



COR 2-3MHI(E)***/SCE

EN Installation and operating instructions

29992313	COR 2MHI202/SCe_EM	29992329	COR 3MHI202/SCe_EM	29992370	COR 2MHI202/SCe_EM_T260AB
29992314	COR 2MHI203/SCe_EM	29992330	COR 3MHI203/SCe_EM	29992371	COR 2MHI203/SCe_EM_T260AB
29992315	COR 2MHI204/SCe_EM	29992331	COR 3MHI204/SCe_EM	29992372	COR 2MHI204/SCe_EM_T260AB
29992316	COR 2MHI205/SCe_EM	29992332	COR 3MHI205/SCe_EM	29992373	COR 2MHI205/SCe_EM_T260AB
29992317	COR 2MHI206/SCe_EM	29992333	COR 3MHI206/SCe_EM	29992374	COR 2MHI206/SCe_EM_T260AB
29992318	COR 2MHI402/SCe_EM	29992334	COR 3MHI402/SCe_EM	29992375	COR 2MHI402/SCe_EM_T260AB
29992319	COR 2MHI403/SCe_EM	29992335	COR 3MHI403/SCe_EM	29992376	COR 2MHI403/SCe_EM_T260AB
29992320	COR 2MHI404/SCe_EM	29992336	COR 3MHI404/SCe_EM	29992377	COR 2MHI404/SCe_EM_T260AB
29992321	COR 2MHI405/SCe_EM	29992337	COR 3MHI405/SCe_EM	29992378	COR 2MHI405/SCe_EM_T260AB
29992322	COR 2MHI406/SCe_EM	29992338	COR 3MHI406/SCe_EM	29992379	COR 2MHI406/SCe_EM_T260AB
29992323	COR 2MHI802/SCe_EM	29992339	COR 3MHI802/SCe_EM		
29992324	COR 2MHI803/SCe_EM	29992340	COR 3MHI803/SCe_EM		
29992325	COR 2MHI804/SCe_EM	29992341	COR 3MHI804/SCe_EM		
29992326	COR 2MHI1602/SCe_EM	29992342	COR 3MHI1602/SCe_EM		
29992327	COR 2MHI1603/SCe-EM	29992353	COR 3MHI1603/SCe-EM		
29992328	COR 2MHI1604/SCe-EM	29992354	COR 3MHI1604/SCe-EM		
29992343	COR 2MHIE 205/SCe_DM	29992348	COR 3MHIE 205/SCe_DM		
29992344	COR 2MHIE 403/SCe_DM	29992349	COR 3MHIE 406/SCe_DM		
29992345	COR 2MHIE803/SCe_DM	29992350	COR 3MHIE403/SCe_DM		
29992346	COR 2MHIE 1602/SCe_DM	29992351	COR 3MHIE 1602/SCe_DM		
29992347	COR 2MHIE406/SCe_DM	29992352	COR 3MHIE803/SCe_DM		

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1 General

The SCe booster set is a 2–3 pump pressure boosting system designed for maintaining water pressure in domestic, commercial and industrial applications using frequency converter driven, variable speed pumps.

 **ATTENTION! Installation and commissioning by qualified personnel only!**


2 Safety


Any works carried out on the SCe booster sets must be completed by a qualified person. Failure to comply to any of the information in this manual may cause potential hazards to people and the environment and may void the warranty.


Operators must be fully aware of all functions of the booster set and any risks associated. For more information on training please contact Wilo Ph: 01283 523 000


WARNING! Local regulations must be complied to when installing and maintaining the booster set

2.1 Symbols and Signals

 **DANGER! Extremely dangerous situation. The non-observance could cause death or serious injuries.**

 **WARNING! The user may suffer from injuries (serious). The mention of warning involves that personal (serious) injuries may happen when precautions are not observed.**

 **ATTENTION! Damage could be caused to the pump or installation. The mention of attention is used to indicate that by ignoring the relevant safety instructions, damage could be caused to the pump or its operation.**

 NOTE – Useful remark for product handling. Any possible difficulty is mentioned.

