Hydro MPC

Booster systems with 2 to 6 pumps

50/60 Hz

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think
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GRUNDFOS

Table of contents

1. Product introduction

Applications

Grundfos Hydro MPC booster systems are designed for the transfer and pressure boosting of clean water in places such as:

- waterworks
- blocks of flats
- hotels
- industry
- hospitals
- schools.

As standard, Hydro MPC booster systems consist of two to six identical CR, CRI, CRE or CRIE pumps connected in parallel and mounted on a common base frame provided with a control cabinet and all the necessary fittings.

Most of the booster systems are available with either CR, CRI pumps and/or CRE, CRIE pumps. For further information, see page 11.

The pumps of the booster system can be removed without interfering with the pipework on either side of the manifolds.

Hydro MPC booster systems are available in three control variants. For further information, see Product ranges on pages 7 and 8 and *Overview of control variants* on page 13.

Hydro MPC-E

Booster systems with two to six identical electronically speed-controlled pumps.

Pipework connection from R 2 to DN 350.

From 0.37 to 22 kW, Hydro MPC-E is fitted with CRE, CRIE pumps with integrated frequency converter.

As from 30 kW, Hydro MPC-E is fitted with CR pumps connected to Grundfos CUE frequency converters (one per pump).

Hydro MPC-F

Booster systems with two to six identical CR, CRI pumps connected to one Grundfos CUE frequency converter. The speed-controlled operation alternates between the pumps of the booster system.

Pipework connection from R 2 to DN 350 and motor sizes from 0.55 to 55 kW.

Hydro MPC-S

Booster systems with two to six identical mains-operated CR, CRI pumps.

Pipework connection from R 2 to DN 350 and motor sizes from 0.37 to 55 kW.

Benefits

Perfect constant-pressure control

Gr1014555

Fig. 1 CU 352

The pumps of the Hydro MPC booster system are controlled individually by the CU 352 multi-pump control unit which contains application-optimised software and pump curve data. The CU 352 thus knows the exact hydraulic and electrical data of the pumps to be controlled. Furthermore, a log function enables monitoring of the system performance over a period of time.

User-friendliness

Hydro MPC features a built-in start-up wizard in a wide range of languages that guides the installer through a series of steps until the system is correctly installed and commissioned. When the installation is complete, the large, user-friendly colour display will ensure that day-to-day operation is equally easy.

Reliability

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Fig. 2 Grundfos CR pumps

Hydro MPC is built on the highly renowned Grundfos CR pump range. CR pumps are known for their reliability, efficiency and adaptability.

Every vital piece of the Hydro MPC is made by Grundfos. You are thus guaranteed long-lasting technology that requires a minimum of maintenance and provides a maximum of efficiency.

Low energy consumption

Hydro MPC-E systems with the newest MGE motors from 0.37 to 2.2 kW have a total efficiency which exceeds the Super Premium Efficiency EuP IE4 level according to IEC 60034-30-1.

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Fig. 3 MGE motor with total efficiency exceeding the EuP IE4 level according to IEC 60034-30-1

All other motors used in Hydro MPC systems meet the legislative requirements of the EuP IE3 level.

Furthermore, the Hydro MPC uses pump curve data to calculate and optimise the cut-in and cut-out of pumps.

High-efficient motors, advanced control in combination with optimised hydraulics for both the CR pump and the manifold ensures that the system uses a minimum of energy.

Flexibility

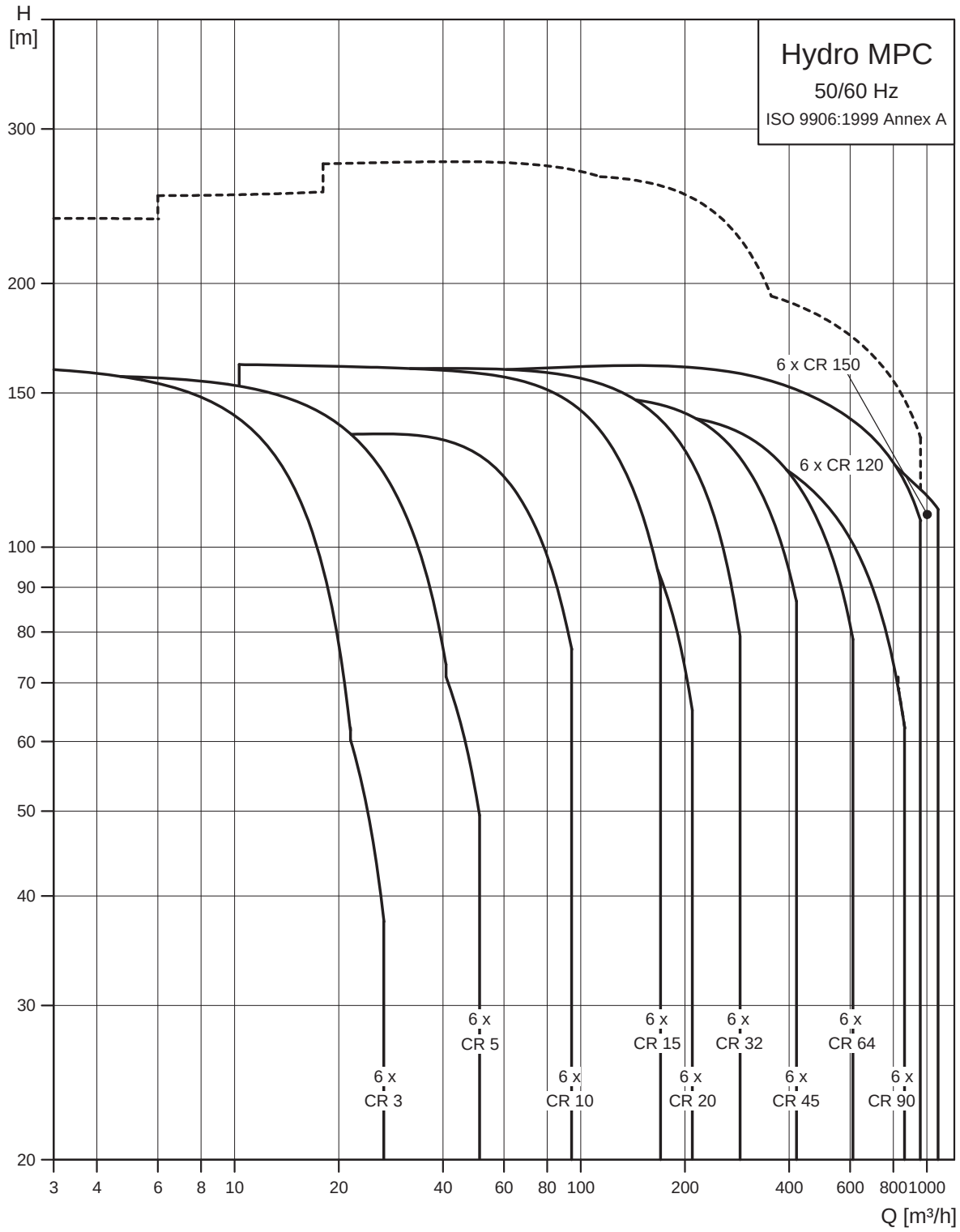
The elements of the Hydro MPC can be combined in a number of ways to make sure that we build the perfect solution for you!

Custom-built solutions

If this data booklet does not provide you with a solution that meets your specific pumping needs, please contact us.

2. Product data

Performance range



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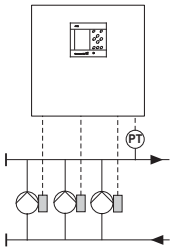
Note: The area within the dotted line applies to Hydro MPC booster systems available on request.

Product range, 50 Hz and 50/60 Hz



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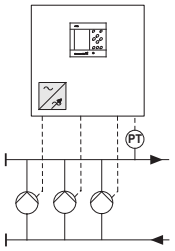

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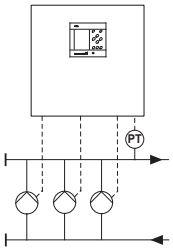

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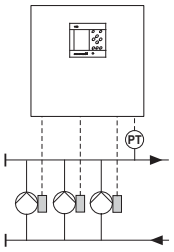
Control variant	Hydro MPC-E	Hydro MPC-F	Hydro MPC-S
Frequency	**50/60 Hz**	**50 Hz**	**50 Hz**
Hydraulic data			
Maximum head [m]	155	155	155
Flow rate [m^3/h]	0 - 1080	0 - 1080	0 - 1080
Liquid temperature [°C]	0 to +60[1)]	0 to +60[1)]	0 to +60
Maximum operating pressure [bar]	16[2)]	16[2)]	16[2)]
Motor data			
Number of pumps	2 - 6	2 - 6	2 - 6
Motor power [kW]	0.37 - 55[3)]	0.55 - 55	0.37 - 55
Shaft seal			
HQQE (SiC/SiC/EPDM)	●	●	●
Materials			
CRI, CRIE 3 to CRI, CRIE 20: Stainless steel EN/DIN 1.4301/AISI 304	●	●	●
CR, CRE 32 to CR, CRE 150: Cast iron and stainless steel EN/DIN 1.4301/AISI 304	●	●	●
Manifold: Stainless steel[6)]	●	●	●
Pipework connection			
Union connection	R 2 to R 2 1/2	R 2 to R 2 1/2	R 2 to R 2 1/2
DIN flange	DN 80 to DN 350	DN 80 to DN 350	DN 80 to DN 350
Functions			
Constant-pressure control	●	●	● [4)]
Automatic cascade control	●	●	●
Pump changeover/alternation	●	●	●
Stop function	●	●	-
Proportional-pressure control	●	●	-
Bus communication (external)	❍	❍	❍
Integrated frequency converter (in pump)	●	●	-
External frequency converter (in cabinet)	●	●	-
Ethernet connection	●	●	●
Alternative setpoints	●	●	●
Redundant primary sensor (option)	●	●	●
Standby pump	●	●	●
Emergency run	●	●	●
Specific energy calculation	● [5)]	-	-
Log function	●	●	●
Reduced operation	●	●	●
Service contact information	●	●	●
Help texts	●	●	●

● Available as standard.
❍ Available on request.

1) Higher temperature available on request.
2) Booster systems with a maximum operating pressure higher than 16 bar are available on request.
3) Hydro MPC-E booster systems from 0.37 to 22 kW are fitted with speed-controlled CRE, CRIE pumps with integrated frequency converters. Hydro MPC-E booster systems from 30 to 55 kW are fitted with CR, CRI pumps connected to Grundfos CUE frequency converters.
4) The pressure will be almost constant between H_{set} and H_{stop}. For further information, see page 13.
5) Requires that a flowmeter has been installed and connected.
6) In some regions, galvanised manifolds are available as an option. For further information, contact Grundfos.

Product range, 60 Hz and 50/60 Hz



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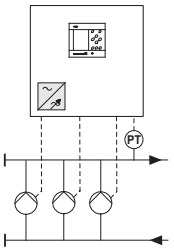

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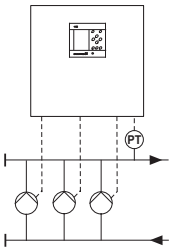

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Control variant	Hydro MPC-E	Hydro MPC-F	Hydro MPC-S
Frequency	**50/60 Hz**	**60 Hz**	**60 Hz**
Hydraulic data			
Maximum head [m]	155	155	155
Flow rate [m^3/h]	0 - 1080	0 - 1080	0 - 1080
Liquid temperature [°C]	0 to +60[1)]	0 to +60[1)]	0 to +60[1)]
Maximum operating pressure [bar]	16[2)]	16[2)]	16[2)]
Motor data			
Number of pumps	2 - 6	2 - 6	2 - 6
Motor power [kW]	0.37 - 75[3)]	0.55 - 75	0.37 - 75
Shaft seal			
HQQE (SiC/SiC/EPDM)	●	●	●
Materials			
CRI, CRIE 3 to 20: Stainless steel EN/DIN 1.4301/AISI 304	●	●	●
CR, CRE 32 to 150: Cast iron and stainless steel EN/DIN 1.4301/AISI 304	●	●	●
Manifold: Stainless steel[6)]	●	●	●
Pipework connection			
Union connection	R 2 to R 2 1/2	R 2 to R 2 1/2	R 2 to R 2 1/2
DIN flange	DN 80 to DN 350	DN 80 to DN 350	DN 80 to DN 350
Functions			
Constant-pressure control	●	●	● [4)]
Automatic cascade control	●	●	●
Pump changeover/alternation	●	●	●
Stop function	●	●	-
Proportional-pressure control	●	●	-
Bus communication (external)	❍	❍	❍
Integrated frequency converter (in pump)	●	-	-
External frequency converter (in cabinet)	●	●	-
Ethernet connection	●	●	●
Alternative setpoints	●	●	●
Redundant primary sensor (option)	●	●	●
Standby pump	●	●	●
Emergency run	●	●	●
Specific energy calculation	● [5)]	-	-
Log function	●	●	●
Reduced operation	●	●	●
Service contact information	●	●	●
Help texts	●	●	●

● Available as standard.
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1) Higher temperature available on request.
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4) The pressure will be almost constant between H_{set} and H_{stop}. For further information, see page 13.
5) Requires that a flowmeter has been installed and connected.
6) In some regions, galvanised manifolds are available as an option. For further information, contact Grundfos.

Type key

Example	Hydro MPC	-E	/NS	3 CRIE 5-8	3 x 380-415 V, 50/60 Hz, N, PE

Type range

Subgroups
Pumps with integrated frequency converter (0.37 to 22 kW), one per pump: -E
Pumps with Grundfos CUE frequency converter (30 kW and up), one per pump: -E
Pumps with one shared Grundfos CUE frequency converter: -F
Mains-operated pumps (start/stop): -S

Manifold material
: Stainless steel (AISI 304)
/OM: Other materials

Suction manifold
: With suction manifold
/NS: Without suction manifold

Number of pumps with integrated frequency converter and pump type

Number of mains-operated pumps and pump type

Code for custom-built solution

Supply voltage, frequency

Operating conditions

Operating pressure

As standard, the maximum operating pressure is 16 bar.

Hydro MPC booster systems with a higher maximum operating pressure are available on request.

Temperature

Liquid temperature: 0 to +60 °C.
Ambient temperature: 0 to +40 °C.

Relative humidity

Maximum relative humidity: 95 %.

3. Construction

Pump

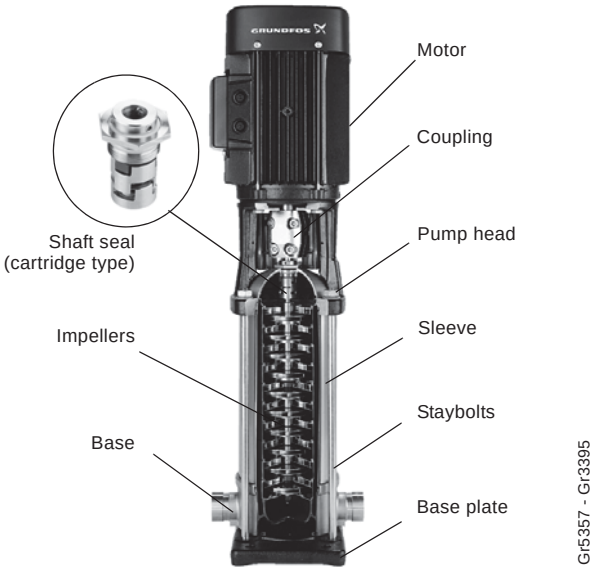

Fig. 4 CR pump

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 and CRIE pumps are based on CR and CRI pumps. The difference between the CR and CRE pump ranges is the motor. CRE and CRIE pumps are fitted with a motor with integrated frequency converter.

CR and CRE pumps have pump head and base of cast iron while CRI and CRIE pumps have pump head and base of stainless steel.

All hydraulic parts are made of stainless steel.

For further information, see the following data booklets:

Title	Publication number
CR, CRI, CRN, CRE, CRIE, CRNE	V7023751
CR, CRI, CRN, CRT, CRE, CRIE, CRNE, CRTE custom-built pumps	96486346
CRE, CRIE, CRNE	98423696
Grundfos E-pumps	96570076

The data booklets are available in WebCAPS on www.grundfos.com. See page 156.

For information about the pump's position in the booster system, see fig. 8 on page 12.

Shaft seal

All pumps have a maintenance-free mechanical HQQE shaft seal of the cartridge type. Seal faces are silicon carbide/silicon carbide. Rubber parts are of EPDM.

Note: Other shaft seal variants are available on request.

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Fig. 5 Cartridge shaft seal

The shaft seal can be replaced without dismantling the pump. The shaft seal of pumps with motors of 11 kW and up can be replaced without removing the motor.

For further information, see the data booklet on shaft seals, publication number 96519875. The data booklet is available in WebCAPS on www.grundfos.com. See page 156.

Motors

CR and CRI pumps

CR and CRI pumps are fitted with a totally enclosed, fan-cooled, 2-pole Grundfos standard motor.

Principal dimensions are in accordance with the EN standards.

Electrical tolerances to EN 60034.

	Standard motor
Mounting designation	Up to 4 kW: V18 From 5.5 kW: V1
Insulation class	F
Efficiency class	IE3
Enclosure class	IP55[1)]
Supply voltage, 50 Hz Tolerance: ± 10 %	P2: 0.37 to 1.5 kW: 3 x 220-240/380-415 V, 50 Hz P2: 2.2 to 11 kW: 3 x 380-415 V, 50 Hz P2: 15 to 55 kW: 3 x 380-415/660-690 V, 50 Hz
Supply voltage, 60 Hz Tolerance: ± 10 %	P2: 0.55 to 75 kW: 3 x 220-277/380-480 V, 60 Hz

1) IP65 available on request.

Three-phase Grundfos motors from 3 kW and up have a built-in thermistor (PTC) according to DIN 44082 (IEC 34-11: TP 211).

CRE and CRIE pumps

CRE and CRIE pumps are fitted with a totally enclosed, fan-cooled, 2-pole motor with integrated frequency converter.

Principal dimensions are in accordance with EN standards.

Electrical tolerances to EN 60034.

	Motor with integrated frequency converter		
	P2: ≤ 1.1 kW	**P2: 0.75 to 7.5 kW**	**P2: 11 to 22 kW**
Mounting designation	V18	Up to 4 kW: V18 From 5.5 kW: V1	
Insulation class		F	
Efficiency class		Up to 2.2 kW: exceeding IE4 See *Low energy consumption* on page 5. From 3 kW: IE3	
Enclosure class		IP54	
Supply voltage Tolerance: ± 10 %	1 x 200-240 V, 50/60 Hz	3 x 380-480 V, 50/60 Hz	3 x 380-415 V, 50/60 Hz

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

Manifold

A suction manifold of stainless steel (AISI 304/EN DIN 1.4301) is fitted on the suction side of the pumps.

Note: In some regions, galvanised manifolds are available as an option. For further information, contact Grundfos.

A discharge manifold of stainless steel (AISI 304/EN DIN 1.4301) is fitted on the discharge side of the pumps.

An isolating valve and a non-return valve are fitted between the discharge manifold and the individual pumps. The non-return valve may be fitted on the suction side on request.

For information about the position of the suction and discharge manifolds, see fig. 8 on page 12.

Control cabinet

The control cabinet is fitted with all the necessary components. If necessary, Hydro MPC booster systems are fitted with a fan to remove surplus heat generated by the frequency converter.

Control cabinet variants

The control cabinets are divided into four different designs:

- **Design A:** Systems with the control cabinet mounted on the same base frame as the pumps.
- **Design B:** Systems with the control cabinet centred on the base frame.
- **Design C:** Systems with the control cabinet mounted on its own base for floor mounting. The control cabinet can be placed up to 2 metres from the pumps.
- **Design D:** Systems with the control cabinet mounted on its own base frame. The control cabinet can be placed up to 2 metres from the pumps.

For further information, see fig. 8 on page 12 and technical data on page 76.

CU 352

The CU 352 multi-pump control unit of Hydro MPC is located in the door of the control cabinet.

Gr1014555

Fig. 6 CU 352

The CU 352 features a colour display, ten buttons and two indicator lights. The control panel enables manual setting and change of parameters such as setpoint, start/stop of system or individual pumps.

The CU 352 has application-optimised software for adapting the system to the application in question.

IO 351

The IO 351 is a module for exchange of digital and analog signals between the CU 352 and the remaining electrical system via GENIbus. The IO 351 is available in the variants A and B.

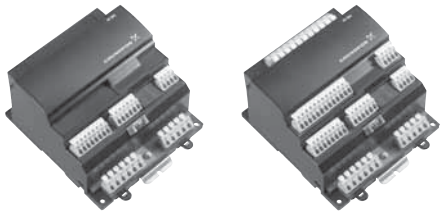

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Fig. 7 IO 351A and IO 351B

IO 351A

The IO 351A is used for one to three mains-operated Grundfos pumps.

IO 351B

The IO 351B is used for one to six mains-operated Grundfos pumps and/or pumps controlled by external Grundfos CUE frequency converters. The module can also be used as an input-output module for communication with monitoring equipment or other external equipment.

Base frame

The pumps in a Hydro MPC system are mounted on a common base frame. The base frame is made of stainless steel AISI 304, except for systems with CR(E) 120 and CR(E) 150 pumps which are mounted on a base frame made of galvanised I-beams.

System components

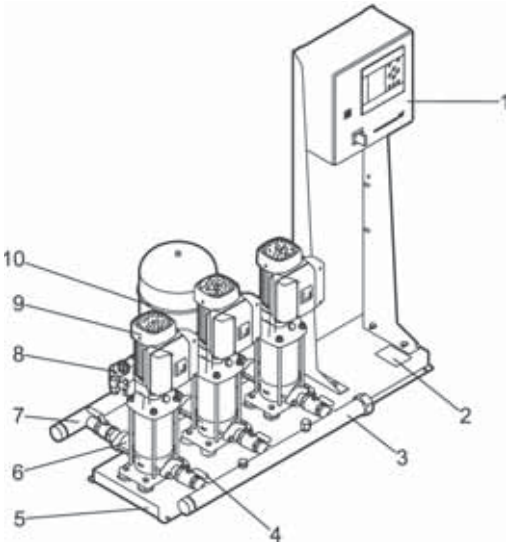

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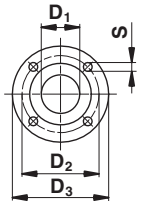
Fig. 8 System components

Pos.	Description	Quantity
1	Control cabinet	1
2	Nameplate	1
3	Suction manifold	1
4	Isolating valve	2 per pump
5	Base frame	1
6	Non-return valve	1 per pump
7	Discharge manifold	1
8	Pressure transmitter/gauge	1
9	Pump	2-6
10	Diaphragm tank (optional)	1

Flange dimensions

PN 16 flanges



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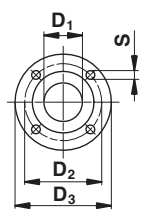
	Standard: EN 1092-2 PN 16 (1.6 MPa)					
	Nominal diameter (DN)					
DN	80	100	125	150	200	250
D_1	80	100	125	150	200	250
D_2	160	180	210	240	295	355
D_3	200	220	250	285	340	405
S	8 x 19	8 x 19	8 x 19	8 x 23	12 x 23	12 x 28

PN 25 flanges

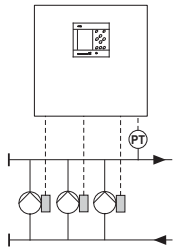
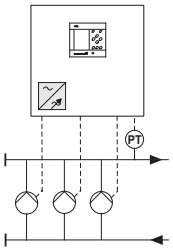
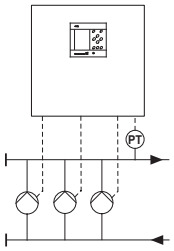
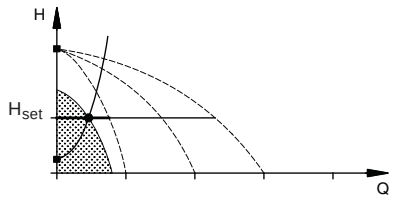
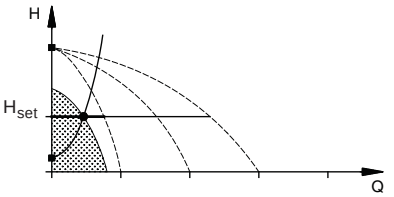
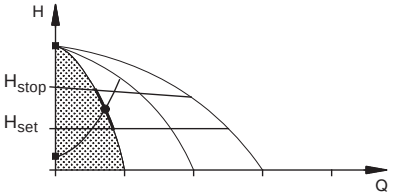
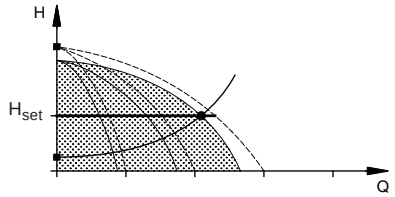
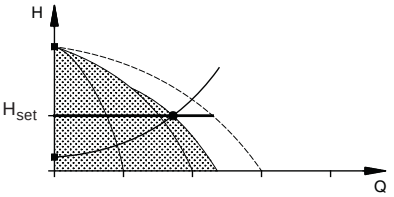
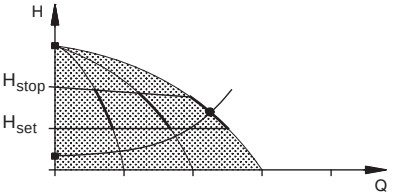


TM02 7720 3803

	Standard: EN 1092-2 PN 25 (2.5 MPa)	
	Nominal diameter (DN)	
DN	300	350
D_1	300	350
D_2	430	490
D_3	485	555
S	16 x 30	16 x 33

4. Functions

Overview of control variants

Booster systems with speed-controlled pumps	Booster systems with pumps connected to one CUE frequency converter	Booster systems with mains-operated pumps
Hydro MPC-E	**Hydro MPC-F**	**Hydro MPC-S**
Hydro MPC booster system with three CRE, CRIE pumps.  TM03 0993 0905	Hydro MPC booster system with three CR pumps. One of the pumps is connected to a Grundfos CUE frequency converter in the control cabinet. The speed-controlled operation alternates between the pumps of the Hydro MPC.  TM03 1265 1505	Hydro MPC booster system with three mains-operated CR, CRI pumps.  TM03 0999 0905
One CRE, CRIE pump in operation.  TM00 7995 2296	One CR pump connected to a Grundfos CUE frequency converter in operation.  TM00 7995 2296	One mains-operated CR, CRI pump in operation.  TM03 2045 3505
Three CRE, CRIE pumps in operation.  TM00 7996 2296	One CR pump connected to a Grundfos CUE frequency converter and two mains-operated CR pumps in operation.  TM00 7998 2296	Three mains-operated CR, CRI pumps in operation.  TM03 2046 3505
• Hydro MPC-E maintains a constant pressure through continuously variable adjustment of the speed of the CRE, CRIE pumps connected. • The performance is adjusted to the demand through cutting in/out the required number of CRE, CRIE pumps and through parallel control of the pumps in operation. • Pump changeover is automatic and depends on load, operating hours and fault. • All pumps in operation will run at equal speed.	• Hydro MPC-F maintains a constant pressure through continuously variable adjustment of the speed of the CR pump connected to a Grundfos CUE frequency converter. The speed-controlled operation alternates between the pumps. • One CR pump connected to the Grundfos CUE frequency converter always starts first. If the pressure cannot be maintained by the pump, one or two mains-operated CR pumps will be cut in. • Pump changeover is automatic and depends on load, operating hours and fault.	• Hydro MPC-S maintains an almost constant pressure 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, operating hours and fault.

CU 352 control panel

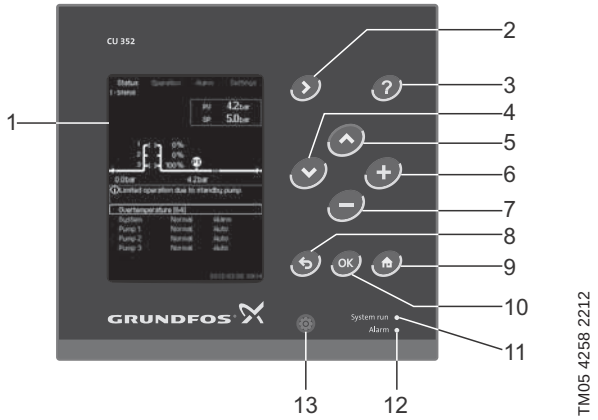


Fig. 9 CU 352 control panel

Key

Pos.	Description
1	Display
2	Arrow to the right
3	Help
4	Down
5	Up
6	Plus
7	Minus
8	Esc
9	Home
10	OK
11	Indicator light, operation (green)
12	Indicator light, fault (red)
13	Display brightness

"Status" menu

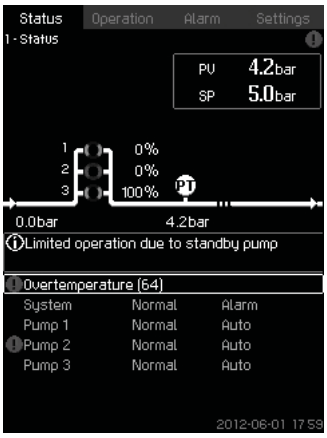


Fig. 10 "Status" menu

Description

- Reading of process value (PV) of control parameter and selected setpoint (SP).
- Graphical illustration of system (upper display half).
- Indication if any incidents occur during operation (middle of display).
- Reading of performance of system and individual pumps (lower display half).
- Button (?) for further information.
- Active buttons are illuminated.

"Operation" menu

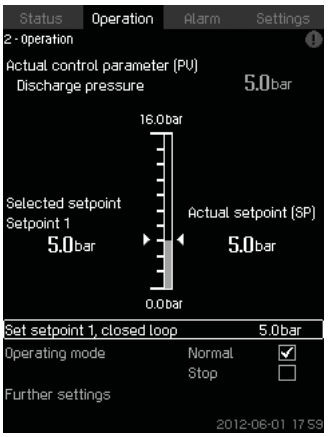


Fig. 11 "Operation" menu

Description

- Setting of basic parameters, for instance setpoint, start/stop of system or individual pumps.
- Reading of selected setpoint and current setpoint.
- Button (?) for further information.
- Active buttons are illuminated.

"Alarm" menu

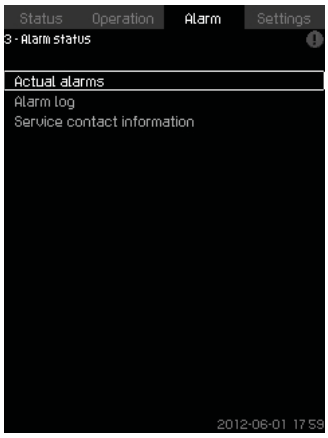


Fig. 12 "Alarm" menu

Description

- Overview of current warnings and alarms in clear text with detailed information:
  - What the cause of the fault is.
  - What the remedy for the fault is.
  - Where the fault occurred: System, pump no. 1…
  - When the fault occurred (time and date).
  - When the fault disappeared (time and date).
  - Whom to contact for service.
- Alarm log with up to 24 warnings and alarms.
- Button (?) for further information.
- Active buttons are illuminated.

"Settings" menu

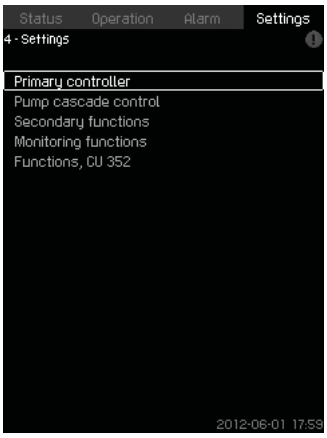


Fig. 13 "Settings" menu

Description

- Various settings:
  - External setpoint influence
  - Redundant primary sensor
  - Standby pumps
  - Stop function
  - Proportional pressure
  - Display language
  - Ethernet, etc.
- Button (?) for further information.
- Active buttons are illuminated.

Overview of functions

	Hydro MPC		
	-E	-F	-S
Functions via the CU 352 control panel			
Constant-pressure control	●	●	● [1]
Proportional pressure	●	●	-
Automatic cascade control	●	●	●
Alternative setpoints	●	●	●
Redundant primary sensor [4]	●	●	●
Minimum changeover time	●	●	●
Number of starts per hour	●	●	●
Standby pumps	●	●	●
Forced pump changeover	●	●	●
Pump test run	●	●	●
Dry-running protection [4]	●	●	●
Stop function	●	●	- [2]
Password	●	●	●
Clock program	●	●	●
Pilot pump [4]	●	●	
Soft pressure build-up	●	●	●
Emergency run	●	●	●
Pump curve data	●	●	●
Flow estimation	●	●	●
Limit 1 and 2 exceeded	●	●	●
Pumps outside duty range	●	●	●
Log function	●	●	●
Specific energy calculation	● [3]	-	-
Setpoint ramp	●	●	●
Reduced operation	●	●	●
Communication			
Ethernet connection	●	●	●
Other bus protocols: PROFIBUS, LonWorks, Modbus, GRM, GSM, BACnet MS/TP, Industrial Ethernet via CIM modules. For further information, see *Optional equipment*, page 146.	❍	❍	❍
External GENIbus connection	❍	❍	❍

● Standard.
❍ On request.
- Not available.

1) The pressure will be almost constant between H_{set} and H_{stop}. For further information, see page 13.
2) Hydro MPC-S will have on/off control of all pumps. For further information, see page 20.
3) Requires that a flowmeter has been installed and connected.
4) Hardware not supplied as standard, but the functionality is available in the controller.

Description of selected functions

Constant-pressure control of E-systems

Constant-pressure control ensures that the system delivers a constant pressure despite a change in consumption.

When taps are opened, water will be drawn from the diaphragm tank, if installed. The pressure will drop to a set cut-in pressure, and the first speed-controlled pump will start to operate. The speed of the pump in operation will be continuously increased to meet the demand. As the consumption rises, more pumps will cut in until the performance of the pumps in operation corresponds to the demand. During operation, the CU 352 will control the speed of each pump individually according to known pump curve data downloaded into the CU 352.

Furthermore, the CU 352 regularly estimates whether pumps are to be cut in or out to ensure best efficiency.

When the water consumption falls, pumps will be cut out one by one to maintain the set discharge pressure.

Display language

Fig. 14 Display language

Via the CU 352, you can select the language for the display.

Options:

- English
- German
- Danish
- Spanish
- Finnish
- French
- Greek
- Italian
- Dutch
- Polish
- Portuguese
- Russian
- Swedish
- Chinese
- Korean
- Japanese
- Czech
- Turkish
- Hungarian
- Bulgarian.

Pump curve data

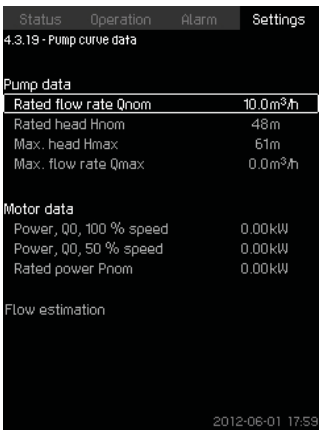


Fig. 15 Pump curve data

As standard, Hydro MPC will help you minimise energy consumption and cut energy costs. By means of pump curve data stored from factory, the CU 352 will know exactly which and how many pumps to control. These pump curve data enables the CU 352 to optimise performance and minimise energy consumption.

Redundant primary sensor

A redundant sensor can be installed as backup for the primary sensor in order to increase reliability and prevent stop of operation. The redundant primary sensor is at the same reference point as the primary sensor, i.e. in the discharge manifold of the booster system.

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 system thus runs as energy-efficiently as possible with a constant pressure and a limited number of pumps.

Alternative setpoints

This function makes it possible to set up to six setpoints as alternatives to the primary setpoint. The setpoints can be set for closed loop and open loop. The performance of the system can thus be adapted to other consumption patterns.

Example

A Hydro MPC booster system 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 altitude a higher discharge pressure is required.

Log function

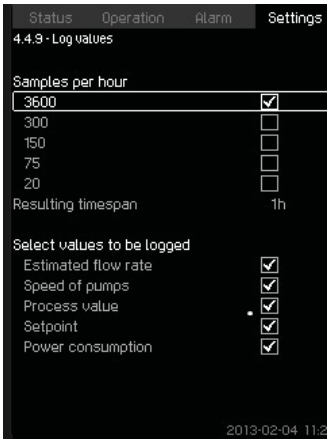


Fig. 16 Log values

The log function enables monitoring of selected parameters. The data can be presented in the display or exported as a .csv file via the built-in Ethernet connection.

Specific energy calculation

For MPC-E systems with a flowmeter connected, the CU 352 can calculate and show the specific energy used. It is shown as two values, the actual value and the average value.

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 systems with mains-operated pumps.

Each time a pump starts or stops, the CU 352 will calculate when the next pump is allowed to start or stop in order not to exceed the permissible number of starts per hour.

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

Standby pumps

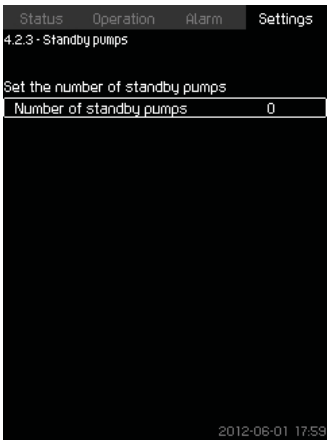


Fig. 17 Standby pumps

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

If a pump is stopped due to a fault, the standby pump will be cut in. This function ensures that the system can maintain the rated performance even if one of the pumps is stopped due to a fault.

The status as standby pump alternates between all pumps of the same type, for instance electronically speed-controlled pumps.

Forced pump changeover

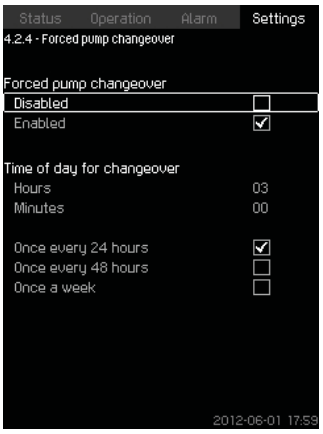


Fig. 18 Forced pump changeover

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 will be stopped and replaced by the pump with the lowest number of operating hours.

Pump test run

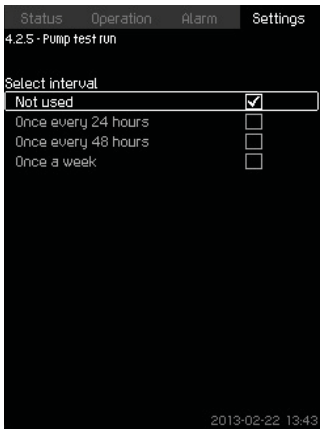


Fig. 19 Pump test run

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

Benefits:

- 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 system 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 will be stopped.

Level switches, pressure switches or analog sensors signalling water shortage at a set level can be used. Furthermore, you can set the system to be reset and restarted manually or automatically after a situation with water shortage.

Stop function

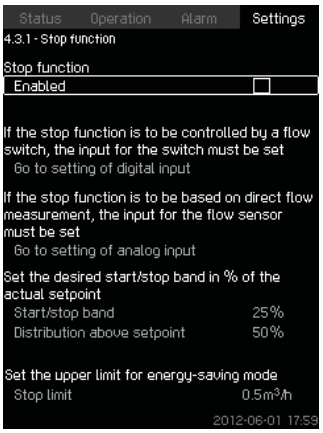


Fig. 20 Stop function

The stop function makes it possible to stop the last pump in operation if there is no or a very small consumption.

Purpose:

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

This function is only used in Hydro MPC booster systems with variable-speed pumps.

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

When the stop function is enabled, the operation of the system will be continuously monitored to detect a low flow rate. If the CU 352 detects no or a low flow rate ($Q < Q_{min}$), it will change from normal constant-pressure operation to on/off control of the last pump in operation.

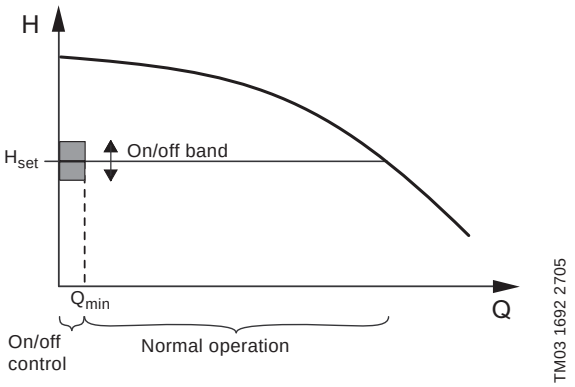


Fig. 21 On/off band

As long as the flow rate is lower than Q_{min}, the pump will run in on/off operation. If the flow rate is increased to above Q_{min}, the pumps will return to normal constant-pressure operation.

Via the CU 352, you can set the Hydro MPC to operate as energy-efficiently as possible or with the highest level of comfort.

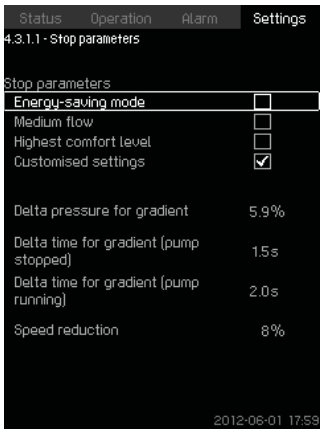


Fig. 22 Stop parameters

Four stop parameters can be selected:

- **Energy-saving mode** (factory setting)
  If you want the highest energy-saving mode possible.
- **Medium flow**
  If you want a compromise between the highest energy-saving mode and highest comfort level.
- **Highest comfort level**
  If you want the highest comfort level without too many pump starts/stops.
- **Customised settings**
  If you want to make your own settings.

Setpoint ramp

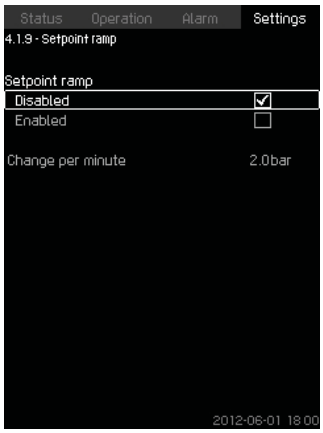


Fig. 23 Setpoint ramp

If this function is enabled, any setpoint change made via the controller, via clock program, when changing between alternative setpoints or via a SCADA system, will be made gradually over time. In this way, smooth setpoint changes can be made, thus causing no discomfort to the consumer.

Pilot pump

The pilot pump will take 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.

Purpose:

- to reduce the necessary size of the diaphragm tank
- to reduce the number of operating hours of the main pumps.

Password

Fig. 24 Password

Passwords make it possible to limit the access to the "Operation" and "Settings" menus in the controller.
If the access is limited, it will not be possible to view or set any parameter in the menus.

Clock program

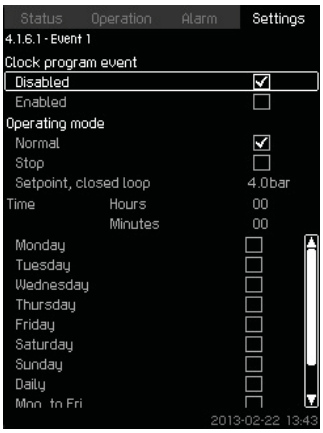


Fig. 25 Clock program

This function makes it possible to set up to ten events with specification of 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

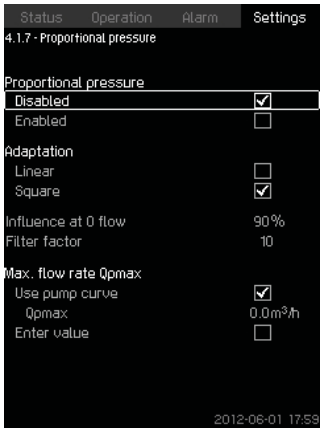


Fig. 26 Proportional pressure

This function can be used in applications with a large pipe system, for instance a village supplied with water from a pumping station or waterworks.

Purpose:

- to deliver the required water at all times
- to compensate for friction loss
- to keep energy consumption at a minimum
- to ensure the highest comfort level at tapping points, etc.
- to minimise water loss from leaks
- to reduce wear and tear on pipes.

In situations with high flow rates, the pressure loss in the pipe system is relatively high. In order to deliver a system pressure of 5 bar in such a situation, the discharge pressure of the system should be set to 6 bar if the pressure loss in the pipe system is 1 bar.

In a low-flow situation, the pressure loss in the pipe system may only be 0.2 bar. Here the system pressure would be 5.8 bar if the setpoint was fixed to 6 bar. That is 0.8 bar too high compared with the peak situation above.

To compensate for this excessive system pressure, the proportional-pressure function of the CU 352 automatically adapts the setpoint to the actual flow rate. The adaptation can be linear or square. Such an automatic adaptation offers you large energy savings and optimum comfort at the tapping point!

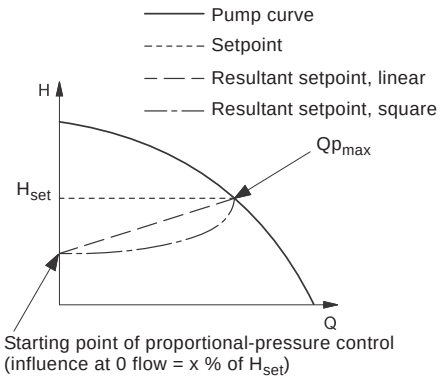


Fig. 27 Proportional-pressure control

Note: Qp_{max} is the expected maximum flow rate. It can either be set to the maximum flow the system can deliver at a determined setpoint, or a value can be entered manually based on a known or assessed maximum flow rate.

Example

Influence at 0 flow (Q0) = pressure loss in supply pipe x 100 / setpoint.

Influence at 0 flow (Q0) = 1 bar x 100 / 6 bar = 16.67 %.

Setpoint at Q_{min} with proportional-pressure control:
6 bar - (6 bar x 0.1667) = **5 bar**.

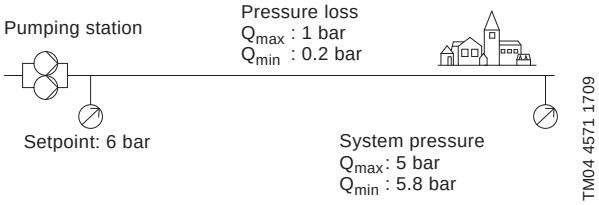


Fig. 28 Without proportional-pressure control

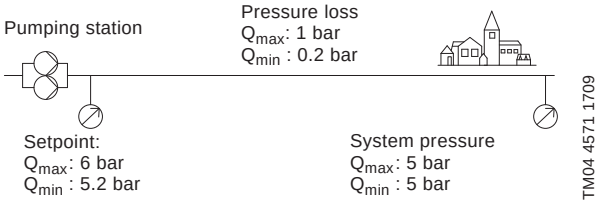


Fig. 29 With proportional-pressure control

Soft pressure build-up

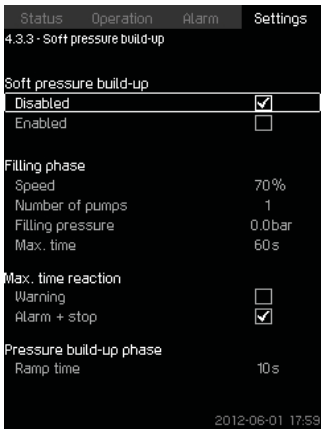


Fig. 30 Soft pressure build-up

This function ensures a soft start of systems with for instance empty pipework.

It has two phases:

1. The pipework is slowly filled with water.
2. When the pressure sensor of the system detects that the pipework has been filled with water, the pressure is increased until it reaches the setpoint. See fig. 31.

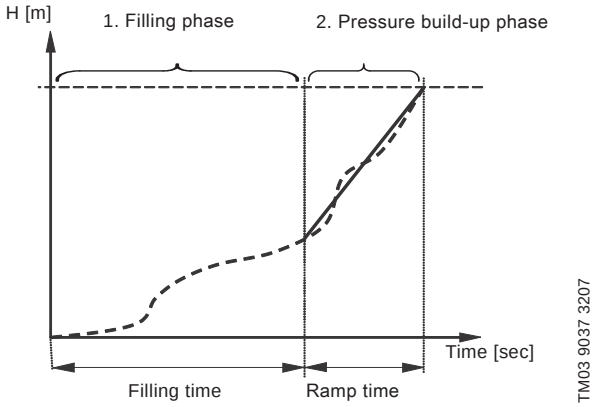


Fig. 31 Filling and pressure build-up phases

The function can be used for preventing water hammer in high-rise buildings with unstable power supply or in irrigation systems.

Emergency run

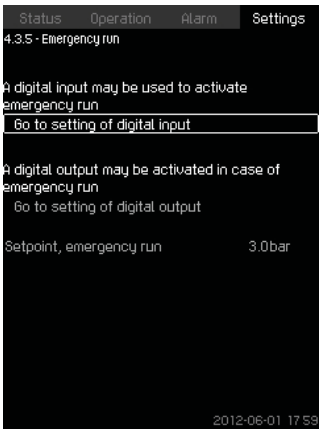


Fig. 32 Emergency run

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

Reduced operation

This function makes it possible to reduce the operation of the system via a digital input. The function is used in applications where the mains power is sometimes switched to generator power. To avoid using more power than the generator can deliver, the system can be derated via a digital input.

5. Installation

Mechanical installation

Location

The booster system must be installed in a well-ventilated room to ensure sufficient cooling of the control cabinet and pumps.

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

The booster system should be placed with a 1-metre 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 system must be of adequate size.

The pipes are connected to the manifolds of the booster system. 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 optimise operation and minimise noise and vibration, it may be necessary to consider vibration dampening of the booster system.

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

If booster systems are installed in blocks of flats or the first consumer on the line is close to the booster system, it is advisable to fit expansion joints on the suction and discharge pipes to prevent vibration being transmitted through the pipework.

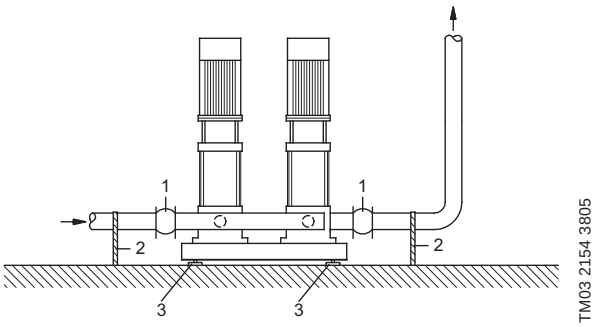


Fig. 33 Schematic view of hydraulic installation

Pos.	Description
1	Expansion joint
2	Pipe support
3	Machine shoe

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

All nuts should be tightened prior to start-up.

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

Foundation

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

Note: As a rule of thumb, the weight of a concrete foundation should be 1.5 x the weight of the booster system.

Dampening

To prevent the transmission of vibrations to buildings, it is advisable to isolate the booster system foundation from building parts by means of vibration dampers.

Which is the right damper varies from installation to installation, and a wrong damper may increase the vibration level. Vibration dampers should therefore be sized by the supplier.

If the booster system 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 system from "hanging" in the pipework.

Expansion joints

Expansion joints provide these advantages:

- Absorption of thermal expansion and contraction of pipework caused by variations in liquid temperature.
- Reduction of mechanical influences in connection with pressure surges in the pipework.
- Isolation of 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 centre displacement of flanges.

Fit expansion joints at a distance of minimum 1 to 1.5 x DN 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 (> 5 m/s), it is advisable to install larger expansion joints corresponding to the pipework.

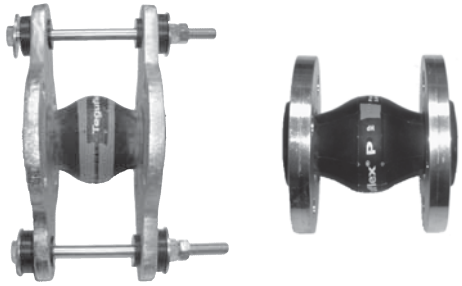


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Fig. 34 Examples of rubber bellows expansion joints with and without limiting rods

Expansion joints with limiting rods can be used to minimise the forces caused by the expansion joints. Expansion joints with limiting rods are always recommended for flanges larger than DN 100.

The pipes should be anchored so that they do 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 must be carried out by authorised personnel in accordance with local regulations.

- The electrical installation of the booster system must be carried out in accordance with enclosure class IP54.
- Check that the supply voltage and frequency correspond to the values stated on the nameplate.
- Make sure that the conductor cross-section meets the specifications in the wiring diagram.

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

6. Sizing

When sizing a booster system, the following must be taken into account:

- The performance of the booster system must meet the highest possible demand both in terms of flow rate and pressure.
- The booster system must not be oversized. This is important in relation to installation and operating costs.

You can size Grundfos Hydro MPC booster systems via WinCAPS, WebCAPS or this data booklet.

Sizing in WinCAPS or WebCAPS (recommended)

We recommend that you size your Hydro MPC booster system in WinCAPS or WebCAPS, which are selection programs offered by Grundfos. For further information, see page 156.

WinCAPS and WebCAPS feature a user-friendly and easy-to-use virtual guide which leads you through the selection of the optimum booster system for the application in question.

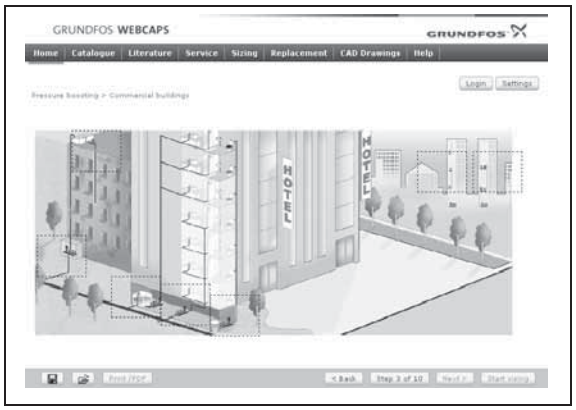

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Fig. 35 Sizing in WebCAPS

Sizing via this data booklet

There are seven steps:

1. Maximum flow requirement
2. Required discharge pressure
3. System layout
4. Consumption profile and load profile
5. Inlet pressure
6. Selection of booster system
7. Accessories.

1. Maximum flow requirement

Total consumption and maximum flow rate depend on the application in question. The maximum flow requirement can be calculated by means of the table below which is based on statistical data.

Consumer	Unit	Q_{year}	Consumption period d	Q_{day}	fd	$Q(m)_{day}$	ft	Max. flow rate
		m^3/year	days/year	m^3/day		m^3/day		m^3/h
Residence building	Residence (2.5 persons)	183	365	0.5	1.3	0.65	1.7	0.046
Office building	Employee	25	250	0.1	1.2	0.12	3.6	0.018
Shopping centre	Employee	25	300	0.08	1.2	0.1	4.3	0.018
Supermarket	Employee	80	300	0.27	1.5	0.4	3.0	0.05
Hotel	Bed	180	365	0.5	1.5	0.75	4.0	0.125
Hospital	Bed	300	365	0.8	1.2	1.0	3.0	0.12
School	Pupil	8	200	0.04	1.3	0.065	2.5	0.007

fd: Maximum consumption factor, day
ft: Maximum consumption factor, hour

Example: Hotel with 540 beds

Number of beds: n

Total annual consumption: Q_{year} x n

Consumption period: d

Average consumption per day: (Q_{year} x n)/d

Day maximum consumption: $Q(m)_{day}$ = fd x Q_{day}

Maximum flow requirement per hour: Q_{max} = Max. flow rate/hour x number of beds

Calculation

n = 540 beds

Q_{year} x n = 180 x 540 = 97,200 m^3/year

d = 365 days/year

(Q_{year} x n)/d = 97,200/365 = 266.3 m^3/day

$Q(m)_{day}$ = fd x Q_{day} = 1.5 x 266.3 = 399.4 m^3/day

Q_{max} = Max. flow rate/hour x number of beds = 0.125 x 540 = **67.5 m^3/h**.

2. Required discharge pressure

The required discharge pressure, p_{set}, of the Hydro MPC can be calculated with the following equation:

$p_{set} = p_{tap(min)} + p_f + (h_{max}/10.2)$

$p_{boost} = p_{set} - p_{in(min)}$

Key

p_{set}	=	Required discharge pressure in bar
$p_{tap(min)}$	=	Required minimum pressure at the highest tapping point in bar
p_f	=	Total pipe friction loss in metres
h_{max}	=	Height from booster discharge port to highest tapping point in metres
$p_{in(min)}$	=	Min. inlet pressure in bar
p_{boost}	=	Required boost in bar.

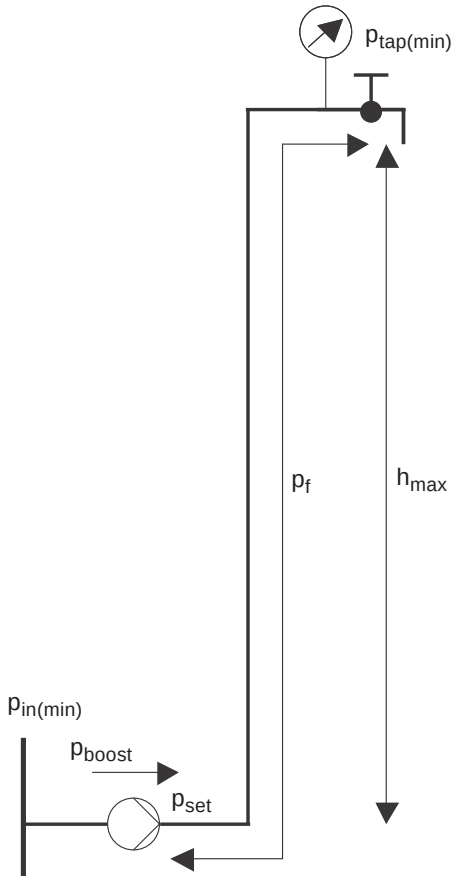

Fig. 36 Calculation of required discharge pressure

Calculation

$p_{tap(min)}$	=	2 bar
p_f	=	1.2 bar
h_{max}	=	41.5 metres
$p_{in(min)}$	=	2 bar
p_{set}	=	2 + 1.2 + (41.5/10.2) = **7.3 bar**
p_{boost}	=	7.3 - 2 = 5.3 bar.

3. System layout

What is the system layout?

a) Direct boosting
Example: Hydro MPC connected to water mains designed to distribute water from one place to another.

b) Break tank
Example: Hydro MPC connected to a break tank installed before the booster system). Hydro MPC connected to a break tank installed before the booster system.

c) Pressure boosting in zones
Example: High-rise building or hilly landscape where the water supply system is divided into zones.

d) Roof tank
Example: Hydro MPC distributes water to a roof tank on top of a high-rise building.

4. Consumption profile and load profile

The consumption pattern of the installation can be illustrated as a 24-hour consumption profile and a load profile.

24-hour consumption profile

The 24-hour consumption profile is the relation between the time of the day and the flow rate.

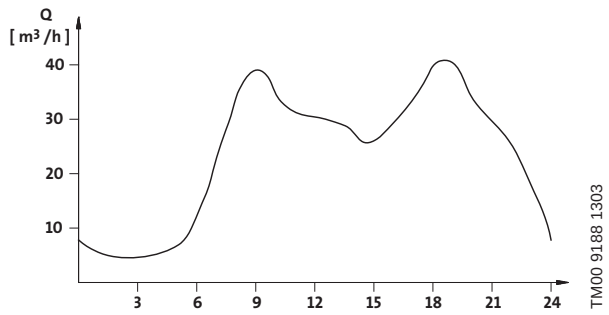

Fig. 37 Example of 24-hour consumption profile

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

Load profile

When the 24-hour consumption profile has been determined, the load profile can be made.

