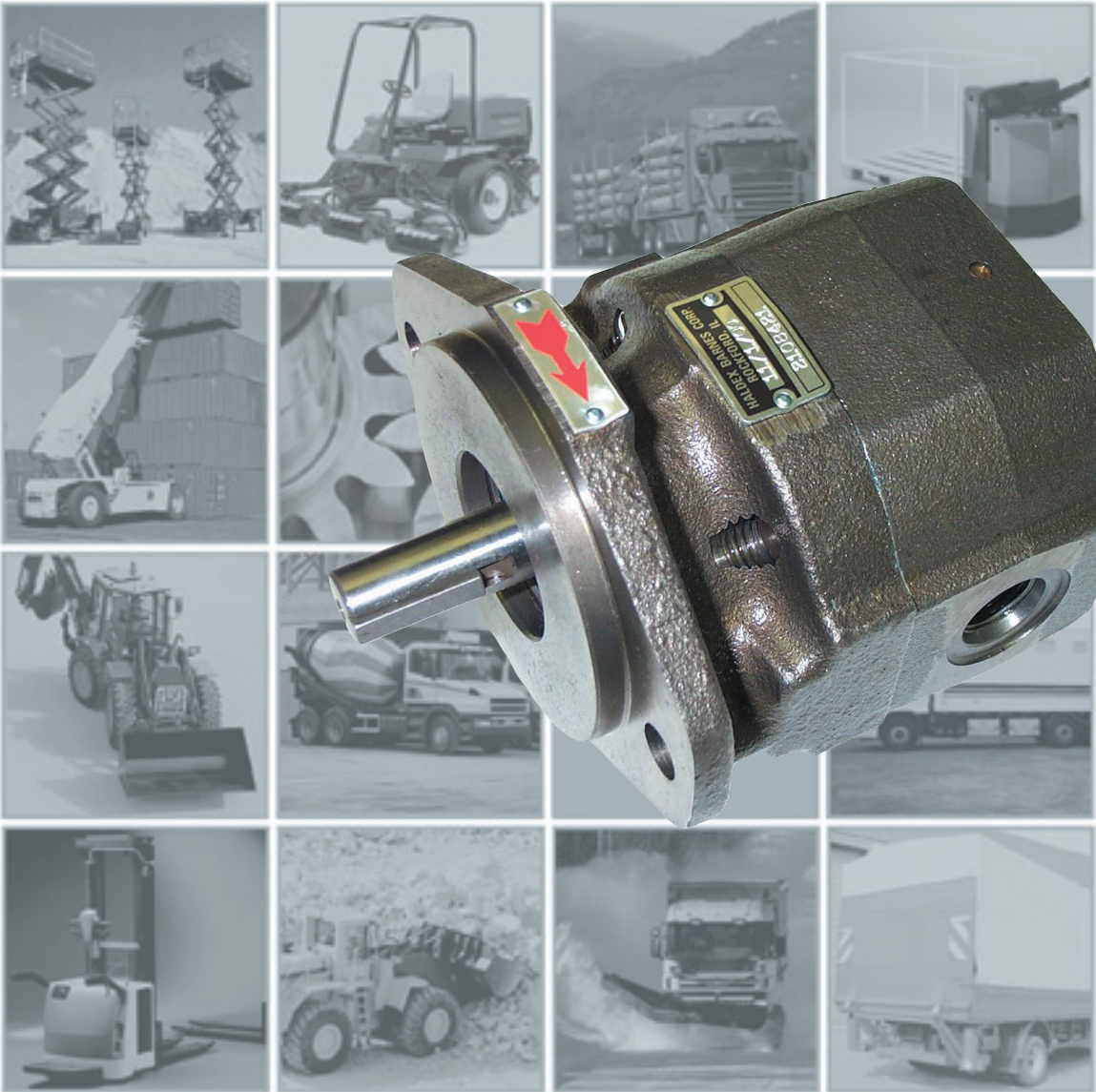




D SERIES HYDRAULIC PUMP



Introduction to Haldex D Series Hydraulic Pumps

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

Haldex 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 Haldex 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 Haldex for additional information regarding the D pump performance using other fluids.

