

BHARAT HEAVY ELECTRICAL LIMITED, JHANSI



Specification No.	7101 Rev 01
Item No.	SP/COMP -1/8/7101
Location	Services/day9
Quantity	01 set

NOTE:-

1. Vendor must submit complete information against clause no. 21.0 (Qualifying Condition). The offer meeting this clause would only be processed.
2. VENDOR to furnish the offer using this standard template of the specification. While furnishing the offer, no change is to be made in the first three columns (i.e. 'S.NO.', 'DESCRIPTION FOR BHEL REQUIREMENT' & 'ACTION BY VENDOR'). Only the "Offered" column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the VENDOR and submitted along with the offer. Wherever "Vendor to specify" is mentioned in action by VENDOR column, the VENDOR has to clearly provide the details. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.
3. The offer and all documents enclosed with offer should be in English language only.
4. Where ever "Vendor to specify" or "suitable" is mentioned, suitable backup data or calculation or justification is required for establishing the suitability.
5. Circuit diagram of the system offered is to be enclosed with proper writeup.

NAME & ADDRESS OF THE SUPPLIER :

TELEPHONE NOS.:

NAME & ADDRESS OF THE INDIAN AGENT :

FAX NOS.:

TELEPHONE NOS.:

E-MAIL ADDRESS :

FAX NOS.:

SCOPE: Design, Supply, Erection & COMMISSIONING OF Screw Type Air Compressors, Air Dryer, Air Filters, Air Receiver, Air pipelines, Valves and accessories etc. SPECIFICATIONS AS BELOW

S. NO.	DESCRIPTION FOR BHEL REQUIREMENT	ACTION BY VENDOR	OFFERED	DEVIATION
1.0	PURPOSE			
	"Screw Type Air Compressor Unit" consisting of Screw Type Air Compressors, Air Dryer, Air Filters, Air Receiver, Air pipelines, Valves and accessories etc. as per the following specifications is required to supply dry and clean compressed air in manufacturing shops for the operation of different machines, plants & equipment.	Vendor to confirm		
2.0	SCOPE			

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S. NO.	DESCRIPTION FOR BHEL REQUIREMENT	ACTION BY VENDOR	OFFERED	DEVIATION
2.1 (A)	Scope of supply Design, Manufacturing, Supply of compressed air supply system comprising of: A. AIR SCREW COMPRESSOR (OIL FLOODED TYPE), Capacity-1200 CFM @ 10 bar pressure, STATIONARY -- QTY: 03 nos. B. REFRIGERANT TYPE AIR COOLED AIR DRYER, Capacity -3000 CFM -- QTY: 01 no. C. AIR RECEIVER, Capacity -10 Cubic Meter -- QTY-02 nos. G. INTER CONNECTION PIPING (As per IS : 3601-2006- Steel tubes for mechanical & general engineering purposes) WITH ABOVE SUPPLIED EQUIPMENT INCLUDING ALL ACCESSORIES REQUIRED TO COMPLETE THE SYSTEM COMPRISING OF FOLLOWING- a) Header pipe line - Length approx. 100 Mtrs. (Pipe dia as per system requirement) b) Interconnection piping - Length and Pipe dia as per system/site requirement. c) Valves -As per site requirement. (pipeline Layout and sizing shall be as per IS 6206:1985- Guide for selection , installation & maintenance of air compressor plants with operating pressure upto 10 bars.) The likely configuration of above equipment shall be as follows: This arrangement is tentative and given only for reference. This may change later as per requirement. Vendor scope shall be governed by details contained in our specifications. a. 2 nos. (1200 CFMX2) compressors, 1 no. Air Receiver (10 cub. M) & 1 no. Air dryer (3000 CFM) shall be connected in one network in existing air compressor house tentatively as per scheme shown in the drawing no. WEX/Services/ Compressor house. b. 1 no. (1200 CFM) compressor, 1 no. Air Receiver (10 cub. M) & Air dryer (2000 CFM) shall be connected in existing air caster compressor system tentatively as per the scheme shown in the drawing no. WEX/Services/Air caster compressor. Above systems are to be installed and commissioned interfacing with our existing compressed air supply systems. (Vendor may visit the site before submitting the offer to understand the site requirement) <u>Optional Scope of supply, installation & commissioning: (optional price is requested for following item/s separately in price bid)</u>	Vendor to confirm		
2.1 (B)	Design, Manufacturing, Supply, Installation and commissioning of compressed air dryer (as per IS 11989: 1986- Specification for compressed air dryer). Type- Refrigerant type, Capacity- 2000 CFM; Qty: 1 no. Other Specifications as per point sr. no. 5.2 of this specification.	Vendor to confirm and specify		

