

GC Series Hydraulic Pumps



G.C. Series Hydraulic Pumps

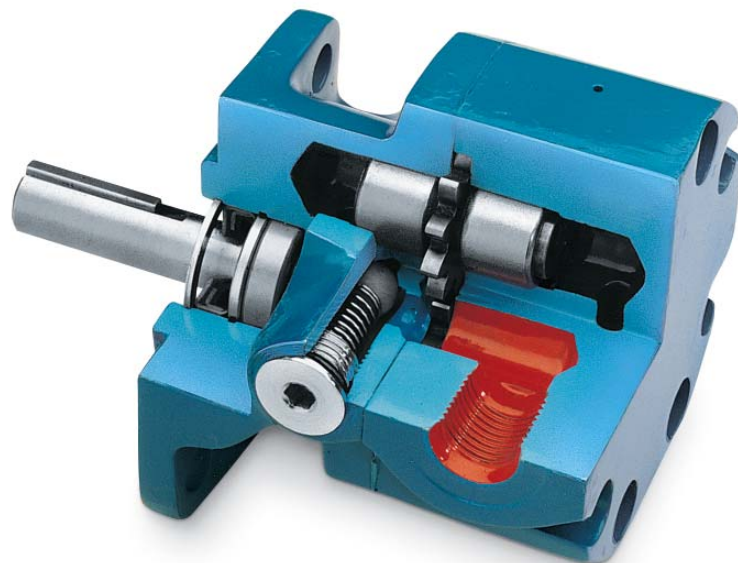
Concentric G.C. Series Hydraulic Pumps are compact, external gear models for use in pumping fluids with lubricating qualities. Suitable for use in a wide variety of material handling, agricultural, and construction equipment in addition to machine tools, robotics, and other types of machinery.

Designed to provide reliable, long-life service under rugged conditions, G.C. Series pumps are built with cast iron bodies and hardened steel gears. Among their other standard, extra-value features are:

- Speeds to 4000 RPM
- Pressures to 4000 PSI
- Superior volumetric efficiency
- Needle bearing construction
- High mechanical efficiency
- Temperature ratings to 250°F (120°C)*
- Wide variety of options

* Higher temperatures, consult factory.

See the chart on this page for basic sizes. Dimensional and option information is listed on pages 3-5 and performance curves are shown on pages 6 & 7. See page 8 for complete ordering information.



Order Code (Gear)	Displacement		Flow				Pressure Rating			
	Revolution		At 1800 RPM		At 3600 RPM		Continuous		Intermittent	
	cu. in.	cc.	GPM	L/Min.	GPM	L/Min.	PSI	BAR	PSI	BAR
04	0.065	1.07	0.50	1.93	1.00	3.86	3000	207	4000	275
06	0.097	1.59	0.75	2.86	1.50	5.72	3000	207	4000	275
08	0.129	2.11	1.00	3.80	2.00	7.60	3000	207	4000	275
▲10	0.161	2.64	1.25	4.75	2.50	9.50	3000	207	4000	275
12	0.194	3.18	1.50	5.72	3.00	11.44	3000	207	4000	275
▲14	0.226	3.70	1.75	6.66	3.50	13.32	2600	179	4000	275
16	0.258	4.23	2.00	7.61	4.00	15.22	2300	159	4000	275
▲18	0.291	4.77	2.25	8.59	4.50	17.18	2100	145	3500	241
20	0.323	5.29	2.50	9.52	5.00	19.04	1900	131	3000	207
24	0.388	6.36	3.00	11.45	6.00	22.90	1600	110	2500	172
28	0.453	7.42	3.50	13.36	7.00	26.72	1300	90	2250	155
32	0.517	8.47	4.00	15.25	8.00	30.50	1200	83	2000	138
†36	0.581	9.52	4.50	17.17	9.00	34.34	2250	155	2475	171
†40	0.647	10.59	5.00	19.07	10.0	38.15	2000	138	2200	152
†44	0.711	11.65	5.50	20.98	11.0	41.97	1800	124	2000	138

Flow listed in U.S. gallons. 200 SSU oil.

