

Aroflex Torque Limiters Information

Contents of this page will cover torque limiters information. The Page below will cover;

- General torque limiters information
- Which coupling to use
- Installing and maintain
- Diagrams and attributes of torque limiters

Aroflex friction disc torque limiters

Aroflex Friction Disc Torque Limiters are suitable for use in Sprockets, Plate wheels (Simplex, Duplex, Triplex), Gears, Pulleys or Flexible Couplings.

Spring loaded design enables preset torque limits by adjusting the locknut which alters the spring force to suit the specified min / max torque ratings.

For use in Conveyors, Mechanical Handling equipment and Agricultural Machinery.

This low-cost product will prevent unnecessary drive damage and eliminate machinery downtime. Boring, Key-waying, Splining and Broaching facilities are available, please check out our [In-House Engineering](#) section of this website.

Friction disc torque limiters with plate wheel

Spring loaded friction discs are preset by adjusting the locknut which alters the spring force to suit the specified min / max torque ratings.

Alternative sprockets in Simplex, Duplex or Triplex with different pitch configurations may also be used.

Please consult the Arrow Engineering's sales team for further advice. Boring, Keying, Splining and Broaching facilities are available as well as visiting our [In-House Engineering](#) page. Please send drawings or samples of any special requirements to our [email](#).

Which coupling should I use?

There are many different types of couplings and depending on the application there are different types of couplings to suit many different needs.

Most popular coupling in the World is the Jaw or Spider coupling, the reason for this is that it is low cost, simple in design and has great dampening characteristics due to the rubber insert / element which absorbs shock and provides good angular and parallel misalignment.

Being a Jaw coupling it is also Fail Safe i.e. it will still drive should the insert fail due to the interlinking Jaws of each hub.

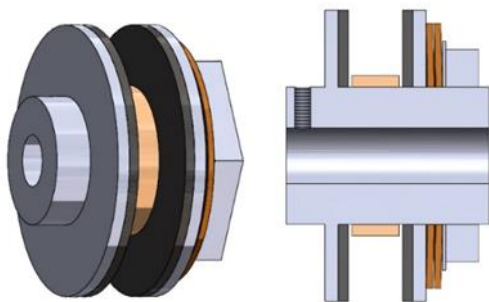
When selecting a coupling careful consideration should be given to chemical resistance, misalignment, restricted space (compactness) etc. There are many types of couplings i.e. Jaw / Spider, Tyre, Pin and Bush, Grid, Gear, Torsional Soft, Metallic Disc, Fluid Drive etc.

Horses for courses comes to mind and as simple as it may sound getting it right can save downtime / lost production and prolong the life of the driven machinery.

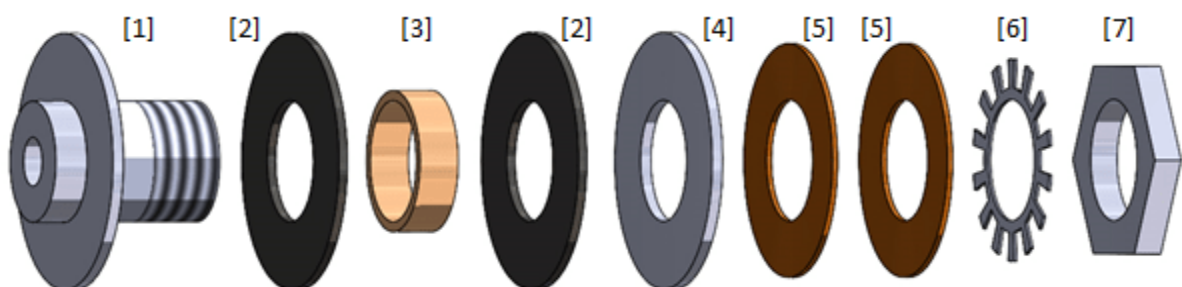
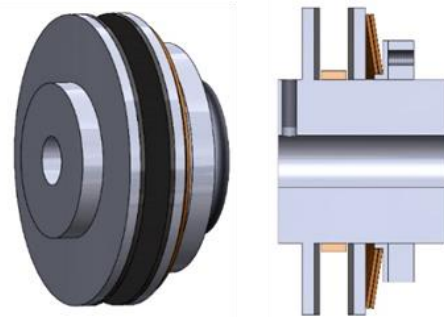
So, for the best advice, send us your questions and queries here at Arrow, we know our Couplings

Installation and Maintenance of ATLC Torque Limiters

Models ATLC 14 to ATLC 25



Models ATLC 42 to ATLC 64



1. General

Before assembly, the pressure plate and centre member (sprocket, sheave, plate etc) should be free of oil, grease, dirt and rust. The centre member should have a 3.2nm finish in the bore and a 1.6nm finish on the area where the friction facings rub, in order to obtain maximum torque and optimum life from the Torque Limiter.

