



A WILO COMPANY

MOTORPUMP™ — 2900 RPM 50 HERTZ, 2.00 X 1.25 FLG

322 JM

D322JM14-18

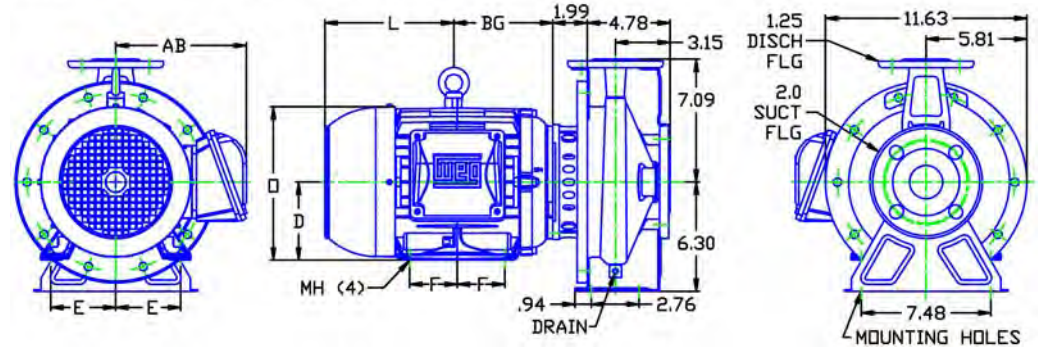
DRAWING DEPICTS 14-18JM 5HP TEFC MOTOR

MOTOR DIMENSIONS

NEMA PREMIUM EFFICIENT JM FRAME 3 PHASE 3500 RPM

| HP | Type | Frame | D | E | F | O | AB | BG | L | MH |
|-----|------|-------|------|------|------|-------|------|------|------|------|
| 5 | ODP | JM184 | 4.50 | 3.75 | 2.25 | 8.56 | 6.70 | 6.25 | 6.15 | 0.41 |
| 7.5 | ODP | JM213 | 5.25 | 4.25 | 2.75 | 10.14 | 7.97 | 7.25 | 6.60 | 0.41 |
| 5 | TEFC | JM184 | 4.50 | 3.75 | 2.75 | 9.34 | 7.57 | 5.51 | 7.64 | 0.41 |
| 7.5 | TEFC | JM215 | 5.25 | 4.25 | 3.50 | 10.37 | 8.19 | 6.77 | 9.16 | 0.41 |

Dimensions are the next larger 60Hz motor derated for 50HZ operation.



ALL DIMENSIONS IN INCHES.

DRAWING REPRESENTS APPROXIMATE PUMP DIMENSIONS. ATOCAD DRAWING TO SCALE AVAILABLE FROM FACTORY.

