

Electric Brakes and Clutches

ATT Series – Advanced Technology Brakes and Clutches

Advanced Technology – A new design concept!

Warner Electric's ATT Series clutches and brakes are rugged and durable.

Besides providing the ultimate in long life and durability, the ATT units are easily repairable... and, for the first time, mounting a standard sheave, pulley or sprocket to the clutch is a snap.

AT Clutches and Brakes are completely assembled at the factory and have been specifically designed to match the torque ratings of standard motors, reducers, and other power transmission components. Easy to select and easy to install.

Features:

ATT Tension Clutches and Brakes

- Ideal for intermediate range applications
- Both brake and clutch models for winders and unwinders
- .284 to .9 thermal horsepower capacity
- Brake wear faces replaceable on the shaft for limited downtime
- Full range of control options. See pages 44-45.



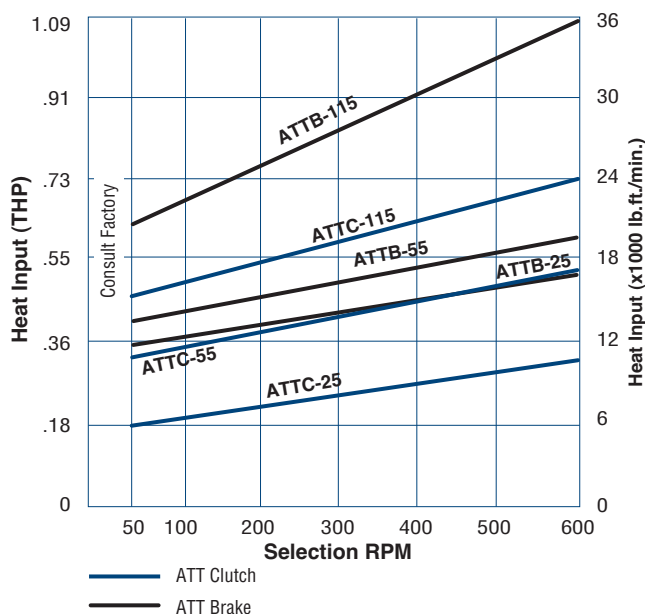
Unit Size	Maximum RPM	Continuous ¹ Dynamic Torque	Overcurrent E-Stop Torque
ATT Brakes			
ATTB-25	3600	8 lb.ft.	15 lb.ft
ATTB-55	3600	15 lb.ft.	21 lb.ft
ATTB-115	3600	62 lb.ft.	83 lb.ft.
ATT Clutches			
ATTC-25	3600	7 lb.ft.	*2
ATTC-55	3600	12 lb.ft.	*
ATTC-115	3600	41 lb.ft.	*

Notes

1. Dynamic torque is constant over a speed range of 0–600 RPM
2. Overcurrent is not used on clutch applications for tensioning

Continuous Operation

Thermal HP vs. Selection RPM



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Special Coil Designs

High temperature coil wire improves durability in the face of high temperature environments and high cycle rates or high inertia cycling that generate large amounts of heat. High temperature Teflon leads are very resistant to accidental abrasion and cutting.



Replaceable Friction Discs

Friction disc is designed as separate assembly from clutch rotor or brake magnet, allowing for replacement of the wear surface without the expense of replacing other valuable unit components. Provides superior wear life with reduced engagement noise level.

Advanced Technology Tension Clutches and Brakes

- Ideal for intermediate range applications
- Both brake and clutch models for winders and unwinders
- .284 to .9 thermal horsepower capacity
- Wear faces replaceable on the shaft for limited downtime
- Full range of control options

Complete Control Capability



Optional Accessories

Warner Electric offers a number of optional accessories as well as rebuild kits, which may make an ATT clutch or

brake easier to apply to your machine. See pages 44-45 for controls.

Unit	Model No.	Clutch Restraining Strap	Repair Kits	
			Friction Face Replacement	Rebuild
Clutch	ATTC-25	5162-101-004	5161-101-008	5161-101-009
	ATTC-55	5162-101-004	5162-101-008	5162-101-009
	ATTC-115	5163-101-004	5163-101-008	5163-101-009
Brake	ATTB-25	—	5161-101-008	—
	ATTB-55	—	5162-101-008	—
	ATTB-115	—	5163-101-008	—

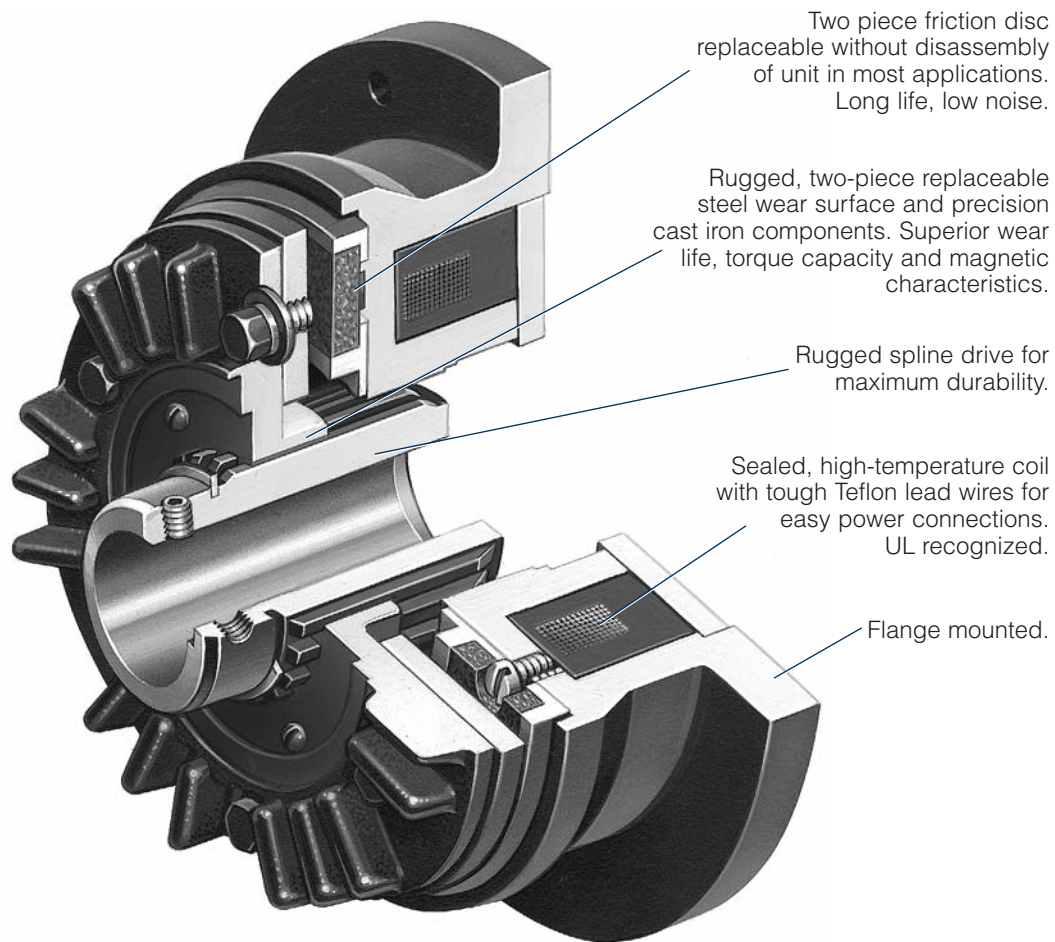
Bore Sizes/Part Numbers

Size	Bore Size (Inch)	24 VDC		90 VDC	
		Clutch (ATTC)	Brake (ATTB)	Clutch (ATTC)	Brake (ATTB)
ATT-25	1/2"	5161-271-021	5191-6	5161-271-025	5191-10
	5/8"	5161-271-022	5191-7	5161-271-026	5191-11
	3/4"	5161-271-023	5191-8	5161-271-027	5191-12
	7/8"	5161-271-024	5191-9	5161-271-028	5191-13
ATT-55	3/4"	5162-271-021	5192-6	5162-271-025	5192-10
	7/8"	5162-271-022	5192-7	5162-271-026	5192-11
	1"	5162-271-023	5192-8	5162-271-027	5192-12
	1-1/8"	5162-271-024	5192-9	5162-271-028	5192-13
ATT-115	1-1/8"	5163-271-021	5193-6	5163-271-025	5193-10
	1-1/4"	5163-271-022	5193-7	5163-271-026	5193-11
	1-3/8"	5163-271-023	5193-8	5163-271-027	5193-12
	1-1/2"	5163-271-024	5193-9	5163-271-028	5193-13

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ATTB Brake

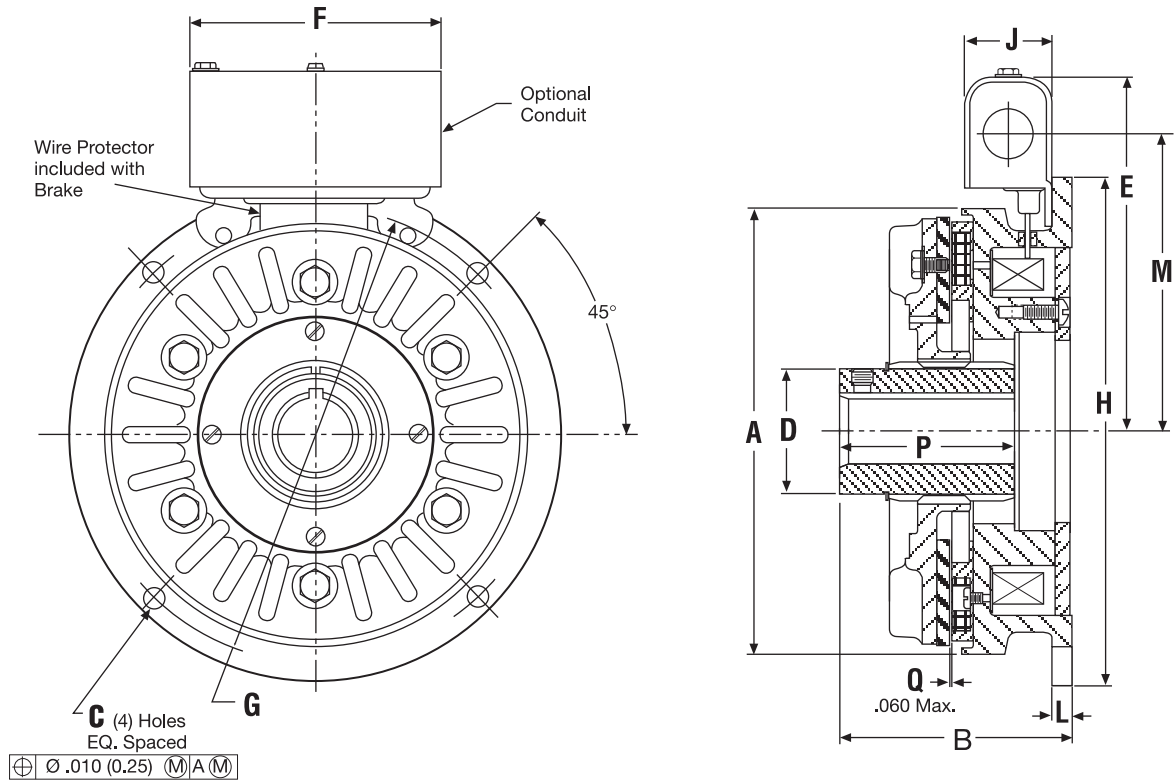


Specifications

Unit	Model No.	Mechanical Data			Electrical Data		
		Total Weight (lbs.)	Max Speed (RPM)	Inertia WR^2 (lb.ft. ²)	24 VDC		
					Resistance (ohms)	Current (amperes)	Power (watts)
	ATTB-25	7	3600	0.038	20.6	1.16	28.0
Brake	ATTB-55	15	3600	0.126	19.6	1.22	29.4
	ATTB-115	24	3600	0.383	16.5	1.46	34.9

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Customer shall maintain:

1. Squareness of brake mounting face with armature hub shaft within .006 T.I.R.
2. Concentricity of brake mounting pilot diameter with armature hub shaft within .010 T.I.R.

