

Description:	Quantum® Hardcoated Polycarbonate UTV Windshield, Wash'n'Wipe™ Full Size	Model:	Polaris Ranger Mid Size, Rd. Frame Tube, Various Models
Part Number:	N30205	Installation Time:	60 min.

Thank you for purchasing a National Cycle product. Read these instructions carefully and thoroughly before beginning work. Dealers, if installing this windshield for a customer, please give them this manual. It contains information needed to properly maintain and use this product.



Attention:

Special notes and cautionary measures which can prevent damage to the accessory or vehicle.



Note:

Tips for facilitation of installation, operation, and adjustment, as well as maintenance work.

PREPARATION

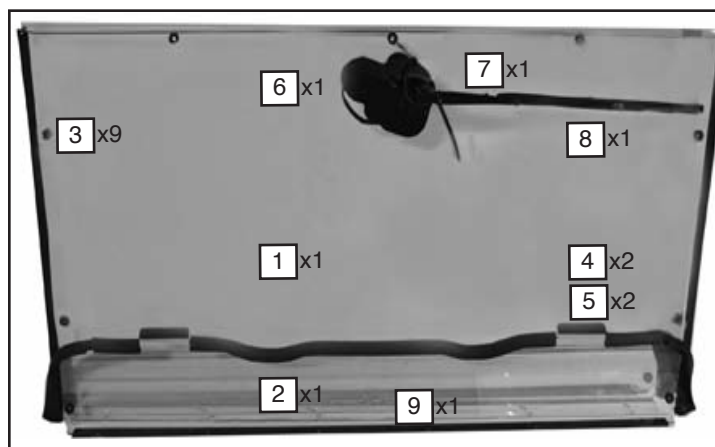
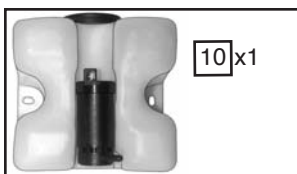
This Kit has been carefully packed and inspected at the factory. Report any missing part directly to National Cycle, Inc. along with the Bag No. and Date on outside of Windshield Carton.

Carefully unpack the windshield, sort the parts, and make sure you have everything required to complete the installation to the vehicle.

TOOL LIST

T27 Torx
3/8 and 7/16" Box Wrench
Flat Blade Screwdriver
Scribe or Marker
X-Acto® Knife, or similar
Wire Cutters
Power Drill with 3/4" (19mm) hole saw, or similar
Small Drill Bit (1/8") (3mm) for pilot hole
#2 or #3 Phillips Screw Driver or Phillips Bit for Drill
1/4" Hex Driver

RESERVOIR and WIRE HARNESS (Harness, Page 3)

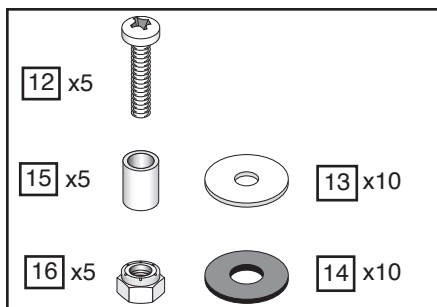
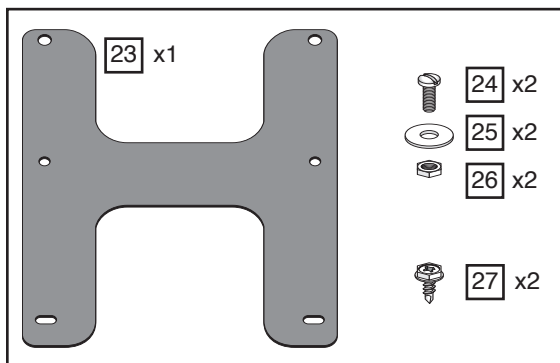
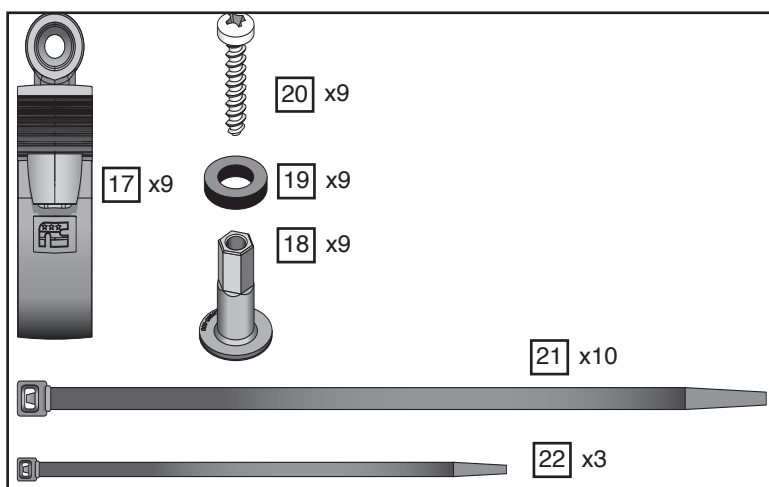


