

# TPE2, TPE2 D, TPE3, TPE3 D

Service instructions



Original service instructions.

## CONTENTS

	Page
1. Symbols used in this document	2
2. Identification	3
2.1 Nameplate	3
2.2 Type key	3
3. General information	4
4. Torques	4
5. Secondary materials	4
6. Service tools	5
7. Dismantling the pump	5
8. Assembling the pump	6
9. Replacing the sensor with cable	7
10. Replacing the valve flap	7
11. Exploded view	8



Warning

Prior to service work, read these service instructions carefully. Installation and service work must comply with local regulations and accepted codes of good practice.

Observe the safety instructions in the installation and operating instructions for the product.

### 1. Symbols used in this document



Warning

If these safety instructions are not observed, it may result in personal injury.



Warning

If these instructions are not observed, it may lead to electric shock with consequent risk of serious personal injury or death.



Warning

The surface of the product may be so hot that it may cause burns or personal injury.

**Caution**

If these safety instructions are not observed, it may result in malfunction or damage to the equipment.

**Note**

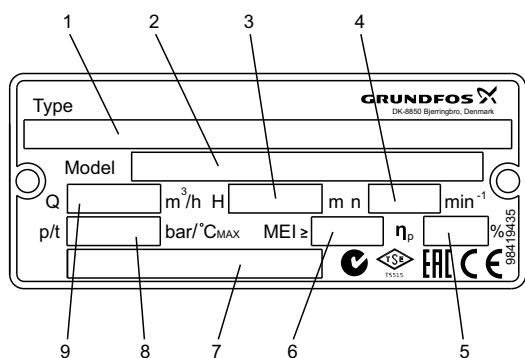
Notes or instructions that make the job easier and ensure safe operation.

## 2. Identification

This section shows the nameplate, type key and the codes that can appear in the variant code.

**Note** As codes can be combined, a code position may contain more than one code (one letter).

### 2.1 Nameplate



TMD06 5005 37-15

Fig. 1 Nameplate

Pos.	Beskrivelse
1	Pump type
2	Pump model
3	Rated head
4	Rated speed
5	Efficiency
6	Minimum efficiency index
7	Country of production
8	Maximum system pressure Maximum liquid temperature
9	Rated flow rate

### 2.2 Type key

Code Example	TPE3	D	65	-120	-S	-A	-F	-A	-BUBE
Pump range, electronically speed-controlled pump									
TPE2 Without built-in sensor									
TPE3 Built-in differential-pressure and temperature sensor									
Twin-head pump									
Nominal diameter of the inlet and outlet port (DN)									
Maximum head [dm]									
S Built-in differential-pressure and temperature sensor.									
N Without built-in sensor									
Code for pump version									
A Basic version									
I PN 6 flange									
X Special version									
Code for pipe connection:									
F Code for pipe connection									
Material code:									
A Special version									
I Stainless-steel pump housing and pump head 1.4308									
Code for shaft seal (incl. other plastic and rubber pump parts, except the neck ring)									

### 3. General information

Position numbers of parts (digits) refer to section [11. Exploded view](#). Position numbers of tools (letters) refer to section [6. Service tools](#).

Electrical parts must only be serviced by Grundfos or an authorised service centre.



#### Warning

Use personal protective equipment if there is a risk of getting into contact with the pumped liquid.

Observe local regulations.

Always use an antistatic service kit when handling electronic components. This will prevent static electricity from damaging components.

#### Caution

When unprotected, the component must be placed on the antistatic cloth.



