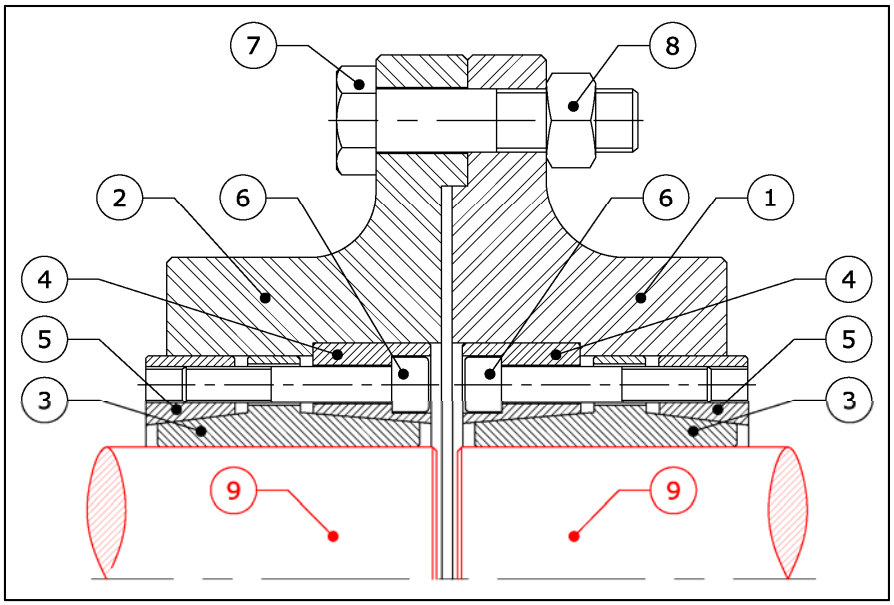
1.) About NKF Coupling & Function:

- NKF Coupling is used to rigid connection of two shafts. NKF Coupling consists of two hub flanges & each hub flanges clampped onto the respective shaft using a keyless locking element.
- The torque is transmitted between the shaft and the flanges using friction connection & flanges are connected by screws connection.
- The tightening the screws of keyless locking element, the front & rear nuts are pulled over the taper of the inner ring. The self-locking nut rings wedge themselves between the inner ring & Flange hub.

2.) Nomenclature:



No.	Nomenclature
1	Male Flange Hub
2	Female Flange Hub
3	Inner Ring
4	Front Nut
5	Rear Nut
6	AllenCap Screws
7	Hex Head Screws
8	Hex Nut
9	Solid Shafts (in Customer Arrangement)

3.) Technical Requirement or 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 h8.
- **During installation be ensure that Shaft and Flange assembly should be kept concentric.**
- **Note :**
  1) **Don't use oil containing molybdenum sulphide or high-pressure additives or grease of any kind.**
  2) **Donot use torque wrench when diresed axial runout upto 0.02 mm not achieved in flange while applying first tightening on allencap screws.**
  3) **After achieved the first desired run-out upto 0.02 mm in flange, Torque wrench must be used for apply tightening torque. Do not uses Allen keys otherwise required Technical parameters will not be achieved.**

4.) Installation:

❖ Installation of Keyless Locking Element with Flanges onto Shafts:

- Before Installation be ensure that shafts are properly clean (remove dust particles & free of grease and dry).
- Apply the light coat oil on the outer surface of shaft & the cotact surface area of keyless locking element during installation of the flanges hub with keyless locking element.
- By hand slightly loose allencap screw of keyless locking element. Remove the allencap screw no.2 or 3 from locking element which was shown as per in fig.01 and that screw them into the thread of centre of inner ring. This prevents the inner ring and rear nut from jamming while inserting keyless locking element into the flange.
- Slide the complete half flange coupling with slots in the keyless locking element facing vertically downwards onto the until the axial position rearched as per shown in Fig.01. Reinstall that removed allencap screws again completly into the keyless locking element.

