



A/C Alternator Kit: Yamaha Drive & Drive2

P/N: 1ACYDR2DRK

Recommended it be installed with Curtis Cab:

Sandstone (p/n 1GCYD1-A, 1GCYD1)

Black (p/n 1GCYD2-A, 1GCYD2)

White (p/n 1GCYD3-A, 1GCYD3)

Black & White Security (p/n 1GCYD4-A, 1GCYD4)

Must be installed with Curtis 1ACUNIT-G2 & 1ACYDR2RFK

Approximate Installation Time *

Experienced Dealer Technician –1 Hour

Average Dealer Technician – 1.5 Hours

Do-It-Yourself – 2 Hours

(*Not including cab & other accessories)

Approximate Product Specifications

Weight: 39 lbs.

The contents of this envelope are the property of the owner. Leave with the owner when installation is complete.

Rev. B, 09/04/2018

p/n: IM-1ACYDR2DRK

TABLE OF CONTENTS

WARNINGS, TIPS, & REQUIRED TOOLS 3

VEHICLE PREPARATION 4

PULLEY INSTALLATION 5-8

WIRING INSTALLATION..... 8-14

FINISHING TOUCHES..... 15

CARE AND MAINTENANCE 15

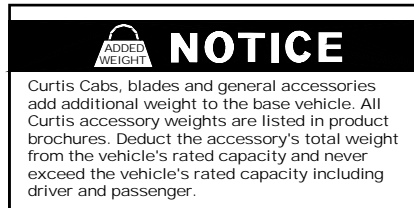
SERVICE PARTS 16-17

BOLT TORQUE SPECIFICATIONS..... 18

WARNINGS, TIPS, & REQUIRED TOOLS

Curtis accessories feature an assembly of parts designed for your vehicle which require adjustment and alignment of components to accommodate vehicle variations. For accurate installation, proper operation, and years of satisfaction, please read and understand the installation and owner's manual fully, prior to installing this accessory.

From all of us at Curtis, we thank you for choosing our product.



California Health and Safety Proposition 65 Warning: This product may contain chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

GENERAL INFORMATION BEFORE YOU START

HELPFUL HINTS:

- Refer to parts diagram found in the service parts section of this manual to help identify parts during the assembly process.
- To assist with the installation, leave all fasteners loose for later adjustment unless otherwise specified.
- Read and understand all instructions before beginning.
- Use proper personal protective equipment during all phases of installation.
- ALWAYS shut off engine before leaving the operator's seat to perform any portion of the procedures listed in this manual.
- ALWAYS disconnect the ground cable from the battery when working with any electrical components.
- Follow Lock-out / Tag-out procedures to maintain a safe work environment.

TOOLS REQUIRED

- Set of Metric & Standard Sockets (1/4" or 3/8" Drive)
- Set of Metric & Standard Open-End Wrenches
- Set of Metric & Standard Allen Wrenches
- Ratchet and Extensions
- 15/16", 1/2" Drive Socket
- 1/2" Drive Impact Gun
- #2 Phillips Screw Driver
- Flathead Screw Driver
- Torque Wrench
- Jig Saw (or similar)

KIT INSTALLATION

STEP 1: (VEHICLE PREP)

- 1.1 Install Yamaha Drive2 Roof Kit 1ACYDR2RFK and Air Conditioner 1ACUNIT-G2.

Instructions for these products are included within their respective kits.

- 1.2 Remove the seat from the vehicle.

- 1.3 Disconnect the negative battery terminal from the battery. See Figure 1.3

Tools

1/2" wrench or socket



Fig. 1.3 (Disconnect Negative Battery Terminal)

- 1.4 Remove the rear motor cover. Vehicles manufactured prior to 2017 will have a different motor cover. See Figures 1.4a and 1.4b.

Tools

5mm Allen wrench, ref. Fig. 1.4a.

Flat head screw driver, ref. Fig 1.4b

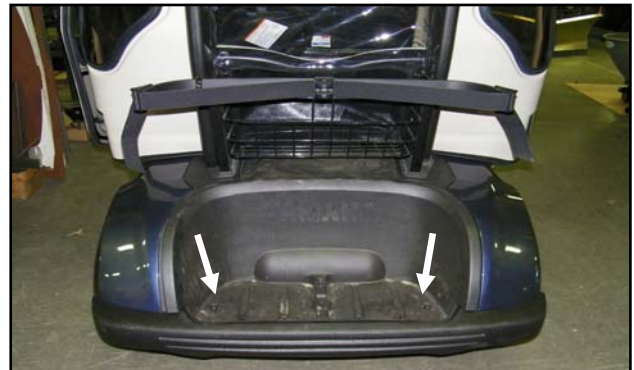


Fig. 1.4a (Remove Motor Cover 2017 & Later Models)



Fig. 1.4b (Remove Motor Cover 2016 & Earlier Models)

KIT INSTALLATION

STEP 2: (PULLEY INSTALLATION)

- 2.1 Loosen the Starter Generator and disengage its v-belt. See Figure 2.1.

Tools

4mm Allen wrench
17mm & 12mm sockets
10mm & 13mm wrench

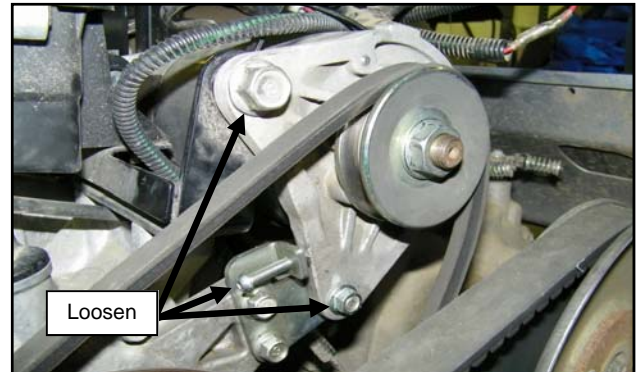


Fig. 2.1 (Loosen Starter Generator Tensioning Screw)

- 2.2 Remove the pulley from the starter generator. If there is a spacer in place with the pulley, remove that as well. Replace with the pulley provided with this kit. The pulley spacer (if present) will not be reused. An impact gun is required for both pulley removal and pulley installation. Refer to Fig. 2.2a.

