



Operation and Maintenance Manual

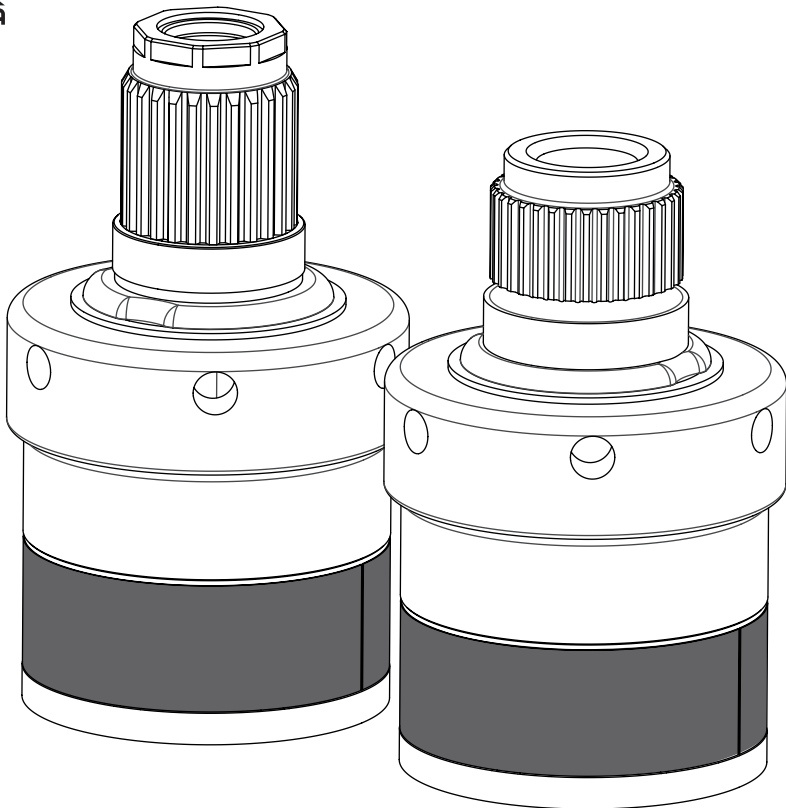
Enerpac STTLS/ STTLR Safe T™ Torque Lock

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To reduce the risk of injury, user must read and understand this document before use.

ABOUT US

Enerpac is a global market leader in high pressure hydraulic tools, controlled force products, portable machining, on-site services and solutions for precise positioning of heavy loads. As a leading innovator with a 110-year legacy, Enerpac has helped move and maintain some of the largest structures on earth. When safety and precision matters, elite professionals in industries such as aerospace, infrastructure, manufacturing, mining, oil & gas and power generation rely on Enerpac for quality tools, services and solutions. For additional information, visit www.enerpac.com.



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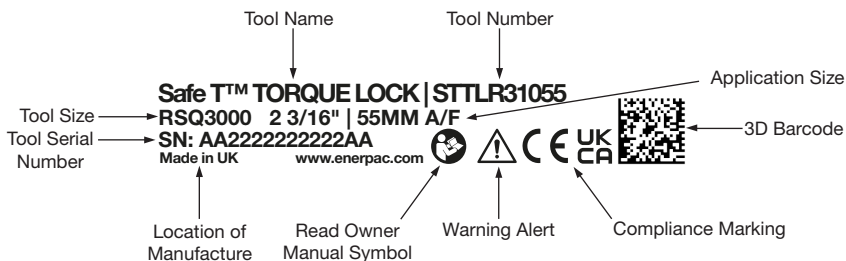


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WARRANTY

Refer to the Enerpac Global Warranty document for terms and conditions of the product warranty. Such warranty information can be found at www.enerpac.com.

NAMEPLATE



AVAILABLE LANGUAGES

L4471 is available in the following languages, visit www.enerpac.com for a copy.

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1. Safety

Read all instructions carefully. Follow all recommended safety precautions to avoid personal injury as well as damage to the product and / or damage to other property. Enerpac cannot be responsible for any damage or injury from unsafe use, lack of maintenance, or incorrect operation. Do not remove warning labels, tags, or decals. In the event that any questions or concerns arise, contact Enerpac or a local Enerpac distributor for clarification.

Save these instructions for future use.

If you have never been trained on high-pressure hydraulic safety, consult your distributor or service center for information about Enerpac Hydraulic Safety Courses.

This manual follows a system of safety alert symbols, signals, words, and safety messages to warn the user of specific hazards. Failure to comply with these warnings could result in death or serious personal injury, as well as damage to the equipment or other property.

The Safety Alert Symbol appears throughout this manual. It is used to alert you to potential physical injury hazards. Pay close attention to Safety Alert Symbols and obey all safety messages that follow this symbol to avoid the possibility of death or serious injury.



Safety Alert Symbols are used in conjunction with certain Signal Words that call attention to safety messages or property damage messages and designate a degree or level of hazard seriousness. The Signal Words used in this manual are DANGER, WARNING, CAUTION, and NOTICE.



Indicates a hazardous situation that, if not avoided, will result in death or serious personal injury.



Indicates a hazardous situation that, if not avoided, could result in death or serious personal injury.



Indicates a hazardous situation that, if not avoided, could result in minor or moderate personal injury.



Indicates information considered important, but not hazard related (e.g. messages related to property damage). Please note that the Safety Alert Symbol will not be used with the signal word.

1.1 Safety Precautions



Failure to observe and comply with the following precautions could result in death or serious personal injury. Property damage could also occur.