The load profile gives an overview of how many per cent per day the booster system operates at a specific flow rate.

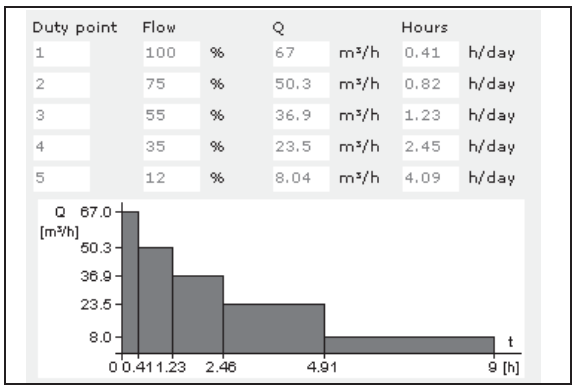

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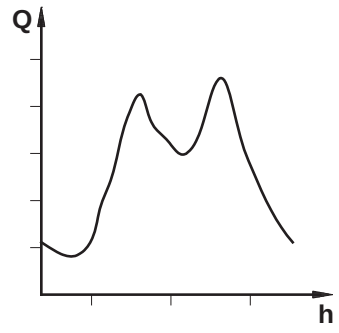
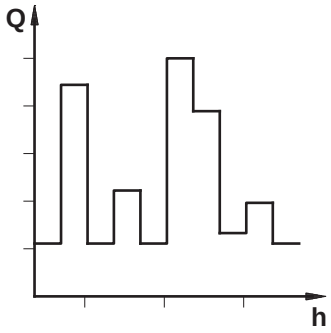
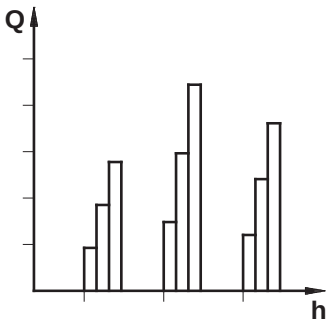
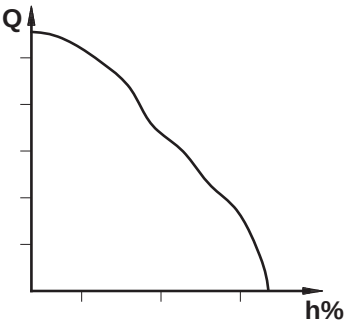
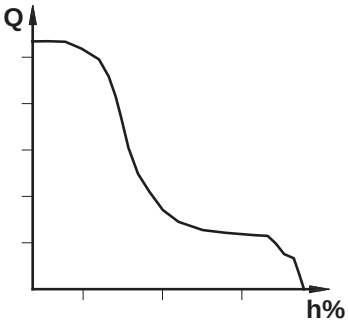
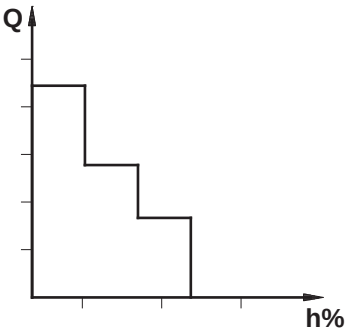
Fig. 38 Load profile

Examples of typical 24-hour consumption profiles and their load profiles:

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

5. Inlet pressure

Is there a positive inlet pressure? If so, the inlet pressure must be taken into consideration to ensure safe operation.

If there is a positive inlet pressure, this has to be added to the discharge pressure supplied by the booster system in order to evaluate the resulting maximum discharge pressure.

Example

A Hydro MPC-E booster system with 3 CRIE 20-7 pumps has been selected.

Maximum operating pressure: **16 bar**.

Maximum inlet pressure: **10 bar**.

Discharge pressure against a closed valve: **10 bar**.

The selected system is allowed to start at an inlet pressure of maximum 5.8 bar, as the maximum operating pressure is limited to 16 bar. If the maximum inlet pressure exceeds 5.8 bar, a system rated PN 25 must be selected.

6. Selection of Hydro MPC booster system

Select the booster system on the basis of these factors: maximum flow requirement, required discharge pressure, load profile, number of pumps required, possible standby pumps, etc.

7. Accessories

Having selected the optimum Hydro MPC booster system, you must consider whether accessories as those mentioned below are required.

Dry-running protection

Every booster system must be protected against dry running.

The inlet conditions determine the type of dry-running protection:

- If the system draws water from a tank or a well, select a level switch or an electrode relay for dry-running protection.
- If the system has an inlet pressure, select a pressure transmitter or a pressure switch for dry-running protection.

Pilot pump

If a pilot pump is selected, it must be sized according to the size of the main pumps in the system. As a rule of thumb, the pilot pump should not be smaller than 1/5 of the flow of a main pump at the desired setpoint.

Diaphragm tank

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

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

Note: If the Hydro MPC booster system includes pilot pumps, the diaphragm tank is to be sized according to the capacity of this pump.

For further information about optional equipment and accessories, see pages 146 to 153.

Pump type	Recommended diaphragm tank size [litres]		
	-E	-F	-S
CR(I), CR(I)E 3	8	8	80
CR(I), CR(I)E 5	12	12	120
CR(I), CR(I)E 10	18	18	180
CR(I), CR(I)E 15	80	80	300
CR(I), CR(I)E 20	80	80	400
CR, CRE 32	80	80	600
CR, CRE 45	120	120	800
CR, CRE 64	120	120	1000
CR, CRE 90	180	180	1500
CR, CRE 120	180	180	1500
CR, CRE 150	180	180	1500

The size of the obligatory diaphragm tank in litres can be calculated from the following equations:

Hydro MPC-E and -F

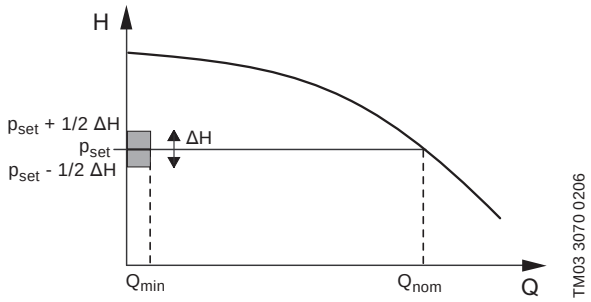
$$V_0 = \frac{k_Q \times Q \times (p_{set} + 1)^2 \times \left(\frac{3600}{N} - 10\right)}{3.6 \times (k_f \times p_{set} + 1) \times k_H \times p_{set}}$$

Hydro MPC-S

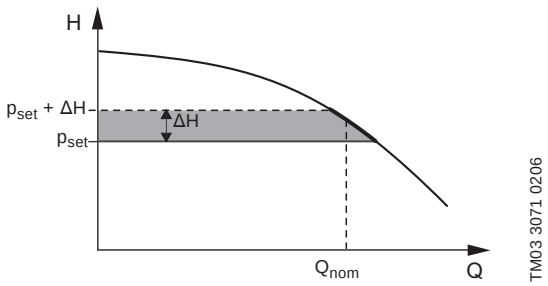
$$V_0 = \frac{1000 \times Q \times (p_{set} + 1) \times (k_H \times p_{set} + p_{set} + 1)}{4 \times N \times (k_f \times p_{set} + 1) \times k_H \times p_{set}}$$

Symbol	Description
V_0	Tank volume [litres]
k_Q	The ratio between rated flow rate of one pump Q_{nom} and the flow rate Q_{min} at which the pump is to change to on/off operation. $k_Q = Q_{min}/Q_{nom}$
Q	Mean flow rate, Q_{nom} [m^3/h]
p_{set}	Setpoint [bar]
k_H	The ratio between the on/off band ΔH and the setpoint p_{set}, $k_H = \Delta H/p_{set}$
k_f	The ratio between tank pre-charge pressure p_0 and the setpoint p_{set} $k_f = p_0/p_{set}$ 0.9 for Hydro MPC-S 0.7 for Hydro MPC-E and -F
N	Maximum number of starts/stops per hour.

Hydro MPC-E and -F



Hydro MPC-S



The tank values are based on the following data:

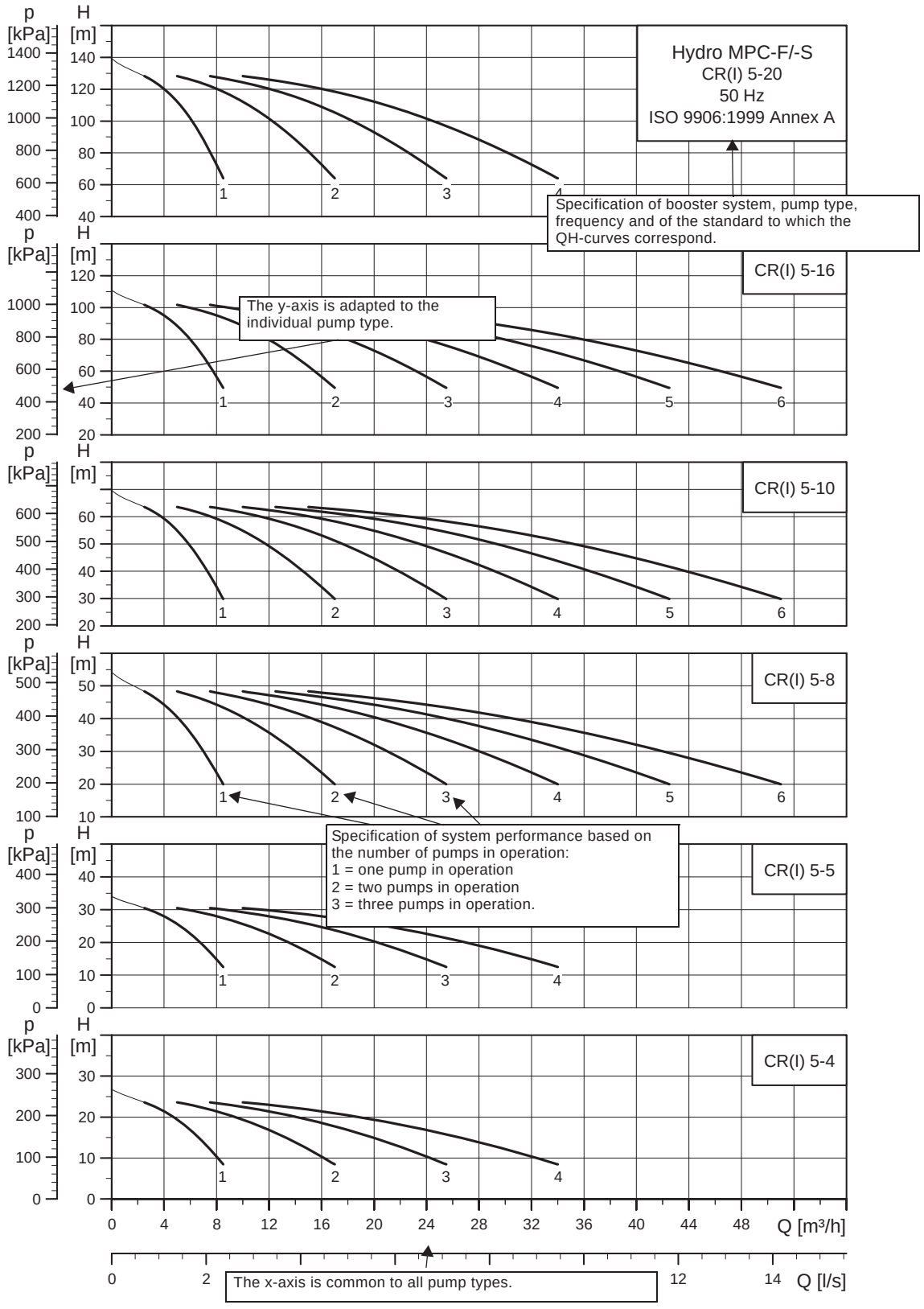
Symbol	Hydro MPC	
	-E and -F	-S
Q	Q_{nom} of one pump	Q_{nom} of one pump
k_Q	10 %	-
p_{set}	4 bar	4 bar
k_H	20 %	25 %
k_f	0.7	0.9

Example of Hydro MPC-E and -S with CRI, CRIE 20

Symbol	Hydro MPC-E	Hydro MPC-S
Q [m^3/h]	10	10
k_Q	10 %	-
k_H	20 %	25 %
p_{set} [bar]	4	4
N [h^{-1}]	200	100
Result		
V_0 [litres]	18.3	163
Selected tank	18	180
ΔH [bar]	0.8	1
p_0 [bar]	2.8	3.6

Understanding the curve charts

The x-axis showing the flow rate (Q) in m^3/h is common to all the curves; the y-axis showing the head (H) in metres has been adapted to the individual pump type.



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Example: How to select a system

- A flow rate of 67.5 m^3/h is required.
- A head of 73 metres is required.

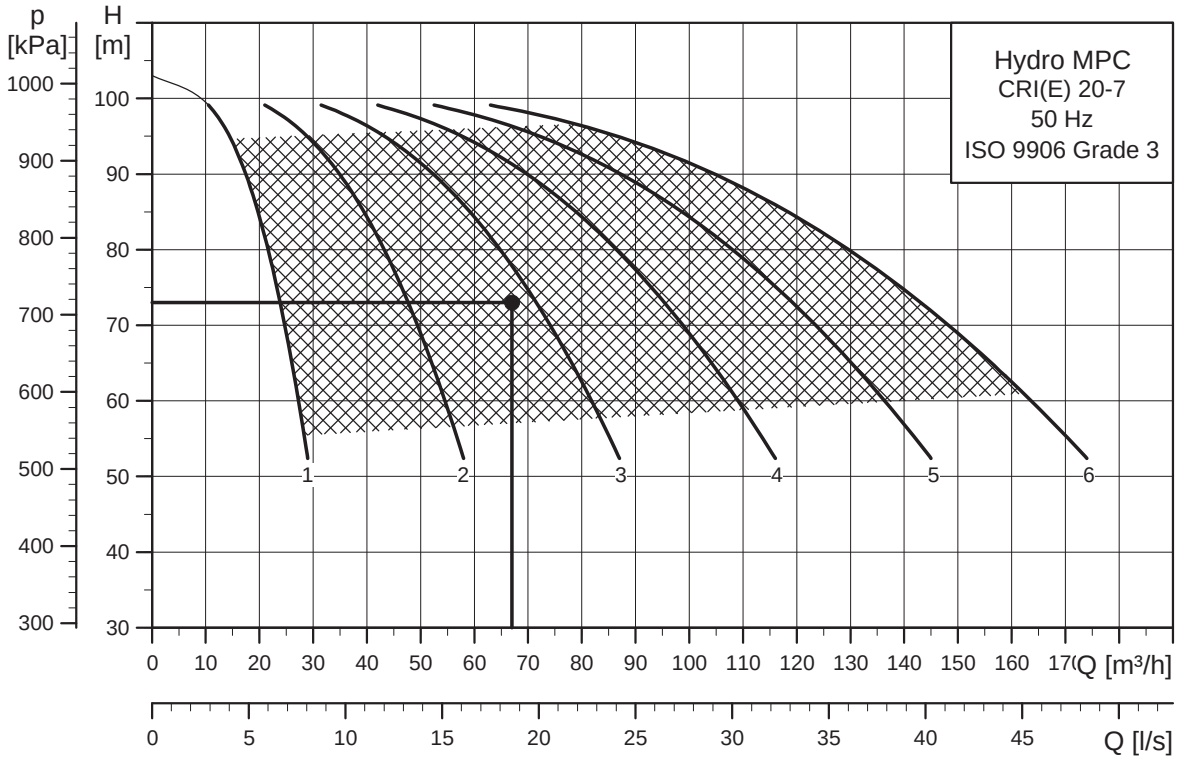
Draw a vertical line from the required flow rate.

Draw a horizontal line from the required head.

The intersection of the two lines gives the number of pumps required for the system (3 CRI, CRIE 20-7).

The pump type best meeting this specification is found by means of the y-axis, for instance 3 CRI, CRIE 20-7.

Only booster systems with performance ranges within the hatched area in the example should be selected.



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7. Curve conditions

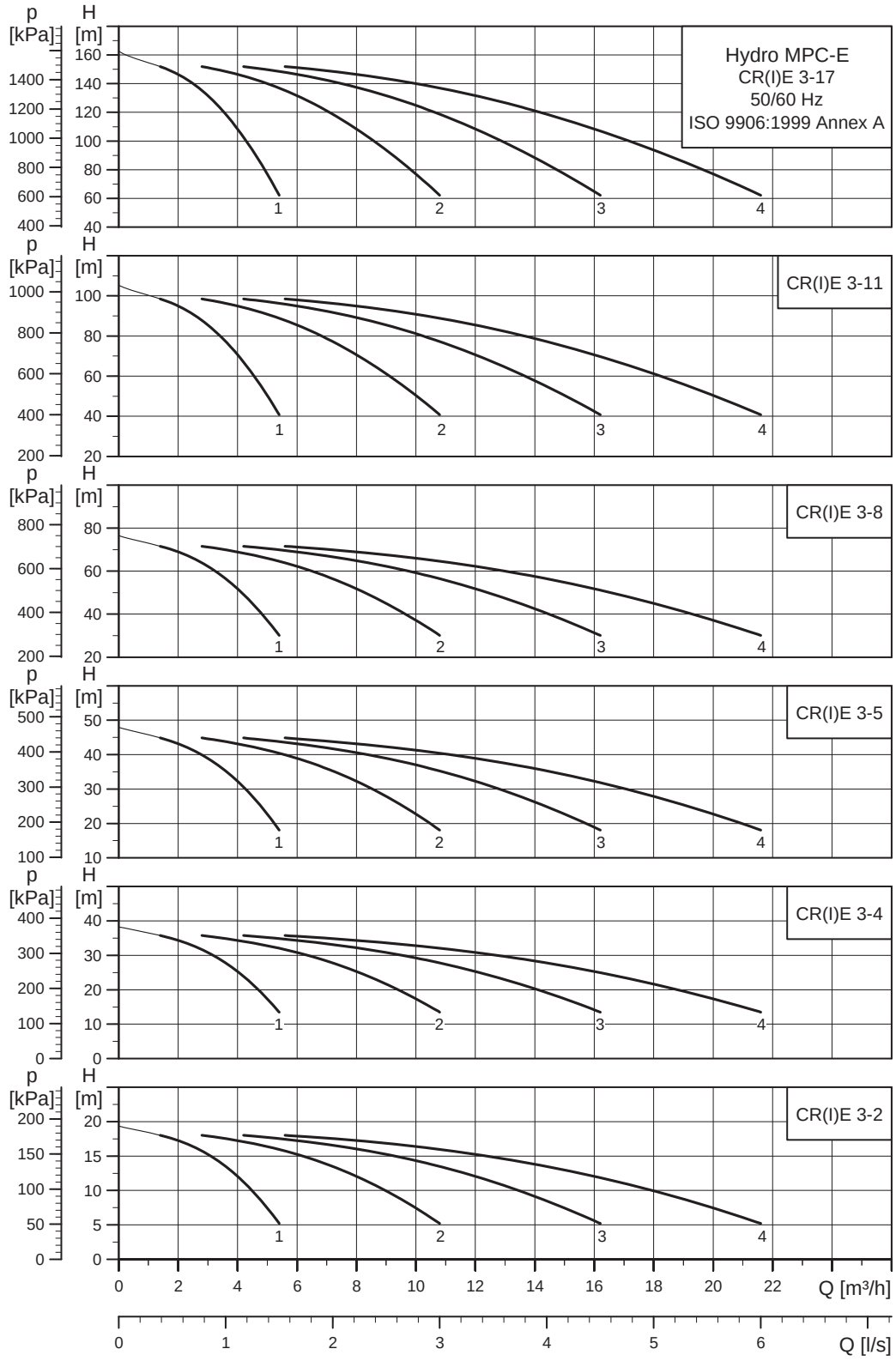
How to read the curve charts

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

- Tolerances to ISO 9906:1999, Annex A, if indicated.
- Measurements have been made with airless water at a temperature of +20 °C.
- The curves apply to the following kinematic viscosity: υ = 1 mm^2/s (1 cSt).
- The QH curves apply to fixed speeds of 2900 min^{-1} (50 Hz) and 3480 min^{-1} (60 Hz).
  Note: The actual speed will in most cases deviate from the above-mentioned speeds. So for realistic curves, please refer to WebCAPS where the pump curves include the characteristics of the selected motor and therefore show curves at actual speeds. In WebCAPS, it is also possible to adjust the curves depending on the density and viscosity.
- The conversion between head H (m) and pressure p (kPa) applies to a water density of ρ = 1000 kg/m^3.

8. Curve charts, Hydro MPC-E (50/60 Hz)

Hydro MPC-E with CR(I)E 3



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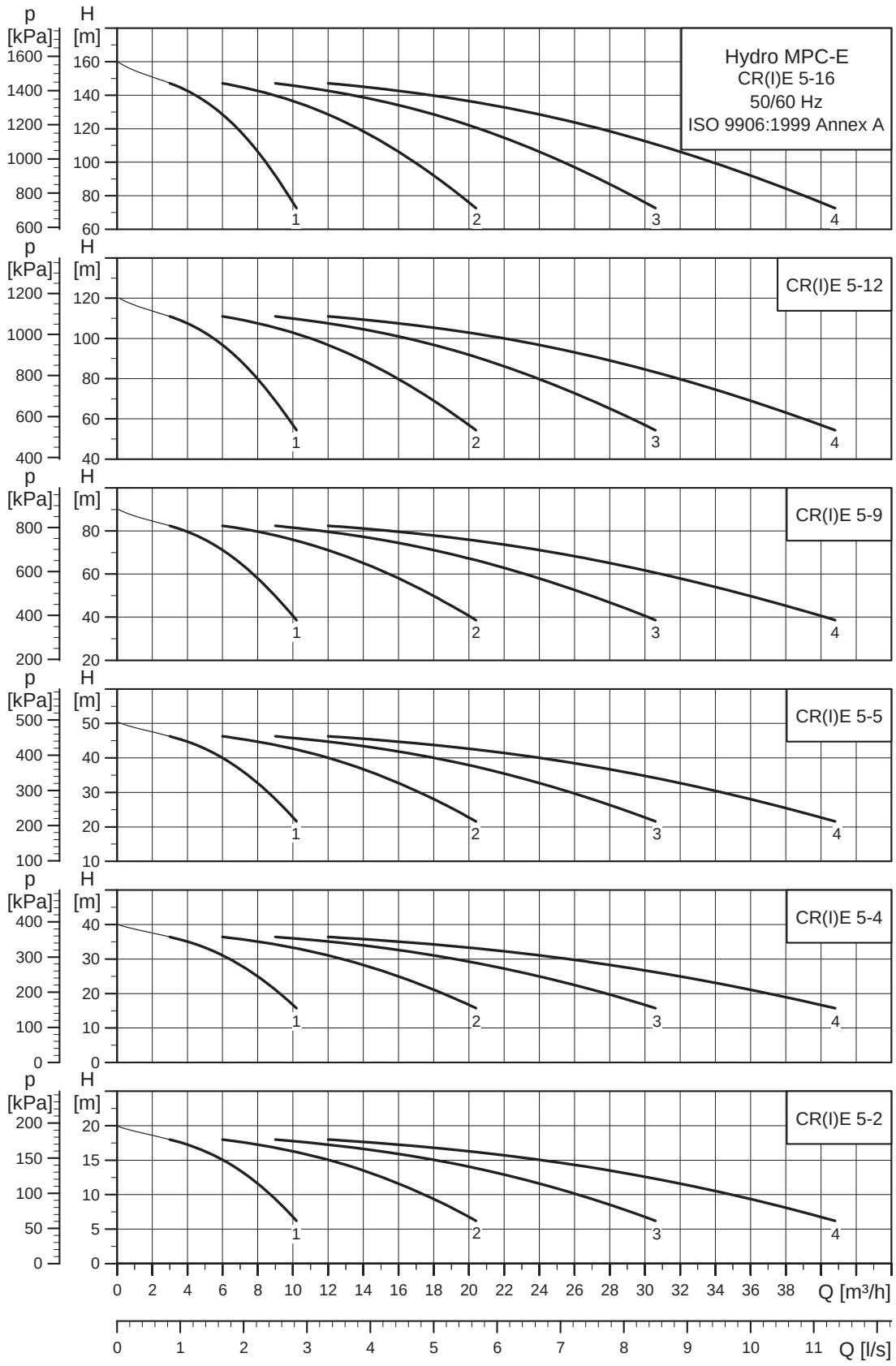
Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

Hydro MPC-E with CR(I)E 5



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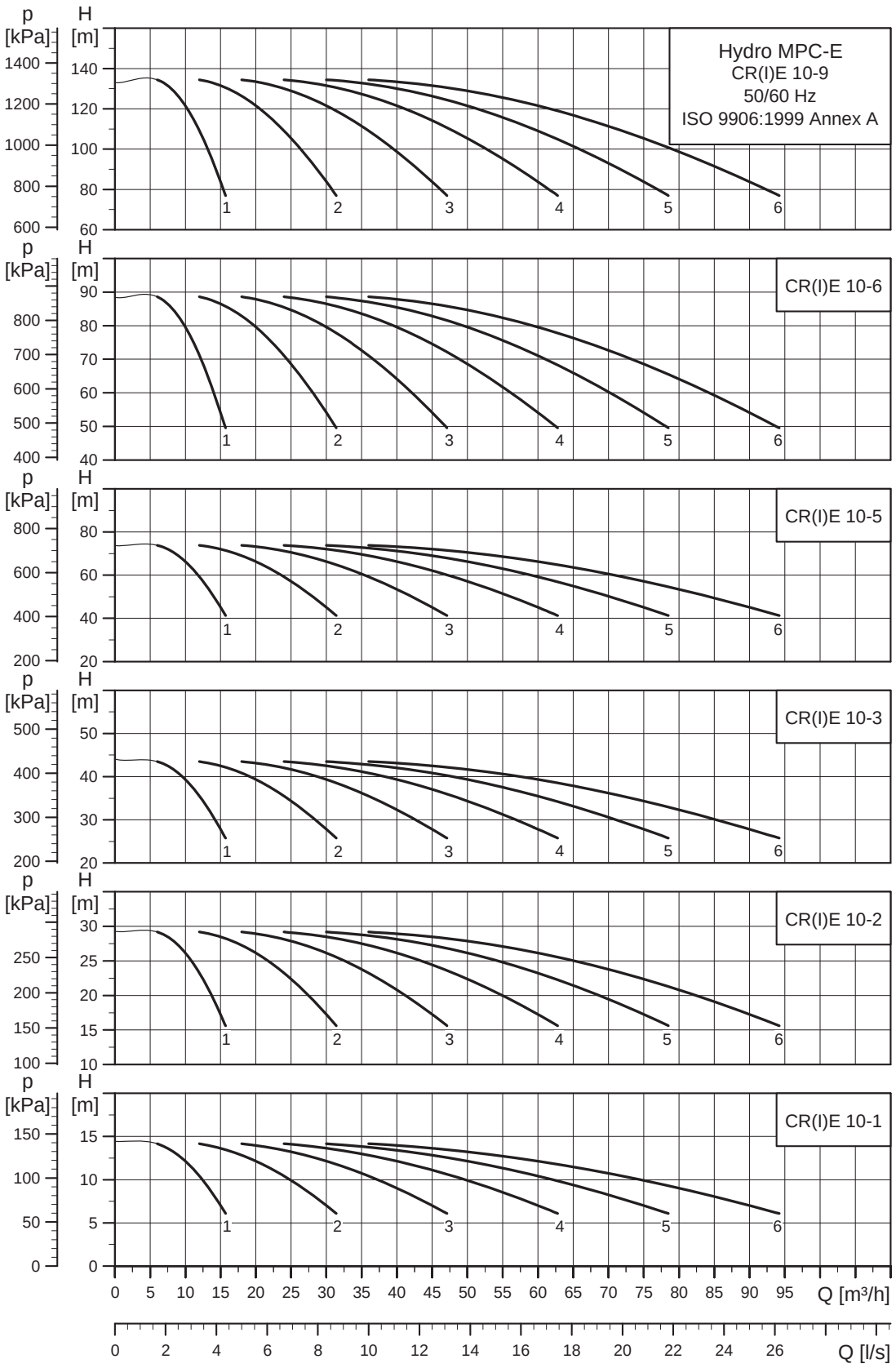
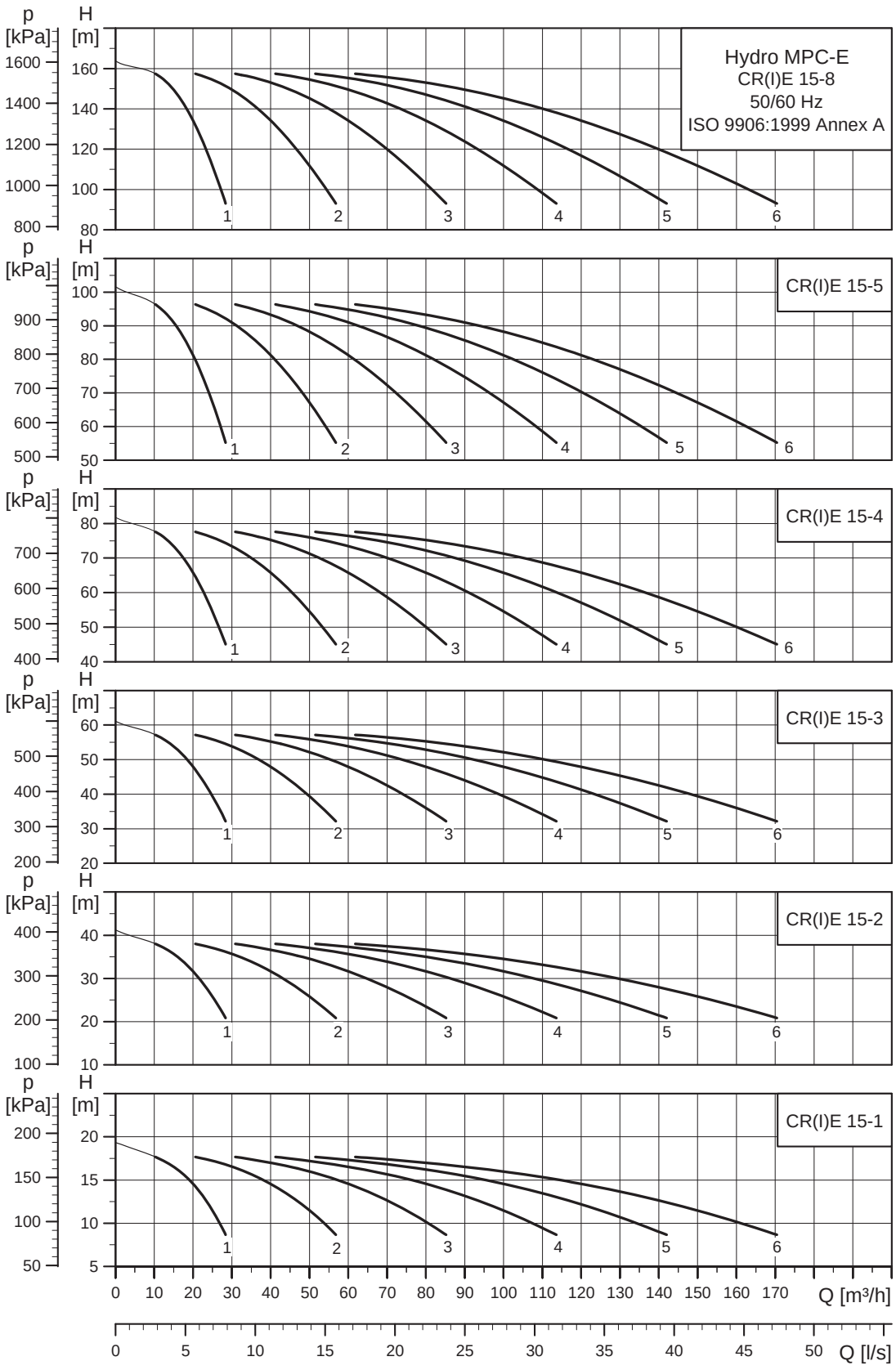
Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

Hydro MPC-E with CR(I)E 10



Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

Hydro MPC-E with CR(I)E 15



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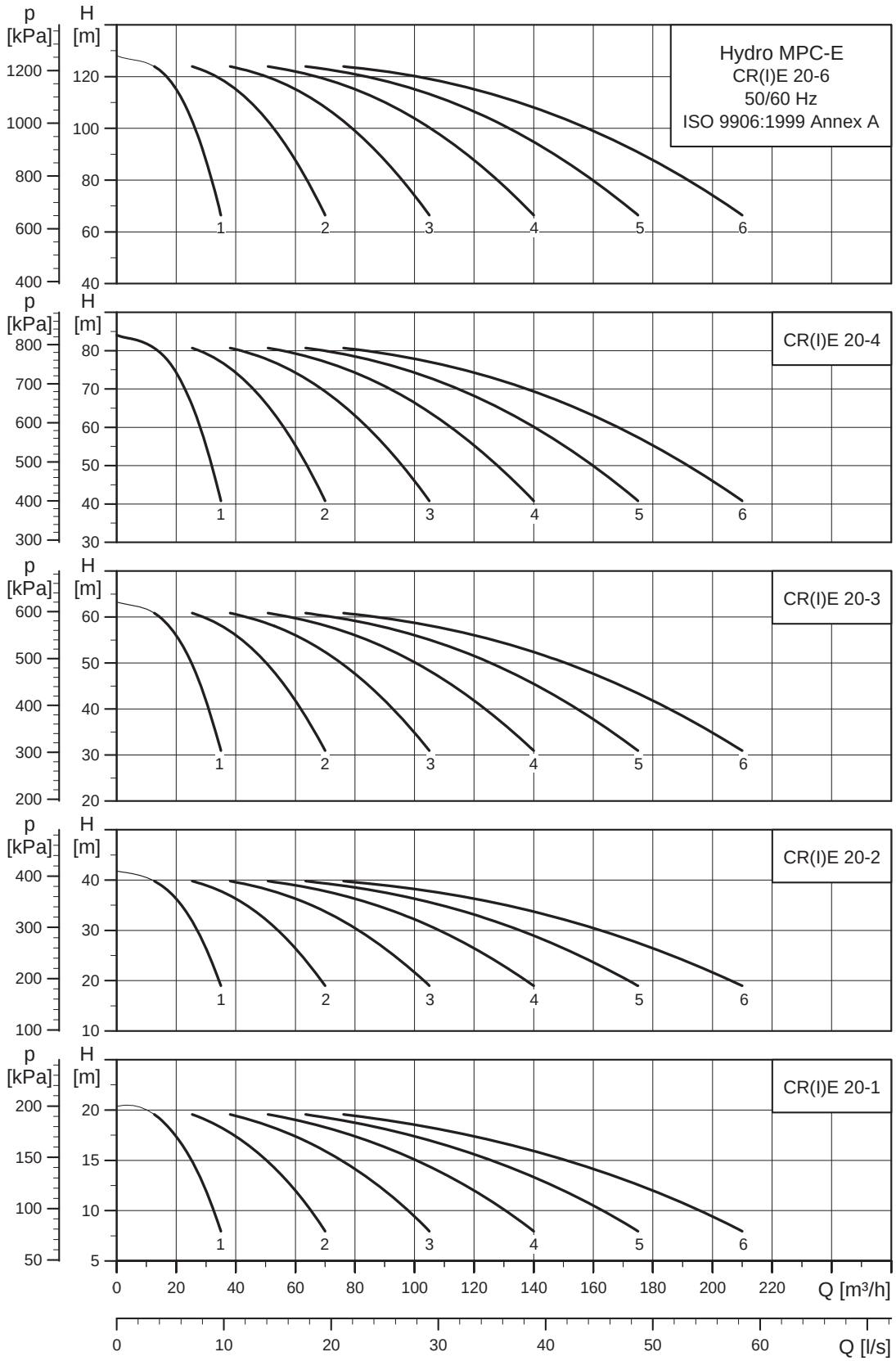
Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

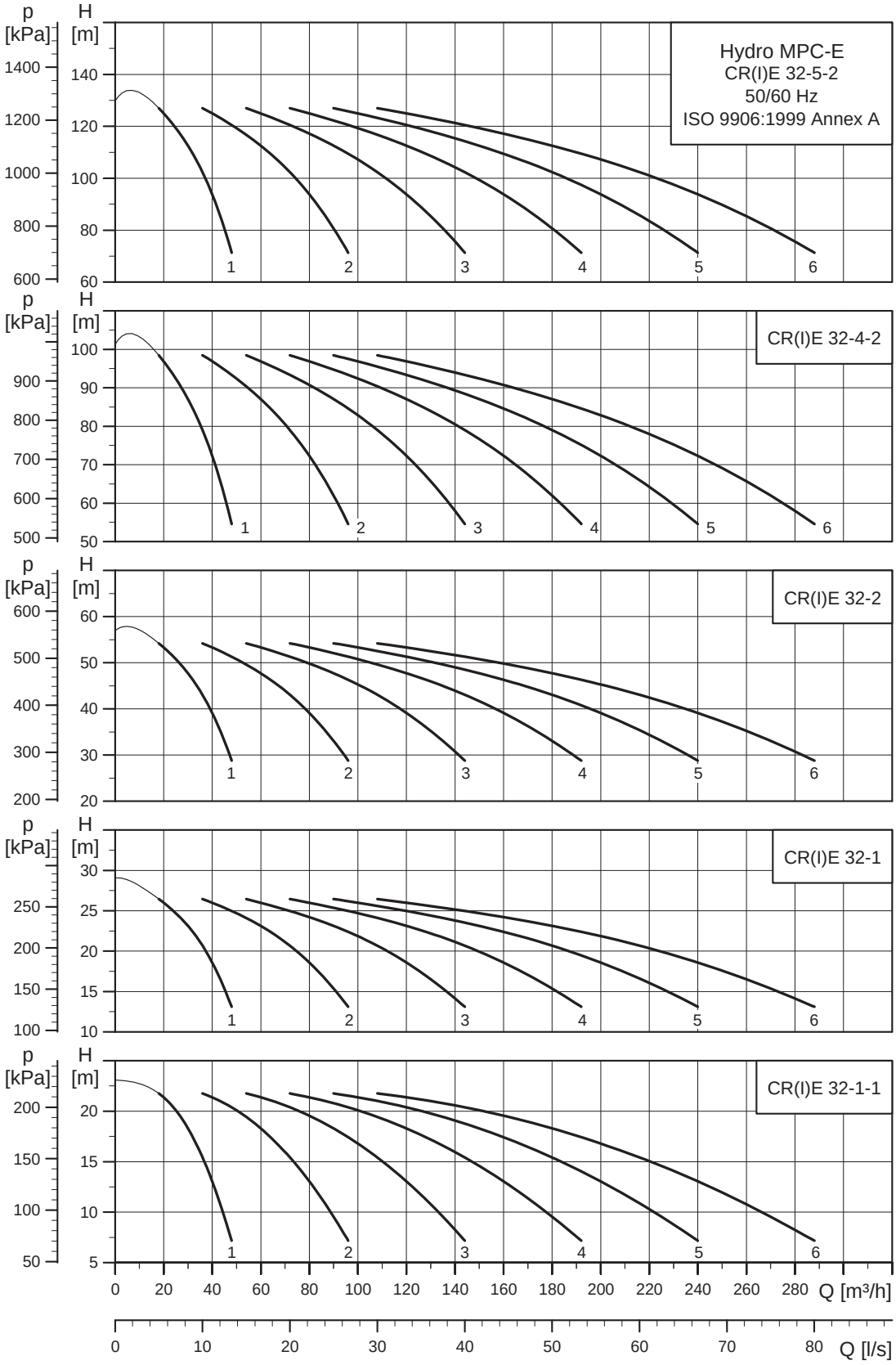
Hydro MPC-E with CR(I)E 20



TM05 7283 0913

Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

Hydro MPC-E with CRE 32



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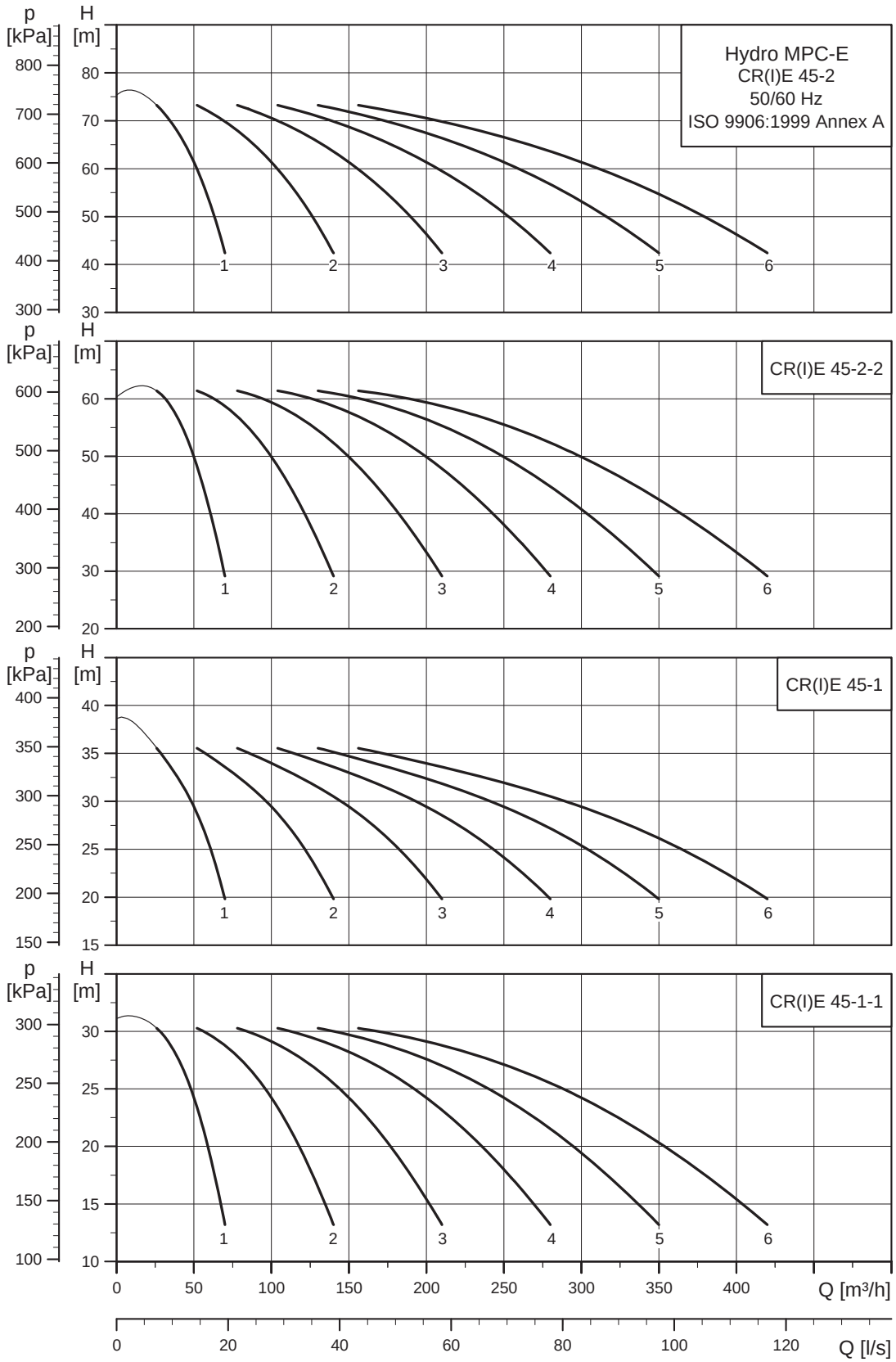
Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

Hydro MPC-E with CRE 45



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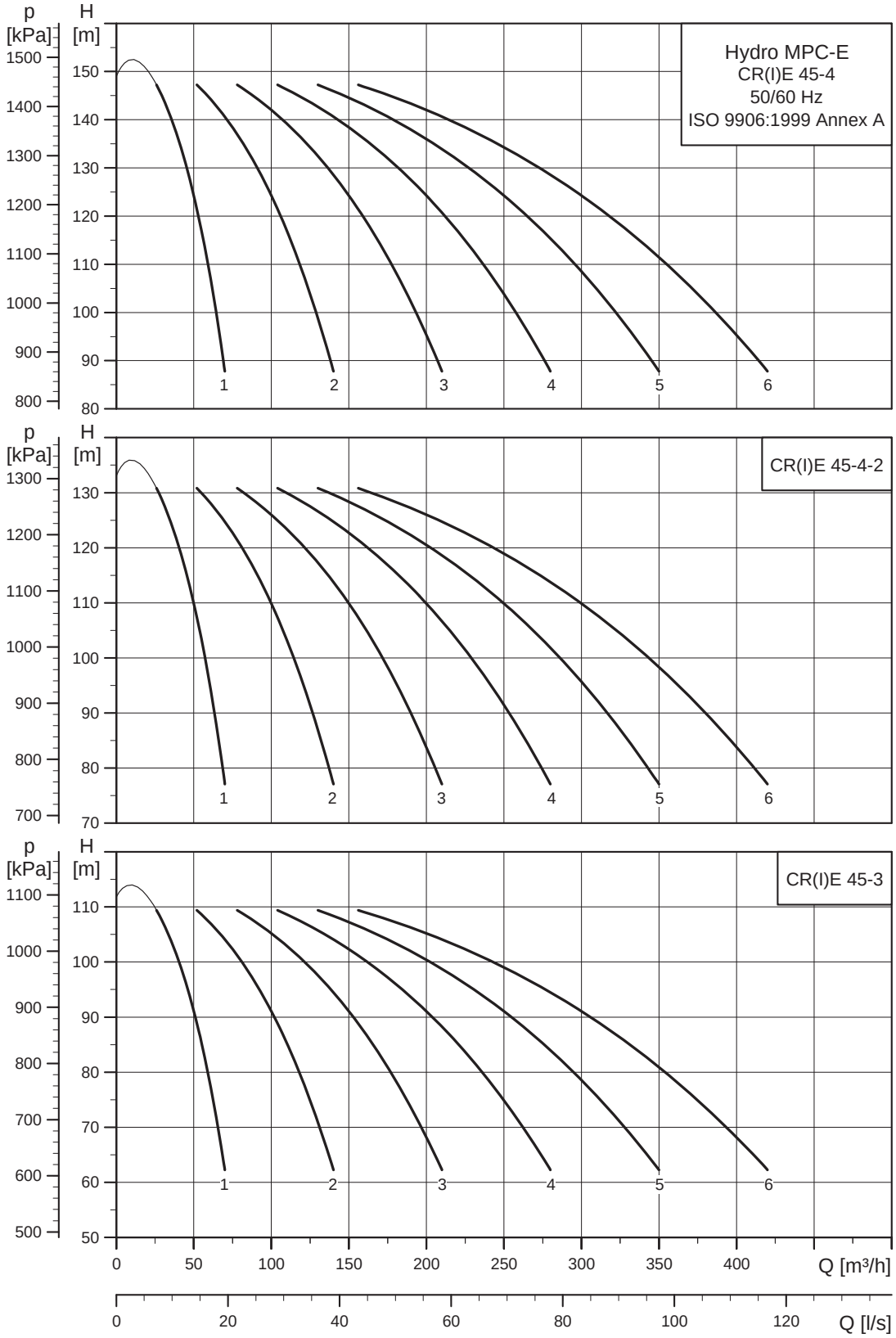
Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

Hydro MPC-E with CRE 45



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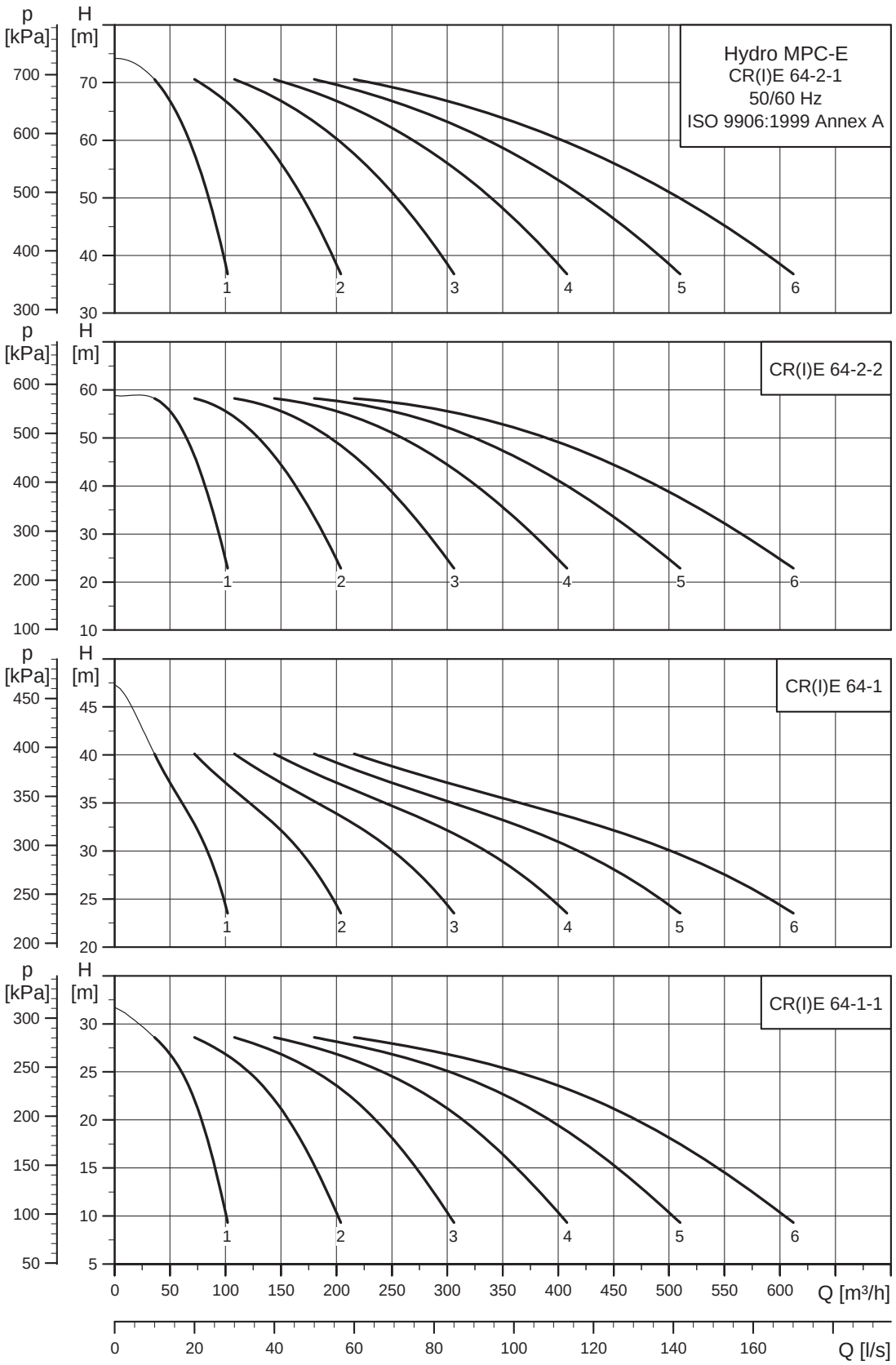
Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

Hydro MPC-E with CRE 64



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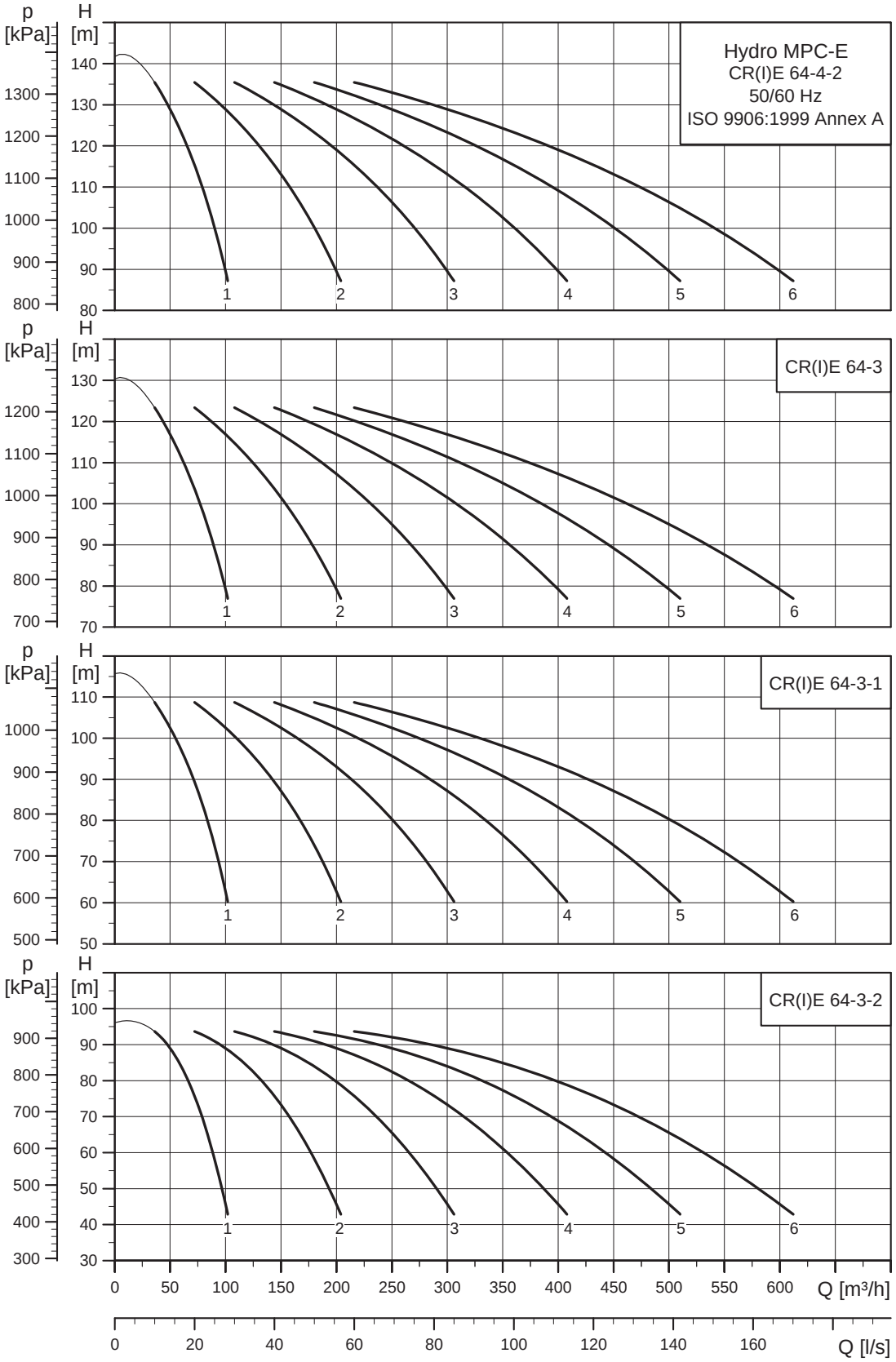
Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

Hydro MPC-E with CRE 64



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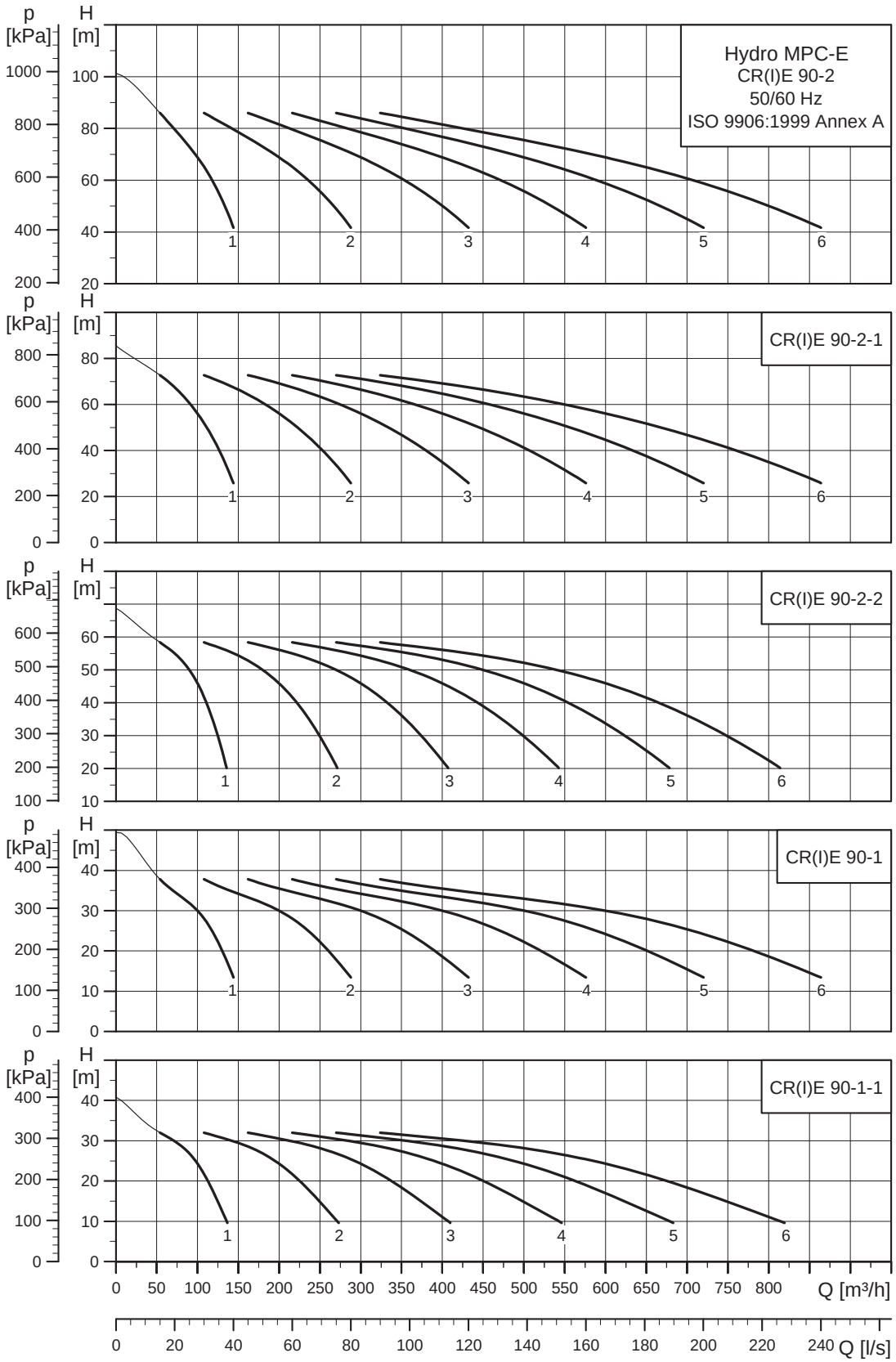
Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

