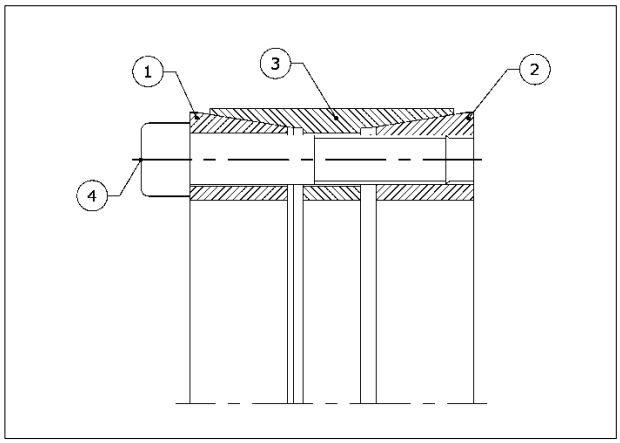
1.) About N7515 / N7515 ZZ / N7515 ZZ Light & Function:

- N7515 / N7515 TC Locking Assembly is internal clamping device to provide backlash free mounting of hub on shaft.Torque is transmitted by contact pressure & friction between contact surface.surface condition and proper tightening of screw is great importance.By appling torque to clamping screw(s),radial clamping force generated due to taper surface.

2.) Nomenclature:



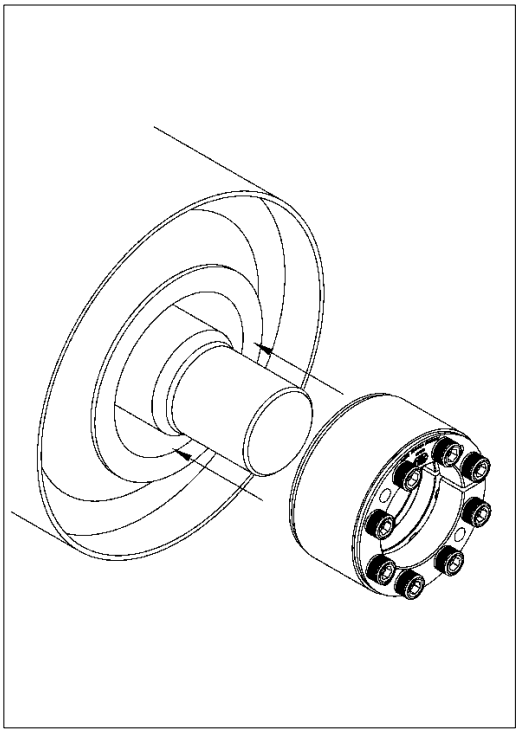
No.	Nomenclature
1	Front Nut
2	Rear Nut
3	Outer Ring
4	Clamping Screw(s)

3.) Technical Requirement for safe operation:

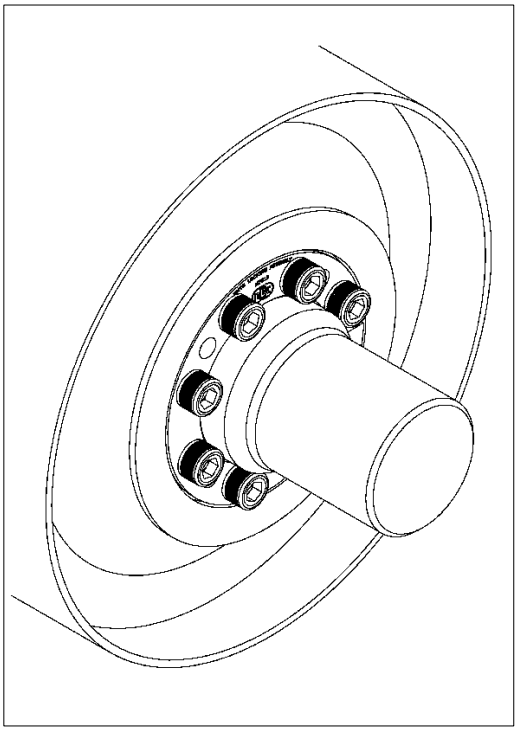
- A good surface finish by machine tool is sufficient. Maximum allowable surface finish: Ra max 3.2µm. Maximum permissible tolerances for hub H8 & Shaft h8.
- **Notes:**
  1) **Don't use oil containing molybdenum sulphide or high-pressure additives or grease of any kind. Apply light coat oil on the shaft & into hub ineer surface.**
  2) **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.**
  3) **For Tightening of screws, Torque wrench must be used. Do not use Allen key otherwise required Technical parameters will not be achieved.**

