

Installation Instructions  
for the  
Manufacturer  
of the End Product  
**MEGAMAT 4**  
Drive System



# MEGAMAT 4

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## General Information

**These instructions are intended for the manufacturer of the end product** and are not designed for passing on to the operator of the end product. With regard to the specialist information contained herein, these instructions can well serve as a basis for drawing up the instructions for the end products.

**It is essential to note the information contained in these instructions!** In doing so, you can prevent mistakes being made in installing or connecting the system which could result in

- **injury and accidents as well as**
- **damage** to the drive system or the end product.

### **Use only DEWERT drive control units!**

The DEWERT drive control unit incorporate an earth-free circuit which is isolated from the supply mains by reinforced insulation or double insulation.

DEWERT **accepts no liability** for damage caused as a result of ...

- non-observance of these instructions,
- alterations to the product not approved by DEWERT or ...
- the use of spare parts not manufactured or approved by DEWERT- these may not ensure adequate safety!

Due to the policy of ongoing product improvement, DEWERT reserves the right to carry out technical changes at any time without prior notification!

## 1. Designated Use

The **MEGAMAT 4** drive system is **designed for installing in end products...**

- or the motorized adjustment of movable furniture parts **using suitable fittings/ mountings or mechanics.**

The **MEGAMAT 4** drive system is **not intended for use...**

- in an environment where **flammable** or **explosive** gases or vapours (e.g. anaesthetics) are likely to occur,
- in a damp environment, i.e. outdoor,
- by small children or fragile persons,
- in the immediate vicinity of young children.

## 2. Prerequisites

The installation steps described in these instructions must be performed by a **suitable qualified or trained person.**

- This being the case, you should never carry out this work by **yourself** unless you are a **suitable trained person** or
- you should **entrust** this work to a **suitable qualified, skilled or trained person only.**

Conformity in accordance with EC Directives

The drive system is supplied ex factory as a **machine not ready for use** in accordance with the EC "Machinery" Directive. In other words, you may not put the drive system into operation until you have met the **safety** objectives of the "Machinery" Directive and issued a corresponding **Declaration of Conformity!**

The drive system with DEWERT controls meets the safety objectives of the EC Directives concerning "**Low Voltage**" and "**Electromagnetic Compatibility (EMC)**".

The drive is **not a medical product** if you install it into a medical device, manufacture in **conformity** with the EC Directive for "Medical Products" or other regulations it is the responsibility of the **manufacturer of the end product**. For this purpose, DEWERT has additionally applied, fully or partially, a number of standards from the medical products sector, in order to facilitate use in medical products (see page 17, Additional Information).

## 3. Getting to Know the System

The **MEGAMAT 4** drive system is intended for the German market and complies with the Law applicable in Germany in implementation of relevant EC Directives.

With regard to other variation options contact your after-sales service or take a look at the current catalogue. We will be happy to assist you with any special requests you may have.

# MEGAMAT 4

## b) Technical Data

Rated voltage.....:	24 V DC
Power consumption with rated load.....:	max. 4,0 A DC (depending on application)
permissible push force.....:	max. 7000 N (depending on application)
permissible pull force.....:	max. 4000 N (depending on application)
Operating mode <sup>1)</sup> with max. rated load.....:	Intermittent duty (AB) 2 min. ON /18 min. OFF
Protection classification.....:	III
Noise level.....:	65 dB(A)
Drive type.....:	Single drive
Type of load.....:	Push; pull
Stroke <sup>2)</sup> .....:	< 500 mm
Adjustment Speed <sup>3)</sup> .....:	to 4,7 mm/s (depending on application)
Protection category.....:	IP20; IP44 and IP54
Colours.....:	grey; black
Quick release "GQR".....:	to 3000 N (only for push or pull drives)
Cable versions.....:	Cable for permanent mains installation or cable with attached plug

## Dimensions and Weights

Length x width x height of the drive.....:	min. 190 x 171,5 x 92 mm min. 236 x 171,5 x 92 mm (with "GQR")
Weight.....:	approx. 2,5 kg (depending on application)

## Ambient Conditions

Room temperature.....:	from +10° to +40° C
Relative humidity.....:	from 30% to 75%
Barometric pressure.....:	from 700 hPa to 1060 hPa

<sup>1)</sup> Operating mode = **intermittent duty (AB) 2 min. ON /18 min. OFF**, i.e. run for a maximum of 2 min. under rated load, then observe a **rest period** of 18 min. Operational failure could otherwise result.

