

OPERATING MANUAL

MASTERFLEX[®] ***L/S***[®] and ***I/P***[®]

HAZARDOUS DUTY PUMP DRIVES

MODEL NO.

7583-50

7583-52

Cole-Parmer Instrument Co.

625 East Bunker Court
Vernon Hills, Illinois U.S.A. 60061-1844

800-MASTERFLEX (627-8373)
(847) 247-2929 (Fax)
www.masterflex.com
e-mail: techinfo@coleparmer.com

A-1299-0676
Edition 02

TABLE OF CONTENTS

| Title | Page |
|--|-------------|
| SAFETY PRECAUTIONS | ii |
| INTRODUCTION AND GENERAL DESCRIPTION | 1 |
| SETUP AND DRIVE OPERATION | 2 |
| Wiring | 2 |
| GENERAL INSTRUCTIONS | 3 |
| OPERATING INSTRUCTIONS | 4 |
| PUMP MOUNTING | 5 |
| Add-On Head Capacity | 6 |
| MAINTENANCE | 6 |
| Cleaning | 6 |
| Service Parts | 6 |
| Lubrication | 6 |
| SPECIFICATIONS | 7 |
| WARRANTY | 8 |
| PRODUCT RETURN | 8 |
| TECHNICAL ASSISTANCE | 8 |

SAFETY PRECAUTIONS

DANGER: *The pump drive is intended for installation in a Class 1 Division 1 Group D hazardous (classified) locations and must be installed by a qualified electrician per the National Electrical Code ANSI/NFPA 70. Incorrect installation of this product can result in the explosive ignition of flammable vapors and liquids which may be present.*



WARNING: *To prevent ignition of hazardous atmospheres, this system must not be installed in an area where vapor or gases having an ignition temperature less than 280°C are present.*



CAUTION: *Failure to wire the system in the manner prescribed can result in premature failure of the mechanical speed reduction system and will result in voiding the warranty.*



WARNING: PRODUCT USE LIMITATION

These products are not designed for, nor intended for use in patient connected applications; including, but not limited to, medical and dental use, and accordingly have not been submitted for FDA approval.

Trademarks bearing the © symbol in this publication are registered in the U.S. and in other countries.

INTRODUCTION AND GENERAL DESCRIPTION

The Hazardous Duty MASTERFLEX Drive System Model 7583-50 consists of a fixed speed 120V, single phase, 60 Hz motor, a variable mechanical speed reducing control, and a pump mounting bracket with the appropriate drive adapters for MASTERFLEX® L/S® and MASTERFLEX® I/P® pumps.

Model 7583-52 is identical to Model 7583-50 except that the unit is supplied without a motor, this allows the customer to furnish the motor for a specific application.

The pump mounting plate will accept all MASTERFLEX® L/S® and MASTERFLEX® I/P® Pump Heads with standard (short) shafts. Additional MASTERFLEX Pump Heads with standard (short) shafts may be used in tandem. The pump speed can be varied from 10 to 430 rpm. The pump rotates in one direction only, clockwise.

For Model 7583-52 to be acceptable for use in a hazardous (classified) location, the motor supplied by the customer must be UL listed for use in Class 1 Group D locations. The system is set up to accept a NEMA 56 frame motor without requiring modification.

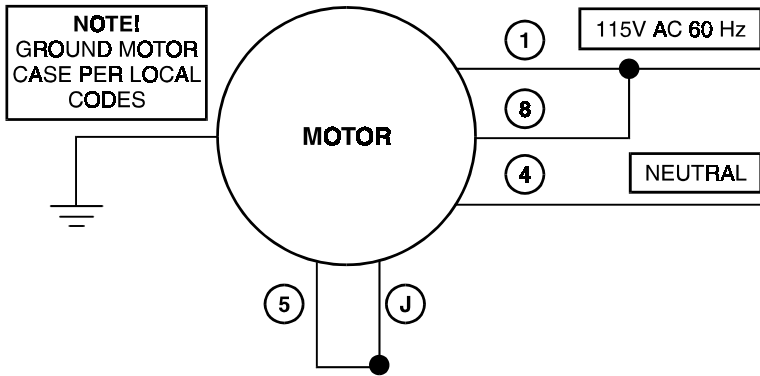
Couplings are supplied to connect the motor to the mechanical speed reducer. The base is threaded to accept the 1/4-20 mounting hardware supplied to fasten the motor to the base.

SETUP AND DRIVE OPERATION

Wiring

The Model 7583-50 drive is intended for hazardous (classified) locations requiring equipment with a Class 1 Group D rating where gases or vapors that have an ignition temperature greater than 280°C are present. Installation of the 7583-50 drive system must be made in accordance with the National Electrical Code ANSI/NFPA 70 and any applicable local codes.

The motor must be wired such that the output shaft of the MOTOR rotates in a clockwise direction when facing the motor shaft. See the wiring diagram below.



WIRING DIAGRAM

For Model 7583-52, the motor which is supplied by the customer must be wired so that the output shaft of the motor rotates in a clockwise direction when facing the motor shaft.

