# SD Series<sup>™</sup> Cord and Light Reel

For storing electric cord used to provide electricity and/or light. For indoor and dry location use only.

Not approved for use in explosive atmospheres or hazardous locations.

### Models: pages 3 and 4

Important Safety Instructions

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Read all warnings and instructions in this manual and in SD Series Cord and Light Reel Installation manual. Save all instructions.

Size 10 Model





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### **Related Manuals**

3A2592 - SD Electric Cord Reel Instructions
3A2828 - Reel Enclosure Installation
406742 - Ball Stop Kit
406743 - Roller Guide Kit

# 120 Volt Models



Model	Description			Si	ze	Cord Length	Insulation	Power Cord Connect	Accessory
Blue		Wire Gauge (AWG)	Current (Amperes)	Size 5	Size 10				
24M510		16	13	1		50 feet 15 meters	SJTOW	NEMA 5-15P (24N866)	-
24M511	Cord, No	16	10		1	95 feet 29 meters	SJTOW	NEMA 5-15P (24N866)	-
24M512	Accessory	12	20	~		50 feet 15 meters	SJOOW	NEMA 5-20P (24N868)	-
24M513		12	18		~	95 feet 29 meters	SJOOW	NEMA 5-20P (24N868)	-
24M517		16	13	1		35 feet 10 meters	SJTOW	NEMA 5-15P (24N866)	NEMA 5-15R (24N892)
24M518	SingleIndustrial	16	13	<i>、</i>		50 feet 15 meters	SJTOW	NEMA 5-15P (24N866)	NEMA 5-15R (24N893)
24M521	Receptacle	12	20	1		35 feet 10 meters	SJOOW	NEMA 5-20P (24N868)	NEMA 5-20R (24N871)
24M522	-	12	20	~		50 feet 15 meters	SJOOW	NEMA 5-20P (24N868)	NEMA 5-20R (24N871)
24M524		12	18		1	95 feet 29 meters	SJOOW	NEMA 5-20P (24N868)	NEMA 5-20R (24N871)
24M525	Duplex GFCI	12	20	<i>、</i>		50 feet 15 meters	SJOOW	NEMA 5-20P (24N868)	Duplex NEMA 5-20R (24N881)
24M526	Receptacle	12	18		1	95 feet 29 meters	SJOOW	NEMA 5-20P (24N868)	Duplex NEMA 5-15R (24N880)
24M527		16	0.3	1		35 feet 10 meters	SJTOW	NEMA 5-15P (24N866)	16N223
24M528	Fluorescent Light	16	0.3	~	-	50 feet 15 meters	SJTOW	NEMA 5-15P (24N866)	16N223
24M529		16	0.3		1	95 feet 29 meters	SJTOW	NEMA 5-15P (24N866)	16N223
24M530		16	10	1		35 feet 10 meters	SJTOW	NEMA 5-15P (24N866)	16N224
24M531	Fluorescent Light with Tool Tap	16	10	<i>·</i>		50 feet 15 meters	SJTOW	NEMA 5-15P (24N866)	16N224
24M532		16	10		1	95 feet 29 meters	SJTOW	NEMA 5-15P (24N866)	16N224

Model	Description			Si	ze	Cord Length	Insulation	Power Cord Connect	Accessory
Blue		Wire Gauge (AWG)	Current (Amperes)	Size 5	Size 10				
24M533		16	0.05	1		35 feet 10 meters	SJTOW	NEMA 5-15P (24N866)	16N227
24M534	LED Light	16	0.05	1		50 feet 15 meters	SJTOW	NEMA 5-15P (24N866)	16N227
24M535		16	0.05		1	95 feet 29 meters	SJTOW	NEMA 5-15P (24N866)	16N227
24M536		16	12	~		35 feet 10 meters	SJTOW	NEMA 5-15P (24N866)	16N227 - light 16N226 - tool tap
24M537	LED Light with Tool Tap	16	12	1		50 feet 15 meters	SJTOW	NEMA 5-15P (24N866)	16N227 - light 16N226 - tool tap
24M538		16	10		1	95 feet 29 meters	SJTOW	NEMA 5-15P (24N866)	16N227 - light 16N226 - tool tap

# 230 Volt Models CE

Model	Description			Si	ze	Cord Length	Insulation	Power Cord Connect	Accessory
Blue		Wire Gauge	Current (Amperes)	Size 5	Size 10				
24M514		1,5 mm <sup>2</sup>	10	1		10 meters	H05RR-F	-	-
24M515	Cord, No Accessory	1,5 mm <sup>2</sup>	10	~		15 meters	H05RR-F	-	-
24M516	, , , , , , , , , , , , , , , , , , , ,	2,5 mm <sup>2</sup>	16		1	25 meters	H07RN-F	-	-
24M539		1,5 mm <sup>2</sup>	0.05	1		10 meters	H05RR-F	CEE 7/7 16 A (24N867)	16N225
24M540	LED Light	1,5 mm <sup>2</sup>	0.05	1		15 meters	H05RR-F	CEE 7/7 16 A (24N867)	16N225
24M541		1,5 mm <sup>2</sup>	0.05		~	25 meters	H05RR-F	CEE 7/7 16 A (24N867)	16N225
24M542		1,5 mm <sup>2</sup>	10	1		10 meters	H05RR-F	CEE 7/7 16 A (24N867)	CEE 7/7 16 A (24N872)
24M543	Single Industrial Receptacle	1,5 mm <sup>2</sup>	10	1		15 meters	H05RR-F	CEE 7/7 16 A (24N867)	CEE 7/7 16 A (24N872)
24M544		2,5 mm <sup>2</sup>	16		1	25 meters	H07RN-F	CEE 7/7 16 A (24N869)	CEE 7/7 16 A (24N872)

# Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.



