

PWC KIT - Bilge Pump

Product:
Project no:
Instruction Sheet P/N:
Revision no:
Revision date:
Item covered:

Sea-Doo_watercraft
ssi2016-004
487802041
Bilge Pump

The following symbols may be used in this document:



WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION: Indicates a hazard situation which, if not avoided, could result in minor or moderate injury.
 NOTICE Indicates an instruction which, if not followed, could severely damage vehicle components or other property.



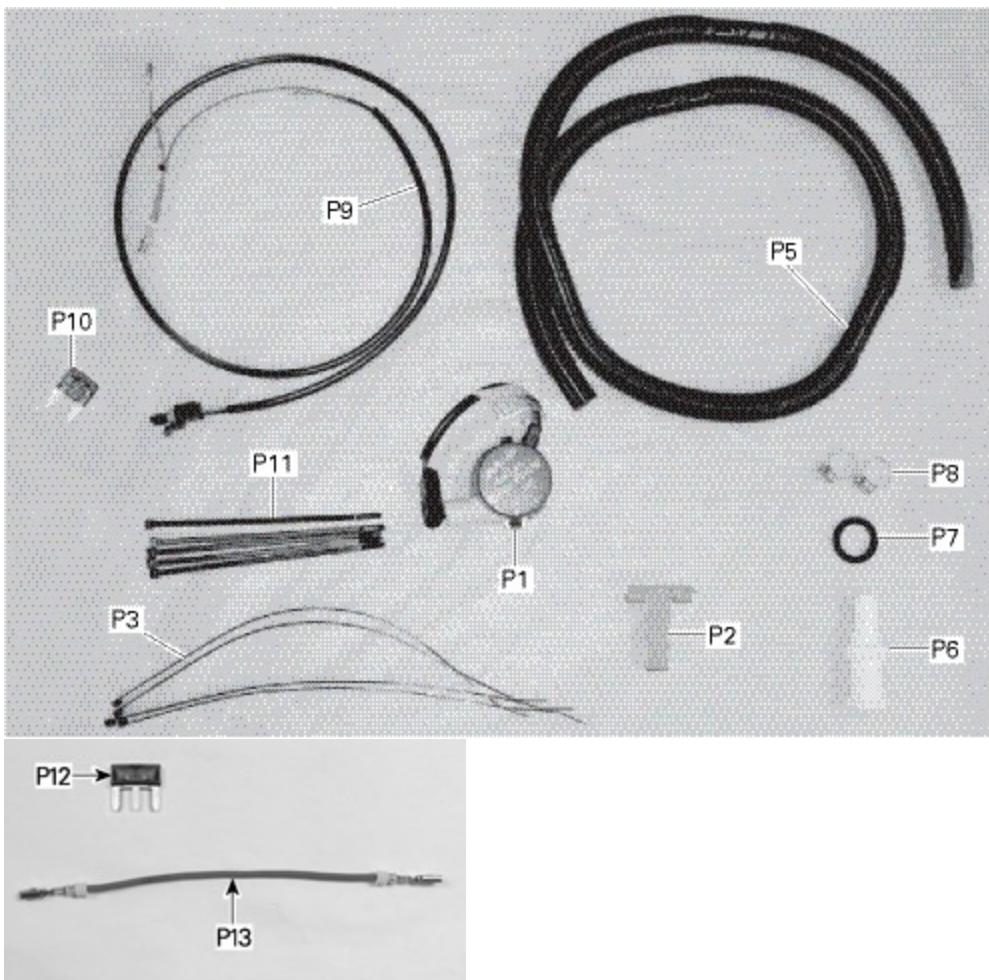
WARNING

- For safety reasons, this kit must be installed by an authorized BRP dealer.
- This kit is designed for specific applicable models only (authorized BRP dealers will confirm model(s)). It is not recommended for units other than the one (those) for which it was sold.
- If the installation of the kit requires a template, ensure that template is to scale.
- Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one.
- Torque wrench tightening specifications must strictly be adhered to.
- Always wear EYE PROTECTION AND APPROPRIATE GLOVES when using power tools.
- Unless otherwise specified, engine must be OFF when performing any operation on the vehicle.
- Always be aware of parts that can move, such as wheels, transmission components, etc.
- Some components may be HOT. Always wait for engine to cool down before performing work.

