SCOT

MOTORPUMP™ — 2900 RPM

50 HERTZ, 2 X 2 X 5.5 NPT

17B
JM

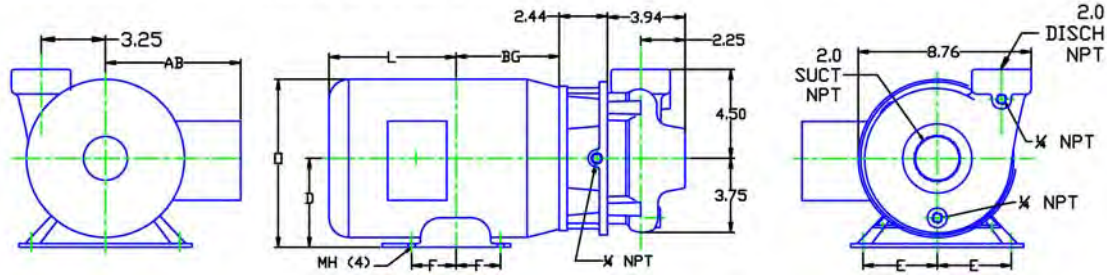
MOTOR DIMENSIONS

NEMA JM FRAME 3 PHASE 2900 RPM

HP	Type	Frame	D	E	F	O	AB	BG	L	MH
1.5	ODP	JM145	3.50	2.75	2.00	6.72	5.87	4.75	5.08	0.34
2	ODP	JM145	3.50	2.75	2.00	6.72	5.87	5.25	4.97	0.34
3	ODP	JM182	4.50	3.75	2.25	8.56	6.70	5.75	6.25	0.41
5	ODP	JM184	4.50	3.75	2.25	8.56	6.70	6.25	6.15	0.41
1.5	TEFC	JM145	3.50	2.75	2.50	7.00	6.25	5.06	6.34	0.34
2	TEFC	JM182	4.50	3.75	2.25	8.85	7.57	5.01	7.14	0.41
3/5	TEFC	JM184	4.50	3.75	2.25	9.34	7.57	5.00	7.76	0.41

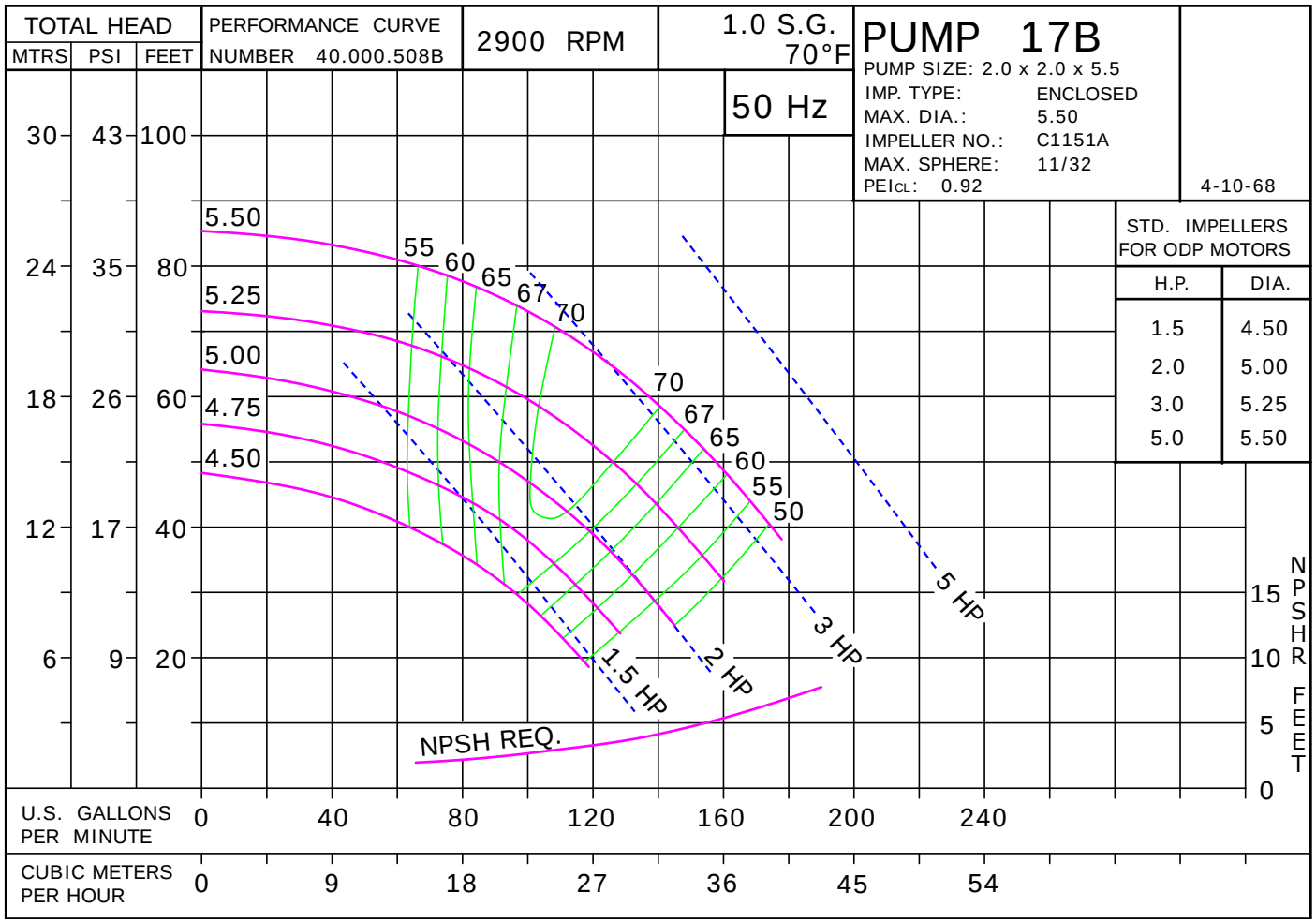
Dimensions are the next larger 60Hz motor derated for 50HZ operation.

