

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)
Tiruchirappalli – 620014, TAMIL NADU, INDIA
MATERIALS MANAGEMENT

ENQUIRY	FOR	BURNER	TRIP	VALVE	S &	TRIP
VALVES						

Phone: +91 431 257 7022 / 7074

Fax : +91 431 252 0719

Email: mathan@bheltry.co.in

Reference Number: Enquiry Date: Due date for submission of quotation: 13.08.2011

You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order

BHEL/Trichy is looking for empanelment of new vendors (manufacturers only) for supply of "BURNER TRIP VALVES & TRIP VALVES"

Tenders should reach us before 14:00 hours on the due date

Technical bid will be opened at 14:30 hours on the due date Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present. Yours faithfully,

For Bharath Heavy Electricals Limited

Sr. Manager/Purchase/SD



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking) HIGH PRESSURE BOILER PLANT

PURCHASE DEPARTMENT - FOSSIL BOILERS THIRUCHIRAPALLI - 620014

FAX NO: 2520719

429-002/A

TAMILNADU (INDIA)

E-mail: Web

PHONE: 2577074

GRAMS : BHARATELEC

Page: 1/3

Collective No. **Enquiry Date Due Date For** Quotation 1801100787 11.07.2011 13.08.2011

OFFICE COPY

ENQUIRY

(INDIGENOUS)

Please quote Enquiry No, Date and due date in all correspondences.

This is only a request for quotation and not an order

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	964262510000 Burner Trip Valves(0)-NB25-FLOW 3CU.M/HR-TEMP 150C: SPEC-TOS 1350/R1 8 TOS 1351A	NO	156.000	156.00	30.12.11
20	964262530000 Burner Trip Valves STEAM(IBR)-NB25-FLOW 325KG/HR-TEMP 250C: SPEC-TOS 1350/R1 & TOS 1351 C	NO	144.000	144.00	30.12.11
30	964262550000 Light Oil Trip Valves (LOTV) -NB40-FLOW 7.5CU.M/HR-TEMP40C: SPEC-TOS1350/R1 & TOS 1351 E	NO	9.000	9.00	30.12.11
40	964262560000 Light Oil Trip Valves (LOTV) -NB50-FLOW 14.5CU.M/HR-TEMP40C: SPEC-TOS1350/R1 & TOS 1351 F	NO	1.000	1.00	30.12.11
50	964262580000 Heavy Oil Trip Valves (HOTV) -NB80-FLOW > 21CU.M/HR-TEMP150C: SPEC-TOS1350/R1 & TOS 1351 H	NO	9.000	9.00	30.12.11
60	964262600000 Heavy Oil Return Trip Valves (HORTV) -NB40-FLOW 11CU.M/HR-TEMP150C: SPEC-TOS1350/R1 & TOS 1351 K	NO	1.000	1.00	30.12.11
70	964262610000 Heavy Oil Return Trip Valves (HORTV) -NB50-FLOW > 11CU.M/HR-TEMP150C: SPEC-TOS1350/R1 & TOS 1351 L	NO	9.000	9.00	30.12.11

General Note:

- 1) Please fill up the commercail terms Annexure A and send along with the offer for evaluation.
- 2) Please give point wise confirmation to our specification.
- 3) The offer to be submitted in two part bid system: a) Technical offer

The offers should reach us 30 minutes before the time of opening of tenders. The offers will be opened at 14,30 hrs on the due date of tender in the presence of tenderers who-have submitted their offer and who may like to be present for the tender ppening.Late and delayed offers are liable to be rejected.

Yours faithfully, For BHARAT HEAVY ELECTRICALS LIMITED

> PRANASH TANTUMAY Engition S Publicated SD

Materials Management (FB) BHEL, Tiruchirappalli - 620 014.



(A Government of India Undertaking) HIGH PRESSURE BOILER PLANT PURCHASE DEPARTMENT - FOSSIL BOILERS THIRUCHIRAPALLI - 620014 TAMILNADU (INDIA)

1801100787 / 11.07.2011

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with commercial terms and b) Price bid.

- 4) All the materials are to be despatched to BHEL stores/Trichy.
- 5) The offer will be considered as a single package for evaluation.

Enclosures:

- 1) Specn: TOS:1350/01.
- 2) Specn: TOS:1351A/00.
- 3) Specn: TOS:1351C/00.
- 4) Specn: TOS:1351E/00.
- 5) Specn: TOS:1351F/00.
- Specn: TOS:1351H/00.
- 7) Specn: TOS:1351K/00.
- 8) Specn: TOS:1351L/00.
- Commercial terms Annexure A & Annexure A1.

"LD clause has to be confirmed without fail." 'Payment to vendors will be made only thro E-Payment mode."

	PR	<u></u>	nk	8
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PR.No	PR.Item.	Quanity	Acc. Assign	Customer Number
67448879	00010	81.000	U2/1220	U2/1220
67448879	00020	75.000	U2/1220	U2/1220
67448879	00040	72.000	U2/1220	U2/1220
67448879	00030	72.000	U2/1220	U2/1220
67448879	00050	5.000	U2/1220	U2/1220
67448879	00060	4.000	U2/1220	U2/1220
67448879	00070	1.000	U2/1220	U2/1220
67448879	08000	5.000	U2/1220	U2/1220
67448879	00090	4.000	U2/1220	U2/1220
67448879	00100	1.000	U2/1220	U2/1220
67448879	00110	5.000	U2/1220	U2/1220
67448879	00120	4.000	U2/1220	U2/1220
	67448879 67448879 67448879 67448879 67448879 67448879 67448879 67448879 67448879	67448879 00010 67448879 00020 67448879 00040 67448879 00030 67448879 00050 67448879 00060 67448879 00070 67448879 00080 67448879 00100 67448879 00110	67448879 00010 81.000 67448879 00020 75.000 67448879 00040 72.000 67448879 00030 72.000 67448879 00050 5.000 67448879 00060 4.000 67448879 00080 5.000 67448879 00090 4.000 67448879 00100 1.000 67448879 00110 5.000	67448879 00010 81.000 U2/1220 67448879 00020 75.000 U2/1220 67448879 00040 72.000 U2/1220 67448879 00030 72.000 U2/1220 67448879 00050 5.000 U2/1220 67448879 00060 4.000 U2/1220 67448879 00070 1.000 U2/1220 67448879 00090 4.000 U2/1220 67448879 00100 1.000 U2/1220 67448879 00110 5.000 U2/1220

The offers should reach us 30 minutes before the time of opening of tenders. The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their ofter and who may like to be present for the tender ppening.Late and delayed offers are liable to be rejected.

Yours faithfully, For BHARAT HEAVY ELECTRICALS LIMITED

> PRAKASH TANJUWAY Engineer L Prochase SD Materials Mainsgement (FB) BHEL, Tiruchirappalli - 620 014.



TECHNICAL SPECIFICATION FOR TRIP VALVES

SPEC.:TOS:1350

Rev. :01 Date: 20.12.10

2.	Type of operation	plug push down to close and flow tends to open for ON / OFF application Pneumatic (spring diaphragm type actuator) operation for slow opening and quick closing application. (The closing time shall be less than 1 second and opening time shall be 6 -10
2.	Type of operation	Pneumatic (spring diaphragm type actuator) operation for slow opening and quick closing application. (The closing time shall be less than
2.	Type of operation	operation for slow opening and quick closing application. (The closing time shall be less than
And the property of the second		application. (The closing time shall be less than
**************************************		1
		1 second and opening time shall be 6 -10
		seconds adjustable)
3.	Flow Medium and maximum	Refer enclosed Data sheet
	operating parameters.	TOS:1351A/B/C/D/E/F/G/H/J/K/L/M as
		applicable.
4.	Material of Construction:	
	a. Body .	Cast (or) forged carbon steel
	b. Plug & Stem	Stainless steel
	c. Seats and seals	Single seated Stainless steel trim, unbalanced, soft seated for oil service to offer CI.VI shutoff, metal seated for steam service, stellited and fine lapped to offer CI.V shut off.
	d. Packing	Packing suitable for both oil and steam service shall be offered
	e. Noice level	Limited to 85dBA measured at a distance of 1.0 meter.
5.	End Connection	Flanged to ANSI 300 class rating.
6.	Leakage test	ANSI FCI 70-2
7.	3 way solenoid valve	Heavy duty, class-H insulation with the medium
	(By purchaser's scope)	of air at 0-7 kg/sq.cm(g) pressure for Single /
		Dual coil with 110AC / 240VAC / 24VDC /
1		220VDC as applicable.
8.	Accessories	Quick exhaust valve, Airset , Airlock valve ,
772		Flow restrictor, 2Nos.of DPDT Limit switches
variation of the state of the s		(linear type)with 240V AC 10A / 220VDC 0.25A
		contact rating to indicate open/close position of
		valve and Compact Junction box to suit no.of
		terminals with NEMA 4&13 enclosure. All
		pneumatic connections shall be firmly piped up
		with 3/8" PVC jacketed copper tube taking



TECHNICAL SPECIFICATION FOR TRIP VALVES

SPEC.:TOS:1350

Rev. :01

Date: 20.12.10

		3/8"solenoid valve connectivity in the hook up diagram and all electrical terminals shall be wired to the junction box and provide two holes with 3/4"dia for cable entry to the terminal block for output.
9.	Marking	Stainless steel name plate with following details: makers name, material code, type, size, rating, tag number and valve open/close position.
10.	Painting & Packing	As per contract requirement / manufacturer standard to address all openings shall be firmly caped and packing to suit wooden boxes with water proof under cover.(in the absence of contract requirement).
11.	Documents required after PO placement	 a. Completely filled up valve data sheet b. Pneumatic hookup diagram with all accs. c. JB wiring diagram with offered box size. d. Valve dimensional drawing with all accs. e. 3 sets of O&M manuals along with one soft copy in CD Rom.

