

# INSTALLATION and MAINTENANCE INSTRUCTIONS

## SZ-21 DIRECT DRIVE HAZARDOUS DUTY ELECTRIC CABLE REELS

All units are provided with right hand rotation unless otherwise specified. This means that cable is pulled off spool top left or bottom right (spool rotates clockwise to wind cable) **when viewing spring end of reel**. See diagram on parts page.

Clock-type springs provide power for automatic cable take-up. **Spring must be pretensioned at time of installation** to insure that tension is applied to cable at all times. A tension adjustment spanner wrench is provided with each reel.

### ⚠ WARNING

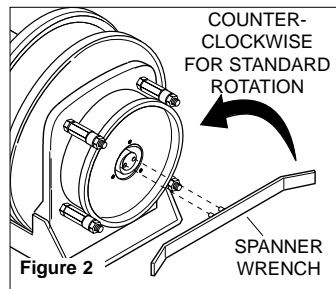
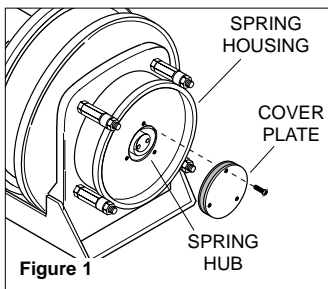
Some reels with large or multiple springs are equipped with a ratcheted adjustment wrench. Follow separate instructions for its use. Failure to use ratcheted wrench, on reels so equipped, could result in serious personal injury.

### ⚠ WARNING

Do not attempt to relieve spring tension using spanner wrench. Doing so may result in personal injury.

### INSTALLATION

1. Insure that machinery to be serviced by reel is at position closest to reel.
2. Securely mount reel in desired position using 3/8"(M10) bolts. Be sure spool is aligned with cable run.
3. Position optional cable guide, if reel is so equipped.
4. Connect free end of cable to junction box on machine or adjust cable stop so that desired length of cable extends from reel.
5. Remove cover plate on spring housing to expose shaft and spring hub. (See Figure 1).
6. Insert spanner wrench into holes in spring hub (Fig 2). Rotate wrench counterclockwise (for standard rotation). Number of 360° turns should match last digit in model number on serial plate. *If model number includes an "R", reel is reverse rotation and wrench must be rotated clockwise.* (See EXPLANATION on parts list page.)



### ⚠ CAUTION

Do not exceed number of turns indicated on serial plate. Over-tensioning can cause a broken spring, sheared shaft or other damage.

**NOTE: If reel is equipped with ratcheted adjustment wrench, follow instructions on separate sheet.**

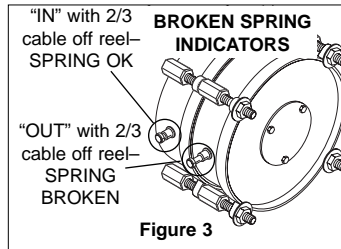
**NOTE:** On reels containing more than one spring, the hubs are connected at the factory. Therefore, by tightening the outer spring, the inside spring(s) will be tightened.

7. Remove collector cover and connect individual supply conductors to collector terminals.

### MAINTENANCE

**Periodically:** A. Use compressed air to clean collector assembly and inside of collector housing. Inspect collector assembly for brush wear and pitted slip rings.

B. Inspect cable for wear and check mounting bolts and other hardware for tightness.



C. Check for broken springs by pulling about 2/3 cable off reel and observing "Broken Spring Indicators" on sides of spring canisters. See Fig. 3. **NOTE:** Bearings and springs are prelubricated and require no periodic maintenance.

### SPRING REPLACEMENT

### ⚠ WARNING

Do not attempt to remove spring from its housing. Clock-type springs can be dangerous to handle. Removal of spring from housing could result in personal injury.

The unique SAFETYCHANGE® spring motor consists of a spring and hub sealed within a housing. A replacement spring is supplied sealed in its housing and the old unit should be discarded completely.

1. Turn off all electric power.
2. Disconnect cable from machine junction box.
3. Wind all cable onto reel to relieve all spring tension.
4. Remove inspection cover from face of spring housing.
5. Rotate spool clockwise and observe inner shaft. Shaft should rotate clockwise and hub (with spring attached) should remain stationary.

