



# With you at every step



Keep up with COVID-19 by taking the right measures for your Steam Engineering products

Bringing you knowledgeable insights and information that will keep your Steam Engineering products up and running during and post lockdown period. Kindly refer to the Start-up Protocols for the product that is applicable to you.

<b>CUSTOMER SERVICE BULLETIN</b>
<b>DOCUMENT No : SE/Startup Protocol/TACTS Rev: 00</b>
<b>PRODUCT : CRS - CONDENSATE RECOVERY SYSTEM</b>
<b>DIVISION : HEATING - STEAM ENGINEERING</b>

P r e c h e c k u p	Checklist	Yes	No
	1. Open the by-pass line for the process float traps and drain the condensate.		
	2. Clean the level sensor and strainer.		
	3. Flush & drain the condensate from receiver & pump vessel until clean water starts coming out. Close the pump drain valve at the end of flushing operation.		
	4. Open the motive steam TD trap bypass valve. Flush the line with steam.		
	5. Flush pneumatic air line at full pressure till moisture & oil droplets are removed.		
	6. Drain any water accumulated in the air filter regulator (AFR) & adjust the air pressure to 4 to 6 kg/cm <sup>2</sup> .		
	7. Ensure motive steam supply pressure is greater than total lift/back pressure.		
	8. Check the incoming supply voltage before switching ON the panel. It should be 240 +/- 3% Volts. Voltage between earth and neutral should be less than 3 Volts.		
	9. Do the the continuity check for solenoid coil.		

S t a r t u p	Start-up																										
	<ul style="list-style-type: none"> <li>• Switch on the power supply.</li> <li>• Open instrument air inlet valve and ensure air pressure on AFR.</li> <li>• Open motive steam inlet valve to CRS.</li> <li>• Open Thermodynamic trap bypass valve for some time initially to remove condensate due to higher start up load. Once steam starts coming out of this valve close the bypass valve and open the thermodynamic inlet valve gradually.</li> <li>• Open butterfly/ball valve between receiver and pump chamber.</li> <li>• Open slightly the valves in condensate line to CRS.</li> <li>• Water enters the receiver and flows to the pump chamber. Level reaches the high Level mark and Controller LED glows and steam enters the pump, which can be detected by click sound of solenoid valve. Condensate is pumped out through outlet piping, and level starts falling, known as discharge stroke. On reaching the low level LED goes off and motive steam supply stops. The vent port of 3 way valve opens and motive steam is exhausted. Once the pump vessel pressure reaches atmospheric, the water restarts filling the pump vessel, referred to as filling stroke.</li> <li>• The sequence of filling and discharge continues</li> <li>• Observe the filling and discharge strokes for few cycles.</li> <li>• Open the condensate inlet valve fully to allow full condensate load to pump.</li> </ul>																										
FOR GLANCE																											
1. Electrical Connection																											
<table border="1"> <thead> <tr> <th>Terminal No.</th> <th>Connection</th> <th>Terminal No.</th> <th>Connection</th> </tr> </thead> <tbody> <tr> <td>1</td> <td rowspan="2">240 V AC 50 Hz</td> <td>7</td> <td>REF. (E3)</td> </tr> <tr> <td>2</td> <td>8</td> <td rowspan="2">Steam SOV</td> </tr> <tr> <td>3</td> <td>Neutral</td> <td>9</td> <td></td> </tr> <tr> <td>4</td> <td>Earth</td> <td>10</td> <td>PE</td> </tr> <tr> <td>5</td> <td>High (HI/E1)</td> <td>11</td> <td rowspan="2">Vent SOV</td> </tr> <tr> <td>6</td> <td>Low (LO/E2)</td> <td>12</td> </tr> </tbody> </table>	Terminal No.	Connection	Terminal No.	Connection	1	240 V AC 50 Hz	7	REF. (E3)	2	8	Steam SOV	3	Neutral	9		4	Earth	10	PE	5	High (HI/E1)	11	Vent SOV	6	Low (LO/E2)	12	
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2. RESET TOTALISER:																											
a) Press "LOCK" key to enter RESET MODE b) Press "ENTER" key & then enter the password "xxxx" with the help of "SHIFT & INCREMENT" Key. C) Press "ENTER" key & the Totaliser value would RESET.																											



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Symptoms	Cause/Check Points	Remedy
Receiver Overflows	Strainer between Receiver and pump body choked	Clean Strainer Screen
	Inlet/Outlet DCV stuck closed or Fails	Clean, Lap if required & Refit or change DCV
	Level Sensor/controller malfunction	Check Wiring & Perform bucket test/loop test. If required change the sensor/controller
Lengthy Discharge Stroke	Outlet DCV fails in closed condition (Leaking)	Clean, Lap if required & Refit or change DCV
	3 way valve fails with steam port open	Replace 3 way valve
Live steam coming from vent port of 3 way Valve	3 way valve leaking	Replace the 3 way valve
	Insufficient air pressure to valve	Check air pressure
3-Way SOV Not Operating	Insufficient air pressure to valve	Adjust air pressure
	SOV short/burnt	Replace SOV
	Controller not working	Replace the Controller
	SOV MCB Trip	Reset MCB
	Main Fuse Blown	Replace Fuse

Do's and Don'ts
<b>Do's</b>
1. Strainers & level sensor should be cleaned thoroughly.
2. Electrical connections should be intact in respective terminals as per electrical drawing.
3. Outlet valve should be opened fully.
4. Ensure pressure gauge is showing motive steam pressure of 06 kg/cm <sup>2</sup> & above before taking the CRS in line.
5. Ensure all the points are ticked as "YES" in above checklist.

Do's and Don'ts
<b>Don'ts</b>
1. Don't switch on the electrical panel without checking incoming voltage & earthing.
2. Don't forget to RESET the totaliser value
3. Don't forget to close the drain valve properly.

Thermax Limited Steam Engineering Services recommends customer to get in touch with the local service engineer as per details given below :

## 1<sup>st</sup> Level

Region	Name of Service Engineer	Email id	Contact No
North (JK, PB, HR)	Puneet Panchal	Puneet.Panchal@Thermaxglobal.com	9717200940
North (UP, NCR, RJ)	Pradeep Kumar	Pradeep.Kumar@Thermaxglobal.com	9717032325
East	Pranay Mridha	Pranay.Mridha@Thermaxglobal.com	9830240010
West (MH, CG, GOA)	Saddam Gadiwan	Saddam.Gadiwan@Thermaxglobal.com	7709973966
West (GJ, MP)	Vipul Gohil	Vipul.Gohil@Thermaxglobal.com	9662064627
South (AP, KAR, TS)	Sandeep Jampala	Sandeep.J@Thermaxglobal.com	8008145681
South (TN, KL)	Noor Mohammed	Noor.Mohammed@Thermaxglobal.com	8098734264
MENA, SEA, SAARC	Tushar Nalawade	Tushar.Nalawade@Thermaxglobal.com	8422044464

## 2<sup>nd</sup> Level

Contact Person	Designation	Email Id	Contact No.
Sathyababu V.	Head - Technical Service Group	Sathyababu.v@Thermaxglobal.com	9486620370