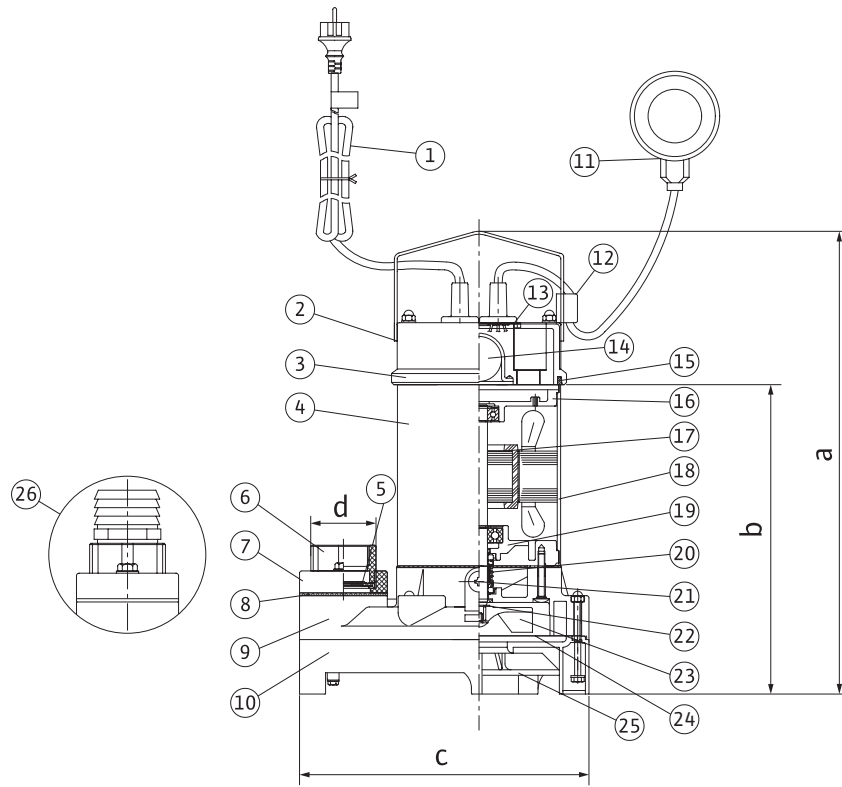


Wilo-Drain TS 40/10, TS 40/14 TS 40/10 A, TS 40/14 A

- | | | | |
|-----------|---|------------|--------------------------------------|
| D | Einbau- und Betriebsanleitung | S | Monterings- och skötselinstruktioner |
| GB | Installation and operating instructions | FIN | Asennus- ja käyttöohje |
| F | Notice de montage et de mise en service | DK | Monterings- og driftsvejledning |
| NL | Inbouw- en bedieningsvoorschriften | H | Beépítési és üzemeltetési utasítás |
| E | Instrucciones de instalación y funcionamiento | PL | Instrukcja montażu i obsługi |
| I | Istruzioni di montaggio, uso e manutenzione | CZ | Návod k montáži a obsluze |
| P | Manual de instalação e funcionamento | RUS | Инструкция по монтажу и эксплуатации |
| GR | Οδηγίες εγκατάστασης και λειτουργίας | | |

Fig.1:



Typ	a	b	c	d	kg
TS 40/10 TS 40/10A	407	273	245	1½"	13 kg
TS 40/14 TS 40/14A	424	290	245	1½"	15 kg

Fig.2a:

