

Pneumatic Brakes

Mistral Brakes

Modular design permits variable tensioning capacities!

Wichita Clutch's Mistral pneumatic tension brakes are ideally suited to the needs of the corrugating market for which it was originally designed. It is also a versatile product which is finding favor in additional tensioning applications. Wichita Clutch designers and engineers consulted extensively with mill roll stand manufacturers and users to offer a tension brake ideally suited to the needs of this particular market. The result is a compact, high performance, versatile brake capable of handling the tensioning needs of the latest machine designs, as well as existing equipment. The Mistral paves the way for increasing line speeds by 5.4 feet/sec. from 810 feet/min. (or slower) to 1,140 feet/min.

Varying number of actuators provide optimum tension control

Each brake may be specified with a varying number of pneumatic actuators, allowing precise selection of brake torque capacity for optimum tension control.

Compact Design

Mistral brakes are compact at only 11.6" or 16.1" in diameter. Their size facilitates the pickup of small, part reels

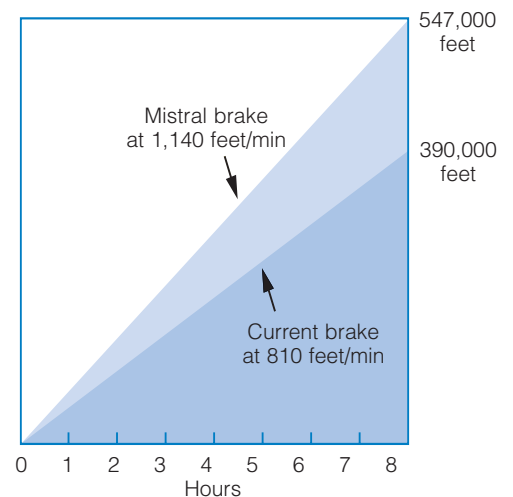


used in short batch runs. For automatic reel loading machines, Mistral offers optional infrared and speed sensor installation within the brake. And their modern, industrial styling enhances the appearance of any machine on which they are used.

Easy Access with Removable Cover Panel

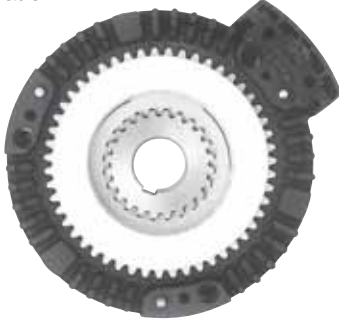
By removing just three cap screws, the Mistral's front cover can be detached for easy and fast access to internal parts. Cover removal automatically disconnects both air and electricity.

Performance Curve



Mounting Ease

Three bolts mount the brake to the arm of the mill roll stand or machine frame and an optional pilot location makes fitting to both new and existing machines a simple operation.



Wear Indicator

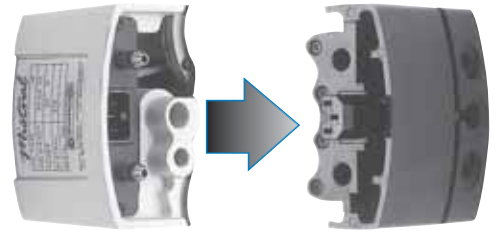
A brake wear indicator, which is conveniently located for easy visual inspection, means no down time to check remaining friction material life.

Easy Connection

Air and electrical connections are easily accessible for fast, simple installation and maintenance.

Safety

Mistral's integral guarding eliminates the cost and effort of installing external guards. Operator safety is further enhanced by automatic air and electric disconnects when the front cover is removed.



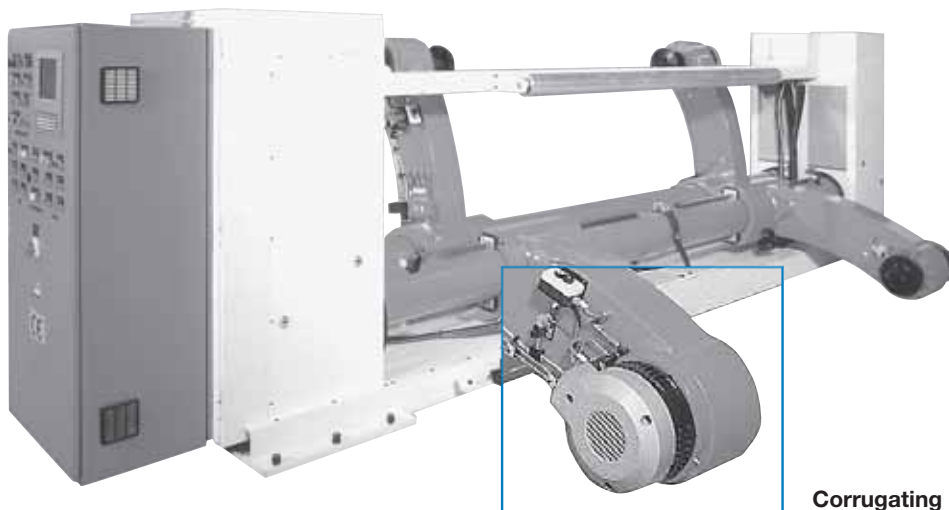
Integral Cooling

A rugged, high performance, low energy usage fan is housed within the brake for high heat dissipation — a must for increased productivity through controlled tension at many roll speeds.



