



**ENQUIRY  
(IMPORTS)**

**BHARAT HEAVY ELECTRICALS LIMITED**

ZPage 1/9

( A Government of India Undertaking )  
80, G.N.ROAD, T.NAGAR  
Purchase Department - Piping Centre  
CHENNAI - 600 017.  
TAMILNADU (INDIA)

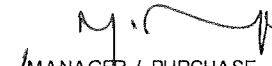
PHONE :  
GRAMS : BHARATELEC  
FAX NO :  
E-mail :  
Web :

	<b>Enquiry No</b>	<b>Enquiry Date</b>	<b>Due Date for Quotation</b>
	4201200049	17.03.2012	07.04.2012
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	HYDRAULIC SNUBBER TAG NO CRH-SX1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102001  <i>Draw.No:</i> <i>Var.No:</i>	NO	2.000	2.00	10.08.12
20	HYDRAULIC SNUBBER TAG NO CRH-SX2 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102002  <i>Draw.No:</i> <i>Var.No:</i>	NO	2.000	2.00	10.08.12
30	HYDRAULIC SNUBBER TAG NO CRH-SX3 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102003  <i>Draw.No:</i> <i>Var.No:</i>	NO	2.000	2.00	10.08.12
40	HYDRAULIC SNUBBER TAG NO HRH-SX1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102004  <i>Draw.No:</i> <i>Var.No:</i>	NO	2.000	2.00	10.08.12
50	HYDRAULIC SNUBBER TAG NO HRH-SXZ1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102005  <i>Draw.No:</i> <i>Var.No:</i>	NO	2.000	2.00	10.08.12
60	HYDRAULIC SNUBBER TAG NO HRH-SXZ2 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102006  <i>Draw.No:</i> <i>Var.No:</i>	NO	2.000	2.00	10.08.12

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 opening.Late and delayed offers are liable to be rejected.

Yours faithfully,  
For **BHARAT HEAVY ELECTRICALS LIMITED**

  
MANAGER / PURCHASE  
(Piping Centre)



## BHARAT HEAVY ELECTRICALS LIMITED

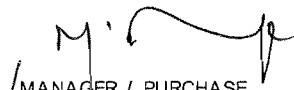
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TAMILNADU (INDIA)

4201200049 / 17.03.2012

	<i>Draw.No:</i> <i>Var.No:</i>				
70	HYDRAULIC SNUBBER TAG NO LPBP-SX1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102007	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
80	HYDRAULIC SNUBBER TAG NO LPBP-SX2 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102008	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
90	HYDRAULIC SNUBBER TAG NO LPBP-SY1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102009	NO	1.000	1.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
100	HYDRAULIC SNUBBER TAG NO LPBP-SY2 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102010	NO	1.000	1.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
110	HYDRAULIC SNUBBER TAG NO LPBP-SZ1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703718090102011	NO	1.000	1.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
120	WELD ON BRACKET FOR TAG NO CRH-SX1 L703718090102012	NO	4.000	4.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
130	WELD ON BRACKET FOR TAG NO CRH-SX2 L703718090102013	NO	4.000	4.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
140	WELD ON BRACKET FOR TAG NO CRH-SX3 L703718090102014	NO	4.000	4.00	10.08.12

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	<i>Draw.No:</i>				
	<i>Var.No:</i>				
150	WELD ON BRACKET FOR TAG NO HRH-SX1 L703718090102015	NO	4.000	4.00	10.08.12
	<i>Draw.No:</i>				
	<i>Var.No:</i>				
160	WELD ON BRACKET FOR TAG NO HRH-SXZ1 L703718090102016	NO	4.000	4.00	10.08.12
	<i>Draw.No:</i>				
	<i>Var.No:</i>				
170	WELD ON BRACKET FOR TAG NO HRH-SXZ2 L703718090102017	NO	4.000	4.00	10.08.12
	<i>Draw.No:</i>				
	<i>Var.No:</i>				
180	WELD ON BRACKET FOR TAG NO LPBP-SX1 L703718090102018	NO	4.000	4.00	10.08.12
	<i>Draw.No:</i>				
	<i>Var.No:</i>				
190	WELD ON BRACKET FOR TAG NO LPBP-SX2 L703718090102019	NO	4.000	4.00	10.08.12
	<i>Draw.No:</i>				
	<i>Var.No:</i>				
200	WELD ON BRACKET FOR TAG NO LPBP-SY1 L703718090102020	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i>				
	<i>Var.No:</i>				
210	WELD ON BRACKET FOR TAG NO LPBP-SY2 L703718090102021	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i>				
	<i>Var.No:</i>				
220	WELD ON BRACKET FOR TAG NO LPBP-SZ1 L703718090102022	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i>				
	<i>Var.No:</i>				
230	HYDRAULIC SNUBBER TAG NO CRH-SX1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102001	NO	2.000	2.00	10.08.12