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S. NO.	DESCRIPTION FOR BHEL REQUIREMENT	ACTION BY VENDOR	OFFERED	DEVIATION
2.1 (B) b	The below mentioned accessories are required for connection with the 1000 CFM reciprocating compressors- i) OIL SEPARATOR SYSTEM for existing 1000 CFM capacity reciprocating compressors-- QTY: 4 nos. ii) AIR PREFILTER for existing compressed air line connection to the air dryer-- QTY: 3 nos. iii) AUTOMATIC MOISTURE DRAIN TRAP for existing air receivers installed with 1000 CFM compressors-- QTY: 3 nos. Vendor shall consider required modifications in existing lines, installation of valves and other accessories required to be installed in existing air line to make the compressed air from existing compressor suitable for use with offered air dryer.	Vendor to confirm and specify		
2.2	Scope of work A. Erection & Commissioning and proving of supplied equipment with our existing compressed air supply network. B. Integration of supplied equipments with our existing compressed air supply system. C. Integration of new header pipe line with existing header line. D. Interconnection piping of compressor, air receiver & air dryer. [Vendor should take approval from M/s BHEL for lay out drawing (compressor, receiver & dryer with interconnection piping including header line), before start the erection work and lay the pipe line as per approved drawing.]	Vendor to confirm		
3.0	SCREW COMPRESSOR [As per IS 12258:1987- Technical Supply Condition for Screw Compressors (oil flooded) for general purpose and industrial applications], Capacity-1200 CFM STATIONARY --QTY-03 NO.	Vendor to confirm		
	The specification governs the quality requirement of design, manufacturing, supply, erection and commissioning of 1200 CFM compressor complete in all respect	Vendor to confirm		
3.1	General Features An independent stationary, single stage/ double stage, air cooled screw type Air Compressor for delivering air to air network, powered by a 3 phase A.C. Electric motor. Vendor to furnish details about general construction features literature, leaflets and sketches.	Vendor to confirm & Furnish		
3.2	Specification			
i	Air delivery : 1200 CFM or more at 10 bar pressure	Vendor to confirm		
ii	Normal working pressure : 10 bar	Vendor to confirm		
iii	Maximum working pressure :	Vendor to specify		
iv	Duty : Continuous	Vendor to confirm		
v	Installation: Indoor/ outdoor with roof	Vendor to note		
vi	Ambient condition : Temp. 5 to 48 degC, RH 95% max., Inlet Pr.: Atmospheric Air	Vendor to confirm		
vii	Maximum speed of screw element -3000 RPM	Vendor to confirm		

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S. NO.	DESCRIPTION FOR BHEL REQUIREMENT	ACTION BY VENDOR	OFFERED	DEVIATION
viii	Suction air filter shall be provided such that it offers minimum resistance to suction and shall be effective for dust prevention.	Vendor to confirm		
ix	For maintaining air receiver pressure at 10 kg/cm ² , Suction valve unloader shall be provided.	Vendor to confirm		
x	Receiver-cum-oil separator shall be provided with a safety valve to prevent abnormal pressure rising and to ensure safety of the unit.	Vendor to confirm		
xi	Oil separation system shall be provided to form an integral part of the operational package with replaceable separation element.	Vendor to confirm		
xii	Lubrication system shall consist of a built in oil reservoir with compressor housing. Standby filter with bypass lube line shall be provided so that compressor is not stopped till such time the filter element of main lube line is changed after clogging.	Vendor to confirm		
xiii	An efficient cooling system for lubricating oil shall be provided.	Vendor to confirm		
xiv	OEM recommended lubrication oil as well as equivalent lubrication oil from IOCL/HPLC/BPCL/BALMER LAWRIE to be mentioned by supplier.	Vendor to confirm		
xv	Drive: Electrical motor (Heavy duty Induction Motor of 200KW capacity or more) with soft starter/variable frequency drive.	Vendor to confirm and specify		
xvi	Make of motor - Siemens/ABB/ Marathon /CGI/ Bharat Bijlee. If make is deviated then guarantee of motor should be minimum for 5 years from the date of commissioning.	Vendor to confirm and specify		
xvii	Valves and accessories such as Pressure Relief Valve, Automatic pressure Switch, Oil Sight Glass, Non Return Valve, Auto and manual Drain Valve, Starter for the motor, High temperature shut down sensor etc.	Vendor to confirm and specify		
xviii	Noise level (1 Meter away from compressor) : 80 dBA (Max.)	Vendor to confirm and specify		
3.3	Control system and panel	Vendor to specify		
3.3 (a)	Following instrumentation shall be provided by manufacturer:			
i	Delivery Pressure Gauge	Vendor to confirm and furnish details		
ii	Lubricating oil pressure gauge	Vendor to confirm		
iii	Lubricating oil delivery temperature gauge	Vendor to confirm		
iv	Safety valve on oil separator vessel	Vendor to confirm		
v	Differential pressure switch for lubricating oil filter	Vendor to confirm		
vi	Differential pressure gauge for oil separator elements	Vendor to confirm		
vii	High lubricating oil temperature safety switch	Vendor to confirm		
viii	Clogging indicator for air suction filter	Vendor to confirm		
ix	Oil level switch	Vendor to confirm		
x	Cooling fan operation interlock	Vendor to confirm		

