

INSTALLATION INSTRUCTIONS

PT-A-404 Rear HVAC System for 2015-2023 FORD TRANSIT (Gas or Diesel Engine) WITHOUT OEM rear AC/Heat Prep Package Fittings For Installation with Havis Prisoner Transport Insert

Warning – Do not attempt to install A/C units unless you are experienced with servicing A/C systems!

****Not recommended for Vans with All Wheel Drive because of minimum space for running hoses along frame rail.**

TOOLS REQUIRED:

A/C Refrigerant Recovery Unit
3"Hole saw
Phillips screwdriver

Drill and Drill bits
Wire Cutter / Crimper Socket set
Straight screwdriver

1.25"Hole saw
CV Boot crimp tool

PARTS AND HARDWARE:

<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART#</u>
1	O2 Cool Air Tech 2 Kit for Ford Transit Van	PRM97463
1	O2 Cool Air Tech 2 fittings	PRM97505
2	2 ½" "Y" Duct Connectors	PRM97483
4	Ceiling Vent Cover Bracket	25567
12	3" Hose Clamp	GSM20045
12	8 x 3/8" Screw	GSM33179
36	2 ½" Air Duct Hose (36 foot length)	PRM97475
20	15" Wire Tie	GSM20036
1	Switch Plate (HS93361)	C-PS-4-L
2	Switch Plate Labels (REAR A/C HEAT)	C-LABEL-REAR-AC-HEAT



NOTES:

- Check for obstructions (Wires, brake lines, fuel tank, etc.) before drilling any holes!
- These instructions include specific details for installing AC /Heat system with the Havis, Inc. Prisoner Transport insert. Some details may be slightly different than the O2 Cool instructions
 - Carefully read all instructions before installing any Havis, Inc. products.

O2 Cool Air Tech 2 Kit for Transit Van / Havis Kit # PRM97463 (includes the following)

O2 Cool Part Numbers

(10)	02 000 015	Linestake clamp, 2"
(1)	02 000 021	Clamp, Dr Hose 7/8
(1)	02 000 043	Washer, 1/4 Flat Zinc
(1)	02 000 053	Grommet, 1" hose, 1 1/4" OD
(1)	02 000 054	Grommet, 3" hose
(20)	02 000 074	Screw, 14x1 Hex Washer Tek Zinc
(2)	02 000 106	Speed clip, #10
(3)	02 000 132	Linestake clamp, 2" twisted ends
(1)	02 000 252	Bolt, 8mm -1.25 x 65
(20)	02 000 378	Wire tie, 14 x 5/16, 120# Pull
(16)	02 000 390C	Clamp, #10 Worm gear Heater Hose 5/8"
(2)	02 000 418	Screw, 10x1/2 hex washer type AB
(1)	02 000 448	Bolt, 1/4-20 x 7/8"
(1)	02 000 520	Nut, 1/4-20 Hex Zinc
(.5ft)	04 000 007	Hose, 1/2 ID Drain - clear
(6ft)	04 000 010	Tube, Convo 1"
(6ft)	04 000 077	Tube, Convo 1/4"
(2)	05 000 020	Plastic Wye, 5/8 OD
(2)	05 000 050	Splice, 5/8 Heater Hose
(2)	05 000 110	Ell, 60 5/8 ID x 4.5" Heater
(1)	05 000 295	<i>Inline Booster Pump (Havis # PRM98233)</i>
(1)	06 001 670	Plate, ATII Transit Mtg
(.666ft)	08 000 017	Tape, Prestite, Refrigerant
(3 ft)	08 000 124	Sleeve, Fire Protective 2" I.D.
(1)	08 000 164	Washer, Sealing, 11mm GM
(1)	09 000 424	Inst. Instr. Transit Tie In
(1)	62 000 274	Hose 5/8 OEM Heater x 75' feet
(1)	62 000 584	Hose #6 AOC x 30' feet
(1)	62 000 585	Hose Assy, #10 AOC x 30' feet
(1)	02 000 118	Nut, 7/16-28 zinc
(1)	63 000 007	Trim lock, 1' 7"
(1)	63 000 705	Valve kazoo 5/8" ID x 3"
(1)	63 001 049	Water Valve Bag, 12 Volt 2 Port (63 001 049 Kit includes the following)
(1)	01 000 136	<i>Relay, 12v 50/20 Amp</i>
(1)	01 000 644	<i>Water valve relay harness</i>
(4)	02 000 075	<i>#10 x 3/4 Hex washer screw</i>
(2)	02 000 390	<i>Worm gear clamp</i>
(1)	05 000 852	<i>12 v Electric water valve (Havis # PRM97506)</i>
(1)	64 000 226	Elec bag, 15 Transit ATII
(1)	66 000 257	Power Pak AT II plate fin coil
(1)	68 000 032	Harness assy, 20A 239 Power Relay
(1)	65 000 011	Warranty Bag, Commercial