- Always wear protective headwear, ear protectors, eye protections, footwear and gloves (at a minimum rigger type gloves) suitable for safe operation of the tool. The protective clothing must not interfere with safe operation of the tool or restrict the ability to communicate with coworkers.
- Be sure your workplace is safe. Follow the instructions in your workplace's standard operating procedures and be sure to observe all communicated safety precautions.
- Be sure the operator has completed safety induction training, specific to the work surroundings. The operator should be thoroughly familiar with the controls and the proper use of the tool.
- The operator must be of at least the minimum age required by applicable local regulations, laws and the facility standard operating procedures.
- These instructions are to be followed in conjunction with those of the particular torque wrench equipment being used.
- Be aware that a nut or bolt that breaks off during operation of the tool may become a high velocity projectile.
- Be sure appropriate guards are securely in position and free from damage.
- This product is designed for use on hexagon threaded nuts with geometry conforming to ANSI B18.2.2 – Heavy Hex. & ANSI B18.2.4 – STYLE 2.
- Not suitable for PTFE coated nuts.
- The bolt / stud thread protrusion above the nut top face must not prevent the socket from contacting with the joint face.
- Nuts must be clean and free from loose paint or rust / corrosion.
- This product must not be used with Impact / Vibro / Percussive equipment.
- Applied torque must be appropriate for the fastener / joint conditions and not exceed the 'Max Torque' rating marked on the product.
- Keep your hands away from the fastener being loosened or tightened. Tightening and loosening nuts and bolts involves little visible movement. However, the pressures and loads are extreme.
- Never apply more hydraulic pressure to any tool, hose, fitting or accessory than the maximum allowable pressure as stated in the manufacturer's specifications. The system operating pressure must not exceed the pressure rating of the lowest rated component in the system.
- Use only a high quality non-flammable solvent for cleaning and degreasing parts during wrench repair procedures. To reduce the risk of fire or explosion, do not use flammable solvents.

- Be sure to wear proper eye and hand protection when using solvent. Always follow the solvent manufacturer's safety and use instructions and any additional instructions included in the standard operating procedures for your worksite. Be certain there is adequate ventilation when using solvent.

⚠ CAUTION

Failure to observe and comply with the following precautions could result in minor or moderate personal injury. Property damage could also occur.

- Provide adequate support in vertical and inverted applications.
- The torque required to loosen a nut is variable and may exceed the torque capacity of the wrench. It is preferred that the wrench is not operated at above 75 percent of its rated maximum torque when loosening a nut or bolt.
- Be sure to minimize torsional and bending stresses in the wrench, the hex socket and any accessories.
- Bolt lubricants and anti-seize compounds will have a rated coefficient of friction. Be sure to know the coefficient of friction for the lubricant or anti-seize compound that is being used. To ensure proper tightening of nuts and bolts, always use this coefficient of friction when calculating required torque values.

NOTICE

- Always use Enerpac replacement parts.
- Always follow the inspection and maintenance instructions contained in this manual. Perform maintenance and inspection activities at the specified time intervals.

2. Compliance Statement(s)

2.1 Conformance to National and International Standards



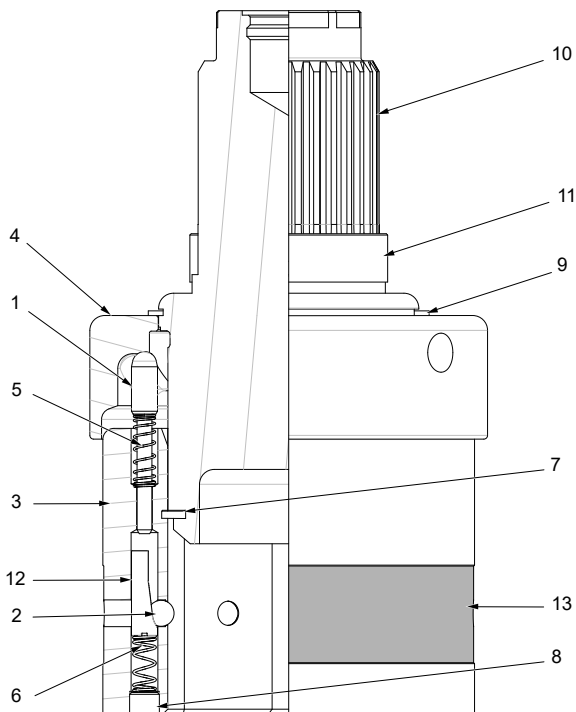
Enerpac declares that the product(s) have been tested and conforms to applicable standards and the product(s) are compatible to all EU and UK Requirements.

Copies of the EU Declaration as well as the UK Self-Declaration are enclosed with each shipment.

3. Features & Components

3.1 Features Diagram

1. Ball Plunger Assembly
2. Bearing Ball
3. Torque Lock Socket
4. Torque Lock Collar
5. Plunger Compression Springs
6. Insert Compression Springs
7. Snap Ring
8. Socket Set Screw
9. Spiral Retaining Ring
10. Spline Adaptor
11. Square Drive Sleeve (S-Series Spline fitting)
12. Taper Insert
13. Grip Tape



3.2 Installing Safe T™ Torque Lock onto torque wrench

1. Before fitting the Safe T™ Torque Lock into the torque wrench, check that the full free movement of the Torque Lock Collar and each of the gripping Bearing Balls can move freely. The Torque Lock Collar should be free to be twisted left or right. The Bearing Balls should move freely when pressed against the Torque Lock Socket.
2. Remove the torque wrench square drive and insert the Torque Lock Spline Adaptor into its place.

NOTICE Refer to the appropriate torque wrench manual for the removal of the square drive to insert the Safe T™ Torque Lock.

NOTICE Once the Spline Adapter has been inserted into the Torque Lock Body, it cannot be removed. The connection is permanent and factory installed.

