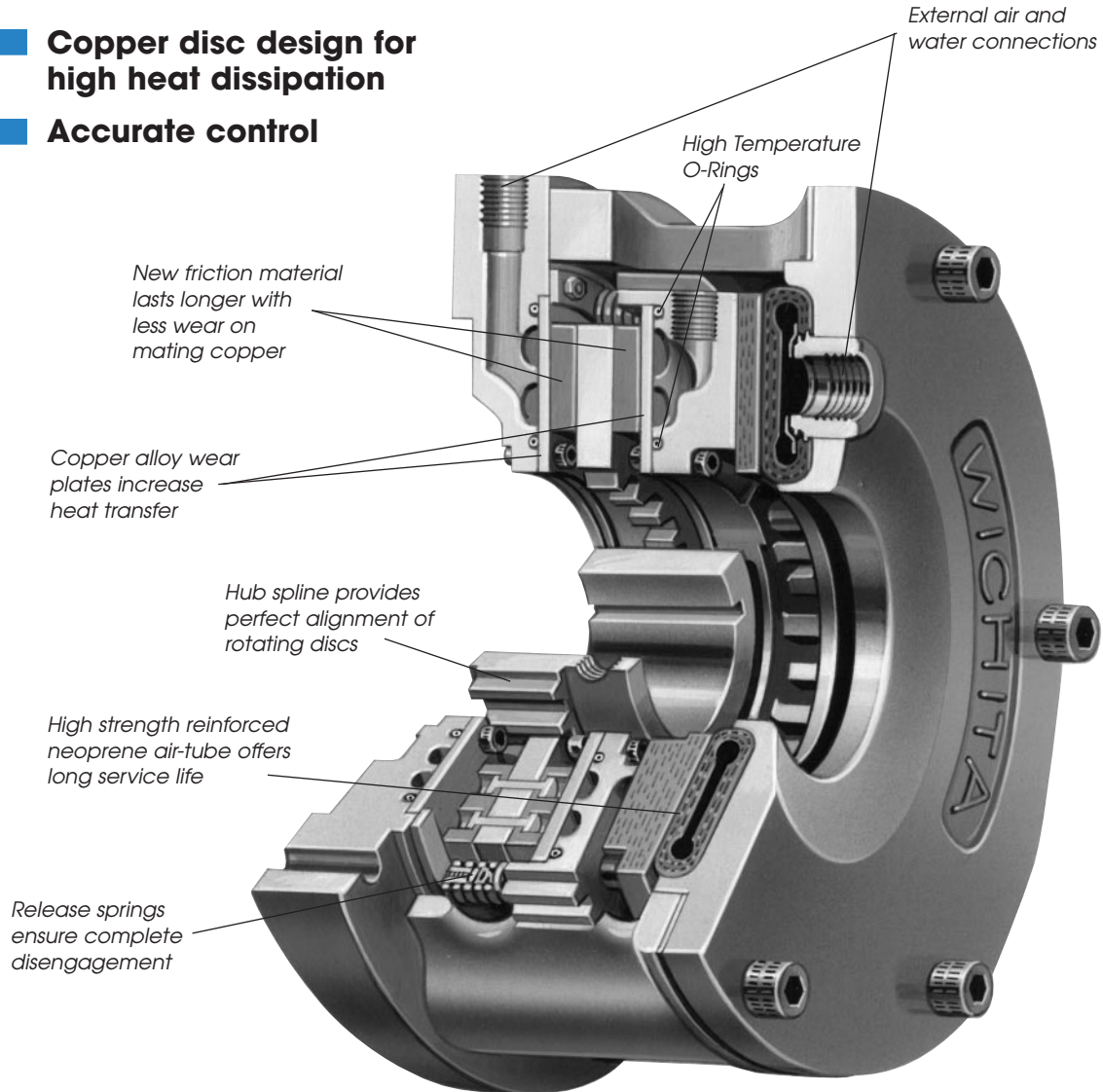


Kopper Kool Brakes

- **Copper disc design for high heat dissipation**
- **Accurate control**



The Wichita Kopper Kool airtube disc Clutches and Brakes are liquid cooled and consist of a series of alternating discs connecting an inner drive member to an outer drive member. Engagement is achieved by pneumatic expansion of the airtube. This air-operated clutch contains copper discs for excellent heat dissipation and provides an accurately controlled continuous slip action for constant web tensioning. Tension levels are in direct proportion to air pressure applied.

Design Features

- New friction material lasts longer with less wear on mating copper.
- Copper alloy wear plates increase heat transfer.
- Hub spline provides perfect alignment of rotating discs.
- External air & water connections.
- Release springs ensure complete disengagement.
- High strength reinforced neoprene air-tube offers long service life.
- Optional long stroke air tube available on 18" or 24" size units to increase life and standard maintenance intervals.
- High thermal capacity.

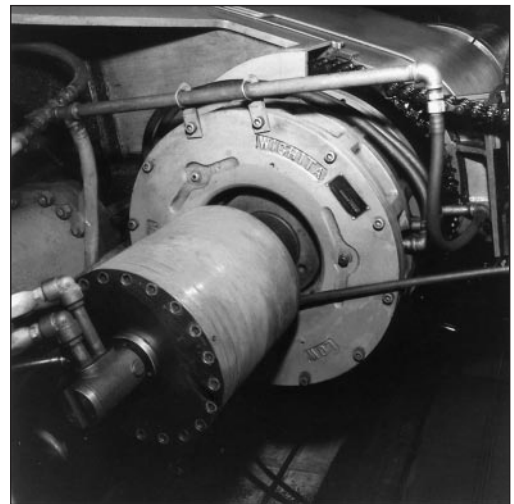
Design advantages

- New friction material is longer lasting with less wear on mating copper. Consistent torque response results directly with air pressure applied. Mechanically retained friction pads can be changed in field.
- Copper has a greater heat transfer capacity than any other metal other than precious metals.
- Generated teeth, in addition to providing perfect alignment of rotating members, offer maximum sensitivity of torque to pressure relationship. All factors affecting torque are fully controlled. Tangential cooling grooves insure effective mixing of cooling water for best heat conductivity. Water volume of the jackets insures high water velocity, which reduces sedimentation and chemical formation. Maximum inlet pressure is 60 psi.
- Close grain alloy iron jackets for coolant assure maximum resistance to corrosion.
- Releasing springs insure complete disengagement.
- By using a triple roto-coupling, the brake can be used as a constant slipping clutch.
- Flexible fiberglass pressure plate assures even distribution of pressure from actuator to braking surfaces, providing maximum contact area on friction surfaces.
- All coolant and air connections are external and easily accessible. Double outlets in center water jackets for multiple plate units 24" and larger.
- Air passages through brake greatly assist in keeping brake cool.
- Actuating member is a reinforced neoprene airtube which has no resistance to movement, resulting in immediate reaction with small pressure changes. Non-corrosion neoprene is unaffected by actuating medium.

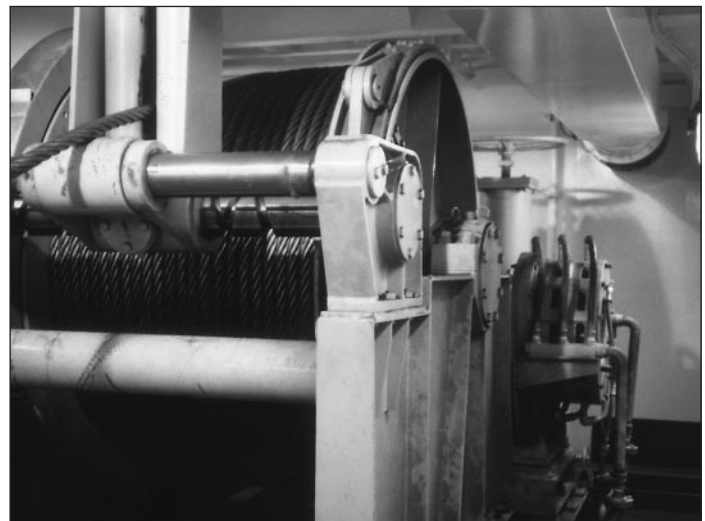
Typical Applications



Wichita Kopper Kool Brakes provide precise tension control on winch drives for mobile equipment.



