

# TURNER UNI-DRIVE TRANSMISSION OPERATING AND MAINTENANCE INSTRUCTIONS

Manufactured by  
TURNER UNI-DRIVE CO., KANSAS CITY, MISSOURI

Model # \_\_\_\_\_

Serial # \_\_\_\_\_



**Turner  
Uni-Drive**

Manufacturers of Industrial Transmission and Gearboxes

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## **GENERAL DESCRIPTION**

### **1. Purpose**

Turner Uni-Drive standard transmissions are available in numerous basic models and these instructions are applicable to all. Although the units are made available in a wide variety of speed ratios, shaft locations, and mounting positions to suit customer requirements, deviations from these instructions will be readily apparent. Turner Uni-Drive Company by virtue of precise design and manufacture has maintained installation and operation consistency regardless of the internal variations in the transmissions. Because the transmissions are extremely rugged, only preventative maintenance procedures are given here. If the minimal requirements are observed, the transmissions will provide uninterrupted service for many years.

### **2. Configurations**

Generally it is advisable to consult the manufacturer's representative or the factory prior to selecting a transmission, taking full advantage of the services and versatility offered by Turner Uni-Drive Company and their transmissions.

The front of the transmission is generally defined as the side containing the shift levers and the identification plate. All shaft locations should be referenced to this side, with the identification plate right side up. Eight combinations of input-output shaft locations may appear on any of the transmissions.

## **INSTALLATION**

### **3. Input Drive and Couplings**

Due to the numerous drive shaft locations available, the selection of a drive medium should take into consideration the alignment problems that may result from a particular transmission location. Accessory mounting hardware is available from the factory to accommodate virtually all motor and transmission mounting conditions. If the transmission is to be belt driven, be sure to consult the belt manufacturer's specifications for the correct number and size of belt(s) for the sheave and horsepower involved. When using direct motor to transmission drives, flexible couplings are recommended. However, if a highly accurate solid coupling is required, the alignment of the two shafts must be held to a run-out tolerance of 0.002 inch or less.

When using pulleys or sprockets on the input or output shafts, these elements should be mounted as close to the bearing caps as possible.

### **4. Mounting Transmission**

Turner Uni-Drive transmissions are designed for horizontal mounting with no more than a 10 degree pitch from gravity level. If a more vertical position must be used, the transmission may need to be equipped with an integral oil pump to insure proper lubrication to the bearings.

The base supporting the transmission and the transmission must be securely attached to a good foundation. Mounting should be sufficient to withstand normal operating load and possible overloads while maintaining proper alignment of the shafts.

The factory offers a standard line of rigid and hinged mounting bases, which can be used for floor or scaffold erection and provide the necessary height of transmission for shaft alignment between the transmission and the motor.

### **5. Checks before starting**

Make the following checks before placing a newly installed transmission in service:

- a. Be sure the input shaft speed will not exceed recommended limits.
- b. Replace the shipping plug in the oil filler with the vent plug supplied to prevent pressure buildup internally.
- c. Check belt alignment by placing a straightedge along the faces of the sheaves or sighting along the parallel surfaces.
- d. Check oil level; level should be visible at the oil level plug.

## **OPERATION**

### **6. General**

No unusual operating procedures are required when using any of the Turner Uni-Drive Company transmissions. However, a few points are included here to insure that the operator realizes the full capability of the transmissions. Some stiffness will be observed changing speeds on a new transmission; this is normal because of the close tolerance fit of the gears and shift lever parts. A few hours of break-in and operator familiarization will eliminate any problems of this kind.

### **CAUTION !**

NEVER CHANGE SPEED UNDER LOAD OR HIGH RPM AS THE INERTIAL FORCES INVOLVED MAY CAUSE INTERNAL DAMAGE TO THE TRANSMISSION.

### **7. Changing speed**

Before rapid changes of speed can be accomplished, the operator must familiarize himself or herself with the information contained on the identification plate and relate this information to the input shaft speed. The operator should also remember that a neutral area exists between each engaged position and that this position will be of considerable assistance in allowing the gear trains to assume slower speeds voluntarily. When changing speeds, perform the following steps in the order given:

- a. Remove or shut off driving power.
- b. Consult identification plate for position of shift levers for desired speed.
- c. When the transmission has slowed to approximately 10 RPM, move the shift levers with a sharp movement to neutral, and then to the desired position.
- d. The input power may be “jogged” to accomplish the full shift.