Completely remove the bolts on the pulley side of the generator, leaving only one of the large bolts in place for the moment. Refer to Fig 2.2b.

Hardware Used

Generator pulley

Qty

1

Tools

Impact gun
15/16" socket

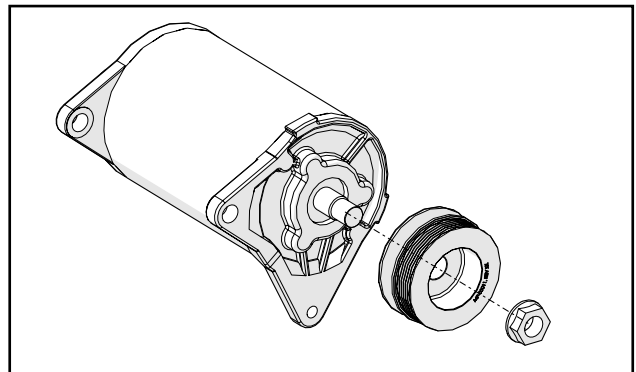


Fig. 2.2a (Install Pulley)

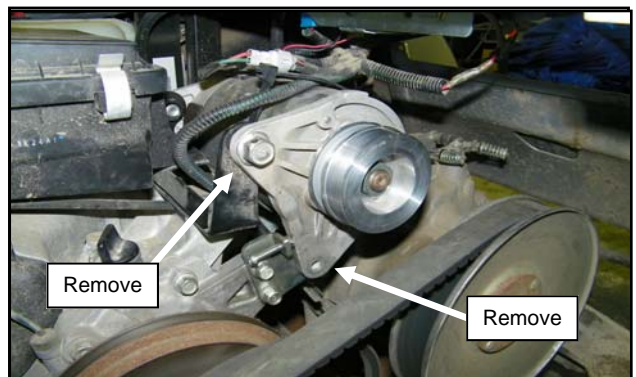


Fig. 2.2b (Remove Starter Generator Hardware)

KIT INSTALLATION

- 2.3 Install the bracket for the auxiliary alternator in the holes that were cleared in the previous step. Longer fasteners, provided with this kit, will replace those removed in the previous step.

Use the lower mounting hole set for vehicles with an independent rear suspension. See arrows in Fig 2.3a.

Use the upper mounting hole set for vehicles with a fixed axle. See arrows in Fig 2.3b.

Do not fully tighten fasteners until the next step.

Hardware Used

	<u>Qty</u>
Alternator Bracket	1
M12x1.25 x 40mm socket head cap screw	1
M8x1.25 x 35mm flanged button head screw	1
M12 washer	1
M8x1.25 flanged hex nut	1
Alternator shim, 8mm	1

Tools

5mm & 12mm Allen wrenches
13mm wrench

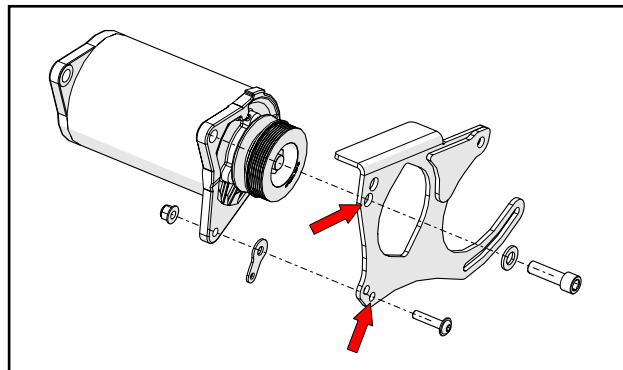


Fig. 2.3a (Alternator Bracket—Independent Suspension)

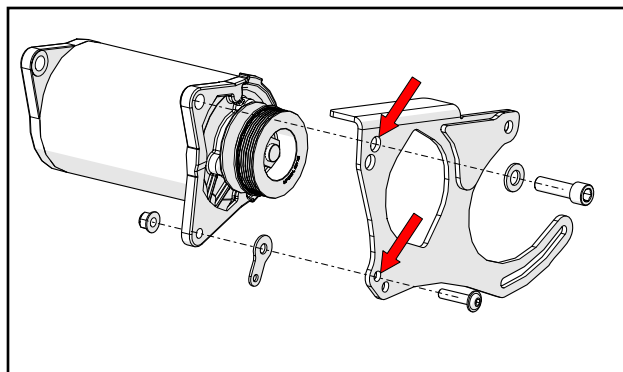


Fig. 2.3b (Alternator Bracket—Fixed Axle)

- 2.4 Per Figure 2.4, re-install the OEM v-belt onto the new starter generator pulley. Tension the v-belt, and tighten the screws that secure the starter generator.

Tools

4mm, 5mm & 12mm Allen wrenches
13mm wrench



Fig. 2.4 (Install Starter Generator Belt)

KIT INSTALLATION

- 2.5 Per Figure 2.5, install the alternator to the alternator bracket. Do not fully tighten the alternator bolts yet. The bolts must be snug, but loose enough to adjust the alternator along its bracket.

Install the alternator belt between the new starter generator pulley and the alternator pulley. Loosely install the hardware to secure the upper pivot bolt, ground wires will be connected here in later steps. Install the tensioning bolt hardware snugly enough to hold the belt in place.

