



BHARAT HEAVY ELECTRICAL LIMITED

Specification No.	9047
Item No.	SP/CO2/9047
Location	FABRICATION
Quantity	1 No.

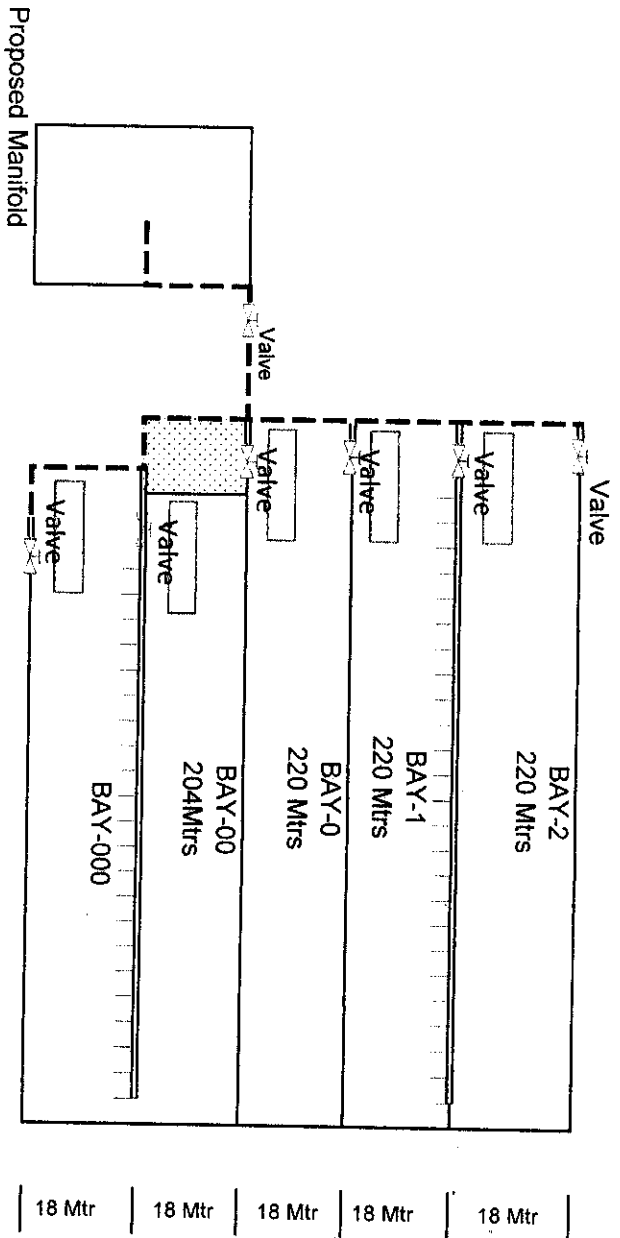
SPECIFICATION CUM COMPLIANCE CERTIFICATE OF CO2 MANIFOLD SYSTEM

NOTE:-

1. Vendor must submit complete information against clause no.10 (Qualifying Condition). The offer meeting this clause would only be processed.
2. 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. 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.