NOTE: The illustrations in this document show typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts; however, they represent parts that have the same or similar function.

NOTE: Installation time is approximately 0.8 hour.

Items in Kit



ITEM	DESCRIPTION	Part number	QTY
P1	Bilge pump	278002020	1
P2	Bilge pump support	Not available separately	1
P3	Locking tie (350 mm (13.8 in))	293750008	4
P5	Pump hose	Not available separately	1
P6	Outlet fitting	293710162	1
P7	Gasket	292001486	1
P8	Hose clamp	293650172	2
P9	Electrical harness	Not available separately	1
P10	Fuse (3 amp)	710001008	1
P11	Locking tie (180 mm (7-1/2 in))	414115200	7
P12	Bus bar	278002182	1
P13	Jumper wire	Not available separately	1

Required tools

Tool	Purpose
Center punch	Make a location mark on hull for drilling a hole

Tool

Hole saw
27 mm (1-1/16 in))

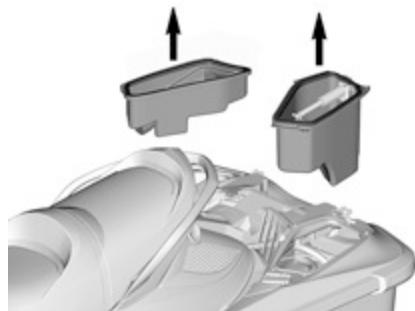
Purpose

Drill hole through hull for installing outlet fitting

INSTRUCTIONS

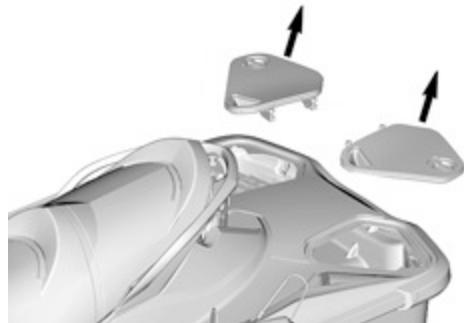
Installing the Bilge Pump

Models with rear access holes, with suspension



Rear access holes

Models with rear access holes, without suspension



Rear access holes

Models without rear access holes

Remove the following components, if applicable to your vehicle model:

- Lower deck
- Rear grab handle
- Coolant bottle

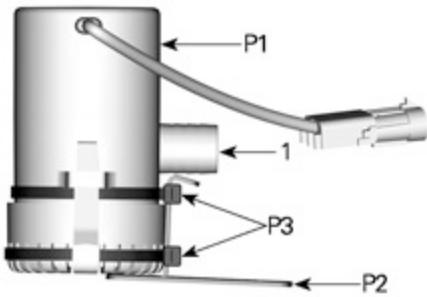
Remove the following components:

- Exhaust hose from engine
- Exhaust
- Breather hose from engine air intake
- Rear engine air intake.

All Models

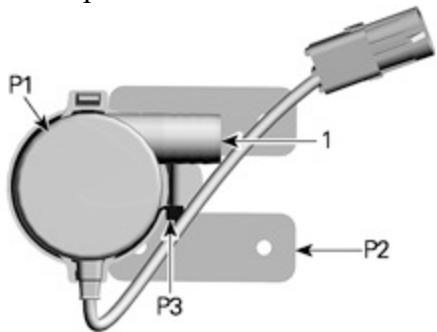
1. Assemble the bilge pump as per following 2 illustrations.

NOTE: Ensure lower locking tie does not obstruct bilge pump inlet.