Notes:

Make sure to remove protective plugs or caps on fittings prior to installation.

This kit may include extra parts not needed for this specific vehicle application.

**When recharging the Air Conditioning system, you will need to add -
3 lbs total refrigerant
2 ounces refrigerant oil**

Refrigerant total may vary slightly depending on final air duct temperature test results.

**Check OEM vehicle specifications for proper Antifreeze/ Coolant.
Approximately 1/2 gallon of additional coolant required.**

(1) **63 001 234 kit Ford Transit Non-Prep PKG fittings kit /Havis # PRM97505 (includes the following)** **Also includes fittings for evaporator connections (Bolt and washer for tie in fitting included)**

(1)	05 000 813	Ell, 180 #6 FOR x 6 CF
(1)	05 000 484	Strt, #10 FOR x 10 CF
(1)	05 001 145	High & Low Block Fittings, Tie-In Ford Transit
(1)	05 000 507	90 #10FOR x 10 CF
(1)	05 000 479	Strt, #6 FOR x 6 CF



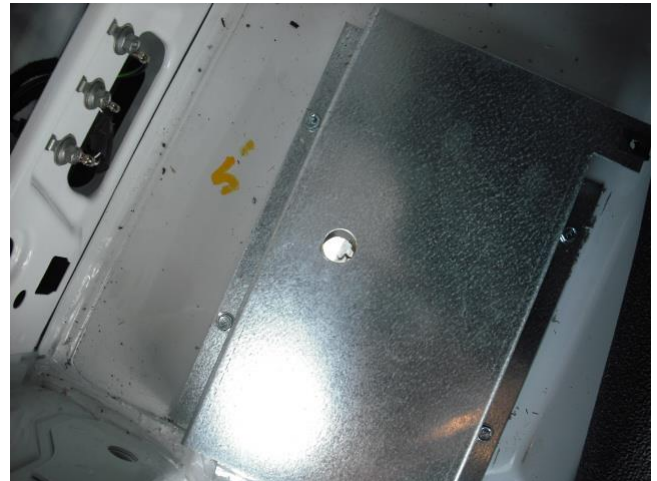
Ford Transit O2 Cool kit



Havis vent adaptor kit



Remove the OEM tie down hook. Uncoil all of the hoses on the floor and mark one of the heater lines. Using red tape about every 24" this will be your push line.



Install mounting plate to the floor behind the driver side wheel well, lining up the floor rib to the edge of the plate. Attach with (4) 5/16" self-tapping screws. Drill drain hose hole through floor using template on the plate.



Attach heater hoses w/ (2) worm gear clamps and a/c lines to unit with the push line marked in red to the bottom of the coil. Crimp on the #6 evap fitting to the #6 liquid line. Crimp on the #10 evap fitting to the #10 suction line. Now attach the fittings using the appropriate "O" rings, lubing them with mineral oil. Wrap the suction line with prestite tape. Plug in the wire harness and ground the black wire to a good ground. Run wiring forward.



