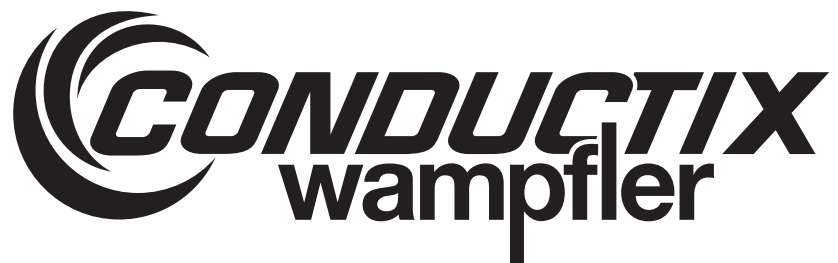
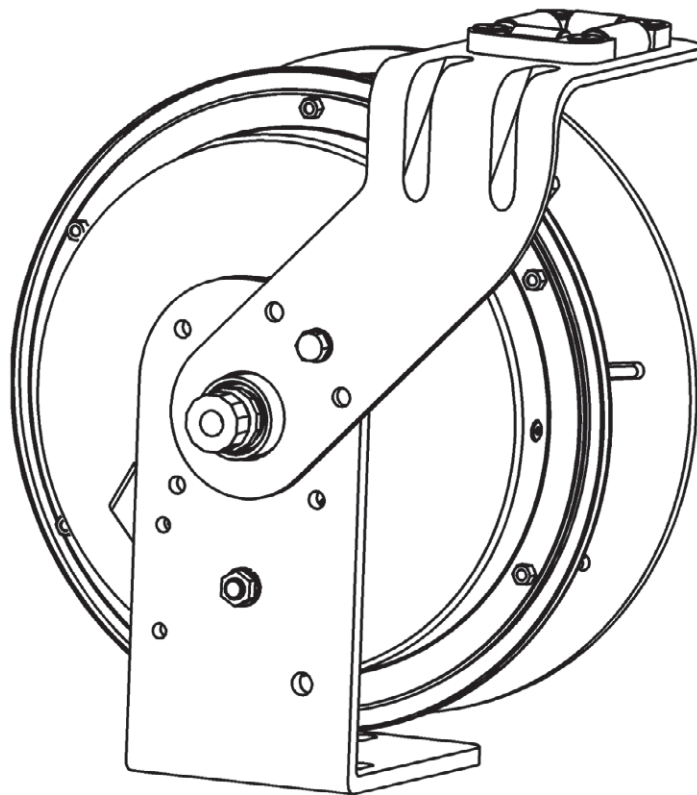


Spring Cable Reel Manual

1200 Series PowerReel[®]



CONDUCTIX-WAMPFLER INCORPORATED

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SECTION 1 - SAFETY

Safety Information Responsibility

All owner, operator, and maintenance personnel must read and understand all manuals associated with this product before installation, operation, or maintenance.

The manual provides information on the recommended installation, operation, and maintenance of this product. Failure to read and follow the information provided could cause harm to yourself or others and/or cause product damage. No one should install, operate, or attempt maintenance of this product prior to familiarizing themselves with the information in this manual.

Safety Messages

The following safety messages are used in this manual to alert you to specific and important safety related information.



CAUTION

- CAUTION indicates unsafe actions or situations that have the potential to cause injury, and/or minor equipment or property damage.



DANGER

- DANGER indicates hazards that have the potential to cause severe personal injury or death.



WARNING

- WARNING indicates unsafe actions or situations that have the potential to cause severe injury, death, and/or major equipment or property damage.

NOTE

- NOTE is used to alert you to installation, operation, programming, or maintenance information that is important, but not hazard related.

SECTION 2 - SAFETY

Electrical Warnings

Properly ground this equipment before use in accordance with both the National Electric Code and local electrical codes and ordinances.

Disconnect the electrical power from the cable reel before any service functions are performed.

Do not use this cable reel for loads greater than the current rating listed on the label and voltage greater than 300V with SJOW-A cable OR 600V with SOW-A cable. The ampacity (current) rating of the cable must be in accordance with the National Electric Code.

Electrical wiring on the reel must be done by a qualified electrician.

Operational Warnings

Exercise care when handling the cable reel during normal operation. This cable reel has a rotating spool powered by springs under tension.

Do not allow cable to retract without restraining the retraction speed.

Do not disassemble the spring motor for any reason. Serious personal injury could result. This cable reel is equipped with springs under tension. Contact the factory for assistance:

In the US call: 1-800-521-4888
In Canada call: 1-800-667-2487

Maintenance Warnings

Do not use cable different from that for which the reel is intended. Changes in diameter, weight per foot, length of cable or flexibility will affect the operation of the reel.

Mounting hardware and fasteners should be installed to maintain tightness under vibration and checked periodically to assure tightness.

Overhead installation mountings should be such that the reel is not suspended by bolts in tension. A safety chain or cable is strongly recommended to minimize damage and/or possible injury in the event of mounting failure.

WARNING: Modification of this equipment may cause excessive wear and will void the warranty. Contact the manufacturer regarding changes or modifications of equipment which could affect reliability or safety.

UL Rating

Reels that are listed UL & CSA are indicated in catalog.

The following requirements apply for UL & CSA listed POWEREEL products:

Listed cable reels are intended for General/Commercial/Industrial use and are provided with permanent mounting means. They must be wired by a qualified electrician.

UL/CSA listed cable per rating of reel, as noted on the Conductix-Wampfler identification label, to be used for the supply cable (if flexible cable is used) and for the load end cable (active cable).

SECTION 2 - SAFETY

Electrical Rating

Reels equipped with or without cable.

Reels equipped with cable are rated and should not be used at voltages and/or amperes above the rating on the reel. Please consult factory prior to making any changes in volts and amps of cable, as a change could affect reliability or safety.

Color Code Chart		
Location of Ring	No. of Conductor	Base Color
top	Ground	Green
2nd from top	2	Black
3rd from top	3	White
bottom	4	Red

Cable AWG / # of Cond.	Ampacity
16/3	10.0
16/4	8.0
14/3	15.0
14/4	12.0
12/3	20.0
12/4	16.0

Labels & Marking

Every cable reel is marked with a label which includes the Conductix-Wampfler name and logo, the product catalog number, the individual product serial number, NEMA rating, Amps, Volts, Watts and Cable Footage.

