

## CLARK SOLUTIONS

### 53/55 Series Rotary Gear Pump

Pressure to 200 PSI, Flow to 51.4 GPM, Drive Speed to 1800 RPM

#### DESCRIPTION

Series 53/55 pumps operate quietly at nominal motor speeds and discharge large volumes of liquid at medium pressures. Typical applications include hydraulic power for positioning devices, lifts, machine actuation, liquid pressurization for fuel burners and blenders as well as general transfer in all industries.

The pumps are available in cast iron (standard) and ductile iron. They are designed to operate at speeds to 1725 RPM, pressures to 200 PSI, and flow rates to 51.4 GPM. The standard seal is a mechanical self adjusting seal with Buna-N elastomer. Lubrication of the anti-friction bearings is accomplished by the circulation of the pumped liquid. All models are available with foot or flange mounting.

These pumps are self-priming and uni-directional. The machining of the gears, shafts and housing faces are held to exacting tolerances (within 0.0005") resulting in a pump with better lift, reduced slippage and longer service life. Standard pumps operate to 250°F and, with modifications, to 500°F.

Helical gears provide very smooth and quiet operation at direct motor speeds in hydraulic, lubrication and transfer applications in almost every industry classification.

#### SPECIFICATIONS

##### GENERAL

Design: Drive speeds to 1725 RPM; discharge pressures to 200 PSI; flow rates to 51.4 GPM; foot or flange mounted

Material: Cast Iron casings with precision machined, heat treated gears and case hardened shafts. Pumps are also available in Ductile Iron.

Gears: Helical gears

Bearings: Ball bearings

Seal: Self adjusting mechanical seal with Buna-N elastomer. Also available with compression packing. Mechanical seal available with different elastomers for pumping different types of liquids.

Lubrication: Self-lubricating using the pumped liquid. Also available for handling non-lubricating liquids.

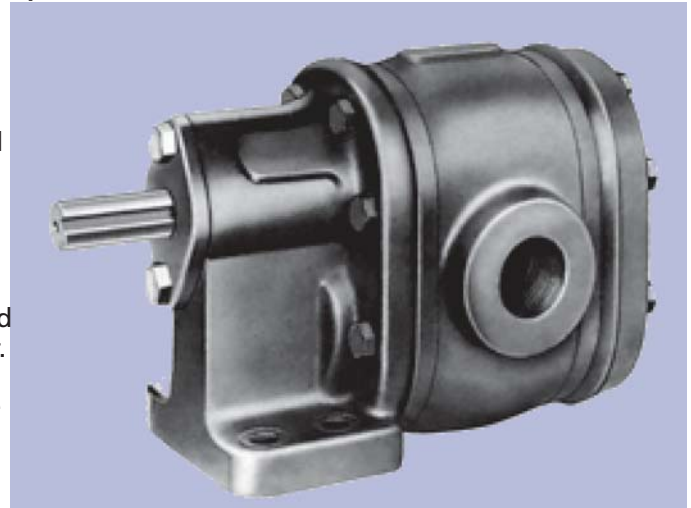
Rotation: Clockwise or counter-clockwise rotation. Specify at time of order.

Liquid Viscosities: 100 SSU to 3,000 SSU. Clean liquids having good lubricating quality. Adaptable for handling liquids of higher or lower viscosities.

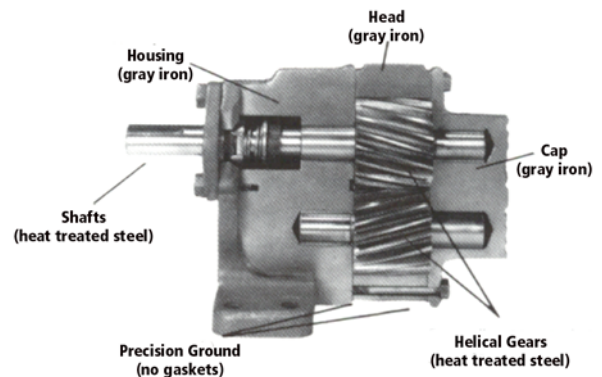
Suction Lift: Up to 28" Hg / 31 feet depending on the type of liquid being pumped.