OPERATING TEMPERATURES - Fluid temperature range (Mineral Oil):

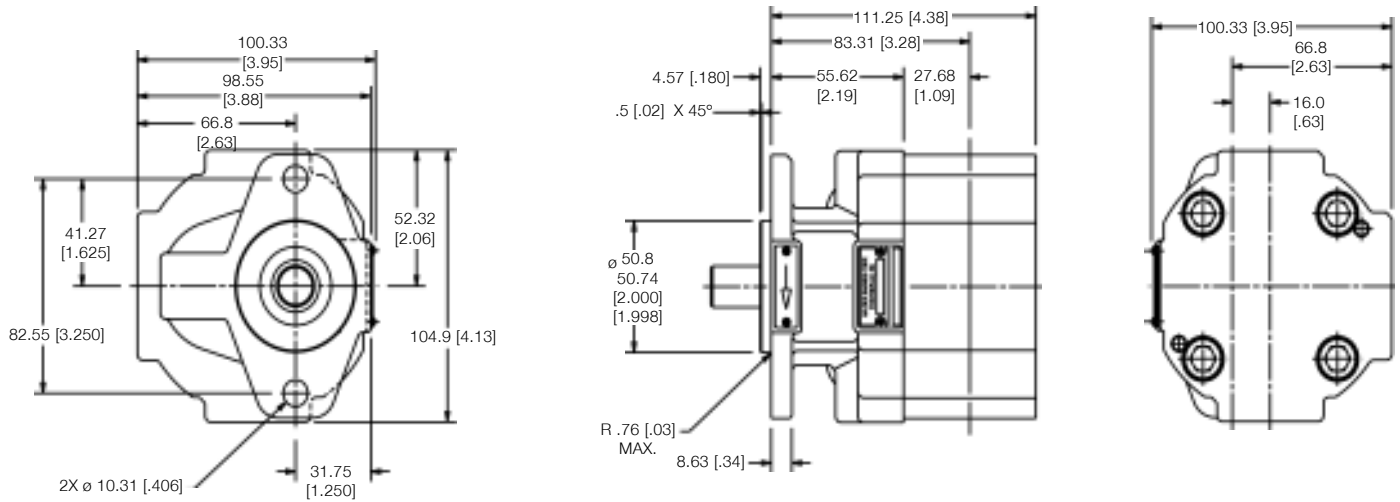
Max. 93°C (200°F) continuous and
Max. 105°C (221°F) intermittent.

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.

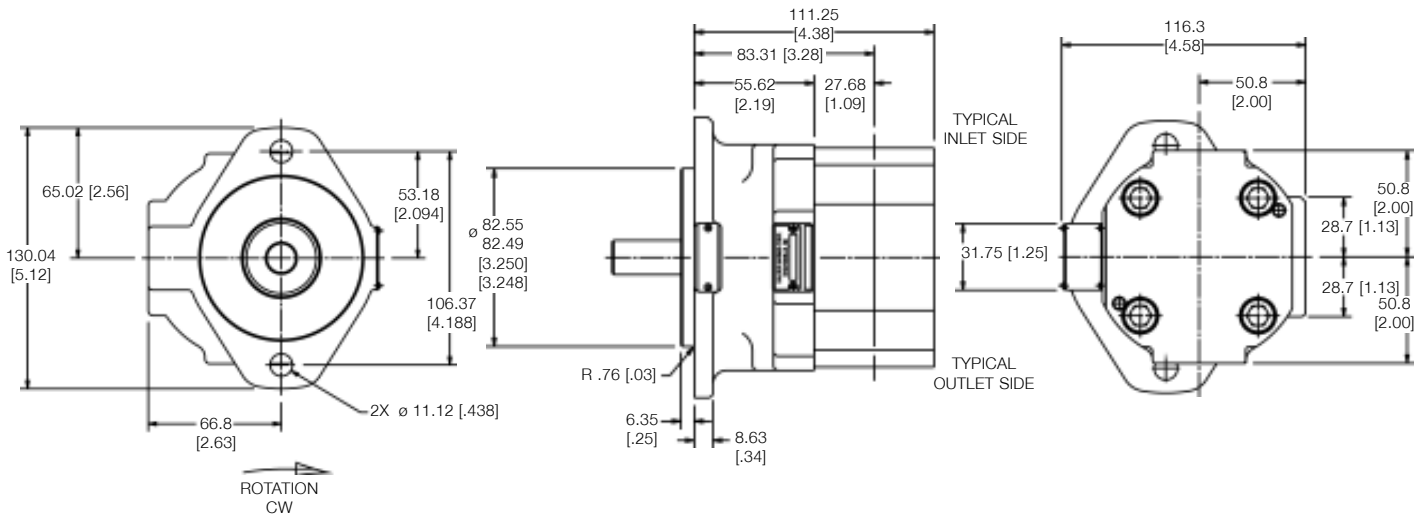
Flange Options & Dimensions

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.