4.) Installation:

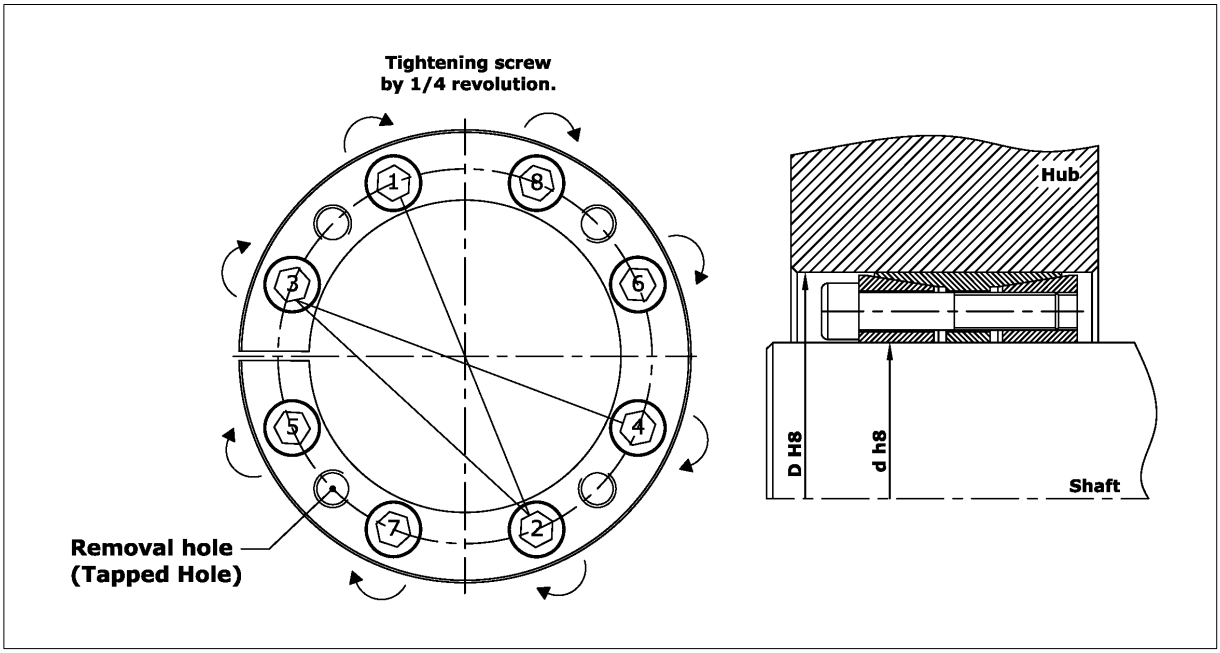
- Before Installation be ensure that hub bore and shaft are properly clean (No dust particles).
- Apply light coat oil onto hub, shaft at where Locking assembly is to be located.
- Assure that necessary space for axial movement of front & rear nut is available.Loosen the clamping screw by hand.
- Slide 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 (As shown in Fig.-1 & Fig.-2).