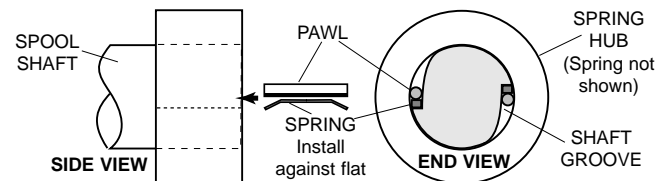
**NOTE: Do not attempt to remove spring if resistance is met or hub tends to rotate with shaft.**

Continue to rotate spool and strike end of shaft several sharp blows with a lead hammer or rubber mallet until shaft rotates freely and hub remains stationary.

6. Remove (4) nuts which secure spring motor(s) to frame.
7. Slide spring motor(s) off shaft and discard.

**NOTE:** On multi-spring reels, be sure to remove and **save** dowel pins which connect one spring hub with another. Also remove snap rings on shaft between spring housings.

8. Install replacement spring motor(s), pawls and pawl springs. **NOTE:** Pawl springs must be located between the pawls and the deepest section of the shaft grooves. Make sure that pawls and pawl springs are inserted flush with ends of shaft and hub or they may rub against inspection cover.



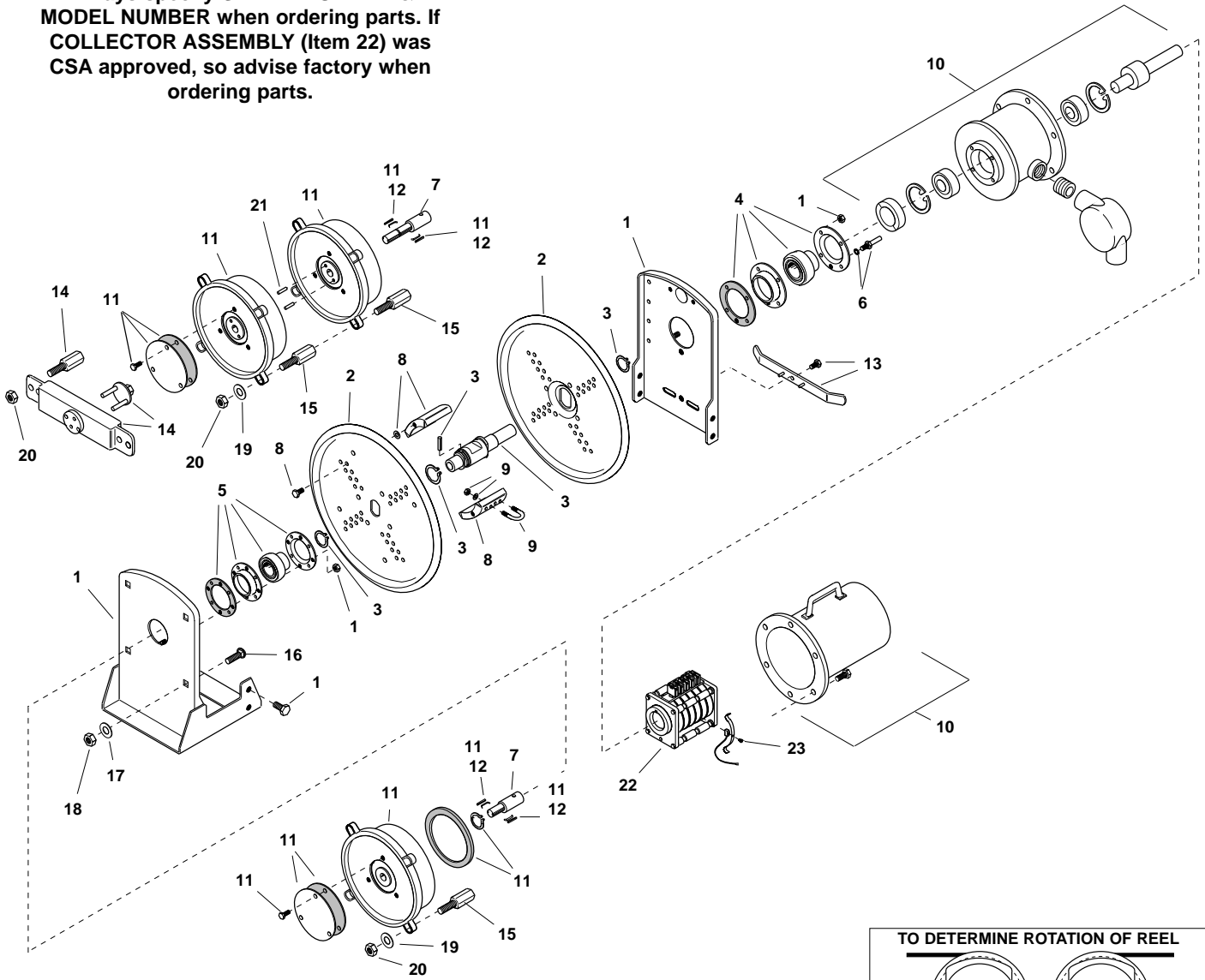
9. Tighten nuts (and extension bolts) securing spring housing(s) to reel frame.
10. Connect free end of cable to junction box on machine or adjust cord stop so that desired length of cord extends from reel.
11. Tension spring with spanner wrench. Refer to **INSTALLATION** section.
12. Replace inspection cover.

