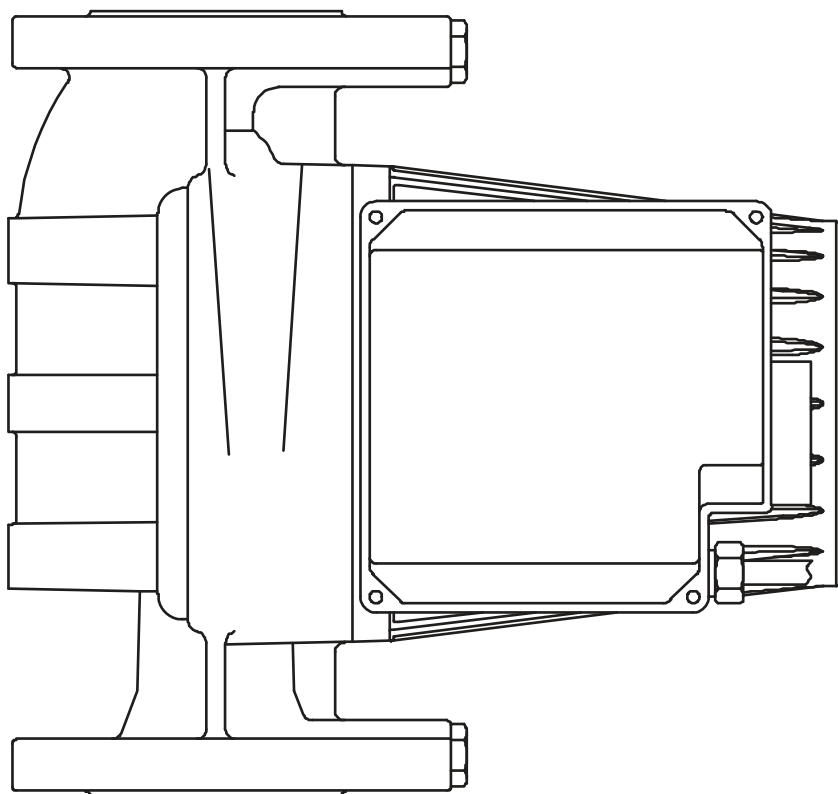

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INSTRUCTIONS DE MISE EN SERVICE ET D'ENTRETIEN
INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE
INSTALLATIONSANWEISUNG UND WARTUNG
INSTRUCTIES VOOR INGEBRUIKNAME EN ONDERHOUD
INSTRUCCIONES PARA LA INSTALACION Y EL MANTENIMIENTO
INSTALLATIONS - OCH UNDERHÅLLSANVISNING
INSTRUÇÕES PARA A INSTALAÇÃO
МОУТАЖ
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ΟΔΗΓΙΕΣ ΓΙΑ ΤΗΝ ΕΓΚΑΤΑΣΤΑΣΗ
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MONTAJ VE BAKIM İÇİN BİLGİLER
POKYNÝ K INŠTALÁCII A ÚDRŽBE
MONTAVIMO IR PRIEŽIŪROS INSTRUKCIJA
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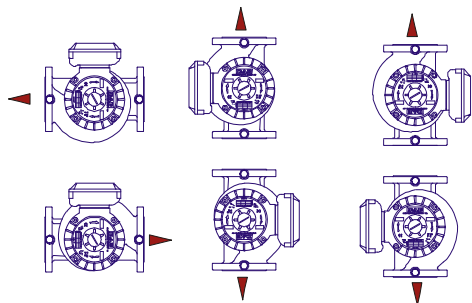
BMH - BPH

