

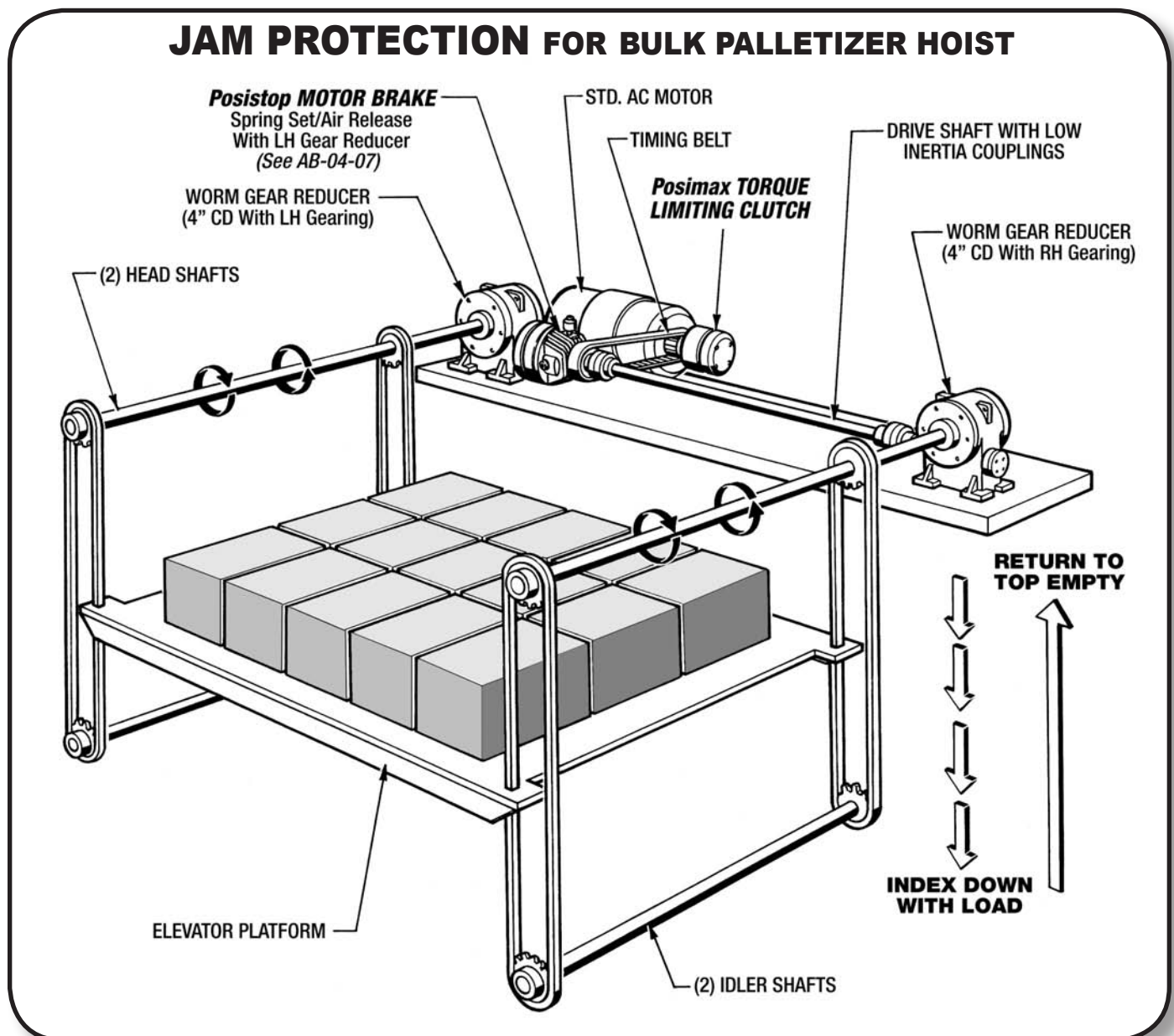
APPLICATION BULLETIN



APPLICATION: Jam Protection for Bulk Palletizer Hoist Drive

INDUSTRY: Food, Beverage, Medical, Container and other Bulk Produced Products & Materials Palletized for Shipment

PRODUCT: Posimax Torque Limiting Clutch
Posistop Drive System - Includes Posistop Motor Brake & (2) Hollow Shaft Worm Gear Reducers (See AB-04-07)



JAM PROTECTION FOR BULK PALLETIZER HOIST DRIVE

WHERE THEY ARE USED: Bulk material handling palletizers are used in manufacturing plants which produce soft drinks, beer, cereal, pet foods, bleach, detergent, motor oil, juice, candy, medical supplies, sugar, and other products shipped on pallets. De-palletizers are used to feed or break down the layers of palletized material. Glass, metal, or plastic containers are usually fed into a filling line or process.

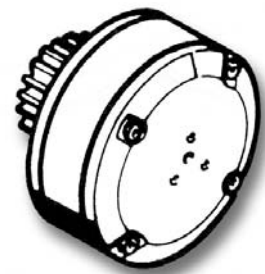
HOW THEY WORK: Material, usually packed in cases, is positioned in layers on retractable slide plates just above an empty pallet on the raised hoist platform. The slide plates retract and the product drops approximately one inch onto the pallet. The hoist drive indexes down a distance equal to the height of the product, and the slide plates close. The process is repeated until a full height of layers is obtained. The full pallet is removed by other automation. An empty pallet is placed on the platform. The hoist drive raises the empty pallet and platform to the top position to start forming another full pallet.

PROBLEMS SOLVED: Manufacturers and designers of palletizers with electro-mechanical hoist mechanisms have long needed a device for effective jam protection. The **Posimax** Torque Limiting Clutch was developed for this specific application. It is designed to mount directly onto the hoist drive motor shaft with a compression fit collet arrangement. The driving torque produced by the motor passes thru a spring-set, multiple-surface, **Oil Shear** clutch stack inside the **Posimax** Clutch and out to a 40 tooth, 8 mm pitch HTD drive sprocket. The torque setting is adjusted by changing the quantity of springs installed inside the clutch. Six torque settings are available ranging from 6 to 36 Ft. Lbs. The clutch limits the amount of combined electrical and inertial torque the motor can supply to the drive train.

1. When a jam occurs, the motor's electrical torque and inertial torque can overload the drive train. The **Posimax Torque Limiting Clutch** limits the amount of energy the motor can put into the drive system and protects chains, shafts, reducers and couplings.
2. Both up and down movements are protected from damage due to a mechanical jam.
3. The oil shear design eliminates the torque fade common to dry friction torque limiters.
4. Energy stored in the rotating components of the drive train is also limited. The drive motor rotor is often over 50% of the rotating inertia. The torque setting of the clutch limits the motor's energy input to the system to protect from mechanical damage.

IMPORTANT FEATURES:

- Multiple-disc, spring-set, **Oil Shear Motor Brake** for long service life.
- Advanced friction material and **Oil Shear** design provide consistent, reliable stops.
- Worm gear geometry combined with **Oil Shear Brake** provides smooth, controlled, & accurate positioning at each layer stop.
- Rugged and heavy construction for long service life.



FORCE CONTROL INDUSTRIES, INC.

3660 Dixie Highway Fairfield, Ohio 45014
Phone: 513-868-0900 Fax: 513-868-2105
E-Mail: info@forcecontrol.com Web: www.forcecontrol.com