Parts Installed on Two-Part Windscreen

Tools Required

Item	Part No.	Description	Qty.	Notes and Tools
1	20-290399-000	Windscreen, Upper Section	1	Grommets Installed
2	20-290431-000	Windscreen, Lower Section	1	Grommets and Velcro Fastener Installed
3	44-447165-000	Grommets for Windshield	9	Installed on Windscreen
4	77-771157-000	Marine Grade Velcro, Hook	2	Installed on Windscreen
5	77-771158-000	Marine Grade Velcro, Loop	2	Installed on Windscreen
6	80-875150-000	Motor Assembly	1	Installed on Windscreen
7	80-875153-000	Arm, Wiper Assembly, 14" 350mm	1	Replacement Arm Part No. is N30910
8	80-875154-000	Blade, Wiper Assembly, 14" (350mm)	1	Replacement Blade Part No. is N30900
9	44-447003-000	Foam Tape, 1/8 x 1" W	1	Installed on Windscreen
PARTS IN KIT				
10	44-442523-000	Reservoir & Pump Assembly	1	
11	80-830326-000	Wire Harness and Switch	1	With Grommet and Switch, Page 3

Parts List Continues on Next Page

BAG#1176**BAG#1185****BAG#1186**

Keep this page as a reference guide during the assembly process.

Parts Included in Bags				Tools Required
Item	Part No.	Description	Qty.	Notes and Tools
Bag#1176				Parts to attach upper and lower screens
12	55-563144-000	Screw, Phillips, 1/4-20 x 1"	5	#2 or #3 Phillips Screw Driver
13	49-490491-000	Washer, Flat, .265 x .875 x .062"	10	
14	75-762021-000	Washer, Rubber, 7/8 OD x 3/8 ID	10	
15	34-346055-000	Spacer, .375 x .277 x .53"	5	
16	42-423242-000	Nut, Nylon Insert, 1/4-20	5	7/16" Wrench
Bag#1186				Parts to mount Windshield
17	44-449370-000	Clamp, Wraparound	9	
18	44-449380-000	Retaining Pin	9	
19	49-490355-000	Washer, Spacing, Black	9	
20	55-563131-000	Screw, Phillips, #12 x 1.25", SS	9	#2 or #3 Phillips Screw Driver
21	44-448726-000	Zip-Tie, Black	10	
22	44-448710-000	Zip-Tie, Black	3	
Bag#1185				Parts to mount Fluid Reservoir
23	37-373686-000	Bracket	1	
24	55-562600-000	Screw, Slotted, 10-32 x 5/8"	2	
25	49-490543-000	Washer, Flat, .253 x .875 x .053"	2	
26	42-450024-000	Nut, Hex 10-32	2	3/8" Wrench
27	50-500206-000	Screw, Hex Self Drill	2	1/4" Hex Drive

Parts List Continues on Next Page

WIRE HARNESS

11 x1

d. Motor Connector and Fluid Hose
Installs to Motor

c. Pump Switch for Wash
Mounts to Dash Inside Cab

a. Battery Connections Black-Negative, Red-Positive

e. Grommet, Seals
3/4" Hole

b. Pump Connector and Fluid Hose
Installs to Fluid Reservoir/Pump

INSTALLATION

PREPARE THE VEHICLE FOR WIRING

REMOVE SEATS AND CENTER CONSOLE

1. Remove seats.
2. Remove center console.

Figure 1 (T27 Torx)

 One of the 7 screws holding the center console is different from the rest.



Figure 1

CUTTING THE PUMP SWITCH HOLE

 The installation of the Pump Switch on this vehicle is in the recessed area of dash panel indicated by the X. Select your preferred location for the switch. Use care when cutting hole, avoid over cutting.

Figure 2

1. Disconnect the Pump Switch (c) from the main Wire Harness. Check the size of Pump Switch against the locator bay. Scribe or draw a 17/32" x 1 1/8" (13.5mm x 28.5mm) guide in the desired location.

2. Using a drill, drill some holes in the plastic cover to serve as starting holes for cutting. Then use your X-Acto knife to cut out the cover's face to the edges shown.

Figure 2 (Drill, X-Acto Knife)

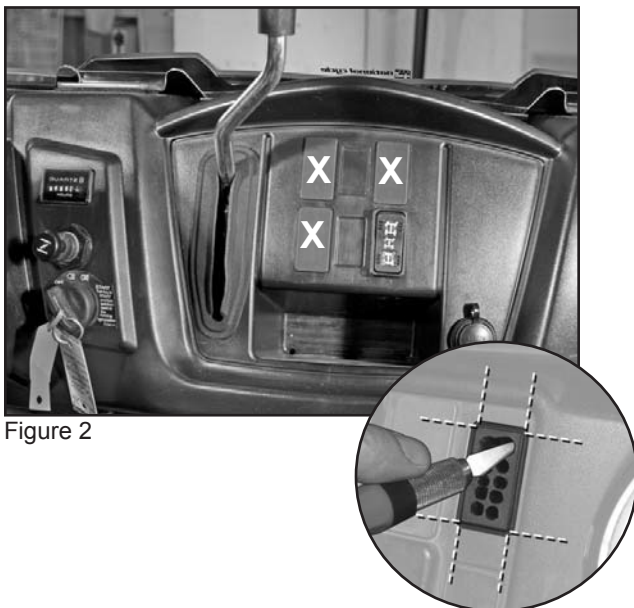


Figure 2



Figure 3 Image shows front hood open.