(Fig.-1)



(Fig.-2)



(Fig.-3)

- 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 shown in Fig.-3)
- At a time tighten screw(s) 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 Ta ;3rd 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.)*

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
Ta or 5% more	P_1 , P_2 , P_3 , P_4 ,…n	1,2 ,3 ,4, ...	By 1/4 Revolution

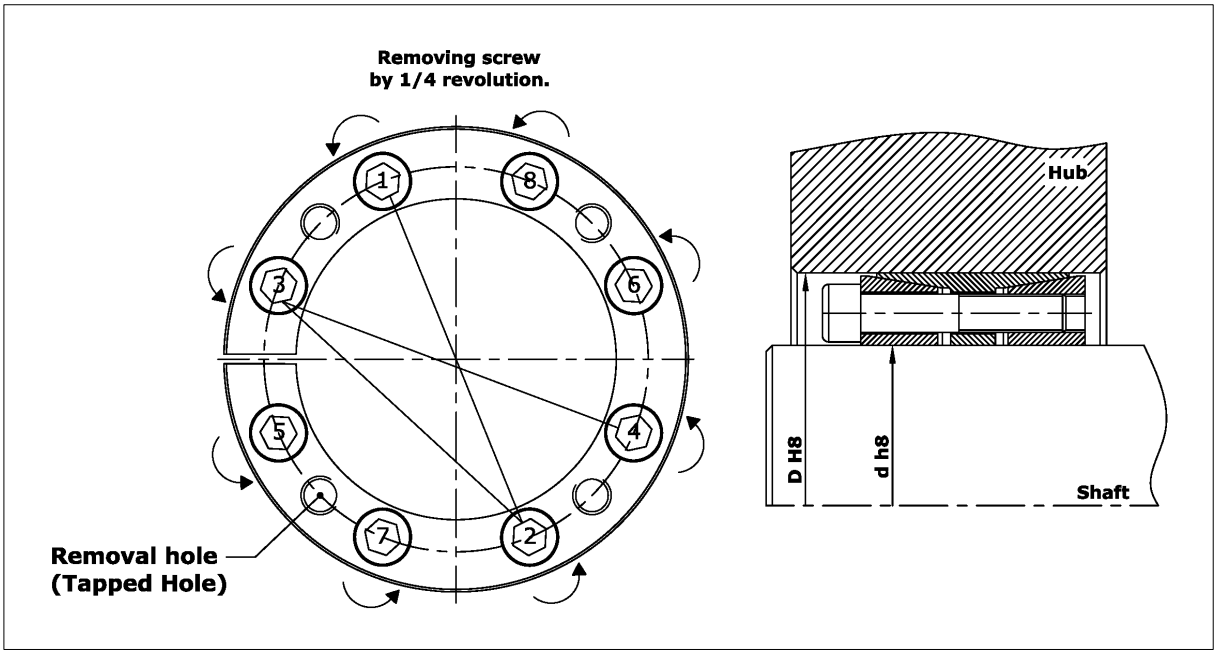
Tightening Torque:

General Application		Bending Load Application	
Screw Size	Ta(Nm)	Screw Size	Ta(Nm)
M6	17	-	-
M8	41	-	-
M10	83	-	-
M12	145	M12	125
M14	230	M14	190
M16	355	M16	295
M18	485	M18	405
M20	690	M20	580
M22	930	M22	780
M24	1200	M24	1000

- **Above mention value of tightening torque is maximum. Please refer drawing for actual value of tightening torque as per your application.**

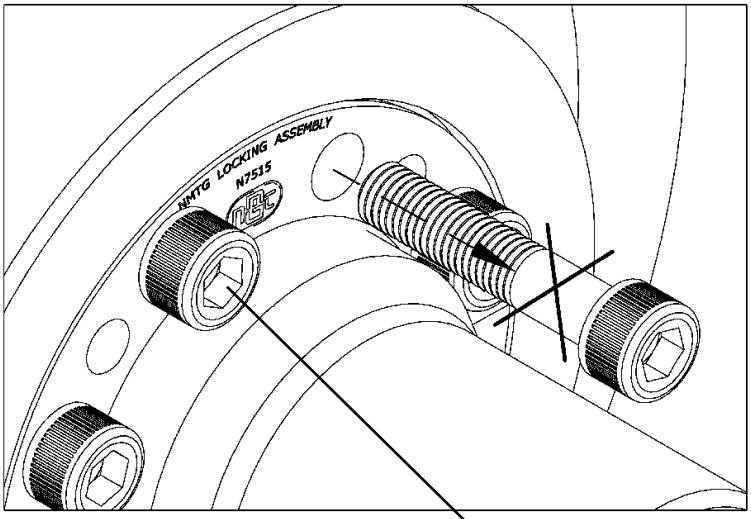
5.) Removal:

- 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 (As shown in Fig.-4) to Prevent misalignment of the clamping surfaces and breaking of screws.

