
 434-003	<h1>ENQUIRY</h1>	<b>Bharat Heavy Electricals Limited</b> (A Government of India undertaking) HIGH PRESSURE BOILER PLANT PURCHASE DEPARTMENT/VALVES TIRUCHIRAPPALLI-620 014.		Phone: 0431-257-7096/7123 FAX : 0431-2520383 Email: vramki@bheltry.co.in nagarajank@bheltry.co.in	
		<b>ENQUIRY NO.</b>	<b>DATE</b>	<b>DUE DATE FOR QUOTATION</b>	
		EN-SOF-1464	15.10.2012	19.11.2012	
		Please quote Enquiry No., and due date in correspondences This is only a request for quotation and not an order.			
<b>SL.NO.</b>	<b>MATERIAAL CODE DESCRIPTION</b> <b>DRAWING NO</b> <b>TDC NO.</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>DELIVERY SCHEDULE</b> <b>QUANTITY</b> <b>DATE</b>	
Supply of Body Hangers & Actuators As per the purchase specification enclosed.  <u>Date, Time &amp; Venue of tender</u> A) Technical Bid opening : at 14.30 IST at Purchase Conference Hall , Building No 24, BHEL Tiruchirappalli – 620 014, Tamil Nadu State, India.  B) Price Bid will be opened for vendors those who's offers are technically suitable alone. The intimation regarding price bid opening will be informed later.		<b>AS PER ENCLOSED ANNEXURE-1</b>  <u>Annexure:</u> 1. Terms & Conditions for Indigenous/Import. 2. Special Conditions of contract. 3. Copy of purchase specifications & drawings. 4. Required Delivery: As mentioned in our annexure-1			
The rate of Excise Duty and Sales Tax, Prevalent on the date of quotation, should be clearly indicated in the quotation itself. If these particulars are not provided, the quotation is liable for rejection. Please, submit your lowest quotation in duplicate subject to our terms and conditions overleaf, for the above materials, so as to reach us on or before the due date by 2 P.M. Quotation will be opened at 2.30 p.m. on the due date in the presence of tenderers who may like to present . Last tenders are liable to be rejected.				Yours faithfully,  For Bharat Heavy Electricals Ltd Sr. Manager (Valves Purchase)	

SPEC. No.	REV.
SPEC:OF:024	03

**PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)**  
**MATERIAL CODE: 97 464 197**

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Pneumatic (Piston and Cylinder Type)
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Actuating medium	Pneumatic dry produced gas with 2% CO <sub>2</sub>
04.	Operating Pressure	90 TO 120 PSI 120 PSI Actuator control pressure should open the valve at 4000 PSI differential pressure. <b>SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE &amp; GATE DRAG / FRICTION VALUES.</b>
05.	Bonnet Interface Details	As per Kvaerner (National) drawing 413820 – AI Revision D
06.	Actuator Performance Requirement	As per section 10.16.2 of API 6A 17 <sup>th</sup> edition / the latest edition
07.	<b>Specification for Bonnet Assembly</b>	
a)	<b>PRODUCT SPECIFICATION LEVEL (PSL)</b>	<b>2</b>
b)	<b>MATERIAL CLASS</b>	<b>EE</b>
c)	<b>TEMPERATURE RATING</b>	<b>U (0 – 250°F)</b>
d)	<b>PERFORMANCE REQUIREMENT LEVEL</b>	<b>PR – 2</b>
e)	Service Condition	Offshore oil field (H <sub>2</sub> S service)
08.	Actuator suitable for M/s Kvaerner National 3-1/8"-5000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	Forged low alloy steel
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
10.	Painting	Suitable for offshore marine environment
11.	<b>ACTUATOR DESIGN FEATURES: -</b>	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable <b>MANUAL OVERRIDE SYSTEM</b>	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	<b>TECHNICAL REQUIREMENTS: -</b>	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of section 10.20 of API 6A 17 <sup>th</sup> edition and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	

**CAD.REF.No.: SPEC024**

 BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.	REV.	T.R. <i>Rajaraman</i>	DATE	PREPARED	T.RAJARAMAN	<i>Rajaraman</i>
	03	J.A. <i>Jerry</i>	19.11.2001			
	ZONE	RETPED IN WORD	PACKAGE.	REVIEWED & APPROVED	JERRY ABRAHAM	<i>Jerry</i>
				DATE	27.05.2000	

SPEC. No.	REV.
<b>SPEC:OF:024</b>	<b>03</b>

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A.
b)	SSV functional test data sheet as per Table 10.49 of API 6A
c)	Shipping Report as per Table 10.50 of API 6A.
d)	Caution : Supplier is requested to detail out deviations from this Specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this Specification requirements in toto.

**REDRESS KIT FOR ACTUATOR MATERIAL CODE: 97 464 194**

1.	Redress kit for actuator should consist of the following items: -
a)	All elastomeric seals
b)	Piston rings with back up rings
c)	Stem
d)	Stem packing
e)	Any other item which the supplier consider as operational spares.
2.	Supplier to indicate the part number of the individual spare items while submitting the offer.
3.	Caution: Supplier is requested to detail out the deviations from this specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this specification requirements in toto.

**CAD.REF.No.: SPEC024**


	<b>BHARAT HEAVY ELECTRICALS LTD.</b> TIRUCHIRAPALLI 620014.	REV.	T.R. <i>Rajaraman</i>	DATE	PREPARED	T.RAJARAMAN	<i>Rajaraman</i>
		<b>03</b>	J.A. <i>Jerry</i>	19.11.2001			
		ZONE	RETYPE IN WORD	PACKAGE.	REVIEWED & APPROVED	JERRY ABRAHAM	<i>Jerry</i>
			DATE	27.05.2000			

SPEC. No.	REV.
SPEC:OF:086	00

**PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)**  
**MATERIAL CODE: 97 464 327**

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Hydraulic
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Operating Pressure	3000 PSI <b>SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE &amp; GATE DRAG / FRICTION VALUES.</b>
05.	Bonnet Interface Details	As per attached drawing OFE: REC: 449
06.	Actuator Performance Requirement	As per section 10.16.2 of API 6A 17 <sup>th</sup> edition / the latest edition
07.	<b>Specification for Bonnet Assembly</b>	
a)	<b>PRODUCT SPECIFICATION LEVEL (PSL)</b>	<b>3</b>
b)	<b>MATERIAL CLASS</b>	<b>FF</b>
c)	<b>TEMPERATURE RATING</b>	<b>U (0 – 250°F)</b>
d)	<b>PERFORMANCE REQUIREMENT LEVEL</b>	<b>PR – 2</b>
e)	Service Condition	Offshore oil field (H <sub>2</sub> S service)
08.	Actuator suitable for M/s Kvaerner National 3-1/16"-10000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	Forged Stainless Steel. SS-410
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
10.	Painting	Suitable for offshore marine environment
11.	<b>ACTUATOR DESIGN FEATURES: -</b>	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable <b>MANUAL OVERRIDE SYSTEM</b>	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	<b>TECHNICAL REQUIREMENTS: -</b>	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of section 10.20 of API 6A 17 <sup>th</sup> edition and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	


REF.No: SPEC086

	<b>BHARAT HEAVY ELECTRICALS LTD.</b> TIRUCHIRAPALLI 620014.				PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
					REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elajaraja</i>
					DATE	27.05.2000	

SPEC. No.	REV.
SPEC:OF:086	00

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A.
b)	SSV functional test data sheet as per Table 10.49 of API 6A
c)	Shipping Report as per Table 10.50 of API 6A.
d)	Caution : Supplier is requested to detail out deviations from this Specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this Specification requirements in toto.
e)	<p>This SSV shall be used as secondary HIPPS valve, For SIL-3 calculation for the complete HIPPS system, the following reliability / failure data for the wing SSV shall be provided by the manufacturer/supplier:</p> <p><b>1- For each device or sub system:</b></p> <ul style="list-style-type: none"> <li>a) Hardware fault tolerance-HFT-as per Table 2 &amp;3 of 61508, part 2.</li> <li>a) Safe failure Fraction-SFF.</li> <li>b) Mean time to repair-MTTR- What value has been used in each of the calculations.</li> <li>c) Probability of failure on demand-PFD (or PFDavg).</li> <li>d) Probability of failure to danger per hour-PFH.</li> <li>e) Fail safe failure detected-λsd.</li> <li>f) Fail safe failure undetected --λsu.</li> <li>g) Fail to Danger detected--λdd (action needs to be taken to go to fail safe state.</li> <li>h) Fail to danger undetected-λdu.</li> <li>i) Test interval used for calculation.</li> </ul> <p><b>2.</b> Swept volume of the SSV (to act as Secondary HIPPS valve) Hydraulic actuator.</p> <p><b>3.</b> Operating Hydraulic pressure shall be 3000 psi for the SSV.</p> <p><b>4.</b> The closing time of the Hydraulic SSV.</p>

**REF.No: SPEC086**


 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>					PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
					REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elajaraja</i>
					DATE	11.03.2008	



SPEC. No.	REV.
SPEC:OF:089	00

**PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)**  
**MATERIAL CODE: 97 464 334**

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Pneumatic (Piston and Cylinder Type)
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Actuating medium	Pneumatic dry produced gas with 2% CO <sub>2</sub>
04.	Operating Pressure	90 TO 120 PSI 120 PSI Actuator control pressure should open the valve at 4000 PSI differential pressure. <b>SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE &amp; GATE DRAG / FRICTION VALUES.</b>
05.	Bonnet Interface Details	As per Kvaerner (National) drawing 413820 – AI Revision D
06.	Actuator Performance Requirement	As per section 10.16.2 of API 6A 17 <sup>th</sup> edition / the latest edition
07.	<b>Specification for Bonnet Assembly</b>	
a)	<b>PRODUCT SPECIFICATION LEVEL (PSL)</b>	<b>3</b>
b)	<b>MATERIAL CLASS</b>	<b>EE</b>
c)	<b>TEMPERATURE RATING</b>	<b>U (0 – 250°F)</b>
d)	<b>PERFORMANCE REQUIREMENT LEVEL</b>	<b>PR – 2</b>
e)	Service Condition	Offshore oil field (H <sub>2</sub> S service)
08.	Actuator suitable for M/s Kvaerner National 3-1/8"-5000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	AISI 4140 Forged Alloy steel
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
c)	All Resilient Seals	Aflas / Ryton / Kalrez / Teflon
d)	All studs and nut	To be Nickel plated by Electrolysis Nickel Plating (Niklad 1000 or equivalent) process
10.	Painting	Suitable for offshore marine environment
11.	<b>ACTUATOR DESIGN FEATURES: -</b>	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable <b>MANUAL OVERRIDE SYSTEM</b>	
c)	Supplier should provide suitable Stem Protector during despatch.	
12.	<b>TECHNICAL REQUIREMENTS: -</b>	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of section 10.20 of API 6A Latest edition and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	


 <b>BHARAT HEAVY ELECTRICALS LTD.</b> TIRUCHIRAPALLI 620014.	REV.			PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
	ZONE			REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elajaraja</i>
				DATE	15.12.2008	

SPEC. No.	REV.
SPEC:OF:089	00

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A.
b)	SSV functional test data sheet as per Table 10.49 of API 6A
c)	Shipping Report as per Table 10.50 of API 6A.
15.	Caution: Supplier is requested to detail out deviations from this Specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this Specification requirements in toto.

**REDRESS KIT FOR ACTUATOR MATERIAL CODE: 97 464 336**


1.	Redress kit for actuator should consist of the following items: -
a)	All Resilient seals
b)	Piston rings with back up O rings
c)	Stem
d)	Stem packing
e)	Any other item which the supplier consider as operational spares.
2.	Supplier to indicate the part number of the individual spare items while submitting the offer.
3.	Caution: Supplier is requested to detail out the deviations from this specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this specification requirements in tutto.