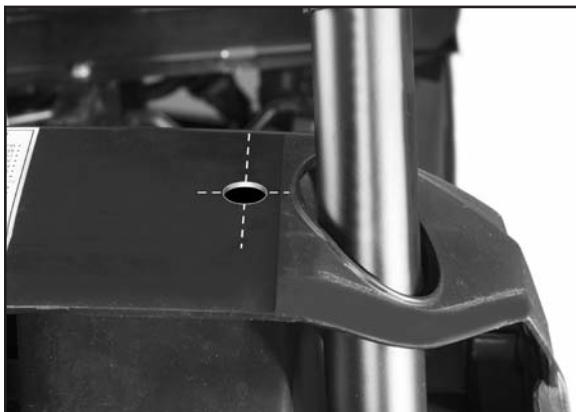


Figure 4

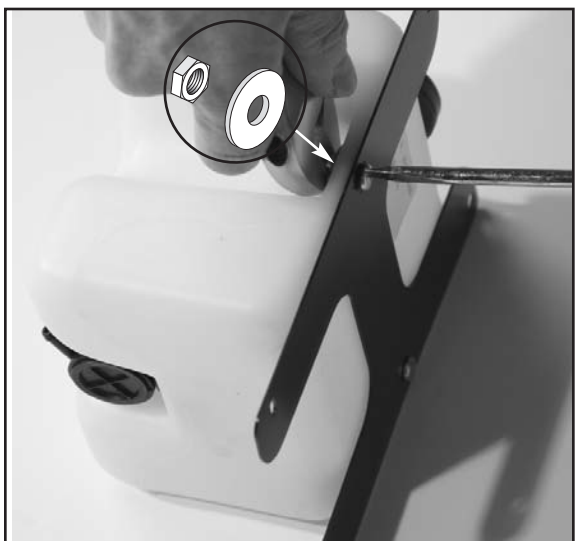


Figure 5

PREPARE THE VEHICLE FOR WIRING

CUTTING THE PASSWAY 3/4" HOLE

1. Open the front hood.
2. On the hood of the vehicle behind the engine cover on the driver's side, measure a point 3" (7.6cm) from the front of the body and 1" (25mm) from the frame cutout on driver's side (left) of vehicle. Mark that location. This hole should be located near the Left Frame Bar.

Figure 3

3. Insert a step drill bit into your drill as shown (or 3/4 hole saw) and drill a 3/4" (19mm) hole in the body cover at the location marked in figure 3.

Figure 4

MOUNT RESERVOIR/PUMP ASSEMBLY TO BRACKET

1. Using a Slotted Screw (24), Washer (25) and Nut (26) from Bag #1185 install the Reservoir (10) to the mounting Bracket (23).

Figure 5 (Flat Blade Screwdriver and 3.8" Box Wrench)

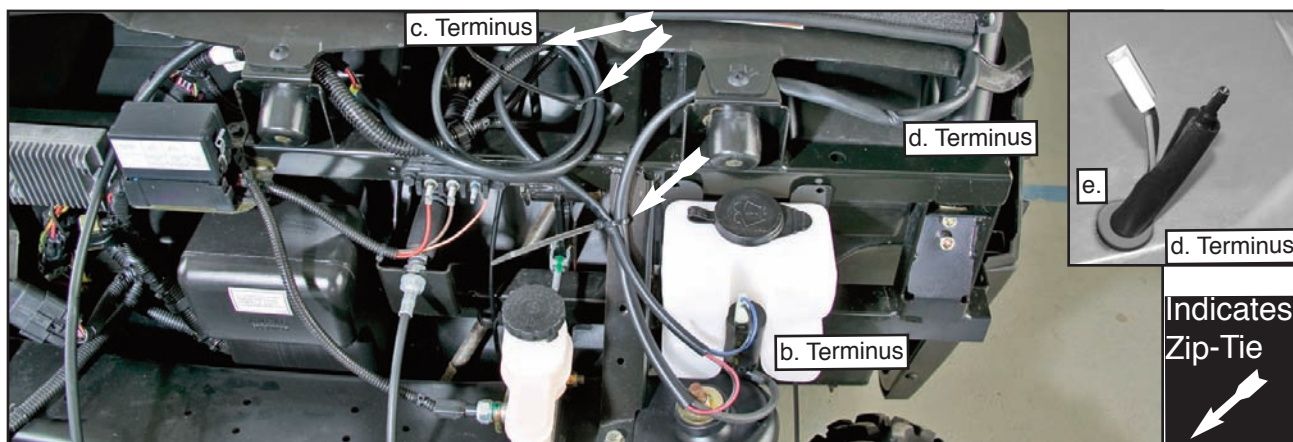


Figure 6

MOUNT RESERVOIR/PUMP ASSEMBLY

Move to under the hood.

1. Use the 2 Self Drill Hex Screws (27) to mount the Reservoir Assembly to the horizontal bar under hood. Maintain a 3/8" (9.5mm) clearance of Pump from shock tower. **Figure 7 (1/4" Hex Drive)**

2. Using 2 Zip-Ties (22) secure the lower section of Bracket (23) to the horizontal bar as shown.

Figure 7 Inset (Wire Cutters)

WIRE HARNESS INSTALLATION- PUMP CONNECTOR AND FLUID HOSE

1. Take Pump Quick Connector section (b) of the Wire Harness and locate the terminus of the Rubber Hose and the Large Nylon 2-Pin Electrical Quick-Connector with red and black wires.

