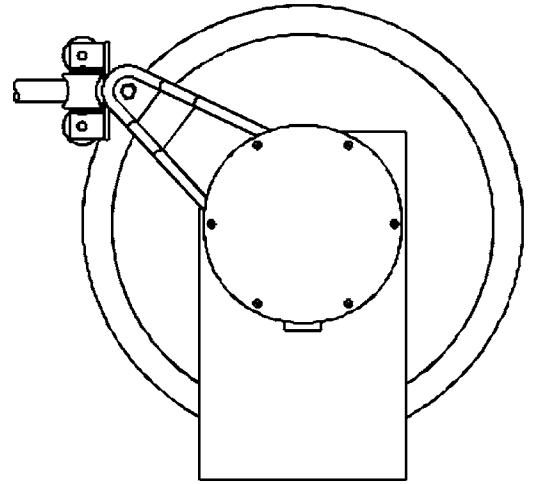
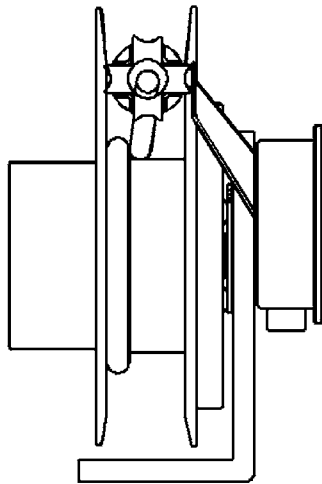


Cable Reel NC & NY



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- 8.0 Replacement Parts**

1.1 Electrical Warnings

- 1.1.1 Properly ground equipment according to the National Electric Code and local codes and ordinances.
- 1.1.2 Always disconnect or remove the power from the cable reel before attempting to perform any service function.
- 1.1.3 Do not use this cable reel with loads greater than the rated current and voltage of the slip ring. The current and voltage must not be greater than that rated for the flexible cord with which this reel is equipped. Rated ampacity of the flexible cord must be in accordance with the National Electric Code.

1.2 Operational and Maintenance Warnings

- 1.2.1 This cable reel is equipped with power springs under tension. Do not disassemble spring motor before consulting Maintenance Section 5.3.
- 1.2.2 This cable reel has a rotating spool powered by springs under tension. Exercise care when handling the cable reel while servicing, adjusting, or during normal operation.
- 1.2.3 Do not use flexible cord or cable different than that which is supplied with this reel. Changes in diameter, weight per foot, and length of cord can affect the operation of the reel.
- 1.2.4 Check all fasteners or hardware periodically to assure tightness. Install all mounting fasteners or hardware to maintain tightness under vibration and check periodically, especially if people are around or below the cable reel assembly after installation. We recommend that a safety chain or cable be attached to all reels mounted overhead to prevent falling.
- 1.2.5 **WARNING:** Modification of this equipment may cause excessive wear and void the Warranty. Contact Manufacturer regarding changes or modifications of equipment which could affect reliability or safety.

1.3 Listings, Ratings and Markings

1.3.1 Listings

- 1.3.1.1 UL listed cord reels are intended for industrial use and are provided with permanent mounting means. The UL rating is voided when a plug is used on the lead cable from the reel junction box to the power supply. This equipment must be connected by a qualified electrician.
- 1.3.1.2 Use UL listed type SO, 600V, rated 90° C flexible cord for the supply cord (if flexible cord is used) and for the load end (spool cord).
- 1.3.1.3 Do not alter the reel construction as supplied from the factory in any way.

1.3.2 Ratings

1.3.2.1 Reels Equipped with Cord

- 1.3.2.1.1 A cord reel equipped with flexible cord must be rated in amperes and volts.
- 1.3.2.1.2 The current rating must not be greater than the ampacity of the flexible cord with which the reel is equipped; and the voltage rating must not be higher than the voltage for which the cord is rated.

1.3.2.2 Reels Not Equipped with Cord

- 1.3.2.2.1 A cord reel that is not equipped with flexible cord must be rated in amperes and in volts for each type AWG size of cord intended for use with the reel.
- 1.3.2.2.2 For each type and AWG size of cord intended for use with the reel, the current rating must not be greater than the ampacity of that type and size of cord, and the voltage rating must not be higher than the voltage rating for the cord.

