



A WILO COMPANY

# MOTORPUMP™ — 1450 RPM

Iron, 50 Hz, 5 X 3 X 8 ANSI FLG

# 104 JP

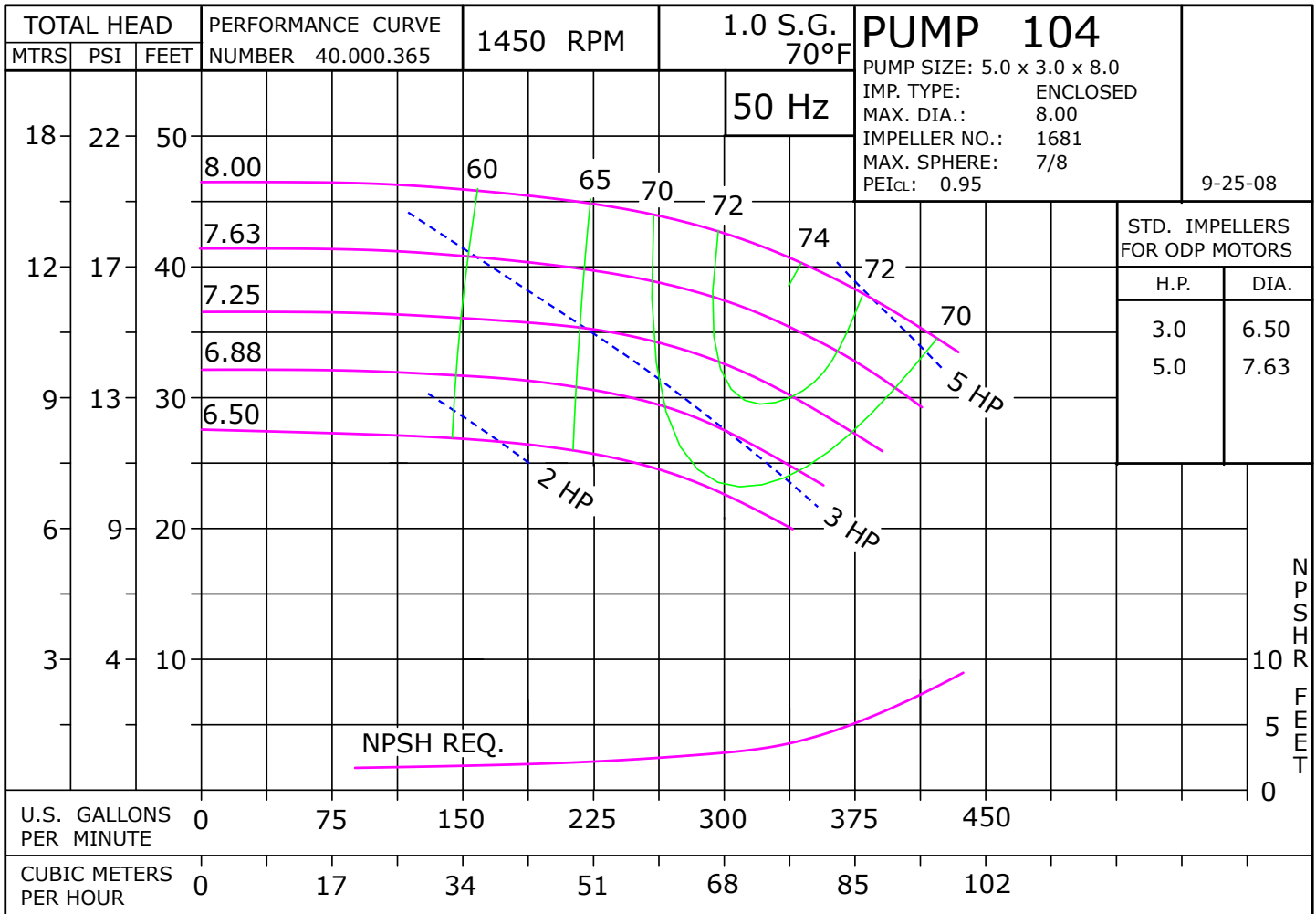
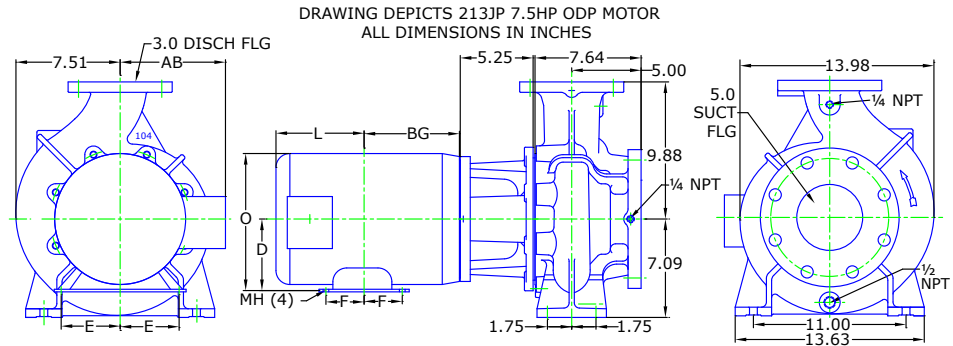