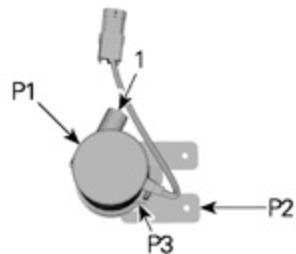
Typical - bilge pump assembly - Side view

1. Pump outlet orientation



bilge pump assembly - Top view: Models with rear access holes

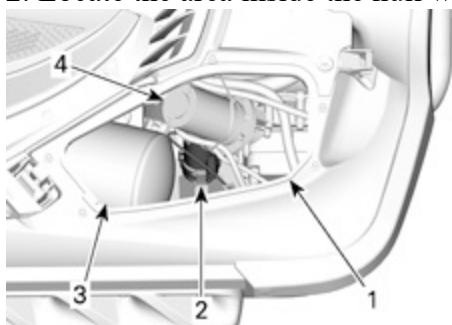
1. Pump outlet orientation



bilge pump assembly - Top view: Models without rear access holes

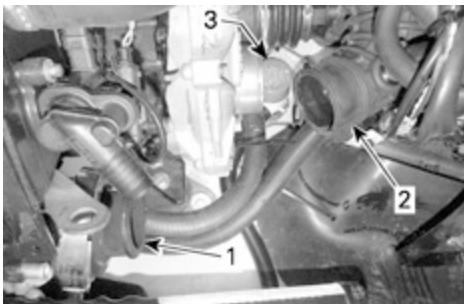
1. Pump outlet orientation

2. Locate the area inside the hull where the bilge pump is to be installed. See following illustrations.



Typical - Planned bilge pump location: Models with rear access holes

1. Port stern bilge access
2. Bilge pump
3. Muffler
4. iBR actuator motor



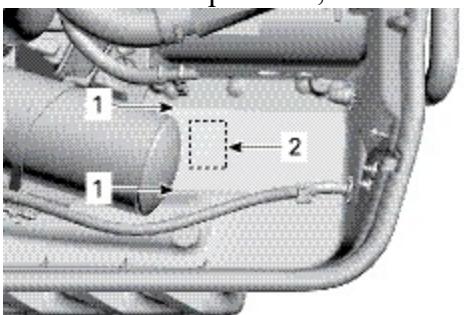
Typical - Planned bilge pump location: Models without rear access holes

1. Engine exhaust hose location
2. Rear engine air intake
3. Bilge pump

NOTE: In the following illustrations, many parts are not shown for clarity of illustration.

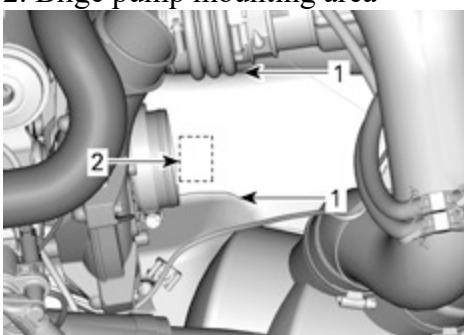
3. Sand the area where the bilge pump is to be installed to remove the shiny surface.

4. Vacuum dust particles, then clean with isopropyl alcohol.



Models with rear access holes

1. Buttock lines
2. Bilge pump mounting area



Models without rear access holes

1. Buttock lines
2. Bilge pump mounting area

service products

Isopropyl alcohol

Clean bilge pump mounting area inside of hull

5 minute epoxy glue

Glue bilge pump support to inside of hull

5. Prepare the epoxy glue as per manufacturers' instructions.

WARNING

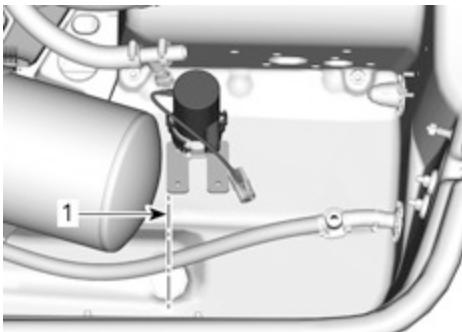
When mixing and applying epoxy glue, always refer to manufacturers instructions.

6. Apply a moderate amount of epoxy glue to the underside of the bilge pump support.

NOTE: Do not apply an excess amount of glue near the pump inlets.

7. Position the pump in the bilge as per following 2 illustrations, and lightly press down on it to ensure good adherence.

