

BoosterpaQ[®] Hydro MPC

Booster sets with 2 to 6 pumps

60 Hz



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1. Product data

Introduction

Grundfos Hydro MPC booster sets are designed for transfer and pressure boosting of clean water in

- waterworks
- apartment buildings & hotels
- irrigation
- industry
- hospitals
- schools.

As standard, Hydro MPC booster sets consist of two to six CR(E) pumps connected in parallel and mounted on a base frame provided with a control cabinet and all the necessary fittings.

Most of the booster sets are available with either CR pumps and/or CRE pumps. For further information, see page 5.

The pumps of the booster set can be removed without interfering with the pipework on either side of the manifolds. Consequently, even on the largest booster sets, service can be performed by a single person with a forklift truck or a crane.

Hydro MPC booster sets are divided into seven groups based on control variants. For further information, see "Product range" on page 5 and "Overview of variants" on page 13.

Hydro MPC-E

Booster sets with two to six CRE pumps. The terminology CRE means CR pump that includes an integrated variable frequency drive(VFD)/motor with sizes from 1 to 10 HP.

Hydro MPC-E (CUE)

Booster sets with two to six CR pumps, each connected to external CUE VFD.

Hydro MPC-F

Booster sets with two to six CR pumps connected to one external VFD.

The speed-controlled operation alternates between the pumps of the booster set.

Hydro MPC-S

Booster sets with two to six constant speed CR pumps.

Why select a booster set with electronically speed-controlled motors?

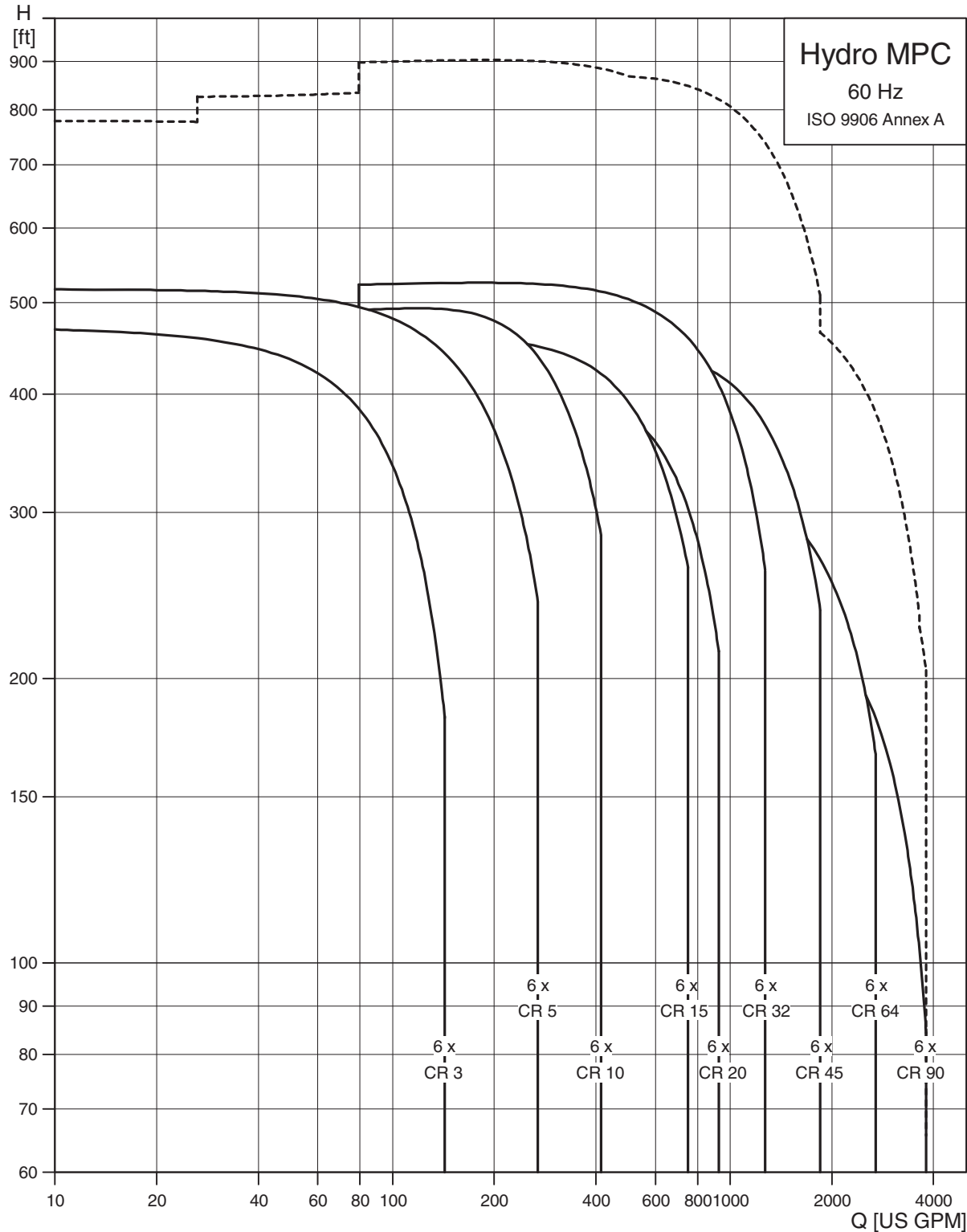
Select a Hydro MPC booster set when

- controlled operation is required, i.e. consumption fluctuates
- constant pressure is required
- control and monitoring of the performance is required.

Adjustment of performance offers obvious advantages:

- Improved comfort thanks to reduced noise emission, constant pressure control
- Reduced water hammer effect (only electronically speed-controlled pumps)
- Reduced maintenance costs.

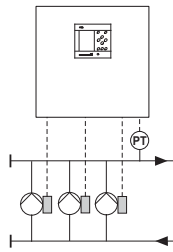
Performance range



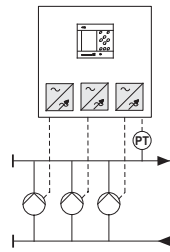
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Note: The area within the dotted line applies to Hydro MPC booster sets available on request. The performance range is based on the standard range of the CR and CRI pumps.

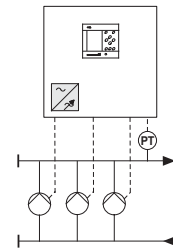
Product range



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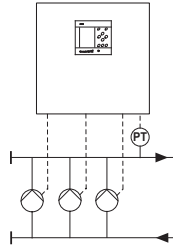
Variant	Hydro MPC-E	Hydro MPC-E (CUE)	Hydro MPC-F
Hydraulic data			
Max. head [ft]	536	536	536
Flow rate [gpm]	0 - 2400	0 - 3600	0 - 3600
Liquid temperature [° F]	32 to 158	32 to 158	32 to 158
Max. operating pressure [psi]	232 ¹⁾	232 ¹⁾	232 ¹⁾
Motor data			
Number of pumps	2 - 6	2 - 6	2 - 6
Motor power [HP]	1 - 10	2 - 60	2 - 60
Shaft seal			
KUHE (TC/C-TC/EPDM)	● ²⁾	● ²⁾	● ²⁾
HQQE (SiC/SiC/EPDM)	● ²⁾	● ²⁾	● ²⁾
Materials			
CR Pumps: Cast iron and stainless steel AISI 304	●	●	●
CRI Pumps: Stainless steel AISI 304	○	○	○
CRN Pumps: Stainless steel AISI 316	○	○	○
Manifold: Stainless steel	●	●	●
Functions			
Constant pressure control	●	●	●
Automatic cascade control	●	●	●
Pump changeover/alternation	●	●	●
GENIbus communication (external)	○	○	○
Integrated variable frequency drive (VFD)/motor (on pump)	●	-	-
External VFD (in cabinet)	-	●	●

● Available as standard.

○ Available on request.

1) Booster sets with a maximum operating pressure higher than 232 psi are available on request.

2) Standard shaft seal for CR 5 - CR 20 is HQQE. Standard shaft seal for CR 32 - CR 90 is KUHE.



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Variant	Hydro MPC-S
Hydraulic data	
Max. head [ft]	155
Flow rate [gpm]	0 - 3600
Liquid temperature [° F]	32 to 158
Max. operating pressure [psi]	232 ¹⁾
Motor data	
Number of pumps	2 - 6
Motor power [HP]	1 - 60
Shaft seal	
KUHE (TC/C-TC/EPDM)	● ²⁾
HQQE (SiC/SiC/EPDM)	● ²⁾
Materials	
CR Pumps: Cast iron and stainless steel AISI 304	●
CRI Pumps: Stainless steel AISI 304	○
CRN Pumps: Stainless steel AISI 316	○
Manifold: Stainless steel	●
Functions	
Constant pressure control	● ³⁾
Automatic cascade control	●
Pump changeover/alternation	●
GENIbus communication (external)	○
Integrated VFD/motor (on pump)	-
External VFD (in cabinet)	-

● Available as standard.

○ Available on request.

1) Booster sets with a maximum operating pressure higher than 232 psi are available on request.

2) Standard shaft seal for CR 5 - CR 20 is HQQE. Standard shaft seal for CR 32 - CR 90 is KUHE.

3) The pressure will range between H_{set} and H_{stop} . For further information, see page 14.

Type key

Example	Hydro MPC	-E	/	/NS	2 CRE 10-3	3x460 V, PE, 60Hz
Type range						
Subgroups: Pumps with integrated variable frequency drive (VFD): -E, -ED, -ES Pumps with external VFD: -EF, -EDF, -F Mains-operated pumps (start/stop): -S						
Manifold material: : Stainless steel						
Suction manifold: : with suction manifold /NS : without suction manifold						
Number of pumps with integrated VFD/motor and pump type						
Supply voltage, frequency						

Operating conditions

Operating pressure

As standard, the maximum operating pressure is 232 psi.

On request, Grundfos offers Hydro MPC booster sets with a higher maximum operating pressure.

Temperature

Liquid temperature: 32 °F to 158 °F

Ambient temperature: 32 °F to 104 °F.

On request, Grundfos offers Hydro MPC booster sets with a higher maximum temperature range.

Relative humidity

Max. relative humidity: 95 %.

2. Construction

Pump

CR pumps are non-self-priming, vertical multistage centrifugal pumps.

Each pump consists of a base and a pump head. The chamber stack and outer sleeve are secured between the pump head and the base by means of staybolts. The base has suction and discharge ports on the same level (in-line) and of the same port size.

CRE pumps are based on CR pumps. The difference between the CR and CRE pump range is the motor. CRE pumps are fitted with a Grundfos MLE motor that includes an integrated variable frequency drive (VFD).

For further information, see the CR Product Guide literature number L-CR-PG-001. The Product Guide is available in WebCAPS on www.grundfos.com, see page 81.

For information about the pump's position in the booster set, see fig. 4 on page 10.

Shaft seal

All pumps are equipped with a maintenance-free mechanical cartridge type shaft seal.

The standard shaft seal for pump sizes CR 3, CR 5, CR 10, CR 15, and CR 20 is a HQQE. Seal faces of the HQQE shaft seal are silicon carbide/silicon carbide with rubber parts of EPDM. The standard shaft seal for pump sizes CR 32, CR 45, CR 64, and CR 90 is a KUHE. Seal faces of the KUHE shaft seal are tungsten carbide/carbon with embedded tungsten carbide with rubber parts of EPDM.

Note: Other shaft seal variants are available on request.



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Fig. 1 Cartridge shaft seal, HQQE shown above

The shaft seal can be replaced without dismantling the pump. The shaft seal of pumps with motors of 15 Hp and up can be replaced without removing the motor.

For further information, see the product guide titled "Shaft seals" (publication number 96519875) available in WebCAPS on www.grundfos.com; see page 81.

Motor

Grundfos standard motors - ML and Baldor motors

CR pumps are fitted with a Grundfos specified motor. The motors are all heavy-duty 2-pole, NEMA C-face motors. The standard motor for pumps 10 Hp and below, with 3-phase power, is the Grundfos ML motor with a TEFC enclosure. The standard motor for pumps above 10 Hp is a Baldor motor with an ODP enclosure.

Single phase motors are available up to 10 Hp. The standard motor for single phase power is a Baldor motor with a TEFC enclosure.

Integrated frequency-controlled motors - MLE motors

The MLE motors consists of a 2-pole, TEFC rated enclosure, NEMA C-faced motor and an integrated VFD in a NEMA 3R enclosure.

In single phase power, (1 x 208-230 V), Grundfos offers MLE motors from 0.5 HP to 1.5 Hp.

In three phase power, (3 x 208-230 V), Grundfos offers MLE motors from 1.5 HP to 7.5 Hp.

In three phase power, (3 x 460 V), Grundfos offers MLE motors from 1 HP to 10 Hp.

Motors with integrated VFD require no external motor protection. The motor incorporates thermal protection against slow overloading and seizure (IEC 34-11: TP 211).

Optional motors

For special applications or operating conditions, Grundfos offers custom-built motors such as:

- explosion proof motors
- motors with anti-condensation heating unit
- energy efficient and premium efficiency motors
- motors with thermal protection

Manifold

A suction manifold of stainless steel (316 or 316 Ti) is fitted on the suction side of the pumps. An isolating valve is fitted between the suction manifold and the individual pumps. A discharge manifold of stainless steel (316 or 316 Ti) is fitted on the discharge side of the pumps. An isolating valve and a check valve are fitted between the discharge manifold and the individual pumps. For suction lift applications the check valve may be fitted on the suction side on request.

For information about the position of the suction and discharge manifold, see fig. 4 on page 10.

Control panel

The control panel is fitted with all the necessary components. If necessary, Hydro MPC booster sets are fitted with a fan to remove surplus heat generated by the variable frequency drive (VFD).

Control panel variants

The control panel are divided into two groups based on construction:

- Systems with the control panel mounted on the base frame next to the pumps, (solid base).
- Systems with the control panel mounted on a separate base frame, (split base).
The control panel is mounted on its own base frame and therefore suitable for floor mounting near the booster system.

For further information, see fig. 4 on page 10 and the chapter of Technical data for the individual Hydro MPC.

CU 351

CU 351, the control unit of the Hydro MPC, is placed in the door of the control cabinet.



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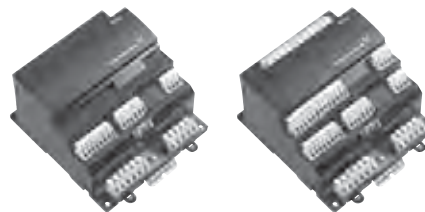
Fig. 2 CU 351

The CU 351 features an LCD display, a number of buttons, and two indicator lights. The control panel enables manual setting and change of parameters such as setpoint.

The CU 351 includes application-optimized software for setting the booster set to the application in question.

IO 351

IO 351 is a module for exchange of digital and analog signals between CU 351 and the remaining electrical system via GENIbus. IO 351 comes in the variants A and B.



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Fig. 3 IO 351A and IO 351B

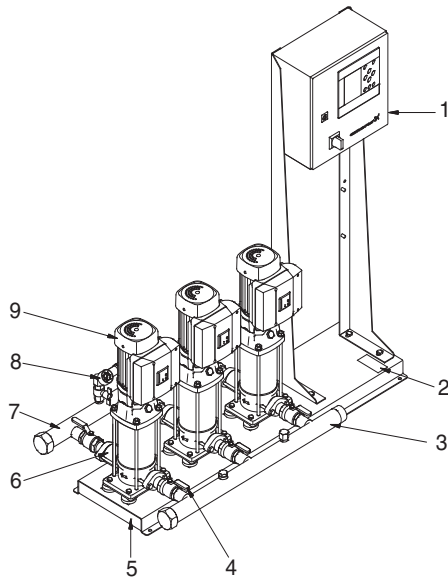
IO 351A

IO 351A is used for one to three Grundfos pumps with fixed speed.

IO 351B

IO 351B is used for one to six Grundfos pumps with fixed speed and/or one to three pumps controlled by external VFD(s). The module can also be used as an input-output module for communication with monitoring equipment or another external equipment.

System components



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Fig. 4 System components

Pos.	Description	Quantity
1	Control panel	1
2	Nameplate	1
3	Suction manifold (316 stainless steel)	1
4	Isolating valve	2 per pump
5	Base frame (304 stainless steel)	1
6	Check valve	1 per pump
7	Discharge manifold (316 stainless steel)	1
8	Pressure transmitter/gauge	1 per manifold
9	Pump	2 - 6

3. Installation

Mechanical installation

Location

The booster set must be installed in a well-ventilated area to ensure sufficient cooling of the control panel and pumps.

Note: Hydro MPC is not designed for outdoor installation and must not be exposed to direct sunlight.

The booster set should be placed with a 3 feet clearance in front and on the two sides for inspection and removal.

Pipework

Arrows on the pump base show the direction of flow of water through the pump.

The pipework connected to the booster set must be of adequate size.

The pipes are connected to the manifolds of the booster set. Either end can be used. Apply sealing compound to the unused end of the manifold and fit the screw cap. For manifolds with flanges, a blanking flange with gasket must be fitted.

To optimize operation and minimize noise and vibration, it may be necessary to consider vibration dampening of the booster set.

Noise and vibration are generated by the rotating components in the motor and pump and by the flow in the pipe and fittings. The effect on the environment is subjective and depends on correct installation and the state of the remaining system.

If booster sets are installed where the first consumer on the line is close to the booster set, it is advisable to fit expansion joints on the suction and discharge pipes to prevent vibration being transmitted through the pipework.

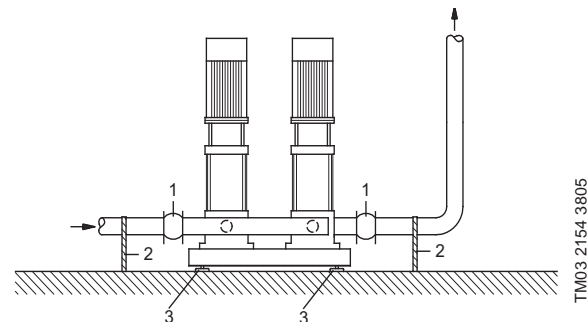


Fig. 5 Schematic view of hydraulic installation

Pos.	Description
1	Expansion joint
2	Pipe support and good location for system isolation valve
3	Machine shoe
4	Discharge pipe isolation valve

Note: Expansion joints, pipe supports and machine shoes shown in the figure above are not supplied with a standard booster set.

All nuts should be tightened prior to startup.

The pipes must be fastened to parts of the building to ensure that they cannot move or be twisted.

Foundation

The booster set should be positioned on an even and solid surface, such as a concrete floor or foundation. If the booster set is not fitted with machine shoes, it must be bolted to the floor or foundation.

Note: As a rule unless protected, the weight of a concrete foundation should be a minimum of 1.5 x the weight of the booster set.

Dampening

To prevent the transmission of vibrations to buildings, it may be necessary to isolate the booster set foundation from building parts by means of vibration dampers.

Determining the correct damper varies from installation to installation, and a wrong damper may increase the vibration level. Vibration dampers should therefore be sized by the supplier of vibration dampers.

If the booster set is installed on a base frame with vibration dampers, expansion joints should always be fitted on the manifolds. This is important to prevent the booster set from “hanging” in the pipework.

Expansion joints

Expansion joints are installed to

- absorb expansions/contractions in the pipework caused by changing liquid temperature
- reduce mechanical strains in connection with pressure surges in the pipework
- isolate mechanical structure-borne noise in the pipework (only rubber bellows expansion joints).

Note: Expansion joints must not be installed to compensate for inaccuracies in the pipework such as center displacement of flanges.

Fit expansion joints at a distance of minimum 1 to 1 1/2 times the nominal flange diameter from the manifold on the suction as well as on the discharge side. This prevents the development of turbulence in the expansion joints, resulting in better suction conditions and a minimum pressure loss on the pressure side. At high water velocities (> 10 ft/s) it is advisable to install larger expansion joints corresponding to the pipework.



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Fig. 6 Examples of rubber bellows expansion joints with and without limit rods

Expansion joints with limit rods can be used to minimize the forces caused by the expansion joints. Expansion joints with limit rods are always recommended for flanges larger than 6 inches.

The pipes should be anchored so that it does not stress the expansion joints and the pump. Follow the supplier's instructions and pass them on to advisers or pipe installers.

Electrical installation

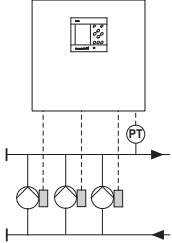
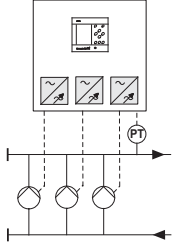
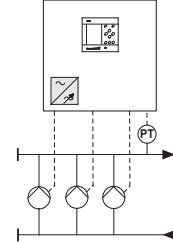
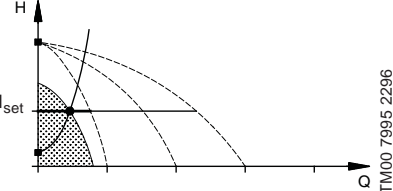
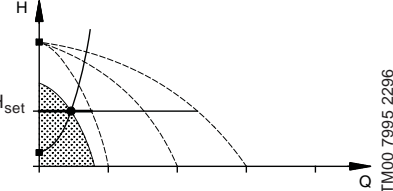
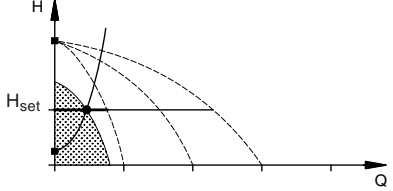
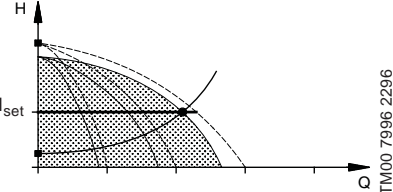
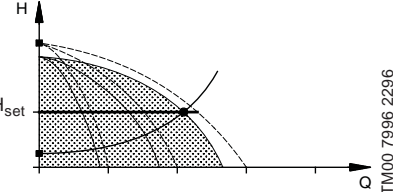
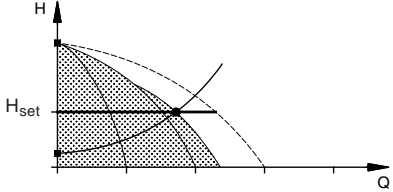
The electrical installation should be carried out by an authorized person in accordance with local regulations.

- The electrical installation of the booster set must be carried out in accordance with enclosure class or panel rating.
- Make sure that the booster set is suitable for the electricity supply to which it is connected.
- Make sure that the wire cross-section corresponds to the specifications in the wiring diagram and panel label - max. amps.

Note: The mains connection should be carried out as shown in the wiring diagram.

4. Functions

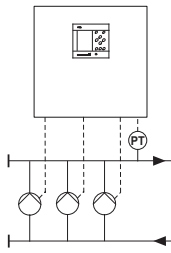
Overview of variants, examples

Booster sets with pumps with integrated variable frequency drive (VFD)	Booster sets with pumps connected to external VFD	
Hydro MPC-E	Hydro MPC-E (CUE)	Hydro MPC-F
<p>Hydro MPC booster set with three CRE pumps.</p>	<p>Hydro MPC booster set with three CR pumps connected to external VFD, in the control panel.</p>	<p>Hydro MPC booster set with three CR pumps. One of the pumps is connected to an external VFD, in the control panel. The speed-controlled operation alternates between the pumps of the Hydro MPC.</p>
 <p style="text-align: right; font-size: small;">TM03 0993 0905</p>	 <p style="text-align: right; font-size: small;">TM03 0995 0905</p>	 <p style="text-align: right; font-size: small;">TM03 1265 1505</p>
<p>One CRE pump in operation.</p>	<p>One CR pump connected to an external VFD in operation.</p>	<p>One CR pump connected to an external VFD in operation.</p>
 <p style="text-align: right; font-size: small;">TM00 7995 2296</p>	 <p style="text-align: right; font-size: small;">TM00 7995 2296</p>	 <p style="text-align: right; font-size: small;">TM00 7995 2296</p>
<p>Three CRE pumps in operation.</p>	<p>Three CR pumps connected to external VFDs in operation.</p>	<p>One CR pump connected to an external VFD and two constant speed CR pumps in operation.</p>
 <p style="text-align: right; font-size: small;">TM00 7996 2296</p>	 <p style="text-align: right; font-size: small;">TM00 7996 2296</p>	 <p style="text-align: right; font-size: small;">TM00 7998 2296</p>
<ul style="list-style-type: none"> • Hydro MPC-E maintains constant pressure through continuous variable adjustment of the speed of the CRE pumps. • The performance is adjusted to the demand through cutting in/out the required number of CRE pumps and through parallel control of the pumps in operation. • Pump changeover is automatic and depends on load, time and fault. • All pumps in operation will run at equal speed. 	<ul style="list-style-type: none"> • Hydro MPC-EF maintains constant pressure through continuous variable adjustment of the speed of the pumps. • The performance is adjusted 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. • All pumps in operation will run at equal speed. 	<ul style="list-style-type: none"> • Hydro MPC-F maintains constant pressure through continuous variable adjustment of the speed of the CR pump connected to an external VFD. The speed controlled operation alternates between the pumps. • One CR pump connected to the VFD always starts first. If the pressure cannot be maintained by the pump, one or two constant speed CR pumps will be cut in. • Pump changeover is automatic and depends on load, time and fault.

Booster sets with direct online/constant speed pumps (on/off)

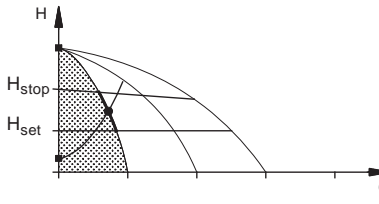
Hydro MPC-S

Hydro MPC booster set with three constant speed CR pumps.



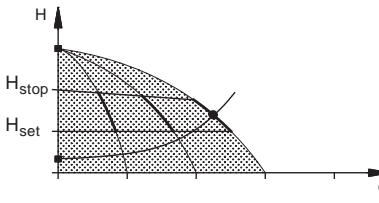
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One constant speed CR pump in operation.



TM03 2045 3505

Three constant speed CR pumps in operation.



TM03 2046 3505

- Hydro MPC-S maintains pressure range through cutting in/out the required number of pumps.
- The operating range of the pumps will lie between the lines H_{set} and H_{stop} (cut-out pressure). The cut-out pressure cannot be set, but is calculated automatically.
- Pump changeover is automatic and depends on load, time and fault.

Overview of functions

	Hydro MPC			
	-E	-E (CUE)	-F	-S
Functions via the CU 351 control panel				
Constant-pressure control	●	●	●	● ²⁾
Automatic cascade control	●	●	●	●
Alternative setpoints	●	●	●	●
Redundant primary sensor (option)	○	○	○	○
Min. changeover time	●	●	●	●
Number of starts per hour	●	●	●	●
Standby pumps	●	●	●	●
Forced pump changeover	●	●	●	●
Test run	●	●	●	●
Dry-running protection (suction transducer)	●	●	●	●
Stop function	●	●	●	● ³⁾
Password	●	●	●	●
Clock program	●	●	●	●
Proportional pressure	●	●	●	●
Pilot pump	●	●	●	●
Soft pressure build-up	●	●	●	●
Emergency run	●	●	●	●
Pump curve data	●	●	●	●
Flow estimation	●	●	●	●
Limit exceeded 1 and 2	●	●	●	●
End of curve protection	●	●	●	●
Communication				
GENIbus connection (external)	○	○	○	○
Other bus protocols: PROFIBUS, Interbus-S and radio/modem/PLC, Modbus via G100 gateway	○	○	○	○
Ethernet connection	●	●	●	●

- Standard.
- On request.

1) Pump changeover only possible among pumps of the same type.

2) The pressure will be almost constant between H_{set} and H_{stop} . For further information, see page 14.

3) Hydro MPC-S will have on/off control of all pumps. For further information, see page 17.

Description of functions

Constant-pressure control

Constant-pressure control ensures that the Hydro MPC booster set delivers a constant pressure despite a change in consumption.

Example

A Hydro MPC booster is used for water supply in a high-rise building.

A pressure transmitter on the discharge manifold measures the discharge pressure. The value is compared with the setpoint. The PID controller of the booster set controller adjusts the performance as the consumption pattern changes, ensuring that the discharge pressure matches the setpoint. Consequently a constant pressure is maintained.

Redundant primary sensor

Normally, signals from a primary sensor on the discharge side controls the Hydro MPC.

A redundant primary sensor can be fitted as backup for the primary sensor in order to increase the reliability and prevent stop of operation.

Note: The redundant primary sensor is available as a factory-fitted option.

Automatic cascade control

Cascade control ensures that the performance of Hydro MPC is automatically adapted to consumption by switching pumps on or off.

The booster set thus runs as energy-efficiently as possible and with a limited number of pumps switched on.

External influence

This function makes it possible to make an external analog signal influence the setpoint. The analog signal may be a 0-100% signal from another control unit, a signal transmitter such as a flow sensor, or a parameter in the system.

Influence function

This function is similar to the external influence except the user has the ability to define the relationship between the measuring parameter which is to influence the setpoint and the desired influence as a percentage.

Alternative setpoints

This function makes it possible to set up to six setpoints as alternatives to the primary setpoint.

The performance of the booster set can thus be adapted to other consumption patterns.

Example

A Hydro MPC booster set is used for irrigation of a hilly golf course.

Constant-pressure irrigation of golf course sections of different sizes and at different altitudes may require more than one setpoint.

For golf course sections at a higher elevation a higher discharge pressure is required to meet the pressure requirement at the higher elevation.

Number of starts per hour

This function limits the number of pump starts and stops per hour. It reduces noise emission and improves the comfort of booster sets with constant speed pumps.

Each time a pump starts or stops, the controller calculates when the next pump is allowed to start/stop in order not to exceed the permissible number of starts per hour.

The function always allows pumps to be started to meet the requirement, but pump stops will be delayed, if needed, in order not to exceed the permissible number of starts/stops per hour.

Standby pumps

It is possible to let one or more pumps function as standby pumps. A booster set with for instance four pumps, one being standby pump, will run like a booster set with three pumps, as the maximum number of pumps in operation is the total number of pump minus the number of standby pumps.

If a pump is stopped due to a fault, the standby pump is cut in. This function ensures that the Hydro MPC booster set can maintain the nominal performance even if one of the pumps is stopped due to a fault.

The standby pump/s alternates between all pumps of the same type. This ensures equal wear of all pumps of the same type.

Forced pump changeover

This function ensures that the pumps run for the same number of operating hours over time.

In certain applications the required flow remains constant for long periods and does not require all pumps to run. In such situations, pump changeover does not take place naturally, and forced pump changeover may thus be required.

Once every 24 hours the controller checks if any pump in operation has been running continuously for the last 24 hours.

If this is the case, the pump with the largest number of operating hours is stopped and replaced by the pump with the lowest number of operating hours.

Test run

This function is primarily used in connection with pumps that do not run every day.

The function ensures that

- pumps do not seize up during a long standstill due to deposits from the pumped liquid.
- the pumped liquid does not decay in the pump.
- trapped air is removed from the pump.

The pump starts automatically and runs for a short time.

