Wilson Trailer Company Operators Manual for HYDRO-Trap



This manual has been prepared to help you operate your HYDRO-Trap successfully and safely. Should you have any questions, we ask that you contact a Wilson Trailer factory representative immediately for a clear explanation.

NOTE: Wilson Trailer constantly makes product improvement to its product line. Your trap may vary slightly from the equipment described and/or pictures in this manual.

We thank you for expressing your confidence in us through the purchase of your new Wilson HYDRO-Trap. We want you to know that it was designed to meet your specific needs and is built for long life and low cost operation. With regular, proper maintenance and your common sense, we are confident that it will do so.



Additional manuals and decal kits are available without charge.

MODEL NO.

SERIAL NO.



This safety alert symbol is to raise your awareness to important messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

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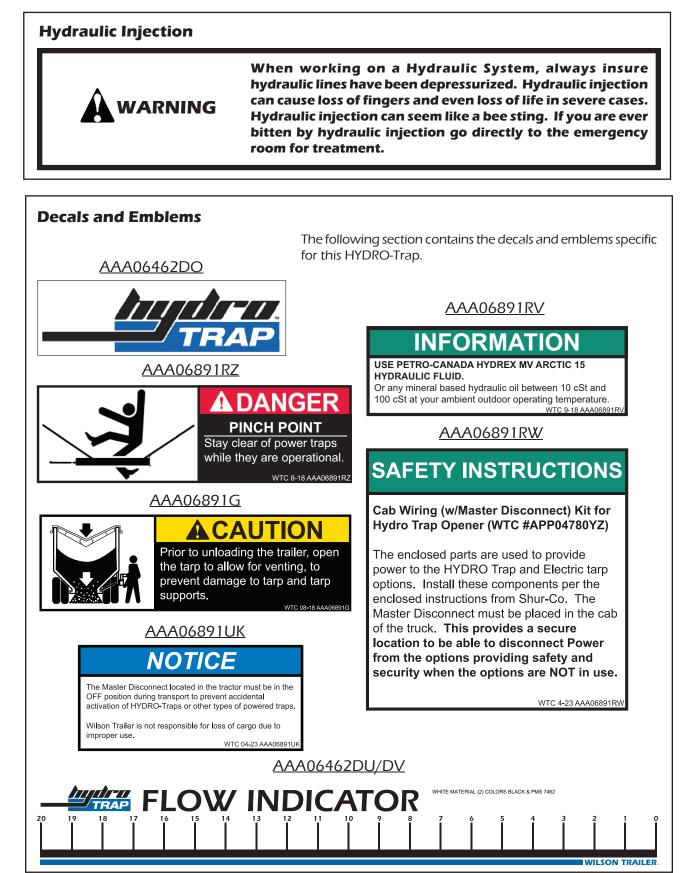
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General Description

The HYDRO-Trap utilizes hydraulic cylinders to open and close the traps. The hydraulic pump is powered by the tractor through the cab wiring kit with a master disconnect switch. The hydraulic traps are activated with the control panel located at the center of the trailer or by the optional remote. The standard remote control system operates the HYDRO-Traps and a Shurco 4500 Smart 3 Series power tarp. An accessory output is available to operate lights by remote.

SAFETY



OPERATION

Power Requirements



Make sure all power supply to trailer is disconnected and the ground wire in the nose of the trailer and on the receiver box is disconnected prior to any welding on trailer. Failure to do so could result in damage to receiver control box!

It is required that Cab Wiring w/Disconnect switch be installed per instructions to power the HYDRO-Trap (WTC P/N APP04780YZ). This kit includes a Master Disconnect. It is required this be installed in the tractor and turned to the ON position ONLY when the traps need to be operated. This kit includes a 120 amp resetable breaker required for the HYDRO-Trap option.

In order to operate, this system **requires two power supplies**:

- 1. The **control system logic power** is supplied a constant nominal 12v by the 7-way center pin (blue wire) and grounded by the bottom (larger) ground pin (white wire). These connections must be kept in good repair. Chassis ground is not adequate or reliable. The ground connection of the 7-way must have a good connection to the tractor ground.
- 2. The pump motor power and ground are supplied via a heavy gauge high current Shurco 2 pin connector at the front the trailer. Tractor wiring kits are available from Wilson Trailer and are the only approved system for powering this unit. Note: Previously installed cab wiring kits for powering Shurco power tarp or trap openers use the same connector but do not supply adequate power to operate the unit when loaded. It is possible to retrofit these tractor systems. (Contact WTC service for details.) The cab wiring kit must be installed per instructions (including the Master Disconnect Switch and 120 amp slow-trip circuit breaker module). The installation should use sufficient cable to comfortably reach components and support maintenance, but avoid coiling up excess as any extra cable length reduces power available to the motor. Chassis ground is not adequate or reliable, ensure that the ground cable is connected to a tractor battery cable. All high power connections need to be kept in good repair. For maximum door opening force and speed, the trap should be operated with the tractor running.

(Rev. 04-23)

Lubrication Requirements Only use Petro-Canada Hydrex MV Arctic 15 Hydraulic fluid or any mineral based hydraulic oil between 10 cSt and 100 cSt at your ambient outdoor operating temperature.

OPERATION

HYDRO-Trap Operation

IMPORTANT NOTICE

WTC requires the Cab Wiring w/Disconnect switch be installed per instructions to power the HYDRO-Trap (WTC P/N APP04780YZ). This kit includes a Master Disconnect. It is required that this be installed in the cab of the tractor and turned to the ON position ONLY when the traps need to be operational. It must be turned to the OFF position when the traps are not required to be operational. This kit includes a 120 amp Breaker required for the HYDRO-Trap option.

Disconnect power before servicing. Make sure all power supply to trailer is disconnected and the ground wire in the nose of the trailer and on the receiver box is disconnected prior to any welding on trailer. Failure to do so could result in damage to receiver control box.

(Rev. 04-23)





The hydraulic cylinders and trap doors/frames may be damaged if trailer is transported with the doors in the open position.

- 1. Turn **Master Disconnect Switch** in the tractor to the "ON" position.
- 2. Make sure tractor is running and all connections to the trailer are hooked up.
- 3. Verify that all personnel are clear of the power trap and tarp (if equipped) before operating either.
- 4. Press and hold button for desired operation (Open or Close).
- 5. Close trap door when finished unloading.
- When finished operating the traps, turn Master Disconnect Switch in the tractor to the "OFF" position.

(Rev. 08-23)

OPERATION

HYDRO-Trap Wireless Operation

<u>NOTE</u>

A Shur-Co Smart 3 electric tarp (if equipped) can also be operated by a Shur-Co Smart 3 remote control. (WTC P/N APP04780AEH



Remote (APP05265B)

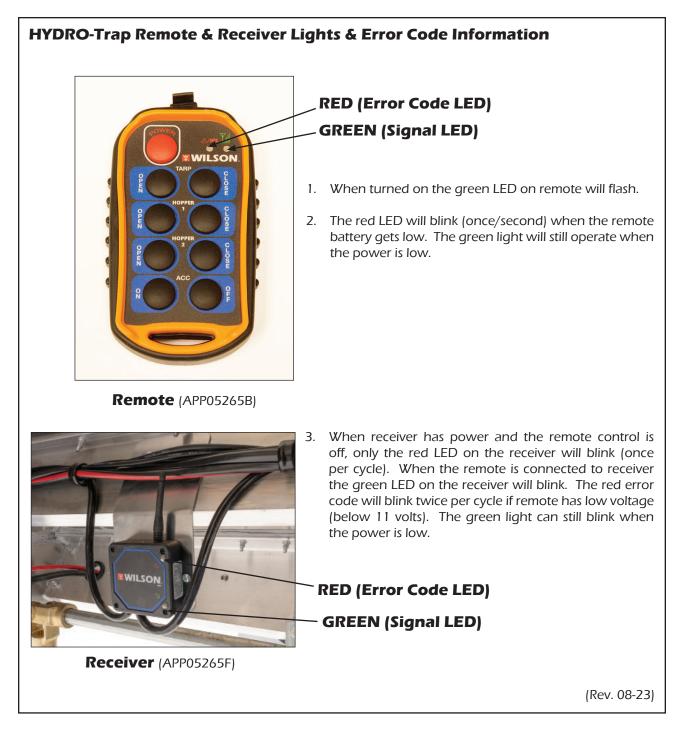
- 1. Make sure tractor is running and all connections to trailer are hooked up.
- 2. Turn **Master Disconnect Switch** in the tractor to the "ON" position.
- 3. Verify that all personnel are clear of the power trap and tarp (if equipped) before operating either.
- 4. To turn the remote "ON", press and hold power button on remote for 3 seconds and release to turn on remote. The red and green lights will be on simultaneoulsy when pressing the power button. The green light will double flicker after releasing the power button.
- Press and hold button for desired operation (Open or Close). Hopper 1 is the front trap; Hopper 2 is the rear trap.
- 6. To turn remote "OFF", press and hold power button on remote until the two LED's (red and green) turn off. Red and green lights alternate flashing until they both turn off to indicate the power is off. Remote will automatically turn off after 15 minutes of inactivity.
- 7. When finished operating the traps, turn **Master Disconnect Switch** in the tractor to the "OFF" position.
- 8. Momentarily press the tarp open or close button to operate the tarp in Shurco Smart 3 express mode.
- 9. ACC momentary buttons will turn and hold accessory functions on or off. Accessory will stay in the last position after disconnecting power.



The hydraulic cylinders and trap doors/ frames may be damaged if trailer is transported with the doors in the open position.

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OPERATION



HYDRO-Trap System Inspection

Perform all inspections in order: No power to trailer; Add 7-way power; Add dual conductor power.