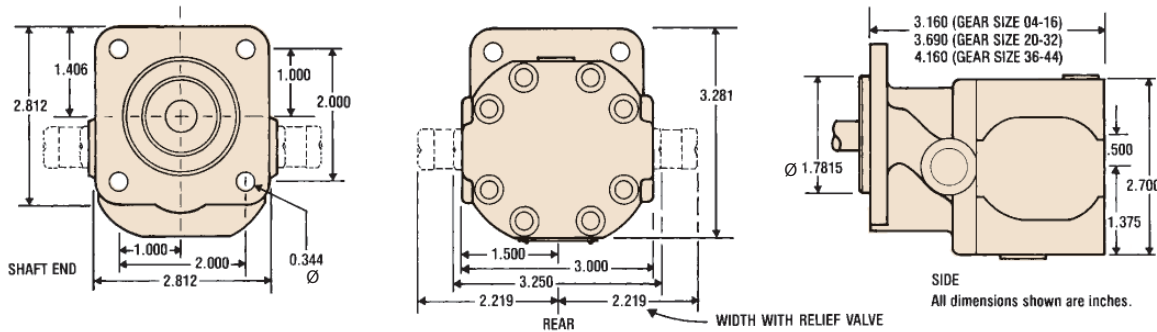
▲ Available, but not standard (100-piece minimum order).

† For speed above 2400 RPM, 1-in. dia. inlet tube must be used.

OPTIONS

DIMENSIONAL INFORMATION

Pumps use one of two basic castings: One size for gear faces 04 through 16 and a slightly larger size for gear faces 20 to 32. See the drawings for details.

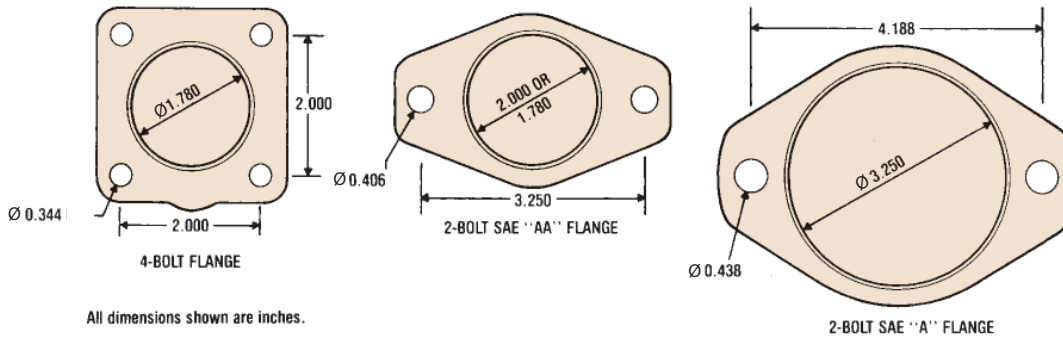


FLANGE OPTIONS

Standard options include three basic flanges: 4-Bolt with 1.78-inch Pilot, 2-Bolt SAE "AA" with 2-inch or 1.78-inch Pilot, and 2-Bolt SAE "A" with 3.25-inch Pilot. Consult factory for other flange requirements.

Order Code	Mounting Flange Options
1	4-Bolt w/1.78" Pilot
2	2-Bolt SAE "AA" w/2.0" Pilot
▲ 3	2-Bolt SAE "AA" w/1.78" Pilot
4	2-Bolt SAE "A" w/3.25" Pilot

▲ 100-piece minimum order

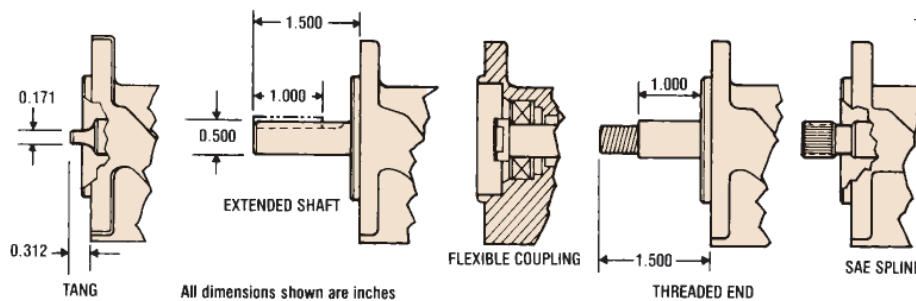


SHAFT OPTIONS

Five shaft options are standard: 0.171-inch Tang, 1/2-inch diameter x 1 1/2-inch Extension, Flexible Coupling, Threaded End, and SAE Spline. Consult factory for other shaft options.

