Introduction to Continental Pump Co. and

Progressing Cavity Pumps

Continental Pump Company
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www.continentalultrapumps.com

We Manufacture a Complete Line of Progressing Cavity Pumps for the Commercial Waste Water and Industrial Markets.

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We offer a complete line of Progressing Cavity Pumps for the commercial waste water and industrial markets. Our goal is to offer quality products and service at a competitive price. Our success is supported by a long standing relationship to quality; a service oriented sales staff, a facility housing $1,500,000 of inventory, and a commitment to helping our valued customers and distributors. We strive to keep you informed by providing all the materials and knowledge we have to offer through our staff and engineers.

Continental Pump Company started with 50 distributors with initial stock of CP Model Pumps with the arrangement to sell the CL line without stocking them. Today we have grown our distributor family worldwide. We pride ourselves in our manufacturing and delivery of our pumps and parts to our distributors, and Original Equipment Manufacturers in addition to Contractors, Utility and Municipal Plants.

Continental Progressing Cavity Pumps have time tested and proven unique characteristics that make them advantageous in performance over all other kinds of Pumps. They are built of various materials in many sizes with capacities from less than one gpm to over 500 gpm and pressures to 450 psi.

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How Progressing Cavity Pumps work:

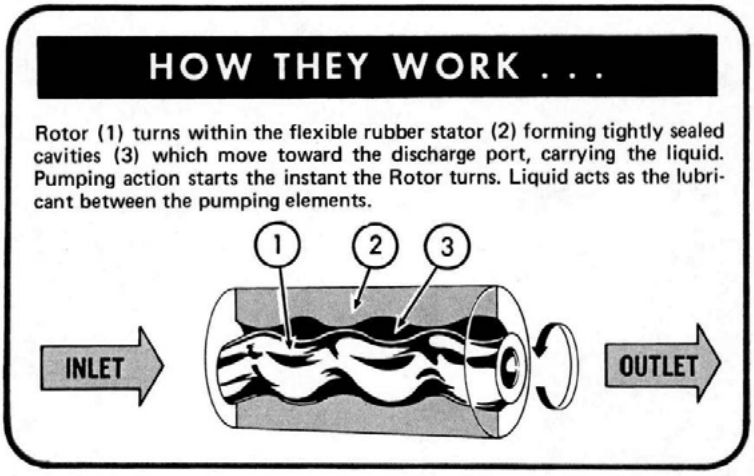
Progressing Cavity Pumps have similar characteristics of a Piston Pump, such as sealed cavities and operational similarities such as: being able to pump at extremely low rates, even to high pressures, and revealing the effect to be purely positive displacement.

They are also known as an Eccentric Screw Pump due to the motion of the rotor.

Rotors are made of Hardened Steel or Stainless Steel and are covered with a Chrome Plating to give resistance to corrosive and abrasive materials. Some liquids affect the Chrome Plating and in those applications a Non-Plated Rotor should be used.

Stators are metal tubes with internally molded cavities of Synthetic or Natural Rubber.

The Rotor seals tightly against the flexible rubber stator as it rotates, forming tightly sealed cavities which move toward the discharge port, carrying the liquid. The pumped liquid does not change in shape or size when pumped due to the tightly sealed cavities formed between the rotor and stator. The effect of the design is that the fluid is moved at a very predictable and steady rate. With positive suction the pumping action starts the instant the Rotor turns. Liquid acts as the lubricant between the pumping elements.



In operation our pumps are fundamentally fixed flow rate pumps and offer long life and reliable service transporting thick or lumpy fluids. However, abrasive fluids can significantly shorten the life of the stator. Also, slurries can be pumped reliably if the slurry is viscous enough to maintain a lubrication layer around the particles and protect the stator.

At the points where the rotor touches the stator, the surfaces are generally traveling transversely, so small areas of sliding contact occur. These areas need to be lubricated by the fluid being pumped. This can mean that more torque is required for starting, and if allowed to operate without fluid, called “run dry”, rapid deterioration of the stator can happen as a result.

Progressing Cavity Pump key advantages:

POSITIVE DISPLACEMENT
The turning ROTOR develops "positive pumping action" similar to a piston moving through a cylinder of infinite length. The pump pressure developed does not depend upon the speed of the rotating ROTOR. The capacity of the pump is approximately viscosity, and pressure can be projected for particular operating conditions.

UNIFORM DISCHARGE FLOW
Fluids are uniformly discharged without pulsation in a constant steady flow. Displacement remains the same with each revolution of the ROTOR permitting accurate predictable metering relative to the fluid being pumped. Because of the unique flow characteristics, these pumps are well suited for low-shear applications.

INTERNAL VELOCITY OF FLUIDS
All fluids are pumped with a minimum amount of turbulence, agitation, pulsation or separation disturbance.

SELF PRIMING
Pumping action starts at the time the ROTOR is turned and it is capable of 28 feet of suction lift in an appropriate installation. The liquid being pumped acts as a lubricant between the ROTOR and STATOR and forms a continuous seal to project the pumping phenomena.

SOLIDS IN SUSPENSION
Solid particles over a wide range of size and shape - as large as 1 1/8 inches in diameter, are pumped with no difficulty.

REVERSIBLE
Pumps can be operated clockwise or counter-clockwise with effective performance in most installations.

INSTALLATION
Pumps can be mounted horizontally or vertically and the Suction Port can be turned to any position for appropriate entry of the liquid.

Pump Selection Guide

To properly select the best performing pump consideration should be given to:

Capacity

The rate of flow in Gallons Per Minute (GPM).

Pressure

How much Pressure is required to move the Liquid being Pumped thru the Discharge Port of the Pump depends upon the piping system and the kind of Liquid being handled. The difference between the Pressure required at the Pump Discharge and the pressure being introduced into the Pump Suction is the differential Pressure and is expressed as Pounds Per Square Inch- (PSI).

Viscosity

The resistance to the flow is expressed by various Scales of measurement; however, the most commonly used is CENTIPOSES. The Viscosity usually changes with Temperature and should always be considered. For conversion purposes the formulas set forth below can be of value:

Centipoises = Centistokes x Specific Gravity

Centipoises $= \frac{SSU}{5}$ x Specific Gravity

(SSU= Saybolt Seconds Universal)

Temperature

The Maximum and Minimum Temperatures at which the Fluid to be pumped are important factors in proper Pump Selection. High Temperatures can cause distortion and swelling of Stator Materials and Low Temperatures can affect Viscosity that reflects in Flow Characteristics and Horsepower requirements.

Operating Time

The Operating Cycle of the Pump should be considered; Whether the Pump is to run continuously or intermittently can be a factor in the selection of the Drive.

Abrasion

Classify the Abrasive characteristics of the fluid to be pumped. Abrasives can look alike and appear to have similar properties; however, they can produce different wearing characteristics. Endeavor to classify the fluid broadly in order to select the proper Pump Construction and Operating Speed. The Classifications set forth below will serve as a guide and our experiences will be helpful:

No Abrasives

Example: Clear Water, Gasoline, Fuel Oil, Lubricating Oil.

Light Abrasives

Example: Dirty Water containing Silt and/or small amounts of Sand or Earth.

Medium Abrasives

Example: Clay Slurries, Potters Glazes, Porcelain Enamel, Frit, Sludge, Wood Dust in Water.

Heavy Abrasives

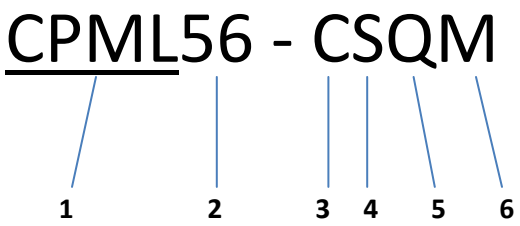
Example: Slurries containing large amounts of Sand, Emery Dust, Lapping Compounds, Mill Scale, Plaster, Grout, Roof Gypsum.

Corrosion

Whether the Fluid being pumped is Neutral, Acid or Alkaline it should be considered in selecting the proper materials of Pump construction. The pH value of the Fluid should be known or determined. A pH of 7 is neutral, below 7 is Acid and above 7 is Alkaline.

CP Model Number Identification:

Materials used in the pumps are based on the fluid to be handled and are indicated in the model number identification.



(1): Indicates the type of pump

(2): Indicates the pump frame size designation

(3): Indicates the pump body casting material

(4): Indicates the rotor material

(5): Indicates the stator material

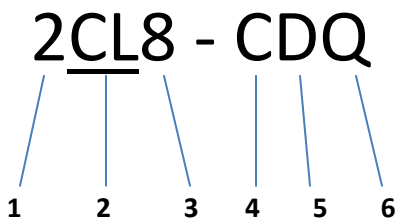
(6): Indicates the type of seal

Material of Construction

	Continental Letter Key	Materials
Pump Body	C	Cast Iron
	S	316 Stainless Steel
Rotor	S	Chrome Plated 304 Stainless Steel
Stator	Q	Buna Nitrile
	R	Natural Rubber
	B	EPDM
	F	Viton
Seal Type	M	Mechanical Seal
	D	Packing Gland

CL, CM and CG Model Number Identification:

Materials used in the pumps are based on the fluid to be handled and are indicated in the model number identification.



(1): Indicates the number of stages for the rotor and stator

(2): Indicates the pump frame size designation (CL, CM or CG Frame)

(3): Indicates the size of the rotor and stator

(4): Indicates the pump body casting material

(5): Indicates the rotor and internal parts material

(6): Indicates the stator material

Material of Construction

	Continental Letter Key	Materials
Pump Body	C	Cast Iron
	S	316 Stainless Steel
Rotor	D	Chrome Plated Alloy Steel
	S	Chrome Plated 304 Stainless Steel
Stator	Q	Buna Nitrile
	R	Natural Rubber
	B	EPDM
	F	Viton
Internal Parts	C	Carbon Steel
	AF	Anti-Friction Bearings
	HS	Hardened Steel

Frame Size Designation

CL- Suitable for a wide variety of applications and are the most frequently used. When properly applied they give excellent long life performance at the most economical cost.

CM- Similar to CL Pumps, except have a larger drive head to handle the increased horsepower that is needed to produce the higher pressures that can be developed by these pumps.

CG- Designed to handle the heavier applications of Sewage, Industrial Waste, Polluted Liquids and Slurries.

Liquids that can be handled by Continental Progressing Cavity Pumps

These Materials of Construction permit Continental Pump to handle almost any fluid that can be moved thru pipe. Set forth in the accompanying chart is a partial list of liquids that have been successfully handled along with an indication of the basic materials for the pump body, the rotor and the stator.

Rotors are made of Hardened Steel or Stainless Steel and are covered with a Chrome Plating to give resistance to corrosive and abrasive materials. Some liquids affect the Chrome Plating and in those applications a Non-Plated Rotor should be used.

Stators are metal tubes with internally molded cavities of Synthetic or Natural Rubber.

Note: *Non-Plated Rotor

When 'D' Rotors are used the Drive Shaft and Connecting Rod will be Carbon Steel. When 'S' Rotors are used the Drive Shaft and Connecting Rod will be Stainless Steel. Maximum allowable Temperatures for Stators: B -240°F, F -300°F, Q -210°F, R -185°F

LIQUID	PUMP BODY		ROTOR		STATOR			
Acetic Acid (cold dilute)		S		S*	B		Q	R
Acetone	C	S	D	S	B			
Acid Mine Water	C			S			Q	R
Alcohol, Ethyl (grain)	C		D				Q	R
Alcohol, Methyl (wood)	C		D				Q	R
Alum (Paper mill)		S		S	B	F	Q	R
Aluminum Hydroxide	C		D				Q	R
Aluminum Sulphate		S		S	B	F	Q	R
Ammonium Bicarbonate	C	S	D	S	B			R
Ammonium Chloride		S		S*	B		Q	R
Ammonium Phosphate	C	S	D	S	B		Q	R
Ammonium Nitrate	C	S	D	S	B		Q	R
Ammonium Sulphate	C	S		S*	B		Q	R
Aromatic Hydrocarbons	C	S	D	S		F		
Asphalt	C	S	D	S		F		
Barium Chloride	C	S		S	B	F	Q	R
Barium Hydroxide	C	S	D	S	B	F	Q	R
Barium Nitrate	C	S	D	S			Q	R
Barium Sulphate	C	S	D	S			Q	R
Beer		S		S			Q	R
Beer Wort		S		S				R
Beet Sugar Liquor		S		S	B	F	Q	R
Benzene (coal tar product)	C		D	S		F		
Benzine (petroleum product)	C	S	D			F	Q	
Black Liquor	C	S	D	S		F	Q	
Boiler Feed Water	C		D				Q	
Bordeaux Mixture	C		D				Q	R
Boric Acid		S		S		F	Q	R
Brine, Calcium Chloride	C	S		S*	B	F	Q	R
Brine, Sodium Chloride	C	S		S*	B	F	Q	R
Calcium Chlorate	C	S	D	S		F		
Calcium Chloride	C	S	D	S	B	F	Q	R
Calcium Hypochlorite	C	S		S	B	F		
Calgon (sodium hexametaphosphate)		S		S			Q	R
Carbon Bisulfide	C	S	D	S		F		
Carbon Disulphide	C	S	D	S		F		

LIQUID	PUMP BODY	ROTOR	STATOR
Carbonic Acid	C	S	Q R
Castor Oil	C S	D S	F Q R
Caustic Potash (lye)	C S	D S	Q R
Caustic Soda (lye)	C S	D S	B Q R
Caustic Zinc Chloride	S	S	Q R
China Wood	C	D	Q
Drying Oils	C	D	Q
Vegetable Oils	C	D	Q
Chlorinated Hydrocarbons			
Chloroform	S	S	F
Dichloroethylene	C S	D S	Q
Methyl Chloride	C S	D S	F
Tri Chloroethyline	S	S	F
Chromic Acid (diluted)	S	S	F
Citric Acid	S	S	B F Q R
Clay Slip	C	D	F Q R
Copper Nitrate	S	S	Q R
Copper Sulphate	S	S*	F Q R
Copperas	S	S*	Q R
Corn Oil	C S	D S	F Q
Cotton Seed Oil	C S	S	F Q
Creosote	C S	D S	F Q
Cyanide	C	D	Q R
Cyanide of Potassium	C	D	B F Q R
Diethylene Glycol (alcohol)	C S	D S	F Q R
Distilled Water or Deionized	C S	S	Q R
Distillery Wort	C S	D S	Q R
Edible Oils	C S	D S	Q
Epsom Salts	C S	D S	B F Q
Ethyl Alcohol	C S	D S	B F
Fatty Acids	C S	D S	F
Ferric Hydroxide	S	S	B Q R
Ferrous Sulphate	S	S*	Q R
Formaldehyde	S	S	F Q
Formic Acid	S	S	F
Fruit Juices	S	S	Q R
Fuel Oils	C S	D S	F Q
Furfural	C S	D S	B
Fusel Oils	C	D	Q
Gasoline	C	D	Q
Glucose	C S	D S	B F Q R
Glue	C S	D S	B F Q R
Glycerine	C S	D S	B F Q R
Glycerol	C S	D S	B F Q R
Grain Alcohol	C	D	Q R
Grape Juice	S	S	Q R
Hops	C S	D S	Q R
Hydrocyanic Acid	S	S	B F
Hydrogen Peroxide	S	S	F
Hydrogen Sulfide	S	S	B F
Kerosene	C	D	Q
Lard	C S	D S	F Q
Lime Water	C	D	Q R
Linseed Oil	C S	D S	B F Q
Lubricating Oils	C	D	Q
Lye (sodium hydroxide)	C S	D S	B F Q R
Magnesium Chloride	C S	D S	B F Q R
Magnesium Sulphate	C S	D S*	B F Q
Mercury	C S	D S	Q R
Methanol	C S	D S	B Q R

LIQUID	PUMP BODY		ROTOR		STATOR			
Methyl Chloride	C		D				Q	R
Milk of Lime	C			S			Q	R
Mine Water	C			S			Q	R
Molasses	C		D	S	B	F	Q	R
Naphtha	C		D				Q	
Nickel Chloride		S		S	B	F	Q	R
Nickel Sulphate		S		S*	B	F	Q	
Oil - Paraffin Base	C		D				Q	
Oil - Vegetable	C		D				Q	
Paints - Water Base	C		D				Q	R
Palmitic Acid	C		D			F	Q	
Phosphoric Acid		S		S		F		
Potassium Carbonate	C		D				Q	R
Potassium Chloride	C		D		B	F	Q	R
Potassium Nitrate	C		D		B	F	Q	R
Potassium Phosphate	C		D				Q	R
Potassium Sulphate	C		D		B	F	Q	
Salammoniac		S		S	B		Q	R
Salt Brine (to 30%)	C	S		S			Q	R
Sea Water	C			S			Q	R
Sewage	C		D				Q	R
Shellac	C		D				Q	
Soap Liquor (thin)	C	S	D	S	B	F	Q	
Soda	C		D		B	F	Q	R
Sodium Aluminate	C		D		B		Q	R
Sodium Bicarbonate	C			S	B	F	Q	R
Sodium Bisulfite		S		S	B		Q	R
Sodium Carbonate	C			S	B	F	Q	R
Sodium Chloride	C	S		S*	B	F	Q	R
Sodium Hydroxide	C	S	D	S	B		Q	R
Sodium Nitrate	C		D		B			
Sodium Silicate	C		D		B	F	Q	R
Sodium Sulfate		S		S	B	F	Q	
Soy Bean Oil	C		D			F	Q	
Starch	C	S	D	S	B		Q	R
Steric Acid		S	D				Q	
Sugar	C		D				Q	R
Tar	C		D				Q	
Tar & Ammonia in Water	C		D				Q	
Titanium Chloride		S		S		F		
Toluene (toluol)	C		D			F		
Trub Sludge	C		D				Q	R
Turpentine	C		D			F	Q	
Varnish	C		D			F		
Vegetable Oil	C		D				Q	
Vinegar		S		S*	B	F	Q	
Vitriol - Blue		S		S	B	F	Q	
Vitriol - Green		S		S			Q	R
Waste Water	C		D				Q	R
Whiskey	C	S	D	S			Q	R
Wine		S		S	B		Q	R
Wood Pulp	C		D				Q	R
Yeast		S		S	B		Q	R
Zinc Chloride		S		S*	B	F	Q	R
Zinc Nitrate		S		S			Q	R
Zinc Sulfate		S		S*	B		Q	R

Note: * Non-plated ROTOR.
When D ROTORS are used the Drive Shaft and Connecting Rod will be of Carbon Steel.
When S ROTORS are used the Drive Shaft and Connecting Rod will be of Stainless Steel.
Maximum allowable Temperatures for STATORS: B - 240° F, F - 300° F, Q - 210° F, R - 185° F.

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Sales Policy and Warranty Information

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General Sales Policy

Prices: All prices are F.O.B. Warrenton, Mo and are subject to change without notice. Prices in effect at date of order entry will prevail.

Sales and Similar Taxes: Prices do not include sales, use, excise or similar taxes.

Terms: 30 Days Net

Credit Ratings: All orders are subject to the approval of our Credit Department. Individuals and firms having no commercial rating and with whom we have had no business relations, must accompany their orders with satisfactory credit references.

Transport Claims: Risk of loss passes to purchaser upon Continental's delivery of goods to carrier. To elevate loss of goods purchased, shipping insurance is mandatory at customer's expense. All claims for damage or shortage occurring during transit must be made directly against carrier. Before accepting goods, have carrier acknowledge any damage or shortage on freight bill.

Inspection: Purchaser shall inspect all goods upon receipt and prior to installation or use in further manufacture. Notice of any defect or deficiency must be given to us within 10 days after receipt.

Cancellation Charges: No purchase orders accepted and acknowledged may be cancelled by purchaser except with the prior written consent of Continental and upon payment of reasonable cancellation charges compensating Continental for all costs incurred in entering, processing and preparing to perform an order to date of agreed cancellation. On standard catalog items cancellation charges will be 25% of net price, $50.00 net minimum, or actual costs incurred, whichever is greater.

Returned Goods:

(a) No Continental products may be returned to the factory for credit without theCompany's prior written authorization (prior to return shipment being made), andwithout transportation prepaid and shippers name and address on the shippingtag. Goods not clearly marked with a Continental RGA number will be returned tothe shipper.
(b) When equipment returned for credit is received, inspected, and found to be infirst-class resalable condition in the judgment of our inspection department,credit will be allowed on the basis of original invoice value less 25% or a minimum of $50.00 net restocking charge, whichever is greater.
(c) When equipment authorized for return is found to be worn or in damaged condition, credit will be allowed only for those usable parts which can be economically salvaged.
(d) The customer will be notified concerning those material returned to the factory which have no salvage value, and return shipping instructions or permissionto scrap such items will be requested. If no instructions are received within 60days after such notice, the material will be scrapped.
(e) Outside purchased equipment and accessories (motors, couplings, etc.) whenoriginally purchased through Continental, may be returned for only the credit allowed by such manufacturer, less a 25%, ($50.00 net minimum) handling charge.

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Shipment delays: Shipment dates are estimates only, and all deliveries are subject to unforeseen delays caused by accidents, fires, weather, strikes, riots, government action, supplier delays or shortages and other contingencies beyond Continental's reasonable control.

Minimum Order: A minimum order of $25.00 will be made for shipments to any one address.

Handling Charge: Depending on what is necessary for packaging products safely and efficiently, all invoices will include a minimum handling charge of $8.00 per box, $10.00 per pallet or $20.00 per crate.

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PUMP WARRANTY

We warrant our Pumps against Material and Workmanship defects for a period of one year from date of shipment from our plant;

Provided the Company receives written notice of such defects and such claims are substantiated by the Company upon their authorized prepaid return to the Factory.

Correction of defects in Material and /or Workmanship shall constitute a fulfillment of this Warranty and shall be returned to the user prepaid and credit issued for the incoming transportation.

Failure of Pumping components due to normal or abnormal wear in operation or by operating conditions beyond the Company's knowledge or control shall not be considered as evidence of defective material, unless the Company's examination of these parts discloses such a defect.

Except for the above Warranty the Company makes no warranty, expressed or implied and no warranty of fitness for a particular use and operation when they have no detail knowledge of all the data prior to purchase surrounding the application of the pump covering:

*Liquid to be Pumped
*Pumping Temperature
*Viscosity Specific Gravity
* Corrosive Content
* Abrasive Content
* Service Cycle
* Pipe Sizes- Valves- Controls
* Pump Drive
* Suction Line
* Discharge Line

All of the above as set forth in detail in our Pump Application Data Sheet that is to be submitted to the Home Office Engineering Staff for consideration and approval.

Any recommendations offered by Distributors, or Dealers and their representatives are to be considered as their best judgment and as matters of opinion without liability to the Company. Under no circumstances shall the Company be liable for damages to good will, loss of profits or for any type of consequential damage.

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Pump Application and Reference Guide

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Pump Application Reference Guide

The Pump Application Data Sheet can be conveniently used to transmit the required information to our Application Specialists to help them assist making a proper Pump Selection.

The first step in selecting a Pump is to determine the Frame size required for your application. The Table below relates capacity and pressure required to the three Frames available. Frame size is also determined by how other variables (Viscosity, Abrasiveness) affect Horsepower requirements. The "CL" frame is the standard bearing-drive designation. The "CM" frame utilizes the bearing drive unit from the next larger pump size. Select the Frame size which will most appropriately meet your needs.

PUMP FRAME	APPROXIMATE GPM RANGE	APPROXIMATE MAX. PRESSURE	SIZE PUMPING ELEMENTS AVAILABLE
CL	.9-500	225 psi	2, 3, 4, 6, 8 10, 10H, 12, 12H,
CM	.05-24	450 psi	1, 2, 3, 4
CG	5-350	150 psi	8, 10, 10H, 12, 12H,

Frame Selection

If particles in suspension are to be pumped, determine the Pump Frame Size that will handle the maximum dimension of the particle. Refer to Table No. 1.

TABLE No. 1
Pump Frame Size - Particle Size

PUMP FRAME SIZE	2CMI 6CM1	1CL2 2CL2 3CL2 6CM2	1CL3 2CL3 3CL3 6CM3	1CL4 2CL4 3CL4 6CM4	1CL6 2CL6 3CL6	1CL8 2CL8 3CL8	1CL10 2CL10 3CL10 1CL10 2CL10	1CL12 2CL12 3CL12 1CL12 2CL12	
Max. Particle Size	.08"	.15"	.20"	.30"	.40"	.60"	.80"	1.0"	

The size of the Rotor and Stator Pumping Elements required to deliver the required capacity at the viscosity of the fluid are set forth in Table No. 2. Select Elements large enough to deliver more than the required capacity when operating at the maximum speed shown.

Table No. 2 is based on viscosities for one fluid and will not be correct for slurries or emulsions where each of which have different viscosities. The recommended pumping speed for a mixture of fluids having different viscosities should be an approximate average of the several fluids.

TABLE NO. 2

Pump Frame Size - Viscosity - Pumping Elements Size

Pump Frame Size	Size Pumping Element		Viscosity (Centipoises)						
			1 to 1000	1000 to 2500	2500 to 5000	5000 to 10,000	10,000 to 50,000	50,000 to 100,000	100,000 to 150,000
2CM1, 6CM1	1	MAX. RPM	1200	900	450	250	125	40	20
		MAX. GPM	0.58	0.50	0.25	0.14	0.07	0.02	0.01
1CL2, 2CL2, 3CL2 6CM2	2	MAX. RPM	1200	900	450	250	125	40	20
		MAX. GPM	3.0	2.4	1.2	0.7	0.35	0.1	0.05
1CL3, 2CL3, 3CL3 6CM3	3	MAX. RPM	1200	900	450	250	125	40	20
		MAX. GPM	10.0	7.8	3.9	2.2	1.1	0.35	0.17
1CL4, 2CL4, 3CL4 6CM4	4	MAX. RPM	1200	900	450	250	125	40	20
		MAX. GPM	24.0	18.0	9.0	5.0	2.5	0.8	0.4
1CL6, 2CL6, 3CL6	6	MAX. RPM	900	900	450	250	125	40	20
		MAX. GPM	47.0	47.0	23.5	13.0	6.5	2.0	1.0
1CL8, 2CL8, 3CL8	8	MAX. RPM	900	900	450	250	125	40	20
		MAX. GPM	100	100	53.0	29.0	14.5	4.7	2.3
1CL10, 3CL10, 3CL10	10	MAX. RPM	750	750	450	250	125	40	20
		MAX. GPM	140	140	85.0	47.0	24.0	7.5	3.8
1CL10H, 2CL10H	10H	MAX. RPM	750	750	450	250	125	40	20
		MAX. GPM	210	210	125	70.0	35.0	11.0	5.5
1CL12, 2CL12, 3CL12	12	MAX. RPM	600	600	450	250	125	40	20
		MAX. GPM	261	261	196	109	54.4	17.4	8.7
1CL12H, 2CL12H	12H	MAX. RPM	600	600	450	250	125	40	20
		MAX. GPM	391	391	293	163	81.5	26	13

If the fluid has Abrasive characteristics, refer to Table No. 3 for the proper operating speed of the Pump. When the speed selected from Table No. 3 results in a lower capacity than required then change the selection of the size Pump even though it will operate below the maximum recommended speed. Keep in mind that the speed requirements for Viscosity in Table No. 2 must also be considered and in general where there is a difference; select the lower of the speeds.

TABLE NO. 3

Pump Frame Size - Abrasives - Pump Elements Size

Pump Frame Size	Size Pumping Elements		Abrasive Characteristics			
			None	Light	Medium	Heavy
2CM1, 6CM1	1	MAX. RPM	1200	900	600	300
		MAX. GPM	0.58	0.50	0.34	0.17
1CL2, 2CL2, 3CL3, 6CM2	2	MAX. RPM	1200	900	600	300
		MAX. GPM	3.0	2.4	1.6	0.8
1CL3, 2CL3, 3CL3, 6CM3	3	MAX. RPM	1200	900	600	300
		MAX. GPM	10.0	7.8	5.2	2.6
1CL4, 2CL4, 3CL4, 6CM4	4	MAX. RPM	1200	900	600	300
		MAX. GPM	24.0	18.0	12.0	6.0
1CL6, 2CL6, 3CL6	6	MAX. RPM	900	675	450	225
		MAX. GPM	47.0	35.5	23.5	12.0
1CL8, 2CL8, 3CL8	8	MAX. RPM	900	675	450	225
		MAX. GPM	100	70.0	52.5	26.5
1CL10, 2CL10, 3CL10	10	MAX. RPM	750	565	375	190
		MAX. GPM	140	106	70.0	36.0
1CL10H, 2CL10H	10H	MAX. RPM	750	565	375	190
		MAX. GPM	210	156	105	52.5
1CL12, 2CL12, 3CL12	12	MAX. RPM	600	450	300	150
		MAX. GPM	261	196	130	65
1CL12H, 2CL12H	12H	MAX. RPM	600	450	300	150
		MAX. GPM	391	293	195	97.5

The length of the Rotor and Stator Elements are designated by Stages, even though both Elements are each integral components. The approximate Pressure Per Stage (PSI) where the fluid pumped has no Abrasives or is laden with Light, Medium or Heavy Abrasives is shown in Table No. 4.

TABLE NO. 4

Pump Frame Size - Pressure Per Stage of Rotor/Stator Elements

Pump Frame Size	Approximate Pressure Per Stage (PSI) Abrasive Characteristics			
	No	Light	Medium	Heavy
1 and 2	60	40	25	10
3 thru 12	75	60	35	15

Referring to Table No. 4, if the fluid has no Abrasives and the Pump Frame Size is 2, the Pressure Per Stage for a 1CL2 is 60 PSI; If it is a 2CL2 the total pressure would be 120 PSI. Further, if the Abrasive is Light the total pressure for a 2CL2 would be 80 PSI and if the Abrasive is heavy the total pressure for the 2CL2 would be 20 PSI.

Having generally selected the pump Frame Size and the number of Stages of the Rotor/Stator Elements, refer to the Performance Data for the Initial Horsepower required to drive the Pump handling fluid with relatively no Viscosity (1 to 2500 Centipoises). For fluids containing increasing amounts of Abrasives the horsepower needed will be greater, refer to Table No. 5 for this additional amount. Multiply the HP increase/ 100 RPM/ Stage by the Pump speed in hundreds of RPM and then by the number of Pump Stages. Add this amount to the initial Horsepower to determine the Final Horsepower required.

TABLE NO. 5

Pump Frame Size - Horsepower Increase - Viscosity

Pump Frame Size	Size Pumping Elements	HP Additives/100 R.P.M./Stage Viscosity (Centipoises)						
		1 to 2500	2500 to 5000	5000 to 10,000	10,000 to 50,000	50,000 to 100,000	100,000 to 150,000	150,000 to 200,000
2CM2, 6CM1	1	0	0.002	0.0025	0.003	0.007	0.010	0.012
1CL2, 2CL2, 3CL2, 6CM2	2	0	0.01	0.015	0.016	0.032	0.046	0.056
1CL3, 2CL3, 3CL3, 6CM3	3	0	00.03	0.04	0.05	0.11	0.15	0.19
1CL4, 2CL4, 3CL4, 6CM4	4	0	0.06	0.09	0.12	0.25	0.35	0.44
1CLc, 2CL6, 3CL6	6	0	0.17	0.23	0.31	0.64	0.91	1.12
1CL8, 2CL8, 3CL8	8	0	0.37	0.52	0.71	1.43	2.05	2.52
1CL10, 2CL10, 3CL210	10	0	0.60	0,83	1.13	2.30	3.29	4.06
1CL10H, 2CL10H	10H	0	0.88	1.22	1.67	3.39	4.83	5.97
1CL12, 2CL12, 3CL12	12	0	1.4	2.0	2.7	5.3	7.7	9.0
1CL12H, 3CL12H	12H	0	2.1	2.9	4.0	8.0	11.3	13.2

Pump Application Data

Company Name: _____

Name of Material being pumped: _____

Service Cycle:

Capacity Required: _____ GPM

Speed: ☐ Intermittent ☐ Variable
☐ Continuous ☐ Constant

Time Per Cycle: _____

Hours Per Cycle: _____

Discharge Pressure (PSI):

Minimum Pressure: _____

Maximum Pressure: _____

Constant Pressure: _____

Pumping Temperature:

Normal: _____ F Minimum: _____ F

Maximum: _____ F

Viscosity: _____ CPS at Normal Temperature: _____ F

Viscosity: _____ CPS at Minimum Temperature: _____ F

Viscosity: _____ CPS at Maximum Temperature: _____ F

Specific Gravity: _____

Weight Per Cubic Ft: _____

Does Liquid Contain Abrasive Materials? _____

Size of Abrasive Material Particles:

Corrosive Chemical Content:

pH: Acidity: %

Concentration:

What Percentage of the Material is Liquid? %

Suction:

Flooded:

Suction Lift: ☐ Positive ☐ Negative

Size Line:

Pump Unit Configuration:

Mounting Arrangement:

Space Limitations:

Power Unit:

Unit Type: ☐ Constant Speed ☐ Variable Speed
☐ V-Belt Drive ☐ Direct Connected

Motor Type: ☐ Electric Motor ☐ Gas Motor
☐ Air Motor ☐ Hydrualic Motor
☐ No Motor

Control Type: ☐ Starter ☐ VFD(Variable Frequency Drive
☐ No Control

Drive Type: ☐ Gear Box ☐ No Drive

Phase: Cycle: Volts: Enclosure:

HP:

Continental Pump Company
29425 State Hwy B | Warrenton, Missouri 63383| Tel: 636-456-6006 | Fax: 636-456-4337| Email: sales@con-pump.com
www.continentalultrapumps.com

Model CP

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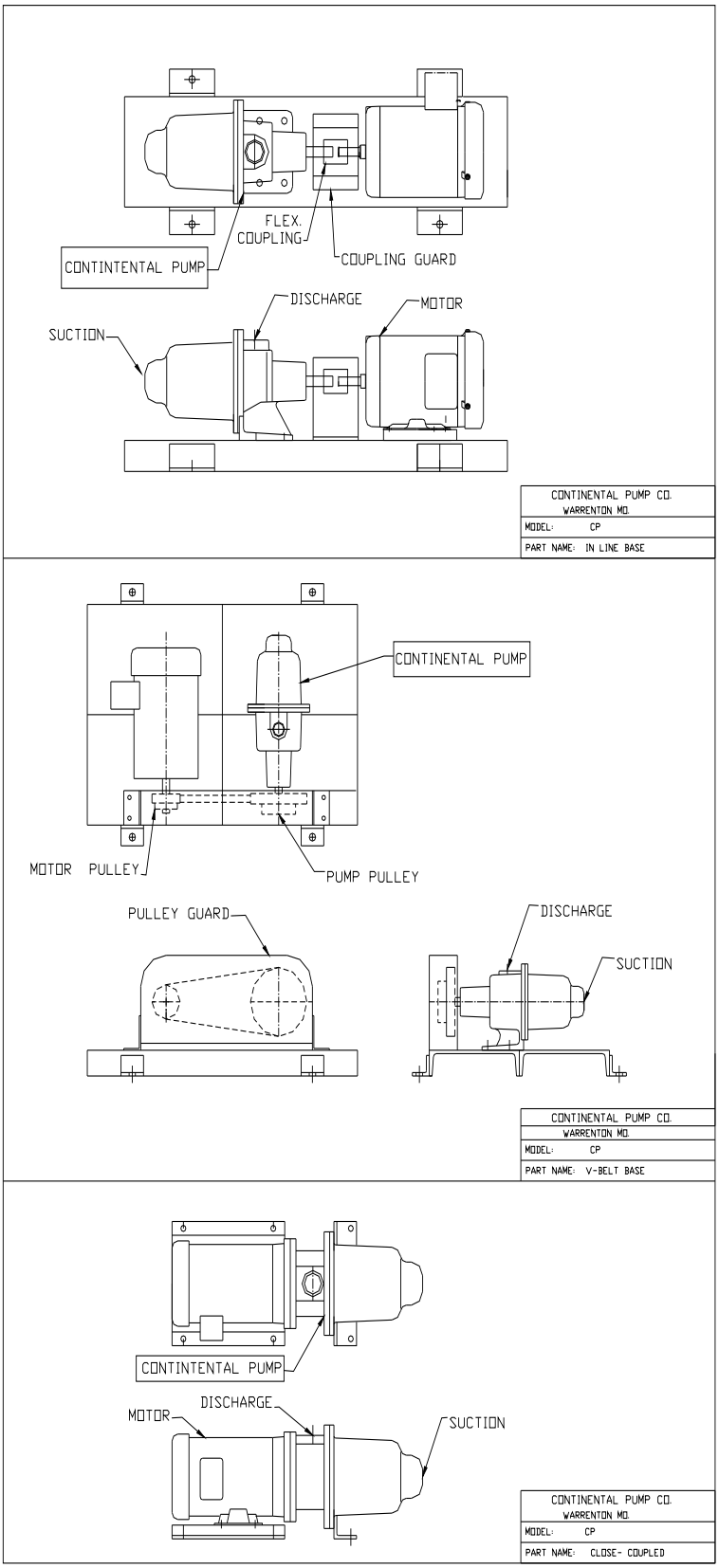

Model CP Pumps are great for low GPM and viscosity applications and can pump many different types of materials. It's a low cost pump that is compact and has many drive options.

Model CP pumps and parts are interchangeable with many progressing cavity pump brands.

Please contact one of our application specialists at (636)-456-6006 Mon-Fri 8AM-5PM CST for more information.

CROSS REFERENCE

Model or Frame Designation

CONTINENTAL		MOYNO®
CP-15		331
CP-22		332
CP-33		333
CP-44		344
CP-56		356
CP-67		367

All Moyno® Parts, models and identification numbers are listed for reference purposes only. Continental Pump Co, Inc. is not affiliated with or a representative of neither Moyno® nor its parent company. Please contact one of our application specialists at (636)-456-6006 M-F 8AM-5PM CST for more information.

Materials of Construction

	Continental Letter Key	Moyno Letter Key	Materials
Pump Body	C	C	Cast Iron
	S	S	316 Stainless Steel
Rotor	D	D	Chrome Plated Alloy Steel
	S	S	Chrome Plated 304 Stainless Steel
Stator	Q	Q	Buna Nitrile
	B	B	EPDM
	F	F	Viton
Internal Parts	C	C	Carbon Steel
	AF	AF	Anti-Friction Bearings
	HS	HS	Hardened Steel

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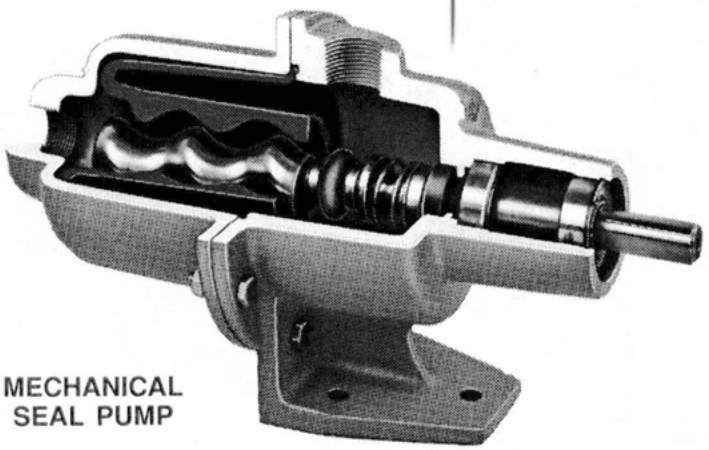
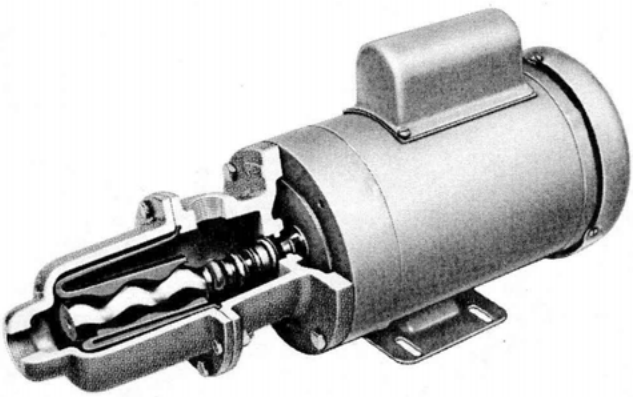
PROGRESSING CAVITY PUMPS

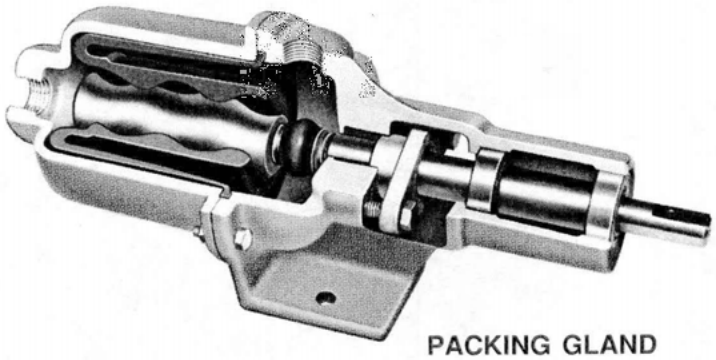


MECHANICAL SEAL PUMP

ONLY ONE MOVING PART!



CLOSE COUPLED MOTOR DRIVEN PUMP



PACKING GLAND PUMP

Continental Pump Co.

29425 State Highway B
Warrenton, MO 63383

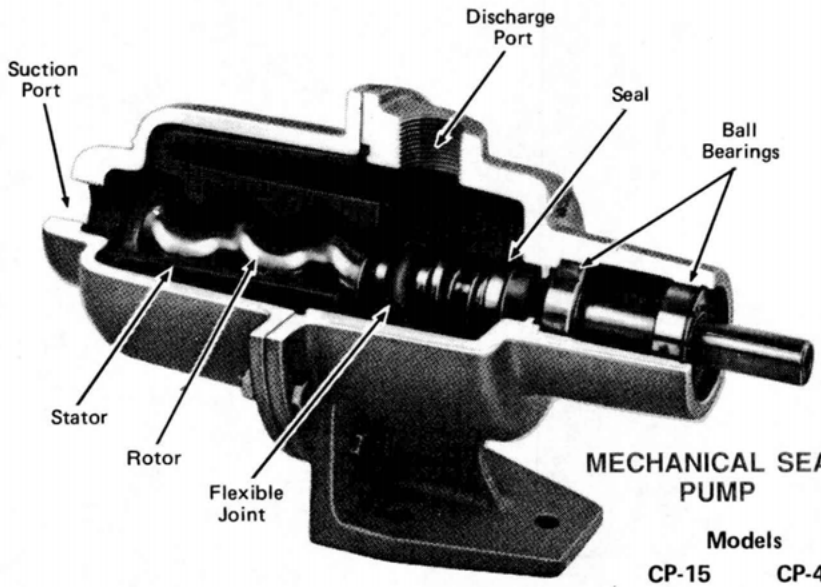
CATALOG CPU-9000

CONTINENTAL®
PROGRESSING CAVITY PUMPS

Amazingly Versatile Units

FOR A WIDE VARIETY OF APPLICATIONS

Revolutionary in design . . . . yet simple and economical, their performance is outstanding on hundreds of different applications for industry, farm and home.



MECHANICAL SEAL PUMP

Models

CP-15	CP-44
CP-22	CP-56
CP-33	CP-67

Proven for 35 years on the toughest pumping problems in industry this amazingly versatile pump is now available in compact, low-cost models for a wide range of uses.

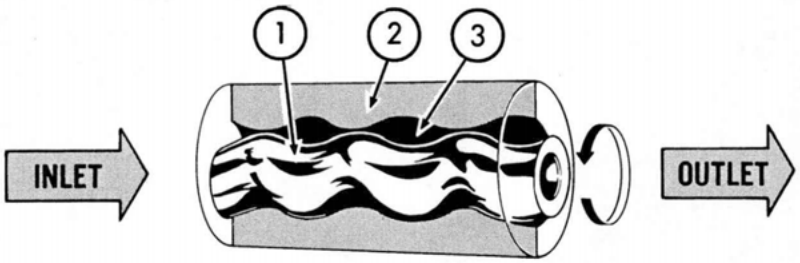
The famed, time-tested and proven simple principle of a helical screw rotor—**ONLY ONE MOVING PART**—turning in a tough rubber stator provides positive displacement, is self-priming to as much as 25 feet of suction lift, has high reserve pressure, low internal turbulence, continuing uniform flow and freedom from air locking.

Properly applied these pumps will yield performance never before accomplished with other types.

Small in size, light in weight, easy to maintain, requiring no lubrication . . . . . **CONTINENTAL PUMPS** are ideal for many kinds of transferring, circulating, metering, filling, sprinkling, irrigating, drainage, and spraying jobs.

HOW THEY WORK . . .

Rotor (1) turns within the flexible rubber stator (2) forming tightly sealed cavities (3) which move toward the discharge port, carrying the liquid. Pumping action starts the instant the Rotor turns. Liquid acts as the lubricant between the pumping elements.



THE PERFECT PUMP FOR:

- *TRANSFERRING*
- *CIRCULATING*
- *SPRAYING*
- *SPRINKLING*
- *IRRIGATING*
- *DRAINING*
- *FILLING*
- *METERING*
- *SEWAGE*
- *WATER SYSTEMS*
- *WASHING*
- *CLEANING*

Ideal for Handling

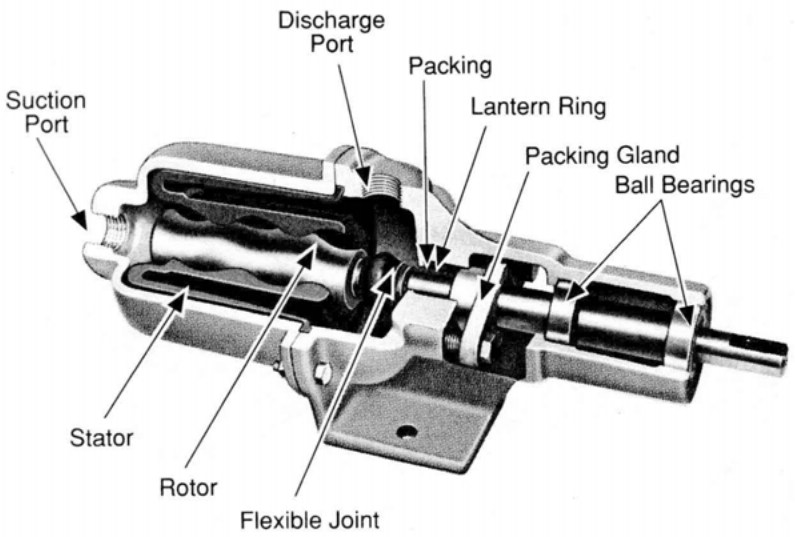
CLEAN WATER
DIRTY WATER (Slightly)
(Extremely)
HOT WATER
SALT WATER
SOAPY WATER
COLD WATER
BEET SUGAR LIQUORS
CANE SUGAR LIQUORS
KEROSENE
NAPTHA
BENZINE
ENGINE OIL (Light)
(Heavy)
CREOSOTE
ALCOHOLS (Ethyl)
(Methyl)
BRINE (Light)
COTTON SEED OIL
AMMONIA WATER
WET VACUUM APPLICATIONS
CONDENSATE
LIQUID SOAP
MINERAL OIL

SYRUP (Light)
(Heavy)
HYDRAULIC OIL (Light)
(Heavy)
WATER BASE PAINTS
TREE SPRAYS (Thin)
(Containing Insolubles)
LAWN SPRINKLING (Water)
LAUNDRY TRAY TRANSFER
GREENHOUSE MIST SPRAYING
SWIMMING POOL CIRCULATION
SWIMMING POOL FILTRATION
WHISKEY
GLYCERINE
WINE
TURPENTINE
BEER
INK
FLAVORS AND EXTRACTS
DYE
FIRE FIGHTING
URINE
IRRIGATING
SEWAGE

VEGETABLE OILS (Light)
(Heavy)
STARCHES (Light)
(Heavy)
LIME WATER
COOLANTS
AQUARIUM CIRCULATION (Salt Water)
(Fresh Water)
INSECTICIDES (Thin)
(Containing Insolubles)
WEEDICIDES (Thin)
(Containing Insolubles)
WOOD TREATMENTS (Oil Base)
(Pastes)
LINSEED OIL
LIVESTOCK SPRAYS (Thin)
(Containing Insolubles)
LIQUID FERTILIZER (Thin)
(Containing Insolubles)
WHITEWASH (Thin)
(Heavy)
ANIMAL OILS (Lard)
MOLASSES (Blackstrap)
(Diluted)

and many more!

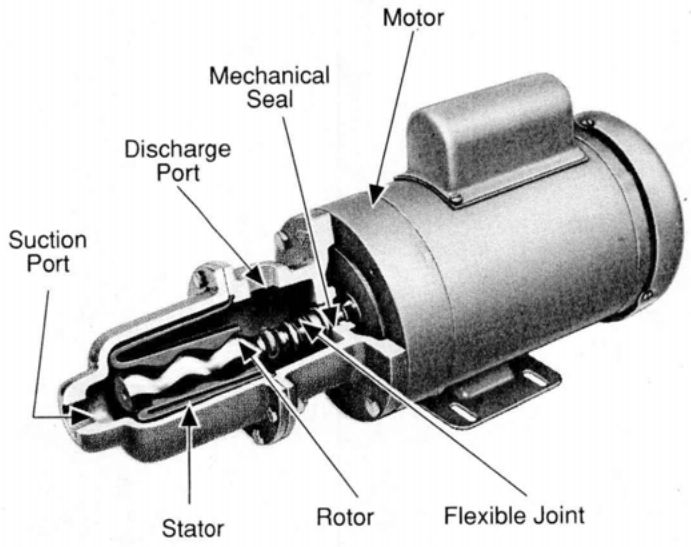
Fill out the **PUMP APPLICATION DATA SHEET** and return for a prompt recommendation.
Request copies if not with this Catalog.



PACKING GLAND PUMP

Models

CP-15D	CP-44D
CP-22D	CP-56D
CP-33D	CP-67D



CLOSE COUPLED
MOTOR-DRIVEN PUMP

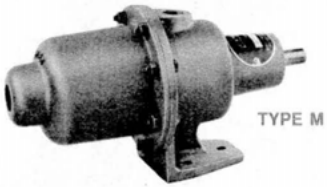
Models

CPM-15	CPML-15
CPM-22	CPML-22
CPM-33	CPML-33
CPM-44	CPML-44
CPM-56	CPML-56
CPM-67	CPML-67

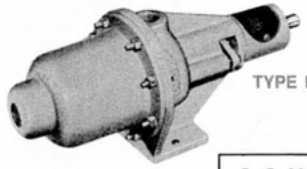
CONTINENTAL®
PROGRESSING CAVITY PUMPS

. . . are the solution to handling many liquids in a range of capacities from less than one gallon to more than 50 gallons per minute versus discharge pressures to 150 PSI depending upon liquid and conditions of the application.

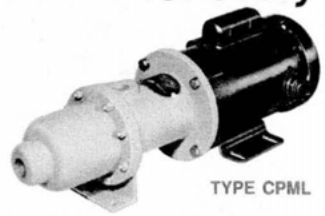
LOW COST COMPACT UNITS
for every requirement!


TYPE M

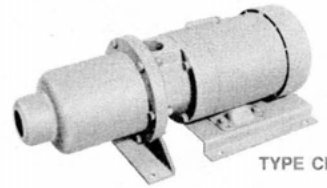
MECHANICAL SEAL PUMP


TYPE D

PACKING GLAND PUMP


TYPE CPML

CLOSE COUPLED MOTOR-DRIVEN PUMP


TYPE CPM

CLOSE COUPLED MOTOR-DRIVEN PUMP

CONTINENTAL PUMP MODELS
PROGRESSING CAVITY TYPE

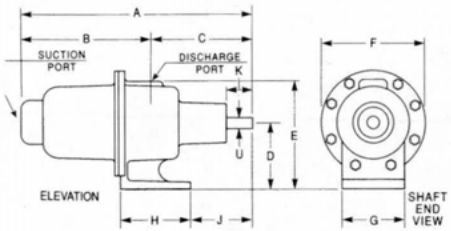
• PUMP FRAME SIZES •	•PORT SIZES• NPT		• PUMP TYPE • MATERIALS OF CONSTRUCTION								SHIPPING WEIGHTS (APPROXIMATE)
			BODY CASTINGS		ROTORS	STATORS			SEALS		
	INLET SUCTION	OUTLET DISCHARGE	"C" CAST IRON	"S" STAINLESS STEEL	"S" STAINLESS STEEL	"Q" BUNA	"B" EPDM	"F" VITON	"M" MECHANICAL	"D" PACKING GLAND	
CP-15 • CP-22 • CP-33 • CP-44	3/4"	3/4"	✓	✓	✓	✓	✓	✓	✓		15 Lbs.
CP-15 • CP-22 • CP-33 • CP-44	3/4"	3/4"	✓	✓	✓	✓	✓	✓		✓	18 Lbs.
CPM-15 • CPM-22 • CPM-33 • CPM-44	3/4"	3/4"	✓		✓	✓	✓	✓	✓		48 Lbs.
CPML-15 • CPML-22 • CPML-33 • CPML-44	3/4"	3/4"	✓	✓	✓	✓	✓	✓	✓		52 Lbs.
CP-56	1-1/2"	1-1/4"	✓	✓	✓	✓	✓	✓	✓		40 Lbs.
CP-56	1-1/2"	1-1/4"	✓	✓	✓	✓	✓	✓		✓	44 Lbs.
CPM-56	1-1/2"	1-1/4"	✓		✓	✓	✓	✓	✓		80 Lbs.
CPML-56	1-1/2"	1-1/4"	✓	✓	✓	✓	✓	✓	✓		85 Lbs.
CP-67	2"	2"	✓	✓	✓	✓	✓	✓	✓		85 Lbs.
CP-67	2"	2"	✓	✓	✓	✓	✓	✓		✓	90 Lbs.
CPM-67	2"	2"	✓		✓	✓	✓	✓	✓		117 Lbs.
CPML-67	2"	2"	✓	✓	✓	✓	✓	✓	✓		125 Lbs.

• DIMENSIONS • SEE NOTE BELOW										
A	B	C	D	E	F	G	H	J	K	U
12-7/16"	6-13/16"	5-5/8"	3-1/2"	5-3/4"	5-1/2"	3-1/4"	3-1/16"	3-3/8"	1-7/16"	5/8"
14-3/4"	6-1/4"	8-1/2"	3-1/2"	5-13/16"	5-1/2"	3-1/4"	3"	6-7/16"	1-7/16"	5/8"
18-5/16"	11-1/2"	6-13/16"	3-1/2"	5-7/8"	6-5/8"	6-1/2"	4-1/2"	10-5/8"	7"	
20-9/16"	13-3/4"	6-13/16"	3-1/2"	5-7/8"	6-5/8"	6-1/2"	4-1/2"	12-7/8"	7"	
16-11/16"	9-3/4"	6-15/16"	4-9/32"	7-9/32"	7-1/2"	6"	4-3/4"	3-9/16"	2-3/8"	3/4"
18-13/16"	9-3/4"	9-1/16"	4-9/32"	7-9/32"	7-1/2"	6"	4-3/4"	5-11/16"	2-3/8"	3/4"
22-1/4"	12-1/2"	9-3/4"	4-1/2"	7-1/2"	7-1/2"	9"	10"	12-1/4"	8-1/4"	
24-11/16"	14-15/16"	9-3/4"	4-1/2"	7-1/2"	7-1/2"	9"	10"	14-11/16"	8-1/4"	
19-9/16"	11-15/16"	7-5/8"	4-1/2"	8-1/4"	8-1/4"	6"	4-7/8"	4-9/16"	2-1/8"	1"
22"	12"	10"	4-1/2"	8-1/4"	8-1/4"	6"	4-3/4"	7-1/8"	2-1/8"	1"
24-5/8"	12-5/8"	12"	4-1/2"	7-3/4"	8-1/4"	9"	10"	14-5/8"	8-5/8"	
27-1/16"	15-1/16"	12"	4-1/2"	7-3/4"	8-1/4"	9"	10"	17-1/16"	8-5/8"	

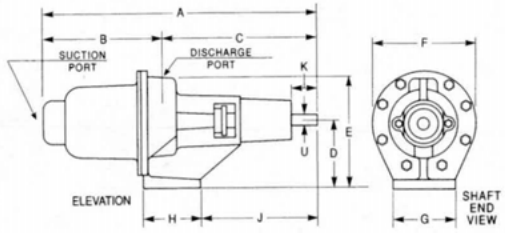
NOTE: TYPE PUMP DESIGNATION:
AFTER PUMP FRAME SIZE
1ST LETTER - BODY CASTING - "C" OR "S"
2ND LETTER - ROTOR - "S"
3RD LETTER - STATOR - "Q", "B" OR "F"
4TH LETTER - TYPE OF SEAL - "M" OR "D"

EXAMPLES OF COMPLETE MODEL DESIGNATIONS
FRAME CP-15-CSQM
FRAME CP-15-SSQD
FRAME CPM-56-CSQM
FRAME CPML-56-CSQM
FRAME CP-67-CSQD

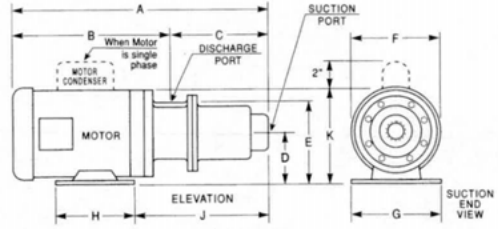
NOTE: ALL DIMENSIONS, EXCEPT "U" MAY VARY BY 1/8".
DO NOT USE ABOVE DIMENSIONS FOR LIMITED SPACE INSTALLATIONS.
REQUEST CERTIFIED DRAWING.
WHERE "U" IS 5/8", +.000"-.002" SHAFT HAS FLAT KEYSEAT 1/16" DEEP x 1" LONG
"U" IS 3/4", +.000"-.002" SHAFT HAS FLAT KEYSEAT 1/16" DEEP x 1" LONG
"U" IS 1" , +.000"-.002" KEYWAY 1/4" WIDE x 1/8" DEEP x 2" LONG



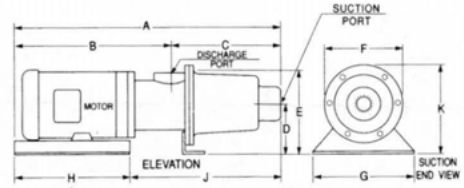
PUMP MODELS
CP-15M • CP-22M • CP-33M • CP-44M • CP-56M • CP-67M
MECHANICAL SEAL TYPE



PUMP MODELS
CP-15D • CP-22D • CP-33D • CP-44D • CP-56D • CP-67D
PACKING GLAND TYPE



PUMP MODELS
CPM-15 • CPM-22 • CPM-33 • CPM-44 • CPML-15 • CPML-22 • CPML-33 • CPML-44
CLOSE COUPLED MOTOR DRIVEN TYPE



PUMP MODELS
CPM-56 • CPML-56 • CPM-67 • CPML-67
CLOSE COUPLED MOTOR DRIVEN TYPE

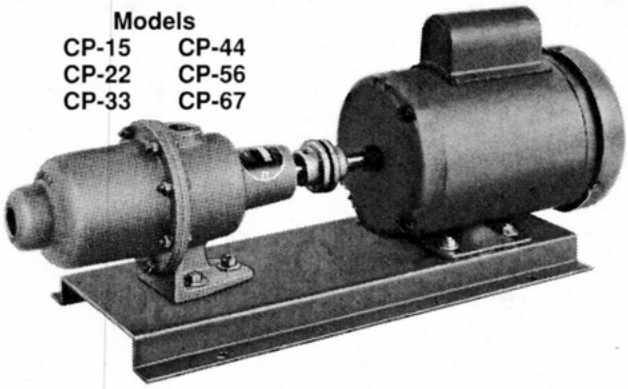
CONTINENTAL®

PROGRESSING CAVITY PUMPS

CONTINENTAL offers Low Cost Compact Pumping Units for every requirement. They are available complete and ready for prompt installation.

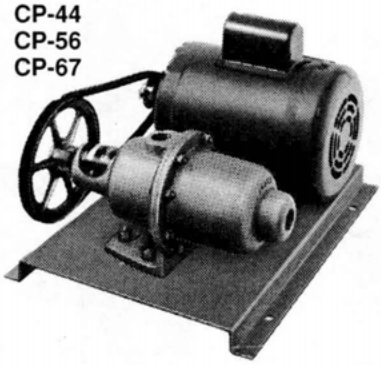
DIRECT CONNECTED MOTOR-DRIVEN UNITS

Models
CP-15 CP-44
CP-22 CP-56
CP-33 CP-67



V-BELT MOTOR-DRIVEN UNITS

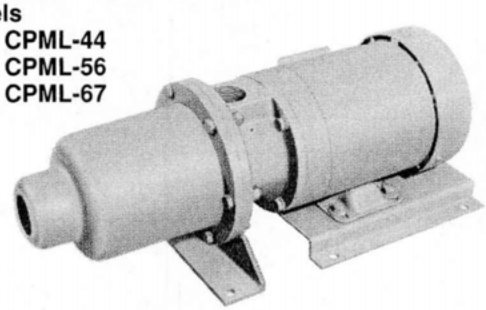
Models
CP-15 CP-44
CP-22 CP-56
CP-33 CP-67



CLOSE-COUPLED MOTOR-DRIVEN UNITS

Models
CPM-15 CPM-44
CPM-22 CPM-56
CPM-33 CPM-67

Models
CPML-15 CPML-44
CPML-22 CPML-56
CPML-33 CPML-67



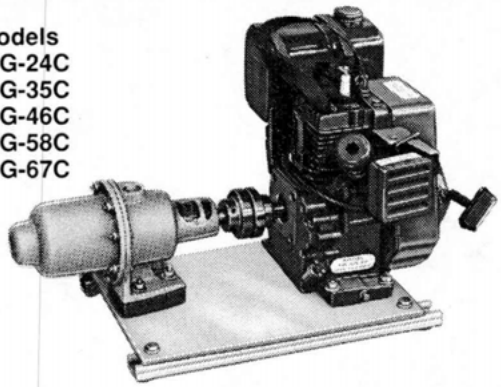
Model CPML Pumps can be CLOSE-COUPLED to a Large Selection of Motor and Drive Units including:

- Open Drip Proof
- Totally Enclosed Fan Cooled
- Explosion Proof
- Direct Current Motors
- Direct Current SCR Drives
- AC Variable Speed Drives

— *WITH A WIDE RANGE OF ELECTRICAL CURRENT CHARACTERISTICS*

GASOLINE ENGINE-DRIVEN PUMP

Models
CPG-24C
CPG-35C
CPG-46C
CPG-58C
CPG-67C



PORTABLE 3 HORSEPOWER ENGINE UNITS

ALSO AVAILABLE WITH VARIABLE SPEED DRIVES OR SPEED REDUCER UNITS

. . . YIELD OUTSTANDING PERFORMANCE

APPLICATION OF

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PROGRESSING CAVITY PUMPS

Speed, temperature, viscosity, suction lift, discharge pressure, abrasive content and corrosive action of the liquid to be handled should all be considered in applying these pumps. Pump should always be filled with the liquid to be handled before running. The liquid serves as a lubricant and is easily poured into pump through the discharge port before final assembly of the piping or hose connections. A filling tee with a plug or valve can be installed above the discharge port for ease in filling.

Liquid to be pumped should never exceed 190°F temperature. Maximum speed that any of these pumps should be run is 2,800 rpm and then only in handling thin, abrasive-free liquids. Preferably the speed should be 1,750 rpm for longest life. When liquid contains abrasive material or is viscous, the speed should be reduced.

For various viscosities of abrasive-free liquids, the maximum operating speed of the pump is set forth below:

SUGGESTED MAXIMUM OPERATING SPEED OF PUMP							
2800 RPM	1750 RPM	1150 RPM	870 RPM	580 RPM	430 RPM	180 RPM	100 RPM
VISCOSITY (Centipoise)							
1	1 to 100	100 to 500	500 to 1000	1000 to 3000	3000 to 5000	5000 to 10,000	10,000 to 20,000
Water	Canned Milk	30 Weight Oil	Table Syrup	Honey	Molasses	Paste	Peanut Butter
ABRASIVE FLUIDS							
None	None	None	Light	Medium	Medium	Heavy	Heavy
Clear Water Gasoline			Dirty Water	Clay Slurries Porcelain Enamel		Lapping Compounds Mill Scale in Water	

Capacity and life of these pumps will depend upon the liquid being handled.

Piping to pump should be properly selected and should not be smaller in size than the suction and discharge ports of the pump. All pipe and hose fitting joints should be tight. Discharge lines should be open or if pump is operated in an enclosed system, provision should be made for pressure relief when the pump pressure exceeds the limits as set forth for each model pump.

Pump bearings do not require lubrication as they are pre-lubricated.

We recommend that the pump be flushed after its use.

PUMP SHOULD NOT BE RUN DRY.

We will be glad to collaborate on any proposed applications.

Fill in CONTINENTAL PUMP DATA Sheet and return for a prompt recommendation. Request copies if not with this Bulletin.

hundreds of different applications for . . . .