<sup>2)</sup> Data deviating from these standard values can be established after consultation and depending on the application and force.

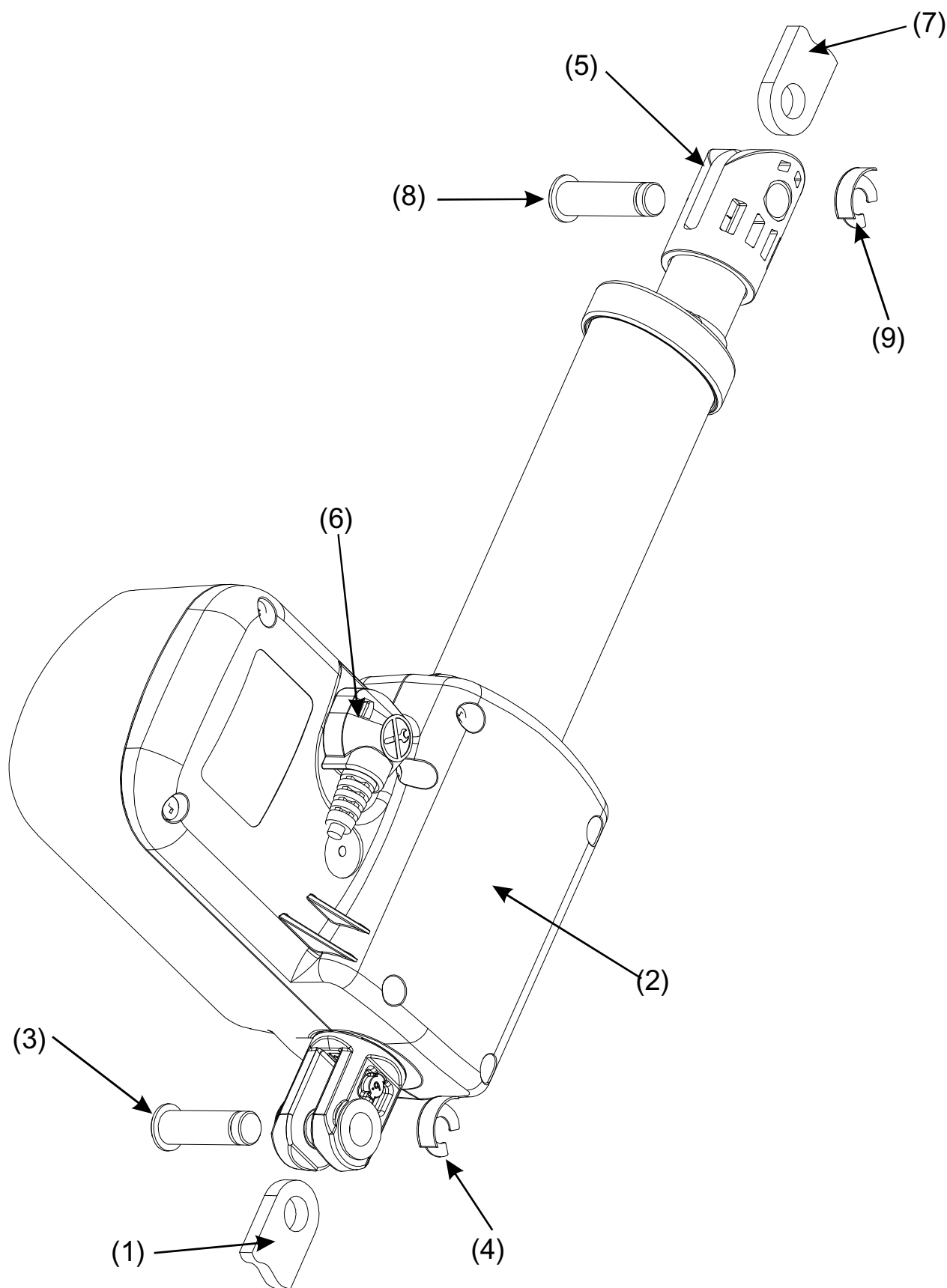
<sup>3)</sup> Adjustment speed = **speed** at which the clevis travels **without load** (speed varies according to the load).