Models with rear access holes



Bilge pump alignment (1 of 2)

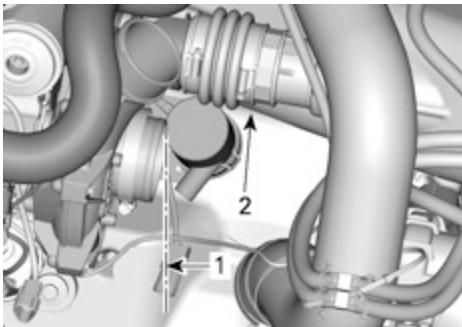
1. Front edge of support



Bilge pump alignment (2 of 2)

1. Pump against this buttock line

Models without rear access holes



Bilge pump alignment

1. Pump position
2. Pump against this buttock line

All Models

NOTICE Make sure that no excess glue flows into the pump inlets.

8. Secure the bilge pump in this position to prevent any movement of the pump while the glue cures.

NOTE: Allow sufficient time for the epoxy glue to completely cure before installing the hose onto the pump outlet. Refer to manufacturers' instructions.

Installing the Outlet Fitting

Models with rear access holes

Precisely cut the profile of the hole template A found on the last pages of this instruction sheet.

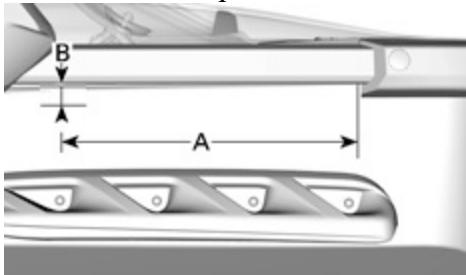
Position the template on the hull over the iBr guard (see illustration) to locate the drilling location.



hole template positioning

GTX, RXT and Wake Pro Models without rear access holes

Locate drilling location 410 mm (16 in) from rear bumper towards front of vehicle and 30 mm (1-1/4 in) down from lateral bumper.



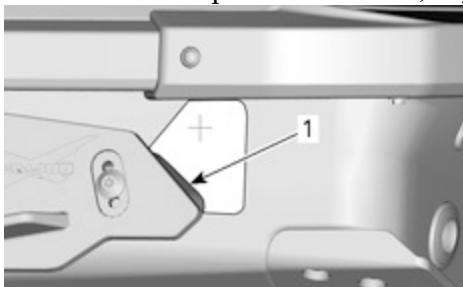
A. 410 mm (16 in)

B. 30 mm (1-1/4 in)

RXP Models

Precisely cut around the hole template B found on the last pages of this instruction sheet.

Position the template on the hull, adjacent to the contour of the base of the sponson.



1. Contour of the base of the sponson

All Models

1. Using a center punch, make a location mark on the hull surface.



typical -Marking center of hole to drill

2. Using a 27 mm (1-1/16 in) hole-saw, drill the outlet hole through the hull wall.

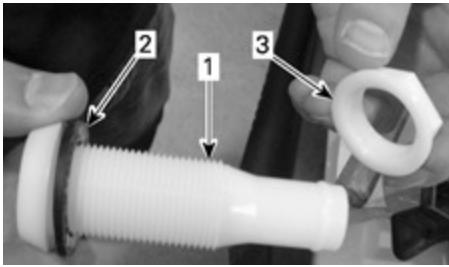


typical

1. Hole saw ($\varnothing = 27$ mm (1-1/16 in))

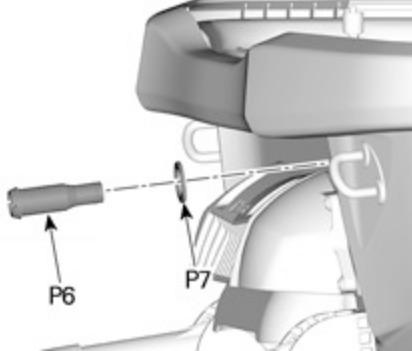
3. Clean the area using a vacuum cleaner.