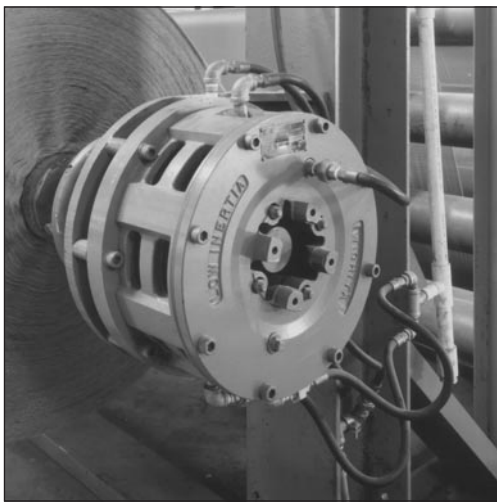
Kopper Kool Brakes dissipate high heat loads in steel uncoiler applications.



Kopper Kool brakes increase control on marine winches.



Selecting a Kopper Kool Brake for an unwind application



To properly select a tension brake for an unwind application the following information is needed:

- Max. Roll Diameter 84 in.
- Max. Web Width 120 in.
- Max. Web Speed 1500 fpm
- Max. Tension 15 pli
- Air Pressure Available 100 psi
- Min. Roll Diameter 12 in.
- Min. Web Width 84 in.
- Min. Web Speed 750 fpm
- Min. Tension 10 pli
- Shaft Size 5.00

Calculations

Using the calculations below, consult Kopper Kool Brake Specifications Chart, page 66.

The brake selected for this application is a 218 Kopper Kool, with 5.5 inch bore.

$$\begin{aligned} \text{Max. Tension} &= \text{Max. pli} \times \text{Max. Web Width} \\ &= 15 \times 120 = 1,800 \text{ lbs.} \end{aligned}$$

$$\begin{aligned} \text{Max. Torque} &= \frac{\text{Max. Tension} \times \text{Max. Roll Dia.}}{2} \\ &= \frac{1800 \times 84}{2} = 75,600 \text{ lb.in.} \end{aligned}$$

$$\begin{aligned} \text{Max. RPM} &= \frac{\text{Max. Web Speed} \times 3.82}{\text{Min. Roll Dia.}} \\ &= \frac{1,500 \times 3.82}{12} = 478 \text{ rpm} \end{aligned}$$

$$\begin{aligned} \text{Heat H.P.} &= \frac{\text{Max. Tension} \times \text{Max. Web Speed}}{33,000} \\ &= \frac{1,800 \times 1,500}{33,000} = 82 \text{ Heat HP} \end{aligned}$$

$$\begin{aligned} \text{Min. Tension} &= \text{Min. pli} \times \text{Min. Web Width} \\ &= 10 \times 84 = 840 \text{ lbs.} \end{aligned}$$

$$\begin{aligned} \text{Min. Torque} &= \frac{\text{Min. Tension} \times \text{Min. Roll Dia.}}{2} \\ &= \frac{840 \times 12}{2} = 5,040 \text{ lb.in.} \end{aligned}$$

$$\begin{aligned} \text{Min. rpm} &= \frac{\text{Min. Web Speed} \times 3.82}{\text{Max. Roll Dia.}} \\ &= \frac{750 \times 3.82}{84} = 34 \text{ rpm} \end{aligned}$$

How to select

1. Select a brake with equal to or greater thermal capacity. The ATD-214 has 150 thp @ 15 gpm. The requirement is 82 thp.
2. Check torque capacity vs. required. The ATD-214 has 42,000 lb.in. @ 100 psi. The requirement is 75,600 lb.in. Therefore an ATD-214 Brake will not produce enough torque for this application. An ATD-218 Brake would be the best choice.
3. Check Maximum Bore. The requirement is 5.00 in. The ATD-218 maximum bore is 5.5 inches.
4. Check Maximum rpm. The requirement is 478 rpm. The maximum rpm for the ATD-218 is 1,300 rpm.

$$\begin{aligned} \text{Max. Air Pressure Required} &= \frac{\text{Max. Torque} \times 100 \text{ psi}}{\text{Catalog Torque Rating}} \\ &= \frac{75,600 \times 100}{94,000} = 80 \text{ psi} \end{aligned}$$

$$\begin{aligned} \text{Min. Air Pressure Required} &= \frac{\text{Min. Torque} \times 100 \text{ psi}}{\text{Catalog Torque Rating}} \\ &= \frac{5,040 \times 100}{94,000} = 5 \text{ psi} \end{aligned}$$

Tension Brakes/Very High Heat Capacity

Kopper Kool Brakes

Specifications

Model No. ATD-	Dynamic Slip Torque* Capacity in lb. at 100 PSI/7 bar		Dissipation† Capacity HP/KW	Water Flow % Ethylene Glycol GPM/LPM			Pressure Drop Parallel Flow w/ % Eth. Glycol PSI/Bar		
	Reg. Airtube	"A" Airtube		0	30	50	0	30	50
108 KKB	5,400/622.1	4,400/506.9	32/24	3.2/12	4.1/16	5.0/19	.9/06	1.6/11	2.3/16
208 KKB	10,800/1,244.1	8,800/1,013.7	64/48	6.4/24	8.2/32	10/38	.9/06	1.6/11	2.3/16
308 KKB	16,200/1,866.2	13,200/1,520.6	96/72	9.6/36	12.3/48	15/57	.9/06	1.6/11	2.3/16
114 KKB	21,000/2,419	14,500/1,670	75/56	7.5/28	9.8/37	12/45	1.2/08	1.6/11	1.8/12
214 KKB	42,000/4,838	29,000/3,341	150/112	15/56	20/74	24/90	1.2/08	1.6/11	1.8/12
314 KKB	63,000/7,257	43,500/5,011	225/168	22.5/84	29/111	36/135	1.2/08	1.6/11	1.8/12
118 KKB	47,000/5,414	35,000/4,032	120/90	12/45	16/60	19/72	1.7/12	2.4/17	2.8/19
218 KKB	94,000/10,828	70,000/8,064	240/180	24/90	32/120	38/144	1.7/12	2.4/17	2.8/19
318 KKB	141,000/16,242	105,000/12,096	360/270	36/135	48/180	57/216	1.7/12	2.4/17	2.8/19
124H KKB	126,000/14,500	100,000/11,519	285/214	29/106	38/144	45/170	1.9/13	2.4/17	3.1/21
224H KKB	252,000/29,000	200,000/23,039	570/428	58/212	76/288	90/340	1.9/13	2.4/17	3.1/21
324H KKB	378,000/43,500	300,000/34,558	855/642	87/318	114/432	135/510	1.9/13	2.4/17	3.1/21
130 KKB	200,000/23,039	150,000/17,279	345/259	35/132	45/170	54/204	2.1/14	2.4/17	3.1/21
230 KKB	400,000/46,078	300,000/34,558	690/518	70/264	90/340	108/408	2.1/14	2.4/17	3.1/21
330 KKB	600,000/69,117	450,000/51,837	1035/777	105/396	135/510	162/612	2.1/14	2.4/17	3.1/21
136H KKB	450,000/51,827	387,000/44,580	750/562	75/284	98/369	120/454	4.0/28	5.3/37	7.2/50
236H KKB	900,000/103,674	774,000/89,160	1500/1126	150/568	196/738	240/908	4.0/28	5.3/37	7.2/50
336H KKB	1,350,000/149,752	1,150,000/132,473	2250/1689	225/852	294/1107	360/1362	4.0/28	5.3/37	7.2/50

* Static torque will vary with temperature. Maximum air pressure 100 PSI.