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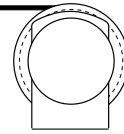
# ILLUSTRATED PARTS LIST

## SZ-21 DIRECT DRIVE HAZARDOUS DUTY ELECTRIC CABLE REELS

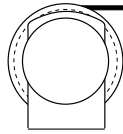
Always specify **SERIAL NUMBER & MODEL NUMBER** when ordering parts. If **COLLECTOR ASSEMBLY (Item 22)** was CSA approved, so advise factory when ordering parts.



### TO DETERMINE ROTATION OF REEL



**STANDARD  
ROTATION**



**REVERSE  
ROTATION**

Cable is payed out and retracted as shown when viewing reel from spring motor side.

# SZ-21 DIRECT DRIVE HAZARDOUS DUTY CABLE REEL REPLACEMENT PARTS LIST

NOTE: Applicable mounting hardware included with each kit.

ITEM	KIT NO.	DESCRIPTION	QTY.
1	01239301	Frame Assembly	1
2	012406	Discs (Set of two)	1
3	01239701	Main Shaft Assembly (Includes drive pin and retaining rings)	1
4	012402	Bearing Kit--2" Bore (Includes housing and gasket)	1
5	012401	Bearing Kit--1.75" Bore (Includes housing and gasket)	1
6	012456	Drive Stud Kit	1
7	012208	Stub Shaft, Std. Rotation (351, 601)	1
7	01220801	Stub Shaft, Rev. Rotation (351, 601)	1
7	012209	Stub Shaft, Std. Rot. (621, 751, 801)	1
7	01220901	Stub Shaft, Rev. Rot. (621, 751, 801)	1
7	012210	Stub Shaft, Std. Rot. (622, 752, 802)	1
7	01221001	Stub Shaft, Rev. Rot. (622, 752, 802)	1
7	012211	Stub Shaft, Std. Rot. (623, 753, 803)	1
7	01221101	Stub Shaft, Rev. Rot. (623, 753, 803)	1
7	012212	Stub Shaft, Std. Rot. (624, 754, 804)	1
7	01221201	Stub Shaft, Rev. Rot. (624, 754, 804)	1
7	012213	Stub Shaft, Std. Rotation (1001)	1
7	01221301	Stub Shaft, Rev. Rotation (1001)	1
7	012214	Stub Shaft, Std. Rotation (1002)	1
7	01221401	Stub Shaft, Rev. Rotation (1002)	1
7	012371	Stub Shaft, Std. Rotation (1003)	1
7	01237101	Stub Shaft, Rev. Rotation (1003)	1
7	014619	Stub Shaft, Std. Rotation (1004)	1
7	01461901	Stub Shaft, Rev. Rotation (1004)	1
8	012416	Wrapper Kit--5" Wide, 8" to 14" Dia. (Includes 4 wrapper sections)	1
8	012417	Wrapper Kit--5" Wide, 15" to 20" Dia. (Includes 8 wrapper sections)	1
9	012444	Cable Clamp Kit .38--.74 Dia. Cable (U-bolt with lockwashers and hex nuts)	1
9	012445	Cable Clamp Kit .75--1.11 Dia. Cable	1
9	012446	Cable Clamp Kit 1.12--1.50 Dia. Cable	1
10	03303901	Enclosure Assembly 2, 3, 4 pole/35 Amp collectors	1
10	03303902	Enclosure Assembly 4, 6 p/35A; 2,3,4p/75A; 2p/125A; 2p/200A collectors	1
10	03303903	Enclosure Assembly 10, 12p/35A; 6p/75A; 3p/125A collectors	1
10	03303904	Enclosure Assembly 14, 16p/35A; 8p/75A; 4p/125A collectors	1
10	03303905	Enclosure Assembly 20, 24pole/35Amp collectors	1
10	03303906	Enclosure Assembly 30, 36 pole/35 Amp collectors	1
11	017041	Spring Motor Kit, Std.. Rot.--35 (Includes pawl, pawl springs, cover, gaskets, and snap ring)	ar
11	017042	Spring Motor Kit, Rev. Rot.--35	ar
11	017043	Spring Motor Kit, Std. Rot.--60	ar
11	017044	Spring Motor Kit, Rev. Rot.--60	ar
11	017045	Spring Motor Kit, Std. Rot.--62	ar
11	017046	Spring Motor Kit, Rev. Rot.--62	ar
11	017047	Spring Motor Kit, Std. Rot.--75	ar
11	017048	Spring Motor Kit, Rev. Rot.--75	ar
11	017049	Spring Motor Kit, Std. Rot.--80	ar
11	017050	Spring Motor Kit, Rev. Rot.--80	ar
11	017051	Spring Motor Kit, Std. Rot.--100	ar
11	017052	Spring Motor Kit, Rev. Rot.--100	ar

