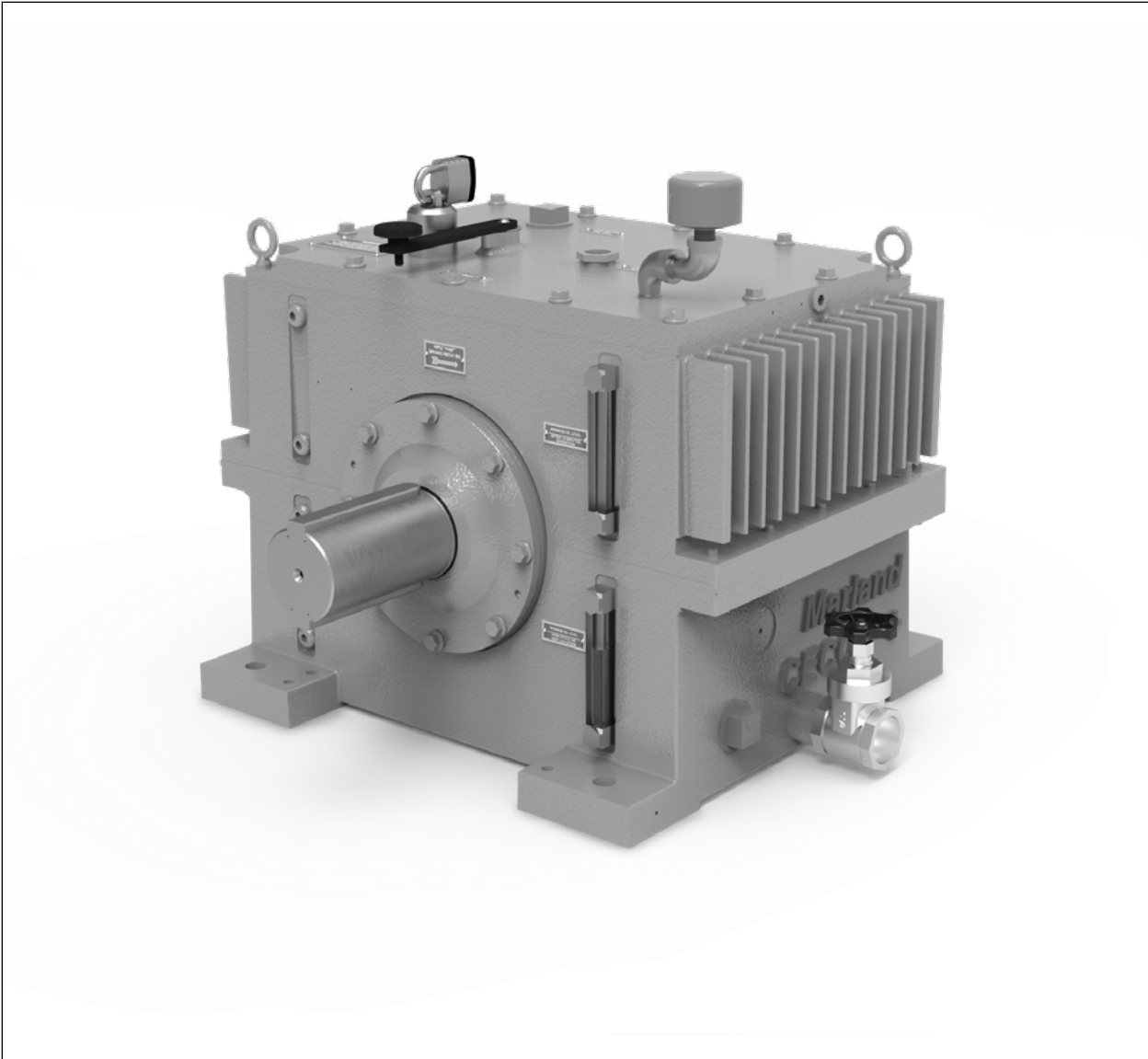


# Completely Enclosed Continuous Operation **CEUS & CEUSD-Series CECON® + Clutches**

Service & Installation Instructions

P-8834-MC



**▲WARNING** Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.

## Installation, Lubrication, and Maintenance

### General

Marland CECON+ Clutches are designed for continuous operation for a year or longer, if required. Successful continuous operation is directly influenced by the care observed in installation, lubrication, and maintenance. It is important that the following recommendations be used as the basis for proper care of CECON+ Clutch units.