** Maximum water jacket inlet pressure 60 psi. Minimum recommended air pressure - 3 psi.

Brakes with as great as 50% higher torque available on request.

† Parallel water hosing is required to achieve the upper 1/3 dissipation capacity.

PSI Pressure Curves

The cooling water requirements are listed in the specification table. The pressure drop across the brakes is given for both parallel and series flow. This table also indicates the increased flow requirement when using a mixture of ethylene glycol as an antifreeze or for corrosion protection.

The normal water requirement for Kopper Kool brakes and clutches is one gallon of water for each 10 horsepower or one liter of water for each 2 kilowatts being dissipated. This amount of flow will give a temperature rise through the brake of 50°F (28° C). The outlet water temperature should not exceed 170°F (77°C).

The curves shown in Figure 1 and 3 indicate the pressure through the listed units for both parallel and series flow. Also shown in Figure 2 is the flow through the optional triple passage rotocouplings for Kopper Kool clutches. The data in Figures 1, 2 and 3 will aid in estimating pressure drops for different flow requirements.

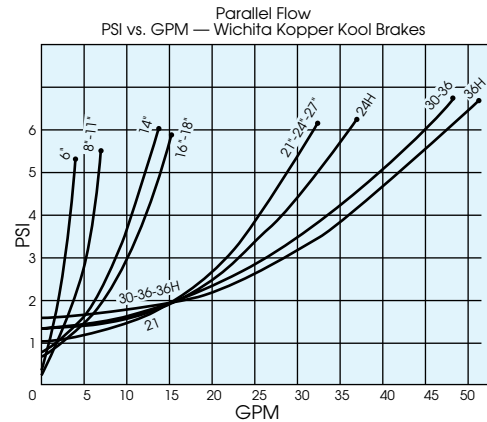


Fig. 1

An example of the use of these flow tables is: An ATD-224H clutch is selected for 200 horsepower @ 190 RPM.

The torque requirement is 66,316 lb. in.

Water flow required = 20 GPM (4 inlets - 4 outlets @5 GPM ea.)

From Figure 1 for 20 GPM (24H Curve at 5 GPM) psi drop is 1.2.



Model No. ATD-	Pressure Drop Series Flow w/ % Eth. Glycol PSI/Bar			Max RPM	Total Weight LB/KG	Hub & Disc Weight LB/KG	Hub & Disc WR ² /KGM ² lb ft ² /mr ²	Maximum Lining Wear			Air Volume-Inches ³ in ³ /dm ³		Water Volume In. ³ /dm ³
	0	30	50					size	in./cm.	cu.in./cu.dm.	New Linings	Worn Linings	
108 KKB	4/1.14	9/6.2	9/6.2	2860	68/30.8	11/4.9	0.6/0.03	108	0.4/1.0	10/0.2	6/1.0	18/3	8/1.3
208 KKB	11/7.6	25/1.72	32/2.21	2860	116/52.6	24.5/11.1	1.3/0.05	208	0.4/1.0	10/0.2	7/1.1	18/3	16/2.6
308 KKB	15/1.03	34/2.34	41/2.83	2860	164/74.4	38/17.2	2.0/0.08	308	0.4/1.0	10/0.2	8/1.3	18/3	24/4
114 KKB	4/1.14	8/5.5	12/8.3	1600	221/100.2	40/18.1	5.0/2.1	114	0.5/1.3	60/1.0	15/2.5	45/7	20/3.3
214 KKB	24/1.66	40/2.76	52/3.59	1600	345/156.5	80/36.3	10.5/4.4	214	0.5/1.3	60/1.0	18/3.0	45/7	40/6.5
314 KKB	28/1.93	48/3.31	—	1600	470/213.2	120/54.4	16/6.7	314	0.5/1.3	60/1.0	23/3.8	45/7	60/1
118 KKB	7/4.8	13/9	20/1.38	1300	415/188.2	88/39.9	18/7.6	118	0.6/1.5	75/1.2	26/4.3	80/1.3	48/8
218 KKB	52/3.59	—	—	1300	565/256.3	176/79.8	36/1.52	218	0.6/1.5	75/1.2	30/4.9	80/1.3	96/1.5
318 KKB	—	—	—	1300	715/324.2	264/119.8	54/2.28	318	0.6/1.5	75/1.2	35/5.7	80/1.3	144/2.35
124H KKB	7/4.8	11/7.6	14/9.7	960	935/424.1	240/109.9	110/4.64	124H	0.8/2.0	200/3.3	60/1.0	165/2.7	110/1.8
224H KKB	23/1.59	35/2.41	48/3.31	960	1500/680.4	410/185	210/8.85	224H	0.8/2.0	200/3.3	70/1.1	165/2.7	220/3.6
324H KKB	30/2.07	46/3.17	—	960	2065/936.7	580/263.1	310/13.06	324H	0.8/2.0	200/3.3	80/1.3	165/2.7	330/5.4
130 KKB	9/6.2	14/9.7	21/1.45	760	1134/514.4	263/119.3	139/5.86	130	0.8/2.0	240/3.9	80/1.3	220/3.6	190/3.1
230 KKB	31/2.14	48/3.31	—	760	1850/839.2	530/240.4	275/11.59	230	0.8/2.0	240/3.9	90/1.5	220/3.6	380/6.2
330 KKB	40/2.76	—	—	760	2565/1163	795/360.6	410/17.28	330	0.8/2.0	240/3.9	110/1.8	220/3.6	570/9.3
136H KKB	14/9.7	24/1.66	—	640	2550/1157	535/242.7	410/17.28	136H	0.8/2.0	500/8.2	175/2.9	450/7.4	285/4.7
236H KKB	60/4.14	—	—	640	4111/1865	925/419.6	790/33.29	236H	0.8/2.0	500/8.2	195/3.2	450/7.4	570/9.3
336H KKB	—	—	—	640	5595/2538	1685/764	1621/68.3	336H	0.8/2.0	500/8.2	235/3.9	450/7.4	855/14

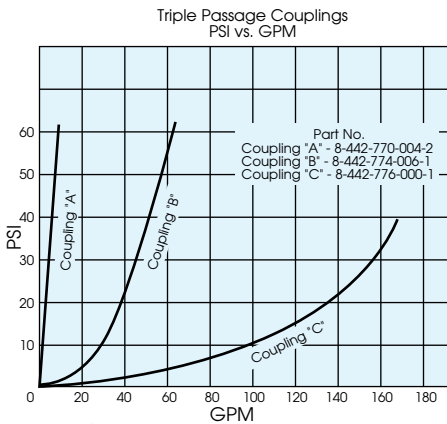


Fig. 2

From Figure 2 for 20 GPM psi drop is 5
 The pressure drop would be 6.2 psi
 across the inlet and outlet of coupling "B"
 for this application.

Horsepower ratings as shown are for
 continuous slip. The ratings can be
 increased for intermittent service. Please
 consult the factory for such applications.