Hardware Used

	Qty
Alternator Assembly	1
Alternator Spacer Tube	1
M10x1.5 x 50mm flanged cap screw	1
M10x1.5 flanged hex nut	1
M8x1.25 x 50mm hex head cap screw	1
M8 split lock washer	1
M8 fender washer	1
V-belt, 6 ribs	1

Tools

13mm & 15mm sockets
15mm wrench

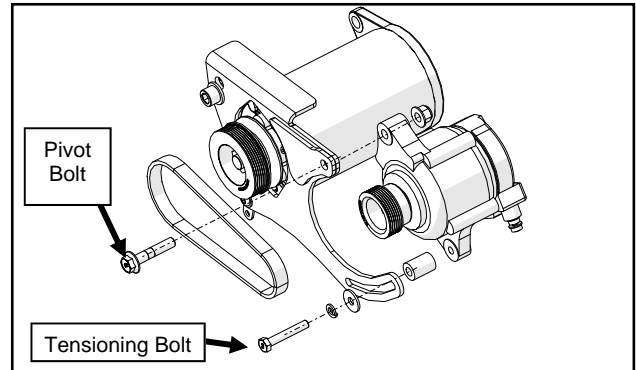


Fig. 2.5 (Install Alternator)

Steps 2.6—2.8 apply only to vehicle models with fixed axles.

Skip to Step 3.1 for vehicle models with independent suspension.

- 2.6 The vehicle's solenoid must be relocated. Remove the two bolts that hold the solenoid bracket to the vehicle's frame. See arrows in Fig. 2.6.

Tools

10mm socket



Fig. 2.6 (Remove Vehicle Solenoid Bracket)

- 2.7 Install the solenoid relocation bracket to the same holes that were used to remove the solenoid bracket in the previous step. Reuse the bolts from the previous step. See arrows in Fig. 2.7.

Tools

10mm socket



Fig. 2.7 (Attach Solenoid Relocation Bracket)

KIT INSTALLATION

- 2.8 Per Figure 2.8, install the vehicle's solenoid bracket to the solenoid relocation bracket (from the previous step).

Tools

3/8" socket

Hardware Used

1/4-20 x 5/8" Flanged Bolt

Qty

2



Fig. 2.8 (Reattach Vehicle Solenoid Bracket)

STEP 3: (WIRING INSTALLATION)

- 3.1 Locate the alternator ground wire (9SV-WH-00068).

The alternator ground wire is a single heavy gauge black wire with two ring terminals. See Figure 3.1a.

Remove the nut from the pivot bolt of the alternator that was installed loosely during Step 2.5. Connect one end of this harness to the pivot bolt. Do not fully tighten, there will be other wires grounded to this location.

Route the harness forward to the battery box and connect the smaller ring terminal of this harness to the negative battery terminal. See Figure 3.1b.

Use wire ties to secure this wire away from belts.

Hardware Used

Wire ties

5/16-18 flanged nut, stainless steel

Qty

2

1

Tools

1/2" wrench or socket

15mm wrench

15mm socket



Fig. 3.1a (Large Ring Terminal to Alternator)

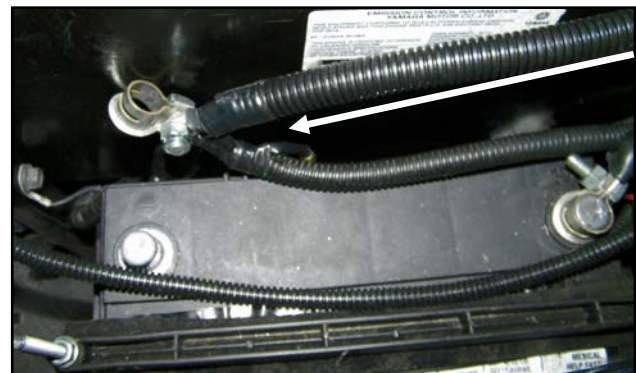


Fig. 3.1b (Small Ring Terminal to Battery Ground)

KIT INSTALLATION

Note: If electric heaters will be installed, proceed with their installation at this time.

If installing heaters with an A/C unit, it is recommended that the wire harness in that kit is routed with the main power harness at this time to ease assembly. Refer to the install manual for the heater mounting kit for additional details.

- 3.2 See Figures 3.2a thru d. Locate the power supply harness (9SV-WH-00065).

Route the power supply harness through the rear engine compartment. Orient the harness so that the alternator plug and the fuses will all remain in the engine compartment.

For 2017 and later models, exit the engine compartment on the driver's side of the vehicle through the rubber gasket that seals the roof's drain gutter. Trim the rubber gasket as necessary.

For 2016 and older vehicle models, the wire harness will have to pass through the plastic motor cover (removed in Step 1.4). The cover will have to be modified by adding a notch to allow the wire harness to pass through it. This can be completed at the end of the wire installation to get the best placement of the notch.

In the figures for this step, the vehicle is shown without its wire basket for clarity. Removal of the wire basket is not necessary to complete this step.

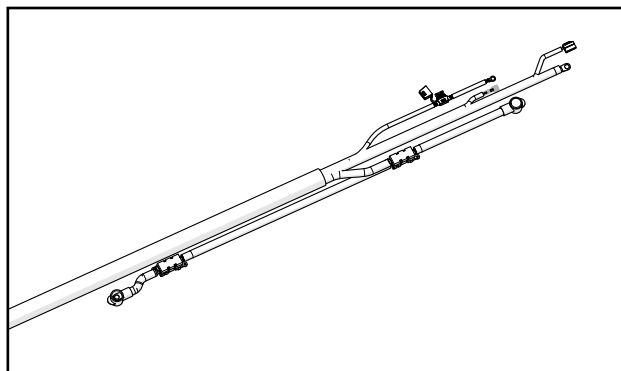


Fig. 3.2a (Fused End of Power Supply Harness)



Fig. 3.2b (Routing on 2017 & Newer Models)



Fig. 3.2c (Routing on 2016 & Older Models)



Fig. 3.2d (Cut Engine Cover)

KIT INSTALLATION

- 3.3 Per Figure 3.3, route the power supply harness along the inside of the vehicle's gutter, and into the cab through the vinyl pocket under the roof on the driver's side of the vehicle.

