

Aero-Motive Company

W A Woodhead Industries, Inc. Subsidiary

IMPORTANT SAFETY INSTRUCTIONS

Please read this manual carefully and follow its instructions. Improper use or failure to follow these instructions could result in serious injury, death or property damage. Operators should be instructed in the safety, proper use and maintenance of this product. Keep this manual for future reference.

The following safety precautions call attention to potentially dangerous conditions.



DANGER: Immediate hazards which **WILL** result in severe personal injury or death.



WARNING: Hazards or unsafe practices which **COULD** result in severe personal injury or death.



CAUTION: Hazards or unsafe practices which **MAY** result in *minor* personal injury or product or property damage.

INSTALLATION

RIGID MOUNT

Locate in line with the direction of pull to minimize cable contact with roller guides. This provides longer cable and reel life. Mount torque reel in desired location by using mounting brackets. When mounting reel, use brackets as template for pre-drilling bolt holes.

SWIVEL MOUNT

Adjust reel in line with the direction of pull and swing movement of reel when in use. Hang torque reel in desired location by using the shackle. If it is necessary to remove shackle to hang the reel, be sure the nut and cotter pin are properly replaced on the shackle bolt. Adjust yoke collar for even balance. Adjust yoke rod, utilizing three mounting holes on yoke plate for minimum cable contact.



WARNING: To prevent personal injury, death or property damage, a secondary support chain is recommended for all reels mounted overhead to protect personnel in case of failure in the mounting components or the structure to which they are attached.

SECONDARY SUPPORT CHAIN

Attach one end of the support chain to reel on the end plate. Connect other end of support chain to a support other than that which the reel is supported on. Safety support chain assemblies are available from Aero-Motive as an option item.

ADJUSTMENT



CAUTION: NEVER pull cable to device to be retracted. Always lift object to hook. If the hook is accidentally released when extended, it will snap back. Hazards or unsafe practices **MAY** result in *minor* personal injury or product or property damage.

TOOL ATTACHMENT

If after installation it is determined that the overhang of the reel for active travel required is not sufficient, an overhang extension cable can be used to extend overhang without reducing the active travel. This is available as an optional item from Aero-Motive. To adjust length of overhang, *first all tension must be removed*, then pull cable down and position hook at desired height. Loosen cable stop by securing bottom portion, and turning top nut of cable stop counter-clockwise. Then slide cable upward to roller guide and tighten. Moving

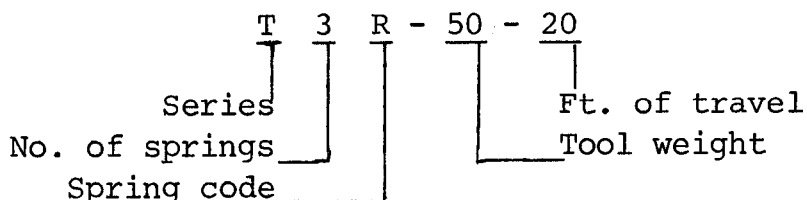
cable stop upward and lengthening overhang of cable will reduce active travel distance. Every foot more of overhang will reduce active cable travel by a foot.

SPRING TENSION

NOTE: Before adjusting tension, attach full load including all attachments.

All torque reels are preset at the factory according to their specified weight. (See Illustration Below) If **increased tension** is desired, turn adjustment nut clockwise. An impact tool is recommended to adjust tension. If **less tension** is required, or to **remove tension**, turn adjustment nut counter-clockwise.

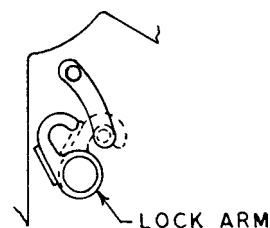
NOTE: A power tool is recommended for many turns may be required because the adjustment is accomplished through a 20:1 worm gear.



NOTE: If tension is removed well below the rated range of the reel during spring adjustment, the safety lock will engage. It will be necessary to apply more tension to release the lock.

