of the outlet pressure is carried out by varying the supplied pressure.

Inlet pressure

Inlet pressure 20-200 bar

Outlet pressure

800 bar maximum

Return pressure to tank

P_{Return} as low as possible

Intensification ratios

Outlet pressure $P_H = (P_{IN} - P_{Return}) \times i$ (Intensification)

Number of Intensification ratios

9 different intensifications

Mounting

Inline tube

Accessories

Pilot operated dump valve available

Flow rates

Intensification factor i	Max. outlet flow l/min	Max. inlet flow l/min
1.2	0.5	8.0
1.5	0.5	8.0
2.0	0.5	8.0
2.8	0.5	8.0
3.3	0.5	8.0
4.0	0.4	8.0
4.8	0.4	8.0
6.2	0.3	8.0
7.5	0.3	8.0

Max. tightening torque BSP

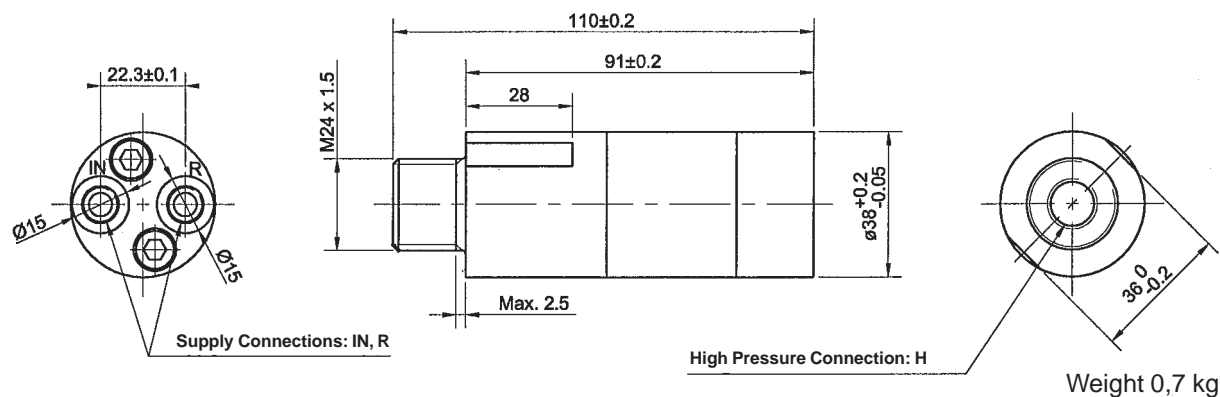
	IN/R 1/8" BSP	H 1/4" BSP
with steel washer	2.0 da/Nm	4.0 da/Nm
with aluminium washer	1.0 da/Nm	–
with cutting edge	2.0 da/Nm	4.0 da/Nm

Max. tightening torque UNF

	IN/R 3/8-24" UNF	H 9/16-18" UNF
with o-ring	1.5 da/Nm	3.5 da/Nm

The HC1 miniBOOSTER

Dimensions

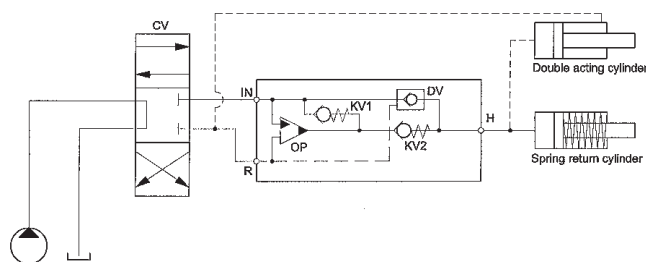


Dimensions

Functions

The basic operation is illustrated in the function diagram. Oil is fed through the directional valve CV to the IN port, flowing freely through the check valves KV1, KV2 and DV to the high pressure side H. In this condition maximum flow through the booster is achieved giving a fast forward function.

When pump pressure is reached on the high pressure side H, valves KV1, KV2 and DV will close. The end pressure will be achieved by the oscillating pump unit OP. The unit will automatically stall when end pressure on high pressure side H is reached. If there is a pressure drop on the high pressure side due to consumption or leakage, the OP valve will automatically operate to maintain the end pressure.



Function Diagram

Ordering a HC1

Model	Intensification, i	Dump Valve	Connections
HC1	see flow rate table	A = (no)	1
		B = (yes)	2

Ordering example of a HC1 with $i = 3.3$,
DV incorporated and BSP connections:
HC1-3.3-B-1

Connection	IN,R	H
1	1/8" BSP	1/4" BSP
2	3/8-24 UNF	9/16-18 UNF

The HC2 miniBOOSTER



Description

The HC2 is a compact unit weighing only 1.0 kg. It is ideal for use in a variety of applications where building and maintaining high pressure is required. The HC2 raises supplied pressure to a higher outlet pressure and automatically compensates for consumption of oil to maintain the high pressure. Adjustment of the outlet pressure is carried out by varying the supplied pressure.

Inlet pressure

Inlet pressure 20-200 bar

Outlet pressure

800 bar maximum

Return pressure to tank

P_{Return} as low as possible

Intensification ratios

Outlet pressure $P_H = (P_{IN} - P_{Return}) \times i$ (Intensification)

Number of intensifications

11 different intensifications

Mounting

Inline tube

Accessories

Pilot operated dump valve available

Flow rates

Intensification factor i	Max. outlet flow l/min	Max. inlet flow l/min
1.2	1.2	8.0
1.5	1.0	8.0
2.0	0.8	8.0
2.8	0.6	8.0
3.2	2.5	15.0
4.0	2.0	14.0
5.0	1.6	14.0
6.6	1.3	13.0
9.0	0.9	13.0
13.0	0.6	12.0
20.0	0.3	12.0

