

World Leader in Modular Torque Limiters

Brunel Corporation

Installation and
Maintenance Instructions
Water & Waste Water
Safety Element Torque Limiters
JSE1-0228EA, LEA Series



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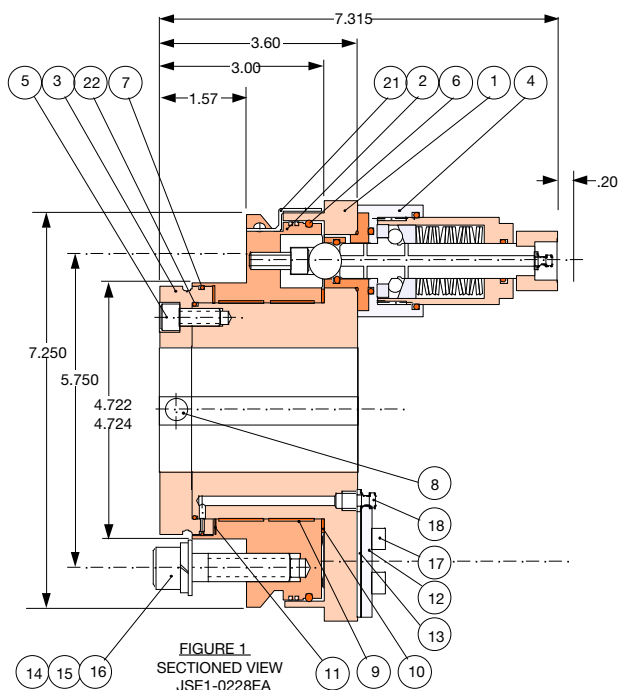


FIGURE 1
SECTIONED VIEW
JSE1-0228EA
Note: Part numbers referred to by (Figure No. - Part No.)

Part No.	Description	Qty.
1	Module Carrier Hub	1
2	Detent Pocket Plate	1
3	Retaining Plate	1
4	JSE1-0015EA Safety Element	1
5	5/16"-24 x 5/8" S.H.C.S.	8
6	"O" Ring - (Module Carrier)	1
7	"O" Ring - (Retaining Plate)	1
8	5/16"-24 x 1/2" Socket Set Screw	2
9	PTFE Bearing	2
10	PTFE Bearing Ring	1
11	PTFE Thrust Pad	1
12	Blanking Plate	1
13	Blanking Plate Seal	1
14	1/2"-13 x 2" S.H.C.S.	6
15	1/2" Lock Washer	6
16	1/2" Flat Washer	6
17	1/4"-28 x 5/8" S.H.C.S.	4
18	Grease Fitting	1
19	Grease Relief Value	1
20	Detent Pocket	1
21	Alignment Pointer	1
22	"O" Ring - (Retaining Plate)	1

1. PRIOR TO INSTALLATION

Check shaft extension & installation area where Torque Limiter is to be mounted to make sure there is sufficient space available for resetting after disengagement.

2. MOUNTING TORQUE LIMITER ON SHAFT

- Make sure bore & keyway are clean and free of burrs, and keyway set screws are in place.
- Mount 11 tooth UHMW sprocket onto torque limiter using the 1/2"-13 x 2" stainless steel socket head cap screws and washers supplied. Use loctite on screws.
- Slide torque limiter onto shaft and align sprockets and chain. Lock torque limiter to shaft with set screw.

3. TORQUE ADJUSTMENT & INITIAL STARTUP

- These torque limiters were preset at the factory, no further adjustment is required at this time. If it is desired to adjust the torque at a later date, proceed as follows.
 - To adjust torque at the job site: Loosen Set Screw (2-17) on the safety element housing and adjust the torque by turning the safety element Housing Nut (2-7) with a 1 1/8" wrench. The torque is increased by turning the nut clockwise (600 lb-in per mark), and maximum torque is reached after approximately 18 marks or 1 3/4 turns. (Refer to Torque Setting Graph) Retighten set Screw (2-17) after adjustment of torque setting to lock torque setting in place.

4. CHECKING RELEASE TORQUE SETTING

Clamp & lock the Detent Pocket Plate (1-2) in a vise or test stand, by clamping thru the 1/2-13 bolts. Apply torque to hub with a dummy shaft and key. Torque may be applied by a torque wrench.