INDUSTRY
COMMERCE
AGRICULTURE

PERFORMANCE DATA							
MODEL NO.	DISCHARGE PRESSURE	CAPACITY-Gallons per Minute (Water at 70°F) PUMP SPEED					MOTOR HORSE POWER
		1750 rpm	1150 rpm	870 rpm	580 rpm	430 rpm	
CP-15	0	1.9	1.3	1.0	.7	.5	1/2
	25	1.7	1.0	.5	.2	.1	
	50	1.5	.9	.2			
	75	1.2	.8				
	100	1.0	.7				
	125	.8	.5				
	150	.6	.4				
CP-22	0	4.9	3.2	2.4	1.6	1.2	1/2
	25	4.1	2.7	2.0	1.3	.9	
	50	3.4	2.2	1.6	1.0	.7	
	75	2.6	1.7	1.3	.8	.6	
	100	2.0	1.5	1.0	.6	.4	
CP-33	0	9.4	6.0	4.6	3.1	2.3	1/2
	25	7.0	4.5	3.4	2.3	1.7	
	50	4.2	2.7	2.0	1.3	.9	
CP-44	0	15.0	9.7	7.3	4.9	3.6	1/2
	25	12.0	7.8	5.9	4.0	3.0	
	50	9.4	6.1	4.6	3.1	2.3	3/4
CP-56	0	24.0	15.6	11.7	7.9	5.8	1
	25	22.0	14.3	10.7	7.2	5.3	
	35	20.5	13.3	10.0	6.7	4.9	
	50	19.5	12.7	9.5	6.4	4.1	
CP-67	0	53.0	34.5	26.0	17.5	13.0	1
	10	48.0	31.0	23.4	15.8	11.7	
	20	43.0	28.0	21.0	14.0	10.3	
	35	34.0	22.0	16.5	11.0	8.1	1-1/2
	50	25.0	16.3	12.3	8.3	6.1	2

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. . . have been applied by these well known Companies:

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ARMCO
ARVIN INDUSTRIES
ASPEN PLASTICS
BALDOR
BANNER FIBREBOARD
BANQUET FOODS
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BEMIS
BENDIX
BEVERIDGE PAPER
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CARNATION
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CLINTON CORP
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COCA COLA
COLEMAN
COLONIAL BAKING
CONSOLIDATED PACKAGING
CONSOLIDATED ALUMINUM
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CURTIS PAPER
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DAN RIVER
DEKALB AGRICULTURE
DEL MONTE
DOW CHEMICAL
DR. PEPPER
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DU PONT
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MONARCH CEMENT
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NATIONAL FELT
NATIONAL GYPSUM
NATIONAL MACHINERY
NATIONAL MARINE
NEKOOSA PAPERS
NORTHRUP KING
OLIN
OLINKRAFT
OWENS CORNING FIBERGLAS
OWENS ILLINOIS
PACKAGING CORP OF AMERICA
PANHANDLE EASTERN
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ST. LOUIS SHIP
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VALSPAR
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Heavy Duty Industrial Pumps

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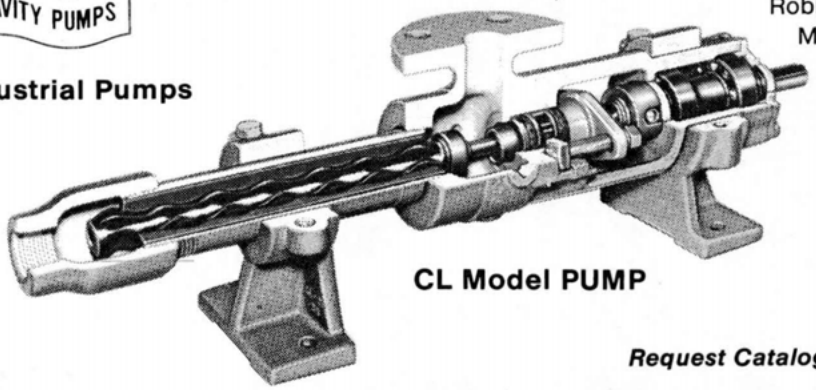

CL Model PUMP

Request Catalog CL-8400

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CP Performance

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PERFORMANCE DATA

MODEL CP

REVISED 4/2012

PERFORMANCE DATA							
MODEL NO	DISCHARGE PRESSURE	CAPACITY- Gallons per Minute (Water at 70°F) PUMP SPEED					MOTOR HORSE POWER
		1750 RPM	1150 RPM	870 RPM	580 RPM	430 RPM	
CP-15	0	1.9	1.3	1.0	0.7	0.5	1/2
	25	1.7	1.0	0.5	0.2	0.1	
	50	1.5	0.9	0.2			
	75	1.2	0.8				
	100	1.0	0.7				
	125	0.8	0.5				
	150	0.6	0.4				
CP-22	0	4.9	3.2	2.0	1.6	1.2	1/2
	25	4.1	2.7	2.0	1.3	0.9	
	50	3.4	2.2	1.6	1.0	0.7	
	75	2.6	1.7	1.3	0.8	0.6	
	100	2.0	1.5	1.0	0.6	0.4	
CP-33	0	9.4	6.0	4.6	3.1	2.3	1/2
	25	7.0	4.5	3.4	2.3	1.7	
	50	4.2	2.7	2.0	1.3	0.9	
CP-44	0	15.0	9.7	7.3	4.9	3.6	3/4
	25	12.0	7.8	5.9	4.0	3.0	
	50	9.4	6.1	4.6	3.1	2.3	3/4
CP-56	0	24.0	15.6	11.7	7.9	5.8	1 1/2
	25	22.0	14.3	10.7	7.2	5.3	
	35	20.5	13.3	10.0	6.7	4.9	
	50	19.5	12.7	9.5	6.4	4.1	
CP-67	0	53.0	34.5	26.0	17.5	13.0	2
	10	48.0	31.0	23.4	15.8	11.7	
	20	43.0	28.0	21.0	14.0	10.3	
	35	34.0	22.0	16.5	11.0	8.1	2
	50	25.0	16.3	12.3	8.3	6.1	2

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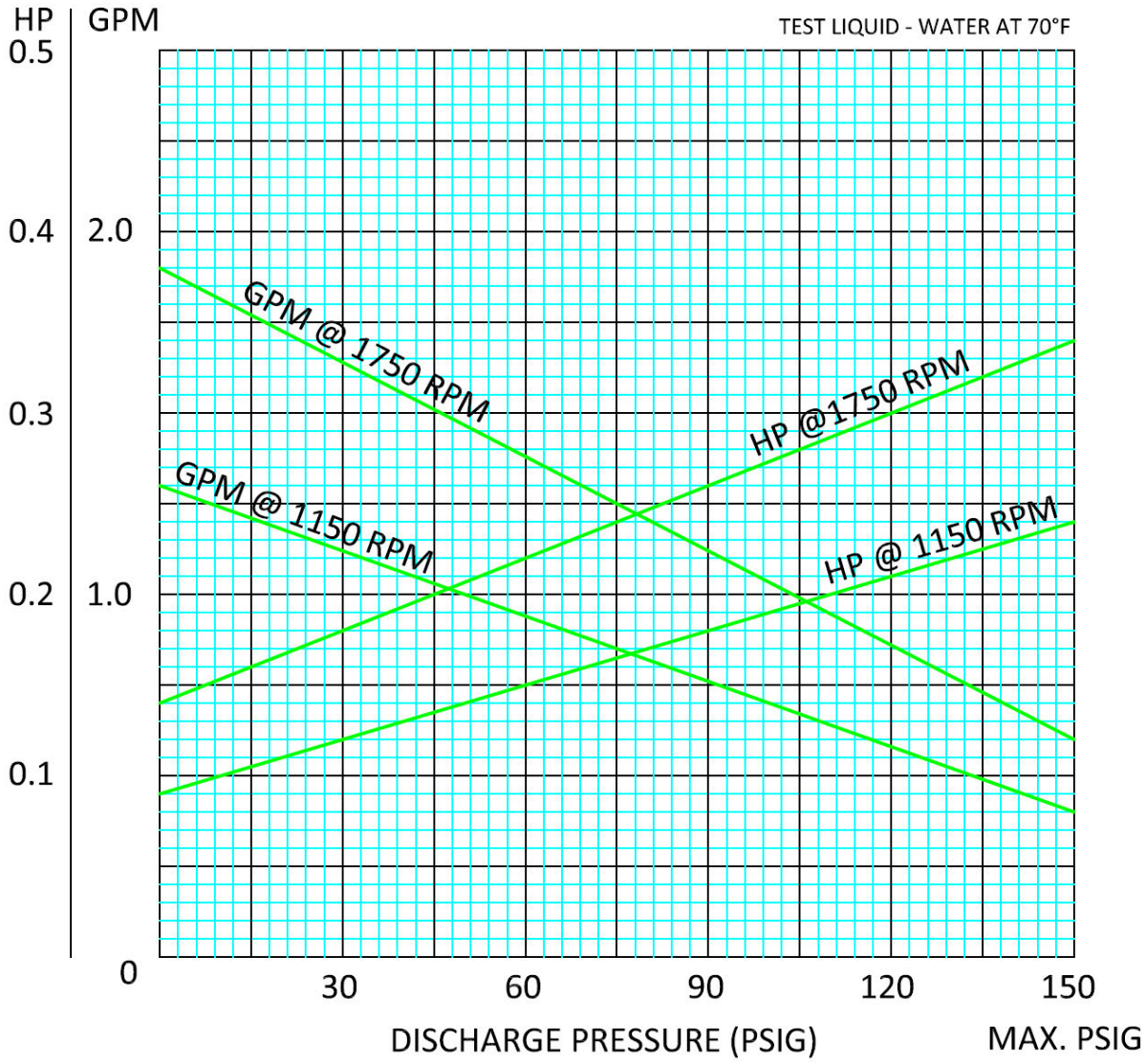
Pump Curves

PERFORMANCE DATA
MODEL CP-15



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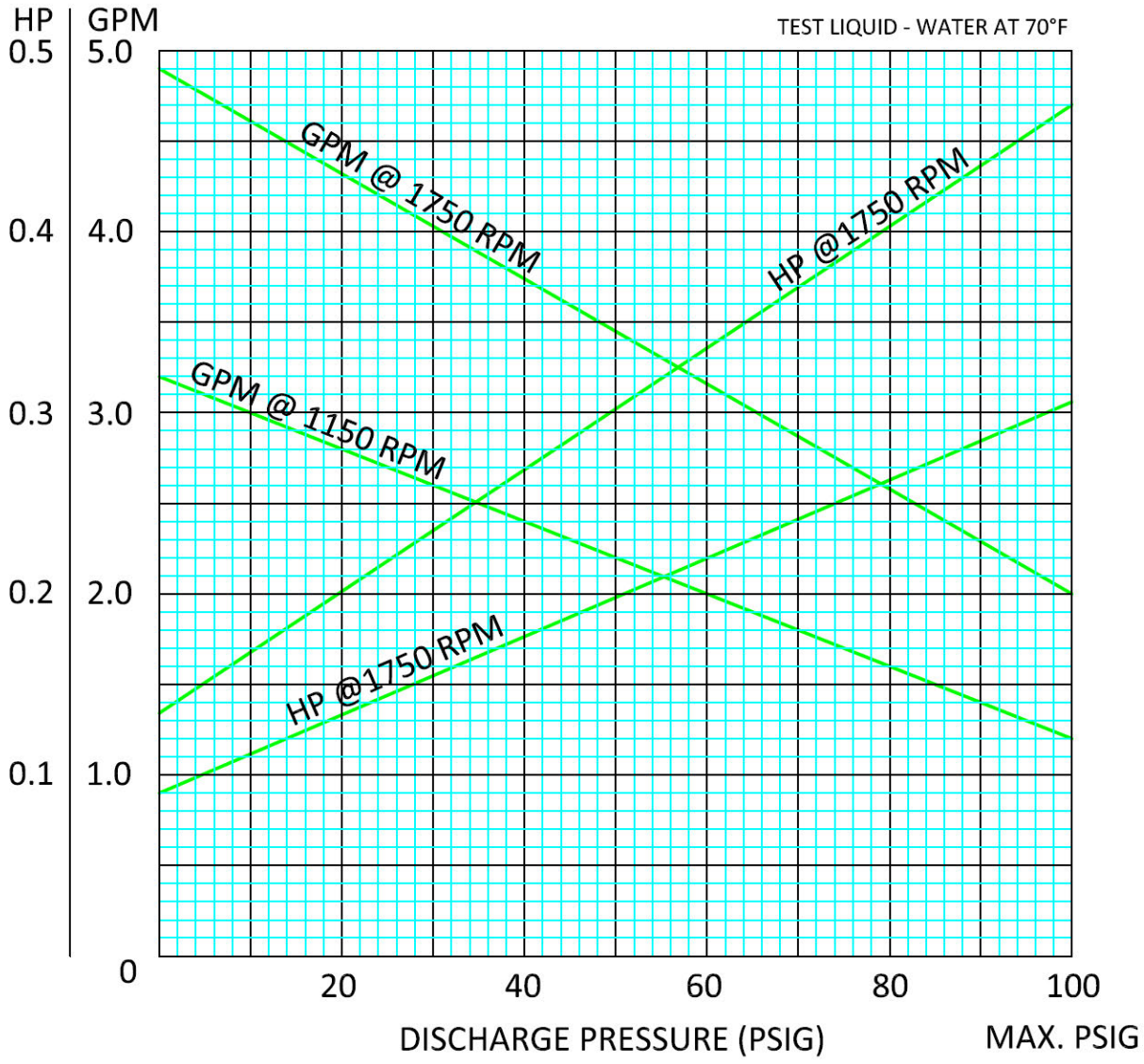
PERFORMANCE DATA
MODEL CP-22



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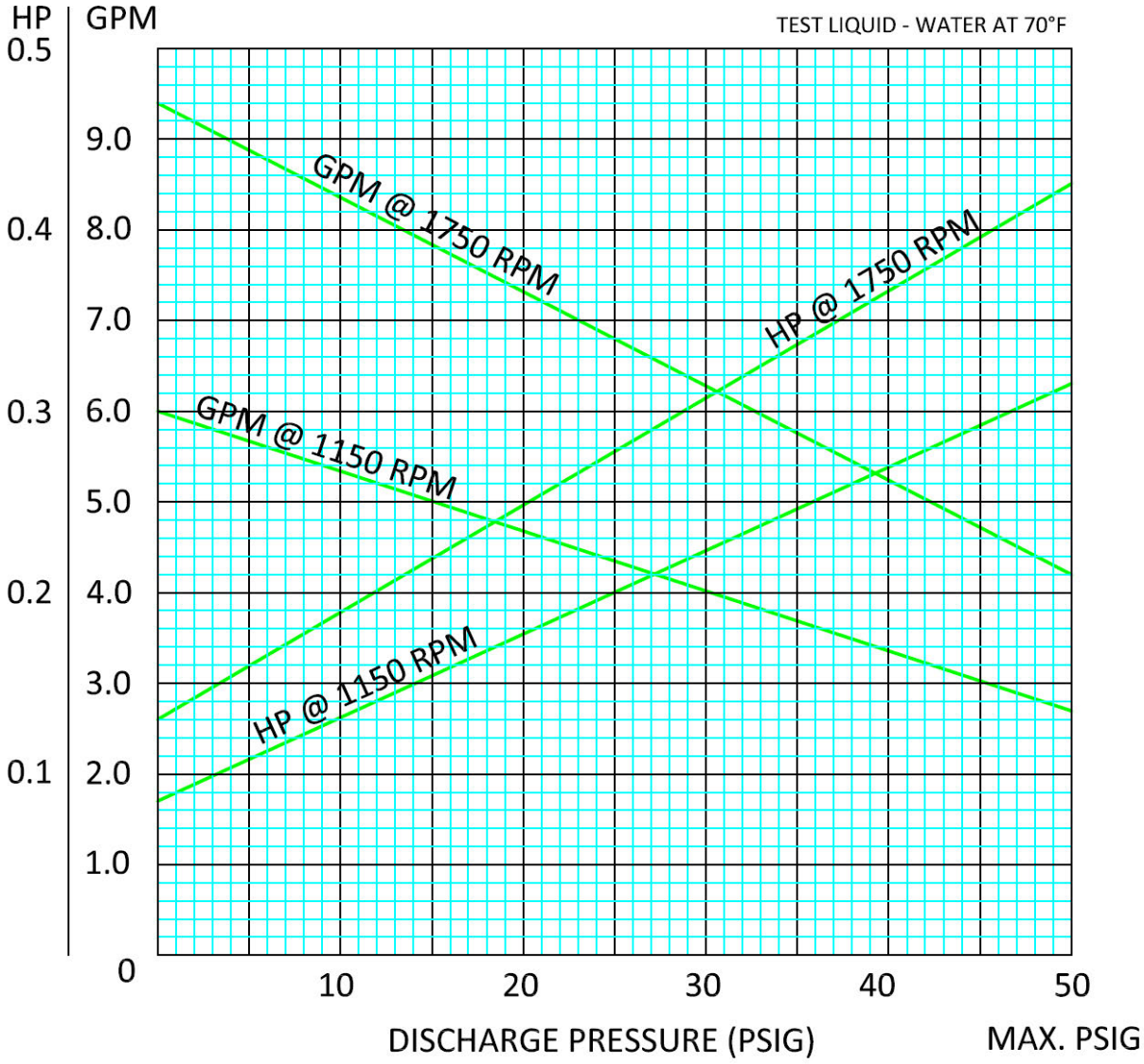
PERFORMANCE DATA
MODEL CP-33



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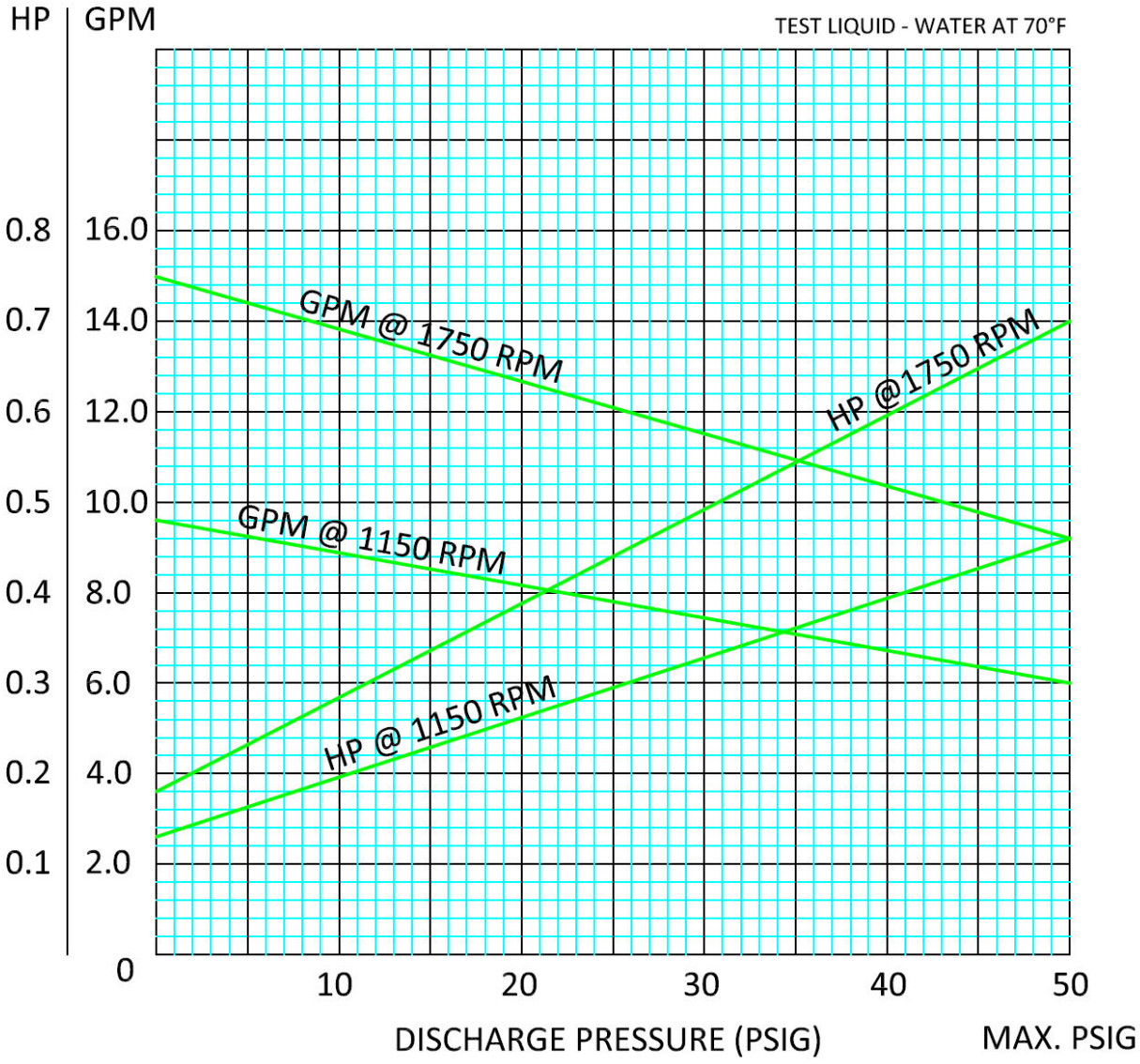
PERFORMANCE DATA
MODEL CP-44



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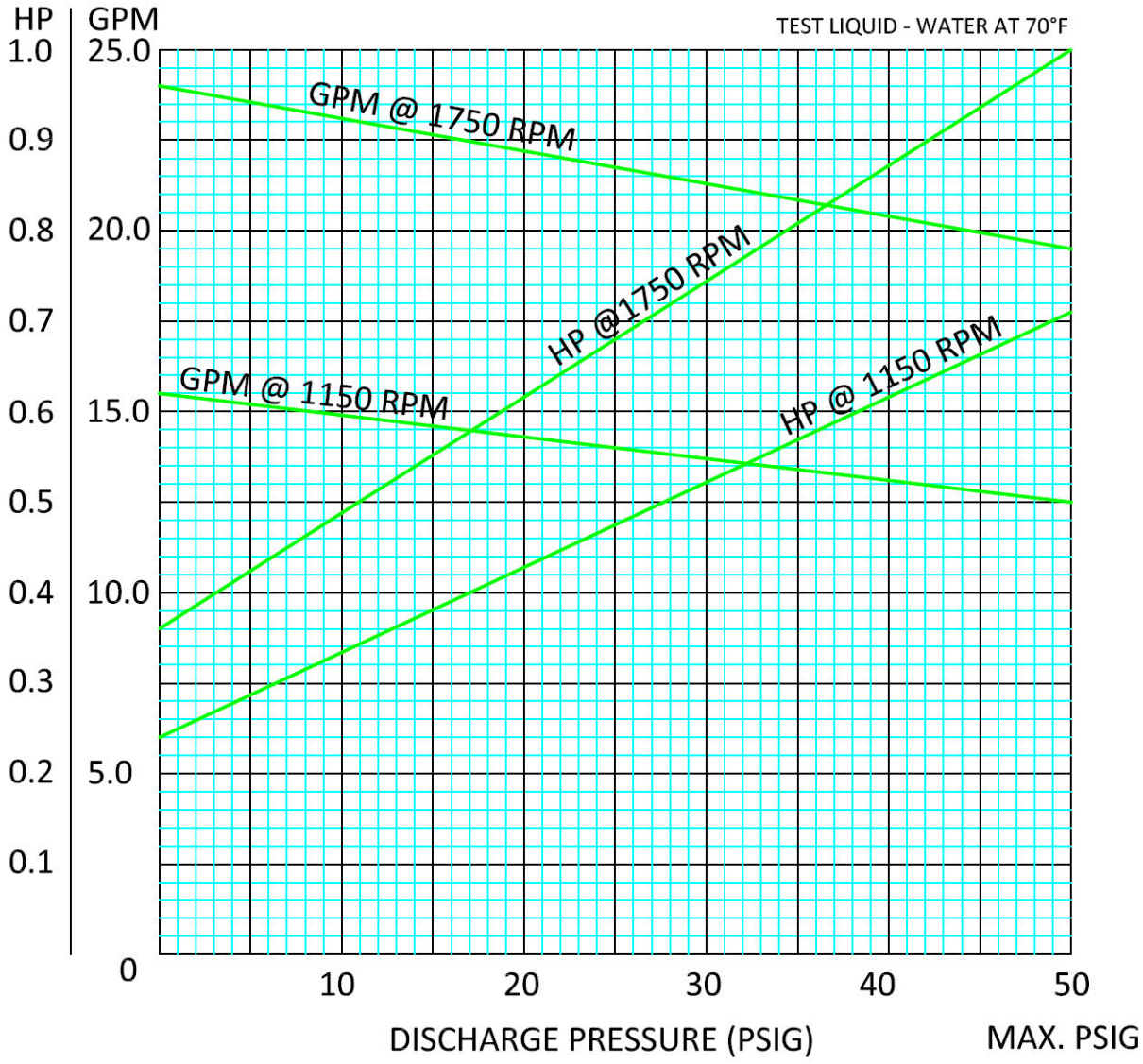
PERFORMANCE DATA
MODEL CP-56



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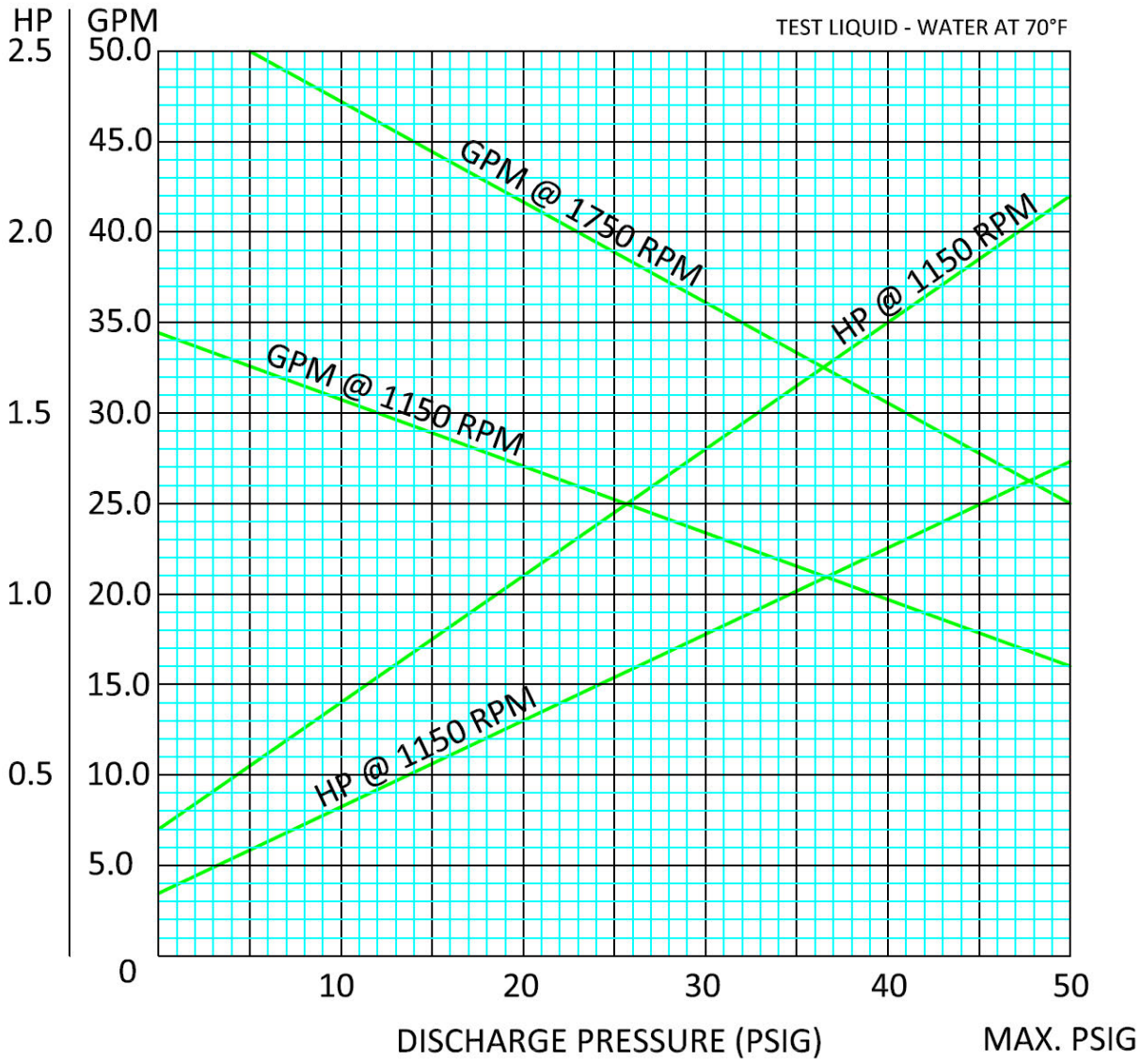
PERFORMANCE DATA
MODEL CP-67



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CP Dimensions

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Dimensions & Weights

CP Frame Pumps

Drawings on next page

REV 4/20/12

PUMP SIZES	DIMENSIONS (INCHES)											WEIGHT (LBS)	PORT SIZES	
	A	B	C	D	E	F	G	H	J	K	U		INLET SUCTION	OUTLET DISCHARGE
CP-15· CP-22 · CP-33 · CP-44	12- 7/16"	6-13/16"	5- 5/8"	3- 1/2"	5- 3/4"	5- 1/2"	3- 1/4"	3- 11/16"	3- 3/8"	1- 7/16"	5/8"	15	3/4"	3/4"
CPD-15· CPD-22 · CPD-33 · CPD-44	14- 3/4"	6- 1/4"	8- 1/2"	3- 1/2"	5- 13/16"	5- 1/2"	3- 1/4"	3"	6- 7/16"	1- 7/16"	5/8"	18	3/4"	3/4"
CPM-15 · CPM-22 · CPM-33 · CPM-44	18- 5/16"	11- 1/2"	6- 13/16"	3- 1/2"	5- 7/8"	6- 5/8"	6- 1/2"	4- 1/2"	10- 5/8"	7"		48	3/4"	3/4"
CPML-15 · CPML-22 · CPML-33 · CPML-44	20- 9/16"	13- 3/4"	6- 13/16"	3- 1/2"	5- 7/8"	6- 5/8"	6- 1/2"	4- 1/2"	12- 7/8"	7'		52	3/4"	3/4"
CP-56	16- 11/16"	9- 3/4"	6- 15/16"	4- 9/32"	7- 9/32"	7- 1/2"	6"	4- 3/4"	3- 9/16"	2- 3/8"	3/4"	40	1-1/2"	1-1/4"
CPD-56	18- 13/16"	9- 3/4"	9- 1/16"	4- 9/32"	7- 9/32"	7- 1/2"	6"	4- 3/4"	5- 11/16"	2- 3/8"	3/4"	44	1-1/2"	1-1/4"
CPM-56	22- 1/4"	12- 1/2"	9- 3/4"	4- 1/2"	7- 1/2"	7- 1/2"	9"	10"	12- 1/4"	8- 1/4"		80	1-1/2"	1-1/4"
CPML-56	24- 11/16"	14- 15/16"	9- 3/4"	4- 1/2"	7- 1/2"	7- 1/2"	9"	10"	14- 11/16"	8- 1/4"		85	1-1/2"	1-1/4"
CP-67	19- 9/16"	11- 15/16"	7- 5/8"	4- 1/2"	8- 1/4"	8- 1/4"	6"	4- 7/8"	4- 9/16"	2- 1/8"	1"	85	2"	2"
CPD-67	22"	12"	10"	4- 1/2"	8- 1/4"	8- 1/4"	6"	4- 3/4"	7- 1/8"	2- 1/8"	1"	90	2"	2"
CPM-67	24- 5/8"	12- 5/8"	12"	4- 1/2"	7- 3/4"	8- 1/4"	9"	10"	14- 5/8"	8- 5/8"		117	2"	2"
CPML-67	27- 1/16"	15- 1/16"	12"	4- 1/2"	7- 3/4"	8- 1/4"	9"	10"	17- 1/16"	8- 5/8"		125	2"	2"

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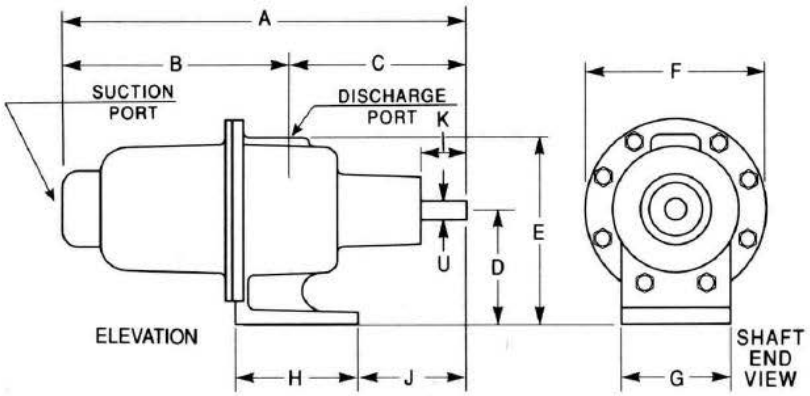
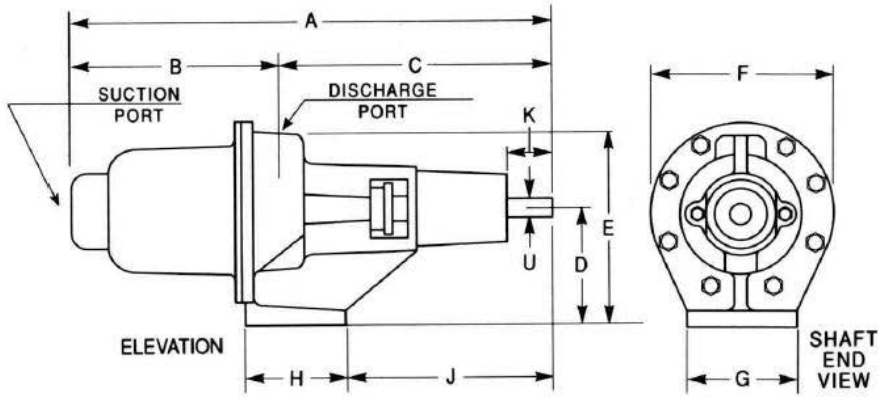
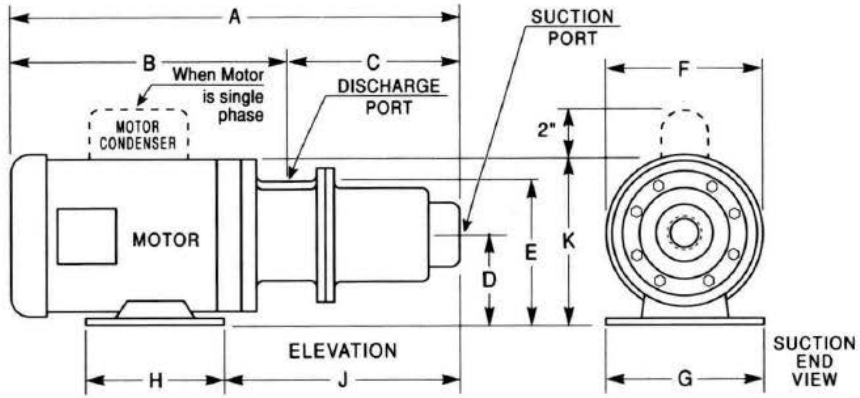


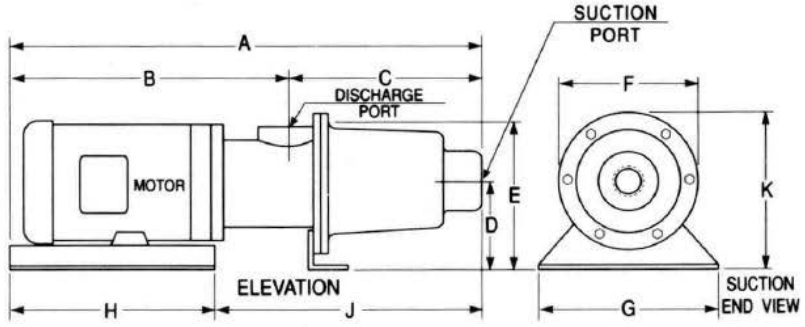
PUMP MODELS
CP-15M • CP-22M • CP-33M • CP-44M • CP-56M • CP-67M
MECHANICAL SEAL TYPE



PUMP MODELS
CP-15D • CP-22D • CP-33D • CP-44D • CP-56D • CP-67D
PACKING GLAND TYPE



PUMP MODELS
CPM-15 • CPM-22 • CPM-33 • CPM-44 • CPML-15 • CPML-22 • CPML-33 • CPML-44
CLOSE COUPLED MOTOR DRIVEN TYPE



PUMP MODELS
CPM-56 • CPML-56 • CPM-67 • CPML-67
CLOSE COUPLED MOTOR DRIVEN TYPE

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CP Parts

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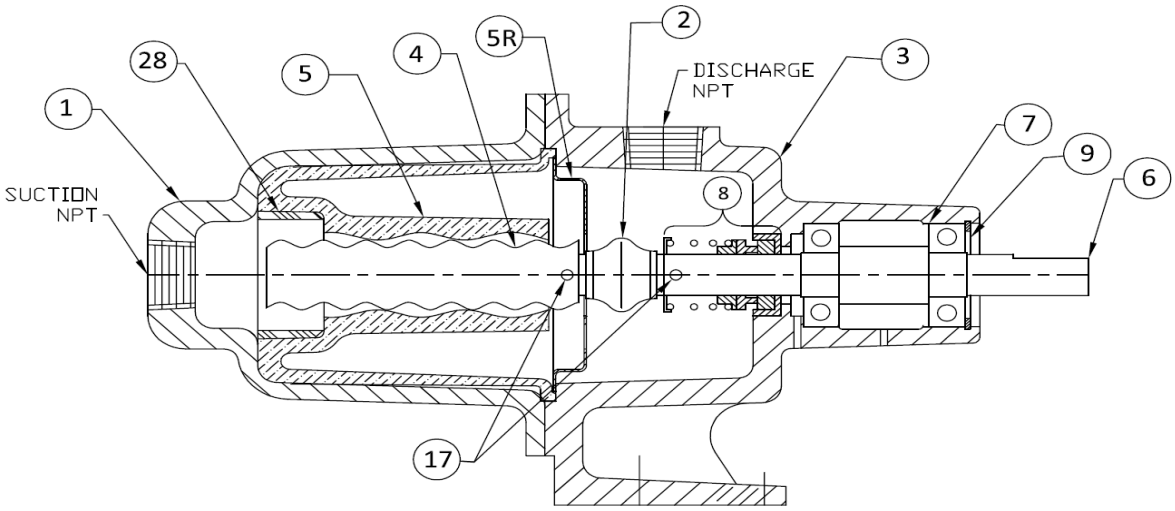
Parts Lists

PARTS LIST

FRAMES: CP15, 22, 33 & 44

MECHANICAL SEAL TYPE - M



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO. 15 FRAME	PART NO. 22 FRAME	PART NO. 33 FRAME	PART NO. 44 FRAME
1	SUCTION HOUSING	CP1-15C CP1-15S	CP1-15C CP1-15S	CP1-15C CP1-15S	CP1-15C CP1-15S
2	FLEXIBLE JOINT-PINNED	U2-15PQS	U2-15PQS	U2-15PQS	U2-15PQS
2	FLEXIBLE JOINT-THREADED	U2-15TQS	U2-15TQS	U2-15TQS	U2-15TQS
3	DISCHARGE HOUSING	CP3-15C CP3-15S	CP3-15C CP3-15S	CP3-15C CP3-15S	CP3-15C CP3-15S
4	ROTOR, PINNED AND THREADED	U4-15PTS	U4-22PTS	U4-33PTS	U4-44PTS
5	STATOR	U5-15Q	U5-22Q	U5-33Q	U5-44Q
5R	STATOR BARRIER**	U5R-15	U5R-15	U5R-15	U5R-15
6	SHAFT, PINNED	U6-15PS	U6-15PS	U6-15PS	U6-15PS
6	SHAFT, THREADED	U6-15TS	U6-15TS	U6-15TS	U6-15TS
7	BALL BEARING (2 EA)	U7-15	U7-15	U7-15	U7-15
8	MECHANICAL RING	U8-15Q	U8-15Q	U8-15Q	U8-15Q
9	RETAINING SEAL	U9-15	U9-15	U9-15	U9-15
17	ROLL PINS (2 EA)	U17-15	U17-15	U17-15	U17-15
28	STATOR RING	U28-15S	U28-15S	NOT USED	NOT USED

**=OPTIONAL

T= THREADED

P=PINNED

MATERIALS OF CONSTRUCTION

C = CAST IRON / CARBON STEEL

S = STAINLESS STEEL

Q = BUNA N / NITRILE

B = EPDM

F = VITON

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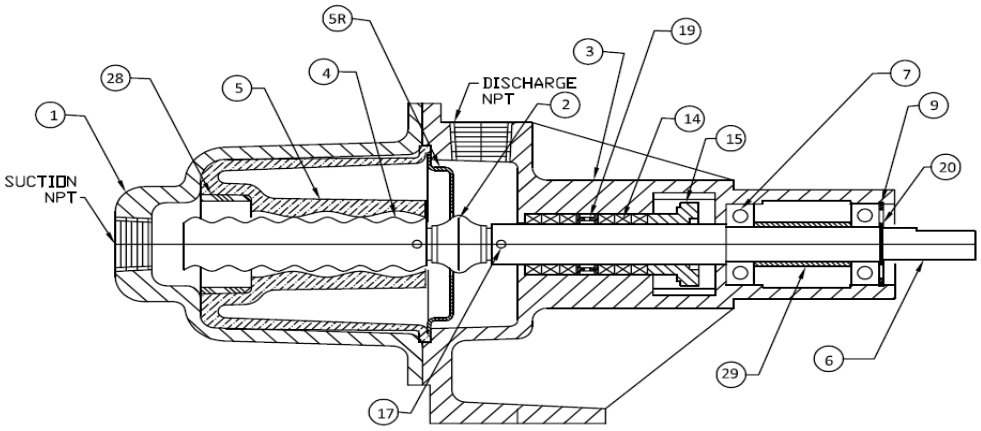
PARTS LIST

FRAMES: CPD15, 22, 23 & 44

PACKING GLAND TYPES - D



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO. 15 FRAME	PART NO. 22 FRAME	PART NO. 33 FRAME	PART NO. 44 FRAME
1	SUCTION HOUSING	CP1-15C CP1-15S	CP1-15C CP1-15S	CP1-15C CP1-15S	CP1-15C CP1-15S
2	FLEXIBLE JOINT-PINNED	U2-15PQS	U2-15PQS	U2-15PQS	U2-15PQS
2	FLEXIBLE JOINT-THREADED	U2-15TQS	U2-15TQS	U2-15TQS	U2-15TQS
3	DISCHARGE HOUSING	CP3-15C CP3-15S	CP3-15C CP3-15S	CP3-15C CP3-15S	CP3-15C CP3-15S
4	ROTOR, PINNED AND THREADED	U4-15PTS	U4-22PTS	U4-33PTS	U4-44PTS
5	STATOR	U5-15Q	U5-22Q	U5-33Q	U5-44Q
5R	STATOR BARRIER**	U5R-15	U5R-15	U5R-15	U5R-15
6	SHAFT, PINNED	U6-15PDSN	U6-15PDSN	U6-15PDSN	U6-15PDSN
6	SHAFT, THREADED	U6-15TDSN	U6-15TDSN	U6-15TDSN	U6-15TDSN
7	BALL BEARING (2 EA)	U7-15	U7-15	U7-15	U7-15
9	RETAINING RING	U9-15	U9-15	U9-15	U9-15
14	PACKING SET	U14-15	U14-15	U14-15	U14-15
15	PACKING GLAND	U15-15C U15-15S	U15-15C U15-15S	U15-15C U15-15S	U15-15C U15-15S
17	ROLL PINS (2 EA)	U17-15S	U17-15S	U17-15S	U17-15S
19	LANTERN RING	U19-15S	U19-15S	U19-15S	U19-15S
20	SHAFT RETAINING RING	U20-15	U20-15	U20-15	U20-15
28	STATOR RING	U28-15S	U28-15S	NOT USED	NOT USED
29	BEARING SPACER	U29-15C	U29-15C	U29-15C	U29-15C

**=OPTIONAL

T= THREADED

P=PINNED

MATERIALS OF CONSTRUCTION

C=CAST IRON / CARBON STEEL

S= STAINLESS STEEL

Q= BUNA N / NITRILE

B= EPDM

F= VITON

CPD-15

REV. 4/20/12

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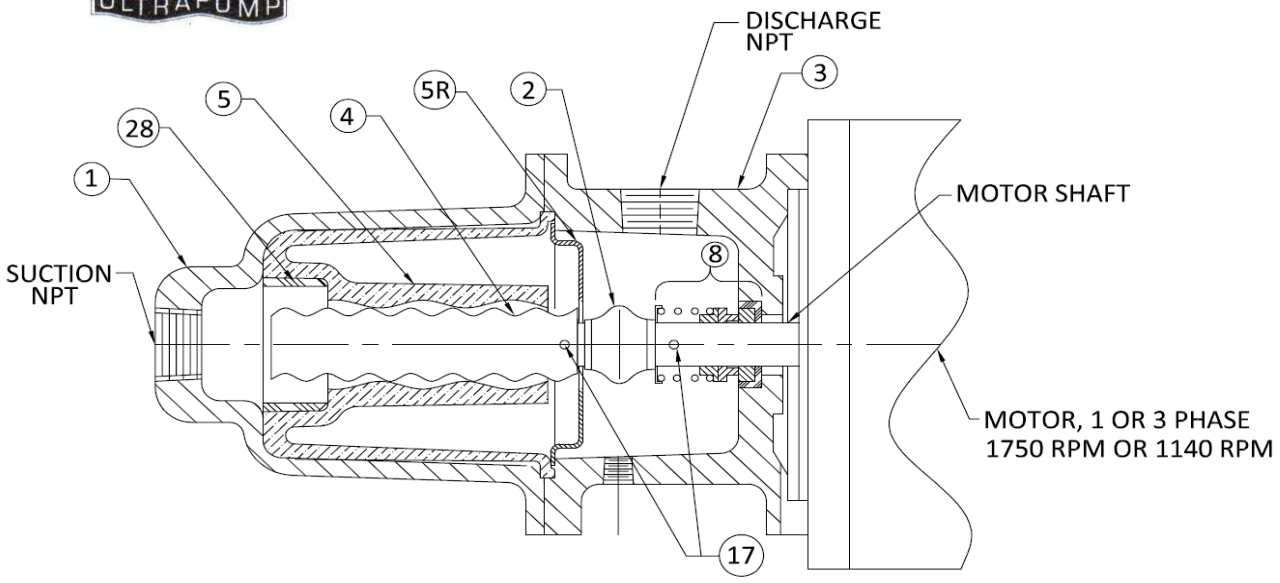
PARTS LIST

FRAMES: CPM15, 22, 33 & 44

CLOSE COUPLED PUMP



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO. 15 FRAME	PART NO. 22 FRAME	PART NO. 33 FRAME	PART NO. 44 FRAME
1	SUCTION HOUSING	CP1-15C CP1-15S	CP1-15C CP1-15S	CP1-15C CP1-15S	CP1-15C CP1-15S
2	FLEXIBLE JOINT-PINNED	U2-15PQS	U2-15PQS	U2-15PQS	U2-15PQS
2	FLEXIBLE JOINT-THREADED	U2-15TQS	U2-15TQS	U2-15TQS	U2-15TQS
3	DISCHARGE HOUSING	CPM3-15C CPM3-15S	CPM3-15C CPM3-15S	CPM3-15C CPM3-15S	CPM3-15C CPM3-15S
4	ROTOR, PINNED AND THREADED	U4-15PTS	U4-22PTS	U4-33PTS	U4-44PTS
5	STATOR	U5-15Q	U5-22Q	U5-33Q	U5-44Q
5R	STATOR BARRIER**	U5R-15	U5R-15	U5R-15	U5R-15
8	MECHANICAL SEAL	U8-15Q	U8-15Q	U8-15Q	U8-15Q
17	ROLL PINS (2 EA)	U17-15	U17-15	U17-15	U17-15
28	STATOR RING	U28-15S	U28-15S	NOT USED	NOT USED

**=OPTIONAL

T= THREADED

P=PINNED

MATERIALS OF CONSTRUCTION

C=CAST IRON / CARBON STEEL

S= STAINLESS STEEL

Q= BUNA N / NITRILE

B= EPDM

F= VITON

CPM-15

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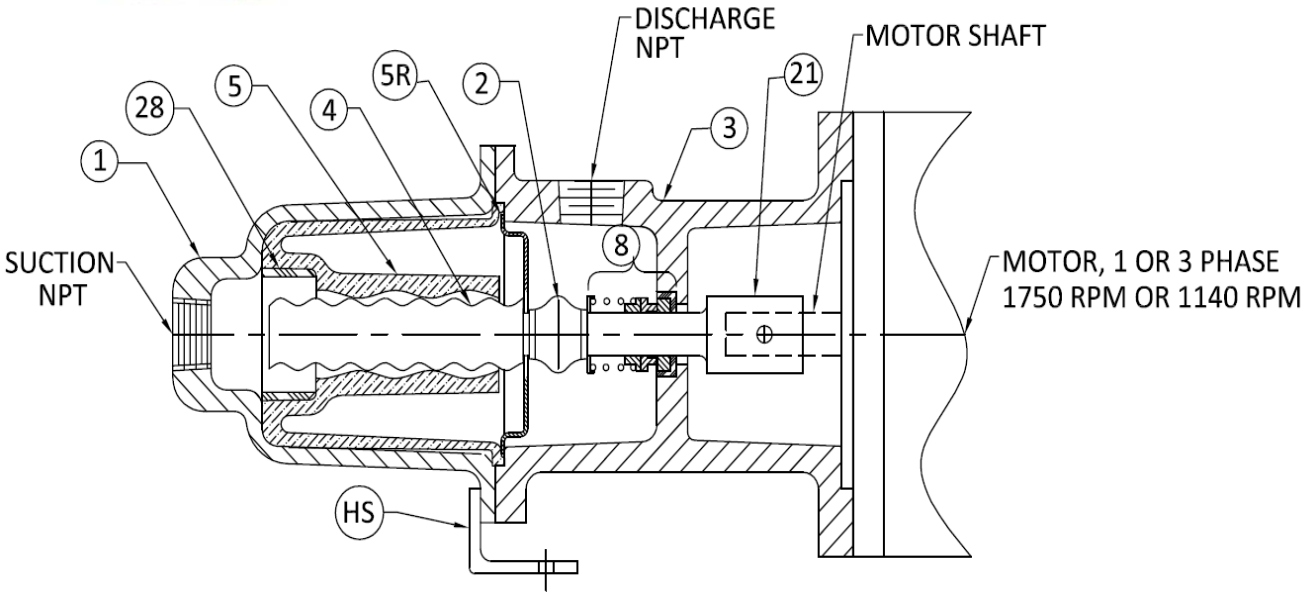
PARTS LIST

FRAMES:CPML15, 22, 33 & 44

CLOSED COUPLED PUMP



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO. 15 FRAME	PART NO. 22 FRAME	PART NO. 33 FRAME	PART NO. 44 FRAME
1	SUCTION HOUSING	CP1-15C CP1-15S	CP1-15C CP1-15S	CP1-15C CP1-15S	CP1-15C CP1-15S
2	FLEXIBLE JOINT- THREADED	U2-15TQS	U2-15TQS	U2-15TQS	U2-15TQS
3	DISCHARGE HOUSING	CPML3-15C CPML3-15S	CPML3-15C CPML3-15S	CPML3-15C CPML3-15S	CPML3-15C CPML3-15S
4	ROTOR, PINNED AND THREADED	U4-15PTS	U4-22PTS	U4-33PTS	U4-44PTS
5	STATOR	U5-15Q	U5-22Q	U5-33Q	U5-44Q
5R	STATOR BARRIER**	U5R-15S	U5R-15S	U5R-15S	U5R-15S
8	MECHANICAL SEAL	U8-15Q	U8-15Q	U8-15Q	U8-15Q
21	MOTOR COUPLING	U21-15S	U21-15S	U21-15S	U21-15S
28	STATOR RING	U28-15S	U28-15S	NOT USED	NOT USED
HS	HOUSING SUPPORT	HS-15	HS-15	HS-15	HS-15

**=OPTIONAL

T= THREADED

P=PINNED

MATERIALS OF CONSTRUCTION

C=CAST IRON / CARBON STEEL

S= STAINLESS STEEL

Q= BUNA N / NITRILE

B= EPDM

F= VITON

CPML-15

REV. 4/20/12

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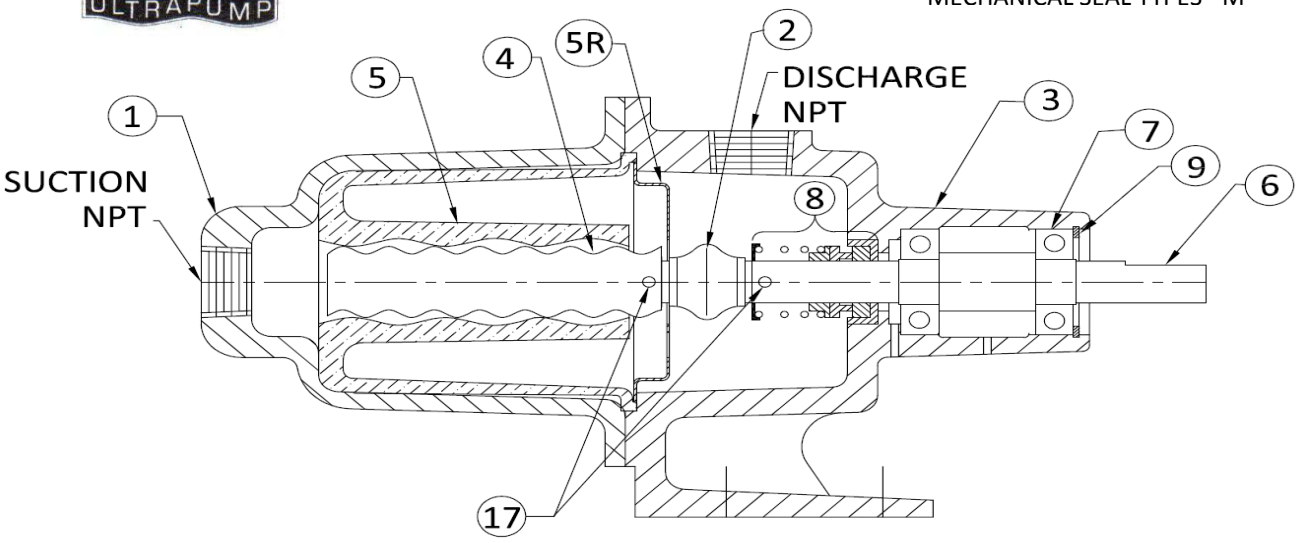
PARTS LIST

FRAMES: CP56 & 67

MECHANICAL SEAL TYPES - M



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO. 56 FRAME	PART NO. 67 FRAME
1	SUCTION HOUSING	CP1-56C CP1-56S	CP1-67C CP1-67S
2	FLEXIBLE JOINT-PINNED	U2-56PQS	U2-67PQS
2	FLEXIBLE JOINT-THREADED	U2-56TQS	NOT USED
3	DISCHARGE HOUSING	CP3-56C CP3-56S	CP3-67C CP3-67S
4	ROTOR, PINNED AND THREADED	U4-56PTS	U4-67PS
5	STATOR	U5-56Q	U5-67Q
5R	STATOR BARRIER**	U5R-56S	U5R-67S
6	SHAFT, PINNED	U6-56PS	U6-67PS
6	SHAFT, THREADED	U6-56TS	NOT USED
7	BALL BEARING (2 EA)	U7-56	U7-67
8	MECHANICAL SEAL	U8-56Q	U8-67Q
9	RETAINING RING	U9-56	U9-67
17	ROLL PINS (2 EA)	U17-56	U17-67

**=OPTIONAL

T= THREADED

P=PINNED

MATERIALS OF CONSTRUCTION

C=CAST IRON / CARBON STEEL

S= STAINLESS STEEL

Q= BUNA N / NITRILE

B= EPDM

F= VITON

CP-56/67

REV. 4/20/12

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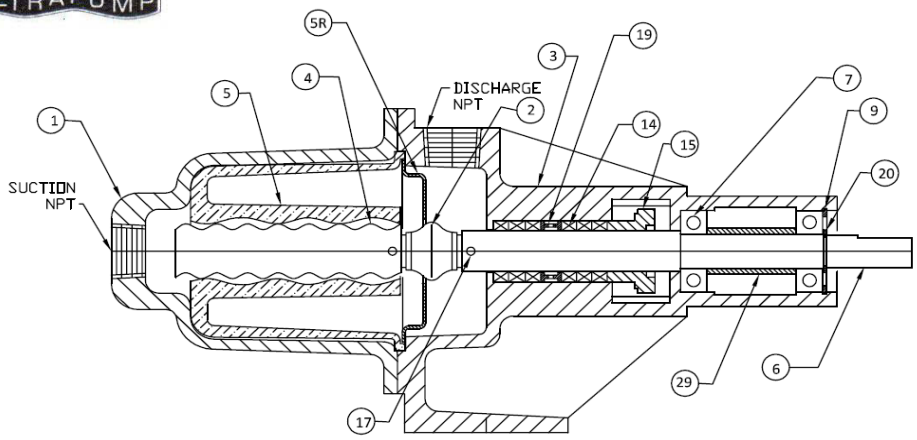
PARTS LIST

FRAMES: CPD56 & 67

PACKING GLAND TYPES - D



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO. 56 FRAME	PART NO. 67 FRAME
1	SUCTION HOUSING	CP1-56C CP1-56S	CP1-67C CP1-67S
2	FLEXIBLE JOINT-PINNED	U2-56PQS	U2-67PQS
2	FLEXIBLE JOINT-THREADED	U2-56TQS	NOT USED
3	DISCHARGE HOUSING	CP3-56DC CP3-56DS	CP3-67DC CP3-67DS
4	ROTOR, PINNED AND THREADED	U4-56PTS	U4-67PS
5	STATOR	U5-56Q	U5-67Q
5R	STATOR BARRIER**	U5R-56S	U5R-67S
6	SHAFT, PINNED	U6-56PDS	U6-67PDS
6	SHAFT, THREADED	U6-56TDS	NOT USED
7	BALL BEARING (2 EA)	U7-56	U7-67
9	RETAINING RING	U9-56	U9-67
14	PACKING SET	U14-56	U14-67
15	PACKING GLAND	U15-56C U15-56S	U15-67C U15-67S
17	ROLL PIN (2 EA)	U17-56S	U17-67S
19	LANTERN RING	U19-56S	U19-67S
20	SHAFT RETAINING RING	U20-56	NOT USED
29	BEARING SPACER	U29-56DC	NOT USED

**=OPTIONAL

T= THREADED

P=PINNED

MATERIALS OF CONSTRUCTION

C=CAST IRON / CARBON STEEL

S= STAINLESS STEEL

Q= BUNA N / NITRILE

B= EPDM

F= VITON

CPD-56/67

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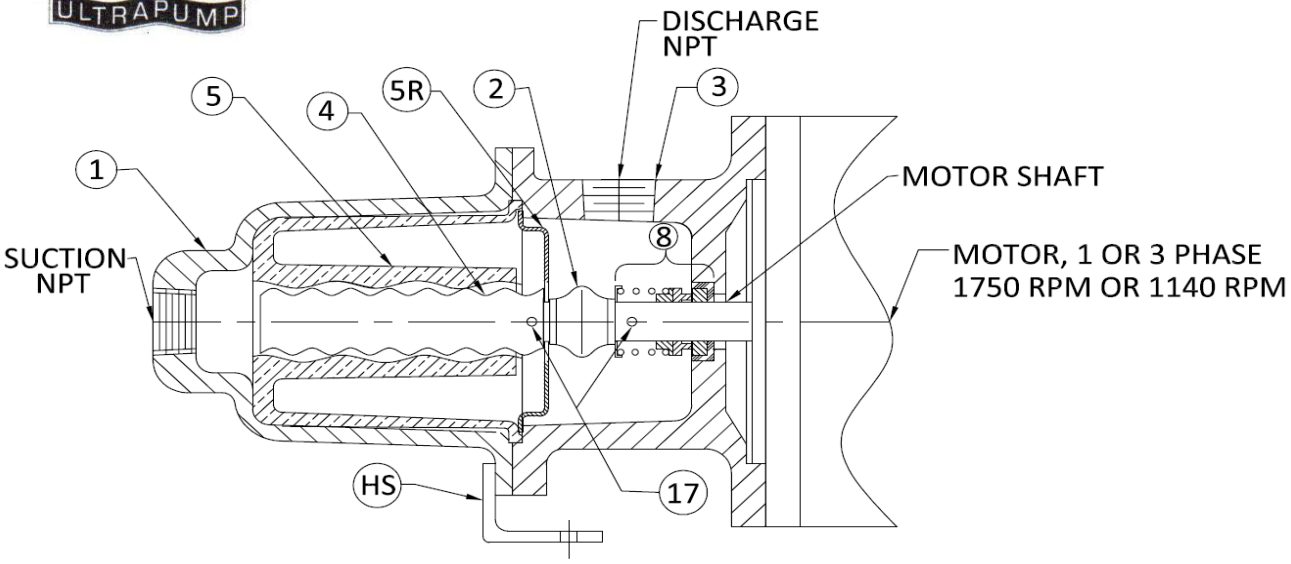
PARTS LIST

FRAMES: CPM56 & 67

CLOSE COUPLED PUMP



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO. 56 FRAME	PART NO. 67 FRAME
1	SUCTION HOUSING	CP1-56C CP1-56S	CP1-67C CP1-67S
2	FLEXIBLE JOINT-PINNED	NOT USED	U2-67PQS
2	FLEXIBLE JOINT-THREADED	U2-56TQS	NOT USED
3	DISCHARGE HOUSING	CPML3-56C CPML3-56S	CPML3-67C CPML3-67S
4	ROTOR, PINNED AND THREADED	U4-56PTS	U4-67PS
5	STATOR	U5-56Q	U5-67Q
5R	STATOR BARRIER**	U5R-56S	U5R-67S
8	MECHANICAL SEAL	U8-56Q	U8-67Q
17	ROLL PINS (2 EA)	NOT USED	U21-67S
21	MOTOR COUPLING	U21-56S	U21-67S
HS	HOUSING SUPPORT	HS-56	HS-67

**=OPTIONAL

T= THREADED

P=PINNED

MATERIALS OF CONSTRUCTION

C=CAST IRON / CARBON STEEL

S= STAINLESS STEEL

Q= BUNA N / NITRILE

B= EPDM

F= VITON

CPM-56/67

REV. 4/20/12

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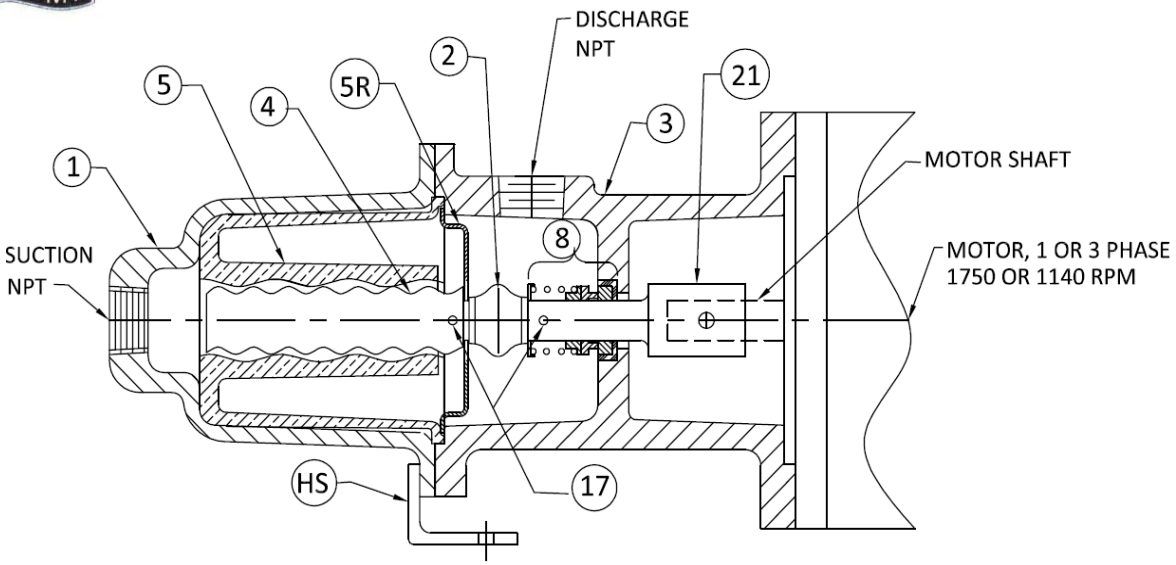
PARTS LIST

FRAMES: CPML 56 & 67

CLOSE COUPLED PUMP



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO. 56 FRAME	PART NO. 67 FRAME
1	SUCTION HOUSING	CP1-56C CP1-56S	CP1-67C CP1-67S
2	FLEXIBLE JOINT-PINNED	U2-56PQS	U2-67PQS
2	FLEXIBLE JOINT-THREADED	U2-56TQS	NOT USED
3	DISCHARGE HOUSING	CPM3-56C CPM3-56S	CPM3-67C CPM3-67S
4	ROTOR, PINNED AND THREADED	U4-56PTS	U4-67PS
5	STATOR	U5-56Q	U5-67Q
5R	STATOR BARRIER**	U5R-56S	U5R-67S
8	MECHANICAL SEAL	U8-56Q	U8-67Q
17	ROLL PINS (2 EA)	U21-56S	U21-67S
HS	HOUSING SUPPORT	HS-56	HS-67

**=OPTIONAL

T= THREADED

P=PINNED

MATERIALS OF CONSTRUCTION

C=CAST IRON / CARBON STEEL

S= STAINLESS STEEL

Q= BUNA N / NITRILE

B= EPDM

F= VITON

R= NATURAL RUBBER

CPML-56/67

REV. 4/20/12

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Model CL

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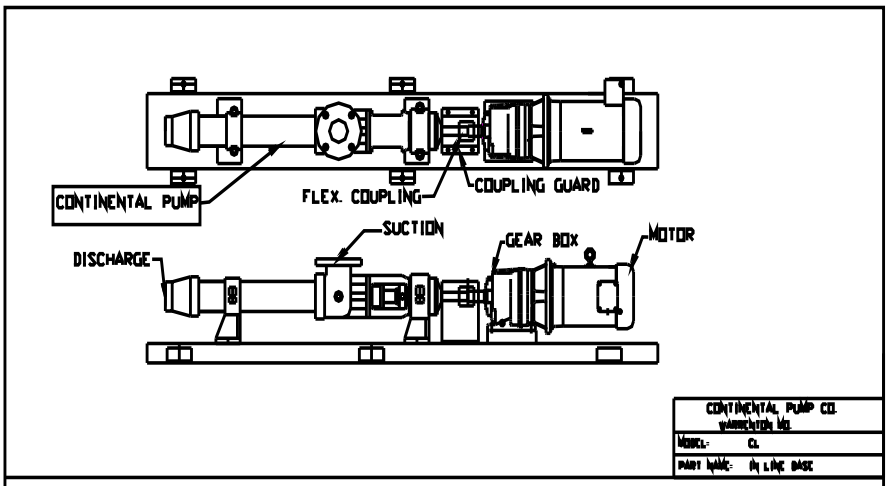

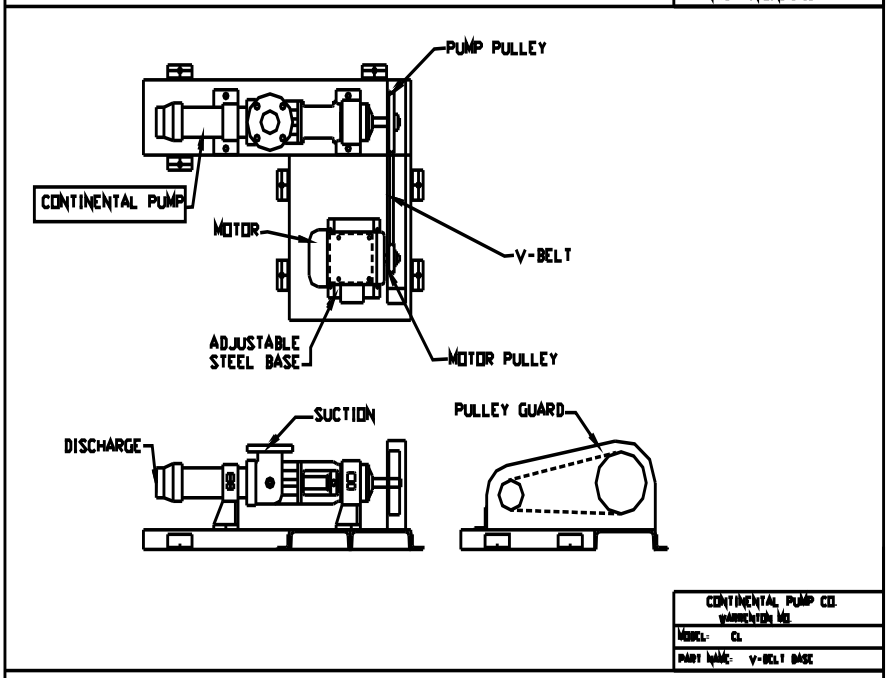

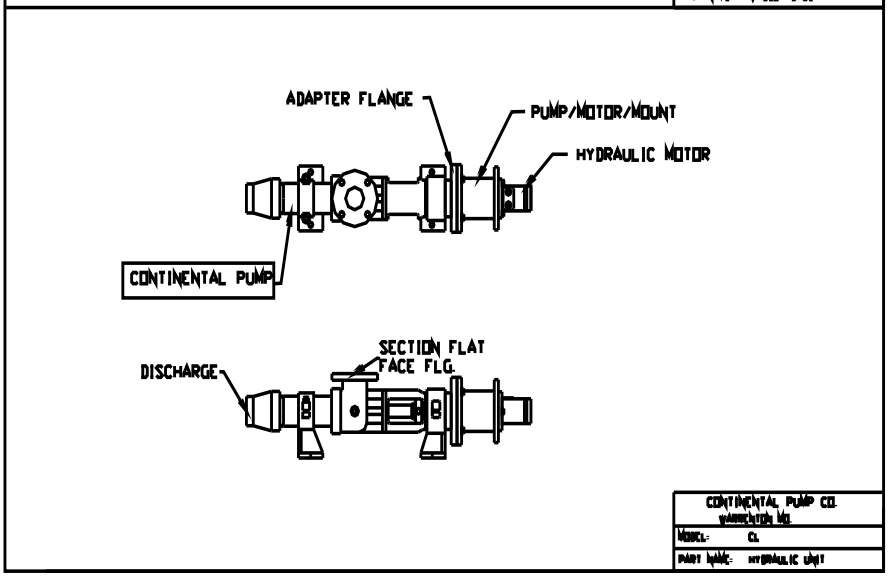

Model CL Pumps are suitable for a wide variety of applications and are the most frequently used. When properly applied they give excellent long life performance at the most economical cost. Hydraulic motor option is also available.

Continental Model CL Pumps and Parts are interchangeable with many progressing cavity pump brands.

Please contact one of our application specialists at (636)-456-6006 Mon-Fri 8AM-5PM CST for more information.

CROSS REFERENCE

Model or Frame Designation

ALL ARE 1, 2 & 3 STAGE PUMPS WITH THE EXCEPTION OF THE 10H/ 12H, ONLY AVAILABLE IN 1 & 2 STAGE.

CONTINENTAL		MOYNO®
CL2		L2
CL3		L3
CL4		L4
CL6		L6
CL8		L8
CL10		L10
CL10H		L10H
CL12		L12
CL12H		L12H

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Materials of Construction

	Continental Letter Key	Moyno Letter Key	Materials
Pump Body	C	C	Cast Iron
	S	S	316 Stainless Steel
Rotor	D	D	Chrome Plated Alloy Steel
	S	S	Chrome Plated 304 Stainless Steel
Stator	Q	Q	Buna Nitrile
	R	R	Natural Rubber
	B	B	EPDM
	F	F	Viton
Internal Parts	C	C	Carbon Steel
	AF	AF	Anti-Friction Bearings
	HS	HS	Hardened Steel

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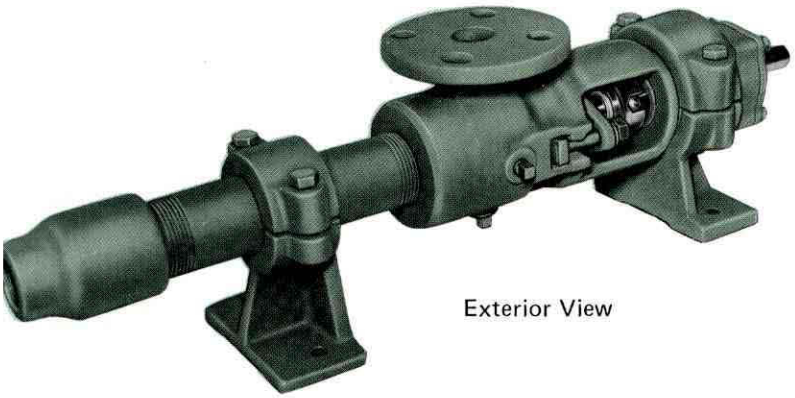
CONTINENTAL®

PROGRESSING CAVITY PUMPS

CONTINENTAL Models CL, CM, CG & CJ
PUMPS and PARTS
are interchangeable with
Robbins & Myers
MOYNO Models L, M, SWG & J.

