

MUD AGITATORS 5 to 30HP

Issued 20 Nov 09 Rev. 25 Sep 12

Maintenance & Operation Manual

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UNIT NUMBER IS KEY TO DERRICK SERVICE

All inquiries to Derrick must include the equipment unit number. The stainless steel unit number tag attached to each piece of Derrick equipment is your key to efficient service and support.



Typical Derrick Unit Number

This unique number gives vital information to Service personnel who use it to identify the correct parts when filling orders, provide accurate responses to service questions, track documentation, and trace the equipment's history or configuration. In short, the **unit number provides the critical information needed to ensure that Derrick customers receive the best possible service**.

The unit number consists of a two-character alphabetic prefix that identifies the equipment type and a series of numeric characters that signify the sequence of the machine's manufacture. For example, unit number MA000001 would be the first screening machine manufactured by Derrick. Alphabetic prefixes currently in use are:

- MA Screening Machine AD Desilter and Desander
- DG Degasser AG Mud Agitator
- CF Centrifuge SF Screen Frame

To ensure that it will remain intact over many years of rigorous service, the heavy-gage tag is riveted to a structural member such as the shaker support structure. It is not to be confused with any other identifier on the machine such as a vibrator motor serial number.

For convenient availability, the unit number is also recorded in the Operation and Maintenance manual shipped with the equipment. When contacting Derrick for any equipment question or need, always have the unit number in your possession. It's the best way to get the most efficient service from our dedicated Service and Engineering personnel.



ABOUT THIS MANUAL

In this electronic manual, all sections and paragraphs listed in the CONTENTS are linked to the corresponding text.

Navigate the electronic manual as follows:

- 1. To view any desired information, display the CONTENTS page and move the cursor to the desired paragraph or section title.
- 2. To display the desired information, click on the listing when the pointing finger appears over the text.
- 3. When finished viewing the text, press Alt + left arrow key to return to the CONTENTS page.
- 4. If desired to return to the same information, press Alt + right arrow. To locate a different item, repeat steps 1 and 2.
- 5. Blank pages are included to facilitate accurate two-sided printing on a standard copier. To print any individual section, simply enter the PDF page number range at the top of the screen (not the page number at the bottom of each page).

This document contains proprietary information of Derrick Corporation. It is intended solely for the information and use of parties operating and maintaining the equipment described herein. Such proprietary information may not be used, reproduced, or disclosed to any other parties for any other purpose without the expressed written permission of Derrick Corporation. Continuous improvement is a policy of Derrick Corporation. All instructions and procedures are subject to change without notice.



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SECTION 1 - INTRODUCTION

OVERVIEW

This manual provides installation, operation, and maintenance instructions for the Derrick mud agitators (Figure 1-1). The manual is divided into several sections to assist the user inreadily accessing the information.

Personnel responsible for transporting, installing, commissioning, operating, or performing maintenance on this equipment are required to read and understand the instructions provided in this manual. One copy of this manual should be available and accessible at the equipment location.

For machine safety and performance, no additions and/or changes may be made to the equipment without the explicit written permission of Derrick Corporation. Genuine Derrick repair/replacement parts are required.





Vertical Drive With Straight Impeller

Horizontal Drive With Canted Impeller

Figure 1-1 Typical Derrick Mud Agitators

SAFETY

Section 2 of this manual contains relevant safety information relating to both operation and maintenance of this equipment. Be sure this information is read and understood by all personnel.

DO NOT operate the equipment if defective or faulty mechanical or electrical components are detected.

SOUND EMISSION

Hearing protection is recommended when working on or near the agitator. Based on measurements taken for technically comparable machinery, the agitator emits the following airborne sound levels:

- A-Weighted Machine Surface-Averaged Sound Pressure Level at .5m 72.9 dBA
- A-Weighted Machine Surface-Averaged Sound Power Level 79.8 dBA
- C-Weighted Instantaneous Peak Sound Pressure Level TBD

EQUIPMENT USE

The mud agitator is designed for stirring mud slurries in an open tank. Derrick Corporation does not authorize any other use of this equipment. Intended usage of the equipment includes compliance with the operating, maintenance, and safety instructions provided in this manual.

DESCRIPTION AND OPERATION

The mud agitators are high-efficiency mud-mixing units offered in a wide array of custom sizes and configurations to accommodate virtually any mud tank. Both horizontal and vertical drive configurations are available for all sizes of mud agitators. The horizontal drive is designed for installations having limited space above the mud tank. The vertical drive agitator employs an allhelical gearing system, and the horizontal drive utilizes a helical-bevel system to drive the agitator shaft, which may have one or two straight or canted mixing impeller(s).

The mud agitator stirs a mud slurry to maintain suspension of solids. The agitator is mounted on top of the mud tank and has one or two impeller(s) immersed in the mud slurry. The impeller shaft is directly coupled to an electric drive motor that is available in several horsepower ratings from 3 (50Hz only) to 30 (60Hz).

Each mud agitator is designed for the specific application, taking into account parameters such as tank size, tank depth, and mud characteristics. Derrick offers mud agitators in both vertical and horizontal drive motor configurations. For vertical configurations, the drive motor rotates the impeller shaft through an all-helical gear drive. For horizontal designs, the motor is connected through a combination of helical and bevel gears. Both designs permit mounting one or two impellers having either straight or canted blades.

The impeller is secured to the shaft by a tapered locking bushing and prevented from rotating by a key inserted into the impeller shaft. Its vertical location on the shaft is determined as a height from the tank bottom corresponding to the impeller diameter times 0.75. For example, a 20" impeller should be mounted 15" above the bottom. Derrick recommends straight impeller blades for tanks under 5' deep and canted blades for deeper tanks. If dual impellers are desired, straight blades are mounted on the bottom and the canted blade impeller is installed at a point about two-thirds above the tank bottom.

The keyed motor and driven impeller shafts are rigidly connected by a multi-piece coupling, which uses tapered locking bushings to secure the shafts together. Shaft lengths are customized to suit customer specifications. For shafts longer than 8', a stabilizer is mounted on the tank bottom to support the lower end of the shaft.

MAJOR COMPONENTS

Although the arrangement mud agitator components is identical across the various sizes and configurations, the drive motor, impeller, shaft length and diameter, gear drive, and motor orientation vary between models. Figure 1-2 shows the typical components of a vertical mud agitator. The horizontal configuration for the same power rating is identical, except for the type of gear drive. The unit is shipped unassembled and requires assembly by a trained, qualified technician.

Drive Motor

The mud agitator is operated by a 3-phase induction motor. Drive motors range from 5 to 30 horsepower for the 230/460Vac 60Hz power configuration and 3 to 25 horsepower for the 190/380 50Hz power configuration; the power requirements are specified on the customer order. Electric power, switching, and safety devices are provided by the customer.



Figure 1-2 Mud Agitator Major Components

INTRODUCTION

Gear Drive

Rotation of the drive motor is transferred to the impeller shaft through the directly coupled gear drive. The drive is a reduction gearbox and is factory assembled to the drive motor. The drive is sized to apply the maximum torque required to produce the design impeller rotation speed of 60 rpm.

For vertical configurations, helical reduction gears transfer power from the motor to the impeller shaft. Horizontal gear drives employ a combination of helical and bevel gears.

Impeller

Impellers are available in diameters ranging from 20" to 52" to meet the needs of various size mud tanks. The impeller diameter is generally determined by the size of the tank. Larger or deeper tanks employ dual impeller units having a secondary impeller mounted closer to the mud surface. The impeller is mounted on the shaft using a tapered locking bushing. A key inserted in the impeller shaft locks the impeller to the shaft and prevents rotation.

The straight blade configuration disperses mud laterally, while the canted impeller blades add a vertical component to the mixing process (Figure 1-3). Canted impeller blades are desirable near the bottom of tanks more than 5' deep or where other forces of flow factor may be absent in the tank.



Figure 1-3 Impeller Blade Configurations

PRODUCT SUPPORT

Derrick Corporation offers 24-hour per day, 7-days per week product support. Product support includes screen replacement / ordering information and repair / replacement parts and service for the entire product line. Refer to the following table for the parts / service center nearest you.

PARTS SALES & SERVICE LOCATIONS
Colorado - 970.241.2417
Louisiana
Broussard - 877.635.3354
Mississippi
Laurie - 877.635.3354
New York - Corporate Headquarters
Buffalo - 716.683.9010
Oklahoma
Oklahoma City - 405.208.4070
Texas
Houston (Oilfield Headquarters) - 866.DERRICK (337.7425)
Bridgeport - 940.210.9975
Corpus Christi - 361.664.2410
Longview - 337.298.9411
Midland - 432.230.3720
Wyoming - 307.265.0445
Germany - 011.49.5162.98580

CONTACT INFORMATION

CONTACT INFORMATION					
Location	Telephone	Facsimile (FAX)	E-Mail / Website		
Derrick Corporation 590 Duke Road Buffalo, New York 14225 <i>USA</i>	716.683.9010	716.683.4991	General Service Manager toconnor@derrickcorp.com		
Derrick Equipment Company 15630 Export Plaza Drive Houston, Texas 77032 <i>USA</i>	281.590.3003	281.442.6948	General Manager <u>rerice@derrickequipment.com</u>		



SECTION 2 - SAFETY

GENERAL

This section contains a summary of WARNINGS used in this manual and a list material safety data sheets (MSDSs) applicable to the equipment. The mud agitator has been designed to perform the stated functions safely.

WARNINGS

All persons responsible for operation and maintenance of this equipment must read and understand all safety information in this manual prior to operating and/or maintaining the equipment. The safety warnings listed below are included in applicable procedures throughout this manual.

Sound



WARNING! TO PROTECT AGAINST HEARING LOSS, HEARING PROTECTION SHOULD BE WORN AT ALL TIMES WHEN WORKING ON OR NEAR DERRICK MACHINES.

Electrical Hazards

WARNING! TO AVOID SERIOUS PERSONAL INJURY BE SURE EQUIPMENT IS LOCKED OUT, TAGGED OUT, AND DE-ENERGIZED PRIOR TO PERFORMING MAINTENANCE AND/OR ADJUSTMENTS.

WARNING! MOTOR MUST BE OPERATED AT THE DESIGNATED SUPPLY VOLTAGE.

WARNING! HIGH VOLTAGE MAY BE PRESENT. BE SURE FUSED DISCONNECT SUPPLYING ELECTRICAL POWER TO THIS EQUIPMENT IS OPEN. LOCK-OUT AND TAG-OUT POWER SUPPLY TO PREVENT ACCIDENTAL APPLICATION OF POWER WHILE MAINTENANCE AND/OR ADJUSTMENTS ARE IN PROGRESS.



WARNING! ELECTRICAL CONNECTIONS MUST BE MADE IN ACCORDANCE WITH THE APPLICABLE NATIONAL AND LOCAL CODES. FAILURE TO COMPLY MAY RESULT IN AN UNSAFE CONDITION THAT COULD INJURE PERSONNEL OR DAMAGE EQUIPMENT. ENSURE THAT ALL ELECTRICAL AND CONDUIT CONNECTIONS ARE SECURE.

Equipment Handling



WARNING! USE SPREADER BARS TO PREVENT DAMAGE WHEN LIFTING THE EQUIPMENT.

WARNING! TO ENSURE PROPER BALANCE AND ORIENTATION WHEN UNIT IS RAISED AND PREVENT DAMAGE TO COMPONENTS, ATTACH LIFTING SLING ONLY BETWEEN MOTOR AND GEAR DRIVE. DO NOT ATTEMPT LIFTING BY ATTACHMENT TO EYEBOLT ON MOTOR OR ANY OTHER LOCATION.



WARNING! BE SURE THAT HANDLING DEVICES HAVE SUFFICIENT LIFTING CAPACITY TO SAFELY HANDLE THE WEIGHT OF THE EQUIPMENT.

Operation



WARNING! MOTOR HOUSING BECOMES HOT DURING OPERATION AND MAY CAUSE SEVERE BURNS. DO NOT TOUCH MOTOR HOUSING DURING OR IMMEDIATELY AFTER MOTOR HAS BEEN OPERATING.



WARNING! ALL OPERATING AND MAINTENANCE PERSONNEL MUST READ AND UNDERSTAND ALL SAFETY INFORMATION IN THIS MANUAL BEFORE WORKING WITH THE EQUIPMENT.

Maintenance



WARNING! HIGH VOLTAGE MAY BE PRESENT. ALWAYS OPEN FUSED DISCONNECT SUPPLYING ELECTRIC POWER TO THE EQUIPMENT, AND LOCK-OUT AND TAG-OUT POWER SUPPLY BEFORE PERFORMING ANY MAINTENANCE AND/OR ADJUSTMENTS OF EQUIPMENT.

Storage



WARNING! MOTOR MAY BE DAMAGED BY STORING IN A HIGH HUMIDITY ENVIRONMENT (GREATER THAN 50% RH). OUT-OF-SERVICE MOTOR(S) MUST BE STORED IN A LOW-HUMIDITY ENVIRONMENT.

MATERIAL SAFETY DATA SHEETS (MSDSs)

Material Safety Data Sheets (MSDSs) advise personnel of the properties and any possible hazards associated with these materials. Emergency first aid procedures, special precautions, emergency telephone number, and other relevant data are contained in the MSDSs. These documents are prepared by the product manufacturers, which have sole responsibility for accuracy of the information.

The MSDSs listed below apply to products used in the manufacture of the Derrick equipment. Only these products or equivalent substitutes may be used in this equipment. Dates shown are current as of the publication date of this manual. The latest MSDSs may be obtained from the product manufacturer.

PRODUCT - WHERE USED	MSDS No. / DATE
Paints	
PPG Dimetcote 302H Green 302F0250 Resin - Top Coat	1302H-5A / 04-11-10
PPG Dimetcote 302H Clear 302G0910 Cure - Top Coat	1302H-B / 01-21-10
PPG PSX 700 Neutral Tint Resin - Undercoat	PX700T3 / 02-28-08
PPG PSX 700FD Cure - Undercoat	PX700FD-B / 01-11-07
Lubricants and Sealants	
Chevron Dura-Lith EP2 Grease - Geardrive Bearings	Dura-Lith EP2 / 12-19-02
Exxon Mobil Mobilux EP2 Grease - Geardrive Bearings	Mobilux EP2 / 07-29-09
Shell Gadus S2 V220 2 Grease - Geardrive Bearings	DEU003514 / 02-28-11
Chevron SRI NLGI 2 - Drive Motor Bearings	SRI NLGI 2 / 12-19-02
Exxon Mobil Polyrex EM - Drive Motor Bearings	Polyrex EM / 06-01-05
Shell Omala S2 G 220 Oil - Geardrive	67500E / 09-20-10
Exxon Mobil Mobilgear 600 XP220 Oil - Geardrive	Mobilgear 600 XP220 / 05-29-07
Loctite 76764 Anti-Seize Lubricant - Geardrive Hardware	76764 / 05-27-09
Loctite 574 Flange Sealant - Geardrive and Adapter	574 / 07-08-10



SECTION 3 - INSTALLATION

GENERAL

This document describes the recommended installation procedure for the Derrick equipment defined by the model number and drawing number associated with your equipment. This equipment may be partially disassembled to comply with shipping restrictions.

