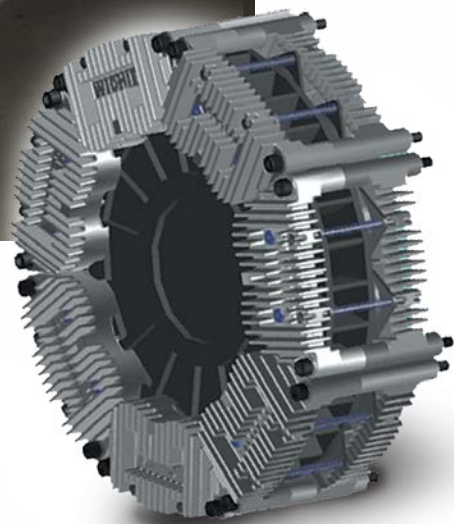




# ModEvo Tension Control Brake



 **Wichita Clutch**<sup>®</sup>  
Altra Industrial Motion

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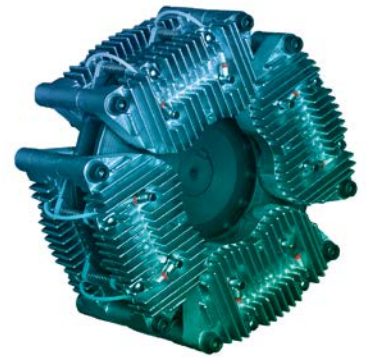


## ModEvo Tension Control Brake

### Versatile, cost-effective performance

The name for Wichita's ModEvo tension control brake is derived from 'modular' and 'evolutionary', terms that describe it perfectly. Modular - because braking systems to suit diverse tensioning applications can be assembled from a minimal number of modules common to the entire ModEvo range. Evolutionary - because continuous development of new materials, improved design and manufacturing techniques have enabled Wichita to develop ModEvo to match all customers' tension needs at affordable cost.

The advantages of the new ModEvo brake lie in the versatility of the modular system, ensuring that the requirements of a wide range of printing and converting unwind tension applications can be met from just a handful of parts common to the ModEvo range. This in turn brings cost benefits, as users can choose just the options they require and add to or upgrade these as their needs change, while carrying a minimum of spare parts.



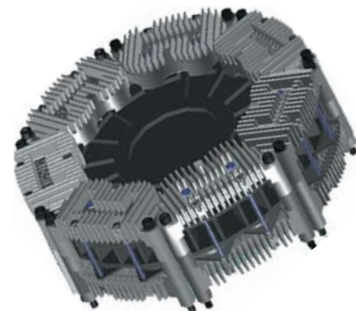
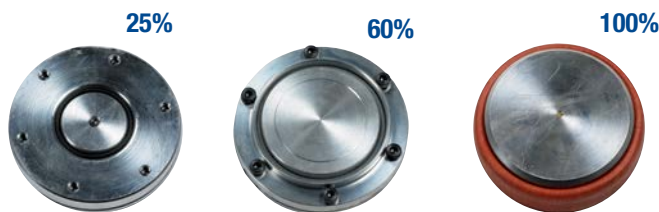
## Actuator Options

### More force, no loss of torque precision

Newly developed rolling diaphragm actuators are used in ModEvo, producing more force than previous designs to allow higher torque ratings. However, the sensitivity for which rolling diaphragms are favoured is not compromised.

Three actuator options are available, offering clamping forces of 100%, 60% or 25%.

The finned, die-cast aluminium brake module is common to all brake disc diameters. Each module uses two pairs of actuators, and allows friction pads to be changed quickly without dismantling the module.





## Brake Discs and Cooling

### Strong, light and efficient

The ModEvo brake disc was developed at the Bedford, UK factory using Finite Element Analysis techniques to ensure maximum strength with minimum weight. The design is optimised to make best use of the cooling air available at slow speeds, and being bi-directional, it achieves high heat dissipation capacity in either rotational direction, unlike some other brakes. An optional electric cooling fan is available where space is limited or more extreme heat handling is required. Available in five sizes: 250mm, 300mm, 350mm, 400mm and 450mm diameters, all discs are the same thickness and use the same brake modules and actuators. Each disc can be specified with a minimum of a single module, up to the maximum number of modules that can be fitted around the disc – 7 in the case of the 450mm disc. This allows torque handling capabilities ranging from a maximum of 1026 Nm (9080 lbf.in) for the 250mm disc, up to 4935 Nm (43650 lbf.in) for the 450mm disc.