Figure 8

2. Take the Quick-Connector section and fold it against the Rubber Hose section. Secure the two sheaths with a Zip-Tie (21) and trim the excess.

Figure 8 (Wire Cutters)

3. Connect the Rubber Hose to the bottom of the Reservoir's Electrical Pump.

Figure 9 Inset

4. Push the Nylon Quick-Connector onto the two pins on top of the Reservoir's Electrical Pump.

Figure 9 Inset

WIRE HARNESS INSTALLATION- MOTOR CONNECTOR AND FLUID HOSE

1. Find the Motor Quick Connector section (d) of the Wire Harness and route it behind the bracket that secures dash to frame. Thread it through the 3/4" hole cut into the vehicle's body.

Figure 6 and 6 Inset

2. Follow the Frame Tube pulling enough length through the 3/4" (19mm) hole so terminus of Motor Connector (d) reaches 4-5" (10-12cm) past the half way point of the upper frame tube. This is where the Wash'N'Wipe Motor will be located.

3. Use Rubber Grommet (e), attached to the wire harness to plug the hole.

Figure 6 Inset

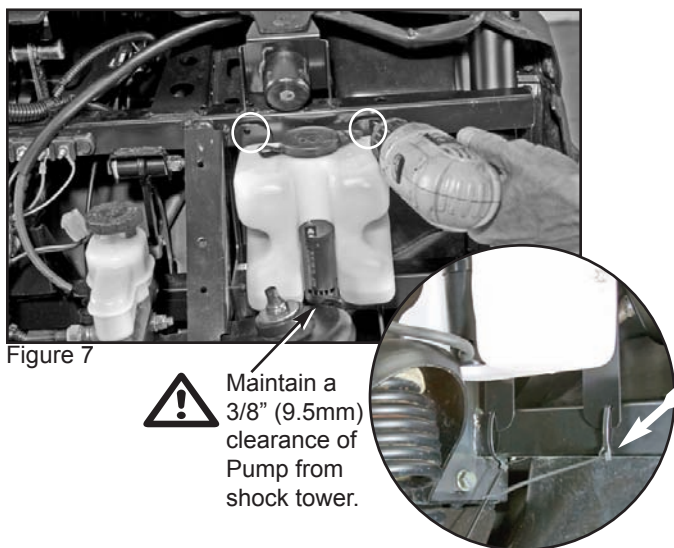


Figure 7

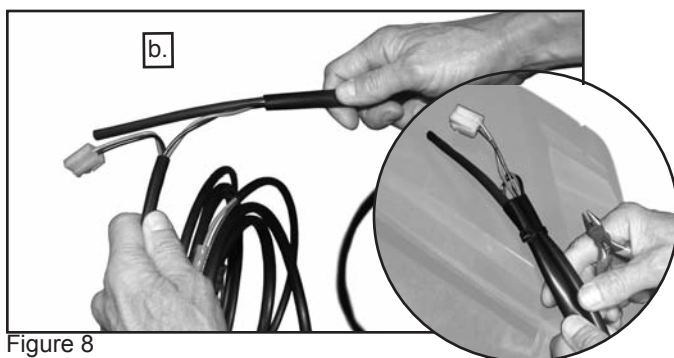


Figure 8

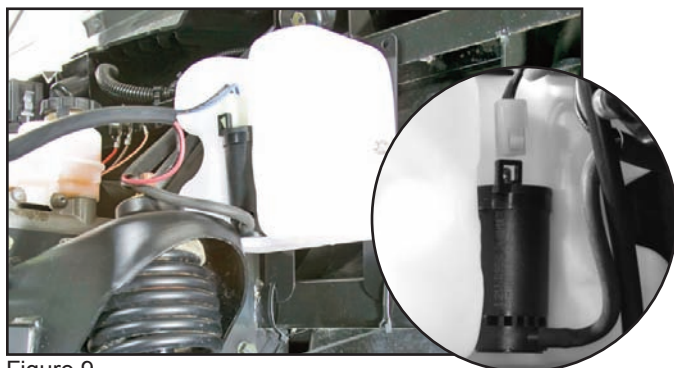


Figure 9

WIRE HARNESS INSTALLATION- ROCKER SWITCH TO DASH

1. Locate the section of Wire Harness (c) that terminates in the Two-Way Rocker Switch. Temporarily remove the Rocker Switch and thread the wiring under the hood toward the hole you cut in the dash panel's accessory bay in Figure 2. Thread the Wire End (c) through the hole.

Figure 10



Figure 10

2. Move inside the vehicle and reattach the Two-Way Rocker Switch to the two Nylon Pin Connectors (polarity doesn't matter) and then push the Rocker Switch into the cutout.

