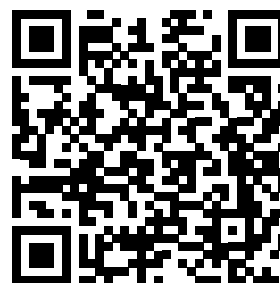

ISTRUZIONI PER L'INSTALLAZIONE E LA MANUTENZIONE (IT)
INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE (EN)
INSTRUCTIONS POUR L'INSTALLATION ET LA MAINTENANCE (FR)
INSTALLATIONS-UND WARTUNGSANLEITUNGEN (DE)
INSTRUCCIONES DE INSTALACIÓN Y MANTENIMIENTO (ES)

CP2-G CM2-G DCP2-G DCM2-G

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KEY

The following symbols have been used in the discussion:



SITUATION OF GENERAL DANGER.

Failure to respect the following instructions may cause damage to persons and property.



SITUATION OF RISK OF ELECTRIC SHOCK.

Failure to respect the following instructions may cause a situation of serious danger for personal safety.



Notes and general information.

WARNINGS



Read this documentation carefully before installation.

Installation and operation must comply with the local safety regulations in force in the country in which the product is installed. Everything must be done in a workmanlike manner.

Failure to respect the safety regulations not only causes risk to personal safety and damage to the equipment, but invalidates every right to assistance under guarantee.



Skilled personnel

It is advisable that installation be carried out by competent, skilled personnel in possession of the technical qualifications required by the specific legislation in force.

The term skilled personnel means persons whose training, experience and instruction, as well as their knowledge of the respective standards and requirements for accident prevention and working conditions, have been approved by the person in charge of plant safety, authorizing them to perform all the necessary activities, during which they are able to recognize and avoid all dangers (Definition for technical personnel IEC 364).



The appliance may be used by children over 8 years old and by persons with reduced physical, sensory or mental capacities, or who lack experience or knowledge, on condition that they are under supervision or after they have received instructions concerning the safe use of the appliance and the understanding of the dangers involved. Children must not play with the appliance. Cleaning and maintenance intended to be carried out by the user must not be performed by children without supervision.



Overload protection. The single-phase pump is equipped with a thermal motor protector. If the motor overheats, the motor protector switches the pump off automatically. The cooling time is about 15-20 min. after which the pump automatically switches on again. After the motor protector has tripped, it is absolutely necessary to find the cause and eliminate it. See Troubleshooting. Three-phase pumps have no thermal motor protector and must be installed with a protection panel.



Use is allowed only if the electric system is in possession of safety precautions in accordance with the regulations in force in the country where the product is installed (for Italy CEI64/2).

Failure to observe the warnings may create situations of risk for persons or property and will void the product guarantee.

Particular warnings



Always switch off the mains power supply before working on the electrical or mechanical part of the system. Only firmly cabled mains connections are admissible. The appliance must be earthed (IEC 536 class 1, NEC and other applicable standards).



Mains terminals and motor terminals may still have dangerous voltage when the motor is stopped.



The appliance may only be used for the functions for which it was designed.

Under certain calibration conditions, the converter can start automatically after a power failure.

RESPONSIBILITY

The Manufacturer does not vouch for correct operation of the electro pumps or answer for any damage that they may cause if they have been tampered with, modified and/or run outside the recommended work range or in contrast with other indications given in this manual.

The Manufacturer declines all responsibility for possible errors in this instructions manual, if due to misprints or errors in copying. The Manufacturer reserves the right to make any modifications to the products that it may consider necessary or useful, without affecting their essential characteristics.

1. GENERAL

The pumps in the IN LINE series represent a complete range of circulators. These installation and operating instructions describe the entire range of models for the IN LINE series. The specific type of model is indicated on the pack and on the product identification plate.

1.1 Applications

Indicated for booster sets for water systems of small, medium and large users. They can be used in the most varied fields, such as:

- Heating and conditioning systems
- Solar energy systems
- Boiler supply
- Circulation systems

2. PUMPED FLUIDS

The machine is designed and built to pump water with up to 50% glycol, free from explosive substances and solid particles or fibers, with a density of 1000 kg/m³ and a kinematic viscosity of 1 mm²/s, and chemically non-aggressive liquids. Use with other fluids is allowed only with the manufacturer's authorization.

3. TECHNICAL CHARACTERISTICS

All technical data are marked on the technical label on the pump. The various items are explained below (Fig. 1):

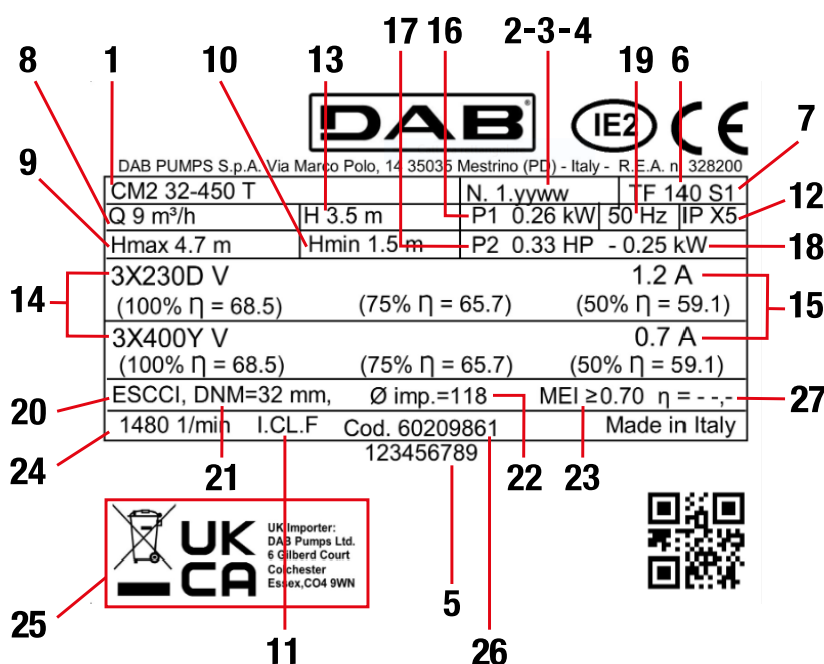


Fig.1 Data plate

Pos.	Description
1	Description
2	Revision
3	Year
4	Week
5	Serial number
6	Maximum liquid temperature
7	Use
8	Rated flow
9	Maximum head
10	Minimum head
11	Insulation class
12	Degree of protection
13	Rated head
14	Rated voltage
15	Ampere
16	P1
17	P2 HP
18	P2 kW
19	Frequency
20	MEI Standard
21	Rated delivery diameter
22	Impeller diameter
23	MEI value
24	Rated number of revolutions
25	Logos
26	Pump code
27	MEI hydraulic efficiency

4. MANAGEMENT

4.1 Storage

All the pumps must be stored indoors, in a dry, vibration-free and dust-free environment, possibly with constant air humidity. They are supplied in their original packaging and must remain there until the time of installation. If this is not possible, the intake and delivery aperture must be accurately closed.