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## Assembly of the MEGAMAT 4 Single Drive



# MEGAMAT 4

## 4. Fitting

### a) Installation (see illustration)

#### Caution!

Only ever connect or disconnect electrical components when they are voltage-free.

- 1) Push **drive (2) into mounting (1)** and fasten it there using **BEK bolt (3)** and secure with **security clip (4)**.
- 2) Now **fasten stroke pipe clevis (5)** with **BEK bolt (8)** and **security clip (9)** onto **mounting (7)**.
- 3) Now connect the drive to the **DEWERT control unit. Secure cable (6) to prevent it from being pulled out** (please also refer to the Installation Instructions supplied with the DEWERT control units).



**Empfehlung:** Beachten Sie, dass durch den Einbau mechanischer Endanschlüsse in Ihrem Endprodukt der Sicherheitsstandard wesentlich erhöht wird.



#### Attention!

For technical reasons or to save costs, mechanical limit stops are not always provided. In safety-critical drives we therefore recommend using an additional safety limit switch which in the event of a defective top limit switch protects against dangerous excess travel and failure. The safety limit switch puts the drive permanently out of action as soon as any overshooting of the regular limit switch takes place. The safety limit switch is integrated directly into the drive and does not require any additional fitting. However this can increase the fitting dimension of the drive by 23 mm.

#### Attention!

The version of the **MEGAMAT 4** drive system with loose nut seat **requires** a fixed mechanical stop in the end product in order to prevent the stroke tube from being pulled out. This could otherwise damage the drive system.

## b) Electrical Connection

In the **Operating Instructions** to be issued by you, point out to the operator that if leads, in particular the **connection lead**, are **driven over** they could sustain damage. **Mechanical** loads should also be avoided.

When routing the leads **make sure** that they...

- cannot get caught up or trapped,
- are not subjected to mechanical loads (i.e. do not pull, apply pressure or bend),
- cannot get damaged in any other way.

Make sure that the cables, in particular the **connection lead**, are fastened to the end product with adequate **strain relief** and **kink protection** and that suitable constructional measures prevent the **connection lead from trailing on the floor** when the end product is being **moved**.

