

Doc. No.: N-DD-IM-TL101	Installation & Operation Instructions Housing Torque Limiter – NFTL			
Rev : -00	Rev Date :-	Prepared by : KRP	Checked by : DBP	

1.) General Instruction:-

- Please give full attention to Safety Notes before installation.
- These instructions regarding installation will only valid, if the products meets the selection criteria before installation.
- Ignore & misconception of installation & operation instruction invalidate the product liabilities or warranty by the NMTG Mechtrans Private Limited; same applies if the product id taken apart or changed.

2.) Safety Criteria:

- Installation should be carried out by skilled person only.
- Replacement of any part should be carried out by NMTG only.
- If there is any problem detected in housing torque limiter or machine into which it is installed, stop machine immediately.
- Make sure turning forces are not applied to torque limiter or turning shaft of the equipment when conducting inspection or maintenance.
- Frequent starting and stopping will apply excessive force on the mounting. Verify mounting strength.
- In accurate installation and mounting, various load conditions, wear and tear of parts, and life expectancy can all affect the performance of a housing torque limiter.
- It is necessary to wear Personal Protective Equipment (such as safety shoes, gloves, goggles, etc.) while handling machine in which housing torque limiter is installed.

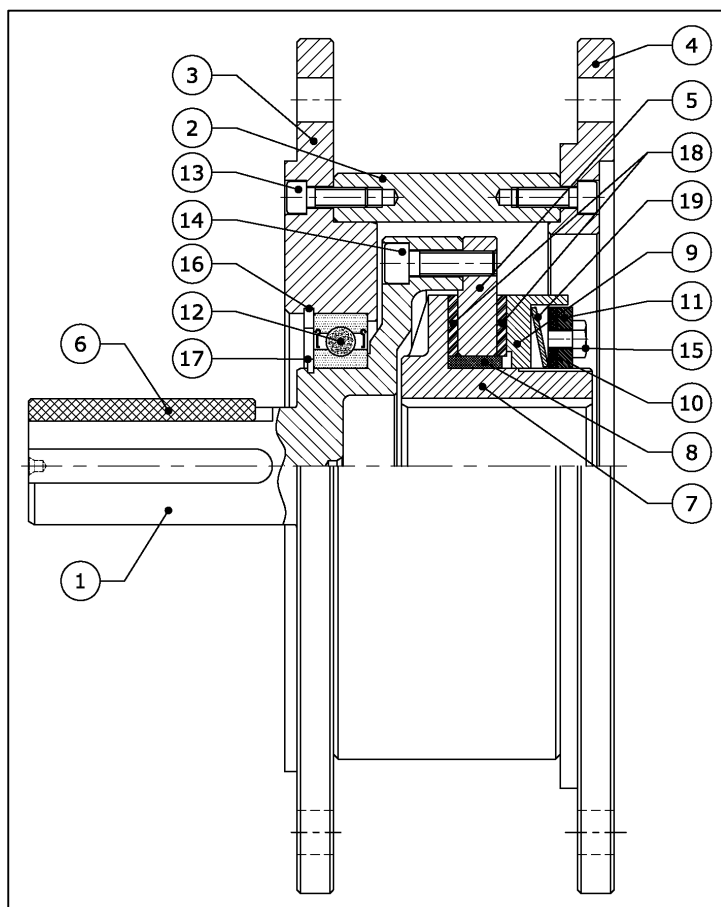
3.) About Housing Torque Limiter - NFTL:

- NMTG NFTL designed overload/slipped torque of clutch with shielded type ball bearing support & double side Flange arrangement.
- NFTL housing freewheel clutch are directly mounted between Flange motor & Gear unit flanges.

4.) Function of NFTL:

- The housing torque limiter is a mechanical device which protects motor, gearbox and machine when overload happens.
- If pre-set spring torque limit exceeds, then the device element splits and protect machinery / equipment against costly damage.
- During the slipping process, input and output rotate relative to each other and pre-set slipping torque continues to be transmitted.