NAME & ADDRESS OF THE SUPPLIER :			
NAME OF CONCERN PERSON :			
TELEPHONE NOS. :			
FAX NOS. :			
E-MAIL ADDRESS :			
DESIGN, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF "CO2 MANIFOLD & PIPE LINE" COMPLYING WITH SPECIFICATIONS AS BELOW:			
S.NO.	DESCRIPTION FOR BHEE REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	OFFERED
1 WORK PIECE MATERIAL:			
1.1	DESIGN, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF "CO2 MANIFOLD & PIPE LINE" COMPLYING WITH SPECIFICATIONS AS BELOW:	VENDOR TO CONFIRM	
2 SPECIFICATION:			
2.1	manifold should have provision for 50 cylinders, 25 Cylinders in each bank (total 02 no. bank) and made of SS304 to take care of atmospheric corrosion. Provision to expand upto 60 cylinders (30 cylinder in each bank) ✓	VENDOR TO CONFIRM	
2.2	Change over from one bank to another should be controlled through pressure switch and Manual change over option is also required to have continuous gas supply to the shop. Lay out diagram for pipe line in side manifold with all indicators, and controller to be submitted and specify the the place where the pressure will be reduced/reheated.	VENDOR TO CONFIRM & SUBMIT DETAILS	
2.3	Double SS304 braided Teflon hose for connecting cylinder to the manifold with replaceable nut at the cylinder end and minimum bending radius of hose should be 4 inches.	VENDOR TO CONFIRM	
2.4	Manifold should be fitted At-Die middle frame with chain link to avoid cylinder fall. NRV, High pressure ball valves & All accessories should be made of SS bar stock to handle high pressure.	VENDOR TO CONFIRM	
2.5	A detailed list of safety alarm/indication provided on equipment should be submitted by the supplier.	VENDOR TO SPECIFY	
2.6	CO2 welding set is to run on CO2 gas connection of manifold	VENDOR TO CONFIRM	
2.7	Working pressure required on each m/c is 4-6Kg/cm2 at full load (adjustable with regulator)	VENDOR TO CONFIRM	
2.8	Pressure of the CO2 cylinder in manifold = 30 Kg/cm2	VENDOR TO CONFIRM	
2.9	Pipe line is to be layed in the bays as given below. Material of Pipe -SS 304 Length 180 meter Pipe of 40NB 440 meter Pipe of 20NB 250 meter Pipe of 15NB (for down take) Specify the pressure in manifold line and after manifold in pipe line. Confirmation is req. that the pipe line shall be able to with stand this pressure.	VENDOR TO CONFIRM & SUBMIT DETAILS	

Layout drawing for CO2 Manifold and gas pipe line

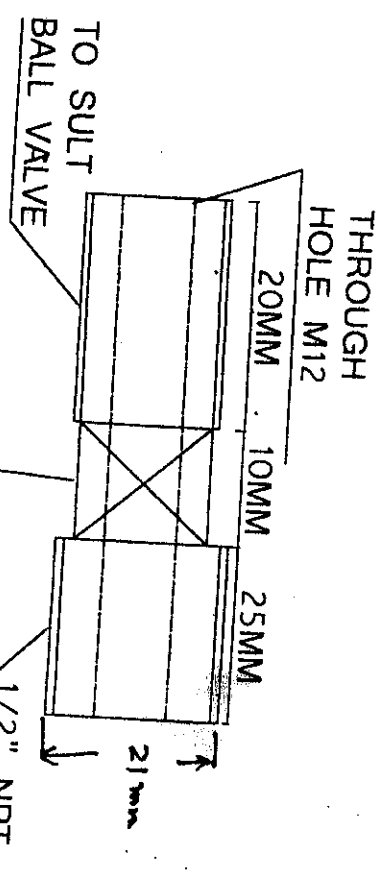
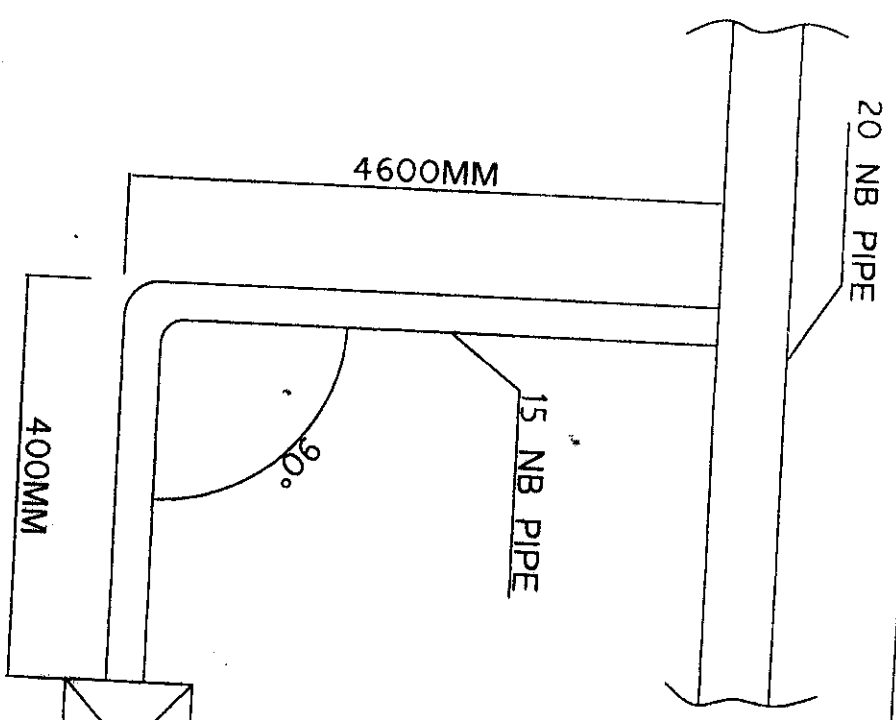