CATALOG CL-8400

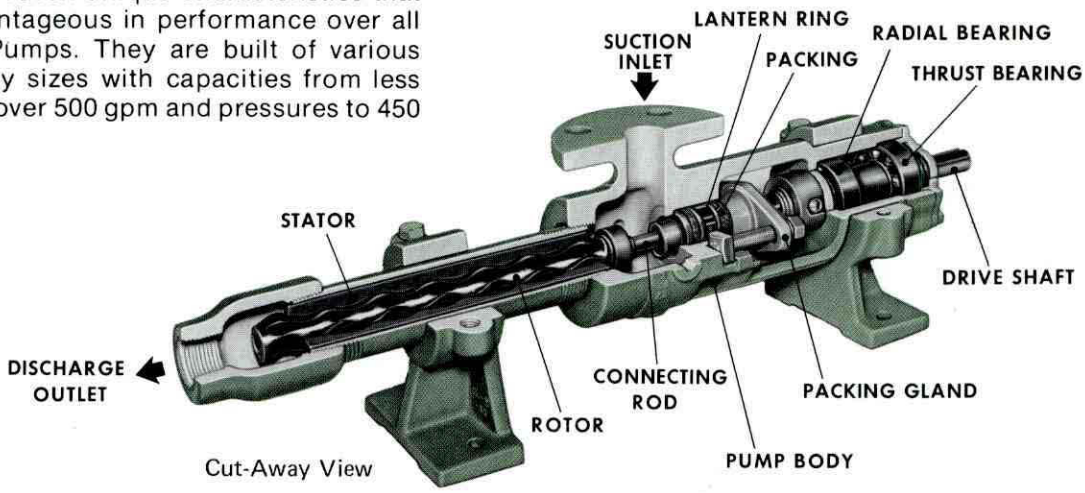
Continental Pump Co.
29425 State Highway B
Warrenton, MO 63383



Exterior View

CONTINENTAL®
PROGRESSING CAVITY PUMPS

CONTINENTAL Progressing Cavity Pumps have time tested and proven unique characteristics that make them advantageous in performance over all other kinds of Pumps. They are built of various materials in many sizes with capacities from less than one gpm to over 500 gpm and pressures to 450 psi.



Cut-Away View

POSITIVE DISPLACEMENT

The turning ROTOR develops "positive pumping action" similar to a piston moving through a cylinder of infinite length. The pump pressure developed does not depend upon the speed of the rotating ROTOR. The capacity of the pump is approximately proportioned to speed. Slippage is relative to the viscosity, and pressure can be projected for particular operating conditions.

UNIFORM DISCHARGE FLOW

Fluids are uniformly discharged without pulsation in a constant steady flow. Displacement remains the same with each revolution of the ROTOR permitting accurate predictable metering relative to the fluid being pumped.

INTERNAL VELOCITY OF FLUIDS

All fluids are pumped with a minimum amount of turbulence, agitation, pulsation or separation disturbance.

SELF PRIMING

Pumping action starts at the time the ROTOR is turned and it is capable of 28 feet of suction lift in an appropriate installation. The liquid being pumped acts as a lubricant between the ROTOR and STATOR and forms a continuous seal to project the pumping phenomena.

SOLIDS IN SUSPENSION

Solid particles over a wide range of size and shape - as large as 1⅛ inches in diameter, are pumped with no difficulty.

REVERSIBLE

Pumps can be operated clockwise or counter-clockwise with effective performance in most installations.

INSTALLATION

Pumps can be mounted Horizontally or Vertically and the Suction Port can be turned to any position for appropriate entry of the liquid.

CONTINENTAL®
PROGRESSING CAVITY PUMPS

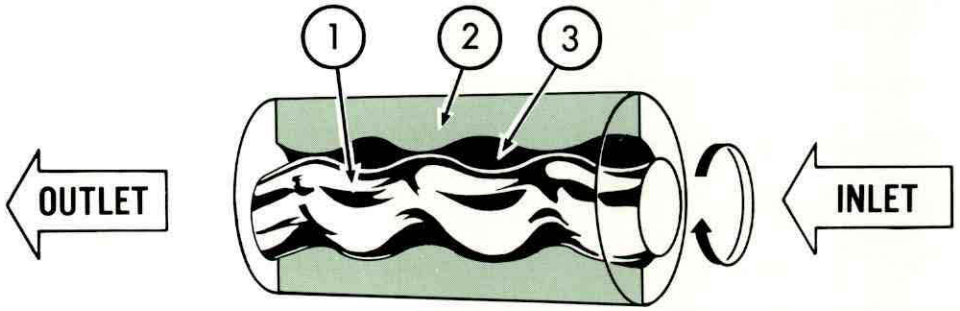
... will handle any Liquid or Slurry that can be moved through pipe of the appropriate size.

How CONTINENTAL® PROGRESSING CAVITY PUMPS Function...

Operation of the CONTINENTAL PUMP can be compared to that of a Screw Conveyor or Meat Grinder. As the ROTOR turns in the STATOR, the cavities between these components are filled with the liquid being handled and the liquid is progressively moved from the Suction Inlet to the Discharge Outlet of the Pump. The action continues as long as the ROTOR turns.

HOW THIS *UNIQUE* PUMP WORKS

Liquid enters the Suction Inlet either under pressure or by gravity and as the ROTOR (1) turns within the flexible rubber STATOR (2) forming tightly sealed cavities (3) which moves the Liquid toward the Discharge Outlet. Pumping action starts the instant the ROTOR turns. Liquid acts as the lubricant between the pumping elements.



ROTORS are made of Hardened Steel or Stainless Steel and are covered with a Chrome Plating to give resistance to corrosive and abrasive materials. Some liquids affect the Chrome Plating and in those applications a Non-Plated ROTOR should be used.

STATORS are metal tubes with internally molded cavities of Synthetic or Natural Rubber.

CONTINENTAL ...The Perfect Pump for...

TRANSFERRING • CIRCULATING • METERING • FILLING • IRRIGATING • WASHING • SPRAYING • SAMPLING • ABRASIVES • CEMENTING • CAULKING • MIXING • AERATING • SPRINKLING • WATER SYSTEMS • CLEANING • PASTES SLURRIES • INDUSTRIAL WASTE • SEWAGE • WASTE WATER • SLUDGE •

. . . to name the more common types of applications that are being successfully and economically performed by these ....Amazingly Versatile Pumps!

Liquids that can be Handled by.....

CONTINENTAL® PROGRESSING CAVITY PUMPS

Materials used in the PUMPS are based on the fluid to be handled and are indicated by three letters following the Frame Size. The first letter covers the material used in the PUMP BODY which is a casting. The second letter indicates the ROTOR materials and the third letter the STATOR construction.

For example a PUMP designated a 1CL2 CDQ is a One stage Size 2 having a Cast Iron Body with a Chrome Plated Alloy Steel Rotor with a Buna N Stator.

These Materials of Construction permit CONTINENTAL PUMPS to "handle almost any fluid that can be moved thru pipe". Set forth in the accompanying chart are a partial list of liquids that have been successfully handled along with an indication of the basic materials for the PUMP BODY, the ROTOR and the STATOR.

PART	LETTER	MATERIAL
PUMP BODY	C	Cast Iron
	S	316 Stainless Steel
ROTOR	D	Chrome Plated Alloy Steel
	S	Chrome Plated 316 Stainless Steel
STATOR	B	Butyl/EPDM Rubber
	F	Viton Rubber
	Q	Buna N Rubber
	R	Natural Rubber

See Footnote on Page 6

LIQUID	PUMP BODY		ROTOR		STATOR			
Acetic Acid (cold dilute)		S		S*	B		Q	R
Acetone	C	S	D	S	B			
Acid Mine Water	C			S			Q	R
Alcohol, Ethyl (grain)	C		D				Q	R
Alcohol, Methyl (wood)	C		D				Q	R
Alum (Paper mill)		S		S	B	F	Q	R
Aluminum Hydroxide	C		D				Q	R
Aluminum Sulphate		S		S	B	F	Q	R
Ammonium Bicarbonate	C	S	D	S	B			R
Ammonium Chloride		S		S*	B		Q	R
Ammonium Phosphate	C	S	D	S	B		Q	R
Ammonium Nitrate	C	S	D	S	B		Q	R
Ammonium Sulphate	C	S		S*	B		Q	R
Aromatic Hydrocarbons	C	S	D	S		F		
Asphalt	C	S	D	S		F		
Barium Chloride	C	S		S	B	F	Q	R
Barium Hydroxide	C	S	D	S	B	F	Q	R
Barium Nitrate	C	S	D	S			Q	R
Barium Sulphate	C	S	D	S			Q	R
Beer		S		S			Q	R
Beer Wort		S		S				R
Beet Sugar Liquor		S		S	B	F	Q	R
Benzene (coal tar product)	C		D	S		F		
Benzine (petroleum product)	C	S	D			F	Q	
Black Liquor	C	S	D	S		F	Q	
Boiler Feed Water	C		D				Q	
Bordeaux Mixture	C		D				Q	R
Boric Acid		S		S		F	Q	R
Brine, Calcium Chloride	C	S		S*	B	F	Q	R
Brine, Sodium Chloride	C	S		S*	B	F	Q	R
Calcium Chlorate	C	S	D	S		F		
Calcium Chloride	C	S	D	S	B	F	Q	R
Calcium Hypochlorite	C	S		S	B	F		
Calgon (sodium hexametaphosphate)		S		S			Q	R
Carbon Bisulfide	C	S	D	S		F		
Carbon Disulphide	C	S	D	S		F		

LIQUID	PUMP BODY		ROTOR		STATOR			
Carbonic Acid	C			S			Q	R
Castor Oil	C	S	D	S		F	Q	R
Caustic Potash (lye)	C	S	D	S			Q	R
Caustic Soda (lye)	C	S	D	S	B		Q	R
Caustic Zinc Chloride		S		S			Q	R
China Wood	C		D				Q	
Drying Oils	C		D				Q	
Vegetable Oils	C		D				Q	
Chlorinated Hydrocarbons								
Chloroform		S		S		F		
Dichloroethylene	C	S	D	S			Q	
Methyl Chloride	C	S	D	S		F		
Tri Chloroethyline		S		S		F		
Chromic Acid (diluted)		S		S		F		
Citric Acid		S		S	B	F	Q	R
Clay Slip	C		D			F	Q	R
Copper Nitrate		S		S			Q	R
Copper Sulphate		S		S*		F	Q	R
Copperas		S		S*			Q	R
Corn Oil	C	S	D	S		F	Q	
Cotton Seed Oil	C	S		S		F	Q	
Creosote	C	S	D	S		F	Q	
Cyanide	C		D				Q	R
Cyanide of Potassium	C		D		B	F	Q	R
Diethylene Glycol (alcohol)	C	S	D	S		F	Q	R
Distilled Water or Deionized	C	S		S			Q	R
Distillery Wort	C	S	D	S			Q	R
Edible Oils	C	S	D	S			Q	
Epsom Salts	C	S	D	S	B	F	Q	
Ethyl Alcohol	C	S	D	S	B	F		
Fatty Acids	C	S	D	S		F		
Ferric Hydroxide		S		S	B		Q	R
Ferrous Sulphate		S		S*			Q	R
Formaldehyde		S		S		F	Q	
Formic Acid		S		S		F		
Fruit Juices		S		S			Q	R
Fuel Oils	C	S	D	S		F	Q	
Furfural	C	S	D	S	B			
Fusel Oils	C		D				Q	
Gasoline	C		D				Q	
Glucose	C	S	D	S	B	F	Q	R
Glue	C	S	D	S	B	F	Q	R
Glycerine	C	S	D	S	B	F	Q	R
Glycerol	C	S	D	S	B	F	Q	R
Grain Alcohol	C		D				Q	R
Grape Juice		S		S			Q	R
Hops	C	S	D	S			Q	R
Hydrocyanic Acid		S		S	B	F		
Hydrogen Peroxide		S		S		F		
Hydrogen Sulfide		S		S	B	F		
Kerosene	C		D				Q	
Lard	C	S	D	S		F	Q	
Lime Water	C		D				Q	R
Linseed Oil	C	S	D	S	B	F	Q	
Lubricating Oils	C		D				Q	
Lye (sodium hydroxide)	C	S	D	S	B	F	Q	R
Magnesium Chloride	C	S	D	S	B	F	Q	R
Magnesium Sulphate	C	S	D	S*	B	F	Q	
Mercury	C	S	D	S			Q	R
Methanol	C	S	D	S	B		Q	R

LIQUID	PUMP BODY		ROTOR		STATOR			
Methyl Chloride	C		D				Q	R
Milk of Lime	C			S			Q	R
Mine Water	C			S			Q	R
Molasses	C		D	S	B	F	Q	R
Naphtha	C		D				Q	
Nickel Chloride		S		S	B	F	Q	R
Nickel Sulphate		S		S*	B	F	Q	
Oil - Paraffin Base	C		D				Q	
Oil - Vegetable	C		D				Q	
Paints - Water Base	C		D				Q	R
Palmitic Acid	C		D			F	Q	
Phosphoric Acid		S		S		F		
Potassium Carbonate	C		D				Q	R
Potassium Chloride	C		D		B	F	Q	R
Potassium Nitrate	C		D		B	F	Q	R
Potassium Phosphate	C		D				Q	R
Potassium Sulphate	C		D		B	F	Q	
Salammoniac		S		S	B		Q	R
Salt Brine (to 30%)	C	S		S			Q	R
Sea Water	C			S			Q	R
Sewage	C		D				Q	R
Shellac	C		D				Q	
Soap Liquor (thin)	C	S	D	S	B	F	Q	
Soda	C		D		B	F	Q	R
Sodium Aluminate	C		D		B		Q	R
Sodium Bicarbonate	C			S	B	F	Q	R
Sodium Bisulfite		S		S	B		Q	R
Sodium Carbonate	C			S	B	F	Q	R
Sodium Chloride	C	S		S*	B	F	Q	R
Sodium Hydroxide	C	S	D	S	B		Q	R
Sodium Nitrate	C		D		B			
Sodium Silicate	C		D		B	F	Q	R
Sodium Sulfate		S		S	B	F	Q	
Soy Bean Oil	C		D			F	Q	
Starch	C	S	D	S	B		Q	R
Steric Acid		S	D				Q	
Sugar	C		D				Q	R
Tar	C		D				Q	
Tar & Ammonia in Water	C		D				Q	
Titanium Chloride		S		S		F		
Toluene (toluol)	C		D			F		
Trub Sludge	C		D				Q	R
Turpentine	C		D			F	Q	
Varnish	C		D			F		
Vegetable Oil	C		D				Q	
Vinegar		S		S*	B	F	Q	
Vitriol - Blue		S		S	B	F	Q	
Vitriol - Green		S		S			Q	R
Waste Water	C		D				Q	R
Whiskey	C	S	D	S			Q	R
Wine		S		S	B		Q	R
Wood Pulp	C		D				Q	R
Yeast		S		S	B		Q	R
Zinc Chloride		S		S*	B	F	Q	R
Zinc Nitrate		S		S			Q	R
Zinc Sulfate		S		S*	B		Q	R

Note: * Non-plated ROTOR.
When D ROTORS are used the Drive Shaft and Connecting Rod will be of Carbon Steel.
When S ROTORS are used the Drive Shaft and Connecting Rod will be of Stainless Steel.
Maximum allowable Temperatures for STATORS: B - 240° F, F - 300° F, Q - 210° F, R - 185° F.

Model CL

CONTINENTAL®
PROGRESSING CAVITY PUMPS

Model CL Pumps are suitable for a wide variety of applications and are the most frequently used. When properly applied they give excellent long life performance at the most economical cost.

PERFORMANCE DATA

FRAME SIZE	Gal./100 Rev.	PUMP SPEED	300 RPM		450 RPM		600 RPM		750 RPM		900 RPM		1200 RPM	
		Diff. Press. PSI	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP
1CL2	.260	0 30 60	.54 .51 .40	1/8 1/8 1/8	1.1 .95 .50	1/6 1/6 1/6	1.5 1.3 .9	1/6 1/6 1/6	2.0 1.8 1.4	1/4 1/4 1/4	2.2 2.1 1.7	1/4 1/4 1/4	3.0 2.8 2.3	1/3 1/3 1/3
2CL2	260	0 60 120	.54 .51 .50	1/4 1/4 1/4	1.1 .95 .50	1/4 1/4 1/4	1.5 1.3 .9	1/4 1/4 1/4	2.0 1.8 1.4	1/3 1/3 1/3	2.2 2.1 1.7	1/3 1/3 1/3	3.0 2.8 2.3	1/2 1/2 1/2
3CL2	.260	0 90 180	.54 .51 .50	1/4 1/4 1/4	1.1 .95 .50	1/4 1/4 1/4	1.5 1.3 .9	1/3 1/3 1/3	2.0 1.8 1.4	1/3 1/3 1/3	2.2 2.1 1.7	1/3 1/3 1/3	3.0 2.8 2.3	3/4 3/4 3/4
1CL3	.860	0 40 75	2.5 1.6 –	1/3 1/3 –	3.8 3.0 1.5	1/3 1/3 1/3	5.1 4.3 2.7	1/3 1/3 1/3	6.4 5.5 4.2	1/3 1/2 1/2	7.5 6.8 5.0	1/2 1/2 3/4	10 9.3 7.7	3/4 3/4 3/4
2CL3	.860	0 80 150	2.5 1.6 –	1/3 1/3 –	3.8 3.0 1.4	1/3 1/3 1/3	5.1 4.3 2.7	1/2 1/2 1/2	6.4 5.5 4.2	1/2 3/4 3/4	7.5 6.8 5.0	3/4 3/4 1	10 9.3 7.7	1 1 1-1/2
3CL3	.860	0 120 225	2.5 1.6 –	1/3 1/3 –	3.8 3.0 1.6	1/2 1/2 3/4	5.1 4.3 2.7	3/4 3/4 1	6.4 5.5 4.2	3/4 1 1-1/2	7.5 6.8 5.0	3/4 1 1-1/2	10 9.3 7.7	1 1-1/2 2
1CL4	2.02	0 40 75	5.8 4.0 –	1/2 1/2 –	9.0 6.7 2.7	1/2 1/2 3/4	2.0 9.5 5.5	1/2 1/2 3/4	15 12.5 8.5	1/2 3/4 1	18 16 12	3/4 1 1-1/2	24 22 18	1 1 1-1/2
2CL4	2.02	0 80 150	5.8 4.0 –	3/4 3/4 –	9.0 6.7 2.7	1/2 3/4 1	12.0 9.5 5.5	3/4 1 1-1/2	15 12.5 8.5	3/4 1-1/2 2	18 16 12	1 1-1/2 2	24 22 18	1-1/2 2 3
3CL4	2.02	0 120 225	5.0 4.0 2.0	3/4 3/4 1	9.0 6.7 3.7	3/4 1 1-1/2	12.0 9.5 5.5	1 1-1/2 2	15 12.5 8.5	1 1-1/2 3	18 16 12	1-1/2 2 3	24 22 18	2 3 5
1CL6	5.20	0 40 75	15 11 6.5	1 1 1	23 19 13	1 1 1-1/2	31 27 21	1-1/2 1-1/2 2	39 35 28	1-1/2 2 3	47 43 36	2 2 3		
2CL6	5.20	0 80 150	15 11 5	1 1 2	23 19 13	1-1/2 1-1/2 3	31 27 21	2 2 5	39 35 28	2 3 5	47 43 36	3 3 5		
3CL6	5.20	0 120 225	15 11 5	1-1/2 1-1/2 3	23 19 13	2 3 5	31 27 21	3 3 5	39 35 28	3 5 7-1/2	47 43 36	5 5 7-1/2		
1CL8	11.7	0 40 75	33 27 17	2 2 2	51 45 35	2 2 3	68 62 52	3 3 5	87 76 66	3 5 7-1/2	100 94 84	5 5 7-1/2		
2CL8	11.7	0 80 150	33 27 18	3 3 5	51 45 35	3 5 7-1/2	68 62 52	5 5 7-1/2	87 76 66	5 7-1/2 10	100 94 84	7-1/2 7-1/2 10		
3CL8	11.7	0 120 225	33 27 18	5 5 7-1/2	51 45 35	5 5 10	68 62 52	7-1/2 7-1/2 10	87 76 66	7-1/2 10 15	100 94 84	10 10 15		
1CL10	18.8	0 40 75	56 46 26	2 2 5	84 74 53	3 3 5	115 105 84	5 5 7-1/2	140 130 106	5 7-1/2 10				
2CL10	18.8	0 80 150	56 46 24	3 5 7-1/2	84 74 53	5 7-1/2 10	115 105 84	7-1/2 7-1/2 15	140 130 106	7-1/2 10 20				
3CL10	18.8	0 120 225	56 46 22	5 5 10	84 74 53	7-1/2 10 15	115 105 84	10 10 20	140 130 106	10 15 25				
1CL10H	27.7	0 40 75	83 73 55	3 3 5	127 117 100	5 5 7-1/2	168 158 143	7-1/2 7-1/2 10	210 202 187	7-1/2 10 15				
2CL10H	27.7	0 80 150	83 73 64	5 5 10	127 117 100	7-1/2 7-1/2 15	168 158 143	10 10 20	210 202 187	10 15 25				
1CL12	43.5	0 40 75	130 118 85	5 7-1/2 10	196 184 149	7-1/2 10 15	255 240 210	10 15 20						
2CL12	43.5	0 80 150	130 118 85	10 10 15	196 184 149	15 15 25	255 240 208	20 20 30						
3CL12	43.5	0 120 225	130 118 85	15 15 25	196 184 149	20 20 30	255 240 210	25 25 40						
1CL12H	65.2	0 40 75	195 173 123	7-1/2 7-1/2 15	293 272 220	10 15 20	380 363 310	15 20 25						
2CL12H	65.2	0 80 150	195 173 123	15 15 25	293 272 220	20 20 30	380 363 300	25 30 50						

Model CL

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PROGRESSING CAVITY PUMPS

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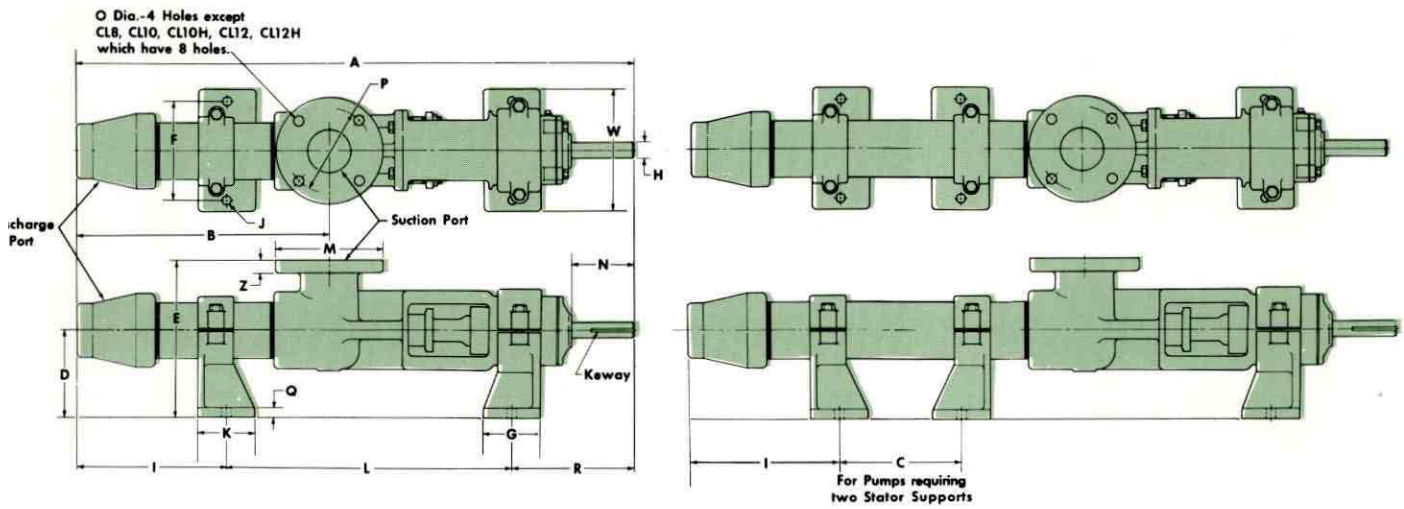
DIMENSIONS AND WEIGHTS



PUMP SIZE	DIMENSIONS (INCHES)																					WEIGHT (LBS.)	PORT SIZES	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	W	Z	KEYWAY		SUCTION	DISCHARGE
1CL2	17	7-5/16	–	3-1/4	5-7/8	3-1/8	2	5/8	4-1/4	3/8	2	8-1/2	4-1/4	1-1/2	9/16	3-1/8	3/8	4-1/4	4	7/16	3/16x3/32	22	1"	3/4"
2CL2	20-1/2	10-7/8	–	3-1/4	5-7/8	3-1/8	2	5/8	5-3/4	3/8	2	10-1/2	4-1/4	1-1/2	9/16	3-1/8	3/8	4-1/4	4	7/16	3/16x3/32	25	1"	3/4"
3CL2	24-1/16	14-7/16	–	3-1/4	5-7/8	3-1/8	2	5/8	7-13/16	3/8	2	12	4-1/4	1-1/2	9/16	3-1/8	3/8	4-1/4	4	7/16	3/16x3/32	31	1"	3/4"
1CL3	22-3/4	10-1/8	–	4-1/8	7-5/16	4-1/4	3	3/4	5-9/16	7/16	3	11-1/2	5	2-1/8	9/16	3-7/8	1/2	5-11/16	5-3/8	9/16	3/16x3/32	47	1-1/2"	1-1/4"
2CL3	28-1/16	15-7/16	–	4-1/8	7-5/16	4-1/4	3	3/4	9-3/8	7/16	3	13	5	2-1/8	9/16	3-7/8	1/2	5-11/16	5-3/8	9/16	3/16x3/32	51	1-1/2"	1-1/4"
3CL3	33-3/8	20-3/4	–	4-1/8	7-5/16	4-1/4	3	3/4	11-3/16	7/16	3	16-1/2	5	2-1/8	9/16	3-7/8	1/2	5-11/16	5-3/8	9/16	3/16x3/32	55	1-1/2"	1-1/4"
1CL4	30	13-1/8	–	5-1/2	9-7/8	5-1/2	3-1/2	15/16	7-1/4	9/16	3½	15-3/4	7	3-1/8	3/4	5-1/2	5/8	7	7	11/16	1/4x1/8	85	2-1/2"	2"
2CL4	37-1/8	20-1/4	–	5-1/2	9-7/8	5-1/2	3-1/2	15/16	8-1/8	9/16	3½	22	7	3-1/8	3/4	5-1/2	5/8	7	7	11/16	1/4x1/8	91	2-1/2"	2"
3CL4	44-1/4	27-5/8	–	5-1/2	9-7/8	5-1/2	3-1/2	15/16	14-1/2	9/16	3½	22-3/4	7	3-1/8	3/4	5-1/2	5/8	7	7	11/16	1/4x1/8	97	2-1/2"	2"
1CL6	39-1/8	17-13/16	–	6-1/4	11-1/4	7	4	1-1/8	10-9/16	11/16	4	20	7-1/2	4-3/8	3/4	6	11/16	8-9/16	8-5/8	7/8	1/4x1/8	141	3"	2-1/2"
2CL6	49-3/4	28-7/16	–	6-1/4	11-1/4	7	4	1-1/8	15-3/16	11/16	4	26	7-1/2	4-3/8	3/4	6	11/16	8-9/16	8-5/8	7/8	1/4x1/8	159	3"	2-1/2"
3CL6	60-3/8	39-1/16	18	6-1/4	11-1/4	7	4	1-1/8	13-13/16	11/16	4	20	7-1/2	4-3/8	3/4	6	11/16	8-9/16	8-5/8	7/8	1/4x1/8	192	3"	2-1/2"
1CL8	46	20-3/16	–	8	14	9	5	1-3/8	9-3/4	7/8	5	27	9	4-9/16	3/4	7-1/2	1-1/8	9-1/4	11-1/2	15/16	3/8x3/16	303	4"	4"
2CL8	58-3/8	32-5/8	–	8	14	9	5	1-3/8	17-1/8	7/8	5	32	9	4-9/16	3/4	7-1/2	1-1/8	9-1/4	11-1/2	15/16	3/8x3/16	332	4"	4"
3CL8	70-13/16	45	24	8	14	9	5	1-3/8	12-9/16	7/8	5	25	9	4-9/16	3/4	7-1/2	1-1/8	9-1/4	11-1/2	15/16	3/8x3/16	372	4"	4"
1CL10	53-1/8	21-7/8	–	9-3/4	16-11/16	9	5	1-7/8	9-5/8	7/8	5	30	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2x1/4	412	8"	5"
2CL10	63-1/2	32-1/4	–	9-3/4	16-11/16	9	5	1-7/8	14-1/2	7/8	5	35-1/2	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2x1/4	500	6"	5"
3CL10	73-7/8	42-5/8	18	9-3/4	16-11/16	9	5	1-7/8	12-3/8	7/8	5	30	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2x1/4	545	6"	5"
1CL10H	58-1/2	27-1/4	–	9-3/4	16-11/16	9	5	1-7/8	15	7/8	5	30	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2x1/4	424	6"	5"
2CL10H	73-7/8	42-5/8	18	9-3/4	16-11/16	9	5	1-7/8	12-3/8	7/8	5	30	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2x1/4	545	6"	5"
1CL12	70	31	–	12-1/2	21	12-5/8	6	2-1/4	14-1/2	1	6	37-1/2	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x1/4	880	8"	6"
2CL12	85-1/2	46-1/2	20-1/2	12-1/2	21	12-5/8	6	2-1/4	12	1	6	35	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x1/4	1075	8"	6"
3CL12	101-1/8	62-1/8	27	12-1/2	21	12-5/8	6	2-1/4	14-1/8	1	6	42	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x1/4	1200	8"	6"
1CL12H	77-3/4	38-3/4	–	12-1/2	21	12-5/8	6	2-1/4	17-3/4	1	6	42	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x1/4	945	8"	6"
2CL12H	101-1/8	62-1/8	27	12-1/2	21	12-5/8	6	2-1/4	14-1/8	1	6	42	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x1/4	1205	8"	6"

Model CM

CONTINENTAL®
PROGRESSING CAVITY PUMPS

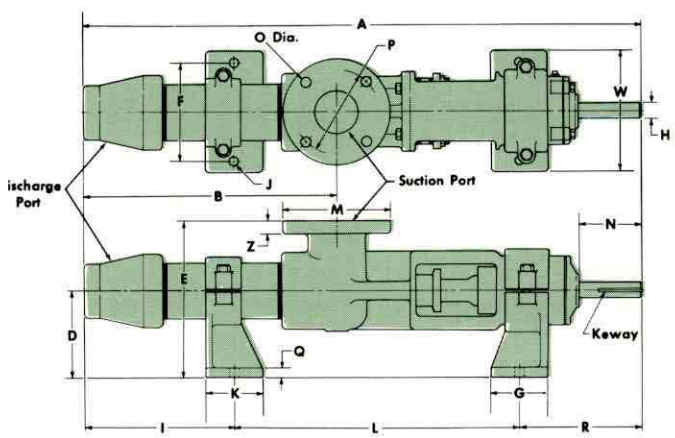
Model CM Pumps are similar to the Model CL Pumps, except they have a larger drive head to handle the increased horsepower that is needed to produce the higher pressures that can be developed by these pumps.

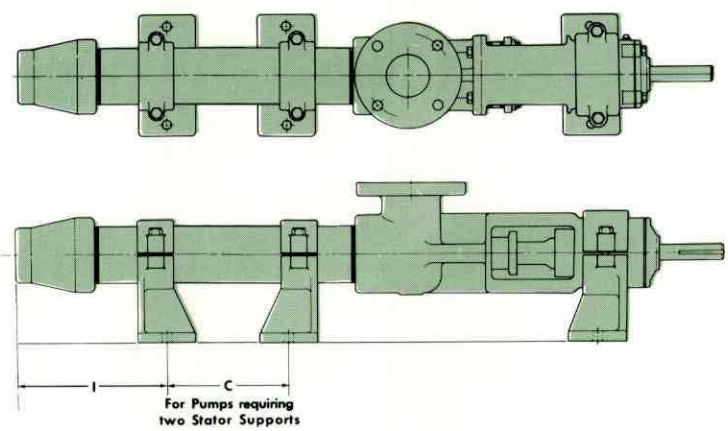
PERFORMANCE DATA

Performance Data based on Water @ 70° F.

FRAME SIZE	Gal./100 Rev.	PUMP SPEED Diff. Press. PSI	300 RPM		450 RPM		600 RPM		750 RPM		900 RPM		1200 RPM	
			GPM	Min. HP	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP
2CM1	.056	0	.14	1/8	.22	1/8	.29	1/4	.37	1/4	.43	1/4	.58	1/4
		60	.12	1/8	.20	1/8	.26	1/4	.33	1/4	.41	1/4	.55	1/4
		120	.10	1/8	.15	1/8	.22	1/4	.30	1/4	.37	1/4	.51	1/4
6CM1	.056	0	.14	1/8	.22	1/6	.29	1/4	.37	1/4	.43	1/3	.58	1/3
		180	.12	1/8	.20	1/6	.26	1/4	.33	1/4	.41	1/3	.55	1/3
		360	.10	1/8	.15	1/6	.22	1/4	.30	1/4	.37	1/3	.51	1/3
6CM2	.260	0	.54	1/4	1.1	1/2	1.5	3/4	2.0	1/3	2.2	1/2	3.0	3/4
		180	.51	1/4	.9	1/2	1.3	3/4	1.8	1/3	2.1	1/2	2.8	3/4
		360	.50	1/4	.45	1/2	.9	3/4	1.4	1/2	1.7	1	2.3	3/4
6CM3	.860	0	2.50	1/2	3.8	3/4	5.1	1	6.4	1-1/2	7.5	1-1/2	10.0	2
		240	1.80	1/2	2.9	3/4	4.3	1	5.5	1-1/2	6.8	1-1/2	9.3	2
		450	–	–	1.7	1-1/2	2.7	1-1/2	4.2	2	5.0	2	7.7	3
6CM4	2.02	0	6.00	1-1/2	9.0	2	12	3	15	5	18	5	24	5
		240	5.00	2	7.4	2	10	3	12.5	5	16	5	22	5
		450	1.80	2	4.5	3	7	5	8.5	7-1/2	13	7-1/2	19	7-1/2

DIMENSIONS AND WEIGHTS





PUMP SIZE	DIMENSIONS (INCHES)																					WEIGHT (LBS.)	PORT SIZES	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	W	Z	KEYWAY		SUCTION	DISCHARGE
2CM1	17-1/2	7-3/16	–	3-1/4	5-7/8	3-1/8	2	5/8	4-1/2	3/8	2	8-3/4	4-1/4	1-1/2	9/16	3-1/8	3/8	4-1/4	4	7/16	3/16x3/32	22	1"	3/4"
6CM1	24-7/8	15-1/4	–	3-1/4	5-7/8	3-1/8	2	5/8	4-7/8	3/8	2	15-3/4	4-1/4	1-1/2	9/16	3-1/8	3/8	4-1/4	4	7/16	3/16x3/32	30	1"	3/4"
6CM2	39-1/8	26-3/8	14	4-1/8	7-5/16	4-1/4	3	3/4	7-15/16	7/16	3	11-1/2	5	2-1/8	9/16	3-7/8	1/2	5-11/16	5-3/8	9/16	3/16x3/32	55	1-1/2"	3/4"
6CM3	54-3/8	37-1/2	22	5-1/2	9-7/8	5-1/2	3-1/2	15/16	9-7/8	9/16	3	15-1/2	7	3-1/8	3/4	5-1/2	5/8	7	7	11/16	1/4x1/8	105	2-1/2"	1-1/4"
6CM4	71	49-3/4	25	6-1/4	11-1/4	7	4	1-1/8	17-7/16	11/16	4	20	7-1/2	4-3/8	3/4	6	11/16	8-9/16	8-5/8	7/8	1/4x1/8	171	3"	2-1/2"

Model CG

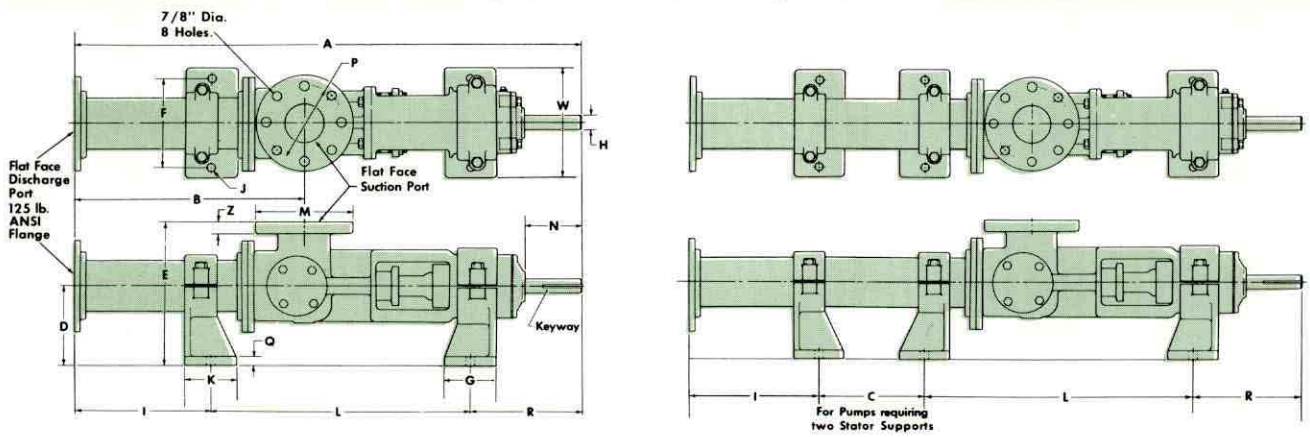
CONTINENTAL PROGRESSING CAVITY PUMPS

Model CG Pumps are designed to handle the heavier applications of Sewage, Industrial Waste, Polluted Liquids, and Slurries. Incorporated into this more rugged Pump is a unique drive train using Gear Joint connections to the Rotor and Drive Shaft.

PERFORMANCE DATA

FRAME SIZE	Gal./100 Rev.	PUMP SPEED Diff. Press. PSI	100 RPM GPM	100 RPM Min. HP	150 RPM GPM	150 RPM Min. HP	200 RPM GPM	200 RPM Min. HP	250 RPM GPM	250 RPM Min. HP	300 RPM GPM	300 RPM Min. HP	350 RPM GPM	350 RPM Min. HP	400 RPM GPM	400 RPM Min. HP
1CG8	11.7	0	12	3/4	17	1	26	1-1/2	29	1-1/2	34	2	40	2	45	3
		25	8	3/4	13	1-1/2	18	1-1/2	24	1-1/2	31	2	37	2	41	3
		50	3	1	7	1-1/2	14	1-1/2	18	2	25	2	32	3	35	3
2CG8	11.7	0	12	1	17	1-1/2	22	2	27	2	33	3	40	3	45	3
		50	8	1	13	1-1/2	18	2	24	3	29	3	35	5	42	5
		100	2	1	8	2	14	3	21	3	25	3	32	5	35	5
3CG8	11.7	50	9	2	14	2	20	3	25	3	34	5	36	5	43	5
		100	6	2	11	3	15	3	22	5	28	5	33	5	39	5
		150	2	2	7	3	11	5	19	5	24	5	29	7-1/2	34	7-1/2
1CG10	18.8	0	19	1	28	1	36	1-1/2	48	1-1/2	56	2	64	2	74	3
		25	12	1	22	1	32	1-1/2	42	2	52	3	60	3	70	5
		50	2	1	14	1-1/2	22	2	35	2	42	3	50	5	59	5
2CG10	18.8	0	18	2	26	3	36	3	46	3	54	3	66	5	72	5
		50	12	2	20	3	30	3	40	5	50	5	58	5	68	7-1/2
		100	3	3	12	3	22	5	32	5	41	5	50	7-1/2	59	7-1/2
3CG10	18.8	50	14	3	22	3	32	3	41	5	52	5	60	7-1/2	72	7-1/2
		100	10	3	18	3	28	5	36	5	48	7-1/2	56	7-1/2	67	10
		150	2	3	10	5	22	5	30	5	41	7-1/2	50	10	60	10
1CG10H	27.7	0	26	1	40	2	54	1	70	3	82	3	96	5	108	5
		25	20	1	36	2	48	2	64	3	76	3	90	5	104	5
		50	12	2	26	2	40	3	54	3	68	5	82	5	96	5
2CG10H	27.7	0	30	2	44	3	58	5	70	5	84	5	98	7-1/2	112	7-1/2
		50	24	2	38	5	52	5	66	5	78	5	92	7-1/2	106	10
		100	16	3	30	5	45	5	58	7-1/2	72	7-1/2	86	10	100	10
1CG12	43.5	0	42	3	62	5	84	5	108	5	127	5	147	7-1/2	169	7-1/2
		25	35	3	56	5	78	5	100	5	123	7-1/2	142	7-1/2	165	10
		50	22	5	42	5	65	5	87	7-1/2	108	7-1/2	128	7-1/2	153	10
2CG12	43.5	0	42	5	65	5	85	7-1/2	105	10	125	10	145	15	167	15
		50	36	5	58	5	80	7-1/2	100	10	120	10	140	15	163	15
		100	21	5	48	7-1/2	67	7-1/2	90	10	108	15	133	15	150	15
3CG12	43.5	50	40	7-1/2	60	7-1/2	82	10	103	15	125	15	145	15	168	15
		100	35	7-1/2	53	7-1/2	78	10	97	15	119	15	140	15	161	20
		150	25	7-1/2	45	10	67	15	90	15	110	20	130	20	152	25
1CG12H	65.2	0	60	5	95	5	125	5	180	5	190	7-1/2	220	7-1/2	252	10
		25	55	5	85	5	120	5	175	7-1/2	185	7-1/2	215	10	249	10
		50	33	5	65	5	98	7-1/2	130	10	160	10	190	15	225	15
2CG12H	65.2	0	60	5	95	7-1/2	125	10	155	15	190	15	220	20	253	20
		50	55	7-1/2	85	7-1/2	120	10	150	15	182	15	215	15	247	20
		100	35	7-1/2	75	10	95	15	130	15	160	15	195	20	225	25

DIMENSIONS AND WEIGHTS



PUMP SIZE	DIMENSIONS (INCHES) A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	W	Z	KEYWAY	WEIGHT (LBS.)	PORT SIZES SUCTION	DISCHARGE
1CG8	52-3/4	19-1/2	–	9-3/4	16-11/16	9	5	1-7/8	6-1/8	7/8	5	31	11	5	7/8	9-1/2	1-1/8	15-5/8	11-1/2	1	1/2x2-3/4	450	6"	5"
2CG8	65-3/16	31-15/16	–	9-3/4	16-11/16	9	5	1-7/8	15-9/16	7/8	5	34	11	5	7/8	9-1/2	1-1/8	15-5/8	11-1/2	1	1/2x2-3/4	545	6"	5"
3CG8	77-5/8	44-3/8	27	9-3/4	16-11/16	9	5	1-7/8	6	7/8	5	29	11	5	7/8	9-1/2	1-1/8	15-5/8	11-1/2	1	1/2x2-3/4	596	6"	5"
1CG10	50-11/16	17-7/16	–	9-3/4	16-11/16	9	5	1-7/8	5-1/16	7/8	5	30	11	5	7/8	9-1/2	1-1/8	15-5/8	11-1/2	1	1/2x2-3/4	492	6"	6"
2CG10	61-1/8	27-7/8	–	9-3/4	16-11/16	9	5	1-7/8	10-1/2	7/8	5	35	11	5	7/8	9-1/2	1-1/8	15-5/8	11-1/2	1	1/2x2-3/4	580	6"	6"
3CG10	71-7/16	38-3/16	18	9-3/4	16-11/16	9	5	1-7/8	7-13/16	7/8	5	30	11	5	7/8	9-1/2	1-1/8	15-5/8	11-1/2	1	1/2x2-3/4	615	6"	6"
1CG10H	56	22-3/4	–	9-3/4	16-11/16	9	5	1-7/8	10-3/8	7/8	5	30	11	5	7/8	9-1/2	1-1/8	15-5/8	11-1/2	1	1/2x2-3/4	494	6"	6"
2CG10H	71-7/16	38-3/16	18	9-3/4	16-11/16	9	5	1-7/8	7-13/16	7/8	5	30	11	5	7/8	9-1/2	1-1/8	15-5/8	11-1/2	1	1/2x2-3/4	615	6"	6"
1CG12	63-3/4	24-3/4	–	12-1/2	21	12-5/8	6	2-1/4	8-1/4	1	6	37-1/2	13-1/2	5-3/8	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x4	960	8"	8"
2CG12	79-7/16	40-7/16	18	12-1/2	21	12-5/8	6	2-1/4	5-15/16	1	6	37-1/2	13-1/2	5-3/8	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x4	1155	8"	8"
3CG12	95-1/16	56	27	12-1/2	21	12-5/8	6	2-1/4	8-1/16	1	6	42	13-1/2	5-3/8	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x4	1285	8"	8"
1CG12H	71-9/16	32-9/16	–	12-1/2	21	12-5/8	6	2-1/4	11-9/16	1	6	42	13-1/2	5-3/8	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x4	1025	8"	8"
2CG12H	95	56	27	12-1/2	21	12-5/8	6	2-1/4	8	1	6	42	13-1/2	5-3/8	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2x4	1285	8"	8"

Guide to Selection of...

CONTINENTAL®
PROGRESSING CAVITY PUMPS

To properly select the best performing CONTINENTAL PUMP consideration should be given to:

CAPACITY

The rate of flow in Gallons Per Minute - GPM.

PRESSURE

How much Pressure is required to move the Liquid being Pumped thru the Discharge Port of the Pump depends upon the piping system and the kind of Liquid being handled. The difference between the Pressure required at the Pump Discharge and the Pressure being introduced into the Pump Suction is the Differential Pressure and is expressed as Pounds Per Square Inch - PSI.

VISCOSITY

The resistance to the flow is expressed by various Scales of measurement, however, the most commonly used is CENTIPOISES. The Viscosity usually changes with Temperature and should always be considered. For conversion purposes the formulas set forth below can be of value:

Centipoises = Centistokes × Specific Gravity

$$\text{Centipoises} = \frac{\text{SSU}}{5} \times \text{Specific Gravity}$$

(SSU = Saybolt Seconds Universal)

TEMPERATURE

The Maximum and Minimum Temperatures at which the Fluid to be pumped are important factors in proper Pump Selection. High Temperatures can cause distortion and swelling of STATOR Materials and Low Temperatures can affect VISCOSITY that reflect in FLOW characteristics and Horsepower requirements.

OPERATING TIME

The Operating Cycle of the Pump should be considered - whether the Pump is to run continuously or intermittenly can be a factor in the selection of the Drive.

ABRASION

Classify the Abrasive characteristics of the fluid to be Pumped. Abrasives can look alike and appear to have similar properties, however, they can produce different wearing characteristics. Endeavor to classify the fluid broadly in order to select the proper Pump Construction and Operating Speed. The Classifications set forth below will serve as a guide and our experiences will be helpful:

No Abrasives

For example: Clear Water - Gasoline - Fuel Oil - Lubricating Oil.

Light Abrasives

For example: Dirty Water containing Silt and/or small amounts of Sand or Earth.

Medium Abrasives

For example: Clay Slurries - Potters Glazes - Porcelain Enamel - Frit - Sludge - Wood Dust in Water.

Heavy Abrasives

For example: Slurries containing large amounts of Sand - Emery Dust - Lapping Compounds - Mill Scale - Plaster - Grout - Roof Gypsum.

CORROSION

Whether the Fluid being Pumped is Neutral, Acid or Alkaline should be considered in selecting the proper materials of Pump Construction. The pH value of the Fluid should be known or determined - pH of 7 is Neutral, below 7 is Acid and above 7 is Alkaline.

CONTINENTAL Pumps are identified by Model, Frame and Type. The Pump Frame designation is an indication of Pump Size and consists of a number, two letters and another set of numbers. The first number indicates the stages or relative lengths of the ROTOR and STATOR elements, the two letters indicate the MODEL and the last numbers and letters refer to the size of the ROTOR and STATOR elements.

For example, a 1CL2 designation indicates a one stage length ROTOR and STATOR in a Model CL size 2 Pump. If the ROTOR and STATOR were twice the length of the one stage the designation would be 2CL2 and if the ROTOR and STATOR were three times the length of the one stage length the designation would be 3CL2. Whether the ROTOR and STATOR lengths are one, two or three lengths they are each a one piece component. Basically, the length of ROTOR and STATOR reflects in the ability to build pressure. A three stage length ROTOR and STATOR build 3 times the Pressure that a one stage length set of ROTOR and STATOR elements and a two stage length set of ROTOR and STATOR elements builds 2 times the Pressure that a one stage length builds. Referring to the Performance Tables will reflect this phenomena of the Pumps.

PUMP APPLICATION DATA SHEET

The PUMP APPLICATION DATA SHEET accompanies this Bulletin and can be conveniently used to transmit the required information to our APPLICATION ENGINEERS for their assistance in making a proper PUMP Selection.

The first step in selecting a CONTINENTAL Pump is to determine the Frame size required. The Table below relates capacity and pressure required to the three Frames available. Frame size is also determined by how other variables (Viscosity, Abrasiveness) affect Horsepower requirements. The "CL" frame is the standard bearing-drive designation. The "CM" frame utilizes the bearing drive unit from the next larger pump size. Select the Frame size which will most appropriately meet your needs.

PUMP FRAME	APPROXIMATE GPM RANGE	APPROXIMATE MAX. PRESSURE	SIZE PUMPING ELEMENTS AVAILABLE
CL	.9-500	225 psi	2, 3, 4, 6, 8 10, 10H, 12, 12H,
CM	.05-24	450 psi	1, 2, 3, 4
CG	5-350	150 psi	8, 10, 10H, 12, 12H,

FRAME SELECTION

If particles in suspension are to be pumped, determine the PUMP FRAME SIZE that will handle the maximum dimension of the particle. Refer to TABLE No. 1.

TABLE No. 1
Pump Frame Size - Particle Size

PUMP FRAME SIZE	2CMI 6CM1	1CL2 2CL2 3CL2 6CM2	1CL3 2CL3 3CL3 6CM3	1CL4 2CL4 3CL4 6CM4	1CL6 2CL6 3CL6	1CL8 2CL8 3CL8	1CL10 2CL10 3CL10 1CL10 2CL10	1CL12 2CL12 3CL12 1CL12 2CL12	
Max. Particle Size	.08"	.15"	.20"	.30"	.40"	.60"	.80"	1.0"	

The size of the ROTOR and STATOR Pumping Elements required to deliver the required capacity at the viscosity of the fluid are set forth in TABLE No. 2. Select Elements large enough to deliver more than the required capacity when operating at the maximum speed shown.

TABLE 2 is based on viscosities for one fluid and will not be correct for slurries or emulsions where each of which have different viscosities. The recommended pumping speed for a mixture of fluids having different viscosities should be an approximate average of the several fluids.

TABLE NO. 2

Pump Frame Size - Viscosity - Pumping Elements Size

Pump Frame Size	Size Pumping Element		Viscosity (Centipoises)						
			1 to 1000	1000 to 2500	2500 to 5000	5000 to 10,000	10,000 to 50,000	50,000 to 100,000	100,000 to 150,000
2CM1, 6CM1	1	MAX. RPM	1200	900	450	250	125	40	20
		MAX. GPM	0.58	0.50	0.25	0.14	0.07	0.02	0.01
1CL2, 2CL2, 3CL2 6CM2	2	MAX. RPM	1200	900	450	250	125	40	20
		MAX. GPM	3.0	2.4	1.2	0.7	0.35	0.1	0.05
1CL3, 2CL3, 3CL3 6CM3	3	MAX. RPM	1200	900	450	250	125	40	20
		MAX. GPM	10.0	7.8	3.9	2.2	1.1	0.35	0.17
1CL4, 2CL4, 3CL4 6CM4	4	MAX. RPM	1200	900	450	250	125	40	20
		MAX. GPM	24.0	18.0	9.0	5.0	2.5	0.8	0.4
1CL6, 2CL6, 3CL6	6	MAX. RPM	900	900	450	250	125	40	20
		MAX. GPM	47.0	47.0	23.5	13.0	6.5	2.0	1.0
1CL8, 2CL8, 3CL8	8	MAX. RPM	900	900	450	250	125	40	20
		MAX. GPM	100	100	53.0	29.0	14.5	4.7	2.3
1CL10, 3CL10, 3CL10	10	MAX. RPM	750	750	450	250	125	40	20
		MAX. GPM	140	140	85.0	47.0	24.0	7.5	3.8
1CL10H, 2CL10H	10H	MAX. RPM	750	750	450	250	125	40	20
		MAX. GPM	210	210	125	70.0	35.0	11.0	5.5
1CL12, 2CL12, 3CL12	12	MAX. RPM	600	600	450	250	125	40	20
		MAX. GPM	261	261	196	109	54.4	17.4	8.7
1CL12H, 2CL12H	12H	MAX. RPM	600	600	450	250	125	40	20
		MAX. GPM	391	391	293	163	81.5	26	13

If the fluid has ABRASIVE characteristics, refer to TABLE 3 for the proper operating speed of the Pump. When the speed selected from TABLE 3 results in a lower capacity than required then change the selection of the size Pump even though it will operate below the maximum recommended speed. Keep in mind that the speed requirements for VISCOSITY in TABLE 2 must also be considered and in general where there is a difference, select the lower of the speeds.

TABLE NO. 3

Pump Frame Size - Abrasives - Pump Elements Size

Pump Frame Size	Size Pumping Elements		Abrasive Characteristics			
			None	Light	Medium	Heavy
2CM1, 6CM1	1	MAX. RPM	1200	900	600	300
		MAX. GPM	0.58	0.50	0.34	0.17
1CL2, 2CL2, 3CL3, 6CM2	2	MAX. RPM	1200	900	600	300
		MAX. GPM	3.0	2.4	1.6	0.8
1CL3, 2CL3, 3CL3, 6CM3	3	MAX. RPM	1200	900	600	300
		MAX. GPM	10.0	7.8	5.2	2.6
1CL4, 2CL4, 3CL4, 6CM4	4	MAX. RPM	1200	900	600	300
		MAX. GPM	24.0	18.0	12.0	6.0
1CL6, 2CL6, 3CL6	6	MAX. RPM	900	675	450	225
		MAX. GPM	47.0	35.5	23.5	12.0
1CL8, 2CL8, 3CL8	8	MAX. RPM	900	675	450	225
		MAX. GPM	100	70.0	52.5	26.5
1CL10, 2CL10, 3CL10	10	MAX. RPM	750	565	375	190
		MAX. GPM	140	106	70.0	36.0
1CL10H, 2CL10H	10H	MAX. RPM	750	565	375	190
		MAX. GPM	210	156	105	52.5
1CL12, 2CL12, 3CL12	12	MAX. RPM	600	450	300	150
		MAX. GPM	261	196	130	65
1CL12H, 2CL12H	12H	MAX. RPM	600	450	300	150
		MAX. GPM	391	293	195	97.5

The length of the ROTOR and STATOR Elements are designated by Stages, even though both Elements are each integral components. The approximate Pressure Per Stage (PSI) where the fluid pumped has No Abrasives or is laden with Light, Medium or Heavy Abrasives is shown in TABLE No. 4.

TABLE NO. 4

Pump Frame Size - Pressure Per Stage of Rotor/Stator Elements

Pump Frame Size	Approximate Pressure Per Stage (PSI) Abrasive Characteristics			
	No	Light	Medium	Heavy
1 and 2	60	40	25	10
3 thru 12	75	60	35	15

Referring to TABLE No. 4, if the fluid has "No" Abrasives and the Pump Frame Size is 2, the Pressure Per Stage for a 1CL2 is 60 PSI - if it is a 2CL2 the total pressure would be 120 PSI. Further, if the Abrasive is "Light" the total pressure for a 2CL2 would be 80 PSI and if the Abrasive is "Heavy" the total pressure for the 2CL2 would be 20 PSI.

Having generally selected the PUMP FRAME SIZE and the number of Stages of the ROTOR/STATOR Elements, refer to the Performance Tables on Pages 6, 9 and 10 for the "Initial" Horsepower required to drive the PUMP handling fluid with relatively no Viscosity (1 to 2500 Centipoises). For fluids containing increasing amounts of Abrasives the Horsepower needed will be greater - refer to TABLE No. 5 for this additional amount. Multiply the "HP increase/100 RPM/Stage" by the PUMP speed in hundreds of RPM and then by the number of PUMP Stages. Add this amount to the "Initial" Horsepower to determine the "Final" Horsepower required.

TABLE NO. 5

Pump Frame Size - Horsepower Increase - Viscosity

Pump Frame Size	Size Pumping Elements	HP Additives/100 R.P.M./Stage Viscosity (Centipoises)						
		1 to 2500	2500 to 5000	5000 to 10,000	10,000 to 50,000	50,000 to 100,000	100,000 to 150,000	150,000 to 200,000
2CM2, 6CM1	1	0	0.002	0.0025	0.003	0.007	0.010	0.012
1CL2, 2CL2, 3CL2, 6CM2	2	0	0.01	0.015	0.016	0.032	0.046	0.056
1CL3, 2CL3, 3CL3, 6CM3	3	0	00.03	0.04	0.05	0.11	0.15	0.19
1CL4, 2CL4, 3CL4, 6CM4	4	0	0.06	0.09	0.12	0.25	0.35	0.44
1CLc, 2CL6, 3CL6	6	0	0.17	0.23	0.31	0.64	0.91	1.12
1CL8, 2CL8, 3CL8	8	0	0.37	0.52	0.71	1.43	2.05	2.52
1CL10, 2CL10, 3CL210	10	0	0.60	0,83	1.13	2.30	3.29	4.06
1CL10H, 2CL10H	10H	0	0.88	1.22	1.67	3.39	4.83	5.97
1CL12, 2CL12, 3CL12	12	0	1.4	2.0	2.7	5.3	7.7	9.0
1CL12H, 3CL12H	12H	0	2.1	2.9	4.0	8.0	11.3	13.2

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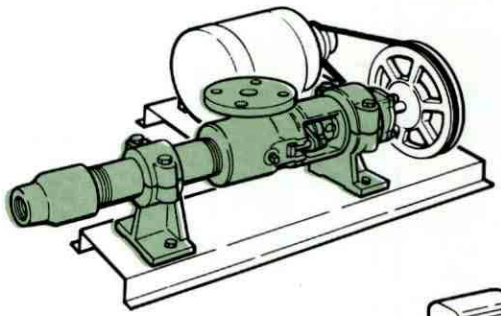

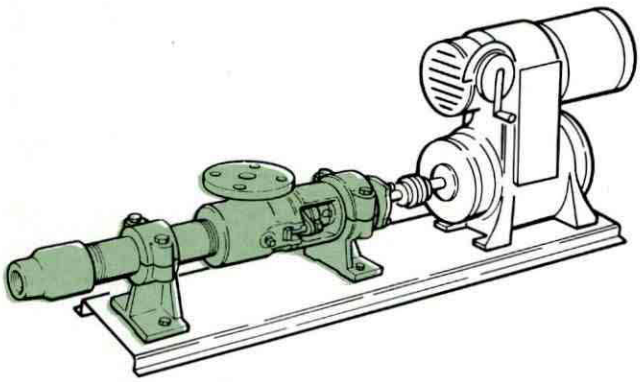

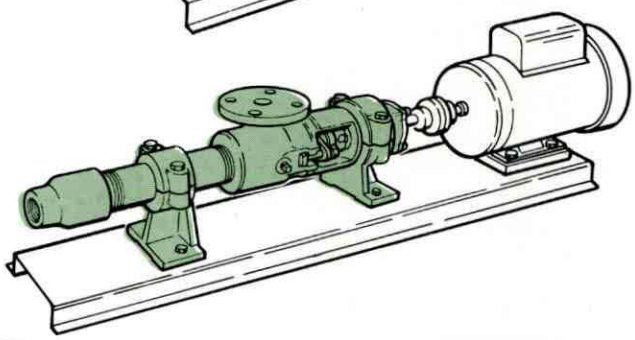

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Model CPM
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PERFORMANCE DATA MODEL CL

REV. 4/20/12

FRAME SIZE	Gal./100 Rev.	PUMP SPEED	300 RPM		450 RPM		600 RPM		750 RPM		900 RPM		1200 RPM	
		Diff. Press. PSI	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP	GPM	Min. HP
1CL2	0.260	0	.54	1/8	1.1	1/6	1.5	1/6	2.0	1/4	2.2	1/4	3.0	1/3
		30	.51	1/8	.95	1/6	1.3	1/6	1.8	1/4	2.1	1/4	2.8	1/3
		60	.40	1/8	.50	1/6	.9	1/6	1.4	1/4	1.7	1/4	2.3	1/3
2CL2	0.260	0	.54	1/4	1.1	1/4	1.5	1/4	2.0	1/3	2.2	1/3	3.0	1/2
		60	.51	1/4	.95	1/4	1.3	1/4	1.8	1/3	2.1	1/3	2.8	1/2
		120	.40	1/4	.50	1/4	.9	1/4	1.4	1/3	1.7	1/3	2.3	1/2
3CL2	0.260	0	.54	1/4	1.1	1/4	1.5	1/3	2.0	1/3	2.2	1/3	3.0	3/4
		90	.51	1/4	.95	1/4	1.3	1/3	1.8	1/3	2.1	1/3	2.8	3/4
		180	.40	1/4	.50	1/4	.9	1/3	1.4	1/3	1.7	1/3	2.3	3/4
1CL3	0.860	0	2.5	1/3	3.8	1/3	5.1	1/3	6.4	1/3	7.5	1/2	10	3/4
		40	1.6	1/3	3.0	1/3	4.3	1/3	5.5	1/2	6.8	1/2	9.3	3/4
		75	N/A	N/A	1.5	1/3	2.7	1/3	4.2	1/2	5.0	3/4	7.7	3/4
2CL3	0.860	0	2.5	1/3	3.8	1/3	5.1	1/2	6.4	1/2	7.5	3/4	10	1
		80	1.6	1/3	3.0	1/3	4.3	1/2	5.5	3/4	6.8	3/4	9.3	1
		150	N/A	N/A	1.4	1/3	2.7	1/2	4.2	3/4	5.0	1	7.7	1-1/2
3CL3	0.860	0	2.5	1/3	3.8	1/2	5.1	3/4	6.4	3/4	7.5	3/4	10	1
		120	1.6	1/3	3.0	1/2	4.4	3/4	5.5	1	6.8	1	9.3	1-1/2
		225	N/A	N/A	1.6	3/4	2.7	1	4.2	1-1/2	5.0	1-1/2	7.7	2
1CL4	2.02	0	5.8	1/2	9.0	1/2	2.0	1/2	15	1/2	18	3/4	24	1
		40	4.0	1/2	6.7	1/2	9.5	1/2	12.5	3/4	16	1	22	1
		75	N/A	N/A	2.7	3/4	5.5	3/4	8.5	1	12	1-1/2	18	1-1/2
2CL4	2.02	0	5.8	3/4	9.0	1/2	12.0	3/4	15	3/4	18	1	24	1-1/2
		80	4.0	3/4	6.7	3/4	9.5	1	12.5	1-1/2	16	1-1/2	22	2
		150	N/A	N/A	2.7	1	5.5	1-1/2	8.5	2	12	2	18	3
3CL4	2.02	0	5.0	3/4	9.0	3/4	12.0	1	15	1	18	1-1/2	24	2
		120	4.0	3/4	6.7	1	9.5	1-1/2	12.5	1-1/2	16	2	22	3
		225	2.0	1	3.7	1-1/2	5.5	2	8.5	3	12	3	18	5
1CL6	5.20	0	15	1	23	1	31	1-1/2	39	1-1/2	47	2		
		40	11	1	19	1	27	1-1/2	35	2	43	2		
		75	6.5	1	13	1-1/2	21	2	28	3	36	3		
2CL6	5.20	0	15	1	23	1-1/2	31	2	39	2	47	3		
		80	11	1	19	1-1/2	27	2	35	3	43	3		
		150	5	2	13	3	21	5	28	5	36	5		
3CL6	5.20	0	15	1-1/2	23	2	31	3	39	3	47	5		
		120	11	1-1/2	19	3	27	3	35	5	43	5		
		225	5	3	13	5	21	5	28	7-1/2	36	7-1/2		
1CL8	11.7	0	33	2	51	2	68	3	87	3	100	5		
		40	27	2	45	2	62	3	76	5	94	5		
		75	17	2	35	3	52	5	66	7-1/2	84	7-1/2		
2CL8	11.7	0	33	3	51	3	68	5	87	5	100	7-1/2		
		80	27	3	45	5	62	5	76	7-1/2	94	7-1/2		
		150	18	5	35	7-1/2	52	7-1/2	66	10	84	10		
3CL8	11.7	0	33	5	51	5	68	7-1/2	87	7-1/2	100	10		
		120	27	5	45	5	62	7-1/2	76	10	94	10		
		225	18	7-1/2	35	10	52	10	66	15	84	15		
1CL10	18.8	0	56	2	84	3	115	5	140	5				
		40	46	2	74	3	105	5	130	7-1/2				
		75	26	5	53	5	84	7-1/2	106	10				
2CL10	18.8	0	56	3	84	5	115	7-1/2	140	7-1/2				
		80	46	5	74	7-1/2	105	7-1/2	130	10				
		150	24	7-1/2	53	10	84	15	106	20				
3CL10	18.8	0	56	5	84	7-1/2	115	10	140	10				
		120	46	5	74	10	105	10	130	15				
		225	22	10	53	15	84	20	106	25				
1CL10H	27.7	0	83	3	127	5	168	7-1/2	210	7-1/2				
		40	73	3	117	5	158	7-1/2	202	10				
		75	55	5	100	7-1/2	143	10	187	15				
2CL10H	27.7	0	83	5	127	7-1/2	168	10	210	10				
		80	73	5	117	7-1/2	158	10	202	15				
		150	64	10	100	15	143	20	187	25				
1CL12H	43.5	0	130	5	196	7-1/2	255	10						
		40	118	7-1/2	184	10	240	15						
		75	85	10	149	15	210	20						
2CL12	43.5	0	130	10	196	15	255	20						
		80	118	10	184	15	240	20						
		150	85	15	149	25	208	30						
3CL12	43.5	0	130	15	196	20	255	25						
		120	118	15	184	20	240	25						
		225	85	25	149	30	210	40						
1CL12H	65.2	0	195	7-1/2	293	10	380	15						
		40	173	7-1/2	272	15	363	20						
		75	123	15	220	20	310	25						
2CL12H	65.2	0	195	15	293	20	380	25						
		80	173	15	272	20	363	30						
		150	123	25	220	30	300	50						

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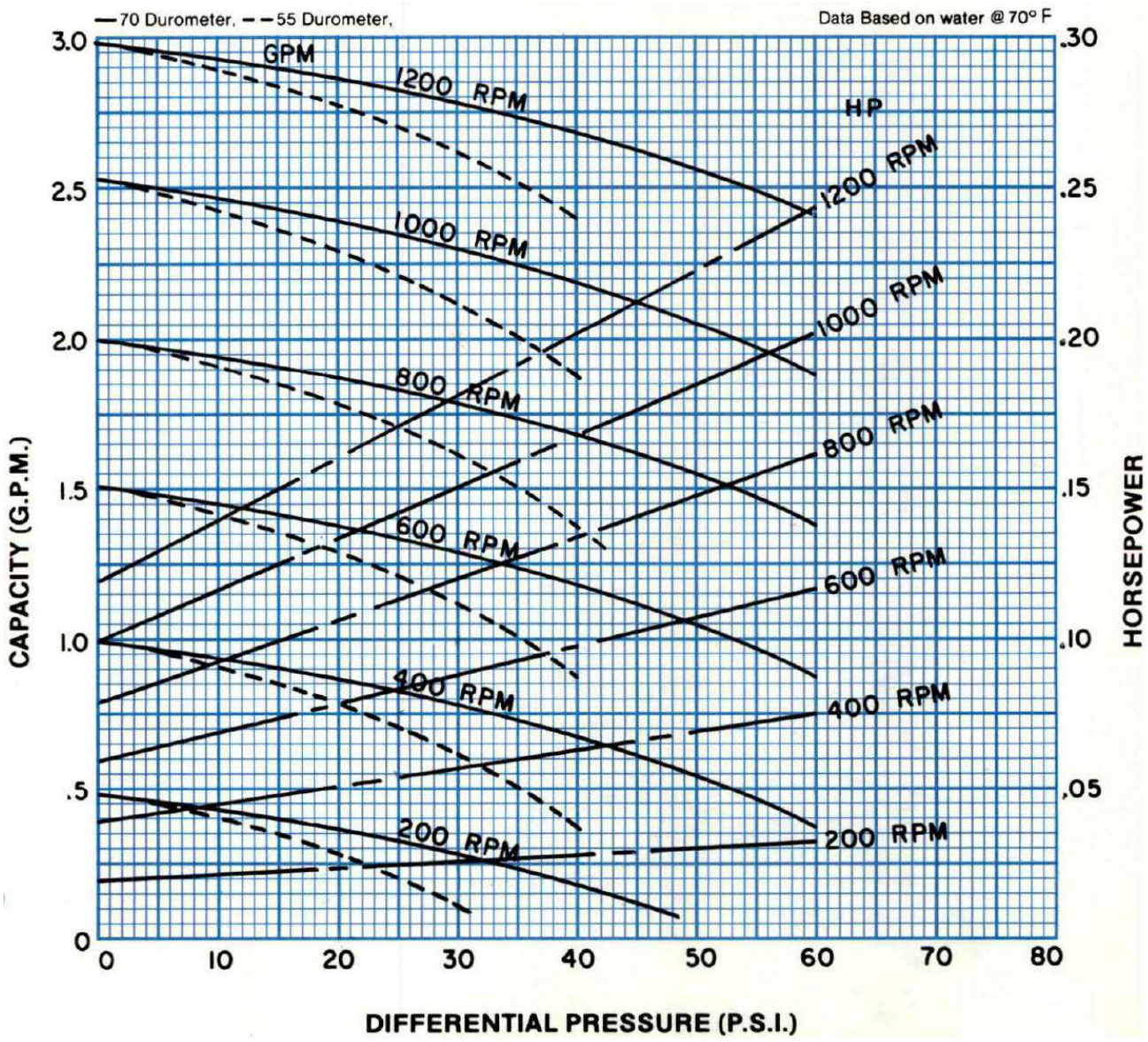
Pump Curves

