W600 SERIES HYDRAULIC PUMP

W600

Compact Hydraulic Gear Pump

Featuring Integrated Valve Packages

Pressure
(P1) 276 BAR (4000 PSI)
*(P2) 290 BAR (4200 PSI)

Speed
Maximum 4000 RPM
**Minimum 700 RPM at 4000 PSI (276 BAR) Continuous

Efficiency
Overall 88%
Volumetric 98%
Mechanical 90%

Sound Level
13 Tooth Design With Superior Trapping Configuration For Quiet Operation

Flexibility
SAE, ISO & DIN Shafts Mounting Flanges, Port Styles, Integrated Valves, Multiple Section Pumps

Quality
ISO 9001 Registered

The W600 offers a compact package with the high performance of the W Series gear pumps and fluid motors. It is a through bore bushing type design constructed of high strength aluminum housings and cast iron end covers. The W600 Series small package makes it suitable for a wide range of equipment applications from material handling, aerial lift and bus, to turf care, agriculture and construction.

The hydraulic performance, flexibility, high efficiency, low and high speed operation, low noise performance and the variety of options have established the W Series as the standard by which other pump performance is measured.

The W600 product line is available also as fluid motors in both single and birotational designs. The same flange, shaft, and porting options are available as well as optional all-aluminum front flange and rear cover for reduced product weight.

This catalog illustrates the options available for the W600 family as well as performance and dimensional information. An easy to follow ordering guide is also included.

Performance Information

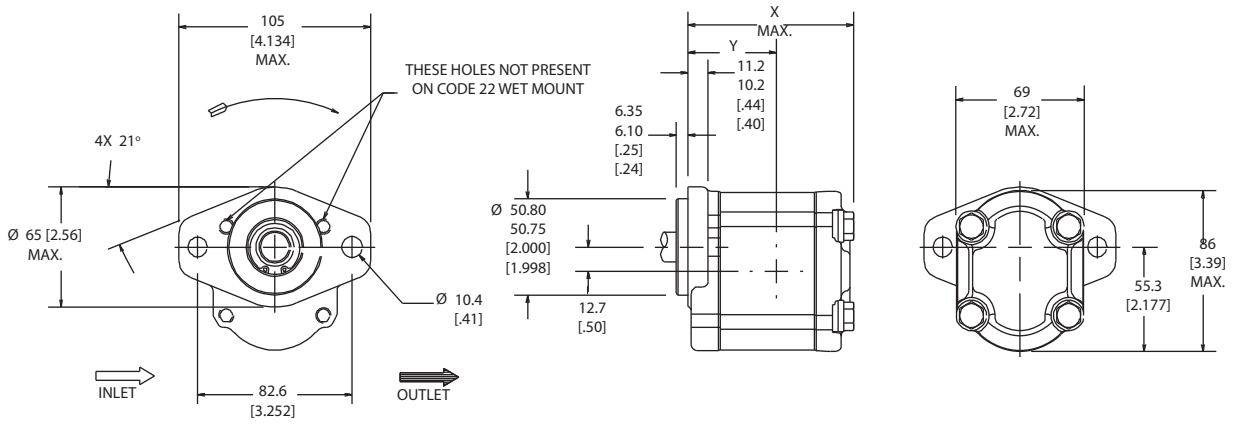
Model Code		030	035	040	045	050	060	070	080	100	120
Displacement	cm^3/rev	3	3.5	4	4.5	5	6	7	8	10	12
	in^3/rev	.183	.214	.244	.275	.305	.366	.427	.488	.610	.732
Inlet Pressure	BAR (PSI)	min. 0.2 BAR below atmospheric (6 IN.HG) max. 2.0 BAR (29 PSI)									
Max. Continous Pressure (P1)	(BAR	276 BAR								221	186
	PSI)	4000 PSI								3200	2700
Max. Intermittent Pressure (P2)	(BAR	290 BAR								241	207
	PSI)	4200 PSI *								3500	3000
Min. Rotational Speed At (P1)		700 **									
Max. Rotational Speed At (P1) ***		4000			3600		3450			3000	2500
Input Power	KW	1.51	1.76	2.01	2.26	2.51	3.01	3.51	4.02	4.02	4.07
P1 @ 1000 RPM	HP	2.0	2.4	2.7	3.0	3.4	4.0	4.7	5.4	5.4	5.5

* For P2 pressures greater than 4200 PSI, consult factory.
** For rotational speeds less than 700 RPM, consult factory.

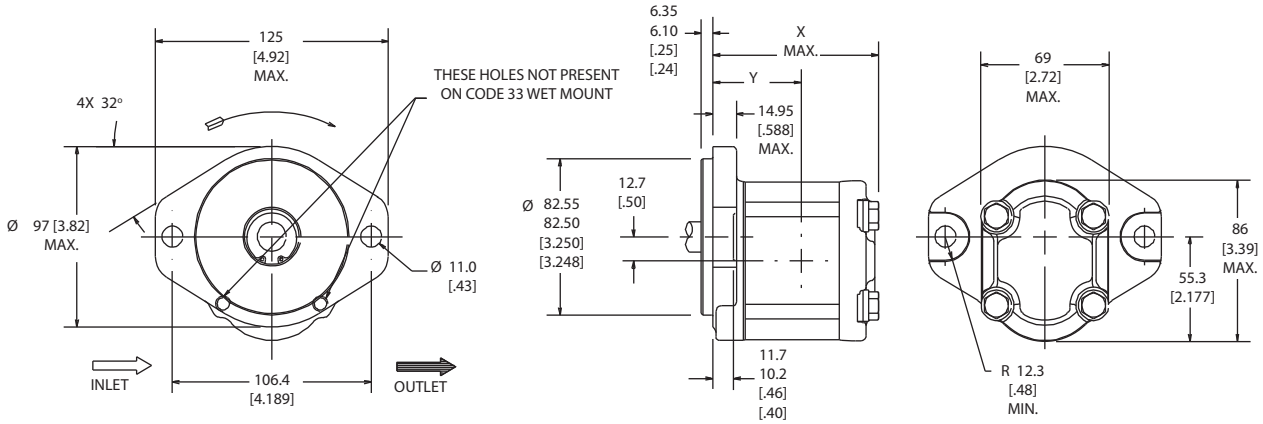
DIMENSIONS & MOUNTING FLANGE OPTIONS

For its displacement and pressure range, the W600 family 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. (See top of page 4 for dimensional chart showing "X" and "Y" dimensions.)