CAUTION: *Failure to wire the system in the manner prescribed can result in premature failure of the mechanical speed reduction system and will result in voiding the warranty.*



GENERAL INSTRUCTIONS

Two different coupling drive adapters are supplied with each drive, the coupling with the narrow slot is for MASTERFLEX® L/S® pumps, the coupling end with a wide slot is for MASTERFLEX® I/P® pumps (see Figure 1).

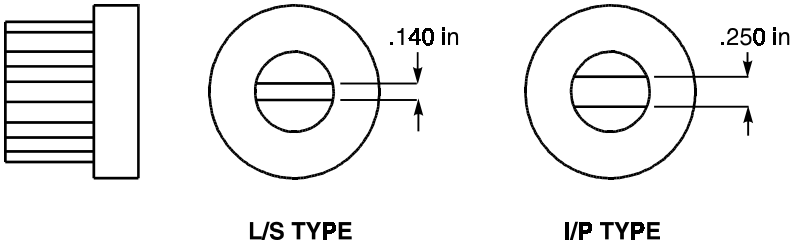


FIGURE 1 — DRIVE ADAPTERS

To install the drive adapter on the drive, first install the rubber coupling sleeve from the loose parts bag on the coupling end mounted on the mechanical speed control by slipping it over the end of the coupling through the pump mounting plate opening. Then select the appropriate adapter for the pump you wish to drive and slip it into the rubber sleeve and seat it firmly (see Figure 2). The pump mounting plate which is mounted to the base has been centered at the factory for optimum performance with both MASTERFLEX® L/S® and MASTERFLEX® I/P® pumps, **DO NOT CHANGE ITS LOCATION**. The pump mounting plate is threaded to accept all standard and optional mounting hardware for MASTERFLEX® L/S® and MASTERFLEX® I/P® pumps. Orient the tang of the pump you wish to drive with the drive adapter and install the pump tang in the adapter. Fasten the pump to the mounting plate using the pump mounting hardware.

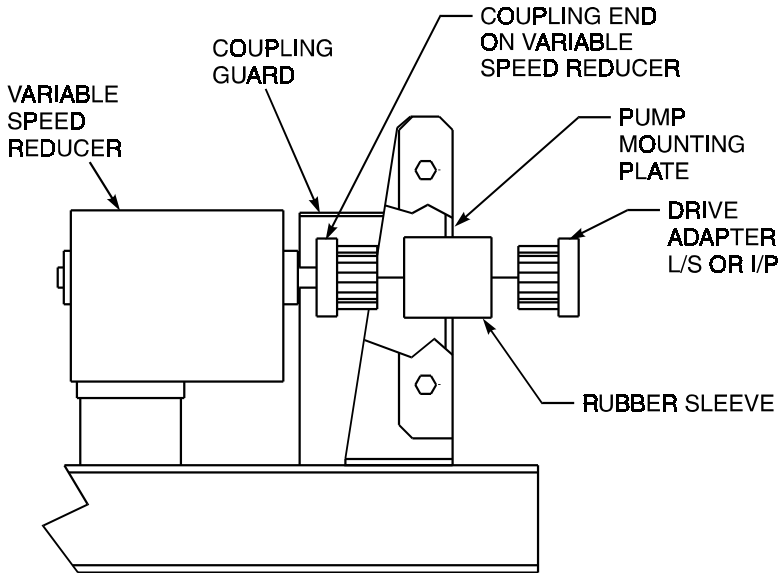


FIGURE 2

OPERATING INSTRUCTIONS

The motor runs at a constant speed of 1725 rpm. The pump speed setting is changed by using the lever on the mechanical speed control. To increase the pump speed, move the lever away from the mechanical gear box, to decrease pump speed, move the lever toward the gear box. The pump speed can be varied from approximately 10 to 400 rpm. The knob on the lever locks the setting and prevents accidental changes in the pump speed (rotate the knob CW (clockwise) to lock the setting and CCW (counterclockwise) to unlock).

To minimize the starting load, it is recommended that the system be at approximately zero speed (lever fully CW) prior to starting the motor. Once the motor has started, move the lever to increase speed to the desired setting and lock in place.

Operating the system continuously at speeds approaching zero will cause excessive wear on the mechanical speed control. Operating at the maximum speed will result in minimum tubing life. If maximum system life at a continuous speed is desired, the size of the pump head should be chosen so that the desired flow is achieved at a pump speed of approximately 60 to 200 rpm. For intermittent operation, any pump head can be used at any speed setting without harm.

PUMP MOUNTING

The pump mounting plate supplied with the system is threaded to accept all standard and optional mounting hardware for MASTERFLEX® L/S® and MASTERFLEX® I/P® pumps. All of the MASTERFLEX pumps mount in a vertical orientation (See Figure 3). Orient the tang of the pump you wish to drive with the drive adapter and install the pump tang in the adapter. Fasten the pump to the mounting plate using the pump mounting hardware supplied.