The UL / CSA Listing Mark is applied to reels that comply with the applicable requirements and identified with the authorized mark.

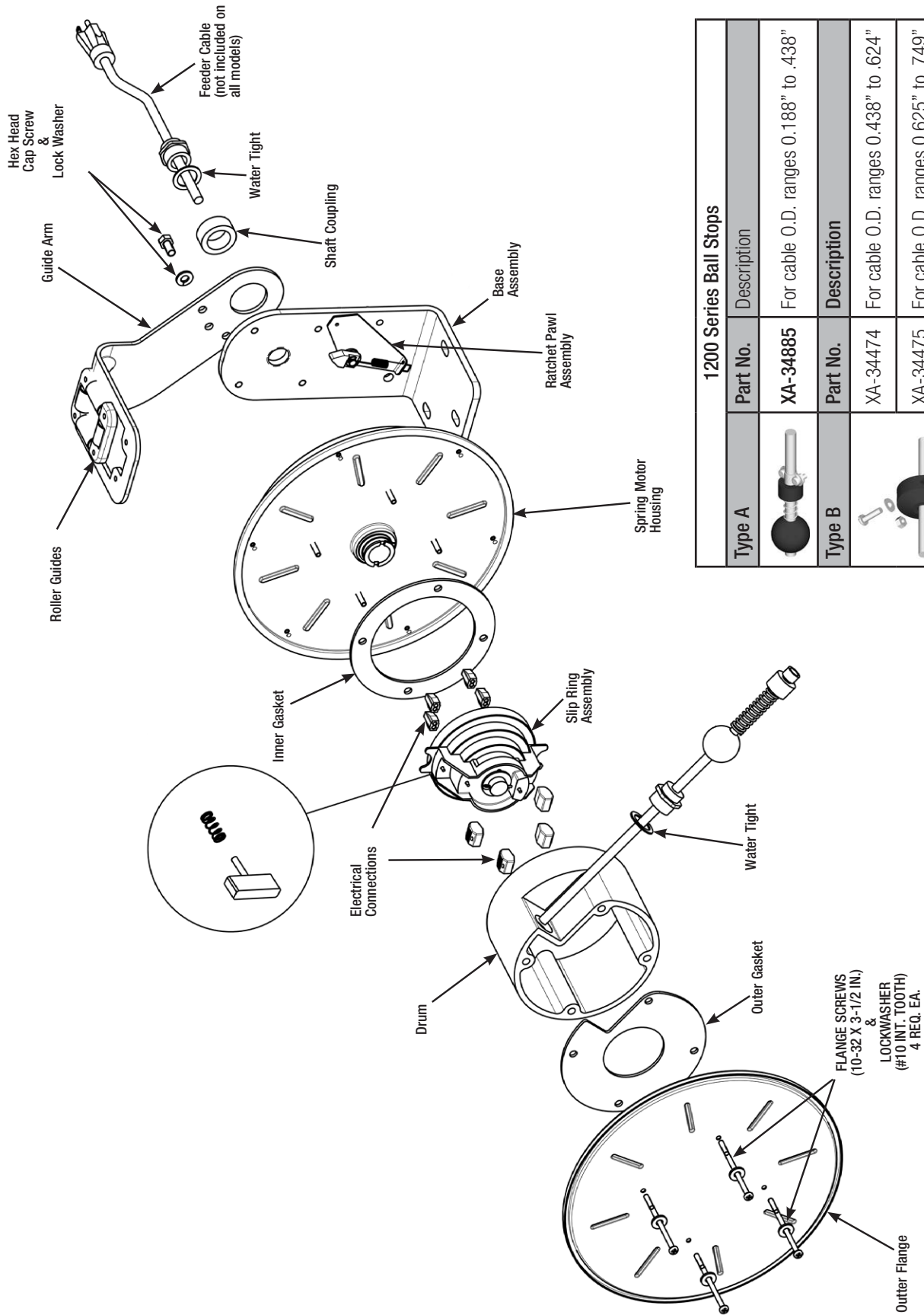
The maximum cable footage, amperage and voltage rating for every cable reel supplied without cable is marked on the Conductix-Wampfler Identification Label. The actual cable installed should not differ from what is indicated on the Conductix-Wampfler label. If the cable must be different please consult the factory prior to installing the cable to ensure the change will not affect the reliability of the reel or the safety of the people working with the reel.





**LISTED
REEL
6 7 N 6**



SECTION 2 - OVERVIEW



1200 Series Ball Stops	
Type A	Type B
	
Part No.	Part No.
XA-34885	XA-34474
XA-34474	XA-34475
XA-34475	XA-34476
Description	Description
For cable O.D. ranges 0.188" to .438"	For cable O.D. ranges 0.438" to .624"
	For cable O.D. ranges 0.625" to .749"
	For cable O.D. ranges 0.750" to 1.05"

SECTION 3 - INSTALLATION

Application Types

Stretch Applications

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 10% sag at full extension. On long applications where sag cannot be tolerated, it is sometimes desirable to put supports at intervals of 5 to 10 feet. See **Figure 9-1**.

Lift Applications

The cable is lifted vertically in lift applications. The reel is normally designed to handle only the total weight of the cable. Some lift applications may require a ball stop and ratchet to control the length of cable to be retracted. See **Figure 9-2**.

Drag Applications

The reel is mounted on a stationary object and is required to drag the cable over the surface to the reel. The cable is supported by the ground or some type of cable tray. A ball stop may be required. All 1200 Series reels sold with cable have a ball stop installed on the reel. See **Figure 9-3**.

Retrieve Applications

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 fixed end. See **Figure 9-4**.

Mounting

Standard Mounting

The reel may be mounted by bolting the base to any flat surface which is structurally sound enough to support it and the forces of winding and unwinding the cable.

The spool drum must rotate on a horizontal axis.

The reel should be oriented so that the cable extends perpendicular to the rotation of the spool. The cable deflection should not exceed 15° to either side of center. See **Figure 9-5**.

If deflection is constant to either side of the reel and operation is impaired, re-mount the reel. See **Figure 9-5**.