DMH - DPH

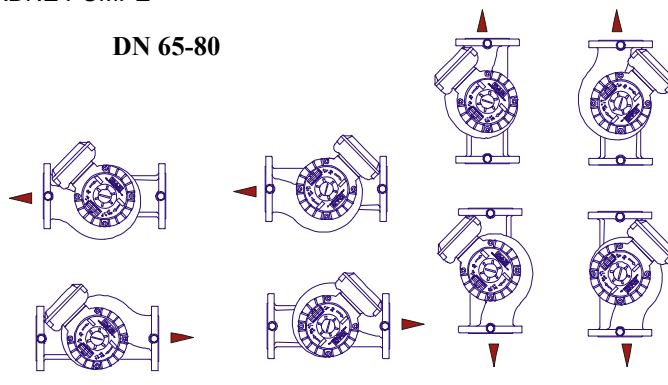


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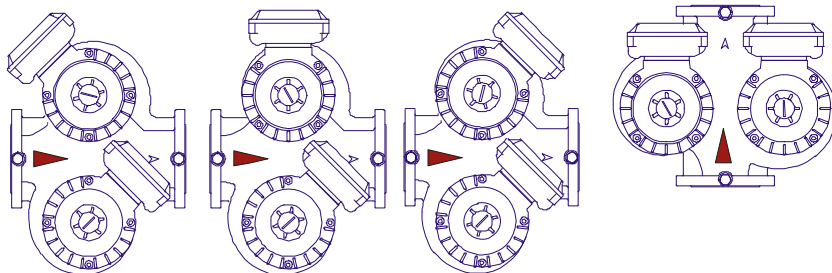


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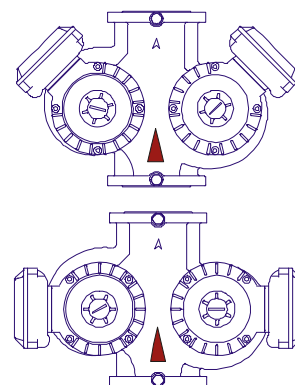


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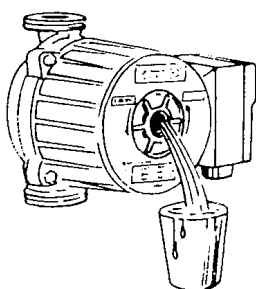
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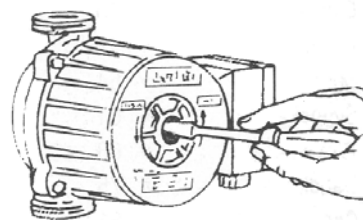
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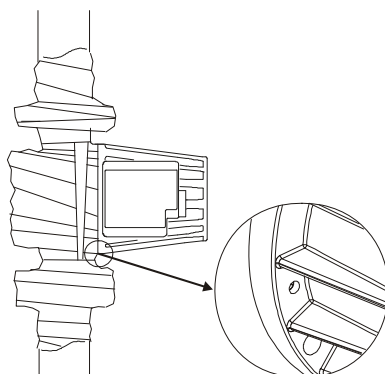
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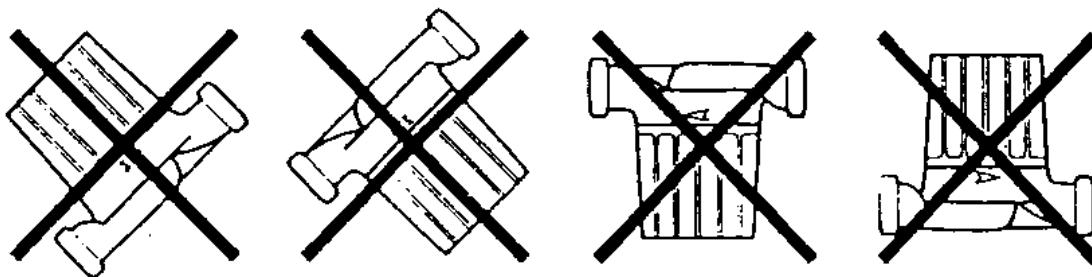


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3

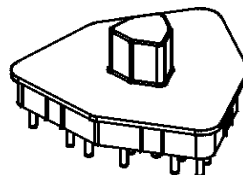
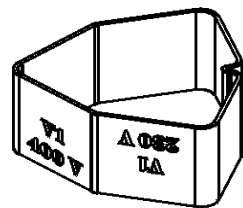




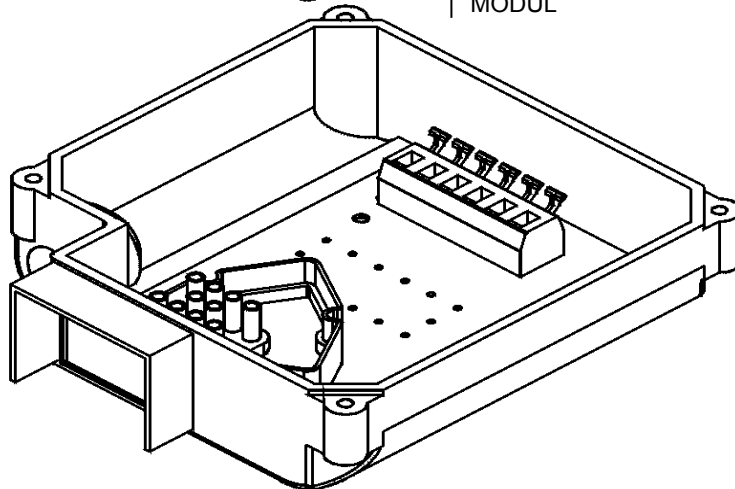
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DISTANZIALE
ENTRETOISE
SPACER
DISTANZSTÜCK
AFSTANDSTUK
DISTANCIADOR
AVSTĀNDSBRICKA
DISTANCIAL
РАСПОРНАЯ ДЕТАЛЬ
ROZPĚRKA
ΑΠΟΣΤΑΤΗΣ
ODSTĚRNIK
ŞİM
ROZPERNÁ VLOŽKA
INTARPAS
ELEKTROBAROŠANAS SLĒGUMA
IZVĒLNES MODULIS
DISTANTIER
DISTANCER