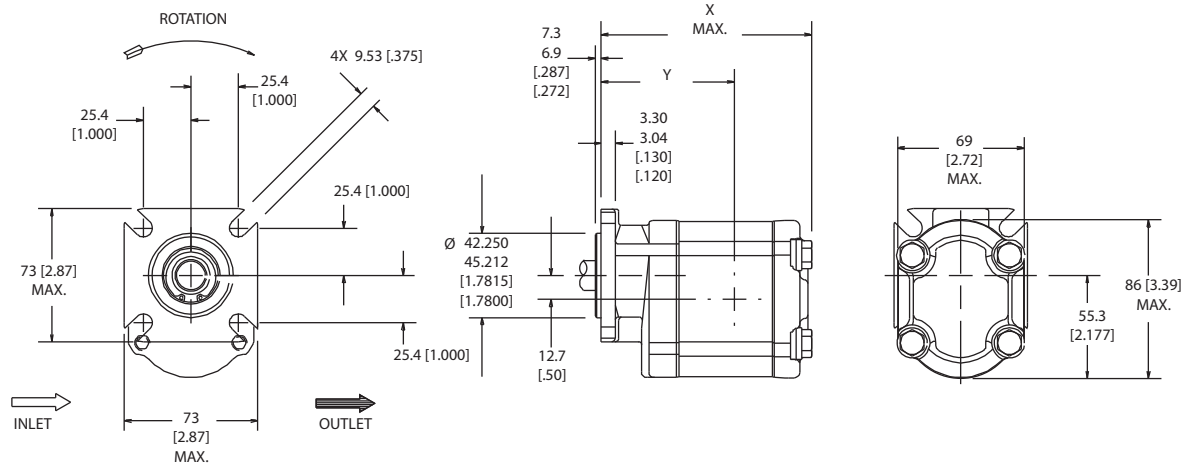
SAE "AA" 2-BOLT ORDER CODE 02 (Dry Mount) / ORDER CODE 22 (Wet Mount)



SAE "A" 2-BOLT ORDER CODE 03 (Dry Mount) / ORDER CODE 33 (Wet Mount)



4-BOLT (4F17) ORDER CODE 01 & 21*



* Flange 21 for use with flex coupling drive code TA only.

DIMENSIONS & MOUNTING FLANGE OPTIONS

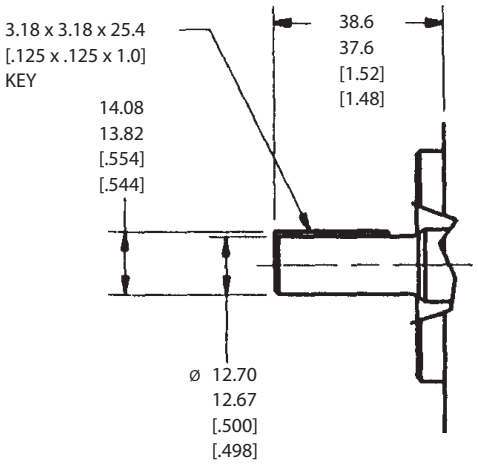
(See dimensional drawings on page 3.)

Order Code	Displacement cm³	Displacement in³	X Max. (2-Bolt)	X Max. (4-Bolt)	Y Port (2-Bolt)	Y Port (4-Bolt)	Approx. Wt. kgs. {lbs.]
030	3.0	.183	81.8 [3.22]	105.7 [4.16]	42.8 [1.69]	66.9 [2.63]	2.43 [5.3]
035	3.5	.214	81.8 [3.22]	105.7 [4.16]	43.7 [1.72]	67.7 [2.67]	2.46 [5.40]
040	4.0	.244	82.5 [3.25]	106.4 [4.19]	44.4 [1.75]	68.4 [2.69]	2.48 [5.45]
045	4.5	.275	83.9 [3.30]	107.8 [4.24]	47.3 [1.86]	71.3 [2.81]	2.50 [5.5]
050	5.0	.305	85.3 [3.36]	109.3 [4.30]	47.3 [1.86]	71.3 [2.81]	2.53 [5.6]
060	6.0	.366	89.1 [3.51]	113.0 [4.45]	47.3 [1.86]	71.3 [2.81]	2.58 [5.7]
070	7.0	.427	92.2 [3.63]	115.1 [4.53]	47.3 [1.86]	71.3 [2.81]	2.63 [5.8]
080	8.0	.488	96.4 [3.80]	120.3 [4.74]	47.3 [1.86]	71.3 [2.81]	2.68 [5.9]
100	10.0	.610	99.9 [3.93]	123.8 [4.87]	49.0 [1.93]	73.0 [2.87]	2.78 [6.1]
120	12.0	.732	105.8 [4.17]	129.7 [5.11]	52.0 [2.05]	76.0 [2.99]	2.88 [6.3]

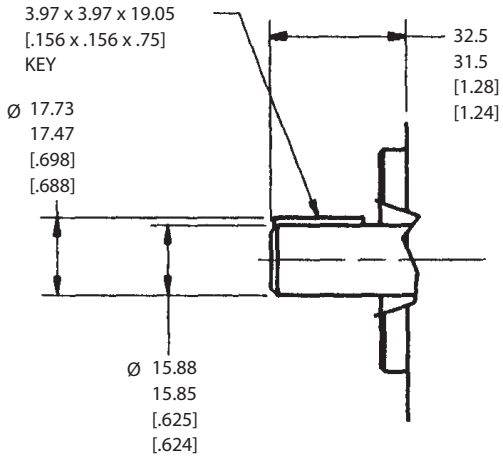
SHAFT OPTIONS

A critical element which must be considered when specifying a W600 pump for your application is the shaft drive system. Concentric has both the product and the application experience to insure that your W600 pump incorporates the correct shaft for your application. The following depict the 7 standard shaft options for the W600 family. Our flexible manufacturing capabilities can accommodate a wide variety of shaft configurations.

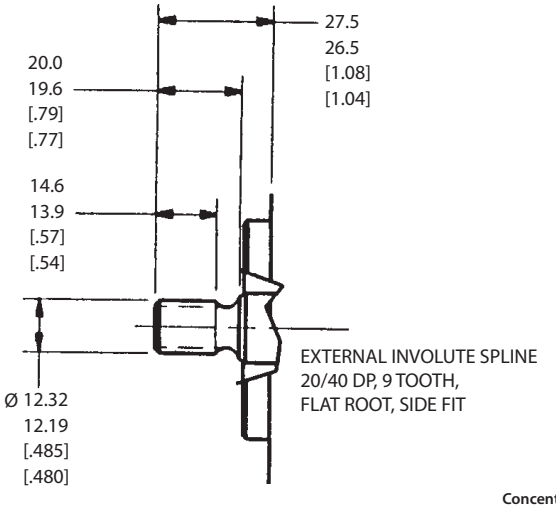
STRAIGHT KEYED SHAFT SAE "AA" ORDER CODE AA



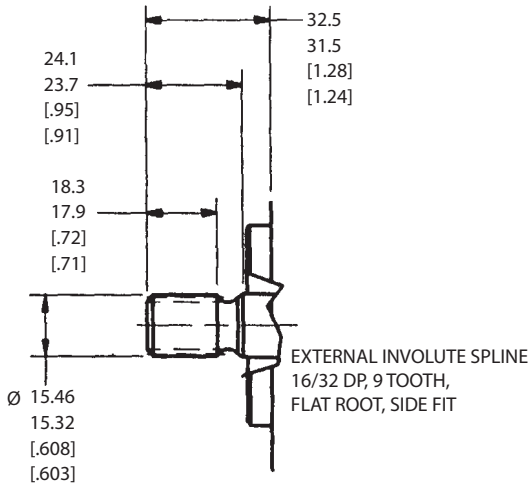
5/8 " STRAIGHT KEYED SHAFT SAE "A" ORDER CODE CA