Drive Options: A-Drive (pump connected to C-face motor with adaptor bracket and coupling); D-Drive (pump coupled to motor mounted on base plate); E-Drive (pump direct coupled to end bell of a foot mounted motor); B-Drive (pump and motor connected by V-belt and pulleys mounted on baseplate).

Accessories: Repair Kits, Gear Sets, Bearing Kits, and Seal Kits.



Foot Mounted Pump



#### FEATURES

##### • PRECISION GROUND JOINTS

**NO GASKETS**- Perhaps the biggest advantage to these pumps. As gaskets are not used, original tolerances are maintained for consistent performance and the time once lost in halting operations to replace a worn gasket is saved.

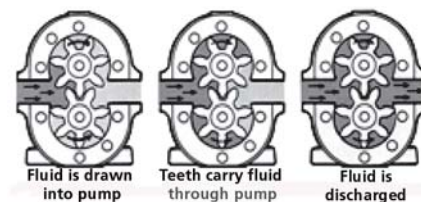
##### • BEARINGS

Anti-friction bearings minimize friction and provide higher load ratings for medium to high pressure service. Anti-friction bearings are replaceable.

##### • SEALS

Compression packing provides an ample safeguard against liquid leakage and the entrance of air.

#### PRINCIPLE OF OPERATION



## PUMP DIMENSIONS (INCHES)

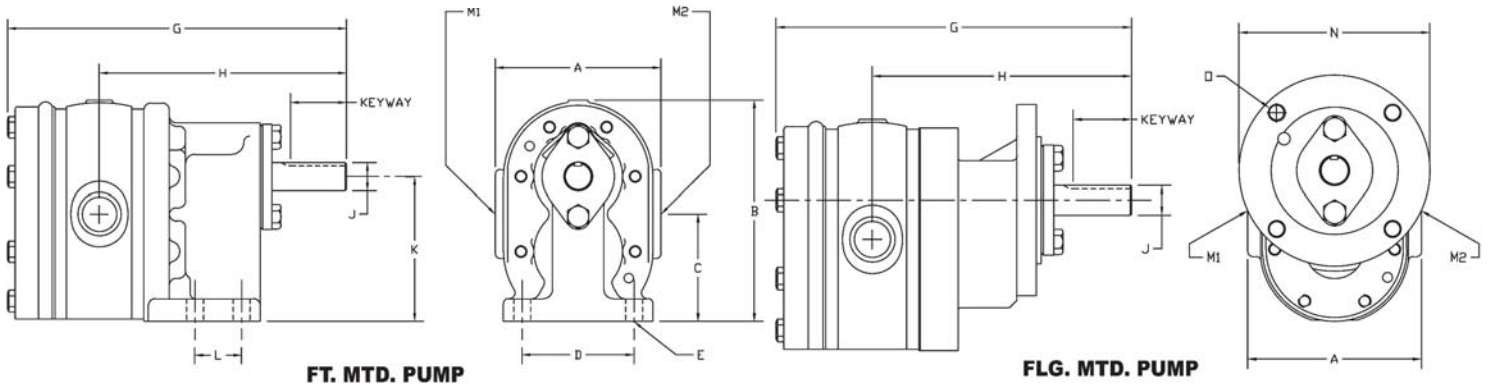


Table 1

Model	A	B	C	D	E	G	H	J	K	L	M1	M2	N	O	Keyway
53	4.52	6.03	2.88	3.00	29/64	9.13	6.63	0.75	3.88	1.25	1	3/4	4 7/8	3/8-16	3/16 x 3/32
55	5.00	6.03	2.88	3.00	29/64	10.13	7.13	0.75	3.88	1.25	1 1/4	1	4 7/8	3/8-16	3/16 x 3/32