**PUMP TO BE
INSTALLED ONLY IN
THE HORIZONTAL
POSITION AS
SHOWN.**

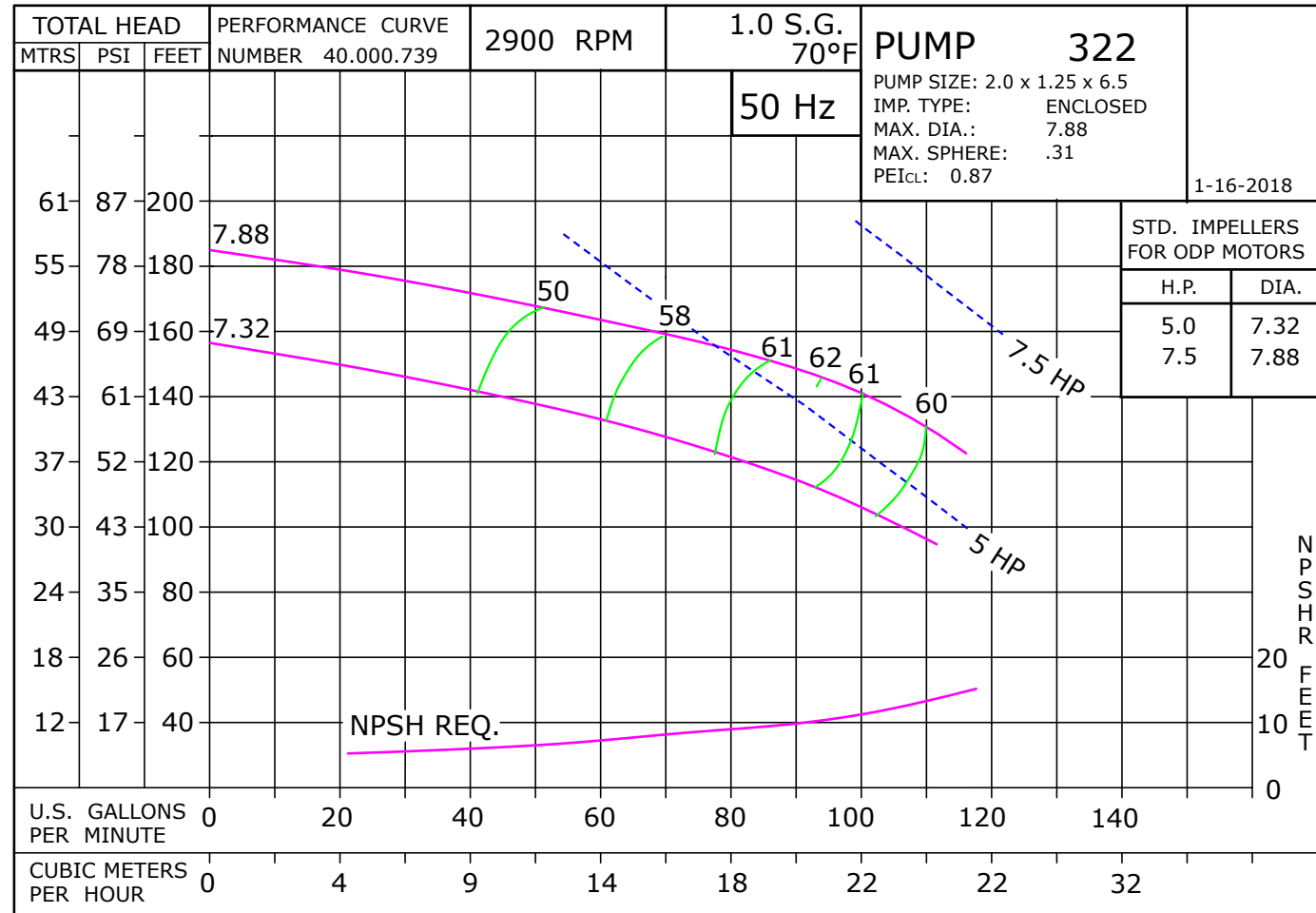


32205TE

D322JM21
3222900

322 JM

3222900JM
81.002.224 M19



50 Hertz Pump & Motor Data

A 3-phase 50 Hertz Motorpump™ can be obtained in several ways. The most common options are listed below:

1. Most 60 Hz pumps available from Scot Pump can be operated on a 3-phase 50 Hz 190/380V power. However, when operated on 50 Hz power, the speed is reduced by approximately 20%, and a significant reduction in performance is realized. The charts below indicate these reductions in performance.
2. Pumps will produce the performance indicated in the performance curves when operated on 50 Hz power. The motors for these selections can be obtained through *derated 60 Hz motors* and *wound 50 Hz motors* (see below).

Contact factory for 1 Phase applications.

Derated 60 Hz Motors

The most common practice and readily available method of obtaining a 50 Hz motor is by using the next larger 60 Hz motor and derating it to the desired horsepower on 50 Hz. We will require the country the motor is being exported to, frequency in hertz and specific voltage to ensure that a nameplate with applicable efficiency and country markings (if required) is supplied. In utilizing this practice, service factors may be derated to 1.0. Please contact the factory for approval of the rating for your specific application.

Wound 50 Hz Motors

Specially wound 50 Hz motors are available. These motors are not normally a stock item and require an extended lead time.

The impeller and horsepower combination sized (taking the reduction in speed into consideration) may not be suitable for operation on 60 Hz power. The increase in speed, performance and load may overload the system and the electric motors. **Pumps sized for 50 Hz operation SHOULD NOT be tested on 60 Hz.**