Max. tightening torque BSP

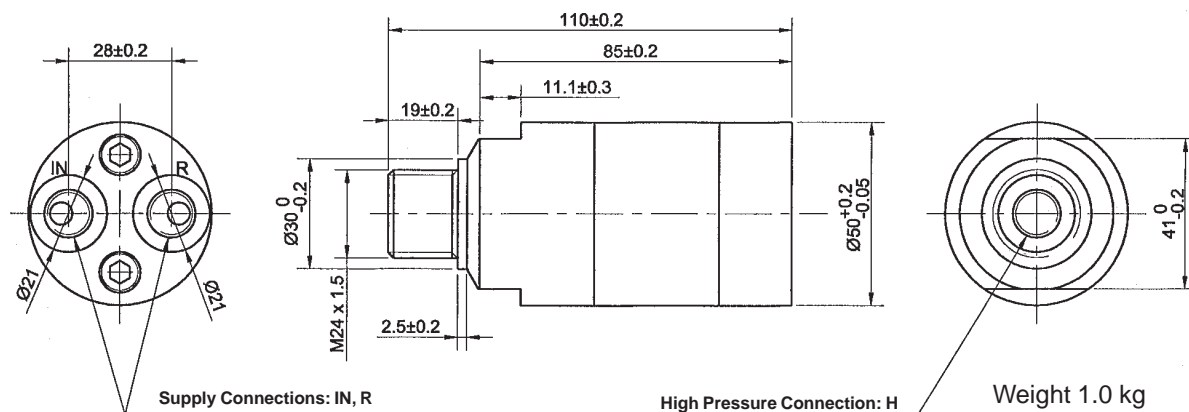
	IN/R 1/4" BSP	H 1/4" BSP
with steel washer	4.0 da/Nm	4.0 da/Nm
with aluminium washer	3.0 da/Nm	—
with cutting edge	4.0 da/Nm	4.0 da/Nm

Max. tightening torque UNF

	IN/R 7/16-18" UNF	H 9/16-18" UNF
with o-ring	2.0 da/Nm	3.5 da/Nm

The HC2 miniBOOSTER

Dimensions

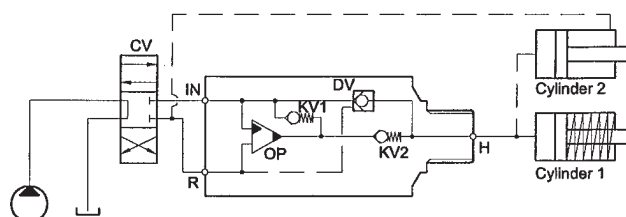


Dimensions

Functions

The basic operation is illustrated in the function diagram. Oil is fed through the directional valve CV to the IN port, flowing freely through the check valves KV1, KV2 and DV to the high pressure side H. In this condition maximum flow through the booster is achieved giving a fast forward function.

When pump pressure is reached on the high pressure side H, valves KV1, KV2 and DV will close. The end pressure will be achieved by the oscillating pump unit OP. The unit will automatically stall when end pressure on high pressure side H is reached. If there is a pressure drop on the high pressure side due to consumption or leakage, the OP valve will automatically operate to maintain the end pressure.



Function Diagram

Ordering a HC2:

Model	Intensification, i	Dump Valve	Connections
HC2	—	—	—
	see flow rate table	A = (no)	1
		B = (yes)	2

Ordering example of a HC2 with $i = 4.0$,
DV incorporated and BSP connections:
HC2 - 4.0 - B - 1

Connection	IN,R	H
1	1/4" BSP	1/4" BSP
2	7/16-20 UNF	9/16-18 UNF

The HC3 miniBOOSTER



Description

The HC3 is a version of the HC2 designed for use in NG6 (D03) stacking manifold systems. It is a compact unit weighing only 2.5 kg. The HC3 has the pilot operated dump valve incorporated as a standard feature. Maximum outlet pressure is 500 bar in standard versions. Adjustments of the outlet pressure is carried out by varying the supplied pressure.

Inlet pressure

Inlet pressure 20-200 bar

Outlet pressure

500 bar maximum

Return pressure to tank

P_{Return} as low as possible

Intensification ratios

Outlet pressure $P_H = (P_{IN} - P_{Return}) \times i$ (Intensification)

Number of intensifications

11 different intensifications

Mounting

NG6 (D03) stacking manifold system

Accessories

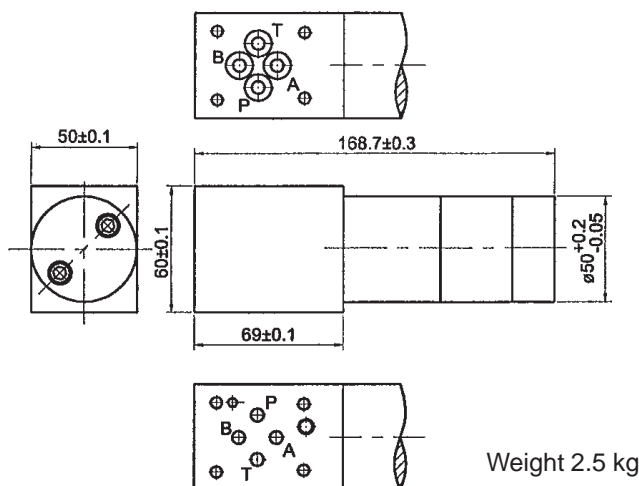
Pilot operated dump valve incorporated

Flow rates

Intensification factor i	Max. outlet flow l/min	Max. inlet flow l/min
1.2	1.2	8.0
1.5	1.0	8.0
2.0	0.8	8.0
2.8	0.6	8.0
3.2	2.5	15.0
4.0	2.0	14.0
5.0	1.6	14.0
6.6	1.3	13.0
9.0	0.9	13.0
13.0	0.6	12.0
20.0	0.3	12.0

The HC3 miniBOOSTER

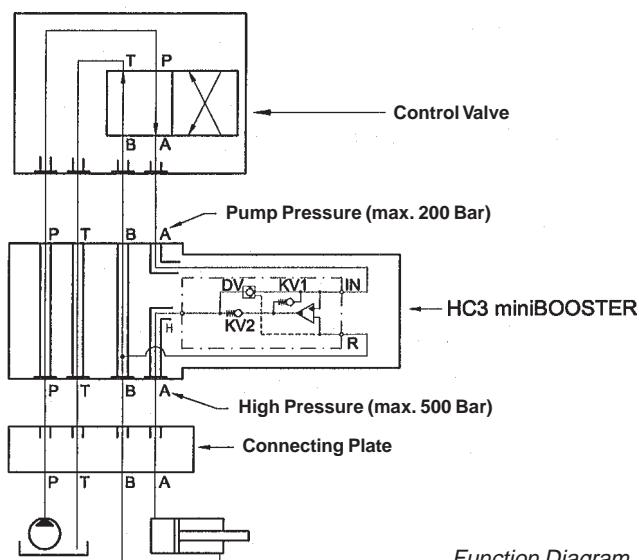
Dimensions



Dimensions

Functions

The basic operation is illustrated in the function diagram. The oil is fed through the connecting plate to the control valve to the IN port of the HC3 flowing freely through check valves KV1, KV2 and DV to the high pressure side H. From the high pressure side H oil is fed to port A on the connecting plate. In this condition maximum flow through the booster is achieved giving a fast forward function. When pump pressure is reached on the high pressure side H, valves KV1, KV2 and DV will close. The end pressure will be achieved by the oscillating pump unit OP. The unit will automatically stall when end pressure on high pressure side is reached. If there is a pressure drop on the high pressure side due to consumption or leakage, the OP valve will automatically operate to maintain the end pressure.



