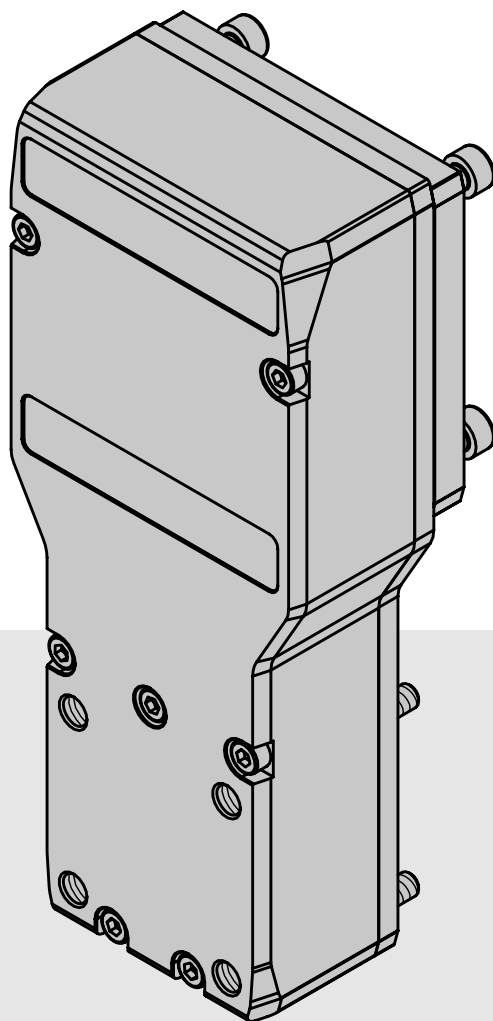


UNIMOTION

ASSEMBLY INSTRUCTIONS

MSD MG






MOTOR SIDE DRIVE
WITH A TIMING BELT



GENERAL INFORMATION

In this assembly instructions the linear unit and electric cylinder or slider, on which the motor side drive MSD will be mounted, are designated as product. The motor or the gearbox are designated as motor. There is also an abbreviation MSD used, by which the motor side drive is defined.

USED SYMBOLS

	Remark, note
	Warning!
	Danger! Risk of coming into contact with power conducting parts! The power supply must be disconnected!
	For more information, please refer to the specified documentation
	Use different tightening torque as it is presented in the section "Recommended tightening torques"

RECOMMENDED TIGHTENING TORQUES

Recommended tightening torques of the screws


Tightening torque (8.8)	Thread size						
	M2	M2,5	M3	M4	M5	M6	M8
$M_{A, \max}$ [Nm]	0,4	0,7	1,3	2,8	5,6	9,6	23,0

Table 1: Recommended tightening torques of the screws of strength class 8.8.

PERMISSIBLE LOADS

Overloading

The maximum rotational speed and the maximum torque of the motor must not exceed the limits of the product or the motor side drive MSD MG. Overloading the product or MSD can lead to the product or MSD being damaged.

 For the values of maximum rotational speed and maximum torque of the product or the motor side drive MSD MG, please refer to the product catalogue.

Pretension of the belt

The excessive pretensioning of the belt may result in breaking of the product drive shaft or the motor shaft. Service life of the belt and bearings of the product or the motor may be significantly reduced.

IDENTIFICATION LABEL

- 1 – ID number
- 2 – Manufacturing date of the motor side drive
- 3 – Type of the motor side drive (ordering code without the motor dimensions)

i The label must be fully visible and must ensure compliance with all the instructions it contains. Damaged or illegible labels must be replaced.

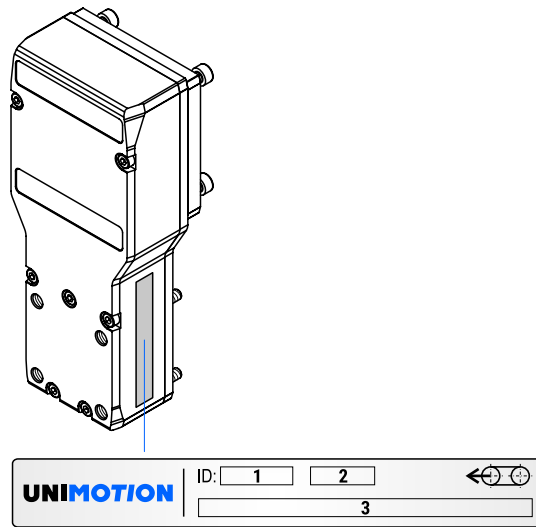


Figure 1: Identification label of the motor side drive MSD MG.