Install p-clamps around the harness and fasten to the vehicle using the drain gutter's fasteners.

Hardware Used

7/8" p-clamp

Qty

2

Tools

4mm Allen wrench

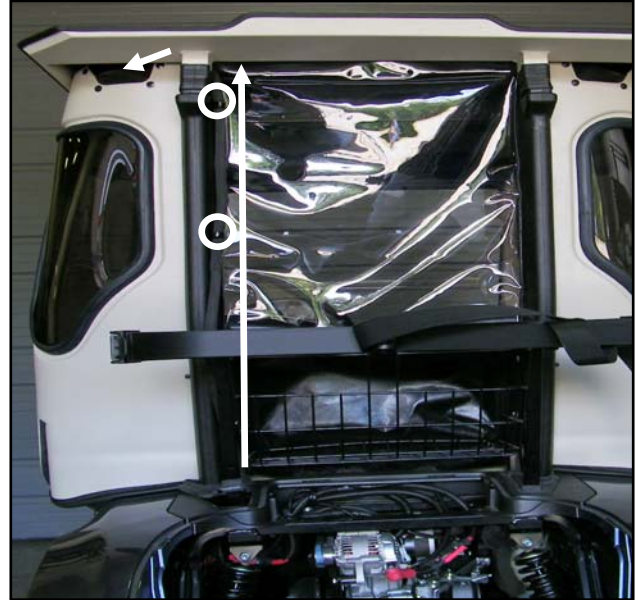


Fig. 3.3 (Route Power Cable into cab)

- 3.4 Per Figure 3.4, connect the ring terminal on the 5-amp fuse holder at the end of the purple wire to the vehicle solenoid.

The ring terminal must be attached to the large lug on the starter side of the solenoid (not the battery side). *If this ring terminal is on the wrong side of the solenoid, the controller will not turn off with the engine.*

NOTE: The solenoid is located under the seat on vehicles with independent rear suspension. For vehicles with fixed rear axles, the solenoid is in the engine compartment along the frame and beneath the seat.

Tools

13mm socket



Fig. 3.4 (Purple Wire, Shown On Fixed Axle Model)

- 3.5 Per Figure 3.5, connect the heavy black wire of the power supply harness to the ground bolt of the alternator.

This is the final component that connects to ground; fully tighten this bolt.

Inspect belt tightness, and adjust as required.

Tools

15mm socket

15mm wrench



Fig. 3.5 (Secure Ground Wires)

KIT INSTALLATION

- 3.6 See Figures 3.6a thru c. Install the heavy red wire of the power harness. This wire forks into two wires.

Route one leg of the red wire into the battery compartment, refer to Fig. 3.6a. Secure to the positive terminal of the battery with stainless steel nut.

Route the other section of the heavy red wire to the alternator. Secure this wire to the post of the alternator. Cover the connection with the wire harness's rubber boot. See black arrow in Figure 3.6c.

Hardware Used

5/16-18 flanged nut, stainless steel

Qty

1

Tools

1/2" wrench or socket

10mm wrench or socket

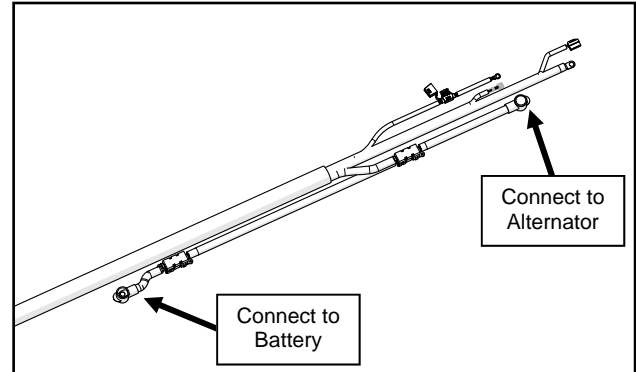


Fig. 3.6a (Power Supply Harness Red Wire Overview)



Fig. 3.6b (Power Supply Harness Red Wire to Battery)



Fig. 3.6c (Power Supply Harness Red Wire to Alternator)

- 3.7 Per Figure 3.7, connect the white plug of the power supply harness into the receptacle of the alternator. Only the top terminal of the "T" on the plug is used.

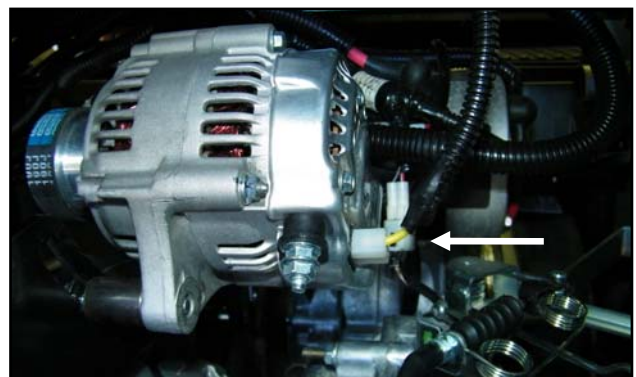


Fig. 3.7 (Alternator Plug)

KIT INSTALLATION

3.8 Locate the signal wire harness (9SV-WH-00075).

Connect the signal wire harness to the brown wire of the power supply harness. See Figure 3.8.