Figure 11



Figure 11

3. Completed dash panel Rocker Switch should appear as shown.

Figure 12



Figure 12

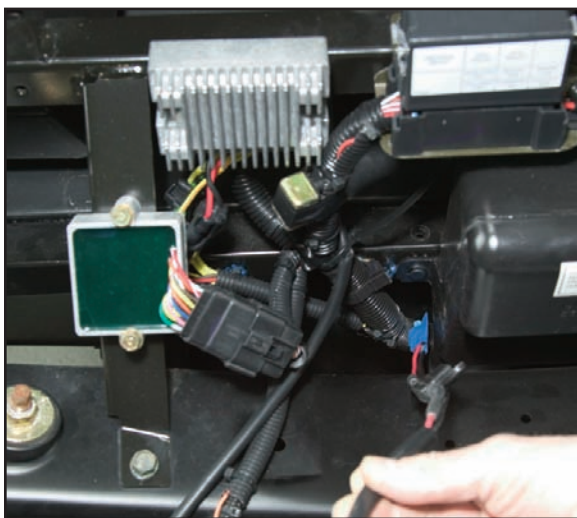


Figure 13



Figure 14

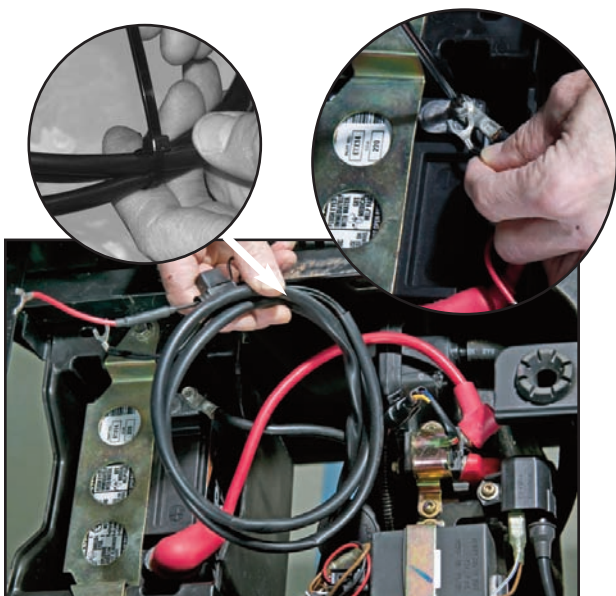


Figure 16

WIRE HARNESS INSTALLATION- BATTERY TERMINUS

 To prevent ends from snagging while routing terminus (a), tape the positive and negative connectors together.

1. Route the Battery terminus end (a) toward the console tunnel following the vehicles main wiring harness.

Figure 13

2. Continue to pull the Battery terminus section of the Wire Harness along the vehicle's main wiring harness to the battery compartment.

Figure 14 and 15

3. Loosen the negative terminal nut of the vehicle's battery. with a Phillips screwdriver or an adjustable wrench. Slip the Brass Open Ring Connector under the negative terminal nut and tighten securely. Repeat for the positive terminal.

Figure 16 (Phillips Screwdriver)

SECURE WIRE HARNESS THROUGHOUT VEHICLE

Use the Zip-Ties (21) to coil and secure the Wire Harness properly within the vehicle.

Do not leave loose Harness anywhere in the vehicle. Once Zip-Tie is tight, clip excess off end. (Wire Cutters)



SECURE a minimum of three locations inside front compartment.

Figure 6, page 5

SECURE at three locations to vehicle's wire group along center floor of vehicle. Stay away from the drive shaft.

Figure 15

SECURE excess inside battery compartment.

Figure 16



Figure 15

WINDSHIELD INSTALLATION

ATTACH UPPER AND LOWER SHIELDS TOGETHER

1. Make six assemblies using, Panhead Machine Screw (12), Flat Zinc Washer (13), Rubber Washer (14) and Windshield Spacer (15).

Illustration A

2. Insert the assembled components into each of the mounting holes where the lower edge of the Windshield Upper Section meets the top edge of the Windshield Lower Section. Make sure the Windshield Spacers do not come loose and fall out.