4.2 Handling

Avoid subjecting the products to needless impacts or collisions.

The following figures show how single and twin electric pumps must be lifted during installation, after they have been unpacked (see Fig.7 at the end of the booklet).

4.3 Weights

The adhesive label on the package indicates the total weight of the electro pump.

4.4 Checking motor shaft rotation

Before installing the pump, ensure that moving parts rotate freely. To do this, proceed as follows: remove the fan cover from the seat of the rear engine cover, unscrewing the blank nuts according to the installation method. Manually operating the fan, turn the rotor shaft a few revolutions. If this is not possible, proceed to disassemble the pump body by loosening the nuts to check for any foreign bodies inside. Proceed in the opposite direction to that described for assembly.

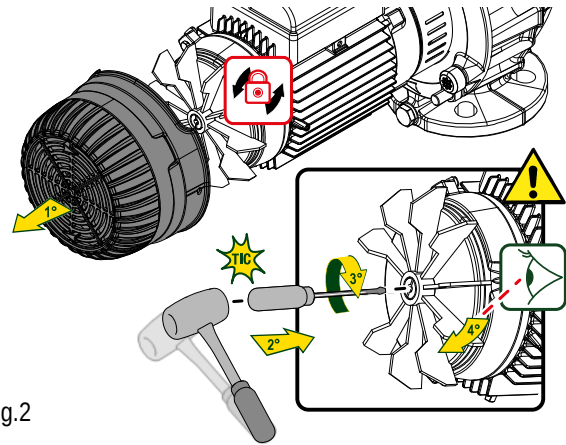


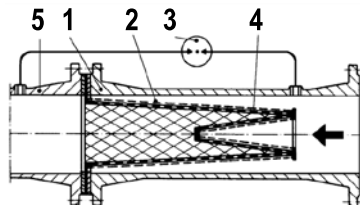
Fig.2



Do not force the fan with pliers or other tools to try to free the pump as this could cause deformation or breakage of the pump.

4.5 New systems

Before running new systems the valves, pipes, tanks and couplings must be cleaned accurately. Often welding waste, flakes of oxide or other impurities fall off after only a certain period of time. To prevent them from getting into the pump they must be caught by suitable filters. The free surface of the filter must have a section at least 3 times larger than the section of the pipe on which the filter is fitted, so as not to create excessive load losses. We recommend the use of TRUNCATED CONICAL filters made of corrosion-resistant materials (SEE DIN 4181):



- 1- Filter body
- 2- Narrow mesh filter
- 3- Differential pressure gauge
- 4- Perforated sheet
- 5- Pump intake aperture

5. PROTECTIONS

5.1 Moving parts

In accordance with accident-prevention regulations, all moving parts (fans, couplings, etc.) must be accurately protected with special devices (fan covers, ecc.) before operating the pump.



During pump operation, keep well away from the moving parts (shaft, fan, etc.) unless it is absolutely necessary, and only then wearing suitable clothing as required by law, to avoid being caught.

5.2 Noise level

The noise levels of pumps with standard motor are indicated in table A at the end of the booklet. Remember that, in cases where the LpA noise levels exceed 85 Db(A), suitable HEARING PROTECTION must be used in the place of installation, as required by the regulations in force.

5.3 Hot and cold parts



DANGER OF BURNING!!

As well as being at high temperature and high pressure, the fluid in the system may also be in the form of steam! It may be dangerous even to touch the pump or parts of the system.

If the hot or cold parts are a source of danger, they must be accurately protected to avoid contact with them.

6. INSTALLATION



The pumps may contain small quantities of residual water from testing. We advise flushing them briefly with clean water before their final installation.

The electro pump must be fitted in a well ventilated place, with an environment temperature not exceeding 50°C. If the unit is installed in a location where there is a risk of explosion, the local regulations on "Ex" protection must be respected, using only suitable motors.

The pump for power ratings up to and including 7.5 kW can be installed either vertically or horizontally. For powers exceeding 7.5 kW, the pump must be installed in a vertical position. (See Fig.3)

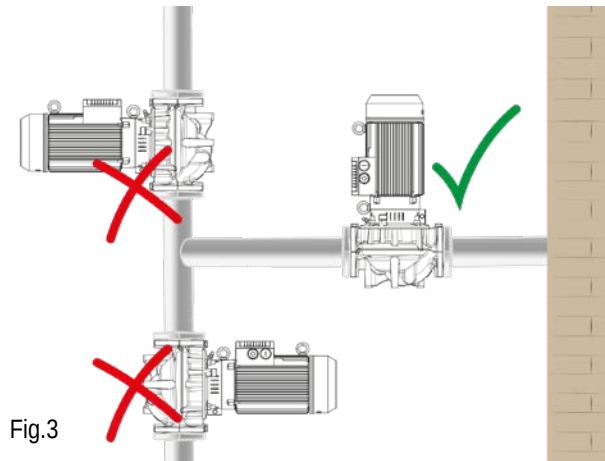


Fig.3

6.1 Foundation

The buyer is fully responsible for preparing the foundation which must be made in conformity with the dimensions. Metal foundations must be painted to avoid corrosion; they must be level and sufficiently rigid to withstand any stress. Their dimensions must be calculated to avoid the occurrence of vibrations due to resonance.

With concrete foundations, care must be taken to ensure that the concrete has set firmly and is completely dry before placing the unit on it. The surface that it sits on must be perfectly flat and horizontal. After the pump has been positioned on the foundation, check with a spirit level to ensure that it is sitting perfectly level. If not, suitable shims must be inserted.

6.2 Connecting the pipes

Ensure that the metal pipes do not transmit excess force to the pump apertures, so as to avoid causing deformations or breakages. Any expansion due to the heat of the pipes must be compensated with suitable precautions to avoid weighing down on the pump. The counter flanges of the pipes must be parallel to the flanges of the pump.

To reduce noise to a minimum it is advisable to fit vibration-damping couplings on the intake and delivery pipes.

It is always good practice to place the pump as close as possible to the liquid to be pumped. It is advisable to use a suction pipe with a diameter larger than that of the intake aperture of the electro pump. If the head at intake is negative, it is indispensable to fit a foot valve with suitable characteristics at intake. Irregular passages between the diameters of the pipes and tight curves considerably increase load losses. Any passage from a pipe with a small diameter to one with a larger diameter must be gradual. Usually the length of the passage cone must be 5 to 7 times the difference in diameter.

Check accurately to ensure that the joins in the intake pipe do not allow air infiltrations. Ensure that the gaskets between flanges and counter flanges are well centered so as not to create resistances to the flow in the pipes. To prevent the formation of air pockets, the intake pipe must slope slightly upwards towards the pump.

If more than one pump is installed, each pump must have its own intake pipe. The only exception is the reserve pump (if envisaged) which, as it starts up only in the case of breakdown of the main pump, ensures the operation of only one pump for each intake pipe. Interception valves must be fitted upstream and downstream from the pump so as to avoid having to drain the system when carrying out pump maintenance.