ModEvo with fan installed



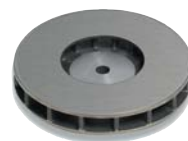
450mm



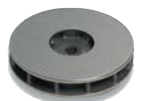
400mm



350mm

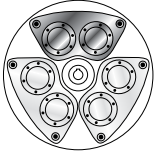
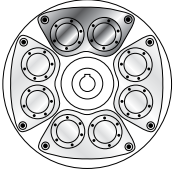
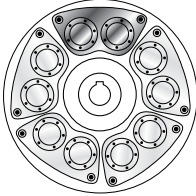
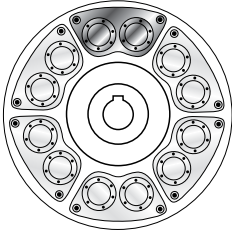
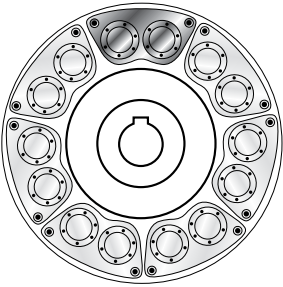


300mm

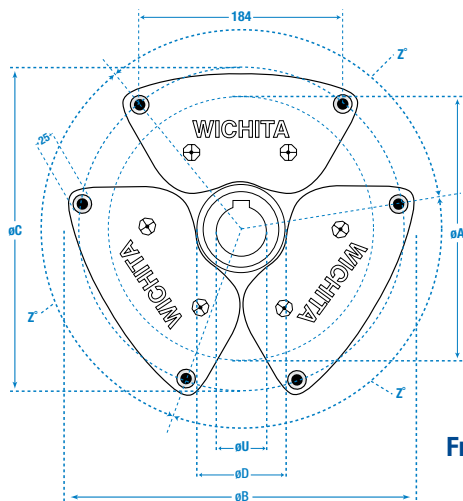


250mm

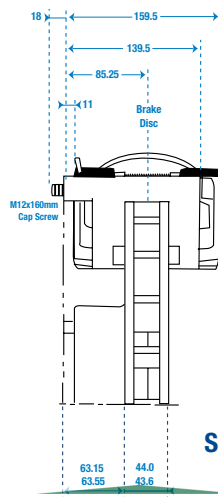
## Performance Charts

ModEvo	MODEL	Torque (Nm) Universal Friction		H		
		Min <sup>(1)</sup>	Max			
	ModEvo	0.2 bar	6 bar	50rpm	100rpm	
	250/1	4	119	1.2	1.4	
	250/2	8 (4)	238			
	250/4	16 (4)	477	3.4	3.5	
	250/6	24 (4)	715			
	300/1	5	149	2.1	2.4	
	300/2	10 (5)	298			
	300/4	20 (5)	595	5.0	5.0	
	300/6	30 (5)	893			
	350/2	12 (6)	361	2.8	3.1	
	350/4	24 (6)	723			
	350/6	36 (6)	1084	5.8	6.3	
	350/8	48 (6)	1445			
	400/2	14 (7)	426	3.2	3.8	
	400/4	28 (7)	852			
	400/6	43 (7)	1278	7.5	8.3	
	400/8	57 (7)	1704			
	400/10	71 (7)	2130	8.5	9.5	
	400/12	85 (7)	2556			
	450/2	16 (8)	491	3.4	4.3	
	450/4	33 (8)	981			
	450/6	49 (8)	1472	8.5	9.5	
	450/8	65 (8)	1963			
	450/10	82 (8)	2454	8.5	9.5	
	450/12	98 (8)	2945			
	450/14	115 (8)	3435			