Illustration A

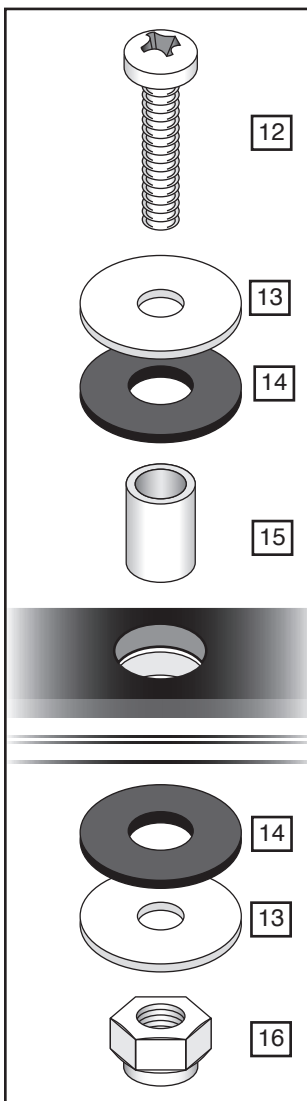


Illustration A

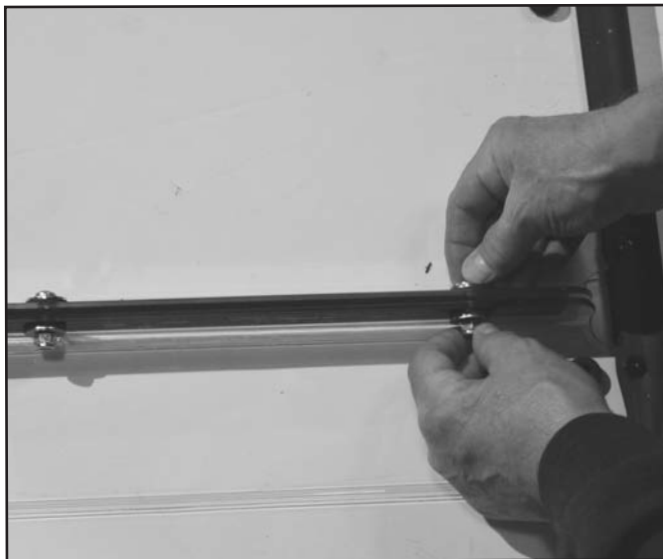


Figure 17

3. From the bottom of the two edges, assemble a Rubber Washer (14), Flat Zinc Washer (13), and Nylon Insert Nut (16), and tighten the Nuts finger-tight for now.

Figure 17

 The Spacers (15) should fit through the Rubber Washers (14) and up against the Metal Washers (13).

4. Make sure the Upper and Lower Windshields are flush with each other and the side edges are in line.

5. Tighten the Screws (12) and Nuts (16) securely.
(Phillips Screwdriver and 7/16" Wrench)

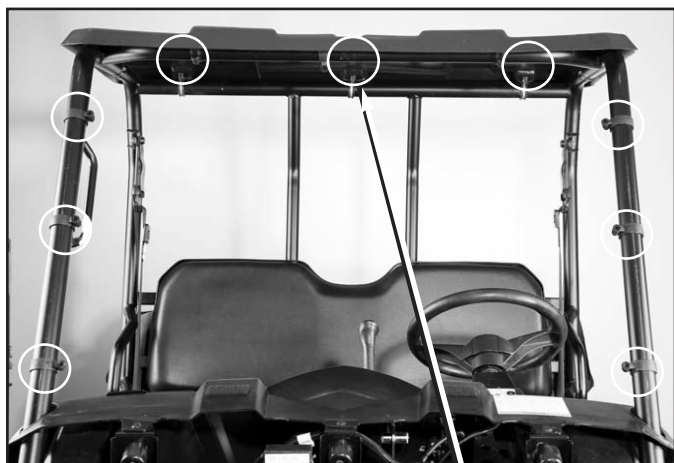


Figure 18



Illustration B

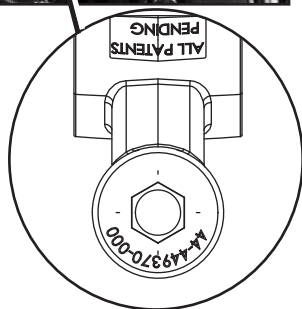


Figure 19

Perspective from below top frame looking up, or inside of right frame.

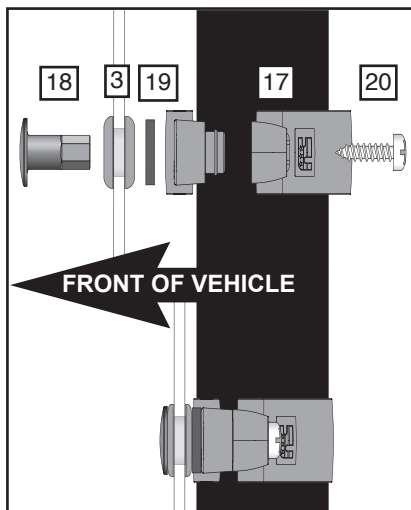


Illustration C



Figure 20

WINDSHIELD INSTALLATION

1. Snap the Wraparound Clamps (17) to the frame of the vehicle. Orient the top clamps facing down and male half (with embossed part number) toward the front of the vehicle.

Figure 18 and Illustration B



Read these helpful tips for a smooth installation:

Place fasteners within reach of assembling clamps.

Note the hex shape of Retainer Pin (18), and male Clamp (17) half.

Apply tape to lower area of grab handle to prevent drill from scratching handle during clamp installation.

Figure 19

While installing the windshield Clamps (17) **tuck Wire Harness between Clamp and Windshield.**

Figure 20

Place Spacing Washer (19) between Grommets (3) and Clamps (17).

Start Machine Screws (20) but do not tighten.

The tabbed section of the Windshield should be touching the hood of the vehicle.