Shaft Bore and Keyway Dimensions

Model	Unit Bore	Key
ATTB-25	.5025 (12.76)	1/8 Sq.
	.5005 (12.71)	
ATTB-25	.6275 (15.94)	3/16 Sq.
	.6255 (15.89)	
ATTB-25	.7525 (19.11)	3/16 Sq.
	.7505 (19.06)	
ATTB-25	.8775 (22.29)	3/16 Sq.
	.8755 (22.24)	

Model	Unit Bore	Key
ATTB-55	1.0025 25.46	1/4 Sq.
	1.0005 25.41	
ATTB-55	1.1275 28.64	1/4 Sq.
ATTB-115	1.1255 28.59	
ATTB-115	1.2525 31.81	1/4 Sq.
	1.2505 31.76	
ATTB-115	1.7775 34.99	5/16 Sq.
	1.3755 34.94	
ATTB-115	1.5025 38.16	3/8 Sq.
	1.5005 38.11	

inches (mm)

Model	A Max. Dia.	B Max.	C Min. Dia.
ATTB-25	4.822 (122.48)	2.730 (69.34)	.264 (6.70)
ATTB-55	6.271 (159.28)	3.010 (77.97)	.330 (8.38)
ATTB-115	7.906 (200.81)	3.625 (92.17)	.330 (8.38)

inches (mm)

Model	D Max.	E Nom.	F Max.	G Dia.	H Pilot Dia.	J Nom.	L Max.	M Nom.	P Max.
ATTB-25	1.347 (34.21)	4.748 (120.60)	3.767 (95.68)	5.250 (133.35)	5.625/5.623 (142.87/142.82)	1.544 (39.22)	.225 (5.71)	3.586 (91.08)	2.080 (52.83)
ATTB-55	1.770 (44.96)	5.37 (136.40)	3.767 (95.68)	6.875 (174.62)	7.375/7.373 (187.33/187.27)	1.544 (39.22)	.491 (12.47)	4.208 (106.88)	3.105 (78.87)
ATTB-115	2.152 (54.66)	6.278 (159.46)	3.767 (95.68)	8.500 (215.90)	9.000/8.998 (228.60/228.55)	1.544 (39.22)	.463 (11.76)	5.116 (129.95)	3.105 (78.87)

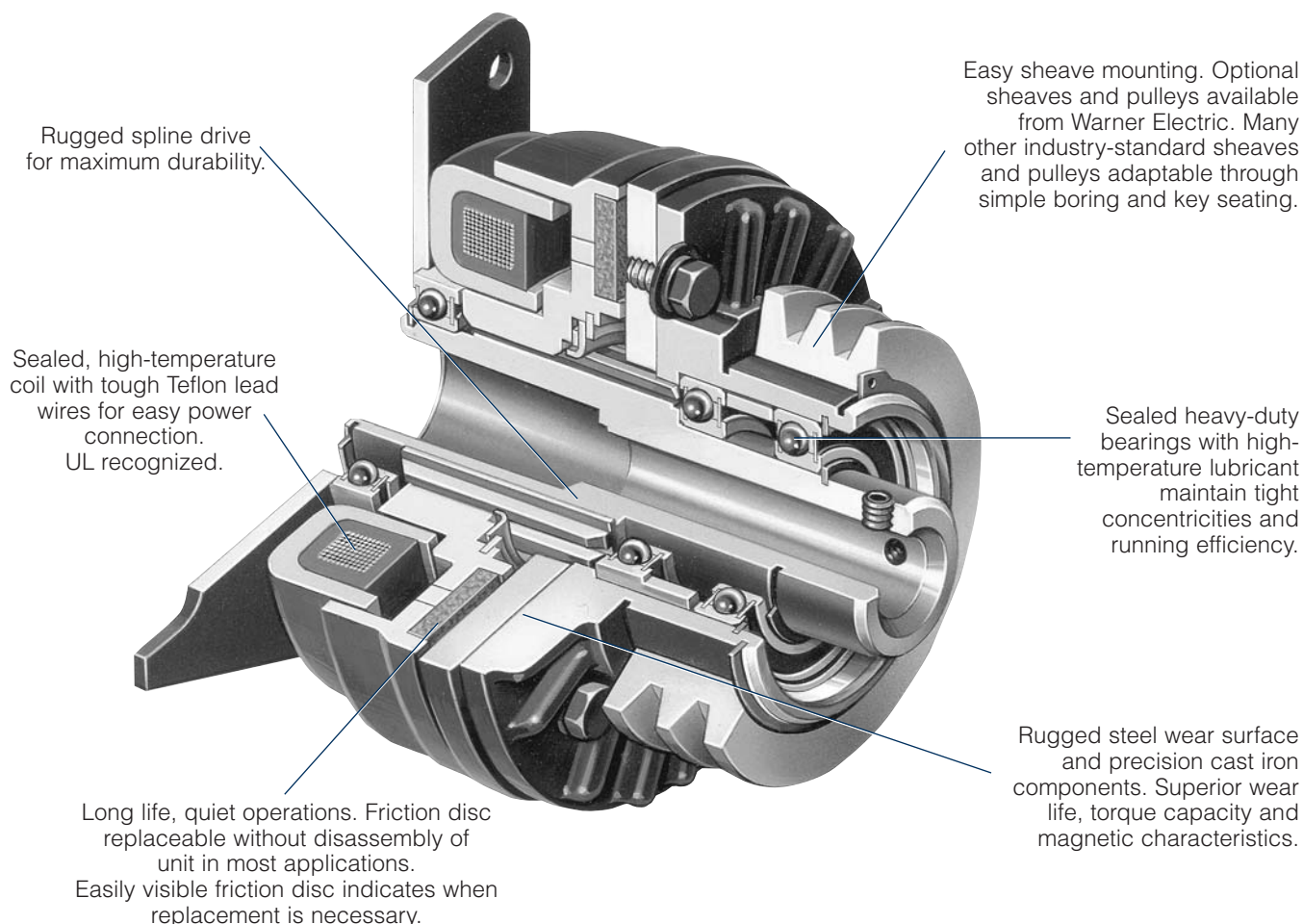
For replacement parts list and exploded view drawing, see page 84.

Note: All dimensions are nominal unless otherwise noted.

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ATTC Clutch



Specifications

Model No.	Mechanical Data			Electrical Data		
	Total Weight (lbs.)	Max Speed (RPM)	Inertia WR ² (lb.ft. ²)	24 VDC		
				Resistance (ohms)	Current (amperes)	Power (watts)
ATTC-25	8	3600	0.048	20.6	1.16	28.0
ATTC-55	18	3600	0.173	19.6	1.22	29.4
ATTC-115	28	3600	0.483	16.5	1.46	34.9

Dimensions

inches (mm)

Model	A Max. Dia.	B Max.	C Nom.	D Nom. Dia.	E Max.	F Max.	G Max.	H Max.	J Max Dia.	K Max.	L Max.	M Max.	T Nom.
ATTC-25	3.60 (91.44)	4.39 (111.51)	2.375 (60.33)	1.080 (27.43)	4.748 (120.60)	3.767 (95.68)	3.282 (83.36)	5.11 (129.79)	4.822 (122.49)	1.68 (42.67)	1.003/991 (25.48/25.17)	.715/.703 (18.16/17.86)	.375 (9.53)
ATTC-55	3.95 (100.33)	4.935 (125.35)	2.925 (74.30)	1.40 (35.56)	5.182 (131.62)	3.767 (95.68)	4.032 (102.41)	5.11 (129.79)	6.275 (159.39)	1.817 (46.15)	1.113/1.101 (28.27/27.97)	—	.375 (9.53)
ATTC-115	5.254 (133.45)	5.977 (151.82)	3.102 (78.79)	1.86 (47.24)	6.089 (154.66)	3.767 (95.68)	4.246 (107.85)	10.11 (256.79)	7.906 (200.81)	2.467 (62.66)	1.539/1.523 (39.09/38.68)	—	.375 (9.53)

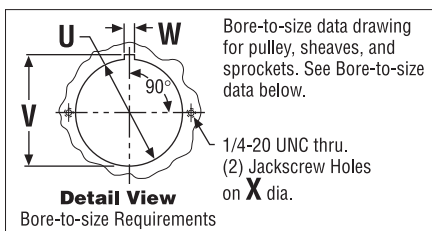
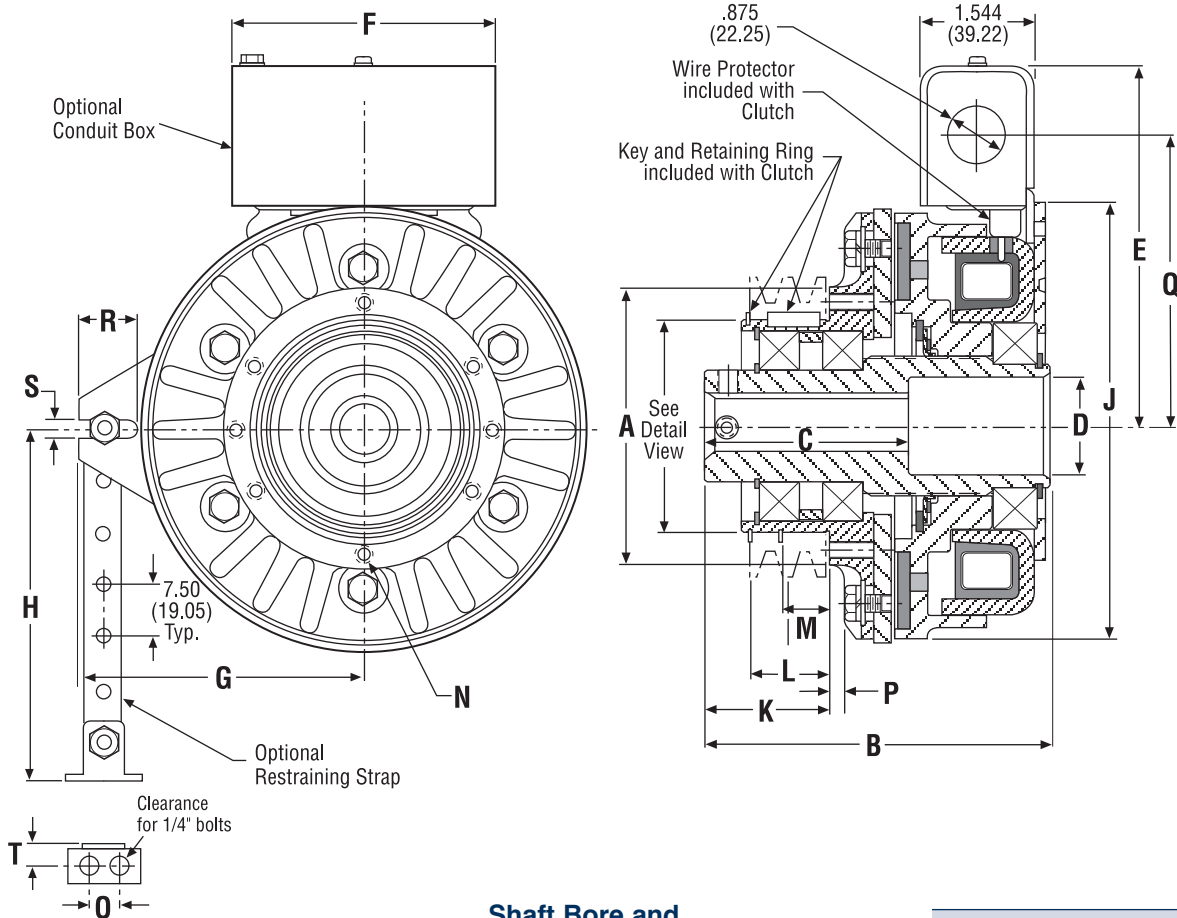
For replacement parts list and exploded view drawing, see page 85.

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Electric Brakes and Clutches

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Dimensions



Shaft Bore and Keyway Dimensions

Model	Unit Bore	Key
ATTC-25	.5025 (12.76) .5005 (12.71)	1/8 Sq.
ATTC-25	.6275 (15.94) .6255 (15.89)	3/16 Sq.
ATTC-25	.7525 (19.11) .7505 (19.06)	3/16 Sq.
ATTC-25	.8775 (22.29) .8755 (22.24)	3/16 Sq.