Dry-running protection

This function is one of the most important ones, as dry running may damage bearings and shaft seals.

The inlet pressure of the booster set or the level in a tank, if any, on the inlet side is monitored. If the inlet pressure or the water level is too low, all pumps are stopped.

Stop function

The stop function is only used in connection with Hydro MPC booster sets with variable-speed pumps.

Note: Hydro MPC-S will have on/off control of all pumps.

In case of low flow the booster set changes from constant-pressure operation to on/off operation to maintain the pressure in the tank. The purpose is to

- save energy
- prevent heating of shaft seal faces due to increased mechanical friction as a result of reduced cooling by the pumped liquid
- prevent heating of the pumped liquid.

In order to use the stop function the diaphragm tank needs to function properly.

Pilot pump

The pilot pump takes over the operation from the main pumps in periods when the consumption is so small that the stop function of the main pumps is activated.

The purpose is to

- save energy
- reduce the number of operating hours of the main pumps.

Password

Passwords make it possible to limit the access to the menus **Operation** and **Settings** in the controller of the booster set.

Operation menu

Via the **Operation** menu it is possible to set and monitor the most basic parameters, such as setpoint, setpoint influence, primary sensor and redundant primary sensor.

Settings menu

Via the **Settings** menu it is possible to monitor and set various functions such as setpoint, setpoint influence and number of starts per hour.

Clock program

This function makes it possible to set up to ten setpoints with day and time for their activation/deactivation. An example of application is sprinkling of golf courses at fixed times for the individual greens.

Proportional pressure

This function is used in pressure regulated systems and automatically adapts the setpoint set to the current flow rate. The adaptation can be linear or square.

The function has these purposes:

- to compensate for pressure losses
- to reduce the energy consumption
- to increase the comfort the user.

Soft pressure build-up

This function ensures a soft start of systems that are connected to piping that has no water in them yet. It has two phases:

1. The piping is slowly filled with water.
2. When the pressure sensor of the systems detects that the piping has been filled, the pressure is increased until it reaches the setpoint.

The function can be used for preventing water hammer in high-rise buildings with unstable voltage supply or in sprinkling applications.

Emergency run

The function is especially suited for important systems where the operation must not be interrupted. If activated this function will keep the pumps running regardless of warnings or alarms. The pumps will run according to the setpoint set specifically for this function.

5. Sizing

When sizing a booster set, it is important to ensure

- that the performance of the booster set can meet the highest possible demand both in terms of flow rate and pressure.
- that the booster set is not oversized. This is important in relation to installation and operating costs.

Consumption pattern

The consumption pattern can be illustrated as a 24-hour profile and duty-time profile.

24-hour profile

The 24-hour profile shows the consumption during 24 hours.

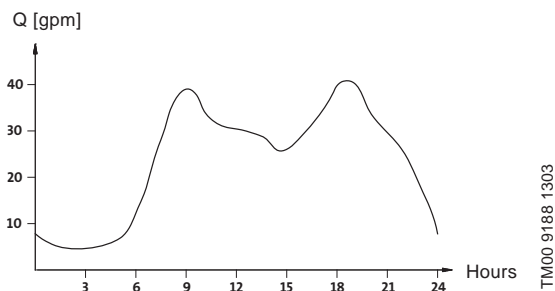


Fig. 7 24-hour profile

Duty-time profile

The duty-time profile is based on the 24-hour profile and gives an overview of how many per cent per day the booster operates at a specific flow rate.

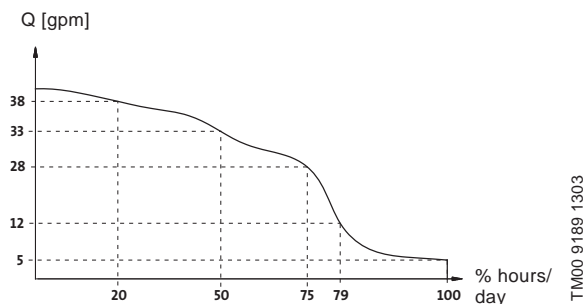


Fig. 8 Duty-time profile

The example in the duty profile above shows:

- 100 % of the time: Flow rate \geq 5 gpm
- 79 % of the time: Flow rate $>$ 12 gpm
- 75 % of the time: Flow rate $>$ 28 gpm
- 50 % of the time: Flow rate $>$ 33 gpm
- 20 % of the time: Flow rate \geq 38 gpm

Selection of booster set

When sizing, the following should be considered:

1. The **consumption pattern** to be met by the booster set:
 - How much does the consumption vary?
 - How suddenly does the consumption vary? See page 20.
2. The distribution of consumption over **time**. See page 20.
3. The **type** of booster set to be selected. The selection of type should be based upon the consumption pattern. The following types are available:
 - E, -E(CUE), -F, -S. See page 20.
4. The **system size** to be selected (pump performance and number of pumps). The selection of system size should be based upon the consumption pattern, considering the following aspects:
 - highest demand
 - efficiency
 - NPSH value
 - are stand-by pumps required? See page 21.
5. The **diaphragm tank** to be selected. See page 22.
6. The **dry-running protection** to be selected. See page 23.

WinCAPS and WebCAPS

WinCAPS and WebCAPS are both selection programs offered by Grundfos.

The two programs make it possible to calculate a Hydro MPC booster set's specific duty point and energy consumption.

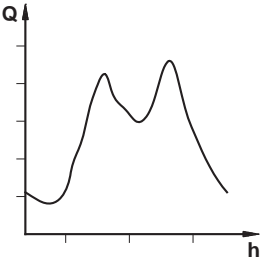
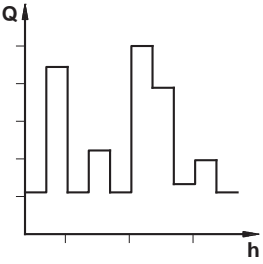
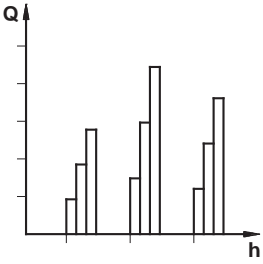
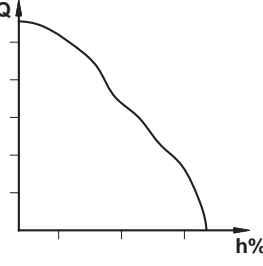
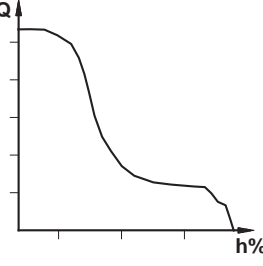
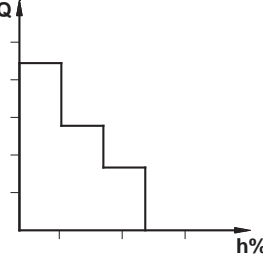
When you enter the dimensions of the pump, WinCAPS and WebCAPS can calculate the exact duty point and energy consumption. For further information, see page 81.

Type of booster set

The booster set type should be selected on the basis of the consumption pattern, i.e. the 24-hour and duty-time profiles.

If the consumption is variable and optimum comfort is required, pumps with continuously variable speed control should be used.

Examples of consumption patterns and their 24-hour and duty-time profiles:

	Water supply	Industry	Irrigation
24-hour profile	 <p>TM00 9197 1705</p>	 <p>TM00 9200 1705</p>	 <p>TM00 9198 1705</p>
	<p>Flow rate: Highly variable. Pressure: Constant.</p>	<p>Flow rate: Highly variable with sudden changes. Pressure: Constant.</p>	<p>Flow rate: Constant and known. Pressure: Constant.</p>
Duty-time profile	 <p>TM00 9201 1705</p>	 <p>TM00 9199 1705</p>	 <p>TM00 9202 1705</p>
	<p>Consumption is highly variable. Continuously variable speed control of the pumps is recommended.</p> <p>Recommended types: -E, -E (CUE), -F, -S</p>	<p>Consumption is highly variable with sudden changes. Continuously variable speed control of the pumps is recommended.</p> <p>Recommended types: -E, -E (CUE), -F, -S</p>	<p>Variations in consumption are regular, yet known. Simple control is recommended.</p> <p>Recommended type: -S.</p>

Selection of pumps

Pump size

The system must meet the highest possible demand. But as the highest demand will often occur for a comparatively short part of the duty period only, it is important to select a type of pump which can meet the varying demand throughout the duty period.

Efficiency

In order to achieve the optimum operating economy, select the pumps on the basis of optimum efficiency, i.e. the pumps should, as much as possible, operate within their nominal performance ranges.

As the booster set is always sized on the basis of the highest possible consumption, the duty point of the pumps should be to the right on the efficiency curve (see the pump performance curve) in order to keep efficiency high when consumption drops.

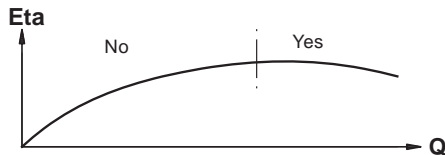


Fig. 9 Pump efficiency curve

Optimum efficiency is ensured by selecting a duty point within the hatched area.

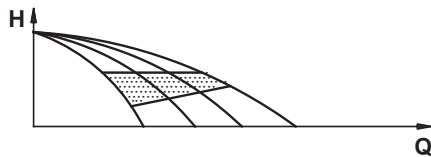


Fig. 10 Area of optimum efficiency

TM00 9190 1705

TM00 9192 1705

NPSH

In order to avoid cavitation, never select a pump with a duty point too far to the right on the NPSHr (NPSH required) curve in applications where suction pressure is low or in suction lift applications. Always check the NPSHr values of the pumps at the highest possible consumption with suction pressure, NPSHa (NPSH available), at this highest possible consumption rate.

CR pumps can be fitted with low NPSH impellers to decrease the pump's required NPSH. See the CR Custom-Built Product Guide for more information.

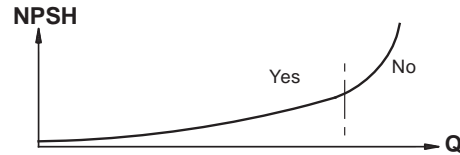


Fig. 11 NPSHr curve for pump

TM00 9191 1705

Stand-by pump

To most customers reliable supplies are a major factor. Often it is not acceptable if the system does not maintain its maximum flow even during pump repairs or breakdown. In order to prevent any disruption of the supply in such a situation, the booster set can be equipped with a stand-by pump.

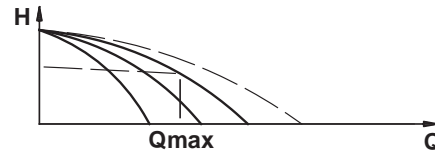


Fig. 12 System with stand-by pump

If flow or pressure is not critical, a standby pump may be omitted. The end result will be a reduced pressure at a required flow or a reduced flow at a required pressure if one of the pumps is requiring service.

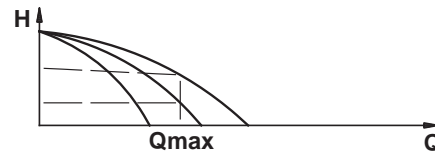


Fig. 13 System without stand-by pump

TM00 9193 1705

TM00 9194 1705

Selection of diaphragm tank

The need for a diaphragm tank should be estimated on the basis of the following guidelines:

- All Hydro MPC booster sets in buildings must be equipped with a diaphragm tank due to the stop function.
- Normally, Hydro MPC booster sets in water supply applications require no diaphragm tank as long piping layouts partly hold the necessary capacity, partly have the elasticity to give sufficient capacity.
Note: To avoid the risk of water hammering a diaphragm tank may be necessary.
- The need for a diaphragm tank for Hydro MPC booster sets in industrial applications should be estimated from situation to situation on the basis of the individual factors on site.

Pump type	Recommended diaphragm tank size [gallons]			
	-E	-E (CUE)	-F	-S
CR(E) 3	4.4	4.4	4.4	20
CR(E) 5	4.4	4.4	4.4	34
CR(E) 10	10.2	10.2	10.2	62
CR(E) 15	34	34	34	211
CR(E) 20	34	34	34	211
CR(E) 32	44	44	44	317
CR(E) 45	86	86	86	528
CR(E) 64	132	132	132	1056
CR(E) 90	-	132	132	1056

The size of the recommended diaphragm tank in gallons can be calculated from the following equations:

Hydro MPC-E, -E (CUE), and -F

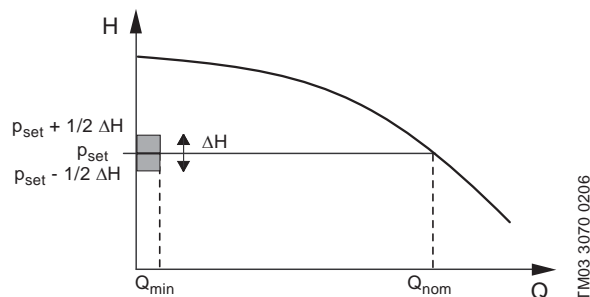
$$V_0 = \frac{k_Q \cdot Q \cdot (p_{\text{set}} + 14.5)^2 \cdot \left(\frac{3600}{N} - 10\right)}{60 \cdot (k_f \cdot p_{\text{set}} + 14.5) \cdot k_H \cdot p_{\text{set}}}$$

Hydro MPC-S

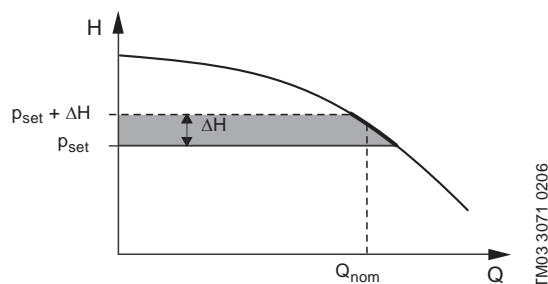
$$V_0 = \frac{15 \cdot Q \cdot (p_{\text{set}} + 14.5) \cdot (k_H \cdot p_{\text{set}} + p_{\text{set}} + 14.5)}{N \cdot (k_f \cdot p_{\text{set}} + 14.5) \cdot k_H \cdot p_{\text{set}}}$$

Symbol	Description
V_0	Tank volume [gallons]
k_Q	The ratio between nominal flow rate of one pump Q_{nom} and the flow rate Q_{min} at which the pump is to change to on/off operation. $k_Q = Q_{\text{min}}/Q_{\text{nom}}$, (0.10 for CR Pumps, 10%)
Q	Mean flow rate, Q_{nom} [gpm]
p_{set}	Setpoint [psi]
k_H	The ratio between the on/off band ΔH and the setpoint p_{set} , $k_H = \Delta H/p_{\text{set}}$
k_f	The ratio between tank pre-charge pressure p_0 and the setpoint p_{set} . $k_f = p_0/p_{\text{set}}$. 0.9 for Hydro MPC-S 0.7 for Hydro MPC-E, -ED, -ES, -EF, -EDF and -F
N	Maximum number of starts/stops per hour

Hydro MPC-E, -E (CUE), and -F



Hydro MPC-S



The tank values are based on the following data:

Symbol	Hydro MPC	
	-E, -E (CUE), and -F	-S
Q	Q_{nom} of one pump	Q_{nom} of one pump
k_Q	10%	-
p_{set}	58 psi	58 psi
k_H	20%	25%
k_f	0.7	0.9

Example of Hydro MPC-E and -S with CR(E) 10

Symbol	Hydro MPC-E	Hydro MPC-S
Q [gpm]	44	44
k_Q	10%	-
k_H	20%	25%
p_{set} [psi]	58	58
N [h^{-1}]	200	100
Result		
V_0 [gallons]	4.83	43.0
Selected tank	4.4 or 10.2 gallon	44 or 62 gallon
ΔH [psi]	11.6	14.5
p_0 [psi]	40.6	52.2

Dry-running protection

The booster set must be protected against dry-running. The inlet conditions determine the type of dry-running protection:

- If the system draws from a tank or a pit, select a float switch located in the tank, or liquid level switch for dry-running protection. The use of a float switch in these applications is recommended because the float switch will initialize the dry run protection before air enters the suction manifold & pumps therefore eliminating the need to vent the system after a dry-run fault has occurred.
- If the system has an inlet pressure, select a pressure transmitter or a pressure switch for dry-running protection.

Minimum inlet pressure - NPSHR

Calculation of the inlet pressure "H" is recommended when

- the liquid temperature is high,
- the flow is significantly higher than the rated flow,
- water is drawn from depths,
- water is drawn through long pipes,
- Inlet conditions are poor.

To avoid cavitation, make sure that there is a minimum pressure on the suction side of the pump. The maximum suction lift "L" in feet can be calculated as follows:

$$H = p_b - \text{NPSHR} - H_f - H_v - H_s - L$$

p_b = Barometric pressure in feet absolute.
(Barometric pressure can be set to 33.9 feet. At sea level. In closed systems, p_b indicates system pressure in feet.)

NPSHR = Net Positive Suction Head Required in feet.
(To be read from the NPSHR curve at the highest flow the pump will be delivering).

H_f = Friction loss in suction pipe in feet.
(At the highest flow the pump will be delivering.)

H_v = Vapor pressure in feet. (To be read from the vapor pressure scale. " H_v " depends on the liquid temperature " T_m ").

H_s = Safety margin = minimum 2.0 feet.

If the "H" calculated is positive, the pump can operate at a suction lift of maximum "L" feet.

If the "H" calculated is negative, cavitation will occur. An inlet pressure of minimum value "H" feet (positive) is required.

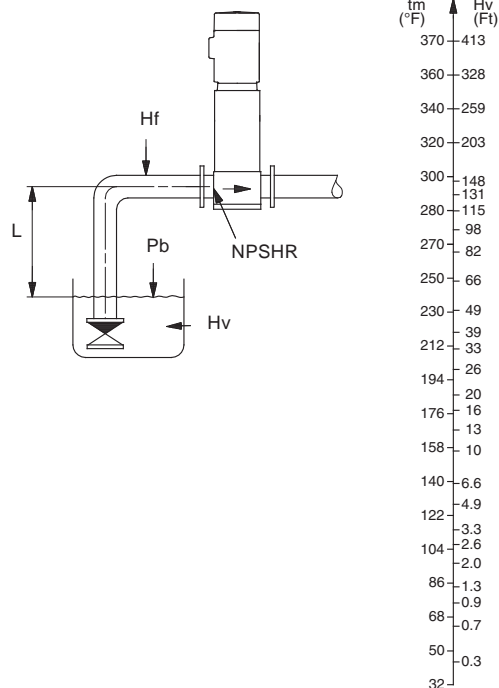


Fig. 14 Minimum inlet pressure - NPSHR

Note: In order to avoid cavitation **never**, select a pump whose duty point lies too far to the right on the NPSHR curve.

Always check the NPSHR value of the pump at the highest possible flow.

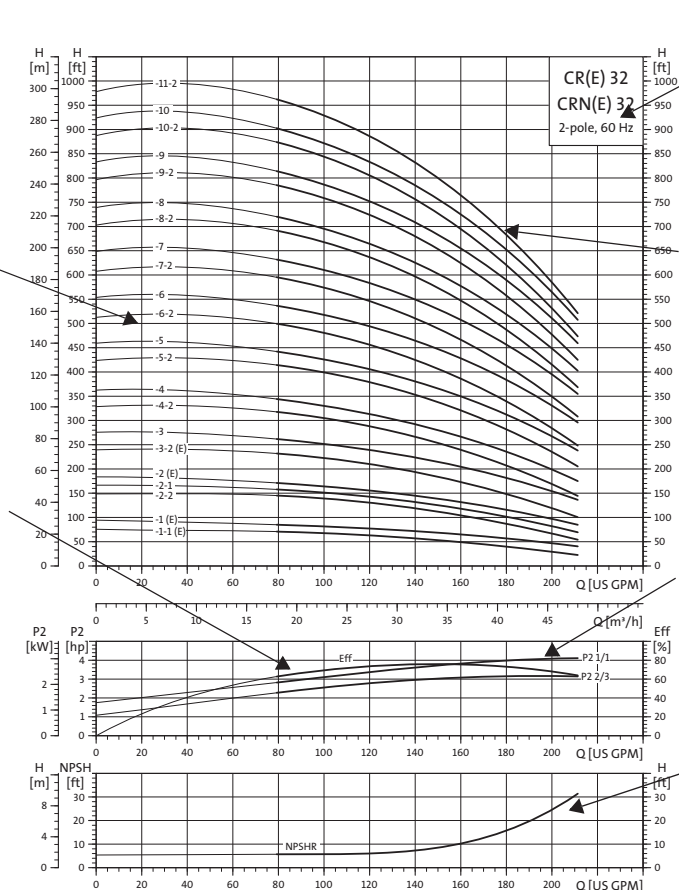
CR pumps can be fitted with low NPSH impellers to decrease the pump's required NPSH. See the CR Custom-Built Product Guide for more information.

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How to read the curve charts

Number of stages.
First figure: number of stages;
second figure: number of reduced-diameter impellers.

The eff curve shows the efficiency of the pump.
The eff curve is an average curve of all the pump types shown in the chart.
The efficiency of pumps with reduced-diameter impellers is approx. 2 % lower than the eff curve shown in the chart.



Pump type, nominal flow rate, number of poles and frequency.

QH curve for the individual pump. The **bold** curves indicate the Hp with the highest stage pump. The dashed lines represent stages that are not the highest Hp.

The power curves indicate pump input power **per stage**. Curves are shown for complete (1/1) and for reduced-diameter (2/3) impellers.

The NPSHR curve is an average curve for all the variants shown. When sizing the pumps, add a safety margin of at least 2.0 feet.

Fig. 15 How to read the curve charts

Guidelines to performance curves

The guidelines below apply to the curves shown on the following pages:

1. The motors used for the measurements are standard motors (ODP, TEFC or MLE).
2. Measurements have been made with airless water at a temperature of 68 °F.
3. The curves apply to a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt).
4. Due to the risk of overheating, the pumps should not be used at a flow below the minimum flow rate.
5. The QH curves apply to actual speed with the motor types mentioned at 60 Hz.

TM02 0039 1303

Example: How to select a system

A booster system is a parallel application of pumping where 2 to 6 pumps are connected to a common suction and common discharge manifold. In parallel applications the flows of each pump will add together and the head will remain the same.

Example 1

- A design maximum flow rate of 300 gpm is required.
- A pressure boost of 100 psi (231 feet) is required.
- Application: constant pressure domestic water supply.
- Power supply: 460V/3/60 Hz

1. Determine the number of pumps desired for the system.

The number of pumps required for the booster system depends on the application. Given 300 gpm design flow for a domestic water supply application, it is known from a typical load profile (see page 20), for this application that the flow will vary significantly. Several factors impact the selection of the number of pumps. These include low flow efficiency, redundant/stand-by pumps, space limitations and overall cost of the system. For this example, assume three pumps best satisfy the the varying conditions. If the number of pumps required for the system is three then each pump would need to be able to deliver 100 gpm @ 231 ft to meet the design requirement of 300 gpm @ 231ft. Remember that pumping in parallel, flow is additive while head remains the same. This breaks down the total flow for the system into individual flows required from each pump.

2. After determining the number of pumps needed for the system it is time to look at individual pump curves on the following pages and select the pump that will meet the individual conditions.

In this example a CR15-5 will meet the individual conditions of 100 gpm @ 231 ft. The selection will be a 3-pump CR15-5 to meet the total flow of 300 gpm @ 231 feet.

3. Now the number of pumps in the system is known and an individual pump model has been selected. It is now time to select the type of system.

The requirements state that constant pressure is required with variable flow requirements, (see page 20). The recommended types of systems to meet the constant pressure and highly variable flow requirement are: -E, -E (CUE), -F, -S type systems, (see pages 13 and 14). All of the above mentioned systems incorporate at least one variable speed controlled pumps. The systems that include all variable speed controlled pumps, and give the greatest flexibility and redundancy, are the -E & -EF systems.

For this example an MPC-E system is selected to incorporate the greatest flexibility and redundancy for the system. The name of the system will be: MPC-E 3CRE15-5.

Example 2

- A design maximum flow rate of 300 gpm is required.
- A pressure boost of 100 psi (231 feet) is required.
- Application: constant flow - tank fill application.
- One 100% stand-by pump required.
- Power supply: 460V/3/60 Hz.

1. Determine the number of pumps required for this application. This application is a constant flow-rate application, when the booster system is needed to run, a constant 300 gpm flow rate is required. The number of pumps required for this application is two, one duty pump and one stand-by pump with each pump capable of delivering 300 gpm @ 231 ft head.

2. After determining what the individual flow required from each pump is, look at the individual pump curves on the following pages and select the pump that will meet the condition.

In this example a CR64-3-2 will meet the condition so the selection will be a 2-pump CR64-3-2, one duty pump and one stand-by pump.

3. The number of pumps in the system have been determined as well as the model of the the pumps. Now select the type of system that best meets the application. The requirements for this example states that a constant flow rate of 300 gpm at a boost pressure of 231 ft is needed any time the pump(s) are called to run. The recommended type of system to meet the constant flow rate at a constant head is an: -S system (see page 20). The name of this system will be a MPC-S 2CR64-3-2.

Example: Calculating total system pressure drop

Example

- A design maximum flow rate of 300 gpm is required.
- A pressure boost of 100 psi (231 feet) is required.
- Application: constant pressure domestic water supply.
- Power supply: 460V/3/60 Hz
- BoosterpaQ System Selection: MPC-E 3CRE15-5

Calculating the total system pressure drop is very important to ensure the system will meet the design condition. A common way to calculate the total system pressure drop requires a hydraulic data book with information on pipe friction pressure loss and various fittings pressure loss information. The total system pressure drop loss consists of the following:

- Suction manifold losses due to water passing through the manifold with interconnecting piping connections. These losses can be considered as water passing through a "Tee Fitting" with in-line flow.
- Manifold exit loss, this loss can be considered as an "Abrupt Contraction" to flow.
- Suction isolation valve loss.
- Check valve loss.
- Discharge isolation valve loss.
- Manifold entry loss, this loss can be considered as an "Abrupt Enlargement" to flow.
- Discharge manifold losses due to water passing through the manifold with interconnecting piping connections. These losses can be considered as water passing through a "Tee Fitting" with in-line flow.

In this example there is a design flow of 300 gpm and a 3-pump MPC-E 3CRE15-5 system has been chosen, which has four-inch manifolds. Consider that each pump on this system is operating at 100 gpm. Base the calculation on the worst case scenario, that is, the flow path of the furthestmost pump from the BoosterpaQ manifold connections to the building's piping.

1. Calculate the suction manifold losses due to water passing through the manifold with interconnecting piping connections. There is a pressure drop from the first interconnecting pipe and the flow will drop from 300 gpm to 200 gpm. Referencing a hydraulic data book, the loss associated with this is equivalent to 7.2 ft of pipe. The friction loss for incoming flow of 300 gpm flowing through 4" pipe is 4.89 ft per 100 feet of pipe, so the loss would be $7.2 \times 4.89 / 100 = 0.35$ ft pressure drop.

The next manifold loss the flow will drop from 200 gpm to 100 gpm.

Referencing a hydraulic data book, the friction loss

for incoming flow of 200 gpm flowing through a 4" pipe is 2.25 ft per 100 feet of piping so the loss would be $7.2 \times 2.25 / 100 = 0.16$ ft pressure drop. The total pressure drop for the suction manifold losses is equal to $0.35 + 0.16 = 0.51$ feet.

2. Calculate the manifold exit loss for the 100 gpm flowing into the interconnecting piping connected to the furthestmost pump. Use an "abrupt contraction" to flow as the bases for the calculation. Referencing a hydraulic data book, this is equivalent to 4 feet of piping of the smaller diameter piping; in this case the interconnection piping is 2" piping. Referencing a hydraulic data book for 2" piping with a flow of 100 gpm we find a pressure drop of 17.5 ft per 100 ft of piping. This pressure drop is $4 \times 17.5 / 100 = 0.7$ ft
3. Calculate the suction isolation valve loss for 100 gpm flow through a 2-inch ball valve. In this example the isolation valve is a ball valve which has negligible pressure drop so will not be considered. For systems that have a butterfly valve this loss should be considered.
4. Calculate the loss through the check valve. Referencing the check valve manufacturer's published pressure drop curve with a flow of 100 gpm through a 2" check valve results in a pressure drop of 8 feet.
5. Calculate the discharge isolation valve loss for 100 gpm flow through a 2-inch ball valve. See step # 3 above.
6. Calculate the discharge manifold entry loss for 100 gpm flow entering the manifold. Use an "abrupt enlargement" as the bases for this calculation. Referencing a hydraulic data book, find an equivalent length of pipe equal to 3.5 ft and find that 100 gpm flow through a 2-inch pipe has a friction loss of 14.51 ft per 100 ft of pipe. The pressure drop for the manifold entry loss is $3.5 \times 14.51 / 100 = 0.51$ ft.
7. The manifold losses due to water passing through the manifold will be the same as calculated in step #1 and is equal to 0.51 feet.
8. Now add all the pressure drops up. In this example there is: $0.51 + 0.7 + 0 + 8 + 0 + 0.51 + 0.51 = 9.8$ ft.
9. Now look at the individual pump performance curve and see if the pump selected, (CR15-5), is capable of 100 gpm @ 231 ft + 9.8 ft (241 ft).