Fan and Connection Data

Model	Fan Voltages	Fan Power	Electric	Pneum.
200	220VAC 50/60 Hz	20W	M16	1/8 BSP
	110VAC 50/60 Hz		PG9	1/8 BSP
	24VDC		3/8 NPT	1/8 NPT
280	220VAC 50/60 Hz	25W	M16	1/8 BSP
	110VAC 50/60 Hz		PG9	1/8 BSP
	24VDC		3/8 NPT	1/8 NPT



Corrugating Press Installation

Pneumatic Brakes

Mistral Brakes

Specifications

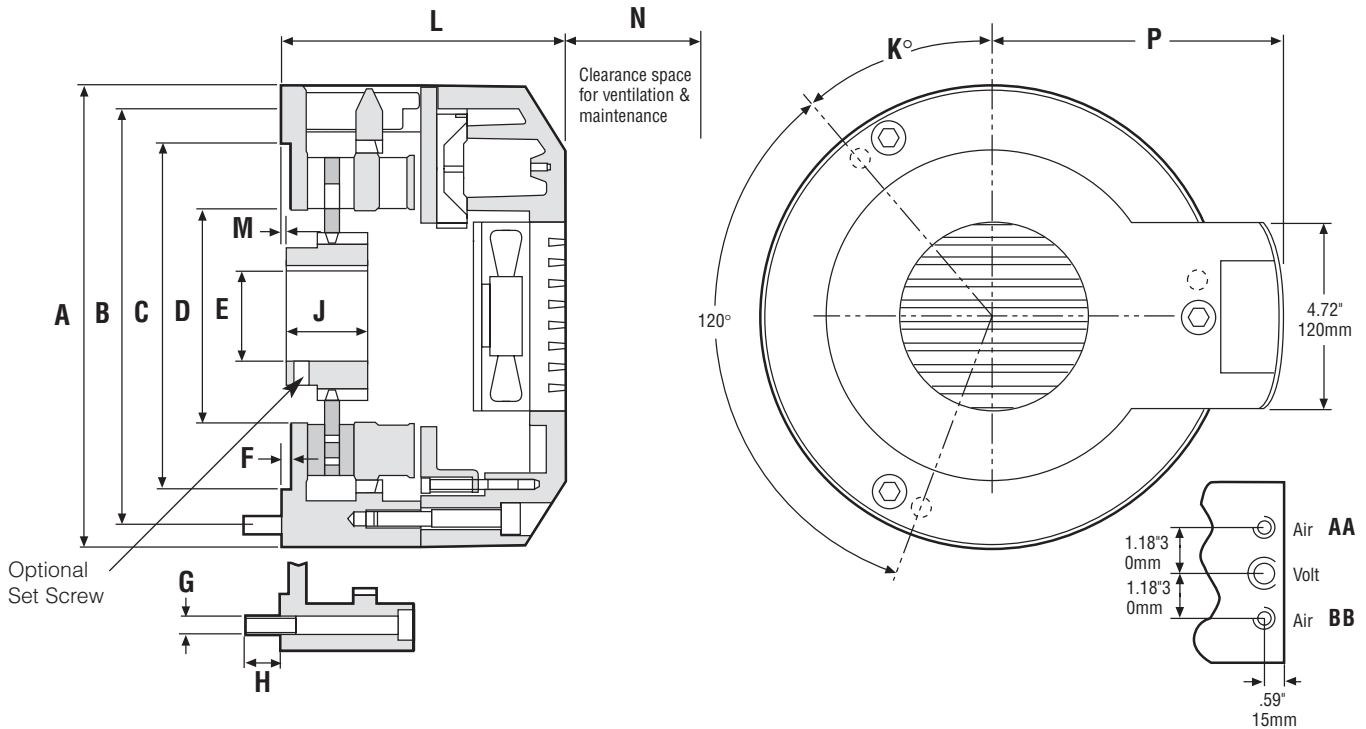
Model	Dynamic Slipping Torque Capacity				Heat Transfer Capacity with fan				Maximum Speed (rev./min.)	Inertia of Rotating Parts		Weight				Fan Power Rating (W)
	Air Pressure (lb.in.) (Nm)				Continuous Operation		:30 On/:30 Off Operation			Wr ² (lb.ft. ²)	J=mr ² (kgm ²)	Total Brake		Rotating Parts		
	min* 3 psi	max. 80 psi	min* 0.2 BAR	max. 5.5 BAR	(hp)	(kW)	(hp)	(kW)				(lb.)	(kg)	(lb.)	(kg)	
200/2/LC	62	1770	7	200	3.2	2.4	3.5	2.6	2860	0.40	0.017	77	35	9.92	4.5	20
200/2	97	2655	11	300	3.2	2.4	3.5	2.6	2860	0.40	0.017	77	35	9.92	4.5	20
200/4/LC	124	3540	14	400	3.2	2.4	3.5	2.6	2860	0.40	0.017	77	35	9.92	4.5	20
200/4	195	5310	22	600	3.2	2.4	3.5	2.6	2860	0.40	0.017	77	35	9.92	4.5	20
200/6/LC	195	5310	22	600	3.2	2.4	3.5	2.6	2860	0.40	0.017	77	35	9.92	4.5	20
200/6	292	7965	33	900	3.2	2.4	3.5	2.6	2860	0.40	0.017	77	35	9.92	4.5	20
280/3/LC	133	3540	14	400	6.4	4.8	7	5.2	2090	1.80	0.076	110	50	20.72	9.4	25
280/3	199	5310	21	600	6.4	4.8	7	5.2	2090	1.80	0.076	110	50	20.72	9.4	25
280/6/LC	265	7080	28	800	6.4	4.8	7	5.2	2090	1.80	0.076	110	50	20.72	9.4	25
280/6	399	10620	42	1200	6.4	4.8	7	5.2	2090	1.80	0.076	110	50	20.72	9.4	25
280/9/LC	399	10620	42	1200	6.4	4.8	7	5.2	2090	1.80	0.076	110	50	20.72	9.4	25
280/9	597	15930	63	1800	6.4	4.8	7	5.2	2090	1.80	0.076	110	50	20.72	9.4	25

* Lower minimum torques possible with appropriate control.



MEX (55) 53 63 23 31 MTY (81) 83 54 10 18
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Dimensions



Bore and Keyway Dimension "E" inches (mm)			
Model	Minimum Bore (No Keyway)	Maximum Bore with Keyway	
200	1.00 (25)	2 3/8 (60)	5/8 x 7/32 (18 x 4.4)
280	1.00 (25)	2 5/8 (65)	3/4 x 1/4 (18 x 4.4)

inches (mm)

Model	A	B (H.C.)	F	G	H	J	K (DEG)	L	M	N	P
200	11.61 (295)	10.236 (260)	.24 (6)	1/2 (M12)	.98 (25)	1.97 (50)	40° (40°)	7.01 (178)	N/A (N/A)	2.76 (70)	7.19 (182.5)
280	16.14 (410)	13.976 (355)	0 (0)	5/8 (M16)	1.18 (30)	2.36 (60)	20° (20°)	7.56 (192)	0.37 (9.5)	3.15 (80)	9.47 (240.5)