• All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

	FIRE AND EXPLOSION HAZARD When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that
	flammable fumes can ignite or explode. To help prevent fire and explosion:
	• When installing a cord reel above a hazardous location the reel must be mounted at such a height that the lamp guard cannot reach within 18 inches of the floor.
	<ul> <li>Do not plug one cord reel into another.</li> </ul>
	<ul> <li>Avoid overheating, do not cover cord reel or accessories with any material.</li> </ul>
	<ul> <li>Always unplug cord reel when not in use.</li> </ul>
	Use equipment only in well ventilated area.
	<ul> <li>Eliminate all ignition sources, such as cigarettes and portable electric lamps.</li> </ul>
	<ul> <li>Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline.</li> </ul>
	<ul> <li>Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.</li> </ul>
	<ul> <li>Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you ide</li> </ul>
	tify and correct the problem.
	<ul> <li>Keep a working fire extinguisher in the work area.</li> </ul>
	EQUIPMENT MISUSE HAZARD
	Misuse can cause death or serious injury.
	Inspect thoroughly before each use. Do not use if damaged. Replace worn or damaged parts immediately with
	genuine manufacturer's replacement parts only.
	<ul> <li>Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety ha ards.</li> </ul>
_	<ul> <li>Make sure cord reel is rated and approved for the environment in which you are using it.</li> </ul>
	<ul> <li>Use equipment only for its intended purpose. Call your distributor for information.</li> </ul>
	<ul> <li>Route power cords and accessory cords away from traffic areas, sharp edges, moving parts, and hot surfaces Do not run cord through ceilings, walls or floors.</li> </ul>
	Do not drive, drag or place objects over cord reel cord.
	• Do not walk on cord.
	Do not use cord to pull equipment.
	<ul> <li>Keep children and animals away from work area.</li> </ul>
	Comply with all applicable safety regulations.

# **WARNING**

#### **MOVING PARTS HAZARD**

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.

# **Component Identification**



#### FIG. 1

#### Key:

- А Spool
- Power Cord В
- Accessory Cord Cord Stop С
- D
- Е Base Plate
- F Support Arm
- G Pawl (cutaway view part is located behind support arm)

# Adjusting Spring Tension



- cause serious injury if you are hit by the plug, accessories, or other moving parts.
- Reel must be bolted securely in place when making adjustments.



#### **Increasing Spring Tension**

- 1. Disconnect cord reel from power source by unplugging power cord from outlet.
- 2. Pull out accessory cord, 1 to 2 turns and engage pawl.
- 3. Pull accessory cord back through cord rollers.
- 4. Wrap a loop of accessory cord onto the spool. See Table 1, Recommended Number of Pre-Turns.
- 5. Check the spring tension; the accessory cord must pull out fully and retract fully. Wrap more loops, one at a time around the spool until the spring has the desired tension.

**NOTE**: Do not put so many loops onto the reel that the spring winds up tightly before the accessory cord is fully extended.

#### **Decreasing Spring Tension**

- 1. Disconnect cord reel from power source by unplugging power cord from outlet.
- 2. Pull out accessory cord, 1 to 2 turns and engage pawl.
- 3. Pull accessory cord back through cord rollers.
- 4. Remove loops of accessory cord to decrease tension.
- 5. Check the spring tension. Unwrap more loops, one at a time from the spool until the spring has the desired tension.

# Table 1:Recommended Number of Pre-Turns

Model	No. of Turns
24M510	2
24M511	2
24M512	3
24M513	3
24M514	3
24M515	2
24M516	3
24M517	3
24M518	2
24M521	3
24M522	3
24M524	3
24M525	3
24M526	3
24M527	3
24M528	2
24M529	2
24M530	3
24M531	2
24M532	2
24M533	3
24M534	2
24M535	2
24M536	3
24M537	2
24M538	2
24M539	3
24M540	2
24M541	3
24M542	3
24M543	2
24M544	3

# Troubleshooting



Problem	Cause	Solution
	Outlet attachment is too heavy	Increase spring tension. See
	Spring lost tension	Increasing Spring Tension, page 8.
Cord will not retract fully	Spring is broken	Replace spring. See Replacing Spring Cassette instructions, page 11.
Cord will not retract at all	Spring is broken	Replace spring. See Replacing Spring Cassette, page 11.
	Spring has lost tension	Increase spring tension. See Increasing Spring Tension, page 8.
	Broken pawl	Replace pawl. See instruction man- ual included with Latch Kit 15Y503.
Reel will not latch	Broken pawl spring	Replace pawl spring. See instruc- tion manual included with Latch Kit 15Y503.
	Pawl not lined up with ratchet plate.	See FIG. 13, page 16 for correct operating position. Realign pawl with ratchet plate if not correctly positioned. See Step 17, page 16.
	Accessory disconnected from cord end	Reconnect accessory to output end of accessory cord.
	Accessory is broken	Replace accessory.
No electrical power at the output end of accessory cord	Wires are not connected	Check all connections. Reconnect any loose wires connections. Or replace cord if problem with cord is discovered
	Worn slip-ring /brushes	Replace worn slip-ring/brushes, page 19.
	Cord is damaged	Replace cord.
Cord reel is not providing adequate ground	Cord or reel was installed incor- rectly	Review installation procedures to identify problem. See SD Cord Reel Installation manual.
	Worn slip-ring /brushes	Replace worn slip-ring/brushes, page 19.
Cord locked when accessory cord was fully extended	Slip-ring cover is assembled in the incorrect position	Relocate slip-ring cover in correct location, page 19.

Problem	Cause	Solution
Breaker or fuse trip out (GFCI	Application does not conform to the electrical rating of the reel	Check electrical rating on reel label. Do not attempt to use a reel that is not rated for the application.
accessory or European models only)	Wires are broken or shorted	Replace all damaged wires.
	GFCI models only: power was removed from unit	Reset GFCI.
Cord could not extend fully	Spring has too much tension applied	Release some of the spring tension. See Decreasing Spring Tension, page 8.

# Repair

## **Replacing the Spring Cassette**



# Kits\*: 24M452, 24M453, 24M454, 24M455, 24M460, 24M462, 24M463

Reference letters used in the following procedure refer to the kit parts table below and Parts page 27. See Parts pages for additional information regarding kits and their related models.