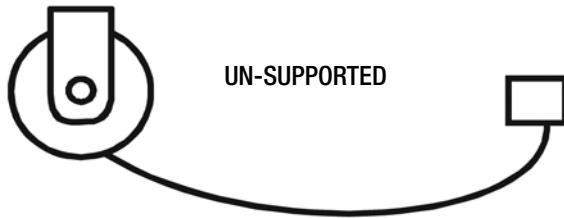
1.3.3 Markings

- 1.3.3.1 A cord reel must have a plain, legible marking readily visible when the reel is properly installed. The marking must include the manufacturer's name or trademark and the catalog number.
- 1.3.3.2 The marking of the cord reel equipped with a flexible cord must include the current and voltage ratings.
- 1.3.3.3 The marking of the cord reel not equipped with a flexible cord must include: the type designation, AWG size, and the maximum length of each type of cord intended for use with the reel, and the current and voltage rating for each of these markings.
- 1.3.3.4 The reel must be marked with the 90°C temperature rating of the cord.

2.0 Installation

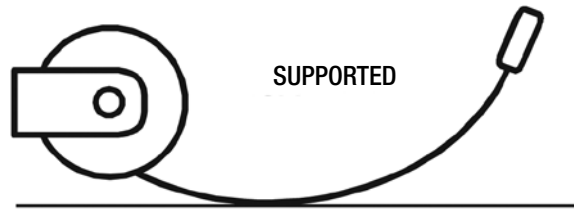
2.1 Application Types

2.1.1 Stretch Applications



2.1.1.1 The cable is suspended without any intermediate support. Stretch reels generally require a line pull equal to two times the weight of the cable, which allows approximately 6% sag. On long applications where sag cannot be tolerated, it is sometimes desirable to put supports at intervals of 5 to 10 feet.

2.1.3 Drag Applications



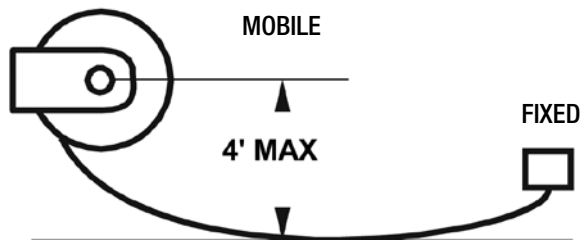
2.1.3.1 The reel is mounted on a stationary object and is required to drag the cable over the surface to the reel. A ratchet and/or ball stop may be desired.



2.1.2 Lift Applications

2.1.2.1 The cable is lifted vertically. The reel is normally designed to handle only the total weight of the cable. Some lift applications may require a ratchet and/or ball stop to control the retracted length of cable.

2.1.4 Retrieve Applications



2.1.4.1 The reel is mounted on the moving object and winds up or pays out the cable as the machine approaches or moves away from the power source. Vertical Retrieve applications are possible.

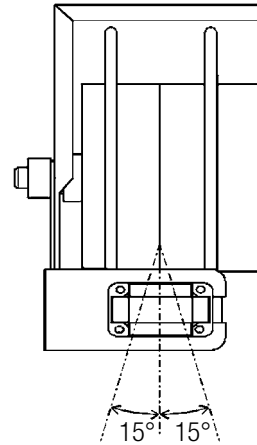
2.2 Mounting

2.2.1 In **Standard Mounting**, reels are mounted correctly when the center line of the reel is in line with the center of the run.

2.2.2 In **Pivot Base Mounting**, the reel must turn and follow the hoist or crane as it moves through up to 330° arc of an open loop track. Mount the reel according to instructions in Section 2.2.1. All NC & NY REELS can be furnished with a pivot base mounting.

2.3 Cable Guides

- 2.3.1 All **NC & NY Reels** come with four-roller guides. The user must exercise caution since certain applications do not lend themselves to the use of small roller cable guides. Normally, use a four-roller guide where cable is pulled in a direction tangent to the drum of the reel. Do not serve cable around the small diameter rollers. The four-roller guide is essentially a centering device. Total cable deflection from center should not exceed 30°, i.e., 15° in either direction. If the angle of deflection exceeds 30°, a pivot base (#PVB) should be used to avoid excessive cable wear and unreliable operation.



