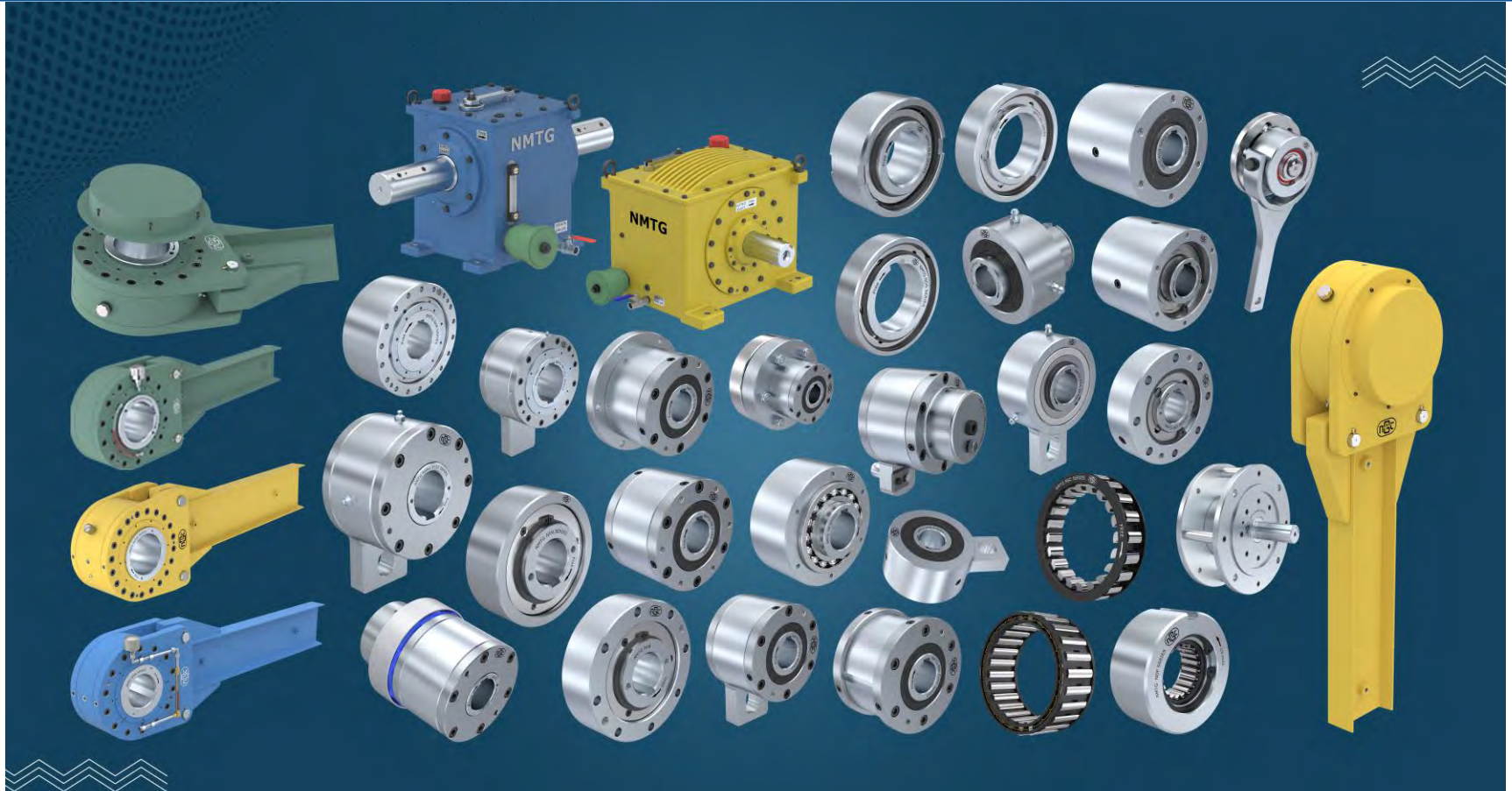


NMTG

————— SINCE 1975 —————

Partners For Delivering Excellence

Key Products - Free Wheel One Way Clutch & Holdback Devices



Key Products - Free Wheel One Way Clutch & Holdback Devices

❖ Working Principle

- ◆ Based on wedge friction theory
- ◆ Allows **free rotation (overrunning)** in one direction
- ◆ Transmits **torque in the opposite direction**
- ◆ Wedging elements (**Roller, Sprag, CLS Cam, NDC Sprag**) generate **clamping forces** during engagement

