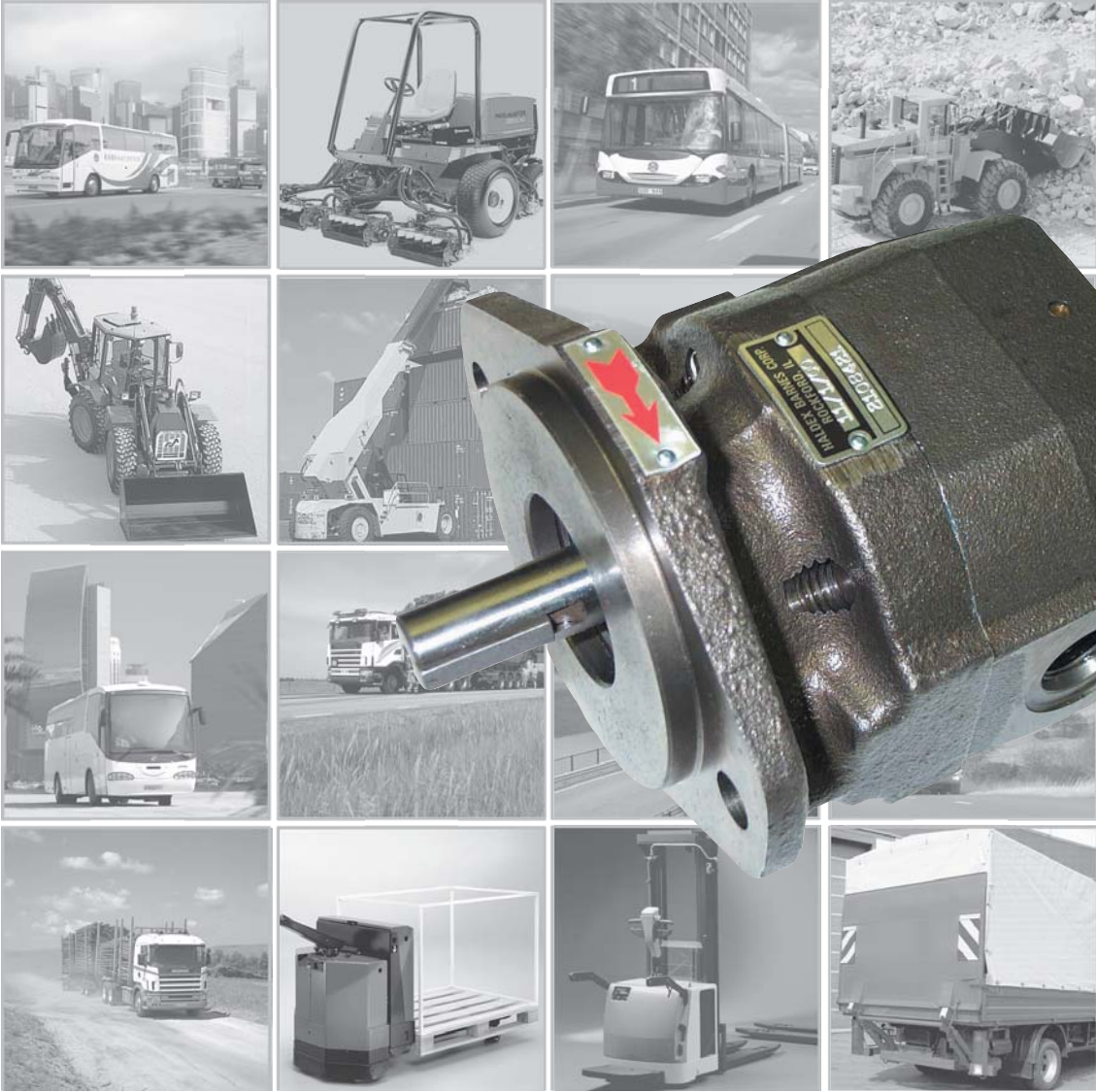




D SERIES HYDRAULIC PUMP



Introduction to Concentric D Series Hydraulic Pumps

Concentric offers one of the widest selections of gear pumps and hydraulic motors in the industry. All Concentric products are designed to provide solutions to our customers' application challenges.

Concentric D Series Hydraulic Pumps are compact, external gear models for use in pumping fluids with lubricating qualities. Suitable for use in a wide variety of

applications, including agricultural, construction, transmission charge and lube, and diesel fuel transfer. Our D pumps are designed to provide reliable, long life service under rugged conditions. D Series pumps are built with cast iron bodies and hardened steel gears.

The Concentric line of D Series pumps covers a displacement range from 0.23

in.³ (3.8 cc) to 1.395 in.³ (22.9 cc). Single, tandem, triple and quadruple configurations are available. The D Series also offers a large selection of shaft and flange options to meet your application requirements.

Specifications and Application Data

Model series	Pump size	Displacement per revolution		Rated pressure		Rated speed @ rated pressure	Minimum speed @ rated pressure	Typical delivery @ rated speed & pressure		Power required @ rated speed & pressure	
		cc	in ³	bar	psi	rpm	rpm	l/min	gpm	kW	hp
D Single Pumps	08	3.8	.232	207	3000	3600	600	13.7	3.6	4.7	6.3
	12	5.7	.348	190	2750	3600	600	20.6	5.5	6.5	8.8
	16	7.6	.465	138	2000	3600	600	27.4	7.2	6.3	8.5
	20	9.5	.581	117	1700	3600	600	34.4	9.1	6.7	9.0
	24	11.4	.697	103	1500	3600	600	41.1	10.9	7.1	9.5
	28	13.3	.813	83	1200	3600	600	48.0	12.7	6.6	8.9
	32	15.2	.930	76	1100	3600	600	54.9	14.5	6.9	9.3
	36	17.1	1.043	69	1000	3600	600	61.7	16.3	7.1	9.5
	48 *	22.9	1.395	52	750	3600	600	82.3	21.7	7.1	9.5

* This displacement is only available in a tandem pump.

Installation Information

FLUIDS - Most premium grade petroleum base fluids can be used with the D Series pump. Optimum operating viscosity is 16-63 cSt (80-288 SSU) at maximum rated speed. Minimum operating viscosity is 10 cSt (59 SSU). Maximum operating viscosity is 750 cSt (3409 SSU). Maximum cold start viscosity is 2000 cSt (9091 SSU). Contact Concentric for additional information regarding the D pump performance using other fluids.