## MOTOR DIMENSIONS

### NEMA JP FRAME 3 PHASE 1450 RPM

HP	Type	Frame	D	E	F	O	AB	BG	L	MH
5	ODP	JP213	5.25	4.25	2.75	10.14	7.97	7.00	6.45	0.41
5	TEFC	JP213	5.25	4.25	2.75	10.41	8.67	6.00	8.41	0.41

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



# 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*.

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. Many High Efficient motors can be operated on 50 HZ power without a reduction in horsepower. The motor manufacturers 60 HZ nameplate will remain intact. An "Alternate Motor Rating" nameplate indicating the reduced horsepower, RPM, volts, amps, and service factor will be affixed to the pump. In utilizing this practice, service factors may be derated to 1.0. The standard voltage is 190/380V and has a ±10% voltage variation. In addition, 200/400V and 208/416V may be available. Please contact the factory for approval of the rating for your specific application.

## Wound 50 Hz Motors

Specially wound 50 Hz 220/380V six-lead Delta Wye motors are available. Most ratings offer a ±15% voltage variation. 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.**

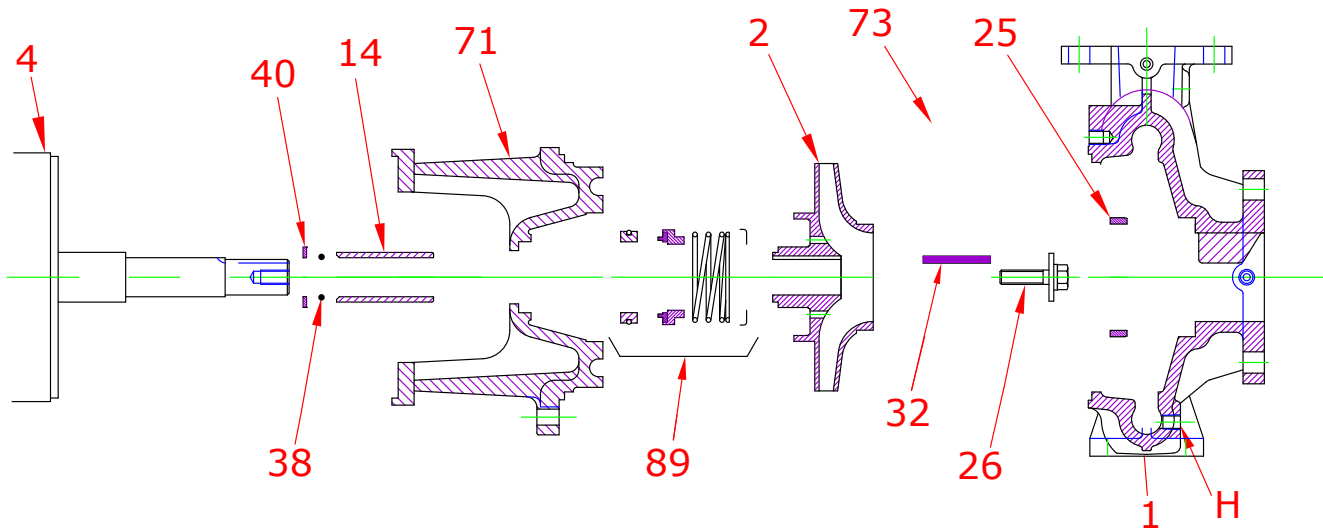
<b>60 Hz Pump on 50 Hz Power</b>		
<b>No Impeller Change</b>		
<b>50 Hz</b>	<b>60 Hz</b>	<b>Factor</b>
GPM =	GPM x	0.829
Head =	Head x	0.687
BHP =	HP x	0.569