S. NO.	DESCRIPTION FOR BHEL REQUIREMENT -	ACTION BY VENDOR OFFERED	DEVIATION
3.3 (b)	Control panel for monitoring the data continuously & accurately (through microprocessor based Regulator and Electronics controller) and for controlling the performance through feedback to the operator and interlocking arrangements.. Built in protection system , inclusive of the following, should be provided for safe operation of the complete compressor system:	Vendor to confirm and furnish details	
i	Phase sequence protection relay	Vendor to confirm	
ii	Phase failure protection relay	Vendor to confirm	
iii	Motor overload Trip	Vendor to confirm	
iv	High Air / Oil Discharge Temperature Trip	Vendor to confirm	
v	Protection against starting on load	Vendor to confirm	
vi	Dual Hours meter for Run / Load	Vendor to confirm	
vii	Auto ON/OFF as per requirement of air pressure	Vendor to confirm	
3.3 (c)	Compressor Status Indications :	Vendor to confirm	
i	Voltage ON (Digital Indication)	Vendor to confirm	
ii	Compressor ON (Stand -By, UP & Shut down Mode)	Vendor to confirm	
iii	Compressor in " UN-LOAD" condition	Vendor to confirm	
iv	Compressor in "LOAD" condition	Vendor to confirm	
4.0	AIR RECEIVER , Cap -10 Cubic Meter --QTY-02 NO	Vendor to confirm	
	The specification covers the requirement of design , manufacturing, supply , erection and commissioning of 10 METER CUBE capacity air receiver complete in all respect. [In accordance to IS: 2825:1969- Code for unfired pressure vessel and IS 7938 (1976) - Air receivers for compressed air installation].	Vendor to confirm	
4.1	General Features		
	Vendor to furnish details about general construction features alongwith literature, leaflets and sketches		
4.2	Specification	Vendor to submit	
i	Capacity -10 METER CUBE	Vendor to confirm	
ii	Material of Construction (As per IS: 2062- Hot Rolled Medium and High Tensile Structural Steel)	Vendor to confirm	
iii	Code of Construction/ manufacturing - As per IS 2825:1969.	Vendor to confirm	
iv	Working pressure -10 Kg/cm2 or more	Vendor to confirm	
v	Design Pressure	Vendor to confirm	
vi	Hydraulic Test : As per IS 7938 (1976)	Vendor to specify	
vii	Class -II	Vendor to confirm	
viii	Mounting: Vertical	Vendor to specify	
ix	Receiver should comply all statutory requirement as applicable to pressure vessel and if any certification required shall be arranged by supplier	Vendor to confirm	
4.3	Accessories - Vendor to furnish details related to following and any other accessory used :	Vendor to confirm	
i	Pressure Gauge 6" Dial 1/2 BSP Socket and Valves	Vendor to submit	
ii	Manhole STD size	Vendor to submit	
iii	Safety Relief valve	Vendor to submit	
iv	Zero Air Loss Automatic Drain Valve along with manual drain valve for draining condensed air from the Receiver.	Vendor to submit	

