![JVL intelligent motors logo]

Gear mounting instructions

For ServoStep™ Integrated Stepper (MIS) Motors and MAC motor® - Integrated Servo Motors

1 Important User Information

Warning

The MAC and MIS series of products are used to control electrical and mechanical components of motion control systems. You should test your motion system for safety under all potential conditions. Failure to do so can result in damage to equipment and/or serious injury to personnel.

Please contact your nearest JVL representative in case of technical assistance. Your nearest contact can be found on our web site www.jvl.dk

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2 Revisions

Ver.	Changes	Date	Init
1.0	Document creation	2025-08-19	JLN

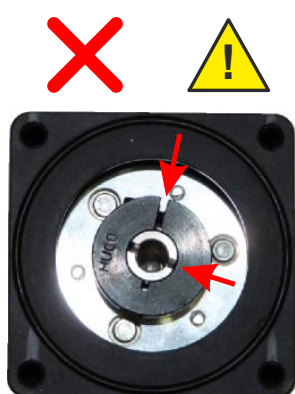# 3   Contents

4 Proper gear installation on motors

This guide covers the installation of all JVL planetary, robot and worm gears (HSHG, HTRG, HTTW, HLMT and others).

When mounting a gear onto a motor, it is essential to ensure correct installation. Improper alignment or fitting can significantly reduce the lifespan and performance of both the motor and the gear. Always follow manufacturer guidelines and verify secure, precise placement to avoid mechanical issues or premature wear.
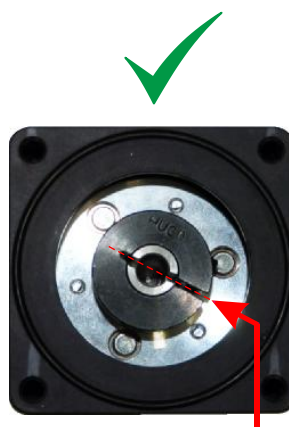
To ensure the best result, please follow the guidelines below:

(1) **Step 1:** Ensure the shaft collar is correctly oriented to allow proper tension on the motor shaft.
Tip: Lightly tighten it to hold it in place, then rotate it such that it is possible to reach the bolt from the outside.
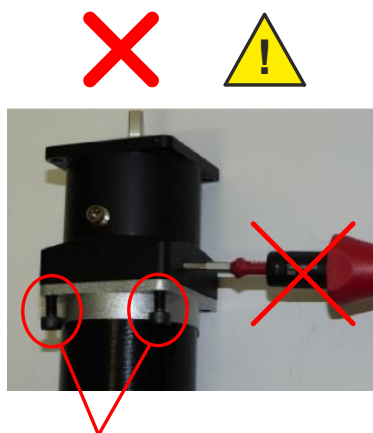
The inner and outer slits must be aligned. Make sure they are aligned as in the illustration on the right.

Correctly aligned inner and outer slits.

(2) **Step 2:** Mount the gear or brake onto the motor, but first fasten the 4 shaft bolts before securing the shaft collar.
Tip: Apply Loctite 278 to the threads to ensure the bolts stay firmly in place.

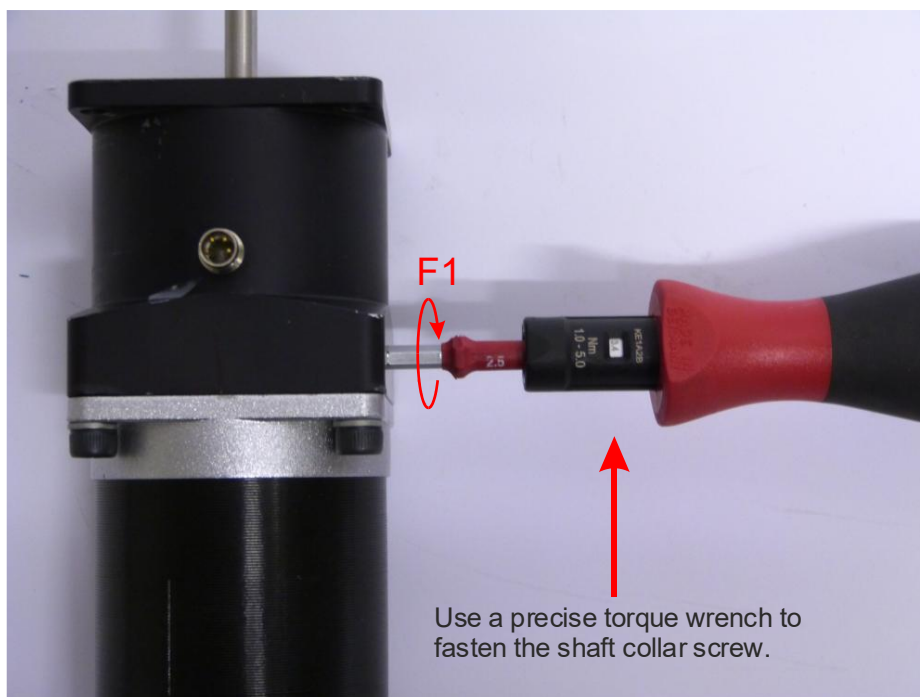Do not tighten the shaft collar before the flange bolts.

Properly mounted and tightened flange bolts.

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③ Step 3: Tighten the shaft collar to the torque from the chart below
Note: Incorrect torque may cause slippage leading to position errors.

F1

Use a precise torque wrench to fasten the shaft collar screw.

Gears (Product type to be mounted)

Series	Used with motor type	Shaft	Hex	Bolt	Torque (F1)	
		Metric			Oz•in	N•m
HTRG05	MAC050 to MAC141	6.35	3.0	M4	550	4 Nm
HTRG05	MIS23x	6.35	3.0	M4	550	4 Nm
HTRG06#	MAC050 to MAC141	6.35	3.0	M4	550	4 Nm
HTRG06	MAC400-402	14.0	3.0	M6	1400	10 Nm
HTRG08	MIS340-341	9.53	4.0	M4	550	4 Nm
HTRG08	MIS342	14.0	5.0	M6	1400	10 Nm
HTRG08	MAC800	19.0	5.0	M6	1400	10 Nm
HTRG10	MAC800	19.0	5.0	M6	1400	10 Nm
HSHG05...	MIS17x	5-9	2.5	M3	280	2 Nm
HSHG17...	MIS17x	5-8	2.5	M3	280	2 Nm
HSHG23...	MIS23x	6.35	3.0	M4	550	4 Nm
HLMT060	MIS17x..23x, MAC140	6.35		M4	680	4.8 Nm
HLMT085	MIS23x, MAC140	6.35		M4	680	4.8 Nm
HLMT110	MIS340..341	9.53		M5	1400	10 Nm
HLMT110	MAC400..402	14.0		M5	1400	10 Nm
HLMT135	MIS234, 232T (Ø10)	10.0		M5	1400	10 Nm
HLMT135	MIS340..341	9.53		M5	1400	10 Nm
HLMT135	MAC400..402	14.0		M5	1400	10 Nm
HLMT200-2-st.	MIS340..341 (25:1..100:1)	9.53		M5	1400	10 Nm
HLMT200-1-st.	MIS340..341	9.53		M6	2250	16 Nm
HLMT200-1-st.	MAC800..1200	19.0		M6	2250	16 Nm
HLMT200-1-st.	MAC1500	24.0		M6	2250	16 Nm

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External gears on MAC100 series (stainless steel) must be mounted with silicone to ensure ingress protection.