FINESTRELLA
FENÊTRE
WINDOW
FENSTER
RAAMPJE
VENTANILLA
SIKTGLAS
JANELA
ОБЛО
OKÉNKO
ΦΙΝΙΣΤΡΙΝΙ
SZYBKĄ
PENCERE
OKIENKO
LANGELIS
INFORMĀCIJAS LOGS
FEREAŞTRA
OTVOR

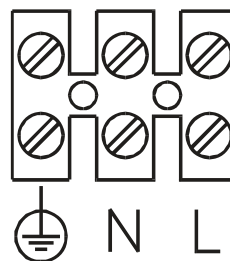


MODULO
MODULE
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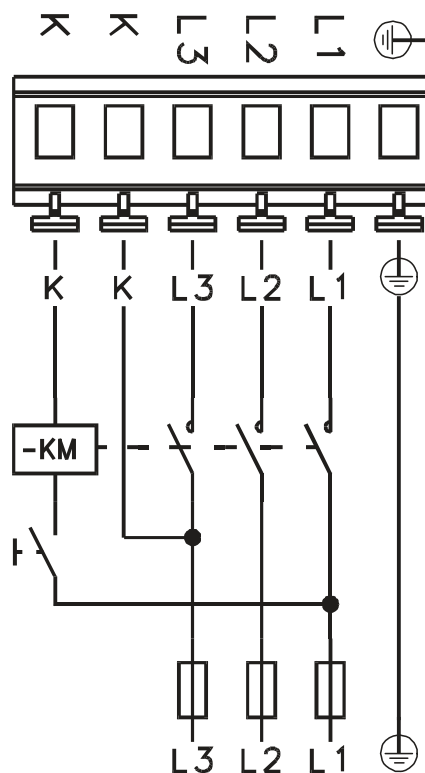
1 ~

BPH 60/250.40 M – DPH 60/250.40 M
BPH 60/280.50 M – DPH 60/280.50 M
BPH 60/340.65 M – DPH 60/340.65 M
BPH 120/250.40 M – DPH 120/250.40 M
BPH 120/280.50 M – DPH 120/280.50 M

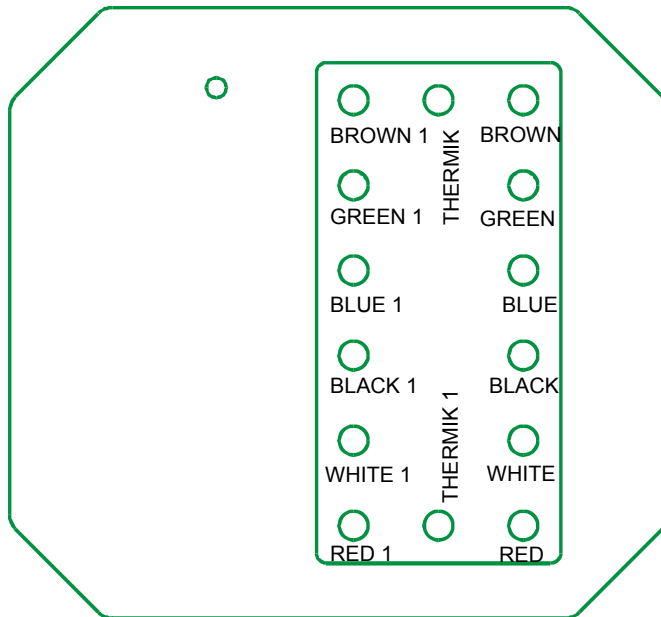
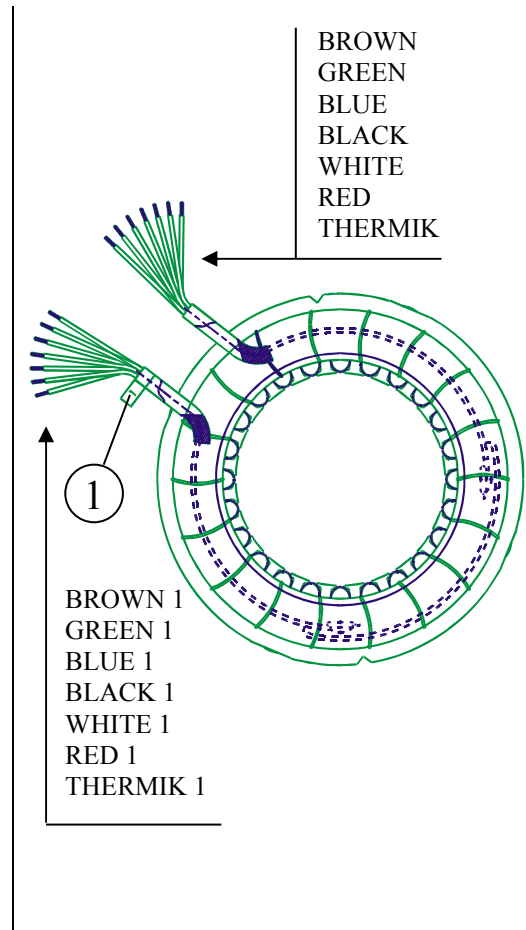