5.) Design:



No.	Nomenclature	No.	Nomenclature
1	Output Shaft	2	Support Ring
3	Front Cover	4	Rear Cover
5	Friction Plate	6	Shaft Key
7	Hub	8	Bearing Bush
9	Thrust Washer	10	Lock Washer
11	Adjusting Nut	12	Shielded Bearing
13	Allencap Screw	14	Allencap Screw
15	Hex Head Screw	16	Internal Circlip
17	External Circlip	18	Friction Liner
19	Disc Spring		

6.) Pre-Installation:

➤ Shaft-Bore fit:

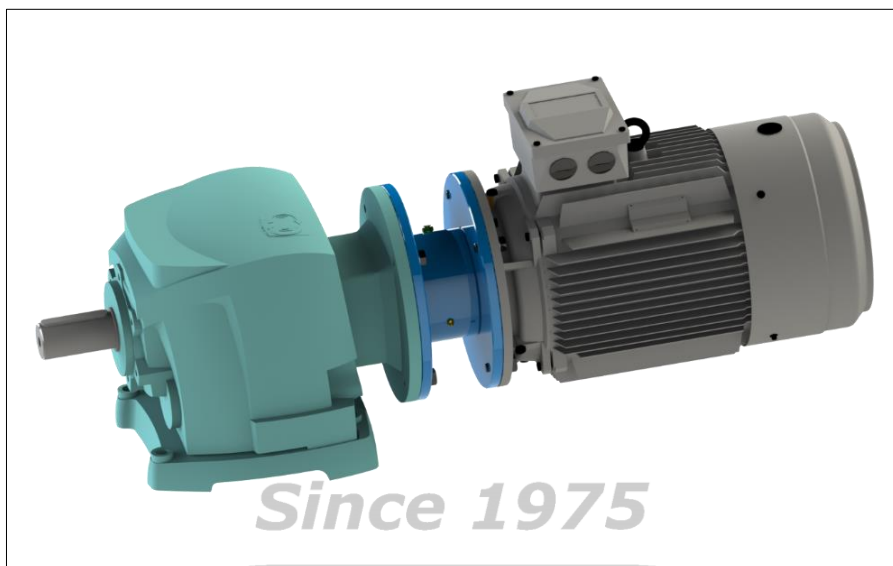
- Shaft should be free from burs and smooth. The tolerance should be controlled as per slide fit the mating shaft & bore.
- Provide coating on shaft with anti-seizing agent for easy mounting and easy removal of housing torque limiter.
- Shaft should not tapered and bore are finished to size for an “easy push fit” on a straight shaft.

➤ Key and keyway:

- Check the key fit with both the housing torque limiter and shaft.
- To provide for adequate top of key clearance, the straight keyway in the bore of the housing torque limiter has been made slightly deeper than standard.
- Only a parallel key is recommended for housing torque limiter fixing. Do not use a tapered key. And there must be clearance between clutch keyway and key top. The key should be in accordance with DIN 6885.1.
- Check key will slide through the housing torque limiter keyway and corner radius is clear for fitment.

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7.) Installation Process:



- The housing torque limiter will be installed in between Motor Flange & Equipment (Geared unit etc.) Flange. Hollow part of housing torque limiter will be inserted on to Output shaft of Motor & Shaft side of torque limiter inserted on hollow part of equipment. This assembly are not suitable for belt drive pulley applications.
- Interference fit and shrink fit are prohibited for housing torque limiter fixing.
- Key must be very carefully fitted to prevent any differential movement.
- Fit the bolts on face of Flanges. Buyer have to arrange concentric alignment for equipment Flange and Spigot diameter of Flange covers.
- **Use 10.9 Grade Bolt only for Mounting.**
- **Do not hit / hammer the plates to avoid damage of housing torque limiter assembly.**
- The Housing torque limiter are typically shipped with the slipped torque value they have specified. (Note: All torque settings are +/- 10 %.) If a torque limiter requires setting or re-setting in the field, please refer to “**Torque Setting Instructions**” below.

