

CMB, CMBE and CMBE TWIN

Horizontal, multistage centrifugal boosters
50/60 Hz



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1. Product introduction

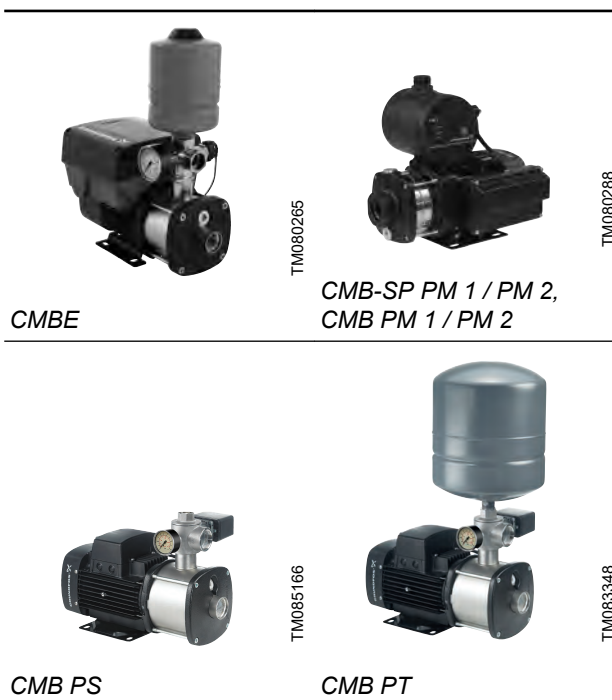
The compact Grundfos CM Booster ensures optimal water pressure for domestic and commercial applications, such as clean water and raw-water supply, pressure boosting, irrigation and dewatering. The booster consists of a Grundfos CME or CM pump and a pressure control unit. The pressure control unit allows the pump to start and stop automatically according to demand.

- CMBE Booster offers constant pressure and high comfort thanks to the variable-speed motor, noiseless operation and built-in protection against dry running, overload, overtemperature and more.
- CMBE TWIN Booster has two pumps. Both pumps run, when there is need for a higher flow to maintain a constant pressure.
- CM Booster with a pressure manager protects the pump against dry-running and cycling, and reduces the number of starts and stops. Self priming variants for a suction lift of 0-4 metres or 0-8 metres are also available.
- CM Booster with a diaphragm tank reduces the number of starts in case of low water consumption or leakage.
- CM Booster with pressure switch provides on/off operation.

Product range

Grundfos offers these CM Booster variants:

- CMBE TWIN, two-pump pressure boosting for constant pressure, including cascade control and pump alternation
- CMBE, a variable-speed pump for constant pressure
- CMB-SP PM 2, a self-priming pump with a pressure control unit, type Pressure Manager 2
- CMB PM 2, pump with a pressure control unit, type Pressure Manager 2
- CMB-SP PM 1, a self-priming pump with a pressure control unit, type Pressure Manager 1
- CMB PM 1, a pump with a pressure control unit, type Pressure Manager 1
- CMB PT, a CM pump with a vertical pressure tank
- CMB PS, a CM pump with a pressure switch.



Applications

The boosters are designed to cover a wide range of applications from small domestic installations to small industrial systems. Typical applications:

- Pressure boosting for home and gardening
- water supply for agriculture and irrigation
- transfer and pressure boosting in break tank and rainwater applications
- water supply from shallow wells
- a twin solution for larger applications, such as apartment buildings, hospitals, hotels and small industrial plants.

Pumped liquids

The boosters are suitable for pumping clean, thin, non-aggressive and non-explosive liquids without solid particles or fibres. Examples:

- Drinking or tap water
- rainwater and condensate
- groundwater
- river and lake water
- boiler feed water and district heating water
- chlorinated water
- softened water
- washing and cleaning.

The pumps must not be used for transfer of diesel oil or other oil-containing liquids. Sand and other impurities in the water can cause wear to the pump.

Type key

Note: The type key cannot be used for ordering as not all combinations are possible.

Code	Description
CMBE TWIN: CMBE TWIN Booster with cascade control and pump alternation	Type range
CMBE: CMBE Booster with integrated frequency converter	
CMB-SP PM 2: CM Booster, self-priming, with PM 2	
CMB-SP PM 1: CM Booster, self-priming, with PM 1	
CMB PM 2: CM Booster with PM 2	
CMB PM 1: CM Booster with PM 1	
CMB PT: CM Booster with pressure switch and tank	
CMB PS: CM Booster with pressure switch	
At 50 Hz [m ³ /h]	Rated flow rate
- 47	Maximum head [m]
A: Inlet and outlet parts - EN-GJL-200 Pump shaft - EN 1.4301/AISI 304 Impellers/chambers - EN 1.4301/AISI 304 Pressure manager - PP 30GF Pressure tank - EPDM/steel/PP/Butyl 5-way valve - EN 1.4301/AISI 304	Materials in contact with the pumped liquid
I: Sleeve - EN 1.4301/AISI 304 Pump shaft - EN 1.4301/AISI 304 Impellers/chambers - EN 1.4301/AISI 304 Pressure manager - PP 30GF Pressure tank - EPDM/steel/PP/Butyl 5-way valve - EN 1.4301/AISI 304	
A: 1 × 220 V, 60 Hz D: 3 × 220 V, 60 Hz C: 1 × 220-240 V, 50 Hz K: 1 × 200-240 V, 50/60 Hz F: 3 × 230/400 V, 50 Hz U: 1 × 200-240 V, 50/60 Hz X: 1 × 110-115 V, 60 Hz	Supply voltage [V]
A: Standard motor (IP55) C: High-efficiency motor with frequency converter (IP55)	Motor
A: 1.5 m cable with Australian plug B: 1.5 m cable with US plug C: 1.5 m cable with Schuko plug D: 1.5 m cable without plug E: No cable, no plug H: 1.5 m cable with IRAM (Argentina) plug G: 2 m cable with UK plug J: Fuse box (CMBE TWIN only) O: 1.5 m cable with Thailand plug	Main cable and plug
A: PM 1-15 (1.5 bar) B: PM 1-22 (2.2 bar) C: PM 2 D: Integrated frequency converter G: Integrated frequency converter with inlet pressure switch N: Integrated frequency converter with inlet pressure switch and inlet pressure gauge P: Pressure switch	Controller
A: Rp 1 B: Rp 1 1/4 C: Rp 1 1/2 D: Rp 2 E: NPT 1 F: NPT 1 1/4 G: NPT 1 1/2 H: NPT 2	Thread

1) The new-generation MGE, currently 0.37 to 2.2 kW.

Installation

Mechanical installation

Placing the pump above ground is generally a convenient way of establishing a water or rainwater supply.

Place the pump as close as possible to the water supply to make the inlet pipe as short as possible.

If a hose is used as inlet pipe, it must be non-collapsible. Fit a strainer to the inlet pipe to prevent solids from entering the pump.

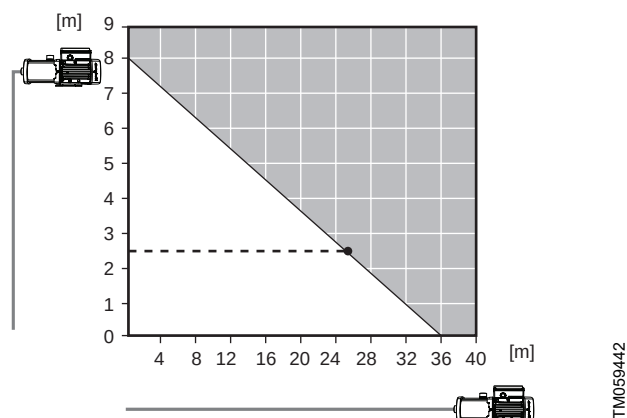
The pump must be installed on a plane and solid surface and fixed so that it cannot be displaced during startup and operation. The inlet direction must be horizontal.

The pump must be installed with easy access for inspection, maintenance and service.

The pump must be installed in a well-ventilated location. When installed outdoors, the booster must be provided with a suitable cover. The cover must be sufficiently large to ensure that the motor is not exposed to direct sunlight, rain or snow. Inlet pipe

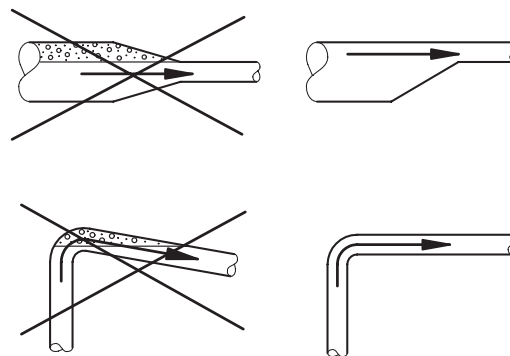
If the pump is to pump water from a well, borehole or similar, always fit a non-return valve on the inlet pipe of the pump.

The length of the inlet pipe of self-priming pumps must not exceed the length stated in the figure below. The maximum length depends on the geodetic suction lift. As shown in the example below, if the suction lift is 2.5 m, then the length of the inlet pipe must not exceed 25 m.



Recommended maximum suction lift or maximum inlet pipe length (Y-axis)

Install the inlet pipe in such a way that bends, airlocks and any unnecessary restrictions to the flow are avoided. See the figure below.



Pipe recommendations

Long inlet pipes affect the performance of the pump. The diameter of the inlet pipe must not be smaller than that of the inlet port. When the inlet pipe is longer than 10 metres or the suction lift is greater than 4 metres, the diameter of the inlet pipe must be larger than that of the inlet port.

The time from when the pump is started until it delivers water depends on the length of the inlet pipe and on the suction lift. Do not allow the pump to run for more than five minutes before it delivers water as the heat generated will damage the pump.

Operating conditions

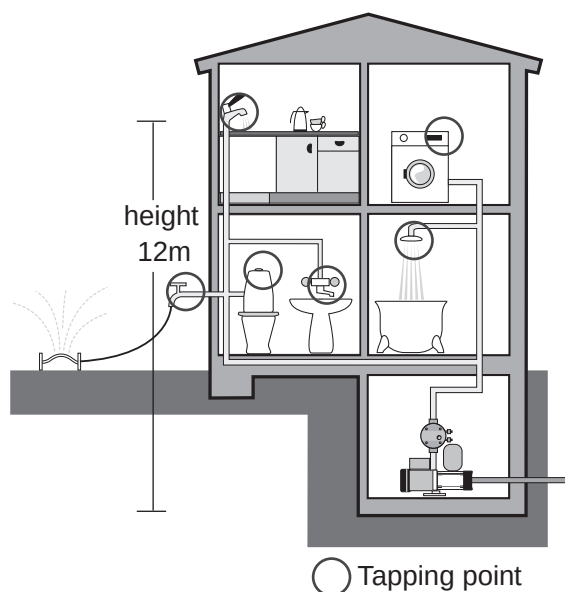
The maximum time of operation against a closed outlet valve is limited by the liquid temperature which must not exceed +40 °C (104 °F).

The maximum inlet pressure depends on the pump head at the actual duty point. The sum of the inlet pressure and the pump head must not exceed the maximum system pressure.

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TM059442

Selection guide for residential applications



A: Required comfort level

- Adjustable constant pressure.

B: Find the right booster

- How many taps? 6.
- How many floors? 3.

Result: CMBE 3-62

Sizing and selection

Booster sizing and selection

Variable speed control

Number of floors	Number of taps			
	1-5	6-10	11-20	21-50
4	CMBE 3-62	CMBE 3-62	CMBE 3-62	CMBE 3-93
3	CMBE 1-44	CMBE 3-62	CMBE 3-62	CMBE 3-62
2	CMBE 1-44	CMBE 1-44	CMBE 3-62	CMBE 3-62
1	CMBE 1-44	CMBE 1-44	CMBE 3-62	CMBE 3-62

Conventional pump control

Number of floors	Number of taps			
	1-5	6-10	11-20	21-50
4	CMB 1-54	CMB 3-46	CMB 3-46	CMB 5-47
3	CMB 1-45	CMB 3-37	CMB 3-46	CMB 5-47
2	CMB 1-45	CMB 3-37	CMB 3-46	CMB 5-37
1	CMB 1-36	CMB 3-27	CMB 3-37	CMB 5-37

Preconditions:

- A tap pressure of 3 bar is considered. To achieve a pressure of 4 bar, add two floors.
- If the inlet is flooded: In suction operation (CM Booster SP) add more floors to compensate for head loss.
- 0.5 l/s per tap average usage pattern is taken into account. Grundfos cannot be held responsible for wrong sizing based on this guide.

Selection guide for commercial applications

The following instructions primarily target commercial applications.

The CMBE TWIN Booster is the recommended product for commercial applications in large buildings, small industrial plants and businesses, agriculture and irrigation. See examples and calculations below.

Note: Local legislation must always be taken into account.

