

Qty.	Description
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1	Hydro MPC-E 2 CRIE 15-3
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Product No.: [99166912](#)

Pressure booster system supplied as compact assembly according to DIN standard 1988/T5.

All pumps are speed-controlled.

From 0.37 to 11 kW, the booster system is equipped with CR, CRE, CRI, CRIE pumps with electronically commutated permanent-magnet motors with extremely high efficiency. The total efficiency of the motor including the frequency converter applies to IE5 level in IEC60034-31.

From 15 to 22 kW, the booster system is equipped with CR, CRE, CRI, CRIE pumps with motors with integrated frequency control. The total efficiency of the motor including the frequency converter is better than the IE3 level in IEC60034-31, even though this standard only applies to the motor.

- \* Hydro MPC-E maintains a constant pressure through continuous adjustment of the speed of the pumps.
- \* The system performance is adapted to the demand through cutting in/out the required number of pumps and through parallel control of the pumps in operation.
- \* Pump changeover is automatic and depends on load, time and fault.

The system consists of these parts:

:vertical, multistage, centrifugal pumps, type CRIE 15-3

- \* Pump parts in contact with the pumped liquid are made of stainless steel EN DIN 1.4301
- \* Pump bases and heads are of either cast iron/stainless steel (CRI) or cast iron EN-GJS-500-7 (CR), depending on pump type; other vital parts are made of stainless steel EN DIN 1.4301
- \* The pumps are equipped with a service-friendly cartridge shaft seal, HQQE (SiC/SiC/EPDM)
- \* Two stainless steel manifolds to EN DIN 1.4571
- \* Stainless steel base frame to EN DIN 1.4301 up to CR 64. Above CR 64 the pumps are placed on a galvanized C-profile frame
- \* One non-return valve (POM) and two isolating valves for each pump
- \* Non-return valves are certified according to DVGW, isolating valves according to DIN and DVGW
- \* Adapter with isolating valve for connection of diaphragm tank
- \* Pressure gauge and pressure transmitter (analog output 4-20 mA)
- \* Control MPC in a steel cabinet, IP54, including main switch, all required fuses, motor protection, switching equipment and microprocessor-controlled CU 352.

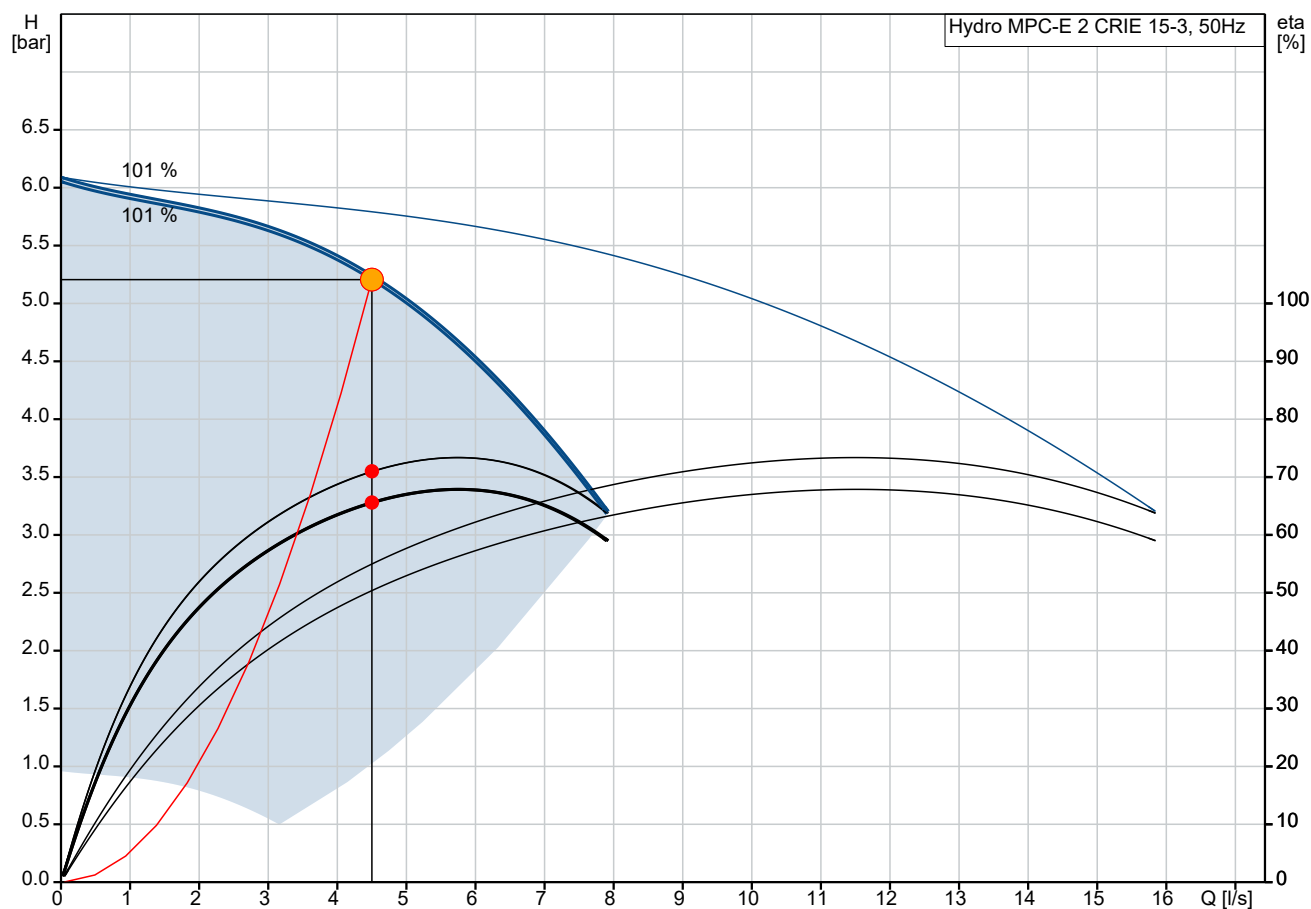
Dry-running protection and diaphragm tank are available according to the list of accessories.