2.2 Modification and Spare Parts

Modifications to the booster are prohibited and will invalidate the warranty. Wilo approved spares must be used at all times. For information on

spares see section 10 Spares of this manual or contact spareparts.uk@wilo.com or Ph: 01283 523 000

3 Transport and Storage

SCe booster must always be transported by pallet and moved with appropriate lifting equipment. Booster must be stored in a dry environment between –25 °C to +55 °C.

NOTE – If stored for future installation film wrapping must not be removed and must be stored in a dry environment



4 Description and Operation

4.1 SCe Controller General (single and three phase)

The Smart Control (SCe) controller is used to maintain the pressure in a system. Using a programmable set point and a 4–20mA pressure transducer on the discharge manifold. When demand is required, and the pressure drops below the set point, the pumps will be ramped up one at a time until the set pressure is reached. Once the set pressure has been reached the pumps maintain the speed until demand is no longer required and they ramp down

4.1.2 Operating Features

- Multiple pressure set points – Triggered by 24V digital input or a variable set point with a 0–10V analogue input
- Pump Cycling – Balances the load on the pumps
- Low water cut out switch – 0–250mBar switch turns the booster off after a set time once the head pressure drops below the pressure set on the switch
- Volt Free Contacts (VFC) – Normally open and closed contacts for fault and run signals

ATTENTION! Low water switch is factory set and must be set to the requirements of the system during commissioning. Failure to do so could lead to ingress of air which could damage the system



NOTE – For the full list of features and settings refer to the SCe user manual



4.2 MHIE***/SCe-DM (Three Phase Variable Speed)

SCe-DM is a variable speed three phase booster set which is controlled with the SCe controller via motor mounted drives and pressure transducer. Once the pressure is set on the controller the speed of the pump will ramp up and down according to the demand of the system (see panel manual for the setting of the system pressure). A suction manifold mounted low water cut out switch protects the booster against dry running



ATTENTION! – Pumps are factory set and do not need any settings changing for the set to function. Any changes could affect the performance or damage the booster

4.3 MHI***/SCe-EM (Single Phase Variable Speed)

SCe-EM is a variable speed single phase booster which is controlled with the SCe controller via panel mounted frequency converters and pressure transducer. Once the pressure is set on the controller the speed of the pump will ramp up and down according to the demand of the system (see panel manual for the setting of the system pressure). A suction manifold mounted low water cut out switch protects the booster against dry running

T260 version comes with an integrated tank, float switch and stand by pump. Under low water conditions, the booster is set for a maximum of 15 seconds continuous flow at full speed.



ATTENTION! – Frequency converters are factory set and do not need any settings changing for the set to function. Any changes could affect the performance or damage the booster

5 Installation and operation

5.1 Foundation

The pressure–boosting system is designed for installation on a flat concrete floor. The base frame is mounted on height–adjustable vibration absorbers as means of insulation against structure–borne noise.

5.2 Hydraulic Connections

The SCe booster set is connected to the mains water supply via a storage tank. An isolation valves must be installed between the tank / discharge manifold and the booster(as standard onm T260). The customer's pipes must be installed without tension. Compensators with extension limiters or flexible connection pipes are recommended for this purpose in order to avoid stress at the pipe connections and minimise the transmission of system vibrations to the building installation.. All SCe booster sets must be fitted with the supplied 8 litre diaphragm pressure vessel and the pressure must be set to the system. Once the tank is filled the pumps must be properly vented before use (Fig 1).

