



Wilo-MVIL

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|------------|---|------------|---|
| D | Einbau- und Betriebsanleitung | H | Beépítési és üzemeltetési utasítás |
| GB | Installation and operating instructions | PL | Instrukcja montażu i obsługi |
| F | Notice de montage et de mise en service | CZ | Návod k montáži a obsluze |
| NL | Inbouw- en bedieningsvoorschriften | RUS | Инструкция по монтажу и эксплуатации |
| E | Instrucciones de instalación y funcionamiento | EST | Paigaldus- ja kasutusjuhend |
| I | Istruzioni di montaggio, uso e manutenzione | LV | Instalēšanas un ekspluatācijas instrukcijas |
| P | Manual de instalação e funcionamento | LT | Montavimo ir naudojimo instrukcija |
| TR | Montaj ve Kullanma Kılavuzu | SK | Návod na montáž a obsluhu |
| GR | Οδηγίες εγκατάστασης και λειτουργίας | SLO | Navodila za vgradnjo in vzdrževanje |
| S | Monterings- och skötselinstruktioner | RO | Instrukcja montażu i obsługi |
| FIN | Huolto- ja käyttöohje | BG | Инструкция за монтаж и експлоатация |
| DK | Monterings- og driftsvejledning | | |

Fig. 1

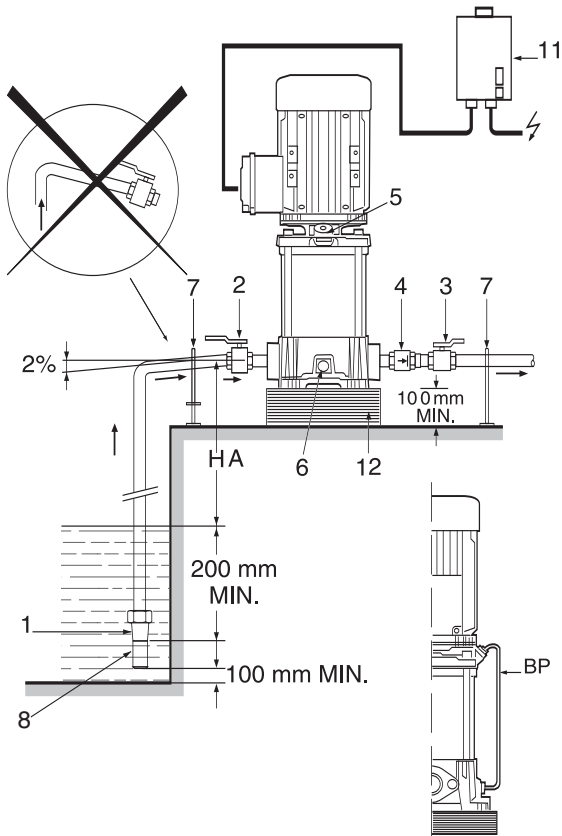


Fig. 2

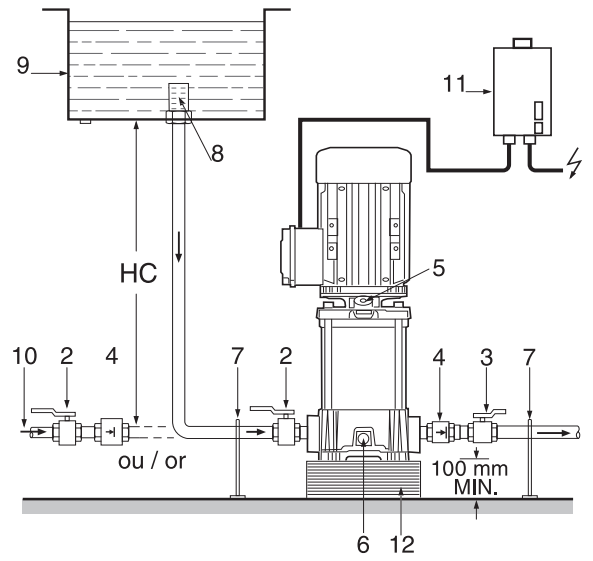


Fig. 3

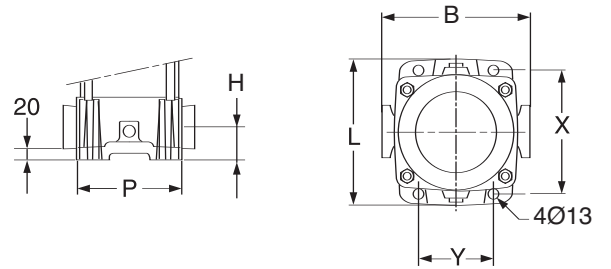
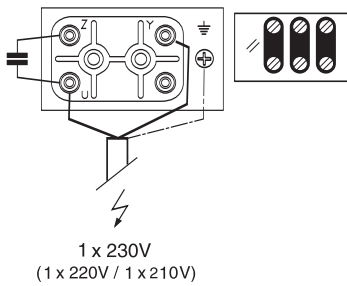