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S. NO.	DESCRIPTION FOR BHEL REQUIREMENT	ACTION BY VENDOR	OFFERED	DEVIATION
v	Inlet and outlet valve (ON/OFF valve)	Vendor to submit		
5.0	AIR DRYER [as per IS 11989: 1986- Specification for compressed air dryer], CAP-3000CFM (Min.) --QTY-01 NO.	Vendor to confirm		
	The specification covers the requirement of design , manufacturing, supply , erection and commissioning of 3000 CFM (min.) capacity air dryer complete in all respect (including air filters) .	Vendor to confirm		
5.1	General Features	Vendor to submit		
5.2	Specification	Vendor to confirm		
	Air Dryer: Dryer unit shall be complete with air to air pre cooler, evaporator, hermetically sealed scroll type refrigerant compressor, air cooled condenser, hot gas by-pass/unloader valve, auto drain valves, temperature control unit & other necessary controls/ protective devices of reputed make. All components are to be mounted on single skid.	Vendor to confirm		
i	Type : Fully Automatic, Non-cyclic, air cooled, refrigerated type	Vendor to confirm		
ii	Capacity of dryer : 3000 CFM (Min)	Vendor to confirm		
iii	Working pressure - 8 Kg/ cm ²	Vendor to confirm		
iv	Max. Working Pressure -10 Kg/cm ²	Vendor to confirm		
v	Max. Pressure drop across dryer shall be < 7 PSI	Vendor to confirm		
vi	Ambient condition : Temp. 5 to 48 degC, RH 95% max.	Vendor to confirm		
vii	Outlet Air Temperature : 35 degC (max)	Vendor to specify		
viii	Pressure dew point (PDP): 3-4 degC	Vendor to specify		
ix	On line differential pressure indicator for measuring pressure drop across dryer shall be provided.	Vendor to confirm		
x	Filter: On line compressed air pre filters at dryer inlet after isolation valve suitable to handle quantity & pressure of air as per capacity of air dryer, having filter elements (max. 5 microns), differential pressure indicator for pressure drop across filter and auto drain valve shall be provided.	Vendor to confirm		
xi	Drain Valve : Automatic through electrical/electronic controls	Vendor to confirm		
xii	Shut off valve at dryer air inlet and out let shall be ball valve/ butterfly type of suitable class.	Vendor to confirm		
xiii	All system piping and flanges shall be as per ASME B16.5.	Vendor to confirm		
xiv	Layout of air dryer, pre filter and interconnecting piping shall be suitably planned for easy/safe operation & maintenance.	Vendor to confirm		
xv	Total Connected load and power consumption of air dryer	Vendor to specify		
xvi	In let and outlet pipe size	Vendor to specify		
xvii	Electronic based control panel for the following operations: (i) Start/Stop for the dryer in manual mode. (ii) Pressure high and pressure low alarm & indication. (iii) Dew point High & Low Alarm & indication (iv) Any other necessary alarm/indication	Vendor to confirm		
xviii	Refrigerant: HFC gas	Vendor to confirm & specify		
xix	Noise level (1 Meter away from dryer) : 80 dBA (Max)	Vendor to confirm		

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S. NO.	DESCRIPTION FOR BHEL REQUIREMENT.	ACTION BY VENDOR	OFFERED	DEVIATION
6.0	QUALITY OF DELIVERED AIR:			
6.1	Compressor unit should deliver compressed air according to ISO - 8573-1, having the following parameters of compressed air:	Vendor to confirm		
	i Pressure Dew Point: 3 - 4 Degree Celsius	Vendor to confirm		
	ii Max. Ambient Temperature: 50 Degree Celsius	Vendor to confirm		
	iii Solid Particle / Dust: Class - I	Vendor to confirm		
	iv Humidity: Class - IV	Vendor to confirm		
	v Oil Content: Class - I	Vendor to confirm		
6.2	Above parameters shall be achieved and if any additional supply/work is required to achieve above parameters shall be provided by vendor without any extra cost to BHEL.	Vendor to confirm		
7.0	ELECTRICAL			
	i Input power Supply : 3 phase, 415 $\pm$ 10% Volt, 50 $\pm$ 3% Hz and 220 $\pm$ 10% Volt, 50 $\pm$ 3% Hz	Vendor to confirm		
	ii Tropicalisation : All/ electricals / electronics equipment shall be tropicalized to suit ambient conditions	Vendor to confirm		
	iii All electricals & electronic control cabinets & panel should be dust and rodent proof.	Vendor to confirm		
	iv Motors shall conform to IEC or Indian Standards.	Vendor to confirm		
8.0	SAFETY ARRANGEMENTS:			
	i Safety feature should be incorporated for safety of operator and the compressor, Dryer and receiver.	Vendor to confirm		
	ii Anti Vibration Mountings should be provided on the compressor frame for vibration isolation from Screw element, Motor and Oil Separator Tank.	Vendor to confirm		
	iii All the pipes, cables etc. on the compressor should be well supported and protected.	Vendor to confirm		
	iv Guards shall be of removable type provided on all movable parts.	Vendor to confirm		
	v Rotation arrow shall be cast in or attached to major items of rotating equipment and Name plate shall be securely attached at an easily accessible points on the compressor, receiver, dryer and major auxiliary equipment.	Vendor to confirm		
9.0	ENVIRONMENTAL PERFORMANCE OF THE COMPRESSOR :			
	The compressor shall confirm to following factors related to environment :	Vendor to confirm		
	i If any safety / environmental protection enclosure is required it should be built in the compressor, Dryer and receiver by the vendor.	Vendor to confirm		
	ii Paint of the compressor, Dryer and receiver should be oil / coolant resistant and should not peel off and mix up with coolant.	Vendor to confirm		
10.0	LEVELING & ANCHORING SYSTEM			
	i Complete anchoring system including foundation bolts, anchoring materials, leveling shoes etc should be supplied.	Vendor to confirm		
11.0	TOOLS FOR ERECTION, OPERATION & MAINTENANCE:			
	i Special tools and equipment required for erection and necessary tools like Torque Wrench, Spanners, Keys, grease guns etc. for operation and maintenance of the compressor should be supplied. List of such tools should be submitted with offer	Vendor to confirm		
12.0	GUARANTEE:			
	ii 24 months from the date of commissioning of complete compressed air supply system (compressor, Dryer and receiver with piping)	Vendor to confirm		