6.3 Insulation

- To protect the pump from deposits, it should not be installed at the lowest point of the system. Only install the pump on the system after all welding work has been completed and check that the system is properly cleaned.
- The pump must be installed in a well ventilated place, protected from unfavorable weather conditions, and with an environment temperature not higher than 50°C.
- The electric pumps with IPX5 degree of protection are protected against water jets.

- To facilitate inspection and replacement, install the pump in an easily accessible position.
- The arrows on the pump body indicate the direction of flow. The use of gate valves on the suction and delivery pipes is recommended in order to avoid draining the system in the event of repairs. In addition, provide a by-pass circuit between delivery and suction to ensure a minimum of recirculation in the event that solenoid valves are used on the pipes, so as not to cause dangerous overheating.
- Ensure that the system is equipped with an air vent system and that the expansion tank (if fitted) is installed before the suction mouth. When, on the other hand, the pump is installed on the delivery side of an open vessel circuit, make sure that the safety pipe is connected before the pump.
- Mount the pump on the system without allowing the metal pipes to transmit excessive stresses or strains to the pump body, which could lead to cracks and breakage.
- To prevent the transmission of noise or any vibrations, fit anti-vibration couplings to the suction and delivery mouths.

7. ELECTRICAL CONNECTION



Strictly observe the wiring diagrams inside the terminal board box and those shown in the Tab. C at the end of the booklet.

In the case of three-phase motors with star-delta starting, it must be ensured that the switching time between star and delta is as short as possible and falls within table B at the end of the booklet.

Before accessing the terminal board and working on the pump, make sure that power has been switched off.

Check the mains voltage before making any connections. If it corresponds to the data plate, connect the wires to the terminal board, giving priority to the earth wire.

The pumps must always be connected to an external switch.

The motors must be protected by motor protectors that are appropriately rated in relation to the current indicated on the data plate.

In systems where the twin version is envisaged, for the purposes of continuity of service, provide separate wiring and switches for each individual pump.

8. STARTING UP



Before starting the pump, check that:

- the pump has been properly primed, filling the pump body completely. This ensures that the pump immediately starts to work regularly and that the seal (mechanical seal or stuffing box seal) is well lubricated. Dry operation causes irreparable damage to the mechanical seal and the stuffing box seal;
- the auxiliary circuits have been correctly connected;
- all the moving parts have been protected with suitable safety systems;
- the electrical connection has been made as indicated previously.

8.1 Starting

Before starting, it is essential to fill the system with water and to vent the air. Vent the residual air from the pump body by inserting a hose into the venting tap and unscrewing it slightly until only water comes out. This is to ensure that the mechanical seal is well lubricated and that the pump starts running smoothly immediately.

Power up and check the correct direction of rotation which, looking at the motor from the fan side, should be clockwise. The check should be carried out after the pump has been powered up by acting on the main switch with a fast start-stop sequence. If the direction of rotation is reversed, invert any two phase leads, after having isolated the pump from the power mains.

When the hydraulic circuit has been completely filled with liquid, gradually open the delivery gate valve to the maximum permissible opening. The energy consumption of the motor must be checked and compared with the value on the data plate, especially if the pump was intentionally equipped with a motor with reduced power (check the design specifications).

With the electric pump in operation, check the supply voltage at the motor terminals, which must not differ by +/- 5% from the rated value.

8.2 Breaking in the mechanical seal

The faces of the mechanical seal are lubricated by the pumped liquid, which means that some leakage from the mechanical seal may occur. If the pump is started up for the first time or if a new mechanical seal is installed, a certain break-in period is necessary before leakage is reduced to a minimum. The time required depends on the operating conditions, i.e. if the operating conditions change, a new break-in period will begin. Under normal conditions, the escaping liquid evaporates immediately.

8.3 Stopping

If hot water is to be pumped, arrange that the pump can be stopped only after having excluded the source of heat and let sufficient time elapse to allow the liquid temperature to drop to acceptable values, so as not to create excessive temperature increases inside the pump body.

For a long period of inactivity, close the interception device on the intake pipe and, if supplied, all the auxiliary control connections. To guarantee maximum system functionality it will be necessary to arrange for brief running periods (5 - 10 min) at intervals of 1 to 3 months.

If the pump is removed from the system and stored, proceed as indicated in par 4.1

9. PRECAUTIONS

The electric pump must not be subjected to an excessive number of starts per hour. The maximum permissible number is as follows:

	Maximum number of starts/hour
Three-phase motors up to 4 kW	20 ÷ 30
Three-phase motors from 5.5 to 44 Kw	5 ÷ 10

9.1 Danger of frost



Check that the leakage of liquid does not damage persons or things, especially in plants that use hot water. The system must be drained only once the fluid temperature has reached environment temperature.

Do not close the drainage cap until the pump is to be used again.

When restarting after long periods of inactivity it is necessary to repeat the operations described above in the paragraphs "WARNINGS" and "STARTING UP".

10. MAINTENANCE AND CLEANING



The electropump can only be dismantled by competent skilled personnel, in possession of the qualifications required by the legislation in force.

In any case, all repair and maintenance jobs must be carried out only after having disconnected the pump from the power mains. Ensure that it cannot be switched on accidentally. If possible, keep to a maintenance schedule: expensive repairs or machine down times can be avoided with a minimum expense. During maintenance schedule discharge the condensate, if necessary present into the motor, through the hole, removing the exhaust port plug no (electropumps with IP55 Degree of motor protection only).



If the liquid has to be drained out maintenance, ensure that the liquid coming out cannot harm persons or things, especially in using hot water.

The legal requirements on the disposal of any harmful fluids must also be complied with.

In normal operation, the pump does not require any kind of maintenance. However, from time to time it is advisable to check the plate data, which will enable you to have advance warning of any faults or wear.

After any operation involving the removal of the motor head from the pump body, it is advisable to change the O-ring between the pump body and the support.

In addition, a new set of gaskets is required in the event of maintenance or replacement of the complete circulator.

10.1 Shaft adjustment

If the motor has been removed during installation or for repair of the pump, the pump shaft must be adjusted after reassembling the motor.

10.1.1 Shaft adjustment for pumps with two-part coupling

Ensure that the shaft pin is fitted into the pump shaft. Adjust the pump shaft as follows:

1. Remove the coupling cover grids with a screwdriver.
2. Secure the hexagon socket screw inside the coupling and do not tighten it.
3. Lift the coupling and pump shaft (towards the motor) as high as possible with a screwdriver or similar tool, so that the pump and the motor shafts come into contact.
4. Secure the hexagon socket screw inside the coupling to 5 Nm (0.5 kpm).
5. Check that the gaps on both sides of the coupling are identical.
6. Tighten the screws two at a time (one side at a time) to the torque indicated below.

10.2 Blanking flanges

For twin-head pumps, a blanking flange with a pump housing gasket is available. If one pump requires service, the blanking flange is fitted to allow the other pump to continue operating.