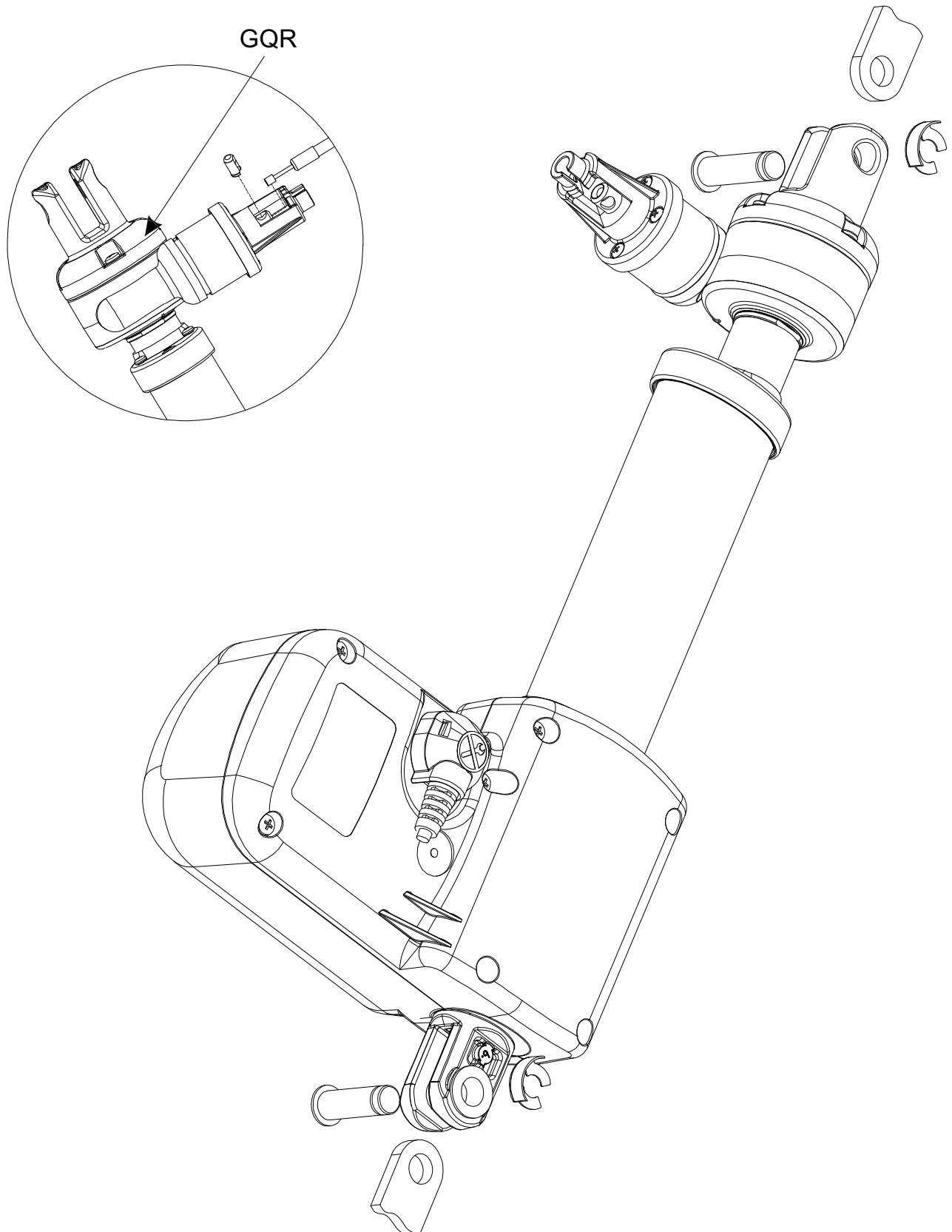
## c) Dismantling

Operate the furniture to travel to the starting position, then isolate **drive (2)** from the DEWERT controls. When removing **security clip (4, 9)** and **BEK bolts (3, 8)**, it is important to **support drive (2)**, as this is released instantly!

# MEGAMAT 4

## d) Quick release „GQR“ (optional)

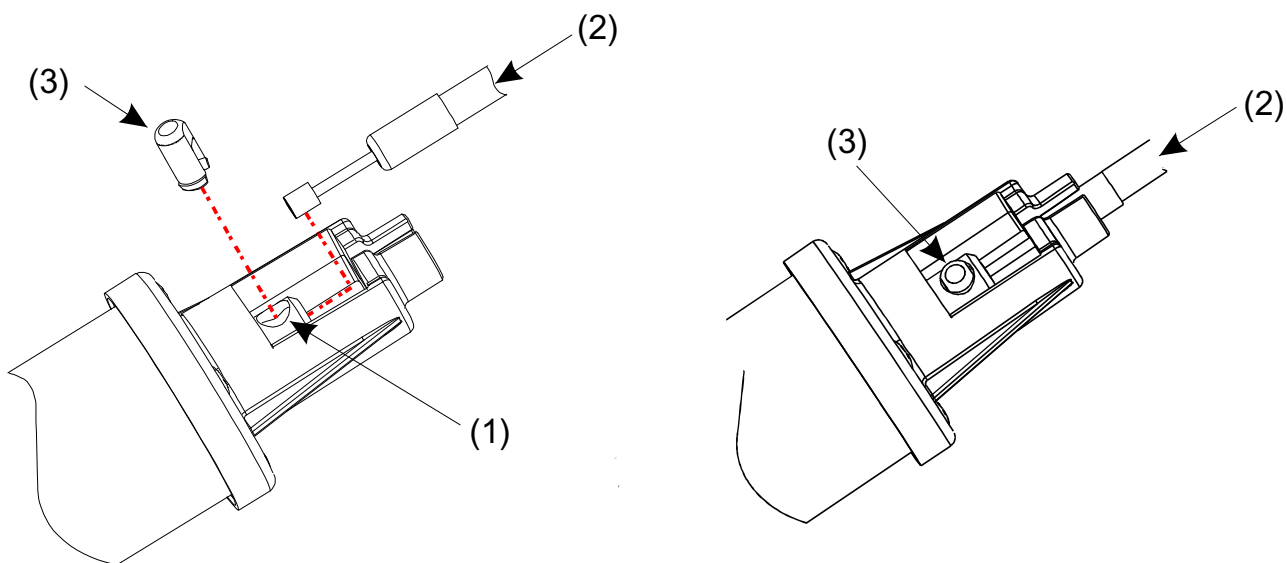
In the event of a power failure the drive can be reset via the optional quick release. Actuating the quick release causes the drive to travel back to the starting position.