## OPERATING CHARACTERISTICS

Table 2

Model	Gallons per Revolution	Slip GPM/PSI	Drive Speed RPM	0 PSI		50 PSI		75 PSI		100 PSI		200 PSI	
				GPM	HP	GPM	HP	GPM	HP	GPM	HP	GPM	HP
53	0.01347	0.0090	860	11.6	0.2	11.1	0.5	10.9	0.7	10.7	0.2	9.8	1.6
			1140	15.4	0.3	14.9	0.8	14.7	1.0	14.5	1.2	13.6	2.2
			1725	23.2	0.8	22.7	1.4	22.5	1.8	22.3	2.1	21.4	3.5
55	0.02984	0.0200	860	25.6	0.3	24.6	1.0	24.1	1.4	23.6	1.8	21.6	3.5
			1140	35.0	0.5	34.0	1.5	33.5	2.0	33.0	2.6	31.0	4.7
			1725	51.4	1.3	50.4	2.6	49.9	3.4	49.4	4.2	47.4	7.5

Delivery and horsepower are based on liquid viscosity of 100 SSU at speed and pressures shown.

## FLOW CURVES

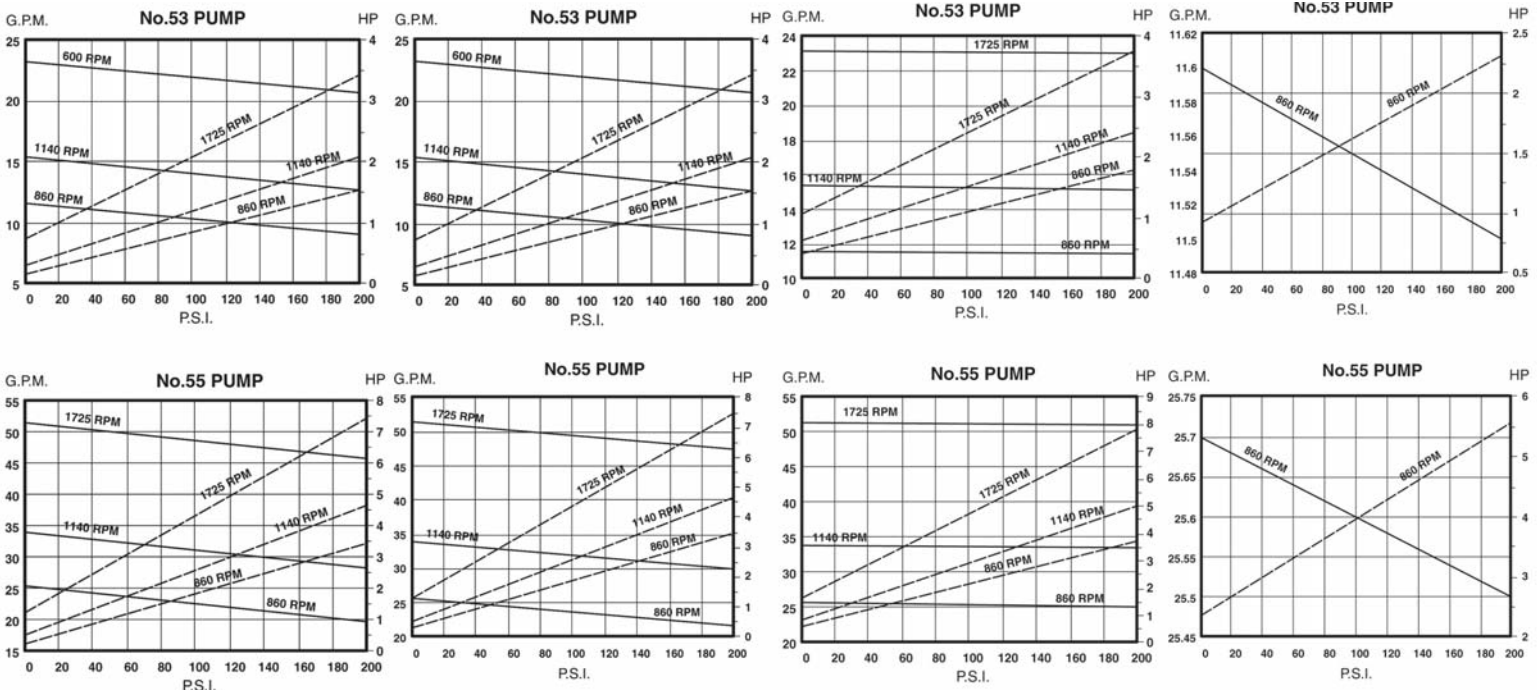
SOLID LINE = GPM BROKEN LINE = HP

70 SSU LIQUID

100 SSU LIQUID

1,000 SSU LIQUID

3,000 SSU LIQUID



## PUMP DIMENSIONS (INCHES) CLOSE COUPLED MOTOR (E-DRIVE)

53/55-Series pumps are available direct coupled to the end bell of a foot mounted motor. This assembly, referred to as an E-Drive, ensures accurate alignment and requires less space than a pump connected to the C-Face of a motor. They are available with motor speeds of 860, 1140 & 1725 RPM.

