

The design Advantage

The design advantage is built into every one of our Water Cooled Brakes (WCB).

Airtube Advantage

Standard with all WCB units, the reinforced neoprene airtube reacts accurately to small pressure changes and offers no resistance to movement – therefore increasing sensitivity.

Our airtubes are inherently corrosion resistant and require no additional coatings or protective treatments. They are ideal for marine and other harsh environmental applications where real world conditions can severely affect performance and reliability.

Finally, the ICP airtube design ensures product performance without the need of expensive and complicated control packages. Controllability is as easy as a simple pressure control valve and regulator.

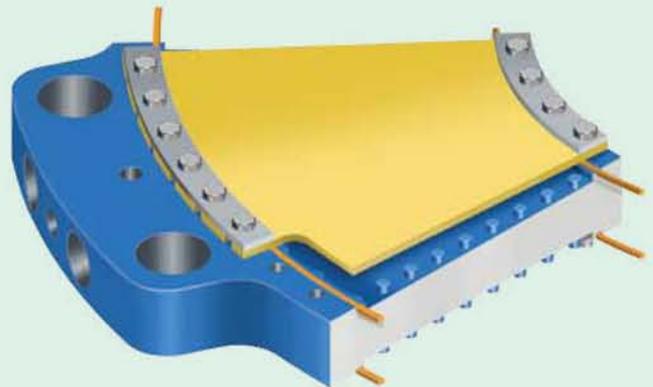


Preferred Airtube Style **VS** Piston Style

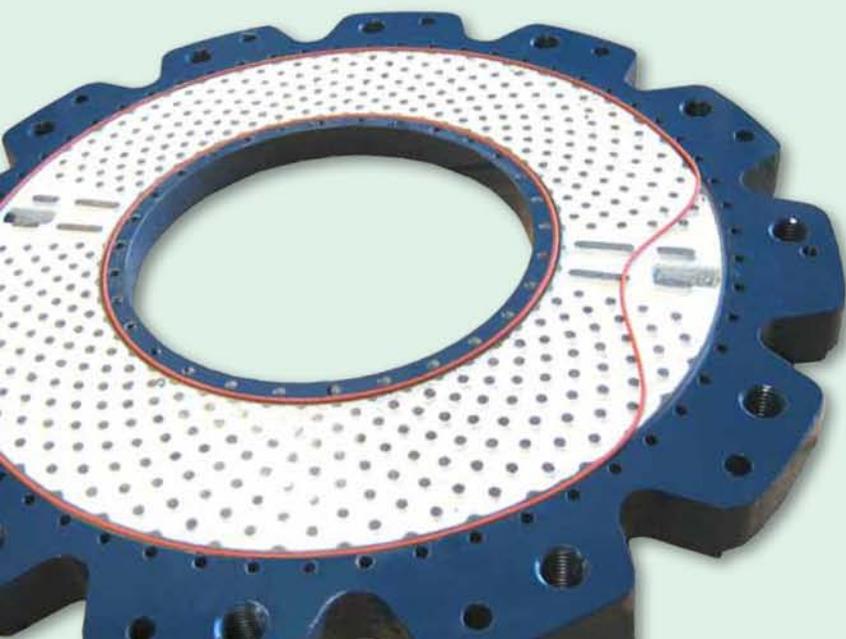
Upgrade your current piston style to the airtube advantage with an easily installed kit.

O-Ring Advantage

Each WCB water jacket, sealed with ICP high-temp silicone o-rings, is superior to other designs as they allow for the expansion and contraction of the copper while the heat is being dissipated.



O-rings make for easy and efficient field service by allowing immediate seal testing and return to service. This eliminates wait-time for the seal to cure which means our customers experience greater efficiency and less downtime.



Water Cooled Brakes

WCB

WCB brakes are specifically designed for applications in which large thermal loads must be dissipated.

Typical applications: Dynamometers, forestry / logging equipment, anchor handling and towing winches, mooring winch systems, petroleum drilling equipment and tension brakes.

WCB Spring Set

Similar to the **WCB**, the **WCB/SS** is a spring applied, air-release, fail-safe brake.

Typical applications: forestry / logging equipment, anchor handling and towing winches, mooring winch systems and petroleum drilling equipment

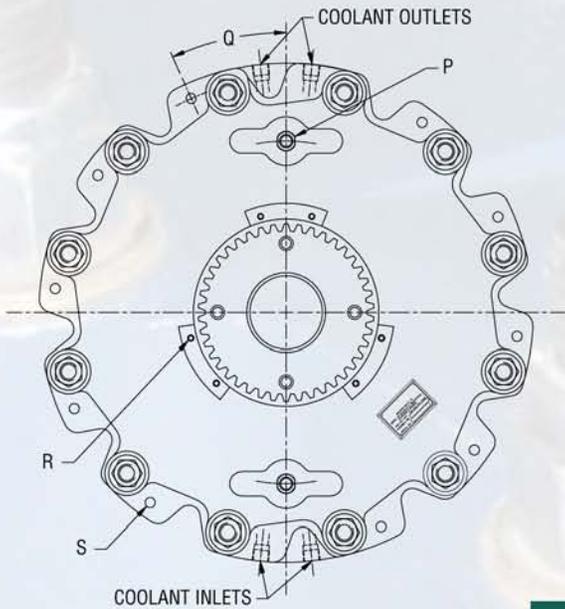
WCB Dual Actuated

The **WCB/DA** combines air applied control and spring applied fail-safe features, is specifically designed for heavy duty braking and holding applications, where emergency stop and parking brake features are necessary.

Typical applications: forestry and logging equipment, anchor handling and towing winches, mooring winch systems, petroleum drawworks equipment.



WCB



WCB DIMENSIONS inches (mm)