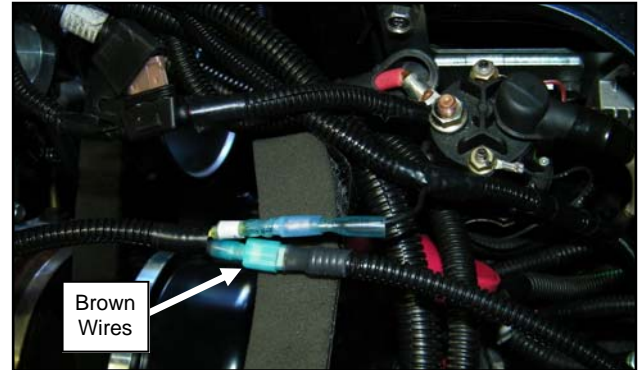


Fig. 3.8 (Install Signal Wire Harness to Power Supply)

3.9 Below the OHV cover on the engine, there are two OEM wire connections. Remove the lower connection (orange wire) from its terminal. Install to the signal wire harness onto the terminal where the orange wire was.

Connect the orange OEM wire to the signal wire harness. Splicing into this wire enables the air conditioner to detect when the motor is running. See Figure 3.9.



Fig. 3.9 (Install Signal Wire Harness to Vehicle)

3.10 See Figures 3.10a and b. Route the signal wire harness around the engine compartment and towards the power supply harness.

For 2017 and newer models, route the signal wire harness over the engine and next to the air cleaner.

For 2016 and older models, route the signal wire harness over the gas tank and along the passenger's side of the vehicle.

In each case, it is important to use wire ties to secure the wire harness away from any moving components, and away from any hot components.



Fig. 3.10a (Route Signal Wire Harness 2017 & Newer)



Fig. 3.10b (Route Signal Wire Harness 2016 & Older)

Hardware Used

Wire Ties

Qty

4

KIT INSTALLATION

- 3.11 Per Figure 3.11a, secure as many wires as possible to the frame of the vehicle using the p-clamp provided. Orient the p-clamp as far away from the belts as possible. An M6 screw has been provided if the vehicle is not so equipped.

Fixed axle models will use the same screw and location as the solenoid relocation bracket, on the driver's side of the vehicle. See Figure 3.11b.

Use wire ties to secure any loose wires that cannot be gathered into the p-clamp.

<u>Hardware Used</u>	<u>Qty</u>
Wire Ties	2
M6x1 x 16mm flanged cap screw	1
2" P-Clamp	1



Fig. 3.11a (P-Clamp Independent Suspension Models)

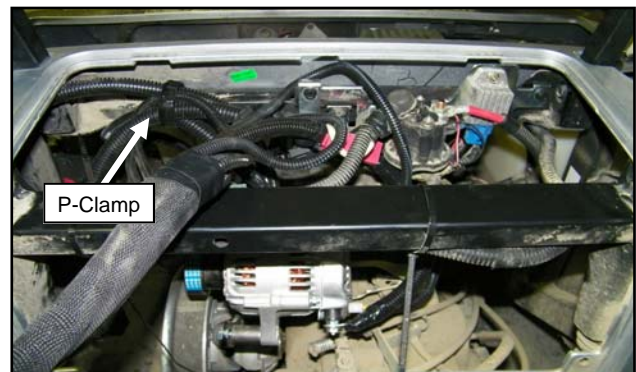


Fig. 3.11b (P-Clamp Fixed Axle Models)

- 3.12 Slip the supplied grommet over the end of the power supply harness as shown. Figure 3.12.

<u>Hardware Used</u>	<u>Qty</u>
Grommet	1

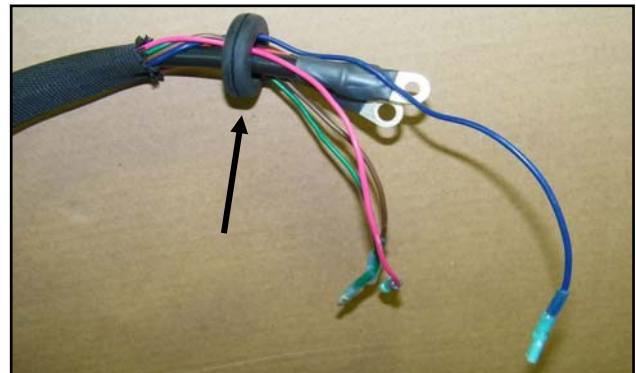


Fig. 3.12 (Install Rubber Grommet)

- 3.13 There are several hole plugs in the air conditioner box to allow for entry of the power supply harness. On this vehicle, the power supply harness will enter through the hole on the driver's side of the vehicle. Remove this hole plug. Figure 3.13.

Route the power harness into the air conditioner through the hole exposed in this step. Fit grommet into the hole to protect the wires.



Fig. 3.13 (Route Power Cable into A/C)

KIT INSTALLATION

- 3.14 Route the power cable through the unit, and loop around inside of the A/C until the ring terminals reach the solenoid in the rear, driver's side corner of the vehicle. Figure 3.14.

Secure the heavy red wire to the unused lug of the solenoid.

Loosen the fastener holding other A/C ground wires in place, then secure the heavy black wire to the same location.