4. Prepare pump outlet components.



typical

1. Outlet fitting [P6]
2. Gasket [P7]
3. Outlet fitting nut
5. Install the gasket on the outlet fitting.
6. From outside the hull, insert the outlet fitting through the new hole.



typical

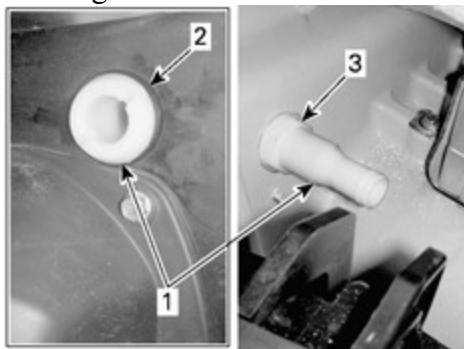
7. While holding the fitting on the exterior of the hull, install the nut on the fitting from inside the hull.
8. Hold the fitting nut steady using channel lock pliers, and have an assistant use a washer (or a flat tool) inserted in the fitting's notches to tighten it from the outside.



typical - Tightening of fitting

1. Washer

NOTE: After tightening the fitting nut, make sure the gasket is compressed all around the fitting to provide a watertight seal.



typical

1. Outlet fitting [P6]
2. Gasket [P7]
3. Outlet fitting nut

Installing Bilge Pump Hose and Electrical Harness

All Models

1. Apply small amount of DIELECTRIC GREASE (P/N 293 550 004) in the bilge pump connector.
2. Connect the pump to the harness connector.

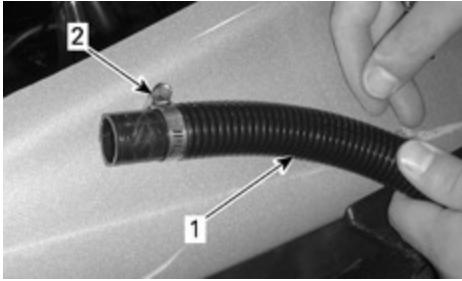


3. Locate the vent hole in the bilge pump hose [P5].



1. Vent hole positioned upwards

4. Insert a screw clamp on the bilge pump hose end that is furthest from the vent hole.



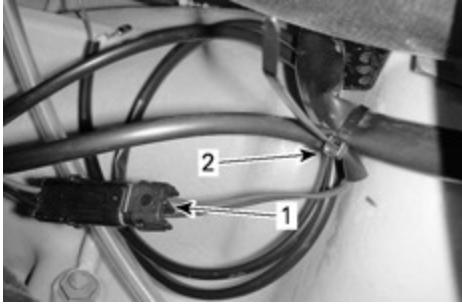
1. Pump hose [P5]

2. Screw clamp [P8]

5. Connect hose end to pump outlet.

5.1 For models with rear access holes, connect the hose end (furthest from the vent hole) to the pump outlet.

5.2 For models without rear access holes, connect the hose end (nearest from the vent hole) to the pump outlet.



Typical

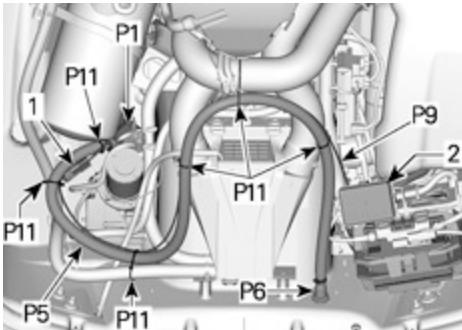
1. Harness [P9] connector

2. Locking tie [P11]

6. Route the bilge pump hose [P5] and electrical harness [P9] as per following illustrations.

7. Secure the pump harness and hose with locking ties [P11] at approximately every 35 cm (14 in) as needed.

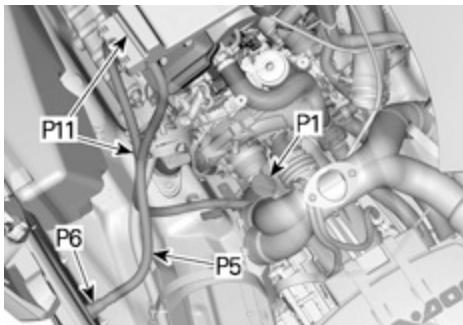
Models with rear access holes



hose and harness routing (deck removed for clarity)

1. Bilge pump electrical connector
2. Fuse box (starboard side)

NOTICE Pay attention to the vent hole. It must be positioned upwards at the highest possible point of the hose routing for back-flow prevention . Keep wiring and hose away from moving or sharp edged parts
Models without rear access holes



hose routing (deck removed for clarity)