Pump operation is controlled by Control MPC with the following functions:

- \* Intelligent multipump controller, CU 352.
- Constant-pressure control through continuously variable adjustment of the speed of each individual pump.
- PID controller with adjustable PI parameters ( $K_p + T_i$ ).
- Constant pressure at setpoint, independent of inlet pressure.
- Soft pressure build-up (To prevent water hammer during startup).
- On/off operation at low flow.
- Automatic cascade control of pumps for optimum efficiency.
- Selection of min. time between start/stop, automatic pump changeover and pump priority.
- Automatic pump test function to prevent idle pumps from seizing up.

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1	<p>                     Possibility of standby pump allocation.                      Possibility of backup sensor (redundant primary sensor).                      Secondary sensor (Possible to switch to another sensor/setpoint).                      Multi-sensor (up to 6 sensors to influence the setpoint).                      Manual operation.                      Possibility of external setpoint influence.                      Log function.                      Setpoint ramp.                      Possibility of digital remote-control functions:                      System on/off.                      Max., min. or user-defined duty.                      Up to 6 alternative setpoints.                      Digital inputs and outputs can be configured individually.                      Pump and system monitoring functions:                      Minimum and maximum limits of current value.                      Inlet pressure.                      Non-return valve monitoring.                      Motor protection.                      Sensors and cables monitored for malfunction.                      Alarm log with the previous 24 warnings/alarms.                      Display and indication functions:                      Colour screen display.                      Green indicator light for operating indications and red indicator light for fault indications                      Potential-free changeover contacts for operation and fault.                      Grundfos bus communication.                 </p> <p>It is possible to add CIM communication modules for communicating with Scada/BMS.</p> <p>Pumps, piping, cabling complete as well as Control MPC are mounted on the base frame. The booster system has been preset and tested.</p> <p>There are options to upgrade the pressure boosting system.</p> <table> <tr> <td>Flow media:</td><td>Agua</td></tr> <tr> <td>Allowed liquid temp.:</td><td>5 °C .. 60 °C</td></tr> <tr> <td>System pressure max.:</td><td>16 bar</td></tr> <tr> <td>Flow (Plant):</td><td>15.78 l/s</td></tr> <tr> <td>Flow (Pump):</td><td>4.5 l/s</td></tr> <tr> <td>Head:</td><td>5.2 bar</td></tr> <tr> <td>Nom. current of plant:</td><td>16 A</td></tr> <tr> <td>Nominal power:</td><td>4 kW</td></tr> <tr> <td>Net weight:</td><td>205 kg</td></tr> </table>	Flow media:	Agua	Allowed liquid temp.:	5 °C .. 60 °C	System pressure max.:	16 bar	Flow (Plant):	15.78 l/s	Flow (Pump):	4.5 l/s	Head:	5.2 bar	Nom. current of plant:	16 A	Nominal power:	4 kW	Net weight:	205 kg
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## 99166912 Hydro MPC-E 2 CRIE 15-3 50 Hz