Tools

1/2" socket
7/16" wrench
5/32" Allen wrench

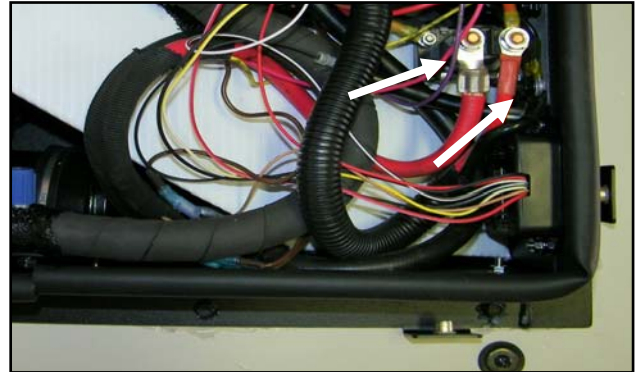


Fig. 3.14 (Route Power Cable into A/C)

- 3.15 Make the remaining connections to tie the power cable to the A/C unit

Relay Harness Terminal	Destination
Purple Wire	Purple Wire of Main Power Harness (WH-00065)
Pink Wire	Pink Wire of Main Power Harness (WH-00065)
Controller Wire	Destination
Brown Wire	Brown Wire of Main Power Harness (WH-00065)

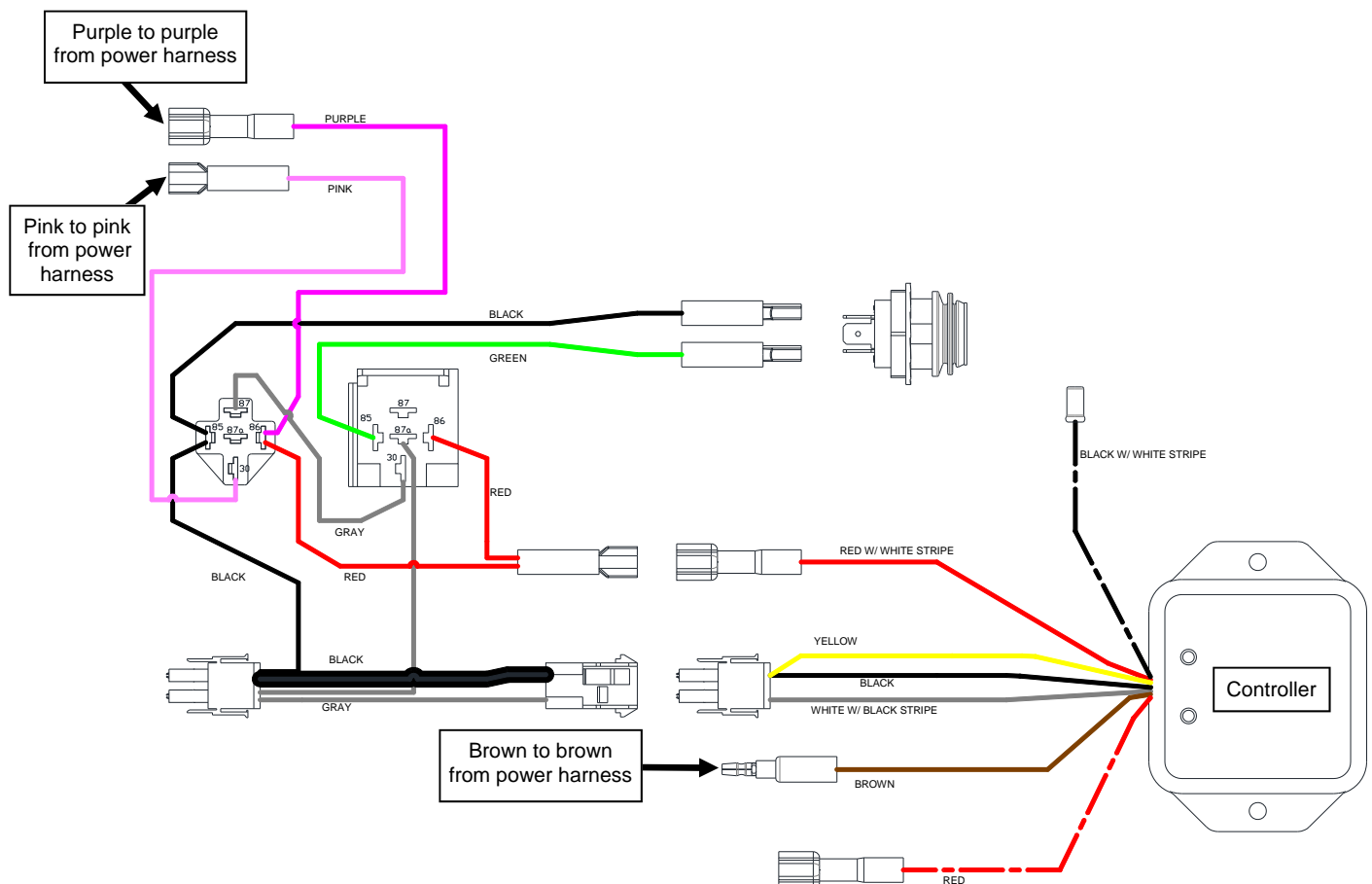


Fig. 3.15 (Connect Relay Harness)