Prepared	Checked	Approved	Date
Anbu	MTP	SVS	20.12.2010

TOS: 1351A / REV: 00 SHEET 1 OF 1

DATASHEET FOR BURNER TRIP VALVE(Oil)

UNITS: Flow-Liquid Cu M / hr. Pr-kg / cmSq (g), Temp-° C. *- Vendor to fill the relevant data

UNITS: Flow-Liq	uid Cu M / hr, Pr-k	-O ·		C, - v	CHACOL .		C I CIC		
O.FLOW DATA			C.SO	LENOID V	/LV(bhe	l scope)			
1. Line Fluid	LDO/LFO/HFO/I	LSHS/HPS/AIR	1. Ma	ke / Type N	lo				
2. Flow Max	3.0		2 Sty	k					
3. Normal in pr	15		3. To	Open Main	Valve			····	
4. Allowable DP	0.5			Close Mair			1		
5. Actuator Sizing DP	30		5. Enc	closure					
6. Temp Max	150		6. Coi		· · · ·	******	1		
7.Flow Temp	150			l Rating			†		
8. Flow Sp Gravity	0.93			alation Clas		·····	-		
9. Flow Viscosity	20CST			ish / Hold			 		
10. Max Flow Cv	*			lve Flow C			 	····	
11. Plug Lift%	<u> </u>			ody Matl	.γ	 	 		
12 Valve Cv	100% (Full open)						 		<u></u>
13 Valve Closing Time				etted parts				· · · · · · · · · · · · · · · · · · ·	
	Less than one Sec		13. Se				 		
14. Valve Opening Time	6-10 Sec.Adjusta	Die		dve Ends					
				ble entry			ļ		
A. VALVE BODY	 			rminal Blo			 		
1. Make/Type No	• •			ICK EXH	AUST V	L	To me	et 0.13	
2. Line Size	ODXT 33.4 X 3	5.38 声曲		ke/type No	, , , , , , , , , , , , , , , , , , , 			+	•
3. Body/port Size	Nb 25 mm / *		2. Port	Conn			L	*	
4. Plug Travel	* mm								
5. Body Style / Rating		NSI # 300		OW REST		3	To me	et 0.14	
6. Ends	Flanged to: ANS	I # 300	1. Mai	ce/Type No					•
7. Port	- Single	•	2. Port				*		
8. Guiding	Goge or Top & Be	Hom	3. Adj	ustable Tin	e Range		+		
9. Body Matl	Carbon Steel, AST	TM A216 WCB							
10. Trim No	•		F. AII	ESET			Type N	ło	
11. Plug Mati	SS	· · · · · · · · · · · · · · · · · · ·	1. Airs	et set pr				sser's scope	
12. Steam Size/Matl	Std 58	l.							
13.Seat, Mati	SS		GLB	IT SWIT	CHES				off
14. Cage Mati	1.			ce/Type No	*****		*		+ · · · · · · · · · · · · · · · · · · ·
15 Plug/Gage Style	Equal % age			inted For		Full	open	Full clos	- 1 W Ones
16. Scat Leak Class	VI to ANSI	EC1 20 1	3. Con			FWII			
17. Plug pushdown to	Close	FCI /U-2		· · · · · · · · · · · · · · · · · · ·		45.4 - 16.4	2 X D		l Ou
18. Flow Tends to			·	tact Rating	<u> </u>	40Ac 10/			De 0.5 Ашр
	Open		5. Enc						er NEMA4 &13
141 Dannes (alii									
19. Bonnet / packing		TFE	6.Cabl				3/" NP		
20. Lub/Isol Valve	Std PT	FE	6.Cabl	NCTION	вох		Provi	ded	
20. Lub/Isol Valve 21. Drain Valve		TFE	6.Cabl H. JU l.Encl	NCTION OSUITE			Provi Weath	ded er proof as p	er NEMA4 &13
20. Lub/Isol Valve		TFE	6.Cabl H. JU 1.Eacl 2. No.	NCTION osure of Termin	uls		Provi	ded er proof as p	er NEMA4 &13
20. Lub/Isol Valve 21. Drain Valve		TFE	6.Cabl H. JU 1.Encl 2. No. 1.SUP	NCTION OSUTE OF Termin PLY CON	uls		Provide Weath	ded er proof as p os	er NEMA4 &13
20. Lub/Isol Valve 21. Drain Valve		TFE	6.Cabl H. JU 1.Eucl 2. No. LSUP 1. Asse	NCTION OSUTE OF Termina PLY CON embly - 1	uls		Provide Weath	ded er proof as p	er NEMA4 &13
20. Lub/Isol Valve 21. Drain Valve		TFE	6.Cabl H. JUI 1.Encl 2. No. 1.SUP 1. Asso 2. Asso	osure of Termina PLY CON embly - 1 embly - 2	als DITION		Provide Weath	ded er proof as p os	er NEMA4 &13
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level		TFE	6.Cabl H. JU 1.Encl 2. No. 1.SUP 1. Asso 2. Asso 3. Pne	osure of Termin PLY CON embly - 1 embly - 2 umatic Terr	als DITION ninal	~	Provi Weath ~24 No Hooku	ded er proof as p as p diagram To sui	t 8 mm tube
20. Lub/Isol Valve 21. Drain Valve		TFE	6.Cabl H. JU 1.Encl 2. No. 1.SUP 1. Asso 2. Asso 3. Pne	osure of Termina PLY CON embly - 1 embly - 2	als DITION ninal	- actuator	Provide Weath ~24 No. Hooku	ded er proof as p as p diagram To sui d packing mil	t 8 mm tube s- lset individually
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY	Less than 85dBA	TFE	6.Cabl H. JU 1.Encl 2. No. 1.SUP 1. Asso 2. Asso 3. Pne	osure of Termin PLY CON embly - 1 embly - 2 umatic Terr	als DITION ninal	- actuator tagged s	Provide Weath ~24 No. Hooku	ded er proof as p as p diagram To sui	t 8 mm tube s- lset individually
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No	Less than 85dBA		6.Cabi H. JUI 1.Encl 2. No. 1.SUPI 1. Assa 2. Assa 3. Pnet 4.Com	NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Terr missioning	ninal spares	tagged a	Provi Weath ~24 No Hooku - - - Ino an and pack	p diagram To suid packing mithed along with	t 8 mm tube is- liset individually the valve.
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20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No	Less than 85dBA Pneumatic Spring		6.Cabi H. JU 1.Encl 2. No. L.SUP 1 Assy 2. Ass 3. Pnet 4. Com	NCTION OSUTE OF TERMINIPLY CON Embly - 1 Embly - 2 Imatic Terr missioning DOCUME Dimension	ninal spares: NTS:(SP	tagged a	Provi Weath ~24 No Hooku - - - Ino an and pack	p diagram To suid packing mithed along with	t 8 mm tube is- liset individually the valve.
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style	Less than 85dBA Pneumatic Spring	Diashragm	6.Cabi H. JU 1.Encl 2. No. L.SUP 1 Assv 2. Assc 3. Pnet 4. Com REF. 1 1 Assy 2. Assy 2. Assy 2. Assy	NCTION OSUTE OF TERMINIPLY CON Embly - 1 Embly - 2 Imatic Terr missioning DOCUME Dimension Hookup D	ninal spares: NTS:(SP al Dwg:	tagged a	Provide Weath ~24 No. Hooku	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- lset individually the valve. .NOs.BELOW)
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume	Less than 85dBA Pneumatic Spring	Diashragm	6.Cabi H. JU 1.Encl 2. No. L.SUP 1 Assv 2. Assc 3. Pnet 4. Com REF. 1 1 Assy 2. Assy 2. Assy 2. Assy	NCTION OSUTE OF TERMINIPLY CON Embly - 1 Embly - 2 Imatic Terr missioning DOCUME Dimension	ninal spares: NTS:(SP al Dwg:	tagged a	Provide Weath ~24 No. Hooku	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- lset individually the valve. .NOs.BELOW)
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl	Less than 85dBA Pneumatic Spring	Diashragm	6.Cabi H. JU 1.Encl 2. No. L.SUP 1 Assv 2. Assc 3. Pnet 4. Com REF. 1 1 Assy 2. Assy 2. Assy 2. Assy	NCTION OSUTE OF TERMINIPLY CON Embly - 1 Embly - 2 Imatic Terr missioning DOCUME Dimension Hookup D	ninal spares: NTS:(SP al Dwg:	tagged a	Provide Weath ~24 No. Hooku	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube is- liset individually the valve.
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20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to	- Less than 85dBA Pneumatic Spring Pneumatic Spring Close Open	Diashragm	6.Cabl H. JU 1.Encl 2. No. 1.SUP 1 Ass 2. Ass 3. Pnet 4.Com REF. 1 1.Assy S.No	NCTION OSUTE OF TERMINIPLY CON Embly - 1 Embly - 2 Imatic Terr missioning DOCUME Dimension Hookup D	ninal spares: NTS:(SP al Dwg: wg:	tagged a	Provide Weath -24 No Hooku	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- lset individually the valve. NOs. BELOW)
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr	Less than 85dBA Pneumatic Spring The Std Close	Diashragm	6.Cabl H. JU 1.Encl 2. No. 1.SUP 1 Asse 2. Asse 4.Com REF, 1 1.Assy 2.Assy S.No 3 4	NCTION OSUTE OF Termin PLY CON embly - 1 embly - 2 umatic Terr missioning DOCUME Dimensior Hookup D ITEM A B	ninal spares: NTS:(SP al Dwg: Wg: O & M	tagged a	Provide Weath -24 No Hooku	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- I set individually the valve. NOs.BELOW) * Catalog&Spec
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr pon Conn	- Less than 85dBA Pneumatic Spring Pneumatic Spring Close Open Paging Pag	Diashragm	6.Cabi H. JUI 1.Encl 2. No. 1.SUP 1 Assa 2. Assa 4.Com REF, 1 1.Assy 2.Assy S.No 3	NCTION OSUTE OF TERMIN PLY CON Embly - 1 Embly - 2 Embly - 2 Embly - 2 Embly - 2 Embly - 1 Embly	ninal spares: NTS:(SP al Dwg: Wg: O & M	tagged a	Provide Weath -24 No Hooku	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- I set individually the valve. NOs.BELOW) * Catalog&Spec
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure	- Less than 85dBA Pneumatic Spring The Std Close Open 40 psig Stay Put	Disphragm	6.Cabl H. JUI 1.Encl 2. No. 1.SUPI 1 Assa 2. Assa 3. Pnet 4.Com REF. 1 1.Assy 2.Assy S.No 3 4 5 6	NCTION OSUFE OF Termine PLY CON Embly - 1 Embly - 2 Imatic Terr missioning DOCUME Dimensior Hookup D ITEM A B B B II C	ninal spares: NTS:(SP al Dwg: wg: O & M	tagged a	Provide Weath -24 No Hooku	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- 1set individually the valve. NOs.BELOW) * Catalog&Spec *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No	- Less than 85dBA Pneumatic Spring The Std Close Open 40 psig Stay Put Purchaser's scope	Disphragm	6.Cabl H. JUI 1.Encl 2. No. 1.SUPI 1 Assa 2. Assa 3. Pnec 4.Com REF. 1 1.Assy 2.Assy S.No 3 4 5 6 7	NCTION OSUTE OF TERMINIPLY CON Embly - 1 Embly - 2 Immatic Term missioning OOCUME Dimension Hookup D ITEM A B B II C D	ninal spares: NTS:(SP al Dwg: wg: O & M	tagged a	Provi- Weath -24 No Hooku	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- Iset individually the valve. NOs.BELOW) * Catalog&Spec * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure	- Less than 85dBA Pneumatic Spring The Std Close Open 40 psig Stay Put	Disphragm	6.Cabl H. JU! 1.Encl 2. No. 1.SUP! 1 Assy 2. Assc 3. Pnec 4.Com REF. 1 1.Assy 2.Assy S.No 3 4 5 6 7 8	NCTION OSUFE OF TERMIN PLY CON embly - 1 embly - 2 ematic Terr missioning DOCUME Dimension Hookup D HTEM A B B B 11 C D E	ninal spares: NTS:(SP al Dwg: wg: O & M	tagged a	Provi. Weath -24 No Hooku Ino an and pack WG/M/	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- 1set individually the valve. NOs.BELOW) * Catalog&Spec *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No	- Less than 85dBA Pneumatic Spring The Std Close Open 40 psig Stay Put Purchaser's scope	Disphragm	6.Cabl H. JUI 1.Encl 2. No. 1.Sup: 1. Asse 2. Asse 3. Pnet 4. Com REF. 1. Assy S.No 3 4 5 6 7 8 9	NCTION OSURE OF Termin PLY CON embly - 1 embly - 2 ematic Terr missioning DOCUME Dimension Hookup D HEM A B B 11 C D E F	ninal spares: NTS:(SP ead Dwg: O & M	tagged a	Provi- Wenth ~24 No Hooku	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- Iset individually the valve. NOs. BELOW) * Catalog& Spec * * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level 22. Noise Level B. ACFUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No 12. Lockup Valve Set pr	Less than 85dBA Pneumatic Spring Pneumatic Spring Std Close Open 40 psig Stay Put Purchaser's scope 40 psig	Diaphragm	6.Cabi H. JU! 1.Encl 2. No. 1.SUP! 1. Assa 3. Pnet 4. Com REF. I 1. Assay S.No 3 4 5 6 7 8 8 9	NCTION OSURE OF Termin PLY CON embly - 1 embly - 2 embly - 2 ematic Terr missioning DOCUME Dimension Hookup D ITEM A B B II C D E F G	ninal spares: NTS:(SP al Dwg: Wg: O & M	tagged a ECIFY D * * Manual	Provide Weath -24 No -24 No -1no an and pack WG/M/ Spar	ded er proof as p ss p diagram To sui d packing mit ed along with ANUAL REF es identifier	t 8 mm tube s- Iset individually the valve. NOs.BELOW) * Catalog&Spec * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No	Less than 85dBA Pneumatic Spring Pneumatic Spring Std Close Open 40 psig Stay Put Purchaser's scope 40 psig	Disphragm	6.Cabi H. JU! 1.Encl 2. No. 1.SUP! 1. Assa 3. Pnet 4. Com REF. I 1. Assay S.No 3 4 5 6 7 8 8 9	NCTION OSURE OF Termin PLY CON embly - 1 embly - 2 ematic Terr missioning DOCUME Dimension Hookup D HEM A B B 11 C D E F	ninal spares: NTS:(SP al Dwg: Wg: O & M	tagged a ECIFY D * * Manual	Provide Weath -24 No -24 No -1no an and pack WG/M/ Spar	ded er proof as p ss p diagram To sui d packing mit ed along with	t 8 mm tube s- Iset individually the valve. NOs. BELOW) * Catalog& Spec * * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level 22. Noise Level B. ACFUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No 12. Lockup Valve Set pr	Less than 85dBA Pneumatic Spring Pneumatic Spring Std Close Open Open Open Open Stay Put Purchaser's scope A0 paig	Diaphragm	6.Cabi H. JU! 1.Encl 2. No. 1.SUP! 1. Assa 3. Pnet 4. Com REF. I 1. Assay S.No 3 4 5 6 7 8 8 9	NCTION OSURE OF Termin PLY CON embly - 1 embly - 2 embly - 2 ematic Terr missioning DOCUME Dimension Hookup D ITEM A B B II C D E F G	ninal spares: NTS:(SP al Dwg: Wg: O & M	tagged a ECIFY D * * Manual	Provide Weath -24 No -24 No -1no an and pack WG/M/ Spar	ded er proof as p ss p diagram To sui d packing mit ed along with ANUAL REF es identifier	t 8 mm tube s- Iset individually the valve. NOs. BELOW) * Catalog& Spec * * *

