

INVENTORY NO.	SIGN. AND DATE	REF. DRG. NO.	THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTREST OF THE COMPANY	REV.	DATE	ALTERED	CHECKED	APPD	REV.	DATE	ALTERED	CHECKED	APPD	ADDITIONAL INFORMATION	
														STATUS OF DRAWING	
														DISTURIBUTION OF PRINTS	
S.NO		DESCRIPTION							UNITS		DATA				
1		GENERAL DATA													
1.1		Service of Heat Exchangers									OIL COOLER (1x100% PHE)				
1.2		No. of Heat Exchangers									As per Enquiry				
1.3		Item No.													
1.4		LOCATION									OUTDOOR				
1.5		OPERATION									CONTINUOUS				
2		DESIGN DATA AND CONSTRUCTION REQUIREMENT FOR <u>ONE PHE</u>									HOT FLUID		COLD FLUID		
2.1		Fluid circulated									OIL (ISO VG-46)		WATER		
2.2		Flow rate							m³/hr		8.5 ⁰¹		VENDOR TO PROVIDE		
2.3		Temperature inlet							°C				38		
2.4		Temperature outlet							°C		45		VENDOR TO PROVIDE		
2.5.		PROPERTIES									@55 °C	@45 °C			
2.5.1		Density							Kg/m³		840	855			
2.5.2		Viscosity							cp		16.67	30.55			
2.5.3		Specific heat							KCal/Kg.°C		0.48	0.46			
2.5.4		Thermal conductivity							KCal/hr.m.°C		0.1285	0.13			
2.5.5		Fouling Factor							m².K.hr/KCal		0.0002		0.0002		
2.6		Operating pressure							Kg/cm²(g)		10.5		4.0		
2.7		Max. Allow. Press. Drop Including Nozzles							Kg/cm²		0.6		0.5		
2.8		Heat exchanged							KCal/Hr		31748				
2.9		Design pressure							Kg/cm²(g)		8		6.5		
2.10		Design temperature							°C		80		60		
2.11		Corrosion allowance on C.S. Mat.							mm		3.0		3.0		
2.12		Surface Area Margin							Excess area %		10%				
2.13		Provision to accommodate additional plates for future expansion							%		10%				
2.14		Hydrostatic test pressure							Kg/cm²		1.5 X Design pressure.				
2.15		Max differential pressure between hot and cold fluid							Kg/cm²		10.0				
2.16		Type & Size of connections									Flanged ASME 150# RF				
		Inlet Nozzle & Outlet Nozzle									Size to be specified by vendor.				
2.17		Permissible Noise level							DBA		85 dBA At a Distance Of 1 M From Outline Of The Equipment.				
बी एच ई एल BHEL		BHARAT HEAVY ELECTRICALS LTD. HYDERABAD							DRN.	NAME ANSHUL			DATE 04.03.2020	NO.OF VAR.	
									CHD.	SUNIL			04.03.2020		NA
									APPD.	PRAFUL			04.03.2020		
TITLE: DATA SHEET – A PLATE TYPE HEAT EXCHANGER (OIL SERVICE)								CARD CODE	DRAWING NO. 4–165–01–22891					REV. 01	
								SHEET NO. 1		NO OF SHEETS 2					

INVENTORY NO. _____ SIGN. AND DATE _____ REF. DRG. NO. _____ THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTREST OF THE COMPANY	REV.	DATE	ALTERED	CHECKED	APPD	REV.	DATE	ALTERED	CHECKED	APPD	ADDITIONAL INFORMATION		
											STATUS OF DRAWING		
											DISTURIBUTION OF PRINTS		
	3	MATERIALS OF CONSTRUCTION											
	3.1	Heat transfer plates								SS 304			
	3.2	Heat transfer plates thickness							mm	0.6			
	3.3	Fixed / Movable cover plate								IS 2062			
	3.4	Lateral bolts (Tie rods) / nuts								A193B7/A1942H			
	3.5	Guide rail								SS CLAD IS 2062			
	3.6	Support beam/column								IS 2062			
	3.7	Plate gaskets								NITRILE RUBBER			
	3.8	Nozzle gaskets								Non - Asbestos			
	3.9	Nozzle pipes											
		(a) Hot fluid side								SS 304			
		(b) Cold fluid side								SS 304			
	3.10	Nozzle flanges & Counter flanges											
		(a) Hot fluid side								SS 304 (Slip-On Type)			
		(b) Cold fluid side								SS 304 (Slip-On Type)			
	3.11	Name plate								SS			
	3.12	Nozzle flange bolt/nuts								A193B7/A1942H			
	4	TESTS											
	4.1	Hydrostatic Test								YES			
	5	SPARES								AS PER REQUIREMENT			
	5.1	Heat Exchanger Plates											
	5.2	Plate Gasket											
	5.3	End Plates											
	5.4	End Plate Gaskets											
	6	MAINTENANCE TOOLS											
	6.1	Wrenches								YES			
	बी एच ई एल BHEL BHARAT HEAVY ELECTRICALS LTD. HYDERABAD								DRN.	NAME ANSHUL	SIGN.	DATE 04.03.2020	NO.OF VAR. NA
									CHD.	SUNIL		04.03.2020	
									APPD.	PRAFUL		04.03.2020	
	TITLE: DATA SHEET – A PLATE TYPE HEAT EXCHANGER (OIL SERVICE)							CARD CODE	DRAWING NO. 4–165–01–22891			REV. 00	
								SHEET NO. 2			NO OF SHEETS 2		