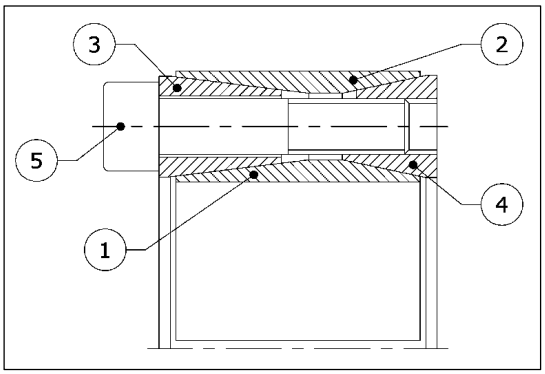
Doc. No.: N-DD-IM-LA113	**Installation & Removal Instructions of Locking Assembly** *(N7014 Model)*			
Rev : -00	Rev Date : -	Prepared by : KRP	Checked by : DBP	Page | **1**

1.) About N7014 & Function:

- N7014 Locking Assembly is internal clamping device to provide backlesh free mounting of hub on shaft.Torque is transmitted by contact preassure & friction between contact surface. Condition surface and proper tightening of screw is great importance.By appling torque to clamping screw,radial clamping force generated due to taper surface.The radial clamping force press outer ring into the hub bore and inner ring onto the shaft and create a friction connection at respective contact surfaces.

2.) Nomenclature:



No.	Nomenclature
1	Front Nut
2	Rear Nut
3	Inner Ring
4	Outer Ring
5	Clamping Srew

3.) Technical Requirement for safe operation:

- A good surface finish by machine tool is sufficient. Maximum allowable surface finish: Ra max 3.2µm. Maximum permissible tolerances for Shaft is h9 & for hub bore is H9.
- **Note :**
  1) **Don't use oil containing molybdenum sulphide or high-pressure additives or grease of any kind.**
  2) **For Tightening of screws, Torque wrench must be used. Do not uses Allen keys otherwise required Technical parameters will not be achieved.**
  3) **During installation be ensure that Shaft and hub should be kept concentric and eliminate an effect of self-weight of Hub & Shaft upon the locking assembly by balancing them.**

4.) Installation:

- Before Installation be ensure that hub bore and shaft are properly clean (No dust particles).
- Apply light coat oil onto hub, shaft at where Locking assembly is to be located.
- First of all,loosen the clamping screw by hand.
- Slide the locking assembly onto the shaft & into hub and after confirming the correct position of locking assembly in respect of hub then hand tighten all screws in diametrically opposed sequence
- Once the axial position of locking assembly is fixed then tighten all screws one by one in diametrically opposed sequence by using **torque wrench**. (As mention in Fig.01)
- At a time tighten screws by 1/4 revolution with help of torque Wrench for several passes*(Set torque wrench for 1st pass: 1/3 Ta ; 2nd pass: 2/3 ; 3ed pass: Full Ta or 5% more)*. Where Ta= Tightening torque
- The tightening process is completed only when no one screw turn at specified tightening torque value.
- *(**IMPORTANT:** Improper installation generates uneven tension in tightening screws and ultimately Which transfers uneven pressure distribution at shaft and hub connection, Lead to Malfunctioning of locking assembly.)*

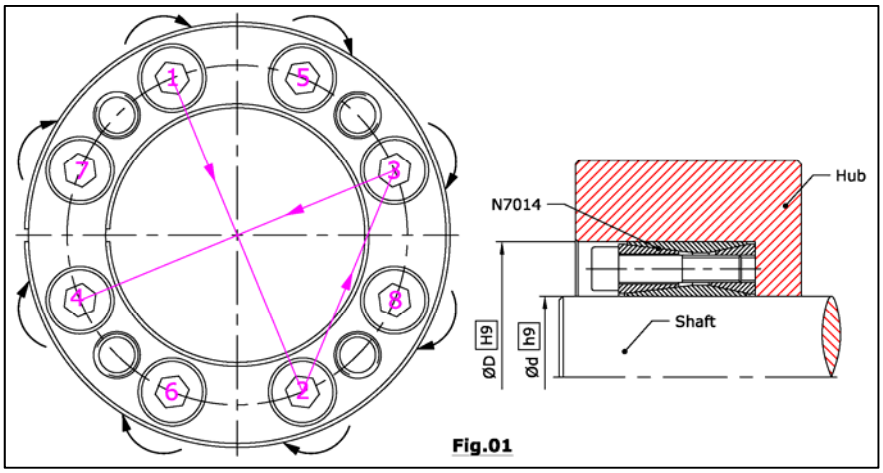


Fig.01

Torque wrench torque	No. of Pass	Bolt Sequence	Tightening of screws
1/3 Ta	P_1 , P_2 , P_3 , P_4 ,…n	1,2 ,3 ,4, …	By 1/4 Revolution
2/3 Ta	P_1 , P_2 , P_3 , P_4 ,…n	1,2 ,3 ,4, …	By 1/4 Revolution
Full Ta or 5% more	P_1 , P_2 , P_3 , P_4 ,…n	1,2 ,3 ,4, …	By 1/4 Revolution