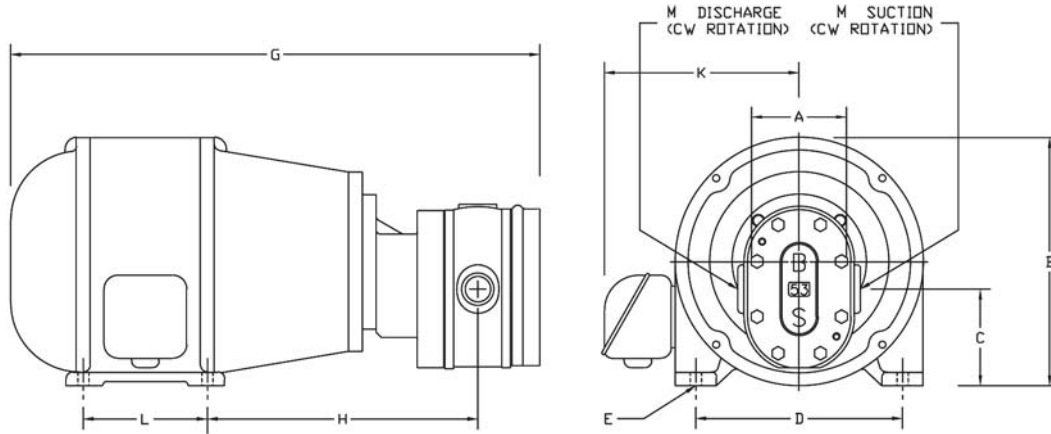


Table 3

Model	Motor Frame	A	B	C	D	E	G	H	K	L	M1	M2
53E	182	4.44	9.00	3.50	7.50	0.41	18.31	8.94	7.06	4.50	3/4	1
	184	4.44	9.00	3.50	7.50	0.41	19.31	8.94	7.06	5.50	3/4	1
	213	4.44	10.38	4.25	8.50	0.41	20.88	9.75	7.94	5.50	3/4	1
	215	4.44	10.38	4.25	8.50	0.41	21.38	9.75	7.94	7.00	3/4	1
	254U	4.44	12.38	5.25	10.00	0.41	23.56	11.93	9.81	8.25	1	1 1/4
55E	182	5.00	9.00	3.50	7.50	0.41	19.68	10.82	7.06	4.50	1	1 1/4
	184	5.00	9.00	3.50	7.50	0.41	20.68	10.82	7.06	5.50	1	1 1/4
	213	5.00	10.38	4.25	8.50	0.41	22.25	11.63	7.94	5.50	1	1 1/4
	215	5.00	10.38	4.25	8.50	0.41	22.75	11.63	7.94	7.70	1	1 1/4
	254U	5.00	12.38	5.25	10.00	0.41	24.93	13.81	9.81	8.25	1	1 1/4

## PUMP DIMENSIONS (INCHES) DIRECT COUPLED TO STANDARD C-FACE MOTOR (A-DRIVE)

53/55 Series pumps are available direct coupled to a NEMA C-Face foot mounted motor. This assembly, referred to as an A-Drive, ensures accurate alignment and requires less space and is less costly than a pump and motor mounted on a baseplate. Available motor speeds are 860, 1140 & 1725 RPM.