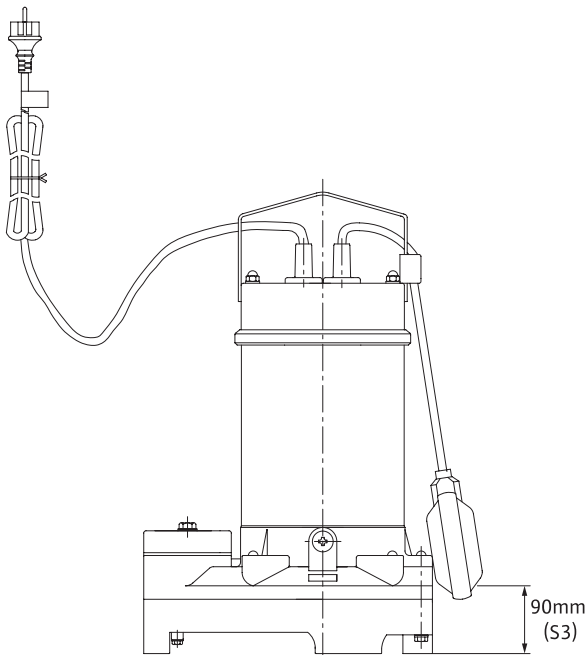
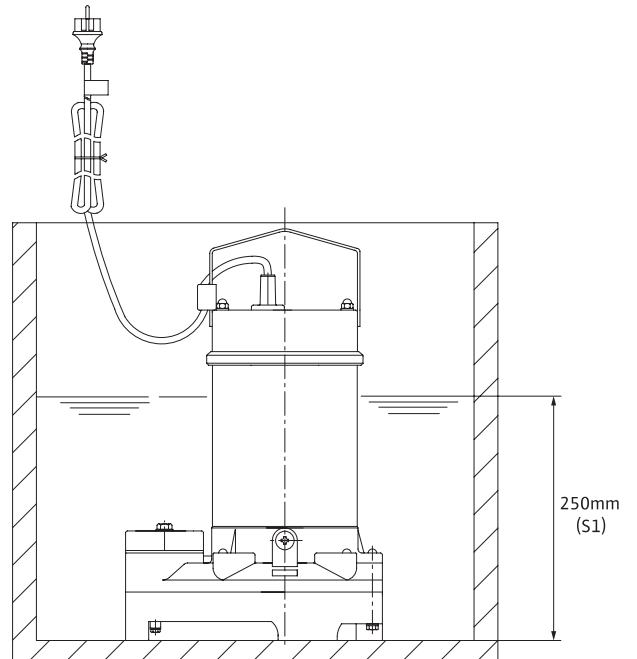


Fig.2b:



D	Einbau- und Betriebsanleitung	3
GB	Installation and operating instructions	8
F	Notice de montage et de mise en service	13
NL	Inbouw- en bedieningsvoorschriften	18
E	Instrucciones de instalación y funcionamiento	23
I	Istruzioni di montaggio, uso e manutenzione	28
P	Manual de instalação e funcionamento	33
GR	Οδηγίες εγκατάστασης και λειτουργίας	38
S	Monterings- och skötselinstruktioner	44
FIN	Asennus- ja käyttöohje	49
DK	Monterings- og driftsvejledning	54
H	Beépítési és üzemeltetési utasítás	59
PL	Instrukcja montażu i obsługi	64
CZ	Návod k montáži a obsluze	69
RUS	Инструкция по монтажу и эксплуатации	74

1 General

1.1 About this document

These installation and operating instructions are an integral part of the product. They must be kept readily available at the place where the product is installed. Strict adherence to these instructions is a precondition for the proper use and correct operation of the product.

These installation and operating instructions conform to the relevant version of the product and the underlying safety standards valid at the time of going to press.

2 Safety

These instructions contain important information which must be followed when installing and operating the pump. It is therefore imperative that they be read by both the installer and the operator before the pump is installed or operated.

Both the general safety instructions in this section and the more specific safety points in the following sections should be observed.

2.1 Instruction symbols used in this operating manual

Symbols:



General danger symbol



Hazards from electrical causes



NOTE: ...

Signal words:

DANGER!

Imminently hazardous situation.

Will result in death or serious injury if not avoided.

WARNING!

Risk of (serious) injury. 'Warning' implies that failure to comply with the safety instructions is likely to result in (severe) personal injury.

CAUTION!