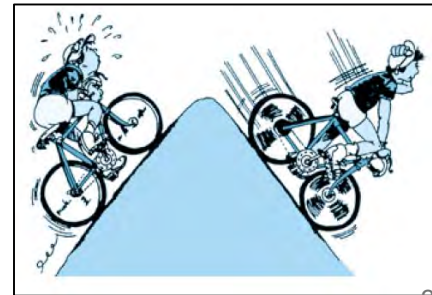
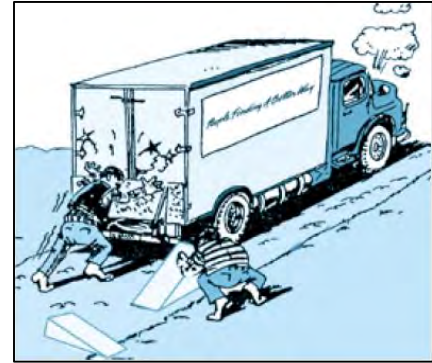
Freewheel One-way Clutches are used as:

Backstop / Holdback

- Prevents **reverse rotation** during power loss or drive stoppage
- Clutch **overruns freely during normal operation**, engages instantly if reverse rotation occurs
- Achieved by anchoring one race (typically outer race) to the frame while the other (inner race) rotates freely in the required direction
- **Applications:** Conveyor, Bucket Elevator, Lifter, Motor Winch, Crane, Elevator

Overrunning Clutch

- Automatically **disengages when the driving member rotates faster** than the driven member
- Allows **intermittent engagement and disengagement** based on speed/direction difference between inner and outer races
- Functions like a **bicycle freewheel**, allowing the driven part to coast when input speed exceeds output
- **Applications:** Large Blower (Fan), Kiln, Heavy Industry Machinery, Crusher, Textile Machines, Agricultural Machinery.



NMTG Holdback Solution for Drive Technology



Holdback clutch is also known as a synonym below

- Freewheel One Way Clutch
- Non Reverse ratchet (NRR)
- Uni-Directional Clutch,
- Anti-Runback device
- Anti- Rotation Device
- Back Stop Device

Industry Solutions for Drive Technology

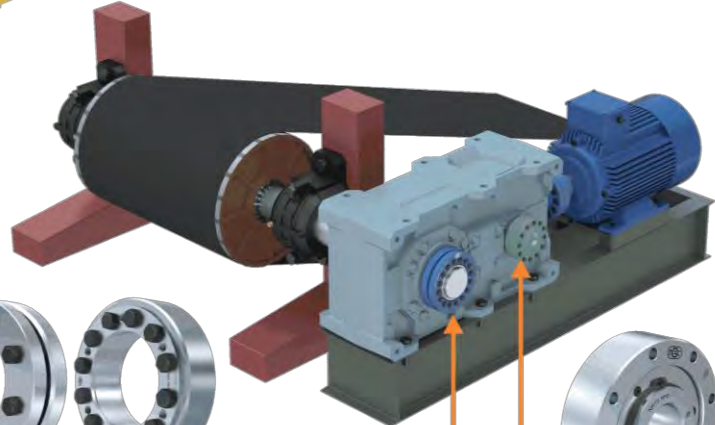
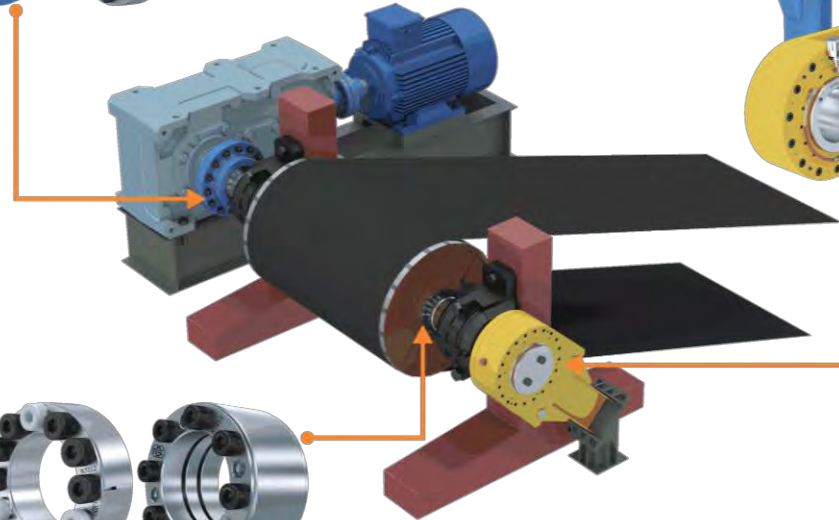
Belt Conveyors