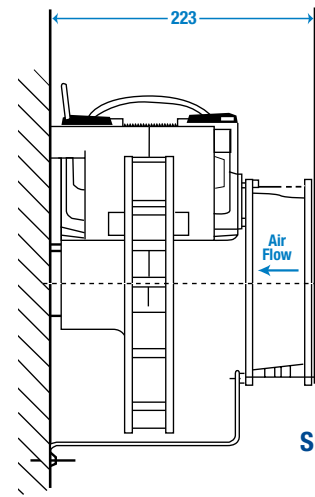
## Dimensions



Front View



Side View



Side View With Fan

Heat Capacity For Effective Cooling Speeds: kW					Max Speed rpm <sup>(2)</sup>	Inertia (J) kgm <sup>2</sup> Rotating Parts	Weight kg	
200rpm	300rpm	400rpm	500rpm	600rpm			Total	Rotating
No Fan					2250	0.060	12.4	8.7
1.9	2.4	2.7	3.0	3.2			13.2	
With Electric cooling fan							17.6	
3.8	4.0	4.0	4.0	4.0			22.1	
No Fan					1900	0.125	17.3	13.6
3.0	3.5	4.0	4.5	5.0			18.1	
With Electric cooling fan							22.5	
5.0	5.0	5.5	6.0	6.0			27.0	
No Fan					1650	0.23	24.8	20.3
4.2	4.8	5.5	6.6	7.2			29.2	
With Electric cooling fan							33.7	
6.5	6.5	6.5	6.5	6.5			38.2	
No Fan					1450	0.4	42.7	26.8
5.4	6.0	6.8	7.8	8.4			31.3	
With Electric cooling fan							35.7	
8.7	9.3	10.0	10.0	10.0			40.2	
No Fan					1250	0.61	44.7	33
6.1	7.0	7.8	9.2	10.0			49.2	
With Electric cooling fan							53.6	
10.0	10.8	11.6	12.5	13.3			37.5	
							41.9	
							46.4	
							50.9	
							55.4	
							59.8	
							64.3	

ModEvo Dimensions Table					
øA - Disc Size	250	300	350	400	450
øB - Overall	324	369	415	461	508
øC - Bolt P.C.D	298.5	343.5	389	435.5	482.5
øD - Clearance Dia.	90	140	190	240	290
U - As cast bore	25	25	25	25	25
Max. Bore	55	79	117	136	154
Z" - Angular Position	120°	90°	72°	60°	51.4°
Max. No. Of Brake Modules	3	4	5	6	7
Wichita. Generic	73125-000	73130-000	73141-000	73141-000	73145-000

- (1) Min torque listed is with standard friction coefficient. Values in (brackets) are with a single actuator.
- (2) Max speed is with standard brake disc. A high speed brake disc capable of 50% higher speed is also available. All torque values are obtained based on Wichita's new ModEvo Rolling Diaphragm Actuators. Smaller area (60% and 25%) rolling Diaphragm actuators are also available for lower torque requirements.

# Single Actuator ModEvo Tension Brake

## For lighter tension duties

The name “ModEvo” comes from Wichita’s ‘modular’ – ‘evolutionary’ design of tension brake. The original ModEvo tension brake was launched in 2000 and has been highly successful in the global tension market. Wichita is now happy to extend the successful ModEvo range to include the single actuator ModEvo. Designed for lighter tension duties, the single actuator unit is available with all of the same options as the dual acting unit. We believe it offers our customers even greater flexibility in their applications. With the added benefit of lower cost, we expect this unit to be a great success in the tension market, whilst maintaining the high Wichita quality standards.