Fig. 2 Antistatic service kit

### 4. Torques

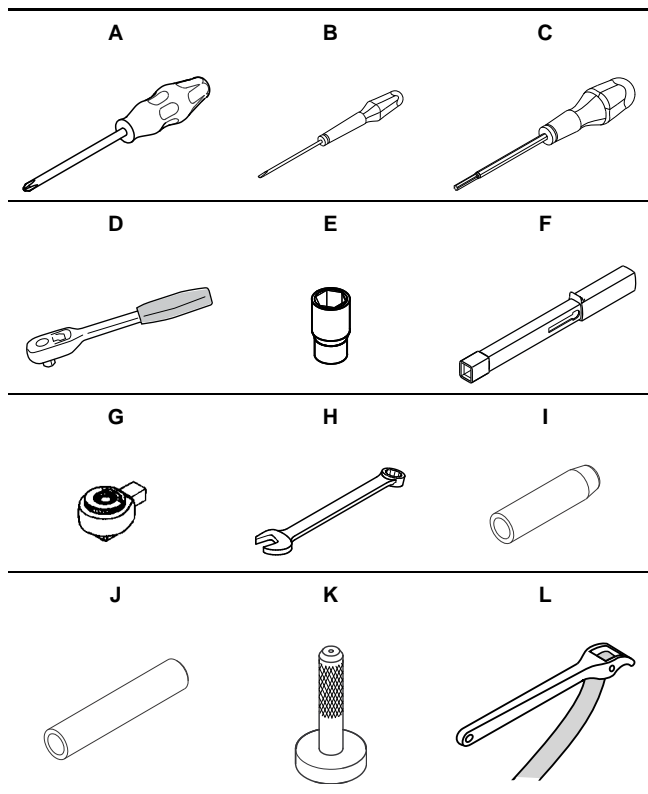
Pos.	Type	Size	Dimensions [mm]	Torque [Nm]
7a	Pozidriv screw	2	M4 x 6	5
9	Screw	3 mm	M4 x 6	2.5
28	Hexagon head	NV 14	3/8" x 1"	45
67	Nut	NV 13	M8	30
92	Screw for clamp	5 mm	M7 x 60	8
251d	Torx screw	T x 25	M5 x 50	5-6
534a	Torx screw	T x 25	M5 x 10	5

### 5. Secondary materials

Pos.	Designation	Quantity [kg]	Product number
9	Loctite 243	0.05	V7137215
92	Rocol Sapphire Aqua-Sil	0.05	00RM2924
105	Water	-	-
301a	Rocol Sapphire Aqua-Sil	0.5	00RM2924
531a			

TM05 1590 3211

## 6. Service tools



Pos.	Designation	For pos.	Further information	
A	Screwdriver	7a	PH2	
B	Screwdriver	Terminal 23-26	Straight slot, 2.5 mm	
C	Screwdriver	534a	Torx 25	
D+E	Ratchet spanner with socket	9	2 mm hexagon socket	
		28	14 mm	
		67	13 mm	
		92	5 mm hexagon socket	
18, 215	6 mm hexagon socket			
F+G	Torque wrench	-	0-50 Nm	
H	Ring/open-end spanner	100	24 mm	
I	Mounting bush	105	98467480	
J	Punch	105	98467479	
K	Punch	45	DN 32:	98699493
			DN 40:	98699494
			DN 50:	98699480
			DN 65:	98699491
			DN 80:	98699492
DN 100:				
L	Strap wrench	49		

## 7. Dismantling the pump

### Warning



Switch off the power supply and make sure that it cannot be accidentally switched on.

Check that other pumps or sources do not force flow through the pump even if the pump is stopped. This will cause the motor to act like a generator, resulting in voltage on the pump.



### Warning

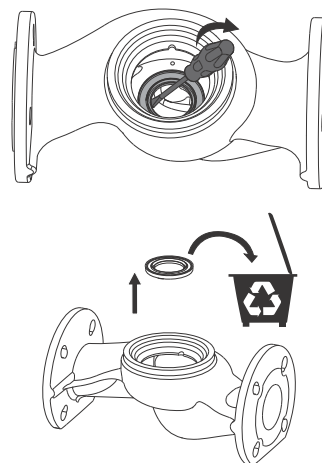
Close the isolating valves, if fitted, and make sure that they cannot be accidentally opened.



### Warning

Before starting work any on the product, let the product and pumped liquid cool off.

1. **TPE3, TPE3 D:** Detach the sensor as described in section 9. *Replacing the sensor with cable.*
2. Apply lubricant e.g. Rocol Sapphire Aqua-Sil on the screw for the clamp (92) and loosen the screw.
3. Lift the pump head out of the pump housing (6).
4. Remove the clamp (92).
5. Remove the O-ring (301a).
6. Remove the neck ring (45) and dispose of it. See fig. 3.



**Fig. 3** Removal and disposal of the neck ring

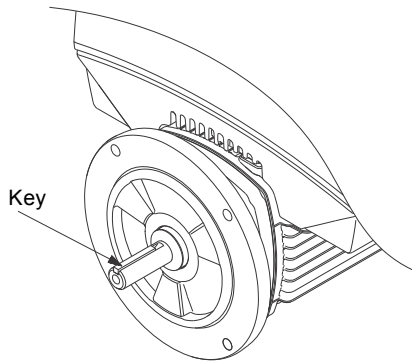
7. Hold the impeller (49) with a strap wrench and loosen the impeller nut (67). Remove the impeller nut, washer (66a) and impeller (49) from the shaft.
8. Remove the spacer ring (100) and the rotating shaft seal part (105).
9. Loosen the two pozidriv screws (7a) and remove the coupling guard (7).
10. Loosen the four nuts (28) and remove the motor stool (77).
11. Remove the stationary shaft seal part (105) from the motor stool (77).
12. Loosen the two set screws (9) and remove the shaft (51).
13. Remove the key (11b) from the shaft (51).