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S. NO.	DESCRIPTION FOR BHEL REQUIREMENT	ACTION BY VENDOR	OFFERED	DEVIATION
13.0	DOCUMENTATION : Three sets of following documents (Hard copies & soft copy) in English language should be supplied along with the compressor, filter, Dryer and receiver. i Operating manuals of compressor, Dryer and receiver. ii Detailed electricals circuit should be supplied along with the air compressor, Dryer and receiver. iii Detailed Maintenance manual of compressor, Dryer and receiver with all drawings of compressor assemblies / sub - assemblies / parts. iv Detailed specification of all rubber items and hydraulic / lube fittings along with details of BOIs like valves, pressure switches, sensors, solenoids etc v Complete Master List of parts used in the compressor, Dryer and receiver. shall be submitted by the vendor.	Vendor to confirm Vendor to confirm Vendor to confirm Vendor to confirm		
14.0	CIVIL WORK i Vendor shall submit the layout drawing for getting BHEL's approval within one month from the date of letter of Intent (LOI) / P.O. The Layout should consist of all requirements pertaining to complete compressor, Dryer and receiver. including space requirement for any accessories. BHEL shall construct complete foundation for the compressor, Dryer and receiver under supervision of supplier and at supplier's responsibility. Vendor should arrange equipments required for the testing of foundation, if required by the Vendor. The vendor shall also indicate detailed specifications of grouting compound and grouting procedure etc. for foundation bolts of the compressor.	Vendor to confirm		
15.0	ERECTION & COMMISSIONING i Supplier to take full responsibility for carrying out the erection, start up, testing of compressor, Dryer and receiver, it's control & all other equipment including interconnecting piping etc. Service requirement like power, air & water shall be provided by BHEL at only one point (to be indicated by supplier in thier foundation/ layout drawings). Other requirements like crane and helping personnel shall also be provided by BHEL subletted to availability. Details of these requirements should be informed by vendor in advance. ii Refrigerant gas, oil and other required consumables shall be in the scope of vendor till commissioning of the complete system including Compressor, Air Dryer and Air receiver tank. iii Necessary Hoses and Pipes in required length and size, Connectors and Valves required between Compressor, Air Dryer and Filters to be supplied with the equipment. iv Tools, Tackels, Test Mandrels, instruments and other necessary equipment / gauges required to carry out all above activities should be brought by the supplier. v Commissioning spares, required for commissioning of the compressor within stipulated time, shall be brought by the supplier on returnable basis. vi Portion, if any, of the compressor, Dryer and receiver, accessories and other supplied items where paint has rubbed off or peeled during transit or erection should be repainted and merged with the original surrounding paint by the Vendor. For this purpose, the vendor should supply sufficient quantity of touch -up paint of various colours of paint used. vii Supplier also has to supply, erect and commission all piping and fittings required for connection of compressors to air dryer and air receiver in exist air pipe line.	Vendor to confirm Vendor to confirm Vendor to confirm Vendor to confirm Vendor to confirm Vendor to confirm Vendor to confirm		

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S. NO.	DESCRIPTION FOR BHEL REQUIREMENT	ACTION BY VENDOR	OFFERED	DEVIATION
viii	Schedule of supply:	Vendor to specify		
ix	Schedule of execution: Erection and Commissioning : 3 months (maximum).	Vendor to confirm		
x	Vendor may note that the E & C charges in this case have been mandatorily fixed at 10% of the total cost. This apportioned price has to be compulsorily agreed by all vendors & no deviation shall be acceptable for this.	Vendor to Confirm		
16.0	OPERATING CONDITIONS & THERMAL STABILITY			
i	Compressor, Dryer and receiver. should work trouble free and efficiently under following operation condition and should specified accuracies. Power supply voltage: 415 V-10% , +10% Frequency : 50 Hz +3%, -3% No. of phase = 3 Ambient Condition : Temperature = 5 to 45 degree celsius Relative Humidity = 95% max. (Vendor to confirm that compressor is suitable for above and details of provisions on the compressor for the same are to be furnished by Vendor)	Vendor to confirm		
ii	Weather condition are tropical , Atmosphere may be dust Laden during some part of the year . Compressor shall be kept in the normal shop floor condition. Max temperature variation is up to 25 deg celsius in 24 hours. (Vendor to confirm that compressor, Dryer and receiver is suitable for above and details of provisions on the compressor for the same are to be furnished by Vendor)	Vendor to confirm		
iii	Thermal Stability of the complete Compressed air supply system (compressor, Dryer and receiver). keeping in view specified Ambient condition and accuracy requirement of BHEL components and trouble free operation of the compressor should be ensured by vendor. (Confirm that compressor is suitable for above and details of provisions on the compressor for the same should be furnished)	Vendor to confirm		
17.0	SYSTEM ACCEPTANCE : (Tests / Activities to be performed by Vendor)	Vendor to confirm		
i	Tests/Activities to be witnesses by BHEL representatives at supplier's works on the complete compressed air supply system(compressor ,Dryer and receiver)before dispatch:	Vendor to confirm		
ii	Test certificates , specification and performance of the complete supplied system shall be checked and verified.	Vendor to confirm		
iii	Demonstration of all features of the complete compressed air supply system(compressor ,Dryer and receiver), control system& accessories.	Vendor to confirm		
iv	Tests/Activities to be carried out at BHEL work while commissioning the compressor:	Vendor to confirm		
v	Demonstration of all features of the complete compressed air supply system(compressor ,Dryer and receiver), control system & accessories to the satisfaction of BHEL for efficient and effective use of the compressor.	Vendor to confirm		
vi	One weeks supervision of independent operation of complete compressed air supply system(compressor ,Dryer and receiver) by BHEL after job acceptance.	Vendor to confirm		