Keyless Rigid Couplings

To connect solid gearbox shafts with pulley shafts.

Low Speed External Holdbacks/Backstops

To prevent reverse rotation of Conveyor Belts.



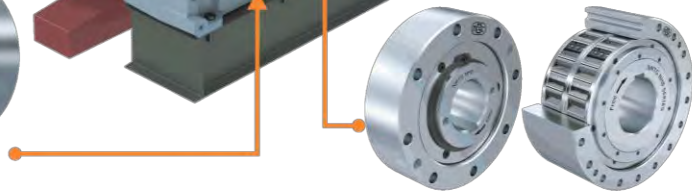
Keyless Transmission Elements

Locking Assemblies are used as a replacement of key or shrink fit connection for High Transmitting torque & Bending



Shrink Discs

To connect the gearbox hollow shafts to pulley shafts.

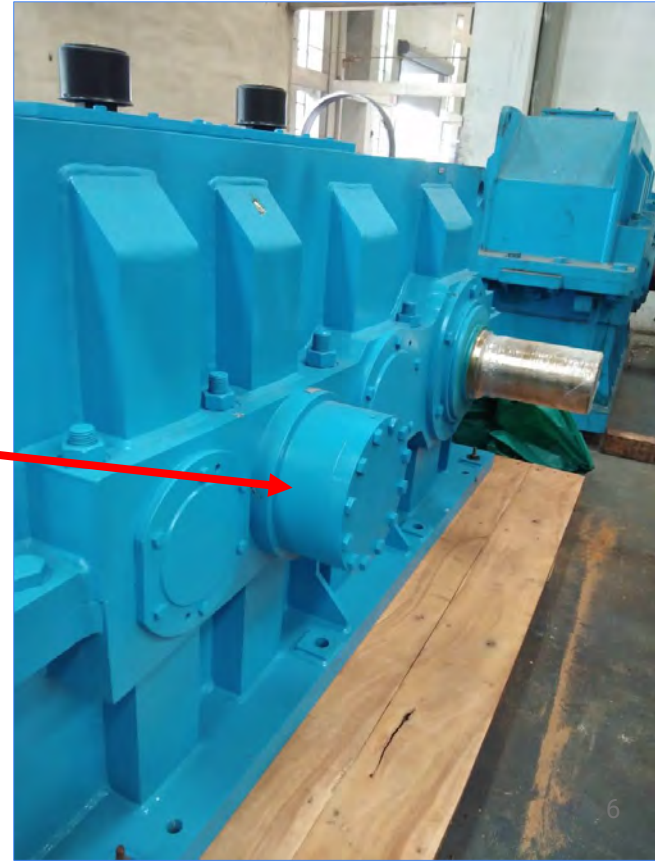
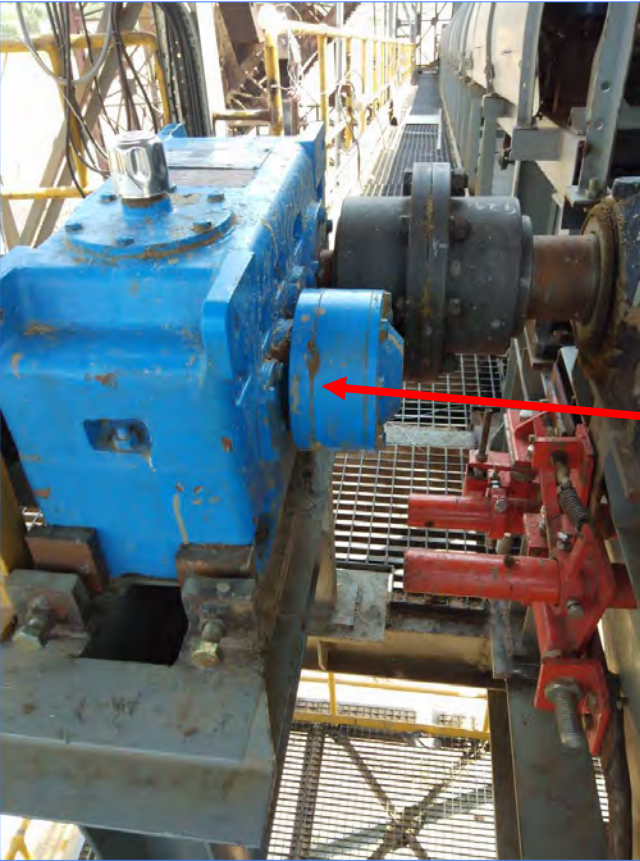