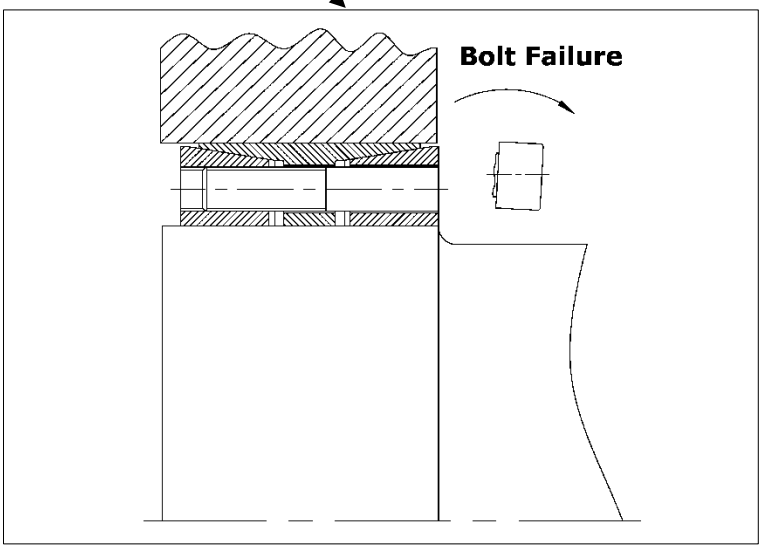


(Fig.-4)

- Don't loose single screw at a time (As shown in Fig.-5) , otherwise it may lead to tilt inner ring and outer ring and damage of locking assembly occurs.



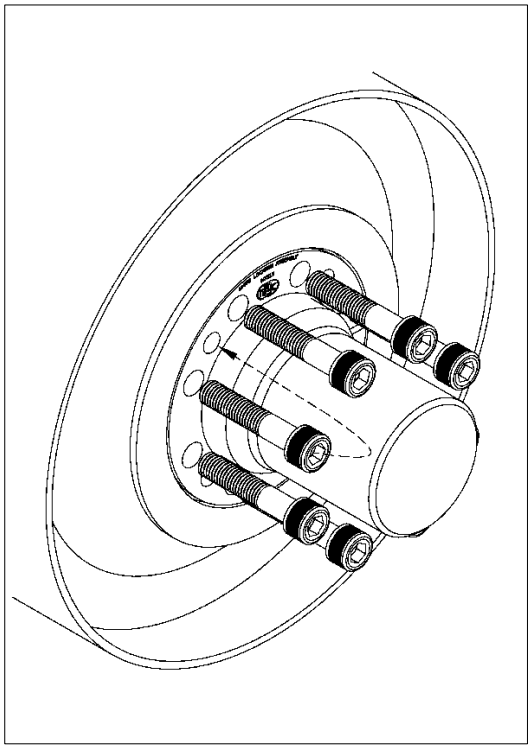
(Fig.-5)



