



DynaTorque Torque Multipliers



OPERATIONS MANUAL

AIMCO DynaTorque torque multipliers offer an economical solution to high torque bolting in a small, robust package.

Through a series of gearing, the DynaTorque multiplier takes torque input from a variety of input devices and increases the torque applied to the bolt by the known ratio of the multiplier's gearing.

Input torque devices can range from hand ratchet wrenches, nutrunners, and settable torque wrenches.

Discontinuous drive torque tools such as Impact Wrenches or Pulse tools are not to be used with DynaTorque torque multipliers

As with *any* high torque applying device, any operator using a DynaTorque torque multiplier must have experience in torque application, reaction forces, and safety practices prior to using the device.

OPERATING INSTRUCTIONS

1. Install the Reaction Bar onto the spline of the DynaTorque multiplier. The reacting portion of the Reaction Bar should be oriented in the same plane or beneath the square drive of the square drive of the Multiplier. (see Figure 1)



Figure 1

2. Place an Impact Grade socket onto the male square drive of the multiplier output and secure with a pin and retention ring (o-ring or metal clip).
3. Place multiplier with socket onto bolt to be tightened.
4. On models ATM-2800, ATM-3800, and ATM-5000 set working direction required by moving selection pawl of anti-backlash device. L = left hand (CCW) operation. R = right hand (CW) operation.
5. Insure that Reaction Bar is located adjacent to a flat surface capable of handling torque reaction forces generated by the multiplier when used.
Attention: Reaction Bar will deliver force to the part opposite to working direction!
6. Set input tool or wrench to deliver the necessary input torque required to achieve the multiplied output torque from the multiplier. The listed ratio of the multiplier will need to be known and calculated to in order to understand the effects of input versus output. Example: In order to deliver 500 Nm from an ATM-800 DynaTorque multiplier, the ratio is 1:3.5 therefore 142.9 Nm input to

the multiplier will equal 500.15 Nm of output (500 divided by 3.5 equals 142.9).

- Once input device torque has been preset, place the input torque device into the female square drive of the multiplier. Use the input torque applying device to tighten the bolt through the multiplier on the job.

Do not hold reaction bar or torque multiplier itself with hands while tightening is being performed. Forces generated can cause severe injury to the operator.

It should also be understood that forces applied by the input torque device will create a force opposite to the direction of tightening. Operators should hold the input torque device securely during tightening to avoid this reaction. Upon completion of the tightening event, operators should use care when releasing the input torque device to avoid backlash.

- For DynaTorque models ATM-2800, ATM-3800, and ATM-5000, the planetary gear system must have stored torque energy released at the end of the tightening event.

This is accomplished by applying a small amount of torque through the input device in the tightening direction then placing the selection pawl into the neutral position (O) then releasing from the assembly.

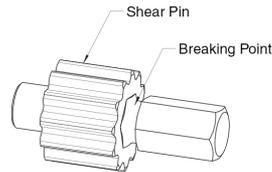
Calculation of Input Torque

$$\frac{\text{Desired Output Torque}}{\text{Torque Ratio}} = \text{Input Torque}$$

Calculation of Output Torque

$$\text{Known Input torque} \times \text{Torque Ratio} = \text{Output torque}$$

Change of Shear Pin



In order to protect the DynaTorque torque multiplier internal gearing from damage in the event of overload, the shear pin has been engineered to fail at a specific load

Each DynaTorque multiplier is supplied with one replacement shear pin part.



When the shear pin breaks due to an overload, there is the possibility of an abrupt force unloading of the torque wrench.

To remove damaged shear pin and replace:

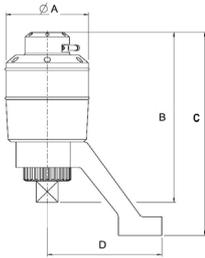
- Remove the cover
 - ATM-800, ATM-1800 models utilize a circlip
 - ATM-2800, ATM-3800, ATM-5000 utilize cover screws
- Lift out damaged shear pin and inspect for debris
- Replace shear pin with new component
- Replace the cover

Should technical assistance be required, please contact your local AIMCO Service Representative.

SPECIFICATIONS

MODEL	INPUT	OUTPUT	RATIO	MAX TORQUE OUTPUT	
	in	in		ft-lb	Nm
ATM-800	1/2	3/4	1:3.5	590	800
ATM-1800	3/4	1	1:3.6	1238	1800
ATM-2800	1/2	1	1:13	2066	2800
ATM-3800	3/4	1	1:13	2804	3800
ATM-5000	3/4	1.5	1:17	3690	5000
ATM-8000	3/4	1.5	1:49	5904	8000
ATM-12000	3/4	1.5	1:58	8856	12000
ATM-16000	3/4	2.5	1:75	11808	16000

DIMENSIONS



	A	B	C	D	WEIGHT	
	(MM)	(MM)	(MM)	(MM)	LB	KG
ATM-800	65	105	132	130	2.9	1.3
ATM-1800	90	150	188	132	6.6	3.0
ATM-2800	95	200	240	132	11.5	5.2
ATM-3800	95	200	240	132	11.5	5.2
ATM-5000	120	215	272	150	15.4	7.0
ATM-8000	132	268	344	200	25.4	11.5
ATM-12000	156	272	348	200	30.9	14.0
ATM-16000	215	292	370	225	57.3	26.0



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