

# Dual Pressure Condenser

Two calculation types are possible, one depending of the total heat load, another based on steam flow for each shell, in both cases calculations are based on fixed cooling water flow or inlet and outlet cooling water temperatures.

The final results give a dual condenser with two identical shells in terms of same surfaces, number and length of tubes.

Details of the connection between hotwells and turbine necks are give.

## PROGRAM WINDOWS

Dual Pressure Steam Condenser

### Dual Pressure Steam Condenser Calculation


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

Job Name

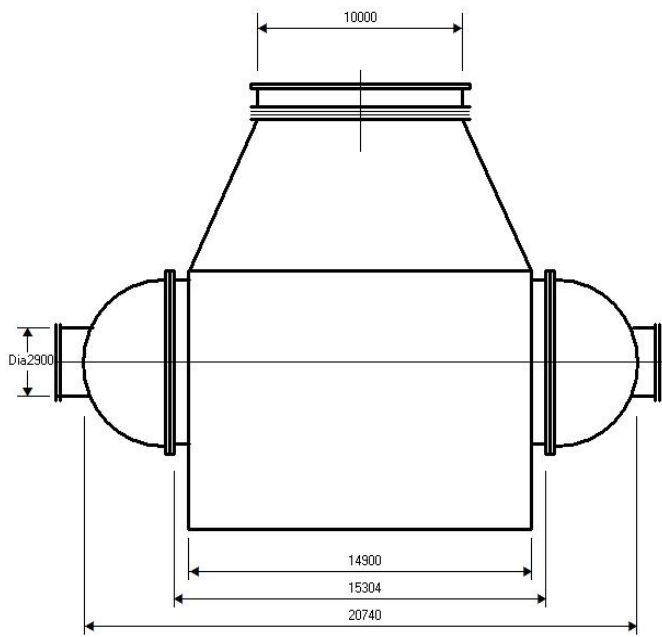
Total Heat Load ( 0 if Unknow)	<input type="text" value="1987.87"/>	Mw/h	Normal Tubes Thickness	<input type="text" value="0.5"/>	mm
Low Pressure Shell Steam Pressure	<input type="text" value="67.63"/>	mbara	Impact Tubes Thickness	<input type="text" value="0.7"/>	mm
High Pressure Shell Steam Pressure	<input type="text" value="102.24"/>	mbara	Air Extraction Zone Tubes Thickness	<input type="text" value="0.5"/>	mm
Low Pressure Shell Steam Enthalpy	<input type="text" value="2469.8"/>	kJ/kg	Impact Tubes Percentage	<input type="text" value="7"/>	%
High Pressure Shell Steam Enthalpy	<input type="text" value="2504.4"/>	kJ/kg	Air Extraction Zone Tubes Percentage	<input type="text" value="4.5"/>	%
LP Shell Steam Flow ( 0 if Total Heat Load <> 0)	<input type="text" value="0"/>	tn/h	Tubes Material :		
HP Shell Steam Flow ( 0 if Total Heat Load <> 0)	<input type="text" value="0"/>	tn/h	[ 1 ] ... Admiralty Brass		
Flow At # 1 Drain Inlet	<input type="text" value="0"/>	tn/h	[ 2 ] ... Aluminium Brass		
Enthalpy At # 1 Drain Inlet	<input type="text" value="0"/>	kcal/kg	[ 3 ] ... Cooper Nickel 90/10		
Flow At # 2 Drain Inlet	<input type="text" value="0"/>	tn/h	[ 4 ] ... Cooper Nickel 70/10		
Enthalpy At # 2 Drain Inlet	<input type="text" value="0"/>	kcal/kg	[ 5 ] ... Stainless Steel Tp 304		
Cooling Water Inlet Temperature	<input type="text" value="27"/>	oC	[ 6 ] ... Titanium		
Cooling Water Outlet Temperature ( 0 if Unknow)	<input type="text" value="0"/>	oC	[ 7 ] ... Carbon Steel		
Cooling Water Flow ( 0 if Outlet Temperature <> 0)	<input type="text" value="105000"/>	m <sup>3</sup> /h	[ 8 ] ... Stainless Steel Tp 316		
Cooling Water Type ( 0 = Brackish 1 = Sea)	<input type="text" value="0"/>		Normal Tubes Material Code	<input type="text" value="6"/>	
Cleanliness Factor ( <= 1 Or > 1 If Out Of H.E.I.)	<input type="text" value="0.9"/>		Impact Tubes Material Code	<input type="text" value="6"/>	
Outside Diameter Of Exchange Tubes	<input type="text" value="22"/>	mm	Air Extraction Zone Material Code	<input type="text" value="6"/>	
Cooling Water Tubes Inlet Velocity	<input type="text" value="1.96354"/>	m/s	Tube Sheet Relation ( Height / Width )	<input type="text" value="1.2"/>	
Turbine Steam Exhaust Length	<input type="text" value="10000"/>	mm	Hotwell Retention Time	<input type="text" value="3"/>	min
Turbine Steam Exhaust Width	<input type="text" value="8000"/>	mm			
Total Height Of Installation	<input type="text" value="14"/>	m			