6. Curve conditions

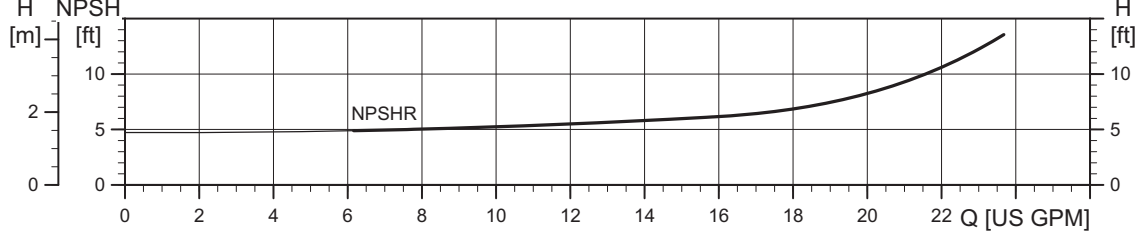
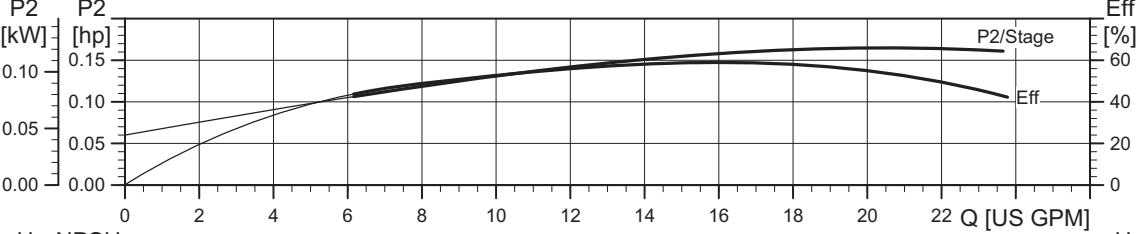
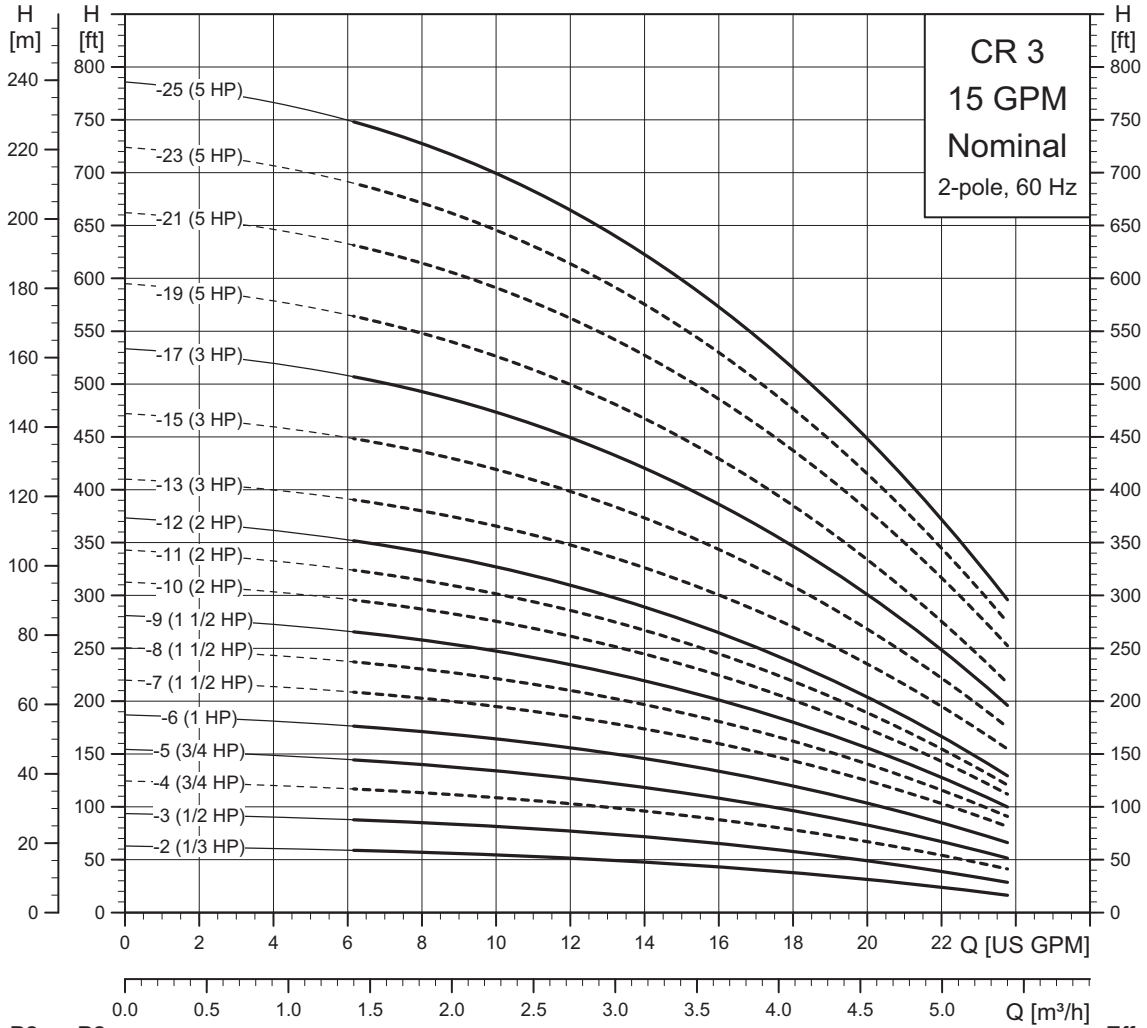
How to read the curve charts

The guidelines below apply to the curves shown on the following pages:

1. Tolerances to ISO 9906, Annex A, if indicated.
2. The curves show the pump mean values.
3. The curves should not be used as guarantee curves.
4. Measurements were made with pure water at a temperature of 68 °F.
5. The curves apply to a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt).
6. Curves represent single pump performance and do not represent system performance. See page 28 for proper sizing.
7. Bold portion of performance curve is correctly sized, do not size pumps out of this range.

7. Performance curves

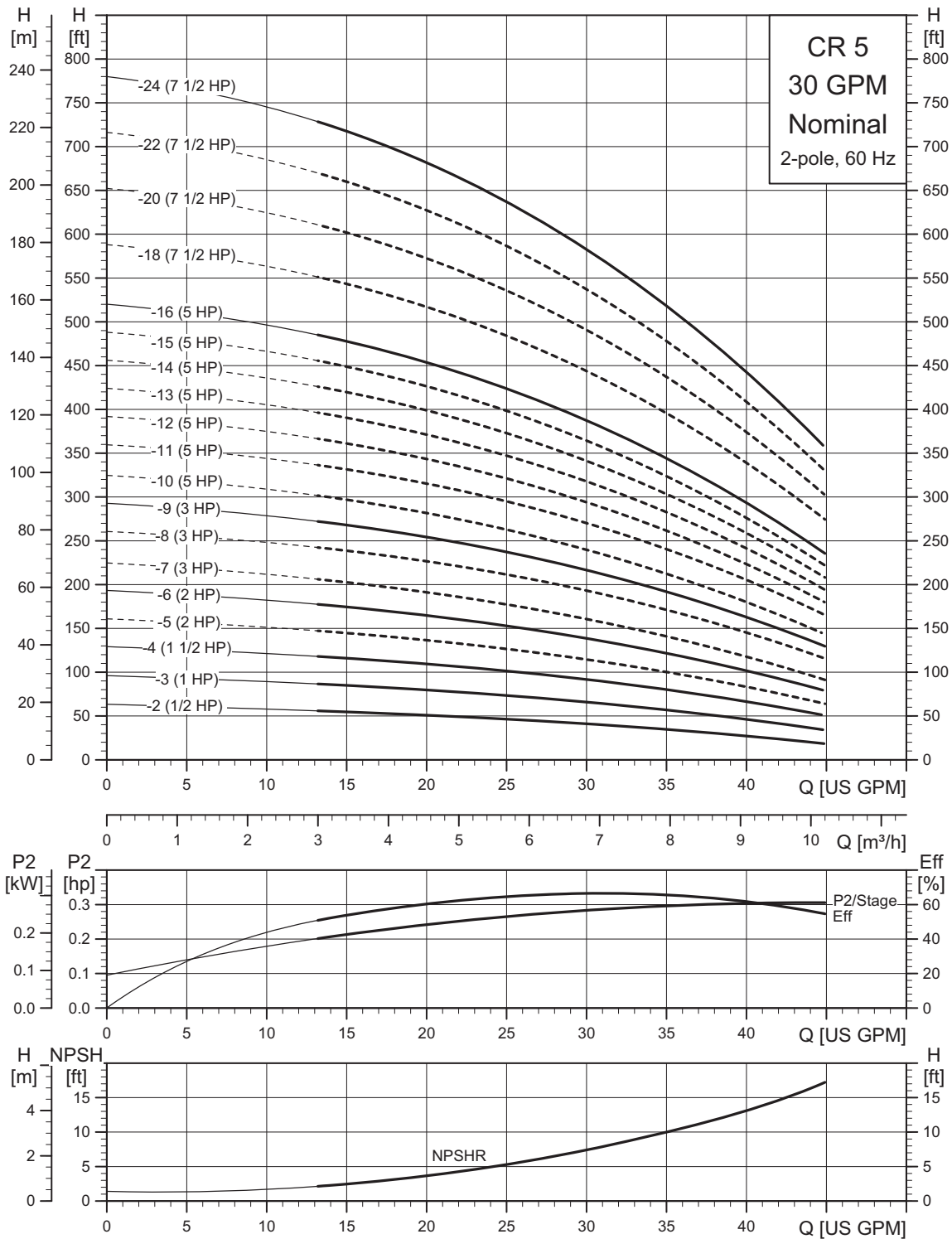
CR 3



Pump curves shown with solid bold line represent standard BoosterspaQ pump offerings. Pump curves shown with dashed line represent non-standard BoosterspaQ pump offerings, which are available upon request.

TM05 1566 3211

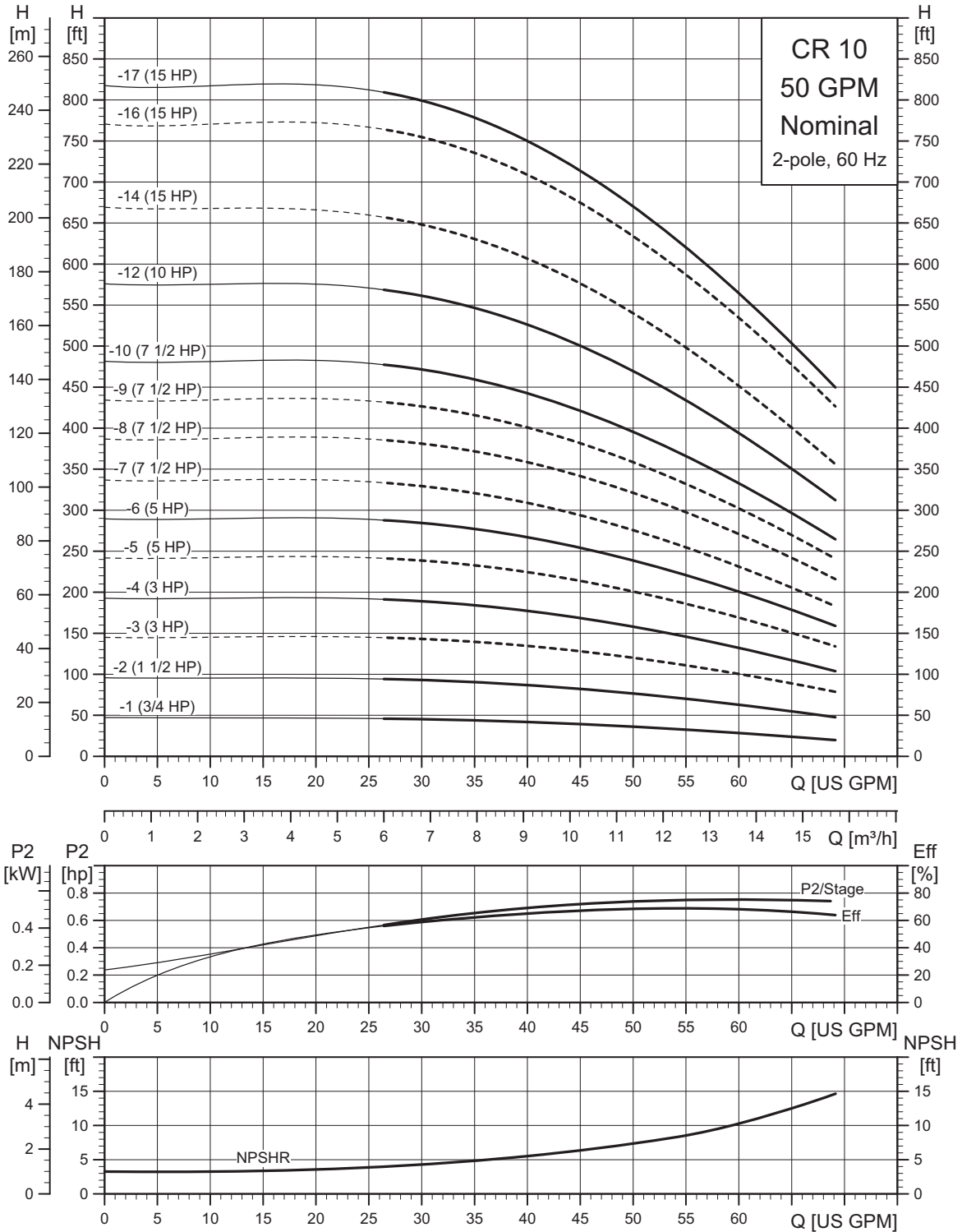
CR 5



TM05 1567 3211

Pump curves shown with solid bold line represent standard BoosterpaQ pump offerings. Pump curves shown with dashed line represent non-standard BoosterpaQ pump offerings, which are available upon request.

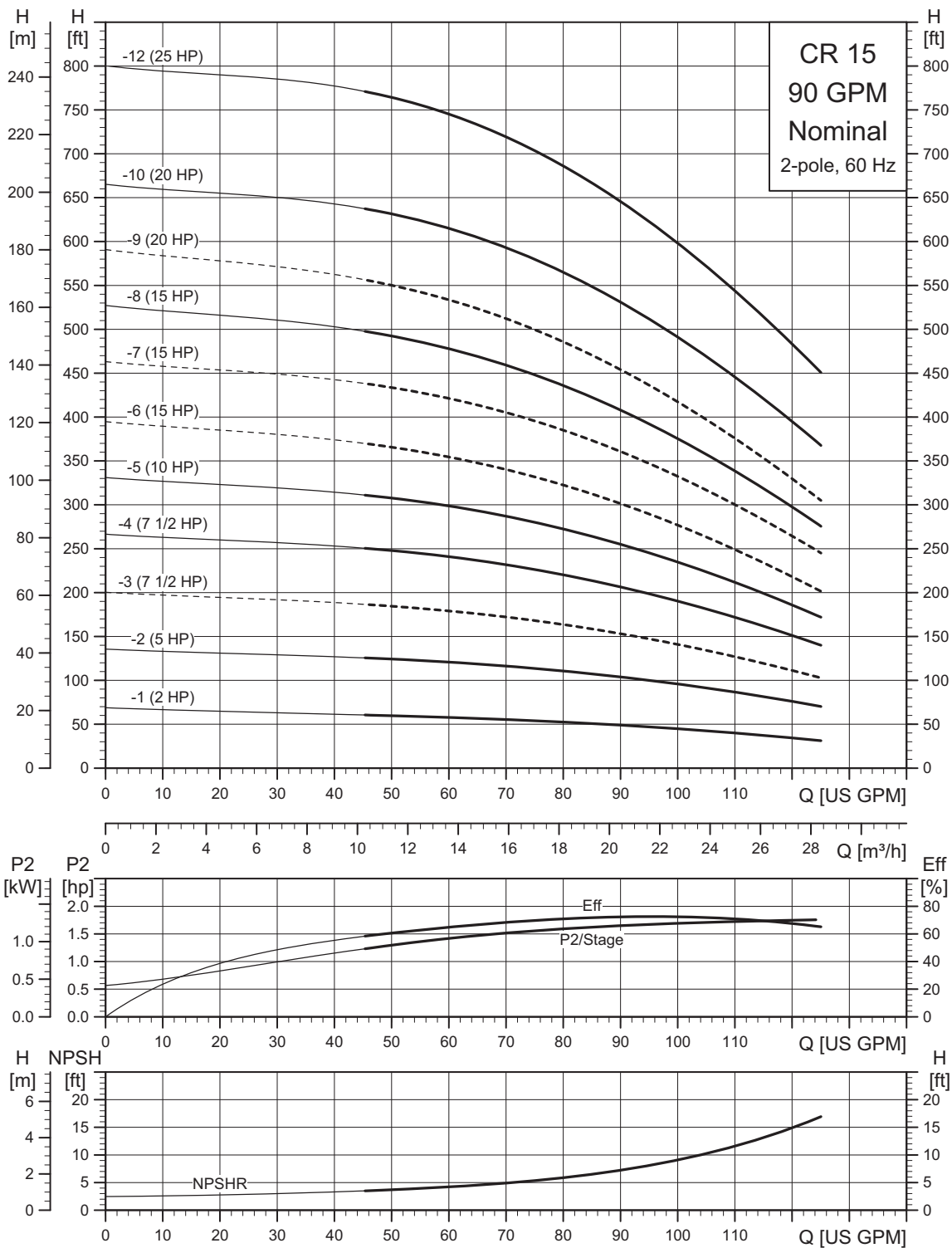
CR 10



Pump curves shown with solid bold line represent standard BoosterspaQ pump offerings. Pump curves shown with dashed line represent non-standard BoosterspaQ pump offerings, which are available upon request.

TM05 1568 3211

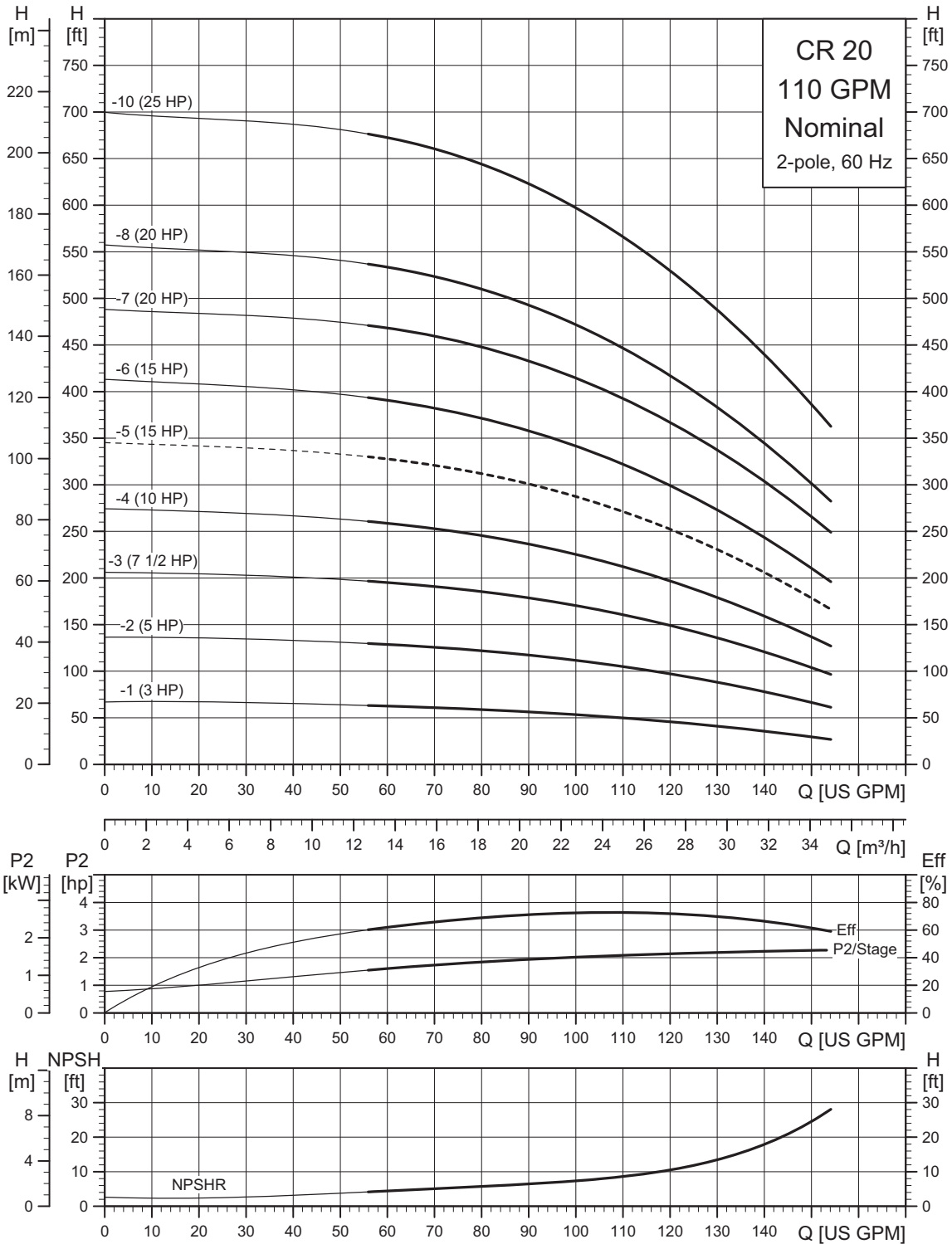
CR 15



TM05 1569 3211

Pump curves shown with solid bold line represent standard BoosterpaQ pump offerings. Pump curves shown with dashed line represent non-standard BoosterpaQ pump offerings, which are available upon request.

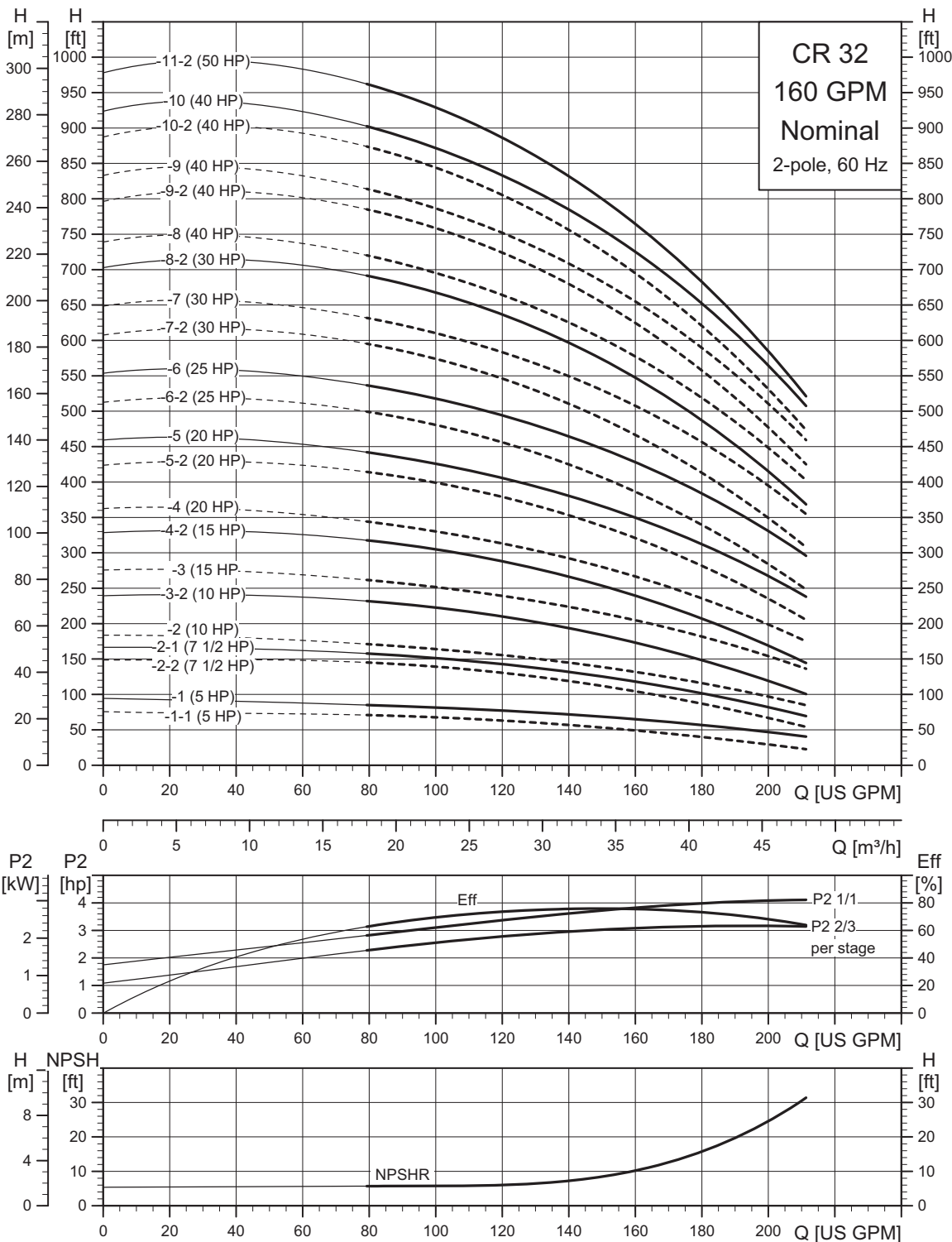
CR 20



TM05 1570 3211

Pump curves shown with solid bold line represent standard BoosterpaQ pump offerings. Pump curves shown with dashed line represent non-standard BoosterpaQ pump offerings, which are available upon request.

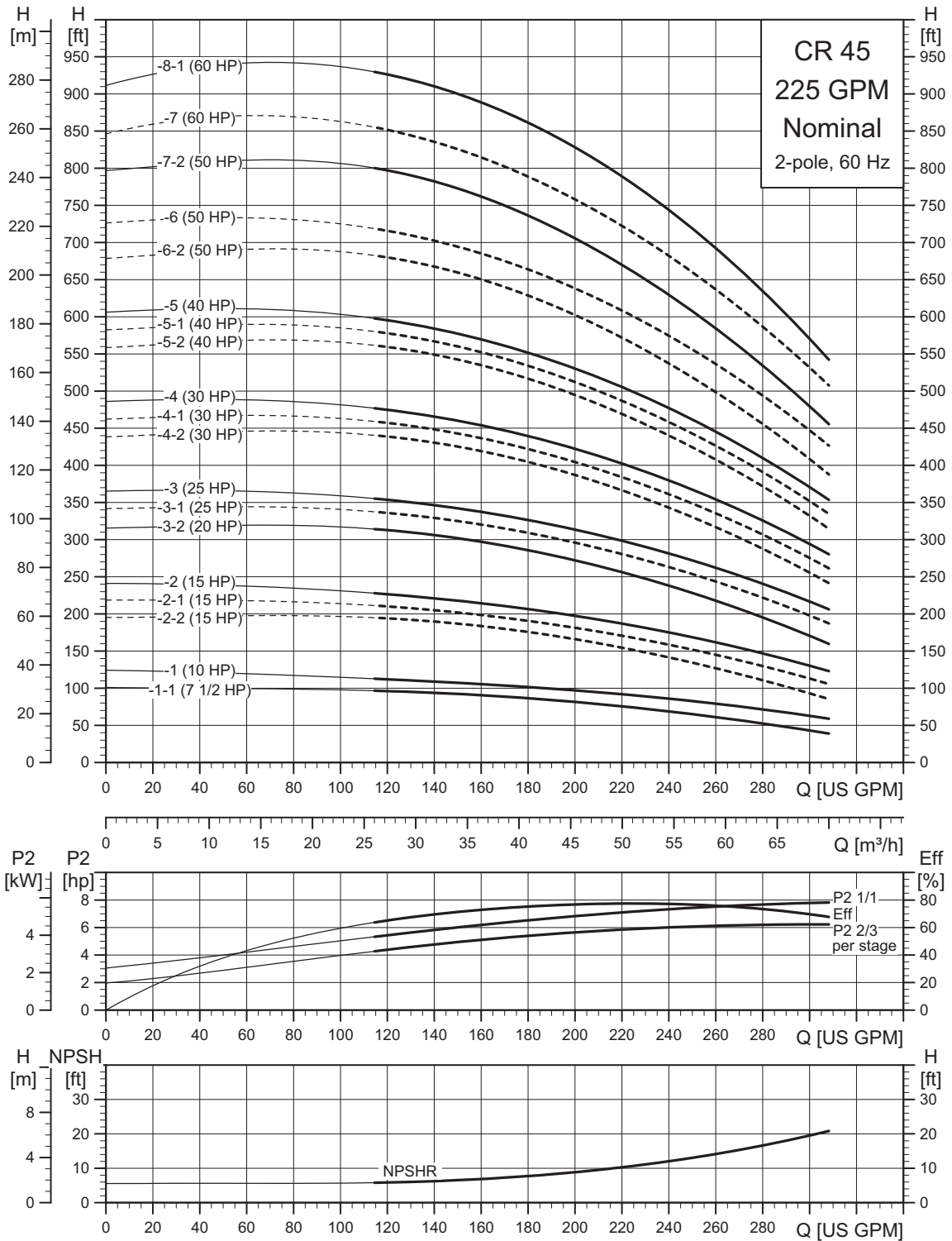
CR 32



Pump curves shown with solid bold line represent standard BoosterpaQ pump offerings. Pump curves shown with dashed line represent non-standard BoosterpaQ pump offerings, which are available upon request.

TM05 1571 3211

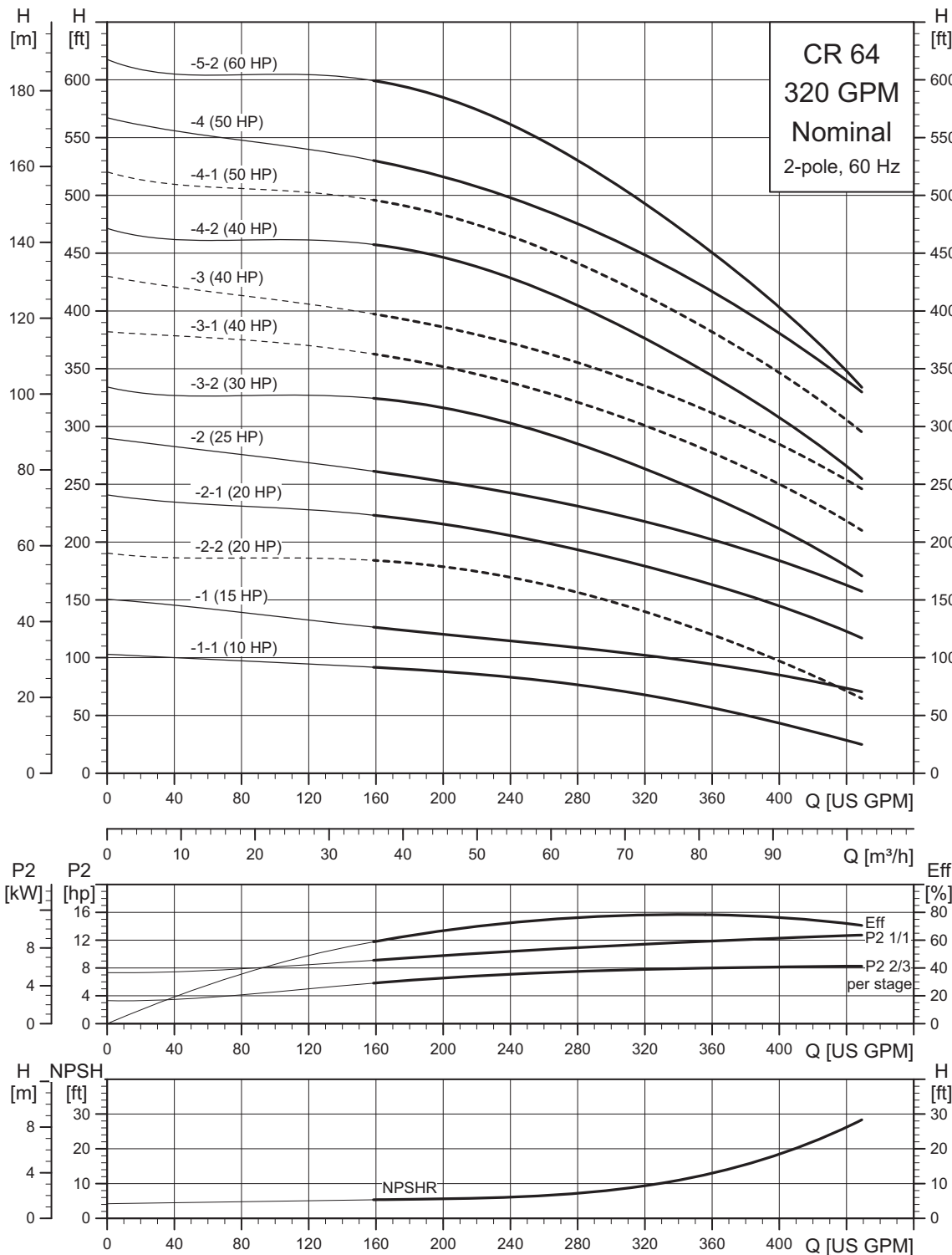
CR 45



TM05 1572 3211

Pump curves shown with solid bold line represent standard BoosterpaQ pump offerings. Pump curves shown with dashed line represent non-standard BoosterpaQ pump offerings, which are available upon request.