High Speed Holdback (Backstop) Clutch

To prevent reverse rotation of Conveyor Belts.

Power Transmission Components for Drive Technology

High Speed Backstop For Gearbox



High Speed Backstops

Mounted on the 1st or 2nd gearbox shaft, they prevent reverse motion in conveyors or bucket elevators.

- Use Centrifugal Liftoff Sprags (CLS) for wear-free, high-speed operation
- Maintenance-free
- Cost-effective

Power Transmission Components for Drive Technology

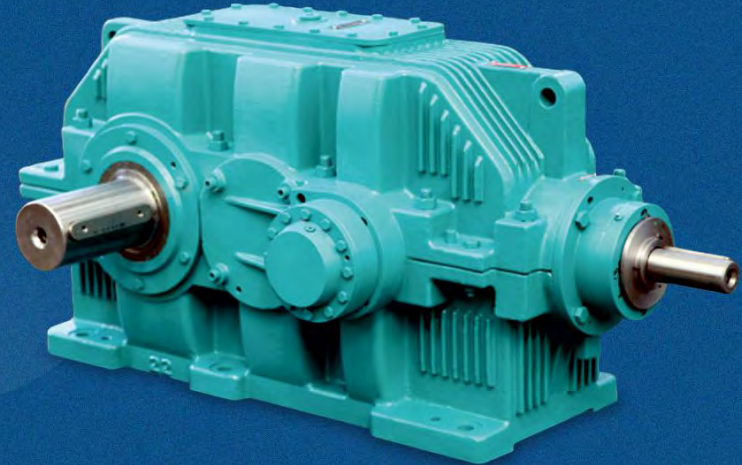


HIGH-SPEED HOLDBACK (BACKSTOP) CLUTCH

- Model Name: **NHB**
- Freewheel one-way clutch is used as: Backstop / Holdback
- Mounting Location: Are located on the 2nd or 1st gearbox reduction shaft
- Bore Diameter Range: **20 mm to 300 mm**
- Nom. Torque Capacity: **Up to 192555 Nm**
- Function: To prevent reverse motion of equipment shaft or Conveyor belts and bucket elevators