SAE "AA" SPLINE ORDER CODE EA

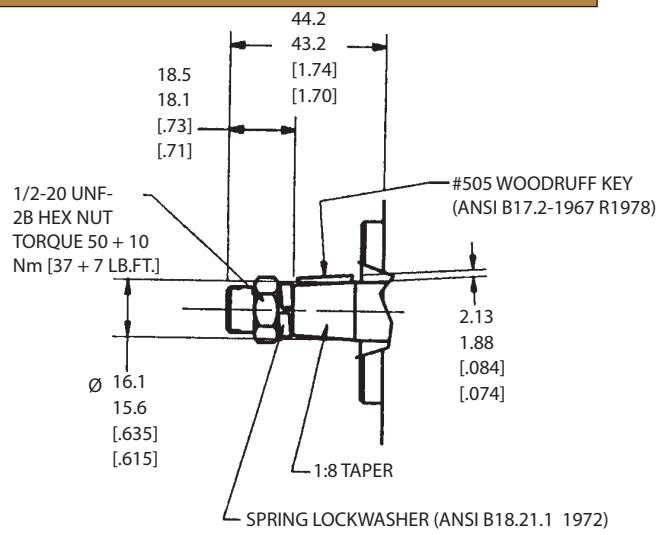


SAE "A" SPLINE ORDER CODE FA

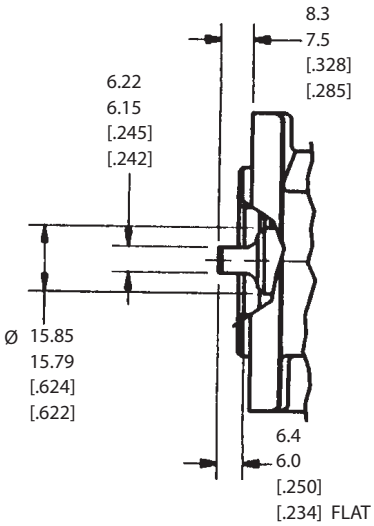


SHAFT OPTIONS

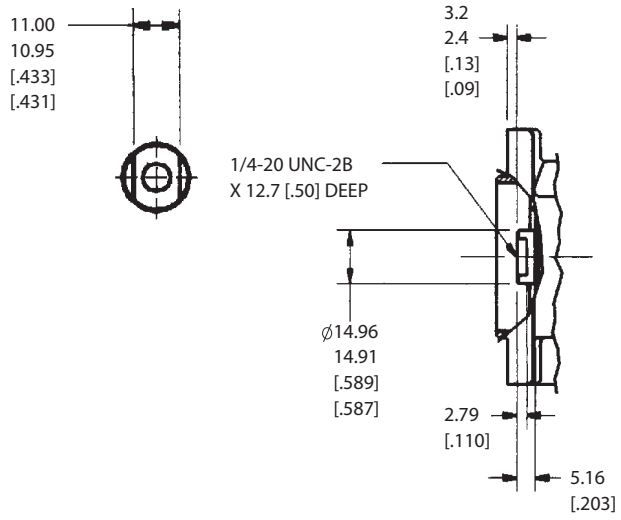
SAE "A" TAPERED SHAFT ORDER CODE LA



TANG DRIVE SHAFT ORDER CODE PA



FLEX COUPLING DRIVE SHAFT ORDER CODE TA



SINGLE SECTION SHAFT LOADING

P1 x V ≤ MAX PERMITTED VALUE IN TABLE BELOW

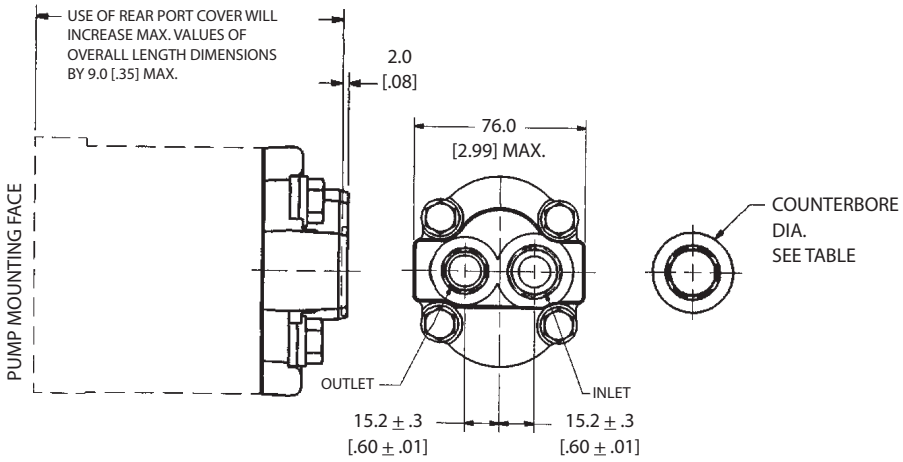
WHERE:
P1 = PRESSURE (BAR)
V = DISPLACEMENT (CM^3/REV)

CALCULATIONS USING METRIC UNITS	
SHAFT OPTION	MAX.PERMITTED VALUE
AA	5060
CA	5500
EA	2660
FA	5240
LA	8257
PA	1314
TA	990

WHERE:
P1 = PRESSURE (PSI)
V = DISPLACEMENT (IN^3/REV)

CALCULATIONS USING ENGLISH UNITS	
SHAFT OPTION	MAX.PERMITTED VALUE
AA	4600
CA	5005
EA	2418
FA	4640
LA	7506
PA	1163
TA	900

PORT OPTIONS

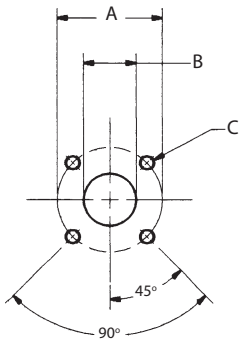


The standard size for each type of port is outlined below.

S.A.E. STRAIGHT THREAD PORT PER S.A.E. j514 (APR 80)			
SIDE ORDER CODE	REAR ORDER CODE	PORT SIZE INLET / OUTLET	COUNTER BORE DIAMETER MIN.
101	501*	7/8-14 / 3/4-16	34.14 [1.344] / 30.18 [1.188]
BSP STRAIGHT THREAD PORT DIN Spec 3852, Part 2			
120	520 *	G 1/2 / G 3/8	28.2 [1.11] / 23.2 [.91]

* 501 previously 111 & 520 previously 130

SEE PAGES 2, 3, 7 & 11 FOR DIMENSIONS FROM FLANGE MOUNTING FACE TO PORT CENTERLINE.



CODE 150

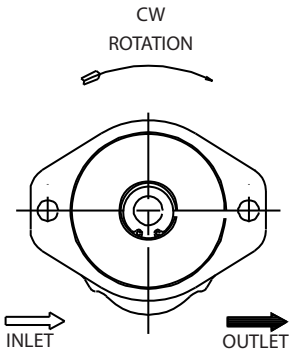
EUROPEAN 4-BOLT FLANGE				
ORDER CODE	PORT SIZE INLET / OUTLET	A	B	C th'd x min. full th'd depth
150	20 / 15	40.0 [1.575] / 35.0 [1.378]	20.0 [.78] / 15.0 [.59]	M6 x 13.0 [.51] / M6 x 13.0 [.51]

W600 MULTIPLE PUMPS

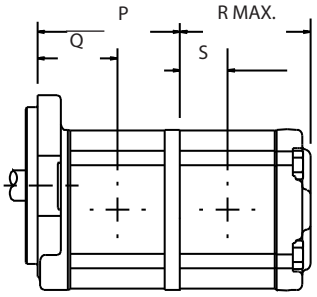
The W600 offers multiple pump configurations up to 3 sections. Multiple pumps provide multiple hydraulic functions from one power source at a significantly lower cost than separate pumps.

