



A WILO BRAND

# MOTORPUMP™ — 1450 RPM

Iron, 50 Hz, 4 X 2.5 X 8 ANSI FLG

# 103 JP



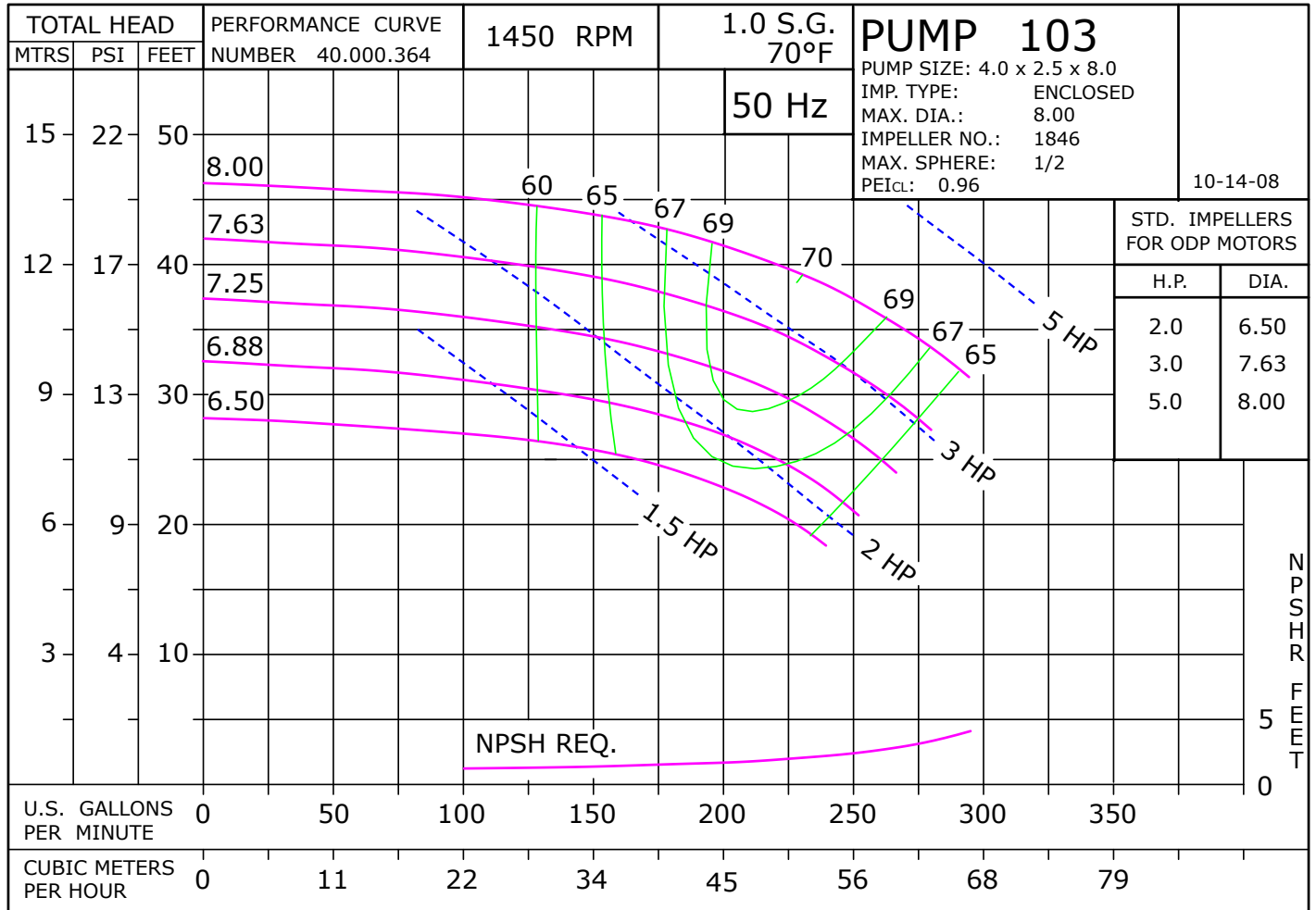
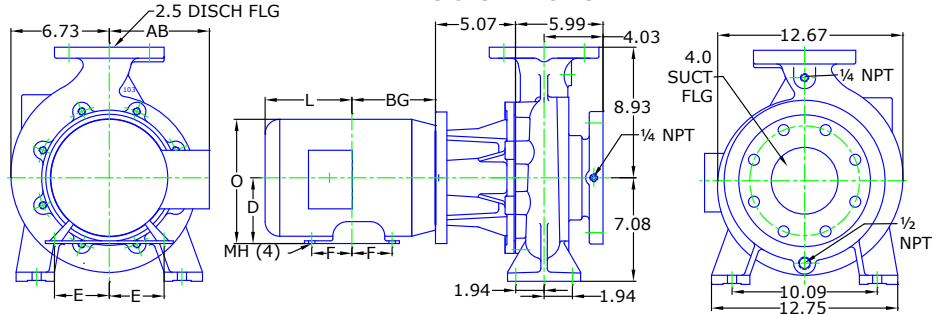
### MOTOR DIMENSIONS

