



HARSHAD ENGINEERING WORKS

PROVIDES HIGH QUALITY OVERPRESSURE PROTECTION FOR AIR, GAS & STEAM IN STANDARDIZED DESIGN



ISO 9001 CERTIFIED COMPANY

SAFETY VALVE

SERIES # 092

DESIGN FEATURES

- SAFETY VALVE MANUFACTURED IN ACCORDANCE WITH REQUIREMENT OF ASME SECTION VIII DIVISION 1, API 526, API 527, EN ISO 4126 PART 1, IS 12992
- DIRECT SPRING OPERATED, FULL LIFT, FULL NOZZLE, SINGLE TRIM, HIGH CAPACITY & ATMOSPHERIC DISCHARGE DESIGN
- FIXED BLOW DOWN & SOFT SEAT DESIGN.
- BEST USE IN SMALL RECIPROCATING & SCREW COMPRESSORS, PRESSURE VESSEL, AIR RECEIVER TANK, GENERATORS, ETC.
- NOT SUITABLE FOR OXYGEN AND STEAM APPLICATION



REV.6 / 05.2019

TECHNICAL DATA : -

- SIZES : 1/4", 3/8", 1/2", 3/4" (ORIFICE "B", "D" & "E")
- END CONNECTION : THREAD END (BSP, BSPT & NPT)
- SET PRESSURE RANGE : 1BARG TO 18BARG
- TEMPERATURE RANGE : -20°C TO 200°C
- APPLICATION : AIR OR NON FLAMMABLE GAS

HARSHAD ENGINEERING WORKS

WORK & OFFICE ADDRESS : -
S-121 TO S-124, VIVEKANAND
INDUSTRIAL ESTAE, NEAR RAKHIAL
CROSS ROAD, RAKHIAL, AHMEDABAD
- 380 023. GUJARAT, INDIA.

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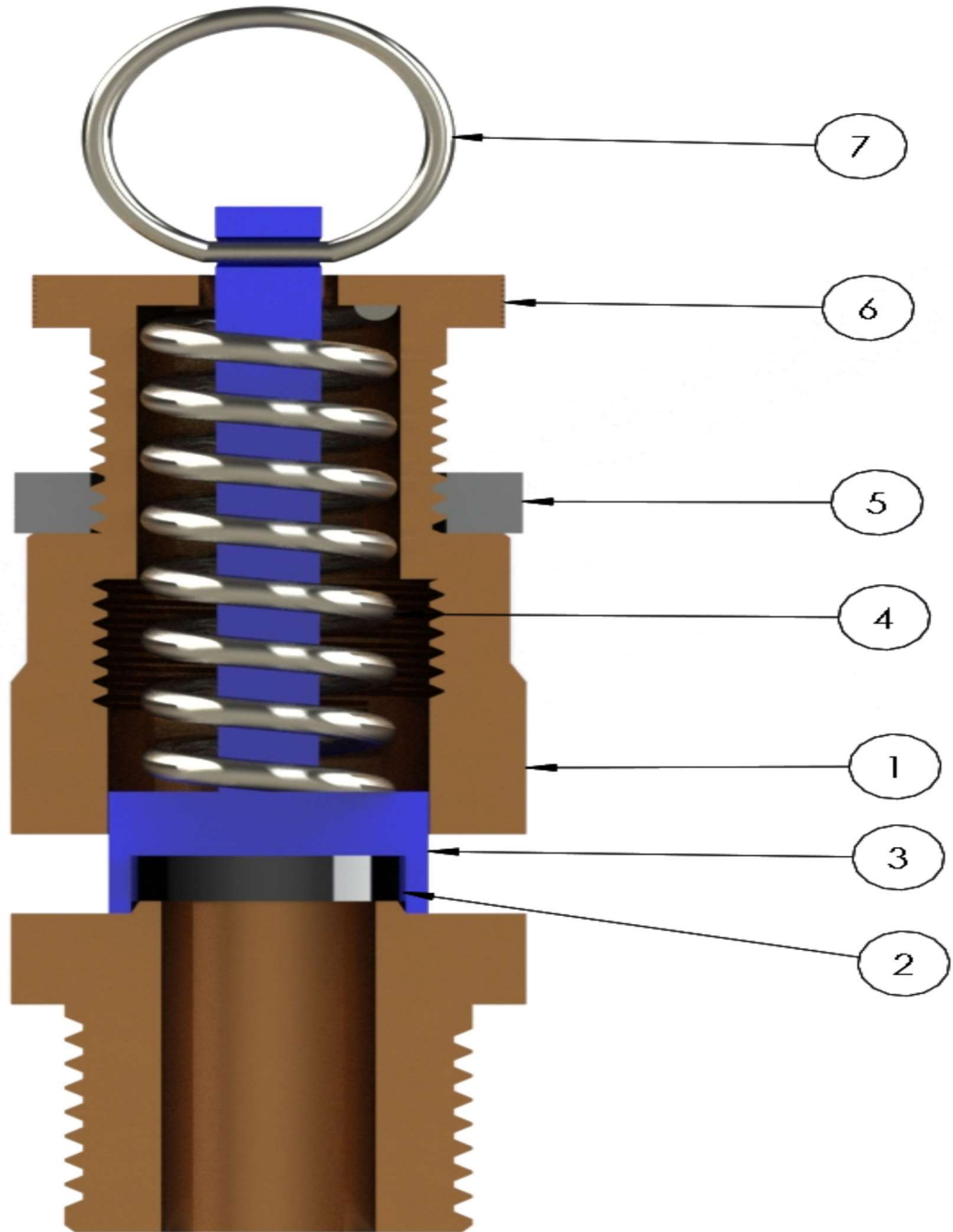
SAFETY VALVE



