Instructions for Installation, Operation and Maintenance of: "WSRD" Interlocked Receptacles — 30, 60 & 100 Ampere

Read instructions carefully and with full understanding for safe installation and operation.

WSRD NEMA 4 Series:
Interlocked Appleton Powertite™ Compatible Receptacle with heavy duty single throw disconnect switch.

ELECTRICAL RATINGS:
Maximum Voltage: 600VAC at 50-60 Hz*, 250 VDC 30, 60,100 Amperes — Continuous Line Current not to exceed 80% of fuse rating employed in other than motor circuits.
***** For 400 Hz applications, consult factory.

Compliances:
- UL Listed
- UL50 for Enclosures
- UL1682 for Receptacles
- NEC wire bending space, Table 373-6(b)
- Federal Specification WS865C
- Major automotive specifications

STANDARD FEATURES:
- Epoxy coated finish on receptacle and switch housing.
- Factory installed fuse pullers for fusible disconnect switch.

OPTIONS:
- Electrical Interlocks : **1 N.O. or 1 N.C.**
  2 N.O. or 2 N.C.

FIGURE A

WSRD SERIES

Shown Above:
Non-Fused Version Catalog Number **WSRD63542N4WSD**

TABLE A

HORSEPOWER RATING:

Catalog Number	DC Volts	AC Volts	Amp	Switch Type	HP Rating AC	
					Stand.	Max
Sheet Metal Enclosure NEMA 12						
WSRD3352SQ	250	600	30	Fused	7.5	20
WSRD33542SQ	250	600	30	Non-Fused	--	30
WSRD3352WSQ	250	600	30	Fused	7.5	20
WSRD33542WSQ	250	600	30	Non-Fused	--	30
WSRD6352SQ	250	600	60	Fused	15	50
WSRD63542SQ	250	600	60	Non-Fused	--	60
WSRD6352WSQ	250	600	60	Fused	15	50
WSRD63542WSQ	250	600	60	Non-Fused	--	60
WSRD10352SQ	250	600	100	Fused	30	75
WSRD10342SQ	250	600	100	Non-Fused	--	75
WSRD10352WSQ	250	600	100	Fused	30	75
WSRD103542WSQ	250	600	100	Non-Fused	--	75
Stainless Steel Enclosure NEMA 3, 3R, 4, 4X, 12						
WSRD3352N4SD	250	600	30	Fused	7.5	20
WSRD33542N4SD	250	600	30	Non-Fused	--	30
WSRD3352N4WSD	250	600	30	Fused	7.5	20
WSRD33542N4WSD	250	600	30	Non-Fused	--	30
WSRD6352N4SD	250	600	60	Fused	15	50
WSRD63542N4SD	250	600	60	Non-Fused	--	60
WSRD6352N4WSD	250	600	60	Fused	15	50
WSRD63542N4WSD	250	600	60	Non-Fused	--	60
WSRD10352N4SD	250	600	100	Fused	30	75
WSRD10342N4SD	250	600	100	Non-Fused	--	75
WSRD10352N4WSD	250	600	100	Fused	30	75
WSRD103542N4WSD	250	600	100	Non-Fused	--	75

APPLICATION:

• Designed to supply power to portable or fixed electrical equipment such as welders, infrared ovens, batch feeders, conveyors and truck and marine docks.

• Designed to supply three (3) phase, grounded electrical power to the aforementioned electrical equipment.

• Designed to provide an interlocked receptacle for use in ordinary (non-hazardous) locations, as defined by the National Electrical Code (NEC). In addition, the receptacle is designed such that a mating plug can only be engaged and disengaged when the switch handle is in the "OFF" position.

• Ideal for use on shipping docks, ports, and other "ship to shore" applications.

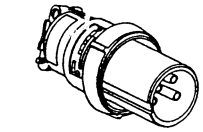
• Suitable for use in locations that require a degree of protection from the elements (See TABLE A). Enclosure cover and receptacle housing are sealed with gaskets. The receptacle housing flip cover is gasketed to seal against the housing. In addition, mating plugs can be engaged to the receptacle face to provide weatherproof union,

SHORT CIRCUIT RATING FUSED/ NONFUSED:

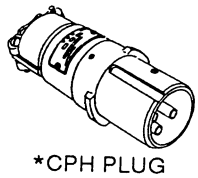
• Suitable for use on a circuit capable of delivering not more than 10,000 RMS symmetrical Amperes, 600 VAC maximum .