Ref	Part No.	Description	Qty
100	*	KIT, spring cassette	1

#### Disassembly

1. Disconnect cord reel from power source by unplugging main supply plug from outlet.



#### FIG. 2: Size 10 shown

- 2. Remove spring tension. See Adjusting Spring Tension/Decreasing, page 8.
- For Size 5 models: Loosen the six 10 mm hex nuts (20) and remove spring cassette (FIG. 2).
   For Size 10 models: Loosen the eight 10 mm hex nuts (20) and remove spring cassette (FIG. 2).

#### Reassembly

1. Assemble the hub (32) into the new spring cassette (100) supplied in the kit (FIG. 2).

NOTE: The hook of the spring (a) and the hook of

the hub (b) must maintain the direction as shown in Fig. 3.



#### FIG. 3

2. Assemble the spring cassette (100) with the hub (32) onto the shaft (7).

**NOTE:** When the spring cassette (100) is assembled into the shaft (7) the surfaces (a and b) must be aligned as shown in FIG. 3.

- For Size 5 models: Replace and tighten the six 10 mm hex nuts (20) 26.6 in-lbs (3 N.m) (FIG. 2).
   For Size 10 models: Replace and tighten the eight 10 mm hex nuts (20) 26.6 in-lbs (3 N.m) (FIG. 2).
- 4. Add tension back to reel. See Table 1on page 8.
- 5. Plug in cord reel.

## **Replacing the Accessory Cord**



#### ELECTRIC SHOCK HAZARD

All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

# Kits†: 24N882, 24N883, 24N884, 24N885, 24N886, 24N887, 24N888, 24N889, 24N890, 24N891, 24N892, 24N893, 243N894, 24N895, 24N896

Reference letters used in the following procedure refer to the kit parts table below and Parts page 27. See Parts pages for additional information regarding kits and their related models.

Ref	Part No.	Description	Qty
101	1	KIT, cord replacement, includes	1
101a		CORD,	1
101b		TERMINAL, ring	1
101c		TERMINAL, insulated	1

#### Disassembly

- 1. Disconnect cord reel from power source by unplugging main supply plug from outlet.
- 2. If the cord reel is enclosed, remove enclosures as necessary to access cord reel.
- 3. Remove spring tension. See Decreasing Spring Tension, page 8.



Never allow the reel to spin freely. Doing so causes the cord reel to spin out of control, which could cause serious injury if you are hit by the plug, accessories or other moving parts

- 4. Remove remaining cord from spool.
- 5. Remove ball stop from accessory cord end and put all the parts in a safe place to reinstall on the new cord later (FIG. 4).
  - a. Loosen and remove screws (18) and nuts (19).
  - b. Separate two ball stop components (17) to remove from end of accessory cord.



6. Loosen and remove strain relief nut (5) (FIG. 5) to allow power cord to move freely.



Fig. 5

 While supporting the spool, loosen 34 mm hex nut (4) (FIG. 4).



- 8. Pull spool assembly away from arm and pedestal.
- For Size 5 models: Loosen six 10 mm hex nuts (20) and remove cover (36). (FIG. 6).
   For Size 10 models: Loosen eight 10 mm hex nuts (20) and remove cover (36). (FIG. 6).





10. Loosen three phillips screws (A) on slip ring brush bracket (22) (FIG. 7).



Remove wires from slip ring brush bracket (22) (FIG. 7).



#### FIG. 8

- For 230V models only disconnect the brown wire (A) from the over current protection device (47). Remove wire from "LOAD" side of device. (FIG. 8)
- 13. Loosen 10 mm hex nut (20) to relieve tension on cord clamp (33) (FIG. 7).
- 14. Pull cord back through the grommet (44) in the spool side (Fig. 7).

#### Reassembly

 Route new cord (101a) through grommet (44) and cord clamp (33). Tighten 10 mm hex nut to 6 in-lbs (3 N.m) on cord clamp (33) to hold the cord in place securely (FIG. 7, page 13).

**NOTE:** Ensure there is enough extra cord between cord clamp and slip ring before securing cord clamp (33).

- 2. For 230V models, attach brown wire to over current protection device. (FIG. 8)
- Attach wires to slip ring brush bracket (22). Refer to Table 2 to ensure the wires are installed in the correct orientation. (FIG. 9)
- 4. Attach spool ground wire (W) to slip ring brush bracket (22).

Table 2			
	Grounding (X) (W)	Hot (Y)	Neutral (Z)
120V	Green	Black	White
230V	Green-Yellow	Brown	Blue



#### FIG. 10: Size 10 shown

- 7. Reassemble cover (36).
- For Size 5 models: Tighten six 10mm hex nuts (20) to 26.6 in-lbs (3 N.m).
   For Size10 models: Tighten eight 10mm hex nuts (20) to 26.6 in-lbs (3 N.m).
- With accessory cord secured to the spool, wrap all the cord around the spool. Wrap cord in a clockwise direction when looking at the spring cassette. (FIG. 11)



#### FIG. 9

- 5. Tighten to 10.2 in-lbs (1.15 N.m) with phillips screws on slip ring brush bracket (22).
- 6. Ensure gasket (34) is in place. Refer to Fig. 10 for correct placement.



 Mount spool assembly into arm and pedestal taking care to ensure keyed shaft aligns with arm and pedestal. Ensure washer is in place as shown in Fig. 12.



#### Fig. 12

11. Tighten 34 mm hex nut (4) to 59 ft-lbs (80 N.m). (Refer to FIG. 5, page 12 for the location of this part.)



loosening hex nut. A damaged power cord presents a threat of electric shock and a fire hazard.



#### Fig. 13

- 12. Check pawl to make sure it is not wedged (FIG. 13).
- Tighten strain relief nut (5) to 11 ft-lbs (15 N.m). (Refer to Fig. 5, page 12 for the location of this part.)
- 14. Route accessory cord through roller guide.
- Position the two ball stop (17) halves around cord. Insert screws (18) through ball stop and hand tighten nuts (19) to hold ball stop in place. (FIG. 4, page 12)
- 16. Adjust spring tension. See Adjusting Spring Tension, page 8.
- 17. Install accessory to end of accessory cord. See appropriate section of this manual for accessory installation.
- 18. If used, reassemble cord reel enclosure following procedure described in the SD Reel Enclosure Installation Instruction manual.