Model	Mounting Pilot	Mounting Bolts Qty. and Size
200	Dim. "C"	3 @ 1/2-13 UNC (3 @ M12 x 1-3/4)
	8.661 +.003 / -.000 (220 +.08 / -.00)	
280	Dim. "D"	3 @ 5/8-11 UNC (3 @ M16 x 2)
	6.890 +.003 / -.000 (175 +.08 / -.00)	

Actuator/Inlet			
Model	No. of Actuators	No. of Air Inlets	No. of Actuators Per Air Inlets AA BB
200/2	2	2	2 0
200/4	4	2	2 2
200/6	6	2	2 4
280/3	3	2	3 0
280/6	6	2	3 3
280/9	9	2	3 6

Pneumatic Brakes

Magnum Brakes

Totally Enclosed with a Wide Range of Torque Capacities

Magnum series unwind tension brakes offer high performance in a compact, easy to install package. Air vents and an impeller-type disk are tuned to achieve highly efficient air flow. Heat dissipation is further enhanced by the use of an integral fan (optional). Four sizes are available with torque capacities from 17 lb.in. through 14,160 lb.in.

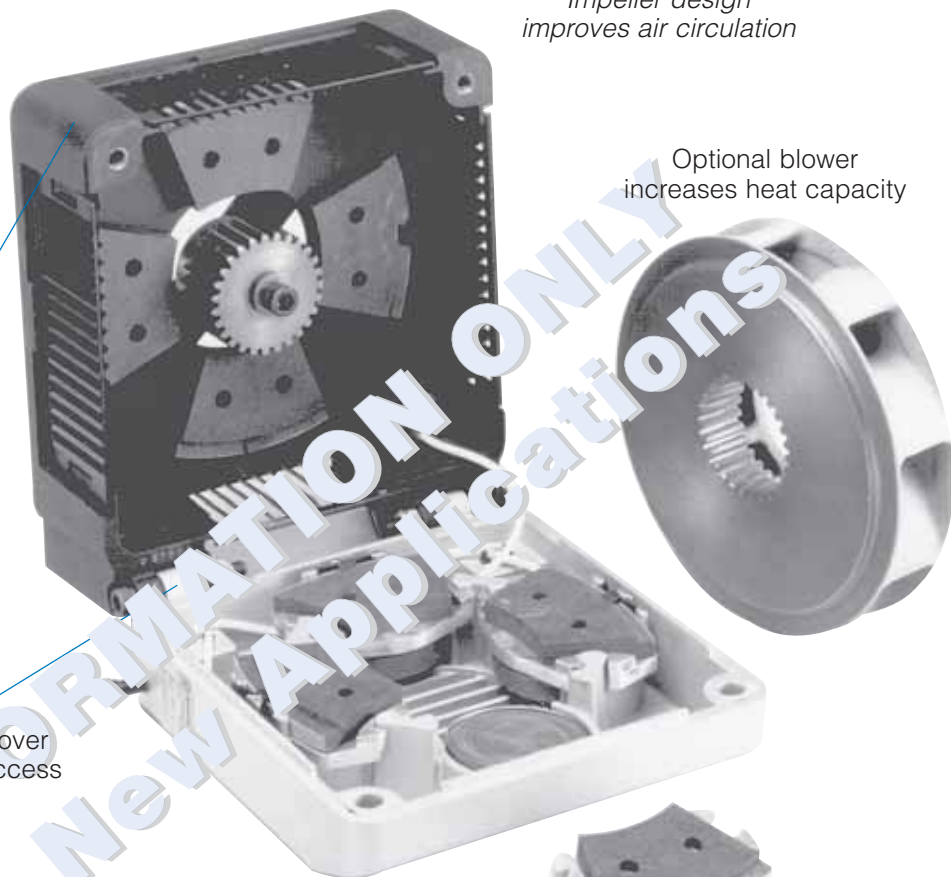
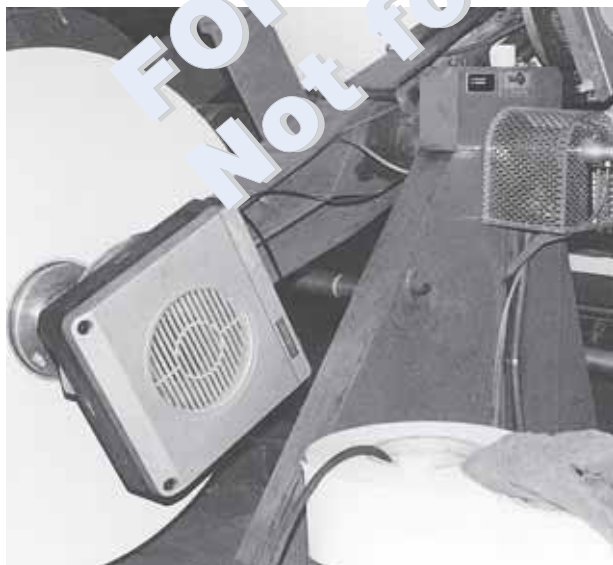
Totally enclosed.
No guard required.

