

### 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 clutch or machine into which it is installed, stop machine immediately.
- Make sure turning forces are not applied to Holdback or turning shaft of the equipment when conducting inspection or maintenance.
- Pay special attention to the backstopping application to prevent accidents.
- 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 Holdback.
- It is necessary to wear Personal Protective Equipment (such as safety shoes, gloves, goggles, etc.) while handling machine in which Freewheel One way Clutch is installed.
- **Confirm rotational direction prior to installing.**

### 3.) About NHBUFC:

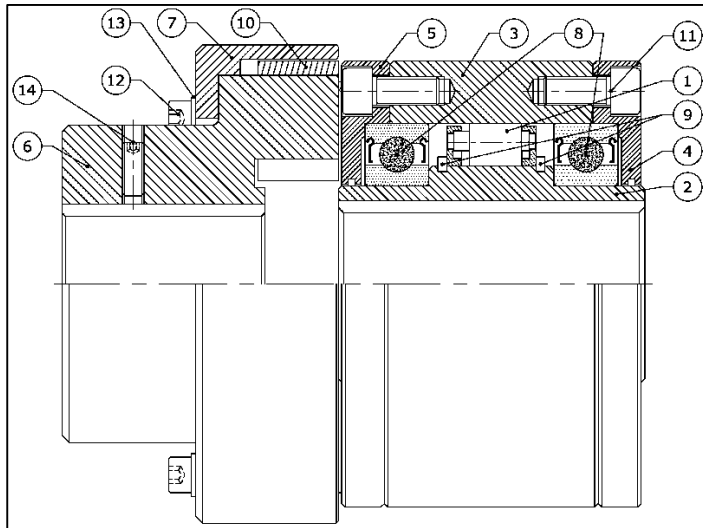
- NHBUFC with shielded type ball bearing support and Centrifugal Lift off Sprag type designed free wheel one-way clutch.
- NHBUFC Freewheel Clutch is self-contained unit designed for overrunning clutch applications.
- NHBUFC model suitable when inner race of clutch at high speed overrunning. Only this race is designed for freewheeling.
- Freewheel one way clutch equipped with elastic coupling.

### 4.) Function of NHBUFC:

#### Overrunning:

- When drive member rotates faster than driving member, clutch gets disengage automatically. The inner race should be highest overrunning speed possible for this clutch. This ensures the best performance, reduce heat generation & wear which lead to increase life.

## 5.) Design:



No.	Nomenclature	No.	Nomenclature
1	CLS assembly	2	Inner Race
3	Outer Race	4	End Cover E1 type
5	Flange Cover	6	Coupling
7	Coupling Cover	8	Bearing ZZ type
9	External Circlips	10	Snap Wrap
11	Allencap Screws of Flange & end Cover	12	Allencap Screws of Coupling cover
13	Spring washer	14	Grub Screw

## 6.) Pre-Installation:

### ➤ Shaft-Bore fit:

- Shaft should be free from burrs and smooth. The tolerance of the shaft should be h6.
- Provide coating on shaft with anti-seizing agent for easy mounting and easy removal of Freewheel One-Way Clutch.
- Shaft should not tapered and bore are finished to size for an “easy push fit” on a straight shaft.

### ➤ Key and keyway:

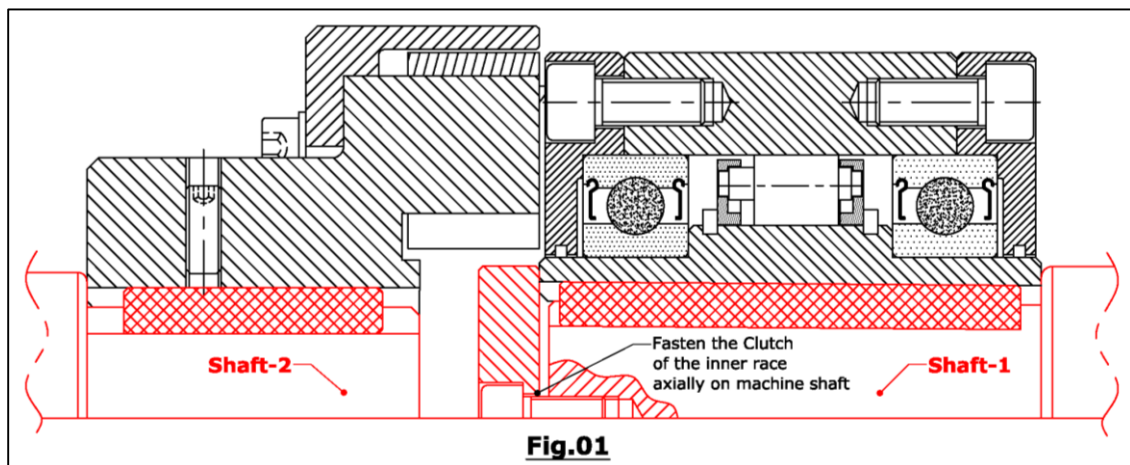
- Check the key fit with both the Freewheel One-way Clutch and shaft.
- To provide for adequate top of key Clearance, the straight keyway in the bore of the Freewheel One-way Clutch has been made slightly deeper than standard.
- Only a parallel key is recommended for Freewheel One-way Clutch fixing. 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 backstop keyway and corner radius is clear for fitment.