Function Diagram

Ordering a HC3

Model	Intensification, i
HC3	—
	see flow rate table

Ordering example of a HC3 with $i = 4.0$,
DV incorporated:
HC3 - 4.0

The HC4 miniBOOSTER



Description

The HC4 is ideal for use in applications where a higher volume of high pressure fluid is required. The HC4 is a compact unit weighing only 3.0 kg, but it delivers up to 5.0 liters/min. outlet flow. Like the HC2, it raises supplied pressure and automatically compensates for consumption of oil to maintain the high pressure. Adjustment of the outlet pressure is carried out by varying the supplied pressure.

Inlet pressure

Inlet pressure 20 – 200 bar.

Outlet pressure

800 bar maximum

Return pressure to tank

P_{Return} as low as possible

Intensification ratios

Outlet pressure $P_H = (P_{IN} - P_{Return}) \times i$ (Intensification)

Number of intensifications

9 different intensifications

Mounting

Inline tube

Accessories

Pilot operated dump valve available

Flow rates

Intensification factor i	Max. outlet flow l/min	Max. inlet flow l/min
1.3	1.5	25.0
1.8	1.2	25.0
2.1	1.0	25.0
2.6	0.7	25.0
3.2	5.0	35.0
4.3	4.0	35.0
5.1	3.5	35.0
6.3	2.5	35.0
9.8	2.0	35.0

Max. tightening torque BSP

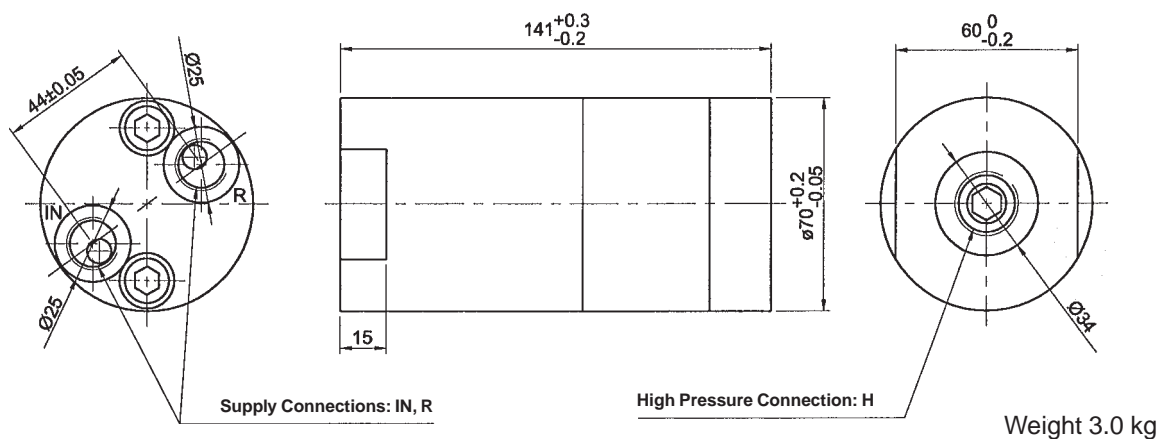
	IN/R 3/8" BSP	H 1/2" BSP
with steel washer	6.0 da/Nm	13.0 da/Nm
with aluminium washer	4.0 da/Nm	–
with cutting edge	6.0 da/Nm	13.0 da/Nm

Max. tightening torque UNF

	IN/R 9/16-18" UNF	H 3/4-16" UNF
with o-ring	3.5 da/Nm	6.0 da/Nm

The HC4 miniBOOSTER

Dimensions

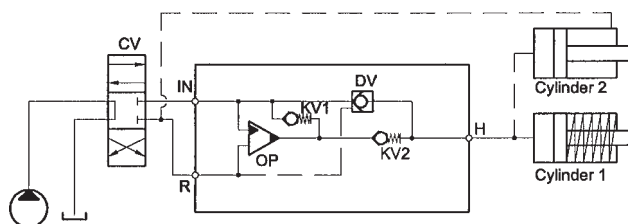


Dimensions

Functions

The basic operation is illustrated in the function diagram. Oil is fed through the directional valve CV to the IN port, flowing freely through the check valves KV1, KV2 and DV to the high pressure side H. In this condition maximum flow through the booster is achieved giving a fast forward function.

When pump pressure is reached on the high pressure side H, valves KV1, KV2 and DV will close. The end pressure will be achieved by the oscillating pump unit OP. The unit will automatically stall when end pressure on high pressure side H is reached. If there is a pressure drop on the high pressure side due to consumption or leakage, the OP valve will automatically operate to maintain the end pressure.



Function Diagram

Ordering a HC4

Model	Intensification, i	Dump Valve	Connections
HC4	see flow rate table	A = (no)	1
		B = (yes)	2

Ordering example of a HC4 with $i = 4.3$,
DV incorporated and BSP connections:
HC4 - 4.3 - B - 1

Connection	IN,R	H
1	3/8" BSP	1/2" BSP
2	9/16-18 UNF	3/4-16 UNF

The HC5 miniBOOSTER



Description

The HC5 is a double acting miniBOOSTER incorporating two separate intensification circuits. As the Function Diagram indicates, changing the position of the control valve CV switches intensification from one circuit to another. It is ideal for use in applications where high pressure is required in separate activation steps such as double acting cylinders, combination cutter spreader tools, etc. Like the HC2, the HC5 is a compact unit weighing only 3.0 kg.