TABLE B

ACP & CPH PLUGS FOR "WSR" RECEPTACLES



ACP PLUG



*CPH PLUG

CABLE DIAMETER (In.)	CURRENT RATING	CATALOG NUMBER
.390 - 1.375	30	ACP3034BC
.500 - .875	30	CPH3034B
.500 - 1.375	60	ACP6034BC
.500 - .750	60	CPH6034A
.750 - 1.00	60	CPH6034B
1.000 - 1.375	60	CPH6034C
.500 - 1.375	60	CPH6034BC
.875 - 1.906	100	ACP1034C

*CPH Plug is rated for NEMA 3R applications only.

TABLE C

TIGHTENING TORQUE — LINE SIDE DISCONNECT SWITCH LUG SCREWS	
SLOTTED HEAD SCREWS	
WIRE SIZE (AWG)	**TORQUE (LB.-IN.)**
#14 -#10 AWG	35
#8 AWG	40
#6 - #4 AWG	45
#3 - #2 AWG	70

WARNING

• Do not modify these devices in any way. Replace missing or broken parts with the proper replacement parts from Appleton Electric, LLC.
• Modification of these devices or substitution of parts with non-standard parts may result in serious or fatal personal injury from electrocution.

WARNING

• Turn off power supplying WSRD interlocked receptacle before and during installation and maintenance.
• **Failure to do so may result in serious or fatal injury from electrocution.**

WARNING

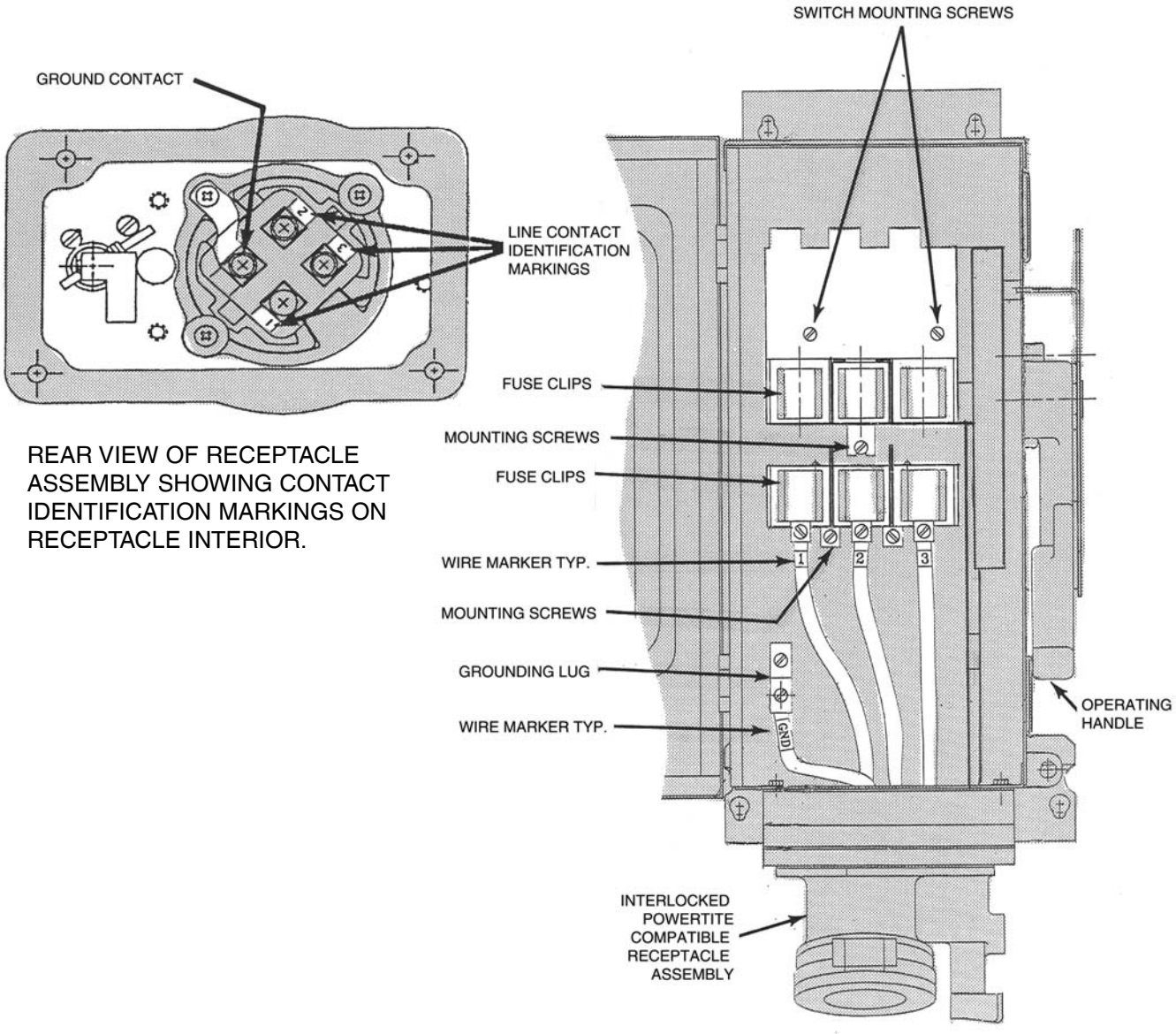
• If any part(s) of **"WSRD"** unit or the mating plug appear to be missing, broken or show signs of damage:

DISCONTINUE USE IMMEDIATELY!

This condition could cause serious or fatal personal injury due to electrocution and/or equipment damage. Repair with the proper replacement part(s) before continuing service.

FIGURE B

CONTACT PHASE IDENTIFICATION MARKINGS



REAR VIEW OF RECEPTACLE ASSEMBLY SHOWING CONTACT IDENTIFICATION MARKINGS ON RECEPTACLE INTERIOR.

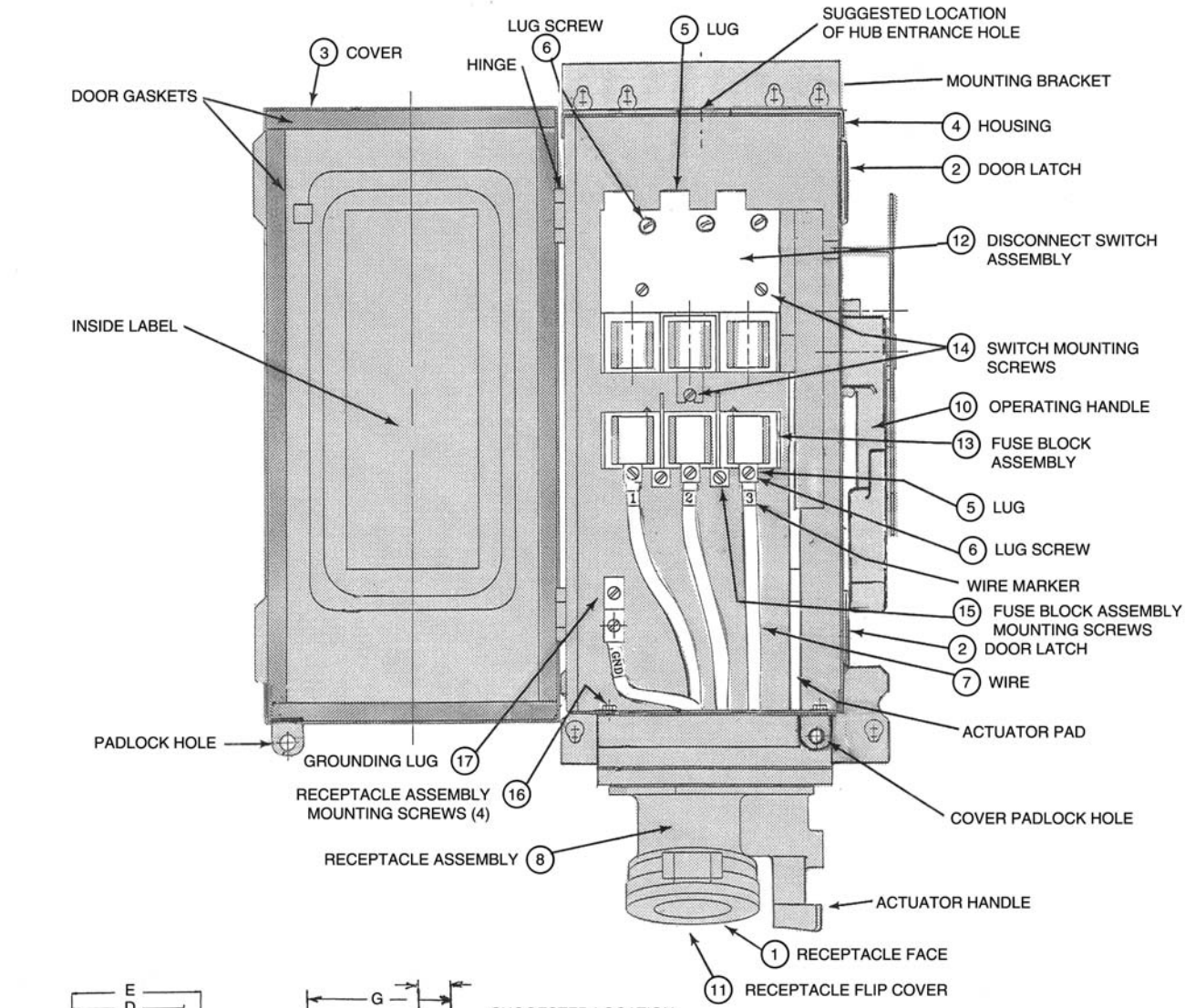
WARNING

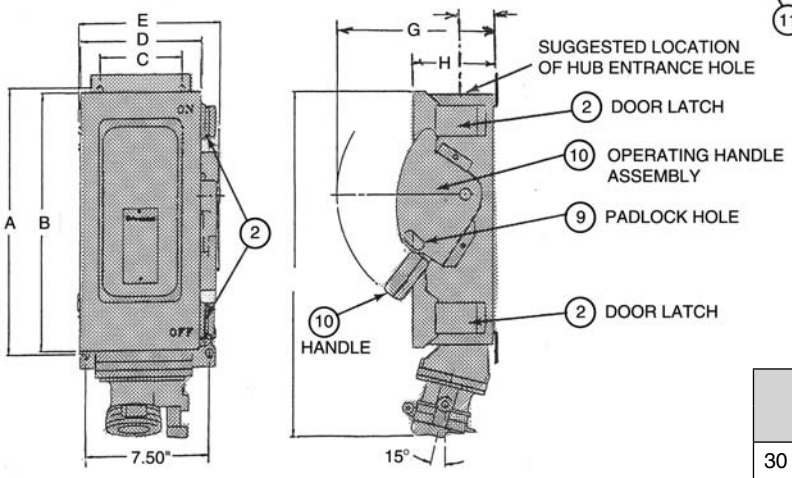
- Use only cable or wire per the National Electrical Code (NEC) for the given amp rating of the receptacle.
- Tighten the disconnect switch lug screws to the torques given in TABLE C and TABLE E for the listed wire ranges.
- Failure to do so may result in over-stressed wire terminations which could cause the conductors to pull out of the disconnect switch lugs. **This could cause serious or fatal injuries due to electrocution.**

DIMENSIONS: WSRD INTERLOCKED RECEPTACLE

FIGURE C

(ASSEMBLY VIEW WITH COVER OPEN)
Unit shown is Catalog Number WSRD6352SQ (NEMA 12 Version)





Device Rating	Dimension in Inches		
	A	B	C
30 & 60 Amp	16.75	16.50	22.25
100 Amp	20.75	20.50	26.25

INSTALLATION INSTRUCTIONS FOR "WSRD" INTERLOCKED RECEPTACLES

The WSRD receptacles are designed to accept clamping rings of the "ACP" plugs. Clamping rings fit onto the receptacle to provide a degree of protection against the elements and to prevent plug fallout when the receptacle is in the "**OFF**" position. When the plug is withdrawn from the receptacle, the gasketed flip cover closes tightly against the receptacle housing to provide weather-proof conditions (NEMA TYPE 12). Screw cap is required for NEMA TYPE 4 applications.

INSTALLATION

1. PREPARE MOUNTING POSITION:

Owners are responsible for damages or injuries if these rules are not followed.

WARNING

- Before starting with the installation, make sure the WSRD interlocked receptacle is suitable for the intended location according to the National Electrical Code or Canadian Electrical Code.
- If the interlocked receptacle is not suitable, serious damage and injuries may result.

A. The WSRD interlocked receptacle must be mounted on four (4) 1/4" maximum diameter steel bolts, securely fastened to wall, column, strut or other vertical structure, in one plane, and must be capable of supporting the unit, as well as its associated conduit and wiring.
NOTE: These bolts are not provided with the WSRD interlocked receptacle.