SAFETY

Read and understand **ALL** safety information presented in this and associated documents **before** installing and operating the mud agitator. Refer to Section 2 for a summary of warnings related to installation, operation, and maintenance of this equipment.

Before beginning the installation, review the equipment handling procedures in **this s**ection. Pay particular attention to information concerning "lift points" and the use of spreader bars before lifting or moving the equipment.

Failure to observe proper equipment handling procedures may result in serious personal injury and/or damage to the equipment.



WARNING! BE SURE THAT HANDLING DEVICES HAVE SUFFICIENT LIFTING CAPACITY TO SAFELY HANDLE THE WEIGHT OF THE EQUIPMENT.



WARNING! TO ENSURE PROPER BALANCE AND ORIENTATION WHEN UNIT IS RAISED AND PREVENT DAMAGE TO COMPONENTS, ATTACH A LIFTING SLING BETWEEN MOTOR AND GEARDRIVE. DO NOT ATTEMPT LIFTING BY ATTACHMENT TO MOTOR EYEBOLTS OR ANY OTHER LOCATION.

SIZING

For proper mixing and suspension of solids, the mud agitator must be properly sized and installed. To properly size a mud agitator, proceed as follows:

- 1. Select desired style horizontal or vertical
- 2. Determine available electric power 230/460Vac 60Hz 3 phase or 190/380Vac 50Hz 3 phase
- 3. Select horsepower and impeller(s) as determined by the following factors:
 - a. Tank design round or square
 - b. Tank dimensions
 - c. Maximum mud weight
 - d. Desired turnover ratio (TOR)

SIZING (CONT'D)

After gathering the required information, the agitator can be properly sized to meet the horsepower demand and correct agitation for the application. To ensure accurate sizing, Derrick recommends use of its computer-aided sizing program, which is available through any Derrick representative.

Following are operational recommendations for mud agitators:

- 1. Maintain uniform tank dimensions, i.e. equal width-to-length ratio or as close as possible to equal.
- 2. Avoid TOR values greater than 85 seconds, as this may jeopardize solids suspension.
- 3. Avoid TOR values less than 40 seconds, as this may result in formation of a vortex and increase air entrapment.

INSTALLATION SEQUENCE

Following are the sequential steps of the mud agitator installation procedure. The sequence presented is a guideline and may vary depending on the user's facilities, previous experience with this equipment, and optional equipment.

- 1. Read and understand all safety information in Section 2 before installing and operating this equipment.
- 2. Read and understand the equipment handling procedures later in this section before lifting and moving the equipment.
- 3. Refer to Section 8 to identify the mud agitator components.
- 4. Locate and weld mounting plate and stabilizer (if required) to tank structure.
- 5. Place shaft in tank, and assemble impeller(s), tapered bushings, and male coupling on shaft.
- 6. Install female coupling on geardrive shaft.
- 7. Install motor and geardrive assembly, and attach shaft coupling to geardrive coupling.
- 8. Connect electric power supply to drive motor.

STORAGE

If the machine will not be installed immediately, it should be covered with a tarpaulin (tarp). If unit is stored outdoors, use a UV- resistant tarp, or UV-resistant shrink-wrap. Install vents when using shrink-wrap. Seal operating and maintenance manual in plastic, and attach to unit.

EQUIPMENT HANDLING

Derrick mud agitators are shipped disassembled except for motor and geardrive, which are supplied as an assembly. All components except the shaft are packaged in a single palletized carton. The shaft is packaged separately and strapped to a skid. A label indicating the total weight is applied to each package.

The delivered equipment should be transported on the ground using a forklift. Once removed from the shipping skid, an overhead lifting device (Figure 3-1) may be used.



WARNING! BE SURE THAT HANDLING DEVICES HAVE SUFFICIENT LIFTING CAPACITY TO SAFELY HANDLE THE WEIGHT OF THE EQUIPMENT.



WARNING! TO ENSURE PROPER BALANCE AND ORIENTATION WHEN UNIT IS RAISED AND PREVENT DAMAGE TO COMPONENTS, ATTACH LIFTING SLING BETWEEN MOTOR AND DRIVE. DO NOT ATTEMPT LIFTING BY ATTACHMENT TO MOTOR EYEBOLT OR ANY OTHER LOCATION.



Figure 3-1 Hoisting Horizontal Geardrive Mud Agitator

LEVELING

To prevent undue premature wear on the geardrive or coupling and ensure long-term reliability and efficiency of the mud agitator, the impeller shaft should rotate in a true vertical orientation. This vertical installation is achieved by ensuring that the mounting plate is absolutely horizontal. If a stabilizer is used, it must be directly aligned with the center of the mounting plate. The following paragraphs describe the correct methods for installing the mounting plate and stabilizer. Refer to Figure 3-2 for parts identification and assistance in the installation.

GEARDRIVE MOUNTING PLATE

The mounting location must be determined before the geardrive is installed. When selecting the mounting plate location, ensure that sufficient clearance is provided between the impeller blades and the tank wall. Use a level to ensure absolute, horizontal orientation of the mounting plate in two perpendicular directions. Select shims as needed to achieve level mounting, mark the position of shims, and then remove the plate from the tank as it must be placed onto the geardrive shaft before installing the female coupling.

STABILIZER (SHAFT OVER 8')

If impeller shaft is more than 8' long, a stabilizer is required to support the lower end of the shaft. Install the stabilizer as follows:

- 1. Drop a plumb line through the center of the mounting plate to locate the exact center position of the stabilizer on the tank floor.
- 2. After determining its proper location, weld the stabilizer to tank floor.

SHAFT ASSEMBLY



WARNING! TAPERED BUSHINGS ARE NOT INTERCHANGEABLE AND MUST BE INSTALLED PROPERLY. REFER TO BUSHING IDENTIFICATION TABLE TO IDENTIFY THE CORRECT BUSHING FOR EACH COMPONENT.



Note! To avoid confusion, each bushing should be kept in its original carton until assembly. The part number shown on the carton corresponds to the part number shown on the parts list in Section 8.

Following installation of the stabilizer (if needed), place the shaft in the tank and assemble as follows:

- 1. Hoist the shaft vertically, and carefully lower into the tank while maintaining suitable support to permit assembly of impeller(s) and male coupling.
- 2. Install the shaft keys in the shaft notches as follows:
 - a. Insert the 12" key at the location that will allow the impeller(s) to be positioned as shown in Figure 3-2.
 - b. Insert the 4" key in the notch at the upper end of the shaft. When installing this key, ensure that the key does not project beyond the end of the shaft.
- 3. For a canted single impeller or a dual impeller shaft, set the distance of the lower impeller from the tank floor at 75 percent of the impeller diameter. Mount the optional second impeller at a distance above the tank floor that is equal to 2/3 of the tank's maximum mud height. For example, if the tank mud depth is 10', the second (upper) impeller key should be centered approximately 6.5' above the bottom of the tank. For tank depths of 6' or less, install a single straight impeller not more than 12" above the tank floor.
- 4. Install the impeller(s) on shaft, and select and install tapered bushings to secure impeller(s) to shaft as follows:
 - a. Insert correct size bushing into primary impeller hub (Table 3-1), and align half holes in bushing with corresponding half holes in hub.



CAUTION! In the Following Step, Lubricate Only the Screws. Do Not Apply Lubricant to Bushing, Coupling, or Shaft, and Do Not Use a Worn Hex Key Wrench As This May Result in a Loose Assembly.

- b. Apply a light coat of oil to screws, and thread screws loosely into bushing and impeller hub.
- c. Slide primary impeller onto shaft until positioned at location determined from Figure 3-2.
- d. Tighten screws to specified torque (Table 3-2) in stages, using an alternating tightening pattern.
- e. Repeat steps a through d for secondary impeller (if used).

- 5. Install male coupling on shaft with wide flange facing away from impeller(s). Position coupling with its hub flush with top of shaft (Figures 3-3 and 3-4), and select and install tapered bushings to secure coupling to shaft as follows:
 - a. Insert correct size bushing into female coupling (Table 3-1), and align half holes in bushing with corresponding half holes in hub.



CAUTION! In the Following Step, Lubricate Only the Screws. Do Not Apply Lubricant to Bushing, Coupling, or Shaft, and Do Not Use a Worn Hex Key Wrench As This May Result in a Loose Assembly.

- b. Apply light coat of oil to screws, and thread screws loosely into bushing and female coupling.
- c. Slide female coupling onto geardrive shaft with wide flange facing away from motor, and align coupling face flush with end of geardrive shaft.
- d. Tighten screws to specified torque (Table 3-2) in stages, using an alternating tightening pattern.

TABLE 3-1 - TAPERED BUSHING IDENTIFICATION					
Motor	Manufacturer's P	Impeller Hub Bushing			
HP	Female Coupling Bushing	Male Coupling Bushing			
5*	(H) 3030 2 (PP1113-200) (V) 2517 2 1/8 (G0005008)	3030 2 1/4 (PP1113-225)	3535 2 1/4 (PP1120-225)		
7.5	3535 2 3/8 (PP1120-238)	3030 2 1/4 (PP1113-225)	3535 2 1/4 (PP1120-225)		
10	3535 2 3/8 (PP1125-238)	3535 3 1/4 (PP1125-325)	3535 3 1/4 (PP1125-325)		
15*	(H) 3535 2 3/8 (PP1120-238) (V) 3535 2 7/8 (PP1120-288)	3535 3 1/4 (PP1125-325)	3535 3 1/4 (PP1125-325)		
20	3535 27/8 (PP1120-288)	3535 3 1/4 (PP1125-325)	3535 3 1/4 (PP1125-325)		
25	4040 3 5/8 (PP1203-363)	4040 3 5/8 (PP1203-363)	4040 3 5/8 (PP1203-363)		
30	4040 3 5/8 (PP1203-363)	4040 3 5/8 (PP1203-363)	4040 3 5/8 (PP1203-363)		

* Male coupling is identical for all units; female coupling is different for horizontal and vertical units

TABLE 3-2 - TORQUE REQUIREMENTS				
Coupling No.	No. of Screws	Screw Size	Torque (Ft-Lbs)	
R30	6	5/8-11 X 1-3/4"	170	
R35	6	5/8-11 X 2-1/4"	170	
R40	6	3/4-10 X 2-1/4"	280	

SHAFT ASSEMBLY (CONT'D)





MOTOR AND GEARDRIVE ASSEMBLY AND INSTALLATION

- 1. Slide the mounting plate onto the geardrive shaft. Align mounting holes with geardrive, and secure mounting plate to geardrive with cap screws, washers (two at each location), and locknuts. Tighten all screws using an alternating, star-pattern sequence.
- 2. Install female coupling on geardrive shaft with wide flange facing away from geardrive. Position coupling with its hub flush with top of shaft (Figure 3-3), and select and install tapered bushings to secure coupling to shaft (refer to *Shaft Assembly* procedure above).
- 3. While supporting the assembled shaft vertically, use an appropriate lifting device to hoist and position the motor and geardrive assembly into alignment with the mounting plate location on the tank.
- 4. Slowly lower geardrive and mounting plate onto the tank (with any shims required for leveling mounting plate), and connect couplings as described under *Geardrive and Impeller Coupling Connection*.

INSTALLATION





MOTOR AND GEARDRIVE ASSEMBLY AND INSTALLATION (CONT'D)



Figure 3-4 Coupling and Bushing Assembly

GEARDRIVE AND IMPELLER COUPLING CONNECTION

- 1. Position and align shafts so that couplings are brought together, and fully mate couplings on shaft and geardrive.
- Check for a gap at any location around the coupling flanges. A gap indicates angular misalignment. Difficulty in mating the shafts indicates parallel misalignment. Alignment should be checked with a dial indicator before bolting flanges together.
- 3. After aligning couplings, insert and tighten hex head screws (supplied with male coupling) to the recommended torque. Tighten in stages, using an alternating pattern until final torque is reached. Re-check torque after completing tightening sequence.



Figure 3-5 Coupling Assembly

GEARDRIVE LUBRICANT LEVEL

Verify that lubricant level in the geardrive reaches the bottom of the oil level plug. Refer to Figure 3-6 for location of oil level plug.





ELECTRICAL CONNECTIONS

WARNING! TO AVOID SERIOUS PERSONAL INJURY BE SURE EQUIPMENT IS LOCKED OUT, TAGGED OUT, AND DE-ENERGIZED PRIOR TO PERFORMING MAINTENANCE AND/OR ADJUSTMENTS.
WARNING! MOTOR MUST BE OPERATED AT THE DESIGNATED SUPPLY VOLTAGE.
WARNING! HIGH VOLTAGE MAY BE PRESENT. BE SURE FUSED DISCONNECT SUPPLYING ELECTRICAL POWER TO THIS EQUIPMENT IS OPEN. LOCK-OUT AND TAG-OUT POWER SUPPLY TO PREVENT ACCIDENTAL APPLICATION OF POWER WHILE MAINTENANCE AND/OR ADJUSTMENTS ARE IN PROGRESS.
WARNING! ELECTRICAL CONNECTIONS MUST BE MADE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES. FAILURE TO COMPLY MAY RESULT IN AN UNSAFE CONDITION THAT COULD INJURE PERSONNEL OR DAMAGE EQUIPMENT. ENSURE THAT ALL ELECTRICAL AND CONDUIT CONNECTIONS ARE SECURE.

Connect the three motor leads to the incoming power source as shown in Figure 3-7, noting that each lead is imprinted with the line number—1, 2, and 3—to correspond with the incoming power leads. Also, refer to the motor connection diagram inside the motor's conduit box cover for assistance.

Before making power connections, be sure that electrical source meets one of the following standards:

- 1. AC power at rated frequency is within ±10 percent of rated voltage, or
- 2. AC power at rated voltage is within ±5 percent of rated frequency, or
- 3. Combined variation in voltage and frequency is ± 10 percent of rated values, provided the frequency variation does not exceed ± 5 percent of rated frequency.

Refer to drive manufacturer's literature in Section 10 for additional assistance in making electrical connections.

ELECTRICAL CONNECTIONS (CONT'D)



TEMPERATURE SENSOR LEADS



MACHINE START UP

Refer to Section 4 for startup and operating procedures.



SECTION 4 - OPERATING INSTRUCTIONS

GENERAL

This section contains initial and normal startup and shutdown procedures for the mud agitator. These procedures are designed to ensure safe operation and shutdown of the equipment.

OPERATION SAFETY

WARNING! BE SURE THAT ALL PERSONNEL ARE CLEAR OF EQUIPMENT BEFORE STARTING.

WARNING! TO AVOID SERIOUS PERSONAL INJURY, LOCK OUT, TAG OUT, AND DE-ENERGIZE MACHINE PRIOR TO PERFORMING MAINTENANCE AND/OR ADJUSTMENTS.