The drawings and charts provide dimensional information as well as shaft and coupling load information for W600 two and three section pumps. If the shaft loading, coupling, and section sequence requirements outlined on pages 4 and 5 are met, W600 multiple pumps will exhibit the same performance as W600 single section pumps outlined on page 2 of this catalog.

DOUBLE SECTION / DUAL INLET

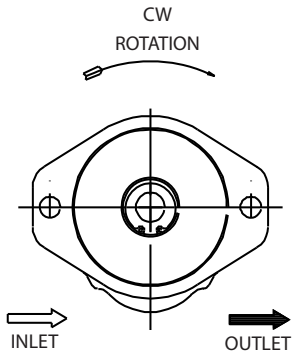


(For counterclockwise rotation, inlet and outlet are reversed.)

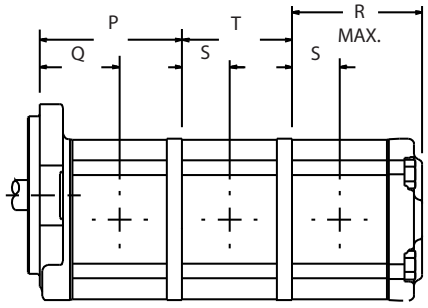


Dimensions P & Q are for use with Flange Options 02 and 03.

TRIPLE SECTION / TRIPLE INLET



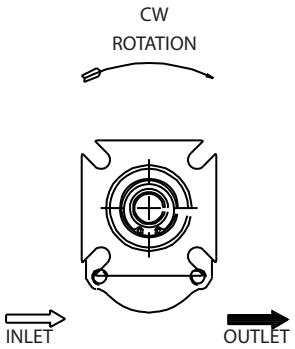
(For counterclockwise rotation, inlet and outlet are reversed.)



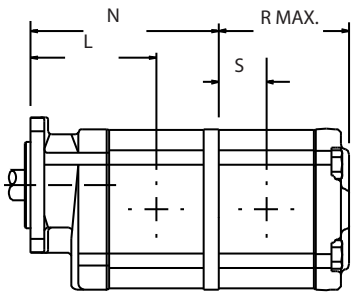
Dimensions P & Q are for use with Flange Options 02 and 03.

Order Code	Displacement		P ± 0.26 [± 0.010]	Q (To Port Centerline)	Approx. Wt. P Section kg. [lbs.]	R Max.	S (To Port Centerline)	Approx. Wt. R Section kg. [lbs.]	T ± 0.26 [± 0.010]	Approx. Wt. T Section kg. [lbs.]	N ± 0.26 [± 0.010]	L (To Port Centerline)
	cm³	in³										
030	3.0	0.183	68.3 [2.69]	42.8 [1.69]	2.27 [5.0]	61.9 [2.44]	25.4 [1.00]	1.26 [2.77]	50.9 [2.00]	1.12 [2.4]	92.24 [3.63]	66.9 [2.63]
035	3.5	0.214	69.8 [2.75]	43.7 [1.72]	2.30 [5.1]	63.4 [2.50]	26.3 [1.04]	1.29 [2.83]	52.4 [2.06]	1.15 [2.5]	93.74 [3.69]	67.7 [2.67]
040	4.0	0.244	71.3 [2.81]	44.4 [1.75]	2.32 [5.1]	64.9 [2.56]	27.0 [1.06]	1.31 [2.88]	53.9 [2.12]	1.17 [2.6]	95.24 [3.75]	68.4 [2.69]
045	4.5	0.275	72.7 [2.86]	47.3 [1.86]	2.34 [5.2]	66.3 [2.61]	29.9 [1.18]	1.33 [2.93]	55.3 [2.18]	1.19 [2.6]	96.64 [3.80]	71.3 [2.81]
050	5.0	0.305	74.2 [2.92]	47.3 [1.86]	2.37 [5.2]	67.8 [2.67]	29.9 [1.18]	1.35 [2.97]	56.8 [2.24]	1.22 [2.7]	98.14 [3.86]	71.3 [2.81]
060	6.0	0.366	77.1 [3.04]	47.3 [1.86]	2.41 [5.3]	70.7 [2.78]	29.9 [1.18]	1.41 [3.10]	59.7 [2.35]	1.27 [2.8]	101.04 [3.98]	71.3 [2.81]
070	7.0	0.427	80.0 [3.15]	47.3 [1.86]	2.47 [5.4]	73.6 [2.90]	29.9 [1.18]	1.46 [3.21]	62.6 [2.46]	1.32 [2.9]	103.94 [4.09]	71.3 [2.81]
080	8.0	0.488	82.9 [3.26]	47.3 [1.86]	2.52 [5.6]	76.5 [3.01]	29.9 [1.18]	1.51 [3.32]	65.5 [2.58]	1.37 [3.0]	106.84 [4.21]	71.3 [2.81]
100	10.0	0.610	88.7 [3.49]	49.0 [1.93]	2.62 [5.8]	82.3 [3.24]	31.6 [1.24]	1.61 [3.54]	71.3 [2.81]	1.47 [3.2]	112.64 [4.43]	73.0 [2.87]
120	12.0	0.732	94.6 [3.72]	52.0 [2.05]	2.72 [6.0]	88.2 [3.47]	34.6 [1.36]	1.71 [3.76]	77.2 [3.04]	1.57 [3.4]	118.54 [4.67]	76.0 [2.99]

W600 MULTIPLE PUMPS



(For counterclockwise rotation, inlet and outlet are reversed.)



Dimensions N & L are for use with Flange Options 01 and 21.

REDUCED INLET MULTIPLE PUMPS

Based on your application requirements the W600 multiple pump may be supplied with a single inlet on two section pump applications and dual inlets on three section pump applications. Reduced inlets provide overall system savings by reducing the cost of redundant inlet hose and fittings. Contact Concentric regarding your reduced inlet multiple pump application.

The W600 offers multiple pump configurations up to 3 sections. Multiple pumps provide multiple hydraulic functions from one power source at a significantly lower cost than separate pumps.

The drawings and charts provide dimensional information as well as shaft and coupling load information for the W600 two and three section pumps. If the shaft loading, coupling, and section sequence requirements outlined on this page are all met, the W600 multiple pump will exhibit the same performance as the W600 single section pumps outlined on page 2 of this catalog.

MULTIPLE SECTION SHAFT LOADING

P1 x V ≤ MAX PERMITTED VALUE IN TABLE BELOW

WHERE:
P1 = PRESSURE (BAR)
V = DISPLACEMENT (CM^3/REV)

CALCULATIONS USING METRIC UNITS	
SHAFT OPTION	MAX.PERMITTED VALUE
AA	5060
CA	5500
EA	2660
FA	5240
LA	8257
PA	1314
TA	990

WHERE:
P1 = PRESSURE (PSI)
V = DISPLACEMENT (IN^3/REV)

CALCULATIONS USING ENGLISH UNITS	
SHAFT OPTION	MAX.PERMITTED VALUE
AA	4600
CA	5005
EA	2418
FA	4640
LA	7506
PA	1164
TA	900

COUPLING LOADING

TWO SECTION:
(P2 x V2) ≤ 2427 (METRIC) 2150 (ENGLISH)

THREE SECTION:
(P2 x V2) + (P3 xV3) ≤ 2427 (METRIC) 2150 (ENGLISH)

In multiple pumps, shaft end section must have largest displacement. Each consecutive section must have displacement equal to or smaller than section preceding.