Flow rate

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

Consumer	Unit [n]	Q_{year}	Consumption period [d]	Q_{day}	fd ²⁾	$Q(m)_{\text{day}}$	ft ³⁾	Max. flow rate
		m^3/year	days/year	m^3/day		m^3/day		m^3/h
Residence building	Residents (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

²⁾ Maximum consumption factor per day

³⁾ Maximum consumption factor per hour

Example: Hotel with 540 beds

Number of beds:	n
Total annual consumption:	$Q_{\text{year}} \times n$
Consumption period:	d
Average consumption per day:	$(Q_{\text{year}} \times n)/d$
Maximum consumption per day:	$Q(m)_{\text{day}} = fd \times Q_{\text{day}}$
Required maximum flow rate per hour:	$Q_{\text{max}} = \text{maximum flow rate/hour} \times \text{number of beds}$

Calculation

n	= 540 beds
$Q_{\text{year}} \times n$	= $180 \times 540 = 97,200 \text{ m}^3/\text{year}$
d	= 365 days/year
$(Q_{\text{year}} \times n)/d$	= $97,200/365 = 266.3 \text{ m}^3/\text{day}$
$Q(m)_{\text{day}}$	= $fd \times Q_{\text{day}} = 1.5 \times 266.3 = 399.4 \text{ m}^3/\text{day}$
$Q_{\text{ma}} \times$	= maximum flow rate/hour $\times$ number of beds = $0.125 \times 540 = 67.5 \text{ m}^3/\text{h}$

2. CMBE TWIN

CMBE TWIN Booster



TM084224

CMBE TWIN Booster

Applications

The compact Grundfos CMBE TWIN Booster is suitable for clean water supply and pressure boosting in domestic and commercial applications. The CMBE TWIN Booster keeps a constant pressure in the pipe system and is mainly used in places such as:

- two-family houses
- cluster homes
- blocks of flats
- schools
- small hotels
- small office buildings
- small industrial plants and businesses
- hospitals
- agriculture and irrigation.

Product description

The CMBE TWIN Booster system consists of two CMBE Boosters connected in parallel and mounted on a common base plate.

The CMBE TWIN booster consists of two units of CMBE booster which each include the following:

- five-way valve
- expansion tanks (green or grey depending on the local drinking water legislation)
- pressure gauge
- pressure sensor
- a base frame
- a twin communication cable

The Grundfos CMBE TWIN booster requires no external motor protection.

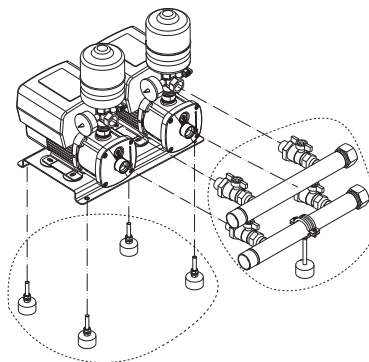
The MGE motors incorporate thermal protection against slow overloading and blocking (TP 211 according to IEC 34-11).

The Grundfos CMBE TWIN booster is mainly used for domestic and light commercial water supply or booster systems.

Suction lift: maximum 1 m, including inlet pipe pressure loss at a liquid temperature of 20 °C (not self-priming).

Accessories:

- vibration dampers (PN 99217259)
- twin manifold set with ball valve and unions and 1 1/2" outlet connection. (PN 99229422 for 1" inlet connection) (PN 99229453 for 1 1/4" inlet connection)



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Accessories

Motor

No external motor protection is required. The MGE motor incorporates thermal protection against slow overloading and blocking (TP 211 according to IEC 34.11).

Features

- Constant pressure via integrated speed control
- cascade control and pump alternation
- dry-running protection
- compact
- robust, stainless steel design
- easy installation
- low energy consumption
- noise level < 55 dB(A) and even lower at controlled speed.

Constant pressure

The integrated speed controller keeps a constant pressure in the pipe system. A pressure sensor monitors changes in the water consumption and signals to the speed controller to adjust the motor speed up or down.

Cascade control

Cascade control ensures that the performance of the booster system is automatically adapted to the consumption by switching pumps on or off and by changing the speed of the pumps in operation. The system runs as energy-efficiently as possible with a constant pressure and only the number of pumps required.

Pump alternation

Pump alternation ensures that the operating hours are distributed evenly on the pumps over time. CMBE TWIN Booster automatically alternates the pumps and will start the available pump with the lowest number of running hours since the last time the power was switched off.

Dry-running protection

Dry-running protection is very important as dry running may damage the bearings and shaft seals. The inlet pressure of the system or the water level in a possible tank on the inlet side is monitored. Lack of inlet pressure or water shortage is indicated by the motor speed. When dry running is detected, the CMBE Booster will stop and go into alarm mode. The pump will attempt 5 restarts at 10 second intervals. If there is no water shortage, it will attempt 8 restarts at 5 minute intervals. If this is not successful, the cycle will be repeated after 24 hours.

Easy installation

The booster is easy to install. When the booster has been connected to the pipes, it is all a matter of plugging the plug into a socket, and the system is operational.

Please ensure that you follow the relevant codes of practice for drinking water installations, e.g. DIN 1988-500 about pressure boosting stations with RPM-regulated pumps.

Operating conditions

System pressure	Max. 10 bar
Suction lift	Max. 1 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0-60 °C
Ambient temperature	Max. +55 °C Min. -20 °C
Relative humidity	Max. 95 %
Enclosure class	IP55
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 55 dB(A)
Supply voltage	1 × 200-240 V, 50/60 Hz
Start/stop frequency	Max. 100 per hour
Cut-in pressure	0.5 bar below setpoint

Electrical data

Pump type	Voltage [V]	I _{max} [A]	P1 [W]	Plug type
CMBE TWIN 3-62	1 × 200-240	6.7 - 5.6	1210	Schuko or fuse box
CMBE TWIN 3-93	1 × 200-240	9.1 - 7.6	1720	
CMBE TWIN 5-62	1 × 200-240	9.1 - 7.6	1720	

Approvals

The product is built according to local drinking water approvals.

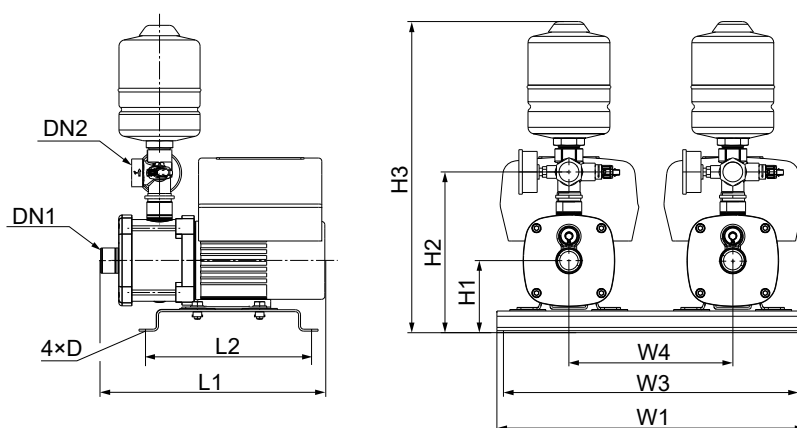
For further information regarding product approvals, visit Grundfos Product Center.

Wetted parts

The table below specifies the parts of the pump that are in contact with the pumped liquid.

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drain plug	Technopolymer	PES 30 % GF
Expansion tank (grey)	Butyl	Diaphragm
Expansion tank (green)	Butyl	Diaphragm

Dimensional drawings



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Pump type	L1	L2	W1	W3	W4	H1	H2	H3	D	DN1 [inch]	DN2 [inch]
CMBE TWIN 3-62	344	250	475	410	250	110	235	485	10	Rp 1	Rp 1
CMBE TWIN 3-93	404	250	475	410	250	125	250	495	10	Rp 1	Rp 1
CMBE TWIN 5-62	350	250	475	410	250	125	250	495	10	Rp 1 1/4	Rp 1

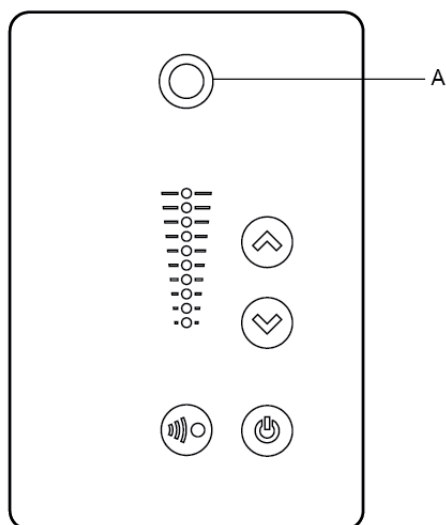
Operating panel

The operating panel on the pump terminal box makes it possible to change the setpoint settings manually.

The operating condition of the pump is indicated by the Grundfos Eye on the operating panel. See position A in the figure below.

Set the desired setpoint by pressing $\odot$ or $\ominus$. The light fields on the operating panel will indicate the setpoint set. Continuously pressing $\odot$ will stop the pump.

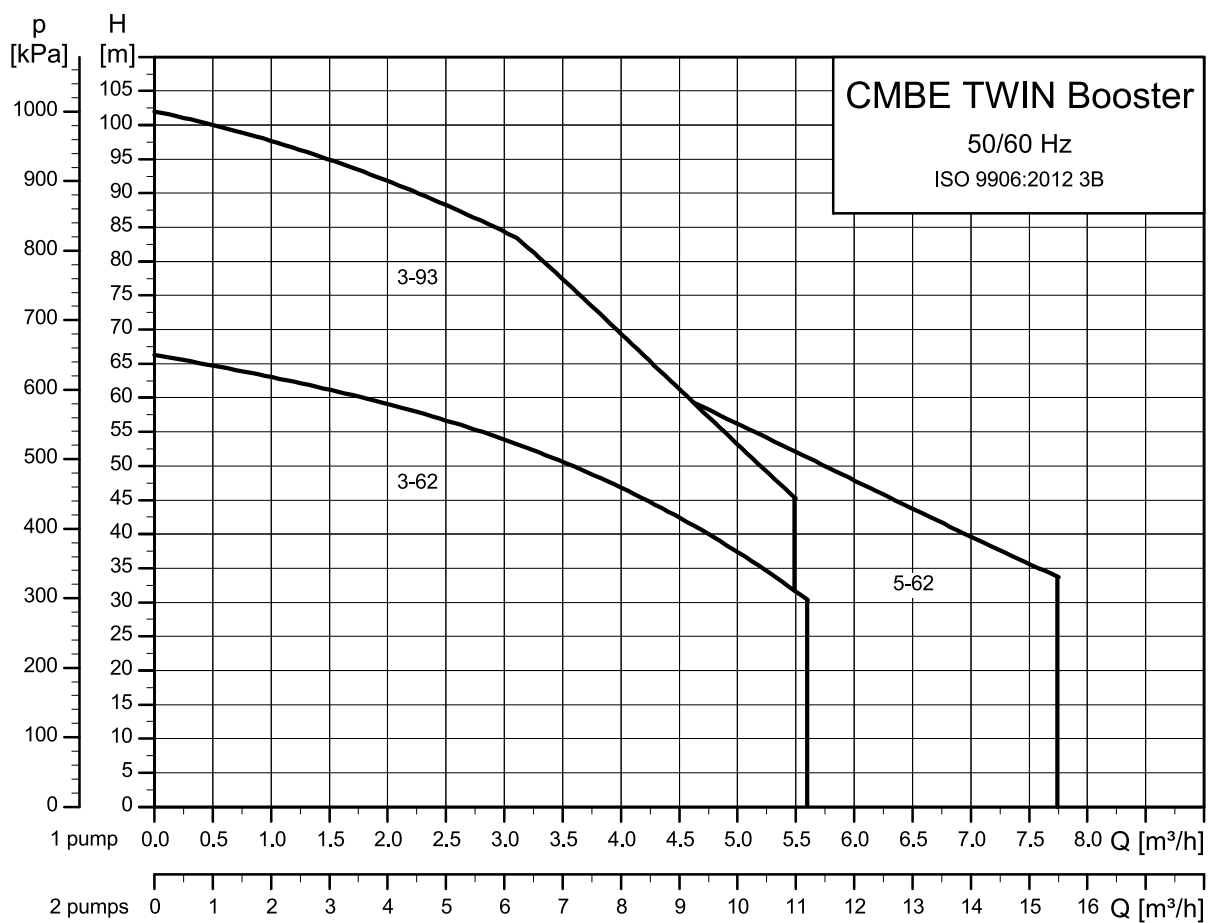
Pressing $\odot$ will enable infrared communication with the Grundfos GO and with other products of same type using infrared.



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Operating panel

Performance curves



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3. CMBE

CMBE Booster



TM085108

CMBE Booster

Applications

The compact Grundfos CMBE Booster is suitable for clean water supply and pressure boosting in domestic and light commercial applications.