If the total angle of deflection exceeds 30° a Pivot Base should be used, otherwise excessive cable wear and unreliable operation will result.

We recommend a safety chain for all overhead installations. Attach the safety chain using the 0.39 hole provided in the base.

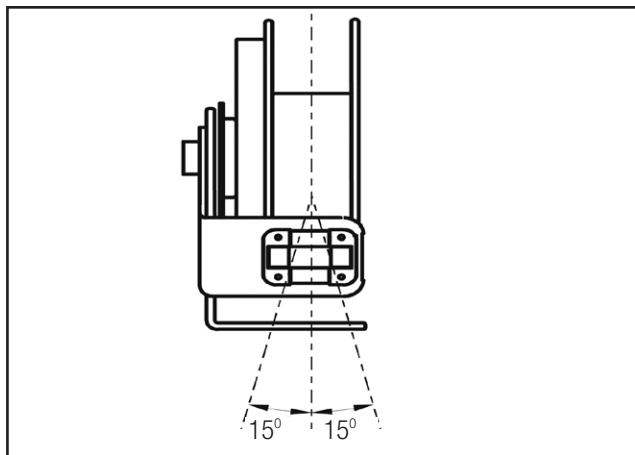


Figure 9-5 Cable Deflection with Roller Guide

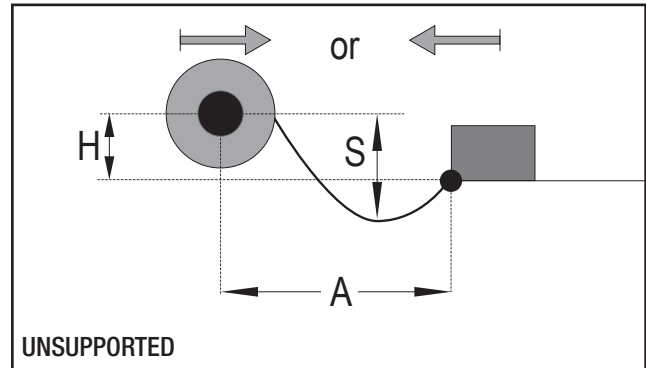


Figure 9-1 Stretch Application

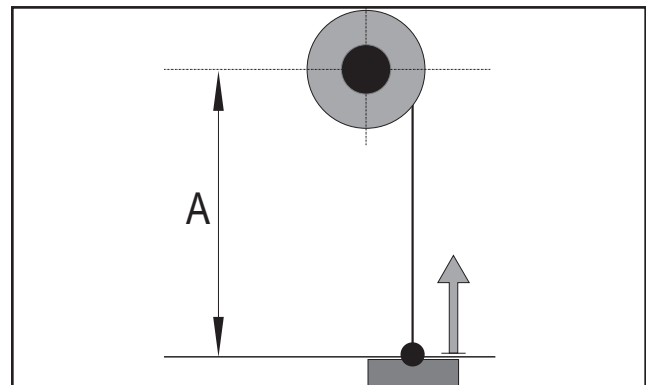


Figure 9-2 Lift Application

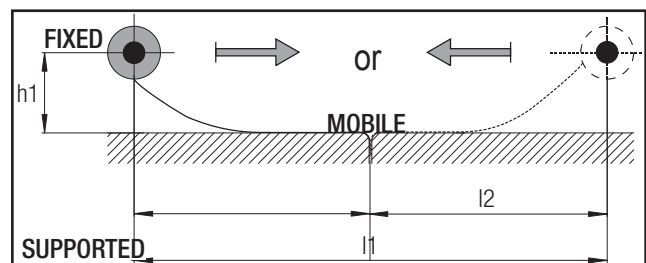


Figure 9-3 Drag Application

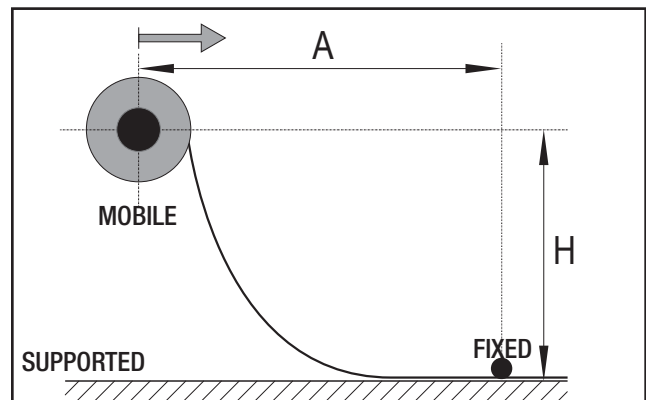


Figure 9-4 Retrieve Application

SECTION 3 - INSTALLATION

Pivot Base Mounting (Optional Accessory)

All 1200 Series Cable Reels can be furnished with a pivot base to allow the reel to rotate and keep the extended cable perpendicular to the application. See **Figure 10-1**.

The PVB Pivot Base will rotate up to 345°. Travel can be limited to 90°, 180°, or 270° by installing an additional roll pin in the appropriate available hole.

A pivot base is required for carousel or loop track applications.

When a pivot base is used the reel must be mounted horizontally ("ceiling" or "floor" mounted).

The Roller Guide should be mounted to require the cable to travel perpendicular to the axis of rotation. This will guard against cable twisting and ensure effective swivel action from the pivot base.

Swing mount and swivel base available, consult factory.

Roller Guides

All 1200 Series units are equipped with a roller guide. The guide's function is to center the cable on the spool and to help the reel wrap cable more evenly. See **Figure 10-2**.

The cable should not bear against either end of the spool during winding as this will tend to inhibit level winding of the cable.

The guide should be secured at the best of twelve possible positions so that a minimum change of direction occurs at the guide; otherwise, cable life will be reduced.

A max 15° angle from guide arm center to cable pay out from reel is suggested.

The guide arm is shipped attached to the reel. The guide must be located and secured in the most appropriate position with the 5/16-18 x 5/8" hex head screw and lock washer provided, prior to making any electrical connections.