Model	Unit Bore	Key
ATTC-55	1.0025 (25.46) 1.0005 (25.41)	1/4 Sq.
ATTC-55	1.1275 (28.64) 1.1255 (28.59)	1/4 Sq.
ATTC-115	1.2525 (31.71) 1.2505 (31.76)	1/4 Sq.
ACCT-115	1.3775 (34.99) 1.3755 (34.94)	5/16 Sq.
ATTC-115	1.5025 (38.16) 1.5005 (38.11)	3/8 Sq.

inches (mm)

Model	No. of Holes	N Thread Size	Max. Depth	Bolt Circle	O Nom.	Q Nom.	R Min.	S Min.
ATTC-25	3	1/4-20	.500	3.00	.500 (12.7)	3.586 (91.08)	.752 (19.08)	.279 (7.09)
ATTC-55	4	1/4-20	.635	3.50	.500 (12.7)	4.156 (105.56)	.722 (18.34)	.265 (6.73)
ATTC-115	4	5/16-18	.830	4.75	.500 (12.7)	4.927 (125.15)	.504 (12.80)	.265 (6.73)

Bore-to-Size Data

U Bore Dia.	V Keyway Height	W Keyway Width	X Bolt Circle
2.502/2.500 (63.55/63.50)	2.601/2.591 (66.06/65.81)	.1905/.1885 (4.84/4.79)	3.00 (76.20)
3.002/3.000 (76.25/76.20)	3.099/3.089 (78.71/78.46)	.1905/.1885 (4.84/4.79)	3.50 (88.90)
4.002/4.000 (101.65/101.60)	4.127/4.117 (104.83/104.57)	.378/.376 (9.60/9.55)	4.50 (114.30)

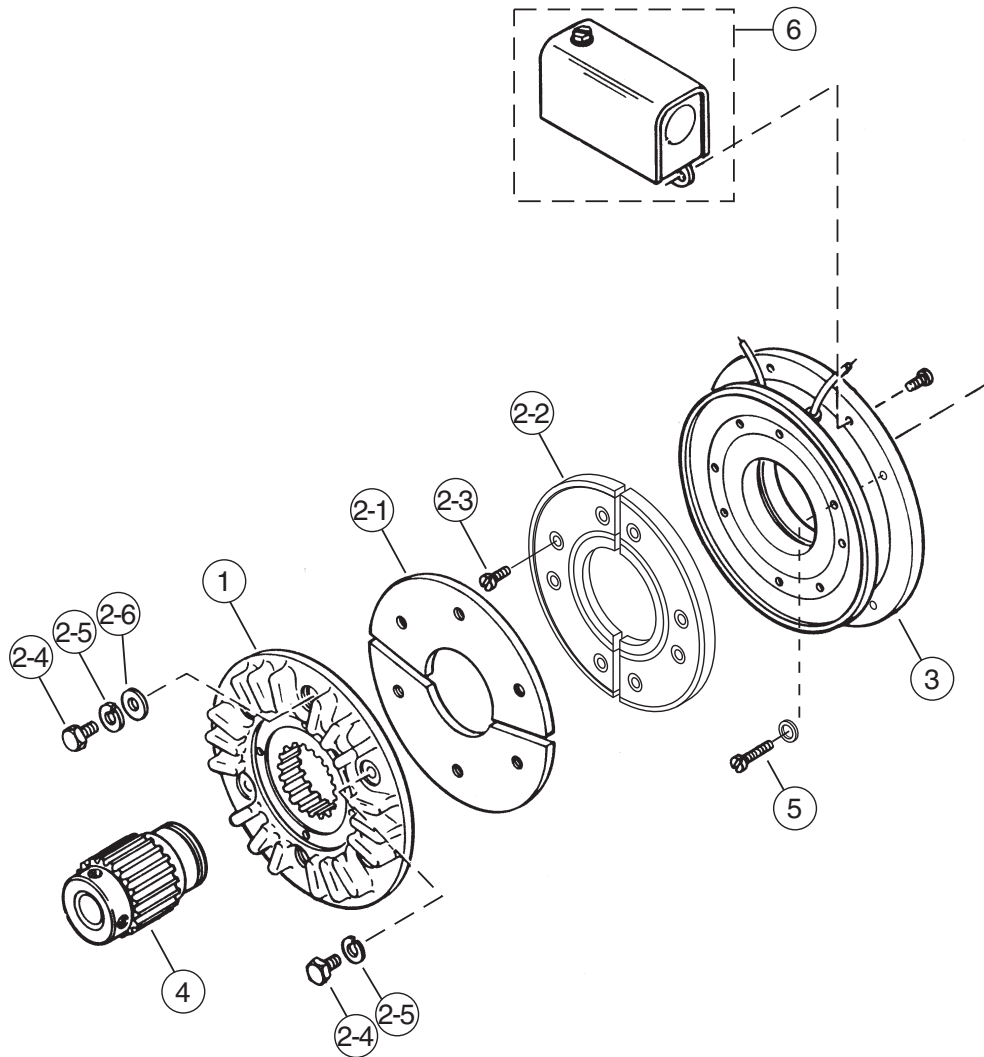
For replacement parts list and exploded view drawing, see page 85.

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Brake Assemblies and Part Numbers

ATT Series – Advanced Technology Brakes

ATTB-25, ATTB-55, ATTB-115



Brake Assemblies

Unit Size	Voltage	Part No.
ATTB-25-1/2	24	5191-6
ATTB-25-1/2	90	5191-10
ATTB-25-5/8	24	5191-7
ATTB-25-5/8	90	5191-11
ATTB-25-3/4	24	5191-8
ATTB-25-3/4	90	5191-12
ATTB-25-7/8	24	5191-9
ATTB-25-7/8	90	5191-13
ATTB-55-3/4	24	5192-6
ATTB-55-3/4	90	5192-10
ATTB-55-7/8	24	5192-7
ATTB-55-7/8	90	5192-11
ATTB-55-1	24	5192-8
ATTB-55-1	90	5192-12
ATTB-55-1-1/8	24	5192-9
ATTB-55-1-1/8	90	5192-13
ATTB-115-1-1/8	24	5193-6
ATTB-115-1-1/8	90	5193-10
ATTB-115-1-1/4	24	5193-7
ATTB-115-1-1/4	90	5193-11
ATTB-115-1-3/8	24	5193-8
ATTB-115-1-3/8	90	5193-12
ATTB-115-1-1/2	24	5193-9
ATTB-115-1-1/2	90	5193-13

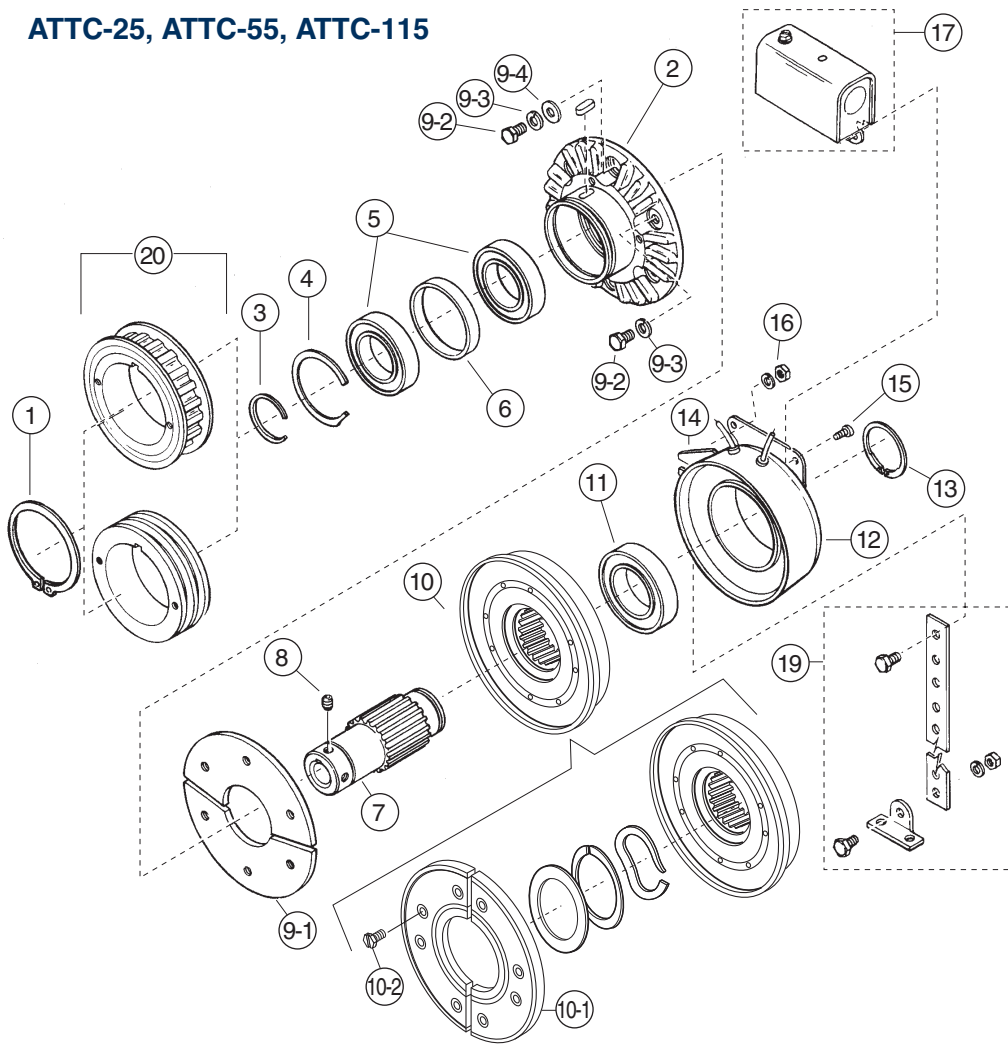
Part Numbers

Item No.	Description	ATTB-25 Qty.	ATTB-25 Part No.	ATTB-55 Qty.	ATTB-55 Part No.	ATTB-115 Qty.	ATTB-115 Part No.	Item No.	Description	ATTB-25 Qty.	ATTB-25 Part No.	ATTB-55 Qty.	ATTB-55 Part No.	ATTB-115 Qty.	ATTB-115 Part No.
1	Armature Hub	1	540-0908	1	540-0851	1	540-0864	7/8" Bore	-	5191-541-005	-	5192-541-003	-	-	
2-1	Armature	1	110-0220	1	110-0218	1	110-0223	1" Bore	-	-	-	5192-541-004	-	-	
2-2	Facing Assem.	1	5191-445-003	1	5192-445-003	1	5193-445-003	1-1/8" Bore	-	-	-	5192-541-005	-	5193-541-002	
2-3	Screw	6	797-1389	8	797-1389	8	797-1389	1-1/4" Bore	-	-	-	-	-	5193-541-003	
2-4	Screw	4	797-1020	6	797-1387	6	797-1174	1-3/8" Bore	-	-	-	-	-	5193-541-004	
2-5	Lockwasher	-	-	6	950-0355	6	950-0355	1-1/2" Bore	-	-	-	-	-	5193-541-005	
2-6	Flatwasher	-	-	2	950-0023	2	950-0023	5 Mtg. Acc'y.	1	5191-101-007	1	5192-101-007	1	5192-101-007	
3	Magnet Assem.	1	-	1	-	1	-	Optional Accessory Items							
	24 Volts D.C.	-	5191-631-007	-	5192-631-007	-	5193-631-014	6 Conduit Box	1	5162-101-002	1	5162-101-002	1	5162-101-002	
	90 Volts D.C.	-	5191-631-008	-	5192-631-008	-	5193-631-015	Kit Items							
4	Splined Hub	1	-	1	-	1	-	7 Friction Face	-	-	-	-	-	-	
	1/2" Bore	-	5191-541-002	-	-	-	-	Replacement Kit	1	5161-101-008	1	5162-101-008	1	5163-101-008	
	5/8" Bore	-	5191-541-003	-	-	-	-	(includes items 2-1, 2-2, 2-3, 2-4, 2-5, 2-6)							
	3/4" Bore	-	5191-541-004	-	5192-541-002	-	-								

Brake Assemblies and Part Numbers

ATT Series – Advanced Technology Clutches

ATTC-25, ATTC-55, ATTC-115



Clutch Assemblies

Unit Size	Voltage	Part No.
ATTC-25-1/2	24	5161-271-021
ATTC-25-1/2	90	5161-271-025
ATTC-25-5/8	24	5161-271-022
ATTC-25-5/8	90	5161-271-026
ATTC-25-3/4	24	5161-271-023
ATTC-25-3/4	90	5161-271-027
ATTC-25-7/8	24	5161-271-024
ATTC-25-7/8	90	5161-271-028
ATTC-55-3/4	24	5162-271-021
ATTC-55-3/4	90	5162-271-025
ATTC-55-7/8	24	5162-271-022
ATTC-55-7/8	90	5162-271-026
ATTC-55-1	24	5162-271-023
ATTC-55-1	90	5162-271-027
ATTC-55-1-1/8	24	5162-271-024
ATTC-55-1-1/8	90	5162-271-028
ATTC-115-1-1/8	24	5163-271-021
ATTC-115-1-1/8	90	5163-271-025
ATTC-115-1-1/4	24	5163-271-022
ATTC-115-1-1/4	90	5163-271-026
ATTC-115-1-3/8	24	5163-271-023
ATTC-115-1-3/8	90	5163-271-027
ATTC-115-1-1/2	24	5163-271-024
ATTC-115-1-1/2	90	5163-271-028