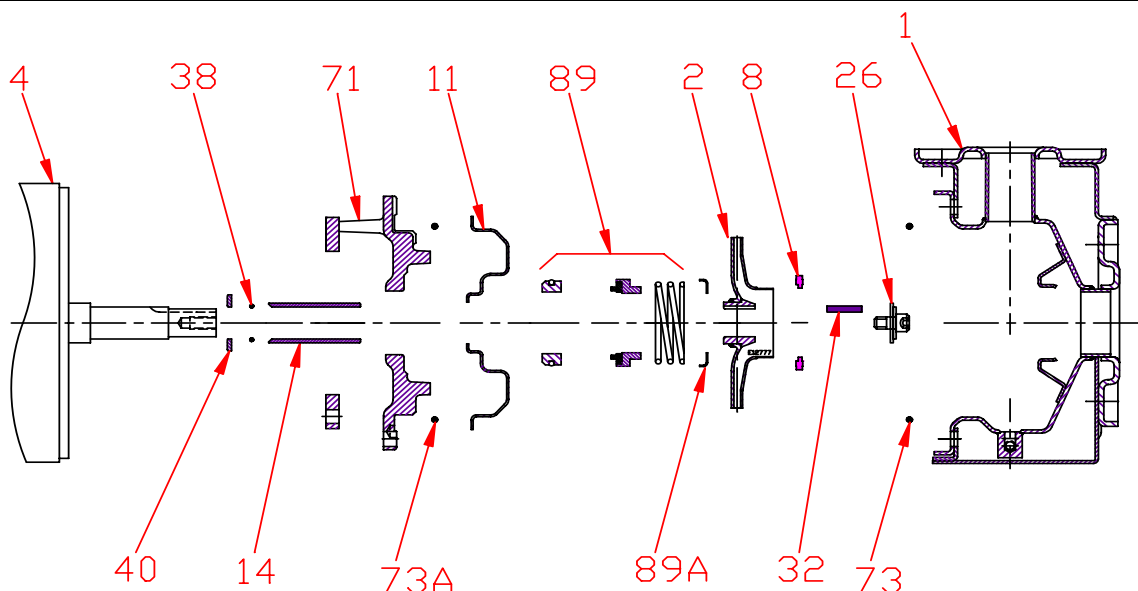
| 60 Hz Pump on 50 Hz Power | | |
|---------------------------|--------|--------|
| No Impeller Change | | |
| 50 Hz | 60 Hz | Factor |
| GPM = | GPM x | 0.829 |
| Head = | Head x | 0.687 |
| BHP = | HP x | 0.569 |

| To Size 60 Hz Pump Using 50 Hz Data, | | |
|--------------------------------------|--------|--|
| Obtain 60 Hz Data As Follows: | | |
| 60 Hz | 50 Hz | Factor |
| GPM = | GPM x | 1.2 |
| Head = | Head x | 1.45 |
| BHP = | HP = | $\frac{\text{GPM} \times \text{Head} \times \text{SG of}}{3960 \times \text{Eff}}$ |

| Change of Speed (RPM) | | |
|-----------------------|-------------|--|
| | How Varies: | Examples |
| GPM | Directly | Double RPM = (2)(RPM) = (2)(GPM) Triple RPM = (3)(RPM) = (3)(GPM) |
| Head | Square | Double RPM = (2)(RPM) = (2) ² = (2)(2) = (4)(Head) Triple RPM = (3)(RPM) = (3) ² = (3)(3) = (9)(Head) |
| BHP | Cube | Double RPM = (2)(RPM) = (2) ³ = (2)(2) (2) = (8)(BHP) Triple RPM = (3)(RPM) = (3) ³ = (3)(3)(3) = (27)(BHP) |

| Change of Impeller Diameter (Dia.) | | |
|------------------------------------|-------------|--|
| | How Varies: | Examples |
| GPM | Directly | Double Dia. = (2)(Dia.) = (2)(GPM) Triple Dia. = (3)(Dia.) = (3)(RPM) |
| Head | Square | Double Dia. = (2)(Dia.) = (2) ² = (2)(2) = (4)(Head) Triple Dia. = (3)(Dia.) = (3) ² = (3)(3) = (9)(Head) |
| BHP | Cube | Double Dia. = (2)(Dia.) = (2) ³ = (2)(2) (2) = (8)(BHP) Triple Dia. = (3)(Dia.) = (3) ³ = (3)(3)(3) = (27)(BHP) |