2.4 Ratchet (Optional)

- 2.4.1 **Operation** - The ratchet on the NC & NY Reel is spring loaded and designed to function whether the reel is mounted with base down, base up, or wall mounted.
- 2.4.2 **Ratchet Removal** - Remove the two 1/4"-28 x 7/16" hex head cap screws (see page 10). Drive the two ratchet pins (B1160) toward the spring housing until they drop free.

2.5 Power Connections

- 2.5.1 Remove six #10-32 x 1/2 round head screws on B1150 Junction Box Cover and Gasket B1151.
- 2.5.2 Make Series NC & NY power connections at the terminal strip found inside the junction box. The feeder cable or conduit enters the junction box through a 3/4" NPT pipe size. Make connections on the open side of the terminal strip.

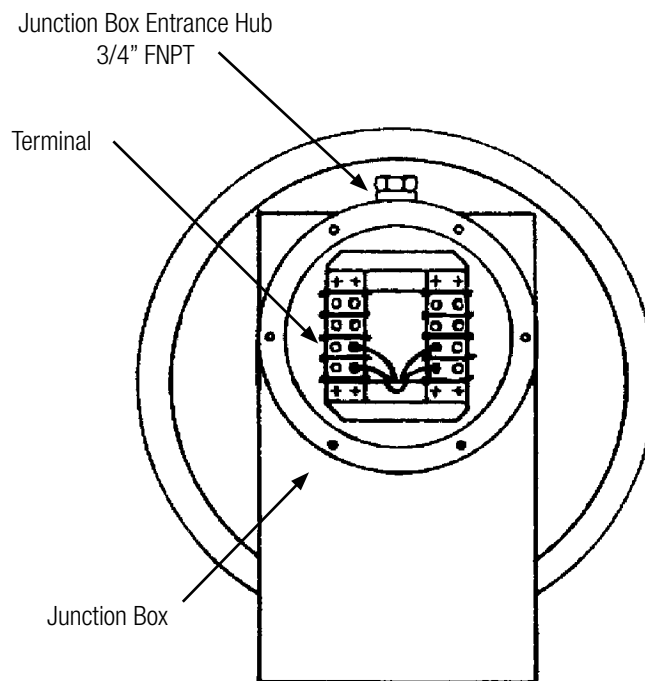


FIGURE 1
Power Connections

3.0 Adjustments

3.1 Slip Ring

3.1.1 All adjustments and alignments of slip ring brushes are made at the factory before shipment. The reel may be jostled in shipment. Before installation, check that the reel brushes are free floating in the brush holders, that the spring operates properly, and that the brush does not ride against the insulator rings of the slip ring. Check the brush surface for full contact seating on the slip ring surface.

3.2 Reel Spring Tension

- 3.2.1 **Set Up Turns**--After installing the cable on the reel, test to see that it performs as required. If the cable tension is too light, adjust by grasping the cable by hand and making a clockwise turn (on standard rotation reels). This sets up one turn on the reel. Set up additional turns in like manner. Test each time to see if the reel operates properly.
- 3.2.2 **Caution: Never set up too many turns so that the spring is worked to its end. The end of the wind can definitely be felt but should be approached with caution. If the reel does not perform after all adjustment length is used, consult the factory.**

4.0 Storage

4.1 When not in use, keep the cable reel protected, and in a clean, dry place, preferably at room temperature. Open slip ring enclosures periodically to check for condensation. We recommend that a self-contained or bagged absorbent material be placed in the slip ring enclosure during extended periods of storage. Remove absorbent material before putting reel into operation.

5.0 Maintenance

5.1 Lubrication

- 5.1.1 **Reel Springs**-- All springs and bearings are lubricated for life at the factory. No additional lubrication is required, except when installing new parts.
- 5.1.2 **Cable Guides**-- Check rollers on cable guides periodically to keep them free running.

5.2 Inspection

5.2.1 **Slip Ring**-- Make a periodic inspection, depending on the duty cycle, to check the brushes on the slip ring. (See Section 5.6.1.7.) Remove dirt, oxidation, or other contaminants from the slip ring and brush surfaces.