Order Code	Mounting Flange Options
1	0.171" Tang
2	0.50" Diameter x 1.50" Extension, 1/8" Square Key
▲ 3	Flexible Coupling
▲ 4	Threaded End (Specify Thread)
* 5	SAE Spline (Specify)

▲ 100-piece minimum order
 * 9T, 20/40 DP standard with flange option 1, 2 & 3;
 9T, 16/32 DP standard with flange option 4.
 Selected sizes available from stock. Consult factory.



OPTIONS

VALVE OPTIONS

A variety of integral valves and valve combinations are available as standard. Options include: Relief, Check, and Check/Relief combination. A Check, Relief & Solenoid Release valve combination provides the lift-hold-lower function for power up and gravity down applications. Another unique option, for lift-hold-lower applications, incorporates an adjustable needle valve in the pump for controlling the lowering speed of the load.

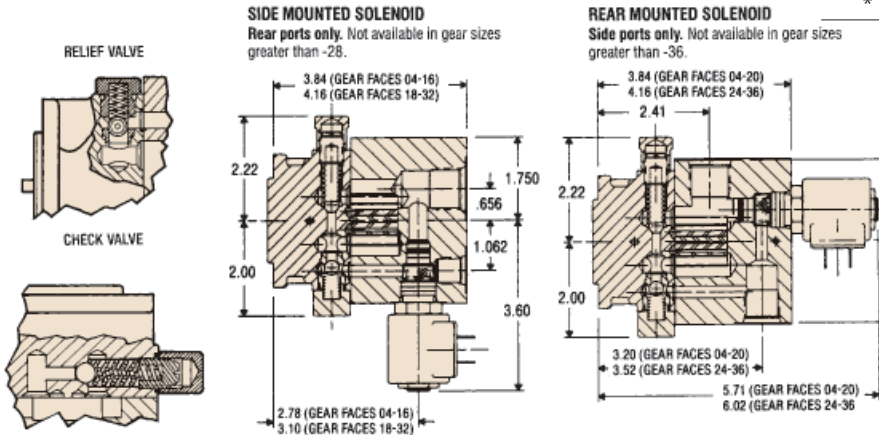
Order Code	Valve Options
A	No Valves
B	Relief Valve
C	Direction Checks (Not Shown)
* D	Check Valve
* E	Check & Relief Valves (Not Shown)
* F	Check, Relief & Normally Closed Solenoid
* G	Check, Relief & Normally Open Solenoid
* H	Check, Relief & Solenoid Cavity Plugged

Pressure compensated flow control spools are available with options F and G.

* Available ONLY for gear sizes 04 through 36

Minimum full bypass relief valve settings:
200 psi for gear sizes 04-16 at 1725 rpm, 300 psi for gear sizes 18- 44 at 1725 rpm. At speeds above 1725 rpm, the minimum relief valve settings increase. Contact factory for specific information.

All dimensions shown are inches.



SEAL & BEARING OPTIONS

Five basic seal & bearing configurations are available as shown here. Oil seals are either Buna-N or Viton. Outboard ball bearings are available for "radial load" (bolt or gear drives and thrust loads). High-pressure seals are rated up to 25 PSI at 3000 RPM. Viton seals are rated at 350°F (176°C). Consult factory for other types of sealing materials and mechanical seals. Higher pressure seals available, consult factory.

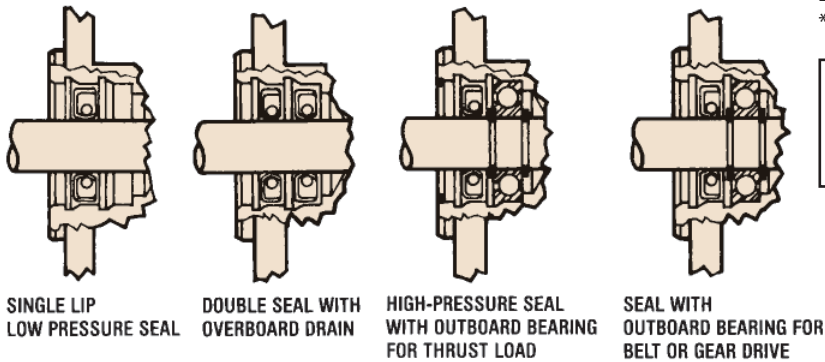
Order Code	Seals & Bearings Options
1	Single Lip Buna-N Low Pressure Seal
2	Viton Seal
*3	Viton High-Pressure Seal w/Outboard Ball Bearing
▲*4	Double Seal w/Overboard Drain
*5	Buna-N Seal w/Outboard Ball Bearing

▲ 100-piece minimum order.