All tags and bulletins attached to the unit should be carefully read before placing the unit in operation and then filed for future reference.

**▲CAUTION** Care must be taken not to place the unit in operation until it has been filled with oil. See “Starting”.

The various component parts referred to in this bulletin may be readily identified on CECON+ Diagram and Parts List.

### Inspection and Storage

As soon as the unit has been received, examine it carefully for damage in transit and report any breakage discovered to the transit company at once.

CECON+ Clutch units have been coated internally with a preservative oil to protect the internal working parts from corrosion during shipment and a preparation period of not more than one week after arrival at the site before the unit is placed in regular operation. It is not necessary to flush out the preservative oil from the CECON+ housing, as this oil will be diluted by introduction of the regular oil supply.

The shaft ends have also been coated with a preservative oil. Do not wash this protective coating from shaft ends or couplings.

If the unit is to be stored for a period of time, immediately fill it with the proper quantity and grade of oil shown on the nameplate attached to the housing. To fill, remove the 1-1/2” square head pipe plug on inspection cover (Part No. 20). Pour the quantity required into this opening. Replace the pipe plug. To keep the unit airtight, do not install static oil level gauge or breather-filter. Be sure to rotate shafts at least once

every two weeks.

If the unit is to be immediately installed and operated upon its arrival at the site, proceed with the installation as per the instructions that follow.

### Foundations

Care should be taken in the selection of flexible foundations such as light steel or timber structures as they may produce damaging effects.

A rigid foundation such as a reinforced concrete bed or substantial steel structure is recommended. The top of the foundation should be flat to prevent housing distortion.

If the CECON+ unit is to be mounted on a concrete foundation, a steel base plate containing tapped holes for the foot mounting bolts should first be anchored to the foundation.

### Installation

#### Electrical Grounding

Tapped holes are provided for electrical grounding of the unit. Contact Marland for the optional electrical grounding kit.

Two eyebolts provided on the clutch housing are to be used when moving, lifting, and lowering the CECON+ unit into position.

**▲CAUTION** CECON units should never be handled by placing slings or chains around the shaft extensions.

#### A. Direction of Rotation

The CECON+ unit output shaft (Part No. 15) must be correctly arranged for freewheeling rotation. The nameplate attached to the clutch housing end plate identifies the output shaft. This shaft is to be connected to the shaft of the driven equipment.

The CECON+ unit input shaft (Part No. 2) is also identified by nameplate on the clutch housing. The input shaft is at the same end of the CECON+ unit as the running oil level gauge (Part No. 16). This shaft is to be connected to the shaft of the driving equipment.

As a further precaution before proceeding with the assembly, check the direction of freewheeling rotation by holding the CECON+ input shaft (Part No. 2) stationary while trying to rotate the output shaft (Part No. 15) first in one direction and then in the opposite.

**▲CAUTION** Be sure the free rotation is in the desired direction.

### B. Drain Valve and Static Oil Gauge

Install the drain valve and static oil level sight gauge before the CECON+ unit is lowered into position.

Drain valve (Part No. 18) and static oil level sight gauge (Part No. 17) may be located on the same or opposite sides of the housing. Use the pipe plug removed from housing as a safety plug in end of the drain valve.

### C. Alignment

Accurate alignment of the CECON+ unit shafts with the shafts of the connected equipment is most important and should be done in accordance with the coupling manufacturer's instructions. Misalignment may develop unnecessary overloads and stresses in shafts and bearings, and can be responsible for failure of the equipment. If Marland Clutch has furnished the couplings, see Coupling Data Sheet enclosed with this bulletin.

