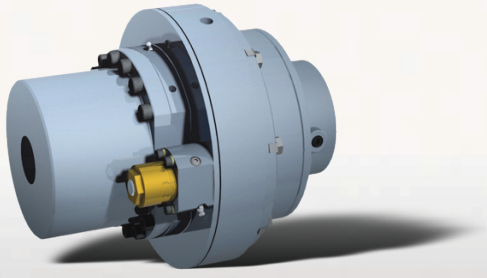
World Leader in Modular Torque Limiters

Brunel Corporation

UEP—Ultimate Extruder Protection

Modular Torque Limiters
Engineered for Extruders and Mixers



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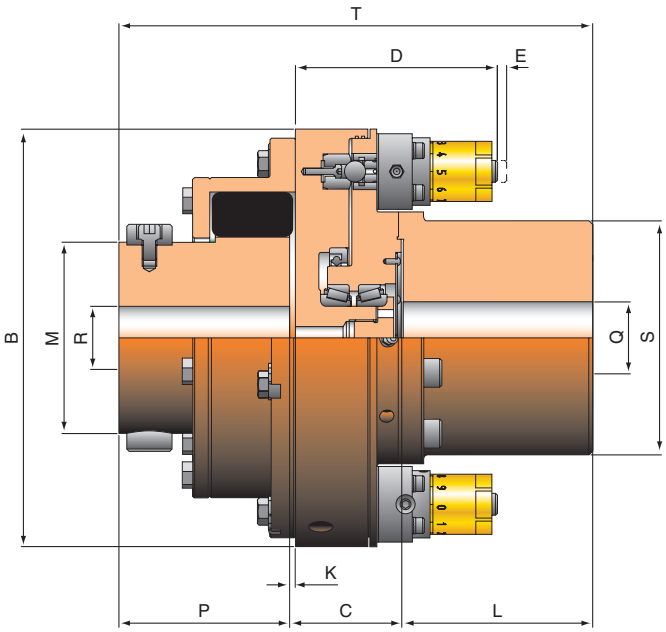
UEP—Ultimate Extruder Protection Torque Limiters w/Torsional Couplings

Brunel Corporation has — through extensive experience — developed the Ultimate Extruder Protection device affording reliable protection for twin screw extruders. Based on over 30 years experience in arduous applications particularly in the steel industry has led to the development of the UEP Brunel Modular Torque Limiter which has become the industry standard for twin screw extruder machines.



Ratings and Dimensions						
Brunel P/N	**Maximum Preset Torque** *Nm*/**lb-in**	**Minimum Preset Torque** *Nm*/**lb-in**	**Maximum Speed RPM**	**Coupling Size**	**Module Size**	**Quantity of Modules**
JSE.5-0234A	*1480* **13100**	*148* **1310**	**3000**	**0.2RB**	**JSE.5**	**2**
JSE1-0237A	*3046* **26960**	*493* **4364**	**2800**	**0.37RB**	**JSE1**	**2**
JSE1-0238A	*3577* **31660**	*579* **5125**	**2800**	**0.73RB**	**JSE1**	**2**
JSE1-0238B	*6688* **59195**	*1122* **9931**	**2500**	**0.73RB**	**JSE1**	**4**
JSE1-0239B	*8786* **77764**	*1420* **12568**	**2500**	**1.15RB**	**JSE1**	**4**
JSE1-0300C	*14280* **126392**	*2310* **20446**	**2200**	**2.15RB**	**JSE1**	**6**