SIZE	A	B	C	D	E	F	G	H	J	K
		+0.00/-0.003 (+0.00/-08)	+0.003/-0.000 (+0.08/-00)							
118	23 5/8 (600.1)	23.250 (590.55)	18.250 (463.55)	11 (279.4)	9 47/64 (247.3)	7 1/4 (184.2)	7/8 (22.2)	3 7/32 (81.8)	8 1/2 (215.9)	1 1/2 (38.1)
218	23 5/8 (600.1)	23.250 (590.55)	18.250 (463.55)	11 (279.4)	13 5/32 (334.2)	10 19/32 (269.1)	7/8 (22.2)	3 7/32 (81.8)	8 1/2 (215.9)	1 1/2 (38.1)
318	23 5/8 (600.1)	23.250 (590.55)	18.250 (463.55)	11 (279.4)	17 1/4 (438.2)	13 15/16 (354.0)	7/8 (22.2)	3 7/32 (81.8)	8 1/2 (215.9)	1 1/2 (38.1)
418	23 5/8 (600.1)	23.250 (590.55)	18.250 (463.55)	11 (279.4)	21 1/2 (546.1)	17 9/32 (438.9)	7/8 (22.2)	3 7/32 (81.8)	8 1/2 (215.9)	1 1/2 (38.1)
124	30 5/8 (777.9)	29.998 (761.95)	24.375 (619.13)	12 3/4 (323.9)	11 (279.4)	9 17/64 (235.3)	1 1/16 (27.0)	4 1/8 (104.8)	11 1/2 (292.1)	1 3/4 (44.5)
224	30 5/8 (777.9)	29.998 (761.95)	24.375 (619.13)	12 3/4 (323.9)	15 1/2 (393.7)	13 5/16 (338.1)	1 1/16 (27.0)	4 1/8 (104.8)	11 1/2 (292.1)	1 3/4 (44.5)
324	30 5/8 (777.9)	29.998 (761.95)	24.375 (619.13)	12 3/4 (323.9)	24 (609.6)	17 11/32 (440.5)	1 1/16 (27.0)	4 1/8 (104.8)	11 1/2 (292.1)	1 3/4 (44.5)
424	30 5/8 (777.9)	29.998 (761.95)	24.375 (619.13)	12 3/4 (323.9)	30 1/2 (774.7)	21 7/16 (544.5)	1 1/16 (27.0)	4 1/8 (104.8)	11 1/2 (292.1)	1 3/4 (44.5)
136	44 55/64 (1139.4)	44.498 ¹ (1130.25) ¹	18.375 (466.73)	16 1/2 (419.1)	17 (431.8)	12 1/16 (306.4)	1 17/32 (38.9)	4 31/32 (126.2)	16 1/2 (419.1)	2 19/32 (65.9)
236	44 55/64 (1139.4)	44.498 ¹ (1130.25) ¹	18.375 (466.73)	16 1/2 (419.1)	20 3/4 (527.1)	17 1/32 (432.6)	1 17/32 (38.9)	4 31/32 (126.2)	16 1/2 (419.1)	2 19/32 (65.9)
336	44 55/64 (1139.4)	44.498 ¹ (1130.25) ¹	18.375 (466.73)	16 1/2 (419.1)	27 1/2 (698.5)	22 (558.8)	1 17/32 (38.9)	4 31/32 (126.2)	16 1/2 (419.1)	2 19/32 (65.9)
436	44 55/64 (1139.4)	44.498 ¹ (1130.25) ¹	18.375 (466.73)	16 1/2 (419.1)	35 (889.0)	26 31/32 (685.0)	1 17/32 (38.9)	4 31/32 (126.2)	16 1/2 (419.1)	2 19/32 (65.9)

NOTES: ¹ 36" brakes: +0.000/-0.005 (+0.00/-0.13)

² 18" and 24" brakes have (10) mounting holes based on a (12) hole pattern

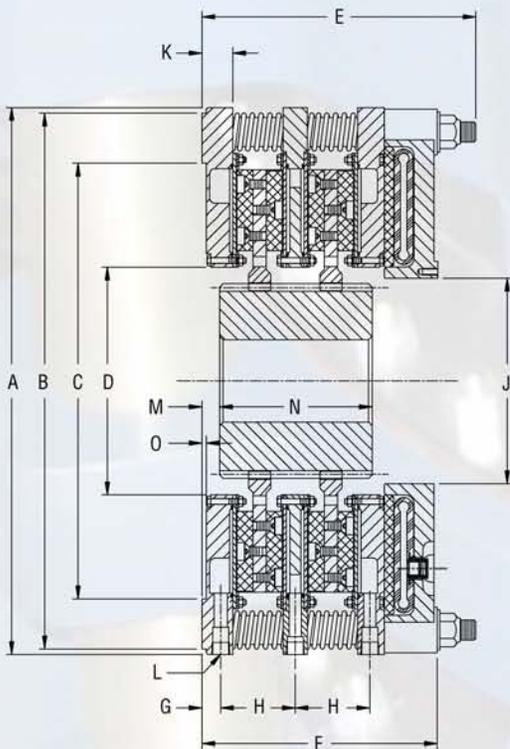
³ 36" brakes have (14) mounting holes based on a (16) hole pattern

(2) holes omitted for coolant inlets/outlets

³ Maximum bores shown are with a standard square key. Contact ICP Engineering for bore sizes exceeding those shown.

Contact Customer Service for drawing before finalizing design.
Certified prints available on request.

Dimensions are considered as reference only and subject to change.



WCB SPECIFICATIONS

Size	TORQUE RATINGS @ 100 psi (lb-in)/7 bar (Nm)								AIR VOLUME/ENGAGEMENT				Max Slip Speed rpm	Max Disengaged Speed rpm	WEIGHT AND INERTIA			Size
	Standard Friction Material		High Coeff Friction Material		Heat Dissipation Capacity		Water Flow (Minimum)		New		Worn				Total Weight lb (kg)	Hub & DP Weight lb (kg)	Hub & DP Inertia lbf ² (wr ²) (kgm ² (J))	
	lb-in	Nm	lb-in	Nm	Hp	kW	gpm	L/min	in ³	L	in ³	L						
118	44,900	5,150	67,100	7,700	120	89.5	12	45.4	59	1.0	122	2.0	850	1560	331 (150)	86 (39)	18.8 (0.79)	118
218	89,800	10,310	134,200	15,400	240	179.0	24	90.8	69	1.1	122	2.0	850	1560	460 (209)	172 (78)	38.1 (1.61)	218
318	134,700	15,460	201,300	23,100	360	268.5	36	136.3	78	1.3	122	2.0	850	1560	848 (385)	272 (123)	57.4 (2.42)	318
418	179,600	20,620	268,400	30,810	480	357.9	48	181.7	88	1.4	122	2.0	850	1560	1,236 (561)	372 (169)	78.1 (3.29)	418
124	111,600	12,800	166,700	19,130	270	201.3	27	102.2	170	2.8	299	4.9	640	1170	810 (367)	196 (89)	71.9 (3.03)	124
224	223,200	25,600	333,400	38,260	540	402.7	54	204.4	190	3.1	299	4.9	640	1170	1,208 (548)	428 (194)	148 (6.21)	224
324	334,800	38,400	500,100	57,380	810	604.0	81	306.6	209	3.4	299	4.9	640	1170	1,624 (737)	631 (286)	219 (9.21)	324
424	446,400	51,200	666,700	76,510	1080	805.4	108	408.8	228	3.7	299	4.9	640	1170	1,950 (884)	850 (386)	294 (12.4)	424
136	375,500	43,080	561,200	64,380	650	484.7	65	246.1	271	4.4	661	10.8	425	775	2,687 (1219)	474 (215)	374 (15.8)	136
236	751,000	86,160	1,122,400	128,750	1,300	969.4	130	492.1	313	5.1	661	10.8	425	775	3,919 (1777)	908 (412)	704 (29.7)	236
336	1,126,500	129,250	1,683,600	193,130	1,950	1,454	195	738.2	355	5.8	661	10.8	425	775	5,400 (2449)	1,345 (610)	1,107 (46.6)	336
436	1,502,000	172,330	2,244,800	257,500	2,600	1,939	260	984.2	396	6.5	661	10.8	425	775	6,501 (2948)	1,997 (906)	1,524 (64.2)	436

NOTES: Torque rating is dependent on air pressure applied. Brake torque is directly proportional to the air pressure applied. Maximum allowable air pressure is 130 psi (9 bar).