WARNING! ALL OPERATING AND MAINTENANCE PERSONNEL MUST READ AND UNDERSTAND ALL SAFETY INFORMATION BEFORE INTERFACING WITH THE EQUIPMENT.

INITIAL STARTUP

The Initial Startup procedure is to be used when the equipment is being started for the first time, or when equipment is returned to use after an extended period out of service. The initial startup is performed as follows:

- 1. Verify that all operators and maintenance personnel have read and understand all operating and safety information in Section 2.
- 2. Verify that equipment has been assembled and installed in accordance with Section 3.
- 3. Check oil level in geardrive (see Section 3). If low, fill to bottom of level plug.
- 4. Jog drive motor to check that impeller rotates in the correct direction. If rotation is incorrect, shut down and lock out and tag out electric power, and reverse any two leads to switch direction of motor rotation.



Note! Canted impeller must rotate with bottom edge of vane trailing.

5. Start up mud agitator in accordance with the Normal Startup procedure.

NORMAL STARTUP AND OPERATION

After the initial startup, the mud agitator is started up and operated as follows:

- 1. Verify that all personnel, tools, documents, and other material are clear of equipment.
- 2. Turn on the mud agitator, and then open the associated mud feed and outlet systems.
- 3. Observe the operation of the impeller shaft assembly as the tank fills with mud and verify continuous rotation of impeller(s).

NORMAL SHUTDOWN PROCEDURE

To shut down the mud agitator for any reason, first shut off the mud feed and then turn off electric power to the agitator motor.

EMERGENCY SHUTDOWN

To immediately stop the machine in case of emergency, open the fused disconnect supplying electric power to the machine.



SECTION 5 - MAINTENANCE

GENERAL

Routine maintenance is critical to ensure maximum life and trouble-free operation of the mud agitator. While the recommended maintenance schedule in this section is flexible, modifications should be based on experience with operating the equipment at your facilities. A maintenance log should be kept to help establish a routine maintenance schedule, as well as to monitor and adjust the schedule as necessary throughout the equipment's life. When determining a suitable maintenance schedule, consider duty cycle, ambient temperature, and operating environment.



WARNING! TO AVOID SERIOUS PERSONAL INJURY, LOCK OUT, TAG OUT, AND DE-ENERGIZE MACHINE PRIOR TO PERFORMING MAINTENANCE.

ROUTINE MAINTENANCE

Routine maintenance consists of checking geardrive oil level and oil condition and greasing gearbox bearings at required intervals.

Geardrive

The geardrive oil level and condition should be checked frequently, as necessary, depending on operating environment. The maximum oil-change interval is every 10,000 operating hours or every 2 years, whichever comes first. However, a more frequent interval is recommended due to the mud agitator's severe operating environment. If synthetic oil is used, the interval can be extended. To check oil level, refer to Section 3. Refer to the following tables for oil quantities and approved lubricants.

Bearings should be cleaned and re-greased on the same schedule as oil changing. After cleaning, fill bearings to one-third of their free volume.

Geardrive Oil Quantities					
Coordeixe UD	Horizontal		Vertical		
Gealurive HP	Quarts	Liters	Quarts	Liters	
3	NA	NA	2.5	2.6	
5	4.26	4.5	4.0	4.1	
7.5	4.26	4.5	7.3	7.7	
10	8.0	8.4	13.2	14.0	
15	8.0	8.4	13.2	14.0	
20	15.0	15.7	18.2	19.2	
25	24.0	25.2	18.2	19.2	
30	24.0	25.2	30.8	32.5	

MAINTENANCE

Geardrive Approved Lubricants					
Product	Exxon Mobil	Kluber	Shell	Texaco	BP
Oil	Mobilgear 600XP 220	Kluberoil GEM 1-220 N	Omala S2 G 220	Meropa 220	BP Energol GP-XP 220
Grease	Mobilux EP2				

Motor Inspection

Inspect motor approximately every 500 hours of operation or every 3 months, whichever comes first. Perform the following steps when inspecting the motor:

- 1. Clean the motor and ventilation openings. Check that motor interior and exterior are free of dirt, oil, grease, water, or other contaminant. Proper ventilation prevents overheating and premature failure.
- 2. Check insulation resistance periodically, and immediately investigate cause of any significant drop in insulation resistance.
- 3. Check that all electrical connections are secure.

Motor Bearing Lubrication

Motor bearings have no grease fittings and are lubricated for the life of the bearings with Esso Polyrex EM grease. Re-greasing requires disassembly, which can only be performed by the manufacturer.

TROUBLESHOOTING

If mud disturbance in the tank becomes unsatisfactory, check the possibilities listed below and correct as described.

PROBLEM	POSSIBLE CAUSE	REMEDY
Motor operating but shaft not turning	Coupling / bushing loose or improperly installed	Shut down unit and lock out / tag out electric power.
		Verify correct orientation and installation of couplings and bushings (refer to Section 3), and correct any defect
Shaft turning but mud not moving	Canted impeller turning in wrong direction	Shut down unit and lock out / tag out electric power.
		Switch any two of the three-phase wire leads (refer to Section 3).
	Impeller hub bushing loose or improperly installed	Shut down unit and lock out / tag out electric power.
		Verify correct installation of impeller on shaft (refer to Section 3) and correct any defect

PART NUMBERS

Tables 5-1 and 5-2 list part numbers for the agitator motors and adapters, and Table 5-3 lists the applicable AM and LP coupling part numbers. These tables are provided to assist maintenance personnel in identifying and ordering the agitator components.

Table 5-1 Motor, Geardrive, & Adapter Part Numbers - Horizontal Agitators							
		Geardri	ve & Adapter	Mot	or		
Model No.	Specifications	Derrick Part No.	Mfr's Part No.*	Derrick Part No.	Mfr's Part No.		
DE-AG-5-H	5hp 230/460/60/3	PP1110-184	KF77AM182/184TC	BAL-CM7044T-I	CM7044T-I		
DE-AG-5-H	5hp 575/600/60/3	PP1110-184	KF77AM182/184TC	G0005514	CM7044T-I/575		
DE-AG-7.5-H	7.5hp 230/460/60/3	PP1110-215	KF77AM213/215TC	BAL-CM7047T-I	CM7047T-I		
DE-AG-7.5-H	7.5hp 575/600/60/3	PP1110-215	KF77AM213/215TC	G0005515	CM7047T-I/575		
DE-AG-7.5-H	5hp 190/380/50/3	PP1110-215	KF77AM213/215TC	BAL-CM7047T-I	CM7047T-I		
DE-AG-10-H	10hp 230/460/60/3	PP1111-215	KF87AM213/215TC	BAL-CM7170T-I	CM7170T-I		
DE-AG-10-H	10hp 575/600/60/3	PP1111-215	KF87AM213/215TC	G0005516	CM7170T-I/575		
DE-AG-10-H	7.5hp 190/380/50/3	PP1111-215	KF87AM213/215TC	BAL-CM7170T-I	CM7170T-I		
DE-AG-15-H	15hp 230/460/60/3	PP1111-256	KF87AM254/256TC	BAL-CM7054T-I	CM7054T-I		
DE-AG-15-H	15hp 575/600/60/3	PP1111-256	KF87AM254/256TC	G0005422	09F3684920GI		
DE-AG-15-H	10hp 190/380/50/3	PP1111-256	KF87AM254/256TC	BAL-CM7054T-I	CM7054T-I		
DE-AG-20-H	20hp 230/460/60/3	PP1200-256	KF97AM256TC	BAL-CM7056T-I	CM7056T-I		
DE-AG-20-H	20hp 575/600/60/3	PP1200-256	KF97AM256TC	G0005517	CM7056T-I/575		
DE-AG-20-H	15hp 190/380/50/3	PP1200-256	KF97AM256TC	BAL-CM7054T-I	CM7054T-I		
DE-AG-25-H	25hp 230/460/60/3	PP1201-286	KF107AM286TC	BAL-CM7058T-I	CM7058T-I		
DE-AG-25-H	25hp 575/600/60/3	PP1201-286	KF107AM286TC	G0005518	CM7058T-I/575		
DE-AG-25-H	20hp 190/380/50/3	PP1201-286	KF107AM286TC	BAL-CM7058T-I	CM7058T-I		
DE-AG-30-H	30hp 230/460/60/3	PP1201-286	KF107AM286TC	BAL-CM7060T-I	CM7060T-I		
DE-AG-30-H	30hp 575/600/60/3	PP1201-286	KF107AM286TC	G0005519	CM7060T-I/575		
DE-AG-30-H	25hp 190/380/50/3	PP1201-286	KF107AM286TC	BAL-CM7060T-I	CM7060T-I		

* The LP coupling has been replaced by the corresponding AM coupling, as shown by the "AM" in the manufacturer's geardrive and adapter part number.

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Table 5-2 Motor, Geardrive, & Adapter Part Numbers - Vertical Agitators								
Model No.	Specifications	Geardrive & Adapter		Motor				
		Derrick Part No.	Mfr's Part No.*	Derrick Part No.	Mfr's Part No.			
DE-AG-3-V	3hp 190/380/50/3	G0004898	RF67AM182TC	BAL-CM7042T-I50	CM7042T-I			
DE-AG-5-V	5hp 230/460/60/3	G0004899	RF77AM184TC	BAL-CM7044T-I	CM7044T-I			
DE-AG-5-V	5hp 575/600/60/3	G0004899	RF77AM184TC	G0005514	CM7044T-I/575			
DE-AG-5-V	3hp 190/380/50/3	G0004899	RF77AM184TC	BAL-CM7044T-I	CM7044T-I			
DE-AG-7.5-V	7.5hp 230/460/60/3	G0004900	RF87AM213TC	BAL-CM7047T-I	CM7047T-I			
DE-AG-7.5-V	7.5hp 575/600/60/3	G0004900	RF87AM213TC	G0005515	CM7047T-I/575			
DE-AG-7.5-V	5HP 190/380/50/3	G0004900	RF87AM213TC	BAL-CM7047T-I	CM7047T-I			
DE-AG-10-V	10hp 230/460/60/3	G0004901	RF97AM215TC	BAL-CM7170T-I	CM7170T-I			
DE-AG-10-V	10hp 575/600/60/3	G000XXXX	RF97AM215TC	G0005516	CM7170T-I/575			
DE-AG-10-V	7.5hp 190/380/50/3	G0004901	RF97AM215TC	BAL-CM7170T-I	CM7170T-I			
DE-AG-15-V	15hp 230/460/60/3	G0004902	RF97AM254TC	BAL-CM7054T-I	CM7054T-I			
DE-AG-15-V	15hp 575/600/50/3	G0004902	RF97AM254TC	G0005422	09F3684920GI			
DE-AG-15-V	10hp 190/380/50/3	G0004902	RF97AM254TC	BAL-CM7054T-I	CM7054T-I			
DE-AG-20-V	20hp 230/460/60/3	G0004903	RF107AM256TC	BAL-CM7056T-I	CM7056T-I			
DE-AG-20-V	20hp 575/600/60/3	G0004903	RF107AM256TC	G0005517	CM7056T-I/575			
DE-AG-20-V	15hp 190/380/50/3	G0004903	RF107AM256TC	BAL-CM7056T-I	CM7056T-I			
DE-AG-25-V	25hp 230/460/60/3	G0004904	RF107AM284TC	BAL-CM7058T-I	CM7058T-I			
DE-AG-25-V	25hp 575/600/60/3	G0004904	RF107AM284TC	G0005518	CM7058T-I/575			
DE-AG-25-V	20hp 190/380/50/3	G0004904	RF107AM284TC	BAL-CM7058T-I	CM7058T-I			
DE-AG-30-V	30hp 230/460/60/3	G0004905	RF137AM286TC	BAL-CM7060T-I	CM7060T-1			
DE-AG-30-V	30hp 575/600/60/3	G0004905	RF137AM286TC	G0005519	CM-7060T-I/575			
DE-AG-30-V	25hp 190/380/50/3	G0004905	RF137AM286TC	BAL-CM7060T-I	CM7060T-I			

* The LP coupling has been replaced by the corresponding AM coupling, as shown by the "AM" in the manufacturer's geardrive and adapter part number.

Table 5-3 Motor and Geardrive Couplings								
Agitator	Adaptor Style and Size	Motor Coupling	Insert (Spider)	Geardrive Coupling				
AM Adapters								
DE-AG-5.0-H / -V	AM 184	G0005172	G0005169	G0005165				
DE-AG-7.5-H / -V	AM 213/215	G0005173	G0005170	G0005166				
DE-AG-10-H / -V	AM 213/215	G0005173	G0005170	G0005166				
DE-AG-15-H / -V	AM 254/256	G0005174	G0005171	G0005167				
DE-AG-20-H / -V	AM 254/256	G0005174	G0005171	G0005167				
DE-AG-25-H / -V	AM 284/286	G0005175	G0005171	G0005168				
DE-AG-30-H / -V	AM 284/286	G0005175	G0005171	G0005168				
LP Adapters								
DE-AG-5.0-H / -V	LP 184	G0004143	G0003186	G0004142				
DE-AG-7.5-H / -V	LP 213/215	G0004145	G0003187	G0004144				
DE-AG-10-H / -V	LP 213/215	G0004145	G0003187	G0004144				
DE-AG-15-H / -V	LP 254/256	G0004147	G0003188	G0004146				
DE-AG-20-H / -V	LP 254/256	G0004147	G0003188	G0004146				
DE-AG-25-H / -V	LP 284/286	G0004149	G0003189	G0004148				
DE-AG-30-H / -V	LP 284/286	G0004149	G0003189	G0004148				

MOTOR REPLACEMENT

This procedure describes removal and installation of the drive motor. The motor may be replaced without removing the agitator from the tank. Refer to Table 5-1 or 5-2 to select the correct motor part number for the geardrive.



WARNING! TO AVOID SERIOUS PERSONAL INJURY BE SURE EQUIPMENT IS LOCKED OUT, TAGGED OUT, AND DE-ENERGIZED PRIOR TO PERFORMING MAINTENANCE.



WARNING! HIGH VOLTAGE MAY BE PRESENT. BE SURE FUSED DISCONNECT SUPPLYING ELECTRIC POWER TO THIS EQUIPMENT IS OPEN. LOCK OUT AND TAG OUT POWER SUPPLY TO PREVENT ACCIDENTAL APPLICATION OF POWER WHILE MAINTENANCE AND/OR ADJUSTMENTS ARE IN PROGRESS.

Removal

- 1. Attach a suitable hoisting sling to motor, and attach sling to overhead hoist.
- 2. Remove four hex head screws (Figure 5-1) securing motor to adapter.
- 3. If vertical mud agitator, operate hoist to carefully lift motor slowly until coupling half on shaft is clear of spider in adapter. If horizontal mud agitator, use hoist to support motor weight while carefully sliding motor away from adapter until coupling half is clear of spider.
- 4. Loosen setscrew securing coupling half to motor shaft, and slide coupling half off motor shaft; discard coupling half if damaged.
- 5. Remove spider from adapter shaft; discard spider if damaged.
- 6. Remove key from motor shaft; discard key if damaged.