 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>	REV.		DATE	PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
	ZONE			REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elajaraja</i>
				DATE	15.12.2008	

SPEC. No.	REV.
SPEC:OF:094	00

**PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)**  
**MATERIAL CODE: 97 464 980 0000**

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Pneumatic (Piston and Cylinder Type)
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Actuating medium	Pneumatic dry produced gas with 2% CO <sub>2</sub>
04.	Operating Pressure	90 TO 120 PSI 120 PSI Actuator control pressure should open the valve at 4000 PSI differential pressure. <b>SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE &amp; GATE DRAG / FRICTION VALUES.</b>
05.	Bonnet Interface Details	As per Kvaerner (National) drawing H412055- AI Revision D
06.	Actuator Performance Requirement	As per section 10.16 of API 6A,latest edition
07.	<b>Specification for Bonnet Assembly</b>	
a)	<b>PRODUCT SPECIFICATION LEVEL (PSL)</b>	<b>3</b>
b)	<b>MATERIAL CLASS</b>	<b>FF</b>
c)	<b>TEMPERATURE RATING</b>	<b>U (0 – 250°F)</b>
d)	<b>PERFORMANCE REQUIREMENT LEVEL</b>	<b>PR – 2</b>
e)	Service Condition	Offshore oil field (H <sub>2</sub> S service)
08.	Actuator suitable for M/s Kvaerner National 4-1/16"-5000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	AISI 410 Forged Stainless steel
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
c)	All Resilient Seals	Aflas / Ryton / Kalrez / Teflon
d)	All studs and nut	To be Nickel plated by Electrolysis Nickel Plating (Niklad 1000 or equivalent) process
10.	Painting	Suitable for offshore marine environment
11.	<b>ACTUATOR DESIGN FEATURES: -</b>	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable <b>MANUAL OVERRIDE SYSTEM</b>	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	<b>TECHNICAL REQUIREMENTS: -</b>	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of API 6A and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	

 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>	REV.	PRE	DATE	PREPARED	T.RAJARAMAN	<i>Rajaraman</i>
	ZONE	APPD		REVIEWED & APPROVED	R.ELAYARAJA	<i>Elayaraja</i>
				DATE	21.08.2010	

SPEC. No.	REV.
<b>SPEC:OF:094</b>	<b>00</b>

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per API 6A.
b)	SSV functional test data sheet as per Table 83 of API 6A
c)	Shipping Report as per API 6A.

**REDRESS KIT FOR ACTUATOR MATERIAL CODE: 97 464 981 0000**

1.	Redress kit for actuator should consist of the following items: -
a)	All Resilient seals
b)	Piston rings with back up rings
c)	Stem
d)	Stem packing
e)	Any other item which the supplier consider as operational spares.
2.	Supplier to indicate the part number of the individual spare items while submitting the offer.
3.	Caution: Supplier is requested to detail out the deviations from this specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this specification requirements in toto.



**BHARAT HEAVY ELECTRICALS LTD.**

TIRUCHIRAPALLI 620014.


REV.	PRE	DATE	PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
	APPD				
ZONE			REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elaiyara</i>
			DATE	21.08.2010	



SPEC. No.	REV.
SPEC:OF:095	00

**PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)**  
**MATERIAL CODE: 97 464 984 0000**

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Pneumatic (Piston and Cylinder Type)
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Actuating medium	Pneumatic dry produced gas with 2% CO <sub>2</sub>
04.	Operating Pressure	90 TO 120 PSI 120 PSI Actuator control pressure should open the valve at 4000 PSI differential pressure. <b>SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE &amp; GATE DRAG / FRICTION VALUES.</b>
05.	Bonnet Interface Details	As per Kvaerner (National) drawing H412055- AI Revision D
06.	Actuator Performance Requirement	As per section 10.16 of API 6A, latest edition
07.	<b>Specification for Bonnet Assembly</b>	
a)	<b>PRODUCT SPECIFICATION LEVEL (PSL)</b>	<b>3</b>
b)	<b>MATERIAL CLASS</b>	<b>EE</b>
c)	<b>TEMPERATURE RATING</b>	<b>U (0 – 250°F)</b>
d)	<b>PERFORMANCE REQUIREMENT LEVEL</b>	<b>PR – 2</b>
e)	Service Condition	Offshore oil field (H <sub>2</sub> S service)
08.	Actuator suitable for M/s Kvaerner National 4-1/16"-5000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	AISI 4130 Forged Alloy steel
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
c)	All Resilient Seals	Aflas / Rytan / Kalrez / Teflon
d)	All studs and nut	To be Nickel plated by Electrolysis Nickel Plating (Niklad 1000 or equivalent) process
10.	Painting	Suitable for offshore marine environment
11.	<b>ACTUATOR DESIGN FEATURES: -</b>	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable <b>MANUAL OVERRIDE SYSTEM</b>	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	<b>TECHNICAL REQUIREMENTS: -</b>	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of API 6A and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	


 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>	REV.	PRE	DATE	PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
	ZONE	APPD		REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elajaraja</i>
				DATE	16.02.2011	

SPEC. No.	REV.
SPEC:OF:095	00

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per API 6A.
b)	SSV functional test data sheet as per Table 83 of API 6A
c)	Shipping Report as per API 6A.

**REDRESS KIT FOR ACTUATOR MATERIAL CODE: 97 464 985 0000**


1.	Redress kit for actuator should consist of the following items: -
a)	All Resilient seals
b)	Piston rings with back up rings
c)	Stem
d)	Stem packing
e)	Any other item which the supplier consider as operational spares.
2.	Supplier to indicate the part number of the individual spare items while submitting the offer.
3.	Caution: Supplier is requested to detail out the deviations from this specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this specification requirements in toto.

 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>	REV.	PRE	DATE	PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
	ZONE	APPD		REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elayaraja</i>
				DATE	16.02.2011	

SPEC. No.	REV.
SPEC:OF:098	00

**PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)**  
**MATERIAL CODE: 97 464 998 0000**

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Pneumatic (Piston and Cylinder Type)
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Actuating medium	Pneumatic dry produced gas with 2% CO <sub>2</sub>
04.	Operating Pressure	90 TO 120 PSI 120 PSI Actuator control pressure should open the valve at 4000 PSI differential pressure. <b>SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE &amp; GATE DRAG / FRICTION VALUES.</b>
05.	Bonnet Interface Details	As per Kvaerner (National) drawing <b>H412055- AI Revision C</b>
06.	Actuator Performance Requirement	As per section 10.16 of API 6A, latest edition
07.	<b>Specification for Bonnet Assembly</b>	
a)	<b>PRODUCT SPECIFICATION LEVEL (PSL)</b>	<b>3</b>
b)	<b>MATERIAL CLASS</b>	<b>FF</b>
c)	<b>TEMPERATURE RATING</b>	<b>U (0 – 250°F)</b>
d)	<b>PERFORMANCE REQUIREMENT LEVEL</b>	<b>PR – 2</b>
e)	Service Condition	Offshore oil field (H <sub>2</sub> S service)
08.	Actuator suitable for M/s Kvaerner National 5-1/8"-5000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	AISI 4130 Forged Alloy steel
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
c)	All Resilient Seals	Aflas / Rytan / Kalrez / Teflon
d)	All studs and nut	To be Nickel plated by Electrolysis Nickel Plating (Niklad 1000 or equivalent) process
10.	Painting	Suitable for offshore marine environment
11.	<b>ACTUATOR DESIGN FEATURES: -</b>	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable <b>MANUAL OVERRIDE SYSTEM</b>	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	<b>TECHNICAL REQUIREMENTS: -</b>	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of API 6A and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	

 BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.	REV.	PRE	DATE	PREPARED	T.RAJARAMAN	<i>Rajaraman</i>
	ZONE	APPD		REVIEWED & APPROVED	R.ELAYARAJA	<i>Elayaraja</i>
				DATE	08.08.2012	

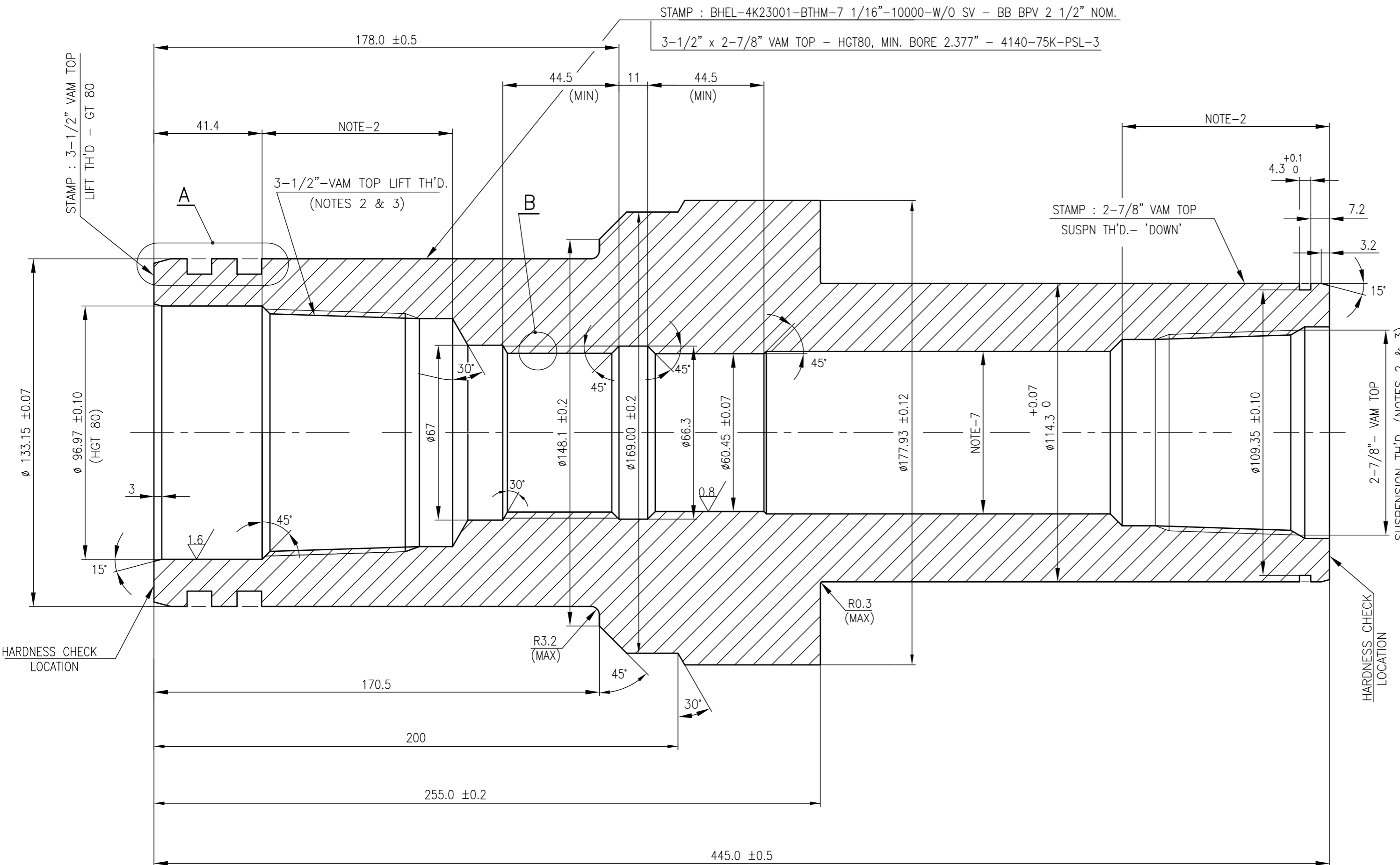
SPEC. No.	REV.
SPEC:OF:098	00

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per API 6A.
b)	SSV functional test data sheet as per Table 83 of API 6A
c)	Shipping Report as per API 6A.