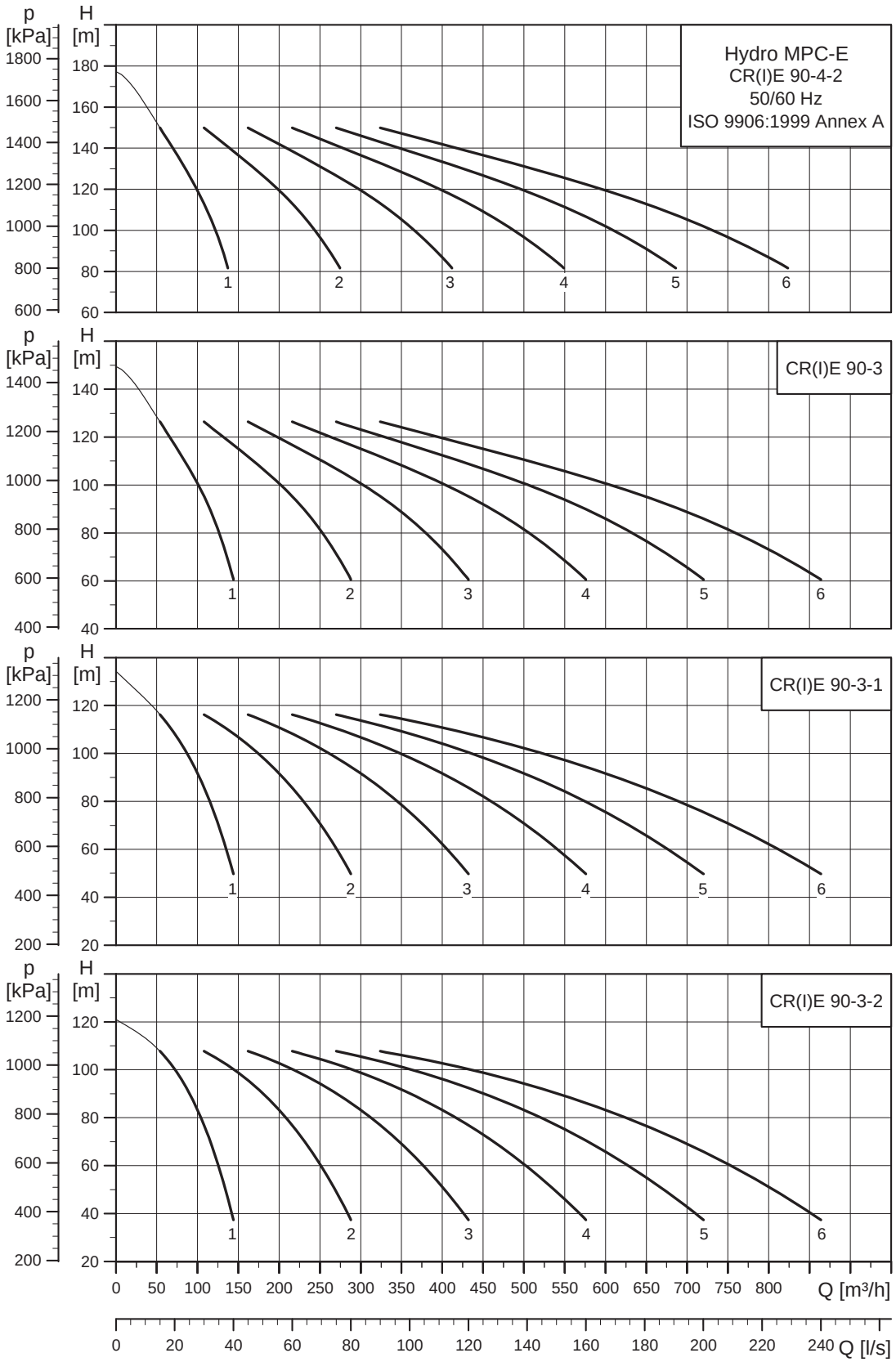
Hydro MPC-E with CRE 90



TM05 7289 0913

Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

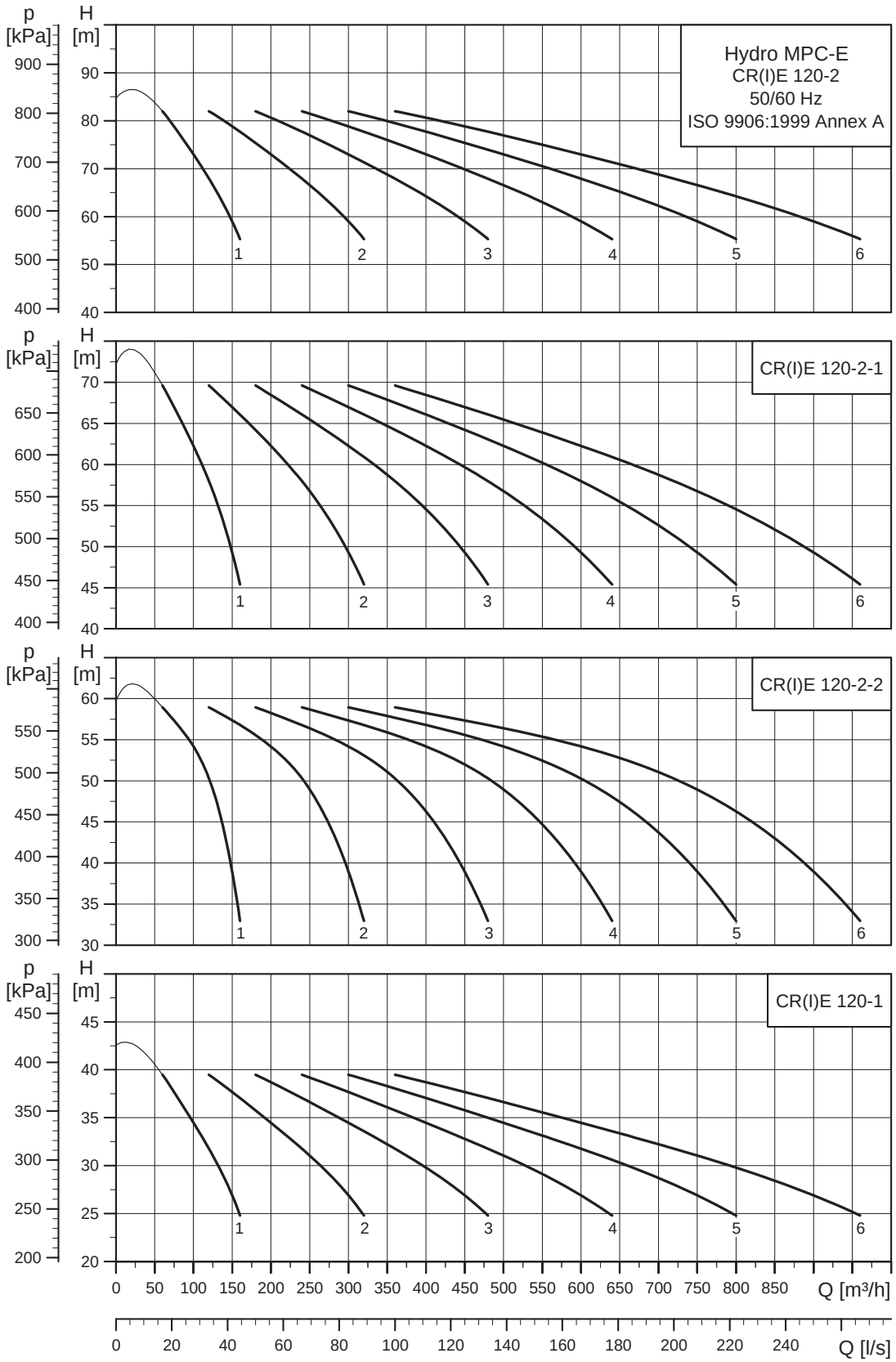
Hydro MPC-E with CRE 90



TM05 7290 0913

Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

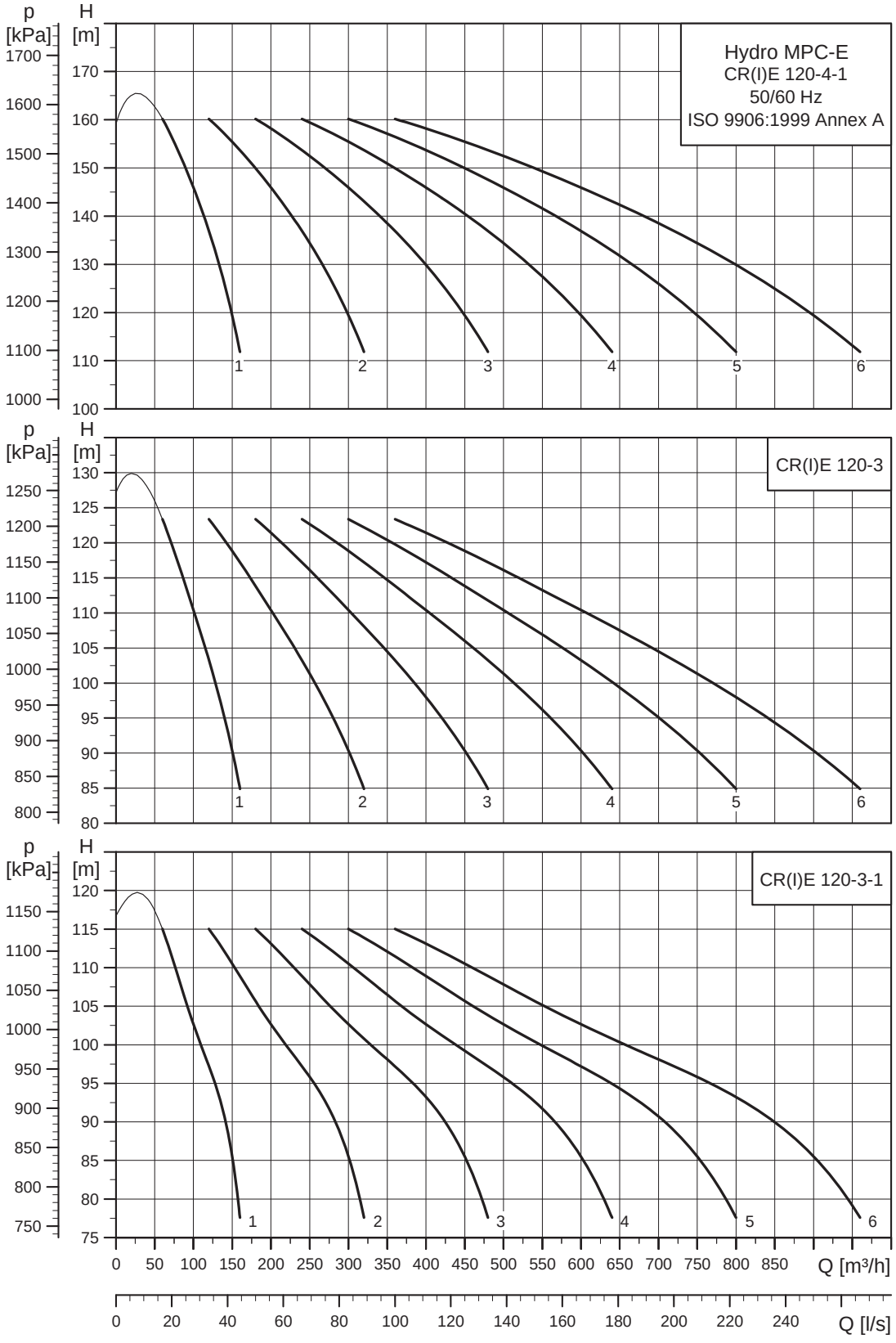
Hydro MPC-E with CRE 120



TM05 7291 0913

Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

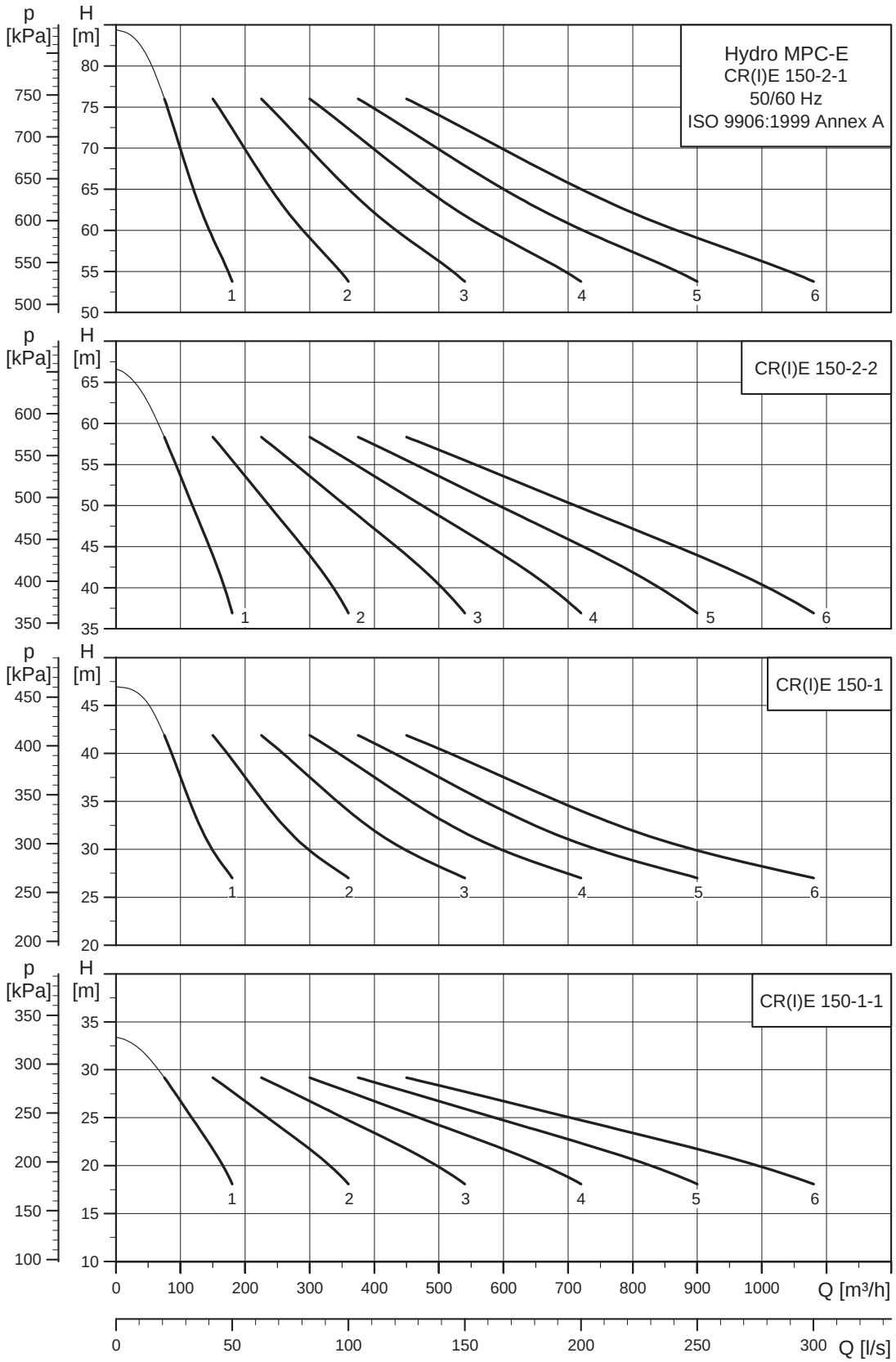
Hydro MPC-E with CRE 120



TM05 7292 0913

Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

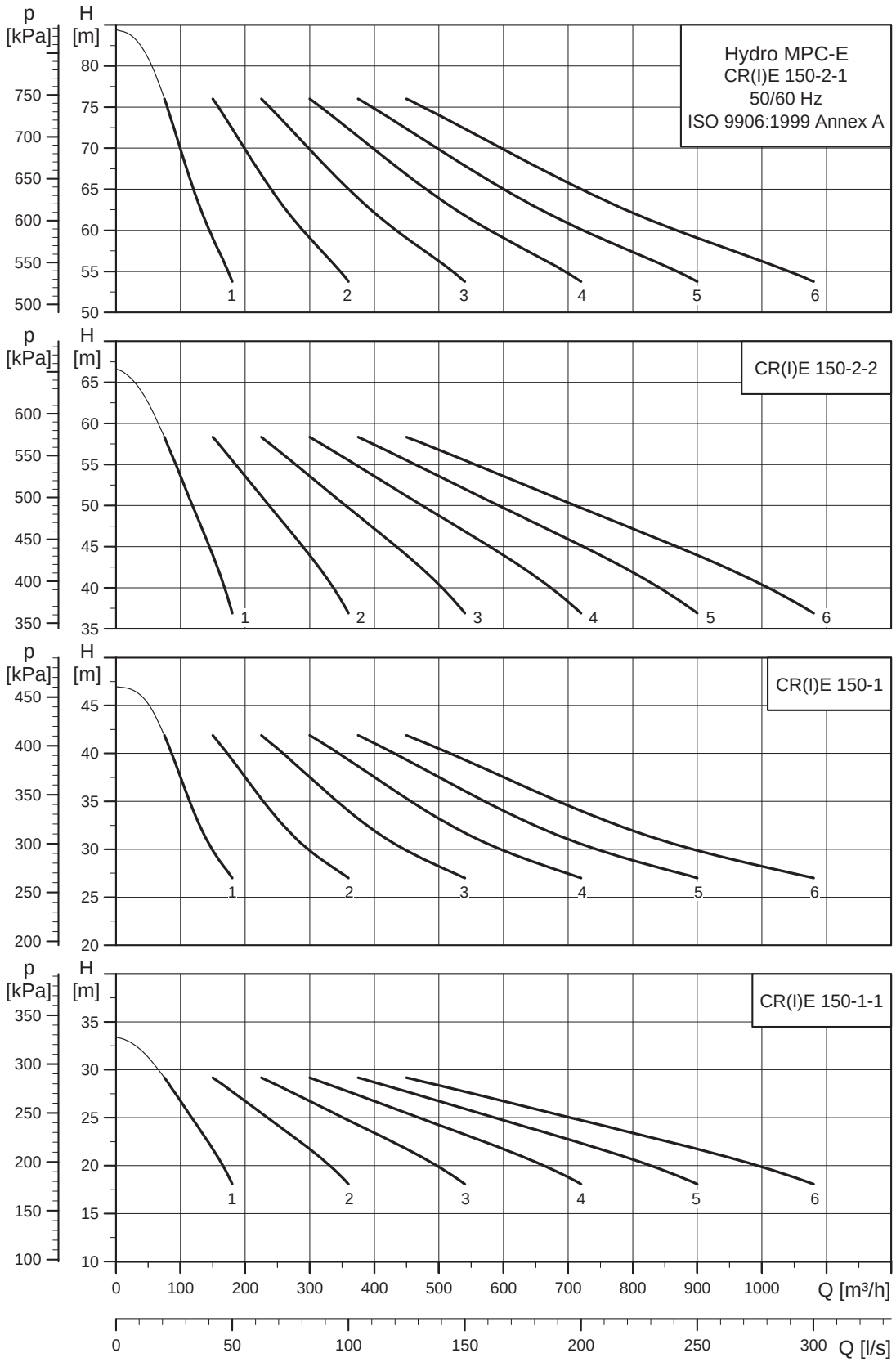
Hydro MPC-E with CRE 150



TM05 7293 0913

Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

Hydro MPC-E with CRE 150

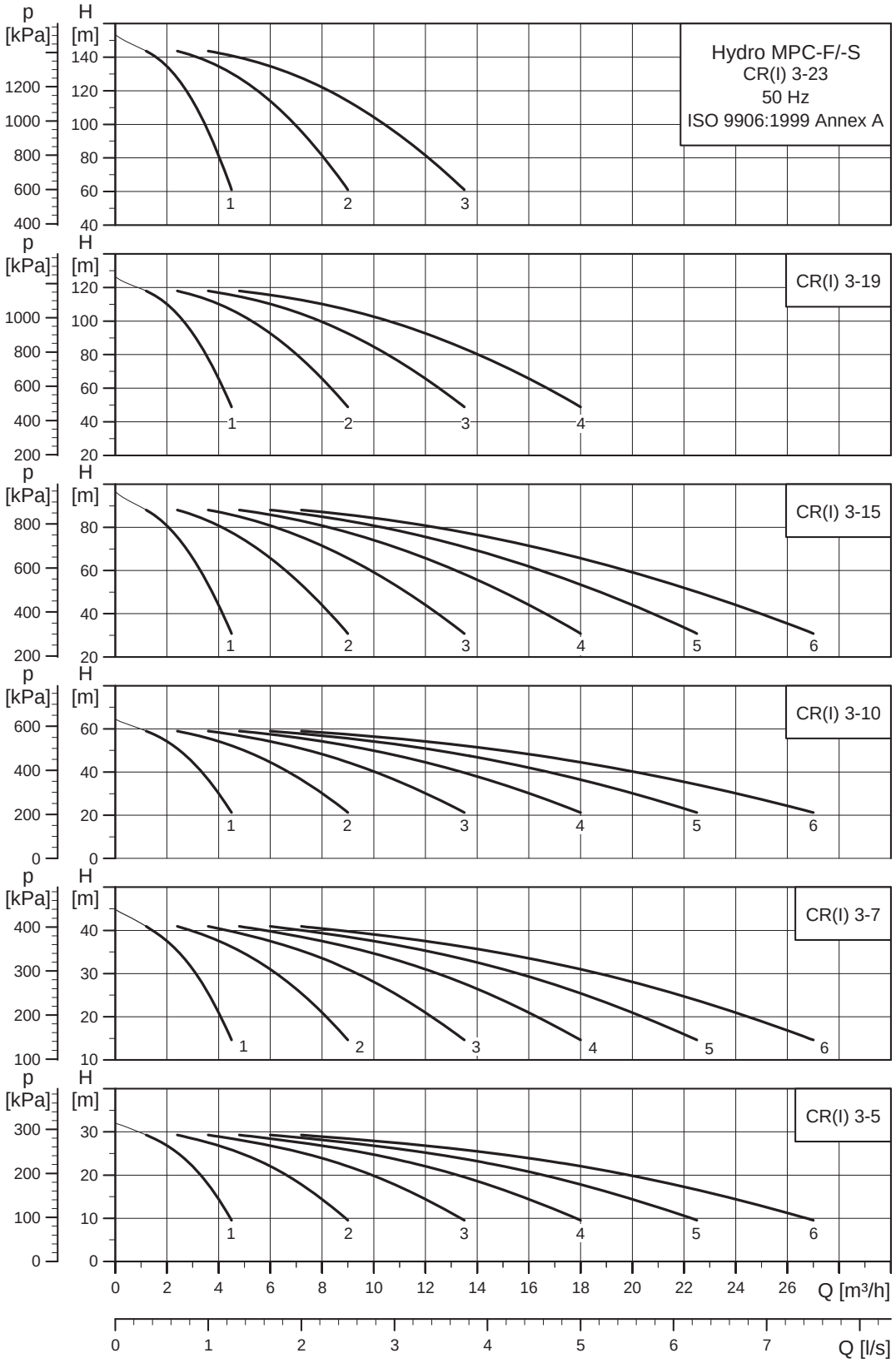


TM05 7294 0913

Note: Irrespective of the input frequency, the 100 % speed of pumps is approximately 3480 min^{-1}.

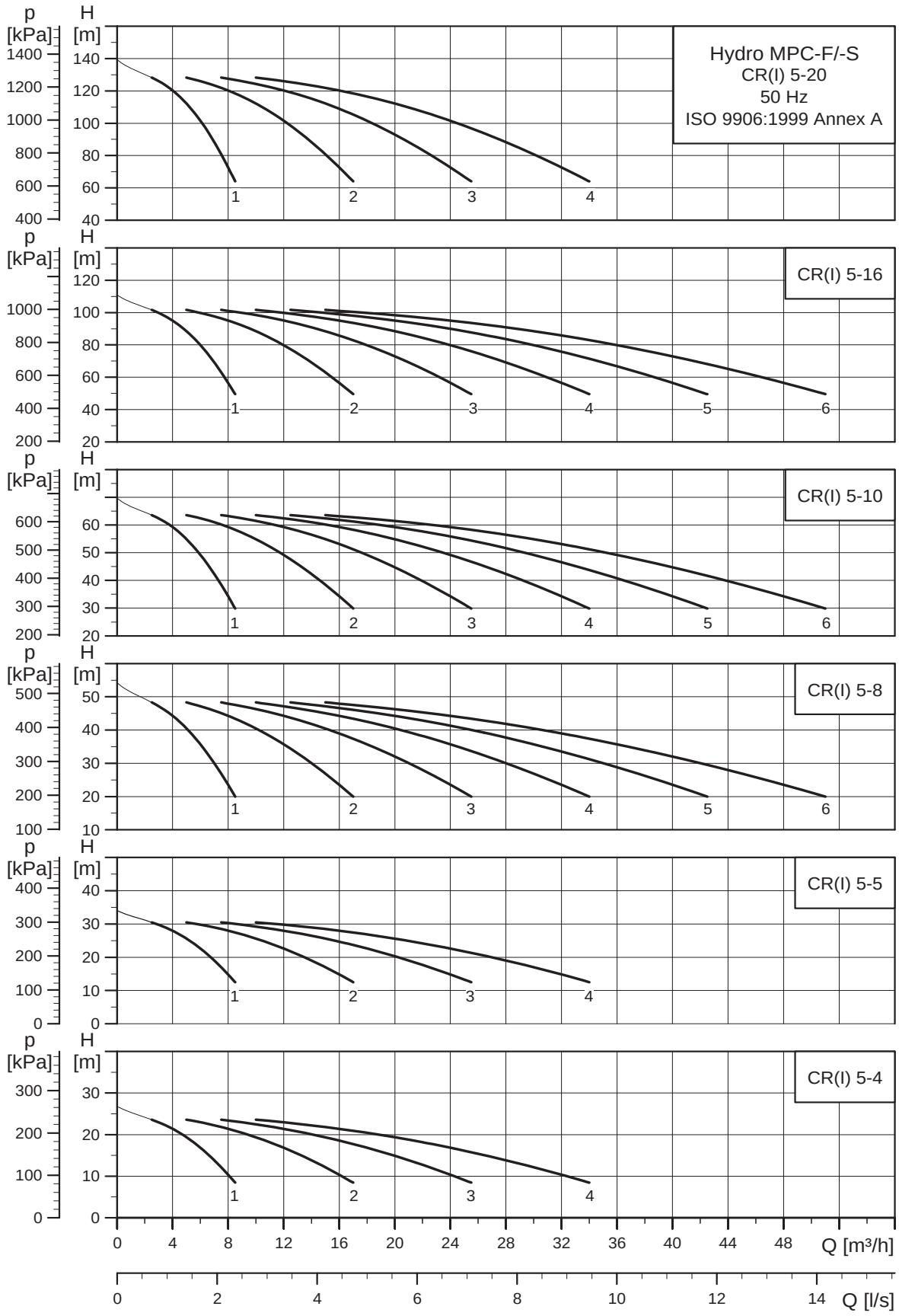
9. Curve charts, Hydro MPC-F/-S (50 Hz)