Hinged cover
for easy access

Impeller design
improves air circulation

Optional blower
increases heat capacity

Quick replacement
friction pads



Pneumatic Brakes

Magnum Brakes

Specifications

Model No.	Dynamic Slipping Torque Cap. lb.in. ¹		Brake	Heat Transfer Capacity for Continuous Operation HP ²				Maximum Speed (rpm)		Inertia of brake disc + hub (lb.ft. ²)	Total Brake (lb.)	Weight Brake disc + Hub (lb.)
	*Min 3 PSI	Max 80 PSI		HP Heat Transfer Cap.	Forced Cooled at 50 rpm	100 rpm	200 rpm	500 rpm	Medium Speed brake disc (rpm)			
260/1LC	17	440	Mag.	1.3	1.5	1.9	2.9	2530	4427	.74	31	13.7
260/1	26	660										
260/2LC	43	880										
260/2	60	1320										
260/3LC	60	1320										
260/3	85	1980										
260/4LC	85	1760										
260/4	113	2640	Mag. Plus	Fan	Fan	Fan	Fan					
340/1LC	35	687	Mag.	2.3	2.7	3.3	4.7	2040	3570	2.4	45	23
340/1	43	1030										
340/2LC	70	1373	Mag. Thin	1.1	1.3	1.6	2.6					
340/2	86	2060										
340/3LC	95	2060										
340/3	129	3090	Mag. Thin	Fan	Fan	Fan	Fan					
340/4LC	129	2748										
340/4	172	4120	Mag. B	Fan	Fan	Fan	Fan					
340/5LC	163	3435										
340/5	215	5150	Mag. Plus	Fan	Fan	Fan	Fan					
340/6LC	198	4120										
340/6	258	6180										
400/2LC	86	1774	Mag.	3.5	4.0	5.2	8.8	1712	2996	5.7	71	41
400/2	113	2660										
400/3LC	129	2660										
400/3	172	3990										
400/4LC	172	3548										
400/4	225	5320										
400/5LC	215	4435										
400/5	286	6650										
400/6LC	252	5322										
400/6	238	7980										
400/7LC	285	6210										
400/7	400	9310										
400/8LC	338	7096										
400/8	451	10640										
500/2LC	113	2360	Mag. B	10.0	11.4	12.6	14.7	1308	2289	17	127	60
500/2	146	3540										
500/3LC	172	3540										
500/3	225	5310										
500/4LC	225	4720										
500/4	304	7080										
500/5LC	286	5900										
500/5	382	8850										
500/6LC	338	7080										
500/6	451	10620										
500/7LC	400	8260										
500/7	530	12390										
500/8LC	451	9440										
500/8	608	14160										

Notes

- The dynamic slipping torque range for a given brake model can be changed by switching the actuators in or out by means of the hand slide valves provided e.g. a 340/3 to a 340/2 or a 340/1.
- The heat transfer ratings in the above chart assume a forward rotation of the brake disc. For reverse rotation, the heat ratings of models Magnum 260 and Magnum 340 should be reduced by 15%. If in doubt, please contact your Wichita Clutch engineer.

* Lower minimum torques possible with appropriate control.



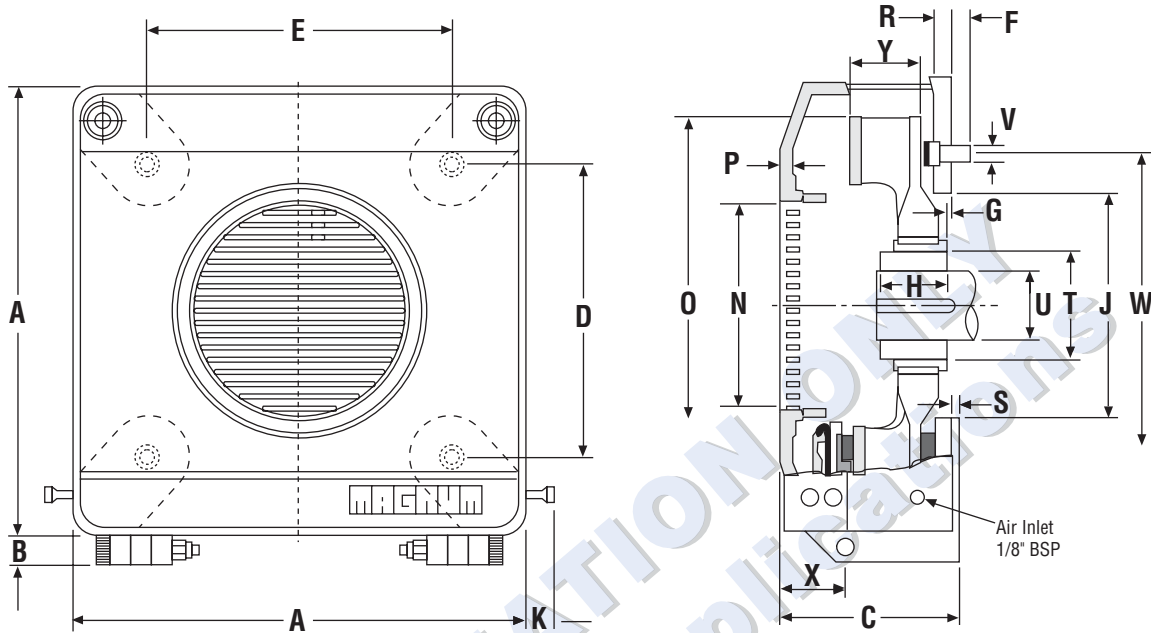
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Pneumatic Brakes

Magnum Brakes

Dimensions

Magnum



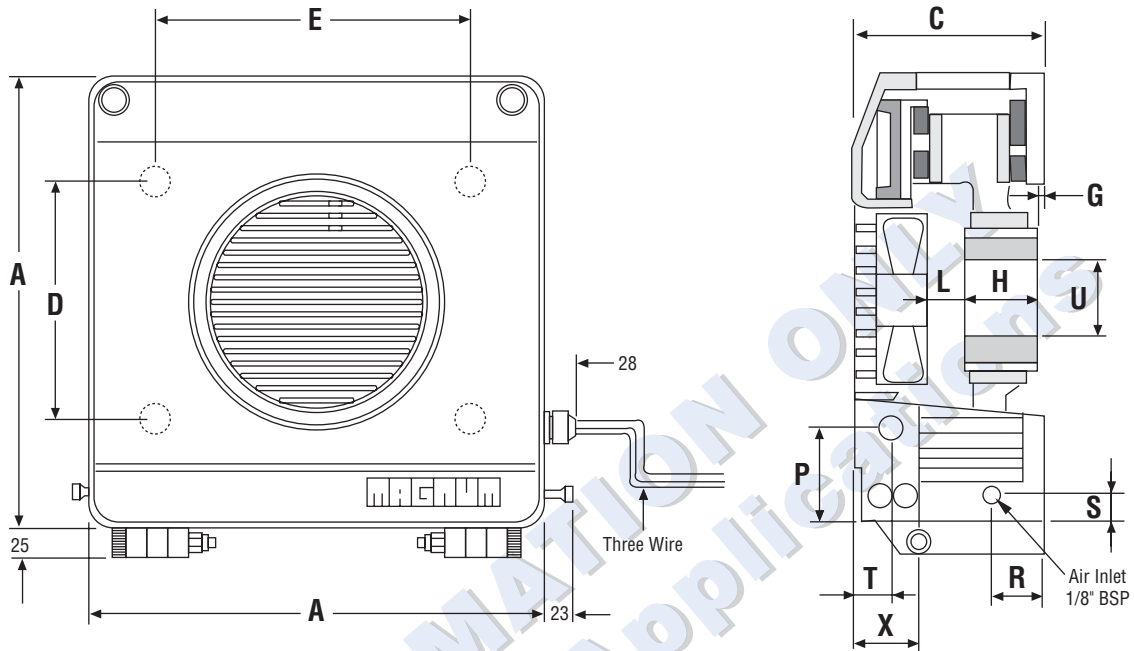
inches (mm)