The CMBE Booster keeps a constant pressure in the pipe system and is mainly used in places such as:

Application	CMBE 1	CMBE 3	CMBE 5	CMBE 10
Single-family houses	●	●	○	○
Two-family houses	○	●	●	●
Cluster homes		●	●	●
Blocks of flats		●	●	●
Schools		●	●	●
Small hotels/guest houses		●	●	●
Small office buildings		●	●	●
Agriculture		○	●	●
Irrigation		○	●	●

● Recommended

○ Applicable

Product description

The Grundfos CMBE booster is a compact booster system for water supply in domestic applications. The integrated speed controller enables the CMBE booster to keep constant pressure in the pipe system. A pressure sensor monitoring changes in the water consumption signals the speed controller to change motor speed to adapt performance to the new state.

The CMBE booster is very easy to install. When the system has been connected to the pipes, it is all a matter of inserting the plug into a power supply socket, and the system is operational.

The CMBE booster consists of the following:

- CME pump with integrated frequency converter
- five-way valve
- expansion tank (green or grey depending on the local drinking water legislation)
- outlet pressure gauge
- outlet pressure sensor
- inlet pressure switch (optional)
- inlet pressure gauge (optional)

The Grundfos CMBE booster requires no external motor protection.

The MGE motor incorporates thermal protection against slow overloading and blocking (IEC 34.11: TP 211).

The Grundfos CMBE booster is mainly used for domestic and light commercial water supply or booster systems.

Suction lift: maximum 1 m, including inlet pipe pressure loss at a liquid temperature of 20 °C (not self-priming).

Motor

No external motor protection is required. The MGE motor incorporates thermal protection against slow overloading and blocking (TP 211 according to IEC 34.11).

Features

- Premium efficiency IE5 motors
- constant pressure, integrated speed control
- resistant to corrosion
- frequency controller: Up to 40 % energy savings
- compact and fully equipped
- low noise level: 55 dB(A)
- user-friendly interface with LED indicators
- dry-running protection
- thermal overload protection: built-in thermal protection
- easy installation.

Constant pressure

The integrated speed controller keeps a constant pressure in the pipe system. A pressure sensor monitors changes in the water consumption and signals to the speed controller to adjust the motor speed up or down.

Dry-running protection

Dry-running protection is very important as dry running may damage the bearings and shaft seals. The inlet pressure of the system or the water level in a possible tank on the inlet side is monitored. Lack of inlet pressure or water shortage is indicated by the motor speed. When dry running is detected, the CMBE Booster will stop and go into alarm mode. The pump will attempt 5 restarts at 10 second intervals. If there is no water shortage, it will attempt 8 restarts at 5 minute intervals. If this is not successful, the cycle will be repeated after 24 hours.

Inlet pressure monitoring

In some regions, it is only allowed to connect pumps directly to the water source, e.g. municipality water mains, when the supplied inlet pressure is above a certain level. When the water inlet pressure is below the required level, the pump must be switched off to protect the supplying pressure network from unstable water pressure.

Easy installation

The booster is easy to install. When the booster has been connected to the pipes, it is all a matter of plugging the plug into a socket, and the system is operational.

Please ensure that you follow the relevant codes of practice for drinking water installations, e.g. DIN 1988-500 about pressure boosting stations with RPM-regulated pumps.

Operating conditions

System pressure	Max. 10 bar
Suction lift	Max. 1 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0-60 °C
Ambient temperature	Max. +55 °C Min. -20 °C
Relative humidity	Max. 95 %
Enclosure class	IP55
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 55 dB(A)
Supply voltage	1 × 200-240 V, 50/60 Hz
Start/stop frequency	Max. 100 per hour
Cut-in pressure	0.5 bar below setpoint

Electrical data

1-phase

Pump type	Voltage [V]	I _{max} [A]	P1 [W]	Plug type
CMBE 1-44	1 × 200-240	3.45 - 2.9	615	Schuko, US, AU, UK, IRAM, Type O or without plug
CMBE 1-75	1 × 200-240	6.7 - 5.6	998	
CMBE 3-30	1 × 200-240	6.7 - 5.6	688	
CMBE 3-51	1 × 200	8	1210	
	1 × 115	8	800	
CMBE 3-62	1 × 200-240	6.7 - 5.6	1210	
CMBE 3-93	1 × 200-240	9.1 - 7.6	1720	
CMBE 5-62	1 × 200-240	9.1 - 7.6	1720	
CMBE 10-54	1 × 200-240	9.1 - 7.6	1710	

3-phase

Pump type	Voltage [V]	I _{max} [A]	P1	Plug type
CMBE 3-51	3 × 220	4.1	1210	No plug

Approvals

The product is built according to local drinking water approvals.

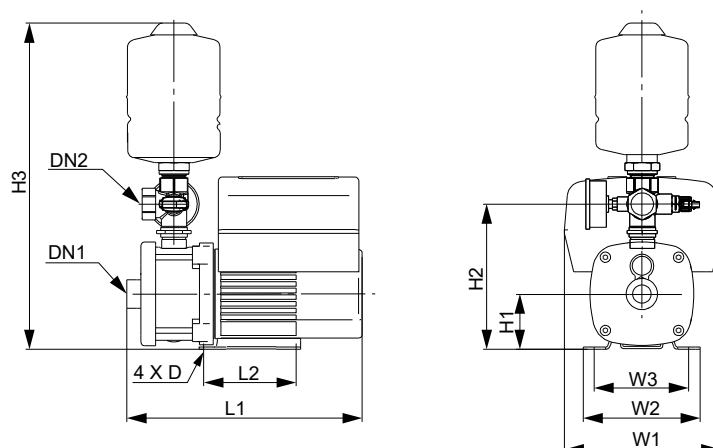
For further information regarding product approvals, visit Grundfos Product Center.

Wetted parts

The table below specifies the parts of the pump that are in contact with the pumped liquid.

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drain plug	Technopolymer	PES 30 % GF
Expansion tank (grey)	Butyl	Diaphragm
Expansion tank (green)	Butyl	Diaphragm

Dimensional drawings



TM083212

Pump type	L1	L2	W1	W2	W3	H1	H2	H3	D	DN1 [inch]	DN2 [inch]
CMBE 1-44	326	95	217	158	125	75	200	440	10	Rp 1	Rp 1
CMBE 1-75	362	95	217	158	125	75	200	440	10	Rp 1	Rp 1
CMBE 3-30	326	95	217	158	125	75	200	440	10	Rp 1	Rp 1
CMBE 3-51	326	95	217	158	125	75	200	440	10	Rp 1	Rp 1
CMBE 3-62	344	95	217	158	125	75	200	440	10	Rp 1	Rp 1
CMBE 3-93	404	125	217	178	148	90	215	455	10	Rp 1	Rp 1
CMBE 5-62	350	125	217	178	148	90	215	455	10	Rp 1 1/4	Rp 1
CMBE 10-54	380	125	212	178	140	90	263	509	10	Rp 1 1/2	Rp 1 1/2

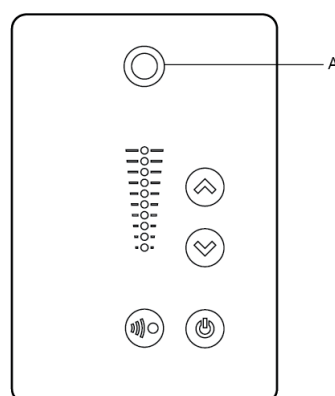
Materials

Designation	Material
Terminal box	Composite PC/ASA and silumin (Alu)
Stator housing	Silumin (Alu)
Fan cover	Composite PBT/PC
Pump housing	Stainless steel, EN 1.4301/AISI 304
Shaft and impeller	Stainless steel, EN 1.4301/AISI 304
Flange	Cast iron

Operating panel

The operating panel on the E-pump terminal box makes it possible to change the setpoint settings manually.

The operating condition of the pump is indicated by the Grundfos Eye on the operating panel. See position A in the figure below.



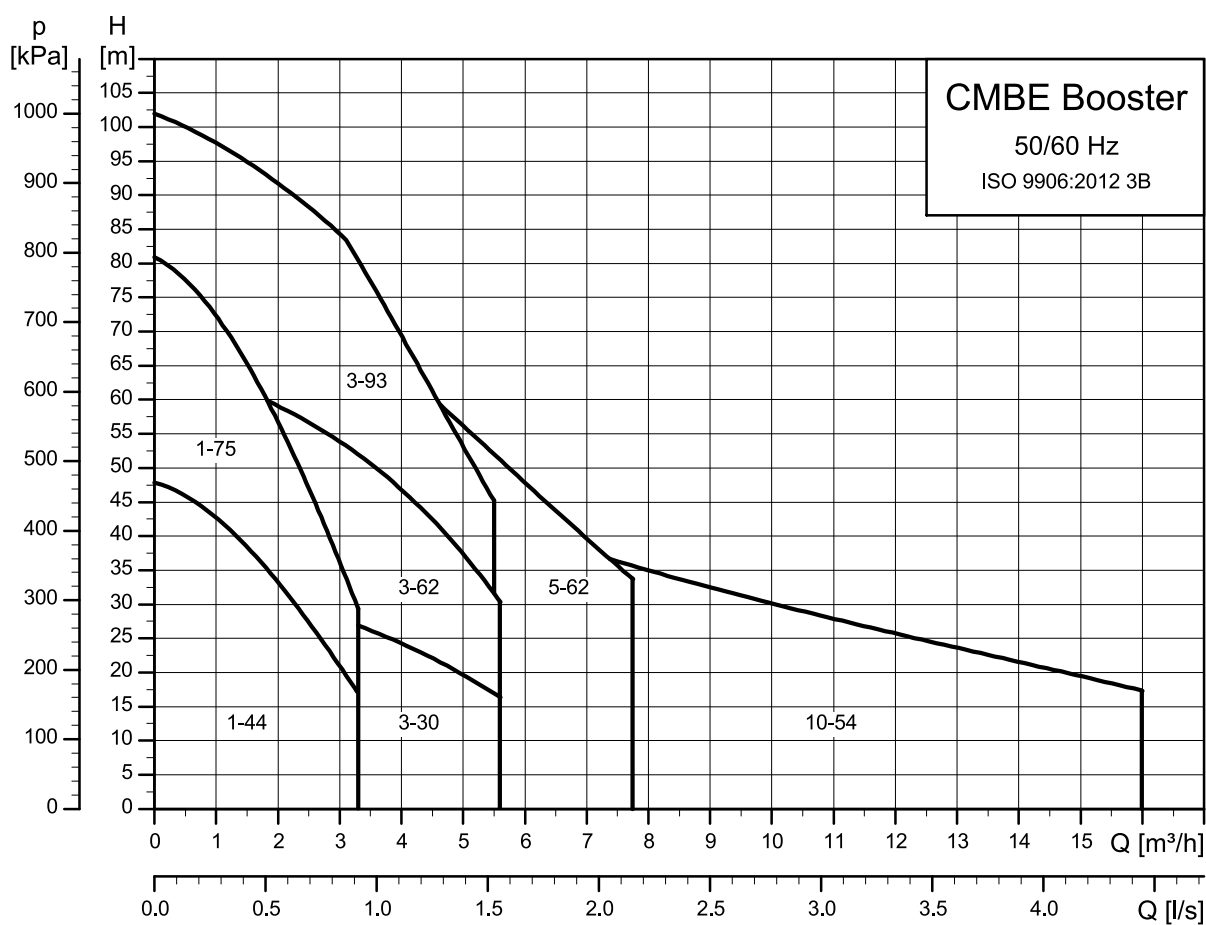
TM055993

Operating panel

Set the desired setpoint by pressing ☉ or ☉. The light fields on the operating panel will indicate the setpoint set. Continuously pressing ☉ will stop the pump.

Pressing ☉ will enable infrared communication with the Grundfos GO and with other products of same type using infrared.

Performance curves



TM061039

4. CMB-SP PM 2

CM Booster Self-Priming Pressure Manager 2



TM085161

CM Booster PM 2

The Grundfos CM Booster self-priming pump with PM2 pressure manager is a compact booster solution for water supply in domestic applications. The pressure booster unit consists of a Grundfos CM self-priming pump and a Grundfos PM2 pressure manager. The pressure manager allows the pump to start and stop automatically according to demand and protects the pump from dry running. It also features automatic restart after dry running and adjustable start pressure.

The CM Booster self-priming pump can create a suction lift of up to 8 m, and it is very easy to install. When the system has been connected to the pipes, it is all a matter of inserting the plug into a power supply socket, and the system is operational.

The Grundfos CM Booster self-priming pump with PM2 pressure manager is mainly used for domestic and light commercial water supply or booster systems.

Applications

Grundfos self-priming CM PM 1 Booster is mainly used for domestic and light commercial water supply or booster systems.

Application	CMB3	CMB5
Single-family houses	●	○
Two-family houses	●	●
Cluster homes	●	●
Blocks of flats	●	●
Schools	●	●
Small hotels/guest houses	●	●
Small office buildings	●	●

- Recommended
- Applicable

Motor

CM Booster pumps have built-in current- and temperature-dependent motor protection in accordance with IEC 60034-11 and require no further motor protection.

Features

- Compact
- easy installation
- self-priming up to 8 m
- automatic resetting of alarms
- dry-running protection
- anticycling (leakage detection)
- maximum continuous operating time.