PARTS LIST

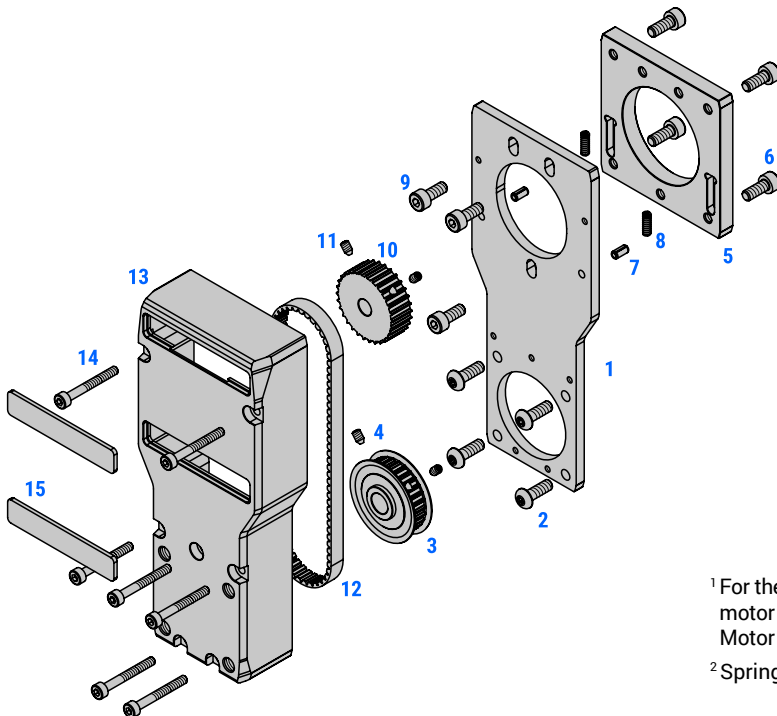


Figure 2: Parts of the motor side drive MSD MG.

- 1 – Base plate
- 2 – Base plate screw
- 3 – Product belt pulley
- 4 – Product belt pulley set screw
- 5 – Tensioning plate
- 6 – Motor screw¹
- 7 – Spring support pin²
- 8 – Spring
- 9 – Tensioning plate screw¹
- 10 – Motor belt pulley
- 11 – Motor belt pulley set screw
- 12 – Toothed belt
- 13 – MSD cap
- 14 – MSD cap screw
- 15 – Cap plug

¹ For the case of using the standard motor side drive and the standard motor with the tapped mounting holes, there are no motor screws. Motor is mounted using the tensioning plate screws.

² Spring support pins are already mounted onto the base plate.

i The standard motor side drives MSD MG are compatible with the standard motor. For the combination with an individual motor, the non-standard motor side drive is used.

i For the compatibility of the standard motor side drives MSD MG with standard motors, please refer to the product catalogue.

MOUNTING

⚠ Requirements for personnel

The motor side drive may only be mounted by appropriately qualified personnel. All qualified personnel must have read and understood this assembly instructions.

⚠ Risk of coming into contact with power conducting parts!

During the mounting procedure, the power supply should be disconnected and secured against reconnection!

⚠ Avoid from collision of the moving components and the motor side drive (or the motor).

There must never be any collision of the mounted motor side drive (or the motor) and the moving components of the product or structure where the product is installed, otherwise the product or motor side drive may be damaged.