This inspection assumes the common installs having a Shur-Co 4500 power tarp with a Smart 3 control module, electrical connections are Grote bullets or Deutsch connectors, tractor has 120 amp kit installed with 120 circuit breaker and disconnect switch, and a Kar-Tech receiver and KTI hydraulic pump unit installed in the apex of the trailer. Older units may have connections with crimped bullet connections covered with heat shrink. Several models may have the receiver and hydraulic power unit mounted over the kingpin.

REFER TO TROUBLESHOOTING SECTION IF PROBLEMS ARE IDENTIFIED.

Inspection Step 1: No Power to Trailer

Tractor power supply and connection to trailer

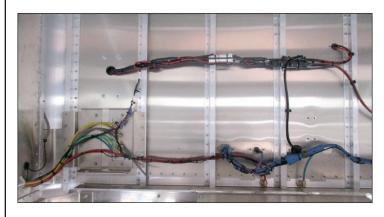
Disconnect the tractor 7-way and dual conductor cables from the trailer to perform the initial inspection.

Test the 7-way cable voltage output between the center pin auxiliary/ABS power and the ground pin. The ground pin is the largest of the seven and at the top of the connection.

Test the voltage output of the dual conductor cable. Confirm the 120 amp circuit breaker is installed and is in the set position. Confirm the main power disconnect switch is on. Both the 120 amp circuit breaker and disconnect switch must be connected to the positive terminal with the circuit breaker closer to the battery. Inspect disconnect switch, circuit breaker, connections, plugs, and cables for corrosion.

Front of trailer; outside

Examine the 7-way and dual conductor connections at the front of the trailer for debris buildup, corrosion, deflected or loose pins, or other damage. Clean corrosion or debris buildup from connectors. Examine the tarp module for damage. Depress open and close button functions for feel of operation.



Front of trailer; inside above kingpin

Inspect the inner wall of the front, above the kingpin. Examine the blue wire power and white wire ground connections from the main harness. Inspect the dual conductor power connections.

Inspect the connections on the tarp module, dual conductor power system, and control wire connections. Check the 40 amp fuse holder for signs of corrosion or debris buildup and clear drain holes if plugged. Examine dual conductor cables entering sidewall of trailer.

Inspection Step 1: No Power to Trailer (Continued)

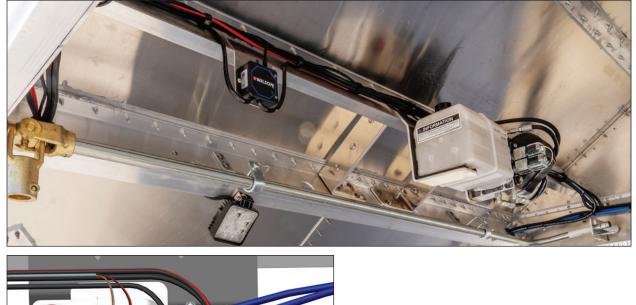
Receiver

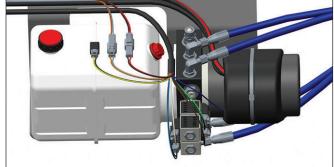
The receiver is located towards the middle of the trailer between the hoppers. Examine power and tarp wires, and connections from the side of trailer to the receiver. The receiver has two cables existing the bottom and an antenna at the top (2.6"). Examine receiver for damage, missing antenna, and cable strain at the receiver bottom. The driver side cable connects the receiver to the manual button inputs in the rubrail. Examine the four connections. An auxiliary input plug (yellow and red wire pair) should have a cover if not in use.

Manual Button Switches

Depress the manual buttons and compare each for a similar feel and sound. Examine where the input wires run through the rubrail for damage or missing grommets/silicone.

Examine the receiver curb cable which runs to the hydraulic pump unit. Eight wires run to the valve control solenoids, two to main power, two to the tarp module if equipped, and one to the motor starter relay.

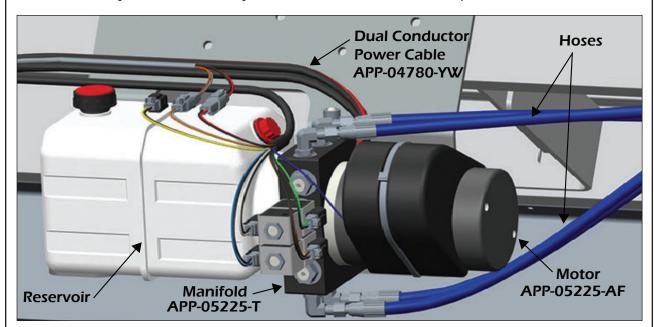




Inspection Step 1: No Power to Trailer (Continued)

<u>Hydraulic Pump Unit</u> Overall

Examine fluid reservoir, pump manifold, and motor for damage or leaks. Examine bracket mount structure for cracks or loose fasteners. The hydraulic pump unit is bolted to the bracket with two bolts through the back of the unit. Ensure these bolts are tight (18 ft-lbs) and that a cushion is in place between the fluid reservoir and the bracket. Ensure the motor starter relay cover is installed over the motor. This cover is held in place by a large zip tie, which will need to be removed and replaced to examine issues related to the motor starter relay. Newer models may have a releaseable and reuseable zip tie.



Electrical

Inspect dual conductor cable from sidewall to under motor starter relay cover. The valve solenoids are located on the hydraulic pump unit manifold between the reservoir and the motor. There are four total and each will have a plug connection from the receiver. Examine four square solenoids for loose, damaged, or unplugged connections. Torque nuts holding solenoids to 3 ft-lbs max. Inspect the pump control wire (the purple wire) between the harness and the motor starter relay under the cover.

Hydraulics

Check hydraulic fluid level in reservoir by the level emblem. Clean debris from the breather cap and the top of the reservoir. Check fluid level with breather cap dipstick and make sure o-ring under cap is intact. Breather cap is installed finger tight.

Check tightness of plug at manifold. Examine hydraulic power unit for leaks. Check directional valve posts and solenoids for damage or bent posts. Inspect PO check valves and relief valve for damage. Inspect 90° fittings and hoses ends; two on top of manifold and two on the bottom.

Hoses and cylinders

Inspect four hydraulic hoses from the hydraulic pump unit. Four hose lines run to the sidewall and two to each hopper. Hoses split at tees on the hopper into four lines which end at 90° fittings installed into the hydraulic cylinders. Inspect hydraulic cylinders for leaks, damage, or debris accumulation at seals. Check cylinder mounts, pins, and clevis ends for signs of excessive wear. Check the rear brackets for stability.

Inspection Step 1: No Power to Trailer (Continued)



<u>Remote Control</u>

Check remote control for damage and button operation feel with power off. Check for debris in the charging port. Hold the red power button for a few seconds to turn on the remote control. The green light should flash twice per cycle. A red led flashing indicates a low battery. Hold down each operation button and observe the green light change to a single flash per second. Turn off the remote by holding the red power button for four seconds. The green and red lights will alternate flashing until the remote is off.

The remote control will turn off after 15 minutes without use.

Remote (APP05265B)

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Inspection Step 2: Add 7-Way Power



Receiver (APP05265F)

Auxilary Power to the Receiver

Ensure 7-way plug has power and connect it to trailer. Do not connect dual conductor plug yet. Observe ABS light operation at the trailer rear corner to verify ABS/auxiliary power circuit is working.

Observe the receiver for lights. The receiver has a red error code led in the upper right corner near the antenna, and a green signal led in the lower right corner.

Confirm the remote control is turned off. Leader notes for the LED's can be here for the receiver and remote. Observe the receiver for the red led flashing with one blink per cycle. This is normal when the remote control is turned off. If the red led flashes twice per cycle it indicates power voltage less than 11 volts.

Receiver RF communication

Turn the remote control on. The receiver red led should stop flashing and the green signal led should start flashing.

The manual buttons will work as intended without a remote control connected to the receiver; however, some troubleshooting steps may not be performed, and the receiver will continue to show a red single flash error light.

(Rev. 08-23)

Inspection Step 2: Add 7-Way Power (Continued)



Remote (APP05265B)

(Rev. 08-23)

7-way power and main ground to the HYDRO-Trap system

Confirm the dual conductor power disconnect switch is off and connect the dual conductor plug. This will allow testing of the connections to the inputs and outputs with a common ground but not operate the hydraulic pump unit to operate.

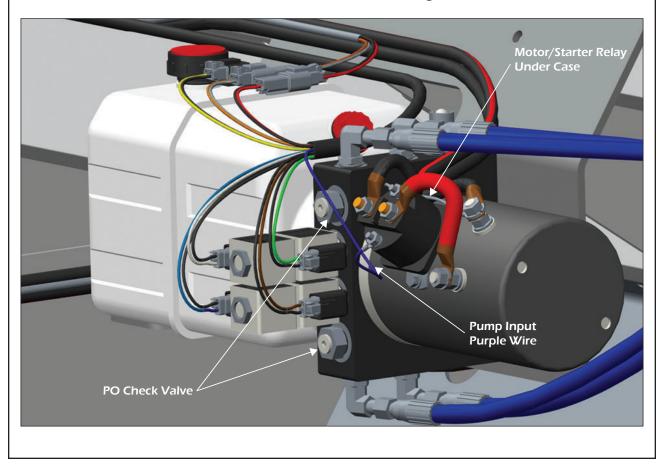
Take a position near the hydraulic power unit to listen for solenoid operation. Press each of the manual buttons on the rubrail and listen for the clicking sounds of the directional control valves and the motor starter relay. Each button should have a similar sound.

Press the buttons for all four trap functions on the remote control. The same sounds should be present as well as the remote's green led increased flashing rate. The green light on the remote will flash three times per second when an operation button is pressed and communication with the receiver is established.