2. Place Windshield on hood. Tuck Wire Harness between Clamps and Windshield.

Figure 19 and 21

3. Using Screws (20) and Spacing Washers (19), install Clamps (17), but do not fully tighten.

Figure 20 and Illustration C

(Phillips Screwdriver or Power Drill on low setting)

4. Check the alignment and position of the windshield and make sure it is even and symmetrical.

5. Securely tighten the Machine Screws (20) in all Wrap-around Clamps (17).

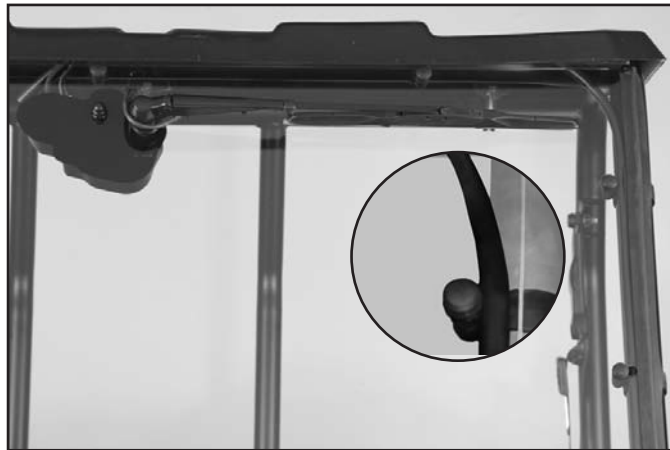


Figure 21

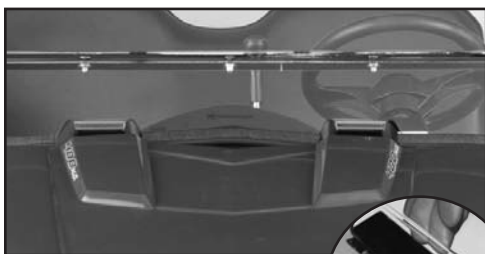


Figure 22



WINDSHIELD INSTALLATION, continued

6. Remove the adhesive backing from the Velcro loop material and then press the windshield tab firmly onto the hood of the vehicle.

Figure 22

7. Check that the Wire Harness is coiled and secured.

FINALIZE CONNECTIONS TO WIPER

1. Check that the Wiper Arm Fluid Hose is threaded through the Grommet in windshield. If it is not, do this now.

Figure 23

2. Connect the Wiper Motor Power and Fluid Hose.

Figure 24



A little moisture on the Fluid Hose end will make them join easier.

3. The arrow on the fluid check valve must point towards the wiper arm, not towards the fluid reservoir.

Figure 24 Inset

4. Tuck Motor Connector behind Motor assembly.

5. Completed Windshield Wiper Motor installation should appear as shown in Figure 24.

FILL THE FLUID RESERVOIR

1. Fill the Reservoir (10) inside the vehicle's cab with plain water during warm weather and glycol-based automotive windshield washer fluid in freezing weather.

2. DO NOT run the pump dry. Minimum amount of fluid to maintain in the Reservoir is:

12 oz. (.35L) or to a depth of 1 1/2" (38mm)

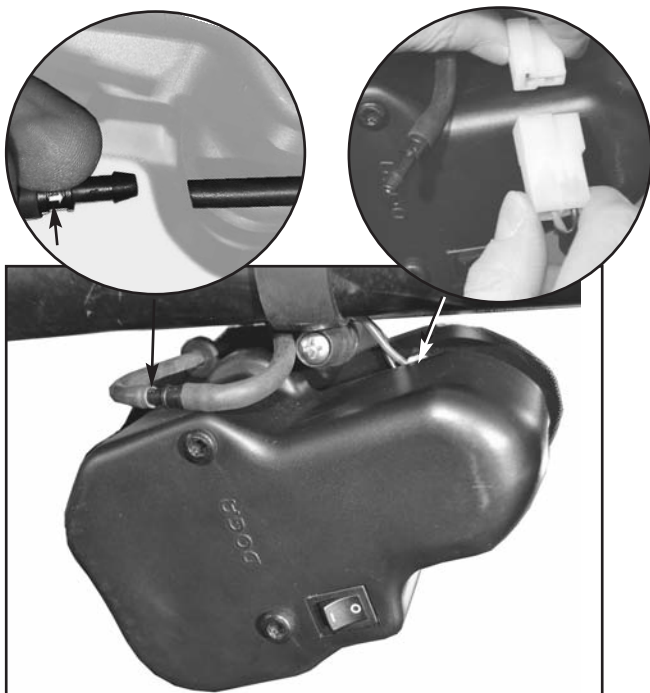
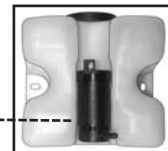


Figure 24

Minimum depth of 1 1/2" -----



REINSTALL PARTS REMOVED FROM VEHICLE

1. Reinstall the seats.
2. Reinstall the center console.

Please refer to page 11 and 12 for operation, replacement parts and warranty.

Enjoy Your New Wash'n'Wipe™ Windshield!