Note! The new motor is supplied with a new coupling half, key, and spider. Mounting paste is also provided for lubricating the motor shaft during installation.



Figure 5-1 Drive Motor and Adapter Exploded View

Installation

- 1. Remove any debris or adhesive residue from motor shaft, and apply mounting paste (supplied with new motor) to motor shaft.
- 2. Install new key in motor keyway, being sure that key will not extend beyond the coupling bore on either side.
- Install coupling half on motor shaft. Position coupling half in accordance with Figure 5-2 for AM adapter or Figure 5-3 if LP adapter, and tighten coupling setscrew. Confirm that key does not extend beyond the coupling bore on either side. Remove coupling, and correct key position if necessary.


Note! The LP coupling is no longer available. New motors are supplied with direct replacement AM couplings. Consult the motor manufacturer for availability of LP adapter component parts, if needed.

- 4. Install the spider between the motor coupling jaws.
- 5. Align motor coupling half so that the jaws on the reducer coupling mesh with the motor coupling half, and insert motor coupling half into reducer coupling.
- 6. Align motor mounting holes with adapter holes, and secure motor to adapter with hex head screws.



Adapter Size	NEMA Motor Frame	Coupling Location (In.)*
AM182/184	182/184TC	2.10
AM213/215TC	213/215TC	2.76
AM254/256	254/256TC	3.65
AM284/286	284/286TC	4.00

* Location tolerance = -0.000 / +0.03125

Figure 5-2 AM Coupling Location

Installation (Cont'd)



Note: Verify the "AH" dimension for motor being installed to ensure that gap "G" between shafts will be maintained. Slide the coupling onto the motor shaft, locate per dimension "W," and tighten setscrew. Place motor against adapter housing, and confirm that flange surfaces meet without interference before tightening screws.

	Dimensions			
LP	AH	U	W +0 /03	G
182/184	2.625	1.125	0.82	0.87
213/215	3.125	1.375	0.35	0.12
254/256	3.750	1.625	0.70	0.16
284/286	4.375	1.875	0.88	0.31

Figure 5-3 LP Coupling Location

GEARDRIVE MAINTENANCE

Geardrive maintenance consists of replacement of output shaft seals on the geardrive and adapter. The tables below list the seal replacement kits available from Derrick. If detailed maintenance and parts information is required for the geardrive and/or adapter, consult SEW-Eurodrive and/or its website for available documentation. Refer to Table 5-1 and 5-2 for manufacturer's part numbers.

Seals are installed on the output shaft of both the geardrive and adapter. Seal(s) should be replaced upon discovery of obvious leakage. Derrick recommends replacement of both geardrive and adapter seals if either component is found to be leaking. To gain access to the adapter seals, the assembled motor and adapter must be removed in accordance with the preceding procedure. To also replace geardrive seals, the mud agitator must be removed from the tank and the geardrive must be separated from the shaft.

Geardrive Seals

Geardrive seal replacement consists of removing and installing new output shaft seal(s) and Oring installed between the housing and mounting flange. The flange must be removed to gain access to the seals. After seal and O-ring replacement, anaerobic sealant (supplied with seal kit) must be applied between the mating surfaces of the housing and flange before assembling flange to housing.

Adapter Seals

An oil seal and slinger are installed on the output shaft of adapters. These parts are accessible after removing the assembled motor and adapter.

SEAL KIT - G0005939 3HP VERTICAL GEARDRIVE & ADAPTER P/N RF67AM182TC			
Name	Description	Part No.	Quantity
	Geardrive		
Oil Seal (prior to 1/3/99)	BA-SF50x65x10/7mm	017 762 8	1
Oil Seal (1/3/99 & later)	BA-SF47x65x10/7mm	017 756 3	1
Oil Seal (prior to 1/3/99)	B1-SF50x60x8/11.5mm	010 362 2	1
Oil Seal (1/3/99 & later)	B1-SF47x60x8/11.5mm	017 435 1	1
Anaerobic Sealant*	Tube	910 255 8	N/A
O-Ring	85x2mm	017 665 6	1
Adapter			
Oil Seal	A28x47x7mm	011 148 1	1
Oil Slinger	28mm	011 676 9	1

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SEAL KIT - G0005940 5HP VERTICAL GEARDRIVE & ADAPTER P/N RF77AM184TC			
Name	Description	Part No.	Quantity
	Geardrive		
Oil Seal	BA-SF52x72x10/7mm	017 787 3	1
Oil Seal	B1-SF2x66x8/11.5mm	017 430 0	1
Anaerobic Sealant*	Tube	910 255 8	N/A
O-Ring	95x2mm	017 666 4	1
Adapter			
Oil Seal	A28x47x7mm	011 148 1	1
Oil Slinger	28mm	011 676 9	1

SEAL KIT - G0004554 5HP HORIZONTAL GEARDRIVE & ADAPTER P/N KF77AM182/184TC			
Name	Description	Part No.	Quantity
	Geardrive		
Oil Seal	AS55x72x8mm	011 541 X	1
Oil Seal	A55x72x8mm	010 632 1	1
Anaerobic Sealant*	Tube	910 255 8	N/A
O-Ring	105x3mm	017 659 1	1
Adapter			
Oil Seal	A28x47x7mm	011 148 1	1
Oil Slinger	28mm	011 676 9	1

SEAL KIT - G0004555 7.5HP HORIZONTAL GEARDRIVE & ADAPTER P/N KF77AM213/215TC			
Name	Description	Part No.	Quantity
Geardrive			
Oil Seal	AS55x72x8mm	011 541 X	1
Oil Seal	A55x72x8mm	010 632 1	1
Anaerobic Sealant*	Tube	910 255 8	N/A
O-Ring	105x3mm	017 659 1	1
Adapter			
Oil Seal	A38x52x7mm	012 105 3	1
Oil Slinger	38mm	011 659 9	1

SEAL KIT - G0005944 7.5HP VERTICAL GEARDRIVE & ADAPTER P/N RF87AM213TC			
Name	Description	Part No.	Quantity
	Geardrive		
Oil Seal	BA-SF62x90x12/8mm	017 789 X	1
Oil Seal	B1-SF62x84x10/14.5mm	017 432 7	1
Anaerobic Sealant*	Tube	910 255 8	N/A
O-Ring	115x3mm	013 951 3	1
Adapter			
Oil Seal	A38x52x7mm	012 105 3	1
Oil Slinger	38mm	011 659 9	1

MAINTENANCE

SEAL KIT - G0004556 10HP HORIZONTAL GEARDRIVE & ADAPTER P/N KF87AM213/215TC			
Name	Description	Part No.	Quantity
Geardrive			
Oil Seal	AS65x100x10mm	011 527 4	1
Oil Seal	A65x100x10mm	011 549 5	1
Anaerobic Sealant*	Tube	910 255 8	N/A
O-Ring	135x3mm	017 661 3	1
Adapter			
Oil Seal	A38x52x7mm	012 105 3	1
Oil Slinger	38mm	011 659 9	1

SEAL KIT - G0004557 15HP HORIZONTAL GEARDRIVE & ADAPTER P/N KF87AM254/256TC			
Name	Description	Part No.	Quantity
	Geardrive		
Oil Seal	AS65x100x10mm	011 527 4	1
Oil Seal	A65x100x10mm	011 549 5	1
Anaerobic Sealant*	Tube	910 255 8	N/A
O-Ring	135x3mm	017 661 3	1
Adapter			
Oil Seal	A50x72x8mm	010 629 1	1
Oil Slinger	50x70mm	011 671 8	1

SEAL KIT - G0005945 10HP VERTICAL GEARDRIVE & ADAPTER P/N RF97AM215TC			
Name	Description	Part No.	Quantity
	Geardrive		
Oil Seal	BA-SF72x95x12/8mm	017 791 1	1
Oil Seal	B1-SF72x89x10/14.5mm	017 391 6	1
Anaerobic Sealant*	Tube	910 255 8	N/A
O-Ring	135x3mm	017 661 3	1
Adapter			
Oil Seal	A38x52x7mm	012 105 3	1
Oil Slinger	38mm	011 659 9	1

SEAL KIT - G0004558 20HP HORIZONTAL GEARDRIVE & ADAPTER P/N KF97AM256TC			
Name	Description	Part No.	Quantity
Geardrive			
Oil Seal	AS75x95x10mm	010 667 4	1
Oil Seal	A75x95x10mm	010 639 9	1
Anaerobic Sealant*	Tube	910 255 8	N/A
O-Ring	165x3mm	017 655 9	1
Adapter			
Oil Seal	A50x72x8mm	010 629 1	1
Oil Slinger	50x70mm	011 671 8	1

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SEAL KIT - G0005946 15HP VERTICAL GEARDRIVE & ADAPTER P/N RF97AM254TC				
Name	Description	Part No.	Quantity	
	Geardrive			
Oil Seal	BA-SF72x95x12/8mm	017 791 1	1	
Oil Seal	B1-SF72x89x10/14.5mm	017 391 6	1	
Anaerobic Sealant*	Tube	910 255 8	N/A	
O-Ring	135x3mm	017 661 3	1	
Adapter				
Oil Seal	A50x72x8mm	010 629 1	1	
Oil Slinger	50x70mm	011 671 8	1	

SEAL KIT - G0005947 20HP & 25HP VERTICAL GEARDRIVE & ADAPTER P/Ns RF107AM256TC, RF107AM284TC, & RF107AM286TC					
Name	Description	Part No.	Quantity		
Geardrive					
Oil Seal	BA-SF82x120x13/10mm	017 793 8	1		
Oil Seal	B1-SF82x113x10/16.5mm	017 393 2	1		
Anaerobic Sealant*	Tube	910 255 8	N/A		
O-Ring	155x3mm	013 952 1	1		
Adapter					
Oil Seal	A50x72x8mm	010 629 1	1		
Oil Slinger	50x70mm	011 671 8	1		

SEAL KIT - G0004559 25HP & 30HP HORIZONTAL GEARDRIVE & ADAPTER P/Ns KF127AM286TC					
Name	Description	Part No.	Quantity		
Geardrive					
Oil Seal	AS118x150x12mm	011 533 9	1		
Oil Seal	A118x150x12mm	011 555 X	1		
Anaerobic Sealant*	Tube	910 255 8	N/A		
O-Ring	245x3mm	017 656 7	2		
Adapter					
Oil Seal	A50x72x8mm	010 629 1	1		
Oil Slinger	50x70mm	011 671 8	1		

SEAL KIT - G0005948 30HP VERTICAL GEARDRIVE & ADAPTER P/N RF137AM286TC						
Name	Description	Part No.	Quantity			
Geardrive						
Oil Seal	BA-SF108x140x15/12mm	017 795 4	1			
Oil Seal	B1-SF108x133x12/19.5mm	017 395 9	1			
Anaerobic Sealant*	Tube	910 255 8	N/A			
O-Ring	165x3mm	017 655 9	1			
Adapter						
Oil Seal	A50x72x8mm	010 629 1	1			
Oil Slinger	50x70mm	011 671 8	1			



SECTION 8 - REFERENCE DRAWINGS

This section contains Derrick engineering drawings for your equipment. These drawings are included to provide assistance in troubleshooting, repair, and parts ordering.

Number	Title
<u> 15246-00</u> -	Vertical Agitators Layout and Dimensions
<u> 15488-00</u> -	Horizontal Agitators Layout and Dimensions
<u> 15494-00</u> -	Parts List - Horizontal Mud Agitator DE-AG-5-H
<u> 15495-00</u> -	Parts List - Horizontal Mud Agitator DE-AG-7.5-H
<u> 15496-00</u> -	Parts List - Horizontal Mud Agitator DE-AG-10-H
<u> 15497-00</u> -	Parts List - Horizontal Mud Agitator DE-AG-15-H
<u> 15498-00</u> -	Parts List - Horizontal Mud Agitator DE-AG-20-H
<u> 15499-00</u> -	Parts List - Horizontal Mud Agitator DE-AG-25-H
<u> 15500-00</u> -	Parts List - Horizontal Mud Agitator DE-AG-30-H
<u> 15503-00</u> -	Parts List - Vertical Mud Agitator DE-AG-5-V
<u> 15504-00</u> -	Parts List - Vertical Mud Agitator DE-AG-7.5-V
<u> 15505-00</u> -	Parts List - Vertical Mud Agitator DE-AG-10-V
<u> 15506-00</u> -	Parts List - Vertical Mud Agitator DE-AG-15-V
<u> 15507-00</u> -	Parts List - Vertical Mud Agitator DE-AG-20-V
<u> 15508-00</u> -	Parts List - Vertical Mud Agitator DE-AG-25-V
<u> 15509-00</u> -	Parts List - Vertical Mud Agitator DE-AG-30-V



		A APPROX	IMATE WEIGHT	A	A
М	A	SHAFT (LBS/FT-KG/M)	AGITATOR (LBS/KGS) (LESS SHAFT & IMPELLER)	GEAR RATIO	
8	203	28/42	783/355	27.58:1	
9 3/4	248	28/42	905/410	27.58:1	
9 3/4 9 3/4	248	35/53	1315/596	29.49.1	
					В
ADE DE IN	IMPE MPEL	ELLERS ON TA LERS ON TAT	ANKS UNDER 5 FT DE NKS OVER 5 FT DEEP	EEP	C
) CA TOM I ST. ZERS	NTEI & (ABIL S RE) IMPELLERS, CANTED BLAC ZER CAN BE DUCE SHAFT	USE STRAIGHT BLAD DE IMPELLER ON TOP USED ON TANKS OV MOVEMENT DURING	E	D
IEN (1) N 2) N 3) S 4) II 5) II 6) T	DRDE 10DE 10TC 6HAF MPEL MPEL 7ANK	ERING SPECIF L NUMBER R VOLTAGE (T LENGTH LLER SIZE (PI LLER ORIENTA DEPTH	Y: (PER SPECIFICATION) ER SPECIFICATION) TION (STRAIGHT OR 0	CANTED)	E
/ERTI	CAL	AGITATORS			\vdash
.AYU		X SIZE DIMEN	NSIUNS (40C)		ļ
√Ыскс) WS	DATE 3/22	+/UZ SCALE 1=10	/9	l
Y	DWN				
FC 10.	CKD	-		HCK	
52	24	-6 - 0	590 DUKE ROAD BUFFALO,	NY 14225 U.S.A.	MAN



7	8	
T BLADE IMPELLER BLADE IMPELLERS	S ON TANKS UNDER 5 FT DEEF ON TANKS OVER 5 FT DEEP	, A
MPELLERS ARE RE AND CANTED IMP BOTTOM & CANTE TTOM STABILIZER ABILIZERS REDUCE	QUIRED, AND CALL FOR A MIX ELLERS, USE STRAIGHT BLADE ED BLADE IMPELLER ON TOP CAN BE USED ON TANKS OVER SHAFT MOVEMENT DURING	-
		В
LOCATE EIGHT		С
CIFY: 1) MODEL NUMBER 2) MOTOR VOLTAGE 3) SHAFT LENGTH 4) IMPELLER SIZE 5) IMPELLER STYLE 6) TANK DEPTH	(STRAIGHT OR CANTED)	D
A	WEIGHT	7
T DIA. SHAFT DIA. 60HZ	SHAFT AGITATOR (LBS/KGS) (LBS/FT-KG/M) (LESS SHAFT & IMPELLER	
83 3 1/4 83 83 3 1/4 83 83 3 1/4 83 83 3 5/8 92 3 92 3 5/8 92	28/42 1000/454 28/42 1300/590 35/53 1800/816 35/53 1850/839	= = = = =
HORIZONTAL AGIT	ATORS	
AYOUT & DIMENS	SIONS (40C)	
S CKD DATE S	D/11/UJ SCALE NIS	6
FC CKD		€ ® F
<u>™</u> 488—		W N
<u> </u>	BUD DUKE RUAD BUFFALO, NY 14225) U.S.A.