VALVE OPTIONS

An optional rear cover provides multiple valve options for the W600 family. Rotation as viewed from drive end.

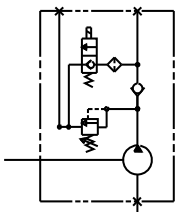
OPTIONS	DESCRIPTION
LA	Lift/Hold/Lower with Rear Ports and Cartridge Relief
LB	Lift/Hold/Lower with Rear Ports and Low Profile Relief
LC	Lift/Hold/Lower with Side Ports and Cartridge Relief
LD	Lift/Hold/Lower with Side Ports and Low Profile Relief
JB	Relief & Check Valve with Rear Ports and Low Profile Relief
JC	Relief & Check Valve with Side Ports and Cartridge Relief
JD	Relief & Check Valve with Side Ports and Low Profile Relief

Note: Opposite rotation requires rotating valve body 180°.

SCHEMATICS / DIMENSIONAL DRAWINGS

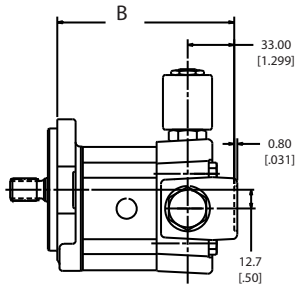
(See bottom of page 9 for dimensional chart showing "A" and "B" dimensions.)

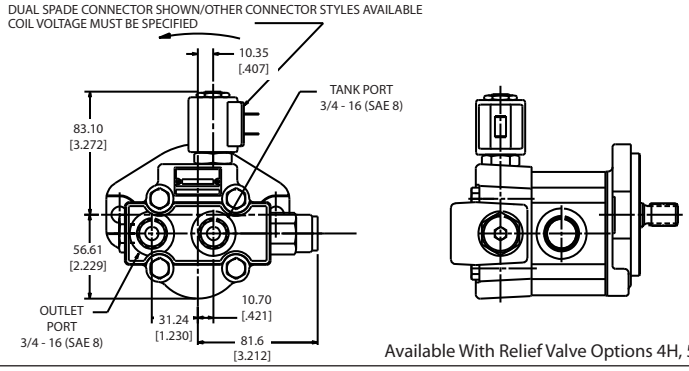
NOTE: Dimensions are in milimeters (mm). Inches are shown in brackets [ ].



LA, LB
LC, LD

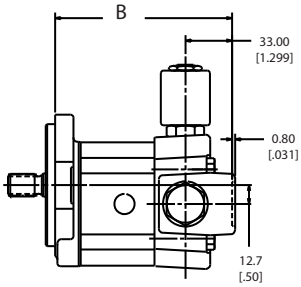
MODEL CODE LA

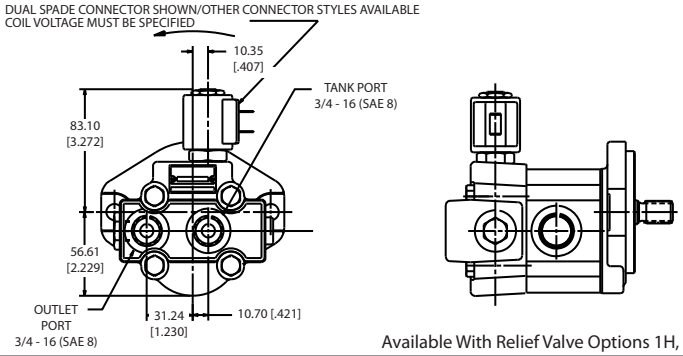




Available With Relief Valve Options 4H, 5H & 6H

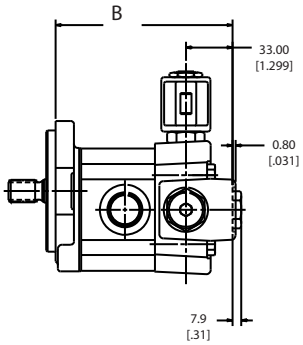
MODEL CODE LB

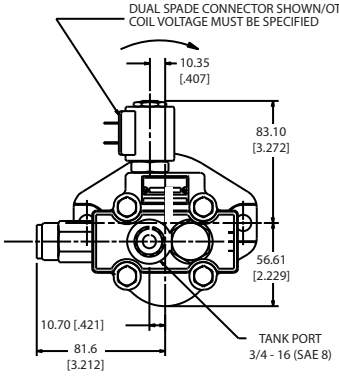


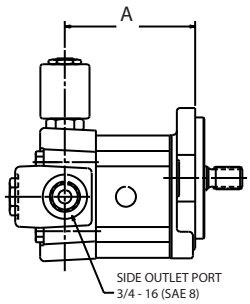


Available With Relief Valve Options 1H, 2H & 3H

MODEL CODE LC

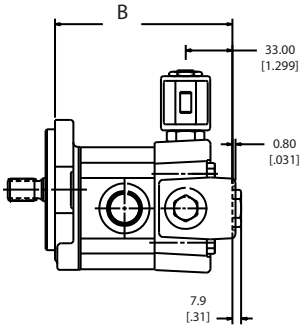


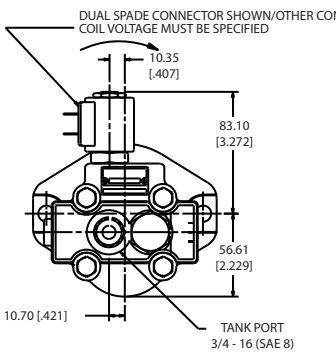


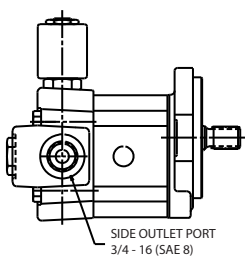


Available With Relief Valve Options 4H, 5H & 6H

MODEL CODE LD





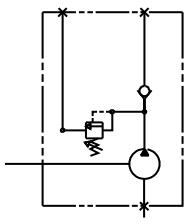


Available With Relief Valve Options 1H, 2H & 3H

VALVE OPTIONS

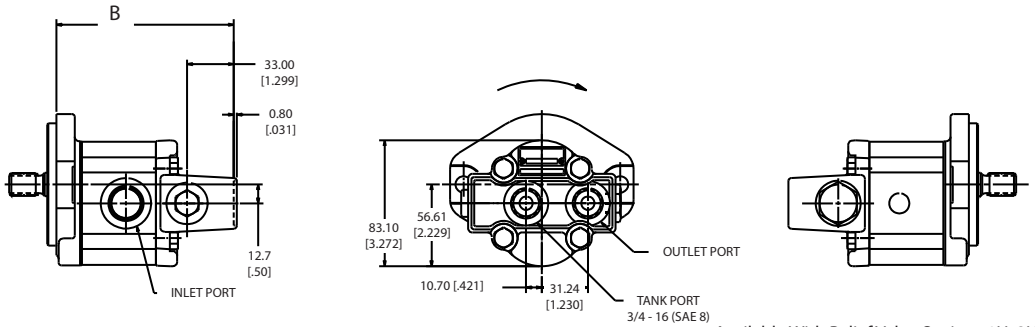
SCHEMATICS / DIMENSIONAL DRAWINGS (Cont.)

NOTE: Dimensions are in milimeters (mm). Inches are shown in brackets [ ].