10.3 Lubricating the bearings



Carry out maintenance based on the type of bearing indicated on the technical data plate. See tables at the end of the booklet.

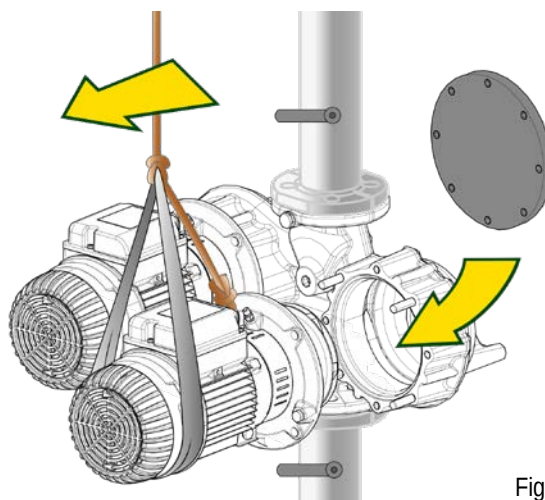


Fig.4

11. TROUBLESHOOTING

Fault	Check (possible cause)	Remedy
The motor does not start and makes no noise.	– Check the protection fuses.	If they are burnt-out, change them.
	– Check the electric connections.	If the fault is repeated immediately this means that the motor is short circuiting.
	– Check that the motor is live.	
The pump supplies insufficient flow.	– The impeller is worn or blocked.	Change the impeller or remove the obstruction.
	– Check that the direction of rotation on three-phase versions is correct.	Invert the connection of two supply wires.
The motor does not start but makes noise.	– Ensure that the mains voltage corresponds to the voltage on the data plate.	
	– Check that the connections have been made correctly.	Correct any errors.
	– Check that all the phases are present on the terminal board.	If not, restore the missing phase.
	– The shaft is blocked. Look for possible obstructions in the pump or motor.	Remove any obstructions.
The motor turns with difficulty.	– Capacitor short-circuiting or broken.	Change the capacitor.
	– Check the supply voltage which may be insufficient.	
	– Check whether any moving parts are scraping against fixed parts.	Eliminate the cause of the scraping.
	– Check the state of the bearings.	Change any worn bearings.
The (external) motor protection trips immediately after starting.	– Check that all the phases are present on the terminal board (on three-phase models).	If not, restore the missing phase.
	– Look for possible open or dirty contacts in the protection.	Change or clean the component concerned.
	– Look for possible faulty insulation of the motor, checking the phase resistance and insulation to earth.	Change the motor casing with the stator or reset any cables discharging to earth.
The motor protection trips too frequently.	– Ensure that the environment temperature is not too high.	Provide suitable ventilation in the environment where the pump is installed.
	– Check the calibration of the protection.	Calibrate at a current value suitable for the motor absorption at full load.
	– Check the motor rotation speed.	Consult the motor data plate.
	– Check the state of the bearings.	Change any worn bearings.
The pump vibrates and operates noisily.	– Check that the pump and/or the pipes are firmly anchored.	Fasten any loose parts.
	– There is cavitation in the pump.	Increase the system pressure, keeping within the allowed limits.
	– The pump is running above its plate characteristics.	Reduce the flow rate.
	– Ensure that the mains voltage corresponds to the voltage on the data plate.	

Rumore aereo prodotto dalle pompe dotate con motore di serie/ Airborne noise produced by pumps fitted with standard motors / Bruit aérien produit par les pompes équipées d'un moteur de série / Luftschall der Pumpen mit serienmäßigem Motor / Ruido aéreo producido por las bombas equipadas con motor de serie

TAB. A

Motor size	2 poles		4 poles	
	LWA	LpA	LWA	LpA
MEC 132	81	72	71	59
MEC 160	87	74	75	62
MEC 180	90	77	78	66
MEC 200	91	78	80	68
MEC 225	92	80	88	76
MEC 250	93	81	88	76
MEC 280	93	82	89	79
MEC 315	93	82	89	79

- Livello di pressione Sonora LpA ed il livello di potenza sonora LWA dei motori normalizzati trifase di dimensioni e potenze secondo normativa IEC 60072
- Sound pressure level LpA and sound power level LWA of three-phase standardised motors with dimensions and power according to IEC 60072
- Niveau de pression acoustique LpA et niveau de puissance acoustique LWA des moteurs triphasés normalisés de dimensions et puissances selon la norme IEC 60072
- Schalldruckpegel LpA und Schalleistungspegel LWA der genormten Drehstrommotoren mit Abmessungen und Leistungen nach IEC 60072
- El nivel de presión sonora LpA y el nivel de potencia sonora LWA de los motores normalizados trifásicos tienen dimensiones y potencias según la normativa IEC 60072

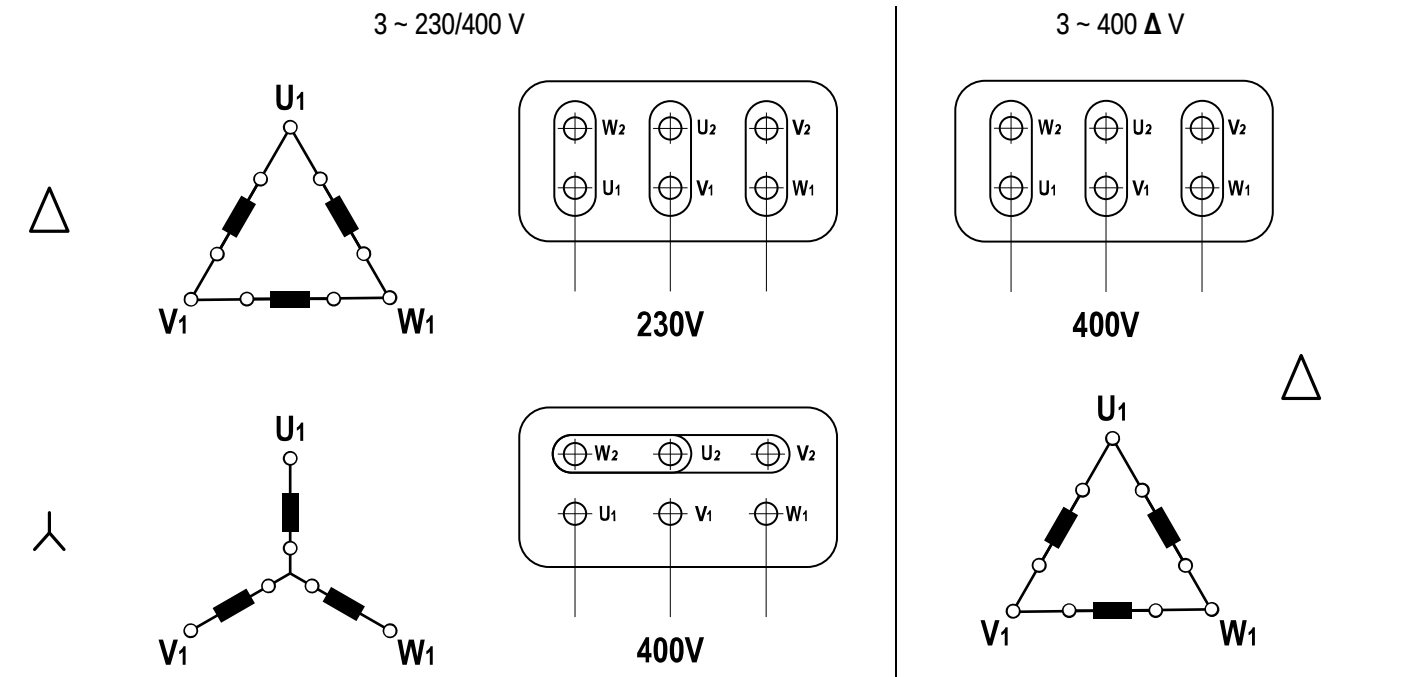
Tempi commutazione stella-triangolo/ Star-delta switching times / Temps de commutation étoile-triangle / Umschaltzeiten Stern-Dreieck / Tiempos de conmutación estrella-triángulo