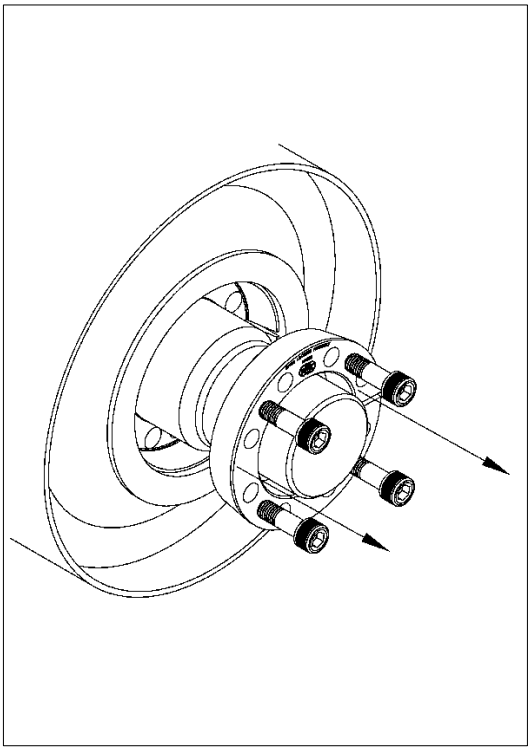
(Fig.-6)

- By removing single Screw completely at a time, adjacent bolt will get more load which may leads to breakage of Bolt head (As Shown in Fig.-6).
- For easy jacking process,grind and apply grease on faces of threads and on threads also to reduce friction loss.

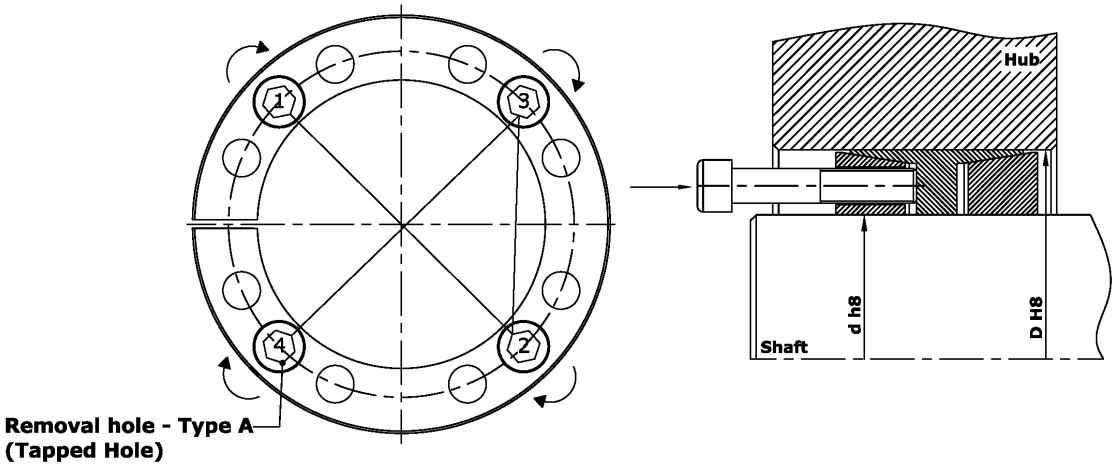
- N7515 / N7515 TC model is not self-releasing.So remove and transfer screws into removal hole (Type – A) which have been provided on front nut(As shown in Fig.-7). By tightening of some screws into removal holes which leads to jacking of front nut (As shown in Fig.-8 & Fig.-9).



(Fig.-7)

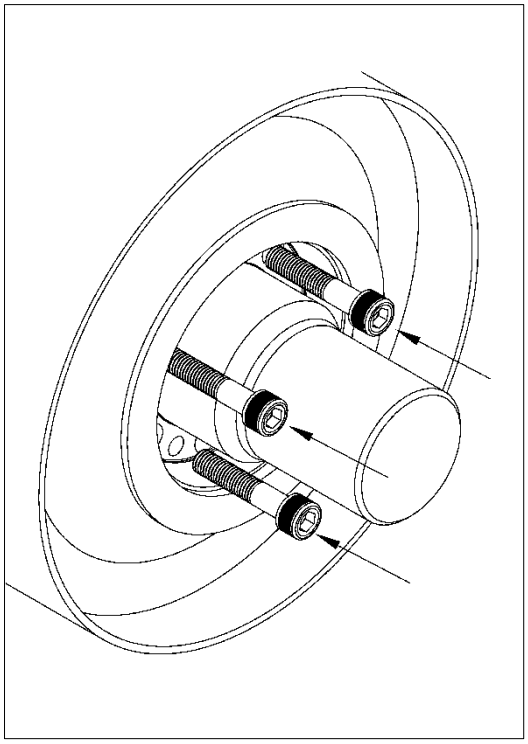


(Fig.-8)