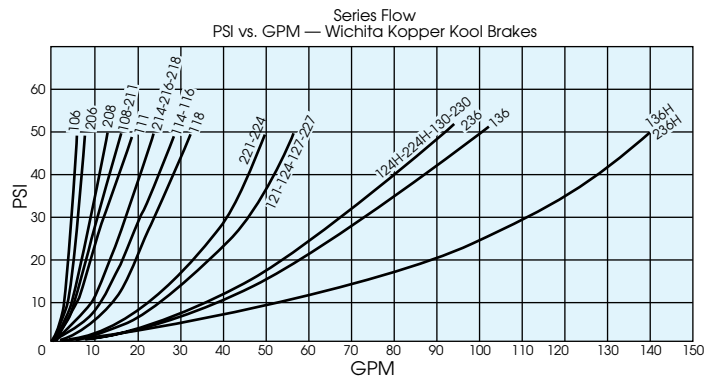
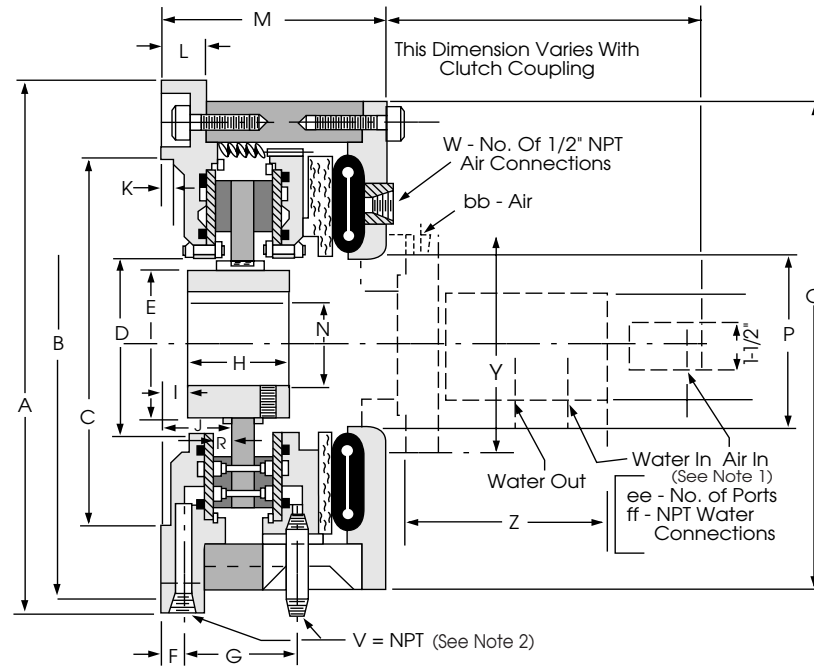
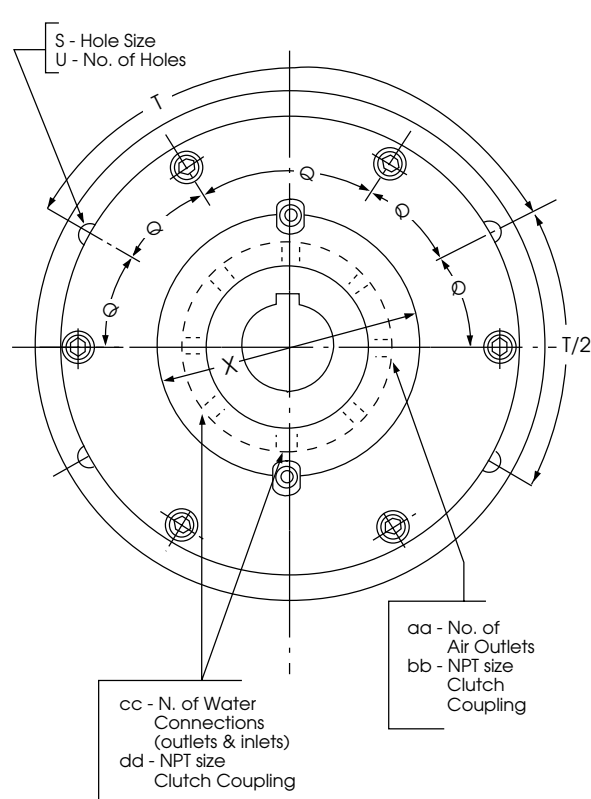


Fig. 3



Kopper Kool Brakes

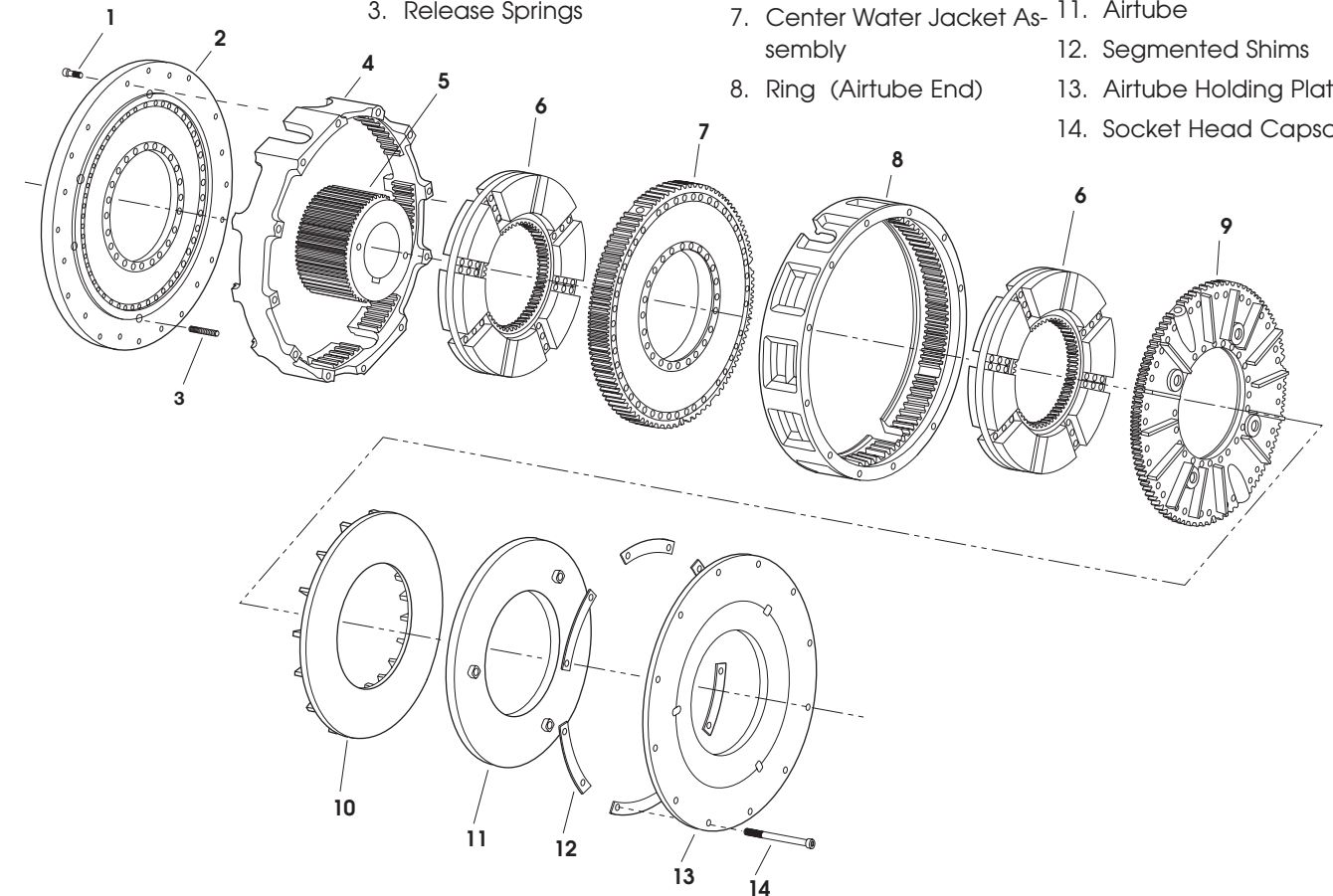


Notes:

1. Roto-couplings, see page 81.
2. Water Hose Kits, see page 78.
3. Triple passage roto-couplings, see page 80.

Component Parts

1. Socket Head Capscrews
2. Backplate Water Jacket Assembly
3. Release Springs
4. Ring (Backplate End)
5. Hub
6. Drive Plate Assembly
7. Center Water Jacket Assembly
8. Ring (Airtube End)
9. Floating Water Jacket Assembly
10. Pressure Plate
11. Airtube
12. Segmented Shims
13. Airtube Holding Plate
14. Socket Head Capscrews



Dimensions (in) (Consult factory for drawing before final layout.)