3 ~

BMH 30/250.40 T – DMH 30/250.40 T
BPH 60/250.40 T – DPH 60/250.40 T
BPH 120/250.40 T – DPH 120/250.40 T
BMH 30/280.50 T – DMH 30/280.50 T
BMH 60/280.50 T – DMH 60/280.50 T
BPH 60/280.50 T – DPH 60/280.50 T
BPH 120/280.50 T – DPH 120/280.50 T
BPH 150/280.50 T – DPH 150/280.50 T
BPH 180/280.50 T – DPH 180/280.50 T
BMH 30/340.65 T – DMH 30/340.65 T
BMH 60/340.65 T – DMH 60/340.65 T
BPH 60/340.65 T – DPH 60/340.65 T
BPH 120/340.65 T – DPH 120/340.65 T
BPH 150/340.65 T – DPH 150/340.65 T
BPH 180/340.65 T – DPH 180/340.65 T
BMH 30/360.80 T – DMH 30/360.80 T
BMH 60/360.80 T – DMH 60/360.80 T
BPH 120/360.80 T – DPH 120/360.80 T
BPH 150/360.80 T – DPH 150/360.80 T
BPH 180/360.80 T – DPH 180/360.80 T



COLLEGAMENTO MOTORE-MORSETTIERA / CONNEXION MOTEUR-BOÎTE À BORNES / MOTOR-TERMINAL BOARD CONNECTION / ANSCHLUSS MOTOR-KLEMMENBRETT / AANSLUITING MOTOR-KLEMMENBORD / CONEXION MOTOR-TERMINAL DE BORNES / ANSLUTNING MOTOR-KOPPLINGSPLINT / LIGAÇÃO MOTOR-QUADRO DE TERMINAIS / СОЕДИНЕНИЕ ДВИГАТЕЛЬ-ЗАЖИМНАЯ КОРОБКА / PROPOJENÍ MOTOR-SVORKOVNICE / ΣΥΝΔΕΣΗ ΚΙΝΗΤΗΡΑ-ΚΛΕΜΜΑΣ / POŁĄCZENIE SILNIK-LISTWA ZACISKÓW / MOTOR-TERMINAL KUTUSU BAĞLANTISI / ZAPOJENIE MOTORA-VARIKLIO / IR KONTAKTŲ DEŽUTĖS SUJUNGIMAS / MOTORA - SPAIŲ KĀRBAS PIESLĒGUMS / CONEXIUNILE LA MOTOR – REGLETA - POVEZIVANJE NA PLOČU MOTORA



	CONTENTS	Page
1.	WARNINGS	18
2.	RESPONSIBILITY	18
3.	APPLICATIONS	18
4.	TECHNICAL DATA AND RANGE OF USE	19
5.	MANAGEMENT	20
5.1.	Storage	20
5.2.	Transport	20
5.3.	Weight	20
6.	INSTALLATION	20
7	ELECTRICAL CONNECTION	21
8	STARTING UP	22
9	SPEED ADJUSTMENT	22
10	MAINTENANCE	23
11	TROUBLESHOOTING	23

1. WARNINGS

1.1



Read this documentation carefully before installation.