Fig. 4

MOT. 230V (220V - 210V)



MOT. 230 / 400V (220/380V - 240/415V)

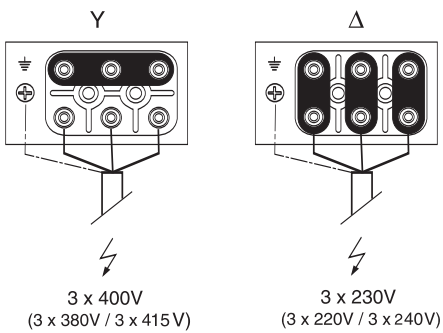
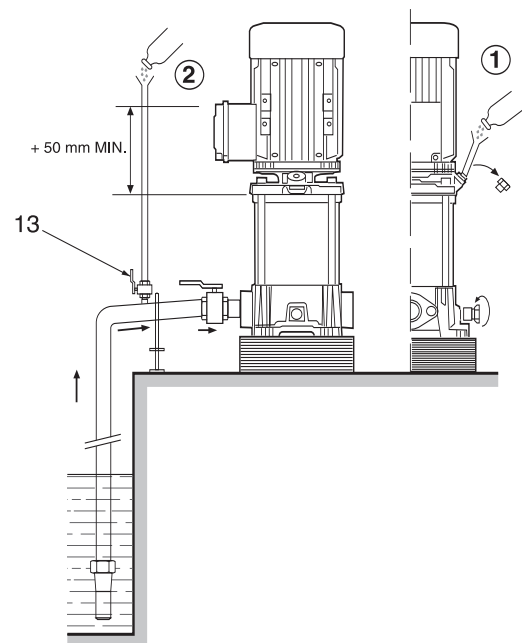


Fig. 5



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1. General

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.

1.1 Applications

Pumps aimed at clear liquids in building, agriculture and industry areas ... (water supply – water tower – sprinkling, irrigation, high pressure washing, fire protection, – Lifting of condensates – air conditioning – Industrial circuits and integration in all modular systems.).

- boiler supply (with mandatory by-pass kit).

1.2 Technical characteristics

- Maximum operating pressure (Depending on types):

102 – 105	Mechanical seal 10 bars Pump casing 16 bars Maximum suction pressure: 6 bars
302 – 304	
502 – 504	
802 – 804	
106 – 112	Mechanical seal 16 bars Pump casing 16 bars Maximum suction pressure: 10 bars
305 – 312	
505 – 512	
805 – 807	

- Temperature range: (EPDM O-ring and mechanical seal) – 15° to + 90°C
- Ambient temperature (standard): + 40°C maxi
- Maximum suction head: according to NPSH of the pump

Sound level: Depends on pump size, rotation speed, working point, motor type: it can exceed 70 dB(A) in 50 Hz and 75 dB(A) in 60 Hz.