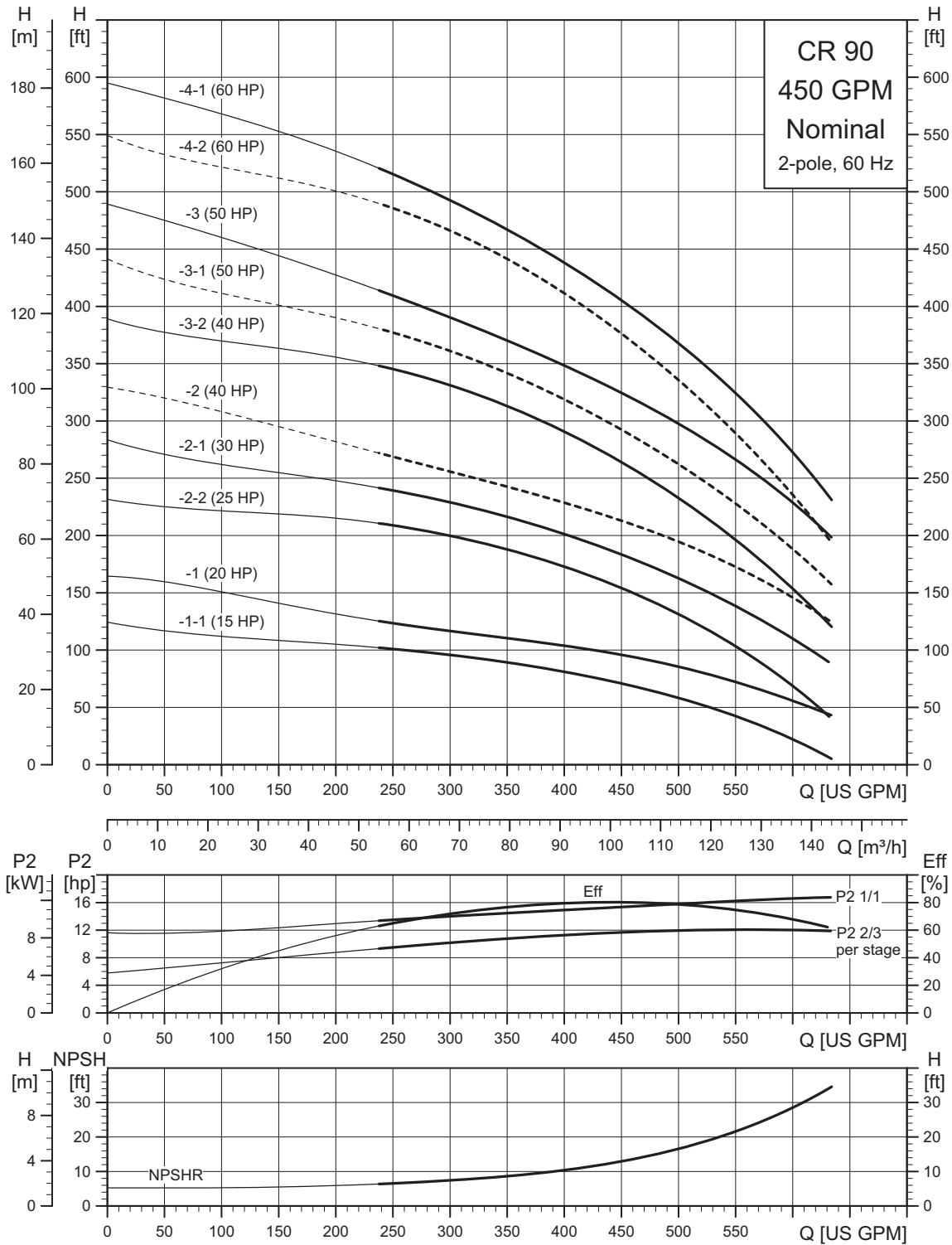
CR 64



TM05 1573 3211

Pump curves shown with solid bold line represent standard BoosterpaQ pump offerings. Pump curves shown with dashed line represent non-standard BoosterpaQ pump offerings, which are available upon request.

CR 90

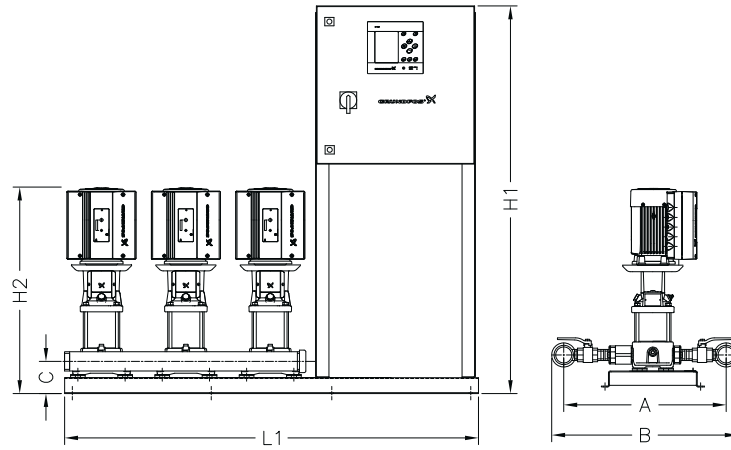


Pump curves shown with solid bold line represent standard BoosterpaQ pump offerings. Pump curves shown with dashed line represent non-standard BoosterpaQ pump offerings, which are available upon request.

TM05 1574 3211

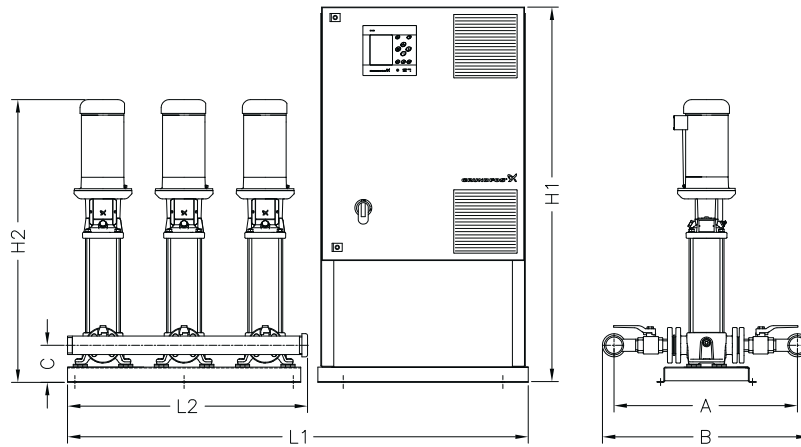
8. Dimensional data

Hydro MPC with CR(E) 3



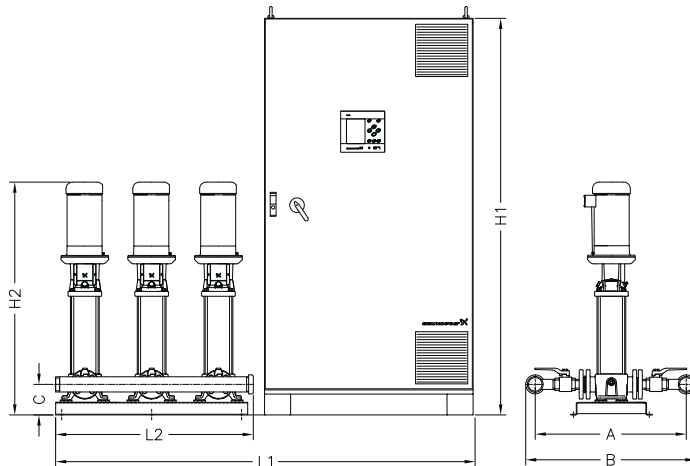
TM03 9997 4807 3CR3-5-E.pdf

Fig. 16 Drawing of a Hydro MPC booster set with a control panel mounted on the same base plate as the pumps. (Design A)



TM03 9999 4807 3CR3-5-F.pdf

Fig. 17 Drawing of a Hydro MPC booster set with control panel and pumps on separate base plates. (Design B)



TM03 9998 4807 3CR3-5-EF.pdf

Fig. 18 Drawing of a Hydro MPC booster set with a floor-mounted control panel. (Design C)

Hydro MPC-E with CRE 3

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR(E) 3-6	1	2" NPT	23.1	25.5	4.8	57.9	27.4	49.2	49.2	24x24x8	256	315	A
	CR(E) 3-9	1.5					57.9	29.5	49.2	49.2	24x24x8	262	321	A
	CR(E) 3-12	2					57.9	31.6	49.2	49.2	24x24x8	274	333	A
	CR(E) 3-15	3					57.9	36.8	49.2	49.2	24x24x8	298	357	A
3	CR(E) 3-6	1	2" NPT	25.2	27.6	4.8	57.9	27.4	61.8	61.8	24x24x8	380	451	A
	CR(E) 3-9	1.5					57.9	29.5	61.8	61.8	24x24x8	389	460	A
	CR(E) 3-12	2					57.9	31.6	61.8	61.8	24x24x8	407	478	A
	CR(E) 3-15	3					57.9	36.8	61.8	61.8	24x24x8	443	514	A
4	CR(E) 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	27.4	74.4	74.4	24x24x8	495	595	A
	CR(E) 3-9	1.5					57.9	29.5	74.4	74.4	24x24x8	507	607	A
	CR(E) 3-12	2					57.9	31.6	74.4	74.4	24x24x8	531	631	A
	CR(E) 3-15	3					57.9	36.8	74.4	74.4	24x24x8	579	679	A
5	CR(E) 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	27.4	86.2	61.4	24x24x8	666	778	B
	CR(E) 3-9	1.5					57.9	29.5	86.2	61.4	24x24x8	681	793	B
	CR(E) 3-12	2					57.9	31.6	86.2	61.4	24x24x8	711	823	B
	CR(E) 3-15	3					57.9	36.8	86.2	61.4	24x24x8	771	883	B
6	CR(E) 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	27.4	98.8	74.0	39x32x12	794	939	B
	CR(E) 3-9	1.5					57.9	29.5	98.8	74.0	39x32x12	812	957	B
	CR(E) 3-12	2					57.9	31.6	98.8	74.0	39x32x12	848	993	B
	CR(E) 3-15	3					57.9	36.8	98.8	74.0	39x32x12	920	1065	B

Hydro MPC-E (CUE) with CR 3

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 3-6	1	2" NPT	23.1	25.5	4.8	57.9	24.8	59.3	26.6	48x36x16	194	354	C
	CR 3-9	1.5					57.9	26.9	59.3	26.6	48x36x16	208	368	C
	CR 3-12	2					57.9	31.6	59.3	26.6	48x36x16	254	421	C
	CR 3-15	3					57.9	35.1	59.3	26.6	48x36x16	270	438	C
3	CR 3-6	1	2" NPT	25.2	27.6	4.8	57.9	24.8	68.9	36.2	63x47x20	287	464	C
	CR 3-9	1.5					57.9	26.9	68.9	36.2	63x47x20	308	485	C
	CR 3-12	2					57.9	31.6	68.9	36.2	63x47x20	377	565	C
	CR 3-15	3					57.9	35.1	68.9	36.2	63x47x20	401	589	C
4	CR 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	24.8	81.5	48.8	63x47x20	371	593	C
	CR 3-9	1.5					57.9	26.9	81.5	48.8	63x47x20	399	621	C
	CR 3-12	2					57.9	31.6	81.5	48.8	63x47x20	491	727	C
	CR 3-15	3					57.9	35.1	81.5	48.8	63x47x20	523	759	C
5	CR 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	24.8	94.1	61.4	63x63x20	511	750	C
	CR 3-9	1.5					57.9	26.9	94.1	61.4	63x63x20	546	785	C
	CR 3-12	2					57.9	31.6	94.1	61.4	63x63x20	661	918	C
	CR 3-15	3					57.9	35.1	94.1	61.4	63x63x20	701	958	C
6	CR 3-6	1	2 1/2" NPT	25.2	28.1	4.8	79.0	24.8	114.6	74.0	71x71x20	608	1011	C
	CR 3-9	1.5					79.0	26.9	114.6	74.0	71x71x20	650	1053	C
	CR 3-12	2					79.0	31.6	114.6	74.0	71x71x20	788	1212	C
	CR 3-15	3					79.0	35.1	114.6	74.0	71x71x20	836	1260	C

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-F with CR 3

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 3-6	1	2" NPT	23.1	25.5	4.8	57.9	24.8	59.3	26.6	39x32x12	194	353	B
	CR 3-9	1.5					57.9	26.9	59.3	26.6	39x32x12	208	367	B
	CR 3-12	2					57.9	31.6	59.3	26.6	39x32x12	254	416	B
	CR 3-15	3					57.9	35.1	59.3	26.6	39x32x12	270	432	B
3	CR 3-6	1	2" NPT	25.2	27.6	4.8	57.9	24.8	68.9	36.2	39x32x12	287	459	B
	CR 3-9	1.5					57.9	26.9	68.9	36.2	39x32x12	308	480	B
	CR 3-12	2					57.9	31.6	68.9	36.2	39x32x12	377	553	B
	CR 3-15	3					57.9	35.1	68.9	36.2	39x32x12	401	577	B
4	CR 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	24.8	81.5	48.8	39x32x12	371	557	B
	CR 3-9	1.5					57.9	26.9	81.5	48.8	39x32x12	399	585	B
	CR 3-12	2					57.9	31.6	81.5	48.8	39x32x12	491	680	B
	CR 3-15	3					57.9	35.1	81.5	48.8	39x32x12	523	713	B
5	CR 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	24.8	94.1	61.4	47x32x12	511	739	B
	CR 3-9	1.5					57.9	26.9	94.1	61.4	47x32x12	546	774	B
	CR 3-12	2					57.9	31.6	94.1	61.4	47x32x12	661	892	B
	CR 3-15	3					57.9	35.1	94.1	61.4	47x32x12	701	932	B
6	CR 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	24.8	106.7	74.0	47x32x12	608	849	B
	CR 3-9	1.5					57.9	26.9	106.7	74.0	47x32x12	650	891	B
	CR 3-12	2					57.9	31.6	106.7	74.0	47x32x12	788	1033	B
	CR 3-15	3					57.9	35.1	106.7	74.0	47x32x12	836	1081	B

Hydro MPC-S with CR 3

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 3-6	1	2" NPT	23.1	25.5	4.8	57.9	24.8	49.2	49.2	24x24x8	194	271	A
	CR 3-9	1.5					57.9	26.9	49.2	49.2	24x24x8	208	285	A
	CR 3-12	2					57.9	31.6	49.2	49.2	24x24x8	254	331	A
	CR 3-15	3					57.9	35.1	49.2	49.2	24x24x8	270	347	A
3	CR 3-6	1	2" NPT	25.2	27.6	4.8	57.9	24.8	61.8	61.8	24x24x8	287	376	A
	CR 3-9	1.5					57.9	26.9	61.8	61.8	24x24x8	308	397	A
	CR 3-12	2					57.9	31.6	61.8	61.8	24x24x8	377	466	A
	CR 3-15	3					57.9	35.1	61.8	61.8	24x24x8	401	490	A
4	CR 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	24.8	74.4	74.4	39x32x12	371	494	A
	CR 3-9	1.5					57.9	26.9	74.4	74.4	39x32x12	399	522	A
	CR 3-12	2					57.9	31.6	74.4	74.4	39x32x12	491	614	A
	CR 3-15	3					57.9	35.1	74.4	74.4	39x32x12	523	646	A
5	CR 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	24.8	94.1	61.4	47x32x12	511	730	B
	CR 3-9	1.5					57.9	26.9	94.1	61.4	47x32x12	546	765	B
	CR 3-12	2					57.9	31.6	94.1	61.4	47x32x12	661	880	B
	CR 3-15	3					57.9	35.1	94.1	61.4	47x32x12	701	920	B
6	CR 3-6	1	2 1/2" NPT	25.2	28.1	4.8	57.9	24.8	106.7	74.0	47x32x12	608	840	B
	CR 3-9	1.5					57.9	26.9	106.7	74.0	47x32x12	650	882	B
	CR 3-12	2					57.9	31.6	106.7	74.0	47x32x12	788	1020	B
	CR 3-15	3					57.9	35.1	106.7	74.0	47x32x12	836	1068	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC with CR(E) 5

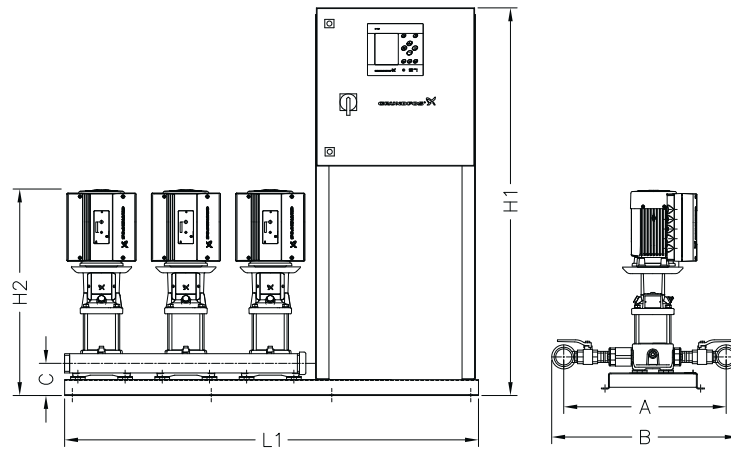


Fig. 19 Drawing of a Hydro MPC booster set with a control panel mounted on the same base plate as the pumps. (Design A)

TM03 9997 4807 3CR3-5-E.pdf

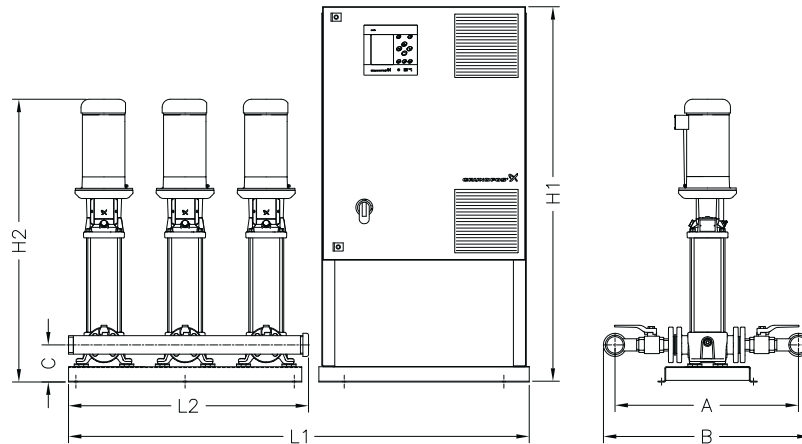


Fig. 20 Drawing of a Hydro MPC booster set with control panel and pumps on separate base plates. (Design B)

TM03 9999 4807 3CR3-5-F.pdf

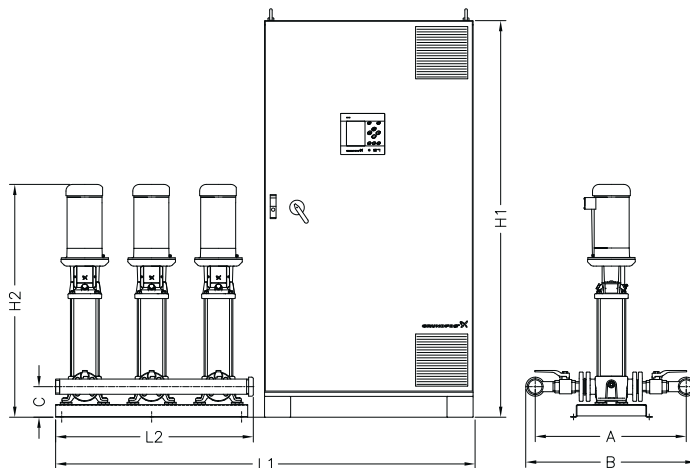


Fig. 21 Drawing of a Hydro MPC booster set with a floor-mounted control panel. (Design C)

TM03 9998 4807 3CR3-5-EF.pdf

Hydro MPC-E with CR(E) 5

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR(E) 5-4	1.5	2" NPT	23.1	25.5	4.8	57.9	29.6	49.2	49.2	24x24x8	257	316	A
	CR(E) 5-6	2					57.9	31.8	49.2	49.2	24x24x8	270	330	A
	CR(E) 5-9	3					57.9	36.6	49.2	49.2	24x24x8	296	355	A
	CR(E) 5-13	5					57.9	42.0	49.2	49.2	24x24x8	386	446	A
	CR(E) 5-16	5					57.9	45.3	49.2	49.2	24x24x8	394	453	A
3	CR(E) 5-4	1.5	2.5" NPT	25.2	28.1	4.8	57.9	29.6	61.8	61.8	24x24x8	376	447	A
	CR(E) 5-6	2					57.9	31.8	61.8	61.8	24x24x8	395	467	A
	CR(E) 5-9	3					57.9	36.6	61.8	61.8	24x24x8	434	506	A
	CR(E) 5-13	5					57.9	42.0	61.8	61.8	24x24x8	569	641	A
	CR(E) 5-16	5					57.9	45.3	61.8	61.8	24x24x8	581	652	A
4	CR(E) 5-4	1.5	3" NPT	25.2	28.7	4.8	57.9	29.6	74.4	74.4	24x24x8	498	597	A
	CR(E) 5-6	2					57.9	31.8	74.4	74.4	24x24x8	524	624	A
	CR(E) 5-9	3					57.9	36.6	74.4	74.4	24x24x8	576	675	A
	CR(E) 5-13	5					57.9	42.0	74.4	74.4	24x24x8	756	856	A
	CR(E) 5-16	5					57.9	45.3	74.4	74.4	24x24x8	771	871	A
5	CR(E) 5-4	1.5	3" NPT	25.2	28.7	4.8	57.9	29.6	86.2	61.4	24x24x8	670	781	B
	CR(E) 5-6	2					57.9	31.8	86.2	61.4	24x24x8	703	814	B
	CR(E) 5-9	3					57.9	36.6	86.2	61.4	24x24x8	767	879	B
	CR(E) 5-13	5					57.9	42.0	86.2	61.4	24x24x8	992	1104	B
	CR(E) 5-16	5					57.9	45.3	86.2	61.4	24x24x8	1012	1123	B
6	CR(E) 5-4	1.5	4" ANSI	25.2	34.2	4.8	57.9	29.6	98.8	74.0	39x32x12	799	943	B
	CR(E) 5-6	2					57.9	31.8	98.8	74.0	39x32x12	838	983	B
	CR(E) 5-9	3					57.9	36.6	98.8	74.0	39x32x12	916	1060	B
	CR(E) 5-13	5					57.9	42.0	98.8	74.0	39x32x12	1186	1330	B
	CR(E) 5-16	5					57.9	45.3	98.8	74.0	39x32x12	1209	1353	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-E (CUE) with CR 5

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 5-4	1.5	2" NPT	23.1	25.5	4.8	57.9	25.9	56.3	23.6	39x32x12	203	364	C
	CR 5-6	2					57.9	30.6	56.3	23.6	48x36x16	250	418	C
	CR 5-9	3					57.9	35.1	56.3	23.6	48x36x16	268	436	C
	CR 5-13	5					57.9	39.8	56.3	23.6	48x36x16	306	474	C
	CR 5-16	5					57.9	43.0	56.3	23.6	48x36x16	314	482	C
3	CR 5-4	1.5	2.5" NPT	25.2	28.1	4.8	57.9	25.9	68.9	36.2	39x32x12	295	472	C
	CR 5-6	2					57.9	30.6	68.9	36.2	63x47x20	365	553	C
	CR 5-9	3					57.9	35.1	68.9	36.2	63x47x20	392	580	C
	CR 5-13	5					57.9	39.8	68.9	36.2	63x47x20	449	637	C
	CR 5-16	5					57.9	43.0	68.9	36.2	63x47x20	461	649	C
4	CR 5-4	1.5	3" NPT	25.2	28.7	4.8	57.9	25.9	81.5	48.8	39x32x12	390	612	C
	CR 5-6	2					57.9	30.6	81.5	48.8	63x47x20	484	720	C
	CR 5-9	3					57.9	35.1	81.5	48.8	63x47x20	520	756	C
	CR 5-13	5					57.9	39.8	81.5	48.8	63x47x20	596	832	C
	CR 5-16	5					57.9	43.0	81.5	48.8	63x47x20	611	848	C
5	CR 5-4	1.5	3" NPT	25.2	28.7	4.8	57.9	25.9	94.1	61.4	48x36x16	535	773	C
	CR 5-6	2					57.9	30.6	94.1	61.4	63x63x20	653	909	C
	CR 5-9	3					57.9	35.1	94.1	61.4	63x63x20	697	954	C
	CR 5-13	5					57.9	39.8	94.1	61.4	63x63x20	792	1049	C
	CR 5-16	5					57.9	43.0	94.1	61.4	63x63x20	812	1068	C
6	CR 5-4	1.5	4" ANSI	25.2	34.2	4.8	79.0	25.9	114.6	74.0	48x36x16	637	1039	C
	CR 5-6	2					79.0	30.6	114.6	74.0	71x71x20	778	1202	C
	CR 5-9	3					79.0	35.1	114.6	74.0	71x71x20	832	1256	C
	CR 5-13	5					79.0	39.8	114.6	74.0	71x71x20	946	1370	C
	CR 5-16	5					79.0	43.0	114.6	74.0	71x71x20	969	1393	C

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-F with CR 5

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 5-4	1.5	2" NPT	23.1	25.5	4.8	57.9	25.9	56.3	23.6	39x32x12	203	362	B
	CR 5-6	2					57.9	30.6	56.3	23.6	39x32x12	250	413	B
	CR 5-9	3					57.9	35.1	56.3	23.6	39x32x12	268	431	B
	CR 5-13	5					57.9	39.8	56.3	23.6	39x32x12	306	469	B
	CR 5-16	5					57.9	43.0	56.3	23.6	39x32x12	314	476	B
3	CR 5-4	1.5	2.5" NPT	25.2	28.1	4.8	57.9	25.9	68.9	36.2	39x32x12	295	467	B
	CR 5-6	2					57.9	30.6	68.9	36.2	39x32x12	365	541	B
	CR 5-9	3					57.9	35.1	68.9	36.2	39x32x12	392	568	B
	CR 5-13	5					57.9	39.8	68.9	36.2	39x32x12	449	625	B
	CR 5-16	5					57.9	43.0	68.9	36.2	39x32x12	461	637	B
4	CR 5-4	1.5	3" NPT	25.2	28.7	4.8	57.9	25.9	81.5	48.8	39x32x12	390	576	B
	CR 5-6	2					57.9	30.6	81.5	48.8	39x32x12	484	674	B
	CR 5-9	3					57.9	35.1	81.5	48.8	39x32x12	520	709	B
	CR 5-13	5					57.9	39.8	81.5	48.8	39x32x12	596	785	B
	CR 5-16	5					57.9	43.0	81.5	48.8	39x32x12	611	801	B
5	CR 5-4	1.5	3" NPT	25.2	28.7	4.8	57.9	25.9	94.1	61.4	47x32x12	535	762	B
	CR 5-6	2					57.9	30.6	94.1	61.4	47x32x12	653	884	B
	CR 5-9	3					57.9	35.1	94.1	61.4	47x32x12	697	928	B
	CR 5-13	5					57.9	39.8	94.1	61.4	47x32x12	792	1023	B
	CR 5-16	5					57.9	43.0	94.1	61.4	47x32x12	812	1042	B
6	CR 5-4	1.5	4" ANSI	25.2	34.2	4.8	57.9	25.9	106.7	74.0	47x32x12	637	877	B
	CR 5-6	2					57.9	30.6	106.7	74.0	47x32x12	778	1023	B
	CR 5-9	3					57.9	35.1	106.7	74.0	47x32x12	832	1076	B
	CR 5-13	5					57.9	39.8	106.7	74.0	47x32x12	946	1190	B
	CR 5-16	5					57.9	43.0	106.7	74.0	47x32x12	969	1213	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-S with CR 5

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 5-4	1.5	2" NPT	23.1	25.5	4.8	57.9	25.9	49.2	49.2	24x24x8	203	280	A
	CR 5-6	2					57.9	30.6	49.2	49.2	24x24x8	250	327	A
	CR 5-9	3					57.9	35.1	49.2	49.2	24x24x8	268	345	A
	CR 5-13	5					57.9	39.8	49.2	49.2	24x24x8	306	383	A
	CR 5-16	5					57.9	43.0	49.2	49.2	24x24x8	314	391	A
3	CR 5-4	1.5	2.5" NPT	25.2	28.1	4.8	57.9	25.9	61.8	61.8	24x24x8	295	384	A
	CR 5-6	2					57.9	30.6	61.8	61.8	24x24x8	365	455	A
	CR 5-9	3					57.9	35.1	61.8	61.8	24x24x8	392	482	A
	CR 5-13	5					57.9	39.8	61.8	61.8	24x24x8	449	539	A
	CR 5-16	5					57.9	43.0	61.8	61.8	24x24x8	461	550	A
4	CR 5-4	1.5	3" NPT	25.2	28.7	4.8	57.9	25.9	74.4	74.4	39x32x12	390	513	A
	CR 5-6	2					57.9	30.6	74.4	74.4	39x32x12	484	608	A
	CR 5-9	3					57.9	35.1	74.4	74.4	39x32x12	520	643	A
	CR 5-13	5					57.9	39.8	74.4	74.4	39x32x12	596	719	A
	CR 5-16	5					57.9	43.0	74.4	74.4	39x32x12	611	735	A
5	CR 5-4	1.5	3" NPT	25.2	28.7	4.8	57.9	25.9	94.1	61.4	47x32x12	535	754	B
	CR 5-6	2					57.9	30.6	94.1	61.4	47x32x12	653	872	B
	CR 5-9	3					57.9	35.1	94.1	61.4	47x32x12	697	916	B
	CR 5-13	5					57.9	39.8	94.1	61.4	47x32x12	792	1012	B
	CR 5-16	5					57.9	43.0	94.1	61.4	47x32x12	812	1031	B
6	CR 5-4	1.5	4" ANSI	25.2	34.2	4.8	57.9	25.9	106.7	74.0	47x32x12	637	869	B
	CR 5-6	2					57.9	30.6	106.7	74.0	47x32x12	778	1010	B
	CR 5-9	3					57.9	35.1	106.7	74.0	47x32x12	832	1064	B
	CR 5-13	5					57.9	39.8	106.7	74.0	47x32x12	946	1178	B
	CR 5-16	5					57.9	43.0	106.7	74.0	47x32x12	969	1201	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC with CR(E) 10