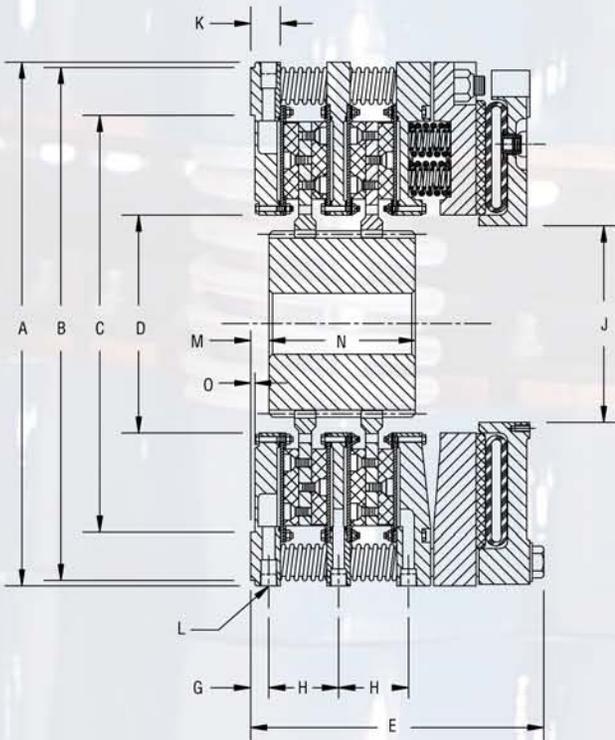
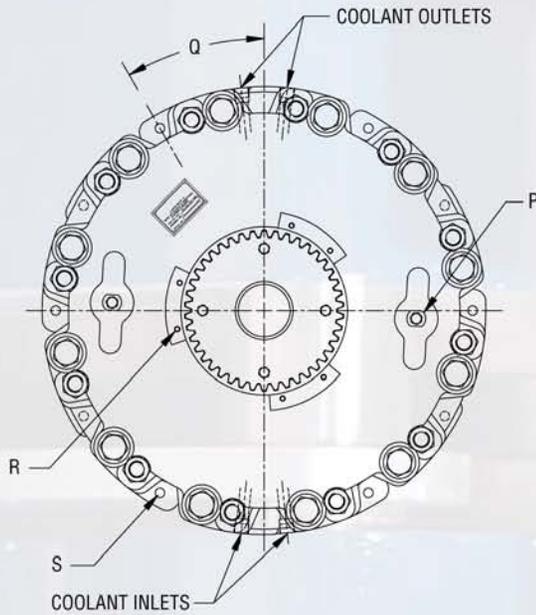
The thermal ratings listed require a water flow of one gallon per minute for every 10 hp (one liter per minute for every 2 kW). The thermal ratings listed are based upon a 50°F (28°C) temperature rise between the inlet and outlet. The outlet water temperature should not exceed 150°F (65°C). Maximum water jacket inlet pressure is 45 psi (3.1 bar) for the 18"/24" and 40 psi (2.8 bar) for the 36".

Contact ICP Engineering for Ethylene Glycol Flow requirements..

L COOLANT INLETS / OUTLETS		M	N	O	P AIR INLETS			Q	R			S MOUNTING HOLES			BORE RANGE		SIZE
QTY	SIZE (NPT)				QTY	TAP SIZE	HOLE CENTER		QTY	SIZE	BOLT CIRCLE	QTY ²	SIZE	BOLT CIRCLE	MIN	MAX ³	
4	1/2-14	1 1/4 (31.8)	2 13/16 (71.4)	1/4 (6.4)	2	1/2-14	14.188 (360.36)	25°	3	3/8-16	9.125 (231.78)	10	21/32 (16.7)	22.000 (558.8)	2 1/4 (57.2)	5 11/32 (135.7)	118
8	1/2-14	1 1/4 (31.8)	5 5/8 (142.9)	1/4 (6.4)	2	1/2-14	14.188 (360.36)	25°	3	3/8-16	9.125 (231.78)	10	21/32 (16.7)	22.000 (558.8)	2 1/4 (57.2)	5 11/32 (135.7)	218
12	1/2-14	1 1/4 (31.8)	9 5/8 (244.5)	1/4 (6.4)	2	1/2-14	14.188 (360.36)	25°	3	3/8-16	9.125 (231.78)	10	21/32 (16.7)	22.000 (558.8)	2 1/4 (57.2)	5 11/32 (135.7)	318
16	1/2-14	1 1/4 (31.8)	12 1/2 (317.5)	1/4 (6.4)	2	1/2-14	14.188 (360.36)	25°	3	3/8-16	9.125 (231.78)	10	21/32 (16.7)	22.000 (558.8)	2 1/4 (57.2)	5 11/32 (135.7)	418
4	3/4-14	1 3/8 (34.9)	3 1/2 (88.9)	1/4 (6.4)	2	1/2-14	18.500 (469.90)	24°	6	3/8-16	12.250 (311.15)	10	21/32 (16.7)	28.750 (730.25)	2 3/4 (69.9)	7 (177.8)	124
8	3/4-14	1 3/8 (34.9)	8 5/8 (219.1)	1/4 (6.4)	2	1/2-14	18.500 (469.90)	24°	6	3/8-16	12.250 (311.15)	10	21/32 (16.7)	28.750 (730.25)	2 3/4 (69.9)	7 (177.8)	224
12	3/4-14	1 3/8 (34.9)	13 3/16 (335.0)	1/4 (6.4)	2	1/2-14	18.500 (469.90)	24°	6	3/8-16	12.250 (311.15)	10	21/32 (16.7)	28.750 (730.25)	2 3/4 (69.9)	7 (177.8)	324
16	3/4-14	1 3/8 (34.9)	16 15/16 (430.2)	1/4 (6.4)	2	1/2-14	18.500 (469.90)	24°	6	3/8-16	12.250 (311.15)	10	21/32 (16.7)	28.750 (730.25)	2 3/4 (69.9)	7 (177.8)	424
4	1-1/4-11 1/2	2 3/8 (60.3)	5 (127.0)	9/32 (7.1)	3	1/2-14	28.000 (711.20)	18.75°	6	1/2-13	17.500 (444.50)	14	1 1/16 (27.0)	42.000 (1066.80)	4 (101.6)	10 1/8 (257.2)	136
8	1-1/4-11 1/2	2 3/8 (60.3)	9 (228.6)	9/32 (7.1)	3	1/2-14	28.000 (711.20)	18.75°	6	1/2-13	17.500 (444.50)	14	1 1/16 (27.0)	42.000 (1066.80)	4 (101.6)	10 1/8 (257.2)	236
12	1-1/4-11 1/2	2 3/8 (60.3)	13 (330.2)	9/32 (7.1)	3	1/2-14	28.000 (711.20)	18.75°	6	1/2-13	17.500 (444.50)	14	1 1/16 (27.0)	42.000 (1066.80)	4 (101.6)	10 1/8 (257.2)	336
16	1-1/4-11 1/2	2 3/8 (60.3)	18 (457.2)	9/32 (7.1)	3	1/2-14	28.000 (711.20)	18.75°	6	1/2-13	17.500 (444.50)	14	1 1/16 (27.0)	42.000 (1066.80)	4 (101.6)	10 1/8 (257.2)	436