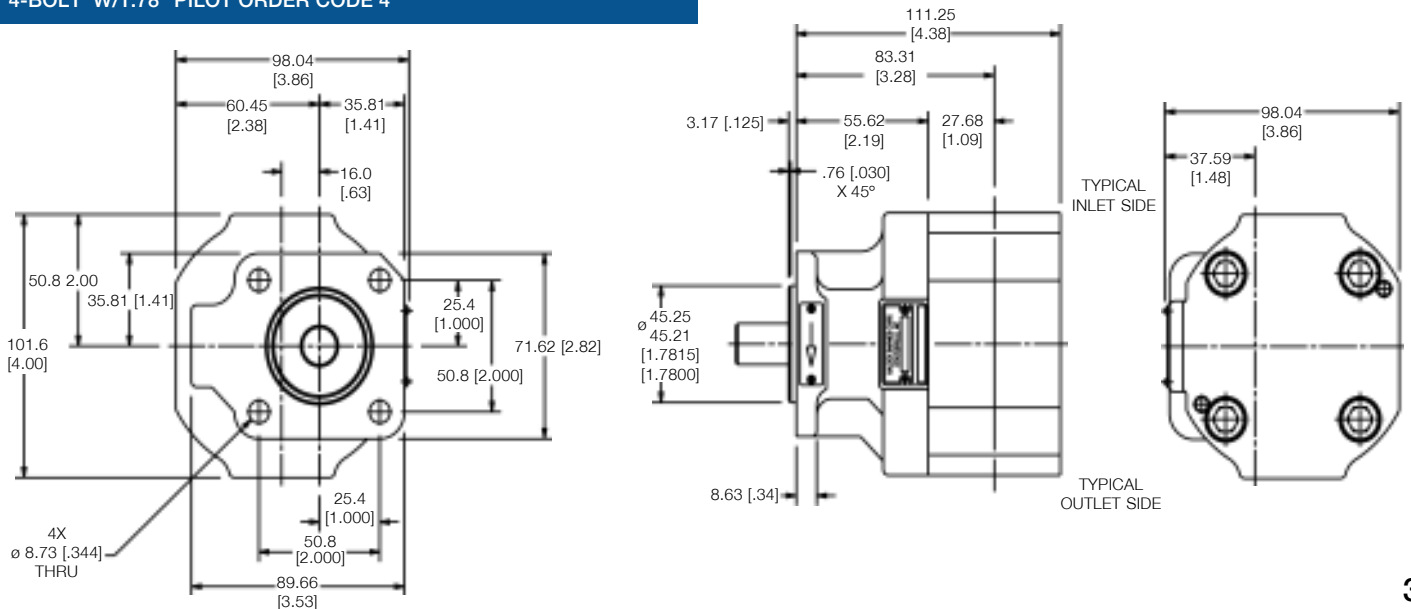
SAE "AA" 2-BOLT w/2.00" PILOT ORDER CODE 1



SAE "A" 2-BOLT ORDER CODE 2



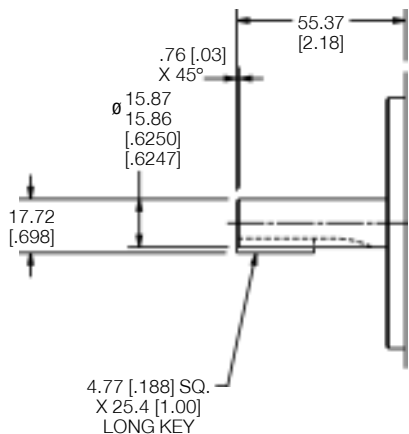
4-BOLT W/1.78" PILOT ORDER CODE 4



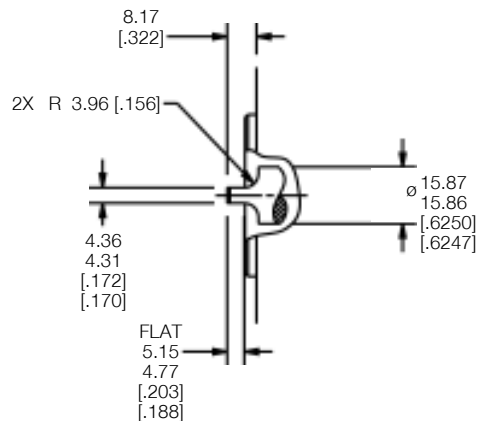
Shaft Options

A critical element which must be considered when specifying a D Series pump for your application is the shaft drive system. Haldex 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.