Inspection Step 3: Add Dual Conductor Power

Connect the dual conductor power to the trailer. Turn the disconnect switch to the on position. Turn off immediately if the hydraulic pump unit motor starts running. Confirm the receiver input and that the hydraulic power unit motor is NOT running. Test the tarp operation with the tarp control module at the front of the trailer. If the tarp operates, press the opposite function to stop and return the tarp to its initial position. Operate the hydro trap manual buttons and/or the remote control buttons and listen for the motor to run and observe the respective trap function.

The motor starter relay is mounted to the motor with two screws and has four terminal posts: #10-24 posts at the top and bottom, and larger Ø5/16-18 posts on the left and right side. The motor has two Ø5/16-18 terminal posts to the right of the motor starter relay; upper and lower. The positive cable of the 2-pole input is a black cable with a red stripe and is connected to the left Ø5/16-18 relay post. The right Ø5/16-18 relay post connects to the lower motor post with a short red cable. Note this cable may have some abrasions to the red covering due to the tight fit of the motor cover. The ground cable of the dual conductor

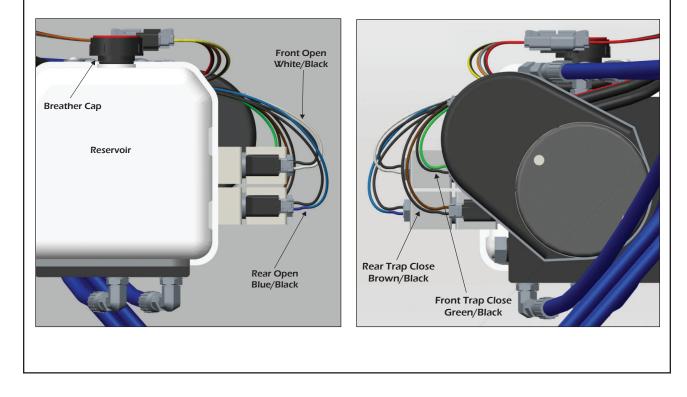


INSPECTION

Inspection Step 3: Add Dual Conductor Power (Continued)

power is solid black and it connects to the upper motor post. The upper #10-24 relay post is connected to the upper motor post with a gray wire. The lower #10-24 relay post is connected to the receiver by the motor relay input wire, aka the "purple wire".

Inspect the motor starter relay and all cables and wires for corrosion, damage, loose studs, bolts, or nuts. Inspect the cables to the two motor terminal posts for corrosion or damage. Check under red terminal post covers. Check all double nut connections and torque on all hardware to 3 ft-lbs. With dual conductor power disconnected and receiver power working, press the manual or remote buttons and listen to the motor starter relay for a single click during each trap operation.