CECON+ Clutch unit shafts should be connected to the driver and driven equipment shafts through suitable sizes of double-engagement flexible couplings. Do not use single-engagement couplings without the approval of Marland Clutch.

Never use heavy blows on CECON+ unit shafts when aligning, mounting hubs, fitting keys, etc. Evidence of damage caused by disregard of these instructions is readily traceable, and Marland Clutch will not be held responsible for the failure of the affected part or parts.

After the unit has been lowered in place, it is desirable to use metal shims to obtain proper alignment of the CECON+ unit shafts with the driver and driven equipment shafts. Locate housing axially to provide shaft gaps per coupling manufacturer or as shown on the certified drawing. Use shims under feet of housing, preferably U-shaped, to fit around mounting bolts evenly.

Tapped through holes for Jacking Screws are provided to assist in the installation of the metal shims.

Failure to properly shim the CECON+ unit housing feet may cause the housing to distort when the mounting bolts are tightened.

For inclined applications, refer to the certified drawing for the approved inclined longitudinal mounting axis. The transverse axis must be placed in a horizontal position and checked with a spirit level indicator.

It is important that the alignment of the CECON+ unit shafts with the shafts of the driver and driven equipment be rechecked after the final tightening of the mounting bolts, and before installation of the coupling halves is complete.

After the installation has been properly aligned, dowel the CECON+ unit in place by using two dowels, located in the holes provided (see top views). Doweling preserves the original alignment and proper shaft relationship should it become necessary to remove and reinstall the CECON+ unit, thus providing every possible precaution against incorrect reassembly.

## Starting

### A. Fill with Oil

**▲CAUTION** CECON+ Clutch units are shipped without oil.

Before placing in operation, the unit must be filled with oil of the grade specified on the nameplate, to the level indicated on the static oil level sight gauge (Part No. 17). The approximate oil capacity for filling to the static oil level is shown on the certified drawing and nameplate.

**▲CAUTION** Oil containing high lubricity or EP additives must not be used in clutch units. Never use grease for internal lubrication of the clutch. The use of improper lubricants could cause a malfunction resulting in equipment damage.

DEXRON III Automatic Transmission Fluid is recommended for year-around lubrication in Marland CECON+ Clutches. Any changes in lubricant specifications will be noted on the nameplate.

To fill the unit with oil, thoroughly clean around the 1-1/2" square pipe plug (Part No. 20) on the inspection cover to prevent foreign material from entering the housing. Remove the 1-1/2" square head pipe plug. Fill the unit with oil through this opening. Allow sufficient time for the oil to seek its natural static level in the housing as indicated by the STATIC oil level sight gauge. Remove the 3/4" square head pipe plug and insert the breather-filter (Part No. 19), using the elbow fittings that furnished.

### B. Initial Startup

During initial starting, check for evidence of localized heating; satisfactory lubrication; and any vibration due to loose foundation bolts or shaft misalignments. If any correction is necessary, it

should be made before placing the CECON+ unit into continuous operation.

**Note: Oil level in the “running oil level” gauge may take up to ten minutes to stabilize at the maximum intended speed.**

## Lubrication Maintenance

### A. Oil Level Gauges

CECON+ units are provided with 2 oil level sight gauges. Both are located on the input end of the clutch housing the upper housing gauge indicates the oil level to be maintained when the unit is in continuous operation or has been operating for at least 10 minutes at the maximum intended speed. The other gauge, located on the lower clutch housing, indicates the static (initial fill) oil level.

### B. Running Oil Level

During operation, the CECON+ unit oil level should be maintained at or above the minimum running level as marked on the tag located on the end of the clutch upper housing.

When the oil level is below the minimum running level, sufficient oil should be added to restore the level up to the indicated minimum running level. It is not necessary to stop the CECON+ unit when adding oil.

**Important:** Oil level may drop below the indicated minimum level during slow rotation of the input shaft, such as in starter drives, creep drives, etc. In these instances, the static oil level indicated is sufficient for proper lubrication.

Improper maintenance methods are often responsible for dirt and foreign matter contaminating the oil. Keep oil supply and containers, pumps, or funnels used for filling, clean and free from contamination.