### ➤ Axial Retention:

- Freewheel One-way Clutches are manufactured for clearance fit on shafts. So The Inner race must be retained axially on shaft – Circlips are suitable or Jack bolt & washer assembly is used to fix position.

## 7.) Installation Process:

- Before installation, separate Coupling Part with snap wrap & Clutch part of Assembly.
- Installed Coupling part on Shaft with key, secure the clutch axially by tightening grub screws. Slide the Clutch part on the shaft, secure the inner race-clutch axially onto shaft by circlip, End washer & bolting arrangement.
- Interference fit and shrink fit are prohibited for Freewheel One-Way Clutch fixing.
- Width of key, within js9 & height (refer to shaft dia.) H-t1 (ref. Din 6885 sheet 1). Key must be very carefully fitted to prevent any differential movement.
- When mounting the NHBUFC Freewheel one-way clutch, apply pressure only on inner race of clutch. When tapping the inner race, use a soft hammer in order to avoid damage on the holdback inner race end. **Do not hit the Clutch side plates to avoid damage of clutch.**
- When mounting the elastic elements, ensure that the clutch Halves are not mounted too close, in order to prevent the elastic elements from being exposed to lateral pressure and to ensure that the clutch remains flexible in the axial direction during use.
- The clutch halves must be mounted too far from each other; this ensures that the rubber blocks are capable of transmitting over the entire width between the coupling claws.
- Check if the direction of shaft rotation is the same as the inner race of NHBUFC Freewheel One-way Clutch, Freewheeling direction of Clutch is shown by an arrow mark on the inner race end.



- Clamp together the Coupling & Clutch part as per mounting reference of fig. 01 and the freewheel clutch NHBUFC must be easy to turn in the freewheeling/overrunning direction of rotation.

## 8.) Change in direction

- Change of the direction of rotation is achieved by exchanging Flange cover with coupling and end cover of the clutch.

## 9.) Lubrication & Maintenance:

- Check after every 2000 working hour OR (4 to 6 month) for Coupling Elastic Element (Snap Wrap) condition. If the Coupling Elastic Element is wear and tear found, then please replace the elastic elements.



- If ambient temperature doesn't exceed 50°C the freewheel clutch can operate without maintenance for approximately 2 years.
- Every two year the freewheel clutch should be dismantled, cleaned, inspected and re lubricated.
- After removing the covers, carefully remove the inner race, bearings and cage from the outer race.
- Clean all parts and examine them visually.
- On reassembly approximately 1/3 of the cage should be filled with grease. Apply grease particularly to the sprags and the inner diameter of the outer race. Too much grease in clutch it will cause to run hot, interfere in clutch function and may bring to mechanical damage.
- Reassemble unit following the guidelines in the Re-Installation of cage assembly until half of the sprags inserted. For Install Cage assembly, Use O-ring on Sprags (become in lift-off condition) of cage.
- Apply remaining grease in free space the cage and the bearings, install ball bearing and insert Cover on clutch fasten by screws.
- Complete installation as described in the installation section.

**(Note: Don't use grease which contains EP additives.)**

- **For working temperature below -40°C and above 100°C, Please contact us.**
- When working temperature is above 90°C, then check lubrication regularly.

Temp. Range	-50°C to +140°C
Manufacturer	Grease
OKS	OKS 475
KLUBER	ISOFLEX LDS 18 SPECIAL A
MOLYKOTE	MOLYKOTE G-1023
BP	ASV RBL 33

### 10.) Preservation & Storage Instruction:

- NMTG Product is supplied with an oil film as Rust & Corrosion Protection as per below instruction for short term storage.
- 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.