Risk of damage to the pump/installation. 'Caution' alerts to user to potential product damage due to non-compliance with the safety instructions.

NOTE:

Useful information on the handling of the product. It alerts the user to potential difficulties.

2.2 Personnel qualification

The personnel installing the pump must have the appropriate qualification for this work.

2.3 Risks incurred by failure to comply with the safety instructions

Failure to comply with the safety precautions could result in personal injury or damage to the pump or installation. Failure to comply with the safety precautions could also invalidate any claim for damages.

In particular, failure to comply with these safety instructions could give rise, for example, to the following risks:

- Failure of important pump or system functions,
- Failure of specified maintenance and repair methods
- Personal injury due to electrical, mechanical and bacteriological causes.
- Damage to property

2.4 Safety instructions for the operator

The relevant accident precaution regulations must be observed.

Potential dangers caused by electrical energy must be excluded. Local or general regulations [e.g. IEC, VDE, etc.] and directives from local energy supply companies are to be followed.

2.5 Safety instructions for inspection and assembly

The operator must ensure that all inspection and assembly work is carried out by authorised and qualified specialists who have carefully studied these instructions.

Work on a pump or installation should only be carried out once the latter has been brought to a standstill.

2.6 Unauthorised modification and manufacture of spare parts

Changes to the pump/machinery may only be made in agreement with the manufacturer. The use of original spare parts and accessories authorised by the manufacturer will ensure safety. The use of any other parts may invalidate claims invoking the liability of the manufacturer for any consequences.

2.7 Improper use

The operating safety of the pump or installation can only be guaranteed if it is used in accordance with paragraph 4 of the operating instructions. All values must neither exceed nor fall below the limit values given in the catalogue or data sheet.

3 Transport and interim storage

Inspect the pump/system for transport damage immediately upon arrival. Any transport damage found must be reported to the carrier within the prescribed periods.

CAUTION! Risk of damage to the pump! Risk of damage due to improper handling during transport or storage.

- **The pump may only be hung from or carried using the handle provided for transport. Never suspend or carry using the cable!**



- The pump should be protected against moisture, frost and physical damage during transport and interim storage.

4 Applications



DANGER! Risk of electric shock!

The pump may not be used for draining swimming-pools / garden ponds or similar places when there are people in the water.



WARNING! Risk of personal injury!

- The materials are not designed for drinking water supply.
The pump must not be used for pumping drinking water.

- The pumps must not be used:

- to pump raw sewage containing faeces,
- in potentially explosive locations,

Local regulations must be observed.

The submersible motor pumps of the Wilo-Drain TS 40 are suitable for removing dirty water and clear fluids containing solids of max. 10 mm \varnothing from shafts, pits and vessels.

They are used:

- for building and surface dewatering,
- in sewage and water-management,
- in environmental and domestic waste disposal,
- in industrial and process engineering.

The pumps

- are made from stainless steel (1.4301) and plastic (hydraulic).
- are normally submerged by the flow medium,
- can be installed stationary or transportable, but only vertically.

5 Product data

5.1 Type code

Example:	TS 40/10 A 1-230-50-2-5M KA, TS 40/14 3-400-50-2-10M KA
TS	Series: submersible motor pump, waste water
40	Nominal width: 40 = Rp 1½
/10	Maximum pump lift [m]: 10, 14
A	A = with float switch, connecting cable with plug - = not specified: without float switch, connecting cable with free cable end for 3~ motor
1-230	Mains voltage: 1~230 V, single-phase motor, 3~400 V, three-phase motor
-50	Mains frequency [Hz]
-2	2 poles
-10M KA	Connecting cable length [m]: 5, 10