5.3 Removing Reel Springs

- 5.3.1 **CAUTION: Be sure all spring tension has been released before starting disassembly procedures.**
- 5.3.2 **Removal of Springs** (See Parts List, Page 10)
- 5.3.2.1 Remove six #10-32 x 1/2 round head screws on B1150 Junction Box Cover and Gasket B1151.
- 5.3.2.2 Disconnect wires on terminal block.
- 5.3.2.3 Remove 5/16 x 1/2 set screw on Reel Stand B1138.
- 5.3.2.4 Pull shaft with spool out of stand.
- 5.3.2.5 Remove six #6-32 x 3/8 screws and Spring Cover B141 from the back side of the spring housing.
- 5.3.2.6 Remove spring.
- 5.3.2.7 **WARNING: Exercise care to make sure that spring does not uncoil during removal. We recommend that a wire or tie wrap be slipped in and secured around the coils (from the center to the outside) so that it does not slip out of its coiled position.**

5.4 Installation of Springs

5.4.1 **NOTE:** Replacement springs are shipped with a narrow metal safety band to keep the spring from uncoiling. **Leave this band in place during and after installation. Plastic tie-wraps are used for additional safety during shipping and handling.**

5.4.2 Installation of Springs

5.4.2.1 Secure the damaged spring as described in Section 5.3.2.7 with a wire or tie wrap.

5.4.2.2 Carefully pry spring up from two sides until it is free of housing.

5.4.2.3 Install new spring in housing. Make sure that it engages Spring Catch and Spring Release Hub on shaft. Carefully cut and remove plastic tie wraps from the spring.

5.4.2.4 Thoroughly coat spring with Dow Corning Molykote BR2S or equivalent.

5.4.2.5 Reassemble reel in reverse order of Section 5.3.

5.5 Installation of Replacement Cable (See Page 8 for Cable Specifications)

5.5.1 Remove Slip Ring Cover.

5.5.2 The cable enters the slip ring enclosure through a watertight connector located on the reel drum. Remove enough of the outer jacket on the cable to make connections without exerting tension on or interfering in any way with the brush springs. Tighten the connector to secure cable in the rubber grommet.

5.5.3 Tighten cable clamp.

5.5.4 **NOTE:** Wind cable around the drum with the spool in a stationary position.

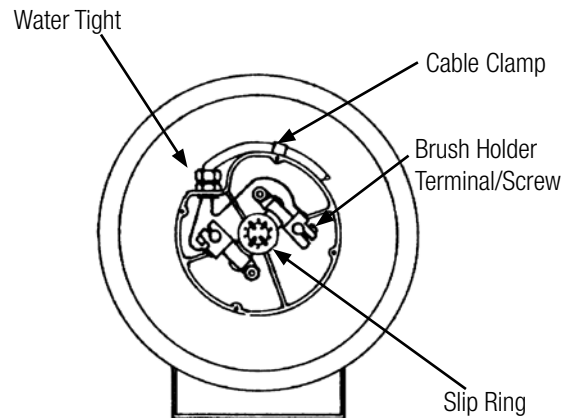


FIGURE 2
Cable Connections

5.6 Installation of Replacement Slip Ring or Brushes

5.6.1 Replacement of Slip Ring Core

5.6.1.1 Remove six #10-32 screws and Slip Ring Cover.

5.6.1.2 Remove Gasket.

5.6.1.3 Disconnect all wires to brush holders. Disconnect slip ring core leads at junction box terminals.

5.6.1.4 Remove brush holders and brushes. If only replacing brushes, install new brushes and follow Section 5.6.1.7 instructions.

5.6.1.5 If also removing core, loosen set screw in drive collar and remove slip ring from shaft.

5.6.1.6 Install new core and assemble by reversing the preceding procedures.

5.6.1.7 Be sure reel brushes are free floating in the holders, that brush spring operates properly, and that the brush does not ride against the insulators of the slip ring. Check the brush surface for full contact seating on the slip ring surface.

6.0 Cable Data

6.1 Note: Charts below based on 90° C conductor temperature. 40° C ambient and derating for a control cable of more than 4 conductors per N.E.C. Nominal diameters and weights shown will vary with different manufacturers. Our reels can be used with other types of cable not specified here. Since cable diameter and weight are critical to proper reel selection, please contact the factory for assistance. If the cable type and size you need is not shown here, contact Conductix or your local representative.