TM06 1574 2514 - TM06 1575 2514

## 8. Assembling the pump

**Note** Lubricate and tighten screws and nuts according to section 4. *Torques* and 5. *Secondary materials*.

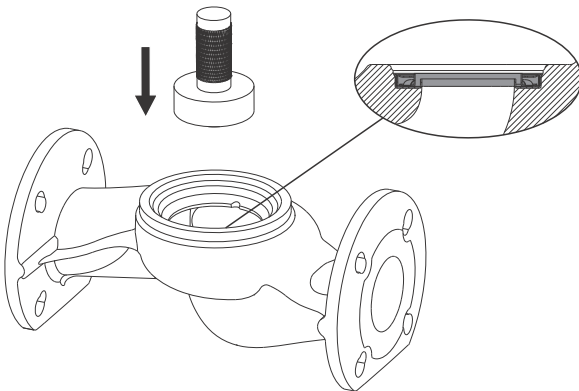
1. Make sure that the key (11) is fitted correctly on the motor shaft. See fig. 4.



TM06 5006 3715

**Fig. 4** Key on motor shaft

2. Push the shaft (51) home on the motor shaft.
3. Apply a drop of Loctite 243 to the set screws (9) and tighten them into the pump shaft. See section 4. *Torques*.
4. Mount the motor stool (77) on the motor.
5. Fit the four nuts (28). See section 4. *Torques*.
6. Spray the stationary shaft seal part (105) with water.
7. Fit the stationary shaft seal part (105) on the shaft. Do not touch the seal face with your fingers.
8. Press the stationary shaft seal part home with a punch (J).
9. Fit the mounting bush (I) on the pump shaft.
10. Spray the rotating shaft seal part (105) with water.
11. Press the rotating shaft seal part home with a punch (J).
12. Remove the mounting bush (I).
13. Fit the spacer ring (100) on the pump shaft (51).
14. Fit the key (11b) and impeller (49) on the pump shaft (51).
15. Fit the washer (66a) and impeller nut (67).
16. Hold the impeller (49) with a strap wrench (L) and tighten the impeller nut (67). See section 4. *Torques*.
17. Fit a new neck ring (45) with the punch (K). See fig. 5.

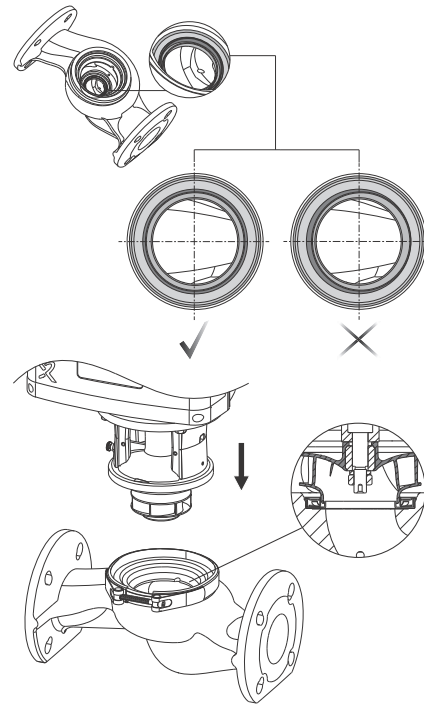


TM06 1585 2714

**Fig. 5** Fitting a neck ring

18. Clean the sealing face and the neck ring on the pump housing. The sealing face must be free of corrosion or deposits and have a uniformly smooth surface.
19. Lubricate the sealing face of the pump head.
20. Fit the O-ring (301a) in the pump head and lubricate it.
21. Fit the clamp (92) on the pump house without tightening it.