* ORDER G0008339 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY (FOR * ORDER G0012472 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY (FOR

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NOTE: IMPELLEI PER CUS

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6\/5\	1		21	G0009387	MOTOR	5HP 575
	1	1	20	PP1110-184	GEAR DRIVE	HELICAL
∕€∕∕5∖		1	19	G0008798	MOTOR	5HP 230
	4	4	18	WLSS-50	LOCK WASHER	1/2 SS
$\overline{\mathcal{A}}$	4	4	17	NNLS-50-13-MH	HEX NUT	1/2-13
$\overline{\mathbb{A}}$	8	8	16	WFSS-50-SAE	FLAT WASHER	1/2 SS
∕₂∖**	1	1	15	CRSQ-50X12	SHAFT KEY	1/2 X 1
	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-13
Λ	4	4	13	HXCS-50-13X225	HEX HEAD CAPSCREW	1/2-13
∕2∖**	1	1	12	PP1120-225	BUSHING	2.25 TAF
	1	1	11	CRSQ-50X4	SHAFT KEY	1/2 X 1
*	1	1	10	13295-01	STABILIZER	HRS
∕2∖**	1	1	09	REF 13169-00	IMPELLER	TO SPEC
	1	1	08	PP1113-225	BUSHING	2.25 TA
	1	1	07	PP1113-200	BUSHING	2.00 TA
	1	1	06	PP1112-M	COUPLING	MALE FL
	1	1	05	PP1112-F	COUPLING	FEMALE
	1	1	04	REF 14017-02	SHAFT	ø2 1/4
	1	1	03	15492-01	MOUNTING PLATE	HRS
∕₅∖	\boxtimes		02	15494-02	ASSEMBLY COMPLETE	5HP 575
$\overline{\mathbb{A}}$		\bowtie	01	15494-01	ASSEMBLY COMPLETE	5HP 230
	Q	TΥ	ITEM	PART NUMBER	PART NAME	
			-			

▲** QUANTITY IS 2 ON DUAL IMPELLER UNITS * OPTIONAL - REF EQUIPMENT ORDER FORM

ſ	$\overline{5}$	REVISED TITLE;	ADDED ASSEMBLIES 01 &	02; ADDED ITEMS 19, 20 & 2	1.	CCS	E /16 /0E		
ł		TITLE WAS DE-A	AG-5-H-460 (460/60/3),	, updated description on it	EM 01.	SB MCR	5/16/05		Z
ł	$\overline{3}$	ITEM 16 WAS WF	SS-50, ITEM 17 WAS NNL	S-50-13-HH.		MCR SB	3/9/04	TITLE	P.
l	$\overline{2}$	ADDED ** NOTE				EJR	10/3/03		51
	1	ITEM 13 WAS HX	(CS-50-13X200			WS	4/3/03	DWN	WS
I	REV		CH	IANGE		CKD	DATE	D	
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	4			5		6			

7	8	
DR ASSY 01) DR ASSY 02)		A
		┢
R SHAFT LENGTH & IMPEL STOMER REQUIREMENT (REI	LER SIZE & STYLE F ORDER FORM)	В
5/600/60/3 EX-PROOF BEVEL GEAR, FLANGE MOU	INTED	
MEDIUM HEIGHT NYLOC SS	80/50/3 EX-PROOF	
/2 X 12 CRS X 1 1/4 SS X 2 1/4 SS PER – LOCK /2 X 4 CPS		
VER - LOCK PER - LOCK PER - LOCK ANGE FLANGE 1045 CFS		D
5/600/60/3 EX-PROOF 5/460/60/3 & 3HP 190/3 DESCRIPTION	80/50/3 EX-PROOF	E
A	CITATOR W/PLATE MOL	
$\begin{array}{c c} F_{\text{DMN}} & \hline \\ \hline$	HZ (55C) SCALE NTS REV DERRICK CORPORATION	® F
$\frac{5+3+-00}{7}$	30 DUKE ROAD BUFFALO, NY 14225 U 8	I.S.A.



* ORDER G0012478 FOR COMPLETE MOTOR/GEAR DRIVE ASS * ORDER G0012479 FOR COMPLETE MOTOR/GEAR DRIVE ASS

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NOTE: IMPELLER SH PER CUSTOM

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€\∕4\	1		21	G0012183	MOTOR	7 1/2HP 51
	1	1	20	PP1110-215	GEAR DRIVE	HELICAL BE
€∖∕4∖		1	19	G0012182	MOTOR	7 1/2HP 2
	4	4	18	WLSS-50	LOCK WASHER	1/2 SS
∕⋧	4	4	17	NNLS-50-13-MH	HEX NUT	1/2-13 MEI
$\overline{\mathbb{A}}$	8	8	16	WFSS-50-SAE	FLAT WASHER	1/2 SS
**	1	1	15	CRSQ-50X12	SHAFT KEY	1/2 X 1/2
	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-13 X 1
Λ	4	4	13	HXCS-50-13X225	HEX HEAD CAPSCREW	1/2-13 X 2
**	1	1	12	PP1120-225	BUSHING	2.25 TAPER
	1	1	11	CRSQ-50X4	SHAFT KEY	1/2 X 1/2
*	1	1	10	13295-01	STABILIZER	HRS
**	1	1	09	REF 13169-00	IMPELLER	TO SPECIFIC
	1	1	08	PP1113-225	BUSHING	2.25 TAPER
	1	1	07	PP1113-200	BUSHING	2.00 TAPER
	1	1	06	PP1112-M	COUPLING	MALE FLAN
	1	1	05	PP1112-F	COUPLING	FEMALE FLA
	1	1	04	REF 14017-02	SHAFT	ø2 1/4 104
	1	1	03	15492-01	MOUNTING PLATE	HRS
A	\succ		02	15495-02	ASSEMBLY COMPLETE	7 1/2HP 5
$\overline{\mathbb{A}}$		\bowtie	01	15495-01	ASSEMBLY COMPLETE	7 1/2HP 2
	Q	ΓΥ	ITEM	PART NUMBER	PART NAME	

* QUANTITY IS 2 ON DUAL IMPELLER UNITS * OPTIONAL – REF EQUIPMENT ORDER FORM

4	REVISED TITLE; ADDED ASSEMBLIES 01 & 02; ADDED ITEMS 19, 20 & 21.	CCS SB	5/16/05		∕₹
3	TITLE WAS DE-AG-7.5-H-460 (460/60/3), UPDATED DESCRIPTION ON ITEM 01.	MCR	5/17/04	TITLE	P
2	ITEM 16 WAS WFSS-50, ITEM 17 WAS NNLS-50-13-HH	EJR SB	3/24/04		7
$\sqrt{1}$	ITEM 13 WAS HXCS-50-13X200	WS	4/3/03	DWN	WS
REV	CHANGE	CKD	DATE	П	
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CORPORATI	on. The information contained on this drawing shall only be used by customers o	R PROSPECT	is or their	DRAW	NG NO
AGENCIES I	N THE ARRANGEMENT OR INSTALLATION OF DERRICK EQUIPMENT, OR BY VENDORS IN QUOTING OF ACCAN OUT INFO IN THE STATE	ON OR IN	THE SUPPLY	1	
	UR ASSEMBLIES IU DERRICK, UR BI UTHERS FUR THE SPECIFIC REASON UUTLINED IN THE T VEDDAT	ANSMITTAL	WHEIHER		
				╘╼┲╧	\sim
4	1 5 1	6			
•		-			

7	8	
		А
SSEMBLY (FOR ASSY C SSEMBLY (FOR ASSY C)1))2)	
IAFT LENGTH & IMPELLER IER REQUIREMENT (REF C	R SIZE & STYLE DRDER FORM)	В
75/600/60/3 EX-PROOF VEL GEAR, FLANGE MOUN		
DIUM HEIGHT NYLOC SS	J/ 360/ 30/ 3 EX-PROOF	C
$\begin{array}{c c} x & 1/2 & \text{OKS} \\ \hline 1/4 & \text{SS} \\ \hline 2 & 1/4 & \text{SS} \\ \hline - & \text{LOCK} \\ \hline x & 4 & \text{CRS} \end{array}$		
CATION - LOCK - LOCK		П
GE INGE -5 CFS		
75/600/60/3 EX-PROOF 30/460/60/3 & 5HP 190 DESCRIPTION	0/380/50/3 EX-PROOF	
		E
ARȚS LIST HORIZONTAL	AGITATOR W/PLATE MOUNT	
/ 1/2НР © 60НZ & 5НР S ско дате 3/11/03 У Дим	@ 5UHZ (55C) scale NTS REV 5	
ю. 495—00	590 DUKE ROAD BUFFALO, NY 14225 U.S.A.	F
7	8	-



* ORDER GO012471 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY * ORDER GO009242 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY NOTE: IMPELLER SHAFT LENGTH & IMPELLER SIZE & STYLE PER C

							-
$\overline{5}$	1		1	26	13295-02	STABILIZER	HRS
<u>/</u> 4	1			25	G0005516	MOTOR	10HP 575/6
$\overline{\mathbb{A}}$	\bowtie			24	15496-24	ASSEMBLY COMPLETE	10HP 575/6
$\overline{\mathbb{A}}$		\succ		23	15496-23	ASSEMBLY COMPLETE	7.5HP 190/3
$\overline{\mathbb{A}}$			imes	22	15496-22	ASSEMBLY COMPLETE	10HP 230/4
		1		21	CRSQ-50X4	SHAFT KEY	1/2 X 1/2 X
**		1		20	CRSQ-50X12	SHAFT KEY	1/2 X 1/2 X
**		2		19	PP1120-225	BUSHING	2.25 TAPER
		1		18	REF 14017-02	SHAFT	ø2 1/4 1045
$\sqrt{2}$	4	4	4	17	NNLS-63-11-MH	HEX NUT	5/8-11 MED
$\overline{\mathbb{A}}$	8	8	8	16	WFSS-63-SAE	FLAT WASHER	5/8 SS
**	1		1	15	CRSQ-75X12	SHAFT KEY	3/4 X 3/4
	4	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-13 X 1
$\sqrt{1}$	4	4	4	13	HXCS-63-11X250	HEX HEAD CAPSCREW	5/8-11 X 2
	4	4	4	12	WLSS-50	LOCK WASHER	1/2 SS
~	1		1	11	CRSQ-75X4	SHAFT KEY	3/4 X 3/4
∕5∖∗		1		10	13295-01	STABILIZER	HRS
**	1	1	1	09	REF 13169-00	IMPELLER	TO SPECIFIC
**	2		2	08	PP1120-325	BUSHING	3.250 TAPEF
	1	1	1	07	PP1120-238	BUSHING	2.375 TAPEF
	1	1	1	06	PP1235-M	COUPLING	MALE FLANG
	1	1	1	05	PP1235-F	COUPLING	FEMALE FLAI
	1		1	04	REF 14017-04	SHAFT	ø3 1/4 1045
	1	1	1	03	15492-02	MOUNTING PLATE	HRS
2	1	1	1	02	PP1111-215	GEAR DRIVE	HELICAL BEV
$\sqrt{3}$		1	1	01	G0009241	MOTOR	10HP 230/4
		QTY		ITEM	PART NUMBER	PART NAME	

** QUANTITY OF ITEMS 08 & 19 ARE (3), ITEMS 09, 15 & 20 ARE (2) ON
 * OPTIONAL - REF EQUIPMENT ORDER FORM

				_	
4	REVISED TITLE, ADDED ASSEMBLY 24 & ITEM 25	SB CCS	5/13/05		2
3	ADDED ASSY 22 & 23, TITLE WAS DE-AG-10-H-460 (460/60/3), UPDATED DESCRIPTION OF ITEM 01.	MCR SB	5/17/04	TITLE	P
2	ITEM WAS HXCS-50–13X225, ITEM 16 WFSS-63-SAE WAS WFSS-50, ITEM 17 NNLS-63-11-MH WAS NNLS-50-13-HH, ITEM 2 WAS PP1110-215, ADDED ** NOTE	EJR SB	3/24/04		1
	ITEM 13 WAS HXCS-50-13X200	WS	4/3/03	DWN	WS
REV	CHANGE	CKD	DATE		Т
THE DESIGN	s and information contained on this drawing or copies remain the exclusive prope	RTY OF DE	RRICK®	В	
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CORPORATIO	on. The information contained on this drawing shall only be used by customers of	R PROSPECT	is or their	DRAW	MING N
AGENCIES II	N THE ARRANGEMENT OR INSTALLATION OF DERRICK EQUIPMENT, OR BY VENDORS IN QUOTING	on or in	THE SUPPLY	1	Г.
OF PARTS	OR ASSEMBLIES TO DERRICK, OR BY OTHERS FOR THE SPECIFIC REASON OUTLINED IN THE TR	ANSMITTAL	WHETHER		
WRITTEN OF	VERBAL.				
<u> </u>	5	6			

/	8	
′ (FOR ASSY 22 & 23)		A
Y (FOR ASSY 24)) SUSTOMER REQUIREMENT	(REF ORDER FORM)	$\left \right $
00/60/3 00/60/3 80/50/3 60/60/3		В
4 12 – LOCK CES		-
UM HEIGHT NYLOC SS (12 CRS 1/4 SS 1/2 SS		C
4 CRS		-
TION – LOCK – LOCK GE CFS		D
EL GEAR, FLANGE MOUNT 60/60/3 & 7.5HP 190/3 DESCRIPTION	ED 80/50/3 EX-PROOF	\vdash
DUAL IMPELLER UNITS		E
<u>/4</u> /6		
2'ARTS LIST HORIZONTAL Ο ΗΡ @ 60 ΗΖ & 7.5 Η S [ακο] [ΔΑΤΕ 3/11/03	AGITATOR W/PLATE MO P @ 50 HZ (55C) 	
у <u>рим</u> F с ско 		Ĩ® F
7 1	B	<u>0.3.4.</u>



* ORDER PP1409-460 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY (FOR ASSY 01) * ORDER PP1409-575 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY (FOR ASSY 02)