	Dimensions mm **and in**														
						Rigid Hub				**Flex Coupling**					
								Q					**R**		
Brunel P/N	**B**	**C**	**D**	**E**	**T**	**S**	**L**	**Min Bore**	**Max Bore**	**K**	**M**	**P**	**Min Bore**	**Max Bore**	**Weight** *kgs*/**lbs**
JSE.5-0234A	*232* **9.134**	*62.3* **2.453**	*112* **4.409**	*3* **0.118**	*264* **10.394**	*130* **5.118**	*106* **4.173**	*32* **1.259**	*90* **3.543**	*3.2* **0.126**	*106.4* **4.189**	*95* **3.740**	*35* **1.378**	*70* **2.756**	*39* **86**
JSE1-0237A	*278* **10.945**	*83.5* **3.287**	*134* **5.276**	*4* **0.157**	*325* **12.795**	*165* **6.496**	*121* **4.764**	*40* **1.575**	*115* **4.528**	*3.2* **0.126**	*128.6* **5.063**	*120* **4.724**	*40* **1.575**	*85* **3.346**	*70* **154**
JSE1-0238A	*317* **12.480**	*83.5* **3.287**	*133* **5.236**	*4* **0.157**	*350* **13.780**	*165* **6.496**	*121* **4.764**	*40* **1.575**	*115* **4.528**	*3.2* **0.126**	*152.4* **6**	*145* **5.709**	*55* **2.165**	*95* **3.740**	*90* **198**
JSE1-0238B	*320* **12.598**	*96.7* **3.807**	*138* **5.433**	*4* **0.157**	*363* **14.291**	*190* **7.480**	*121* **4.764**	*50* **1.969**	*135* **5.315**	*3.2* **0.126**	*152.4* **6**	*145* **5.709**	*55* **2.165**	*95* **3.740**	*106* **234**
JSE1-0239B	*378* **14.882**	*96.7* **3.807**	*138* **5.433**	*4* **0.157**	*407* **16.024**	*234* **9.213**	*140* **5.512**	*55* **2.165**	*165* **6.496**	*3.2* **0.126**	*179.4* **7.063**	*170* **6.693**	*55* **2.165**	*115* **4.528**	*163* **359**
JSE1-0300C	*467* **18.386**	*110.7* **4.358**	*136* **5.354**	*4* **0.157**	*441* **17.362**	*234* **9.213**	*140* **5.512**	*55* **2.165**	*165* **6.496**	*4.8* **0.189**	*219* **8.622**	*190* **7.480**	*70* **2.756**	*140* **5.512**	*231* **509**

Externally Adjusted Disconnect Modules

Features and Benefits

Very accurate release torque repeatability with minimal variation between static and dynamic release. Versatile installation allows for the torque limiter center section to be removed without the need to move the motor or gearbox.

Individual modules are preset to provide the required release torque. Any maintenance of the modules is a straightforward operation. A simple removal operation allows for module recalibration without having to replace the complete unit. By holding spare modules in stock already preset to the required release torque keeps downtime to an absolute minimum.

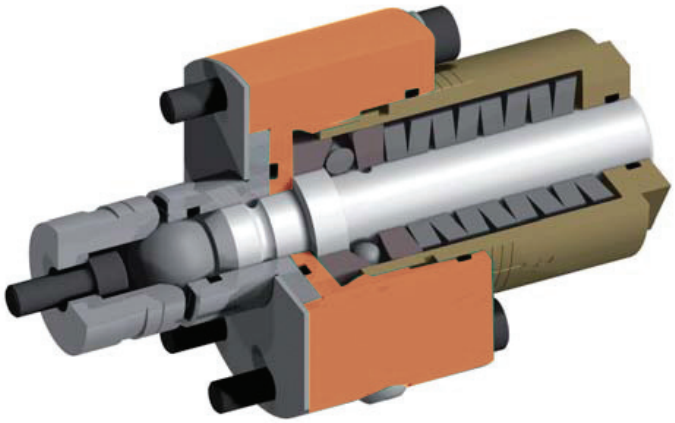
Manual reset of the torque limiter can only be carried out when the drive is at rest. Resetting is achieved by realigning the two halves of the unit and then lightly tapping each module fitted, with a soft mallet.

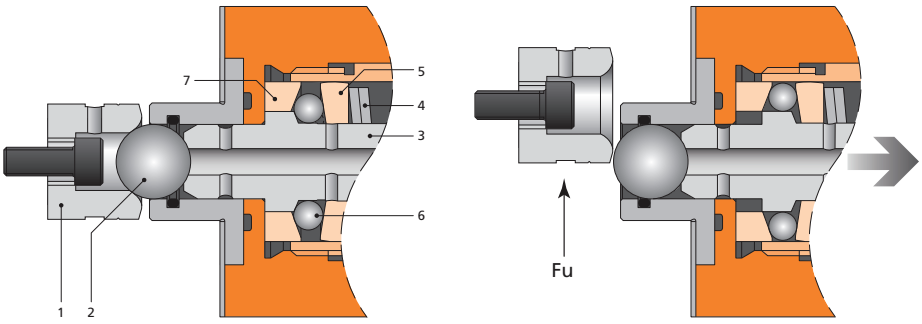
Lubrication of the unit is via easy access grease nipples. Proximity sensor targets are included to provide the means to switch off the drive after an overload occurs.

