PRE-ENGINEERED BY GRUNDFOS TESTED AND VERIFIED

GRUNDFOS
HYDRO BOOSTER RANGE

HYDRO MULTI-S
HYDRO MULTI-B CME
HYDRO MULTI-B CR
HYDRO MPC









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GRUNDFOS

GRUNDFOS HYDRO BOOSTER RANGE **PRESSURE BOOSTING MADE SIMPLE**

Whatever the demand, the Grundfos booster range has the right solution for you. Grundfos booster systems are famous for providing reliable comfort at your pre-set pressure level, whilst providing optimal stability and minimising energy consumption. Grundfos Hydro Boosters are supplied as complete systems, designed and manufactured to work harmoniously to provide boosting wherever additional pressure is needed. They are built on the world's number one multistage centrifugal pumps – the highly renowned CM and CR pumps. The CM and CR pumps are known for reliability, efficiency and adaptability and form the perfect base for the Grundfos booster systems. Every component in our systems is Grundfos-made, or rigorously tested to Grundfos standards, guaranteeing long-lasting solutions with minimal maintenance resulting in lower total life cycle costs.

A booster system is an integration of several products, parts and components made into one solution. At Grundfos, we have full ownership of all the elements that go into making each system including the production processes, firmware and hardware. We make sure it's all TESTED AND VERIFED.

Customers who invest in a Grundfos Hydro Booster System are guaranteed to get the best possible user experience and a long trouble-free product life.



100% Grundfos

Every component in a Hydro Booster System – from the non-return valve to the manifold – is made by Grundfos, or rigorously tested to Grundfos standards. This is your guarantee that all technologies involved work perfectly together.

HYDRO MULTI-S
SIMPLE AND RELIABLE

The Hydro Multi-S boosters are simple, reliable systems, consisting of two or three identical fixed-speed Grundfos CM, CMV or CR pumps, connected in parallel and mounted on a common base frame. The control cabinet comes complete with motor protection and integrated Grundfos controller at the heart of the system.

The Hydro Multi-S boosters are supplied as complete, pre-assembled and tested systems including suction and discharge manifolds, isolating valves, non-return valves, pressure gauge and pressure switches. To ensure reliable operation, the booster system must be fitted with a suitable diaphragm tank. Automatic pump operation is based on system demand and controlled by pressure . switches (one for each pump).

FUNCTIONS
Automatic cascade control
Automatic pump changeover
Dry-running protection
Emergency operation
Automatic resetting of dry-running fault
Start-up delay between pumps
Motor protection by means of a thermal overload relay
Short-circuit protection by means of fuses



How does the Hydro Multi-S work?

When a tap is opened, water will be drawn from the diaphragm tank. The pressure will drop to the first cut-in pressure level, and the first pump will then cut in. As the consumption increases, more pumps will cut in until the performance of the pumps in operation corresponds to the demand. When the water consumption falls, the discharge pressure will rise to the first cut-out pressure level and the pressure switch will cut out one pump and as the consumption falls, more pumps will be cut out, filling the diaphragm tank in preparation for the next . demand cycle.





GRUNDFOS HYDRO BOOSTERS PRE-ENGINEERED FOR ASEAN

HYDRO MULTI-B



Simply effective

The Hydro Multi-B is a unique combination of an effective water supply and an extremely simple user interface. Due to the simplicity of the CU323 controller unit, all daily operations can be handled in a safe and simple manner without compromising on high reliability and energy efficiency. This makes the system ideal for water supply in any large complex or multistorey building.

Compact and designed to last

The design of the Hydro Multi-B booster system and the selection of high quality components have both been done with a focus on sturdiness and compactness. As a result, the user gets the benefits of a complete solution, with components optimised for this specific task.

HYDRO MULTI-B CME

The Multi-B CME consists of two or three identical Grundfos CME pumps connected in parallel and mounted on a common base frame. The control cabinet comes complete with the CU323 controller. The ES variant (which has one CME and up to two fixed-speed CM pumps) is also available.

FUNCTIONS VIA THE CU 323 CONTROLER	CONSTANT PRESSURE		TANK FILLING	
	E	ES	E	ES
Proportional pressure control	O	-	O	-
Automatic cascade control	●	●	●	●
Automatic pump changeover (1)	●	●	●	●
Standby pumps	O	O	●	●
Redundant sensor	O	O	O	O
Digital input for external start/stop	●	●	●	●
Water shortage/dry-running protection	O	O	O	O
Automatic resetting of dry-running fault	O	O	O	O
System alarm and operation outputs	●	●	●	●
Motor protection	●	●	●	●
Maximum pressure protection	●	●	-	-
Sensor fault protection	●	●	●	●
High tank level protection	-	-	●	●
Button lock function	●	●	●	●
BUS communication (CIM card required)	O	O	O	O
Low flow stop function	●	●	-	-
Pump prioritisation (startup & stop) (2)	O	O	O	O

● Standard
O On request

(1) The variable speed pump in the ES system, is not a part of the cascade changeover function.
(2) The variable speed pump in the ES system, is not a part of the pump prioritisation function.