OPERATING TEMPERATURES - Fluid temperature range (Mineral Oil):

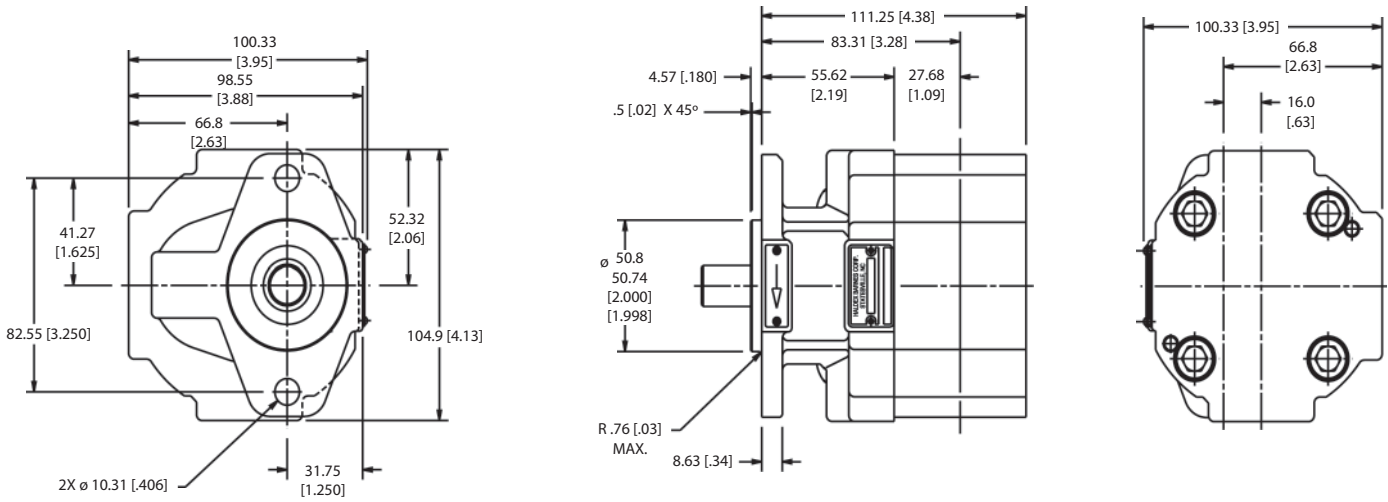
Max. 93°C (200°F) continuous and Max. 105°C (221°F) intermittent.

FILTRATION - Proper filtration is critical to the trouble free operating of any hydraulic system. For optimum pump life at maximum pressure ISO 4406/1986 (Code 18/14) is recommended. A 10-micron filter sized to accommodate full system return flow is recommended for most operating environments.

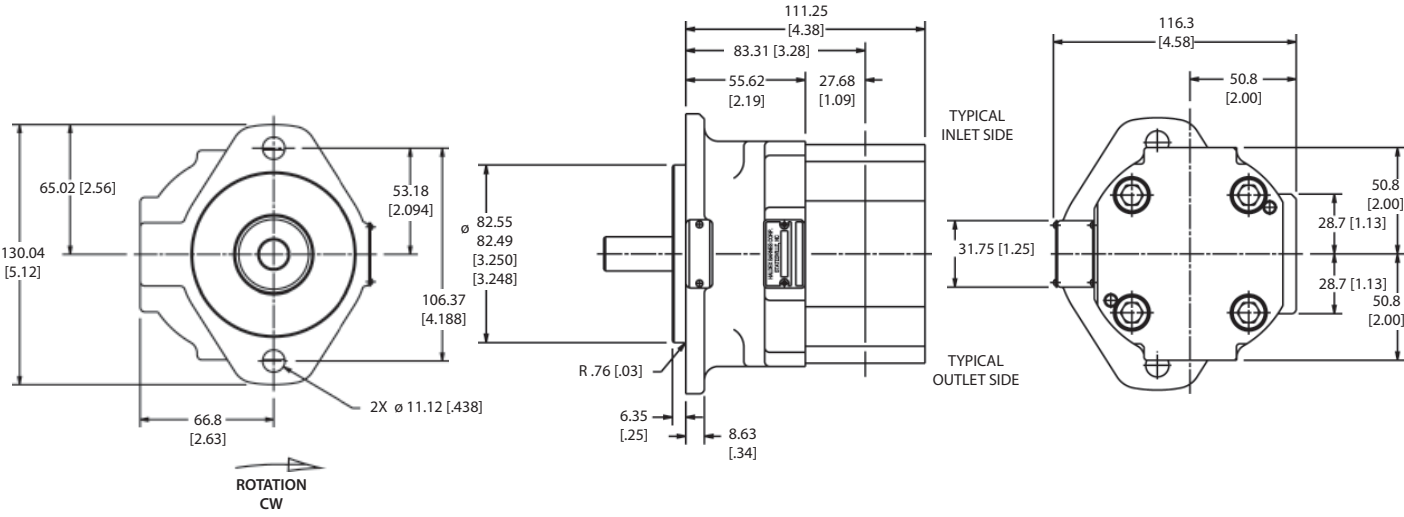
Flange Options & Dimensions

For its displacement and pressure range, the D Series pump features one of the most compact envelopes available from any manufacturer. Standard international mounting flange options are outlined below. Dimensions shown outside of brackets are metric units.