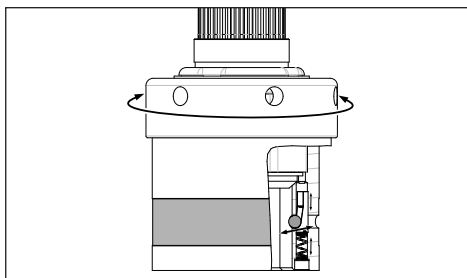


Figure 1: Check Collar/ Bearing Ball movement

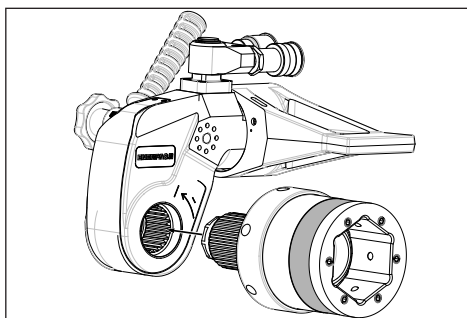
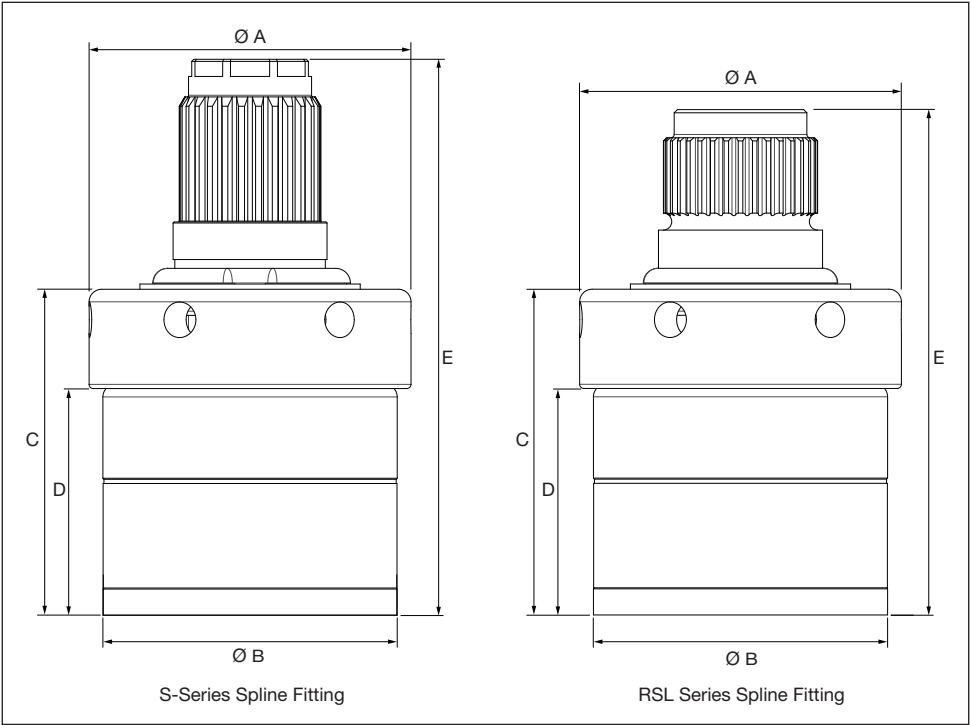


Figure 2: Installing Safe T™ Torque Lock

4. Technical Product Data

4.1 Dimensional Callout Art



4.2 Dimensional Table

Safe T™ Torque Lock Model Number	Dimensions					
	A	B	C	D	E	A/F
STTLS31046 S3000X 1.13/16"	77 mm [3.0"]	70.4 mm [2.8"]	78.0 mm [3.1"]	54.2 mm [2.1"]	133 mm [5.2"]	46 mm [1 ¹³ / ₁₆ "]
STTLR31046 RSQ3000 1.13/16"	77 mm [3.0"]	70.4 mm [2.8"]	78 mm [3.1"]	54.2 mm [2.1"]	120.9 mm [4.8"]	46 mm [1 ¹³ / ₁₆ "]
STTLS31550 S3000X 2"	88.7 mm [3.5"]	81.7 mm [3.2"]	78 mm [3.1"]	53.5 mm [2.1"]	132.8 mm [5.2"]	50 mm [2"]
STTLR31550 RSQ3000 2"	88.7 mm [3.5"]	81.7 mm [3.2"]	78 mm [3.1"]	53.5 mm [2.1"]	122.9 mm [4.8"]	50 mm [2"]
STTLS31055 S3000X 2.3/16"	93 mm [3.7"]	86 mm [3.4"]	82.9 mm [3.3"]	58.4 mm [2.3"]	137.9 mm [5.4"]	55 mm [2 ³ / ₁₆ "]
STTLR31055 RSQ3000 2.3/16"	93 mm [3.7"]	86 mm [3.4"]	82.9 mm [3.3"]	58.4 mm [2.3"]	129.9 mm [5.1"]	55 mm [2 ³ / ₁₆ "]
STTLR315238 RSQ3000 2.3/8"	99 mm [3.9"]	92 mm [3.6"]	91.2 mm [3.6"]	67.4 mm [2.7"]	136 mm [5.4"]	2 ³ / ₈ "
STTLR51550 RSQ5000 2"	88.7 mm [3.5"]	81.7 mm [3.2"]	78 mm [3.1"]	53.5 mm [2.1"]	132.2 mm [5.2"]	50 mm [2"]
STTLS61560M S6000X 60mm	99 mm [3.9"]	92 mm [3.6"]	86 mm [3.4"]	62.3 mm [2.5"]	149.3 mm [5.9"]	60 mm
STTLR51560M RSQ5000 60mm	99 mm [3.9"]	92 mm [3.6"]	86 mm [3.4"]	62.3 mm [2.5"]	145.4 mm [5.7"]	60 mm
STTLS615238 S11000X 2.3/8"	99 mm [3.9"]	92.0 mm [3.6"]	91.2 mm [3.6"]	67.4 mm [2.7"]	154.3 mm [6.1"]	2 ³ / ₈ "
STTLR515238 RSQ5000 2.3/8"	99.0 mm [3.9"]	92.0 mm [3.6"]	91.2 mm [3.6"]	67.4 mm [2.7"]	150.4 mm [5.9"]	2 ³ / ₈ "
STTLS61565 S6000X 2.9/16"	107 mm [4.2"]	100 mm [3.9"]	107.4 mm [4.2"]	74.2 mm [2.9"]	171.7 mm [6.8"]	65 mm [2 ⁹ / ₁₆ "]
STTLR51565 RSQ5000 2.9/16"	107 mm [4.2"]	100 mm [3.9"]	107.4 mm [4.2"]	74.2 mm [2.9"]	167.8 mm [6.6"]	65 mm [2 ⁹ / ₁₆ "]
STTLS61570 S11000X 2.3/4"	113.7 mm [4.5"]	106.7 mm [4.2"]	108.9 mm [4.3"]	75.7 mm [3.0"]	173.2 mm [6.8"]	70 mm [2 ³ / ₄ "]
STTLR51570 RSQ5000 2.3/4"	113.7 mm [4.5"]	106.7 mm [4.2"]	108.9 mm [4.3"]	75.7 mm [3.0"]	169.3 mm [6.7"]	70 mm [2 ³ / ₄ "]

