SEW EURODRIVE

Addendum to the Operating Instructions

MOVIGEAR® classic/performance

Integrated Pressure Compensation (/PG Option)

Edition 11/2018

28519086/EN

Table of contents

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1 General information

1.1 About this documentation

The current version of the documentation is the original.

This documentation is an integral part of the product. The documentation is intended for all employees who perform work on the product.

Make sure this documentation is accessible and legible. Ensure that persons responsible for the systems and their operation as well as persons who work on the product independently have read through the documentation carefully and understood it. If you are unclear about any of the information in this documentation, or if you require further information, contact SEW-EURODRIVE.

1.2 Other applicable documentation

This documentation supplements the operating instructions of the associated product. Use this document only in connection with the operating instructions.

1.3 Structure of the safety notes

1.3.1 Meaning of signal words

The following table shows the grading and meaning of the signal words for safety notes.

Signal word	Meaning	Consequences if disregarded
⚠ **DANGER**	Imminent hazard	Severe or fatal injuries
⚠ **WARNING**	Possible dangerous situation	Severe or fatal injuries
⚠ **CAUTION**	Possible dangerous situation	Minor injuries
NOTICE	Possible damage to property	Damage to the product or its environment
INFORMATION	Useful information or tip: Simplifies handling of the product.	

1.3.2 Structure of section-related safety notes

Section-related safety notes do not apply to a specific action but to several actions pertaining to one subject. The hazard symbols used either indicate a general hazard or a specific hazard.

This is the formal structure of a safety note for a specific section:

SIGNAL WORD

Type and source of hazard.

Possible consequence(s) if disregarded.

- Measure(s) to prevent the hazard.

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Meaning of the hazard symbols

The hazard symbols in the safety notes have the following meaning:

Hazard symbol	Meaning
	General hazard
	Warning of dangerous electrical voltage
	Warning of hot surfaces

1.3.3 Structure of embedded safety notes

Embedded safety notes are directly integrated into the instructions just before the description of the dangerous action.

This is the formal structure of an embedded safety note:

⚠ **SIGNAL WORD** Type and source of hazard. Possible consequence(s) if disregarded. Measure(s) to prevent the hazard.

1.4 Rights to claim under limited warranty

Read the information in this documentation. This is essential for fault-free operation and fulfillment of any rights to claim under limited warranty. Read the documentation before you start working with the product.

1.5 Product names and trademarks

The brands and product names in this documentation are trademarks or registered trademarks of their respective titleholders.

1.6 Copyright notice

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2 Unit structure

2.1 Integrated pressure compensation (/PG option)

2.1.1 Description

When the gear unit oil heats up, the pressure rises within the gear unit due to the expansion. Until now, the pressure has been reduced by means of a breather valve. As this valve cannot be installed in mounting position M3, this mounting position could until now only be used with restrictions concerning the output power.

The /PG option is a fully integrated pressure compensation mechanism that replaces the breather valve and makes it possible to implement applications in mounting position M3 without restrictions concerning the output power.

2.1.2 Advantages

- Universal mounting position without restrictions concerning the output power.
- Fully integrated pressure compensation mechanism without external valve.
- No oil mist caused by the breather valve.
- No risk of damaging the product due to an inactive breather valve.
- The position of the breather valve must no longer be adjusted when changing the mounting position.
- Reduced risk of oil leakages due to incorrectly installed breather valve.

2.1.3 Restrictions

For integrated pressure compensation (/PG option) and drive units with pressure compensation fitting in the electronics cover (/PE option or design for use in wet areas / WA), observe the notes regarding mounting positions (see the chapter "Mechanical installation" in the operating instructions).

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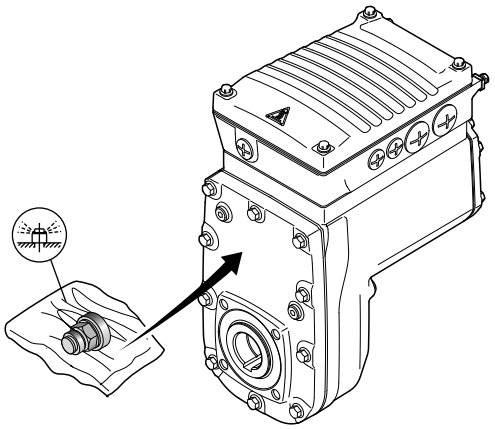
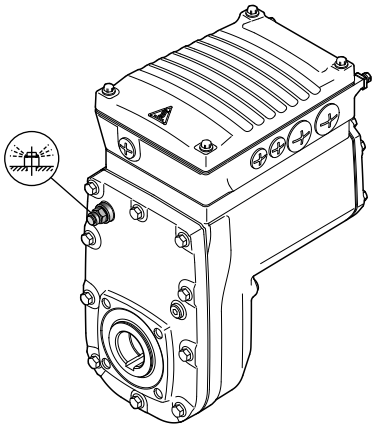
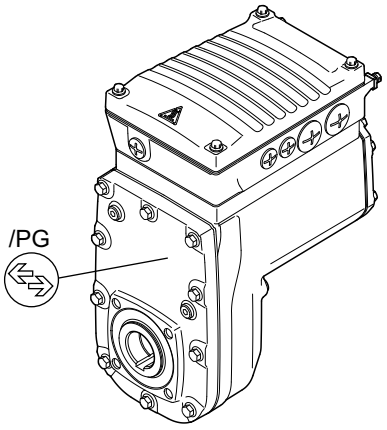
2.1.4 Combination options