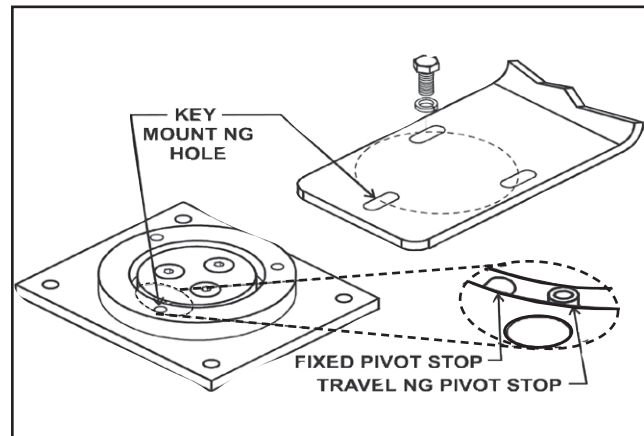


Figure 10-1

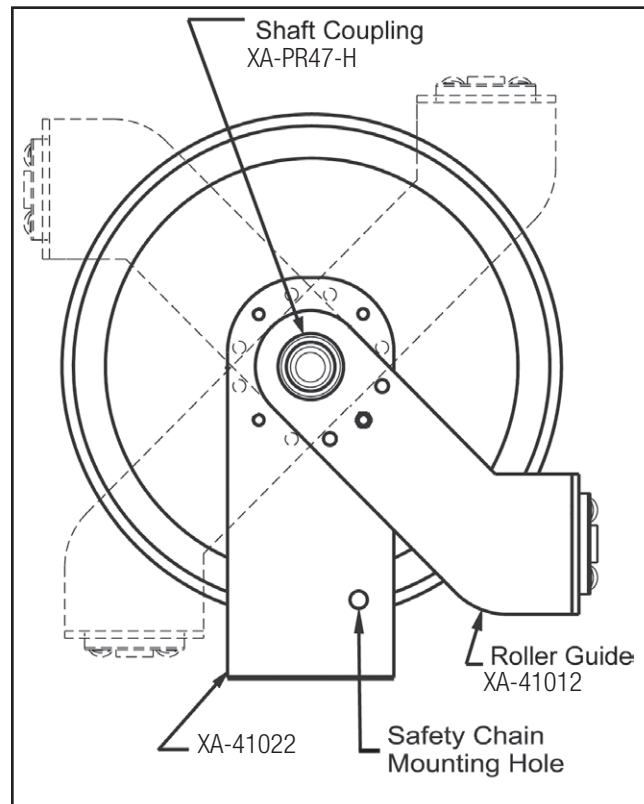


Figure 10-2 Roller Guide Locations
(4 of 12 possible positions shown)

SECTION 3 - INSTALLATION

Ratchet

Ratchet Lock

The ratchet lock can be engaged or disengaged, depending upon the application. Reels are sent from factory with ratchet lock engaged. See **Figure 11-1**.

Operation with Ratchet

The ratchet pawl is spring loaded. It is designed to function in all acceptable mounting configurations. See **Figure 11-1**.

A slight pull on cable will disengage the ratchet. See **Figure 11-1**.

Operation without Ratchet

Disengage the ratchet by pivoting the lock-out bar to the lower position. This will remove the ratchet pawl from the path of the ratchet plate. Locate the dimple on the lock-out bar in the hole provided. See **Figure 11-1**.

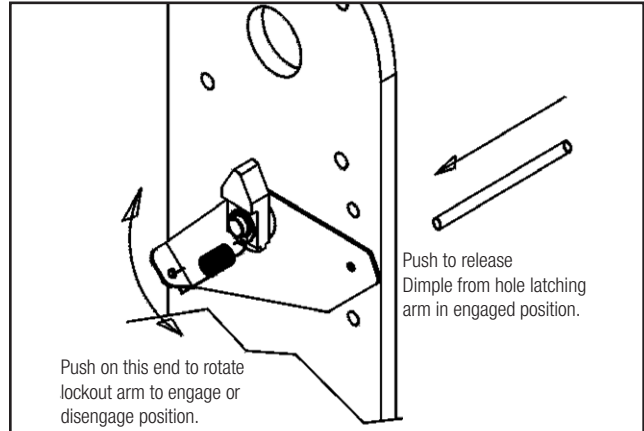


Figure 11-1



WARNING

- Do not engage the ratchet abruptly. Sudden engagement may cause excessive shock loads to the ratchet pawl.

Cable Installation

Either of two methods for installing cable on the reel may be used.

The first method is to simply lay the cable out straight along the path of travel and wrap onto the reel. **The second method** requires using a support for the cable being wrapped (see Figure 1 on the next page). In either method, it is important that the cable not twist or loop.

- Remove the 4 screws securing the outer flange. Remove outer flange, gasket and drum from the remaining assembly.
- Strip back approximately 6" of cable jacket.
- Feed cable through the watertight and the drum, so that 1" of the jacket is through the watertight. Secure a cable-tie 1/4" from the end of the jacket and tighten watertight. Replace inner flange gasket if damaged (see Figure 3 on the next page).
- Cut the individual wires such that the white and green wires extend 3" beyond the cable jacket and the red and black wire extend 6" beyond the cable jacket. Strip approximately 1/2" of insulation. Insert each cable wire and its corresponding slip ring brush wire into the toggle lock wire connector. See **Table 11-1**.
- Perform a continuity check to verify circuits.
- Attach outer flange gasket and outer flange to drum (replace outer flange gasket if damaged). Attach with 10-32 x 3-1/2" screws. Longer screws will damage the reel.
- Wrap new cable on drum spool.
- Adjust spring tension by following spring tension adjustment procedure.