### C. Sampling of Oil

To obtain long, trouble-free service from your CECON+ unit, it is necessary that the lubricating oil within the housing be clean and free from sludge at all times. To be assured of this, make frequent inspection of the condition of the oil by sampling a sufficient quantity through the drain valve (Part No. 18). Such sampling may be done while the unit is running and does not require interrupting operation.

Visual observation of the running oil level gauge will provide a further check of oil purity.

The frequency with which the CECON+ unit lubricating oil is sampled or replaced is an important consideration and can only be determined by

individual experience. However, it is considered desirable to sample the lubrication several times at weekly intervals after the unit has been placed in operation. The results of such samplings will dictate the frequency for future samplings, which could possibly extend to one month intervals, but in any event should not exceed three months.

Whenever oil sampling indicates contamination by moisture or foreign matter, such impurities may be withdrawn from the housing through the drain valve. If the unit is in operation, do not withdraw more than 1 quart at a time. The amount withdrawn should be immediately replaced with fresh specified oil. Replacement oil may be added through the initial oil fill hole.

### D. Changing of Oil

Timing of oil changes should be determined by the results of oil sampling. Unless results of oil sampling suggest otherwise, the oil within the clutch should be completely changed once a year for continuous duty applications.

### E. Breather Filter

The breather filter should be cleaned or replaced at regular intervals. The frequency of servicing depends upon the condition of the filter element when examined and cleaned. Initially, this should be done after a short period of operation.

### F. Couplings

Follow coupling manufacturer's recommendations regarding installation and maintenance of the couplings.

## Disconnect/Connect Option

CECON+ Clutches can be ordered in a configuration (CEUSD) that allows lockout/tagout of the driver in accordance with OSHA requirements without disconnecting a coupling. This is accomplished by physically moving the cam and roller assembly (Part Nos. 6 and 7) so they are not in contact with the outer race (Part No. 8). This movement takes place without removing the inspection cover (Part No. 5) per the procedure below.

**Note: It is important that the driver be disconnected and locked/tagged out in accordance with OSHA requirements before proceeding with the following.**

To disconnect the clutch, the following must be adhered to and performed by authorized personnel:

### A. Disconnect

1. Do not attempt to disconnect the clutch while it is being driven.
2. After verifying that the clutch is not driving, unlock and remove the locking device from the lock cover (Part No. 24).
3. Remove the lock cover (Part No. 23) and allow the locking hasp to lay flat on the inspection cover (Part No. 5).
4. Move the shift lever (Part No. 22) to the disconnect position as tagged on the housing cover.
5. Verify that the unit is disconnected by viewing the location of the shift pin through the sight glass (Part No. 21).
6. Insert hasp into lock cover and lock in place before any type of service is performed on non driving equipment.

### B. Connect

To reconnect the clutch, the following must be adhered to and performed by authorized personnel:

**Note: It is imperative that the input shaft is not rotating while attempting to reconnect the clutch. Also, the output shaft must be turning, either mechanically or manually, in the freewheel direction prior to attempting reconnection of the clutch.**

1. After verifying that all above conditions are met, unlock and remove the locking device from lock cover (Part No. 24).
2. Remove the lock cover (Part No. 23) and allow the locking hasp to lay flat on the inspection cover.