ATTENTION! Connections must be made according to local water authority regulations



WARNING! Failure to vent the pumps correctly can cause damage to the pumps (Fig 1)



5.3 Hygiene

The supplied pressure–boosting system meets the standards of current technology has been checked at the factory to make sure it functions correctly. Please remember that when used in drinking water applications, the complete drinking water supply has to be handed over to the operator in a perfect state of hygiene. Flushing and disinfecting is essential

DANGER! Contaminated drinking water is a health hazard! Flushing and disinfecting the pipes and system reduces the risk of impairing the quality of the drinking water. For information contact service.uk@wilo.com or Ph: 01283 523 0000



5.4 Electrical Connections (Fig2–3)

Please use the correct wiring diagram provided with the booster for connection of mains voltage. Pay close attention to the terminals used and that the correct voltage is applied. Failure to do so may cause damage to pump or drives and will void the warranty.

NOTE – Isolator terminal cables size Min 1.5mm²
Max 35.0mm²



DANGER! The electrical connections and testing must be carried out by a licensed electrician and in accordance with locally applicable standard specifications.



5.5 Low Water Protection

Low water cut out switches are fitted to the suction manifold and have a range of 0-250 mBar (not on T260 models). This must be set on commissioning. (Fig 4)

1. Rotate Notched wheel clockwise until tight to obtain minimum differential.
2. Set Switch to required operating point.
3. Rotate notched wheel anti-clockwise until required until required differential is obtained $\frac{1}{4}$ turn of the notched wheel will give a change in differential of approximately 10% of the range of the switch.
4. During differential adjustment, the operating point may vary slightly but can be reset by use of the adjusting nut.

When the low water switch triggers there will be a programmable delay (factory set 15s) before the booster switches off. See menu 1.2.5.4

For T260 versions a float switch is installed in the tank and factory set. This must be checked for correct operation during commissioning



WARNING! Failure to set the low water cut out switch correctly can cause air to enter the system and damage the pumps

5.6 Operation

SCe booster is designed for ease of use. All drives (motor and panel mounted) are factory set and do not require any additional programming. All control panel settings are set for factory performance and may need altering during commission to specific installation conditions. This should be done in conjunction with the Wilo-control- SC-booster operator manual

The following settings must be set to site conditions. Failure to do so could result in dangerous conditions

- oSystem pressure set point 1.2.1.1
- oDry Run protection delay 1.2.5.4
- oPipe fill timer 5.8.3.0 (factory set at 300 seconds)
- oPipe fill speed 5.8.4.0 (factory set at 60%)
- oTurn pumps on 3.1.0.0

WARNING! Changes made to the drives may hamper performance or cause damage to the pumps

6 Commissioning & Maintenance

6.1 Commissioning

We recommend that the equipment is commissioned by qualified personnel only. Please contact Wilo UK service for commissioning request service.uk@wilo.com

Prior to placing the equipment into service the unit must be installed with a correctly sized electrical capability and meets the local requirements for electrical installation. We recommend the unit is installed on a permanent power supply.

The hydraulic system the cold water booster set feeds must be complete with no open ends and is suitably sized for the demand of the system.

Ensure all inlet valves are open and that the cold water storage tank(s) are full of water. Vent all air from the pumps via the vent plugs located on the pumps. Enter system parameters and place unit into operation.

Check operation of booster set meets the system requirements.

DANGER! Risk of fatal injury! Tighten all connection terminals prior to commissioning!



6.2 Maintenance

To guarantee maximum reliability in operation at the lowest possible operating cost, we recommend that the cold water booster set is subject to an annual maintenance schedule. It is advisable to enter into a maintenance agreement with a specialist company or with Wilo UK service department. Checks should be made on the condition of the expansion vessel(s) and operating condition of the pumps and valves. Checks should be made on the operating parameters to ensure that the unit is providing pressure that meets the system requirements.