TOS: 1351C / REV: 00 SHEET 1 OF 1

DATASHEET FOR BURNER TRIP VALVE(Steam)-IBR

UNITS: Flow-Steam- Kg / hr, Pr-kg / cmSq (g), Temp-° C, *- Vendor to fill the relevant data

	BHEL)	DATE	1	FIRM				ATE	
***************************************			10	G	*		*		*
			9	F				***************************************	
Lockup Valve type No Lockup Valve Set pr	Purchaser's scope		7 8	D E	*		*		*
0. On Air Failure 1. Lockup Valve type No	Stay Put		6	<u> </u>	+		*		
Pr port Conn			5	B 11					
. Signal pr	~40 psig		4	В	*		! *		*
. Air to	Open		3	A	*				+
Spring to	Close		† ****		<u> </u>		~pon w3 1		
Spring No/Range	- Ste	1	S,No	ITEM	O&M		Spares i	dentifier	Catalog&Spec
. Size/volume . Diaphragm Matl	1		2 Acces	Dimension Hookup D	IN LANG	*	······································		
. Style . Size/Volume	Pneumatic Spring	nisbursem					WG/MAN	UAL REF	NOs.BELOW)
. Make/Type No	<u> </u>	N: 1	-		-	-			
B. ACTUATOR ASSY	•		4.Com	missioning	spares:	actuator tagged a	-Ino and p and packed	acking mt along with	s- I set individually the valve.
B 4 27771 4 270 0 1 002	 	····		imatic Ten		-			t 8 mm tube
	<u> </u>			embiy - 2			-		
			-	mbly - 1			Hookup e	lisgram	
				PLY CON					
22. Noise Level	Less than 85dBA			of Termin	als		~24 Nos	hunes #2	CINENIA4 6415
21. Drain Valve	-		l.Encl		DUX		Provided		er NEMA4 &13
19. Bonnet / packing 20. Lub/Isol Valve	Std G	RAPHITE		e Entry NCTION	BOY		%" NPT		
18, Flow Tends to	Open	O A WATER	5. Ene					proof as p	er NEMA4 &13
17. Plug pushdown to	Close			tact Rating	2	40Ac 10A			Dc 0.5 Amp
16. Seat Leak Class	V to ANSI	FCI 78-2	3. Con				2 X DPD		Off
15.Plug/Gage Style	Equal % age		2. Mo	unted For		Fall	open	Full clo	se %-Open
14. Cage Matl	•			ce/Type No			*		*
13 Seat, Matl	SS		G.LIN	AT SWIT	CHES		<u> </u>		no
12. Steam Size/Matl	Std SS		1. Am	et set pr			rurchase	a s scope	
11. Plug Mati	SS		F. All	RSET set set pr			Type No	т'я всоре	
9. Body Matl 10. Trim No	Carbon Steel, AS	1M AZI6 WCB	+	DOET			7:		
8. Guiding	Cage or Top & B		3. Adj	ustable Tir	ne Range		*		
7. Port	- Single	-		t Conn			*		
6. Ends -	Flanged to : ANS			ke/Type No		•	*		+
5. Body Style / Rating	P11421	NSI # 300	E. FL	OW REST	RICTO	3	To meet	0.14	
4. Plug Travel	* mm		2. FO	t Conn			<u> </u>		
2. Line Size 3. Body/port Size	ODXT 33.4 X	3,38 mm		ke/type No t Conn			-		
1. Make/Type No	ODVT 12.4 V	2 20		ЛСК ЕХН		L	To meet	0.13	
A. VALVE BODY				rminal Blo					
				ble entry				····	
14. Valve Opening Time	6-10 Sec.Adjusti			alve Ends	····		 		
13. Valve Closing Time	Less than one Se	¢.	12. W	etted parts			 		
11. Plug Lift% 12. Valve Cv	100% (Fall open)	<u> </u>		ody Mati	····		 		
10. Max Flow Cv	1000/ (10-1)			alve Flow (Cy		<u> </u>		
9. Flow Viscosity	•			ush / Hold					
8. Flow Sp Gravity				uletion Cla	SS				
7. Flow Temp	250	7		il Rating			╂		
6. Temp Max	15 250			closure il Duty			_		
Allowable DP Actuator Sizing DP	0.5			Close Mai	n Valve				
3 Normal in pr	7			Open Mair					
2. Flow Max	325		2. Sty	le			T		· • · · · · · · · · · · · · · · · · · ·
3 71 14	STEAM			ske / Type i					

TOS: 1351E / REV: 00 SHEET 1 OF 1

DATASHEET FOR LIGHT OIL TRIP VALVE

UNITS: Flow-Liquid Cu M / hr, Pr-kg / cmSq (g), Temp-° C, *- Vendor to fill the relevant data