Inlet pressure

Inlet pressure 20 – 200 bar

Outlet pressure

800 bar maximum

Return pressure to tank

P_{Return} as low as possible

Intensification ratios

Outlet pressure $P_H = (P_{IN} - P_{Return}) \times i$ (Intensification)

Number of intensifications

11 different intensifications

Mounting

Inline tube

Accessories

Pilot operated dumpvalves incorporated
High Pressure in two directions

Flow rates

Intensification factor i	Max. outlet flow l/min	Max. inlet flow l/min
1.2	1.2	8.0
1.5	1.0	8.0
2.0	0.8	8.0
2.8	0.6	8.0
3.2	2.5	15.0
4.0	2.0	14.0
5.0	1.6	14.0
6.6	1.3	13.0
9.0	0.9	13.0
13.0	0.6	12.0
20.0	0.3	12.0

Max. tightening torque BSP

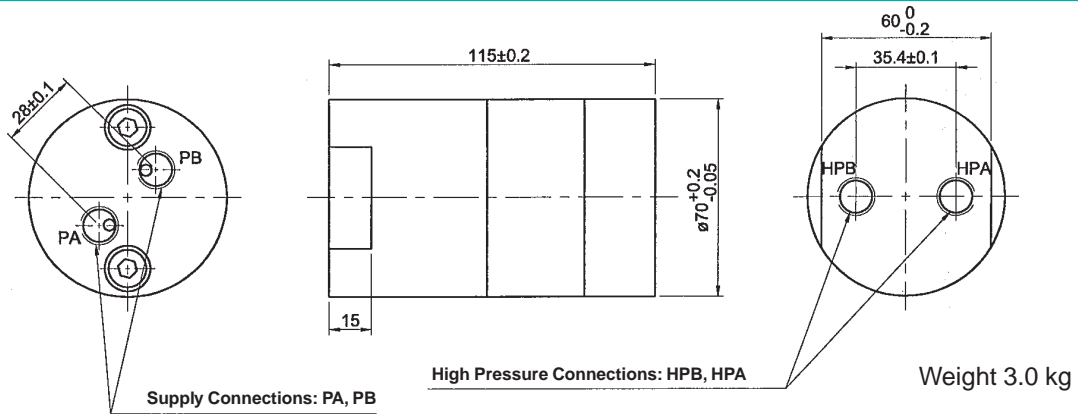
	IN/R 1/4" BSP	H 1/4" BSP
with steel washer	4.0 da/Nm	4.0 da/Nm
with aluminium washer	3.0 da/Nm	–
with cutting edge	4.0 da/Nm	4.0 da/Nm

Max. tightening torque UNF

	IN/R 7/16-18" UNF	H 9/16-18" UNF
with o-ring	2.0 da/Nm	3.5 da/Nm

The HC5 miniBOOSTER

Dimensions



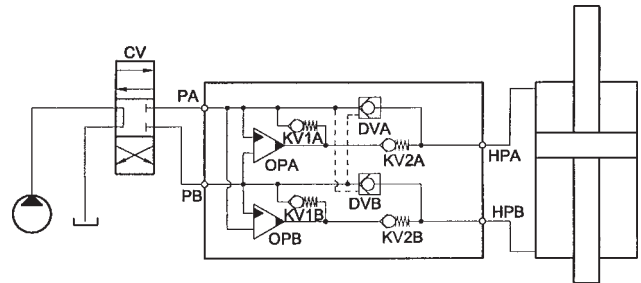
Dimensions

Functions

The basic operation is illustrated in the function diagram. The oil is fed through the directional valve CV to port PA, flowing freely through the check valve KV1A, KV2A and DVA to the high pressure side HPA. In this condition maximum flow through the booster is achieved giving a fast forward function.

When pump pressure is reached on the high pressure side HPA valves KV1A, KV2A and DVA will close. The end pressure will be achieved by the oscillating pump unit OPA. The unit will automatically stall when end pressure on high pressure side HPA is reached. If there is a pressure drop on the high pressure side due to consumption or leakage, the OPA valve will automatically operate to maintain the end pressure. To operate the cylinder in the other direction simply change the position of the CV and the pressure will now be built up via OPB.

The intensification ratios of OPA and OPB can be determined independently so that different end pressures can be achieved from the same supply pressure.



Function Diagram

Ordering a HC5

Model	Intensification, iA	Intensification, iB	Connections
HC5			
	see flow rate table	see flow rate table	1
			2

Ordering example of a HC5 with $iA = 4.0$, $iB = 5.0$ and BSP connections:
HC5 - 4.0 - 5.0 - 1

Connection	IN,R	H
1	1/4" BSP	1/4" BSP
2	7/16-18 UNF	9/16-18 UNF

The HC6 miniBOOSTER



Description

The HC6 is a high flow unit which is capable of up to 11 l/min flow on the high pressure end. Like other miniBOOSTER models, the HC6 raises supplied pressure to a higher outlet pressure and automatically compensates for consumption of oil to maintain the high pressure. Adjustment of the outlet pressure is carried out by varying the supplied pressure. Relative to its flow capability, the HC6 is a compact unit weighing only 9.5 kg.

Inlet pressure

Inlet pressure 20-200 bar

Outlet pressure

800 bar maximum

Return pressure to tank

P_{Return} as low as possible

Intensification ratios

Outlet pressure $P_H = (P_{IN} - P_{Return}) \times i$ (Intensification)

Number of intensifications

9 different intensifications

Mounting

Inline tube

Accessories

Pilot operated dump valve available

Flow rates

Intensification factor i	Max. outlet flow l/min	Max. inlet flow l/min
1.3	3.1	50.0
1.5	2.5	50.0
1.9	2.0	50.0
2.4	1.5	50.0
3.3	11.0	70.0
4.0	9.0	70.0
4.9	7.0	70.0
6.3	5.5	70.0
8.2	4.5	70.0

