

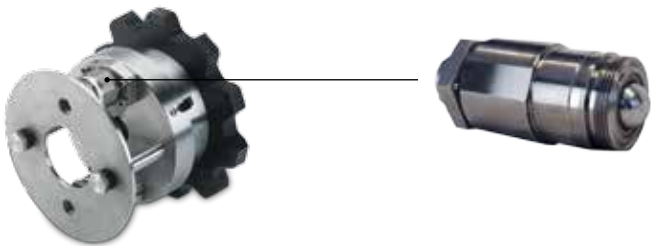
Torque Limiter WT Series





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For more than 80 years, Autogard® products have led the industry in overload protection with high-quality products, design innovation and production. Autogard products are manufactured to meet ISO 9001 using the latest machine tools and high-quality materials.



Autogard Torque Limiters act like a mechanical “circuit breaker” to protect the weakest member of the drive train. The most effective location for the torque limiter would be as close as possible to the component being protected. The WT Series was designed to accommodate water treatment applications and features the Ultra Module.

The Autogard WT Series is a mechanical torque limiter incorporating the proven ball detent principle. The basic unit is comprised of two separate halves. A hardened seat is installed into one half and a ball module is installed into the other in such a manner that torque is transmitted in shear between the drive ball and seat. (Fig. A). As in standard torque limiters, this produces an end thrust on the plunger/drive ball assembly in proportion to the applied torque. This force is resisted by a ring of smaller thrust balls trapped between flat and conical washers loaded by disc springs. When the axial force reaches a level greater than the reaction through the spring mechanism the smaller thrust balls are forced up the slope on the plunger allowing the drive ball to disengage from the seat (Fig. B). The smaller thrust balls

are then sitting on the larger diameter of the plunger and all forces are balanced internally allowing the torque limiter to run free and unloaded (Fig. C). Resetting is accomplished by simply aligning the ball modules with their seats and tapping the reset pin with a soft hammer.

Adjusting the Overload Torque Setting

The trip torque is externally adjustable and is achieved by turning the adjustor to increase or decrease the spring pressure.

Disengagement on Overload

When the axial force reaches a level greater than the reaction through the spring mechanism, the ball and plunger will retract forcing the balls up the plunger slope and allowing the ball to disengage from the seat. The balls are then located on the larger diameter of the plunger and all forces are balanced internally allowing the torque limiter to run free and unloaded. The unit can also be disengaged manually. This is achieved by clockwise rotation of the disengagement sleeve. This feature disconnects the drive and can be a useful tool for equipment setup and maintenance, and can also be used as a replacement for standard jaw clutches.

Re-engagement

Resetting the unit is accomplished by simply aligning the two halves, positioning the ball over its seat, and tapping the reset pin with a soft hammer. Automatic reset versions are also available.

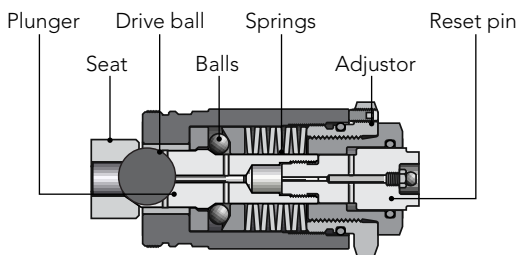


Figure A
(engaged)

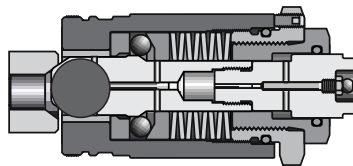


Figure B
(disengaging)

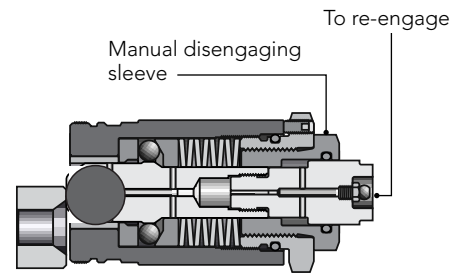


Figure C
(disengaged)



Features and Benefits:

- Stainless steel construction to withstand harsh working environments
- Accurate and consistent torque setting including a Vernier scale on each module to allow consistent and accurate torque adjustment
- Instant and complete disengagement of drive and driveline inertia for optimum protection
- Adjustable (in-place) torque setting to match the actual load requirements
- Accommodates automatic motor shut down or an alarm signal with use of a proximity sensor or standard limit switch if the optional sensor plate is used
- Quick and easy reset using alignment markers; can be manually reset with a soft hammer
- Manual disengagement is standard to allow for the unit to be disconnected for testing; replaces the need for a separate jaw clutch
- Low maintenance; integral grease fittings allow periodic lubrication of the unit without removing it from the drive
- Maintenance and replacement of modules can be performed without removing the torque limiter from the application

Selection:

Data required for torque limiter selection:

- Application details for service factors
- Kilowatt (kW) or horsepower (hp) and rpm of the driver
- Shaft details of the driving and driven equipment

(1) Calculate the nominal torque.

$$\text{Torque (lb-in)} = \text{hp} \times 63025 / \text{rpm}$$

Consideration should then be given to start torque or other special circumstances depending on the position chosen in the drive system. Choose a set torque with a suitable margin over nominal. Select the torque limiter which has a higher torque rating.

(2) Check limiting conditions:

- (a) Check hub bore capacity.
- (b) Check the torque limiter dimensions such as the overall length and outside diameter.

(3) Select and specify the appropriate drive medium.

All Autogard WT Series units may be supplied from the factory at a pre-set torque and with required drive medium assembled to the unit.

Ordering the WT Series Torque Limiter

When ordering, please provide the following designation:
 Model & Size / Number of Modules / Bore
 Standard bore tolerance = H8 + normal fit key/setscrews
 shaft retention

Example: WT-1 / 2LT / 1.500

Refers to WT Series Size 1 torque limiter with 2 low torque modules and a bore size of 1.500 inches.
 Also specify the sprocket and the torque setting and limit switch plate if required.



Model WT

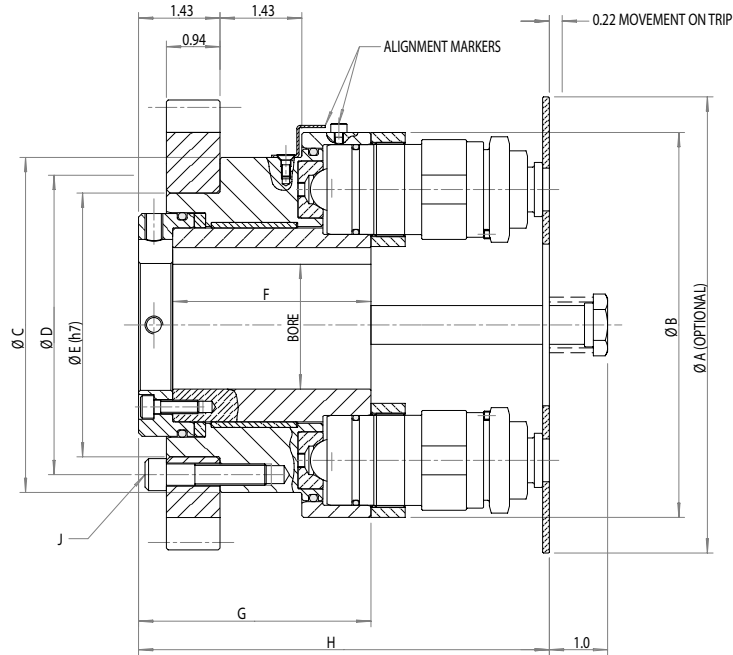


Table 1

Size	Modules (Size-Qty)	Torque				Weight lb [⊙]
		Low Torque Modules		High Torque Modules		
		Min lb-in	Max lb-in	Min lb-in	Max lb-in	
1	1	1,250	5,000	3,375	7,500	26
	2	2,500	10,000	6,750	15,000	
	4	N/A	N/A	N/A	N/A	
2	1	1,500	6,000	4,050	9,000	30
	2	3,000	12,000	8,100	18,000	
	4	N/A	N/A	N/A	N/A	
3	1	1,750	7,000	4,950	11,000	38
	2	3,500	14,000	9,900	22,000	
	4	N/A	N/A	N/A	N/A	
4	1	2,500	10,000	6,750	15,000	55
	2	5,000	20,000	13,500	30,000	
	4	10,000	40,000	27,000	60,000	

⊙ Weights estimated based on units with unbored hubs and 2 modules.