It is indispensable to have the electrical and hydraulic connections made by skilled personnel in possession of the technical requirements indicated by the safety regulations in force in the country in which the product is installed.

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

1.2



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).

1.3



Check that no damage has been done during transport or storage. In particular, ensure that the external casing is perfectly entire and in excellent condition.

2. RESPONSIBILITY

The Manufacturer does not ensure good operation of the circulator if it is tampered with or modified or made to operate at values beyond the data on the plate.

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

The appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

3. APPLICATIONS

The single version circulators in series **BMH**, **BPH**, and the twin versions in series **DMH**, **DPH** have been designed for the circulation of:

- hot water in heating systems.
- water in industrial hydraulic circuits.
- water in conditioning circuits.

No circulator may be used for circulating domestic water or liquid foodstuffs.

4. TECHNICAL DATA AND RANGE OF USE

Maximum temperature of the fluid TF as a function of the air temperature TA:

(BPH 150....T, DPH 150...T
BPH...M, DPH....M excluded)

TA °C	30	40	55	70
TF °C	120	110	95	80

Only BPH 150....T, DPH 150...T
BPH...M, DPH....M

TA °C	30	40	55	70
TF °C	110	100	85	70

Minimum pressure required at intake to avoid cavitation phenomena, (values for the maximum flow rate):

Models	Minimum head in metres at a temperature of:			
	75°C	90°C	110°C	120°C
BMH 30/250.40 T – DMH 30/250.40 T	0.9	4	—	18
BMH 30/280.50 T – DMH 30/280.50 T				
BPH 60/250.40 M – DPH 60/250.40 M	1,6	4	14	—
BPH 60/250.40 T – DPH 60/250.40 T	1,6	4	—	19
BPH 120/250.40 T – DPH 120/250.40 T	6	9	—	23
BPH 120/250.40 M – DPH 120/250.40 M	6	9	18	—
BPH 120/280.50 M – DPH 120/280.50 M	2	5	—	—
BMH 60/280.50 T – DMH 60/280.50 T				
BMH 30/340.65 T – DMH 30/340.65 T	4	7,5	—	21
BMH 60/340.65 T – DMH 60/340.65 T				
BMH 30/360.80 T – DMH 30/360.80 T				
BPH 60/280.50 M – DPH 60/280.50 M	1,6	6	14	—
BPH 60/280.50 T – DPH 60/280.50 T	1,6	6	—	19
BPH 120/280.50 T – DPH 120/280.50 T	2	5	—	20
BMH 60/360.80 T – DMH 60/360.80 T				
BPH 60/340.65 M – DPH 60/340.65 M	1	4	13	—
BPH 60/340.65 T – DPH 60/340.65 T	1	4	—	18
BPH 120/340.65 T – DPH 120/340.65 T	6	9	—	22
BPH 120/360.80 T – DPH 120/360.80 T	6	10	—	22
BPH 180/280.50 T – DPH 180/280.50 T	4	7	16	—
BPH 150/280.50 T – DPH 150/280.50 T				
BPH 150/340.65 T – DPH 150/340.65 T	7	11	18	—
BPH 150/360.80 T – DPH 150/360.80 T				
BPH 180/340.65 T – DPH 180/340.65 T				
BPH 180/360.80 T – DPH 180/360.80 T				

- **Supply voltage:** see electric data plate
- **Absorbed power:** see electric data plate
- **Pumped fluid:** clean, free from solids or abrasive substances, non aggressive.
- **Flow rate:** from 1.5 m³/h to 78 m³/h
- **Head up – Hmax (m):** pag. 114
- **Degree of motor protection:** IP42
- **Degree of terminal board protection:** IP44 single-phase community circulators
IP55 three-phase community circulators
- **Protection class:** H
- **Cable clamp:** PG 11 and/or PG 13,5 a depending on models