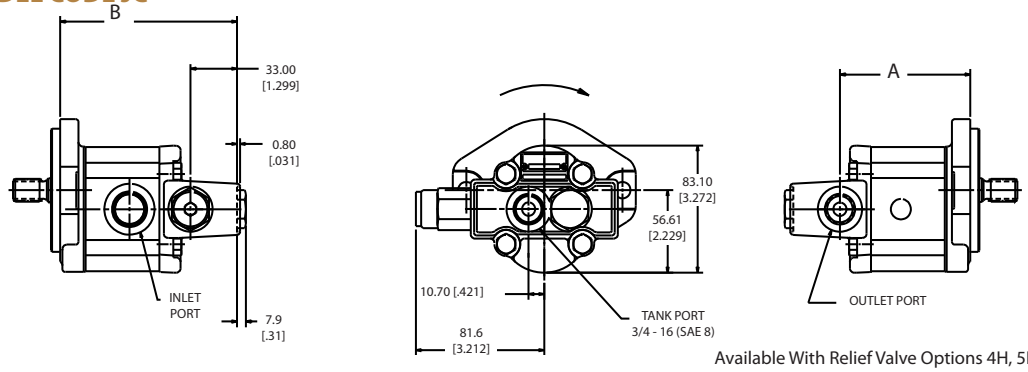
JB, JC
JD

MODEL CODE JB



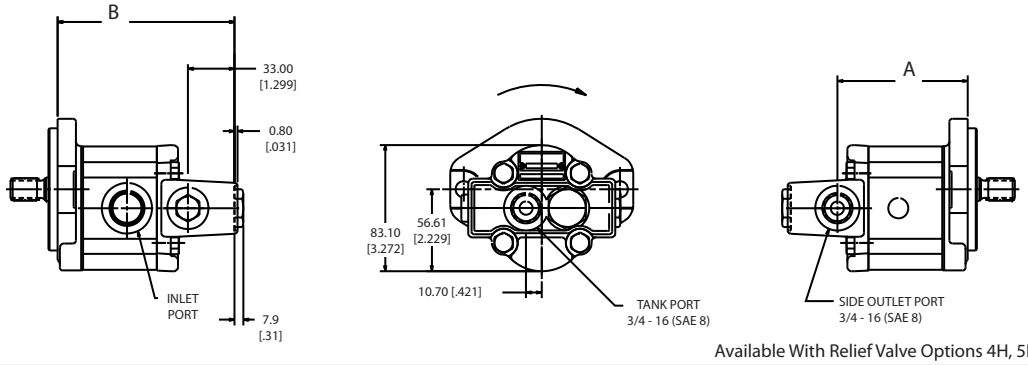
Available With Relief Valve Options 1H, 2H & 3H

MODEL CODE JC



Available With Relief Valve Options 4H, 5H & 6H

MODEL CODE JD



Available With Relief Valve Options 4H, 5H & 6H

Installation Dimensions for Single Section W600 Pumps

(See dimensional drawings on page 9 and above.)

	MOUNTING FLANGE TYPE (A, A-A, RECT.)					MOUNTING FLANGE TYPE (4-Bolt)			
	Dim. A		Dim. B			Dim. A		Dim. B	
DISP (CC)	NOMINAL TO PORT CL ON VALVE BODY (MM)	NOMINAL TO PORT CL ON VALVE BODY (IN)	"B" MAX. TO PORT C'BORE (MM)	"B" MAX. TO PORT C'BORE (IN)	DISP (CC)	NOMINAL TO PORT CL ON VALVE BODY (MM)	NOMINAL TO PORT CL ON VALVE BODY (IN)	"B" MAX. TO PORT C'BORE (MM)	"B" MAX. TO PORT C'BORE (IN)
3	81.5	3.21	116.4	4.52	3	105.4	4.15	138.9	5.47
3.5	83.0	3.27	117.9	4.58	3.5	106.9	4.21	140.4	5.53
4	84.5	3.33	119.3	4.64	4	108.4	4.27	141.9	5.59
4.5	85.9	3.38	120.8	4.70	4.5	109.8	4.32	143.3	5.64
5	87.4	3.44	123.7	4.76	5	111.3	4.38	144.8	5.70
6	90.3	3.56	126.6	4.87	6	114.2	4.50	147.7	5.81
7	93.2	3.67	129.5	4.98	7	117.1	4.61	150.6	5.93
8	96.1	3.78	135.3	5.10	8	120.0	4.73	153.5	6.04
10	101.9	4.01	141.2	5.33	10	125.8	4.95	159.3	6.27
12	107.8	4.24	114.9	5.56	12	131.7	5.19	165.2	6.50

RELIEF VALVE APPLICATION GUIDE

OPTIONS	RELIEF VALVE TYPE WITH PRESSURE & FLOW LIMITS
IH	Low Profile Relief Valve (1000 PSI MAX., 2 GPM MAX.)
2H	Low Profile Relief Valve (1100 - 1500 PSI, 2.5 GPM MAX.) (1600 - 2500 PSI, 3 GPM MAX.)
3H	Low Profile Relief Valve (3000 - 3400 PSI, 3 GPM MAX.) (3500 - 4000 PSI, 3.5 GPM MAX.)
4H	Cartridge Relief Valve (3300 PSI, 6 GPM MAX.)
5H	Cartridge Relief Valve (3000 PSI MAX., 8 GPM MAX.)
6H	Cartridge Relief Valve (4000 PSI MAX., 8 GPM MAX.)

Note: For recommended application, see Relief Valve Selection table below.

FLOW (GPM)	PRESSURE (PSI)							
GPM	500-1000	1100-1500	1600-2000	2100-2500	2600-3000	3100-3300	3400-4000
2.0	1H	2H	2H	2H	3H	3H	3H
2.5	4H	2H	2H	2H	3H	3H	3H
3.0	4H	4H	2H	2H	3H	3H	3H
3.5	5H	4H	4H	4H	4H	3H	3H
4.0	5H	4H	4H	4H	4H	4H	6H
5.0	5H	5H	4H	4H	4H	4H	6H
6.0	5H	5H	5H	4H	4H	4H	6H
7.0	5H	5H	5H	5H	5H	6H	6H
8.0	5H	5H	5H	5H	5H	6H	6H

FLOW (LPM)	PRESSURE (BAR)							
LPM	34-69	76-103	110-138	145-172	176-207	214-228	234-276
7.6	1H	2H	2H	2H	3H	3H	3H
9.5	4H	2H	2H	2H	3H	3H	3H
11.4	4H	4H	2H	2H	3H	3H	3H
13.2	5H	4H	4H	4H	4H	3H	3H
15.1	5H	4H	4H	4H	4H	4H	6H
19.0	5H	5H	4H	4H	4H	4H	6H
22.7	5H	5H	5H	4H	4H	4H	6H
26.5	5H	5H	5H	5H	5H	6H	6H
30.3	5H	5H	5H	5H	5H	6H	6H

Selection Example: 6 GPM & 2200 PSI relief valve needed (Option 4H recommended).