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S. NO.	DESCRIPTION FOR BHEL REQUIREMENT -	ACTION BY VENDOR	OFFERED	DEVIATION
vii	Training of BHEL compressor operators / maintenance personnel in operation / maintenance of complete compressed air supply system(compressor ,Dryer and receiver) & accessories etc by the supplier's experts/ engineers during their stay at BHEL works	Vendor to confirm		
viii	Demonstration by actual use of all supplied attachments and accessories to their full capacity .	Vendor to confirm		
18.0	FINAL ACCEPTANCE i Final acceptance shall be after erection and commissioning of the complete air compressor system at BHEL by the vendor to full satisfaction of BHEL . The criteria for acceptance of the complete compressed air supply system(compressor ,Dryer and receiver) after erection shall be " satisfying all the clauses of Technical specifications" given above.	Vendor to confirm		
19.0	PACKING i Sea worthy & rigid packing for all items of complete compressor,Dryer and receiver.All accessories and other supplied items to avoid any damage/ loss in transit. When compressor is despatched in containers, all small loose items shall be suitably packed in boxes	Vendor to confirm		
20.0	GENERAL : The vendor should submit the following information:			
i	Equipment Model for air compressor,Dryer and receiver.	Vendor to furnish		
ii	Equipment Make for air compressor,Dryer and receiver.	Vendor to furnish		
iii	Dimension of compressor,Dryer and receiver.	Vendor to furnish		
iv	Detailed catalogues, sketch / photographs of the compresor and accessories / attachments should be submitted with the offer.	Vendor to furnish		
21.0	QUALIFYING CONDITION :			
i	Only those Manufacturers / their authorized Dealers should quote who have supplied and commissioned the screw air compressor/s of capacity 1200 CFM@10 bar pressure each or higher capacity to at least three different customers in the past 5 years from the original date of tender opening and such compressors are presently working satisfactorily for more than one year after commissioning .	Vendor to accept and confirm		
21.1	The following information is to be submitted by the VENDOR about the companies where such plants have been supplied. This is required from all the VENDORS for qualification of their offer.	Vendor to confirm		
21.1.1	Name of the customer / company where such Compressor is installed.(unpriced copy of purchase order to be furnished in line with point no. 21.0. i)	Vendor to furnish		
21.1.2	Complete postal address, Phone, FAX no. and E-mail address of the contact person of the customer.	Vendor to furnish		
21.1.3	Year of commissioning.	Vendor to furnish		
21.1.4	Application for which Compressor has been supplied.	Vendor to furnish		
21.1.5	Name and designation of the contact person of the customer.	Vendor to furnish		