HYDRO MULTI-B CR

The Multi-B CR consists of two, three or four identical Grundfos CR pumps connected in parallel and mounted on a common base frame. The control cabinet comes complete with the CU323 controller and a variable-speed drive for each pump. The ES variant (which has a lead CR pump with variable-speed drive and up to three fixed-speed CR pumps) is also available.



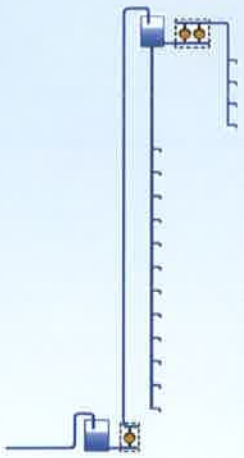
The Hydro Multi-B booster system has been optimised for both pressure-boosting and filling of roof tanks.
The difference in operation is handled entirely by the CU323 control unit. Therefore, the controller unit comes in two firmware versions, designed for the specific application.

How does Multi-B work

Tank filling

Pumping fresh water into a roof tank must be done in a controlled and efficient way to protect the piping and prevent noisy pipework from disturbing the buildings clients. The Hydro Multi-B controller ensures that tank filling is carried out in a controlled manner that minimises wear on the pipes, making the system both effective yet flexible.

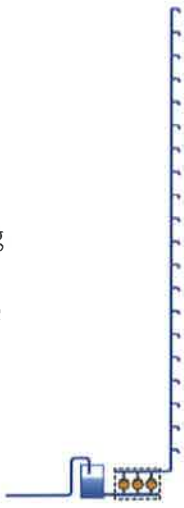
When the tank level reaches the lower limit, the first pump ramps up its speed. During the filling phase, the piping is slowly filled. Then more pumps are started in accordance with the demand. Once the high limit level is reached, the pumps are slowly stopped. At all times, the pumps are controlled to protect against water hammer, noise and pipe damage.
Flooding of the tank is avoided by means of a high level alarm limit, which will force the system to stop instantly.



TANK FILLING

Pressure Boosting

Water demand in multi-storey buildings varies greatly during the day – and ultimately depends on what a building is used for. The control unit at the heart of the Hydro Multi-B accurately controls the speed of the pumps and the number of pumps running according to demand measured from the pressure transmitter mounted in the discharge pipe of the system. Therefore, the system delivers a constant water pressure regardless of large fluctuations in demand.



PRESSURE BOOSTING

Connect and go!

SYSTEM CONTROL **CU323**

The Hydro Multi-B features the option of communicating with the most commonly-used BUS protocols. This allows users to operate and monitor the system remotely from BMS systems.



GRUNDFOS HYDRO BOOSTERS PRE-ENGINEERED FOR ASEAN

HYDRO MPC

Grundfos HYDRO MPC booster systems provide dependability, supreme technology and easy operation for a range of purposes.

Take your booster solution to new heights
The Grundfos Hydro MPC booster systems are renowned for their high performance and extreme reliability. The advanced controller improves ease of operation and energy-efficiency even further.

High comfort
The pump speed is continuously adapted to the flow demand to keep the required pressure constant and ensure high comfort throughout the day.

Energy savings
The energy consumption is continuously optimised using the pump curve data to determine the most efficient speed and the required number of pumps in operation.

Easy operation
The big intuitive colour screen ensures easy operation just as the start-up wizard greatly facilitates commissioning.

Early warning
The incorporated log feature enables constant monitoring of system performance and allows the user to react and adjust in time.



Redundancy
It is possible to assign one or more standby pumps via the CU352 controller. The standby pumps will take over in case of pump failure. It is also possible to have an additional primary sensor installed. The CU 352 will then continuously monitor both sensors for discrepancy. If the discrepancy is more than a predefined amount, the controller will show an alarm that will notify the user of the sensor failure.

Connect, setup, go!



SYSTEM CONTROL **CU352**

CU 352 performs a complex task, but installing and operating the unit could not be simpler. The installation wizard guides the installer through a series of steps until the booster system is correctly installed and commissioned. The installation process is performed by following the on-screen instructions of the control unit. When the installation is complete, the simple, user-friendly interface ensures that the day-to-day operation is equally easy.

SYSTEM CONTROL AT YOUR FINGERTIPS

The mastermind behind the efficiency and flexibility of our Hydro MPC booster systems is the Multi Pump Controller, CU 352. The primary job of the CU 352 is to determine the number of pumps that should be in operation and the speed of each individual pump. The advanced controller optimises the performance of the booster system and thereby minimises energy costs.