W600 DISTRIBUTOR STOCK PUMPS

W600 SERIES PUMPS WITH 4-BOLT MOUNT, 1/2" SAE "AA" STRAIGHT DRIVE SHAFT, AND SAE STRAIGHT THREAD SIDE PORTS

DISPLACEMENT			SAE SIDE PORTS		MODEL	CATALOG
IN.³	CC	ROTATION	IN	OUT	NUMBER	X-REF
.183	3	CCW	7/8-14	3/4-16	1303285	WP06A1B030L01AA101N
.183	3	CW	7/8-14	3/4-16	1303286	WP06A1B030R01AA101N
.214	3.5	CCW	7/8-14	3/4-16	1303287	WP06A1B035L01AA101N
.214	3.5	CW	7/8-14	3/4-16	1303288	WP06A1B030R01AA101N
.244	4.0	CCW	7/8-14	3/4-16	1303289	WP06A1B040L01AA101N
.244	4.0	CW	7/8-14	3/4-16	1303290	WP06A1B040R01AA101N
.305	5.0	CCW	7/8-14	3/4-16	1303293	WP06A1B050L01AA101N
.305	5.0	CW	7/8-14	3/4-16	1303294	WP06A1B050R01AA101N
.366	6.0	CW	7/8-14	3/4-16	1303296	WP06A1B060R01AA101N
.427	7.0	CCW	7/8-14	3/4-16	1303297	WP06A1B070L01AA101N
.427	7.0	CW	7/8-14	3/4-16	1303298	WP06A1B070R01AA101N
.488	8.0	CCW	7/8-14	3/4-16	1303299	WP06A1B080L01AA101N
.732	12.0	CCW	7/8-14	3/4-16	1303303	WP06A1B120L01AA101N
.732	12.0	CW	7/8-14	3/4-16	1303304	WP06A1B120R01AA101N

W600 SERIES PUMPS WITH SAE "A" 2-BOLT MOUNT, 1/2" SAE "AA" STRAIGHT DRIVE SHAFT, AND SAE STRAIGHT THREAD SIDE PORTS

DISPLACEMENT			SAE SIDE PORTS		MODEL	CATALOG
IN.³	CC	ROTATION	IN	OUT	NUMBER	X-REF
.183	3	CCW	7/8-14	3/4-16	1303305	WP06A1B030L33AA101N
.183	3	CW	7/8-14	3/4-16	1303306	WP06A1B030R33AA101N
.214	3.5	CCW	7/8-14	3/4-16	1303307	WP06A1B035L33AA101N
.214	3.5	CW	7/8-14	3/4-16	1303308	WP06A1B035R33AA101N
.244	4.0	CCW	7/8-14	3/4-16	1303309	WP06A1B040L33AA101N
.244	4.0	CW	7/8-14	3/4-16	1303310	WP06A1B040R33AA101N
.305	5.0	CCW	7/8-14	3/4-16	1303313	WP06A1B050L33AA101N
.305	5.0	CW	7/8-14	3/4-16	1303314	WP06A1B050R33AA101N
.427	7.0	CCW	7/8-14	3/4-16	1303317	WP06A1B070L33AA101N
.427	7.0	CW	7/8-14	3/4-16	1303318	WP06A1B070R33AA101N
.732	12.0	CCW	7/8-14	3/4-16	1303323	WP06A2B230L33AA101N
.732	12.0	CW	7/8-14	3/4-16	1303324	WP06A1B120R33AA101A

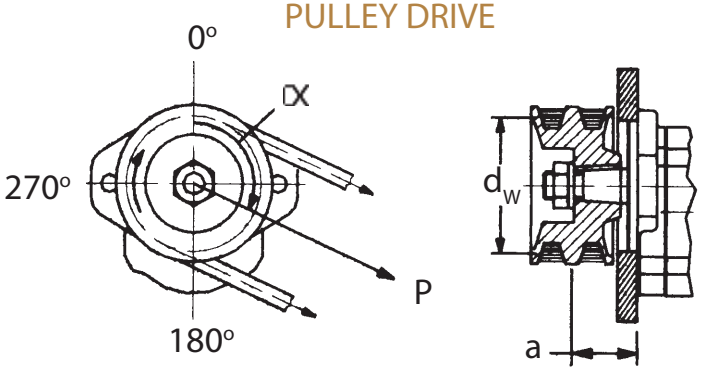
W600 SERIES PUMPS WITH SAE "A" 2-BOLT MOUNT, 9 TOOTH SPLINE DRIVE SHAFT, AND SAE STRAIGHT THREAD SIDE PORTS

DISPLACEMENT			SAE SIDE PORTS		MODEL	CATALOG
IN.³	CC	ROTATION	IN	OUT	NUMBER	X-REF
.183	3	CCW	7/8-14	3/4-16	1303325	WP06A1B030L33FA101N
.183	3	CW	7/8-14	3/4-16	1303326	WP06A1B030R33FA101N
.214	3.5	CCW	7/8-14	3/4-16	1303327	WP06A1B035L33FA101N
.214	3.5	CW	7/8-14	3/4-16	1303328	WP06A1B035R33FA101N
.244	4.0	CCW	7/8-14	3/4-16	1303329	WP06A1B040L33FA101N
.244	4.0	CW	7/8-14	3/4-16	1303330	WP06A1B040R33FA101N
.305	5.0	CCW	7/8-14	3/4-16	1303333	WP06A1B050L33FA101N
.305	5.0	CW	7/8-14	3/4-16	1303334	WP06A1B050R33FA101N
.427	7.0	CCW	7/8-14	3/4-16	1303337	WP06A1B070L33FA101N
.427	7.0	CW	7/8-14	3/4-16	1303338	WP06A1B070R33FA101N
.732	12.0	CCW	7/8-14	3/4-16	1303343	WP06A1B120L33FA101N
.732	12.0	CW	7/8-14	3/4-16	1303344	WP06A1B120R33FA101N
.366	6.0	CW	7/8-14	3/4-16	1303380	WP06A1B060R33FA501N
.488	8.0	CW	7/8-14	3/4-16	1303381	WP06A1B080R33CA501N

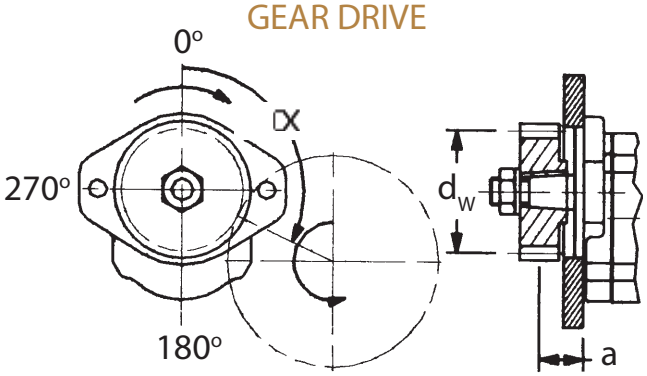
EXTERNAL SIDE & THRUST LOAD OPTIONS

The W600 pump is recommended for direct axial drive. If your application incorporates a drive imposing radial and/or thrust loads, submit the application information requested below to your Concentric representative.

PULLEY DRIVE



GEAR DRIVE



WHERE:

- a = DISTANCE TO GEAR OR PULLEY CENTER FROM PUMP MOUNTING FACE
- d_W = PITCH DIA. OF GEAR OR PULLEY
- ∝ = ANGLE OF DRIVING GEAR OR PULLEY CENTER RELATIVE TO THE PUMPS VERTICAL CENTERLINE
- P = TENSION LOAD BELT(S) ARE TIGHTENED TO

NOTE: ABOVE SKETCHES DEPICT CLOCKWISE ROTATION. FOR COUNTERCLOCKWISE ROTATION, 90° AND 270° POSITIONS ARE REVERSED.

INSTALLATION INFORMATION

DIMENSIONS

Dimensions shown in brackets are in English units. Dimensions shown outside of brackets are metric units.

