

# In-line Feedwater Heaters Performance

Performance calculation of a complete battery of in-line feedwater heaters for a maximum of six heaters (LP & HP) in-line with cascade drain type, reinjected by booster pump or lost to the outside.

Online FWH Performance

## Online Feed Water Heaters Performance First Feed Water Heater

Instructions

Run File

Results

Print Results

Save File

Load File

Next FWH

Global Results

Print Global Results

Exit

**INPUTS**

Job Name

Total Number Of Heaters (Max. 6)

Units Code (1 = S.I. 2 = USA)  Press Button

**Data For First Heater, Higher Of Steam Pressure**

Steam Temperature At Inlet	<input type="text" value="664.16"/>	oF
Steam Pressure At Inlet	<input type="text" value="577.46"/>	psia
Pressure Drop At Desuperheater	<input type="text" value="5.8"/>	psi
Flow At # 1 Drain Inlet In Waterfall	<input type="text" value="0"/>	lb/h
Enthalpy At # 1 Drain Inlet In Waterfall	<input type="text" value="0"/>	btu/lb
Flow At # 2 Auxiliary Inlet	<input type="text" value="0"/>	lb/h
Enthalpy At # 2 Auxiliary Inlet	<input type="text" value="0"/>	btu/lb
Feed Water Pump Pressure	<input type="text" value="2555"/>	psia
Feed Water Flow	<input type="text" value="479343"/>	lb/h
Feed Water Inlet Temperature	<input type="text" value="433.94"/>	oF
Number Of Plugged Tubes	<input type="text" value="0"/>	
Drain Cooler Tube Outlet Velocity	<input type="text" value="0.984"/>	ft/s
Type Of Shell Outlet Drain	<input type="text" value="2"/>	

(1 = Lost For The System) (2 = To Next Heater)  
(3 = Reinjected In FW Flow Outlet Of This Heater)

**Enter Inputs, Press Run File Button And Wait For Final Calculation**

Original Desuperheater Surface	<input type="text" value="294.9"/>	ft2
Original Condensation Surface	<input type="text" value="1706.1"/>	ft2
Original Drain Cooling Surface	<input type="text" value="121.6"/>	ft2
Tubes Outlet Diameter	<input type="text" value="0.625"/>	in
Tube Thickness	<input type="text" value="0.0748"/>	in
Number Of Tubes	<input type="text" value="275"/>	
Tubes Material :		
[ 1 ] .... Carbon Steel		
[ 2 ] .... Cooper Nickel 90/10		
[ 3 ] .... Austenitic S.S.		
[ 4 ] .... Monel		
[ 5 ] .... Cooper Nickel 70/30		
[ 6 ] .... Ferritic S.S.		
[ 7 ] .... Admiralty Brass 70/30		
Enter Code Material	<input type="text" value="1"/>	
Heater Installation :		
[ 0 ] .... Horizontal Full Flow	[ 1 ] .... Vertical Channel Down	
[ 2 ] .... Horizontal Split Flow	[ 3 ] .... Vertical Channel Up	
Enter Installation Code	<input type="text" value="0"/>	
Number Of Tubes In D. C. If Code = 2 Or 3	<input type="text" value="0"/>	
- Ext.Surf. Of D. C. Casing If Code 3	<input type="text" value="0"/>	ft2
Desuperheating Correction Coefficient	<input type="text" value="1"/>	
Condensation Correction Coefficient	<input type="text" value="1"/>	
Drain Cooler Correction Coefficient	<input type="text" value="1"/>	