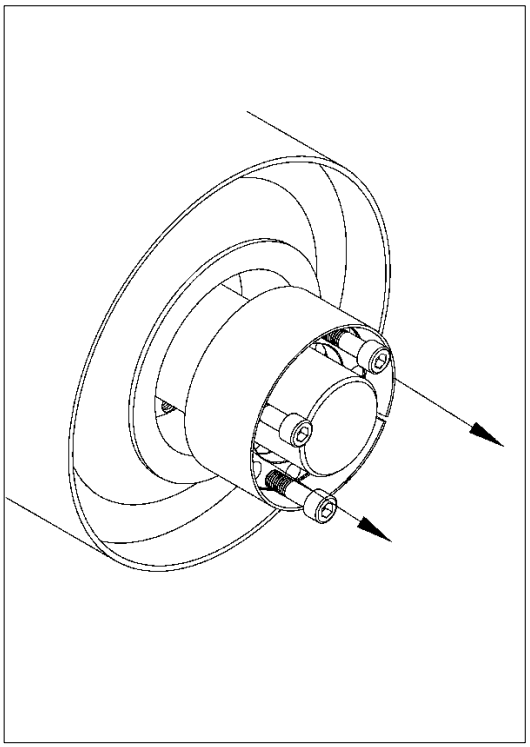


(Fig.-9)

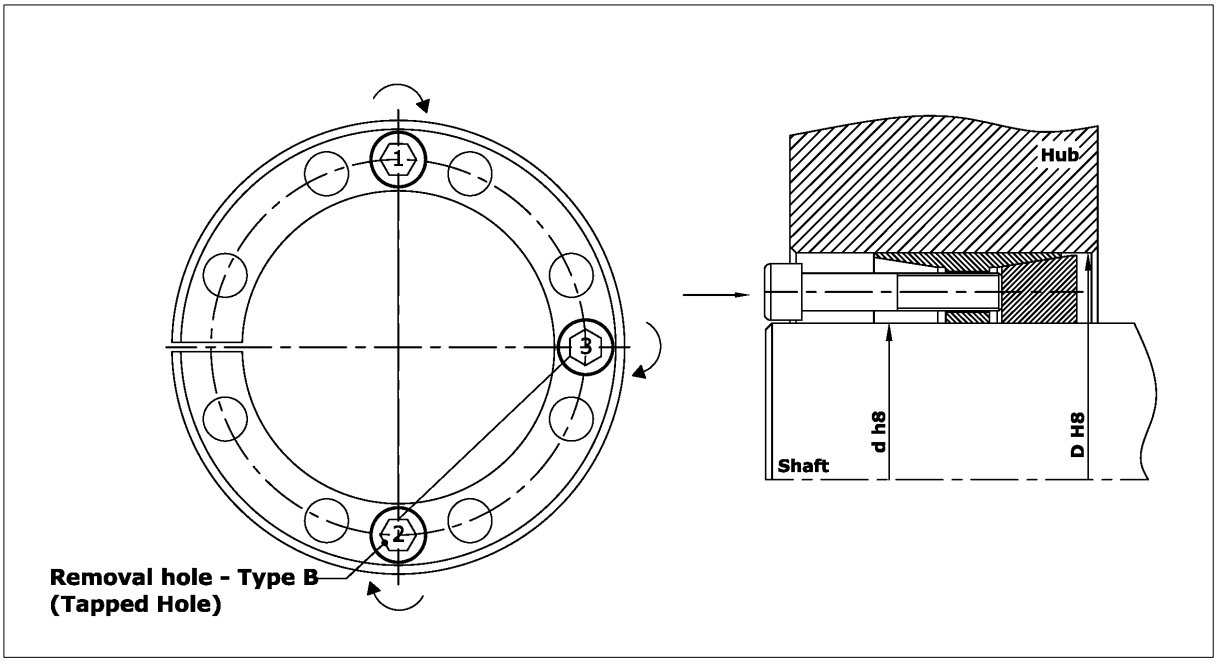
- Now for removal of Outer race , transfer screws into removal hole(Type – B), Which has been provided on Outer ring (As shown in Fig.-10). By tightening of some screw into removal hole which leads to jacking of Outer ring (As shown in Fig.-11 & Fig.12).



