THE CAST "ARROW" ON PUMP HEAD TO POINT UP FOR ALL GEARBOX POSITIONS, EXCEPT INVERTED POSITION.

THE CAST "I" ON PUMP HEAD TO POINT UP FOR INVERTED GEARBOX POSITION.

HORIZONTAL LH - 22.5°
(NOT AVAILABLE WITH ENGINE MOUNT)

HORIZONTAL LH

VERTICAL
(PUMP OVER INPUT)

INVERTED
(INPUT OVER PUMP)

HORIZONTAL RH

HORIZONTAL RH - 22.5°
(NOT AVAILABLE WITH ENGINE MOUNT)

ENGINE ROTATION (ER)

OPPOSITE ENGINE ROTATION (OER)

DISCHARGE AND GEARBOX POSITIONS
NOTE:

1. LEVEL 1 REPAIR KIT PROVIDES EVERYTHING NEEDED TO CHANGE SEALS.
2. LEVEL 2 REPAIR KIT PROVIDES LEVEL 1 AND ITEMS NEEDED FOR BEARINGS.
3. LEVEL 3 REPAIR KIT PROVIDES LEVEL 1 & 2 AND ITEMS TO REPLACE GEARS.
4. IMPELLER RENEW KIT PROVIDES LEVEL 1 REPAIR KIT AND ITEMS TO REPLACE IMPELLER.

### REPAIR KIT PART NUMBERS

<table>
<thead>
<tr>
<th>RATIO NAME</th>
<th>GEAR RATIO</th>
<th>LEVEL 1 REPAIR KIT P/N</th>
<th>LEVEL 2 REPAIR KIT P/N</th>
<th>LEVEL 3 REPAIR KIT P/N</th>
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<tbody>
<tr>
<td>-37F</td>
<td>3.74</td>
<td>546-00067-100</td>
<td>546-00067-237</td>
<td>546-00067-337</td>
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<tr>
<td>-29F</td>
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<td>-26F</td>
<td>2.60</td>
<td>546-00067-200</td>
<td>546-00067-329</td>
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<td>-23F</td>
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<tr>
<td>-13F</td>
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<td>546-00067-313</td>
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<td>-11F</td>
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### IMPELLER RENEW KIT PART NUMBERS

<table>
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<tr>
<th>DESCRIPTION</th>
<th>PART NUMBER</th>
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<tbody>
<tr>
<td>IMPELLER RENEW KIT (OER)</td>
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<tr>
<td>IMPELLER RENEW KIT (ER)</td>
<td>516-00026-024</td>
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</tbody>
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### PUMP ASSEMBLY

- **3.74 RATIOS**
- **ALL RATIOS EXCEPT 3.74**
HALE FLEX SERIES CBPM PUMP

GEARBOX POSITION - INVERTED, DISCHARGE POSITION - 1.

ENGINE MOUNT INSTALLATION

NOTES:
1. PRIMING SYSTEM, DISCHARGE & SUCTION VALVES, PRESSURE RELIEF VALVES & CONTROLLERS AND THERMAL RELIEF VALVES ARE AVAILABLE.
2. USE SAE 50 LONG-LIFE SYNTHETIC MANUAL TRANSMISSION FLUID MEETING ONE OR MORE OF THE FOLLOWING SPECIFICATIONS.
   - API MT-1
   - Eaton PS-104 Rev. 7
   - Mack TA-4 Plus
   - Meritor 0-81
   - Navistar / International TMS 819
   - Rockwell (Eaton / Fuller CD-50 - PS-081)
   - ZF Freedom
3. FILL GEARBOX UNTIL OIL LEVEL INDICATOR WINDOW IS 1/2 TO 3/4 FULL. APPROXIMATE OIL CAPACITY IS 1.5 QUART (1.4 LITER)
4. ALL METRIC FASTENERS USED TO HAVE A MINIMUM PROPERTY CLASS 8.8.
   ALL SAE FASTENERS USED TO HAVE A MINIMUM GRADE 5.

ENGINE MOUNT

PRIMING SYSTEM, DISCHARGE & SUCTION VALVES, PRESSURE RELIEF VALVES & CONTROLLERS AND THERMAL RELIEF VALVES ARE AVAILABLE.

OPTIONAL GEARBOX COOLER SHOWN

PUMP ASSEMBLY, CBP FLEX SERIES

THE HALE TYPE CBPM PUMP IS AVAILABLE IN 250 GPM AND 1000 L/min NFPA RATINGS.