MOVIGEAR® classic

Type/mounting position	Pressure compensation design	Representation
• **MGF..-DSM-C** • **Universal use in M1/M2/ M4/M5/M6**	• Breather valve included in delivery	
• **MGF..-DSM-C** • **Use in the ordered mounting position M1 or M2 or M4 or M5 or M6**	• Breather valve mounted according to the specific mounting position	
• **MGF..-DSM-C/PG** • **Universal mounting position MU**	• Integrated pressure compensation /PG	

– Breather valve

/PG Integrated pressure compensation

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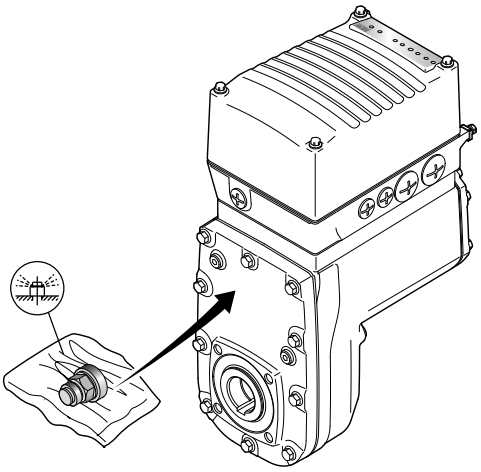
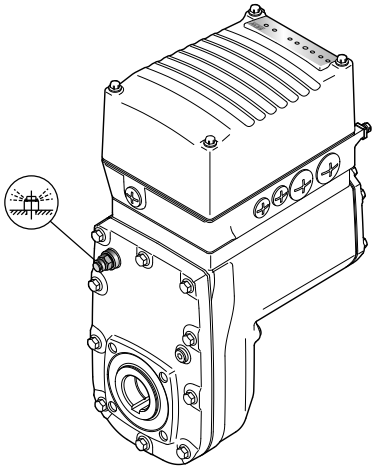
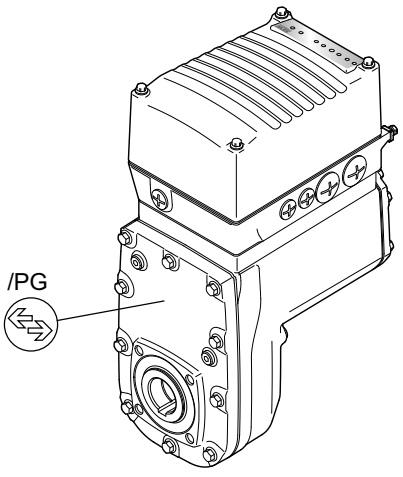
MOVIGEAR® performance

Type/mounting position	Pressure compensation design	Representation
• **MGF..-..-C** • **Universal use in M1/M2/ M4/M5/M6**	• Breather valve included in delivery	
• **MGF..-..-C** • **Use in the ordered mounting position M1 or M2 or M4 or M5 or M6**	• Breather valve mounted according to the specific mounting position	
• **MGF..-..-C/PG** • **Universal mounting position MU**	• Integrated pressure compensation /PG	

 – Breather valve

 /PG Integrated pressure compensation

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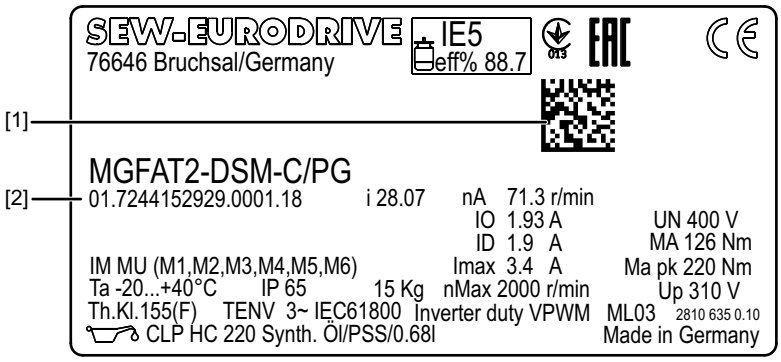
2.2 Example nameplate and type designation of the drive unit

2.2.1 Nameplate of MOVIGEAR® classic

The following figure gives an example of a nameplate for MOVIGEAR® classic. For the structure of the type designation, refer to the chapter "Type designation".