## DATA ENTRY WINDOW

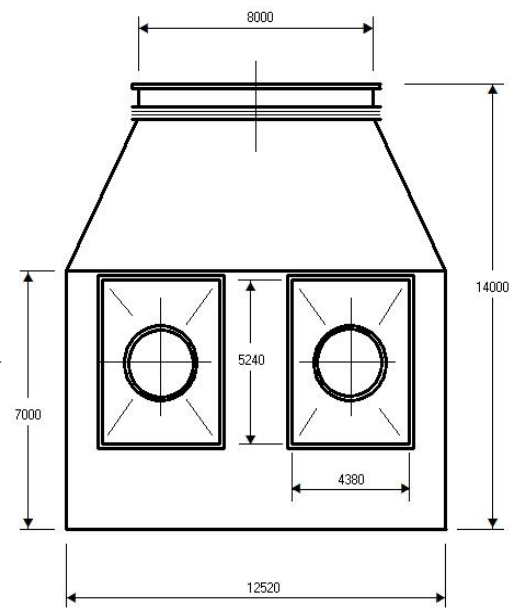
# RESULTS

		<b>Dual Pressure Steam Condenser - Data Results</b> Job Name : PRUEBA	
■ Data		■ Results	
Total Heat Load (Including 0.2% Lost)	1991,84 Mw/h	LP Shell Condensation Temperature	38,38 oC
Low Pressure Shell Steam Pressure	67,63 mbara	HP Shell Condensation Temperature	46,26 oC
High Pressure Shell Steam Pressure	102,24 mbara	LP Shell Corrected Steam Flow	1557,66 Tn/h
Low Pressure Shell Steam Enthalpy	2469,8 Kj/Kg	HP Shell Corrected Steam Flow	1568,9 Tn/h
High Pressure Shell Steam Enthalpy	2504,4 Kj/Kg	LP Cooling Water Outlet Temperature	35,18 oC
Low Pressure Shell Steam Flow	0 Tn/h	HP Cooling Water Outlet Temperature	43,31 oC
High Pressure Shell Steam Flow	0 Tn/h	Low Pressure Shell Heat Load	999,1 Mw/h
Flow At # 1 Drain Inlet	0 Tn/h	High Pressure Shell Heat Load	992,73 Mw/h
Enthalpy At # 1 Drain Inlet	0 Kj/Kg	Low Pressure Shell L.M.T.D.	6,44 oC
Flow At # 2 Drain Inlet	0 Tn/h	High Pressure Shell L.M.T.D.	6,14 oC
Enthalpy At # 2 Drain Inlet	0 Kj/Kg	LP Shell Exchange Coefficient	12258 Kj/hoCm2
Cooling Water Inlet Temperature	27 oC	HP Shell Exchange Coefficient	12776 Kj/hoCm2
Cooling Water Outlet Temperature	43,31 oC	LP Shell Exchange Surface	45488 m2
Cooling Water Flow	105000 m3/h	HP Shell Exchange Surface	45488 m2
Cooling Water Type	Brackish Water	Total Number Of Tubes	86001
Cleanliness Factor	0,9	Tubes Length Between Tube Sheets	15,305 m
Outside Diameter Of Exchange Tubes	22 mm	Total Cooling Water Pressure Drop	7,43 mcw
Cooling Water Tubes Inlet Velocity	1,96354 m/s	Tube Sheet Height	5240 mm
Normal Tubes Thickness	0,5 mm	Tube Sheet Width	4380 mm
Impact Tubes Thickness	0,7 mm	Shell Total Width	12,52 m
Air Extraction Zone Tubes Thickness	0,5 mm	Tube Sheet Drilling Coefficient	0,387
Normal Tubes Material	Titanium	Number Of Tubes Support Plates	19
Impact Tubes Material	Titanium	Turbine Steam Exhaust Length	10000 mm
Air Extraction Zone Tubes Material	Titanium	Turbine Steam Exhaust Width	8000 mm
Impact Tubes Percentage	7 %	Total Height Of Installation	14 m
Air Extraction Zone Tubes Percentage	4,5 %	Shell Total Height	7000 m
Hotwell Retention Time	3 min	Diameter Of Cooling Water Nozzles	2900 mm
		Height Of Normal Level In Hotwell	520 mm
		Condenser Total Length	20,74 m