Model No.	A	B	C -.000" +.003	D	E	F	G	H	I	J	K	L	M	Max. Bore Rect. Key N	O
108 KKB	12.125	11-1/8	8.378	4-3/8	3-1/2	11/16	2-7/8	2.00	1-1/8	1-13/16	1/4	1-3/8	5-11/16	2-1/4	11-3/4
208 KKB	12.125	11-1/8	8.378	4-3/8	3-1/2	11/16	2-3/4	4.25	1-1/8	1-13/16	1/4	1-3/8	8-1/2	2-1/4	11-3/4
308 KKB	12.125	11-1/8	8.378	4-3/8	3-1/2	11/16	2	7.00	1-1/8	1-13/16	1/4	1-3/8	11-1/4	2-1/4	11-3/4
114 KKB	18.750	17-1/2	14.375	7-3/8	6-1/2	3/4	3-7/16	3.25	1-1/16	2-3/32	1/4	1-1/2	7	4-3/8	17-1/2
214 KKB	18.750	17-1/2	14.375	7-3/8	6-1/2	3/4	3-7/16	5.88	1-1/16	2-3/32	1/4	1-1/2	10-5/8	4-3/8	17-1/2
314 KKB	18.750	17-1/2	14.375	7-3/8	6-1/2	3/4	3-7/16	9.13	1-1/16	2-3/32	1/4	1-1/2	14-5/16	4-3/8	17-1/2
118 KKB	23.250	22	18.253	9-3/8	8-1/4	3/4	4-3/16	3.63	1-1/16	2-9/32	1/4	1-1/2	8-1/8	5-1/2	22
218 KKB	23.250	22	18.253	9-3/8	8-1/4	3/4	4-1/8	7.13	1-5/8	2-9/32	1/4	1-1/2	12-3/8	5-1/2	22
318 KKB	23.250	22	18.253	9-3/8	8-1/4	3/4	4-1/8	10.75	1-5/8	2-9/32	1/4	1-1/2	16-5/8	5-1/2	22
124H KKB	30.000	28-3/4	24.375	12-11/16	11-1/2	1-3/16	4-7/8	5.00	1-3/8	2-7/8	1/4	2-3/8	10	7-5/8	31
224H KKB	30.000	28-3/4	24.375	12-11/16	11-1/2	1-3/16	4-7/8	8.63	1-3/8	2-7/8	1/4	2-3/8	14-7/8	7-5/8	31
324H KKB	30.000	28-3/4	24.375	12-11/16	11-1/2	1-3/16	4-7/8	13.63	1-3/8	2-7/8	1/4	2-3/8	19-3/4	7-5/8	31
130 KKB	37.000	35-1/2	30.378	15-3/4	14-1/4	1-1/16	4-11/16	4.63	1-3/8	2-23/32	1/4	2	9-9/16	9	34-3/4
230 KKB	37.000	35-1/2	30.378	15-3/4	14-1/4	1-1/16	4-3/4	9.25	1-3/8	2-23/32	1/4	2	14-3/8	9	34-3/4
330 KKB	37.000	35-1/2	30.378	15-3/4	14-1/4	1-1/16	4-3/4	13.88	1-3/8	2-23/32	1/4	2	19-1/4	9	34-3/4
136H KKB	43.500	42	36.378	16-1/2	14	1-1/4	6-9/16	5.63	1-1/8	3-9/16	1/4	2-7/8	13-1/4	9	44-1/2
236H KKB	43.500	42	36.378	16-1/2	14	1-1/4	6-9/16	11.00	1-7/16	3-9/16	1/4	2-7/8	19-3/4	9	44-1/2
336H KKB	43.500	42	36.378	16-1/2	14	1-1/4	6-9/16	16.63	1-7/16	3-9/16	1/4	2-7/8	26-1/4	9	44-1/2

Note: For mounting, use socket head cap screws conforming to the ASTM-574-97a.

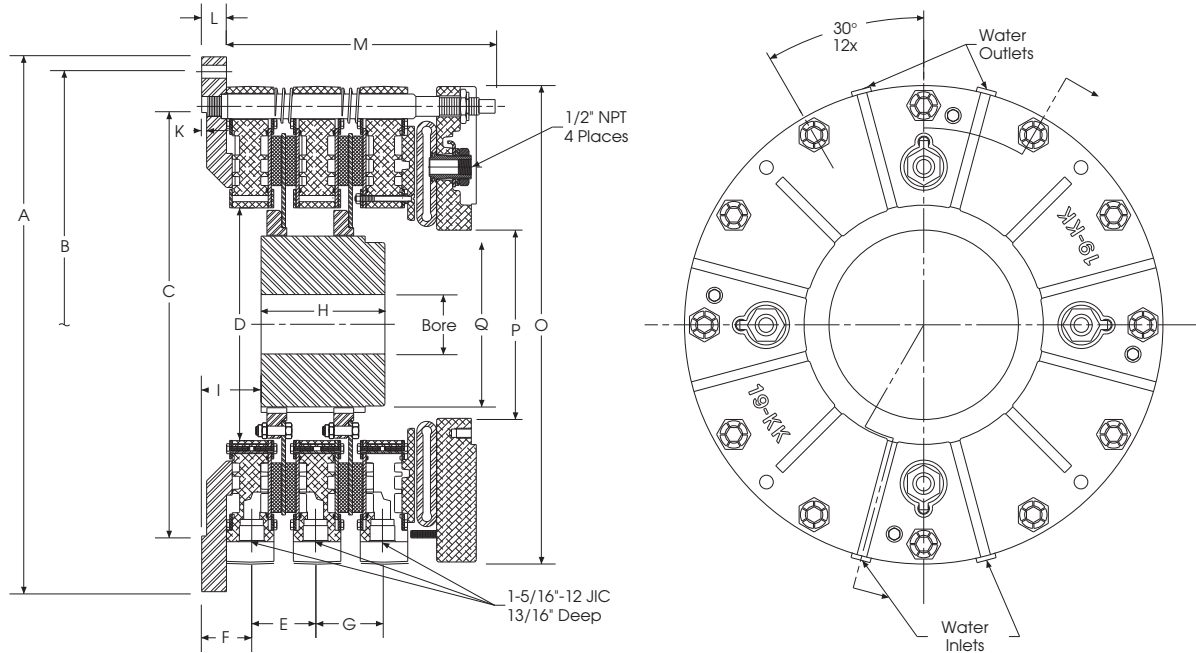
P	Q	R	S	T	U	V	W	X	Y	Z	aa	bb	cc	dd	ee	ff
3-3/4	30	7/16	17/32	120	4	3/8	2	6-5/8	6-1/2	7-1/8	1	3/8	2	3/8	2	3/8
3-3/4	30	7/16	17/32	120	4	3/8	2	6-5/8	6-1/2	7-1/8	1	3/8	2	3/8	2	3/8
3-3/4	30	7/16	17/32	120	4	3/8	2	6-5/8	6-1/2	7-1/8	1	3/8	2	3/8	2	3/8
6-7/8	22-1/2	5/8	21/32	90	6	1/2	2	10-3/4	7-1/4	10-7/8	2	3/8	6	3/4	2	1-1/4
6-7/8	22-1/2	5/8	21/32	90	6	1/2	2	10-3/4	7-1/4	10-7/8	2	3/8	6	3/4	2	1-1/4
6-7/8	22-1/2	5/8	21/32	90	6	1/2	2	10-3/4	7-1/4	10-7/8	2	3/8	6	3/4	2	1-1/4
9-3/4	15	7/8	21/32	60	10	1/2	3	14-3/16	7-1/4	10-7/8	2	3/8	6	3/4	2	1-1/4
9-3/4	15	7/8	21/32	60	10	1/2	3	14-3/16	7-1/4	10-7/8	2	3/8	6	3/4	2	1-1/4
9-3/4	15	7/8	21/32	60	10	1/2	3	14-3/16	7-1/4	10-7/8	2	3/8	6	3/4	2	1-1/4
15-1/8	15	1	21/32	60	10	1	3	21	7-1/4	10-7/8	2	3/8	6	3/4	2	1-1/4
15-1/8	15	1	21/32	60	10	1	3	21	7-1/4	10-7/8	2	3/8	6	3/4	2	1-1/4
15-1/8	15	1	21/32	60	10	1	3	21	7-1/4	10-7/8	2	3/8	6	3/4	2	1-1/4
17-3/8	10	7/8	25/32	40	16	1	4	24-3/4	10	15-7/8	2	1/2	8	1	2	2
17-3/8	10	7/8	25/32	40	16	1	4	24-3/4	10	15-7/8	2	1/2	8	1	2	2
17-3/8	10	7/8	25/32	40	16	1	4	24-3/4	10	15-7/8	2	1/2	8	1	2	2
17-3/4	10	1-3/16	25/32	40	16	1-1/4	4	30-1/2	10	15-7/8	2	1/2	8	1	2	2
17-3/4	10	1-3/16	25/32	40	16	1-1/4	4	30-1/2	10	15-7/8	2	1/2	8	1	2	2
17-3/4	10	1-3/16	25/32	40	16	1-1/4	4	30-1/2	10	15-7/8	2	1/2	8	1	2	2