## FIRST FWH DATA ENTRY WINDOW



## Online Feed Water Heaters Performance First Feed Water Heater

<p>Instructions</p> <p>Run File</p> <p>Results</p> <p>Print Results</p> <p>Save File</p> <p>Load File</p> <p>Next FWH</p> <p>Global Results</p> <p>Print Global Results</p> <p>Exit</p>	<p><b>INPUTS</b></p>	<p>Job Name <input type="text" value="HPs"/></p> <p>Total Number Of Heaters (Max. 6) <input type="text" value="2"/></p> <p>Units Code (1 = S.I. 2 = USA) <input type="text" value="2"/> Press Button <input type="button" value="Button"/></p> <p style="color: red;"><b>Data For First Heater, Higher Of Steam Pressure</b></p> <table style="width: 100%;"> <tr><td>Steam Temperature At Inlet</td><td><input type="text" value="664.16"/></td><td>oF</td></tr> <tr><td>Steam Pressure At Inlet</td><td><input type="text" value="577.46"/></td><td>psia</td></tr> <tr><td>Pressure Drop At Desuperheater</td><td><input type="text" value="5.8"/></td><td>psi</td></tr> <tr><td>Flow At # 1 Drain Inlet In Waterfall</td><td><input type="text" value="0"/></td><td>lb/h</td></tr> <tr><td>Enthalpy At # 1 Drain Inlet In Waterfall</td><td><input type="text" value="0"/></td><td>btu/lb</td></tr> <tr><td>Flow At # 2 Auxiliary Inlet</td><td><input type="text" value="0"/></td><td>lb/h</td></tr> <tr><td>Enthalpy At # 2 Auxiliary Inlet</td><td><input type="text" value="0"/></td><td>btu/lb</td></tr> <tr><td>Feed Water Pump Pressure</td><td><input type="text" value="2555"/></td><td>psia</td></tr> <tr><td>Feed Water Flow</td><td><input type="text" value="479343"/></td><td>lb/h</td></tr> <tr><td>Feed Water Inlet Temperature</td><td><input type="text" value="433.94"/></td><td>oF</td></tr> <tr><td>Number Of Plugged Tubes</td><td><input type="text" value="0"/></td><td></td></tr> <tr><td>Drain Cooler Tube Outlet Velocity</td><td><input type="text" value="0.984"/></td><td>ft/s</td></tr> <tr><td>Type Of Shell Outlet Drain</td><td><input type="text" value="2"/></td><td></td></tr> </table> <p>(1 = Lost For The System) (2 = To Next Heater) (3 = Rejected In FW Flow Outlet Of This Heater)</p> <p style="color: red; text-align: center;"><b>End Of Calculation. Press Next FW Heater</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p><input type="text" value="28097"/> Lb/h</p> </div>	Steam Temperature At Inlet	<input type="text" value="664.16"/>	oF	Steam Pressure At Inlet	<input type="text" value="577.46"/>	psia	Pressure Drop At Desuperheater	<input type="text" value="5.8"/>	psi	Flow At # 1 Drain Inlet In Waterfall	<input type="text" value="0"/>	lb/h	Enthalpy At # 1 Drain Inlet In Waterfall	<input type="text" value="0"/>	btu/lb	Flow At # 2 Auxiliary Inlet	<input type="text" value="0"/>	lb/h	Enthalpy At # 2 Auxiliary Inlet	<input type="text" value="0"/>	btu/lb	Feed Water Pump Pressure	<input type="text" value="2555"/>	psia	Feed Water Flow	<input type="text" value="479343"/>	lb/h	Feed Water Inlet Temperature	<input type="text" value="433.94"/>	oF	Number Of Plugged Tubes	<input type="text" value="0"/>		Drain Cooler Tube Outlet Velocity	<input type="text" value="0.984"/>	ft/s	Type Of Shell Outlet Drain	<input type="text" value="2"/>		<table style="width: 100%;"> <tr><td>Original Desuperheater Surface</td><td><input type="text" value="294.9"/></td><td>ft2</td></tr> <tr><td>Original Condensation Surface</td><td><input type="text" value="1706.1"/></td><td>ft2</td></tr> <tr><td>Original Drain Cooling Surface</td><td><input type="text" value="121.6"/></td><td>ft2</td></tr> <tr><td>Tubes Outlet Diameter</td><td><input type="text" value="0.625"/></td><td>in</td></tr> <tr><td>Tube Thickness</td><td><input type="text" value="0.0748"/></td><td>in</td></tr> <tr><td>Number Of Tubes</td><td><input type="text" value="275"/></td><td></td></tr> </table> <p>Tubes Material :</p> <p>[ 1 ] .... Carbon Steel          [ 2 ] .... Cooper Nickel 90/10          [ 3 ] .... Austenitic S.S.          [ 4 ] .... Monel          [ 5 ] .... Cooper Nickel 70/30          [ 6 ] .... Ferritic S.S.          [ 7 ] .... Admiralty Brass 70/30</p> <p>Enter Code Material <input type="text" value="1"/></p> <p>Heater Installation :</p> <p>[ 0 ] .... Horizontal Full Flow    [ 1 ] .... Vertical Channel Down          [ 2 ] .... Horizontal Split Flow    [ 3 ] .... Vertical Channel Up</p> <p>Enter Installation Code <input type="text" value="0"/></p> <p>Number Of Tubes In D. C. If Code = 2 Or 3          - Ext.Surf. Of D. C. Casing If Code 3 <input type="text" value="0"/> ft2</p> <p>Desuperheating Correction Coefficient <input type="text" value="1"/></p> <p>Condensation Correction Coefficient <input type="text" value="1"/></p> <p>Drain Cooler Correction Coefficient <input type="text" value="1"/></p>	Original Desuperheater Surface	<input type="text" value="294.9"/>	ft2	Original Condensation Surface	<input type="text" value="1706.1"/>	ft2	Original Drain Cooling Surface	<input type="text" value="121.6"/>	ft2	Tubes Outlet Diameter	<input type="text" value="0.625"/>	in	Tube Thickness	<input type="text" value="0.0748"/>	in	Number Of Tubes	<input type="text" value="275"/>	
Steam Temperature At Inlet	<input type="text" value="664.16"/>	oF																																																										
Steam Pressure At Inlet	<input type="text" value="577.46"/>	psia																																																										
Pressure Drop At Desuperheater	<input type="text" value="5.8"/>	psi																																																										
Flow At # 1 Drain Inlet In Waterfall	<input type="text" value="0"/>	lb/h																																																										
Enthalpy At # 1 Drain Inlet In Waterfall	<input type="text" value="0"/>	btu/lb																																																										
Flow At # 2 Auxiliary Inlet	<input type="text" value="0"/>	lb/h																																																										
Enthalpy At # 2 Auxiliary Inlet	<input type="text" value="0"/>	btu/lb																																																										
Feed Water Pump Pressure	<input type="text" value="2555"/>	psia																																																										
Feed Water Flow	<input type="text" value="479343"/>	lb/h																																																										
Feed Water Inlet Temperature	<input type="text" value="433.94"/>	oF																																																										
Number Of Plugged Tubes	<input type="text" value="0"/>																																																											
Drain Cooler Tube Outlet Velocity	<input type="text" value="0.984"/>	ft/s																																																										
Type Of Shell Outlet Drain	<input type="text" value="2"/>																																																											
Original Desuperheater Surface	<input type="text" value="294.9"/>	ft2																																																										
Original Condensation Surface	<input type="text" value="1706.1"/>	ft2																																																										
Original Drain Cooling Surface	<input type="text" value="121.6"/>	ft2																																																										
Tubes Outlet Diameter	<input type="text" value="0.625"/>	in																																																										
Tube Thickness	<input type="text" value="0.0748"/>	in																																																										
Number Of Tubes	<input type="text" value="275"/>																																																											

