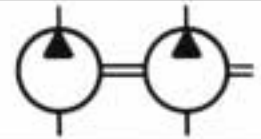




HYDRAULIC PUMPS

GEAR PUMPS 53 SERIES Specification Sheet



The CROSS Series 53 tandem gear pumps provide two sections for operating separate systems with independent flow requirements or combining the flow from two sections into a compact space less than 6" x 6½" x 12". The Cross gear tooth design and pressure-balanced loading plates provide high volumetric and overall efficiency.

GENERAL SPECIFICATIONS

Displacement sizes (Front & Rear Sections)	1.52	1.95	2.32	2.74	3.30	3.80	cu.in./rev.
	24.9	32.0	38.0	44.9	54.1	62.3	cc/rev.

Rated working pressure (Max. relief valve setting at full flow)	3000 psi (207 bar)
Maximum shock and surge pressure	3500 psi (242 bar)
Maximum speed (continuous)..see Fill Curves for 50P (Form P501)	Up to 3000 rpm
Maximum flow rate (per section)	up to 40 gpm (151 l/m)
Maximum (required) horsepower (combined)	130 hp (97 Kw)
Mounting (any position)	SAE "B" size 2-Bolt
Weight	Approx. 38 lbs. (17 Kg)

MATERIAL SPECIFICATIONS

Body and end covers	Die cast aluminum alloy
Gears and shaft	Hardened steel
Seals	Buna N
Bearings	Pressure lubricated, Teflon impregnated sleeve
Body	Permold aluminum alloy

STANDARD FEATURES:

20 psi (1.4 bar) Shaft Seal standard on all units

OPTIONAL FEATURES AVAILABLE

Left hand (counterclockwise) or right hand (clockwise) rotation available.

7/8" diameter Woodruff keyed standard or long length, straight shaft.

SAE 7/8" splined shaft (13 tooth, 16/32 pitch, 30° P.A. flat root side fit Class I)

SAE #20 (1 1/4") o-ring inlet port (1 5/8 - 12). SAE #24 (1 1/2") o-ring inlet port (1 7/8-12)

Common inlet and outlet ports(middle). Common mid-inlet, separate outlet ports.

Separate inlet, common mid-outlet ports; Separate inlet, separate outlet ports.

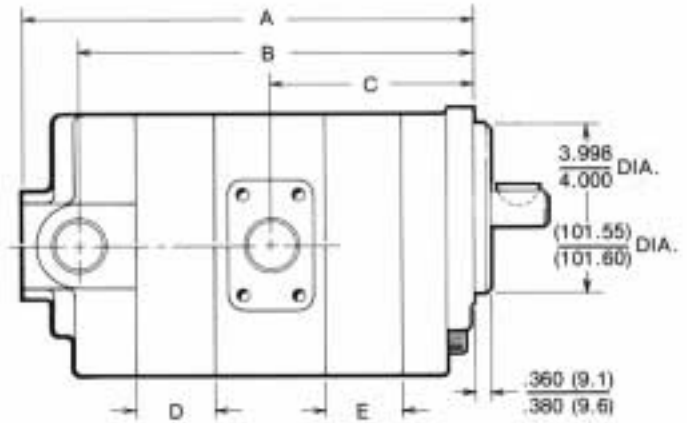
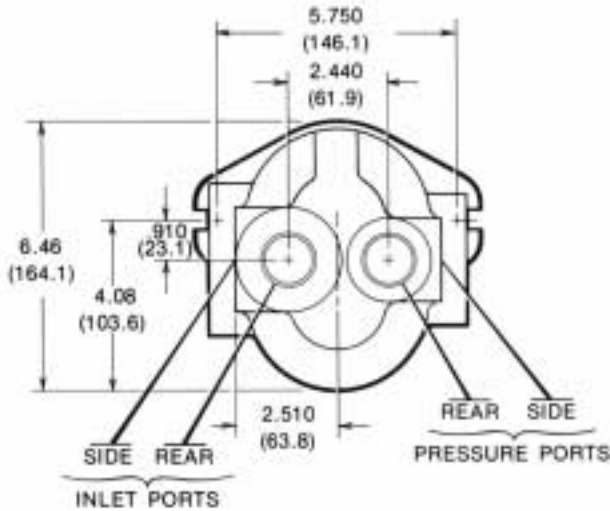
Rear inlet and outlet ports locations (rear section)

NOTE: The first pump section (nearest shaft) should be the largest (highest hp) section. If total displacement exceeds 3.8 cu.in./rev. (62.3 cc/rev.), separate inlet ports should be used. Consult Cross Sales Dept. if pressure (psi) times TOTAL displacement (cu.in./rev.) exceeds 20,000, or if displacement times pressure of the rear pump section exceeds 10,000.