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[1] The data matrix code on the nameplate indicates the unique serial number.
[2] Unique serial number

2.2.2 Type designation of MOVIGEAR® classic

The following table shows the type designation of MOVIGEAR® classic:

MG	**Product family** MG = MOVIGEAR®
F	**Gear unit type** F = Parallel-shaft helical gear unit
A	**Shaft design** A = Shaft-mounted gear unit (hollow shaft with key) T = TorqLOC® hollow shaft mounting system[1)]
T	**Housing mounting types** T = Drive with torque arm S = Housing with threads for mounting a torque arm
2	**Size** 1 = Torque class 100 Nm 2 = Torque class 200 Nm 4 = Torque class 400 Nm
–	
DSM	**MOVIGEAR® variant** DSM = Drive unit without electronics
–	
C	**MOVIGEAR® version**
/	

PE	MOVIGEAR® option
	XT = Increased torque (only with size 4)
	DI = Digital interface (MOVILINK® DDI)
	AZ1Z = Multi-turn encoder with MOVILINK® DDI connection
	IV = Plug connector
	PE = Pressure compensation fitting electronics
	PG = Integrated pressure compensation gear unit (only with sizes 2 and 4)

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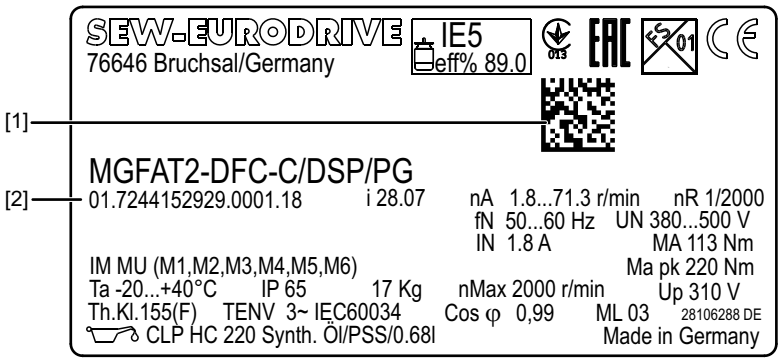
2.2.3 Nameplate of MOVIGEAR® performance

The following figure gives an example of a nameplate for MOVIGEAR® performance. For the structure of the type designation, refer to the chapter "Type designation".



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[1] The data matrix code on the nameplate indicates the unique serial number.
[2] Unique serial number

2.2.4 Type designation of MOVIGEAR® performance

The following table shows the type designation of MOVIGEAR® performance:

MG	**Product family** MG = MOVIGEAR®
F	**Gear unit type** F = Parallel-shaft helical gear unit
A	**Shaft design** A = Shaft-mounted gear unit (hollow shaft with key) T = TorqLOC® hollow shaft mounting system[1)]
S	**Housing mounting types** T = Drive with torque arm S = Housing with threads for mounting a torque arm
2	**Size** 2 = Torque class 200 Nm 4 = Torque class 400 Nm
–	
DFC	**Communication variant** DFC = **D**irect **F**ieldbus **C**ommunication
–	
C	**MOVIGEAR® version**
/	

DSP	MOVIGEAR® option
	XT = Increased torque[1] (only with size 4)
	DI = Digital interface (MOVILINK® DDI)
	AZ1Z = Multi-turn encoder with MOVILINK® DDI connection
	DSP = DynaStop® electrodynamic retarding function
	IV = Plug connector
	PE = Pressure compensation fitting electronics
	PG = Integrated pressure compensation gear unit

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3 Mechanical installation

INFORMATION

Additionally you must observe the following publications, especially the safety and warning instructions.

- "MOVIGEAR® performance" operating instructions
- "MOVIGEAR® classic" operating instructions

3.1 Gear unit venting

3.1.1 Drive units with installed breather valve

Except for mounting position M3, SEW-EURODRIVE delivers all drive units ordered for a specific mounting position with a breather valve that is activated and installed according to the specific mounting position.