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NOTE: IMPELLER SHAF

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\$	1	1	20	PP1111-256	GEAR DRIVE	HELICAL
\$		1	19	BAL-CM7054T-I	MOTOR	15HP 230
$\overline{\mathbf{A}}$	1		18	G0005422	MOTOR	15HP 575
2	4	4	17	NNLS-63-11-MH	HEX NUT	5/8-11 N
<u>承</u>	8	8	16	WFSS-63-SAE	FLAT WASHER	5/8 SS
**	1	1	15	CRSQ-75X12	SHAFT KEY	3/4 X 3
	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-13 >
⋒	4	4	13	HXCS-63-11X250	HEX HEAD CAPSCREW	5/8-11 >
	4	4	12	WLSS-50	LOCK WASHER	1/2 SS
	1	1	11	CRSQ-75X4	SHAFT KEY	3/4 X 3
*	1	1	10	13295-02	STABILIZER	HRS
**	1	1	09	REF 13169-00	IMPELLER	TO SPECI
**	2	2	08	PP1120-325	BUSHING	3.250 TA
	1	1	07	PP1120-238	BUSHING	2.375 TA
	1	1	06	PP1235-M	COUPLING	MALE FLA
	1	1	05	PP1235-F	COUPLING	FEMALE F
	1	1	04	REF 14017-04	SHAFT	ø3 1/4 1
	1	1	03	15492-02	MOUNTING PLATE	HRS
∕\$∖	imes		02	15497-02	ASSEMBLY COMPLETE	15HP 575
\$		\succ	01	15497-01	ASSEMBLY COMPLETE	15HP 230
	Q	ΓY	ITEM	PART NUMBER	PART NAME	

▲** QUANTITY OF ITEM 08 IS (3), 09 IS (2) & 15 IS (2) ON DUAL IMPELLER * OPTIONAL - REF EQUIPMENT ORDER FORM

3	TITLE WAS DE-AG-15-H-460 (460/60/3), UPDATED DESCRIPTION ON ITEM 01	MCR SB	5/17/04	TITLE	Ρ
2	ITEM 13 HXCS-63-11X250 WAS HXCS-50-13X225, ITEM 26 WFSS-63-SAE WAS WFSS-50, ITEM 17 WAS NNLS-50-13-HH, REVISED MOTOR DESCRIPTION, ADDED ** NOTE	MCR SB	3/22/04		1
$\backslash 1$	ITEM 13 WAS HXCS-50-13X200	WS /	4/3/03	DWN \	WS
REV	CHANGE	CKD	DATE	П	
THE DESIGN	S AND INFORMATION CONTAINED ON THIS DRAWING OR COPIES REMAIN THE EXCLUSIVE PROPEI	rty of dei	RRICK®	B	
CORPORATION	IN BUFFALO, NEW YORK U.S.A. AND ARE NOT TO BE REPRODUCED WITHOUT THE WRITTEN PER	MISSION OF	DERRICK	SHEET S	IZŁ
CORPORATI	n. The information contained on this drawing shall only be used by customers or	PROSPECT	's or their	DRAWIN	G N
AGENCIES I	I THE ARRANGEMENT OR INSTALLATION OF DERRICK EQUIPMENT, OR BY VENDORS IN QUOTING	on or in	THE SUPPLY		Ē
OF PARTS	or assemblies to derrick. Or by others for the specific reason outlined in the tra	NSMITTAL	WHETHER		1
WRITTEN OF	VERBAL.				
4	5	6			
•		~		1	

7 8	_
	A
	-
T LENGTH & IMPELLER SIZE & STYLE REQUIREMENT (REF ORDER FORM)	В
BEVEL GEAR, FLANGE MOUNTED D/460/60/3 & 10HP 190/380/50/3 EX-PROOF 5/600/60/3 EX-PROOF MEDIUM HEIGHT NYLOC SS /4 X 12 CRS (1 1/4 SS (2 1/2 SS	С
/4 X 4 CRS	\vdash
FICATION PER – LOCK PER – LOCK ANGE FLANGE 045 CFS	D
5/600/60/3 EX-PROOF	
UNITS	E
ARTS LIST HORIZONTAL AGITATOR W/PLATE MOUN 5HP @ 60HZ & 10HP @ 50HZ	11
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	<u>``</u> ' F
5 - 7 (590 DUKE ROAD BUFFALO, NY 14225 U.S 7 8	A.



NOTE:	IMPELLER	SHAF
	PER CUS	TOMEF

	1		20	G0005517	MOTOR	20HP 5
	1	1	19	PP1200-256	GEAR DRIVE	HELICAL
		1	18	BAL-CM7056T-I	MOTOR	20HP 2
∕ঽ	8	8	17	NNLS-63-11-MH	HEX NUT	5/8–11
$\overline{\mathbb{A}}$	16	16	16	WFSS-63-SAE	FLAT WASHER	5/8 SS
**	1	1	15	CRSQ-75X12	SHAFT KEY	3/4 X
	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-13
$\sqrt{1}$	8	8	13	HXCS-63-11X250	HEX HEAD CAPSCREW	5/8-11
	4	4	12	WLSS-50	LOCK WASHER	1/2 SS
	1	1	11	CRSQ-75X4	SHAFT KEY	3/4 X
*	1	1	10	13295-02	STABILIZER	HRS
**	1	1	09	REF 13169-00	IMPELLER	TO SPE
**	2	2	08	PP1120-325	BUSHING	3.250 1
	1	1	07	PP1120-288	BUSHING	2.875 1
	1	1	06	PP1235-M	COUPLING	MALE F
	1	1	05	PP1235-F	COUPLING	FEMALE
	1	1	04	REF 14017-04	SHAFT	ø3 1/4
	1	1	03	15492-03	MOUNTING PLATE	HRS
	\succ		02	15498-02	ASSEMBLY COMPLETE	20HP 5
		\bowtie	01	15498-01	ASSEMBLY COMPLETE	20HP 2
		QTY	ITEM	PART NUMBER	PART NAME	

▲ ** QUANTITY OF ITEM 08 IS (3), 09 IS (2) & 15 IS (2) ON DUAL IMPELLER * OPTIONAL - REF EQUIPMENT ORDER FORM

4	REVISED TITLE; ADDED ASSEMBLIES 01 & 02; ADDED ITEMS 18, 19 & 20.	CCS SB	5/16/05		
$\overline{3}$	TITLE WAS DE-AG-20-H-460 (460/60/3), UPDATED DESCRIPTION ON ITEM 01.	MCR	5/17/04	TITLE	Ρ
2	ITEM 13 HXCS-63-11X250 WAS HXCS-50-13X225, ITEM 16 WFSS-63-SAE WAS WFSS-50, ITEM 17 NNLS-63-11-MH WAS NNLS-50-13-HH, ADDED ** NOTE	EJR SB	3/24/04		2
	ITEM 13 WAS HXCS-50-13X200	WS	4/3/03	DWN	WS
		V			
REV	CHANGE	CKD	DATE		
REV The design	CHANGE Is and information contained on this drawing or copies remain the exclusive prop	CKD ERTY OF DE	DATE RRICK®	В	
REV THE DESIGN CORPORATIO	CHANGE Is and information contained on this drawing or copies remain the exclusive prop on Buffalo, New York U.S.A. and are not to be reproduced without the Written pe	CKD Erty of De RMISSION O	DATE RRICK® DERRICK	B Sheet	SIZE
REV THE DESIGN CORPORATIO CORPORATIO	Change Is and information contained on this drawing or copies remain the exclusive prop on Buffalo, New York U.S.A. and are not to be reproduced without the Written Pe on. The information contained on this drawing shall only be used by customers o	CKD Erty of De RMISSION OI R PROSPEC	DATE RRICK® DERRICK TS OR THEIR	B	SIZE
REV THE DESIGN CORPORATIO CORPORATIO AGENCIES II	Change Is and information contained on this drawing or copies remain the exclusive prop on Buffalo, New York U.S.A. and are not to be reproduced without the Written Pe on. The information contained on this drawing shall only be used by customers o n the arrangement or installation of derrick equipment, or by vendors in quoting	CKD Erty of De RMISSION OI R PROSPEC G ON OR IN	DATE RRICK® DERRICK TS OR THEIR THE SUPPLY	B SHEET DRAWI	SIZE NG N
REV THE DESIGN CORPORATIO CORPORATIO AGENCIES II OF PARTS	CHANGE Is and information contained on this drawing or copies remain the exclusive propion on Buffalo, New York U.S.A. and are not to be reproduced without the written pe on. The Information contained on this drawing shall only be used by customers o in the arrangement or installation of derick equipment, or by vendors in quoting or assemblies to derrick, or by others for the specific reason outlined in the tr	CKD ERTY OF DE RMISSION OI R PROSPEC ON OR IN ANSMITTAL	DATE RRICK® F DERRICK TS OR THEIR THE SUPPLY WHETHER	B SHEET DRAWI	size Ng n
REV The design Corporatio Corporatio Agencies II OF Parts Written OF	CHANGE IS AND INFORMATION CONTAINED ON THIS DRAWING OR COPIES REMAIN THE EXCLUSIVE PROP ON BUFFALO, NEW YORK U.S.A. AND ARE NOT TO BE REPRODUCED WITHOUT THE WRITTEN PE ON. THE INFORMATION CONTAINED ON THIS DRAWING SHALL ONLY BE USED BY CUSTOMERS O IN THE ARRANGEMENT OR INSTALLATION OF DERRICK EQUIPMENT, OR BY VENDORS IN QUOTING OR ASSEMBLIES TO DERRICK, OR BY OTHERS FOR THE SPECIFIC REASON OUTLINED IN THE TR R VERBAL.	CKD ERTY OF DE RMISSION OI R PROSPEC G ON OR IN ANSMITTAL	DATE RRICK ® F DERRICK IS OR THEIR THE SUPPLY WHETHER	B SHEET DRAWIN	SIZE
REV THE DESIGN CORPORATIO AGENCIES II OF PARTS WRITTEN OF	CHANGE IS AND INFORMATION CONTAINED ON THIS DRAWING OR COPIES REMAIN THE EXCLUSIVE PROP ON BUFFALO, NEW YORK U.S.A. AND ARE NOT TO BE REPRODUCED WITHOUT THE WRITTEN PE ON. THE INFORMATION CONTAINED ON THIS DRAWING SHALL ONLY BE USED BY CUSTOMERS O IN THE ARRANGEMENT OR INSTALLATION OF DERRICK EQUIPMENT, OR BY VENDORS IN QUOTING OR ASSEMBLIES TO DERRICK, OR BY OTHERS FOR THE SPECIFIC REASON OUTLINED IN THE TR R VERBAL.	CKD ERTY OF DE RMISSION OI R PROSPEC ON OR IN ANSMITTAL	DATE RRICK ® F DERRICK TS OR THEIR THE SUPPLY WHETHER	B SHEET DRAWI	SIZE

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FT LENGTH & IMPELLER R REQUIREMENT (REF OF	SIZE & RDER FC	STYLE DRM)		В
75/600/60/3 EX-PROOF BEVEL GEAR, FLANGE M 30/460/60/3 & 15HP 1	- 10UNTED 190/380	/50/3	EX-PROOF	
MEDIUM HEIGHT NYLOC 3/4 X 12 CRS X 1 1/4 SS < 2 1/2 SS	<u> </u>			
3/4 X 4 CRS				
APER – LOCK APER – LOCK ANGE FLANGE 1045 CFS				D
75/600/60/3 EX-PROOF 30/460/60/3 & 15HP 1 DESCRIPTION	- 190/380	/50/3	EX-PROOF	
ER UNITS				E
PARTS LIST HORIZONTAL 20HP @ 60HZ & 15HP @	AGITATO 50HZ	DR W/PL	ATE MOUN	JT
S (KD DATE 3/11/03 Y DWN F C (KD 10.	3 SCALE	DER	RICK ®) F
$\frac{0498-00}{7}$	590 DUKE	road buffal 8	.0, NY 14225 U.S	. A .



	А
MPELLER SIZE & STYLE	
(REF ORDER FORM) 75/600/60/3 EX-PROOF 75/600/60/3 EX-PROOF 0/380/50/3 EX-PROOF 30/460/60/3 EX-PROOF 30/460/60/3 EX-PROOF 40/40/60/3 EX-PROOF 5/4 X 4 5/4 X 12 1045 CFS	В
7/8 X 12 CRS X 1 1/4 SS X 2 1/2 SS	С
APER – LOCK	
ANGE FLANGE 1045 CFS BEVEL GEAR FLANGE MOUNTED	D
30/460/60/3 & 20HP 190/380/50/3 EX-PROOF DESCRIPTION CLLER UNITS	
	E
PARTS LIST HORIZONTAL AGITATOR W/PLATE MOUNT 25HP @ 60HZ & 20HP @ 50 HZ	╞
S CKD DATE 3/11/03 SCALE NTS REV Y DWN F C CKD DERRICK ® IO	F
/ Ι δ	

NOTE:	IMPELLER	S
	PER CUS	TO

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	<u>6</u> [1		19	G0005519	MOTOR	30 HP 57
	Γ	1	1	18	PP1201-286	GEAR DRIVE	HELICAL
	\$∖[1	17	BAL-CM7060T-I	MOTOR	30 HP 23
∕Ѧ		16	16	16	WFSS-63-SAE	FLAT WASHER	5/8 SS
;	**[1	1	15	CRSQ-88X12	SHAFT KEY	7/8 X 7
	Γ	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-13
∕\$∖∕	<u>î</u> [8	8	13	HXCS-63-11X250	HEX HEAD CAPSCREW	5/8-11
		4	4	12	WLSS-50	LOCK WASHER	1/2 SS
	Γ	1	1	11	CRSQ-88X4	SHAFT KEY	7/8 X 7
	*	1	1	10	13295-02	STABILIZER	HRS
;	**[1	1	09	REF 13169-00	IMPELLER	TO SPEC
∕₹		8	8	08	NNLS-63-11-MH	HEX NUT	5/8-11
;	**[3	3	07	PP1203-363	BUSHING	3.625 TA
	Γ	1	1	06	PP1202-M	COUPLING	MALE FL
\sim	Γ	1	1	05	PP1202-F	COUPLING	FEMALE I
		1	1	04	REF 14017-05	SHAFT	ø3 5/8
		1	1	03	15492-03	MOUNTING PLATE	HRS
	€∖[\times		02	15500-02	ASSEMBLY COMPLETE	30HP 57
Z	<u>6</u> [\ge	01	15500-01	ASSEMBLY COMPLETE	30 HP 23
		Q	TY	ITEM	PART NUMBER	PART NAME	