5.2 Technical data

Permissible components of the flow media:	Mildly acidic / mildly alkaline, Chloride content max. 150 mg/l (for 1.4301 / AISI 304),
max. permissible grain size:	10 mm
Mains voltage:	1 ~ 230 V, $\pm 10\%$, 3 ~ 400 V, $\pm 10\%$
Mains frequency:	50 Hz
System of protection:	IP 68
Speed:	max. 2900 ¹ /min (50 Hz)
max. current consumption:	see rating plate
Power input P1:	see rating plate
Motor power rating P2:	see rating plate
max. flow rate:	see rating plate
max. pump lift:	see rating plate
Operating mode S1:	200 operating hours a year
Operating mode S3 (optimum):	Intermittent service, 25 % (2.5 min mode, 7.5 min break).
recommended operating frequency:	20 ¹ /h
max. operating frequency:	50 ¹ /h
Nominal width of pipe mount:	see rating plate
Temperature range of the flow medium:	+3 to 35 °C
max. immersion depth:	5 m
Oil filling:	ELFOLNA DS 22 or comparable, 410 ml

5.3 Scope of supply

Each pump is supplied with

- 5 / 10 m connecting cable,
- plug (earthing pin), (for single-phase current)
- built-in non return valve,
- connected float switch (A-version),
- hose connection 1½",
- pipe connection with outside thread 1½",
- Installation and operating instructions.

6 Description and operation

6.1 Pump description (Figure 1)

Pos.	Part description	Pos.	Part description
1	Cable assy	14	Capacitor
2	Head Cover	15	Gasket, Head Cover
3	Adaptor cover	16	End bracket (B)
4	Motorhousing	17	Rotor assy
5	Non-return valve	18	Stator
6	Pipe connection 1 1/2"	19	End bracket (A)
7	Delivery port, Flange	20	Mechanical seal
8	Gasket, Flange	21	Oil drain plug with seal
9	Cover, Casing	22	Washer
10	Pump casing	23	Impeller
11	Floatswitch	24	Gasket, Casing
12	Cable holder	25	Strainer
13	Sealing, cable entry	26	Hose nozzle R1 1/2 (outside thread)

The submersible motor pump is driven by an enclosed motor that is impermeable to presswater. Motor and pump have a continuous shaft. The flow medium enters from below through the central suction opening and exits by the vertical pressure-pipe connection. The pump has a built-in non return valve (pos. 5).

The TS 40 pumps are delivered with a half-open impeller (pos. 23). It pumps solids up to 10 mm Ø (no fibrous materials such as grass, leaves or rags). For stationary installation, the pump is screwed to a fixed pressure-pipe (R 1 1/2), and for transportable installation to a hose connection.

The motor of both types is sealed with a mechanical tandem seal (pos. 20) on the medium and motor side against the pump housing. So that the seals are lubricated and cooled in the case of dry running, the chamber between the mechanical seals is filled with oil.



CAUTION! Risk of leak!

If the mechanical seal is damaged, small quantities of oil may leak into the flow medium.

The motors are fitted with a thermal motor protection (1~: thermal winding contact (WSK), 3~: thermal motor control) that automatically switches the motor off if there is a threat of it overheating and switches it back on again once it has cooled down. A capacitor is fitted at the 1~ motor to generate the rotary field.

7 Installation and electrical connection

Installation and electrical connection should be carried out in accordance with local regulations and only by qualified personnel!



WARNING! Risk of personal injury!

The relevant accident precaution regulations must be observed.



WARNING! Risk of electric shock!

Potential dangers caused by electrical energy must be excluded.

Local or general regulations [e.g. IEC, VDE, etc.] and directives from local energy supply companies are to be followed.

7.1 Installation

The pump is designed for stationary and transportable wet-well installation.



CAUTION! Risk of damage to the pump!

- **Only suspend the pump using a chain or rope from the transport loop, never by the electric cable or pipe /hose connection.**
- **When the pump is lowered into the shaft or pit the connecting cable must not be damaged.**
- The pump must be installed in a frost-free place.
- The shaft must be free from coarse solids (e.g. building rubble) prior to installation and commissioning.
- See catalogue for installation dimensions.
- The pressure-pipe must show the pump's nominal width (R 1 1/2, possibility for expansion).