### **Electrical Power Cords**



#### ELECTRIC SHOCK HAZARD

All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

#### Kits 4: 24N866, 24N867, 24N868, 24N869, 24N870

Reference letters used in the following procedure refer to the kit parts table below and Parts page 27. See Parts pages for additional information regarding kits and their related models.

Ref	Part No.	Description	Qty
102	•	KIT, power cord, includes	1
102a		CORD	1
102b		PLUG (included in 24N868 and 24N869)	1
102c		TERMINAL, ring	3
102d		STOP, cord gland	1
102e		LABEL, safety (only on 120V models)	1
102f		LABEL, safety (only on 120V models)	1
102g		LABEL, safety (only on 120V models)	1

#### Disassembly

- 1. Disconnect cord reel from power source by unplugging main supply plug from outlet.
- Continue disassembly procedure for Replacing the Accessory Cord Instructions, Steps 2 - 9, pages 12 -13.
- 3. Loosen and remove three 7 mm hex nuts (A) and lockwashers (B) from slip ring (21) (FIG. 14).



FIG. 14

4. Cut wire at ring terminals (43). (FIG. 15)



Fig. 15

5. Remove power cord (37). (FIG. 15)

#### Reassembly

 Route power cord (102a) through strain relief nut (5), cord stop (102d), 34 mm hex nut (4), star washer (27) through pedestal arm, washer (8), and then through shaft (7). (FIG. 16)



 Orient cord so wires route to appropriate holes and to the left side of the desired mounting stud as shown in FIG. 17 and Table 3.



3. Use new ring terminals (102c) from kit and crimp onto each conductor of the cord.

**NOTE:** Test each crimp by performing a pull test on each conductor to ensure proper crimp.

4. Mount terminal rings (102c) to appropriate mounting stud as shown in Fig. 18. Refer to Table 3 for wire locations.

Table 3				
	Grounding	Hot	Neutral	
	1*	2*	3*	
120V	Green	Black	White	
230V	Green/Yellow	Brown	Blue	



 Install three lock washers (B) and three 7 mm hex nuts (A). Tighten nuts to 10.2 in-lbs (1.15 N.m). (Fig. 19)



6. Continue reassembly procedure for Replacing the Cord Instructions, Steps 7 - 18, page 15.

# Slip Ring Replacement

Reference letters used in the following procedure refer to the kit parts table below and Parts page 27. See Parts pages for additional information regarding kits and their related models.

Ref		Description	Qty
103	24N687	KIT, slip ring and brush	1
103a		RING, slip	1
103b		BRACKET, carbon brush	1
103c		TOOL, assembly, repair, slip ring	1

#### Disassembly

#### **Slip Ring Brush Bracket**

|--|--|--|

- 1. Disconnect cord reel from power source by unplugging main supply plug from outlet.
- Continue disassembly procedure for Replacing the Accessory Cord Instructions, Steps 2 - 13, pages 12 - 13
- Disassemble two 10 mm hex nuts (20) holding slip ring brush bracket (22) to slip ring (21). Remove slip ring brush bracket. (FIG. 20)



#### Slip Ring

- In order to remove slip ring (21), disassembly of spring cassette is required. Remove spring cassette. Continue Disassembly with Steps 1-3 of the Replacing the Spring Cassette section on page 11 of this manual.
- 5. Remove retaining clip (25).



#### Fig. 21

- 6. Slide shaft (7) out of spool.
- 7. Loosen two set screws (A) and grounding lug on shaft (7). (FIG. 22)
- 8. Slide slip ring off of the shaft.

#### Reassembly

1. Insert the slip ring (103a) onto shaft (7) (FIG. 22).



FIG. 22

- 2. Align set screw holes (A) on shaft (7) with proper holes on new slip ring. Tighten set screw to hand tight.
- 3. Re-install ground lug and wire between position 1 on slip ring and ground lug on shaft (7).
- 4. Re-install retaining clip (25) onto shaft (7) and slip ring (103a) in place. (Fig. 21)
- 5. Press tool (103c) onto the slip ring brush bracket (103b) as shown in Fig. 23.



#### FIG. 23

 Install slip ring brush bracket (103b) onto spool. Tighten two 10 mm hex nuts (20) to 26.6 in-lbs (3 N.m).



7. Remove tool (103c) from assembly (FIG. 25).





8. Continue Reassembly with Steps 3 - 18 of the Replacing the Accessory Cord section, beginning on page 15 of this manual.

## **Single Industrial Receptacle**

#### 120V Models NEMA 5-20R (24N871)



FIG. 26

#### Disassembly

- 1. Disconnect cord reel from power source by unplugging main supply plug from outlet.
- 2. Loosen strain relief screws (A) from plug attached to reel. (Fig. 26)
- 3. Loosen three screws (B) (FIG. 26) on the front of the receptacle.
- 4. Remove receptacle from housing to expose wiring terminals.
- 5. Loosen three wiring terminal screws and remove wires.
- 6. Slide housing over cord.

#### Reassembly

- If cord is not stripped, strip wire on cord 1/4" (6.35 mm).
- 2. Place green ground wire in position 1 (a) with green ground screw (FIG. 27). Tighten green screw.
- 3. Place white wire in position 2 (b) with silver screw (FIG. 27). Tighten silver screw.
- 4. Place black wire in position 3 (c) with brass screw (FIG. 27). Tighten brass screw.



#### FIG. 27: Viewed from the back

- 5. Slide receptacle into housing.
- 6. Replace and tighten 3 screws on front of receptacle.
- 7. Install strain relief and tighten screws.
- 8. Plug reel back in and test.