STEP 1 AND 2

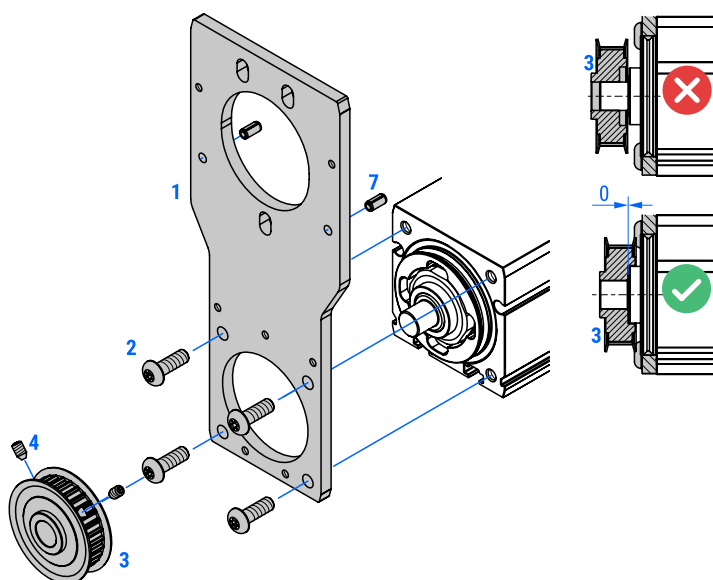


Figure 3: Step 1 and 2.

STEP 1: Mount the base plate 1 on the product using the base plate screws 2. The base plate 1 can be mounted in any orientation (facing up, right, down or left).
Tighten the base plate screws 2.

i There should be noted that the spring support pins 7 are already mounted onto the base plate 1.

STEP 2: Place the product belt pulley 3 on the drive shaft of the product. Ensure that the product belt pulley 3 is completely pushed on the drive shaft of the product, please see the Figure 3.
Tighten the product belt pulley set screws 4 evenly.

⚠ Tighten the set screw 4 with the tightening torque as follows:

- set screw of size M3: 0,9 Nm,
- set screw of size M5: 5,8 Nm.

STEP 3 AND 4

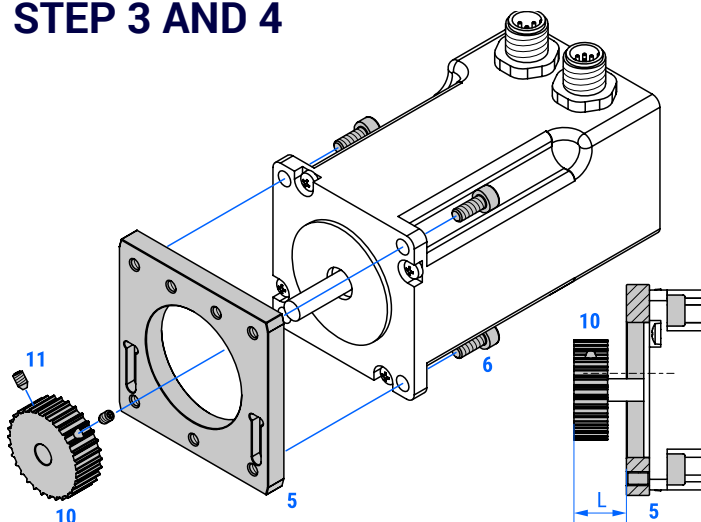


Figure 4: Step 3 and 4.

STEP 3: Mount the tensioning plate 5 onto the motor (in desired motor orientation) with the motor screws 6. Tighten the motor screws 6, as it is presented in the Table 1.

i Make sure that the prepared slots for the springs on the tensioning plate 5 are placed on the opposite side of the motor.

i For the case of using the standard motor side drive and the standard motor with the tapped mounting holes, there are no motor screws 6. Place the tensioning plate 5 onto the motor without tightening it.

⚠ For the compatibility of the standard motor side drives MSD MG with standard motors, please refer to the product catalogue.

VK MG	Type	L [mm]
		(±0,2 mm)
25	T1	13,6
32	T1	13,6
	T2	12,8
45	T1	14,9
	T2	14,8
60	T1	15,5
	T2	19,5

Table 2: Mounting distance L.