3.1.2 Drive units with separately included breather valve

NOTICE

The breather valve cannot be used for drive units in mounting position M3.

Possible damage to property

- For drive units in mounting position M3, use the variant with integrated pressure compensation (/PG option).

SEW-EURODRIVE delivers drive units ordered for universal operation in mounting positions M1, M2, M4, M5, M6 with an enclosed breather valve.

In this case, the breather valve is delivered in the hollow shaft of the drive unit. Before startup, replace the highest oil screw plug with the provided breather valve.

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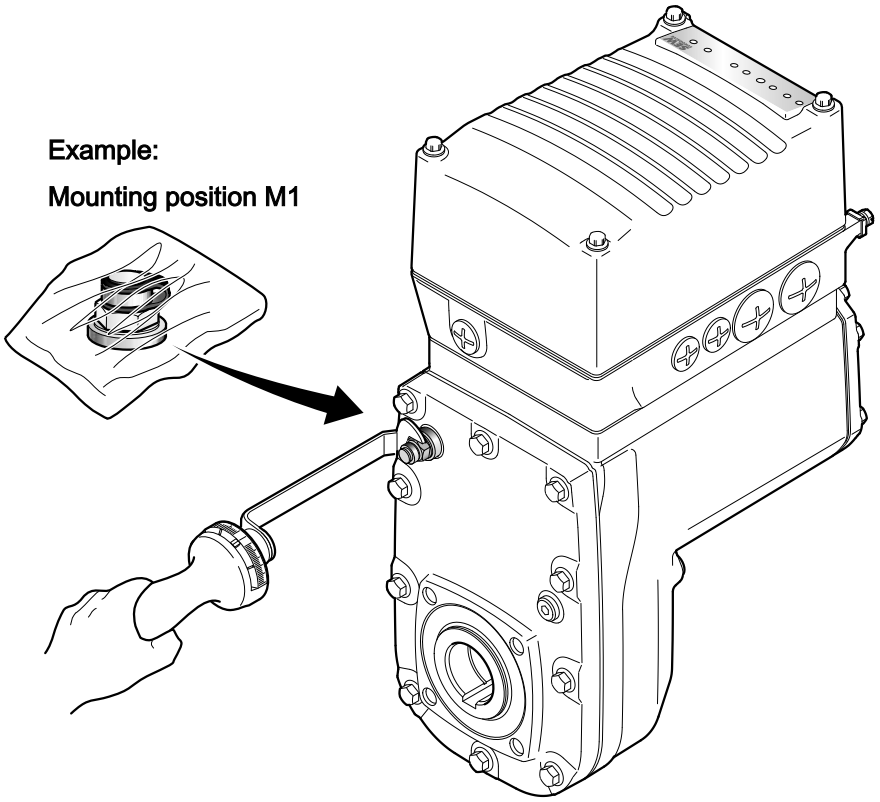
Tightening torque

Tighten the breather valve from SEW-EURODRIVE included in the delivery with 8.0 Nm.

The following figure shows an example. The position of the breather valve depends on the mounting position in use. Observe the chapter "Technical data and dimension sheets" > "Mounting positions".



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3.1.3 Drive units with integrated pressure compensation (/PG option)

No further measures are required because a breather valve is not required for drive units with integrated pressure compensation (/PG option).

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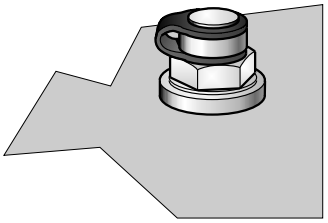
3.1.4 Activating the breather valve (not with integrated pressure compensation /PG)

After installing the breather valve, activate it as follows. For designs with the breather valve screwed in: Check whether the breather valve is activated. If not, remove the transport fixture of the breather valve before starting up the drive unit.

1. Breather valve with transport protection fixture



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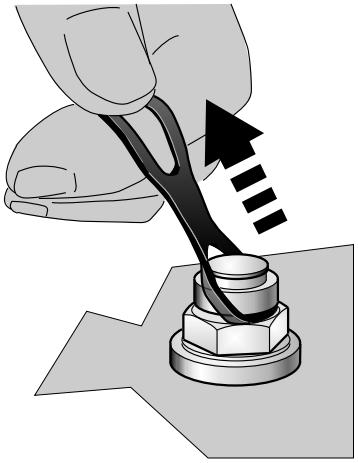
2. Remove transport fixture