Versions

CMB-SP is available in two versions:

- Standard version with pressure manager factory mounted on the pump. This version allows a suction lift of maximum 4 m.
- Kit version, called CMB-SP SET, without pressure manager mounted on the pump. This version allows a suction lift of maximum 8 m if there is a pipe between the pump and the pressure manager of at least 0.7 m. The kit version is capable of suction lift between 0 and 8 m depending on the pipe length between pump and pressure manager.

Operating conditions

System pressure	Max. 10 bar
Suction lift (H₂)	0 < H ₂ ≤ 4 m (standard version) 4 < H ₂ ≤ 8 m (Set version) Including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0-60 °C
Ambient temperature	Max. +55 °C Min. -20 °C
Relative humidity	Max. 95 %
Enclosure class	IP55
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 55 dB(A). Note: During priming the sound level may be higher.
Supply voltage	1 × 220-240 V, 50 Hz
Start/stop frequency	Max. 60 per hour
Cut-in pressure	1.5 - 5 bar (adjustable)

Electrical data

Pump type	Voltage [V]	I _{max} [A]	P1 [W]	Plug type
CMB-SP 3-28	1 × 220-240	3.1 - 2.8	490	Schuko, AU, UK or without plug
CMB-SP 3-37	1 × 220-240	3.1 - 2.8	587	
CMB-SP 3-47	1 × 220-240	3.1 - 2.8	753	
CMB-SP 3-56	1 × 220-240	4.4 - 4.0	867	
CMB-SP 5-28	1 × 220-240	3.1 - 2.8	684	
CMB-SP 5-47	1 × 220-240	5.4 - 5.0	1170	

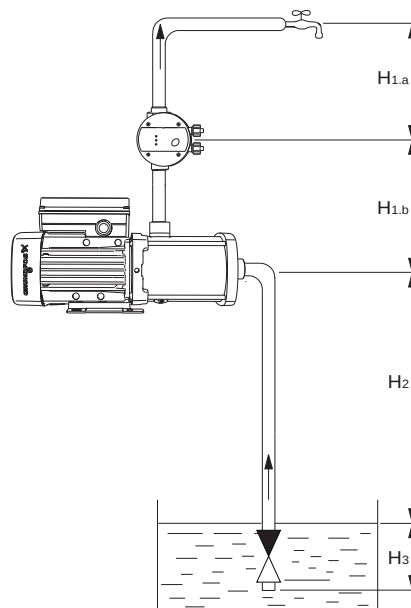
Approvals

The product is built according to local drinking water approvals.

For further information regarding product approvals, visit Grundfos Product Center.

Self-priming CM Booster sets

Note: The following applies only to self-priming CM Boosters delivered as sets.



TM059410

Self-priming CM Booster

The length H_{1,b} of the outlet pipe must be minimum 0.2 metres. See the figure above. By increasing H_{1,b}, a suction lift up to 8 metres can be achieved. Use the table below to determine the necessary outlet pipe length for your desired suction lift.

Outlet pipe length H _{1,b} [m]	Resulting suction lift H ₂ [m]
≥ 0.35	5
≥ 0.5	6
≥ 0.6	7
≥ 0.7	8

Install the pressure manager on the outlet side of the pump. It incorporates a non-return valve.

We recommend to install the unit so that the height between the unit and the highest tapping point, H_{1,a}, does not exceed the values in the table below. See the figure above.

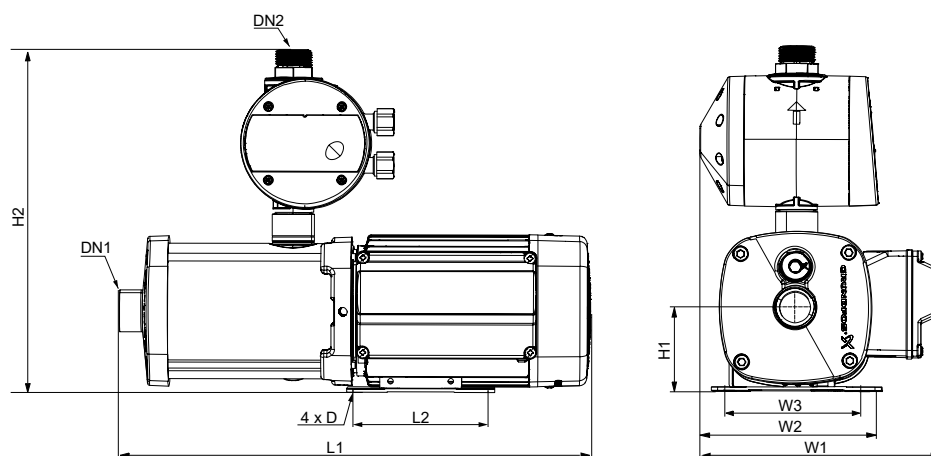
Pressure manager	Start pressure [bar]	Maximum height H _{1,a} [m]
PM 1-15	1.5	10
PM 1-22	2.2	17
PM 2	1.5	11
	2	16
	2.5	21
	3	26
	3.5	31
	4	36
	4.5	41
	5	46

Wetted parts

The table below specifies the parts of the pump that are in contact with the pumped liquid.

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drain plug	Technopolymer	PES 30 % GF

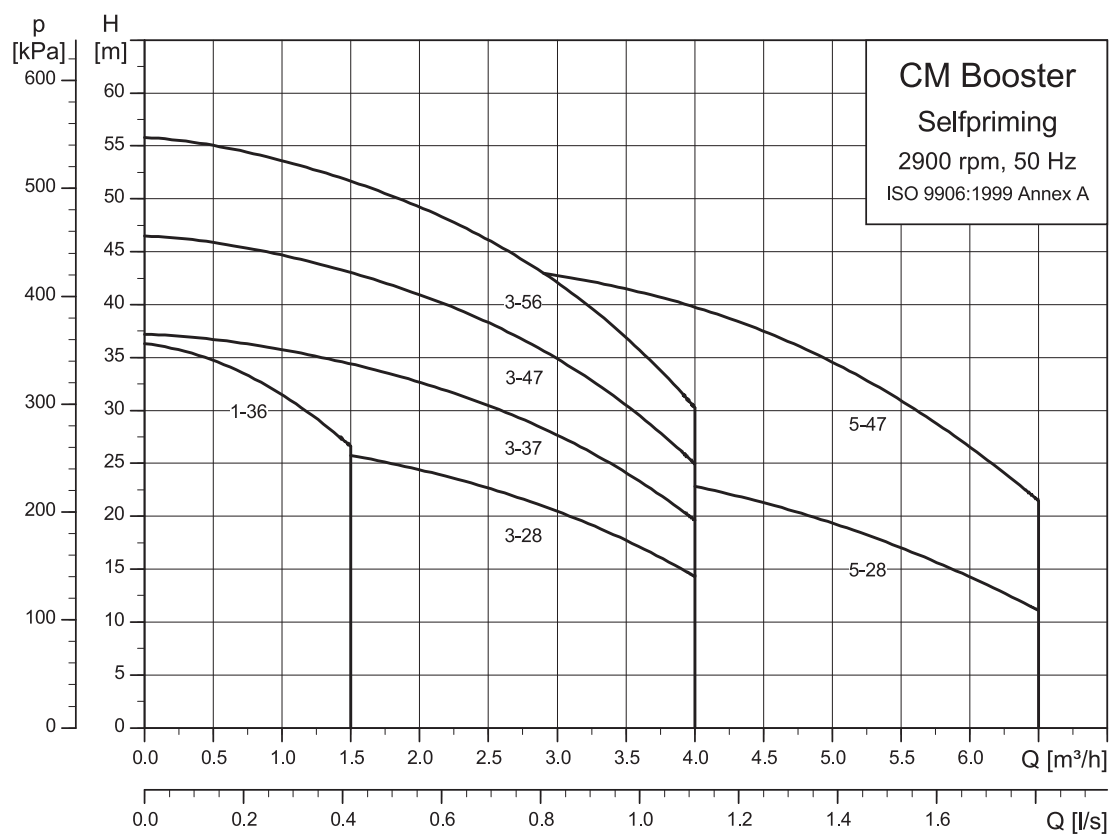
Dimensional drawings



TM083211

Pump	L1	L2	W1	W2	W3	H1	H2	D	DN1 [inch]	DN2 [inch]
CMB-SP 3-28	377	125	221	158	100	75	317	10	Rp 1	G 1
CMB-SP 3-37	377	125	221	158	100	75	317	10	Rp 1	G 1
CMB-SP 3-47	413	125	221	158	100	75	317	10	Rp 1	G 1
CMB-SP 3-56	453	125	221	158	100	75	317	10	Rp 1	G 1
CMB-SP 5-28	377	125	221	158	100	75	317	10	Rp 1	G 1
CMB-SP 5-47	453	125	221	158	100	75	317	10	Rp 1	G 1

Performance curves



TM061042

1-36 is only available for CMB-SP PM 1.

5. CMB PM 2

CM Booster Pressure Manager 2



TM085162

CM Booster PM 2

The Grundfos CM Booster with PM2 pressure manager is a compact booster set for water supply in domestic applications. The pressure booster unit consists of a Grundfos CM pump and a Grundfos PM2 pressure manager. The pressure manager allows the pump to start and stop automatically according to demand and protects the pump from dry running. It also features automatic restart after dry running and adjustable start pressure. The CM Booster is very easy to install. When the booster has been connected to the pipes, it is all a matter of plugging the plug into a socket, and the system is operational.

The Grundfos CM Booster with PM2 is mainly used for domestic and light commercial water supply or booster systems.

Suction lift: maximum 1 m, including inlet pipe pressure loss at a liquid temperature of 20 °C (not self-priming).

Applications

Grundfos CM PM 2 Booster is mainly used for domestic and light commercial water supply or booster systems.

Application	CMB 5
Single-family houses	○
Two-family houses	•
Cluster homes	•
Blocks of flats	•
Schools	•
Small hotels/guest houses	•
Small office buildings	•

• Recommended

○ Applicable

Motor

CM Booster pumps have built-in current- and temperature-dependent motor protection in accordance with IEC 60034-11 and require no further motor protection.

Features

- Compact
- easy installation
- automatic resetting of alarms
- dry-running protection
- anticycling (leakage detection)
- maximum continuous operating time.

Operating conditions

System pressure	Max. 10 bar.
Suction lift	Max. 1 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0-60 °C
Ambient temperature	Max. +55 °C Min. -20 °C
Relative humidity	Max. 95 %
Enclosure class	IP55
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 55 dB(A)
Supply voltage	1 × 220-240 V, 50 Hz
Start/stop frequency	Max. 60 per hour
Cut-in pressure	1.5 - 5 bar (adjustable)

Electrical data

Pump type	Voltage [V]	I _{max} [A]	P1 [W]	Plug type
CMB 5-46	1 × 220-240	5.4 - 5.0	1160	Schuko, US, AU, without plug

Approvals

The product is built according to local drinking water approvals.

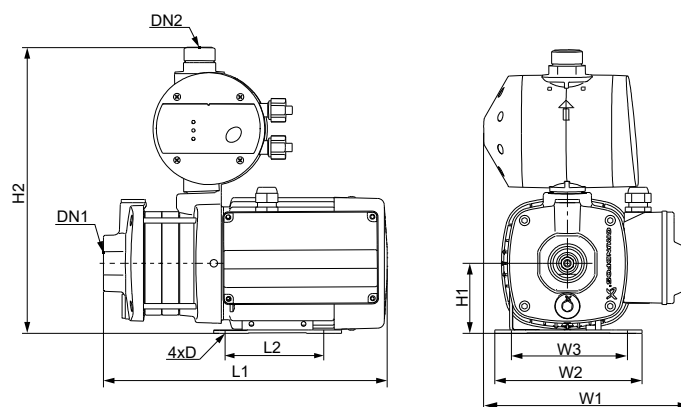
For further information regarding product approvals, visit Grundfos Product Center.

Wetted parts

The table below specifies the parts of the pump that are in contact with the pumped liquid.