If the transmission is of the reversing type, the operating procedure above applies except that the transmission should be allowed to come to a complete stop and “jogged” to accomplish the full shift.

ALWAYS BRING THE TRANSMISSION TO A COMPLETE STOP BEFORE REVERSING

## **MAINTENANCE**

### **8. General**

Because of the rugged construction of the transmissions, no unusual maintenance procedures are involved for the life of the transmissions. A periodic check of the oil level and an occasional check for security of bearing-cap bolts, cover bolts, and all mounting hardware is advisable to avoid excessive wear and noise due to misalignment. These inspections are best scheduled to coincide with the oil changes described under lubrication.

In certain applications, the exterior of the transmission may become covered with process byproducts (e.g. dirt, paper dust, plastic, etc...). The exterior of the transmission should be kept relatively clear to prevent the insulating properties of these byproducts from causing the transmission to overheat.

### **9. Lubrication**

All transmissions are shipped from the factory with the proper grade of oil for the application. This will be Mobil Gear 630 in manual and pneumatic transmissions and Dextron II ATF in transmissions equipped with electric clutches. Consult the name plate for proper type for your transmission. The following are oils comparable to Mobil Gear 630:

Texaco	Meropa 220
Phillips	Philgear 220
Shell	Omala 220

In general, all manual and pneumatic shifting transmission should use good grade extreme pressure gear oil with rust and oxidation inhibitor and anti-foaming additive. Oil should be approximately EP 4 to EP 5.

Electric clutch units (automatic) should use Dextron II ATF or a comparable alternative.

Initial oil supplied with the transmissions should be changed after 500 hours operation, and flushed out with a proper flushing oil. After initial oil change, further changes should be scheduled every 2500 hours or every 6 months, whichever comes first. In extremely dirty or dusty areas, or areas where the transmission is exposed to high humidity, or reactive chemicals in the air, changes should be more frequent.

Transmissions that are located in areas with severe seasonal variations in temperature may require the grade of oil to be altered accordingly.

Oil level of the transmission should be checked weekly.

**THE FOLLOWING STEPS SHOULD BE FOLLOWED WHEN CHANGING OIL:**

- A. Operate transmission for at least ½ hour to warm oil.
- B. STOP transmission and disconnect driver from power supply. Remove drain, fill and level plugs.
- C. Allow transmission to drain completely (if oil removed appears unusually dirty, flush with suitable flushing oil).
- D. Clean and install drain plugs securely using a thread sealant. Refill transmission until oil reaches level hole. **DO NOT OVERFILL.**
- E. Clean and re-install filler plug and level plug using a thread sealant.
- F. **CLEAN OIL BREATHER.**

**10. Storage**

If the transmission is going to be put in storage for a period of time greater than two months, or for shorter periods in high- humidity areas, the unit should be either filled completely with oil, or run for short periods once a week with normal operating oil levels. Failure to ensure proper lubrication of internal parts during storage may result in internal oxidation.

Store the transmission indoors in an area where the temperature remains fairly constant. If the transmission is stored where the temperature varies considerably, condensation may occur on the internal components, if not properly cared for..

At the end of the storage period, change the oil in the transmission and refill to operating levels, and thoroughly examine the transmission components for signs of oxidation or deterioration.

**11. Gear Case Data Sheet**

Turner Uni-Drive Company manufactures thousands of variations of transmissions, dependent on our customers' requirements for torque capacity, number of speeds, and ratio requirements. Because of this flexibility, and in order to provide our customers with adequate documentation regarding the makeup of each particular transmission, we have prepared a Gear Case Data Sheet (GCDS) for each transmission and an Explanation of the Gear Case Data Sheet. These two documents are shipped with each transmission.

The GCDS graphically represents the construction of each transmission providing part numbers, parts description, transmission characteristics and other critical information.

**12. Additional information**

Additional information or assistance is readily available from Turner Uni-Drive. If you have questions about the operation or maintenance of your transmission, please contact us at 1-800-637-7736 or via E-Mail at [Info@turnerunidrive.com](mailto:Info@turnerunidrive.com).