SCOT
ARDOX

MOTORPUMP™ — 2900 RPM
50 HERTZ, 1 X .75 X 4.75 NPT

13S
J56

MOTOR DIMENSIONS
NEMA J56 FRAME 2900 RPM

HP	TEFC		
	3 PHASE		
	L	O	AB
.33	9.43	7.04	5.43
.50	9.43	7.04	5.43
.75	9.43	7.04	5.43
1	9.43	7.04	5.43

D013J563PH   DRAWING DEPICTS 56J 3PHASE TEFC MOTOR

1.00 DISCH NPT
AB
¼ NPT
4.81
2.19
4.75
3.69
2.88
TEFC
L
4.19
1.25 SUCT NPT
7.88
3.19
¼ NPT
¼ NPT (2)

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

TOTAL HEAD			PERFORMANCE CURVE	2900 RPM	1.0 S.G. 70°F	PUMP 13
MTRS	PSI	FEET	NUMBER 40.000.153			

50 Hz

PUMP SIZE: 1.25 x 1.0 x 5.0
IMP. TYPE: SEMI—OPEN
MAX. DIA.: 4.75
IMPELLER NO.: A1010
MAX. SPHERE: 1/2

7-13-77

STD. IMPELLERS FOR ODP MOTORS	
H.P.	DIA.
1/3	3.38
1/2	3.75
3/4	4.50
1.0	4.75

Performance curve values (TOTAL HEAD): MTRS 30 24 18 12 6 / PSI 43 35 26 17 9 / FEET 100 80 60 40 20

Impeller diameter curves: 4.75, 4.50, 4.25, 4.00, 3.75, 3.38, 3.12

Efficiency lines: 40 45 50 50 45 42 40

HP curves: 1/4 HP, 1/3 HP, 1/2 HP, 3/4 HP, 1 HP

NPSH REQ.

NPSH FEET: 15 10 5 0

U.S. GALLONS PER MINUTE	0	10	20	30	40	50
LITERS PER MINUTE	0	38	76	114	152	190

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013S2900J56
81.001.788   J12

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. 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, most service factors are 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**.

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 =	GPM x Head x SG of 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)

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Pump 13S • Stainless Steel • J56 Frame • 2900 RPM
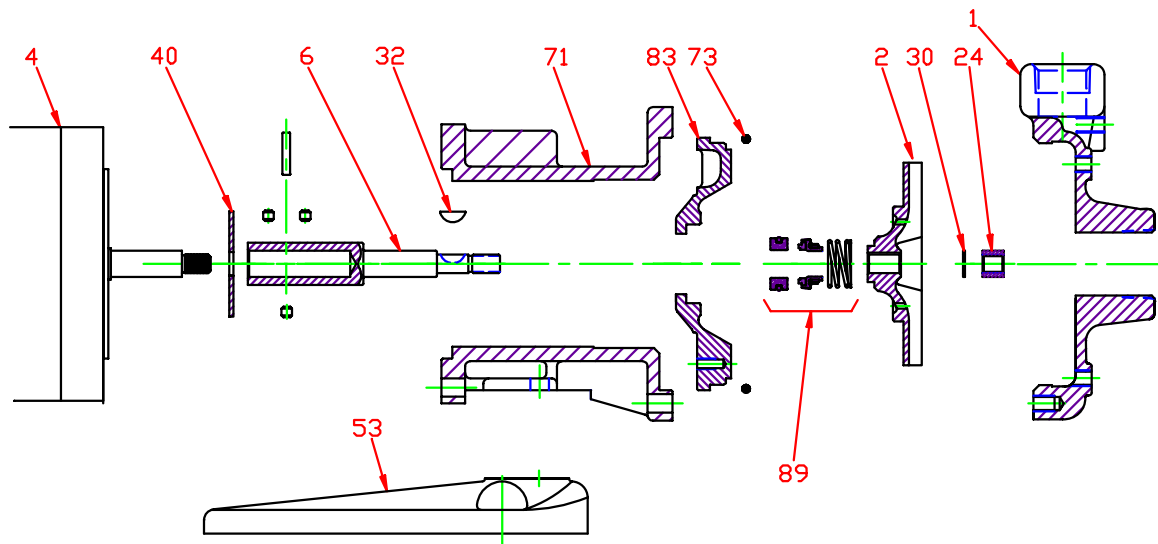
| KEY NO.	PART NAME	PUMP 13S	
1	CASE, 316SS, 1 x .75 NPT	130.000.212X	
2	IMPELLER, 7/16" KEYED, SEMI-OPEN, SPECIFY DIAMETER:		
	STAINLESS	137.000.105	
4	MOTOR:		
	J56, 3.5" RIGID BASE	See 60HZ Chart	
6*†	STUB SHAFT, 303SS	135.000.197X	
24*+	NUT, 303SS	137.001.349	
30*+	LOCKWASHER, 303SS	104.000.129	
32*	KEY, 316SS	102.000.101A	
40*	FLINGER, NEOPRENE	104.000.171	
53	BASE, IRON	110.000.121	
71	ADAPTER, IRON	132.000.120	
73*	GASKET, CASE, VITON	116.000.150	
83	BACKPLATE, 316SS	132.000.231	
89*	5/8" SEAL, VN-SIL/SIL	101.000.239A	
--	REPAIR KITS:	3 PHASE:	1 PHASE:
	VN-SIL/SIL SEAL	118.000.538C.2	118.000.538C.1