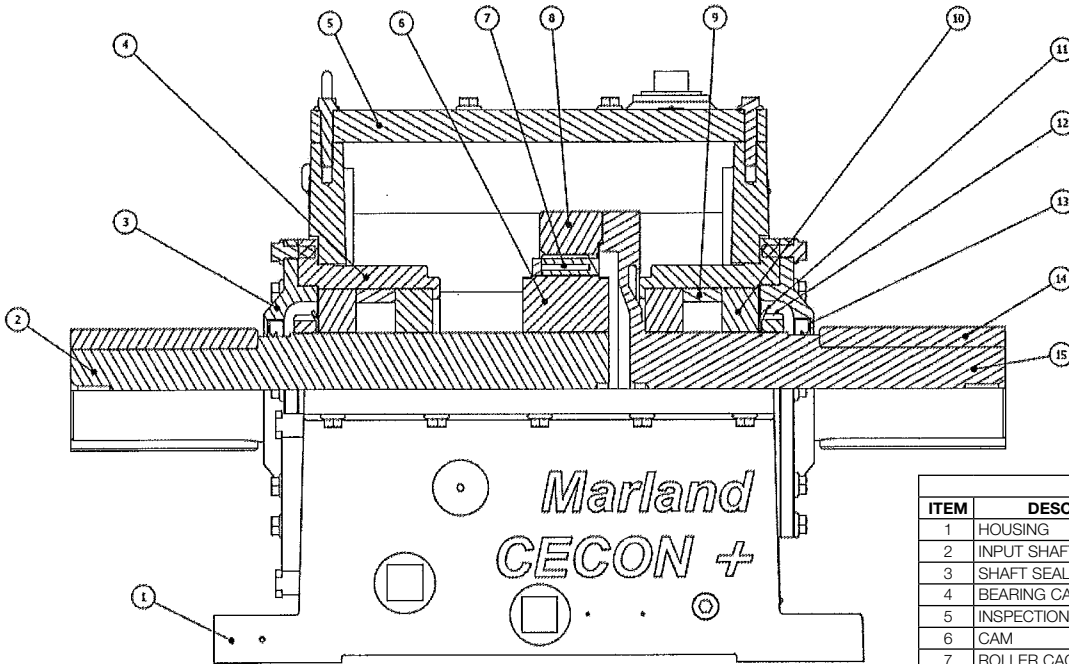
3. Move the shift lever (Part No. 22) to the connect position as tagged on the housing cover.
4. Verify that the unit is connected by viewing the location of the shift pin through the sight glass (Part No. 21).
5. Insert hasp into the lock cover and lock in place.

## Service

Field disassembly and repair of a CECON+ Clutch is not recommended. Should problems occur, contact Marland Clutch directly.

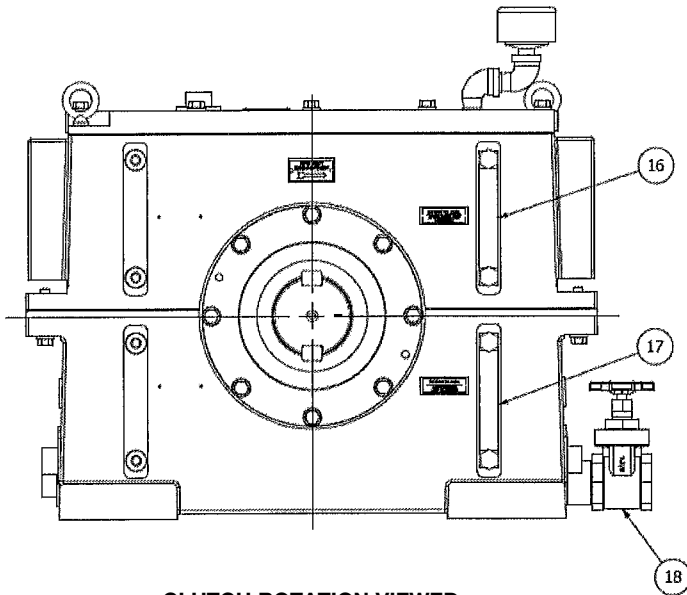
**⚠CAUTION Rotating equipment is potentially dangerous and could cause injury or damage if not properly protected. Follow applicable codes and regulations.**

## CECON+ DIAGRAMS AND PARTS LIST



PARTS LIST		
ITEM	DESCRIPTION	MATERIAL
1	HOUSING	CAST IRON
2	INPUT SHAFT	ALLOY STEEL
3	SHAFT SEAL COVER	CAST IRON
4	BEARING CAGE	CAST IRON
5	INSPECTION COVER	STEEL
6	CAM	ALLOY STEEL
7	ROLLER CAGE ASSEMBLY	ALLOY STEEL/ALUMINIUM
8	OUTER RACE	ALLOY STEEL
9	BEARING SPACER	ALLOY STEEL
10	BEARING	ALLOY STEEL
11	LOCKWASHER	STEEL
12	LOCKNUT	STEEL
13	SEAL	PTFE
14	KEY	ALLOY STEEL
15	OUTPUT SHAFT	ALLOY STEEL