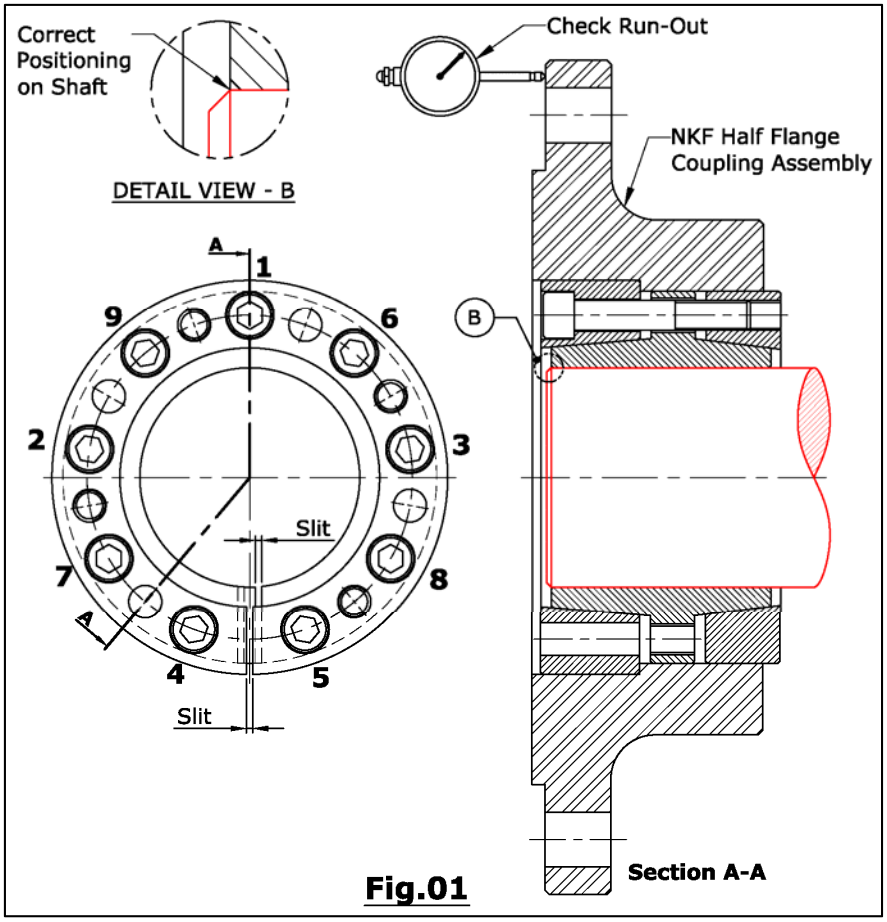


Fig.01

- **Manually start tightening the allencap screws in small incrementstarting with 12 o'clock (1st Marked Screw), 9 o'clock (2nd Marked Screw), 3 o'clock (3rd Marked Screw), until the tension has been evenly distrubuted (as shown in Fig.01). Donot use torque wrench for this procedure.**
- Tighten the remaining clamping screw in diametrically opposed sequence (as shown in Fig.01). to ensure that all screws are tightened, tighten then all screws again turn by hand.
- Adjust the diaguage and check the alignment of flange. Determine the point of gretest divergence. Tighten the allencap screws at the point of gretest divergance.
- Check the axial run-out inspection with a dial guage and repeat this procedure of tightening the screws until the **run-out upto 0.02 mm for every 100 mm flange diameter** should hereby be achieved.
- **After achieved the desired axial run-out, By using torque wrench start tighten the allencap screws** with 50 Nm (except NKF 50 model having max. tightening torque capacity is 41 Nm) in unform sequence order number until the torque is applied to all screws.

- Check run-out alignement of flange as described previously and if necessary ensured by tightening the allencap screws at the point of gretest divergence. This step must be carried out every time after you switch to next higher toque. **Increase the tightening torque by an additional 50 Nm or 1/3 times of max. tightening torque capacity of screws untill achived the maximum tightening torque for allen-cap screws (refer below table for reference).**

Size of Allen Cap Screw	M8	M10	M12	M14	M16	M20
Max. Ta (Nm)	41	83	145	230	355	690

Here, above mention value of tightening torque (Ta) is maximum. Please refer approved drawing for actual value of tightening torque as per your application.

- Continue the tightening the allencap screws with next higher torque apllied in unform sequence order number of screws & recheck run-out as per previously described in every stage of increasing in tightening torque.
- As soon as the maximum tightening torque of allen-cap screw has been applied, carry our final inspection of alignment of the hub flange.