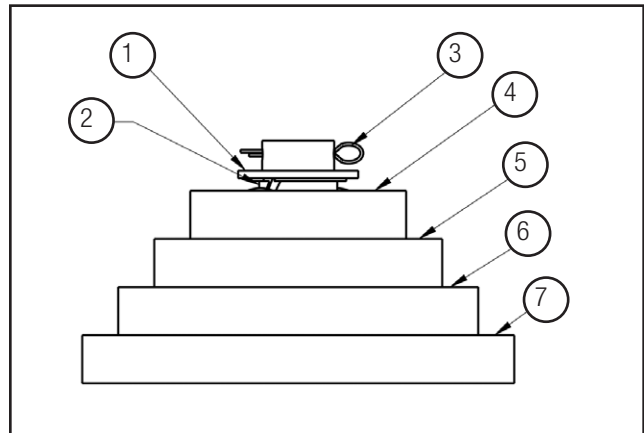


Figure 11-2

- Plastic Washer
- Bearing
- Cotter Pin
- Ground Ring
- Ring 2
- Ring 3
- Ring 4

Location of Ring	No. of Conductor	Base Color
top	Ground	Green
2nd from top	2	Black
3rd from top	3	White
bottom	4	Red

Table 11-1 Color Code Table

SECTION 3 - INSTALLATION

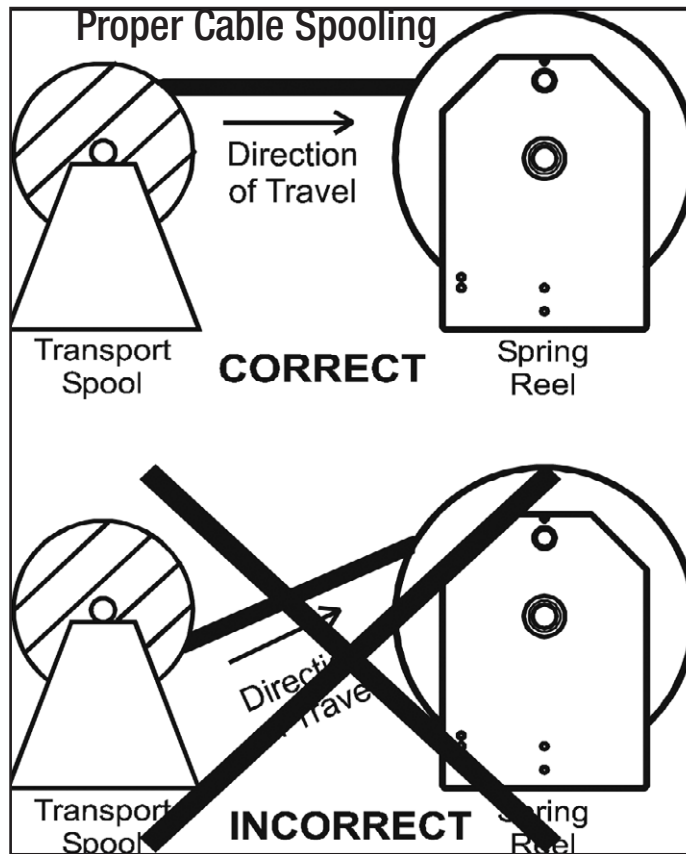


Figure 11-1

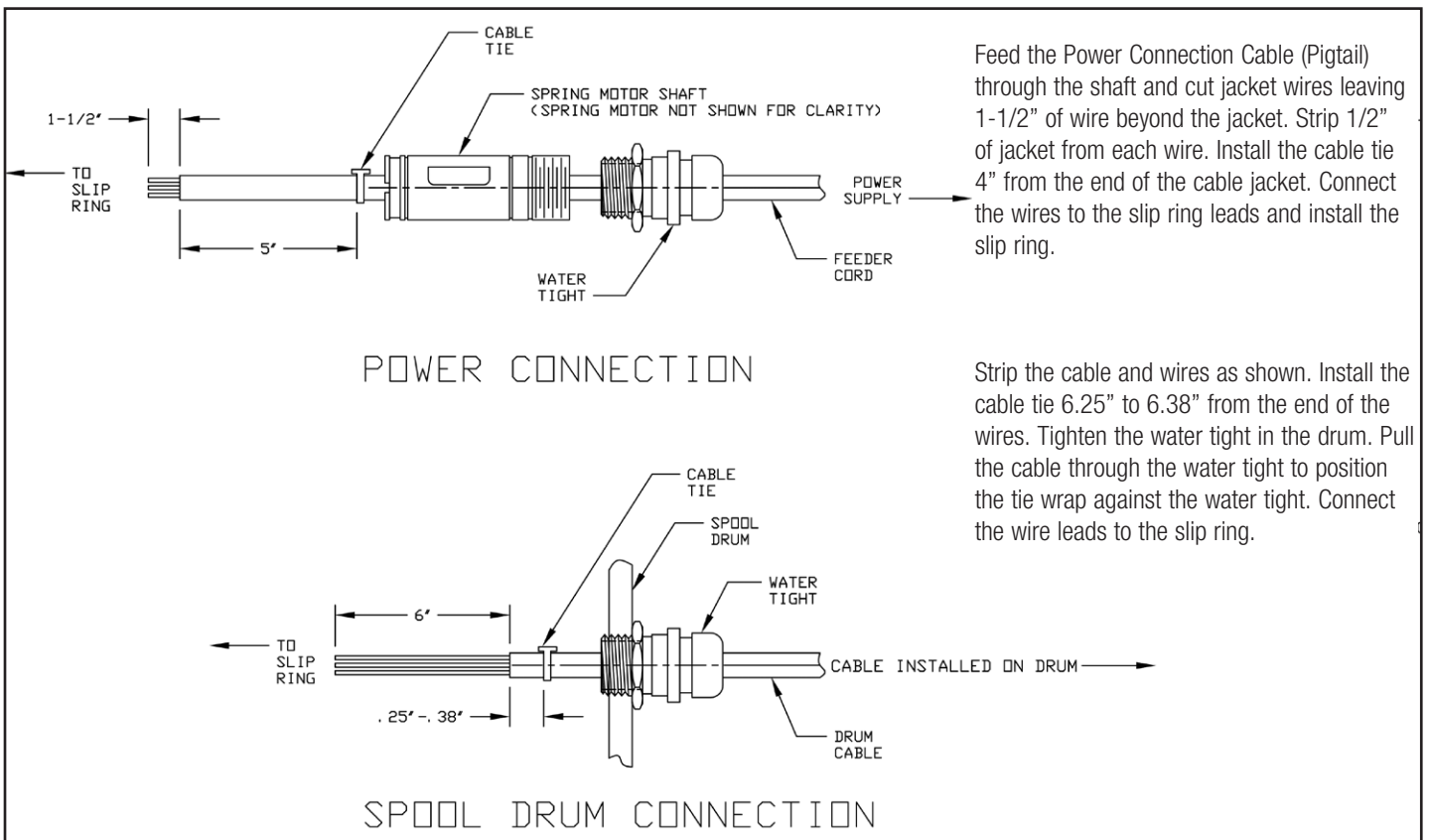


Figure 11-2

SECTION 3 - INSTALLATION

Feeder Cord Connection

Power supply should have overcurrent protection to prevent overheating of the reel and cable.

