

## Intensifier System M- HC-013



### Key features

- ▶ Automatic activated (sequence valve)
- ▶ High pressure – up to 700 bar (10,000 psi)
- ▶ Fast fill – system flows up to 400 l/ min
- ▶ Extended service life
- ▶ Robust design
- ▶ Flexible design– several boosters / intensification ratios
- ▶ Switch from by- pass to intensified flow
- ▶ Max inlet pressure = 345 bar
- ▶ Adjustable outlet pressure

### Description

The M- HC-013 In- line Intensifier System is designed to boost the hydraulic pressure from the pump to the workload. It operates only when needed, to save energy.

The system is dynamical by means of being able to provide flow at high pressure for intermittent use (< 10 min duty cycle).

The function of the system is simple, but smart. The hydraulic oil is by- passed directly from the pump to the workload at maximum flow when back pressure from the workload has reached a set point close to the maximum pressure of pump.

A sequence valve opens and directs the oil to the booster, which makes the pressure rise. The shift between maximum pump pressure and high pressure happens without intervention from the user and ensures that the workload at all times will be driven at a maximum speed in relation to the required high pressure.

A relief valve is installed to control the maximum allowable pressure the system can output, allowing the booster to go for a higher end pressure producing flow at the decided pressure.

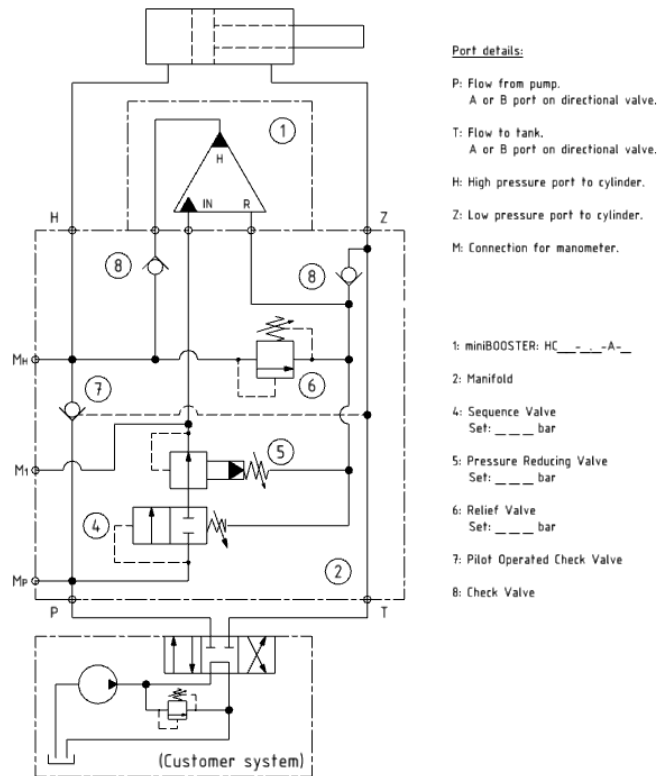
### Easy installation

The M- HC-013 is provided with four mounting holes for through bolt installation. The four connection ports are placed logically in pairs and in line of each other on the HIC block. All surfaces are electroplated for good protection and fine surface finish.

### Typical Applications

Mobile attachments (motors - steering systems - cutters - crushers - shears), off highway equipment, injection molding machines and hydraulic presses. Applicable to machines with insufficient pump capacity to prevent machine stoppage when peak pressures occur.

## Function diagram




013-01



Download PDF file: [013-01.\\_Function\\_diagram](#)

## Connection types

Connection	P / T	H / Z
1	1/2" BSPP	1/2" BSPP
2	3/4-16" UNF	3/4-16" UNF
F	Flange mounting	 HV-399-02 Detail drawing

## Max. tightening torque BSPP

	P / T	H / Z
	1/2" BSPP	1/2" BSPP
with steel washer	13.0 da/ Nm	13.0 da/ Nm
with aluminium washer	7.0 da/ Nm	–
with cutting edge	13.0 da/ Nm	13.0 da/ Nm




