TAB. B

Motor		λ/Δ
(kW)	(Hp)	
≤ 30	≤ 40	$< 3''$
> 30	> 40	$< 5''$

Collegamento TRIFASE per motori/ THREE-PHASE connection for motors / Raccordement TRIPHASÉ pour moteurs / DREIPHASEN-Anschluss für Motoren / Conexión TRIFÁSICA para motores

TAB. C



Dimensionamento cavi / Section cable / Dimensionnement câbles / Dimensionierung der anlasskabel /
Dimensionamiento de los cables

Maximum lenght (meters) – 1 Phase							
Section cable mm2		1,5	2,5	4	6	10	16
I (A)	Min. Section cable	General sizing of a low voltage cable					
5	1,5	47	79	126	189	314	494
7,5	1,5	32	53	84	126	209	329
10	1,5	24	40	63	95	157	247
15	1,5	16	26	42	63	105	165
25	2,5		16	25	38	63	98
37	4			17	25	42	66
50	6				21	35	55
61	10					28	45
76	16						33

Maximum lenght (meters) - 3 Phase							
Section cable mm2		1,5	2,5	4	6	10	16
I (A)	Min. Section cable	General sizing of a low voltage cable					
1,6	1,5	285	474	756	1132	1874	2948
3,3	1,5	143	237	377	560	918	1434
8,4	1,5	55	90	144	214	351	548
16,8	1,5	23	38	61	91	150	236
25,3	2,5		25	39	58	96	151
33,7	4			28	41	68	108
42,2	6				33	54	86
50,6	6				27	45	72
59	10					39	62
67,5	10					34	54
84,4	16						43

Installazione / Installation / Mise en place / Installation / Instalación

Fig.4

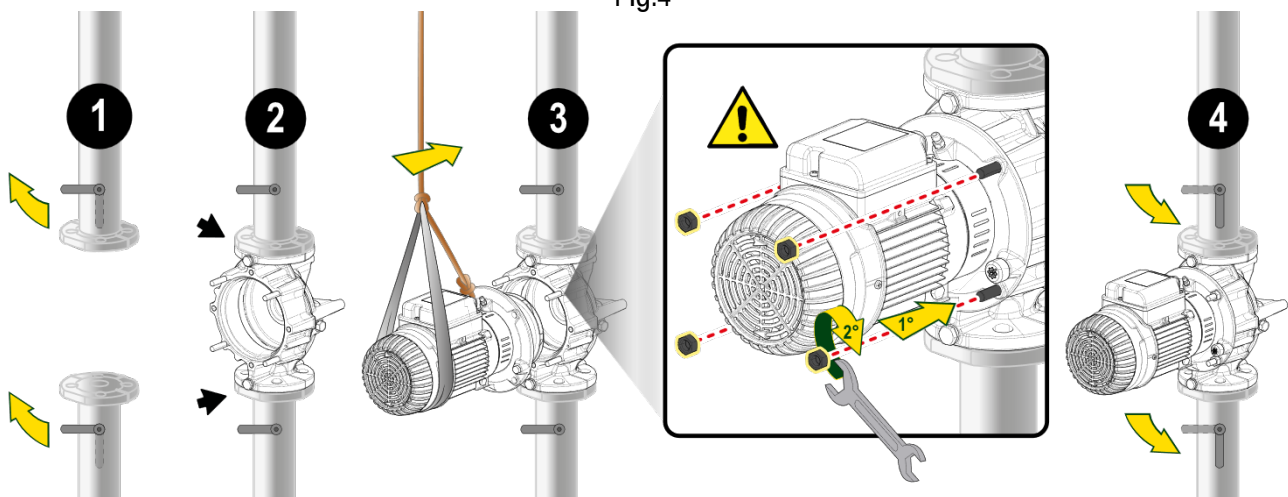
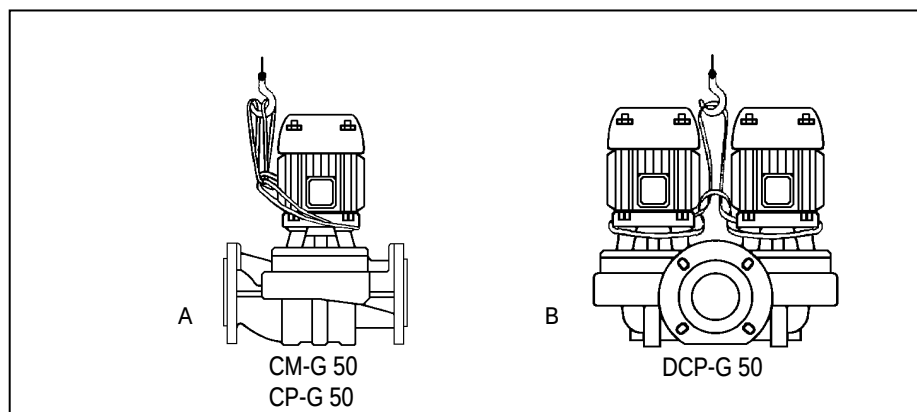
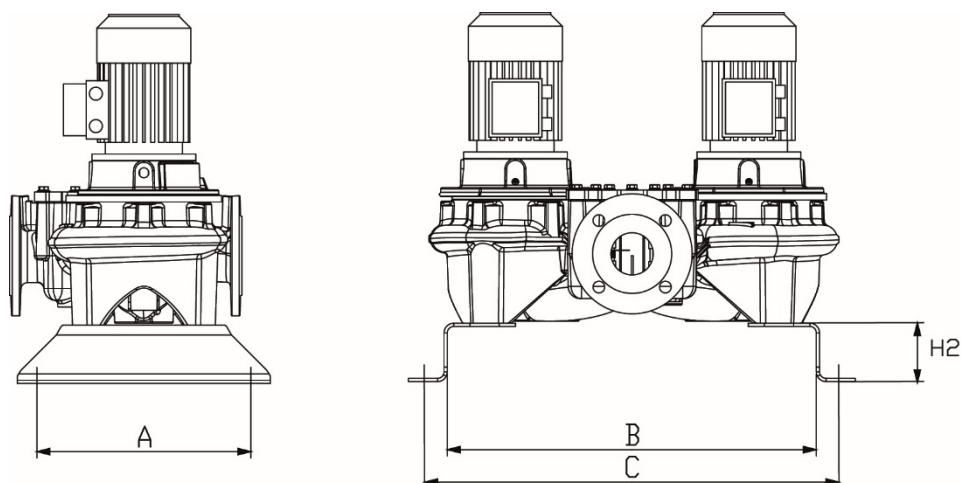