PERFORMANCE DATA
MODEL: 1CL2

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.5	.9	1.3	1.7	2.1	2.5
MIN. HP	1/10	1/8	1/6	1/4	1/4	1/3



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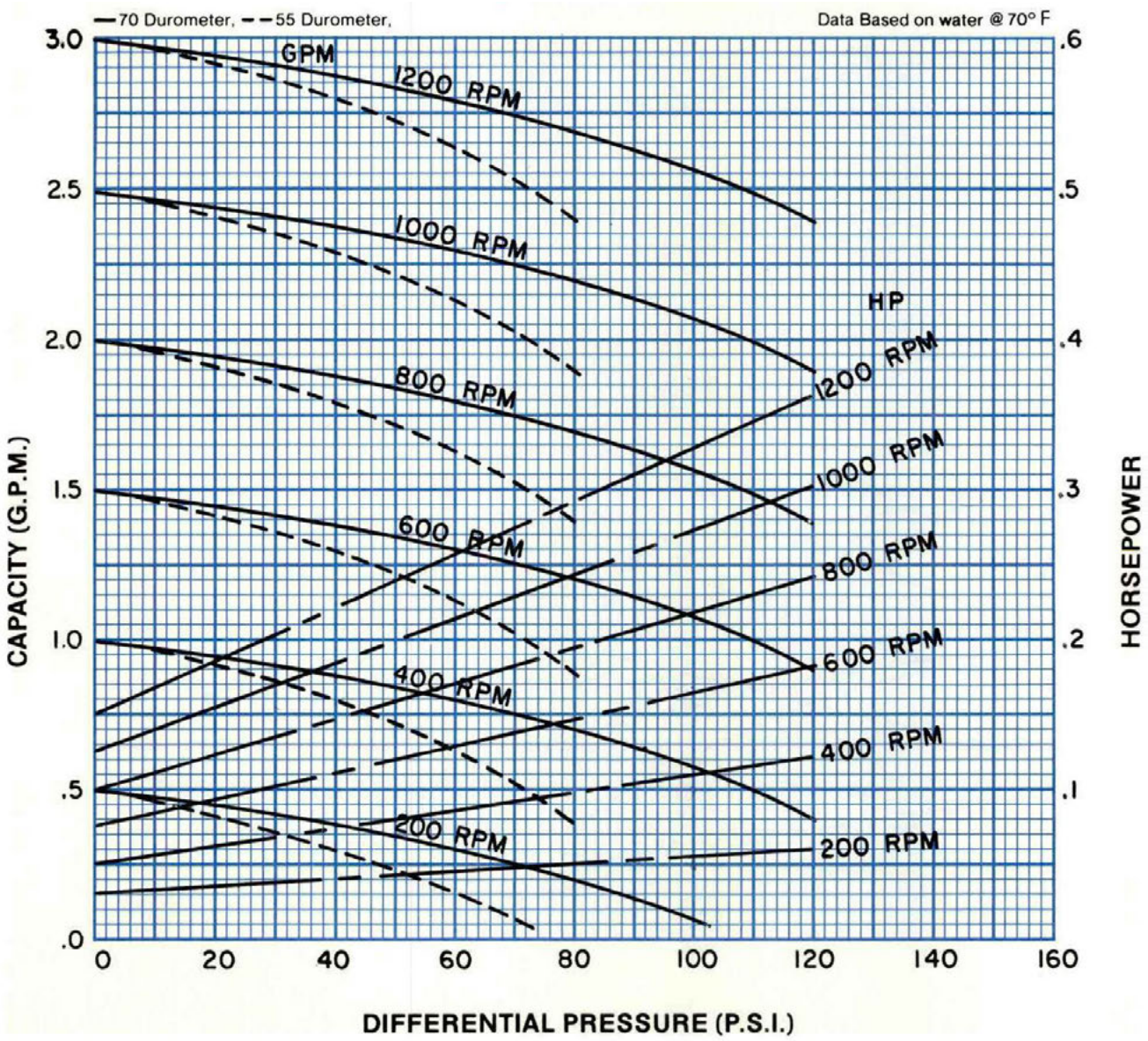
PERFORMANCE DATA
MODEL: 2CL2

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.4	.9	1.3	1.7	2.1	2.6
MIN. HP	1/8	1/6	1/4	1/3	1/3	1/2



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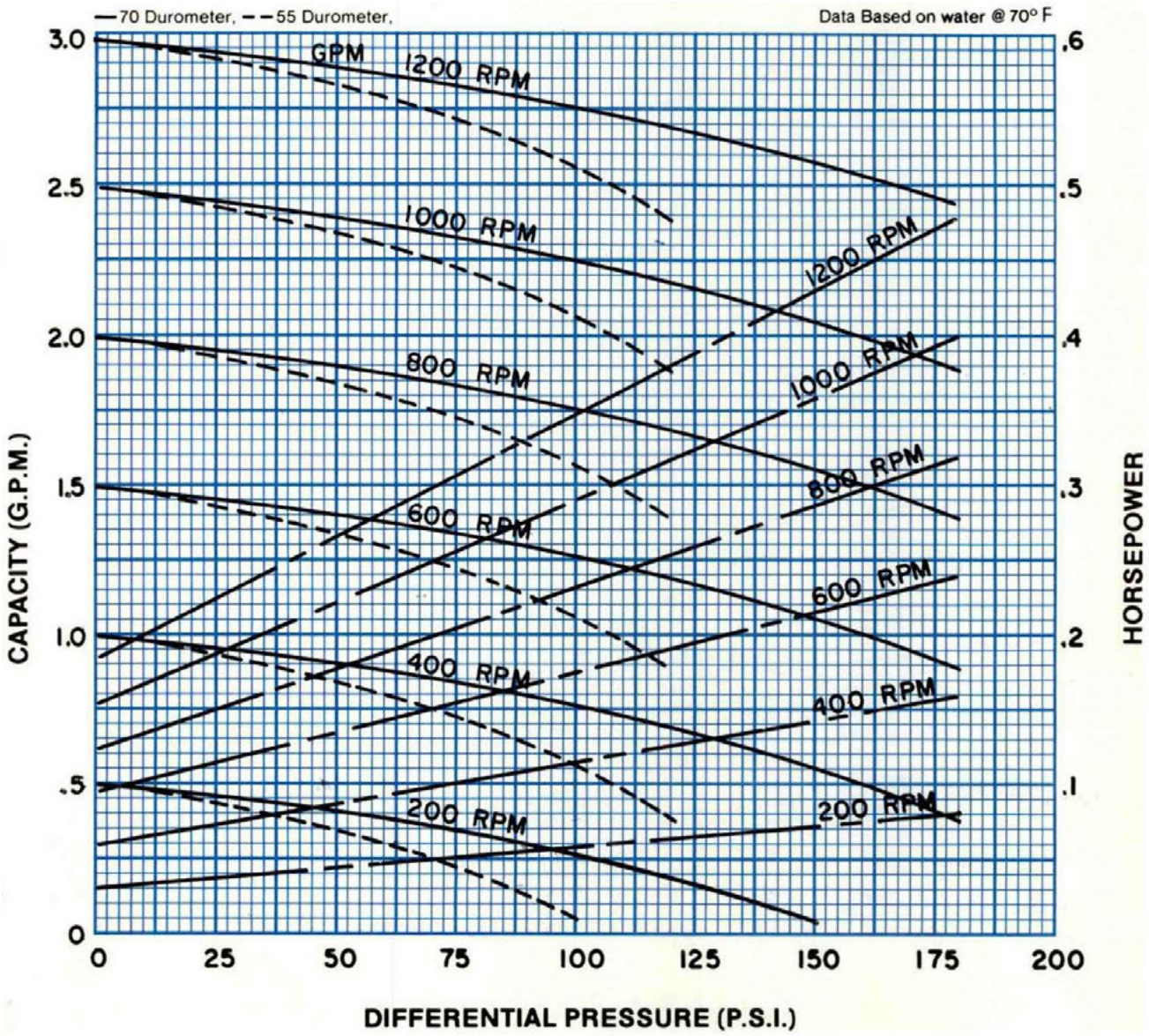
PERFORMANCE DATA
MODEL: 3CL2

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.4	.9	1.3	1.7	2.1	2.6
MIN. HP	1/6	1/4	1/3	1/2	1/2	3/4



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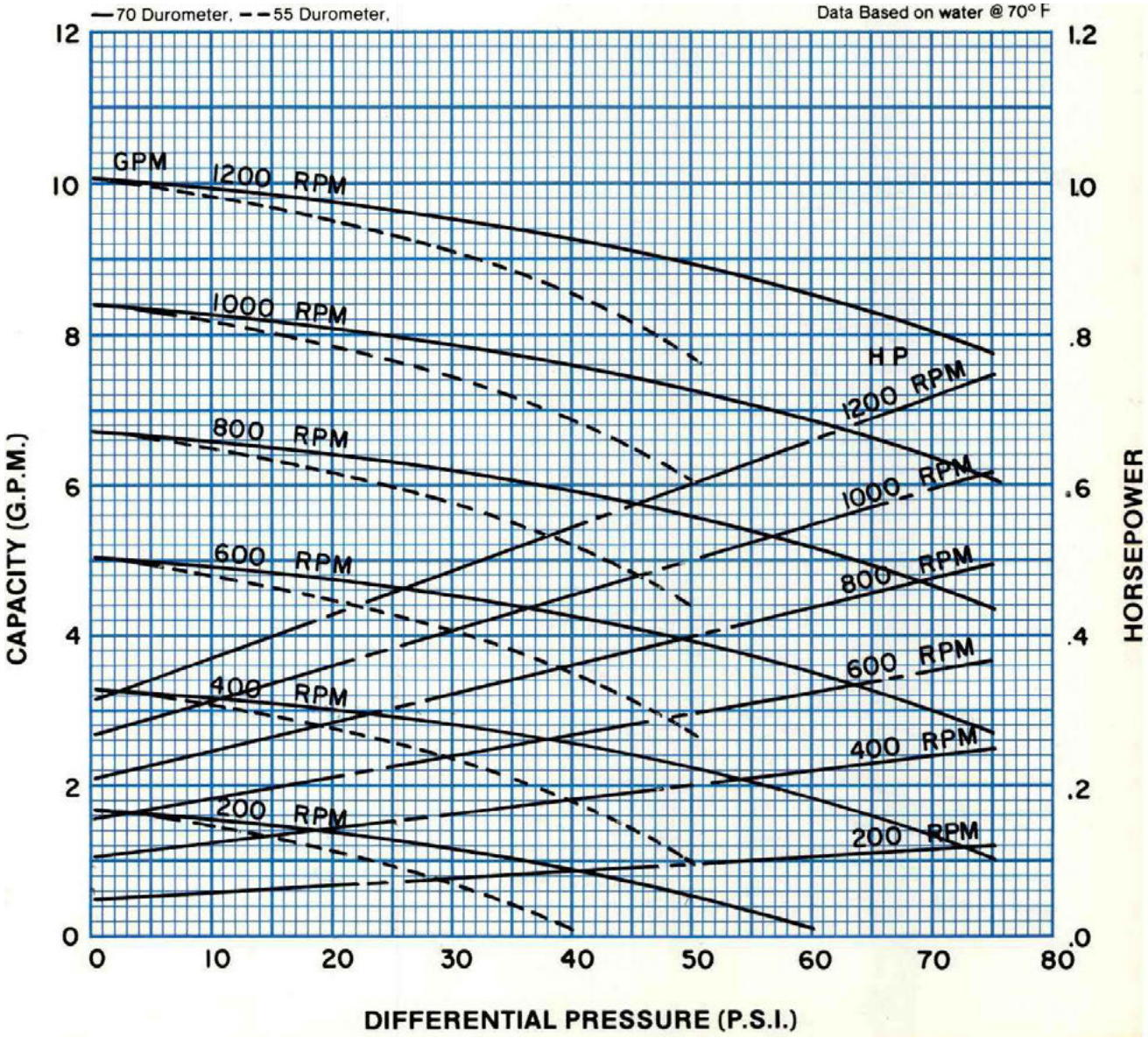
PERFORMANCE DATA
MODEL: 1CL3

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.6	1.3	2	2.6	3.2	3.9
MIN. HP	1/4	1/3	1/3	1/2	3/4	3/4



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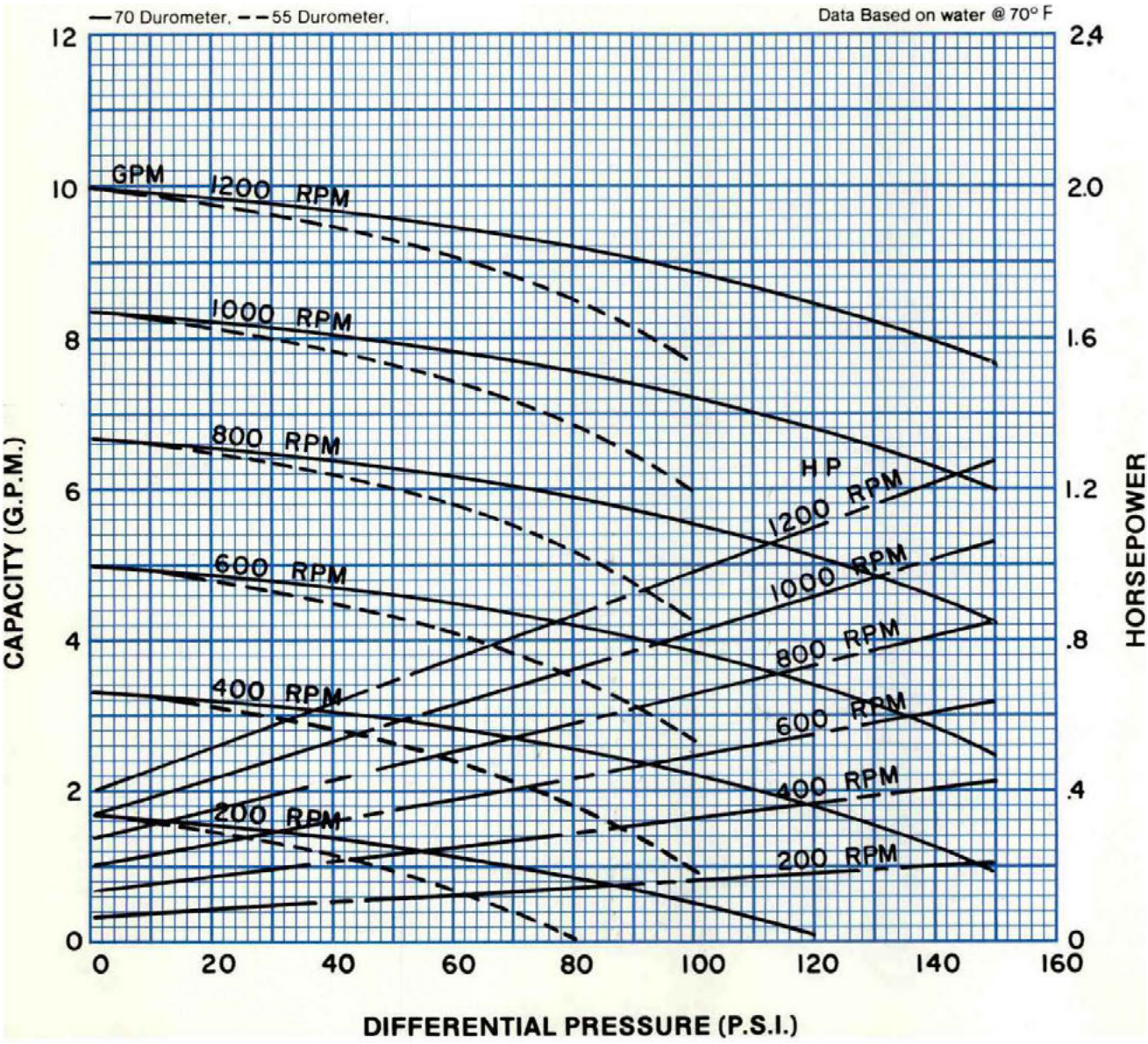
PERFORMANCE DATA
MODEL: 2CL3

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.6	1.3	2	2.6	3.2	3.9
MIN. HP	1/4	1/3	1/2	3/4	1	1



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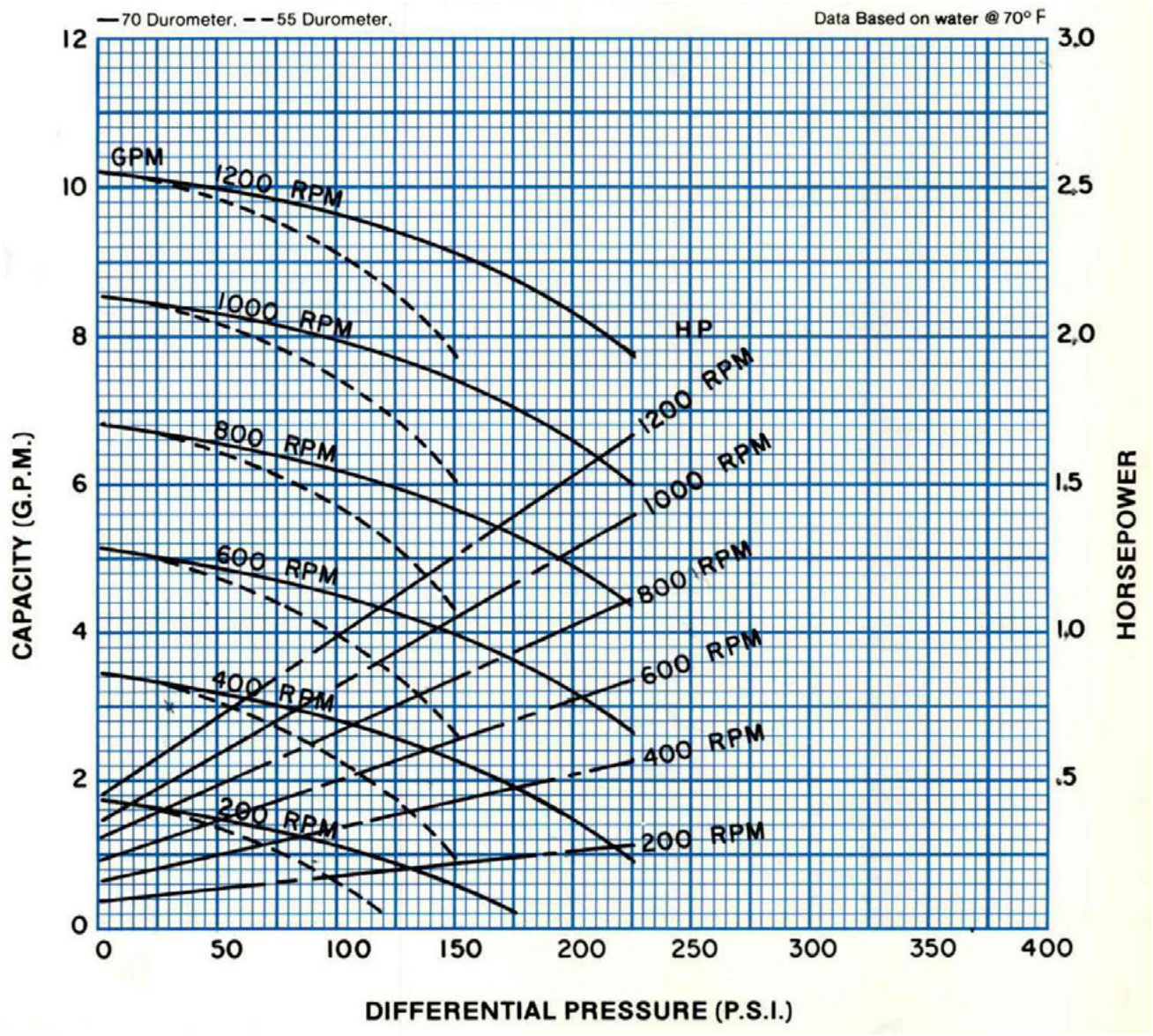
PERFORMANCE DATA
MODEL: 3CL3

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.6	1.3	2	2.6	3.2	3.9
MIN. HP	1/3	1/2	3/4	3/4	1	1



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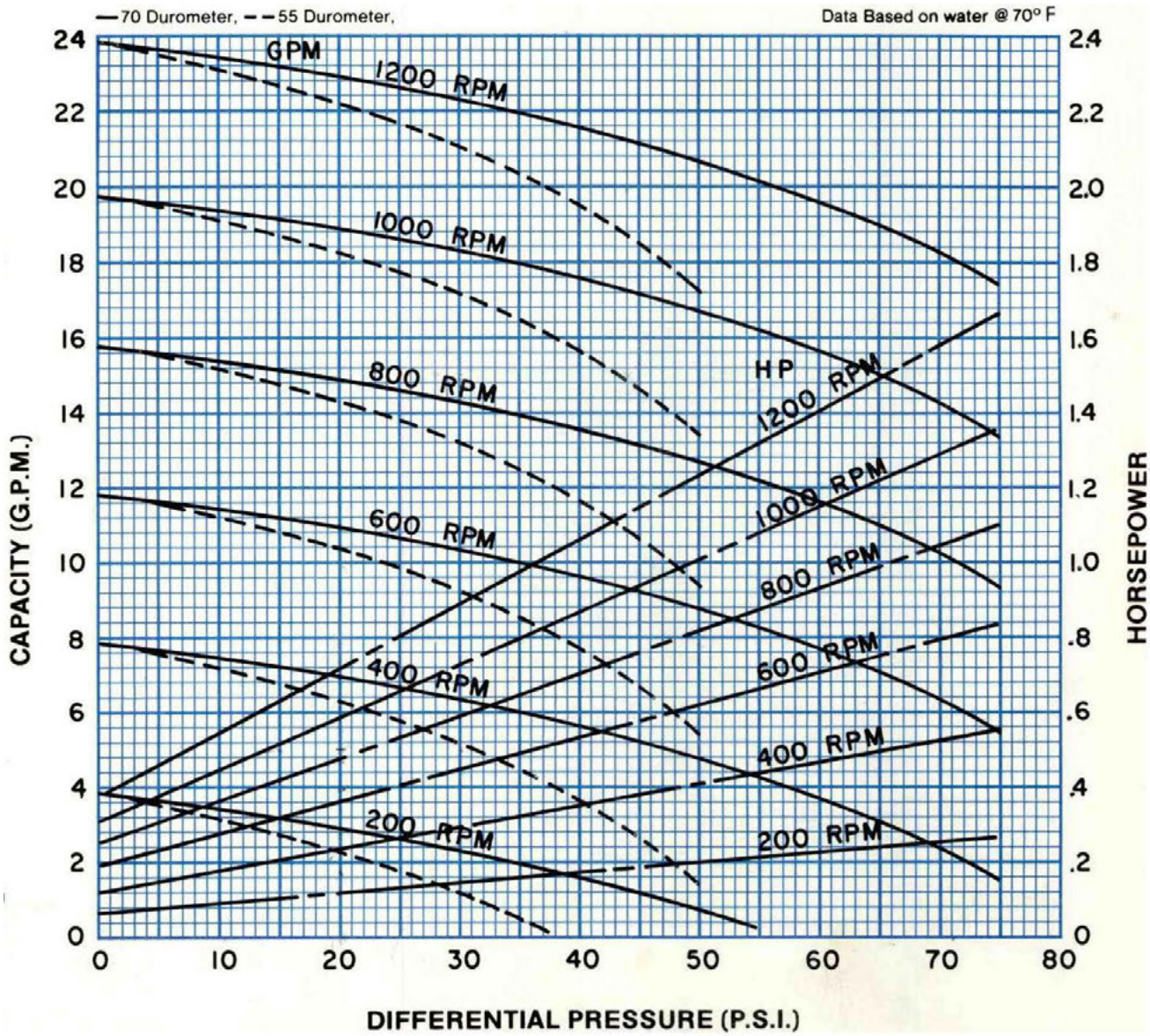
PERFORMANCE DATA
MODEL: 1CL4

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.9	1.7	2.6	3.4	4.8	6.7
MIN. HP	1/3	1/2	1/2	3/4	1	1



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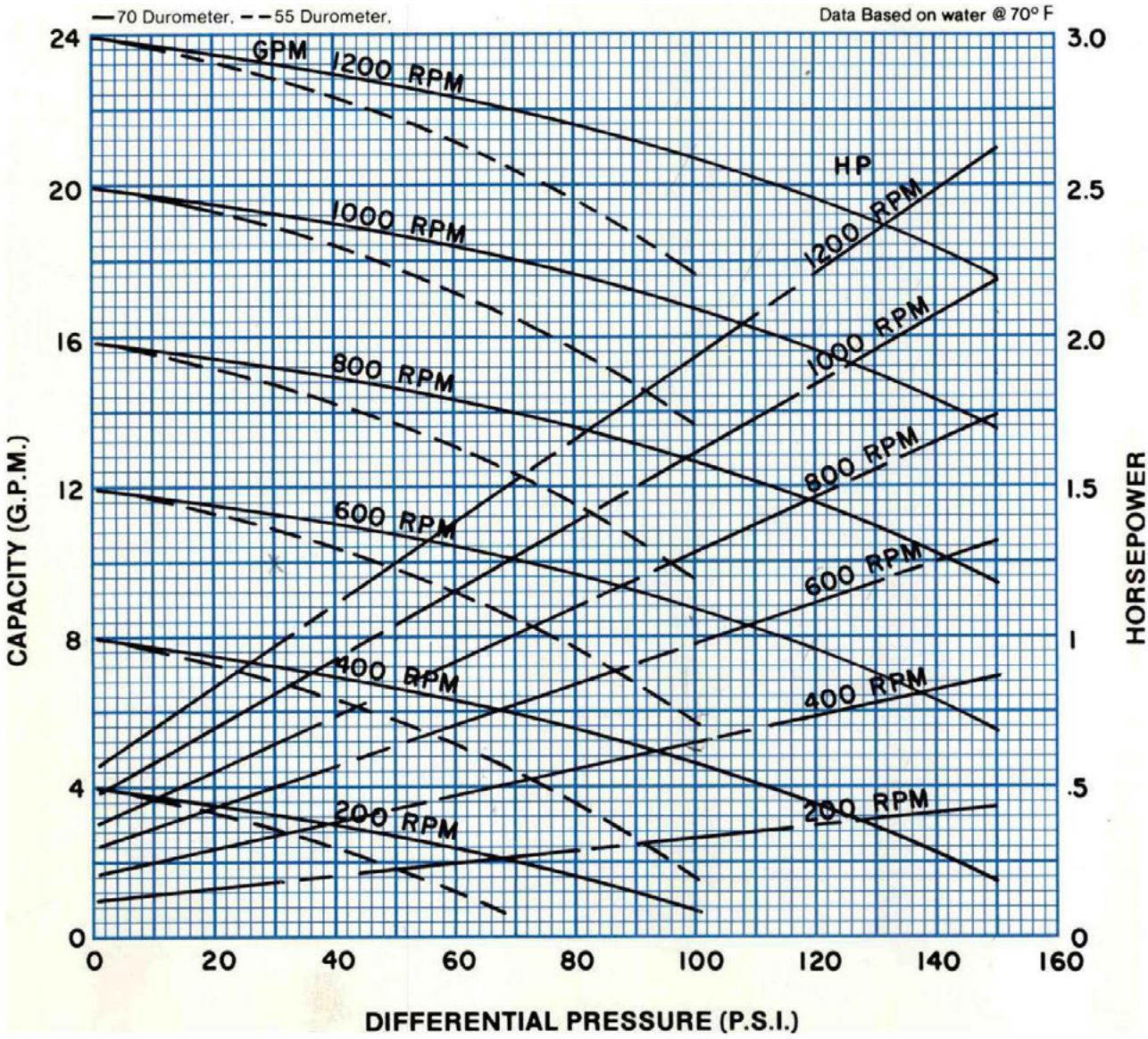
PERFORMANCE DATA
MODEL: 2CL4

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.9	1.7	2.6	3.4	4.8	6.7
MIN. HP	1/3	1/2	3/4	1	1 1/2	1 1/2



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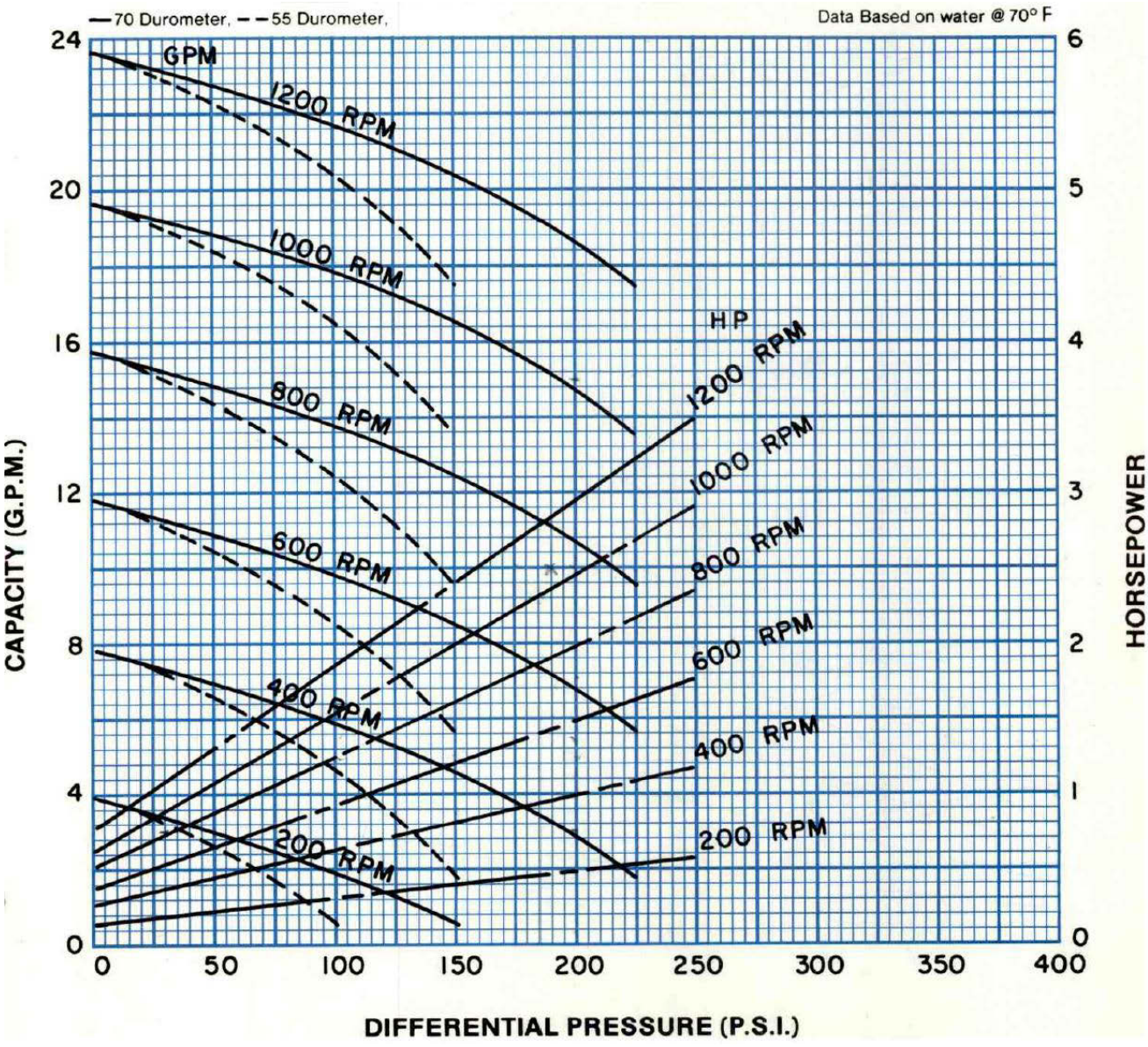
PERFORMANCE DATA
MODEL: 3CL4

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.9	1.7	2.6	3.4	4.8	6.7
MIN. HP	1/2	3/4	1	1 1/2	2	2



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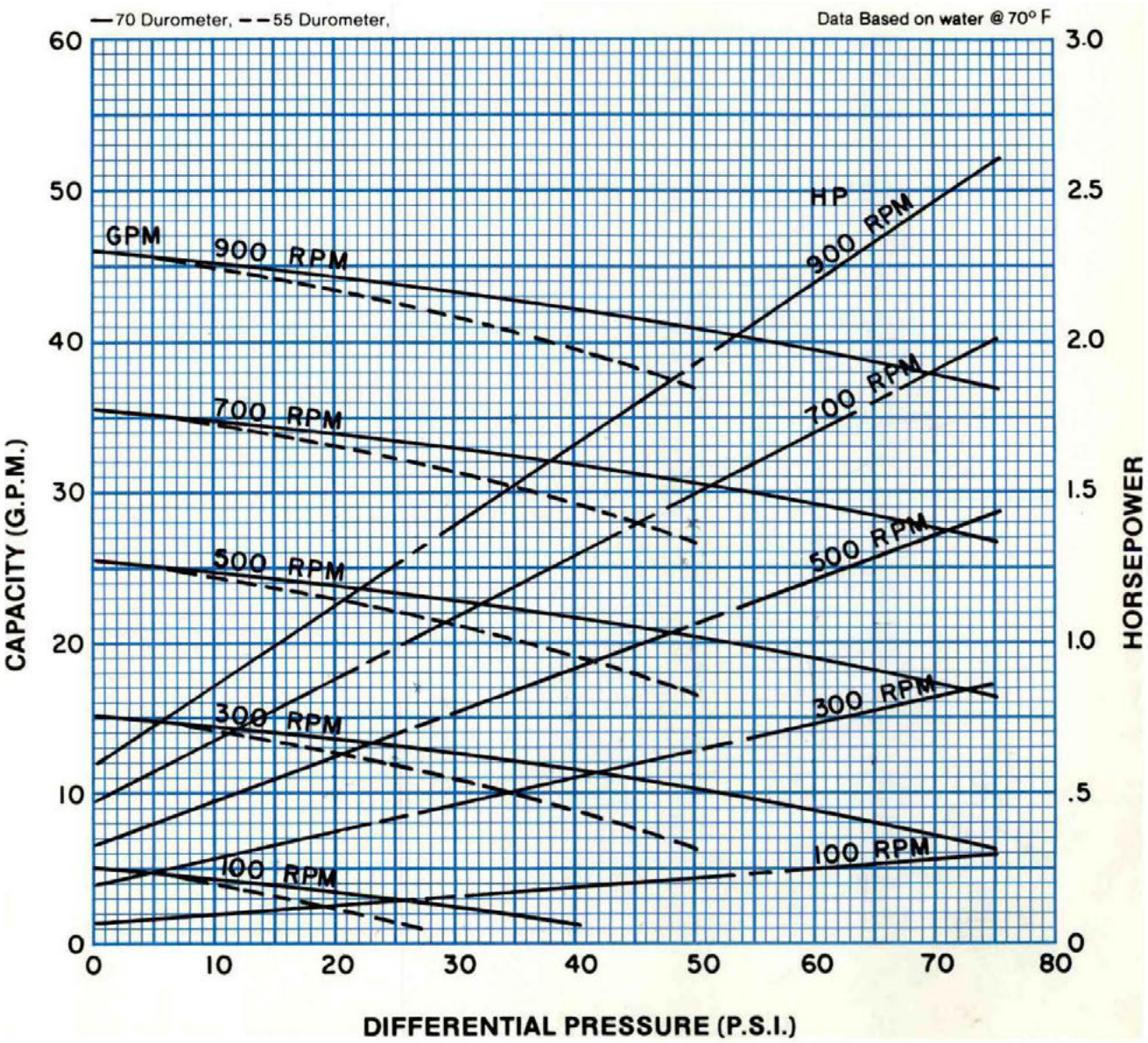
PERFORMANCE DATA
MODEL: 1CL6

RPM	100	300	500	700	900
NPSH REQ'D	.6	1.7	2.9	4.1	6.9
MIN. HP	1/3	3/4	1	1 1/2	2



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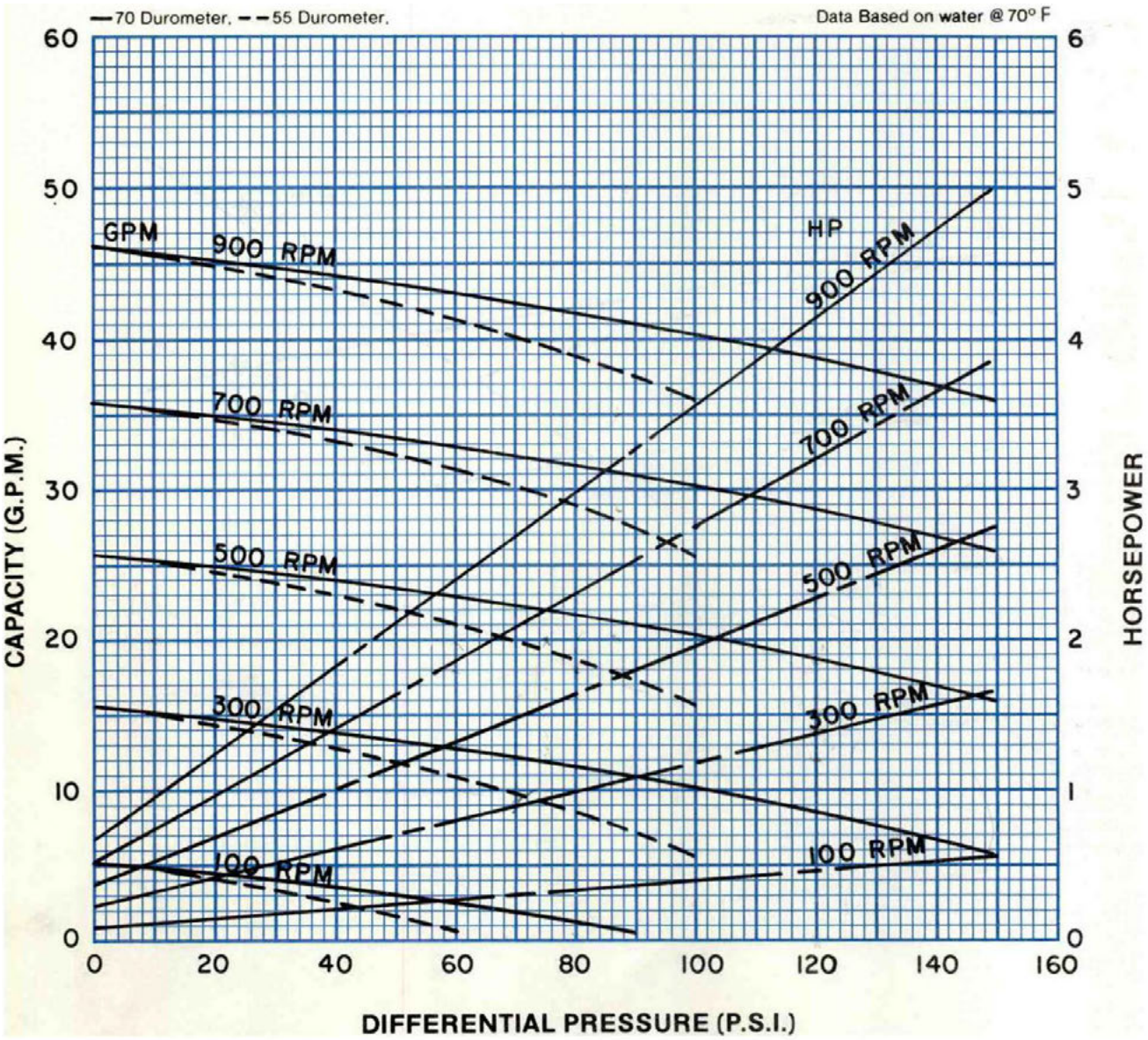
PERFORMANCE DATA
MODEL: 2CL6

RPM	100	300	500	700	900
NPSH REQ'D	.6	1.7	2.9	4.1	6.9
MIN. HP	1/2	1 1/2	2	3	3



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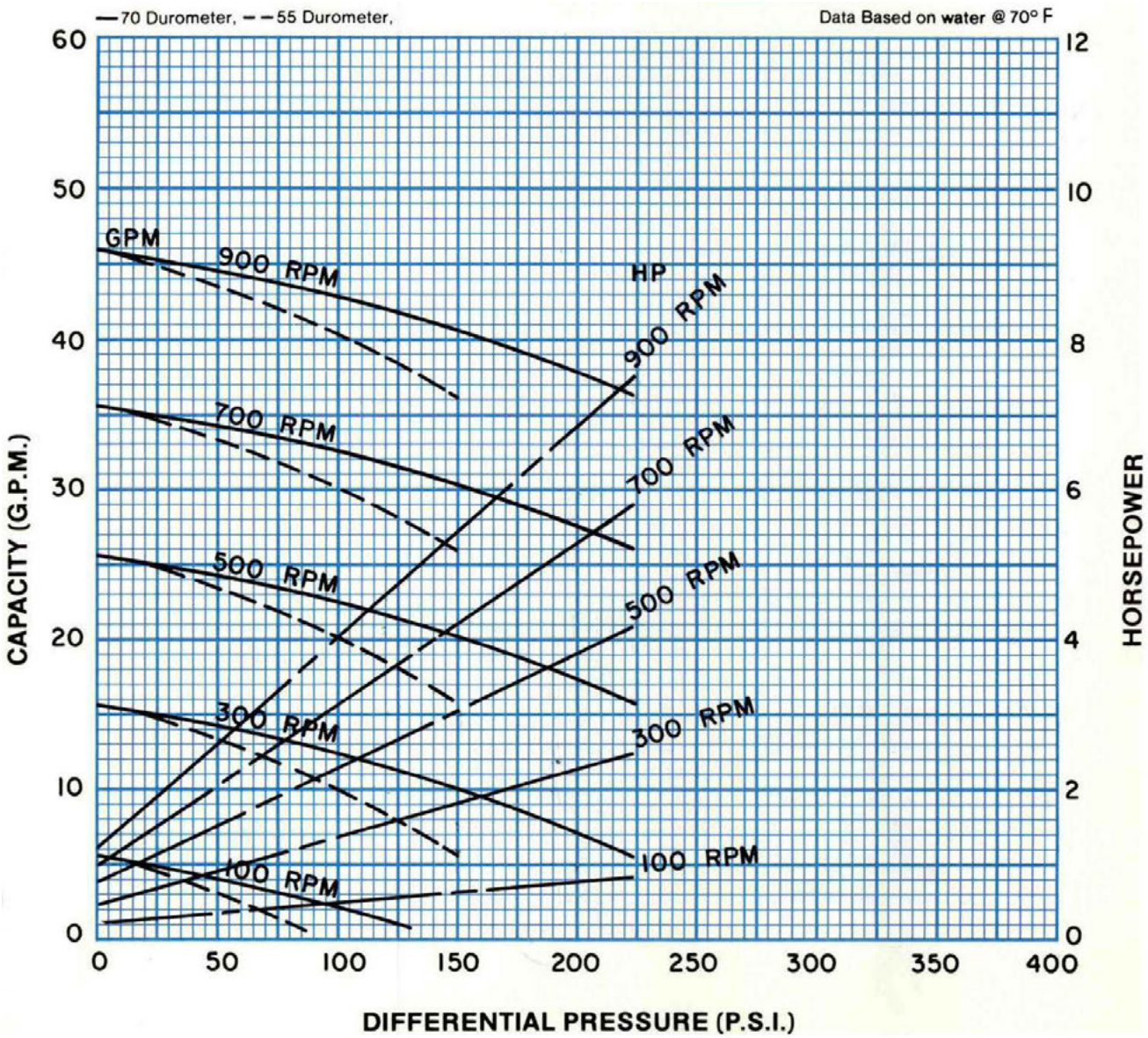
PERFORMANCE DATA
MODEL: 3CL6

RPM	100	300	500	700	900
NPSH REQ'D	.6	1.7	2.9	4.1	6.9
MIN. HP	1	2	3	5	5



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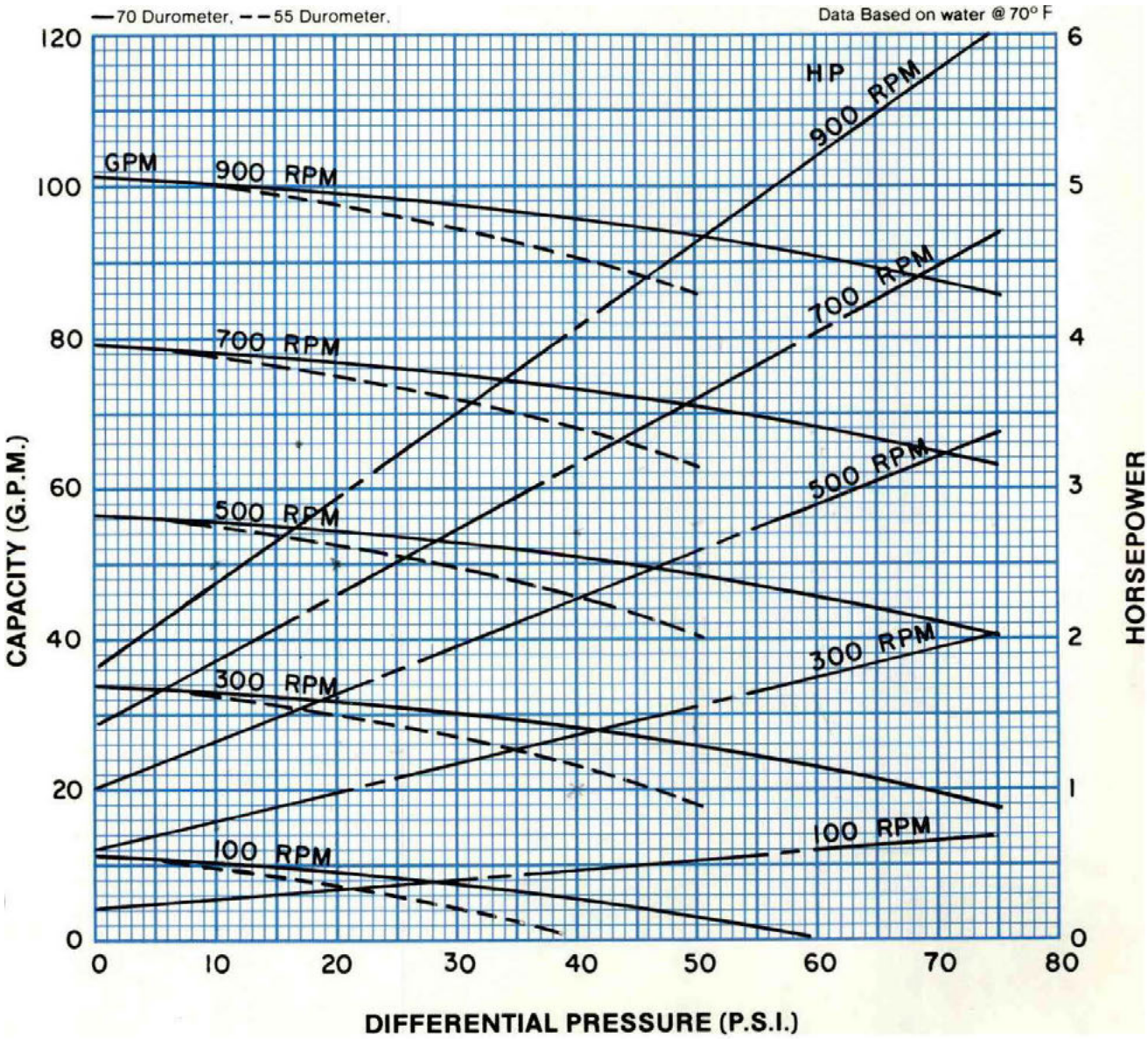
PERFORMANCE DATA
MODEL: 1CL8

RPM	100	300	500	700	900
NPSH REQ'D	.8	2.2	3.7	6.9	10.5
MIN. HP	1/2	1 1/2	2	3	5



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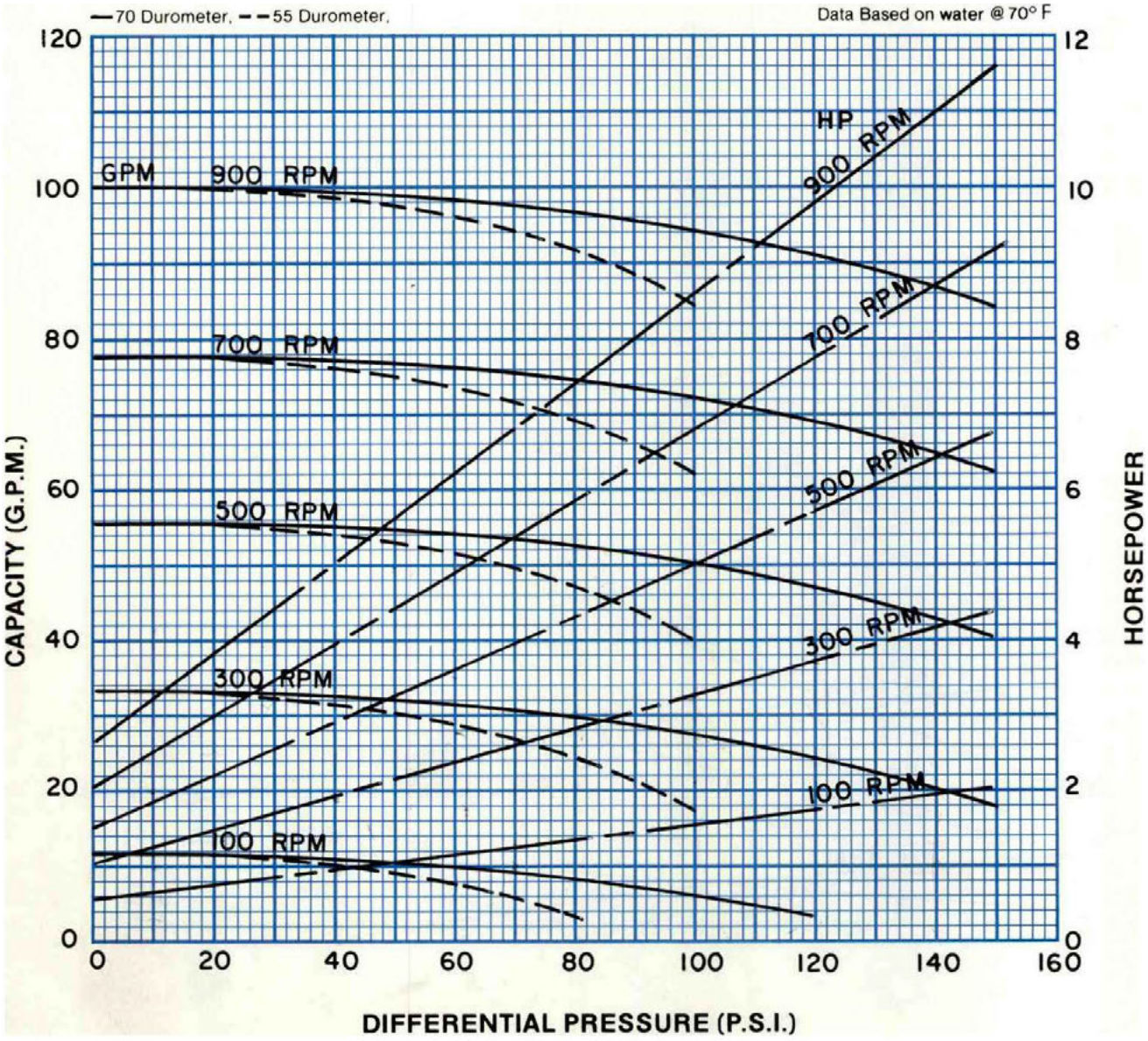
PERFORMANCE DATA
MODEL: 2CL8

RPM	100	300	500	700	900
NPSH REQ'D	.8	2.2	3.7	6.9	10.5
MIN. HP	1 1/2	3	5	7 1/2	7 1/2



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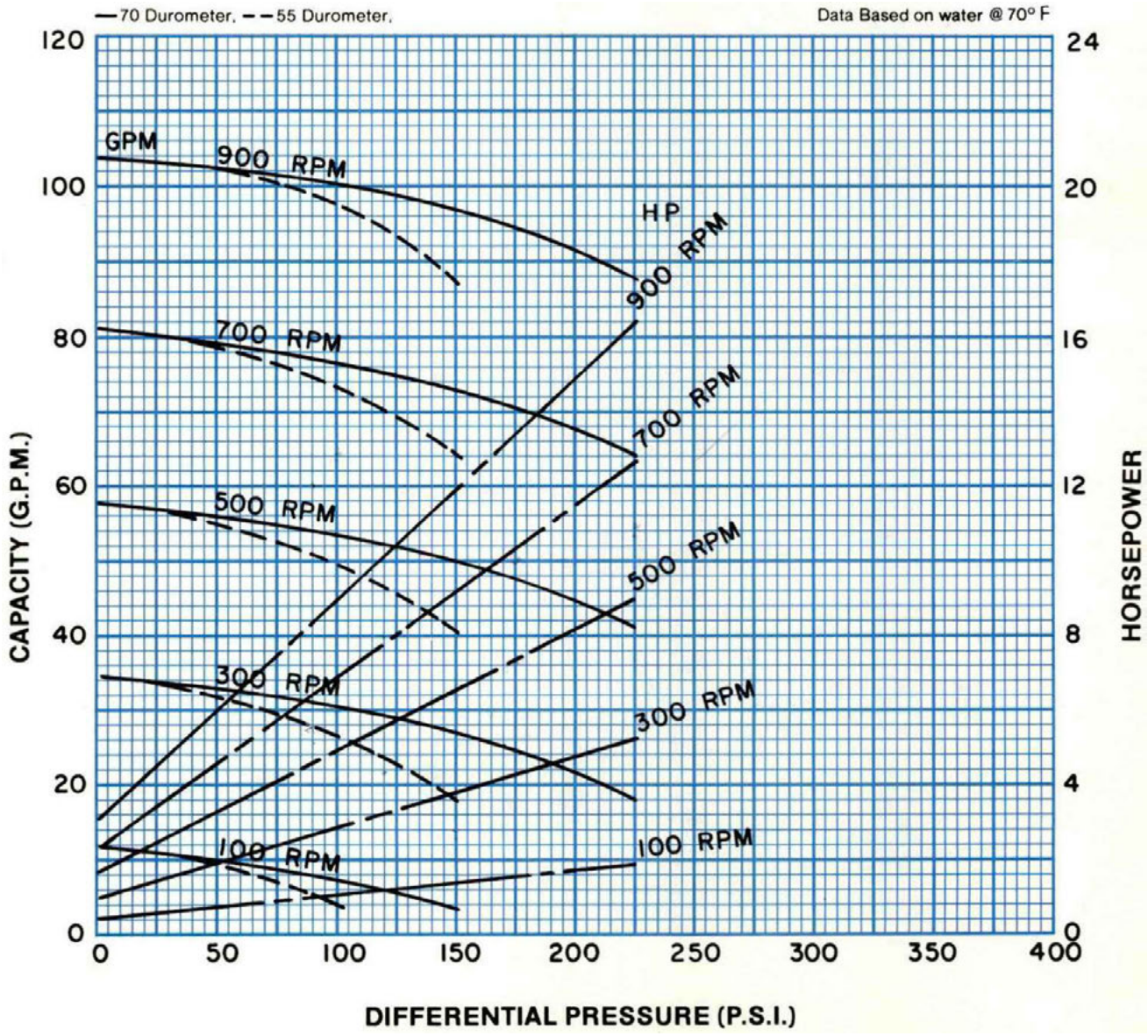
PERFORMANCE DATA
MODEL: 3CL8

RPM	100	300	500	700	900
NPSH REQ'D	.8	2.2	3.7	6.9	10.5
MIN. HP	2	5	7 1/2	10	10



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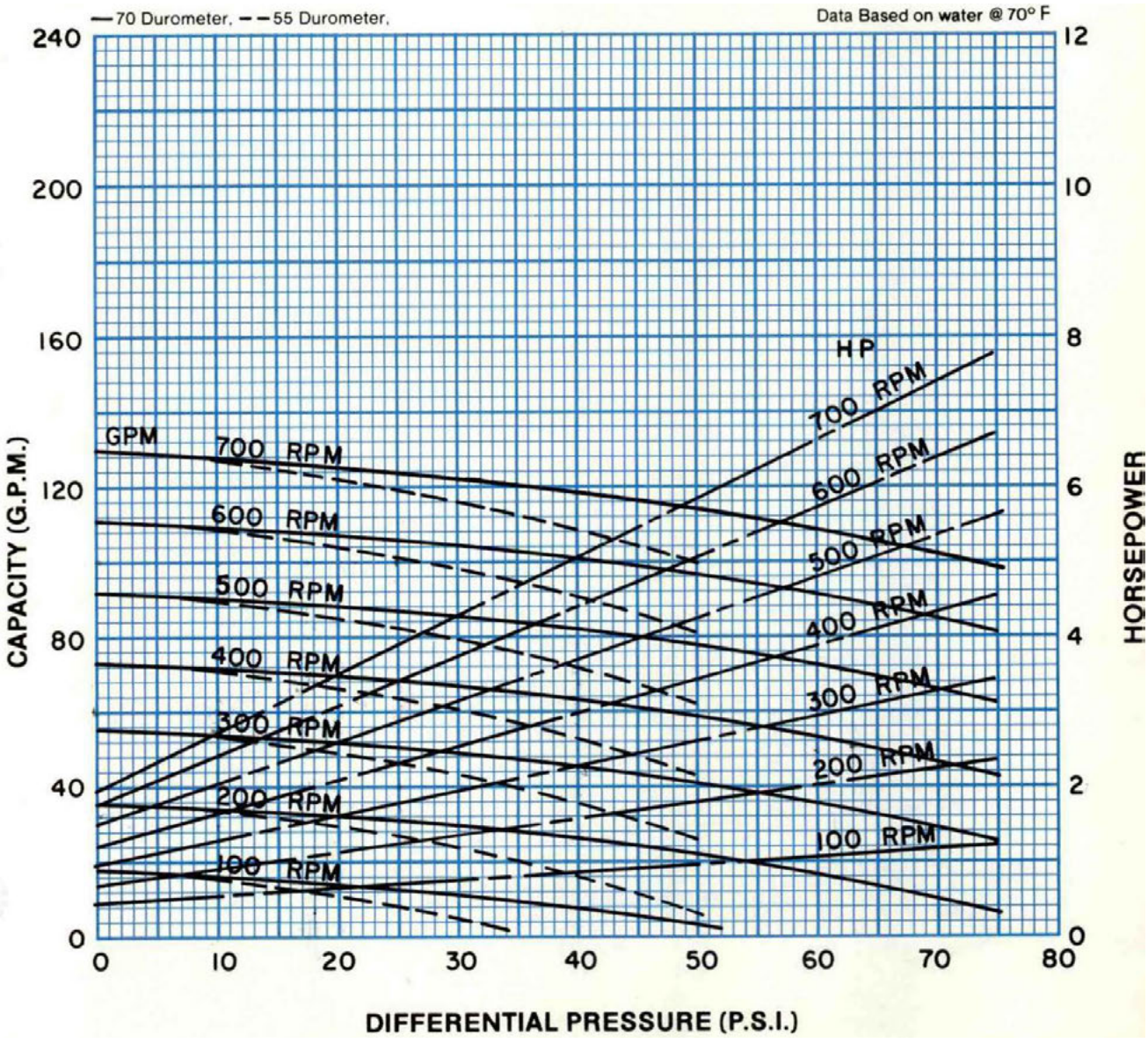
PERFORMANCE DATA
MODEL: 1CL10

RPM	100	200	300	400	500	600	700
NPSH REQ'D	.9	1.7	2.6	3.5	4.9	6.9	9.1
MIN. HP	1	1 1/2	2	3	5	5	5



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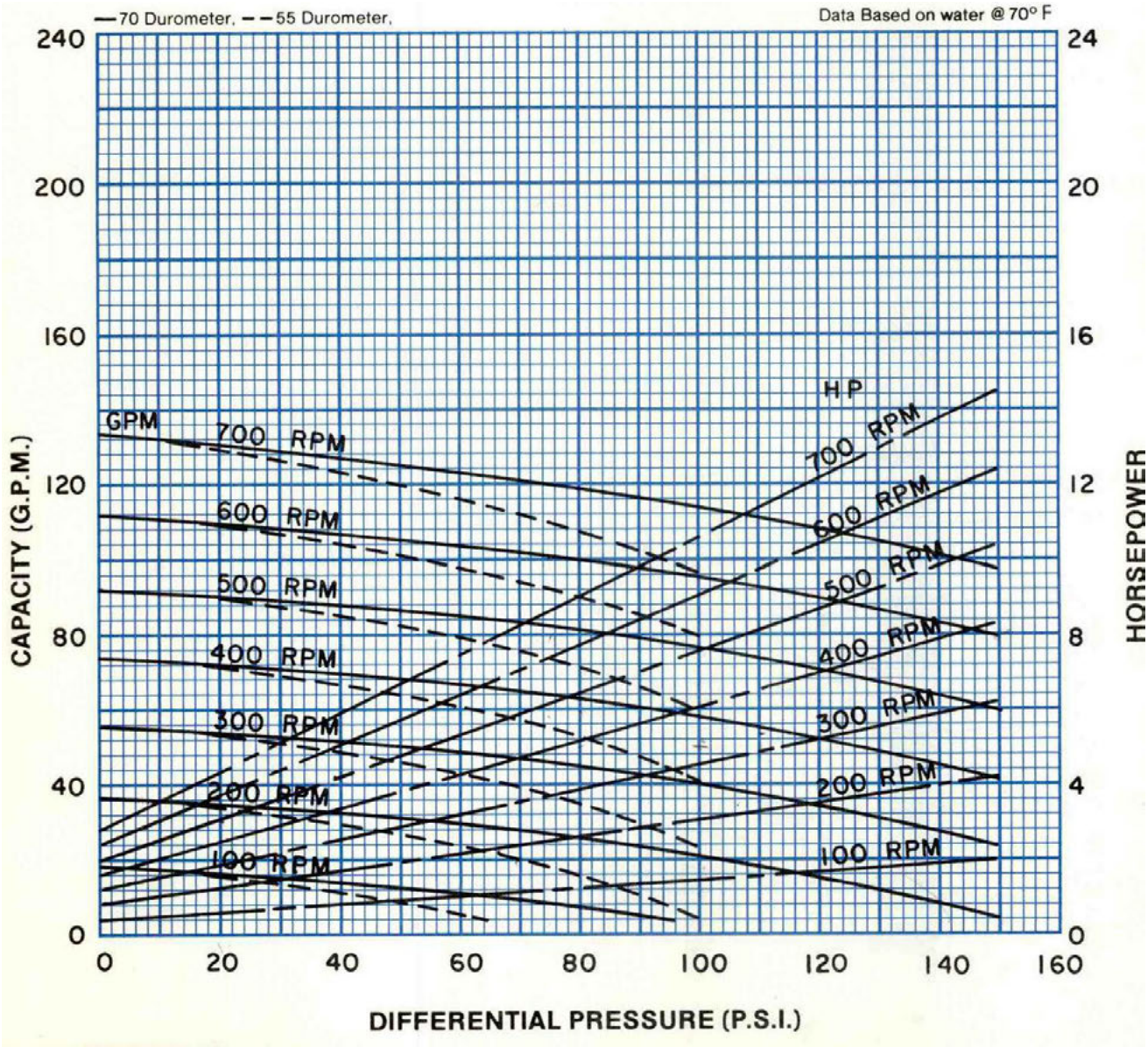
PERFORMANCE DATA
MODEL: 2CL10

RPM	100	200	300	400	500	600	700
NPSH REQ'D	.9	1.7	2.6	3.5	4.9	6.9	9.1
MIN. HP	1 1/2	2	3	5	7 1/2	7 1/2	10



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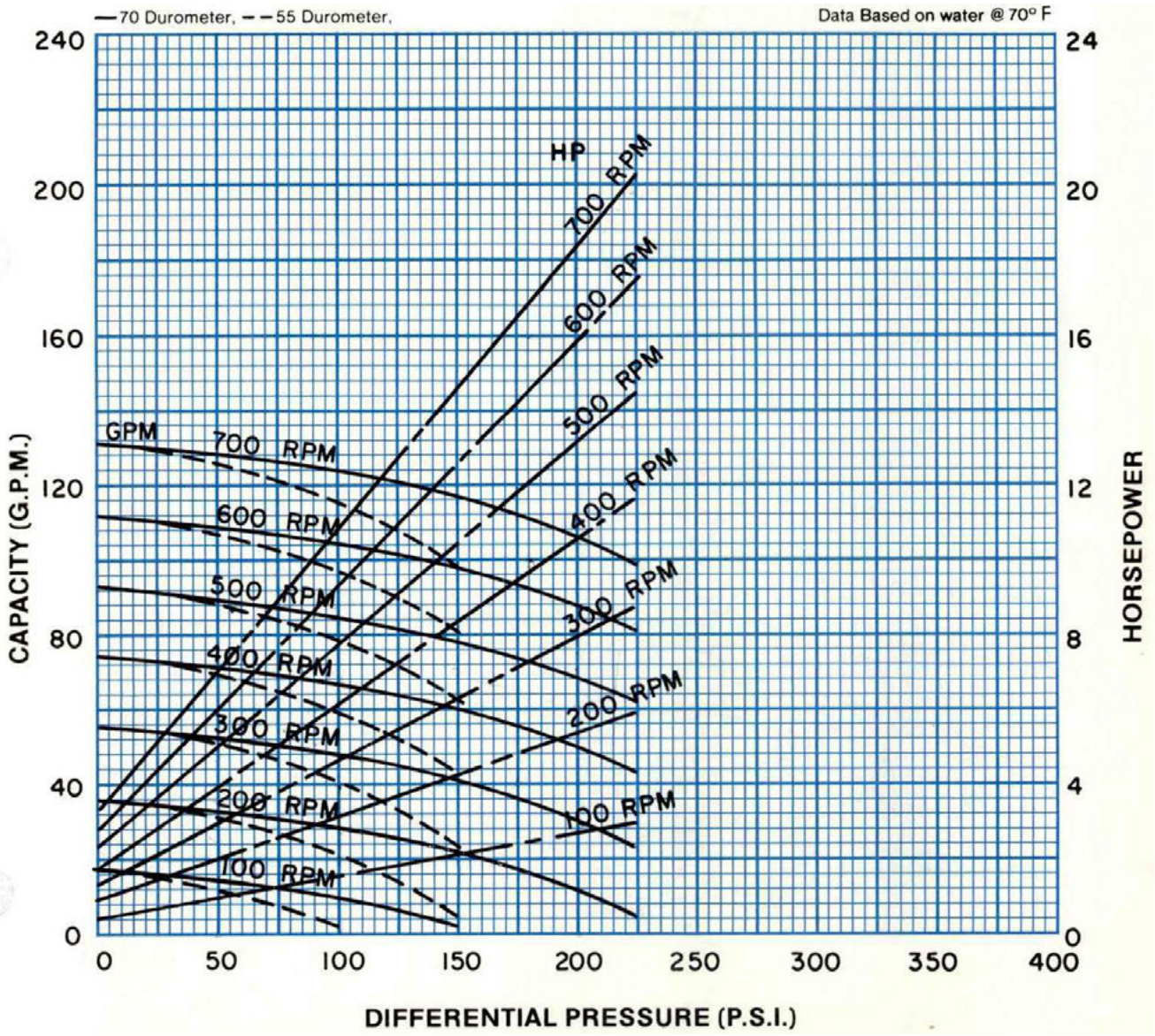
PERFORMANCE DATA
MODEL: 3CL10