RATCHET LOCK

The ratchet/holding lock (separate from safety lock) will function in three positions per revolution, providing approximately five to six inch increments. To hold, pull cable down to desired height, halt, and let lock engage. (In much the same way a window shade works). To disengage, simply pull cable down slightly, permitting lock to release. Cable will retract until end of travel, or until lock is re-engaged. If ratchet lock is not required, it can be disengaged by moving the pin, entering through the slot in the housing, downward and engaging the hook shaped lock arm over it.





AUTOMATIC SAFETY LOCK

If a spring should break or loose tension for any reason, an automatic lock will engage and prevent drum from turning. Lock will disengage when tension is applied to a new spring. (For spring replacement, see SERVICE—SPRING REPLACEMENT).

NOTE: If tension is removed well below the rate range of the reel during spring adjustment, the safety lock will engage. It will be necessary to apply more tension to release the lock.

SERVICE

-  **CAUTION:** Always remove all spring tension before attempting to service the reel. Hazards or unsafe practices MAY result in *minor* personal injury or product or property damage.
-  **CAUTION:** Never remove the tool when cable is extended. Remove tool when cable is fully retracted. Hazards or unsafe practices MAY result in *minor* personal injury or product or property damage.

CABLE REPLACEMENT

Remove tool from hook, ONLY with cable FULLY retracted. Release tension from the springs by turning tension adjustment nut counter-clockwise. Remove two bolts from yoke plate. (On rigid mounted reels this step is not necessary). Remove six nuts on the outer edge of endplate and remove endplate. Lift cable drum out of band assembly until plug and cable are visible. **DO NOT REMOVE COMPLETELY.** Remove plug and cable. Be sure to feed the replacement cable through guide rollers on end plate when replacing. Reassemble by reversing the above procedure, making sure that all parts seat properly. To replace desired tension, see spring tension adjustment.

SPRING REPLACEMENT

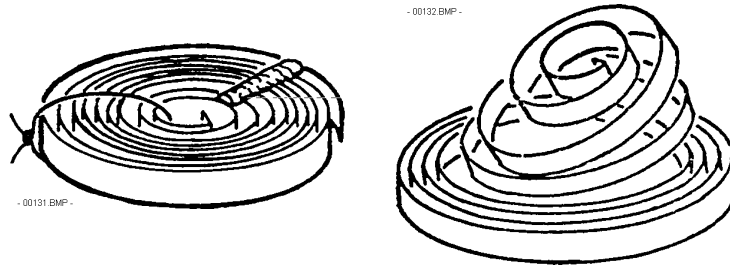
⚠ DANGER: To prevent personal injury, death or property damage, handle all springs which are potentially dangerous with care. Immediate hazards WILL result in severe personal injury or death.

⚠ DANGER: To prevent personal injury, death or property damage, hold the center of the spring down as the hub is pulled out. If the center is allowed to rise up, the spring may escape from its container. Immediate hazards WILL result in severe personal injury or death.

NOTE: This reel contains two to five springs. If one of them has broken due to fatigue, it is recommended that all springs be replaced to avoid excessive down time, since they have been subjected to the same wear, and may be near the breaking point.

First, with cable fully retracted, remove tool clip. Release all tension by turning adjustment nut counter-clockwise. Move reel to a bench or convenient work area. Place reel on a bench with tension nut side down, so that the reel is level. Remove six nuts from end plate and remove end plate. Remove cable drum assembly. Remove the cable assembly by removing set screw. Remove the band assembly. Remove the spring and cup assembly and subsequent spring and cup assemblies. Spring assemblies must be removed carefully from the shaft. When removing spring assembly, carefully grasp spring and cup so that the spring remains in the cup.

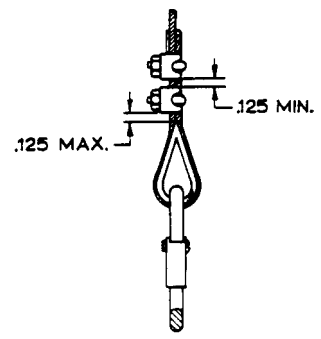
When disposing of old or broken spring assemblies, the coils should be welded or wired securely together to prevent possible injury to scrap handling personnel. DO NOT allow the center of the spring to raise.