— Swipe →

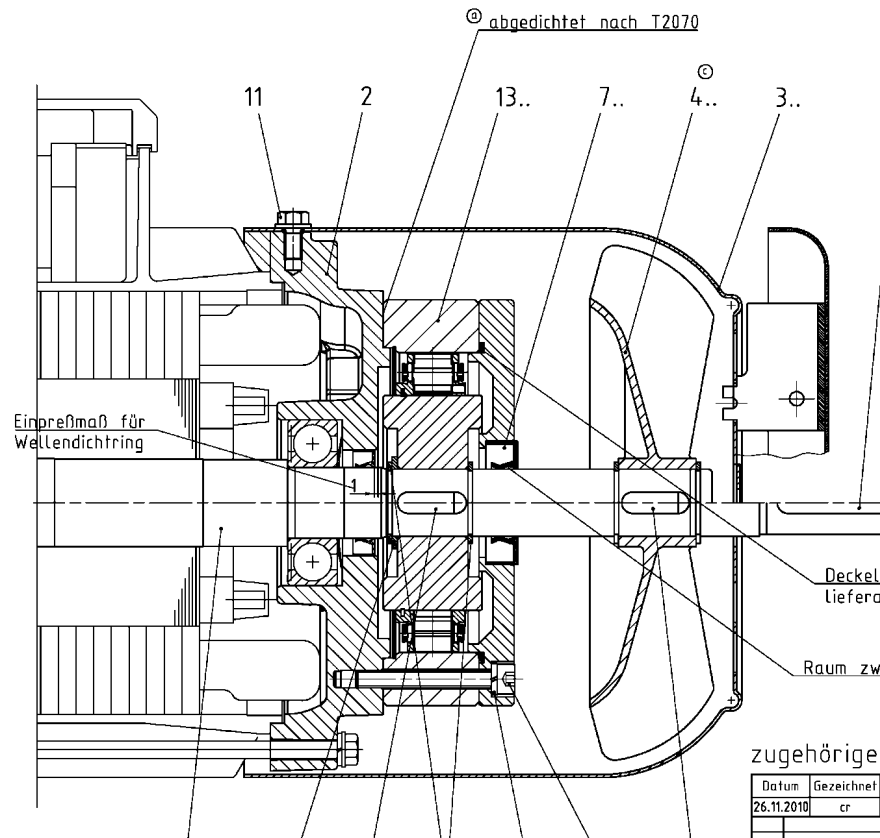
nmtgindia.com



APPLICATION: GEARBOX

- NMTG Freewheel one-way clutch Backstop Device / Holdback Device are designed to transmit torque in one direction, and overrun (Freewheeling) in the opposite direction