▲ ** QUANTITY OF ITEM 07 IS (4), 09 IS (2) & 15 IS (2) ON DUAL IMPELLE * OPTIONAL – REF EQUIPMENT ORDER FORM

5	REVISED TITLE; ADDED ASSEMBLIES 01 & 02; ADDED ITEMS 17, 18 & 19.	CCS SB	5/16/05					
4	TITLE WAS DE-AG-30-H-460 (460/60/3), UPDATED DESCRIPTION OF ITEM 01	MCR SB	5/17/04					
3	ITEM 08 NNLS-63-11-MH WAS NNLS-50-13-HH, ITEM 13 HXCS-63-11X250 WAS HXCS-50-13X225, ITEM 16 WFSS-63-SAE WAS WFSS-50.	MCR SB	3/10/04	TITLE	Ρ			
2	ADDED ** NOTE	EJR	5/15/03		3			
1	ITEM 13 WAS HXCS-50-13X200	WS	4/3/03	DWN	WS			
REV	CHANGE	CKD	DATE	П				
THE DESIGN	is and information contained on this drawing or copies remain the exclusive proper	rty of de	RRICK ®	В				
CORPORATI	ON BUFFALO, NEW YORK U.S.A. AND ARE NOT TO BE REPRODUCED WITHOUT THE WRITTEN PER	MISSION OF	DERRICK	Sheet	SIZE			
	CORPORATION. THE INFORMATION CONTAINED ON THIS DRAWING SHALL ONLY BE USED BY CUSTOMERS OR PROSPECTS OR THER DATE ADDANCEMENT OR DIVISION AND ADDALL ONLY DE STORE ADDANCEMENT OF DIVISION AND ADDALL ONLY DE STORE ADDANCEMENT OF DIVISION AND ADDALL ONLY DE STORE ADDANCEMENT OF DIVISION AND ADDALL ONLY DE STORE ADDALL ONLY							
OF PARTS	or assemblies to derrick. Or by others for the specific reason outlined in the tra	NSMITTAL	WHETHER	1				
WRITTEN O	R VERBAL.							
4	5	6						
-		0		ļ				



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HAFT LENGTH & IMPELLER SIZE & STY MER REQUIREMENT (REF ORDER FORM)	ΊE Β
5/600/60/3 EX-PROOF BEVEL GEAR, FLANGE MOUNTED 0/460/60/3 & 25 HP 190/380/50/3 E	X-PROOF
(8 X 12 CRS (1 1/4 SS (2 1/2 SS (8 X 4 CPS)	C
FICATION HEDIUM HEIGHT NYLOC SS PER - LOCK	
LANGE 045 CFS	D
5/600/60/3 EX-PROOF 0/460/60/3 & 25 HP 190/380/50/3 EX DESCRIPTION	X-PROOF
ER UNITS	F
$\frac{30 \text{ Parts LIST HORIZONTAL AGITATOR W/I}{30 \text{ HP} @ 60 \text{ HZ} & 25 \text{ HP} @ 50 \text{ HZ}}{\text{S} \cos 2 \pi 11/03} \text{ scale NTS}$	
	RICK [®] F
7 590 DUKE ROAD BUFF 7 8	ALO, NY 14225 U.S.A.



* ORDER G0012553 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY (FO * ORDER G0009304 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY (FO

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NOTE: IMPELLER SH PER CUSTON

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$3\sqrt{2}$	1		21	G0009387	MOTOR	5HP 5
	1	1	20	G0004899	GEAR DRIVE	ALL H
A		1	19	G0008798	MOTOR	5HP 2
	4	4	18	WLSS-50	LOCK WASHER	1/2 S
	4	4	17	NNLS-50-13-MH	HEX NUT	1/2-1
	8	8	16	WFSS-50-SAE	FLAT WASHER	1/2 S
**	1	1	15	CRSQ-50X12	SHAFT KEY	1/2 X
	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-1
	4	4	13	HXCS-50-13X225	HEX HEAD CAPSCREW	1/2-1
**	1	1	12	PP1120-225	BUSHING	2.25
	1	1	11	CRSQ-50X4	SHAFT KEY	1/2 X
*	1	1	10	13295-01	STABILIZER	HRS
**	1	1	09	REF 13169-00	IMPELLER	TO SF
	1	1	08	PP1113-225	BUSHING	2.25
\wedge	1	1	07	G0003686	BUSHING	1.625
	1	1	06	PP1112-M	COUPLING	MALE
	1	1	05	PP1112-F	COUPLING	FEMAL
	1	1	04	REF 14017-02	SHAFT	ø2 1/
	1	1	03	15492-01	MOUNTING PLATE	HRS
\wedge	\bowtie		02	15503-02	ASSEMBLY COMPLETE	5HP 5
团		\bowtie	01	15503-01	ASSEMBLY COMPLETE	5HP 2
	Q	ΓY	ITEM	PART NUMBER	PART NAME	

** QUANTITY IS 2 ON DUAL IMPELLER UNITS * OPTIONAL – REF EQUIPMENT ORDER FORM

-								
	$\sqrt{3}$	COMBO PART NUMBERS G0012553 WAS G0004421, G0009304 WAS G0008364 ITEM 19 WAS BAL-CM7044T-I, ITEM 21 WAS G0005514, ADDED (55C) TO TITLE	H H	3/20/12	TITLE	Ρ		
	2	REVISED TITLE; ADDED ASSEMBLIES 01 & 02; ADDED ITEMS 19, 20 & 21.	CCS SB	5/17/05		5		
	1	TITLE WAS DE-AG-5-V-460 (460/60/3), UPDATED DESCRIPTIONS OF ITEMS 1 & 2, ITEM 07 WAS PP1113-200.	MCR	5/17/04	DWN	MC		
ſ	REV	CHANGE	CKD	DATE	D			
	THE DESIGNS AND INFORMATION CONTAINED ON THIS DRAWING OR COPIES REMAIN THE EXCLUSIVE PROPERTY OF DERRICK® CORPORATION BUFFALO, NEW YORK U.S.A. AND ARE NOT TO BE REPRODUCED WITHOUT THE WRITTEN PERMISSION OF DERRICK CORPORATION. THE INFORMATION CONTAINED ON THIS DRAWING SHALL ONLY BE USED BY CUSTOMERS OR PROSPECTS OR THEIR AGENCIES IN THE ARRANGEMENT OR INSTALLATION OF DERRICK EQUIPMENT, OR BY VENDORS IN QUOTING ON OR IN THE SUPPLY OF PARTS OR ASSEMBLIES TO DERRICK, OR BY OTHERS FOR THE SPECIFIC REASON OUTLINED IN THE TRANSMITTAL WHETHER WRITTEN OR VERBAL.							
	4	5	6					

7 8	_
(FOR ASSY 01)	A
(FOR ASSY 02)	
SHAFT LENGTH & IMPELLER SIZE & STYLE TOMER REQUIREMENT (REF ORDER FORM)	В
575/600/60/3 EX-PROOF HELICAL GEAR, FLANGE MOUNTED 230/460/60/3 & 3HP 190/380/50/3 EX-PROOF SS -13 MEDIUM HEIGHT NYLOC SS SS X 1/2 X 12 CRS -13 X 1 1/4 SS	
-13 X 2 1/4 SS 5 TAPER - LOCK X 1/2 X 4 CRS SPECIFICATION 5 TAPER - LOCK 25 TAPER - LOCK E FLANGE ALE FLANGE 1/4 W/K WAY 1045 CES	
1/4 w/k-way 1045 crs 575/600/60/3 EX-PROOF 230/460/60/3 & 3HP 190/380/50/3 EX-PROOF DESCRIPTION	- - - E
5HP @ 60HZ & 3HP @ 50HZ (55C) MCR CKD DATE 3/16/04 SCALE NTS Y DWN SCALE NTS REV 3 SIZE F C CKD DERRICK ® NG NO. 5503 0 0 590 DUKE ROAD BUFFALO, NY 14225 U.S.A. 7 8	F



* ORDER G0012184 FOR COMPLETE MOTOR/GEAR DRIVE ASSE ⚠ * ORDER G0012185 FOR COMPLETE MOTOR/GEAR DRIVE ASSE

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NOTE: IMPELLER SH PER CUSTOM

3∖∕2∖	1		21	G0012183	MOTOR	7 1/2HP
	1	1	20	G0004900	GEAR DRIVE	ALL HELIC
\$∖∕2∖		1	19	G0012182	MOTOR	7 1/2HP
	4	4	18	WLSS-50	LOCK WASHER	1/2 SS
	4	4	17	NNLS-50-13-MH	HEX NUT	1/2-13 N
	8	8	16	WFSS-50-SAE	FLAT WASHER	1/2 SS
**	1	1	15	CRSQ-50X12	SHAFT KEY	1/2 X 1/
	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-13 X
	4	4	13	HXCS-50-13X225	HEX HEAD CAPSCREW	1/2-13 X
**	1	1	12	PP1120-225	BUSHING	2.25 TAPE
	1	1	11	CRSQ-50X4	SHAFT KEY	1/2 X 1/
*	1	1	10	13295-01	STABILIZER	HRS
**	1	1	09	REF 13169-00	IMPELLER	TO SPECIF
	1	1	08	PP1113-225	BUSHING	2.25 TAPE
\triangle	1	1	07	G0005008	BUSHING	2.125 TAF
	1	1	06	PP1112-M	COUPLING	MALE FLA
	1	1	05	PP1112-F	COUPLING	FEMALE F
	1	1	04	REF 14017-02	SHAFT	ø2 1/4 W
	1	1	03	15492-01	MOUNTING PLATE	HRS
<u>⁄</u> 2	\ge		02	15504-02	ASSEMBLY COMPLETE	7 1/2HP
Δ		\bowtie	01	15504-01	ASSEMBLY COMPLETE	7 1/2HP
	Q	TY	ITEM	PART NUMBER	PART NAME	

- ** QUANTITY IS 2 ON DUAL IMPELLER UNITS * OPTIONAL REF EQUIPMENT ORDER FORM

	3	COMBO PART NUMBERS GO012184 WAS GO004422, GO012185 WAS GO008365 ITEM 19 WAS BAL-CM7047T-I, ITEM 21 WAS GO005515, ADDED (55C) TO TITLE					Ŧ	3/20/12	TITLE	Ρ
	2	revised title;	ADDED ASSEMBLIES 0	CCS B	5/17/05		7			
		TITLE WAS DE-AG-7.5-V-460 (460/60/3), UPDATED DESCRIPTIONS OF ITEMS 01 & 02, ITEM 07 WAS PP1113-200.					MCR	5/13/04	DWN	MC
	REV			CHANGE			CKD	DATE	р	
	The designs and information contained on this drawing or copies remain the exclusive property of derrick $^{\textcircled{0}}$ corporation buffalo, new york u.s.a. and are not to be reproduced without the written permission of derrick									SIZE
CORPORATION. THE INFORMATION CONTAINED ON THIS DRAWING SHALL ONLY BE USED BY CUSTOMERS OR PROSPECTS OR THEIR									DRAW	
	OF PARTS OR ASSEMBLIES TO DERRICK, OR BY OTHERS FOR THE SPECIFIC REASON OUTLINED IN THE TRANSMITTAL WHETHER									L
	WRITIEN OF	r verbal.								$\overline{}$
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	A	
SEMBLY (FOR ASSY 01)		_
SEMELT (FOR ASST UZ)		
	В	
SHAFT LENGTH & IMPELLER SI MER REQUIREMENT (REF ORD	ZE & STYLE ER FORM)	_
575/600/60/3 EX-PROOF CAL GEAR, FLANGE MOUNTED 230/460/60/3 & 5HP 190,	/380/50/3 EX PROOF	
MEDIUM HEIGHT NYLOC SS	C	
X 1 1/4 SS X 2 1/4 SS PER - LOCK		-
/2 X 4 CRS		
PER – LOCK APER – LOCK ANGF	U	
FLANGE W/K-WAY 1045 CFS		-
575/600/60/3 EX-PROOF 230/460/60/3 & 5HP 190/ DESCRIPTION	/380/50/3 EX PROOF	
A		
PARTS LIST VERTICAL AGITAT 7 1/2HP @ 60HZ & 5HP @ 3	OR W/PLATE MOUNT 50HZ (55C)	-
MCR CKD SB DATE 3/16/04 S	CALE NTS REV 3	
$\frac{550}{590}$	CORPORATION DUKE ROAD BUFFALO, NY 14225 U.S.A.	
7	8	

	1 2		3		4	5	6	
А	2401			ß	* ORDER G * ORDER G	0012123 FOR CO 0012124 FOR CO	MPLETE MOTOR/GEAR	DRIVE ASSEN DRIVE ASSEN
_							NOTE: I F	MPELLER SHAF PER CUSTOMEF
В			Å 3 5 ***	1	1 26 132 25 155 24 GO	295–02 505–25 005516	STABILIZER ASSEMBLY COMPLETE MOTOR	HRS 10 HP 575, 10 HP 575,
_) **		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	505-23 505-22 SQ-50X4 SQ-50X12	ASSEMBLY COMPLETE ASSEMBLY COMPLETE SHAFT KEY SHAFT KEY	10HP 230/ 1/2 X 1/2 1/2 X 1/2
C			-(03) ** **	2 1 4 4 8 8 1	19 PP 18 REI 4 17 NN 8 16 WF 1 15 CR	1120-225 F 14017-02 LS-63-11-MH SS-63-SAE SQ-75X12	BUSHING SHAFT HEX NUT FLAT WASHER SHAFT KEY	2.25 TAPER Ø2 1/4 104 5/8-11 ME 5/8 SS 3/4 X 3/4
_				4 4 4 4 4 4 1 1	4 14 HX 4 13 HX 4 12 WL 1 11 CR	CS-50-13X125 CS-63-11X250 SS-50 SQ-75X4	HEX HEAD CAPSCREW HEX HEAD CAPSCREW LOCK WASHER SHAFT KEY	1/2-13 X 5/8-11 X 2 1/2 SS 3/4 X 3/4
D	(21)(11)f		<u></u> ** ** 	1 1 2 1 1 1 1 1	10 132 1 09 REI 2 08 PP 1 07 PP 1 06 PP	F 13169-00 F 13169-00 1120-325 1120-238 1235-M	STABILIZER IMPELLER BUSHING BUSHING COLIPLING	HRS TO SPECIFIC 3.250 TAPE 2.375 TAPE
_				1 1 1 1 1 1 1 1 1 1	1 05 PP 1 04 REI 1 03 154	1235 M 1235 F F 14017 - 04 492 - 02 004901	COUPLING SHAFT MOUNTING PLATE	FEMALE FLA Ø3 1/4 104 HRS
F				QTY	1 01 GO ITEM PA	009241 RT NUMBER	MOTOR PART NAME	10HP 230/
	2015		(0)	** (* (QUANTITY OF OPTIONAL — R 4 ADDED ITEM 26	ITEMS 08 & 19 IS REF EQUIPMENT ORE 5; moved quantities from item 10 *	(3), ITEMS 09, 15 & 20 DER FORM TO ITEM 26	ARE (2) ON D
_					3 REVISED TITLE; 2 ADDED ITEM 24 1 ADDED ASSEMB	AUUED ASSEMBLY 25; REMOVED NOT	SB NVE	5/17/05 P 12/7/04 10 5/17/04 dwn EJ
F	EB DEPT. G 1bc, 2bc, 4a	(10) ⊕	8252 10 TITLE	3/16/12	THE DESIGNS AND INFORMAT CORPORATION BUFFALO, NE CORPORATION. THE INFORMA AGENCIES IN THE ARRANGE OF PARTS OR ASSEMBLIES WRITTEN OR VERBAL.	CHANGE TION CONTAINED ON THIS DRAWING OI W YORK U.S.A. AND ARE NOT TO BE ATION CONTAINED ON THIS DRAWING S MENT OR INSTALLATION OF DERRICK E TO DERRICK, OR BY OTHERS FOR THE	CKD R COPIES REMAIN THE EXCLUSIVE PROPERTY OF DE REPRODUCED WITHOUT THE WRITTEN PERMISSION C SHALL ONLY BE USED BY CUSTOMERS OR PROSPEC QUIPMENT, OR BY VENDORS IN QUOTING ON OR IN E SPECIFIC REASON OUTLINED IN THE TRANSMITTAL	DAIL RRICK® F DERRICK TS OR THEIR THE SUPPLY WHETHER HETHER
	1 2	3			4	5	6	

