Browning®

Torq/Pro® Torque Overload Device Installation and Maintenance Instructions for Models TPZ20 - TPZ50

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FORM
9021
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⚠ WARNING

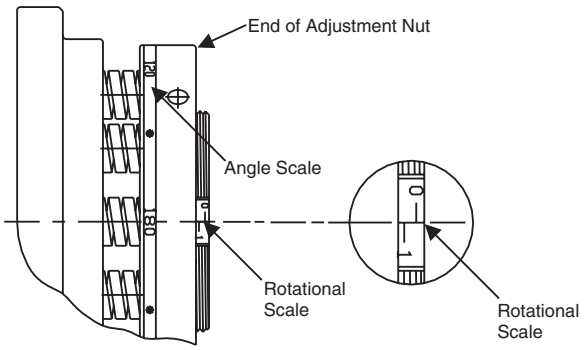
- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

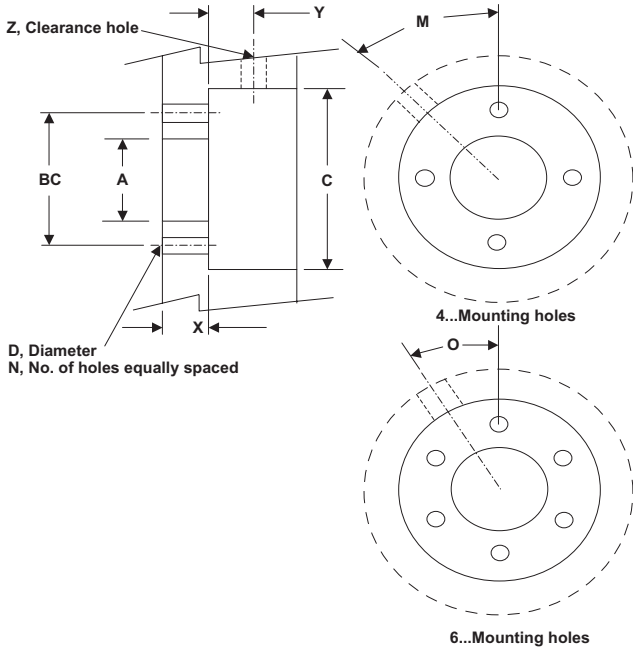
⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.
- All electrical work should be performed by qualified personnel and compliant with local and national electrical codes.

Torque Setting

TPZ units must be adjusted to accommodate your required trip torque. Check to see that the angle and rotation scales show "0" (see figure below). To adjust Torque, loosen the setscrew on the adjustment nut, and then read the adjustment nut angle of required torque from the diagrams listed on the back of this page and rotate the nut to the required torque setting. To properly set Torque, rotate the adjustment nut 60 degrees less than the required torque and perform a trip test. If the unit trips at a torque lower than the desired torque, continue rotating the adjustment nut to achieve the desired tripping torque. After adjusting the unit to the desired torque, tighten the setscrew(s) in the adjustment nut.





TPZ Drive Member Mounting Dimensions										
Model	A	BC	C	D	N	X (1)	Y (2)	Z (2)	M (2)	O (2)
TPZ20	2.837-2.840	3.386	3.84	7/32	4	0.433	0.571	9/32	22.5deg	
TPZ30	3.427-3.430	4.173	4.70	9/32	4	0.453	0.689	5/16	22.5deg	
TPZ40	4.490-4.493	5.472	6.05	9/32	6	0.551	0.767	13/32		45deg
TPZ50	5.238-5.241	6.378	7.07	11/32	6	0.630	0.925	13/32		45deg

***Note:** External force resetting – after the machine has been stopped and the source of overload has been removed, the TPZ is reset by applying a load in the direction of the shaft, either manually or by means of external force.

(1) If X is greater than dimension shown, the drive member should be counter bored to dimension C.

(2) Provisions may need to be made to the drive member to access the mounting set screw and for re-engagement of the clutch.

See installation and maintenance instructions for complete details on how to re-engage the clutch.

The overhang of the drive member must not interfere with the on/off mechanism of the clutch.