NMTG Holdback Solution for Motor Application



Application Location: Non-Drive end of the Motor Shaft

NMTG Holdback Solution for Motor Application

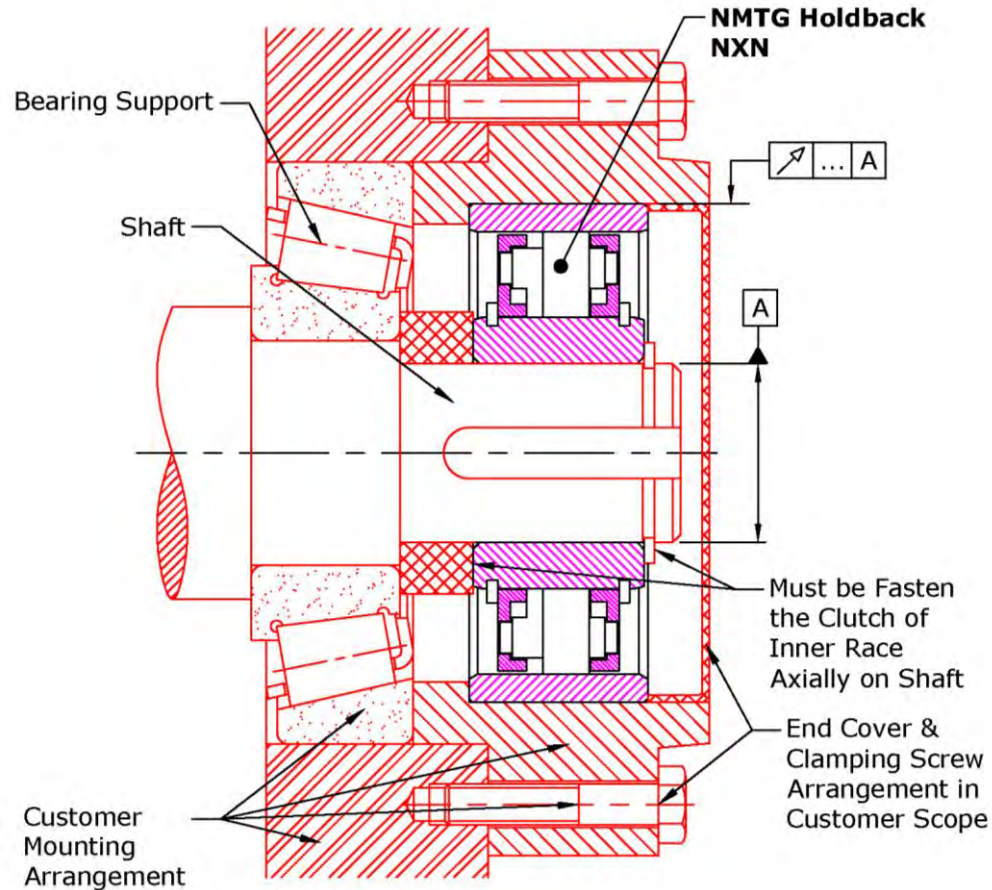


**NMTG Holdback
at Non-drive end
of Motor of
Vertical Pump –
Motor Assembly**



NHB Series

Internal Freewheel one-way clutches

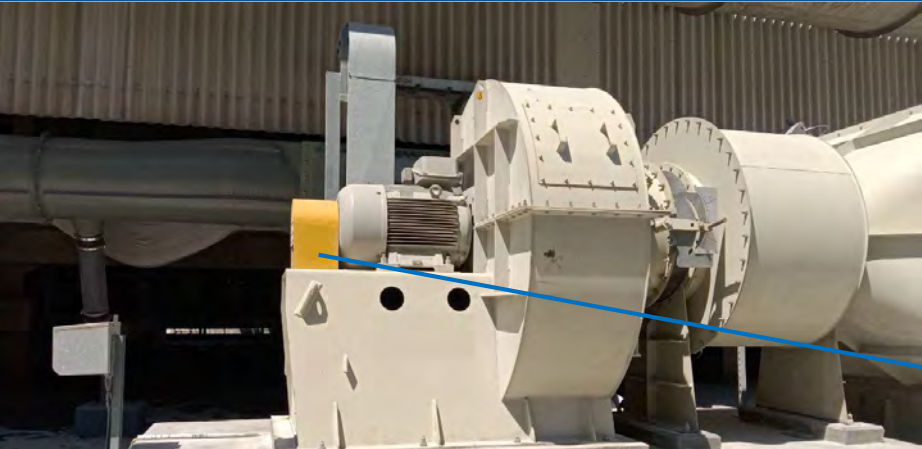


NXN Series

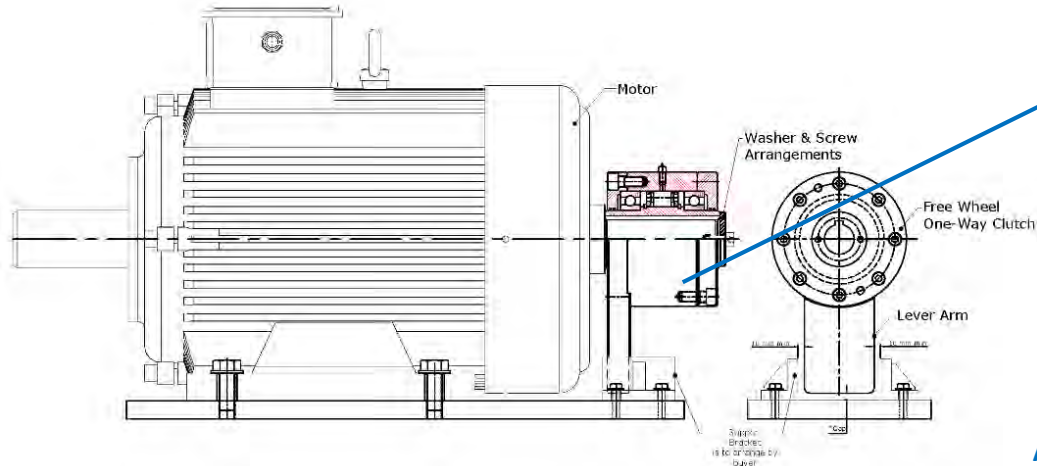
❖ Features:

- This type of Freewheel Clutch is designed without bearing support, Concentric alignment of the inner and outer ring must be provided by the customer.
- Press mounting type freewheel, without Keyway.
- Lubrication – if necessary – to be provided by the customer
- This type of Freewheel Clutch is used as Backstop in Gearboxes.