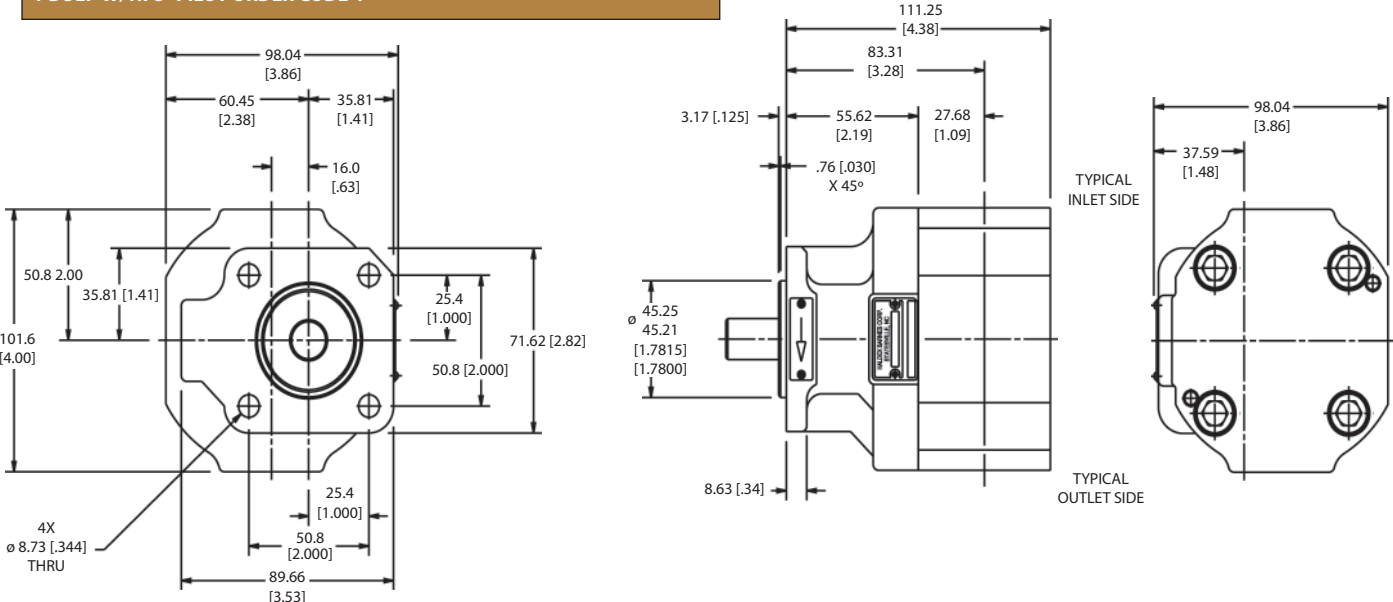
SAE "AA" 2-BOLT w/2.00" PILOT ORDER CODE 1



SAE "A" 2-BOLT ORDER CODE 2



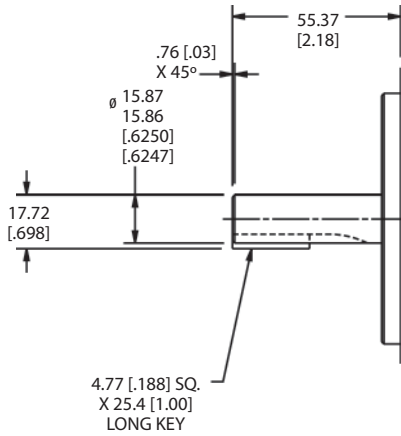
4-BOLT W/1.78" PILOT ORDER CODE 4



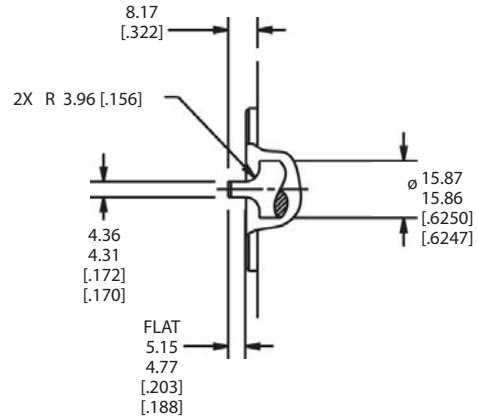
Shaft Options

A critical element which must be considered when specifying a D Series pump for your application is the shaft drive system. Concentric has both the product and the application experience to insure that your D Series pump incorporates the correct shaft for your application. The following depict the 8 standard shaft options for the D Series pump. Our flexible manufacturing capabilities can accommodate a wide variety of shaft configurations.

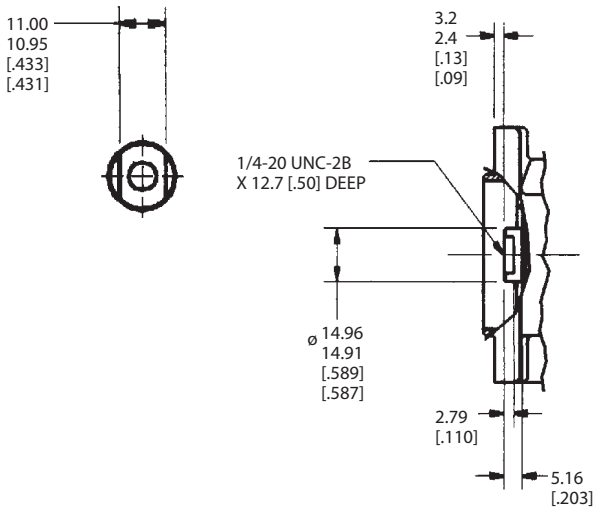
SAE "A" 5/8" STRAIGHT KEYED ORDER CODE 1