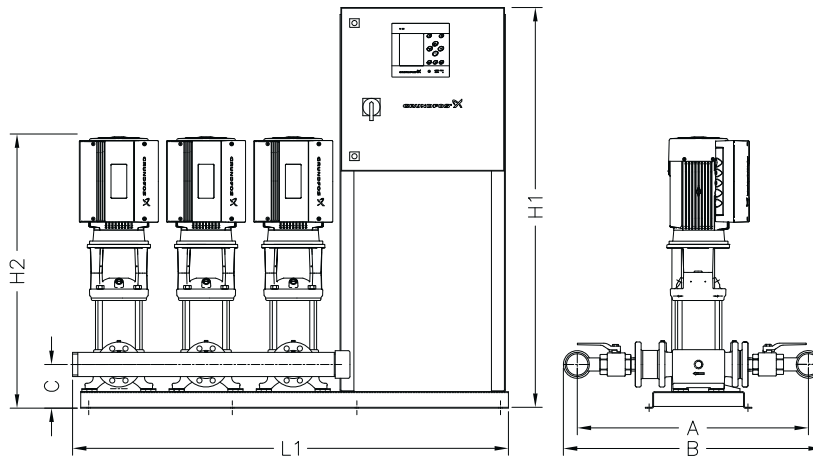


Fig. 22 Drawing of a Hydro MPC booster set with a control panel mounted on the same base plate as the pumps. (Design A)

TM04 0000 4807 3CR10-15-E.pdf

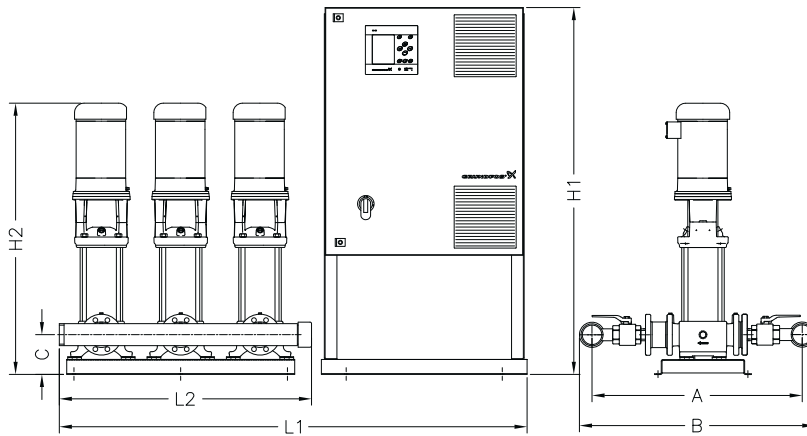


Fig. 23 Drawing of a Hydro MPC booster set with control panel and pumps on separate base plates. (Design B)

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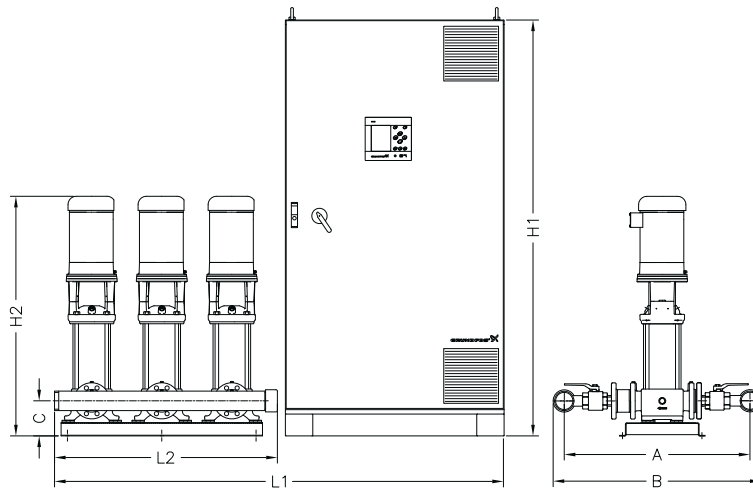


Fig. 24 Drawing of a Hydro MPC booster set with a floor-mounted control panel. (Design C)

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Hydro MPC-E with CRE 10

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR(E) 10-2	1.5	2.5" NPT	32.4	35.3	6.3	57.9	29.6	51.6	51.6	24x24x8	361	420	A
	CR(E) 10-3	3					57.9	33.4	51.6	51.6	24x24x8	407	467	A
	CR(E) 10-4	3					57.9	34.6	51.6	51.6	24x24x8	412	471	A
	CR(E) 10-5	5					57.9	36.8	51.6	51.6	24x24x8	498	557	A
	CR(E) 10-6	5					57.9	39.0	51.6	51.6	24x24x8	503	562	A
	CR(E) 10-8	7.5					57.9	41.8	51.6	51.6	24x24x8	527	586	A
	CR(E) 10-10	7.5					57.9	46.5	51.6	51.6	24x24x8	545	604	A
3	CR(E) 10-2	1.5	3" NPT	32.4	35.9	6.3	57.9	29.6	64.2	64.2	24x24x8	533	604	A
	CR(E) 10-3	3					57.9	33.4	64.2	64.2	24x24x8	603	674	A
	CR(E) 10-4	3					57.9	34.6	64.2	64.2	24x24x8	610	681	A
	CR(E) 10-5	5					57.9	36.8	64.2	64.2	24x24x8	739	811	A
	CR(E) 10-6	5					57.9	39.0	64.2	64.2	24x24x8	746	817	A
	CR(E) 10-8	7.5					57.9	41.8	64.2	64.2	24x24x8	782	854	A
	CR(E) 10-10	7.5					57.9	46.5	64.2	64.2	24x24x8	809	880	A
4	CR(E) 10-2	1.5	4" ANSI	32.4	41.4	6.3	57.9	29.6	79.1	79.1	24x24x8	747	847	A
	CR(E) 10-3	3					57.9	33.4	79.1	79.1	24x24x8	841	940	A
	CR(E) 10-4	3					57.9	34.6	79.1	79.1	24x24x8	850	949	A
	CR(E) 10-5	5					57.9	36.8	79.1	79.1	24x24x8	1022	1122	A
	CR(E) 10-6	5					57.9	39.0	79.1	79.1	24x24x8	1031	1131	A
	CR(E) 10-8	7.5					57.9	41.8	79.1	79.1	24x24x8	1080	1180	A
	CR(E) 10-10	7.5					57.9	46.5	79.1	79.1	24x24x8	1115	1215	A
5	CR(E) 10-2	1.5	4" ANSI	32.4	41.4	6.3	57.9	29.6	89.5	64.7	24x24x8	930	1042	B
	CR(E) 10-3	3					57.9	33.4	89.5	64.7	24x24x8	1048	1159	B
	CR(E) 10-4	3					57.9	34.6	89.5	64.7	24x24x8	1059	1170	B
	CR(E) 10-5	5					57.9	36.8	89.5	64.7	24x24x8	1275	1386	B
	CR(E) 10-6	5					57.9	39.0	89.5	64.7	24x24x8	1286	1397	B
	CR(E) 10-8	7.5					57.9	41.8	89.5	64.7	24x24x8	1347	1458	B
	CR(E) 10-10	7.5					57.9	46.5	89.5	64.7	24x24x8	1391	1502	B
6	CR(E) 10-2	1.5	6" ANSI	32.4	43.4	6.3	57.9	29.6	102.2	77.4	39x32x12	1132	1277	B
	CR(E) 10-3	3					57.9	33.4	102.2	77.4	39x32x12	1273	1418	B
	CR(E) 10-4	3					57.9	34.6	102.2	77.4	39x32x12	1286	1431	B
	CR(E) 10-5	5					57.9	36.8	102.2	77.4	39x32x12	1545	1690	B
	CR(E) 10-6	5					57.9	39.0	102.2	77.4	39x32x12	1559	1703	B
	CR(E) 10-8	7.5					57.9	41.8	102.2	77.4	39x32x12	1632	1777	B
	CR(E) 10-10	7.5					57.9	46.5	102.2	77.4	39x32x12	1685	1830	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-E (CUE) with CRE 10

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 10-2	1.5	2.5" NPT	32.4	35.3	6.3	43*	26.9	58.7	26.0	48x36x16	307	467	C
	CR 10-3	3					43*	31.6	58.7	26.0	48x36x16	379	547	C
	CR 10-4	3					43*	32.9	58.7	26.0	48x36x16	384	551	C
	CR 10-5	5					57.9	35.5	58.7	26.0	48x36x16	418	586	C
	CR 10-6	5					57.9	36.8	58.7	26.0	48x36x16	423	590	C
	CR 10-8	7.5					57.9	41.8	58.7	26.0	48x36x16	529	707	C
	CR 10-10	7.5					57.9	46.5	58.7	26.0	48x36x16	547	724	C
3	CR 10-2	1.5	3" NPT	32.4	35.9	6.3	57.9	26.9	71.3	38.6	63x47x20	452	629	C
	CR 10-3	3					57.9	31.6	71.3	38.6	63x47x20	561	749	C
	CR 10-4	3					57.9	32.9	71.3	38.6	63x47x20	568	756	C
	CR 10-5	5					57.9	35.5	71.3	38.6	63x47x20	619	807	C
	CR 10-6	5					57.9	36.8	71.3	38.6	63x47x20	626	814	C
	CR 10-8	7.5					57.9	41.8	71.3	38.6	63x47x20	785	988	C
	CR 10-10	7.5					57.9	46.5	71.3	38.6	63x47x20	812	1015	C
4	CR 10-2	1.5	4" ANSI	32.4	41.4	6.3	57.9	26.9	87.2	54.5	63x47x20	639	861	C
	CR 10-3	3					57.9	31.6	87.2	54.5	63x47x20	785	1021	C
	CR 10-4	3					57.9	32.9	87.2	54.5	63x47x20	794	1030	C
	CR 10-5	5					57.9	35.5	87.2	54.5	63x47x20	862	1099	C
	CR 10-6	5					57.9	36.8	87.2	54.5	63x47x20	871	1108	C
	CR 10-8	7.5					79.0	41.8	95.0	54.5	63x63x20	1084	1487	C
	CR 10-10	7.5					79.0	46.5	95.0	54.5	63x63x20	1119	1523	C
5	CR 10-2	1.5	4" ANSI	32.4	41.4	6.3	57.9	26.9	97.4	64.7	63x63x20	795	1034	C
	CR 10-3	3					57.9	31.6	97.4	64.7	63x63x20	978	1234	C
	CR 10-4	3					57.9	32.9	97.4	64.7	63x63x20	989	1245	C
	CR 10-5	5					57.9	35.5	97.4	64.7	63x63x20	1075	1331	C
	CR 10-6	5					57.9	36.8	97.4	64.7	63x63x20	1086	1342	C
	CR 10-8	7.5					79.0	41.8	105.3	64.7	71x71x20	1352	1780	C
	CR 10-10	7.5					79.0	46.5	105.3	64.7	71x71x20	1396	1824	C
6	CR 10-2	1.5	6" ANSI	32.4	43.4	6.3	79.0	26.9	117.9	77.4	71x71x20	970	1373	C
	CR 10-3	3					79.0	31.6	117.9	77.4	71x71x20	1189	1613	C
	CR 10-4	3					79.0	32.9	117.9	77.4	71x71x20	1202	1626	C
	CR 10-5	5					79.0	35.5	117.9	77.4	71x71x20	1305	1729	C
	CR 10-6	5					79.0	36.8	117.9	77.4	71x71x20	1319	1742	C
	CR 10-8	7.5					79.0	41.8	117.9	77.4	71x71x20	1638	2092	C
	CR 10-10	7.5					79.0	46.5	117.9	77.4	71x71x20	1691	2145	C

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-F with CR 10

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 10-2	1.5	2.5" NPT	32.4	35.3	6.3	43*	26.9	58.7	26.0	39x32x12	307	465	B
	CR 10-3	3					43*	31.6	58.7	26.0	39x32x12	379	542	B
	CR 10-4	3					43*	32.9	58.7	26.0	39x32x12	384	546	B
	CR 10-5	5					57.9	35.5	58.7	26.0	39x32x12	418	580	B
	CR 10-6	5					57.9	36.8	58.7	26.0	39x32x12	423	585	B
	CR 10-8	7.5					57.9	41.8	58.7	26.0	39x32x12	529	698	B
	CR 10-10	7.5					57.9	46.5	58.7	26.0	39x32x12	547	715	B
3	CR 10-2	1.5	3" NPT	32.4	35.9	6.3	57.9	26.9	71.3	38.6	39x32x12	452	624	B
	CR 10-3	3					57.9	31.6	71.3	38.6	39x32x12	561	737	B
	CR 10-4	3					57.9	32.9	71.3	38.6	39x32x12	568	743	B
	CR 10-5	5					57.9	35.5	71.3	38.6	39x32x12	619	795	B
	CR 10-6	5					57.9	36.8	71.3	38.6	39x32x12	626	802	B
	CR 10-8	7.5					57.9	41.8	71.3	38.6	39x32x12	785	968	B
	CR 10-10	7.5					57.9	46.5	71.3	38.6	39x32x12	812	995	B
4	CR 10-2	1.5	4" ANSI	32.4	41.4	6.3	57.9	26.9	87.2	54.5	47x32x12	639	853	B
	CR 10-3	3					57.9	31.6	87.2	54.5	47x32x12	785	1002	B
	CR 10-4	3					57.9	32.9	87.2	54.5	47x32x12	794	1011	B
	CR 10-5	5					57.9	35.5	87.2	54.5	47x32x12	862	1080	B
	CR 10-6	5					57.9	36.8	87.2	54.5	47x32x12	871	1089	B
	CR 10-8	7.5					57.9	41.8	87.2	54.5	47x32x12	1084	1309	B
	CR 10-10	7.5					57.9	46.5	87.2	54.5	47x32x12	1119	1344	B
5	CR 10-2	1.5	4" ANSI	32.4	41.4	6.3	57.9	26.9	97.4	64.7	47x32x12	795	1023	B
	CR 10-3	3					57.9	31.6	97.4	64.7	47x32x12	978	1208	B
	CR 10-4	3					57.9	32.9	97.4	64.7	47x32x12	989	1219	B
	CR 10-5	5					57.9	35.5	97.4	64.7	47x32x12	1075	1305	B
	CR 10-6	5					57.9	36.8	97.4	64.7	47x32x12	1086	1317	B
	CR 10-8	7.5					57.9	41.8	97.4	64.7	47x32x12	1352	1591	B
	CR 10-10	7.5					57.9	46.5	97.4	64.7	47x32x12	1396	1635	B
6	CR 10-2	1.5	6" ANSI	32.4	43.4	6.3	79.0	26.9	117.9	77.4	71x39x16	970	1358	B
	CR 10-3	3					79.0	31.6	117.9	77.4	71x39x16	1189	1580	B
	CR 10-4	3					79.0	32.9	117.9	77.4	71x39x16	1202	1594	B
	CR 10-5	5					79.0	35.5	117.9	77.4	71x39x16	1305	1697	B
	CR 10-6	5					79.0	36.8	117.9	77.4	71x39x16	1319	1710	B
	CR 10-8	7.5					79.0	41.8	117.9	77.4	71x39x16	1638	2038	B
	CR 10-10	7.5					79.0	46.5	117.9	77.4	71x39x16	1691	2091	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-S with CR 10

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 10-2	1.5	2.5" NPT	32.4	35.3	6.3	43*	26.9	50.4	50.4	24x24x8	307	383	A
	CR 10-3	3					43*	31.6	50.4	50.4	24x24x8	379	456	A
	CR 10-4	3					43*	32.9	50.4	50.4	24x24x8	384	460	A
	CR 10-5	5					57.9	35.5	50.4	50.4	24x24x8	418	495	A
	CR 10-6	5					57.9	36.8	50.4	50.4	24x24x8	423	499	A
	CR 10-8	7.5					57.9	41.8	50.4	50.4	24x24x8	529	606	A
	CR 10-10	7.5					57.9	46.5	50.4	50.4	24x24x8	547	624	A
3	CR 10-2	1.5	3" NPT	32.4	35.9	6.3	57.9	26.9	63.0	63.0	24x24x8	452	541	A
	CR 10-3	3					57.9	31.6	63.0	63.0	24x24x8	561	650	A
	CR 10-4	3					57.9	32.9	63.0	63.0	24x24x8	568	657	A
	CR 10-5	5					57.9	35.5	63.0	63.0	24x24x8	619	709	A
	CR 10-6	5					57.9	36.8	63.0	63.0	24x24x8	626	715	A
	CR 10-8	7.5					57.9	41.8	63.0	63.0	39x32x12	785	876	A
	CR 10-10	7.5					57.9	46.5	63.0	63.0	39x32x12	812	902	A
4	CR 10-2	1.5	4" ANSI	32.4	41.4	6.3	57.9	26.9	76.8	76.8	39x32x12	639	762	A
	CR 10-3	3					57.9	31.6	76.8	76.8	39x32x12	785	908	A
	CR 10-4	3					57.9	32.9	76.8	76.8	39x32x12	794	917	A
	CR 10-5	5					57.9	35.5	76.8	76.8	39x32x12	862	986	A
	CR 10-6	5					57.9	36.8	76.8	76.8	39x32x12	871	995	A
	CR 10-8	7.5					57.9	41.8	76.8	76.8	39x32x12	1084	1209	A
	CR 10-10	7.5					57.9	46.5	76.8	76.8	39x32x12	1119	1244	A
5	CR 10-2	1.5	4" ANSI	32.4	41.4	6.3	57.9	26.9	97.4	64.7	47x32x12	795	1015	B
	CR 10-3	3					57.9	31.6	97.4	64.7	47x32x12	978	1197	B
	CR 10-4	3					57.9	32.9	97.4	64.7	47x32x12	989	1208	B
	CR 10-5	5					57.9	35.5	97.4	64.7	47x32x12	1075	1294	B
	CR 10-6	5					57.9	36.8	97.4	64.7	47x32x12	1086	1305	B
	CR 10-8	7.5					57.9	41.8	97.4	64.7	47x32x12	1352	1572	B
	CR 10-10	7.5					57.9	46.5	97.4	64.7	47x32x12	1396	1616	B
6	CR 10-2	1.5	6" ANSI	32.4	43.4	6.3	57.9	26.9	110.1	77.4	47x32x12	970	1202	B
	CR 10-3	3					57.9	31.6	110.1	77.4	47x32x12	1189	1421	B
	CR 10-4	3					57.9	32.9	110.1	77.4	47x32x12	1202	1434	B
	CR 10-5	5					57.9	35.5	110.1	77.4	47x32x12	1305	1537	B
	CR 10-6	5					57.9	36.8	110.1	77.4	47x32x12	1319	1551	B
	CR 10-8	7.5					57.9	41.8	110.1	77.4	47x32x12	1638	1872	B
	CR 10-10	7.5					57.9	46.5	110.1	77.4	47x32x12	1691	1925	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC with CR(E) 15

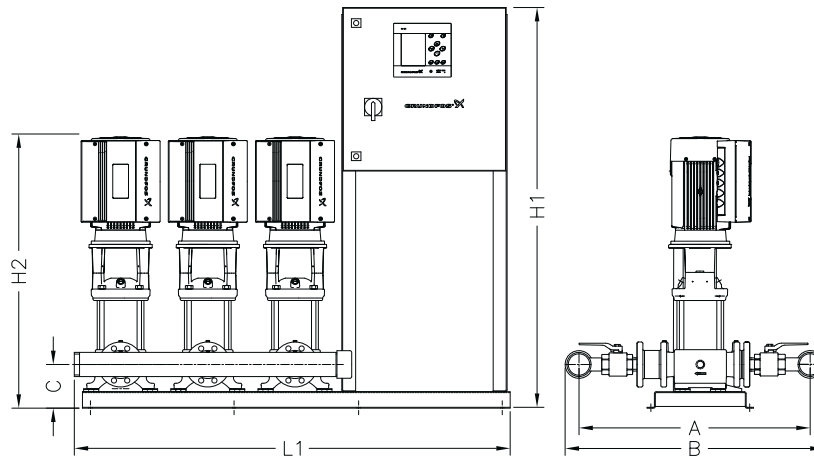


Fig. 25 Drawing of a Hydro MPC booster set with a control panel mounted on the same base plate as the pumps. (Design A)

TM04 0000 4807 3CR10-15-E.pdf

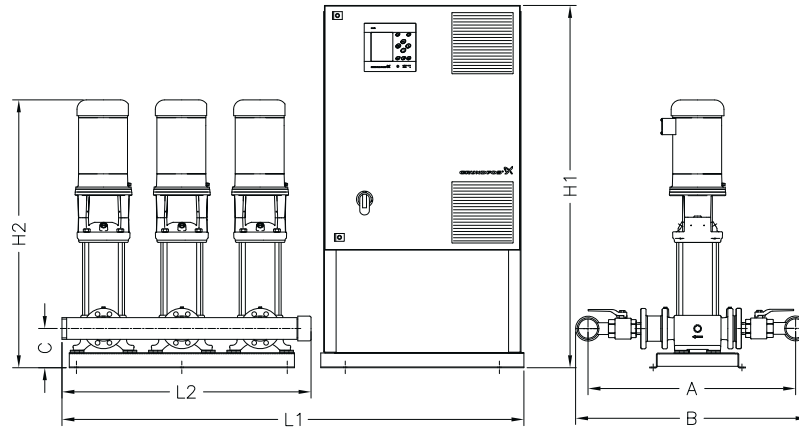


Fig. 26 Drawing of a Hydro MPC booster set with control panel and pumps on separate base plates. (Design B)

TM04 0002 4807 3CR10-15-F-F.pdf

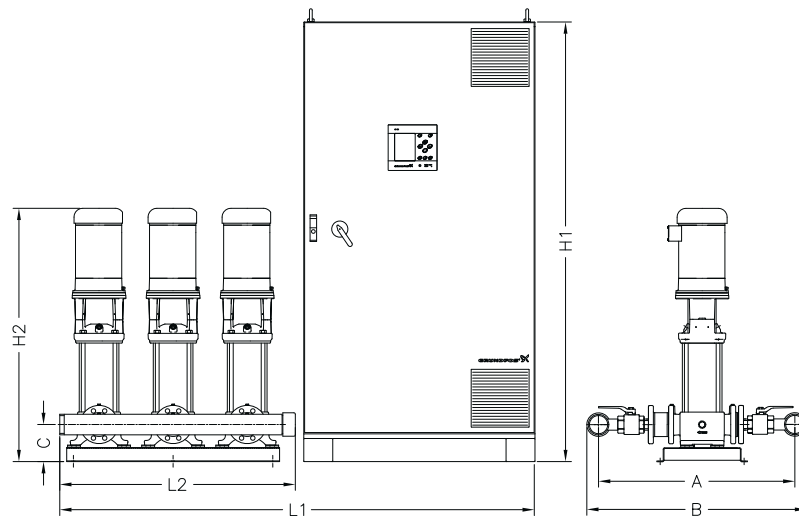


Fig. 27 Drawing of a Hydro MPC booster set with a floor-mounted control panel. (Design C)

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Hydro MPC-E with CR(E) 15

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR(E) 15-2	5	4" ANSI	37.0	46.0	6.3	57.9	35.4	51.6	51.6	24x24x8	520	580	A
	CR(E) 15-3	7.5					57.9	37.3	51.6	51.6	24x24x8	529	588	A
	CR(E) 15-4	7.5					57.9	39.4	51.6	51.6	24x24x8	562	622	A
	CR(E) 15-5	10					57.9	42.9	51.6	51.6	24x24x8	594	653	A
3	CR(E) 15-2	5	4" ANSI	37.0	46.0	6.3	57.9	35.4	64.2	64.2	24x24x8	762	833	A
	CR(E) 15-3	7.5					57.9	37.3	64.2	64.2	24x24x8	775	847	A
	CR(E) 15-4	7.5					57.9	39.4	64.2	64.2	24x24x8	825	897	A
	CR(E) 15-5	10					57.9	42.9	64.2	64.2	24x24x8	872	943	A
4	CR(E) 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	35.4	76.8	76.8	24x24x8	1031	1130	A
	CR(E) 15-3	7.5					57.9	37.3	76.8	76.8	24x24x8	1048	1148	A
	CR(E) 15-4	7.5					57.9	39.4	76.8	76.8	24x24x8	1115	1214	A
	CR(E) 15-5	10					57.9	42.9	76.8	76.8	24x24x8	1177	1277	A
5	CR(E) 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	35.4	91.9	67.1	24x24x8	1322	1434	B
	CR(E) 15-3	7.5					57.9	37.3	91.9	67.1	24x24x8	1344	1456	B
	CR(E) 15-4	7.5					57.9	39.4	91.9	67.1	24x24x8	1427	1539	B
	CR(E) 15-5	10					57.9	42.9	91.9	67.1	24x24x8	1505	1617	B
6	CR(E) 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	35.4	104.5	79.7	39x32x12	1463	1607	B
	CR(E) 15-3	7.5					57.9	37.3	104.5	79.7	39x32x12	1489	1634	B
	CR(E) 15-4	7.5					57.9	39.4	104.5	79.7	39x32x12	1589	1734	B
	CR(E) 15-5	10					57.9	42.9	104.5	79.7	39x32x12	1683	1828	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-E (CUE) with CR 15

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 15-2	5	4" ANSI	37.0	46.0	6.3	57.9	33.3	62.0	29.3	48x36x16	440	608	C
	CR 15-3	7.5					57.9	37.6	62.0	29.3	48x36x16	449	627	C
	CR 15-4	7.5					57.9	39.3	62.0	29.3	48x36x16	564	742	C
	CR 15-5	10					57.9	41.1	62.0	29.3	48x36x16	578	755	C
	CR 15-7	15					57.9	48.3	62.0	29.3	48x36x16	649	882	C
3	CR 15-2	5	4" ANSI	37.0	46.0	6.3	57.9	33.3	74.6	41.9	63x47x20	642	830	C
	CR 15-3	7.5					57.9	37.6	74.6	41.9	63x47x20	655	858	C
	CR 15-4	7.5					57.9	39.3	74.6	41.9	63x47x20	828	1031	C
	CR 15-5	10					57.9	41.1	74.6	41.9	63x63x20	848	1051	C
	CR 15-7	15					57.9	48.3	74.6	41.9	63x47x20	955	1241	C
4	CR 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	33.3	87.2	54.5	63x47x20	871	1107	C
	CR 15-3	7.5					57.9	37.6	87.2	54.5	63x63x20	888	1145	C
	CR 15-4	7.5					57.9	39.3	87.2	54.5	63x63x20	1119	1375	C
	CR 15-5	10					57.9	41.1	87.2	54.5	71x71x20	1145	1402	C
	CR 15-7	15					57.9	48.3	87.2	54.5	63x47x20	1289	1655	C
5	CR 15-2	5	6" ANSI	37.0	48.0	6.3	79.0	33.3	107.7	67.1	63x63x20	1122	1526	C
	CR 15-3	7.5					79.0	37.6	107.7	67.1	71x71x20	1144	1573	C
	CR 15-4	7.5					79.0	39.3	107.7	67.1	71x71x20	1432	1861	C
	CR 15-5	10					79.0	41.1	107.7	67.1	71x71x20	1465	1894	C
	CR 15-7	15					79.0	48.3	107.7	67.1	63x63x20	1644	2210	C
6	CR 15-2	5	6" ANSI	37.0	48.0	6.3	79.0	33.3	120.3	79.7	71x71x20	1346	1770	C
	CR 15-3	7.5					79.0	37.6	120.3	79.7	71x71x20	1372	1827	C
	CR 15-4	7.5					79.0	39.3	120.3	79.7	71x71x20	1718	2172	C
	CR 15-5	10					79.0	41.1	120.3	79.7	79x93x24	1758	2212	C
	CR 15-7	15					79.0	48.3	120.3	79.7	71x71x20	1973	2592	C

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-F with CR 15

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 15-2	5	4" ANSI	37.0	46.0	6.3	57.9	33.3	62.0	29.3	39x32x12	440	603	B
	CR 15-3	7.5					57.9	37.6	62.0	29.3	39x32x12	449	616	B
	CR 15-4	7.5					57.9	39.3	62.0	29.3	39x32x12	564	733	B
	CR 15-5	10					57.9	41.1	62.0	29.3	39x32x12	578	746	B
	CR 15-7	15					57.9	48.3	62.0	29.3	48x36x16	649	845	B
3	CR 15-2	5	4" ANSI	37.0	46.0	6.3	57.9	33.3	74.6	41.9	39x32x12	642	818	B
	CR 15-3	7.5					57.9	37.6	74.6	41.9	39x32x12	655	836	B
	CR 15-4	7.5					57.9	39.3	74.6	41.9	39x32x12	828	1011	B
	CR 15-5	10					57.9	41.1	74.6	41.9	39x32x12	848	1031	B
	CR 15-7	15					57.9	48.3	74.6	41.9	48x36x16	955	1166	B
4	CR 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	33.3	87.2	54.5	47x32x12	871	1088	B
	CR 15-3	7.5					57.9	37.6	87.2	54.5	47x32x12	888	1111	B
	CR 15-4	7.5					57.9	39.3	87.2	54.5	47x32x12	1119	1344	B
	CR 15-5	10					57.9	41.1	87.2	54.5	47x32x12	1145	1370	B
	CR 15-7	15					57.9	48.3	87.2	54.5	63x47x20	1289	1541	B
5	CR 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	33.3	99.8	67.1	47x32x12	1122	1353	B
	CR 15-3	7.5					57.9	37.6	99.8	67.1	47x32x12	1144	1380	B
	CR 15-4	7.5					57.9	39.3	99.8	67.1	47x32x12	1432	1671	B
	CR 15-5	10					79.0	41.1	107.7	67.1	71x39x16	1465	1851	B
	CR 15-7	15					79.0	48.3	107.7	67.1	63x47x20	1644	2058	B
6	CR 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	33.3	112.4	79.7	47x32x12	1346	1590	B
	CR 15-3	7.5					57.9	37.6	112.4	79.7	47x32x12	1372	1622	B
	CR 15-4	7.5					79.0	39.3	120.3	79.7	71x39x16	1718	2118	B
	CR 15-5	10					79.0	41.1	120.3	79.7	71x39x16	1758	2158	B
	CR 15-7	15					79.0	48.3	120.3	79.7	63x47x20	1973	2401	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-S with CR 15