#### 230 Models CEE 7/7 16 Receptacle (24N872)





#### FIG. 28

#### Disassembly

- 1. Disconnect cord reel from power source by unplugging main supply plug from outlet.
- 2. Loosen the phillips screw located in the center of the plug.
- 3. Pull outer protective shell back to expose wiring terminals.

- 4. Loosen two phillips screws for strain relief.
- 5. Loosen three screws to wire terminals. Remove wire.

#### Reassembly

- 1. Route wire through protective shell.
- 2. Install brown wire in left wiring terminal and tighten screw.
- 3. Install green/yellow wire in center wiring terminal and tighten screw.
- 4. Install blue wire in right wiring terminal and tighten screw.
- 5. Tighten down strain relief.
- 6. Slide protective shell over terminals and reinstall phillips screw.

# Fluorescent Light (16N223)

For repair instructions, see instructions provided with light.

# Fluorescent Light with Tool Tap (16N224)

For repair instructions, see instructions provided with light.



Fig. 30



FIG. 29

# LED Light 120V (16N227)

For repair instructions, see instructions provided with light.



# LED Light 230V (16N225)

For repair instructions, see instructions provided with light.



FIG. 33

FIG. 31

## Tool Tap 120V (16N226)

For repair instructions, see instructions provided with light.



# **Duplex GFCI Industrial Receptacle**

### 5-15R (24N880) 5-20R (24N881)



#### FIG. 34

Ref	Part No.	Description	Qty
104		KIT, socket, assembly, GFCI 5-15R, with box	
		KIT, socket, assembly, GFCI 5-20R, with box	
104a		COVER, outlet box, waterproof	1
104b		SOCKET, duplex, NEMA 5-15R	1
104c		MODULE, GFCI, 125V, 20A	1
104d	1	BOX, outlet	1

#### Disassembly

Reference letters used in the following instructions refer to FIG. 34.

- 1. Disconnect cord reel from power source by unplugging main supply plug from outlet.
- 2. Loosen four phillips #2 screws (A) on cover (104b). Remove cover.
- 3. Unscrew two phillips #2 screws (C) to remove GFCI.

- 4. Unscrew two phillips #2 screws (B) to remove NEMA receptacle.
- 5. Disconnect black, white, and green wires from wire nuts and remove GFCI and NEMA receptacle from box.
- 6. Loosen strain relief (3) at the top of the junction box.
- 7. Remove cord (37) from junction box (104d).

#### Reassembly

- 1. Insert cord (73) through strain relief (3). Tighten strain relief with 6 inches (152 mm) service loop of cord in the junction box (104d).
- 2. Connect black wire from cord to black wire from GFCI module with wire nut.
- 3. Connect white wire from cord to white wire from GFCI module with wire nut.
- 4. Connect green wire from cord to green wire from GFCI module, NEMA receptacle, and metal junction box with wire nut.
- 5. Secure GFCI to left side of junction box using two phillips screws (104c).
- 6. Secure NEMA duplex receptacle (104d) to right side of junction box using two phillips screws.
- 7. Reassemble cover (104b) with four phillips #2 screws (104a).
- 8. Plug in cord reel.
- 9. Test the GFCI with by pressing the test button.

## **Replacement Bulbs**

### For Fluorescent Lights - 16P697



FIG. 35

#### Disassembly

- Disconnect cord reel from power source by unplug-1. ging main supply plug from outlet.
- 2. Twist diffuser (A) in a counter clockwise direction.
- 3. Remove light bulb from diffuser.

#### Reassembly

- Install light bulb in diffuser. 1.
- 2. Twist diffuser in clockwise direction onto light.
- Ensure light bulb plugs into socket by visual inspec-З. tion.
- Plug reel back in and test. 4.

### For 230V LED Lights - 16P1696





# Disassembly

FIG. 36

- 1. Disconnect cord reel from power source by unplugging main supply plug from outlet.
- 2. Slide black handle off.
- Remove the two screws. З.
- Slide diffuser off. 4.

5. Remove light bulb. Dispose of light bulb according to applicable guidelines.

#### Reassembly

- 1. Install light bulb in socket.
- 2. Slide diffuser into place over bulb until holes line up.
- 3. Tighten two screws to secure diffuser.
- 4. Slide black handle back over handle.
- 5. Plug reel back in and test.

# Parts Size 5 shown



# Size 5 and Size 10 Models

See page 30 for a complete list of kits referenced in the following parts table.

REF	Kit No.	Description	Qty
1		BASE, welded, Size 5 models	1
		BASE, welded, Size 10 models	1
0		ARM, guide, Size 5 models	1
2		ARM, guide, Size 10 models	1
3		NUT, lock	4
4		NUT, M22 x 1.5 MM	1
		CAP, wire, M22 x 1.5, 16 AWG, models 24M510, 24M511, 24M514, 24M515, 24M517, 24M518, 24M527 - 24M543	1
5		CAP, wire, M22 x 1.5, 12 AWG and 2.5 mm <sup>2</sup> , models 24M512, 24M513, 24M516, 24M521, 24M522, 24M524, 24N525, 24M526, 24M544	1
6	106a 107a	STOP, cord, gland, 16 gauge, mod- els 24M510, 24M511, 24M514, 24M515, 24M517, 24M518, 24M527 - 24M543	1
0	106b 107b	STOP, cord, gland, 12 gauge, mod- els 24M512, 24M513, 24M516, 24M521, 24M522, 24M524, 24N525, 24M526, 24M544	1
7		SHAFT, cord reel, Size 5 models	1
· ·		SHAFT, cord reel, Size 10 models	
8		WASHER, flat 31 ID	1
9	105a	SPRING, ratchet pawl	1
10	105b	BOLT, M10 x 25 lg w patch	1
11	105c	BUSHING, pawl	1
12	105d	PAWL, ratchet	1
13	108a	BRACKET, roller	1
14	108b	ROLLER	4
15	108c	PIN, roller	4
16	108d	SCREW, M6 x 16	4

