

HYDRAULIC POWER PACK FOR 30T EAF

1. PURPOSE:

Details of Hydraulic operations in 30T EAF are as under:			
S/N	Operation	Details of existing Hydraulic Cylinder	Supplier's comment
1.1	Roof movement: Up and Down	Veljan make 6" Bore X 3" dia. piston Rod X 21" stroke Double acting hydraulic cylinder. Mounting: Vertical Qty.: 2 Nos. (Working 2 Cylinders at a time) Working Pressure: 80 Kg/sq. cm Pipe line: ¾" NB	
1.2	Roof movement: In and Out	Veljan make 6" Bore X 3" dia. piston Rod X 42" stroke Double acting hydraulic cylinder. Mounting: Horizontal Qty.: 1No. Working Pressure: 80 Kg/sq. cm Pipe line: ¾" NB	
1.3	Furnace tilting: Forward and Reverse	Cylinder: 8.25" dia. piston Rod X 2 meter stroke Single acting cylinder. Mounting: Vertical Qty.: 2 Nos. (Working 2 Cylinders at a time) Working Pressure: 80 Kg/sq. cm Pipe Line: Pipe line: ¾" NB	

2. SCOPE OF SUPPLY:

S/N	Details		Supplier's comment
2.1	Complete hydraulic power pack equipment for operating 30T EAF in three different operations as per Clause no. 1.1, 1.2 & 1.3		
2.2	Tank Capacity	600 L to 700 L	
2.3	No. of Variable displacement axial piston Pump Motor units	03 Nos.	
2.4	Working Pressure	80 Kg/sq cm	
2.5	Design & tested at maximum Pressure (motor, pump & complete unit). <u>Note:</u> Relevant Test certificate to be provided.	150 Kg/sq cm	
2.6	Hydraulic Oil to be used	Servo System 32/68 or equivalent	
2.7	Pressure Relief Valve with manual adjustment pilot stage & vent function with a solenoid operated DC valve	03 No.	
2.8	Directional Control valve for each operations	3 Nos.	
2.9	Separate Flow Control check valve for controlling speed of forward & backward stroke of each cylinder for each operation		
2.10	Pilot operated check valve for each operation		
2.11	Pressure gauges For Pump Pressure, after pressure regulating valve	01 No.	

2.12	Each Pressure Gauge to be fitted with gauge isolator valve or shut off valve for easy maintenance / replacement of Gauge	
2.13	Manual operated Ball valve at inlet and outlet of all the three variable displacement axial piston Pump Motor unit for maintenance of pump & Motor	
2.14	Oil level indicator & temperature indicator on oil tank	
2.15	No suction strainer required & system must be provided with two return line filters separated by two ball valves, operating one at a time & one stand by for easy maintenance of filter in case of clogging	
2.16	Magnetic separator	
2.17	Remote pilot operated interlocking valve to control Roof IN & OUT movement. DC valve for Roof IN & OUT movement must only be actuated by pilot supply from pilot operated interlocking valve	
2.18	All items mentioned at Sl. No. 2.3 (for pump only), 2.7, 2.8, 2.9, 2.10, 2.17 & spares against these items must be of same make from either of the makes specified at 2.22.	
2.19	Special instructions	
2.19.1	Variable displacement axial piston Pump motor unit must be connected with the help of external coupling for easy maintenance of motor & variable displacement axial piston pump separately	
2.19.2	Variable displacement axial piston pump must be mounted on power pack & not submerged in hydraulic oil for easy maintenance	
2.19.3	System must be designed in such a way that no increase in temperature of tank due to hot hydraulic oil transfer. For effective cooling & filtration, separate Oil Filtration unit with Heat Exchanger must be provided in the same power pack with the tank.	
2.19.4	Hydraulic circuit must be manufactured by using seamless Carbon steel pipes & fittings.	
2.19.5	Color coding of each hydraulic line must be there with metallic tagging for each valve and gauge on power pack	
2.19.6	1 No. of variable displacement axial piston Pump Motor unit will work at a time and rest 2 Nos. variable displacement axial piston Pump Motor Unit will be kept as standby	
2.20	Mechanical interlocking	
2.20.1	Provision for Hydraulic Interlocking of roof swing cylinder as follows: A) Roof OUT & IN motion to be actuated only after getting following feedback: i) Rear Bumper IN	
2.21	Electrical Control	
2.21.1	All solenoid valve to be operated with 220V AC 50Hz.	
2.21.2	Terminal box mounted on power pack having indication lamp for each solenoid coil with metallic indication tag	
2.21.3	Foot mounted separate Control Panel consist of: i) 1 no. MCCB of suitable rating at Incomer with 3 Phase indications, Voltmeter & Ammeter ii) 3 nos. MPCB/ POWER CONTACTORS/Overload relay of suitable rating for start and stop of 3 Nos. variable displacement axial piston Pump Motor unit	