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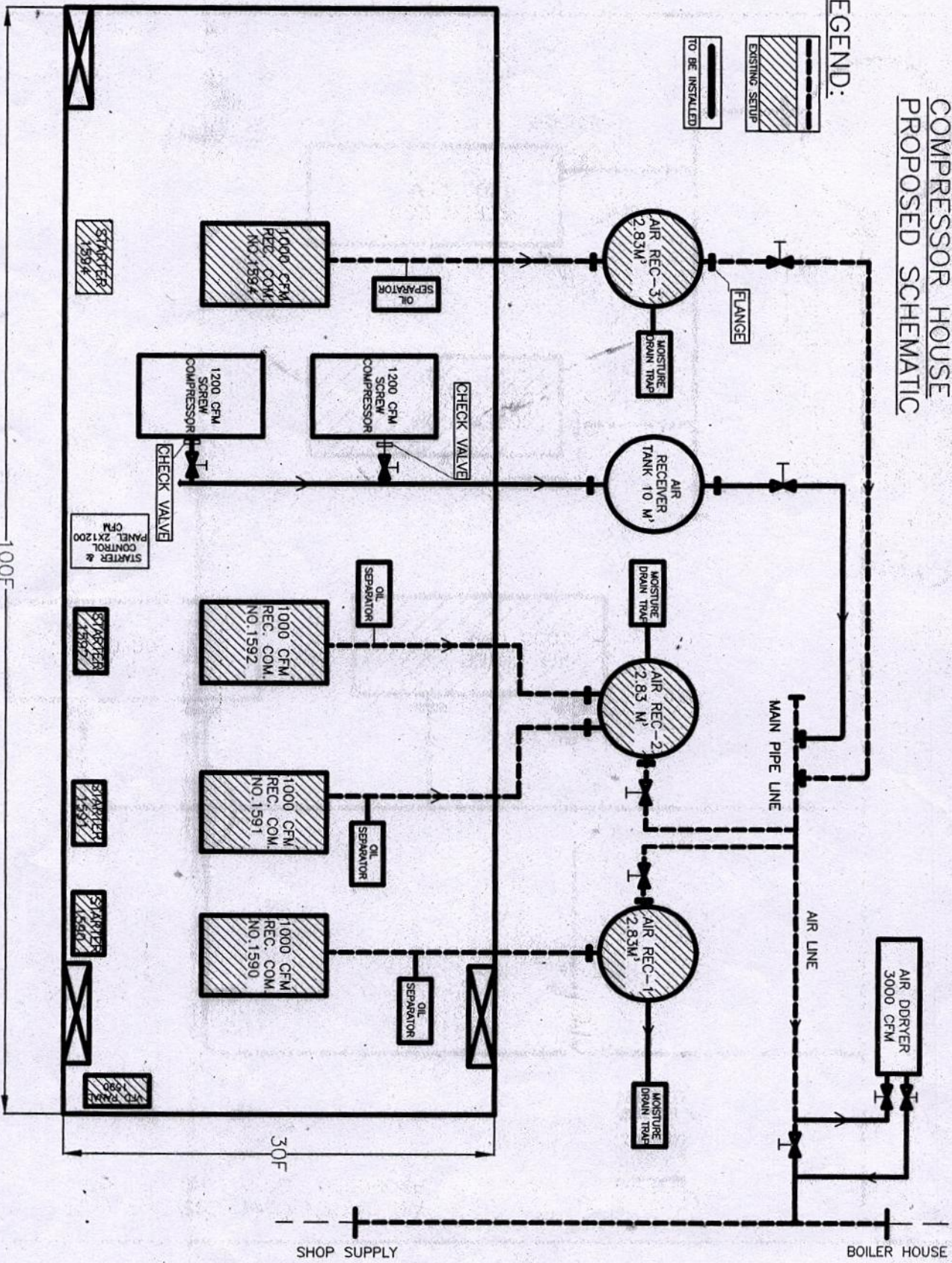
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S. NO.	DESCRIPTION FOR BHEL REQUIREMENT.	ACTION BY VENDOR	OFFERED	DEVIATION
21.1.6	Performance certificate from the customer regarding satisfactory performance for minimum one year after commissioning of Compressor supplied in line with point no. 21.0, i.	Vendor to furnish		
21.2	BHEL reserves the right to verify information or visit the place of installation of customer as indicated by VENDOR. In case the information is found to be false / incorrect, the offer shall be rejected.	Vendor to note & confirm		
Abhishek Gupta Sr. Engineer/ FCX Prabhat katiyar Dy. Mgr./TRM D. K. Sharma Dy. Mgr./TRM Nitin Kumar Gaur Manager/WEX Dhirendra Kumar Manager/TRM Pawan Kumar Sr. Manager/WEX				

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COMPRESSOR HOUSE PROPOSED SCHEMATIC