7.1.1 Stationary wet-well installation

In the case of stationary wet-well installation of TS 40 pumps with pressure-pipe the pump is to be positioned and secured such that:

- the pressure-pipe connections do not bear the weight of the pump,
- the load of the pressure-pipe does not act on the connecting sleeve.

7.1.2 Transportable wet-well installation

In transportable wet-well installations, the pump in the shaft is to be protected against tipping over and slipping. (e.g. secure the chain with slight pre-stressing).



NOTE:

If used in pits without a solid floor, the pump must be placed on a sufficiently large plate or be suspended in a suitable position on a rope or chain.

7.2 Electrical connection



WARNING! Risk of electric shock!

Electrical connection must be carried out by an electrical installer authorised by the local power supply company in accordance with the applicable local regulations (e.g. VDE regulations).

- Check that the mains current and voltage comply with the data on the rating plate.

- Mains fuse: 16 A, time-lag,
- Pump / installation must be earthed in compliance with regulations,
- Use a residual current operating device ≤ 30 mA,
- Use a disconnecting device to disconnect from the mains with a contact gap width of min. 3 mm,
- The pump is ready for connection.

Pump with three-phase current motor (3~400V):

- For the three-phase current connection (DM) the leads of the free cable end are to be assigned as follows:

4-leaded connection cable: 4 x 1,0²

Lead no	brown	black	blue	green/yellow
terminal	U	V	W	PE

The free cable end is to be wired up in the switch box (see switch box Installation and Operating Instructions).

8 Starting-up



DANGER! Risk of electric shock!

The pump may not be used for draining swimming-pools / garden ponds or similar places when there are people in the water.



CAUTION! Risk of damage to the pump

Prior to starting up the pump, the shaft and the intake pipes should be freed from solid matter such as rubbish.

8.1 Direction of rotation (only for three-phase current motors)

The correct direction of rotation must be tested before the pump is submerged. The correct direction of rotation is indicated by a directional arrow on the top of the motor housing.

- Hold the pump in your hand,
- Briefly switch on the pump. The pump will move in the opposite direction to the motor.
- If the direction of rotation is incorrect, 2 phases of the mains connection must be exchanged.

8.2 Adjusting the control level



CAUTION! Risk of damage to the pump!

The mechanical seal must not run dry!

- **Dry running reduces the life of motor and mechanical seal.**
- **As protection against dry running for the mechanical seal, the motor is fitted with an oil-filled separating chamber.**
- The water level may not be reduced below the minimum immersion depth of the pump. The level control is originally set at the following level: see figure 2
 - Fig. 2a: operating mode S3: connection and electrical data
 - Fig. 2b: operating mode S1: connection and electrical data

- When filling the shaft or lowering the pump into the pit make sure that the float switches can move freely.
- Switch on pump.

9 Maintenance

Maintenance and repair work should only be carried out by qualified personnel!

WARNING! Risk of infection!

In order to avoid any risk of infection, maintenance work should only be carried out using appropriate protective clothing (protective gloves).



WARNING! Risk of electric shock!

Potential dangers caused by electrical energy must be excluded



- **The pump must be switched off for all maintenance and repair work and secured against unauthorised operation.**
- **In principle, damage to the connecting cable should only be repaired by a qualified electrician.**
- **Change oil in the mechanical seal chamber one times the year.**
- Unscrew Oil drain plug with seal (Fig. 1, pos. 21).
- Cant the pump until the oil gets out (use a suitable collecting basin and dispose the oil correctly).
- Fill in new oil (see connection and electrical data).
- Screw in Oil drain plug with seal.