40 NB Pipe Line (Approx. Length - 180 Mtr)
 20 NB Pipe Line (Approx. Length - 440 Mtr)
 15 NB Pipe Line (Approx. Length - 250 Mtr)

Drg No- BHEL/JHS/W&S/A4-1862

SPECIFICATION CUM COMPLIANCE CERTIFICATE OF CO2 MANIFOLD SYSTEM

2.10	Down take is required at 50 places with 15 NB pipe line for the length of 05 r each (total 250 meter). As per sketch No-BHEL/JHS/WE&S/A4-1861	VENDOR TO CONFIRM	
2.11	No- 20 NB ball valve to be fixed in each 20 NB pipe line(Total Six nos.) Valves should be made of SS to handle high pressure and provision of connecting 20NB pipe line after valve as per Sketch No-BHEL/JHS/WE&S/A4-1862	VENDOR TO CONFIRM	
2.12	Ball valve 15 NB -50 Nos (one in each down take) made of SS to handle high pressure are required	VENDOR TO CONFIRM	
2.13	Ball valve 40 NB -01 Nos (after manifold in main line) made of SS to handle high pressure are required.	VENDOR TO CONFIRM	
2.14	No outside heater is required to put in the pipe line	VENDOR TO CONFIRM	
2.15	No pressure oscillation is desired in the line:- Details of system used to prevent oscillation in the line are required	VENDOR TO CONFIRM & SUBMIT DETAILS	
2.16	No iteration in co2 supply during cylinder change	VENDOR TO CONFIRM	
2.17	Alarm and indications are required for low pressure in the lines	VENDOR TO CONFIRM	
2.18	There should not be any freezing at discharge:- Details of system used to prevent freezing at discharge are required	VENDOR TO CONFIRM & SUBMIT DETAILS	
2.19	If any statutory obligation required same to be arranged by supplier.	VENDOR TO SPECIFY	
2.20	Floor area required (Length, Width, Height) for complete co2 manifold system & accessories, vendor to submit the civil drawing Size of shed or room and flooring required for co2 manifold and other civil work required(civil work will be in the scope of BHEL, JHANSI)	VENDOR TO SPECIFY	
3.0	SCOPE OF WORK		
3.1	Scope of work includes all activities required for the installation of manifold and gas pipe line	VENDOR TO CONFIRM	
3.2	Pickling, degreasing of pipes, final making of Pipe line as per relevant IS	VENDOR TO CONFIRM	
3.3	Laying of gas pipe line at the suitable height in Bay & from manifold to shop	VENDOR TO CONFIRM	
4	TRAINING:		
4.1	Vendor to impart training to BHEL personnel for operation & for maintenance at BHEL works after Erection, Commissioning and handing over of the co2 manifold. Supplier should arrange for training of BHEL personnel free of cost	VENDOR TO CONFIRM	
	DOCUMENTATION		
5.1	Three sets of following documents (hard copies) in English language should be supplied along with the CO2 Manifold.	VENDOR TO CONFIRM	
5.2	Catalogues, O&M Manuals of all items including drawings, wherever applicable, specification / type / model, and name & address of the spare supplier shall be furnished along with documentation to be supplied with the MANIFOLD System.	VENDOR TO CONFIRM	
5.3	G.A. Drawing.(With details of indivisual items used in system)	VENDOR TO CONFIRM & SUBMIT	
	SPARES:		
6.1	Itemised break-up of mechanical, spares used on the CO2 Manifold in sufficient quantity for 2 years trouble free operation on three shifts continuous running basis should be offered by vendor. The list include Unit Price of each item of spare.	VENDOR TO SUBMIT	
6.2	All types of spares and accessories should be available for atleast ten years after supply of the manifold. If accessories likely to become obsolete in this period, the vendor should inform BHEL sufficiently in advance and provide drawings of parts / details of spares & suppliers to enable BHEL to procure them in advance, if required	VENDOR TO CONFIRM	
7.0	GUARANTEE		
7.1	The complete system supplied shall be guaranteed for the period of 24 months from the date of commissioning	VENDOR TO CONFIRM	
	PACKING:		
8.1	Rigid packing for all other parts like sub- assemblies of co2 manifold, Panel, Panel etc shall be suitably packed so that the material reaches BHEL without any damage/loss in transit.	VENDOR TO CONFIRM	
8.2	Total weight of the co2 manifold	VENDOR TO SPECIFY	