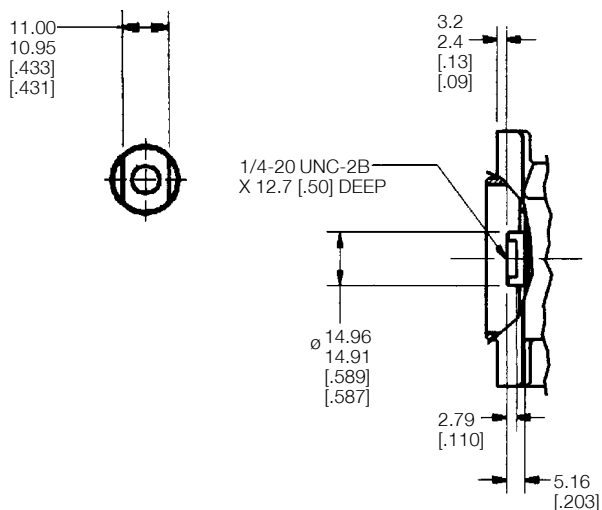
SAE "A" 5/8" STRAIGHT KEYED ORDER CODE 1



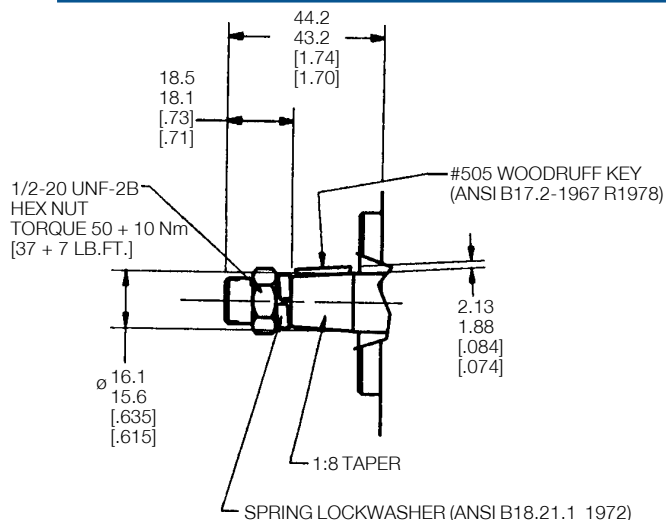
.171" TANG DRIVE ORDER CODE 2



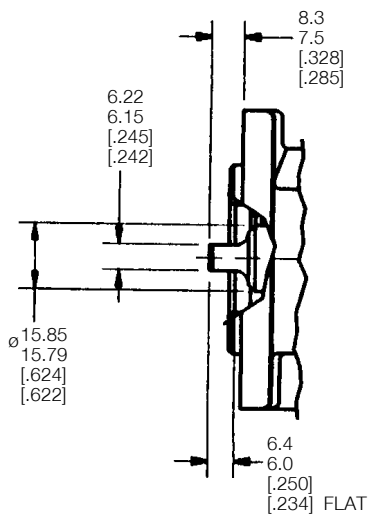
FLEX COUPLING DRIVE ORDER CODE 3



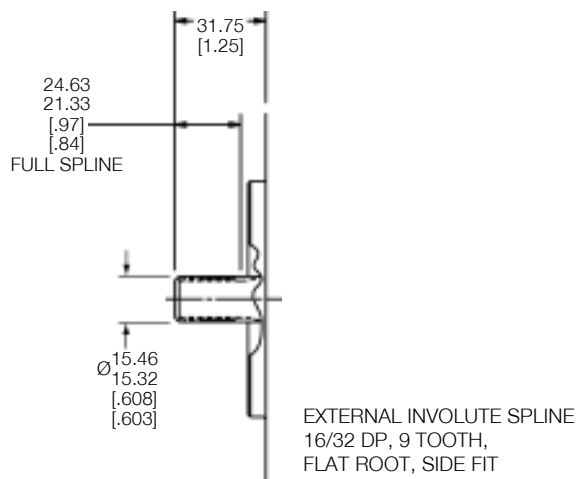
SAE "A" TAPERED ORDER CODE 7



.252" TANG DRIVE ORDER CODE 8

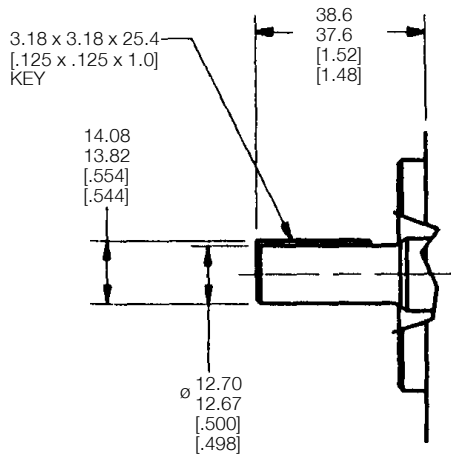


SAE "A" 9 TOOTH SPLINE ORDER CODE 9

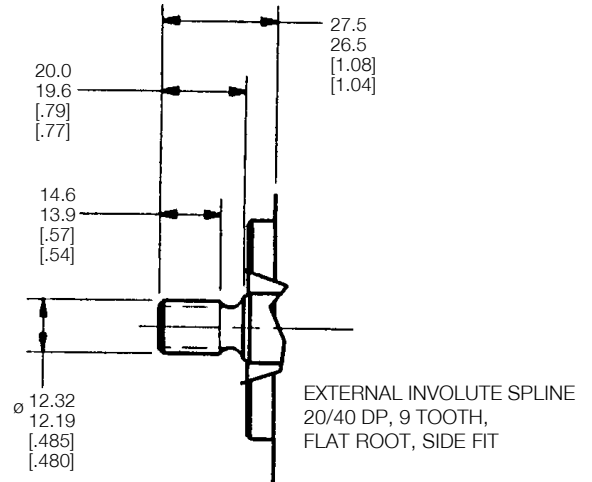


Shaft Options (cont.)