## STEAM FLOW RESULT



## Online Feed Water Heaters Performance Second Feed Water Heater

**Run File**

**Results**

**Print Results**

**Save File**

**Load File**

**Next FWH**

**Precedent FWH**

INPUTS

Units Code (1 = S.I. 2 = USA)  Press Button

Data For Second Heater. Pressure Falling In Cascade

Steam Temperature At Inlet	<input type="text" value="897.26"/>	oF		
Steam Pressure At Inlet	<input type="text" value="372.13"/>	psia		
Pressure Drop At Desuperheater	<input type="text" value="5.8"/>	psi		
Flow At # 1 Drain Inlet In Waterfall	<input type="text" value="26697"/>	lb/h		
Enthalpy At # 1 Drain Inlet In Waterfall	<input type="text" value="423.47"/>	btu/lb		
Flow At # 2 Auxiliary Inlet	<input type="text" value="0"/>	lb/h		
Enthalpy At # 2 Auxiliary Inlet	<input type="text" value="0"/>	btu/lb		
Feed Water Pump Pressure	<input type="text" value="2570"/>	psia		
Feed Water Flow	<input type="text" value="479343"/>	lb/h		
Feed Water Inlet Temperature	<input type="text" value="371.66"/>	oF		
Number Of Plugged Tubes	<input type="text" value="0"/>			
Drain Cooler Tube Outlet Velocity	<input type="text" value="1.31"/>	ft/s		
Type Of Shell Outlet Drain	<input type="text" value="1"/>			
(1 = Lost For The System) (2 = To Next Heater)				
(3 = Reinjectd In FW Flow Outlet Of This Heater)				

Enter Inputs, Press Run File Button And Wait For Final Calculation

Original Desuperheater Surface	<input type="text" value="258.3"/>			ft2
Original Condensation Surface	<input type="text" value="1093.6"/>			ft2
Original Drain Cooling Surface	<input type="text" value="261.6"/>			ft2
Tubes Outlet Diameter	<input type="text" value="0.625"/>			in
Tube Thickness	<input type="text" value="0.0748"/>			in
Number Of Tubes	<input type="text" value="275"/>			
Tubes Material :				
[ 1 ] .... Carbon Steel	<input type="text"/>			
[ 2 ] .... Cooper Nickel 90/10	<input type="text"/>			
[ 3 ] .... Austenitic S.S.	<input type="text"/>			
[ 4 ] .... Monel	<input type="text"/>			
[ 5 ] .... Cooper Nickel 70/30	<input type="text"/>			
[ 6 ] .... Ferritic S.S.	<input type="text"/>			
[ 7 ] .... Admiralty Brass 70/30	<input type="text"/>			
Enter Code Material	<input type="text" value="1"/>			
Heater Installation :				
[ 0 ] .... Horizontal Full Flow	<input type="text"/>	[ 1 ] .... Vertical Channel Down	<input type="text"/>	
[ 2 ] .... Horizontal Split Flow	<input type="text"/>	[ 3 ] .... Vertical Channel Up	<input type="text"/>	
Enter Installation Code	<input type="text" value="0"/>			
Number Of Tubes In D. C. If Code = 2 Or 3	<input type="text" value="0"/>			
- Ext.Surf. Of D. C. Casing If Code 3	<input type="text" value="0"/>			ft2
Desuperheating Correction Coefficient	<input type="text" value="1"/>			
Condensation Correction Coefficient	<input type="text" value="1"/>			
Drain Cooler Correction Coefficient	<input type="text" value="1"/>			