B. Referring to "FIGURE C" for dimensions of the WSRD interlocked receptacle, prepare the structure for the mounting bolts by drilling, tapping, securing nuts or another method of providing threaded anchors for the bolts.

C. Install the two top bolts leaving 3/16" to 5/16" under the heads.
• The bolts must be engaged at least five (5) full threads.

2. MOUNTING THE WSRD INTERLOCKED RECEPTACLE:

Place the interlocked receptacle on the previously prepared mounting bolts, with the receptacle face ① at the lower-most position (See FIGURE C). Make sure that the shanks of the bolts are in the small part of the key-hole slot in the mounting bracket. Install the two lower bolts. Tighten mounting bolts to 18-20 lb.-ft. torque to secure assembly in place.

3. OPENING ENCLOSURE COVER:

A. Referring to "FIGURE C", loosen the two (2) door latches.

B. The cover ③ is now free to swing open on its hinges.

C. Note that the cover ③ is not intended to be removed from the housing ④, since the range of travel (swing) of the cover is adequate to service the inside of the unit.

4. CONDUIT INSTALLATION:

A. Drill appropriate trade size hole in the top of the housing according to the size of hub used. Drill this hole in the location suggested in "FIGURE C".

B. Make sure hole is free of all burrs and sharp edges.

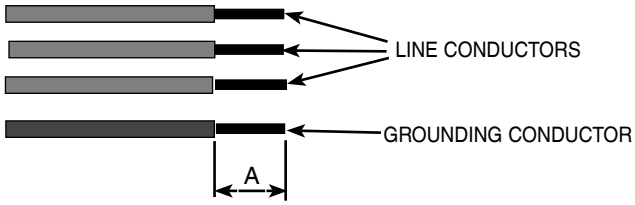
C. Install the corresponding hub in this hole according to the instructions given with the hub kit.

D. At this point, ensure that all hubs are tightened appropriately.

TABLE D

TERMINAL WIRE RANGE AND STRIPPING GUIDE

AMPERE RATING	STRIP LENGTH (In.)	TERMINAL WIRE RANGE (AWG)
	CONDUCTOR A	BUILDING WIRE
30	.63	#14 - #2 (Cu)
60	.63	#6 - #2 (Cu)
100	.63	#4 - #1/0 (Cu)



5. WIRING:

A. Referring to "FIGURE C", feed line side wiring into housing ④ through hub opening. Note - wiring must be rated 60 deg. C. or 75 deg. C. copper.

B. Strip the individual conductors per "TABLE D".

C. Connect wires to the proper disconnect switch lugs ⑤ by loosening, but not removing, lug screws ⑥**.** Insert conductors including all strands into lugs according to your established wiring scheme. Tighten lug screws ⑥ to the appropriate value shown in "TABLE C". Please note the wire markers on the wires ⑦ connected between the receptacle ⑧ and disconnect switch lugs ⑤. These wire markers correspond to the contact identification markings found on the back of the receptacle contact block. Refer to "FIGURE B".

6. ELECTRICAL TESTING:

All wiring must be checked and tested to ensure that all circuits are according to plan and that there are no unwanted opens, shorts or grounds. **Do not apply power until the following steps are completed:**

A. Test to verify correct phasing and ground connections.

B. Test insulation resistance by meggering, high voltage or hi-pot test, to be sure the system does not have any short circuits or unwanted grounds.

7. CLEAN COVER AND HOUSING:

Before closing the cover ③, it is strongly recommended that all dirt, debris and other foreign materials be removed from the interior.

• This action should be taken to help eliminate the possibility of unwanted shorts or grounds.

• Make sure the cover gasket surface is clean and free of any tears or damage.

• Clean the mating surface of the housing ④ in the same manner as the enclosure cover ③.

8. CLOSE ENCLOSURE COVER:

A. Close the cover ③.
B. Engage latches ②.

9. POWER:

With all electrical tests successfully completed, the door latched closed and the receptacle turned "OFF", power may be applied to the WSRD unit.

10. OPERATION:

A. The WSRD interlocked receptacle can now be turned to the "ON" position by lifting the operating handle ⑩ to the upper-most position.

Note that the WSRD interlocked receptacle cannot be turned "ON" without a mating plug engaged.