SAE "AA" STRAIGHT KEYED ORDER CODE 10

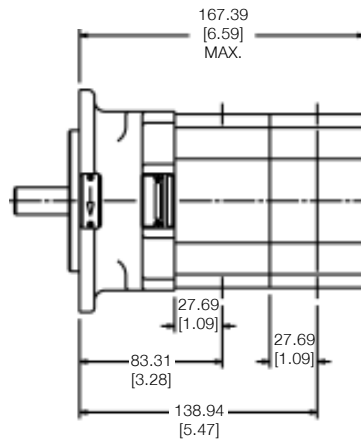


SAE "AA" 9 TOOTH SPLINE ORDER CODE 11

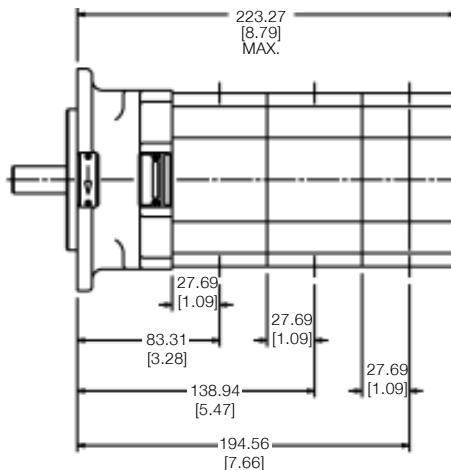


Multiple Pump Dimensions

TANDEM PUMP

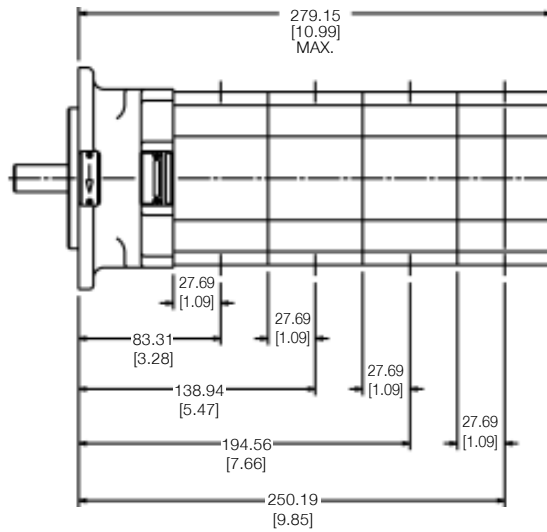