* Not available with shaft option 3.

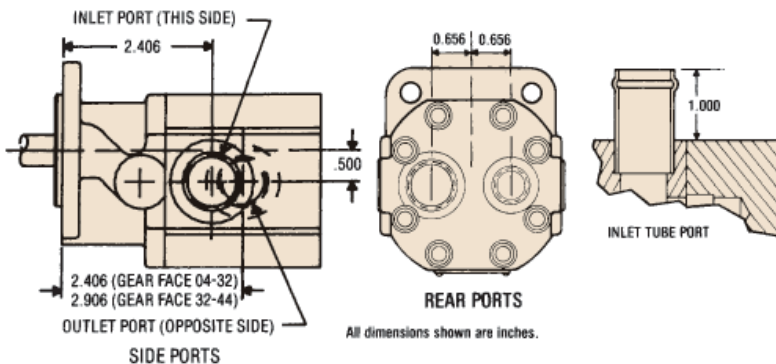
Outboard ball bearing settings:

Maximum overhang load: 150 lbs.
Maximum inward thrust: 75 lbs.
Maximum outward thrust: 50 lbs.



PORT LOCATION OPTIONS

Standard porting is SAE Straight Thread O'Ring Ports. Depending on gear size, porting size varies as shown in the chart below. NPTF and Inlet Tube Ports are not standard, but can be supplied. The second chart shows the Order Code for port type and location.