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drain plug	Technopolymer	PES 30 % GF

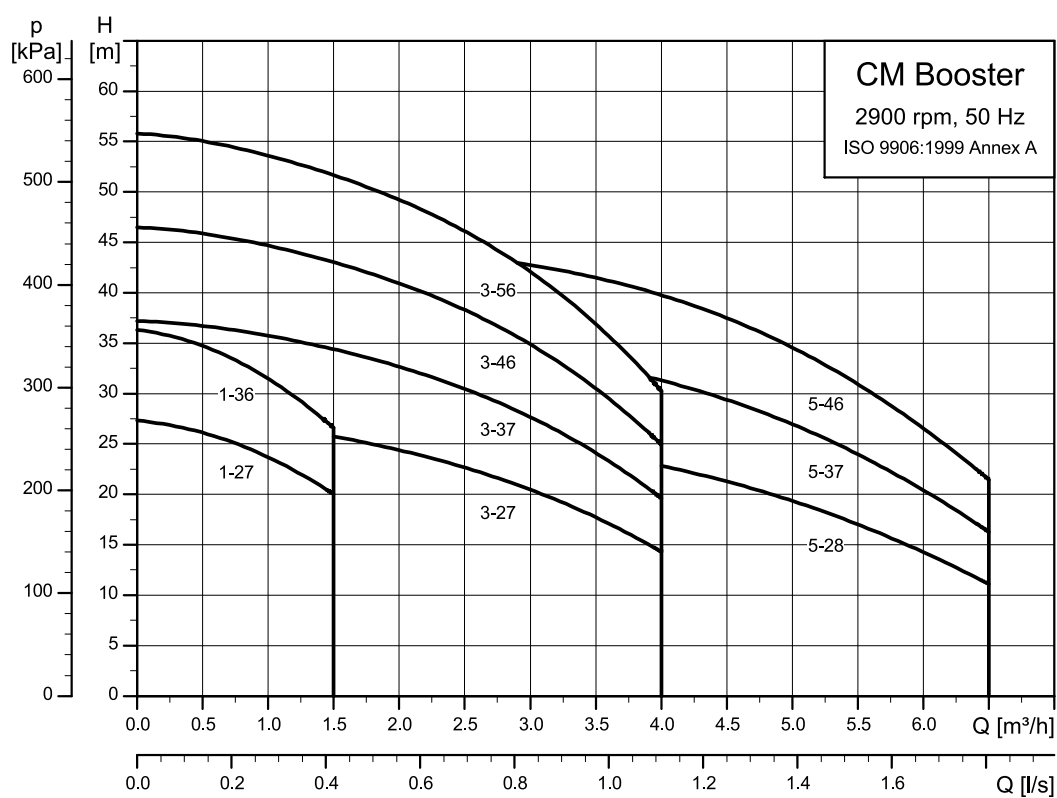
Dimensional drawings



TM083205

Pump type	L1	L2	W1	W2	W3	H1	H2	D	DN1 [inch]	DN2 [inch]
Cast iron										
CMB 5-46	382	125	221	137	100	75	301	10	Rp 1 1/4	G 1

Performance curves



TM061282

For CMB PM 2, only 5-46 is applicable.

6. CMB-SP PM 1

CM Booster Self-Priming Pressure Manager 1



TM085163

CM Booster SP PM 1

The Grundfos CM Booster self-priming pump with PM1 pressure manager is a compact booster solution for water supply in domestic applications. The pressure booster unit consists of a Grundfos CM self-priming pump and a Grundfos PM1 pressure manager. The pressure manager allows the pump to start and stop automatically according to demand and protects the pump from dry running.

The CM Booster self-priming pump can create a suction lift of up to 8 m, and it is very easy to install. When the system has been connected to the pipes, it is all a matter of inserting the plug into a power supply socket, and the system is operational.

The Grundfos CM Booster self-priming pump with PM1 pressure manager is mainly used for domestic and light commercial water supply or booster systems.

Applications

Grundfos self-priming CM PM 1 Booster is mainly used for domestic and light commercial water supply or booster systems.

Application	CMB3	CMB5
Single-family houses	•	○
Two-family houses	•	•
Cluster homes	•	•
Blocks of flats	•	•
Schools	•	•
Small hotels/guest houses	•	•
Small office buildings	•	•

- Recommended
- Applicable

Motor

CM Booster pumps have built-in current- and temperature-dependent motor protection in accordance with IEC 60034-11 and require no further motor protection.

Features

- Compact
- easy installation
- self-priming up to 8 m
- automatic resetting of alarms
- dry-running protection
- anticycling (leakage detection)
- maximum continuous operating time.

Versions

CMB-SP is available in two versions.

- Standard version with a pressure manager factory mounted on the pump. This version allows a suction lift for maximum 4 m.
- Kit version, called CMB-SP SET, without a pressure manager mounted on the pump. This version allows a suction lift of 4 to 8 m if there is a pipe between the pump and the pressure manager of at least 0.7 m.

Operating conditions

System pressure	Max. 10 bar.
Suction lift (H2)	0 < H2 ≤ 4 m (standard version) 4 < H2 ≤ 8 m (Set version) Including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0-60 °C
Ambient temperature	Max. +55 °C Min. -20 °C
Relative humidity	Max. 95 %
Enclosure class	IP55
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 55 dB(A) Note: During priming the sound level may be higher
Supply voltage	1 × 220-240 V, 50 Hz
Start/stop frequency	Max. 60 per hour
Cut-in pressure	PM 1-15: 1.5 bar PM 1-22: 2.2 bar

Electrical data

Pump type	Voltage [V]	I _{max} [A]	P1 [W]	Plug type
CMB-SP 1-36	1 × 220-240	3.1 - 2.8	400	Schuko, AU or without plug
CMB-SP 3-37	1 × 220-240	3.1 - 2.8	587	
CMB-SP 3-47	1 × 220-240	3.1 - 2.8	753	
CMB-SP 5-47	1 × 220-240	5.4 - 5.0	1170	

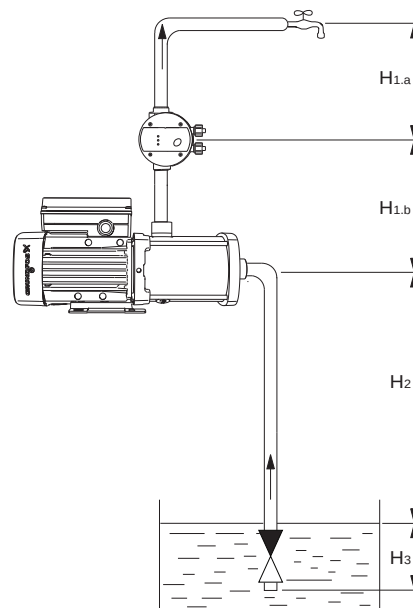
Approvals

The product is built according to local drinking water approvals.

For further information regarding product approvals, visit Grundfos Product Center.

Self-priming CM Booster sets

Note: The following applies only to self-priming CM Boosters delivered as sets.



TM059410

Self-priming CM Booster

The length $H_{1,b}$ of the outlet pipe must be minimum 0.2 metres. See the figure above. By increasing $H_{1,b}$, a suction lift up to 8 metres can be achieved. Use the table below to determine the necessary outlet pipe length for your desired suction lift.

Outlet pipe length $H_{1,b}$ [m]	Resulting suction lift H_2 [m]
≥ 0.35	5
≥ 0.5	6
≥ 0.6	7
≥ 0.7	8

Install the pressure manager on the outlet side of the pump. It incorporates a non-return valve.

We recommend to install the unit so that the height between the unit and the highest tapping point, $H_{1,a}$, does not exceed the values in the table below. See the figure above.

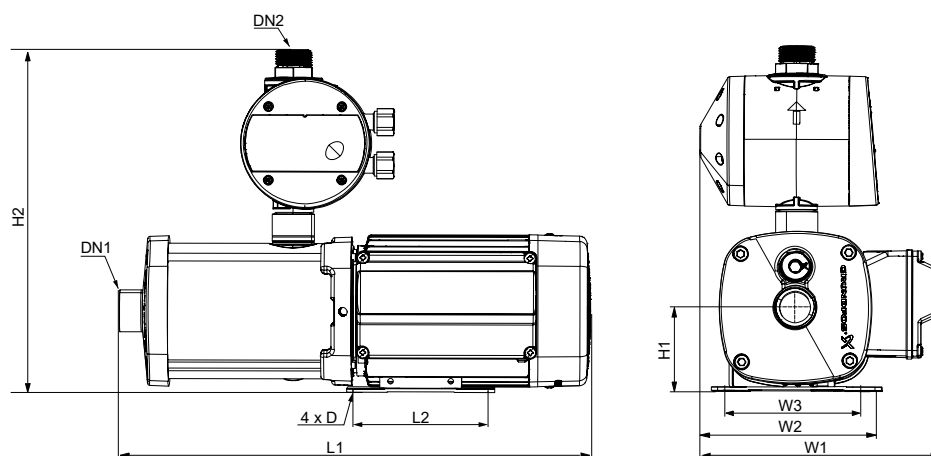
Pressure manager	Start pressure [bar]	Maximum height $H_{1,a}$ [m]
PM 1-15	1.5	10
PM 1-22	2.2	17
PM 2	1.5	11
	2	16
	2.5	21
	3	26
	3.5	31
	4	36
	4.5	41
	5	46

Wetted parts

The table below specifies the parts of the pump that are in contact with the pumped liquid.

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drain plug	Technopolymer	PES 30 % GF

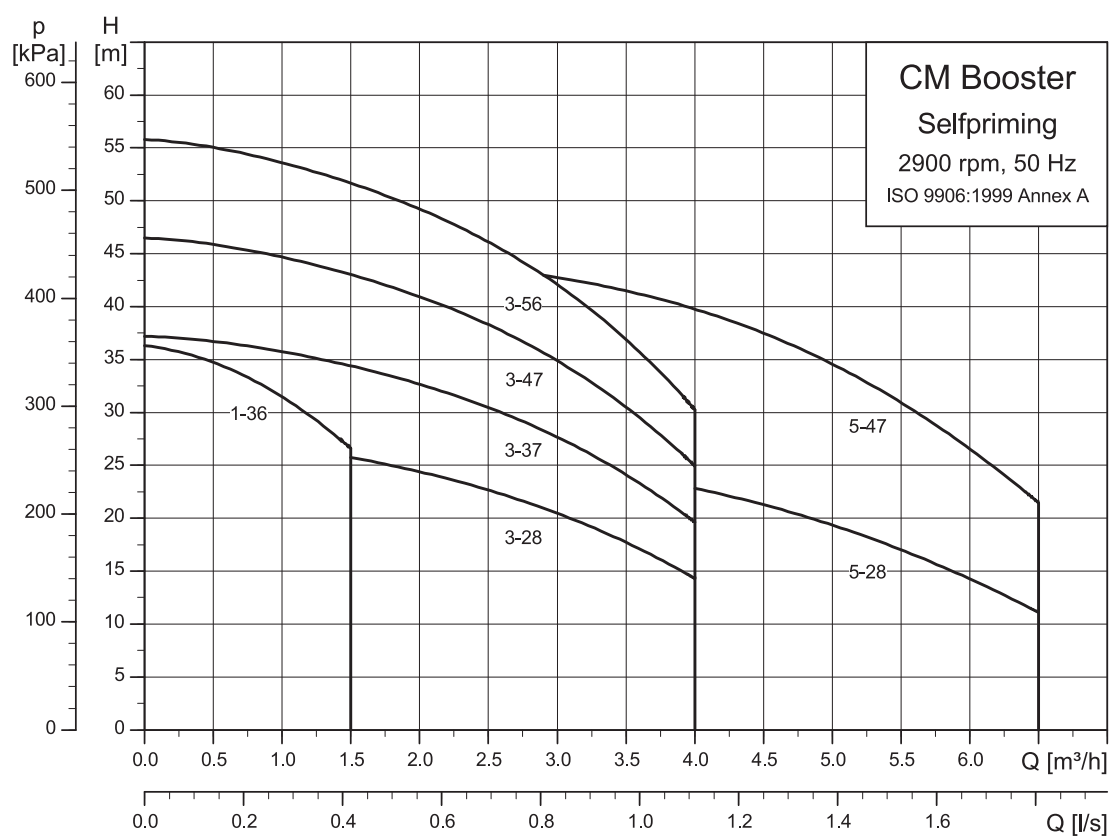
Dimensional drawings



TM083211

Pump type	L1	L2	W1	W2	W3	H1	H2	D	DN1 [inch]	DN2 [inch]
CMB-SP 1-36	377	125	221	137	100	75	317	10	Rp 1	G 1
CMB-SP 3-37	377	203	221	137	100	75	317	10	Rp 1	G 1
CMB-SP 3-47	413	239	221	137	100	75	317	10	Rp 1	G 1
CMB-SP 5-47	453	239	221	137	100	75	317	10	Rp 1	G 1

Performance curves



TM061042

7. CMB PM 1

CM Booster Pressure Manager 1



TM085167

CM Booster PM 1

The Grundfos CM Booster with PM1 pressure manager is a compact booster set for water supply in domestic applications. The pressure booster unit consists of a Grundfos CM pump and a Grundfos PM1 pressure manager. The pressure manager allows the pump to start and stop automatically according to demand and protects the pump from dry running.

The Grundfos CM Booster is very easy to install. When the system has been connected to the pipes, it is all a matter of inserting the plug into a power supply socket, and the system is operational.

The Grundfos CM Booster with PM1 is mainly used for domestic and light commercial water supply or booster systems.

Suction lift: maximum 1 m, including inlet pipe pressure loss at a liquid temperature of 20 °C (not self-priming).

Applications

Grundfos CM PM 1 Booster is mainly used for domestic and light commercial water supply or booster systems.

Application	CMB1	CMB3	CMB5
Single-family houses	●	●	○
Two-family houses	○	●	●
Cluster homes		●	●
Blocks of flats		●	●
Schools		●	●
Small hotels/guest houses		●	●
Small office buildings		●	●

● Recommended

○ Applicable.