Cable Data Chart

16 AWG				14 AWG				12 AWG				10 AWG			
No. Cond.	Amps	Dia. In.	Weight Lb./Ft.	No. Cond.	Amps	Dia. In.	Weight Lb./Ft.	No. Cond.	Amps	Dia. In.	Weight Lb./Ft.	No. Cond.	Amps	Dia. In.	Weight Lb./Ft.
2	10	.405	.083	2	15	.530	.137	2	20	.605	.188	2	25	.640	.221
3	10	.430	.102	3	15	.560	.169	3	20	.640	.169	3	25	.690	.283
4	8	.485	.135	4	12	.605	.209	4	16	.670	.270	4	20	.750	.350
5	8	.525	.153	5	12	.685	.262	5	16	.730	.319	5	20	.815	.419
6	8	.565	.177	6	12	.740	.302	6	16	.800	.372	6	20	.880	.484
7	7	.605	.202	7	10.5	.785	.329	7	14	.860	.429	7	17.5	.980	.590
8	7	.645	.221	8	10.5	.845	.373	8	14	.915	.472	8	17.5	1.050	.652
10	7	.720	.278	10	10.5	.905	.434	10	14	1.015	.577	10	17.5	1.125	.762
12	7	.720	.305	12	10.5	.930	.481	12	14	1.045	.642	12	17.5	1.155	.853

Cable Jacket Types

Type	Conductor Temp.	Max. Voltage Rating	Conductor Insulation	Jacket	No. of Conductors	Ground Conductors
SOOW-A or SOW-A	90° C	600	EPDM	CDE (or equal)	1-12	N/A
SO	90° C	600	Rubber or EPR	Neoprene (or equal)	1-12	N/A

Cable Characteristic

(May vary between cable manufacturers.)

SOW-A/SOOW-A

General purpose, CDE jacket cable (larger overall diameter as compared to SJOW-A/ SJOOW-A) with fine stranding for flexibility.

Resistant to oil, water and weather.