UNITS: Flow-Liqui	id Cu M / hr, Pr-	kg / cmSq (g),	Temp-°	C, *- V	endor t	o fill the	e relev	antuata	······································
O.FLOW DATA				LENOID V		scope)			
1. Line Fluid	LDO/LFO		1 Mal	ce / Type N	c				
2. Flow Max	7.5		2 Styl	e					
3. Normal in pr	15		3. To (Open Main	Valve				
4. Allowable DP	0.5		4. To 0	Close Main	Valve				
5. Actuator Sizing DP	30		5. Enc	losure					
6. Temp Max	49		6. Coil						
7.Flow Temp	40			Rating					
8. Flow Sp Gravity	0.83		+	lation Clas	s				- • · · · · · · · · · · · · · · · · · ·
9. Flow Viscosity	15CST			sh / Hold					T
10. Max Flow Cv	*			ive Flow C					<u> </u>
11. Plug Lift%	100% (Full open	ì		dy Mati	<u> </u>				
12. Valve Cv	*	<u>L</u>		etted parts					
13. Valve Closing Time	Less than one Se		13. Sec						
	6-10 Sec.Adjust			lve Ends				·	
14 Valve Opening Time	0-10 Sec. Adjust	BDIC .							
	ļ			ble entry					
A. VALVE BODY				rminal Blo		,	TT.	0 13	
1. Make/Type No				ICK EXH	AUSI Y	١	To me	et 8.13	т
2. Line Size		3.68 mm		ce/type No			ļ	<u>, , , , , , , , , , , , , , , , , , , </u>	1 *
3. Body/port Size	Nb 40 mm / *		2. Port	Conn			ļ	·	
4. Plug Travel	* mm	2122 22	 				<u> </u>		
5. Body Style / Rating		LNSI # 300		OW REST			To me	et 0.14	T
6. Ends	Flanged to : AN			ce/Type No			*		<u> </u>
7. Port	- Single		2. Port				*		
8. Guiding	Cage or Top & F		3. Adju	ustable Tim	e Range		*		
9. Body Matl	Carbon Steel, AS	TM A216 WCB							
10. Trim No	*	,	F. AIF	SET			Type?	No	
11. Plug Matl	SS		1. Airs	et set pr			*		
12. Steam Size/Matl	Std S	S							
13.Seat, Matl	SS		G.LIN	UT SWIT	CHES				off
14. Cage Mati	-		1. Mak	e/Type No			*		*
15.Plug/Gage Style	Equal % age			inted For	-	Fell	open	Full clos	e % Open
16. Seat Leak Class		SI FCI 78-2	3. Con				2 X DI		Off
17. Plug pushdown to	Close			tact Rating	2	40Ac 10A			C 0.5 Amp
18. Flow Tends to	Open		5. Enc						r NEMA4 &13
19 Bonnet / packing		TFE		e Entry			%" NP		
20. Lub/isol Valve	1			NCTION	ROX		Provi		
21. Drain Valve	1.		1.Encl						r NEMA4 &13
22. Noise Level	Less than 85dBA			of Termin	als		- 24 No		
ZZ. HOISC EXTE	LICSS (NAM OUTLAN			PLY CON		- 			
	 			mbly - I	2.4.23.71		Hooks	p diagram	
·				embly - 2			A SUVER	h miski sm	
	†			anoty - 2 amatic Ten	nina)		L	T. 4	8 mm tube
The According to Mary Assessed	 	.,		missioning		a otrects -	182		- 1set individually
B. ACTUATOR ASSY			4.Com	тизэтолинд	sparts.			o packing mu: ed along with	
1 Maka/Tima No	*		+			INEXEU 8	en pack	CO BLOUB WILL	HIL TRITE.
1. Make/Type No		- Disaber	DEE	DOCTOR	NTC-/CD	ECTEV N	WC M	MILLI DEE	NOs.BELOW) *
2. Style	Pneumatic Sprin	X misharagus				erit I D	W G/NL	LIVAL REF.	HOWBELDM)
3. Size/Volume	*			Dimension		*			
4. Diaphragm Matl			7 231	Hookup D			7 2	14 16	
S Carino No/Deage	1 _ 1 @	td	I S.No	ПЕМ	U&M	Manual	Spar	es identifier	Catalog&Spec
5.Spring No/Range					Į.		1		L
6. Spring to	Close				 		1 -		•
6. Spring to 7. Air to	Close Open		3	A	*		*		•
6. Spring to 7. Air to 8. Signal pr	Close		4	В	*		•		*
6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn	Close Open -40 psig		<u>4</u> 5	B B 11	*		*		*
6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure	Close Open		4 5 6	B B 11 C	*		:		*
6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No	Close Open -46 psig * Stay Put *		5 6 7	B B 11 C D	* * *		*		* * * * * * * * * * * * * * * * * * * *
6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure	Close Open -40 psig		4 5 6	B B 11 C	* * *		* * * * * * * * * * * * * * * * * * * *		* * * * * * * * * * * * * * * * * * * *
6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No	Close Open -46 psig * Stay Put *		5 6 7	B B 11 C D	* * *		* * * *		* * * * * * * * * * * * * * * * * * * *
6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No	Close Open -46 psig * Stay Put *		4 5 6 7 8	B B11 C D	* * *		* * * * * * * * * * * * * * * * * * * *		* * * * * * * * * * * * * * * * * * * *
6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No 12. Lockup Valve Set pr	Close Open -40 psig * Stay Put * -40 psig		4 5 6 7 8 9	B B 11 C D E F G	* * * * * * * * * * * * * * * * * * * *	TNIM	* * * * * * * * * * * * * * * * * * * *	DATE	* * * * * * * * * * * * * * * * * * * *
6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No	Close Open -40 psig * Stay Put * -40 psig	DATE 20.12.10	4 5 6 7 8 9	B B 11 C D E F	* * * * * * * * * * * * * * * * * * * *	ENDO	* * * * * * * * * * * * * * * * * * * *	DATE	* * * * * * * * * * * * * * * * * * * *

TOS: 1351F / REV: 00 SHEET 1 OF 1

DATASHEET FOR LIGHT OIL TRIP VALVE

UNITS: Flow-Liquid Cu M / hr, Pr-kg / cmSq (g), Temp-° C, *- Vendor to fill the relevant data

UNITS: Flow-Liq	uia Cu M / nr, Pr-k	E / CHION (E)					CICICI		
O.FLOW DATA	7.DO# FO			LENOID		:l scope}	1		···
1. Line Fluid	LDO/LFO			ke / Type l	NO	· · · · · · · · · · · · · · · · · · ·	<u> </u>		
2. Flow Max	14.5		2 Sty			· · · · · · · · · · · · · · · · · · ·	 		
3. Normal in pr	15			Open Maii			ļ		
4. Allowable DP	0.5			Close Mai	n Valve	· · · · · · · · · · · · · · · · · · ·	<u> </u>		
5. Actuator Sizing DP	35			closure					
6. Temp Max	40			l Duty			ļ		
7.Flow Temp	40			l Rating					· · · · · · · · · · · · · · · · · · ·
8. Flow Sp Gravity	0.83			ulation Cla					
9. Flow Viscosity	15CST			ısh / Hold			<u> </u>		
10 Max Flow Cv	*	 		alve Flow (<u></u>				
11 Plug Lift%	196% (Full open)			ody Matl					
12. Valve Cv	*			etted parts					
13. Valve Closing Time	Less than one Sec		13. Se						
14 Valve Opening Time	6-10 Sec.Adjusta	ble		alve Ends			<u> </u>		
			15. Ct	ble entry					
A. VALVE BODY				rminal Blo	*****				
1. Make/Type No	* •		D. QU	JICK EXP	IAUST V	L	To me	et 0.13	
2. Line Size	ODXT 68.3X 3.	91 mm	1 Ma	ke/type No					
3. Body/port Size	Nb 50 mm / *		2. Por	t Conn				•	
4. Plug Travel	* mm		1						
5. Body Style / Rating		YSI # 300	E. FL	OW REST	RICTOR	ì.	Te me	et 9.14	
6. Ends	Flanged to : ANS	I # 300	I. Ma	ke/Type No)		*		•
7. Port	- Single	-		t Conn					
8. Guiding	Cage or Top & Be	tion	3. Adi	ustable Tin	ne Range		*		
9. Body Matl	Carbon Steel, AST	M A216 WCB							
10 Trim No	•		F. All	RSET			Type !	¥o	·····
11. Plug Matl	SS		1. Air	et set pr			*		
12. Steam Size/Matl	Std SS		1						***************************************
13.Seat, Matl	SS		G.LIN	AIT SWIT	CHES			****	off
14. Cage Mati	•			ke/Type No			•		+
15 Plug/Gage Style	Equal % age		· · · · · · · · · · · · · · · · · · ·	unted For		Fall	open	Fall	close % Open
16. Seat Leak Class	VI to ANSI	FCI 70-2	3. Con				2 X DI		Off
17. Plug pushdown to	Close					40 4 4 4 4 4			
A A A TOE DUSHBUTTI IU			4. Con	tact Ratins		4.日本で 1日本		4 1	Iff De 65 Amn
			_	tact Rating	4	40Ac 10A			10 Dc 0.5 Amp
18. Flow Tends to	Орея	TE	5. Enc	losure		40AC 10A	Weath	er proof	10 Dc 0.5 Amp 18 per NEMA4 &13
18. Flow Tends to 19. Bonnet / packing	Open Std PT	FE	5. Enc 6.Cab	losure e Entry		ABAC IBA	Weath %" NP	er proof : T	
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isel Valve	Open Std PT	FE	5. Enc 6.Cabl H. JU	losure e Entry NCTION		49AC 19A	Weath %" NP Provi	er proof : T led	is per NEMA4 &13
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve	Open Std PT -	PE	5. Enc 6.Cabl H. JU 1.Encl	losure e Entry NCTION osure	вох	AUAC 1UA	Weath %" NP Provide Weath	er proof : T led er proof :	
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isel Valve	Open Std PT	FE	5. Enc 6.Cabl H. JU 1.Encl 2. No.	losure e Entry NCTION osure of Termin	BOX als	SUAC 19A	Weath %" NP Provis	er proof : T led er proof :	is per NEMA4 &13
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve	Open Std PT -	FE	5. Enc 6.Cabl H. JU 1.Encl 2. No. LSUP	losure e Entry NCTION osure of Termin PLY CON	BOX als	40AC 10A	Weath ½" NP Provid Weath -24 No	er proof s T led er proof s	as per NEMA4 &13
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve	Open Std PT -	FE	5. Enc 6.Cabl H. JU 1.Encl 2. No. L.SUP	losure e Entry NCTION osure of Termin PLY CON embly - I	BOX als	AUAC 1UA	Weath %" NP Provid Weath ~24 No	er proof : T led er proof :	as per NEMA4 &13
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve	Open Std PT -	FE	5. Enc 6.Cabl H. JU 1.Encl 2. No. LSUP 1. Ass 2. Ass	losure e Entry NCTION osure of Termin PLY CON embly - 1 embly - 2	BOX als DITION		Weath ½" NP Provid Weath -24 No	er proof s T led er proof s s	as per NEMA4 &13
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level	Open Std PT -	FE	5. Enc 6.Cabl H. JU 1.Encl 2. No. LSUP 1. Assa 2. Assa 3. Pnc	losure e Entry NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Ter	BOX als DITION		Weath %" NP Provid Weath ~24 No	er proof s T led er proof s p diagram	as per NEMA4 &13 as per NEMA4 &13 as per NEMA4 &13 as per NEMA4 &13
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve	Open Std PT -	FE	5. Enc 6.Cabl H. JU 1.Encl 2. No. LSUP 1. Assa 2. Assa 3. Pnc	losure e Entry NCTION osure of Termin PLY CON embly - 1 embly - 2	BOX als DITION	actuator	Weath ½" NP Provie Weath ~24 No Hooks Ino an	er proof s led er proof s p diagram	as per NEMA4 &13
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY	Open Std PT -	FE	5. Enc 6.Cabl H. JU 1.Encl 2. No. LSUP 1. Assa 2. Assa 3. Pnc	losure e Entry NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Ter	BOX als DITION	actuator	Weath ½" NP Provie Weath ~24 No Hooks Ino an	er proof s led er proof s p diagram	as per NEMA4 &13 as per NEMA4 &13 as per NEMA4 &13 as per NEMA4 &13
18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY i Make/Type No	Open Std PT Less than 85dBA		5. Enc 6.Cabi H. JU 1. Encl 2. No. L.SUP 1. Ass 2. Ass 3. Pnc 4. Com	losure te Entry NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Termin missioning	BOX als DITION minal spares:	actuator tagged a	Weath ½" NP Provie Weath ~24 No Hooku - Ino an and pack	er proof a T Sed er proof a a p diagram Te d packing a adapted along w	as per NEMA4 &13
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18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY i Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl	Open Std PT Less than 85dBA Pneumatic Spring + +	Diaphragm	5. Enc 6.Cabi H. JUI 1.Encl 2. No. 1.SUP 1. Ass 2. Ass 3. Pnc 4 Com REF. 1	losure E Entry NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Term missioning DOCUME Dimension Hookup D	BOX als DITION minal spares: NTS:(SP) nal Dwg: wg:	actuator tagged a	Weath ½" NP Provice Weath ~24 No Hooku -Ino an and pack WG/MA	er proof : T Jed er proof : p diagram T to d packing ed along w	as per NEMA4 &13 suit 8 min tube mtls- 1 set individually ith the valve.
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TOS: 1351H / REV: 00