GENERAL MAINTENANCE

Repair and Service Parts

APP04780ACX I20-Amp Circuit Breaker, Manual Reset (Shur-Co Part # 1705861) APP047802D .40-Amp Circuit Breaker, SMARTwierTM (Shur-Co Part # 1126704) APP047802D .40-Amp Circuit Breaker, SMARTwierTM (Shur-Co Part # 1126704) APP047802D	Part number	Description
APP04780ZD. 40-Amp ² Circuit Breaker, SMARTwireTM (Shur-Co Part # 1126704) APP04780AFS Battery Disconnect Rotary Switch (Shur-Co Part # 1704283) APP052525AD Breather Cap w/ dipstick, KTI APP04780472 Cab Wining Kit, Master Disconnect, 120 amp, (Shur-Co Part # 1126492) APP005105 Cable Tie, Nyion: releaseable, 26° black APP05255D Charger, micro USB, cal 12 VDC, Kar-Tech APP05255D Charger, micro USB, cal 12 VDC, Kar-Tech APP05255D Charger, micro USB, cal 12 VDC, Kar-Tech APP05205B Cylinder, Aluminum, 1-1/2° bore x 1° rod x 46-3/16° stroke APP04209BL Cylinder, Steel, black, 1° bore x 1/2° rod x 46-3/16° stroke APP04209BL Cylinder, Steel, black, 1° bore x 1/2° rod x 46-3/16° stroke APP04209BL Cylinder, Steel, black, 1° bore x 1/2° rod x 46-3/16° stroke APP04209BL Cylinder, Steel, black, 1° bore x 1/2° rod x 46-3/16° stroke APP04209BL Disconnect Switch Mounting Bracket (Shur-Co Part # 1118323) APP04780AFL Disconnect Nut Mounting Bracket (Shur-Co Part # 1104284) APP03347OM Harness, TWDRO-Trap, Power & Tarp APP04780AFL Disconnect Replaced by APP05225AI (Hydraulic Power Unit, HYDRO-Trap) APP05255L "Obsolete* Replaced by APP05225AI (Hydraulic Power Unit, HYDR		
APP04780AFS Battery Disconnect Rotary Switch (Shur-Co Part # 1704283) APP05225AD Breather Cap W/ dipstick, KTI APP0478072 Cab Wiring Kit, Master Disconnect, 120 amp, (Shur-Co Part # 1126492) APP00511D Cable Tie, RY APP05265C Charger, micro USB, 110-220 VAC, Kar-Tech APP05265D Charger, micro USB, car 12 VDC, Kar-Tech APP05265C Charger, micro USB, car 12 VDC, Kar-Tech APP05265D Charger, micro USB, car 12 VDC, Kar-Tech APP04209BC Cylinder, Aluminum, 1-1/2' bore x 1'' rod x 46-3/16'' stroke APP04209BT Cylinder, Steel, black, 1' bore x 1/2'' rod x 34-1/4'' stroke APP04209BT Cylinder, Steel, black, 1' bore x 1/2'' rod x 46-3/16'' stroke APP04209BT Cylinder, Steel, black, 1' bore x 1/2'' rod x 46-3/16'' stroke APP04209BT Cylinder, Steel, black, 1' bore x 1/2'' rod x 46-3/16'' stroke APP04209BT Cylinder, Steel, black, 1' bore x 1/2'' rod x 46-3/16'' stroke APP04209BT Cylinder, Steel, black, 1' bore x 1/2'' rod x 46-3/16'' stroke APP04209BT Cylinder, Steel, black, 1' bore x 1/2'' rod x 46-3/16'' stroke APP04209BT Cylinder, Steel, black, 1'' bore x 1/2'' rod x 46-3/16'' stroke APP04209CE Cylinder, Steel, black, 1'' bore x 1/2''' rod x 46-3/16'''stroke		
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APP04780YZ. Cab Wiring Kit, Master Disconnect, 120 amp, (Shur-Co Part # 1126492) APP00511D Cable Tie, Nylon: releaseable, 26" black APP01048 Cable Tie, S" APP05265C Charger, micro USB, 110-220 VAC, Kar-Tech APP05265D Charger, micro USB, car 12 VDC, Kar-tech APP05265D Cover, Motor Starter Relay, KTI APP042098D Cylinder, Aluminum, 1-1/2" borex 1 "rod x 46-3/16" stroke APP04209BT Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209BT Cylinder, Steel, black, 1" bore x 1/2" rod x 46-3/16" stroke APP04209BT Cylinder, Steel, black, 1" bore x 1/2" rod x 46-3/16" stroke APP04209BT Cylinder, Steel, black, 1" bore x 1/2" rod x 46-3/16" stroke APP04209BT Cylinder, Steel, black, 1" bore x 1/2" rod x 46-3/16" stroke APP04209BT Disconnect Switch Mounting Bracket (Shur-Co Part # 1104284) APP04203AFU Face Plate, Battery Disconnect Rotary Switch (Shur-Co Part # 1104284) APP0363AX Harness, T-way Receptacle w/Auxiliary Power Drop APP01648B Hydraulic Fluid, Hydrex MV Arctic 15 [5 gal.] APP05225AI Hydraulia Button Switch with Deutsch connector plug APP05225AI Motor Starter Relay. 12 VDC, 125 amp, 100% Duty Cycle, KTI APP0		
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APP01048. Cable Tie, 8' APP05265C. Charger, micro USB, 110-220 VAC, Kar-Tech APP05265D. Charger, micro USB, car 12 VDC, Kar-tech APP04209BO. Cylinder, Aluminum, 1-1/2" bore x 1" rod x 46-3/16" stroke APP04209BK. Cylinder, Aluminum, 1-1/2" bore x 1" rod x 34-1/4" stroke APP04209BK. Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209EC. Cylinder, Steel, black, 1" bore x 1/2" rod x 34-3/16" stroke APP04209CE. Cylinder, Steel, black, 1" bore x 1/2" rod x 46-3/16" stroke APP04780AFT Disconnect Switch Mounting Bracket (Shur-Co Part # 118323) APP04780AFU Face Plate, Battery Disconnect Rotary Switch (Shur-Co Part # 1704284) APP03347OM. Harness, T-Way Receptacle w/Auxiliary Power Drop APP05225T *Obsolete* Replaced by APP05225AI (Hydraulic Power Unit, HYDRO-Trap) APP05225AI Hydraulic Fluid, Hydrex MV Arctic 15 [5 gal.] APP05225AI Hydraulic Fluid, Hydrex MV Arctic 15 [5 gal.] APP05225AI Hydraulic Fluid, Hydrex MV Arctic 15 [5 gal.] APP05225AI Hydraulic Fluid, Hydrex MV Arctic 15 [5 gal.] APP05225AI Hydraulic Fluid, Hydrex MV Arctic 15 [5 gal.] APP05225AI Hydraulic Fluid, Hydrex MV Arctic 15 [5 gal.] APP05225AI		5
APP05265C Charger, micro USB, 110-220 VAC, Kar-Tech APP05265D Charger, micro USB, car 12 VDC, Kar-tech APP05265D Cover, Motor Starter Relay, KTI APP04209BO Cylinder, Aluminum, 1-1/2" bore x 1" rod x 46-3/16" stroke APP04209BT Cylinder, Aluminum, 1-1/2" bore x 1" rod x 34-1/4" stroke APP04209ET Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209ET Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209E Cylinder, Steel, black, 1" bore x 1/2" rod x 46-3/16" stroke APP04209ET Cylinder, Steel, black, 1" bore x 1/2" rod x 46-3/16" stroke APP04780AFT Disconnect Switch Mounting Bracket (Shur-Co Part # 1118323) APP04780AFU Face Plate, Battery Disconnect Rotary Switch (Shur-Co Part # 1704284) APP03347OM Harness, 7-way Receptacle w/Auxiliary Power Drop APP03347OM Harness, HYDRO-Trap, Power & Tarp APP05225AI Motor Starter Relay ed by APP05225AI (Hydraulic Power Unit, HYDRO-Trap) APP05225AI Motor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTI APP05225AI Motor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTI APP05225AF Motor, 12 VDC, 1P65, Power Unit for APP05225AI, KTI APP05225AF Receiver, Tarp Module, Smart 3, Shur-Co <td></td> <td></td>		
APP05265D. Charger, micro USB, car 12 VDC, Kar-tech APP05225R Cover, Motor Starter Relay, KTI APP04209BO. Cylinder, Aluminum, 1-1/2" bore x 1" rod x 46-3/16" stroke APP04209BT Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209E Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209E Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04780AFT Disconnect Switch Mounting Bracket (Shur-Co Part # 1118323) APP04780AFU Face Plate, Battery Disconnect Rotary Switch (Shur-Co Part # 1704284) APP03363AX Harness, 7-way Receptacle W/Auxiliary Power Drop APP01648B Hydraulic Fluid, Hydrex MV Arctic 15 (5 gal.) APP05225AI Hydraulic Fluid, Hydrex MV Arctic 15 (5 gal.) APP05225AI Hydraulic Power Unit, HYDRO-Trap, KTI GAA08280BOF Manual Button Switch with Deutsch connector plug APP05225AI Motor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTI APP05225AF Plug, wi neoprene gasket, KTI GAA08280BRG Receiver, Tarp Module, Smart 3, Shur-Co APP05225AF Plug, wi neoprene gasket, KTI GAA08280BRG Receiver, Tarp Module, Smart 3, Shur-Co APP052255. Terminal Bot, 6 ga. Cable, Red		
APP05225R Cover, Motor Starter Relay, KTI APP04209BC Cylinder, Aluminum, 1-1/2" bore x 1" rod x 46-3/16" stroke APP04209BK Cylinder, Aluminum, 1-1/2" bore x 1" rod x 34-1/4" stroke APP04209GE Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209GE Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209GE Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209GE Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209GE Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209GE Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209GE Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209GE Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209BC Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209BC Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209BC Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP04209BC Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" stroke APP032363AX Harness, 7-way Receptacle W/ANUISIAN APP032653AX Harness, 7-way Receptacle W/ANUISIAN APP052255L Plop14408		
APP04209BO.Cylinder, Aluminum, 1-1/2" bore x 1" rod x 46-3/16" strokeAPP04209BK.Cylinder, Aluminum, 1-1/2" bore x 1" rod x 34-1/4" strokeAPP04209BT.Cylinder, Steel, black, 1" bore x 1/2" rod x 34-1/4" strokeAPP04209CE.Cylinder, Steel, black, 1" bore x 1/2" rod x 46-3/16" strokeAPP04780AFTDisconnect Switch Mounting Bracket (Shur-Co Part # 118323)APP04780AFUFace Plate, Battery Disconnect Rotary Switch (Shur-Co Part # 1704284)APP03363AXHarness, T-way Receptacle w/Auxiliary Power DropAPP01648BHydraulic Fluid, Hydrex MV Arctic 15 (5 gal.)APP015225T*Obsolete* Replaced by APP05225Al (Hydraulic Power Unit, HYDRO-Trap)APP05225AlHydraulic Power Unit, HYDRO-Trap, KTIGAA08280BOFManual Button Switch with Deutsch connector plugAPP05225AL*Obsolete* Replaced by APP05225AJ (Motor Starter Relay)APP05225ALMotor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225ALPlug, w/ neoprene gasket, KTIGAA08280BGGReceiver, Tarp Module, Smart 3, Shur-CoAPP05225ALSolenoid, Directional Control Valve, KTIAPP05225STerminal Boot, 6 ga. Cable, RedAPP05225SSolenoid, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP05225SSolenoid, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP04780YWSMARTwireTM Dual Conductor Socket 3-6" (Shur-Co Part # 1126878)APP04780PCSMARTwireTM Dual Conductor Socket 3-6" (Shur-Co Part # 1126867)APP04780PCSMARTwireTM Dual Conductor Socket 3-6" (Shur-Co Part # 1126867)APP04780PCSMARTwireTM Dual Cond		
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APP04209BT		
APP04209CECylinder, Steel, black, 1" bore x 1/2" rod x 46-3/16" strokeAPP04780AFTDisconnect Switch Mounting Bracket [Shur-Co Part # 1118323]APP04780AFUFace Plate, Battery Disconnect Rotary Switch (Shur-Co Part # 1704284)APP02363AXHarness, 7-way Receptacle w/Auxiliary Power DropAPP03347OMHarness, HYDRO-Trap, Power & TarpAPP01648BHydraulic Fluid, Hydrex MV Arctic 15 [5 gal.]APP05225T*Obsolete* Replaced by APP05225Al (Hydraulic Power Unit, HYDRO-Trap)APP05225AIHydraulic Power Unit, HYDRO-Trap, KIIGAA08280BOFManual Button Switch with Deutsch connector plugAPP05225AJMotor, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225AEPlug, w/ neoprene gasket, KTIGAA08280BRGReceiver, Tarp Module, Smart 3, Shur-CoAPP05225SJSolenoid, Directional Control, Kar-TechAPP05225SJSolenoid, Directional Control, Kar-TechAPP05225SJSolenoid, Directional Control, Valve, KTIAPP05225STerminal Boot, 6 ga. Cable, RedAPP05225SRemote Control, Shur-Co Part # 1126867)APP05225SSolenoid, Directional Control Valve, KTIAPP05225SRemote Control, Shur-Co Part # 1126867)APP04780AGRemote Control, Shur-Co Part # 1126879APP04780AGSMARTwireTM 6' Extension w/5/16" Ring Terminals (Shur-Co Part # 1126878)APP04780APSMARTwireTM Dual Conductor Socket 3'-6" (Shur-Co Part # 1126878)APP04780APSMARTwireTM Dual Conductor Socket 3'-6" (Shur-Co Part # 1126944)APP05225AEValve, Pilot Operated (PO) Check Valve, KTI		
APP04780AFTDisconnect Switch Mounting Bracket (Shur-Co Part # 1118323)APP04780AFUFace Plate, Battery Disconnect Rotary Switch (Shur-Co Part # 1704284)APP02363AXHarness, 7-way Receptacle w/Auxiliary Power DropAPP03847OMHarness, HYDRO-Trap, Power & TarpAPP01648BHydraulic Fluid, Hydrex MV Arctic 15 (5 gal.)APP05225T*Obsolete* Replaced by APP05225AI (Hydraulic Power Unit, HYDRO-Trap)APP05225AIHydraulic Power Unit, HYDRO-Trap, KTIGAA08280BOFManual Button Switch with Deutsch connector plugAPP05225J*Obsolete* Replaced by APP05225AJ (Motor Starter Relay)APP05225AIMotor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225AEPlug, w/ neoprene gasket, KTIGAA08280BGGReceiver, Tarp Module, Smart 3, Shur-CoAPP05225SReceiver, Tarp Module, Smart 3, Shur-CoAPP05225SSolenoid, Directional Control Valve, KTIAPP05225STerminal Boot, 6 ga. Cable, RedAPP05225SRemote Control, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP054780AGRemote Control, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP04780YOSMARTwireTM 25' Extension (Shur-Co Part # 1126841)APP04780AEQSMARTwireTM 6' Extension w/5/16" Ring Terminals (Shur-Co Part # 1126944)APP04780AEQSMARTwireTM Junction Block Kit (Shur-Co Part # 1120849)APP04780AEQSMARTwireTM Junction Block Kit (Shur-Co Part # 1120849)APP04780AEQSMARTwireTM Junction Block Kit (Shur-Co Part # 1120849)APP04780AEQSMARTwireTM Junction Block Kit (Shur-Co Part # 1120849)		
APP04780AFUFace Plate, Battery Disconnect Rotary Switch (Shur-Co Part # 1704284)APP02363AXHarness, 7-way Receptacle w/Auxiliary Power DropAPP03347OMHarness, HYDRO-Trap, Power & TarpAPP016488Hydraulic Fluid, Hydrex MV Arctic 15 (5 gal.)APP05225T*Obsolete* Replaced by APP05225AI (Hydraulic Power Unit, HYDRO-Trap)APP05225AIHydraulic Power Unit, HYDRO-Trap, KTIGAA08280BOFManual Button Switch with Deutsch connector plugAPP05225J*Obsolete* Replaced by APP05225AJ (Motor Starter Relay)APP05225AIMotor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225AFMotor, 12 VDC, IP65, Power Unit for APP05225AI, KTIAPP05225AFPlug, w/ neoprene gasket, KTIGAA08280BRGReceiver, Tarp Module, Smart 3, Shur-CoAPP05225VSolenoid, Directional Control Valve, KTIAPP05225STerminal Boot, 6 ga. Cable, RedAPP05225SRemote Control, 8 button, HYDRO-Trap, Kar-TechAPP05225SRemote Control, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP04780AAGRemote Control, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP04780AFQSMARTwireTM 25' Extension (Shur-Co Part # 112687)APP04780AFQSMARTwireTM 56' Extension w/5/16'' Ring Terminals (Shur-Co Part # 1126578)APP04780AFQSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP04780AFQSMARTwireTM Junction Block Kit (Shur-Co Part # 1126949)APP04780AFQSMARTwireTM Junction Block Kit (Shur-Co Part # 1126949)APP04780AFQSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)		
APP02363AXHarness, 7-way Receptacle w/Auxiliary Power DropAPP03347OMHarness, HYDRO-Trap, Power & TarpAPP01648BHydraulic Fluid, Hydrex MV Arttic 15 (5 gal.)APP05225T*Obsolete* Replaced by APP05225AI (Hydraulic Power Unit, HYDRO-Trap)APP05225AIHydraulic Power Unit, HYDRO-Trap, KTIGAA08280BOFManual Button Switch with Deutsch connector plugAPP05225AI*Obsolete* Replaced by APP05225AJ (Motor Starter Relay)APP05225AIMotor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225AFMotor, 12 VDC, IP65, Power Unit for APP05225AI, KTIAPP05225AFPlug, w/ neoprene gasket, KTIGAA08280BRGReceiver, Tarp Module, Smart 3, Shur-CoAPP05225VSolenoid, Directional Control Valve, KTIAPP05225STerminal Boot, 6 ga. Cable, RedAPP05225SRemote Control, 8 button, HYDRO-Trap, Kar-TechAPP05265BRemote Control, 8 button, HYDRO-Trap, Kar-TechAPP05265BRemote Control, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP04780AAGSMARTwireTM 25' Extension (Shur-Co Part # 112687)APP04780APCSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP04780OPSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP04780APCSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP04780APCSMARTwireTM Junction Block Kit (Shur-Co Part # 1126949)APP04780APCSMARTwireTM Junction Block Kit (Shur-Co Part # 1126949)APP04780APCSMARTwireTM Junction Block Kit (Shur-Co Part # 1126949)APP04780APCSMARTwireTM Junction Block Kit (Shur-		5
APP03347OMHarness, HYDRO-Trap, Power & TarpAPP01648BHydraulic Fluid, Hydrex MV Arctic 15 (5 gal.)APP05225T*Obsolete* Replaced by APP05225AI (Hydraulic Power Unit, HYDRO-Trap)APP05225AIHydraulic Power Unit, HYDRO-Trap, KTIGAA08280BOFManual Button Switch with Deutsch connector plugAPP05225J*Obsolete* Replaced by APP05225AJ (Motor Starter Relay)APP05225AIMotor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225AFMotor, 12 VDC, IP65, Power Unit for APP05225AI, KTIAPP05225AEPlug, w/ neoprene gasket, KTIGAA08280BRGReceiver, Tarp Module, Smart 3, Shur-CoAPP05225SSolenoid, Directional Control, Kar-TechAPP05225STerminal Boot, 6 ga. Cable, RedAPP05225SRemote Control, 8 button, HYDRO-Trap, Kar-TechAPP04780AGRemote Control, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP04780YOSMARTwireTM 25' Extension (Shur-Co Part # 1126578)APP04780OPSMARTwireTM 06 Extension w/5/16" Ring Terminals (Shur-Co Part # 1126578)APP04780AGSMARTwireTM Dual Conductor Socket 3'-6" (Shur-Co Part # 1126944)APP04780OPSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP04780ABValve, Pilot Operated (PO) Check Valve, KTI		
APP016488Hydraulic Fluid, Hydrex MV Arctic 15 (5 gal.)APP05225T*Obsolete* Replaced by APP05225AI (Hydraulic Power Unit, HYDRO-Trap)APP05225AIHydraulic Power Unit, HYDRO-Trap, KTIGAA08280BOFManual Button Switch with Deutsch connector plugAPP05225J*Obsolete* Replaced by APP05225AJ (Motor Starter Relay)APP05225AJMotor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225AFMotor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225AFMotor, 12 VDC, IP65, Power Unit for APP05225AJ, KTIAPP05225AEPlug, w/ neoprene gasket, KTIGAA08280BRGReceiver, Tarp Module, Smart 3, Shur-CoAPP05225VSolenoid, Directional Control Valve, KTIAPP05225STerminal Boot, 6 ga. Cable, RedAPP05265BRemote Control, 8 button, HYDRO-Trap, Kar-TechAPP05265BRemote Control, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP04780AAGSMARTwireTM 25' Extension (Shur-Co Part # 1126867)APP04780YWSMARTwireTM bd (Extension w/5/16" Ring Terminals (Shur-Co Part # 1126578)APP04780OPSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP04780OPSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP04780AEQSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP04780AEWalve, Pilot Operated (PO) Check Valve, KTI		
APP05225T		
APP05225Al.Hydraulic Power Unit, HYDRO-Trap, KTIGAA08280BOFManual Button Switch with Deutsch connector plugAPP05225U*Obsolete* Replaced by APP05225AJ (Motor Starter Relay)APP05225AJMotor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225AFMotor, 12 VDC, IP65, Power Unit for APP05225AI, KTIAPP05225AEPlug, w/ neoprene gasket, KTIGAA08280BRGReceiver, Tarp Module, Smart 3, Shur-CoAPP05265FReceiver, Tarp Module, Smart 3, Shur-CoAPP05225VSolenoid, Directional Control Valve, KTIAPP05225STerminal Boot, 6 ga. Cable, RedAPP05265BRemote Control, 8 button, HYDRO-Trap, Kar-TechAPP04780AAGRemote Control, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP04780YOSMARTwireTM 25' Extension (Shur-Co Part # 1126867)APP04780AEOSMARTwireTM 6' Extension w/5/16'' (Ing) Terminals (Shur-Co Part # 1126578)APP04780AEOSMARTwireTM 6' Extension W/5/16'' (Shur-Co Part # 1126944)APP05225ABSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP05225ABValve, Directional Control, Motor Center, KTIAPP05225ABValve, Pilot Operated (PO) Check Valve, KTI		
GAA08280BOFManual Button Switch with Deutsch connector plugAPP05225U*Obsolete* Replaced by APP05225AJ (Motor Starter Relay)APP05225AJMotor Starter Relay, 12 VDC, 125 amp, 100% Duty Cycle, KTIAPP05225AFMotor, 12 VDC, IP65, Power Unit for APP05225AI, KTIAPP05225AEPlug, w/ neoprene gasket, KTIGAA08280BRGReceiver, Tarp Module, Smart 3, Shur-CoAPP05265FReceiver, Tarp Module, Smart 3, Shur-CoAPP05225VSolenoid, Directional Control Valve, KTIAPP05225STerminal Boot, 6 ga. Cable, RedAPP05265BRemote Control, 8 button, HYDRO-Trap Module (Shur-Co Part # 1126867)APP04780AAGRemote Control, 8 button, HYDRO-Trap Module (Shur-Co Part # 1126867)APP04780YOSMARTwireTM 6' Extension (Shur-Co Part # 1126978)APP04780APCSMARTwireTM Dual Conductor Socket 3'-6'' (Shur-Co Part # 1126974)APP04780APCSMARTwireTM Junction Block Kit (Shur-Co Part # 1126944)APP05225AEValve, Directional Control, Motor Center, KTIAPP05225AEValve, Pilot Operated (PO) Check Valve, KTI		
APP05225U		
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APP05225VSolenoid, Directional Control Valve, KTIAPP05225STerminal Boot, 6 ga. Cable, RedAPP05265BRemote Control, 8 button, HYDRO-Trap, Kar-TechAPP04780AAGRemote Control, Shur-Co Smart 3 Tarp Module (Shur-Co Part # 1126867)APP04780YOSMARTwireTM 25' Extension (Shur-Co Part # 1704888)APP04780YWSMARTwireTM 6' Extension w/5/16" Ring Terminals (Shur-Co Part # 1126578)APP04780AEOSMARTwireTM Dual Conductor Socket 3'-6" (Shur-Co Part # 1126944)APP04780OPSMARTwireTM Junction Block Kit (Shur-Co Part # 1120849)APP05225ACValve, Directional Control, Motor Center, KTIAPP05225ABValve, Pilot Operated (PO) Check Valve, KTI		
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Hardware Install Guide