ATTENTION! Any maintenance must be completed by a trained and competent person. Any damage to the booster could void warranty if this is not adhered to



7 Warranty

WILO reserve the right to inspect an installation to verify that the equipment has been installed in accordance with the written instructions. The full warranty document is downloadable at www.wilo.co.uk click on local information then downloads. Before requesting a site visit, the following information must be available to the service team:

- Article number of the equipment
- A purchase order to cover the work in the event that no manufacturing defect is found.
- A site contact name and number
- A FULL description of the alleged fault

8 Decommissioning and Disposal

If the pressure–boosting system has to be taken out of service for maintenance, repairs or other measures, proceed as follows:

- Switch off the voltage supply and secure against unauthorised reactivation.
- Close the shut–off valve upstream and downstream of the system.
- Shut off the diaphragm pressure vessel at the throughflow fitting and drain it.
- Drain the system completely if necessary.

All parts must be disposed of in accordance to the Waste Electrical and Electronic Equipment Directive (WEEE). Please call 0333 3001433 to arrange collection and disposal. All costs are covered by Wilo UK

9) Tables

Table 1 SCe Panel Fault Codes (EM & DM)

Code	Fault description	Causes	Remedies
E040	Output pressure sensor faulty	Pressure sensor defective	Replace sensor
	Supply pressure sensor faulty	No electrical connection to the sensor	Repair the electrical connection
E054	Connection partner lost	Fault in the CAN connection between the switchgear and pumps	Check cable connection Check activation of the terminating resistors
E060	Maximum pressure exceeded	The output pressure of the system has risen above the value set in the controller	Check controller function (Menu 5.4.1.0) Check installation
E060	Maximum pressure exceeded	The output pressure of the system has risen above the value set in the controller	Check controller function (Menu 5.4.1.0) Check installation
E061	Pressure below minimum value	The output pressure of the system has dropped below the value set in menu 5.4.2.0 (e.g. due to a pipe burst)	Check the default value corresponds to local conditions. Check pipe and repair if necessary
E062	Low water	Protection against low water level triggered	Check inlet/break tank; pumps restart automatically

Table 2 SCe-DM Drive Fault Codes

Code	Response Time	Restart	Faults	Remedies
E001	60s	Immediately	Pump is in overload condition, defective	Density and/or viscosity of the conveyed liquid is too high
			Pump is obstructed by particles	Dismantle the pump and replace or clean the defective components
E004 (E032)	5s	300s	Converter supply experiences undervoltage	Check the converter terminals: • Fault if network < 330V
E006	5s	300s	A supply phase is missing	Check the supply
E007	Immediately	Immediately	The converter runs like a generator. Warning signal, pump is not stopped	Pump veers, check tightness of the non-return valve
E010	5s	Immediately	Pump is locked	Dismantle the pump, clean it and replace defective parts. It may be a mechanical failure of the motor (bearings)
E011	60s	Immediately	Pump is no longer primed or is running dry	Prime the pump by filling it. Check the tightness of the foot valve
E020	5s	Immediately	Motor overheats	Clean the cooling ribs of the motor
			Ambient temperature exceeds more than +50 °C	The motor is not designed for operation at an ambient temperature of +50 °C
E023	Immediately	Immediately	Motor has short circuit	Dismantle the frequency converter of the pump, check and replace it, if required
E025	Immediately	Immediately	Missing phase at the motor	Check the connection between motor and converter
E026	5s	Immediately	The thermal sensor of the motor is defective or is not correctly connected	Dismantle the frequency converter of the pump, check and replace it, if required
E030 E031	5s	Immediately	Converter overheats	Clean the cooling ribs at the rear and under the converter as well as the fan cover
			Ambient temperature exceeds than +50 °C	The converter is not design to operate at an ambient temperature of +50 °C
E042	5s	Immediately	The sensor cable (4 – 20 mA) is interrupted	Check the correct supply and the cable connection of the sensor
E050	300s	Immediately	BMS communication time-out	Check the connection
E070	Immediately	Immediately	Internal communication error	Contact after-sales technician
E071	Immediately	Immediately	EEPROM error	Contact after-sales technician
E072	Immediately	Immediately	Problem inside converter	Contact after-sales technician
E075	Immediately	Immediately	Inrush-current relay defective	Contact after-sales technician
E076	Immediately	Immediately	Current sensor defective	Contact after-sales technician
E099	Immediately	Immediately	Unknown pump type	Contact after-sales technician