Safe T™ Torque Lock Model Number	Dimensions					
	A	B	C	D	E	A/F
STTLS61575 S6000X 2.15/16"	112 mm [4.4"]	105 mm [4.1"]	112.9 mm [4.4"]	79.7 mm [3.1"]	177.1 mm [6.97"]	75 mm [2 ⁹ / ₁₆ "]
STTLR51575 RSQ5000 2.15/16"	112 mm [4.4"]	105 mm [4.1"]	112.9 mm [4.4"]	79.7 mm [3.1"]	173.3 mm [6.8"]	75 mm [2 ¹⁵ / ₁₆ "]
STTLS111560M S11000X 60mm	99 mm [3.9"]	92 mm [3.6"]	86 mm [3.4"]	62.3 mm [2.5"]	167 mm [6.57"]	60 mm
STTLR111560M RSQ11000 60mm	99 mm [3.9"]	92 mm [3.6"]	86 mm [3.4"]	62.3 mm [2.5"]	155.5 mm [6.12"]	60 mm
STTLS111565 S11000X 2.9/16"	107 mm [4.2"]	100 mm [3.9"]	107.4 mm [4.2"]	74.2 mm [2.9"]	189.4 mm [7.5"]	65 mm [2 ⁹ / ₁₆ "]
STTLR111565 RSQ11000 2.9/16"	107 mm [4.2"]	100 mm [3.9"]	107.4 mm [4.2"]	74.2 mm [2.9"]	178 mm [7.0"]	65 mm [2 ⁹ / ₁₆ "]
STTLS111570 S11000X 2.3/4"	113.7 mm [4.5"]	106.7 mm [4.2"]	108.9 mm [4.3"]	75.7 mm [3.0"]	190.9 mm [7.5"]	70 mm [2 3/4"]
STTLR111570 RSQ11000 2.3/4"	113.7 mm [4.5"]	106.7 mm [4.2"]	108.9 mm [4.3"]	75.7 mm [3.0"]	181.4 mm [7.1"]	70 mm [2 3/4"]
STTLS111575 S11000X 2.15/16"	112 mm [4.4"]	105 mm [4.1"]	112.9 mm [4.4"]	79.7 mm [3.1"]	194.9 mm [7.7"]	75 mm [2 ¹⁵ / ₁₆ "]
STTLR111575 RSQ11000 2.15/16"	112 mm [4.4"]	105 mm [4.1"]	112.9 mm [4.4"]	79.7 mm [3.1"]	183.3 mm [7.2"]	75 mm [2 ¹⁵ / ₁₆ "]
STTLS1115318 S11000X 3.1/8"	122 mm [4.8"]	115 mm [4.5"]	114.7 mm [4.5"]	81.4 mm [3.2"]	185.1 mm [7.3"]	3 1/8"
STTLR1115318 RSQ11000 3.1/8"	122 mm [4.8"]	115 mm [4.5"]	114.7mm [4.5"]	81.4 mm [3.2"]	185.1 mm [7.3"]	3 1/8"

5. Operation

5.1 To engage the Torque Lock:

1. Press down until the red line indicator appears and rotate the Torque Lock Collar anti-clockwise 45° to set the socket in to 'Release' mode.
2. Place the Torque Lock and wrench assembly on to the desired nut ensuring the whole of the nut is engaged into the Torque Lock Socket and the bottom of the Torque Lock Socket is in full contact with the joint.
3. Rotate the Torque Lock Collar clockwise 45° until it springs up to set the Torque Lock into the locked mode.
4. Carefully pull the Torque Lock away from the joint to ensure it is gripped onto the nut.
5. If the Torque Lock moves away slightly before gripping, push the Torque Lock back towards the joint until the grip is secured with minimal gap between the socket and joint face.

If the Torque Lock does not grip sufficiently, dis-engage the Torque Lock Collar and remove wrench assembly, and check that the nut dimensionally conforms to the ANSI standard requirements.

6. With the Torque Lock fully engaged and gripped, follow the wrench operating instructions noting that the wrench can now be used 'hands free' during its power drive cycle.