Follow procedure in **Section 4 - Maintenance** if feeder cord is not installed on reel.

1. Connect feeder cord to power supply, per NEC and local codes.

Spring Tension Adjustment

To assure that the cable will retract properly and operate under the correct tension, the reel should be tested.

1. Install cable on drum but do not connect the free end of cable. Securely mount reel before testing.
2. Pull the cable out approximately 20 - 30 feet and allow it to rewind. This procedure should be repeated 5 to 10 times in order to set the spring.
3. Walk the cable back to the reel during the spring tension adjusting process.

WARNING

- Do not allow cable to retract without restraining the retraction speed. Always maintain two full cable wraps on drum at maximum cable extension, size cable accordingly.

4. With all the cable wound on the reel, grasp the end of the cable and rotate the drum and cable together in a clockwise direction in order to pre-tension the spring. Generally, one full turn is adequate for most applications. Use no more than two full turns for pre-tension. See **Figure 13-1**.
5. Feed the end of the cable through the cable guide and pull the cable out the required length.

NOTE

- The number of spool revolutions including the pre-tension turns should not exceed 26 full turns on models with K Spring Motor (XA-41027) or 30 turns on models with G Spring Motor (XA-41028). Consult factory or your representative if number of spool turns are not within parameter.

6. Repeat steps if necessary to add or decrease tension. See **Figure 13-1**.

NOTE

- All reels with factory installed cable have one full pre-wrap on the reel, but has not had the spring tension adjustment process completed.

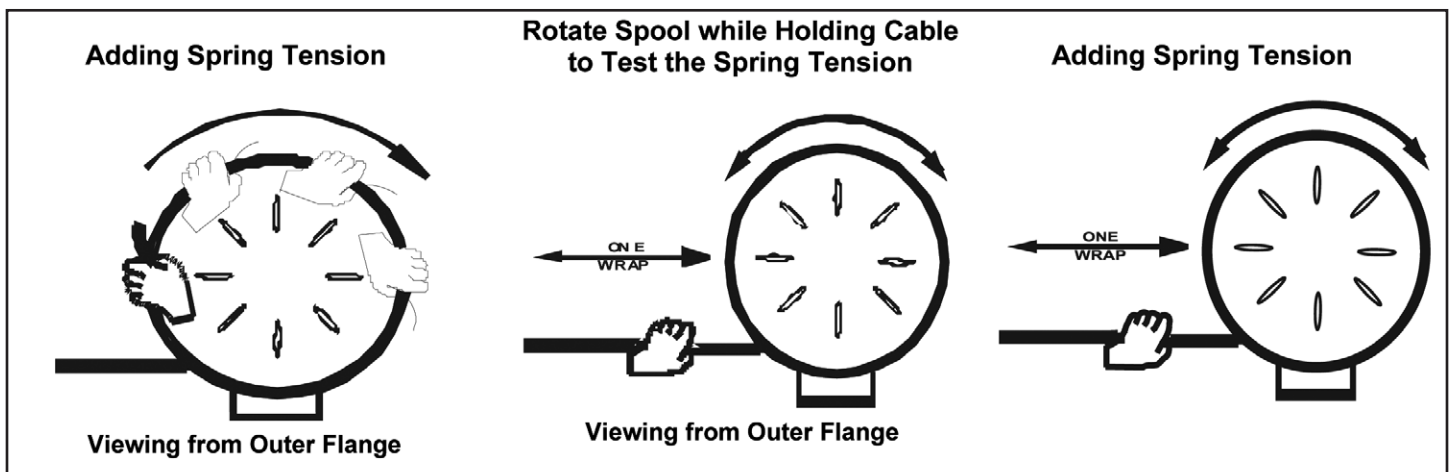


Figure 13-1

SECTION 4 - OPERATION

- Do not exceed the voltage or ampere rating of the reel. Overheating, fire, damage to equipment or personal injury could result.
- Do not allow cable to retract without restraining the retraction speed.
- Operate the reel within the cable size and length and spring tensioning limits for which it was intended.
- Two wraps of cable should remain on the reel at maximum extension to avoid excessive tension on the cable entrance watertight.
- The spring should not be wound to its last two turns at maximum payout to avoid over-stressing the spring, thus reducing its life or damaging the reel.
- Keep the reel and cable clean to avoid excessive wear and damage.
- Arrange for maintenance service if damage is found on the cable or reel.
- Cable should be fully retracted when not in service to maximize spring life.

SECTION 5 - MAINTENANCE

Be sure the power is off for all maintenance.

Lubrication

- All springs and bearings are lubricated for life at the factory. Additional lubrication should not be required.
- Do not apply any lubricants or solvent cleaning agents to slip ring, brush or insulator surfaces.

Inspections

- Periodically check the reel for any loose or missing fasteners. Tighten or replace as necessary.

NOTE

- Do not over tighten, this will cause fasteners to snap.
- The slip ring assembly should be checked periodically as follows:
 - » Clean to remove dust and dirt from the slip ring housing area and all slip ring assembly and brush surfaces.
 - » Inspect cable for damage or wear which would make it unsafe to use.

Slip Ring & Feeder Cord Replacement

If the slip ring assembly or feeder cord becomes damaged, it becomes damaged.

