SCOT

MOTORPUMP™ — 2900 RPM

50 HERTZ, 2 X 1.5 X 5.63 NPT

19GN
JM

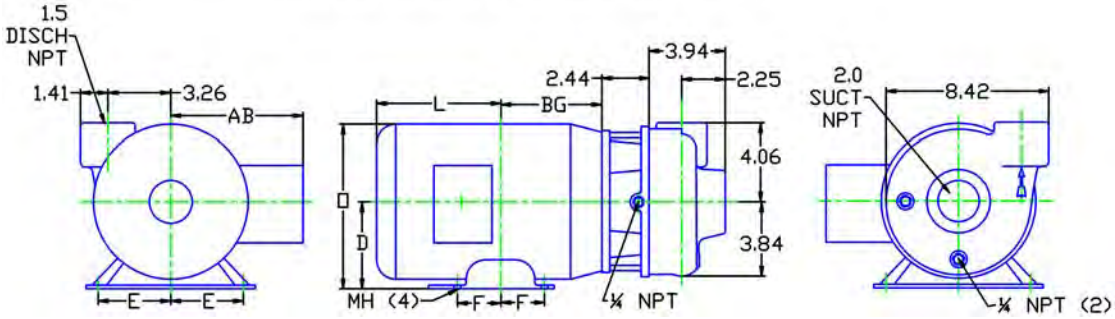
MOTOR DIMENSIONS

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
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	TEFC	JM184	4.50	3.75	2.25	9.34	7.57	5.00	7.76	0.41

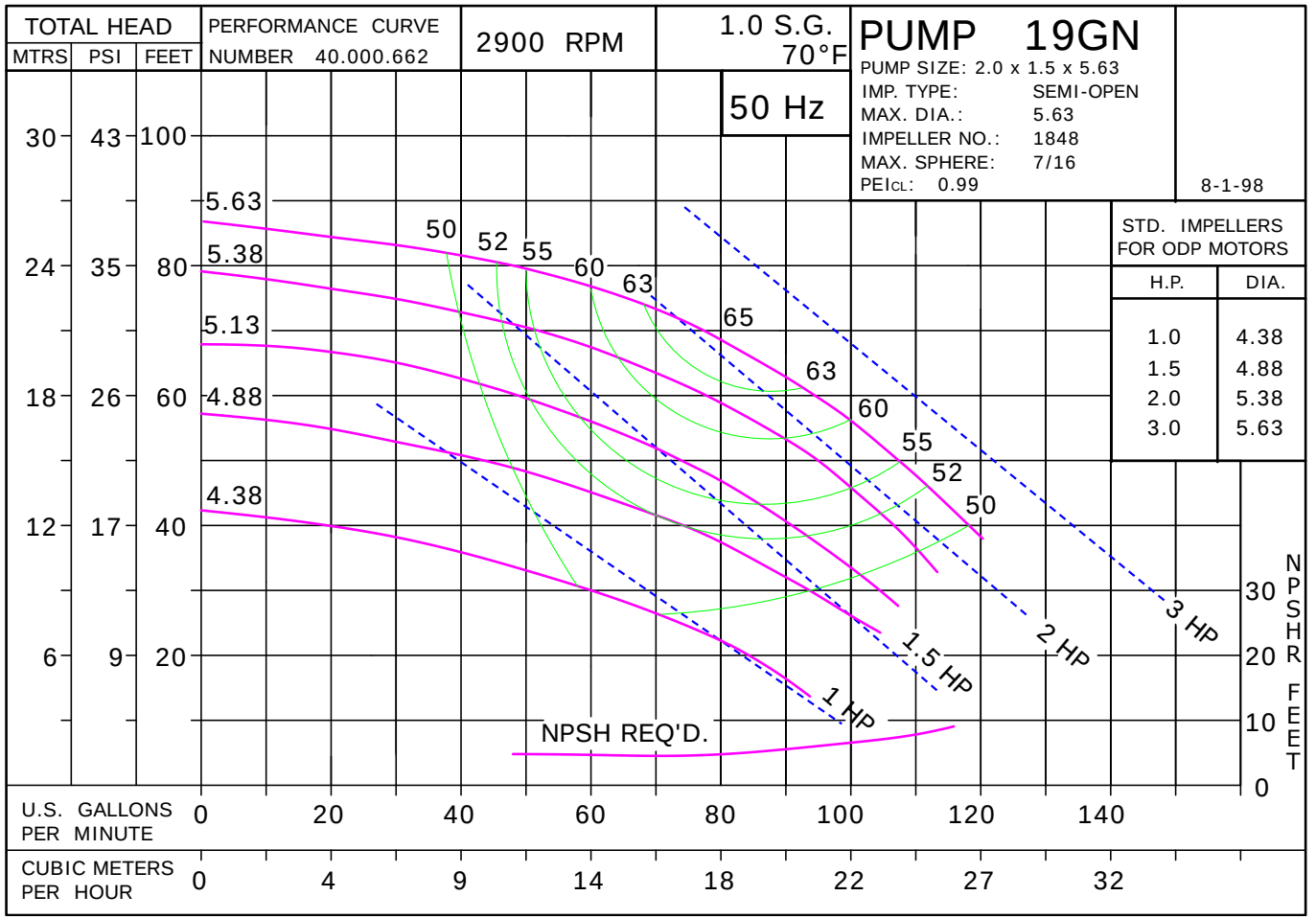
Dimensions are the next larger 60Hz motor derated for 50HZ operation.