SHEET 1 OF 1

DATASHEET FOR HEAVY OIL TRIP VALVE

2. Flow Max 3. Normal in pr 4. Allowable DP 5. Actuator Sizing DP 6. Temp Max 7. Flow Temp 8. Flow Sp Gravity 9. Flow Viscosity 10. Max Flow Cv 11. Plug Lift% 12. Valve CV 13. Valve Closing Time 14. Valve Opening Time 14. Valve Opening Time 15. Body/port Size 16. Ends 7. Port 19. Body Matl 10. Trim No 11. Plug Matl 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Cage Stylc 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	Nb 80 mm * mn Globe Flanged to: Si Gage or Top	open) nc Sec. djustable * 8.9X 5.49 mm / * n ANSI # 300 : ANSI # 300 ingle -	1. M. 2. St. 3. To 4. To 5. En 6. C. C. 7. C. 6. C. C. 9. In 9. In 10. V 11. B 12. V 15. C. 16. T. D. Q. 1. Meg 2. Pool 5. F. F. I. 1. Mag 2. Pool 3. Ad F. A. I. Air G. L. I. Air G. L. I. C. C. L. I. Air G. L. I. C. L. I. Air G. I. AI	Open Mai Close M	No n Valve n Valve sss Wattage Cv ck HAUST V		To meet 0.1. To meet 8.1. Type No		
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3. Normal in pr 4. Allowable DP 5. Actuator Sizing DP 6. Temp Max 7. Flow Temp 8. Flow Sp Gravity 9. Flow Viscosity 10. Max Flow Cv 11. Plug Lift% 12. Valve Cv 13. Valve Closing Time 14. Valve Opening Time A. VALVE BODY 1. Make/Type No 2. Line Size 3. Body/port Size 4. Plug Travel 5. Body Style / Rating 6. Ends 7. Port 9. Body Matl 10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Gage Style 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	22 0.5 45 150 150 0.93 20CST * 100% (Full * Less than or 6-10 Sec.Ad * ODXT 88 Nb 80 mm * mn Globe Flanged to: Si Gage or Top Carbon Stee * SS Std SS	open) ne Sec. djustable * 8.9X 5.49 mm / * n ANSI # 300 :: ANSI # 300 ingle - 0: & Bettom H, ASTM A216 WCB	3. To 4. To 5. En 6. Cc 7. Cc 8. Ins 9. Inn 10. V 11. B 12. V 13. S 14. V 15. C 16. T D. Qi 1. Me 2. Poi 2. Poi 3. Ad F. AL G.LH	Open Mai Close M	n Valve ISS Wattage Cv OCK HAUST V		To meet 8.14		
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14. Valve Opening Time A. VALVE BODY 1. Make/Type No 2. Line Size 3. Body/port Size 4. Plug Travel 5. Body Style / Rating 6. Ends 7. Port 8. Guiding 9. Body Matl 10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Gage Style 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	ODXT 88 Nb 90 mm * mn Globe Flanged to: - Si Gage or Top Carbon Stee * SS Std SS	# 8.9X 5.49 mm / * n	14. V 15. C 16. T D. Qi 1. Me 2. Poi E. FI 1. Ma 2. Poi 3. Ad F. AI 1. Air	alve Ends able entry erminal Bic UICK EXI ake/type No rt Conn OW RES ake/Type N rt Conn justable Tir set set pr MIT SWII	IAUST V		To meet 8.14		
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1. Make/Type No 2. Line Size 3. Body/port Size 4. Plug Travel 5. Body Style / Rating 6. Ends 7. Port 8. Guiding 9. Body Matl 10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Gage Style 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	ODXT 88 Nb 80 mm * mn Globe Flanged to: - Si Gage or Top Carbon Stee * SS Std SS	8.9X 5.49 mm / * II	D. Qi 1. Mg 2. Poi 1. Mg 2. Poi 3. Ad F. AI 1. Air	WICK EXP ske/type Nort Conn OW RES ske/Type Nort Conn justable Tin RSET set set pr	IAUST V		To meet 8.14		
2 Line Size 3 Body/port Size 4 Plug Travel 5 Body Style / Rating 6 Ends 7 Port 8 Guiding 9 Body Matl 10 Trim No 11 Plug Matl 12 Steam Size/Matl 13 Seat, Matl 14 Cage Matl 15 Plug/Gage Style 16 Seat Leak Class 17 Plug pushdown to 18 Flow Tends to 19 Bonnet / packing 20 Lub/Isol Valve 21 Drain Valve 22 Noise Level L	ODXT 88 Nb 80 mm * mn Globe Flanged to: - Si Gage or Top Carbon Stee * SS Std SS	8.9X 5.49 mm / * II	1. Mg 2. Por E. FI 1. Mg 2. Por 3. Ad F. AI 1. Air	Ake/type Nort Conn OW RES Ake/Type Nort Conn justable Tin RSET set set pr	rricto		To meet 8.14		
3. Body/port Size Plug Travel 5. Body Style / Rating 6 6. Ends Port - 7. Port - 8. Guiding 9. Body Matl Club Club Club Club Club Club Club Clu	Nb 80 mm * mn Globe Flanged to: - Si Cage or Top Carbon Stee * SS Std SS	/ * n	2. Poi E. FI 1. Ma 2. Poi 3. Ad F. AI 1. Air	OW REST ke/Type North Count justable Tin RSET set set pr	TRICTO	R	To meet 8.14		
4 Plug Travel 5. Body Style / Rating 6 Ends 7. Port 8. Guiding 9. Body Matl 10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Gage Style 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	* mn Globe Flanged to: - Si Gage or Top Carbon Stee * SS Std SS	n	E. FI 1. Ma 2. Por 3. Ad F. AI 1. Air	OW REST ke/Type Note to Conn justable Tir RSET set set pr	0	R	*		*
5. Body Style / Rating 6. Ends 7. Port 8. Guiding 9. Body Matl 10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Gage Style 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level 6. Ends 6. Seat Level	Globe Flanged to: - Si Gage or Top Carbon Stee + SS Std SS	ANSI # 300 : ANSI # 300 ingle	1. Ma 2. Por 3. Ad F. AI 1. Air	ke/Type North Connigustable Tin RSET set set pr	0	R	*		
6. Ends 7. Port - 8. Guiding 9. Body Matl 10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Cage Stylc 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	Finnged to: Si Gage or Top Carbon Stee SS Std SS	: ANSI # 300 ingle & Bettom -L ASTM A216 WCB	1. Ma 2. Por 3. Ad F. AI 1. Air	ke/Type North Connigustable Tin RSET set set pr	0	R	*		
7. Port - 8. Guiding 6 9. Body Matl 1 10. Trim No 11. Plug Matl 5 12. Steam Size/Matl S 13. Seat, Matl 1 14. Cage Matl - 15. Plug/Gage Stylc 1 16. Seat Leak Class 1 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing S 20. Lub/Isol Valve - 21. Drain Valve - 22. Noise Level L	- Si Gege or Top Carbon Stee * SS Std SS	ngle - o & Bettom L, ASTM A216 WCB	2. Por 3. Ad F. AI 1. Air	rt Conn justable Tir RSET set set pr			*		
8. Guiding 9. Body Matl 10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Gage Style 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	Gage or Top Carbon Stee * SS Std SS	& Bettom L ASTM A216 WCB	F. AI 1. Air	justable Tir RSET set set pr MIT SWIT	ne Range		*		
9. Body Matl 10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Gage Stylc 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	Carbon Stee * SS Std SS	L ASTM A216 WCB	F. AL 1. Air G.LH	RSET set set pr MIT SWII	ne Range				
9. Body Matl 10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Gage Stylc 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	Carbon Stee * SS Std SS	L ASTM A216 WCB	F. AL 1. Air G.LH	RSET set set pr MIT SWII			Type No		
10. Trim No 11. Plug Matl 12. Steam Size/Matl 13. Seat, Matl 14. Cage Matl 15. Plug/Gage Style 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	* SS Std SS		1. Air	set set pr MIT SWII			Type No		
12. Steam Size/Matl S 13. Seat, Matl S 14. Cage Matl - 15. Plug/Cage Style E 16. Seat Leak Class 17. Plug pushdown to C 18. Flow Tends to C 19. Bonnet / packing S 20. Lub/Isol Valve - 21. Drain Valve - 22. Noise Level L	Std SS -	ss	1. Air	set set pr MIT SWII			2300110		
12. Steam Size/Matl S 13. Seat, Matl S 14. Cage Matl - 15. Plug/Cage Stylc E 16. Seat Leak Class 17. Plug pushdown to C 18. Flow Tends to C 19. Bonnet / packing S 20. Lub/Isol Valve - 21. Drain Valve - 22. Noise Level L	Std SS -	SS	G.LI	MIT SWII			*		
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14. Cage Matl 15. Plug/Gage Style 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	-				WHEE				
15. Plug/Gage Stylc 16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level	Equal % age			ke/Type No			*		off
16. Seat Leak Class 17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level	EQUAL 70 HE				3				*
17. Plug pushdown to 18. Flow Tends to 19. Bonnet / packing 20. Lub/Isol Valve 21. Drain Valve 22. Noise Level L	3.77			unted For		Full		ull clase	% Open
18. Flow Tends to C 19. Bonnet / packing S 20. Lub/Isol Valve - 21. Drain Valve - 22. Noise Level L	·	ANSI FCI 70-2	3. Con				2 X DPDT		Off
19. Bonnet / packing S 20. Lub/Isol Valve - 21. Drain Valve - 22. Noise Level L	Close			ntact Rating	33	40Ac 10A	ınβρ	110 Dc	0.5 Amp
20. Lub/Isol Valve - 21. Drain Valve - 22. Noise Level L	Open			losure			Weather pro	of as per	NEMA4 &13
21. Drain Valve - 22. Noise Level L	Std	PTFE		le Entry			ሃ" NPT		
22. Noise Level L	<u> </u>		H JU	NCTION	BOX		Provided		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
			I Enc	osure			Weather pro	of as per	NEMA4 &13
	Less than 85	dBA	2. No.	of Termin	als		~24 Nos		
			I.SUP	PLY CON	DITION				
				embly - 1			Hookup diag	[F2.10]	
				cerbly - 2	****	<u>-</u>			
		******		umatic Ter	minal			To suit 8	mm tube
B. ACTUATOR ASSY			_	missioning		achietor			set individually
			''~	c	pheres.	tapped as	nd packed alon	ang mith tha	salve
I. Make/Type No *	,						Pavavu eluk	M M MILL	TOLETO,
	nenmatic C	pring Diaphragm	DEE	DOCIME	NTC-/CB	FCIEV IN	WG/MANUAI	DEEN	PELON .
3. Size/Volume *		* * *** ******************************		Dimension			UMANUA	LALFIN	B.BELUW) *
4. Diaphragm Matl				Hookup D		*			
T. Diapinagan irani		8+4					C	T.	
5 Spring No/Range -		Std	S.No	ITEM	U&M	Manual	Spares iden	uner C	atalog&Spec
	Close			<u> </u>	ļ .				
)pen		3	<u> </u>	*		*	*	
	40 psig		4	В	*		*	*	
9. Pr port Conn *			5	B 11	*		*	*	
	itay Pot		6	С	*		*	*	
11. Lockup Valve type No *			7	D	•		*		
12. Lockup Valve Set pr →	40 psig		8	E	*		*	*	
			9	F	*		•		
			10	Ġ	+		*	- .	
PREPAREN BY /BIF		DATE			103773	TENNO	TO 1 15 4 7		
PREPARED BY (BH	TT)		100	FIRM	DY(V	PIADO	R) DAT	LL	
SVS	EL)	20.12.10					i		