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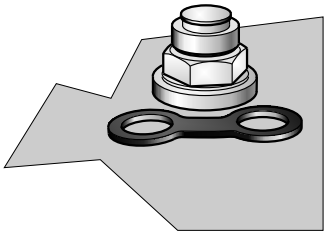
3. Activated breather valve



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4 Inspection and maintenance

4.1 Inspection and maintenance intervals /PG option

The following table shows the inspection and replacement intervals for the integrated pressure compensation (/PG option):

Time interval	What to do?	Who is permitted to perform the work?
Every 10 000 operating hours[1)]	Have the integrated pressure compensation mechanism (/PG option) inspected by SEW-EURODRIVE Service or qualified personnel trained by SEW-EURODRIVE.	SEW-EURODRIVE Service
		Qualified personnel trained by SEW-EURODRIVE

1) Wear times are influenced by many factors. The system manufacturer must calculate the required inspection/maintenance intervals individually in accordance with the project planning documents.

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4.2 Inspection and maintenance work

4.2.1 Preliminary work for inspection/maintenance work for MOVIGEAR® classic

Observe the following notes before you start with inspection/maintenance work on MOVIGEAR® classic:

⚠ WARNING

Risk of injury if the drive unit starts up unintentionally and danger of electrical voltage.

Severe or fatal injuries.

- Disconnect the drive unit from the power supply with suitable external measures before you start working on the unit and secure it against unintentional reconnection to the voltage supply.
- Secure the output shaft against rotation.

⚠ WARNING

Risk of burns due to hot surfaces and hot gear unit oil.

Serious injuries.

- Let the devices cool down before touching them.
- Remove the screw plugs and the breather valve carefully.
- The gear unit must still be warm, otherwise the high viscosity of excessively cold oil will make it more difficult to drain the oil correctly.

NOTICE

Damage to the drive unit.

Potential damage to property.

- Make sure that only the SEW-EURODRIVE Service or qualified personnel trained by SEW-EURODRIVE opens the gear unit cover.

NOTICE

Filling in the wrong oil may result in significantly different lubricant characteristics.

Potential damage to property.

- Do not mix different synthetic lubricants and do not mix synthetic and mineral lubricants.
- Synthetic oil is used as the standard lubricant.

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4.2.2 Preliminary work for inspection/maintenance work for MOVIGEAR® performance

Observe the following notes before you start with inspection/maintenance work on the MOVIGEAR® performance:

⚠ WARNING

Risk of injury if the drive unit starts up unintentionally and danger of electrical voltage.

Dangerous voltages may still be present for up to 5 minutes after disconnection from the line voltage.

- Disconnect the drive unit from the power supply with suitable external measures before you start working on the unit and secure it against unintentional reconnection to the voltage supply.
- Secure the output shaft against rotation.
- Wait for at least the following time before removing the electronics cover: **5 minutes.**

⚠ WARNING

Risk of burns due to hot surfaces and hot gear unit oil.

Serious injuries.

- Let the devices cool down before touching them.
- Remove the screw plugs and the breather valve carefully.
- The gear unit must still be warm, otherwise the high viscosity of excessively cold oil will make it more difficult to drain the oil correctly.

NOTICE

Damage to the drive unit.

Potential damage to property.

- Make sure that only the SEW-EURODRIVE Service or qualified personnel trained by SEW-EURODRIVE opens the gear unit cover.

NOTICE

Filling in the wrong oil may result in significantly different lubricant characteristics.

Potential damage to property.

- Do not mix different synthetic lubricants and do not mix synthetic and mineral lubricants.
- Synthetic oil is used as the standard lubricant.