D017BJM182 DRAWING DEPICTS JM182 ODP MOTOR



ALL DIMENSIONS IN INCHES.

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



017B5DP D017BJM182
0172900

17B
JM

017B2900JM
81.001.744 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 =	$\frac{\text{GPM x Head x SG of}}{\text{3960 x Eff}}$

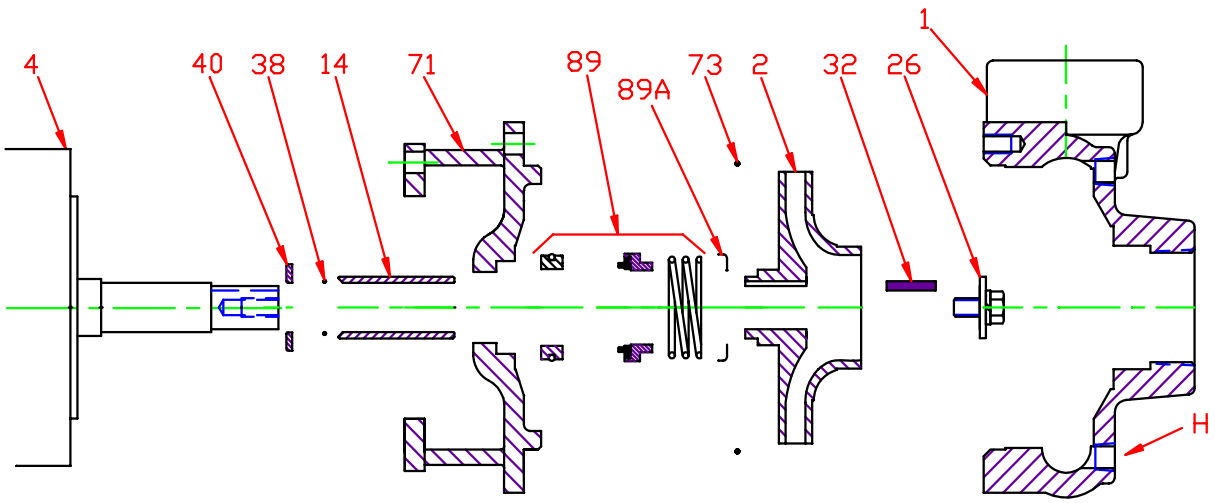
Change of Speed (RPM)

	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)