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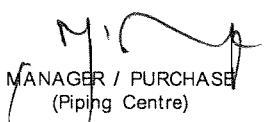
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240	<i>Draw.No:</i> <i>Var.No:</i> HYDRAULIC SNUBBER TAG NO CRH-SX2 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102002	NO	2.000	2.00	10.08.12
250	<i>Draw.No:</i> <i>Var.No:</i> HYDRAULIC SNUBBER TAG NO CRH-SX3 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102003	NO	2.000	2.00	10.08.12
260	<i>Draw.No:</i> <i>Var.No:</i> HYDRAULIC SNUBBER TAG NO HRH-SX1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102004	NO	2.000	2.00	10.08.12
270	<i>Draw.No:</i> <i>Var.No:</i> HYDRAULIC SNUBBER TAG NO HRH-SXZ1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102005	NO	2.000	2.00	10.08.12
280	<i>Draw.No:</i> <i>Var.No:</i> HYDRAULIC SNUBBER TAG NO HRH-SXZ2 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102006	NO	2.000	2.00	10.08.12
290	<i>Draw.No:</i> <i>Var.No:</i> HYDRAULIC SNUBBER TAG NO LPBP-SX1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102007	NO	2.000	2.00	10.08.12
300	<i>Draw.No:</i> <i>Var.No:</i> HYDRAULIC SNUBBER TAG NO LPBP-SX2 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102008	NO	2.000	2.00	10.08.12

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310	<i>Var.No:</i> HYDRAULIC SNUBBER TAG NO LPBP-SY1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102009	NO	1.000	1.00	10.08.12
320	<i>Draw.No:</i> <i>Var.No:</i> HYDRAULIC SNUBBER TAG NO LPBP-SY2 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102010	NO	1.000	1.00	10.08.12
330	<i>Draw.No:</i> <i>Var.No:</i> HYDRAULIC SNUBBER TAG NO LPBP-SZ1 AS PER SPECIFICATION PC:TSP:SHREE SINGAJI:001 L703818090102011	NO	1.000	1.00	10.08.12
340	<i>Draw.No:</i> <i>Var.No:</i> WELD ON BRACKET FOR TAG NO CRH-SX1 L703818090102012	NO	4.000	4.00	10.08.12
350	<i>Draw.No:</i> <i>Var.No:</i> WELD ON BRACKET FOR TAG NO CRH-SX2 L703818090102013	NO	4.000	4.00	10.08.12
360	<i>Draw.No:</i> <i>Var.No:</i> WELD ON BRACKET FOR TAG NO CRH-SX3 L703818090102014	NO	4.000	4.00	10.08.12
370	<i>Draw.No:</i> <i>Var.No:</i> WELD ON BRACKET FOR TAG NO HRH-SX1 L703818090102015	NO	4.000	4.00	10.08.12
380	<i>Draw.No:</i> <i>Var.No:</i> WELD ON BRACKET FOR TAG NO HRH-SXZ1 L703818090102016	NO	4.000	4.00	10.08.12
390	<i>Draw.No:</i> <i>Var.No:</i> WELD ON BRACKET FOR TAG NO HRH-SXZ2 L703818090102017	NO	4.000	4.00	10.08.12