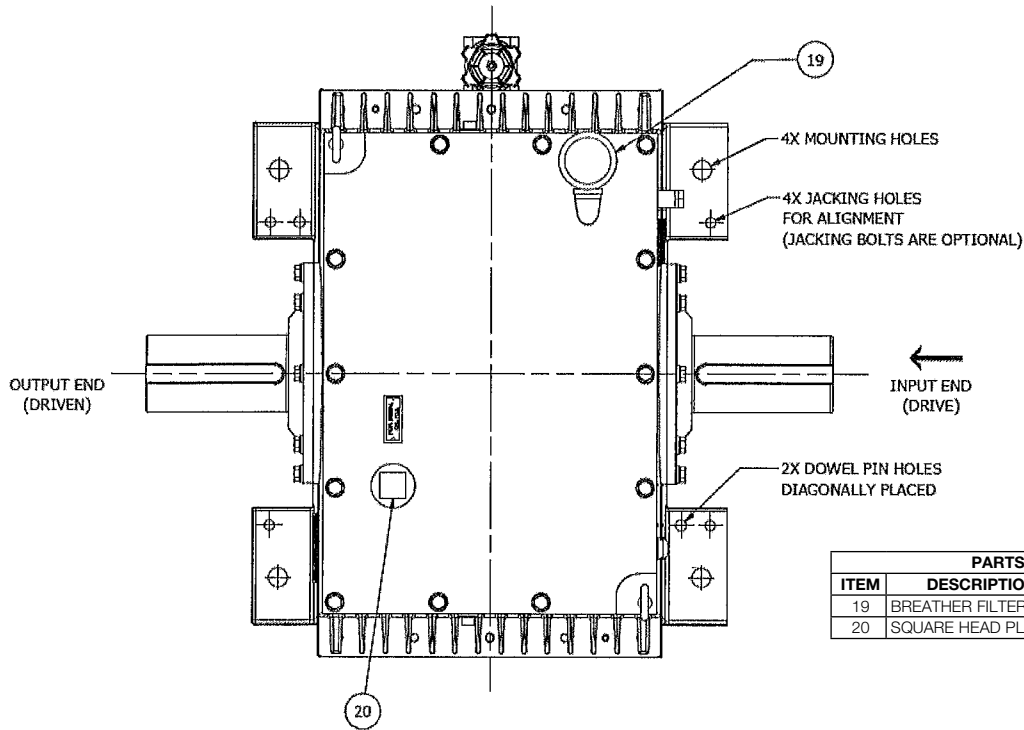
**GENERAL CROSS SECTION**



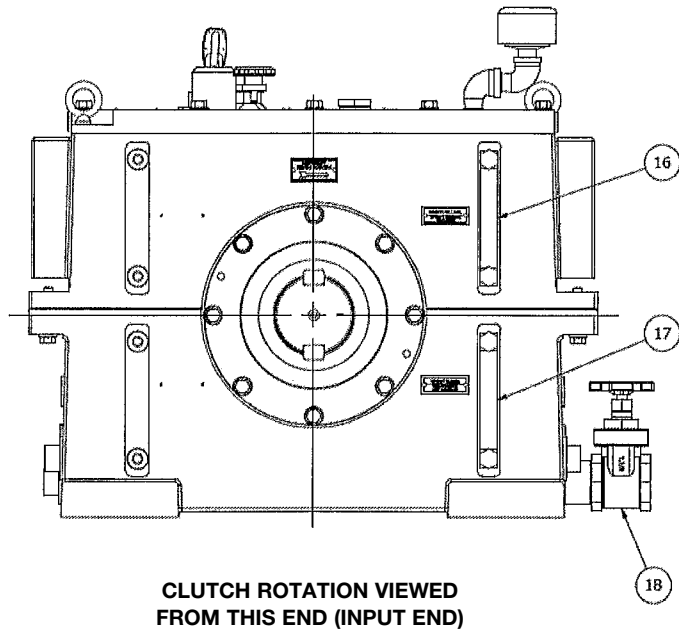
PARTS LIST		
ITEM	DESCRIPTION	MATERIAL
16	RUNNING OIL LEVEL GAGE	ALLOY STEEL/GLASS
17	STATIC OIL LEVEL GAGE	ALLOY STEEL/GLASS
18	1 1/2" DRAIN VALVE	STAINLESS STEEL