Model No.	A	A1	B	B1	C	C1	D	E	F	G	H	J	K
260	10.4 (264)	10.6 (270)	1.0 (25)	0.8 (20)	5.7 (145)	7.7 (195)	7.0 (176.8)	7.0 (176.8)	0.8 (20)	0.2 (5)	2.2 (55)	3.9 (100)	0.9 (23)
340	13.6 (346)	13.8 (350)	1.0 (25)	0.8 (20)	5.7 (145)	8.0 (205)	5.5 (140.0)	9.5 (242.5)	0.9 (22)	0.2 (5)	2.2 (55)	6.9 (175)	0.9 (23)
340 Thin	13.6 (346)	13.8 (350)	1.0 (25)	0.8 (20)	5.12 (130)	8.0 (205)	5.5 (140.0)	9.5 (242.5)	0.9 (22)	0.2 (5)	2.2 (55)	6.9 (175)	0.9 (23)
400	16 (406)	16.1 (410)	1.0 (25)	0.8 (20)	5.7 (145)	7.7 (195)	10.4 (265.2)	10.4 (265.2)	1.1 (27)	0.2 (5)	2.4 (60)	7.9 (200)	0.9 (23)
500	19.9 (506)	2.0 (510)	1.1 (28)	0.8 (20)	5.7 (150)	8.0 (205)	13.3 (339.4)	13.3 (339.4)	1.2 (30)	0.2 (5)	2.4 (60)	12.6 (320)	0.9 (23)

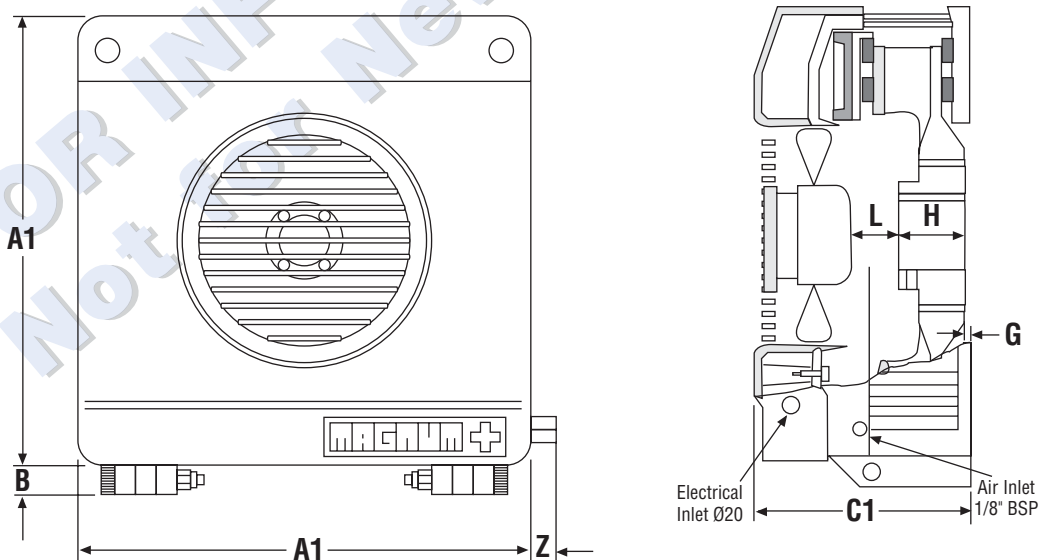
Model No.	L	N	O	P	R	S	T	U	V	W	X	Y	Z	
								Min	Max		PCD			
260	2.0 (50)	3.7 (95)	9.0 (230)	.24 (6)	.59 (15)	.20 (5)	2.44 (62)	.59 (15)	1.77 (45)	4 off-M12 X 35	9.84 (250)	1.969 (50)	2.36 (60)	.47 (12)
340	2.0 (50)	5.5 (14)	11.0 (280)	.24 (6)	.51 (13)	.28 (7)	3.62 (92)	.98 (25)	2.24 (57)	4 off-M12 x 30	11.02 (280)	1.969 (50)	2.32 (59)	.47 (12)
340 Thin	2.0 (50)	5.5 (14)	11.0 (280)	.24 (6)	.51 (13)	.28 (7)	3.62 (92)	.98 (25)	2.24 (57)	4 off-M12 x 30	11.02 (280)	1.969 (50)	2.32 (59)	.47 (12)
400	1.0 (25)	7.9 (200)	13.4 (340)	.31 (8)	.51 (13)	.12 (3)	4.69 (119)	1.38 (35)	2.56 (65)	4 off-M16 x 40	14.76 (375)	2.047 (52)	2.36 (60)	.47 (12)
500	1.0 (25)	11.1 (283)	17.5 (445)	.44 (11)	.59 (15)	.08 (2)	5.6 (140)	1.38 (35)	4.08 (102)	4 off-M20 x 45	18.1 (480)	2.2 (55)	2.32 (59)	.47 (12)

Certified prints showing exact dimensions are sent with every order acknowledgement, and these should always be obtained before finalizing any design detail.

Magnum B



Magnum Plus



Pneumatic Brakes

AD Series – Air Disc® Brakes

The Wichita Clutch Air Disc is a pneumatic unwind brake for those heavy-duty applications where high thermal capacity and/or high tension requirements exceed the range of electrically actuated products.

The Wichita Clutch Air Disc pneumatic brake offers effective web control under heavy working conditions through innovative engineering features such as low inertia and high thermal conductivity rotor discs, which allow high work loads and still afford control as the roll reaches core.