# DRAWING



Dimension in mm



Number of Shells 2





## Condenser HEI Shell And Water Box Thickness (Chap.8.2.3 and 5)

**Run File**

**Results**

**Print Results**

**Save File**

**Load File**

**Clear All**

**Press For Weights**

**Exit**

**INPUTS**

Job Name

Shell Side Design Pressure  psig

Horizontal Length Between Two Support Points  in

Vertical Length Between Two Support Points  in

Shell Allowable Load (If 0, 20000 For A515Gr70)  psi

Support Tubes Allowable Load (If 0, 35000 For A106)  psi

Supports Young's Modulus (If 0, 29.3x10<sup>6</sup> For A106)  psi

In Hotwell Support Tubes Outlet Diameter  in

In Hotwell Support Tubes Thickness  in

Height Of Support Tubes In Hotwell  ft

Tube Side Design Pressure  psig

Discontinuity Factor According To Geometry ( < = 1 )

Radius Of Water Box  in

Water Box Allowable Load (If 0, 20000 For A515Gr70)  psi

Welding Efficiency Factor (If 0, HEI Factor = 0.75)

Dimension Between Reinforcements In Plane Plates  in

# SHELL AND WATER BOX THICKNESS CALCULATION



## Condenser Shell And Water Box Thickness - Data And Results

Job Name : TESTTICK1

■ Data Inputs			■ Results		
Shell Side Design Pressure	15	psig	Shell Thickness Without Corrosion	0,8	in
Horizontal Length Between Two Support Points	40	in	Tube Diameter Or Clips Width In Support Points	4,89	in
Vertical Length Between Two Support Points	60	in	Shell Thickness With Ribs And Without Corrosion	0,63	in
Shell Allowable Load (If 0, 20000 For A515Gr70)	20000	psi	Allowable Loads In Hotwell Support Tubes	36858	lb
Support Tubes Allowable Load (If 0, 35000 For A106)	35000	psi	Semi-Cylindrical Water Box Thickness Without Corosion	0,34	in
Supports Young's Modulus (If 0, 29.3x10 <sup>6</sup> For A106)	29300	Kpsi	Plane Plates Thickness Without Corrosion	1,1	in
In Hotwell Support Tubes Outlet Diameter	3	in			
In Hotwell Support Tubes Thickness	0,2	in			
Height Of Support Tubes In Hotwell	3	ft			
Tube Side Design Pressure	60	psig			
Discontinuity Factor According To Geometry ( <= 1 )	1				
Radius Of Water Box	86	in			
Water Box Allowable Load (If 0, 20000 For A515Gr70)	20000	psi			
Welding Efficiency Factor (If 0, HEI Factor = 0.75)	0,75				
Dimension Between Reinforcements In Plane Plates	35	in			