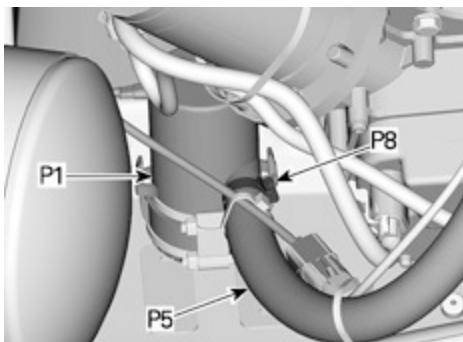
1. Bilge pump electrical connector



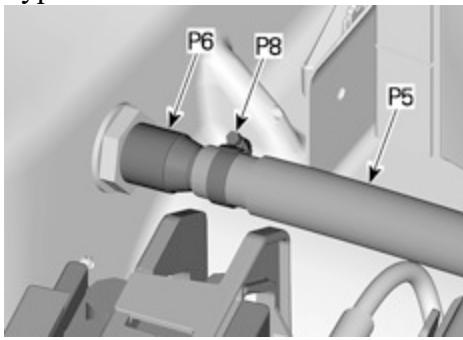
1. Vent hole

NOTICE Pay attention to the vent hole. It must be positioned downwards at the highest possible point . Keep wiring and hose away from moving or sharp edged parts

All Models



Typical



Tightening torque

Hose clamps

$3.7 \pm 0.3 \text{ N}\cdot\text{m} (33 \pm 3 \text{ lbf}\cdot\text{in})$

NOTE: To ease installation, tighten the clamp to a snug fit on the hose prior to installing the hose on the fitting. Then install the hose on the fitting and move the clamp over the fitting. Orient the clamp upwards to facilitate access for tightening.

Electrical Connections

1. Disconnect BLACK (-) battery cable then the RED (+) cable.

WARNING

Always disconnect battery cables exactly in the specified order.

Models with rear access holes

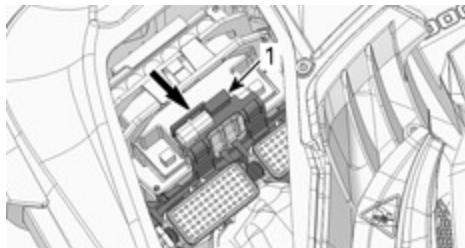


typical

1. BLACK (-) cable

2. RED (+) cable

2. Lift and push the top of electrical component support to unlock it from the battery holder. Move support aside to make room.

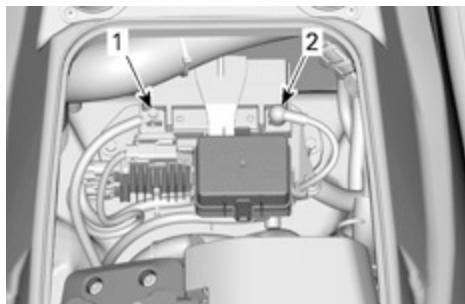


typical

1. Electrical component support

3. Detach fuse box from the electrical component support.

Models without rear access holes



typical - GTX RXT and Wake pro shown

1. BLACK (-) cable first

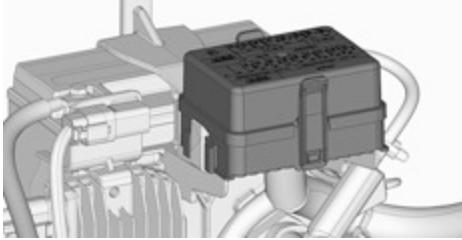
2. RED (+) cable last

NOTE: RXP models have their fuse box behind the front storage compartment.



1. Access to fuse box on RXP models

4. Remove fuse box from electrical Component support



Fuse box

5. Move locking tabs aside to unlock the fuse box.
6. Remove fuse box cover.
7. Remove bus bar from row "D" and long bus bar from row "H".



Fuse Box - top view

1. Bus bar on D-row
2. Bus bar on H-row

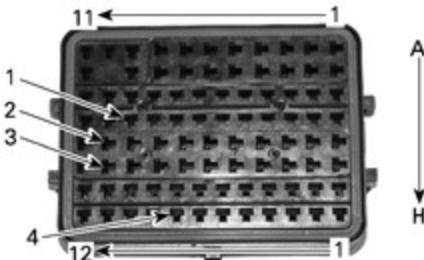
NOTICE Carefully remove bus bar by simultaneously pulling on both sides of bus bar during removal.