Part Numbers

Item No.	Description	ATTC-25		ATTC-55		ATTC-115		Item No.	Description	ATTC-25		ATTC-55		ATTC-115	
		Qty.	Part No.	Qty.	Part No.	Qty.	Part No.			Qty.	Part No.	Qty.	Part No.	Qty.	Part No.
1	Retaining Ring	1	748-0734	1	748-0725	1	748-0738								
2	Armature Hub	1	540-0907	1	540-0852	1	540-0863								
3	Retaining Ring	1	748-0732	1	748-0726	1	748-0737								
4	Retaining Ring	1	748-0731	1	748-0728	1	748-0736								
5	Bearing	2	166-0278	2	166-0277	2	166-0279								
6	Spacer	1	807-0119	1	807-1061	1	807-1063								
7	Splined Hub	1	-	1	-	1	-								
	1/2" Bore		540-0910		-		-								
	5/8" Bore		540-0911		-		-								
	3/4" Bore		540-0912		540-1501		-								
	7/8" Bore		540-0913		540-1502		-								
	1" Bore		-		540-1503		-								
	1-1/8" Bore		-		540-1504		540-0857								
	1-1/4" Bore		-		-		540-0858								
	1-3/8" Bore		-		-		540-0859								
	1-1/2" Bore		-		-		540-0860								
8	Setscrew	2	797-1393	2	797-1386	2	797-1395								
*9-1	Armature	1	110-0220	1	110-0218	1	110-0223								
*9-2	Screw	4	797-1519	6	797-1462	6	797-1463								
*9-3	Lockwasher	-	-	6	950-0355	6	950-0355								
*9-4	Flatwasher	-	-	2	950-0023	2	950-0023								
*10	Rotor	1	5161-751-002	1	5162-751-002	1	5163-751-002								
*10-1										1	5191-445-003	1	5192-445-003	1	5193-445-003
*10-2										6	797-1389	8	797-1389	8	797-1389
*11	Bearing									1	166-0283	1	166-0284	1	166-0279
12	Field Assembly														
	90 Volts D.C.									1	5161-451-003	1	5162-451-003	1	5163-451-003
	24 Volts D.C.									1	5161-451-004	1	5162-451-004	1	5163-451-004
*13	Retaining Ring									1	748-0018	1	748-0727	1	748-0737
14	Adapter									-	-	-	-	2	104-0300
15	Screw									-	-	-	-	4	797-1396
16	Lockwasher									-	-	-	-	4	950-0102
Optional Accessory Items															
17	Conduit Box									1	5162-101-002	1	5162-101-002	1	5162-101-002
19	Restraining Arm Assembly									1	5162-101-004	1	5162-101-004	1	5162-101-004
20	Timing Belt and V Belt Pulleys: Consult Factory.														
Kit Items															
*	Clutch Rebuild Kit (includes items 9-1, 9-2, 9-3, 9-4, 10, 11, 13)									1	5161-101-012	1	5162-101-012	1	5163-101-012
†	Friction Service Kit									1	5161-101-008	1	5162-101-008	1	5163-101-008

Note: In some versions of this product, item 10 consists of a rotor and a replaceable face.

Electric Brakes

MTB Series – Modular Tension Brakes

One of the keys to the Warner Electric tensioning system is the Electro Disc tension brake. Electro Disc brake systems are capable of continuous slip from full roll to core diameter while providing outstandingly consistent and accurate control of unwind tension throughout the process. Electro Disc brakes operate smoothly and quietly. They respond instantly for emergency stops. Wear life is remarkable. Electronic control systems are easily interfaced with Warner Electric controls. Selection of the right brake for virtually any web processing application, from film to boxboard, is made possible through a building-block modular design.

Simple Maintenance

Rugged design eliminates most moving parts. No diaphragms to break down. Asbestos-free brake pads are quickly and easily replaced. Brake wear does not affect torque as with some other types of brakes.

Easy Installation

Electro Disc tension brakes fit within tight space restrictions. Bushings adapt to most standard and metric shafts. Electrical installation replaces complex pneumatic plumbing, valves and compressors.

Long Life, High Heat Dissipation

A replaceable face armature disc provides extremely long life and maximum heat dissipation. Standard armature discs can be mounted singly or in tandem as shown here to increase the heat dissipation and torque capability.

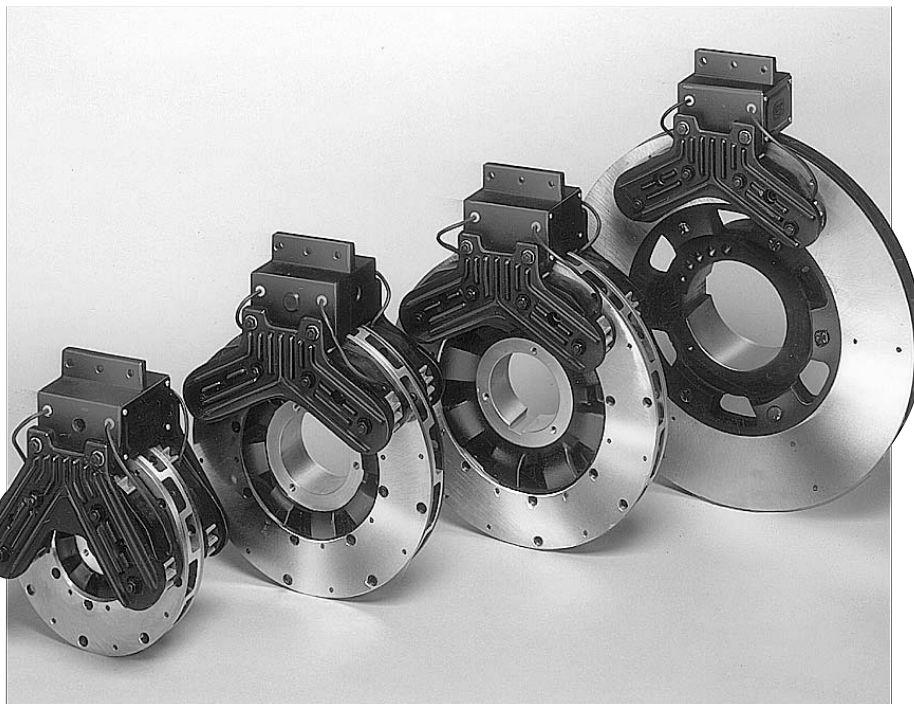
Accurate, Consistent Control

The responsiveness of electric brakes coupled with specially designed controls provides accurate tensioning from beginning to end of roll, even during emergency stops and flying splices.

Brake Modularity

With one to sixteen magnets and single or double armature discs, Electro Disc tension brakes offer torque control and continuous slip capacity to meet a broad spectrum of requirements for virtually any web processing application.

Four armature sizes



Patented Design

The patented Electro Disc design is a proven concept, featuring a simple, yet powerful tension brake ... easy-to-control, smooth, quiet and accurate. The speed of response and controllability, especially near zero tension, far exceeds that of other braking technologies.

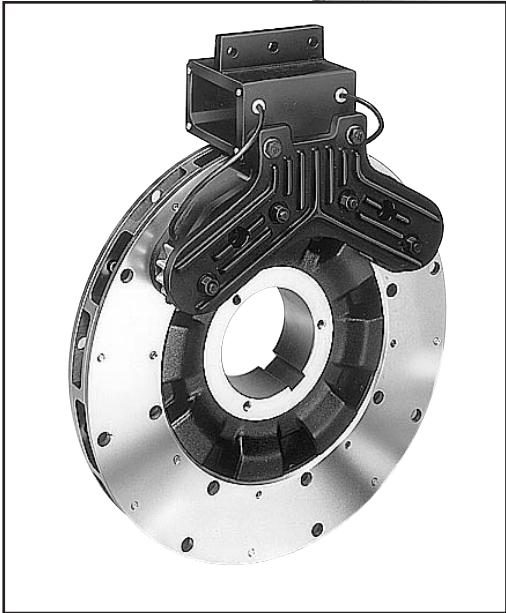
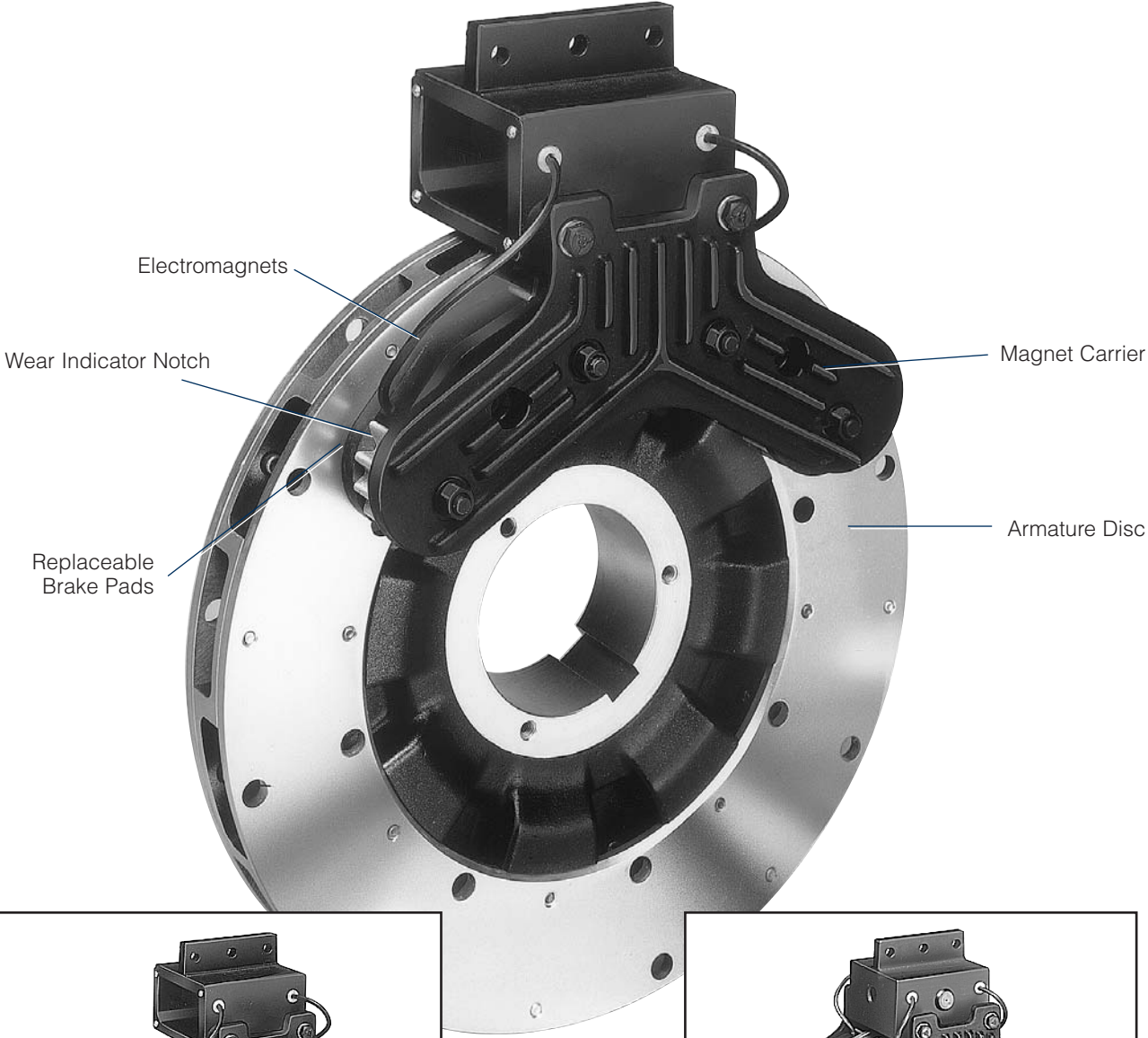
Simple. Powerful. Controllable.

The electromagnetic principle, as applied to the Electro Disc tension brake, results in a brake design that features outstanding control from zero torque to the maximum limits of the brake. Complex moving parts are eliminated.

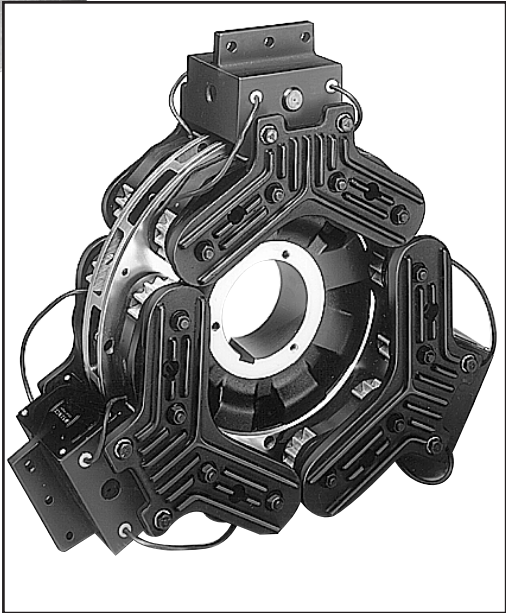
Smooth Operation with Minimal Maintenance

The friction pads are made of a unique composite of asbestos-free friction materials specially designed to produce smooth, powerful, yet quiet engagement between the magnet and armature discs. Since the replaceable friction pads and armature disc are the only parts which receive regular wear, the electromagnets can be reused indefinitely. An indicator notch on the friction pad, as well as an optional electric wear indicator, makes routine checking for remaining wear life quick and easy.