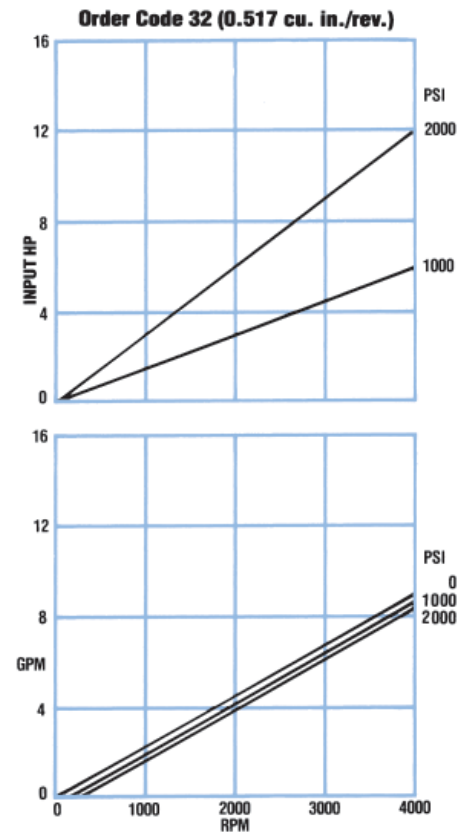
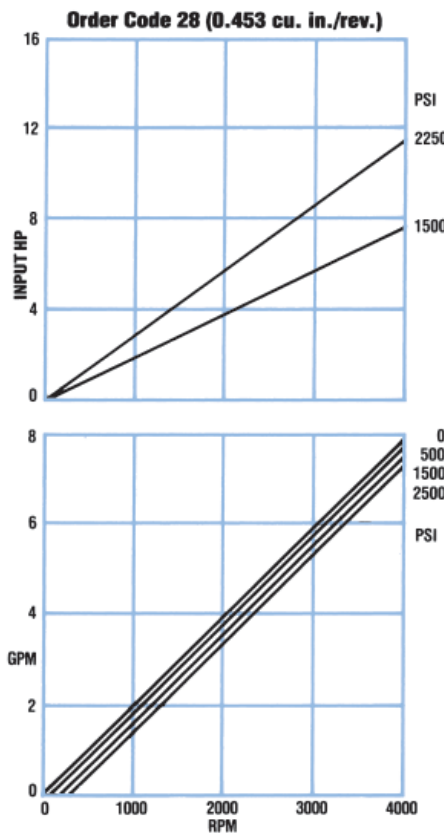
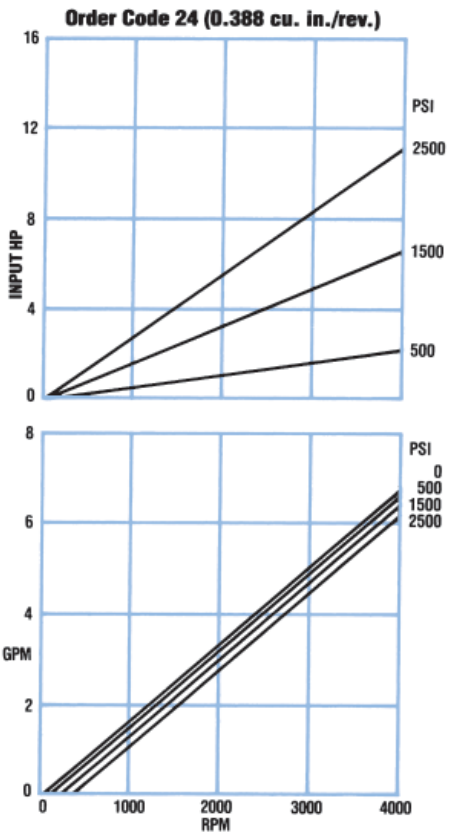
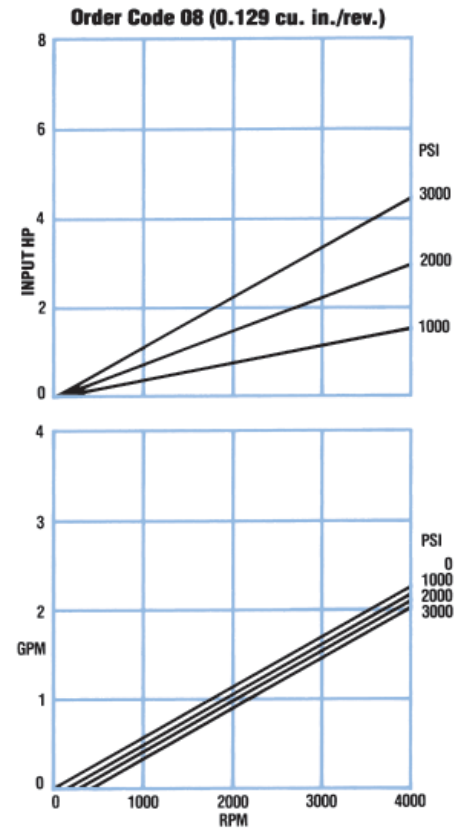
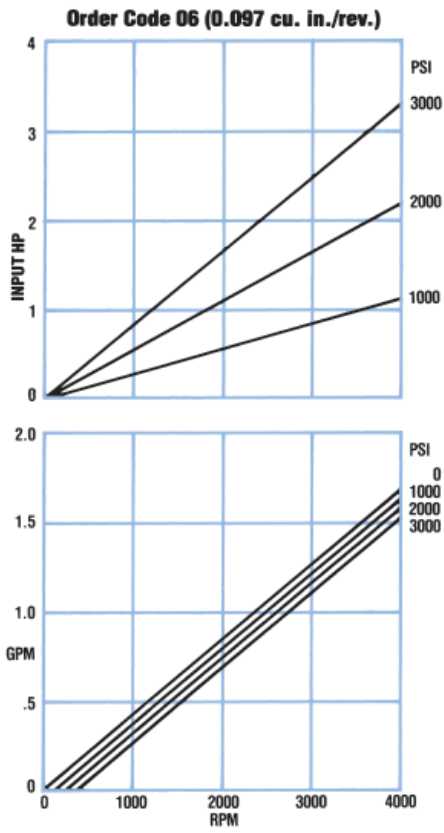
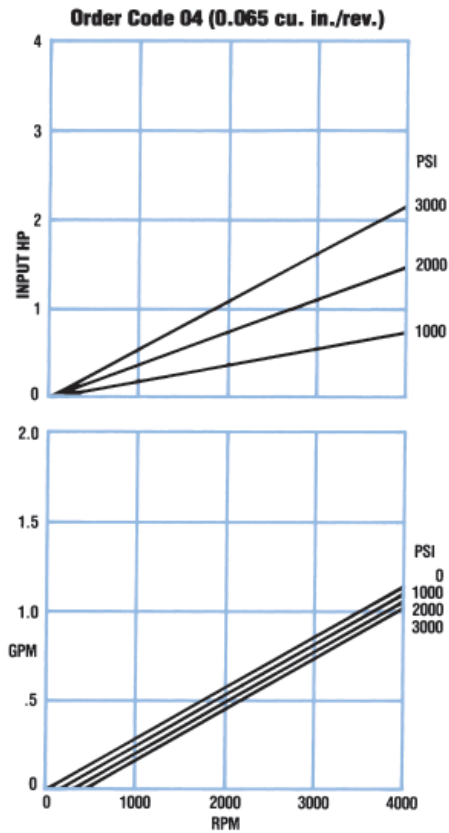
* NOTE: Based on CCW rotation.