Fig.5



Dimensioni installazione / Installation dimensions / Dimensions d'installation / Einbaumaße / Dimensiones de instalación

Fig.6



NOTE: Solo per versione gemellare superiore o uguale a DN65. / NOTES: Only for twin version greater than or equal to DN65. / NOTES : Uniquement pour la version jumelée supérieure ou égale à DN65. / HINWEIS: Nur für Doppelausführung über oder gleich DN 65. / NOTAS: Solo para versión doble igual o superior a DN65.

H2	A	B	C				
100	330	569	639	DCM-G 65-420	DCM-GE 65- 660	DCP-G 65-1470	DCP-GE 65-4700
				DCM-G 65-540	DCM-GE 65-920	DCP-G 65-1900	DCP-GE 65-5500
				DCM-G 65-660		DCP-G 65-2280	
				DCM-G 65-760		DCP-G 65-2640	
				DCM-G 65-920		DCP-G 65-3400	
						DCP-G 65-4100	
100	330	649	719	DCM-G 65-1080		DCP-G 65-4700	DCP-GE 65-4700
				DCM-G 65-1200	DCM-GE 65-1200	DCP-G 65-5500	DCP-GE 65-5500
				DCM-G 65-1530	DCM-GE 65-1680	DCP-G 65-6150	
				DCM-G 65-1680	DCM-GE 65-2380	DCP-G 65-6750	
				DCM-G 65-2380		DCP-G 65-7350	
						DCP-G 65-9250	
100	330	580	650	DCM-G 80-550		DCP-G 80-1400	DCP-GE 80-1400
				DCM-G 80-650	DCM-GE 80- 650	DCP-G 80-1700	DCP-GE 80-1400
						DCP-G 80-2050	DCP-GE 80-2050
						DCP-G 80-2400	DCP-GE 80-2400
100	330	620	690	DCM-G 80-740		DCP-G 80-2770	DCP-GE 80-2770

				DCM-G 80-890	DCM-GE 80- 890	DCP-G 80-3250	DCP-GE 80-3250
				DCM-G 80-1050		DCP-G 80-4000	DCP-GE 80-4000
100	362	662	785	DCM-G 80-1530	DCM-GE 80-1530	DCP-G 80-5150	
				DCM-G 80-1700	DCM-GE 80-1700	DCP-G 80-5650	
						DCP-G 80-6850	
100	500	804	924	DCM-G 80-2410	DCM-GE 80-2410	DCP-G 80-8600	
				DCM-G 80-2700	DCM-GE 80-2700	DCP-G 80-9600	
				DCM-G 80-3420	DCM-GE 80-3420	DCP-G 80-10200	
100	362	637	717	DCM-G 100-510	DCM-GE 100- 510	DCP-G 100-1600	DCP-GE 100-1600
				DCM-G 100-650		DCP-G 100-1950	DCP-GE 100-1950
						DCP-G 100-2350	DCP-GE100-2350
100	362	733	809	DCM-G 100-660	DCM-GE 100- 660	DCP-G 100-2400	DCP-GE 100-2400
				DCM-G 100-865		DCP-G 100-3050	DCP-GE 100-3050
				DCM-G 100-1020	DCM-GE 100-1020	DCP-G 100-3550	
						DCP-G 100-3850	

100	362	753	833	DCM-G 100-1320	DCM-GE 100-1320	DCP-G 100-4800	
				DCM-G 100-1650	DCM-GE 100-1650	DCP-G 100-5600	
						DCP-G 100-6300	
100	500	836	934	DCM-G 100-2050	DCM-GE 100-2050	DCP-G 100-8300	
				DCM-G 100-2550	DCM-GE 100-2550		
				DCM-G 100-3290	DCM-GE 100-3290		
				DCM-G 100-3680			
				DCM-G 100-4100			
100	500	810	920	DCM-G 125-1075	DCM-GE 125-1075	DCP-G 125-4750	
				DCM-G 125-1270	DCM-GE 125-1270	DCP-G 125-5300	
				DCM-G 125-1560	DCM-GE 125-1560	DCP-G 125-5800	
100	500	810	920	DCM-G 125-2100	DCM-GE 125-2100		
				DCM-G 125-2550	DCM-GE 125-2550		
				DCM-G 125-3200			
				DCM-G 125-3600			
				DCM-G 125-4022			
100	500	805	920	DCM-G 150-955	DCM-GE 150- 955		
				DCM-G 150-1322	DCM-GE 150-1322		
				DCM-G 150-1600	DCM-GE 150-1600		
				DCM-G 150-1950	DCM-GE 150-1950		
				DCM-G 150-2200			
				DCM-G 150-2405			

Tipo cuscinetti / Type of bearings / Type de roulements / Lagertyp / Tipo de cojinetes

TAB. D

CLASSIFICAZIONE DEI CUSCINETTI (COSTRUZIONE STANDARD)

Secondo costruzione standard i cuscinetti hanno una lubrificazione permanente (Cuscinetti a sfera secondo la normativa ISO15 –DIN 625)

BEARINGS CLASSIFICATION (STANDARD CONSTRUCTION)

According to standard construction the bearings are permanently lubricated (Ball bearings according to ISO15 -DIN 625)

CLASSIFICATION DES PALIERS (CONSTRUCTION STANDARD)

Selon la construction standard, les roulements ont une lubrification permanente (Roulements à billes selon ISO15 - DIN 625)

LAGERKLASSIFIZIERUNG (STANDARD AUSFÜHRUNG)

Standardmäßig sind die Lager dauergeschmiert (Kugellager nach ISO 15 - DIN 625)

CLASIFICACIÓN DE LOS COJINETES (CONSTRUCCIÓN ESTÁNDAR)

Según la construcción estándar, los cojinetes tienen una lubricación permanente (Cojinetes de esfera según la normativa ISO15 – DIN 625)