**REDRESS KIT FOR ACTUATOR MATERIAL CODE: 97 464 999 0000**

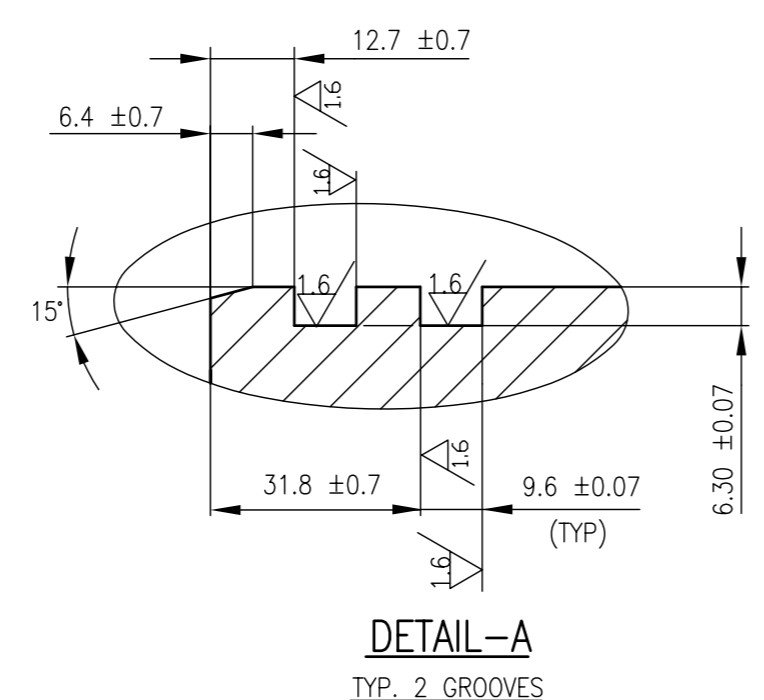
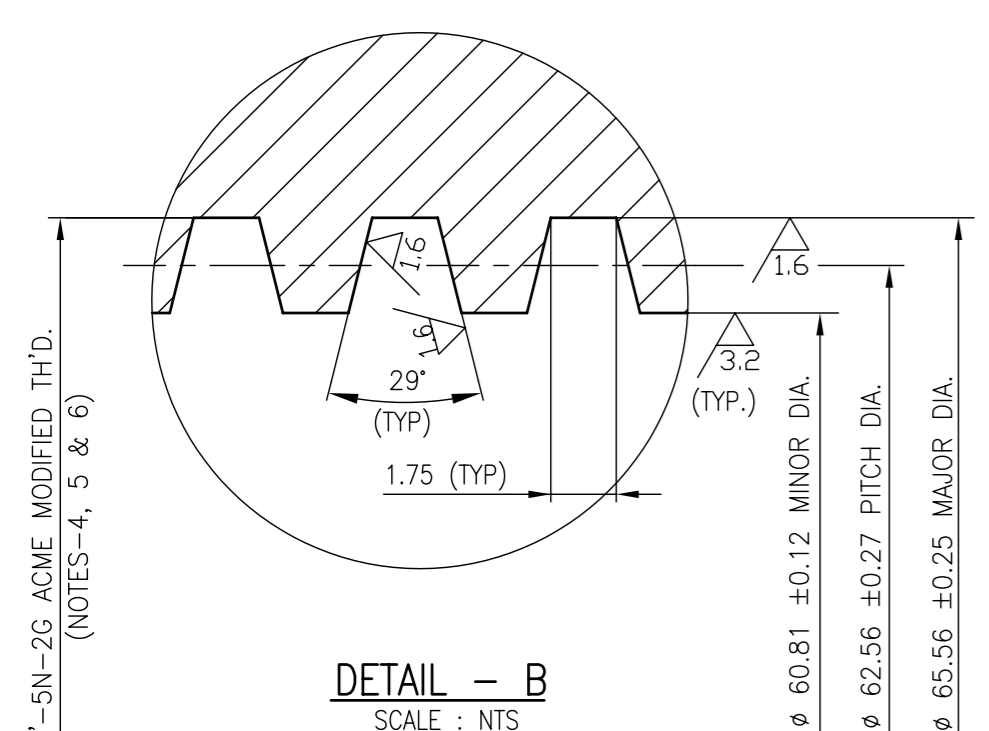
1.	Redress kit for actuator should consist of the following items: -
a)	All Resilient seals
b)	Piston rings with back up rings
c)	Stem
d)	Stem packing
e)	Any other item which the supplier consider as operational spares.
2.	Supplier to indicate the part number of the individual spare items while submitting the offer.
3.	Caution: Supplier is requested to detail out the deviations from this specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this specification requirements in tutto.





- NOTES:-**
- MATERIAL SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE FOR PRESSURE RETAINING PARTS TO PSL-3 AND CHARPY IMPACT TEST FOR RAW MATERIAL TO BE CARRIED OUT FOR PSL-3 REQUIREMENTS.
  - THREAD LENGTH, COUNTER BORE, THREAD RELIEF DIA.ETC.TO SUIT THE 3 1/2" & 2-7/8" VAM TOP LIFT & SUSPENSION THREADS.
  - COAT THE LIFT & SUSPENSION THREADS AS PER THREAD LICENSEE INSTRUCTIONS.
  - LIFT THIN SECTION OF ACME THREAD TO FULL THREAD WIDTH.
  - NITRIDE THE ACME THREADS TO A CASE DEPTH OF 0.076mm - 0.152mm. AFTER NITRIDING THREADS MUST BE CLEANED IN ORDER TO REMOVE ALL GRIT, SCALE AND SALT.
  - ACME THREADS MUST BE FREE OF RAG & BURRS. BREAK CREST R0.13 TO R0.25.
  - ID TO MATCH WITH THE INDICATED PPF VALUE, TO ENSURE METAL TO METAL NOSE SEAL.
  - AFTER FINAL MACHINING COAT OUTDOOR RUST PREVENTIVE COATING.
  - WET MPI SHALL BE DONE FOR ALL ACCESSIBLE SURFACES FOR PSL-3 REQUIREMENT.
  - PROTECT THE THREADS DURING TRANSIT.
  - UNLESS OTHERWISE SPECIFIED:
    - MACHINING TOLERANCE  $\pm 0.25$  mm
    - ANGLE TOLERANCE  $\pm 1/2^\circ$
  - INDIGENOUS MATERIAL CODE : 96 469 053

**PSL-3**  
**TEMP. RATING : U**  
**MATL. CLASS : AA**  
**100% HARDNESS CHECK**  
 (WILL HAVE TO BE CARRIED OUT)



UNLESS OTHERWISE SPECIFIED

BREAK SHARP CORNERS : 0.25  
 FILLET RADII : 0.76 $\pm$ 0.12  
 CONCENTRICITY : 0.25 FIM  
 SQUARENESS : 0.25 IN 254  
 PARALLELISM : 0.25 IN 254  
 RFS EXCEPT WHEN (M) MODIFIED

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REV	DATE	ALTERED

CAD REF No. o205355									
No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
-	-	97 464 326	AISI-4140 API-75K	Q & T	-	35	-	-	001

TYPE OF PRODUCT : 7 1/16"-10,000 PSI - BTHM W/O SV W/HGT 80  
 OR NAME OF CUSTOMER/PROJECT : 3 1/2" VAM TOP-LIFT x 2 7/8" VAM TOP SUSPN.  
 (FOR 2-1/2" NOMINAL BPV)