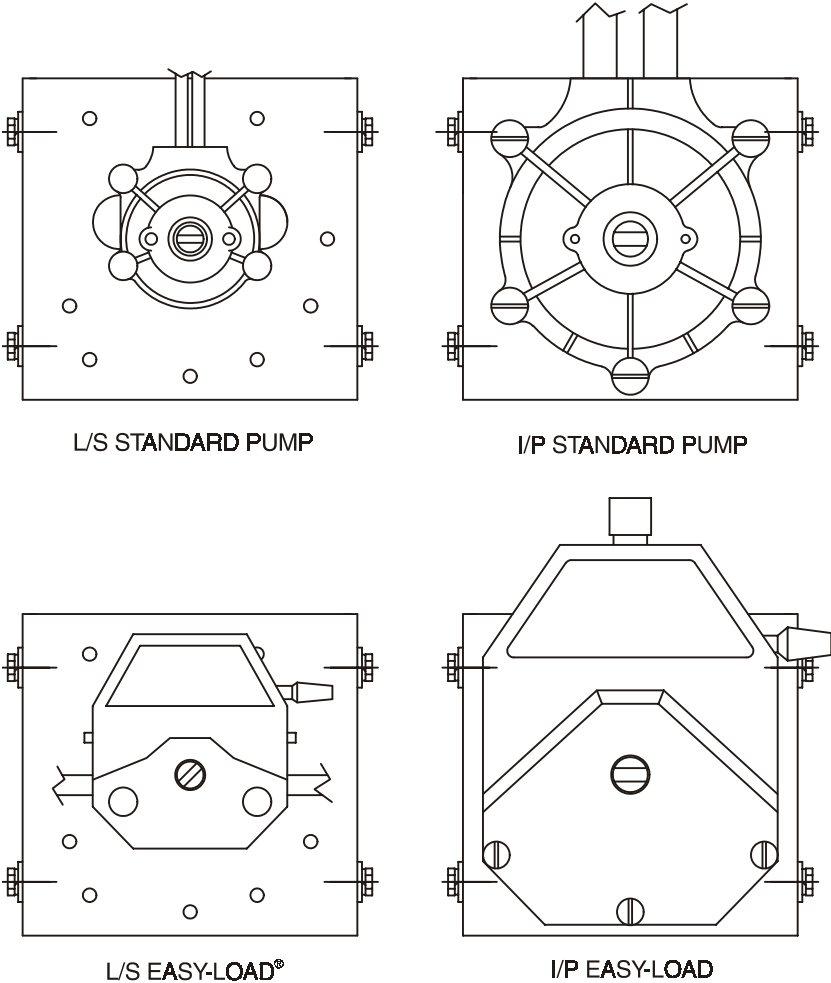


FIGURE 3

Add On Head Capacity

A maximum of two MASTERFLEX® L/S® or one MASTERFLEX® I/P® add-on pump heads is recommended (for a total of 3 MASTERFLEX® L/S® heads or 2 MASTERFLEX® I/P® heads). Additional pump heads beyond the number recommended will cause excessive load and wear on the motor, speed reducer and pump.

MAINTENANCE

Cleaning

The exterior surfaces of the unit may be cleaned using water and a strong detergent. **Do not immerse unit nor use excessive fluid.**

Service Parts

| Item | Part Number |
|---|-------------|
| I/P Drive Adapter | B-3435 |
| L/S Drive Adapter | B-3545 |
| Rubber Coupling Sleeve | B-3434 |
| Coupling End 3/8 in Bore (Speed Reducer) | B-3546 |
| Coupling End 5/8 in Bore (Motor) | B-3433 |
| Coupling End 3/4 in Bore (Motor European) | B-3676 |

Lubrication

The mechanical speed control is permanently lubricated at the factory. The oil level should be periodically checked, however, as a safety precaution, the case should be at least 1/2 full of lubricant.

Use any good quality SAE 40 detergent oil. A quantity of 14 ounces is required to refill the drive. A drain and fill-hole is provided in the housing if additional oil is needed.

The motor has permanently lubricated, sealed bearings. No maintenance or lubrication is required.

SPECIFICATIONS

| | |
|----------------------------------|---|
| Hazardous (classified) Location: | Class 1 |
| Group: | D |
| Zone: | 1 |
| Operating Temperature: | 0° to 40°C |
| Storage Temperature: | -40° to 65°C |
| Humidity (non-condensing): | 10 to 90% |
| Chemical Resistance: | Painted steel |
| Operating Voltage/Frequency: | 115V AC nominal 57–63 Hz (90–130V AC) @ 4.7 A AC |
| Power Rating: | 1/4 hp (190W) |
| Output Speed Range: | 10 to 430 rpm |
| Direction of Rotation: | Clockwise |
| Speed Regulation: | ±10% |
| Altitude: | Less than 6600 Ft (2000m) |
| Dimensions (L × W × H): | 560 × 350 × 230 mm (22 1/16 in × 13 5/8 in × 9 in) |
| Weight: | 23.7 kg (52.25 pounds) |
| Maximum Torque Load: | 25 lb-in |