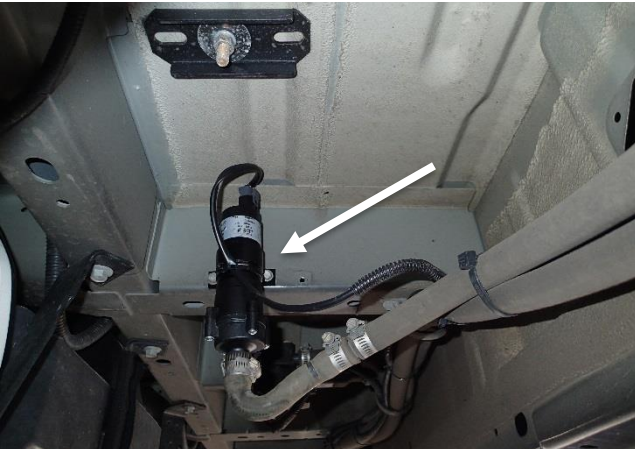
Drill a 3" hole at this location in front of the wheel well. Take note of the spot welds and the body seam. Your hole should be between these two points. Insert 3" grommet and fasten with three (3) 5/16" self-tapping screws.



Run hoses and harness over the wheel well. Use tie-wraps to keep hoses and harness together. Determine what wiring is needed to go to the pumps and what wiring needs to go to the switches. Run wiring accordingly.



Run hoses and pump harnesses down through 3" hole and out the bottom of van. The access hole must be sealed after all parts are installed and the system is tested.



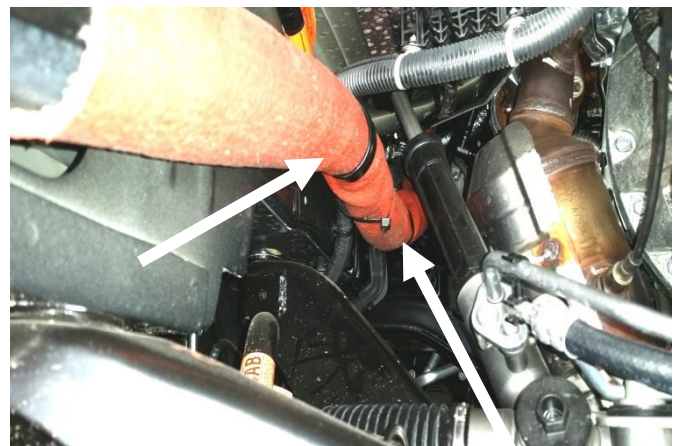
Mount booster pump per O2 Cool instruction details. See attached print for heater hose hook up.
(Pump O2 Cool # 05 000 295)
(Pump Havis # PRM98233)



Mount water valve per O2 Cool instruction details. See attached print for heater hose hook up.
(Water valve O2 Cool # 05 000 852)
(Water valve Havis # PRM97506)



Continue forward to the engine compartment. Route the hoses to the inside of the sub frame. Add a hose clamp at the bend to keep the hoses clear of any sharp edges.



When routing the hoses up towards the engine add the heat sock. Also be sure to clamp the hoses clear of the steering assembly.

Note: Orange Heat protective tube may be silver.

Dash side



Run the heater hoses on the inside of the brake booster. And the a/c lines over the top of the brake booster. Note how the a/c lines are run beside the brake booster. Take care running these, due to the windshield wiper linkage movements



Cut the factory heater lines and install splice, and elbow, and (4) 02 000 390 clamps. The factory push line is on the passenger side of engine compartment. There is a factory splice in the push line. Remove the splice for ease of installation



Install (1) 62 000 27 heater hose assembly w/ 02 000 390 clamp to the wye. Install (1) 62 000 27 heater hose assembly w/ 02 000 390 clamp to the wye



The return is on the top of the valve cover



Be sure to evacuate the A/C system

This is the tie in point for the a/c. Remove bolt and stud, and discard. Install the tie in block that is supplied in the kit and the "O" rings.