NEMA JP FRAME 3 PHASE 1450 RPM

HP	Type	Frame	D	E	F	O	AB	BG	L	MH
2	ODP	JP182	4.50	3.75	2.25	8.56	6.70	5.75	6.65	0.41
3	ODP	JP184	4.50	3.75	2.75	8.56	6.70	6.25	7.34	0.41
5	ODP	JP213	5.25	4.25	2.75	10.14	7.97	7.00	6.45	0.41
2	TEFC	JP182	4.50	3.75	2.25	8.85	7.57	5.01	7.14	0.41
3	TEFC	JP184	4.50	3.75	2.75	8.85	7.57	5.51	7.64	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

DRAWING DEPICTS 184JP 5HP ODP MOTOR  
ALL DIMENSIONS IN INCHES



**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.

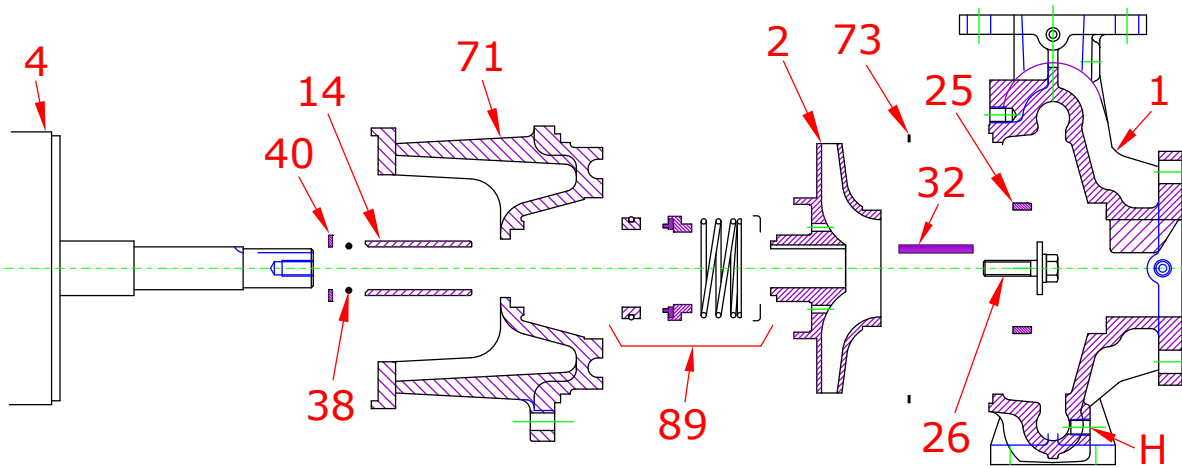
60Hz Pump on 50Hz No Impeller Change		
50Hz	60Hz	Factor
GPM =	GPM x	0.829
Head =	Head x	0.687
BHP =	HP x	0.569

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

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) <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)

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) <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**