ITEM	KIT NO.	DESCRIPTION	QTY.
12	012425	Pawl Kit (35, 60 Springs) (Includes 2 pawls and springs)	ar
12	012426	Pawl Kit (62, 75, 80 Springs)	ar
12	012427	Pawl Kit (100 Springs)	ar
13	017190	Spanner Wrench (35 - 80 Springs)	1
13	017191	Spanner Wrench (100 Springs)	1
14	032805	Ratchet Wrench Kit (75, 80 Springs) (Includes mounting bolts)	1
14	032804	Ratchet Wrench Kit (100 Springs)	1
15	017054	Extension Bolts (35 - 80 Springs) (4 bolts per kit--less hardware)	ar
15	017055	Extension Bolts (100 Springs)	ar
16	016182	Carriage Bolt, .50--13 x 1.5	ar
17	021291	Lockwasher, .56 Med., Z.P.	ar
18	100959	Hex Nut, .50--13, Z.P.	ar
19	101211	Flat Washer, .50	ar
20	P06-03	ESNA Lock Nut, .50--13, Z.P.	ar
21	021762	Hub Lock Pins (100 Springs)	ar
21	021761	Hub Lock Pins (All Other Springs)	ar
22	012285	Collector Assembly, 2 Pole, 35 Amp	1
22	012286	Collector Assembly, 3 Pole, 35 Amp	1
22	012287	Collector Assembly, 4 Pole, 35 Amp	1
22	012288	Collector Assembly, 6 Pole, 35 Amp	1
22	012289	Collector Assembly, 8 Pole, 35 Amp	1
22	012290	Collector Assembly, 10 Pole, 35 Amp	1
22	012291	Collector Assembly, 12 Pole, 35 Amp	1
22	012292	Collector Assembly, 14 Pole, 35 Amp	1
22	012293	Collector Assembly, 16 Pole, 35 Amp	1
22	012294	Collector Assembly, 20 Pole, 35 Amp	1
22	012295	Collector Assembly, 24 Pole, 35 Amp	1
22	012296	Collector Assembly, 30 Pole, 35 Amp	1
22	012297	Collector Assembly, 36 Pole, 35 Amp	1
22	012298	Collector Assembly, 2 Pole, 75 Amp	1
22	012299	Collector Assembly, 3 Pole, 75 Amp	1
22	012300	Collector Assembly, 4 Pole, 75 Amp	1
22	012376	Collector Assembly, 6 Pole, 75 Amp	1
22	012377	Collector Assembly, 8 Pole, 75 Amp	1
22	037194	Collector Assembly, 2 Pole, 125 Amp	1
22	037294	Collector Assembly, 3 Pole, 125 Amp	1
22	037295	Collector Assembly, 4 Pole, 125 Amp	1
22	012304	Collector Assembly, 2 Pole, 200 Amp	1
23	012440	Brush Kit (35 Amp) (Each kit includes 4 brushes and 4 fingers)	ar
23	012441	Brush Kit (75 Amp)	ar
23	012443	Brush Kit (125 Amp/200 Amp)	ar
n.s.	02180901	Seal Kit (Use to install cable)	1

**⚠ WARNING**  
Failure to carefully follow instructions in Seal Kit could result in reel that does not meet Hazardous Duty Certification.