Installation and Maintenance

Slide the TPZ onto the shaft; tighten setscrew(s) to secure TPZ onto the shaft. For the required torque to properly tighten the setscrew(s). Use a parallel key in the keyway as the use of a tapered key will result in damage to the unit.

To attach a sprocket/pulley/gear onto the driven flange of the TPZ, first test fit the sprocket/pulley/gear to make sure it will slide onto the driven flange and then tighten flange bolts to hold sprocket/pulley/gear to the TPZ. To prevent the bolts from backing out or loosening, apply liquid thread locker to the bolt threads and use lock washers.

Mobilux® EP2	Listun EP2	Alvania® EP Grease 2	Nisseki-Mitsubish® Epinoc EP 2	Rizonics EP2	Daphne® Eponex® Grease EP No. 2	Kygnus® EP Grease 2

Maintenance

After every 1,000 engagements, or at least annually, disassemble the unit and apply NGLI2 lithium based, EP grease to the internal bearing and ball detent grooves.

Do not use the TPZ in an environment in which flammable liquids, gases, or dust is present, as frequent tripping of the TPZ may create sparks

*Conversion from (N-m) to (ft-lb): ft-lb = 0.737 (N-m).

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Overload Detection

If desired, a proximity switch can be placed next to the sensor plate of the TPZ as illustrated in the two diagrams below. Reference the corresponding two tables for the distance the sensor plate will travel in either of the 2 possible proximity switch configurations.

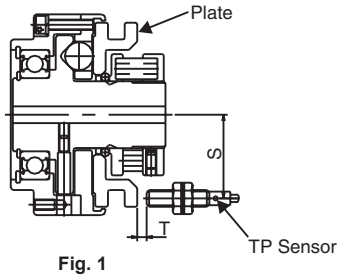


Fig. 1

Refer to figure 1

Model \ Measure	S (mm)	T (mm)	Traveling of Plate
TPZ20	40	4.2 - 5.6	4.1
TPZ30	60	4.8 - 6.2	4.7
TPZ40	66.5	6.0 - 7.4	5.9
TPZ50	79	7.1 - 8.5	7.0

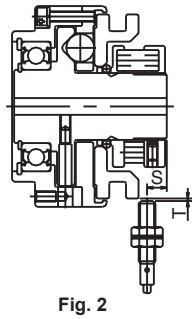
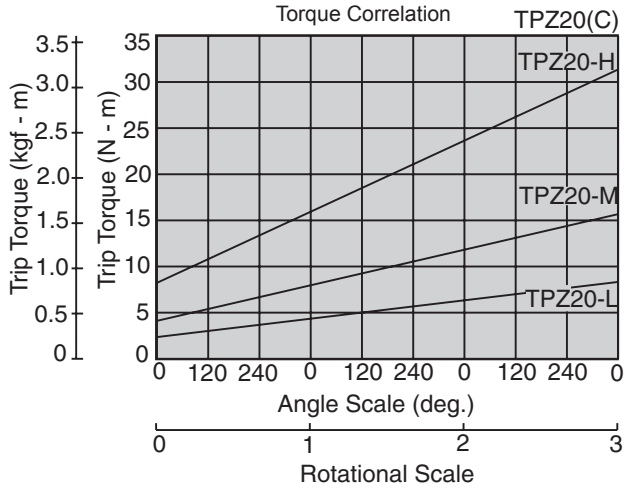
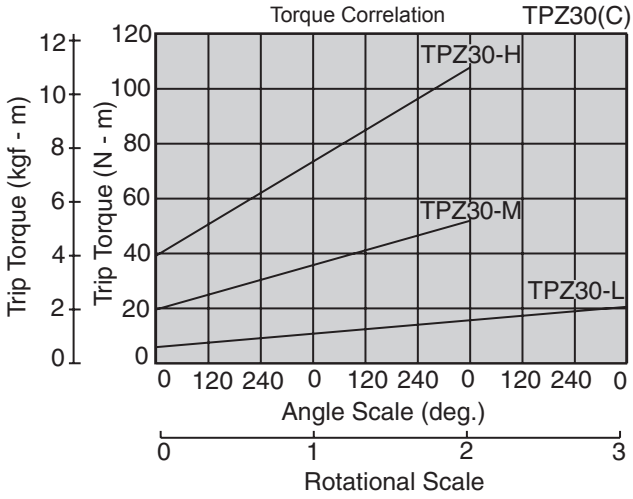


