








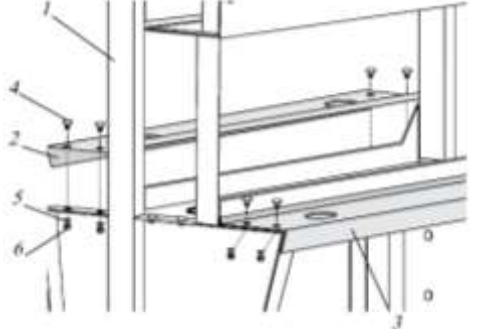
	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 1 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
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Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)																																													
	<p>It is best to have the Center ECU supports partially assembled and ready to install into the machines before the roof panels start going up.</p>		<p>Throughout:            Safety Shoes            Safety Glasses            Hearing protection as required            Additional equipment as required by the site</p>																																													
OP100022 Step 1	<p>Open the FB6278 pack and inventory to ensure the following components are present:</p> <table border="1"> <thead> <tr> <th>Part #</th> <th>#</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PB5947</td> <td>4</td> <td>Pipe - ECU Centre Support</td> </tr> <tr> <td>MB20117</td> <td>2</td> <td>Plate - Front Support</td> </tr> <tr> <td>MB20006</td> <td>1</td> <td>Support - Leg L.H.</td> </tr> <tr> <td>MB20007</td> <td>1</td> <td>Support - Leg R.H.</td> </tr> <tr> <td>MB20130</td> <td>2</td> <td>Cover - Intake Duct</td> </tr> <tr> <td>MB20131</td> <td>1</td> <td>Duct - Intake - L.H.</td> </tr> <tr> <td>MB20134</td> <td>1</td> <td>Duct - Intake - R.H.</td> </tr> <tr> <td>AB7499</td> <td>1</td> <td>Damper - Intake</td> </tr> <tr> <td>AB7503</td> <td>1</td> <td>Shipping Pack - Centre Support Hardware Pack</td> </tr> <tr> <td>AB7564</td> <td>2</td> <td>Valve - P120 Solenoid</td> </tr> <tr> <td>AB7565</td> <td>2</td> <td>Check Valve - P120</td> </tr> <tr> <td>AB7419</td> <td>1</td> <td>Support - ECU Centre</td> </tr> <tr> <td>PB4590</td> <td>7</td> <td>Conduit - .500" PVC</td> </tr> <tr> <td>FB6393</td> <td>1</td> <td>Pack - Plat Egg Centre Support</td> </tr> </tbody> </table>	Part #	#	Description	PB5947	4	Pipe - ECU Centre Support	MB20117	2	Plate - Front Support	MB20006	1	Support - Leg L.H.	MB20007	1	Support - Leg R.H.	MB20130	2	Cover - Intake Duct	MB20131	1	Duct - Intake - L.H.	MB20134	1	Duct - Intake - R.H.	AB7499	1	Damper - Intake	AB7503	1	Shipping Pack - Centre Support Hardware Pack	AB7564	2	Valve - P120 Solenoid	AB7565	2	Check Valve - P120	AB7419	1	Support - ECU Centre	PB4590	7	Conduit - .500" PVC	FB6393	1	Pack - Plat Egg Centre Support		
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OP100022 Step 2 	<p>Insert 2x AB7493 Nut Plate weldment into the AB7419 ECU center support assembly.</p> <p>The nut side should go into the leg. It may have to be hammered in place.</p> <p>Ensure the nut is centered in the leg.</p>	Hammer																																														

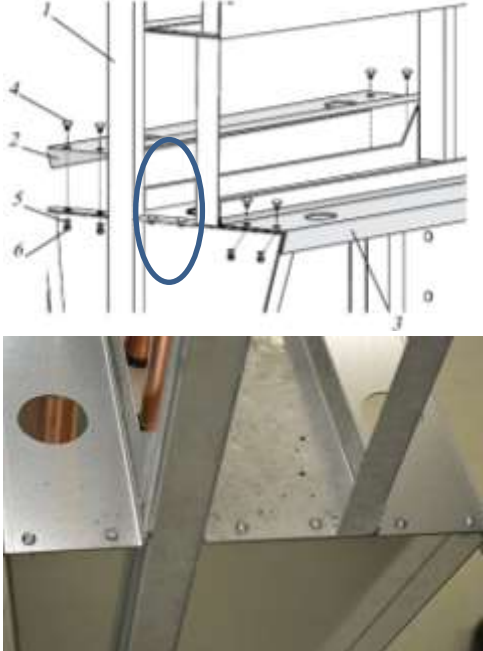

	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 2 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner


Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
<p>OP100022 Step 3</p> 	<p>Fit the support legs (MB20006 RH and MB20007 LH) to the AB7419 ECU center support assembly.</p> <p>The shorter side from the gap should be on the long side (without the shelf) of the main support piece.</p> <p>Ensure the nut plate is centered in the opening of the</p>		
<p>OP100022 Step 4</p> 	<p>Stack a P6255 nut, then P6317 lock washer, then a P6286 flat washer onto the PB5756 articulated foot.</p> <p>Screw PB5756 into each support leg, about half way.</p>		
<p>OP100022 Step 5</p> 	<p>Secure each support leg to the frame using 7x P6082 self-drilling screws.</p> <p>Pre-drill the holes using a 5/32" drill bit.</p>	<p>Drill 5/32" drill bit #2 Phillips driver bit</p>	


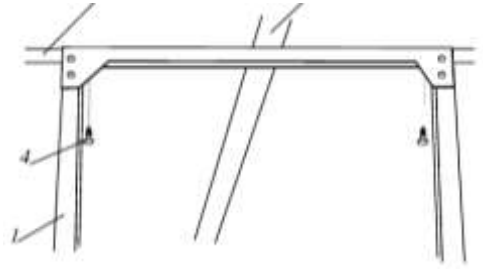
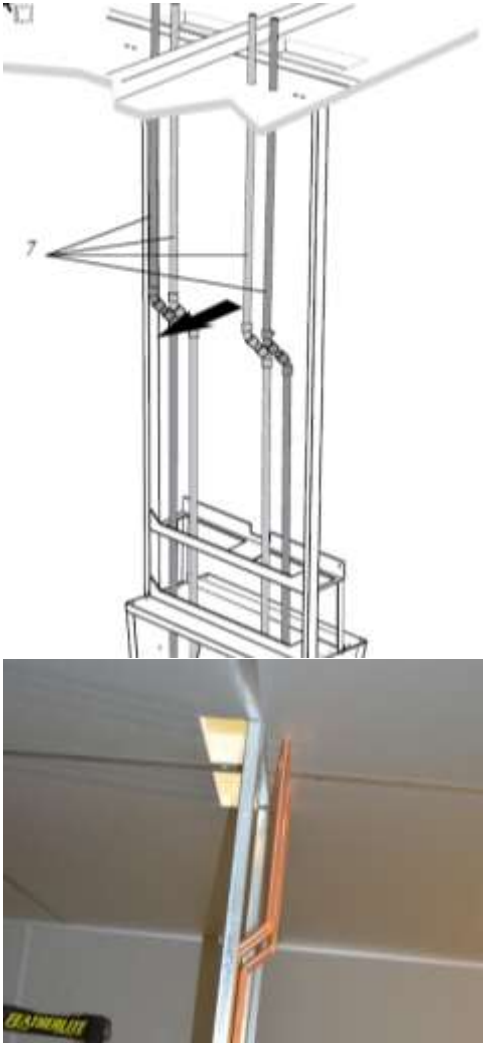
	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 3 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner

Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
OP100022 Step 6 	Fit the 8 holes in the center stand with PB5775 7/8" snap bushings.		
OP100022 Step 7 	Install the AB7430 pipe assemblies through the ECU center support. Cut 4" off the two return pipes (the two pipes in the center).  The longer side of the pipe assembly should be oriented down through the bushings, and the shorter side should be oriented to the top of the center support.	Pipe cutter	
OP100022 Step 8  	Attach the 2x MB20117 front and rear support plates to the assembly using P314 bolts, PT1195 flat washers and P6395 lock nuts.  <b>Note:</b> the longer lip on each plate should be at the bottom.	Screwdriver Socket	


	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 4 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner



Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
<p>OP100022 Step 9</p>  <p>The technical drawing shows a side view of the support leg assembly with a blue circle highlighting the connection point between the support leg and the shelf. The photograph below shows the physical assembly with copper-colored support legs and silver metal shelves.</p>	<p>Fasten the support leg to the shelf of the frame using P314 bolts, PT1195 washers on the support leg side and P6395 lock nuts.</p>	<p>Screwdriver Socket</p>	
 <p>The photograph shows the completed assembly installed in a server cabinet. The copper-colored support legs are mounted vertically, and the shelves are positioned horizontally. The assembly is centered within the cabinet's roof extrusion.</p>	<p>Stand the assembly upright and position it in the middle of the center roof extrusion, and in line with the H channel in the center of the cabinet.</p> <p><b>Note:</b> The centre ECU support and the console should be perfectly inline to allow a perpendicular connection between the ECU and console, and ensure proper airflow patterns.</p>		


	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 5 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner


Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
<p>OP100022 Step 11</p> 	<p>Adjust the articulating feet such that the ceiling is pushed upwards approximately 3/16" - 1/4" maximum.</p> <p>Check this using a level on the center roof extrusion.</p>		
<p>OP100022 Step 12</p> 	<p>Attach the frame to the central roof joiner system using 2x P6200 self-drilling screws.</p> <p><b>Note:</b> Do not attach the support to the floor at this point. Alignment will need to be checked when the front and back ECU supports are installed.</p>	<p>Drill #2 Phillips driver bit</p>	
<p>OP100022 Step 13</p> 	<p>Push the pipe assemblies through the pre-drilled holes in the roof panel.</p> <p>Ensure the two shorter assemblies are located towards the centre of the cabinet, with the two longer assemblies on the outside.</p> <p>The top elbow of each should sit about 14" (355 mm) below the roof, and face 90° to the support towards the front of the cabinet.</p> <p>All elbows should be in line.</p> <p>Use two ~14" pieces of 2x4 to support the return pipes and two ~10" pieces of 2x4 to support the supply pipes in place until the pipes are anchored.</p>		







	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 6 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner

Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
OP100022 Step 14 	<p>If the Pilot system is to be installed on this cabinet, drill a hole in the center roof extrusion to pass the Pilot cables.</p> <p>This hole should be located just forward of the hole for the conduit.</p> <p>Tap with a PG7 tap.</p> <p>Insert a PB4259 PG7 liquid tight into the hole.</p>	11.5 mm drill bit PG7 tap Drill	
Hot Water Lines OP100022 Step 15 	<p>When the hot and cold water lines are installed, the solenoids will be located to the outside (on the supply side) and the check valves towards the inside (return side) of the cabinet.</p> <p>The check valves will be located on the shorter legs of the pipe assemblies. These should be cut 4" (100 mm) shorter now if not completed when constructing the center ECU support.</p>		
OP100022 Step 16	<p>If the hot and cold water service plumbing is complete and connected to each pipe assembly, flush the lines before proceeding.</p> <p>If the plumbing is not complete, do not connect the cabinet piping to the main plumbing until those lines have been flushed.</p>		


	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 7 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner




Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
OP100022 Step 17	<p>Solder the solenoid valve assemblies to the outside pipe assemblies and the check valves to the inside pipe assemblies.</p> <p>Ensure that the valves sit 90° to the center support and are inline down the cabinet.</p>		
OP100022 Step 18	<p>Silicone around the pipe/roof joints both inside and outside the cabinet.</p> <p>Leave the support 2x4s in place for at least 24 hours while the silicone dries.</p>		
OP100022 Step 19 	<p>Support the plumbing using the pipe clamps – four at the center support shelf, and four on the roof of the cabinet.</p>		
<b>Electrical Conduit Assembly</b>			
OP100022 Step 20	<p>The wiring for the solenoids runs from the console, through the low voltage duct of the centre roof extrusion and down through PVC conduit to a connection box.</p> <p>Ensure the pre-drilled hole in the centre roof extrusion is fitted with a snap bushing.</p>		


	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 8 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner


Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
OP100022 Step 21 	Cut the PB4590 PVC conduit into two lengths: <ul style="list-style-type: none"> <li>• 57" (145 mm)</li> <li>• 19" (48 mm)</li> </ul>		
OP100022 Step 22 	From the inside, screw the PB4841 PVC adaptor into the tapped hole in the centre roof extrusion.		
OP100022 Step 23 	Test fit the PVC conduit into the ECU stand.  The long pipe should fit snugly into the roof adaptor with the PB4636 coupling resting on the top plate of the centre stand.  The short piece of PVC conduit will come up through the bottom of the stand in to the coupling.  Adjust lengths if necessary.		