MTB-II ... the second generation



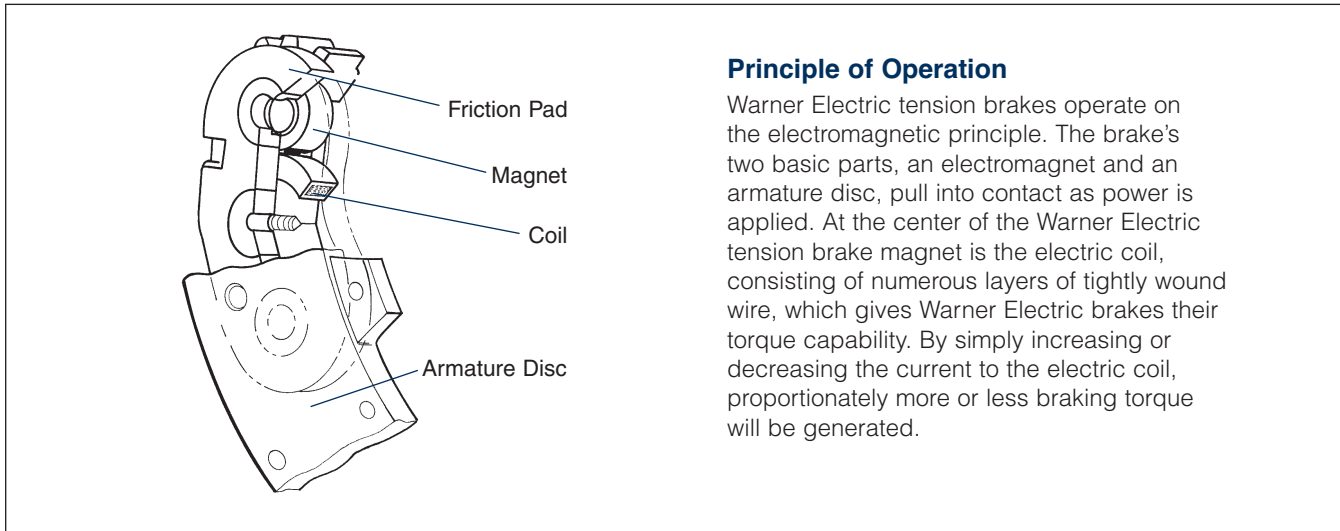
Single disc, 2 magnets



Dual disc, 12 magnets

Electric Brakes

MTB Series – Modular Tension Brakes



MTB-II...The Second Generation

The ED magnet has been redesigned following years of engineering tests and evaluation. The result is a unique, patent pending design providing more than double the life of the previous Electro Disc brakes ... without any loss in smoothness or controllability.



New armature design

New aluminum armature carriers for 10", 13" and 15" systems provide inertial reduction up to 40%, allowing improved tension control as high speed machines accelerate to core. The radial blower design improves air flow and cooling. Systems run cooler and last longer.



New friction system

The friction system features three important benefits:

- A new, long wearing friction pad material.
- A new, improved balance between the wear rate of the magnetic poles and the friction material.
- A replaceable face friction pad for fast, easy maintenance.

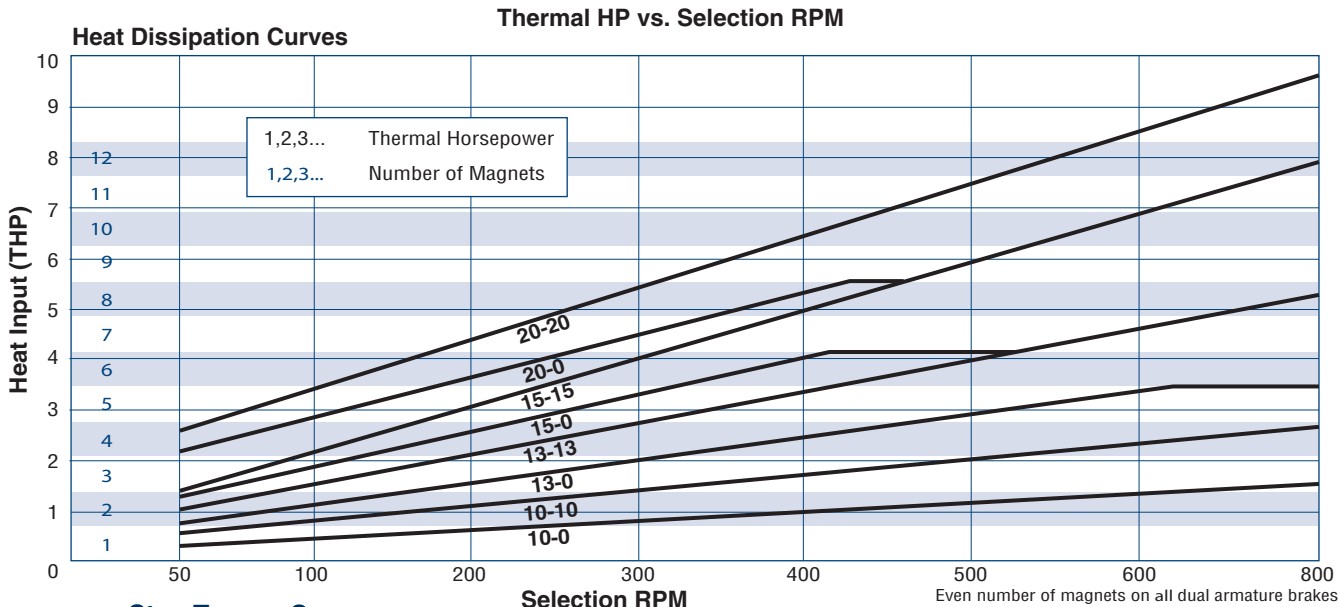
New pole geometry

The geometry of the magnetic poles has been redesigned (Patent Pending) to minimize the "leading edge wear" common to all pin mounted friction brakes. Magnet mounting holes do not extend through the face for freer, axial movement.



New electronic wear indicator option

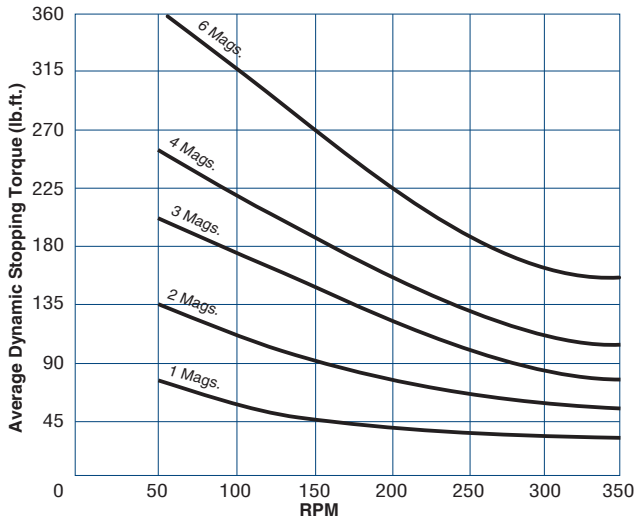
An optional, electronic wear indicator is imbedded into the magnets to aid in planning maintenance requirements. An indicator on the Warner Electric control illuminates at the point where 15% of brake life still remains.



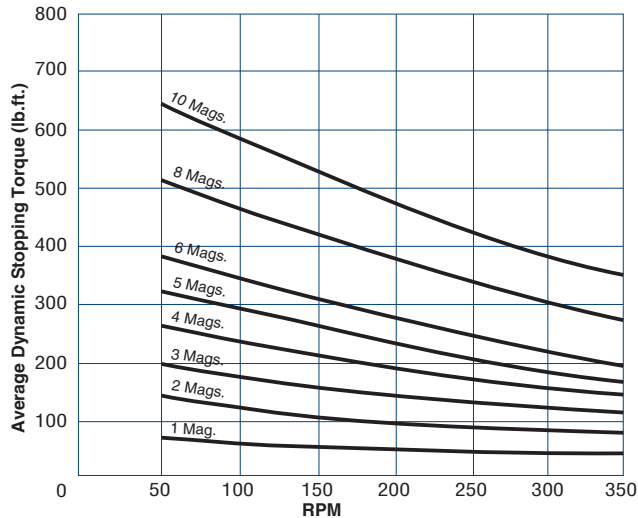
Emergency Stop Torque Curves

Note: The following curves are for emergency stop torques. For normal running dynamic torque, multiply the emergency stop torque value by .54.

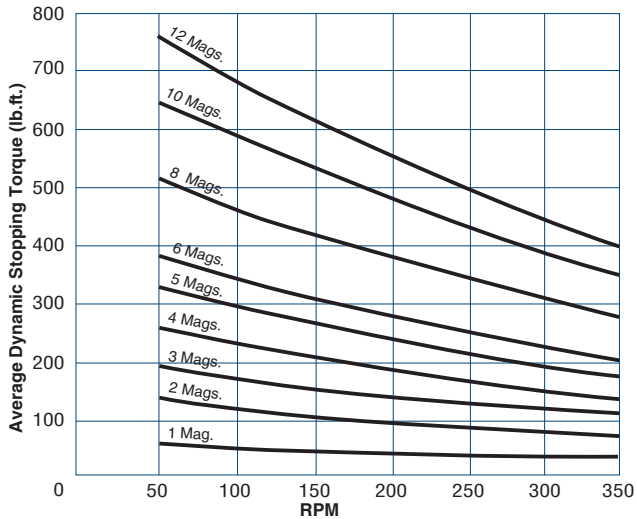
Electro Disc – 10"*



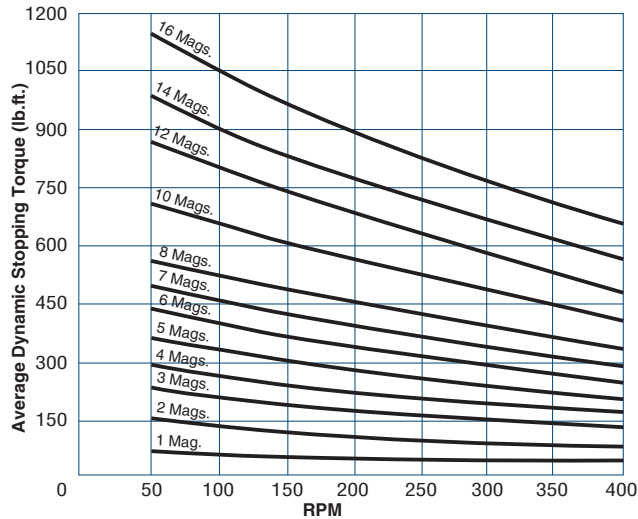
Electro Disc – 13"*



Electro Disc – 15"*



Electro Disc – 20"*



* MTB II Dynamic Torques at 500 mA per magnet, available from TCS series controls during emergency stop.

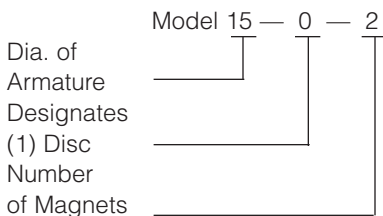
Electric Brakes

MTB Series – Modular Tension Brakes

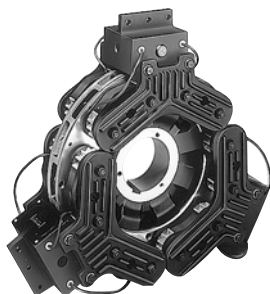
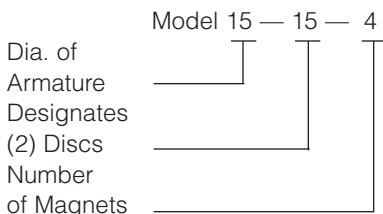
Model number designation



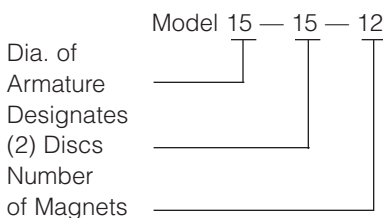
Single Disc, 2 Magnets



Dual Discs, 4 Magnets



Dual Discs, 12 Magnets



Specifications

Model	No. of Discs	No. of Magnets	Resistance @20°C Ohms ¹	Current Amps	Watts ¹	Max. Allowable Disc Speed RPM
10-0-1	1	1	69.10	0.35	8.33	3600
10-0-2	1	2	34.55	0.69	16.67	3600
10-0-3	1	3	23.03	1.04	25.01	3600
10-10-2	2	2	34.55	0.69	16.67	3600
10-10-4	2	4	17.28	1.39	33.33	3600
10-10-6	2	6	11.52	2.08	50.0	3600
13-0-1	1	1	69.10	0.35	8.33	2500
13-0-2	1	2	34.55	0.69	16.67	2500
13-0-3	1	3	23.03	1.04	25.01	2500
13-0-4	1	4	17.28	1.39	33.33	2500
13-0-5	1	5	13.82	1.74	41.68	2500
13-13-2	2	2	34.55	0.69	16.67	2500
13-13-4	2	4	17.28	1.39	33.33	2500
13-13-6	2	6	11.52	2.08	50.0	2500
13-13-8	2	8	8.64	2.78	66.67	2500
13-13-10	2	10	6.91	3.47	83.36	2500
15-0-1	1	1	69.10	0.35	8.33	2500
15-0-2	1	2	34.55	0.69	16.67	2500
15-0-3	1	3	23.03	1.04	25.01	2500
15-0-4	1	4	17.28	1.39	33.33	2500
15-0-5	1	5	13.82	1.74	41.68	2500
15-0-6	1	6	11.52	2.08	50.0	2500
15-15-2	2	2	34.55	0.69	16.67	2500
15-15-4	2	4	17.28	1.39	33.33	2500
15-15-6	2	6	11.52	2.08	50.0	2500
15-15-8	2	8	8.64	2.78	66.67	2500
15-15-10	2	10	6.91	3.47	83.36	2500
15-15-12	2	12	5.76	4.17	100.0	2500
20-0-1	1	1	69.10	0.35	8.33	1600
20-0-2	1	2	34.55	0.69	16.67	1600
20-0-3	1	3	23.03	1.04	25.01	1600
20-0-4	1	4	17.28	1.39	33.33	1600
20-0-5	1	5	13.82	1.74	41.68	1600
20-0-6	1	6	11.52	2.08	50.0	1600
20-0-7	1	7	9.87	2.43	58.36	1600
20-0-8	1	8	8.64	2.78	66.67	1600
20-20-2	2	2	34.55	0.69	16.67	1600
20-20-4	2	4	17.28	1.39	33.3	1600
20-20-6	2	6	11.52	2.08	50.0	1600
20-20-8	2	8	8.64	2.78	66.67	1600
20-20-10	2	10	6.91	3.47	83.36	1600
20-20-12	2	12	5.76	4.17	100.0	1600
20-20-14	2	14	4.94	4.86	116.60	1600
20-20-16	2	16	4.32	5.56	133.33	1600

Notes: 1. Electrical data based on magnets connected in parallel.