TRIPLE PUMP



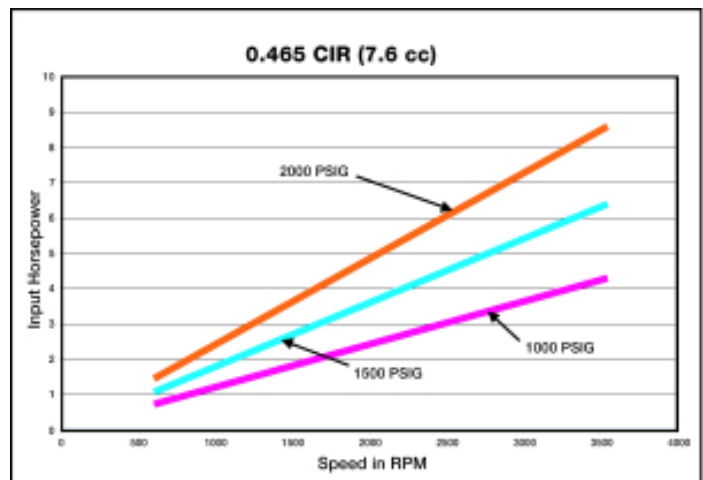
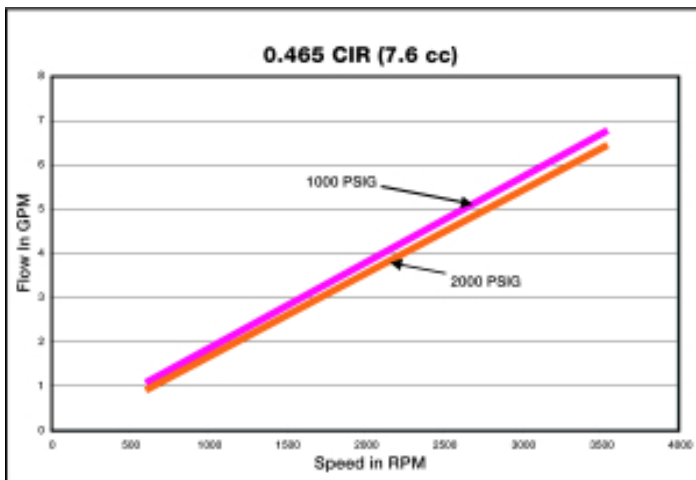
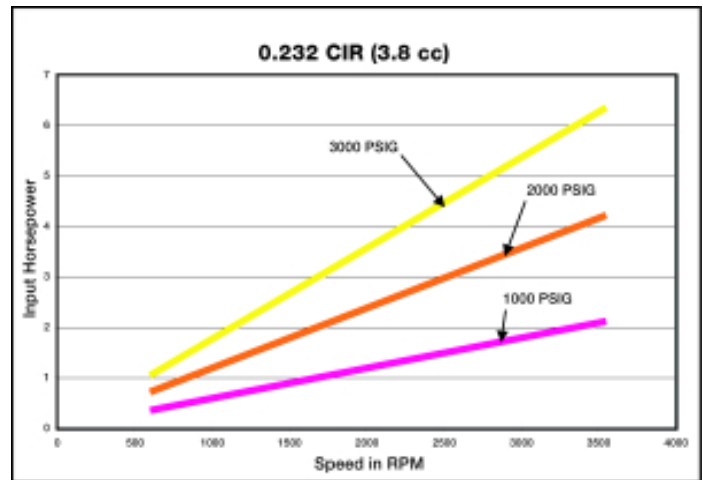
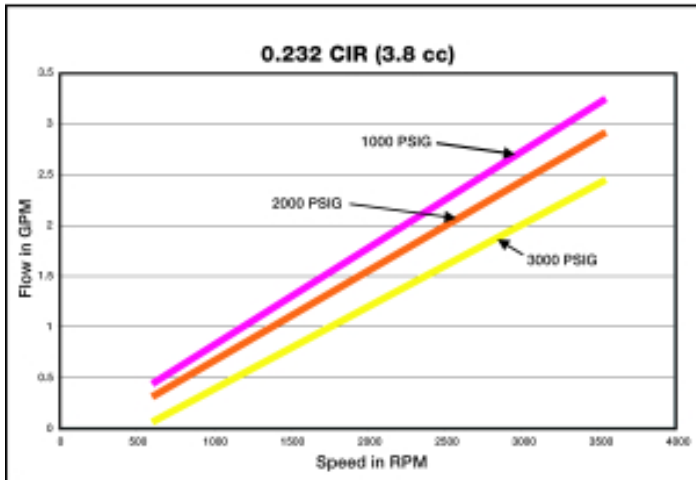
Multiple Pump Dimensions (Cont.)