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5 Technical data

5.1 Mounting positions

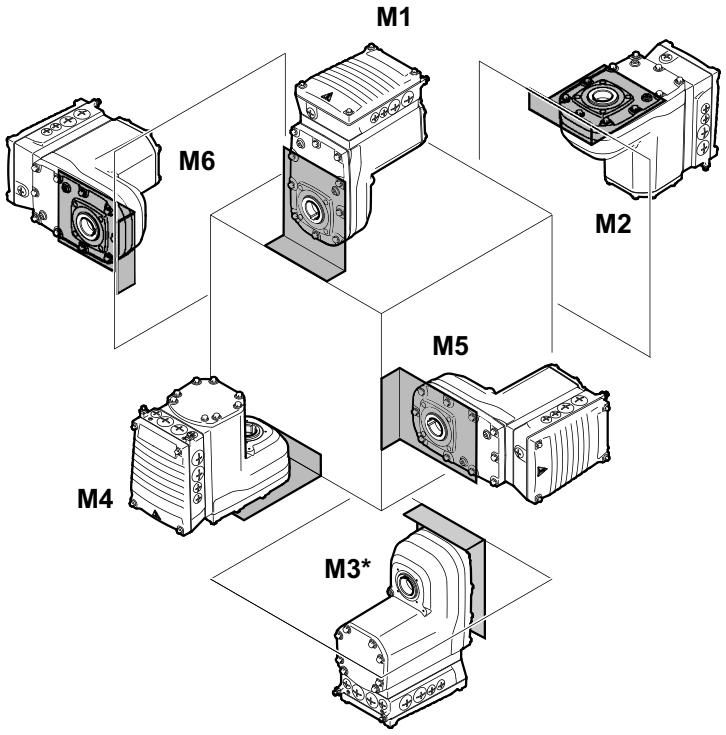
5.1.1 Description of mounting positions

The following mounting positions are possible for the drive units:

- Specified mounting position: M1 or M2 or M3* or M4 or M5 or M6
- Universal use in mounting positions M1, M2, M4, M5, M6
- Universal mounting position MU (= M1 to M6) with option "integrated pressure compensation /PG"

Mounting positions M1 to M6 MOVIGEAR® classic

The following figure shows the position of the drive unit when installed in mounting positions M1 to M6:



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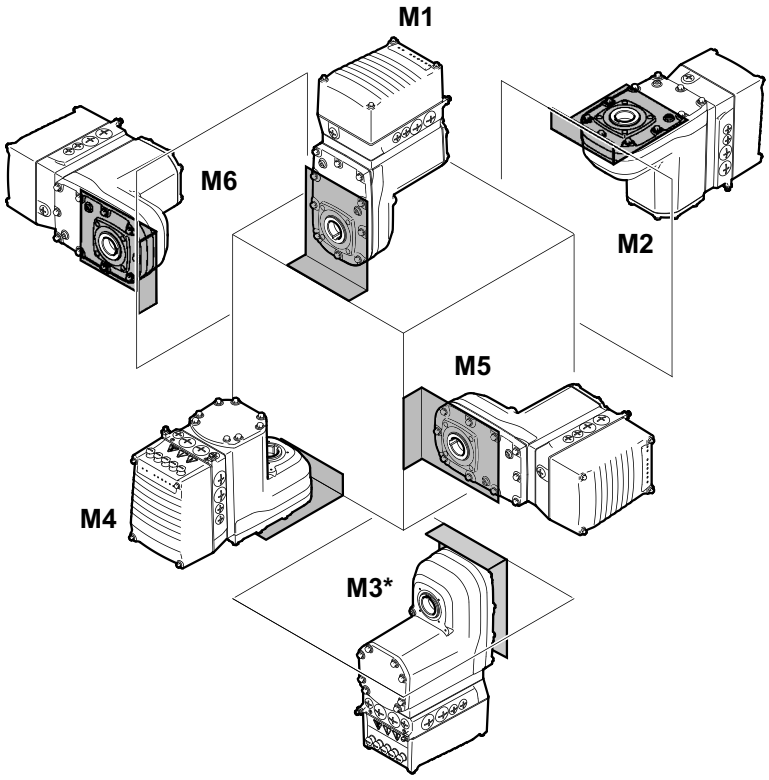
* = Mounting position M3 is only possible with the option "integrated pressure compensation /PG".

Mounting positions M1 to M6 MOVIGEAR® performance

The following figure shows the position of the drive unit when installed in mounting positions M1 to M6:



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* = Mounting position M3 is only possible with the option "integrated pressure compensation /PG".

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5.1.2 Mounting position sheet for MOVIGEAR® classic

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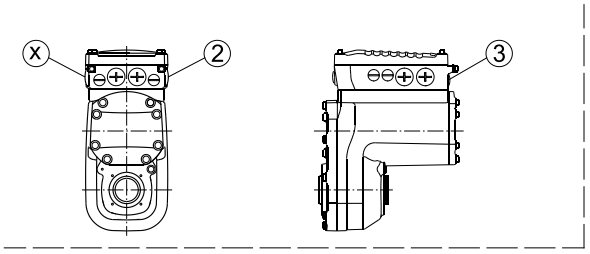