Hydro MPC-F/-S with CR(I) 3



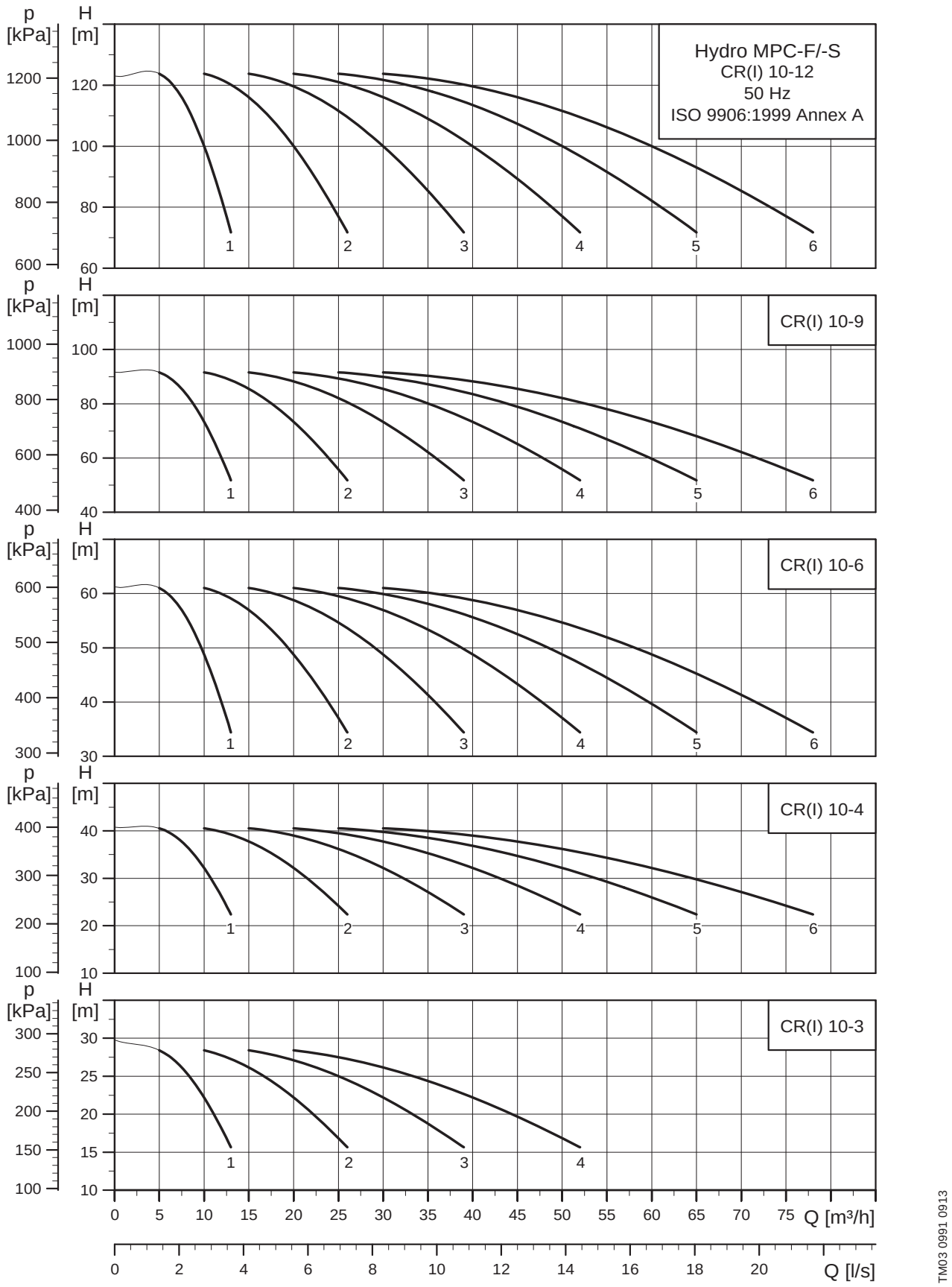
TM03 0989 0913

Hydro MPC-F/-S with CR(I) 5

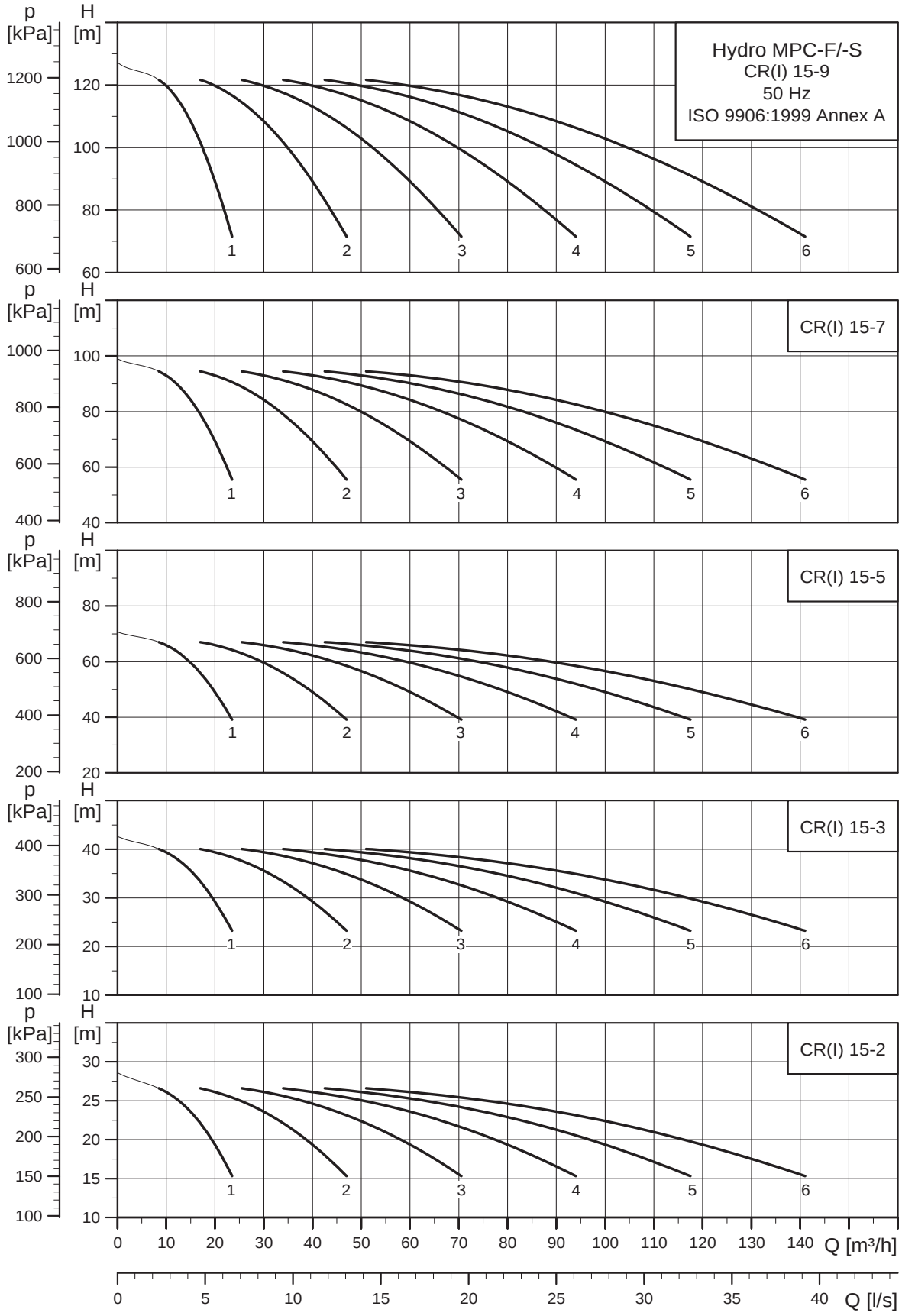


TM03 0990 0913

Hydro MPC-F/-S with CR(I) 10

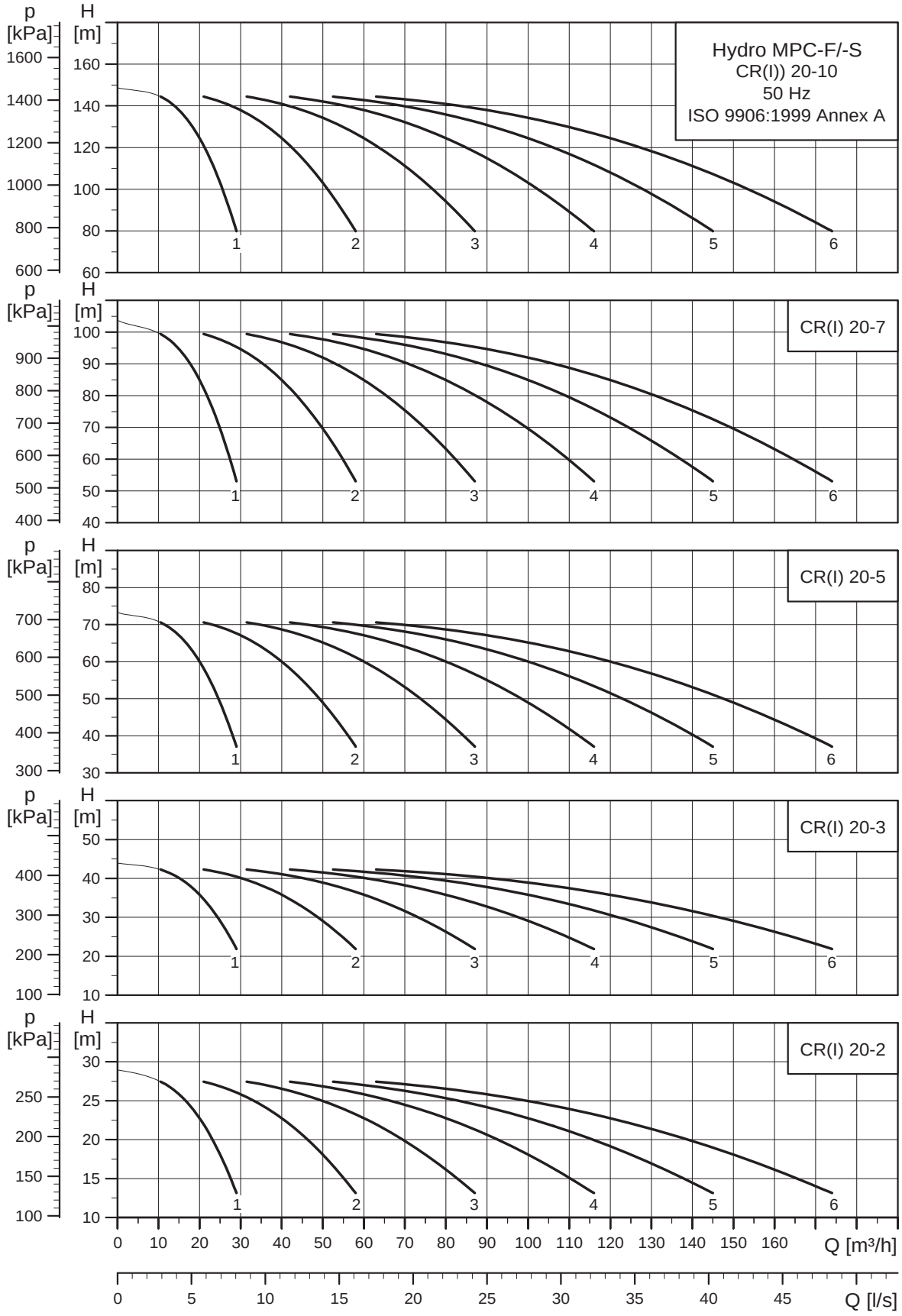


Hydro MPC-F/-S with CR(I) 15



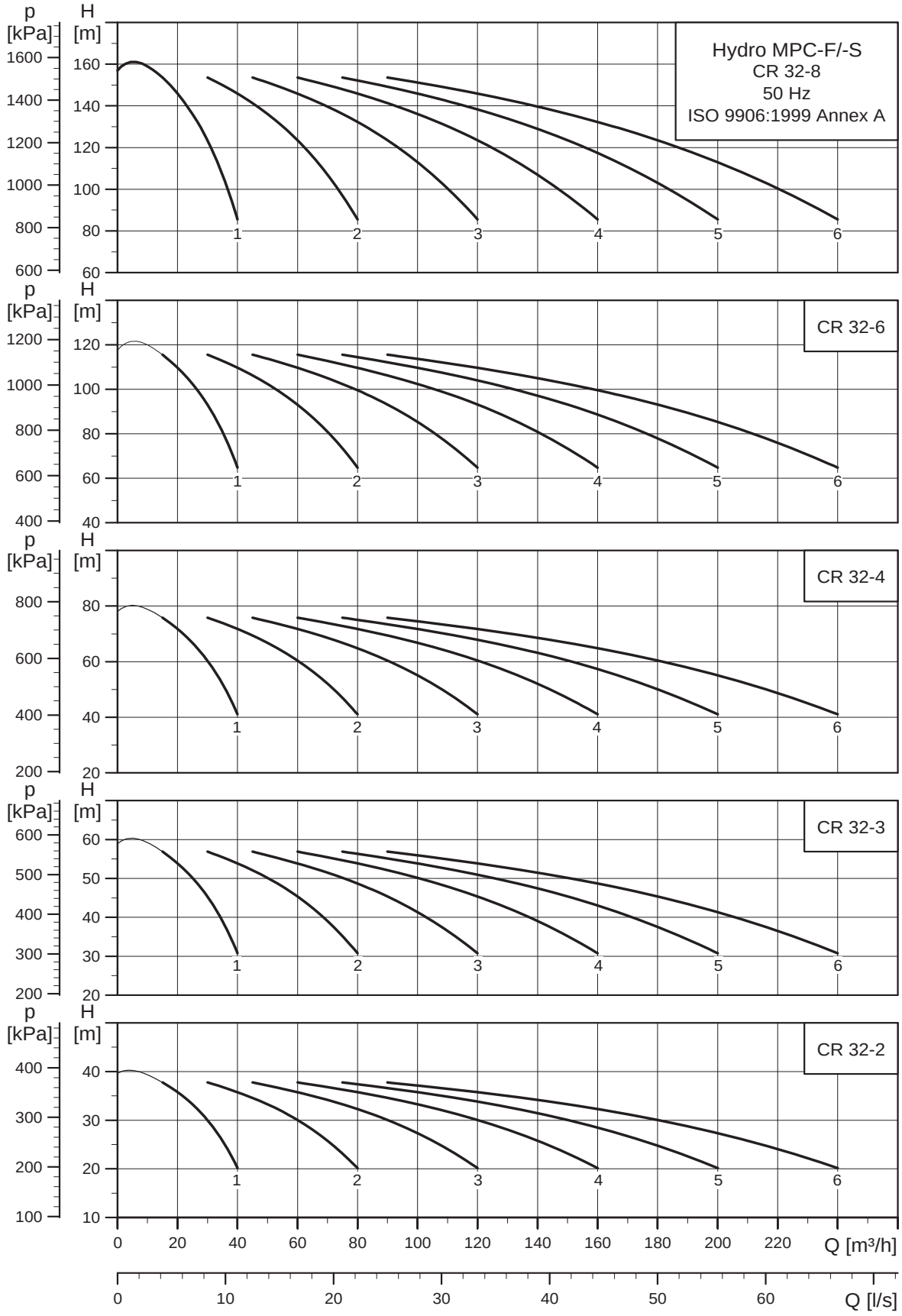
TM03 1066 0913

Hydro MPC-F/-S with CR(I) 20



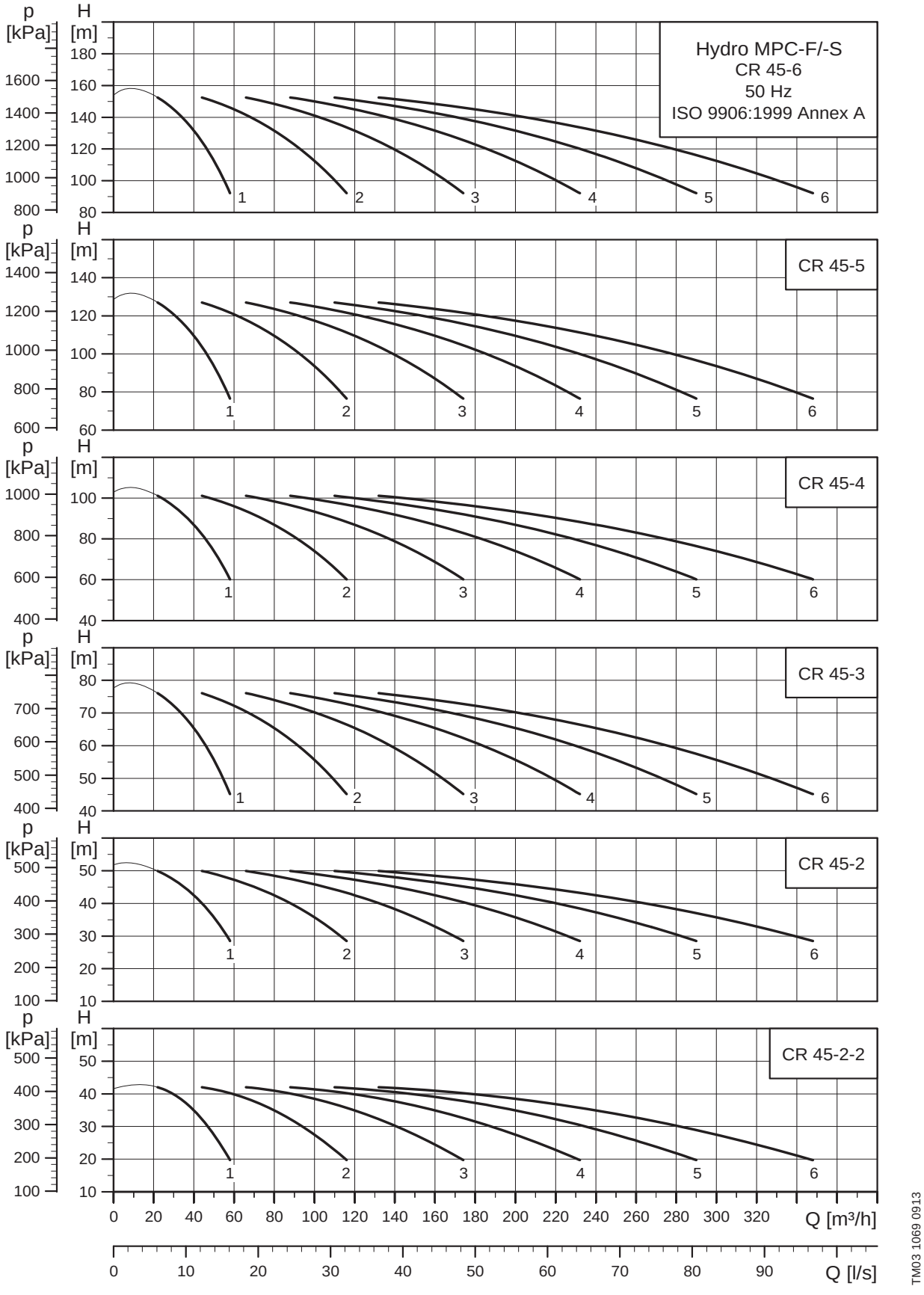
TM03 1067 0913

Hydro MPC-F/-S with CR 32



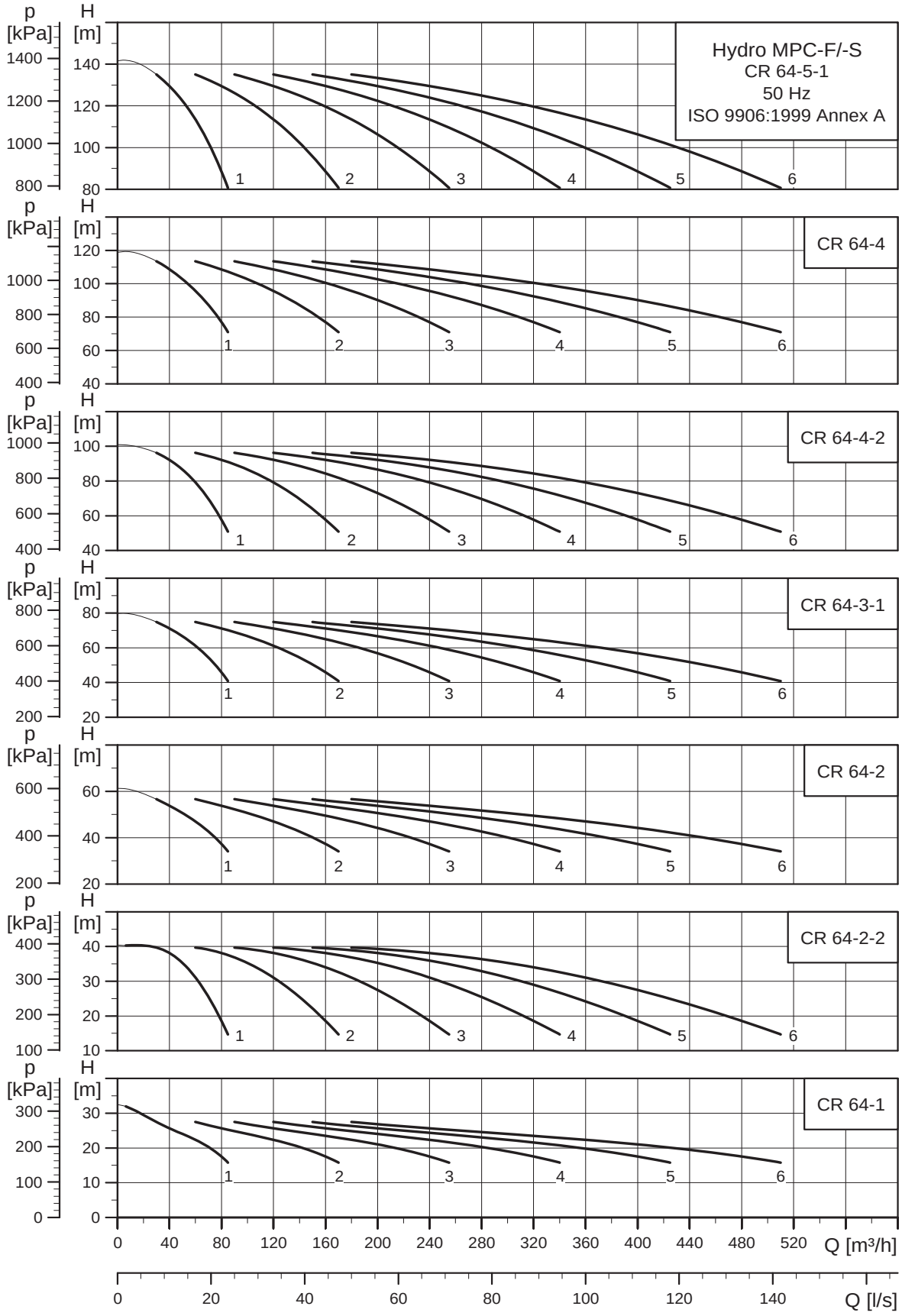
TM03 1068 0913

Hydro MPC-F/-S with CR 45



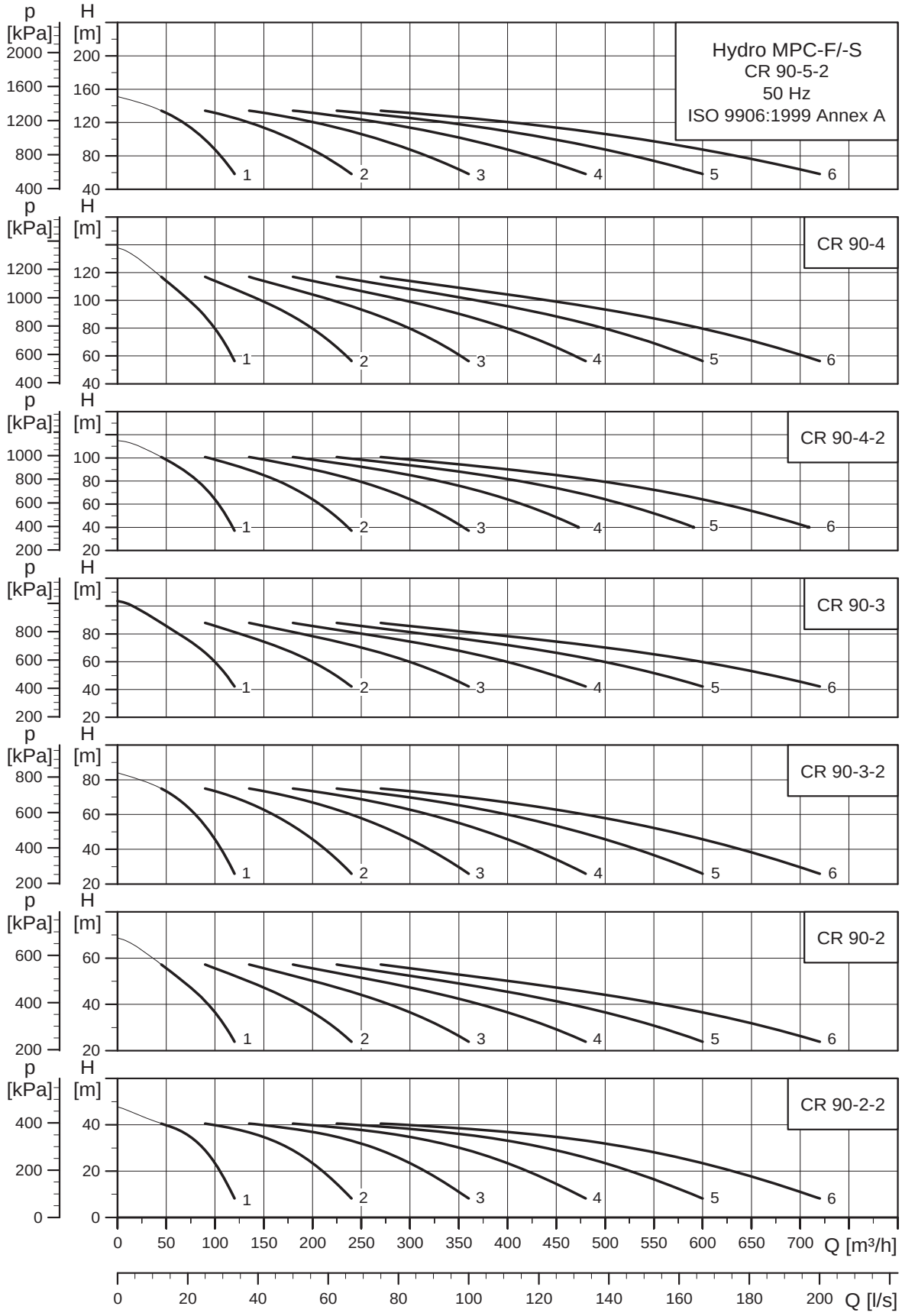
TM03 1069 0913

Hydro MPC-F/-S with CR 64



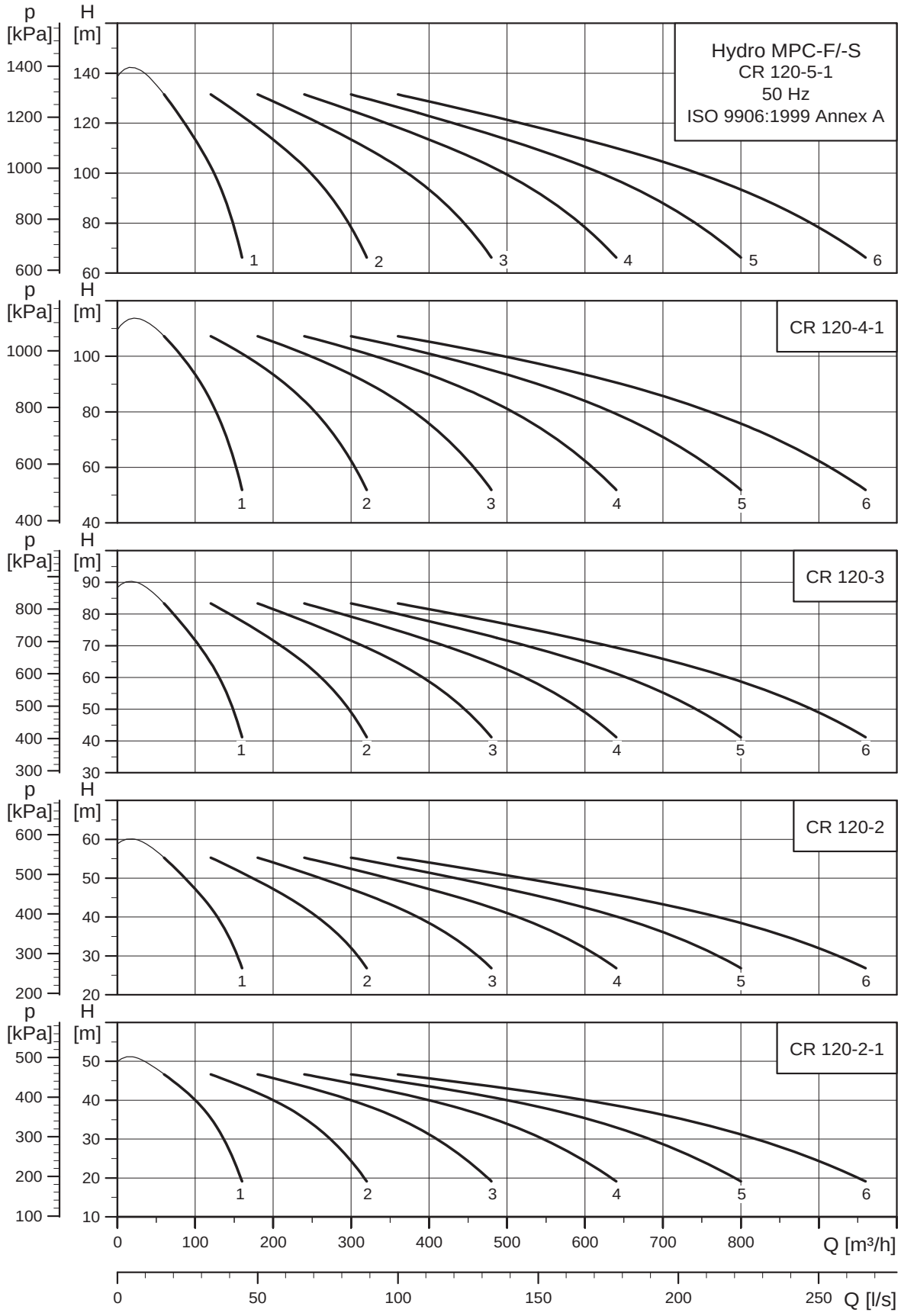
TM03 1070 0913

Hydro MPC-F/-S with CR 90



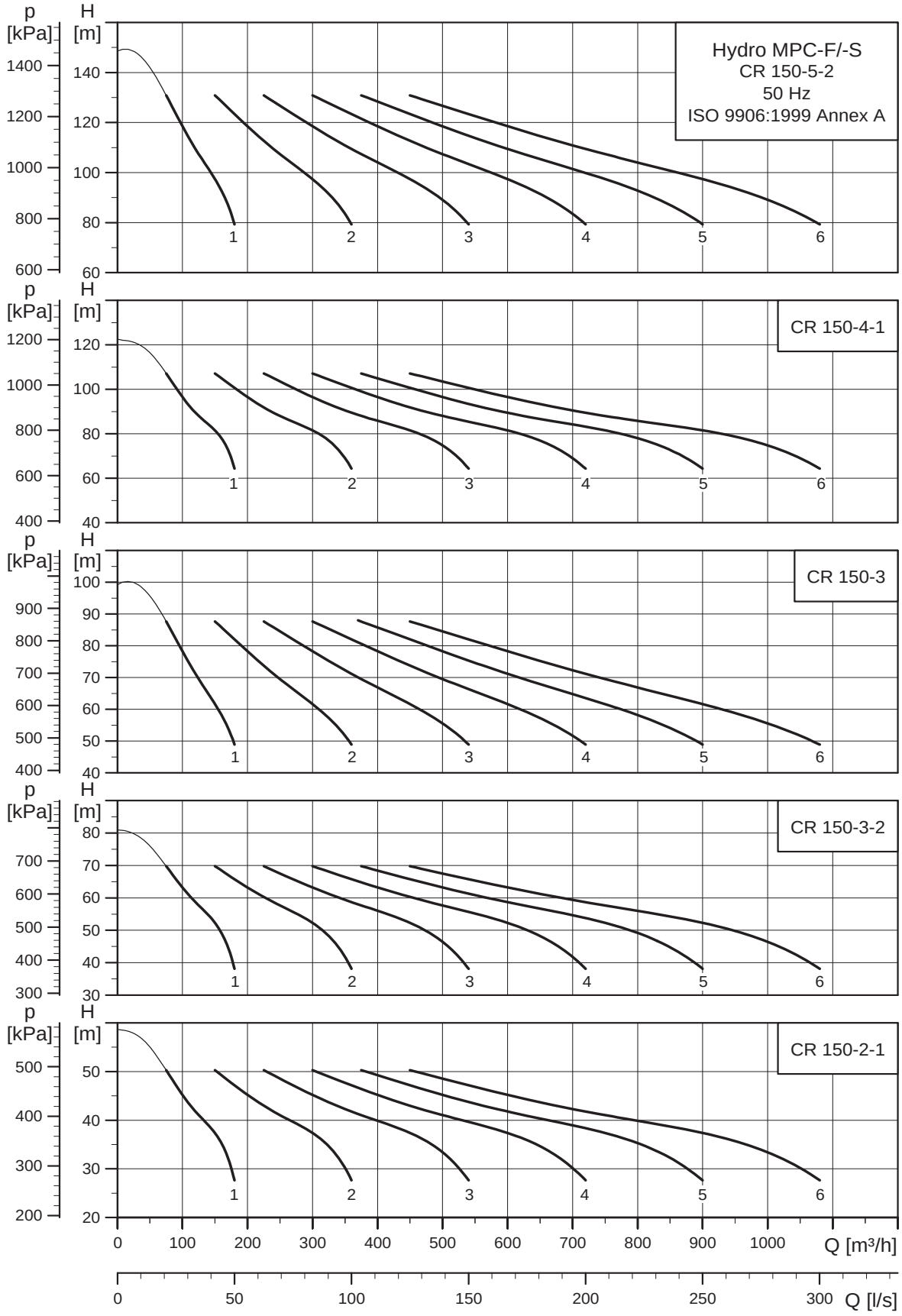
TM03 1143 0913

Hydro MPC-F/-S with CR 120



TM04 4774 0913

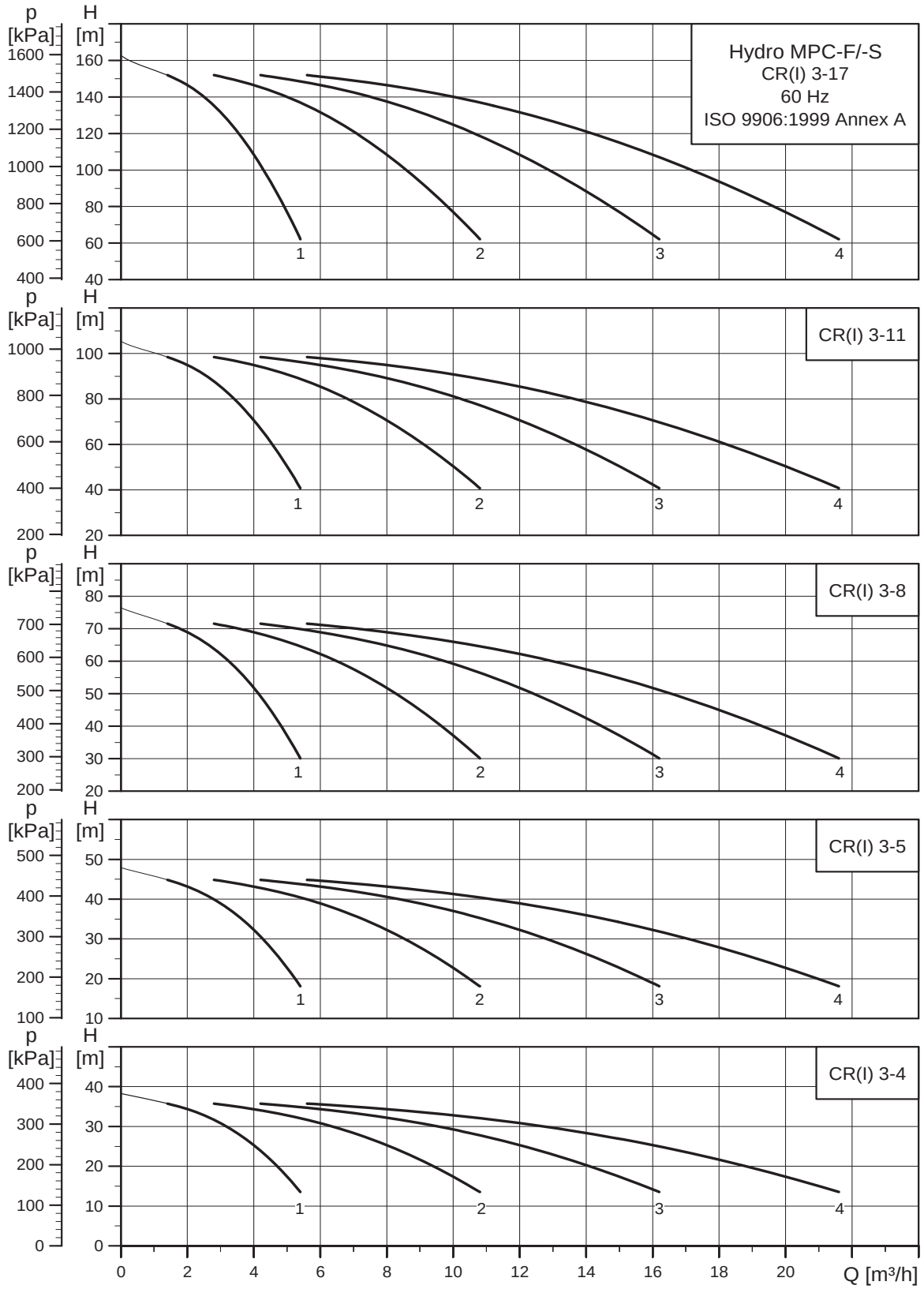
Hydro MPC-F/-S with CR 150



TM04 4775 0913

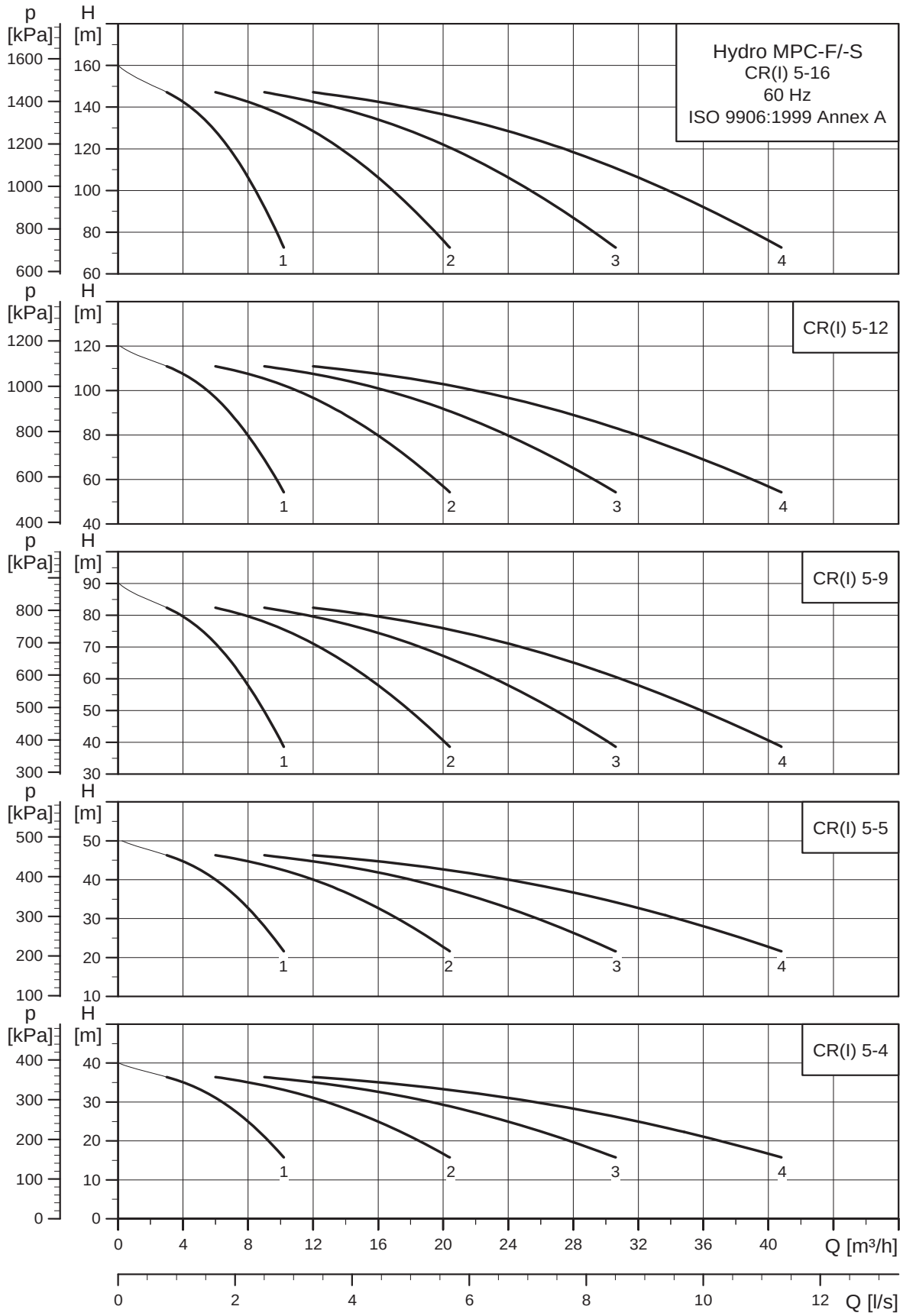
10. Curve charts, Hydro MPC-F/-S (60 Hz)

Hydro MPC-F/-S with CR(I) 3



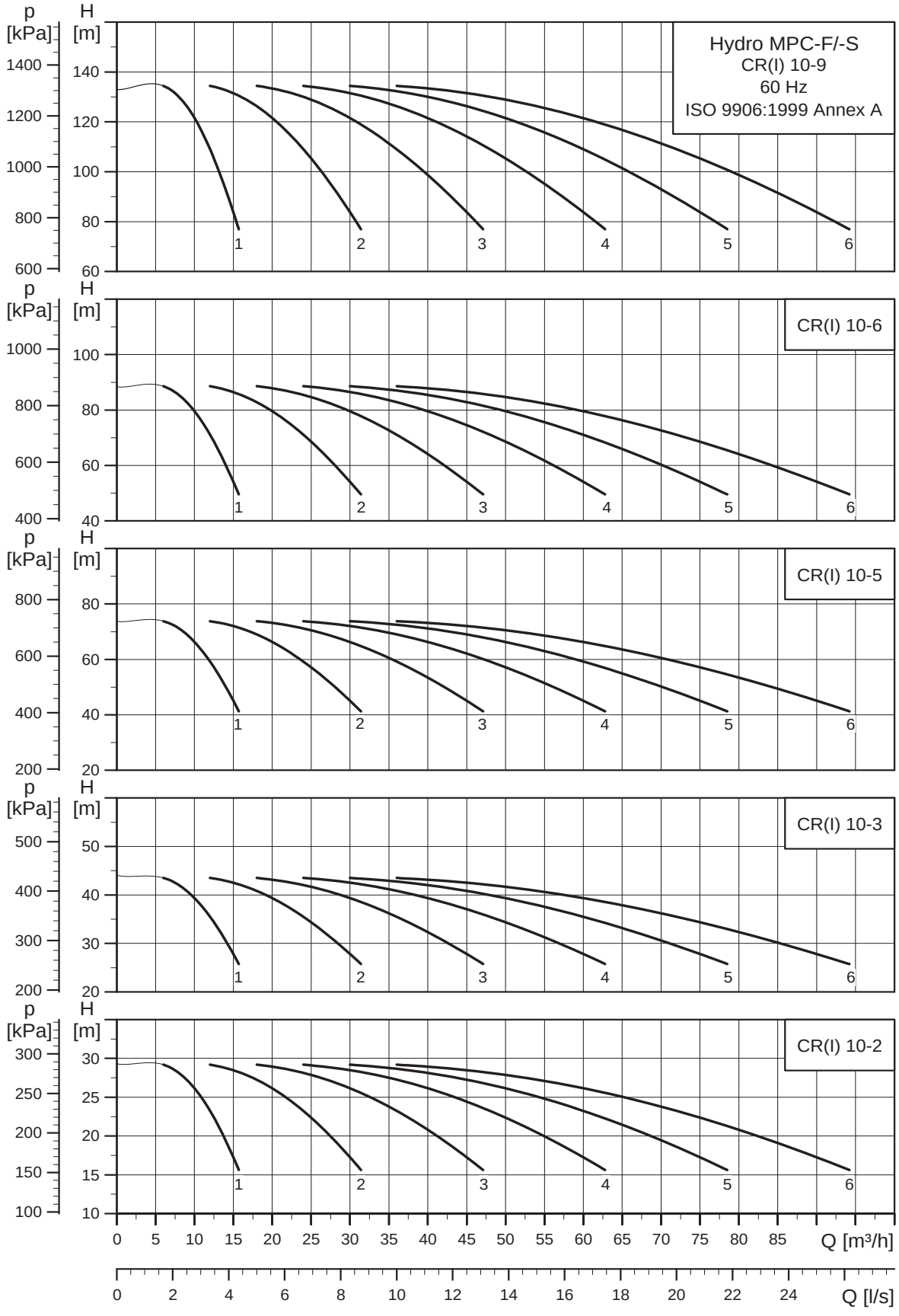
TM03 3349 0913

Hydro MPC-F/-S with CR(I) 5



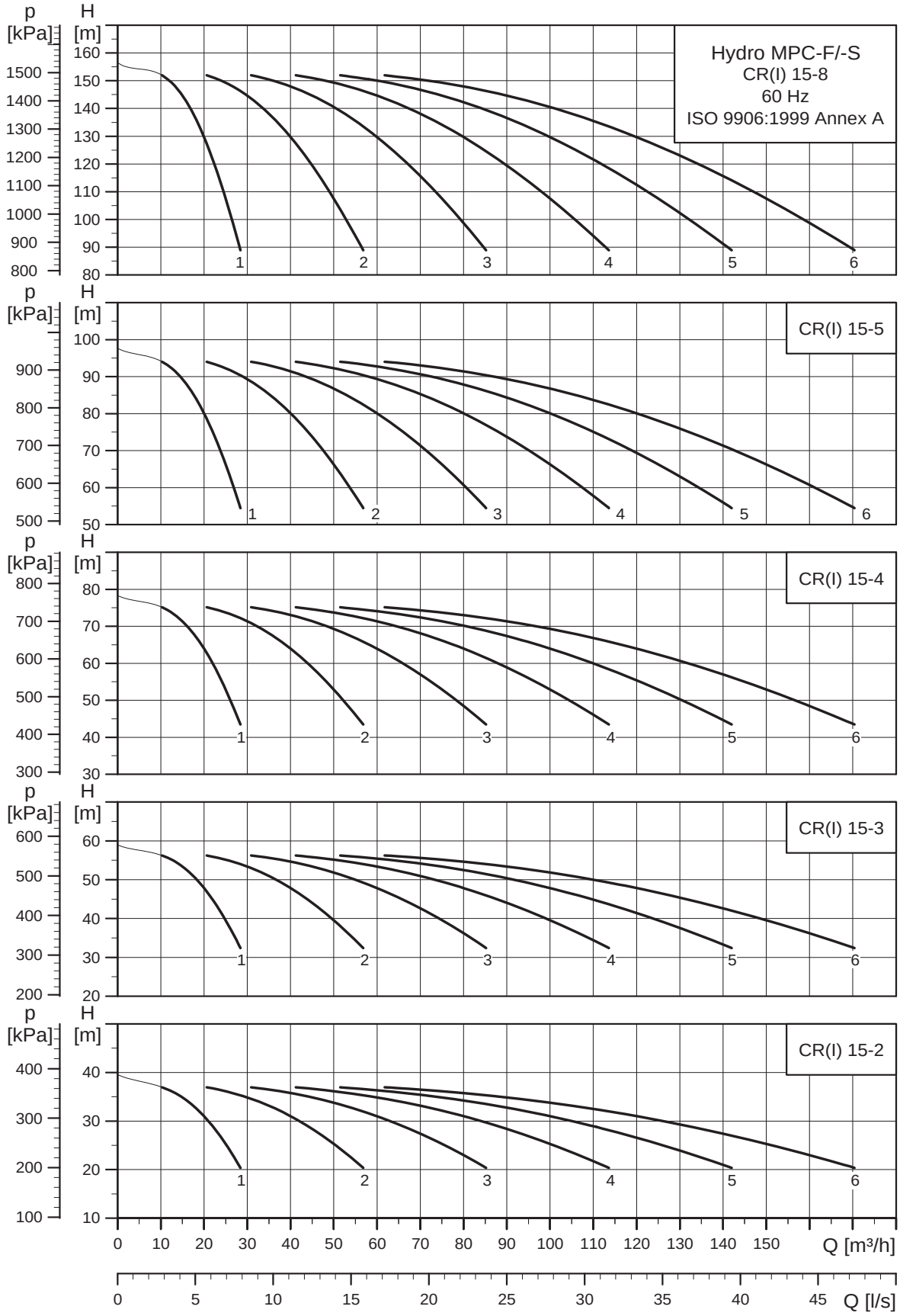
TM03 1144 0913

Hydro MPC-F/-S with CR(I) 10



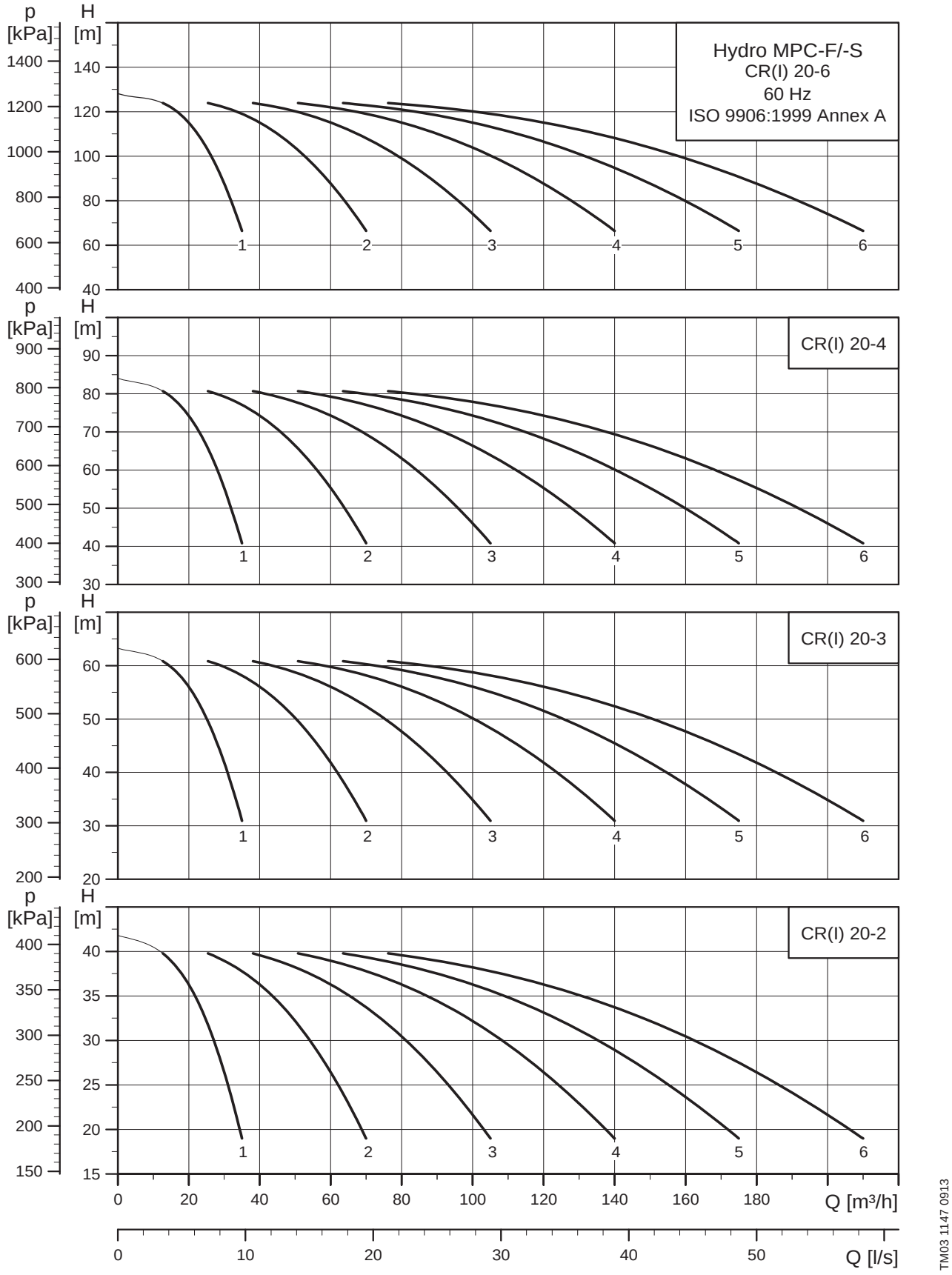
TM03 1145 0913

Hydro MPC-F/-S with CR(I) 15

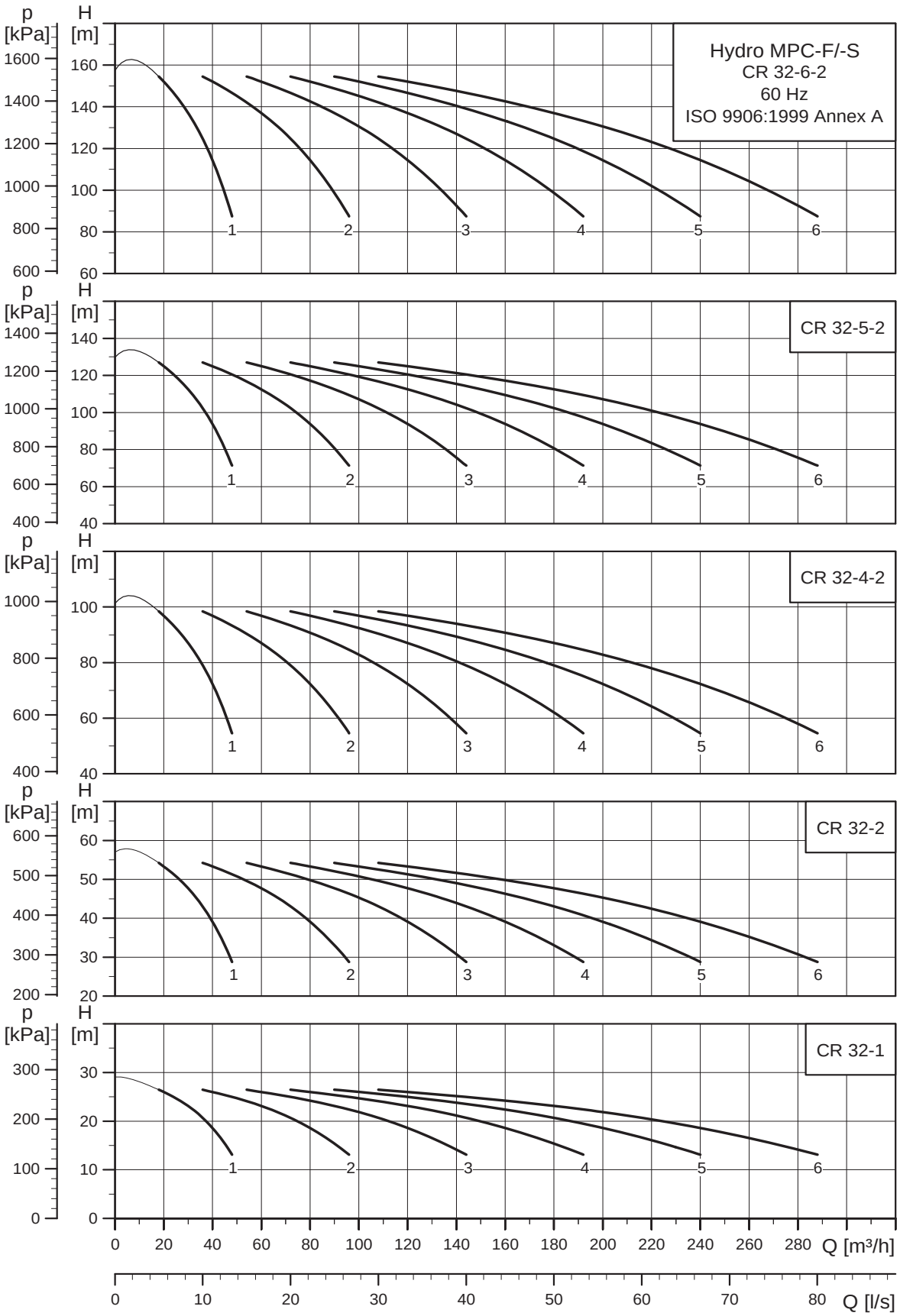


TM03 1146 0913

Hydro MPC-F/-S with CR(I) 20

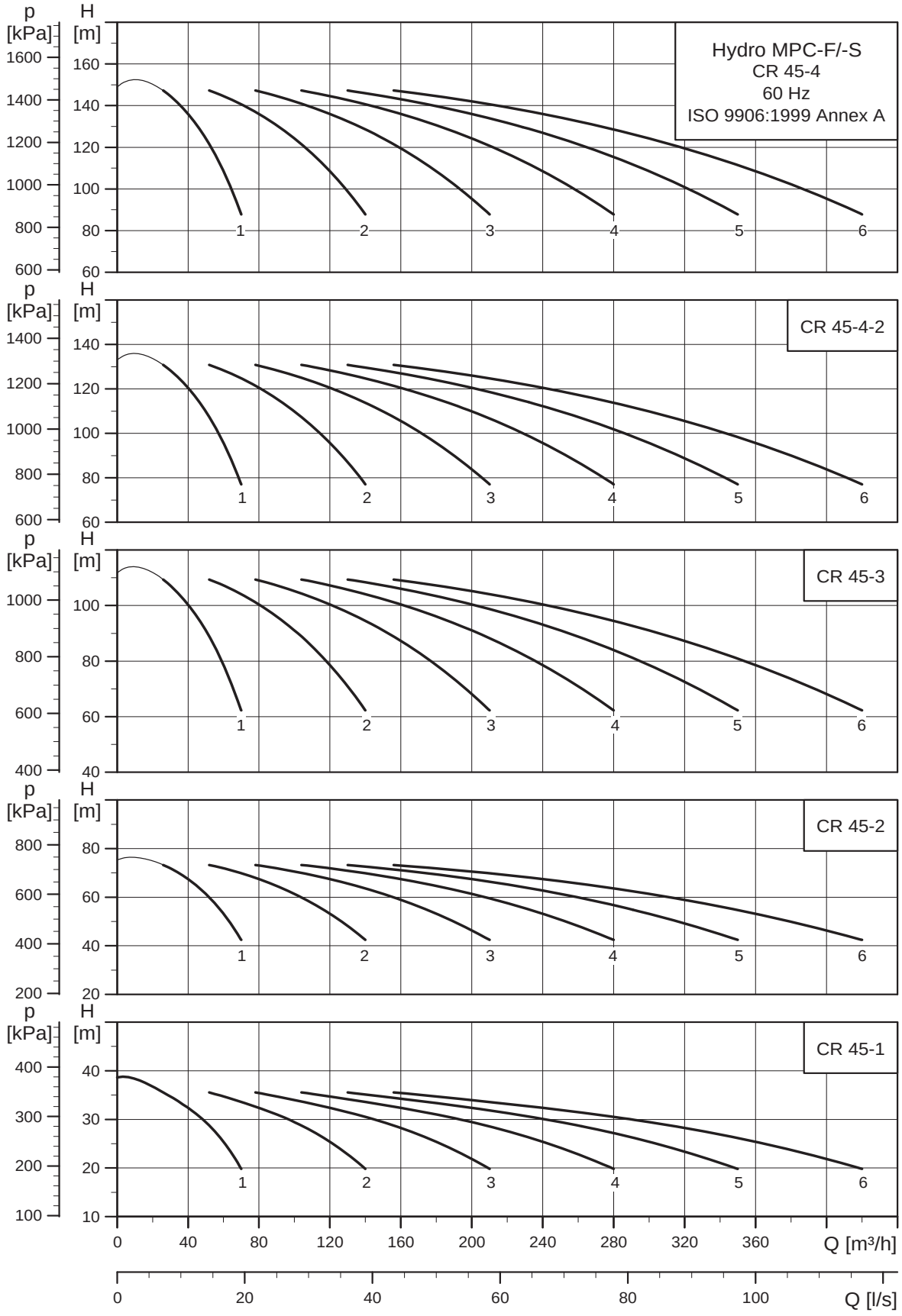


Hydro MPC-F/-S with CR 32



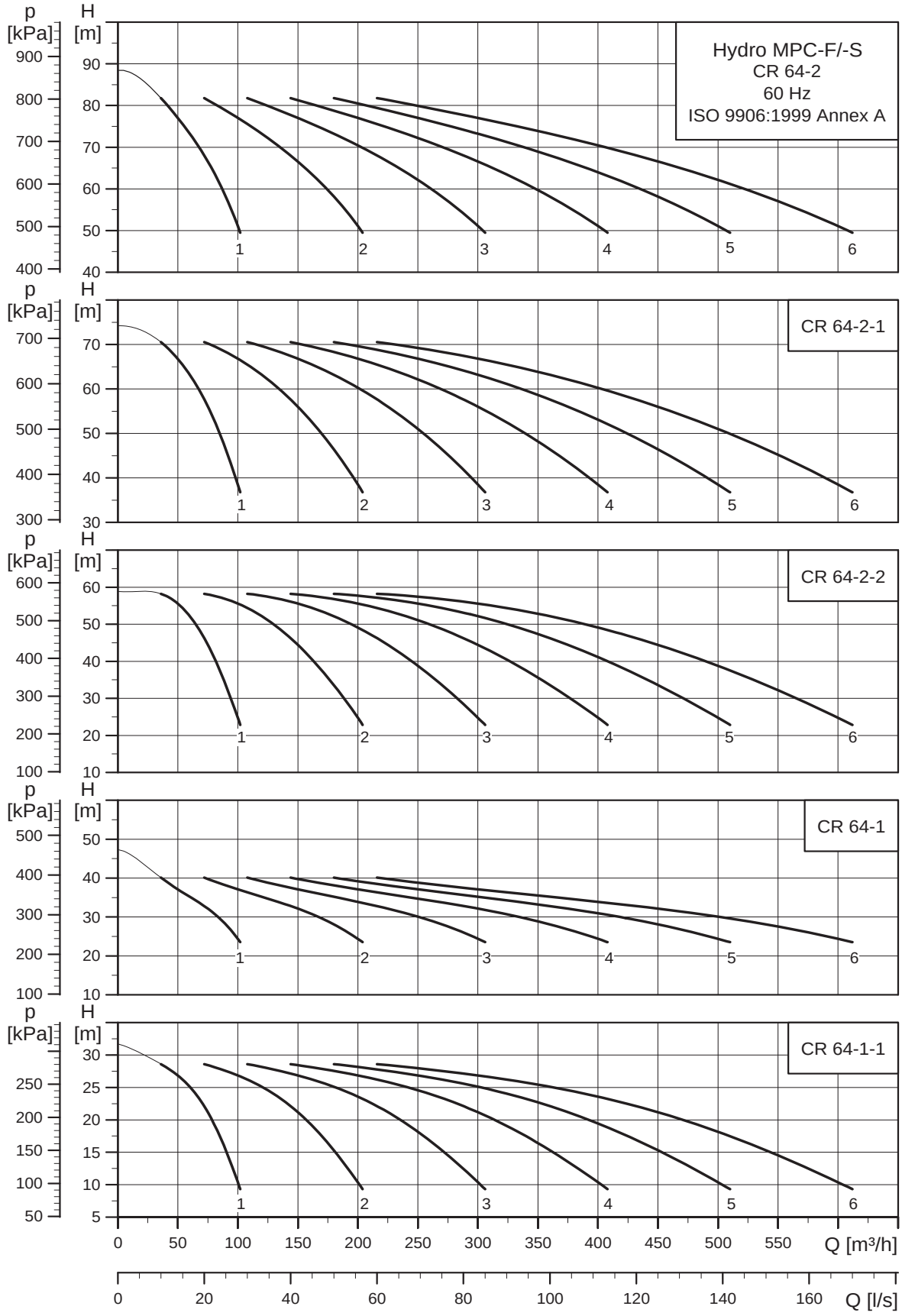
TM03 1148 0913

Hydro MPC-F/-S with CR 45



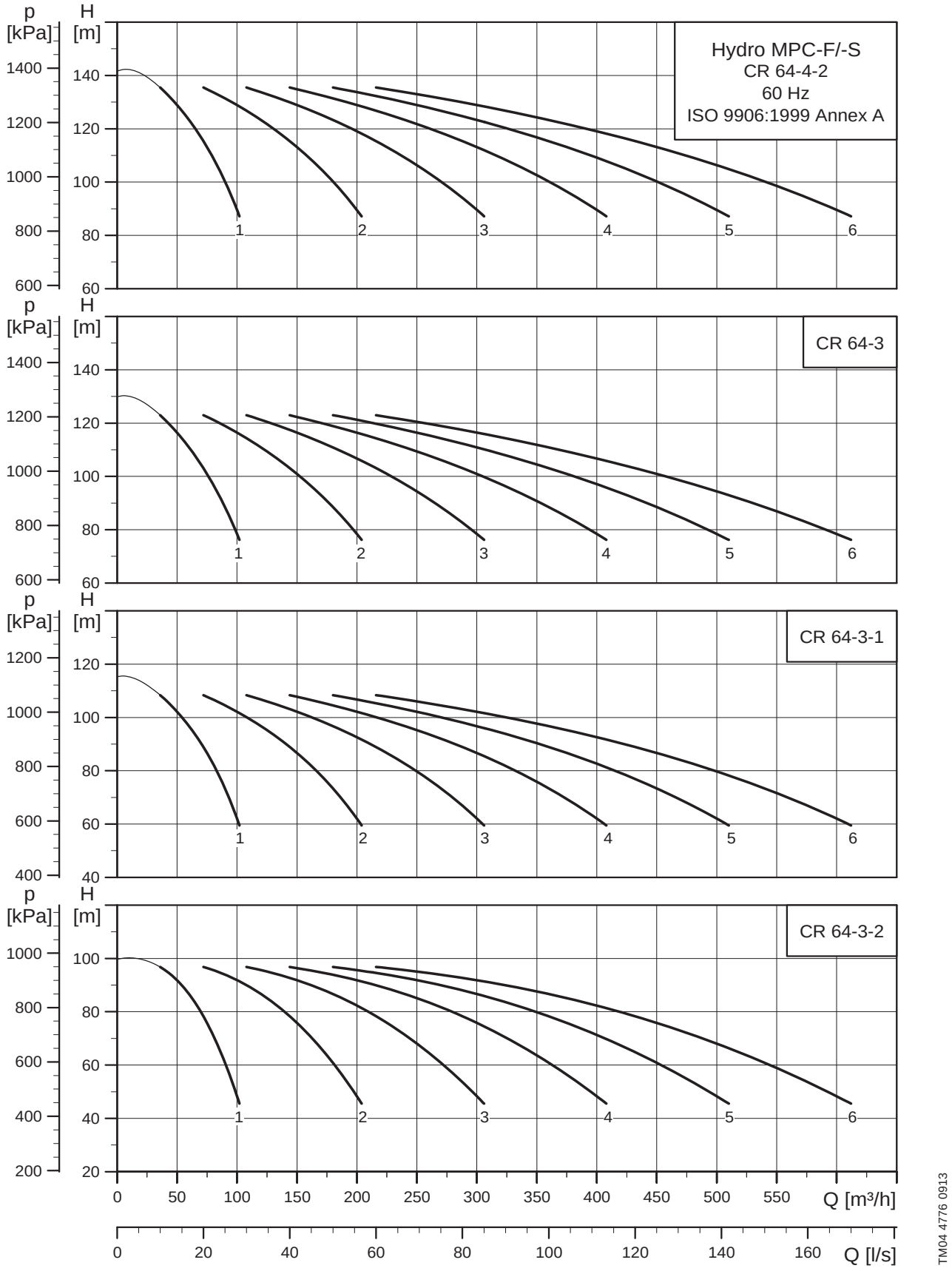
TM03 1149 0913

Hydro MPC-F/-S with CR 64



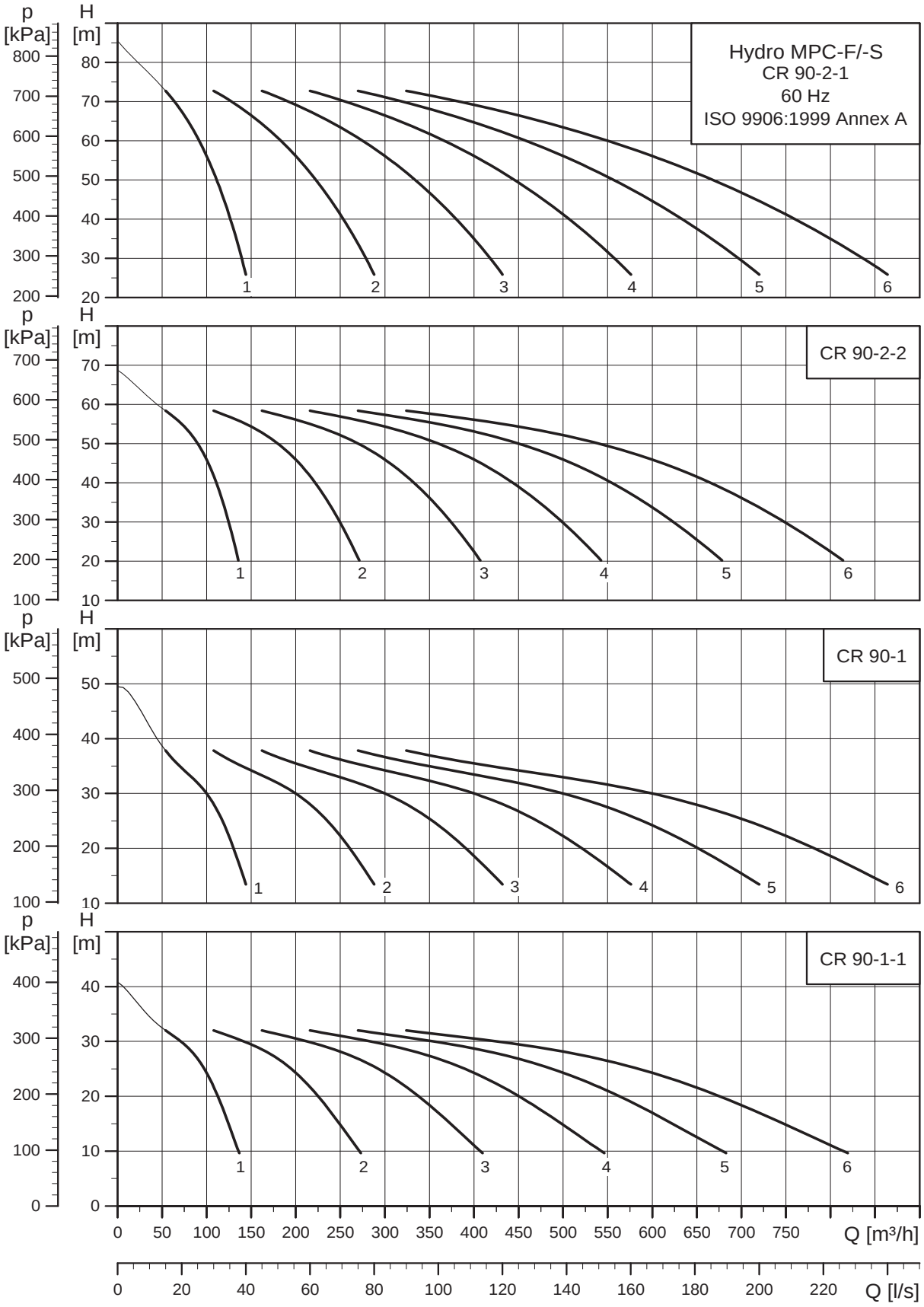
TM03 1150 0913

Hydro MPC-F/-S with CR 64



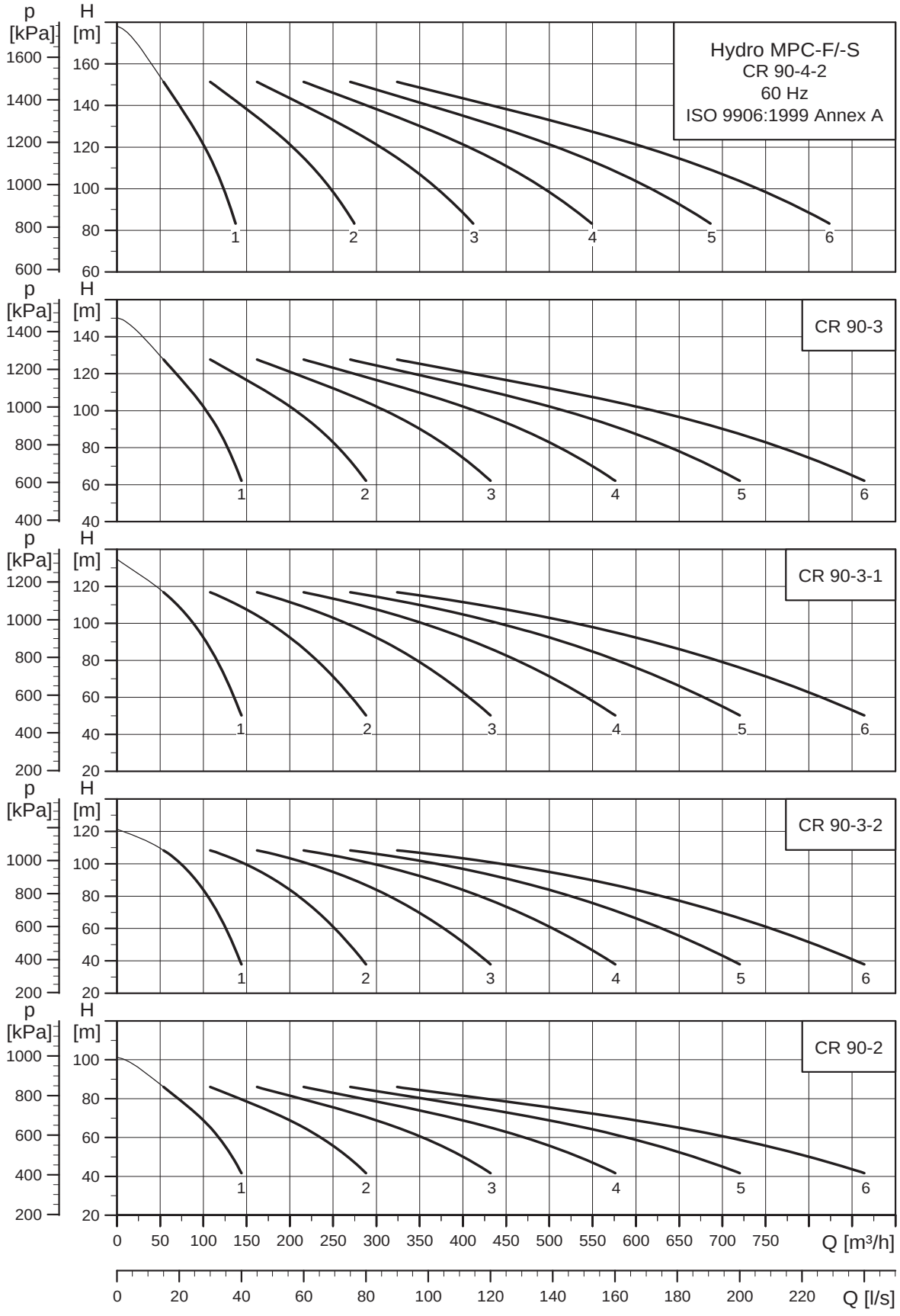
TM04 4776 0913

Hydro MPC-F/-S with CR 90



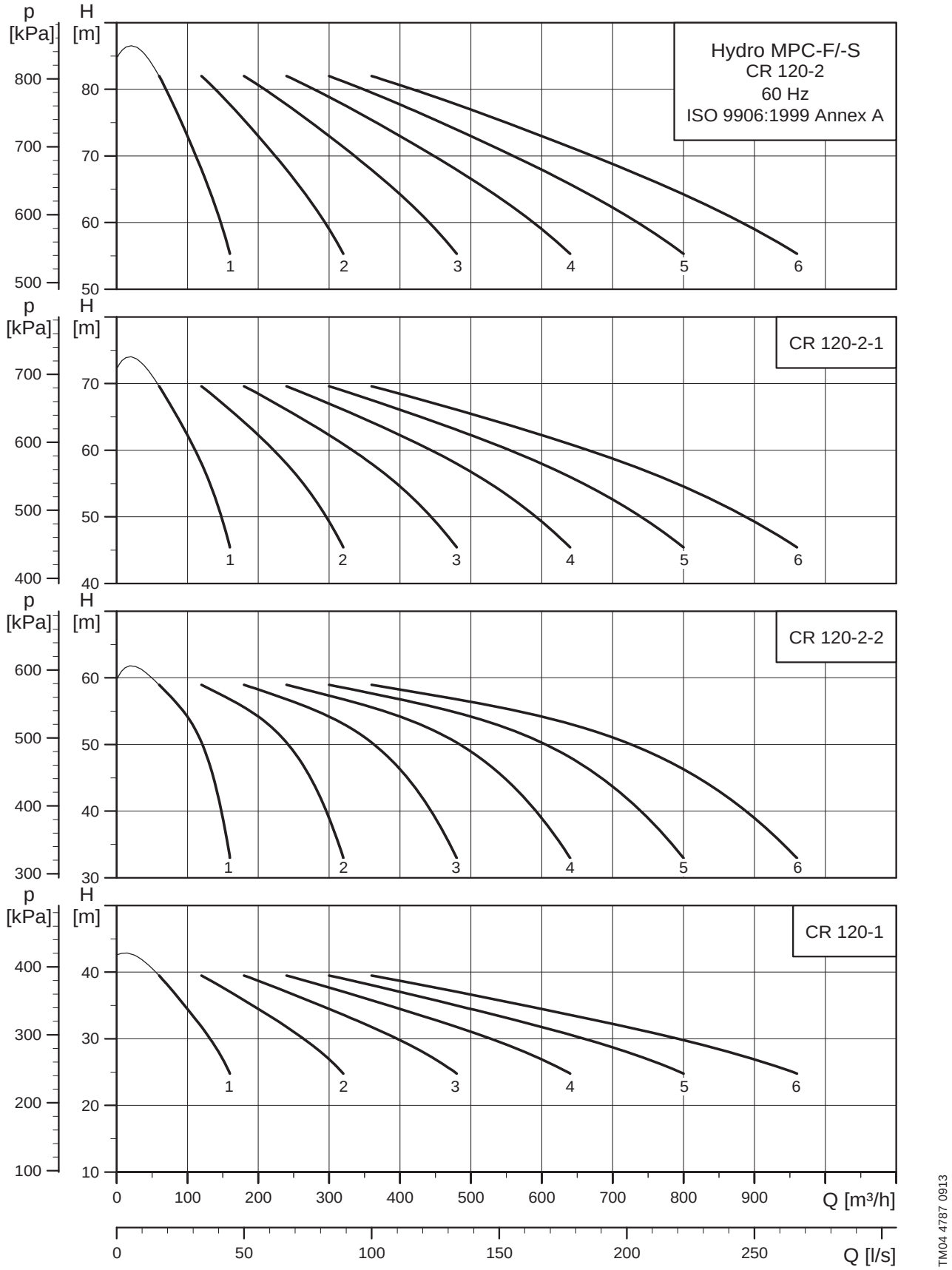
TM03 1151 0913

Hydro MPC-F/-S with CR 90

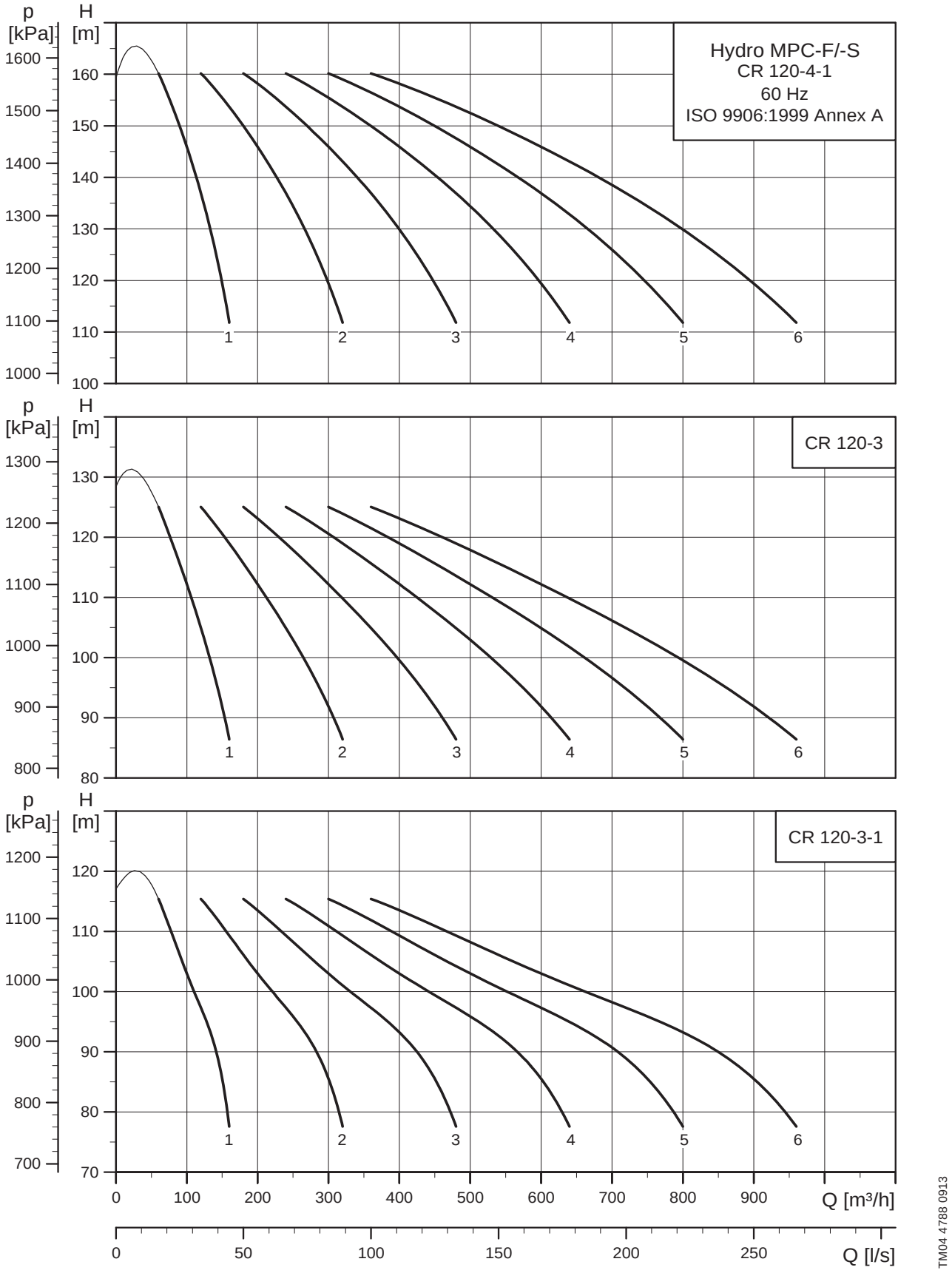


TM04 4777 0913

Hydro MPC-F/-S with CR 120

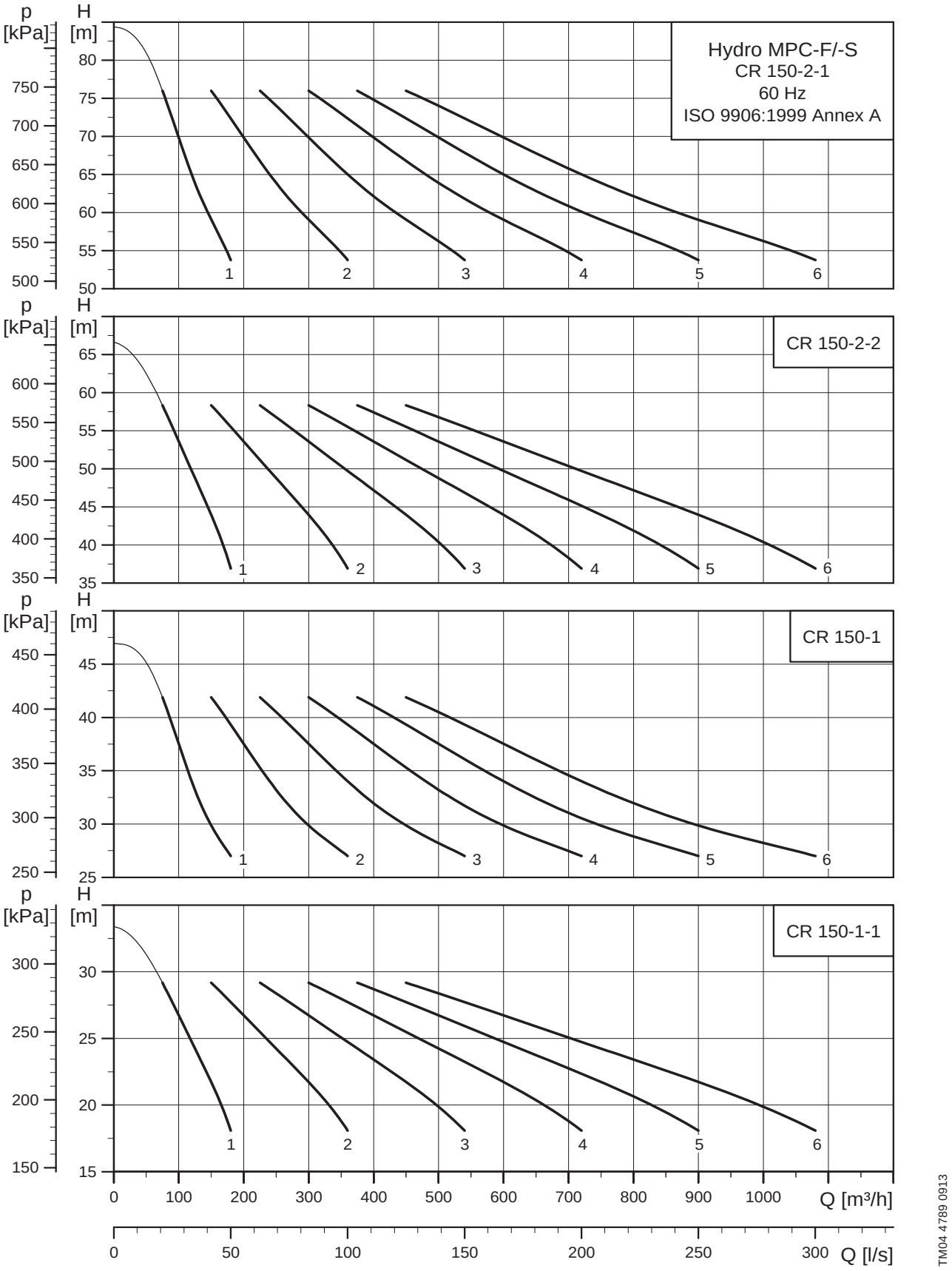


Hydro MPC-F/-S with CR 120



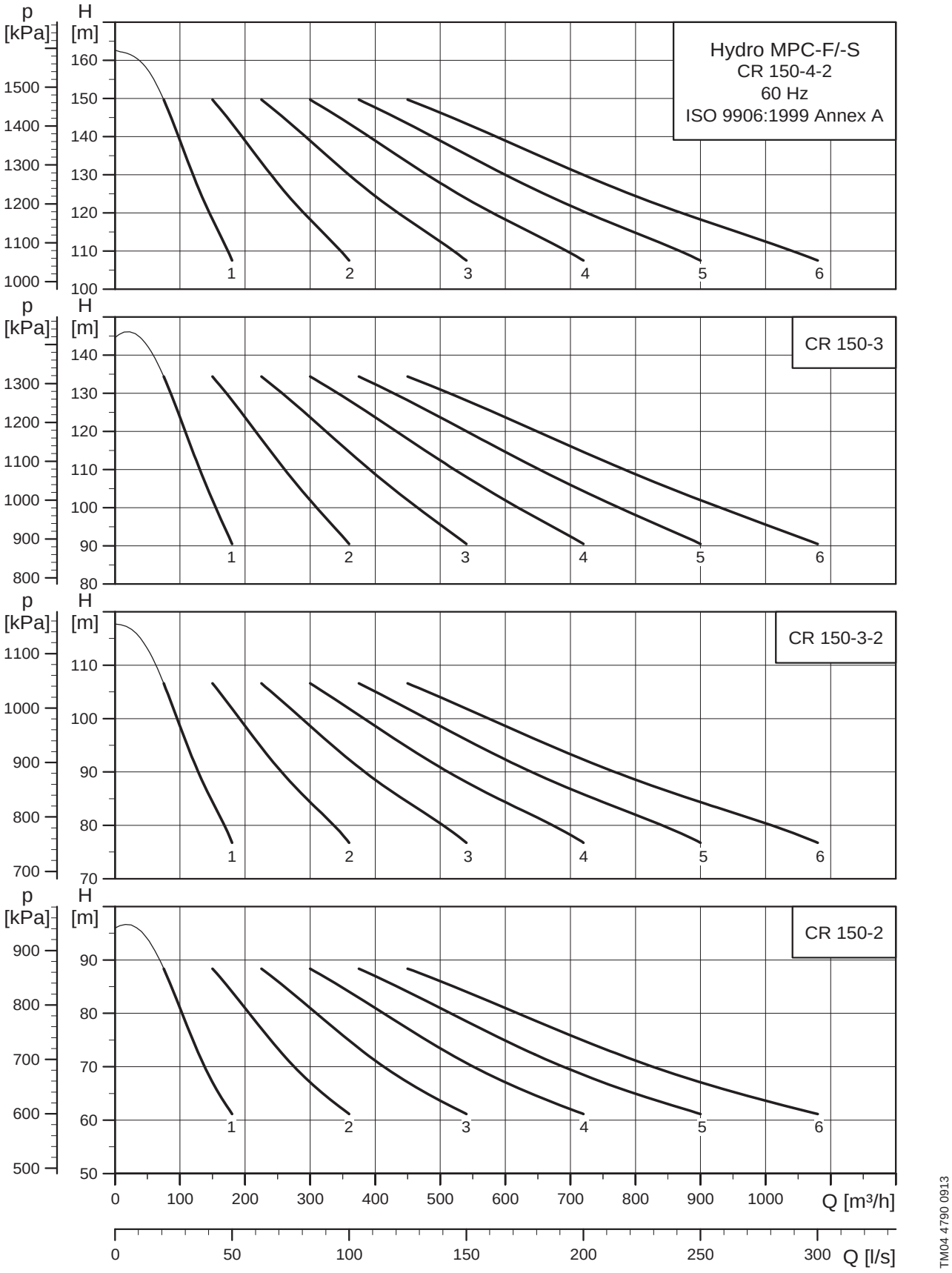
TM04 4788 0913

Hydro MPC-F/-S with CR 150



TM04 4789 0913

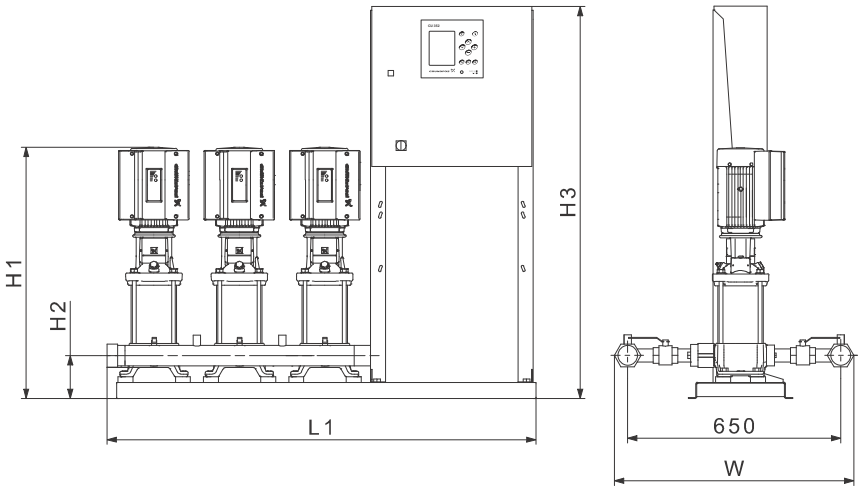
Hydro MPC-F/-S with CR 150



TM04 4790 0913

11. Technical data, Hydro MPC-E (50/60 Hz)

Hydro MPC-E with CR(I)E 3 / CR(I)E 5



TM03 1740 2310

Fig. 39 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps (design A). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-E with CR(I)E 3