If spring hub comes off the shaft with spring cup, place hub in new spring assembly, making sure that the hub is engaging the spring. Replace broken spring assembly and reassemble the reel by following steps above in reverse order. When replacing spring assemblies make sure that the square projection, on the end of spring hub, is properly engaged in the opening in the spring cup. Before replacing reel make sure that all nuts, bolts, and cotter pins are replaced. Pretension reel as described above. For lubrication: See MAINTENANCE.

LOWER HOOK REPLACEMENT

If for any reason the lower hook must be replaced, thimble and clamps must be replaced as shown in the short end of the cable. On the side of the clamps, shrinkable tubing or electrical tape should be placed around cable ends to prevent injury of the frayed strands.



MAINTENANCE

LUBRICATION

The spring and bearings have been sufficiently lubricated at the factory to last the normal life of the reel. If grease has been removed during maintenance, it should be replaced with good quality, high-low, temperature grease

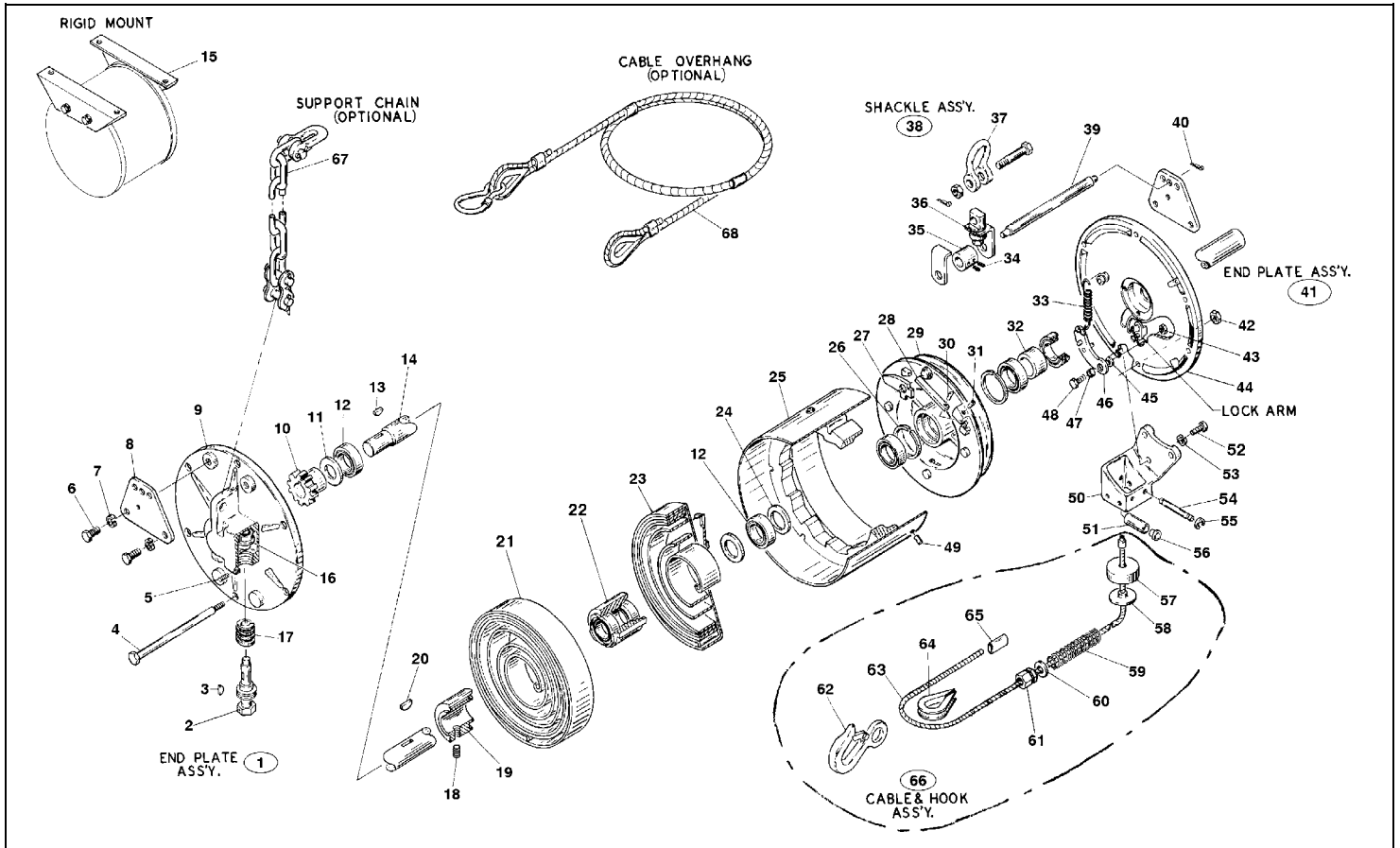
(Texco AFB 2 or equal). Bearings should be packed, and springs should have enough grease in the cup to thoroughly coat the entire spring as it works in during use.