QUADRUPLE PUMP

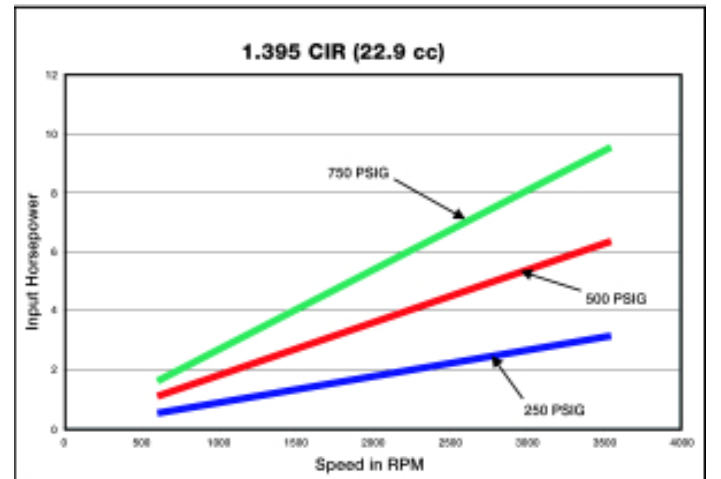
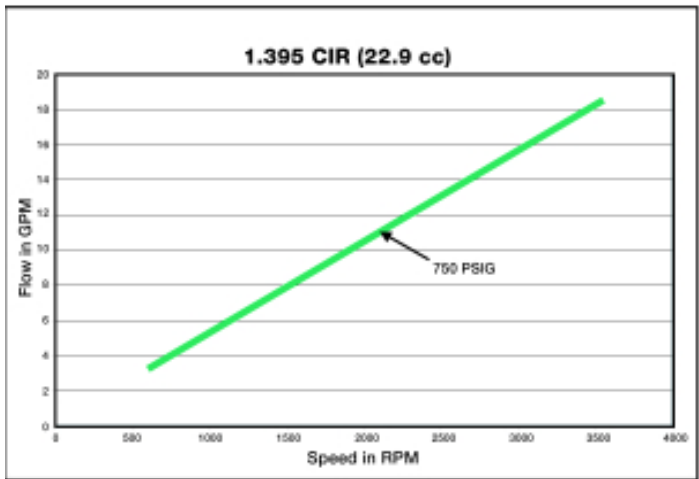
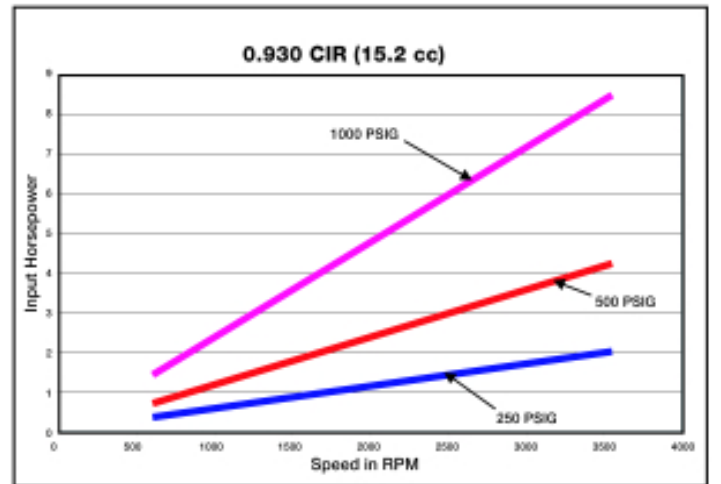
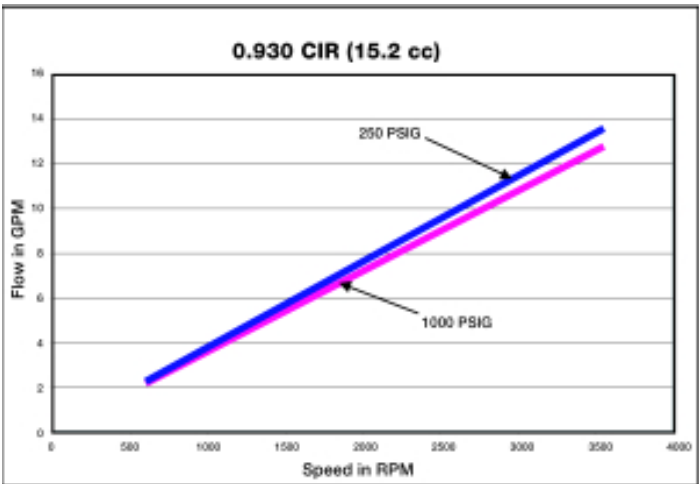
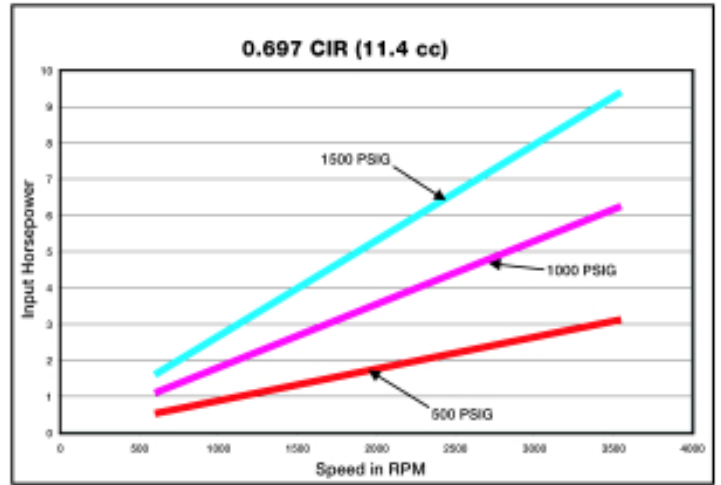
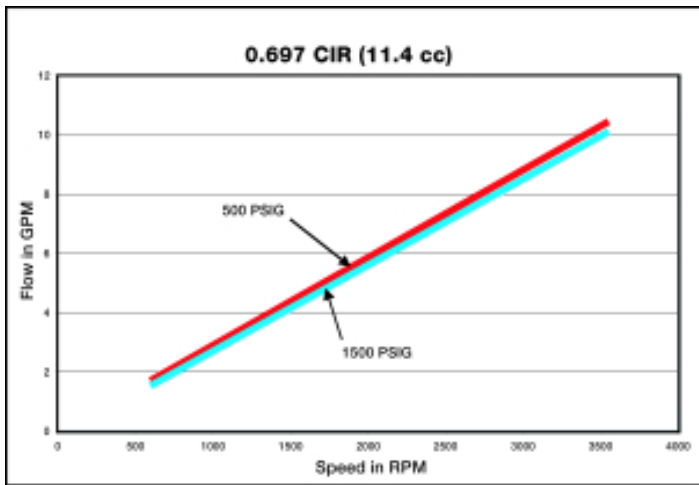