600 Volts

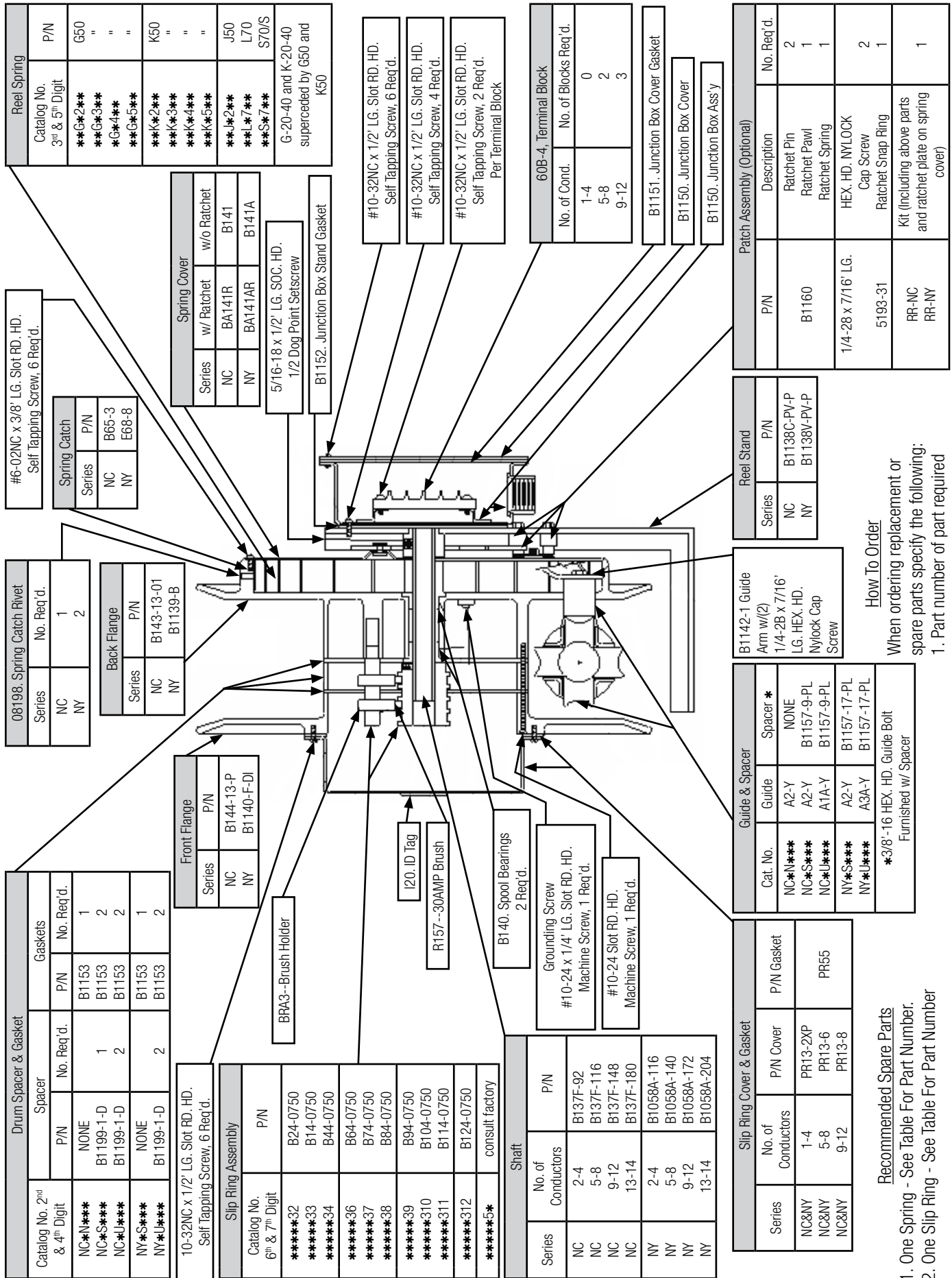
Color Code Chart

No. Cond.	Base Color	Tracer Color	Cond. No.	Base Color	Tracer Color
1	Green		7	White	Black
2	Black		8	Red	Black
3	White		9	Green	Black
4	Red		10	Orange	Black
5	Orange		11	Blue	Black
6	Blue		12	Black	Black

7.0 Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
Reel will not retract cable but has some tension.	1) Improper pretension 2) Incorrect reel for application (lift vs. stretch). 3) Improper cable or cable length installed. 4) Cable needs adjustment.	1) See Tension Adjustment section. 2) Quantify application vs. reel selection. 3) Install correct cable type and length. 4) Check guide alignment.
Reel does not have spring tension.	1) Broken spring. *Quantify application to prevent reoccurrence.	1) Replace spring motor.
Ratchet will not engage.	1) Broken ratchet pawl spring.	1) Replace ratchet pawl spring.
Ratchet will not disengage.	1) Over-extension of reel.	1) Manually rotate reel spool to disengage ratchet. Do not over extend. Adjust guide to prevent lockup in case of over extension.
Cable wraps improperly (uneven wrapping, wraps above or jumps flange).	1) Improper cable or cable length installed. 2) Cable guide needs adjustment. 3) Reel mounting.	1) Install cable for which reel was designed. 2) Check guide alignment. 3) Check for spool drum horizontal alignment and spool alignment in relation to cable travel & adjust.
Cable twisting or knotting.	1) Improperly installed cable. 2) Cable rubbing on or bending around fixed object. 3) Excessive spring tension. 4) Inadequate anchoring of cable.	1) See Cable Install section 5.5 of manual. 2) Check roller guide for function and cable pay out path. 3) Quantify application vs. reel selection. Also check pretension. 4) Adjust anchoring method. ie. add strain relief (kelloms grip).
Open or intermittent circuit.	1) Inadequate connection. 2) Brush loses contact with slip ring. 3) Cable defective.	1) Check all termination points. 2) Check brush wear, spring tension & alignment. 3) Perform continuity check while rotating spool one complete revolution.
Circuit trips and/or Pitted, burned rings or brushes.	1) Inadequate amp rating of reel.	1) Quantify application requirements vs. reel & cable rating.
Circuit arcing	1) Inadequate Amp or voltage rating of reel. 2) Carbon dust accumulation. 3) Water/moisture in slip ring enclosure. 4) Loss of brush contact with ring due to weak brush spring, brush wear or excessive Rpm's.	1) Quantify application requirements vs. reel and cable rating. 2) Periodically inspect and clean slip ring enclosure. 3) Check gasket seal. Addition of heater to prevent condensation. 4) Replace brush spring(s).

8.0 Replacement Parts



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