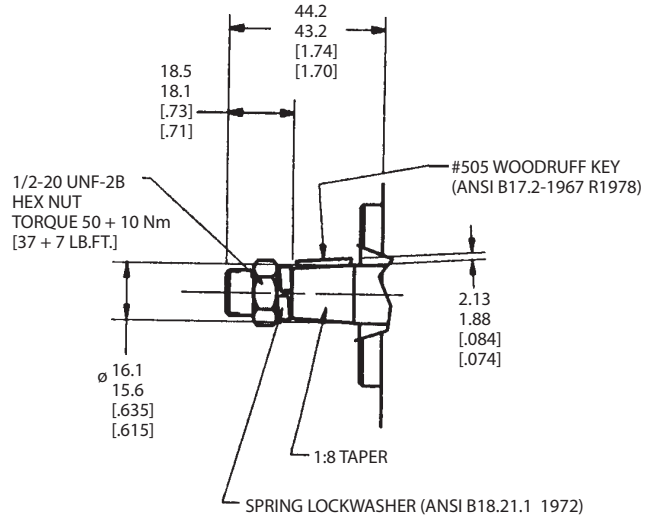
.171" TANG DRIVE ORDER CODE 2



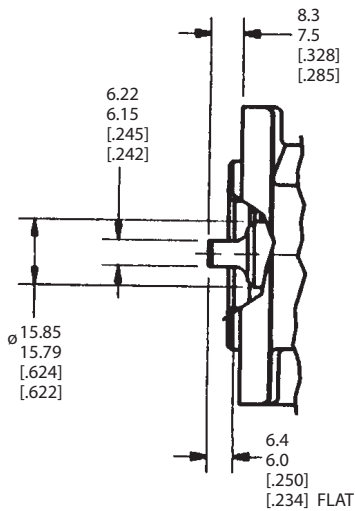
FLEX COUPLING DRIVE ORDER CODE 3



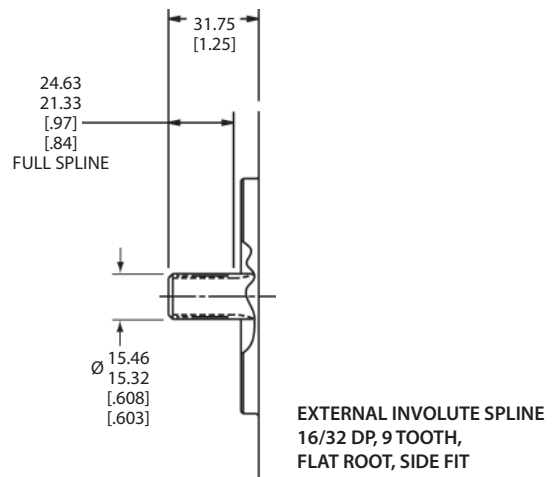
SAE "A" TAPERED ORDER CODE 7



.252" TANG DRIVE ORDER CODE 8

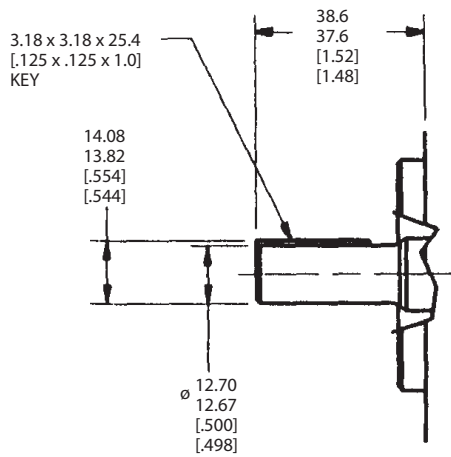


SAE "A" 9 TOOTH SPLINE ORDER CODE 9

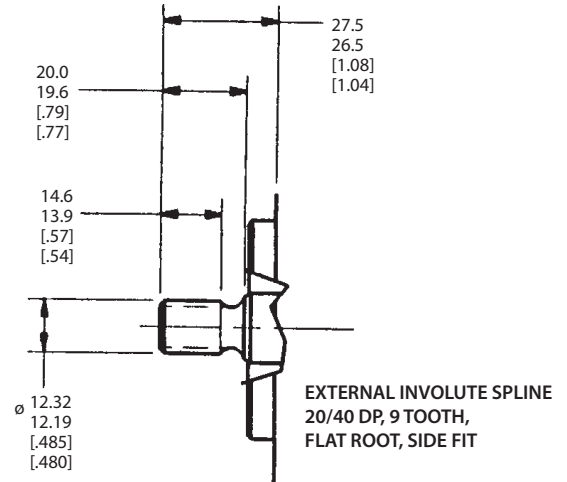


Shaft Options (cont.)