CU 352 Controller

The CU 352 controller controls up to six pumps and features both digital and analogue outputs. Control functions include pump start and stop speed, compensation for start-up time, forced pump changeover, dry run protection, clock program and soft pressure build-up.

Features include:

- Colour screen
- Back-up battery (optional battery required)
- BUS communication (optional CIM card required)
- Log function

For a complete overview of functions, please consult the Hydro MPC Databooklet.



Long distance communication

The Hydro MPC booster set is compatible with the following communication systems:
Ethernet (built-in VNC server is standard)
With optional CIM modules;

- PROFIBUS
- PROFINET IO
- LON
- Modbus RTU
- Modbus TCP
- GSM and GPRS
- GRM (Grundfos Remote Management)
- BACnet MS/TP
- BACnet IP

Connecting Hydro MPC to a computer via Ethernet allows remote monitoring and control of your booster system. This gives you easy and unlimited access to system performance and allows you to optimise system settings wherever you are.



The Soft Pressure Build-up feature ensures smooth start-up of systems with empty pipes, reducing the risk of water hammer after onsite power failure or an external run command (e.g. Irrigation start signal). This protects the building/irrigation network from expensive flooding /pipe damage. This feature also reduces the water loss in the event of pipe breakage.

The Estimated System Flow feature allows the user to view the actual system flow on the CU352 screen without the need for expensive in-line flow meters to be installed. (Optional inlet pressure sensor required).

The Log function makes it possible to trend system data like power consumption and system pressure. The trending graphs shown on the CU352 screen are very useful when conducting system fault finding.

TAKING A STAND **FOR HYGIENE**

Choosing a Grundfos booster system with stainless steel manifolds is choosing not to gamble with the health of your end user. Every year a number of people become sick from exposure to legionella – a disease caused by bacteria in drinking water. One of the ways to help prevent legionella is to ensure that pressure booster systems which carry drinking water live up to the highest standards of hygiene.

The Grundfos standard

Grundfos leads the way when it comes to ensuring hygienically-designed booster systems. There are two material variants for the Grundfos Hydro Booster manifolds;

- Stainless steel for demanding or drinking water applications
- Hot dip galvanized for standard applications

The stainless steel solution guarantees protection against corrosion. The use of high-precision production technologies ensures that surfaces and connections are completely smooth, rounded, and without cracks. The result is hydraulic optimisation with reduced pressure loss and noise as well as the best conditions for hygiene control.



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Grundfos Hydro Booster

Pre-engineered for ASEAN









HYDRO MULTI-S	HYDRO MULTI-B CME	HYDRO MULTI-B CR	HYDRO MPC
SYSTEM/CONTROL VARIANTS AVAILABLE			
Multi-S CM - with all horizontal multistage fixed speed CM pumps.	Multi-B, E with all variable speed horizontal multistage CME pumps.	Multi-B, E - with all variable speed vertical multistage CR pumps with Danfoss VFD's.	MPC-E - with all variable speed vertical multistage CR pumps with CUE VFD's.
Multi-S CMV - with all vertical multistage fixed speed CMV pumps.			
Multi-S CR - with all vertical multistage fixed speed CR pumps.	Multi-B, ES with one variable speed horizontal multistage CME pump and one or two fixed speed CM pumps.	Multi-B, ES - with one variable speed vertical multistage CR pump with a Danfoss VFD and one, two or three fixed speed CR pumps.	MPC-F - with one variable speed CUE VFD that switches between all vertical multistage CR pumps on the system.
			MPC-S - with all vertical multistage fixed speed CR pumps.
Number of pumps			
2-3	2-3	2-4	2-6
Pumps types			
CM/CMV/CR	CME/ CME & CM	CR	CR
Controller interface			
CS100	CU323	CU323	CU352
Hydraulic Data			
Max. head (1) 103 m	125 m	146 m	144 m
Max. flow rate (2) 69 m^3/h	108 m^3/h	192 m^3/h	876 m^3/h
Max. operating pressure (1) 10/16	16	16	16
Liquid temperature 5-40/50oC	0-60oC	0-60oC	0-60oC

(1) Standard maximum head/pressure shown. High pressure systems available on request.
(2) Standard maximum flow rate shown. Higher flow systems available on request.

With the Grundfos Hydro Booster range we offer a solution to all your pressure boosting needs

GRUNDFOS (SINGAPORE) PTE. LTD.
ASIA/PACIFIC - Regional Head Office
25 Jalan Tukang
619264 Singapore
Singapore(SG)

Phone: (+65) 66819688
email: contact-sg@grundfos.com
www.grundfos.com

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