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Max. I_O [A]	Connection	W [mm]	L1 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)E3-2	U1	0.37	2.8	2.9	R 2	714	1050	541	120	1455	83	A
	CR(I)E3-4	U1	0.55	4.1	4.2	R 2	714	1050	559	120	1455	84	A
	CR(I)E3-5	U1	0.75	5.6	5.7	R 2	714	1050	583	120	1455	88	A
	CR(I)E3-8	U1	1.1	8	8.1	R 2	714	1050	637	120	1455	90	A
	CR(I)E3-11	U2	1.5	5.4	-	R 2	714	1050	767	120	1455	95	A
	CR(I)E3-17	U2	2.2	7.8	-	R 2	714	1050	875	120	1455	100	A
3	CR(I)E3-2	U1	0.37	3.5	3.6	R 2	714	1370	541	120	1455	130	A
	CR(I)E3-4	U1	0.55	5.1	5.2	R 2	714	1370	559	120	1455	132	A
	CR(I)E3-5	U1	0.75	6.9	7	R 2	714	1370	583	120	1455	137	A
	CR(I)E3-8	U1	1.1	9.8	9.9	R 2	714	1370	637	120	1455	141	A
	CR(I)E3-11	U2	1.5	8.2	-	R 2	714	1370	767	120	1455	145	A
	CR(I)E3-17	U2	2.2	11.6	-	R 2	714	1370	875	120	1455	153	A
4	CR(I)E3-2	U1	0.37	4	4.1	R 2 1/2	730	1690	541	120	1455	165	A
	CR(I)E3-4	U1	0.55	5.8	5.9	R 2 1/2	730	1690	559	120	1455	168	A
	CR(I)E3-5	U1	0.75	7.9	8	R 2 1/2	730	1690	583	120	1455	175	A
	CR(I)E3-8	U1	1.1	11.4	11.5	R 2 1/2	730	1690	637	120	1455	180	A
	CR(I)E3-11	U2	1.5	10.9	-	R 2 1/2	730	1690	767	120	1455	186	A
	CR(I)E3-17	U2	2.2	15.5	-	R 2 1/2	730	1690	875	120	1455	196	A

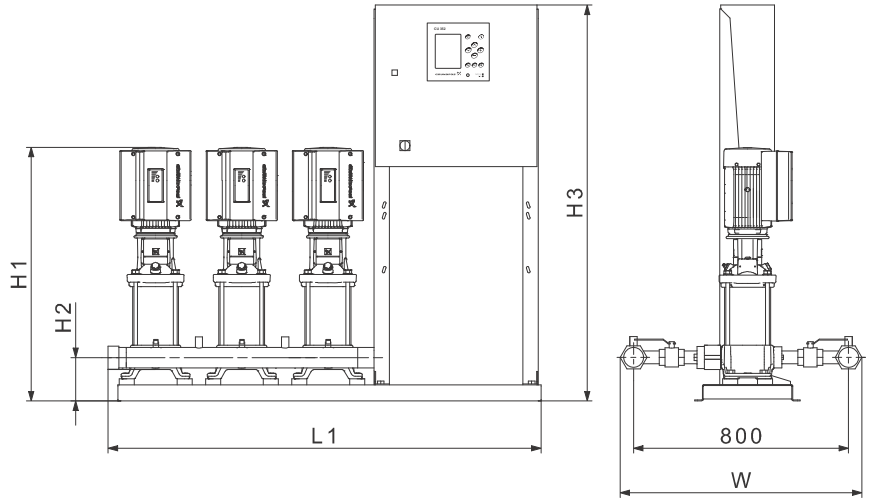
Supply voltage U1: 3 x 380-415 V ± 10 %, N, PE.
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Maximum current in neutral conductor, Max. I_0 [A], applies to booster systems with single-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CR(I)E 5

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Max. I_O [A]	Connection	W [mm]	L1 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)E5-2	U1	0.55	4.1	4.2	R 2	714	1050	541	120	1455	83	A
	CR(I)E5-4	U2	1.1	4.1	-	R 2	714	1050	641	120	1455	92	A
	CR(I)E5-5	U2	1.5	5.4	-	R 2	714	1050	704	120	1455	92	A
	CR(I)E5-9	U2	2.2	7.8	-	R 2	714	1050	812	120	1455	97	A
	CR(I)E5-12	U2	3	12.4	-	R 2	714	1050	959	120	1455	163	A
	CR(I)E5-16	U2	4	16	-	R 2	714	1050	1104	120	1455	190	A
3	CR(I)E5-2	U1	0.55	5.1	5.2	R 2	714	1370	541	120	1455	130	A
	CR(I)E5-4	U2	1.1	6.2	-	R 2	714	1370	641	120	1455	141	A
	CR(I)E5-5	U2	1.5	8.2	-	R 2	714	1370	704	120	1455	141	A
	CR(I)E5-9	U2	2.2	11.6	-	R 2	714	1370	812	120	1455	148	A
	CR(I)E5-12	U2	3	18.6	-	R 2	714	1370	959	120	1455	247	A
	CR(I)E5-16	U2	4	24	-	R 2	714	1570	1104	120	1455	300	A
4	CR(I)E5-2	U1	0.55	5.8	5.9	R 2 1/2	730	1690	541	120	1455	166	A
	CR(I)E5-4	U2	1.1	8.2	-	R 2 1/2	730	1690	641	120	1455	180	A
	CR(I)E5-5	U2	1.5	10.9	-	R 2 1/2	730	1690	704	120	1455	180	A
	CR(I)E5-9	U2	2.2	15.5	-	R 2 1/2	730	1690	812	120	1455	189	A
	CR(I)E5-12	U2	3	24.8	-	R 2 1/2	730	1890	959	120	1455	334	A
	CR(I)E5-16	U2	4	32	-	R 2 1/2	730	1690	1104	120	1455	376	A

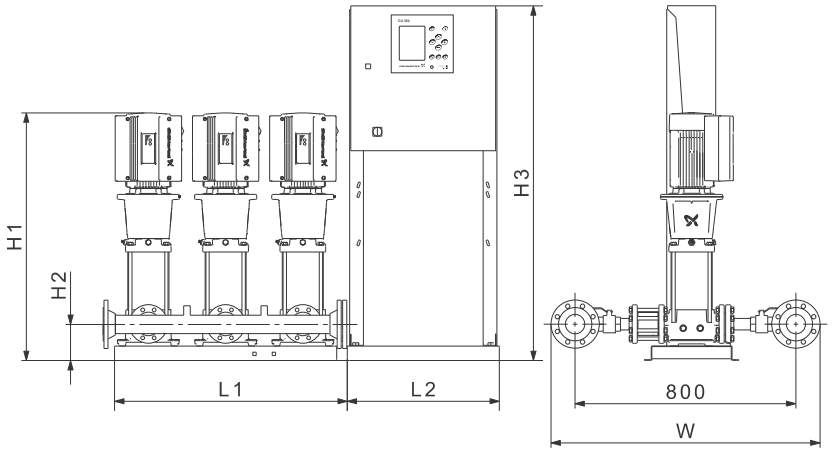
Supply voltage U1: 3 x 380-415 V ± 10 %, N, PE.
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Maximum current in neutral conductor, Max. I_0 [A], applies to booster systems with single-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CR(I)E 10



TM03 1182 2310

Fig. 40 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps (design A). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM04 7830 2410

Fig. 41 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-E with CR(I)E 10

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Max. I_O [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)E10-1	U1	0.75	5.6	5.7	R 2 1/2	880	1080	380	641	150	1455	118	A
	CR(I)E10-2	U2	1.5	5.4	-	R 2 1/2	880	1080	380	717	150	1455	122	A
	CR(I)E10-3	U2	2.2	7.8	-	R 2 1/2	880	1080	380	747	150	1455	124	A
	CR(I)E10-5	U2	3	12.4	-	R 2 1/2	880	1080	380	873	150	1455	190	A
	CR(I)E10-6	U2	4	16	-	R 2 1/2	880	1080	380	940	150	1455	216	A
	CR(I)E10-9	U2	5.5	22	-	R 2 1/2	880	1080	380	1081	150	1455	254	A
3	CR(I)E10-1	U1	0.75	6.9	7	DN 80	1004	1430	380	641	150	1455	210	A
	CR(I)E10-2	U2	1.5	8.2	-	DN 80	1004	1430	380	717	150	1455	213	A
	CR(I)E10-3	U2	2.2	11.6	-	DN 80	1004	1430	380	747	150	1455	216	A
	CR(I)E10-5	U2	3	18.6	-	DN 80	1004	1430	380	873	150	1455	315	A
	CR(I)E10-6	U2	4	24	-	DN 80	1004	1630	600	940	150	1455	366	A
	CR(I)E10-9	U2	5.5	33	-	DN 80	1004	1430	380	1081	150	1455	411	A
4	CR(I)E10-1	U1	0.75	7.9	8	DN 80	1004	1720	380	641	150	1455	245	A
	CR(I)E10-2	U2	1.5	10.9	-	DN 80	1004	1720	380	717	150	1455	249	A
	CR(I)E10-3	U2	2.2	15.5	-	DN 80	1004	1720	380	747	150	1455	253	A
	CR(I)E10-5	U2	3	24.8	-	DN 80	1004	1920	600	873	150	1455	397	A
	CR(I)E10-6	U2	4	32	-	DN 80	1004	1720	380	940	150	1455	437	A
	CR(I)E10-9	U2	5.5	44	-	DN 80	1004	1720	380	1081	150	1455	513	A
5	CR(I)E10-1	U1	0.75	8.9	9	DN 100	1024	1702	430	641	150	1455	301	D
	CR(I)E10-2	U2	1.5	13.6	-	DN 100	1024	1702	430	717	150	1455	304	D
	CR(I)E10-3	U2	2.2	19.4	-	DN 100	1024	1702	430	747	150	1455	309	D
	CR(I)E10-5	U2	3	31	-	DN 100	1024	1702	430	873	150	1455	474	D
	CR(I)E10-6	U2	4	40	-	DN 100	1024	1702	630	940	150	1455	551	D
	CR(I)E10-9	U2	5.5	55	-	DN 100	1024	1702	430	1081	150	1455	635	D
6	CR(I)E10-1	U1	0.75	9.7	9.8	DN 100	1024	1940	430	641	150	1455	337	D
	CR(I)E10-2	U2	1.5	16.3	-	DN 100	1024	1940	630	717	150	1455	353	D
	CR(I)E10-3	U2	2.2	23.3	-	DN 100	1024	1940	630	747	150	1455	359	D
	CR(I)E10-5	U2	3	37.2	-	DN 100	1024	1940	630	873	150	1455	557	D
	CR(I)E10-6	U2	4	48	-	DN 100	1024	1940	630	940	150	1455	635	D
	CR(I)E10-9	U2	5.5	66	-	DN 100	1024	1940	630	1081	150	1455	750	D

Supply voltage U1: 3 x 380-415 V ± 10 %, N, PE.
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Maximum current in neutral conductor, Max. I_0 [A], applies to booster systems with single-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CR(I)E 15 / CR(I)E 20

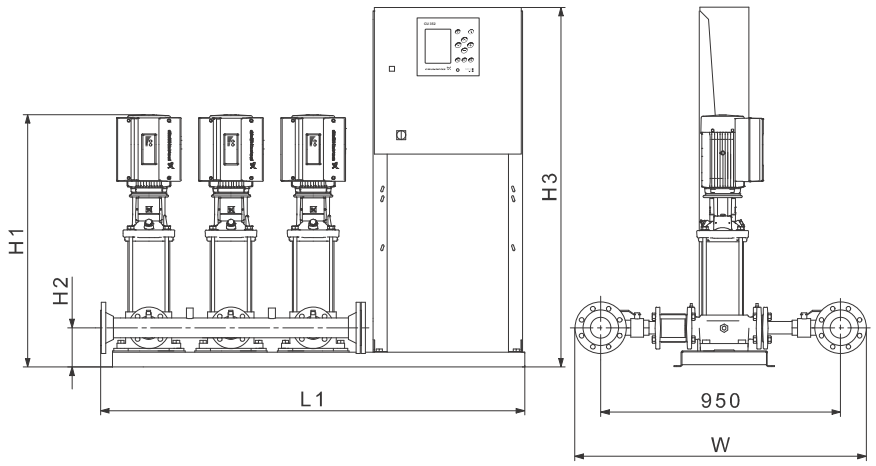


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Fig. 42 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps (design A). The booster system is shown as an example. The pumps supplied may differ from the sketch.

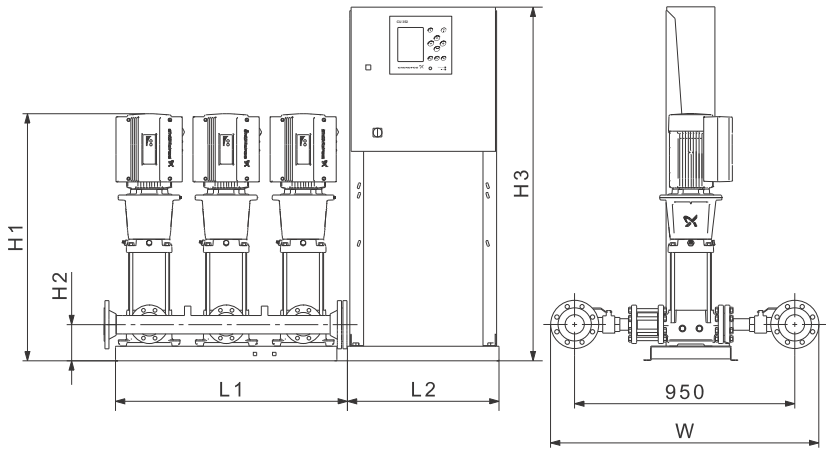

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Fig. 43 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-E with CR(I)E 15

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)E15-1	U2	1.5	5.4	DN 80	1150	1110	380	757	160	1455	150	A
	CR(I)E15-2	U2	3	12.4	DN 80	1150	1110	380	923	160	1455	214	A
	CR(I)E15-3	U2	4	16	DN 80	1150	1110	380	905	160	1455	238	A
	CR(I)E15-4	U2	5.5	22	DN 80	1150	1110	380	1001	160	1455	276	A
	CR(I)E15-5	U2	7.5	30	DN 80	1150	1110	380	1034	160	1455	286	A
	CR(I)E15-8	U2	11	42.8	DN 80	1150	920	430	1393	200	1495	494	D
3	CR(I)E15-1	U2	1.5	8.2	DN 100	1170	1430	380	757	160	1455	231	A
	CR(I)E15-2	U2	3	18.6	DN 100	1170	1430	380	923	160	1455	327	A
	CR(I)E15-3	U2	4	24	DN 100	1170	1630	600	905	160	1455	375	A
	CR(I)E15-4	U2	5.5	33	DN 100	1170	1430	380	1001	160	1455	420	A
	CR(I)E15-5	U2	7.5	45	DN 100	1170	1430	380	1034	160	1455	436	A
	CR(I)E15-8	U2	11	64.2	DN 100	1170	1522	630	1393	200	1495	744	D
4	CR(I)E15-1	U2	1.5	16.3	DN 150	1235	1940	630	757	160	1455	437	D
	CR(I)E15-2	U2	3	37.2	DN 150	1235	1940	630	923	160	1455	629	D
	CR(I)E15-3	U2	4	48	DN 150	1235	1940	630	905	160	1455	701	D
	CR(I)E15-4	U2	5.5	66	DN 150	1235	1940	630	1001	160	1455	816	D
	CR(I)E15-5	U2	7.5	90	DN 150	1235	1940	630	1034	160	1455	847	D
	CR(I)E15-8	U2	11	85.6	DN 100	1170	1950	630	1393	200	1495	969	D
5	CR(I)E15-1	U2	1.5	13.6	DN 150	1235	1704	430	757	160	1455	366	D
	CR(I)E15-2	U2	3	31	DN 150	1235	1704	430	923	160	1455	526	D
	CR(I)E15-3	U2	4	40	DN 150	1235	1704	630	905	160	1455	598	D
	CR(I)E15-4	U2	5.5	55	DN 150	1235	1704	430	1001	160	1455	682	D
	CR(I)E15-5	U2	7.5	75	DN 150	1235	1704	630	1034	160	1455	719	D
	CR(I)E15-8	U2	11	107	DN 150	1235	2424	630	1353	160	1455	1223	D
6	CR(I)E15-1	U2	1.5	16.3	DN 150	1235	1940	630	757	160	1455	437	D
	CR(I)E15-2	U2	3	37.2	DN 150	1235	1940	630	923	160	1455	629	D
	CR(I)E15-3	U2	4	48	DN 150	1235	1940	630	905	160	1455	701	D
	CR(I)E15-4	U2	5.5	66	DN 150	1235	1940	630	1001	160	1455	816	D
	CR(I)E15-5	U2	7.5	90	DN 150	1235	1940	630	1034	160	1455	847	D
	CR(I)E15-8	U2	11	128.4	DN 150	1235	2924	790	1353	160	1455	1477	D

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CR(I)E 20

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)E20-1	U2	2.2	7.8	DN 80	1150	1110	380	757	160	1455	150	A
	CR(I)E20-2	U2	4	16	DN 80	1150	1110	380	860	160	1455	236	A
	CR(I)E20-3	U2	5.5	22	DN 80	1150	1110	380	956	160	1455	272	A
	CR(I)E20-4	U2	7.5	30	DN 80	1150	1110	380	989	160	1455	284	A
	CR(I)E20-6	U2	11	42.8	DN 80	1150	920	430	1303	200	1495	488	D
3	CR(I)E20-1	U2	2.2	11.6	DN 100	1170	1430	380	757	160	1455	231	A
	CR(I)E20-2	U2	4	24	DN 100	1170	1630	600	860	160	1455	372	A
	CR(I)E20-3	U2	5.5	33	DN 100	1170	1430	380	956	160	1455	414	A
	CR(I)E20-4	U2	7.5	45	DN 100	1170	1430	380	989	160	1455	433	A
	CR(I)E20-6	U2	11	64.2	DN 100	1170	1522	630	1303	200	1495	735	D
4	CR(I)E20-1	U2	2.2	15.5	DN 100	1170	1750	380	757	160	1455	282	A
	CR(I)E20-2	U2	4	32	DN 100	1170	1750	380	860	160	1455	454	A
	CR(I)E20-3	U2	5.5	44	DN 100	1170	1750	380	956	160	1455	526	A
	CR(I)E20-4	U2	7.5	60	DN 100	1170	1950	600	989	160	1455	562	A
	CR(I)E20-6	U2	11	85.6	DN 100	1170	1950	630	1303	200	1495	957	D
5	CR(I)E20-1	U2	2.2	19.4	DN 150	1235	1704	430	757	160	1455	366	D
	CR(I)E20-2	U2	4	40	DN 150	1235	1704	630	860	160	1455	593	D
	CR(I)E20-3	U2	5.5	55	DN 150	1235	1704	430	956	160	1455	672	D
	CR(I)E20-4	U2	7.5	75	DN 150	1235	1704	630	989	160	1455	714	D
	CR(I)E20-6	U2	11	107	DN 150	1235	2424	630	1263	160	1455	1208	D
6	CR(I)E20-1	U2	2.2	23.3	DN 150	1235	1940	630	757	160	1455	437	D
	CR(I)E20-2	U2	4	48	DN 150	1235	1940	630	860	160	1455	695	D
	CR(I)E20-3	U2	5.5	66	DN 150	1235	1940	630	956	160	1455	804	D
	CR(I)E20-4	U2	7.5	90	DN 150	1235	1940	630	989	160	1455	841	D
	CR(I)E20-6	U2	11	128.4	DN 150	1235	2924	790	1263	160	1455	1459	D

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CRE 32

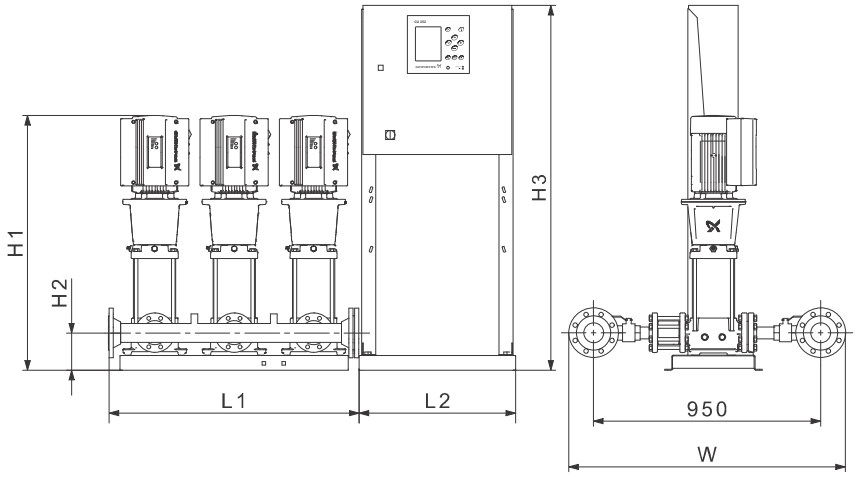

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Fig. 44 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-E with CRE 32

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CRE32-1-1	U2	2.2	7.8	DN 100	1170	1022	430	849	175	1455	207	D
	CRE32-1	U2	3	12.4	DN 100	1170	1022	430	910	175	1455	264	D
	CRE32-2	U2	7.5	30	DN 100	1170	1022	430	1024	175	1455	330	D
	CRE32-4-2	U2	11	42.8	DN 100	1170	1022	430	1406	215	1495	498	D
	CRE32-5-2	U2	15	56	DN 100	1170	1022	630	1476	215	1495	550	D
3	CRE32-1-1	U2	2.2	11.6	DN 150	1235	1524	430	849	175	1455	304	D
	CRE32-1	U2	3	18.6	DN 150	1235	1524	430	910	175	1455	390	D
	CRE32-2	U2	7.5	45	DN 150	1235	1524	430	1024	175	1455	490	D
	CRE32-4-2	U2	11	64.2	DN 150	1235	1524	630	1406	215	1495	754	D
	CRE32-5-2	U2	15	84	DN 150	1235	1524	630	1476	215	1495	815	D
4	CRE32-1-1	U2	2.2	19.4	DN 150	1235	2524	430	849	175	1455	484	D
	CRE32-1	U2	3	31	DN 150	1235	2524	430	910	175	1455	627	D
	CRE32-2	U2	7.5	75	DN 150	1235	2524	630	1024	175	1455	805	D
	CRE32-4-2	U2	11	107	DN 150	1235	2524	630	1406	215	1495	1227	D
	CRE32-5-2	U2	15	112	DN 150	1235	2024	790	1476	215	1495	1088	D
5	CRE32-1-1	U2	2.2	19.4	DN 150	1235	2524	430	849	175	1455	484	D
	CRE32-1	U2	3	31	DN 150	1235	2524	430	910	175	1455	627	D
	CRE32-2	U2	7.5	75	DN 150	1235	2524	630	1024	175	1455	805	D
	CRE32-4-2	U2	11	107	DN 150	1235	2524	630	1406	215	1495	1227	D
	CRE32-5-2	U2	15	140	DN 150	1235	2524	790	1476	215	1495	1353	D
6	CRE32-1-1	U2	2.2	23.3	DN 150	1235	3024	630	849	175	1455	580	D
	CRE32-1	U2	3	37.2	DN 150	1235	3024	630	910	175	1455	752	D
	CRE32-2	U2	7.5	90	DN 150	1235	3024	630	1024	175	1455	952	D
	CRE32-4-2	U2	11	128.4	DN 150	1235	3024	790	1406	215	1495	1481	D
	CRE32-5-2	U2	15	168	DN 150	1235	3024	790	1476	215	1495	1603	D

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CRE 45 / CRE 64

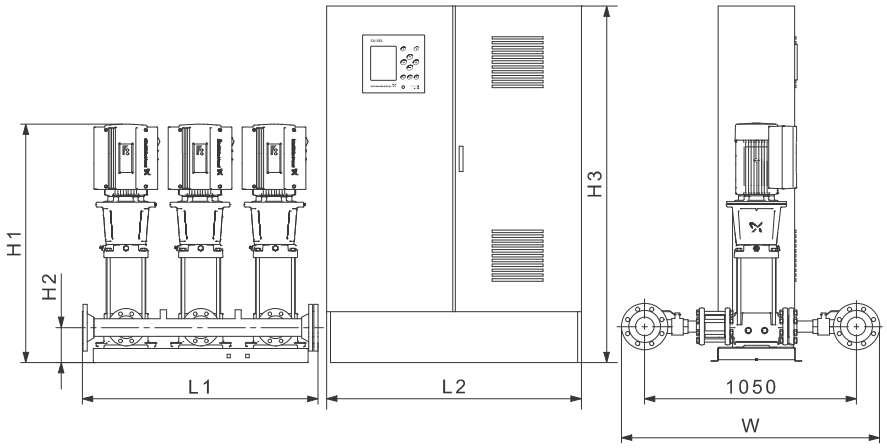


Fig. 45 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

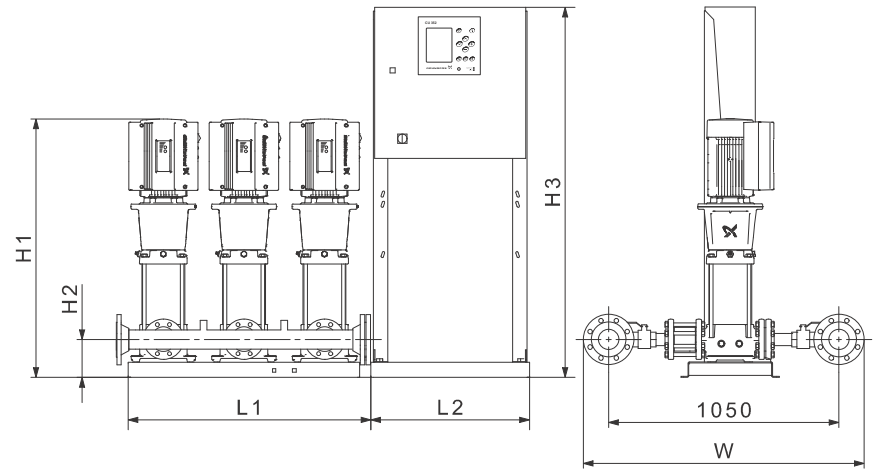


Fig. 46 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-E with CR(E) 45

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CRE45-1-1	U2	5.5	33	DN 200	1390	1526	430	1020	210	1455	525	D
	CRE45-1	U2	7.5	45	DN 200	1390	1526	430	1008	210	1455	538	D
	CRE45-2-2	U2	11	64.2	DN 200	1390	1526	630	1330	250	1495	719	D
	CRE45-2	U2	15	84	DN 200	1390	1526	630	1330	250	1495	854	D
	CRE45-3	U2	18.5	102	DN 200	1390	1526	630	1454	250	1495	971	D
	CRE45-4-2	U2	22	126	DN 200	1390	1526	790	1560	250	1495	1123	D
	CR45-4	U2	30	165	DN 200	1390	1526	2400	1665	250	2000	1640	C
4	CRE45-1-1	U2	5.5	44	DN 200	1390	2026	430	1020	210	1455	680	D
	CRE45-1	U2	7.5	60	DN 200	1390	2026	630	1008	210	1455	708	D
	CRE45-2-2	U2	11	85.6	DN 200	1390	2026	630	1330	250	1495	934	D
	CRE45-2	U2	15	112	DN 200	1390	2026	790	1330	250	1495	1139	D
	CRE45-3	U2	18.5	136	DN 200	1390	2026	790	1454	250	1495	1294	D
	CRE45-4-2	U2	22	168	DN 200	1390	2026	790	1560	250	1495	1465	D
	CR45-4	U2	30	220	DN 200	1390	2026	2400	1665	250	2000	2005	C
5	CRE45-1-1	U2	5.5	55	DN 200	1390	2526	430	1020	210	1455	852	D
	CRE45-1	U2	7.5	75	DN 200	1390	2526	630	1008	210	1455	884	D
	CRE45-2-2	U2	11	107	DN 200	1390	2526	630	1330	250	1495	1167	D
	CRE45-2	U2	15	140	DN 200	1390	2526	790	1330	250	1495	1416	D
	CRE45-3	U2	18.5	170	DN 200	1390	2526	790	1454	250	1495	1612	D
	CRE45-4-2	U2	22	210	DN 200	1390	2526	830	1560	250	1495	1839	D
	CR45-4	U2	30	275	DN 200	1390	2526	2400	1665	250	2000	2424	C
6	CRE45-1-1	U2	5.5	66	DN 200	1390	3026	630	1020	210	1455	1019	D
	CRE45-1	U2	7.5	90	DN 200	1390	3026	630	1008	210	1455	1044	D
	CRE45-2-2	U2	11	128.4	DN 200	1390	3026	790	1330	250	1495	1407	D
	CRE45-2	U2	15	168	DN 200	1390	3026	790	1330	250	1495	1676	D
	CRE45-3	U2	18.5	204	DN 200	1390	3026	830	1454	250	1495	1926	D
	CRE45-4-2	U2	22	252	DN 200	1390	3026	830	1560	250	1495	2185	D
	CR45-4	U2	30	330	DN 200	1390	3026	2400	1665	250	2000	2811	C

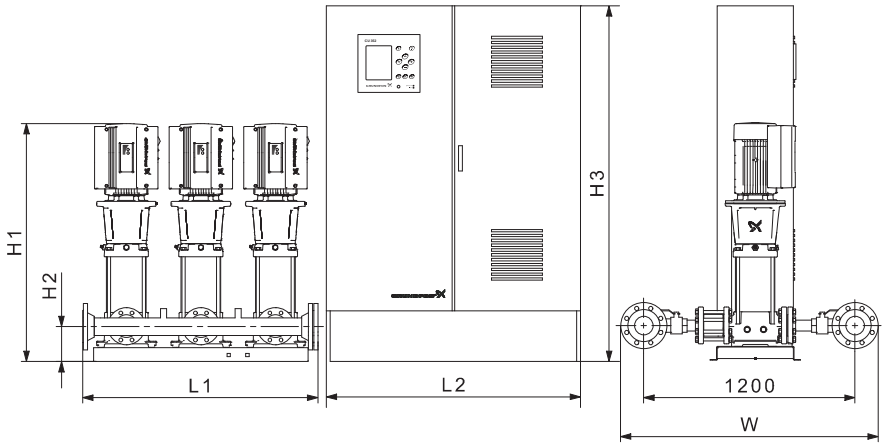
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CR(E) 64

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CRE64-1-1	U2	7.5	45	DN 200	1390	1526	430	1010	210	1455	545	D
	CRE64-1	U2	11	64.2	DN 200	1390	1526	630	1252	250	1495	805	D
	CRE64-2-2	U2	15	84	DN 200	1390	1526	630	1335	250	1495	870	D
	CRE64-2-1	U2	18.5	102	DN 200	1390	1526	630	1379	250	1495	793	D
	CRE64-3-2	U2	22	126	DN 200	1390	1526	790	1487	250	1495	1130	D
	CR64-3-1	U2	30	165	DN 200	1390	1526	2400	1592	250	2000	1646	C
	CR64-3	U2	30	165	DN 200	1390	1526	2400	1592	250	2000	1646	C
	CR64-4-2	U2	37	216	DN 200	1390	1526	2400	1732	250	2000	1752	C
4	CRE64-1-1	U2	7.5	60	DN 200	1390	2026	630	1010	210	1455	718	D
	CRE64-1	U2	11	85.6	DN 200	1390	2026	630	1252	250	1495	1050	D
	CRE64-2-2	U2	15	112	DN 200	1390	2026	790	1335	250	1495	1161	D
	CRE64-2-1	U2	18.5	136	DN 200	1390	2026	790	1379	250	1495	1057	D
	CRE64-3-2	U2	22	168	DN 200	1390	2026	790	1487	250	1495	1474	D
	CR64-3-1	U2	30	220	DN 200	1390	2026	2400	1592	250	2000	2014	C
	CR64-3	U2	30	220	DN 200	1390	2026	2400	1592	250	2000	2014	C
	CR64-4-2	U2	37	288	DN 200	1390	2026	2400	1732	250	2000	2177	C
5	CRE64-1-1	U2	7.5	75	DN 200	1390	2526	630	1010	210	1455	896	D
	CRE64-1	U2	11	107	DN 200	1390	2526	630	1252	250	1495	1311	D
	CRE64-2-2	U2	15	140	DN 200	1390	2526	790	1335	250	1495	1443	D
	CRE64-2-1	U2	18.5	170	DN 200	1390	2526	790	1379	250	1495	1315	D
	CRE64-3-2	U2	22	210	DN 200	1390	2526	830	1487	250	1495	1850	D
	CR64-3-1	U2	30	275	DN 200	1390	2526	2400	1592	250	2000	2435	C
	CR64-3	U2	30	275	DN 200	1390	2526	2400	1592	250	2000	2435	C
	CR64-4-2	U2	37	360	DN 200	1390	2526	2400	1732	250	2000	2628	C
6	CRE64-1-1	U2	7.5	90	DN 200	1390	3026	630	1010	210	1455	1058	D
	CRE64-1	U2	11	128.4	DN 200	1390	3026	790	1252	250	1495	1578	D
	CRE64-2-2	U2	15	168	DN 200	1390	3026	790	1335	250	1495	1708	D
	CRE64-2-1	U2	18.5	204	DN 200	1390	3026	830	1379	250	1495	1570	D
	CRE64-3-2	U2	22	252	DN 200	1390	3026	830	1487	250	1495	2198	D
	CR64-3-1	U2	30	330	DN 200	1390	3026	2400	1592	250	2000	2824	C
	CR64-3	U2	30	330	DN 200	1390	3026	2400	1592	250	2000	2824	C
	CR64-4-2	U2	37	432	DN 200	1390	3026	4800	1732	250	2000	3484	C

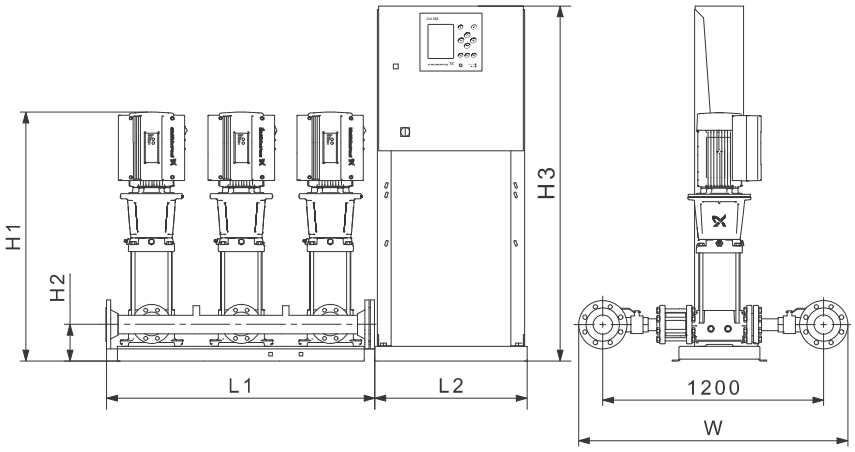
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CR(E) 90



TM03 3046 2310

Fig. 47 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM03 1190 2310

Fig. 48 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-E with CR(E) 90

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CRE90-1-1	U2	11	64.2	DN 200	1540	1526	630	1262	250	1495	822	D
	CRE90-1	U2	15	84	DN 200	1540	1526	630	1262	250	1495	874	D
	CRE90-2-2	U2	18.5	102	DN 200	1540	1526	630	1398	250	1495	994	D
	CRE90-2-1	U2	22	126	DN 200	1540	1526	790	1424	250	1495	886	D
	CR90-2	U2	30	165	DN 200	1540	1526	2400	1529	250	2000	1651	C
	CR90-3-2	U2	37	216	DN 200	1540	1526	2400	1678	250	2000	1754	C
	CR90-3-1	U2	37	216	DN 200	1540	1526	2400	1678	250	2000	1754	C
	CR90-3	U2	37	216	DN 200	1540	1526	2400	1684	250	2000	1992	C
	CR90-4-2	U2	37	216	DN 200	1540	1526	2400	1776	250	2000	2012	C
4	CRE90-1-1	U2	11	85.6	DN 250	1605	2026	630	1262	250	1495	1086	D
	CRE90-1	U2	15	112	DN 250	1605	2026	790	1262	250	1495	1179	D
	CRE90-2-2	U2	18.5	136	DN 250	1605	2026	790	1398	250	1495	1339	D
	CRE90-2-1	U2	22	168	DN 250	1605	2026	790	1424	250	1495	1164	D
	CR90-2	U2	30	220	DN 250	1605	2026	2400	1529	250	2000	2035	C
	CR90-3-2	U2	37	288	DN 250	1605	2026	2400	1678	250	2000	2193	C
	CR90-3-1	U2	37	288	DN 250	1605	2026	2400	1678	250	2000	2193	C
	CR90-3	U2	37	288	DN 250	1605	2026	2400	1684	250	2000	2511	C
	CR90-4-2	U2	37	288	DN 250	1605	2026	2400	1776	250	2000	2537	C
5	CRE90-1-1	U2	11	107	DN 250	1605	2526	630	1262	250	1495	1495	D
	CRE90-1	U2	15	140	DN 250	1605	2526	790	1262	250	1495	1605	D
	CRE90-2-2	U2	18.5	170	DN 250	1605	2526	790	1398	250	1495	1806	D
	CRE90-2-1	U2	22	210	DN 250	1605	2526	830	1424	250	1495	1600	D
	CR90-2	U2	30	275	DN 250	1605	2526	2400	1529	250	2000	2599	C
	CR90-3-2	U2	37	360	DN 250	1605	2526	2400	1678	250	2000	2787	C
	CR90-3-1	U2	37	360	DN 250	1605	2526	2400	1678	250	2000	2787	C
	CR90-3	U2	37	360	DN 250	1605	2526	2400	1684	250	2000	3184	C
	CR90-4-2	U2	37	360	DN 250	1605	2526	2400	1776	250	2000	3217	C
6	CRE90-1-1	U2	11	128.4	DN 250	1605	3026	790	1262	250	1495	1772	D
	CRE90-1	U2	15	168	DN 250	1605	3026	790	1262	250	1495	1875	D
	CRE90-2-2	U2	18.5	204	DN 250	1605	3026	830	1398	250	1495	2130	D
	CRE90-2-1	U2	22	252	DN 250	1605	3026	830	1424	250	1495	1869	D
	CR90-2	U2	30	330	DN 250	1605	3026	2400	1529	250	2000	2993	C
	CR90-3-2	U2	37	432	DN 250	1605	3026	4800	1678	250	2000	3647	C
	CR90-3-1	U2	37	432	DN 250	1605	3026	4800	1678	250	2000	3647	C
	CR90-3	U2	37	432	DN 250	1605	3026	4800	1684	250	2000	4124	C
	CR90-4-2	U2	37	432	DN 250	1605	3026	4800	1776	250	2000	4164	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CRE 120 / CRE 150

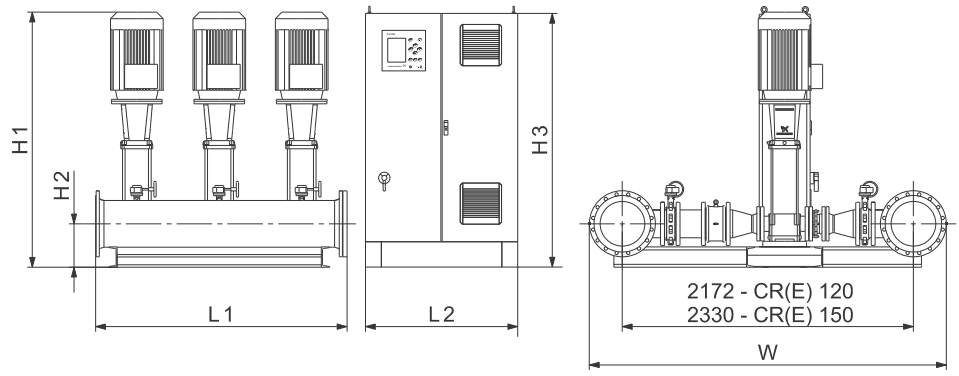


Fig. 49 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

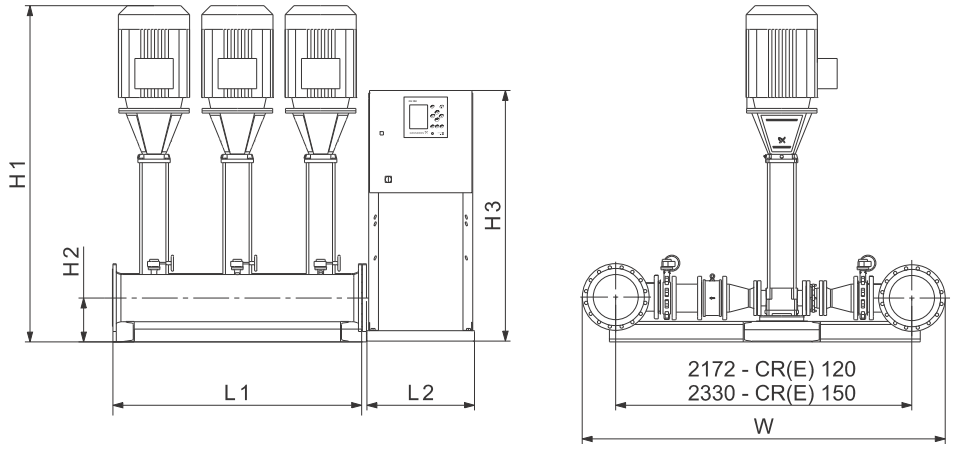


Fig. 50 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-E with CR(E) 120

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CRE120-1	U2	18.5	102	DN 300	2632	1978	630	1519	350	1555	1778	D
	CR120-2-2	U2	30	165	DN 300	2632	1978	2400	1806	350	2000	2465	C
	CR120-2-1	U2	30	165	DN 300	2632	1978	2400	1806	350	2000	2465	C
	CR120-2	U2	37	216	DN 300	2632	1978	2400	1863	350	2000	2552	C
	CR120-3-1	U2	45	264	DN 300	2632	1978	2400	2024	350	2000	2871	C
	CR120-3	U2	45	264	DN 300	2632	1978	2400	2092	350	2000	3277	C
	CR120-4-1	U2	75	408	DN 300	2632	1978	2400	2321	350	2000	3773	C
4	CRE120-1	U2	18.5	136	DN 300	2632	2628	790	1519	350	1555	2431	D
	CR120-2-2	U2	30	220	DN 300	2632	2628	2400	1806	350	2000	3166	C
	CR120-2-1	U2	30	220	DN 300	2632	2628	2400	1806	350	2000	3166	C
	CR120-2	U2	37	288	DN 300	2632	2628	2400	1863	350	2000	3304	C
	CR120-3-1	U2	45	352	DN 300	2632	2628	3600	2024	350	2000	3939	C
	CR120-3	U2	45	352	DN 300	2632	2628	3600	2092	350	2000	4480	C
	CR120-4-1	U2	75	544	DN 300	2632	2628	3600	2321	350	2000	5150	C
5	CRE120-1	U2	18.5	170	DN 300	2632	3278	790	1519	350	1555	2942	D
	CR120-2-2	U2	30	275	DN 300	2632	3278	2400	1806	350	2000	3785	C
	CR120-2-1	U2	30	275	DN 300	2632	3278	2400	1806	350	2000	3785	C
	CR120-2	U2	37	360	DN 300	2632	3278	2400	1863	350	2000	3947	C
	CR120-3-1	U2	45	440	DN 300	2632	3278	3600	2024	350	2000	4679	C
	CR120-3	U2	45	440	DN 300	2632	3278	3600	2092	350	2000	5355	C
	CR120-4-1	U2	75	680	DN 300	2632	3278	3600	2321	350	2000	6191	C
6	CRE120-1	U2	18.5	204	DN 300	2632	3928	830	1519	350	1555	3467	D
	CR120-2-2	U2	30	330	DN 300	2632	3928	2400	1806	350	2000	4389	C
	CR120-2-1	U2	30	330	DN 300	2632	3928	2400	1806	350	2000	4389	C
	CR120-2	U2	37	432	DN 300	2632	3928	4800	1863	350	2000	5013	C
	CR120-3-1	U2	45	528	DN 300	2632	3928	4800	2024	350	2000	5640	C
	CR120-3	U2	45	528	DN 300	2632	3928	4800	2092	350	2000	6451	C
	CR120-4-1	U2	75	816	DN 300	2632	3928	4800	2321	350	2000	7470	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-E with CR(E) 150

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CRE150-1-1	U2	18.5	102	DN350	2850	1980	630	1519	350	1555	1978	D
	CRE150-1	U2	22	126	DN350	2850	1980	790	1545	350	1555	2120	D
	CR150-2-2	U2	30	165	DN350	2850	1980	2400	1806	350	2000	2665	C
	CR150-2-1	U2	37	216	DN350	2850	1980	2400	1863	350	2000	2752	C
	CR150-2	U2	37	216	DN350	2850	1980	2400	1869	350	2000	2991	C
	CR150-3-2	U2	45	264	DN350	2850	1980	2400	2092	350	2000	3478	C
	CR150-3	U2	75	408	DN350	2850	1980	2400	2165	350	2000	3944	C
	CR150-4-2	U2	75	408	DN350	2850	1980	2400	2321	350	2000	3973	C
4	CRE150-1-1	U2	18.5	136	DN350	2850	2630	790	1519	350	1555	2712	D
	CRE150-1	U2	22	168	DN350	2850	2630	790	1545	350	1555	2869	D
	CR150-2-2	U2	30	220	DN350	2850	2630	2400	1806	350	2000	3447	C
	CR150-2-1	U2	37	288	DN350	2850	2630	2400	1863	350	2000	3585	C
	CR150-2	U2	37	288	DN350	2850	2630	2400	1869	350	2000	3904	C
	CR150-3-2	U2	45	352	DN350	2850	2630	3600	2092	350	2000	4762	C
	CR150-3	U2	75	544	DN350	2850	2630	3600	2165	350	2000	5392	C
	CR150-4-2	U2	75	544	DN350	2850	2630	3600	2321	350	2000	5431	C
5	CRE150-1-1	U2	18.5	170	DN350	2850	3280	790	1519	350	1555	3266	D
	CRE150-1	U2	22	210	DN350	2850	3280	830	1545	350	1555	3476	D
	CR150-2-2	U2	30	275	DN350	2850	3280	2400	1806	350	2000	4109	C
	CR150-2-1	U2	37	360	DN350	2850	3280	2400	1863	350	2000	4271	C
	CR150-2	U2	37	360	DN350	2850	3280	2400	1869	350	2000	4669	C
	CR150-3-2	U2	45	440	DN350	2850	3280	3600	2092	350	2000	5681	C
	CR150-3	U2	75	680	DN350	2850	3280	3600	2165	350	2000	6467	C
	CR150-4-2	U2	75	680	DN350	2850	3280	3600	2321	350	2000	6516	C
6	CRE150-1-1	U2	18.5	204	DN350	2850	3930	830	1519	350	1555	3834	D
	CRE150-1	U2	22	252	DN350	2850	3930	830	1545	350	1555	4071	D
	CR150-2-2	U2	30	330	DN350	2850	3930	2400	1806	350	2000	4757	C
	CR150-2-1	U2	37	432	DN350	2850	3930	4800	1863	350	2000	5380	C
	CR150-2	U2	37	432	DN350	2850	3930	4800	1869	350	2000	5857	C
	CR150-3-2	U2	45	528	DN350	2850	3930	4800	2092	350	2000	6820	C
	CR150-3	U2	75	816	DN350	2850	3930	4800	2165	350	2000	7780	C
	CR150-4-2	U2	75	816	DN350	2850	3930	4800	2321	350	2000	7839	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

12. Technical data, Hydro MPC-F/-S (50 Hz)

Hydro MPC-F/-S with CR(I) 3 / CR(I) 5

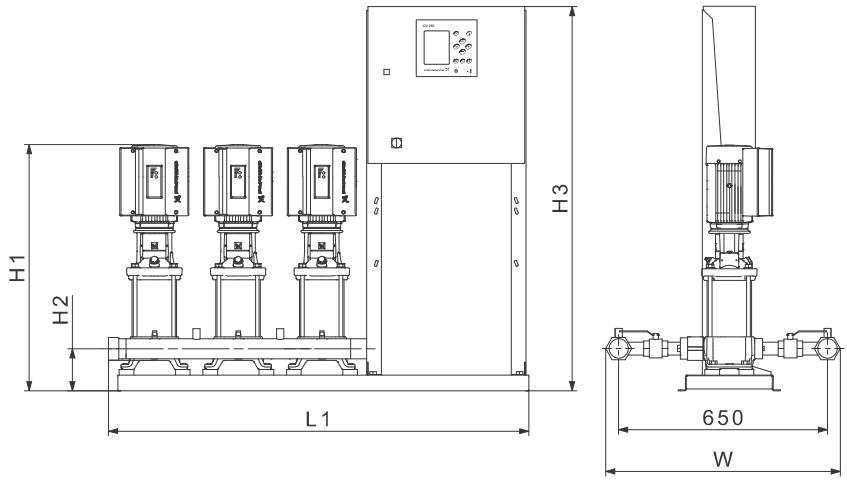


Fig. 51 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps (design A). The booster system is shown as an example. The pumps supplied may differ from the sketch.

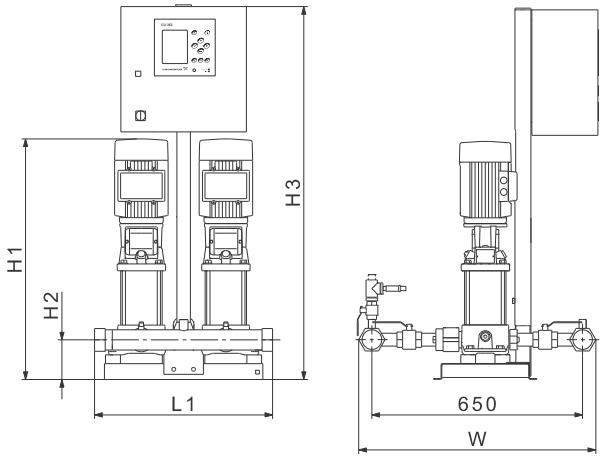


Fig. 52 Dimensional sketch of a Hydro MPC booster system with a control cabinet centred on the base frame (design B). The booster system is shown as an example. The pumps supplied may differ from the sketch.

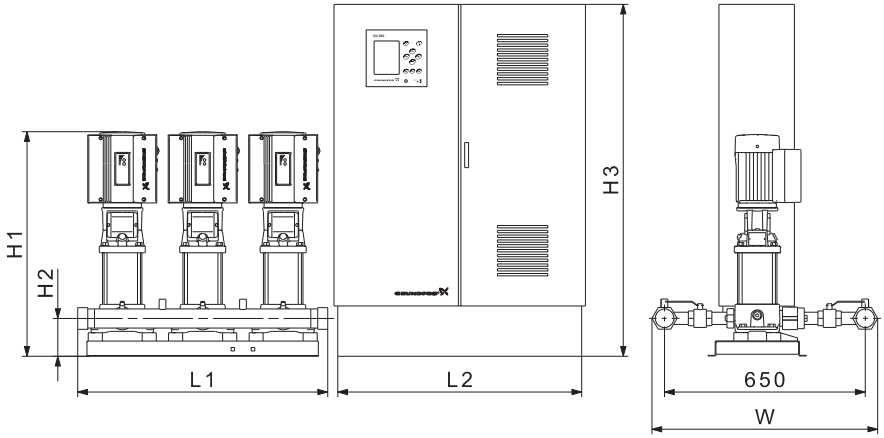


Fig. 53 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR(I) 3

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)3-7	U2	0.55	2.9	R 2	714	610	800	587	120	1500	176	C
	CR(I)3-10	U2	0.75	3.8	R 2	714	610	800	690	120	1500	187	C
	CR(I)3-15	U2	1.1	5.2	R 2	714	610	800	777	120	1500	192	C
	CR(I)3-19	U2	1.5	6.8	R 2	714	610	800	915	120	1500	206	C
	CR(I)3-23	U2	2.2	9.5	R 2	714	610	800	987	120	1500	213	C
3	CR(I)3-7	U2	0.55	4.3	R 2	714	930	800	587	120	1500	221	C
	CR(I)3-10	U2	0.75	5.7	R 2	714	930	800	690	120	1500	236	C
	CR(I)3-15	U2	1.1	7.8	R 2	714	930	800	777	120	1500	240	C
	CR(I)3-19	U2	1.5	10.2	R 2	714	930	800	915	120	1500	262	C
	CR(I)3-23	U2	2.2	14.3	R 2	714	930	800	987	120	1500	273	C
4	CR(I)3-7	U2	0.55	5.8	R 2 1/2	730	1250	800	587	120	1500	264	C
	CR(I)3-10	U2	0.75	7.6	R 2 1/2	730	1250	800	690	120	1500	284	C
	CR(I)3-15	U2	1.1	10.4	R 2 1/2	730	1250	800	777	120	1500	290	C
	CR(I)3-19	U2	1.5	13.6	R 2 1/2	730	1250	800	915	120	1500	319	C
	CR(I)3-23	U2	2.2	19	R 2 1/2	730	1250	800	987	120	1500	334	C

Hydro MPC-S with CR(I) 3

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)3-5	U2	0.37	2	R 2	714	610	551	120	1240	102	B
	CR(I)3-7	U2	0.55	2.9	R 2	714	610	587	120	1240	104	B
	CR(I)3-10	U2	0.75	3.8	R 2	714	610	690	120	1240	115	B
	CR(I)3-15	U2	1.1	5.2	R 2	714	610	777	120	1240	118	B
	CR(I)3-19	U2	1.5	6.8	R 2	714	610	915	120	1240	132	B
	CR(I)3-23	U2	2.2	9.5	R 2	714	1250	987	120	1455	166	A
3	CR(I)3-5	U2	0.37	3	R 2	714	1570	551	120	1455	163	A
	CR(I)3-7	U2	0.55	4.3	R 2	714	1570	587	120	1455	167	A
	CR(I)3-10	U2	0.75	5.7	R 2	714	1570	690	120	1455	182	A
	CR(I)3-15	U2	1.1	7.8	R 2	714	1570	777	120	1455	186	A
	CR(I)3-19	U2	1.5	10.2	R 2	714	1570	915	120	1455	208	A
	CR(I)3-23	U2	2.2	14.3	R 2	714	1570	987	120	1455	219	A
4	CR(I)3-5	U2	0.37	4	R 2 1/2	730	1890	551	120	1455	205	A
	CR(I)3-7	U2	0.55	5.8	R 2 1/2	730	1890	587	120	1455	210	A
	CR(I)3-10	U2	0.75	7.6	R 2 1/2	730	1890	690	120	1455	230	A
	CR(I)3-15	U2	1.1	10.4	R 2 1/2	730	1890	777	120	1455	236	A
	CR(I)3-19	U2	1.5	13.6	R 2 1/2	730	1890	915	120	1455	265	A
	CR(I)3-23	U2	2.2	19	R 2 1/2	730	1890	987	120	1455	279	A

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Maximum current in neutral conductor, Max. I_0 [A], applies to booster systems with single-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F with CR(I) 5

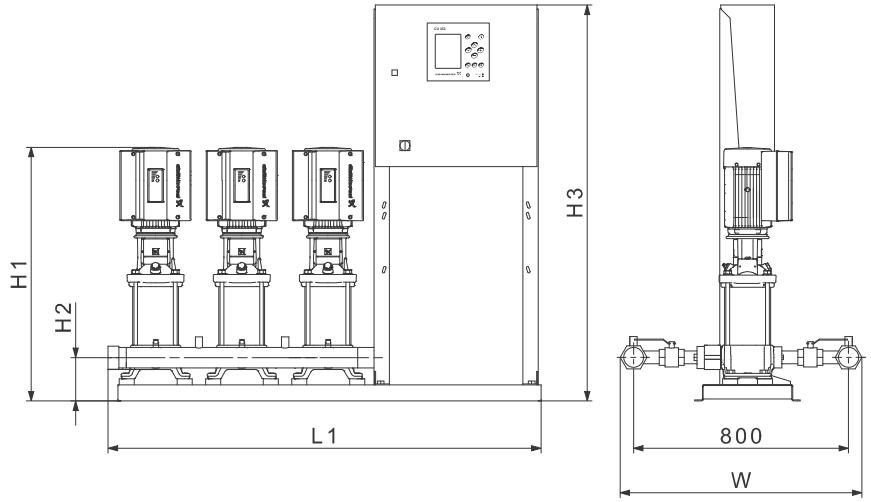
No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)5-4	U2	0.55	2.9	R 2	714	610	800	572	120	1500	179	C
	CR(I)5-5	U2	0.75	3.8	R 2	714	610	800	642	120	1500	181	C
	CR(I)5-8	U2	1.1	5.2	R 2	714	610	800	726	120	1500	194	C
	CR(I)5-10	U2	1.5	6.8	R 2	714	610	800	846	120	1500	209	C
	CR(I)5-16	U2	2.2	9.5	R 2	714	610	800	1005	120	1500	214	C
	CR(I)5-20	U2	3	12.8	R 2	714	610	800	1175	120	1500	231	C
3	CR(I)5-4	U2	0.55	4.3	R 2	714	930	800	572	120	1500	224	C
	CR(I)5-5	U2	0.75	5.7	R 2	714	930	800	642	120	1500	228	C
	CR(I)5-8	U2	1.1	7.8	R 2	714	930	800	726	120	1500	244	C
	CR(I)5-10	U2	1.5	10.2	R 2	714	930	800	846	120	1500	267	C
	CR(I)5-16	U2	2.2	14.3	R 2	714	930	800	1005	120	1500	274	C
	CR(I)5-20	U2	3	19.2	R 2	714	930	800	1175	120	1500	300	C
4	CR(I)5-4	U2	0.55	5.8	R 2 1/2	730	1250	800	572	120	1500	268	C
	CR(I)5-5	U2	0.75	7.6	R 2 1/2	730	1250	800	642	120	1500	273	C
	CR(I)5-8	U2	1.1	10.4	R 2 1/2	730	1250	800	726	120	1500	295	C
	CR(I)5-10	U2	1.5	13.6	R 2 1/2	730	1250	800	846	120	1500	326	C
	CR(I)5-16	U2	2.2	19	R 2 1/2	730	1250	800	1005	120	1500	336	C
	CR(I)5-20	U2	3	25.6	R 2 1/2	730	1250	800	1175	120	1500	370	C

Hydro MPC-S with CR(I) 5

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)5-4	U2	0.55	2.9	R 2	714	610	572	120	1240	107	B
	CR(I)5-5	U2	0.75	3.8	R 2	714	610	642	120	1240	109	B
	CR(I)5-8	U2	1.1	5.2	R 2	714	610	726	120	1240	120	B
	CR(I)5-10	U2	1.5	6.8	R 2	714	610	846	120	1240	135	B
	CR(I)5-16	U2	2.2	9.5	R 2	714	1250	1005	120	1455	167	A
	CR(I)5-20	U2	3	12.8	R 2	714	610	1175	120	1240	157	B
3	CR(I)5-4	U2	0.55	4.3	R 2	714	1570	572	120	1455	170	A
	CR(I)5-5	U2	0.75	5.7	R 2	714	1570	642	120	1455	174	A
	CR(I)5-8	U2	1.1	7.8	R 2	714	1570	726	120	1455	190	A
	CR(I)5-10	U2	1.5	10.2	R 2	714	1570	846	120	1455	213	A
	CR(I)5-16	U2	2.2	14.3	R 2	714	1570	1005	120	1455	220	A
	CR(I)5-20	U2	3	19.2	R 2	714	1570	1175	120	1455	246	A
4	CR(I)5-4	U2	0.55	5.8	R 2 1/2	730	1890	572	120	1455	214	A
	CR(I)5-5	U2	0.75	7.6	R 2 1/2	730	1890	642	120	1455	219	A
	CR(I)5-8	U2	1.1	10.4	R 2 1/2	730	1890	726	120	1455	241	A
	CR(I)5-10	U2	1.5	13.6	R 2 1/2	730	1890	846	120	1455	272	A
	CR(I)5-16	U2	2.2	19	R 2 1/2	730	1890	1005	120	1455	281	A
	CR(I)5-20	U2	3	25.6	R 2 1/2	730	1890	1175	120	1455	316	A

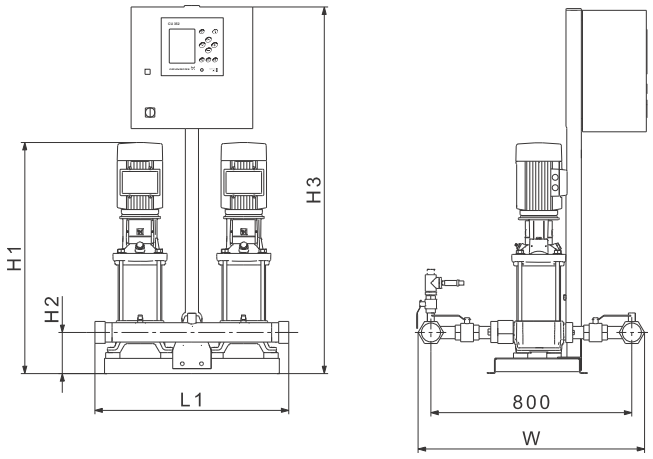
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Maximum current in neutral conductor, Max. I_0 [A], applies to booster systems with single-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR(I) 10



TM03 1182 2310

Fig. 54 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps (design A). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM03 1183 2310

Fig. 55 Dimensional sketch of a Hydro MPC booster system with a control cabinet centred on the base frame (design B). The booster system is shown as an example. The pumps supplied may differ from the sketch.