D019GNJM182 DRAWING DEPICTS 182JM 5.0HP ODP MOTOR



ALL DIMENSIONS IN INCHES.

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



019G03DP D019GNS182
019N2900

19GN
JM

019N2900JM
81.001.546 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 =	$\frac{\text{GPM x Head x SG of}}{\text{3960 x Eff}}$

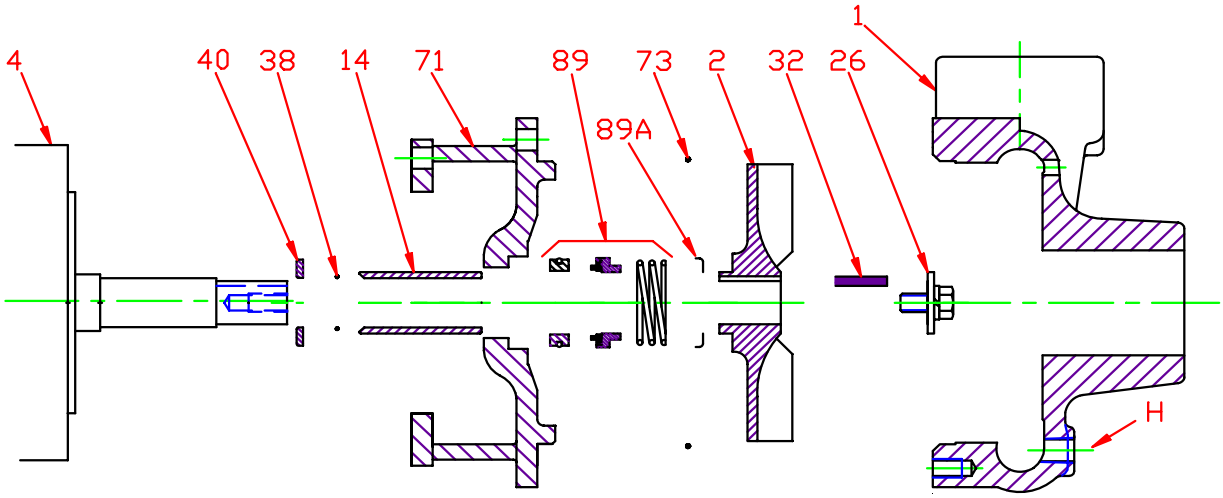
Change of Speed (RPM)

	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)

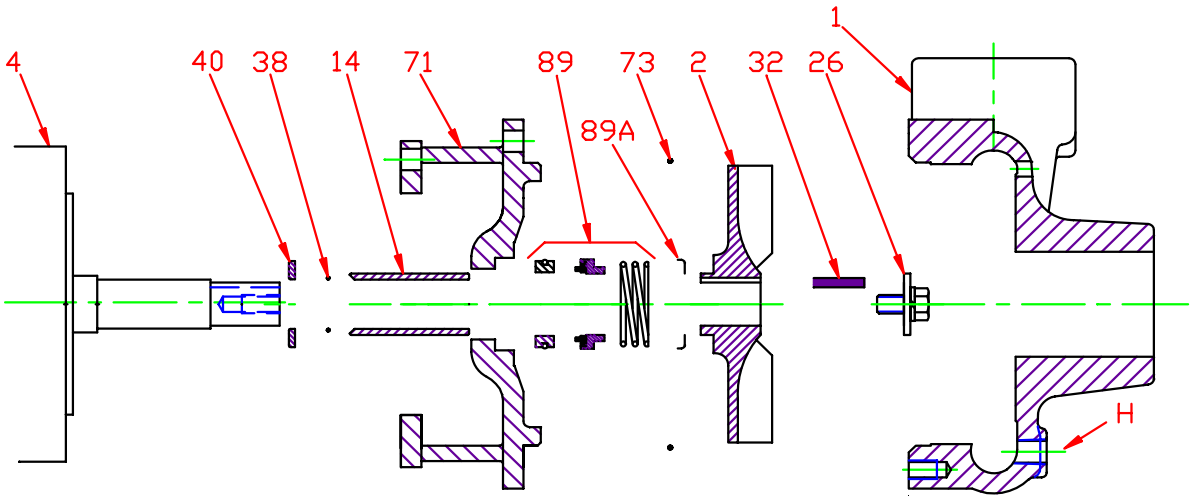
Pump 19GN • Iron • JM Frame • 2900 RPM



KEY NO.	PART NAME	PUMP NO. 19GN
1	CASE, IRON, 2 x 1.5 NPT	130.000.344X
2	IMPELLER, 7/8" KEYED, SEMI-OPEN, SPECIFY DIAMETER:	
	IRON	131.000.822
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, IRON, JM140/180	132.000.194X
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/CM SEAL	118.000.343M
	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 19GN • Iron • JM Frame • 2900 RPM



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

E017JM