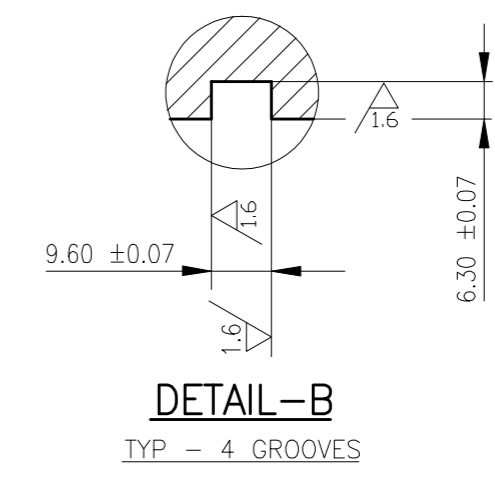
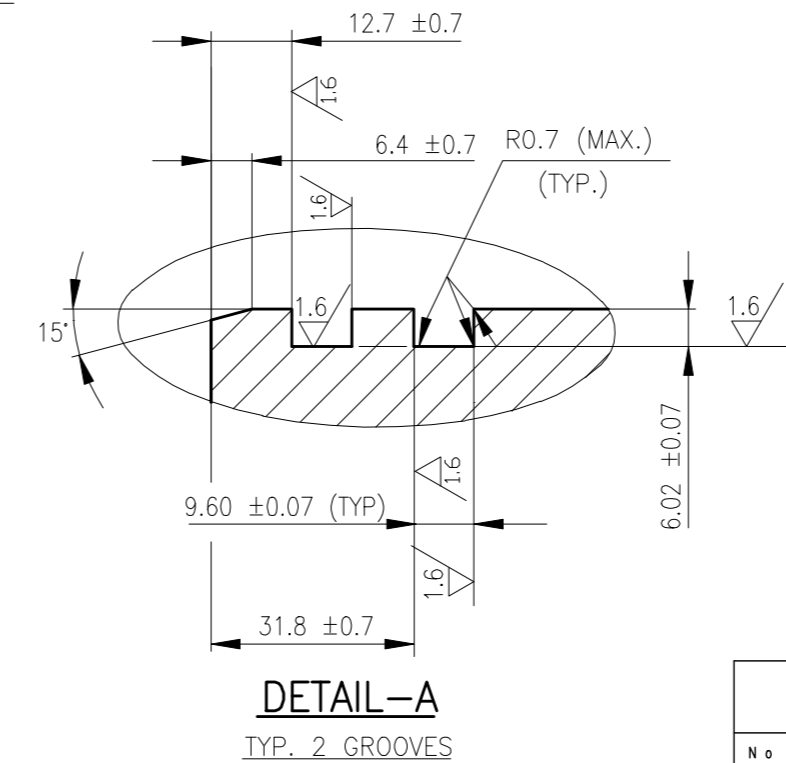
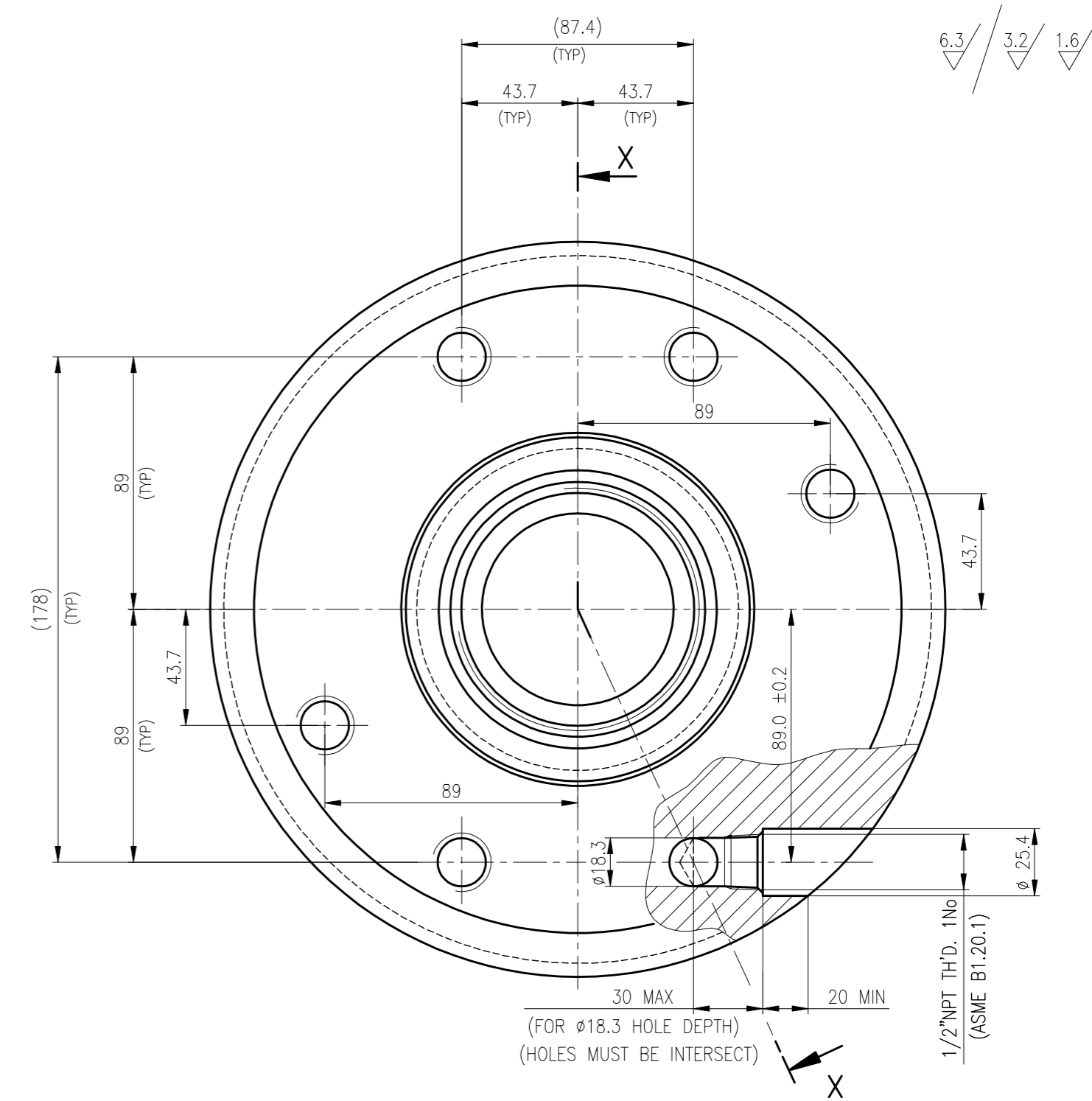
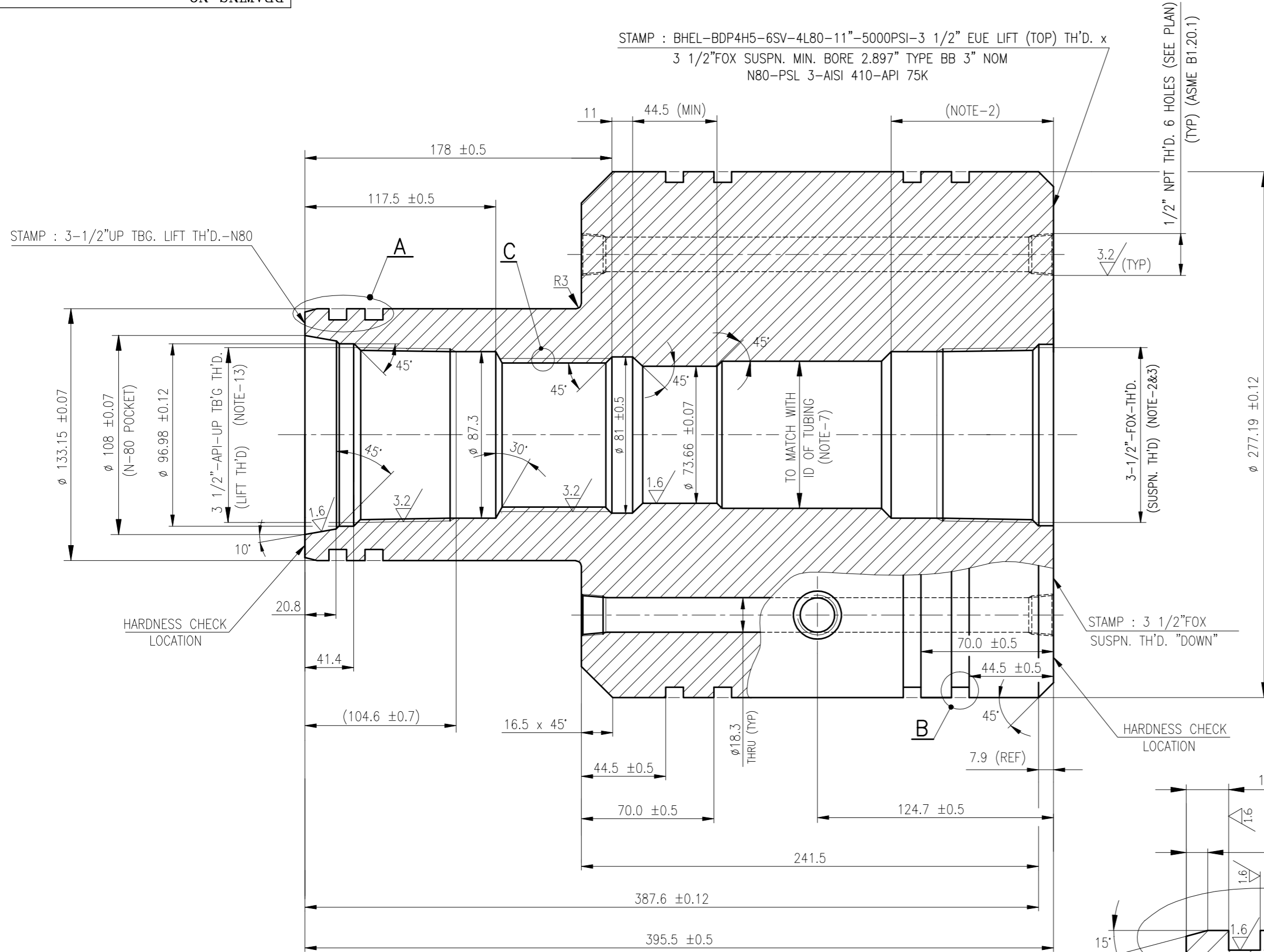
DEPT	V L	SCALE	WEIGHT (KG)	REFERENCE INFORMATION	NO. OF ITEMS
365-120	-	N T S	-	525683-8K SL.No. 4310	
TITLE : BODY - EXT. NECK HANGER CARD CODE : U 01				DRAWING NO. : 2-V-4K23-05355	REV : 00

DRN	NAME	SIGN	DATE	NO. OF VAR.
	T.RAJARAMAN	<i>T.Rajaraman</i>	2-2-08	
	T.RAJARAMAN	<i>T.Rajaraman</i>	2-2-08	
	R.RELAYARAJA	<i>R.Relayaraja</i>	2-2-08	

REV	DATE	ALTERED

DRAWING NO  
2-V-4L80-05489

ALL DIMENSIONS ARE IN MILLIMETRES. FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT QCP / QP

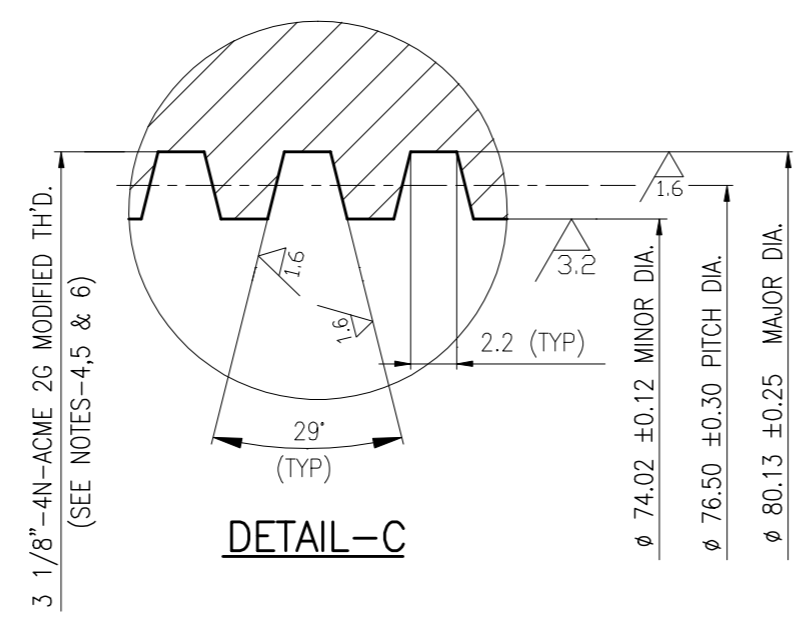


**PSL-3**  
TEMP. RATING : P,U  
MATL. CLASS : EE,FF

**100% HARDNESS CHECK**  
(WILL HAVE TO BE CARRIED OUT ON ALL PARTS)

**NOTES:-**

- MATERIAL SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE FOR PRESSURE RETAINING PARTS TO PSL-3 REQUIREMENT. CHARTY IMPACT TEST FOR RAW MATERIAL TO BE CARRIEDOUT FOR PSL-3 REQUIREMENT.
- THREAD LENGTH, COUNTER BORE, THREAD RELIEF DIA. THREAD FINISH ETC TO SUIT THE 3 1/2" FOX SUSPENSION THREAD.
- COAT THE SUSPENSION THREAD AS PER THREAD LICENSEE INSTRUCTIONS.
- LIFT THIN SECTION OF ACME THREAD TO FULL THREAD WIDTH BOTH ENDS.
- NITRIDE THE ACME THREADS TO A CASE DEPTH OF 0.076mm. - 0.152mm. AFTER NITRIDING THREADS MUST BE CLEANED IN ORDER TO REMOVE ALL GRIT, SCALE & SALT.
- ACME THREADS MUST BE FREE OF RAG & BURRS. BREAK CREST R0.13 TO R0.25
- ID TO MATCH WITH THE INDICATED PPF VALUE. TO ENSURE METAL TO METAL NOSE SEAL.
- AFTER FINAL MACHINING COAT OUTDOOR RUST PREVENTIVE COATING.
- WET MPI SHALL BE DONE ON ALL ACCESSIBLE SURFACES AS PER LATEST APPLICABLE QUALITY PROCEDURE TO PSL-3 REQUIREMENT.
- 100% UT TO BE DONE FOR PSL-3 REQUIREMENT(AT RAW MATERIAL STAGE).
- PROTECT THE THREADS DURING TRANSIT.
- UNLESS OTHERWISE SPECIFIED:
  - MACHINING TOLERANCE ±0.25 mm
  - ANGLE TOLERANCE ±1/2'
- THREAD MACHINING & GAUGING SHALL BE DONE AS PER API-5B & API-6A. USE MASTER GAUGE FOR GAUGING.