RPM	100	200	300	400	500	600	700
NPSH REQ'D	.9	1.7	2.6	3.5	4.9	6.9	9.1
MIN. HP	2	3	5	7 1/2	10	10	15



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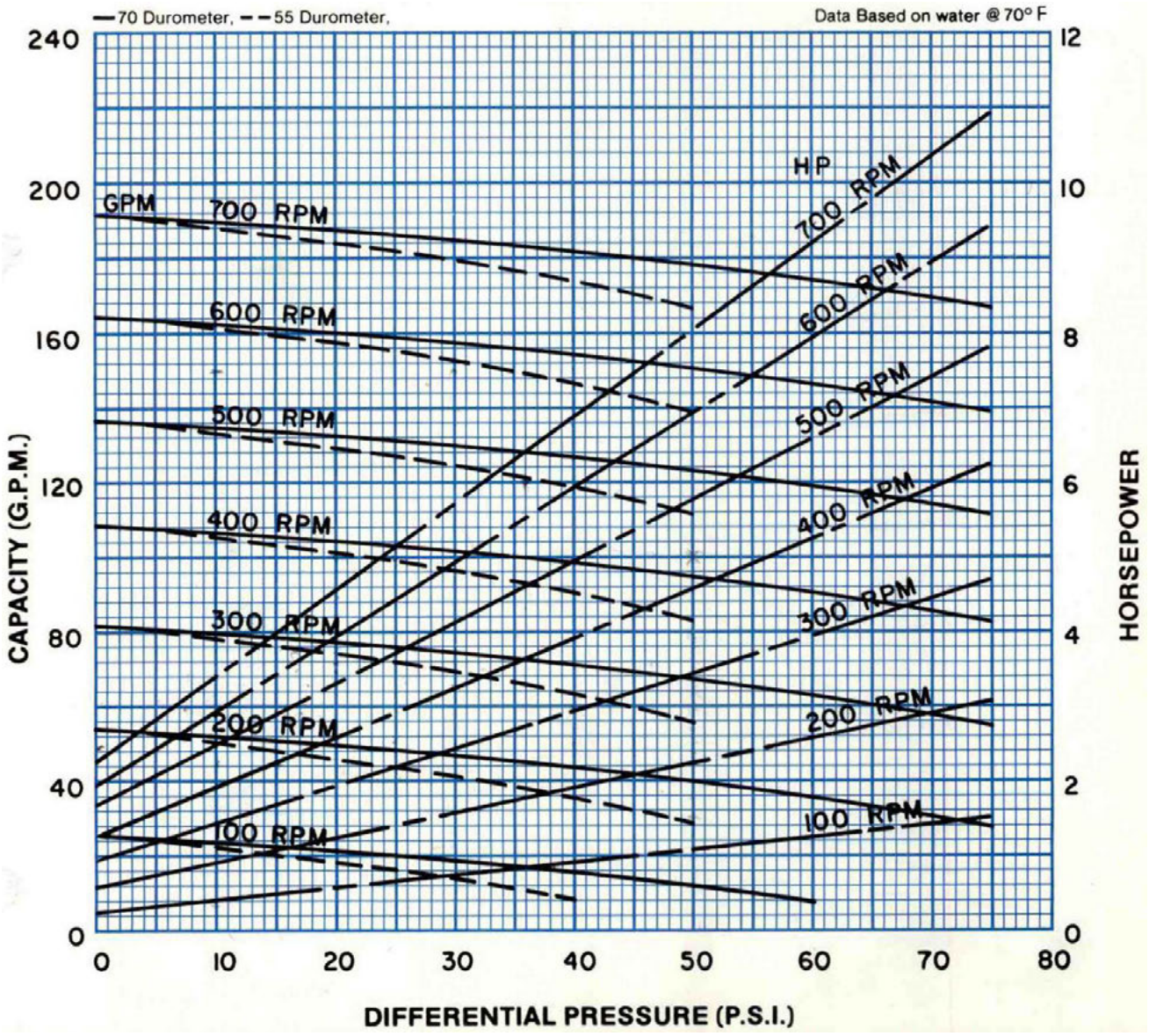
PERFORMANCE DATA
MODEL: 1CL10H

RPM	100	200	300	400	500	600	700
NPSH REQ'D	1.1	2.1	3.2	4.7	7.4	9.9	12.6
MIN. HP	1	2	3	5	5	7 1/2	7 1/2



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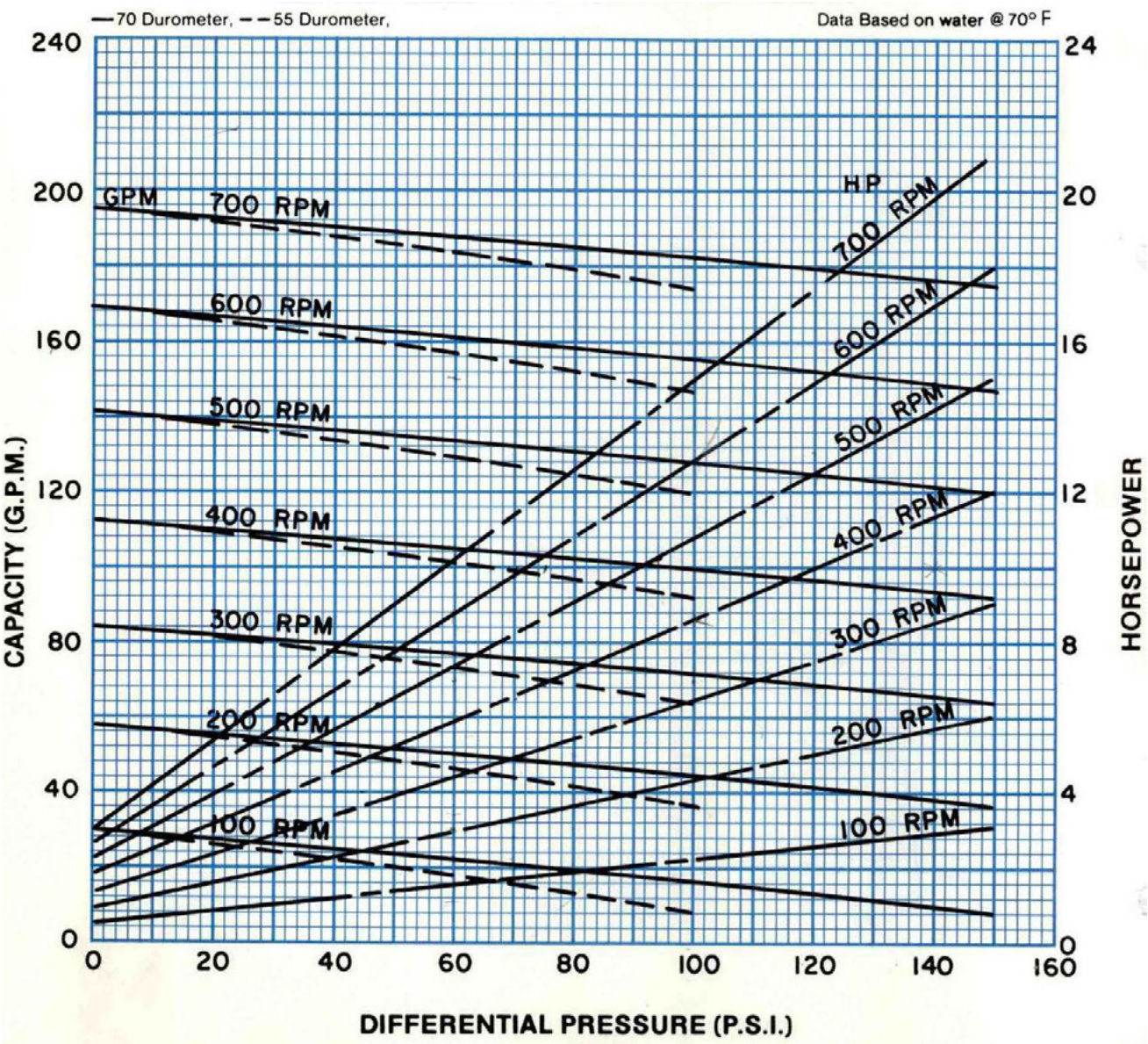
PERFORMANCE DATA
MODEL: 2CL10H

RPM	100	200	300	400	500	600	700
NPSH REQ'D	1.1	2.1	3.2	4.7	7.4	9.9	12.6
MIN. HP	2	5	5	7 1/2	10	10	15



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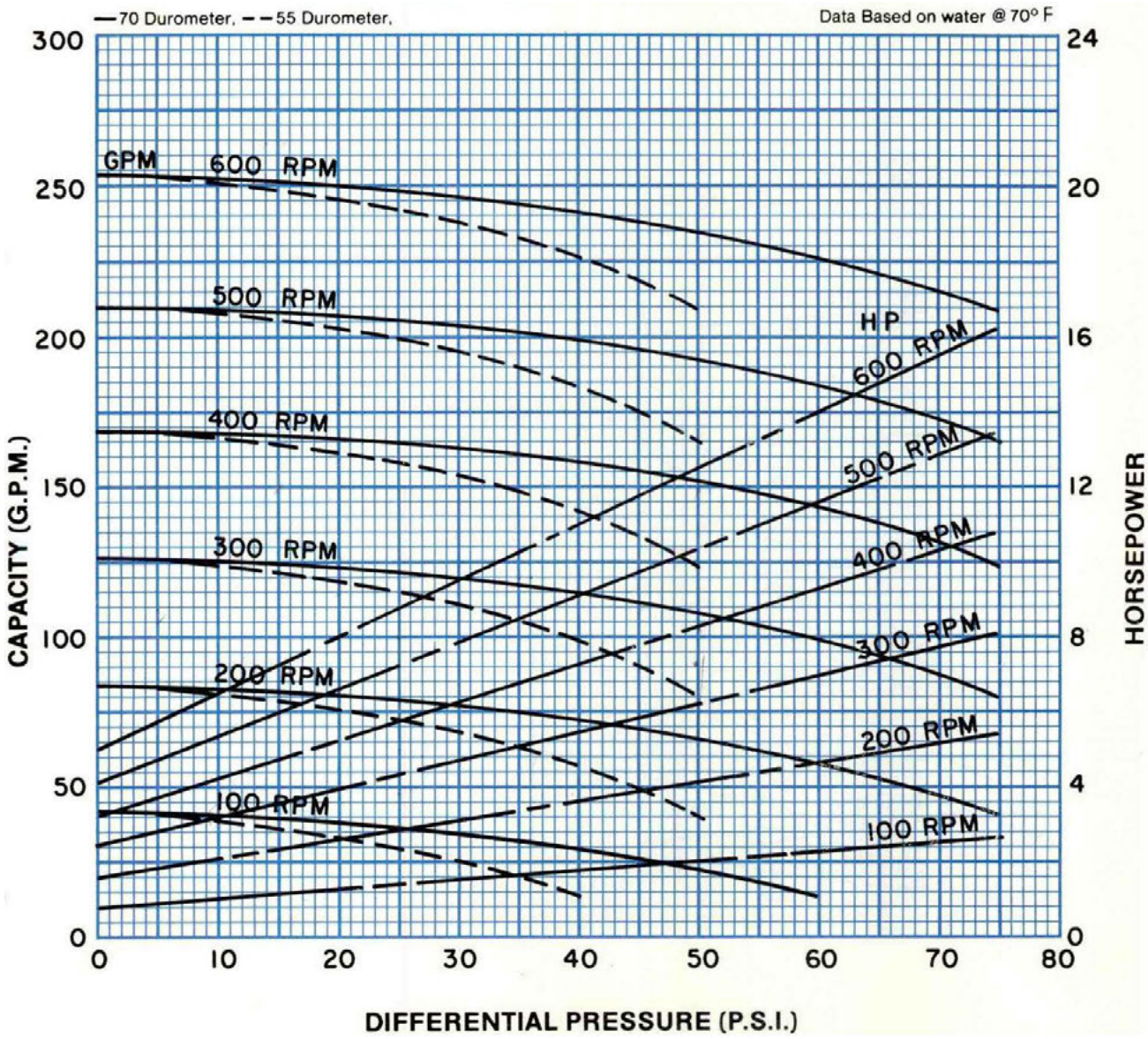
PERFORMANCE DATA
MODEL: 1CL12

RPM	100	200	300	400	500	600
NPSH REQ'D	1.2	2.3	3.4	5.6	8.4	11.2
MIN. HP	3	5	5	7 1/2	10	10



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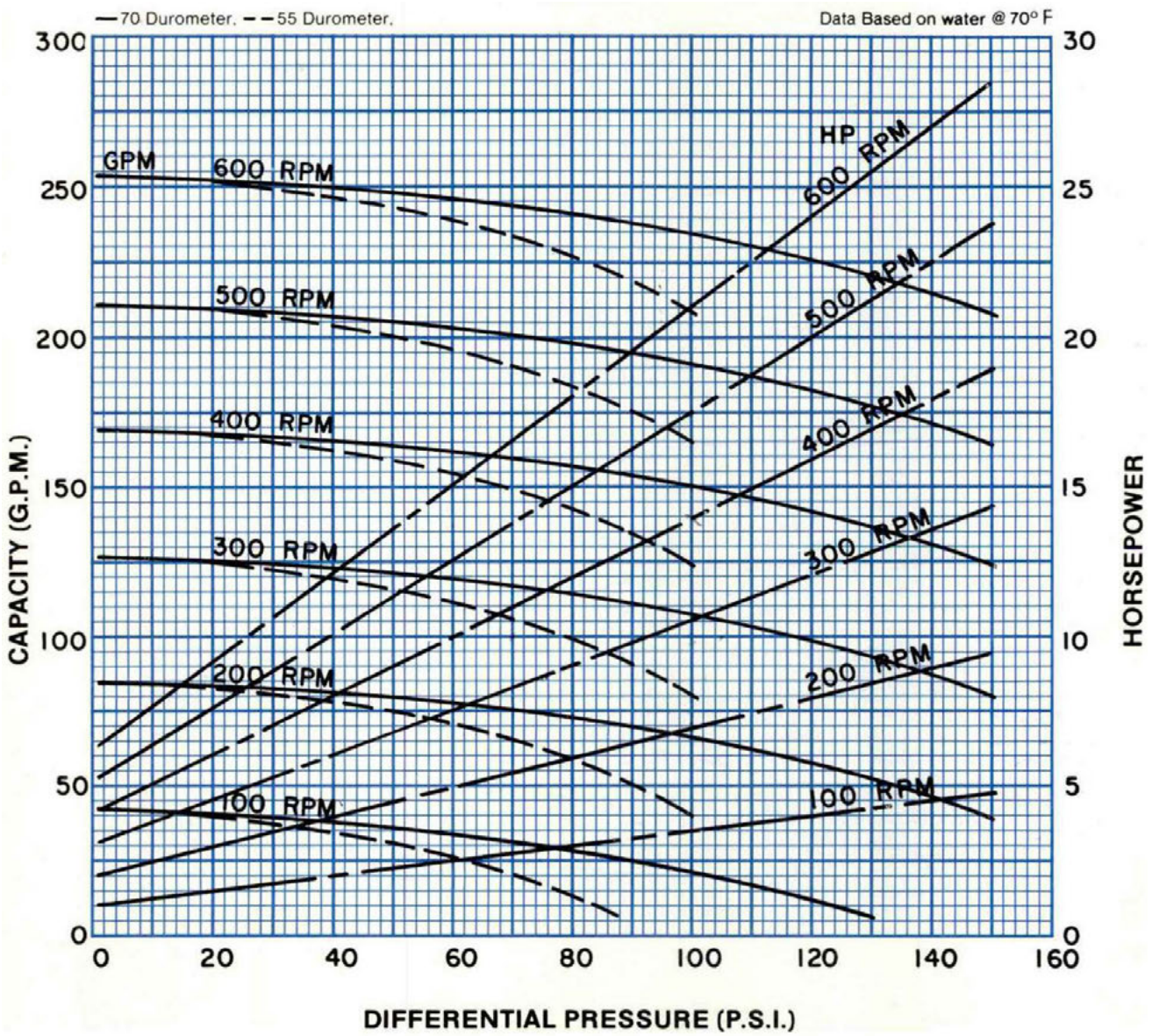
PERFORMANCE DATA
MODEL: 2CL12

RPM	100	200	300	400	500	600
NPSH REQ'D	1.2	2.3	3.4	5.6	8.4	11.2
MIN. HP	5	7 1/2	10	15	15	20



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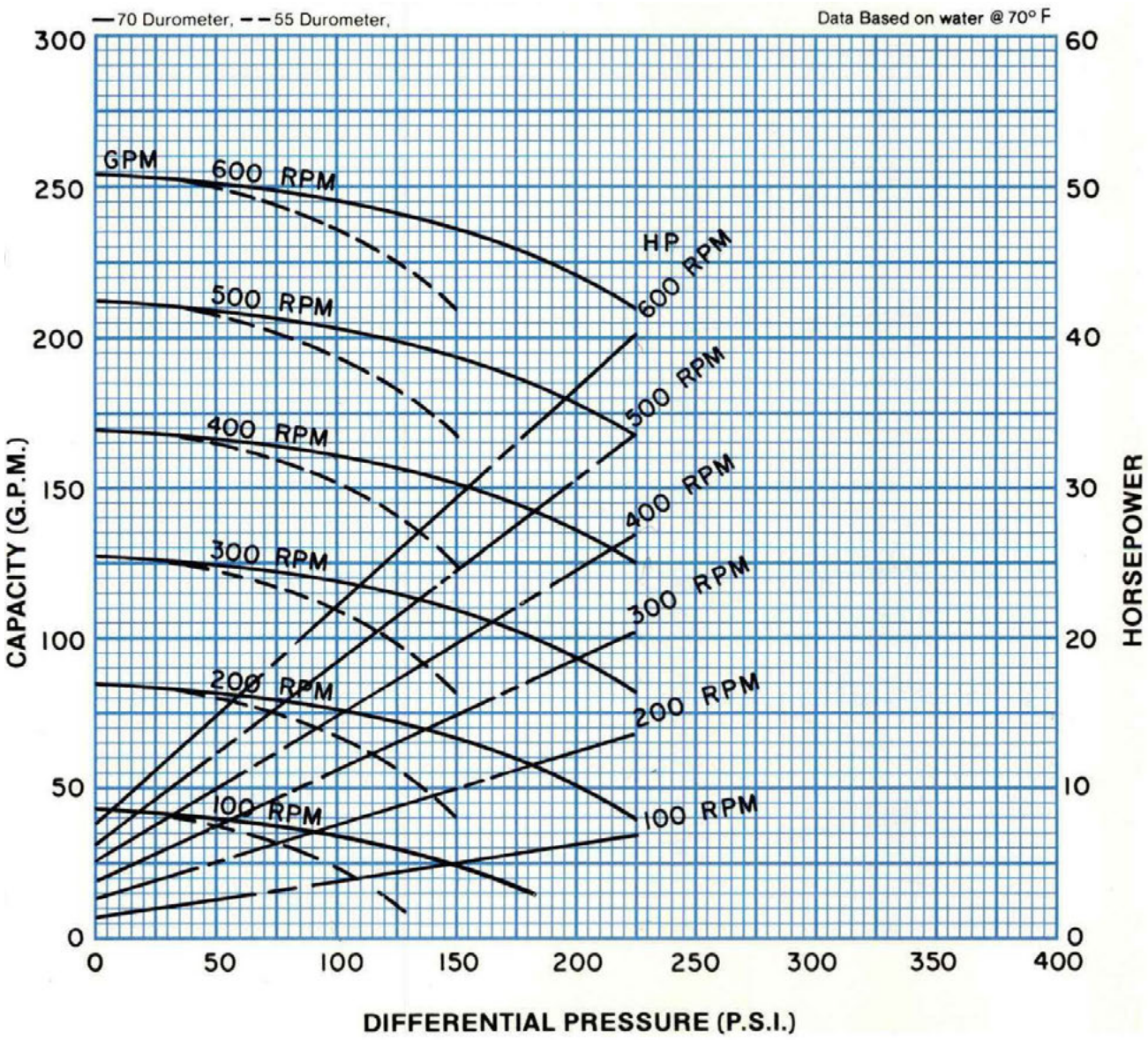
PERFORMANCE DATA
MODEL: 3CL12

RPM	100	200	300	400	500	600
NPSH REQ'D	1.2	2.3	3.4	5.6	8.4	11.2
MIN. HP	5	10	15	15	20	25



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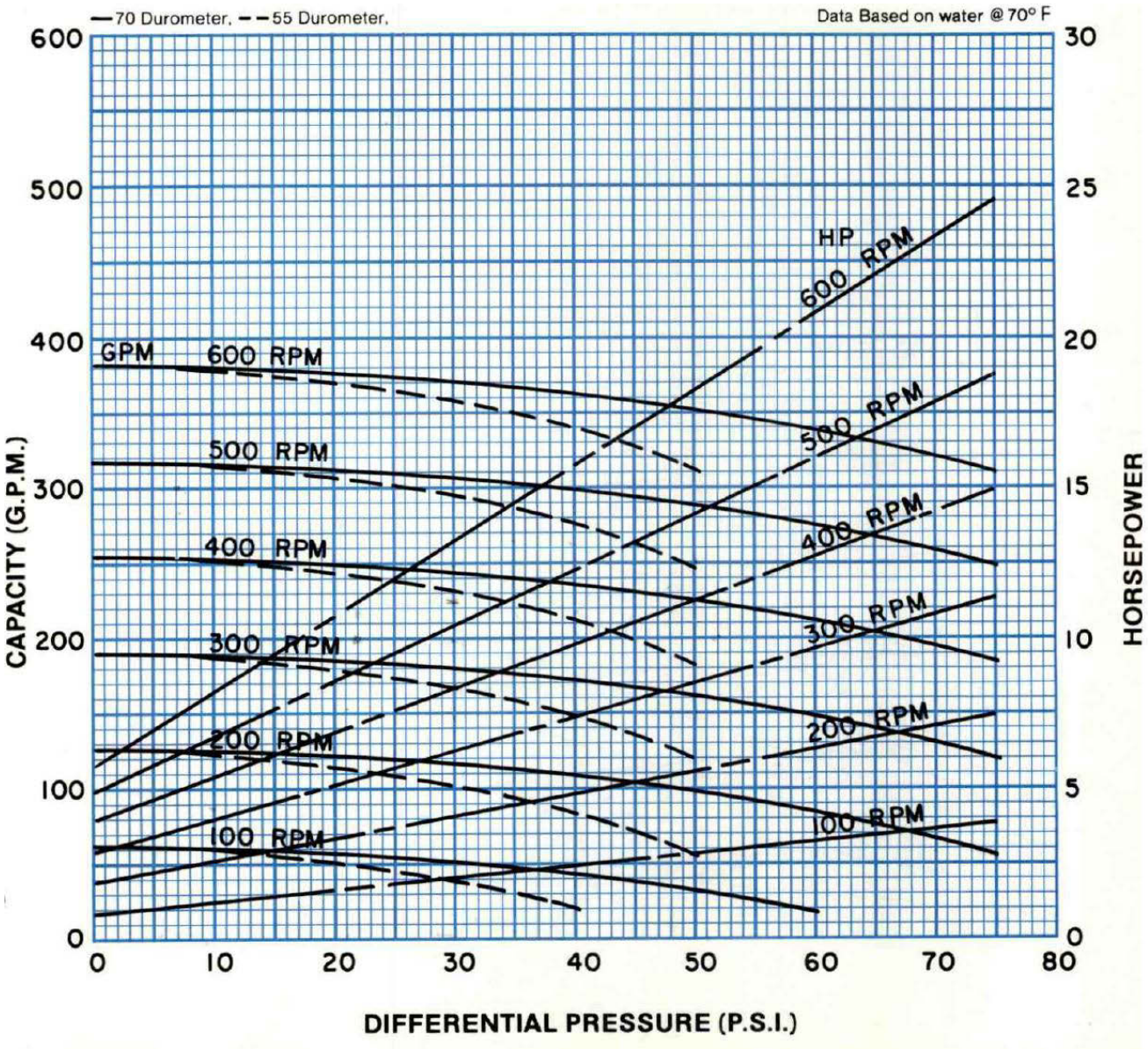
PERFORMANCE DATA
MODEL: 1CL12H

RPM	100	200	300	400	500	600
NPSH REQ'D	1.4	2.8	4.6	8.1	11.5	15.0
MIN. HP	3	5	7 1/2	10	15	15



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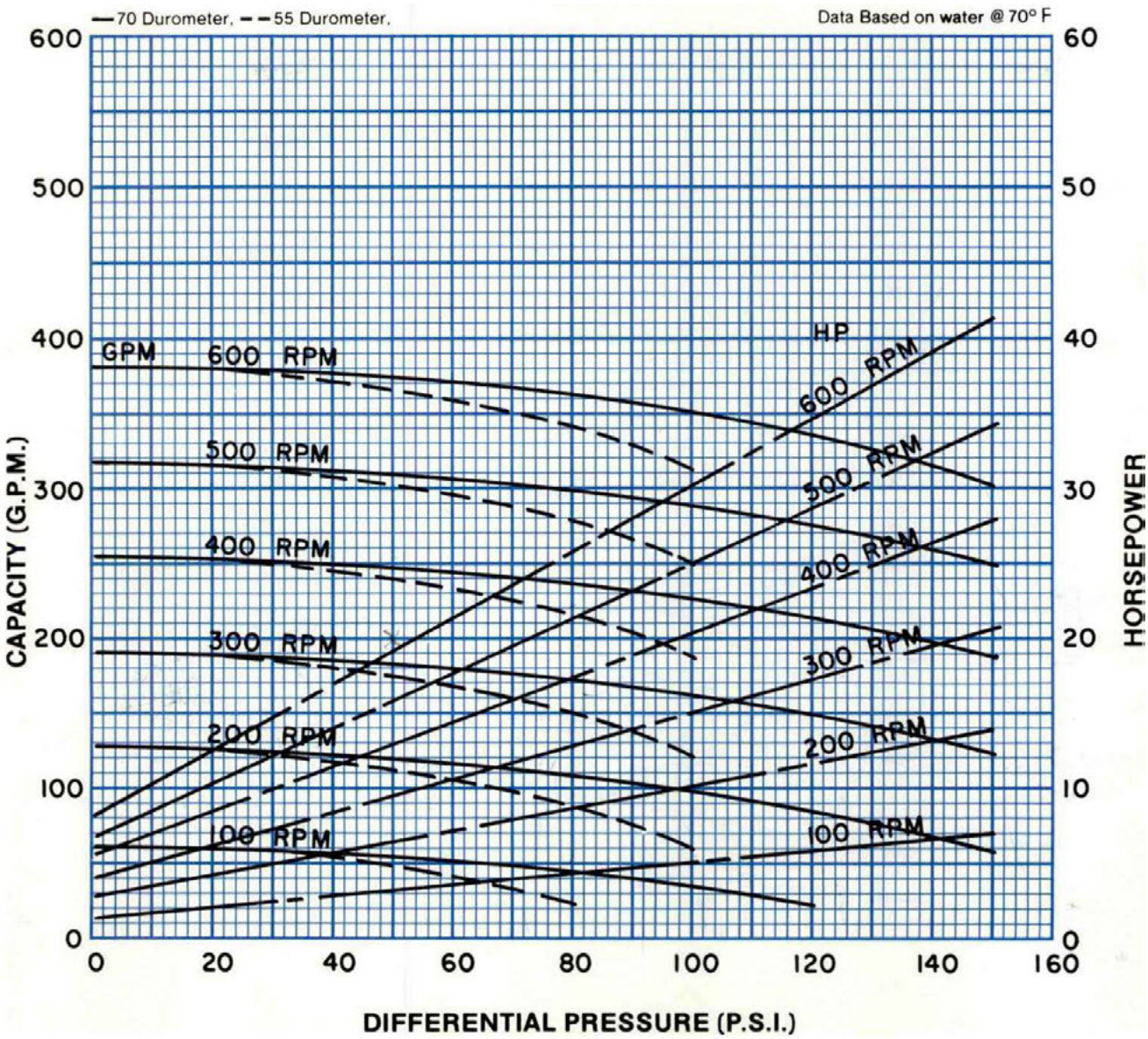
PERFORMANCE DATA
MODEL: 2CL12H

RPM	100	200	300	400	500	600
NPSH REQ'D	1.4	2.8	4.6	8.1	11.5	15.0
MIN. HP	5	10	15	20	20	25



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CL Dimensions

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Dimensions & Weights
CL Frame Pumps
REV. 4/20/12

Drawing is on the next page

PUMP SIZE	DIMENSIONS (INCHES)																					WEIGHT (LBS.)	PORT SIZES	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	W	Z	KEYWAY		SUCTION	DISCHARGE
1CL2	17	7-5/16	N/A	3-1/4	5-7/8	3-1/8	2	5/8	4-1/4	3/8	2	8-1/2	4-1/4	1-1/2	9/16	3-1/8	3/8	4-1/4	4	7/16	3/16 x 3/32	22	1"	3/4"
2CL2	20-1/2	10-7/8	N/A	3-1/4	5-7/8	3-1/8	2	5/8	5-3/4	3/8	2	10-1/2	4-1/4	1-1/2	9/16	3-1/8	3/8	4-1/4	4	7/16	3/16 x 3/32	25	1"	3/4"
3CL2	24-1/16	14-7/16	N/A	3-1/4	5-7/8	3-1/8	2	5/8	7-13/16	3/8	2	12	4-1/4	1-1/2	9/16	3-1/8	3/8	4-1/4	4	7/16	3/16 x 3/32	31	1"	3/4"
1CL3	22-3/3	10-1/8	N/A	4-1/8	7-5/16	4-1/4	3	3/4	5-9/16	7/16	3	11-1/2	5	2-1/8	9/16	3-7/8	1/2	5-11/16	5-3/8	9/16	3/16 x 3/32	47	1-1/2"	1-1/4"
2CL3	28-1/16	15-7/16	N/A	4-1/8	7-5/16	4-1/4	3	3/4	9-3/8	7/16	3	13	5	2-1/8	9/16	3-7/8	1/2	5-11/16	5-3/8	9/16	3/16 x 3/32	51	1-1/2"	1-1/4"
3CL3	33-3/8	20-3/4	N/A	4-1/8	7-5/16	4-1/4	3	3/4	11-3/16	7/16	3	16-1/2	5	2-1/8	9/16	3-7/8	1/2	5-11/16	5-3/8	9/16	3/16 x 3/32	55	1-1/2"	1-1/4"
1CL4	30	13-1/8	N/A	5-1/2	9-7/8	5-1/2	3-1/2	15/16	7-1/4	9/16	3	15-3/4	7	3-1/8	3/4	5-1/2	5/8	7	7	11/16	1/4 x 1/8	85	2-1/2"	2"
2CL4	37-1/8	20-1/4	N/A	5-1/2	9-7/8	5-1/2	3-1/2	15/16	8-1/8	9/16	3	22	7	3-1/8	3/4	5-1/2	5/8	7	7	11/16	1/4 x 1/8	91	2-1/2"	2"
3CL4	44-1/4	27-5/8	N/A	5-1/2	9-7/8	5-1/2	3-1/2	15/16	14-1/2	9/16	3	22-3/4	7	3-1/8	3/4	5-1/2	5/8	7	7	11/16	1/4 x 1/8	97	2-1/2"	2"
1CL6	39-1/8	17-13/16	N/A	6-1/4	11-1/4	7	4	1-1/8	10-9/16	11/16	4	20	7-1/2	4-3/8	3/4	6	11/16	8-9/16	8-5/8	7/8	1/4 x 1/8	141	3"	2-1/2"
2CL6	49-3/4	28-7/16	N/A	6-1/4	11-1/4	7	4	1-1/8	15-3/16	11/16	4	26	7-1/2	4-3/8	3/4	6	11/16	8-9/16	8-5/8	7/8	1/4 x 1/8	159	3"	2-1/2"
3CL6	60-3/8	39-1/16	18	6-1/4	11-1/4	7	4	1-1/8	13-13/16	11/16	4	20	7-1/2	4-3/8	3/4	6	11/16	8-9/16	8-5/8	7/8	1/4 x 1/8	192	3"	2-1/2"
1CL8	46	20-3/16	N/A	8	14	9	5	1-3/8	9-3/4	7/8	5	27	9	4-9/16	3/4	7-1/2	1-1/8	9-1/4	11-1/2	15/16	3/8 x 3/16	303	4"	4"
2CL8	58-3/8	32-5/8	N/A	8	14	9	5	1-3/8	17-1/8	7/8	5	32	9	4-9/16	3/4	7-1/2	1-1/8	9-1/4	11-1/2	15/16	3/8 x 3/16	332	4"	4"
3CL8	70-13/16	45	24	8	14	9	5	1-3/8	12-9/16	7/8	5	25	9	4-9/16	3/4	7-1/2	1-1/8	9-1/4	11-1/2	15/16	3/8 x 3/16	372	4"	4"
1CL10	53-1/8	21-7/8	N/A	9-3/4	16-11/16	9	5	1-7/8	9-5/8	7/8	5	30	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2 x 1/4	412	6"	5"
2CL10	63-1/2	32-1/4	N/A	9-3/4	16-11/16	9	5	1-7/8	14-1/2	7/8	5	35-1/2	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2 x 1/4	500	6"	5"
3CL10	73-7/8	42-5/8	18	9-3/4	16-11/16	9	5	1-7/8	12-3/8	7/8	5	30	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2 x 1/4	545	6"	5"
1CL10H	58-1/2	27-1/4	N/A	9-3/4	16-11/16	9	5	1-7/8	15	7/8	5	30	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2 x 1/4	424	6"	5"
2CL10H	73-7/8	42-5/8	18	9-3/4	16-11/16	9	5	1-7/8	12-3/8	7/8	5	30	11	5-3/8	7/8	9-1/2	1-1/8	13-1/2	11-1/2	1	1/2 x 1/4	545	6"	5"
1CL12	70	31	N/A	12-1/2	21	12-5/8	6	2-1/4	14-1/2	1	6	37-1/2	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2 x 1/4	880	8"	6"
2CL12	85-1/2	46-1/2	20-1/2	12-1/2	21	12-5/8	6	2-1/4	12	1	6	35	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2 x 1/4	1075	8"	6"
3CL12	101-1/8	62-1/8	27	12-1/2	21	12-5/8	6	2-1/4	14-1/8	1	6	42	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2 x 1/4	1200	8"	6"
1CL12H	77-3/4	38-3/4	N/A	12-1/2	21	12-5/8	6	2-1/4	17-3/4	1	6	42	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2 x 1/4	945	8"	6"
2CL12H	101-1/8	62-1/8	27	12-1/2	21	12-5/8	6	2-1/4	14-1/8	1	6	42	13-1/2	6	7/8	11-3/4	1-1/8	18	14-1/2	1-1/8	1/2 x 1/4	1205	8"	6"

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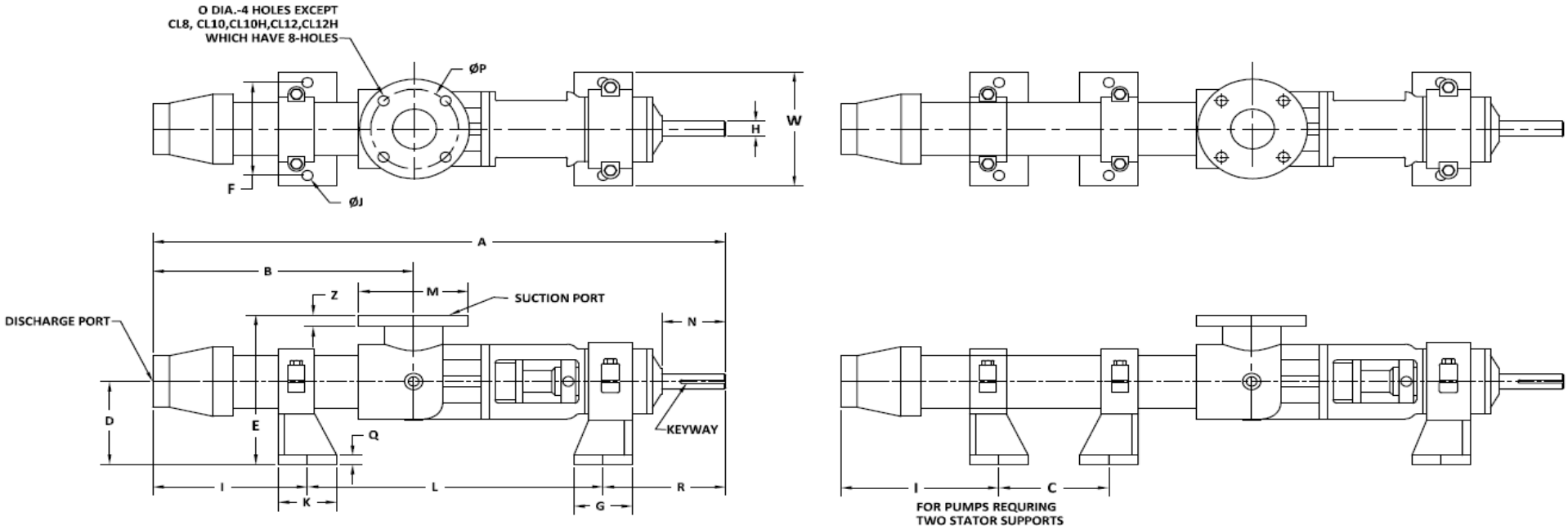
Dimensions & Weights

CL Frame Pumps

REV. 4/20/12



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CL Parts

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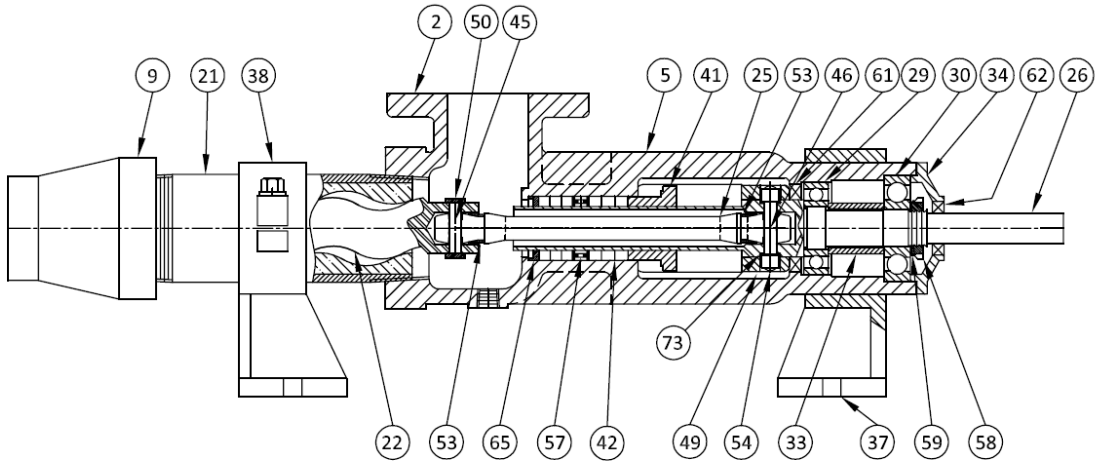
Parts Lists

PARTS LIST

1CL2, 2CL2 & 3CL2
2CM1, 3CM1 & 6CM1



PLEASE SPECIFY MODEL: NO. AND/OR SERIAL NO. OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL2-2C / CL2-2S
5	BEARING HOUSING	CL2-5C
9	REDUCER	CL2-9C / CL2-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL2-25CS / CL2-25S
26	DRIVE SHAFT	CL2-26CS / CL2-26S
29	BALL BRG. (RADIAL)	CL2-29
30	BALL BRG. (THRUST)	CL2-30
33	BEARING SPACER	CL2-33C
34	BEARING COVER PLATE	CL2-34C
37	PUMP SUPPORT	CL2-37C
38	STATOR SUPPORT	CL2-38C
41	PACKING GLAND	CL2-41C / CL2-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL2-42
45	ROTOR PIN	CL2-45C / CL2-45S
46	SHAFT PIN	CL2-46C / CL2-46S
49	SHAFT COLLAR	CL2-49CS
50	ROTOR BAND	CL2-50C / CL2-50S
53	CONN. ROD WASHER (2 REQ)	CL2-53*
54	DR. PIN RET. NUT (2 REQ)	CL2-54S
57	LANTERN RING	CL2-57S
58	BEARING LOCK NUT	CL2-58
59	BEARING LOCK WASHER	CL2-59
61	GREASE SEAL (RADIAL)	CL2-61
62	GREASE SEAL (THRUST)	CL2-62
65	PACKING GLAND INSERT	CL2-65S
73	DRIVE PIN WASHER (2 REQ)	CL2-73S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q, B, F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL
Q = BUNA NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-2
4-3-12

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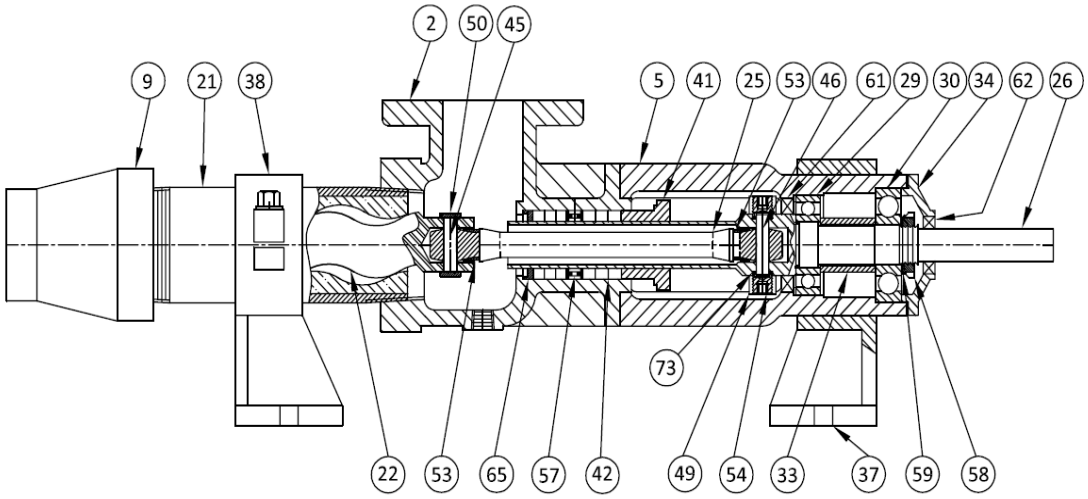
PARTS LIST

1CL3, 2CL3, 3CL3 & 6CM2



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL3-2C / CL3-2S
5	BEARING HOUSING	CL3-5C
9	REDUCER	CL3-9C / CL3-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL3-25C / CL3-25S
26	DRIVE SHAFT	CL3-26C / CL3-26S
29	BALL BRG. (RADIAL)	CL3-29
30	BALL BRG. (THRUST)	CL3-30
33	BEARING SPACER	CL3-33C
34	BEARING COVER PLATE	CL3-34C
37	PUMP SUPPORT	CL3-37C
38	STATOR SUPPORT	CL3-38C
41	PACKING GLAND	CL3-41C / CL3-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL3-42
45	ROTOR PIN	CL3-45C / CL3-41S
46	SHAFT PIN	CL3-46C / CL3-46S
49	SHAFT COLLAR	CL3-49C
50	ROTOR BAND	CL3-50C / CL3-50S
53	CONN. ROD WASHER (2 REQ.)	CL3-53*
54	DR. PIN RET. SCREW (2 REQ)	CL3-54C / CL3-54S
57	LANTERN RING	CL3-57S
58	BEARING LOCK NUT	CL3-58
59	BEARING LOCK WASHER	CL3-59
61	GREASE SEAL (RADIAL)	CL3-61
62	GREASE SEAL (THRUST)	CL3-62
65	PACKING GLAND INSERT	CL3-65S
73	DR. PIN WASHER (2-REQ.)	CL3-73S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q,B,F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL
Q = BUNA N/NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-3
4-4-12

**Please Note: On Pump size 6CM2 that Item No. 38 (Stator Support) requires 2 for this size pump.

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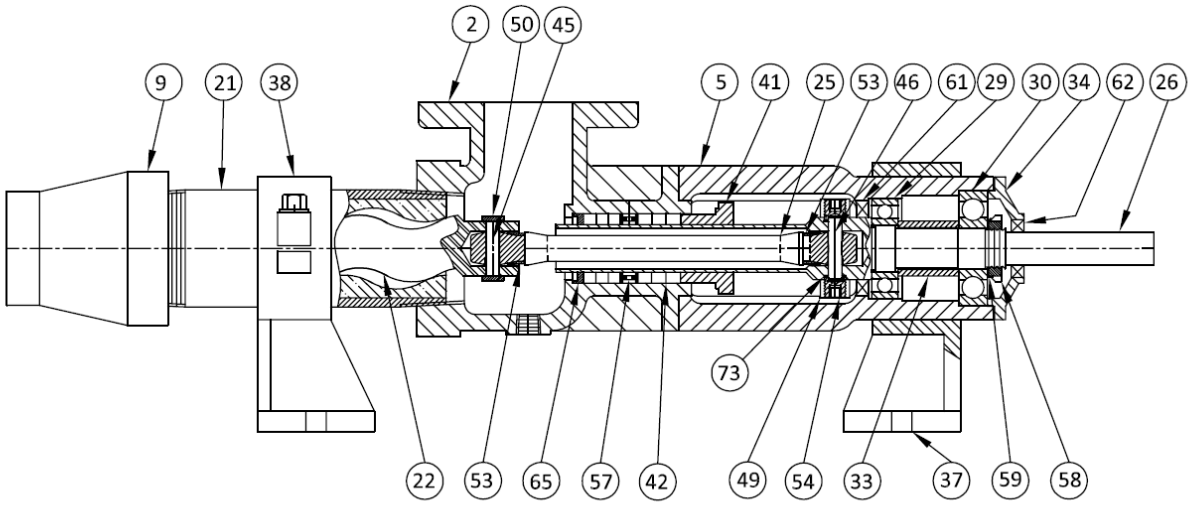
PARTS LIST

1CL4, 2CL4, 3CL4 & 6CM3



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL4-2C / CL4-2S
5	BEARING HOUSING	CL4-5C
9	REDUCER	CL4-9C / CL4-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL4-25C / CL4-25S
26	DRIVE SHAFT	CL4-26C / CL4-26S
29	BALL BRG. (RADIAL)	CL4-29
30	BALL BRG. (THRUST)	CL4-30
33	BEARING SPACER	CL4-33C
34	BEARING COVER PLATE	CL4-34C
37	PUMP SUPPORT	CL4-37C
38	STATOR SUPPORT	CL4-38C
41	PACKING GLAND	CL4-41C / CL4-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL4-42
45	ROTOR PIN	CL4-45C / CL4-45S
46	SHAFT PIN	CL4-46C / CL4-46S
49	SHAFT COLLAR	CL4-49C
50	ROTOR BAND	CL4-50C / CL4-50S
53	CONN. ROD WASHER (2 REQ.)	CL4-53 *
54	DR. PIN RET. SCREW (2 REQ)	CL4-54C / CL4-54S
57	LANTERN RING	CL4-57S
58	BEARING LOCK NUT	CL4-58
59	BEARING LOCK WASHER	CL4-59
61	GREASE SEAL (RADIAL)	CL4-61
62	GREASE SEAL (THRUST)	CL4-62
65	PACKING GLAND INSERT	CL4-65S
73	DR. PIN WASHER (2-REQ.)	CL4-73S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q, B, F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL
Q = BUNA NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-4
4-4-12

**Please Note: On Pump size 6CM3 that Item No. 38 (Stator Support) requires 2 for this size pump.

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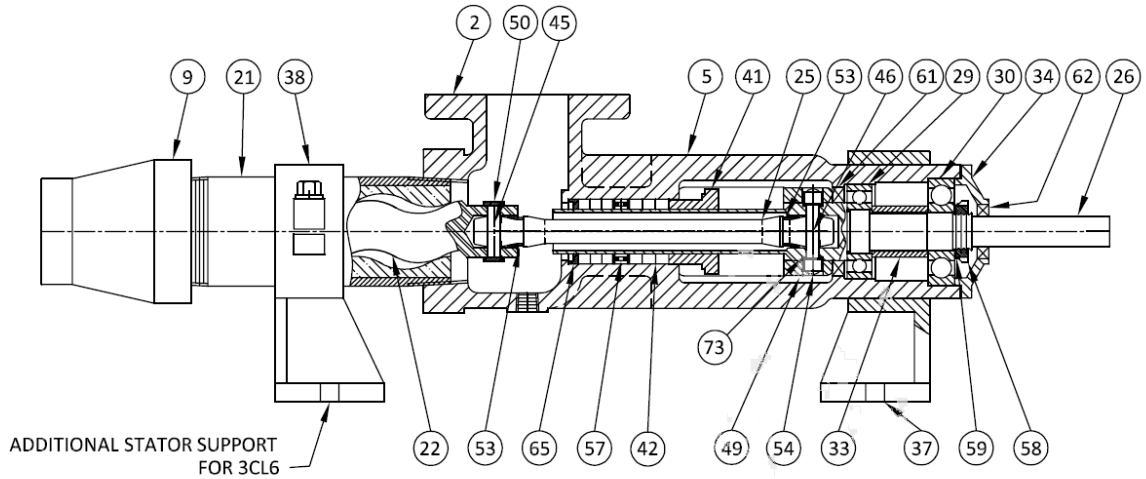
PARTS LIST

1CL6, 2CL6, 3CL6 & 6CM4



PLEASE SPECIFY MODEL: NO. AND/OR SERIAL NO. OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL6-2C / CL6-2S
5	BEARING HOUSING	CL6-5C
9	REDUCER	CL6-9C / CL6-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL6-25C / CL6-25S
26	DRIVE SHAFT	CL6-26C / CL6-26S
29	BALL BRG. (RADIAL)	CL6-29
30	BALL BRG. (THRUST)	CL6-30
33	BEARING SPACER	CL6-33C
34	BEARING COVER PLATE	CL6-34C
37	PUMP SUPPORT	CL6-37C
38	STATOR SUPPORT	CL6-38C
41	PACKING GLAND	CL6-41C / CL6-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL6-42
45	ROTOR PIN	CL6-45C / CL6-45S
46	SHAFT PIN	CL6-46C / CL6-46S
49	SHAFT COLLAR	CL6-49C
50	ROTOR BAND	CL6-50C / CL6-50S
53	CONN. ROD WASHER (2 REQ)	CL6-53*
54	DR. PIN RET. SCREW (2 REQ)	CL6-54C / CL6-54S
57	LANTERN RING	CL6-57S
58	BEARING LOCK NUT	CL6-58
59	BEARING LOCK WASHER	CL6-59
61	GREASE SEAL (RADIAL)	CL6-61
62	GREASE SEAL (THRUST)	CL6-62
65	PACKING GLAND INSERT	CL6-65S
73	DRIVE PIN WASHER (2 REQ)	CL6-73S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q, B, F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL
Q = BUNA NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-6
4-4-12

**Please Note: On Pump size 3CL6 and 6CM4 that Item No. 38 (Stator Support) requires 2 for this size pump.

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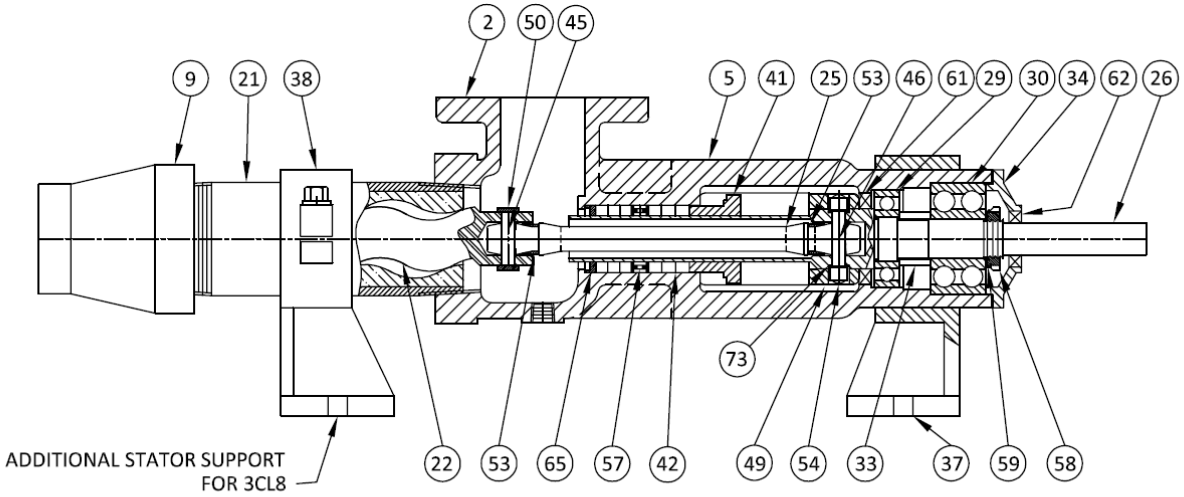
PARTS LIST
1CL8, 2CL8 & 3CL8



PLEASE SPECIFY MODEL: NO. AND/OR SERIAL NO. OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL8-2C / CL8-2S
5	BEARING HOUSING	CL8-5C
9	REDUCER	CL8-9C / CL8-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL8-25C / CL8-S
26	DRIVE SHAFT	CL8-26C / CL8-26S
29	BALL BRG. (RADIAL)	CL8-29
30	BALL BRG. (THRUST)	CL8-30
33	BEARING SPACER	CL8-33S
34	BEARING COVER PLATE	CL8-34C
37	PUMP SUPPORT	CL8-37C
38	STATOR SUPPORT	CL8-38C
41	PACKING GLAND	CL8-41C / CL8-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL8-42
45	ROTOR PIN	CL8-45C / CL8-45S
46	SHAFT PIN	CL8-46C / CL8-46S
49	SHAFT COLLAR	CL8-49C
50	ROTOR BAND	CL8-50C / CL8-50S
53	CONN. ROD WASHER (2 REQ)	CL8-53*
54	DR. PIN RET. SCREW (2 REQ)	CL8-54C / CL8-54S
57	LANTERN RING	CL8-57S
58	BEARING LOCK NUT	CL8-58
59	BEARING LOCK WASHER	CL8-59
61	GREASE SEAL (RADIAL)	CL8-61
62	GREASE SEAL (THRUST)	CL6-62
65	PACKING GLAND INSERT	CL8-65S
73	DRIVE PIN WASHER (2 REQ)	CL8-73S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q, B, F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL
Q = BUNA NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-8
4-3-12

**Please Note: On Pump size 3CL8 that Item No. 38 (Stator Support) requires 2 for this size pump.

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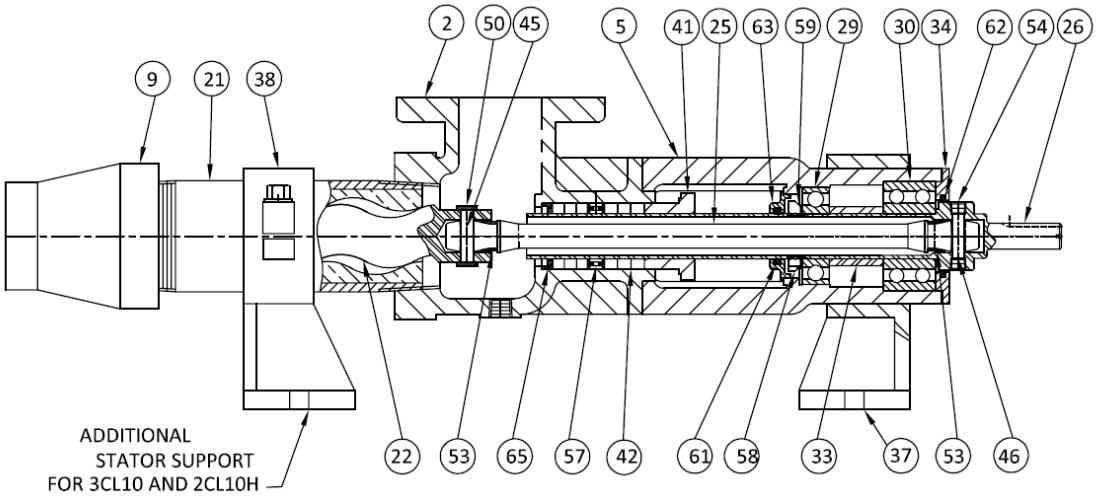
PARTS LIST

1CL10, 2CL10, 3CL10
1CL10H, 2CL10H



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS.

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL10-2C / CL10-2S
5	BEARING HOUSING	CL10-5C
9	REDUCER	CL10-9C / CL10-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL10-25C / CL10-25S
26	DRIVE SHAFT	CL10-26C / CL10-26S
29	BALL BRG. (RADIAL)	CL10-29
30	BALL BRG. (THRUST)	CL10-30
33	BEARING SPACER	CL10-33CS
34	BEARING COVER PLATE	CL10-34C
37	PUMP SUPPORT	CL10-37C
38	STATOR SUPPORT	CL10-38C
41	PACKING GLAND	CL10-41C / CL10-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL10-42
45	ROTOR PIN	CL10-45C / CL10-45S
46	SHAFT PIN	CL10-46C / CL10-46S
50	ROTOR BAND	CL10-50C / CL10-50S
53	CONN. ROD WASHER (2 REQ)	CL10-53*
54	DR. PIN RET. SCREW (2 REQ)	CL10-54CS / CL10-54S
57	LANTERN RING	CL10-57S
58	BEARING LOCK NUT	CL10-58
59	BEARING LOCK WASHER	CL10-59
61	GREASE SEAL (RADIAL)	CL10-61
62	GREASE SEAL (THRUST)	CL10-62
63	GREASE SEAL RETAINER	CL10-63C
65	PACKING GLAND INSERT	CL10-65S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q, B, F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL
Q = BUNA NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-10
4-4-12

**Please Note: On Pump size 3CL10 and 2CL10H that Item No. 38 (Stator Support) requires 2 for this size pump.

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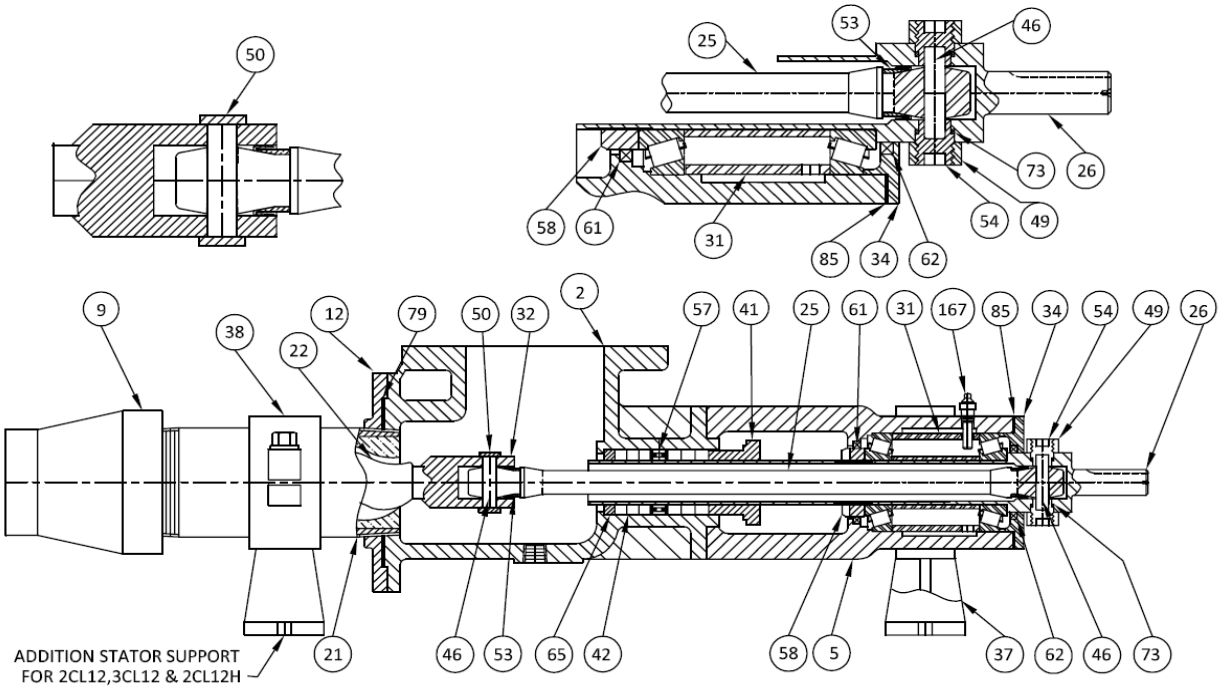
PARTS LIST

1CL12, 2CL12, 3CL12
1CL12H, 2CL12H



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS.

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL12-2C
5	BEARING HOUSING	CL12-5C
9	REDUCER	CL12-9C
12	ADAPTER FLANGE	CL12-12C
21	STATOR	SEE PG. CLSR-1
22	ROTOR, NEW STYLE	SEE PG. CLSR-1
25	CONNECTING ROD	CL12-25C
26	DRIVE SHAFT	CL12-26C
31	ROLLER BEARING ASSEMBLY	CL12-31
34	BEARING COVER PLATE	CL12-34C
37	PUMP SUPPORT	CL12-37C
38	STATOR SUPPORT	CL12-38C
41	PACKING GLAND	CL12-41C
42	PACKING (SET)	CL12-42

ITEM NO.	PART NAME	PART NO.
45/46	SHAFT & ROTOR PIN (3 REQ.)	CL12-45/46C
49	SHAFT COLLAR	CL12-49C
50	ROTOR BAND (1 REQ)	CL12-50C
53	CONN. ROD WASHER (2 REQ.)	CL12-53Q
54	DR. PIN RET. SCREW (2 REQ)	CL12-54C
57	LANTERN RING	CL12-57S
58	BEARING LOCK NUT	CL12-58
61	GREASE SEAL (RADIAL)	CL12-61
62	GREASE SEAL (THRUST)	CL12-62
65	PACKING GLAND INSERT	CL12-65S
73	DRIVE PIN WASHER (2 REQ)	CL12-73S
79	GASKET	CL12-79
85	COVER PLATE GASKET	CL12-85
110B	"O" RING (ROTOR HEAD)	CL12-110B
167	SPUD	CL12-167

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q, B, F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL

Q = BUNA NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-12
1-3-12

**Please Note: On Pump size 3CL12 and 2CL12H that Item No. 38 (Stator Support) requires 2 for this size pump.

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STATOR AND ROTOR PARTS LIST CLSR-1

ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL	ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL
21	2CM1 STATOR	2CM1-21QC 2CM1-21BC 2CM1-21RC 2CM1-21FC	2CM1-21QS 2CM1-21BS 2CM1-21RS 2CM1-21FS	22	2CM1 ROTOR	2CM1-22D	2CM1-22S
21	3CM1 STATOR	3CM1-21QC 3CM1-21BC 3CM1-21RC 3CM1-21FC	3CM1-21QS 3CM1-21BS 3CM1-21RS 3CM1-21FS	22	3CM1 ROTOR	3CM1-22D	3CM1-22S
21	6CM1 STATOR	6CM1-21QC 6CM1-21BC 6CM1-21RC 6CM1-21FC	6CM1-21QS 6CM1-21BS 6CM1-21RS 6CM1-21FS	22	6CM1 ROTOR	6CM1-22D	6CM1-22S
21	1CL2 STATOR	1CL2-21QC 1CL2-21BC 1CL2-21RC 1CL2-21FC	1CL2-21QS 1CL2-21BS 1CL2-21RS 1CL2-21FS	22	1CL2 ROTOR	1CL2-22D	1CL2-22S
21	2CL2 STATOR	2CL2-21QC 2CL2-21BC 2CL2-21RC 2CL2-21FC	2CL2-21QS 2CL2-21BS 2CL2-21RS 2CL2-21FS	22	2CL2 ROTOR	2CL2-22D	2CL2-22S
21	3CL2 STATOR	3CL2-21QC 3CL2-21BC 3CL2-21RC 3CL2-21FC	3CL2-21QS 3CL2-21BS 3CL2-21RS 3CL2-21FS	22	3CL2 ROTOR	3CL2-22D	3CL2-22S
21	6CM2 STATOR	6CM2-21QC 6CM2-21BC 6CM2-21RC 6CM2-21FC	6CM2-21QS 6CM2-21BS 6CM2-21RS 6CM2-21FS	22	6CM2 ROTOR	6CM2-22D	6CM2-22S
21	1CL3 STATOR	1CL3-21QC 1CL3-21BC 1CL3-21RC 1CL3-21FC	1CL3-21QS 1CL3-21BS 1CL3-21RS 1CL3-21FS	22	1CL3 ROTOR	1CL3-22D	1CL3-22S
21	2CL3 STATOR	2CL3-21QC 2CL3-21BC 2CL3-21RC 2CL3-21FC	2CL3-21QS 2CL3-21BS 2CL3-21RS 2CL3-21FS	22	2CL3 ROTOR	2CL3-22D	2CL3-22S
21	3CL3 STATOR	3CL3-21QC 3CL3-21BC 3CL3-21RC 3CL3-21FC	3CL3-21QS 3CL3-21BS 3CL3-21RS 3CL3-21FS	22	3CL3 ROTOR	3CL3-22D	3CL3-22S
21	6CM3 STATOR	6CM3-21QC 6CM3-21BC 6CM3-21RC 6CM3-21FC	6CM3-21QS 6CM3-21BS 6CM3-21RS 6CM3-21FS	22	6CM3 ROTOR	6CM3-22D	6CM3-22S
21	1CL4 STATOR	1CL4-21QC 1CL4-21BC 1CL4-21RC 1CL4-21FC	1CL4-21QS 1CL4-21BS 1CL4-21RS 1CL4-21FS	22	1CL4 ROTOR	1CL4-22D	1CL4-22S
21	2CL4 STATOR	2CL4-21QC 2CL4-21BC 2CL4-21RC 2CL4-21FC	2CL4-21QS 2CL4-21BS 2CL4-21RS 2CL4-21FS	22	2CL4 ROTOR	2CL4-22D	2CL4-22S

ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL	ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL
21	3CL4 STATOR	3CL4-21QC 3CL4-21BC 3CL4-21RC 3CL4-21FC	3CL4-21QS 3CL4-21BS 3CL4-21RS 3CL4-21FS	22	3CL4 ROTOR	3CL4-22D	3CL4-22S
21	6CM4 STATOR	6CM4-21QC 6CM4-21BC 6CM4-21RC 6CM4-21FC	6CM4-21QS 6CM4-21BS 6CM4-21RS 6CM4-21FS	22	6CM4 ROTOR	6CM4-22D	6CM4-22S
21	1CL6 STATOR	1CL6-21QC 1CL6-21BC 1CL6-21RC 1CL6-21FC	1CL6-21QS 1CL6-21BS 1CL6-21RS 1CL6-21FS	22	1CL6 ROTOR	1CL6-22D	1CL6-22S
21	2CL6 STATOR	2CL6-21QC 2CL6-21BC 2CL6-21RC 2CL6-21FC	2CL6-21QS 2CL6-21BS 2CL6-21RS 2CL6-21FS	22	2CL6 ROTOR	2CL6-22D	2CL6-22S
21	3CL6 STATOR	3CL6-21QC 3CL6-21BC 3CL6-21RC 3CL6-21FC	3CL6-21QS 3CL6-21BS 3CL6-21RS 3CL6-21FS	22	3CL6 ROTOR	3CL6-22D	3CL6-22S
21	1CL8 STATOR	1CL8-21QC 1CL8-21BC 1CL8-21RC 1CL8-21FC	1CL8-21QS 1CL8-21BS 1CL8-21RS 1CL8-21FS	22	1CL8 ROTOR	1CL8-22D	1CL8-22S
21	2CL8 STATOR	2CL8-21QC 2CL8-21BC 2CL8-21RC 2CL8-21FC	2CL8-21QS 2CL8-21BS 2CL8-21RS 2CL8-21FS	22	2CL8 ROTOR	2CL8-22D	2CL8-22S
21	3CL8 STATOR	3CL8-21QC 3CL8-21BC 3CL8-21RC 3CL8-21FC	3CL8-21QS 3CL8-21BS 3CL8-21RS 3CL8-21FS	22	3CL8 ROTOR	3CL8-22D	3CL8-22S
21	1CL10 STATOR	1CL10-21QC 1CL10-21BC 1CL10-21RC 1CL10-21FC	1CL10-21QS 1CL10-21BS 1CL10-21RS 1CL10-21FS	22	1CL10 ROTOR	1CL10-22D	1CL10-22S
21	2CL10 STATOR	2CL10-21QC 2CL10-21BC 2CL10-21RC 2CL10-21FC	2CL10-21QS 2CL10-21BS 2CL10-21RS 2CL10-21FS	22	2CL10 ROTOR	2CL10-22D	2CL10-22S
21	3CL10 STATOR	3CL10-21QC 3CL10-21BC 3CL10-21RC 3CL10-21FC	3CL10-21QS 3CL10-21BS 3CL10-21RS 3CL10-21FS	22	3CL10 ROTOR	3CL10-22D	3CL10-22S
21	1CL10H STATOR	1CL10H-21QC 1CL10H-21BC 1CL10H-21RC 1CL10H-21FC	1CL10H-21QS 1CL10H-21BS 1CL10H-21RS 1CL10H-21FS	22	1CL10H ROTOR	1CL10H-22D	1CL10H-22S
21	2CL10H STATOR	2CL10H-21QC 2CL10H-21BC 2CL10H-21RC 2CL10H-21FC	2CL10H-21QS 2CL10H-21BS 2CL10H-21RS 2CL10H-21FS	22	2CL10H ROTOR	2CL10H-22D	2CL10H-22S
21	1CL12 STATOR	1CL12-21QC 1CL12-21BC 1CL12-21RC 1CL12-21FC	1CL12-21QS 1CL12-21BS 1CL12-21RS 1CL12-21FS	22	1CL12 ROTOR	1CL12-22D	1CL12-22S

ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL	ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL
21	2CL12 STATOR	2CL12-21QC 2CL12-21BC 2CL12-21RC 2CL12-21FC	2CL12-21QS 2CL12-21BS 2CL12-21RS 2CL12-21FS	22	2CL12 ROTOR	2CL12-22D	2CL12-22S
21	3CL12 STATOR	3CL12-21QC 3CL12-21BC 3CL12-21RC 3CL12-21FC	3CL12-21QS 3CL12-21BS 3CL12-21RS 3CL12-21FS	22	3CL12 ROTOR	3CL12-22D	3CL12-22S
21	1CL12H STATOR	1CL12H-21QC 1CL12H-21BC 1CL12H-21RC 1CL12H-21FC	1CL12H-21QS 1CL12H-21BS 1CL12H-21RS 1CL12H-21FS	22	1CL12H ROTOR	1CL12H-22D	1CL12H-22S
21	2CL12H STATOR	2CL12H-21QC 2CL12H-21BC 2CL12H-21RC 2CL12H-21FC	2CL12H-21QS 2CL12H-21BS 2CL12H-21RS 2CL12H-21FS	22	2CL12H ROTOR	2CL12H-22D	2CL12H-22S

STATORS		
Designation	**Elastomer**	All elastomers can be furnished in either: **C** - Carbon Steel Sleeve or **S**- Stainless Steel Sleeve **Example: QC** = Buna Nitrile elastomer with a Carbon Steel Sleeve.
Q	Buna N/Nitrile	
B	EPDM	
R	Natural Rubber	
F	Viton	

ROTORS	
Designation	**Material**
D	Alloy Steel
S	Stainless Steel

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Model CM

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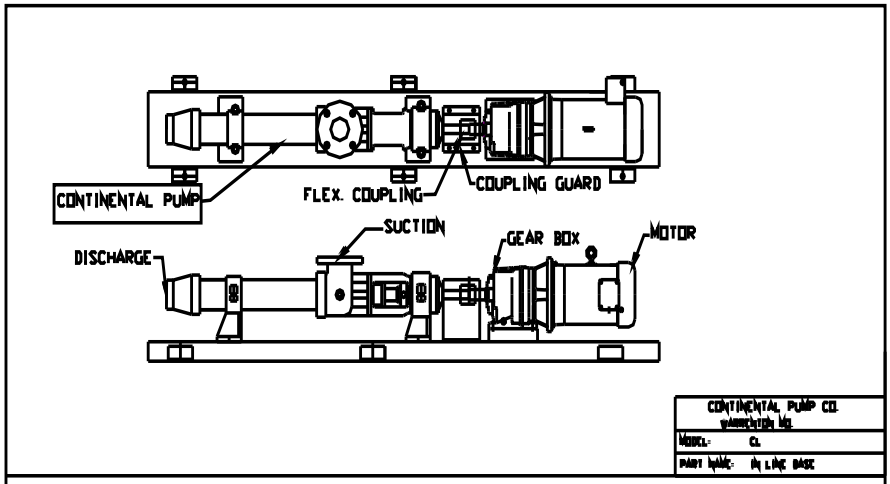

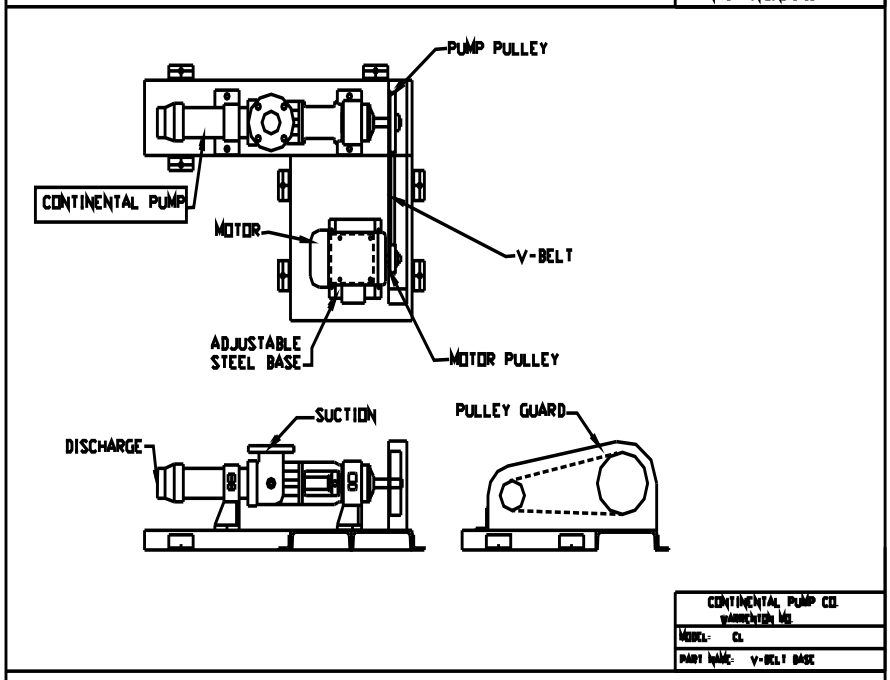

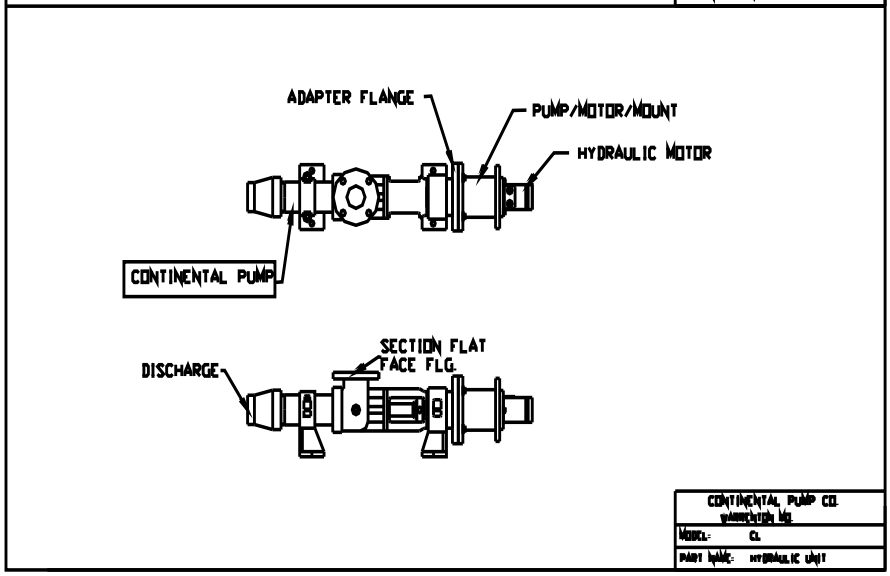

Model CM Pumps are similar to the Model CL Pumps, except they have a larger drive head to handle the increased horsepower that is needed to produce the higher pressures that can be developed by these pumps.