	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 9 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner


Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
OP100022 Step 24 	Using PVC solvent glue, glue the long PVC conduit into the roof adaptor.		
OP100022 Step 25	Glue the coupling to the bottom of the long pipe, and orient in place over the hole through the top plate of the ECU stand		
OP100022 Step 26 	Line up the coupling with the hole in the center stand.  Apply solvent to the short pipe and slide it through the hole in the bottom plate of the centre stand and up into the coupling.		
OP100022 Step 27 	Install 4 PB4529 PG7 liquid tight connectors into the MB20227 junction box.		




	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 10 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner


Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
OP100022 Step 28 	<p>Apply the PVC solvent to the bottom of the short pipe. Slide the MB20227 junction box on the bottom of this pipe.</p> <p>The opening of the junction box should face the rear of the cabinet.</p> <p>Install the PB4776 lid on the junction box loosely.</p>		
OP100022 Step 29	<p>Silicone around the pipe/roof joint on the inside of the cabinet.</p>		
<b>Wiring the Solenoid Valves (Pre-24VDC controls)</b>			
OP100022 Step 30	<p>From the roof, feed the wiring for the solenoid valves along the low voltage trough and down the PVC conduit to the connection box.</p> <p>Ensure the hole through the center roof extrusion is fitted with a snap bushing.</p>		
OP100022 Step 31	<p>Cut the wiring approximately 8" longer than the bottom of the box, and connect to the terminal strip inside the connection box.</p>		
OP100022 Step 32	<p>Twist the top of each solenoid valve so that the DIN plugs face inward at approximately a 35° angle.</p> <p>The angle should be consistent between the two solenoids so that they are a mirror image of each other.</p> <p><b>Note:</b> Ensure the ECU connections will remain inside the limits of the ECU and center support, otherwise they may be damaged by impact from the racks.</p>		




	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 11 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner

Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
OP100022 Step 33	<p>Run an appropriate length of each cable through a liquid tight connector on the electrical box.</p> <p>The front valve cables should be run through the top liquid tights and the rear valve cables should be run through the bottom.</p>		
OP100022 Step 34	<p>Ensure that each liquid tight connector is firmly screwed into the electrical box.</p>		
OP100022 Step 35	<p>Wire each valve cable to the terminal strip in the connection box, and replace the cover.</p> <p>The cover should fit snugly on the box.</p>		
OP100022 Step 36	<p>Plug each DIN connector into the appropriate solenoid valve and tighten in place with the DIN plug screw.</p>		
<b>Intake Duct</b>			
OP100022 Step 37 	<p>Place the MB20134 and MB20131 intake ducts onto the duct support shelf on the center ECU support.</p>		


	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 12 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
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Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
<p>OP100022 Step 38</p> 	<p>Connect the bottom of the intake ducts to the duct support shelf on the center ECU support using 4 each of: P314 machine screws and P6395 lock nuts.</p>		
<p>OP100022 Step 39</p> 	<p>Insert the intake damper assembly through the holes of the roof and into the intake ducts.</p> <p>The damper shaft should be on the left side of the cabinet (low voltage side).</p>		
<p>OP100022 Step 40</p> 	<p>The assembly should drop into the duct about 1 1/2" (40 mm), with the front flange sitting on the centre extrusion.</p> <p>It may be necessary to insert shims between the roof and the back flange of the intake dampers in order to level the fit.</p>		


	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 13 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner



Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
OP100022 Step 41 	Secure the intake assembly to the frame and intake duct with P6401 bolts and O490500 nuts, with the nuts inside the intake duct.		
OP100022 Step 42	Silicone around the assembly and roof joint both inside and outside the cabinet.		
OP100022 Step 43 	The centre support requires the installation of two magnetic catches on each intake duct (4 in total).  Insert the catch through the slot in the duct. Push the shim on the back gently until it snaps into place.		
OP100022 Step 44 	Attach the PB5646 lift-off hinges to the duct covers and intake ducts using PA130 washers and PT1191 panhead screws.  The male portion should be installed on the door, and the female portion on the duct.  The hinge pin should face downwards and be attached to the duct cover.		