* DENOTES COMPONENTS INCLUDED IN REPAIR KIT.
+ NOT REQUIRED ON 1/3 TO 1-1/2 HP 1 PHASE MOTORS.
† INCLUDES PIN & SET SCREWS

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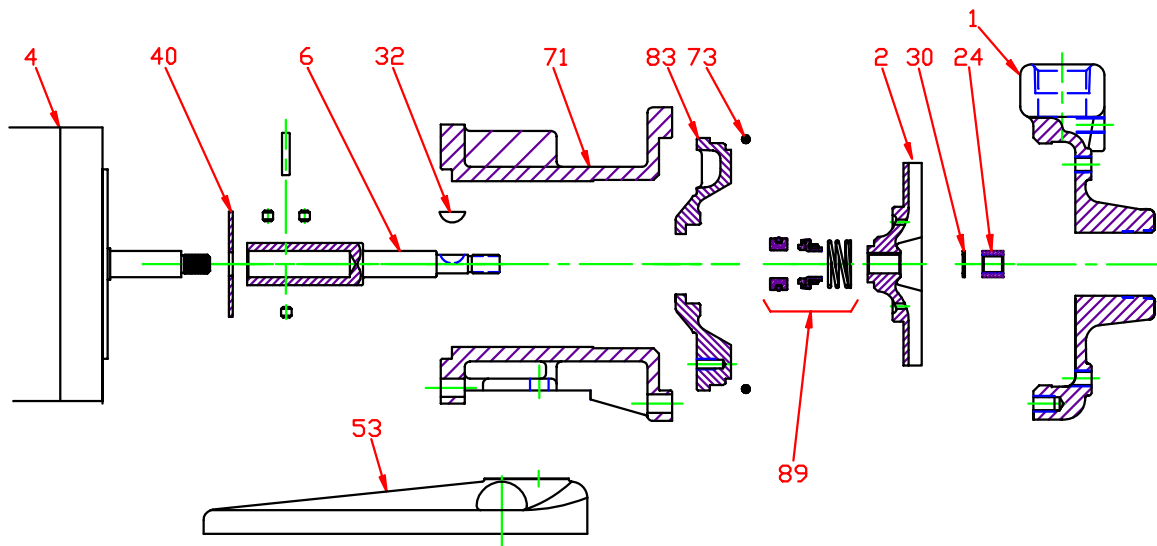
CONSTRUCTION OPTIONS		
KEY NO.	**PART NAME**	**STANDARD FITTED**
1	CASE	316SS
2	IMPELLER	316SS
6	STUB SHAFT	303SS
24	NUT	303SS
30	LOCKWASHER	303SS
32	KEY	316SS
40	FLINGER	NEOPRENE
53	BASE	IRON
71	ADAPTER	IRON
73	GASKET, CASE	VITON
83	BACKPLATE	316SS
89	SEAL ASSEMBLY	VN-SIL/SIL

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