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 15-2	5	4" ANSI	37.0	46.0	6.3	57.9	33.3	51.6	51.6	24x24x8	440	517	A
	CR 15-3	7.5					57.9	37.6	51.6	51.6	24x24x8	449	526	A
	CR 15-4	7.5					57.9	39.3	51.6	51.6	24x24x8	564	642	A
	CR 15-5	10					57.9	41.1	51.6	51.6	24x24x8	578	655	A
	CR 15-7	15					57.9	48.3	51.6	51.6	24x24x8	649	726	A
3	CR 15-2	5	4" ANSI	37.0	46.0	6.3	57.9	33.3	64.2	64.2	24x24x8	642	732	A
	CR 15-3	7.5					57.9	37.6	64.2	64.2	24x24x8	655	745	A
	CR 15-4	7.5					57.9	39.3	64.2	64.2	24x24x8	828	919	A
	CR 15-5	10					57.9	41.1	64.2	64.2	39x32x12	848	938	A
	CR 15-7	15					57.9	48.3	64.2	64.2	39x32x12	955	1046	A
4	CR 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	33.3	76.8	76.8	39x32x12	871	994	A
	CR 15-3	7.5					57.9	37.6	76.8	76.8	39x32x12	888	1012	A
	CR 15-4	7.5					57.9	39.3	76.8	76.8	39x32x12	1119	1243	A
	CR 15-5	10					57.9	41.1	76.8	76.8	39x32x12	1145	1270	A
	CR 15-7	15					57.9	48.3	76.8	76.8	39x32x12	1289	1413	A
5	CR 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	33.3	99.8	67.1	47x32x12	1122	1341	B
	CR 15-3	7.5					57.9	37.6	99.8	67.1	47x32x12	1144	1363	B
	CR 15-4	7.5					57.9	39.3	99.8	67.1	47x32x12	1432	1653	B
	CR 15-5	10					57.9	41.1	99.8	67.1	47x32x12	1465	1686	B
	CR 15-7	15					57.9	48.3	99.8	67.1	47x32x12	1644	1865	B
6	CR 15-2	5	6" ANSI	37.0	48.0	6.3	57.9	33.3	112.4	79.7	47x32x12	1346	1578	B
	CR 15-3	7.5					57.9	37.6	112.4	79.7	47x32x12	1372	1605	B
	CR 15-4	7.5					57.9	39.3	112.4	79.7	47x32x12	1718	1952	B
	CR 15-5	10					57.9	41.1	112.4	79.7	47x32x12	1758	1992	B
	CR 15-7	15					57.9	48.3	112.4	79.7	47x32x12	1973	2207	B

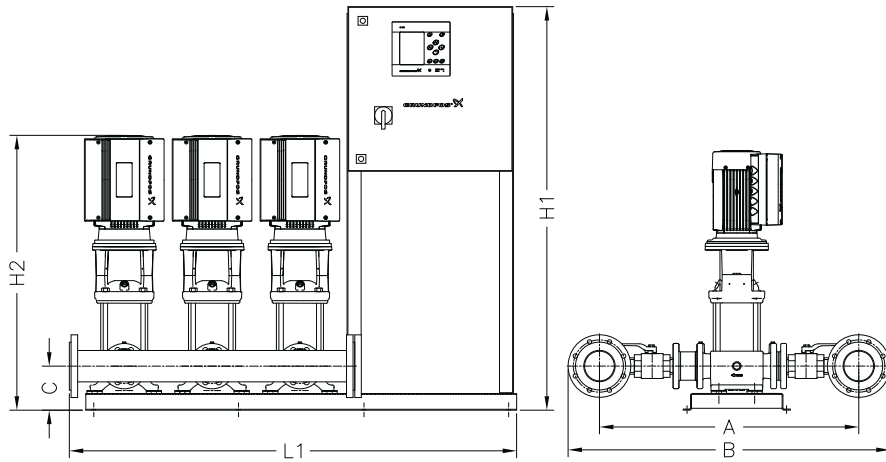
Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

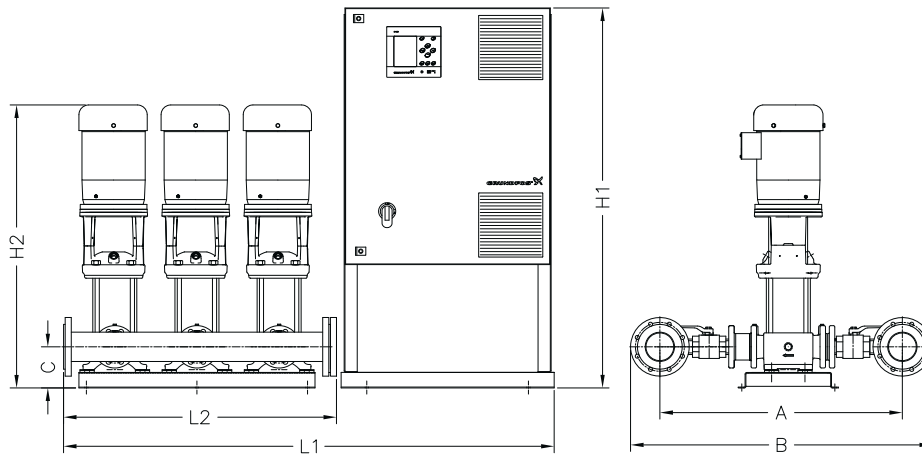
Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC with CR(E) 20



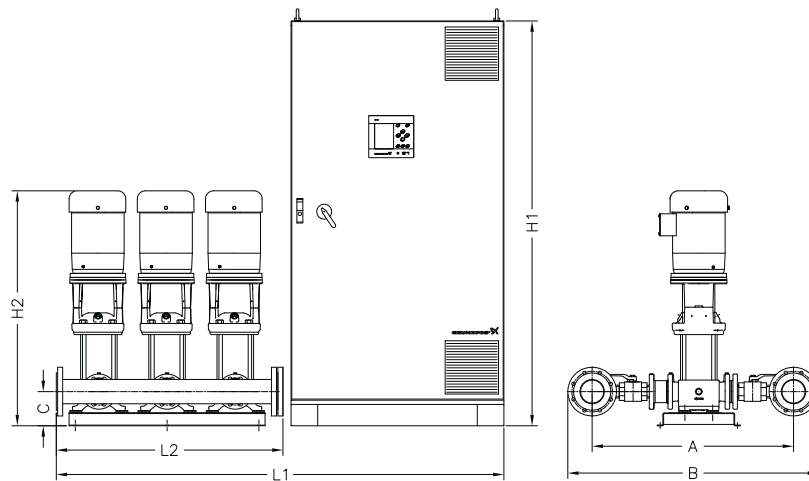
TM04 0003 4807 3CR20-E.pdf

Fig. 28 Drawing of a Hydro MPC booster set with a control panel mounted on the same base plate as the pumps. (Design A)



TM04 0005 4807 3CR20-F.pdf

Fig. 29 Drawing of a Hydro MPC booster set with control panel and pumps on separate base plates. (Design B)



TM04 0004 4807 3CR20-EF.pdf

Fig. 30 Drawing of a Hydro MPC booster set with a floor-mounted control panel. (Design C)

Hydro MPC-E with CR(E) 20

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR(E) 20-1	3	4" ANSI	37.0	46.0	6.3	57.9	33.4	51.6	51.6	24x24x8	438	498	A
	CR(E) 20-2	5					57.9	35.5	51.6	51.6	24x24x8	520	580	A
	CR(E) 20-3	7.5					57.9	37.6	51.6	51.6	24x24x8	554	613	A
	CR(E) 20-4	10					57.9	39.4	51.6	51.6	24x24x8	580	640	A
3	CR(E) 20-1	3	4" ANSI	37.0	46.0	6.3	57.9	33.4	64.2	64.2	24x24x8	639	710	A
	CR(E) 20-2	5					57.9	35.5	64.2	64.2	24x24x8	762	833	A
	CR(E) 20-3	7.5					57.9	37.6	64.2	64.2	24x24x8	812	883	A
	CR(E) 20-4	10					57.9	39.4	64.2	64.2	24x24x8	852	924	A
4	CR(E) 20-1	3	6" ANSI	37.0	48.0	6.3	57.9	33.4	76.8	76.8	24x24x8	867	966	A
	CR(E) 20-2	5					57.9	35.5	76.8	76.8	24x24x8	1031	1130	A
	CR(E) 20-3	7.5					57.9	37.6	76.8	76.8	24x24x8	1097	1197	A
	CR(E) 20-4	10					57.9	39.4	76.8	76.8	24x24x8	1151	1250	A
5	CR(E) 20-1	3	6" ANSI	37.0	48.0	6.3	57.9	33.4	91.9	67.1	24x24x8	1117	1229	B
	CR(E) 20-2	5					57.9	35.5	91.9	67.1	24x24x8	1322	1434	B
	CR(E) 20-3	7.5					57.9	37.6	91.9	67.1	24x24x8	1405	1517	B
	CR(E) 20-4	10					57.9	39.4	91.9	67.1	24x24x8	1472	1584	B
6	CR(E) 20-1	3	6" ANSI	37.0	48.0	6.3	57.9	33.4	104.5	79.7	39x32x12	1340	1485	B
	CR(E) 20-2	5					57.9	35.5	104.5	79.7	39x32x12	1586	1731	B
	CR(E) 20-3	7.5					57.9	37.6	104.5	79.7	39x32x12	1685	1831	B
	CR(E) 20-4	10					57.9	39.4	104.5	79.7	39x32x12	1766	1911	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-E (CUE) with CR 20

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 20-1	3	4" ANSI	37.0	46.0	6.3	57.9	31.4	62.0	29.3	48x36x16	410	578	C
	CR 20-2	5					57.9	33.1	62.0	29.3	48x36x16	440	608	C
	CR 20-3	7.5					57.9	37.6	62.0	29.3	48x36x16	556	733	C
	CR 20-4	10					57.9	39.4	62.0	29.3	48x36x16	564	742	C
	CR 20-5	15					57.9	44.3	62.0	29.3	48x36x16	636	869	C
	CR 20-6	15					57.9	46.0	62.0	29.3	48x36x16	645	877	C
3	CR 20-1	3	4" ANSI	37.0	46.0	6.3	57.9	31.4	74.6	41.9	63x47x20	597	813	C
	CR 20-2	5					57.9	33.1	74.6	41.9	63x47x20	642	858	C
	CR 20-3	7.5					57.9	37.6	74.6	41.9	63x47x20	815	1046	C
	CR 20-4	10					57.9	39.4	74.6	41.9	63x63x20	828	1059	C
	CR 20-5	15					57.9	44.3	74.6	41.9	63x47x20	936	1249	C
	CR 20-6	15					57.9	46.0	74.6	41.9	63x47x20	949	1262	C
4	CR 20-1	3	6" ANSI	37.0	48.0	6.3	57.9	31.4	87.2	54.5	63x47x20	811	1047	C
	CR 20-2	5					57.9	33.1	87.2	54.5	63x47x20	871	1107	C
	CR 20-3	7.5					57.9	37.6	87.2	54.5	63x63x20	1101	1357	C
	CR 20-4	10					57.9	39.4	87.2	54.5	71x71x20	1119	1375	C
	CR 20-5	15					79.0	44.3	95.1	54.5	63x47x20	1262	1775	C
	CR 20-6	15					79.0	46.0	95.1	54.5	63x47x20	1280	1793	C
5	CR 20-1	3	6" ANSI	37.0	48.0	6.3	79.0	31.4	107.7	67.1	63x63x20	1047	1451	C
	CR 20-2	5					79.0	33.1	107.7	67.1	63x63x20	1122	1526	C
	CR 20-3	7.5					79.0	37.6	107.7	67.1	71x71x20	1410	1839	C
	CR 20-4	10					79.0	39.4	107.7	67.1	71x71x20	1432	1861	C
	CR 20-5	15					79.0	44.3	107.7	67.1	63x63x20	1611	2177	C
	CR 20-6	15					79.0	46.0	107.7	67.1	63x63x20	1633	2199	C
6	CR 20-1	3	6" ANSI	37.0	48.0	6.3	79.0	31.4	120.3	79.7	71x71x20	1256	1680	C
	CR 20-2	5					79.0	33.1	120.3	79.7	71x71x20	1346	1770	C
	CR 20-3	7.5					79.0	37.6	120.3	79.7	71x71x20	1691	2146	C
	CR 20-4	10					79.0	39.4	120.3	79.7	79x93x24	1718	2172	C
	CR 20-5	15					84.0	44.3	151.7	79.7	71x71x20	1933	3161	C
	CR 20-6	15					84.0	46.0	151.7	79.7	71x71x20	1959	3188	C

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes..

Hydro MPC-F with CR 20

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 20-1	3	4" ANSI	37.0	46.0	6.3	57.9	31.4	62.0	29.3	39x32x12	410	573	B
	CR 20-2	5					57.9	33.1	62.0	29.3	39x32x12	440	603	B
	CR 20-3	7.5					57.9	37.6	62.0	29.3	39x32x12	556	724	B
	CR 20-4	10					57.9	39.4	62.0	29.3	39x32x12	564	733	B
	CR 20-5	15					57.9	44.3	62.0	29.3	48x36x16	636	832	B
	CR 20-6	15					57.9	46.0	62.0	29.3	48x36x16	645	841	B
3	CR 20-1	3	4" ANSI	37.0	46.0	6.3	57.9	31.4	74.6	41.9	39x32x12	597	773	B
	CR 20-2	5					57.9	33.1	74.6	41.9	39x32x12	642	818	B
	CR 20-3	7.5					57.9	37.6	74.6	41.9	39x32x12	815	998	B
	CR 20-4	10					57.9	39.4	74.6	41.9	39x32x12	828	1011	B
	CR 20-5	15					57.9	44.3	74.6	41.9	48x36x16	936	1146	B
	CR 20-6	15					57.9	46.0	74.6	41.9	48x36x16	949	1159	B
4	CR 20-1	3	6" ANSI	37.0	48.0	6.3	57.9	31.4	87.2	54.5	47x32x12	811	1028	B
	CR 20-2	5					57.9	33.1	87.2	54.5	47x32x12	871	1088	B
	CR 20-3	7.5					57.9	37.6	87.2	54.5	47x32x12	1101	1326	B
	CR 20-4	10					57.9	39.4	87.2	54.5	47x32x12	1119	1344	B
	CR 20-5	15					57.9	44.3	87.2	54.5	63x47x20	1262	1514	B
	CR 20-6	15					57.9	46.0	87.2	54.5	63x47x20	1280	1532	B
5	CR 20-1	3	6" ANSI	37.0	48.0	6.3	57.9	31.4	99.8	67.1	47x32x12	1047	1278	B
	CR 20-2	5					57.9	33.1	99.8	67.1	47x32x12	1122	1353	B
	CR 20-3	7.5					79.0	37.6	107.7	67.1	71x39x16	1410	1796	B
	CR 20-4	10					79.0	39.4	107.7	67.1	71x39x16	1432	1818	B
	CR 20-5	15					79.0	44.3	107.7	67.1	63x47x20	1611	2025	B
	CR 20-6	15					79.0	46.0	107.7	67.1	63x47x20	1633	2047	B
6	CR 20-1	3	6" ANSI	37.0	48.0	6.3	79.0	31.4	120.3	79.7	71x39x16	1256	1647	B
	CR 20-2	5					79.0	33.1	120.3	79.7	71x39x16	1346	1737	B
	CR 20-3	7.5					79.0	37.6	120.3	79.7	71x39x16	1691	2092	B
	CR 20-4	10					79.0	39.4	120.3	79.7	71x39x16	1718	2118	B
	CR 20-5	15					79.0	44.3	120.3	79.7	63x47x20	1933	2361	B
	CR 20-6	15					79.0	46.0	120.3	79.7	63x47x20	1959	2387	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-S with CR 20

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 20-1	3	4" ANSI	37.0	46.0	6.3	57.9	31.4	51.6	51.6	24x24x8	410	487	A
	CR 20-2	5					57.9	33.1	51.6	51.6	24x24x8	440	517	A
	CR 20-3	7.5					57.9	37.6	51.6	51.6	24x24x8	556	633	A
	CR 20-4	10					57.9	39.4	51.6	51.6	39x32x12	564	642	A
	CR 20-5	15					57.9	44.3	51.6	51.6	24x24x8	636	713	A
	CR 20-6	15					57.9	46.0	51.6	51.6	24x24x8	645	722	A
3	CR 20-1	3	4" ANSI	37.0	46.0	6.3	57.9	31.4	64.2	64.2	24x24x8	597	687	A
	CR 20-2	5					57.9	33.1	64.2	64.2	24x24x8	642	732	A
	CR 20-3	7.5					57.9	37.6	64.2	64.2	39x32x12	815	905	A
	CR 20-4	10					57.9	39.4	64.2	64.2	39x32x12	828	919	A
	CR 20-5	15					57.9	44.3	64.2	64.2	39x32x12	936	1026	A
	CR 20-6	15					57.9	46.0	64.2	64.2	39x32x12	949	1039	A
4	CR 20-1	3	6" ANSI	37.0	48.0	6.3	57.9	31.4	76.8	76.8	39x32x12	811	934	A
	CR 20-2	5					57.9	33.1	76.8	76.8	39x32x12	871	994	A
	CR 20-3	7.5					57.9	37.6	76.8	76.8	39x32x12	1101	1226	A
	CR 20-4	10					57.9	39.4	76.8	76.8	39x32x12	1119	1243	A
	CR 20-5	15					57.9	44.3	76.8	76.8	39x32x12	1262	1387	A
	CR 20-6	15					57.9	46.0	76.8	76.8	39x32x12	1280	1404	A
5	CR 20-1	3	6" ANSI	37.0	48.0	6.3	57.9	31.4	99.8	67.1	47x32x12	1047	1266	B
	CR 20-2	5					57.9	33.1	99.8	67.1	47x32x12	1122	1341	B
	CR 20-3	7.5					57.9	37.6	99.8	67.1	47x32x12	1410	1631	B
	CR 20-4	10					57.9	39.4	99.8	67.1	47x32x12	1432	1653	B
	CR 20-5	15					57.9	44.3	99.8	67.1	47x32x12	1611	1832	B
	CR 20-6	15					57.9	46.0	99.8	67.1	47x32x12	1633	1854	B
6	CR 20-1	3	6" ANSI	37.0	48.0	6.3	57.9	31.4	112.4	79.7	47x32x12	1256	1488	B
	CR 20-2	5					57.9	33.1	112.4	79.7	47x32x12	1346	1578	B
	CR 20-3	7.5					57.9	37.6	112.4	79.7	47x32x12	1691	1926	B
	CR 20-4	10					57.9	39.4	112.4	79.7	47x32x12	1718	1952	B
	CR 20-5	15					57.9	44.3	112.4	79.7	47x32x12	1933	2167	B
	CR 20-6	15					57.9	46.0	112.4	79.7	47x32x12	1959	2194	B

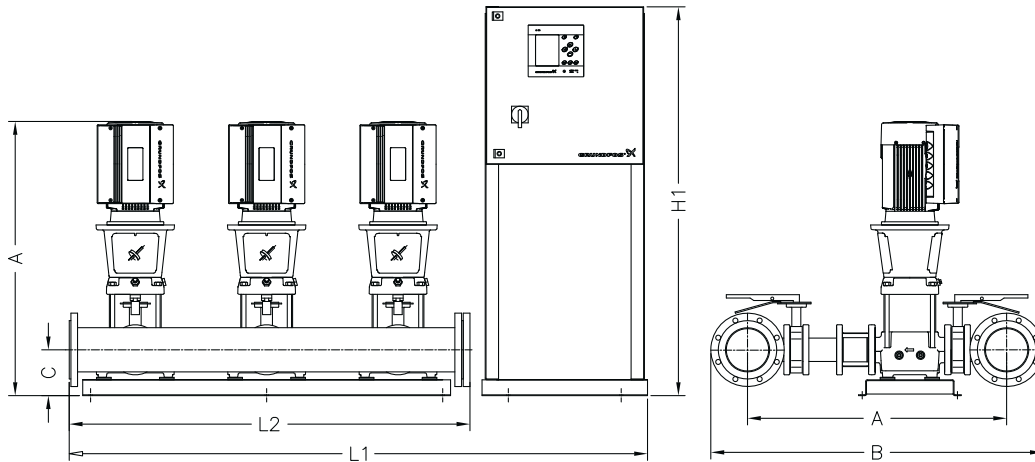
Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

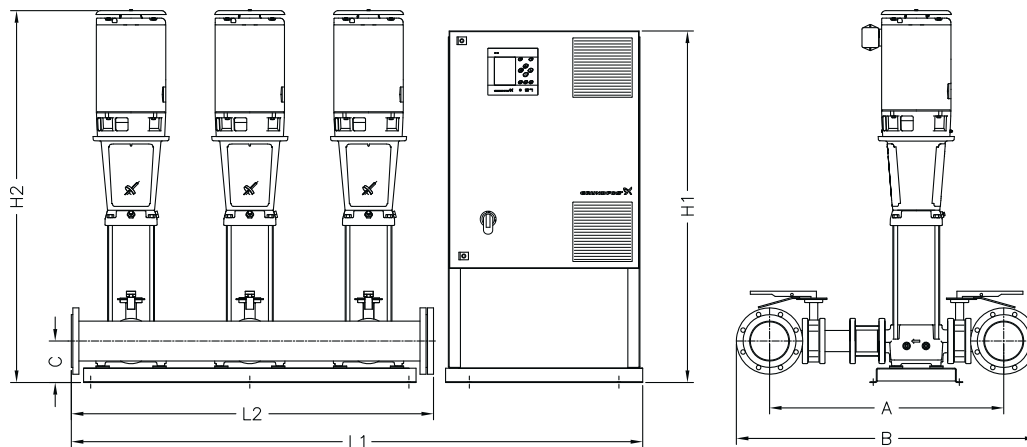
Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC with CR(E) 32



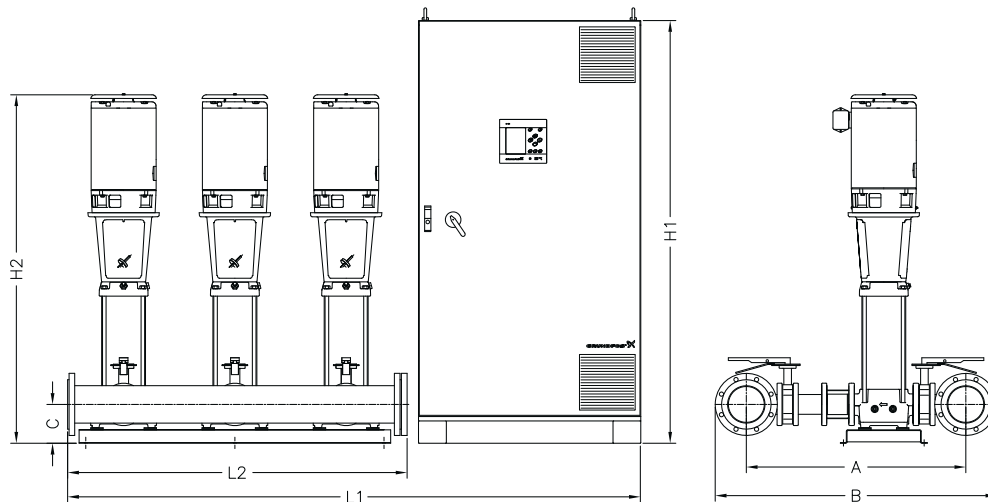
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Fig. 31 Drawing of a Hydro MPC booster set with integrated VFD/motors and control panel and pumps on separate base plates. (Design A)



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Fig. 32 Drawing of a Hydro MPC booster set with control panel and pumps on separate base plates. (Design B)



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Fig. 33 Drawing of a Hydro MPC booster set with a floor-mounted control panel. (Design C)

Hydro MPC-E with CR(E) 32

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR(E) 32-1	5	4" ANSI	38.5	47.5	6.9	57.9	38.2	65.1	40.3	24x24x8	651	710	B
	CR(E) 32-2-1	7.5					57.9	40.9	65.1	40.3	24x24x8	683	743	B
	CR(E) 32-3-2	10					57.9	43.1	65.1	40.3	24x24x8	716	775	B
3	CR(E) 32-1	5	6" ANSI	38.5	49.5	6.9	57.9	38.2	84.9	60.1	24x24x8	962	1033	B
	CR(E) 32-2-1	7.5					57.9	40.9	84.9	60.1	24x24x8	1010	1082	B
	CR(E) 32-3-2	10					57.9	43.1	84.9	60.1	24x24x8	1058	1130	B
4	CR(E) 32-1	5	6" ANSI	38.5	49.5	6.9	57.9	38.2	104.5	79.7	24x24x8	1312	1412	B
	CR(E) 32-2-1	7.5					57.9	40.9	104.5	79.7	24x24x8	1377	1476	B
	CR(E) 32-3-2	10					57.9	43.1	104.5	79.7	24x24x8	1441	1541	B
5	CR(E) 32-1	5	8" ANSI	40.7	54.2	8.5	57.9	39.7	124.4	99.6	24x24x8	1672	1783	B
	CR(E) 32-2-1	7.5					57.9	42.5	124.4	99.6	24x24x8	1753	1864	B
	CR(E) 32-3-2	10					57.9	44.7	124.4	99.6	24x24x8	1833	1944	B
6	CR(E) 32-1	5	8" ANSI	40.7	54.2	8.5	57.9	39.7	144.0	119.2	39x32x12	1958	2103	B
	CR(E) 32-2-1	7.5					57.9	42.5	144.0	119.2	39x32x12	2055	2200	B
	CR(E) 32-3-2	10					57.9	44.7	144.0	119.2	39x32x12	2151	2296	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-E (CUE) with CR 32

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 32-1	5	4" ANSI	38.5	47.5	6.9	57.9	38.2	73.0	40.3	48x36x16	571	739	C
	CR 32-2-1	7.5					57.9	40.9	73.0	40.3	48x36x16	685	863	C
	CR 32-3-2	10					57.9	43.7	73.0	40.3	48x36x16	700	877	C
	CR 32-4-2	15					57.9	21.8	73.0	40.3	48x36x16	799	1032	C
	CR 32-5	20					57.9	54.6	73.0	40.3	48x36x16	941	1175	C
	CR 32-6-2	25					57.9	60.6	73.0	40.3	48x36x16	918	1153	C
3	CR 32-1	5	6" ANSI	38.5	49.5	6.9	57.9	38.2	92.7	60.1	63x47x20	842	1058	C
	CR 32-2-1	7.5					57.9	40.9	92.7	60.1	63x47x20	1013	1244	C
	CR 32-3-2	10					57.9	43.7	92.7	60.1	63x63x20	1034	1265	C
	CR 32-4-2	15					57.9	21.8	92.7	60.1	63x47x20	1184	1497	C
	CR 32-5	20					57.9	54.6	92.7	60.1	63x47x20	1396	1713	C
	CR 32-6-2	25					57.9	60.6	92.7	60.1	63x63x20	1362	1679	C
4	CR 32-1	5	6" ANSI	38.5	49.5	6.9	57.9	38.2	112.4	79.7	63x47x20	1152	1388	C
	CR 32-2-1	7.5					57.9	40.9	112.4	79.7	63x63x20	1381	1637	C
	CR 32-3-2	10					79.0	43.7	120.3	79.7	71x71x20	1409	1812	C
	CR 32-4-2	15					79.0	21.8	120.3	79.7	63x63x20	1608	2122	C
	CR 32-5	20					79.0	54.6	120.3	79.7	63x63x20	1891	2409	C
	CR 32-6-2	25					79.0	60.6	120.3	79.7	63x63x20	1846	2364	C
5	CR 32-1	5	8" ANSI	40.7	54.2	8.5	57.9	39.7	132.2	99.6	63x63x20	1472	1728	C
	CR 32-2-1	7.5					79.0	42.5	140.1	99.6	71x71x20	1758	2186	C
	CR 32-3-2	10					79.0	45.2	140.1	99.6	71x71x20	1793	2221	C
	CR 32-4-2	15					79.0	23.4	140.1	99.6	71x71x20	2041	2608	C
	CR 32-5	20					79.0	56.2	140.1	99.6	71x71x20	2396	2968	C
	CR 32-6-2	25					79.0	62.2	140.1	99.6	71x71x20	2339	2911	C
6	CR 32-1	5	8" ANSI	40.7	54.2	8.5	57.9	39.7	151.9	119.2	71x71x20	1718	1995	C
	CR 32-2-1	7.5					79.0	42.5	159.8	119.2	71x71x20	2061	2515	C
	CR 32-3-2	10					79.0	45.2	159.8	119.2	79x93x24	2103	2557	C
	CR 32-4-2	15					84.0	23.4	191.2	119.2	71x71x20	2401	3630	C
	CR 32-5	20					84.0	56.2	191.2	119.2	71x71x20	2826	4061	C
	CR 32-6-2	25					84.0	62.2	191.2	119.2	71x71x20	2758	3993	C

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-F with CR 32

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 32-1	5	4" ANSI	38.5	47.5	6.9	57.9	38.2	73.0	40.3	39x32x12	571	733	B
	CR 32-2-1	7.5					57.9	40.9	73.0	40.3	39x32x12	685	854	B
	CR 32-3-2	10					57.9	43.7	73.0	40.3	39x32x12	700	868	B
	CR 32-4-2	15					57.9	21.8	73.0	40.3	48x36x16	799	995	B
	CR 32-5	20					57.9	54.6	73.0	40.3	48x36x16	941	1144	B
	CR 32-6-2	25					57.9	60.6	73.0	40.3	48x36x16	918	1121	B
3	CR 32-1	5	6" ANSI	38.5	49.5	6.9	57.9	38.2	92.7	60.1	39x32x12	842	1018	B
	CR 32-2-1	7.5					57.9	40.9	92.7	60.1	39x32x12	1013	1196	B
	CR 32-3-2	10					57.9	43.7	92.7	60.1	39x32x12	1034	1217	B
	CR 32-4-2	15					57.9	21.8	92.7	60.1	48x36x16	1184	1394	B
	CR 32-5	20					57.9	54.6	92.7	60.1	48x36x16	1396	1617	B
	CR 32-6-2	25					57.9	60.6	92.7	60.1	48x36x16	1362	1611	B
4	CR 32-1	5	6" ANSI	38.5	49.5	6.9	57.9	38.2	112.4	79.7	47x32x12	1152	1370	B
	CR 32-2-1	7.5					57.9	40.9	112.4	79.7	47x32x12	1381	1606	B
	CR 32-3-2	10					57.9	43.7	112.4	79.7	47x32x12	1409	1634	B
	CR 32-4-2	15					57.9	21.8	112.4	79.7	48x36x16	1608	1861	B
	CR 32-5	20					57.9	54.6	112.4	79.7	63x47x20	1891	2158	B
	CR 32-6-2	25					57.9	60.6	112.4	79.7	63x47x20	1846	2113	B
5	CR 32-1	5	8" ANSI	40.7	54.2	8.5	57.9	39.7	132.2	99.6	47x32x12	1472	1703	B
	CR 32-2-1	7.5					79.0	42.5	140.1	99.6	71x39x16	1758	2143	B
	CR 32-3-2	10					79.0	45.2	140.1	99.6	71x39x16	1793	2179	B
	CR 32-4-2	15					79.0	23.4	140.1	99.6	63x47x20	2041	2455	B
	CR 32-5	20					79.0	56.2	140.1	99.6	63x47x20	2396	2827	B
	CR 32-6-2	25					79.0	62.2	140.1	99.6	63x63x20	2339	2770	B
6	CR 32-1	5	8" ANSI	40.7	54.2	8.5	79.0	39.7	159.8	119.2	71x39x16	1718	2109	B
	CR 32-2-1	7.5					79.0	42.5	159.8	119.2	71x39x16	2061	2461	B
	CR 32-3-2	10					79.0	45.2	159.8	119.2	71x39x16	2103	2503	B
	CR 32-4-2	15					79.0	23.4	159.8	119.2	63x63x20	2401	2830	B
	CR 32-5	20					79.0	56.2	159.8	119.2	63x63x20	2826	3276	B
	CR 32-6-2	25					79.0	62.2	159.8	119.2	63x63x20	2758	3208	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-S with CR 32