Unique actuators float freely to compensate for run-out and less than ideal roll conditions. Simple pad replacement makes maintenance a breeze – especially when factoring in the long life of the components.



Typical Applications



**Dancer
Tension Control System**



**Load Cell
Control System**



**Analog
Tension Control System**

Selection

Selecting any tension braking device requires consideration of many interrelated factors. By using the data sheet on pages 16-28, the correct sizing information can be organized.

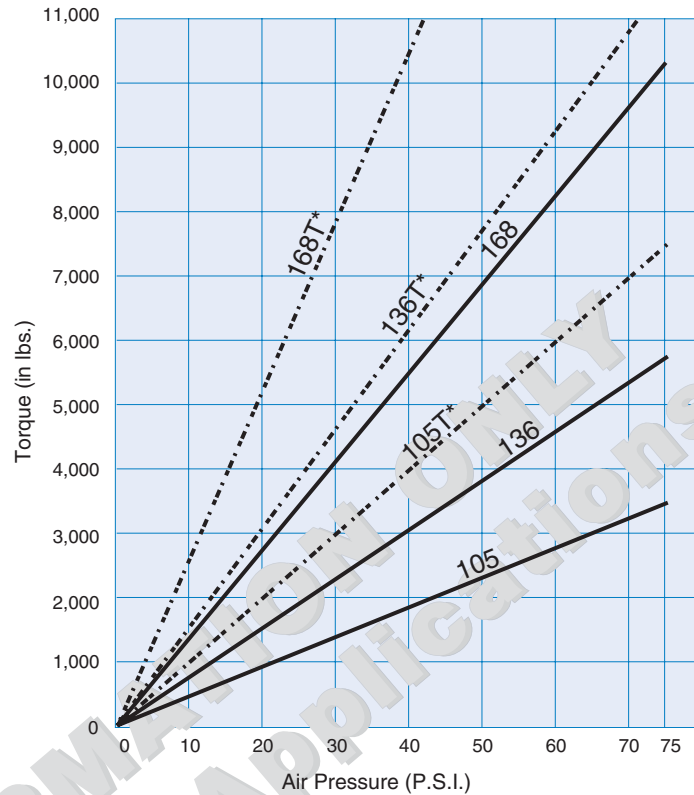
Provisions for selection calculations are also made on this form.

If you need assistance, please copy this form and forward it to Wichita Clutch. Your local Wichita Clutch market representative or your local Wichita Clutch Authorized Distributor can also provide selection assistance.

Torque Characteristics

Torque produced by the Air Disc is proportional to the air pressure applied. Refer to the chart at the right to see the relationship of air pressure to torque.

Torque Characteristics



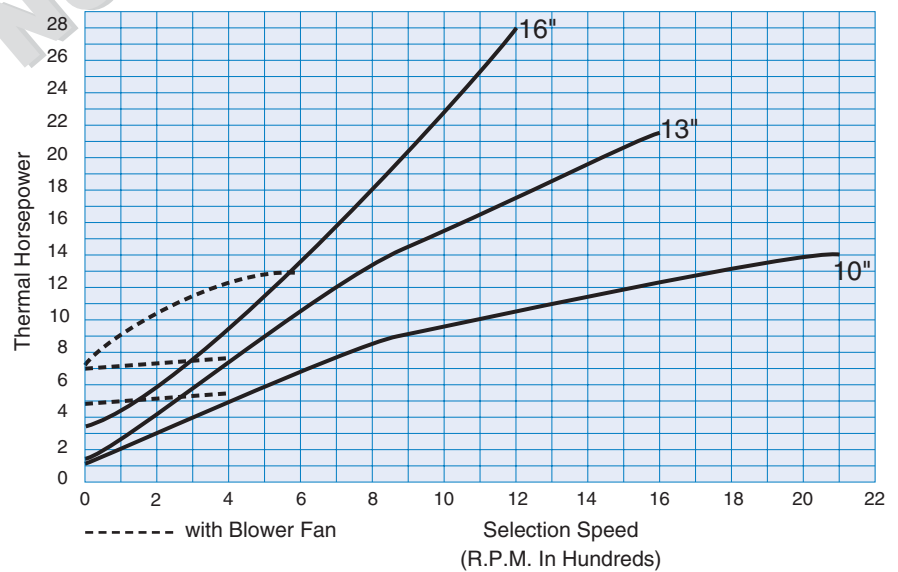
NOTE: Torque is proportional to air pressure as shown above.

Rotor Inertia and Weights

Brake Size	Rotor and Hub* Total Weight (Lbs)	Total Brake Inertia (lb.ft. ²)
10"	28.3	2.6
13"	53.2	6.5
16"	81.0	23.7