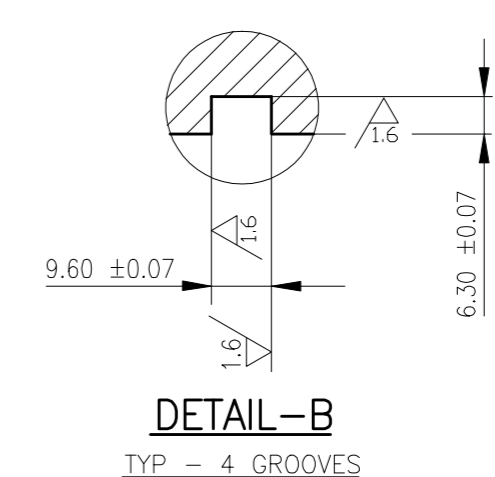
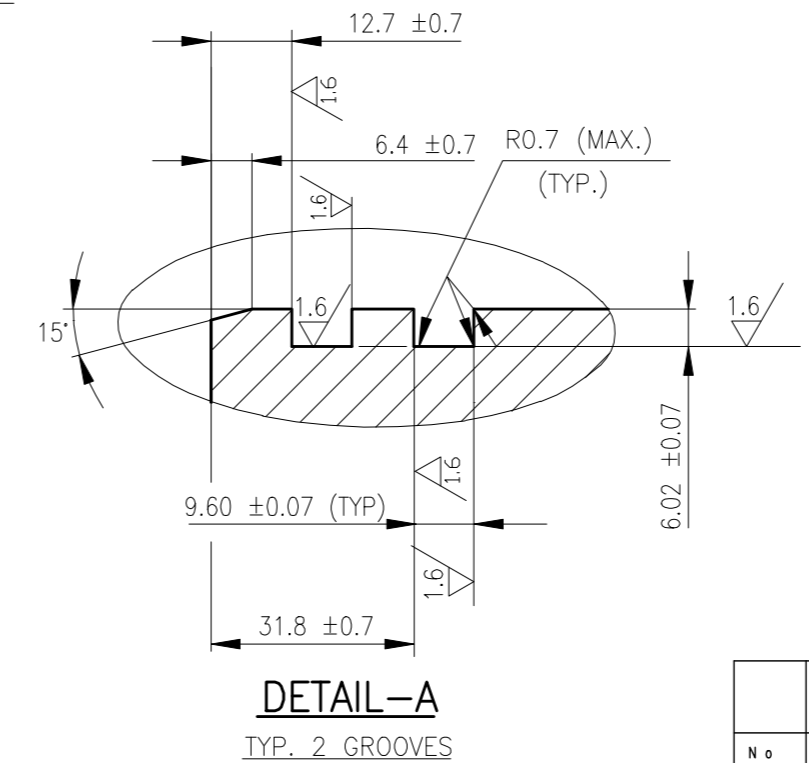
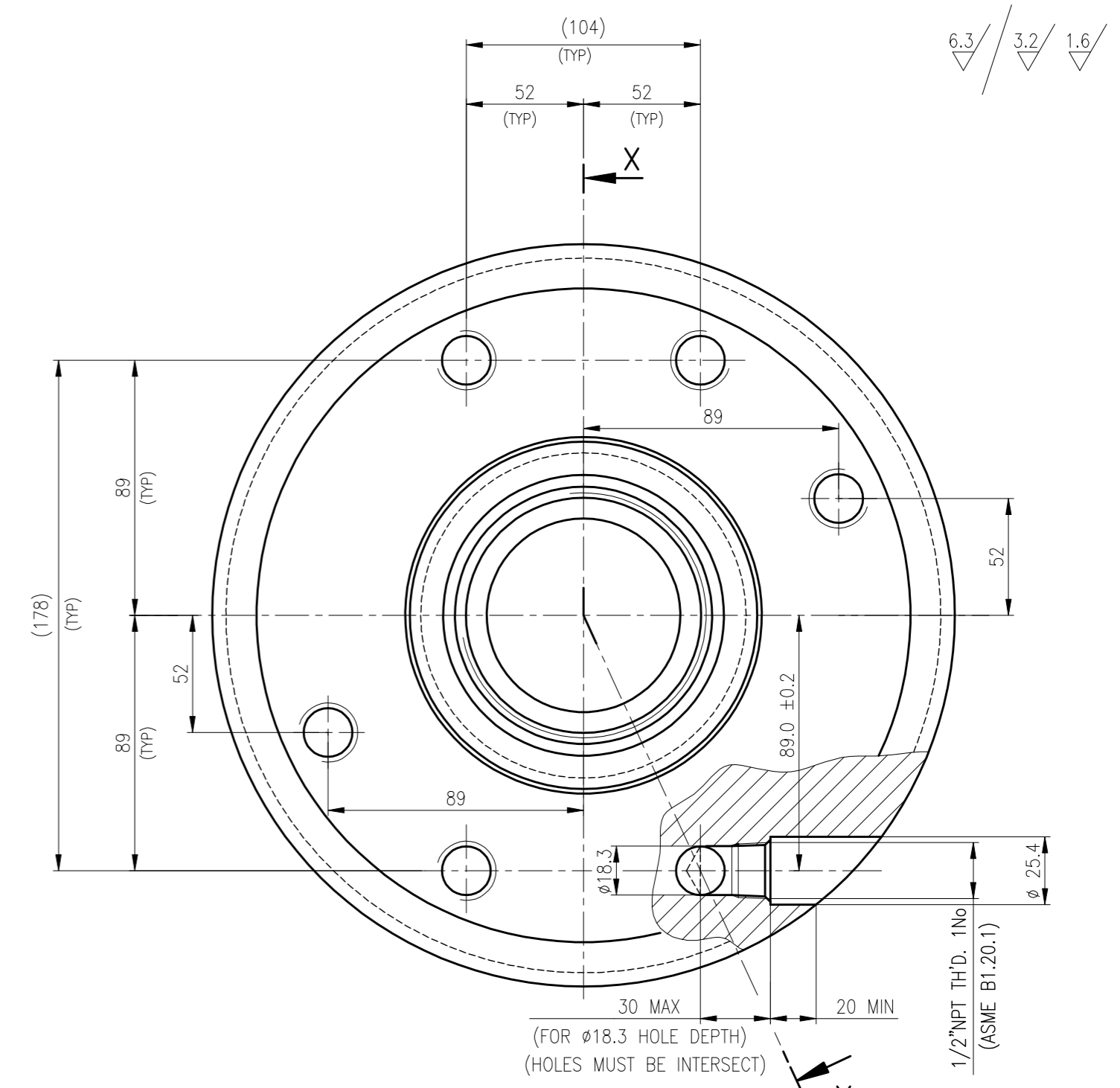
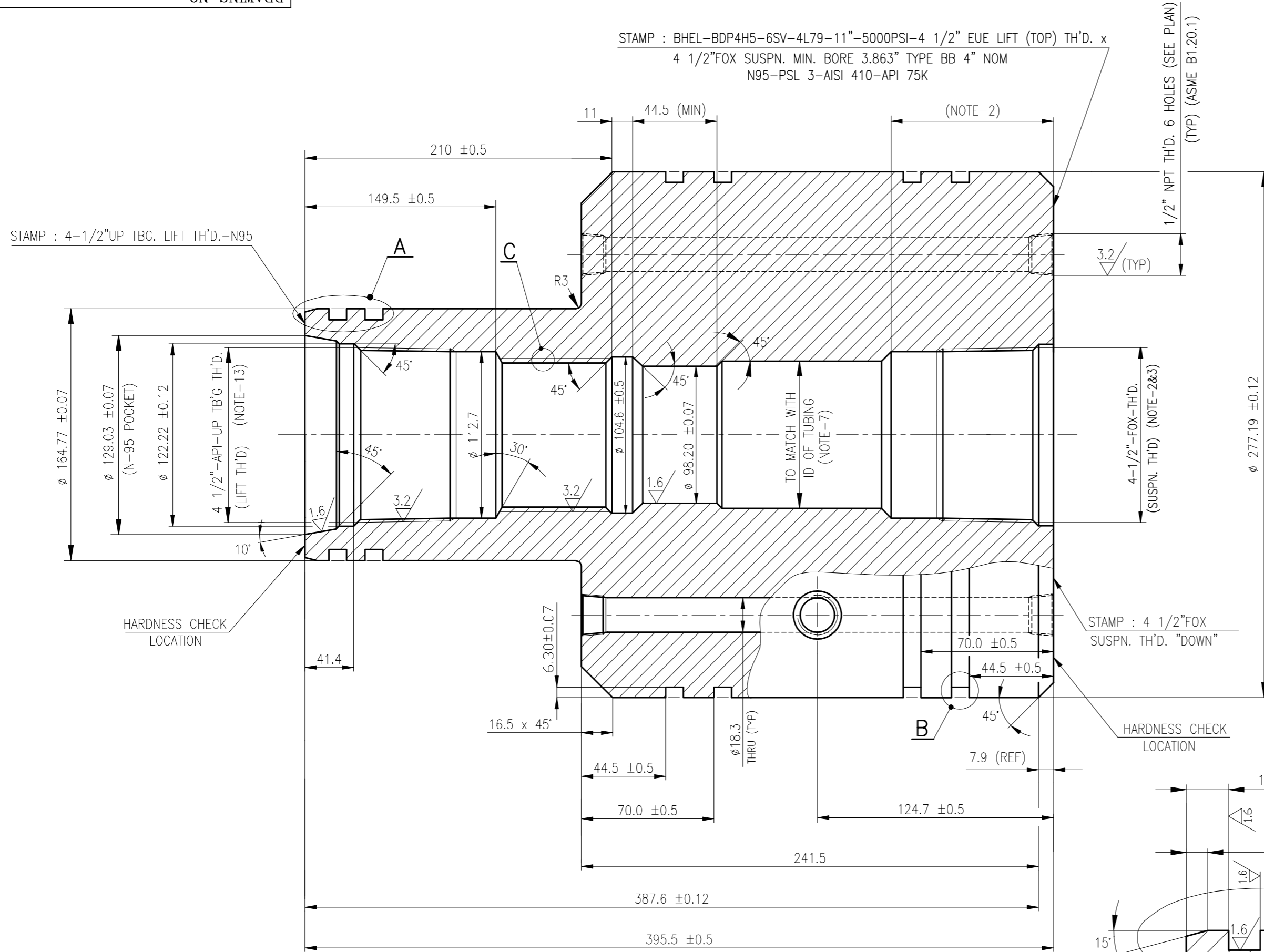
UNLESS OTHERWISE SPECIFIED

BREAK SHARP CORNERS	: 0.25
FILLET RADII	: 0.76 ± 0.12
CONCENTRICITY	: 0.25 FIM
SQUARENESS	: 0.25 IN 254
PARALLELISM	: 0.25 IN 254
RFS EXCEPT WHEN (M) MODIFIED.	