22. Make sure that the movable part of the neck ring is centred in the stationary part. See fig. 6.



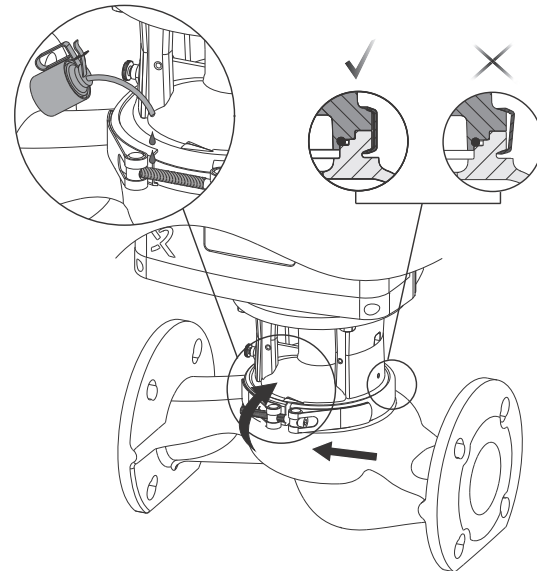
TM06 1590 2614

**Fig. 6** Centring of neck ring

23. Fit the pump head in the pump housing.
 

**Note:** Check that the pump head is home. There must be no gap between the contact surfaces of pump housing and pump head.
24. Apply lubricant e.g. Rocol Sapphire Aqua-Sil on the screw for the clamp (92) and loosen the screw.
 

**Note:** Make sure that the clamp is fastened correctly around the flange recesses on the pump head and pump housing. See fig. 7 and section 4. *Torques*.



TM06 1584 2714

**Fig. 7** Fitting the clamp

25. Check that the pump shaft can rotate freely.
26. Fit the coupling guards (7) and tighten the pozidriv screws (7a). See section 4. *Torques*.
27. **TPE3, TPE3 D:** Connect the sensors as described in section 9. *Replacing the sensor with cable*.

**Note** If analog or digital inputs, the relay output or the CIM module has been removed from the pump, check the communication with external units after service.

## 9. Replacing the sensor with cable

The instruction below only applies to TPE3 and TPE3 D pumps.

### Removing the sensor

1. Disconnect the power supply.
2. Loosen the four screws (251d) and remove the cover of the terminal box (251a).
3. Remove the sensor wires from terminals 23, 24, 25 and 26.
4. Turn the union nut (530a) counter-clockwise until it is free. Make sure not to turn the sensor cable at the same time.
5. Pull the sensor cable (530) out of the terminal box via the cable gland.
6. Remove the screw (534a) and pull the cable clamp (534) to the right.
7. Hold the sensor (531) by its sides and move it carefully from side to side to remove it from the pump housing.  
**Note:** Check that the sensor pocket (531a) comes out of the hole in the pump housing.
8. Clean the sensor hole with a clean piece of cloth and check that there are no particles in the sensor hole. See fig. 8.

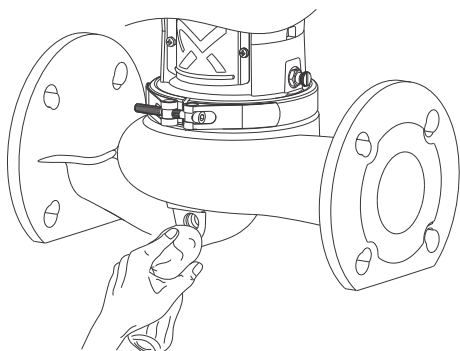


Fig. 8 Cleaning the sensor hole

TM05 8652 2513

### Fitting the sensor

1. Fit the new sensor and push it carefully home. The nose of the sensor must face downwards. See fig. 9.

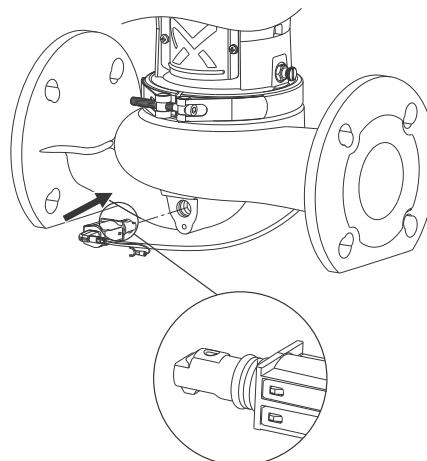


Fig. 9 Correct fitting of sensor

TM05 8653 2513

2. Fit the bracket from the right to the left.
3. Fit the earth conductor on the bracket and secure the bracket to the pump housing with the screw (534a). See section 4. *Torques*.
4. Lead the sensor cable into the terminal box via the cable gland.
5. Connect the sensor wires to terminals 23, 24, 25 and 26.

Terminal	26	23	25	24
Colour of wire	Brown	Silver	Yellow	White

6. Fit and tighten the impeller (530a) clockwise. Make sure not to turn the sensor cable at the same time.
7. Fit the cover of the terminal box (251a) and tighten the screws (251d). See section 4. *Torques*.

**Note**

If analog or digital inputs, the relay output or the CIM module has been removed from the pump, check the communication with external units after service.