STEP 4: Place the motor belt pulley **10** on the motor shaft. Ensure that the motor belt pulley **10** and the motor shaft are correctly aligned (mounting distance L between the tensioning plate **5** and the outside surface of the motor belt pulley **10** must be ensured), see Figure 4 and Table 2. Tighten the motor belt pulley set screws **11** evenly.

⚠ Tighten the set screw **11** with the tightening torque as follows:

- set screw of size M3: 0,9 Nm,
- set screw of size M5: 5,8 Nm.

STEP 5

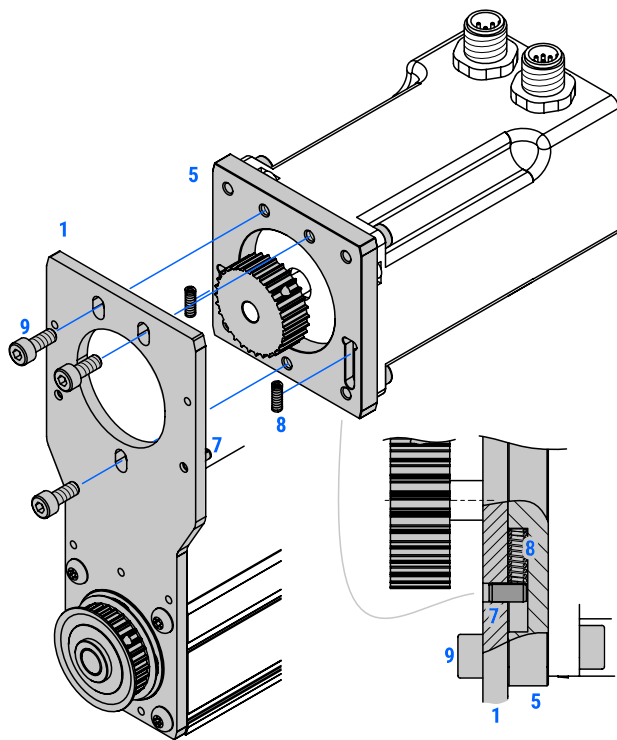
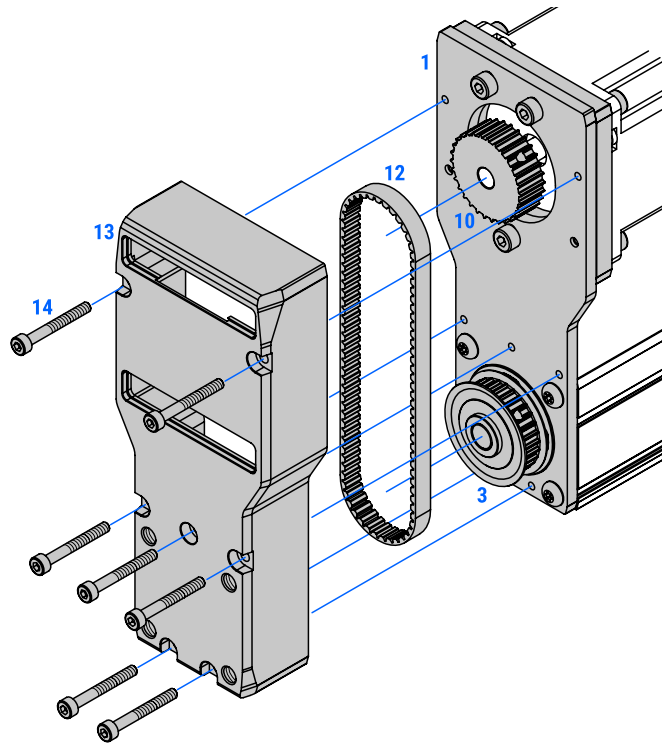


Figure 5: Step 5.

STEP 5: Place the springs **8** in the prepared slots on the tensioning plate **5**. Mount the tensioning plate **5** together with the springs **8** and the motor on the base plate **1**. Ensure that each of the springs is positioned above the spring support pin **7**, please see the Figure 5, where detailed section view is presented.

Lightly tighten the tensioning plate screws **9**. Make sure that the movement of the tensioning plate **5** is unrestricted. There must be no visible gap between the base plate **1** and the tensioning plate **5**.