**CLUTCH ROTATION VIEWED  
FROM THIS END (INPUT END)**

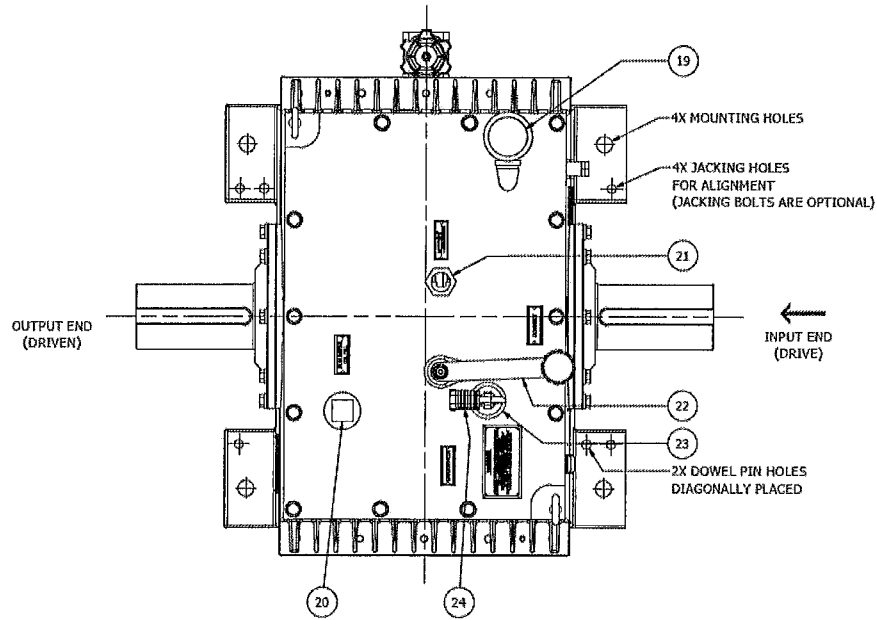
**CEUS DESIGN - END VIEW**



**CEUS DESIGN – TOP VIEW**



**CEUSD DESIGN – END VIEW**



PARTS LIST		
ITEM	DESCRIPTION	MATERIAL
19	BREATHER FILTER	ALLOY STEEL
20	SQUARE HEAD PLUG	ALLOY STEEL
21	SIGHT GLASS	ALLOY STEEL
22	SHAFT LEVER	ALLOY STEEL
23	LOCK COVER	ALLOY STEEL
24	MASTER LOCK	ALLOY STEEL

**CEUSD DESIGN - TOP VIEW**





## Warranty

Marland Clutch warrants that it will repair or replace (whichever it deems advisable) any product manufactured and sold by it which proves to be defective in material or workmanship within a period of three (3) years from date of shipment. This warranty extends only to the original purchaser and is not transferable or assignable without Marland Clutch's prior consent.

This warranty covers normal use and does not cover damage or defect which results from alteration, accident, neglect, or improper installation, operation, or maintenance.

Marland Clutch's obligation under this warranty is limited to the repair or replacement of the defective product and in no event shall Marland Clutch be liable for consequential, indirect or incidental damages of any kind incurred by reasons of manufacture, sale or use of any defective product. Marland Clutch either assumes nor authorizes any other person to give any other warranty or to assume any other obligation or liability on its behalf.



[www.marland.com](http://www.marland.com)

23601 Hoover Rd.  
Warren, MI. 48089  
800-216-3515