Gear Size	SAE Port Size	
	Unirotational (Birotational)	
Order Code	Low Pressure Port	High Pressure Port
04 & 06	9/16-18 (9/16-18)	9/16-18 (9/16-18)
08, 12 & 16	3/4-16 (3/4-16)	9/16-18 (3/4-16)
20, 24	7/8-14	3/4-16
28 & 32	(7/8-14)	(7/8-14)
36, 40 & 44	(7/8-14)	(7/8-14)

Order Code	Port Location Options
A	SAE Side Ports
▲ B	SAE Rear Ports
▲ C	NPTF Side Ports
▲ D	NPTF Rear Ports
▲* E	Inlet Tube, 1.0" w/SAE Side Outlet Port

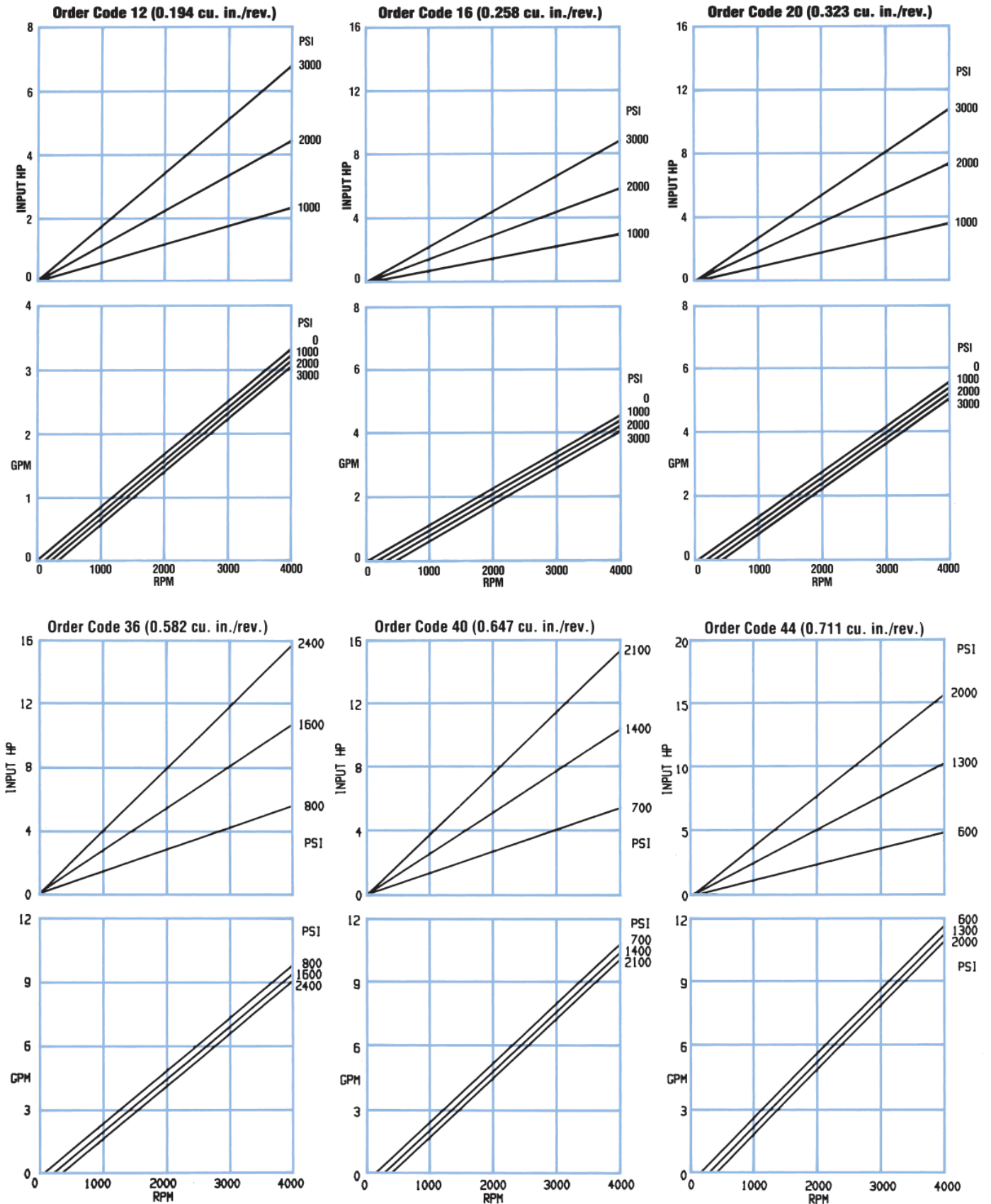
NOTE: If ordering NPTF Ports, specify sizes (1/4, 3/8 or 1/2 in.) 100-piece minimum order. * For gear order codes 3, 40 and 44, 1 in. diameter Inlet Tube must be used for speeds above 2400 RPM.

