



# KRAISSL ROTARY PUMPS

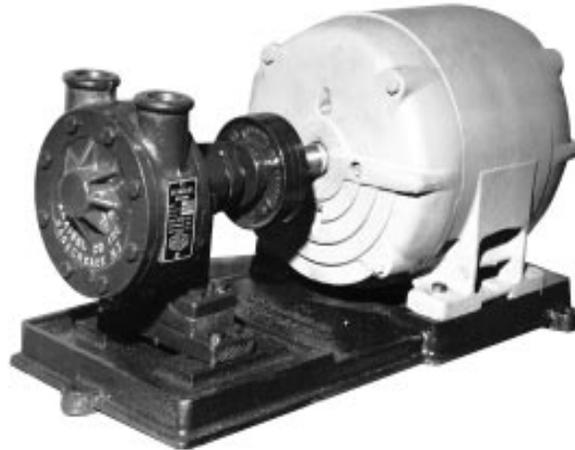
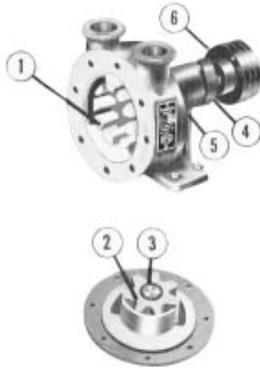
## MODEL 60EMD SERIES

### DIRECT DRIVE

#### STANDARD PRESSURES UP TO 100 PSIG

#### HIGH SUCTION CHARACTERISTICS

### MECHANISM



### FEATURES

- 1- Internal gear design provides high suction lift characteristics.
- 2- Hardened idler for long life.
- 3- Integral bearing and idler assembly.
- 4- Adjustable stuffing box with return seal and packing minimizes shaft wear & leakage.
- 5- Interchangeable return seal design allows change of rotation in field.
- 6- Flexible coupling protection and easy field replacement.
- 7- Cap screw closure with steering permits easy access to pump interior.
- 8- Iron pumps are individually tested in accordance with Underwriter's Lab requirements.
- 9- Cast metal bed plate with drip collecting bead around edge ensures rigid support and minimizes bed plate distortion.
- 10- Approved by the Board of Standards and Appeals for use in New York City under Cal. No. 517-53-SA.

**KRAISSL COMPANY, INC.**

### GENERAL DESIGN SPECIFICATIONS

Kraissl Model 60 EMD Series pumpsets are of the internal gear type, with provision made for proper gasketing to control clearances for each type of service. The master rotor and shaft are an integral unit, eliminating misalignment due to the deflection of a rotor on a separate shaft. Standard 60 EMD pumps are furnished with heavy duty journal bearings and return seal stuffing box which permits interchange of suction and discharge ports by reversing rotation of pump and interchanging return by a simple adjustment. This reduces pressure on the stuffing box to suction pressure and minimizes leakage. Standard pumps are furnished with face plates, end plates and housing of high tensile cast iron, The displacement gears are of steel with the idler hardened to ensure minimum wear. Optional OSHA coupling guards can be provided when required.

### APPLICATION

It has been sufficiently emphasized in our opinion, that the proper speed for pump operation is controlled by the viscosity of the liquid being pumped. A rapid change in viscosity is very often a function of temperature and the pump speed should reconcile with the lowest average viscosity at pumping temperature. The method of applying this speed is a matter of economics and in some cases, space limitations.

If a pump is run faster than the liquid will fill the displacement chamber, under the suction created, cavitation will result. This produces an undesirable audible whine, adverse mechanical effects and the capacity and efficiency are reduced. Where speeds of 1800, 1200 and sometimes 900 rpm do not produce cavitation, direct connection to motor is usually the desirable choice.

If speeds below 900 rpm are necessary loose coupling to our reduction belt drive units may be employed. See our Bulletin A1193. The speed of 900 rpm is a dividing line where the choice could be either way, depending upon other factors, and pump characteristics at 900 and 600 rpm are indicated where connection to other sources of power or reduction drive motors meet the requirements.

In general with light liquids of a viscosity at pumping temperatures of not over 150 SSU, direct motor drive at 1200 rpm is a good selection, if proper attention is given to bearing considerations for non-lubricating materials. There are cases of liquids containing abrasive matter where reduced speed should be used with oils and other hydro-carbons that do not rust and corrode these metals.

Our standard Model 60 series pump heads are manufactured with manually adjustable, bronze packing glands. Periodic examination and adjustment of this gland may be necessary to avoid shaft leakage, especially on light fuel oils. Standard shaft packing is square section, rope-type, made of graphited synthetic fiber.

An optional spring-loaded packing gland can be provided which automatically adjusts the pump shaft packing to compensate for packing wear.

Optional Teflon packing in lieu of standard graphited-fiber packing can also be provided. The combination of spring-loaded, Teflon packing can be a cost-effective way to assure effective pump shaft sealing. Both can be added later to existing pumps.

**A1904A (9610)**

# TECHNICAL SPECIFICATIONS CAPACITY, SPEED, PRESSURE, POWER CONSUMPTION

This information is for comparison only. Capacities and horse power required with different liquids at the same pressures will vary with viscosity and pump sealing characteristics. Request performance curves for accuracy.