Table 2 — Type 1 designed to accept a sprocket suitable for the water treatment industry

Size	Maximum Bore in [⊙]	A in	B in	C in	D in	E in	F in	G in	H in	J in	Smallest H78 Sprocket (min. teeth)
1	1.750	7.2	5.95	5.13	4.50	3.640	3.48	4.1	7.2	(6) 3/8 UNC X 1 3/4	9
2	2.250	8.0	6.75	5.88	5.25	4.625	3.48	4.1	7.2	(6) 3/8 UNC X 1 3/4	9
3	3.000	8.8	7.55	6.63	5.75	4.724	3.48	4.1	7.2	(6) 1/2 UNC X 1 3/4	10
4	3.750	11.2	9.95	7.25	6.60	6.000	3.88	4.5	7.6	(8) 3/8 UNC X 1 3/4	11

⊙ Bores are furnished for clearance fit unless otherwise specified by customer. Rectangular keys must be used for maximum bore diameters.



WT Series Applications

Primary Wastewater Tanks
Secondary Wastewater Tanks
Clarifiers

Maintenance and General Safety Information

Protective Finish

As a standard, all WT Series torque limiters are manufactured from stainless steel. For any exceptions, please consult Rexnord.

Maintenance

The frequency of maintenance will depend on the operating environment and number of trips, but once every 2,000 operating hours should be adequate in most applications. The amount of maintenance required is dependent upon the operating conditions and should be maintained at least as frequently as the adjacent drive components. In adverse conditions, consult Rexnord.

General Safety

The Autogard Torque Limiter is a reliable unit, built to high standards of workmanship. Similar to all mechanical devices, each application must be considered on its own merits with reference to safety (i.e. lifting equipment, explosive conditions, etc). As a rotating component, adequate guarding must be provided, in accordance with local codes. The intended use of the torque limiter is for the protection of industrial machinery and it is not to be regarded as a human safety device. Rexnord staff are always available to discuss particular applications.



WT Series Industries

Water Treatment

Other Autogard Products



Autogard Torque Limiter 200 Series



Autogard Torque Limiter 320 Series



Autogard Torque Limiter 400 Series



Autogard Torque Limiter 600 Series



Autogard Torque Limiter 820 Series

To learn more about the Autogard Torque Limiter offering and how it can provide you with high-quality overload protection, go to www.rexnord.com, where you'll find:

- Product information
- Brochures
- Manuals

866-REXNORD/866-739-6673 (toll-free within the U.S.) or 414-643-2366 (Outside the U.S.)





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www.rexnord.com

Why Choose Rexnord?

When it comes to providing highly engineered products that improve productivity and efficiency for industrial applications worldwide, Rexnord is the most reliable in the industry. Commitment to customer satisfaction and superior value extend across every business function.

Delivering Lowest Total Cost of Ownership

The highest quality products are designed to help prevent equipment downtime and increase productivity and dependable operation.

Valuable Expertise

An extensive product offering is accompanied by global sales specialists, customer service and maintenance support teams, available anytime.

Solutions to Enhance Ease of Doing Business

Commitment to operational excellence ensures the right products at the right place at the right time.

REXNORD

Rexnord Company Overview

Rexnord is a growth-oriented, multi-platform industrial company with leading market shares and highly trusted brands that serve a diverse array of global end markets.

Process & Motion Control

The Rexnord Process & Motion Control platform designs, manufactures, markets and services specified, highly engineered mechanical components used within complex systems where our customers' reliability requirements and the cost of failure or downtime are extremely high.

Water Management

The Rexnord Water Management platform designs, procures, manufactures and markets products that provide and enhance water quality, safety, flow control and conservation.