## 10. Replacing the valve flap

The instruction below only applies to TPE2 D and TPE3 D pumps.

### Removal of valve flap

1. Remove the screws (215a).
2. Push the pin (215) out.
3. Remove the valve flap (217).

### Fitting the valve flap

1. Insert the new valve flap (217).
2. Insert the pin (215).
3. Fit and tighten the screws (215a). See section 4. *Torques* and 5. *Secondary materials*.

11. Exploded view

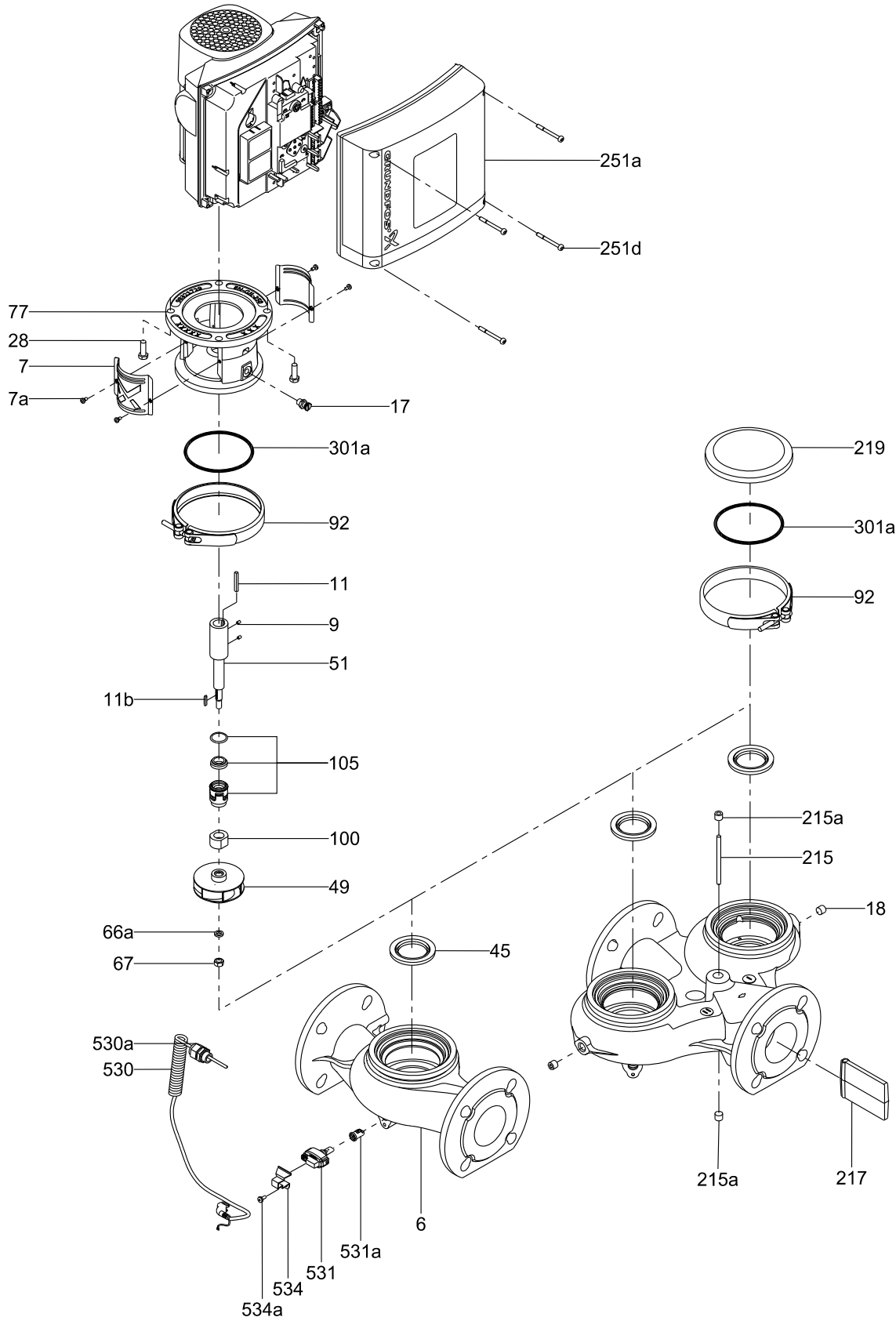


Fig. 10 TPE2, TPE2 D, TPE3, TPE3 D

Subject to alterations.