DOWN TAKE CONNECTION TO THE SHOP (50 NOS)

NOTE-
 1-ALL DIMENSION ARE IN MM&INCHS
 2-SCALE -NTS

SHARAD
 BHARAT HEAVY ELECTRICALS
 LIMITED JHANSI

TITLE-
 CO₂ MANIFOLD SYSTEM

DRG. NO. -BHEL/JHS/WE&S/A4-1861

NO.	NAME	SING.	DATE
DRAWN	ANAND KUMAR		11/08/12
CHECKD	SUDHEER KUMAR		11/08/12
APPROVED	A.K.SH.VPURI		11/08/12

SPECIFICATION GUM COMPLIANCE CERTIFICATE OF CO2 MANIFOLD SYSTEM

9.0	ERECTION, COMMISSIONING, & TESTING			
9.1	Supplier to take full responsibility for carrying out the erection, start testing of system, its control system & all type of other supplied equipment.	VENDOR TO CONFIRM		
9.2	Power, air & water shall be provided by BHEL at only one point to be indicated by Supplier. Other requirement like crane, Trolley shall also be provided by BHEL if available at site. Details of the requirements should be informed by Supplier in advance.	VENDOR TO CONFIRM		
9.3	Tools, Tackles, instruments and other necessary equipments, if any, required to carry out all above activities should be brought by the supplier on returnable basis.	VENDOR TO CONFIRM		
9.4	Charges, duration, Term & condition for E&C should be furnished in details separately by VENDOR along with offer.	VENDOR TO CONFIRM		
9.5	Inspection, testing and commissioning of complete pipe line will be done after completion of work at BHEL Jhansi	VENDOR TO CONFIRM		
9.6	Vendor should quote price for supporting structure erection & commissioning for distance of 50 meter 40NB pipe line alongwith structure detail	VENDOR TO CONFIRM & SUBMIT DETAILS		
10	QUALIFYING CONDITIONS			
10.1	Those vendors who have supplied & commissioned at least 2 manifolds in last ten years (on the date of opening of tender). Supplier must submit latest performance certificate for satisfactory	VENDOR TO CONFIRM & SUBMIT DETAILS		
10.2	The following information is to be submitted by the vendor about the company where similar co2 manifold have been supplied. This is required from all the vendor for qualification of there offer.	VENDOR TO SUBMIT		
10.3	Name of the customer / company along with Purchase Order no. and Purchase Order date where referred co2 manifold is installed (Copy of Purchase Order should be furnished).	VENDOR TO SUBMIT		
10.4	Complete postal address of the customer.	VENDOR TO SUBMIT		
10.5	Year of commissioning. (Copy of Commissioning Report should be furnished).	VENDOR TO SUBMIT		
10.6	Name and designation of the contact person of the customer.	VENDOR TO SUBMIT		
10.7	Phone, FAX no. and email address of the contact person of the customer.	VENDOR TO SUBMIT		
10.8	Performance certificate from the customers, on their letter head, regarding satisfactory performance of co2 manifold supplied to them.	VENDOR TO CONFIRM		
11	BHEL reserves the right to verify information submitted by vendor. In case the information is found to be false / incorrect, the offer shall be rejected.	VENDOR TO CONFIRM		

(Signature)
Y.K. Dhangra
Sr. Engrt (WEX)

(Signature)
Ajay Singh
Sr. Mgrt (WEX)

(Signature)
A.K. Shivpuri
DGM (WEX)

(Signature)
Rajeev Shivastava
DGM (FCX)

(Signature)
G.S. Jalli
Sr. DGM (Store)

(Signature)
S.J. Chakraborty
AGM (WEX)

(Signature)
R.N. Jha
AGM (FBM)

(Signature)
CHAIRMAN