REF	Kit No.	Description	Qty
	109c	STOP, cord, 16 AWG, models 24M510, 24M511, 24M517, 24M518, 24M527 - 24M538	2
17	109c	STOP, cord, 12 AWG, 2.5 mm <sup>2</sup> , models 24M512, 24M513, 24M516, 24M521, 24M522, 24M524- 24M526, 24M544	2
	109c	STOP, cord, 1.5 mm <sup>2</sup> , models 24M514, 24M515, 24M539 - 24M543	2
18	109b	SCREW, machine, pnh	2
19	109a	NUT, hex, jam,	2
20		NUT, hex, 10 mm, non-metallic insert, Size 5 models	16
20		NUT, hex, 10 mm, non-metallic insert, Size 10 models	20
21	103a	RING, slip	1
22	103b	BRACKET, carbon, brush	1
23		SCREW, setting, M5 x10, not shown	2
24		WASHER, flat, spring side	1
25		RING, retaining	1
27		WASHER, with internal teeth	1
28	100	COVER, spring, black, not shown	1
29	100	CASSETTE, spring, black, not shown	1
30	100	SPRING, power, not shown,	1
31	100	RIVET, aluminum, 4mm, not shown	4
32		HUB, cord reel, 3550, Size 5 mod- els	1
02		HUB, cord reel, 7500, Size 10 mod- els	1

REF	Kit No.	Description	Qty
	106g 107g	CLAMP, wire, 12 AWG, 2.5 mm <sup>2</sup> , models 24M512, 24M513, 24M516, 24M521, 24M522, 24M524, 24N525, 24M526, 24M544	1
33	106h 107h	CLAMP, wire, 16 AWG, 1.5 mm <sup>2</sup> , models 24M510, 24M511, 24M514, 24M515, 24M517, 24M518, 24M527, 24M528, 24M529, 24M530, 24M531, 24M533 - 24M543	1
34	106d	SEAL, spool, Size 5 models	1
34	107d	SEAL, spool, Size 10 models	1
35		FLANGE, set, black, 3550, Size 5 models	1
30		FLANGE, set, black, 7500, Size 10 models	1
		COVER, assembly, slip ring, 3550, models 24M510, 24M512, 24M517, 24M518, 24M521, 24M522, 24M525, 24M527, 24M528, 24M530, 24M531, 24M533, 24M534, 24M536, 24M537	1
36		COVER, assembly, slip ring, 3550, black, models 24M514, 24M515, 24M539, 24M540, 24M542, 24M543	1
		COVER, assembly, slip ring, 7500, metallic blue, 24M511, 24M513, 24M524, 24M526, 24M529, 24M532, 24M535, 24M538	1
		COVER, assembly, slip ring, 7500, black, 24M516, 24M541, 24M544	1
37	102a	CORD, power	1
38	101a	CORD, accessory	1
39	106c 107c	PACKING, o-ring, not shown,	1
40	106e 107e	GROMMET, diaphragm, 12 AWG, 2.5 mm <sup>2</sup> , not shown, models 24M512, 24M513 24M516, 24M521, 24M522, 24M524, 54M525, 24M526, 24M544	1
	106f 107f	GROMMET, diaphragm, 16 AWG, 1.5 mm <sup>2</sup> , not shown, models 24M510, 24M511, 24M514, 24M4517, 24M518, 24M257, 24M528 - 24M543	1

REF	Kit No.	Description	Qty
41	102b	PLUG, NEMA, 5-20P, 20A, 120V, models 24M512, 25M513, 24M521, 24M522, 24M524, 24N525, 24M526	1
	102b	PLUG, CEE 7/7, 16A, 230V, model 24M544	1
42		CORD, grounding with terminals, 12 AWG, models 24M510, 24M512, 24M514, 24M515, 24M517, 24M518, 24M521, 24M522, 24M525, 24M527, 24M528, 24M530, 24M531, 24M533, 24M534, 24M536, 24M537, 24M539, 24M540, 24M542, 24M543	1
		CORD, grounding with terminals, 2.5 mm <sup>2</sup> , models 24M511, 24M513, 24M516, 24M524, 24M526, 24M529, 24M532, 24M535, 24M538, 24M541, 24M544	1
	102c*	TERMINAL, ring, M4, 16 AWG, 1.5 mm <sup>2</sup> , not shown, models 24M510, 24M511, 24M517, 24M518, 24M527 - 24M537	6
43	102c*	TERMINAL, ring, M4, 16 AWG, 1.5 mm <sup>2</sup> , not shown, models 24M510, 24M511, 24M514, 24M515, 24M517, 24M518, 24M527 - 24M541	5
	102c*	TERMINAL, ring, M4, 12 AWG, 1.5-2.5-4 mm <sup>2</sup> , M4, not shown, models 24M512, 24M513, 24M516, 24M522, 24M524, 24N525, 24M526, 24M544	7
	shown re	c contains a quantity of 3. Quantity flects the total number of terminal rin assembly.	ngs
44		TERMINAL, insulated, 14-16 AWG, not shown, models 24M514 - 24M516, 24M539 - 24M544	1
45	24N871	SOCKET, single, NEMA, 5-20R, not shown, models 24M521, 24M522, 24M524	1
46		CORD, protector-to-carbon brush, not shown, models 24M514 - 24M516, 24M539 - 24M544	1

REF	Kit No.	Description	Qty
47		PROTECTOR, thermal, cord reel, 10A, models 24M514 - 24M515, 24M539 - 24M543	1
		PROTECTOR, thermal, cord reel, 16A, models 24M516, 24M544	1
49		TERMINAL, ring M4, 12 AWG and 2.5 mm <sup>2</sup> , not shown, models 24M510, 24M511, 24M517, 24M518, 24M527 - 24M537	1
49		TERMINAL, ring M4, 12 AWG and 2.5 mm <sup>2</sup> , not shown, models 24M514, 24M515, 24M539 - 24M543	2
50		TERMINAL, ring, M6, 12 AWG, 2 mm <sup>2</sup> , not shown	1
56		NUT, hex, 10 mm, not-metallic insert	4
60		LABEL, brand	1
61		WASHER	1
62 🔺	16P224	TAG, danger, cord reel, English	1
63 🔺	16P392	TAG, danger, cord reel, French	1
64 🔺	169394	TAG, danger, cord reel, Spanish	1
65 🔺	16P454	LABEL, safety, multiple	1