**Argentina**

Bombas GRUNDFOS de Argentina S.A.  
Ruta Panamericana km. 37.500 Centro  
Industrial Garin  
1619 Garin Pcia. de B.A.  
Phone: +54-3327 414 444  
Telefax: +54-3327 45 3190

**Australia**

GRUNDFOS Pumps Pty. Ltd.  
P.O. Box 2040  
Regency Park  
South Australia 5942  
Phone: +61-8-8461-4611  
Telefax: +61-8-8340 0155

**Austria**

GRUNDFOS Pumpen Vertrieb Ges.m.b.H.  
Grundfosstraße 2  
A-5082 Grödig/Salzburg  
Tel.: +43-6246-883-0  
Telefax: +43-6246-883-30

**Belgium**

N.V. GRUNDFOS Bellux S.A.  
Boomssesteenweg 81-83  
B-2630 Aartselaar  
Tél.: +32-3-870 7300  
Télécopie: +32-3-870 7301

**Belarus**

Представительство ГРУНДФОС в  
Минске  
220125, Минск  
ул. Шафарьянская, 11, оф. 56, БЦ  
«Порт»  
Тел.: +7 (375 17) 286 39 72/73  
Факс: +7 (375 17) 286 39 71  
E-mail: minsk@grundfos.com

**Bosna and Herzegovina**

GRUNDFOS Sarajevo  
Zmaja od Bosne 7-7A,  
BH-71000 Sarajevo  
Phone: +387 33 592 480  
Telefax: +387 33 590 465  
www.ba.grundfos.com  
e-mail: grundfos@bih.net.ba

**Brazil**

BOMBAS GRUNDFOS DO BRASIL  
Av. Humberto de Alencar Castelo Branco,  
630  
CEP 09850 - 300  
São Bernardo do Campo - SP  
Phone: +55-11 4393 5533  
Telefax: +55-11 4343 5015

**Bulgaria**

Grundfos Bulgaria EOOD  
Slatina District  
Iztochna Tangenta street no. 100  
BG - 1592 Sofia  
Tel. +359 2 49 22 200  
Fax. +359 2 49 22 201  
email: bulgaria@grundfos.bg

**Canada**

GRUNDFOS Canada Inc.  
2941 Brighton Road  
Oakville, Ontario  
L6H 6C9  
Phone: +1-905 829 9533  
Telefax: +1-905 829 9512

**China**

GRUNDFOS Pumps (Shanghai) Co. Ltd.  
10F The Hub, No. 33 Suhong Road  
Minhang District  
Shanghai 201106  
PRC  
Phone: +86 21 612 252 22  
Telefax: +86 21 612 253 33

**Croatia**

GRUNDFOS CROATIA d.o.o.  
Buzinski prilaz 38, Buzin  
HR-10010 Zagreb  
Phone: +385 1 6595 400  
Telefax: +385 1 6595 499  
www.hr.grundfos.com

**Czech Republic**

GRUNDFOS s.r.o.  
Čajkovského 21  
779 00 Olomouc  
Phone: +420-585-716 111  
Telefax: +420-585-716 299

**Denmark**

GRUNDFOS DK A/S  
Martin Bachs Vej 3  
DK-8850 Bjerringbro  
Tlf.: +45-87 50 50 50  
Telefax: +45-87 50 51 51  
E-mail: info\_GDK@grundfos.com  
www.grundfos.com/DK

**Estonia**

GRUNDFOS Pumps Eesti OÜ  
Peterburi tee 92G  
11415 Tallinn  
Tel: + 372 606 1690  
Fax: + 372 606 1691

**Finland**

OY GRUNDFOS Pumput AB  
Trukkikuja 1  
FI-01360 Vantaa  
Phone: +358-(0) 207 889 500  
Telefax: +358-(0) 207 889 550

**France**

Pompes GRUNDFOS Distribution S.A.  
Parc d'Activités de Chesnes  
57, rue de Malacombe  
F-38290 St. Quentin Fallavier (Lyon)  
Tél.: +33-4 74 82 15 15  
Télécopie: +33-4 74 94 10 51

**Germany**

GRUNDFOS GMBH  
Schlüterstr. 33  
40699 Erkrath  
Tel.: +49-(0) 211 929 69-0  
Telefax: +49-(0) 211 929 69-3799  
e-mail: infoservice@grundfos.de  
Service in Deutschland:  
e-mail: kundendienst@grundfos.de

**Greece**

GRUNDFOS Hellas A.E.B.E.  
20th km. Athinon-Markopoulou Av.  
P.O. Box 71  
GR-19002 Peania  
Phone: +0030-210-66 83 400  
Telefax: +0030-210-66 46 273