Hook up the liquid and suction lines from the rear unit here. Using (05 000 813) 180deg. liquid fitting and "O" ring lubed with mineral oil. Hookup the suction fitting (05 000 484), crimp fittings to appropriate lines. Vac and charge system



Another view of the air conditioning lines.

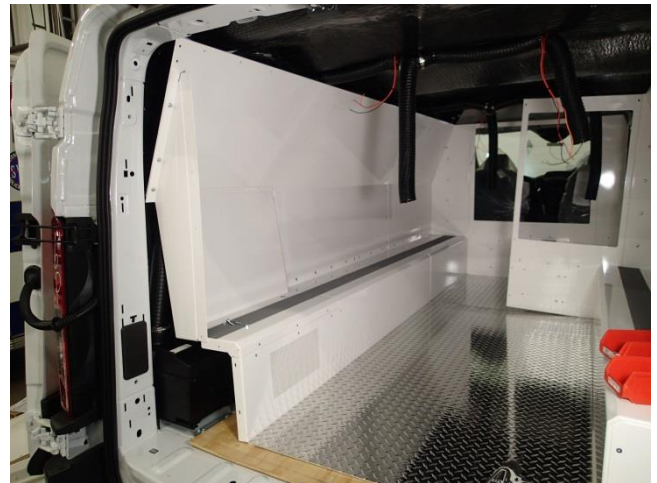
****Triple check all hose routing and connections****



Attach the hose and clamps to the HVAC blower assembly **Note: Carefully measure length of duct hose needed for each vent and "Y" connections before cutting.**



Run a single long length of hose and attach the "Y" and split the hose into two vents in driver and passenger side front ceiling. This will provide a total of four ceiling vents.



Install insert leaving the ceiling panels out. Loop the hoses over the side of the wall. Install ceiling panels and drop the hoses into their respective holes.



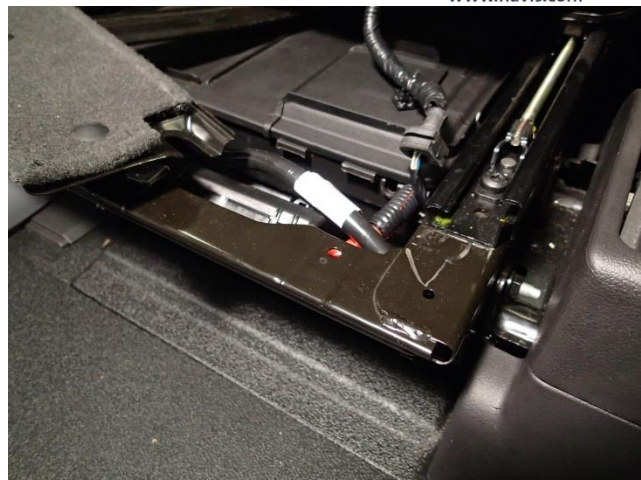
Route hose into ceiling holes and **cut off any extra slack.** Attach the hose to the vent bracket using a 3" hose clamp



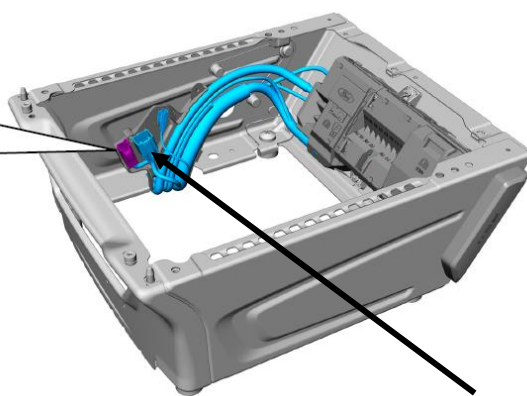
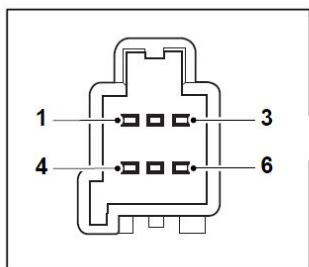
Align the three mount holes of the vent adapter cover with the pre-punched holes in ceiling. Attach each vent to ceiling using #8 x 3/8" flat head sheet metal screws. **(Screws included with standard insert hardware)**



Underneath the driver seat is the battery and Upfitters wiring. Remove three push pins to pull the carpet off.