Motor

CM pumps have built-in current- and temperature-dependent motor protection in accordance with IEC 60034-11 and require no further motor protection.

Features

- Compact
- easy installation
- dry-running protection
- anticycling (leakage detection).

Operating conditions

System pressure	Max. 10 bar.
Suction lift	Max. 1 m, including suction-pipe pressure loss at a liquid temperature of +20 °C.
Liquid temperature	0-60 °C.
Ambient temperature	Max. +55 °C. Min. -20 °C.
Relative humidity	Max. 95 %.
Enclosure class	IP44.
Insulation class	F.
Sound pressure level	The sound pressure level of the pump is below 55 dB(A).
Supply voltage	1 × 220-240 V, 50 Hz.
Start/stop frequency	Max. 60 per hour.
Cut-in pressure	PM 1-15: 1.5 bar. PM 1-22: 2.2 bar.

Electrical data

Pump type	Voltage [V]	I _{max} [A]	P1 [W]	Plug type
CMB 1-27	1 × 220-240	1.8 - 2.4	377	Schuko, UK, US, AU, without plug
CMB 1-36	1 × 220-240	3.1 - 2.8	436	
CMB 3-27	1 × 220-240	3.1 - 2.8	491	
CMB 3-37	1 × 220-240	3.1 - 2.8	587	
CMB 3-46	1 × 220-240	3.1 - 2.8	689	
CMB 5-28	1 × 220-240	3.1 - 2.8	715	
CMB 5-37	1 × 220-240	4.4 - 4.0	800	
CMB 5-46	1 × 220-240	5.4 - 5.0	1160	

Approvals

The product is built according to local drinking water approvals.

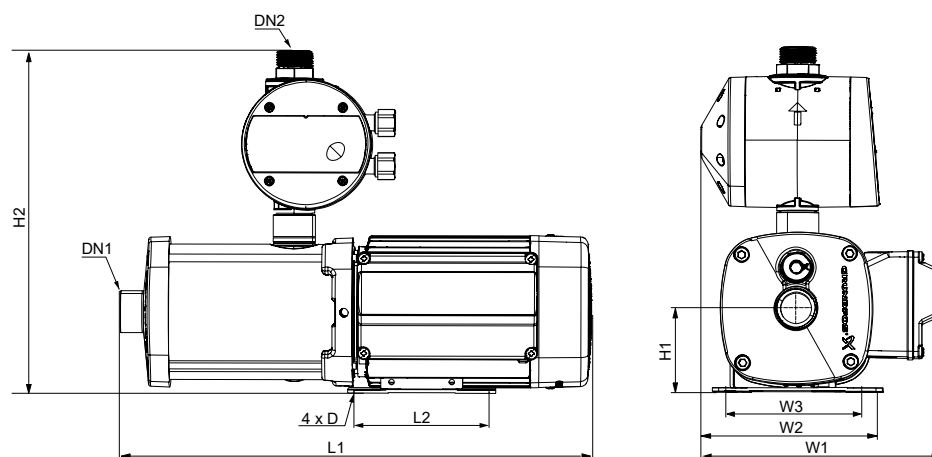
For further information regarding product approvals, visit Grundfos Product Center.

Wetted parts

The table below specifies the parts of the pump that are in contact with the pumped liquid.

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drain plug	Technopolymer	PES 30 % GF

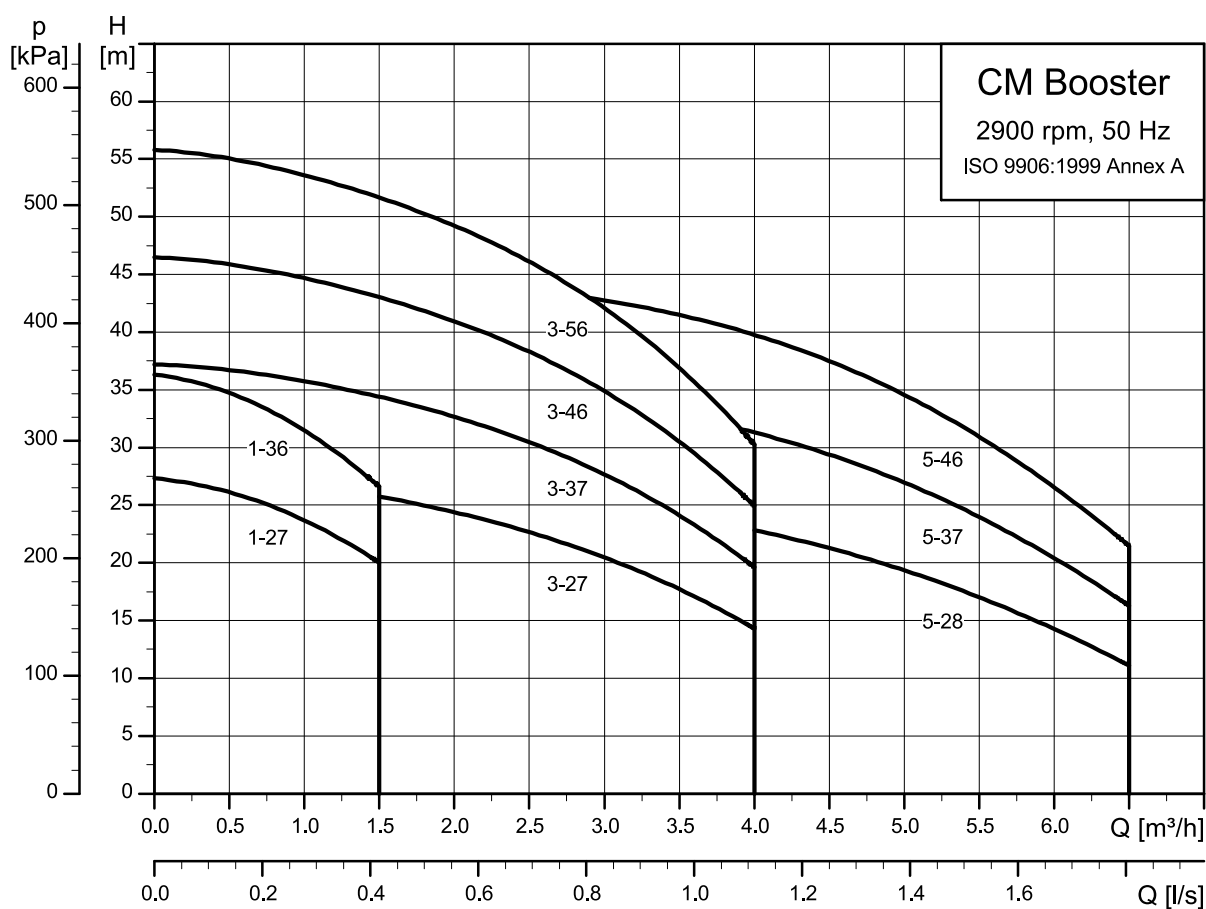
Dimensional drawings



TM083211

Pump	L1	L2	W1	W2	W3	H1	H2	D	DN1 [inch]	DN2 [inch]
Cast Iron										
CMB 1-27	306	125	221	137	100	75	301	10	Rp 1	G 1
CMB 1-36	324	125	221	137	100	75	301	10	Rp 1	G 1
CMB 3-27	306	125	221	137	100	75	317	10	Rp 1	G 1
CMB 3-37	323	125	221	137	100	75	317	10	Rp 1	G 1
CMB 3-46	341	125	221	137	100	75	317	10	Rp 1	G 1
CMB 3-55	417	125	221	137	100	75	317	10	Rp 1	G 1
CMB 5-28	305	125	221	137	100	75	317	10	Rp 1 1/4	G 1
CMB 5-37	364	125	221	137	100	75	317	10	Rp 1 1/4	G 1
CMB 5-46	382	125	221	137	100	75	317	10	Rp 1 1/4	G 1

Performance curves



TM061282

8. CMB PT

CM Booster pressure tank



TM083348

CM Booster PT

The Grundfos CM PT Booster is an automatic booster system for water supply in domestic and agricultural applications as well as other installations where minor leakages are expected to occur. The booster system consists of a Grundfos CM pump, a pressure tank and a pressure switch assembled into one unit. The system is supplied ready for use with preset start pressure and corresponding tank precharge pressure. The pressure band is approximately 1 bar. The system is simple to install. When the system has been connected to the pipes, it is all a matter of inserting the plug into a power supply socket, and the system is operational.

The Grundfos CM PT Booster is mainly used for agricultural and light-commercial water supply and similar water installations where minor leakages can be expected.

Suction lift: maximum 1 m, including inlet pipe pressure loss at a liquid temperature of 20 °C (not self-priming).

Applications

The Grundfos CM PT Booster is mainly used for agricultural and light commercial water supply and similar water installations where minor leakages can be expected.

Application	CMB 3	CMB 5
Agriculture	●	●
Irrigation	●	●
Single-family houses	○	○
Two-family houses	○	○
Cluster homes	○	○
Blocks of flats	○	○
Schools	○	○
Small hotels or guest houses	○	○
Small office buildings	○	○

- Recommended
- Applicable

Motor

Single-phase CM pumps incorporate current- and temperature-dependent motor protection according to IEC 60034-11 and require no external motor protection.

Three-phase CM pumps do not incorporate motor protection. The CM pumps require external motor protection.

Features

- Easy installation
- dry-running protection
- pressure switch
- pressure tank to minimise the number of pump starts (only CMB PT)
- motor protection (single-phase only)
- automatic operation.

Operating conditions

System pressure	Max. 10 bar
Suction lift	Max. 1 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0-60 °C
Ambient temperature	Max. +50 °C Min. -20 °C
Relative humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 55 dB(A)
Supply voltage	1 × 220-240 V, 50 Hz 3 × 220-240 / 380-415 V, 50 Hz
Start/stop frequency	Max. 60 per hour
Cut-in pressure	1.5 bar

Electrical data

Vertical tank, 1 × 220-240 V, 50 Hz

Pump type	Voltage [V]	I _{max} [A]	P1 [W]	Plug type
CMB 3-37	1 × 220-240	3.1 - 2.8	587	Schuko/UK
CMB 3-46	1 × 220-240	3.1 - 2.8	690	Schuko/UK
CMB 5-37	1 × 220-240	4.4 - 4.0	925	Schuko/UK
CMB 5-46	1 × 220-240	5.4 - 5.0	1160	Schuko/UK

All pumps are fitted with a 1.5 m cable.

Approvals

The product is built according to local drinking water approvals.

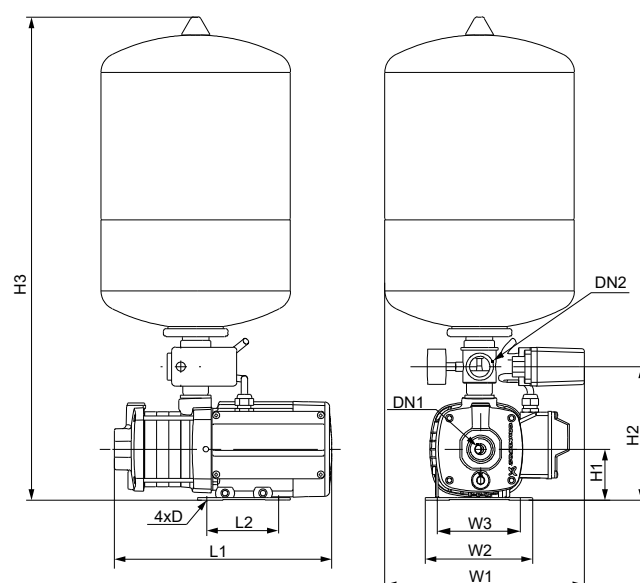
For further information regarding product approvals, visit Grundfos Product Center.

Wetted parts

The table below specifies the parts of the pump that are in contact with the pumped liquid.