10 Problems, causes and remedies

Problems	Causes	Remedy
Pump does not run	Interruption of the current, short circuit.	Check power supply,. Call on expert to check cable and motor.
	Insulation fault in the motor winding.	Replace fuses, capacitor
	Safety fuse, capacitor defect.	Check cable resistance. If necessary, replace cable. Only use original Wilo special cable!
	Cable break.	Check level switch.
Protective motor switch engaged	Level switch does not switch.	Switch to nominal current.
	Protective motor switch not set correctly.	• Switch off the pump voltage and secure against re-operation. • Close the shut-off valve at the back of the pump. • Remove pump from the sump. • Remove foreign bodies from the pump.
Pump does not pump	Cutting device or impeller already blocked by foreign bodies.	
	Air in spiral housing.	Ventilate backflow preventer.
Pump transports too little, noisy operation	Level switch not set correctly.	Ensure that the suction impeller is flooded.
	Wrong direction of rotation.	interchange two phases of the mains connection.
	Impeller worn down.	Change impeller.
	Impeller, cutting device or pump housing covered in sludge.	Clean pump, see sixth line.

If no solution can be found, please contact your plumbing and heating specialist or your nearest Wilo Customer Service or representative.

11 Spare parts

Spare parts are ordered via a local specialist dealer and/or Wilo customer service.

In order to avoid queries and incorrect orders, make sure to mention all data indicated on the rating plate when placing your order.

Subject to technical alterations!

D **EG – Konformitätserklärung**
GB **EC – Declaration of conformity**
F **Déclaration de conformité CEE**

Hiermit erklären wir, dass die Bauarten der Baureihe : **TS 40 / 10**
Herewith, we declare that this product: **TS 40 / 14**
Par le présent, nous déclarons que cet agrégat :

in der gelieferten Ausführung folgenden einschlägigen Bestimmungen entspricht:
in its delivered state comply with the following relevant provisions:
est conforme aux dispositions suivants dont il relève:

EG-Maschinenrichtlinie **98/37/EG**
EC-Machinery directive
Directives CEE relatives aux machines

Elektromagnetische Verträglichkeit – Richtlinie **89/336/EWG**
Electromagnetic compatibility – directive i.d.F./ as amended/ avec les amendements suivants:
Compatibilité électromagnétique- directive 91/263/EWG
92/31/EWG
93/68/EWG

Niederspannungsrichtlinie **73/23/EWG**
Low voltage directive i.d.F./ as amended/ avec les amendements suivants :
Direction basse-tension 93/68/EWG

Bauproduktenrichtlinie **89/106/EWG**
Construction product directive i.d.F./ as amended/ avec les amendements suivants :
Directive de produit de construction 93/68/EWG

Angewendete harmonisierte Normen, insbesondere:
Applied harmonized standards, in particular:
Normes harmonisées, notamment:
EN 809
EN 12050-2
EN 12050-4
EN 60034-1
EN 60204-1
EN 60335-2-41
EN 61000-6-3
EN 61000-6-4