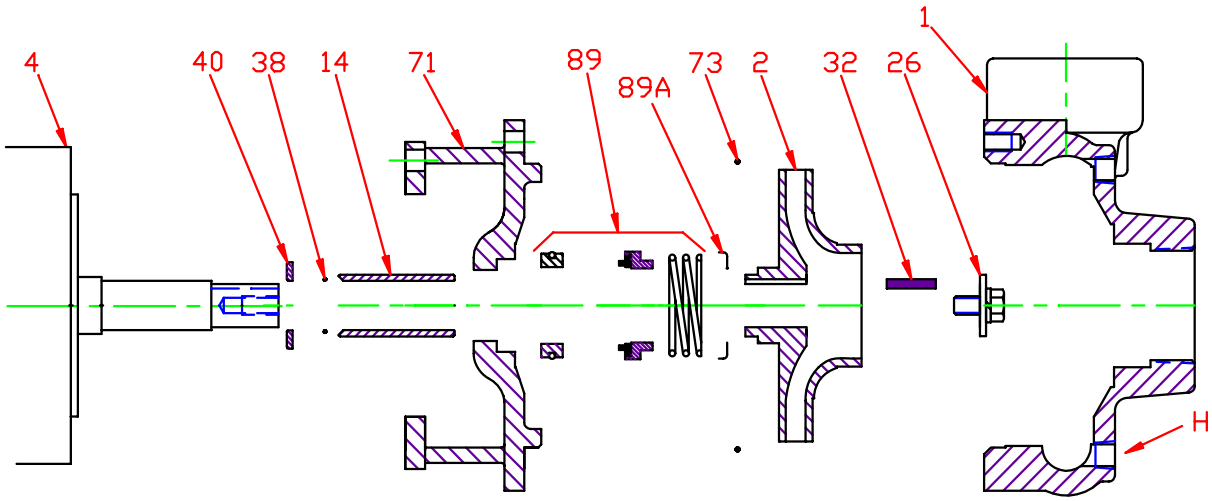
Pump 17B • Bronze • JM Frame • 2900 RPM



KEY NO.	PART NAME	PUMP NO. 17
1	CASE, BRONZE, 2 x 2 NPT	189.001.042X
2	IMPELLER, 7/8" KEYED, ENCLOSED, SPECIFY DIAMETER:	
	BRONZE	131.000.806
4	MOTOR, JM140/180	See 60Hz Chart
14*	SHAFT SLEEVE, BRONZE	110.000.178
	SHAFT SLEEVE, STAINLESS	110.000.192
26*	IMPELLER RETAINER, STAINLESS	118.000.111A
32*	KEY, STAINLESS	102.000.102
38*	O-RING, SHAFT, BUNA	116.000.117
	O-RING, SHAFT, VITON	116.000.105
40*	FLINGER, STAINLESS	104.000.165
71	ADAPTER, BRONZE, JM140/180	132.000.219X
73*	GASKET, CASE, BUNA	116.000.146
89*	1½" SEALS:	
	BN-CARB/CM	101.000.168
	VN-CARB/CM	101.000.191
	VN-CARB/SIL	101.000.175
	VN-SIL/SIL	101.000.204
	EPDM-CARB/SIL	101.000.175B
	EPDM-SIL/SIL	101.000.204A
89A*	SEAL RETAINER	104.000.175
--	º REPAIR KITS:	
	BN-CARB/CM SEAL	118.000.343
	VN-CARB/CM SEAL (S)	118.000.343A
	VN-CARB/SIL SEAL	118.000.343B
	VN-SIL/SIL SEAL (S)	118.000.343F
	EPDM-CARB/SIL SEAL	118.000.343D
	EPDM-SIL/SIL SEAL	118.000.343J

* DENOTES COMPONENTS INCLUDED IN REPAIR KIT.
º ALL REPAIR KITS INCLUDE THE BRONZE SHAFT SLEEVE EXCEPT THE (S) INDICATED, WHICH IS STAINLESS WITH VITON SHAFT O-RING.

Pump 17B • Bronze • JM Frame • 2900 RPM



CONSTRUCTION OPTIONS		
KEY	**PART NAME**	**ALL BRONZE**
1	Case	Bronze
2	Impeller	Bronze
14	Shaft Sleeve	Bronze
26	Imp. Retaining Ass'y	Stainless
32	Key	Stainless
38	Shaft O-Ring	BUNA
40	Flinger	Stainless
71	Adapter	Bronze
73	Gasket, Case	BUNA
89	Mechanical Seal, Type 21 BN-CM	Standard
89A	Seal Retainer	Stainless
H	Plug, Drain	Brass

E017JM