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drain plug	Technopolymer	PES 30 % GF
Expansion tank	Butyl	Diaphragm

Dimensional drawings

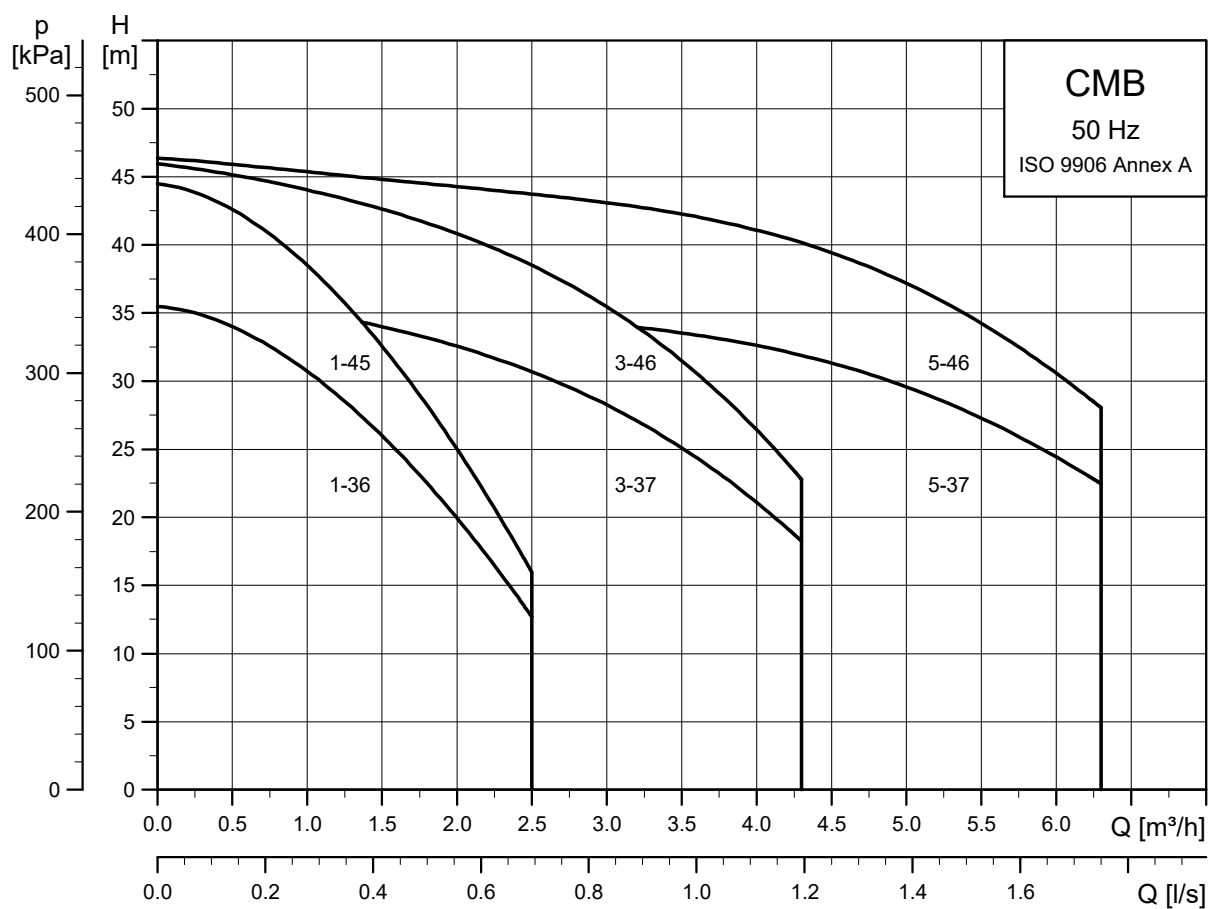


TM083206

CMB	Tank [l]	L1	L2	W1	W2	W3	H1	H2	H3	D	DN1 [inch]	DN2 [inch]
CMB 3-37	18	324	125	289	137	100	75	195	585	10	Rp 1	R 1
CMB 3-46	18	342	125	289	137	100	75	195	585	10	Rp 1	Rp 1
CMB 5-37	18	364	125	289	137	100	75	195	585	10	Rp 1 1/4	R1
CMB 5-46	18	382	125	289	137	100	75	195	585	10	Rp 1 1/4	Rp 1

Performance curves

Vertical tank



TM054260

Pressure losses in fittings and hose are not included.

9. CMB PS

CM Booster with pressure switch



TM085166

CM Booster PS

The Grundfos CM PS Booster is an automatic booster system for water supply in domestic and agricultural applications as well as other installations where minor leakages are expected to occur. The booster system consists of a Grundfos CM pump, a five-way valve and a pressure switch. A pressure tank must be fitted to complete the booster system. Grundfos GT tanks make a perfect fit for your booster system. The pressure band is approximately 1 bar. When the system has been connected to the pipes, it is all a matter of inserting the plug into a power supply socket, and the system is operational.

The Grundfos CM PS Booster is mainly used for agricultural and light commercial water supply and similar water installations where minor leakages can be expected.

Suction lift: maximum 1 m, including inlet pipe pressure loss at a liquid temperature of 20 °C (not self-priming).

Applications

The Grundfos CM PS Booster is mainly used for agricultural and light commercial water supply and similar water installations where minor leakages can be expected.

Motor

Application	CMB 1	CMB 3	CMB 5	CMB 10
Agriculture	●	●	●	●
Irrigation	●	●	●	●
Single-family houses	○	○	○	○
Two-family houses	○	○	○	○
Cluster homes	○	○	○	○
Blocks of flats	○	○	○	○
Schools	○	○	○	○
Small hotels or guest houses	○	○	○	○
Small office buildings	○	○	○	○

● Recommended

○ Applicable

Single-phase motors

Single-phase CM pumps incorporate current- and temperature-dependent motor protection according to IEC 60034-11 and require no external motor protection.

Three-phase motors

Three-phase CM pumps do not incorporate motor protection and therefore require external motor protection.

Features

- Easy installation
- dry-running protection
- pressure switch
- pressure tank to minimise the number of pump starts (only CMB PT)
- motor protection (single-phase only)
- automatic operation.

Operating conditions

System pressure	Max. 10 bar.
Suction lift	Max. 1 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0-60 °C
Ambient temperature	Max. +55 °C Min. -20 °C
Relative humidity	Max. 95 %
Enclosure class	IP44

Wetted parts

The table below specifies the parts of the pump that are in contact with the pumped liquid.

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drain plug	Technopolymer	PES 30 % GF

System pressure	Max. 10 bar.
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 62 dB(A).
Supply voltage	1 × 220-240 V, 50 Hz 3 × 220-240 / 380-415 V, 50 Hz
Start/stop frequency	Max. 60 per hour
Cut-in pressure	1.5 bar

Electrical data

1 × 220-240 V, 50 Hz

Pump type	Voltage [V]	I _{max} [A]	P1 [W]	Plug type
CMB PS 1-36	1 × 220-240	3.1 - 2.8	436	AU
CMB PS 3-37	1 × 220-240	3.1 - 2.8	587	AU
CMB PS 5-47	1 × 220-240	5.4 - 5.0	1410	AU
CMB PS 5-56	1 × 220-240	8.72 - 8.1	1410	AU
CMB PS 5-75	1 × 220-240	8.72 - 8.1	1790	AU
CMB PS 5-93	1 × 220-240	12.2 - 11.0	2130	AU
CMB PS 10-47	1 × 220-240	12.2 - 11.0	2070	AU

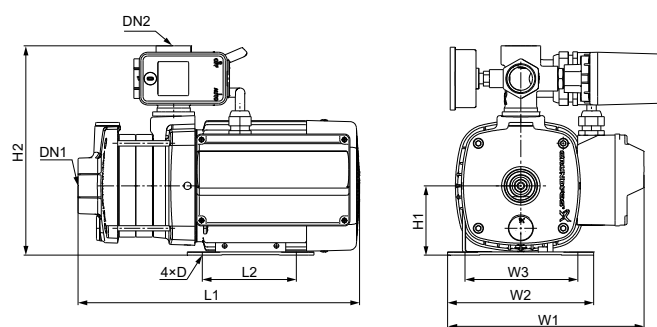
All pumps are fitted with a 1.5 m cable.

Approvals

The product is built according to local drinking water approvals.

For further information regarding product approvals, visit Grundfos Product Center.

Dimensional drawings

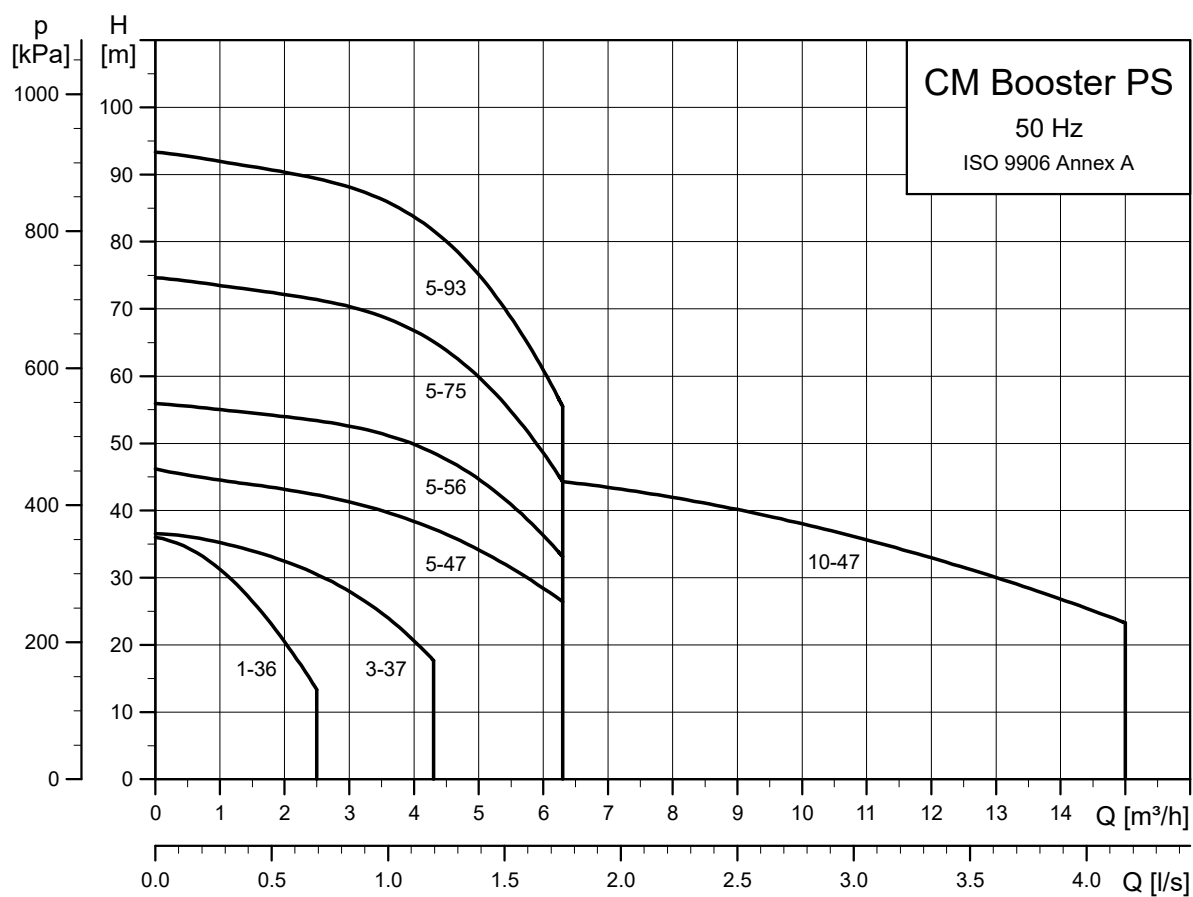


TM083207

1 × 220-240 V, 50 Hz

Pump type	L1	L2	W1	W2	W3	H1	H2	D	DN1 [inch]	DN2 [inch]
CMB PS 1-36	323	125	210	137	100	75	208	10	Rp 1	Rp 1
CMB PS 3-37	323	150	210	158	125	75	208	10	Rp 1	Rp 1
CMB PS 5-47	381	167	210	158	125	75	208	10	Rp 1 1/4	Rp 1
CMB PS 5-56	469	245	210	178	140	90	223	10	Rp 1 1/4	Rp 1
CMB PS 5-75	505	280	237	178	140	90	223	10	Rp 1 1/4	Rp 1
CMB PS 5-93	579	315	237	178	140	90	223	10	Rp 1 1/4	Rp 1
CMB PS 10-47	491	219	237	199	160	100	261	10	Rp 1 1/2	Rp 1

Performance range



TM054765

Pressure losses in fittings and hose are not included.