Figure 1 Pump Vents

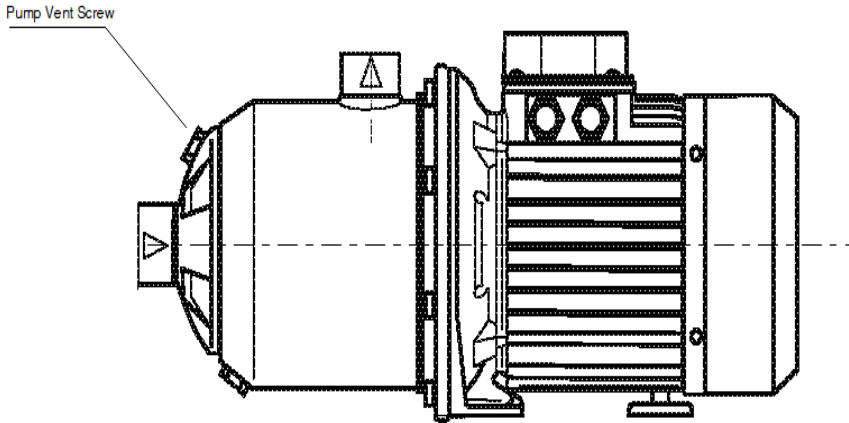
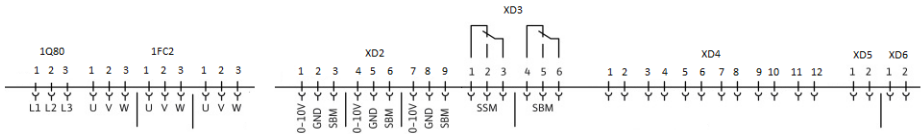
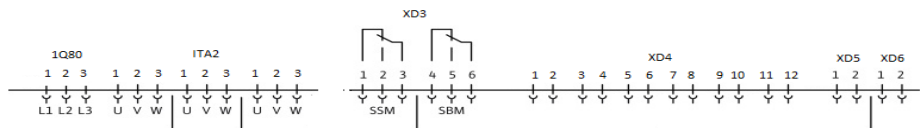


Figure 2 DM Electrical Connections*



* For detailed wiring diagrams see the electrical drawings refer to the drawings in the customer pack

Figure 3 EM Electrical Connections*



* For detailed wiring diagrams see the electrical drawings refer to the drawings in the customer pack