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

When receiving the material, check that there has been no damage during the transport. If any defect has been stated, take the required steps with the carrier within the allowed time. If the delivered material is to be installed later on, store it in a dry place and protect it from impacts and any outside influences (humidity, frost etc...).



DANGER ! Due to high position of centre of gravity and small ground surface of this type of pumps, beware of instability during handling to avoid any falling down and take necessary means to avoid injuries or damaging.



CAUTION ! Handle the pump carefully so as not to alter the geometry and the alignment of the hydraulic unit.

4. Products and accessories

4.1 Description (fig. 1, 2, 5):

- 1 – Strainer-foot valve
- 2 – Pump suction valve
- 3 – Pump discharge valve
- 4 – Non-return valve
- 5 – Venting and filling plug
- 6 – Drain-priming plug
- 7 – Pipe supports
- 8 – Strainer
- 9 – Storage tank
- 10 – Town water supply
- 11 – Motor overload release
- 12 – Foundation block
- 13 – Cock
- HA – Maximum suction head
- HC – Minimum inlet pressure

4.2 The pump

Vertical multistage pump (2 to 12 stages) not self-priming, with ports in line on the same axis at the bottom part.
Shaft tightness with standard mechanical seal.
Oval Flanges for PN 16 pump casing: pump delivered with oval counterflanges in cast iron for screw-on tube, gaskets and bolts.

4.3 The motor

- Dry motor – 2 poles.
- Protection index: IP 54
- Insulation class: F
- Single phase motor:
 - With integrated thermal protection, automatic reset.
 - Capacitor integrated inside the terminal box.

FREQUENCY	50Hz	60Hz
Speed RPM	2900	3500
Winding* TRI ≤4	230/400 V	220/380V to 254/440V

* Standard voltage motors: on network (50Hz) ± 10%
– (60Hz) ± 6%

Maximum number of starts per hour

Motor Power (kW)	0,37	0,55	0,75	1,1	1,5	1,85	2,2	2,5
Direct	100	90	75	60	50	45	40	40

4.4 Accessories (as option)

- By-pass kit
- isolating valves
- bladder or galvanised tank
- tank for antihammer blow effect
- control box
- PN 25 weld-on counter-flange (steel) or tapped (stainless steel)
- tapped oval counter-flange PN 16 in stainless steel
- motor overload release
- non-return valves
- strainer-foot valve
- vibrationless sleeves
- dry-running protection kit
- flexible collar type Victaulic style 77
- threaded muff joint (stainless steel)...

5. INSTALLATION

Two standard cases:

- fig. 1: pump in suction
- fig. 2: pump under pressure on storage tank (9) or town water supply (10) with dry-running protection system.

5.1 Montage

Install the pump in a place easy to reach, protected against frost and as close as possible from the drawing point.

Install the pump on a concrete block (at least 10 cm high) (fig. 12) and fix with anchor bolts (installation plan fig. 3).

Foresee an isolating material under the concrete block (cork or reinforced rubber) to avoid any noise and vibration transmission into the installation.

Before final tightening of anchor bolts, ensure that the pump axis is vertical: use shims if necessary.



Bear in mind that the altitude of the installation place and water temperature may reduce the suction head of the pump.

Altitude	Loss of head	Temperature	Loss of head
0 m	0 mCL	20 °C	0,20 mCL
500 m	0,60 mCL	30 °C	0,40 mCL
1000 m	1,15 mCL	40 °C	0,70 mCL
1500 m	1,70 mCL	50 °C	1,20 mCL
2000 m	2,20 mCL	60 °C	1,90 mCL
2500 m	2,65 mCL	70 °C	3,10 mCL
3000 m	3,20 mCL	80 °C	4,70 mCL
		90 °C	7,10 mCL
		100 °C	10,30 mCL



CAUTION !

When the conveyed fluid is above 80 °C, plan to install the pump under pressure.