5. RESETTING

On overload, the safety element ball is displaced and the Module Carrier Hub disengages from the Detent Pocket Plate, allowing the Hub (1-1) to rotate freely. With the drive at rest (the power off) and the overload cleared, align the two reset arrows on the Detent Pocket Plate and Hub by joggng the drive motor. After aligning the match marks strike the safety element plunger with a soft mallet and the plunger will move back into the safety element 1/4 inch signifying that the unit is engaged and the drive can be restarted.

6. GENERAL MAINTENANCE

- Grease 2-3 pumps from a grease gun into Grease Fitting (2-13) every 6 months. Recommended grease; Mobilith SHC PM Series.
- Safety elements should be stripped, inspected and re-assembled at least once every 3 years, more frequently where frequent tripping occurs.

Maintenance Instructions

Safety Element Torque Limiters JSE1-0228EA



7. TROUBLE SHOOTING

- a. Continual releasing, further adjustment making no difference.
 - 1) Detent Pocket (2-10) worn. Remove Safety Element (1-4), extract Detent Pocket (use extraction screw), & Rotate Detent 90° & reinstall. If badly worn replace with new detent pocket.
 - 2) Additional torque capacity is required.(Consult Brunel Corporation)
- b. Unable to screw Housing Nut (2-7) in any further.
 - 1) Loosen Set Screw (2-17) and make sure that the threads on the Housing Nut and Housing are not damaged, if so clean & file burrs until usable or replace defective parts.
 - 2) You have reached maximum torque capacity.
- c. Unable to reset.

Reset arrows not aligned. Check reference marks on Module Carrier Hub (1-1) and Detent Pocket Plate (1-2).

8. SAFETY ELEMENT - METHOD OF ASSEMBLY

- a. Clean all components and coat all working surfaces with a suitable anti-seize compound.
- b. Grease & install "O" ring (2-14) into groove in Housing (2-11)
- c. Grease inside surfaces of the Housing and install Outer Thrust Race (2-2).
- d. Install "O" Ring (2-20) into Housing Nut (2-7).
- e. Install 16 springs (2-5) oriented as shown in cross section, and fully greased.
- f. Grease and install the Inner Thrust Race (2-4).
- g. Install the Plunger (2-1) through the inner thrust race, springs & the end of the Housing Nut (2-7) ensuring that the "O" Ring is not damaged by the Plunger threads.
- h. Install 11 - 1/4" Balls (2-3), apply grease to hold balls in place.
- i. Screw in the Housing Nut (2-7) into the Housing until there is contact with the springs.
- j. Insert the Locking Pellet (2-18) and Set Screw (2-17) into the side of the Housing to facilitate locking the Housing Nut. (Refer to #3 for Torque Adjustment)
- k. Grease and insert the "O" Ring (2-21) into groove in housing (2-11).
- l. Slide "O" ring (2-21) over Bushing (2-8). Grease and insert the "O" Ring (2-19) into the Bushing (2-8), insert the Detent Ball (2-9) after thoroughly greasing the Bushing ID. Grease the Plunger (2-1) and install the Bushing.
- m. Loctite Shroud (2-12) to the end of Plunger (2-1) using Loctite #270.