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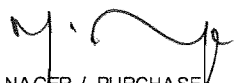
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	<i>Draw.No:</i> <i>Var.No:</i>				
400	WELD ON BRACKET FOR TAG NO LPBP-SX1 L703818090102018	NO	4.000	4.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
410	WELD ON BRACKET FOR TAG NO LPBP-SX2 L703818090102019	NO	4.000	4.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
420	WELD ON BRACKET FOR TAG NO LPBP-SY1 L703818090102020	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
430	WELD ON BRACKET FOR TAG NO LPBP-SY2 L703818090102021	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
440	WELD ON BRACKET FOR TAG NO LPBP-SZ1 L703818090102022	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
450	HYDRAULIC SNUBBER TAG NO CRH-SX1 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102001	NO	1.000	1.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
460	HYDRAULIC SNUBBER TAG NO CRH-SX2 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102002	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
470	HYDRAULIC SNUBBER TAG NO CRH-SX3 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102003	NO	2.000	2.00	10.08.12
	<i>Draw.No:</i> <i>Var.No:</i>				
480	HYDRAULIC SNUBBER TAG NO HRH-SX1 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102004	NO	2.000	2.00	10.08.12

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	<i>Draw.No:</i>					
	<i>Var.No:</i>					
490	HYDRAULIC SNUBBER TAG NO HRH-SXZ1 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102005	NO	2.000	2.00	10.08.12	
	<i>Draw.No:</i>					
	<i>Var.No:</i>					
500	HYDRAULIC SNUBBER TAG NO HRH-SXZ2 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102006	NO	2.000	2.00	10.08.12	
	<i>Draw.No:</i>					
	<i>Var.No:</i>					
510	HYDRAULIC SNUBBER TAG NO LPBP-SX1 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102007	NO	2.000	2.00	10.08.12	
	<i>Draw.No:</i>					
	<i>Var.No:</i>					
520	HYDRAULIC SNUBBER TAG NO LPBP-SX2 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102008	NO	2.000	2.00	10.08.12	
	<i>Draw.No:</i>					
	<i>Var.No:</i>					
530	HYDRAULIC SNUBBER TAG NO LPBP-SY1 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102009	NO	1.000	1.00	10.08.12	
	<i>Draw.No:</i>					
	<i>Var.No:</i>					
540	HYDRAULIC SNUBBER TAG NO LPBP-SY2 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102010	NO	1.000	1.00	10.08.12	
	<i>Draw.No:</i>					
	<i>Var.No:</i>					
550	HYDRAULIC SNUBBER TAG NO LPBP-SZ1 AS PER SPECIFICATION PC:TSP:KWPC:001 L706918090102011	NO	1.000	1.00	10.08.12	
	<i>Draw.No:</i>					
	<i>Var.No:</i>					
560	WELD ON BRACKET FOR TAG NO CRH-SX1 L706918090102012	NO	2.000	2.00	10.08.12	

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Var.No:	Draw.No:	Item Description	NO	4.000	4.00	10.08.12
570		WELD ON BRACKET FOR TAG NO CRH-SX2 L706918090102013	NO	4.000	4.00	10.08.12
580		WELD ON BRACKET FOR TAG NO CRH-SX3 L706918090102014	NO	4.000	4.00	10.08.12
590		WELD ON BRACKET FOR TAG NO HRH-SX1 L706918090102015	NO	4.000	4.00	10.08.12
600		WELD ON BRACKET FOR TAG NO HRH-SXZ1 L706918090102016	NO	4.000	4.00	10.08.12
610		WELD ON BRACKET FOR TAG NO HRH-SXZ2 L706918090102017	NO	4.000	4.00	10.08.12
620		WELD ON BRACKET FOR TAG NO LPBP-SX1 L706918090102018	NO	4.000	4.00	10.08.12
630		WELD ON BRACKET FOR TAG NO LPBP-SX2 L706918090102019	NO	4.000	4.00	10.08.12
640		WELD ON BRACKET FOR TAG NO LPBP-SY1 L706918090102020	NO	2.000	2.00	10.08.12
650		WELD ON BRACKET FOR TAG NO LPBP-SY2 L706918090102021	NO	2.000	2.00	10.08.12
660		WELD ON BRACKET FOR TAG NO LPBP-SZ1 L706918090102022	NO	2.000	2.00	10.08.12

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Draw.No:

Var.No:

**General Note:**


- 1.CHECK LIST ENCLOSED SHOULD BE FILLED UP & SENT ALONG WITH YOUR OFFER
- 2.PROJECT
  - (i)VIZAG-SPEC:PC:TSP:SHREE SINGAJI:001 REV:00(3 SHEETS)  
DATA SHEET DRG NO:PC-SHREE SINGAJI-SKT-01 REV 00(1 SHEET)
  - (ii)AVANTHA BHANDAR-SPEC:PC:TSP:KWPC:001 REV:00(3 SHEETS)  
DATA SHEET DRG NO:PC-KWPC-SKT-01 REV 00(1 SHEET)
- 3.UNPRICED BID FORMAT
- 4.ENQUIRY TERMS AND CONDITIONS
- 5.BANK GUARANTEE FORMAT
- 6.STANDARD QUALITY PLAN FOR SNUBBERS QPG 55

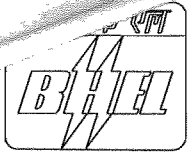
**Enclosures:**

"LD clause has to be confirmed without fail."

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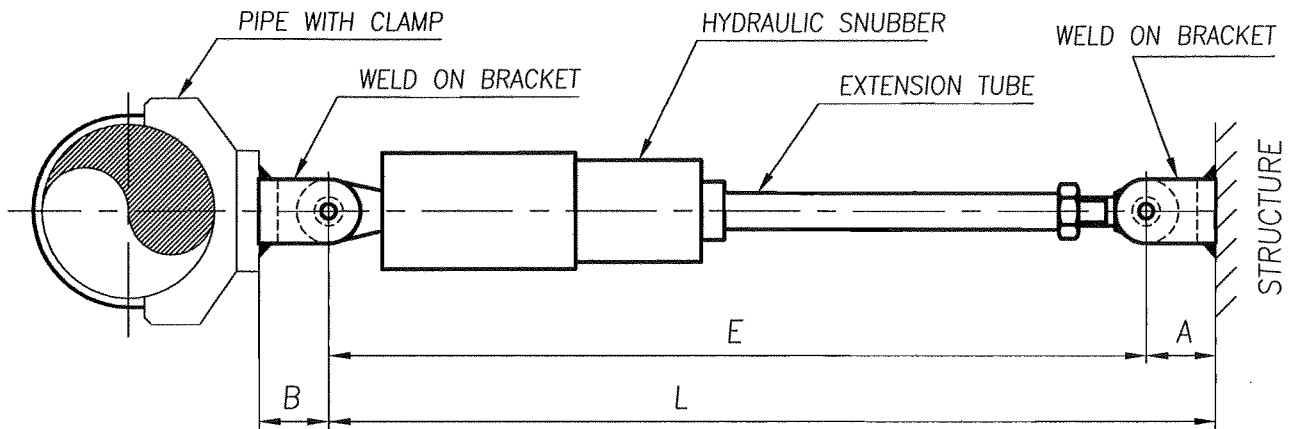


PIPING CENTRE

## DATA SHEET FOR HYDRAULIC SNUBBER

PROJECT : 1X600MW KWPC L RAIGARH TPP

CUST No. : 7069



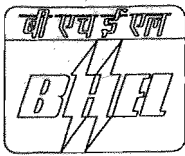
- 1, DIMENSIONS A,B & E SHALL BE FIXED BY VENDOR WITH REF TO L max & L min AND THERMAL MOVEMENT.
- 2, L max - L min INDICATES MINIMUM SNUBBER STROKE LENGTH REQUIRED.

SL No.	TAG No.	DESIGN LOAD ± KN	THERMAL MOVEMENT ALONG SHOCK - ABSORBER AXIS IN mm	L max	L min	QTY./UNIT No.	WELD ON BRACKET QTY./UNIT No.	REMARKS
01	CRH-SX1	150	100 (COMPRESSION)	2665	2515	1	2	
02	CRH-SX2	80	100 (COMPRESSION)	1125	975	2	4	
03	CRH-SX3	80	100 (COMPRESSION)	1125	975	2	4	
04	HRH-SX1	125	200 (COMPRESSION)	1625	1375	2	4	
05	HRH-SXZ1	100	150 (COMPRESSION)	1435	1235	2	4	
06	HRH-SXZ2	100	150 (COMPRESSION)	1435	1235	2	4	
07	LPBP-SX1	100	75 (COMPRESSION)	1025	900	2	4	
08	LPBP-SX2	80	150 (COMPRESSION)	1525	1350	2	4	
09	LPBP-SY1	100	75 (COMPRESSION)	2275 (L+B)	2150 (L+B)	1	2	
10	LPBP-SY2	100	75 (COMPRESSION)	2875 (L+B)	2675 (L+B)	1	2	
11	LPBP-SZ1	80	75 (COMPRESSION)	1925 (L+B)	1800 (L+B)	1	2	