• **SAFETY FEATURE -** The receptacle is interlocked to the operating handle mechanism so that a mating plug cannot be removed when the switch is in the "ON" position.

B. A hole is provided in the housing lock-out ⑨ and operating handle ⑩ for the use of a padlock (See "FIGURE C") to prevent unauthorized movement of the operating handle ⑩ from the "OFF" position.

11. MAINTENANCE:

A. **INSPECTION:** Complete unit must be inspected regularly. Schedule of inspections is determined by frequency of use and environmental conditions.

• *It is recommended that inspections be carried out at least once a year.*

WARNING

• If any part(s) of the **"WSRD"** unit or the mating plug appear to be missing, broken or show signs of damage: ***DISCONTINUE USE IMMEDIATELY!***

This condition could cause serious or fatal personal injury due to electrocution and/or equipment damage. Repair with the proper replacement part(s) before continuing service.

DURING THE INSPECTIONS, PERFORM AT LEAST THE FOLLOWING:

1. Electrical power supplying the WSRD interlocked receptacle must be turned "OFF" before performing maintenance.
2. Inspect all conductor terminations for secureness.
   • Confirm torque values given in "TABLE C" and "TABLE E".
   • Discoloration due to excessive heat is an indication of possible problems and should be thoroughly investigated and repaired as necessary.
3. Check grounding and bonding effectiveness/continuity.
   • **Retorque connections to original values.**
4. Check gaskets for damage. Replace as necessary.
5. Check all hubs for tightness and retorque as necessary.
6. Clean interior of all foreign materials.
7. Make sure all openings are closed.
8. Make sure that receptacle assembly flip-cover ⑪ seals againts the receptacle housing.
9. Make sure the receptacle assembly nameplate located on the outside of the cover remains clean and legible.
   • **Do not paint nameplate**.
10. Make sure the assembly labels located on the inside of the cover remain clean and legible.

• It is recommended that an electrical preventive maintenance program, such as found in the National Fire Protection Bulletin NFPA 70B, be followed in addition to the above.

B. DISCONNECT SWITCH:

Disconnect switches occasionallt fail with use and need to be replaced.

The disconnect switch used in this receptacle must only be replaced with the same type and brand as factory installed. Doing so will not affect the UL Listing.

To replace disconnect switch -

• Referring to "FIGURE C", loosen the line and load side lug screws ⑥ of the disconnect switch and remove wires from the switch. Take note of the orination of these wires for proper reassembly. Also note that the wires ⑦ that connect the recptacle to either the disconnect switcch directly (non-fused version), or connect the receptacle to the fuse base (fused version) are numbered according to the phase location (See "FIGURE B").

• Remove disconnect switch and fuse base (*if applicable*) mounting screws mountin screws ⑭. Remove disconnect switch ⑫ and fuse base ⑬ (*if applicable*).

• Replace disconnect switch and fuse base, if applicable, with the appropriate switch kit as shown in "TABLE E", reversing the steps taken to remove them. Make sure to reconnect the wires to the same locations as before disassembly. Replace fuses, if necessary, for fused receptacle.

used in this interlocked receptacle is not replaceable. In case of disconnect switch failure, entire unit must be replaced.

TABLE F **SWITCHING KITS**

Appleton Disconnect Switch Cat. No.	Switch Type	Assembly Used In
WSRNT30F	Fused	WSRD3352SQ
WSRNT30U	Non-Fused	WSRD33542SQ
WSRNT60F	Fused	WSRD6352SQ
WSRNT60U	Non-Fused	WSRD63542SQ
WSRNT100F	Fused	WSRD10352SQ
WSRNT100U	Non-Fused	WSRD103542SQ

• Torque the mounting screw ⑩ to 15-20 lb. -in. to secure disconnect switch and fuse base, if applicable, in place.

• Torque the lug screw ⑥ to the appropriate value shown in "TABLE C" and "TABLE F".

C. RECEPTACLE ASSEMBLY:

The receptacle assemblies shown in "Table F" can be replaced without affecting the U.L. Listing.

To replace the receptacle assembly -

• Referring to "FIGURE C", loosen the load side lug screws ⑥ of the disconnect switch ⑫ or fuse base ⑬, (*if applicable*), and remove wires.
• Remove the four (4) receptacle assembly mounting screws ⑯ that fasten the assembly to the housing ④. Support the assembly so that it does not fall from unit.