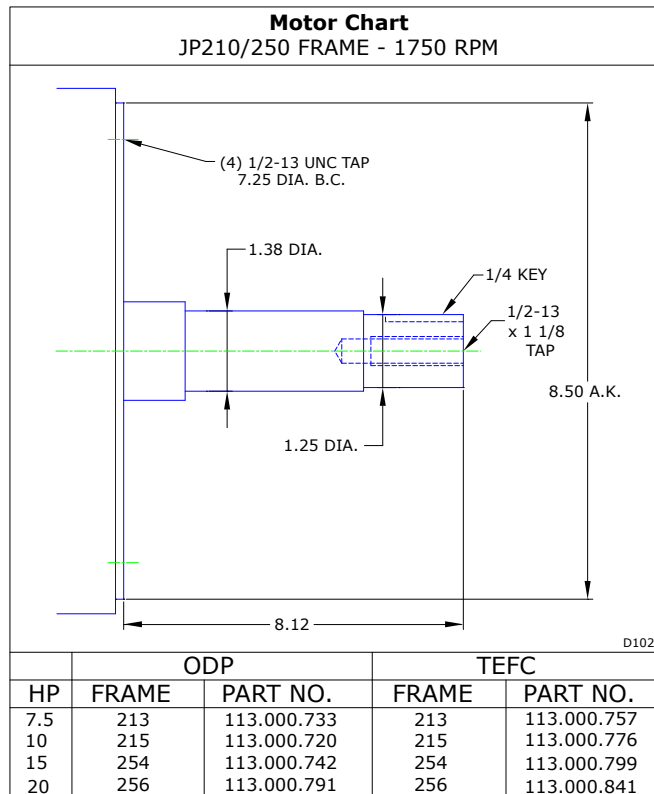
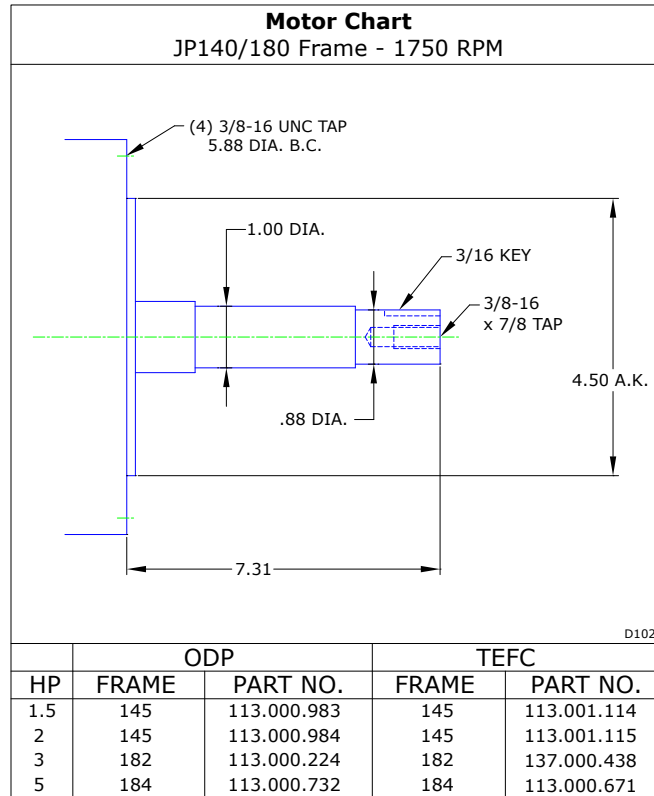