* PERFORMANCE CURVES



* Based on 200 SSU oil.

* PERFORMANCE CURVES (cont.)



* Based on 200 SSU oil.

How To Order G.C. Series Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown to the right.

2

Order Code	Mounting Flange Options
1	4-Bolt w/1.78" Pilot
2	2-Bolt SAE "AA" w/2.0" Pilot
▲ 3	2-Bolt SAE "AA" w/1.78" Pilot
4	2-Bolt SAE "A" w/3.25" Pilot

▲ 100-piece minimum order

3

Order Code	Shaft Options
1	0.171" Tang w/ Short Coupling (.5" long) (For DC Motors)
2	0.50" Diameter x 1.50" Extension, 1/8" Square Key
▲ 3	Flexible Coupling
▲ 4	Threaded End (Specify Thread)
5	SAE Spline (9 tooth, 20/40DP standard with flange options 1, 2 and 3; 9 tooth, 16/32 DP standard for flange option 4.)
6	0.171" Tang w/Long Coupling (.8" long) (For AC Motors)

▲ 100-piece minimum order

4 & 5

Order Code	Gear Size Width, Inches	Displacement Cu. In./Rev. (cc)
04	0.125	0.065 (1.07)
06	0.188	0.097 (1.59)
08	0.250	0.129 (2.11)
▲ 10	0.312	0.161 (2.64)
12	0.375	0.194 (3.18)
▲ 14	0.437	0.226 (3.70)
16	0.500	0.258 (4.23)
▲ 18	0.562	0.291 (4.77)
20	0.625	0.323 (5.29)
24	0.750	0.388 (6.36)
28	0.875	0.453 (7.42)
32	1.000	0.517 (8.47)
36	1.125	0.581 (9.52)
40	1.250	0.647 (10.60)
44	1.375	0.711 (11.65)

▲ 100-piece minimum order

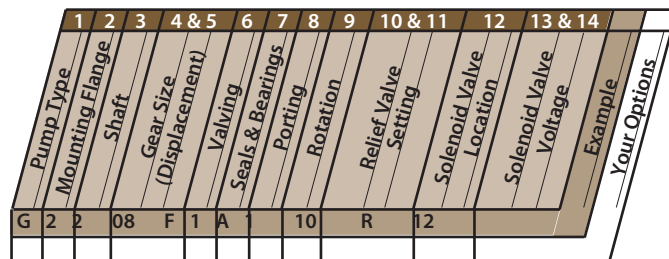
NOTE: Duplex and triple pumps available in minimum 100-piece order.