(Fig.-10)

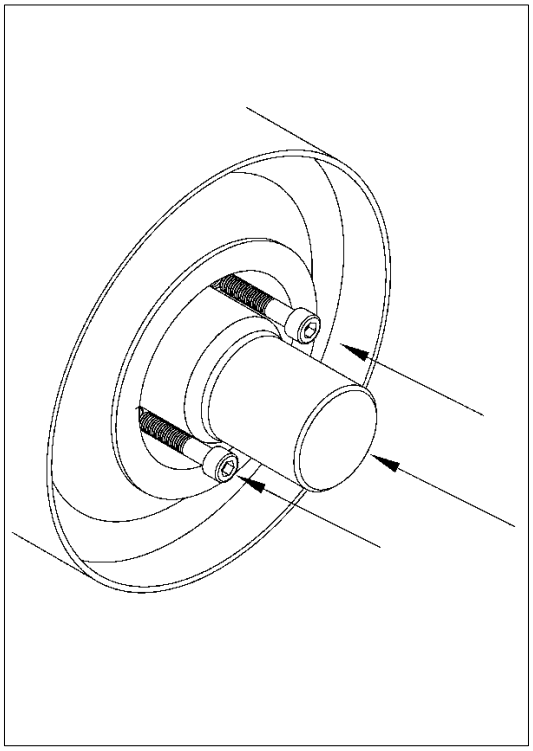


(Fig.-11)

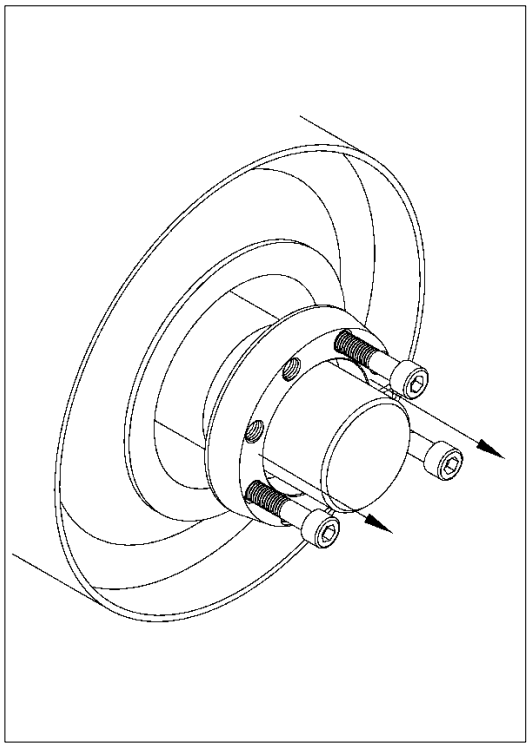


(Fig.-12)

- Now for removal of Rear nut , transfer some screws into Tapped holes of Rear nut & pull out Rear nut (As shown in Fig.-13 & Fig.14).



(Fig.-13)



(Fig.-14)

6.) Reuse:

- For reuse of locking assembly, re-lubricate outer ring, front nut, rear nut and clamping screws. 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 because of during operating condition if they have been elongated so they cannot be used further so replace with same size and grade.

7.) Maintenance:

- Locking assembly N7515 / N7515 TC is maintenance free. We therefore recommend to check tightening torque of the clamping screws every 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.