## SECOND FWH DATA ENTRY WINDOW



## Online Feed Water Heaters Performance Second Feed Water Heater

Run File	<p><b>INPUTS</b></p> <p>Units Code (1 = S.I. 2 = USA) <input type="text" value="2"/> Press Button <input type="button" value="Button"/></p> <p style="color: red;"><b>Data For Second Heater. Pressure Falling In Cascade</b></p>		<p>Original Desuperheater Surface <input type="text" value="258.3"/> ft2</p> <p>Original Condensation Surface <input type="text" value="1093.6"/> ft2</p> <p>Original Drain Cooling Surface <input type="text" value="261.6"/> ft2</p> <p>Tubes Outlet Diameter <input type="text" value="0.625"/> in</p> <p>Tube Thickness <input type="text" value="0.0748"/> in</p> <p>Number Of Tubes <input type="text" value="275"/></p> <p>Tubes Material :</p> <p>[ 1 ] .... Carbon Steel</p> <p>[ 2 ] .... Cooper Nickel 90/10</p> <p>[ 3 ] .... Austenitic S.S.</p> <p>[ 4 ] .... Monel</p> <p>[ 5 ] .... Cooper Nickel 70/30</p> <p>[ 6 ] .... Ferritic S.S.</p> <p>[ 7 ] .... Admiralty Brass 70/30</p> <p>Enter Code Material <input type="text" value="1"/></p> <p>Heater Installation :</p> <p>[ 0 ] .... Horizontal Full Flow    [ 1 ] .... Vertical Channel Down</p> <p>[ 2 ] .... Horizontal Split Flow    [ 3 ] .... Vertical Channel Up</p> <p>Enter Installation Code <input type="text" value="0"/></p> <p>Number Of Tubes In D. C. If Code = 2 Or 3 <input type="text" value="0"/></p> <p>– Ext.Surf. Of D. C. Casing If Code 3 <input type="text" value="0"/> ft2</p> <p>Desuperheating Correction Coefficient <input type="text" value="1"/></p> <p>Condensation Correction Coefficient <input type="text" value="1"/></p> <p>Drain Cooler Correction Coefficient <input type="text" value="1"/></p>
Results	<p>Steam Temperature At Inlet <input type="text" value="897.26"/> oF</p> <p>Steam Pressure At Inlet <input type="text" value="372.13"/> psia</p> <p>Pressure Drop At Desuperheater <input type="text" value="5.8"/> psi</p> <p>Flow At # 1 Drain Inlet In Waterfall <input type="text" value="26697"/> lb/h</p> <p>Enthalpy At # 1 Drain Inlet In Waterfall <input type="text" value="423.47"/> btu/lb</p> <p>Flow At # 2 Auxiliary Inlet <input type="text" value="0"/> lb/h</p> <p>Enthalpy At # 2 Auxiliary Inlet <input type="text" value="0"/> btu/lb</p> <p>Feed Water Pump Pressure <input type="text" value="2570"/> psia</p> <p>Feed Water Flow <input type="text" value="479343"/> lb/h</p> <p>Feed Water Inlet Temperature <input type="text" value="371.66"/> oF</p> <p>Number Of Plugged Tubes <input type="text" value="0"/></p> <p>Drain Cooler Tube Outlet Velocity <input type="text" value="1.31"/> ft/s</p> <p>Type Of Shell Outlet Drain <input type="text" value="1"/></p> <p>(1 = Lost For The System) (2 = To Next Heater)</p> <p>(3 = Reinjectd In FW Flow Outlet Of This Heater)</p>		
Print Results	<p style="color: red;"><b>End Of Calculation. Press Next FW Heater</b></p> <p><input type="text" value="26858"/> Lb/h</p>		
Save File			
Load File			
Next FWH			
Precedent FWH			