REV	DATE	ALTERED
		CHD & APPD
ZONE		

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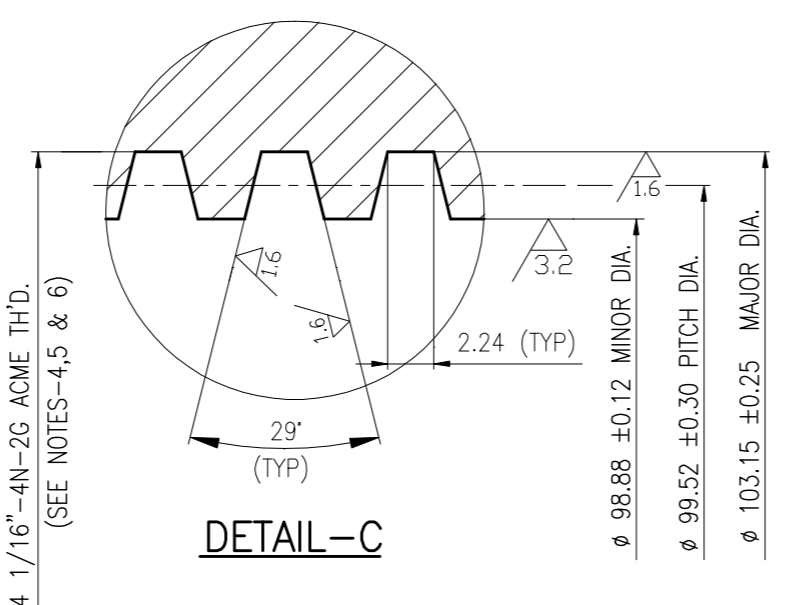
97 464 992	AISI-410-75K NOTE 1 & 11	H & T 197-235 BHN	113,-	001					
No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
	TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT	11"-NOM.x 3-1/2" EUE LIFT x 3 1/2" FOX SUSPN. W/N-80 FOR 3" NOM. BPV BDP4H5 W/6 SV PORTS							
	BHARAT HEAVY ELECTRICALS LTD.	DRN	R.NATARAJAN	SIGN	DATE	NO. OF VAR.			
	UNIT: HIGH PRESSURE BOILER PLANT.	CHD	R.NATARAJAN		25-05-2011				
	TIRUCHIRAPALLI-620014.	APPD	R.ELAYARAJA		25-05-2011				
DEPT	V L	SCALE	WEIGHT (KG).	REFERENCE INFORMATIONS			NO. OF ITEMS		
CODE	340	N T S	-	-			-		
TITLE	BODY-TBG. HANGER			CARD CODE	DRAWING NO.		REV		
				U 01	2-V-4L80-05489				



**PSL-3**  
**TEMP. RATING : P,U**  
**MATL. CLASS : EE,FF**

**100% HARDNESS CHECK**  
 (WILL HAVE TO BE CARRIED OUT ON ALL PARTS)

- NOTES:-**
- MATERIAL SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE FOR PRESSURE RETAINING PARTS TO PSL-3 REQUIREMENT. CHARPY IMPACT TEST FOR RAW MATERIAL TO BE CARRIEDOUT FOR PSL-3 REQUIREMENT.
  - THREAD LENGTH, COUNTER BORE, THREAD RELIEF DIA. THREAD FINISH ETC TO SUIT THE 4 1/2" FOX SUSPENSION THREAD.
  - COAT THE SUSPENSION THREAD AS PER THREAD LICENSEE INSTRUCTIONS.
  - LIFT THIN SECTION OF ACME THREAD TO FULL THREAD WIDTH BOTH ENDS.
  - NITRIDE THE ACME THREADS TO A CASE DEPTH OF 0.076mm. - 0.152mm. AFTER NITRIDING THREADS MUST BE CLEANED IN ORDER TO REMOVE ALL GRIT, SCALE & SALT.
  - ACME THREADS MUST BE FREE OF RAG & BURRS. BREAK CREST R0.13 TO R0.25
  - ID TO MATCH WITH THE INDICATED PPF VALUE. TO ENSURE METAL TO METAL NOSE SEAL.
  - AFTER FINAL MACHINING COAT OUTDOOR RUST PREVENTIVE COATING.
  - WET MPI SHALL BE DONE ON ALL ACCESSIBLE SURFACES AS PER LATEST APPLICABLE QUALITY PROCEDURE TO PSL-3 REQUIREMENT.
  - 100% UT TO BE DONE FOR PSL-3 REQUIREMENT(AT RAW MATERIAL STAGE).
  - PROTECT THE THREADS DURING TRANSIT.
  - UNLESS OTHERWISE SPECIFIED:
    - MACHINING TOLERANCE ±0.25 mm
    - ANGLE TOLERANCE ±1/2'
  - THREAD MACHINING & GAUGING SHALL BE DONE AS PER API-5B & API-6A. USE MASTER GAUGE FOR GAUGING.



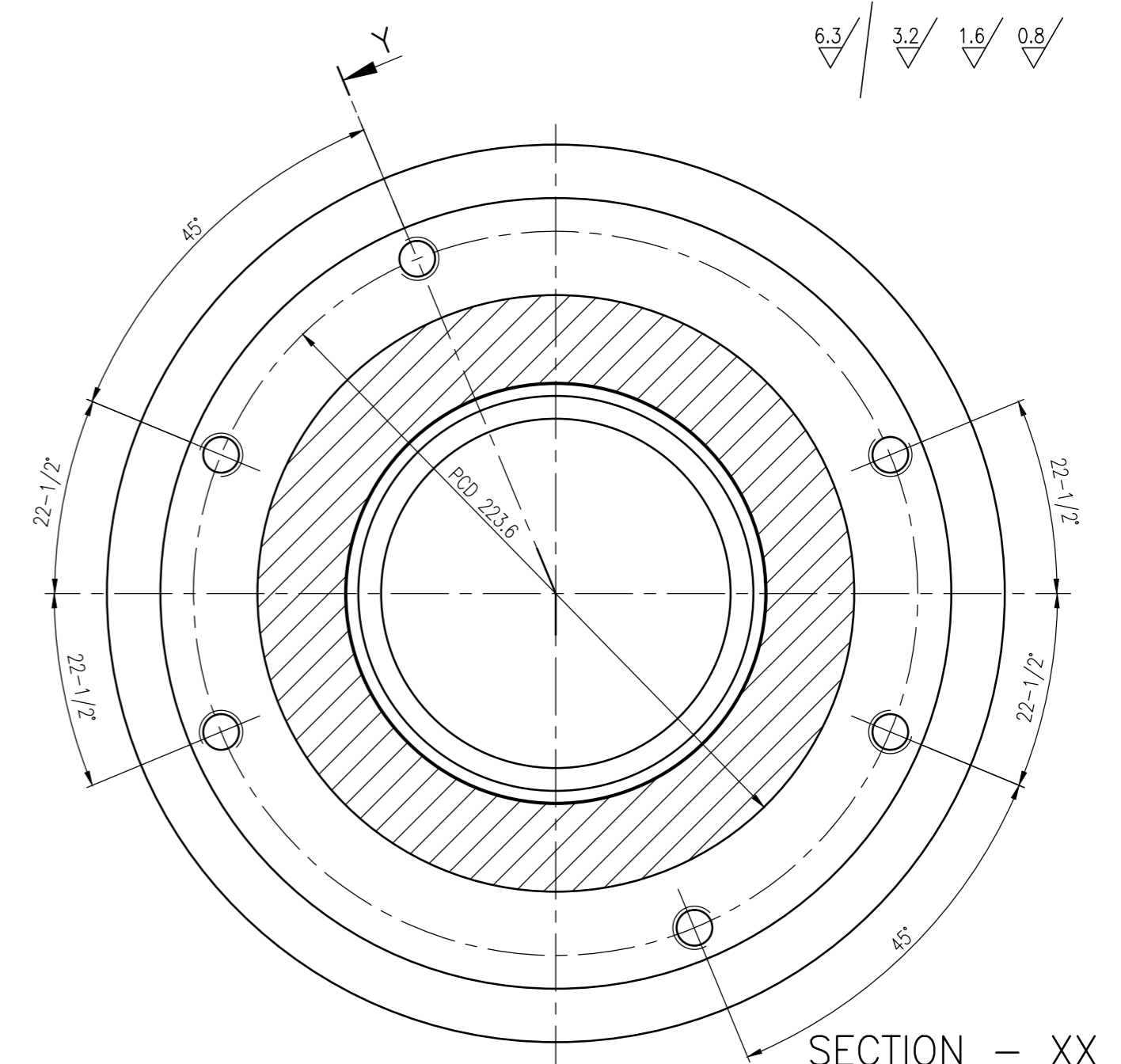
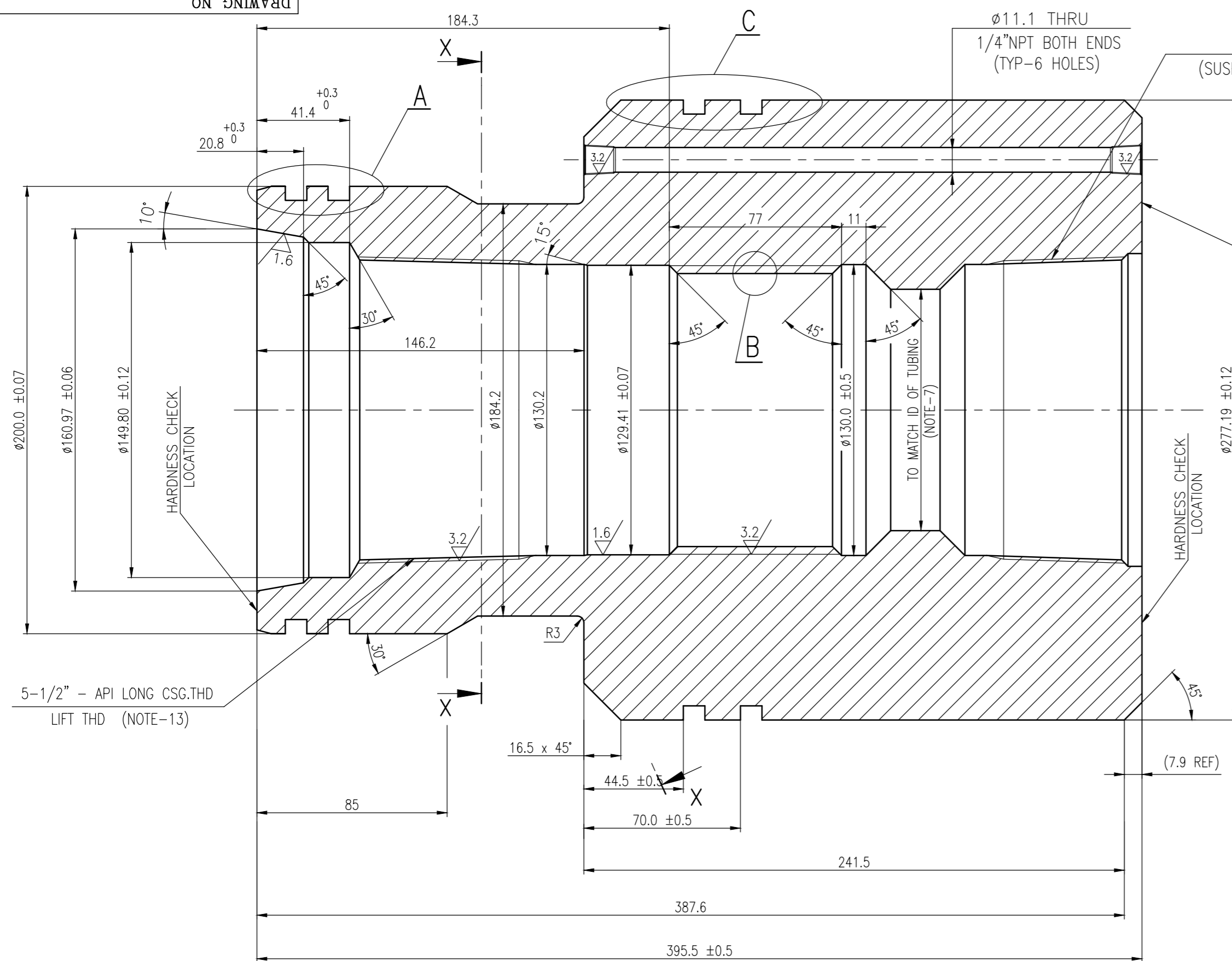
UNLESS OTHERWISE SPECIFIED

BREAK SHARP CORNERS	: 0.25
FILLET RADII	: 0.76±0.12
CONCENTRICITY	: 0.25 FIM
SQUARNESS	: 0.25 IN 254
PARALLELISM	: 0.25 IN 254
RFS EXCEPT WHEN (M) MODIFIED.	