Armature Data

Brake Size	No. of Armatures	Total Brake Inertia (lb.ft. ²)	Armature and Hub* Total Weight (lbs.)
10"	1	0.9	9.4
	2	1.4	14.6
13"	1	2.9	16.6
	2	4.6	25.0
15"	1	4.6	22.3
	2	7.5	32.5
20"	1	20.0	70.0
	2	36.0	105.0

*Armature, hub and bushing rotate

Torque Ratings per Magnet

Brake Size	Dynamic Torque* (lb.ft.)	Drag Torque (lb.ft.)	E-Stop** (lb.ft.)
10"	28.5	.21	62
13"	30	.32	64
15"	33	.37	65
20"	37	.51	70

* Per magnet @ 50 rpm; 270 ma coil current

** Per magnet @ 50 rpm; 500 ma coil current

Modular Design ... tailored to meet your requirements

To select the proper size Electro Disc tension brake, it is important to understand that the brakes are fully modular. This feature enables matching requirements for heat dissipation and emergency stopping torque to the tension brake configuration that optimizes these features.

Selection

The easy-to-use selection charts on page 89 specifies a particular modular combination as listed in the accompanying chart. (See page 90 for selection of basic tension brakes.)

Determining two factors are all that's required.

1. Diameter
Basically heat dissipation capacity is directly proportional to the diameter of the disc.
2. Number of magnets
Torque capacity is proportional to the number of magnets. See page 89 for torque and heat dissipation sizing to meet the specific requirements of your application.

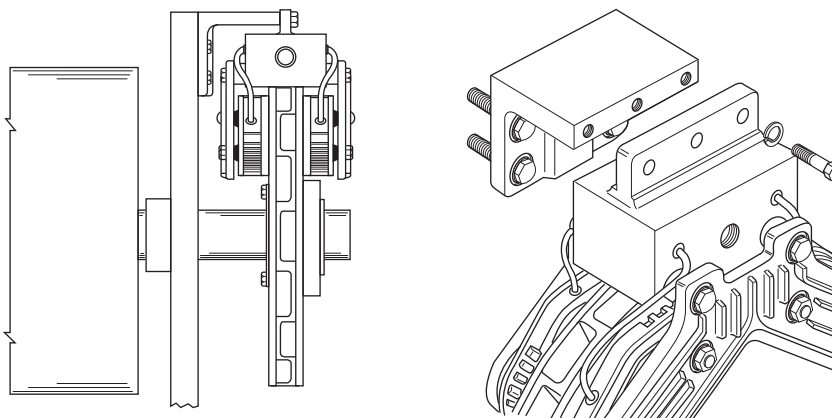
Mounting Configurations

Flexible Mounting

Thrust bearings, side loading, and special supports are a thing of the past!

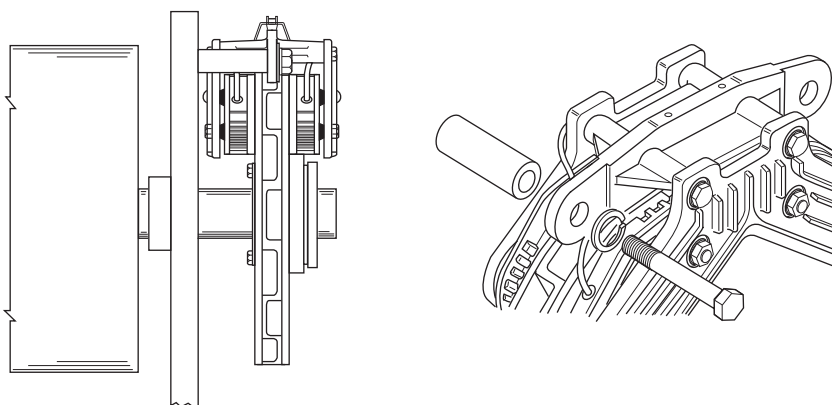
Universal Mounting Bracket

With addition of a simple "L" shaped bracket (Customer supplied), the universal mount provides a perfectly easy retrofit on older machines.



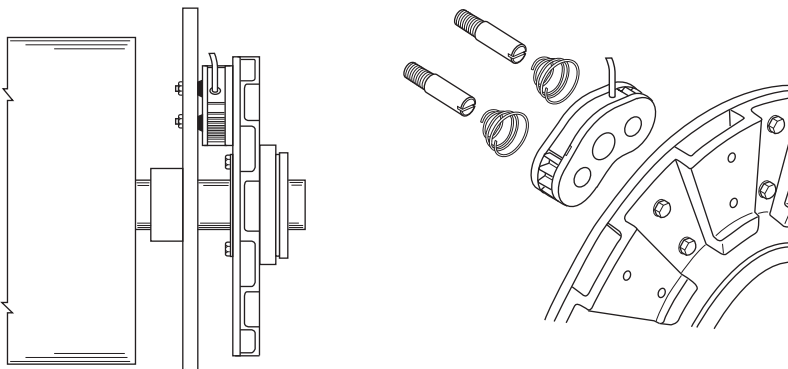
Bulk Head Mounting Bracket

Use of the bulkhead mount reduces the overall diameter to allow mounting in more constricted or enclosed locations.



Direct (Free) Mounting

For the Machine Builder or retrofitter, the free mount provides the simplest, least expensive option with low profile and diameter advantages. Mounting directly to the side frame of the machine offers all support necessary for performance requirements.

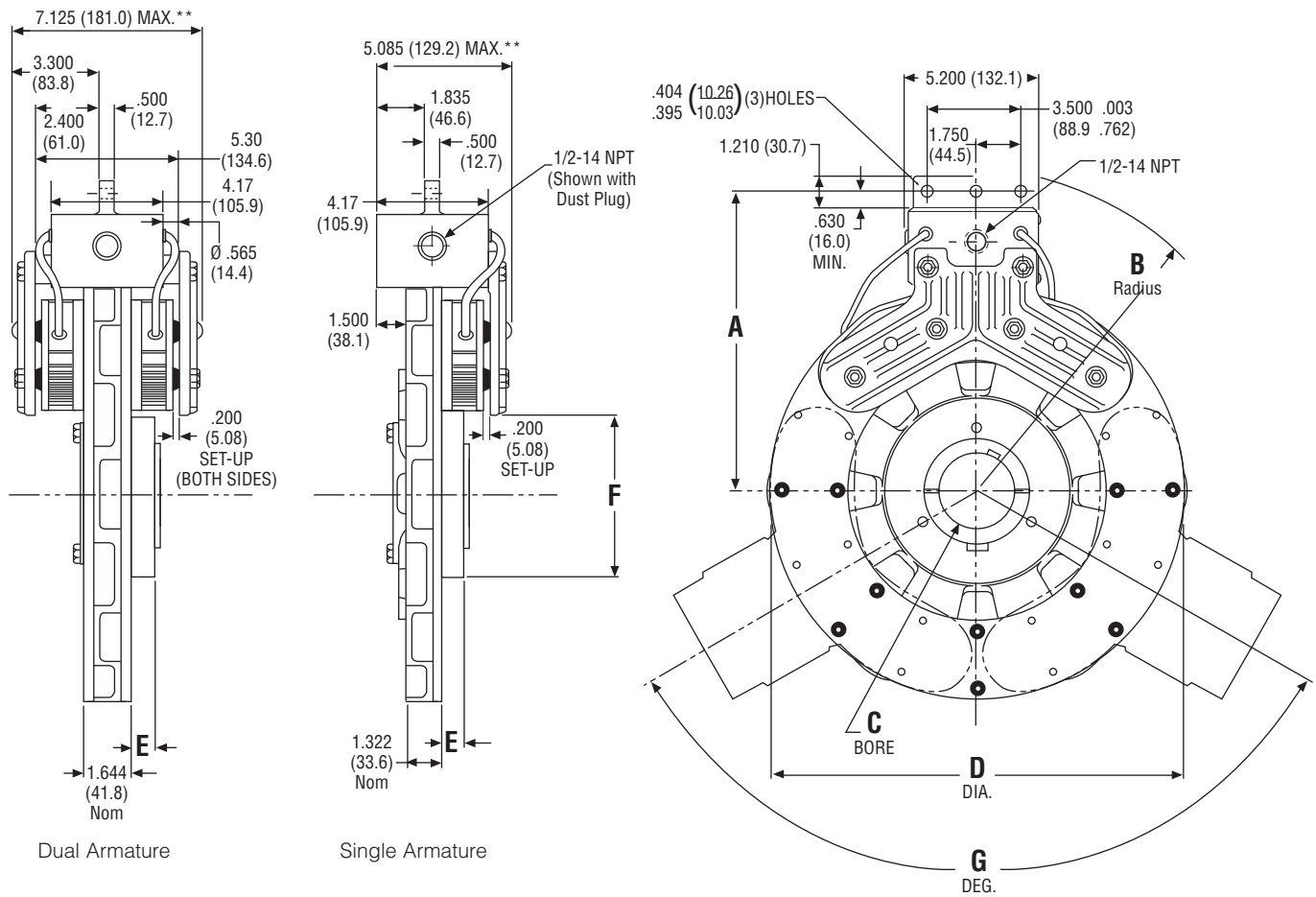


Electric Brakes

MTB Series – Modular Tension Brakes

MTB-II Dimensions

... with Universal Mounting Brackets



inches (mm)

Armature Size	A	B Max.	C BORE			D Max.	E Max.	F Max.	G Degree
			Stock*	Bushing	Browning				
10"	8.625 ± .020 (219.0 ± 0.5)	9.500 (241.3)	1.750 (44.45)	.500–1.750 (14.0–42.0)	P-1	10.020 (254.5)	.479 (12.2)	3.550 (88.9)	180
13"	10.187 ± .020 (258.7 ± 0.5)	11.000 (279.4)	3.375 (85.73)	1.125–3.750 (28.0–95.0)	R-1	13.520 (343.4)	1.219 (31.0)	5.687 (144.4)	108 & 144
15"	11.125 ± .020 (282.6 ± 0.5)	12.000 (304.8)	3.375 (85.73)	1.125–3.750 (28.0–95.0)	R-1	15.325 (389.3)	1.219 (31.0)	6.875 (174.6)	120
20"	13.470 ± .020 (340.4 ± 0.5)	14.250 (362.0)	—	2.375–5.500 —	U-0	20.020 (508.5)	2.720 (69.1)	4.380 (111.3)	—

* Stock bore is straight bore for use with Trantorque bushing.

For replacement parts list and exploded view drawing, see page 96.