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SERIES # 092

G.A.DRAWING





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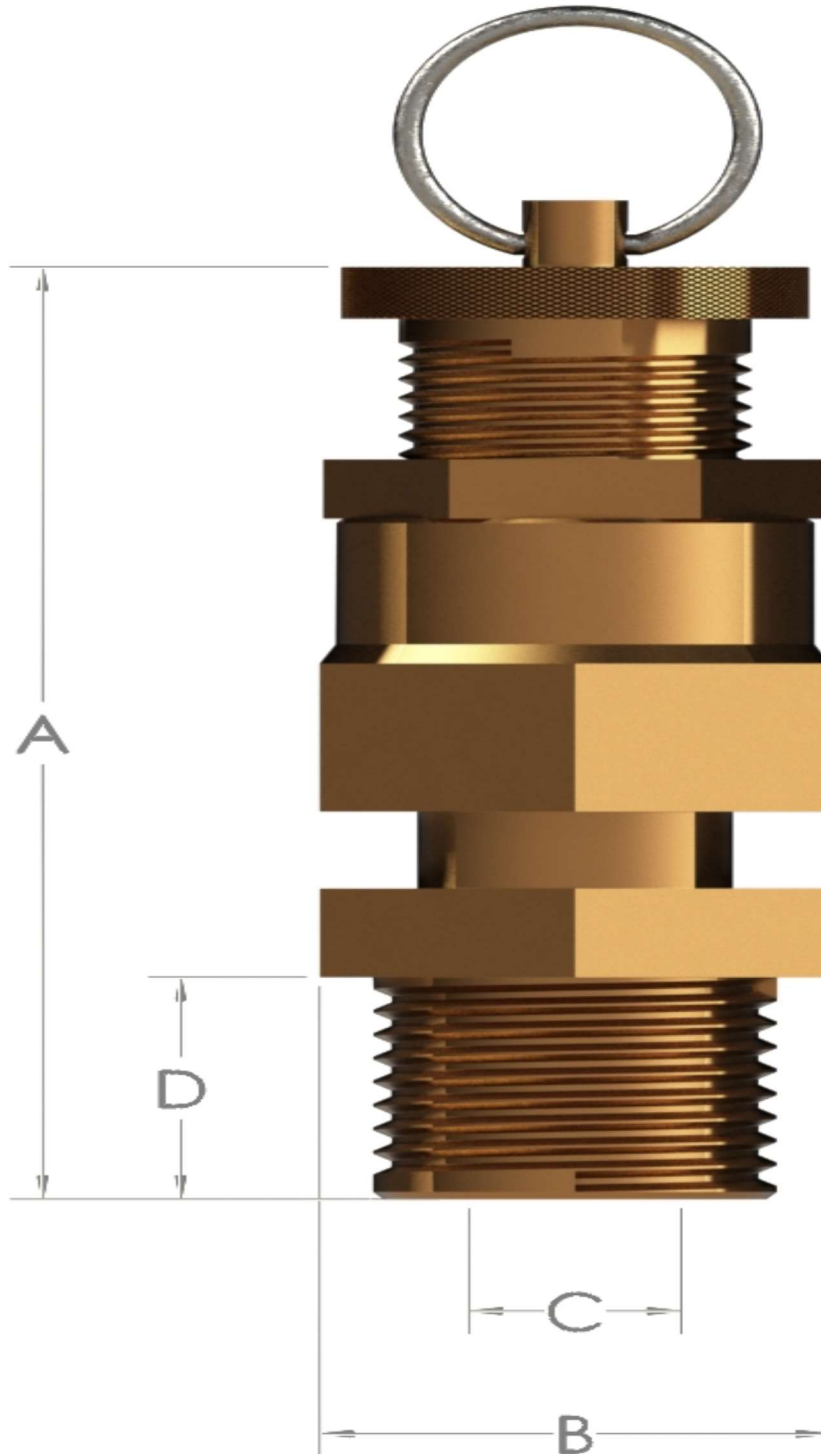
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DIMENSION