## SHELL AND WATER BOX THICKNESS RESULTS

# WEIGHTS OF MAIN PARTS

Steam Condenser Tubes And Tube Sheets Weight



## Condenser Tubes And Tube Sheets Weight

### INPUTS

Job Name

Run File

Results

Print Results

Save File

Load File

Press For Shell Weight

Exit

Tubes Diameter	<input type="text" value="22"/>	mm
Normal Tubes Thickness	<input type="text" value="0.5"/>	mm
Impact Tubes Thickness	<input type="text" value="0.7"/>	mm
Air Extraction Tubes Thickness	<input type="text" value="0.5"/>	mm
Percentage Of Impact Tubes	<input type="text" value="7"/>	%
Percentage Of Air Extraction Tubes	<input type="text" value="4.5"/>	%
Length Of Tubes	<input type="text" value="15.385"/>	m
Total Number Of Tubes	<input type="text" value="86001"/>	
Density Of Normal Tubes Material	<input type="text" value="4.55"/>	kg/dm3
Density Of Impact Tubes Material	<input type="text" value="4.55"/>	kg/dm3
Density Of Air Extraction Tubes Material	<input type="text" value="4.55"/>	kg/dm3
Height Of Tube Sheet	<input type="text" value="5.4"/>	m
Width Of Tube Sheet	<input type="text" value="4.54"/>	m
Tube Sheet Thickness	<input type="text" value="40"/>	mm
Thickness Of Cladding	<input type="text" value="5"/>	mm
Density Of Tubes Sheet Material	<input type="text" value="7.9"/>	kg/dm3
Density Of Cladding Material	<input type="text" value="4.55"/>	kg/dm3
Total Number Of Tubes Sheets	<input type="text" value="8"/>	
Water Box Bolts Diameter	<input type="text" value="25"/>	mm
Number Of Bolts Per Tube Sheet	<input type="text" value="130"/>	



## Steam Condenser Tubes And Tube Sheets Weight - Data And Results

Job Name : TEST DOWN

■ Data Inputs		■ Results	
Tubes Diameter	22 mm	Weight Of Normal Tubes	179934 kg
Normal Tubes Thickness	0,5 mm		
Impact Tubes Thickness	0,7 mm	Weight Of Impact Tubes	19739 kg
Air Extraction Tubes Thickness	0,5 mm		
Percentage Of Impact Tubes	7 %	Weight Of Air Extraction Tubes	9149 kg
Percentage Of Air Extraction	4,5 %		
Length Of Tubes	15,385 m	Gross Weight Of One Tube Sheet	7336 kg
Total Number Of Tubes	86001		
Density Of Normal Tubes Material	4,55 kg/dm <sup>3</sup>	Gross Weight Of All Tube Sheets	58691 kg
Density Of Impact Tubes Material	4,55 kg/dm <sup>3</sup>		
Density Of Air Extraction Tubes Material	4,55 kg/dm <sup>3</sup>	Gross Weight Of One Tube Sheet After Machining	4784 kg
Height Of Tube Sheet	5,4 m		
Width Of Tube Sheet	4,54 m	Gross Weight Of All Tube Sheets After Machining	38278 kg
Tube Sheet Thickness	40 mm		
Thickness Of Cladding	5 mm		
Density Of Tube Sheet Material	7,9 kg/dm <sup>3</sup>		
Density Of Cladding Material	4,55 kg/dm <sup>3</sup>		
Total Number Of Tube Sheets	8		
Water Box Bolts Diameter	25 mm		
Number Of Bolts Per Tube Sheet	130		



# One Shell With Two Tube Bundles - Shell Weight

## INPUTS

Run File

Job Name

Results

Length Between Tube Sheets  m      Aircooling Casing Thickness  mm

Shell Length  m      Diameter Of Aircooling Main Pipe  mm

Print Results

Shell Width  m      Thickness Of Aircooling Main Pipe  mm

Shell Height  m      Number Of Vertical Aircooling Pipes

Shell Wall Thickness  mm      Diameter Of Vertical Aircooling Pipes  mm

Tube Sheet Height  m      Thickness Of Vertical Aircooling Pipes  mm

Save File

Tube Sheet Width  m      Dimension Of Tube Sheet Face Flange  mm

Number Of Tube Support Plates Per Bundle       Number Of Holes In Tube Sheet Flange

Load File

Thickness Of Tube Support Plates  mm      Holes Diameter In Tube Sheet Flange  mm