Recommended for Grease:
Mobilith SHC PM Series

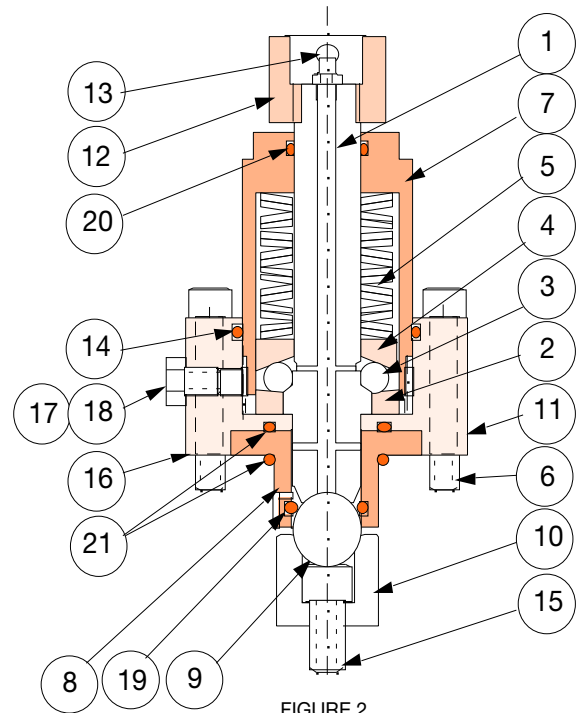


FIGURE 2
SECTIONED VIEW OF JSE1-0015
Externally Adjustable
Safety Element

Item	Part No.	Description	Qty.
1	JSE1 0015-1	Plunger	1
2	JSE1 0015-2	Outer thrust race	1
3	JSE1 0014-3	Ball - 1/4"	11
4	JSE1 0015-4	Inner thrust race	1
5	JSE1 0015-5	Disc spring	16
6	JSE1 0015-6	1/4"-28 X 1 3/4" S.H.C.S.	4
7	JSE1 0015-7	Housing nut	1
8	JSE1 0015-8	Bushing	1
9	JSE1 0014-9	Detent ball - 5/8"	1
10	JSE1 0015-10	Detent pocket	1
11	JSE1 0015-11	Housing	1
12	JSE1 0015-12	Shroud	1
13	JSE1 0014-13	Grease fitting	1
14	JSE1 0015-14	"O" Ring (Housing/Housing Nut)	1
15	JSE1 0015-15	5/16"-24 x 5/8" S.H.C.S.	1
16	JSE1 0015-16	Shim Pack	1
17	JSE1 0015-17	Hex Head Set Screw	1
18	JSE1 0014-18	Locking Pellet	1
19	JSE1 0014-19	"O" Ring (Bushing)	1
20	JSE1 0015-20	"O" Ring (Housing Nut)	1
21	JSE1 0015-21	"O" Ring (Bushing/Housing)	2

9) METHOD OF PRELOADING EACH SAFETY ELEMENT

(Only required if adding a second Safety Element or if changing Safety Elements from originals supplied)

- a. If adding a second Safety Element, first remove quantity 4, 1/4"-28 x 5/8" Bolts (1-17), then remove the Blanking Plate (1-12) and Blanking Plate Seal (1-13).

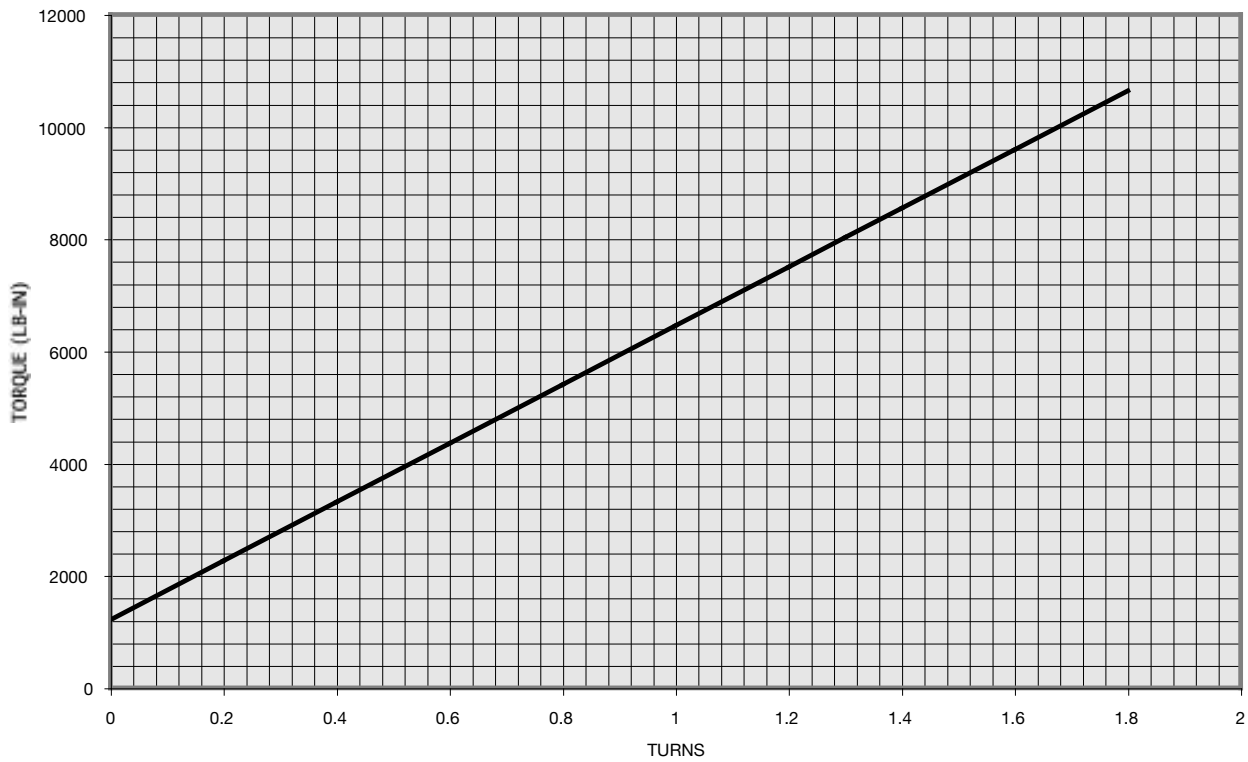
If replacing original Safety Elements, remove quantity 4, 1/4"-28 x 1 5/8" SHCS (2-6) and remove the Safety Element (1-4) including Bushing (2-8) Shims (2-16) and Ball (2-9). Replace Detent Pocket (if worn), this may require extracting the Detent using a 3/8"-16 bolt, insert new Detent Pocket and loctite in place with 5/16"-24 x 5/8" socket head cap screw.