No. of pumps	Pump type	Motor [hp]	Connection size [in.]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 32-1	5	4" ANSI	38.5	47.5	6.9	57.9	38.2	65.1	40.3	24x24x8	571	648	B
	CR 32-2-1	7.5					57.9	40.9	65.1	40.3	24x24x8	685	763	B
	CR 32-3-2	10					57.9	43.7	65.1	40.3	24x24x8	700	777	B
	CR 32-4-2	15					57.9	21.8	65.1	40.3	24x24x8	799	876	B
	CR 32-5	20					57.9	54.6	65.1	40.3	24x24x8	941	1023	B
	CR 32-6-2	25					57.9	60.6	65.1	40.3	24x24x8	918	1000	B
3	CR 32-1	5	6" ANSI	38.5	49.5	6.9	57.9	38.2	84.9	60.1	24x24x8	842	931	B
	CR 32-2-1	7.5					57.9	40.9	84.9	60.1	24x24x8	1013	1104	B
	CR 32-3-2	10					57.9	43.7	84.9	60.1	24x24x8	1034	1125	B
	CR 32-4-2	15					57.9	21.8	84.9	60.1	39x32x12	1184	1274	B
	CR 32-5	20					57.9	54.6	84.9	60.1	39x32x12	1396	1493	B
	CR 32-6-2	25					57.9	60.6	84.9	60.1	39x32x12	1362	1459	B
4	CR 32-1	5	6" ANSI	38.5	49.5	6.9	57.9	38.2	104.5	79.7	39x32x12	1152	1275	B
	CR 32-2-1	7.5					57.9	40.9	104.5	79.7	39x32x12	1381	1505	B
	CR 32-3-2	10					57.9	43.7	104.5	79.7	39x32x12	1409	1534	B
	CR 32-4-2	15					57.9	21.8	104.5	79.7	39x32x12	1608	1733	B
	CR 32-5	20					57.9	54.6	104.5	79.7	39x32x12	1891	2026	B
	CR 32-6-2	25					57.9	60.6	104.5	79.7	39x32x12	1846	1980	B
5	CR 32-1	5	8" ANSI	40.7	54.2	8.5	57.9	39.7	132.2	99.6	47x32x12	1472	1691	B
	CR 32-2-1	7.5					57.9	42.5	132.2	99.6	47x32x12	1758	1978	B
	CR 32-3-2	10					57.9	45.2	132.2	99.6	47x32x12	1793	2014	B
	CR 32-4-2	15					57.9	23.4	132.2	99.6	47x32x12	2041	2263	B
	CR 32-5	20					57.9	56.2	132.2	99.6	47x32x12	2396	2628	B
	CR 32-6-2	25					57.9	62.2	132.2	99.6	47x32x12	2339	2571	B
6	CR 32-1	5	8" ANSI	40.7	54.2	8.5	57.9	39.7	151.9	119.2	47x32x12	1718	1950	B
	CR 32-2-1	7.5					57.9	42.5	151.9	119.2	47x32x12	2061	2295	B
	CR 32-3-2	10					57.9	45.2	151.9	119.2	47x32x12	2103	2337	B
	CR 32-4-2	15					57.9	23.4	151.9	119.2	47x32x12	2401	2636	B
	CR 32-5	20					57.9	56.2	151.9	119.2	47x32x12	2826	3075	B
	CR 32-6-2	25					57.9	62.2	151.9	119.2	47x32x12	2758	3006	B

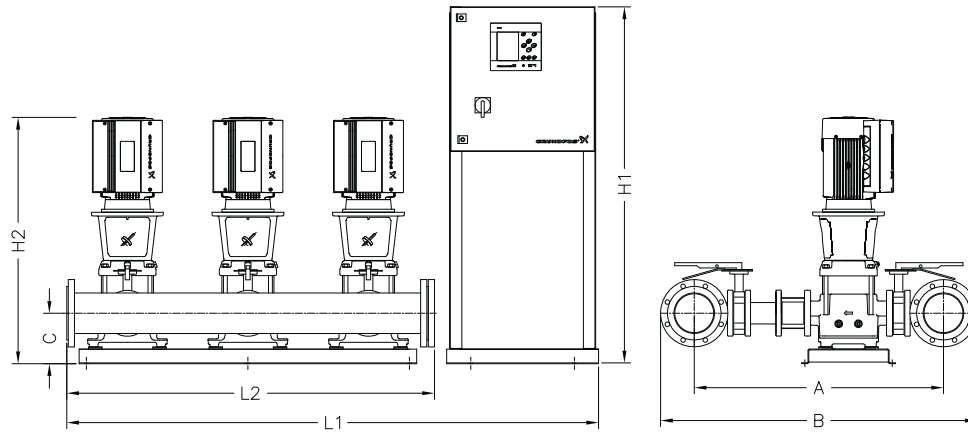
Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

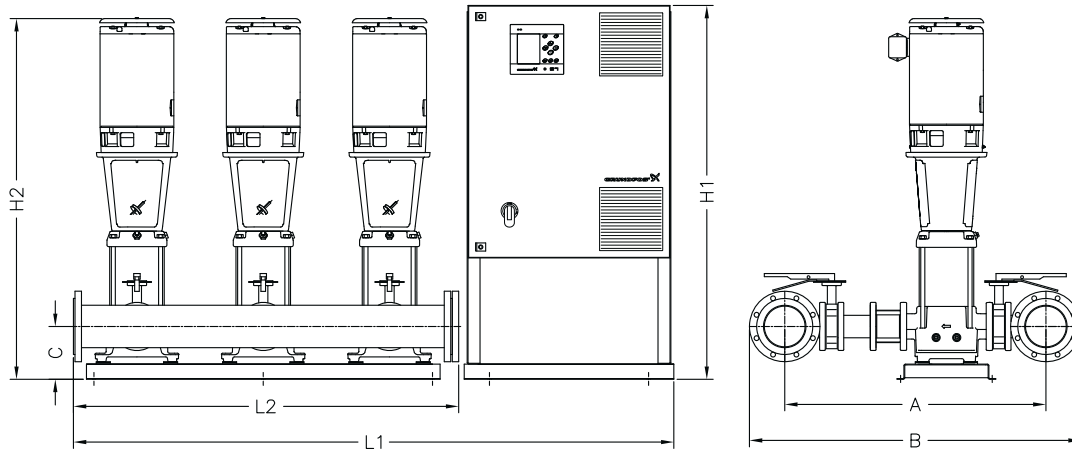
Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC with CR(E) 45



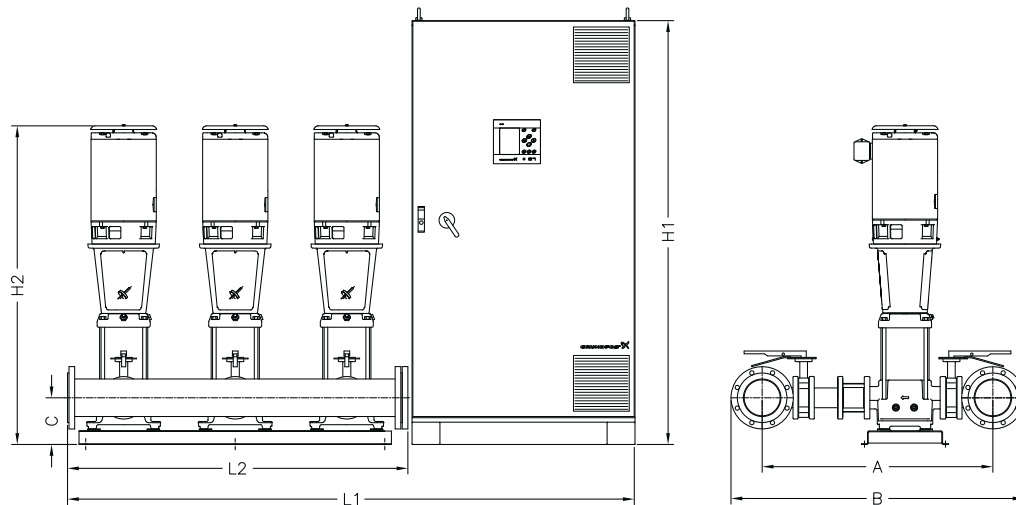
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Fig. 34 Drawing of a Hydro MPC booster set with integrated VFD/motors and control panel and pumps on separate base plates. (Design A)



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Fig. 35 Drawing of a Hydro MPC booster set with control panel and pumps on separate base plates. (Design B)



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Fig. 36 Drawing of a Hydro MPC booster set with a floor-mounted control panel. (Design C)

Hydro MPC-E with CR(E) 45

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR(E) 45-1-1	7.5	6" ANSI	40.3	51.3	8.3	57.9	40.3	57.3	40.4	24x24x8	711	770	B
	CR(E) 45-1	10					57.9	39.7	57.3	40.4	24x24x8	729	749	B
3	CR(E) 45-1-1	7.5	6" ANSI	40.3	51.3	8.3	57.9	40.3	77.0	60.1	24x24x8	1052	1123	B
	CR(E) 45-1	10					57.9	39.7	77.0	60.1	24x24x8	1079	1116	B
4	CR(E) 45-1-1	7.5	8" ANSI	42.4	55.9	9.8	57.9	41.9	104.7	79.9	24x24x8	1473	1573	B
	CR(E) 45-1	10					57.9	41.3	104.7	79.9	24x24x8	1509	1559	B
5	CR(E) 45-1-1	7.5	8" ANSI	42.4	55.9	9.8	57.9	41.9	124.4	99.6	24x24x8	1765	1877	B
	CR(E) 45-1	10					57.9	41.3	124.4	99.6	24x24x8	1931	1993	B
6	CR(E) 45-1-1	7.5	10" ANSI	42.4	55.9	12.2	57.9	44.2	144.1	119.3	39x32x12	2125	2270	B
	CR(E) 45-1	10					57.9	43.6	144.1	119.3	39x32x12	2179	2324	B

Hydro MPC-E (CUE) with CR 45

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 45-1	10	6" ANSI	40.3	51.3	8.3	57.9	40.3	73.1	40.4	48x36x16	713	891	C
	CR 45-2	15					57.9	48.6	73.1	40.4	48x36x16	816	1048	C
	CR 45-3-2	20					57.9	55.1	73.1	40.4	48x36x16	961	1196	C
	CR 45-3	25					57.9	56.2	73.1	40.4	48x36x16	921	1156	C
	CR 45-4	30					57.9	60.4	73.1	40.4	63x47x20	1043	1345	C
3	CR 45-1	10	6" ANSI	40.3	51.3	8.3	57.9	40.3	92.7	60.1	63x63x20	1055	1286	C
	CR 45-2	15					57.9	48.6	92.7	60.1	63x47x20	1209	1522	C
	CR 45-3-2	20					57.9	55.1	92.7	60.1	63x47x20	1427	1743	C
	CR 45-3	25					57.9	56.2	92.7	60.1	63x63x20	1367	1684	C
	CR 45-4	30					79.0	60.4	100.6	60.1	63x63x20	1550	2072	C
4	CR 45-1	10	8" ANSI	42.4	55.9	9.8	79.0	41.9	120.4	79.9	71x71x20	1477	1881	C
	CR 45-2	15					79.0	50.1	120.4	79.9	63x63x20	1682	2196	C
	CR 45-3-2	20					79.0	56.7	120.4	79.9	63x63x20	1973	2491	C
	CR 45-3	25					79.0	57.8	120.4	79.9	63x63x20	1894	2412	C
	CR 45-4	30					79.0	61.9	120.4	79.9	63x63x20	2137	2733	C
5	CR 45-1	10	8" ANSI	42.4	55.9	9.8	79.0	41.9	140.1	99.6	71x71x20	1770	2199	C
	CR 45-2	15					79.0	50.1	140.1	99.6	71x71x20	2026	2594	C
	CR 45-3-2	20					79.0	56.7	140.1	99.6	71x71x20	2389	2962	C
	CR 45-3	25					79.0	57.8	140.1	99.6	71x71x20	2290	2863	C
6	CR 45-4	30	10" ANSI	42.4	55.9	12.2	79.0	61.9	140.1	99.6	71x71x20	2595	3264	C
	CR 45-1	10					79.0	44.2	159.9	119.3	79x93x24	2131	2585	C
	CR 45-2	15					84.0	52.5	191.3	119.3	71x71x20	2438	3668	C
	CR 45-3-2	20					84.0	59.0	191.3	119.3	71x71x20	2874	4110	C
	CR 45-3	25					84.0	60.2	191.3	119.3	71x71x20	2755	3991	C
	CR 45-4	30					84.0	64.3	191.3	119.3	79x93x24	3121	4472	C

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-F with CR 45

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 45-1	10	6" ANSI	40.3	51.3	8.3	57.9	40.3	73.1	40.4	48x36x16	713	882	B
	CR 45-2	15					57.9	48.6	73.1	40.4	48x36x16	816	1012	B
	CR 45-3-2	20					57.9	55.1	73.1	40.4	48x36x16	961	1164	B
	CR 45-3	25					57.9	56.2	73.1	40.4	48x36x16	921	1125	B
	CR 45-4	30					57.9	60.4	73.1	40.4	48x36x16	1043	1294	B
3	CR 45-1	10	6" ANSI	40.3	51.3	8.3	57.9	40.3	92.7	60.1	48x36x16	1055	1238	B
	CR 45-2	15					57.9	48.6	92.7	60.1	48x36x16	1209	1419	B
	CR 45-3-2	20					57.9	55.1	92.7	60.1	48x36x16	1427	1647	B
	CR 45-3	25					57.9	56.2	92.7	60.1	48x36x16	1367	1616	B
	CR 45-4	30					57.9	60.4	92.7	60.1	48x36x16	1550	1818	B
4	CR 45-1	10	8" ANSI	42.4	55.9	9.8	57.9	41.9	112.5	79.9	48x36x16	1477	1702	B
	CR 45-2	15					57.9	50.1	112.5	79.9	48x36x16	1682	1935	B
	CR 45-3-2	20					57.9	56.7	112.5	79.9	63x47x20	1973	2240	B
	CR 45-3	25					57.9	57.8	112.5	79.9	63x47x20	1894	2161	B
	CR 45-4	30					57.9	61.9	112.5	79.9	63x47x20	2137	2424	B
5	CR 45-1	10	8" ANSI	42.4	55.9	9.8	79.0	41.9	140.1	99.6	63x47x20	1770	2156	B
	CR 45-2	15					79.0	50.1	140.1	99.6	63x47x20	2026	2441	B
	CR 45-3-2	20					79.0	56.7	140.1	99.6	63x47x20	2389	2822	B
	CR 45-3	25					79.0	57.8	140.1	99.6	63x63x20	2290	2723	B
	CR 45-4	30					79.0	61.9	140.1	99.6	63x63x20	2595	3047	B
6	CR 45-1	10	10" ANSI	42.4	55.9	12.2	79.0	44.2	159.9	119.3	63x63x20	2131	2531	B
	CR 45-2	15					79.0	52.5	159.9	119.3	63x63x20	2438	2867	B
	CR 45-3-2	20					79.0	59.0	159.9	119.3	63x63x20	2874	3324	B
	CR 45-3	25					79.0	60.2	159.9	119.3	63x63x20	2755	3206	B
	CR 45-4	30					79.0	64.3	159.9	119.3	63x63x20	3121	3590	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-S with CR 45

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 45-1	10	6" ANSI	40.3	51.3	8.3	57.9	40.3	65.2	40.4	24x24x8	713	791	B
	CR 45-2	15					57.9	48.6	65.2	40.4	24x24x8	816	893	B
	CR 45-3-2	20					57.9	55.1	65.2	40.4	24x24x8	961	1043	B
	CR 45-3	25					57.9	56.2	65.2	40.4	24x24x8	921	1003	B
	CR 45-4	30					57.9	60.4	65.2	40.4	24x24x8	1043	1125	B
3	CR 45-1	10	6" ANSI	40.3	51.3	8.3	57.9	40.3	84.9	60.1	24x24x8	1055	1145	B
	CR 45-2	15					57.9	48.6	84.9	60.1	39x32x12	1209	1299	B
	CR 45-3-2	20					57.9	55.1	84.9	60.1	39x32x12	1427	1524	B
	CR 45-3	25					57.9	56.2	84.9	60.1	39x32x12	1367	1465	B
	CR 45-4	30					57.9	60.4	84.9	60.1	39x32x12	1550	1647	B
4	CR 45-1	10	8" ANSI	42.4	55.9	9.8	57.9	41.9	104.7	79.9	39x32x12	1477	1602	B
	CR 45-2	15					57.9	50.1	104.7	79.9	39x32x12	1682	1807	B
	CR 45-3-2	20					57.9	56.7	104.7	79.9	39x32x12	1973	2107	B
	CR 45-3	25					57.9	57.8	104.7	79.9	39x32x12	1894	2028	B
	CR 45-4	30					57.9	61.9	112.5	79.9	39x32x12	2137	2327	B
5	CR 45-1	10	8" ANSI	42.4	55.9	9.8	57.9	41.9	132.2	99.6	47x32x12	1770	1991	B
	CR 45-2	15					57.9	50.1	132.2	99.6	47x32x12	2026	2248	B
	CR 45-3-2	20					57.9	56.7	132.2	99.6	47x32x12	2389	2623	B
	CR 45-3	25					57.9	57.8	132.2	99.6	47x32x12	2290	2524	B
	CR 45-4	30					57.9	61.9	132.2	99.6	47x32x12	2595	2828	B
6	CR 45-1	10	10" ANSI	42.4	55.9	12.2	57.9	44.2	152.0	119.3	47x32x12	2131	2365	B
	CR 45-2	15					57.9	52.5	152.0	119.3	47x32x12	2438	2674	B
	CR 45-3-2	20					57.9	59.0	152.0	119.3	47x32x12	2874	3123	B
	CR 45-3	25					57.9	60.2	152.0	119.3	47x32x12	2755	3004	B
	CR 45-4	30					57.9	64.3	152.0	119.3	47x32x12	3121	3370	B

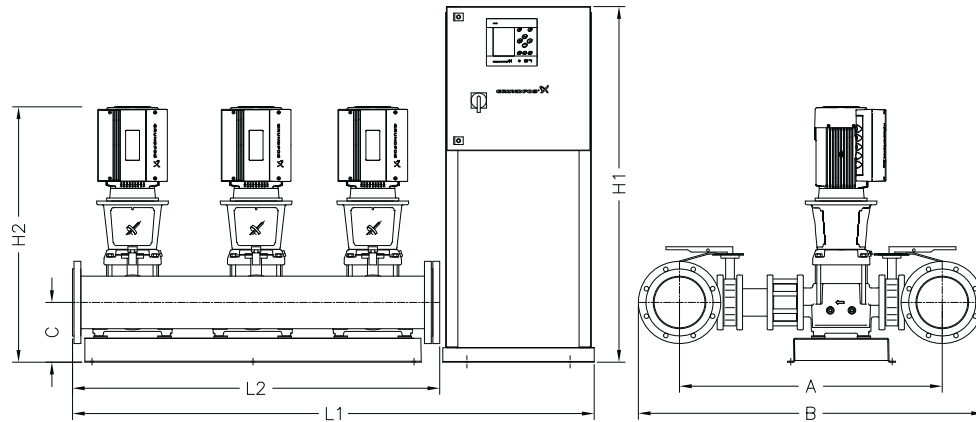
Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

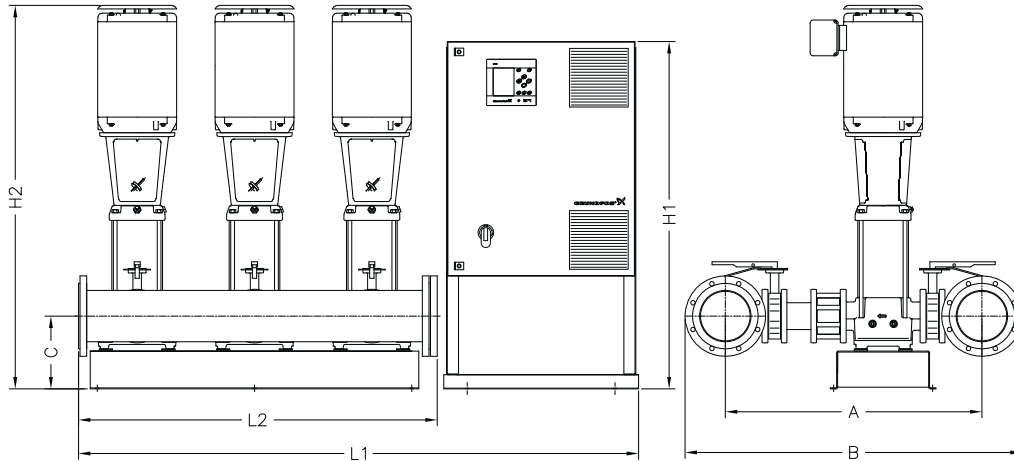
Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC with CR(E) 64



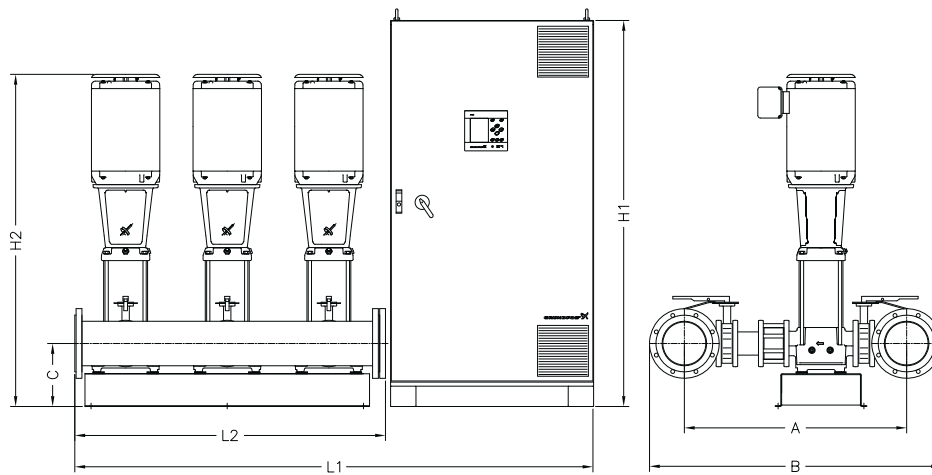
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Fig. 37 Drawing of a Hydro MPC booster set with integrated VFD/motors and control panel and pumps on separate base plates. (Design A)



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Fig. 38 Drawing of a Hydro MPC booster set with control panel and pumps on separate base plates. (Design B)



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Fig. 39 Drawing of a Hydro MPC booster set with a floor-mounted control panel. (Design C)

Hydro MPC-E with CR(E) 64

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR(E) 64-1-1	10	6" ANSI	42.6	53.6	8.3	57.9	40.3	57.3	40.4	24x24x8	814	874	B
3	CR(E) 64-1-1	10	8" ANSI	42.6	56.1	9.8	57.9	41.8	77.1	60.2	24x24x8	1214	1285	B
4	CR(E) 64-1-1	10	8" ANSI	48.3	61.8	9.8	57.9	41.8	104.7	79.9	24x24x8	1554	1654	B
5	CR(E) 64-1-1	10	10" ANSI	48.0	64.0	12.2	57.9	44.2	132.0	107.2	24x24x8	2286	2397	B
6	CR(E) 64-1-1	10	12" ANSI	49.9	68.9	12.2	57.9	44.2	135.0	110.2	39x32x12	2854	2999	B

Hydro MPC-E (CUE) with CR 64

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 64-1-1	10	6" ANSI	42.6	53.6	8.3	57.9	40.5	73.1	40.4	48x36x16	816	994	C
	CR 64-1	15					57.9	48.6	73.1	40.4	48x36x16	922	1155	C
	CR 64-2-1	20					57.9	50.5	73.1	40.4	48x36x16	1050	1285	C
	CR 64-2	25					57.9	53.5	73.1	40.4	48x36x16	1014	1249	C
	CR 64-3-2	30					57.9	57.4	73.1	40.4	63x47x20	1124	1426	C
	CR 64-3	40					57.9	58.8	73.1	40.4	63x47x20	1242	1547	C
3	CR 64-1-1	10	8" ANSI	42.6	56.1	9.8	57.9	42.1	92.9	60.2	63x63x20	1217	1448	C
	CR 64-1	15					57.9	50.2	92.9	60.2	63x47x20	1376	1690	C
	CR 64-2-1	20					57.9	52.1	92.9	60.2	63x47x20	1568	1885	C
	CR 64-2	25					57.9	55.1	92.9	60.2	63x63x20	1514	1831	C
	CR 64-3-2	30					57.9	59.0	100.7	60.2	63x63x20	1679	2201	C
	CR 64-3	40					79.0	60.3	100.7	60.2	63x63x20	1856	2382	C
4	CR 64-1-1	10	8" ANSI	48.3	61.8	9.8	79.0	42.1	120.4	79.9	71x71x20	1558	1962	C
	CR 64-1	15					79.0	50.2	120.4	79.9	63x63x20	1770	2284	C
	CR 64-2-1	20					79.0	52.1	120.4	79.9	63x63x20	2026	2544	C
	CR 64-2	25					79.0	55.1	120.4	79.9	63x63x20	1954	2472	C
	CR 64-3-2	30					79.0	59.0	120.4	79.9	63x63x20	2174	2769	C
	CR 64-3	40					79.0	60.3	120.4	79.9	63x63x20	2410	3011	C
5	CR 64-1-1	10	10" ANSI	48.0	64.0	12.2	79.0	44.5	147.7	107.2	71x71x20	2291	2721	C
	CR 64-1	15					79.0	52.6	147.7	107.2	71x71x20	2556	3123	C
	CR 64-2-1	20					79.0	54.5	147.7	107.2	71x71x20	2876	3451	C
	CR 64-2	25					79.0	57.5	147.7	107.2	71x71x20	2786	3361	C
	CR 64-3-2	30					79.0	61.3	147.7	107.2	71x71x20	3060	3732	C
	CR 64-3	40					79.0	62.7	147.7	107.2	71x71x20	3355	4034	C
6	CR 64-1-1	10	12" ANSI	49.9	68.9	12.2	79.0	44.5	150.8	110.2	71x71x20	2860	3315	C
	CR 64-1	15					84.0	52.6	182.2	110.2	71x71x20	3178	4407	C
	CR 64-2-1	20					84.0	54.5	182.2	110.2	71x71x20	3562	4800	C
	CR 64-2	25					84.0	57.5	182.2	110.2	71x71x20	3454	4692	C
	CR 64-3-2	30					84.0	61.3	182.2	110.2	79x93x24	3783	5138	C
	CR 64-3	40					84.0	62.7	182.2	110.2	79x93x24	4137	5500	C

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-F with CR 64

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 64-1-1	10	6" ANSI	42.6	53.6	8.3	57.9	40.5	73.1	40.4	48x36x16	816	985	B
	CR 64-1	15					57.9	48.6	73.1	40.4	48x36x16	922	1118	B
	CR 64-2-1	20					57.9	50.5	73.1	40.4	48x36x16	1050	1254	B
	CR 64-2	25					57.9	53.5	73.1	40.4	48x36x16	1014	1218	B
	CR 64-3-2	30					57.9	57.4	73.1	40.4	48x36x16	1124	1375	B
	CR 64-3	40					57.9	58.8	73.1	40.4	48x36x16	1242	1505	B
3	CR 64-1-1	10	8" ANSI	42.6	56.1	9.8	57.9	42.1	92.9	60.2	48x36x16	1217	1400	B
	CR 64-1	15					57.9	50.2	92.9	60.2	48x36x16	1376	1586	B
	CR 64-2-1	20					57.9	52.1	92.9	60.2	48x36x16	1568	1789	B
	CR 64-2	25					57.9	55.1	92.9	60.2	48x36x16	1514	1763	B
	CR 64-3-2	30					57.9	59.0	92.9	60.2	48x36x16	1679	1947	B
	CR 64-3	40					78.0	60.3	92.9	60.2	63x47x20	1856	2143	B
4	CR 64-1-1	10	8" ANSI	48.3	61.8	9.8	57.9	42.1	112.5	79.9	48x36x16	1558	1783	B
	CR 64-1	15					57.9	50.2	112.5	79.9	48x36x16	1770	2023	B
	CR 64-2-1	20					57.9	52.1	112.5	79.9	63x47x20	2026	2293	B
	CR 64-2	25					57.9	55.1	112.5	79.9	63x47x20	1954	2221	B
	CR 64-3-2	30					57.9	59.0	112.5	79.9	63x47x20	2174	2460	B
	CR 64-3	40					78.0	60.3	112.5	79.9	63x47x20	2410	2721	B
5	CR 64-1-1	10	10" ANSI	48.0	64.0	12.2	57.9	44.5	147.7	107.2	63x47x20	2291	2678	B
	CR 64-1	15					57.9	52.6	147.7	107.2	63x47x20	2556	2971	B
	CR 64-2-1	20					57.9	54.5	147.7	107.2	63x47x20	2876	3311	B
	CR 64-2	25					57.9	57.5	147.7	107.2	63x63x20	2786	3221	B
	CR 64-3-2	30					57.9	61.3	147.7	107.2	63x63x20	3060	3515	B
	CR 64-3	40					78.0	62.7	147.7	107.2	63x63x20	3355	3841	B
6	CR 64-1-1	10	12" ANSI	49.9	68.9	12.2	57.9	44.5	150.8	110.2	63x63x20	2860	3261	B
	CR 64-1	15					57.9	52.6	150.8	110.2	63x63x20	3178	3607	B
	CR 64-2-1	20					57.9	54.5	150.8	110.2	63x63x20	3562	4015	B
	CR 64-2	25					57.9	57.5	150.8	110.2	63x63x20	3454	3907	B
	CR 64-3-2	30					57.9	61.3	150.8	110.2	63x63x20	3783	4256	B
	CR 64-3	40					78.0	62.7	150.8	110.2	71x71x20	4137	4647	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-S with CR 64