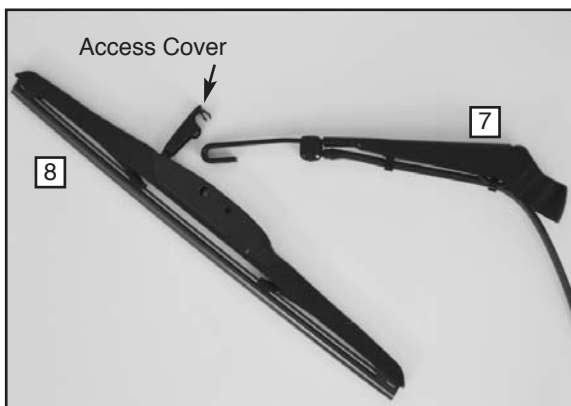


Figure 25



Figure 26

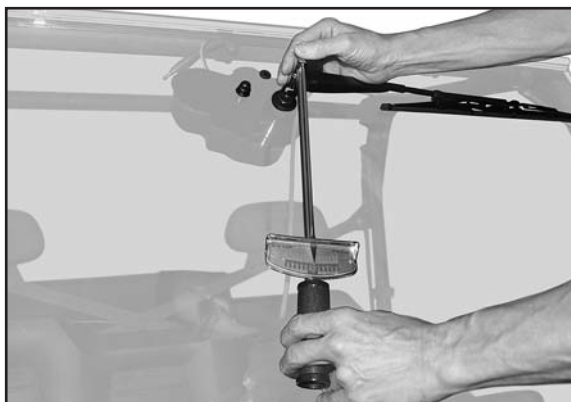


Figure 27



WINDSHIELD WIPER OPERATION



The Wiper is intended for use with the wash cycle or during rain. **DO NOT** Wipe a dry windshield.

DO NOT run the Pump without fluid.

The Wiper Motor has an on/off Rocker Switch as shown. Turn the switch on and verify that the Wiper works as expected.

The dash panel Rocker Switch installed controls the fluid spray. Momentarily hold the Switch in the on position to spray water from the Wiper Arm. It should spray in four separate directions.



The 4 spray jets can be redirected carefully.

WIPER ARM AND BLADE

Your Wash'n"Wipe Windshield is equipped with a quality silicone Wiper Blade. Replacement Wiper Blades are available from your local dealer or by contacting National Cycle.

Replacement Wiper Blade Part Number is N30901

Replacement Wiper Arm Part Number is N30910

REPLACING THE WIPER BLADE AND ARM

Open the small access cover on the Wiper Blade (8) and pull the blade towards the motor end of Wiper Arm to loosen blade.

Join the end of the Wiper Arm (7) to the Wiper Blade (8). Place the J-hook of the Arm over the Blade's plastic mounting clip until it clicks and locks into place. Close the small access cover.

Figure 25

Swivel up the mount cover of the Wiper Arm as shown and then mount the Wiper Arm over the Motor's Spindle.

Figure 26

Once the Wiper Arm is on the Spindle, install the Internal Tooth Lock Washer and Small Mounting Nut. Use a torque wrench to tighten the Small Mounting Nut to 16 foot-pounds (22Nm). Then swivel the mount cover of the Wiper Arm back to its closed position.

Figure 27 (Torque Wrench with 13 mm Socket)



CLEANING AND MAINTENANCE

To clean the screen, wash with a clean soft cloth, plenty of warm water and if necessary, a non-abrasive soap such as dishwashing liquid. Flannel or soft chamois make good cleaning cloths. **Paint, glue residue or grease removal:** Moisten cotton with naphtha or turpentine followed by a wash as above.

National Cycle **Shield Wash™** (N1401-01) makes a good daily cleaner and comes with a handy travel size bottle. Shield Wash is safe for all windshields and helmet visors.

Do not clean polycarbonate in hot sun or high temperatures. Do not clean the screen with glass cleaners.

Do not allow brake fluid, alcohol, or strong solvents to contact the screen.

RAIN REPELLENT

Do not use rain protective products made for glass. We recommend National Cycle's **RainZip®** (N1410-01) to help shed water in rainy weather.



Register your windshield online at www.nationalcycle.com

National Cycle's UTV Windshield 3-Year Limited Warranty

National Cycle hereby warrants to the original registered owner of a National Cycle polycarbonate windshield for a period of three years from the date of purchase against breakage. This limited warranty is expressly limited to the replacement of the polycarbonate windscreen. This limited warranty does not include scratches, coating failure, cosmetic wear and tear, replacement of hardware, or any consequential damages or expenses including

labor cost of installation, removal and/or replacement, inconvenience, inbound or replacement outbound freight expenses (outbound freight must be paid in advance by cc or check) or damage to any other component of the vehicle or any other accessories. Certain chemicals, generally known as acidic hydrocarbons, are known to cause polycarbonate damage and will not be covered under this limited warranty. Please refer to the cleaning instructions supplied with your UTV Windshield.

! WARNING

Never operate your vehicle with loose accessory mounting hardware. Check the hardware for tightness regularly.

UTVs are built with enough frame rigidity to withstand the moderate loads imposed on them by the foreseeable addition of an accessory(ies). If an accessory(ies) adversely affects your vehicle's stability, immediately remove the accessory(ies). Do not operate a vehicle that exhibits unsafe handling traits.

Have experienced service personnel correct any problem before driving with the accessory(ies) installed. For further questions concerning handling problems associated with an accessory(ies), contact your dealer, UTV manufacturer, or accessory manufacturer.

CAUTION: Do not clean polycarbonate in hot sun or high temperatures. Do not clean the screen with glass cleaners. Certain chemicals, generally known as acidic hydrocarbons, are known to cause polycarbonate damage. Do not allow brake fluid, alcohol, or strong solvents to contact the screen.

CAUTION: Do not use rain protective products made for glass. We recommend National Cycle's **RainZip®** (N1410-01) to help shed water in rainy weather.

CAUTION: Always face windshield forward (in direction of travel) while carrying on truck or trailer.