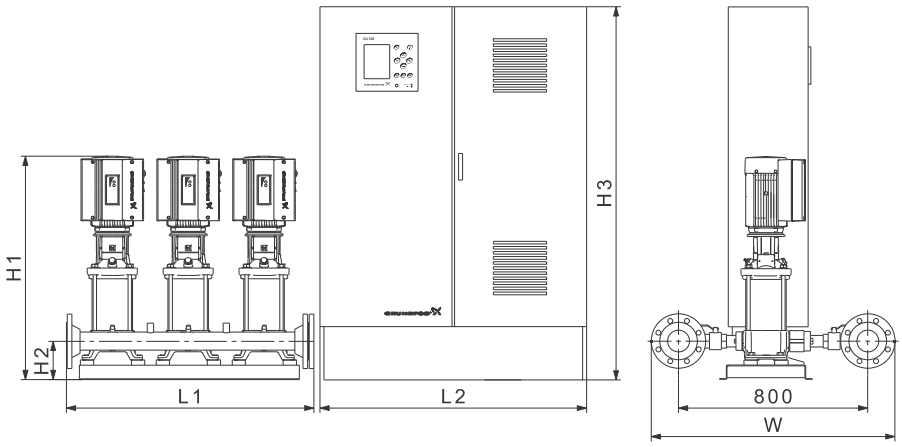


Fig. 56 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

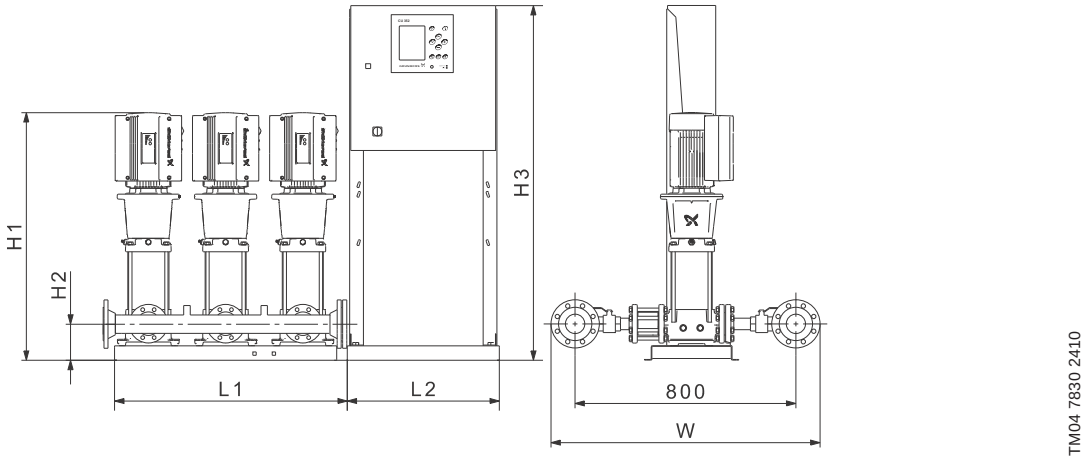


Fig. 57 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR(I) 10

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)10-3	U2	1.1	5.2	R 2 1/2	880	670	800	688	150	1500	222	C
	CR(I)10-4	U2	1.5	6.8	R 2 1/2	880	670	800	784	150	1500	234	C
	CR(I)10-6	U2	2.2	9.5	R 2 1/2	880	670	800	844	150	1500	242	C
	CR(I)10-9	U2	3	12.8	R 2 1/2	880	670	800	993	150	1500	258	C
	CR(I)10-12	U2	4	16	R 2 1/2	880	670	800	1120	150	1500	286	C
3	CR(I)10-3	U2	1.1	7.8	R 2 1/2	880	990	800	688	150	1500	286	C
	CR(I)10-4	U2	1.5	10.2	R 2 1/2	880	990	800	784	150	1500	304	C
	CR(I)10-6	U2	2.2	14.3	R 2 1/2	880	990	800	844	150	1500	316	C
	CR(I)10-9	U2	3	19.2	R 2 1/2	880	990	800	993	150	1500	340	C
	CR(I)10-12	U2	4	24	R 2 1/2	880	990	800	1120	150	1500	383	C
4	CR(I)10-3	U2	1.1	10.4	DN 80	1004	1320	800	688	150	1500	361	C
	CR(I)10-4	U2	1.5	13.6	DN 80	1004	1320	800	784	150	1500	385	C
	CR(I)10-6	U2	2.2	19	DN 80	1004	1320	800	844	150	1500	402	C
	CR(I)10-9	U2	3	25.6	DN 80	1004	1320	800	993	150	1500	434	C
	CR(I)10-12	U2	4	32	DN 80	1004	1320	800	1120	150	1500	490	C
5	CR(I)10-3	U2	1.1	13	DN 80	1004	1640	800	688	150	1500	410	C
	CR(I)10-4	U2	1.5	17	DN 80	1004	1640	800	784	150	1500	441	C
	CR(I)10-6	U2	2.2	23.8	DN 80	1004	1640	800	844	150	1500	461	C
	CR(I)10-9	U2	3	32	DN 80	1004	1640	800	993	150	1500	501	C
	CR(I)10-12	U2	4	40	DN 80	1004	1640	800	1120	150	1500	571	C
6	CR(I)10-3	U2	1.1	15.6	DN 100	1024	1940	800	688	150	1500	488	C
	CR(I)10-4	U2	1.5	20.4	DN 100	1024	1940	800	784	150	1500	524	C
	CR(I)10-6	U2	2.2	28.5	DN 100	1024	1940	800	844	150	1500	548	C
	CR(I)10-9	U2	3	38.4	DN 100	1024	1940	800	993	150	1500	597	C
	CR(I)10-12	U2	4	48	DN 100	1024	1940	800	1120	150	1500	681	C

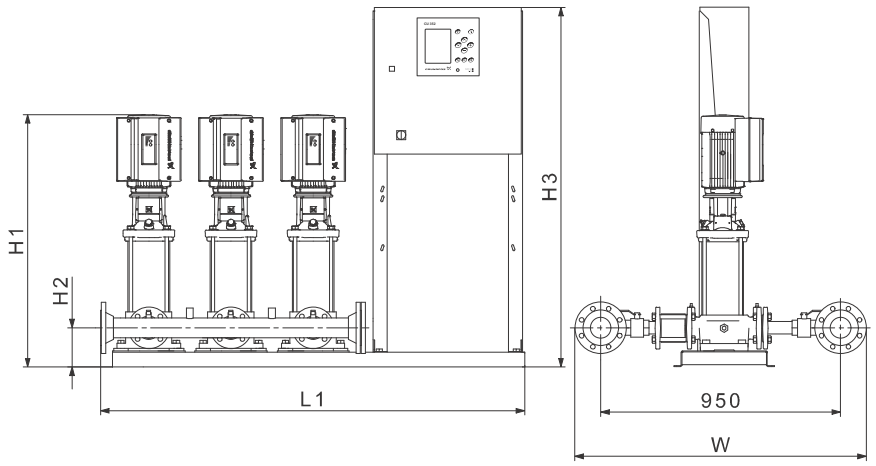
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Maximum current in neutral conductor, Max. I_0 [A], applies to booster systems with single-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR(I) 10

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)10-3	U2	1.1	5.2	R 2 1/2	880	670	380	688	150	1240	148	B
	CR(I)10-4	U2	1.5	6.8	R 2 1/2	880	670	380	784	150	1240	160	B
	CR(I)10-6	U2	2.2	9.5	R 2 1/2	880	1280	600	844	150	1455	195	A
	CR(I)10-9	U2	3	12.8	R 2 1/2	880	670	380	993	150	1240	184	B
	CR(I)10-12	U2	4	16	R 2 1/2	880	1280	600	1120	150	1455	239	A
3	CR(I)10-3	U2	1.1	7.8	R 2 1/2	880	1600	600	688	150	1455	232	A
	CR(I)10-4	U2	1.5	10.2	R 2 1/2	880	1600	600	784	150	1455	250	A
	CR(I)10-6	U2	2.2	14.3	R 2 1/2	880	1600	600	844	150	1455	262	A
	CR(I)10-9	U2	3	19.2	R 2 1/2	880	1600	600	993	150	1455	286	A
	CR(I)10-12	U2	4	24	R 2 1/2	880	1600	600	1120	150	1455	328	A
4	CR(I)10-3	U2	1.1	10.4	DN 80	1004	1920	600	688	150	1455	307	A
	CR(I)10-4	U2	1.5	13.6	DN 80	1004	1920	600	784	150	1455	331	A
	CR(I)10-6	U2	2.2	19	DN 80	1004	1920	600	844	150	1455	347	A
	CR(I)10-9	U2	3	25.6	DN 80	1004	1920	600	993	150	1455	380	A
	CR(I)10-12	U2	4	32	DN 80	1004	1920	600	1120	150	1455	436	A
5	CR(I)10-3	U2	1.1	13	DN 80	1004	1640	630	688	150	1455	347	D
	CR(I)10-4	U2	1.5	17	DN 80	1004	1640	630	784	150	1455	377	D
	CR(I)10-6	U2	2.2	23.8	DN 80	1004	1640	630	844	150	1455	397	D
	CR(I)10-9	U2	3	32	DN 80	1004	1640	630	993	150	1455	437	D
	CR(I)10-12	U2	4	40	DN 80	1004	1640	630	1120	150	1455	510	D
6	CR(I)10-3	U2	1.1	15.6	DN 100	1024	1940	630	688	150	1455	422	D
	CR(I)10-4	U2	1.5	20.4	DN 100	1024	1940	630	784	150	1455	460	D
	CR(I)10-6	U2	2.2	28.5	DN 100	1024	1940	630	844	150	1455	482	D
	CR(I)10-9	U2	3	38.4	DN 100	1024	1940	630	993	150	1455	532	D
	CR(I)10-12	U2	4	48	DN 100	1024	1940	630	1120	150	1455	617	D

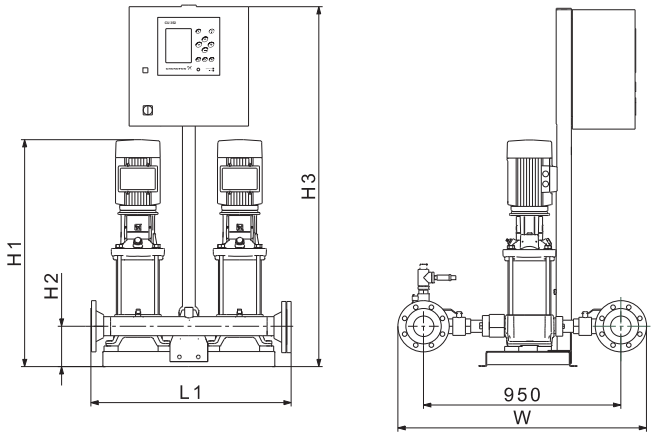
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Maximum current in neutral conductor, Max. I_0 [A], applies to booster systems with single-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR(I) 15 / CR(I) 20



TM03 1184 2310

Fig. 58 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps (design A). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM04 7831 2410

Fig. 59 Dimensional sketch of a Hydro MPC booster system with a control cabinet centred on the base frame (design B). The booster system is shown as an example. The pumps supplied may differ from the sketch.

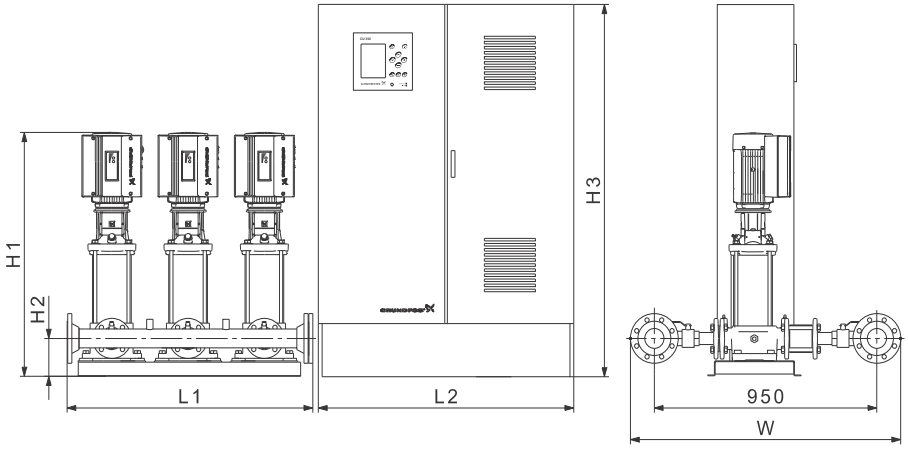


Fig. 60 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

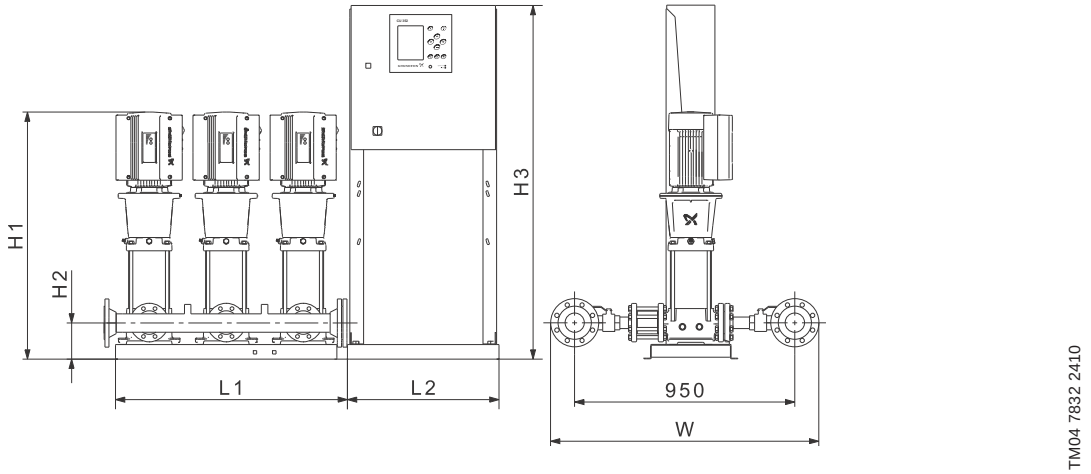


Fig. 61 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR(I) 15

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)15-2	U2	2.2	9.5	DN 80	1150	740	800	764	160	1500	264	C
	CR(I)15-3	U2	3	12.8	DN 80	1150	740	800	1068	160	1500	274	C
	CR(I)15-5	U2	4	16	DN 80	1150	740	800	995	160	1500	302	C
	CR(I)15-7	U2	5.5	22.4	DN 80	1150	740	800	1136	160	1500	352	C
	CR(I)15-9	U2	7.5	30.4	DN 80	1150	740	800	1214	160	1500	391	C
3	CR(I)15-2	U2	2.2	14.3	DN 100	1170	1062	800	764	160	1500	353	C
	CR(I)15-3	U2	3	19.2	DN 100	1170	1062	800	1068	160	1500	368	C
	CR(I)15-5	U2	4	24	DN 100	1170	1062	800	995	160	1500	411	C
	CR(I)15-7	U2	5.5	33.6	DN 100	1170	1062	800	1136	160	1500	487	C
	CR(I)15-9	U2	7.5	45.6	DN 100	1170	1062	800	1214	160	1500	541	C
4	CR(I)15-2	U2	2.2	19	DN 100	1170	1382	800	764	160	1500	423	C
	CR(I)15-3	U2	3	25.6	DN 100	1170	1382	800	1068	160	1500	443	C
	CR(I)15-5	U2	4	32	DN 100	1170	1382	800	995	160	1500	499	C
	CR(I)15-7	U2	5.5	44.8	DN 100	1170	1382	800	1136	160	1500	599	C
	CR(I)15-9	U2	7.5	60.8	DN 100	1170	1382	800	1214	160	1500	671	C
5	CR(I)15-2	U2	2.2	23.8	DN 150	1235	1704	800	764	160	1500	535	C
	CR(I)15-3	U2	3	32	DN 150	1235	1704	800	1068	160	1500	560	C
	CR(I)15-5	U2	4	40	DN 150	1235	1704	800	995	160	1500	630	C
	CR(I)15-7	U2	5.5	56	DN 150	1235	1704	1000	1136	160	1500	780	C
	CR(I)15-9	U2	7.5	76	DN 150	1235	1704	1000	1214	160	1500	871	C
6	CR(I)15-2	U2	2.2	28.5	DN 150	1235	1940	800	764	160	1500	614	C
	CR(I)15-3	U2	3	38.4	DN 150	1235	1940	800	1068	160	1500	645	C
	CR(I)15-5	U2	4	48	DN 150	1235	1940	800	995	160	1500	729	C
	CR(I)15-7	U2	5.5	67.2	DN 150	1235	1940	1000	1136	160	1500	901	C
	CR(I)15-9	U2	7.5	91.2	DN 150	1235	1940	1000	1214	160	1500	1009	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR(I) 15

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)15-2	U2	2.2	9.5	DN 80	1150	1310	600	764	160	1455	217	A
	CR(I)15-3	U2	3	12.8	DN 80	1150	740	380	1068	160	1240	200	B
	CR(I)15-5	U2	4	16	DN 80	1150	1310	600	995	160	1455	255	A
	CR(I)15-7	U2	5.5	22.4	DN 80	1150	740	790	1136	160	1455	310	D
	CR(I)15-9	U2	7.5	30.4	DN 80	1150	740	790	1214	160	1455	346	D
3	CR(I)15-2	U2	2.2	14.3	DN 100	1170	1630	600	764	160	1455	299	A
	CR(I)15-3	U2	3	19.2	DN 100	1170	1630	600	1068	160	1455	314	A
	CR(I)15-5	U2	4	24	DN 100	1170	1630	600	995	160	1455	356	A
	CR(I)15-7	U2	5.5	33.6	DN 100	1170	1062	790	1136	160	1455	443	D
	CR(I)15-9	U2	7.5	45.6	DN 100	1170	1062	790	1214	160	1455	497	D
4	CR(I)15-2	U2	2.2	19	DN 100	1170	1950	600	764	160	1455	368	A
	CR(I)15-3	U2	3	25.6	DN 100	1170	1950	600	1068	160	1455	389	A
	CR(I)15-5	U2	4	32	DN 100	1170	1950	600	995	160	1455	445	A
	CR(I)15-7	U2	5.5	44.8	DN 100	1170	1382	790	1136	160	1455	554	D
	CR(I)15-9	U2	7.5	60.8	DN 100	1170	1382	790	1214	160	1455	626	D
5	CR(I)15-2	U2	2.2	23.8	DN 150	1235	1704	630	764	160	1455	471	D
	CR(I)15-3	U2	3	32	DN 150	1235	1704	630	1068	160	1455	496	D
	CR(I)15-5	U2	4	40	DN 150	1235	1704	630	995	160	1455	569	D
	CR(I)15-7	U2	5.5	56	DN 150	1235	1704	790	1136	160	1455	709	D
	CR(I)15-9	U2	7.5	76	DN 150	1235	1704	790	1214	160	1455	799	D
6	CR(I)15-2	U2	2.2	28.5	DN 150	1235	1940	630	764	160	1455	548	D
	CR(I)15-3	U2	3	38.4	DN 150	1235	1940	630	1068	160	1455	580	D
	CR(I)15-5	U2	4	48	DN 150	1235	1940	630	995	160	1455	665	D
	CR(I)15-7	U2	5.5	67.2	DN 150	1235	1940	830	1136	160	1455	844	D
	CR(I)15-9	U2	7.5	91.2	DN 150	1235	1940	830	1214	160	1455	953	D

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F with CR(I) 20

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)20-2	U2	2.2	9.5	DN 80	1150	740	800	804	160	1500	264	C
	CR(I)20-3	U2	4	16	DN 80	1150	740	800	905	160	1500	296	C
	CR(I)20-5	U2	5.5	22.4	DN 80	1150	740	800	1046	160	1500	348	C
	CR(I)20-7	U2	7.5	30.4	DN 80	1150	740	800	1124	160	1500	385	C
	CR(I)20-10	U2	11	42.8	DN 80	1150	920	800	1496	200	1500	454	C
3	CR(I)20-2	U2	2.2	14.3	DN 100	1170	1062	800	804	160	1500	353	C
	CR(I)20-3	U2	4	24	DN 100	1170	1062	800	905	160	1500	402	C
	CR(I)20-5	U2	5.5	33.6	DN 100	1170	1062	800	1046	160	1500	481	C
	CR(I)20-7	U2	7.5	45.6	DN 100	1170	1062	800	1124	160	1500	532	C
	CR(I)20-10	U2	11	64.2	DN 100	1170	1522	800	1496	200	1500	629	C
4	CR(I)20-2	U2	2.2	19	DN 100	1170	1382	800	804	160	1500	423	C
	CR(I)20-3	U2	4	32	DN 100	1170	1382	800	905	160	1500	487	C
	CR(I)20-5	U2	5.5	44.8	DN 100	1170	1382	800	1046	160	1500	591	C
	CR(I)20-7	U2	7.5	60.8	DN 100	1170	1382	800	1124	160	1500	659	C
	CR(I)20-10	U2	11	85.6	DN 100	1170	1950	800	1496	200	1500	793	C
5	CR(I)20-2	U2	2.2	23.8	DN 150	1235	1704	800	804	160	1500	535	C
	CR(I)20-3	U2	4	40	DN 150	1235	1704	800	905	160	1500	615	C
	CR(I)20-5	U2	5.5	56	DN 150	1235	1704	1000	1046	160	1500	770	C
	CR(I)20-7	U2	7.5	76	DN 150	1235	1704	1000	1124	160	1500	856	C
	CR(I)20-10	U2	11	107	DN 150	1235	2424	1000	1456	160	1500	1010	C
6	CR(I)20-2	U2	2.2	28.5	DN 150	1235	1940	800	804	160	1500	614	C
	CR(I)20-3	U2	4	48	DN 150	1235	1940	800	905	160	1500	711	C
	CR(I)20-5	U2	5.5	67.2	DN 150	1235	1940	1000	1046	160	1500	889	C
	CR(I)20-7	U2	7.5	91.2	DN 150	1235	1940	1000	1124	160	1500	991	C
	CR(I)20-10	U2	11	128.4	DN 150	1235	2924	1000	1456	160	1500	1181	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR(I) 20

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)20-2	U2	2.2	9.5	DN 80	1150	1310	600	804	160	1455	217	A
	CR(I)20-3	U2	4	16	DN 80	1150	1310	600	905	160	1455	249	A
	CR(I)20-5	U2	5.5	22.4	DN 80	1150	740	790	1046	160	1455	306	D
	CR(I)20-7	U2	7.5	30.4	DN 80	1150	740	790	1124	160	1455	340	D
	CR(I)20-10	U2	11	42.8	DN 80	1150	920	790	1496	200	1495	404	D
3	CR(I)20-2	U2	2.2	14.3	DN 100	1170	1630	600	804	160	1455	299	A
	CR(I)20-3	U2	4	24	DN 100	1170	1630	600	905	160	1455	347	A
	CR(I)20-5	U2	5.5	33.6	DN 100	1170	1062	790	1046	160	1455	437	D
	CR(I)20-7	U2	7.5	45.6	DN 100	1170	1062	790	1124	160	1455	488	D
	CR(I)20-10	U2	11	64.2	DN 100	1170	1522	790	1496	200	1495	580	D
4	CR(I)20-2	U2	2.2	19	DN 100	1170	1950	600	804	160	1455	368	A
	CR(I)20-3	U2	4	32	DN 100	1170	1950	600	905	160	1455	433	A
	CR(I)20-5	U2	5.5	44.8	DN 100	1170	1382	790	1046	160	1455	546	D
	CR(I)20-7	U2	7.5	60.8	DN 100	1170	1382	790	1124	160	1455	614	D
	CR(I)20-10	U2	11	85.6	DN 100	1170	1950	790	1496	200	1495	741	D
5	CR(I)20-2	U2	2.2	23.8	DN 150	1235	1704	630	804	160	1455	471	D
	CR(I)20-3	U2	4	40	DN 150	1235	1704	630	905	160	1455	554	D
	CR(I)20-5	U2	5.5	56	DN 150	1235	1704	790	1046	160	1455	699	D
	CR(I)20-7	U2	7.5	76	DN 150	1235	1704	790	1124	160	1455	784	D
	CR(I)20-10	U2	11	107	DN 150	1235	2424	790	1456	160	1455	932	D
6	CR(I)20-2	U2	2.2	28.5	DN 150	1235	1940	630	804	160	1455	548	D
	CR(I)20-3	U2	4	48	DN 150	1235	1940	630	905	160	1455	647	D
	CR(I)20-5	U2	5.5	67.2	DN 150	1235	1940	830	1046	160	1455	832	D
	CR(I)20-7	U2	7.5	91.2	DN 150	1235	1940	830	1124	160	1455	935	D
	CR(I)20-10	U2	11	128.4	DN 150	1235	2924	800	1456	160	1500	1138	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR 32

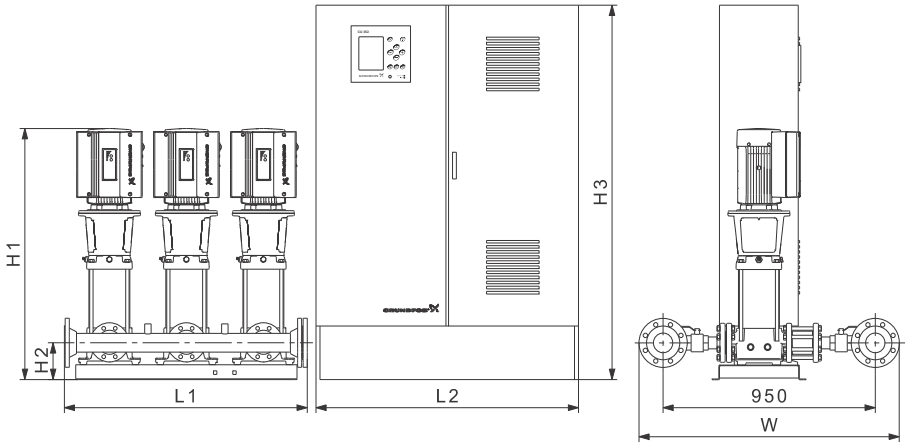


Fig. 62 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

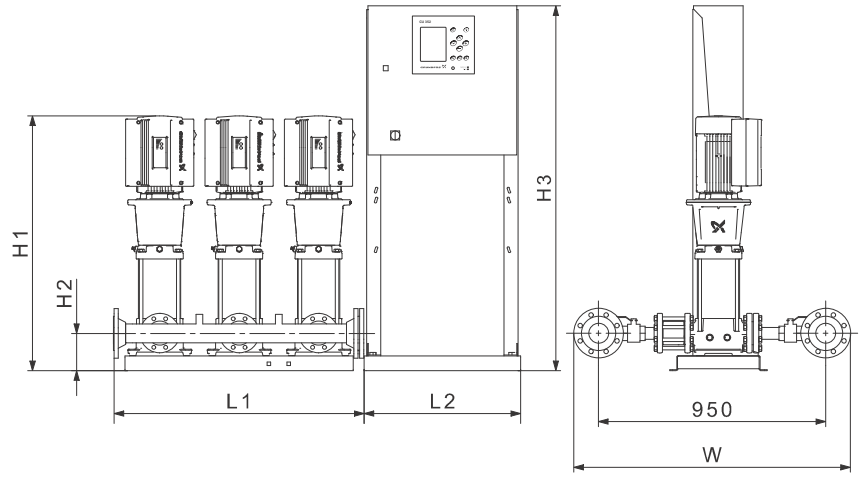


Fig. 63 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR 32

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR32-2	U2	4	16	DN 100	1170	1022	800	1017	175	1500	352	C
	CR32-3	U2	5.5	22.4	DN 100	1170	1022	800	1106	175	1500	391	C
	CR32-4	U2	7.5	30.4	DN 100	1170	1022	800	1164	175	1500	453	C
	CR32-6	U2	11	42.8	DN 100	1170	1022	800	1546	215	1500	498	C
	CR32-8	U2	15	56	DN 100	1170	1022	800	1693	215	1500	548	C
3	CR32-2	U2	4	24	DN 150	1235	1524	800	1017	175	1500	486	C
	CR32-3	U2	5.5	33.6	DN 150	1235	1524	800	1106	175	1500	545	C
	CR32-4	U2	7.5	45.6	DN 150	1235	1524	800	1164	175	1500	634	C
	CR32-6	U2	11	64.2	DN 150	1235	1524	800	1546	215	1500	699	C
	CR32-8	U2	15	84	DN 150	1235	1524	1000	1693	215	1500	802	C
4	CR32-2	U2	4	32	DN 150	1235	2024	800	1017	175	1500	604	C
	CR32-3	U2	5.5	44.8	DN 150	1235	2024	800	1106	175	1500	682	C
	CR32-4	U2	7.5	60.8	DN 150	1235	2024	800	1164	175	1500	800	C
	CR32-6	U2	11	85.6	DN 150	1235	2024	800	1546	215	1500	887	C
	CR32-8	U2	15	112	DN 150	1235	2024	1000	1693	215	1500	1014	C
5	CR32-2	U2	4	40	DN 150	1235	2524	800	1017	175	1500	737	C
	CR32-3	U2	5.5	56	DN 150	1235	2524	1000	1106	175	1500	860	C
	CR32-4	U2	7.5	76	DN 150	1235	2524	1000	1164	175	1500	1008	C
	CR32-6	U2	11	107	DN 150	1235	2524	1000	1546	215	1500	1114	C
	CR32-8	U2	15	140	DN 150	1235	2524	1000	1693	215	1500	1245	C
6	CR32-2	U2	4	48	DN 150	1235	3024	800	1017	175	1500	859	C
	CR32-3	U2	5.5	67.2	DN 150	1235	3024	1000	1106	175	1500	998	C
	CR32-4	U2	7.5	91.2	DN 150	1235	3024	1000	1164	175	1500	1175	C
	CR32-6	U2	11	128.4	DN 150	1235	3024	1000	1546	215	1500	1305	C
	CR32-8	U2	15	168	DN 150	1235	3024	1000	1693	215	1500	1463	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR 32

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR32-2	U2	4	16	DN 100	1170	1022	630	1017	175	1455	290	D
	CR32-3	U2	5.5	22.4	DN 100	1170	1022	790	1106	175	1455	349	D
	CR32-4	U2	7.5	30.4	DN 100	1170	1022	790	1164	175	1455	408	D
	CR32-6	U2	11	42.8	DN 100	1170	1022	790	1546	215	1495	448	D
	CR32-8	U2	15	56	DN 100	1170	1022	790	1693	215	1495	498	D
3	CR32-2	U2	4	24	DN 150	1235	1524	630	1017	175	1455	423	D
	CR32-3	U2	5.5	33.6	DN 150	1235	1524	790	1106	175	1455	501	D
	CR32-4	U2	7.5	45.6	DN 150	1235	1524	790	1164	175	1455	590	D
	CR32-6	U2	11	64.2	DN 150	1235	1524	790	1546	215	1495	650	D
	CR32-8	U2	15	84	DN 150	1235	1524	790	1693	215	1495	725	D
4	CR32-2	U2	4	32	DN 150	1235	2024	630	1017	175	1455	541	D
	CR32-3	U2	5.5	44.8	DN 150	1235	2024	790	1106	175	1455	637	D
	CR32-4	U2	7.5	60.8	DN 150	1235	2024	790	1164	175	1455	755	D
	CR32-6	U2	11	85.6	DN 150	1235	2024	790	1546	215	1495	835	D
	CR32-8	U2	15	112	DN 150	1235	2024	830	1693	215	1495	952	D
5	CR32-2	U2	4	40	DN 150	1235	2524	630	1017	175	1455	676	D
	CR32-3	U2	5.5	56	DN 150	1235	2524	790	1106	175	1455	789	D
	CR32-4	U2	7.5	76	DN 150	1235	2524	790	1164	175	1455	936	D
	CR32-6	U2	11	107	DN 150	1235	2524	790	1546	215	1495	1036	D
	CR32-8	U2	15	140	DN 150	1235	2524	800	1693	215	1500	1199	C
6	CR32-2	U2	4	48	DN 150	1235	3024	630	1017	175	1455	795	D
	CR32-3	U2	5.5	67.2	DN 150	1235	3024	830	1106	175	1455	941	D
	CR32-4	U2	7.5	91.2	DN 150	1235	3024	830	1164	175	1455	1119	D
	CR32-6	U2	11	128.4	DN 150	1235	3024	800	1546	215	1500	1262	C
	CR32-8	U2	15	168	DN 150	1235	3024	800	1693	215	1500	1413	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR 45 / CR 64

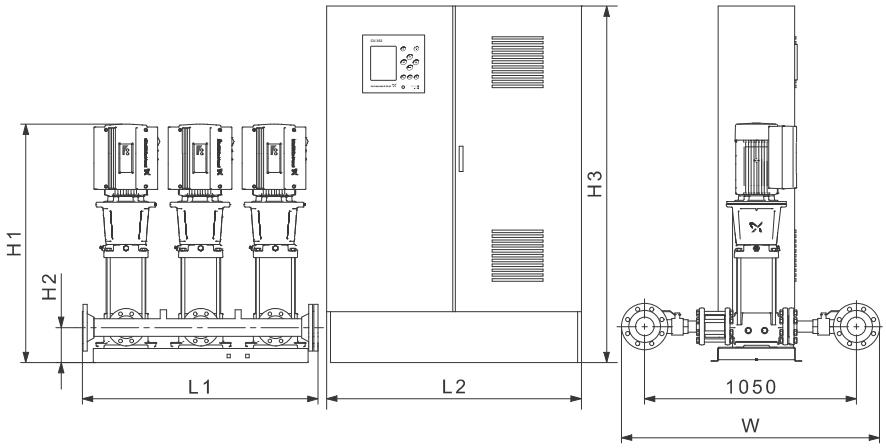


Fig. 64 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

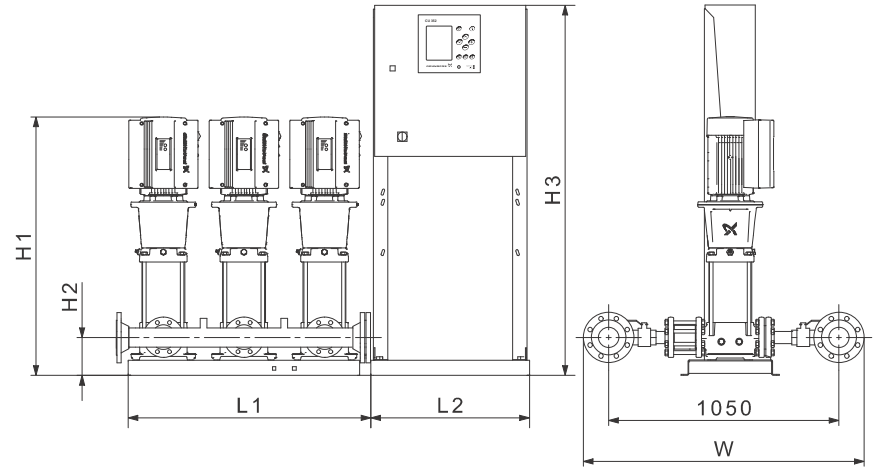


Fig. 65 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR 45

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR45-2-2	U2	5.5	33.6	DN 200	1390	1526	800	1100	210	1500	593	C
	CR45-2	U2	7.5	45.6	DN 200	1390	1526	800	1088	210	1500	648	C
	CR45-3	U2	11	64.2	DN 200	1390	1526	800	1375	250	1500	754	C
	CR45-4	U2	15	84	DN 200	1390	1526	1000	1490	250	1500	896	C
	CR45-5	U2	18.5	103.5	DN 200	1390	1526	1000	1614	250	1500	902	C
	CR45-6	U2	22	124.5	DN 200	1390	1526	1200	1789	250	2000	1248	C
4	CR45-2-2	U2	5.5	44.8	DN 200	1390	2026	800	1100	210	1500	745	C
	CR45-2	U2	7.5	60.8	DN 200	1390	2026	800	1088	210	1500	817	C
	CR45-3	U2	11	85.6	DN 200	1390	2026	800	1375	250	1500	958	C
	CR45-4	U2	15	112	DN 200	1390	2026	1000	1490	250	1500	1137	C
	CR45-5	U2	18.5	138	DN 200	1390	2026	1200	1614	250	2000	1232	C
	CR45-6	U2	22	166	DN 200	1390	2026	1200	1789	250	2000	1573	C
5	CR45-2-2	U2	5.5	56	DN 200	1390	2526	1000	1100	210	1500	938	C
	CR45-2	U2	7.5	76	DN 200	1390	2526	1000	1088	210	1500	1030	C
	CR45-3	U2	11	107	DN 200	1390	2526	1000	1375	250	1500	1204	C
	CR45-4	U2	15	140	DN 200	1390	2526	1000	1490	250	1500	1400	C
	CR45-5	U2	18.5	172.5	DN 200	1390	2526	1200	1614	250	2000	1491	C
	CR45-6	U2	22	208	DN 200	1390	2526	1200	1789	250	2000	1919	C
6	CR45-2-2	U2	5.5	67.2	DN 200	1390	3026	1000	1100	210	1500	1090	C
	CR45-2	U2	7.5	91.2	DN 200	1390	3026	1000	1088	210	1500	1199	C
	CR45-3	U2	11	128.4	DN 200	1390	3026	1000	1375	250	1500	1411	C
	CR45-4	U2	15	168	DN 200	1390	3026	1000	1490	250	1500	1647	C
	CR45-5	U2	18.5	207	DN 200	1390	3026	1200	1614	250	2000	1738	C
	CR45-6	U2	22	249	DN 200	1390	3026	1200	1789	250	2000	2243	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR 45

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR45-2-2	U2	5.5	33.6	DN 200	1390	1526	790	1100	210	1455	549	D
	CR45-2	U2	7.5	45.6	DN 200	1390	1526	790	1088	210	1455	604	D
	CR45-3	U2	11	64.2	DN 200	1390	1526	790	1375	250	1495	705	D
	CR45-4	U2	15	84	DN 200	1390	1526	790	1490	250	1495	819	D
	CR45-5	U2	18.5	103.5	DN 200	1390	1526	790	1614	250	1495	820	D
	CR45-6	U2	22	124.5	DN 200	1390	1526	830	1789	250	1495	1080	D
4	CR45-2-2	U2	5.5	44.8	DN 200	1390	2026	790	1100	210	1455	700	D
	CR45-2	U2	7.5	60.8	DN 200	1390	2026	790	1088	210	1455	772	D
	CR45-3	U2	11	85.6	DN 200	1390	2026	790	1375	250	1495	906	D
	CR45-4	U2	15	112	DN 200	1390	2026	830	1490	250	1495	1075	D
	CR45-5	U2	18.5	138	DN 200	1390	2026	800	1614	250	1500	1097	C
	CR45-6	U2	22	166	DN 200	1390	2026	800	1789	250	1500	1422	C
5	CR45-2-2	U2	5.5	56	DN 200	1390	2526	790	1100	210	1455	867	D
	CR45-2	U2	7.5	76	DN 200	1390	2526	790	1088	210	1455	958	D
	CR45-3	U2	11	107	DN 200	1390	2526	790	1375	250	1495	1126	D
	CR45-4	U2	15	140	DN 200	1390	2526	800	1490	250	1500	1354	C
	CR45-5	U2	18.5	172.5	DN 200	1390	2526	800	1614	250	1500	1356	C
	CR45-6	U2	22	208	DN 200	1390	2526	1000	1789	250	2000	1831	C
6	CR45-2-2	U2	5.5	67.2	DN 200	1390	3026	830	1100	210	1455	1033	D
	CR45-2	U2	7.5	91.2	DN 200	1390	3026	830	1088	210	1455	1143	D
	CR45-3	U2	11	128.4	DN 200	1390	3026	800	1375	250	1500	1368	C
	CR45-4	U2	15	168	DN 200	1390	3026	800	1490	250	1500	1597	C
	CR45-5	U2	18.5	207	DN 200	1390	3026	1000	1614	250	2000	1668	C
	CR45-6	U2	22	249	DN 200	1390	3026	1000	1789	250	2000	2154	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F with CR 64

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR64-1	U2	5.5	33.6	DN 200	1390	1526	800	1022	210	1500	625	C
	CR64-2-2	U2	7.5	45.6	DN 200	1390	1526	800	1093	210	1500	688	C
	CR64-2	U2	11	64.2	DN 200	1390	1526	800	1335	250	1500	789	C
	CR64-3-1	U2	15	84	DN 200	1390	1526	1000	1417	250	1500	985	C
	CR64-4-2	U2	18.5	103.5	DN 200	1390	1526	1000	1504	250	1500	1022	C
	CR64-4	U2	22	124.5	DN 200	1390	1526	1200	1570	250	2000	1224	C
	CR64-5-1	U2	30	165	DN 200	1390	1526	1200	1762	250	2000	1486	C
4	CR64-1	U2	5.5	44.8	DN 200	1390	2026	800	1022	210	1500	788	C
	CR64-2-2	U2	7.5	60.8	DN 200	1390	2026	800	1093	210	1500	872	C
	CR64-2	U2	11	85.6	DN 200	1390	2026	800	1335	250	1500	1006	C
	CR64-3-1	U2	15	112	DN 200	1390	2026	1000	1417	250	1500	1257	C
	CR64-4-2	U2	18.5	138	DN 200	1390	2026	1200	1504	250	2000	1392	C
	CR64-4	U2	22	166	DN 200	1390	2026	1200	1570	250	2000	1542	C
	CR64-5-1	U2	30	220	DN 200	1390	2026	1200	1762	250	2000	1896	C
5	CR64-1	U2	5.5	56	DN 200	1390	2526	1000	1022	210	1500	992	C
	CR64-2-2	U2	7.5	76	DN 200	1390	2526	1000	1093	210	1500	1098	C
	CR64-2	U2	11	107	DN 200	1390	2526	1000	1335	250	1500	1263	C
	CR64-3-1	U2	15	140	DN 200	1390	2526	1000	1417	250	1500	1549	C
	CR64-4-2	U2	18.5	172.5	DN 200	1390	2526	1200	1504	250	2000	1691	C
	CR64-4	U2	22	208	DN 200	1390	2526	1200	1570	250	2000	1879	C
	CR64-5-1	U2	30	275	DN 200	1390	2526	2400	1762	250	2000	2534	C
6	CR64-1	U2	5.5	67.2	DN 200	1390	3026	1000	1022	210	1500	1154	C
	CR64-2-2	U2	7.5	91.2	DN 200	1390	3026	1000	1093	210	1500	1280	C
	CR64-2	U2	11	128.4	DN 200	1390	3026	1000	1335	250	1500	1481	C
	CR64-3-1	U2	15	168	DN 200	1390	3026	1000	1417	250	1500	1825	C
	CR64-4-2	U2	18.5	207	DN 200	1390	3026	1200	1504	250	2000	1978	C
	CR64-4	U2	22	249	DN 200	1390	3026	1200	1570	250	2000	2195	C
	CR64-5-1	U2	30	330	DN 200	1390	3026	3600	1762	250	2000	3140	C

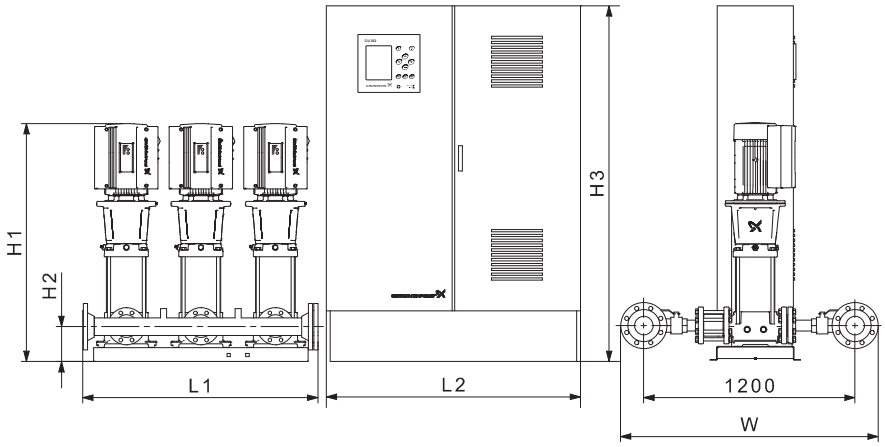
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR 64

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR64-1	U2	5.5	33.6	DN 200	1390	1526	790	1022	210	1455	581	D
	CR64-2-2	U2	7.5	45.6	DN 200	1390	1526	790	1093	210	1455	644	D
	CR64-2	U2	11	64.2	DN 200	1390	1526	790	1335	250	1495	740	D
	CR64-3-1	U2	15	84	DN 200	1390	1526	790	1417	250	1495	908	D
	CR64-4-2	U2	18.5	103.5	DN 200	1390	1526	790	1504	250	1495	940	D
	CR64-4	U2	22	124.5	DN 200	1390	1526	830	1570	250	1495	1056	D
	CR64-5-1	U2	30	165	DN 200	1390	1526	830	1762	250	1495	1317	D
4	CR64-1	U2	5.5	44.8	DN 200	1390	2026	790	1022	210	1455	743	D
	CR64-2-2	U2	7.5	60.8	DN 200	1390	2026	790	1093	210	1455	827	D
	CR64-2	U2	11	85.6	DN 200	1390	2026	790	1335	250	1495	954	D
	CR64-3-1	U2	15	112	DN 200	1390	2026	830	1417	250	1495	1195	D
	CR64-4-2	U2	18.5	138	DN 200	1390	2026	800	1504	250	1500	1257	C
	CR64-4	U2	22	166	DN 200	1390	2026	800	1570	250	1500	1391	C
	CR64-5-1	U2	30	220	DN 200	1390	2026	800	1762	250	2000	1782	C
5	CR64-1	U2	5.5	56	DN 200	1390	2526	790	1022	210	1455	921	D
	CR64-2-2	U2	7.5	76	DN 200	1390	2526	790	1093	210	1455	1026	D
	CR64-2	U2	11	107	DN 200	1390	2526	790	1335	250	1495	1185	D
	CR64-3-1	U2	15	140	DN 200	1390	2526	800	1417	250	1500	1503	C
	CR64-4-2	U2	18.5	172.5	DN 200	1390	2526	800	1504	250	1500	1556	C
	CR64-4	U2	22	208	DN 200	1390	2526	1000	1570	250	2000	1791	C
	CR64-5-1	U2	30	275	DN 200	1390	2526	1200	1762	250	2000	2274	C
6	CR64-1	U2	5.5	67.2	DN 200	1390	3026	830	1022	210	1455	1097	D
	CR64-2-2	U2	7.5	91.2	DN 200	1390	3026	830	1093	210	1455	1224	D
	CR64-2	U2	11	128.4	DN 200	1390	3026	800	1335	250	1500	1438	C
	CR64-3-1	U2	15	168	DN 200	1390	3026	800	1417	250	1500	1775	C
	CR64-4-2	U2	18.5	207	DN 200	1390	3026	1000	1504	250	2000	1908	C
	CR64-4	U2	22	249	DN 200	1390	3026	1000	1570	250	2000	2106	C
	CR64-5-1	U2	30	330	DN 200	1390	3026	1600	1762	250	2000	2713	C

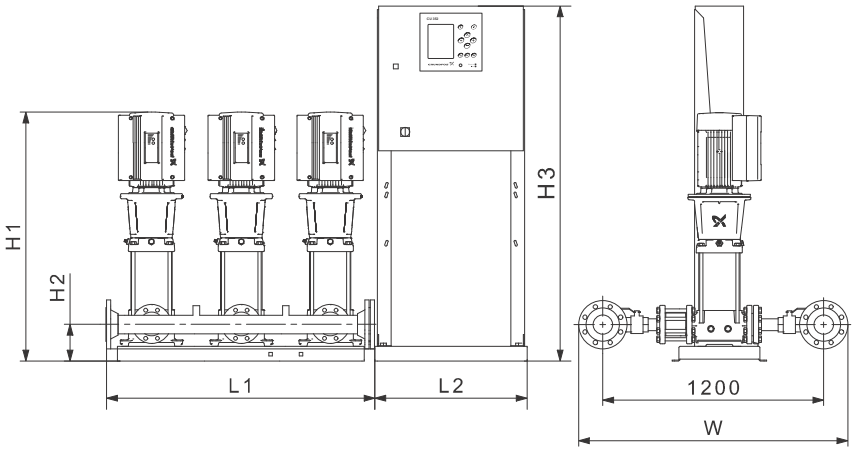
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR 90



TM03 3046 2310

Fig. 66 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM03 1190 2310

Fig. 67 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR 90

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR90-2-2	U2	11	64.2	DN 200	1540	1526	800	1354	250	1500	810	C
	CR90-2	U2	15	84	DN 200	1540	1526	1000	1361	250	1500	840	C
	CR90-3-2	U2	18.5	103.5	DN 200	1540	1526	1000	1490	250	1500	1017	C
	CR90-3	U2	22	124.5	DN 200	1540	1526	1200	1466	250	2000	1177	C
	CR90-4-2	U2	30	165	DN 200	1540	1526	1200	1713	250	2000	1413	C
	CR90-4	U2	30	165	DN 200	1540	1526	1200	1718	250	2000	1495	C
	CR90-5-2	U2	37	216	DN 200	1540	1526	2400	1862	250	2000	1745	C
4	CR90-2-2	U2	11	85.6	DN 250	1605	2026	800	1354	250	1500	1048	C
	CR90-2	U2	15	112	DN 250	1605	2026	1000	1361	250	1500	1077	C
	CR90-3-2	U2	18.5	138	DN 250	1605	2026	1200	1490	250	2000	1400	C
	CR90-3	U2	22	166	DN 250	1605	2026	1200	1466	250	2000	1494	C
	CR90-4-2	U2	30	220	DN 250	1605	2026	1200	1713	250	2000	1812	C
	CR90-4	U2	30	220	DN 250	1605	2026	1200	1718	250	2000	1922	C
	CR90-5-2	U2	37	288	DN 250	1605	2026	2400	1862	250	2000	2189	C
5	CR90-2-2	U2	11	107	DN 250	1605	2526	1000	1354	250	1500	1454	C
	CR90-2	U2	15	140	DN 250	1605	2526	1000	1361	250	1500	1463	C
	CR90-3-2	U2	18.5	172.5	DN 250	1605	2526	1200	1490	250	2000	1839	C
	CR90-3	U2	22	208	DN 250	1605	2526	1200	1466	250	2000	1957	C
	CR90-4-2	U2	30	275	DN 250	1605	2526	2400	1713	250	2000	2568	C
	CR90-4	U2	30	275	DN 250	1605	2526	2400	1718	250	2000	2705	C
	CR90-5-2	U2	37	360	DN 250	1605	2526	3600	1862	250	2000	2977	C
6	CR90-2-2	U2	11	128.4	DN 250	1605	3026	1000	1354	250	1500	1682	C
	CR90-2	U2	15	168	DN 250	1605	3026	1000	1361	250	1500	1693	C
	CR90-3-2	U2	18.5	207	DN 250	1605	3026	1200	1490	250	2000	2127	C
	CR90-3	U2	22	249	DN 250	1605	3026	1200	1466	250	2000	2260	C
	CR90-4-2	U2	30	330	DN 250	1605	3026	3600	1713	250	2000	3152	C
	CR90-4	U2	30	330	DN 250	1605	3026	3600	1718	250	2000	3317	C
	CR90-5-2	U2	37	432	DN 250	1605	3026	3600	1862	250	2000	3397	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR 90

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR90-2-2	U2	11	64.2	DN 200	1540	1526	790	1354	250	1495	761	D
	CR90-2	U2	15	84	DN 200	1540	1526	790	1361	250	1495	763	D
	CR90-3-2	U2	18.5	103.5	DN 200	1540	1526	790	1490	250	1495	935	D
	CR90-3	U2	22	124.5	DN 200	1540	1526	830	1466	250	1495	1009	D
	CR90-4-2	U2	30	165	DN 200	1540	1526	830	1713	250	1495	1244	D
	CR90-4	U2	30	165	DN 200	1540	1526	830	1718	250	1495	1326	D
	CR90-5-2	U2	37	216	DN 200	1540	1526	800	1862	250	2000	1422	C
4	CR90-2-2	U2	11	85.6	DN 250	1605	2026	790	1354	250	1495	996	D
	CR90-2	U2	15	112	DN 250	1605	2026	830	1361	250	1495	1015	D
	CR90-3-2	U2	18.5	138	DN 250	1605	2026	800	1490	250	1500	1265	C
	CR90-3	U2	22	166	DN 250	1605	2026	800	1466	250	1500	1343	C
	CR90-4-2	U2	30	220	DN 250	1605	2026	800	1713	250	2000	1698	C
	CR90-4	U2	30	220	DN 250	1605	2026	800	1718	250	2000	1808	C
	CR90-5-2	U2	37	288	DN 250	1605	2026	1200	1862	250	2000	1926	C
5	CR90-2-2	U2	11	107	DN 250	1605	2526	790	1354	250	1495	1376	D
	CR90-2	U2	15	140	DN 250	1605	2526	800	1361	250	1500	1417	C
	CR90-3-2	U2	18.5	172.5	DN 250	1605	2526	800	1490	250	1500	1704	C
	CR90-3	U2	22	208	DN 250	1605	2526	1000	1466	250	2000	1869	C
	CR90-4-2	U2	30	275	DN 250	1605	2526	1200	1713	250	2000	2308	C
	CR90-4	U2	30	275	DN 250	1605	2526	1200	1718	250	2000	2445	C
	CR90-5-2	U2	37	360	DN 250	1605	2526	1600	1862	250	2000	2536	C
6	CR90-2-2	U2	11	128.4	DN 250	1605	3026	800	1354	250	1500	1639	C
	CR90-2	U2	15	168	DN 250	1605	3026	800	1361	250	1500	1643	C
	CR90-3-2	U2	18.5	207	DN 250	1605	3026	1000	1490	250	2000	2057	C
	CR90-3	U2	22	249	DN 250	1605	3026	1000	1466	250	2000	2171	C
	CR90-4-2	U2	30	330	DN 250	1605	3026	1600	1713	250	2000	2725	C
	CR90-4	U2	30	330	DN 250	1605	3026	1600	1718	250	2000	2890	C
	CR90-5-2	U2	37	432	DN 250	1605	3026	1600	1862	250	2000	2957	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR 120 / CR 150