STEP 6 AND 7



STEP 6: Push the motor in the direction of the product to shorten the centre-to-centre distance between both of the belt pulleys **3** and **10**.

Place the toothed belt **12** on the flanged belt pulley (**3** or **10**) first and then on the non-flanged belt pulley (**10** or **3**). During placing the toothed belt **12**, it is important to ensure the correct rotational alignment of both belt pulleys **3** and **10** (set screws of both pulleys **3** and **10** must face in the same direction, please see the Figure 7).

STEP 7: Mount the MSD cap **13** on the base plate **1** using the MSD cap screws **14** and tighten them.

Figure 6: Step 6 and 7.

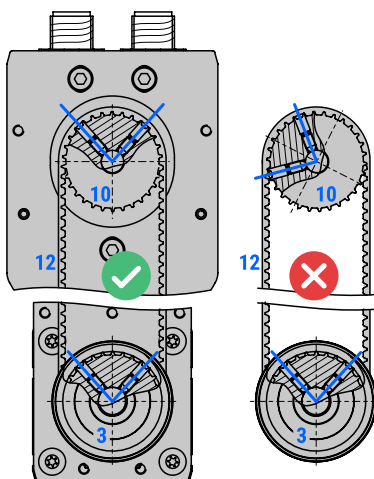


Figure 7: Rotational alignment of the product and motor belt pulleys (**3** and **10**).

STEP 8 AND 9

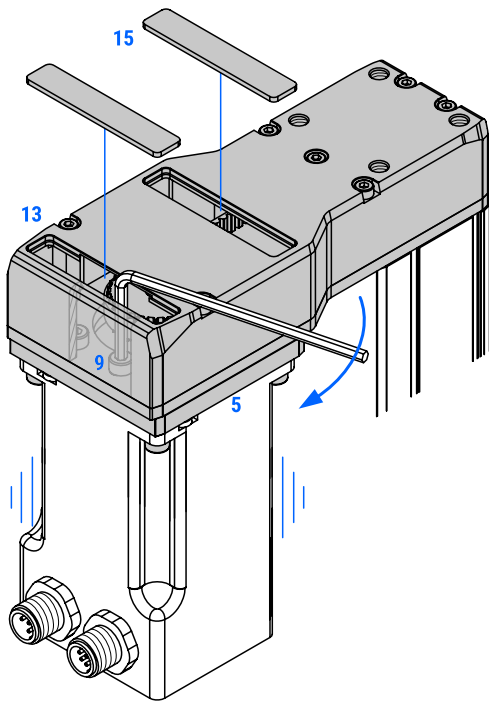


Figure 8: Step 8 and 9.

STEP 8: Place the motor side drive (together with the product and the motor) in a horizontal direction. Shake the motor (together with the tensioning plate **5**) lightly several times with a hand to ensure that the tensioning plate **5** fits optimally on the base plate **1** (springs inside the tensioning plate **5** will automatically tension the toothed belt properly). Then tighten the upper tensioning plate screws **9** first and then the remaining one (ones) through the holes on the MSD cap **13**.

⚠ Pretension of the belt

The toothed belt must not be additionally tensioned. Appropriate belt pretension is generated automatically via the springs placed inside the tensioning plate **5**. The excessive pretensioning of the belt may result in breaking of the product drive shaft or the motor shaft. Service life of the belt and bearings of the product or the motor may be significantly reduced.

STEP 9: Insert the cap plugs **15** into the prepared holes on the MSD cap **13**.

INITIAL START-UP

Before the initial start-up, check if everything is OK:

- electrical wiring,
- mounted elements,
- tightened screws,
- there is no collision of the moving components and the motor side drive (or the motor),
- the motor needs to be supported for the case the product is subjected to the shock loads and vibrations or a massive motor is used.

DISMOUNTING

To dismantle the motor side drive MSD MG properly, look at the mounting procedure.

⚠ Dismounting the motor side drive

To dismantle the motor side drive MSD MG, take precautions, such as turning off the power supply and prevent the moving components of the product from dropping, if it is in a vertical or inclined position. It should be also noted, that during the operating process hot surfaces of the motor, motor side drive MSD and product may occur.