<u>Component</u>	Max torque	Wrench	
Motor Starter Relay, Output	3 ft.lbs		
Motor Starter Relay, Input	2 ft.lbs		
Motor Starter Relay, Mount	3 ft.lbs		
Motor Cable Post Hardware	3 ft.lbs	13 mm	
Manual Button Switch Nut	2 ft.lbs		
Nut on Top of Valve Solenoids	2 ft.lbs		
Hydraulic Power Unit Mount	15 ft.lbs		
Hydraulic Valves (AA,AB,AC)	18 ft.lbs	7/8" (use a deepwell socket)	
End Fitting of Hydraulic Hose	2 FFWR		
"T" Fitting of Hydraulic Hose	15 ft.lbs	7/16″, 9/16″	
90° Fittings on Cylinders	15 ft.lbs	7/16″, 9/16″	
90° Fittings on Manifold	15 ft.lbs	9/16″, 11/16″	

GENERAL MAINTENANCE

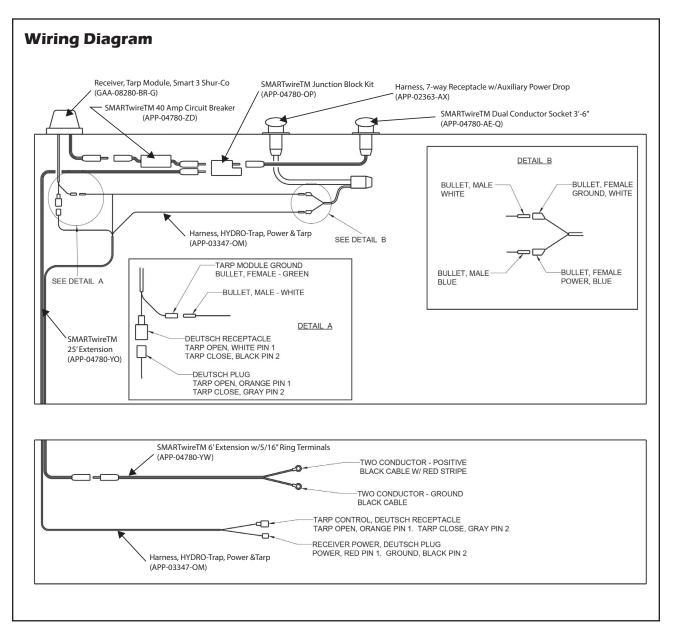
Hydraulic Fluid

Changing the hydraulic fluid and cleaning the system is recommended at least once per year or as needed. Drain hydraulic oil from reservoir and remove reservoir from manifold (end plate). Wipe down and remove all debris inside the reservoir, also check the magnet for signs of metal particles. Lubricate reservoir O-ring with hydraulic fluid to remount the reservoir. Ensure the reservoir O-ring is not pinched or pushed out of groove during installation.