### e) Connecting the Bowden cable

Represented example: 1 Bowden cable (max.  $\varnothing$  6.0mm)

- To allow actuation, a suitable commercially available **Bowden cable (2)** is provided. This is fastened in the **Bowden cable receptacle (1)** (the Bowden cable is not part of the supply package).
- Thread the Bowden cable fully through the groove in the **Bowden cable receptacle (1)** and into the cable bolt at the top, then secure the Bowden cable in place with the **locking pin (3)**.
- Take care to ensure that the Bowden cable is **not** under excessive tension, otherwise this could cause the quick adjustment to be activated unintentionally or the clutch in the GQR to slip, resulting in possible damage to the drive.
- The Bowden cable must now be tested to ensure that it is in perfect working order.



### Bitte beachten:

- GQR (Quick Release) features a high quality gear system which can be actuated at any time, also in the loaded state.

### Attention!

The GQR system is designed as a standard feature to be used for applications in the **drive's push direction**. When actuating the GQR, it is therefore important to ensure that the manual adjustment takes place in the **intended direction only**.

**Non-observance can cause the GQR to sustain damage.**

Moreover, another standard feature of the GQR is the trap protection for emergencies. **Non-designated actuation of the trap protection (operating the quick release without actuating the Bowden cable in the opposite direction to the designated direction) leads to increased wear and can premature failure of the drive.**

**Please draw attention to this in your operating instructions.**

# MEGAMAT 4

## 5. Operation

For drawing up the Operating Instructions for the end product, you can use the specialist information described herein. Please bear in mind that these instructions are intended for you as a specialist and not for the possibly non-technically trained operator of the end product.

### Attention!

- The electric adjustment drive is not intended for use by small children or the unsupervised infirm.
- The electric adjustment drive is not a toy for children to play with.

#### a) Prerequisites

The **MEGAMAT 4 drive system** is only intended for use with corresponding DEWERT control units.

In this connection please also follow the installation instructions supplied with the accompanying control unit.

#### b) Quick release “GQR”

If you have acquired a **MEGAMAT 4** drive system with **quick release „GQR“**, please note the following:

- A **quick release „GQR“** enables you to move the drive manually in an emergency.
- Actuate the **quick release „GQR“** and move the drive into the desired position.

**Caution:** Depending on version, it is possible that the application could lower itself under its own weight. If application is not possible to sink down with own weight, you must press down the right side of application.

- When restarting the drive system following actuation of the **quick release „GQR“**, this automatically re-engages. The drive system is now ready for operation.

### c) Maintenance and Repairs

At regular intervals carry out the inspections in accordance with the BGV A3 (Instruction of the Professional Trade Association). The inspections must be performed by an electrical specialist.

The recommended inspection period is: **6 months**

In addition to the above, the following checks should be carried out at shorter intervals:

- **Regular visual checks** for damage of all kinds  
Check the housing for **cracks** and **fractures** and the connection lead for signs of **pinching** and **shearing-off**. Also check the **strain relief** with **kink protection**, in particular after each case of mechanical loading. Any **damaged connection leads** of equipment must be replaced by **the manufacturer** or **persons qualified** to do so (see page 3) in order to exclude hazards.
- **Regular functional testing of the “quick release, GQR”** by actuating the Bowden cable, as described on page 8,9 and 10.
- **Regular checks** of the Bowden cable of the "GQR quick release" at intervals to ensure that it is functioning correctly. If necessary, re-adjust!

Check the limit switches by using the DEWERT control unit to make the drive travel to the end-of-travel positions.

## Caution! For Your Own Safety!

**Shutdown in an emergency is achieved by pulling the mains plug out of the drive controls!**

The **mains plug** must therefore be accessible **at all times** when the system is in operation to ensure it can be quickly **pulled out of the wall socket** in an emergency.

Movement of the drive takes place via a stroke pipe. Please bear this in mind when designing your product:

- After installing the **MEGAMAT 4** make sure that no shearing or trap/crush zones are accessible from the outside.