	(Separate starters for 3 units) with Overload & single phasing protection, indication lamp and metallic indication tag iii) Push buttons and indication lamp for operation of all the motions iv) Connecting Cable from Hydraulic power pack to control panel (Distance: 20 Meter)			
2.21.4	Motor: i) Suitable motor 3 Ph, 415 volts 50 Hz. ii) Motor make Siemens/L&T/Schneider/Kirloskar/CG/ABB/Alstom			
2.21.5	Foot mounted Remote Control Desk of size 1000mm X 1000mm X 300mm with necessary opening arrangement for maintenance, consist of: i) 4 ways spring return joystick switch (1 No.)/ 2 ways spring return joystick switch (2 Nos.), for Roof UP/Down Motion and Roof In/Out Motion ii) 2 ways spring return joystick switch for Furnace tilting Forward/Reverse Motion iii) Push Buttons for ON/OFF of variable displacement axial piston Pump with indication. iv) Connecting cable from Control panel to Remote Desk (Distance of each desk from Control Panel will be 100M)	3 Nos.		
2.22	Spares:	Qty.	Make	
	Variable displacement axial piston Pump	1 No.	Eaton/ Rexroth/ Yuken/ Parker	
	Electric Motor	1 No.	ABB/ Crompton Greaves/ Marathon/ Siemens/ GEC	
	Coupling	5	Reputed	
	Pressure Relief + vent valve	3 Nos.	Eaton/ Rexroth/ Yuken/ Parker	
	Magnetic Tank Cleaner	3 Nos.	Hydrolite/ Eaton/ Rexroth/ Parker/ Equivalent	
	Air Breather	3 Nos.	Hydrolite/ Eaton/ Rexroth/ Parker/ Equivalent	
	Inline Check Valve	3 Nos.	Eaton/ Rexroth/ Yuken/ Parker	
	Pressure Gauge Isolator Valve	2 Nos.	Reputed	
	Pressure Gauge Glycerin Filled	2 Nos.	Reputed	
	Solenoid Operated DC Valve For Each operation	3 Nos.	Eaton/ Rexroth/ Yuken/ Parker	
	Pilot Operated Interlocking Valve	1 No.	Eaton/ Rexroth/ Yuken/ Parker	
	Pilot Operated Check Valve	3 Nos.	Eaton/ Rexroth/ Yuken/ Parker	
	Flow Control Check Valve	5 Nos.	Eaton/ Rexroth/ Yuken/ Parker	
	Solenoid Coil	6 Nos.	Reputed	
	Pump Motor Coupling	4 Nos.	Reputed	

	Return Line Filter	8 Nos.	Hydrolite/ Eaton/ Rexroth/ Parker/ Equivalent	
	Indication Lamp	20 Nos.	Reputed	
	Push Button	20 Nos.	Reputed	
	4 ways spring return Joystick switch	2 Nos.	Reputed	
	2 ways spring return Joystick Switch	2 Nos.	Reputed	

3. ON SITE TRAINING

1	Training on operation & maintenance of Hydraulic Power Pack supplied, shall have to be provided to 4 CFFP personnel at site.	
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4. CONFIRMATION TO BE GIVEN BY THE SUPPLIER

S/N	Details	Supplier's comment
01	Space available for Hydraulic Power Pack excluding Control panel and Remote Desks is 2500mm(L) X 2000mm (W) X 1400mm(H), Power Pack to be designed accordingly.	
02	Supervision for Erecting & Commissioning to be done by the supplier. Commissioning will be considered completed only after successful operation of all the motions and interlocking stated above as per Clause 2.17. Note: Supplier may visit the site for any clarifications or to understand the system, before participating in Tender Enquiry.	
03	Guarantee for 18 months from Date of receipt or 12 months from date of commissioning, whichever is earlier.	
04	3 Sets of drawings (Hydraulic Power Pack and Electrical Panel) and Operation & Maintenance Manual to be provided in hard copy along with the equipment detailed specification.	

Special Instructions:

Note:

1. Vendor to quote rate including supervision of E&C charges.
2. All material along with spares are required to be supplied together in one lot.
3. "Reputed" make means no restriction for specific make of the item.