Reinforcing Pipe Diam. In Tube Support Plates  mm      Number Of Tubes Per Tube Bundle

Press For Water Boxes Weight

Reinforcing Pipe Thick. In Tube Support Plates  mm      Diameter Of Tubes  mm

Tube Sheet Flange Thickness  mm      Number Of Tubes In Aircooling Per Bundle

Tubes Protection Grill Tube Diameter  mm      Turbine Neck Connection Thickness Plate  mm

Exit

Tubes Protection Grill Tube Thickness  mm      Turbine Neck Connection Width Plate  mm



## One Shell With Two Tube Bundles - Shell Weight - Data And Results

Job Name : TEST DOWN

<b>■ Data Inputs</b>	<b>■ Results</b>		
Length Between Tube Sheets	15,305 m	Weight Of Wall Plates	34693 kg
Shell Length	14,9 m	Weight Of Necks Between Tube Sheet And Shell	4945 kg
Shell Width	12,52 m	Weight Of Shell Expansion Joint (If Needed)	345 kg
Shell Height	5,6 m	Weight Of Flanges For Tube Sheets Connection	3014 kg
Shell Wall Thickness	20 mm	Weight Of Tube Support Plates After Drilling	52735 kg
Tube Sheet Height	5,4 m	Weight Of Tube Support Plates Reinforcement Pipes	3438 kg
Tube Sheet Width	4,54 m	Weight Of Reinforcement Plates And Profiles	3378 kg
Number Of Tube Support Plates Per Bundle	19	Weight Of Tube Protection Grill	4999 kg
Thickness Of Tube Support Plates	10 mm	Weight Of Aircooling Casing	915 kg
Reinforcing Pipe Diam. At Tube Support Plates	80 mm	Weight Of Aircooling Extraction Pipes	1025 kg
Reinforcing Pipe Thick. At Tube Support Plates	5 mm	Weight Of Plate Between Neck And Shell	350 kg
Tube Sheet Flange Thickness	50 mm	<b>TOTAL WEIGHT OF ONE SHELL</b>	<b>109841 kg</b>
Tube Diameter For Tube Protection Grill	25 mm		
Tube Thickness For Tube Protection Grill	2 mm		
Aircooling Casing Thickness	3 mm		
Diameter Of Aircooling Main Pipe	200 mm		
Thickness Of Aircooling Main Pipe	6 mm		
Number Of Vertical Aircooling Pipes	4		
Diameter Of Vertical Aircooling Pipes	100 mm		
Thickness Of Vertical Aircooling Pipes	4 mm		
Dimension Of Tube Sheet Face Flange	100 mm		
Number Of Holes In Tube Sheet Flange	130		
Holes Diameter In Tube Sheet Flange	25 mm		
Number Of Tubes Per Tube Bundle	21500		
Diameter Of Exchange Tubes	22 mm		
Number Of Tubes In Aircooling Per Bundle	960		
Turbine Neck Connection Thickness Plate	20 mm		
Turbine Neck Connection Width Plate	40 mm		



# Steam Condenser Water Box Weight

(Semicylindrical Type, whitout considered interconexion)