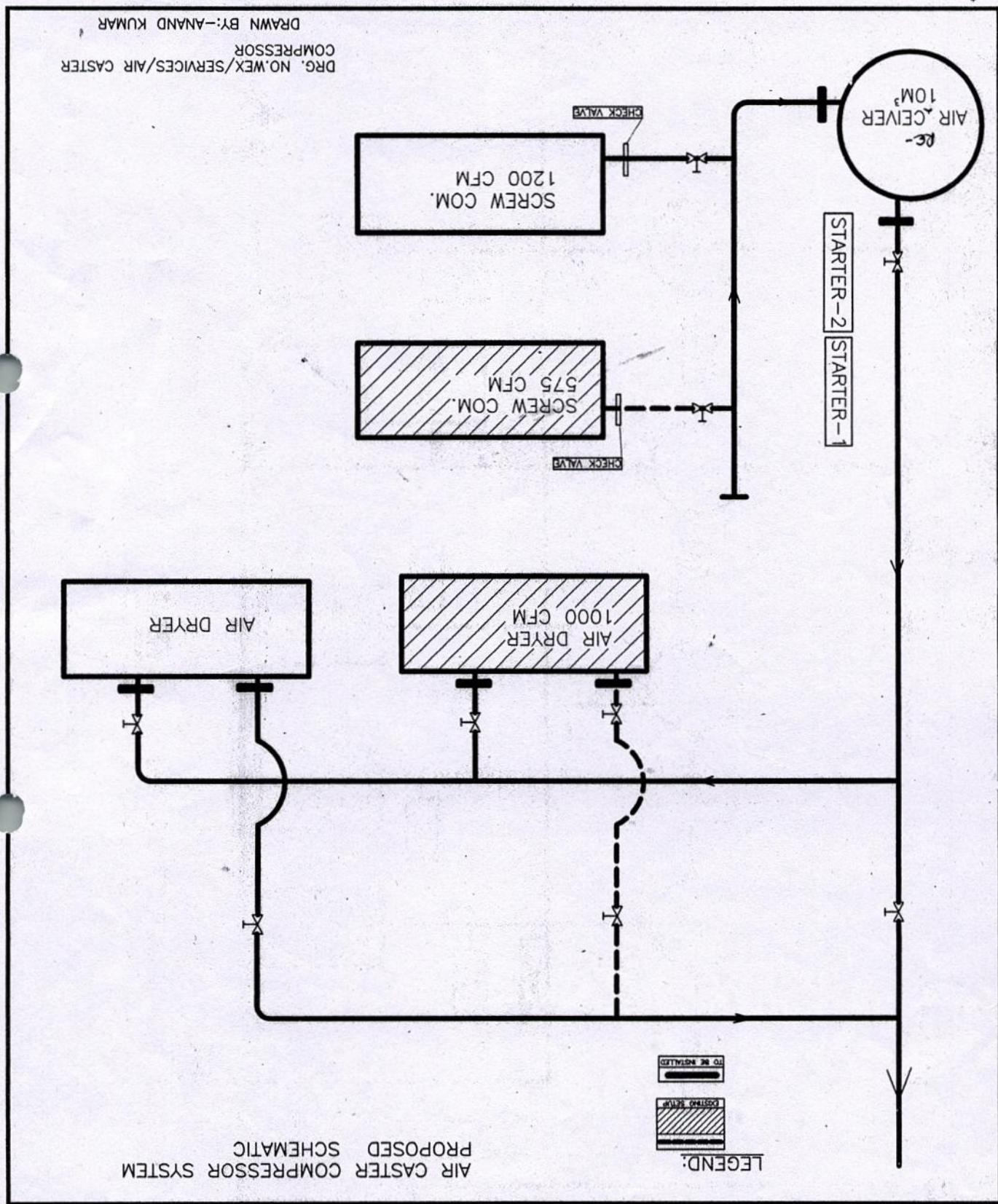
LEGEND:



DRG. NO. :WEX/SERVICES/COMPRESSOR HOUSE

DRAWN BY:-ANAND KUMAR

DRG. NO. WEX/SERVICES/AIR CASTER
COMPRESSOR
DRAWN BY:-ANAND KUMAR



AIR CASTER COMPRESSOR SYSTEM
PROPOSED SCHEMATIC

LEGEND:
EXISTING EQUIP.
TO BE INSTALLED

FOLLOWING BREAKUP IS REQUESTED IN SUBMITTED PRICE BID (ANNEXURE - P)

Sl. No.	Spec. point no.	Description of items	PRICE
	2.1(A)	MAIN ITEMS	
1		A. AIR SCREW COMPRESSOR (OIL FLOODED TYPE) , Capacity-1200 CFM @ 10 bar pressure, STATIONARY -- QTY: 03 nos.	XXXX
2		B. REFRIGERANT TYPE AIR COOLED AIR DRYER, Capacity -3000 CFM ,Working pressure- 10 bar ,-- QTY: 01 no.	XXXX
3		C. AIR RECEIVER, Capacity -10 Cubic Meter -- QTY-02 nos.	XXXX
4		D. INTER CONNECTION PIPING	XXXX
5		E .E &C CHARGES FOR SCREW COMPRESSOR,AIR COOLED AIR DRYER & AIR RECEIVER	XXXX
	2.1(B)	OPTIONAL ITEMS	
6	2.1(B)(a)	a.Design,Manufacturing ,Supply, Installation and commissioning of compressed air dryer Type- Refrigerant type, Capacity- 2000 CFM.QTY: 01 nos. (as per IS 11989: 1986- Specification for compressed air dryer)	
7	2.1(B)b	i. OIL SEPARATOR SYSTEM for existing 1000 CFM capacity reciprocating compressors-- QTY: 4 nos.	XXXX
8	2.1(B)b	ii.AIR PREFILTER for existing compressed air line connection to the air dryer-- QTY: 3 nos.	XXXX
9	2.1(B)b	iii. AUTOMATIC MOISTURE DRAIN TRAP for existing air receivers installed with 1000 CFM compressors-- QTY: 3 nos.	XXXX

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