5.2 Hydraulic connections

By threaded tubes to screw directly on the oval tapped counterflanges delivered with the pump. The diameter of the pipe must never be smaller than the one of the counterflange.

Limit the length of the suction pipe and avoid all features that cause losses of head (bends, valves, tapers...).



CAUTION ! Connections has to correctly sealed: No air entrance is allowed on the suction pipe which is showing a mounting declivity (2 %) (fig. 1).

- Use supports or collars so that the pump does not bear the weight of the pipes.
- The circulation sense of the fluid is indicated on the identification label of the pump.
- Connect the non-return valve to the pump discharge to protect it from hammer blow effects.



To pump water with a large content of air or hot water, we recommend installing the by-pass kit (fig. 1).

5.3 Electrical connections



The electrical connections and the inspections have to be done by a qualified electrician and comply with the applicable local standards.

- The electrical characteristics (frequency, voltage, nominal current) of the motor are mentioned on the name plate).
- check if the motor it complies with the mains supply used.
- The motors must be protected by a circuit-breaker set to the current mentioned on the name plate of the motor.
- Provide a fuse disconnecting switch (type aM) to protect the mains supply.

Supply network

- Use an electrical cable conforming with the National Electric Supply Company.
- **Three-phase:** 4 conductors (3 phases + earth). If necessary, cut an opening in the terminal box, fit the cable gland stuffing box and connect the motor as shown by the diagram inside the cover of the terminal box (fig. 4).



DO NOT FORGET TO CONNECT TO EARTH.



CAUTION ! A connection error would damage the motor. The power cable must never touch the pipe or the pump; make sure that it is sheltered from any humidity.

The electric motors used on the pumps can be connected to a frequency converter. Strictly follow the instructions given by the data sheet of the converter's manufacturer.

The converter must not generate voltage peaks at the motor terminals higher than 850 V and dU/dt (Voltage/Time variation) higher than 2500 V/ μ s. If the value of the voltage signal are higher than those, risk of damage the motor are to forecast.

In the contrary provide a LC filter (inductance – capacitor) between the converter and the motor. It must be connected to the motor with a minimum length cable, armoured if necessary.

6. Starting up

6.1 Prior cleaning



An hydraulic test is carried out for each pump in our factory. If some water stays inside them. It is recommended for hygien reasons to clean the pump before using it with potable water supply.

6.2 Filling - degassing



CAUTION ! Never operate the pump dry, even briefly.

Pump under pressure (fig. 2)

- Close the discharge valve (3),
 - Open the venting plug (5), and the suction valve (2) and completely fill the pump.
- Close the venting plug only after water flows out and complete air exit.



WARNING ! In hot water, a stream of water may escape from the venting port. Take all required precautions as regards persons and motor.

Pump in suction

Two possible cases:

1st CASE (fig. 5-1):

- Close the discharge valve (3), open the suction valve (2).
- Remove the venting plug (5).
- Unscrew the bottom drain-priming plug (6) located on the pump casing 4 to 5 turns.
- Put a funnel into the venting plug port and completely fill the pump and the suction pipe.
- After water flows out and total air exit, filling is complete.
- Screw the venting plug and the bottom drain-priming plug back in.

2nd CASE (fig. 5-2):

Filling can be made easier by fitting on the suction pipe of the pump, a vertical pipe fitted with a $\varnothing 1/2$ " stopcock and a funnel.



The length of the pipe must be at least 50 mm taller than the venting level.

- Close the discharge valve (3), open the suction valve (2).
- Open the stopcock and the venting plug.
- Unscrew 4 to 5 turns the drain-priming plug (6).
- Fill the pump and the suction pipe completely until water flows out of the venting plug (5).
- Close the stopcock (which can be left in place), remove the pipe and close the bleed device (5) and screw again the drain-priming plug (6).

Dry-running protection

To ensure that the pump is always primed, we recommend to protect it with a pressure switch or a float switch.