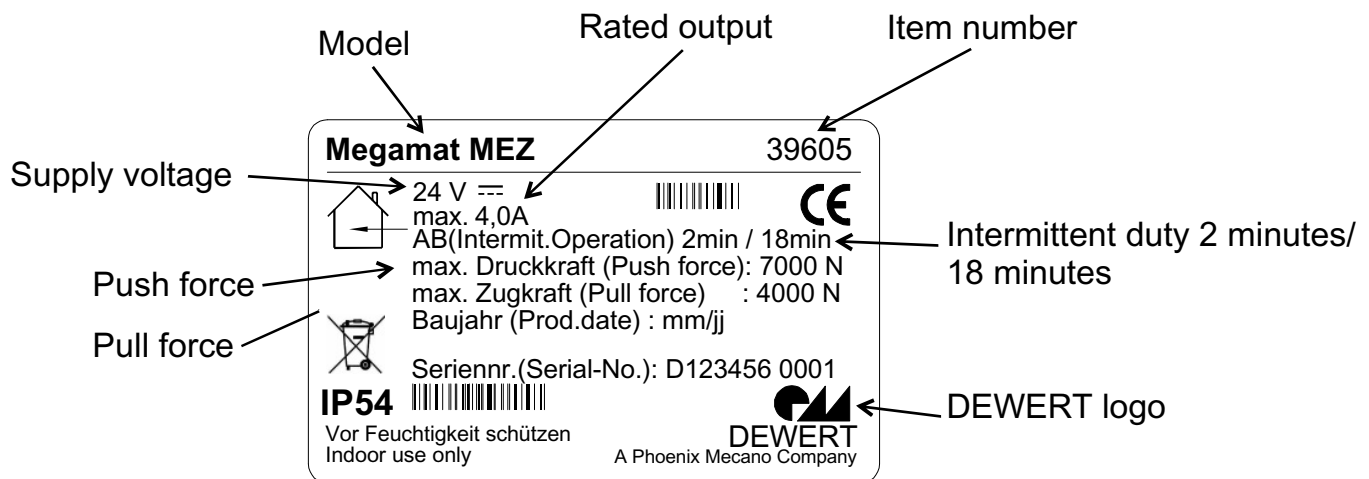
In the Operating Instructions to be drawn up by yourselves, it is essential that you draw the operator's attention to the points mentioned here.

# MEGAMAT 4

## 6. Type Plate and Seal (example)

Each drive component carries an identification plate giving the exact model, item number and technical specifications (see following figure as an example).

The **MEGAMAT 4** is designated on the type plate as **MEGAMAT MEZ**.



### Graphical Symbols



Conformity mark

**IP54**

Protection category



Use in dry rooms only!



Do not dispose in your household waste!



In order to guarantee the safety of DEWERT products, a seal is attached to all DEWERT products. Opening the product damages the seal, thereby indicating that the drive has been altered or tampered with. The drive may only be opened by specialist personnel holding the qualifications as described on page 3.

## 7. Trouble-shooter's Guide to Detect and Eliminate Common Faults and Errors

The following table has been developed to help you detect and eliminate common faults and errors. If you come across a fault/error that is not listed here, please contact your supplier. All of these faults/errors may only be investigated and rectified by specialists holding the qualifications as described on page 3.

<b>Problem</b>	<b>Possible Cause</b>	<b>Remedy</b>
Handset or drive system without function	<ul style="list-style-type: none"> <li>- Handset or drive system defective</li> <li>- No supply voltage</li> </ul>	<ul style="list-style-type: none"> <li>- Contact your supplier/ dealer</li> <li>- Connect to mains</li> </ul>
Drives suddenly no longer respond, no movement takes place	<ul style="list-style-type: none"> <li>- Thermoswitch on transformer or in the DEWERT controls has possibly been triggered</li> <li>- Temperature fuse in transformer has possibly been triggered</li> <li>- Instrument fuse has possibly been triggered</li> <li>- No supply voltage</li> <li>- Lead (mains and/or handset/slave drives) interrupted</li> </ul>	<ul style="list-style-type: none"> <li>- Leave the drive system in the rest position for approx. 20-30 minutes</li> <li>- Contact your supplier/ dealer</li> <li>- Connect mains cable</li> <li>- Check the lead, if necessary restoring contact<sup>1)</sup></li> </ul>
Motor is running but the drive does not move	<ul style="list-style-type: none"> <li>- GQR Bowden cable is not at the starting position</li> </ul>	<ul style="list-style-type: none"> <li>- adjust Bowden cable</li> </ul>

<sup>1)</sup> see page 11 Maintenance and Repairs

# MEGAMAT 4

## 8. Cleaning

The **MEGAMAT 4** drive system has been designed for easy cleaning, assisted in addition by a large number of smooth surfaces.