Max. tightening torque BSP

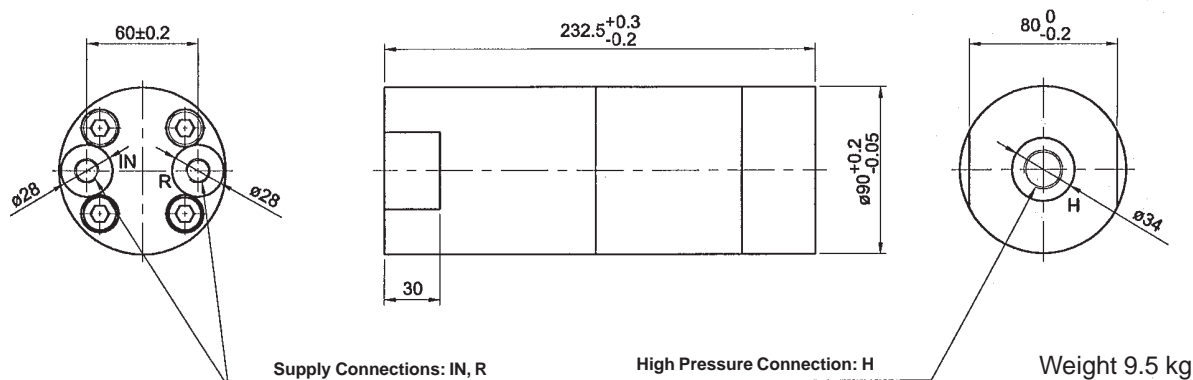
	IN/R 3/8" BSP	H 1/2" BSP
with steel washer	6.0 da/Nm	13.0 da/Nm
with aluminium washer	4.0 da/Nm	–
with cutting edge	6.0 da/Nm	13.0 da/Nm

Max. tightening torque UNF

	IN/R 9/16-18" UNF	H 3/4-16" UNF
with o-ring	3.5 da/Nm	6.0 da/Nm

The HC6 miniBOOSTER

Dimensions

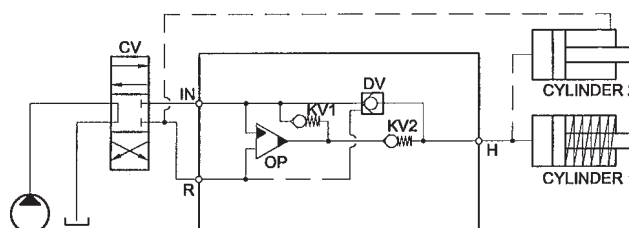


Dimensions

Functions

The basic operation is illustrated in the function diagram. Oil is fed through the directional valve CV to the IN port, flowing freely through the check valves KV1, KV2 and DV to the high pressure side H. In this condition maximum flow through the booster is achieved giving a fast forward function.

When pump pressure is reached on the high pressure side H, valves KV1, KV2 and DV will close. The end pressure will be achieved by the oscillating pump unit OP. The unit will automatically stall when end pressure on high pressure side H is reached. If there is a pressure drop on the high pressure side due to consumption or leakage, the OP valve will automatically operate to maintain the end pressure.



Function Diagram

Ordering a HC6

Model	Intensification, i	Dump Valve	Connections
HC6	see flow rate table	A = (no)	1
		B = (yes)	2

Ordering example of a HC6 with $i = 4.0$,
DV incorporated and BSP connections:
HC6 - 4.0 - B - 1

Connection	IN,R	H
1	3/8" BSP	1/2" BSP
2	9/16-18 UNF	3/4-16 UNF

The HC8 miniBOOSTER



Description

The HC8 was developed for applications where intensified pressure up to 2,000 bar are required. Operating like the HC2, the HC8 is a unique, self contained device which boosts inlet pressure by up to a 20:1 ratio without the use of external power. In addition, the HC8 maintains high pressure by automatically compensating for consumption of oil on the high pressure side. High pressure is directly proportional to inlet pressure. The HC8 is compact in size. The HC8 works at inlet pressure from 20 to 200 bar. On standard versions maximum outlet pressure is 2,000 bar. Higher pressure is available on special request.

Inlet pressure

Inlet pressure 20-200 bar

Outlet pressure

2.000 bar maximum

Return pressure to tank

P_{Return} as low as possible

Intensification ratios

Outlet pressure $P_H = (P_{IN} - P_{Return}) \times i$ (Intensification)

Number of intensifications

4 intensifications

Mounting

Inline tube

Accessories

Pilot operated dump valve incorporated

Pressure gauge/transducer connection available

Flow rates

Intensification factor i	Max. outlet flow l/min	Max. inlet flow l/min
6.6	1.3	13.0
9.0	0.9	13.0
13.0	0.6	12.0
20.0	0.3	12.0

Max. tightening torque BSP

	IN/R 1/4" BSP
with steel washer	4.0 da/Nm
with aluminium washer	3.0 da/Nm
with cutting edge	4.0 da/Nm

Max. tightening torque UNF

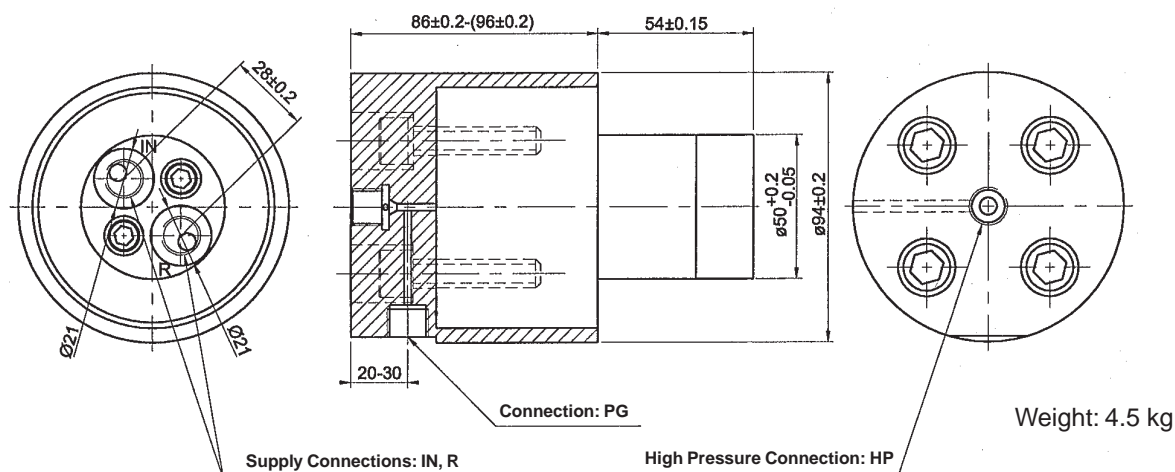
	IN/R 7/16-18" UNF
with o-ring	2.0 da/Nm