HARSHAD ENGINEERING WORKS

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MATERIAL OF CONSTRUCTION

PART LIST

MODEL # 092
FULL BRASS
STANDARD CONSTRUCTION

SR.NO.

DESCRIPTION

TEMPERATURE
-20*C TO 200*C

01

BODY

BRASS
(IS 319 GR.1)

02

SEAT

VITON RUBBER

03

PLUNGER / SPINDLE

BRASS
(IS 319 GR.1)

04

SPRING

S.S.302

05

LOCK NUT

BRASS
(IS 319 GR.1)

06

SETTING SCREW

BRASS
(IS 319 GR.1)

07

LIFTING PIN

S.S.304



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TECHNICAL DETAIL

SR.NO.	SIZES	ORIFICE (API526 & EN ISO 4126)		MAX SET PRESSURE (IN BARG) @ 38°C	A (MM) ± 3	B (MM) ± 1	C (MM) ± 1	D (MM) ± 1	APPROX WEIGHT (KG)
		DESIGNATION & EFFECTIVE AREA (IN ²)	ACTUAL AREA IN ² & INLET BRE (MM)						
1	1/4"	"B" (0.049)	0.05 (6MM)	18	52.0	17.5	6.0	12.0	0.05
2	3/8"	"D" (0.11)	0.12 (10MM)	18	65.0	20.5	10.0	12.0	0.10
3	1/2"	"D" (0.11)	0.12 (10MM)	18	70.0	24.0	10.0	15.0	0.15
4	3/4"	"E" (0.196)	0.23 (14MM)	18	85.0	35.0	14.0	16.0	0.25

NOTE :-

- 1.) SERIES # 092 SAFETY VALVE IS AVAILABLE IN THREAD END CONNECTION ONLY.
(BSP, BSPT, ISO7R & NPT.)
- 2.) SEAT LEAKAGE TEST IS CONDUCTED AS PER API 527 OR AS SPECIFIED.
- 3.) TECHNICAL DATA SHEET WILL BE PROVIDED ON REQUEST.
- 4.) WE OFFER THIRD PARTY INSPECTION IF REQUIRED.(TUV, LLYODS, BVQI, SGS, ETC.)
- 5.) SAFETY VALVE IS SUPPLIED WITH ONE SET OF FINAL INSPECTION REPORT & TEST CERTIFICATE OF HYDRO SET PRESSURE TEST & SEAT LEAKAGE TEST.
- 6.) SAFETY VALVE COMES WITH WARRANTY OF 18MONTHS FROM THE DATE OF SUPPLY OR 12 MONTHS FROM THE DATE OF INSTALLATION WHICHEVER IS EARLIER.
- 7.) NO WARRANTY CLAIMS CAN BE MADE FOR ANY DAMAGE CAUSED AS THE RESULT OF INCORRECT HANDLING, DISREGARDS OF INSTALLATION INSTRUCTIONS, ACCIDENT PREVENTION REGULATIONS, EN, ISO, API, ASME STANDARDS AND OTHER APPLICABLE CODE OF PRACTICE.
- 8.) IF SEAL FOUND IN BROKEN CONDITIONS WARRANTY WILL EXPIRES RIGHT AWAY.