Tightening Torque:

Screw Size	M10	M12	M14	M16	M18	M20
Ta(Nm)	83	145	230	355	485	690

- **Above mention value of tightening torque is maximum. Please refer drawing for actual value of tightening torque as per your application.**
- **Replace missing or damaged clamping screw with screw of quality grade 12.9 grade only.**

5.) Removal:

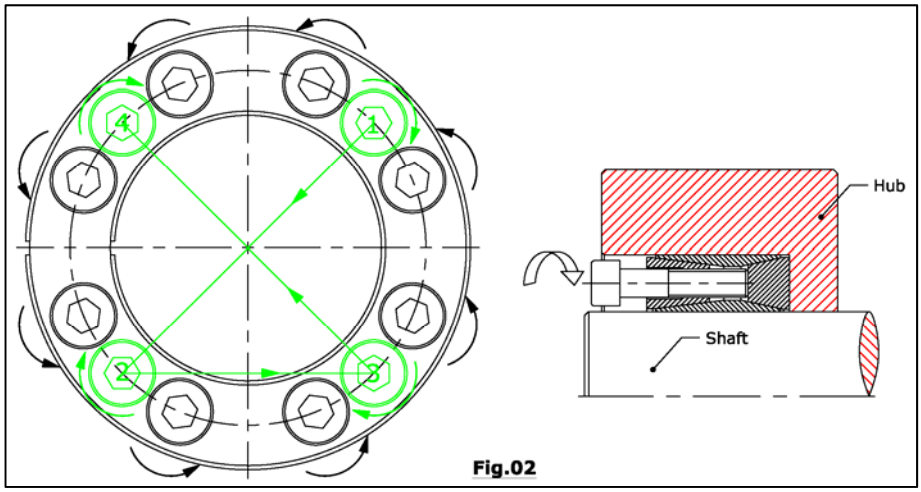


Fig.02

- Loosen the clamping screws uniformly one by one with the help of torque wrench in diametrically opposed sequence in multiple steps by 1/4 revolution for each step to Prevent misalignment of the clamping surfaces and breaking of screws (As shown in Fig.02). If completely loosen of single screw at a time take place, then it may lead to tilt inner ring & outer ring and damage of locking assembly occurs.

- N7014 is not self releasing. So loose all screws, Remove some screws which are clamped on locking assembly or nearest to removal holes and those screws insert into removal tapped holes which have been provided on front nut. (As Shown in Fig.02).
- Apply the tightening torque with 1/4 revolution to removal screws by torque wrench, continue the procedure for several passes and which lead to jacking of front nut or loosening the locking assembly from shaft – hub connection.
- After loosen the assembly, Remove the whole assembly from shaft & hub.

6.) Reuse:

- For reuse of locking assembly, to re-lubricate front nut, rear nut, outer ring, inner ring and clamping screw. If any damage found in parts of locking assembly,then replacement of whole assembly required. Before reuse of locking assembly's screws please check screws length & if they have been elongated, during operating condition- can't reused, hense replace (with same size and grade).

7.) Maintenance:

- Locking assembly N7014 is maintenance free. We therefore recommend checking the tightening torque of the clamping screws each time maintenance is performed on the machine.

(All Figures shown in instructions are for easy understanding of installation and removal processes.)

8.) Storage Preservation and Instruction:

- NMTG Product is supplied with an oil film as Rust & Corrosion Protection as per below instruction.
- This protection is renewed at regular intervals which depends on Environmental condition at Storage site. (Temperature, Atmosphere, etc.)

➢ **Maximum Storage period is 6 Months for Short-term Storage**.

Please follow Instruction for Preservation & Storage of NMTG Products:

- Once NMTG Product is used then clean all its parts with clean cloth.
- Lubricate all parts with rust preventive oil S-VCI 415 or equivalent & assemble as it was & packed in plastic bag.
- After wrapping in plastic bag, Material is packed by S-VCI 131 or equivalent rust preventive paper & store.
- Keep it in dry place and free from dust.
- Do not expose to open or corrosive environment.
- Keep away from direct Sunlight.
- Avoid Mechanical Shock & Vibration.
- Storage Temperature: -10 to +60°C.
- Relative Humidity: Maximum 95%, non-condensing.

For Long term Storage (1 Year):

Please follow Instruction for Preservation & Storage of NMTG Products:

- Once NMTG Product is used then clean all its parts with clean cloth.

- Lubricate all parts with rust preventive oil S-VCI 415 or equivalent & assemble as it was & packed in special Vacuum bag.
- After wrapping in Vacuum bag, Material is packed & store.
- Keep it in dry place and free from dust.
- Do not expose to open or corrosive environment.
- Keep away from direct Sunlight.
- Avoid Mechanical Shock & Vibration.
- Storage Temperature: -10 to +60°C.
- Relative Humidity: Maximum 95%, non-condensing.