1. Remove the 4 screws securing the outer flange. Remove outer flange and gasket from remaining assembly. Remove or unwrap the cable from the drum and lay it next to the reel. See **Figure 15-1**.
2. Disconnect the wires from the spool cable. Remove the drum (black plastic tube) from the reel and place next to the slip ring.
3. Loosen feeder cord watertight located at the shaft end.
4. Remove the brush block from the slip ring by removing the cotter pin and washer at the top of the slip ring assembly. Remove the 2 screws securing the slip ring to the shaft. See **Figure 15-1**.
5. Remove the slip ring from the shaft while feeding in the feeder cord through the shaft. Cut wires if they are butt spliced or disconnect connectors if locking wire connectors are used. Reinsert the washer and cotter pin after removal of the slip ring from the shaft to keep the assembly together.
6. Carefully and thoroughly clean the inside surfaces of both flanges and the drum. Inspect both gaskets for damage and replace as necessary. Caution: Damaged gaskets may affect UL / CSA rating of reel.
7. Remove old feeder cord and insert approximately 5" -10" of new feeder cord through the watertight and shaft. Secure cable-tie as shown in Figure 3 on page 11.
8. Install inner gasket.
9. Connect the slip ring leads to the feeder cord with the provided wire connectors and install the slip ring on the shaft. Ensure the wire connectors are outside the shaft and under the slip ring body before securing the slip ring to the shaft. Be careful not to over tighten or strip the Phillips head screws.
10. Install the 2 screws to secure the slip ring to the shaft.
11. For remaining assembly, follow Cable Installation and Spring Tension Adjustment in Section 3.

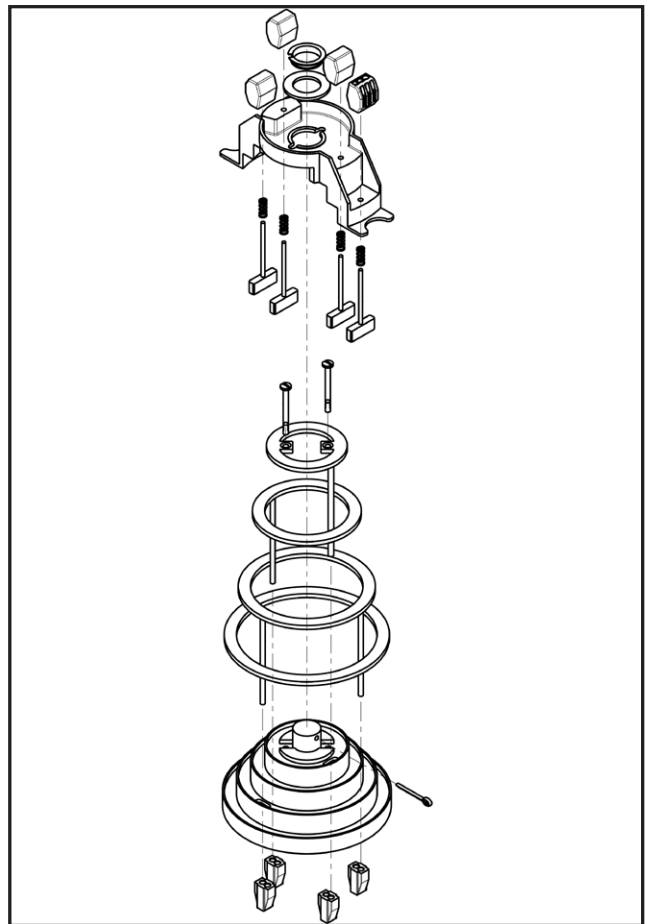


Figure 15-1

Cable Replacement

SECTION 5 - MAINTENANCE

Replacement cable should be the same size and length as existing cable. Any variations to cable specifications should be pre-approved by the factory.

1. Disconnect all electrical service to the reel before replacing the cable as per Lock-Out/Tag-Out procedures outlined in OSHA section 1910.147.
2. Disconnect the terminated service end of the cable and allow the cable to retract onto spool. Make sure the end of the cable is through the roller guide. Ensure all spring tension has been relieved by manually rotating the spool counter clockwise as viewed from outer flange.
3. Remove the 4 screws securing the outer flange. Remove outer flange and gasket from remaining assembly. Remove or unwrap the cable from the drum and lay it next to the reel.
4. Disconnect the wires from the spool cable. Remove the drum (black plastic tube) from the reel and place next to the slip ring.
5. Loosen feeder cord watertight located at the shaft end.
6. Remove the brush block from the slip ring by removing the cotter pin and washer at the top of the slip ring assembly. Remove the 2 screws securing the slip ring to the shaft (see exploded view).
7. Remove the slip ring from the shaft while feeding in the feeder cord through the shaft. Cut wires if they are butt spliced or disconnect connectors if locking wire connectors are used. Reinsert the washer and cotter pin after removal of the slip ring from the shaft to keep the assembly together.
8. Remove cable.
9. Carefully and thoroughly clean the inside surfaces of both flanges and the drum. Inspect both gaskets for damage and replace as necessary.



CAUTION

- Damaged gaskets may affect UL / CSA rating of reel.

10. Install inner gasket.
11. For remaining assembly, follow Cable Installation and Spring Tension Adjustment in Section 3.

Spring Motor Replacement



CAUTION

- Do not open the spring motor or personal injury may result.

1. The spring replacement process is determined by the spring configuration and cannot be performed in the field. The entire spring motor assembly must be replaced as a unit. See Spring Motor Selection Chart for proper spring motor selection.
2. Disconnect all electrical power to the reel before beginning any maintenance or service.
3. Remove the slip ring and feeder cord from the reel by following the procedure in Slip Ring & Feeder Cord Replacement section.
4. Remove the watertight and coupling from the shaft.
5. Remove the spring motor by unscrewing the shaft from the mounting base.
6. Re-assemble spring reel in reverse order with the new spring motor. Note the following:
 - A. Shaft must be fully seated on base before installing coupling and watertight.
 - B. Verify drum, slip ring, and ratchet teeth orientation as per Figure 2 on page 11.
7. Adjust spring tension.