Notes About Oil

- Hydraulic oil must be kept clean and dry to work correctly. Contamination causes wear and can cause valves to stick. Do not remove fill plug without cleaning the area around the hole. In wet conditions use a rag to wipe excess water off the top of the plug and reservoir before operating traps.
- For oil to go out to the cylinders air needs to be allowed to enter the reservoir through the fill plug vent. Keep the top of the reservoir clear of debris and wipe clean often. Remove fill plug and clean vent as needed.
- Correct oil must be used for acceptable performance and system life. Oil must be mineral based with a viscosity and must be between 10 and 100 cSt (mm²/s) at ambient outdoor operating temperatures. Oil thinner than 10 cSt will damage the pump. Oil thicker than 100 cSt will reduce power available to open traps and can cause the power breaker to trip. Your system is supplied pre-filled with Petro-Canada Hydrex MV Artic 15 hydraulic fluid, which should give good performance from -20 to 120° F (-30 to 50° C) for operation outside this temperature range, or with other fluids, consult with Wilson Trailer Co. Service department.

SCHEMATICS



TROUBLESHOOTING



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When working on a Hydraulic System, always insure hydraulic lines have been depressurized. Hydraulic injection can cause loss of fingers and even loss of life in severe cases. Hydraulic injection can seem like a bee sting. If you are ever bitten by hydraulic injection go directly to the emergency room for treatment.

Potential Issues (See Resolution Procedures below)

No receiver lights and no pump operation Receiver green light and no pump operation	
Receiver lights go out when function is engaged	
Trap stops after moving a foot or more	See #'s 3, 17, 19, 25, 22.
Manual buttons do not work	See #'s 6, 11.
Remote control does not work	See # 5.
Trap door lurches when moving	See #'s 18, 25.
Single trap function issue	See #'s 6, 11, 18, 19, 16, 22, 23, 25, 9.
Pump motor does not run	See #'s 3, 8, 7, 11, 15, 9, 14.
Pump runs by itself	See #'s 6, 7.
Continuous clicking noise from pump	See #'s 4, 15, 7.
Pump operates, traps do not respond	See #'s 6, 11, 16, 20, 21, 25, 23, 19, 22.
Trap opens 1" to 3" without power	See #'s 18, 19, 25, 22.
Trap opens slowly	See #'s 4, 14, 18, 21, 25, 15, 22, 24.
Trap will not run by manual buttons	See #'s 8, 11, 13, 12.
Tarp by remote misfires	See # 12.
Tarp will not run by remote control	See #'s 11, 15, 13, 12.

Resolution Procedures		
1. ABS Power from Tractor.	Confirm voltage is available at the 7-way plug between the positive ABS center pin and the larger ground pin at the top. The Hydro Trap receiver unit will need approximately 5 amps at 12 volts to function. Further testing may need to be performed to confirm voltage and amperage supply during the operation of the hydraulic pump motor.	
2. ABS Power to Receiver.	Check for error lights on the receiver when the trailer 7-way is connected and powered. Inspect the 7 way plug to the 7 way receptacle pins at the front of the trailers. Above the kingpin, find the bullet connections at the APP02363AX 7-way Grote main drops to the APP03347OM power & tarp harness. Ensure both bullet connections are completely seated (White for ground, Blue for ABS power). Inspect Deutsch connection with red and black wires near hydraulic power unit in apex near power unit. Check voltage at plug. Use an ammeter to test for available amperage. Minimum 5 amps required. Test at the apex if Deutsch test leads are available; otherwise use the bullet connection to the Grote ABS power	

TROUBLESHOOTING

Resolution Procedures				
3. 120-Amp Circuit Breaker/ Disconnect Switch.	Check tractor for installation of 120 amp circuit breaker. Ensure breaker is in the set position and the disconnect switch is on for operation. Inspect parts for corrosion or loose connections. Check two conductor plug for proper seating in receptacle at the front of the trailer.			
4. Tractor Power Low.	Optimal power supply should be able to provide 100 to 120 amps for a full minute while maintaining at least 12 volts. Check with clamp ammeter. 90 amps should be measured during the operation of an empty trap. Tractor should remain running during operation for optimal performance.			
5. Transmitter Not Synched.	Confirm remote control is charged. Flashing red light indicates low power. Synchronize the remote and receiver by the following steps:			
	 Make sure the receiver and remote are off Press and hold the power button on the remote for more than 10 seconds. The red and green LEDs will start flashing. Apply power to the receiver by connecting your 7 way with hot center pin to trailer. Wait for a few seconds until only the green LED begins to blink on the remote Synchronization can be performed at normal operational distances. If not successful, repeat with the remote within six feet of the receiver. 			
6. Manual Button Malfuction.	Disconnect 7-way power and 2 pole power. Disconnect all four manual button switch Deutsch connectors inside of the rubrail. Reconnect the 7-way to power the receiver and turn the remote control on. Confirm the receiver has a green light. Press each trap function button while listening/feeling the valve solenoids for operation. Confirm all functions have a clear on/off output.			
	Examine the switch input Deutsch receptacles and observe two small pins inside each one. Test the manual button inputs by gently inserting a conductive contact (key, bolt, paperclip) to touch both pins and listen for clicking sounds. Do not damage the pins. Listen/feel the valve solenoid operations as previously done with the remote control. Confirm all four inputs have a clear on/off output. If an input does not have a reaction at the valve solenoid, it may be a valve solenoid or directional control valve issue.			

TROUBLESHOOTING

Resolution Procedures

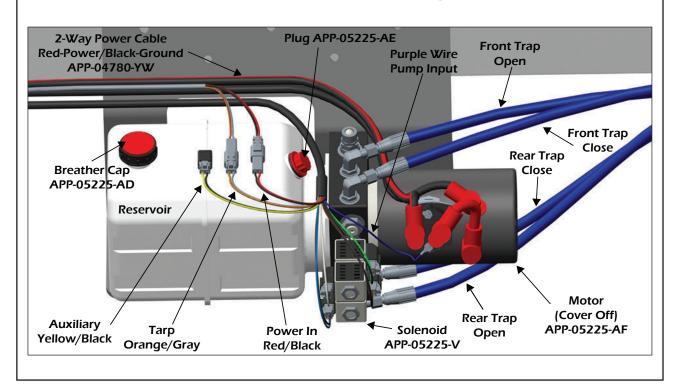
6.	Manual Button Malfuction. (Continued)	Connect one manual button switch plug to the front close receptacle. Listen for valve solenoid action upon initial connection. A malfunctioning manual button switch may trigger the valve solenoid upon connection. Test the normal function of the manual button switch. A malfunction switch may also fail to trigger the valve solenoid when pressed. If the manual button switch fails either test, double check on another the rear close receptacle. Ensure testing is done on all four manual button switches.
		Reference output functions and wire pairs from front to back on the manual button bracket:
		Front close – green and red Front open – white and red Rear open – blue and red Rear close – brown and red
7.	Motor Starter Relay (MSR).	Disconnect 2-way power. Cut the motor cover zip tie and remove the cover. Examine the motor starter relay (MSR) and the motor terminals for loose hardware or corrosion. Use the receiver trap function to trigger the MSR and listen or feel for clicking. Normal operation will trigger the valve solenoid function and the MSR slightly afterward. The valve solenoid plugs may be temporarily removed to help isolate the sound or feel of the MSR. If all inputs have a reaction at the MSR, proceed to test the output. Use a voltmeter to test the continuity across the larger two posts.
		Receiver and auxiliary power troubleshooting If receiver red led flashing is not observed, double check the 7-way power and plug connection. Disconnect and reconnect the 7-way plug and observe the ABS light func- tion. If receiver leds are still not observed, locate the power connection to the receiver. The power connection will be the only connector with red and black wires, and it will be at the end of the curb side cable from the receiver.
		Motor starter relay troubleshooting If the motor does not run check and reconnect the dual conducter power supply and try again. If function does not resume, disconnect the dual conductor power plug and remove the cover over the motor starter relay. Under the cover is the motor starter relay, the motor terminal posts, the ends of the dual conducter power cables, and

TROUBLESHOOTING

Resolution Procedures

7. Motor Starter Relay (MSR). (Continued)

remove the cover over the motor starter relay. Under the cover is the motor starter relay, the motor terminal posts, the ends of the dual conducter power cables, and the motor starter relay input wire from the receiver. When inputs are pressed, power from the receiver is applied to the motor starter relay every time, but only the valve solenoid corresponding to the specific function.