Figure 4 Low Water Cut Out Switch Setting

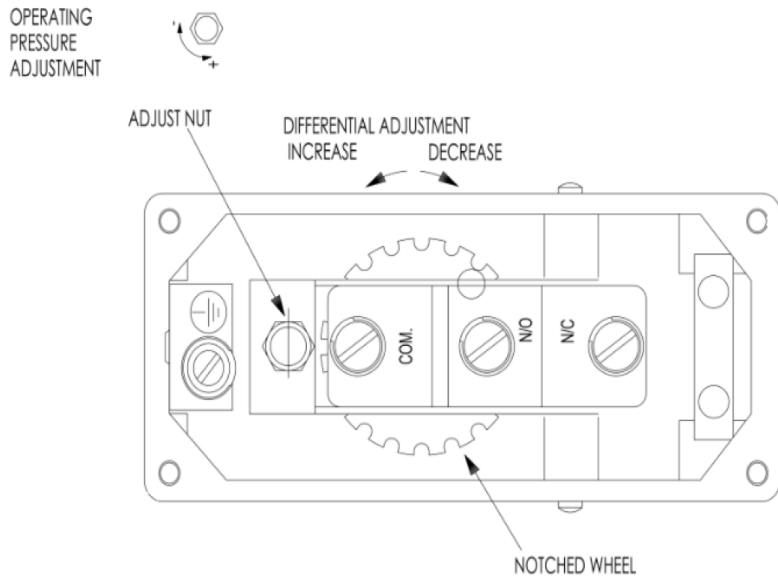
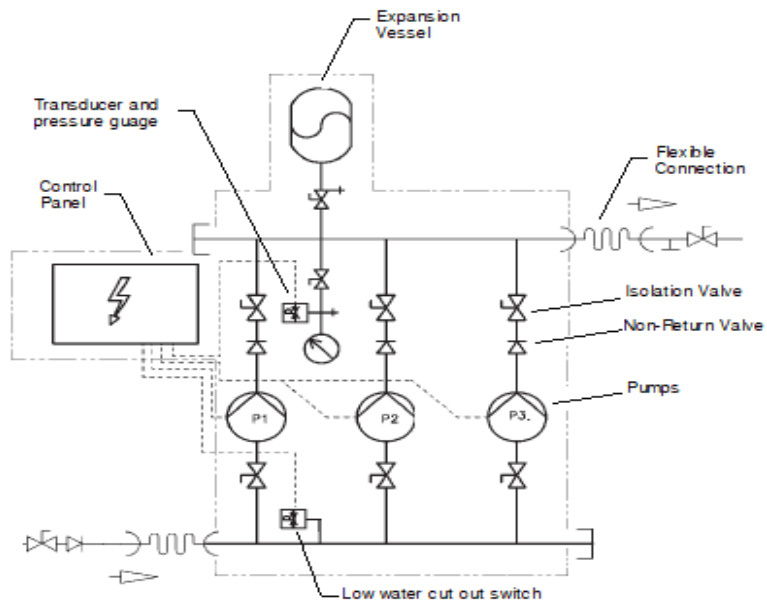


Figure 5 General Arrangement



Spares 2 COR 3 MHI***/SCE-EM

Part Number	Part Description	2992329 COR	3MH1202/Sce-EM	2992330 COR	3MH1203/Sce-EM	2992331 COR	3MH1204/Sce-EM	2992332 COR	3MH1205/Sce-EM	2992333 COR	3MH1206/Sce-EM	2992334 COR	3MH1402/Sce-EM	2992335 COR	3MH1403/Sce-EM	2992336 COR	3MH1404/Sce-EM	2992337 COR	3MH1405/Sce-EM	2992338 COR	3MH1406/Sce-EM	2992339 COR	3MH1802/Sce-EM	2992340 COR	3MH1803/Sce-EM	2992341 COR	3MH1804/Sce-EM	2992342 COR	3MH1602/Sce-EM	2992353 COR	3MH1603/Sce-EM	2992354 COR	3MH1604/Sce-EM				
	Motors																																				
4024283	MHI202																																				
4024285	MHI203																																				
4024287	MHI204																																				
4210718	MHI205																																				
4210722	MHI206																																				
4024293	MHI402																																				
4210725	MHI404																																				
4210732	MHI405																																				
4210735	MHI406																																				
4210739	MHI802																																				
4210743	MHI803																																				
4210747	MHI804																																				
4210770	MHI1602																																				
4210773	MHI1603																																				
4210775	MHI1604																																				
	Vessel																																				
2815472	8L Expansion Vessel																																				
	Controls																																				
2551432	3X2.4 Control Panel																																				
2551434	3X4.0 Control Panel																																				
2552569	3X6.8 Control Panel																																				
2085909	Pressure Sensor																																				
2818575	Low Water Switch																																				
	Valves																																				
2027870	1 1/4" Non Return Valve																																				
2518444	1 1/4" NRV Housing																																				
29900059	1 1/4" Ball Valve																																				
2518806	2" Non Return Valve																																				
2518582	2" NRV Housing																																				
2990000	1 1/2" Ball Valve																																				
2520853	3/4" Vessel Valve																																				



DECLARATION OF CONFORMITY

We, the manufacturer, declare under our sole responsibility that these booster set types of the series,