Pump Hd Mod #		1800 RPM						1200 RPM						900 RPM						600 RPM											
Discharge	psig	25		50		75		25		50		75		100		25		50		75		100		25		50		75		100	
	"feet"	57	115	172	57	115	172	230	57	115	172	230	57	115	172	230	57	115	172	230	57	115	172	230	57	115	172	230	57	115	172
3/8" Port	60-01E	<b>3.0</b>	<b>.12</b>	2.9	<b>.18</b>	2.8	<b>.24</b>	2.0	<b>.08</b>	1.9	<b>.12</b>	1.7	<b>.17</b>	1.5	<b>.20</b>	1.5	<b>.07</b>	1.3	<b>.10</b>	1.1	<b>.13</b>	.08	<b>.13</b>	0.9	<b>.06</b>	0.8	<b>.07</b>	0.6	<b>.08</b>	0.4	<b>.10</b>
1/2" NPT	60-03E	7.3	27	7.0	44			5.0	.18	4.7	.29	4.3	.41	3.9	.50	3.7	.13	3.4	.22	3.0	.30	2.6	.36	2.3	.08	2.0	.14	1.7	.19	1.4	.22
3/4" "	60-05E	Not Recommended						12.0	.39	11.3	.68	10.6	.95	9.8	1.2	8.8	.28	8.1	.50	7.5	.72	6.8	.91	5.5	.17	4.9	.31	4.4	.46	3.8	.58
1" "	60-07E	For Operation						24.0	.79	22.6	1.4	21.2	1.9	19.7	2.5	17.6	.56	16.3	1.0	15.0	1.4	13.7	1.9	11.0	.33	9.9	.62	8.8	.91	7.7	1.2
1-1/4" "	60-09E	At 1800 RPM.						37.8	1.2	36.0	2.1	34.6	3.0	32.8	3.9	27.4	.79	26.4	1.5	25.1	2.3	23.9	3.2	17.3	.47	16.2	.95	15.0	1.5	13.8	2.1
1-1/2" "	60-11E	At 1800 RPM.						52.0	1.6	50.0	2.9	48.0	4.2	45.5	5.4	38.0	1.1	36.5	2.1	34.8	3.2	33.2	4.4	24.0	.65	22.4	1.3	20.8	2.1	19.1	2.9

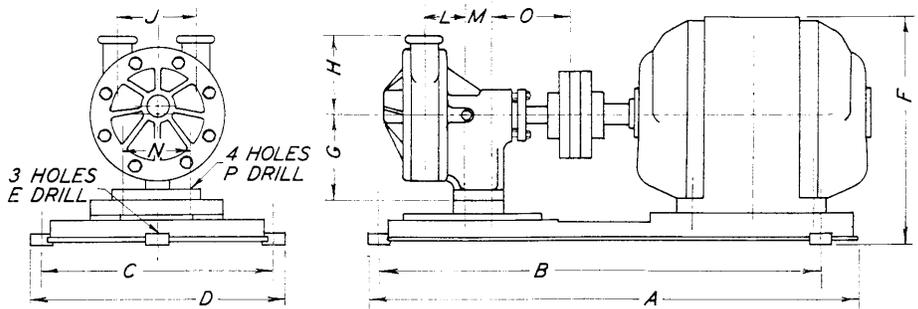
**Note** - First column under each pressure shows GPM. Second column under each pressure refers to HP and is set in bold face type.

## OPERATING INSTRUCTIONS

1. Check that electrical characteristics shown on motor name plate reconcile with your electric circuit.
2. Mount on solid, non-vibrating foundation, preferably with anti-vibration block underneath.
3. Remove plugs from pump ports of iron pumps and pour into suction port a generous amount of fuel oil or SAE 30 lubricating oil. This will provide lubrication for pump when starting up. Do not run pump dry for extended lengths of time.
4. Fill grease cup on stuffing box gland with good grade of cup grease and tighten. Lubricate periodically. Pumps are shipped with lubricant in grease cups. Check motor lubrication.
5. Check whether rotation is in direction of arrow. Rotation is always toward suction port and is specified clockwise or counterclockwise facing shaft end of pump. Reversing rotation interchanges suction and discharge ports but return seal stuffing box must be changed, if necessary, to accommodate rotation.
6. To change return seal stuffing box for opposite rotation, remove the two cap screws from the sides of the stuffing box. Inside the threaded hole in the channel connecting to discharge port will be found an Allen dog point set screw. Unscrew this and screw it into the empty hole on the opposite side so that it firmly seats. Replace the cap screws with washers and tighten. The dog point set screw should be on the discharge side of the pump.

## SIZES & DIMENSIONS

Principal dimensions of these pumps are indicated in the following table. A wide variety of pump sets are available to accommodate various frame motors. Most commonly used motor frames have been standardized and separate prints are available. Where standard prints cannot be furnished, we will provide required special dimensions.



Pump Model	NPT Ports	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
60-01EMD	3/8"							2 3/8	2	2	1/2	1 31/64	3/4	2	2 11/16	25/64
60-03EMD	1/2"							3	2 3/4	2 3/4	5/8	1 31/32	7/8	2 1/2	3 7/32	25/65
60-05EMD	3/4"							3 7/8	3 5/8	3 1/2	3/4	2 1/32	1 1/4	3	3 9/32	29/64
60-07EMD	1"							3 7/8	3 5/8	3 3/4	3/4	2 3/8	1 1/4	3	3 9/32	29/64
60-09EMD	1-1/4"							4 3/4	4 5/16	4 3/4	1	3	1 5/8	4 3/8	4	29/64
60-11EMD	1-1/2"							4 3/4	4 5/16	4 3/4	1	3 1/4	1 5/8	4 3/8	4	29/64

Dimensions A through F vary with motor frame size. See Dwg. A1906B.  
Dimensions are in inches and subject to casting and production variations.

## MOTOR DRIVE COMPLETE WITH COUPLING AND BASE PLATE WITHOUT MOTOR INDICATED BY SUFFIX-MD

DR. ASS'Y	FRAME	H. P.	RPM	Volt- age	Cycles	Phase (s)	Enclo- sure	Type



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