**STEAM FLOW RESULT**

 <b>F W H Performance - Data Results</b> Job Name : <b>HPs</b>					
<b>■ Data</b>			<b>■ Results</b>		
Steam Pressure At Inlet	577,45	Psia	Steam Flow (Including 0.5 % Lost)	28097	Lb/h
Steam Saturation Temp.At Inlet Pressure	482,1	oF	Desuperheating Duty	2953,3	Kbtu/h
Steam Temperature At Inlet	664,16	oF	Condensation Duty	21360,9	Kbtu/h
Steam Enthalpy At Inlet	1332,11	Btu/lb	Drain Cooler Duty	1178,1	Kbtu/h
Temperature At Condensation Zone	481,01	oF	Desuperheating L.M.T.D.	85,55	oF
Enthalpy At Condensation Zone	465,66	Btu/lb	Condensation L.M.T.D.	17,19	oF
Flow At # 1 Drain Inlet	0	Lb/h	Drain Cooler L.M.T.D.	23,16	oF
Enthalpy At # 1 Drain Inlet	0	Btu/lb	Desup.Heat Transfer Coefficient	113,8	Btu/hoFsqt
Flow At # 2 Drain Inlet	0	Lb/h	Conden.Heat Transfer Coefficient	727,4	Btu/hoFsqt
Enthalpy At # 2 Drain Inlet	0	Btu/lb	D.C. Heat Transfer Coefficient	416,1	Btu/hoFsqt
Feed Water Pump Pressure	2555	Psia	F W Heater Shell Outlet Temperature	444,02	oF
Feed Water Flow	479343	Lb/h	Feed Water Outlet Temperature	482,21	oF
Feed Water Inlet Temperature	434,08	oF	Feed Water Temp.At In Conden.Zone	436,17	oF
Feed Water Inlet Enthalpy	414,32	Btu/lb	Feed Water Temp.At Out Conden.Zone	476,78	oF
Number Of Non Plugged Tubes	275		F W Heater Shell Outlet Enthalpy	423,71	Btu/lb
Tubes Outlet Diameter	0,625	In	Feed Water Outlet Enthalpy	467,5	Btu/lb
Tubes Thickness	0,074	In	Feed Water EnthalAt In Conden.Zone	416,77	Btu/lb
Tubes Material	Carbon Steel		Feed Water EnthalAt Out Conden.Zone	461,34	Btu/lb
Active Desuperheating Surface	294,9	Sqft	Steam Temp.At Desuperheater End	508,01	oF
Active Condensing Surface	1706,1	Sqft	Steam EnthalAt Desuperheater End	1225,91	Btu/lb
Active Drain Cooler Surface	121,6	Sqft	Terminal Temperature Difference	-0,13	oF
Heater Installation	Horizontal Full Flow		Drain Cooler Approach	9,93	of
Desuperheating Correction Coefficient	1		Tube Number In Drain Cooler	275	
Condensation Correction Coefficient	1		Number Of Plugged Tubes	0	
Drain Cooler Correction Coefficient	1		Dew Point Verification	503,85	oF
			(It Must Be Less Than Temperature At Desuperheater Outlet)		

## FIRST FWH CALCULATION RESULTS



## F W H Performance - Data Results

Job Name :

<b>■ Data</b>	<b>■ Results</b>
Steam Pressure At Inlet	372,12 Psia
Steam Saturation Temp.At Inlet Pressure	437,57 oF
Steam Temperature At Inlet	897,26 oF
Steam Enthalpy At Inlet	1469,59 Btu/lb
Temperature At Condensation Zone	436,07 oF
Enthalpy At Condensation Zone	414,65 Btu/lb
Flow At # 1 Drain Inlet	28097 Lb/h
Enthalpy At # 1 Drain Inlet	423,91 Btu/lb
Flow At # 2 Drain Inlet	0 Lb/h
Enthalpy At # 2 Drain Inlet	0 Btu/lb
Feed Water Pump Pressure	2570 Psia
Feed Water Flow	479343 Lb/h
Feed Water Inlet Temperature	371,66 oF
Feed Water Inlet Enthalpy	348,13 Btu/lb
Number Of Non Plugged Tubes	275
Tubes Outlet Diameter	0,625 in
Tubes Thickness	0,074 in
Tubes Material	Carbon Steel
Active Desuperheating Surface	258,3 Sqft
Active Condensing Surface	1093,6 Sqft
Active Drain Cooler Surface	261,6 Sqft
Heater Installation	Horizontal Full Flow
Desuperheating Correction Coefficient	1
Condensation Correction Coefficient	1
Drain Cooler Correction Coefficient	1
Steam Flow (Including 0.5 % Lost)	26858 Lb/h
Desuperheating Duty	5630,9 Kbtu/h
Condensation Duty	22937,1 Kbtu/h
Drain Cooler Duty	3244,3 Kbtu/h
Desuperheating L.M.T.D.	229,69 oF
Condensation L.M.T.D.	29,93 oF
Drain Cooler L.M.T.D.	27,3 oF
Desup.Heat Transfer Coefficient	93,3 Btu/hofsqft
Conden.Heat Transfer Coefficient	700,4 Btu/hofsqft
D.C. Heat Transfer Coefficient	450,7 Btu/hofsqft
F W Heater Shell Outlet Temperature	381,66 oF
Feed Water Outlet Temperature	434,08 oF
Feed Water Temp.At In Conden.Zone	378,08 oF
Feed Water Temp.At Out Conden.Zone	423,23 oF
F W Heater Shell Outlet Enthalpy	355,61 Btu/lb
Feed Water Outlet Enthalpy	414,5 Btu/lb
Feed Water EnthalAt In Conden.Zone	354,9 Btu/lb
Feed Water EnthalAt Out Conden.Zone	402,76 Btu/lb
Steam Temp.At Desuperheater End	515,26 oF
Steam EnthalAt Desuperheater End	1258,98 Btu/lb
Terminal Temperature Difference	3,49 oF
Drain Cooler Approach	9,99 oF
Tube Number In Drain Cooler	275
Number Of Plugged Tubes	0
Dew Point Verification	519,56 oF
	(It Must Be Less Than Temperature At Desuperheater Outlet)

