

Tension Brakes and Clutches

Selection Guide






Selection Guide

Selecting the proper clutch or brake starts with collecting the appropriate data. See the data form on page 13. Once the data is collected, go through the various calculations for thermal and torque requirements. Examples are on pages 16-28. At this point, a general selection can be made from these two pages. Then go to the applicable page for further details on the unit such as mounting considerations and dimensions.

Finally, a control system must be chosen – several factors will influence this choice, such as degree of accuracy required (open vs. closed loop), physical restraints in the machine (dancer or load cell). Go to the controls section on page 44 for full specifications and details on these various controls systems.

Once control system is selected, determination of dancer, load cell, or analog system can be made. Dancer design considerations can be found on pages 33-37. Load cell design considerations and sizing can be found on pages 38-43.

You are now well on the way to specifying the best tension control system available.





	Product	Description and most suitable applications
Electric	TB Series  Brakes	Basic Tension Brakes Single disc friction electromagnetic brake. Operates with any Warner 24V or 90V control. Very economical. Excellent life when properly sized.
	ATT Series  Brakes & Clutches	Advanced Technology Brakes & Clutches The tension version of the popular Warner Electric Advanced Technology clutches and brakes. Economical and easy to install. The clutch has an easily adaptable pulley mounting. Operated by full family of Warner Electric tension controls, 24V and 90V.
	MTB Series  Brakes	Modular Tension Brakes Single or double disc electromagnetic brake uses multiple pucks for precise selection of torque range. Unique design provides up to double normal operating torque for E-stops. Works with all Warner Electric 24V tension controls.
	M Series  Brakes & Clutches	Permanent Magnet Brakes & Clutches These units can be used as either clutch or brakes. They operate with permanent magnets, thereby requiring no external power source. Very accurate torque control is manually adjustable.
	Magnetic Particle  Brakes & Clutches	Magnetic Particle Brakes & Clutches Very precise torque control in an enclosed unit that does not have friction discs, but employs magnetically charged powder that varies torque according to current. Works with all Warner Electric 24V tension controls.

Heat Transfer Capacity

Dynamic Torque Rating	Continuous Operation	On-Off Operation	Typical Applications and Comments	Page No.
0.50–256 lb.ft.	.02–1.1 HP	.03–2.12 HP	Narrow to medium width web machines such as business forms presses. Also good on wire pay-offs. A low-cost alternative in many applications.	72
7–62 lb.ft. Up to 83 lb.ft. with overcurrent	.3 to .9 HP	—	Light tension on narrow web paper or plastic film, such as bag making machines and printing presses. Clutch provides a good, economical solution on many winders.	78
0.21–592 lb.ft. Up to 1,120 lb.ft. with overcurrent	.25–2.75 HP	—	The work horse of the brake line. Wide dynamic torque range. Good for business forms presses, wire pay-offs, slitters, coaters. Excellent choice for closed loop as well as open loop systems.	86
0–65 lb.in.	3-150 watts	—	Excellent problem solver for difficult light tension applications. Particularly good for nip-roll control where diameter compensation is not required. Perfect solution for wire braiders and twisters where pay-off is spinning. No control required.	98
.17–578 lb.ft.	10-400 watts	—	Excellent solution where wear particles of friction disc units cause a problem. Very precise torque regulation. Will operate with great accuracy at lower speeds than friction disc units. Staying within thermal capacity is critical for long life.	106

Tension Brakes and Clutches

Selection Guide

	Product	Description and most suitable applications
Pneumatic	Mistral  Brakes	Pneumatic Brakes The Mistral combines high thermal capacity with a rugged, easy-to-maintain design. No guard is required. Both open and closed loop controls available. Optional cooling fan increases heat dissipation.
	Magnum  Brakes	Pneumatic Brakes High thermal capacity and easy to service this brake requires no guard. Optional fan increase thermal capacity. Easily controllable in both open and closed loop mode.
	AD Series  Brakes	Pneumatic Brakes Broad range of torque capacities accessible by selection of modular actuators. All control options are available.
	MODEVO  Brakes	Pneumatic Brakes Combination of high thermal capacity and broad range of torques through various selection of actuators and friction pads. Option for increase thermal capacities.

Heat Transfer Capacity (Continued)

Dynamic Torque Rating	Continuous Operation	On-Off Operation	Typical Applications and Comments	Page No.
5.2–1,328 lb.ft.	3.2–6.4 HP	3.5–7.0 HP	The brake of choice in the corrugator industry due to long life and ease of maintenance. Other converting industry applications apply equally.	130
0.16–1,180 lb.ft.	1.5–6.0 HP 4.0–22.0 HP w/forced air cooling	—	This brake is well accepted among converting equipment manufacturers worldwide. Slitters, coaters, and laminators are but a few of the many applications.	134
3.8–1,785 lb.ft.	1–3.2 HP 4–6.5 HP with optional blower	—	The multiple actuator selection possibilities make this an excellent choice for machines running a variety of materials on a wide range of tensions.	138
0.6–3,180 lb.ft.	1–17 HP 4–18 HP with optional blower	—	Compatibilities of various actuator and friction pad combinations allow for wide range of applications.	144