### **Kits**

Ref	Part No.	Description	Qty
	24M452	KIT, spring casette	
	24M453	KIT, spring casette, Size 5 models 24M514, 24M517, 24M527, 24M533, 24M536, 24M539, 24M542	
	24M454	KIT, spring casette, Size 5 models 24M512, 24M522, 24M525	
100	24M455	KIT, spring casette, Size 5 models 24M510, 24M515, 24M518, 24M528, 24M531, 24M534, 24M537, 24M540, 24M543	
	24M462	KIT, spring casette, Size 10 mod- els 24M513, 24M516, 24M524, 24M526, 24M544	
	24M463	KIT, spring casette, Size 10 mod- els 24M511, 24M529, 24M532, 24M535, 24M538, 24M541	

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

Ref	Part No.	Description	Qty
	24N882	KIT, cord, 1.5 mm <sup>2</sup> , 25 M, models 24M541	1
	24N883	KIT, cord, 1.5 mm <sup>2</sup> , 10 M, CEE 7/7, 16 AWG, models 24M542	1
	24N884	KIT, cord, 1.5 mm <sup>2</sup> , 15 M, CEE 7/7, 16 AWG, models 24M543, 24N884	1
	24N885	KIT, cord, 50 feet, 16 AWG, SJTOW, models 24M510, 24M528, 24M531, 24M534, 24M537	1
	24N886	KIT, cord, 95 feet, 16 AWG, SJTOW, models 24M511, 24M529, 24M532, 24M535, 24M538	1
	24N887	KIT, cord, 50 feet, 12 AWG, SJOOW, models 24M512, 24M522, 24M525	1
101	24N888	KIT, cord, 95 feet, 12 AWG, SJOOW, models 24M513, 24M524, 24M526	1
	24N889	KIT, cord, 1.5 mm <sup>2</sup> , 10 M, models 24M514, 24M539	1
	24N890	KIT, cord, 1.5 mm <sup>2</sup> , 15 M, models 24M515, 24M540	1
	24N891	KIT, cord, 2.5 mm <sup>2</sup> , 25M, models, 24M516, 24M544	1
	24N892	KIT, cord, 35 feet, 16 AWG, SJTOW with NEMA 5-15R, models 24M517	1
	24N893	KIT, cord,, 50 feet, 16 AWG, SJTOW with NEMA 5-15R, models 24M518	1
	24N894	KIT, cord, 35 feet, 12 AWG, SJOOW, models 24M521	1
	24N896	KIT, cord, 35 feet, 16AWG, SJTOW, models 24M527, 24M530, 24M533, 24M536	1
101a		CORD	1
101b		TERMINAL, ring	1
101c	]	TERMINAL, insulated	1

Ref	Part No.	Description	Qty		
	24N866	KIT, power cord, NEMA 5-15P, 16 AWG, models 24M510, 24M511, 24M517, 24M518, 24M527 - 24M538			
	24N867	KIT, power cord, CEE 7/7, 1.5 mm <sup>2</sup> , models 24M539 - 24M543			
102	24N868	KIT, power cord, NEMA, 5-20P, 12 AWG, models 24M512, 24M513, 24M521, 24N522, 24M524- 24M526	1		
	24N869	KIT, power cord, CEE 7/7, 2.5 mm <sup>2</sup> , models 24M516, 24M544	1		
	24N870	KIT, power cord, 1.5 mm <sup>2</sup> , models 24M514, 24M515	1		
102a		CORD	1		
102b		PLUG, included in 24N868 and 24N869	1		
102c		TERMINAL, ring	3		
102d		STOP, cord gland			
102e		LABEL, safety, only on 120V models	1		
102f		LABEL, safety, only used on 120V models			
102g		LABEL, safety, only used on 120V models	1		
103	24N687	KIT, slip-ring			
103a		RING, slip	1		
103b		BRACKET, carbon, brush	1		
103c		TOOL, assembly, repair, slip ring (not shown)	1		
104	24N880	KIT, socket, assembly, GFCI 5-15R, with box			
104	24N881	KIT, socket, assembly, GFCI 5-20R, with box			
104a		COVER, outlet box, waterproof	1		
104b 104c		SOCKET, duplex	1		
104c 104d		MODULE, GFCI, 125V, 20A BOX, outlet	1		
105	15Y503	KIT, latch, repair			
105a	101000	SPRING, ratchet pawl			
-			1		
105b		BOLT, M10 x 25 lg w patch	1		
105c		BUSHING, pawl	1		
105d		PAWL, ratchet	1		

Ref	f Part No. Description				
105e		NUT, lock	1		
106	24N540	KIT, seal and wire clamping, Size-5			
106a		STOP, cord, gland, 16 gauge, models 24M510, 24M511, 24M514, 24M515, 24M517, 24M518, 24M527 - 24M543			
106b		STOP, cord, gland, 12 gauge, models 24M512, 24M513, 24M516, 24M521, 24M522, 24M524 - 24M526, 24M544			
106c		PACKING, o-ring	1		
106d		SEAL, spool, Size 5 models	1		
1000		SEAL, spool, Size 10 models	1		
106e		GROMMET, diaphragm, 12 AWG, 2.5 mm <sup>2</sup> , models 24M512, 24M513 24M516, 24M521, 24M522, 24M524, 54M525, 24M526, 24M544,			
106f		GROMMET, diaphragm, 16 AWG, 1.5 mm <sup>2</sup> , models 24M510, 24M511, 24M514, 24M4517, 24M518, 24M257, 24M528 - 24M543	1		
106g		CLAMP, wire, 12 AWG, 2.5 mm <sup>2</sup> , models 24M512, 24M513, 24M516, 24M521 - 24M525, 24M526, 24M544			
106h		CLAMP, wire, 16 AWG, 1.5 mm <sup>2</sup> , models 24M510, 24M511, 24M514, 24M515, 24M517, 24M518, 24M527, 24M528, 24M529, 24M530, 24M531, 24M533 - 24M543	1		
107	24N541	KIT, seal and wire clamping, Size-10			
107a		STOP, cord, gland, 16 gauge, models 24M510, 24M511, 24M514, 24M515, 24M517, 24M518, 24M527 - 24M543			
107b	7b STOP, cord, gland, 12 gauge, models 24M512, 24M513, 24M516, 24M521, 24M522, 24M524 - 24M526, 24M544				