## SECOND FWH CALCULATION RESULTS



### Online Global FWH Performance - Data Results

Job Name: HPs

	<u>Steam Flow (Lbh)</u>	<u>F W In Flow (Lbh)</u>	<u>F W Out Flow (Lbh)</u>	<u>F W In Temp. (oF)</u>	<u>F W Out Temp. (oF)</u>	<u>Drains In Flow (Lbh)</u>	<u>Drains Out Flow (Lbh)</u>	<u>T.T.D.(oF)</u>	<u>D.C.A.(oF)</u>
■ Heater # 1	28097	479334	479334	434,08	482,21	0	28097	-0,13	9,93
■ Heater #2	26858	479334	479334	371,66	434,08	28097	54955	3,49	9,99
■ Heater #3	0	0	0	0	0	0	0	0	0
■ Heater #4	0	0	0	0	0	0	0	0	0
■ Heater #5	0	0	0	0	0	0	0	0	0
■ Heater #6	0	0	0	0	0	0	0	0	0

## GLOBAL RESULTS




### Online Global FWH Performance - Data Results

Job Name : 3-2-1

	<u>Steam Flow (t/h)</u>	<u>F W In Flow (t/h)</u>	<u>F W Out Flow (t/h)</u>	<u>F W In Temp. (oC)</u>	<u>F W Out Temp. (oC)</u>	<u>Drains In Flow (t/h)</u>	<u>Drains Out Flow (t/h)</u>	<u>T.T.D.(oC)</u>	<u>D.C.A.(oC)</u>
■ Heater # 1	10,205	175,48	175,48	194,99	219,98	0	10,205	3,01	4,91
■ Heater #2	8,902	175,48	175,48	169,97	194,99	10,205	19,107	2,97	4,91
■ Heater #3	8,312	175,48	175,48	143,98	169,97	19,107	27,419	3,01	6,4
■ Heater #4	10,235	175,48	175,48	107,74	143,98	27,419	37,654	1,83	21,23
■ Heater #5	11,074	175,48	175,48	71,38	107,74	0	11,074	1,99	1,93
■ Heater #6	9,034	175,48	175,48	39,1	71,38	11,074	20,108	1,99	2,04

**ONE CASE OF SIX FWH GLOBAL RESULTS**



**Online Global FWH Performance - Data Results**  
Job Name : 3-2-1

	<u>Steam Flow (t/h)</u>	<u>F W In Flow (t/h)</u>	<u>F W Out Flow (t/h)</u>	<u>F W In Temp. (oC)</u>	<u>F W Out Temp. (oC)</u>	<u>Drains In Flow (t/h)</u>	<u>Drains Out Flow (t/h)</u>	<u>T.T.D.(oC)</u>	<u>D.C.A.(oC)</u>
■ Heater # 1	11,727	205,37	205,37	194,11	218,62	0	11,727	4,37	6,29
■ Heater #2	9,956	205,37	205,37	170,3	194,11	11,727	21,683	3,85	5,68
■ Heater #3	8,205	175,48	205,37	143,95	170	21,685	29,89	2,98	7,33
■ Heater #4	10,962	175,48	175,48	107,78	143,95	0	10,962	1,86	5,59
■ Heater #5	10,418	175,48	175,48	71,37	107,78	10,962	21,38	1,95	4,33
■ Heater #6	8,542	175,48	175,48	39,1	71,37	21,38	29,922	2	5,35

**OTHER CASE OF SIX FWH GLOBAL RESULTS**