		Motori IE2 / Motors IE2 / Moteurs IE2 / Motoren IE2 / Motores IE2		Motori IE3 / Motors IE3 / Moteurs IE3 / Motoren IE3 / Motores IE3	
Altezza d'asse / Axis height / Hauteur d'axe / Achshöhe / Altura de eje	N° di Poli / No. of Poles / N. de Pôles / Polzahl / N° de Polos	DE-NDE	Dimensioni / Dimensions / Dimensions / Abmessungen / Dimensiones	DE-NDE	Dimensioni / Dimensions / Dimensions / Abmessungen / Dimensiones
MEC 56	2-4	6201-2Z	12x32x10	6201-2Z	12x32x10
MEC 63	2-4	6202-2Z	15x35x11	6202-2Z	15x35x11
MEC 71	2-8	6203-2Z	17x40x12	6203-2Z	17x40x12
MEC 80	2-8	6204-2Z	17x40x12	6204-2Z	20x47x14
MEC 90	2-8	6205-2Z	25x52x15	6205-2Z	25x52x15
MEC 100	2-8	6206-2Z	30x62x16	6206-2Z	30x62x16
MEC 112	2-8	6306-2Z	30x72x19	6306-2Z	30x72x19
MEC 132	2-8	6208-2Z	40x80x18	6208-2Z	40x80x18
MEC 160	2-8	6309-2Z	45x100x25	6309-2Z	45x100x25
MEC 180	2-8	6311 C3	55x120x29	6311 C3	55x120x29
MEC 200	2-8	6312 C3	60x130x31	6312 C3	60x130x31
MEC 225	2-8	6313 C3	65x140x33	6313 C3	65x140x33
MEC 250	2-8	6314 C3	70x150x35	6314 C3	70x150x35
MEC 280	2-8	6316 C3	80x170x39	6316 C3	80x170x39
MEC 315	2	6317 C3	85x180x41	6317 C3	85x180x41
MEC 315	4-8	NU319 - 6319 C3	95x200x45	NU319 - 6319 C3	95x200x45

LUBRIFICAZIONE

Lubrificazione permanente fino al 160. Dal 180, ingrassatori M10x1 DIN 3404

LUBRICATION

Permanent lubrication up to 160. After 180, grease nipples M10x1 DIN 3404

LUBRIFICATION

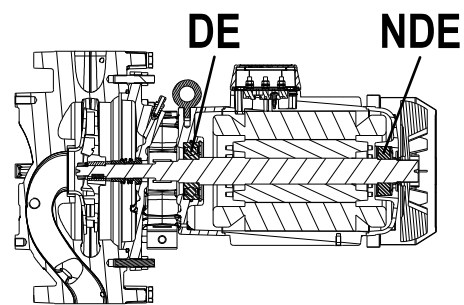
Lubrification permanente jusqu'à 160. À partir de 180, graisseurs M10x1 DIN 3404

SCHMIERUNG

Dauerschmierung bis 160. Ab 180 Schmiernippel M10x1 DIN 3404

LUBRICACIÓN

Lubricación permanente hasta 160. A partir de 180, engrasadores M10x1 DIN 3404



MONTAGGIO CUSCINETTI / BEARING ASSEMBLY / ASSEMBLAGE ROULEMENTS / LAGERMONTAGE / MONTAJE COJINETES

Altezza d'asse / Axis height / Hauteur d'axe / Achshöhe / Altura de eje	Cuscinetti DE / DE Bearings / Roulements DE / Lager DE / Cojinetes DE	Cuscinetti NDE / NDE Bearings / Roulements NDE / Lager NDE / Cojinetes NDE	Molla di precarico / Preloading spring / Ressort de précharge / Vorspannfeder / Muelle de precarga / Muelle de precarga
MEC 56-MEC 160 Motori Standard / Standard Motors / Moteurs Standards / Standardmotoren / Motores estándar	Cuscinetti non bloccanti / Non-blocking bearings / Roulements non bloquants / Nicht blockierende Lager / Cojinetes no bloqueantes	Cuscinetti non bloccanti / Non-blocking bearings / Roulements non bloquants / Nicht blockierende Lager / Cojinetes no bloqueantes	Lato opposto comando / Side opposite control / Côté opposé à la commande / Gegenüberliegende Seite zur Steuerung / Lado contrario al mando
MEC 180-MEC 315 Motori Standard / Standard Motors / Moteurs Standards / Standardmotoren / Motores estándar	Cuscinetti bloccanti / Blocking bearings / Roulements de blocage / Blockierende Lager / Cojinetes bloqueantes	Cuscinetti non bloccanti / Non-blocking bearings / Roulements non bloquants / Nicht blockierende Lager / Cojinetes no bloqueantes	Lato opposto comando / Side opposite control / Côté opposé à la commande / Gegenüberliegende Seite zur Steuerung / Lado contrario al mando

INTERVALLI DI REINGRASSAGGIO

Intervalli di reingrassaggi per temperature fino a 70° C (ore di funzionamento)

RE-GREASING INTERVALS

Re-greasing intervals for temperatures up to 70°C (operating hours)

INTERVALLES DE REGRAISSAGE

Intervalles de regraissage pour des températures allant jusqu'à 70 ° C (heures de fonctionnement)

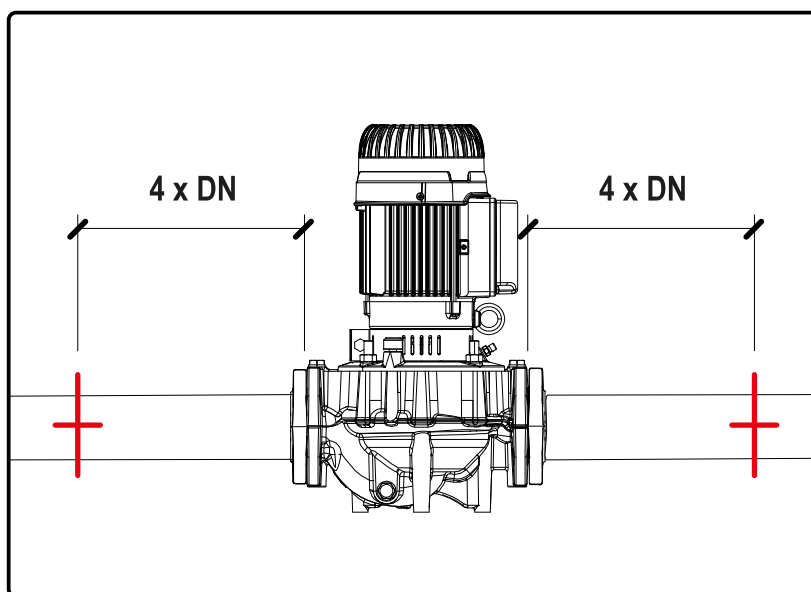
NACHSCHMIERINTERVALLE

Nachschmierintervalle für Temperaturen bis 70 ° C (Betriebsstunden)

INTERVALOS DE ENGRASADO

Intervalos de engrasado para temperaturas de hasta 70° C (horas de funcionamiento)

Altezza d'asse / Axis height / Hauteur d'axe / Achshöhe / Altura de eje	3000 RPM		1500 RPM		1000 RPM		Quantità gr. / Quantity gr. / Quantité gr. / Menge g / Cantidad g.
	Orizzontale / Horizontal / Horizontal / Horizontal	Verticale / Vertical / Vertikal / Vertical	Orizzontale / Horizontal / Horizontal / Horizontal	Verticale / Vertical / Vertikal / Vertical	Orizzontale / Horizontal / Horizontal / Horizontal	Verticale / Vertical / Vertikal / Vertical	
180	4000	2000	9000	4500	1300	7500	15
200	3500	1750	8000	4000	1200	6000	20
225	3000	1500	7500	3750	1100	5500	23
250	2000	1000	7000	3500	1000	5000	26
280	1500	750	6500	3250	900	4500	40
315	1000	500	4000	2000	800	4000	55