Note: Other sizes are available on request.



Tension Brakes/Very High Heat Capacity

Kopper Kool Pin Brakes



Dimensions (in) (Consult factory for drawing before final layout.)

Model No. ATD-	A	B Hole Circle	C (+.003/-0.000)	D	E	F	G	H	I
119 KKB	27.00	25.500	21.375	11.75	3.22	2.78	N/A	3.63	2.08
219 KKB	27.00	25.500	21.375	11.75	3.22	2.78	3.38	6.25	3.25

Model No. ATD-	K	L	M	O	P	Q
119 KKB	0.25	1.50	10.25	24.00	9.50	8.25
219 KKB	0.25	1.50	13.56	24.00	9.50	8.25

Note: For mounting, use socket head cap screws conforming to the ASTM-574-97a.



119 Kopper Kool Brake

Specifications

Model No. ATD-	Dynamic Slip Torque Capacity in-lb @ 100psi/NM@7 Bar	Dissipation Capacity HP/KW	Maximum Bore	Max. Speed RPM	Total Wt. Lb/Kg
119 KKB	65,000/7,488	160/119	5.50	1200	337/152.9
119 KKB Hi-Co	97,500/11,232	160/119	5.50	1200	337/152.9
219 KKB	130,000/14,976	320/239	5.50	1200	464/210.5
219 KKB Hi-Co	195,000/22,463	320/239	5.50	1200	464/210.5

Model No. ATD-	Hub & Disc Wt Lb/Kg	Hub & Disc WR lb.ft./mr	Water Flow % Ethylene Glycol GPM/LPM			Swept Friction Area In
			0	30	50	
119 KKB	84/38.1	12.5/.53	16/59.5	20.8/77	25/93	260
119 KKB Hi-Co	84/38.1	12.5/.53	16/59.5	20.8/77	25/93	260
219 KKB	144/65.3	21.6/.91	32/119.5	42/155	50/186	520
319 KKB	144/65.3	21.6/.91	32/119.5	42/155	50/186	520

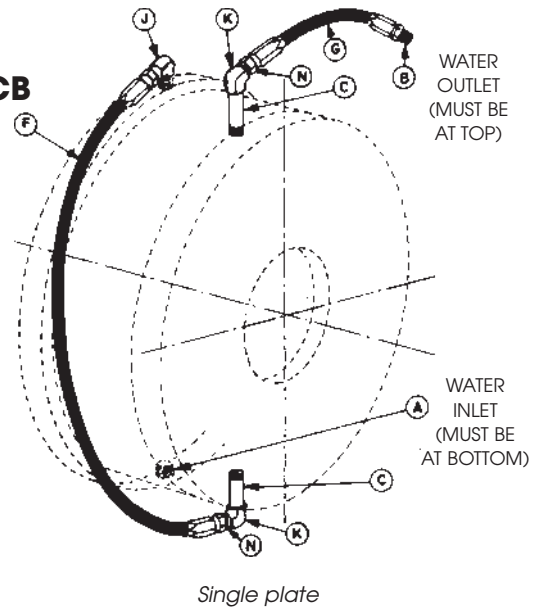
Note: 19 Kopper Kool Clutch available upon request. Maximum speed – 550 RPM. Maximum recommended air pressure – 100 PSI.



Tension Brakes/High Heat Capacity

Series Water Hose Kits for Kopper Kool Brakes, KKB and Steel Water Cooled Brakes, SWCB

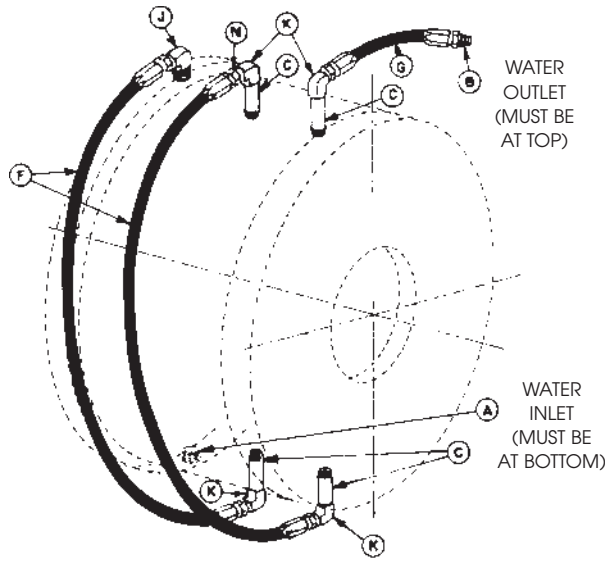
Wichita Water Hose kits contain all necessary fittings, hoses, and connections to completely plumb the brake water system. Customer needs to connect water input at the bottom of the brake and the output water connections at the top of the brake.