**NOTE:**  
Please consult factory for optional accessories: roller guides, ratchet lock, limit switch, hoop guides, spool lock, and swivel base. **If Collector Assembly was CSA approved, so advise factory when ordering parts.**

## MODEL NUMBER EXPLANATION

SPRING REEL    FRAME SERIES    SPRING SERIES    NO. OF SPRINGS    NO. OF POLES    AMPACITY    CORE DIAMETER    PRETENSION TURNS  
**SZ   21   80   2   R   -   12   3   10   -   1**

INDICATES REVERSE ROTATION.  
NO LETTER INDICATES STANDARD ROTATION.

## AMPACITY

CODE	AMPS
3	35
7	75
12	125
20	200

## CABLE INSTALLATION & REMOVAL

Use the procedure detailed on HAZARDOUS DUTY CABLE REEL SEALING INSTRUCTIONS (bulletin 039789) which comes with sealing kit (available separately).

### **⚠ CAUTION**

Carefully read and follow instructions supplied with separate sealing kit as well as instructions for sealing compound. Failure to properly follow those instructions could result in damage to equipment, personal injury or death.

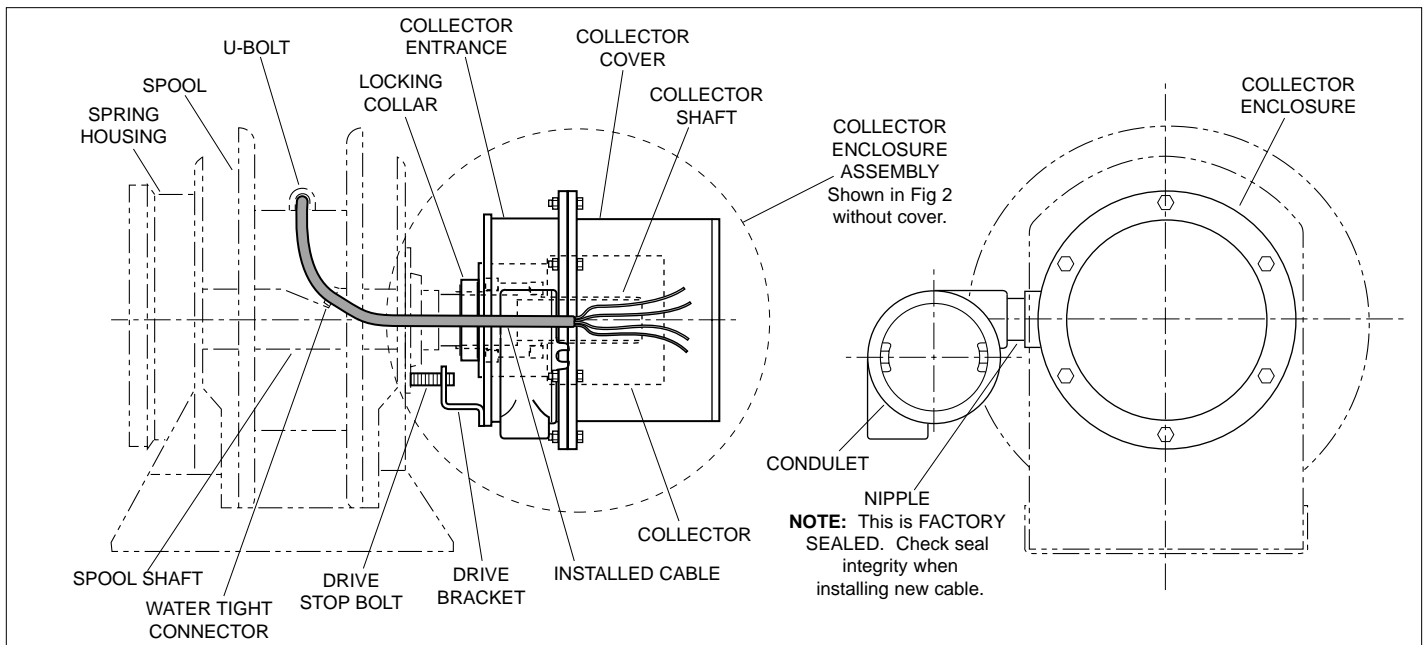
## CABLE REMOVAL

### **⚠ CAUTION**

Always open all breakers and disconnect electrical power to reel. Failure to turn off electrical power could lead to serious injury or death.

1. Move machine serviced by reel to a position closest to reel. Springs will still be under pre-tension at this point.
2. Turn off all power to reel.
3. Remove collector cover and gasket.
4. Disconnect electric leads to and from collector.
5. Follow Steps 3–9, REMOVING OLD CABLE, on bulletin 039789.

## CABLE INSTALLATION REFERENCE DRAWING



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