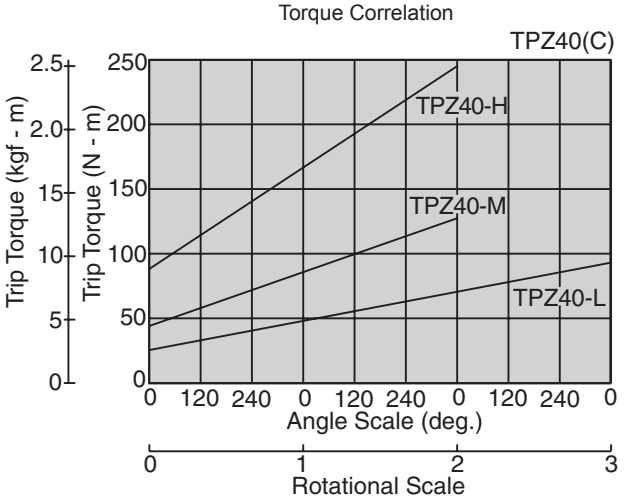
Fig. 2

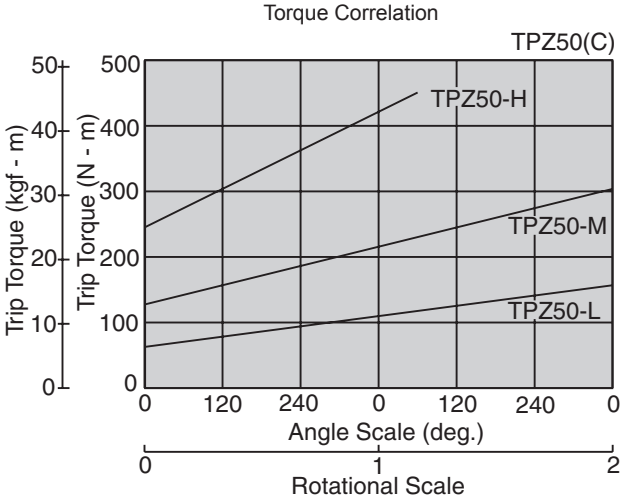
Refer to figure 2

Model \ Measure	S (mm)	T (mm)	Traveling of Plate
TPZ20	9.5	1.2	4.1
TPZ30	10.2	1.2	4.7
TPZ40	15.0	1.2	5.9
TPZ50	12.2	1.2	7.0





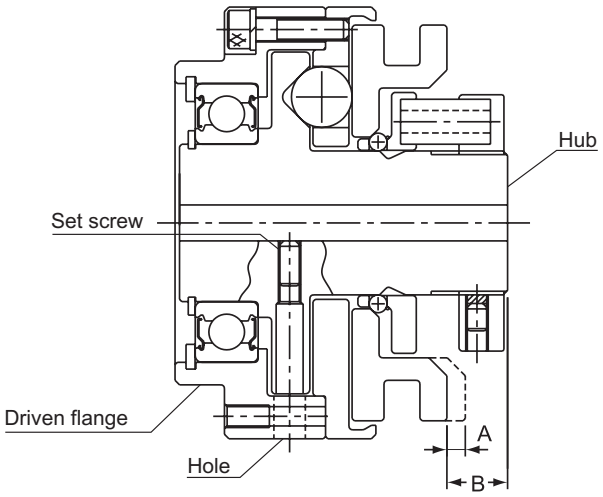




Resetting Clutch after Overload

1. When an overload occurs causing the Torq/ProZ to trip, stop rotation of machine and remove the cause of the excess load.