WCB/SS



WCB/SS SPECIFICATIONS

Size	SPRING APPLIED TORQUE RATINGS MINIMUM RELEASE PRESSURE*							
	75 psi (lb-in)/5.2 bar (Nm)				90 psi (lb-in)/6.2 bar (Nm)			
	Standard Friction Material		High Coeff Friction Material		Standard Friction Material		High Coeff Friction Material	
	lb-in	Nm	lb-in	Nm	lb-in	Nm	lb-in	Nm
118	29,800	3,370	40,200	4,540	34,100	3,860	46,000	5,190
218	57,800	6,530	77,900	8,800	66,200	7,480	89,200	10,080
318	84,100	9,500	113,200	12,790	96,400	10,890	129,800	14,670
418	108,500	12,260	146,200	16,510	124,400	14,060	167,700	18,940
124	74,500	8,410	100,300	11,330	90,200	10,190	121,500	13,730
224	144,200	16,290	194,200	21,950	174,800	19,750	235,500	26,610
324	209,200	23,630	281,800	31,840	253,900	28,690	342,000	38,650
424	260,000	29,370	350,200	39,570	316,300	35,730	426,000	48,140
136	264,700	29,900	356,600	40,290	320,800	36,250	432,200	48,830
236	523,000	59,090	704,500	79,600	633,900	71,630	854,000	96,490
336	765,300	86,470	1,031,000	116,490	927,900	104,840	1,250,100	141,240
436	994,900	112,410	1,340,300	151,430	1,206,600	136,330	1,625,500	183,660

WCB/SS DIMENSIONS inches (mm)

SIZE	A	B	C	D	E	G	H	J
118	23 5/8 (600.1)	23.250 (590.55)	18.250 (463.55)	11 (279.4)	9 7/8 (250.8)	7/8 (22.2)	3 7/32 (81.8)	8 1/2 (215.9)
218	23 5/8 (600.1)	23.250 (590.55)	18.250 (463.55)	11 (279.4)	13 7/32 (335.7)	7/8 (22.2)	3 7/32 (81.8)	8 1/2 (215.9)
318	23 5/8 (600.1)	23.250 (590.55)	18.250 (463.55)	11 (279.4)	16 9/16 (420.6)	7/8 (22.2)	3 7/32 (81.8)	8 1/2 (215.9)
418	23 5/8 (600.1)	23.250 (590.55)	18.250 (463.55)	11 (279.4)	19 29/32 (505.6)	7/8 (22.2)	3 7/32 (81.8)	8 1/2 (215.9)
124	30 5/8 (777.9)	29.998 (761.95)	24.375 (619.13)	12 3/4 (323.9)	13 7/16 (341.3)	1 1/16 (27.0)	4 1/8 (104.8)	11 1/2 (292.1)
224	30 5/8 (777.9)	29.998 (761.95)	24.375 (619.13)	12 3/4 (323.9)	17 3/8 (441.3)	1 1/16 (27.0)	4 1/8 (104.8)	11 1/2 (292.1)
324	30 5/8 (777.9)	29.998 (761.95)	24.375 (619.13)	12 3/4 (323.9)	21 5/16 (541.3)	1 1/16 (27.0)	4 1/8 (104.8)	11 1/2 (292.1)
424	30 5/8 (777.9)	29.998 (761.95)	24.375 (619.13)	12 3/4 (323.9)	25 1/4 (641.3)	1 1/16 (27.0)	4 1/8 (104.8)	11 1/2 (292.1)
136	44 55/64 (1139.4)	44.498 ¹ (1130.25) ¹	18.375 (466.73)	16 1/2 (419.1)	16 21/32 (423.1)	1 17/32 (38.9)	4 31/32 (126.2)	16 1/2 (419.1)
236	44 55/64 (1139.4)	44.498 ¹ (1130.25) ¹	18.375 (466.73)	16 1/2 (419.1)	21 39/64 (548.9)	1 17/32 (38.9)	4 31/32 (126.2)	16 1/2 (419.1)
336	44 55/64 (1139.4)	44.498 ¹ (1130.25) ¹	18.375 (466.73)	16 1/2 (419.1)	26 9/16 (674.7)	1 17/32 (38.9)	4 31/32 (126.2)	16 1/2 (419.1)
436	44 55/64 (1139.4)	44.498 ¹ (1130.25) ¹	18.375 (466.73)	16 1/2 (419.1)	31 33/64 (800.5)	1 17/32 (38.9)	4 31/32 (126.2)	16 1/2 (419.1)

NOTES: ¹ 36" brakes: +0.000/-0.005 (+0.00/-0.13)

² 18" and 24" brakes have (10) mounting holes based on a (12) hole pattern

36" brakes have (14) mounting holes based on a (16) hole pattern

(2) holes omitted for coolant inlets/outlets

³ Maximum bores shown are with a standard square key. Contact ICP Engineering for bore sizes exceeding those shown.

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Dimensions are considered as reference only and subject to change.