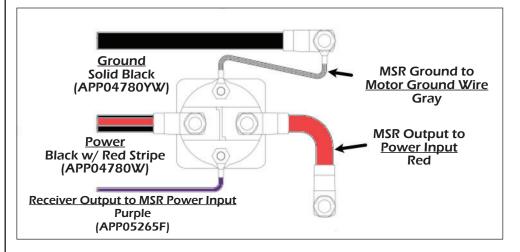
TROUBLESHOOTING

Resolution Procedures

7. Motor Starter Relay (MSR). (Continued)

Test with multimeter

A multimeter can be used to measure for motor starter relay function. Disconnect 2-pole power from the trailer before inspecting. Disconnect the gray wire from the upper #10-24 post and check for continuity across both #10-24 posts. Resistance measured should be less than 8 ohms. Higher resistance or no continuity indicates a relay failure. Measure continuity across the Ø5/16-18 terminal posts while pressing the manual or remote inputs. If no change is present replace the relay.



Motor operation testing with direct power

If the motor does not start its operation can be tested independently from the motor starter relay to confirm motor function. This can also determine if issues are because of the motor starter relay or the motor itself. Disconnect the dual conductor power plug from the trailer and turn off the disconnect switch. Return to the Ø5/16-18 post terminals on the relay. Take the lug from the left side and add it to the post terminal on the right side. This will take the motor starter relay out of the motor power circuit and directly power the motor when dual conductor power is reconnected. Confirm the switch disconnect is in the off position and plug the dual conductor plug into the trailer. Listen for the motor operation, or use a helper to confirm, and turn the disconnect switch on long enough to confirm motor operation and turn off. Note this will not cause any trap movement, but the motor will run against relief pressure and cause the 120 amp circuit breaker to trip if ran too long. If the motor runs, turn the disconnect switch off, disconnect the dual conductor plug, and return the cable lugs to their original positions on the motor starter relay. 2 to 3 times per second, heard when holding an input button indicate a malfunctioning motor starter relay which will need to be replaced.

TROUBLESHOOTING

Resolution Procedures				
8. Main Power Cable Issue.	Inspect 2-pole receptacle and plug at the front of the trailer. Inspect every smart wire connection above the kingpin. Inspect the smartwire connection and eyelets at the motor starter relay. Inspect motor starter relay and motor terminals.			
9. Receiver Module.	Inspect receiver module for damage at the antenna on top and cables on the bottom. Inspect for damage along the cables or at the Deutsch connectors. Confirm the low voltage error code is not present. Confirm at the electrical connection can provide at least five amps. Perform testing of the remote and manual button switch inputs described under the manual button switch heading.			
	Disconnect the power connection and check the power at the plug on the trailer side of the connection. If power is not available, inspect all wires and connections from the power connection plug to the 7-way connection at the front of the trailer. Measuring the correct voltage at the receiver connection is not a sufficient indicator of power. The receiver will need approximately four amps to oper- ate the hydraulic power unit. This may be checked with an ammeter, three valve solenoids, and Deutsch plug test leads. Three valve solenoids in parallel are close to 3 ohms resistance needed to test amperage.			
10. Damaged Antenna.	Examine top of receiver for presence of antenna. The antenna is a permanent fixture of the receiver and neither unscrews or pulls out without damage. Use light force to confirm antenna is still attached.			
11. Loose Electrical Plug.	Inspect and confirm insertion of all bullet connectors and Deutsch connections above the kingpin. Inspect and confirm insertion of all Deutsch connection from the receiver: incoming power, inputs to manual button switches, outputs to valve solenoids and tarp. Connections may be disconnected, inspected, and reconnected.			

TROUBLESHOOTING

Resolution Procedures	
12. Smart 3 Tarp Module.	Manual button issue: Disconnect the remote input Deutsch connection and ground bullet connector. Reconfigure smartwire connections so the plug from the 2-pole receptacle directly connects to the tarp module. Confirm all other tarp connections to the motor. Test manual buttons.
	Misfire issue: Repeated misfires of the open function by remote, with no misfires of the close function, indicates an internal malfunction of the Smart 3 tarp module which cannot be fixed.
	Remote control issue: Check the Deutsch plug connections at the receiver output in the apex. Check the Deutsch plug connections at the tarp module and the ground bullet connection.
	Next test the module function wire inputs. Disconnect the Deutsch connection for the open and close function. Look inside the Deutsch receptacle connection for the two pins. The open and close functions both operate with a positive signal. Positive power on the white wire will open the tarp and positive power on the black wire will close the tarp. Both functions will ground through the green wire. Important: permanent damage will result if ground and power is connected across the white and black wires. Unplug the receiver power from the ABS power drop from the 7-way UBS. Use a wire to connect to the ABS drop power. Touching the pins inside the Deutsch receptacle with power should cause the tarp to operate. Confirm both open and close functions work.
	Next use a voltmeter to confirm the receiver plug outputs both have voltage when triggered. If no voltage is observed, repeat the check at the receiver connection in the apex.
13. 40-Amp Fuse for Tarp.	Expose and inspect fuse container. Confirm smartwire connections. Look for plugged weep hole or evidence of corrosion at the threaded connection.
14. Pump Motor Terminal Corrosion.	Disconnect 2-pole power and remove the motor cover. Inspect the motor input terminals for loose hardware or corrosion. Ensure terminal post is not loose. Use a Phillips screwdriver to take end cover off and look for corrosion.

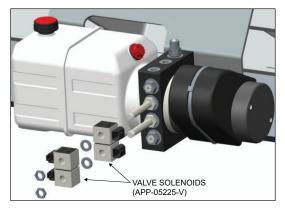
TROUBLESHOOTING

Resolution Procedures

15. Corroded or Separated Connection.

Examine all available connections. Priority of ring terminals, bullet connections, Deutsch connectors. Systems made prior to July 2019 use bullet connectors instead of Deutsch connectors for the receiver connections.

16. Valve Solenoid.



Four valve solenoids are located on the manifold of the hydraulic pump unit facing towards the rear of the trailer. The upper two control the front trap and the lower two control the rear trap. A 3/4" jam nut holds the valve solenoids in place with a spacer washer between each pair. Due to having four valve solenoids and four receiver outputs, field diagnosis can be readily performed by swapping plugs or solenoid positions to determine what does and doesn't work. Testing for continuity with a multimeter can determine if a valve solenoid has failed. Torque the 3/4" jam nut to 36 in-lbs. max, or slightly past finger tight. Note: the valve solenoid nut and spacer is not included with a replacement directional control valve.

Original positions:

Front open – top, away from manifold - white and black Front close – top, close to manifold - green and black Rear open – bottom, away from manifold - blue and black Rear close – bottom, close to manifold - brown and black

17. Low Hydraulic Fluid.

Check fluid levels against the level indicators on the reservoir. Add as needed. Note Ø1-1/2" cylinders take more fluid to fill versus Ø1.0" cylinders and are more susceptible to low fluid levels.

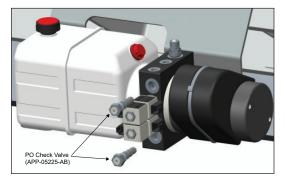
18. Air in Cylinder/Hoses.

Cycling the traps open and closed several times is sufficient action to remove air from the hydraulic cylinders. However, the optimal air removal position will require each cylinder to be unmounted and rotated 90° so the hose ports are facing up during cycling.

TROUBLESHOOTING

Resolution Procedures

19. PO Check Valve.



The PO check valves are located on the manifold facing towards the rear of the trailer, above and below the valve solenoids. The upper PO check valve controls the front trap and the lower PO check valve controls the rear trap. Thoroughly clean the area around the PO check valve before removing to prevent contamination upon installation. Remove with a 7/8" socket. Use hydraulic fluid to lubricate all O-rings and back-up rings on the new valve. Inspect for foreign objects or contaminates in valve cavity. Insert the valve into the cavity, and then hand tight. Torque to 18 ft-lbs. (216 in-lbs.)

20. Thermal Pressure Lock.	Thermal pressure lock may happen when a hydraulic system was left pressurized in the cold and then encounters a warmer temperature. This excess pressure may lock the valves and prohibit proper functions. Locate the 90° fittings on the valve manifold of the hydraulic pump unit where the hydraulic hoses connect. Two on top for the front trap and two on the bottom for the rear trap. Loosen all four hoses to relieve residual pressure. Tighten to initial wrench resistance, then to two flats past the resistance point. 150-320-500
21. Loose Hydraulic Fitting.	All hose end fittings are #4 JIC. Finger start and tighten, then use a 9/16" wrench to tighten to resistance, then turn two flats (120°) from wrench resistance (FFWR). Tighten non-hose fittings to 15 ft-lbs. (180 in-lbs.)

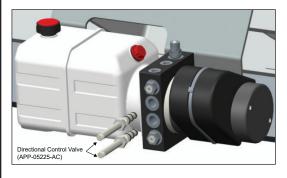
TROUBLESHOOTING

Resolution Procedures

22. Cylinder Plston Seal Leak.

Testing cylinders for leaks will involve removing hoses from the cylinder port fittings. The removed hose will need to be plugged and the exposed fitting prepared and monitored for leaking fluid. Testing will be performed on one cylinder at a time; the cylinder on the opposite side of the trap may stay in position. Fully close the trap door. Thoroughly clean the areas around both cylinder port fittings. Disconnect the cylinder open hose and plug with a #4 JIC plug. Run the trap close function to apply stall pressure to the cylinder and check for fluid leakage from the open fitting. Reconnect the extend hose and extend the trap completely. Remove and plug the retract hose. Run the trap open function to apply stall pressure to the cylinder and check for fluid leakage from the open fitting. Repeat the test on all applicable cylinders. Acceptable leakage is approximately one drop in 15 seconds.