The **MEGAMAT 4** drive system should be cleaned with a damp cloth using a proprietary cleaning agent suitable for **polyamide 6**. Follow the instructions provided by the manufacturer of the respective cleaning agent used.

**Before cleaning, always pull out the mains plug of the controls!**

Never clean the drive system in a wash tunnel or with a **high-pressure cleaner nor spray liquids onto it**. You otherwise risk damaging the equipment!

When **cleaning** take care not to damage the drive system's **connection lead!**

In its basic version the drive system meets the requirements of the IP20 protection category. You have the option of upgrading the protection category up to IP54.

**Do not use any solvents** such as **benzene, alcohol** or similar substances.

## 9. Disposal

The **MEGAMAT 4** drive system contains electronic components, cables, metal, plastic etc. The **MEGAMAT 4** drive system should be disposed of in accordance with the environmental regulations applicable in the respective country. Information on this subject can also be obtained from:

Federal Association for  
Disposal Management BDE  
Behrenstraße 29  
10117 Berlin  
Germany  
Phone: +49 (0) 30-59 00 33 5-0  
[www.bde-berlin.de](http://www.bde-berlin.de)

### Notes on environmental directives and legislation

- The product complies with the European Directive 2002 / 95 / EC (RoHS as of 01.07.2006).
- The product is not subject to the European Directive 2002 / 96 / EC (WEEE) and its amendment EU Directive 2003 / 108 / EC.

**The MEGAMAT 4 drive system may not be disposed of with the normal household waste!**



## EC Manufacturer's Declaration

According to Appendix II B of the EC Machinery Directive (98/37/EC)

The Manufacturer:

**DEWERT**  
**Antriebs- und Systemtechnik GmbH**  
**Weststr. 1**  
**32278 Kirchlengern**  
**Germany**

hereby declares that the drive system described below

**MEGAMAT 4 (MEZ)**

is not a ready-to-use machine in keeping with the EC Machinery Directive and, therefore, does not fully comply with the requirements of the Directive!

This machine may not be put into operation until conformity with the above Directive of the entire machine, into which it is to be installed, has been declared!

Partially applied harmonized standards:

Based on:

**EN 292-1** Safety of Machines, Basic Terminology, Methods

**EN 292-2** Safety of Machines, Guiding Technical Principles



Andreas Roither  
Managing Director R&D and Engineering

Kirchlengern, 28th May 2008

# MEGAMAT 4

## EC Declarations

### EC Declaration of Conformity

according to appendix IV of the EC Directive on Electromagnetic Compatibility 2004/108/EEC,

according to appendix III of the EC Low-Voltage Directive 2006/95/EG

The Manufacturer:

**DEWERT  
Antriebs- und Systemtechnik GmbH  
Weststr. 1  
32278 Kirchlengern  
Germany**

hereby declares that the drive system described below

**MEGAMAT 4 (MEZ) with DEWERT Controls**

meets the following EC Directives:

Directive on Electromagnetic Compatibility 2004/108/EEC

Low-Voltage Directive 2006/95/EG

Angewendete Normen:

**EN 60335-1  
EN 55014-1  
EN 55014-2  
EN 61000-3-2  
EN 61000-3-3  
EN 50366 (measurement distance: 5cm)**

Constructional changes which affect the technical data stated in the Installation Instructions as well as the designated use, in other words which alter the drive system in a significant way, make this Declaration of Conformity null and void!



Andreas Roither

Managing Director R&D and Engineering

Kirchlengern, 28th May 2008

## Additional Information

**For the MEGAMAT 4 (MEZ) drive system in the IP54 version with DEWERT CARE/HOSP control unit, the following standards were applied**  
**Based on EN 60601-1:1990 +A1:1993 +A2:1995, Electromedical Equipment**

EN60601-1, main section 2	Environmental Conditions
EN60601-1, main section 3	Protection against Electrical Shock Hazard
EN60601-1, section 21	Mechanical Strength
EN60601-1, main section 7	Protection against Excessive Temperatures
EN60601-1, main section 9	Non-designated Operation and Cases of Faults
EN60601-1, main section 10	Constructional Requirements
EN60601-1, section 56.8	But without power supply indicator
EN60601-1, section 36	Electromagnetic Compatibility
EN60601-1-2	Electromagnetic Compatibility



## Notes



**DEWERT**

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