FLUIDS

Most premium grade petroleum base fluids can be used with W600 pumps. Optimum operating viscosity is 16-63 cSt (80-288 SSU) at maximum rated speed. Minimum operating viscosity is 11 cSt (63 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 W600 performance using other fluids.

OPERATING TEMPERATURES

Fluid temperature range:

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

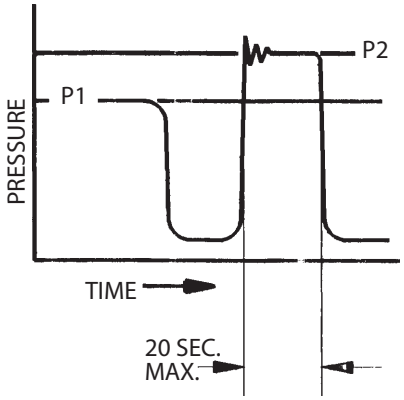
FILTRATION

Proper filtration is critical to the trouble free operation 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.

INLET CONDITIONS

Inlet vacuum should not exceed 0.35 Bar below atmospheric pressure (10 In.Hg.). Continuous operation at vacuums in excess of 0.2 Bar below atmospheric pressure (6 In.Hg.) are not recommended. Max. gauge pressure for pressurized inlet is 0.2 Bar (29 PSI).

PRESSURE RATINGS



P1 - Continuous
P2 - Intermittent

Total cycle for P2 is 30 seconds.

ORDERING INFORMATION

	STANDARD PUMP											
	1	2	3	3	3	4	5	6	7	7	7	8
	DESIGN CODE	SEAL MATERIAL	DISPLACEMENT	DISPLACEMENT	DISPLACEMENT	ROTATION	FLANGE	SHAFT	PORT	PORT	PORT	VALVE OPTION
EXAMPLE	WP06A3	B	100	080	060	R	02	EA	101	101	101	L
Your Options	WP06A3											

	VALVE OPTIONS			
	9	10	11	12
	VALVE TYPE	RELIEF VALVE TYPE	RELIEF VALVE SETTING	COIL VOLTAGE
EXAMPLE	LD	1H	R35	012**
Your Options	L*			

1. **DESIGN CODE**

WP06A1 - Single Pump	WP06A2 - Double Pump	WP06A3 - Triple Pump	WP06A4 - Quadruple Pump

2. **SEAL MATERIAL**

B	Buna
V	Viton
C	Combination of Both

3. **DISPLACEMENT**

Order Code	Cm.³	In.³
030	3	.183
035	3.5	.214
040	4	.244
045	4.5	.275
050	5	.305
060	6	.366
070	7	.427
080	8	.488
100	10	.610
120	12	.732

4. **ROTATION**

R	Clockwise
L	Counter Clockwise

5. **MOUNTING FLANGES**

01/21	JSB Offset 4-Bolt (4F17) +
02	SAE "AA" 2-Bolt (Dry Mount)
03	SAE "A" 2-Bolt (Dry Mount)
22	SAE "AA" 2-Bolt (Wet Mount)
33	SAE "A" 2-Bolt (Wet Mount)

+ Flange 21 for use with flex coupling drive code TA only.

6. **DRIVE SHAFTS**

AA	SAE "AA" Straight Shaft 1/2" Dia.
CA	SAE Straight Shaft 5/8" dia.
EA	SAE "AA" Spline (9 Tooth)
FA	SAE "A" Spline (9 Tooth)
LA	SAE "A" Tapered (1:8)
PA	Tang 1/4"
TA	JSB Flex Coupling Drive

7. **STANDARD PORTING**

DISP. ORDER CODE	SIDE PORT CODE	REAR PORT CODE	DESCRIPTION
030-120	101	501*	SAE Straight Thread (7/8-14,3/4-16)
030-120	120	520*	BSPP Straight Thread (G1/2, G3/8)
030-120	150	N/A	European 4-Bolt Flange (20,15)

* 501 previously 111 and 520 previously 130

Note: Above are standard offerings. For other porting options, please contact factory.

8. **VALVE OPTIONS**

J	Check & Relief Valve with External Relief Drain
L	Lift, Hold & Lower with External Relief Drain
N	Not Applicable

9. **VALVE TYPE DESIGNATIONS**

*A	Rear Outlet Port / Cartridge Relief & Cartridge Check Valve (3/4-16 Ports)
*B	Rear Outlet Port / Low Profile Relief & Cartridge Check Valve (3/4-16 Ports)
*C	Side Outlet Port / Cartridge Relief & Cartridge Check Valve (3/4-16 Ports)
*D	Side Outlet Port / Low Profile Relief & Cartridge Check Valve (3/4-16 Ports)
NN	Not Applicable

* Represents Option J or L as shown in #8 (Valve Options). Option JA not available.

10. **RELIEF VALVE TYPES**

1H	Low Profile Relief Valve (1000 PSI Max. / 2 GPM Max.)
2H	Low Profile Relief Valve (1100-1500 PSI / 2.5 GPM Max.) (1600-2000 PSI / 3 GPM Max.)
3H	Low Profile Relief Valve (3000-3400 PSI / 3 GPM Max.) (3500-4000 PSI / 3.5 GPM Max.)
4H	Cartridge Relief Valve (3500 PSI / 6 GPM Max.)
4E	Cartridge Relief Valve (3500 PSI / 6 GPM Max.)
5H	Cartridge Relief Valve (3000 PSI / 8 GPM Max.)
5E	Cartridge Relief Valve (3000 PSI / 8 GPM Max.)
6H	Cartridge Relief Valve (4000 PSI / 8 GPM Max.)
6E	Cartridge Relief Valve (4000 PSI / 8 GPM Max.)
NN	Not Applicable

H = Hidden Adjustment / E = External Adjustment

11. **RELIEF VALVE SETTINGS**

R**	
**	Relief pressure divided by 100. Available in 100 PSI increments to 4000 PSI. Example: R35 = 3500 PSI
NN	Not Applicable

Note: Relief valve setting is defined at .25 GPM full bypass.

12. **COIL VOLTAGE** **

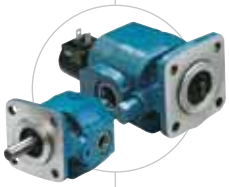
010	10 VDC
012	12 VDC
024	24 VDC
036	36 VDC
048	48 VDC
110	110 VDC
115	115 VAC
230	230 VDC
NN	Not Applicable

** Coil voltage is only specified when option **"L - Lift, Hold & Lower with External Relief Drain"** is selected for **Valve Options**.

All pumps require a minimum 25-piece order with the exception of those options designated with "+" (100-piece minimum). A selected number of distributor stock pumps are available with no minimum order quantity.

PUMPS & MOTORS

Cast Iron Pumps — Heavy Duty

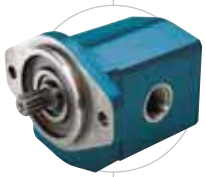


GC Series Pumps

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)

CONCENTRIC

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For application assistance or detailed literature on any Concentric 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

CONCENTRIC

Call us for more information
For application assistance or detailed literature on any Concentric 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

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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Concentric is an innovator in flow control and fluid power, supplying proprietary systems and components for trucks, buses and industrial vehicles, worldwide. With 1,156 employees and sales of 1,977 million Swedish Kronor, Concentric AB is listed on the Stockholm Stock Exchange (www.concentricAB.com).

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