Performance Charts

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.

1 (Seal Options)

F3	Viton Seal
Omit	Standard (Buna N)

2 (Series)

D	D Series Hydraulic Pump
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3 (Mounting Flange)

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.)
28	(13.3 cc / .813 in. ³ /rev.)
32	(15.2 cc / .930 in. ³ /rev.)
36	(17.1 cc / 1.043 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.

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

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





PRODUCT RANGE

He Power Packs

12/24/48 VDC 0.8 - 3.5 kW and 0.75 - 3 kW AC modular power packs

Pressure Switches

5 - 350 bar connecting / disconnecting

He Classic Power Packs

12/24/48 VDC modular powerpacks in weatherproof boxes

W100 Hydraulic Pumps

0.5 - 2.0 cc/section, 227 bar

W300 Hydraulic Pumps

0.8 - 5.7 cc/section, 230 bar

W600 Hydraulic Pumps

4 - 12 cc/section, 276 bar

WM600 Hydraulic Motors

4 - 12 cc/section, 276 bar

W900 Hydraulic Pumps

5 - 31 cc/section, 276 bar

WM900 Hydraulic Motors

5 - 31 cc/section, 276 bar

WQ900 The Quiet Pump

5 - 27 cc/section, 230 bar

W1500 Hydraulic Pumps

19 - 50 cc/section, 276 bar

WM1500 Hydraulic Motors

19 - 50 cc/section, 276 bar

G25 Hydraulic Pumps

23 - 87 cc/section, 250 bar

GM25 Hydraulic Motors

23 - 87 cc/section, 250 bar

GPA Internal Gear Pumps

1.7 - 63 cc/section, 100 bar

GC Hydraulic Pumps/Fluid Motors

1.06 - 11.65 cc/section, 276 bar

II-Stage Hydraulic Pumps

4.2 - 22.8 cc/section, 276 bar

Rotary Flow Dividers

3.8 - 13.3 cc/section, 300 bar

D Hydraulic Pumps

3.8 - 22.9 cc/section, 207 bar

H Hydraulic Pumps

9.8 - 39.4 cc/section, 207 bar

G20/G30 Hydraulic Pumps

23 - 161 cc/section, 276 bar

GM20/GM30 Hydraulic Motors

23 - 161 cc/section, 276 bar

G20/G30 (LS) Hydraulic Pumps

23 - 161 cc/section, 276 bar

Transmission Pumps

Fuel Pumps

www.hbus.haldex.com



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Haldex (www.haldex.com), headquartered in Stockholm, Sweden, is a provider of

proprietary and innovative solutions to the global vehicle industry, with focus on products in vehicles that enhance safety, environment and vehicle dynamics. Haldex is listed on the Stockholm Stock Exchange and has annual sales of nearly 7 billion SEK with 4,400 employees.