NOTE: Refer to Cross Pump and Motor Technical/Service sheet for side and end load limitations, oil recommendations, start-up procedures, etc.



DIMENSIONAL DATA: in inches and (millimeters)

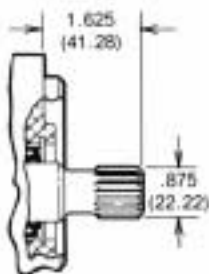


DISPLACEMENT cu.in./rev. (cc/rev.)	1.52 (24.9)	1.95 (32.0)	2.32 (38.0)	2.74 (44.9)	3.30 (54.1)	3.80 (62.3)
DIMENSION D inches (mm)	1.08 (27.4)	1.28 (32.5)	1.44 (36.6)	1.63 (41.4)	1.88 (47.8)	2.10 (53.3)
DIMENSION E inches (mm)	1.08 (27.4)	1.28 (32.5)	1.44 (36.6)	1.63 (41.4)	1.88 (47.8)	2.10 (53.3)

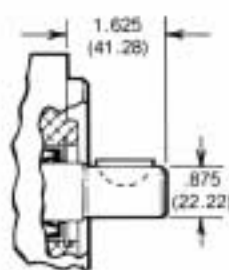
DIMENSION A = 7.21 + D + E
 DIMENSION B = 5.83 + D + E
 DIMENSION C = 3.08 + E

OUTPUT SHAFT

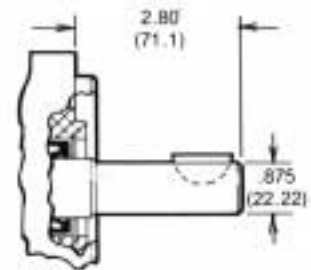
SHAFT A



SHAFT C



SHAFT D

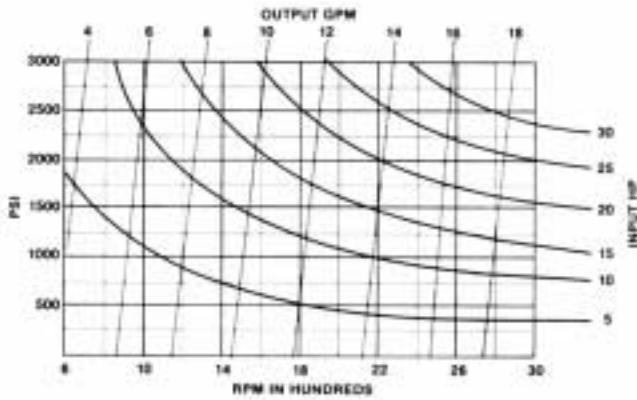


Shaft Type	DESCRIPTION
"A"	7/8" spline, 13 tooth, 16/32 Pitch, 30° Pressure Angle, Flat root side fit, Class 1
"C"	7/8" Diameter, with Woodruff key
"D"	7/8" Diameter, Long, with Woodruff key