While each torque limiter assembly is normally factory preset, if required site adjustments can be carried out, a setting chart with instructions is provided for this purpose.

Please note a security key is required and adjustment should only be carried out by an authorized person.

- **Accurate release torque repeatability**
- **Simple fast manual re-engagement**
- **Low-cost maintenance**
- **The preferred protection for many extruder manufacturers**





Engaged Disengaged

Normal Operation

The flange connection is driven by a large steel ball (2), located in the detent pocket (1), which is retained by a plunger (3). This in turn is retained axially by means of a system of angled races (5,7) biased by pressure from the Belleville springs (4), acting on a circle of balls (6).

Disengagement

On overload, relative angular movement between the flanges imparts a tangential force (Fu) on the large steel ball, forcing it clear of the detent pocket back against the plunger. This in turn causes the plunger to be forced through the circle of balls overcoming the spring loading on the angle races. In this position, the balls are resting on the large diameter of the plunger, and once this condition is reached the flanges are completely free to rotate independently. A suitable switch can be incorporated in the assembly to switch off the drive motor or operate a warning device when the Torque Limiting assembly disengages. After first ensuring that the drive is isolated, resetting is a simple matter of first realigning the flanges and then tapping each module plunger back with a soft mallet to allow the circle of balls to return to their original position and the large steel ball to return to its location in the detent pocket.

Installations must conform to industry standards.

BRUNEL CORPORATION

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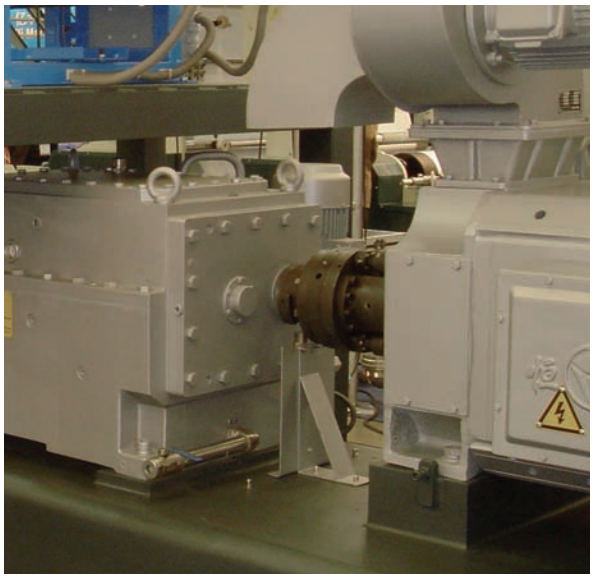
Recommended Torque Limiter Specifications



Torque limiters shall be a ball-detent type which transmit torque through balls retained in detents against adjustable spring pressure.

The design of the torque limiter shall be such that when torque exceeds a pre-set value the balls will leave their seats and roll free to provide complete disengagement of the driving and driven components. The device shall not incorporate friction plates and resetting will be by a simple manual push or blow from a soft hammer with torque setting remaining constant within plus 0% to minus 10% after each disengagement and resetting.

The ball detent, as well as any parts where sliding occurs during disengagement, shall be hardened to a minimum of 62 R/C. The torque limiter shall be totally enclosed for indoor dust-tight application with all external parts made of steel or ductile iron. These parts will include; hardware, module carrier plate, detent pocket plate, rigid hub, HiTec hub and safety element modules. Release torque must be externally adjustable with provisions to make the external adjustment tamperproof. The torque limiter will be marked with clearly readable graduations to allow for accurate release torque adjustment. Torque limiters will be preset by the manufacturer.

The working safety element components including; plunger, detent pocket, flanged bushing, and thrust races will be made of D2 steel and through hardened to Rc 62 minimum. Balls shall be of chrome-alloy steel hardened to a minimum of Rc 60.

Torque limiter models submitted must have been successfully applied in extruder applications for at least three years in order to be considered.

Approved supplier – Brunel Corporation, Wichita Falls, Texas.

From the Pioneer and World Leader in Modular Torque Limiters!

Leader in Extruder Torque Limiters