**Hong Kong**

GRUNDFOS Pumps (Hong Kong) Ltd.  
Unit 1, Ground floor  
Siu Wai Industrial Centre  
29-33 Wing Hong Street &  
68 King Lam Street, Cheung Sha Wan  
Kowloon  
Phone: +852-27861706 / 27861741  
Telefax: +852-27858664

**Hungary**

GRUNDFOS Hungária Kft.  
Park u. 8  
H-2045 Törökbálint,  
Phone: +36-23 511 110  
Telefax: +36-23 511 111

**India**

GRUNDFOS Pumps India Private Limited  
118 Old Mahabalipuram Road  
Thoraiakkam  
Chennai 600 096  
Phone: +91-44 2496 6800

**Indonesia**

PT. GRUNDFOS POMPA  
Graha Intirub Lt. 2 & 3  
Jin. Cililitan Besar No.454. Makasar,  
Jakarta Timur  
ID-Jakarta 13650  
Phone: +62 21-469-51900  
Telefax: +62 21-460 6910 / 460 6901

**Ireland**

GRUNDFOS (Ireland) Ltd.  
Unit A, Merrywell Business Park  
Ballymount Road Lower  
Dublin 12  
Phone: +353-1-4089 800  
Telefax: +353-1-4089 830

**Italy**

GRUNDFOS Pompe Italia S.r.l.  
Via Gran Sasso 4  
I-20060 Truccazzano (Milano)  
Tel.: +39-02-95838112  
Telefax: +39-02-95309290 / 95838461

**Japan**

GRUNDFOS Pumps K.K.  
Gotanda Metalion Bldg., 5F,  
5-21-15, Higashi-gotanda  
Shiagawa-ku, Tokyo  
141-0022 Japan  
Phone: +81 35 448 1391  
Telefax: +81 35 448 9619

**Korea**

GRUNDFOS Pumps Korea Ltd.  
6th Floor, Aju Building 679-5  
Yeoksam-dong, Kangnam-ku, 135-916  
Seoul, Korea  
Phone: +82-2-5317 600  
Telefax: +82-2-5633 725

**Latvia**

SIA GRUNDFOS Pumps Latvia  
Deglava biznesa centrs  
Augusta Deglava ielā 60, LV-1035, Rīga,  
Tālr.: + 371 714 9640, 7 149 641  
Fakss: + 371 914 9646

**Lithuania**

GRUNDFOS Pumps UAB  
Smolensko g. 6  
LT-03201 Vilnius  
Tel: + 370 52 395 430  
Fax: + 370 52 395 431

**Malaysia**

GRUNDFOS Pumps Sdn. Bhd.  
7 Jalan Peguam U1/25  
Glenmarie Industrial Park  
40150 Shah Alam  
Selangor  
Phone: +60-3-5569 2922  
Telefax: +60-3-5569 2866

**Mexico**

Bombas GRUNDFOS de México S.A. de  
C.V.  
Boulevard TLC No. 15  
Parque Industrial Stiva Aeropuerto  
Apodaca, N.L. 66600  
Phone: +52-81-8144 4000  
Telefax: +52-81-8144 4010

**Netherlands**

GRUNDFOS Netherlands  
Veluwezoom 35  
1326 AE Almere  
Postbus 22015  
1302 CA ALMERE  
Tel.: +31-88-478 6336  
Telefax: +31-88-478 6332  
E-mail: info\_gnl@grundfos.com

**New Zealand**

GRUNDFOS Pumps NZ Ltd.  
17 Beatrice Tinsley Crescent  
North Harbour Industrial Estate  
Albany, Auckland  
Phone: +64-9-415 3240  
Telefax: +64-9-415 3250

**Norway**

GRUNDFOS Pumper A/S  
Strømsveien 344  
Postboks 235, Leirdal  
N-1011 Oslo  
Tlf.: +47-22 90 47 00  
Telefax: +47-22 32 21 50

**Poland**

GRUNDFOS Pompy Sp. z o.o.  
ul. Klonowa 23  
Baranowo k. Poznania  
PL-62-081 Przeźmierowo  
Tel: (+48-61) 650 13 00  
Fax: (+48-61) 650 13 50

**Portugal**

Bombas GRUNDFOS Portugal, S.A.  
Rua Calvet de Magalhães, 241  
Apartado 1079  
P-2770-153 Paço de Arcos  
Tel.: +351-21-440 76 00  
Telefax: +351-21-440 76 90