❖ Installation of Flanges Connection:

- make sure flanges are in centering and properly clean (ro remove dust particles & free of grease and dry) from front surfaces of the both flanges.
- Align the both shafts radially and parallel to one another as precisely as possible and line up the bore holes in the hub flanges.
- Insert the supplied hex head screws from one side through the bore holes into the hub flanges. Insert the hex nut from another side of hex head screw and tighten manually in diagonal sequence.
- Ensure that the centering mechanisms easily glide into one another. When the flanges surface touch, tighten the hex nut with tightening torque (Ta) as per below table

For Apply Tightening Torque by Torque Wrench:

Where Ta = max. Tightening torque, please refer Ta as per NMTG drawing or NMTG NKF Catalogue (as per Model & Size).

Size of Flange's Hex Nut (10.9 Grade)	M10	M12	M14	M16	M24	M30
Ta (Nm)	71	123	195	300	1020	2030

Note: The assembly of Coupling cannot compensate any misalignment of shafts.
The Max. Tightening torque of hex nut may not be exceed.

- **Replace missing or damaged clamping screw with screw of quality as per mentioned below**
  - **Allencap Screw for Keyless Locking Element, DIN 912 – 12.9 Grade Only.**
  - **Hex Head Screw for Flange Screws, ISO 4014 – 10.9 Grade.**
  - **Hexagonal Nut, DIN EN ISO 4032.**

5.) Removal:

- Completely loosen the clamping screws & nuts of both flanges. Separate assembly from each other.
- Remove all allencap screws and insert screw into removal holes which as many into push off threading of the inner ring as shown in fig. Start tightening the allencap screws in clockwise direction until the rear nut is pushed off (as shown in Fig.02).

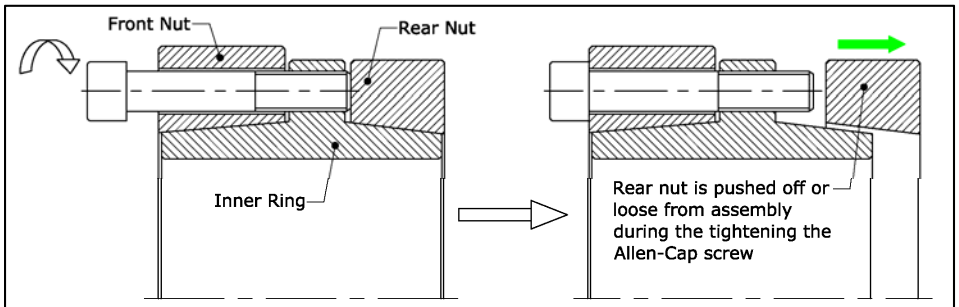


Fig.02

- After loosening the rear nut, the allencap screws insert in another removal holes which as many into the push off threading of front nut as showed in Fig.03. Against tighten the screws in clockwise direction until inner ring is pushed off and entire flange coupling is loose.
- After lossen assembly, Remove whole assembly from shaft.

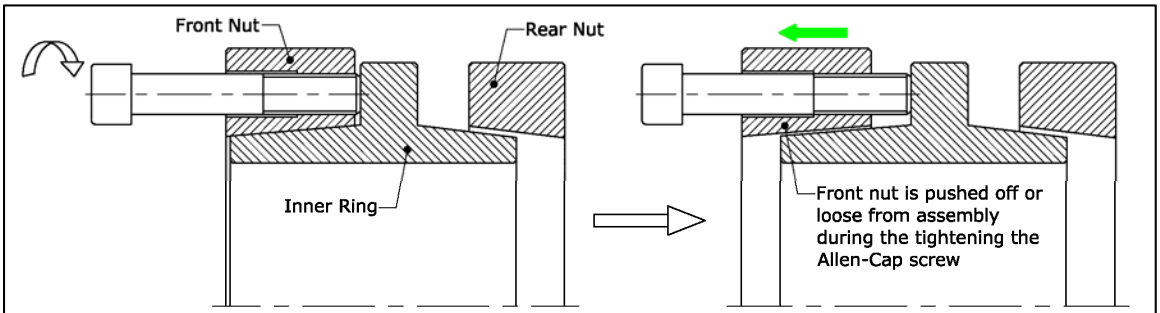


Fig.03

6.) Reuse:

- Completely clean, re-lubricate inner ring, front nut, rear nut, flanges and clamping screws. If any damage found in parts of assembly then replacement of whole part required. Before reuse of keyless locking element's screws or flange's screws, please check screws with length because of during operating condition if they have been elongated. so they cannot be reused further. Hence, replace with same size and grade of screws.

7.) Maintenance:

- Internal Keyless Locking element & Flange Assembly are maintenance free. We therefore recommend to check 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.