Ref	Part No.	Description			
107c		PACKING, o-ring	1		
107d		SEAL, spool, Size 5 models	1		
1070		SEAL, spool, Size 10 models	1		
107e		GROMMET, diaphragm, 12 AWG, 2.5 mm <sup>2</sup> , models 24M512, 24M513 24M516, 24M521, 24M522, 24M524, 54M525, 24M526, 24M544,			
107f		GROMMET, diaphragm, 16 AWG, 1.5 mm <sup>2</sup> , models 24M510, 24M511, 24M514, 24M4517, 24M518, 24M257, 24M528 - 24M543	1		
107g		CLAMP, wire, 12 AWG, 2.5 mm <sup>2</sup> , models 24M512, 24M513, 24M516, 24M521 - 24M525, 24M526, 24M544	1		
107h		CLAMP, wire, 16 AWG, 1.5 mm <sup>2</sup> , models 24M510, 24M511, 24M514, 24M515, 24M517, 24M518, 24M527, 24M528, 24M529, 24M530, 24M531, 24M533 - 24M543			
108	24N897	KIT, repair, roller bracket			
108a		BRACKET, roller	1		
108b		ROLLER	4		
108c		PIN, roller	4		
108d		SCREW, M6 x 16			
109	222225	KIT, repair, ball stop, 12 AWG and 2.5 mm <sup>2</sup> cord			
	24N539	KIT, repair, ball stop, 16AWG cord			
	24N538	KIT, repair, ball stop, 1.5 mm <sup>2</sup> cord			
109a		NUT, hex	2		
109b		SCREW, mach. pnh			
109c		BALL STOP			
	24N871	KIT, socket, single, NEMA 5-20R	1		
		KIT, socket, single, 16AWG	1		
16N226 KIT, tool tap, 125V, 12A		KIT, tool tap, 125V, 12A	1		
16N223		KIT, light, fluorescent, 110V, with- out tool	1		
	16N224 KIT, light, fluorescent, 110V with tool				

Ref	Part No.	Description			
	16N225	KIT, light, LED, 110V-240V	1		
	16N227	KIT, light, LED, Stubby II	1		
	16P697	KIT, lamp, fluorescent, light, 110V	1		
	16P696	KIT, lamp, LED, light, 110V-240V	1		
	16P999	KIT, magnetic clip	1		

# **Technical Data**

	120V Models	230V Models
Voltage	120VAC	230VAC
Maximum Current	See Models, page 3	See Models, page 4
Wire Gauge	See Models, page 3	See Models, page 4
Cord Length		
Size 5	See Models,	page 3 and 4
Size 10	See Models,	page 3 and 4
Operating Temperature		
24M510-24M518		
24M521-24M526	-22°F to 122°F	<sup>-</sup> (-30°C to 50°C)
24M542-24M544	7	
24M527-24M541	-4°F to 104°F	(-20°C to 40°C)
GFCI Models		
24M525	Complies with UL943 Section	
24M526	6.7.2.1c requirements for open neutral protection for a portable GFCI.	
Weight - without accessories		
120V Models		
Size 5: 16AWG, Cord Length - 35 Feet	25.4 lbs	(11.5 kg)
Size 5: 16AWG, Cord Length - 50 Feet	27.6 lbs	(12.5 kg)
Size 10: 16 AWG, Cord Length - 95 Feet	46.3 lbs	(21.0 kg)
Size 5: 12AWG, Cord Length - 35 Feet	28.2 lbs	(12.8 kg)
Size 5: 12AWG, Cord Length - 50 Feet		(14.5 kg)
Size 5: 12AWG, Cord Length - 75 Feet	51.1 lbs	(23.2 kg)
Size 10: 12 AWG, Cord Length - 95 Feet	51.8 lbs	(23.5 kg)
230V Models		
Size 5: 1,5 mm <sup>2</sup> , Cord Length 10 m	25.6 lbs	(11.6 kg)
Size 5: 1,5 mm <sup>2</sup> , Cord Length 15 m	30.6 lbs	(13.9 kg)
Size 10: 1,5 mm <sup>2</sup> , Cord Length 25 m	49.4 lbs	(22.4 kg)
Size 10: 2,5 mm <sup>2</sup> , Cord Length 25 m	54.1 lbs	(24.5 kg)
Dimensions		
Size 5 and Size 10	See page 35	
Sound Pressure*	80 dB(A)	
Sound Power**	87 dB(A)	

\*All readings taken at assumed retraction rate, from assumed operator position.

\*\*Sound Power tester per ISO 9614-2.

## **Dimensions - Size 5 and Size 10 Models**



Size	A	В	С	D	E†	F♦	G★
Size 5		6.38 inches (162 mm)					13.84 inches (352mm)
Size 10		7.5 inches (191 mm)		9 inches (229 mm)	19.5 inches (498 mm)		17.5 inches (445 mm)

† Measurement taken from base to top of bolts.

• Measurement taken from end of the power cord strain relief to the spring cassette cover cap.

 $\star$  Measurement taken from edge of spool to front of the arm.

# Graco SD Series<sup>™</sup> Cord and Light Reel Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. Graco will, for a period of two (2) years from the date of sale, repair or replace any non-electrical components of the equipment determined by Graco to be defective, and Graco will for a period of one (1) year from the date of sale, repair or replace any electrical components of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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Original instructions. This manual contains English. MM 3A2826

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