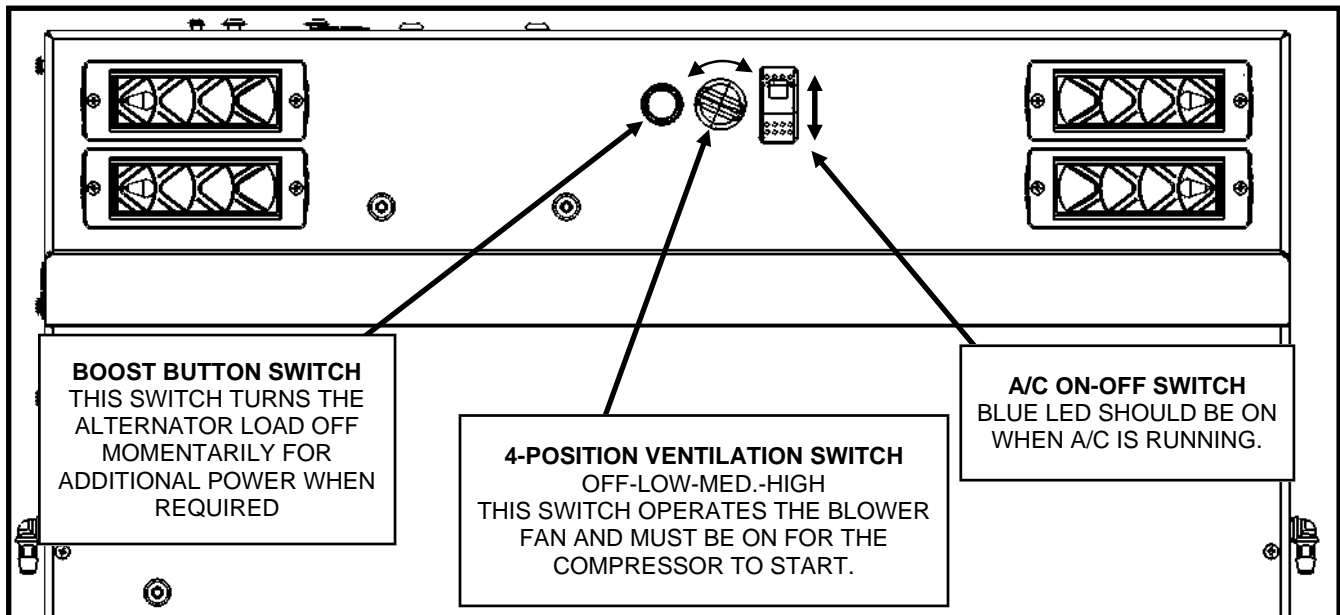
KIT INSTALLATION

STEP 4: (FINISHING TOUCHES)

- 4.1 Inspect all belts for tightness, adjust as necessary.
- 4.2 Inspect all fasteners, they should be fully tightened before starting the vehicle.
- 4.3 Inspect all wires to make sure they are sufficiently tied down and away from hot or moving parts.
- 4.4 Reconnect the negative battery terminal.
- 4.5 Start the vehicle in neutral, and turn on the air conditioner. Run the engine at full RPM (above 2400 RPM). Cool air should begin to flow after 30 to 60 seconds. Verify that the air conditioner is functioning. If it is not functioning, refer to the troubleshooting section in the A/C manual.

The A/C compressor should continue to operate after the engine stops for approximately 90 seconds and the fan for approximately 2 minutes, unless the fan switch is turned to the off position on the A/C unit.

- 4.6 Install the cover to the air conditioner, detailed instructions and hardware are provided with the roof kit.



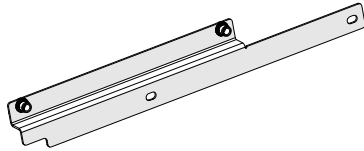
CARE AND MAINTENANCE

- Check and tighten hardware after 20 hours of operation. Check that belts are properly tightened. Periodically inspect and tighten hardware for the remainder of the unit's life.
- Wash the painted surfaces of the unit with commercial automotive cleaning products.

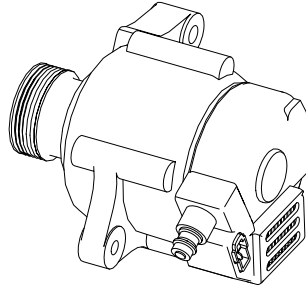
YAMAHA DRIVE2 A/C ALTERNATOR KIT

SERVICE PARTS

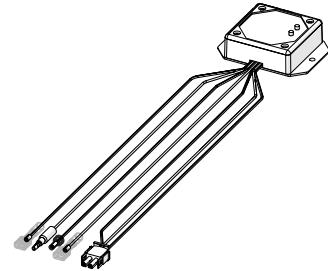
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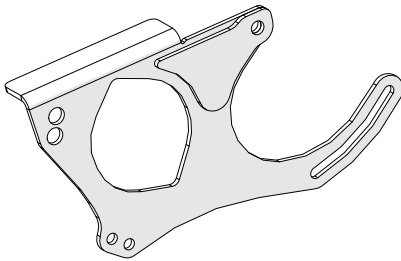
ALTERNATOR, 93MM DENSO STYLE
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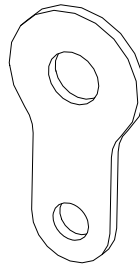
CONTROLLER
P/N: 8SV-114-00017



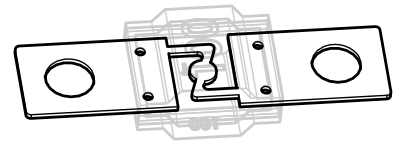
BRACKET, AUXILIARY ALTERNATOR
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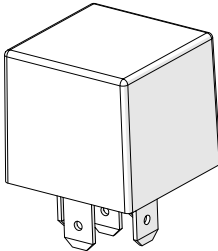
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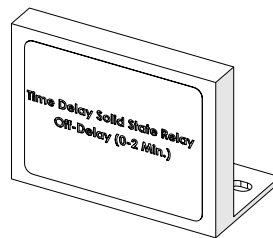
100 AMP FUSE
P/N: 9SV-85-00-0011



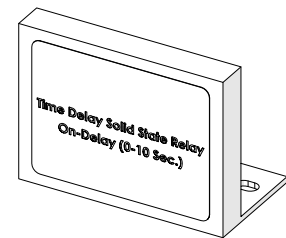
RELAY, 12V, 20/40 AMP
P/N: 9SV-85-01-0022



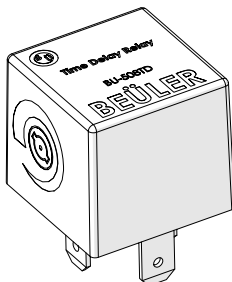
TIME DELAY OFF RELAY, 2 MIN
P/N: 8SV-114-00022