FUEL FIRING PE (BOILERS)

TOS: 1351K / REV: 00 SHEET 1 OF 1

DATA SHEET FOR HEAVY OIL RETURN TRIP VALVE(3-WAY)

UNITS: Flow-Liquid Cu M / hr, Pr-kg / cmSq (g), Temp-° C, *- Vendor to fill the relevant data

UNITS: Flow-Liq	uid Cu M / hr, Pr-	kg/cmsq(g),	1 CHIP*	<u> </u>	y engo	to mi	ne lete	******	l
O.FLOW DATA			C.SC	LENOID	VLV(bh	el scope)			
I Line Fluid	HFO/LSHS/HPS	/FO	I. M	ke / Type	No				
2. Flow Max	11		2. Sty	de			1		
3. Normal in pr	15		3. To	Open Mai	n Valve		†		
4. Allowable DP	0.5			Close Mai			†		
5. Actuator Sizing DP	30			closure	., ,		 	··	
6. Temp Max	150			il Duty			 		
7.Flow Temp	150			il Rating			<u> </u>		· · · · · · · · · · · · · · · · · · ·
8. Flow Sp Gravity	9.93			ulation Cla			<u> </u>		
9. Flow Viscosity	20CST						 		- ,
	*	····		ush / Hold					
10. Max Flow Cv				alve Flow (J.Y		ļ		
11. Plug Lift%	100% (Full)			ody Mati					
12. Valve Cv	*			etted parts			ļ <u> </u>		
13 Valve Closing Time	Less than one Se			ating					
14. Valve Opening Time	6-10 Sec.Adjusti	ı ble	14. V	alve Ends		•			
			15. C	able entry					
A. VALVE BODY			16. To	eminal Blo	ck				
1 Make/Type No			D. QI	JICK EXI	IAUST V	ī.	To me	et 0.13	
2. Line Size	ODXT 48.3X 3	1.68 mm		ke/type No				•	
3. Body/port Size	Nb 40 mm / *			t Conn	****		 	<u> </u>	
4. Plug Travel	* com		1				 		
5. Body Style / Rating		NSI # 300	FF	OW REST	DICTO	D-	To me	A 14	
6. Ends	Flanged to : ANS			ke/Type No		<u> </u>	10 me	Ct 4.14	
7. Port	- Single			t Conn			*		<u> </u>
8. Guiding					- N		-		
	Cage or Top & B		3. Ad	ustable Tir	ne Kange		-		
9. Body Matl	Carbon Steel, AS	IM AZIG WCB							
10. Trim No	<u> </u>		F. AD				Type I	Vo	
11. Plug Mati	SS		1. Air	et set pr			*		
12 Steam Size/Matl	Std St	3	<u> </u>						
13.Seat, Matl	SS		G.LP	ATT SWIT	CHES				off
14 Cage Mati] -		1. Ma	ke/Type No)		4		T +
15.Plug/Gage Style	Linear		2. Mo	unted For		Full	орев	Full cla	se %-Open
16. Seat Leak Class	VI to ANS	I FCI 70-2	3. Cor				2 X DE		Ton:
17. Plug pushdown to	Close Lower port			tact Rating	, 1	40Ac 10A			De 0.5 Ашр
18. Flow Tends to	Close Upper port			losure		TURE AU		110	per NEMA4 &13
			7. 4134	**************************************					per Newige 6:15
19 Ronnet / nacking	1 (C+A) 1 (D/)		4 Cab	a Enter:					
19. Bonnet / packing		TFE		e Entry	DOV		%" NP		
20. Lub/Isol Valve	Std P	ife	H. JU	NCTION	BOX		Provid	led	
20. Lub/Isol Valve 21. Drain Valve		138	H. JU	NCTION osure			Provid Weath	led er proof as	per NEMA4 &13
20. Lub/Isol Valve		TFE	H. JU 1.Encl 2. No.	NCTION osure of Termin	als		Provid	led er proof as	per NEMA4 &13
20. Lub/Isol Valve 21. Drain Valve		IFE.	H. JU 1.Encl 2. No. LSUP	NCTION osure of Termin PLY CON	als		Provid Weath	led er proof as	per NEMA4 &13
20. Lub/Isol Valve 21. Drain Valve		TFE.	H. JU 1.Encl 2. No. LSUP 1. Ass	NCTION osure of Termin PLY CON embly - 1	als		Provid Weath	led er proof as	per NEMA4 &13
20. Lub/Isol Valve 21. Drain Valve		I'R	H. JU 1.Encl 2. No. LSUP 1. Ass	NCTION osure of Termin PLY CON	als		Provid Weath ~24 No	led er proof as	per NEMA4 &13
20. Lub/Isol Valve 21. Drain Valve			H. JU 1.Encl 2. No. LSUP 1. Ass 2. Ass	NCTION osure of Termin PLY CON embly - 1	als DITION		Provid Weath ~24 No	led er proof as	per NEMA4 & 13
20. Lub/Isol Valve 21. Drain Valve			H. JU 1.Encl 2. No. LSUP 1. Asso 2. Asso 3. Pne	osure of Termin PLY CON embly - 1 embly - 2	als DITION minal	actuator	Provid Weath ~24 No	led er proof as s	it 8 sam tube
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level			H. JU 1.Encl 2. No. LSUP 1. Asso 2. Asso 3. Pne	osure of Termin PLY CON embly - 1 embly - 2 umatic Term	als DITION minal		Provide Weath24 No	r proof as To su I packing mt	it 8 sum tube
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level			H. JU 1.Encl 2. No. LSUP 1. Asso 2. Asso 3. Pne	osure of Termin PLY CON embly - 1 embly - 2 umatic Term	als DITION minal		Provide Weath24 No	led er proof as s	it 8 sum tube
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY	Less than 85dBA		H. JU 1.Encl 2. No. LSUP 1. Ass 2. Ass 3. Pnc 4.Com	osure of Termin PLY CON embly - 1 embly - 2 umatic Termin missioning	als DITION minal spares:	tagged a	Provice Weath -24 No -1no and	Te su	it 8 mm tube lls- lset individually i the valve.
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/fype No 2. Style	Less than 85dBA		H. JU 1.Encl 2. No. 1.SUP 1. Ass 2. Ass 3. Pne 4.Com	osure of Termin PLY CON embly - 1 embly - 2 umatic Ten missioning	als DITION minal spares:	tagged a	Provice Weath -24 No -1no and	Te su	it 8 sum tube
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Stze/Volume	Less than 85dBA		H. JU 1.Encl 2. No. 1.SUP 1. Ass 2. Ass 3. Pne 4.Com REF, 1.Assy	osure of Termin PLY CON embly - 1 embly - 2 umatic Termin missioning DOCUME Dimension	als DITION minal spares: NTS:(SP	tagged a	Provice Weath -24 No -1no and	Te su	it 8 mm tube lls- lset individually i the valve.
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Stze/Volume 4. Diaphragm Matl	Less than 85dBA	Diaphragm	H. JU 1.Encl 2. No. 1.SUP 1. Ass 2. Ass 3. Pne 4.Com REF. 1.Assy 2.Assy	osure of Termin PLY CON embly - 1 embly - 2 umatic Ten missioning POCUME Dimension Hookup D	als DITION minal spares: NTS:(SP ial Dwg:	tagged a	Provide Weath ~24 No -24 No -2	Te su d packing mid d along with	it 8 mm tube Ils- Iset individually 1 the valve. F.NOs. BELOW)
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 4. Diaphragm Mail 5.Spring No/Range	Less than 85dBA Pneumatic Spring Strip	Diaphragm	H. JU 1.Encl 2. No. 1.SUP 1. Ass 2. Ass 3. Pne 4.Com REF, 1.Assy	osure of Termin PLY CON embly - 1 embly - 2 umatic Termin missioning DOCUME Dimension	als DITION minal spares: NTS:(SP ial Dwg:	tagged a	Provide Weath ~24 No -24 No -2	Te su	it 8 mm tube lls- lset individually i the valve.
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to	Less than 85dBA Pneumatic Spring Str. Str. Close Upper port	Diaphragm	H. JU 1.Encl 2. No. LSUP 1. Ass. 2. Ass. 3. Pne. 4.Com REF., 1.Assy S.No	NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Termissioning POCUME Dimension Hookup ITEM	als DITION minal spares: NTS:(SP nal Dwg: wg: O & M	tagged a	Provide Weath ~24 No -24 No -2	Te su d packing mid d along with	it 8 mm tube Its-liset individually the valve. F.NOs.BELOW) Catalog&Spec
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Stze/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to	Less than 85dBA Pneumatic Spring Pneumatic Spring Str. Close Upper port Open Lower port	Diaphragm	H. JU 1.Encl 2. No. LSUP 1. Ass 2. Ass 3. Pne 4.Com REF. 1. Assy 2. Assy 5. No	NCTION osure of Termin PLY CON embly - 1 embly - 1 embly - 2 umatic Terminssioning DOCUME Dimension Hookup D ITEM	als DITION minal spares: NTS:(SP ial Dwg: wg: O & M	tagged a	Provide Weath ~24 Not ~25 Not	Te su d packing mid d along with	it 8 mm tube ils- Iset individually ithe valve. F.NOs. BELOW) * Catalog&Spec