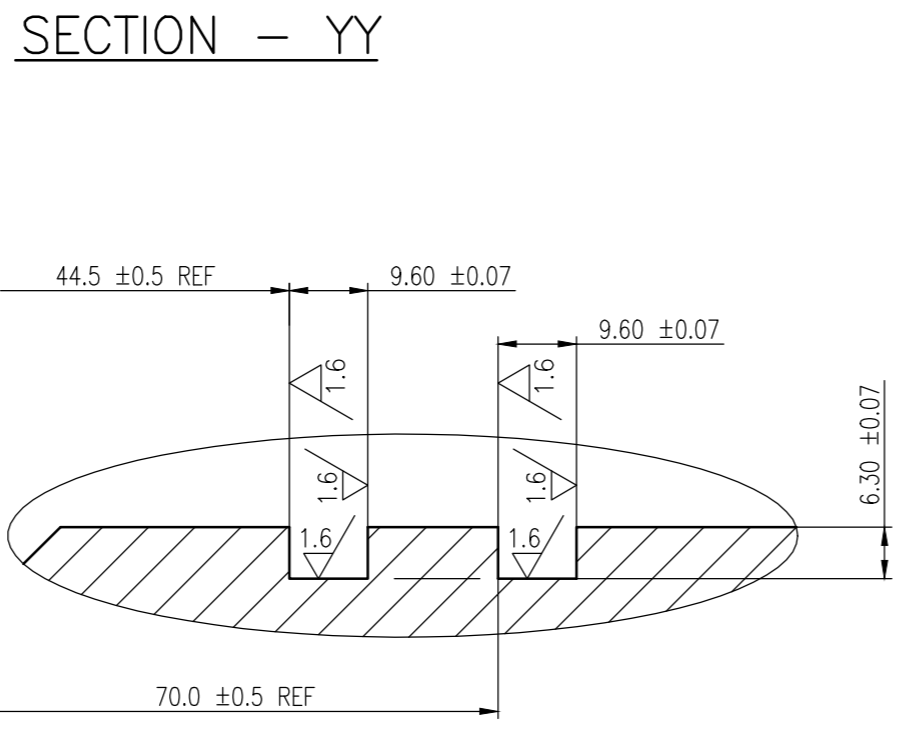
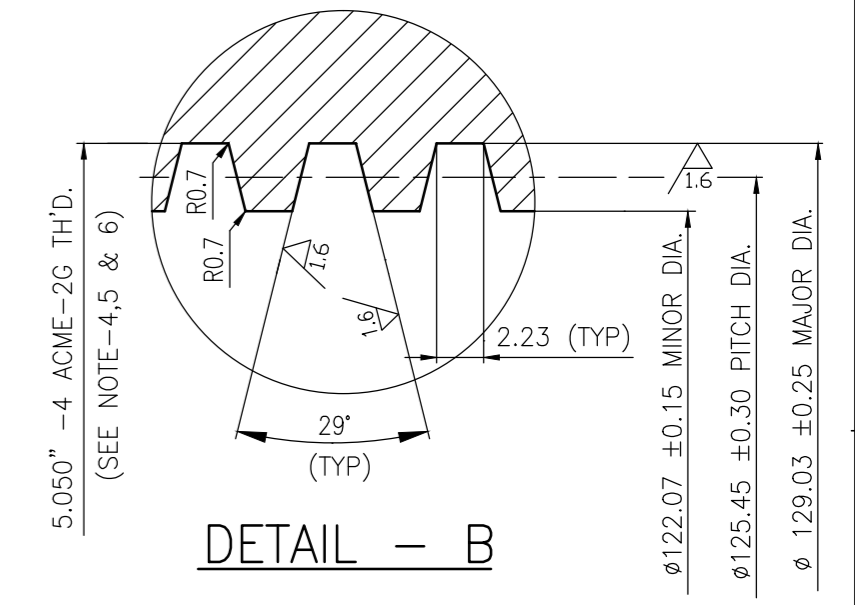
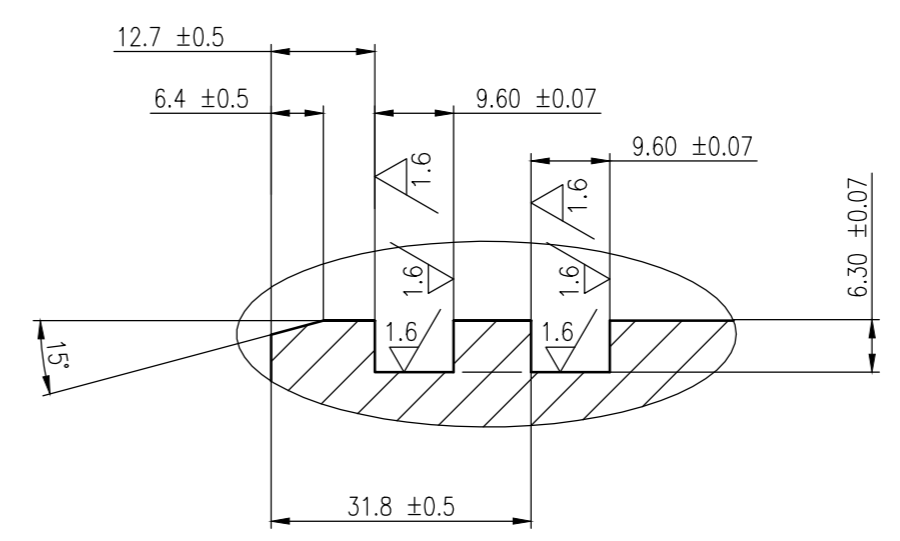
REV	DATE	ALTERED

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

97 464 993	AISI-410-75K NOTE 1 & 11	H & T 197-235 BHN	117,-	001					
No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		11"-NOM.x 4-1/2" EUE LIFT x 4-1/2" FOX SUSPN. W/N-95 FOR 4" NOM. BPV BDP4H5 W/6 SV PORTS							
DEPT		V L		SCALE		WEIGHT (KG).		REFERENCE INFORMATIONS	
365-120		-		N T S		-		-	
CODE		340							
TITLE		BODY-TBG. HANGER		CARD CODE		U 01		DRAWING NO. 2-V-4L79-05488	



STAMP : BHEL-4P03001-11-10000 / 5000 PSI-  
5 1/2" API-LONG CSG. LIFT x 5-1/2" FOX TH'D. SUSPN  
N50-BDP4H5-6SV-410-75K-PSL 3-TYPE BB-BPV 5" NOM.



- NOTES:-**
- MATERIAL SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE FOR PRESSURE RETAINING PARTS TO PSL-3 REQUIREMENT. CHARPY IMPACT TEST FOR RAW MATERIAL TO BE CARRIED OUT FOR PSL-3 REQUIREMENT.
  - THREAD LENGTH, COUNTER BORE, THREAD RELIEF DIA. THREAD FINISH ETC TO SUIT THE 5 1/2" FOX SUSPENSION THREAD.
  - COAT THE SUSPENSION THREAD AS PER THREAD LICENSEE INSTRUCTIONS.
  - LIFT THIN SECTION OF ACME THREAD TO FULL THREAD WIDTH BOTH ENDS.
  - NITRIDE THE ACME THREADS TO A CASE DEPTH OF 0.076mm. - 0.152mm. AFTER NITRIDING THREADS MUST BE CLEANED IN ORDER TO REMOVE ALL GRIT, SCALE & SLAT.
  - ACME THREADS MUST BE FREE OF RAG & BURRS. BREAK CREST R0.13 TO R0.25
  - ID TO MATCH WITH THE INDICATED PPF VALUE. TO ENSURE METAL TO METAL NOSE SEAL.
  - AFTER FINAL MACHINING COAT OUTDOOR RUST PREVENTIVE COATING.
  - WET MPI SHALL BE DONE ON ALL ACCESSIBLE SURFACES AS PER LATEST APPLICABLE QUALITY PROCEDURE TO PSL-3 REQUIREMENT.
  - 100% UT TO BE DONE FOR PSL-3 REQUIREMENT (AT RAW MATERIAL STAGE).
  - PROTECT THE THREADS DURING TRANSIT.
  - UNLESS OTHERWISE SPECIFIED:
    - MACHINING TOLERANCE ±0.25 mm
    - ANGLE TOLERANCE ±1/2°
  - THREAD MACHINING & GAUGING SHALL BE DONE AS PER API-5B & API-6A. USE MASTER GAUGE FOR GAUGING.

**PSL-3**  
TEMP. RATING : P,U  
MATL. CLASS : FF

**100% HARDNESS CHECK**  
(WILL HAVE TO BE CARRIED OUT)

UNLESS OTHERWISE SPECIFIED	
BREAK SHARP CORNERS	:0.25
FILLET RADII	: 0.76±0.12
CONCENTRICITY	: 0.25 FIM
SQUARNESS	: 0.25 IN 254
PARALLELISM	: 0.25 IN 254
RFS EXCEPT WHEN (M) MODIFIED.	

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REV	DATE	ALTERED
		CHD & APPD

No	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
	PROOF MACHINED FORGING	97 465 002 96 469 202	AISI-410-75K PRODUCT ATTEST	H & T	-	~109.2	-	-	001

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT: **11"-5000 x 5-1/2" API LONG CSG. LIFT x 5-1/2" FOX SUSPN.- N-50 - BDP4H5-6SV (5" NOM. BPV)**

DRN	NAME	SIGN	DATE	NO. OF VAR.
	R.NATARAJAN		04-09-2012	
	R.NATARAJAN		04-09-2012	
	R.ELAYARAJA		04-09-2012	

DEPT	V L	SCALE	WEIGHT (KG)	REFERENCE INFORMATIONS	NO. OF ITEMS
365-120		N T S			
CODE	340				
TITLE	BODY-EXT.NECK TBG. HANGER			CARD CODE	
	U 01			DRAWING NO.	
				2-V-4P03-20083	
				REV	

Annexure for Open Tender -EN-SOF-1464				
Material	Matl Desc	Approx req Qty	Applicable Purchase specification	Required documents along with offer
974641970000	PIS.TYP.PNE.ACT.F/3-1/8"5M,3	50	SPEC:OF:024/Rev 03	API -6A certi
974643270000	BONNET W / HYD. ACT. ASSY.3,FF-4K44	2	SPEC:OF:086/Rev 00	API -6A certi
974643340000	PIS.TYP.PNE.ACT.F/3-1/8"5M,3,EE	5	SPEC:OF:089/Rev 00	API -6A certi
974649800000	PIS.TYP.PNE.ACT.F/4-1/16" 5M,3,FF	10	SPEC:OF:094/Rev 00	API -6A certi
974649840000	PIS.TYP.PNE.ACT.F/4-1/16" 5M,3,EE	5	SPEC:OF:095/Rev 00	API -6A certi
974649980000	PIS.TYP.PNE.ACT.F/5-1/8" 5M,3,FF	11	SPEC:OF:098/Rev 00	API -6A certi
974643260000	HGR3-1/2V TOP X 2-7/8 V TOP MDL.TYP-4K23	10	2-V-4K23-05355/00	API -6A certi & valid licence for making threads
974649920000	BODY-HGR11X3-1/2EU X FOX 6CCL,3,FF-4L80	30	2-V-4L80-05489/00	API -6A certi & valid licence for making threads
974649930000	BODY-HGR.11-5M 4 1/2 EUE x FOX 6CCL-4L79	10	2-V-4L79-05488/00	API -6A certi & valid licence for making threads
974650020000	BODY-HGR11X5-1/2EU X FOX 6CCL,3,FF-4P03	12	2-V-4P03-20083/00	API -6A certi & valid licence for making threads