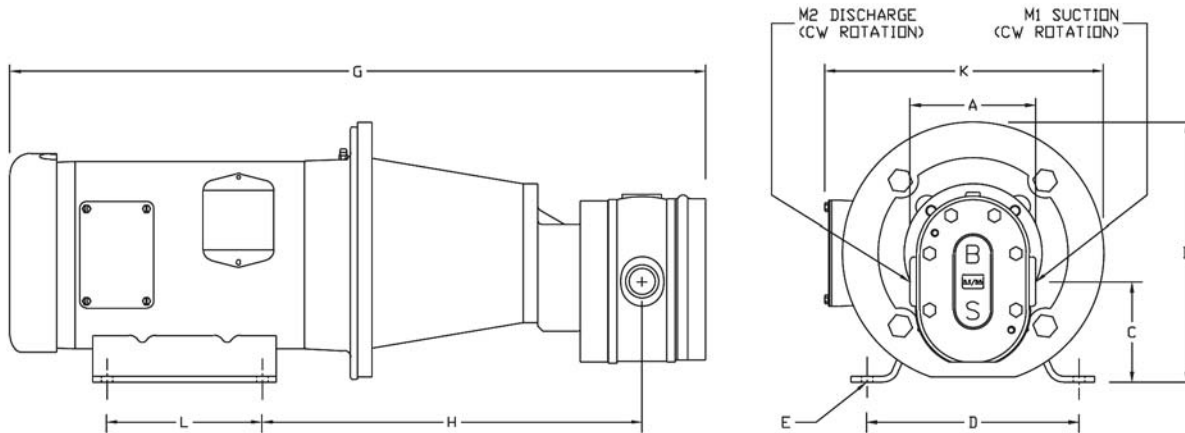


Table 4

Model	Motor Frame	A	B	C	D	E	G	H	K	L	M1	m2
53A	56C	4.44	6.88	2.50	4.88	0.34	21.19	11.74	8.31	3.00	3/4	1
	145TC	4.44	6.88	2.50	5.50	0.34	22.91	12.06	8.56	5.00	3/4	1
	182TC	4.44	8.69	3.50	7.50	0.41	24.50	13.68	9.81	4.50	3/4	1
	184TC	4.44	8.69	3.50	7.50	0.41	25.50	13.68	9.81	5.50	3/4	1
	56C	5.00	6.88	2.50	4.88	0.34	22.19	12.24	8.31	3.00	1	1 1/4
55A	145TC	5.00	6.88	2.50	5.50	0.34	23.91	12.56	8.56	5.00	1	1 1/4
	182TC	5.00	8.69	3.50	7.50	0.41	25.50	14.18	9.81	4.50	1	1 1/4
	184TC	5.00	8.69	3.50	7.50	0.41	26.50	14.18	9.81	5.50	1	1 1/4
	213TC	5.00	10.25	4.25	8.50	0.41	28.41	15.06	12.16	5.50	1	1 1/4
	215	5.00	10.25	4.25	8.50	0.41	29.91	15.06	12.16	7.00	1	1 1/4

## PUMP DIMENSIONS (INCHES) BASE MOUNTED ASSEMBLIES (D-DRIVE)

53/54 Series pumps are available as base mounted pump and motor assemblies. Each assembly includes the base, flexible coupling, coupling guard, riser blocks (if required), lifting eye-bolts, and mounting hardware. The fabricated steel or channel steel bases are available with optional features such as drip-lip construction, drain plugs, mounting lugs, casters, etc..