110 psi (lb-in)/7.6 bar (Nm)																	
Standard Friction Material		High Coeff Friction Material		Heat Dissipation Capacity		Water Flow (Minimum)		AIR VOLUME/ENGAGEMENT				Max Slip Speed	Max Disengaged Speed	WEIGHT AND INERTIA			Size
lb-in	Nm	lb-in	Nm	Hp	kW	gpm	L/min	New		Worn		rpm	rpm	Total Weight	Hub & DP Weight	Hub & DP Inertia	
								in ³	L	in ³	L			lb (kg)	lb (kg)	lbft ² (wr ²) (kgm ² (J))	
42,800	4,830	57,600	6,510	120	89.5	12	45.4	59	1.0	122	2.0	850	1560	448 (203)	86 (39)	18.8 (0.79)	
83,100	9,390	111,900	12,650	240	179.0	24	90.8	69	1.1	122	2.0	850	1560	577 (262)	172 (78)	38.1 (1.61)	
121,000	13,670	162,900	18,410	360	268.5	36	136.3	78	1.3	122	2.0	850	1560	965 (438)	272 (123)	57.4 (2.42)	
156,400	17,670	210,600	23,800	480	358.0	48	181.7	88	1.4	122	2.0	850	1560	1,353 (614)	372 (169)	78.1 (3.29)	
116,400	13,160	156,900	17,720	270	201.3	27	102.2	170	2.8	299	4.9	640	1170	997 (452)	196 (89)	71.9 (3.03)	
225,900	25,530	304,400	34,390	540	402.7	54	204.4	190	3.1	299	4.9	640	1170	1,395 (633)	428 (194)	148 (6.21)	
328,500	37,110	442,500	49,990	810	604.0	81	306.6	209	3.4	299	4.9	640	1170	1,811 (821)	631 (286)	219 (9.21)	
410,100	46,340	552,500	62,420	1080	805.4	108	408.8	228	3.7	299	4.9	640	1170	2,137 (969)	850 (386)	294 (12.4)	
383,200	43,290	516,200	58,320	650	484.7	65	246.1	271	4.4	661	10.8	425	775	3,586 (1627)	474 (215)	374 (15.8)	
757,200	85,560	1,020,100	115,260	1,300	969.4	130	492.1	313	5.1	661	10.8	425	775	4,818 (2185)	908 (412)	704 (29.7)	
1,108,600	125,260	1,493,500	168,740	1,950	1,454	195	738.2	355	5.8	661	10.8	425	775	6,299 (2857)	1,345 (610)	1,107 (46.6)	
1,441,900	162,910	1,942,400	219,460	2,600	1,939	260	984.2	396	6.5	661	10.8	425	775	7,400 (3357)	1,997 (906)	1,524 (64.2)	

NOTES: *Minimum pressure required to fully release brake. Springs can be removed to lower the minimum release pressure (lower torque ratings will result). Contact ICP Engineering for details. Maximum allowable air pressure is 130 psi (9 bar).

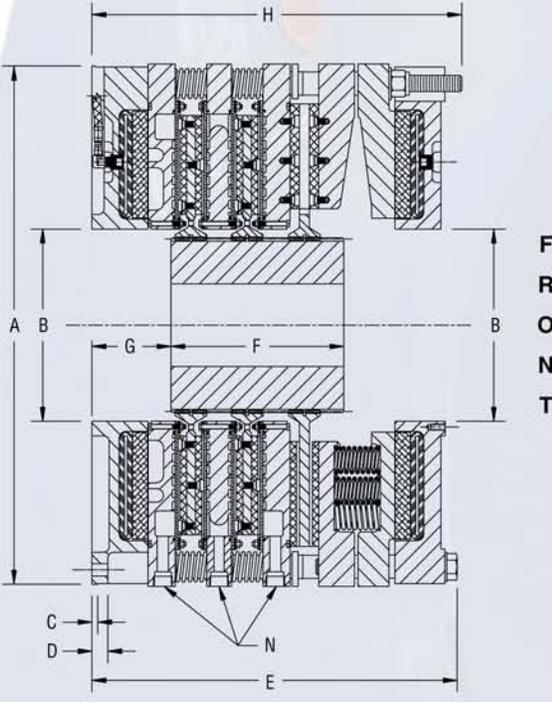
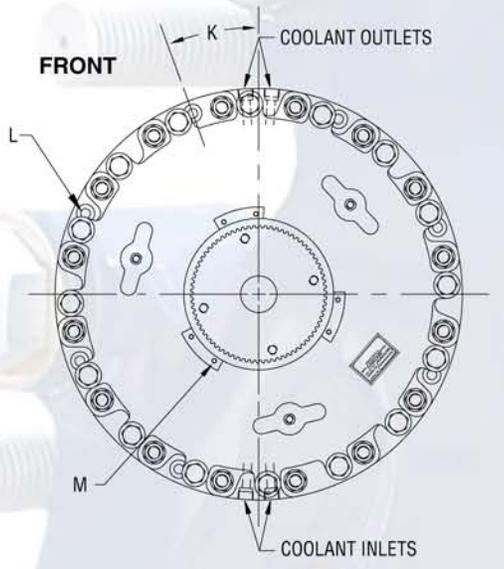
The thermal ratings listed require a water flow of one gallon per minute for every 10 hp (one liter per minute for every 2 kW). The thermal ratings listed are based upon a 50°F (28°C) temperature rise between the inlet and outlet. The outlet water temperature should not exceed 150°F (65°C). Maximum water jacket inlet pressure is 45 psi (3.1 bar) for the 18"/24" and 40 psi (2.8 bar) for the 36".

Contact ICP Engineering for Ethylene Glycol Flow requirements.