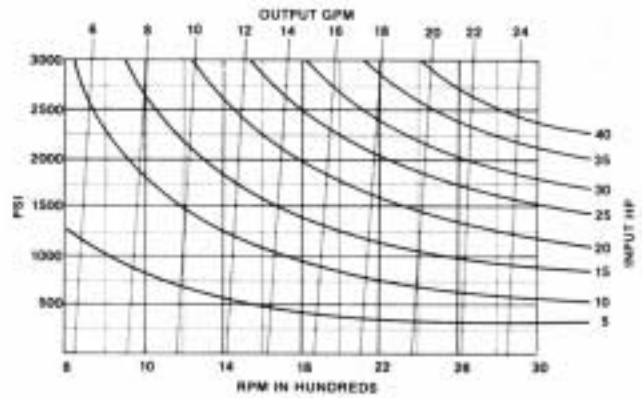


TYPICAL PERFORMANCE DATA

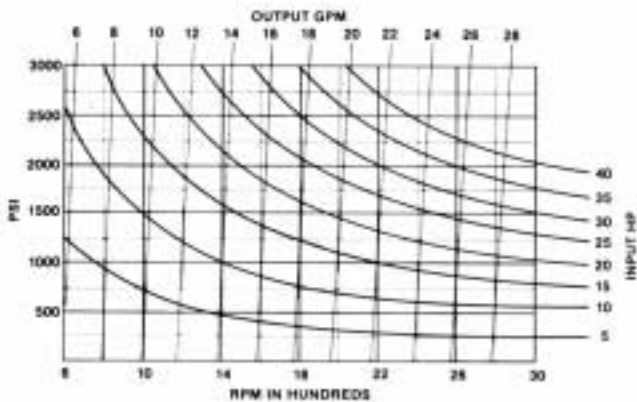
MODEL 53P015



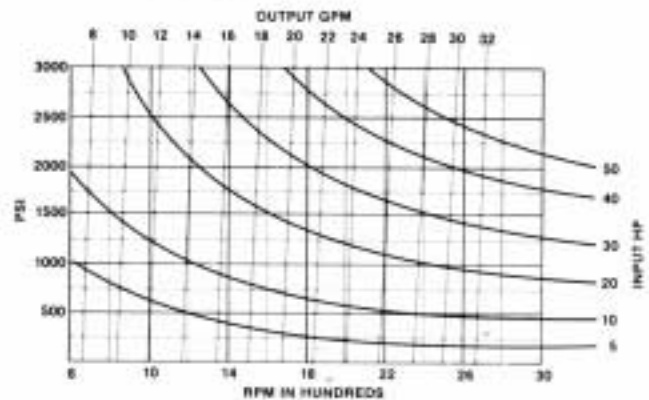
MODEL 53P019



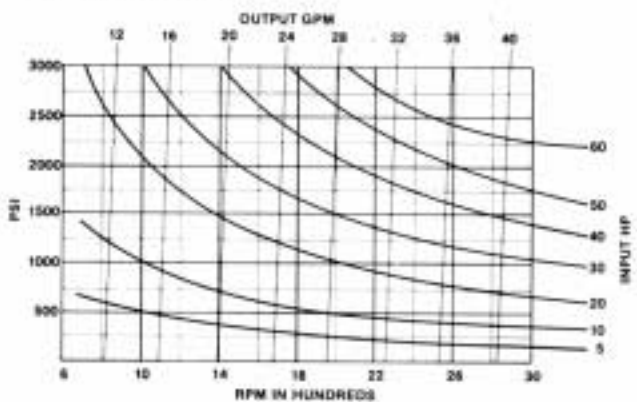
MODEL 53P023



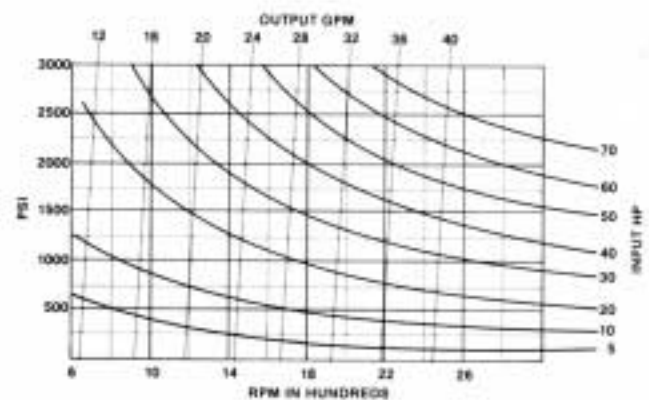
MODEL 53P027



MODEL 53P033



MODEL 53P038



Refer to CROSS 50 series pump literature (Form P501) for inlet vacuum/rpm limitations.



ORDERING DATA

Series No.	Type	Special Options	Size			Rotation	Mtg.	Shaft Size & Type	Port Location and Size **	
			Displ. (cu.in./rev. x 10)	Front Sect.	—					Rear Sect.
53	P Pump	O 20 PSI Shaft Seal	15	—	15	L Left Hand	B (SAE "B" 2-Bolt)	A 1/8 - 13 tooth spline	A 1 7/8 Common Inlet 1 5/16 Separate outlets side ports	
			19	—	19				B 1 7/8 Common Inlet 1 5/16 Common Outlet side ports	
			23	—	23				C 1 5/8 Common Inlet 1 5/16 Separate Outlets side ports	
			27	—	27	R Right Hand			C 1/8" Keyed	D 1 7/8 Common Inlet 1 5/16 Front Outlet 1 5/16 Rear Outlet
			33	—	33				D 1/8" Long Keyed	E 1 5/8 Common Inlet 1 5/16 Front Outlet 1 5/16 Rear Outlet
			38	—	38				F 1 7/8 Separate Inlets 1 5/16 Separate Outlets side ports	
							G 1 5/8 Separate Inlets 1 5/16 Separate Outlets side ports			

EXAMPLE: 53PO15-15RBCA is a standard 53 Series pump, 20 psi shaft seal, with 1.52 cu.in./rev. displacement both front and rear sections, right hand rotation, SAE "B" 2 bolt mounting, 1/8" keyed shaft with 1 1/8" common inlet and 1 1/8" separate outlet side ports.



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**If Total Displacement is over 3.8 cu.in./rev. two inlets must be used.