Run File

Results

Print Results

Save File

Load File

Press For LP  
Hotwell Weight

Exit

## INPUTS

Job Name

Height Of Tube Sheet (Or Width If Axial Type)  m

Width Of Tube Sheet (Or Height If Axial Type)  m

Width Of The Flange Face  mm

Thickness Of Flange  mm

Diameter Of Water Box Bolts  mm

Number Of Bolts Per Water Box

Thikness Of Main Plate  mm

Thickness Of Up And Down Water Box Covers  mm

Diameter Of Inlet/Outlet Cooling Water Pipes  mm

Thickness Of Inlet/Outlet Cooling Water Pipes  mm

Thickness Of Inlet/Outlet Cooling Water Flange  mm



## Steam Condenser Water Box Weight - Data And Results

Job Name : TEST DOWN

■ Data Inputs		■ Results	
Height Of Tube Sheet	5,24 m	Weight Of Tube Plate Flange	871 kg
Width Of Tube Sheet	4,38 m	Weight Of Tube Plate Bolts	183 kg
Width Of The Flange Face	100 mm	Weight Of Manhole	320
Thickness OF Flange	60 mm	Weight Of Cooling Water Connection	738 kg
Diameter OF Water Box Bolts	25 mm	Weight Of Main Plate And Up And Down Covers	7283 kg
Number Of Bolts Per Water Box	130	Weight Of Miscellaneous	80 kg
Thickness Of Main Plate	16 mm		
Thickness Of Up And Down Water Box Covers	28 mm	<b>TOTAL WEIGHT OF WATER BOX</b>	<b>9475 kg</b>
Diameter Of Inlet/Outlet Cooling Water Pipes	2900 mm		
Thickness Of Inlet/Outlet Cooling Water Pipes	12 mm		
Thickness Of Inlet/Outlet Cooling Water Flange	40 mm		



# LP Condenser Hotwell Weight

(Whitout considered interconexion)

## INPUTS

Run File

Results

Print Results

Save File

Load File

Press For HP  
Hotwell Weight

Exit

Job Name

Length Of Hotwell	<input type="text" value="14.9"/>	m
Width Of Hotwell	<input type="text" value="12.52"/>	m
Height Of Hotwell	<input type="text" value="1.4"/>	m
Thickness Of Wall Plate	<input type="text" value="20"/>	mm
Thickness Of Down Plate	<input type="text" value="25"/>	mm
Number Of Tube Support Plates Per Bundle	<input type="text" value="19"/>	
Diameter Of Tube Support Plate Reinforcement Pipe	<input type="text" value="80"/>	mm
Thickness Of Tube Support Plate Reinforcement Pipe	<input type="text" value="5"/>	mm
Thickness Of Bundles Separation Vertical Plate	<input type="text" value="18"/>	mm
Diameter Of Wall Plate Reinforcement Pipe	<input type="text" value="80"/>	mm
Thickness Of Wall Plate Reinforcement Pipe	<input type="text" value="5"/>	mm
Thickness Of Civil Works Foot Support Plates	<input type="text" value="20"/>	mm
Length Of Dearating System	<input type="text" value="0"/>	m
Thickness Of Shell Connection Plate	<input type="text" value="20"/>	mm
Width Of Shell Connection Plate	<input type="text" value="40"/>	mm
Thickness Of Plate Between Hot And Cold Condensates	<input type="text" value="16"/>	mm



## LP Condenser Hotwell Weight - Data And Results

Job Name : TEST DOWN

■ Data Inputs		■ Results	
Length Of Hotwell	14,9 m	Weight Of Wall Plates And Manhole	12604 kg
Width Of Hotwell	12,52 m	Weight Of Down Hotwell Plate	37309 kg
Height Of Hotwell	1,4 m	Weight Of Tube Support Plates Reinforcement Pipes	1002 kg
Thickness Of Wall Plate	20 mm	Weight Of Wall Plate Reinforcement Pipes	461 kg
Thickness Of Down Plate	25 mm	Weight Of Bundles Separation Plate	1410 kg
Number Of Tube Support Plates Per Budle	19	Weight Of Civil Works Foot Support Plates	480 kg
Diameter Of Tube Support Plate Reinform. Pipe	80 mm	Weight Of Civil Works Plates And Fixed Point	752 kg
Thickness Of Tube Support Plate Reinform. Pipe	5 mm	Weight Of Lifting Brackets	103 kg
Thickness Of Bundles Separation Plate	18 mm	Weight Of Sampling Plates	209 kg
Diameter Of Wall Plate Reinforcement Pipe	80 mm	Weight Of Condensate Outlet Casing	760 kg
Thickness Of Wall Plate Reinforcement Pipe	5 mm	Weight Of Miscellaneous	100 kg
Thickness OF Civil Works Foot Support Plates	20 mm	Weight Of Internal Deaerating System	0 kg
Length Of Deaerating System	0 m	Weight Of Plates For Connection To Shell	350 kg
Thickness Of Shell Connection Plate	20 mm	Weight Of Plate Between Hot And Cold Condensates	23878 kg
Width Of Shell Connection Plate	40 mm	<b>TOTAL WEIGHT OF LP HOTWELL</b>	<b>79422 kg</b>