K	L COOLANT INLETS/OUTLETS		M	N	O	P AIR INLETS			Q	R			S MOUNTING HOLES			BORE RANGE		SIZE
	QTY	SIZE (NPT)				QTY	SIZE (NPT)	HOLE CENTER		QTY	SIZE	BOLT CIRCLE	QTY ²	SIZE	BOLT CIRCLE	MIN	MAX ³	
1 1/2 (38.1)	4	1/2-14	1 1/4 (31.8)	2 1/2 (63.5)	1/4 (6.4)	2	1/2-14	14.188 (360.36)	25°	3	3/8-16	9.125 (231.78)	10	21/32 (16.7)	22.000 (558.80)	2 1/4 (57.2)	5 11/32 (135.7)	118
1 1/2 (38.1)	8	1/2-14	1 1/4 (31.8)	5 5/8 (142.9)	1/4 (6.4)	2	1/2-14	14.188 (360.36)	25°	3	3/8-16	9.125 (231.78)	10	21/32 (16.7)	22.000 (558.80)	2 1/4 (57.2)	5 11/32 (135.7)	218
1 1/2 (38.1)	12	1/2-14	1 1/4 (31.8)	9 5/8 (244.5)	1/4 (6.4)	2	1/2-14	14.188 (360.36)	25°	3	3/8-16	9.125 (231.78)	10	21/32 (16.7)	22.000 (558.80)	2 1/4 (57.2)	5 11/32 (135.7)	318
1 1/2 (38.1)	16	1/2-14	1 1/4 (31.8)	12 1/2 (317.5)	1/4 (6.4)	2	1/2-14	14.188 (360.36)	25°	3	3/8-16	9.125 (231.78)	10	21/32 (16.7)	22.000 (558.80)	2 1/4 (57.2)	5 11/32 (135.7)	418
1 3/4 (44.5)	4	3/4-14	1 3/8 (34.9)	3 1/2 (88.9)	1/4 (6.4)	2	1/2-14	21.000 (533.4)	24°	6	3/8-16	12.250 (311.15)	10	21/32 (16.7)	28.750 (730.25)	2 3/4 (69.9)	7 (177.8)	124
1 3/4 (44.5)	8	3/4-14	1 3/8 (34.9)	8 5/8 (219.1)	1/4 (6.4)	2	1/2-14	21.000 (533.4)	24°	6	3/8-16	12.250 (311.15)	10	21/32 (16.7)	28.750 (730.25)	2 3/4 (69.9)	7 (177.8)	224
1 3/4 (44.5)	12	3/4-14	1 3/8 (34.9)	13 3/16 (335.0)	1/4 (6.4)	2	1/2-14	21.000 (533.4)	24°	6	3/8-16	12.250 (311.15)	10	21/32 (16.7)	28.750 (730.25)	2 3/4 (69.9)	7 (177.8)	324
1 3/4 (44.5)	16	3/4-14	1 3/8 (34.9)	16 15/16 (430.2)	1/4 (6.4)	2	1/2-14	21.000 (533.4)	24°	6	3/8-16	12.250 (311.15)	10	21/32 (16.7)	28.750 (730.25)	2 3/4 (69.9)	7 (177.8)	424
2 19/32 (65.9)	4	1-1/4-11 1/2	2 3/8 (60.3)	5 (127.0)	9/32 (7.1)	3	1/2-14	28.000 (711.20)	18.75°	6	1/2-13	17.500 (444.50)	14	1 1/16 (27.0)	42.000 (1066.80)	4 (101.6)	10 1/8 (257.2)	136
2 19/32 (65.9)	8	1-1/4-11 1/2	2 3/8 (60.3)	9 (228.6)	9/32 (7.1)	3	1/2-14	28.000 (711.20)	18.75°	6	1/2-13	17.500 (444.50)	14	1 1/16 (27.0)	42.000 (1066.80)	4 (101.6)	10 1/8 (257.2)	236
2 19/32 (65.9)	12	1-1/4-11 1/2	2 3/8 (60.3)	13 (330.2)	9/32 (7.1)	3	1/2-14	28.000 (711.20)	18.75°	6	1/2-13	17.500 (444.50)	14	1 1/16 (27.0)	42.000 (1066.80)	4 (101.6)	10 1/8 (257.2)	336
2 19/32 (65.9)	16	1-1/4-11 1/2	2 3/8 (60.3)	18 (457.2)	9/32 (7.1)	3	1/2-14	28.000 (711.20)	18.75°	6	1/2-13	17.500 (444.50)	14	1 1/16 (27.0)	42.000 (1066.80)	4 (101.6)	10 1/8 (257.2)	436



WCB/DA



WCB/DA SPECIFICATIONS

Size*	TORQUE RATINGS							
	Air-Applied Dynamic Torque Ratings @ 100 psi (lb-in)/7 bar (Nm)		Spring-Applied Dynamic Torque Ratings @ 110 psi (lb-in)/7.6 bar (Nm)** Release Pressure		Spring-Applied Static Torque Ratings @ 110 psi (lb-in)/7.6 bar (Nm)** Release Pressure		Maximum Dynamic Torque Ratings @ 120 psi (lb-in)/8.3 bar (Nm)** Release Pressure	
	lb-in	Nm	lb-in	Nm	lb-in	Nm	lb-in	Nm
118 DA 1WC 0AC	67,100	7,700	63,800	7,210	63,800	7,210	80,500	9,100
218 DA 1WC 1AC	67,100	7,700	142,700	16,120	166,000	18,760	150,300	16,980
218 DA 2WC 0AC	134,200	15,400	127,700	14,430	127,700	14,430	161,100	18,200
318 DA 2WC 1AC	134,200	15,400	215,700	24,370	238,900	26,990	230,900	26,090
418 DA 2WC 2AC	134,200	15,400	285,500	32,260	332,000	37,510	300,600	33,960
318 DA 3WC 0AC	201,400	23,100	191,500	21,640	191,500	21,640	241,700	27,310
418 DA 3WC 1AC	201,400	23,100	288,700	32,620	311,900	35,240	311,400	35,180
518 DA 3WC 2AC	201,400	23,100	358,400	40,490	404,900	45,750	381,200	43,070
418 DA 4WC 0AC	268,500	30,810	255,400	28,860	255,400	28,860	322,200	36,400
124 DA 1WC 0AC	166,700	18,830	144,000	16,270	144,000	16,270	200,100	22,610
224 DA 1WC 1AC	166,700	18,830	284,900	32,190	331,800	37,490	341,000	38,530
224 DA 2WC 0AC	333,500	37,680	288,000	32,540	288,000	32,540	400,200	45,220
324 DA 2WC 1AC	333,500	37,680	428,900	48,460	475,900	53,770	541,100	61,140
424 DA 2WC 2AC	333,500	37,680	569,800	64,380	663,700	74,990	682,000	77,060
324 DA 3WC 0AC	500,200	56,520	432,000	48,810	432,000	48,810	600,300	67,830
424 DA 3WC 1AC	500,200	56,520	572,900	64,730	619,900	70,040	741,200	83,740
524 DA 3WC 2AC	500,200	56,520	713,800	80,650	807,800	91,270	882,100	99,660
424 DA 4WC 0AC	667,000	75,360	576,100	65,090	620,400	70,100	800,400	90,430
136 DA 1WC 0AC	561,200	63,410	444,200	50,190	444,200	50,190	673,400	76,080
236 DA 1WC 1AC	561,200	63,410	912,900	103,140	1,021,000	115,360	1,142,000	129,030
236 DA 2WC 0AC	1,122,400	126,810	888,500	100,390	888,500	100,390	1,346,900	152,180
336 DA 2WC 1AC	1,122,400	126,810	1,357,200	153,340	1,465,300	165,560	1,815,500	205,130
436 DA 2WC 2AC	1,122,400	126,810	1,825,800	206,290	2,042,100	230,730	2,284,100	258,070
336 DA 3WC 0AC	1,683,600	190,220	1,332,800	150,590	1,332,800	150,590	2,020,400	228,280
436 DA 3WC 1AC	1,683,600	190,220	1,801,400	203,530	1,909,600	215,760	2,489,000	281,220
536 DA 3WC 2AC	1,683,600	190,220	2,270,100	256,490	2,486,400	280,930	2,957,600	334,170
436 DA 4WC 0AC	2,244,900	253,640	1,777,100	200,790	1,777,100	200,790	2,693,800	304,360