Remove the two (2) 8mm head bolts and remove the brace for the battery cover. This gives you access to the battery for power and the Upfitters ignition wiring.



Item	
1	Turn Lamp Left Front
2	Turn Lamp Right Front
3	Engine Run — Ground
4	Vehicle Speed
5	Switch Illumination
6	Ignition

This is an example of where you can safely pick up an ignition source for your wiring. The max load is 10amps

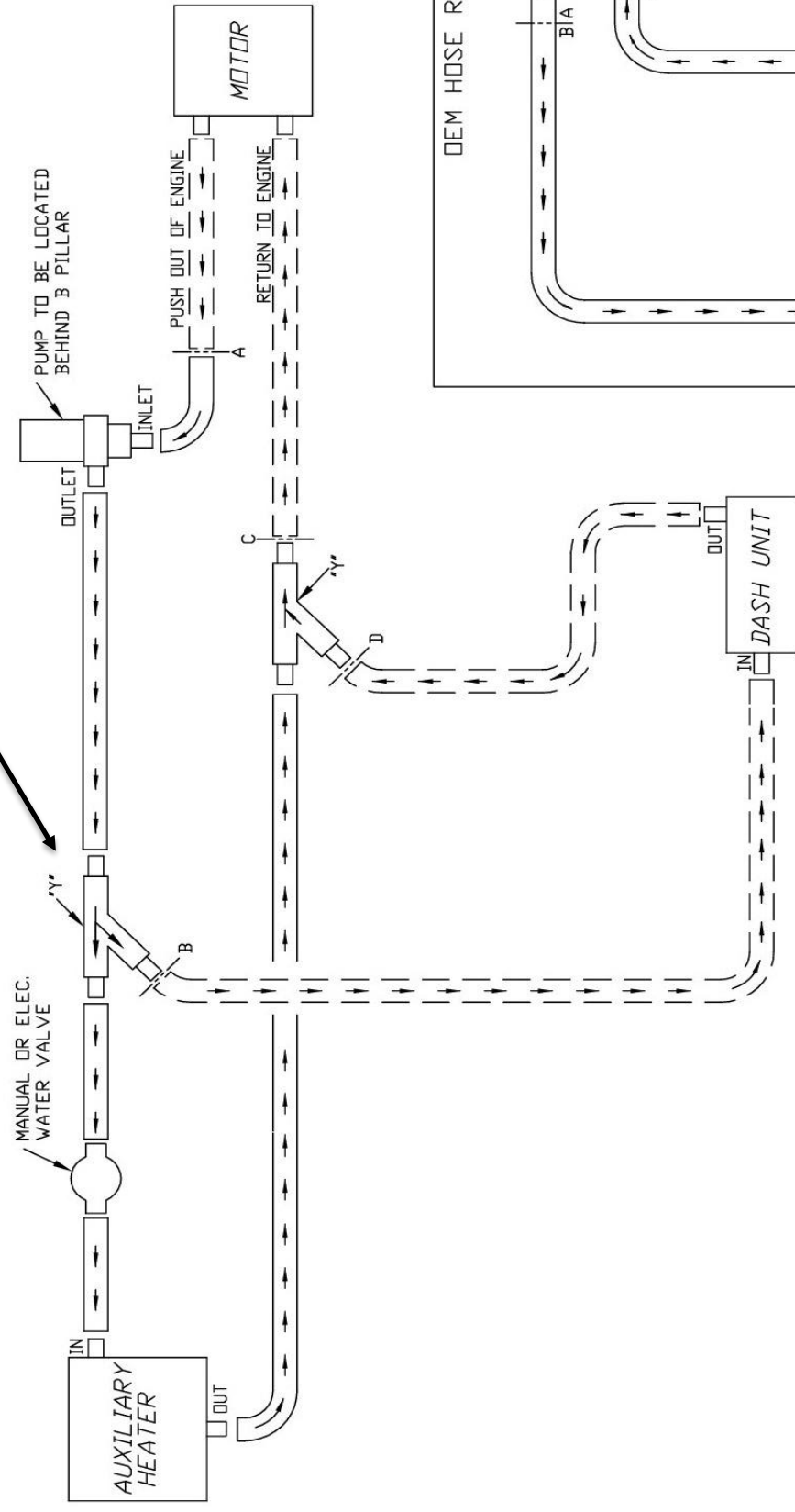


Follow wiring diagram listed below.

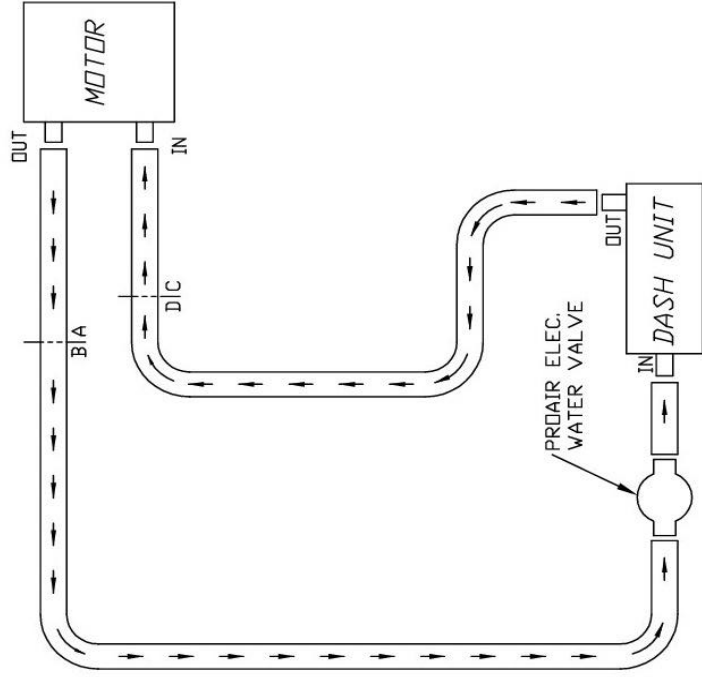
This photo shows the C-PS-4-L switch plate included in the PT-A-404 kit.


It is mounted in the optional C-240 console and C-B68 mount kit


Note: The rear "Y" fitting must be installed rearward of the booster pump as shown. This is a proven solution for best