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

<b>Change of Speed (RPM)</b>		
	<b>How Varies:</b>	<b>Examples</b>
GPM	Directly	Double RPM = (2)(RPM) = (2)(GPM) Triple RPM = (3)(RPM) = (3)(GPM)
Head	Square	Double RPM = (2)(RPM) = (2) <sup>2</sup> = (2)(2) = (4)(Head) Triple RPM = (3)(RPM) = (3) <sup>2</sup> = (3)(3) = (9)(Head)
BHP	Cube	Double RPM = (2)(RPM) = (2) <sup>3</sup> = (2)(2) (2) = (8)(BHP) Triple RPM = (3)(RPM) = (3) <sup>3</sup> = (3)(3)(3) = (27)(BHP)

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

**Parts**

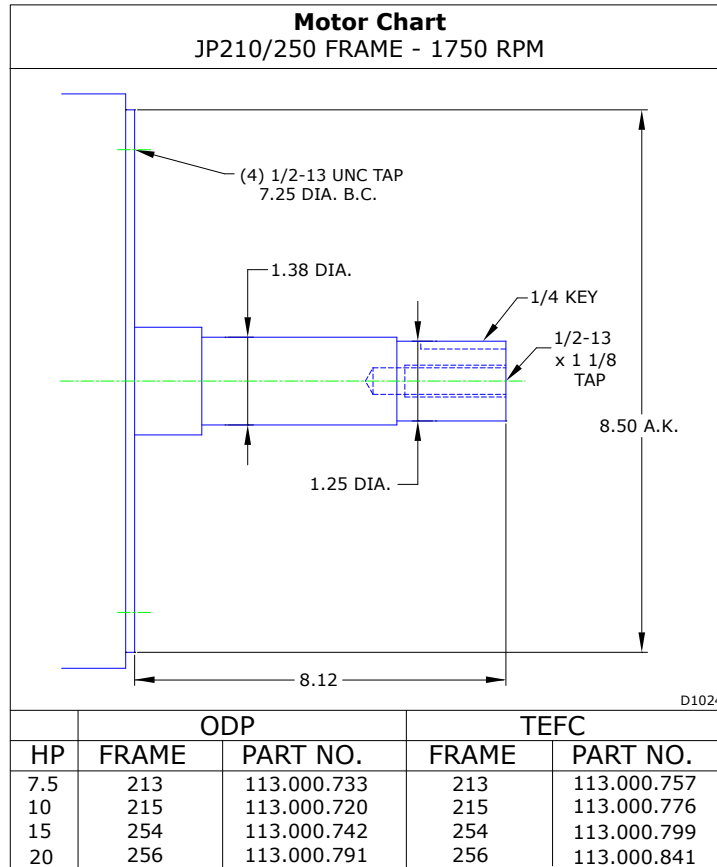


Key No.	Part Name	Part Number
1+	Case 104, Iron, 5.00 X 3.00 FLG Bronze Wear Ring and plugs	130.000.310X
2	Impeller 104, Iron, Tefcoted, Specify Dia., 8.25 Max 1-1/4" Key	137.000.148.TC
4	Motor chart, JP210/250	See Chart
14*	Shaft Sleeve, Bronze	110.000.398
	Shaft Sleeve, Stainless	110.000.360
25	Wear ring, Bronze	103.000.202
	Wear ring, Steel	103.000.185
26*	Impeller retaining assembly, Stainless	118.000.640
32*	Key, Stainless	102.000.282
38*	O-ring, Shaft, Buna	116.000.218
	O-ring, Shaft, Viton	116.000.218A
40*	Flinger, Stainless	104.000.200
71	Adapter, Iron, JP210/250 1-3/4" Seal, with Brass plug	132.000.374X
73*	Gasket, Case, Fiber	116.000.261
89*	Seal, 1-3/4", Type 21, BN-CARB/CM with retainer	101.000.196
	Seal, 1-3/4", Type 21, EPDM-CARB/SIL with retainer	101.000.196B
	Seal, 1-3/4", Type 21, EPDM-SIL/SIL with retainer	137.001.555
	Seal, 1-3/4", Type 21, VN-CARB/CM with retainer	101.000.216
	Seal, 1-3/4", Type 21, VN-CARB/SIL with retainer	101.000.221
	Seal, 1-3/4", Type 21, VN-SIL/SIL with retainer	101.000.231
KIT	Repair Kit, 1-3/4" BN-CARB/CM Seal, Brz sleeve, BN O-ring	118.000.412
	Repair Kit, 1-3/4" EPDM-CARB/SIL Seal, Brz sleeve, BN O-ring	118.000.412C
	Repair Kit, 1-3/4" VN-CARB/CM Seal, Stn sleeve, VN O-ring	118.000.412A
	Repair Kit, 1-3/4" VN-CARB/SIL Seal, Brz sleeve, BN O-ring	118.000.412B
	Repair Kit, 1-3/4" VN-SIL/SIL Seal, Stn sleeve, VN O-ring	118.000.412E
	Repair Kit, 1-3/4" EPDM-SIL/SIL Seal, Brz sleeve, BN O-ring	118.000.412F