WCB/DA DIMENSIONS inches (mm)

SIZE	A	B	C	D	E	F	G	H	QTY
	+0.000/-0.003 (+.00/-08)								
118	23.250 (560.55)	8 1/2 (215.9)	1/4 (6.4)	1 5/8 (41.3)	15 11/64 (385.4)	2 13/16 (71.4)	5 1/8 (130.2)	15 3/4 (400.1)	2
218	23.250 (560.55)	8 1/2 (215.9)	1/4 (6.4)	1 5/8 (41.3)	18 9/64 (460.8)	6 5/8 (168.3)	5 1/8 (130.2)	18 3/4 (476.3)	2
318	23.250 (560.55)	8 1/2 (215.9)	1/4 (6.4)	1 5/8 (41.3)	21 29/64 (544.9)	9 5/8 (244.5)	5 1/8 (130.2)	22 (558.8)	2
418	23.250 (560.55)	8 1/2 (215.9)	1/4 (6.4)	1 5/8 (41.3)	24 23/32 (627.9)	12 5/8 (320.7)	5 1/8 (130.2)	25 1/4 (641.4)	2
124	29.998 (761.95)	11 1/2 (292.1)	3/8 (9.5)	1 1/2 (38.1)	16 52/64 (427.4)	3 1/2 (88.9)	3 7/8 (98.4)	23 1/8 (587.4)	2
224	29.998 (761.95)	11 1/2 (292.1)	3/8 (9.5)	1 1/2 (38.1)	20 49/64 (527.4)	9 1/4 (235.0)	3 7/8 (98.4)	27 1/16 (687.4)	2
324	29.998 (761.95)	11 1/2 (292.1)	3/8 (9.5)	1 1/2 (38.1)	24 45/64 (627.5)	13 3/16 (335.0)	3 7/8 (98.4)	31 (787.4)	2
424	29.998 (761.95)	11 1/2 (292.1)	3/8 (9.5)	1 1/2 (38.1)	28 5/8 (727.1)	16 15/16 (430.2)	3 7/8 (98.4)	34 15/16 (887.4)	2
136	44.498 ¹ (1130.25) ¹	16 1/2 (419.1)	1/2 (12.7)	1 3/8 (34.9)	21 15/16 (557.2)	5 (127.0)	6 55/64 (174.2)	22 21/32 (575.5)	3
236	44.498 ¹ (1130.25) ¹	16 1/2 (419.1)	1/2 (12.7)	1 3/8 (34.9)	27 (685.8)	11 (279.4)	6 55/64 (174.2)	27 3/8 (695.3)	3
336	44.498 ¹ (1130.25) ¹	16 1/2 (419.1)	1/2 (12.7)	1 3/8 (34.9)	31 11/16 (804.9)	15 (381.0)	6 55/64 (174.2)	32 3/32 (815.2)	3
436	44.498 ¹ (1130.25) ¹	16 1/2 (419.1)	1/2 (12.7)	1 3/8 (34.9)	35 11/16 (906.5)	20 1/2 (520.7)	6 55/64 (174.2)	37 15/32 (951.7)	3
536	44.498 ¹ (1130.25) ¹	16 1/2 (419.1)	1/2 (12.7)	1 3/8 (34.9)	40 39/64 (1031.5)	22 3/4 (577.9)	6 55/64 (174.2)	42 7/16 (1077.9)	3

Heat Dissipation Capacity		Water Flow (minimum)		M Coolant Inlets/Outlets		AIR VOLUME/ENGAGEMENT				Max Slip Speed	Max Disengaged Speed	WEIGHT AND INERTIA		
						New		Worn				Total Weight	Hub & DP Weight	Hub & DP Inertia
						in ³	L	in ³	L					
Hp	kW	gpm	L/min	qty	size (npt)				rpm	rpm				
120	89.5	12	45.4	4	1/2-14	59	1.0	122	2.0	850	1,560	834 (378)	84 (38)	22.4 (0.94)
120	89.5	12	45.4	4	1/2-14	69	1.1	122	2.0	850	1,560	842 (382)	162 (73)	44.8 (1.89)
240	179.0	24	90.8	8	1/2-14	69	1.1	122	2.0	850	1,560	1,006 (456)	176 (80)	45.2 (1.91)
240	179.0	24	90.8	8	1/2-14	78	1.3	122	2.0	850	1,560	1,014 (460)	265 (120)	68.4 (2.88)
240	179.0	24	90.8	8	1/2-14	88	1.4	122	2.0	850	1,560	1,143 (518)	339 (154)	90.6 (3.82)
360	268.5	36	136.3	12	1/2-14	78	1.3	122	2.0	850	1,560	1,202 (545)	279 (127)	68.8 (2.90)
360	268.5	36	136.3	12	1/2-14	88	1.4	122	2.0	850	1,560	1,210 (549)	354 (161)	91.0 (3.84)
360	268.5	36	136.3	12	1/2-14	88	1.4	122	2.0	850	1,560	1,309 (594)	428 (195)	113 (4.77)
480	357.9	48	181.7	16	1/2-14	88	1.4	122	2.0	850	1,560	1,374 (623)	368 (167)	90.9 (3.83)
270	201.3	27	102.2	4	3/4-14	170	2.8	299	4.9	640	1,170	1,700 (771)	202 (92)	72.2 (3.04)
270	201.3	27	102.2	4	3/4-14	190	3.1	299	4.9	640	1,170	1,971 (894)	406 (184)	139 (5.85)
540	402.7	54	204.4	8	3/4-14	190	3.1	299	4.9	640	1,170	2,050 (930)	441 (200)	148 (6.24)
540	402.7	54	204.4	8	3/4-14	209	3.4	299	4.9	640	1,170	2,292 (1040)	611 (277)	213 (8.99)
540	402.7	54	204.4	8	3/4-14	228	3.7	299	4.9	640	1,170	2,540 (1152)	798 (362)	309 (13.0)
810	604.0	81	306.6	12	3/4-14	209	3.4	299	4.9	640	1,170	2,391 (1085)	646 (293)	223 (9.38)
810	604.0	81	306.6	12	3/4-14	228	3.7	299	4.9	640	1,170	2,608 (1183)	833 (378)	286 (12.1)
810	604.0	81	306.6	12	3/4-14	228	3.7	299	4.9	640	1,170	2,856 (1295)	1,012 (459)	350 (14.7)
1,080	805.4	108	408.8	16	3/4-14	228	3.7	299	4.9	640	1,170	3,783 (1716)	869 (394)	295 (12.5)
650	484.7	65	246.1	4	1-1/4-11 1/2	271	4.4	661	10.8	425	775	2,876 (1305)	493 (224)	305 (12.9)
650	484.7	65	246.1	4	1-1/4-11 1/2	313	5.1	661	10.8	425	775	5,440 (2468)	967 (439)	676 (28.5)
1,300	969.4	130	492.1	8	1-1/4-11 1/2	313	5.1	661	10.8	425	775	4,203 (1906)	986 (447)	610 (25.7)
1,300	969.4	130	492.1	8	1-1/4-11 1/2	355	5.8	661	10.8	425	775	6,978 (3165)	1,460 (662)	1,046 (44.1)
1,300	969.4	130	492.1	8	1-1/4-11 1/2	396	6.5	661	10.8	425	775	8,175 (3708)	1,911 (867)	1,347 (56.8)
1,950	1454	195	738.2	12	1-1/4-11 1/2	355	5.8	661	10.8	425	775	5,545 (2515)	1,479 (671)	915 (38.6)
1,950	1454	195	738.2	12	1-1/4-11 1/2	396	6.5	661	10.8	425	775	7,766 (3523)	1,930 (876)	1,412 (59.5)
1,950	1454	195	738.2	12	1-1/4-11 1/2	396	6.5	661	10.8	425	775	9,401 (4264)	2,360 (1071)	1,643 (69.2)
2,600	1939	260	984.2	16	1-1/4-11 1/2	396	6.5	661	10.8	425	775	7,981 (3620)	1,957 (888)	1,216 (51.2)