**NOTE :-**

REFER TECHNICAL SPECIFICATION ENCLOSED HEREWITH.  
LOAD INDICATED IS FOR EACH SNUBBER

PREPARED  SURENDRAN	APPROVED  VISHNU JYOTI	DATE  09.03.12	DRG. No.  PC-KWPCL-SKT-01	REV.  00
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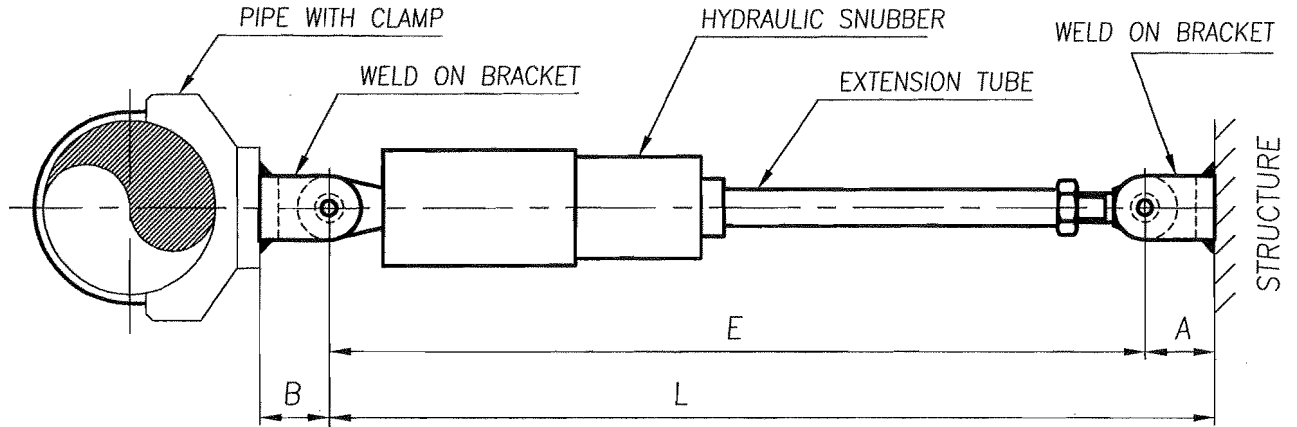


PIPING CENTRE

## DATA SHEET FOR HYDRAULIC SNUBBER

PROJECT : SHREE SINGAJI-2x600 MW

CUST No. : 7037 & 7038



- 1, DIMENSIONS A,B & E SHALL BE FIXED BY VENDOR WITH REF TO L max & L min AND THERMAL MOVEMENT.
- 2, L max - L min INDICATES MINIMUM SNUBBER STROKE LENGTH REQUIRED.

SL No.	TAG No.	DESIGN LOAD ± KN	THERMAL MOVEMENT ALONG SHOCK - ABSORBER AXIS IN mm	L max	L min	QTY./UNIT No.	WELD ON BRACKET QTY./UNIT No.	REMARKS
01	CRH-SX1	150	100 (EXPANSION)	1388	1238	2	4	
02	CRH-SX2	80	100 (COMPRESSION)	1150	1000	2	4	
03	CRH-SX3	80	100 (COMPRESSION)	1150	1000	2	4	
04	HRH-SX1	125	200 (COMPRESSION)	1325	1075	2	4	
05	HRH-SXZ1	100	150 (COMPRESSION)	1435	1235	2	4	
06	HRH-SXZ2	100	150 (COMPRESSION)	1435	1235	2	4	
07	LPBP-SX1	100	75 (COMPRESSION)	825	700	2	4	
08	LPBP-SX2	80	150 (COMPRESSION)	1325	1125	2	4	
09	LPBP-SY1	100	75 (COMPRESSION)	2275 (L+B)	2150 (L+B)	1	2	
10	LPBP-SY2	100	75 (COMPRESSION)	2275 (L+B)	2150 (L+B)	1	2	
11	LPBP-SZ1	80	75 (COMPRESSION)	675 (L+B)	550 (L+B)	1	2	