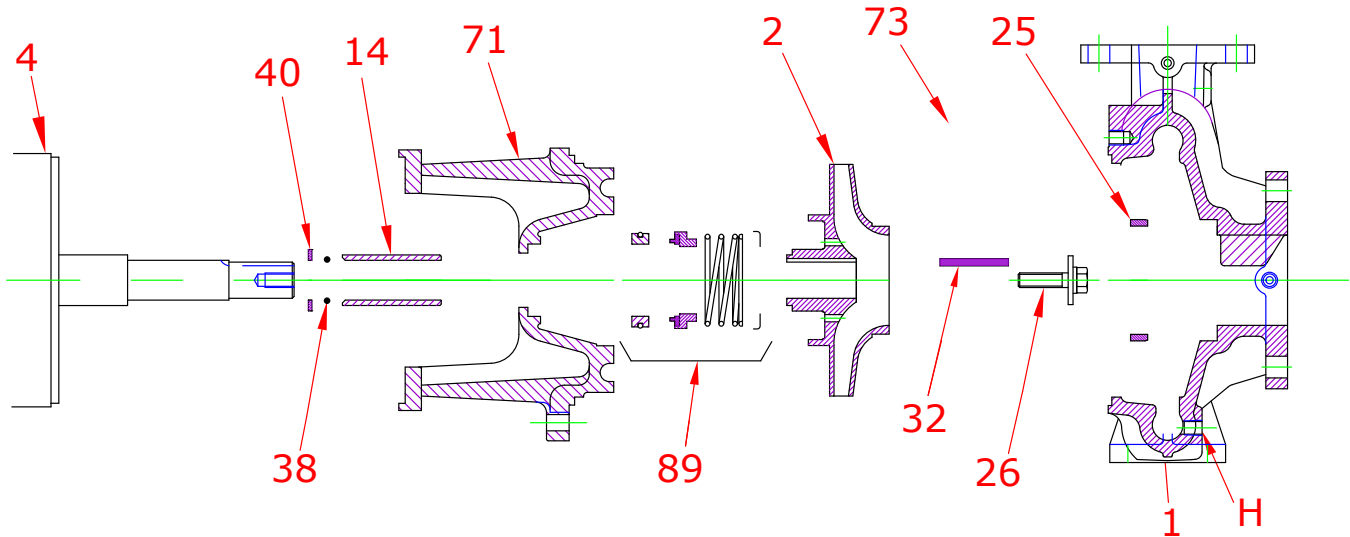
\* Denotes components included in repair kit.

+ Includes bronze wear ring. For steel wear ring, replace suffix "X" with "X1".

**Motor Charts**



**Construction Options**



Construction Options			
Key No.	Part Name	Standard Fitted	All Iron
1	Case	Iron	Iron
2	Impeller	Iron, Tefcoted	Iron, Tefcoted
14	Shaft Sleeve	Bronze	Stainless
25	Wear Ring, Case	Bronze	Steel
26	Impeller Retainer	Stainless	Stainless
32	Key	Stainless	Stainless
38	Shaft O-Ring	Buna	Buna
40	Flinger	Stainless	Stainless
71	Adapter	Iron	Iron
73	Gasket, Case	Fiber	Fiber
89	Mechanical Seal, Type 21 BN-CM	Standard	Standard
H	Plug, Drain	Brass	Plated Steel