Dortmund, 18.04.2006

i. V. 
Erwin Prieß
Quality Manager



WILO AG
Nortkirchenstraße 100
44263 Dortmund

<p>NL EG-verklaring van overeenstemming Hiermede verklaren wij dat dit aggregaat in de geleverde uitvoering voldoet aan de volgende bepalingen: EG-richtlijnen betreffende machines 98/37/EG Elektromagnetische compatibiliteit 89/336/EEG als vervolg op 91/263/EEG, 92/31/EEG, 93/68/EEG EG-laagspanningsrichtlijn 73/23/EEG als vervolg op 93/68/EEG Bouwproductenrichtlijn 89/106/EEG als vervolg op 93/86/EEG Gebruikte geharmoniseerde normen, in het bijzonder: 1)</p>	<p>I Dichiarazione di conformità CE Con la presente si dichiara che i presenti prodotti sono conformi alle seguenti disposizioni e direttive rilevanti: Direttiva macchine 98/37/CE Compatibilità elettromagnetica 89/336/CEE e seguenti modifiche 91/263/CEE, 92/31/CEE, 93/68/CEE Direttiva bassa tensione 73/23/CEE e seguenti modifiche 93/68/CEE Direttiva linee guida costruzione dei prodotti 89/106/CEE e seguenti modifiche 93/68/CEE Norme armonizzate applicate, in particolare: 1)</p>	<p>E Declaración de conformidad CE Por la presente declaramos la conformidad del producto en su estado de suministro con las disposiciones pertinentes siguientes: Directiva sobre máquinas 98/37/CE Directiva sobre compatibilidad electromagnética 89/336/CEE modificada por 91/263/CEE, 92/31/CEE, 93/68/CEE Directiva sobre equipos de baja tensión 73/23/CEE modificada por 93/68/CEE Directiva sobre productos de construcción 89/106/CEE modificada por 93/68/CEE Normas armonizadas adoptadas, especialmente: 1)</p>
<p>P Declaração de Conformidade CE Pela presente, declaramos que esta unidade no seu estado original, está conforme os seguintes requisitos: Directivas CEE relativas a máquinas 98/37/CE Compatibilidade electromagnética 89/336/CEE com os aditamentos seguintes 91/263/CEE, 92/31/CEE, 93/68/CEE Directiva de baixa voltagem 73/23/CEE com os aditamentos seguintes 93/68/CEE Directiva sobre produtos de construção 89/106/CEE com os aditamentos seguintes 93/68/EEG Normas harmonizadas aplicadas, especialmente: 1)</p>	<p>S CE- försäkrän Härmed förklarar vi att denna maskin i levererat utförande motsvarar följande tillämpliga bestämmelser: EG-Maskindirektiv 98/37/EG EG-Elektromagnetisk kompatibilitet – riktlinje 89/336/EEG med följande ändringar 91/263/EEG, 92/31/EEG, 93/68/EEG EG-Lågspänningsdirektiv 73/23/EEG med följande ändringar 93/68/EEG EG-Byggmaterialdirektiv 89/106/EEG med följande ändringar 93/68/EEG Tillämpade harmoniserade normer, i synnerhet: 1)</p>	<p>N EU-Overensstemmelseserklæring Vi erklærer hermed at denne enheten i utførelse som levert er i overensstemmelse med følgende relevante bestemmelser: EG-Maskindirektiv 98/37/EG EG-EMV-Elektromagnetisk kompatibilitet 89/336/EEG med senere tilføyelser: 91/263/EEG, 92/31/EEG, 93/68/EEG EG-Lavspenningsdirektiv 73/23/EEG med senere tilføyelser: 93/68/EEG Byggevaredirektiv 89/106/EEG med senere tilføyelser 93/68/EEG Anvendte harmoniserte standarder, særlig: 1)</p>