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PREPARED  S.SENTHIL	APPROVED  G.AARTHI	DATE  15.03.12	DRG. No.  PC-SHREE SINGAJI-SKT-01	REV.  00
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<b>TECHNICAL SPECIFICATION FOR HYDRAULIC SNUBBERS</b>	<b>SPEC :PC:TSP:KWPC:001</b>			<b>REV: 00</b>		
	DATE : 09.03.12 CUST.NO: 7069			NO OF SHEETS : 3		
	PREPD	SURENDRAN	CHKD	VISHNU JYOTI	APPD	CKN

### General Requirements

The snubbers shall be mounted in between a piping system and the supporting structure. The purpose is to protect the piping/components against Dynamic movements arising from sudden changes in steam flow, safety valve reactions, earthquake etc.

The snubber shall allow free movement of the piping with minimum frictional resistance when subjected to non-dynamic movements such as thermal expansion and contraction.

The snubber shall limit motion, when the component is subjected to dynamic or impulse loads. The snubber shall be “locked up” and form a rigid connection when the piping is subjected to dynamic/seismic motion thereby protecting the piping by limiting their relative displacement. The snubbers shall be of double acting type so that it can lock the motion of component and resist inertial forces of highly oscillatory nature, in both directions along longitudinal axis of the snubber.

### Technical requirements

#### Stroke Length

The Snubber stroke length shall be decided based on the thermal movement of the pipe as given in the data sheet with a cushion of 25 mm on the either side.

The arrangement should permit swiveling motion not less than 6deg in all directions.

## **Mechanical**

End Connection: Each end of the snubber shall be provided with self aligning bearing. One end of the snubber shall be connected to the pipe clamp to a weld on bracket and the other end to a weld on bracket attached to the supporting structure. The weld on brackets are to be supplied by the snubber supplier.

## **Materials & construction**

Materials & construction shall conform to be as per MSS 58, 69, 89 and 90.

## **Specific requirements/Data**

1. Application: For pipe support
2. The snubbers may be of hydraulic type.
3. The distance between the structural member and the pipe to be supported as indicated in the data sheet.
4. Recommended spares list to be furnished by supplier.
5. Supplier to furnish reference list, relevant catalogues and maintenance procedures..
6. For hydraulic snubber, the recommended Indian equivalent oil. If not, furnish the quantity of oil to be stocked as spare along with price particulars.
7. Filling instruction of oil to the shock absorber.
8. For data sheet refer drg no. PC-KWPCL-SKT-01

## **Scope of Supply**

1. The length 'L' indicated in the data sheet is the actual length required based on arrangement in cold condition.
2. The supplier has to select the shock absorber type, extension tube and weld on bracket assembly.
3. dimension "A", "B" and "E" are to be selected by the supplier.
4. Snubber with necessary accessories as required.
5. Weld on brackets with pins etc.
6. Painting of the supplied equipment.
7. Any special tools as required for erection and maintenance.
8. Commissioning/recommended spares.

**Documents to be submitted along with the offer:**

- a. Dimensional drawings of the snubber and weld on bracket(s)
- b. Details of materials for the above
- c. Quality plan
- d. Reference list, relevant catalogues and maintenance procedures..
- e. Recommended spares list.
- f. Detailed equipment specification

**Documents to be submitted along with supply of material**

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- e. Special tools(if any).
- f. Erection instructions.
- g. Technical Data sheets.
- h. Maintenance instructions.



<b>TECHNICAL SPECIFICATION FOR HYDRAULIC SNUBBERS</b>	<b>SPEC :PC:TSP:SHREE SINGAJI:001</b>			<b>REV: 00</b>		
	DATE : 15.03.12 CUST.NO: 7037 ,7038			NO OF SHEETS : 3		
	PREPD	G.AARTHI	CHKD	G.AARTHI	APPD	A.P.M.K

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