High pressure plate

Ordering Code	HP-Connection	PG-Connection
8-281	1/2" BSP	None
8-282	3/4" BSP	None
8-283	M16 x 1.5	None
8-284	1/4" BSP	None
8-285	1/4" BSP	9/16-18 UNF
8-286	3/4" BSP	9/16-18 UNF
8-287	1/4" BSP	9/16-18 UNF
8-288	9/16-18 UNF	9/16-18 UNF
8-289	1/4" BSP	M14 x 1.5
8-290	1/4" BSP	M16 x 1.5
8-291	1/4" BSP	M15 x 1.0
8-292	M16 x 1.5	M16 x 1.5
8-293	1/2" BSP	None
8-294	M16 x 1.5	M16 x 1.5 9/16-18 UNF

The HC8 miniBOOSTER

Dimensions

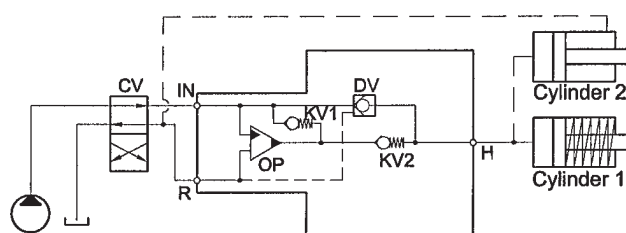


Dimensions

Functions

The basic operation is illustrated in the function diagram. Oil is fed through the directional valve CV to the IN port, flowing freely through the check valves KV1, KV2 and DV to the high pressure side H. In this condition maximum flow through the booster is achieved giving a fast forward function.

When pump pressure is reached on the high pressure side H, valves KV1, KV2 and DV will close. The end pressure will be achieved by the oscillating pump unit OP. The unit will automatically stall when end pressure on high pressure side H is reached. If there is a pressure drop on the high pressure side due to consumption or leakage, the OP valve will automatically operate to maintain the end pressure.



Function Diagram

Ordering a HC8

Model	Intensification, i	Dump Valve	Connections
HC8	see flow rate table	B = (yes)	1
			2

Ordering example of a HC8 with $i = 13.0$,
DV incorporated and BSP connections:
HC8 - 13.0 - B - 1

Connection	IN,R
1	1/4" BSP
2	7/16-20 UNF

You need also a high pressure plate - see page 20
Other high pressure connections on request.

Accessories

Ordering a Manifold Adapter Kit

This connector plate kit provides a convenient method for mounting the miniBOOSTER to a manifold block.

Model	Kit	Connections
<input type="text"/>	<input type="text" value="Kit"/>	<input type="text"/>
<input type="text" value="HC1"/>		<input type="text" value="1= BSP"/>
<input type="text" value="HC2"/>		<input type="text" value="2= UNF"/>
<input type="text" value="HC4"/>		
<input type="text" value="HC5"/>		
<input type="text" value="HC6"/>		
<input type="text" value="HC8"/>		



Ordering example: HC2 – KIT – 1

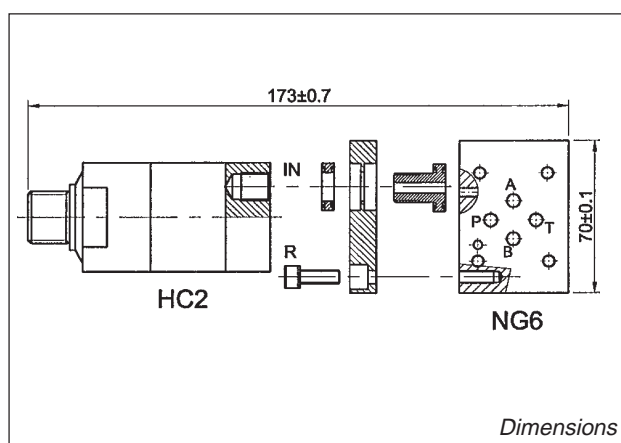
Ordering a NG6 Adapter plate according to form A6, DIN 24340

An NG6 adapter plate is available for situations where it is required to develop the full 800 bar pressure capability of the HC2.

Model	NG6	Connections
<input type="text" value="HC2"/>	<input type="text" value="NG6"/>	<input type="text"/>
		<input bsp"="" type="text" value="1 = 1/4"/>
		<input type="text" value="2 = 7/16-20 UNF"/>



Ordering example: HC2 – NG6 – 2



Accessories

Ordering a Valve house

The CV1 is a cartridge style directional valve which can be directly mounted to the HC2. It is made for use with cartridges conforming to the C-10-4 standard. Both manual and solenoid operated valves are available.

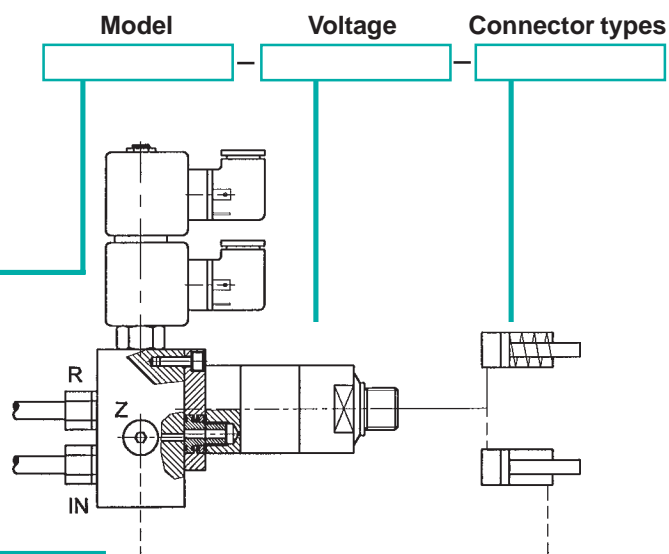
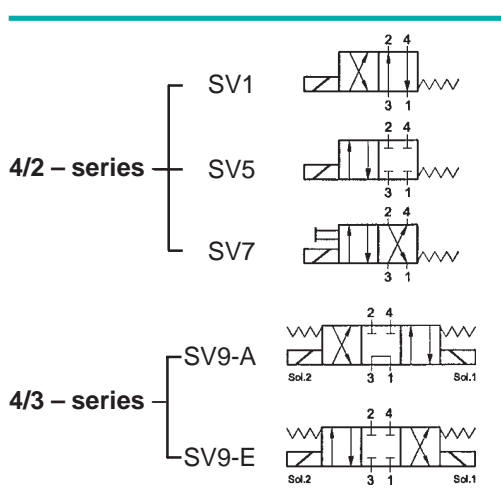
Model	Kit	Connections
HC2	CV1	
		1 = 1/4" BSP
		2 = 7/16 - 20 UNF