7 8	-
MBLY (ASSY 22 & 23) MBLY (ASSY 25)	A
FT LENGTH & IMPELLER SIZE & STYLE R REQUIREMENT (REF ORDER FORM)	╞
5/600/60/3 EX-PROOF 5/600/60/3 EX-PROOF 90/380/50/3 EX-PROOF /460/60/3 EX-PROOF	В
X 4 X 12 R – LOCK 45 CFS EDIUM HEIGHT NYLOC SS 4 X 12 CRS	C
1 1/4 SS 2 1/2 SS 4 X 4 CRS	
ER – LOCK ER – LOCK IGE ANGE 45 CFS	D
AL GEAR, FLANGE MOUNTED /460/60/3 & 7 1/2HP 190/380/50/3 EX-PROOF DESCRIPTION	
DUAL IMPELLER UNITS	
10HP @ 60HZ & 7 1/2HP @ 50HZ (55C) JR ckd SB Date 03/26/04 scale NTS Rev 5 Y DWN F C CKD DERRICK ® NO 50 5 0 5 590 DUKE ROAD BUFFALO, NY 14225 U.S.A.	F
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(09)

ORDER G0004424 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY ORDER G0008251 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBLY

NOTE: IMPELLEF PER CUS

\triangle	1		20	G0005422	MOTOR	15HP 57
	1	1	19	G0004902	GEAR DRIVE	ALL HELI
∕∕∕		1	18	BAL-CM7054T-I	MOTOR	15HP 23
	4	4	17	NNLS-63-11-MH	HEX NUT	5/8-11
	8	8	16	WFSS-63-SAE	FLAT WASHER	5/8 SS
**	1	1	15	CRSQ-75X12	SHAFT KEY	3/4 X 3
	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-13
	4	4	13	HXCS-63-11X250	HEX HEAD CAPSCREW	5/8-11
	4	4	12	WLSS-50	LOCK WASHER	1/2 SS
	1	1	11	CRSQ-75X4	SHAFT KEY	3/4 X 3
*	1	1	10	13295-02	STABILIZER	HRS
**	1	1	09	REF 13169-00	IMPELLER	TO SPEC
**	2	2	08	PP1120-325	BUSHING	3.250 TA
	1	1	07	PP1120-238	BUSHING	2.375 TA
	1	1	06	PP1235-M	COUPLING	MALE FL
	1	1	05	PP1235-F	COUPLING	FEMALE
	1	1	04	REF 14017-04	SHAFT	ø3 1/4 ⁻
	1	1	03	15492-02	MOUNTING PLATE	HRS
∕⋧	\bowtie		02	15506-02	ASSEMBLY COMPLETE	15HP 57
$\overline{\mathbb{A}}$		\succ	01	15506-01	ASSEMBLY COMPLETE	15HP 23
	Q	TY	ITEM	PART NUMBER	PART NAME	

** QUANTITY OF ITEM 08 IS (3), 09 IS (2) & 15 IS (2) ON DUAL IMPELLER UNITS * OPTIONAL - REF EQUIPMENT ORDER FORM

\square		\checkmark		TITLE F	
2	REVISED TITLE; ADDED ASSEMBLIES 01 & 02; ADDED ITEMS 18, 19 & 20.	CCS SB	5/17/05	1	
	TITLE WAS DE-AG-15-V-460 (460/60/3), UPDATED DESCRIPTIONS OF ITEMS 01 & 02.	MCR	5/13/04	dwn E	
REV	CHANGE	CKD	DATE		
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	A
(ASSY 01) (ASSY 02)	
	В
R SHAFT LENGTH & IMPELLER SIZE & STYLE STOMER REQUIREMENT (REF ORDER FORM)	
5/600/60/3 EX-PROOF CAL GEAR, FLANGE MOUNTED 0/460/60/3 & 10HP 190/380/50/3 EX-PROOF MEDIUM HEIGHT NYLOC SS	С
/4 X 12 CRS < 1 1/4 SS < 2 1/2 SS /1 X 1 000	
74 X 4 CRS FICATION PER – LOCK PER – LOCK ANGE FLANGE	D
045 CFS 5/600/60/3 EX-PROOF 0/460/60/3 & 10HP 190/380/50/3 EX-PROOF DESCRIPTION	E
S PARTS LIST VERTICAL AGITATOR W/PLATE MOUNT	
5HP @ 60HZ & 10HP @ 50HZ JR ckd SB Date 03/26/04 scale NTS Y DWN	
$ \begin{array}{c c} FC & CKD \\ \hline NO. \\ \hline 5 & \hline 6 & \hline \\ 7 & \hline \\ 8 \end{array} $	F

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	L	כו	4	-)	(2

ORDER G0004425 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBL ORDER G0008366 FOR COMPLETE MOTOR/GEAR DRIVE ASSEMBL

NOTE: IMPELLER SHAFT L PER CUSTOMER RE

\bigwedge	1		20	G0005517	MOTOR	20HP 5
Т	1	1	19	G0004903	GEAR DRIVE	ALL HE
\triangle		1	18	BAL-CM7056T-I	MOTOR	20HP
	8	8	17	NNLS-63-11-MH	HEX NUT	5/8-1
	16	16	16	WFSS-63-SAE	FLAT WASHER	5/8 SS
**	1	1	15	CRSQ-75X12	SHAFT KEY	3/4 X
	4	4	14	HXCS-50-13X125	HEX HEAD CAPSCREW	1/2-13
	8	8	13	HXCS-63-11X250	HEX HEAD CAPSCREW	5/8-1
	4	4	12	WLSS-50	LOCK WASHER	1/2 SS
	1	1	11	CRSQ-75X4	SHAFT KEY	3/4 X
*	1	1	10	13295-02	STABILIZER	HRS
**	1	1	09	REF 13169-00	IMPELLER	TO SPE
**	2	2	08	PP1120-325	BUSHING	3.250
	1	1	07	PP1120-288	BUSHING	2.875
	1	1	06	PP1235-M	COUPLING	MALE F
	1	1	05	PP1235-F	COUPLING	FEMALE
	1	1	04	REF 14017-04	SHAFT	ø3 1/4
	1	1	03	15492-03	MOUNTING PLATE	HRS
\triangle	\geq		02	15507-02	ASSEMBLY COMPLETE	20HP 3
Δ		\succ	01	15507-01	ASSEMBLY COMPLETE	20HP 2
	Q -	TΥ	ITEM	PART NUMBER	PART NAME	

** QUANTITY OF ITEM 08 IS (3), 09 IS (2) & 15 IS (2) ON DUAL IMPELL * OPTIONAL – REF EQUIPMENT ORDER FORM

\square		\checkmark		TITLE	F
2	REVISED TITLE; ADDED ASSEMBLIES 01 & 02; ADDED ITEMS 18, 19 & 20.	CCS SB	5/17/05		2
1	TITLE WAS DE-AG-20-V-460 (460/60/3), UPDATED DESCRIPTIONS ON ITEMS 1 & 2.	MCR	5/17/04	DWN	Εı
REV	CHANGE	CKD	DATE		
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LY (ASSY 01) LY (ASSY 02)	В
LENGTH & IMPELLER SIZE & S EQUIREMENT (REF ORDER FORM	TYLE 1)
75/600/60/3 EX-PROOF LICAL GEAR, FLANGE MOUNTED 230/460/60/3 & 15HP 190/3 MEDIUM HEIGHT NYLOC SS	30/50/3 EX-PROOF C
3/4 X 12 CRS X 1 1/4 SS X 2 1/2 SS	
3/4 X 4 CRS CIFICATION APER – LOCK APER – LOCK LANGE FLANGE	D
1045 CFS 75/600/60/3 EX-PROOF 30/460/60/3 & 15HP 190/3 DESCRIPTION	30/50/3 EX-PROOF
LER UNITS	R W/PLATE MOUNT
20HP @ 60HZ & 15HP @ 50HZ JR ско SB дате 03/26/04 scal Y рими F с ско	DERRICK ® F
<u>5507-00</u> 7 1	KE ROAD BUFFALO, NY 14225 U.S.A. 8



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IENT (REF ORDER FORM)		A
c 23)		
5/50/3 EX-PROOF		F
5/50/3 EX-PROOF 5/600/60/3 EX-PROOF 5/600/60/3 EX-PROOF		
0/380/50/3 EX-PROOF 0/460/60/3 EX-PROOF		В
PER – LÓCK /4 X 4		
/4 X 12 1045 CFS \PER_LOCK		\vdash
/8 X 12 CRS		
X 1 1/4 SS X 2 1/2 SS		C
/8 X 4 CRS		
IFICATION MEDIUM HEIGHT NYLOC SS		-
APER – LOCK ANGE FLANGE		
1045 CFS		טן
CAL GEAR, FLANGE MOUN 0/460/60/3 & 20HP 190 DESCRIPTION	TED 0/380/50/3 EX-PROOF	
		E
PARTS LIST VERTICAL AGI	TATOR W/PLATE MOUNT	-
25HP @ 60H2 & 20HP @ JR ско SB	SUHZ 4 _{scale} NTS Rev 7	
Y DWN FC CKD NO.		F
$\frac{508-00}{7}$	590 DUKE ROAD BUFFALO, NY 14225 U.S.A.	J



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		A
GSY 01) GSY 02)		
R SHAFT LENGTH & IMPEL STOMER REQUIREMENT (REI	LER SIZE & STYLE F ORDER FORM)	В
'5/600/60/3 EX-PROOF CAL GEAR, FLANGE MOUNT 0/460/60/3 & 25HP 190	ED /380/50/3 EX-PROOF	C
78 X 12 CRS X 1 1/4 SS X 2 1/2 SS		
IFICATION MEDIUM HEIGHT NYLOC SS APER – LOCK		D
ANGE FLANGE 1045 CFS		
5/600/60/3 EX-PROOF 0/460/60/3 & 25HP 190 DESCRIPTION	/380/50/3 EX-PROOF	E
PARTS LIST VERTICAL AGIT. 30HP @ 60HZ & 25HP @ 5	ATOR W/PLATE MOUNT 50HZ	
$ \begin{array}{c cccccccccccccccccccccccccccccccccc$	SCALE NTS REV 3 DERRICK ® CORPORATION 190 DUKE ROAD BUFFALO, NY 14225 U.S.A. 8	F
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SECTION 9 - INSTALLATION AND MAINTENANCE LOG

PURPOSE

This section should be used by operating and maintenance personnel to record historical information gathered during the installation and operation of the Derrick equipment. If properly kept, the log will be useful for altering maintenance intervals and intercepting trends that may indicate the need for changing operating procedures. Each entry in the log should be dated for future reference and tracking. If required, additional pages may be added to the log by copying a blank page or simply inserting ruled paper at the rear of the section.

Installation and Maintenance Notes:



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CERTIFICATE OF ORIGIN

Equipment:	Agitators	
Model:	Series: DE-AG	
Characteristics:	0-600VAC, 50/60Hz, 3PH	
Derrick Corporation acknowledges that the above set-forth product is manufactured in the United States of America as of the date of this certificate. This certificate is governed by the applicable purchase order terms in effect at the time of Derrick Corporation's original shipment of the referenced product.		
	Juniley Folanowski	
Date: 28-December-2011	Signature: Jennifer J. Polanowski Derrick Corporation	



CERTIFICATE OF QUALITY

Equipment:	Agitators	
Model:	Series: DE-AG	
Characteristics:	0-600VAC, 50/60Hz, 3PH	
Derrick Corporation acknowledges that the above set-forth product conformed to the requirements for the applicable purchase order at the time of its original shipment by Derrick Corporation in that all construction materials and components were new and unused, were manufactured for this product, and that it was free of any known defects as to their design, material and workmanship. This certificate is governed by the applicable purchase order terms in effect at the time of Derrick Corporation's original shipment of the referenced product.		
	Junifer Franowski	

Date: 29-December-2011

 \cup Q

Signature: Jennifer J. Polanowski Derrick Corporation



SHIPPING FINAL INSPECTION AND RUN TEST CERTIFICATE

Equipment:

Agitators

Model:

Characteristics:

Series: DE-AG

0-600VAC, 50/60Hz, 3PH

The product listed above was inspected and found to be in conformance with Derrick Corporation's internal coating, run test, and assembly inspection documents that were required for the type of equipment manufactured in accordance with the Derrick quality system. This certificate is governed by the applicable purchase order terms in effect at the time of Derrick Corporation's original shipment of the referenced product.

Junifer Franowski

Signature: Jennifer J. Polanowski Derrick Corporation

Date: 29-December-2011



CERTIFICATE OF CONFORMANCE

Equipment:	Mining & Oilfield equipment manufactured specifically for Hazardous Location Areas including but not limited to: Flo-Line® Cleaners, Flo-Line® Primers, Agitators, Vacu-Flo™ Degassers, DE-1000™ Centrifuges, Centrifugal Pumps, Flo-Line Scalpers™ etc.
Name and Address of Manufacturer:	Derrick Corporation 590 Duke Road Buffalo, NY 14225
Rating and Principle Characteristics:	0-600 VAC, 50/60Hz, 3PH
Model / Type Ref:	Various
Additional Information:	None

This product was found to be in conformance with:

U.L. listed for hazardous locations Class I, Division 1, Groups C & D, which is similar to equipment marked as II 2G Ex d IIB T3 for Zone 1 areas. Assembled in accordance with National Electrical Code (NEC) – articles 500 thru 506 (hazardous locations) where applicable.

Additionally:

Derrick Corporation certifies that the above-listed equipment for the referenced order conformed to the requirements of the specified order at the time of its original shipment by Derrick Corporation in that: all construction materials and components were new and unused, manufactured for this equipment, and that the goods were free of any known defects as to their design, material and workmanship. This certificate is governed by the applicable purchase order terms in effect at the time of Derrick Corporation's original shipment of the above-listed equipment.