PARTS REPLACEMENT

All parts are replaceable in the field without special tools. Always remove all spring tension before attempting to disassemble internal parts.

NOTE: When ordering replacement parts always include the reel model number add serial number. Always insist on genuine Aero-Motive replacement parts.

REPLACEMENT PARTS



Reference Number *	Part Number	Qty.	Description
1	4099600000	A/R	Assembly; End Plate
2	4098800000	1	Assembly; Tension Shaft
3	00751P0015	1	Key; Woodruff
4	4489400008	6	Tie Bolt (T2XXXXX)
	4489400013	6	Tie Bolt (T3XXXXX)
	00031P0110	6	Tie Bolt (T4XXXXX)
	4489400018	6	Tie Bolt (T5XXXXX)
5	00053P0101	1	Screw; 8-32x¼ Set
6	00032P0101	4	Bolt; 3/8-16x¾
7	00101P0021	4	Washer; 3/8 Lock
8	4092900000	2	Support; Yoke
9	4093900001	1	Plate; End
10	4094500000	1	Gear
11	4094200000	1	Retainer
12	4000500000	4	Bearing
13	00751P0015	1	Key; Woodruff

14	4094300010	1	Shaft; Main (T2XXXXX)
	4094300011	1	Shaft; Main (T3XXXXX)
	4094300012	1	Shaft; Main (T4XXXXX)
	4094300013	1	Shaft; Main (T5XXXXX)
15	4095200000	2	Bracket; Mounting (TXXXXXR)
16	00376P0005	1	Bearing; Flange
17	4094400000	1	Gear; Worm
18	00053P0502	1	Screw; 3/8-16x1/2 Set
19	4018500001	1	Hub; Fixed Spring
20	00751P0014	1	Key; Woodruff
*REFER TO THE TOP OF PAGE 2 FOR SPRING CODE DIAGRAM			
21	4378200105	1	Assembly; Spring & Cup (T2WXXXX-Spring Code)*
	4378200105	2	Assembly; Spring & Cup (T3WXXXX-Spring Code)*
	4378200105	3	Assembly; Spring & Cup (T4WXXXX-Spring Code)*
	4378200105	4	Assembly; Spring & Cup (T5WXXXX-Spring Code)*
	4378200110	1	Assembly; Spring & Cup (T2NXXXX-Spring Code)*
	4378200110	2	Assembly; Spring & Cup (T3NXXXX-Spring Code)*
	4378200110	3	Assembly; Spring & Cup (T4NXXXX-Spring Code)*
	4378200116	1	Assembly; Spring & Cup (T2RXXXX-Spring Code)*
	4378200116	2	Assembly; Spring & Cup (T3RXXXX-Spring Code)*
	4378200116	3	Assembly; Spring & Cup (T4RXXXX-Spring Code)*
	4378200116	4	Assembly; Spring & Cup (T5RXXXX-Spring Code)*
	4378200117	1	Assembly; Spring & Cup (T2TXXXX-Spring Code)*
	4378200117	2	Assembly; Spring & Cup (T3TXXXX-Spring Code)*
	4378200117	3	Assembly; Spring & Cup (T4TXXXX-Spring Code)*
22	5974400001	A/R	Assembly; Rotating Spring Hub & Bearing
23	4014500005	1	Assembly; Spring & Lock Cup (TXWXXXX-Spring Code)