10. Product numbers

CMBE TWIN

D: Integrated frequency converter

Pump type	Controller	Pump housing Stainless steel	Thread type	Plug	Product number
<i>CMBE 3, 1 × 200-240 V, 50/60 Hz</i>					
CMBE 3-62	D	•	Rp	Schuko	99219420
CMBE 3-62	D	•	Rp	Fuse Box	99220844
CMBE 3-62	D	•	Rp	AU	99282854
CMBE 3-62	D	•	Rp	UK	99963950
CMBE 3-62	D	•	Rp	Type O	99968524
CMBE 3-62	D	•	Rp	None	99521893
CMBE 3-93	D	•	Rp	Schuko	99219421
CMBE 3-93	D	•	Rp	Fuse Box	99220845
CMBE 3-93	D	•	Rp	AU	99282855
<i>CMBE 5, 1 × 200-240 V, 50/60 Hz</i>					
CMBE 5-62	D	•	Rp	Schuko	99219423
CMBE 5-62	D	•	Rp	Fuse Box	99220847
CMBE 5-62	D	•	Rp	AU	99282856
CMBE 5-62	D	•	Rp	UK	99963966
CMBE 5-62	D	•	Rp	Type O	99968525

CMBE TWIN Accessories

Accessory type	Ball valve	Unions	1" inlet connection	1 1/2" outlet connection	1 1/4" inlet connection	Product Number
Vibration damper kit						99217259
Twin manifold set	•	•	•	•		99229422
Twin manifold set	•	•		•	•	99229453

CMBE

D: Integrated frequency converter

Pump type	Controller	Pump housing Stainless steel	Thread type	Plug	Product number
<i>CMBE 1, 1 × 200-240 V, 50/60 Hz</i>					
CMBE 1-44	D	•	Rp	Schuko	98374697
CMBE 1-44	D	•	Rp	None	98374679
CMBE 1-44	D	•	NPT	None	98548109
CMBE 1-44	D	•	Rp	AU	98374705
CMBE 1-44	D	•	Rp	UK	98374713
CMBE 1-44	G	•	Rp	Schuko	98563698
CMBE 1-44	D	•	NPT	US	98810910
CMBE 1-44	D	•	NPT	US	99561340
CMBE 1-75	D	•	NPT	None	98548110
CMBE 1-75	D	•	NPT	US	98810921
<i>CMBE 3, 1 × 110 V, 60 Hz</i>					
CMBE 3-51	D	•	Rp	None	99871395
<i>CMBE 3, 1 × 115 V, 60 Hz</i>					
CMBE 3-51	D	•	NPT	US	98810924
<i>CMBE 3, 1 × 200-240 V, 50/60 Hz</i>					
CMBE 3-30	D	•	Rp	US	98374724
CMBE 3-30	D	•	NPT	None	98548112
CMBE 3-51	D	•	Rp	None	99877061
CMBE 3-62	D	•	Rp	Schuko	98374701
CMBE 3-62	D	•	Rp	None	98374693
CMBE 3-62	D	•	NPT	None	98548113
CMBE 3-62	D	•	Rp	AU	98374709
CMBE 3-62	D	•	Rp	UK	98374717
CMBE 3-62	D	•	Rp	UK	99953869
CMBE 3-62	G	•	Rp	Schuko	98563709
CMBE 3-62	D	•	Rp	Type O	99968508
CMBE 3-93	D	•	Rp	Schuko	98374702
CMBE 3-93	D	•	Rp	None	98374694
CMBE 3-93	D	•	NPT	None	98548114
CMBE 3-93	G	•	Rp	Schuko	98563722
<i>CMBE 3, 3 × 220 V, 60 Hz</i>					
CMBE 3-51	D	•	Rp	None	99877073
<i>CMBE 5, 1 × 200-240 V, 50/60 Hz</i>					
CMBE 5-62	D	•	Rp	Schuko	98374704
CMBE 5-62	D	•	Rp	None	98374696
CMBE 5-62	D	•	NPT	None	98548116
CMBE 5-62	D	•	Rp	AU	98374712
CMBE 5-62	D	•	Rp	UK	98374720
CMBE 5-62	D	•	Rp	UK	99953871
CMBE 5-62	G	•	Rp	Schuko	98563727
CMBE 5-62	D	•	Rp	Type O	99968512
CMBE 5-62	D	•	Rp	IRAM	98987736
<i>CMBE 10, 1 × 200-240 V, 50/60 Hz</i>					
CMBE 10-54	D	•	Rp	Schuko	98382202
CMBE 10-54	D	•	Rp	None	98382190
CMBE 10-54	D	•	NPT	None	98548118
CMBE 10-54	D	•	Rp	None	98661978
CMBE 10-54	D	•	NPT	None	99503806

Pump type	Controller	Pump housing	Thread type	Plug	Product number
		Stainless steel			
CMBE 10-54	D	•	Rp	UK	98382206
CMBE 10-54	D	•	Rp	UK	99953872
CMBE 10-54	G	•	Rp	Schuko	98563731
CMBE 10-54	D	•	Rp	IRAM	98987737

CMB PM 1

Pump type	Controller	Pump housing		Self-priming	Thread type	Plug	Product number
		Stainless steel	Cast iron				
CMB 1 PM 1, 1 × 220 V, 50 Hz							
CMB 1-27	PM 1-15		•		Rp	None	98661927
CMB 1-36	PM 1-15		•		Rp	Schuko	97530096
CMB 1-36	PM 1-15		•		Rp	AU	97530097
CMB-SP 1-36	PM 1-15	•		•	Rp	AU	98507562
CMB 3 PM 1, 220 V, 50 Hz							
CMB 3-27	PM 1-15		•		Rp	Schuko	97530123
CMB 3-27	PM 1-15		•		Rp	None	98661934
CMB 3-37	PM 1-15		•		Rp	Schuko	97530132
CMB 3-37	PM 1-15		•		Rp	Schuko	98780335
CMB 3-37	PM 1-15		•		Rp	None	97530135
CMB 3-37	PM 1-15		•		Rp	None	98661936
CMB 3-37	PM 1-15		•		Rp	None	98661937
CMB 3-37	PM 1-15		•		Rp	UK	99953864
CMB 3-37	PM 1-15		•		Rp	AU	97530133
CMB-SP 3-37	PM 1-15	•		•	Rp	Schuko	98507565
CMB 3-46	PM 1-22		•		Rp	Schuko	98780336
CMB 3-46	PM 1-22		•		Rp	None	97530144
CMB 3-46	PM 1-22		•		Rp	None	98661938
CMB 3-46	PM 1-22		•		Rp	None	98661939
CMB 3-46	PM 1-22		•		Rp	UK	99953865
CMB-SP 3-47	PM 1-22	•		•	Rp	None	98507575
CMB 5 PM 1, 220 V, 50 Hz							
CMB 5-28	PM 1-22		•		Rp	Schuko	97530159
CMB 5-37	PM 1-22		•		Rp	Schuko	98780343
CMB 5-37	PM 1-22		•		Rp	UK	99953866
CMB 5-37	PM 1-22		•		Rp	AU	97687685
CMB 5-46	PM 1-22		•		Rp	Schuko	98780348
CMB 5-46	PM 1-22		•		Rp	None	97530171
CMB 5-46	PM 1-22		•		Rp	UK	99953868
CMB 5-46	PM 1-22		•		Rp	AU	97530169
CMB-SP 5-47	PM 1-22	•		•	Rp	Schuko	98507581

CMB PM 2

Pump type	Controller	Pump housing		Self-priming	Thread type	Plug	Product number
		Stainless steel	Cast iron				
CMB 3 PM 2, 220 V, 50 Hz							
CMB-SP 3-28	PM 2	●		●	Rp	AU	98507627
CMB-SP 3-37	PM 2	●		●	Rp	AU	98507628
CMB-SP 3-47	PM 2	●		●	Rp	AU	98507629
CMB-SP 3-56	PM 2	●		●	Rp	AU	98507630
CMB 5 PM 2, 220 V, 50 Hz							
CMB-SP 5-28	PM 2	●		●	Rp	AU	98507635
CMB 5-46	PM 2		●		Rp	Schuko	97530082
CMB-SP 5-47	PM 2	●		●	Rp	AU	98507636

CMB PT and CMB PS

Pump type	Pump housing		Pressure switch	Tank size [l]	Thread type	Plug	Product number
	Stainless steel	Cast iron					
CMB 1 PT and CMB 1 PS							
CMB PS 1-36	•		•		Rp	AU	98244555
CMB 3 PT and CMB 3 PS							
CMB PT 3-37		•	•	18, vertical	Rp	Schuko	98158257
CMB PT 3-37	•		•	18, vertical	Rp	UK	99953844
CMB PS 3-37	•		•		Rp	AU	98244556
CMB PT 3-46		•	•	18, vertical	Rp	Schuko	98158258
CMB PT 3-46	•		•	18, vertical	Rp	UK	99953850
CMB 5 PT and CMB 5 PS							
CMB PT 5-37		•	•	18, vertical	Rp	Schuko	98158260
CMB PT 5-37	•		•	18, vertical	Rp	UK	99953852
CMB PT 5-46		•	•	24, vertical	Rp	Schuko	98158281
CMB PT 5-46	•		•	18, vertical	Rp	UK	99953863
CMB PS 5-47	•		•		Rp	AU	98117630
CMB PS 5-56	•		•		Rp	AU	98117632
CMB PS 5-75	•		•		Rp	AU	98117633
CMB PS 5-93	•		•		Rp	AU	98117634
CMB PS 10-47	•		•		Rp	AU	98117635

11. Accessories

The vital components from the booster solutions are also available as stand-alone products. They can be combined with any pump to create a booster system.

Inlet/outlet pipe kits for CMBE TWIN

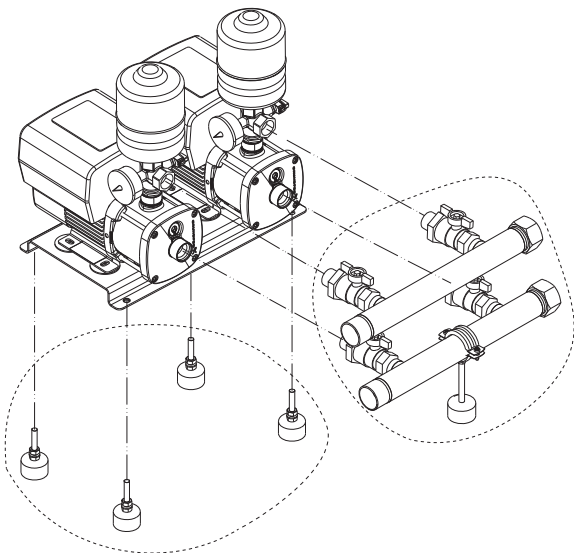
Inlet and outlet pipe kits are available for the CMBE TWIN booster. All pipe kits include ball valve and unions and 1 1/2" outlet connection. The inlet connection is available in two sizes.

Type	Product Numbers
1" inlet connection	PN 99229422
1 1/4" inlet connection	PN 99229453

Vibration damper kit for CMBE TWIN

The vibration dampers are mounted on the base plate of the CMBE TWIN booster. We also recommend to support the pipes with a vibration damper.

Type	Product Numbers
Vibration dampers	PN 99217259



TM068740

Vibration damper kit (left) and inlet/outlet pipe kit (right) for the CMBE TWIN booster

12. Grundfos Product Center

Online search and sizing tool to help you make the right choice.

From the international view, you can select your specific country to view the product range available to you.

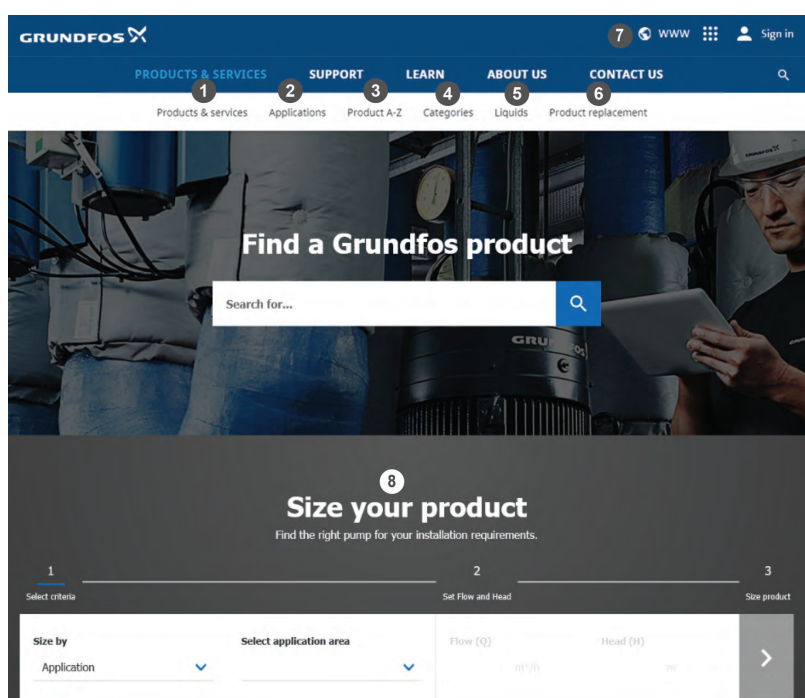
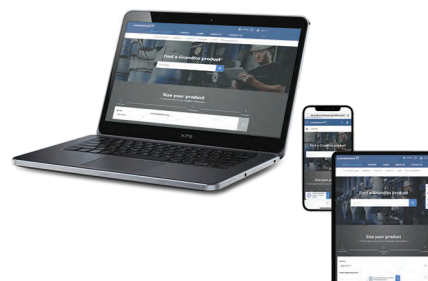
International view: <http://product-selection.grundfos.com>

All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.

Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc., in PDF format.



When you select your country, you will see the menus below. Note that some menus may not be available depending on the country.

Example: <https://product-selection.grundfos.com/uk>

Pos.	Description
1	Products & services enables you to find products and documents by typing a product number or name into the search field.
2	Applications enables you to choose an application to see how Grundfos can help you design and optimise your system.
3	Products A-Z enables you to look through a list of all the Grundfos products.
4	Categories enables you to look for a product category.
5	Liquids enables you to find pumps designed for aggressive, flammable or other special liquids.
6	Product replacement enables you to find a suitable replacement.
7	WWW enables you to select the country, which changes the language, the available product range and the structure of the website.
8	Sizing enables you to size a product based on your application and operating conditions.

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