8. Inspect backside of fuse box.
 - 8.1 If location D10 is free, follow default wiring procedure.
 - 8.2 If location D10 is not free, follow alternative wiring procedure.
- NOTE: The fuse box pinout is identified at the back of the fuse box. Pay careful attention to the location numbers as the rows don't all have 12 contact locations.

30A RELAY	1. 5A	1. 5A
+12 VOLTS ACCESSORY	2. 15A	2. 15A
	3. 3A	3. 3A
	4. 3A	4. 3A
	5. 30A	5. 30A
	6. 30A	6. 30A
	7. 30A	7. 30A
	8. 30A	8. 30A
	9. 30A	9. 30A
	10. 30A	10. 30A
	11. 3A	11. 3A
	12. 3A	12. 3A
	13. 10A	13. 10A
	14. 10A	14. 10A
	15. 10A	15. 10A
	16. 5A	16. 5A
	17. 5A	17. 5A
	18. 10A	18. 10A
	19. 15A	19. 15A
COMMUNICATION (CAN HI)	20. 5A	20. 5A
+12 VOLTS ACCESSORY	21. GND	21. GND
	22. GND	22. GND

Default wiring procedure

1. Locate free contact locations H8, D10, E10 for default wire routing, and F10 for new wire connection.

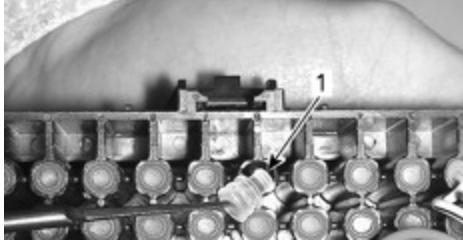


Regular routing - top view

1. D10
2. E10
3. F10

4. H8

- Using a small tool, pull out the seal plugs at the back of the fuse box from locations H8, D10, E10, and F10.



1. Seal out of its cavity - TYPICAL

3. Insert and lock wire terminals in their respective locations (see table that follows).

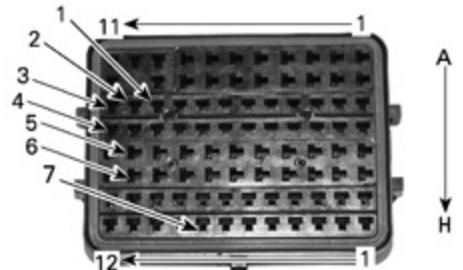


NOTE: Terminal locations have different orientations depending on their position in the fuse box. When inserting the terminals in their respective locations, make sure to follow the orientation of the cavity. When the terminals are inserted correctly, they will "click-in". Verify that the terminals are properly locked in by pulling back on the wire.

Action	Default wiring Location no	wire identification
Install	H8	Black
Install	D10	Red/ Purple
Install	E10	Red/Purple
Install	F10	Brown

Alternative Wiring Procedure

- If the default wire routing is not possible, use locations C10, C11, C12, D12, E10, F10 and H8.
- Remove wire from D12 and install in C12.



Alternative Wiring - Top view

- C10
- C11
- C12
- D12
- E10
- F10
- H8
- Using a small tool, pull out seal plugs at the back of the fuse box from locations (C10, C11, C12, D12, E10, F10 and H8).



1. Seal out of its cavity - TYPICAL

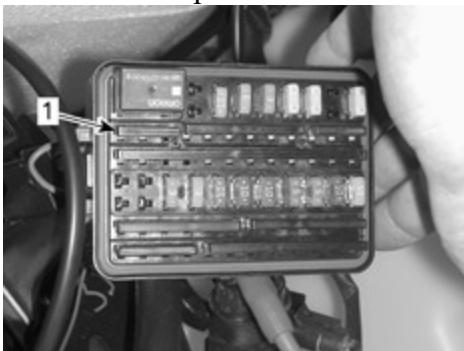
4. Insert and lock wire terminals in their respective locations (see table that follows).