SAE "AA" STRAIGHT KEYED ORDER CODE 10

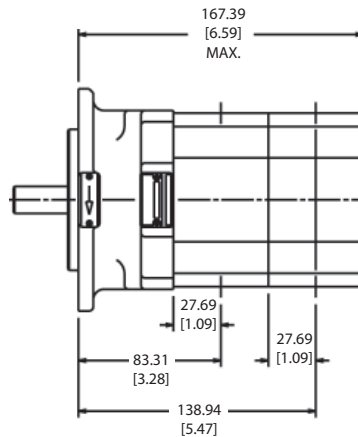


SAE "AA" 9 TOOTH SPLINE ORDER CODE 11

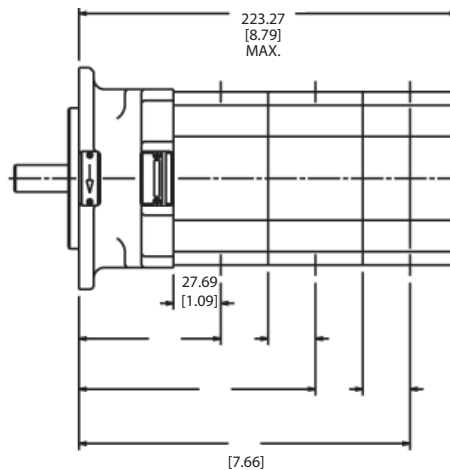


Multiple Pump Dimensions

TANDEM PUMP

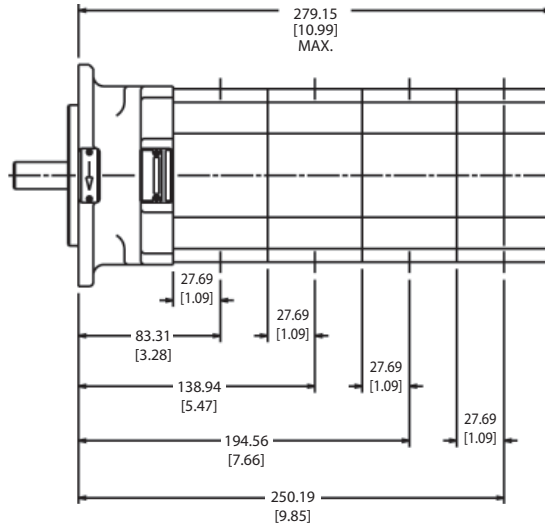


TRIPLE PUMP



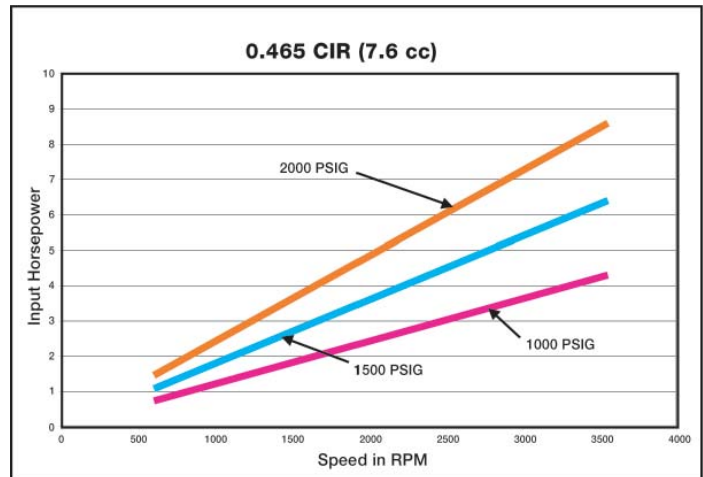
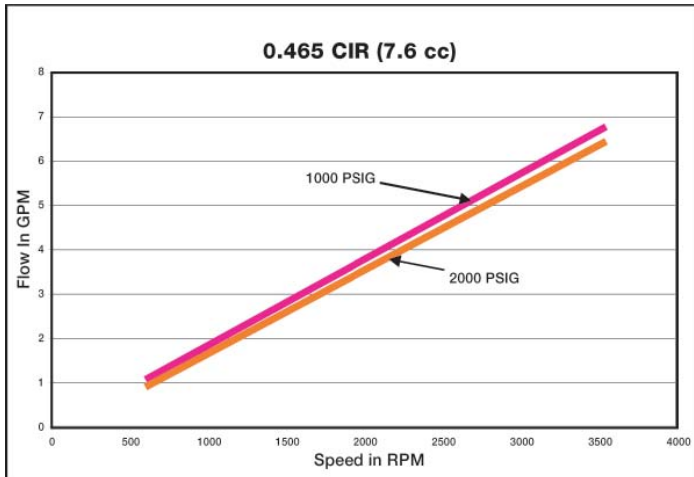
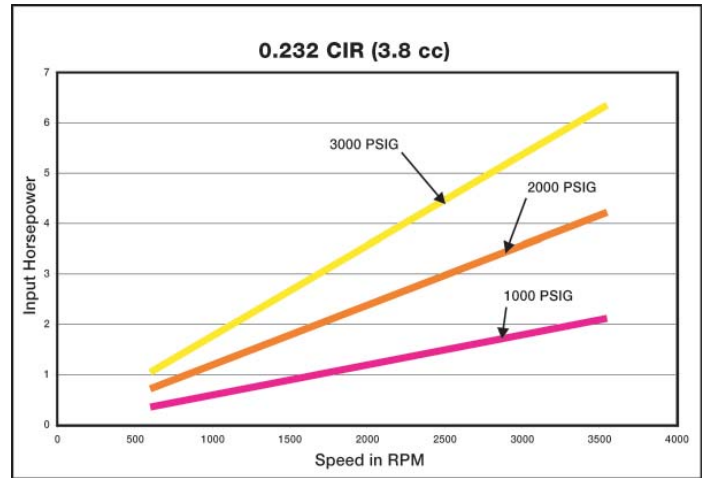
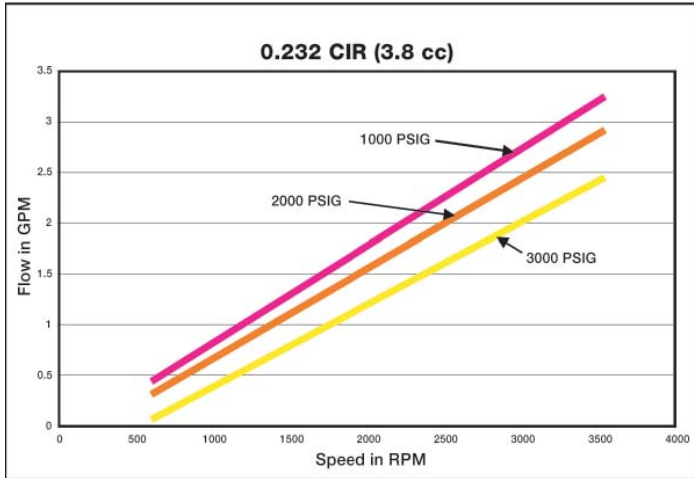
Multiple Pump Dimensions (Cont.)