Continental Model CM Pumps and parts are interchangeable with many progressing cavity pump brands.

Please contact one of our application specialists at (636)-456-6006 Mon-Fri 8AM-5PM CST for more information.

CROSS REFERENCE

Model or Frame Designation

2, 3 and 6 STAGE PUMPS

CONTINENTAL		MOYNO®
2CM1		2M1
3CM1		3M1
6CM1		6M1
6CM2		6M2
6CM3		6M3
6CM4		6M4

All Moyno® Part, model and identification numbers are listed for reference purposes only. Continental Pump Co, Inc. is not affiliated with or a representative of neither Moyno® nor its parent company. Please contact one of our application specialists at (636)-456-6006 M-F 8AM-5PM CST for more information.

	Continental Letter Key	Moyno Letter Key	Materials
Pump Body	C	C	Cast Iron
	S	S	316 Stainless Steel
Rotor	D	D	Chrome Plated Alloy Steel
	S	S	Chrome Plated 304 Stainless Steel
Stator	Q	Q	Buna Nitrile
	R	R	Natural Rubber
	B	B	EPDM
	F	F	Viton
Internal Parts	C	C	Carbon Steel
	AF	AF	Anti-Friction Bearings
	HS	HS	Hardened Steel

Our CM Line consists of CM1, CM2, CM3 and CM4 frames with an option of 2, 3, or 6 stages. CM Pumps not listed are: 3CM1, 2CM2, 3CM2, 2CM3, 3CM3, 2CM4 and 3CM4. For more information on these pumps please contact us.

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CM Performance

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Rev. 4/20/12

PERFORMANACE DATA
MODEL CM

FRAME SIZE	GAL./100 REV.	PUMP SPEED	300 RPM		450 RPM		600 RPM		750 RPM		900 RPM		1200 RPM	
		DIFF. PRESS. PSI	GPM	MIN. HP	GPM	MIN. HP	GPM	MIN. HP	GPM	MIN. HP	GPM	MIN. HP	GPM	MIN. HP
2CM1	0.056	0 60 120	.14 .12 .10	1/8 1/8 1/8	.22 .20 .15	1/8 1/8 1/8	.29 .26 .22	1/4 1/4 1/4	.37 .33 .30	1/4 1/4 1/4	.43 .41 .37	1/4 1/4 1/4	.58 .55 .51	1/4 1/4 1/4
6CM1	0.056	0 180 360	.14 .12 .10	1/8 1/8 1/8	.22 .20 .15	1/6 1/6 1/6	.29 .26 .22	1/4 1/4 1/4	.37 .33 .30	1/4 1/4 1/4	.43 .41 .37	1/3 1/3 1/3	.58 .55 .51	1/3 1/3 1/3
6CM2	0.260	0 180 360	.54 .51 .50	1/4 1/4 1/4	1.1 .90 .45	1/2 1/2 1/2	1.50 1.30 .90	3/4 3/4 3/4	2.00 1.80 1.40	1/3 1/3 1/2	2.20 2.10 1.70	1/2 1/2 1	3.00 2.80 2.30	3/4 3/4 3/4
6CM3	0.860	0 240 450	2.50 1.80 -	1/2 1/2 -	3.80 2.90 1.70	3/4 3/4 1-1/2	5.10 4.30 2.70	1 1 1-1/2	6.40 5.50 4.20	1-1/2 1-1/2 2	7.50 6.80 5.00	1-1/2 1-1/2 2	10.00 9.30 7.70	2 2 3
6CM4	2.020	0 240 450	6.00 5.00 1.80	1- 1/2 2 2	9.00 7.40 4.50	2 2 3	12.00 10.00 7.00	3 3 5	15.00 12.50 8.50	5 5 7-1/2	18.00 16.00 13.00	5 5 7-1/2	24 22 19	5 5 7-1/2

Our CM Line consists of CM1, CM2, CM3 and CM4 frames with an option of 2, 3, or 6 stages. CM Pumps not listed are: 3CM1, 2CM2, 3CM2, 2CM3, 3CM3, 2CM4 and 3CM4. For more information on these pumps please contact us.

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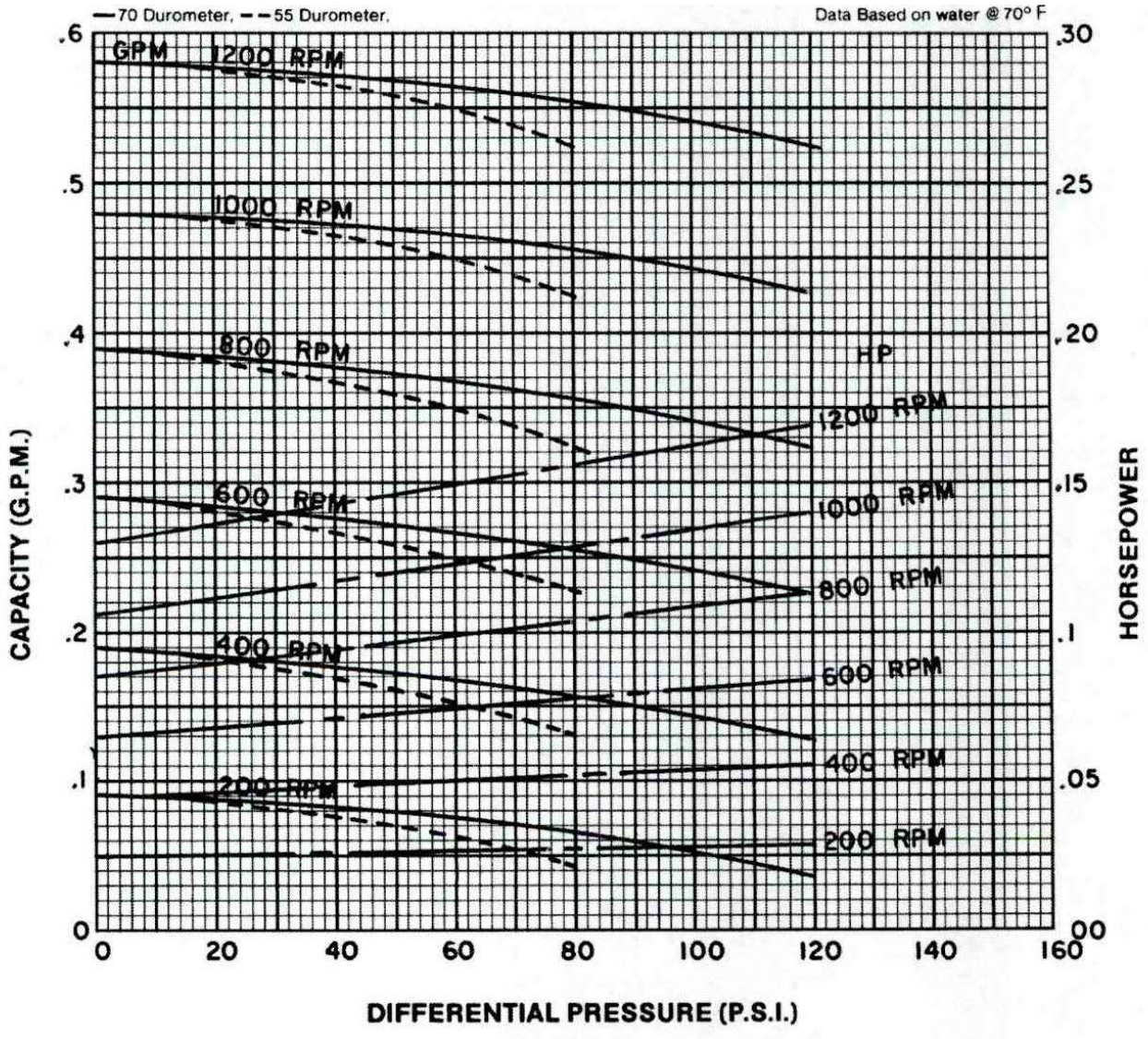
Pump Curves

PERFORMANCE DATA
MODEL: 2CM1

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.3	.6	.9	1.2	1.5	1.8
MIN. HP	1/8	1/8	1/6	1/6	1/4	1/4



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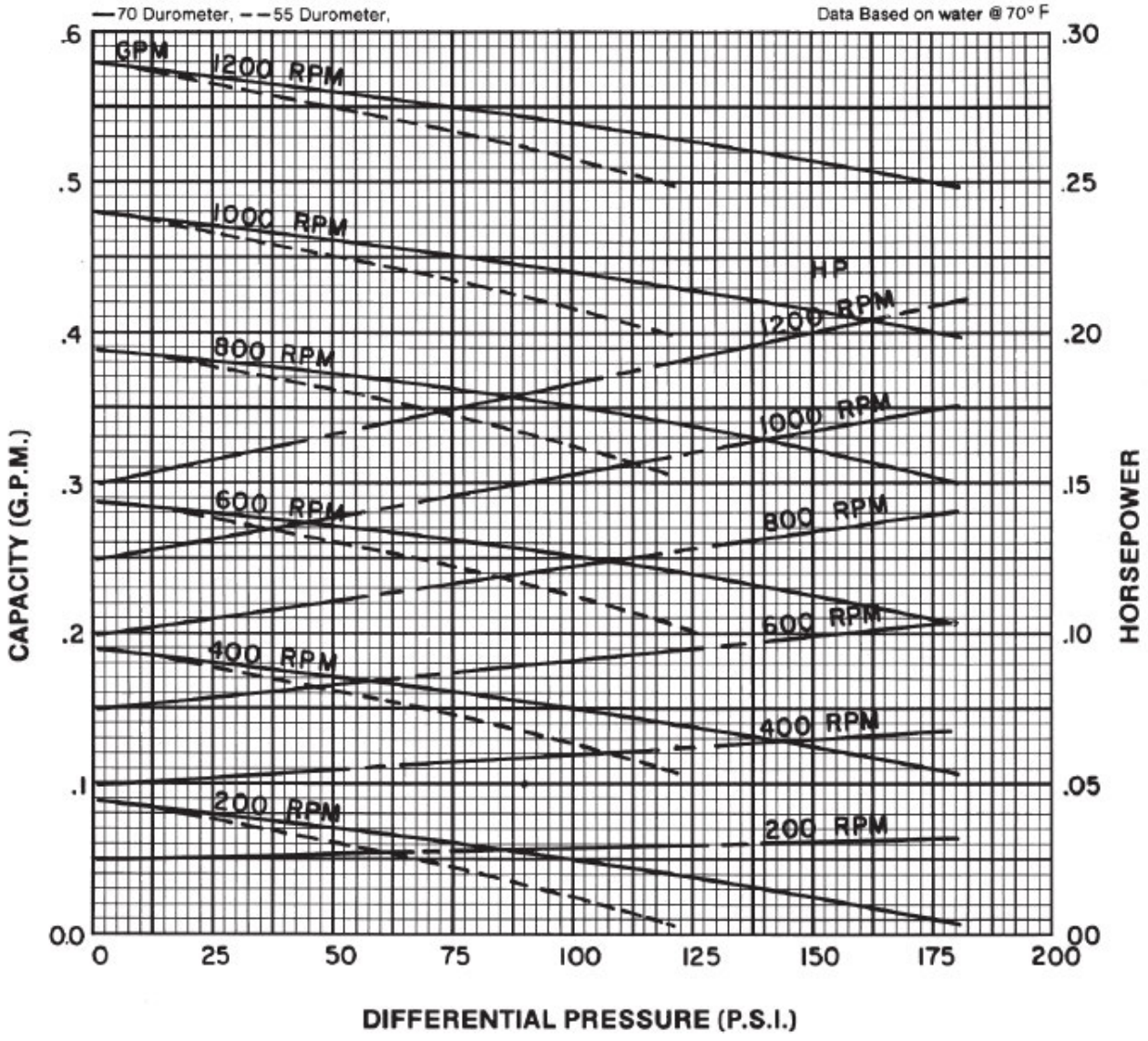
PERFORMANCE DATA
MODEL: 3CM1

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.3	.6	.9	1.2	1.5	1.8
MIN. HP	1/8	1/8	1/6	1/6	1/4	1/4



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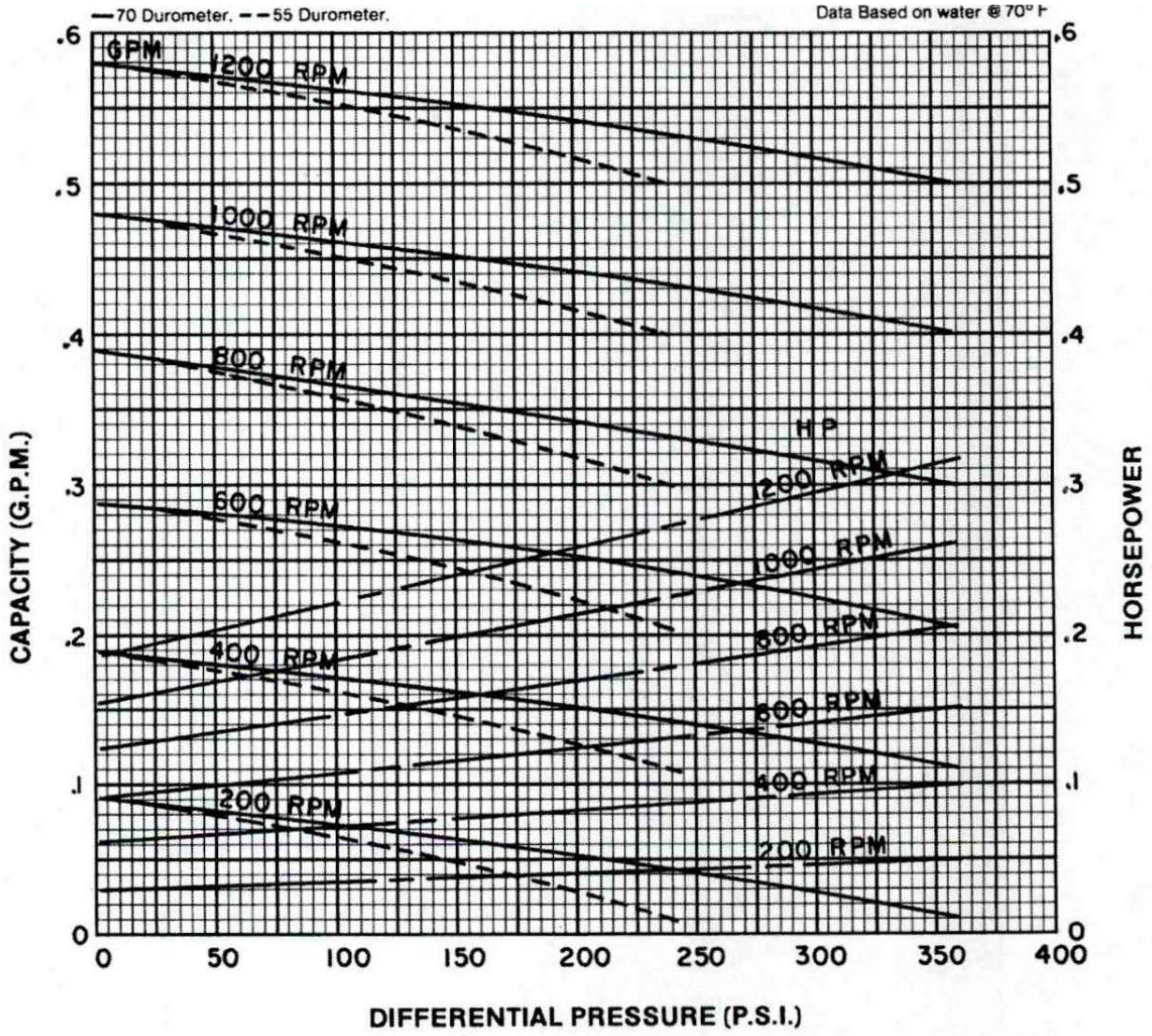
PERFORMANCE DATA
MODEL: 6CM1

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.3	.6	.9	1.2	1.5	1.8
MIN. HP	1/6	1/6	1/4	1/4	1/3	1/3



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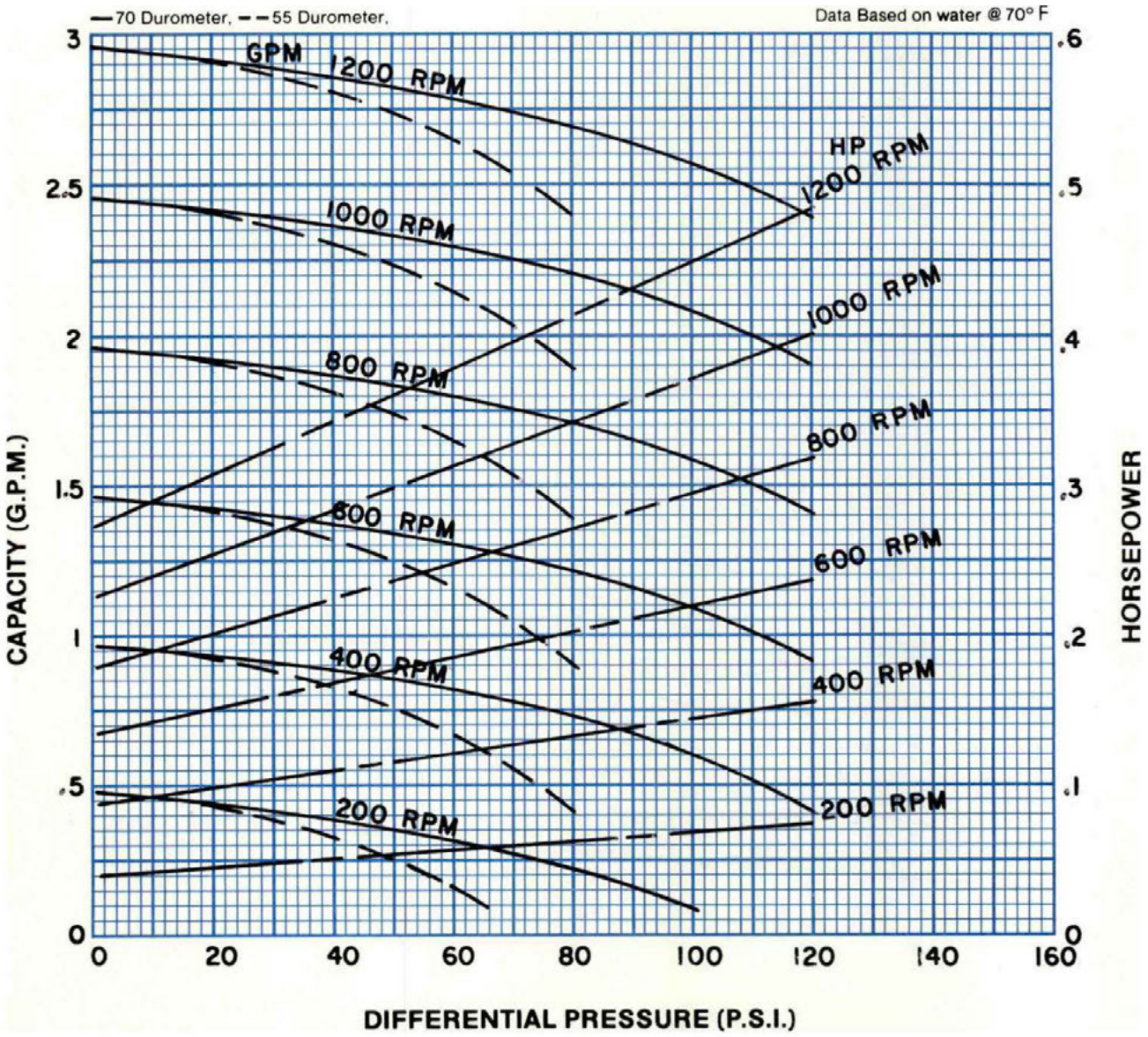
PERFORMANCE DATA
MODEL: 2CM2

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.4	.9	1.3	1.7	2.1	2.6
MIN. HP	1/8	1/6	1/4	1/3	1/3	1/2



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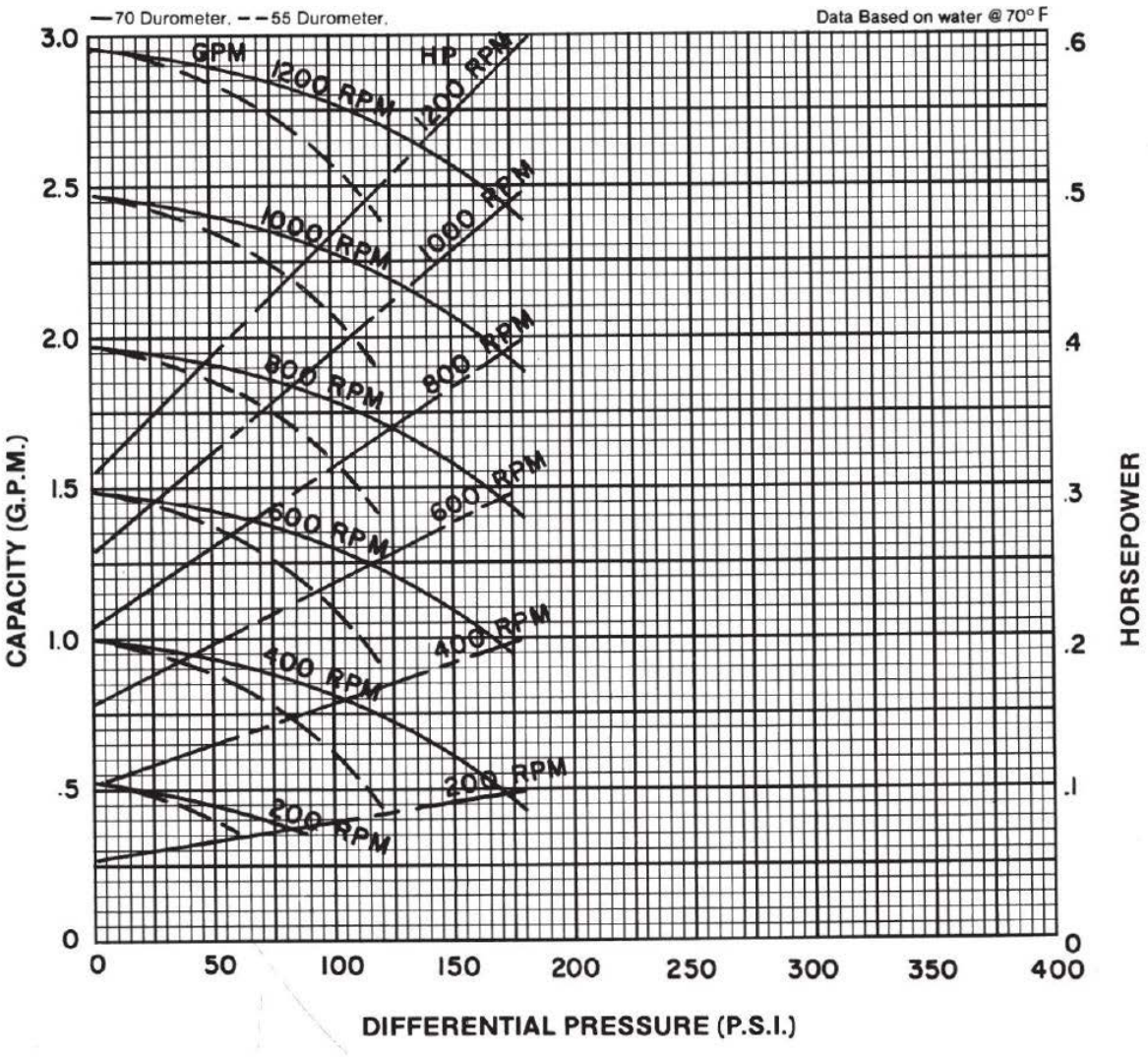
PERFORMANCE DATA
MODEL: 3CM2

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.4	.9	1.3	1.7	2.1	2.6
MIN. HP	1/8	1/6	1/4	1/3	1/3	1/2



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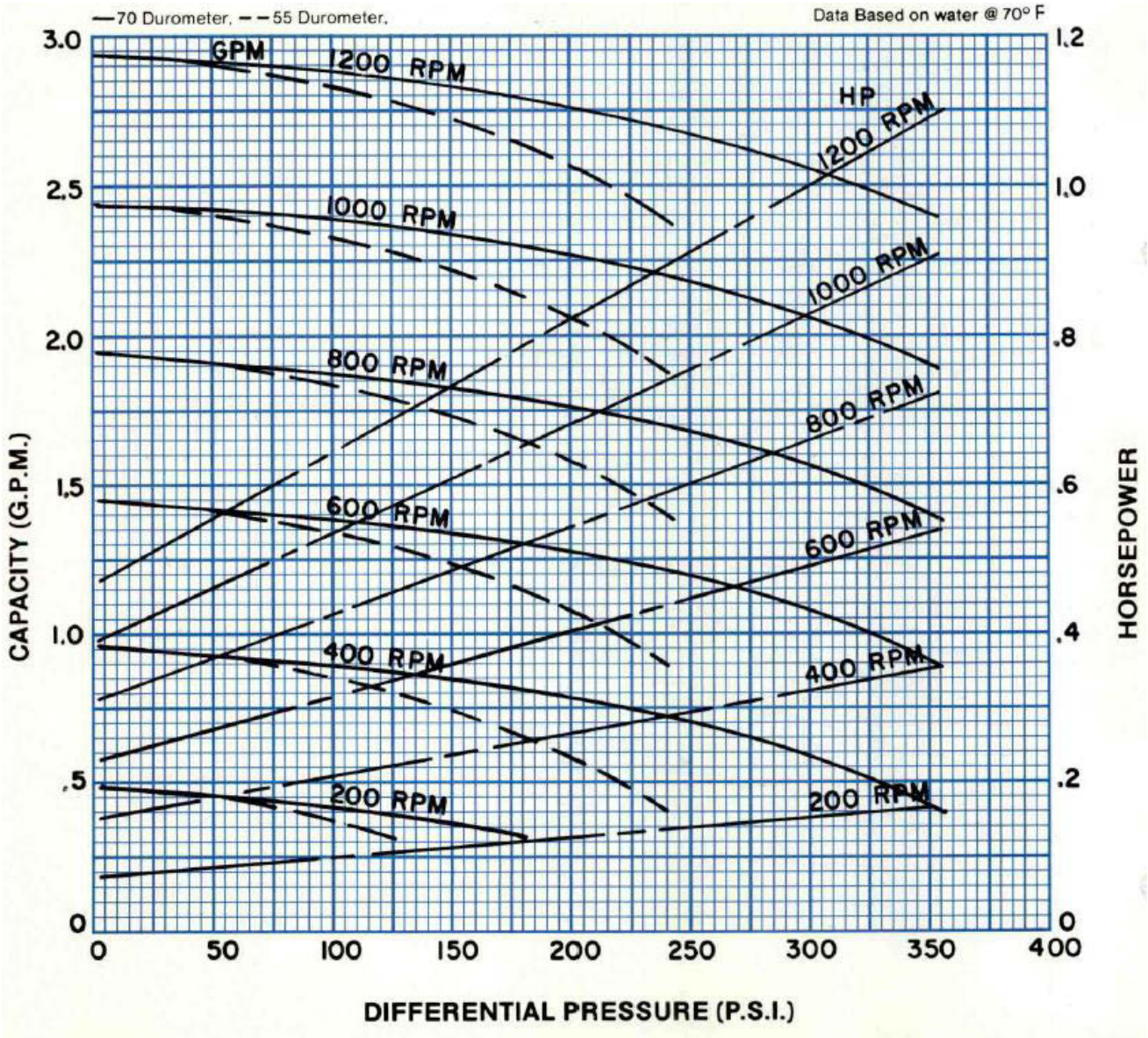
PERFORMANCE DATA
MODEL: 6CM2

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.4	.9	1.3	1.7	2.1	2.6
MIN. HP	1/3	1/2	3/4	3/4	1	1



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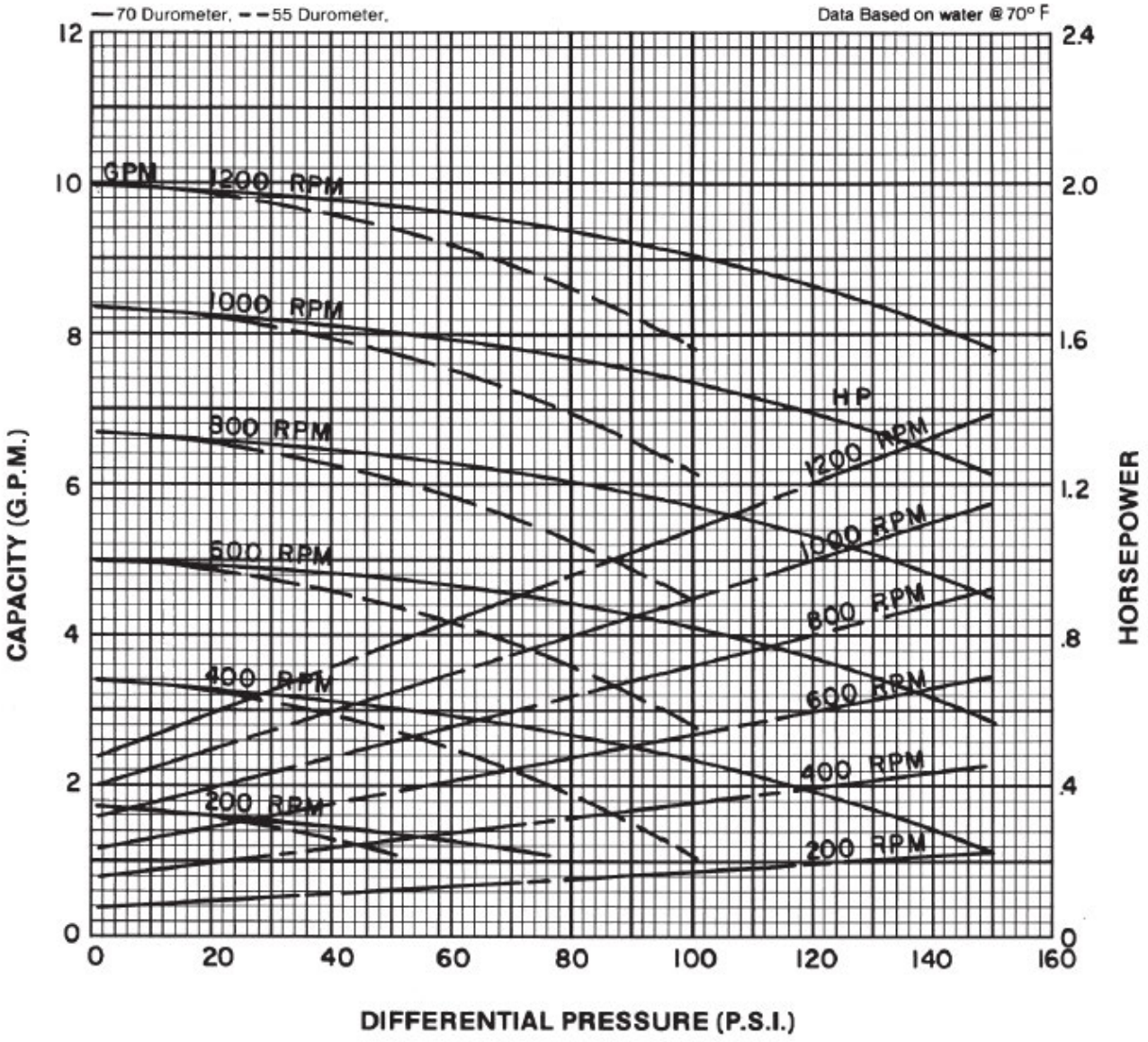
PERFORMANCE DATA
MODEL: 2CM3

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.6	1.3	2	2.6	3.2	3.9
MIN. HP	1/4	1/3	1/2	3/4	1	1



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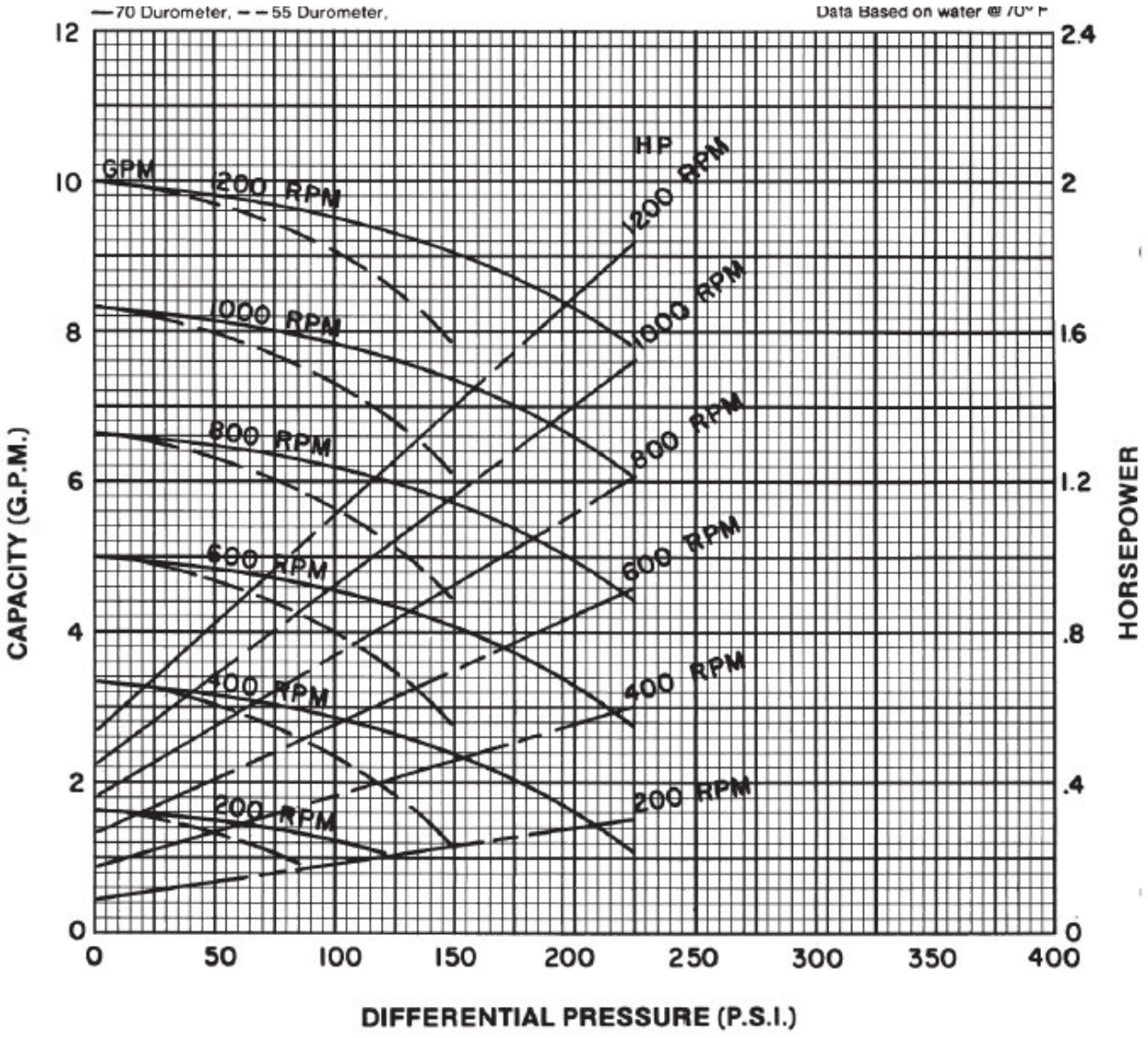
PERFORMANCE DATA
MODEL: 3CM3

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.6	1.3	2	2.6	3.2	3.9
MIN. HP	1/3	1/2	3/4	1	1 1/2	1 1/2



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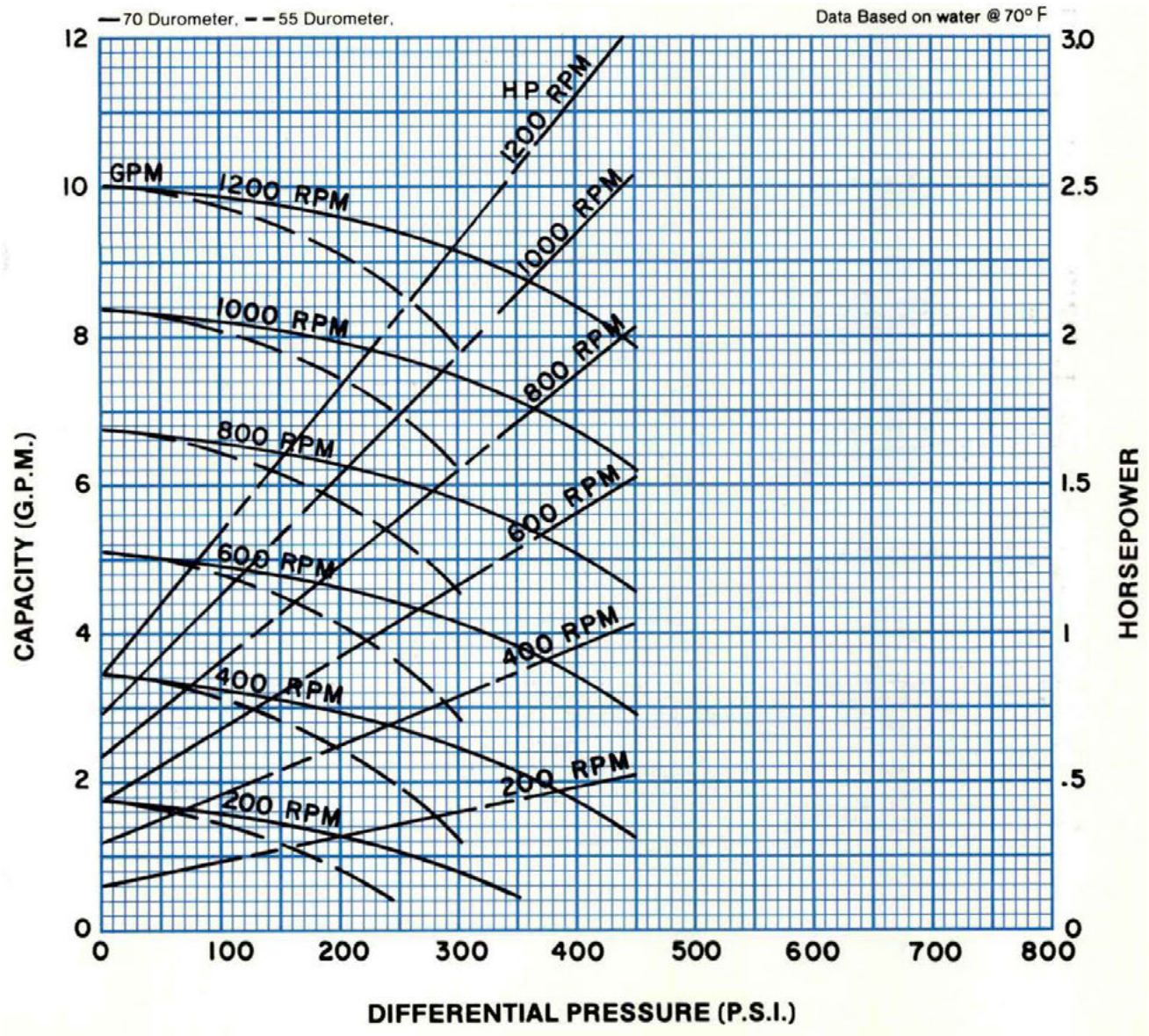
PERFORMANCE DATA
MODEL: 6CM3

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.6	1.3	2	2.6	3.2	3.9
MIN. HP	1/2	3/4	1	1 1/2	2	2



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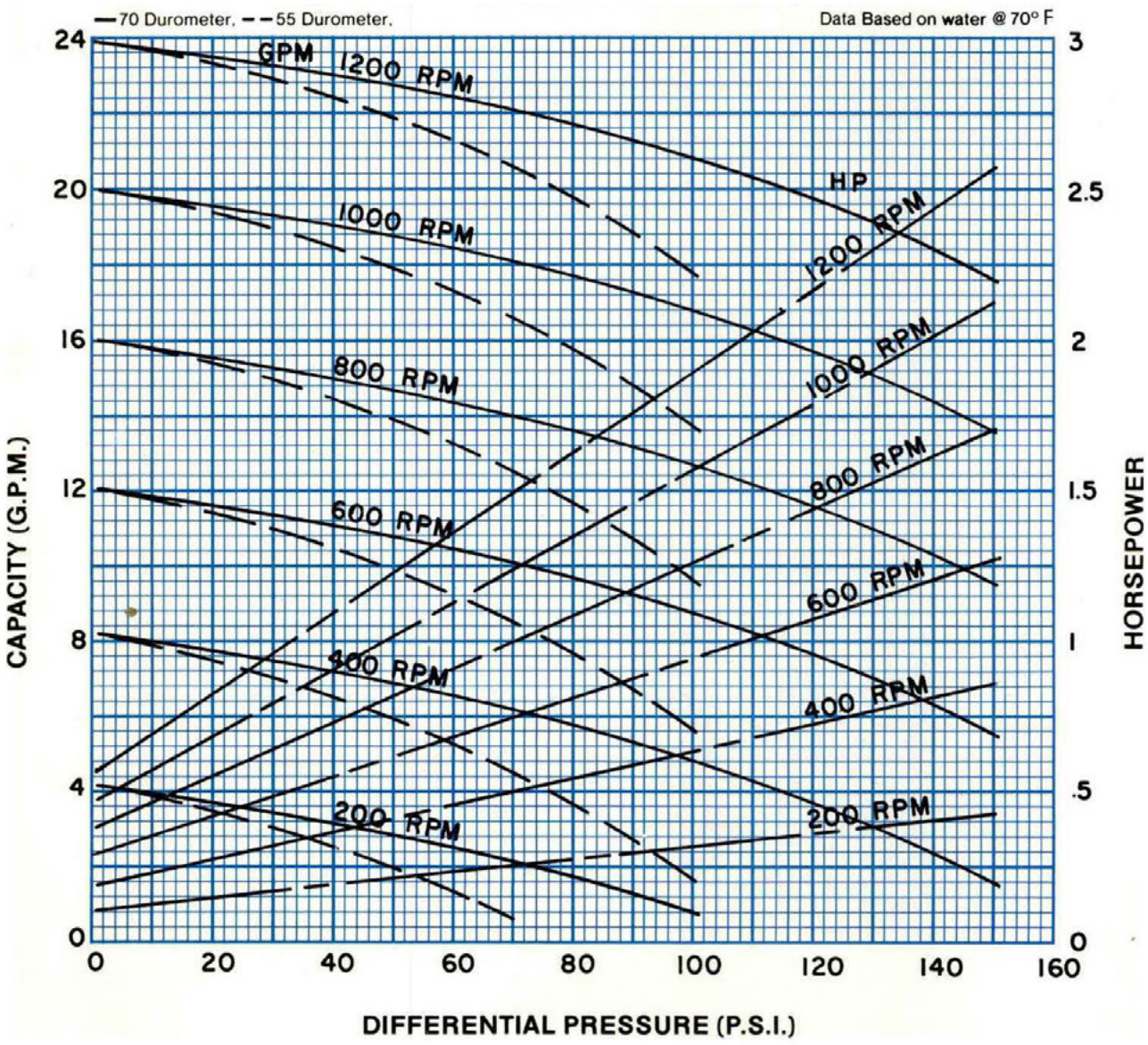
PERFORMANCE DATA
MODEL: 2CM4

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.9	1.7	2.6	3.4	4.8	6.7
MIN. HP	1/3	1/2	3/4	1	1 1/2	1 1/2



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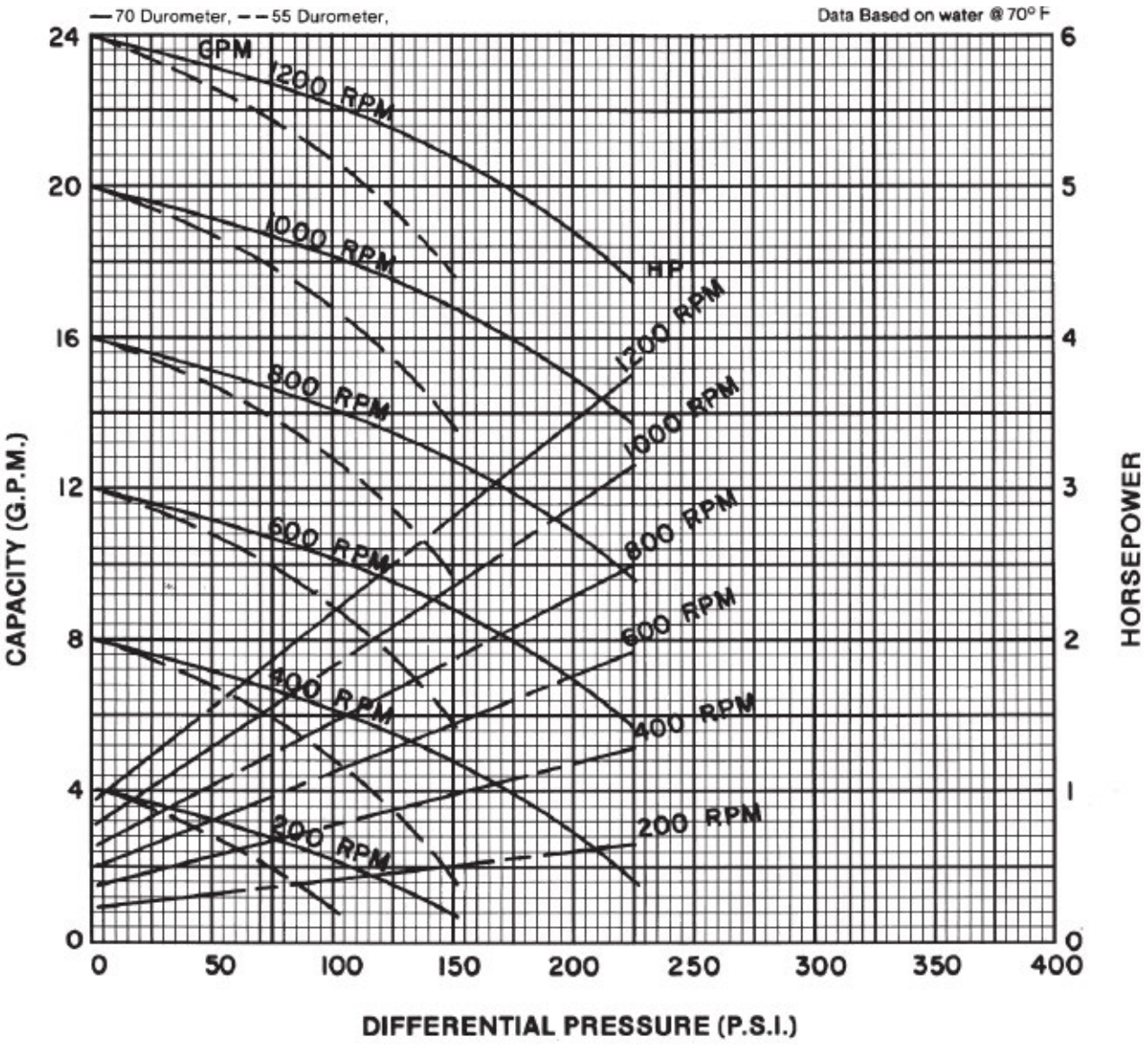
PERFORMANCE DATA
MODEL: 3CM4

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.9	1.7	2.6	3.4	4.8	6.7
MIN. HP	1/2	1	1 1/2	2	2	3



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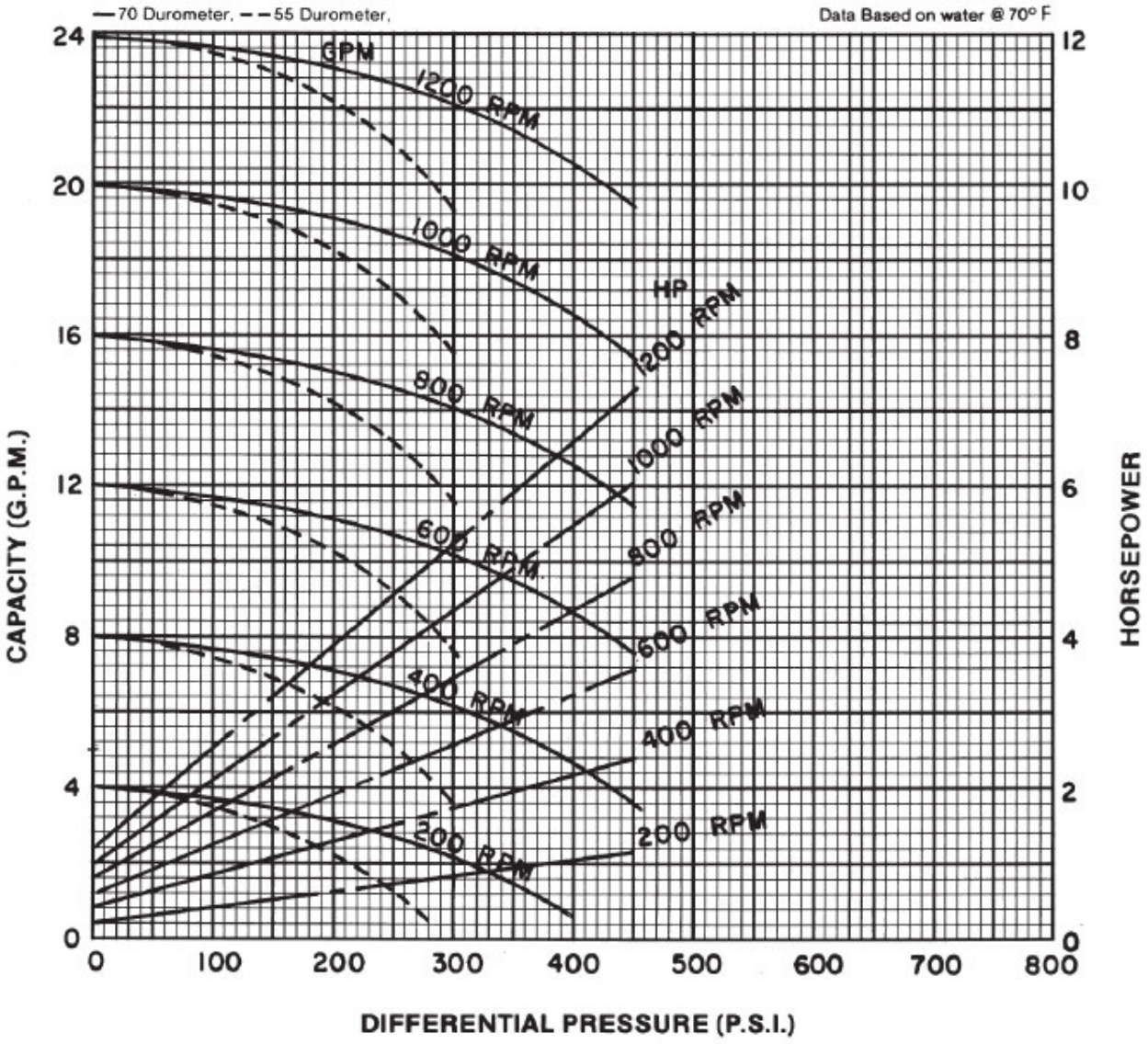
PERFORMANCE DATA
MODEL: 6CM4

RPM	200	400	600	800	1,000	1,200
NPSH REQ'D	.9	1.7	2.6	3.4	4.8	6.7
MIN. HP	1 1/2	2	3	3	5	5



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CM Dimensions

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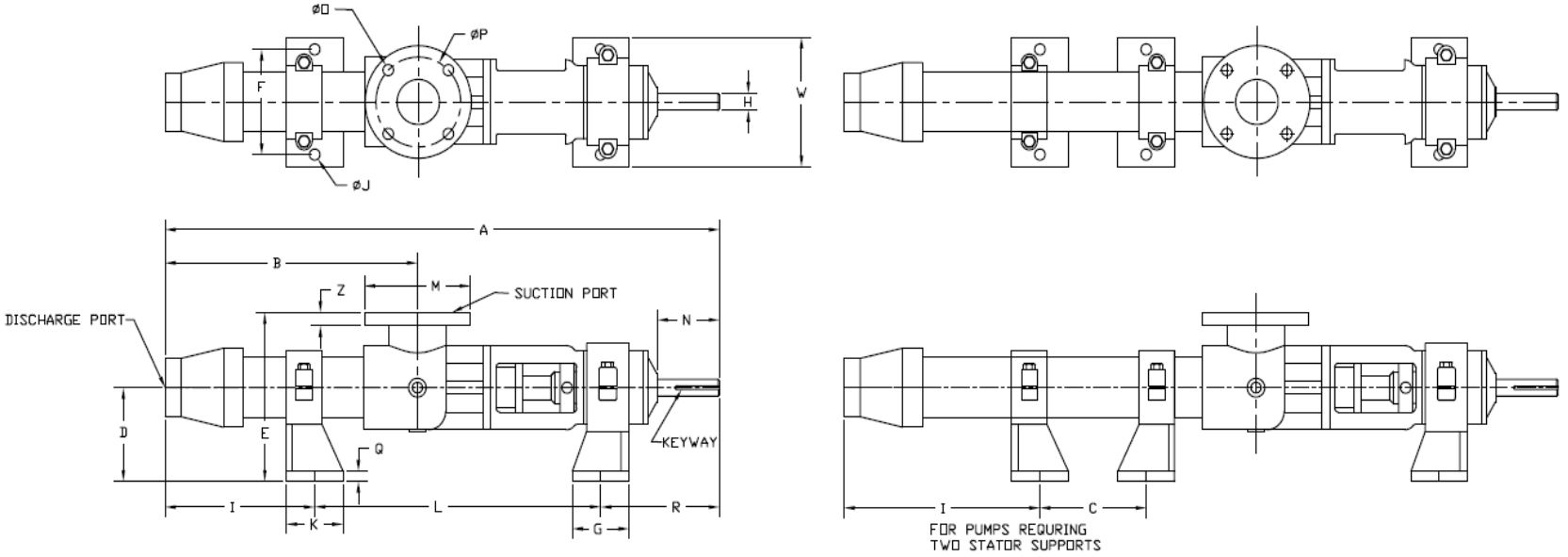
Dimensions & Weights
CM Frame Pumps
REV. 4/20/12



PUMP SIZE	DIMENSIONS (INCHES)																					WEIGHT (LBS.)	PORT SIZE	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	W	Z	KEYWAY		SUCTION	DISCHARGE
2CM1	17-1/2	7- 3/16	-	3- 1/4	5- 7/8	3- 1/8	2	5/8	4- 1/2	3/8	2	8- 3/4	4- 1/4	1- 1/2	9/16	3- 1/8	3/8	4- 1/4	4	7/16	3/16 X 3/32	22	1"	3/4"
6CM1	24- 7/8	15- 1/4	-	3- 1/4	5- 7/8	3- 1/8	2	5/8	4- 7/8	3/8	2	15- 3/4	4- 1/4	1- 1/2	9/16	3- 1/8	3/8	4- 1/4	4	7/16	3/16 X 3/32	30	1"	3/4"
6CM2	39- 1/8	26- 3/8	14	4- 1/8	7- 5/16	4- 1/4	3	3/4	7- 15/16	7/16	3	11-1/2	5	2- 1/8	9/16	3- 7/8	1/2	5- 11/16	5- 3/8	9/16	3/16 X 3/32	55	1- 1/2"	3/4"
6CM3	54- 3/8	37- 1/2	22	5- 1/2	9- 7/8	5- 1/2	3- 1/2	15/16	9- 7/8	9/16	3	15- 1/2	7	3- 1/8	3/4	5- 1/2	5/8	7	7	11/16	1/4 X 1/8	105	2- 1/2"	2"
6CM4	71	49- 3/4	25	6- 1/4	11- 1/4	7	4	1- 1/8	17- 7/16	11/16	4	20	7- 1/2	4- 3/8	3/4	6	11/16	8- 9/16	8- 5/8	7/8	1/4 X 1/8	171	3"	2- 1/2"

Our CM Line consists of CM1, CM2, CM3 and CM4 frames with an option of 2, 3, or 6 stages. CM Pumps not listed are: 3CM1, 2CM2, 3CM2, 2CM3, 3CM3, 2CM4 and 3CM4. For more information on these pumps please contact us.

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CM Parts

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CM Pump and Part Equivalents

The CM Pump Line is equivalent to the CL Pump Line.
Refer to the table below for the similarities of the Model CL and CM Pumps.

Frame Size	Reference To:
2CM1	CL2
3CM1	CL2
6CM1	CL2
6CM2	CL3
6CM3	CL4
6CM4	CL6

Our CM Line consists of CM1, CM2, CM3 and CM4 frames with an option of 2, 3, or 6 stages. CM Pumps not listed are: 3CM1, 2CM2, 3CM2, 2CM3, 3CM3, 2CM4 and 3CM4. For more information on these pumps please contact us.