Losses in fittings and valves not included

H = 5.2 bar

Pumped liquid = Agua

Density = 998.2 kg/m<sup>3</sup>

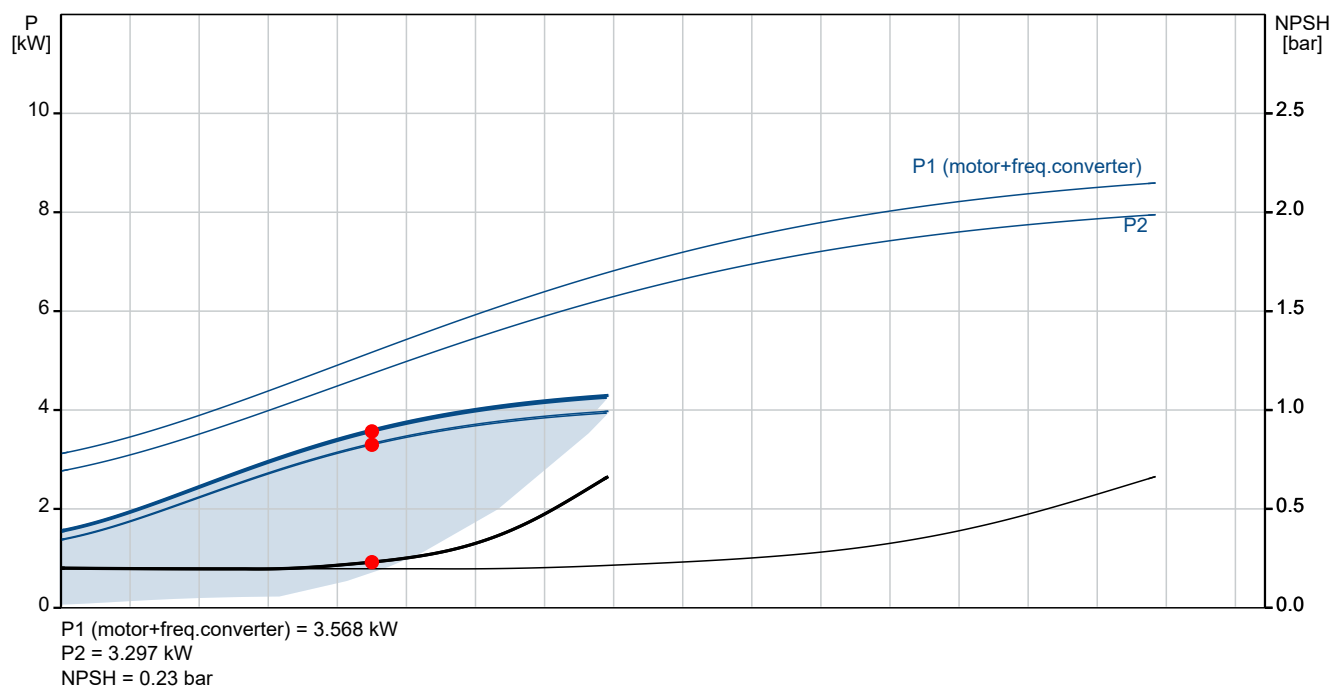
Eta pump+motor+freq.converter = 65.6 %

Q = 4.5 l/s

n = 101 % / 3629 rpm

Liquid temperature during operation = 20 °C

Eta pump = 71 %



P1 (motor+freq.converter) = 3.568 kW

P2 = 3.297 kW

NPSH = 0.23 bar

Description	Value
<b>General information:</b>	
Product name:	Hydro MPC-E 2 CRIE 15-3
Product No:	99166912
EAN number:	5712607971878
Price:	EUR 32617
<b>Technical:</b>	
Actual calculated flow:	4.5 l/s
Max flow:	15.78 l/s
Resulting head of the pump:	5.2 bar
Head max:	6.02 bar
Main pump name:	CRIE 15-3
Main pump No:	99071547
Number of pumps:	2
<b>Materials:</b>	
Manifolds:	EN/DIN 1.4571/ AISI 316 Ti
<b>Installation:</b>	
Range of ambient temperature:	5 .. 40 °C
Maximum operating pressure:	16 bar
Manifold inlet:	DN80
Manifold outlet:	DN80
Pressure rating:	PN 16
Earth connection:	PE
System design:	A
<b>Liquid:</b>	
Pumped liquid:	Agua
Liquid temperature range:	5 .. 60 °C
Selected liquid temperature:	20 °C
Density:	998.2 kg/m <sup>3</sup>
Kinematic viscosity:	1 mm <sup>2</sup> /s
<b>Electrical data:</b>	
Power (P2) main pump:	4 kW
Mains frequency:	50 / 60 Hz
Rated voltage:	3 x 380-415 V
Rated current of system:	16 A
Start. method:	Variable frequency drives
Enclosure class (IEC 34-5):	IP54
Radio interference supression:	EMC DIRECTIVE(2014/30/EU)
Number of phases of main pump:	3
<b>Controls:</b>	
Control type:	E
Dry running protection, mechanical:	NONE
<b>Tank:</b>	
Diaphragm tank:	No
<b>Others:</b>	
Net weight:	205 kg
Gross weight:	248 kg
Config. file no:	98272347
Config.file Control MPC:	98271946
Config.file Hydro MPC:	98272018
Country of origin:	DE
Custom tariff no.:	84137075