# HP Condenser Hotwell Weight

(Whitout considered interconexion)

## INPUTS

Run File

Results

Print Results

Save File

Load File

Press For Shell  
Neck Weight

Exit

Job Name

Length Of Hotwell	<input type="text" value="14.9"/>	m
Width Of Hotwell	<input type="text" value="12.52"/>	m
Height Of Hotwell	<input type="text" value="1.4"/>	m
Thickness Of Wall Plate	<input type="text" value="20"/>	mm
Thickness Of Down Plate	<input type="text" value="25"/>	mm
Number Of Tube Support Plates Per Bundle	<input type="text" value="19"/>	
Diameter Of Tube Support Plate Reinforcement Pipe	<input type="text" value="80"/>	mm
Thickness Of Tube Support Plate Reinforcement Pipe	<input type="text" value="5"/>	mm
Thickness Of Bundles Separation Plate	<input type="text" value="18"/>	mm
Diameter Of Wall Plate Reinforcement Pipe	<input type="text" value="80"/>	mm
Thickness Of Wall Plate Reinforcement Pipe	<input type="text" value="5"/>	mm
Thickness Of Civil Works Foot Support Plates	<input type="text" value="20"/>	mm
Length Of Dearating System	<input type="text" value="0"/>	m
Thickness Of Shell Connection Plate	<input type="text" value="20"/>	mm
Width Of Shell Connection Plate	<input type="text" value="40"/>	mm
Thickness Of Plate For Deaerating Casing System	<input type="text" value="10"/>	mm



## HP Condenser Hotwell Weight - Data And Results

Job Name : TEST DOWN

■ Data Inputs			■ Results	
Length Of Hotwell	14,9	m	Weight Of Wall Plates And Manhole	12604 kg
Width Of Hotwell	12,52	m	Weight Of Down Hotwell Plate	37309 kg
Height Of Hotwell	1,4	m	Weight Of Tube Support Plates Reinforcement Pipes	1002 kg
Thickness Of Wall Plate	20	mm	Weight Of Wall Plate Reinforcement Pipes	461 kg
Thickness Of Down Plate	25	mm	Weight Of Bundles Separation Plate	1293 kg
Number Of Tube Support Plates Per Budle	19		Weight Of Civil Works Foot Support Plates	480 kg
Diameter Of Tube Support Plate Reinforc. Pipe	80	mm	Weight Of Civil Works Plates And Fixed Point	752 kg
Thickness Of Tube Support Plate Reinforc. Pipe	5	mm	Weight Of Lifting Brackets	103 kg
Thickness Of Bundles Separation Plate	18	mm	Weight Of Sampling Plates	209 kg
Diameter Of Wall Plate Reinforcement Pipe	80	mm	Weight Of Condensate Outlet Casing	760 kg
Thickness Of Wall Plate Reinforcement Pipe	5	mm	Weight Of Miscellaneous	100 kg
Thickness OF Civil Works Foot Support Plates	20	mm	Weight Of Internal Deaerating System	0 kg
Length Of Deaerating System	0	m	Weight Of Plates For Connection To Shell	350 kg
Thickness Of Shell Connection Plate	20	mm	Weight Of Plate For Deaerating Casing System	1117 kg
Width Of Shell Connection Plate	40	mm	TOTAL WEIGHT OF HP HOTWELL	56545 kg