QUADRUPLE PUMP

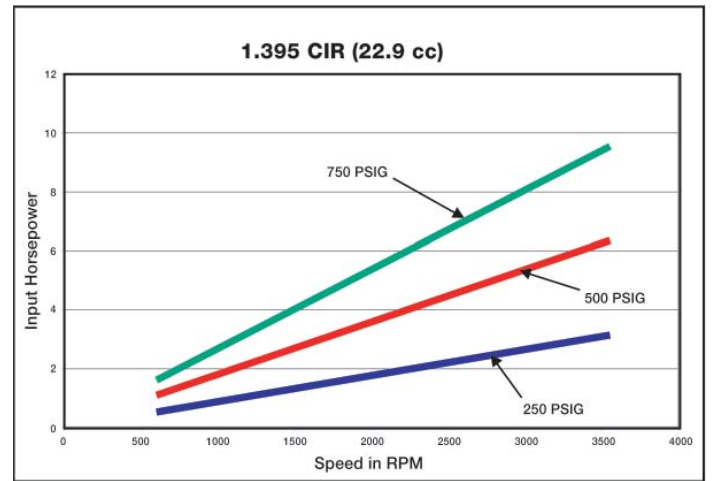
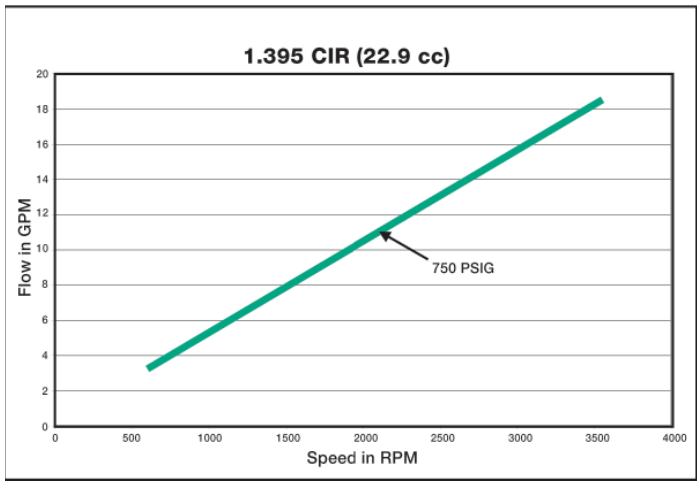
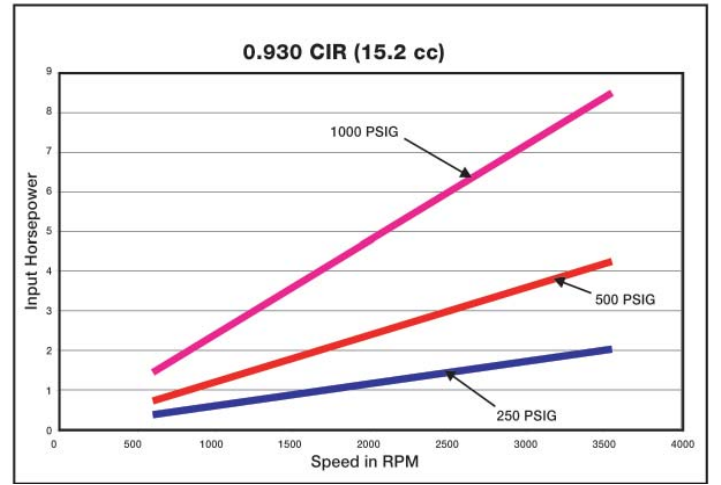
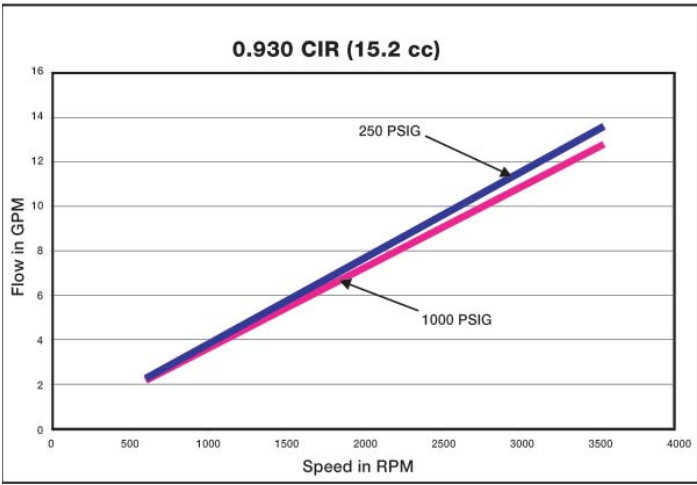
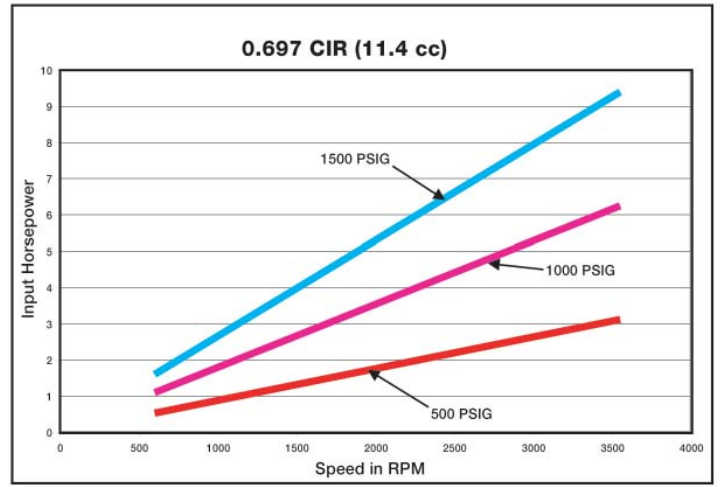
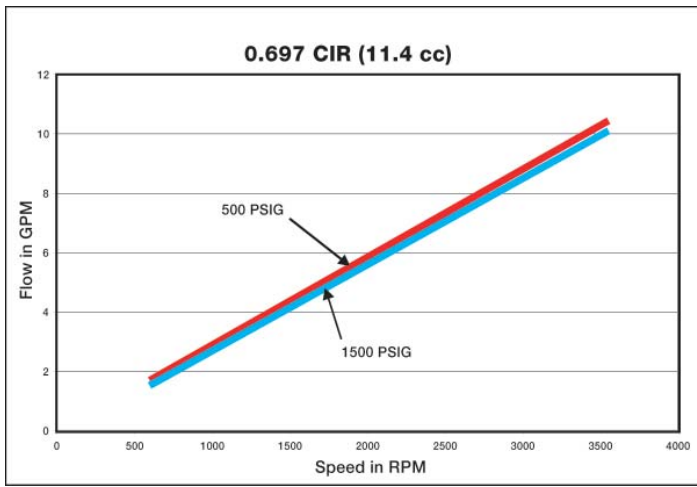


Performance Charts

NOTE: Oil viscosity is 200 SSU.



Performance Charts (Cont.)



D Series Single Pump Order Code

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

EXAMPLE:										
F3- D-2- V-20- S-1-B- 9-10- R										
1	2	3	4	5	6	7	8	9	10	11
Seal Options	Series	Mounting Flange	Inlet Port	Displacement Code	Outlet Port	Gear Housing Type	Shaft Seals	Drive Shaft	Design Series	Rotation

1 (Seal Options)

Order Code	Description
F3	Viton Seal
Omit	Standard (Buna N)

2 (Series)

Order Code	Description
D	D Series Hydraulic Pump

3 (Mounting Flange)

Order Code	Description
1	SAE "AA" 2-Bolt w/2.00" Pilot
2	SAE "A" 2-Bolt
4	4-Bolt w/ 1.78" Pilot

4 (Inlet Port)

Order Code	Description
Q	#8 SAE (3/4" - 16) Straight Thread
S	#10 SAE (7/8" - 14) Straight Thread
T	#12 SAE (1-1/16" - 12) Straight Thread
V	#16 SAE (1 5/16" - 12) Straight Thread

5 (Displacement Code)

Order Code	cc / In ³
08	(3.8 cc / .232 in. ³ /rev.)
12	(5.7 cc / .348 in. ³ /rev.)
16	(7.6 cc / .465 in. ³ /rev.)
20	(9.5 cc / .581 in. ³ /rev.)
24	(11.4 cc / .697 in. ³ /rev.)

Contact factory for other requirements.