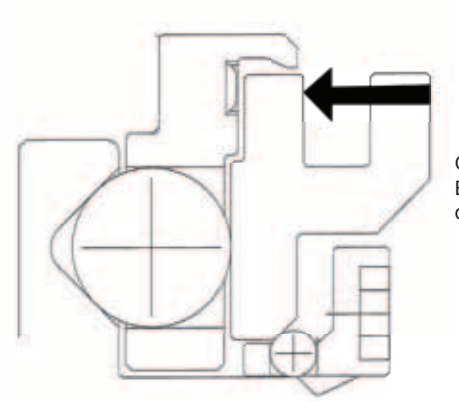
2. Align the hole in the driven flange with the setscrew on the hub side. (This brings the pockets and balls into proper alignment). Apply an axial load (see table below) to the plate and the guard will reset. Use the lengths given in the table below (dim. A) to verify whether or not the Torq/ProZ has completely reset.



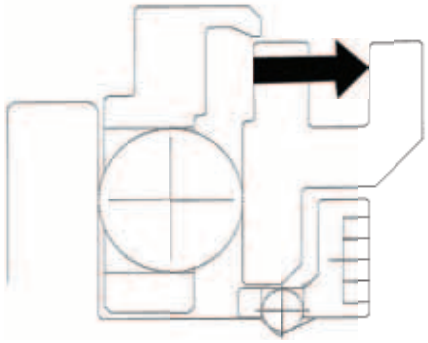
Model	Axial Load (kgf)	Travel A (mm)	B (mm)
TPZ20 L	5	4.1	13.5
TPZ20 M	9		
TPZ20 H	18		
TPZ30 L	10	4.7	14.5
TPZ30 M	24		
TPZ30 H	48		
TPZ40 L	16	5.9	20.0
TPZ40 M	43		
TPZ40 H	85		
TPZ50 L	46	7.0	20.3
TPZ50 M	92		
TPZ50 H	141		

On-Off (Manual Operation) Clutch

The TPZ Clutch can be both engaged and dis-engaged by moving the operating plate axially either manually or by means of a mechanical external force (ie air or hydraulic cylinder). The required axial force to engage and dis-engage the clutch is shown in the table below.
The drive shafts must be stationery when engaging or dis-engaging drive. If the clutch is operated while the shafts are rotating very high impact loads will occur which will damage both clutch and machinery.
For the clutch to function correctly as an On-Off unit is imperative that the hub is securely locked to the shaft and no axial free plays exists.
The necessary axial load to start or stop rotation.
There will be variation in the axial load depending on the number of movements made and the conditions. Allow some leeway for this in setting the load.

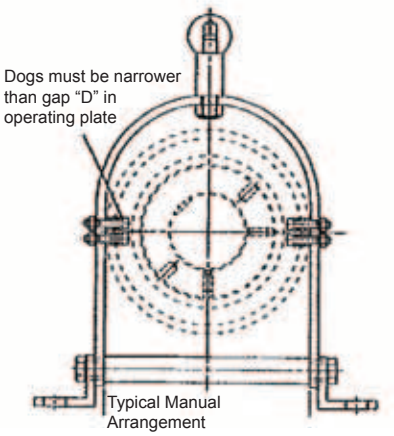


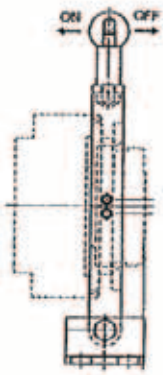
OFF ⟶ ON
Engaging the clutch



ON ⟶ OFF
Dis-engaging the clutch

Model	OFF-ON (kgf)	OFF-ON (lbs)	ON-OFF (kgf)	ON-OFF (lbs)	Travel (mm)	Travel (in)
TPZ20L	5	11.023	25	55.115	4.1	0.16
TPZ20M	9	19.841	44	97.002		
TPZ20H	18	39.683	88	194.005		
TPZ30L	10	22.046	48	105.821	4.7	0.19
TPZ30M	24	52.910	120	264.552		
TPZ30H	48	105.821	240	529.104		
TPZ40L	16	35.274	79	174.163	5.9	0.23
TPZ40M	43	94.798	213	469.580		
TPZ40H	85	187.391	424	934.750		
TPZ50L	46	101.412	231	509.263	7	0.28
TPZ50M	92	202.823	461	1016.321		
TPZ50H	141	310.849	706	1556.448		





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