• Do not allow unit to be used until problem is corrected.

When finished with installation, file and retain these instructions for future reference during inspection and maintenance.

• Remove the old receptacle assembly and replace it with the new unit. Replacing the unit can be accomplished by reversing the steps needed to remove it. Tighten the four (4) receptacle assembly mounting screws ⑯ to 19-25 lb.-in. to secure unit to housing.

• Place the appropriate wires into the correct lug locations and tighten lug screws to the appropriate value shown in "TABLE E".
• Test the unit for proper function by performing the following tasks: **ELECTRICAL POWER MUST BE TURNED "OFF" BEFORE PERFORMING TESTS.** Close the cover ③ and throw the switch to the "ON" position to make sure that no interference between new receptacle assembly and switch exists. Also verify that a mating plug can not be removed from the receptacle when the switch is in the "ON" position. If unit functions properly, it can be returned to service. If unit does not function properly, check the mounting of the receptacle assembly to the housing.

TABLE E

TIGHTENING TORQUE — LINE SIDE DISCONNECT SWITCH LUG SCREWS	
SLOTTED HEAD SCREWS	
WIRE SIZE (AWG)	**TORQUE (LB.-IN.)**
#14 -#10 AWG	35
#8 AWG	40
#6 - #4 AWG	45
#3 - #2 AWG	70

TABLE F **"WSRD" INTERLOCKED RECEPTACLE REPLACEMENT PARTS**

REFERENCE NUMBER	AMPACITY	DESCRIPTION	PART NUMBER	QUANTITY PER ASSEMBLY	ASSEMBLY USED IN
1	30	ELECTRICAL INTERLOCK, 1 N.O., 1 N.C.	WSAUX1	1	WSRD3352SQ &
		ELECTRICAL INTERLOCK, 2 N.O., 2 N.C.	WSAUX2	1	WSRD33542SQ
		ELECTRICAL INTERLOCK, 1 N.O., 1 N.C.	WS30AUX1	1	WSRD3352N4SD &
		ELECTRICAL INTERLOCK, 2 N.O., 2 N.C.	WS30AUX2	1	WSRD33542N4SD
	60	ELECTRICAL INTERLOCK, 1 N.O., 1 N.C.	WSAUX1	1	WSRD6352SQ &
		ELECTRICAL INTERLOCK, 2 N.O., 2 N.C.	WSAUX2	1	WSRD63542SQ
		ELECTRICAL INTERLOCK, 1 N.O., 1 N.C.	WS60AUX1	1	WSRD6352N4SD &
		ELECTRICAL INTERLOCK, 2 N.O., 2 N.C.	WS60AUX2	1	WSRD63542N4SD
	100	ELECTRICAL INTERLOCK, 1 N.O., 1 N.C.	WSAUX1	1	WSRD10352SQ &
		ELECTRICAL INTERLOCK, 2 N.O., 2 N.C.	WSAUX2	1	WSRD103542SQ
		ELECTRICAL INTERLOCK, 1 N.O.,1 N.C.	WS100AUX1	1	WSRD10352N4SD &
		ELECTRICAL INTERLOCK, 2 N.O., 2 N.C.	WS100AUX2	1	WSRD103542N4SD
2	30	Switching Kit - Fused	WSRNT30F	1	WSRD3352SQ
		Switching Kit - Non-Fused	WSRNT30U	1	WSRD33542SQ
	60	Switching Kit - Fused	WSRNT60F	1	WSRD6352SQ
		Switching Kit - Non-Fused	WSRNT60U	1	WSRD63542SQ
	100	Switching Kit - Fused	WSRNT100F	1	WSRD10352SQ
		Switching Kit - Non-Fused	WSRNT100U	1	WSRD103542SQ
	30	RECEPTACLE ASSEMBLY - 3W - 4P	WRDK3034	1	WSRD3352SQ&
					WSDR33542SQ
					WSRD3352N4SD
					WSDR33542N4SD
	60	RECEPTACLE ASSEMBLY - 3W - 4P	WRDK6034	1	WSRD6352SQ
					WSRD63542SQ
					WSRD6352N4SD
					WSRD63542N4SD
	100	RECEPTACLE ASSEMBLY - 3W - 4P	WRDK1034	1	WSRD10352SQ
					WSRD103542SQ
					WSRD10352N4SD
					WSRD103542N4SD