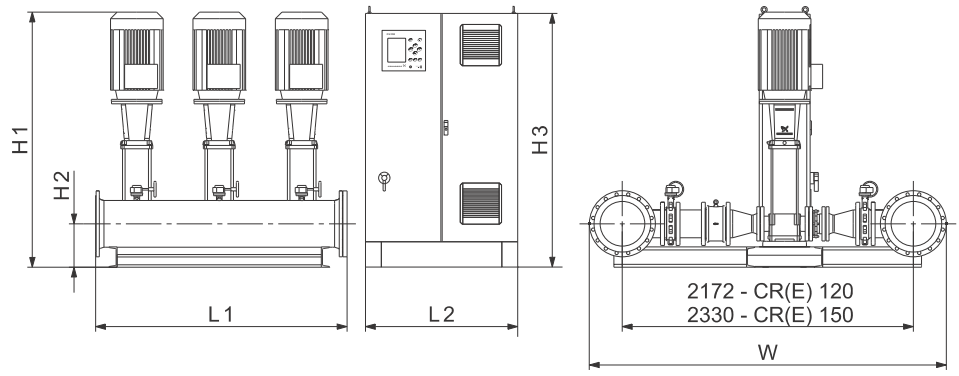


Fig. 68 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

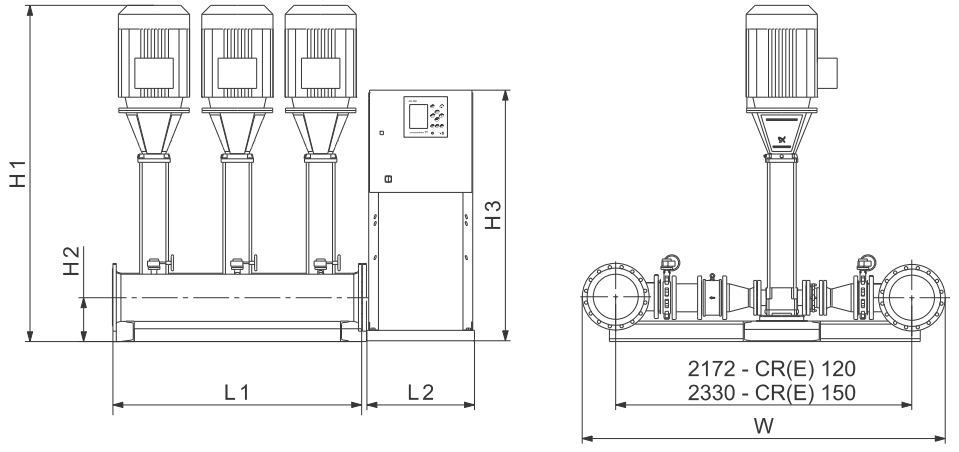


Fig. 69 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR 120

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR120-2-1	U2	18.5	103.5	DN 300	2632	1978	1000	1678	350	1500	1682	C
	CR120-2	U2	22	124.5	DN 300	2632	1978	1200	1770	350	2000	2042	C
	CR120-3	U2	30	165	DN 300	2632	1978	1200	1961	350	2000	2226	C
	CR120-4-1	U2	37	216	DN 300	2632	1978	2400	2174	350	2000	2568	C
	CR120-5-1	U2	45	264	DN 300	2632	1978	2400	2335	350	2000	2863	C
4	CR120-2-1	U2	18.5	138	DN 300	2632	2628	1200	1678	350	2000	2333	C
	CR120-2	U2	22	166	DN 300	2632	2628	1200	1770	350	2000	2693	C
	CR120-3	U2	30	220	DN 300	2632	2628	1200	1961	350	2000	2942	C
	CR120-4-1	U2	37	288	DN 300	2632	2628	2400	2174	350	2000	3332	C
	CR120-5-1	U2	45	352	DN 300	2632	2628	2400	2335	350	2000	3710	C
5	CR120-2-1	U2	18.5	172.5	DN 300	2632	3278	1200	1678	350	2000	2777	C
	CR120-2	U2	22	208	DN 300	2632	3278	1200	1770	350	2000	3228	C
	CR120-3	U2	30	275	DN 300	2632	3278	2400	1961	350	2000	3752	C
	CR120-4-1	U2	37	360	DN 300	2632	3278	3600	2174	350	2000	4178	C
	CR120-5-1	U2	45	440	DN 300	2632	3278	3600	2335	350	2000	4641	C
6	CR120-2-1	U2	18.5	207	DN 300	2632	3928	1200	1678	350	2000	3226	C
	CR120-2	U2	22	249	DN 300	2632	3928	1200	1770	350	2000	3758	C
	CR120-3	U2	30	330	DN 300	2632	3928	3600	1961	350	2000	4547	C
	CR120-4-1	U2	37	432	DN 300	2632	3928	3600	2174	350	2000	4811	C
	CR120-5-1	U2	45	528	DN 300	2632	3928	3600	2335	350	2000	5374	C

Hydro MPC-S with CR 120

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR120-2-1	U2	18.5	103.5	DN 300	2632	1978	790	1678	350	1555	1600	D
	CR120-2	U2	22	124.5	DN 300	2632	1978	830	1770	350	1555	1874	D
	CR120-3	U2	30	165	DN 300	2632	1978	830	1961	350	1555	2057	D
	CR120-4-1	U2	37	216	DN 300	2632	1978	800	2174	350	2000	2245	C
	CR120-5-1	U2	45	264	DN 300	2632	1978	1200	2335	350	2000	2588	C
4	CR120-2-1	U2	18.5	138	DN 300	2632	2628	800	1678	350	1500	2198	C
	CR120-2	U2	22	166	DN 300	2632	2628	800	1770	350	1500	2542	C
	CR120-3	U2	30	220	DN 300	2632	2628	800	1961	350	2000	2828	C
	CR120-4-1	U2	37	288	DN 300	2632	2628	1200	2174	350	2000	3069	C
	CR120-5-1	U2	45	352	DN 300	2632	2628	1200	2335	350	2000	3433	C
5	CR120-2-1	U2	18.5	172.5	DN 300	2632	3278	800	1678	350	1500	2642	C
	CR120-2	U2	22	208	DN 300	2632	3278	1000	1770	350	2000	3140	C
	CR120-3	U2	30	275	DN 300	2632	3278	1200	1961	350	2000	3492	C
	CR120-4-1	U2	37	360	DN 300	2632	3278	1600	2174	350	2000	3737	C
	CR120-5-1	U2	45	440	DN 300	2632	3278	1600	2335	350	2000	4188	C
6	CR120-2-1	U2	18.5	207	DN 300	2632	3928	1000	1678	350	2000	3156	C
	CR120-2	U2	22	249	DN 300	2632	3928	1000	1770	350	2000	3669	C
	CR120-3	U2	30	330	DN 300	2632	3928	1600	1961	350	2000	4120	C
	CR120-4-1	U2	37	432	DN 300	2632	3928	1600	2174	350	2000	4371	C
	CR120-5-1	U2	45	528	DN 300	2632	3928	1600	2335	350	2000	4915	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

Hydro MPC-F with CR 150

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR150-2-1	U2	22	124.5	DN350	2850	1980	1200	1770	350	2000	2242	C
	CR150-3-2	U2	30	165	DN350	2850	1980	1200	1961	350	2000	2426	C
	CR150-3	U2	37	216	DN350	2850	1980	2400	2018	350	2000	2739	C
	CR150-4-1	U2	45	264	DN350	2850	1980	2400	2180	350	2000	3034	C
	CR150-5-2	U2	55	315	DN350	2850	1980	2400	2403	350	2000	3484	C
4	CR150-2-1	U2	22	166	DN350	2850	2630	1200	1770	350	2000	2974	C
	CR150-3-2	U2	30	220	DN350	2850	2630	1200	1961	350	2000	3223	C
	CR150-3	U2	37	288	DN350	2850	2630	2400	2018	350	2000	3575	C
	CR150-4-1	U2	45	352	DN350	2850	2630	2400	2180	350	2000	3952	C
	CR150-5-2	U2	55	420	DN350	2850	2630	3600	2403	350	2000	4745	C
5	CR150-2-1	U2	22	208	DN350	2850	3280	1200	1770	350	2000	3552	C
	CR150-3-2	U2	30	275	DN350	2850	3280	2400	1961	350	2000	4076	C
	CR150-3	U2	37	360	DN350	2850	3280	3600	2018	350	2000	4454	C
	CR150-4-1	U2	45	440	DN350	2850	3280	3600	2180	350	2000	4917	C
	CR150-5-2	U2	55	525	DN350	2850	3280	3600	2403	350	2000	5662	C
6	CR150-2-1	U2	22	249	DN350	2850	3930	1200	1770	350	2000	4125	C
	CR150-3-2	U2	30	330	DN350	2850	3930	3600	1961	350	2000	4914	C
	CR150-3	U2	37	432	DN350	2850	3930	3600	2018	350	2000	5121	C
	CR150-4-1	U2	45	528	DN350	2850	3930	3600	2180	350	2000	5684	C
	CR150-5-2	U2	55	630	DN350	2850	3930	3600	2403	350	2000	6556	C

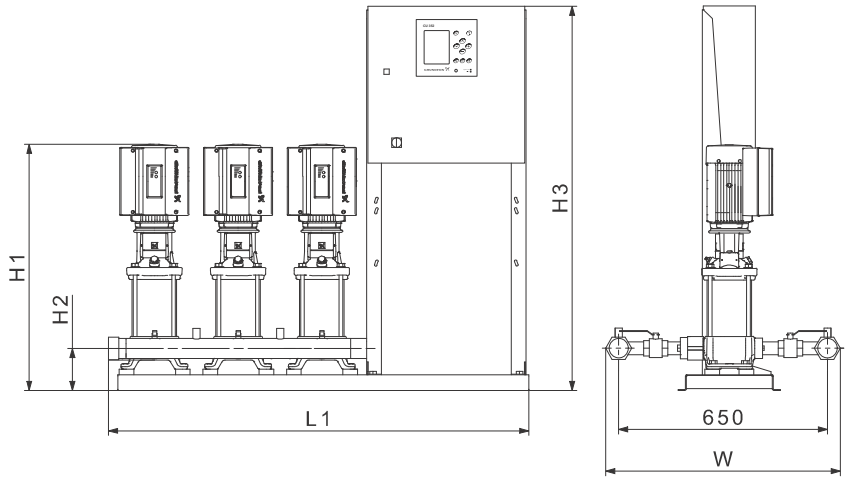
Hydro MPC-S with CR 150

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR150-2-1	U2	22	124.5	DN350	2850	1980	830	1770	350	1555	2074	D
	CR150-3-2	U2	30	165	DN350	2850	1980	830	1961	350	1555	2257	D
	CR150-3	U2	37	216	DN350	2850	1980	800	2018	350	2000	2416	C
	CR150-4-1	U2	45	264	DN350	2850	1980	1200	2180	350	2000	2759	C
	CR150-5-2	U2	55	315	DN350	2850	1980	1200	2403	350	2000	3198	C
4	CR150-2-1	U2	22	166	DN350	2850	2630	800	1770	350	1500	2823	C
	CR150-3-2	U2	30	220	DN350	2850	2630	800	1961	350	2000	3109	C
	CR150-3	U2	37	288	DN350	2850	2630	1200	2018	350	2000	3312	C
	CR150-4-1	U2	45	352	DN350	2850	2630	1200	2180	350	2000	3675	C
	CR150-5-2	U2	55	420	DN350	2850	2630	1200	2403	350	2000	4258	C
5	CR150-2-1	U2	22	208	DN350	2850	3280	1000	1770	350	2000	3464	C
	CR150-3-2	U2	30	275	DN350	2850	3280	1200	1961	350	2000	3816	C
	CR150-3	U2	37	360	DN350	2850	3280	1600	2018	350	2000	4013	C
	CR150-4-1	U2	45	440	DN350	2850	3280	1600	2180	350	2000	4464	C
	CR150-5-2	U2	55	525	DN350	2850	3280	1600	2403	350	2000	5194	C
6	CR150-2-1	U2	22	249	DN350	2850	3930	1000	1770	350	2000	4036	C
	CR150-3-2	U2	30	330	DN350	2850	3930	1600	1961	350	2000	4487	C
	CR150-3	U2	37	432	DN350	2850	3930	1600	2018	350	2000	4681	C
	CR150-4-1	U2	45	528	DN350	2850	3930	1600	2180	350	2000	5225	C
	CR150-5-2	U2	55	630	DN350	2850	3930	1600	2403	350	2000	6099	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
All pumps are fitted with three-phase motors.
Dimensions may vary by ± 10 mm.

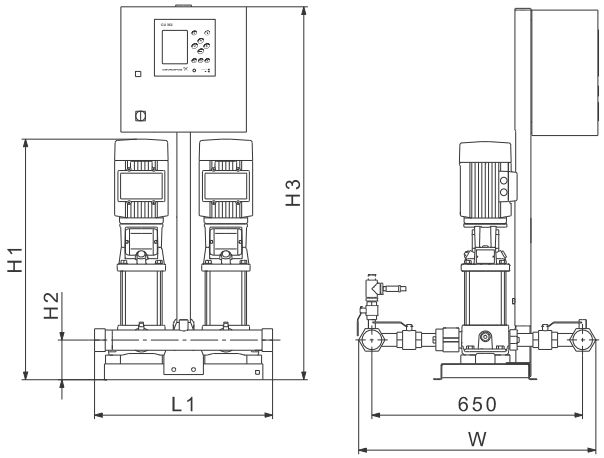
13. Technical data, Hydro MPC-F/-S (60 Hz)

Hydro MPC-F/-S with CR(I) 3 / CR(I) 5



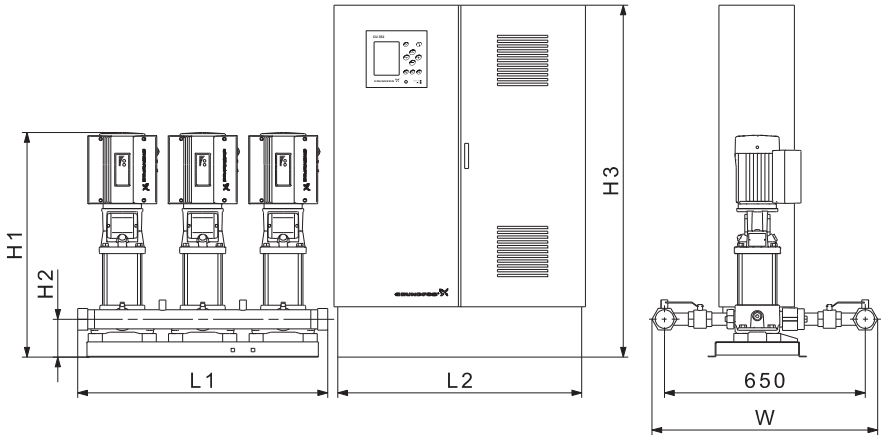
TM03 1740 2310

Fig. 70 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps (design A). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM03 1181 2310

Fig. 71 Dimensional sketch of a Hydro MPC booster system with a control cabinet centred on the base frame (design B). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM03 3042 2310

Fig. 72 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR(I) 3

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)3-4	U2	0.55	2.9	R 2	714	610	800	536	120	1500	177	C
	CR(I)3-5	U2	0.75	3.8	R 2	714	610	800	600	120	1500	178	C
	CR(I)3-8	U2	1.1	5.2	R 2	714	610	800	654	120	1500	186	C
	CR(I)3-11	U2	1.5	6.8	R 2	714	610	800	774	120	1500	206	C
	CR(I)3-17	U2	2.2	9.5	R 2	714	610	800	922	120	1500	213	C
3	CR(I)3-4	U2	0.55	4.3	R 2	714	930	800	536	120	1500	221	C
	CR(I)3-5	U2	0.75	5.7	R 2	714	930	800	600	120	1500	223	C
	CR(I)3-8	U2	1.1	7.8	R 2	714	930	800	654	120	1500	232	C
	CR(I)3-11	U2	1.5	10.2	R 2	714	930	800	774	120	1500	263	C
	CR(I)3-17	U2	2.2	14.3	R 2	714	930	800	922	120	1500	272	C
4	CR(I)3-4	U2	0.55	5.8	R 2 1/2	730	1250	800	536	120	1500	265	C
	CR(I)3-5	U2	0.75	7.6	R 2 1/2	730	1250	800	600	120	1500	267	C
	CR(I)3-8	U2	1.1	10.4	R 2 1/2	730	1250	800	654	120	1500	279	C
	CR(I)3-11	U2	1.5	13.6	R 2 1/2	730	1250	800	774	120	1500	320	C
	CR(I)3-17	U2	2.2	19	R 2 1/2	730	1250	800	922	120	1500	333	C

Hydro MPC-S with CR(I) 3

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)3-4	U2	0.55	2.9	R 2	714	610	536	120	1240	105	B
	CR(I)3-5	U2	0.75	3.8	R 2	714	610	600	120	1240	106	B
	CR(I)3-8	U2	1.1	5.2	R 2	714	610	654	120	1240	112	B
	CR(I)3-11	U2	1.5	6.8	R 2	714	610	774	120	1240	132	B
	CR(I)3-17	U2	2.2	9.5	R 2	714	1250	922	120	1455	166	A
3	CR(I)3-4	U2	0.55	4.3	R 2	714	1570	536	120	1455	167	A
	CR(I)3-5	U2	0.75	5.7	R 2	714	1570	600	120	1455	169	A
	CR(I)3-8	U2	1.1	7.8	R 2	714	1570	654	120	1455	178	A
	CR(I)3-11	U2	1.5	10.2	R 2	714	1570	774	120	1455	209	A
	CR(I)3-17	U2	2.2	14.3	R 2	714	1570	922	120	1455	218	A
4	CR(I)3-4	U2	0.55	5.8	R 2 1/2	730	1890	536	120	1455	211	A
	CR(I)3-5	U2	0.75	7.6	R 2 1/2	730	1890	600	120	1455	213	A
	CR(I)3-8	U2	1.1	10.4	R 2 1/2	730	1890	654	120	1455	225	A
	CR(I)3-11	U2	1.5	13.6	R 2 1/2	730	1890	774	120	1455	266	A
	CR(I)3-17	U2	2.2	19	R 2 1/2	730	1890	922	120	1455	278	A

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Dimensions may vary by ± 10 mm.

Hydro MPC-F with CR(I) 5

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)5-4	U2	1.1	5.2	R 2	714	610	800	618	120	1500	183	C
	CR(I)5-5	U2	1.5	6.8	R 2	714	610	800	711	120	1500	203	C
	CR(I)5-9	U2	2.2	9.5	R 2	714	610	800	819	120	1500	207	C
	CR(I)5-12	U2	3	12.8	R 2	714	610	800	958	120	1500	220	C
	CR(I)5-16	U2	4	16	R 2	714	610	800	1103	120	1500	242	C
3	CR(I)5-4	U2	1.1	7.8	R 2	714	930	800	618	120	1500	228	C
	CR(I)5-5	U2	1.5	10.2	R 2	714	930	800	711	120	1500	258	C
	CR(I)5-9	U2	2.2	14.3	R 2	714	930	800	819	120	1500	263	C
	CR(I)5-12	U2	3	19.2	R 2	714	930	800	958	120	1500	283	C
	CR(I)5-16	U2	4	24	R 2	714	930	800	1103	120	1500	317	C
4	CR(I)5-4	U2	1.1	10.4	R 2 1/2	730	1250	800	618	120	1500	274	C
	CR(I)5-5	U2	1.5	13.6	R 2 1/2	730	1250	800	711	120	1500	314	C
	CR(I)5-9	U2	2.2	19	R 2 1/2	730	1250	800	819	120	1500	321	C
	CR(I)5-12	U2	3	25.6	R 2 1/2	730	1250	800	958	120	1500	348	C
	CR(I)5-16	U2	4	32	R 2 1/2	730	1250	800	1103	120	1500	392	C

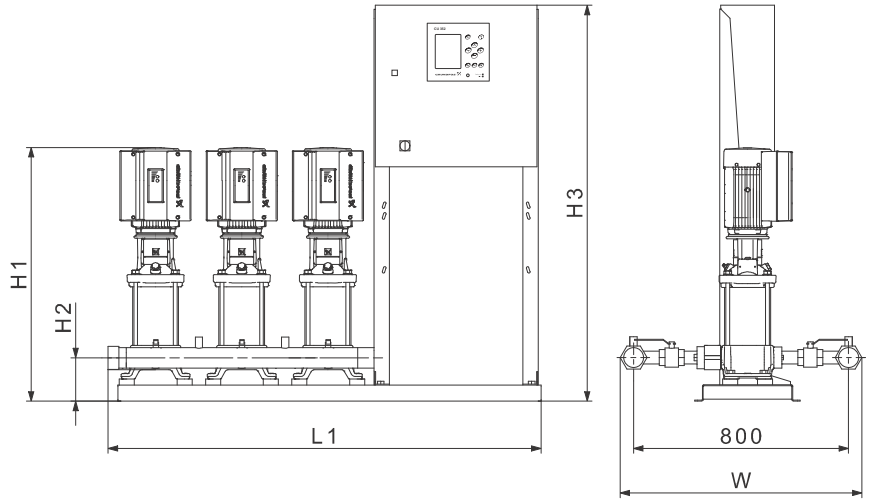
Hydro MPC-S with CR(I) 5

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)5-4	U2	1.1	5.2	R 2	714	610	618	120	1240	109	B
	CR(I)5-5	U2	1.5	6.8	R 2	714	610	711	120	1240	129	B
	CR(I)5-9	U2	2.2	9.5	R 2	714	1250	819	120	1455	160	A
	CR(I)5-12	U2	3	12.8	R 2	714	610	958	120	1240	146	B
	CR(I)5-16	U2	4	16	R 2	714	1250	1103	120	1455	195	A
3	CR(I)5-4	U2	1.1	7.8	R 2	714	1570	618	120	1455	174	A
	CR(I)5-5	U2	1.5	10.2	R 2	714	1570	711	120	1455	204	A
	CR(I)5-9	U2	2.2	14.3	R 2	714	1570	819	120	1455	209	A
	CR(I)5-12	U2	3	19.2	R 2	714	1570	958	120	1455	229	A
	CR(I)5-16	U2	4	24	R 2	714	1570	1103	120	1455	262	A
4	CR(I)5-4	U2	1.1	10.4	R 2 1/2	730	1890	618	120	1455	220	A
	CR(I)5-5	U2	1.5	13.6	R 2 1/2	730	1890	711	120	1455	260	A
	CR(I)5-9	U2	2.2	19	R 2 1/2	730	1890	819	120	1455	266	A
	CR(I)5-12	U2	3	25.6	R 2 1/2	730	1890	958	120	1455	294	A
	CR(I)5-16	U2	4	32	R 2 1/2	730	1890	1103	120	1455	338	A

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Dimensions may vary by ± 10 mm.

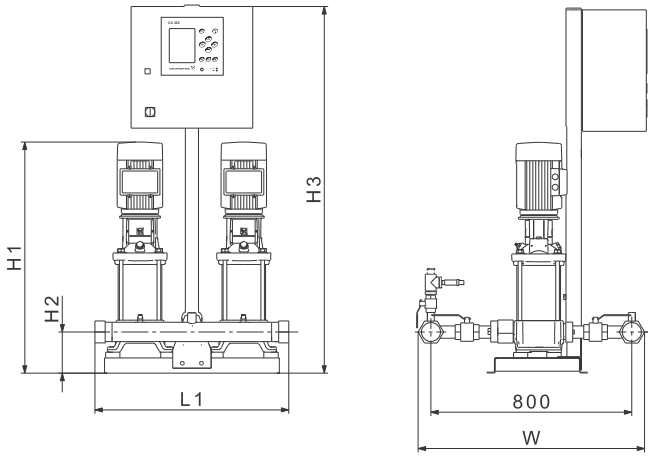
Hydro MPC-F/-S with CR(I) 10

Note: The manifold connection is either R thread or DIN flange. For further details, see the relevant table on page 124 or 125.



TM03 1182 2310

Fig. 73 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps (design A). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM03 1183 2310

Fig. 74 Dimensional sketch of a Hydro MPC booster system with a control cabinet centred on the base frame (design B). The booster system is shown as an example. The pumps supplied may differ from the sketch.

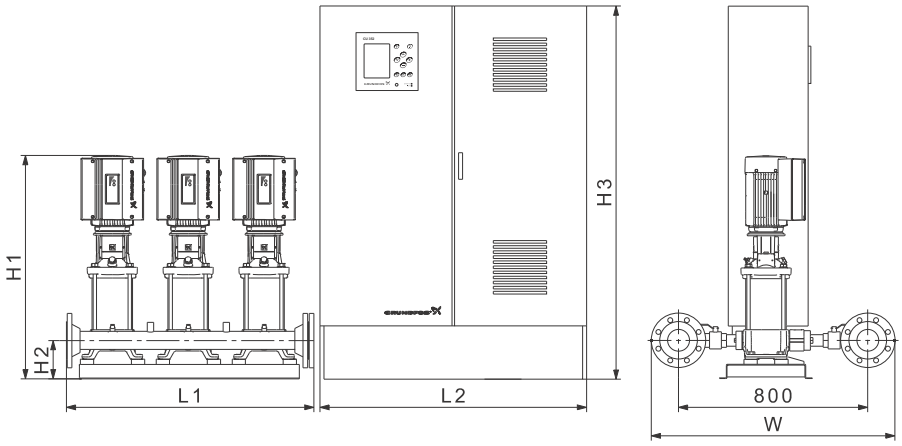


Fig. 75 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

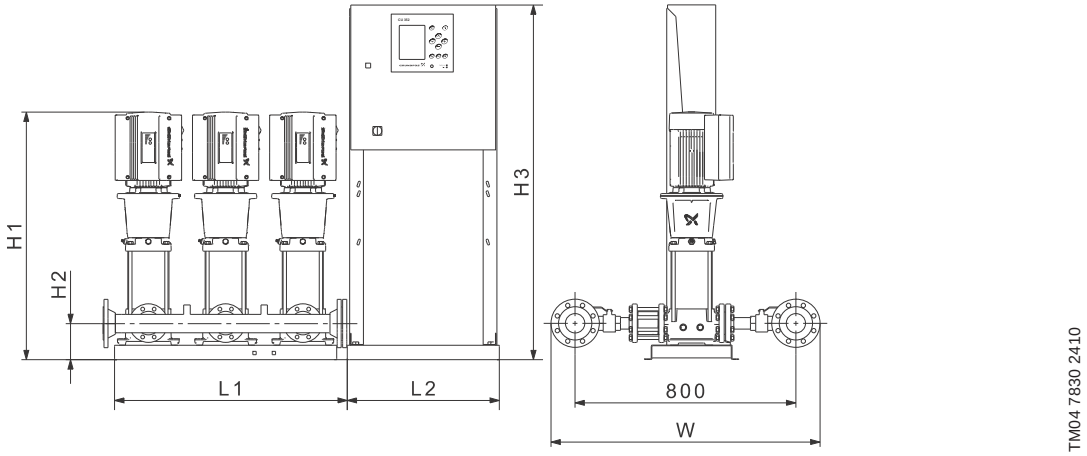


Fig. 76 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR(I) 10

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)10-2	U2	1.5	6.8	R 2 1/2	880	670	800	724	150	1500	230	C
	CR(I)10-3	U2	2.2	9.5	R 2 1/2	880	670	800	754	150	1500	236	C
	CR(I)10-5	U2	3	12.8	R 2 1/2	880	670	800	873	150	1500	248	C
	CR(I)10-6	U2	4	16	R 2 1/2	880	670	800	940	150	1500	274	C
	CR(I)10-9	U2	5.5	22.4	R 2 1/2	880	670	800	1081	150	1500	324	C
3	CR(I)10-2	U2	1.5	10.2	DN 80	1004	1060	800	724	150	1500	326	C
	CR(I)10-3	U2	2.2	14.3	DN 80	1004	1060	800	754	150	1500	335	C
	CR(I)10-5	U2	3	19.2	DN 80	1004	1060	800	873	150	1500	353	C
	CR(I)10-6	U2	4	24	DN 80	1004	1060	800	940	150	1500	393	C
	CR(I)10-9	U2	5.5	33.6	DN 80	1004	1060	800	1081	150	1500	469	C
4	CR(I)10-2	U2	1.5	13.6	DN 80	1004	1320	800	724	150	1500	377	C
	CR(I)10-3	U2	2.2	19	DN 80	1004	1320	800	754	150	1500	390	C
	CR(I)10-5	U2	3	25.6	DN 80	1004	1320	800	873	150	1500	414	C
	CR(I)10-6	U2	4	32	DN 80	1004	1320	800	940	150	1500	466	C
	CR(I)10-9	U2	5.5	44.8	DN 80	1004	1320	800	1081	150	1500	566	C
5	CR(I)10-2	U2	1.5	17	DN 100	1024	1702	800	724	150	1500	458	C
	CR(I)10-3	U2	2.2	23.8	DN 100	1024	1702	800	754	150	1500	473	C
	CR(I)10-5	U2	3	32	DN 100	1024	1702	800	873	150	1500	503	C
	CR(I)10-6	U2	4	40	DN 100	1024	1702	800	940	150	1500	568	C
	CR(I)10-9	U2	5.5	56	DN 100	1024	1702	1000	1081	150	1500	718	C
6	CR(I)10-2	U2	1.5	20.4	DN 100	1024	1940	800	724	150	1500	512	C
	CR(I)10-3	U2	2.2	28.5	DN 100	1024	1940	800	754	150	1500	530	C
	CR(I)10-5	U2	3	38.4	DN 100	1024	1940	800	873	150	1500	567	C
	CR(I)10-6	U2	4	48	DN 100	1024	1940	800	940	150	1500	645	C
	CR(I)10-9	U2	5.5	67.2	DN 100	1024	1940	1000	1081	150	1500	817	C

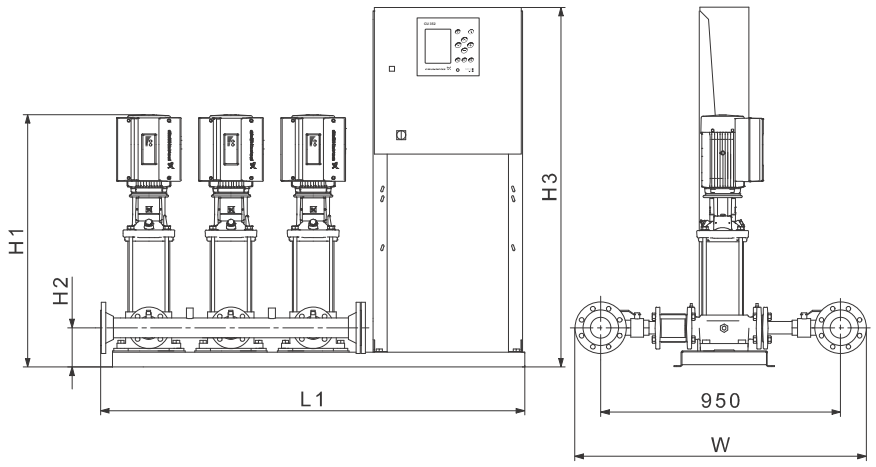
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR(I) 10

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)10-2	U2	1.5	6.8	R 2 1/2	880	670	380	724	150	1240	156	B
	CR(I)10-3	U2	2.2	9.5	R 2 1/2	880	1280	600	754	150	1455	189	A
	CR(I)10-5	U2	3	12.8	R 2 1/2	880	670	380	873	150	1240	174	B
	CR(I)10-9	U2	5.5	22.4	R 2 1/2	880	670	790	1081	150	1455	282	D
	CR(I)10-6	U2	4	16	R 2 1/2	880	1280	600	940	150	1455	227	A
3	CR(I)10-2	U2	1.5	10.2	DN 80	1004	1630	600	724	150	1455	272	A
	CR(I)10-3	U2	2.2	14.3	DN 80	1004	1630	600	754	150	1455	281	A
	CR(I)10-5	U2	3	19.2	DN 80	1004	1630	600	873	150	1455	299	A
	CR(I)10-6	U2	4	24	DN 80	1004	1630	600	940	150	1455	338	A
	CR(I)10-9	U2	5.5	33.6	DN 80	1004	1060	790	1081	150	1455	425	D
4	CR(I)10-2	U2	1.5	13.6	DN 80	1004	1920	600	724	150	1455	323	A
	CR(I)10-3	U2	2.2	19	DN 80	1004	1920	600	754	150	1455	335	A
	CR(I)10-5	U2	3	25.6	DN 80	1004	1920	600	873	150	1455	360	A
	CR(I)10-6	U2	4	32	DN 80	1004	1920	600	940	150	1455	412	A
	CR(I)10-9	U2	5.5	44.8	DN 80	1004	1320	790	1081	150	1455	521	D
5	CR(I)10-2	U2	1.5	17	DN 100	1024	1702	630	724	150	1455	394	D
	CR(I)10-3	U2	2.2	23.8	DN 100	1024	1702	630	754	150	1455	409	D
	CR(I)10-5	U2	3	32	DN 100	1024	1702	630	873	150	1455	439	D
	CR(I)10-6	U2	4	40	DN 100	1024	1702	630	940	150	1455	507	D
	CR(I)10-9	U2	5.5	56	DN 100	1024	1702	790	1081	150	1455	647	D
6	CR(I)10-2	U2	1.5	20.4	DN 100	1024	1940	630	724	150	1455	448	D
	CR(I)10-3	U2	2.2	28.5	DN 100	1024	1940	630	754	150	1455	464	D
	CR(I)10-5	U2	3	38.4	DN 100	1024	1940	630	873	150	1455	502	D
	CR(I)10-6	U2	4	48	DN 100	1024	1940	630	940	150	1455	581	D
	CR(I)10-9	U2	5.5	67.2	DN 100	1024	1940	830	1081	150	1455	760	D

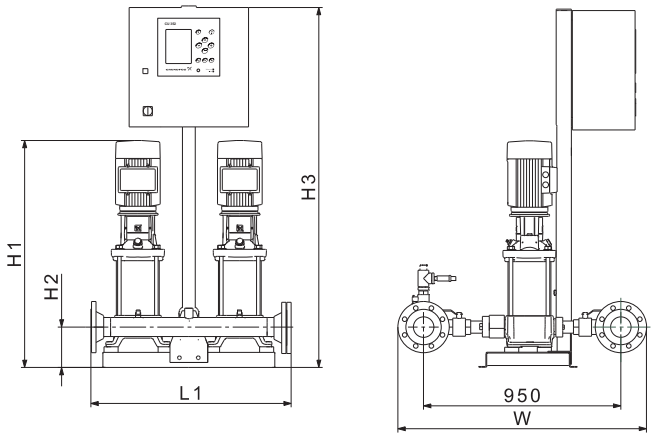
Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR(I) 15 / CR(I) 20



TM03 1184 2310

Fig. 77 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps (design A). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM04 7831 2410

Fig. 78 Dimensional sketch of a Hydro MPC booster system with a control cabinet centred on the base frame (design B). The booster system is shown as an example. The pumps supplied may differ from the sketch.

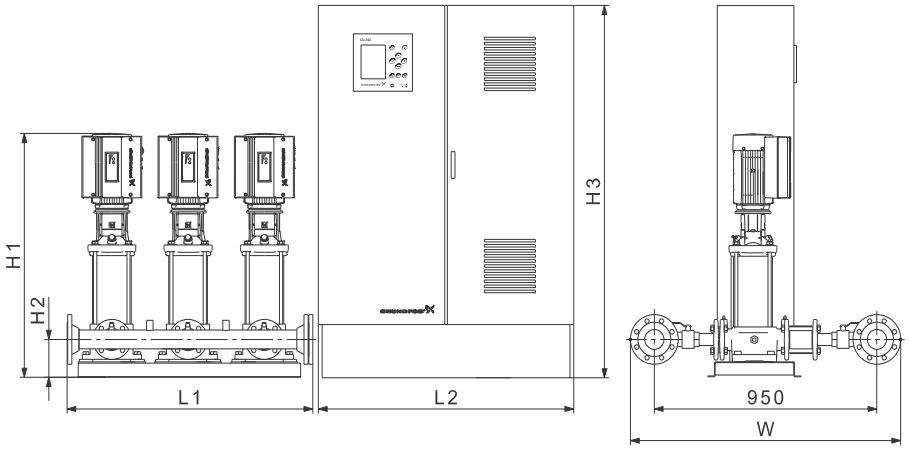


Fig. 79 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

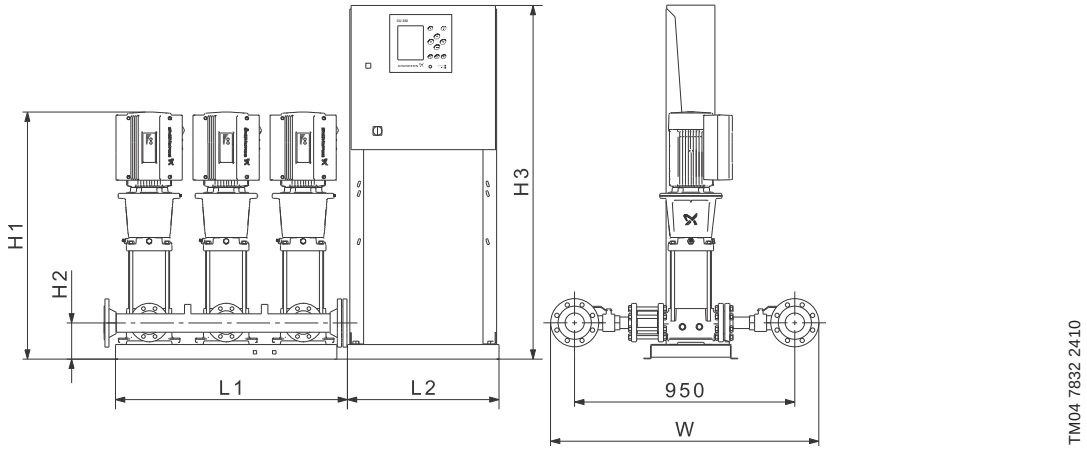


Fig. 80 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR(I) 15

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)15-2	U2	3	12.8	DN 80	1150	740	800	823	160	1500	272	C
	CR(I)15-3	U2	4	16	DN 80	1150	740	800	905	160	1500	296	C
	CR(I)15-4	U2	5.5	22.4	DN 80	1150	740	800	1001	160	1500	344	C
	CR(I)15-5	U2	7.5	30.4	DN 80	1150	740	800	1034	160	1500	379	C
	CR(I)15-8	U2	11	42.8	DN 80	1150	920	800	1406	200	1500	446	C
3	CR(I)15-2	U2	3	19.2	DN 100	1170	1062	800	823	160	1500	365	C
	CR(I)15-3	U2	4	24	DN 100	1170	1062	800	905	160	1500	402	C
	CR(I)15-4	U2	5.5	33.6	DN 100	1170	1062	800	1001	160	1500	475	C
	CR(I)15-5	U2	7.5	45.6	DN 100	1170	1062	800	1034	160	1500	523	C
	CR(I)15-8	U2	11	64.2	DN 100	1170	1522	800	1406	200	1500	617	C
4	CR(I)15-2	U2	3	25.6	DN 100	1170	1382	800	823	160	1500	439	C
	CR(I)15-3	U2	4	32	DN 100	1170	1382	800	905	160	1500	487	C
	CR(I)15-4	U2	5.5	44.8	DN 100	1170	1382	800	1001	160	1500	583	C
	CR(I)15-5	U2	7.5	60.8	DN 100	1170	1382	800	1034	160	1500	647	C
	CR(I)15-8	U2	11	85.6	DN 100	1170	1950	800	1406	200	1500	777	C
5	CR(I)15-2	U2	3	32	DN 150	1235	1704	800	823	160	1500	555	C
	CR(I)15-3	U2	4	40	DN 150	1235	1704	800	905	160	1500	615	C
	CR(I)15-4	U2	5.5	56	DN 150	1235	1704	1000	1001	160	1500	760	C
	CR(I)15-5	U2	7.5	76	DN 150	1235	1704	1000	1034	160	1500	841	C
	CR(I)15-8	U2	11	107	DN 150	1235	2424	1000	1366	160	1500	990	C
6	CR(I)15-2	U2	3	38.4	DN 150	1235	1940	800	823	160	1500	639	C
	CR(I)15-3	U2	4	48	DN 150	1235	1940	800	905	160	1500	711	C
	CR(I)15-4	U2	5.5	67.2	DN 150	1235	1940	1000	1001	160	1500	877	C
	CR(I)15-5	U2	7.5	91.2	DN 150	1235	1940	1000	1034	160	1500	973	C
	CR(I)15-8	U2	11	128.4	DN 150	1235	2924	1000	1366	160	1500	1157	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR(I) 15

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)15-2	U2	3	12.8	DN 80	1150	740	380	823	160	1240	198	B
	CR(I)15-3	U2	4	16	DN 80	1150	1310	600	905	160	1455	249	A
	CR(I)15-4	U2	5.5	22.4	DN 80	1150	740	790	1001	160	1455	302	D
	CR(I)15-5	U2	7.5	30.4	DN 80	1150	740	790	1034	160	1455	334	D
	CR(I)15-8	U2	11	42.8	DN 80	1150	920	790	1406	200	1495	396	D
3	CR(I)15-2	U2	3	19.2	DN 100	1170	1630	600	823	160	1455	311	A
	CR(I)15-3	U2	4	24	DN 100	1170	1630	600	905	160	1455	347	A
	CR(I)15-4	U2	5.5	33.6	DN 100	1170	1062	790	1001	160	1455	431	D
	CR(I)15-5	U2	7.5	45.6	DN 100	1170	1062	790	1034	160	1455	479	D
	CR(I)15-8	U2	11	64.2	DN 100	1170	1522	790	1406	200	1495	568	D
4	CR(I)15-2	U2	3	25.6	DN 100	1170	1950	600	823	160	1455	385	A
	CR(I)15-3	U2	4	32	DN 100	1170	1950	600	905	160	1455	433	A
	CR(I)15-4	U2	5.5	44.8	DN 100	1170	1382	790	1001	160	1455	538	D
	CR(I)15-5	U2	7.5	60.8	DN 100	1170	1382	790	1034	160	1455	602	D
	CR(I)15-8	U2	11	85.6	DN 100	1170	1950	790	1406	200	1495	725	D
5	CR(I)15-2	U2	3	32	DN 150	1235	1704	630	823	160	1455	491	D
	CR(I)15-3	U2	4	40	DN 150	1235	1704	630	905	160	1455	554	D
	CR(I)15-4	U2	5.5	56	DN 150	1235	1704	790	1001	160	1455	689	D
	CR(I)15-5	U2	7.5	76	DN 150	1235	1704	790	1034	160	1455	769	D
	CR(I)15-8	U2	11	107	DN 150	1235	2424	790	1366	160	1455	912	D
6	CR(I)15-2	U2	3	38.4	DN 150	1235	1940	630	823	160	1455	574	D
	CR(I)15-3	U2	4	48	DN 150	1235	1940	630	905	160	1455	647	D
	CR(I)15-4	U2	5.5	67.2	DN 150	1235	1940	830	1001	160	1455	820	D
	CR(I)15-5	U2	7.5	91.2	DN 150	1235	1940	830	1034	160	1455	917	D
	CR(I)15-8	U2	11	128.4	DN 150	1235	2924	800	1366	160	1500	1114	C

Hydro MPC-F with CR(I) 20

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)20-2	U2	4	16	DN 80	1150	740	800	860	160	1500	294	C
	CR(I)20-3	U2	5.5	22.4	DN 80	1150	740	800	956	160	1500	342	C
	CR(I)20-4	U2	7.5	30.4	DN 80	1150	740	800	989	160	1500	375	C
	CR(I)20-6	U2	11	42.8	DN 80	1150	920	800	1288	200	1500	444	C
3	CR(I)20-2	U2	4	24	DN 100	1170	1062	800	860	160	1500	399	C
	CR(I)20-3	U2	5.5	33.6	DN 100	1170	1062	800	956	160	1500	472	C
	CR(I)20-4	U2	7.5	45.6	DN 100	1170	1062	800	989	160	1500	517	C
	CR(I)20-6	U2	11	64.2	DN 100	1170	1522	800	1288	200	1500	614	C
4	CR(I)20-2	U2	4	32	DN 100	1170	1382	800	860	160	1500	483	C
	CR(I)20-3	U2	5.5	44.8	DN 100	1170	1382	800	956	160	1500	579	C
	CR(I)20-4	U2	7.5	60.8	DN 100	1170	1382	800	989	160	1500	639	C
	CR(I)20-6	U2	11	85.6	DN 100	1170	1950	800	1288	200	1500	773	C
5	CR(I)20-2	U2	4	40	DN 150	1235	1704	800	860	160	1500	610	C
	CR(I)20-3	U2	5.5	56	DN 150	1235	1704	1000	956	160	1500	755	C
	CR(I)20-4	U2	7.5	76	DN 150	1235	1704	1000	989	160	1500	831	C
	CR(I)20-6	U2	11	107	DN 150	1235	2424	1000	1248	160	1500	985	C
6	CR(I)20-2	U2	4	48	DN 150	1235	1940	800	860	160	1500	705	C
	CR(I)20-3	U2	5.5	67.2	DN 150	1235	1940	1000	956	160	1500	871	C
	CR(I)20-4	U2	7.5	91.2	DN 150	1235	1940	1000	989	160	1500	961	C
	CR(I)20-6	U2	11	128.4	DN 150	1235	2924	1000	1248	160	1500	1151	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR(I) 20

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR(I)20-2	U2	4	16	DN 80	1150	1310	600	860	160	1455	247	A
	CR(I)20-3	U2	5.5	22.4	DN 80	1150	740	790	956	160	1455	300	D
	CR(I)20-4	U2	7.5	30.4	DN 80	1150	740	790	989	160	1455	330	D
	CR(I)20-6	U2	11	42.8	DN 80	1150	920	790	1288	200	1495	394	D
3	CR(I)20-2	U2	4	24	DN 100	1170	1630	600	860	160	1455	344	A
	CR(I)20-3	U2	5.5	33.6	DN 100	1170	1062	790	956	160	1455	428	D
	CR(I)20-4	U2	7.5	45.6	DN 100	1170	1062	790	989	160	1455	473	D
	CR(I)20-6	U2	11	64.2	DN 100	1170	1522	790	1288	200	1495	565	D
4	CR(I)20-2	U2	4	32	DN 100	1170	1950	600	860	160	1455	429	A
	CR(I)20-3	U2	5.5	44.8	DN 100	1170	1382	790	956	160	1455	534	D
	CR(I)20-4	U2	7.5	60.8	DN 100	1170	1382	790	989	160	1455	594	D
	CR(I)20-6	U2	11	85.6	DN 100	1170	1950	790	1288	200	1495	721	D
5	CR(I)20-2	U2	4	40	DN 150	1235	1704	630	860	160	1455	549	D
	CR(I)20-3	U2	5.5	56	DN 150	1235	1704	790	956	160	1455	684	D
	CR(I)20-4	U2	7.5	76	DN 150	1235	1704	790	989	160	1455	759	D
	CR(I)20-6	U2	11	107	DN 150	1235	2424	790	1248	160	1455	907	D
6	CR(I)20-2	U2	4	48	DN 150	1235	1940	630	860	160	1455	641	D
	CR(I)20-3	U2	5.5	67.2	DN 150	1235	1940	830	956	160	1455	814	D
	CR(I)20-4	U2	7.5	91.2	DN 150	1235	1940	830	989	160	1455	905	D
	CR(I)20-6	U2	11	128.4	DN 150	1235	2924	800	1248	160	1500	1108	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR 32

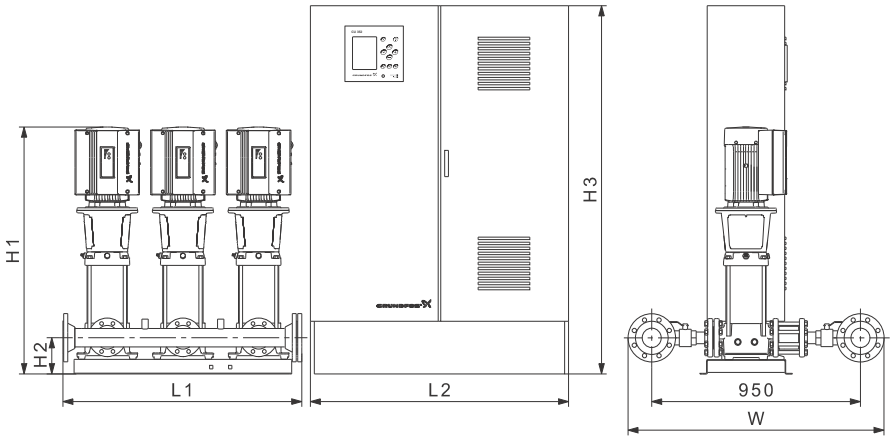


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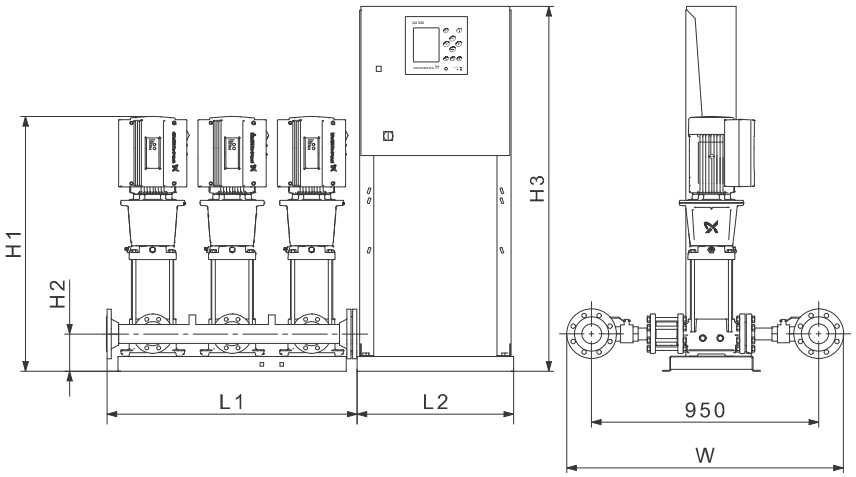
Fig. 81 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.



TM03 1186 2310

Fig. 82 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR 32

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR32-1	U2	3	12.8	DN 100	1170	1022	800	910	175	1500	319	C
	CR32-2	U2	7.5	30.4	DN 100	1170	1022	800	1024	175	1500	419	C
	CR32-4-2	U2	11	42.8	DN 100	1170	1022	800	1434	215	1500	482	C
	CR32-5-2	U2	15	56	DN 100	1170	1022	800	1476	215	1500	588	C
	CR32-6-2	U2	18.5	69	DN 100	1170	1022	800	1550	215	1500	644	C
3	CR32-1	U2	3	19.2	DN 150	1235	1524	800	910	175	1500	436	C
	CR32-2	U2	7.5	45.6	DN 150	1235	1524	800	1024	175	1500	583	C
	CR32-4-2	U2	11	64.2	DN 150	1235	1524	800	1434	215	1500	675	C
	CR32-5-2	U2	15	84	DN 150	1235	1524	1000	1476	215	1500	862	C
	CR32-6-2	U2	18.5	103.5	DN 150	1235	1524	1000	1550	215	1500	945	C
4	CR32-1	U2	3	25.6	DN 150	1235	2024	800	910	175	1500	540	C
	CR32-2	U2	7.5	60.8	DN 150	1235	2024	800	1024	175	1500	732	C
	CR32-4-2	U2	11	85.6	DN 150	1235	2024	800	1434	215	1500	855	C
	CR32-5-2	U2	15	112	DN 150	1235	2024	1000	1476	215	1500	1094	C
	CR32-6-2	U2	18.5	138	DN 150	1235	2024	1200	1550	215	2000	1291	C
5	CR32-1	U2	3	32	DN 150	1235	2524	800	910	175	1500	656	C
	CR32-2	U2	7.5	76	DN 150	1235	2524	1000	1024	175	1500	923	C
	CR32-4-2	U2	11	107	DN 150	1235	2524	1000	1434	215	1500	1074	C
	CR32-5-2	U2	15	140	DN 150	1235	2524	1000	1476	215	1500	1345	C
	CR32-6-2	U2	18.5	172.5	DN 150	1235	2524	1200	1550	215	2000	1564	C
6	CR32-1	U2	3	38.4	DN 150	1235	3024	800	910	175	1500	762	C
	CR32-2	U2	7.5	91.2	DN 150	1235	3024	1000	1024	175	1500	1073	C
	CR32-4-2	U2	11	128.4	DN 150	1235	3024	1000	1434	215	1500	1257	C
	CR32-5-2	U2	15	168	DN 150	1235	3024	1000	1476	215	1500	1583	C
	CR32-6-2	U2	18.5	207	DN 150	1235	3024	1200	1550	215	2000	1828	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR 32

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
2	CR32-1	U2	3	12.8	DN 100	1170	1022	430	910	175	1455	245	D
	CR32-2	U2	7.5	30.4	DN 100	1170	1022	790	1024	175	1455	374	D
	CR32-4-2	U2	11	42.8	DN 100	1170	1022	790	1434	215	1495	432	D
	CR32-5-2	U2	15	56	DN 100	1170	1022	790	1476	215	1495	538	D
	CR32-6-2	U2	18.5	69	DN 100	1170	1022	790	1550	215	1495	590	D
3	CR32-1	U2	3	19.2	DN 150	1235	1524	630	910	175	1455	374	D
	CR32-2	U2	7.5	45.6	DN 150	1235	1524	790	1024	175	1455	539	D
	CR32-4-2	U2	11	64.2	DN 150	1235	1524	790	1434	215	1495	626	D
	CR32-5-2	U2	15	84	DN 150	1235	1524	790	1476	215	1495	785	D
	CR32-6-2	U2	18.5	103.5	DN 150	1235	1524	790	1550	215	1495	863	D
4	CR32-1	U2	3	25.6	DN 150	1235	2024	630	910	175	1455	477	D
	CR32-2	U2	7.5	60.8	DN 150	1235	2024	790	1024	175	1455	687	D
	CR32-4-2	U2	11	85.6	DN 150	1235	2024	790	1434	215	1495	803	D
	CR32-5-2	U2	15	112	DN 150	1235	2024	830	1476	215	1495	1032	D
	CR32-6-2	U2	18.5	138	DN 150	1235	2024	800	1550	215	1500	1156	C
5	CR32-1	U2	3	32	DN 150	1235	2524	630	910	175	1455	592	D
	CR32-2	U2	7.5	76	DN 150	1235	2524	790	1024	175	1455	851	D
	CR32-4-2	U2	11	107	DN 150	1235	2524	790	1434	215	1495	996	D
	CR32-5-2	U2	15	140	DN 150	1235	2524	800	1476	215	1500	1299	C
	CR32-6-2	U2	18.5	172.5	DN 150	1235	2524	800	1550	215	1500	1429	C
6	CR32-1	U2	3	38.4	DN 150	1235	3024	630	910	175	1455	697	D
	CR32-2	U2	7.5	91.2	DN 150	1235	3024	830	1024	175	1455	1017	D
	CR32-4-2	U2	11	128.4	DN 150	1235	3024	800	1434	215	1500	1214	C
	CR32-5-2	U2	15	168	DN 150	1235	3024	800	1476	215	1500	1533	C
	CR32-6-2	U2	18.5	207	DN 150	1235	3024	1000	1550	215	2000	1758	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR 45 / CR 64

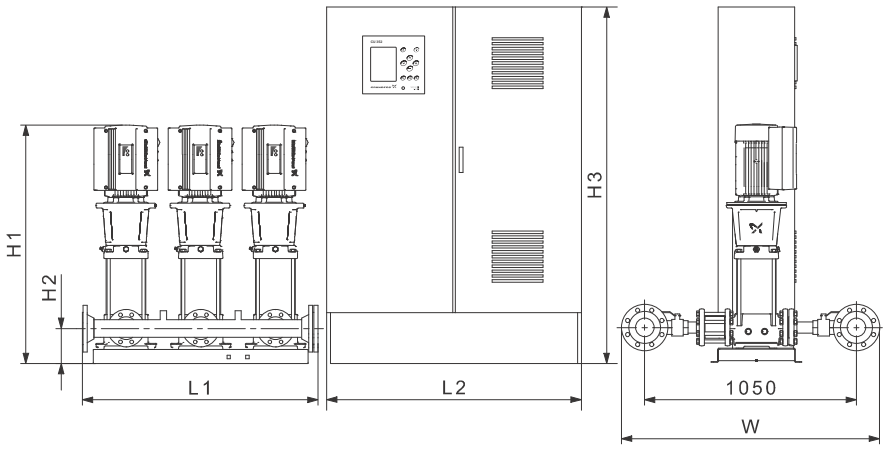


Fig. 83 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

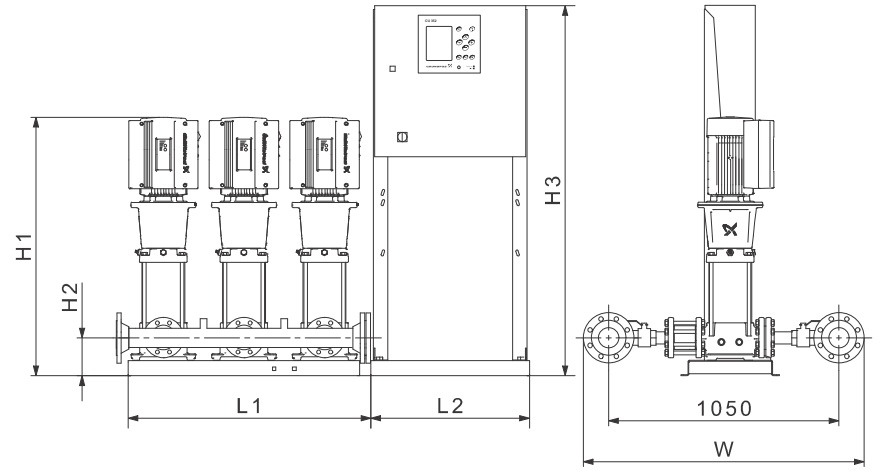


Fig. 84 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR 45

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR45-1	U2	7.5	45.6	DN 200	1390	1526	800	1008	210	1500	630	C
	CR45-2	U2	15	84	DN 200	1390	1526	1000	1330	250	1500	867	C
	CR45-3	U2	18.5	103.5	DN 200	1390	1526	1000	1414	250	1500	953	C
	CR45-4-2	U2	22	124.5	DN 200	1390	1526	1200	1510	250	2000	1121	C
	CR45-4	U2	30	165	DN 200	1390	1526	1200	1665	250	2000	1371	C
4	CR45-1	U2	7.5	60.8	DN 200	1390	2026	800	1008	210	1500	794	C
	CR45-2	U2	15	112	DN 200	1390	2026	1000	1330	250	1500	1099	C
	CR45-3	U2	18.5	138	DN 200	1390	2026	1200	1414	250	2000	1300	C
	CR45-4-2	U2	22	166	DN 200	1390	2026	1200	1510	250	2000	1404	C
	CR45-4	U2	30	220	DN 200	1390	2026	1200	1665	250	2000	1742	C
5	CR45-1	U2	7.5	76	DN 200	1390	2526	1000	1008	210	1500	1001	C
	CR45-2	U2	15	140	DN 200	1390	2526	1000	1330	250	1500	1352	C
	CR45-3	U2	18.5	172.5	DN 200	1390	2526	1200	1414	250	2000	1576	C
	CR45-4-2	U2	22	208	DN 200	1390	2526	1200	1510	250	2000	1707	C
	CR45-4	U2	30	275	DN 200	1390	2526	2400	1665	250	2000	2342	C
6	CR45-1	U2	7.5	91.2	DN 200	1390	3026	1000	1008	210	1500	1164	C
	CR45-2	U2	15	168	DN 200	1390	3026	1000	1330	250	1500	1589	C
	CR45-3	U2	18.5	207	DN 200	1390	3026	1200	1414	250	2000	1840	C
	CR45-4-2	U2	22	249	DN 200	1390	3026	1200	1510	250	2000	1989	C
	CR45-4	U2	30	330	DN 200	1390	3026	3600	1665	250	2000	2909	C