**Romania**

GRUNDFOS Pompe România SRL  
Bd. Biruintei, nr 103  
Pantelimon county Ilfov  
Phone: +40 21 200 4100  
Telefax: +40 21 200 4101  
E-mail: romania@grundfos.ro

**Russia**

ООО Грундфос Россия  
109544, г. Москва, ул. Школьная, 39-41,  
стр. 1  
Тел. (+7) 495 564-88-00 (495) 737-30-00  
Факс (+7) 495 564 88 11  
E-mail grundfos.moscow@grundfos.com

**Serbia**

Grundfos Srbija d.o.o.  
Omladinskih brigada 90b  
11070 Novi Beograd  
Phone: +381 11 2258 740  
Telefax: +381 11 2281 769  
www.rs.grundfos.com

**Singapore**

GRUNDFOS (Singapore) Pte. Ltd.  
25 Jalan Tukang  
Singapore 619264  
Phone: +65-6681 9688  
Telefax: +65-6681 9689

**Slovakia**

GRUNDFOS s.r.o.  
Prievozská 4D  
821 09 BRATISLAVA  
Phona: +421 2 5020 1426  
sk.grundfos.com

**Slovenia**

GRUNDFOS d.o.o.  
Šlandrova 8b, SI-1231 Ljubljana-Črnuče  
Phone: +386 31 718 808  
Telefax: +386 (0)1 5680 619  
E-mail: slovenia@grundfos.si

**South Africa**

GRUNDFOS (PTY) LTD  
Corner Mountjoy and George Allen Roads  
Wilbart Ext. 2  
Bedfordview 2008  
Phone: (+27) 11 579 4800  
Fax: (+27) 11 455 6066  
E-mail: lsmart@grundfos.com

**Spain**

Bombas GRUNDFOS España S.A.  
Camino de la Fuentesilla, s/n  
E-28110 Algete (Madrid)  
Tel.: +34-91-848 8800  
Telefax: +34-91-628 0465

**Sweden**

GRUNDFOS AB  
Box 333 (Lunnagårdsgatan 6)  
431 24 Mölndal  
Tel.: +46 31 332 23 000  
Telefax: +46 31 331 94 60

**Switzerland**

GRUNDFOS Pumpen AG  
Bruggacherstrasse 10  
CH-8117 Fällanden/ZH  
Tel.: +41-44-806 8111  
Telefax: +41-44-806 8115

**Taiwan**

GRUNDFOS Pumps (Taiwan) Ltd.  
7 Floor, 219 Min-Chuan Road  
Taichung, Taiwan, R.O.C.  
Phone: +886-4-2305 0868  
Telefax: +886-4-2305 0878

**Thailand**

GRUNDFOS (Thailand) Ltd.  
92 Chaloen Phrakiat Rama 9 Road,  
Dokmai, Pravej, Bangkok 10250  
Phone: +66-2-725 8999  
Telefax: +66-2-725 8998

**Turkey**

GRUNDFOS POMPA San. ve Tic. Ltd. Sti.  
Gezbe Organize Sanayi Bölgesi  
Ihsan dede Caddesi,  
2. yol 200. Sokak No. 204  
41490 Gezbe/ Kocaeli  
Phone: +90 - 262-679 7979  
Telefax: +90 - 262-679 7905  
E-mail: satis@grundfos.com

**Ukraine**

Бізнес Центр Європа  
Столичне шосе, 103  
м. Київ, 03131, Україна  
Телефон: (+38 044) 237 04 00  
Факс: (+38 044) 237 04 01  
E-mail: ukraine@grundfos.com

**United Arab Emirates**

GRUNDFOS Gulf Distribution  
P.O. Box 16768  
Jebel Ali Free Zone  
Dubai  
Phone: +971 4 8815 166  
Telefax: +971 4 8815 136

**United Kingdom**

GRUNDFOS Pumps Ltd.  
Grovebury Road  
Leighton Buzzard/Beds. LU7 4TL  
Phone: +44-1525-850000  
Telefax: +44-1525-850011

**U.S.A.**

GRUNDFOS Pumps Corporation  
17100 West 118th Terrace  
Olathe, Kansas 66061  
Phone: +1-913-227-3400  
Telefax: +1-913-227-3500

**Uzbekistan**

Grundfos Tashkent, Uzbekistan The Repre-  
sentative Office of Grundfos Kazakhstan in  
Uzbekistan  
38a, Oybek street, Tashkent  
Телефон: (+998) 71 150 3290 / 71 150  
3291  
Факс: (+998) 71 150 3292

Addresses Revised 29.09.2015

<b>98991089</b> 1015
----------------------

ECM: 1168304
--------------