- b. Place the Detent Ball (2-9) on top of the Detent Pocket, then insert the Bushing (2-8), less Bushing "O" Rings (2-21), into the hole until the flange of the Bushing bottoms.
- c. Insert the assembled Safety Element through the bushing until the Plunger comes in contact with the ball.

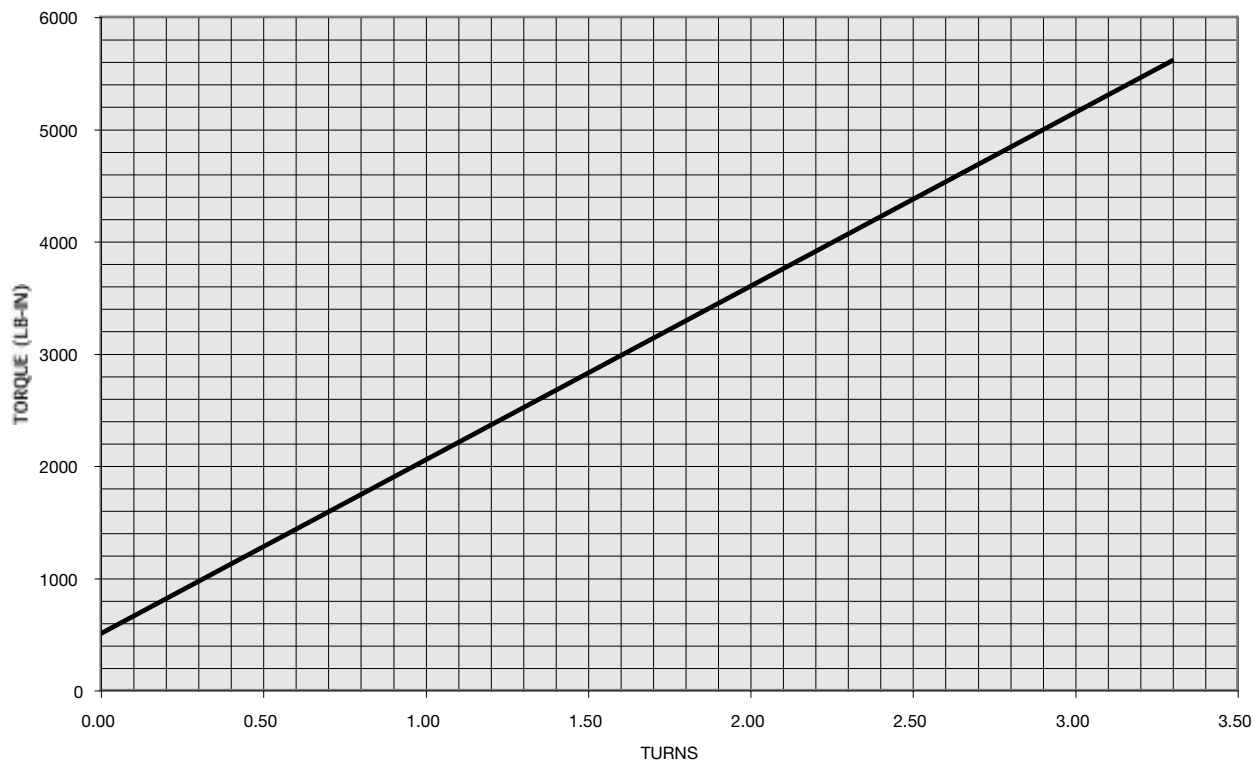
Notes:

- 1) Safety Element must be in the engaged position
 - 2) Housing Nut (2-7) must be turned past "0" to give some spring compression
 - 3) "O" Rings (2-21) are to be left out while measuring for shims.
 - 4) Shims must not be in place when measuring for shims.
- d. With a suitable height gauge or feeler gauge, measure the resultant gap between the inner face of the Housing (2-11) and the Module Carrier Hub (1-1). Deduct .003" - .008" from the measurement (Preload required) and select a suitable sized laminated Shim Pack (2-16) to accommodate this gap. Place the Shim Pack onto the Module Carrier Hub, grease and insert the Bushing, with "O" rings (2-21) in place and secure the Safety Element with the 4 socket head cap screws.

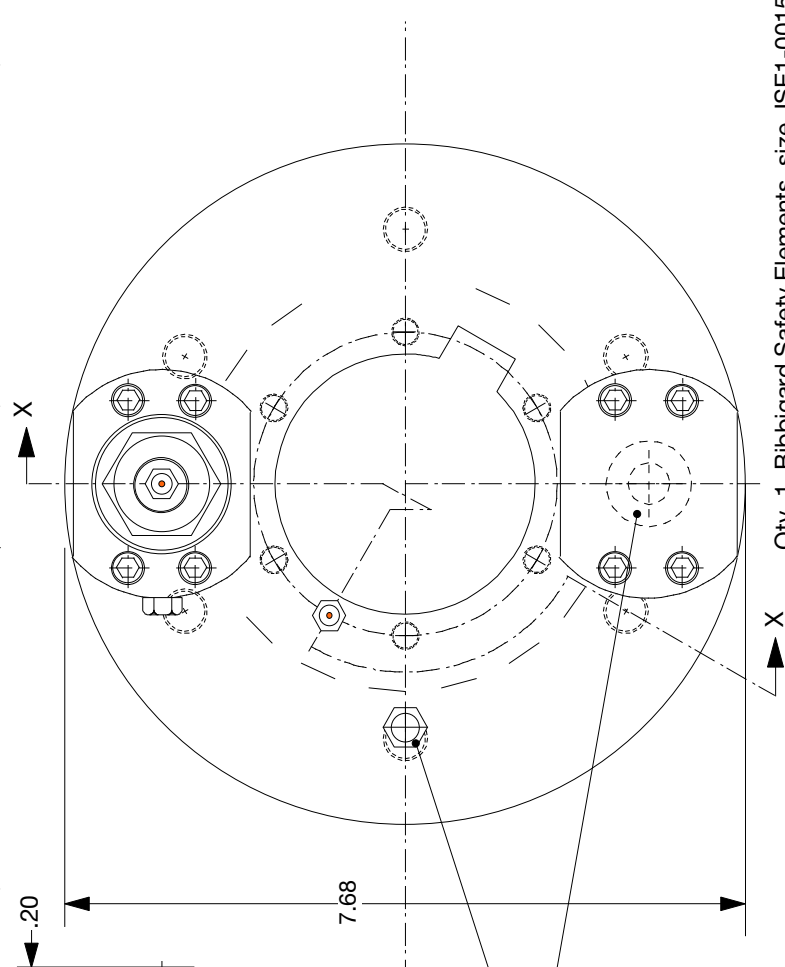
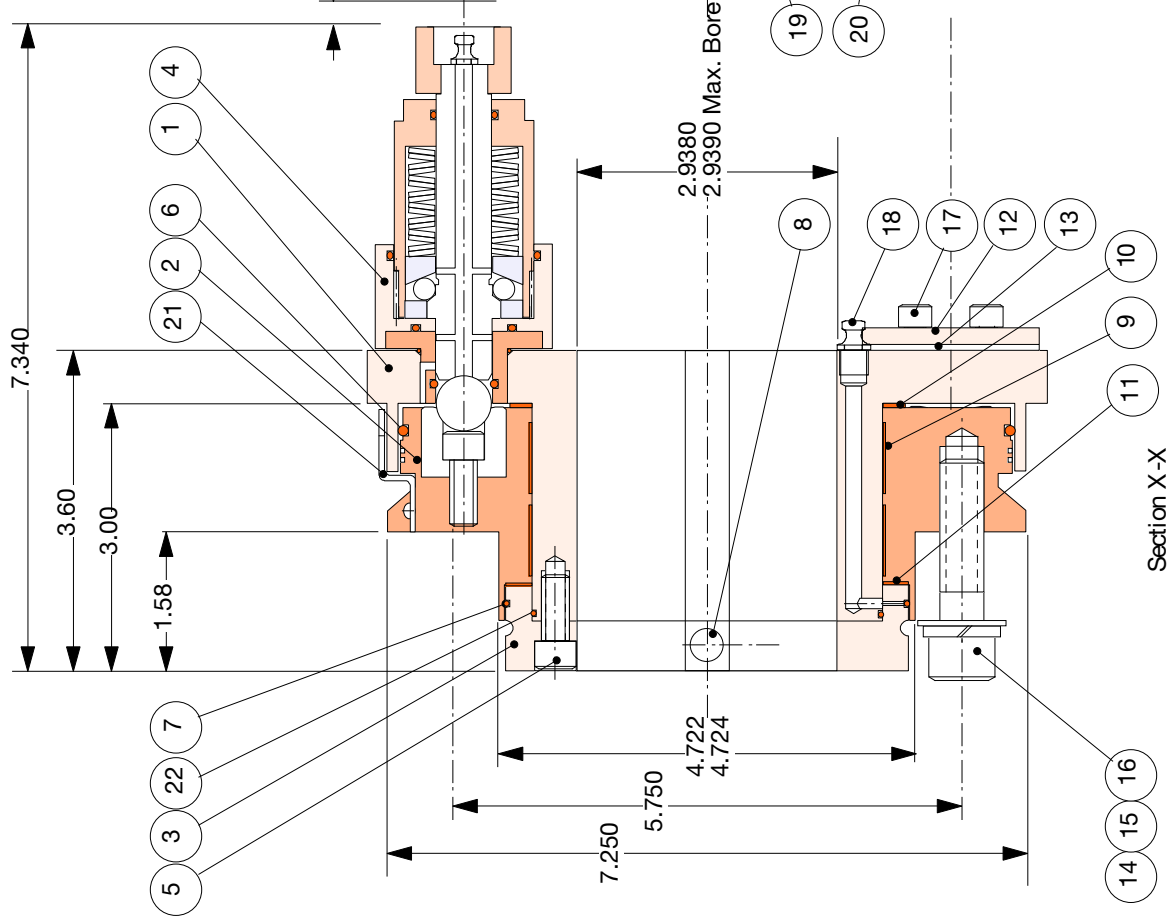
JSE1-0228EA Torque Setting Graph