23. Directional Control Valve.



Inspect for physical damage such as a bent stem. Use output plug and valve solenoid swapping to help determine the malfunction is not an electrical component. Refer to the valve solenoid section. Thoroughly clean the area around the directional control valve before removing to prevent contamination. Remove with a 7/8" deep well socket. Use hydraulic fluid to lubricate all O-rings and back-up rings on the new valve. A small tool can manually shift the valve and help clean out debris. Replace the valve if it cannot be shifted. Inspect for foreign objects or contaminates in the valve cavity. Insert the valve into the cavity, and then hand tight. Torque to 18 ft-lbs. (216 in-lbs.)

Note: the valve solenoid nut and spacer are included with a replacement directional control valve.

TROUBLESHOOTING

Resolution Procedures

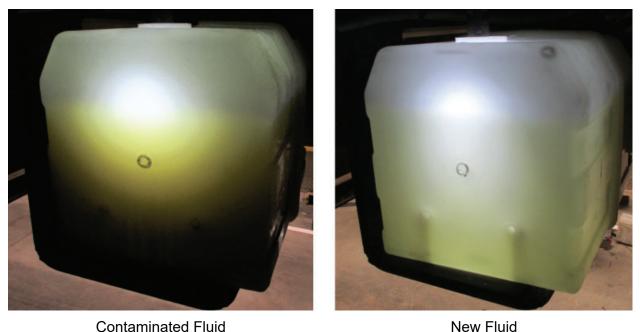
24. Relief Valve.



The relief value is on top of the manifold, towards the front of the trailer. The relief valve should be pre-set to open at 2,500 psi. Test by using a hydraulic gauge to measure output pressure. Thoroughly clean the area around the relief valve before removing to prevent contamination. Remove with a 7/8" deep well socket. Use hydraulic fluid to lubricate all O-rings and back-up rings on the new valve. Inspect for foreign objects or contaminates in the valve cavity. Insert the valve into the cavity, and then hand tight. Torque to 18 ft-lbs. (216 in-lbs.)

25. Contaminated Hydraulic Fluid.

Contaminated hydraulic fluid will require all fluid to be removed from the system and replaced, and for disassembly of the valve manifold to clean the cartridges. A flush will need to be performed more than once due to residual fluid and accumulation inside of hoses and cylinders.

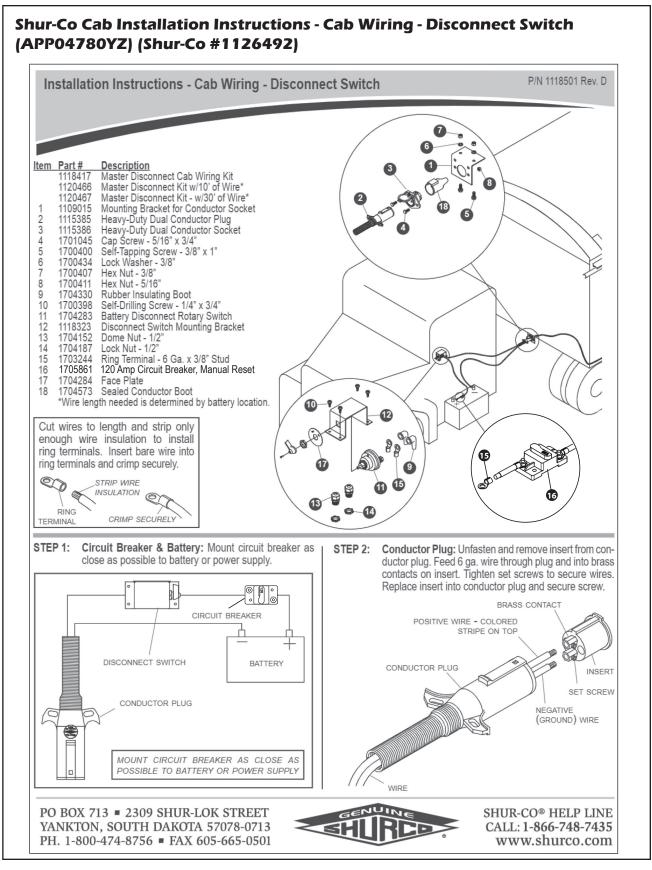


Example: Contaminated fluid on the left, new fluid on the right. Same trailer, same light. (Fluid APP-01648-B)

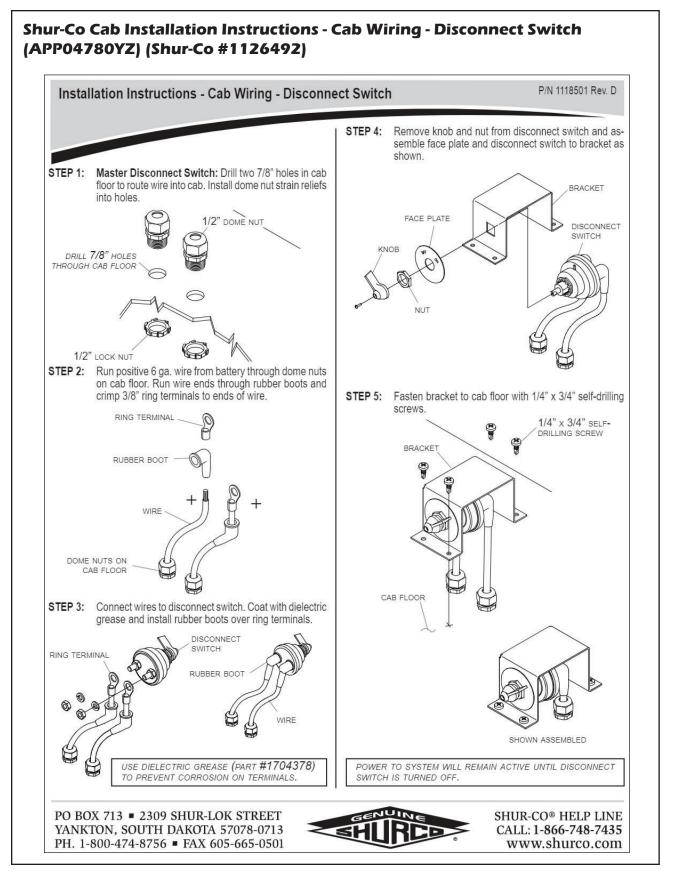
Contaminated Fluid



CAB WIRING KIT INSTALLATION



CAB WIRING KIT INSTALLATION



CONSUMER INFORMATION



Warranty Coverage

Wilson Trailer will repair or replace, at its option, any factory-installed part that is defective in material or factory workmanship under normal use, maintenance and service. Normal use excludes any operation in excess of GVWR (gross vehicle weight rating) and any use the Owner's Manual states is not recommended. Warranty repairs will be made and adjusted in accordance with the Extended Warranty Schedule. Any repaired or replaced parts are covered only for the remainder of this warranty. All parts replaced under this warranty become the property of Wilson Trailer. This warranty begins on the date the trailer is delivered to the **FIRST RETAIL PURCHASER** or the date it is first placed into service as a demonstrator or leased trailer, whichever comes first and continues for a period of (3) three years.

Non-Coverage Items

Non-standard features or items specified by the purchaser. Parts that fail due to lack of required maintenance or use of non-equivalent parts. Normal wear or deterioration on any part. Any trailer normally driven outside the United States or Canada. The replacement of expendable maintenance items when the replacement is not due to a defect in material or factory workmanship. Any pre-owned trailer.

Major Component Coverage

1 Year Coverage

- Coating on Steel Parts Parts and Labor Covered
- Shurco Tarp Electronics
- Cylinders and Hoses, HYDRO-Trap
- Receiver & Remote, HYDRO-Trap
- KTI Pump, Motor, and Solenoids, HYDRO-Trap
- Electrical Harness, HYDRO-Trap

3 Year Coverage

• All components manufactured by Wilson Trailer

CONSUMER INFORMATION

To Get Warranty Service

Parts claimed to be defective in material or workmanship must be brought to the attention of Wilson Trailer or the selling dealer by taking the trailer to the dealer or by written notification within ten (10) days of discovery, and any repairs or replacement must be commenced within forty-five (45) days thereafter. Wilson Trailer has the right to inspect the claimed defect and determine whether the part is covered by this warranty. If you cannot get warranty service, or you are dissatisfied with the service or with a warranty decision, contact Technical Service and Claims Manager, 1-800-798-2002, Wilson Trailer, P.O. Box 6300, Sioux City, IA 51106.

Owner's Responsibility

As the **FIRST RETAIL PURCHASER** of the trailer, you have the responsibility to perform the required maintenance at the proper intervals and make reasonable and normal use of the trailer.

The **FIRST RETAIL PURCHASER** needs to contact Wilson Trailer's Warranty Department at the 1st sign of a defect in material or workmanship at 1-800-798-2002 to get the claim on record.

Warranty Work

All warranty work must preformed at a repair shop approved in advance by Wilson Trailer Company.

Limitations and Disclaimers

Wilson Trailer disclaims any responsibility for any loss of time or use of the parts or trailers in which the parts are installed, transportation, cargo loss, or other incidental or consequential damage. Any implied warranties, including the implied warranty of merchantability and fitness for a particular purpose, are limited to the duration of this written warranty. Wilson Trailer makes no warranty as to quality or performance of its trailer other than set forth above. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you special legal rights, and you may also have other rights which vary from state to state.

To file a claim or if you need answers to questions about this warranty contact the Wilson Trailer Warranty Department:

Wilson Trailer, PO Box 6300, Sioux City, IA 51106 • 800-798-2002 www.wilsontrailer.com • email: warranty@wilsontrailer.com

Serial Number	
G.V.W. Rating	
Purchased By	
Date In Service	
Selling Dealer	Δ
Ву	lodd Heitman
	(Authorized Signature)

PRODUCT HISTORY

2017 to March 2019

• Receiver powered from rear sill.

April 2019 to September 2019

• Receiver powered from front with Deustch connections.

October 2019 to Present

• Receiver powered from front with APP03347OM harness.

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