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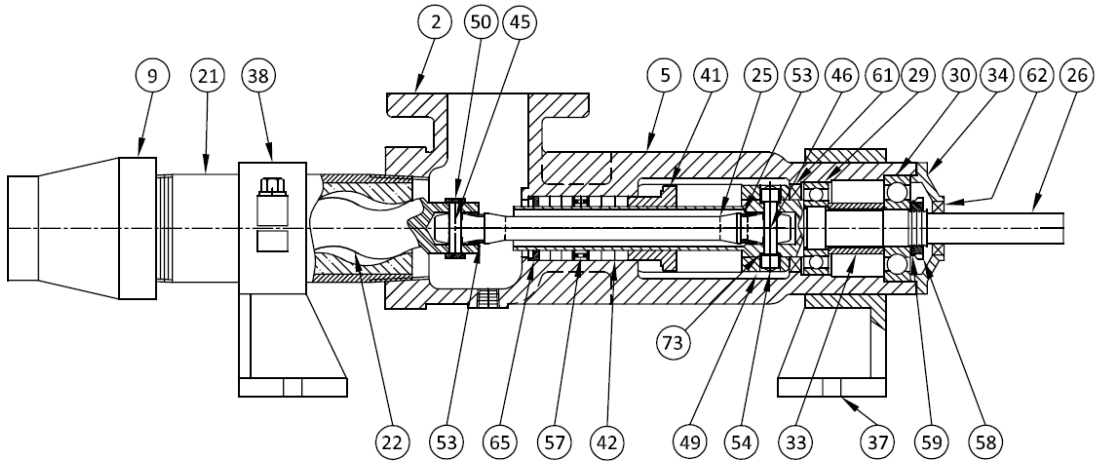
Parts Lists

PARTS LIST

1CL2, 2CL2 & 3CL2
2CM1, 3CM1 & 6CM1



PLEASE SPECIFY MODEL: NO. AND/OR SERIAL NO. OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL2-2C / CL2-2S
5	BEARING HOUSING	CL2-5C
9	REDUCER	CL2-9C / CL2-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL2-25CS / CL2-25S
26	DRIVE SHAFT	CL2-26CS / CL2-26S
29	BALL BRG. (RADIAL)	CL2-29
30	BALL BRG. (THRUST)	CL2-30
33	BEARING SPACER	CL2-33C
34	BEARING COVER PLATE	CL2-34C
37	PUMP SUPPORT	CL2-37C
38	STATOR SUPPORT	CL2-38C
41	PACKING GLAND	CL2-41C / CL2-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL2-42
45	ROTOR PIN	CL2-45C / CL2-45S
46	SHAFT PIN	CL2-46C / CL2-46S
49	SHAFT COLLAR	CL2-49CS
50	ROTOR BAND	CL2-50C / CL2-50S
53	CONN. ROD WASHER (2 REQ)	CL2-53*
54	DR. PIN RET. NUT (2 REQ)	CL2-54S
57	LANTERN RING	CL2-57S
58	BEARING LOCK NUT	CL2-58
59	BEARING LOCK WASHER	CL2-59
61	GREASE SEAL (RADIAL)	CL2-61
62	GREASE SEAL (THRUST)	CL2-62
65	PACKING GLAND INSERT	CL2-65S
73	DRIVE PIN WASHER (2 REQ)	CL2-73S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q, B, F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL
Q = BUNA NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-2
4-3-12

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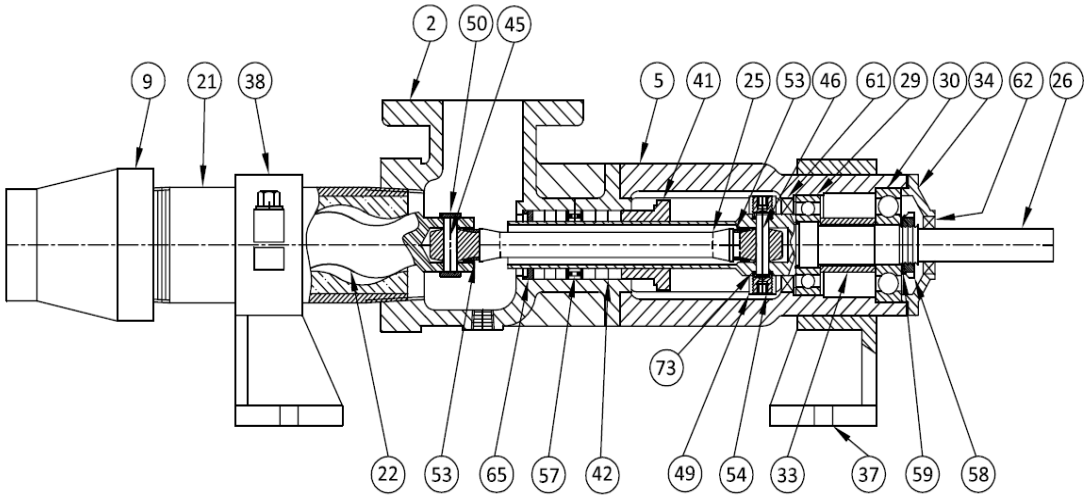
PARTS LIST

1CL3, 2CL3, 3CL3 & 6CM2



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL3-2C / CL3-2S
5	BEARING HOUSING	CL3-5C
9	REDUCER	CL3-9C / CL3-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL3-25C / CL3-25S
26	DRIVE SHAFT	CL3-26C / CL3-26S
29	BALL BRG. (RADIAL)	CL3-29
30	BALL BRG. (THRUST)	CL3-30
33	BEARING SPACER	CL3-33C
34	BEARING COVER PLATE	CL3-34C
37	PUMP SUPPORT	CL3-37C
38	STATOR SUPPORT	CL3-38C
41	PACKING GLAND	CL3-41C / CL3-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL3-42
45	ROTOR PIN	CL3-45C / CL3-41S
46	SHAFT PIN	CL3-46C / CL3-46S
49	SHAFT COLLAR	CL3-49C
50	ROTOR BAND	CL3-50C / CL3-50S
53	CONN. ROD WASHER (2 REQ.)	CL3-53*
54	DR. PIN RET. SCREW (2 REQ)	CL3-54C / CL3-54S
57	LANTERN RING	CL3-57S
58	BEARING LOCK NUT	CL3-58
59	BEARING LOCK WASHER	CL3-59
61	GREASE SEAL (RADIAL)	CL3-61
62	GREASE SEAL (THRUST)	CL3-62
65	PACKING GLAND INSERT	CL3-65S
73	DR. PIN WASHER (2-REQ.)	CL3-73S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

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MATERIALS OF CONSTRUCTION

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Q = BUNA N/NITRILE
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R = NATURAL RUBBER

CLP-3
4-4-12

**Please Note: On Pump size 6CM2 that Item No. 38 (Stator Support) requires 2 for this size pump.

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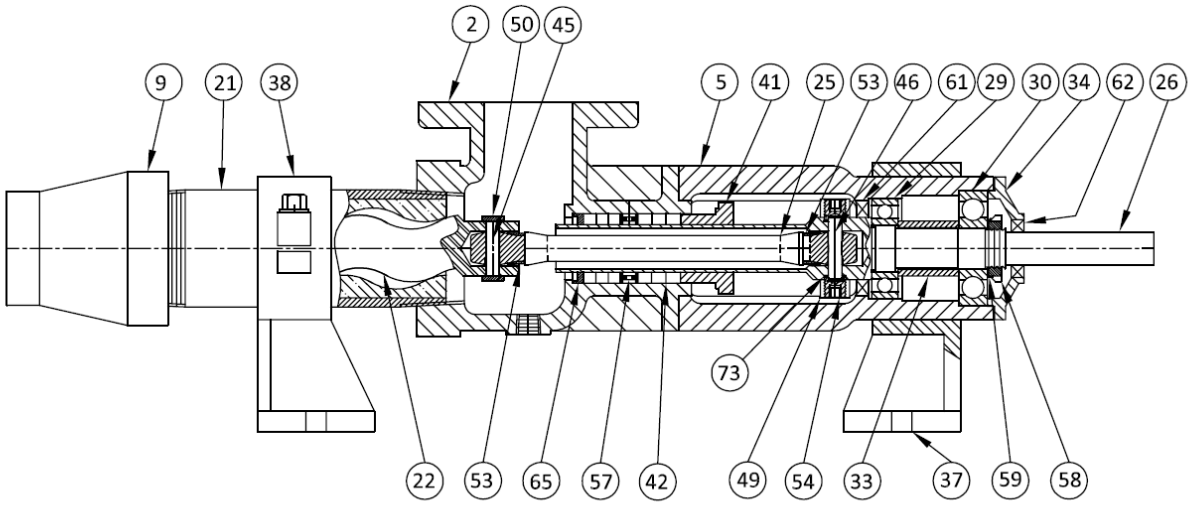
PARTS LIST

1CL4, 2CL4, 3CL4 & 6CM3



PLEASE SPECIFY MODEL NUMBER AND/OR SERIAL NUMBER OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL4-2C / CL4-2S
5	BEARING HOUSING	CL4-5C
9	REDUCER	CL4-9C / CL4-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL4-25C / CL4-25S
26	DRIVE SHAFT	CL4-26C / CL4-26S
29	BALL BRG. (RADIAL)	CL4-29
30	BALL BRG. (THRUST)	CL4-30
33	BEARING SPACER	CL4-33C
34	BEARING COVER PLATE	CL4-34C
37	PUMP SUPPORT	CL4-37C
38	STATOR SUPPORT	CL4-38C
41	PACKING GLAND	CL4-41C / CL4-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL4-42
45	ROTOR PIN	CL4-45C / CL4-45S
46	SHAFT PIN	CL4-46C / CL4-46S
49	SHAFT COLLAR	CL4-49C
50	ROTOR BAND	CL4-50C / CL4-50S
53	CONN. ROD WASHER (2 REQ.)	CL4-53 *
54	DR. PIN RET. SCREW (2 REQ)	CL4-54C / CL4-54S
57	LANTERN RING	CL4-57S
58	BEARING LOCK NUT	CL4-58
59	BEARING LOCK WASHER	CL4-59
61	GREASE SEAL (RADIAL)	CL4-61
62	GREASE SEAL (THRUST)	CL4-62
65	PACKING GLAND INSERT	CL4-65S
73	DR. PIN WASHER (2-REQ.)	CL4-73S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q, B, F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL
Q = BUNA NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-4
4-4-12

**Please Note: On Pump size 6CM3 that Item No. 38 (Stator Support) requires 2 for this size pump.

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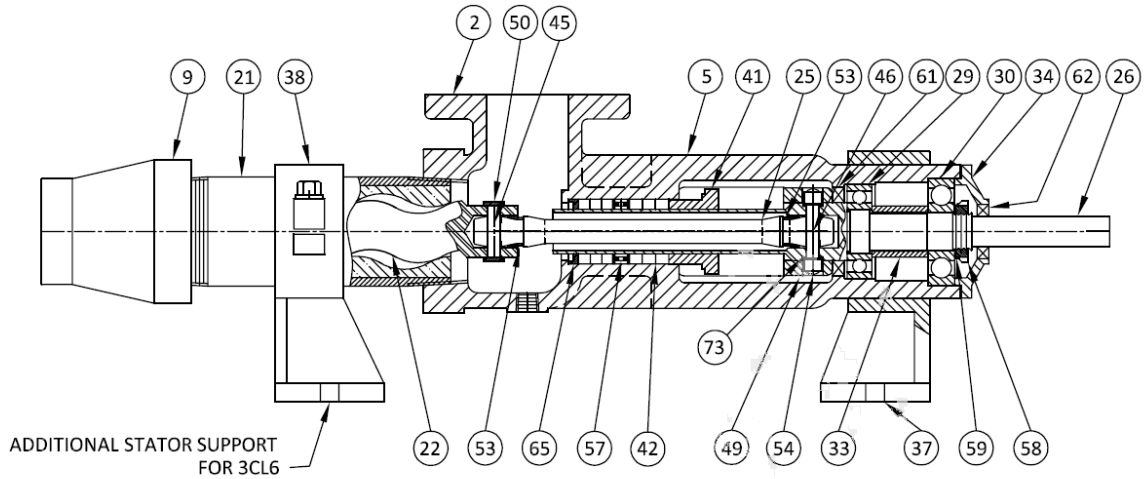
PARTS LIST

1CL6, 2CL6, 3CL6 & 6CM4



PLEASE SPECIFY MODEL: NO. AND/OR SERIAL NO. OF PUMP WHEN ORDERING PARTS

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CL6-2C / CL6-2S
5	BEARING HOUSING	CL6-5C
9	REDUCER	CL6-9C / CL6-9S
21	STATOR	SEE PG. CLSR-1
22	ROTOR	SEE PG. CLSR-1
25	CONNECTING ROD	CL6-25C / CL6-25S
26	DRIVE SHAFT	CL6-26C / CL6-26S
29	BALL BRG. (RADIAL)	CL6-29
30	BALL BRG. (THRUST)	CL6-30
33	BEARING SPACER	CL6-33C
34	BEARING COVER PLATE	CL6-34C
37	PUMP SUPPORT	CL6-37C
38	STATOR SUPPORT	CL6-38C
41	PACKING GLAND	CL6-41C / CL6-41S

ITEM NO.	PART NAME	PART NO.
42	PACKING (SET)	CL6-42
45	ROTOR PIN	CL6-45C / CL6-45S
46	SHAFT PIN	CL6-46C / CL6-46S
49	SHAFT COLLAR	CL6-49C
50	ROTOR BAND	CL6-50C / CL6-50S
53	CONN. ROD WASHER (2 REQ)	CL6-53*
54	DR. PIN RET. SCREW (2 REQ)	CL6-54C / CL6-54S
57	LANTERN RING	CL6-57S
58	BEARING LOCK NUT	CL6-58
59	BEARING LOCK WASHER	CL6-59
61	GREASE SEAL (RADIAL)	CL6-61
62	GREASE SEAL (THRUST)	CL6-62
65	PACKING GLAND INSERT	CL6-65S
73	DRIVE PIN WASHER (2 REQ)	CL6-73S

NOTE: FOR MECHANICAL SEAL PUMPS,
ITEM NOS. 41, 42, 57 & 65 NOT INCLUDED.

* ITEM #53-CONN. ROD WASHER AVAILABLE IN Q, B, F, & R

MATERIALS OF CONSTRUCTION

C = CAST IRON/CARBON STEEL
S = STAINLESS STEEL
Q = BUNA NITRILE
B = EPDM
F = VITON
R = NATURAL RUBBER

CLP-6
4-4-12

**Please Note: On Pump size 3CL6 and 6CM4 that Item No. 38 (Stator Support) requires 2 for this size pump.

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STATOR AND ROTOR PARTS LIST CLSR-1

ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL	ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL
21	2CM1 STATOR	2CM1-21QC 2CM1-21BC 2CM1-21RC 2CM1-21FC	2CM1-21QS 2CM1-21BS 2CM1-21RS 2CM1-21FS	22	2CM1 ROTOR	2CM1-22D	2CM1-22S
21	3CM1 STATOR	3CM1-21QC 3CM1-21BC 3CM1-21RC 3CM1-21FC	3CM1-21QS 3CM1-21BS 3CM1-21RS 3CM1-21FS	22	3CM1 ROTOR	3CM1-22D	3CM1-22S
21	6CM1 STATOR	6CM1-21QC 6CM1-21BC 6CM1-21RC 6CM1-21FC	6CM1-21QS 6CM1-21BS 6CM1-21RS 6CM1-21FS	22	6CM1 ROTOR	6CM1-22D	6CM1-22S
21	1CL2 STATOR	1CL2-21QC 1CL2-21BC 1CL2-21RC 1CL2-21FC	1CL2-21QS 1CL2-21BS 1CL2-21RS 1CL2-21FS	22	1CL2 ROTOR	1CL2-22D	1CL2-22S
21	2CL2 STATOR	2CL2-21QC 2CL2-21BC 2CL2-21RC 2CL2-21FC	2CL2-21QS 2CL2-21BS 2CL2-21RS 2CL2-21FS	22	2CL2 ROTOR	2CL2-22D	2CL2-22S
21	3CL2 STATOR	3CL2-21QC 3CL2-21BC 3CL2-21RC 3CL2-21FC	3CL2-21QS 3CL2-21BS 3CL2-21RS 3CL2-21FS	22	3CL2 ROTOR	3CL2-22D	3CL2-22S
21	6CM2 STATOR	6CM2-21QC 6CM2-21BC 6CM2-21RC 6CM2-21FC	6CM2-21QS 6CM2-21BS 6CM2-21RS 6CM2-21FS	22	6CM2 ROTOR	6CM2-22D	6CM2-22S
21	1CL3 STATOR	1CL3-21QC 1CL3-21BC 1CL3-21RC 1CL3-21FC	1CL3-21QS 1CL3-21BS 1CL3-21RS 1CL3-21FS	22	1CL3 ROTOR	1CL3-22D	1CL3-22S
21	2CL3 STATOR	2CL3-21QC 2CL3-21BC 2CL3-21RC 2CL3-21FC	2CL3-21QS 2CL3-21BS 2CL3-21RS 2CL3-21FS	22	2CL3 ROTOR	2CL3-22D	2CL3-22S
21	3CL3 STATOR	3CL3-21QC 3CL3-21BC 3CL3-21RC 3CL3-21FC	3CL3-21QS 3CL3-21BS 3CL3-21RS 3CL3-21FS	22	3CL3 ROTOR	3CL3-22D	3CL3-22S
21	6CM3 STATOR	6CM3-21QC 6CM3-21BC 6CM3-21RC 6CM3-21FC	6CM3-21QS 6CM3-21BS 6CM3-21RS 6CM3-21FS	22	6CM3 ROTOR	6CM3-22D	6CM3-22S
21	1CL4 STATOR	1CL4-21QC 1CL4-21BC 1CL4-21RC 1CL4-21FC	1CL4-21QS 1CL4-21BS 1CL4-21RS 1CL4-21FS	22	1CL4 ROTOR	1CL4-22D	1CL4-22S
21	2CL4 STATOR	2CL4-21QC 2CL4-21BC 2CL4-21RC 2CL4-21FC	2CL4-21QS 2CL4-21BS 2CL4-21RS 2CL4-21FS	22	2CL4 ROTOR	2CL4-22D	2CL4-22S

ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL	ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL
21	3CL4 STATOR	3CL4-21QC 3CL4-21BC 3CL4-21RC 3CL4-21FC	3CL4-21QS 3CL4-21BS 3CL4-21RS 3CL4-21FS	22	3CL4 ROTOR	3CL4-22D	3CL4-22S
21	6CM4 STATOR	6CM4-21QC 6CM4-21BC 6CM4-21RC 6CM4-21FC	6CM4-21QS 6CM4-21BS 6CM4-21RS 6CM4-21FS	22	6CM4 ROTOR	6CM4-22D	6CM4-22S
21	1CL6 STATOR	1CL6-21QC 1CL6-21BC 1CL6-21RC 1CL6-21FC	1CL6-21QS 1CL6-21BS 1CL6-21RS 1CL6-21FS	22	1CL6 ROTOR	1CL6-22D	1CL6-22S
21	2CL6 STATOR	2CL6-21QC 2CL6-21BC 2CL6-21RC 2CL6-21FC	2CL6-21QS 2CL6-21BS 2CL6-21RS 2CL6-21FS	22	2CL6 ROTOR	2CL6-22D	2CL6-22S
21	3CL6 STATOR	3CL6-21QC 3CL6-21BC 3CL6-21RC 3CL6-21FC	3CL6-21QS 3CL6-21BS 3CL6-21RS 3CL6-21FS	22	3CL6 ROTOR	3CL6-22D	3CL6-22S
21	1CL8 STATOR	1CL8-21QC 1CL8-21BC 1CL8-21RC 1CL8-21FC	1CL8-21QS 1CL8-21BS 1CL8-21RS 1CL8-21FS	22	1CL8 ROTOR	1CL8-22D	1CL8-22S
21	2CL8 STATOR	2CL8-21QC 2CL8-21BC 2CL8-21RC 2CL8-21FC	2CL8-21QS 2CL8-21BS 2CL8-21RS 2CL8-21FS	22	2CL8 ROTOR	2CL8-22D	2CL8-22S
21	3CL8 STATOR	3CL8-21QC 3CL8-21BC 3CL8-21RC 3CL8-21FC	3CL8-21QS 3CL8-21BS 3CL8-21RS 3CL8-21FS	22	3CL8 ROTOR	3CL8-22D	3CL8-22S
21	1CL10 STATOR	1CL10-21QC 1CL10-21BC 1CL10-21RC 1CL10-21FC	1CL10-21QS 1CL10-21BS 1CL10-21RS 1CL10-21FS	22	1CL10 ROTOR	1CL10-22D	1CL10-22S
21	2CL10 STATOR	2CL10-21QC 2CL10-21BC 2CL10-21RC 2CL10-21FC	2CL10-21QS 2CL10-21BS 2CL10-21RS 2CL10-21FS	22	2CL10 ROTOR	2CL10-22D	2CL10-22S
21	3CL10 STATOR	3CL10-21QC 3CL10-21BC 3CL10-21RC 3CL10-21FC	3CL10-21QS 3CL10-21BS 3CL10-21RS 3CL10-21FS	22	3CL10 ROTOR	3CL10-22D	3CL10-22S
21	1CL10H STATOR	1CL10H-21QC 1CL10H-21BC 1CL10H-21RC 1CL10H-21FC	1CL10H-21QS 1CL10H-21BS 1CL10H-21RS 1CL10H-21FS	22	1CL10H ROTOR	1CL10H-22D	1CL10H-22S
21	2CL10H STATOR	2CL10H-21QC 2CL10H-21BC 2CL10H-21RC 2CL10H-21FC	2CL10H-21QS 2CL10H-21BS 2CL10H-21RS 2CL10H-21FS	22	2CL10H ROTOR	2CL10H-22D	2CL10H-22S
21	1CL12 STATOR	1CL12-21QC 1CL12-21BC 1CL12-21RC 1CL12-21FC	1CL12-21QS 1CL12-21BS 1CL12-21RS 1CL12-21FS	22	1CL12 ROTOR	1CL12-22D	1CL12-22S

ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL	ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL
21	2CL12 STATOR	2CL12-21QC 2CL12-21BC 2CL12-21RC 2CL12-21FC	2CL12-21QS 2CL12-21BS 2CL12-21RS 2CL12-21FS	22	2CL12 ROTOR	2CL12-22D	2CL12-22S
21	3CL12 STATOR	3CL12-21QC 3CL12-21BC 3CL12-21RC 3CL12-21FC	3CL12-21QS 3CL12-21BS 3CL12-21RS 3CL12-21FS	22	3CL12 ROTOR	3CL12-22D	3CL12-22S
21	1CL12H STATOR	1CL12H-21QC 1CL12H-21BC 1CL12H-21RC 1CL12H-21FC	1CL12H-21QS 1CL12H-21BS 1CL12H-21RS 1CL12H-21FS	22	1CL12H ROTOR	1CL12H-22D	1CL12H-22S
21	2CL12H STATOR	2CL12H-21QC 2CL12H-21BC 2CL12H-21RC 2CL12H-21FC	2CL12H-21QS 2CL12H-21BS 2CL12H-21RS 2CL12H-21FS	22	2CL12H ROTOR	2CL12H-22D	2CL12H-22S

STATORS		
Designation	**Elastomer**	All elastomers can be furnished in either: **C** - Carbon Steel Sleeve or **S**- Stainless Steel Sleeve **Example: QC** = Buna Nitrile elastomer with a Carbon Steel Sleeve.
Q	Buna N/Nitrile	
B	EPDM	
R	Natural Rubber	
F	Viton	

ROTORS	
Designation	**Material**
D	Alloy Steel
S	Stainless Steel

Continental Pump Company
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Model CG

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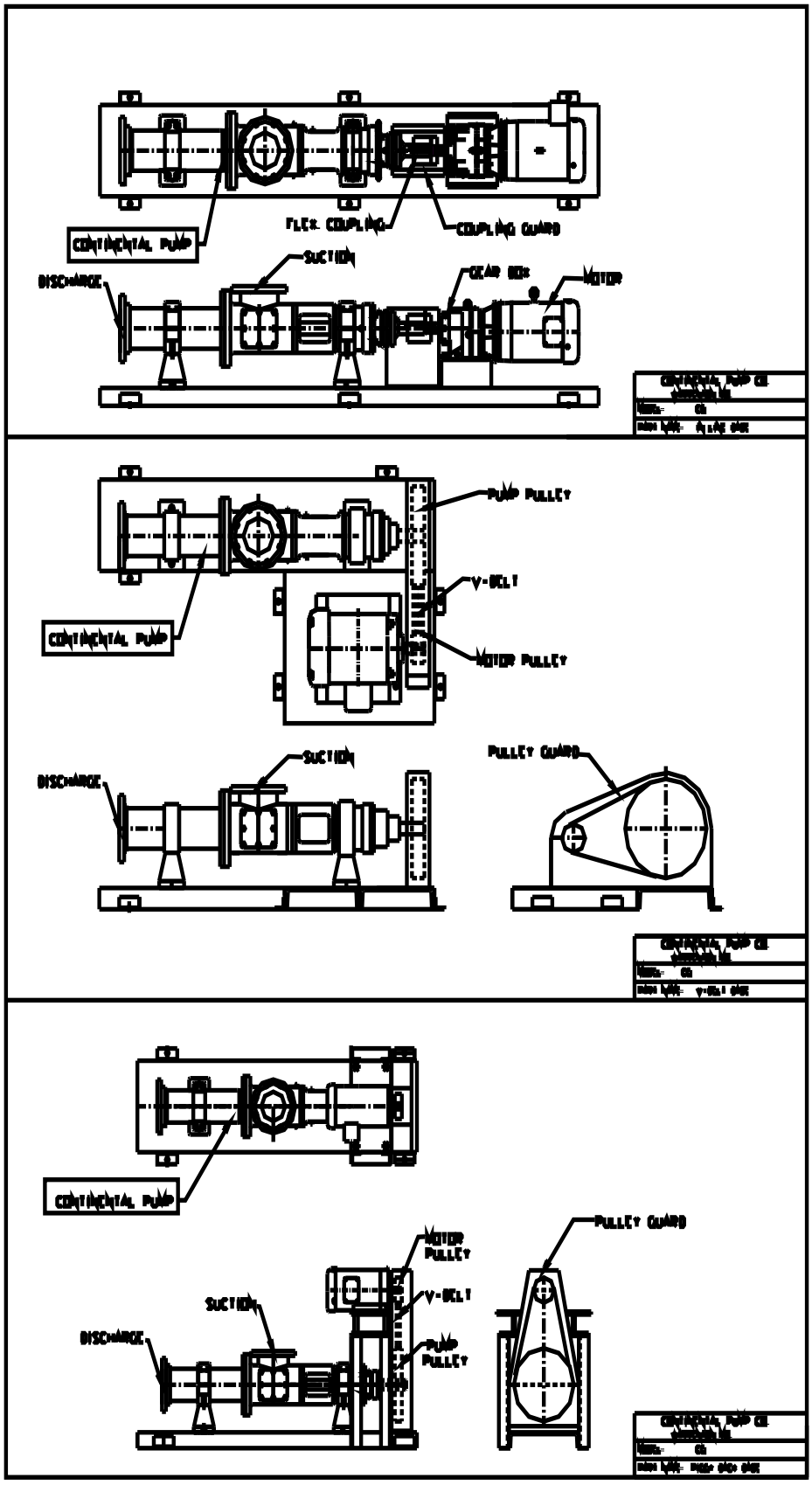

Model CG pumps are designed to handle the heavier applications of sewage, industrial waste, polluted liquids, and slurries. Incorporated into this more rugged pump is a unique drive train using gear joint connections to the rotor and drive shaft.

Continental Model CG Pumps and Parts are interchangeable with many progressing cavity pump brands.

Please contact one of our application specialists at (636)-456-6006 Mon-Fri 8AM-5PM CST for more information.

CROSS REFERENCE

Model or Frame Designation

ALL ARE 1, 2 & 3 STAGE PUMPS WITH THE EXCEPTION OF THE 10H/ 12H, ONLY AVAILABLE IN 1 & 2 STAGE.

CONTINENTAL		MOYNO®
CG8		SWG8
CG10		SWG10
CG10H		SWG10H
CG12		SWG12
CG12H		SWG12H

All Moyno® Part, model and identification numbers are listed for reference purposes only. Continental Pump Co, Inc. is not affiliated with or a representative of neither Moyno® nor its parent company. Please contact one of our application specialists at (636)-456-6006 M-F 8AM-5PM CST for more information.

Materials of Construction

	Continental Letter Key	Moyno Letter Key	Materials
Pump Body	C	C	Cast Iron
Rotor	D	D	Chrome Plated Alloy Steel
Stator	Q	Q	Buna Nitrile
	R	R	Natural Rubber
	B	B	EPDM
	C	C	Carbon Steel
	S	S	316 Stainless Steel
	F	F	Viton
Internal Parts	C	C	Carbon Steel
	AF	AF	Anti-Friction Bearings
	HS	HS	Hardened Steel

Continental Pump Company

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CG Performance

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Performance Data
Model CG

FRAME SIZE	GAL/100 REV.	PUMP SPEED	100 RPM		150 RPM		200 RPM		250 RPM		300 RPM		350 RPM		400 RPM	
		DIFF. PRESS. PSI	GPM	MIN. HP	GPM	MIN. HP	GPM	MIN. HP	GPM	MIN. HP	GPM	MIN. HP	GPM	MIN. HP	GPM	MIN. HP
1CG8	11.7	0	12	3/4	17	1	26	1- 1/2	29	1- 1/2	34	2	40	2	45	3
		25	8	3/4	13	1- 1/2	18	1- 1/2	24	1- 1/2	31	2	37	2	41	3
		50	3	1	7	1- 1/2	14	1- 1/2	18	2	25	2	32	3	35	3
2CG8	11.7	0	12	1	17	1- 1/2	22	2	27	2	33	3	40	3	45	3
		50	8	1	13	1- 1/2	18	2	24	3	29	3	35	5	42	5
		100	2	1	8	2	14	3	21	3	25	3	32	5	35	5
3CG8	11.7	50	9	2	14	2	20	3	25	3	34	5	36	5	43	5
		100	6	2	11	3	15	3	22	5	28	5	33	5	39	5
		150	2	2	7	3	11	5	19	5	24	5	29	7- 1/2	34	7- 1/2
1CG10	18.8	0	19	1	28	1	36	1- 1/2	48	1- 1/2	56	2	64	2	74	3
		25	12	1	22	1	32	1- 1/2	42	2	52	3	60	3	70	5
		50	2	1	14	1-1/2	22	2	35	2	42	3	50	5	59	5
2CG10	18.8	0	18	2	26	3	36	3	46	3	54	3	66	5	72	5
		50	12	2	20	3	30	3	40	5	50	5	58	5	68	7- 1/2
		100	3	3	12	3	22	5	32	5	41	5	50	7- 1/2	59	7- 1/2
3CG10	18.8	50	14	3	22	3	32	3	41	5	52	5	60	7- 1/2	72	7- 1/2
		100	10	3	18	3	28	5	36	5	48	7- 1/2	56	7- 1/2	67	10
		150	2	3	10	5	22	5	30	5	41	7- 1/2	50	10	630	10
1CG10H	27.7	0	26	1	40	2	54	1	70	3	82	3	96	5	108	5
		25	20	1	36	2	48	2	64	3	76	3	90	5	104	5
		50	12	2	26	2	40	3	54	3	68	5	82	5	96	5
2CG10H	27.7	0	30	2	44	3	58	5	70	5	84	5	98	7- 1/2	112	7- 1/2
		50	24	2	38	5	52	5	66	5	78	5	92	7- 1/2	106	10
		100	16	3	30	5	45	5	58	7- 1/2	72	7- 1/2	86	10	100	10
1CG12	43.5	0	42	3	62	5	84	5	108	5	127	5	147	7- 1/2	169	7-1/2
		25	35	3	56	5	78	5	100	5	123	7- 1/2	142	7- 1/2	165	10
		50	22	5	42	5	65	5	87	1- 1/2	108	7- 1/2	128	7- 1/2	153	10
2CG12	43.5	0	42	5	65	5	85	7- 1/2	105	10	125	10	145	15	167	15
		50	36	5	58	5	80	7- 1/2	100	10	120	10	140	15	163	15
		100	21	6	48	7- 1/2	67	7- 1/2	90	10	108	15	133	15	150	15
3CG12	43.5	50	40	7- 1/2	60	7- 1/2	82	10	103	15	125	15	145	15	168	15
		100	35	7- 1/2	53	7- 1/2	78	10	97	15	119	15	140	15	161	20
		150	25	7- 1/2	45	10	67	15	90	15	110	20	130	20	152	25
1CG12H	65.2	0	60	5	95	5	125	5	180	5	190	7- 1/2	220	7- 1/2	252	10
		25	55	5	85	5	120	5	175	7- 1/2	185	7- 1/2	215	10	249	10
		50	33	5	65	5	98	7- 1/2	130	10	160	10	190	15	225	15
2CG12H	65.2	0	60	5	95	7- 1/2	125	10	155	15	190	15	220	20	253	20
		50	55	7- 1/2	85	7- 1/2	120	10	150	15	182	15	215	15	247	20
		100	35	7- 1/2	75	10	95	15	130	15	160	15	195	20	225	25

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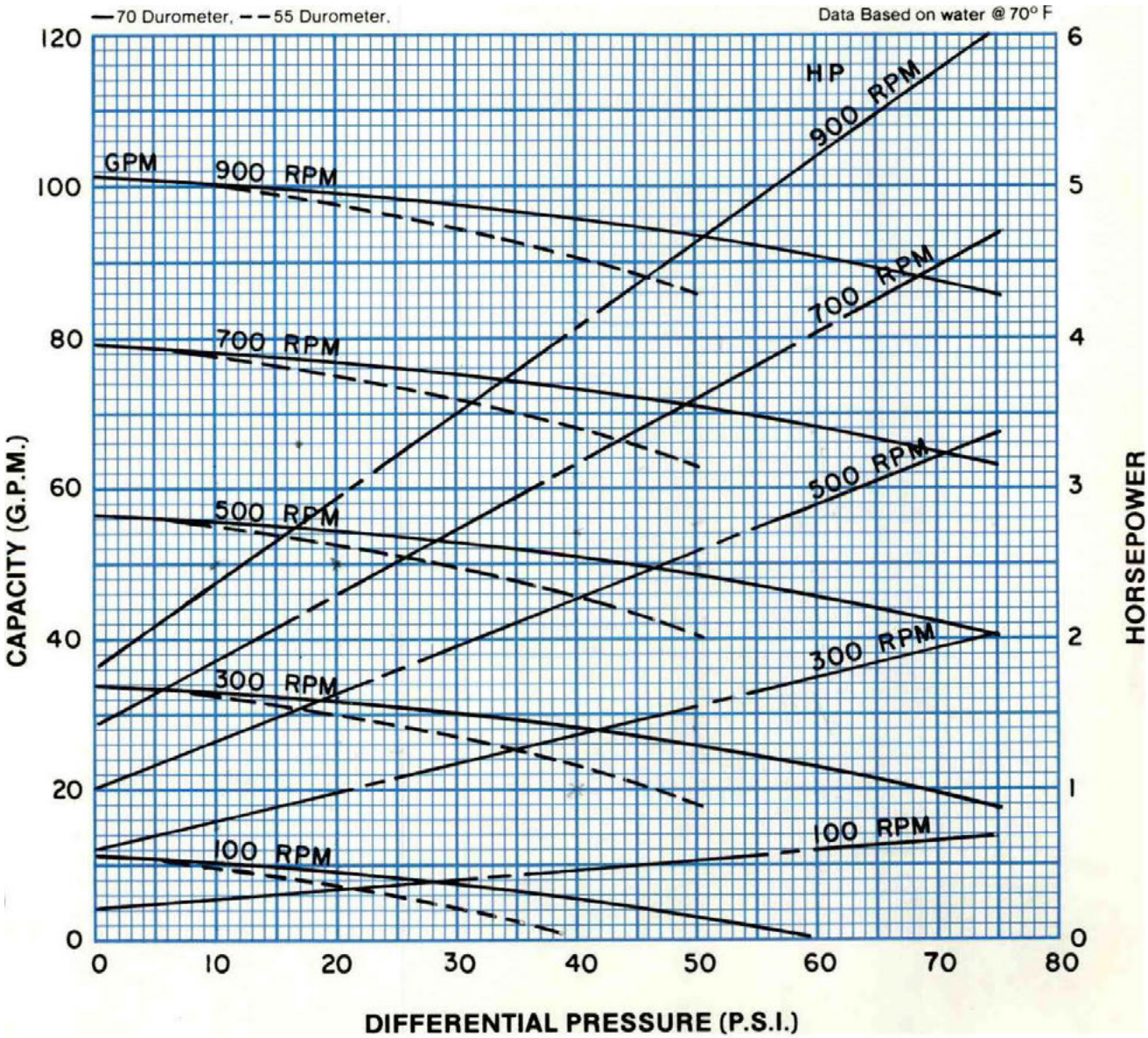
Pump Curves

PERFORMANCE DATA
MODEL: 1CG8

RPM	100	300	500	700	900
NPSH REQ'D	.8	2.2	3.7	6.9	10.5
MIN. HP	1/2	1 1/2	2	3	5



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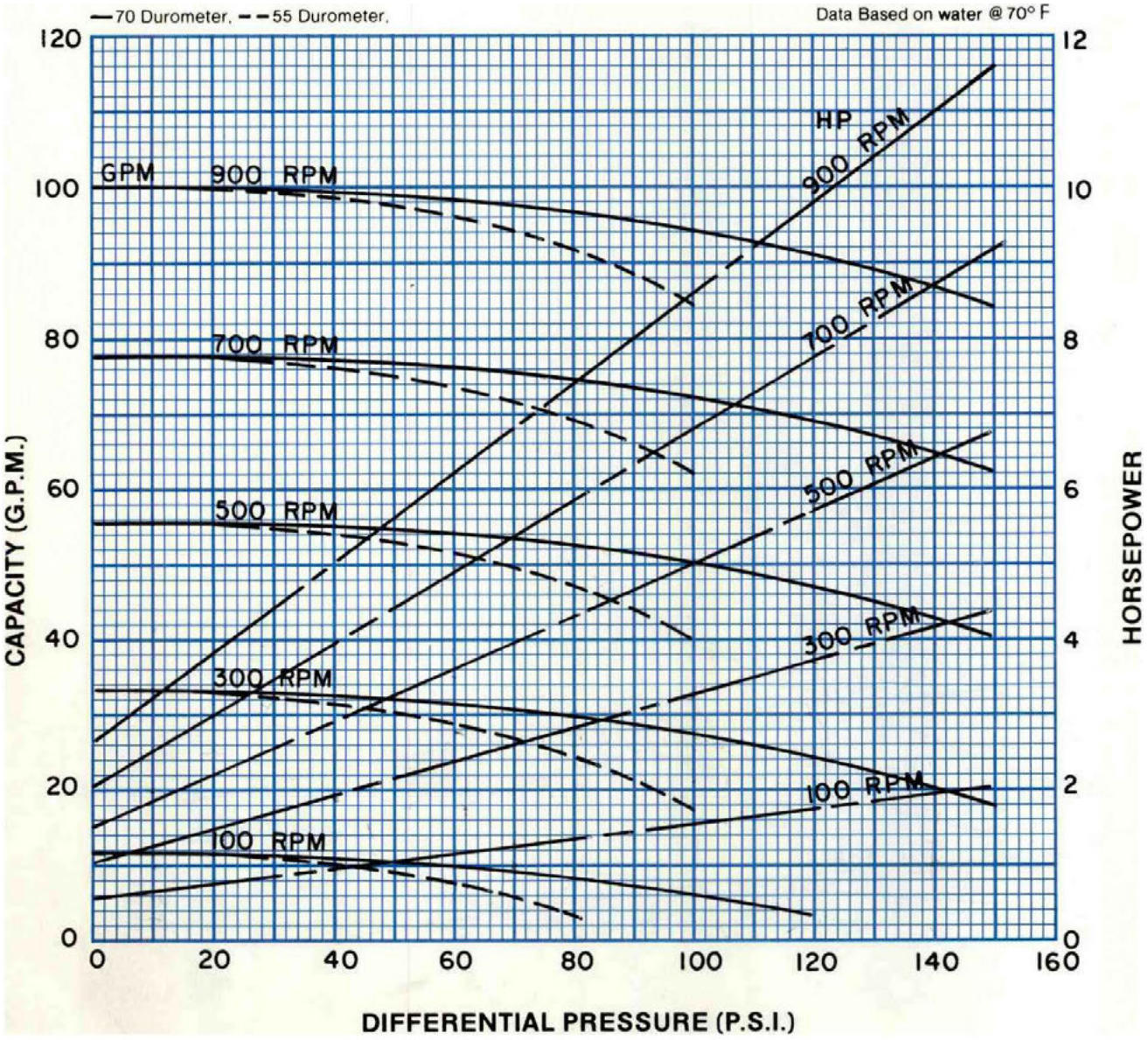
PERFORMANCE DATA
MODEL: 2CG8

RPM	100	300	500	700	900
NPSH REQ'D	.8	2.2	3.7	6.9	10.5
MIN. HP	1 1/2	3	5	7 1/2	7 1/2



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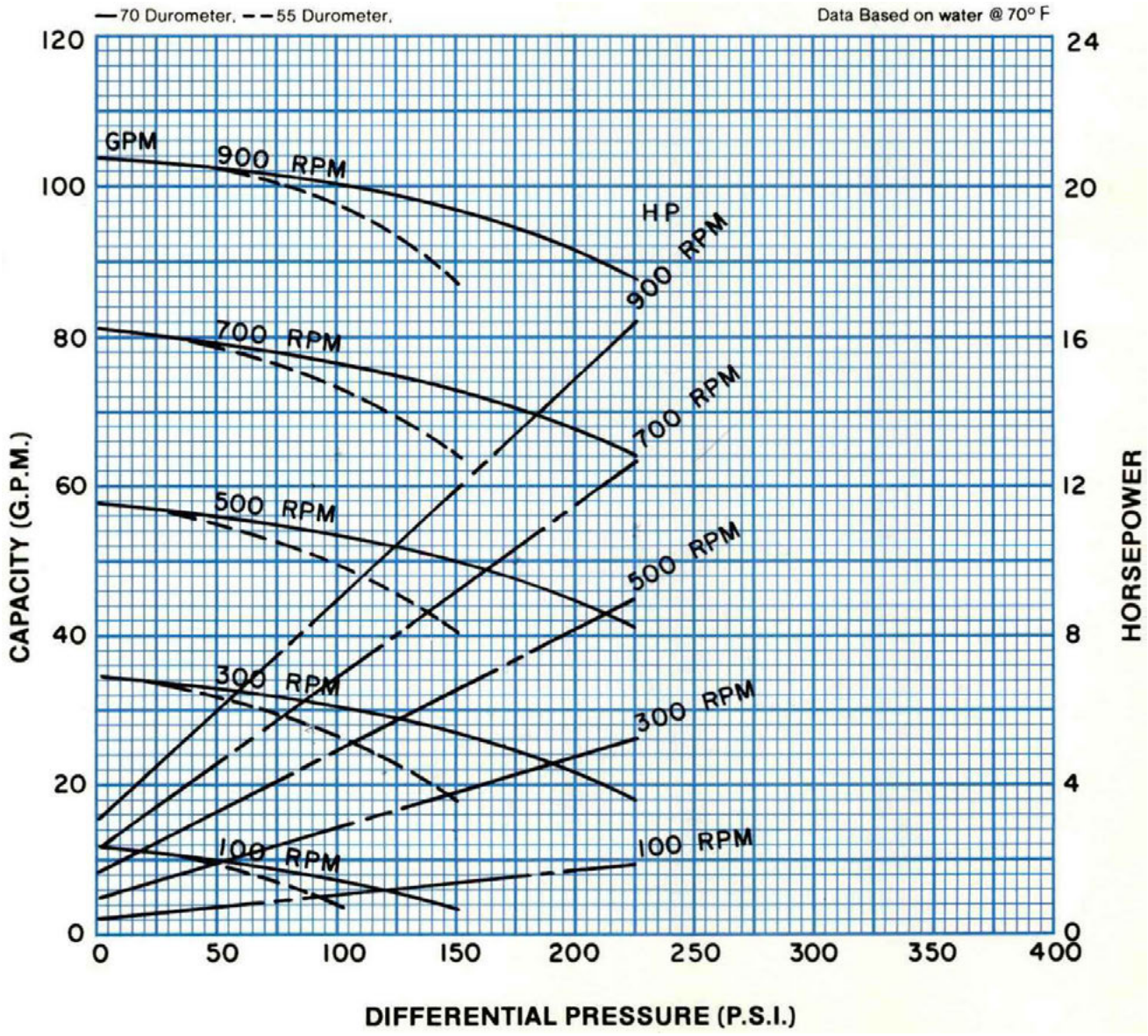
PERFORMANCE DATA
MODEL: 3CG8

RPM	100	300	500	700	900
NPSH REQ'D	.8	2.2	3.7	6.9	10.5
MIN. HP	2	5	7 1/2	10	10



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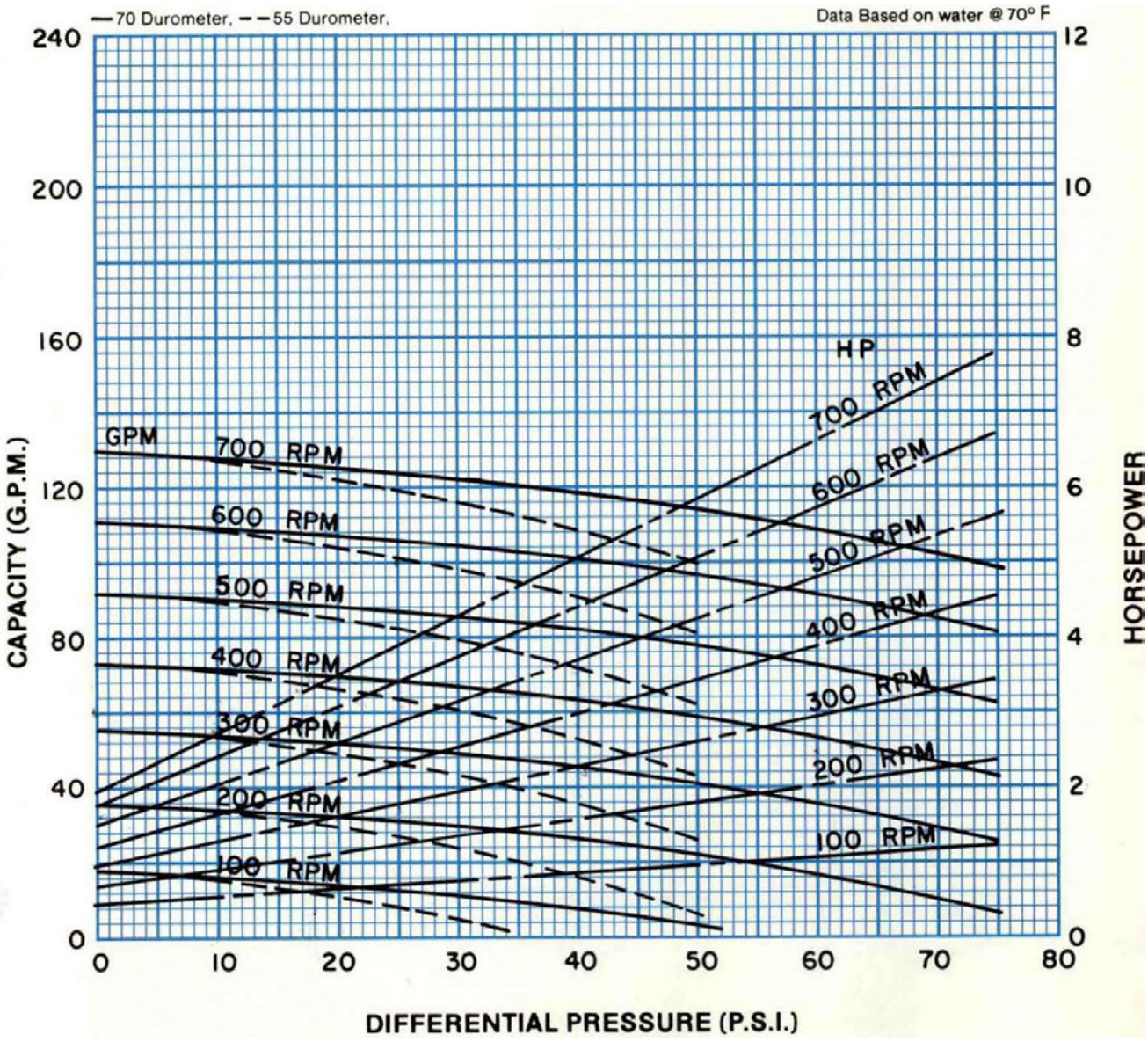
PERFORMANCE DATA
MODEL: 1CG10

RPM	100	200	300	400	500	600	700
NPSH REQ'D	.9	1.7	2.6	3.5	4.9	6.9	9.1
MIN. HP	1	1 1/2	2	3	5	5	5



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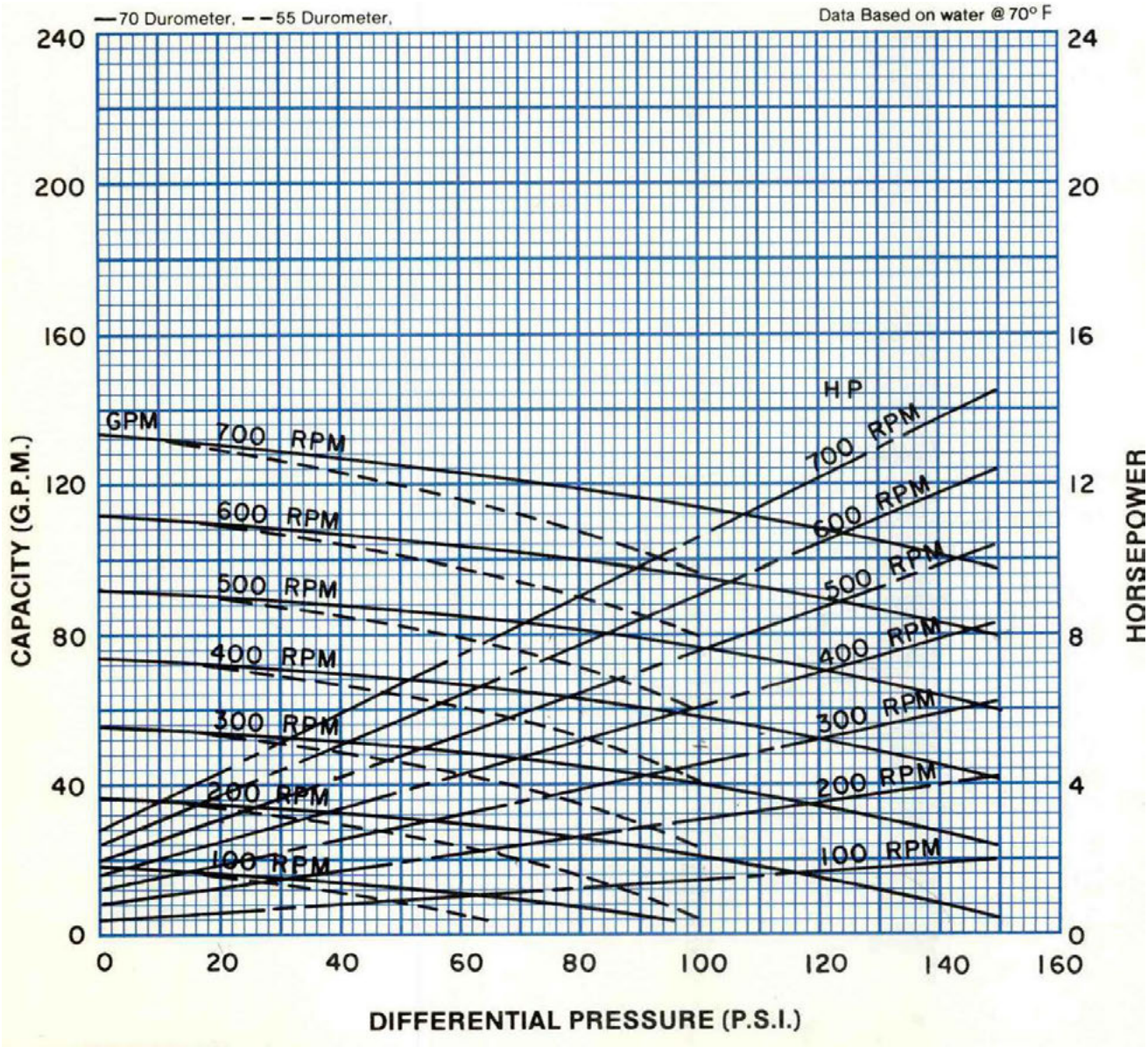
PERFORMANCE DATA
MODEL: 2CG10

RPM	100	200	300	400	500	600	700
NPSH REQ'D	.9	1.7	2.6	3.5	4.9	6.9	9.1
MIN. HP	1 1/2	2	3	5	7 1/2	7 1/2	10



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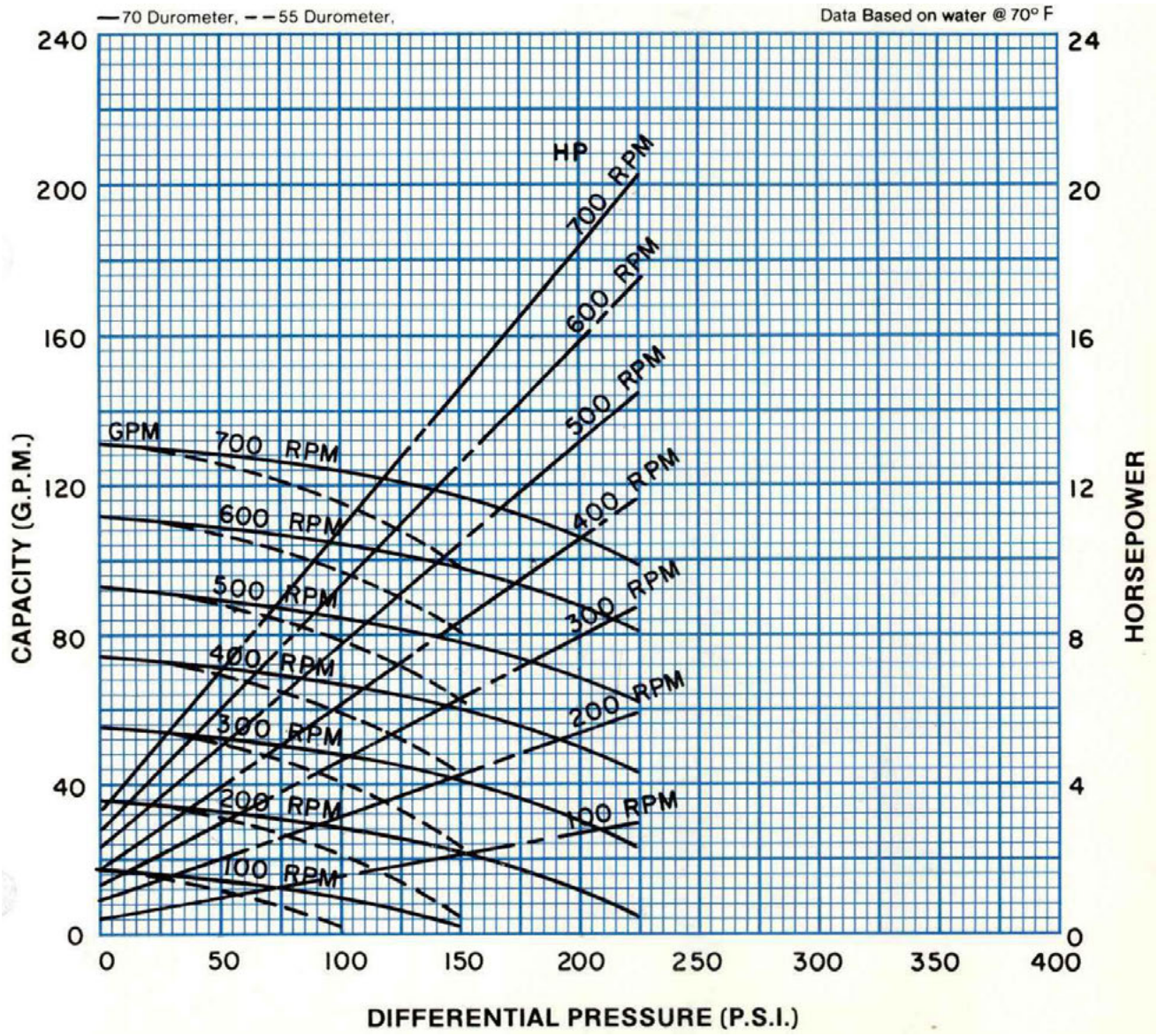
PERFORMANCE DATA
MODEL: 3CG10

RPM	100	200	300	400	500	600	700
NPSH REQ'D	.9	1.7	2.6	3.5	4.9	6.9	9.1
MIN. HP	2	3	5	7 1/2	10	10	15



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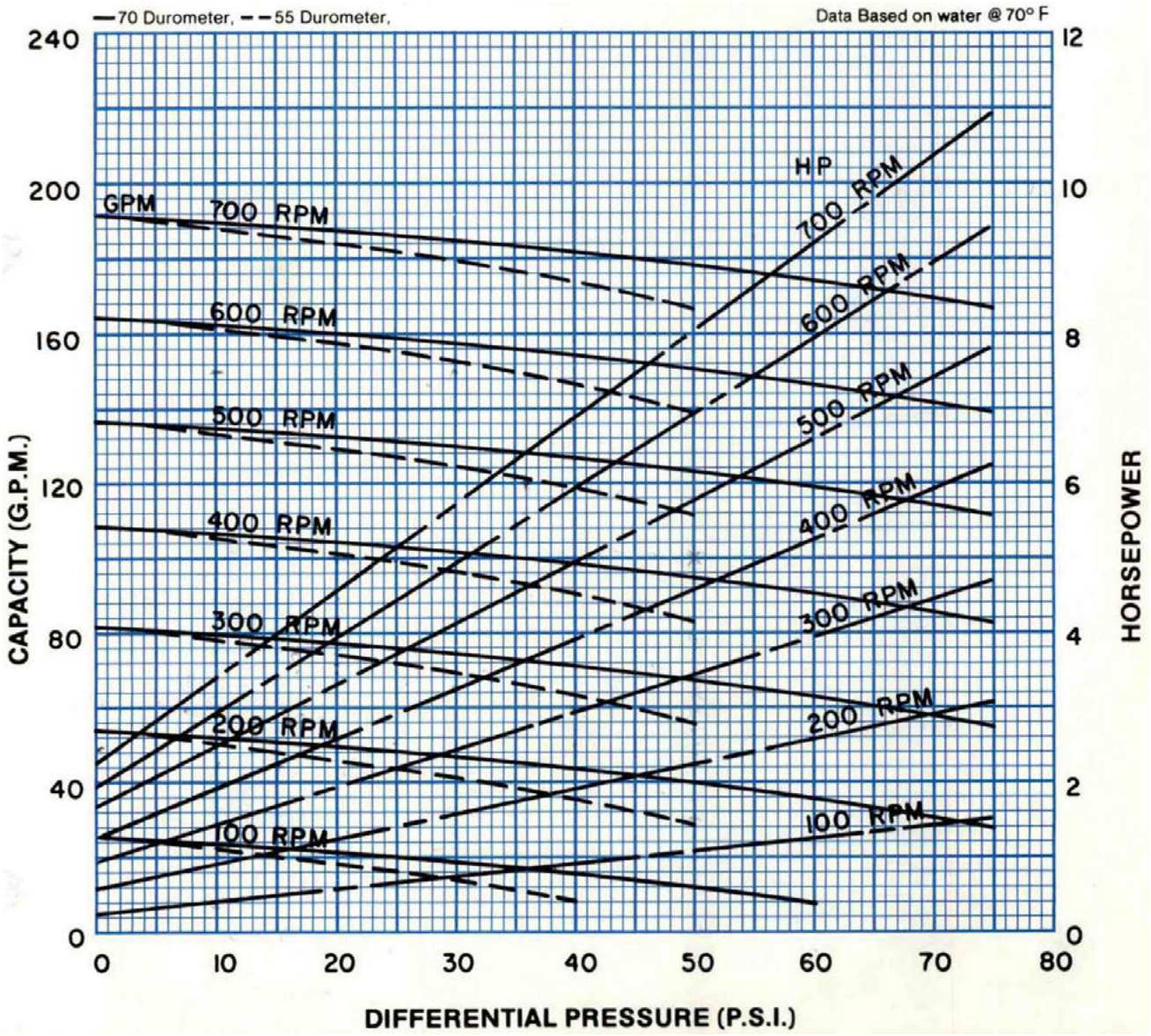
PERFORMANCE DATA
MODEL: 1CG10H

RPM	100	200	300	400	500	600	700
NPSH REQ'D	1.1	2.1	3.2	4.7	7.4	9.9	12.6
MIN. HP	1	2	3	5	5	7 1/2	7 1/2



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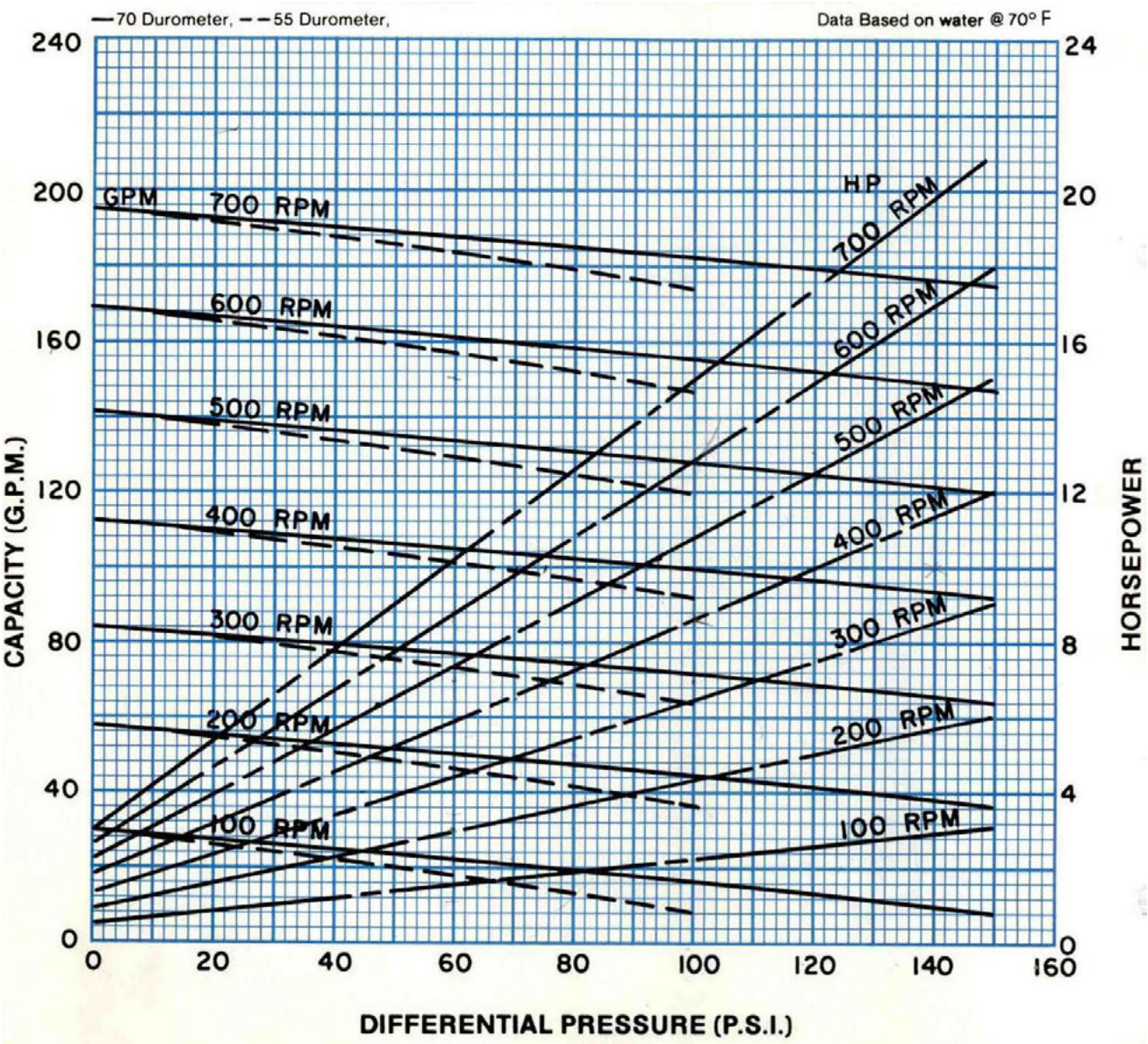
PERFORMANCE DATA
MODEL: 2CG10H

RPM	100	200	300	400	500	600	700
NPSH REQ'D	1.1	2.1	3.2	4.7	7.4	9.9	12.6
MIN. HP	2	5	5	7 1/2	10	10	15



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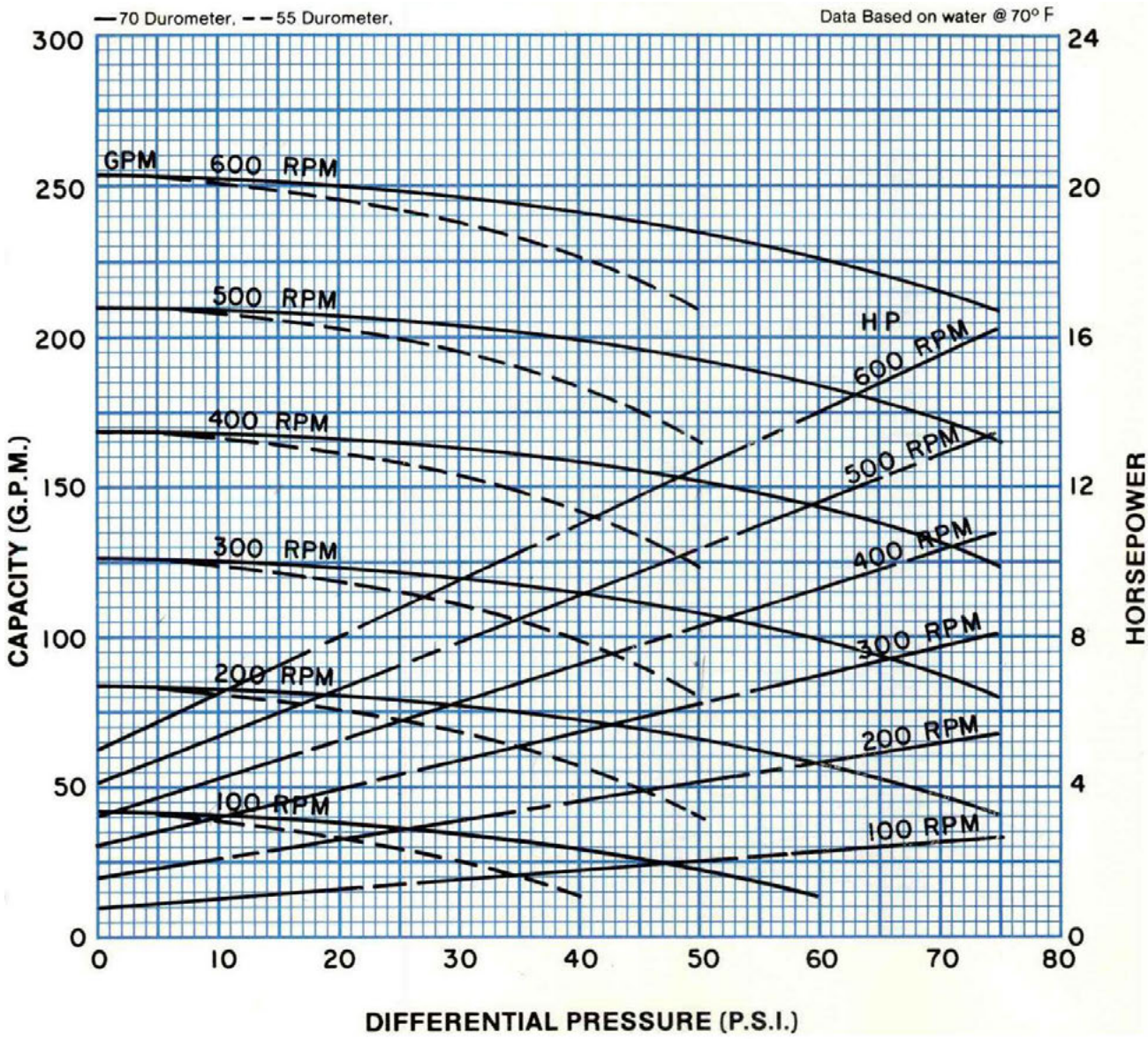
PERFORMANCE DATA
MODEL: 1CG12

RPM	100	200	300	400	500	600
NPSH REQ'D	1.2	2.3	3.4	5.6	8.4	11.2
MIN. HP	3	5	5	7 1/2	10	10



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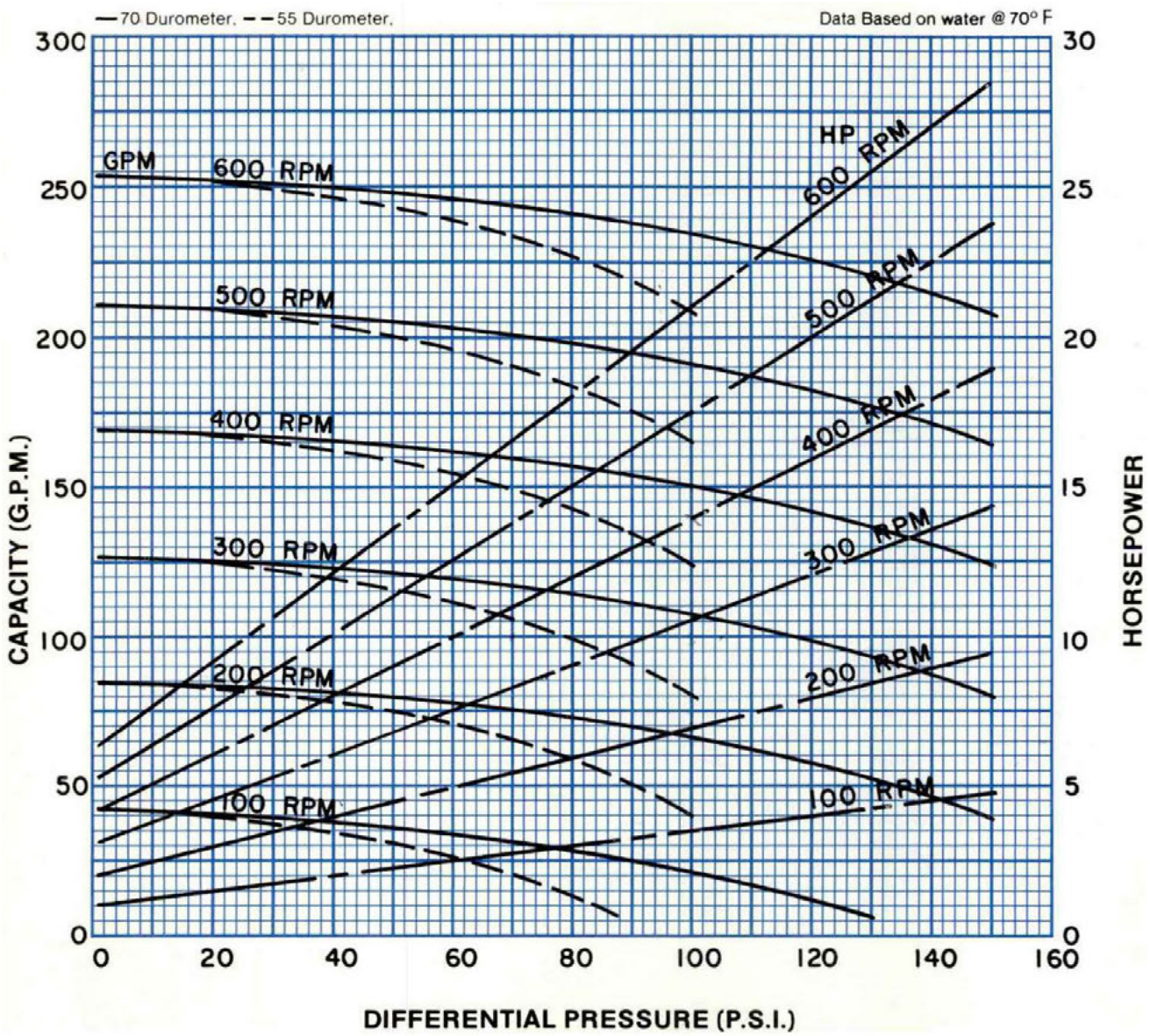
PERFORMANCE DATA
MODEL: 2CG12

RPM	100	200	300	400	500	600
NPSH REQ'D	1.2	2.3	3.4	5.6	8.4	11.2
MIN. HP	5	7 1/2	10	15	15	20



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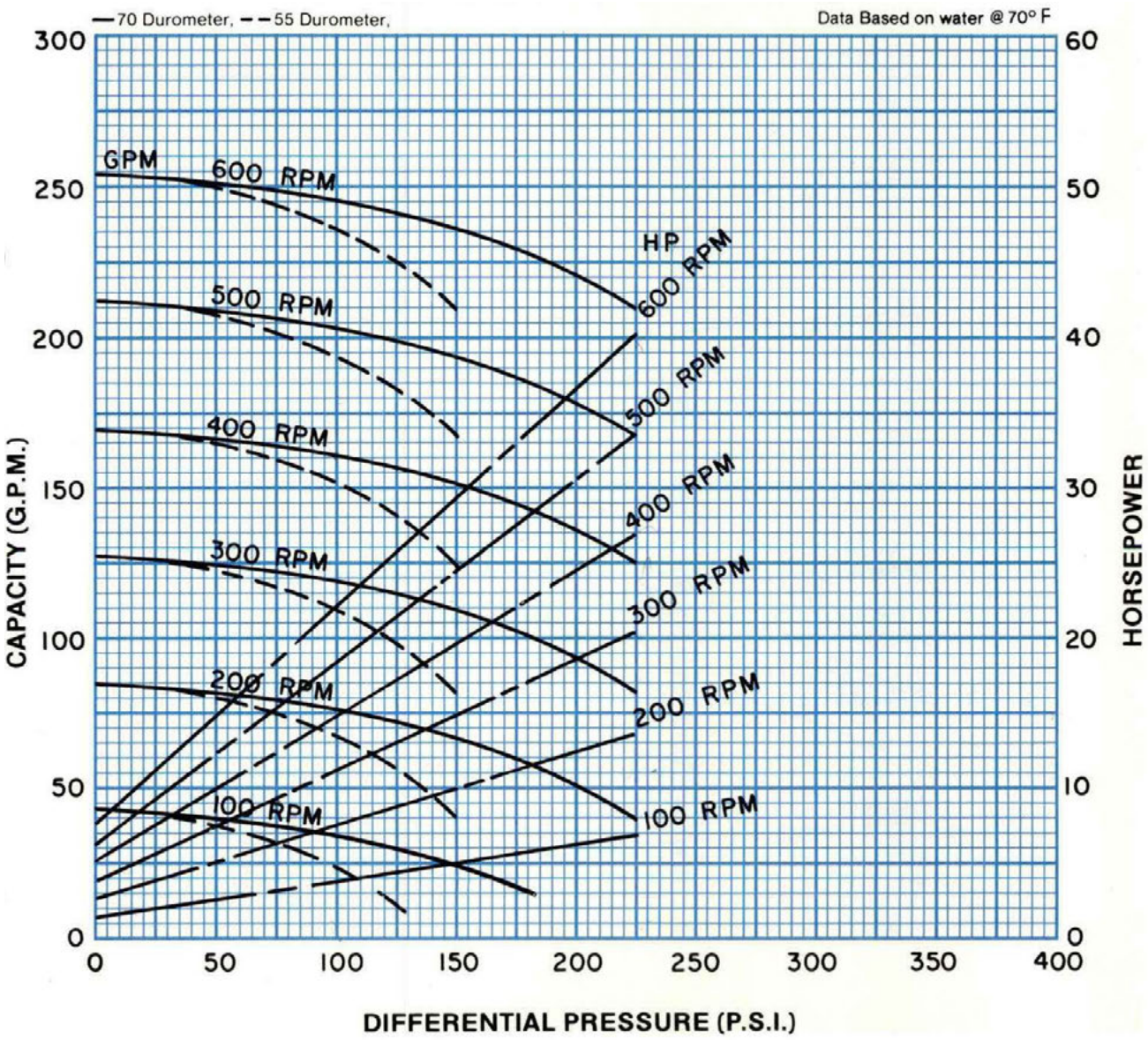
PERFORMANCE DATA
MODEL: 3CG12