6 (Outlet Port)

Order Code	Description
H	#6 SAE (9/16" - 18) Straight Thread
Q	#8 SAE (3/4" - 16) Straight Thread
S	#10 SAE (7/8" - 14) Straight Thread
T	#12 SAE (1-1/16" - 12) Straight Thread
V	#16 SAE (1-5/16" - 12) Straight Thread

7 (Gear Housing Type)

Order Code	Description
1	Standard
7	Case Drain (optional)

Contact factory for other requirements.

8 (Shaft Seals)

Order Code	Description
A	Single Shaft Seal
B	Double Shaft Seal w/ Weep Hole
C	Single Shaft Seal w/ Ball Bearing
D	High Pressure Single Shaft Seal
E	High Pressure Single Shaft Seal w/ Ball Bearing
F	High Pressure Inner Single Shaft Seal w/ Std. Outer

9 (Drive Shaft)

Order Code	Description
1	SAE "A" 5/8" Straight Keyed
2	.171" Tang Drive
3	Flex Coupling Drive
7	SAE "A" Tapered
8	.252" Tang Drive
9	SAE "A" 9 Tooth Spline
10	SAE "AA" Straight Keyed
11	SAE "AA" 9 Tooth Spline

Contact factory for other requirements.

10 (Design Series)

Order Code	Description
10	Standard

11 (Rotation)

Order Code	Description
R	Clockwise Rotation
L	Counterclockwise Rotation
B	Bi-Rotational

D Series Tandem Pump Order Code

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

EXAMPLE:												
F3- D-2- V-20- S-V-20- S- 1-B- 10- R												
1	2	3	4	5	6	7	8	9	10	11	12	13
Seal Options	Series	Mounting Flange	1st Sec Inlet Port	1st Sec Displacement	1st Sec Outlet Port	2nd Sec Inlet Port	2nd Sec Displacement	2nd Sec Outlet Port	Drive Shaft	Shaft Seals	Design Series	Rotation

1 (Seal Options)

Order Code	Description
F3	Viton Seal
Omit	Standard (Buna N)

2 (Series)

Order Code	Description
D	D Series Hydraulic Pump

3 (Mounting Flange)

Order Code	Description
1	SAE "AA" 2-Bolt w/2.00" Pilot
2	SAE "A" 2-Bolt
4	4-Bolt w/ 1.78" Pilot

4 (First Section Inlet Port)

Order Code	Description
Q	#8 SAE (3/4" - 16) Straight Thread
S	#10 SAE (7/8" - 14) Straight Thread
T	#12 SAE (1-1/16" - 12) Straight Thread
V	#16 SAE (1-5/16" - 12) Straight Thread

Common inlet port available (contact factory).

5 (First Section Displacement Code)

Order Code	cc / In ³
08	(3.8 cc / .232 in. ³ /rev.)
12	(5.7 cc / .348 in. ³ /rev.)
16	(7.6 cc / .465 in. ³ /rev.)
20	(9.5 cc / .581 in. ³ /rev.)
24	(11.4 cc / .697 in. ³ /rev.)

Contact factory for other requirements.

6 (First Section Outlet Port)

Order Code	Description
H	#6 SAE (9/16" - 18) Straight Thread
Q	#8 SAE (3/4" - 16) Straight Thread
S	#10 SAE (7/8" - 14) Straight Thread
T	#12 SAE (1-1/16" - 12) Straight Thread
V	#16 SAE (1-5/16" - 12) Straight Thread

7 (Second Section Inlet Port)

Order Code	Description
Q	#8 SAE (3/4" - 16) Straight Thread
S	#10 SAE (7/8" - 14) Straight Thread
T	#12 SAE (1-1/16" - 12) Straight Thread
V	#16 SAE (1-5/16" - 12) Straight Thread

Common inlet port available (contact factory).

8 (Second Section Displacement Code)

Order Code	cc / In ³
08	(3.8 cc / .232 in. ³ /rev.)
12	(5.7 cc / .348 in. ³ /rev.)
16	(7.6 cc / .465 in. ³ /rev.)
20	(9.5 cc / .581 in. ³ /rev.)
24	(11.4 cc / .697 in. ³ /rev.)

Contact factory for other requirements.

9 (Second Section Outlet Port)

Order Code	Description
H	#6 SAE (9/16" - 18) Straight Thread
Q	#8 SAE (3/4" - 16) Straight Thread
S	#10 SAE (7/8" - 14) Straight Thread
T	#12 SAE (1-1/16" - 12) Straight Thread
V	#16 SAE (1-5/16" - 12) Straight Thread

10 (Drive Shaft)

Order Code	Description
1	SAE "A" 5/8" Straight Keyed
2	.171" Tang Drive
3	Flex Coupling Drive
7	SAE "A" Tapered
8	.252" Tang Drive
9	SAE "A" 9 Tooth Spline
10	SAE "AA" Straight Keyed
11	SAE "AA" 9 Tooth Spline

Contact factory for other requirements.

11 (Shaft Seals)

Order Code	Description
A	Single Shaft Seal
B	Double Shaft Seal w/ Weep Hole
C	Single Shaft Seal w/ Ball Bearing
D	High Pressure Single Shaft Seal
E	High Pressure Single Shaft Seal w/ Ball Bearing
F	High Pressure Inner Single Shaft Seal w/ Std. Outer

12 (Design Series)

Order Code	Description
10	Standard
11	Sealed Between Sections

13 (Rotation)

Order Code	Description
R	Clockwise Rotation
L	Counterclockwise Rotation

PUMPS & MOTORS

Cast Iron Pumps

Heavy Duty



GC Series Pumps

Displacements

0.065 to 0.711 cu. In. (1.06 to 11.65 cc)

GC Series High/Low Pumps

High Pressure Displacements

0.065 to 0.258 cu. In. (1.06 to 4.22 cc)

Low Pressure Displacements

0.258 to 0.776 cu. In. (4.22 to 12.71 cc)

Maximum Pressure

4,000 psi (276 bar)

Maximum Speed

4,000 rpm



F12 & F15 Ferra Series Pumps

F12 Displacements

0.976 to 2.502 cu. In. (16 – 41 cc)

F15 Displacements

1.159 to 3.051 cu. In. (19 to 50 cc)

Maximum Pressure

4,000 psi (276 bar)