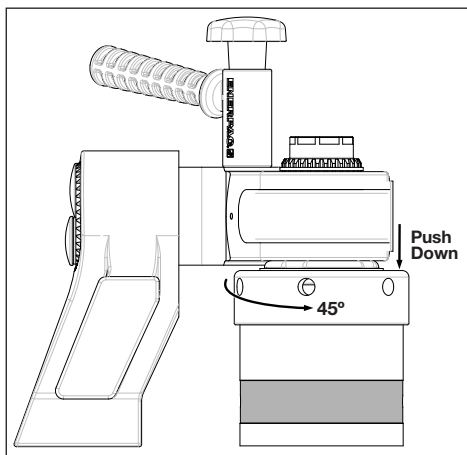


Figure 3: Engaging Releasing Mode

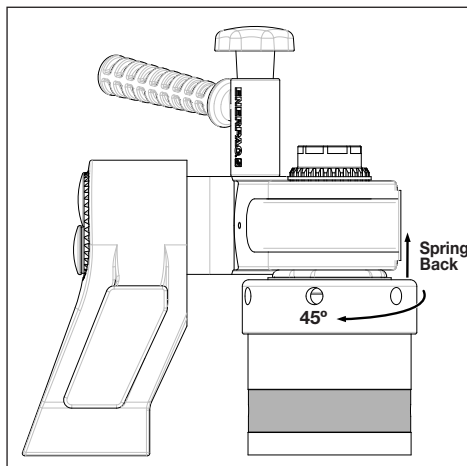


Figure 4: Engaging Lock Mode

5.2 Tool Operation

To dis-engage the Torque Lock:

1. Press down and rotate the Torque Lock Collar anti-clockwise 45° to set the socket into 'Release' mode taking care to support the weight of the assembly as it disengages - the supplied tommy bar can be used to assist this action if necessary.

6. Storage

6.1 Recommended Storage

Store the Safe T™ Torque Lock in a clean, dry place and protect against mechanical damage.

7. Maintenance

7.1 General Maintenance

The Safe T™ Torque Lock is of rugged construction but regular visual inspection is recommended to ensure safe continuous service of the product.

After use, always ensure the Safe T™ Torque Lock is clean and free from foreign bodies or particles. Operate the Torque Lock release mechanism to ensure full free movement of the Torque Lock Collar and gripping Bearing Balls. Inspect the Spline Adaptor for mechanical damage and gripping Bearing Balls for signs of flattening.

If the visual inspection identifies problems with any parts or functional operation, the Safe T™ Torque Lock must be dis-assembled for closer inspection and possible replacement of parts. See Sections 7.2 & 7.3 for dis-assembly & re-assembly and the Safe T™ Torque Lock section 8.0 RPS for replacement part details.

7.2 Dis-assembling Safe T™ Torque Lock

1. Remove the Grip Tape from the outer diameter surface of the Torque Lock Socket.
2. Push down and rotate the Torque Lock Collar 45° anti-clockwise to engage the release mechanism and remove the Spiral Retaining Ring.
3. Rotate the Torque Lock Collar clockwise to fully release the mechanism and remove the Torque Lock Collar upwards and away from the Torque Lock Socket.

Note: There are three lugs that will need to be rotationally aligned with three scallops in the Torque Lock Socket to enable the Torque Lock Collar to be removed.

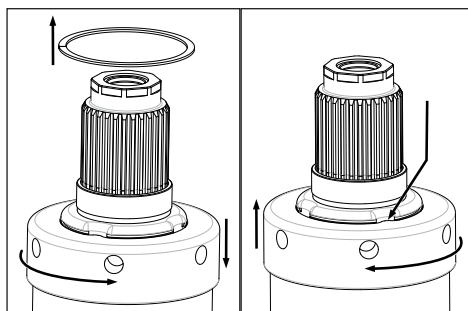


Figure 5: Remove Spiral Retaining Ring and Torque Lock Collar

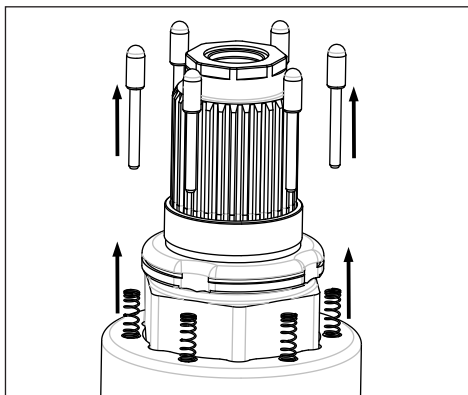


Figure 6: Remove Ball Plunger Nose and Plunger Compression Springs

4. Remove the Ball Plunger Nose and Plunger Compression Springs from the upper plunger holes.
5. Remove Socket Set Screws, Insert Compression Springs, Taper Inserts and Bearing Balls from the bottom face apertures of the Torque Lock Socket.

NOTICE The Torque Lock Socket and Splined Adaptor are designed to remain together as one piece once assembled before dispatch. They should not be separated during cleaning or maintenance. If the two parts do become separated, a new assembly will have to be ordered.

The Safe T™ Torque Lock is now fully dis-assembled.

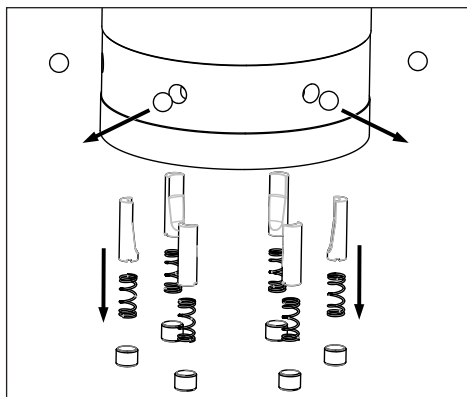


Figure 7: Remove Socket Set Screws, Insert Springs, Taper Inserts and Bearing Balls