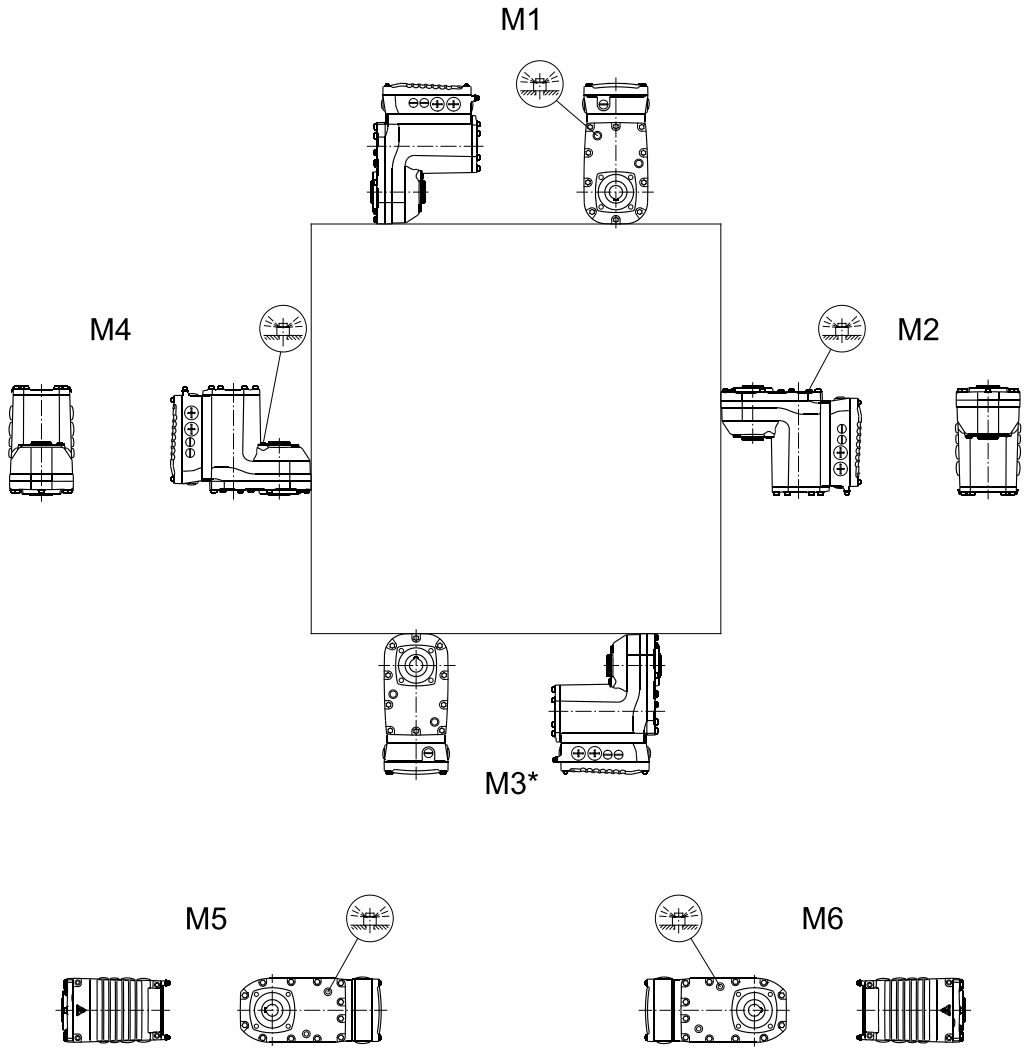

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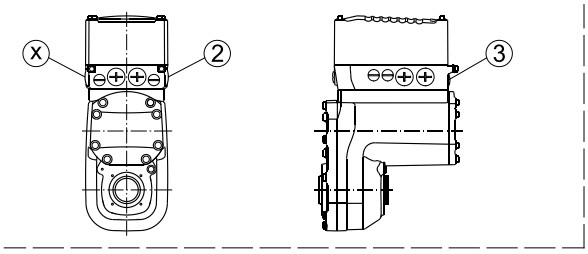
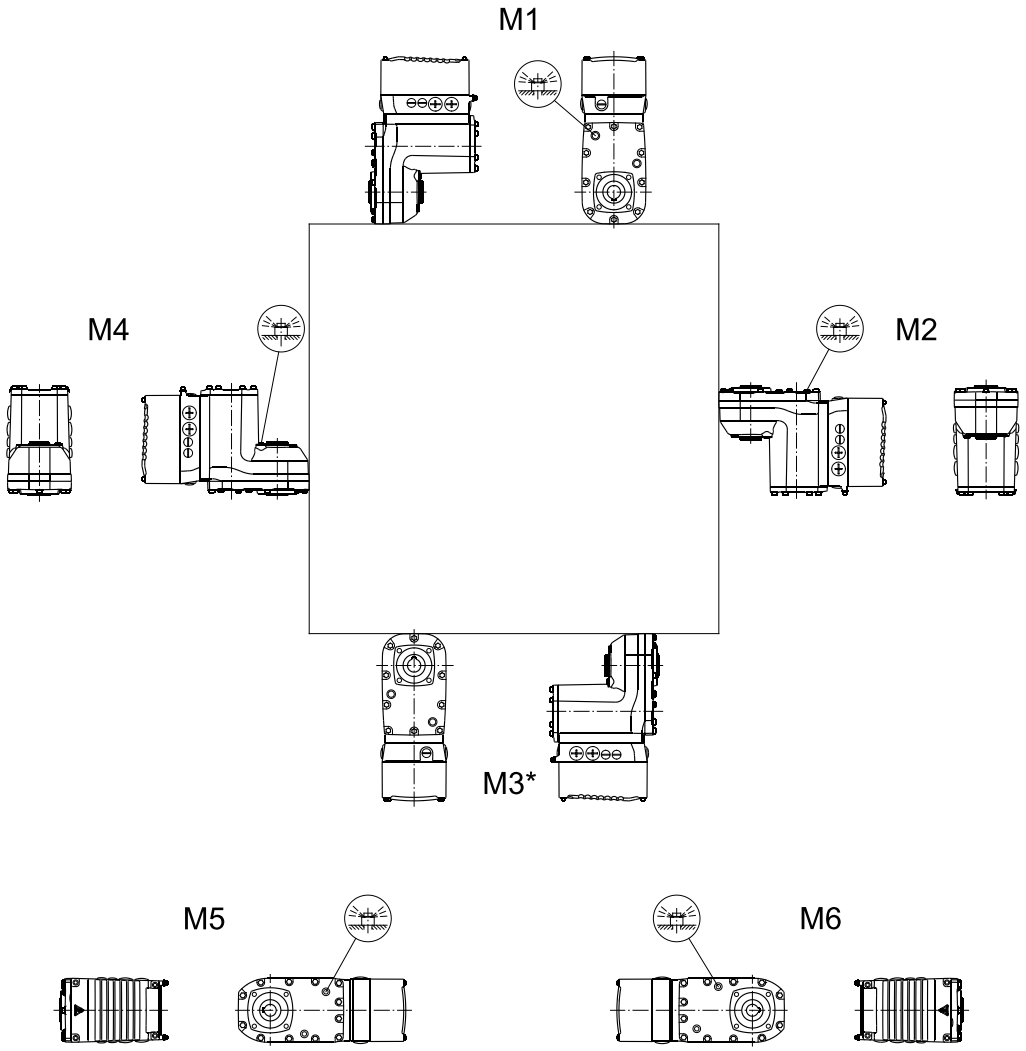
* = Mounting position M3 is only possible with the option "integrated pressure compensation /PG".

= Breather valve