JSE1-0228LEA Torque Setting Graph



Item	Description	Qty	Item	Description	Qty
1	Module Carrier Hub	1	12	Blanking Plate	1
2	Detent Pocket Plate	1	13	Blanking Plate Seal	1
3	Retaining Plate	1	14	1/2"-13 x 2" 316 SS SHCS	6
4	JSE1-0015 External Adjust SE	1	15	1/2" 316 SS Lock Washer	6
5	5/16-24 x 5/8" 316 SS SHCS	8	16	1/2" 316 SS Flat Washer	6
6	"O" Ring Seal	1	17	1/4"-28 x 5/8" 316 SS SHCS	4
7	"O" Ring Seal	1	18	Grease Fitting	1
8	5/-16-24 x 1/2 316 SS SHSS	2	19	Grease Relief Valve (1/8 NPT)	1
9	PTFE Bearing	2	20	Detent Pocket	1
10	PTFE Bearing Ring	1	21	Pointer (Alignment)	1
11	PTFE Thrust Pad	1	22	"O" Ring Seal	1



Qty. 1, Bibbigard Safety Elements, size JSE1-0015
 Axially mounted on a 2.750 P.C. Radius
 Maximum Torque Setting = 11,000 lb-in
 Minimum Torque Setting = 2,448 lb-in

OEM:	Material: All wearing parts thru hardened RC62 minimum All external components 316 stainless steel	Scale: 1/2	Similar to	Description
Contractor:	Note: This document must not be copied without our written permission, and the contents thereof must not be imparted to a third party, nor be used for any unauthorized purpose. Contravention will be prosecuted. Brunel Corporation	Dimensions Inches Unless Otherwise Noted	Checked by	Safety Element Torque Limiter
End User:		Dimensional Tolerance ± .010 Unless Otherwise Specified	Drawn by	All External Components 316 Stainless Steel
			Randy Long	Date 5/4/95
			BRUNEL CORP.	Sheet
				JSE1-0228EA



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