6

Order Code	Valve Options
A	No Valves
B	Relief Valve
† C	Direction Checks (Not Shown)
* D	Check Valve
* E	Check & Relief Valves (Not Shown)
* F	Check, Relief & Normally Closed Solenoid
* G	Check, Relief & Normally Open Solenoid
* H	Check, Relief & Solenoid Cavity Plugged

† Available only with option "3" of section 9

* Available ONLY for gear sizes 04 through 36



7

Order Code	Seals & Bearings Options
1	Single Lip Buna-N Low Pressure Seal
2	Viton Seal
* 3	Viton High-Pressure Seal w/Outboard Ball Bearing
▲ * 4	Double Seal w/Overboard Drain
* 5	Buna-N Seal w/Outboard Ball Bearing

▲ 100-piece minimum order.

* Not available with shaft option 3.

8

Order Code	Port Location Options
A	SAE Side Ports
▲ B	SAE Rear Ports
▲ C	NPTF Side Ports
▲ D	NPTF Rear Ports
▲ * E	Inlet Tube, 1.0" w/SAE Side Outlet Port

▲ 100-piece minimum order.

NOTE: If ordering NPTF Ports, specify size: 1/4, 3/8 or 1/2 in.

* For gear order codes 36, 40 & 44, 1-in. Diameter Inlet Tube must be used for speeds above 2400 RPM.

9

Order Code	Rotation Options
1	Clockwise
2	Counterclockwise
* 3	Birotational

* Must specify option "C" in section 6

10 & 11

Order Code	Relief Valve Setting
02-40	Full bypass pressure in hundreds of PSI. (Example: 00 = No Relief; 09 = 900 PSI (Full Bypass Pressure); 40 = 4000 PSI (Full Bypass Pressure).)

NOTE: The maximum relief valve full bypass setting for each gear size as listed on page 2, "intermittent rating" pressure chart.

Minimum full bypass relief valve settings: 200 psi for gear sizes 04-16 at 1725 rpm, 300 psi for gear sizes 18-44 at 1725 rpm. At speeds above 1725 rpm, the minimum relief valve settings increase. Contact factory for specific information.

12

Order Code	Solenoid Valve Location
R	Rear Mounted Solenoid Valve
S	Side Mounted Solenoid Valve
N	No Solenoid Valve

13 & 14

Order Code	Solenoid Valve Voltage
12	12 Volts DC
24	24 Volts DC
15	115 Volts AC
*PG	Solenoid Valve Cavity Plugged
00	No Solenoid Valve Cavity

* Must specify option "H" in section 6

PRODUCT RANGE

HE Powerpacks

12/24/48 VDC 0.3 – 4.5 kW and
0.75 – 3 kW AC modular power packs

HE Box Powerpacks

12/24/48 VDC modular powerpacks
in weatherproof boxes

Pressure Switches

5 - 350 bar, connecting/disconnecting

W100 Hydraulic pumps

0,5 - 2,0 cc 227 bar

W300 Hydraulic pumps

0,8 – 5,7 cc 230 bar

W600 Hydraulic pumps / motors

3 – 12 cc 276 bar

W900 Hydraulic pumps / motors

5 – 31 cc/section 276 bar

Calma The new quiet pumps

6,2 - 23,7 cc/section 250 bar

WQ900 The quiet pumps

5 - 23 cc/section 230 bar

WP900X Hydraulic pumps

16 - 31 cc/section 276 bar

W1500 Hydraulic pumps / motors

19 - 50 cc/section 276 bar

F12 FERRA Heavy duty pumps

16 - 41 cc/section 276 bar

F15 FERRA Heavy duty pumps

19 - 50 cc/section 276 bar

F20/F30 (LS) Hydraulic pumps / motors

23 – 161 cc/section 276 bar

GPA Internal Gear pumps

1,7 – 63 cc/section 100 bar

GC Hydraulic pumps / motors

1,06 – 11,65 cc/section 276 bar

D Hydraulic pumps

3,8 – 22,9 cc/section 207 bar

H Hydraulic pumps

9,8 – 39,4 cc/section 207 bar

II-Stage Hydraulic pumps

4,2 – 22,8 cc/section 276 bar

Rotary Flow Dividers

3,8 – 13,3 cc/section 300 bar

Transmission pumps

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