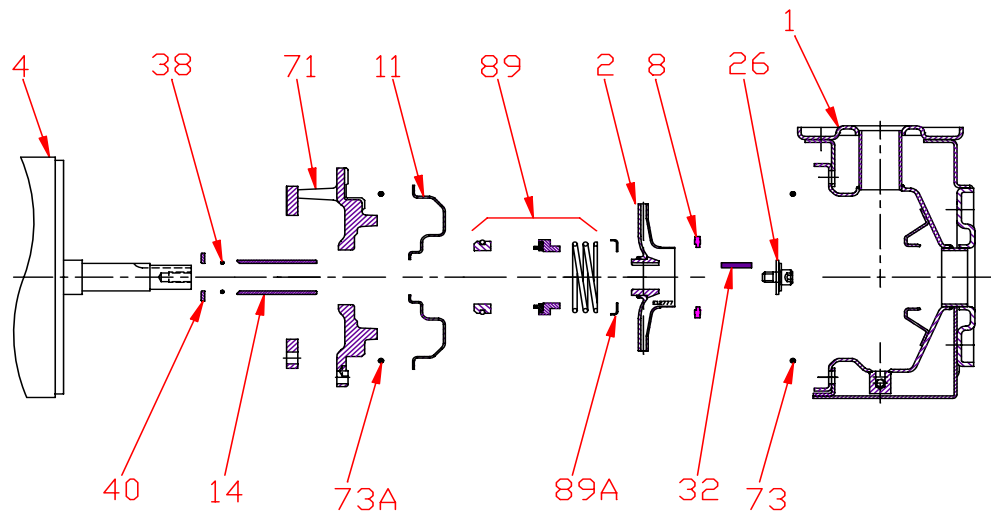
Pump 322 • 304SS • JM Frame • 2900 RPM



| KEY NO. | PART NAME | PUMP 322 |
|---------|---|---|
| 1 | CASE, 304SS, 2.0 x 1.25, FLG | 137.002.957 |
| 2 | IMPELLER, STAINLESS, ENCLOSED, 7/8" KEYED: 7.32" DIA 7.88" DIA | 137.002.916 137.002.917 |
| 4 | MOTOR, JM140/180 MOTOR, JM210 | See 60hz Chart See 60hz Chart |
| 8 | RING | 137.002.906 |
| 11 | COVER, 304SS | 137.002.919 |
| 14* | SHAFT SLEEVE, 304SS | 137.002.904 |
| 26* | IMPELLER RETAINER, 304SS | 118.000.111A |
| 32* | KEY, 303SS | 102.000.102 |
| 38* | O-RING, SHAFT, BUNA | 116.000.117 |
| 40* | FLINGER, 304SS | 104.000.165 |
| 71 | ADAPTER, IRON, JM140/180 ADAPTER, IRON, JM210 | 137.002.918 137.002.926 |
| 73* | GASKET, CASE, BUNA | 137.002.922 |
| 73A* | GASKET, COVER, BUNA | 137.003.013 |
| 89* | 1-1/4" SEALS TYPE 21, BN-CARB/CM TYPE 21, VN-CARB/CM TYPE 21, VN-CARB/SIL TYPE 21, VN-SIL/SIL TYPE 21, EPDM-CARB/SIL | 137.002.949 137.002.950 137.002.952 137.002.953 137.002.951 |
| 89A | SEAL RETAINER, STAINLESS | 137.002.948 |
| -- | REPAIR KITS: BN-CARB/CM SEAL VN-CARB/CM SEAL VN-CARB/SIL SEAL VN-SIL/SIL SEAL EPDM-CARB/SIL SEAL | 118.000.675 118.000.675A 118.000.675D 118.000.675B 118.000.675C |

* DENOTES COMPONENTS INCLUDED IN REPAIR KIT.

Pump 322 • 304SS • JM Frame • 2900 RPM



| CONSTRUCTION OPTIONS | | |
|----------------------|-------------------|----------------------------------|
| KEY | PART NAME | STANDARD FITTED |
| 1 | Case | 304SS |
| 2 | Impeller | 304SS |
| 8 | Impeller Ring | POLYPHENYLENE OXIDE 20% GLASS |
| 11 | Cover | 304SS |
| 14 | Sleeve | 304SS |
| 26 | Retainer Assembly | 304SS |
| 32 | Key | 303SS |
| 38 | O-ring, Shaft | BUNA |
| 40 | Flinger | 304SS |
| 71 | Motor Disc | Cast Iron |
| 73 | Gasket, Case | Buna |
| 73A | Gasket, Cover | Buna |
| 89 | Seal Assembly | BN-CARB/CM |
| 89A | Seal Retainer | 304SS |

E320JM

B18

C3222900JM