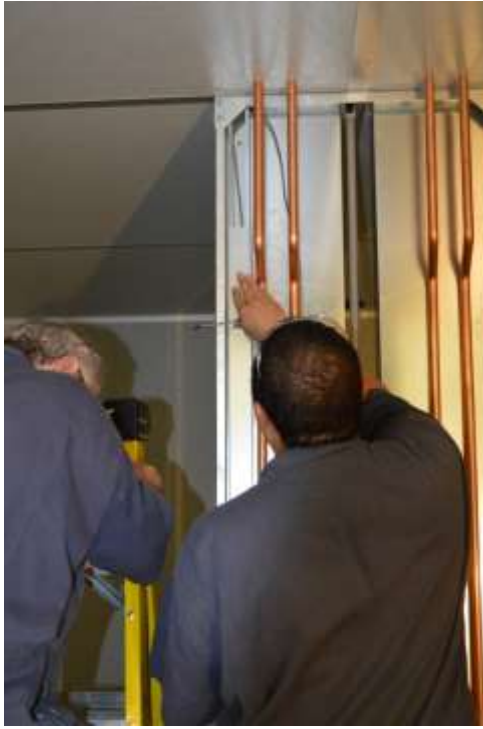

	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 14 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner


Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
OP100022 Step 45	Connect the duct covers on each side and close.		
<b>Damper Motor Installation</b>			
OP100022 Step 46	Attach the damper motor and mount as in OP100027 Exhaust Dampers procedure.		
OP100022 Step 47	<p>The intake dampers will be wired once the exhaust dampers are in place.</p> <p>Proceed to finishing the cabinet with the add-ons, exhaust dampers, airlines, etc. or installing the Pilot system plug bar.</p>		
<b>Pilot Plug Bar Installation</b>			
<i>Refer to F3211 Platinum Egg Plug Install for additional details.</i>			
OP100022 Step 48 	Screw a PB4529 liquid tight into the top of the MB20332 duct for the Pilot connections.		
OP100022 Step 49 	Locate the duct on the left side of the center ECU support. It should be tight to the top with the liquid tight pointing towards the center of the cabinet.		


	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 15 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner

Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
<p>OP100022 Step 50</p> 	<p>Drill out the holes in the Pilot duct through the intake duct.</p> <p>Mount the duct using PT1234 machine screws, PT1195 washers, and P6114 nuts.</p> <p>The washers and nuts should be located inside the intake duct.</p>	<p>¼" drill bit Drill</p>	
<p>OP100022 Step 51</p> 	<p>Install the AB7594 Pilot connection support plate over the duct.</p> <p>Ensure it is fully seated to the bottom of the duct.</p>		

	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 16 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner

Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)
<p>OP100022 Step 52</p> 	<p>Thread the connection wire out of the top of the duct through the liquid tight, and tighten.</p>		
<p>OP100022 Step 53</p> 	<p>Slide the MB20333 upper cover in place. It should fit snugly.</p>		
<p>OP100022 Step 54</p> 	<p>Secure the covers with the 8x P6067 screws.</p>		

	<b>Part Name / Description:</b> <b>Platinum 2.0 Center ECU Support</b>	Instruction #: OP100022	Page 17 of 17
	<b>Operation Instruction Title:</b> <b>Platinum Centre ECU Support</b>	Revision Date: 04/03/2018	Revised By: V. Frail
		Revision No. 1	Approved By: S. Ditner

Step (picture)	Step (Instructions)	Step (Tools Required)	Step (Safety & PPE)												
OP100022 Step 55 	<p>Thread the Pilot egg cable through the liquid tight in the center roof extrusion and tighten fully.</p> <p>Leave a minimal amount of slack.</p>														
OP100022 Step 56	<p>Run the Pilot egg cable to the SMA106 board and connect as follows:</p> <table border="1"> <thead> <tr> <th>Wire</th> <th>Connection Point</th> </tr> </thead> <tbody> <tr> <td>Brown</td> <td>TB3-1</td> </tr> <tr> <td>Black</td> <td>TB3-2</td> </tr> <tr> <td>White</td> <td>TB3-3</td> </tr> <tr> <td>Red</td> <td>TB2-10</td> </tr> <tr> <td>Green</td> <td>Trim at jacket</td> </tr> </tbody> </table>	Wire	Connection Point	Brown	TB3-1	Black	TB3-2	White	TB3-3	Red	TB2-10	Green	Trim at jacket		
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