Ordering example: HC2-CV1-1



Valve house

Ordering a Solenoid Cartridge Valve



	Voltage rating	Amps	Lead color
00D	No coil	—	—
12D	12VDC	1.5	Red
24D	24VDC	0.75	Black
36D	36VDC	0.5	Blue
24A	24VAC, 60/50 Hz	0.75	Orange
115A	115VAC, 60/50 Hz	0.16	Yellow
230A	230VAC, 60/50 Hz	0.08	Red/White


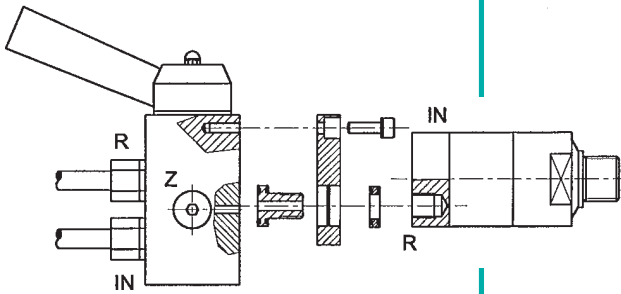
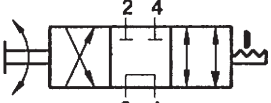
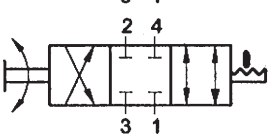
Connector Types

G	ISO 4400 (DIN 43650) connector.
P	1/2" NPT conduit port, with leadwire.
Q	Spade terminal (option for DC voltage only)
W	Leadwire (option for DC and 24VAC only)

Ordering example: SV9-A – 24D – G

Accessories

Ordering a Manual Cartridge Valve

		Model	Operation
4/2-series — MRV4/2			
4/3-series —	MRV4 		
	MRV5 		
Operation D Lever (3-position detent) E Ball lever (3-position detent)			

Ordering example: MRV4 – D

Ordering a HC3 Top plate

HC3 Top connects P → A and T → B on a HC3 miniBOOSTER or on a NG6 Adapter Plate.

Model no.	Description
HC3-Top	HC3 Top plate



Accessories

Hydraulic in-line filters

The hydraulic in-line filter provides protection in hydraulic systems up to 200 bar. Fitted on the pressure side of a pump it will protect the system and its control valves down to 10 microns. The sintered bronze element will not collapse, should foreign matter accumulate and increase pressure drop across the element.

The unique construction features an anodized aluminium housing for light weight, and a conically shaped sintered bronze element positioned by a retaining spring to allow true, uninterrupted axial flow. The standard 10 micron bronze filter element can be easily cleaned or replaced.

Maximum operating pressure: 200 bar

Operating temperatures: 0°C to 100°C



Hydraulic in-line filters

Ordering hydraulic in-line filters

Ordering code	BSP	Overall length	Dia	Wt kg	Element and seal
F-9052-S11	1/4"	81 mm	39 mm	0.19	EK9052
F-9053-S11	3/8"	81 mm	39 mm	0.19	EK9052

Hydraulic in-line filters TEE-TYPE

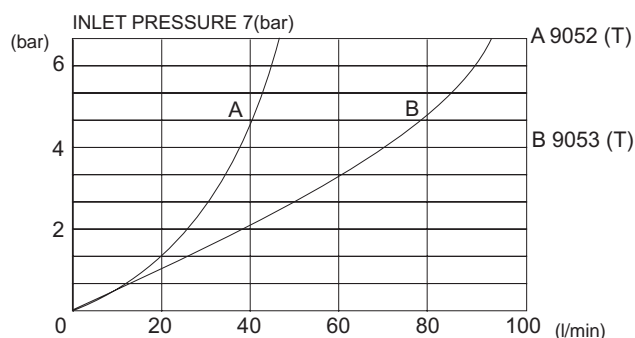
This in-line filter provides protection in hydraulic systems up to 350 bar. It is similar in design and performance to filter models 9052 and 9053 with the added advantage of an element that can be removed for cleaning or replacement without breaking line connections. This is achieved by unscrewing the filter access cap.

The anodized aluminium housing is lightweight. Porting is 1/4", 3/8" BSP. The standard bronze element filter is 10 micron.

Maximum operating pressure : 350 bar

Operating temperatures: 0°C to 100°C

Differential pressure vs. flow



Hydraulic oil mil H 5606

Oil temp. 40°C

Flow characteristics for Hydraulic inline filters 9052(T), 9053(T)

Ordering Hydraulic in-line filters TEE-TYPE

Ordering code	BSP	Overall length	Dia.	Wt kg	Element and seal
F-9052T-S11	1/4"	81 mm	54 mm	0.42	EK9052
F-9053T-S11	3/8"	81 mm	54 mm	0.42	EK9052

Ordering filter kit 10 µm for all types

Ordering code: EK9052-10

Ordering adapters up to max. 400 bar

Model no.	Description
030136-02-02	1/8" BSP × 1/8" BSP adapter
400-820-4490	1/8" BSP bonded seal
030136-04-04	1/4" BSP × 1/4" BSP adapter
400-821-4490	1/4" BSP bonded seal
030136-06-06	3/8" BSP × 3/8" BSP adapter
400-823-4490	3/8" BSP bonded seal
030136-08-08	1/2" BSP × 1/2" BSP adapter
400-825-4490	1/2" BSP bonded seal

Ordering adapters up to max. 1.000 bar

Model no.	Description
2-816	1/4" BSP - HF4 adapter
2-817	7/16-20 UNF - HF4 adapter
10-115-1202	1/4" BSP female coupling
10-115-6202	1/4" BSP female nipple
19-950-1621	1/4" BSP × 1/4" BSPT adapter
19-950-1622	1/4" BSP × 1/4" BSP adapter