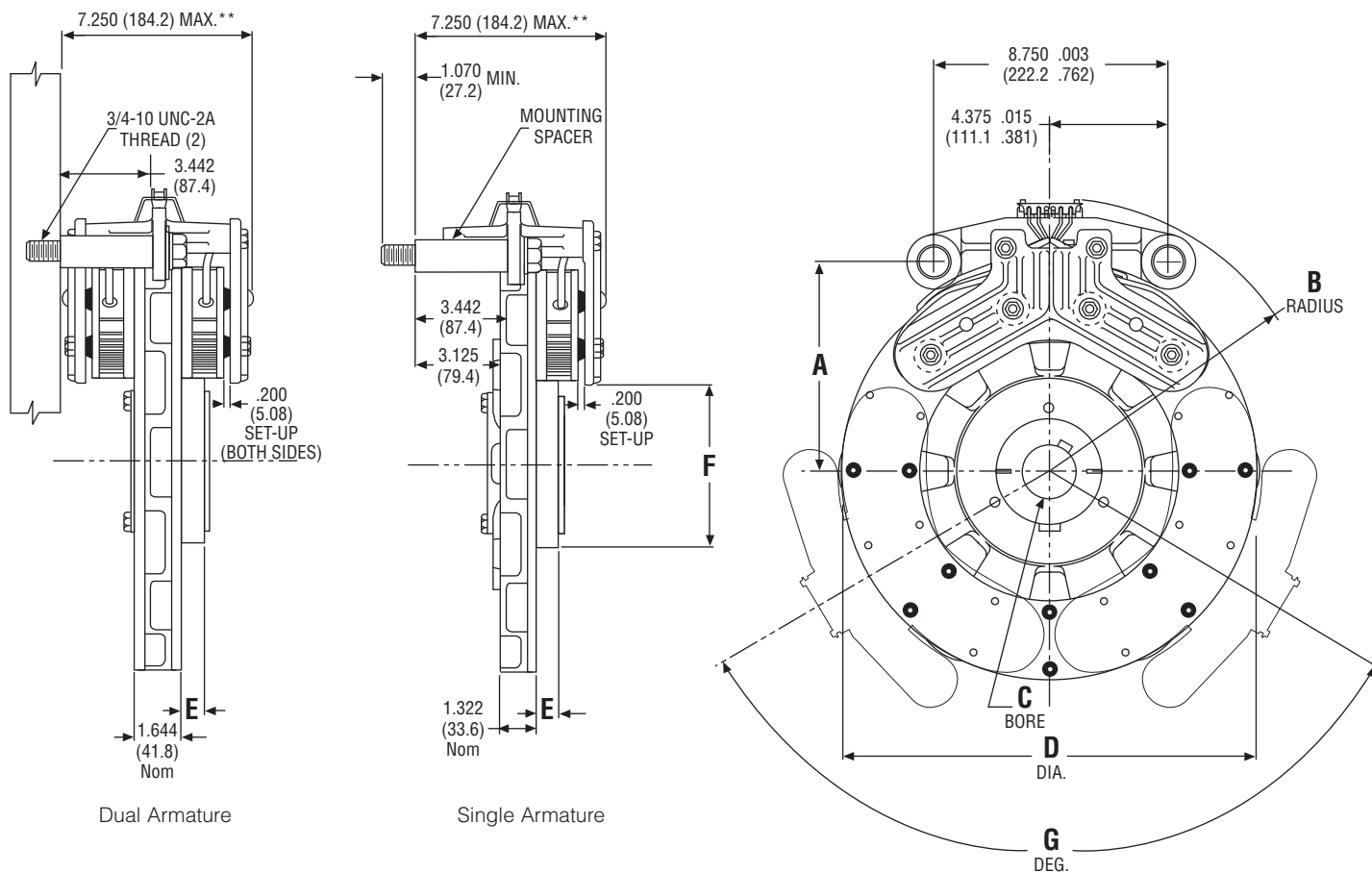
** Width dimension is the same for single or dual magnet carriers. (Dual magnet carrier shown.)

Consult factory for dimensional information on MTB-I.

Note: All dimensions are nominal unless otherwise noted.

MTB-II Dimensions

... with Bulk Head Mounting Brackets



inches (mm)

Armature Size	A	B Max.	C BORE			D Max.	E Max.	F Max.	G Degree
			Stock*	Bushing	Browning				
10"	5.260 ± .020 (133.6 ± 0.5)	7.750 (196.9)	1.750 (44.45)	.500–1.750 (14.0–42.0)	P-1	10.020 (254.5)	.479 (12.2)	3.55 (88.9)	180
13"	6.822 ± .020 (173.3 ± 0.5)	9.300 (236.2)	3.375 (85.73)	1.125–3.750 (28.0–95.0)	R-1	13.520 (343.4)	1.219 (31.0)	5.687 (144.4)	108 & 144
15"	7.760 ± .020 (197.1 ± 0.5)	10.230 (259.9)	3.375 (85.73)	1.125–3.750 (28.0–95.0)	R-1	15.325 (389.3)	1.219 (31.0)	6.875 (174.6)	120
20"	10.250 ± .020 (260.4 ± 0.5)	12.500 (317.5)	—	2.375–5.500 —	U-0	20.020 (508.5)	2.720 (69.1)	4.380 (111.3)	—

* Stock bore is straight bore for use with Trantorque bushing.

For replacement parts list and exploded view drawing, see page 96.

** Width dimension is the same for single or dual magnet carriers. (Dual magnet carrier shown.)

Consult factory for dimensional information on MTB-I.

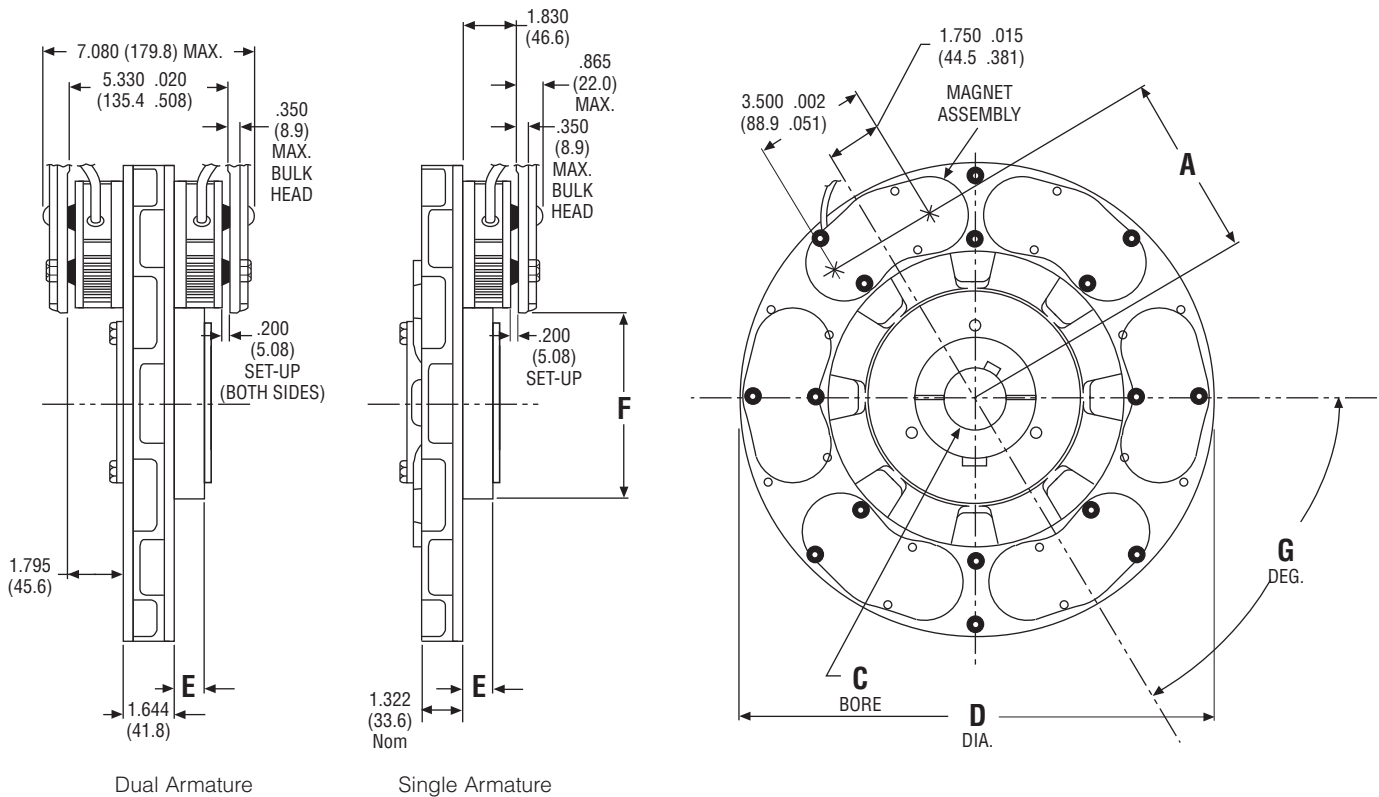
Note: All dimensions are nominal unless otherwise noted.

Electric Brakes

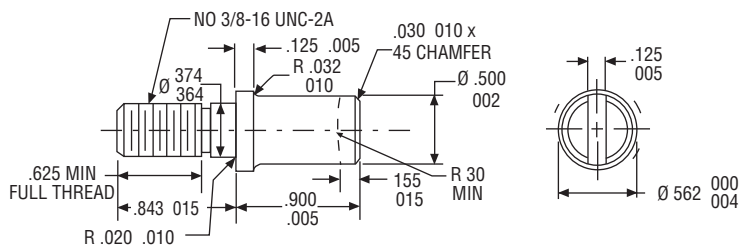
MTB Series – Modular Tension Brakes

MTB-II Dimensions

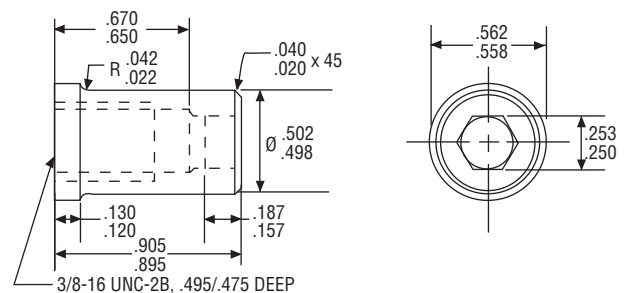
... with Direct Mounting



Male Pins



Female Pins



inches (mm)

Armature Size	A	C BORE			D Max.	E Max.	F Max.	G Degree
		Stock*	Bushing	Browning				
10"	3.350 ± .020 (85.1 ± 0.5)	1.750 (44.45)	.500–1.750 (14.0–42.0)	P-1	10.020 (254.5)	.479 (12.2)	3.550 (88.9)	120
13"	5.215 ± .020 (132.5 ± 0.5)	3.375 (85.73)	1.125–3.750 (28.0–95.0)	R-1	13.520 (343.4)	1.219 (31.0)	5.687 (144.4)	72
15"	5.850 ± .020 (148.6 ± 0.5)	3.375 (85.73)	1.125–3.750 (28.0–95.0)	R-1	15.325 (389.3)	1.219 (31.0)	6.875 (174.6)	60
20"	8.125 ± .040 (206.4 ± 1.0)	—	2.375–5.500 —	U-0	20.020 (508.5)	2.720 (69.1)	—	—

* Stock bore is straight bore for use with Trantorque bushing.
For replacement parts list and exploded view drawing, see page 96.
Consult factory for dimensional information on MTB-I.

Note: All dimensions are nominal unless otherwise noted.

Retrofit/Upgrade of MTB to MTB-II

New MTB-II magnets and armature carriers are designed to easily retrofit and upgrade existing MTB applications.

MTB Magnet Weight
3 lb. 4.5 oz. each Magnet

1. **Magnets only** – Existing applications can extend the life of the friction system by installing MTB-II components.

If presently using... MTB MAGNETS

Magnet 5216-631-004

that should go with...

Magnet Carriers

Dual 10" 5216-295-002
13" None
15" & 20" 5216-295-001
Single All 5216-295-003

OR (if Free Mounting)...

Free Mount Pins 5216-101-010
5216-101-008

Upgrade with... MTB-II MAGNETS

Standard Magnet 5216-631-010
or
Magnet with electronic wear indicator 5216-631-009

that should go with...

Dual 10" 5216-295-005
13" 5216-295-006
15" & 20" 5216-295-007
Single All 5216-295-004

OR (if Free Mounting)...

Free Mount Pins 5216-101-029
5216-101-030



Note: a) The same number of magnets should be used unless additional considerations exist (consult factory).
b) MTB-II Free Mount Pins (5216-101-029) may replace the pins in the MTB carriers to convert them into MTB-II carriers.

2. **Aluminum Armature Carriers** – Existing applications may be upgraded to aluminum armature carriers with the benefit of reducing armature inertia. This may be done with or without upgrading the magnets.

If presently using... MTB ARMATURE & HUB

10" Armature 5216-111-001

that should go with...

10" Hub 540-0842

15" Armature 5216-111-003

that should go with...

15" Hub 540-1382

Upgrade with... MTB-II ARMATURE & CARRIER

10" Armature 5216-101-025

that should go with...

Tapered Bore Carrier 295-0021
OR
Straight Bore Carrier 295-0026

15" Armature 5216-101-024

that should go with...