7.3 Re-assembling Safe T™ Torque Lock

1. Hold the Torque Lock Socket horizontally and place a Ball into the upper most radial access hole on the Torque Lock Socket outer diameter surface ensuring that it travels through to the retaining seat on the inner hexagon surface.
2. Carefully raise the base of the Torque Lock Socket up to approximately 45° making sure the Bearing Ball stays against its seat and insert a Taper Insert into the corresponding threaded hole in the bottom face with the taper ramp feature innermost against the Bearing Ball and ensure the Taper Insert is fully inserted.
3. Place an Insert Compression Spring into the same threaded hole in the bottom face of the Torque Lock Socket.
4. Engage a Socket Set Screw in to the same threaded hole in the bottom face of the Torque Lock Socket one thread only. Apply Loctite 222 Low Strength Thread Locker (or equivalent product) to the exposed threads and screw down to 0.5mm [0.02"] below the Torque Lock Socket bottom face.
5. Repeat steps 1. to 4. for the remaining five Bearing Balls.

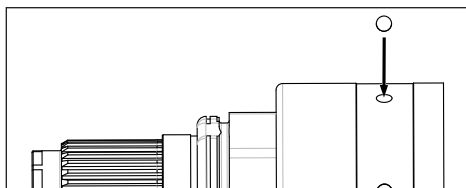


Figure 8: Installing Bearing Ball

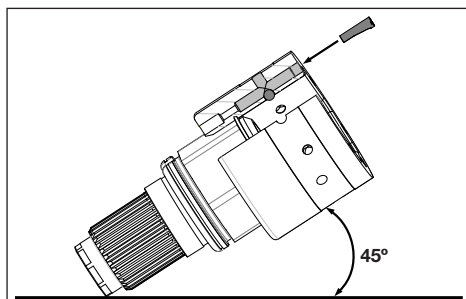


Figure 9: Installing Taper Insert

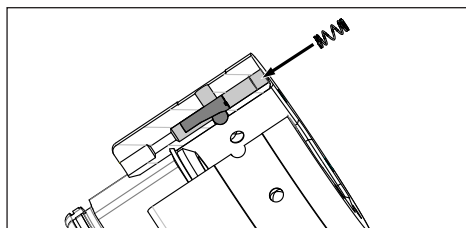


Figure 10: Installing Insert Compression Springs

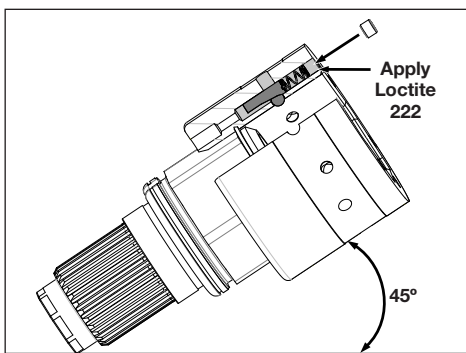


Figure 12: Installing Socket Set Screw

6. Orientate the Torque Lock Socket to the upright position and place an Upper Compression Spring and a Ball Plunger Nose into each one of the six upper plunger holes.
 7. Lightly coat all outer surfaces of the Ball Plunger Assemblies with a Lithium based grease prior to insertion.
 8. Lightly coat the inner ramped profiles of the Torque Lock Collar with a Lithium based grease. With the Torque Lock Socket still in the upright position, place the Torque Lock Collar over the Torque Lock Socket upper boss making sure it is oriented so that the three lugs engage into the three slots and the six Ball Plunger Nose Assembly heads engage with the corresponding ramped slot feature inside the Torque Lock Collar.
- Note:** it is possible to be 90° out of correct position.
9. Push down and rotate the Torque Lock Collar 45° anti-clockwise to engage the release mechanism. Fit the Spiral Retaining Ring then rotate the Torque Lock Collar clockwise to fully release the mechanism.
 10. Carefully and neatly apply the pre-cut to length Grip Tape to the outer diameter surface of the Torque Lock Socket so that Bearing Ball radial access holes are positioned centrally under the Grip Tape taking care not to cover any stampings / markings and trim if necessary.

The Safe T™ Torque Lock is now fully re-assembled.

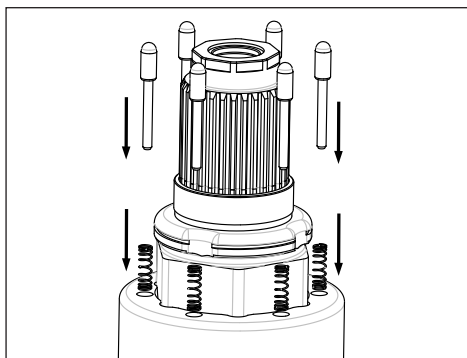


Figure 13: Installing Plunger Compression Springs and Ball Plunger Nose Assemblies