*Both Rotor and Hub Rotate

Table 2. Thermal Horsepower



Pneumatic Brakes

AD Series – Air Disc® Brakes

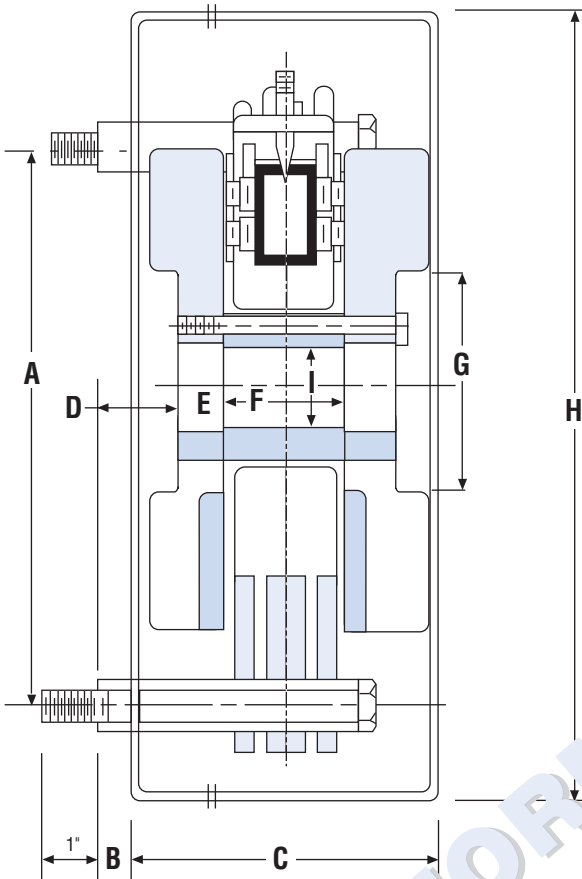
Table 3. Capacities

Model No.	Dia. of Friction Plates	No. of Actuators	Approx. Total Weight (lbs.)	Max Speed* (RPM)	Rated Torque At 75 P.S.I. Air Pressure (lb.in./lb.ft.)
101	10"	1	50	2,100	700/58
101T	10"	1	50		1,470/120
102	10"	2	53	2,100	1,400/117
102T	10"	2	53		2,940/245
103	10"	3	56	2,100	2,100/175
103T	10"	3	56		4,410/365
104	10"	4	59	2,100	2,800/233
104T	10"	4	59		5,880/490
105	10"	5	62	2,100	3,500/292
105T	10"	5	62		7,350/610
131	13"	1	78	1,600	950/79
131T	13"	1	78		1,995/165
132	13"	2	81	1,600	1,900/158
132T	13"	2	81		3,990/330
133	13"	3	84	1,600	2,850/238
133T	13"	3	84		5,985/495
134	13"	4	87	1,600	3,800/317
134T	13"	4	87		7,980/665
135	13"	5	90	1,600	4,750/396
135T	13"	5	90		9,975/830
136	13"	6	93	1,600	5,700/475
136T	13"	6	93		11,970/995
161	16"	1	111	1,300	1,275/106
161T	16"	1	111		2,675/220
162	16"	2	114	1,300	2,550/213
162T	16"	2	114		5,355/445
163	16"	3	117	1,300	3,825/319
163T	16"	3	117		8,030/665
164	16"	4	120	1,300	5,100/425
164T	16"	4	120		10,710/890
165	16"	5	123	1,300	6,375/531
165T	16"	5	123		13,385/1,115
166	16"	6	126	1,300	7,650/638
166T	16"	6	126		16,065/1,335
167	16"	7	129	1,300	8,926/744
167T	16"	7	129		18,745/1,560
168	16"	8	132	1,300	10,200/850
168T	16"	8	132		21,420/1,785

"T" Designates high coefficient friction material. Available as an option upon request.

* Max Speed is with standard friction plate. A high speed friction plate capable of 50% higher speed is available. Thermal capacity is reduced with high speed friction plate to 60% of values shown on thermal curves.

Dimensions



Model No.	A	B	C	D	E	F	G
101-105	13.00	.75	6.25	1.59	.88	2.72	6.00
131-136	14.75	.75	6.25	1.59	.88	2.72	8.00
161-168	17.50	1.25	6.25	2.09	.88	2.72	10.50

H	Max. Bore Rect. Key		J	K
	Max.	Min.		
16.60	1.875	1.0	5/8"-11	5
18.00	3.000	1.0	5/8"-11	6
21.50	4.500	1.0	5/8"-11	8

J = Size of Mounting Bolts
K = Number of Mounting Bolts

Guard and Hose Kit

Size	Basic Unit	Guard Kit	Hose Kit
101	7-810-100-100-5	4-610-021-009-3	8-610-070-007-1
102	7-810-200-100-5	4-610-021-009-3	8-610-070-007-2
103	7-810-300-100-5	4-610-021-009-3	8-610-070-007-3
104	7-810-400-100-5	4-610-021-009-3	8-610-070-007-4
105	7-810-500-100-5	4-610-021-009-3	8-610-070-007-5
131	7-813-100-100-5	4-613-021-010-3	8-613-070-007-1
132	7-813-200-100-5	4-613-021-010-3	8-613-070-007-2
133	7-813-300-100-5	4-613-021-010-3	8-613-070-007-3
134	7-813-400-100-5	4-613-021-010-3	8-613-070-007-4
135	7-813-500-100-5	4-613-021-010-3	8-613-070-007-5

Size	Basic Unit	Guard Kit	Hose Kit
136	7-813-600-100-5	4-613-021-010-3	8-613-070-007-6
161	7-816-100-100-5	4-616-021-007-3	8-616-070-007-1
162	7-816-200-100-5	4-616-021-007-3	8-616-070-007-2
163	7-816-300-100-5	4-616-021-007-3	8-616-070-007-3
164	7-816-400-100-5	4-616-021-007-3	8-616-070-007-4
165	7-816-500-100-5	4-616-021-007-3	8-616-070-007-5
166	7-816-600-100-5	4-616-021-007-3	8-616-070-007-6
167	7-816-700-100-5	4-616-021-007-3	8-616-070-007-7
168	7-816-800-100-5	4-616-021-007-3	8-616-070-007-8

Notes:

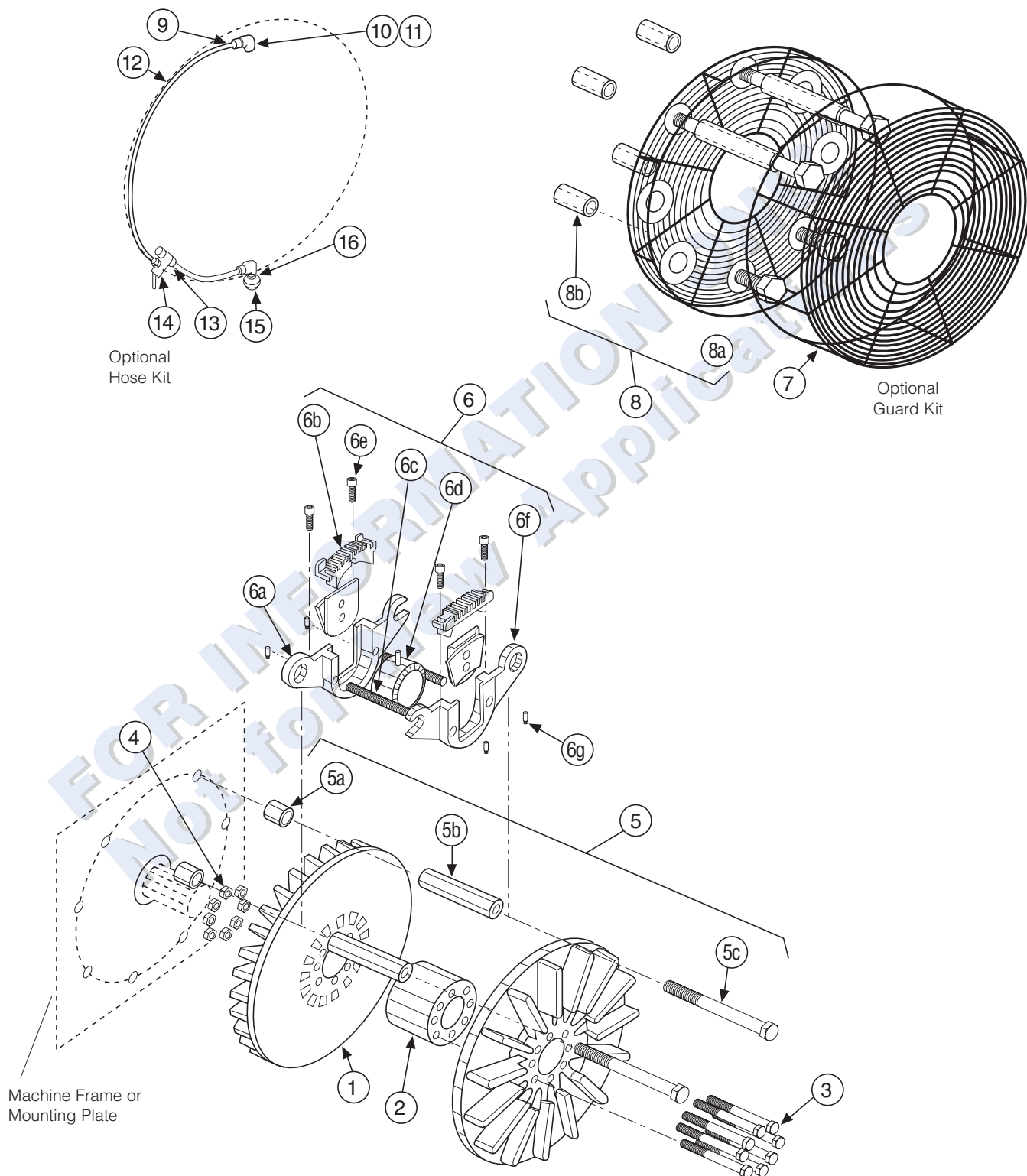
- Wichita Clutch does not recommend using a hose kit without a guard kit.
- The guard kit uses the bolt spacer kit that comes with the basic unit kits for mounting. Using the 10" guard with a unit with fewer than 3

actuators requires one guard bolt spacer kit. 13" & 16" guard kits require two guard bolt spacer kits when utilizing fewer than 4 and 6 actuators, respectively. With 4 and 6 actuators, only one guard bolt spacer kit is required. No guard bolt spacer kit is required with 5 or 7 actuators.

Pneumatic Brakes

AD Series – Air Disc® Brakes

Component Parts



Parts List

Item Description	10" Rotor	13" Rotor	16" Rotor	
Basic Brake	1. Friction Plate	4-610-001-001-1	4-613-001-001-1	4-616-001-001-1
	2. Hub	4-610-001-002-3	4-613-001-000-3	4-616-001-000-3
	3. HHCS 3/8 x 5"	2-173-037-050-0	2-173-037-050-0	2-173-037-050-0
	4. Nut 3/8	2-112-037-012-0	2-112-037-012-0	2-112-037-012-0
	5. Bolt/Spacer Kit	8-610-010-001-0	8-610-010-001-0	8-610-010-001-0
	5.a Short Spacer	4-616-015-000-3	4-616-015-000-3	4-616-015-000-3
	5.b Spacer	4-613-015-002-3	4-613-015-002-3	4-613-015-002-3
	5.c HHCS 5/8 x 7"	2-173-062-070-0	2-173-062-070-0	2-173-062-070-0
	6. Airtube Carrier Assembly	8-610-002-001-5	8-613-002-003-5	8-616-002-001-5
	6.a Airtube Carrier	4-610-002-001-5	4-613-002-003-5	4-616-002-001-5
	6.b Airtube Carrier Cap	4-613-002-004-5	4-613-002-004-5	4-613-002-004-5
	6.c Spring	4-613-033-000-4	4-613-033-000-4	4-613-033-000-4
	6.d Airtube Assembly	8-613-020-008-0	8-613-020-008-0	8-613-020-008-0
	6.e SHCS 1/4 x 3/4"	2-177-025-006-0	2-177-025-006-0	2-177-025-006-0
	6.f Friction Puck Assembly, STD	8-613-007-000-0	8-613-007-000-0	8-613-007-000-0
	Friction Pad Assembly, HICO	8-613-507-000-0	—	—
	6.g Spring Pin	4-613-033-001-4	4-613-033-001-4	4-613-033-001-4
Guard Kit	7. Guard	4-610-021-009-3	4-613-021-010-3	4-616-021-007-3
	8. Guard Bolt/Spacer Kit	8-610-010-002-0	8-610-010-002-0	8-610-010-002-0
	8.a HHCS 5/8 x 2 1/4	2-173-062-022-0	2-173-062-022-0	2-173-062-022-0
	8.b Short Spacer	4-616-015-000-3	4-616-015-000-3	4-616-015-000-3
Hose Kit	9. Coupling 1/8 x 1/8	4-613-072-006-0	4-613-072-006-0	4-613-072-006-0
	10. Elbow 1/8 x 10-32	4-613-072-007-0	4-613-072-007-0	4-613-072-007-0
	11. Tee 10-32 x 10-32 x 1/8	4-613-072-008-0	4-613-072-008-0	4-613-072-008-0
	12. Teflon Tubing	4-610-074-001-0	4-610-074-001-0	4-610-074-001-0
	13. 10-32 Hex Plug	4-613-072-004-0	4-613-072-004-0	4-613-072-004-0
	14. 3-Way Switch	4-613-071-002-0	4-613-071-002-0	4-613-071-002-0
	15. 10-32 Straight Fitting	4-613-072-002-0	4-613-072-002-0	4-613-072-002-0
	16. Washer	4-137-050-111-0	4-137-050-111-0	4-137-050-111-0
	17. Extension 1/8	2-308-001-001-0	2-308-001-001-0	2-308-001-001-0