## Max. tightening torque UNF

	P / T	H / Z
	3/4-16" UNF	3/4-16" UNF
with o- ring	3.5 da/ Nm	6.0 da/ Nm

## Fluids and materials

Please see: General Specifications

## Ordering a M- HC-013

Type	Connection	Bypass flow	Max. pressure	Weight	Dimension drawing PDF
M- HC2D-013-1K	Tube: 1 = BSPP 2 = UNF	100 l/ min	500 bar	12.2 kg	 M- HC2D-013-1K
M- HC3-013-1K		100 l/ min	500 bar	10.7 kg	 M- HC3-013-1K
M- HC6D-013-1K		100 l/ min	500 bar	32.7 kg	 M- HC6D-013-1K
M- HC6D-013-1K400		400 l/ min	500 bar	48.0 kg	 M- HC6D-013-1K400
M- HC2D-013- FK	F = Flange	100 l/ min	500 bar	10.2 kg	 M- HC2D-013- FK
M- HC3-013- FK		100 l/ min	500 bar	8.7 kg	 M- HC3-013- FK
M- HC2D-013-1L55	Tube: 1 = BSPP 2 = UNF	55 l/ min	700 bar	12.2 kg	 M- HC2D-013-1L
M- HC2D-013-1L100		100 l/ min	700 bar	12.2 kg	 M- HC2D-013-1L100
M- HC3-013-1L55		55 l/ min	700 bar	10.7 kg	 M- HC3-013-1L
M- HC3-013-1L100		100 l/ min	700 bar	10.7 kg	 M- HC3-013-1L100
M- HC6D-013-1L55		55 l/ min	700 bar	32.7 kg	 M- HC6D-013-1L
M- HC6D-013-1L100		100 l/ min	700 bar	32.7 kg	 M- HC6D-013-1L100
M- HC6D-013-1L200		200 l/ min	700 bar	48.0 kg	 M- HC6D-013-1L200
M- HC6D-013-1L400		400 l/ min	700 bar	48.0 kg	 M- HC6D-013-1L400
M- HC2D-013- FL55	F = Flange	55 l/ min	700 bar	10.2 kg	 M- HC2D-013- FL
M- HC2D-013- FL100		100 l/ min	700 bar	10.2 kg	 M- HC2D-013- FL100
M- HC3-013- FL55		55 l/ min	700 bar	8.7 kg	 M- HC3-013- FL
M- HC3-013- FL100		100 l/ min	700 bar	8.7 kg	 M- HC3-013- FL100
M- HC6D-013- FL100		100 l/ min	700 bar	32.7 kg	 M- HC6D-013- FL100
M- HC6D-013- FL200		200 l/ min	700 bar		
M- HC6D-013- FL400		400 l/ min	700 bar		

## Intensification factors

HC2D	HC3	HC6D
1,6	1,5	1,5
1,9	2,0	2,0
2,2	2,8	2,5
2,6	3,2	3,3
3,2	4,0	4,0
4,0	5,0	4,9
5,0	6,6	6,3
6,6	9,0	8,2
9,0		

The intensification factor depends on available inlet and desired outlet pressure. To calculate the initial factor, please use the following formular:

$i = \text{Desired high pressure} / \text{Pump pressure}$

Desired pressure: **500 bar**

Pump pressure: **200 bar**

$i = 500 / 200 = 2.5$

**For static use:** Please select an intensification factor higher or equal to the calculated value. In this case  $i = 2.8$  with HC3 booster. The desired pressure of 500 bar is finally adjusted with the HP relief valve.

**For dynamic use:** Please select an intensification factor 60% higher than the calculated value. In this case  $i = 500 / 200 = 2.5 + 60\% = 4.0$   
The desired pressure of 500 bar is finally adjusted with the HP relief valve.

Adjust the pressure- reducing valve to reach a pressure 40% higher than the settings at the relief valve. In this case  $500 + 40\% = 700$  bar.

## Ordering example

### Static use

Ordering example of an M- HC-013- \_ for 500 bar, connection tube BSPP with  $i = 2.8$ ;

M- HC3-013-1K mounted with HC3-2.8- A- D

Also specify valve pre- settings pos. 4, 5 and 6, see [013-01.\\_Function\\_diagram](#)

### Dynamic use

Ordering example of a M- HC-013- \_ for 500 bar, connection tube BSPP with  $i = 4.0$ ;

M- HC3-013-1K mounted with HC3-4.0- A- D

Also specify valve pre- settings pos. 4, 5 and 6, see [013-01.\\_Function\\_diagram](#)