Maximum Speed

3,600 rpm



F20/F30 Pumps & F20-LS/F30-LS Load Sense Ferra Series Pumps

Displacements

1.41 to 9.82 cu. In. (23 to 161 cc)

Maximum Pressure

4,000 psi (276 bar)

Maximum Speed

3,600 rpm



D Series Pumps

Displacements

0.232 to 1.395 cu. In. (3.80 to 22.85 cc)

D Series High/Low Pumps

High Pressure Displacements

0.465 cu. In. (7.62 cc)

Low Pressure Displacements

0.930 to 1.395 cu. In. (15.24 to 22.86 cc)

Maximum Pressure

3,000 – 4,000 psi (207 – 276 bar)

Maximum Speed

3,600 – 4,000 rpm

Aluminum Pumps

Medium/Light Duty



W-Series Pumps

W100 Displacements

0.031 to 0.122 cu. In. (0.50 to 2.00 cc)

W300 Displacements

0.049 to 0.347 cu. In. (0.80 to 5.70 cc)

W600 Displacements

0.244 to 0.732 cu. In. (4 to 12 cc)

W900 Displacements

0.305 to 1.891 cu. In. (5 to 31 cc)

W1200 Displacements

1.526 to 2.014 cu. In. (25 to 33 cc)

W1500 Displacements

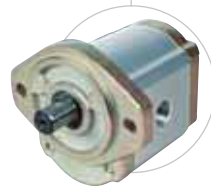
1.159 to 3.051 cu. In. (19 to 50 cc)

Maximum Pressure

4,000 psi (276 bar)

Maximum Speed

500 to 4,000 rpm



WK900 CALMA Pumps

Displacements

0.305 to 1.648 cu. In. (5 to 27 cc)

Maximum Pressure

3,336 psi (230 bar)

Maximum Speed

4,000 rpm

Fluid Motors



Cast Iron

Displacements

0.065 to 9.82 cu. In. (1.06 to 161 cc)

Speed

Up to 10,000 rpm

Aluminum

Displacements

0.244 to 3.050 cu. In. (4 to 50 cc)

Speed

Up to 4,000 rpm

Flow Dividers



GC & D Series

GC Displacements

0.097 to 0.517 cu. In. (1.58 to 8.47 cc)

D Displacements

0.232 to 0.813 cu. in. (3.8 to 13.32 cc)

Maximum Pressure

4,500 psi (310 bar)

Maximum Input Flow Per Section

14 gpm (53 lpm)

Call us for more information

For application assistance or detailed literature on any product line, call us toll-free: **1-800-572-7867.**

Visit our web site: <http://www.concentricAB.com>

E-mail us: info.hydraulics.us@concentricAB.com

Only Concentric offers this extensive range of products worldwide.

POWER PACKS



PUMP/MOTORS (DC/AC)

DC Voltage Range

12 to 72 VDC

AC Horsepower Range

1/2 to 3 HP

Pump Displacements

0.04 – 1.71 cu. In. (0.65 to 28 cc)

Maximum Pressure

4,000 psi (276 bar)



HB800 POWER PACKS

Voltage Range

12 to 24 VDC

Pump Displacements

0.037 to 0.092 cu. In. (0.60 to 1.5 cc)

Reservoirs

0.13 to 1 gal. (.5 to 3.8 ltr.) plastic

Maximum Pressure

2,610 psi (180 bar)



HE1000 SERIES POWER PACKS

Voltage Range

12 to 24 VDC

Pump Displacements

0.015 to 0.122 cu. In. (0.24 to 2 cc)

Maximum Pressure

3,336 psi (230 bar)

Reservoirs

0.13 to 1.0 gal. (0.5 to 3.8 ltr.) plastic



HE2000 SERIES POWER PACKS

Voltage Range

12 to 24 VDC, 115 to 230 VAC

Pump Displacements

0.049 to 0.388 cu. In. (0.80 to 6.36 cc)

Maximum Pressure

3,336 psi (230 bar)

Reservoirs

0.95 qt. to 3.96 gal. (0.9 to 15 ltr.) steel,
0.8 to 1.7 qt. (0.76 to 1.6 ltr.) plastic



HE "BOX" POWER PACKS

Voltage Range

12 to 24 VDC

Pump Displacements

0.049 to 0.388 cu. In. (0.80 to 6.36 cc)

Maximum Pressure

3,336 psi (230 bar)

Reservoirs

3 qt. to 5.0 gal. (2.84 to 19 ltr.) steel

HE-Q (QUIET) POWER PACKS

Voltage Range

24 VDC

WQ300 Pump Displacements

0.073 to 0.347 cu. In. (1.2 to 5.7 cc)

Noise

42dB(A)



BIROTATIONAL POWER PACKS

Voltage Range

12 to 24 VDC, 115 to 230 VAC

Pump Displacements

0.049 to 0.129 cu. In. (0.80 to 2.11 cc)

Reservoirs

2 to 2.96 qt. (1.9 to 2.8 ltr.) plastic,
1 to 2 gal. (3.8 to 7.6 ltr.) steel



AC POWER PACKS GC-9500 SERIES

Displacements

0.065 to 1.394 cu. In. (1.06 to 22.85 cc)

Maximum Pressure

3,000 psi (207 bar)

Maximum Speed

3,600 rpm

Reservoirs

5 to 20 gal. (19 to 76 ltr.) steel

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

www.concentricAB.com


Concentric Rockford Corp.

2222 15th Street
ROCKFORD, IL 61104
USA
Tel: +1-815 398 4400
Fax: +1-815 398 5977
E-mail: info.hydraulics.us@concentricAB.com

Concentric Hof GmbH

Postfach 1507
D-95014 HOF
Germany
Tel: +49-9281 895-0
Fax: +49-9281 87133
E-mail: info.hydraulics.eu@concentricAB.com

Concentric Skanes AB

Box 95
SE-280 40 SK. FAGERHULT
Sweden
Tel: +46-433 32400
Fax: +46-433 30546
E-mail: info.hydraulics.eu@concentricAB.com

Concentric Suzhou Co. Ltd.

47 Dongjing Industrial Park
9 Dong Fu Lu
SIP, Suzhou
Jiangsu
China 215123
Tel +86 512 8717 5100
Fax +86 512 8717 5101
info.chsh@concentricAB.com



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