	4014500010	1	Assembly; Spring & Lock Cup (TXNXXXX-Spring Code)
	4014500016	1	Assembly; Spring & Lock Cup (TXRXXXX-Spring Code)
	4014500017	1	Assembly; Spring & Lock Cup (TXTXXXX-Spring Code)
24	4011900000	A/R	Spacer
25	4099700018	1	Assembly; Drum Band (T2NXXXX)
	4099700019	1	Assembly; Drum Band (T3XXXXX)
	4099700020	1	Assembly; Drum Band (T4XXXXX)
	4099700021	1	Assembly; Drum Band (T5XXXXX)
26	00581P0010	2	Ring; Retaining
27	M46420001	1	Lever; Safety Lock
	1		
28	4096200000	1	Lock; Spring Safety
29	4095900000	1	Assembly; Cable Drum
30	00230P0112	1	Pin; .125x.500 LG.
31	00053P0203	1	Screw; #10-24x3/8 Set
32	4094700000	1	Spacer
33	3163500000	1	Spring
34	00053P0408	2	Screw; 5/16-18x5/16 Set
35	4095100000	1	Collar; Yoke
36	4967300000	1	Shackle Connector
37	01240P0007	1	Shackle Body
38	4969300000	1	Assembly; Shackle
39	4092800018	1	Rod; Yoke Support (T2XXXXX)
	4092800019	1	Rod; Yoke Support (T3XXXXX)
40	00228P0010	1	Pin; Cotter
41	4097800000	1	Assembly; End Plate
42	00077P0001	6	Nut 5/16-18
43	00151P0035	1	Nut; 3/8-16
44	4095700001	1	Plate; End
45	4095300000	1	Spacer
46	4306900000	1	Lever; Scroll Lock
47	4000500000	1	Bearing

48	00032P0103	1	Bolt; 3/8-16x1
49	00006P0104	1	Pin
50	4095400001	1	Housing; Roller Guide
51	4095600000	4	Roller
52	00030P0110	3	Bolt 1/4-20x3/4
53	00101P0030	3	Washer; Lock 3/4
54	4095500000	4	Shaft; Roller
55	00580P0010	8	Ring; Retaining .312 I.D.
56	3124900000	8	Bearing; Cable Guide Flange
57	M83490010	1	Ball Stop
58	M56130005	1	Retainer
59	3128500000	1	Spring
60	6158000000	1	Thimble
61	6158100000	1	Nut; Cable Stop
62	3108500000	1	Hook
63	4190300015	1	Swaged Cable (TXXXX15)
	4190300020	1	Swaged Cable (TXXXX20)
	4190300030	1	Swaged Cable (TXXXX30)
	4190300040	1	Swaged Cable (TXXXX40)
	4190300050	1	Swaged Cable (TXXXX50)
64	C25370717	1	Thimble
65	C2580626	1	Swage Fitting
66	4190800015	1	Assembly; Cable & Hook (TXXXX15)
	4190800020	1	Assembly; Cable & Hook (TXXXX20)
	4190800030	1	Assembly; Cable & Hook (TXXXX30)
	4190800040	1	Assembly; Cable & Hook (TXXXX40)
	4190800050	1	Assembly; Cable & Hook (TXXXX50)
67		A/R	Chain; Support (optional)
68		A/R	Overhang; Cable (optional)

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