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr	Less than 85dBA Pneumatic Spring The Str. Close Upper port Open Lower port -40 psig	Diaphragm	H. JU 1.Encl 2. No. LSUP 1. Asse 2. Asse 3. Pne 4. Com REF, 1. Assey 2. Assy S. No.	NCTION osure of Termin PLY CON embly - 1 embly - 1 embly - 2 umatic Term missioning DOCUME Dimension Hookup D ITEM	minal spares: NTS:(SP nal Dwg: wg: O & M	tagged a	Provide Weath -24 No -2	Te su d packing mid d along with	it 8 mm tube Ils- Iset individually i the valve. FNOs. BELOW) Catalog&Spec
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn	- Less than 85dBA Pneumatic Spring Pneumatic Spring Close Upper port Open Lower port 40 psig	Diaphragm	H. JU 1.Encl 2. No. LSUP 1. Ass: 2. Ass: 3. Pne: 4.Com REF., 1.Assy 2.Assy S.No. 3 4	NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Terminssioning POCUME Dimension Hookup D ITEM	minal spares: NTS:(SP nal Dwg: wg: O & M	tagged a	Provide Weath ~24 No	Te su d packing mid d along with	it 8 sum tube lls-1 set individually in the valve. F.NOs.BELOW) * Catalog&Spec * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSV 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure	Less than 85dBA Pneumatic Spring The Str. Close Upper port Open Lower port -40 psig	Diaphragm	H. JU 1.Encl 2. No. LSUP 1. Asse 2. Asse 3. Pne 4. Com REF, 1. Assey 2. Assy S. No.	NCTION osure of Termin PLY CON embly - 1 embly - 1 embly - 2 umatic Term missioning DOCUME Dimension Hookup D ITEM	minal spares: NTS:(SP nal Dwg: Wg: O & M * *	tagged a	Provide Weath -24 No -2	Te su d packing mid d along with	it 8 mm tube Ils- Iset individually i the valve. FNOs. BELOW) Catalog&Spec
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn	- Less than 85dBA Pneumatic Spring Pneumatic Spring Close Upper port Open Lower port 40 psig	Diaphragm	H. JU 1.Encl 2. No. LSUP 1. Ass: 2. Ass: 3. Pne: 4.Com REF., 1.Assy 2.Assy S.No. 3 4	NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Terminssioning POCUME Dimension Hookup D ITEM	minal spares: NTS:(SP nal Dwg: wg: O & M	tagged a	Provide Weath ~24 No	Te su d packing mid d along with	it 8 sum tube lls-1 set individually in the valve. F.NOs.BELOW) * Catalog&Spec * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSV 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure	- Less than 85dBA Pneumatic Spring Pneumatic Spring Close Upper port Open Lower port 40 psig	Diaphragm	H. JU 1.Encl 2. No. LSUP 1. Ass. 2. Ass. 3. Pne. 4.Com REF.: 1.Assy 2.Assy S.No. 3 4 5 6	NCTION osure of Termin PLY CON embly - 1 cambly - 2 urmatic Ten missioning POCUME Dimension Hookup D ITEM A B B B 11 C	minal spares: NTS:(SP nal Dwg: Wg: O & M * *	tagged a	Provide Weath ~24 No -24 No -2	Te su d packing mid d along with	it 8 mm tube list list individually in the valve. F.NOs. BELOW) * Catalog&Spec * * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY I. Make/Type No 2. Style 3. Stze/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No	- Less than 85dBA Pneumatic Spring Pneumatic Spring Close Upper port Open Lower port 40 psig Stay Put	Diaphragm	H. JU 1.Encl 2. No. LSUP 1. Ass 2. Ass 3. Pnet 4.Com REF. 1.Assy S.No 3 4 5 6 7	NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Terminssioning POCCUME Dimension Hookup D ITEM A B B 11 C D E	minal spares: NTS:(SP nal Dwg: Wg: O & M * *	tagged a	Provide Weath24 No	Te su d packing mid d along with	it 8 sum tube lls- lset individually i the valve. F-NOs. BELOW) Catalog&Spec * * * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY I. Make/Type No 2. Style 3. Stze/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No	- Less than 85dBA Pneumatic Spring Pneumatic Spring Close Upper port Open Lower port 40 psig Stay Put	Diaphragm	H. JU 1.Encl 2. No. 1.SUP 1. Ass 2. Ass 3. Pne: 4.Com REF. 1. Assy 2. Assy S.No 3 4 5 6 7 8 9	NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Term missioning DOCUME Dimension Hookup D ITEM A B B 11 C C E F	minal spares: NTS:(SP in all Dwg: wg: 0 & M	tagged a	Provide Weath ~24 No	Te su d packing mid d along with	it 8 mm tube Ils- Iset individually i the valve. F.NOs. BELOW) * Catalog&Spec * * * * * * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No 12. Lockup Valve Set pr	Less than 85dBA Pneumatic Spring Pneumatic Spring Str. Str. Close Upper port Open Lower port -40 psig * -40 psig	Diaphragm	H. JU 1.Encl 2. No. 1.SUP 1. Ass 2. Ass 3. Pne: 4.Com REF. 1. Assy 2. Assy 5. No 3 4 5 6 7 8 9 10	NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Term missioning DOCUME DOCUME A B B B 11 C C E F G	minal spares: NTS:(SP nail Dwg: wg: O & M * * * * * * * * * * * * * * * * * *	ECIFY D * Manual	Provide Weath ~24 No -24 No -2	Te su I packing mid along with NUAL REI	it 8 mm tube Ils- I set individually the valve. ENOs. BELOW) Catalog&Spec * * * * * * * * * * * * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 4. Diaphragm Mail 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Com 10. On Air Failure 11. Lockup Valve type No 12. Lockup Valve Set pr PREPARED BY (1)	Less than 85dBA Pneumatic Spring Pneumatic Spring Str. Str. Close Upper port Open Lower port -40 psig * -40 psig	Diaphragm	H. JU 1.Encl 2. No. 1.SUP 1. Ass 2. Ass 3. Pne: 4.Com REF. 1. Assy 2. Assy 5. No 3 4 5 6 7 8 9 10	NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Termissioning PDOCUME Dimension Hookup D ITEM A B B B 11 C D E F	minal spares: NTS:(SP nail Dwg: wg: O & M * * * * * * * * * * * * * * * * * *	ECIFY D * Manual	Provide Weath ~24 No -24 No -2	Te su d packing mid d along with	it 8 mm tube Ils- I set individually the valve. ENOs. BELOW) Catalog&Spec * * * * * * * * * * * * *
20. Lub/Isol Valve 21. Drain Valve 22. Noise Level B. ACTUATOR ASSY 1. Make/Type No 2. Style 3. Size/Volume 4. Diaphragm Matl 5. Spring No/Range 6. Spring to 7. Air to 8. Signal pr 9. Pr port Conn 10. On Air Failure 11. Lockup Valve type No 12. Lockup Valve Set pr	Less than 85dBA Pneumatic Spring Pneumatic Spring Str. Str. Close Upper port Open Lower port -40 psig * -40 psig	Diaphragm	H. JU 1.Encl 2. No. 1.SUP 1. Ass 2. Ass 3. Pne: 4.Com REF. 1. Assy 2. Assy 5. No 3 4 5 6 7 8 9 10	NCTION osure of Termin PLY CON embly - 1 embly - 2 umatic Term missioning DOCUME DOCUME A B B B 11 C C E F G	minal spares: NTS:(SP nail Dwg: wg: O & M * * * * * * * * * * * * * * * * * *	ECIFY D * Manual	Provide Weath ~24 No -24 No -2	Te su I packing mid along with NUAL REI	it 8 mm tube Ils- I set individually the valve. ENOs. BELOW) Catalog&Spec * * * * * * * * * * * * *



FUEL FIRING PE (BOILERS)

TOS: 1351L / REV: 00 SHEET 1 OF 1

DATA SHEET FOR HEAVY OIL RETURN TRIP VALVE(3-WAY)