NMTG Holdback Solution for Motor Application



NHBU E1E2 Series

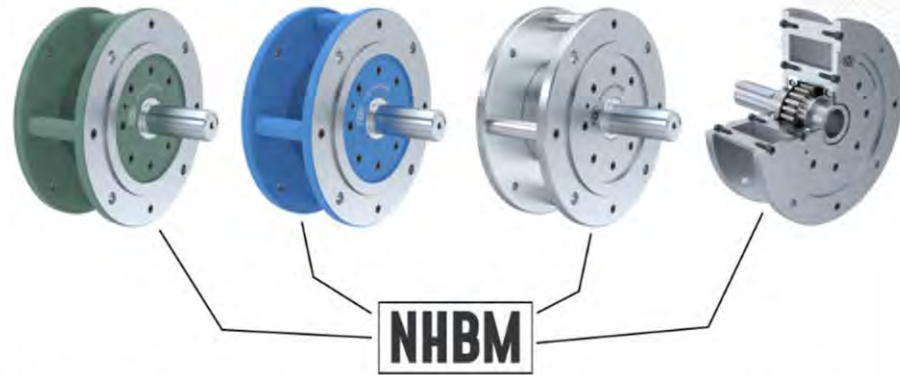


Application Location: Non-Drive end of the Motor Shaft

Special Solutions & Innovations for Geared Motor

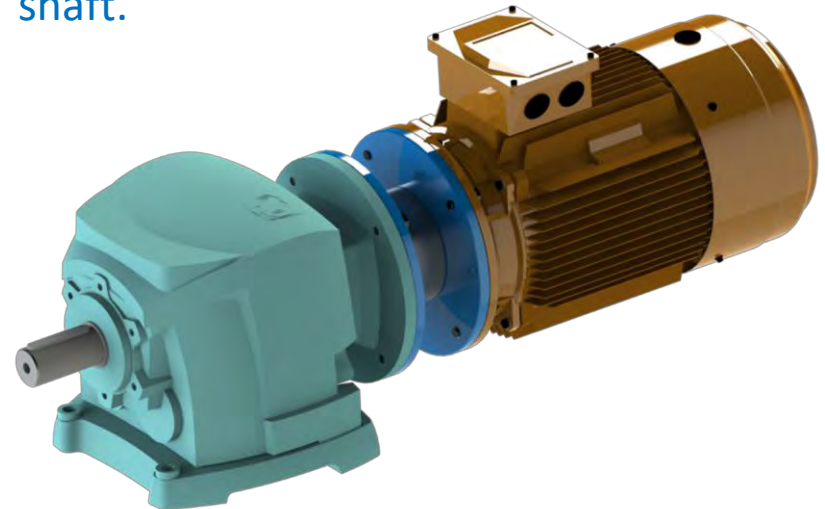
INDUSTRY SOLUTIONS FOR DRIVE TECHNOLOGY

NMTG Holdback Solution for Motor Application



- **Application:** Flange Type Motor (IEC) / Geared Motor
- **Product Name:** Holdback /Backstop Device
- **Model Name:** NHBM & NHSM
- **Mounting Location:** Drive end of the motor shaft
- **Freewheel one-way clutch is used as a backstop/ Holdback**

Function: To prevent reverse rotation of motor shaft. This can be installed in existing flange mounted motor without any modifications. And it is flange type mounting to prevent reverse rotation of shaft.



NHBU E1E2 Series & NHBM Series

High-Speed External Backstops/Holdbacks NHBU E1E2 Series



Features:

- » This series is used as a Backstop clutch for High-speed overrunning Applications.
- » Bore range: up to **150 mm**.
- » Nom. Transmitting torque: **33908 Nm**.
- » This type of Freewheel Clutches are designed with ball bearings to be assembled with customer-connecting parts
- » This type of Combination is used as Backstopping in which the E2 cover as a Torque arm Lever arm that has an integrated Stop bolt that must go into a slot in a fixed part of the machine.
- » This type of combination is arranged through shafts or shaft ends.