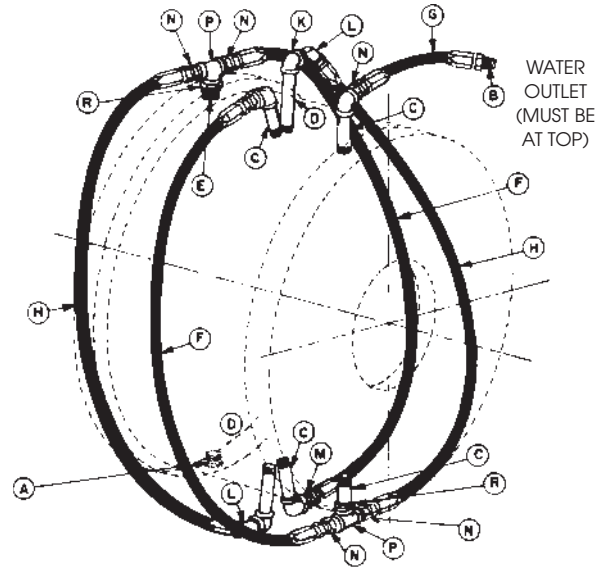
Model No. ATD-	Water Hose Kit Number*	A Inlet Size	B Inlet Size	C Pipe Nipple Part Number	Qty	D Pipe Nipple Part Number	Qty	E Pipe Nipple Part Number	Qty	F Hose Part Number	Qty	G Hose Part Number	Qty
108 KKB	8-908-999-901-5	3/8" NPT	3/8" NPT	2-200-036-122-0	2	—	—	—	—	2-403-240-033-1	1	2-403-110-133-1	1
208 KKB	8-908-999-902-5	3/8" NPT	3/8" NPT	2-200-036-122-0	4	—	—	—	—	2-403-240-033-1	2	2-403-110-133-1	1
308 KKB	8-908-999-903-5	3/8" NPT	3/8" NPT	2-200-036-122-0	6	—	—	—	—	2-403-240-033-1	3	2-403-110-133-1	1
114 KKB	8-914-999-901-6	1/2" NPT	3/4" NPT	2-200-037-122-0	2	—	—	—	—	2-404-320-044-1	1	2-404-110-144-1	1
214 KKB	8-914-999-902-6	1/2" NPT	3/4" NPT	2-200-037-122-0	4	—	—	—	—	2-404-320-044-1	2	2-404-110-144-1	1
314 KKB	8-914-999-903-6	1/2" NPT	3/4" NPT	2-200-037-122-0	6	—	—	—	—	2-404-320-044-1	3	2-404-110-144-1	1
118 KKB	8-918-999-901-6	1/2" NPT	3/4" NPT	2-200-037-122-0	2	—	—	—	—	2-404-380-044-1	1	2-404-110-144-1	1
218 KKB	8-918-999-902-6	1/2" NPT	3/4" NPT	2-200-037-122-0	4	—	—	—	—	2-404-380-044-1	2	2-404-110-144-1	1
318 KKB	8-918-999-903-6	1/2" NPT	3/4" NPT	2-200-037-122-0	6	—	—	—	—	2-404-380-044-1	3	2-404-110-144-1	1
124H SWCB	8-924-999-901-6	1/2" NPT	3/4" NPT	2-200-060-122-0	2	—	—	—	—	2-404-500-044-1	1	2-404-110-144-1	1
224H SWCB	8-924-999-902-6	1/2" NPT	3/4" NPT	2-200-060-122-0	4	—	—	—	—	2-404-500-044-1	2	2-404-110-144-1	1
324H SWCB	8-924-999-903-6	1/2" NPT	3/4" NPT	2-200-060-122-0	6	—	—	—	—	2-404-500-044-1	3	2-404-110-144-1	1
124H KKB	9-925-999-901-7	1" NPT	1" NPT	2-200-051-122-0	2	—	—	—	—	2-405-500-055-1	1	2-405-110-155-1	1
224H KKB	8-925-999-902-7	1" NPT	1" NPT	2-200-051-122-0	4	2-200-082-122-0	2	2-200-017-122-0	1	2-405-500-055-1	2	2-405-110-155-1	1
324H KKB	8-925-999-903-7	1" NPT	1" NPT	2-200-051-122-0	6	2-200-082-122-0	4	2-200-017-122-0	1	2-405-500-055-1	3	2-405-110-155-1	1
130 SWCB	8-930-999-901-7	3/4" NPT	1" NPT	2-200-061-122-0	2	—	—	—	—	2-405-620-055-1	1	2-405-200-155-1	1
230 SWCB	8-930-999-902-7	3/4" NPT	1" NPT	2-200-061-122-0	4	—	—	—	—	2-405-620-055-1	2	2-405-200-155-1	1
330 SWCB	8-930-999-903-7	3/4" NPT	1" NPT	2-200-061-122-0	6	—	—	—	—	2-405-620-055-1	3	2-405-200-155-1	1
130 KKB	8-930-999-901-9	1" NPT	1-1/2" NPT	2-200-062-122-0	2	—	—	—	—	2-407-620-077-1	1	2-407-200-177-1	1
230 KKB	8-930-999-902-9	1" NPT	1-1/2" NPT	2-200-062-122-0	4	2-200-092-122-0	2	2-200-017-122-0	1	2-407-620-077-1	4	2-407-200-177-1	1
330 KKB	8-930-999-903-9	1" NPT	1-1/2" NPT	2-200-062-122-0	6	2-200-092-122-0	4	2-200-017-122-0	1	2-407-620-077-1	3	2-407-200-177-1	1
136 SWCB	8-936-999-901-7	3/4" NPT	1" NPT	2-200-061-122-0	2	—	—	—	—	2-405-680-055-1	1	2-405-200-155-1	1
236 SWCB	8-936-999-902-7	3/4" NPT	1" NPT	2-200-061-122-0	4	—	—	—	—	2-405-680-055-1	2	2-405-200-155-1	1
336 SWCB	8-936-999-903-7	3/4" NPT	1" NPT	2-200-061-122-0	6	—	—	—	—	2-405-680-055-1	3	2-405-200-155-1	1
136H KKB	8-937-999-901-9	1-1/4" NPT	1-1/2" NPT	2-200-063-122-0	2	—	—	—	—	2-407-680-077-1	1	2-407-200-155-1	1
236H KKB	8-937-999-902-9	1-1/4" NPT	1-1/2" NPT	2-200-063-122-0	4	2-200-104-122-0	2	2-200-018-122-0	1	2-407-680-077-1	2	2-407-200-155-1	1
336H KKB	8-937-999-903-9	1-1/4" NPT	1-1/2" NPT	2-200-063-122-0	6	2-200-104-122-0	4	2-200-018-122-0	1	2-407-680-077-1	3	2-407-200-155-1	1

* Denotes complete hose kit





Double Plate
 Sizes 208 through 318

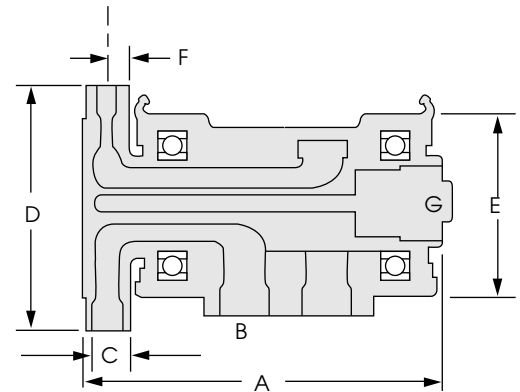
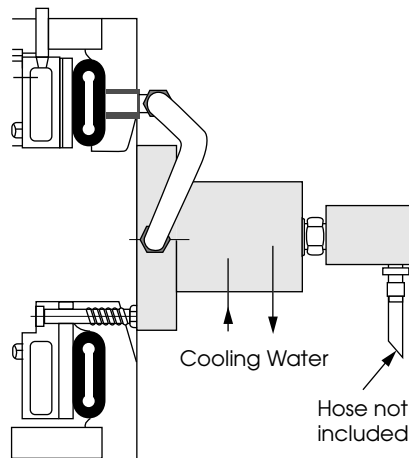