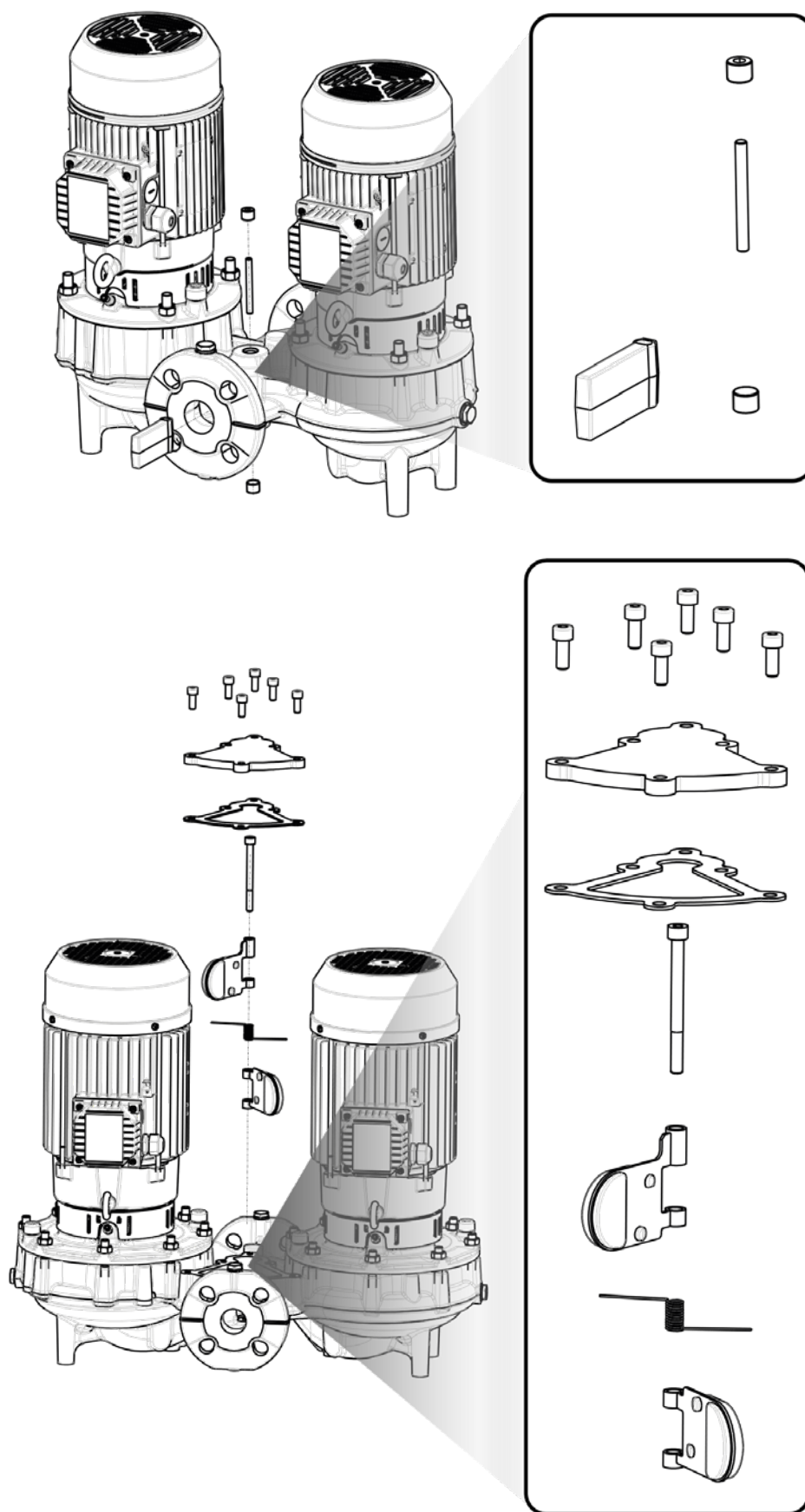
- La distanza delle prese di pressione secondo la normativa UNI-EN ISO 9906 8.2.1.1 è pari a 2 x DN. DAB consiglia di mantenere 4 x DN allo scopo di ottenere una rilevazione della pressione più precisa.
- The distance between pressure sockets according to DIN-EN ISO 9906 8.2.1.1 is 2 x DN. DAB recommends maintaining 4 x DN in order to achieve more accurate pressure detection.
- La distance des prises de pression selon la norme UNI-EN ISO 9906 8.2.1.1 est égale à 2 x DN. DAB recommande de maintenir 4 x DN afin d'obtenir une lecture de pression plus précise.
- Der Abstand der Druckanschlüsse nach UNI-EN ISO 9906 8.2.1.1 entspricht 2 x DN. DAB empfiehlt den Beibehalt von 4 x DN, um eine genauere Druckmessung zu erreichen.
- La distancia de las tomas de presión según la normativa UNI-EN ISO 9906 8.2.1.1 es de 2 x DN. DAB recomienda mantener 4 x DN con el fin de obtener una detección de la presión más precisa.

Tabella Pressione Min Ingresso / Min Input Pressure Table / Tableau de Pression minimale d'entrée / Tabelle Min. Eingangsdruck / Tabla Presión Mín Entrada

Models		Inlet Min Pressure
CM2 32-450 T	DCM2 32-450 T	0.94 bar / 94 kPa
CM2 32-600 T	DCM2 32-600 T	
CM2 32-800 T	DCM2 32-800 T	
CM2 32-1200 T	DCM2 32-1200 T	0.95 bar / 95 kPa
CP2 32-550 T	DCP2 32-550 T	0.90 bar / 90 kPa
CP2 32-750 T	DCP2 32-750 T	0.92 bar / 92 kPa
CP2 32-1100 T	DCP2 32-1100 T	
CP2 32-1400 T	DCP2 32-1400 T	
CP2 32-2100 T	DCP2 32-2100 T	0.96 bar / 96 kPa
CP2 32-1800 T	DCP2 32-1800 T	0.92 bar / 92 kPa
CP2 32-2200 T	DCP2 32-2200 T	
CP2 32-2700 T	DCP2 32-2700 T	
CP2 32-3600 T	DCP2 32-3600 T	0.83 bar / 83 kPa
CP2 32-4000 T	DCP2 32-4000 T	
CP2-G 32-4800 T	DCP2-G 32-4800 T	
		0.90 bar / 90 kPa

Pressione max del sistema / Max system pressure / Pression maximale du système / Max. Systemdruck / Presión máx del sistema
PN (16 bar / 1600 kPa)

Fig.9



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