UNITS: Flow-Liquid Cu M / hr. Pr-kg / cmSq (g), Temp-° C. *- Vendor to fill the relevant data

	quid Cu M / hr, Pr	-kg/cmSq(g)						nt data	
O.FLOW DATA			C.S	OLENOID	VLV(Ы	hel scope)		······································	
1. Line Fluid	HFO/LSHS/HP	S/FO		lake / Type	: No				
2. Flow Max	12		2. St						
3. Normal in pr	15	·	3. To	о Ореп Ма	in Valve				
4. Allowable DP	0.5			o Close Ma	sin Valve				
5. Actuator Sizing DP	30		5. Et	nclosure					
6. Temp Max	150			oil Duty					
7.Flow Temp	150	· · · · · · · · · · · · · · · · · · ·	7. Co	oil Rating					
8. Flow Sp Gravity	0.93			sulation Cl					
9. Flow Viscosity	20CST			rush / Hole		;			
10. Max Flow Cv	*	···		Valve Flow	Cv				
11. Plug Lift%	100% (Full)	***		Body Mati					
12. Valve Cv			12. V	Wetted part	S				
13. Valve Closing Time	Less than one S		13. S	Seating					
14. Valve Opening Time	6-10 Sec.Adjus	table		Valve Ends					
				able entry					
A. VALVE BODY			16. T	crminal Bl	lock				
I Make/Type No	*			UICK EX		VL	To meet 0.	.13	
2. Line Size		3.91 mm		ake/type No	0				*
3. Body/port Size	Nb 50 mm / *		2. Po	rt Conn					
4. Plug Travel	mm *								
5. Body Style / Rating		NSI # 300		LOW RES		R	To meet 0.	14	
6. Ends	Elanged to : AN			ake/Type N	lo			~	
7. Port	- Single			rt Conn					
8. Guiding	Cage or Top & I		3. Ad	ljustable Ti	me Range	;	*		
9 Body Matl	Carbon Steel, AS	TM A216 WCB		·					
10 Trim No	*		F. AI	RSET			Type No		
11 Plug Mati	SS		1. Air	rset set pr			*		
12 Steam Size/Matl		S							
13 Seat, Matl	SS			MIT SWIT					off
14. Cage Mati				ke/Type N	o		•		*
15 Plug/Gage Style	Linear			nunted For		Ful	lopen	Full clos	e % Open
16 Seat Leak Class	VI to ANS		3. Cor				2 X DPDT		Off
17. Plug pushdown to	Close Lower per	**		ntact Ratin	g 2	240Ac 10/		110 1	Dc 9.5 Amp
18. Flow Tends to	Close Upper port	· · · · · · · · · · · · · · · · · · ·		closure			Weather pr	roof as p	er NEMA4 &13
19. Bonnet / packing		TFE		de Entry			½" NPT		
20 Lub/isol Valve				INCTION	BOX		Provided		
21 Drain Valve			-	losure			Weather pr	oof as p	er NEMA4 &13
22. Noise Level	Less than 85dBA			of Termin			~24 Nos		
	 			PLY CON	MITTION				
	 	· · · · · · · · · · · · · · · · · · ·		embly - 1			•		
	 			embly - 2			-		
B (CVEV) TO B (CVEV)	 			umatic Ter		<u> </u>		To suit	8 mm tube
B. ACTUATOR ASSY			4.Com	ımissioning	g spares:	actuator	-I no and pac	king mtls	- 1set individually
1. Make/Type No	+					tagged a	ind packed alc	ong with	the valve.
2. Style		794	-	Th. 61 (42)					
3. Size/Volume	Pneumatic Spring	Maphragin	REF.	DOCUME	NTS:(SP	ECIFY D	WG/MANUA	L REF.	NOs.BELOW) *
4. Diaphragm Matl	<u> </u>			/ Dimension		+			
5.Spring No/Range			2.Assy	Hookup D		+			
6. Spring to	· St	<u> </u>	S.No	ITEM	O&M	Manual	Spares ide	ntifier	Catalog&Spec
7. Air to	Close Upper port		 	 	<u> </u>				
8. Signal pr	Open Lower port	·····	3	<u> </u>	•		*		*
	~40 psig		4	В	•		•		•
U Proof/or-	1		5	B 11	•				*
9. Pr port Conn	Canal Day			l C			*		*
10. On Air Failure	Stay Put		6						
10. On Air Failure 11. Lockup Valve type No	*		7	D	*		•		*
10. On Air Failure			7 8	D E	*		•		*
10. On Air Failure 11. Lockup Valve type No	*		7 8 9	D E F	*		•		*
10 On Air Failure 11 Lockup Valve type No 12 Lockup Valve Set pr	~40 psig		7 8 9	D E F G	*		*		•
10. On Air Failure 11. Lockup Valve type No	~40 psig	DATE	7 8 9	D E F G	*	ENDO	*	TE	*
10 On Air Failure 11 Lockup Valve type No 12 Lockup Valve Set pr	~40 psig	DATE 20.12.10	7 8 9	D E F	*	ENDO	*	TE	*

ANNEXURE- A

ACCEPTANCE OF TECHNO - COMMERCIAL TERMS AND CONDITIONS BY THE BIDDERS (To be Filled and submitted for evaluation and to consider for Price-Bid opening /RA)

Descrip Enquiry Project:		Burner Trip Valves & Trip Valves 1801100787/14 dt 11.07,11	
SI No.		Description	Vendor's confirmation
1	vendors are re	operated on two part bid basis and the equested to submit both Technomid Price Bid in a separate sealed cover.	
2	Technical:	per BHEL's Respective Specification.	
3	Firm Price: The quoted/Finalisthe supplies.	sed rates shall be Firm till execution of	
4	Price Basis: The rates are to Stores Destinat	be quoted on FOR / BHEL Trichy ion basis inclusive of Packing, pht charges to your account.	
5	Payment terms: 90% against des against receipt and	patch documents and balance 10% acceptance of materials at stores. OR	
6	receipt and accepta Liquidated damag Our standard LD	gainst despatch documents against ance of materials at stores les: term is 0.5% per week subject to a shall be applicable for late deliveries.	
8	Delivery Period: Bidder shall indica	te the firm delivery period required for materials from the date of Purchase	
9 .	Validity: Price Validity of your from the date of Te	our offer shall be Minimum 120 days chno-Commercial Bid opening.	
10	Taxes & Duties: Please mention all	the taxes and duties and other price clearly in your offer.	
11	Guarantee: Guarantee clause	18 months from the date of supply or date of actual put in use, whichever is	
12	Reverse Auction: BHEL is having the reverse auction.	option of finalising the tender through	
13	Risk Purchase cla	use as per Annexure A1	

n	ato	

ANNEXURE

TERMS AND CONDITIONS - A

- 1. a) QUOTATIONS: Each tender should be sent in double cover, inner cover should be sealed with tenderer's distinctive seal and superscribed with correct tender No. item of supply and due date of opening. The outer cover should only bear the address of this office and should not have any indication that a tender is within. Two or more quotation should not be sent in one cover but the quotation against each tender should be sent separately to avoid confusion. Tender should not be addressed to any individual's name but only by designation.
- b) Tenders should be free from CORRECTION AND ERASURES. Corrections if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
 - c) Price should be nett F.O.R despatching station inclusive of risk in transit and remain valid for 60 days from the due date.
- d) if any Sales Tax is payable as extra to the quoted price it should be specifically stated in quotations alongwith CST & TNGST No tailing which the purchaser will not be liable for payment of Sales Tax.Our T.N.G.S.T No 3560005 Dt. 01-04-1995 CST No. 239383 Dt. 11.8.1991.
 - e) No revision of prices will be entertained after tenders are opened.
- f) Manufacturer's Name, Trade Mark or Patent No. If any should be specified. Illustrative leaflets giving technical particulars are required alongwith quotation wherever necessary.
 - g) Products with I.S.I Certification marks will be preferred.
- h) The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reason whatsoever.
- 2. SAMPLES: Wherever possible, sample should be submitted separately whether specifically requested or not so as to reach the purchaser on or before the due date of the enquiry. They should be clearly marked with the enquiry No and the date on the outside cover to facilitate identification.
 - 3. PACKING AND MARKING: The supplier shall arrange for securely protecting and packing the stores to avoid loss or damages during transit.
- 4. TERMS OF PAYMENT: Payment will be made within 30 days of satisfactory receipt of materials at site. Wherever required by the purchaser, the successful tenderer must send the operation and maintenance manuals, test certificates, drawings, etc., for the materials ordered. These should be sent immediately after despetch of the materials and a statement to that effect should be made in the invoice. Failure to comply with this provision will result in delay in payment of the bills. Goods despetched either by V.P.P or by the document presented through bank will not be accepted unless agreed to by the Purchaser.

The duplicate copy of the invoice meant for the transporters should accompany the material as stipulated under C.E. Rules 52A and 173C (or) 57GG. A photostat copy of the above invoice for each delivery challen should be submitted alongwith the original bills routed through bank or submitted directly to BHEL. Finance Department.

5. SECURITY DEPOSIT: For purchases over Rs. 5,000/- the successful tenderer/s may be requested to furnish a Bank Guarantee. Security Deposit for an appropriate value as may be determined by BHEL.

6. LIQUIDATED DAMAGES/ PENALTY AND INTEREST ON ADVANCES FOR DELAY IN DELIVERY:

If the supplier fails to deliver the raw material / equipment / components within the period specified in the contract the purchaser shall deduct Equidated Damages a sum equivalent to 0.5 % of the price for each week of delay upto a maximum of 15% of the price of the delayed / undelivered goods. In addition to the recovery of interest at normal cash credit rate plus 2% for the unadjusted portion of the advances. If the delay in delivery of a part contributes to delay in execution of total system, LD and interest on advances will be recovered on the total contract price / total advance paid.

- 7. RISK PURCHASE: Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or despatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefor. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases in addition to penalty at the rate mentioned in clause 6 above.
- 8. PREFERENTIAL DELIVERY: It should be noted if a contract is placed on a higher tenderer as a result of this invitation to tender in preference to the lowest acceptable offer in consideration of the earlier delivery, the seller will be liable to pay to the purchaser the difference between the contract rate and that of the lowest acceptable tender on the basis of final price F.O.R. destination, including all elements of freights, sales tax, duties and other incidents, incidental in case of failure to complete supplies in terms of such contract within the date of delivery specified in the tender and incorporated in the contract.
- MODVAT CREDIT: If any Excise Duty is payable, the chapter head/sub-head reference and the rate of the duty should be quoted. If the
 tender is availing MODVAT credit for this inpute materials, the effect of proforms credit should be passed on to the purchaser. Tenderer under
 "MODVAT" shall be preferred.
 - 10 Purchase : Preference will be given to CPSUs as per. Government Guidelines.
- 11. GENERAL: The purchaser reserves the right to split up the tender and place order for individual terms with different tenderers and also increase or decrease the quantity.

Any Other conditions wihich might have been quoted by the Seller and are in contravention to the terms prescribed in the order and which have not been specifically accepted in by Purchaser will not be applicable to the contract.

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