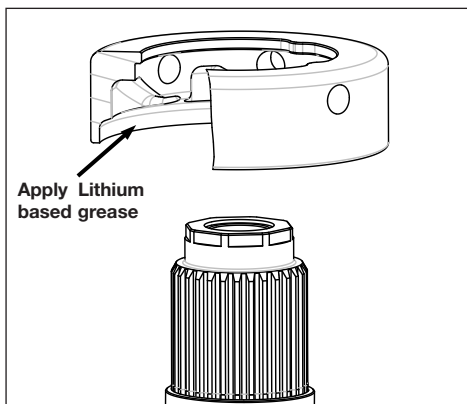


Figure 14: Applying grease to Torque Lock Collar

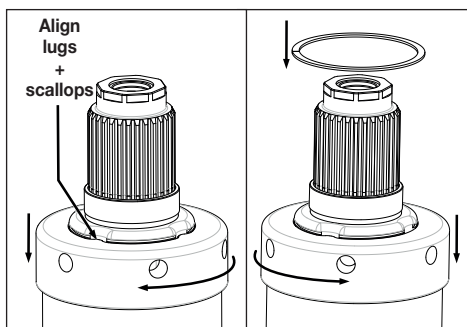
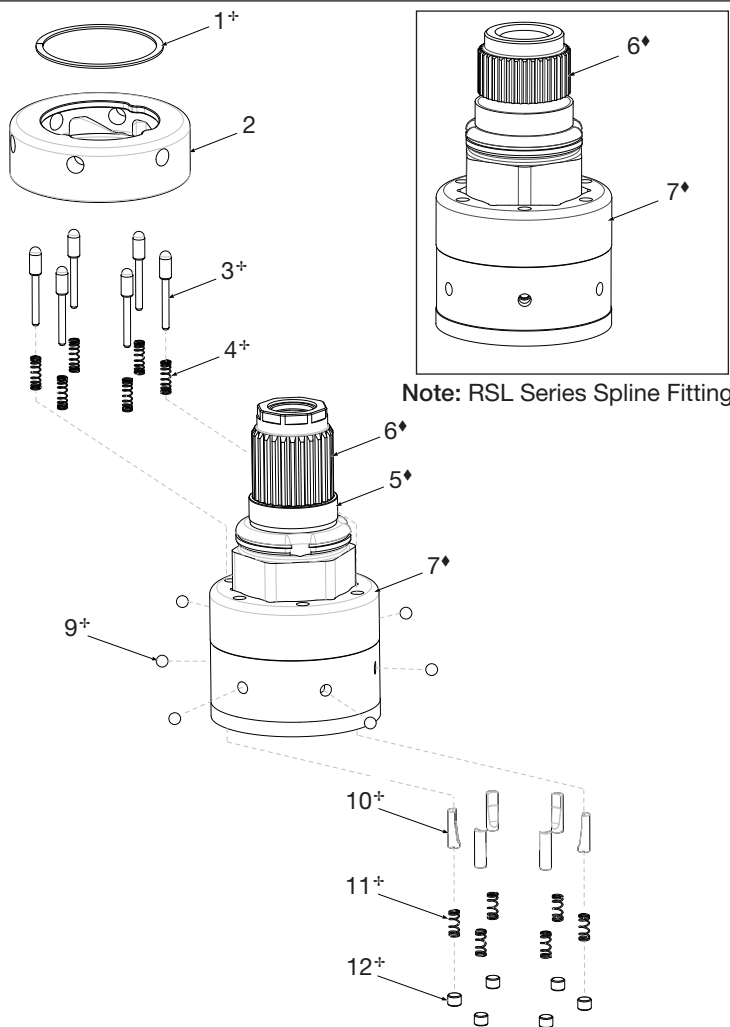


Figure 15: Installing Torque Lock Collar and Spiral Retaining Ring

8. Parts List

8.1 Exploded Views - Safe T™ Torque Lock Exploded Diagram (S-Series Spline Fitting)



Service Kits:

Items marked ⁺ supplied in Repair Kit: STTL46RK, STTL55RK, STTL60RK, STTL65RK, STTL75RK.

Items marked [♦] not sold separately.

8.2 Table of Parts - Safe T™ Torque Lock 46mm [1 13/16"] A/F

SAFE T TORQUE LOCK 46mm A/F				
Item	Description	Qty	Part Numbers	
			S3000X 1.13/16" STTLS31046	RSQ3000 1.13/16" STTLR31046
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1123489	DM1123489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL46RK				
◆ Not sold separately				

8.3 Table of Parts - Safe T™ Torque Lock 50mm [2"] A/F

SAFE T TORQUE LOCK 50mm A/F				
Item	Description	Qty	Part Numbers	
			S3000X 2" STTLS31050	RSQ3000 2" STTLR31050
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1565489	DM1565489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL50RK				
◆ Not sold separately				

SAFE T TORQUE LOCK 50mm A/F				
Item	Description	Qty	Part Numbers	
			RSQ5000 2" STTLR51550	
1	Spiral Retaining Ring	1	✚	
2	Torque Lock Collar	1	DM1565489	
3	Ball Plunger Assembly	6	✚	
4	Plunger Compression Springs	6	✚	
5	Square Drive Sleeve	1	not applicable	
6	Spline Adaptor	1	◆	
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	✚	
10	Taper Insert	6	✚	
11	Insert Compression Springs	6	✚	
12	Socket Set Screw	6	✚	
13	Grip Tape (not shown)	1	✚	
✚ Indicates items included and available only as part of Repair Kit: STTL50RK				
◆ Not sold separately				

8.4 Table of Parts - Safe T™ Torque Lock 55mm [2 3/16"] A/F

SAFE T TORQUE LOCK 55mm A/F				
Item	Description	Qty	Part Numbers	
			S3000X 2.3/16" STTLS31055	RSQ3000 2.3/16" STTLR31055
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1112489	DM1112489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL55RK				
◆ Not sold separately				

8.5 Table of Parts - Safe T™ Torque Lock 60mm A/F

SAFE T TORQUE LOCK 60mm A/F				
Item	Description	Qty	Part Numbers	
			S6000X 60MM STTLS61560M	RSQ5000 60MM STTLR51560M
1	Spiral Retaining Ring	1	✚	✚
2	Torque Lock Collar	1	DM1116489	DM1116489
3	Ball Plunger Assembly	6	✚	✚
4	Plunger Compression Springs	6	✚	✚
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	✚	✚
10	Taper Insert	6	✚	✚
11	Insert Compression Springs	6	✚	✚
12	Socket Set Screw	6	✚	✚
13	Grip Tape (not shown)	1	✚	✚
✚ Indicates items included and available only as part of Repair Kit: STTL60RK				
◆ Not sold separately				