6.3 Check the motor sense of rotation

- With an open-end screwdriver placed in the slot of the shaft on fan side, make sure that the pump turns freely without sticking.

Three-phase motor

- Switch on the motor by short pressing on the motor-overload release and check that it turns in the direction indicated by the arrow located on the identification label of the pump.
- In the opposite case and if the motor had three phase, cross two phase wires on motor terminal block or on the switch.

Single-phase motor

The single-phase motors and motors variators are designed for operating in the correct sense of rotation.

The sense of rotation is adjusted when assembling the product and is independent from the network connection.

6.4 Starting

WARNING ! Depending on conveyed fluid and running of pump, surface temperature can exceed 68°C. Take necessary means to avoid injuries.



CAUTION ! The pump must not operate at zero flow (closed discharge valve) for more than 10 minutes with cold water ($T^{\circ}C < 40^{\circ}C$) and more than 5 minutes above $60^{\circ}C$.



We recommend to ensure a minimum flow of about 10 % of the nominal flow of the pump to avoid the formation of a vapour lock at the top of the pump.

- Keep the discharge valve closed.
- Start the pump.
- Open draining plug to drain air. If no water leaks within 20', close the plug and stop the pump, then wait 20' to allow air to settle.
- Start again the pump.
- If necessary (particularly if the suction height exceeds 5 m) repeat these operations.
- If water leaks at draining plug (it means the pump delivers its pressure), slowly open the discharge valve. The pump has to be primed.
- Check pressure stability at discharge with a manometer, if instability, perfect air draining.
- In case of failure, do the filling in again and start the operation again.
- To perfect air draining, close the discharge valve and the draining plug, then stop the pump 20', start the pump again and open the draining plug. Do it as long as air comes out.
- Open the discharge valve in order to have the wished working point.
- Check that the current input does not exceed the value indicated on the motor data plate.

7. Maintenance

DANGER ! Before any operation, switch off the pump(s).

No special maintenance in operation.

Keep the pump and the motor perfectly clean.

In case of prolonged stopping, if there is no risk of frost, it is best not to drain the pump.

The bearing holding the coupling is lubricated for its total lifetime and does not require any lubrication.

Motors

The bearings are lubricated for their lifetime and do not require any lubrication.

Mechanical seals

The mechanical seal does not require any maintenance in operation.

It must never operate dry.

Replacement frequencies

The replacement frequency of the mechanical seal depends on the operating conditions of the pump:

- Temperature and pressure of the conveyed fluid for the mechanical seal.
- Starting frequency: continuous or intermittent running.

The replacement frequency of the other components depends on the operating conditions of the pump like load and ambient temperature.