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 64-1-1	10	6" ANSI	42.6	53.6	8.3	57.9	40.5	65.2	40.4	24x24x8	816	894	B
	CR 64-1	15					57.9	48.6	65.2	40.4	24x24x8	922	1000	B
	CR 64-2-1	20					57.9	50.5	65.2	40.4	24x24x8	1050	1132	B
	CR 64-2	25					57.9	53.5	65.2	40.4	24x24x8	1014	1096	B
	CR 64-3-2	30					57.9	57.4	65.2	40.4	24x24x8	1124	1206	B
	CR 64-3	40					57.9	58.8	65.2	40.4	39x32x12	1242	1362	B
3	CR 64-1-1	10	8" ANSI	42.6	56.1	9.8	57.9	42.1	85.0	60.2	24x24x8	1217	1308	B
	CR 64-1	15					57.9	50.2	85.0	60.2	39x32x12	1376	1467	B
	CR 64-2-1	20					57.9	52.1	85.0	60.2	39x32x12	1568	1666	B
	CR 64-2	25					57.9	55.1	85.0	60.2	39x32x12	1514	1612	B
	CR 64-3-2	30					57.9	59.0	92.9	60.2	39x32x12	1679	1852	B
	CR 64-3	40					78.0	60.3	92.9	60.2	39x32x12	1856	2041	B
4	CR 64-1-1	10	8" ANSI	48.3	61.8	9.8	57.9	42.1	104.7	79.9	39x32x12	1558	1683	B
	CR 64-1	15					57.9	50.2	104.7	79.9	39x32x12	1770	1895	B
	CR 64-2-1	20					57.9	52.1	104.7	79.9	39x32x12	2026	2160	B
	CR 64-2	25					57.9	55.1	104.7	79.9	39x32x12	1954	2088	B
	CR 64-3-2	30					57.9	59.0	112.5	79.9	39x32x12	2174	2363	B
	CR 64-3	40					78.0	60.3	112.5	79.9	39x32x12	2410	2614	B
5	CR 64-1-1	10	10" ANSI	48.0	64.0	12.2	57.9	44.5	139.9	107.2	47x32x12	2291	2513	B
	CR 64-1	15					57.9	52.6	139.9	107.2	47x32x12	2556	2778	B
	CR 64-2-1	20					57.9	54.5	139.9	107.2	47x32x12	2876	3112	B
	CR 64-2	25					57.9	57.5	139.9	107.2	47x32x12	2786	3022	B
	CR 64-3-2	30					57.9	61.3	139.9	107.2	47x32x12	3060	3297	B
	CR 64-3	40					78.0	62.7	139.9	107.2	47x32x12	3355	3611	B
6	CR 64-1-1	10	12" ANSI	49.9	68.9	12.2	57.9	44.5	142.9	110.2	47x32x12	2860	3095	B
	CR 64-1	15					57.9	52.6	142.9	110.2	47x32x12	3178	3413	B
	CR 64-2-1	20					57.9	54.5	142.9	110.2	47x32x12	3562	3813	B
	CR 64-2	25					57.9	57.5	142.9	110.2	47x32x12	3454	3705	B
	CR 64-3-2	30					57.9	61.3	142.9	110.2	47x32x12	3783	4035	B
	CR 64-3	40					78.0	62.7	142.9	110.2	47x32x12	4137	4412	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC with CR 90

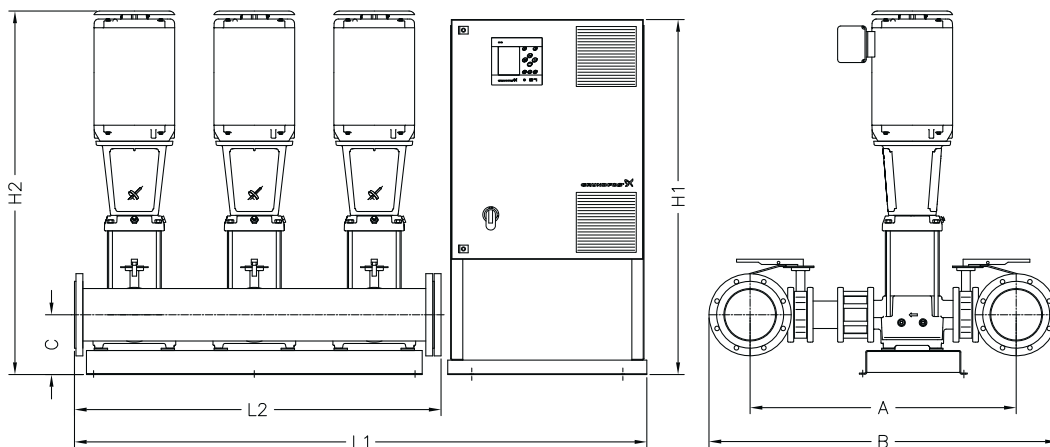


Fig. 40 Drawing of a Hydro MPC booster set with control panel and pumps on separate base plates. (Design B)

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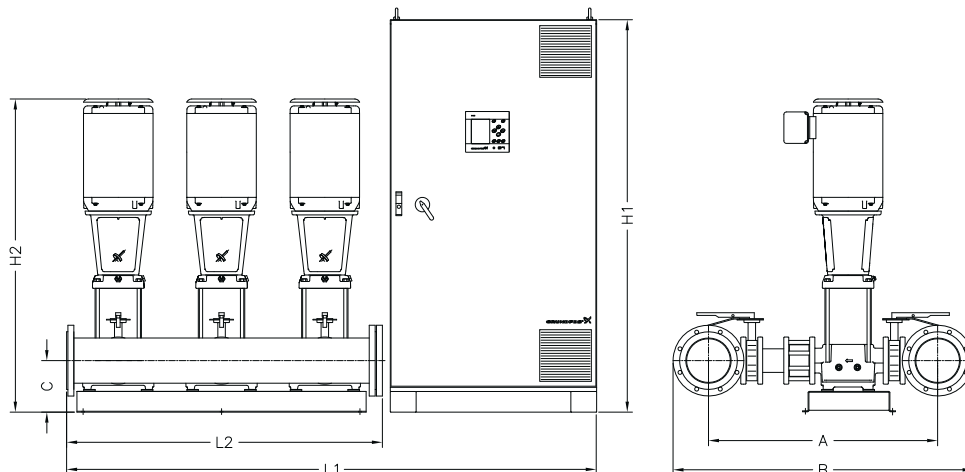


Fig. 41 Drawing of a Hydro MPC booster set with a floor-mounted control panel. (Design C)

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Hydro MPC-E (CUE) with CR 90

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 90-1-1	15	6" ANSI	43.5	54.5	8.3	57.9	40.4	73.1	40.4	48x36x16	923	1156	C
	CR 90-1	20					57.9	45.5	73.1	40.4	48x36x16	1051	1284	C
	CR 90-2-2	25					57.9	54.3	73.1	40.4	48x36x16	1033	1268	C
	CR 90-2-1	30					57.9	54.9	73.1	40.4	63x47x20	1127	1429	C
	CR 90-2	40					57.9	56.3	73.1	40.4	63x47x20	1245	1550	C
	CR 90-3-2	40					57.9	59.9	73.1	40.4	63x47x20	1268	1573	C
CR 90-3	50	79.0	59.4	80.9	40.4	63x47x20	1548	2073	C					
3	CR 90-1-1	15	8" ANSI	43.5	57.0	9.8	57.9	41.9	92.9	60.2	63x47x20	1298	1612	C
	CR 90-1	20					57.9	47.1	92.9	60.2	63x47x20	1490	1804	C
	CR 90-2-2	25					57.9	55.8	92.9	60.2	63x63x20	1514	1831	C
	CR 90-2-1	30					79.0	56.5	100.7	60.2	63x63x20	1655	2178	C
	CR 90-2	40					79.0	57.8	100.7	60.2	63x63x20	1832	2359	C
	CR 90-3-2	40					79.0	61.5	100.7	60.2	63x63x20	1856	2383	C
CR 90-3	50	84.0	61.0	132.2	60.2	63x63x20	2276	3522	C					
4	CR 90-1-1	15	10" ANSI	48.1	64.1	12.2	79.0	44.3	120.5	79.9	63x63x20	1977	2491	C
	CR 90-1	20					79.0	49.4	120.5	79.9	63x63x20	2233	2747	C
	CR 90-2-2	25					79.0	58.2	120.5	79.9	63x63x20	2265	2784	C
	CR 90-2-1	30					79.0	58.8	120.5	79.9	63x63x20	2453	3052	C
	CR 90-2	40					79.0	60.2	120.5	79.9	63x63x20	2689	3294	C
	CR 90-3-2	40					79.0	63.8	120.5	79.9	63x63x20	2721	3326	C
CR 90-3	50	84.0	63.3	151.9	79.9	63x63x20	3281	4639	C					
5	CR 90-1-1	15	12" ANSI	50.9	69.9	12.2	79.0	44.3	140.2	99.7	71x71x20	2612	3179	C
	CR 90-1	20					79.0	49.4	140.2	99.7	71x71x20	2932	3499	C
	CR 90-2-2	25					79.0	58.2	140.2	99.7	71x71x20	2972	3545	C
	CR 90-2-1	30					79.0	58.8	140.2	99.7	71x71x20	3207	3879	C
	CR 90-2	40					79.0	60.2	140.2	99.7	71x71x20	3502	4181	C
	CR 90-3-2	40					79.0	63.8	140.2	99.7	71x71x20	3541	4221	C
CR 90-3	50	84.0	63.3	171.7	99.7	71x71x20	4241	5710	C					
6	CR 90-1-1	15	12" ANSI	50.9	69.9	12.2	84.0	44.3	182.2	110.2	71x71x20	3045	4274	C
	CR 90-1	20					84.0	49.4	182.2	110.2	71x71x20	3429	4658	C
	CR 90-2-2	25					84.0	58.2	182.2	110.2	71x71x20	3477	4713	C
	CR 90-2-1	30					84.0	58.8	182.2	110.2	79x93x24	3759	5113	C
	CR 90-2	40					84.0	60.2	182.2	110.2	79x93x24	4113	5476	C
	CR 90-3-2	40					84.0	63.8	182.2	110.2	79x93x24	4161	5523	C
CR 90-3	50	84.0	63.3	182.2	110.2	79x93x24	5001	6579	C					

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-F with CR 90

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 90-1-1	15	6" ANSI	43.5	54.5	8.3	57.9	40.4	73.1	40.4	48x36x16	923	1156	B
	CR 90-1	20					57.9	45.5	73.1	40.4	48x36x16	1051	1284	B
	CR 90-2-2	25					57.9	54.3	73.1	40.4	48x36x16	1033	1268	B
	CR 90-2-1	30					57.9	54.9	73.1	40.4	48x36x16	1127	1429	B
	CR 90-2	40					57.9	56.3	73.1	40.4	48x36x16	1245	1550	B
	CR 90-3-2	40					57.9	59.9	73.1	40.4	48x36x16	1268	1573	B
	CR 90-3	50					57.9	59.4	80.9	40.4	48x36x16	1548	2073	B
3	CR 90-1-1	15	8" ANSI	43.5	57.0	9.8	57.9	41.9	92.9	60.2	48x36x16	1298	1612	B
	CR 90-1	20					57.9	47.1	92.9	60.2	48x36x16	1490	1804	B
	CR 90-2-2	25					57.9	55.8	92.9	60.2	48x36x16	1514	1831	B
	CR 90-2-1	30					57.9	56.5	100.7	60.2	48x36x16	1655	2178	B
	CR 90-2	40					57.9	57.8	100.7	60.2	63x47x20	1832	2359	B
	CR 90-3-2	40					57.9	61.5	100.7	60.2	63x47x20	1856	2383	B
	CR 90-3	50					79.0	61.0	132.2	60.2	63x47x20	2276	3522	B
4	CR 90-1-1	15	10" ANSI	48.1	64.1	12.2	57.9	44.3	120.5	79.9	48x36x16	1977	2491	B
	CR 90-1	20					57.9	49.4	120.5	79.9	63x47x20	2233	2747	B
	CR 90-2-2	25					57.9	58.2	120.5	79.9	63x47x20	2265	2784	B
	CR 90-2-1	30					57.9	58.8	120.5	79.9	63x47x20	2453	3052	B
	CR 90-2	40					57.9	60.2	120.5	79.9	63x47x20	2689	3294	B
	CR 90-3-2	40					57.9	63.8	120.5	79.9	63x47x20	2721	3326	B
	CR 90-3	50					79.0	63.3	151.9	79.9	63x47x20	3281	4639	B
5	CR 90-1-1	15	12" ANSI	50.9	69.9	12.2	79.0	44.3	140.2	99.7	63x47x20	2612	3179	B
	CR 90-1	20					79.0	49.4	140.2	99.7	63x47x20	2932	3499	B
	CR 90-2-2	25					79.0	58.2	140.2	99.7	63x63x20	2972	3545	B
	CR 90-2-1	30					79.0	58.8	140.2	99.7	63x63x20	3207	3879	B
	CR 90-2	40					79.0	60.2	140.2	99.7	63x63x20	3502	4181	B
	CR 90-3-2	40					79.0	63.8	140.2	99.7	63x63x20	3541	4221	B
	CR 90-3	50					79.0	63.3	171.7	99.7	63x63x20	4241	5710	B
6	CR 90-1-1	15	12" ANSI	50.9	69.9	12.2	79.0	44.3	182.2	110.2	63x63x20	3045	4274	B
	CR 90-1	20					79.0	49.4	182.2	110.2	63x63x20	3429	4658	B
	CR 90-2-2	25					79.0	58.2	182.2	110.2	63x63x20	3477	4713	B
	CR 90-2-1	30					79.0	58.8	182.2	110.2	63x63x20	3759	5113	B
	CR 90-2	40					79.0	60.2	182.2	110.2	71x71x20	4113	5476	B
	CR 90-3-2	40					79.0	63.8	182.2	110.2	71x71x20	4161	5523	B
	CR 90-3	50					79.0	63.3	182.2	110.2	71x71x20	5001	6579	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Hydro MPC-S with CR 90

No. of pumps	Pump type	Motor [hp]	Connection size [in]	A [in]	B [in]	C [in]	H1 [in]	H2 [in]	L1 [in]	L2 [in]	Panel dim. HxWxD [in]	Wt. w/out panel [lb]	Weight w/panel [lb]	Design
2	CR 90-1-1	15	6" ANSI	43.5	54.5	8.3	57.9	40.4	73.1	40.4	24x24x8	923	1156	B
	CR 90-1	20					57.9	45.5	73.1	40.4	24x24x8	1051	1284	B
	CR 90-2-2	25					57.9	54.3	73.1	40.4	24x24x8	1033	1268	B
	CR 90-2-1	30					57.9	54.9	73.1	40.4	24x24x8	1127	1429	B
	CR 90-2	40					57.9	56.3	73.1	40.4	39x32x12	1245	1550	B
	CR 90-3-2	40					57.9	59.9	73.1	40.4	39x32x12	1268	1573	B
	CR 90-3	50					57.9	59.4	80.9	40.4	39x32x12	1548	2073	B
3	CR 90-1-1	15	8" ANSI	43.5	57.0	9.8	57.9	41.9	92.9	60.2	39x32x12	1298	1612	B
	CR 90-1	20					57.9	47.1	92.9	60.2	39x32x12	1490	1804	B
	CR 90-2-2	25					57.9	55.8	92.9	60.2	39x32x12	1514	1831	B
	CR 90-2-1	30					57.9	56.5	100.7	60.2	39x32x12	1655	2178	B
	CR 90-2	40					57.9	57.8	100.7	60.2	39x32x12	1832	2359	B
	CR 90-3-2	40					57.9	61.5	100.7	60.2	39x32x12	1856	2383	B
	CR 90-3	50					57.9	61.0	132.2	60.2	39x32x12	2276	3522	B
4	CR 90-1-1	15	10" ANSI	48.1	64.1	12.2	57.9	44.3	120.5	79.9	39x32x12	1977	2491	B
	CR 90-1	20					57.9	49.4	120.5	79.9	39x32x12	2233	2747	B
	CR 90-2-2	25					57.9	58.2	120.5	79.9	39x32x12	2265	2784	B
	CR 90-2-1	30					57.9	58.8	120.5	79.9	39x32x12	2453	3052	B
	CR 90-2	40					57.9	60.2	120.5	79.9	39x32x12	2689	3294	B
	CR 90-3-2	40					57.9	63.8	120.5	79.9	39x32x12	2721	3326	B
	CR 90-3	50					57.9	63.3	151.9	79.9	39x32x12	3281	4639	B
5	CR 90-1-1	15	12" ANSI	50.9	69.9	12.2	57.9	44.3	140.2	99.7	47x32x12	2612	3179	B
	CR 90-1	20					57.9	49.4	140.2	99.7	47x32x12	2932	3499	B
	CR 90-2-2	25					57.9	58.2	140.2	99.7	47x32x12	2972	3545	B
	CR 90-2-1	30					57.9	58.8	140.2	99.7	47x32x12	3207	3879	B
	CR 90-2	40					57.9	60.2	140.2	99.7	47x32x12	3502	4181	B
	CR 90-3-2	40					57.9	63.8	140.2	99.7	47x32x12	3541	4221	B
	CR 90-3	50					57.9	63.3	171.7	99.7	47x32x12	4241	5710	B
6	CR 90-1-1	15	12" ANSI	50.9	69.9	12.2	57.9	44.3	182.2	110.2	47x32x12	3045	4274	B
	CR 90-1	20					57.9	49.4	182.2	110.2	47x32x12	3429	4658	B
	CR 90-2-2	25					57.9	58.2	182.2	110.2	47x32x12	3477	4713	B
	CR 90-2-1	30					57.9	58.8	182.2	110.2	47x32x12	3759	5113	B
	CR 90-2	40					57.9	60.2	182.2	110.2	47x32x12	4113	5476	B
	CR 90-3-2	40					57.9	63.8	182.2	110.2	47x32x12	4161	5523	B
	CR 90-3	50					57.9	63.3	182.2	110.2	47x32x12	5001	6579	B

Design A: Hydro MPC booster set with a control panel mounted on the same base plate as the pumps.

Design B: Hydro MPC booster set with a control panel and pumps mounted on separate base plates.

Design C: Hydro MPC booster set with a floor mounted control panel.

Note: All control panel dimensions based on 460/3/60 power. Dimensions may vary ± 1 in. and vary due to options requested and component changes. Please contact Grundfos for a Certified drawing for construction purposes.

Maximum system amps (full load amperage)

No. of pumps	Motor [hp]	MPC-E				MPC-E(CUE), -F, -S				
		1x230V	3x208V	3x230V	3x460V	1x230V	3x208V	3x230V	3x460V	3x575V
2	1	11.4	7.5	7.7	4.4	13.0	7.5	7.7	4.4	4.1
	1.5	16.0	10.4	10.2	5.6	20.0	10.4	10.2	5.6	5.5
	2		12.4	11.8	6.4	24.0	12.4	11.8	6.4	7.1
	3		18.8	18.0	9.5	33.0	18.8	18.0	9.5	7.9
	5		29.4	29.0	15.0	49.0	29.4	29.0	15.0	12.5
	7.5		43.0	44.0	22.6	68.6	43.0	44.0	22.6	16.7
	10				29.8	81.0	57.0	58.0	29.8	20.7
	15						77.0	73.0	37.0	29.5
	20						105.0	97.0	49.0	39.9
	25						129.0	119.0	60.0	48.5
	30							141.0	71.0	56.7
3	1	16.6	10.8	11.1	6.0	19.0	10.8	11.1	6.0	5.4
	1.5	23.5	15.1	14.8	7.9	29.5	15.1	14.8	7.9	7.5
	2		18.1	17.2	9.1	35.5	18.1	17.2	9.1	9.9
	3		27.7	26.5	13.8	49.0	27.7	26.5	13.8	11.1
	5		43.6	43.0	22.0	73.0	43.6	43.0	22.0	18.0
	7.5		64.0	65.5	33.4	102.4	64.0	65.5	33.4	24.3
	10				44.2	121.0	85.0	86.5	44.2	30.3
	15						115.0	109.0	55.0	43.5
	20						157.0	145.0	73.0	59.1
	25						193.0	178.0	89.5	72.0
	30							211.0	106.0	84.3
4	1	21.8	14.0	14.4	7.7	25.0	14.0	14.4	7.7	6.7
	1.5	31.0	19.8	19.4	10.2	39.0	19.8	19.4	10.2	9.5
	2		23.8	22.6	11.8	47.0	23.8	22.6	11.8	12.7
	3		36.6	35.0	18.0	65.0	36.6	35.0	18.0	14.3
	5		57.8	57.0	29.0	97.0	57.8	57.0	29.0	23.5
	7.5		85.0	87.0	44.2	136.2	85.0	87.0	44.2	31.9
	10				58.6	161.0	113.0	115.0	58.6	39.9
	15						153.0	145.0	73.0	57.5
	20						209.0	193.0	97.0	78.3
	25						257.0	237.0	119.0	95.5
	30							281.0	141.0	111.9
5	1	27.0	17.3	17.8	9.4	31.0	17.3	17.8	9.4	8.0
	1.5	38.5	24.5	24.0	12.5	48.5	24.5	24.0	12.5	11.5
	2		29.5	28.0	14.5	58.5	29.5	28.0	14.5	15.5
	3		45.5	43.5	22.3	81.0	45.5	43.5	22.3	17.5
	5		72.0	71.0	36.0	121.0	72.0	71.0	36.0	29.0
	7.5		106.0	108.5	55.0	170.0	106.0	108.5	55.0	39.5
	10				73.0	201.0	141.0	143.5	73.0	49.5
	15						191.0	181.0	91.0	71.5
	20						261.0	241.0	121.0	97.5
	25						321.0	296.0	148.5	119.0
	30							351.0	176.0	139.5
5	40						481.0	241.0	186.5	
	50						581.0	291.0	231.5	

Notes: 1. Maximum system amperage reflect panels with no options and may change due to panel options requested.

Maximum system amps (full load amperage)

No. of pumps	Motor [hp]	MPC-E				MPC-E(CUE), -F, -S				
		1x230V	3x208V	3x230V	3x460V	1x230V	3x208V	3x230V	3x460V	3x575V
6	1	32.2	20.5	21.1	11.1	37.0	20.5	21.1	11.1	9.3
	1.5	46.0	29.2	28.6	14.8	58.0	29.2	28.6	14.8	13.5
	2		35.2	33.4	17.2	70.0	35.2	33.4	17.2	18.3
	3		54.4	52.0	26.5	97.0	54.4	52.0	26.5	20.7
	5		86.2	85.0	43.0	145.0	86.2	85.0	43.0	34.5
	7.5		127.0	130.0	65.8	203.8	127.0	130.0	65.8	47.1
	10				87.4	241.0	169.0	172.0	87.4	59.1
	15						229.0	217.0	109.0	85.5
	20						313.0	289.0	145.0	116.7
	25						385.0	355.0	178.0	142.5
	30							421.0	211.0	167.1
	40							577.0	289.0	223.5
	50							697.0	349.0	277.5

Notes: 1. Maximum system amperage reflect panels with no options and may change due to panel options requested.

9. Optional equipment

All optional equipment, if required, must be specified when ordering the Hydro MPC booster set, as it must be fitted from factory prior to delivery.

Diaphragm tank

In most systems a diaphragm tank must be installed on the discharge side of the system. See page 22 for recommended size.

Redundant primary sensor

In order to increase the reliability, a redundant primary sensor can be connected as backup sensor for the primary sensor.

Note: The redundant primary sensor ¹⁾ must be of the same type as the primary sensor.

¹⁾ The redundant primary sensor is normally connected to the analog input AI3 of CU 351. If this input is used for another function, such as External setpoint, the redundant sensor must be connected to the analog input AI2. If, however, this input is also occupied, the number of analog inputs must be increased by installing an IO 351B module, see page 79.

Dry-running protection

Dry-running protection must always be installed on the suction side of the system.

The following types of dry run protection are available with each BoosterpAQ.

- Pressure transducer (4-20mA) ²⁾
- Liquid level switch ¹⁾

¹⁾ Only one type of dry-running protection can be selected, as it must be connected to the same digital input of CU 351. This also applies to level switches.

For further information about CU 351, see page 9.

²⁾ The inlet pressure sensor is normally connected to the analog input AI2 of CU 351. If this input is used for another function, such as External setpoint, the sensor must be connected to the analog input AI3. If, however, this input is also occupied, the number of analog inputs must be increased by installing an IO 351B module, see page 79.

For further information about IO 351B, see page 79.

Position of non-return valve

As standard, non-return valves are fitted on the discharge side. They can also be fitted on the suction side of the pump.

Emergency operation switch

The emergency operation switch enables emergency operation if a fault occurs in the CU 351. The emergency operation switch are located inside the panel as standard but can be located through the door if requested.

Note: The motor protection and the dry-running protection are not activated during emergency operation.

Note: Order 1 switch for each pump.

Service disconnect switch

By means of a repair switch fitted to the individual pumps of the Hydro MPC booster set, the pumps can be switched off during repair, etc.

Note: Order 1 switch for each pump.

Pump run indicator light

The indicator light is on when the relevant pump is in operation.

Note: Order 1 operation indicator light for each pump.

System Fault indicator light

The fault indicator light is on if a fault occurs in the booster set.

Note: Phase failure causes no fault indication.

Individual pump fault indicator light

The fault indicator light is on if a fault occurs in the pump.

Note: Order 1 fault indicator light for each pump.

Surge arrester

A surge arrester is mounted in the control panel to aid in the protection against a lightning strike and power spikes.

Phase-failure monitor

The booster set should be protected against phase failure.

Note: A potential-free switch is available for external monitoring. Systems that include all variable frequency drives (VFD) do not need this option as the VFD will protect the motors from loss of phase.

Panel dome light

The dome light is on in case of a system alarm.

Note: Phase failure causes no alarm indication.

Audible alarm

The audible alarm sounds in case of a system alarm. Two types are available:

- 80 dB
- 100 dB

Voltmeter

A voltmeter indicates the mains voltage between the main phases.

Ammeter

An ammeter indicates the current of one phase per pump.

IO 351B interface



GrA 0815

Fig. 42 IO 351B interface

This option features a factory-fitted and non-programmed IO 351B interface enabling exchange of nine additional digital inputs, seven additional digital outputs and two additional analog inputs.

Note: As standard the CU 351 supports the installation of one IO 351B interface.

Description	Location	Product number
I/O interface via IO 351B	In control panel	96161730

Ethernet

The ethernet connection makes it possible to get unlimited access to the setting and monitoring of the Hydro MPC from a remote PC. Ethernet connection is standard on CU 351 controller.

GENIbus module

The GENIbus module is an add-on module that enables data communication with external GENIbus devices, such as Grundfos CIU communication interfaces.

Note: The GENIbus module is needed when you wish to transfer operational data from the Hydro MPC to a building management system.

Description	Location	Product number
GENIbus module	In control panel	96086146

CIU communication interface



GrA 6118

Fig. 43 Grundfos CIU communication interface

The CIU enables communication of operating data, such as measured values and setpoints, between the Hydro MPC and a building management system.

The CIU enables transfer of these data:

- operating mode
- setpoint
- control mode
- warnings and alarms
- power/energy consumption.

We offer the following CIU units:

CIU 110

For communication via LON.

CIU 150

For communication via PROFIBUS.

CIU 200

For communication via Modbus RTU.

CIU 250

For communication via GSM.

CIU 300

For communication via BACnet.

Note: This option includes a CU 351 with a factory-fitted GENIbus module which is necessary for external data communication.

Description	Fieldbus protocol	Location	Product number
CIU 110	LON		96753736
CIU 150	PROFIBUS		96753081
CIU 200	Modbus RTU	In control panel	96753082
CIU 250	GSM		96787106
CIU 300	BACnet		96893769

For further information about data communication via CIU units, data to transfer and fieldbus protocols, see the CIU documentation available in WebCAPS.

10. Further product documentation

WebCAPS

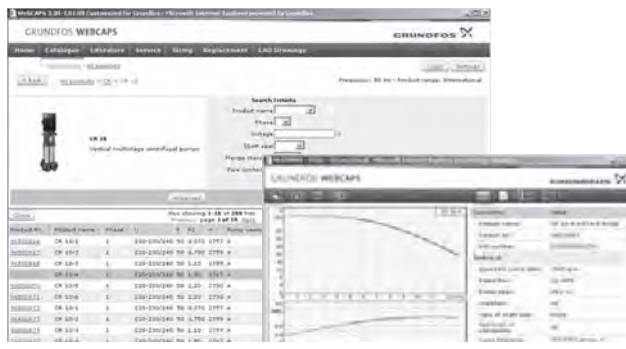


WebCAPS is a **Web**-based **Computer Aided Product Selection** program available on www.grundfos.com.

WebCAPS contains detailed information on more than 185,000 Grundfos products in more than 20 languages.

In WebCAPS, all information is divided into 6 sections:

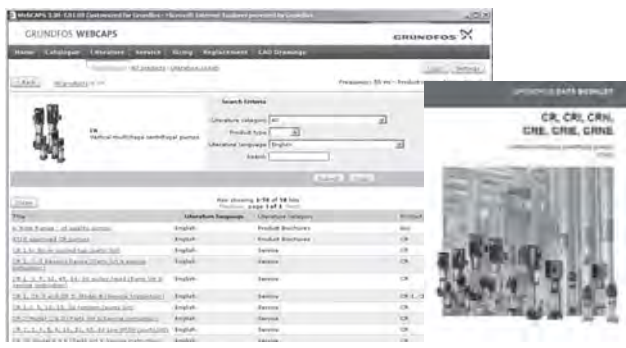
- Catalog
- Literature
- Service
- Sizing
- Replacement
- CAD drawings.



Catalog

This section is based on fields of application and pump types, and contains

- technical data
- curves (QH, Eta, P1, P2, etc) which can be adapted to the density and viscosity of the pumped liquid and show the number of pumps in operation
- product photos
- dimensional drawings
- wiring diagrams
- quotation texts, etc.



Literature

In this section you can access all the latest documents of a given pump, such as

- product guides
- installation and operating instructions
- service documentation, such as Service kit catalog and Service kit instructions
- quick guides
- product brochures, etc.



Service

This section contains an easy-to-use interactive service catalog. Here you can find and identify service parts of both existing and discontinued Grundfos pumps.

Furthermore, this section contains service videos showing you how to replace service parts.

Subject to alterations.



Sizing

This section is based on different fields of application and installation examples, and gives easy step-by-step instructions in how to

- select the most suitable and efficient pump for your installation
- carry out advanced calculations based on energy consumption, payback periods, load profiles, life cycle costs, etc.
- analyse your selected pump via the built-in life cycle cost tool
- determine the flow velocity in wastewater applications, etc.



Replacement

In this section you find a guide to selecting and comparing replacement data of an installed pump in order to replace the pump with a more efficient Grundfos pump. The section contains replacement data of a wide range of pumps produced by other manufacturers than Grundfos.

Based on an easy step-by-step guide, you can compare Grundfos pumps with the one you have installed on your site. When you have specified the installed pump, the guide will suggest a number of Grundfos pumps which can improve both comfort and efficiency.



CAD drawings

In this section it is possible to download 2-dimensional (2D) and 3-dimensional (3D) CAD drawings of most Grundfos pumps.

These formats are available in WebCAPS:

2-dimensional drawings:

- .dxf, wireframe drawings
- .dwg, wireframe drawings.

3-dimensional drawings:

- .dwg, wireframe drawings (without surfaces)
- .stp, solid drawings (with surfaces)
- .eprt, E-drawings.



WinCAPS



WinCAPS CD-ROM

WinCAPS is a **Windows-based Computer Aided Product Selection** program containing detailed information on more than 185,000 Grundfos products in more than 20 languages.

The program contains the same features and functions as WebCAPS, but is an ideal solution if no Internet connection is available.

WinCAPS is available on CD-ROM and updated once a year.

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