Ordering adapters up to max. 1.500 bar

Model no.	Description
10-116-1202	1/4" BSP female coupling
10-116-6202	1/4" BSP female nipple

Ordering adapters up to max. 2.000 bar

Model no.	Description
10-125-1202	1/4" BSP w.cone female coupling
10-125-6202	1/4" BSP w.cone female nipple
19-950-0029	1/4" BSP w.cone × 9/16-18 UNF adapter
19-950-0061	1/8" BSP bonded seal
19-950-0062	1/4" BSP bonded seal

Ordering adapters up to max. 3.000 bar

Model no.	Description
10-135-1505	M16 × 1,5 w.cone female coupling
10-135-6505	M16 × 1,5 w.cone female nipple
19-950-1601	1/4" BSP × 1/4" BSP adapter w.cones
19-950-1602	1/4" BSP w.cone × 1/4" BSP adapter
19-950-1612	M16 × 1,5 × M16 × 1,5 adapter w.cones



Ordering HF4 adapters up to max. 4.000 bar

Model no.	Description
HC8-HF4	Gauge connection kit
8-820	60C4-316 collar
8-821	60G4-316 gland
8-822	60N442-316 nipple
8-823	60P4 plug
8-824	Needle valve max. 2.000 bar
8-825	Needle valve max. 4.000 bar
8-840	M14 × 1,5 transducer for max. 1.800 bar
8-841	Gauge 0 - 2.000 bar
8-842	Gauge 0 - 2.500 bar

Ordering nuts and brackets

2-673	M24 nut
2-674	Mounting bracket for HC1 & HC2



Application examples



Hydraulic Workholding



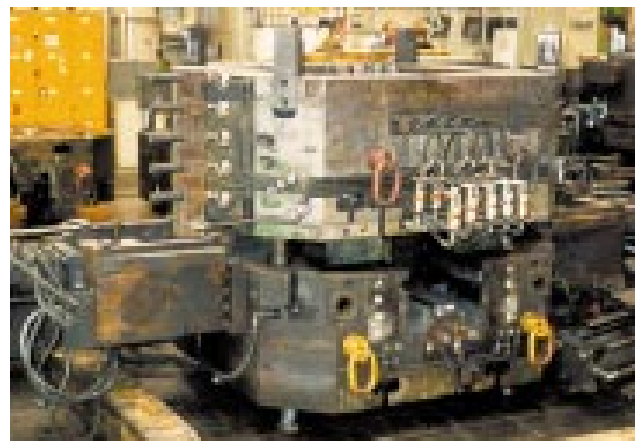
Demolition Tools



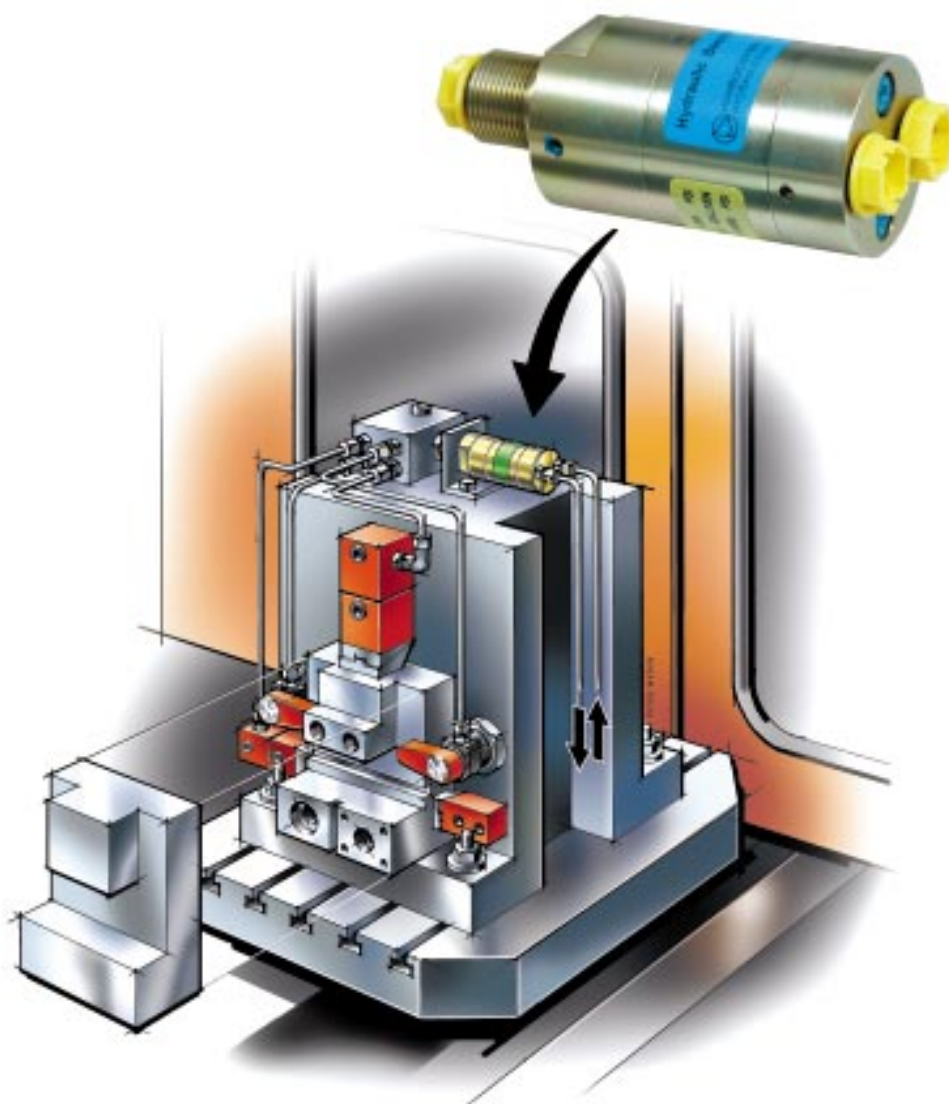
Hydraulic Power Unit



Subsea & Nuclear R.O.V.'s

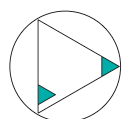


Hydraulic Pressure Die Casting



miniBOOSTER for workholding on pallets

Authorized distributor:



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