8. Problems, causes and remedies

Faults	Causes	Remedies
The pump turns but not delivery	The internal parts are obstructed by particles	Dismantle the pump and clean it
	Suction pipe obstructed	Clean all the pipes
	Air in suction pipes	Check tightness of the whole pipe up to the pump and make it tight
	Pump is no more primed	Fill the pump to prime again Check foot valve is tight
	Suction pressure is too low, it causes cavitation noise	Too high loss of head on suction or suction head (check the NPSH of the pump installed and of the installation)
	The supply voltage of the motor is too low	Check the voltage on the terminals of the motor and the cross-section of the conductors
The pump vibrate	Loose on its foundation	Check and tighten completely the nuts of the stud bolts
	Particles obstructing the pump	Dismantle the pump and clean it
	Difficult rotation of the pump	Check the pump turns freely without abnormal sticking
	Bad electrical connection	Check the connections to the pump motor
The motor overheats	Voltage too low	Check voltage on terminals of the motor, it should be within $\pm 10\%$ in 50 Hz or $\pm 6\%$ in 60 Hz of the rated voltage
	Pump obstructed by particles	Dismantle the pump and clean it
	Ambient temperature above $+ 40^{\circ}\text{C}$	The motor is aimed at operating at a maximum ambient temperature of $+ 40^{\circ}\text{C}$
	Coupling failure in the terminal box	Be in conformity with the motor plate and see figure 4
The pump delivers insufficient pressure	The motor fails to run at its normal speed (particles...)	Dismantle the pump and solve the defect
	The motor is defective	Replace the motor
	Bad filling of the pump	Open the bleeding device and drain until there are no more air bubbles
	The motor turns in the wrong way (three-phase motor)	Reverse the sense of rotation by interchanging the two phase wires on the motor terminal box
	The drain-priming plug is not correctly tightened	Check it and screw it again
	The supply voltage of the motor is too low	Check the voltage on the terminals of the motor and the cross-section of the conductors
The circuit-breaker device is on	The setting of the thermal relay is not adequate (too low)	Check the current with an ammeter or set the value of the current rating on the motor data plate
	The voltage is too low	Check the adequate cross-section of the conductors of the electrical cable
	A phase is cut	Check it and change the electrical cable if necessary
	The thermal relay of the circuit-breaker is defective	Replace it
	A fuse is off	Replace it
The flow is irregular	The suction head (H_a) is not adequate	Study again the installation conditions and the recommendations described in this instruction
	The suction pipe has a lower diameter than the one of the pump	The suction pipe must have the same diameter as the suction pump port
	The strainer and the suction pipe are partially obstructed	Remove and clean

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

9. 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 : **MVIL 100**
Herewith, we declare that this product: **MVIL 300**
Par le présent, nous déclarons que cet agrégat : **MVIL 500**
MVIL 900

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

Angewendete harmonisierte Normen, insbesondere: **EN 809**
Applied harmonized standards, in particular: **EN 60034-1**
Normes harmonisées, notamment:

Dortmund, 25.05.2005

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</p> <p>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</p> <p>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</p> <p>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</p> <p>Normas harmonizadas aplicadas, especialmente: 1)</p>	<p>S CE- försäkran 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</p> <p>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</p> <p>Anvendte harmoniserte standarder, særlig: 1)</p>
<p>FIN CE-standardinmukaisuuslause Ilmoitamme täten, että tämä laite vastaa seuraavia asiaankuuluvia määräyksiä: EU-konedirektiivit: 98/37/EG Sähkömagneettinen soveltuvuus 89/336/EEG seuraavin täsmennyksin 91/263/EEG 92/31/EEG, 93/68/EEG Matalajännite direktiivit: 73/23/EEG seuraavin täsmennyksin 93/68/EEG</p> <p>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</p> <p>Anvendte harmoniserede standarder, særligt: 1)</p>	<p>H EK. Azonossági 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 irány-Elve: 73/23/EEG és az azt kiváltó 93/68/EEG</p> <p>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</p> <p>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</p> <p>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</p> <p>Используемые согласованные стандарты и нормы, в частности: 1)</p>
<p>GR Δήλωση προσαρ ογής της Ε.Ε. Δηλώνου ε ότι το προϊόν αυτό σ' αυτή την κατάσταση παράδοσης ικανοποιεί τις ακόλουθες διατάξεις: Οδηγίες EG για ηχανή στα 98/37/EG Ηλεκτρο αγνητική ου βατότητα EG-89/336/EEG όπως τροποποιήθηκε 91/263/EEG 92/31/EEG, 93/68/EEG Οδηγία χα ηλής τάσης EG-73/23/EEG όπως τροποποιήθηκε 93/68/EEG</p> <p>Εναρ ονισ ένα χρρησι οποιού ένα πρότυπα, ιδιαίτερα: 1)</p>	<p>TR CE Uygunluk Teyid Belgesi Bu cihazın teslim edildiği °ekliyle a°ajıdaki 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</p> <p>Kismen kullanılan standartlar: 1)</p>	<p>1) EN 809, EN 60034-1</p>

i. V. Erwin Prieß
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