❖ Torque Setting Instructions:

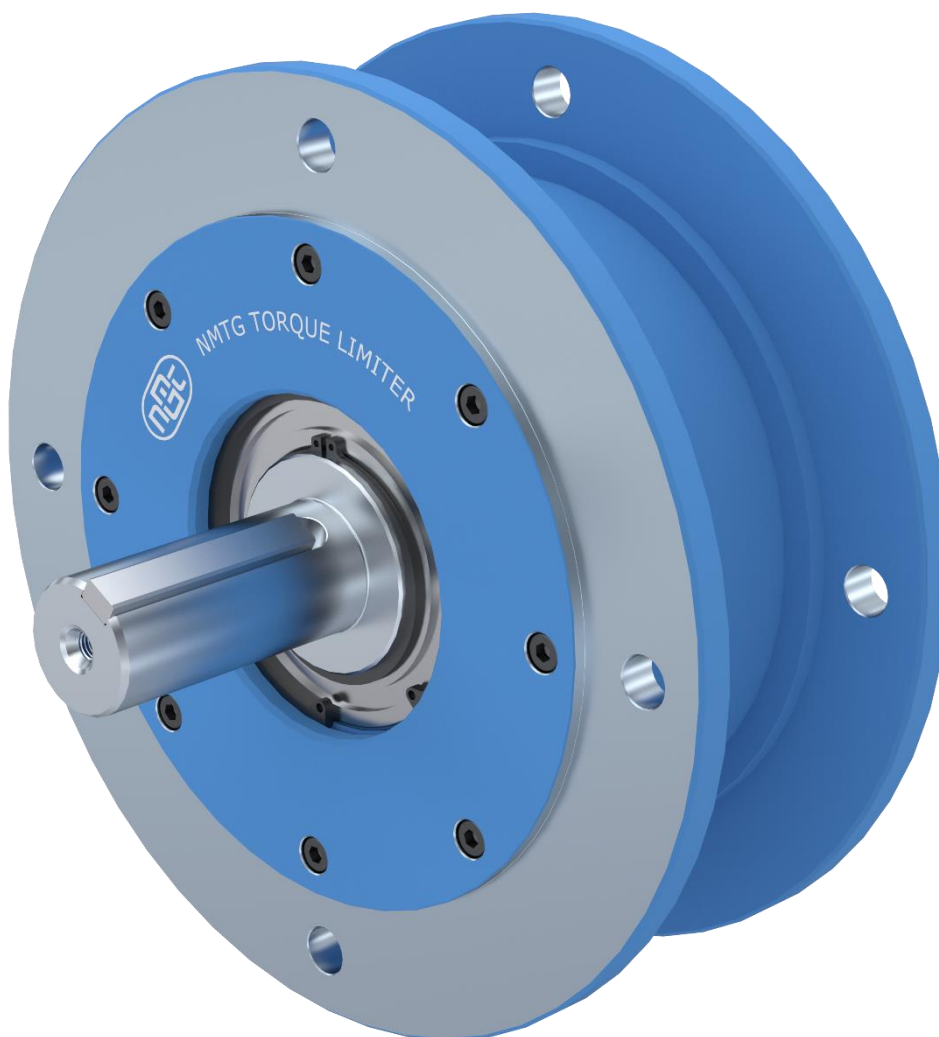
- Unscrew the hex head screw from adjusting nut.
- The adjusting nut with lock washer is adjusted by hand up to contact on the disc springs.
- Using a spanner wrench, tighten or loosen the adjustment nut against the disc spring and check torque value after each 1/8 or 1/4-turn increment of the adjustment nut while holding hub stationary and turning drive hub with a **torque wrench**.
- After torque setting, tighten the hex head screw in the of the adjustment nut.

8.) Maintenance & Repair/Replacement:

- The housing torque limiter is maintenance free.
- Check the wear-out of friction liner & axial fastening of the housing torque limiter on slipped torque value carried out in when performing maintenance.
- If a torque limiter requires setting or re-setting in the field, please refer to “Torque Setting Instructions” section.
- If the friction liner is wear out & desired slipped torque should not be achieved, contact to NMTG.

❖ **Friction Liner & Disc Spring Replacement Procedure:**

- Remove the adjustment nut, lock washer, disc spring, friction plate and friction liner.
- Friction liner, Disc spring should be clean (no dust particle), completely dry and free of burrs or nicks.
- Reassemble friction liner & disc spring section according to reference drawing using new spring, friction liner & disc spring as necessary.
- Ensure that disc spring move freely on the hub and that the lugs of the disc springs move freely in the drive slots of the sleeve.
- Refer repeat procedure of installation & torque setting for reinstallation of assembly.



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