NOTES:
 *WC=Water Cooled Drive Plates AC=Air Cooled Drive Plates
 **Minimum pressure required to fully release brake. Springs can be removed to lower the minimum release pressure (lower torque ratings will result).
 Contact ICP Engineering for details. Maximum allowable air pressure is 130 psi (9 bar).

The thermal ratings listed require a water flow of one gallon per minute for every 10 hp (one liter per minute for every 2 kW). The thermal ratings listed are based upon a 50°F (28°C) temperature rise between the inlet and outlet. The outlet water temperature should not exceed 150°F (65°C). Maximum water jacket inlet pressure is 45 psi (3.1 bar) for the 18"/24" and 40 psi (2.8 bar) for the 36".

Contact ICP Engineering for Ethylene Glycol Flow requirements.

J AIR INLETS (PER ACTUATOR)		K	L MOUNTING HOLES (EQUALLY SPACED)			M			N	BORE RANGE		SIZE
SIZE (NPT)	HOLE CENTER		QTY	SIZE	BOLT CIRCLE	QTY	SIZE	BOLT CIRCLE	SIZE (NPT)	MIN	MAX ²	
1/2-14	14.188 (360.36)	30°	12	21/32 (16.7)	22.000 (558.8)	3	3/8-16	9.125 (231.78)	1/2-14	2 1/4 (57.2)	5 11/32 (135.7)	118
1/2-14	14.188 (360.36)	30°	12	21/32 (16.7)	22.000 (558.8)	3	3/8-16	9.125 (231.78)	1/2-14	2 1/4 (57.2)	5 11/32 (135.7)	218
1/2-14	14.188 (360.36)	30°	12	21/32 (16.7)	22.000 (558.8)	3	3/8-16	9.125 (231.78)	1/2-14	2 1/4 (57.2)	5 11/32 (135.7)	318
1/2-14	14.188 (360.36)	30°	12	21/32 (16.7)	22.000 (558.8)	3	3/8-16	9.125 (231.78)	1/2-14	2 1/4 (57.2)	5 11/32 (135.7)	418
1/2-14	21.000 (533.40)	24°	12	21/32 (16.7)	28.750 (730.25)	6	3/8-16	12.250 (311.15)	3/4-14	2 3/4 (69.9)	7 (177.8)	124
1/2-14	21.000 (533.40)	24°	12	21/32 (16.7)	28.750 (730.25)	6	3/8-16	12.250 (311.15)	3/4-14	2 3/4 (69.9)	7 (177.8)	224
1/2-14	21.000 (533.40)	24°	12	21/32 (16.7)	28.750 (730.25)	6	3/8-16	12.250 (311.15)	3/4-14	2 3/4 (69.9)	7 (177.8)	324
1/2-14	21.000 (533.40)	24°	12	21/32 (16.7)	28.750 (730.25)	6	3/8-16	12.250 (311.15)	3/4-14	2 3/4 (69.9)	7 (177.8)	424
1/2-14	28.000 (711.20)	20°	16	1 1/16 (27.0)	42.000 (1066.80)	6	1/2-13	17.500 (444.50)	1-1/4-11 1/2	4 (101.6)	10 1/8 (257.2)	136
1/2-14	28.000 (711.20)	20°	16	1 1/16 (27.0)	42.000 (1066.80)	6	1/2-13	17.500 (444.50)	1-1/4-11 1/2	4 (101.6)	10 1/8 (257.2)	236
1/2-14	28.000 (711.20)	20°	16	1 1/16 (27.0)	42.000 (1066.80)	6	1/2-13	17.500 (444.50)	1-1/4-11 1/2	4 (101.6)	10 1/8 (257.2)	336
1/2-14	28.000 (711.20)	20°	16	1 1/16 (27.0)	42.000 (1066.80)	6	1/2-13	17.500 (444.50)	1-1/4-11 1/2	4 (101.6)	10 1/8 (257.2)	436
1/2-14	28.000 (711.20)	20°	16	1 1/16 (27.0)	42.000 (1066.80)	6	1/2-13	17.500 (444.50)	1-1/4-11 1/2	4 (101.6)	10 1/8 (257.2)	536



NOTES:
¹ 36" brakes: +0.000/-0.005 (+0.00/-0.13)
² Maximum bores shown are with a standard square key. Contact ICP Engineering for bore sizes exceeding those shown.

Contact Customer Service for drawing before finalizing design. Certified prints available on request.

Dimensions are considered as reference only and subject to change.

Enclosed Cooling Package

- Closed loop cooling package
- Cooling packages available for all sizes
- Skid mounted for portability
- All packages include Brake and Cooling System monitoring with dual pumps for emergency back-up



Parallel Hose Arrangement

Typical closed loop cooling system. Water jackets should always be connected in parallel hose arrangement.

Coolant enters at the bottom of the jackets to guard against air entrapment. ICP recommends low pressure and high temperature warning devices in the cooling system.

A center water jacket will generate roughly twice as much heat as the front or back water jacket. Coolant volume should be provided accordingly.

There are many ways to provide coolant to the unit but it is most important to maintain adequate flow.

If the unit is used as a clutch, consult ICP for additional requirements.