– **Line fuses class AM:**

Model	Line fuses (Amps)		
	1x220-240V 50Hz	3x230V 50Hz	3x400V 50Hz
BMH 30/250.40 T – DMH 30/250.40 T		1	1
BMH 30/280.50 T – DMH 30/280.50 T		1	2
BPH 60/250.40 M – DPH 60/250.40 M	2		
BPH 60/250.40 T – DPH 60/250.40 T		2	2
BPH 120/250.40 T – DPH 120/250.40 T			
BMH 60/280.50 T – DMH 60/280.50 T			
BMH 30/340.65 T – DMH 30/340.65 T			
BMH 60/340.65 T – DMH 60/340.65 T		2	2
BMH 30/360.80 T – DMH 30/360.80 T			
BPH 60/340.65 T – DPH 60/340.65 T			
BPH 60/280.50 T – DPH 60/280.50 T			
BPH 60/280.50 M – DPH 60/280.50 M	4		
BPH 120/280.50 T – DPH 120/280.50 T		4	2
BPH 120/280.50 M – DPH 120/280.50 M	4		
BMH 60/360.80 T – DMH 60/360.80 T		2	2
BPH 60/340.65 M – DPH 60/340.65 M	4		
BPH 120/340.65 T – DPH 120/340.65 T		4	4
BPH 150/280.50 T – DPH 150/280.50 T			
BPH 120/360.80 T – DPH 120/360.80 T		6	4
BPH 150/340.65 T – DPH 150/340.65 T		6	4
BPH 150/360.80 T – DPH 150/360.80 T		6	6
BPH 180/280.50 T – DPH 180/280.50 T		4	4
BPH 180/340.65 T – DPH 180/340.65 T		6	6
BPH 180/360.80 T – DPH 180/360.80 T		6	4

- **Maximum working pressure:** 10 bar
- **Storage temperature:** -10°C +40°C
- **Relative humidity of the air:** MAX 95%
- **Noise level:** The noise level falls within the limits envisaged by EC Directive 89/392/EEC and subsequent modifications.

Motor construction: in accordance with standards CEI 2-3 - CEI 61-69 (EN 60335-2-41)

5. MANAGEMENT

5.1 Storage

All the circulators must be stored indoors, in a dry place, possibly with constant air humidity, free from vibrations and dust.

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 openings must be accurately closed.

5.2 Transport

Avoid subjecting the products to needless jolts or collisions.

To lift and transport the circulator use fork-lift trucks and the pallet supplied (if contemplated).

5.3 Weight

The adhesive label on the package indicates the total weight of the circulator.

6. INSTALLATION

- 6.1 The installation personnel must be qualified.



The terminal board must never be turned downward. To position it, follow the diagrams on page 1.

- 6.2 The circulator may be installed in heating systems either on the delivery pipe or on the return pipe; the arrow stamped on the pump body indicates the direction of flow.

- 6.3 Install the circulator as high as possible above the minimum level of the boiler, and as far as possible from bends, elbows, derivations, as they could cause turbulence in the water entering the circulator, with consequent noisy operation.
- 6.4 To facilitate control and maintenance operations, install an on-off valve on both the intake and the delivery pipe.
- 6.5 Fit the circulator on the system only after having completed the welding jobs.
- 6.6 Before installing the circulator, accurately flush the system with only water at 80°C, Then completely drain the system to eliminate any harmful substance that may have got into circulation.



Always fit the circulator with the motor shaft in a horizontal position (fig. 4).

- 6.7 Assemble it in such a way as to avoid the dripping of water onto the water and onto the terminal board during both installation and maintenance.
- 6.8 Avoid mixing hydrocarbon-derived additives and aromatic products with the circulating water. The addition of antifreeze, where necessary, must not exceed the maximum of 30%.
- 6.9 **Caution!!** in the presence of thermal insulation, ensure that the holes for discharging condensate from the motor casing are not closed or partly blocked (fig. 3).

7. ELECTRICAL CONNECTION:

Caution: always follow the safety regulations!



Scrupulously follow the wiring diagrams on page 3.

- 7.1 **The electrical connections must be made by a skilled, authorised electrician, who assumes all the responsibility.**
- 7.2 Ensure that the mains voltage is the same as the value shown on the motor data plate and that it is possible to MAKE A GOOD EARTH CONNECTION.
- 7.3 In fixed installations, International Standards require the use of insulating switches with a fuse-carrier base.
- 7.4 All the single-phase motors are provided with built-in overload protection and they may be connected directly to the mains. All the three-phase motors have a built-in probe for connection to the external protection relay and to the environment thermostat as indicated on page 3. (to be connected by the user.)
- 7.5 When making the electrical connection to the supply line, fit a two-pole switch (M single-phase versions), three-pole or four-pole if there is a neutral lead (T three-phase versions) with contact opening distance of at least 3 mm, and with AM type fuses (motor start) with a suitable current value for the motor that is to be fed.
- 7.6 After making the electrical connection of three-phase circulators, before filling the system, always check the direction of rotation of the motor, unscrewing the breather cap and letting the cap run for a few seconds.
- 7.7 If the motor is turning in the opposite direction to the arrows on the motor plate, this indicates an incorrect electrical connection.
- 7.8 To connect the motor protector to the outside of the terminal box, it is necessary to drill a hole in the box at the level of the niche and to apply a cable grommet (not supplied as standard).
- 7.9 For the connection between the motor and the terminal box, follow the diagram on page 4. **ATTENTION:** the bundle of cables for group N°1 must be connected to the respective connections of group N°1 on the terminal box. The coloured cables in the bundles must be connected to the connections marked with the respective colour.