## Performance

MODEL	Torque (Nm) universal friction		Heat Capacity For Effective Cooling Speeds: kW						Max Speed rpm <sup>(1)</sup>	Inertia (J) kgm <sup>2</sup> Rotating Parts	Weight kg		
	Min 0.2 bar	Max 6 bar	50rpm	100rpm	200rpm	300rpm	400rpm	500rpm			600rpm	Total	Rotating
250/1	4	119	No Fan						2250	0.060	12.0	10.0	
			1.2	1.4	1.9	2.4	2.5	2.5					2.5
			With Electric Cooling Fan (150 mm) <sup>(4)</sup>										
			2.8	2.8	2.8	2.8	2.8	2.8	2.8				
300/1	5	149	No Fan						1900	0.128	16.3	14.3	
			2.1	2.4	2.5	2.5	2.5	2.5					2.5
			With Electric Cooling Fan (150 mm) <sup>(4)</sup>										
			2.8	2.8	2.8	2.8	2.8	2.8	2.8				
350/1	6	180	No Fan						1650	0.226	23.3	21.3	
			2.5	2.5	2.5	2.5	2.5	2.5					2.5
			With Electric Cooling Fan (150 mm) <sup>(4)</sup>										
			2.8	2.8	2.8	2.8	2.8	2.8	2.8				
400/1	7	213	No Fan						1450	0.383	30.0	27.9	
			2.5	2.5	2.5	2.5	2.5	2.5					2.5
			With Electric Cooling Fan (200 mm) <sup>(4)</sup>										
			2.8	2.8	2.8	2.8	2.8	2.8	2.8				
450/1	8	245	No Fan						1250	0.587	36.6	34.6	
			2.5	2.5	2.5	2.5	2.5	2.5					2.5
			With Electric Cooling Fan (250 mm) <sup>(4)</sup>										
			2.8	2.8	2.8	2.8	2.8	2.8	2.8				

(1) Max speed is with standard brake disc. A high speed disc capable of 50% higher speed is available (derate heat by 10%)

All torque values are obtained based on Wichita’s new ModEvo Rolling Diaphragm Actuators  
Smaller area (60% and 25%) Rolling Diaphragm actuators are also available for lower torque requirements

Limit to 2.5 kw/ actuator (normal) or 2.8 kw/ actuator (fan cooled)

## Genuine Replacement Parts

### Longer Life

We have years of experience in building value into every Genuine Wichita Replacement Part. Our parts, made with quality materials and leading-edge technology, not only last longer than the competition, resulting in lower life cycle costs, they also fit precisely to give you the assurance of trouble-free performance. That's why we can confidently offer you the very best warranty in the business.

### Faster Delivery

To help you lessen downtime problems, we've recently established new methods and procedures that will get Genuine Replacement Parts to you quicker than ever before. We've improved order processing, increased manufacturing capacities and added to our nationwide network of distributors. Many of our parts can now be shipped within 24 hours of your order or are available off-the-shelf from your local distributor. You don't have to pay a premium price for all the product and service advantages of Genuine Wichita Replacement Parts. You'll find our prices to be very competitive with any of the companies offering imitation replacement parts.

### Warranty

When you specify Genuine Replacement Parts from Wichita you automatically expect more...and get more. Especially better performance, longer life and the peace of mind that comes with knowing you are working with the industry's proven leader. To further back up our quality commitment to you, we now offer a new three-year warranty on our line of replacement air tubes\*, and a two-year warranty on all other components\*\*. That's unmatched by anyone in our industry...and for good reason.

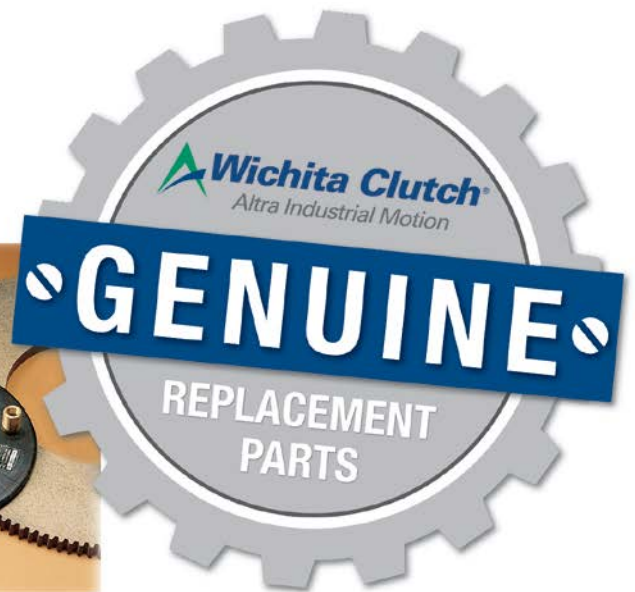
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- Wear resistance polymers insure compatibility with other Wichita parts
- Consistent size allows ease of replacement if required
- Low air volume construction reduces needless use of compressed air
- Combination of space-age fibers and elastomers give extended life and retention of size and fit



### Friction Discs

- Special high strength materials with molded composite teeth resist functional wear and provide additional output torque
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