SAFE T TORQUE LOCK 60mm A/F				
Item	Description	Qty	Part Numbers	
			S11000X 60MM STTLS111560M	RSQ11000 60MM STTLR111560M
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1116489	DM1116489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL60RK				
◆ Not sold separately				

8.6 Table of Parts - Safe T™ Torque Lock 2 3/8" A/F

SAFE T TORQUE LOCK 2 3/8" A/F				
Item	Description	Qty	Part Numbers	
			RSQ3000 2.3/8" STTLR315238	RSQ5000 2.3/8" STTLR515238
1	Spiral Retaining Ring	1	✚	✚
2	Torque Lock Collar	1	DM1573489	DM1573489
3	Ball Plunger Assembly	6	✚	✚
4	Plunger Compression Springs	6	✚	✚
5	Square Drive Sleeve	1	not applicable	not applicable
6	Spline Adaptor	1	◆	◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	✚	✚
10	Taper Insert	6	✚	✚
11	Insert Compression Springs	6	✚	✚
12	Socket Set Screw	6	✚	✚
13	Grip Tape (not shown)	1	✚	✚
✚ Indicates items included and available only as part of Repair Kit: STTL238RK				
◆ Not sold separately				

SAFE T TORQUE LOCK 2 3/8" A/F				
Item	Description	Qty	Part Numbers	
			S6000X 2.3/8" STTLS615238	
1	Spiral Retaining Ring	1	+	
2	Torque Lock Collar	1	DM1573489	
3	Ball Plunger Assembly	6	+	
4	Plunger Compression Springs	6	+	
5	Square Drive Sleeve	1	◆	
6	Spline Adaptor	1		
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	
10	Taper Insert	6	+	
11	Insert Compression Springs	6	+	
12	Socket Set Screw	6	+	
13	Grip Tape (not shown)	1	+	
+ Indicates items included and available only as part of Repair Kit: STTL238RK				
◆ Not sold separately				

8.7 Table of Parts - Safe T™ Torque Lock 65mm [2 9/16"] A/F

SAFE T TORQUE LOCK 65mm A/F				
Item	Description	Qty	Part Numbers	
			S6000X 2.9/16" STTLS61565	RSQ5000 2.9/16" STTLR51565
1	Spiral Retaining Ring	1	✚	✚
2	Torque Lock Collar	1	DM1191489	DM1191489
3	Ball Plunger Assembly	6	✚	✚
4	Plunger Compression Springs	6	✚	✚
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	✚	✚
10	Taper Insert	6	✚	✚
11	Insert Compression Springs	6	✚	✚
12	Socket Set Screw	6	✚	✚
13	Grip Tape (not shown)	1	✚	✚
✚ Indicates items included and available only as part of Repair Kit: STTL65RK				
◆ Not sold separately				

SAFE T TORQUE LOCK 65mm A/F				
Item	Description	Qty	Part Numbers	
			S11000X 2.9/16" STTLS111565	RSQ11000 2.9/16" STTLR111565
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1191489	DM1191489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL65RK				
◆ Not sold separately				

8.8 Table of Parts - Safe T™ Torque Lock 70mm [2 3/4"] A/F

SAFE T TORQUE LOCK 70mm A/F				
Item	Description	Qty	Part Numbers	
			S6000X 2.3/4" STTLS61570	RSQ5000 2.3/4" STTLR51570
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1589489	DM1589489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL70RK				
◆ Not sold separately				

SAFE T TORQUE LOCK 70mm A/F				
Item	Description	Qty	Part Numbers	
			S11000X 2.3/4" STTLS111570	RSQ11000 2.3/4" STTLR111570
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1589489	DM1589489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL70RK				
◆ Not sold separately				

8.9 Table of Parts - Safe T™ Torque Lock 75mm [2 15/16"] A/F

SAFE T TORQUE LOCK 75mm A/F				
Item	Description	Qty	Part Numbers	
			S6000X 2.15/16" STTLS61575	RSQ5000 2.15/16" STTLR51575
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1215489	DM1215489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL75RK				
◆ Not sold separately				

SAFE T TORQUE LOCK 75mm A/F				
Item	Description	Qty	Part Numbers	
			S11000X 2.15/16" STTLS111575	RSQ11000 2.15/16" STTLR111575
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1215489	DM1215489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL75RK				
◆ Not sold separately				

8.10 Table of Parts - Safe T™ Torque Lock 3 1/8" A/F

SAFE T TORQUE LOCK 3 1/8" A/F				
Item	Description	Qty	Part Numbers	
			S3000X 3.1/8" STTLS1115318	RSQ3000 1.13/16" STTLR1115318
1	Spiral Retaining Ring	1	+	+
2	Torque Lock Collar	1	DM1643489	DM1643489
3	Ball Plunger Assembly	6	+	+
4	Plunger Compression Springs	6	+	+
5	Square Drive Sleeve	1	◆	not applicable
6	Spline Adaptor	1		◆
7	Torque Lock Socket	1		
8	Snap Retaining Ring (not shown)	1		
9	Bearing Ball	6	+	+
10	Taper Insert	6	+	+
11	Insert Compression Springs	6	+	+
12	Socket Set Screw	6	+	+
13	Grip Tape (not shown)	1	+	+
+ Indicates items included and available only as part of Repair Kit: STTL318RK				
◆ Not sold separately				

9. Troubleshooting

Fault	Possible Cause	Corrective Action
Torque Lock Collar does not rotate, or there is resistance when turning.	Grease or dirt has built up in the collar.	Disassemble the Torque Lock for cleaning and lubrication.
Spine does not fit into wrench.	Torque Lock has been dropped from height.	Contact Enerpac Service center.
Torque Lock Collar does not rotate.	Deformed due to over torquing	
Titled or damaged adaptor.		

Notes

[illegible]

Notes

[illegible]

Notes

[illegible]