8. STARTING UP

- 8.1 After installation and after having checked the direction of rotation, fill and bleed the system before running the circulator. (fig.1)



Avoid running the circulator when there is no water in the system.

- 8.2 As well as being at high temperature and high pressure, the fluid in the system may also be in the form of steam. DANGER OF BURNING.
- 8.3 It is dangerous to touch the circulator. DANGER OF BURNING.
- 8.4 If it is necessary to bleed air from the motor, slowly slacken the breather cap and let the fluid flow out for a few seconds. (fig.1)
- 8.5 It is dangerous to unscrew the cap quickly; the fluid in the system is at a high temperature and high pressure and can cause burns.



Protect the electrical components during bleeding operations.

9. SPEED ADJUSTMENT

- 9.1 For **single-phase** circulators the speed is adjusted by turning the knob of the three-position switch and it may be done when the motor is live.



The operations for changing the speed of three-phase circulators must be carried out when the power supply is disconnected.

- 9.2 To set the speed of three-phase **community** circulators, refer to the figure on page 3 and perform the following operations:

1. Ensure that the circulator is not receiving power from the mains.
2. Remove the terminal board cover.
3. Slip out the speed selector module and replace it so that the number corresponding to the speed and the required voltage value are visible through the window of the terminal board.

ATTENTION: To change over from setting speed at 400 V to setting speed at 230V, it is necessary to slip out the selector module, remove the spacer, turn it upside down and position it so that, after replacing the module, the speeds for 230 V power supply are visible in the window of the terminal board.

TAKE CARE not to position the module so that the danger warning is visible in the window.

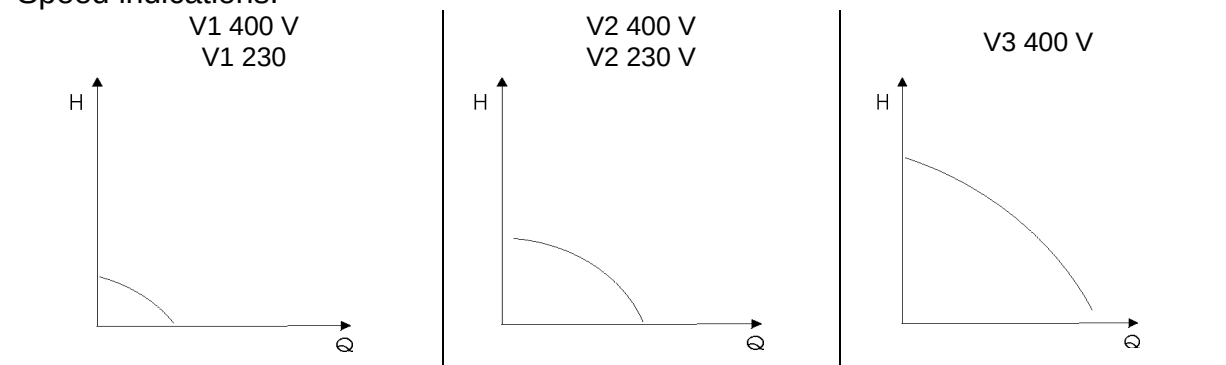


4. Put the cover back on the terminal board.
5. Reconnect the electric power supply.

- 9.3 **The speeds for voltages 230 V and 400 V must be associated respectively with the mains voltage.**

- 9.4 For 400 V three-phase community circulators it is possible to set 3 speeds, while at 230 V it is possible to set 2.

Speed indications:



9.5 If a lower speed is selected, considerable energy saving may be obtained and less noise.

9.6 **Twin circulators must have their motors set at the same speed.**

10. MAINTENANCE



Maintenance must be entrusted to qualified personnel and carried out respecting the warnings given in this manual.

10.1 When correctly installed, the circulator does not require any maintenance during operation.

10.2 From time to time it is recommended to check the absorbed current and the head, so as to prevent malfunctions.

10.3 Before restarting the circulator after the summer season, ensure that motor shaft is not blocked by scale deposits. If this should occur, unscrew the breather cap when the system is cold and turn the motor shaft with a screwdriver (fig.2).