COR 2MHI*/SCe-EM**
COR 2MHI*/SCe-EM-T260**
COR 3MHI*/SCe-EM**
COR 2MHIE*/SCe-DM**
COR 2MHIE*/SCe-DM-T260**
COR 3MHIE*/SCe-DM**

(The serial number is marked on the product site plate)

in their delivered state comply with the following relevant directives and with the relevant national legislation:

- _ **Supply of Machinery (Safety) Regulations (SI 2008 No. 1597) amended**
- _ **Pressure Equipment (Safety) Regulations (SI 2016 No. 1105)**
- _ **Electromagnetic Compatibility (EMC) Regulations (SI 2016 No. 1091) amended**
- _ **Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment Regulations (SI 2012 No. 3032) amended**

comply also with the following relevant standards:

**BS EN ISO 12100:2010; BS EN 60204-1:2018; BS EN 13831:2007; BS EN 61000-6-1:2007;
BS EN 61000-6-2:2005; BS EN 61000-6-3:2007+A1:2011; BS EN 61000-6-4:2007+A1:2011;
BS EN IEC 63000:2018;**

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Declaration n°7199899-rev01

PC As-Sh n°7199999-GB-rev01

ORIGINAL DECLARATION
F:\REL\01.1945



**DECLARATION OF CONFORMITY
KONFORMITÄTSERKLÄRUNG
DECLARATION DE CONFORMITE**

We, the manufacturer, declare under our sole responsibility that these booster set types of the series, Als Hersteller erklären wir unter unserer alleinigen Verantwortung, daß die Druckerhöhungsanlagen der Baureihen, Nous, fabricant, déclarons sous notre seule responsabilité que les types de surpresseurs des séries,

COR 2MHI*/SCe-EM
COR 2MHI***/SCe-EM-T260
COR 3MHI***/SCe-EM
COR 2MHIE***/SCe-DM
COR 2MHIE***/SCe-DM-T260
COR 3MHIE***/SCe-DM**

(The serial number is marked on the product site plate.
Die Seriennummer ist auf dem Typenschild des Produktes angegeben.
Le numéro de série est inscrit sur la plaque signalétique du produit)

in their delivered state comply with the following relevant directives and with the relevant national legislation: in der gelieferten Ausführung folgenden einschlägigen Bestimmungen entsprechen 'und entsprechender nationaler Gesetzgebung: dans leur état de livraison sont conformes aux dispositions des directives suivantes et aux législations nationales les transposant :

_ PRESSURE EQUIPMENT 2014/68/EU / DRUCKGERÄTERICHTLINIE 2014/68/EU / EQUIPEMENT SOUS PRESSION 2014/68/UE

_ ELECTROMAGNETIC COMPATIBILITY 2014/30/EU / ELEKTROMAGNETISCHE VERTRÄGLICHKEIT - RICHTLINIE 2014/30/EU / COMPATIBILITE ELECTROMAGNETIQUE 2014/30/UE

_ RESTRICTION OF THE USE OF CERTAIN HAZARDOUS SUBSTANCES 2011/65/EU + 2015/863 / BESCHRÄNKUNG DER VERWENDUNG BESTIMMTER GEFÄHRLICHER STOFFE-RICHTLINIE 2011/65/EU + 2015/863 / LIMITATION DE L'UTILISATION DE CERTAINES SUBSTANCES DANGEREUSES 2011/65/UE + 2015/863

comply also with the following relevant harmonised European standards: sowie auch den Bestimmungen zu folgenden harmonisierten europäischen Normen: sont également conformes aux dispositions des normes européennes harmonisées suivantes :

EN ISO 12100:2010; EN 60204-1:2018; EN 13831:2007; EN 61000-6-1:2007; EN 61000-6-2:2005; EN 61000-6-3:2007+A1:2011; EN 61000-6-4:2007+A1:2011; EN IEC 63000:2018;

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