TIME DELAY ON RELAY, 5 SEC
P/N: 8SV-114-00023



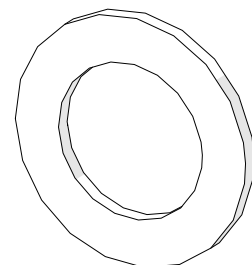
TIME DELAY OFF RELAY, 90 SEC
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BELT
P/N: 9SV-9BLT-02



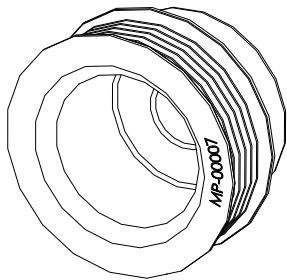
ALTERNATOR PULLEY SHIM
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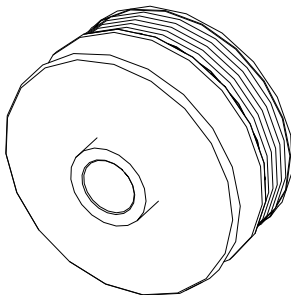
YAMAHA DRIVE2 A/C ALTERNATOR KIT

SERVICE PARTS

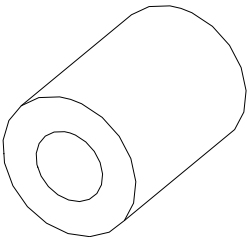
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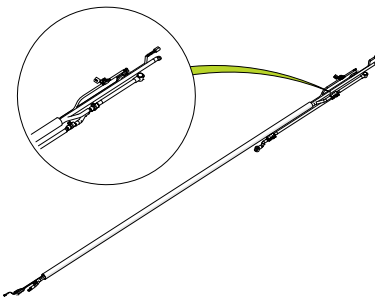
PULLEY, GENERATOR
P/N: 9SV-MP-00011



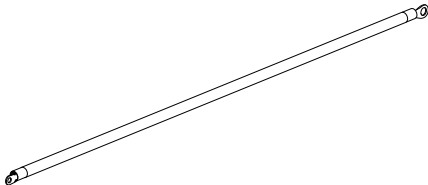
ALTERNATOR SPACER TUBE
P/N: 9SV-MP-00012



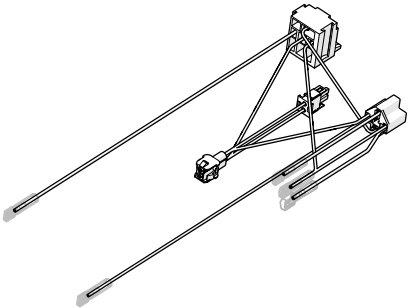
POWER SUPPLY HARNESS
P/N: 9SV-WH-00065



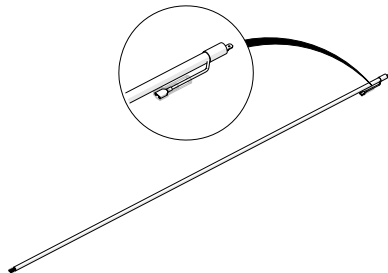
ALTERNATOR GROUND WIRE
P/N: 9SV-WH-00068



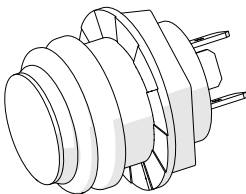
RELAY HARNESS
P/N: 9SV-WH-00074



SIGNAL WIRE HARNESS
P/N: 9SV-WH-00075



PUSH BUTTON, 14V DC, 10A, SPST
P/N: 9SV-85-03-0033



ADDITIONAL SERVICE PARTS

PART NUMBER	DESCRIPTION
9SV-HWK-00064	HARDWARE KIT, A/C DRIVE KIT, YAMAHA DRIVE2








BOLT TORQUE

BOLT TORQUE SPECIFICATIONS

GENERAL TORQUE SPECIFICATION TABLE

Use the following torques when special torques are not given. These values apply to fasteners as received from suppliers, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads. Remember to always use grade five or better when replacing bolts.

IMPORTANT: On all PLATED GRADE 8 bolts, reduce torque 15% from listed bolt torque specification.

SAE Grade No.		2				5				8*			
Bolt head identification mark as per grade. NOTE: Manufacturing Marks Will Vary						  				  			
Bolt Size		TORQUE				TORQUE				TORQUE			
Inches	Millimeters	Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.35	5	6	7	8	9	11	12	15	12	15	16	20
5/16	7.94	10	12	14	16	17	20.5	23	28	24	29	33	39
3/8	9.53	20	23	27	31	35	42	48	57	45	54	61	73
7/16	11.11	30	35	41	47	54	64	73	87	70	84	95	114
1/2	12.70	45	52	61	70	80	96	109	130	110	132	149	179
9/16	14.29	65	75	88	102	110	132	149	179	160	192	217	260
5/8	15.88	95	105	129	142	150	180	203	244	220	264	298	358
3/4	19.05	150	185	203	251	270	324	366	439	380	456	515	618
7/8	22.23	160	200	217	271	400	480	542	651	600	720	814	976
1	25.40	250	300	339	406	580	696	787	944	900	1080	1220	1464
1-1/8	25.58	-	-	-	-	800	880	1085	1193	1280	1440	1736	1953
1-1/4	31.75	-	-	-	-	1120	1240	1519	1681	1820	2000	2468	2712
1-3/8	34.93	-	-	-	-	1460	1680	1980	2278	2380	2720	3227	3688
1-1/2	38.10	-	-	-	-	1940	2200	2631	2983	3160	3560	4285	4827

*Thick Nuts must be used with Grade 8 bolts

METRIC BOLT TORQUE SPECIFICATIONS

5.6

8.8

10.9

Size of Screw	Property Class	Course Thread			Fine Thread		
		Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-9.4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		55-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.6-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6