<p>FIN CE-standardinmukausselostet Ilmoitamme täten, että tämä laite vastaa seuraavia asiaankuuluvia määräyksiä: EU-konedirektiivit: 98/37/EG Sähkömagneettinen soveltuvuus 89/336/EEG seuraavien täsmennyksin 91/263/EEG, 92/31/EEG, 93/68/EEG Matalajännite direktiivit: 73/23/EEG seuraavien täsmennyksin 93/68/EEG EU materiaalidirektiivi 89/106/EEG seuraavien täsmennyksin 93/68/EEG Käytetyt yhteensovitetut standardit, erityisesti: 1)</p>	<p>DK EF-overensstemmelseserklæring Vi erklærer hermed, at denne enhed ved levering overholder følgende relevante bestemmelser: EU-maskindirektiver 98/37/EG Elektromagnetisk kompatibilitet: 89/336/EEG, følgende 91/263/EEG, 92/31/EEG, 93/68/EEG Lavvolts-direktiv 73/23/EEG følgende 93/68/EEG Produktkonstruktionsdirektiv 98/106/EEG følgende 93/68/EEG Anvendte harmoniserede standarder, særligt: 1)</p>	<p>H EK. Azonosági nyilatkozat Ezennel kijelentjük, hogy az berendezés az alábbiaknak megfelel: EK Irányelvek gépekhez: 98/37/EG Elektromágneses zavarás/tűrés: 89/336/EEG és az azt kiváltó 91/263/EEG, 92/31/EEG, 93/68/EEG Kisfeszültségű berendezések irányelve: 73/23/EEG és az azt kiváltó 93/68/EEG Építési termékek irányelv 98/106/EEG és az azt kiváltó 93/68/EEG Felhasznált harmonizált szabványok, különösen: 1)</p>
<p>CZ Prohlášení o shodě EU Prohlašujeme tímto, že tento agregát v dodaném provedení odpovídá následujícím příslušným ustanovením: Směrnícím EU–strojní zařízení 98/37/EG Směrnícím EU–EMV 89/336/EEG ve sledu 91/263/EEG, 92/31/EEG, 93/68/EEG Směrnícím EU–nízké napětí 73/23/EEG ve sledu 93/68/EEG Směrnícím stavebních produktů 89/106/EEG ve sledu 93/68/EEG Použité harmonizační normy, zejména: 1)</p>	<p>PL Deklaracja Zgodności CE Niniejszym deklarujemy z pełną odpowiedzialnością że dostarczony wyrób jest zgodny z następującymi dokumentami: EC-dyrektywa dla przemysłu maszynowego 98/37/EG Odpowiedniość elektromagnetyczna 89/336/EEG ze zmianą 91/263/EEG, 92/31/EEG, 93/68/EEG Normie niskich napięć 73/23/EEG ze zmianą 93/68/EEG Wyroby budowlane 89/106/EEG ze zmianą 93/68/EEG Wyroby są zgodne ze szczegółowymi normami zharmonizowanymi: 1)</p>	<p>RUS Декларация о соответствии Европейским нормам Настоящим документом заявляем, что данный агрегат в его объеме поставки соответствует следующим нормативным документам: Директивы ЕС в отношении машин 98/37/EG Электромагнитная устойчивость 89/336/EEG с поправками 91/263/EEG, 92/31/EEG, 93/68/EEG Директивы по низковольтному напряжению 73/23/EEG с поправками 93/68/EEG Директива о строительных изделиях 89/106/EEG с поправками 93/68/EEG Используемые согласованные стандарты и нормы, в частности : 1)</p>
<p>GR Δήλωση προσαρμογής της Ε.Ε. Δηλώνουμε ότι το προϊόν αυτό σ' αυτή την κατάσταση παράδοσης ικανοποιεί τις ακόλουθες διατάξεις : Οδηγίες EG για μηχανήματα 98/37/EG Ηλεκτρομαγνητική συμβατότητα EG-89/336/EEG όπως τροποποιήθηκε 91/263/EEG, 92/31/EEG, 93/68/EEG Οδηγία χαμηλής τάσης EG-73/23/EEG όπως τροποποιήθηκε 93/68/EEG Οδηγία κατασκευής 89/106/EEG όπως τροποποιήθηκε 93/68/EEG Εναρμονισμένα χρησιμοποιούμενα πρότυπα, ιδιαίτερα: 1)</p>	<p>TR CE Uygunluk Teyid Belgesi Bu cihazın teslim edildiği şekliyle aşağıdaki standartlara uygun olduğunu teyid ederiz: AB-Makina Standartları 98/37/EG Elektromanyetik Uyumluluk 89/336/EEG ve takip eden, 91/263/EEG, 92/31/EEG, 93/68/EEG Alçak gerilim direktifi 73/23/EEG ve takip eden, 93/68/EEG Ürün imalat direktifi 89/106/EEG ve takip eden, 93/68/EEG Kismen kullanılan standartlar: 1)</p>	<p>1) EN 809, EN 12050-2, EN 12050-4, EN 60034-1, EN 60204-1 EN 60335-2-41, EN 61000-6-3, EN 61000-6-4.</p>

i. v. Erwin Pfeiß
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