THE COMPLETE PUMP MODEL NUMBER IS FORMED AS FOLLOWS:

* * * 25 * 23 * F

FOR EXAMPLE, A CBPM PUMP IS REQUIRED TO HAVE A 250 GPM RATING WITH A 2.33 GEAR RATIO.

THE PUMP MODEL NUMBER WOULD BE AS SHOWN:

* * * 25 * 23 * F

WARNING
EXCEEDING THESE LIMITS OR FAILURE TO FOLLOW THE RECOMMENDATIONS OUTLINED ON THIS DRAWING COULD DAMAGE THE PUMP AND RESULT IN PERSONAL INJURY.

MAXIMUM ALLOWABLE ENGINE SPEED: 4000 RPM

MAXIMUM ALLOWABLE HYDRODYNAMIC PRESSURE: 400 PSIG

MAXIMUM ALLOWABLE HYDROSTATIC PRESSURE: 500 PSIG

NOTES:
1. PRIMING SYSTEM, DISCHARGE & SUCTION VALVES, PRESSURE RELIEF VALVES & CONTROLLERS AND THERMAL RELIEF VALVES ARE AVAILABLE.
2. USE SAE 50 LONG-LIFE SYNTHETIC MANUAL TRANSMISSION FLUID MEETING ONE OR MORE OF THE FOLLOWING SPECIFICATIONS.
   - API MT-1
   - Eaton PS-164 Rev. 7
   - Mack TO-A Plus
   - Meritor 0-81
   - Navistar / International TMS 819
   - Rockwell (Eaton / Fuller CD-50 - PS-081)
   - ZF Freedom
3. FILL GEARBOX UNTIL OIL LEVEL INDICATOR WINDOW IS 1/2 TO 3/4 FULL. APPROXIMATE OIL CAPACITY IS 1.5 QUART (1.4 LITER)
4. ALL METRIC FASTENERS USED TO HAVE A MINIMUM PROPERTY CLASS 8.8.
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OPTIONS AND ACCESSORIES

OPTION DRAWING NUMBER
ESR PRIMING PUMP PL821
ESR PRIMING VALVE PL829
SPR PRIMING VALVE PL829
GEARBOX POSITIONS FSG-PL-01482, SHT 2
DISCHARGE POSITIONS FSG-PL-01482, SHT 2
IN GEARBOX ASSEMBLY FSG-PL-01481

GEAR RATIOS & PUMP MODELS

PUMP MODEL GEAR RATIO
CBPMT-37F 3.74
CBPMT-29F 2.91
CBPMT-26F 2.60
CBPMT-23F 2.33
CBPMT-19F 1.96
CBPMT-17F 1.71
CBPMT-15F 1.51
CBPMT-13F 1.40

PUMP WEIGHT (DRY):
IRON VERSION: 135 LBS [61 kg]
BRONZE VERSION: 138 LBS [63 kg]

MAXIMUM ENGINE RPM

WARNING
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MAXIMUM ALLOWABLE ENGINE SPEED: 4000 RPM

MAXIMUM ALLOWABLE HYDRODYNAMIC PRESSURE: 400 PSIG

MAXIMUM ALLOWABLE HYDROSTATIC PRESSURE: 500 PSIG

NOTE:
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   - Mack TO-A Plus
   - Meritor 0-81
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   - ZF Freedom
3. FILL GEARBOX UNTIL OIL LEVEL INDICATOR WINDOW IS 1/2 TO 3/4 FULL. APPROXIMATE OIL CAPACITY IS 1.5 QUART (1.4 LITER)
4. ALL METRIC FASTENERS USED TO HAVE A MINIMUM PROPERTY CLASS 8.8.
   ALL SAE FASTENERS USED TO HAVE A MINIMUM GRADE 5.

OPTIONS AND ACCESSORIES

OPTION DRAWING NUMBER
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ESR PRIMING VALVE PL829
SPR PRIMING VALVE PL829
GEARBOX POSITIONS FSG-PL-01482, SHT 2
DISCHARGE POSITIONS FSG-PL-01482, SHT 2
IN GEARBOX ASSEMBLY FSG-PL-01481

GEAR RATIOS & PUMP MODELS

PUMP MODEL GEAR RATIO
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CBPMT-29F 2.91
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