Tapered Bore Carrier 295-0019
OR
Straight Bore Carrier 295-0028

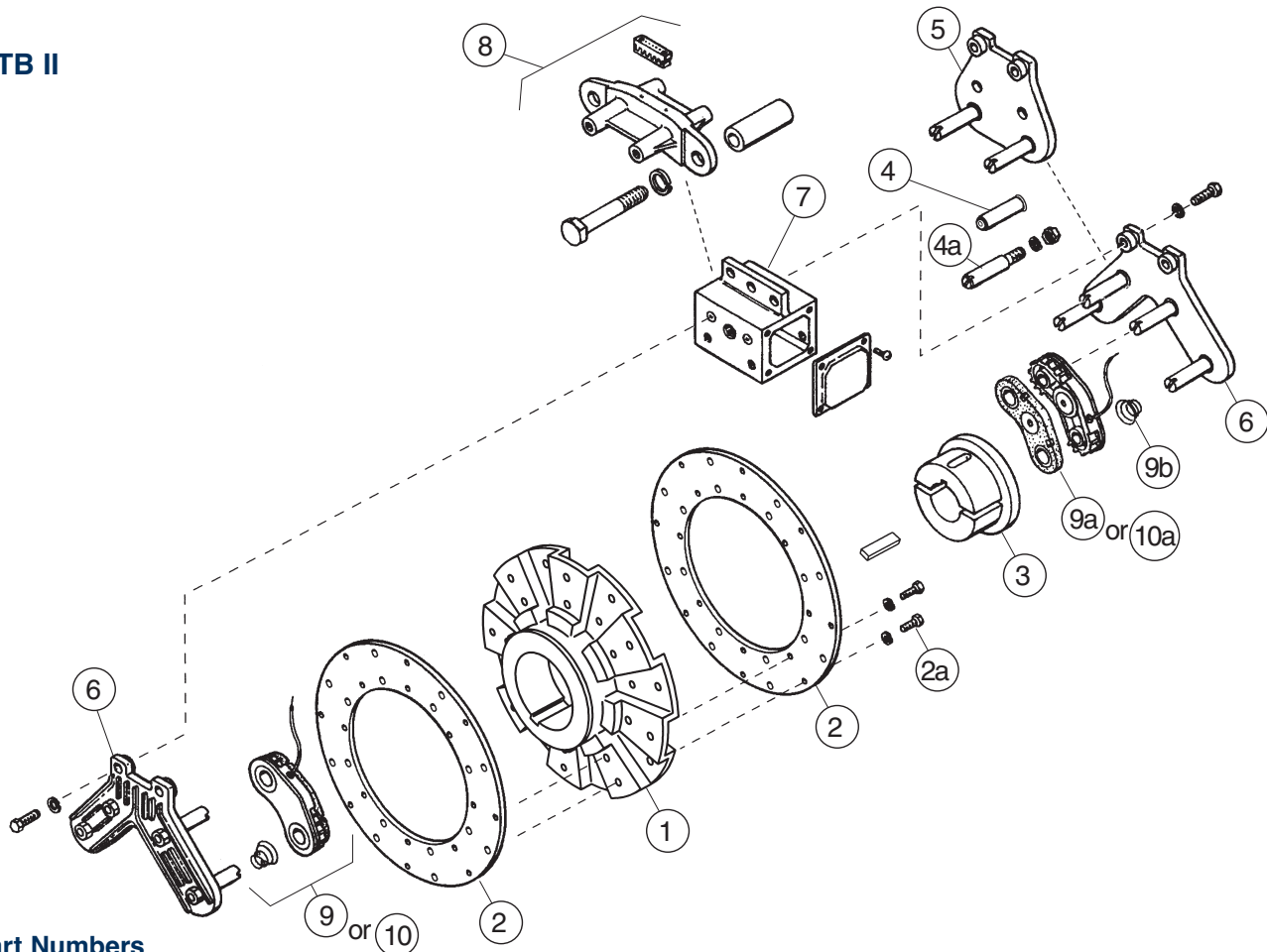


Note: Due to the orientation of the tapered bore in the integral hub of the MTB-II armature carrier, some existing MTB applications may not readily retrofit to the new assembly (consult factory).

Brake Assemblies and Part Numbers

MTB Series – Modular Tension Brakes

MTB II



Part Numbers

Item Description	10" Armature	13" Armature	15" Armature	20" Armature*
Armatures				
1 Armature Carrier (Bushing Enters from Flush Side of Carrier as Shown)	295-0021	295-0023	295-0019	—
Armature Carrier Reverse Taper (Bushing Enters from Extended Side of Carrier)	295-0031	295-0030	295-0029	—
Armature Carrier (Straight Bore)	295-0026	295-0027	295-0028	—
2 Armature (Replaceable Face)	5216-101-025	5216-101-026	5216-101-024	—
2a Armature Mounting Accessory (Included with Armature)	5216-101-023	5216-101-023	5216-101-023	—
3 Bushing (Customer Supplied) Taper Bore	Browning P1	Browning R1	Browning R1	—
	Straight Bore			Use Trantorque. Consult Warner Electric
4 Female Pin Kit (Includes 2 Pins)	5216-101-030	5216-101-030	5216-101-030	5216-101-030
4a Male Pin Kit (Includes 2 Pins with Nuts and Lockwashers)	5216-101-029	5216-101-029	5216-101-029	5216-101-029
Magnet Carriers				
5 Single Magnet Carrier Assembly	5216-295-004	5216-295-004	5216-295-004	5216-295-004
6 Dual Magnet Carrier Assembly	5216-295-005	5216-295-006	5216-295-007	5216-295-007
Carrier Brackets				
7 Universal Mounting Bracket, Series 10-0, 13-0, & 20-0 (2)	5216-101-020	5216-101-020	5216-101-020	5216-101-020
Universal Mounting Bracket, Series 10-10, 13-13, & 20-20 (2)	5216-101-021	5216-101-021	5216-101-021	5216-101-021
8 Bulk Head Mounting Bracket (3)	5216-101-022	5216-101-022	5216-101-022	5216-101-022
Magnets				
9 Magnet Assembly, Standard	5216-631-010	5216-631-010	5216-631-010	5216-631-010
Magnetic Assembly, HICO	5216-631-013	5216-631-013	5216-631-013	5216-631-013
9a Friction Pad, Standard (Replacement Part Only)	5216-101-028	5216-101-028	5216-101-028	5216-101-028
Friction Pad, HICO (4)	5216-101-031	5216-101-031	5216-101-031	5216-101-031
9b Preload Spring (1) (Included with Magnets)	808-0008	808-0008	808-0008	808-0008
10 Magnet Assembly with Wear Indicator	5216-631-009	5216-631-009	5216-631-009	5216-631-009
10a Friction Pad with Wear Indicator (Replacement Part Only)	5216-101-027	5216-101-027	5216-101-027	5216-101-027

(1) Two of each required for each brake magnet.

(2) Includes magnet carrier (4 & 5) mounting hardware.

(3) Includes magnet mounting hardware, bracket mounting bolts and spacers.

(4) HICO friction pads can be identified by orange paint mark near wear notch.

* 20" armature components – see page 97.

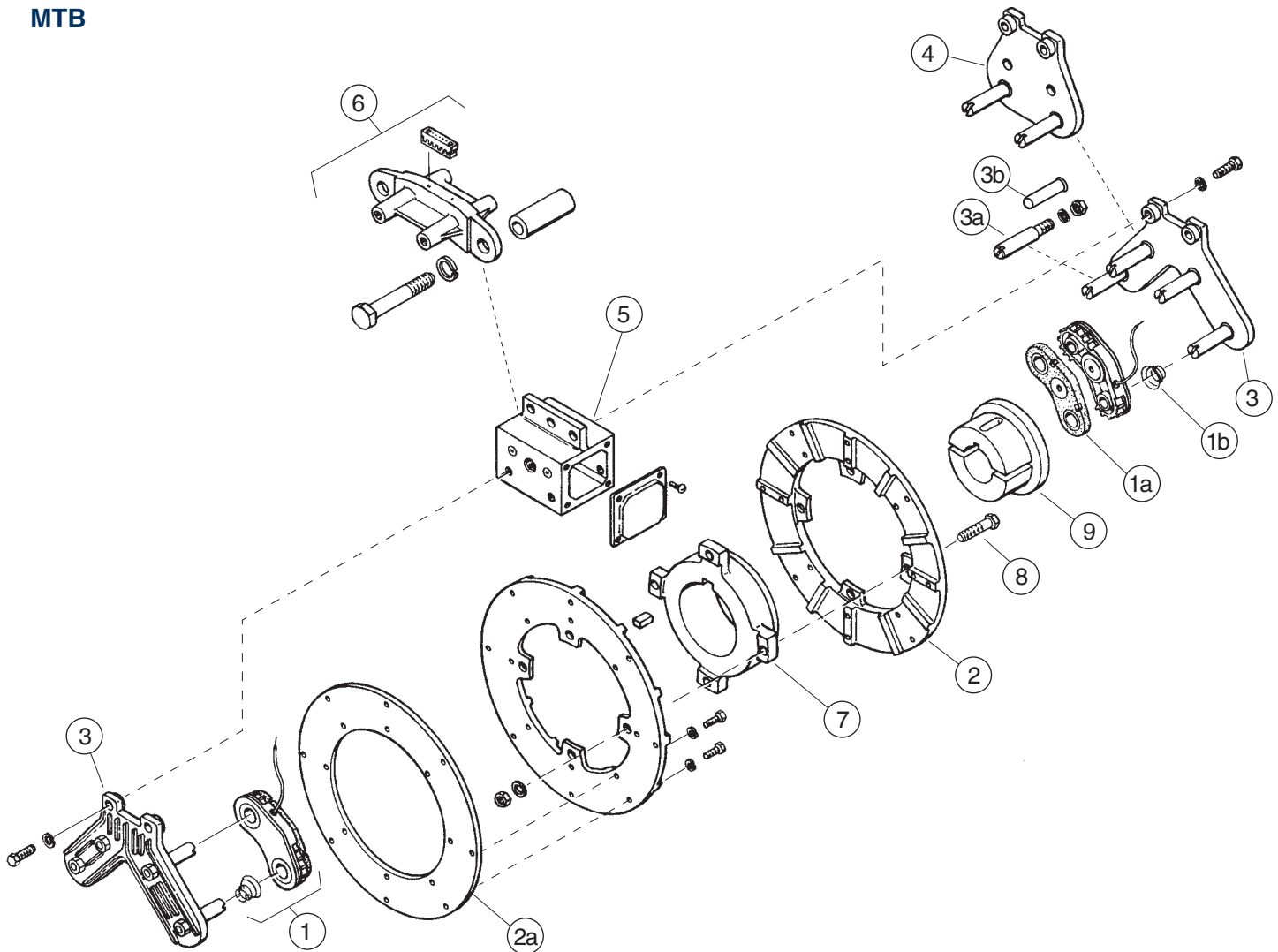
Browning is a registered trademark of Emerson Electric Co.

Trantorque is a registered trademark of Trantorque Corporation.

Brake Assemblies and Part Numbers

MTB Series – Modular Tension Brakes

MTB



Part Numbers

Item	Description	10" Armature	15" Armature	20" Armature
1	Magnet Assembly	5216-631-004	5216-631-004	5216-631-004
1a	Friction Pad (Replacement Part Only)	5216-101-003	5216-101-003	5216-101-003
1b	Preload Spring	808-0008	808-0008	808-0008
2	Armature (Replaceable Face & Carrier)	5216-111-001	5216-111-003	5216-111-004
2a	Steel Replacement Face	5216-101-012	5216-101-011	5216-101-013
3	Dual Magnet Carrier Assembly	5216-295-002	5216-295-001	5216-295-001
3a	Male Pin Only (Includes Nut & Lockwasher)	5216-101-010	5216-101-010	5216-101-010
3b	Female Pin Kit	5216-101-008	5216-101-008	5216-101-008
4	Single Magnet Carrier Assembly	5216-295-003	5216-295-003	5216-295-003
5	Series 10-0, 15-0, & 20-0 Universal Mounting Bracket (2)	5216-101-020	5216-101-020	5216-101-020
	Series 10-10, 15-15, & 20-20 Universal Mounting Bracket (2)	5216-101-021	5216-101-021	5216-101-021
6	Bulk Head Mounting Bracket (3)	5216-101-022	5216-101-022	5216-101-022
7	Hub	540-0842	540-1382	540-1399
8	Series 10-0, 15-0, & 20-0 Armature Mounting Accessory	5216-101-004	5216-101-004	5216-101-018
	Series 10-10, 15-15, & 20-20 Armature Mounting Accessory	5216-101-005	5216-101-005	5216-101-019
9	Bushing (Customer Supplies)	Browning Type P-1	Browning Type R-1	Browning Type U-0

(1) Two of each required for each brake magnet.

(2) Includes magnet carrier (3 & 4) mounting hardware.

(3) Includes magnet mounting hardware, bracket mounting bolts and spacers.

Browning is a registered trademark of Emerson Electric Co.