Key	Part Name	Part Number	
		3-5 HP	7.5 HP
1+	Case 103, Iron, 4 X 2.5 FLG Bronze Wear Ring & plugs	130.000.309X	130.000.309X
2	Impeller 103, Iron, Specify Dia., 8.00 Max	<b>7/8" Key</b>	<b>1 1/4" Key</b>
		137.002.241	137.002.242
4	Motor chart, JP140/180	See Chart	--
	Motor chart, JP210/250	--	See Chart
14*	Shaft Sleeve, Bronze	110.000.399	110.000.398
	Shaft Sleeve, Stainless	110.000.361	110.000.360
25	Wear Ring, Bronze	137.000.434	137.000.434
	Wear Ring, Steel	137.002.335	137.002.335
26*	Impeller retaining assembly, Stainless	118.000.635	118.000.640
32*	Key, Stainless	102.000.256	102.000.257
38*	O-ring, Shaft, Buna	116.000.117	116.000.218
	O-ring, Shaft, Viton	116.000.105	116.000.218A
40*	Flinger, Stainless	104.000.256	104.000.200
71	Adapter, Iron, JP140/180 1-1/2" Seal	132.000.391	--
	Adapter, Iron, JP210/250 1-3/4" Seal, with Brass plug	--	132.000.378X
73*	Gasket, Case, Fiber	116.000.276	116.000.276
89*	Seal, Type 21	<b>1 1/2"</b> Seal, Type 21, BN-CARB/CM	<b>1 3/4"</b> 101.000.168
		101.000.175B	101.000.196B
		101.000.204A	137.001.555
		101.000.191	101.000.216
		101.000.175	101.000.221
		101.000.204	101.000.231
89A*	Seal spring retainer, Stainless	104.000.174	Included w/seal
KIT	Repair Kit, BN-CARB/CM Seal, Brz sleeve, BN O-ring	118.000.413	118.000.410
	Repair Kit, EPDM-CARB/SIL Seal, Brz sleeve, BN O-ring	118.000.413D	118.000.410C
	Repair Kit, EPDM-SIL/SIL Seal, Brz sleeve, BN O-ring	118.000.413E	118.000.410E
	Repair Kit, VN-CARB/CM Seal, Brz sleeve, BN O-ring	118.000.413A	118.000.410A
	Repair Kit, VN-CARB/CM Seal, Stn sleeve, VN O-ring	118.000.413F	118.000.410G
	Repair Kit, VN-CARB/SIL Seal, Brz sleeve, BN O-ring	118.000.413B	118.000.410B
	Repair Kit, VN-SIL/SIL Seal, Stn sleeve, VN O-ring	118.000.413G	118.000.410D
	Repair Kit, VN-SILB/SIL Seal, Brz sleeve, BN O-ring	118.000.413C	118.000.410H

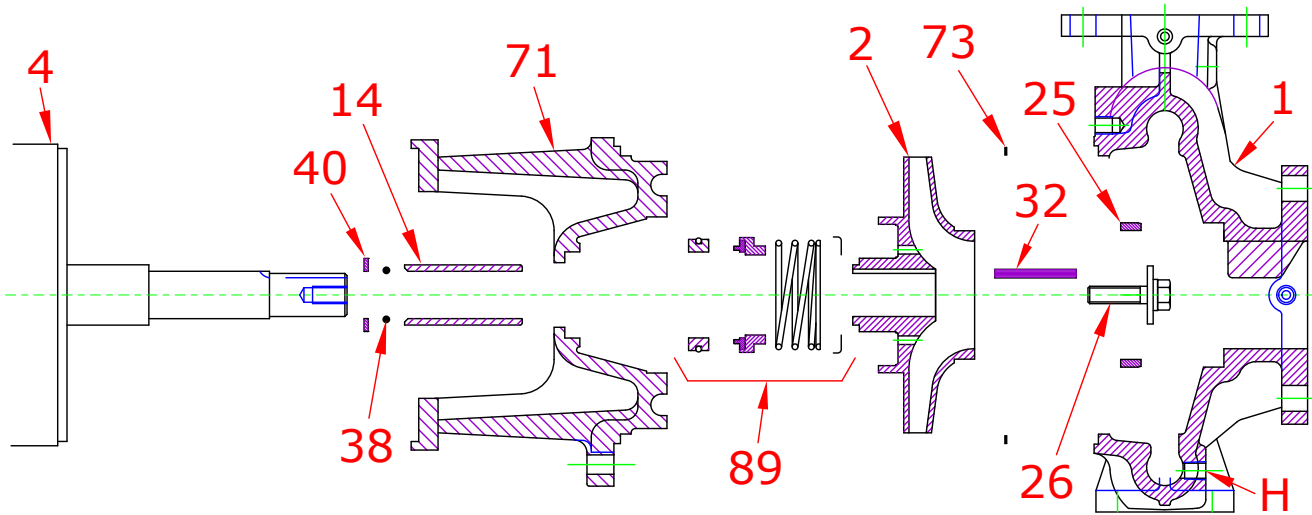
\* Denotes components included in repair kit.

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

**Motor Charts**



**Construction Options**



Construction Options			
Key	Part Name	Standard Fitted	All Iron
1	Case	Iron	Iron
2	Impeller	Iron	Iron
14	Shaft Sleeve	Bronze	Stainless
25	Wear Ring, Case	Bronze	Steel
26	Impeller Retaining Assembly	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
89A*	Seal Spring Retainer	Stainless	Stainless
H	Plug, Drain	Brass	Plated Steel