10.4 In the bottom of the pump body there are drainage holes for water that forms due to condensation. Ensure that these holes are not blocked by foreign bodies or dirt deposits.

10.5 If the motor has to be dismantled from the pump body, it is recommended to replace the seal, ensuring that is correctly positioned during reassembly.

11. TROUBLESHOOTING

FAULT	CHECK (possible cause)	REMEDY
1. The circulator does not start.	A. No supply voltage. B. Incorrect supply voltage. C. Faulty capacitor (single-phase motors). D. Rotor blocked by deposits on the bushes.	A. Check the electric connections and the fuses. B. Check the data on the plate and apply the correct voltage. Check the window in the terminal board to ensure that the set voltage is the same as the mains voltage. C. Change the capacitor. D. Select the maximum speed and/or free the rotor with a screwdriver.
2. The system is noisy.	A. Flow rate too high. B. Air in the system.	A. Select a lower speed. B. Bleed the system.
3. The circulator is noisy.	A. Air in the pump. B. Intake pressure too low. C. The pump is turning in the wrong direction (three-phase pumps).	A. Bleed the circulator. B. Increase the intake pressure. C. Invert the electrical connection of the terminal board.
4. The circulator starts and then stops after a short time.	A. No power supply on one phase (three-phase motors). B. Dirt or scale between the rotor and the stator lining or between the impeller and the pump body.	A. Check the connections and correct supply of the 3 phases. B. Check that the shaft is turning freely. Remove any dirt and/or scale.

DAB PUMPS LTD.

Units 4 & 5, Stortford Hall Industrial Park,
Dunmow Road, Bishop's Stortford, Herts
CM23 5GZ - UK

salesuk@dwtgroup.com

Tel.: +44 1279 652 776

Fax: +44 1279 657 727

DAB PUMPS B.V.

Brusselstraat 150

B-1702 Groot-Bijgaarden - Belgium

info.belgium@dwtgroup.com

Tel.: +32 2 4668353

Fax: +32 2 4669218

PUMPS AMERICA, INC. DAB PUMPS DIVISION

3226 Benchmark Drive

Ladson, SC 29456 USA

info.usa@dwtgroup.com

Ph. : 1-843-824-6332

Toll Free: 1-866-896-4DAB (4322)

Fax : 1-843-797-3366

OOO DWT GROUP

100 bldg. 3 Dmitrovskoe highway,

127247 Moscow - Russia

info.russia@dwtgroup.com

Tel.: +7 495 739 52 50

Fax: +7 495 485-3618

DAB POLAND - Representative Office

Mokotow Marynarska

Ul. Postepu 15c - 3rd Floor

02-676 Warsaw - POLAND

Tel. +48 223 81 6085

DAB PUMPS CHINA

No.40 Kaituo Road, Qingdao Economic &
Technological Development Zone

Qingdao City, Shandong Province, China

PC: 266500

info.china@dwtgroup.com

Tel.: +8653286812030-6270

Fax: +8653286812210

DAB PUMPS IBERICA S.L.

Avenida de Castilla nr.1 Local 14

28830 - San Fernando De Henares - Madrid

Spain

info.spain@dwtgroup.com

Ph.: +34 91 6569545

Fax: +34 91 6569676

DAB PUMPS B.V.

Albert Einsteinweg, 4

5151 DL Drunen - Nederland

info.netherlands@dwtgroup.com

Tel.: +31 416 387280

Fax: +31 416 387299

DWT South Africa

Podium at Menlyn, 3rd Floor, Unit 3001b,

43 Ingersol Road, C/O Lois and Atterbury,

Menlyn, Pretoria, 0181 South-Africa

info.sa@dwtgroup.com

Tel +27 12 361 3997

Fax +27 12 361 3137

DAB PUMPEN DEUTSCHLAND GmbH

Tackweg 11

D - 47918 Tönisvorst - Germany

info.germany@dwtgroup.com

Tel.: +49 2151 82136-0

Fax: +49 2151 82136-36

DAB UKRAINE Representative Office

Regus Horizon Park

4M. Hrinchenka St, suit 147

03680 Kiev. UKRAINE

Tel. +38 044 391 59 43

DAB PRODUCTION HUNGARY KFT.

H-8800

NAGYKANIZSA, Buda Ernő u.5

HUNGARY

Tel. +36.93501700

**DAB PUMPS S.p.A.**

Via M. Polo, 14 - 35035 Mestrino (PD) - Italy

Tel. +39 049 5125000 - Fax +39 049 5125950

www.dabpumps.com