RPM	100	200	300	400	500	600
NPSH REQ'D	1.2	2.3	3.4	5.6	8.4	11.2
MIN. HP	5	10	15	15	20	25



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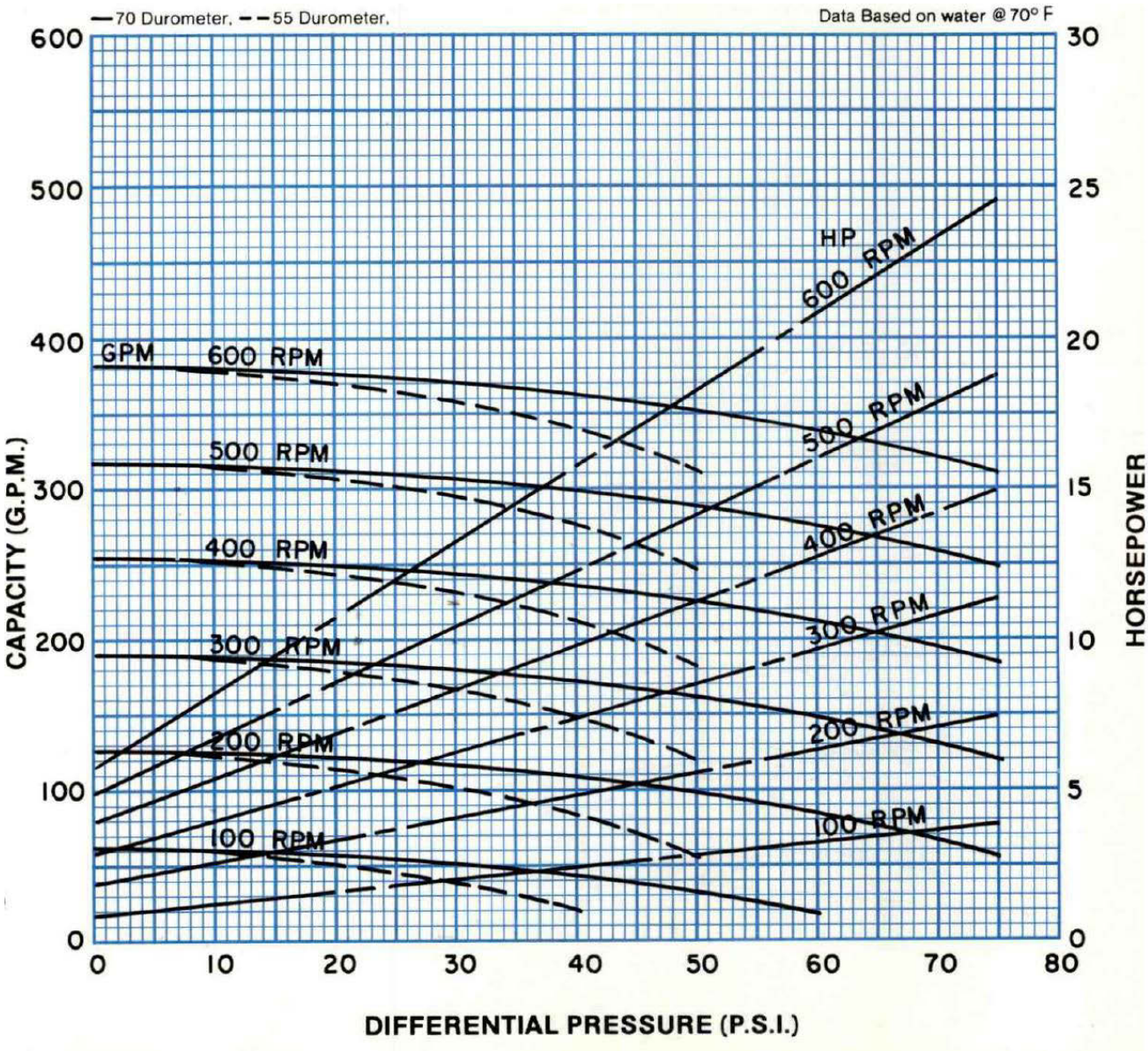
PERFORMANCE DATA
MODEL: 1CG12H

RPM	100	200	300	400	500	600
NPSH REQ'D	1.4	2.8	4.6	8.1	11.5	15.0
MIN. HP	3	5	7 1/2	10	15	15



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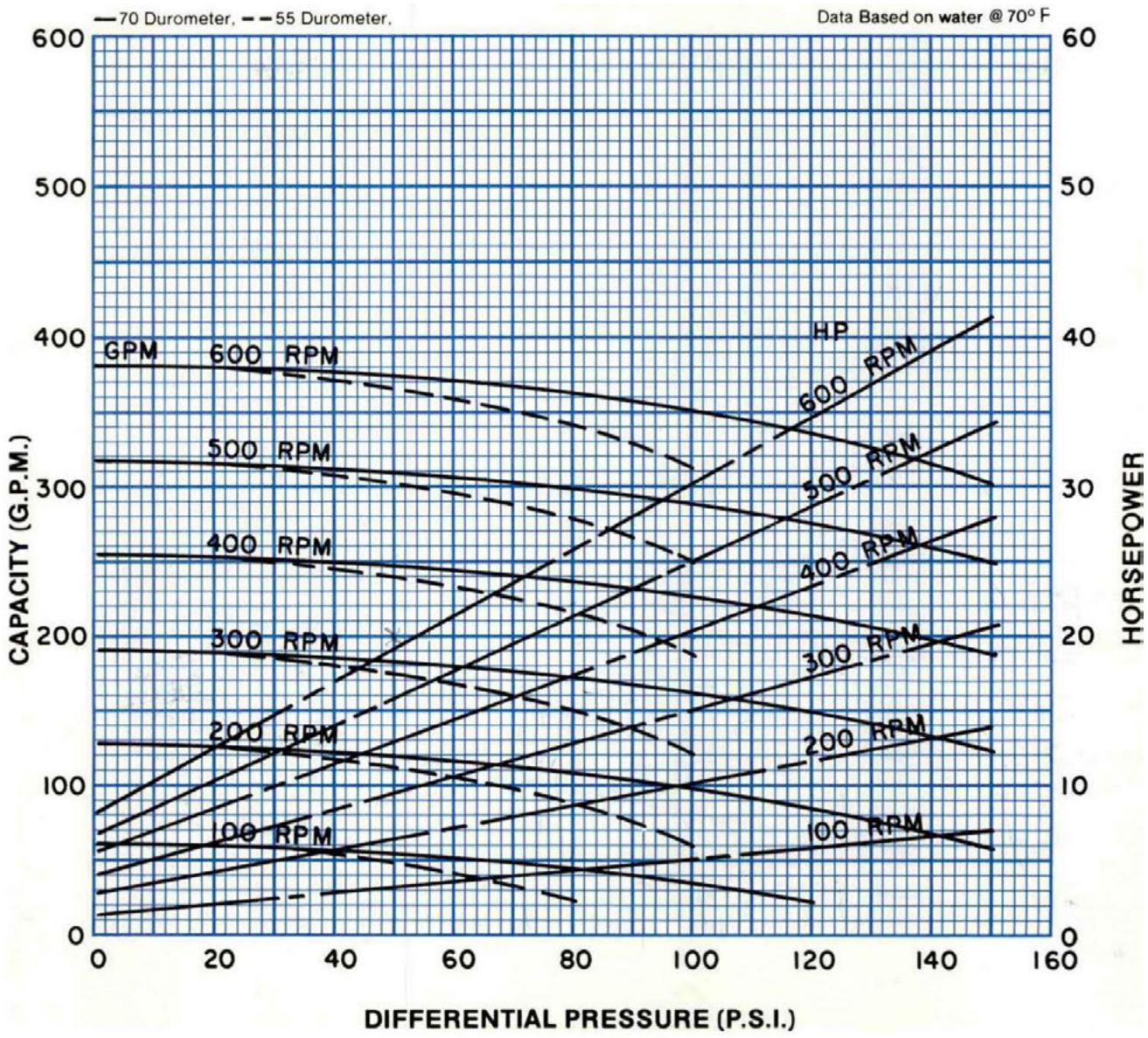
PERFORMANCE DATA
MODEL: 2CG12H

RPM	100	200	300	400	500	600
NPSH REQ'D	1.4	2.8	4.6	8.1	11.5	15.0
MIN. HP	5	10	15	20	20	25



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CG Dimensions

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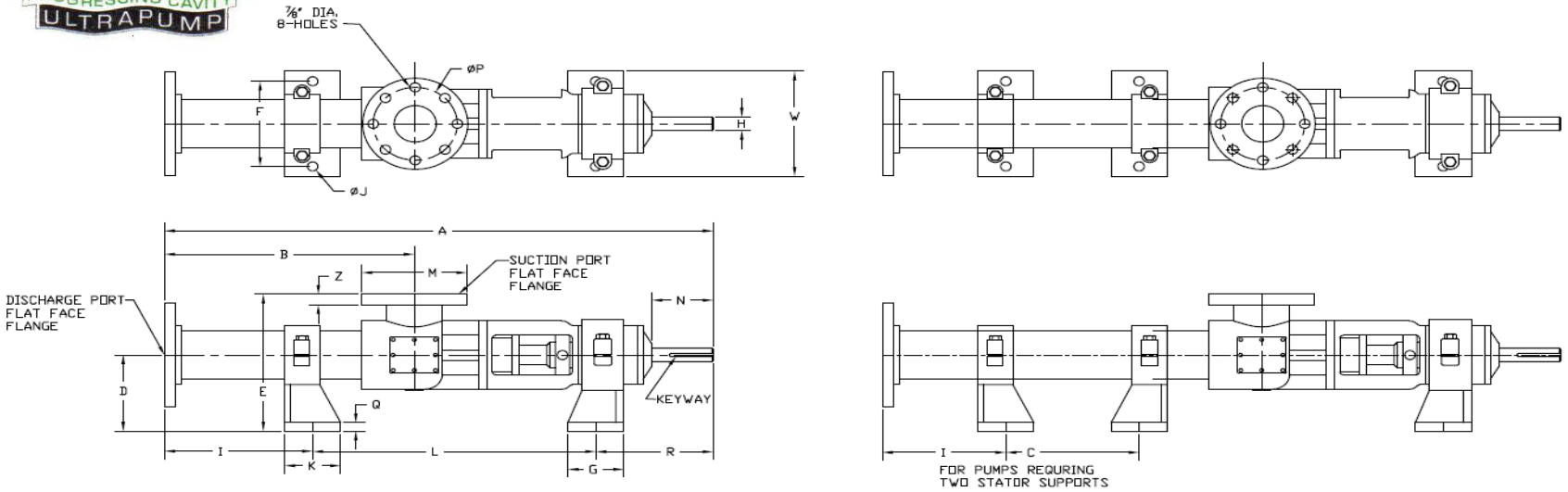
Dimensions & Weights
Model CG- Heavy Duty Pumps



PUMP SIZE	DIMENSIONS (INCHES)																			KEYWAY	WEIGHT (LBS.)	PORT SIZE	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	W	Z			SUCTION	DISCHARGE
1CG8	52- 3/4	19- 1/2	-	9- 3/4	16- 11/16	9	5	1- 7/8	6- 1/8	7/8	5	31	11	5	7/8	9- 1/2	1- 1/8	15- 5/8	11- 1/2	1	1/2 X 2- 3/4	450	6"	5"
2CG8	65- 3/16	31- 15/16	-	9- 3/4	16- 11/16	9	5	1- 7/8	15- 9/16	7/8	5	34	11	5	7/8	9- 1/2	1- 1/8	15- 5/8	11- 1/2	1	1/2 X 2- 3/4	545	6"	5"
3CG8	77- 5/8	44- 3/8	27	9- 3/4	16- 11/16	9	5	1- 7/8	6	7/8	5	29	11	5	7/8	9- 1/2	1- 1/8	15- 5/8	11- 1/2	1	1/2 X 2- 3/4	596	6"	5"
1CG10	50- 11/16	17- 7/16	-	9- 3/4	16- 11/16	9	5	1- 7/8	5- 1/16	7/8	5	30	11	5	7/8	9- 1/2	1- 1/8	15- 5/8	11- 1/2	1	1/2 X 2- 3/4	492	6"	6"
2CG10	61- 1/8	27- 7/8	-	9- 3/4	16- 11/16	9	5	1- 7/8	10- 1/2	7/8	5	35	11	5	7/8	9- 1/2	1- 1/8	15- 5/8	11- 1/2	1	1/2 X 2- 3/4	580	6"	6"
3CG10	71- 7/16	38- 3/16	18	9- 3/4	16- 11/16	9	5	1- 7/8	7- 13/16	7/8	5	30	11	5	7/8	9- 1/2	1- 1/8	15- 5/8	11- 1/2	1	1/2 X 2- 3/4	615	6"	6"
1CG10H	56	22- 3/4	-	9- 3/4	16- 11/16	9	5	1- 7/8	10- 3/8	7/8	5	30	11	5	7/8	9- 1/2	1- 1/8	15- 5/8	11- 1/2	1	1/2 X 2- 3/4	494	6"	6"
2CG10H	71- 7/16	38- 3/16	18	9- 3/4	16- 11/16	9	5	1- 7/8	7- 13/16	7/8	5	30	11	5	7/8	9- 1/2	1- 1/8	15- 5/8	11- 1/2	1	1/2 X 2- 3/4	615	6"	6"
1CG12	63- 3/4	24- 3/4	-	12- 1/2	21	12- 5/8	6	2- 1/4	8- 1/4	1	6	37- 1/2	13-1/2	5- 3/8	7/8	11- 3/4	1- 1/8	18	14- 1/2	1- 1/8	1/2 x 4	960	8"	8"
2CG12	79- 7/16	40- 7/16	18	12- 1/2	21	12- 5/8	6	2- 1/4	5- 15/16	1	6	37- 1/2	13- 1/2	5- 3/8	7/8	11- 3/4	1- 1/8	18	14- 1/2	1- 1/8	1/2 x 4	1155	8"	8"
3CG12	95- 1/16	56	27	12- 1/2	21	12- 5/8	6	2- 1/4	8- 1/16	1	6	42	13- 1/2	5- 3/8	7/8	11- 3/4	1- 1/8	18	14- 1/2	1- 1/8	1/2 x 4	1285	8"	8"
1CG12H	71- 9/16	32- 9/16	-	12- 1/2	21	12- 5/8	6	2- 1/4	11- 9/16	1	6	42	13- 1/2	5- 3/8	7/8	11- 3/4	1- 1/8	18	14- 1/2	1- 1/8	1/2 x 4	1025	8"	8"
2CG12H	95	56	27	12- 1/2	21	12- 5/8	6	2- 1/4	8	1	6	42	13- 1/2	5- 3/8	7/8	11- 3/4	1- 1/8	18	14- 1/2	1- 1/8	1/2 X 4	1285	8"	8"

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REV. 4/20/12

CG Parts

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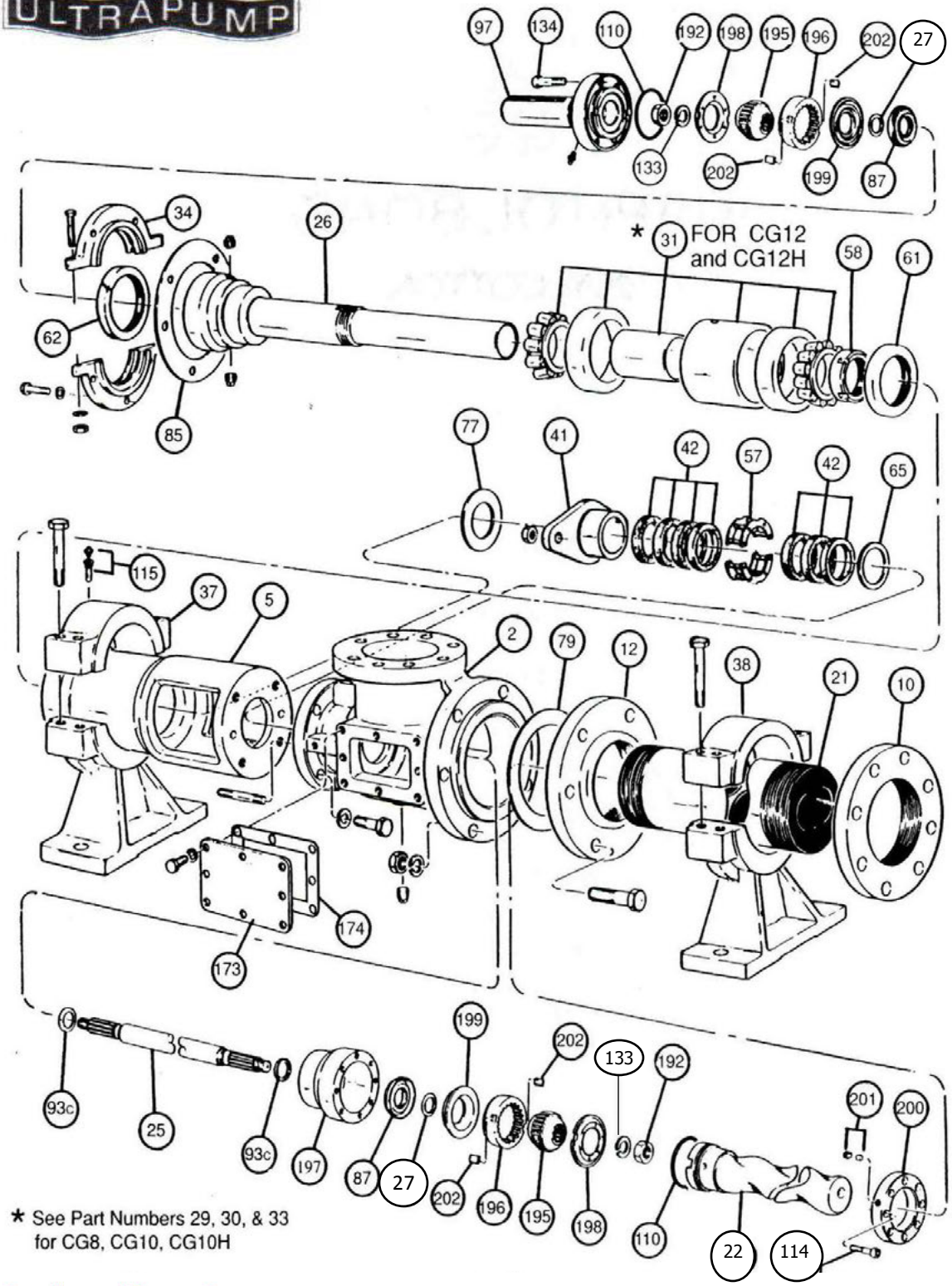
Part Numbers for Model CG8, 10, 10H, 12 & 12H

Heavy Duty Pumps

Used in Handling Sewage- Polluted Liquids- Industrial Waste
CGP-1



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Parts Lists

CONTINENTAL PROGRESSING CAVITY ULTRAPUMP

CG8,CG10 & CG10H PARTS LIST

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CG8/10-2C
5	BEARING HOUSING	CL10-5C
10	FLANGED REDUCER	CG8-10C CG10-10C
12	ADAPTER FLANGE	CG8-12C CG10-12C
21	STATOR	SEE CGSR-1
22	ROTOR	SEE CGSR-1
25	CONNECTING ROD	CG8/10-25C
26	DRIVE SHAFT	CG8/10-26C
27	SPACER	CG8/10-27
29	RADIAL BEARING	CG8/10-29
30	THRUST BEARING	CL10-30
33	BEARING SPACER	CL10-33C
34	BEARING COVER PLATE	CG8/10-34C
37	BODY SUPPORT	CL10-37C
38	STATOR SUPPORT	CL10-38C
41	PACKING GLAND	CL10-41C
42	PACKING	CL10-42
57	LANTERN RING	CL10-57S CL10-57T
58	BEARING LOCK NUT	CL10-58

ITEM NO.	PART NAME	PART NO.
59	BEARING LOCK WASHER	CL10-59
61	RADIAL GREASED SEAL	CL10-61
62	THRUST GREASED SEAL	CL10-62
63	GREASE SEAL RETAINER	CL10-63
65	PACKING GLAND INSERT	CL10-65S
77	SLINGER	CG8/10-77
79	ADAPTER GASKET	CG8/10-79
85	COVER PLATE GASKET	CG8/10-85
87	CONNECTING ROD COVER (2 REQ.)	CG8/10-87Q
93C	CONNECTING ROD CLAMP RING (2 REQ.)** INCLUDED WITH PART NO. 25	CG8/10-93
97	DRIVE SHAFT HEAD	CG8/10-97
110	"O" RING (2 NEQ.)	CG8/10-110
114	ROTOR HEAD SCREW (8 REQ.)	CG10-114
133	SHAFT WASHER (2 REQ.)	CG8/10-133
134	SHAFT SCREW (4 REQ.)	CG8/10-134
173	INSPECTION PLATE (2 REQ.)	CG8/10-173C
174	INSPECTION PLATE GASKET (2 REQ.)	CG8/10-174
192	CONNECTING ROD NUT (2 REQ.)	CG8/10-192
195	BALL GEAR (2 REQ.)	CG8/10-195

PLEASE NOTE ON 3D DRAWING THE PART NUMBER "31" IS FOR CG12 & CG12H. PARTS 29,30 & 33 ARE FOR THE CG8, CG10 AND CG10H MODEL.

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ITEM NO.	PART NAME	PART NO.
196	RING GEAR (2 REQ.)	CG8/10-196
197	GEAR JOINT SHELL	CG8/10-197
198	FRONT THRUST PLATE (2 REQ.)	CG8/10-198
199	REAR THRUST PLATE (2 REQ.)	CG8/10-199
200	HEAD RING	CG8/10-200
201	BRASS PLUG & RETAINER SCREW	CG8/10-201
202	SHAFT KEYS (4 REQ.)	CG8/10-202

Letter Key	Material	Part
C	Cast Iron	**Pump Body**
S	316 Stainless Steel	
D	Chrome Plated Alloy Steel	**Rotor**
S	Chrome Plated 304 Stainless Steel	
Q	Chrome Plated 304 Stainless Steel	**Stator**
R	Buna Nitrile	
B	EPDM	
F	Viton	
C	Carbon Steel	**Internal Parts**
AF	Anti-Friction Bearings	
HS	Hardened Steel	

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CONTINENTAL PROGRESSING CAVITY ULTRAPUMP

CG12 & CG12H PARTS LIST

ITEM NO.	PART NAME	PART NO.
2	SUCTION BODY	CG12-2C
5	BEARING HOUSING	CL12-5C
10	FLANGED REDUCER	CG12-10C
12	ADAPTER FLANGE	CG12-12C
21	STATOR	SEE CGSR-1
22	ROTOR	SEE CGSR-1
25	CONNECTING ROD	CG12-25C
26	DRIVE SHAFT	CG12-26C
27	SPACER	CG12-27
31	ROLLER BEARING ASSEMBLY	CL12-31
34	BEARING COVER PLATE	CG12-34C
37	BODY SUPPORT	CL12-37C
38	STATOR SUPPORT	CL12-38C
41	PACKING GLAND	CL12-41C
42	PACKING	CL12-42
57	LANTERN RING	CL12-57S CL12-57T
58	BEARING LOCK NUT	CL12-58
59	BEARING LOCK WASHER	CL12-59
61	RADIAL GREASED SEAL	CL12-61
62	THRUST GREASED SEAL	CL12-62

ITEM NO.	PART NAME	PART NO.
63	GREASE SEAL RETAINER	CL12-63
65	PACKING WASHER	CL12-65S
77	SLINGER	CG12-77
79	ADAPTER GASKET	CG12-79
85	COVER PLATE GASKET	CG12-85
87	CONNECTING ROD COVER (2 REQ.)	CG12-87Q
93C	CONNECTING ROD CLAMP RING (2 REQ.)** INCLUDED IN PART NO. 25	CG12-93
97	DRIVE SHAFT HEAD	CG12-97
110	"O" RING (2 NEQ.)	CG12-110
114	ROTOR HEAD SCREW (8 REQ.)	CG12-114
133	SHAFT WASHER (2 REQ.)	CG12-133
134	SHAFT SCREW (4 REQ.)	CG12-134
167	SPUD	CG12-167
173	INSPECTION PLATE (2 REQ.)	CG12-173C
174	INSPECTION PLATE GASKET (2 REQ.)	CG12-174
192	CONNECTING ROD NUT (2 REQ.)	CG12-192
195	BALL GEAR (2 REQ.)	CG12-195
196	RING GEAR (2 REQ.)	CG12-196
197	GEAR JOINT SHELL	CG12-197
198	FRONT THRUST PLATE (2 REQ.)	CG12-198

PLEASE NOTE ON 3D DRAWING THE PART NUMBER "31" IS FOR CG12 & CG12H. PARTS 29,30 & 33 ARE FOR THE CG8, CG10 AND CG10H MODEL.

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ITEM NO.	PART NAME	PART NO.
199	REAR THRUST PLATE (2 REQ.)	CG12-199
200	HEAD RING	CG12-200
201	BRASS PLUG & RETAINER SCREW	CG12-201
202	SHAFT KEYS (4 REQ.)	CG12-202

Letter Key	Material	Part
C	Cast Iron	Pump Body
S	316 Stainless Steel	
D	Chrome Plated Alloy Steel	Rotor
S	Chrome Plated 304 Stainless Steel	
Q	Chrome Plated 304 Stainless Steel	Stator
R	Buna Nitrile	
B	EPDM	
F	Viton	
C	Carbon Steel	Internal Parts
AF	Anti-Friction Bearings	

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CONTINENTAL PROGRESSING CAVITY ULTRAPUMP

STATOR AND ROTOR PARTS LIST CGSR-1

ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL	ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL
21	1CG8 STATOR	1CG8-21QC 1CG8-21BC 1CG8-21RC 1CG8-21FC	1CG8-21QS 1CG8-21BS 1CG8-21RS 1CG8-21FS	22	1CG8 ROTOR	1CG8-22D	1CG8-22S
21	2CG8 STATOR	2CG8-21QC 2CG8-21BC 2CG8-21RC 2CG8-21FC	2CG8-21QS 2CG8-21BS 2CG8-21RS 2CG8-21FS	22	2CG8 ROTOR	2CG8-22D	2CG8-22S
21	3CG8 STATOR	3CG8-21QC 3CG8-21BC 3CG8-21RC 3CG8-21FC	3CG8-21QS 3CG8-21BS 3CG8-21RS 3CG8-21FS	22	3CG8 ROTOR	3CG8-22D	3CG8-22S
21	1CG10 STATOR	1CG10-21QC 1CG10-21BC 1CG10-21RC 1CG10-21FC	1CG10-21QS 1CG10-21BS 1CG10-21RS 1CG10-21FS	22	1CG10 ROTOR	1CG10-22D	1CG10-22S
21	2CG10 STATOR	2CG10-21QC 2CG10-21BC 2CG10-21RC 2CG10-21FC	2CG10-21QS 2CG10-21BS 2CG10-21RS 2CG10-21FS	22	2CG10 ROTOR	2CG10-22D	2CG10-22S
21	3CG10 STATOR	3CG10-21QC 3CG10-21BC 3CG10-21RC 3CG10-21FC	3CG10-21QS 3CG10-21BS 3CG10-21RS 3CG10-21FS	22	3CG10 ROTOR	3CG10-22D	3CG10-22S
21	1CG10H STATOR	1CG10H-21QC 1CG10H-21BC 1CG10H-21RC 1CG10H-21FC	1CG10H-21QS 1CG10H-21BS 1CG10H-21RS 1CG10H-21FS	22	1CG10H ROTOR	1CG10H-22D	1CG10H-22S
21	2CG10H STATOR	2CH10H-21QC 2CH10H-21BC 2CH10H-21RC 2CH10H-21FC	2CH10H-21QS 2CH10H-21BS 2CH10H-21RS 2CH10H-21FS	22	2CG10H ROTOR	2CG10H-22D	2CG10H-22S
21	1CG12 STATOR	1CG12-21QC 1CG12-21BC 1CG12-21RC 1CG12-21FC	1CG12-21QS 1CG12-21BS 1CG12-21RS 1CG12-21FS	22	1CG12 ROTOR	1CG12-22D	1CG12-22S
21	2CG12 STATOR	2CG12-21QC 2CG12-21BC 2CG12-21RC 2CG12-21FC	2CG12-21QS 2CG12-21BS 2CG12-21RS 2CG12-21FS	22	2CG12 ROTOR	2CG12-22D	2CG12-22S
21	3CG12 STATOR	3CG12-21QC 3CG12-21BC 3CG12-21RC 3CG12-21FC	3CG12-21QS 3CG12-21BS 3CG12-21RS 3CG12-21FS	22	3CG12 ROTOR	3CG12-22D	3CG12-22S

ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL	ITEM NO.	PART NAME	PART NO. CARBON STEEL	PART NO. STAINLESS STEEL
21	1CG12H STATOR	1CG12H-21QC 1CG12H-21BC 1CG12H-21RC 1CG12H-21FC	1CG12H-21QS 1CG12H-21BS 1CG12H-21RS 1CG12H-21FS	22	1CG12H ROTOR	1CG12H-22D	1CG12H-22S
21	2CG12H STATOR	2CG12H-21QC 2CG12H-21BC 2CG12H-21RC 2CG12H-21FC	2CG12H-21QS 2CG12H-21BS 2CG12H-21RS 2CG12H-21FS	22	2CG12H ROTOR	2CG12H-22D	2CG12H-22S

STATORS		
Designation	**Elastomer**	All elastomers can be furnished in either: C - Carbon Steel Sleeve or S- Stainless Steel Sleeve **Example: QC** = Buna N/Nitrile elastomer with a Carbon Steel Sleeve.
Q	Buna N/Nitrile	
B	EPDM	
R	Natural Rubber	
F	Viton	

ROTORS	
Designation	**Material**
D	Alloy Steel
S	Stainless Steel

GEAR JOINT KIT- PART NO. CG8/10-195K FOR MODELS CG8, CG10 & CG10H			GEAR JOINT KIT- PART NO. CG8/10-195K FOR MODELS CG8, CG10 & CG10H		
QTY	PART DESCRIPTION	PART NO.	QTY	PART DESCRIPTION	PART NO.
1	CONNECTING ROD COVER	CG8/10-87	1	CONNECTING ROD COVER	CG12-87
1	SHAFT WASHER	CG8/10-133	1	SHAFT WASHER	CG12-133
1	BALL GEAR	CG8/10-195	1	BALL GEAR	CG12-195
1	RING GEAR	CG8/10-196	1	RING GEAR	CG12-196
1	THRUST PLATE-FRONT	CG8/10-198	1	THRUST PLATE-FRONT	CG12-198
1	THRUST PLATE-REAR	CG8/10-199	1	THRUST PLATE-REAR	CG12-199
2	SHAFT KEY	CG8/10-202	2	SHAFT KEY	CG12-202

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Motors and Controls

To supply our customers with complete Pump Units Continental Pump Company has partnered with the following companies to provide the needed motors and controls necessary for your pumping application needs.

Our knowledgeable application specialists are available to answer any questions pertaining to your specific needs to help you accomplish your pumping needs.

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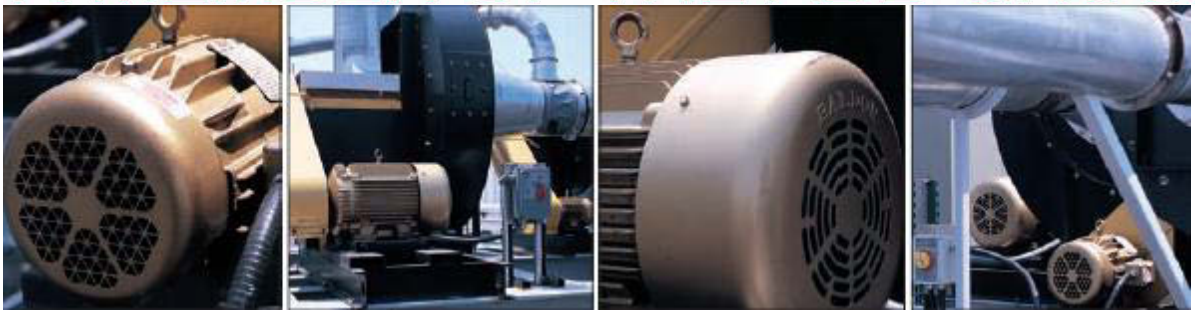
BALDOR®

A MEMBER OF THE ABB GROUP



Super-E® Premium Efficient Motors

Severe Duty Motors

BALDOR®

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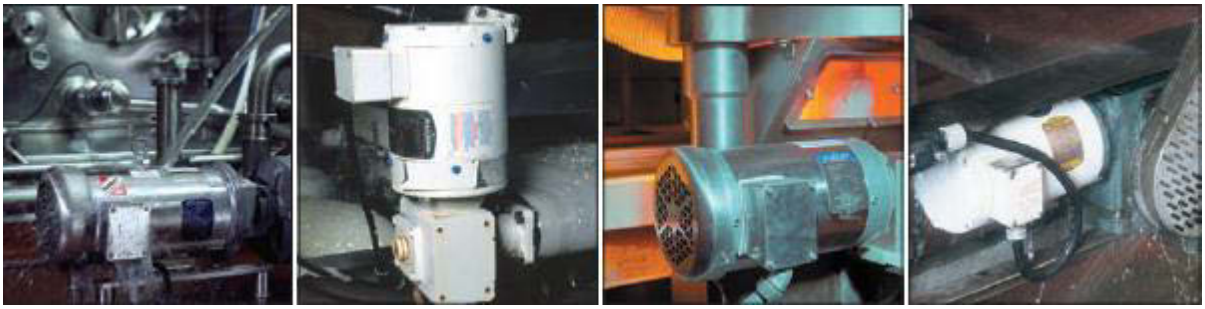
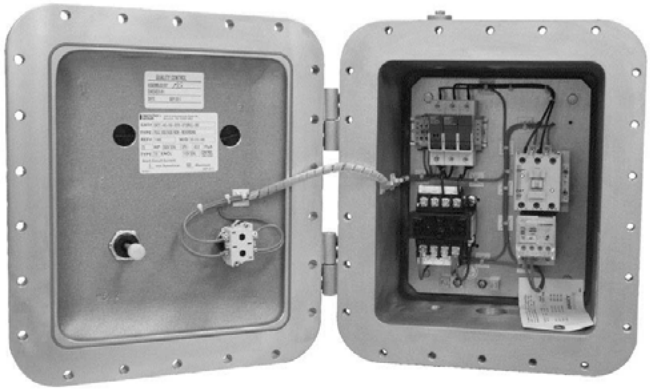
Baldor Explosion Proof AC and DC Motors



Washdown Duty Products

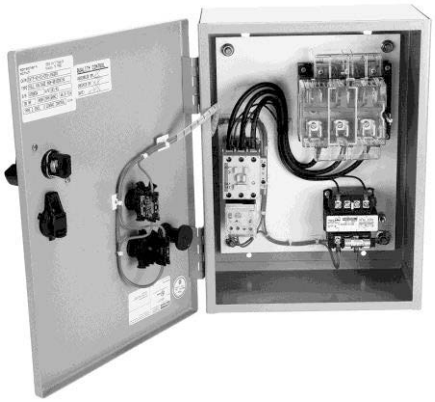


Explosion Proof

Explosion Proof: Starters and Combination Starters with an option of a Fusible or Circuit Breaker disconnect switches.

Duplex Pump Controllers: Used for alternating between two pumps for longer pump life or peak demand to add additional pump on the line for higher flow rate.

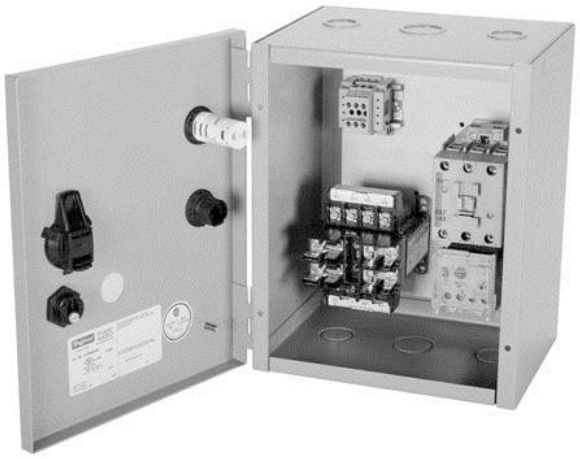
Duplex Pump Controllers



Combination Starters

Combination Starters: Available in Fused, Non-Fused or Circuit Breaker disconnects. Enclosure types of Indoor (Nema 1), Industrial Dust Tight (Nema 12) or Water Tight (Nema 4X).

Nema & IEC Rated Starters: Both UL and CSA rated FVNR (Full Voltage Non-Reversing) and Manual Starters in 1^{ϕ} and 3^{ϕ} in Nema 1, Nema 12 and Nema 4X enclosures.



Premium Efficient Motors



Hostile Duty Motors

- Totally Enclosed Fan Cooled
- Three Phase, 60 Hertz
- 1.00 and 1.15 Service Factor
- 1 through 350 HP
- 2, 4, 6, and 8 Poles
- 143 through 286 Frame
- Cast Iron Frame and Brackets
- Ball and Roller Bearing Options

CORRO-DUTY® Motors

- Totally Enclosed Fan Cooled
- Three Phase, 60 Hertz
- 1 through 200 HP
- 2, 4, and 6 Poles
- 143 through 447 Frame
- All Cast Iron Construction

841 Plus® Motors

- Totally Enclosed Fan Cooled
- Three Phase, 60 Hertz
- 1.0 or 1.15 Service Factor
- 1 through 400 HP
- 2, 4, 6, and 8 Poles
- 143 through 447 Frame
- VBBX®† Bearing Isolators by Inpro/Seal
- Meets IEEE®† 841 GM7E-TA Specifications
- Five Year Warranty*
- Footed and C-Face Footless

Open Dripproof Motors

- Three Phase, 60 Hertz
- 1.0 and 1.15 Service Factor
- 1/4 through 400 HP
- 2, 4, 6, and 8 Poles
- 48 through 449 Frame
- Close Coupled Ratings Available

UNIMOUNT® Motors

- Totally Enclosed Fan Cooled
- Three Phase, 60 Hertz
- 1.25 Service Factor
- 1/4 through 30 HP
- 2, 4, 6, and 8 Poles
- 50 through 286 Frame
- C-Face, Footed and Footless
- Removable Base 180 Frame and Above
- F2 Field Assembly
- Close Coupled Ratings Available

Hazardous Location Motors

- Totally Enclosed Fan Cooled
- Three Phase
- 1 to 200 HP
- 2, 4, and 6 Poles
- 143 to 447 Frame
- Single and Dual Label

Nidec
NIDEC MOTOR CORPORATION
8050 W. Florissant Avenue | St. Louis, MO 63136
Phone: 888-637-7333 | Fax: 314-553-2087

Premium Efficient Motors



ACCU-Torq® Motor

Used with inverters and vector drives. Used in applications requiring precise speed or position control such as machine tools, material handling, packaging machinery and other applications requiring serve-like performance.

- 1/4–20 HP
- Variable speeds: maximum operating speed: 3600 RPM
- Three Phase
- Design voltages: 230–575 volt
- 1.25 SF
- Constant torque operation from zero to base speed
- Constant power (HP) operation to 2x base speed
- Optimized for IGBT and Intelligent-power module drives
- NEMA® design A
- Normally closed thermostats
- Configuration: C-Face Footed, C-Face Footless

Product Overview and Options

UNIMOUNT® motors offer the widest range of electrical and mechanical features of any motor on the market today. UNIMOUNT can be used on pumps, fans, compressors, general industrial belt drive, direct drive and direct-connected equipment where 12-lead, wye-start/delta-run is required. UNIMOUNT is also available as an inverter duty motor, meeting both Parts 30 and 31 of NEMA MG-1 standards.

Product Features:

- EISA Compliant Motors
- 1.15 Service Factor
- Oversized diagonally split conduit box
- Rugged motor base
- Rolled steel frame
- 40°C ambient
- Usable up to 3,300 feet above sea level
- CE certified
- Dual voltage ratings suitable for Part Winding Start (PWS) on low voltage
- Lifting provisions 180 frame and up
- Agency recognitions: UL® and CSA® certified
- ALLGUARD® Motor Quality System
- Footed, C-Face Footed, C-Face Footless

Additional Footed Features:

- Shaft slinger on pulley end
- Regreasable shaft-end bearings

UNIMOUNT® Motors
Footed

UNIMOUNT® Motors
C-Face Footed

Additional Footless Features:

- Aluminum end shields with steel bearing inserts
- Oversized diagonally split conduit box
- Regreasable shaft-end bearings (180-210 frame)

UNIMOUNT® Motors
C-Face Footless

Pump Operation and Installation

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Installation and Operation Instructions for CONTINENTAL Models CP, CL, CM, and CG

1. **The Operating Principle of the CONTINENTAL Progressive Cavity Pump** is based on two pumping elements. One is a high strength steel single thread helical screw **rotor** that turns in a double thread helical screw **stator**. The **stator** is a molded elastomer of various selected compounds bonded into a steel tube.

2. The outer circumference of the turning **rotor** is in contact with the internal circumference of the **stator** and provides an effective seal creating cavities of liquid that are moved from the suction end to the discharge end of the pumping elements.

3. The displacement of the liquid is uniformly positive, without pulsation or turbulence. The rate of flow is proportional to the speed of the rotating **rotor**. Pressure is uniform and independent of the pump speed, but is attributable to the length of the **rotor** and **stator** elements.

4. Dry friction is harmful to Progressing Cavity Pumps**. Do no operate the pump until it is filled with the liquid to be pumped**. This liquid serves as a lubricant and as a seal between the rotor and stator and is not a priming operation. Approximately 10% of the pump's displacement rating will satisfy the cooling and lubricant requirements until full displacement capacity is attained.

5. Mount the pump on a properly machined and fabricated steel base that is anchored with bolts on a level solid foundation.

6. **Alignment of direct driven pumps** that are driven by a motor or a speed reducer should be carefully checked after the pump base has been mounted on the foundation. Check the alignment of the coupling halves with a straight edge. Alignment should be checked at least four points 90° around the O.D. of the coupling. A space between the pump and driver shaft ends should be held to no less than 1/8".

7. **Belt driven pumps** should be checked after mounting the pump base on the foundation. Make sure, with the help of a straight edge, that the belts and pulleys are in alignment and that the belts have the proper tension.

8. **Pump rotation:** The pump can be operated in either a clockwise or counterclockwise direction when viewing the pump form the driveshaft end. The recommended operating direction is clockwise when viewing the pump from the driveshaft end. The inlet and discharge ports are

related to the rotation of the pump. Please contact the factory if you have any questions regarding rotation.

9. **Piping** to pump should generally be the same size as the pump inlet port and discharge port openings. Those systems handling viscous, volatile high pressure or high temperature materials may have to be more appropriately sized.

    a. All threaded joints should be coated and sealed with pipe compound.
    b. Provide for expansion in the piping system to all for movement and deflection.
    c. Use pipe supports to keep the weight of the piping system from causing strain on the pump.
    d. Make all lines as direct and free of fittings as possible. Minimize suction line by locating the pump below or close to the liquid being pumped.
    e. When the pump is handling abrasive, corrosive liquids, slurries, sludges, cements, adhesives or any liquids that harden, it should be flushed **clean**. The rotation of the pump can be operated both clockwise and counterclockwise to accomplish this operation most thoroughly.
    f. It is a good practice to consider installing pressure and/or vacuum gauges in both the inlet and outlet pipes to the pump to check that it conforms to your operating specifications.

    Progressing Cavity Pumps are **positive displacement** and the discharge outlet must be kept open or a **relief valve** or a **by-pass piping** arrangement should be provided. If the discharge or inlet into the system is to be shut off or closed, provisions must be made for a relief valve or by-pass arrangement or damage can be done to the pump and the drive, including the motor. Strainers, filters and foot valves should be properly sized so as not to affect performance of the pump and should usually be installed in the suction line.

10. **Pump Bearings** are anti-friction ball type and should be periodically grease lubricated. They are initially packed when assembled at the factory.

    a. **Do not over lubricate**.
    b. Use quality anti-friction bearing grease.
    c. It is recommended that under normal use, that no lubrication be added for the first 1200 hours of operation unless it is uncomfortable to hold the hand on the bearing housing.
    d. The bearing shaft assembly should be inspected and cleaned after running the pump for approximately 2500 hours.
    e. All old grease should be removed from the bearing housing, and only new grease applied to bearing races so as to fill them flush.
    f. Add a few drops of oil to bearing seals before remounting assembly.

11. Packing maintenance procedures

a. The Packing Gland should be firmly tightened so as to prevent excessive leakage through the packing, but not so tight that it will cause overheating. Always adjust packing gland evenly. Align the packing gland so that it evenly goes into the packing gland cavity of the pump housing.
b. **CONTINENTAL Progressing Cavity Pumps** are supplied with a lantern ring in the midsection of the packing with access to a lubrication fitting on the external surface of the pump body. Lubricating the packing regularly with small amounts of lubricant or flushing with water will extend the life of the packing and help maintain a good seal.
c. A scored driveshaft reduces the life of packing and should be replaced.
d. When replacing worn packing use standard die-cut formed packing. Do not use one piece spiral packing. Press into place the die-cut and preformed packing rings and stagger the joints 180° apart.
e. After packing is installed, tighten the gland bolts evenly and firmly. Bolts should be backed off gradually as the stuffing box warms up, to avoid overheating of the packing area.
f. A small amount of leakage through the packing can be normal and helpful for good operation and easily drained away from the base.

Pre-Start-Up Checks

1. Read and understand all information furnished with pump.
2. Review operating conditions.
3. Check setting of relief valve in discharge line.
4. Check for proper position of belt or coupling guards. Do not operate pump without guards.
5. Fill the pump with the liquid to be pumped. **Do not operate pump dry**.
6. **Rotate driveshaft** of pump four or five rotations. This creates a seal between the rotor and stator to create pumping action.
7. Make sure the inlet and discharge lines are open.
8. Start the unit.
9. Check to see if the pump is delivering liquid. If it is not, refer to the section on checking pump performance.

Troubleshooting Pump Performance

A summary of possible causes of improper performance of Progressing Cavity Pumps

No liquid delivered

1. Pump rotating in wrong direction.
2. Inlet lift too great.

3. Clogged inlet line.
4. Air pockets or vapor lock.
5. Air leaks in inlet line.
6. Faulty relief valve in system.

Pump Takes Too Much Power

1. Speed too high.
2. Liquid more viscous that anticipated.
3. Operating pressure higher than specified. Check this with gauge at the pump outlet.
4. Outlet line obstructed.
5. Mechanical defect, such as bent shaft, tight packing gland, or misalignment of piping.
6. Relief valve in system not operating properly.

Insufficient Liquid Delivered

1. Air leaks in inlet line.
2. Air leaks in through packing.
3. Speed too low.
4. Excessive lift at inlet. Check this with gauge at the pump inlet.
5. Viscosity of liquid too high for size and length of inlet pipe.
6. Foot valve or end of inlet pipe not immersed deeply enough in liquid.
7. Foot valve, if used, too small, stuck, or not working properly.
8. Partial air pockets or vapor lock.
9. Pump damaged by misalignment.
10. Excessive clearance in pump caused by wear or corrosion.
11. Faulty relief valve in system.

Excessive Noise

1. Started pump. Liquid not getting into pump.
2. Air leaks in inlet line.
3. Air or gases in liquid.
4. Pump speed too high.
5. Improper mounting. Check alignment thoroughly.

Application, Installation and Operation Instructions for Dis-Assembly and Assembly of Model CP Continental Progressing Cavity Pumps

Speed, temperature, viscosity, suction lift, discharge pressure, abrasive content and corrosive action of the liquid to be handled should all be considered in applying these pumps. Pump should always be filled with the liquid to be handled before running. The liquid serves as a lubricant and is easily poured into the pump through the discharge port before final assembly of the piping or hose connections. A filling tee with a plug or valve can be installed above the discharge port for ease in filling.

Liquid to be pumped should never exceed 190° F temperature. Maximum speed that any of these pumps should be run is 2,800 rpm and then only in handling thin, abrasive-free liquids. Preferably the speed should be 1,750 rpm for longest life. When liquid contains abrasive materials or is viscous, the speed should be reduced.

For various viscosities of abrasive-free liquids, the maximum operating speed of the pump is set forth below:

SUGGESTED MAXIMUM OPERATING SPEED OF PUMP							
2800 RPM	1750 RPM	1150 RPM	870 RPM	580 RPM	430 RPM	180 RPM	100 RPM
VISCOSITY (Centipoises)							
1	1 to 100	100 to 500	500 to 1000	1000 to 3000	3000 to 5000	5000 to 10,000	10,000 to 20,000
Water	Canned Milk	30 Weight Oil	Table Syrup	Honey	Molas-ses	Paste	Peanut Butter
ABRASIVE FLUIDS							
None	None	None	Light	Medium	Medium	Heavy	Heavy
Clear Water Gasoline		Dirty Water	Clay Slurries Porcelain Enamel			Lapping Compounds Mill Scale in Water	

Capacity and life of these pumps will depend upon the liquid being handled.
Piping to pump should be properly selected and should not be smaller in size than the suction and discharge ports of the pump. All pipe and hose fitting joints should be tight. Discharge lines should be open or if pump is operated in an enclosed system, provision should be made for pressure relief when the pump pressure exceeds the limits as set forth for each model pump.

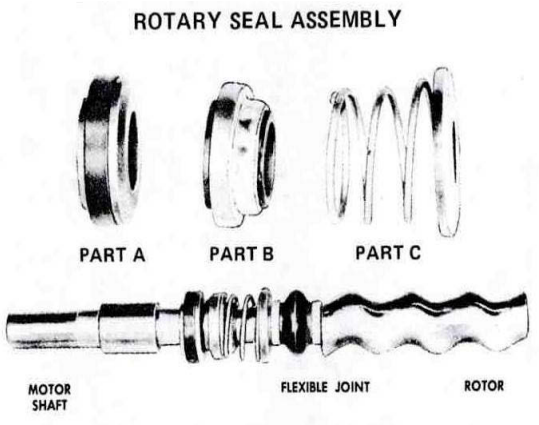
Pump bearings do not require lubrication as they are pre-lubricated.
We recommend that the pump be flushed after its use.
PUMP SHOULD NOT BE RUN DRY.
We will be glad to collaborate on any proposed applications. Fill out the CONTINENTAL PUMP APPLICATION DATA sheet and return it for a prompt recommendation. Please request copies if not with this Bulletin.

When necessary to dismantle pump, disconnect pipe or hose at suction and discharge ports. Remove bolts which connect Suction Housing to Discharge Housing. Rotor can be removed by turning it in opposite direction to pump rotation. Grip Rotor with wrench, whose teeth have been protected, and hold Shaft externally- hold Motor Shaft with Screwdriver on CPM Models. To replace Rotary Seal, unscrew Flexible Joint with 3/16" hexagonal wrench. Rotary Seals can be easily removed from shaft.

To replace Pump Bearings remove Retaining Ring and then tap shaft at threaded end. Protect threaded end with wood or rubber block.

If any parts of the Rotary Seal are worn or broken, replace complete Rotary Seal. The parts of each Rotary Seal are precision matched and are not interchangeable. Illustration below shows how Rotary Seal is installed by parts and how it looks after it is complete. Part A is pressed into the Discharge Housing. Care should be taken to assure that rubbing surfaces of Part A and B are not scratched. Moisten rubber sleeve of Part B with water to permit easy fitting over Shaft. Part B is then slipped down Shaft until face fits firmly against face of Part A. Part C is placed against Part B. Flexible Joint should then be screwed into Shaft against Part C. Use hexagonal wrench to tighten Flexible Joint, and then screw Rotor onto Flexible Joint. It is not necessary to tighten Rotor with a wrench as it is self-tightening when the pump starts.

Moisten inside of Stator with water and slip it over Rotor. Mount Suction Housing to Discharge Housing and fasten with body screws. Refill pump with liquid to be handled, connect pipe or hose to suction and discharge ports and pump is ready to run.



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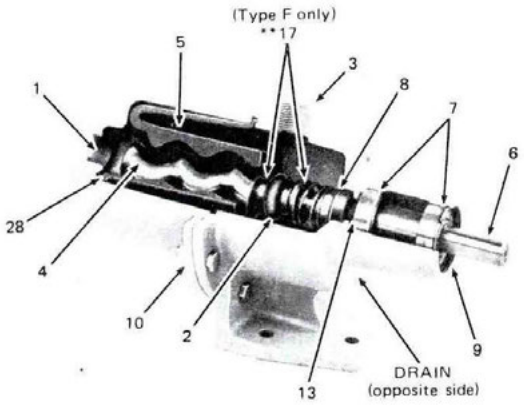
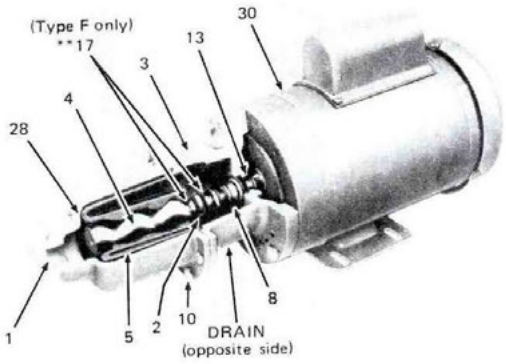
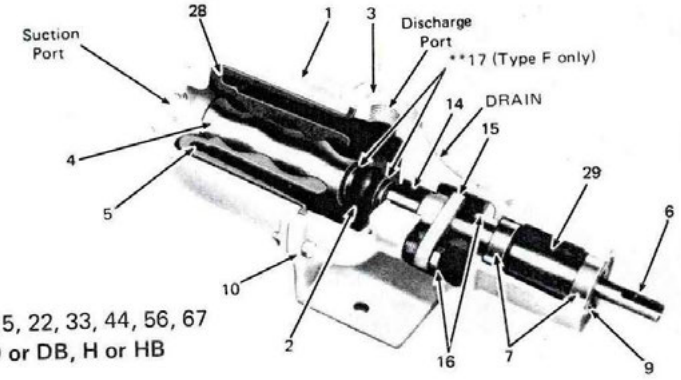


*Models CP-15, 22, 33, 44, 56, 67
TYPES A or AB, C or CB, F or FB, G or GB



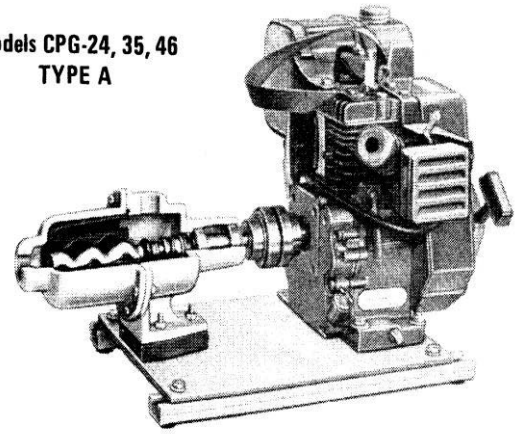
*Models CPM-15, 22, 33, 44, 56, 67
TYPES C or CB, F or FB, G or GB



*Models CP-15, 22, 33, 44, 56, 67
TYPES D or DB, H or HB

ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
1	Suction Housing	7	Pump Bearing	15	Packing Gland
2	Flexible Joint	8	Rotary Seal	16	Packing Gland Bolt
3	Discharge Housing	9	Retaining Ring	17	Roll Pins
4	Rotor	10	Screws and Nuts	28	Stator Ring
5	Stator	13	Slinger Ring	29	Bearing Spacer
6	Shaft	14	Packing	30	Motor

Models CPG-24, 35, 46
TYPE A



OPERATION OF GASOLINE ENGINE DRIVEN UNITS

This unit comes to you ready for operation with the exception of the gasoline and engine oil. A complete book of instructions is furnished with each Gasoline Engine Model and should be thoroughly read and followed. After gasoline engine is made ready by filling with engine oil in crank case and gasoline in tank, fill Discharge Housing of the pump with the liquid to be handled. Complete suction and discharge port connections of pump and start engine with rope provided. We recommend that the pump be drained and flushed after each use.

DO NOT RUN PUMP DRY

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Instructions for Dis- Assembly and Assembly of

Model CL and CM

Continental Progressing Cavity Pumps

Frames: 1CL2, 2CL2, 3CL2, 1CL3, 2CL3, 3CL3, 1CL4, 2CL4, 3CL4, 1CL6, 2CL6, 3CL6, 1CL8, 2CL8, 3CL8
Frames: 2CM1, 3CM1, 6CM1, 2CM2, 3CM2, 6CM2, 2CM3, 3CM3, 6CM3, 2CM4, 3CM4, 6CM4

1. Remove clamp bolts from stator housing support, #38, pull top half of stator support, #38, from stator, #21.
2. By using pipe wrench remove stator, #21, from main body casting, #2. Pull stator, #21, off rotor, #22.
3. Remove two drive pin retainer screws, #54, with Allen Wrench and driveshaft pin, #46, by pushing pin through collar, #49.
4. Slide collar, #49, back to packing gland, #41.
5. Remove two drive pin washers, #73. (It is usually best to use new drive pin washers when re-assembling).
6. Pull rotor, #22, out of driveshaft, #26.
7. To dis-assemble rotor and connecting rod, press rotor band, #50, off rotor, #22, push rotor pin, #45, out of rotor, #22, then pull connecting rod, #25 out of rotor, #22. To re-assemble rotor and connecting rod, use new connecting rod washers, #53, and pack ball joint with water-proof grease.
8. Remove four cap screws from bearing cover plate, #34.
9. Insert a small rod into driveshaft, #26, through main body casting, #1, and drive ball bearings and shaft assembly out of main body casting, #2
10. To dis-assemble driveshaft, #26, and ball bearings, remove lock nut, #58, and washer, #59, then press bearing, #29 and #30, also bearing spacer, #33, off driveshaft, #26. When assembling, bearing should be packed with good bearing grease to about one-third capacity of bearing housing.
11. Remove packing gland bolts and packing gland, #41.
12. Remove packing, #42, and note how the packing rings are staggered. When repacking, stagger ends of packing. Remove lantern ring, #57, and packing gland insert, #65.
13. Pressing bearing housing grease seal, #61, and bearing cover plate grease seal, #62, out of main body casting, #2, and bearing cover plate, #34, respectively.
14. To re-assemble, reverse the above procedure.

Refer to Parts List CLP-2 & CLP-3, 4, 6, 8

ALWAYS SPECIFY FRAME SIZE, TYPE, AND SERIAL NUMBER OF PUMP WHEN ORDERING PARTS.

All prices are net to consumer, F.O. B. Warrenton, Missouri, and subject to change without notice.

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Instruction for Dis- Assembly and Assembly of

Model CL10

Continental Progressing Cavity Pumps

FRAMES: 1CL10, 2CL10, 3CL10, 1CL10H, AND 2CL10H

1. Remove clamp bolts from stator housing support, #38, pull top half of stator support, #38 from stator, #21.
2. By using pipe wrench remove stator, #21 from main body casting, #2. Pull stator, #21 off rotor, #22.
3. Remove two drive pin retainer screws, #54, with Allen Wrench and driveshaft pin, #46, by pushing pin through drive pin screw holes.
4. Pull rotor, #22, out of driveshaft, #26.
5. To dis-assemble rotor and connecting rod, press rotor band, #50, off rotor head, push rotor pin, #45, out of rotor head, then pull connecting rod, #25, out of rotor head. To re-assemble rotor and connecting rod, use new connecting rod washers, #53, and pack ball joint with water-proof grease.
6. Remove five cap screws from bearing cover plate, #34.
7. Insert a rod into driveshaft, #26, through main body castings, #2, and drive ball bearings and shaft assembly out of main body casting, #2.
8. To dis-assemble driveshaft, #26 and ball bearings, remove lock nut, #58, and washer, #59, then press bearing, #29 and #30, also bearing spacer, #33, off driveshaft, #26. When assembling, bearing should be packed with good bearing grease to about 1/3 capacity of bearing housing.
9. Remove packing gland bolts and packing gland, #41.
10. Remove packing, #42 and note how the packing rings are staggered. When re-packing, stagger ends of packing. Remove lantern ring, #57, and packing gland insert, #65.
11. Press grease seal retainer, #63 out of main body casting, #2, and remove radial bearing grease seal, #61. Remove thrust bearing grease seal, #62, from bearing cover plate, #34.
12. To re-assemble, reverse the above procedure.

Refer to Parts List CLP-10

ALWAYS SPECIFY FRAME SIZE, TYPE, AND SERIAL NUMBER OF PUMP WHEN ORDERING PARTS.

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Instructions for Dis-Assembly and Assembly of

Model CL12

Continental Progressing Cavity Pumps

FRAMES: 1CL12, 2CL12, 3CL12, 1CL12H AND 2CL12H

1. Remove discharge end, #9. Remove clamp bolts from stator housing support, #38, pull top half of stator support, #38, from stator, #21.
2. By using pipe wrench remove stator, #21, from stator adapter flange, #12. Pull stator, #21, off rotor, #22.
   Alternate method: remove bolts holding stator adapter flange, #12, to main body castings. Remove clamp bolts from body housing support, #38, pull top half of body housing support from pump body. Raise pump at suction to facilitate removal of stator, #21, with stator adapter flange, #12, attached. Pull stator, #21, off rotor, #22.
3. Remove two drive pin screws, #54, with Allen Wrench and remove shaft pin, #46, under drive pin screws, by pushing pin through collar, #49.
4. Slide collar, #49, from driveshaft, #26.
5. Remove two drive pin washers, #73, (it is usually best to use new drive pin washers when re-assembling).
6. Pull rotor and connecting rod assembly out of driveshaft, #26.
7. To dis-assemble rotor and connecting rod, press rotor bands (two), #50, off head, #32, push pin, #46, out of the rotor head, pull connecting rod, #25, out of rotor head, #32, pull rotor, #22, out of rotor head, #32, remove "O" ring, #110B, from rotor, remove connecting rod washers, #53, from connecting rod, #25. To re-assemble rotor and connecting rod, use new connecting rod washers, #53, new "O" ring, #110B, and pack ball joint with water-proof grease.
8. Remove six cap screws from bearing cover plate, #34, and remove cover plate. Remove grease fitting and plug from bearing housing at body support.
9. Insert a small rod into drive shaft, #26, through main body casting, #2 and #5, and drive bearing assembly, #31, and shaft assembly out of joined main body and bearing housing castings.
10. To remove roller bearing assembly, #31, from driveshaft, #26, remove the Allen head screw and brass slug from bearing lock nut, #58, and remove lock nut. Use a piece of tubing approximately 24"long with an inside diameter of 4-13/16" + .015 which is to be placed down over the shaft end against roller bearing cone. With tube in position bearings can be removed from the shaft. If an arbor press is not available use a piece of wood on end of tubing and strike with a heavy sledge hammer.
11. Remove packing gland bolts and packing gland, #41.
12. Remove packing, #42, and note how the packing rings are staggered. When repacking, stagger ends of packing. Remove lantern ring, #57, and packing washer insert, #65.
13. Press bearing housing grease seal, #61 and bearing cover plate grease seal, #62, out of joined main body and bearing housing castings and bearing cover plate, #34, respectively.
14. To re-assemble, reverse the above procedure.

Refer to Parts List CLP-12.

ALWAYS SPECIFY FRAME SIZE, TYPE, AND SERIAL NO. OF PUMP WHEN ORDERING PARTS.

All prices are net to consumer, F.O.B. Warrenton, Missouri, and subject to change without notice.

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Instructions for Dis- Assembly and Assembly of

Model CG Heavy Duty

Continental Progressing Cavity Pumps

Used in Handling Sewage- Polluted Liquids- Industrial Waste

1. Before starting dis-assembly, drain lines and suction housing of as much liquid as possible. A section of piping at the discharge side of the pump should be easily removable to facilitate the replacement of rotor, stator, or gear joint parts. The recommended "Length of Piping" is as set forth in CLEARANCE TABLE NOTE "A".

CLEARANCE TABLE			
MODEL		NOTE "A"	NOTE "B"
CONTINENTAL	MOYNO®	Length of Piping	Space Required
1CG8	SWG8	31"	7/8"
2CG8	2SWG8		
1CG10	SWG10		
2CG10	2SW10		
1CG10H	SWG10H		
2CG10H	2SWG10H		
1CG12	SWG12	37"	1"
2CG12	2SWG12		
1CG12H	SWG12H		
2CG12H	2SWG12H		
1CG14	SWG14	40"	1-1/2"
2CG14	2SWG14		
1CG20	1SVG20		

All Moyno® Part, model and identification numbers are listed for reference purposes only. Continental Pump Co, Inc. is not affiliated with or a representative of neither Moyno® nor its parent company. Please contact one of our application specialists at (636)-456-6006 M-F 8AM-5PM CST for more information.

Remove this section of piping and the discharge flange, #10.

2. Remove clamp bolts from stator support, #38. Then pull the top half of the stator support from the stator, #21.

3. Replace temporary support under suction housing, #2, and remove bottom half of stator support, #38.

4. Remove bolts from adapter flange, #12. Then pull assembly of stator, #21, and adapter flange, #12, from rotor, #22.

5. Remove adapter flange, #12, from stator, #21, and remove adapter gasket, #79. This is as far as the pump should be dis-assembled for replacement of the stator only. To re-assemble, use new stator and reverse the above procedure.

6. Remove shaft screws, #134, from drive shaft head, #97, and pull driveshaft head from driveshaft, #26.

   NOTE: If pump is directly coupled to the driver, a space should be left between the end of the driver shaft and the driven shaft to allow removal of the driveshaft head. This can normally be done through the use of radial removable couplings. The "Space Required" is as set forth in CLEARANCE TABLE NOTE"B".

7. Remove "O" ring, #110, from driveshaft head, #97.

8. Push on the discharge end of the rotor so that the connecting rod nut, #192, will project from the driveshaft, #26.

9. Remove connecting rod nut, #192, shaft lock washer, #133, connecting rod washer, #53, front thrust plate, #198, shaft keys, #202, gear joint, #195, ring gear, #196, rear thrust plate, #199, spacer, #27, connecting rod cover, #87, and connecting rod clamp ring, #93C, from the connecting rod, #25.

   NOTE: When re-assembling, pack cavity in driveshaft head, #97, gear teeth, and spherical bearing surfaces with grease - Like: Shell, Alvania, EP-O, or equivalent.

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Instructions for Dis- Assembly and Assembly of

Model CG Heavy Duty

Continental Progressing Cavity Pumps

Used in Handling Sewage- Polluted Liquids- Industrial Waste

10. Pull rotor and driveshaft assembly from pump.

11. Remove rotor head seal retainer screws, #114, from head ring, #200. Pull head ring over contour of rotor, #22.

12. Pull rotor, #22, from gear joint shell, #197, and remove grease plug and "O" ring, #110 from rotor. This is as far as the pump should be dis-assembled for replacement of the rotor. Use a new rotor and reverse the above procedure to re-assemble.

13. Remove gear joint shell, #197, from connecting rod, #25, by pulling it off the opposite end of its normal position. Remove grease plugs.

14. Remove connecting rod nut, #192, shaft lock washer, #133, connecting rod washer, #53, front thrust plate, #198, shaft keys, #202, gear joint, #195, ring gear, #196, rear thrust plate, #199, spacer, #27, connecting rod cover, #87, and connecting rod clamp ring. When re-assembling, pack cavity in rotor, #22, gear teeth, and spherical surfaces with grease-Like: Shell, Alvania, EP-O, or equivalent.

15. Remove screws from the bearing cover plate, #34, which allows removal of the bearing cover plate and the thrust bearing grease seal, #62. (If the cover plate is not the split type it will be removed later; however, all screws must still be removed from it).

16. Re-assemble driveshaft head, #97, to driveshaft, #26. Insert a rod or bar inside driveshaft from packing end and drive ball bearing and shaft assembly out of the bearing housing, #5. Slinger ring, #27, is removed from driveshaft during removal of shaft from bearing housing.

17. To dis-assemble the driveshaft assembly on 1CG8 and 1CG10 pumps, remove bearing lock nut, #58, and bearing lock washer, #59. Then press off bearing, #29, bearing spacer, #33, and bearing, #30. On 1CG14 & 2CG14 pumps, remove Allen head screw and brass slug from bearing lock nut, #58, and remove lock nut. Press off roller bearing assembly, #31. If the bearing cover plate, #34, is not of the split design, it can be removed at this time. When re-assembling, bearings should be packed with Mobil EP- #1 grease or equivalent and the space between the bearings filled to about one-third capacity.

18. Remove packing gland, #41, packing gland bolts, #47, packing, #42, lantern ring, #57, and packing washer, #65, (no packing washer on 1CG14 & 2CG14). Press the radial grease seal retainer, #63, out of the bearing housing and remove the radial grease seal, #61.

19. To re-assemble, reverse the above procedure. When inserting packing, make sure each ring is lubricated and that the ends are staggered so that no two adjacent rings have their ends in the same position.

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