# ***Bharat Heavy Electricals Ltd***

**(A.Govt.of India Undertaking)**

**Valves Purchase, Tiruchirappalli- 620 014. INDIA**

Phone : 91-0431-2577123

e-mail : nagarajank@bheltry.co.in

: 91-0431-2577096

vramki@bheltry.co.in

Fax No: 91-0431-2520383

## **Scope of supply & SPECIAL CONDITIONS OF ENQUIRY**

**EN-SOF-1464**

**Date: 15.10.2012**

We require the Actuators & Body hangers as per the purchase specifications & drawings indicated against annexure I for our production. Kindly send your competitive offer immediately for our consideration. The tender will be opened positively

**on at 14.30 IST.**

1. Kindly quote your rates on firm price basis with the offer validity of minimum 180 days from the date of tender opening. The same shall be per unit basis for each item and on FOR, BHEL, TRICHY. In case of foreign vendors, the offer shall be on FOB basis only.
2. Kindly quote for each item separately as per enclosed specifications and drawings.
3. The quantities indicated are approximate only.
4. Our delivery requirement is indicated in the annexure for each item. Offers not meeting this delivery will not be considered.
5. Prices shall be firm till entire execution of the Purchase Order. Price variation clause is not acceptable.
6. Lowest prices received against BHEL enquiries need not be the technically acceptable one and in that case, BHEL reserves the right not to consider the same.
7. Supplier's has to submit test reports for each sl nos as per our Purchase specifications and Drawings also to be done for each item separately
8. **For indigenous vendors:-**  
100% payment will be made after 45 days on acceptance of material at BHEL Stores. No other Payment term is acceptable to BHEL.  
**For Foreign vendors:-**  
100% Payment against this contract will be made to the seller on collection basis. You have to send the documents to our banker M/S. State Bank of India, Kailasapuram, Tiruchirappalli-620014.  
The original clean HAWB( in case of Air)/Original Bill of Lading( In case of Ship) issued by our forwarding agency ,original invoice, Packing list with your signature, Certificate of origin, Test certificates as per respective purchase specifications & drawings etc are to be sent in triplicate to our bankers.
9. One copy of Test certificates/non negotiable documents shall accompany the dispatches.

Contd...2...

10. Delivery schedule shall be strictly as per BHEL requirements only which is indicated in the Enquiry / Purchase Order sheet that will be issued. In case of delay in delivery, beyond the end delivery dates given in the Purchase Order sheet, Liquidated Damage clause will be applicable at the rate of 0.5 % per week and subject to a maximum of 10% of undelivered portion of the item value.
11. The delivery of the item shall be strictly as per BHEL's enquiry/ Purchase orders. In case of urgency, the delivery period have to be altered to meet BHEL's production plan.
12. Confirmation for compliance is to be given in the offer for all the conditions specified in the respective Purchase specifications and Drawings.
13. BHEL reserves the right to increase / decrease the enquired quantities or to delete the enquired quantities for any of the items. Also BHEL reserves the right to split the enquired quantity among more than one tenderer and place orders accordingly in any proportion, based on BHEL's requirements and supplier's Capability in terms of delivery and quality.
14. Every dispatch of material shall accompany the packing list, detailing the Numbers of items. An advance Copy of dispatch details shall be furnished to Purchase/Valves/BHEL/Tiruchy-14.
15. The materials are to be dispatched with proper packing and binding.
16. BHEL reserves the right to finalize the tender either through **price bid open** or **through Reverse Auction route**.
17. The offers are invited in two parts.
  - a) Techno commercial bid covering Technical Conditions, Delivery conditions, acceptance of all our commercial conditions and a copy of un-priced bid. **(Please submit a separate envelope super scribing the enquiry no for techno commercial bid)**.
  - b) Price bid covering only unit price each case. **(Please submit a separate envelope super scribing the enquiry no for price bid.)**
18. Techno Commercial bid will be opened first. Price bid of technically suitable vendors only will be opened with prior intimation.
19. If the supply is short the extra cost to BHEL in replenishing the short fall will be debited to the vendor.
20. In addition to all the above conditions, BHEL standard terms & conditions given as a separate annexure shall also be applicable to the extent they are not superseded by the above conditions.
21. **Non-adherence to these special conditions of enquiry and BHEL's standard terms and conditions will lead to disqualification of offer.**

EN-SOF-1464

Date: 15.10.2012

**GENERAL TERMS AND CONDITIONS OF Reverse Auction:-**

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

- a. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- b. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
- c. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
- d. Business rules like event date, time, and Start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
- e. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to participate in the event.
- f. BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
- g. Reverse auction will be conducted on scheduled date & time.
- h. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
- i. The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
- j. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.

**Note:-**

- (I) **Along with the Techno-commercial bid, you are requested to indicate from whom you are going to source the components, also send a typical Test Certificate for the components from that maker. Without the Test Certificate, your offer may not be considered for further processing's.**
- (II) **For Actuators: Valid API 6A certificate to be submitted in Techno-commercial bid.**
- (III) **For Body Hanger: Valid API 6A certificate and thread cutting license to be submitted in Techno-commercial Bid**

**V.RAMAKRISHNAN**  
**Senior Manager / Purchase/Valves**



# Bharat Heavy Electricals Ltd.

( A Govt. of India Undertaking )

**Valves purchase,  
Tiruchirappalli - 620 014. India**

PHONE: 91-0431-257 7096/7123  
FAX: 91-0431-2520 383

EMAIL: [vramki@bheltry.co.in](mailto:vramki@bheltry.co.in)

## IMPORT ENQUIRY TERMS AND CONDITIONS

### 1 OFFER

Offer in ENGLISH LANGUAGE and in TRIPLICATE in a SEALED COVER SUPERSCRIBING the Enquiry Number and the due date shall be submitted addressed to

THE SR. MANAGER  
PURCHASE VALVES  
BHARAT HEAVY ELECTRICALS LIMITED  
HIGH PRESSURE BOILER PLANT  
TIRUCHIRAPPALLI - 620 014  
TAMIL NADU, INDIA

Offers should be firm for net FOB Nearest AIR / SEA Port price and C & F Chennai Port price, indicating the shipping specifications and the earliest delivery in respect of offers from overseas suppliers. Offers from indigenous sources shall be firm for FOR / TIRUCHIRAPPALLI.

### 11: DOCUMENTS

- (i) Offers should be accompanied by detailed technical literature, Catalogue and detailed dimensional drawings in ENGLISH and in TRIPLICATE, or otherwise, the offers will not be considered.
- (ii) In case overseas suppliers route their offer through their accredited selling agents, a letter of authority should be furnished mentioning the name and address of their selling agents who are authorised to bid, negotiate and conclude a Contract on their behalf.

### III AGENCY COMMISSION:

- (i) In respect of offers from overseas suppliers, agency commission, if any, payable to their agents in India, shall invariably be shown separately in the proforma invoice and this will be paid by us in India, in Indian Rupees, on satisfactory completion of the Contract.
- (ii) If Overseas Principal has any tie up with any third party in respect of Agency Commission it should be declared while submitting the offers.
- (iii) Copies of current Agency Agreement / Authorization Letter in respect of Agency Commission shall be furnished along with order, if not made available earlier.
- (iv) For calculation of Rupee equivalent of Agency Commission, exchange rate as prevailing on the date of order will be taken.

Continued... 2

V **VALIDITY:**

The offers for main equipment and spares shall be kept open for acceptance for 180 days (one hundred and Eighty days) from the date of opening of the tender.

VI **TEST CERTIFICATES, OPERATING AND MAINTENANCE MANUALS:**

The tenderer shall clearly mention in their offer, that the Test Certificate and Operating and Maintenance Manuals, etc., as called for in the technical specification, in the required number of copies will be provided at no extra cost. If any amount is payable as extra, the same shall be indicated separately in the offer.

VII **TERMS OF PAYMENT:**

In the event of an order, the purchaser will arrange for 100% payment against presentation of documents through Bank.

VIII **GENERAL:**

- (i) Preference will be given to suitable indigenous or ex-stock imported offers failing which imported offers from incoming consignment against the indigenous supplies "Stock and sale licence" will be accepted. If "stock and sale licence" is not available with the indigenous suppliers, the same shall be indicated in their offer.
- (ii) **Bank Guarantee:** The supplier in the event of an order should furnish a Bank Guarantee from an approved Bank at no extra cost in a proforma which will be Supplied to the Supplier, along with the order, for an amount equivalent to 10% of the value of the contract. The Bank Guarantee should remain in full force and effect during the period that would be taken for successful completion of the contract and shall continue to be enforceable till 12 months from the date of receipt of consignment at purchaser's site or 18months from the date of last shipment at the Port of Delivery whichever is earlier.

IX **LD / PENALTY AND INTEREST ON ADVANCES FOR DELAY IN DELIVERY:**

"If the supplier fails to deliver the Raw Materials / equipment / components within the period specified in the contract the Purchaser shall deduct Liquidated Damages a sum equivalent to 0.5% of the price for each week of delay upto a maximum of 10% 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"

(File: Enq-Anx-Import)



**Bharat Heavy Electricals Ltd.**  
( A Govt. of India Undertaking )

VALVES PURCHASE,  
TIRUCHIRAPPALLI- 620 014. INDIA



PHONE: 91-0431-257 7096/7123

EMAIL: [vramki@bheltry.co.in](mailto:vramki@bheltry.co.in)

FAX: 91-0431-2520 383

**INDIGENOUS ENQUIRY**

**TERMS AND CONDITIONS**

**1. QUOTATIONS :**

- a. Each tender should be sent in double cover, should be sealed and super scribed 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 quotations 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 figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
- c. Price should be F.O.R. dispatching station inclusive of risk in transit and remain valid for 180 days from. The due date.
- d. If any Sales Tax is payable as extra to the quoted price, it should be specifically stated in quotation along with CST & T.N.G.S.T No. failing which the purchaser will not be liable for payment of Sales Tax. Our T.N.G.S.T No. 3550005 Dated 01-04-1995 C.S.T. No. 259383 Dt. 11.06.1991.
- 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 along with 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 samples should be submitted separately whether specifically requested or not so as to reach the purchaser on or before its 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 lose or damages during transit.

**4 TERMS OF PAYMENT :**

100% Payment will be made after 45 days on acceptance & satisfactory receipt of materials. Where required by the purchaser, the successful tenderer must send the operation and maintenance manuals, test certificates, drawings, etc., for the materials should be sent immediately after dispatch 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 dispatched either by V.P.P. or by thro' document presented through bank will not be accepted unless agreed to by the Purchaser.

The Original Excise Duty Gate Pass or certified extract form Excise Duty Ledger should accompany the material. A Photostat copy of the above gate pass for each delivery challan should be submitted along with the original bills submitted directly to BHEL Department.

**5 LIQUIDATED DAMAGES:**

It is clearly understood among the parties to the contract that 'Time is the essence of the Contract. Therefore, the delivery of the goods specified in the purchase order should be made within the time prescribed. Where the seller supplies or despatches the goods beyond the delivery period specified the purchaser will have no obligation to accept the goods. If accepted liquidated damages at the rate of ½ % of the value of goods delayed for each week of delay to the maximum of 10% or part thereof will be levied without prejudice to any other relief of compensation due to the purchaser under any other condition of this contract.

**6 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 dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss, which the purchaser may sustain by reason for such risk purchases in addition to penalty at the rate mentioned in clause 6 above.

**7 PREFERENTIAL DELIVERY :**

It should be noted if a contract is placed on a higher tender 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.

**8 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 his input materials, the effect of proforma invoice should be passed on to the purchaser; Tenderer under MODVAT shall be preferred.

**9 GENERAL :**

The Purchaser reserves the right to split up the tender and place order for individual items with different tenders and also increase or decrease the quantity.

Any other conditions which 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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