2. Assembly

Refer to the appropriate sketch (above) and assemble on the torque limiter hub in the following order

- Bush [3],
- Friction Facing [2] over bush, Centre member [not shown],
- second Friction Facing [2] ensuring it sits on the bush, Pressure Plate [4],
- Disc Springs [5]; then for ATLC 14 to ATLC 25 models, Lock-washer [6]
- Adjusting Nut (7);
- or on ATLC 42 & ATLC 64 models pilot plates (8) and Adjustments Nut (9)

3. Running-In

Torque limiters should be run-in for the most consistent results. To run-in adjust the Torque limiter to 70-80% of the maximum single spring capacity and slip the centre member at approx. 60rpm for 4 minutes. (See steps 4 and 5 for setting and checking instructions).

4. Torque setting

(A). For the ATLC 14 – ATLC 25 models: To adjust the Torque limiter to carry the required torque, tighten the adjusting nut an appropriate amount. Do not completely flatten the disc spring. Check setting per step 5.

(B). For the ATLC 25 and ATLC 64 models: With the 3 bolts backed out until the points are below the surface of the nut, run the nut up finger tight. Alternately tighten the bolts no more than ½ turn at a time until the desired torque rating is achieved. Check setting per item 5. Do not overtighten the bolts nor completely flatten the disc spring.

5. Torque Checking

To check the Torque limiter for the required slip torque, mount the Torque limiter on a stub shaft and fasten in a bench vice. Wrap the centre member (if a sprocket) with a chain and load the chain with weights until the centre member rotates. If the centre member is a plate, attach a chain or cable to the centre member.

Breakaway torque will be equal to the radius of the centre member in metres, times the weight in kgs on the chain divided by 9.81.

Therefore, breakaway torque should be slightly higher (5 – 10%) than the required slip torque. If the slip torque is too high or too low, re-adjust torque limiter as in step 4, tightening or loosening the adjusting nut or bolts as required. After readjustment, check the breakaway torque in the manner outlined above. After final adjustment (models ATLC 14 to ATLC 25 only), lock the adjusting nut by bending lock-washer tab over nut.

6. Couplings

This additional information is applicable to Torque limiter couplings:

- a) NEVER USE A TORQUE LIMITER ALONE AS A COUPLING. When a shaft coupling is required in conjunction with slip protection, use a torque limiter coupling.
- b) After setting torque limiter per steps 4 & 5 (including chain plate-wheel centre member), mount it on the shaft. Then mount the coupling leaving a gap between adjacent hub faces as

Coupling	ATLC 14 C	ATLC 22 C	ATLC 25 C	ATLC 42 C	ATLC 64 C
Suitable Sprocket	08B1-20	08B1-22	10B1-24	12B1-28	16B1-28
Gap between Hub (mm)	7	7	7.5	8.7	16.1
DBSE (mm)	3	3	3	3	3.7

follows:

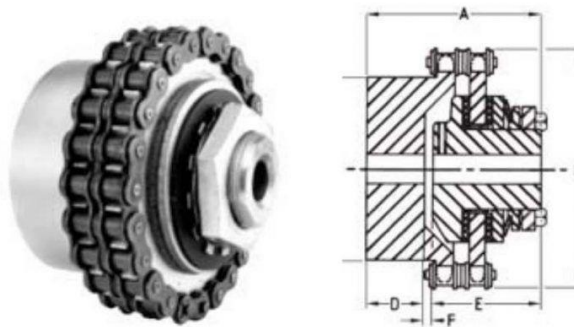
- c) Align the shafts accurately to obtain the maximum service life from the coupling.
- d) When the shafts are correctly aligned, wrap the coupling chain (Duplex chain) around the sprocket teeth and connect the chain ends with the connecting link ensuring spring clip is correctly fitted. The chain will wrap and connect easily on correctly aligned sprockets.

Maintenance

At periodic intervals, or if proper torque is not being maintained, inspect Torque limiter for presence of oil, grease, moisture or corrosion on the driving services and for proper setting of spring load. Clean and adjust as required.

Friction facings and bushings are designed as wearing parts that may require replacement after periods of clutch slipping.

Aroflex ATLC Torque Limiter Chain Coupling



Ref ATLC	Torque Capacity		Maximum Bore mm		Sprocket Ref	Dimensions mm						Weight Kg
	Min Nm	Max Nm	Torque Limiter	Coupling		A	B	C	D	E	F	
14-1/C	2.94	9.88	14	42	08B-20	73.3	93	66	22	47.6	3.7	1.8
14-2/C	6.86	19.61										
22-1/C	6.86	27.46	22	50	08B-22	76.7	101	75.4	25.4	47.6	3.7	2
22-2/C	13.73	53.94										
25-1/C	19.61	74.53	25	70	10B-24	103.7	136.5	104.4	38.1	61.9	3.7	5.2
25-2/C	34.32	149.06										
42-1/C	47.07	209.86	42	95	12B-28	121.2	186.8	149.3	41.3	76.2	3.7	12.2
42-2/C	88.26	420.71										
64-1/C	115.72	569.77	64	135	16B-28	168.1	247.5	199.4	66.7	98.4	3	31.3
64-2/C	223.59	1088.53										