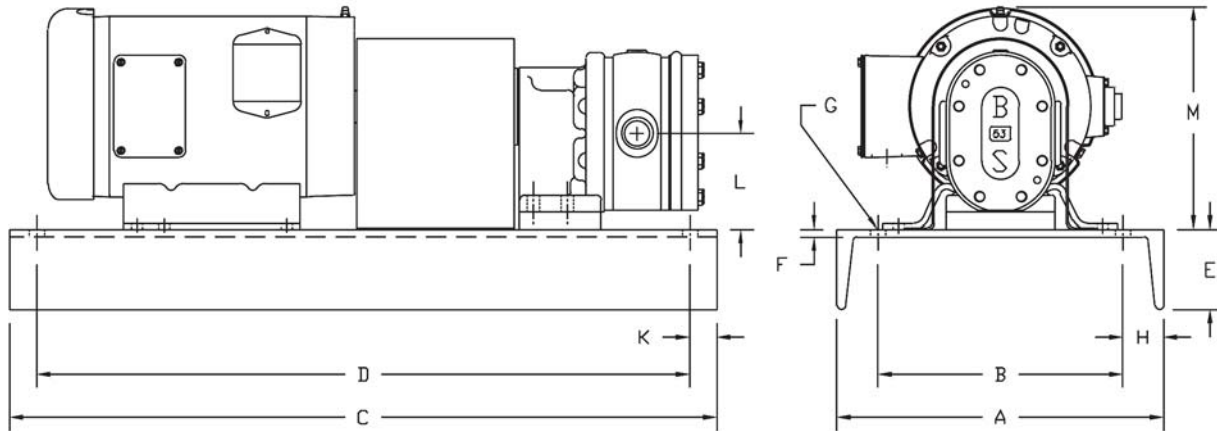


Table 5

Model	Motor Frame	A	B	C	D	E	F	G	H	K	L	M
53D	56	12.00	9.00	26.00	24.00	2.94	0.28	0.56	1.50	1.00	2.50	6.88
	145T	12.00	9.00	26.00	24.00	2.94	0.28	0.56	1.50	1.00	2.50	6.88
	182T	15.00	12.00	30.00	28.00	3.41	0.41	0.56	1.50	1.00	3.50	8.69
	184T	15.00	12.00	30.00	28.00	3.41	0.41	0.56	1.50	1.00	3.50	8.69
55D	56	12.00	9.00	30.00	28.00	2.94	0.28	0.56	1.50	1.00	2.50	6.88
	145T	12.00	9.00	30.00	28.00	2.94	0.28	0.56	1.50	1.00	2.50	6.88
	182T	15.00	12.00	32.00	30.00	3.41	0.41	0.56	1.50	1.00	3.50	8.69
	184T	15.00	12.00	32.00	30.00	3.41	0.41	0.56	1.50	1.00	3.50	8.69
	213T	15.00	12.00	34.00	32.00	3.41	0.41	0.56	1.50	1.00	4.25	10.25
	215T	15.00	12.00	34.00	32.00	3.41	0.41	0.56	1.50	1.00	4.25	10.25

## ORDERING INFORMATION

ORDER PUMP ONLY 713-A-B-E

ORDER PUMP & DRIVE 713-A-B-C-D-E

Pump		Drive	Assembly
A	B	C	D
Pump Model	Turning Direction	Pump Drive/Bracket	Assembly: Pump & Bracket
53= Foot Mount Model 53 953= Flange Mount Model 53 55= Foot Mount Model 55 955= Flange Mount Model 55	2= CW 3= CCW	*Select Model & Motor Frame From Tables 3,4 OR 5 Example: 53D-182T *Call us for other mounting/drive options	A= Factory Assembly B= Field Assembly

### E- Options

Opt 1= Ductile Iron Casing

ORDER PUMP, DRIVE AND MOTOR 713-A-B-C-D-E-F

F
Motor
<p>1) Specify motor frame: tables 4,5 or 6 2)Specify motor speed &amp; horsepower (see flow charts) 3) Specify voltage, frequency &amp; enclosure rating</p> <p>Please call us to discuss your motor requirements. We offer a complete range of AC &amp; DC motors as well as variable frequency drives.</p>