Double Plate
 Sizes 224H through 336H

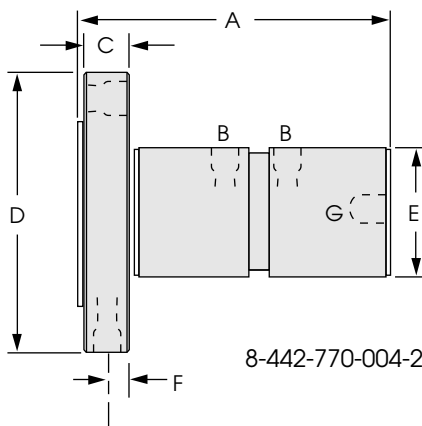
Model No.	ATD-	H Hose Part Number	Qty	J Elbow 90 Part Number	Qty	K Elbow 90 Part Number	Qty	L Elbow 45 Part Number	Qty	M Adaptor Part Number	Qty	N Adaptor Part Number	Qty	P Pipe Tee Part Number	Qty
108 KKB	—	—	—	2-303-027-020-0	1	2-302-027-020-0	2	—	—	—	—	—	—	—	—
208 KKB	—	—	—	2-303-027-020-0	1	2-302-027-020-0	4	—	—	—	—	—	—	—	—
308 KKB	—	—	—	2-303-027-020-0	1	2-302-027-020-0	6	—	—	—	—	—	—	—	—
114 KKB	—	—	—	2-303-039-020-0	1	2-302-039-020-0	2	—	—	—	—	—	—	—	—
214 KKB	—	—	—	2-303-039-020-0	1	2-302-039-020-0	4	—	—	—	—	—	—	—	—
314 KKB	—	—	—	2-303-039-020-0	1	2-302-039-020-0	6	—	—	—	—	—	—	—	—
118 KKB	—	—	—	2-303-039-020-0	1	2-302-039-202-0	4	—	—	—	—	—	—	—	—
218 KKB	—	—	—	2-303-039-020-0	1	2-302-039-202-0	6	—	—	—	—	—	—	—	—
318 KKB	—	—	—	2-303-039-020-0	1	2-302-039-202-0	4	—	—	—	—	—	—	—	—
124H SWCB	—	—	—	2-303-039-020-0	1	2-302-039-202-0	6	—	—	—	—	—	—	—	—
224H SWCB	—	—	—	2-303-039-020-0	1	2-302-039-202-0	6	—	—	—	—	—	—	—	—
324H SWCB	—	—	—	2-303-062-001-0	1	2-302-062-001-0	2	—	—	—	—	—	—	—	—
124H KKB	2-405-500-055-1	2	—	—	—	2-302-062-001-0	5	2-307-062-001-0	2	2-300-062-001-0	2	2-300-062-001-0	5	2-214-041-412-0	2
224H KKB	2-405-500-055-1	3	—	—	—	2-302-062-001-0	9	2-307-062-001-0	4	2-300-062-001-0	4	2-300-062-001-0	5	2-214-041-412-0	2
324H KKB	—	—	—	2-303-051-001-0	1	2-210-036-112-0	2	—	—	—	—	—	—	2-300-062-001	2
130 SWCB	—	—	—	2-203-051-001-0	1	2-210-036-112-0	4	—	—	—	—	—	—	2-300-062-001-0	4
230 SWCB	—	—	—	2-303-064-001-0	1	2-210-041-112-0	6	—	—	—	—	—	—	2-300-062-001-0	6
330 SWCB	—	—	—	2-303-064-001-0	1	2-210-041-112-0	2	—	—	—	—	—	—	2-300-064-001-0	2
130 KKB	—	—	—	2-210-041-112-0	5	2-307-064-001-0	2	2-300-064-001	2	2-300-064-001-0	5	2-214-041-112-0	2	—	—
230 KKB	—	—	—	2-407-620-077-1	3	2-210-041-112-0	9	2-307-064-001-0	4	2-300-064-001-0	4	2-300-064-001-0	5	2-214-041-112-0	29
330 KKB	—	—	—	2-303-051-001-0	1	2-210-036-112-0	2	—	—	—	—	—	—	2-300-062-001-0	2
136 SWCB	—	—	—	2-303-051-001-0	1	2-210-036-112-0	4	—	—	—	—	—	—	2-300-062-001-0	4
236 SWCB	—	—	—	2-303-051-001-0	1	2-210-036-112-0	6	—	—	—	—	—	—	2-300-062-001-0	6
336 SWCB	—	—	—	2-303-075-001-0	1	2-210-046-112-0	2	—	—	—	—	—	—	2-300-075-001-0	2
136H KKB	2-407-660-077-1	2	—	—	—	2-210-046-112-0	5	2-300-075-001-0	2	2-300-075-001-0	2	2-300-075-001-0	5	2-214-073-112-0	2
236H KKB	2-407-660-077-1	3	—	—	—	2-210-046-112-0	9	2-300-075-001-0	4	2-300-075-001-0	4	2-300-075-001-0	5	2-214-073-112-0	2
336H KKB	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

C

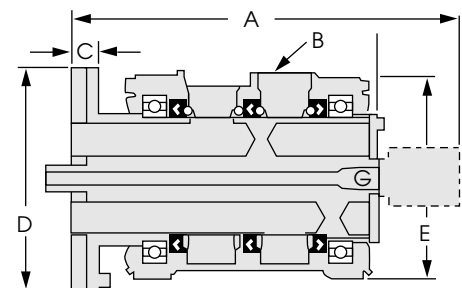
3-Way Roto-Coupling (for water-cooled Clutches)



8-442-774-006-1



8-442-770-004-2



8-442-776-000-1

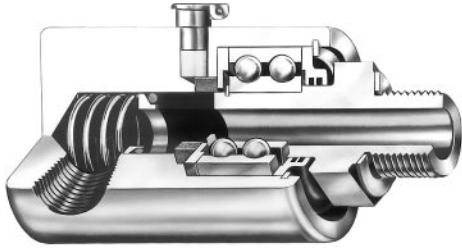
Dimensions

Wichita Part No.	A	B	C	D	E	F	Thread Size	
							G	H
8-442-770-004-2	7-1/4"	3/8"-18 NPT	1"	6-1/2"	3"	1/2"	5/8"-18	—
8-442-774-006-1	11"	1-1/4"-11-1/2 NPT	1-3/8"	7-1/4"	5-3/8"	11/16"	1/4" NPT	—
8-442-776-000-1	18-7/8"	2"-11-1/2 NPT	1-1/4"	10"	9"	—	1"-14	3-3/4"

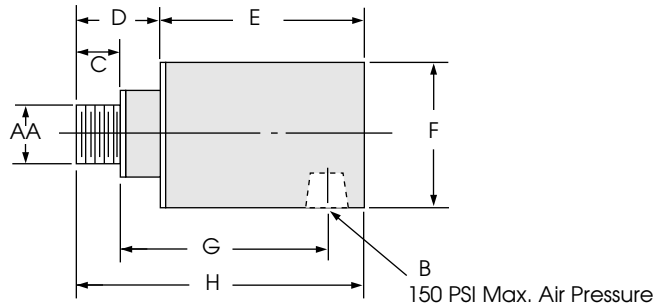




Roto-couplings



- Long life, low maintenance.
- Felt seal eliminates bearing contamination.
- Fast, easy installation.



The Wichita Roto-coupling is a device to connect, or couple, a non-rotating air, gas, or fluid line to a rotating shaft.

Wichita Part No.	AA	B	C	D	E	F	G	H	Max. R.P.M.
8-240-701-003-1	5/8-18NF	1/4" NPT	.40	1.046	2.250	1.500	2.13	3.297	3500
8-240-705-001-1	1"-14 NF	1/2" NPT	.75	1.250	3.188	2.500	3.00	4.438	3500
8-240-708-001-1	1"-14 NF	3/4" NPT	.75	1.313	4.688	2.875	3.69	5.440	3500
8-240-710-002-1	1-1/2"-12 NF	1" NPT	1.13	1.937	4.875	3.250	3.44	6.812	2500
8-240-712-001-1	2"-12 NF	1-1/2" NPT	1.13	2.813	5.250	4.250	5.38	8.062	2500
8-240-714-001-3	2" NPT	2" NPT	1.50	3.000	7.062	4.625	7.00	10.062	1000
8-240-716-000-3	2-1/2" NPT	2-1/2" NPT	1.88	3.250	9.375	7.000	7.75	12.625	750

Notes: All measurements are in inches.

Principle of Operation

Closed Cooling System

As shown here in the closed loop system, flexible water lines should be brought into each jacket at the 6 o'clock position. When the Kopper Kool Unit is used as a clutch, air vent tubes must be installed internally at the factory to insure proper filling of the water jackets. The Kopper Kooled Clutches also require 5 PSI back pressure on the outlet side of the triple passage rotocoupling to insure complete evacuation of air from these jackets during rotation.

Referring to the closed loop cooling system, the equipment should be protected with low water pressure and high temperature warning devices. For availability information, contact factory.