5.1.3 Mounting position sheet for MOVIGEAR® performance

03 015 00 18





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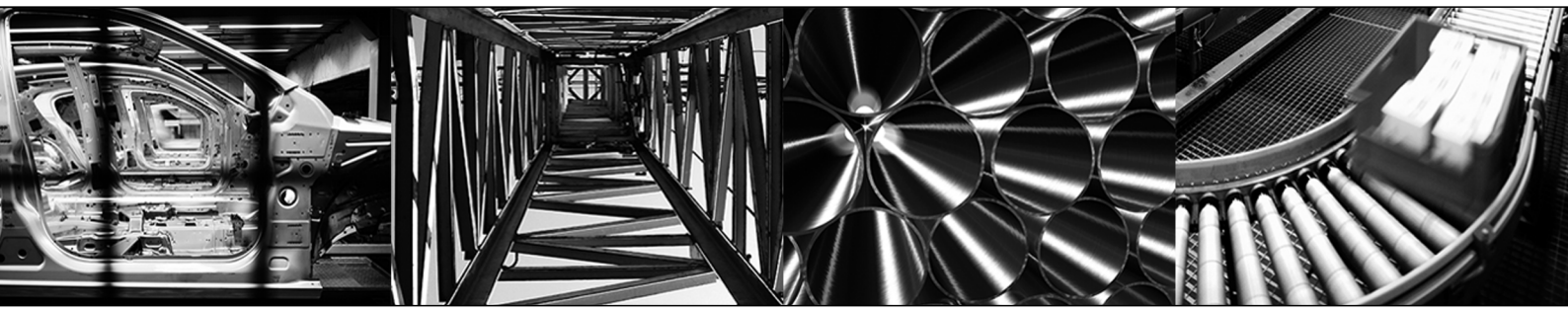
* = Mounting position M3 is only possible with the option "integrated pressure compensation /PG".

= Breather valve



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