Hydro MPC-S with CR 45

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR45-1	U2	7.5	45.6	DN 200	1390	1526	790	1008	210	1455	586	D
	CR45-2	U2	15	84	DN 200	1390	1526	790	1330	250	1495	790	D
	CR45-3	U2	18.5	103.5	DN 200	1390	1526	790	1414	250	1495	871	D
	CR45-4-2	U2	22	124.5	DN 200	1390	1526	830	1510	250	1495	953	D
	CR45-4	U2	30	165	DN 200	1390	1526	830	1665	250	1495	1202	D
4	CR45-1	U2	7.5	60.8	DN 200	1390	2026	790	1008	210	1455	749	D
	CR45-2	U2	15	112	DN 200	1390	2026	830	1330	250	1495	1037	D
	CR45-3	U2	18.5	138	DN 200	1390	2026	800	1414	250	1500	1165	C
	CR45-4-2	U2	22	166	DN 200	1390	2026	800	1510	250	1500	1253	C
	CR45-4	U2	30	220	DN 200	1390	2026	800	1665	250	2000	1628	C
5	CR45-1	U2	7.5	76	DN 200	1390	2526	790	1008	210	1455	929	D
	CR45-2	U2	15	140	DN 200	1390	2526	800	1330	250	1500	1306	C
	CR45-3	U2	18.5	172.5	DN 200	1390	2526	800	1414	250	1500	1441	C
	CR45-4-2	U2	22	208	DN 200	1390	2526	1000	1510	250	2000	1619	C
	CR45-4	U2	30	275	DN 200	1390	2526	1200	1665	250	2000	2082	C
6	CR45-1	U2	7.5	91.2	DN 200	1390	3026	830	1008	210	1455	1108	D
	CR45-2	U2	15	168	DN 200	1390	3026	800	1330	250	1500	1539	C
	CR45-3	U2	18.5	207	DN 200	1390	3026	1000	1414	250	2000	1770	C
	CR45-4-2	U2	22	249	DN 200	1390	3026	1000	1510	250	2000	1900	C
	CR45-4	U2	30	330	DN 200	1390	3026	1600	1665	250	2000	2482	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-F with CR 64

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR64-1-1	U2	7.5	45.6	DN 200	1390	1526	800	1010	210	1500	676	C
	CR64-1	U2	11	64.2	DN 200	1390	1526	800	1280	250	1500	726	C
	CR64-2-1	U2	18.5	103.5	DN 200	1390	1526	1000	1339	250	1500	959	C
	CR64-2-2	U2	15	84	DN 200	1390	1526	1000	1335	250	1500	970	C
	CR64-2	U2	22	124.5	DN 200	1390	1526	1200	1474	250	2000	1210	C
	CR64-3-1	U2	30	165	DN 200	1390	1526	1200	1592	250	2000	1377	C
	CR64-3-2	U2	22	124.5	DN 200	1390	1526	1200	1477	250	2000	1212	C
	CR64-3	U2	30	165	DN 200	1390	1526	1200	1592	250	2000	1377	C
	CR64-4-2	U2	37	216	DN 200	1390	1526	2400	1732	250	2000	1709	C
4	CR64-1-1	U2	7.5	60.8	DN 200	1390	2026	800	1010	210	1500	856	C
	CR64-1	U2	11	85.6	DN 200	1390	2026	800	1280	250	1500	922	C
	CR64-2-1	U2	18.5	138	DN 200	1390	2026	1200	1339	250	2000	1308	C
	CR64-2-2	U2	15	112	DN 200	1390	2026	1000	1335	250	1500	1237	C
	CR64-2	U2	22	166	DN 200	1390	2026	1200	1474	250	2000	1523	C
	CR64-3-1	U2	30	220	DN 200	1390	2026	1200	1592	250	2000	1751	C
	CR64-3-2	U2	22	166	DN 200	1390	2026	1200	1477	250	2000	1526	C
	CR64-3	U2	30	220	DN 200	1390	2026	1200	1592	250	2000	1751	C
	CR64-4-2	U2	37	288	DN 200	1390	2026	2400	1732	250	2000	2127	C
5	CR64-1-1	U2	7.5	76	DN 200	1390	2526	1000	1010	210	1500	1078	C
	CR64-1	U2	11	107	DN 200	1390	2526	1000	1280	250	1500	1158	C
	CR64-2-1	U2	18.5	172.5	DN 200	1390	2526	1200	1339	250	2000	1586	C
	CR64-2-2	U2	15	140	DN 200	1390	2526	1000	1335	250	1500	1524	C
	CR64-2	U2	22	208	DN 200	1390	2526	1200	1474	250	2000	1855	C
	CR64-3-1	U2	30	275	DN 200	1390	2526	2400	1592	250	2000	2353	C
	CR64-3-2	U2	22	208	DN 200	1390	2526	1200	1477	250	2000	1859	C
	CR64-3	U2	30	275	DN 200	1390	2526	2400	1592	250	2000	2353	C
	CR64-4-2	U2	37	360	DN 200	1390	2526	3600	1732	250	2000	2761	C
6	CR64-1-1	U2	7.5	91.2	DN 200	1390	3026	1000	1010	210	1500	1256	C
	CR64-1	U2	11	128.4	DN 200	1390	3026	1000	1280	250	1500	1354	C
	CR64-2-1	U2	18.5	207	DN 200	1390	3026	1200	1339	250	2000	1852	C
	CR64-2-2	U2	15	168	DN 200	1390	3026	1000	1335	250	1500	1795	C
	CR64-2	U2	22	249	DN 200	1390	3026	1200	1474	250	2000	2166	C
	CR64-3-1	U2	30	330	DN 200	1390	3026	3600	1592	250	2000	2922	C
	CR64-3-2	U2	22	249	DN 200	1390	3026	1200	1477	250	2000	2171	C
	CR64-3	U2	30	330	DN 200	1390	3026	3600	1592	250	2000	2922	C
	CR64-4-2	U2	37	432	DN 200	1390	3026	3600	1732	250	2000	3165	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR 64

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
	CR64-1-1	U2	7.5	45.6	DN 200	1390	1526	790	1010	210	1455	632	D
	CR64-1	U2	11	64.2	DN 200	1390	1526	790	1280	250	1495	677	D
	CR64-2-1	U2	18.5	103.5	DN 200	1390	1526	790	1339	250	1495	877	D
	CR64-2-2	U2	15	84	DN 200	1390	1526	790	1335	250	1495	893	D
3	CR64-2	U2	22	124.5	DN 200	1390	1526	830	1474	250	1495	1042	D
	CR64-3-1	U2	30	165	DN 200	1390	1526	830	1592	250	1495	1208	D
	CR64-3-2	U2	22	124.5	DN 200	1390	1526	830	1477	250	1495	1044	D
	CR64-3	U2	30	165	DN 200	1390	1526	830	1592	250	1495	1208	D
	CR64-4-2	U2	37	216	DN 200	1390	1526	800	1732	250	2000	1386	C
	CR64-1-1	U2	7.5	60.8	DN 200	1390	2026	790	1010	210	1455	811	D
	CR64-1	U2	11	85.6	DN 200	1390	2026	790	1280	250	1495	870	D
	CR64-2-2	U2	15	112	DN 200	1390	2026	830	1335	250	1495	1175	D
	CR64-2-1	U2	18.5	138	DN 200	1390	2026	800	1339	250	1500	1173	C
4	CR64-2	U2	22	166	DN 200	1390	2026	800	1474	250	1500	1372	C
	CR64-3-1	U2	30	220	DN 200	1390	2026	800	1592	250	2000	1637	C
	CR64-3-2	U2	22	166	DN 200	1390	2026	800	1477	250	1500	1375	C
	CR64-3	U2	30	220	DN 200	1390	2026	800	1592	250	2000	1637	C
	CR64-4-2	U2	37	288	DN 200	1390	2026	1200	1732	250	2000	1864	C
	CR64-1-1	U2	7.5	76	DN 200	1390	2526	790	1010	210	1455	1006	D
	CR64-1	U2	11	107	DN 200	1390	2526	790	1280	250	1495	1080	D
	CR64-2-2	U2	15	140	DN 200	1390	2526	800	1335	250	1500	1478	C
	CR64-2-1	U2	18.5	172.5	DN 200	1390	2526	800	1339	250	1500	1451	C
5	CR64-2	U2	22	208	DN 200	1390	2526	1000	1474	250	2000	1767	C
	CR64-3-1	U2	30	275	DN 200	1390	2526	1200	1592	250	2000	2093	C
	CR64-3-2	U2	22	208	DN 200	1390	2526	1000	1477	250	2000	1771	C
	CR64-3	U2	30	275	DN 200	1390	2526	1200	1592	250	2000	2093	C
	CR64-4-2	U2	37	360	DN 200	1390	2526	1600	1732	250	2000	2320	C
	CR64-1-1	U2	7.5	91.2	DN 200	1390	3026	830	1010	210	1455	1200	D
	CR64-1	U2	11	128.4	DN 200	1390	3026	800	1280	250	1500	1311	C
	CR64-2-2	U2	15	168	DN 200	1390	3026	800	1335	250	1500	1745	C
	CR64-2-1	U2	18.5	207	DN 200	1390	3026	1000	1339	250	2000	1782	C
6	CR64-2	U2	22	249	DN 200	1390	3026	1000	1474	250	2000	2077	C
	CR64-3-2	U2	22	249	DN 200	1390	3026	1000	1477	250	2000	2082	C
	CR64-3-1	U2	30	330	DN 200	1390	3026	1600	1592	250	2000	2495	C
	CR64-3	U2	30	330	DN 200	1390	3026	1600	1592	250	2000	2495	C
	CR64-4-2	U2	37	432	DN 200	1390	3026	1600	1732	250	2000	2725	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR 90

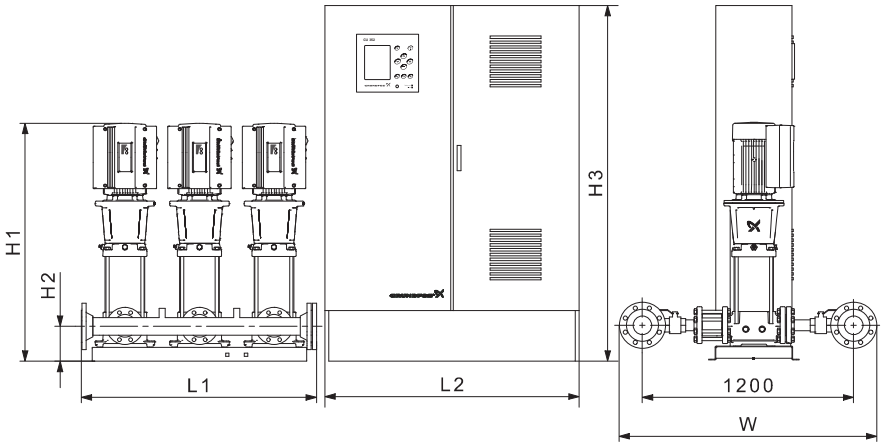


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Fig. 85 Dimensional sketch of a Hydro MPC booster system with a floor-mounted control cabinet (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

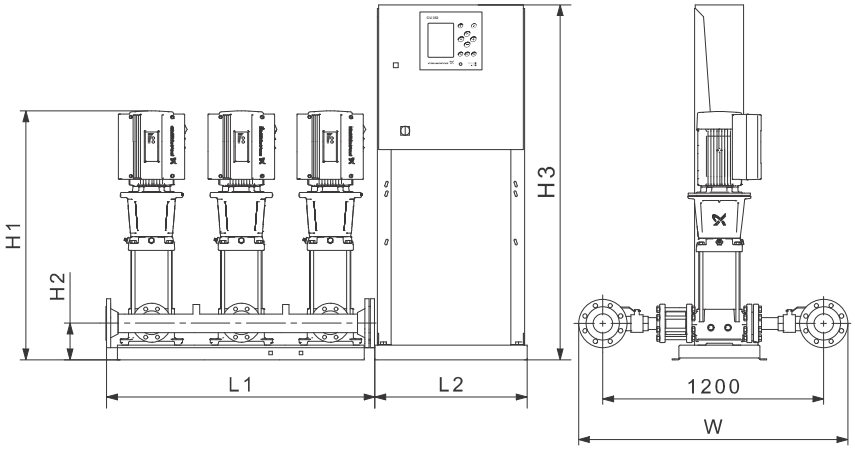

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Fig. 86 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR 90

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR90-1-1	U2	11	64.2	DN 200	1540	1526	800	1262	250	1500	749	C
	CR90-1	U2	15	84	DN 200	1540	1526	1000	1262	250	1500	979	C
	CR90-2-1	U2	22	124.5	DN 200	1540	1526	1200	1374	250	2000	1117	C
	CR90-2-2	U2	18.5	103.5	DN 200	1540	1526	1000	1480	250	1500	1164	C
	CR90-2	U2	30	165	DN 200	1540	1526	1200	1529	250	2000	1382	C
	CR90-3-1	U2	37	216	DN 200	1540	1526	2400	1678	250	2000	1711	C
	CR90-3-2	U2	37	216	DN 200	1540	1526	2400	1678	250	2000	1711	C
	CR90-3	U2	37	216	DN 200	1540	1526	2400	1684	250	2000	1949	C
	CR90-4-2	U2	37	216	DN 200	1540	1526	2400	1776	250	2000	1969	C
4	CR90-1-1	U2	11	85.6	DN 250	1605	2026	800	1262	250	1500	966	C
	CR90-1	U2	15	112	DN 250	1605	2026	1000	1262	250	1500	1263	C
	CR90-2-1	U2	22	166	DN 250	1605	2026	1200	1374	250	2000	1414	C
	CR90-2-2	U2	18.5	138	DN 250	1605	2026	1200	1480	250	2000	1596	C
	CR90-2	U2	30	220	DN 250	1605	2026	1200	1529	250	2000	1772	C
	CR90-3-1	U2	37	288	DN 250	1605	2026	2400	1678	250	2000	2143	C
	CR90-3-2	U2	37	288	DN 250	1605	2026	2400	1678	250	2000	2143	C
	CR90-3	U2	37	288	DN 250	1605	2026	2400	1684	250	2000	2461	C
	CR90-4-2	U2	37	288	DN 250	1605	2026	2400	1776	250	2000	2487	C
5	CR90-1-1	U2	11	107	DN 250	1605	2526	1000	1262	250	1500	1352	C
	CR90-1	U2	15	140	DN 250	1605	2526	1000	1262	250	1500	1695	C
	CR90-2-1	U2	22	208	DN 250	1605	2526	1200	1374	250	2000	1857	C
	CR90-2-2	U2	18.5	172.5	DN 250	1605	2526	1200	1480	250	2000	2084	C
	CR90-2	U2	30	275	DN 250	1605	2526	2400	1529	250	2000	2517	C
	CR90-3-1	U2	37	360	DN 250	1605	2526	3600	1678	250	2000	2920	C
	CR90-3-2	U2	37	360	DN 250	1605	2526	3600	1678	250	2000	2920	C
	CR90-3	U2	37	360	DN 250	1605	2526	3600	1684	250	2000	3317	C
	CR90-4-2	U2	37	360	DN 250	1605	2526	3600	1776	250	2000	3350	C
6	CR90-1-1	U2	11	128.4	DN 250	1605	3026	1000	1262	250	1500	1560	C
	CR90-1	U2	15	168	DN 250	1605	3026	1000	1262	250	1500	1972	C
	CR90-2-1	U2	22	249	DN 250	1605	3026	1200	1374	250	2000	2140	C
	CR90-2-2	U2	18.5	207	DN 250	1605	3026	1200	1480	250	2000	2421	C
	CR90-2	U2	30	330	DN 250	1605	3026	3600	1529	250	2000	3091	C
	CR90-3-1	U2	37	432	DN 250	1605	3026	3600	1678	250	2000	3328	C
	CR90-3-2	U2	37	432	DN 250	1605	3026	3600	1678	250	2000	3328	C
	CR90-3	U2	37	432	DN 250	1605	3026	3600	1684	250	2000	3805	C
	CR90-4-2	U2	37	432	DN 250	1605	3026	3600	1776	250	2000	3845	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR 90

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR90-1	U2	15	84	DN 200	1540	1526	790	1262	250	1495	902	D
	CR90-1-1	U2	11	64.2	DN 200	1540	1526	790	1262	250	1495	700	D
	CR90-2-2	U2	18.5	103.5	DN 200	1540	1526	790	1480	250	1495	1082	D
	CR90-2-1	U2	22	124.5	DN 200	1540	1526	830	1374	250	1495	949	D
	CR90-2	U2	30	165	DN 200	1540	1526	830	1529	250	1495	1213	D
	CR90-3-2	U2	37	216	DN 200	1540	1526	800	1678	250	2000	1388	C
	CR90-3-1	U2	37	216	DN 200	1540	1526	800	1678	250	2000	1388	C
	CR90-3	U2	37	216	DN 200	1540	1526	800	1684	250	2000	1626	C
	CR90-4-2	U2	37	216	DN 200	1540	1526	800	1776	250	2000	1646	C
4	CR90-1	U2	15	112	DN 250	1605	2026	830	1262	250	1495	1201	D
	CR90-1-1	U2	11	85.6	DN 250	1605	2026	790	1262	250	1495	914	D
	CR90-2-2	U2	18.5	138	DN 250	1605	2026	800	1480	250	1500	1461	C
	CR90-2-1	U2	22	166	DN 250	1605	2026	800	1374	250	1500	1263	C
	CR90-2	U2	30	220	DN 250	1605	2026	800	1529	250	2000	1658	C
	CR90-3-2	U2	37	288	DN 250	1605	2026	1200	1678	250	2000	1880	C
	CR90-3-1	U2	37	288	DN 250	1605	2026	1200	1678	250	2000	1880	C
	CR90-3	U2	37	288	DN 250	1605	2026	1200	1684	250	2000	2198	C
	CR90-4-2	U2	37	288	DN 250	1605	2026	1200	1776	250	2000	2224	C
5	CR90-1-1	U2	11	107	DN 250	1605	2526	790	1262	250	1495	1274	D
	CR90-1	U2	15	140	DN 250	1605	2526	800	1262	250	1500	1649	C
	CR90-2-2	U2	18.5	172.5	DN 250	1605	2526	800	1480	250	1500	1949	C
	CR90-2-1	U2	22	208	DN 250	1605	2526	1000	1374	250	2000	1769	C
	CR90-2	U2	30	275	DN 250	1605	2526	1200	1529	250	2000	2257	C
	CR90-3-2	U2	37	360	DN 250	1605	2526	1600	1678	250	2000	2479	C
	CR90-3-1	U2	37	360	DN 250	1605	2526	1600	1678	250	2000	2479	C
	CR90-3	U2	37	360	DN 250	1605	2526	1600	1684	250	2000	2876	C
	CR90-4-2	U2	37	360	DN 250	1605	2526	1600	1776	250	2000	2909	C
6	CR90-1-1	U2	11	128.4	DN 250	1605	3026	800	1262	250	1500	1517	C
	CR90-1	U2	15	168	DN 250	1605	3026	800	1262	250	1500	1922	C
	CR90-2-2	U2	18.5	207	DN 250	1605	3026	1000	1480	250	2000	2351	C
	CR90-2-1	U2	22	249	DN 250	1605	3026	1000	1374	250	2000	2051	C
	CR90-2	U2	30	330	DN 250	1605	3026	1600	1529	250	2000	2664	C
	CR90-3-2	U2	37	432	DN 250	1605	3026	1600	1678	250	2000	2888	C
	CR90-3-1	U2	37	432	DN 250	1605	3026	1600	1678	250	2000	2888	C
	CR90-3	U2	37	432	DN 250	1605	3026	1600	1684	250	2000	3365	C
	CR90-4-2	U2	37	432	DN 250	1605	3026	1600	1776	250	2000	3405	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-F/-S with CR 120 / CR 150

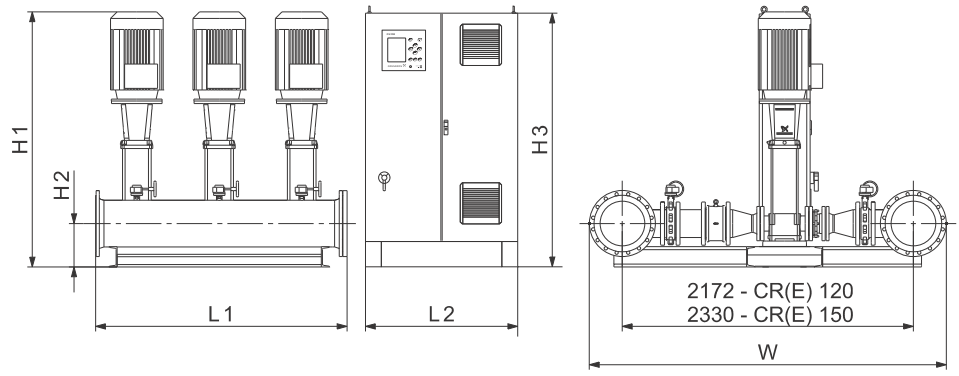


Fig. 87 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design C). The booster system is shown as an example. The pumps supplied may differ from the sketch.

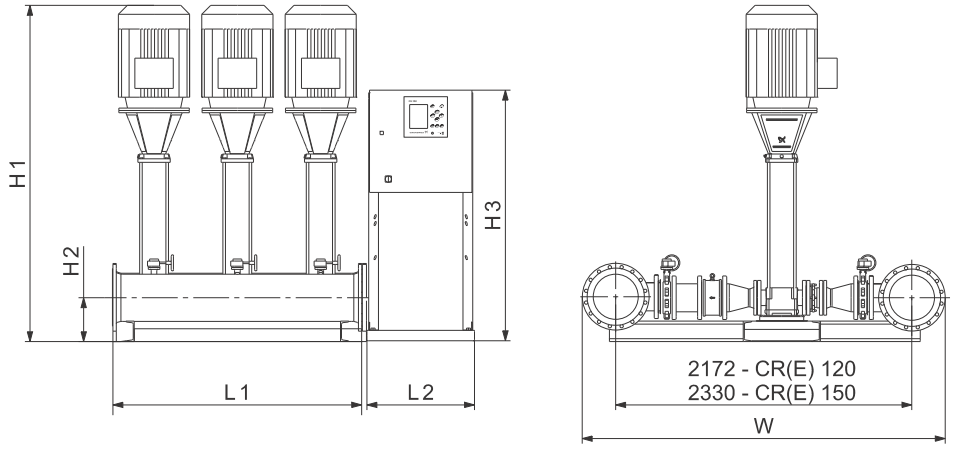


Fig. 88 Dimensional sketch of a Hydro MPC booster system with a control cabinet mounted on a separate base frame (design D). The booster system is shown as an example. The pumps supplied may differ from the sketch.

Electrical data, dimensions and weights

Hydro MPC-F with CR 120

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR120-1	U2	18.5	103.5	DN 300	2632	1978	1000	1522	350	1500	1653	C
	CR120-2-1	U2	30	165	DN 300	2632	1978	1200	1806	350	2000	2196	C
	CR120-2-2	U2	30	165	DN 300	2632	1978	1200	1806	350	2000	2196	C
	CR120-2	U2	37	216	DN 300	2632	1978	2400	1863	350	2000	2509	C
	CR120-3-1	U2	45	264	DN 300	2632	1978	2400	2024	350	2000	2804	C
	CR120-3	U2	45	264	DN 300	2632	1978	2400	2092	350	2000	3210	C
	CR120-4-1	U2	75	408	DN 300	2632	1978	2400	2321	350	2000	3688	C
4	CR120-1	U2	18.5	138	DN 300	2632	2628	1200	1522	350	2000	2294	C
	CR120-2-1	U2	30	220	DN 300	2632	2628	1200	1806	350	2000	2903	C
	CR120-2-2	U2	30	220	DN 300	2632	2628	1200	1806	350	2000	2903	C
	CR120-2	U2	37	288	DN 300	2632	2628	2400	1863	350	2000	3254	C
	CR120-3-1	U2	45	352	DN 300	2632	2628	2400	2024	350	2000	3631	C
	CR120-3	U2	45	352	DN 300	2632	2628	2400	2092	350	2000	4172	C
	CR120-4-1	U2	75	544	DN 300	2632	2628	3600	2321	350	2000	5006	C
5	CR120-1	U2	18.5	172.5	DN 300	2632	3278	1200	1522	350	2000	2728	C
	CR120-2-1	U2	30	275	DN 300	2632	3278	2400	1806	350	2000	3703	C
	CR120-2-2	U2	30	275	DN 300	2632	3278	2400	1806	350	2000	3703	C
	CR120-2	U2	37	360	DN 300	2632	3278	3600	1863	350	2000	4080	C
	CR120-3-1	U2	45	440	DN 300	2632	3278	3600	2024	350	2000	4542	C
	CR120-3	U2	45	440	DN 300	2632	3278	3600	2092	350	2000	5218	C
	CR120-4-1	U2	75	680	DN 300	2632	3278	3600	2321	350	2000	5995	C
6	CR120-1	U2	18.5	207	DN 300	2632	3928	1200	1522	350	2000	3167	C
	CR120-2-1	U2	30	330	DN 300	2632	3928	3600	1806	350	2000	4487	C
	CR120-2-2	U2	30	330	DN 300	2632	3928	3600	1806	350	2000	4487	C
	CR120-2	U2	37	432	DN 300	2632	3928	3600	1863	350	2000	4694	C
	CR120-3-1	U2	45	528	DN 300	2632	3928	3600	2024	350	2000	5256	C
	CR120-3	U2	45	528	DN 300	2632	3928	3600	2092	350	2000	6067	C
	CR120-4-1	U2	75	816	DN 300	2632	3928	3600	2321	350	2000	7002	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR 120

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR120-1	U2	18.5	103.5	DN 300	2632	1978	790	1522	350	1555	1571	D
	CR120-2-2	U2	30	165	DN 300	2632	1978	830	1806	350	1555	2027	D
	CR120-2-1	U2	30	165	DN 300	2632	1978	830	1806	350	1555	2027	D
	CR120-2	U2	37	216	DN 300	2632	1978	800	1863	350	2000	2186	C
	CR120-3-1	U2	45	264	DN 300	2632	1978	1200	2024	350	2000	2529	C
	CR120-3	U2	45	264	DN 300	2632	1978	1200	2092	350	2000	2935	C
	CR120-4-1	U2	75	408	DN 300	2632	1978	1200	2321	350	2000	3384	C
4	CR120-1	U2	18.5	138	DN 300	2632	2628	800	1522	350	1500	2159	C
	CR120-2-2	U2	30	220	DN 300	2632	2628	800	1806	350	2000	2789	C
	CR120-2-1	U2	30	220	DN 300	2632	2628	800	1806	350	2000	2789	C
	CR120-2	U2	37	288	DN 300	2632	2628	1200	1863	350	2000	2991	C
	CR120-3-1	U2	45	352	DN 300	2632	2628	1200	2024	350	2000	3354	C
	CR120-3	U2	45	352	DN 300	2632	2628	1200	2092	350	2000	3895	C
	CR120-4-1	U2	75	544	DN 300	2632	2628	1600	2321	350	2000	4526	C
5	CR120-1	U2	18.5	172.5	DN 300	2632	3278	800	1522	350	1500	2593	C
	CR120-2-2	U2	30	275	DN 300	2632	3278	1200	1806	350	2000	3443	C
	CR120-2-1	U2	30	275	DN 300	2632	3278	1200	1806	350	2000	3443	C
	CR120-2	U2	37	360	DN 300	2632	3278	1600	1863	350	2000	3639	C
	CR120-3-1	U2	45	440	DN 300	2632	3278	1600	2024	350	2000	4089	C
	CR120-3	U2	45	440	DN 300	2632	3278	1600	2092	350	2000	4765	C
	CR120-4-1	U2	75	680	DN 300	2632	3278	1600	2321	350	2000	5528	C
6	CR120-1	U2	18.5	207	DN 300	2632	3928	1000	1522	350	2000	3097	C
	CR120-2-2	U2	30	330	DN 300	2632	3928	1600	1806	350	2000	4060	C
	CR120-2-1	U2	30	330	DN 300	2632	3928	1600	1806	350	2000	4060	C
	CR120-2	U2	37	432	DN 300	2632	3928	1600	1863	350	2000	4254	C
	CR120-3-1	U2	45	528	DN 300	2632	3928	1600	2024	350	2000	4797	C
	CR120-3	U2	45	528	DN 300	2632	3928	1600	2092	350	2000	5608	C
	CR120-4-1	U2	75	816	DN 300	2632	3928	1600	2321	350	2000	6543	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-F with CR 150

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR150-1-1	U2	18.5	103.5	DN350	2850	1980	1000	1522	350	1500	1853	C
	CR150-1	U2	22	124.5	DN350	2850	1980	1200	1614	350	2000	2213	C
	CR150-2-1	U2	37	216	DN350	2850	1980	2400	1863	350	2000	2709	C
	CR150-2-2	U2	30	165	DN350	2850	1980	1200	1806	350	2000	2396	C
	CR150-2	U2	37	216	DN350	2850	1980	2400	1869	350	2000	2948	C
	CR150-3-2	U2	45	264	DN350	2850	1980	2400	2092	350	2000	3411	C
	CR150-3	U2	75	408	DN350	2850	1980	2400	2165	350	2000	3859	C
	CR150-4-2	U2	75	408	DN350	2850	1980	2400	2321	350	2000	3888	C
4	CR150-1-1	U2	18.5	138	DN350	2850	2630	1200	1522	350	2000	2575	C
	CR150-1	U2	22	166	DN350	2850	2630	1200	1614	350	2000	2935	C
	CR150-2-1	U2	37	288	DN350	2850	2630	2400	1863	350	2000	3535	C
	CR150-2-2	U2	30	220	DN350	2850	2630	1200	1806	350	2000	3184	C
	CR150-2	U2	37	288	DN350	2850	2630	2400	1869	350	2000	3854	C
	CR150-3-2	U2	45	352	DN350	2850	2630	2400	2092	350	2000	4454	C
	CR150-3	U2	75	544	DN350	2850	2630	3600	2165	350	2000	5248	C
	CR150-4-2	U2	75	544	DN350	2850	2630	3600	2321	350	2000	5287	C
5	CR150-1-1	U2	18.5	172.5	DN350	2850	3280	1200	1522	350	2000	3052	C
	CR150-1	U2	22	208	DN350	2850	3280	1200	1614	350	2000	3503	C
	CR150-2-1	U2	37	360	DN350	2850	3280	3600	1863	350	2000	4404	C
	CR150-2-2	U2	30	275	DN350	2850	3280	2400	1806	350	2000	4027	C
	CR150-2	U2	37	360	DN350	2850	3280	3600	1869	350	2000	4802	C
	CR150-3-2	U2	45	440	DN350	2850	3280	3600	2092	350	2000	5544	C
	CR150-3	U2	75	680	DN350	2850	3280	3600	2165	350	2000	6271	C
	CR150-4-2	U2	75	680	DN350	2850	3280	3600	2321	350	2000	6320	C
6	CR150-1-1	U2	18.5	207	DN350	2850	3930	1200	1522	350	2000	3534	C
	CR150-1	U2	22	249	DN350	2850	3930	1200	1614	350	2000	4066	C
	CR150-2-1	U2	37	432	DN350	2850	3930	3600	1863	350	2000	5061	C
	CR150-2-2	U2	30	330	DN350	2850	3930	3600	1806	350	2000	4855	C
	CR150-2	U2	37	432	DN350	2850	3930	3600	1869	350	2000	5538	C
	CR150-3-2	U2	45	528	DN350	2850	3930	3600	2092	350	2000	6436	C
	CR150-3	U2	75	816	DN350	2850	3930	3600	2165	350	2000	7312	C
	CR150-4-2	U2	75	816	DN350	2850	3930	3600	2321	350	2000	7371	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

Hydro MPC-S with CR 150

No. of pumps	Pump type	Supply voltage [V]	Motor [kW]	Max. I_N [A]	Connection	W [mm]	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]	Design
3	CR150-1-1	U2	18.5	103.5	DN350	2850	1980	790	1522	350	1555	1771	D
	CR150-1	U2	22	124.5	DN350	2850	1980	830	1614	350	1555	2045	D
	CR150-2-2	U2	30	165	DN350	2850	1980	830	1806	350	1555	2227	D
	CR150-2-1	U2	37	216	DN350	2850	1980	800	1863	350	2000	2386	C
	CR150-2	U2	37	216	DN350	2850	1980	800	1869	350	2000	2625	C
	CR150-3-2	U2	45	264	DN350	2850	1980	1200	2092	350	2000	3136	C
	CR150-3	U2	75	408	DN350	2850	1980	1200	2165	350	2000	3555	C
	CR150-4-2	U2	75	408	DN350	2850	1980	1200	2321	350	2000	3584	C
4	CR150-1-1	U2	18.5	138	DN350	2850	2630	800	1522	350	1500	2440	C
	CR150-1	U2	22	166	DN350	2850	2630	800	1614	350	1500	2784	C
	CR150-2-2	U2	30	220	DN350	2850	2630	800	1806	350	2000	3070	C
	CR150-2-1	U2	37	288	DN350	2850	2630	1200	1863	350	2000	3272	C
	CR150-2	U2	37	288	DN350	2850	2630	1200	1869	350	2000	3591	C
	CR150-3-2	U2	45	352	DN350	2850	2630	1200	2092	350	2000	4177	C
	CR150-3	U2	75	544	DN350	2850	2630	1600	2165	350	2000	4768	C
	CR150-4-2	U2	75	544	DN350	2850	2630	1600	2321	350	2000	4807	C
5	CR150-1-1	U2	18.5	172.5	DN350	2850	3280	800	1522	350	1500	2917	C
	CR150-1	U2	22	208	DN350	2850	3280	1000	1614	350	2000	3415	C
	CR150-2-2	U2	30	275	DN350	2850	3280	1200	1806	350	2000	3767	C
	CR150-2-1	U2	37	360	DN350	2850	3280	1600	1863	350	2000	3963	C
	CR150-2	U2	37	360	DN350	2850	3280	1600	1869	350	2000	4361	C
	CR150-3-2	U2	45	440	DN350	2850	3280	1600	2092	350	2000	5091	C
	CR150-3	U2	75	680	DN350	2850	3280	1600	2165	350	2000	5804	C
	CR150-4-2	U2	75	680	DN350	2850	3280	1600	2321	350	2000	5853	C
6	CR150-1-1	U2	18.5	207	DN350	2850	3930	1000	1522	350	2000	3464	C
	CR150-1	U2	22	249	DN350	2850	3930	1000	1614	350	2000	3977	C
	CR150-2-2	U2	30	330	DN350	2850	3930	1600	1806	350	2000	4428	C
	CR150-2-1	U2	37	432	DN350	2850	3930	1600	1863	350	2000	4621	C
	CR150-2	U2	37	432	DN350	2850	3930	1600	1869	350	2000	5098	C
	CR150-3-2	U2	45	528	DN350	2850	3930	1600	2092	350	2000	5977	C
	CR150-3	U2	75	816	DN350	2850	3930	1600	2165	350	2000	6853	C
	CR150-4-2	U2	75	816	DN350	2850	3930	1600	2321	350	2000	6912	C

Supply voltage U2: 3 x 380-415 V ± 10 %, PE.
Design A: Hydro MPC booster system with a control cabinet mounted on the same base frame as the pumps.
Design B: Hydro MPC booster system with a control cabinet centred on the base frame.
Design C: Hydro MPC booster system with a floor-mounted control cabinet.
Design D: Hydro MPC booster system with a control cabinet mounted on a separate base frame.
Dimensions may vary by ± 10 mm.

14. Optional equipment

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

Diaphragm tank

TM02 9027 1904

Fig. 89 Diaphragm tanks

In buildings, it is usually necessary to install a diaphragm tank on the discharge side of the booster system.

As standard, the Hydro MPC booster system is designed for a maximum system pressure of 16 bar. A standard Hydro MPC booster system includes pressure transmitters and one pressure gauge with a rated pressure of 16 bar (full scale).

Hydro MPC booster systems designed for PN 16

Diaphragm tanks up to 33 litres are mounted on the manifold on the discharge side of the booster system.

For information about diaphragm tanks larger than 25 litres, see *Diaphragm tank* on page 152.

Description	Max. system pressure [bar]	Volume [litres]	Connection
Diaphragm tank and Hydro MPC booster system for PN 16	16	8	G 3/4
		12	G 3/4
		25	G 3/4

Redundant primary sensor

TM04 4125 0809

Fig. 90 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 must be of the same type as the primary sensor.

Description	Range [bar]
Redundant primary sensor[1)]	0-10
	0-16

1) The redundant primary sensor is normally connected to analog input AI3 of the CU 352. If this input is used for another function, such as "External setpoint", the redundant sensor must be connected to 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 150.

Dry-running protection

The booster system must be protected against dry running.

The inlet conditions determine the type of dry-running protection:

- If the system draws water from a tank or a well, select a level switch or an electrode relay for dry-running protection.
- If the system has an inlet pressure, select a pressure transmitter or a pressure switch for dry-running protection.

Description	Range [bar]
Dry-running protection by means of electrode relay (without electrodes and electrode cable)[1)]	-
Pressure switch[1)]	0-2
	0-4
	0-8
	0-16
Inlet pressure sensor[2)]	0-1
	0-4
	0-6
	0-10
	0-16

1) Only one type of dry-running protection can be selected, as it must be connected to the same digital input of the CU 352. This also applies to level switches. For further information about the CU 352, see page 12.

2) The inlet pressure sensor is normally connected to analog input AI2 of the CU 352. If this input is used for another function, such as "External setpoint", the sensor must be connected to 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 150. For further information about the IO 351B, see page 12.

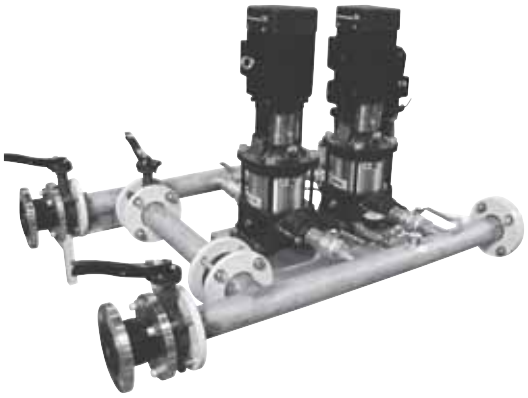
Pilot pump

TM04 4197 1009

Fig. 91 Pilot pump

The pilot pump takes over the operation from the main pumps during periods when the consumption is so small that the stop function of the main pumps is activated. A pilot pump is typically used in booster systems as from 5.5 kW. Pilot pumps are available for Hydro MPC-E and -F control variants.

Bypass connection



TM04 4126 0809

Fig. 92 Booster system with bypass connection

A bypass connection is a pipe diversion consisting of a manifold, two isolating valves and a non-return valve. The bypass connection allows water to bypass the pumps from the suction to the discharge manifold.

We offer bypass connections for the following Hydro MPC systems:

Description	Connection
CR(I), CR(I)E 3 (2 or 3 pumps) CR(I), CR(I)E 5 (2 or 3 pumps)	Rp 2
CR(I), CR(I)E 3 (4 to 6 pumps) CR(I), CR(I)E 5 (4 to 6 pumps)	Rp 2 1/2
CR(I), CR(I)E 10 (2 or 3 pumps)	Rp 2 1/2
CR(I), CR(I)E 10 (4 or 5 pumps)	DN 80
CR(I), CR(I)E 10 (6 pumps)	DN 100
CR(I), CR(I)E 15, 20 (2 pumps)	DN 80
CR(I), CR(I)E 15, 20 (3 or 4 pumps) CR, CRE 32 (2 pumps)	DN 100
CR, CRE 15, 20 (5 or 6 pumps) CR, CRE 32 (3 to 6 pumps)	DN 150
CR, CRE 45 (2 pumps) CR, CRE 64 (2 pumps)	DN 150
CR, CRE 45 (3 to 6 pumps) CR, CRE 64 (3 to 6 pumps)	DN 200
CR, CRE 90 (2 pumps)	DN 150
CR, CRE 90 (3 or 4 pumps)	DN 200
CR, CRE 90 (5 or 6 pumps)	DN 250

Position of non-return valve

As standard, non-return valves are fitted on the discharge side of the pumps of the booster system.

In installations with suction lift, it is advisable to install non-return valves on the suction side of the pumps to prevent dry running.

Description
Non-return valve on suction side

Stainless-steel non-return valve

As standard, the Hydro MPC booster system includes non-return valves of polyoxymethylene (POM).

Stainless-steel non-return valves are available for pumped liquids containing abrasive particles.

When stainless-steel non-return valves are used, the maximum temperature of the pumped liquid can be higher.

Note: Order one valve for each pump.

Description	Connection
Non-return valve[1)]	CR(I), CR(I)E 3 and 5
	CR(I), CR(I)E 10
	CR(I), CR(I)E 15 to 32
	CR, CRE 45 to 90

1) Maximum operating pressure is 25 bar.

Emergency operation switch

The emergency operation switch enables emergency operation if a fault occurs in the CU 352.

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

Note: Order one switch for each pump.

Description	Location
CRE, CRIE pumps	In control cabinet
CR, CRI pumps with external frequency converter	
CR, CRI pumps for mains operation	

Repair switch

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

Note: Order one switch for each pump.

Description	Motor current/starting method	Location
Repair switch	≤ 16 A, DOL	On the pump
	> 16 A < 25 A, DOL	
	> 25 A < 40 A, DOL	
	> 40 A < 63 A, DOL	
	> 63 A < 80 A, DOL	
	> 80 A < 100 A, DOL	
	> 100 A < 125 A, DOL	
	>125 A < 175 A, DOL	
	> 175 A < 250 A, DOL	
	≤ 16 A, Y/Δ	
	> 16 A < 25 A, Y/Δ	
	> 25 A < 40 A, Y/Δ	
	> 40 A < 63 A, Y/Δ	
	> 63 A < 80 A, Y/Δ	
	> 80 A < 100 A, Y/Δ	
	> 100 A < 125 A, Y/Δ	
	> 125 A < 175 A, Y/Δ	
	> 175 A < 250 A, Y/Δ	

Isolating switch

By means of an isolating switch fitted inside the control cabinet, the power supply to the pump can be switched off during repair, etc.

Note: This option only applies to Hydro MPC-F control variants.

Note: Order one switch for each pump.

Description	Motor current/ starting method	Location
Isolating switch	≤ 16 A, DOL	In control cabinet
	> 16 A < 25 A, DOL	
	> 25 A < 40 A, DOL	
	> 40 A < 63 A, DOL	
	> 63 A < 80 A, DOL	
	> 80 A < 100 A, DOL	
	> 100 A < 125 A, DOL	
	> 125 A < 175 A, DOL	
	≤ 16 A, Y/Δ	
	> 16 A < 25 A, Y/Δ	
	> 25 A < 40 A, Y/Δ	
	> 40 A < 63 A, Y/Δ	
	> 63 A < 80 A, Y/Δ	
	> 80 A < 100 A, Y/Δ	
	> 100 A < 125 A, Y/Δ	
	> 125 A < 175 A, Y/Δ	

Main switch for neutral conductor

The main switch for switching off the neutral conductor is only used in connection with single-phase motors. This option is to be selected according to the local rules for the installation site. As standard, the main switch does not switch off the neutral conductor.

Description	Nominal current of Hydro MPC [A]	Location
Main switch for switching off the neutral conductor	40	In control cabinet
	100	
	175	
	250	
	400	
	630	
	800	
	1250	
	1750	
	2000	
	2500	

Operating light, system

TM04 4112 0709

Fig. 93 Operating light, system

The operating light is on when the system is in operation.

Description	Location
Operating light, system	In door of control cabinet

Operating light, pump

TM04 4112 0709

Fig. 94 Operating light, system

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

Note: Order one operating light for each pump.

Description	Operating light for	Location
Operating light, pump	Hydro MPC-E	In door of control cabinet
	Hydro MPC-F	
	Hydro MPC-S	

Example: For a Hydro MPC-ES booster system consisting of one CR(I)E pump with integrated frequency converter and two mains-operated CR(I) pumps, order one operating light no. 96020330 and two operating lights no. 96020139.

Fault light, system

TM04 3254 3908

Fig. 95 Fault light, system

The fault light is on if a fault occurs in the system.

Note: Phase failure causes no fault indication.

Description	Location
Fault light, system	In door of control cabinet

Fault light, pump

TM04 3254 3908

Fig. 96 Fault light, pump

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

Note: Order one fault light for each pump.

Description	Fault indicator light for	Location
Fault light, pump	Hydro MPC-E	In door of control cabinet
	Hydro MPC-F	
	Hydro MPC-S	

Panel light and socket

The panel light is on when the door of the control cabinet is open.

Panel lights for 50 Hz are in accordance with EN 60529/10.91.

Note: The panel light and socket are to be connected to a separate power supply.

Description	Type	Location
Panel light	14 W, 240 V, 50 Hz, socket	In control cabinet
	14 W, 220-230 V, 50 Hz, socket	
	14 W, 120 V, 60 Hz, socket	

IO 351B interface

GrA0815

Fig. 97 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 352 supports the installation of one IO 351B interface.

Description	Location
Input/output interface via the IO 351B	In control cabinet

Backup battery

TM02 7159 2703

The battery is connected to the CU 352 as a backup in case the power supply is interrupted.

Description	Location
Backup battery for CU 352 (7 Ah)	In control cabinet

Ethernet

The Ethernet connection makes it possible to get unlimited access to the setting and monitoring of the Hydro MPC from a remote PC.

Description
Ethernet

CIM communication interface modules

GrA6121

Fig. 98 Grundfos CIM communication interface module

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

Note: CIM modules must be fitted by authorised personnel.

The CIM module enables transfer of data such as:

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

We offer the following CIM modules:

Module	Fieldbus protocol
CIM 050	GENIbus
CIM 110	LonWorks
CIM 150	PROFIBUS DP
CIM 200	Modbus RTU
CIM 250	GSM
CIM 270	GRM
CIM 300	BACnet MS/TP
CIM 500	Industrial Ethernet

Antennas for CIM 250

Description
Antenna for roof
Antenna for desk

Transient voltage protection

The transient voltage protection protects the booster system against high-energy transients.

Description	Range
Transient voltage protection	3 x 400 V, N, PE, 50/60 Hz
	3 x 400 V, PE, 50/60 Hz

Lightning protection

The booster system can be protected against strokes of lightning. The lightning protection is in accordance with IEC 61024-1:1992-10, class B and C.

Note: Additional earthing facilities must be arranged by the customer at the installation site.

Description	Range
Lightning protection	3 x 400 V, N, PE, 50/60 Hz
	3 x 400 V, PE, 50/60 Hz

Phase-failure monitoring

The booster system should be protected against phase failure.

Note: A potential-free switch is available for external monitoring.

Description	Location
Phase-failure monitoring	In control cabinet

Beacon

The beacon is on in case of a system alarm.

Note: Phase failure causes no alarm indication.

Description	Location
Beacon	On top of control cabinet
	External[1)]

1) Cable is not included.

Potential-free contacts

Potential-free contacts to indicate that the pumps in the system are running or that an alarm is present.

Description	Location
Hydro MPC-E/-EC: < 7.5 kW, max. 250 V, NC 1 A, NO 2 A	In control cabinet
Hydro MPC-E/-EC: > 11 kW, max. 250 V, NC 1 A, NO 2 A	
Hydro MPC-F: Max. 250 V, NC 1 A, NO 2 A	
Hydro MPC-S: Max. 250 V, NC 1 A, NO 2 A	

Audible alarm

The audible alarm sounds in case of a system alarm.

Description	Sound pressure level	Location
Audible alarm	80 dB(A)	In control cabinet
	100 dB(A)	

Voltmeter

A voltmeter indicates the mains voltage between the mains phases and between the neutral conductor, N, and the mains phases.

Note: Order one voltmeter for each pump.

Description	Location
Voltmeter, 500 V (two phases)	In door of control cabinet
Voltmeter, 500 V, with changeover switch (all phases)	

Ammeter

An ammeter indicates the current of one phase per pump.

Note: Order one ammeter for each pump.

Description	Current [A]	Location
Ammeter	6	In door of control cabinet
	16	
	25	
	40	
	100	
	160	
	250	
	400	

15. Accessories

All accessories can be fitted to the Hydro MPC booster system after delivery.

Dry-running protection

The booster system must be protected against dry running.

Dry-running protection by means of level switches is used in installations where the booster system draws water from a tank or well.

Description	Product number
Level switch including 5 metres of cable[1)]	96020142

1) The input for the level switch is not included. See page 146. Only one type of dry-running protection can be selected, as it must be connected to the same digital input of the CU 352. This also applies to level switches.

Diaphragm tank

TM02 9097 1904

Fig. 99 Diaphragm tanks

A diaphragm tank must always be installed on the discharge side of the booster system.

Note: The diaphragm tanks are separate tanks without valve, fittings and pipes.

Diaphragm tank, 10 bar

Capacity [litres]	Connection	Product number
8	G 3/4	96528335
12	G 3/4	96528336
18	G 3/4	96528337
24	G 1	96528339
33	G 1	96528340
60	G 1	96528341
80	G 1	96528342
100	G 1	96528343
130	G 1	96528344
170	G 1	96528345
240	G 1	96528346
300	G 1	96528347
450	G 1	96528348
600	G 1 1/2	96603451
800	G 1 1/2	96603452
1000	G 1 1/2	96603453
1500	DN 65	96573283
2000	DN 65	96573284
3000	DN 65	96573285

Diaphragm tank, 16 bar

Capacity [litres]	Connection	Product number
8	G 3/4	96573347
12	G 3/4	96573348
25	G 3/4	96573349
80	G 1	96603420
100	G 1	96603421
200	G 1 1/4	96603422
300	G 1 1/2	96603423
400	G 1 1/2	96603424
500	G 1 1/2	96603425
600	G 1 1/2	96603426
800	G 1 1/2	96603427
1000	G 1 1/2	96603428

Foot valve

TM04 4128 0809

Fig. 100 Foot valves

The booster system must be protected against dry running.

Dry-running protection by means of level switches is used in installations where the booster system draws water from a tank or well.

Foot valves are typically used in minor booster systems with suction lift, for example when the Hydro MPC draws water from a break tank placed at a lower geodetic height than the booster system.

Foot valves are designed to ensure optimum suction conditions.

Description	Connection	Product number
Foot valve	Rp 2	956120
	Rp 3	956130
	Rp 4	956449

Machine shoe

TM04 3245 3908

Fig. 101 Machine shoes

Machine shoes reduce any vibrations from the system to the floor, allowing the system to be height-adjusted by ± 20 mm.

Description	Hydro MPC with	Product number
Machine shoe	CR(I), CR(I)E 3 and 5	96412344
	CR(I), CR(I)E 10 to 20	96412345
	CR, CRE 32 to 90	96412347

Note: The product number covers one (1) machine shoe.

Grundfos GO Remote

The Grundfos GO Remote is used for wireless infrared or radio communication with the pumps.

Various Grundfos GO Remote variants are available. The variants are described in the following.

MI 201

The MI 201 is a complete solution, consisting of an Apple iPod touch 4G and a Grundfos cover for infrared and radio communication with Grundfos pumps or systems.

TM05 3886 1712

Fig. 102 MI 201

Supplied with the product:

- Apple iPod touch 4G incl. accessories
- Grundfos MI 201 cover
- battery charger
- quick guide.

MI 202

The MI 202 is an add-on module with built-in infrared and radio communication. The MI 202 can be used in conjunction with Apple iPod Touch 4, iPhone 4 or later.

TM05 3887 1712

Fig. 103 MI 202

Supplied with the product:

- Grundfos MI 202
- quick guide.

MI 301

The MI 301 is a module with built-in infrared and radio communication. The MI 301 must be used in conjunction with an Android or iOS-based Smartphone with a Bluetooth connection. The MI 301 has rechargeable Li-ion battery and must be charged separately.

TM05 3890 1712

Fig. 104 MI 301

Supplied with the product:

- Grundfos MI 301
- battery charger
- quick guide.

Product numbers

Grundfos GO Remote variant	Product number
Grundfos MI 201	98140638
Grundfos MI 202	98046376
Grundfos MI 301	98046408

Supported units

Make	Model	Operating system	MI 201	MI 202	MI 301
Apple	iPod touch 4G	iOS 5.0 or later	•	•	•
	iPhone 4G, 4GS		-	•	•
HTC	Desire S	Android 2.3.3 or later	-	-	•
	Sensation	Android 2.3.4 or later	-	-	•
Samsung	Galaxy S II		-	-	•

Note: Similar Android and iOS-based devices may work as well, but are not supported by Grundfos.

Extra documentation

The documents and publication numbers below refer to printed documentation of Hydro MPC (group versions).

Document	Publication number
Installation and operating instructions	
Hydro MPC	96605907
Quick guide	
Hydro MPC	96605941
Catalogue	
Hydro booster systems - custom-built solutions 50/60 Hz	96881732

In addition to printed documentation, Grundfos offers product documentation in WebCAPS on www.grundfos.com. See page 91.

16. Alternative booster systems

Booster system	Data and features	
Hydro Multi-E	Maximum head	10 to 100 m
	Flow rate	2 to 85 m^3/h
	Maximum operating pressure	16 bar
	Number of pumps	2 or 3
	Pump types	CRE, CRIE, CME
	Features	• Specially designed for water supply in buildings. • 100 % adaptation to consumption. • Easy to install and commission. • Small foot print. • Data communication via Grundfos R100 remote control or Grundfos GO Remote.
Hydro Multi-S	Maximum head	9 to 103 m
	Flow rate	0.5 to 69 m^3/h
	Maximum operating pressure	16 bar
	Number of pumps	2 or 3
	Pump types	CR, CM, CMV
	Features	• Specially designed for water supply in buildings. • 100 % adaptation to consumption. • Easy to install and commission. • Small foot print.
Hydro Solo-E/-S	Maximum head	10 to 100 m
	Flow rate	2 to 55 m^3/h
	Maximum operating pressure	16 bar
	Number of pumps	1
	Pump types	CRE[2], CR[1]
	Features	• Easy to install and commission. • Constant pressure.[2] • Data communication via Grundfos R100 remote control or Grundfos GO Remote.[2]

TM05 2468 0212 - GrA0762

GrA5733 - GrA9833

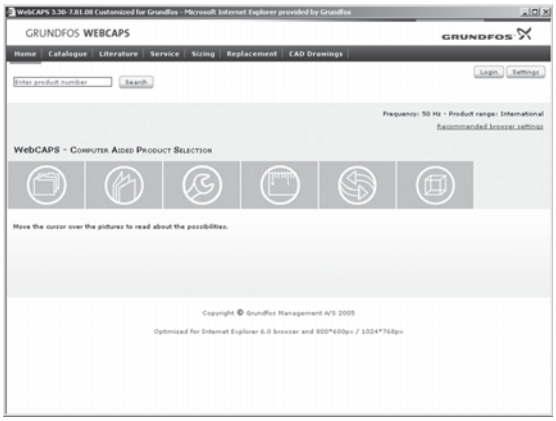
Gr5164 - Gr5165

1) Hydro Solo-E is fitted with a CRE pump; Hydro Solo-S with a CR pump.

2) Applies only to Hydro Solo-E.

17. Further product information

WebCAPS

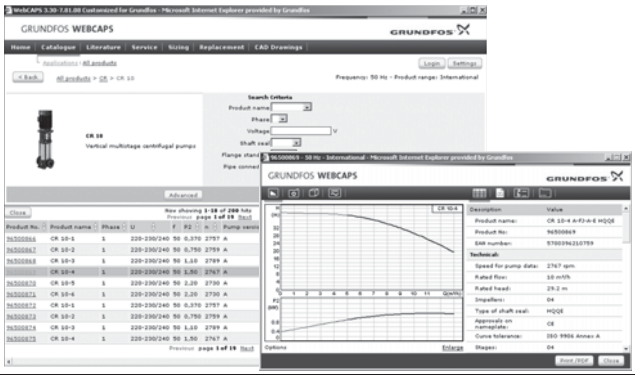


WebCAPS is a **Web**-based **C**omputer **A**ided **P**roduct **S**election program available on www.grundfos.com.

WebCAPS contains detailed information on more than 220,000 Grundfos products in more than 30 languages.

Information in WebCAPS is divided into six sections:

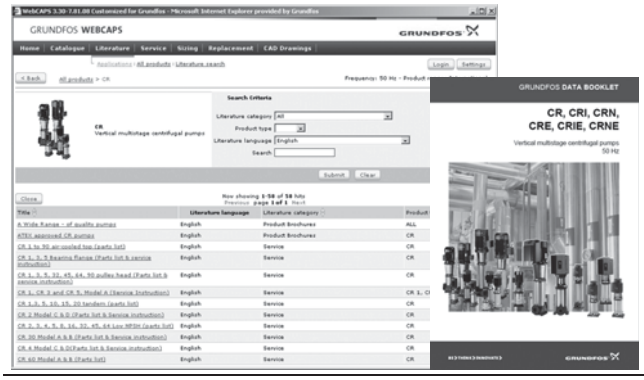
- Catalogue
- Literature
- Service
- Sizing
- Replacement
- CAD drawings.



Catalogue

Based on fields of application and pump types, this section contains the following:

- 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.



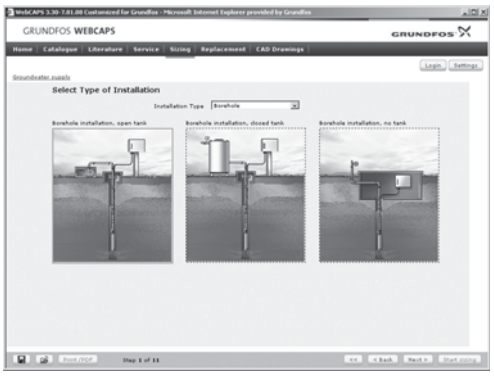
Literature

This section contains all the latest documents of a given pump, such as

- data booklets
- installation and operating instructions
- service documentation, such as Service kit catalogue and Service kit instructions
- quick guides
- product brochures.

Service

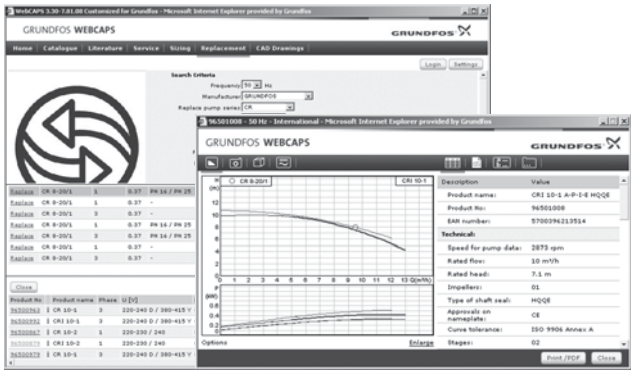
This section contains an easy-to-use interactive service catalogue. Here you can find and identify service parts of both existing and discontinued Grundfos pumps.
Furthermore, the section contains service videos showing you how to replace service parts.



Sizing

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

- 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

Fig. 105 WinCAPS DVD

WinCAPS is a **Win**dows-based **C**omputer **A**ided **P**roduct **S**election program containing detailed information on more than 220,000 Grundfos products in more than 30 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 DVD and updated once a year.

GO CAPS

Mobile solution for professionals on the GO!

CAPS functionality on the mobile workplace.

Available on the App Store

Subject to alterations.

be think innovate

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