SECTION 5 - MAINTENANCE

Spring Motor Selection Chart

Spring Motor Selection Chart		
Cable Type	Cable Lengths That Use This Spring Motor	Spring Motor Part Number (Spring)
14/3 SJEOW-A	Up to 50'	XA-41028 (G50)
12/3 SJOW-A	Up to 50'	XA-41027 (K50)
14/4 SJEOW-A	Up to 50'	XA-41028 (G50)
12/4 SJOW-A	Up to 40'	XA-41027 (K50)
16/3 SOW-A	Up to 50'	XA-41028 (G50)
14/3 SOW-A	Up to 40'	XA-41027 (K50)
12/3 SOW-A	Up to 30'	XA-41027 (K50)
16/4 SOW-A	Up to 50'	XA-41027 (K50)
14/4 SOW-A	Up to 35'	XA-41027 (K50)
12/4 SOW-A	Up to 25'	XA-41027 (K50)

SECTION 6 - TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Reel will not retract cable but has some tension	1) Improper pretension	1) See tension adjustment section
	2) Incorrect reel for application (lift vs stretch)	2) Quantify application vs reel selection
	3) Improper cable or cable length installed	3) Install correct cable type and length
	4) Cable guide adjustment	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 2) Lock-out option arm disengaged	1) Replace ratchet pawl spring 2) Engage lock-out arm
Ratchet will not disengage	1) Over-extension of reel	1) Manually rotate reel spool to disengage ratchet Do not over-extend (guide adjustment may prevent lock-up when over-extended) 2) Adjust ball stop
Cable wraps improperly (uneven wrapping, wraps above or jumps flange)	1) Reel mounting not level 2) Cable retraction rate too high 3) Cable guide out of adjustment 4) Improper cable or cable length installed	1) Mount reel on level surface 2) Maintain steady retraction rate 3) Properly adjust cable guide 4) Install correct cable type and length
Cable twisting or knotting	1) Improperly installed cable	1) See cable installation section in IOM
	2) Cable rubbing on or bending around fixed object	2) Check roller guide for function and cable pay out path
	3) Excessive spring tension	3) Quantify application vs reel selection and also check pretension
	4) Inadequate anchoring of cable	4) Adjust anchoring method (i.e. add strain relief)
Open or intermittent circuit	1) Inadequate connection	1) Check all termination points
	2) Loss of brush contact to slip ring	2) Check brush wear, spring tension, and alignment
	3) Cable defective	3) Perform continuity check on cable termination points
Circuit trips and/or pitted burned rings or brushes	1) Inadequate amp rating of reel selection	1) Quantify application requirements vs. reel & cable rating
Circuit arcing	1) Amp or voltage above rating of reel	1) Quantify application requirements vs. reel & cable rating
	2) Excessive carbon dust accumulation	2) Clean dust from inside slip ring
	3) Water or moisture in slip ring	3) Check gasket seal
	4) Loss of brush to ring contact	4) Replace brush spring

Table 18-1 Troubleshooting Table

SECTION 7 - REPLACEMENT PARTS

PowerReel Catalog Number:

Description:

6.1 Part Descriptions

- 2 P/N XA-41012 Roller Guide Arm Ass'y
 - 3 P/N XA-PR47-H Shaft Coupling
 - 7 P/N XA-41013 Outer Drum Gasket
 - 11 P/N XA-41005 Spool Drum
 - 12 P/N XA-41023 Inner Drum Gasket
 - 13 P/N XA-41003 Outer Flange
 - 14 P/N XA-08051 Flange Screws
 - 17 P/N XA-10171 Lock Washer
- 1200 Series

Cable/Feeder Cord w/o Plug (Per Ft.)	
P/N	SOW 3 & 4 Cond/SJOW 4 Cond
XA-51034	14/3 SJEOW-A Cable (0.37 OD)
XA-34754	12/3 SJOW-A Cable (0.47 OD)
XA-51035	14/4 SJEOW-A Cable (0.40 OD)
XA-34755	12/4 SJOW-A Cable (0.52 OD)
XA-33018	16/3 SOW-A Cable (0.41 OD)
XA-33030	14/3 SOW-A Cable (0.56 OD)
XA-33042	12/3 SOW-A Cable (0.64 OD)
XA-33019	16/4 SOW-A Cable (0.45 OD)
XA-33031	14/4 SOW-A Cable (0.60 OD)
XA-33043	12/4 SOW-A Cable (0.65 OD)

6= 600 Volt
3= 300 Volt

ACCESSORIES		
Hand Lamp		
Item	Part No.	Description
HSR	HSR	Incandescent w/switch & outlet
FHL	FHL	Florescent handlamp w/ switch
Receptacle Box Assembly		
Item	Part No.	Description
RB1	XA-RB	15 amp, 4 Outlet
RB2	XA-RB-5-20R	20 amp, 4 Outlet
GFCI Plug for Feeder		
Item	Part No.	Description
GFCI1	XA-530245	15A Right Angle Plug
GFCI2	XA-530246	20A Right Angle Plug

Installed Cable
Blank = No Cable Installed
= Length of Cable (Ft.)
00 to 50 Ft.
*Add 2 Ft. for Hookup



Description

- 6 K= P/N XA-41027 K50 Spring Motor Ass'y
G= P/N XA-41028 G50 Spring Motor Ass'y
- Q For reels manufactured prior to 2006 use P/N: XA-50863 for K50 Spring Motor and P/N: XA-50864 for G50 Spring Motor

- 4 P/N 41022 Base Ass'y & Ratchet Pawl Kit
- 5 P/N XA-PR91 Ratchet Pawl Kit

Ball Stop Assembly	
Part No.	Description
16 XA-34885	Cable OD Ranges (0.188-0.438)
XA-34474	Cable OD Ranges (0.438-0.624)
XA-34475	Cable OD Ranges (0.624-0.749)

Watertight Kit (Includes Cable-Tie)	
Part No.	Description
1 XA-34955	Universal Cable Range (0.25-0.65)
XA-34846	Cable Range (0.25 to 0.350)
XA-03652	Cable Range (0.350-0.450)
XA-03653	Cable Range (0.450-0.560)
XA-04257	Cable Range (0.560-0.650)

Feeder Cord w/ Plug Assembly	
Part No.	Description
15 XA-41042	6'-14/3 SJEOW-A w/ 15 amp Plug
XA-41043	6'-12/3 SJOW-A w/ 20 amp Plug

Number of Conductors	
Slip Ring Assembly	
Part No.	Description
8 XA-50804	3 Cond-30 amp
XA-39565	4 Cond-30 amp
Q For reels manufactured prior to 2006 use P/N: XA-50863 for 3 & 4 cond. with K50 Spring and P/N: XA-50864 for 3 & 4 cond. with G50 spring.	
9	P/N: XA-50865 Single Brush Replacement Kit

NOTES

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