# One Condenser Shell Neck Weight

## INPUTS

Run File

Results

Print Results

Save File

Load File

Press For  
Turbine Neck  
Weight

Exit

Job Name

Top Length Of Shell Neck  m

Lower Length Of Shell Neck  m

Top Width Of Shell Neck  m

Lower Width Of Shell Neck  m

Height Of Shell Neck  m

Thickness Of Wall Plates  mm

Diameter Of Internal Reinforcement Pipes  mm

Thickness Of Internal Reinforcement Pipes  mm

Thickness Of Plate For Connection To Turbine Neck  mm

Width Of Plate For Connection To Turbine Neck  mm

Diameter Of Sprays Make-Up Pipes  mm

Thickness Of Sprays Make-Up Pipes  mm



## One Condenser Shell Neck Weight - Data And Results

Job Name : **TEST DOWN**

<b>■ Data Inputs</b>			<b>■ Results</b>	
Top Length Of Shell Neck	10	m	Weight Of Wall Plates, Manhole And Connexions	51390 kg
Lower Length Of Shell Neck	14,9	m	Weight Of Plate For Connexion To Turbine Neck	230 kg
Top Width Of Shell Neck	8	m	Weight Of Internal Reinforcement Pipes	5792 kg
Lower Width Of Shell Neck	12,52	m	Weight Of Profiles " I " 200 mm Height	1567 kg
Height Of Shell Neck	7	m	Weight Of Sparys Make-Up System	141 kg
Thickness Of Wall Plate	20	mm	<b>TOTAL WEIGHT OF SHELL NECK</b>	<b>59120 kg</b>
Diameter Of Internal Reinforcement Pipes	80	mm		
Thickness Of Internal Reinforcement Pipes	5	mm		
Thickness Of Plate For Connexion To Turbine	20	mm		
Width Of Plate For Connexion To Turbine	40	mm		
Diameter Of Sprays Make-Up Pipes	50	mm		
Thickness Of Sprays Make-Up Pipes	3	mm		



# One Condenser Turbine Neck Weight

Run File

Results

Print Results

Save File

Load File

Press For  
Interconexions  
Weight

Exit

## INPUTS

Job Name

Length Of Turbine Neck  m

Width Of Turbine Neck  m

Height Of Turbine Neck  m

Thickness Of Wall Plates  mm

Diameter Of Internal Reinforcement Pipes  mm

Thickness Of Internal Reinforcement Pipes  mm

Thickness Of Plate For Connection To Turbine  mm

Width Of Plate For Connection To Turbine  mm

Thickness Of Plate In S.S. For Expansion Joint  mm

Thickness Of Plate In S.S. For Expansion Joint Protection  mm

Diameter Of Bolts For Expansion Joint Protection  mm



## One Condenser Turbine Neck Weight - Data And Results

Job Name : TEST DOWN

■ Data Inputs			■ Results		
Length Of Turbine Neck	10	m	Weight Of Wall Plates, Manhole And Connexions	5184	kg
Width Of Turbine Neck	8	m	Weight Of Expansion Joint And Internal Protection	433	kg
Height Of Turbine Neck	1	m	Weight Of Turbine Connection Plate	230	kg
Thickness Of Wall Plate	20	mm	Weight Of Internal Reinforcement Pipes	1007	kg
Diameter Of Internal Reinforcement Pipes	80	mm	Weight Of Bolts System	386	kg
Thickness Of Internal Reinforcement Pipes	5	mm	<b>TOTAL WEIGHT OF TURBINE NECK</b>	<b>7242</b>	<b>kg</b>
Thickness Of Plate For Connexion To Turbine	20	mm			
Width Of Plate For Connexion To Turbine	40	mm			
Thickness Of Plate In S.S. For Expansion Joint	3	mm			
Thick.Of Plate In S.S. For Expan. Joint Protection	3	mm			
Diameter Of Bolts For Expansion Joint Protection	20	mm			



# Interconexions Of Hotwells And Necks Weights

Run File

Results

Print Results

Save File

Load File

Exit

## INPUTS

Job Name

Thickness Of Diameter Of Hydraulic Seal Between Necks  mm

Thickness Of Hydraulic Seal Plates Between Necks  mm

Thickness Of Pipes Between Hotwells  mm

## FOR FINAL WEIGHTS



## Interconexion Of Hotwells And Necks Weight - Data And Results

Job Name : PRUEBA

### ■ Data Inputs

Thickness Of Diameter Of Seal Betwen Necks      16    mm

Thickness Of Seal Plates Between Necks            10    mm

Thickness Of Pipes Between Hotwells                8     mm

### ■ Results

Weight Of Diameter Of Hydraulic Seal Between Necks    4690    kg

Weight Of Hydraulic Seal Plates Between Necks            900    kg

Weight Of Pipes Between Hotwells                            1280    kg

TOTAL WEIGHT OF INTERCONEXIONS                            6870    kg