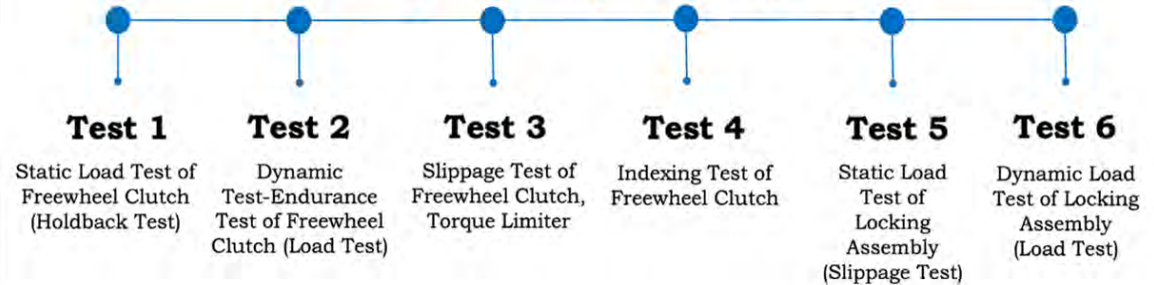
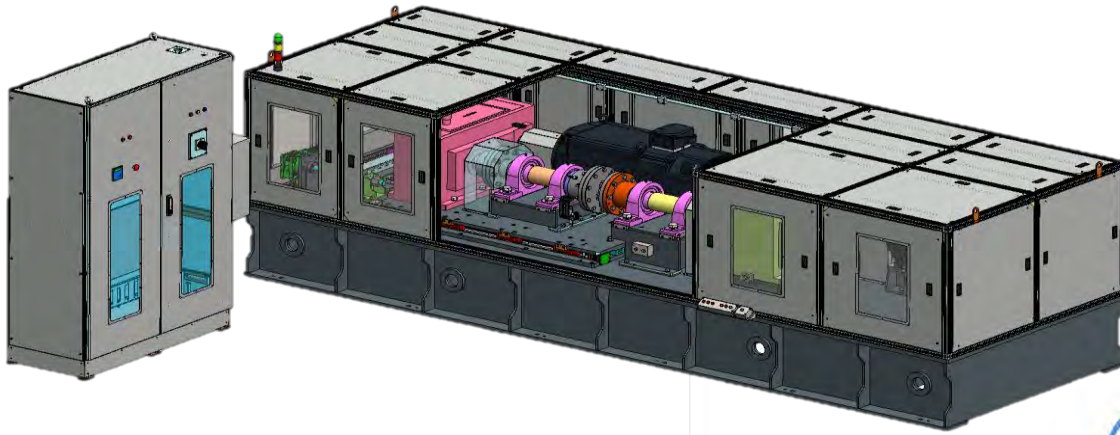
Complete Freewheel one-way clutches - NHBM Series



Features:

- Function: Backstopping
- For Frame sizes 71 to 280 for IEC Standard Motor
- Nom. Transmitting torque: up to 3100 Nm.
- This type of model is specially designed for flange-mounted motors. This can be installed in an existing flange-type motor without any modifications. It is flange-type mounting to prevent reverse rotation of the shaft.
- Model NHBM clutches are designed for use with IEC-flange type motors providing a backstopping function in a modular packaging arrangement.
- NHBM clutches can be bolted directly to any IEC-flange type motor or reduced.
- This model is equipped with one side Bore and the other side solid extended shaft.
- This model is equipped with a bore on one side and a solid extended shaft on the other.

Dynamic Testing Facility



NMTG – Our Strength & Product Advantages

Why Choose NMTG?

Delivering Value Through Quality, Innovation & Service Excellence

Key Strengths of NMTG Products

1. Complete Interchangeability

- NMTG products such as Freewheel Clutches, Locking Assemblies, Shrink Discs, and Tensioner Nuts & Bolts are designed to be fully interchangeable with leading competitor models — ensuring hassle-free replacement without any design changes.

2. Equivalent Technical Specifications

- Our products meet or exceed industry standards in terms of torque capacity, performance parameters, and design features — ensuring reliable and consistent performance.

3. Wide Bore Size Range

- Locking Assemblies & Shrink Discs: Bore sizes from 6 mm to 1000 mm
- Freewheel Clutch: Bore sizes from 12 mm to 500 mm
- Custom sizes available based on customer requirements.

NMTG – Our Strength & Product Advantages

4. Technical Expertise & Support

- Expert assistance available during product selection, design stage, and post-sales support.
- On-site support by NMTG Engineers during installation, commissioning, or any critical development phase.
- Continuous improvement and customized solutions tailored to customer-specific applications.

5. In-house Testing Facility

- All products undergo stringent in-house testing — ensuring superior performance and quality assurance.

6. Faster Delivery Commitment

- With optimized manufacturing processes and ready stock availability, NMTG ensures faster delivery timelines compared to competitors.

7. Installation & Service Support

- Dedicated service engineers available for installation, removal, and re-installation support at customer sites.

8. Customized Solutions & Innovation

- Proven expertise in providing customized, cost-effective solutions to meet unique customer needs.
- Continuous investment in advanced manufacturing technology, skilled workforce, and process improvements for delivering value-driven products.

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