NOTE: Terminal locations have different orientations depending on their position in the fuse box. When inserting the terminals in their respective locations, make sure to follow the orientation of the cavity. When the terminals are inserted correctly, they will "click-in". Verify that the terminals are properly locked in by pulling back.

Install	Alternative wiring cavity no	wire identification
Remove	D12	---
Install	C12	Removed wire from D12
Install	H8	Black - Pump Harness
Install	D12	Jumper Red/Blue
Install	C11	Jumper Red/Blue
Install	C10	Red/Purple - Pump Harness
Install	E10	Red/Purple - Pump Harness
Install	F10	Brown - Pump Harness

5. Install the 3 pin bus bar in row "C".

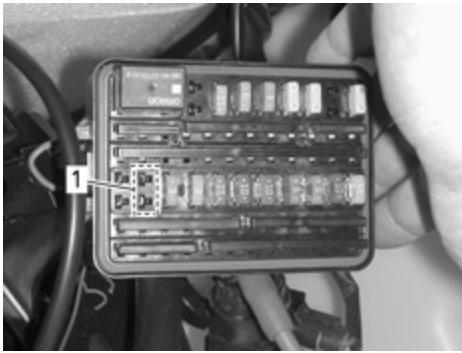


1. 3 pin bus bar in C-row

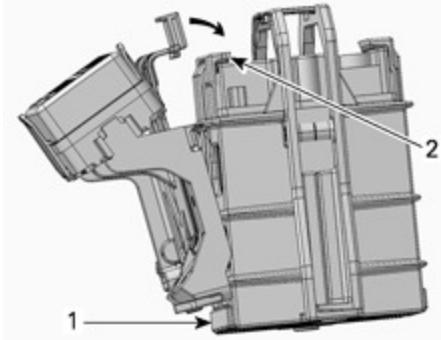
Both wiring procedures

1. Reinstall removed bus bar from row "H" and row "D".

2. Insert the new 3A fuse [P10] in fuse box locations E10/F10.



1. 3 amp fuse [P10] installation location
3. Install the fuse box and its cover.
4. Reinstall electrical component support.



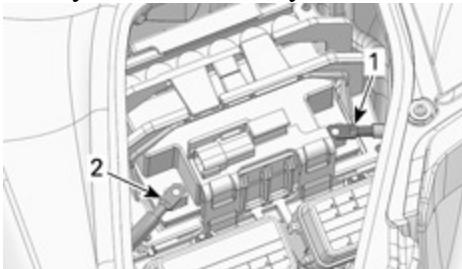
1. Lower receptacle
2. Upper retaining tab
- 4.1 Insert lower tabs from component support into lower receptacle.
- 4.2 Push component support onto upper retaining tab.



5. Connect RED (+) battery cable then the BLACK (-) cable.



Always connect battery cables exactly in the specified order.



typical

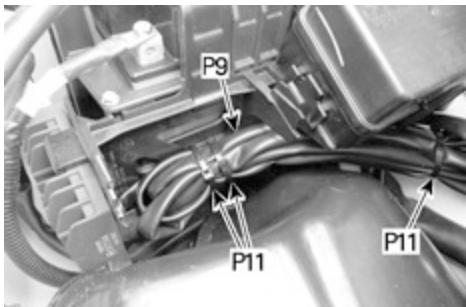
1. RED (+) cable
2. BLACK (-) cable
6. Check bilge pump operation.
7. Reinstall all removed components.

NOTE: When the watercraft is turned "OFF", the bilge pump will continue to operate for approximately 3 minutes to drain the bilge.

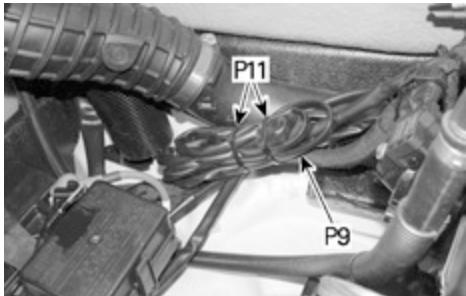
8. Secure harness using locking ties [P11].

NOTE: Extra length of wire should be looped together and securely tied using locking tie.

Models with rear access holes



Securing harness using locking ties
Models without rear access holes



Typical - Securing harness using locking ties - RXP not shown

[Templates.pdf](#)