OEM HOSE ROUTING



 = WATER VALVE

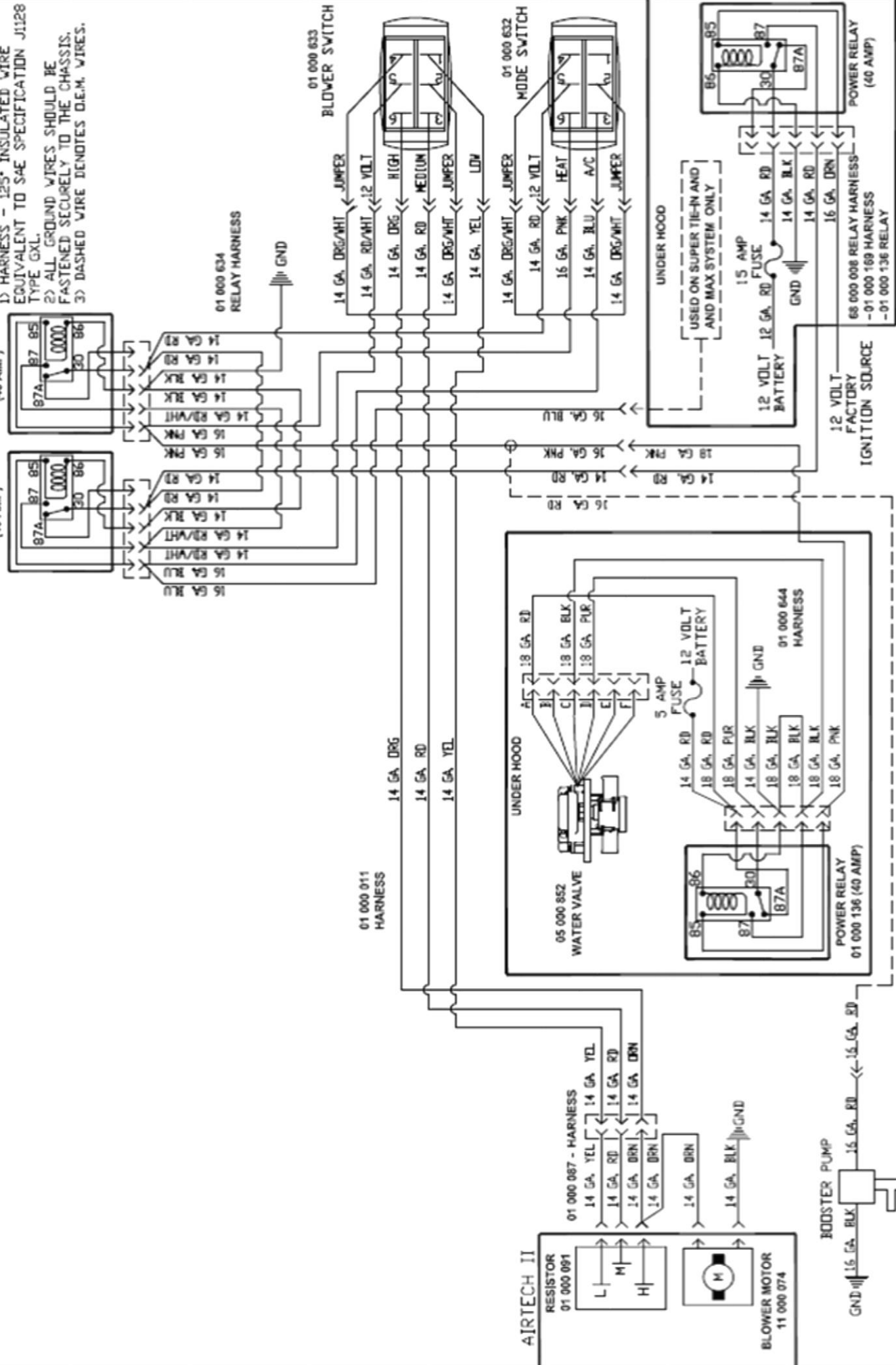
 = DEM HOSE

 = WATER FLOW

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REV. A		PART NO. 40 000 493		SCALE: 3/8" = 1" SIZE A		SHEET 1 OF 1	
TITLE: WATER PLUMBING SCHEMATIC		USAGE: STR		REV. A			
SIGNATURES		DATE					
DRAWN M. R. M.		10/07/14					
CHECKED SMF.		10/07/14					
APPROVED							
RELEASED TO PRODUCTION		BY DATE					
A 14-166		MRM 10/07/14					
LET. NO.		REVISION					

- NOTES:
- 1) HARNESS - 125" INSULATED WIRE EQUIVALENT TO SAE SPECIFICATION J1128 TYPE GXL
 - 2) ALL GROUND WIRES SHOULD BE FASTENED SECURELY TO THE CHASSIS.
 - 3) DASHED WIRE DENOTES O.E.M. WIRES.



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TITLE: WIRE SCHEMATIC USAGE: AIRTECH II TIE-IN ID: JUDGE PROMASTER				REV. A PART NO 40 000 462 SCALE: 1" = 1'-0" SIZE A SHEET 1 OF 1			
SIGNATURES:				DATE:			
DRAWN: B.L.V.				1/10/14			
CHECKED: R.I.				1/17/14			
APPROVED:				DATE:			
BY:				DATE:			
RELEASED DRAWING:				REVISION:			
LET. NO.				11 000 074			