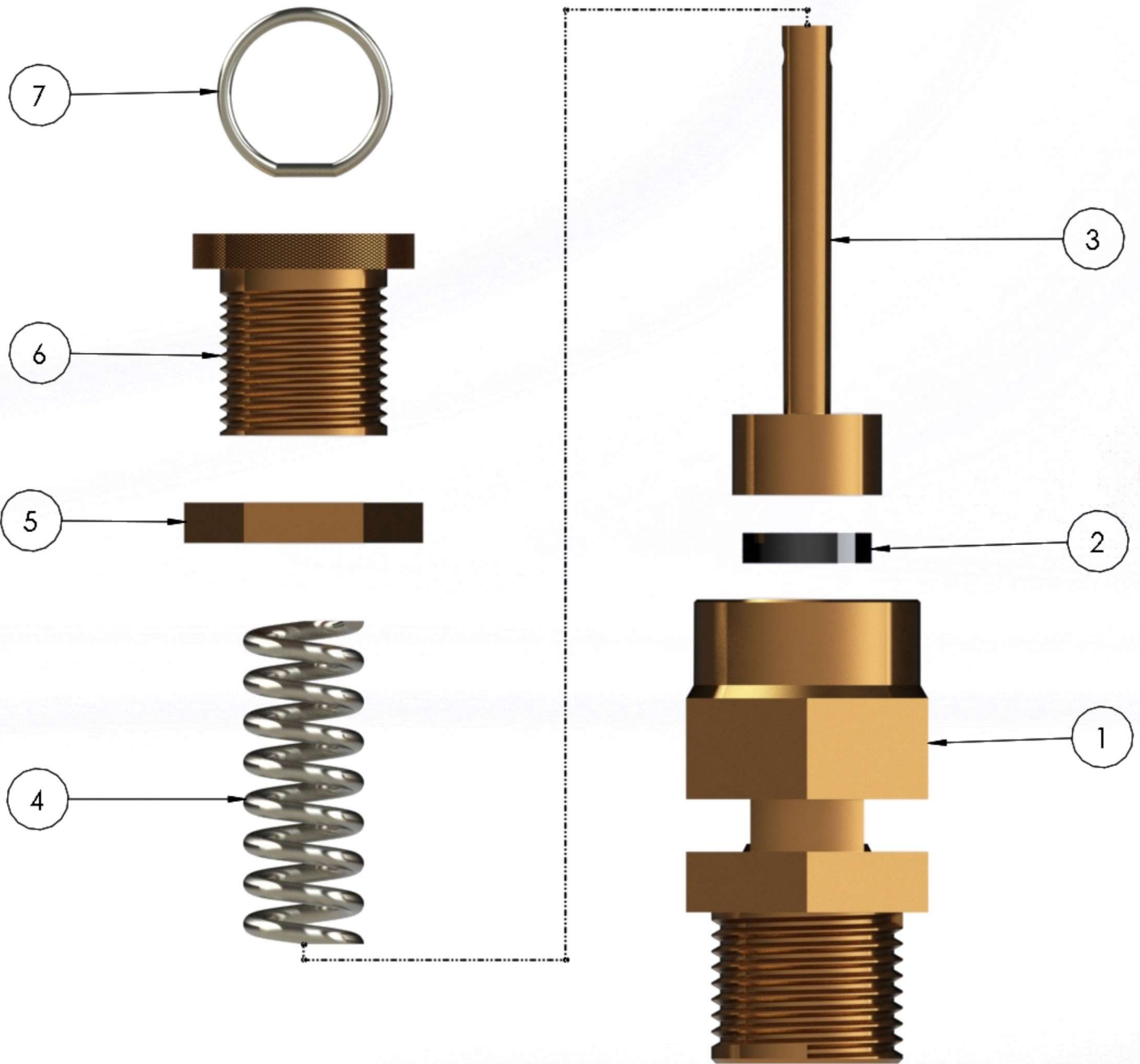
HARSHAD ENGINEERING WORKS SAFETY VALVE



ISO 9001 CERTIFIED COMPANY

SERIES # 092

ASSEMBLY DRAWING





HARSHAD ENGINEERING WORKS SAFETY VALVE



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SERIES # 092 MARKING DETAIL



EVERY SAFETY VALVE IS LASER MARKED ACCORDING TO ABOVE LABEL

LASER MARKING DETAIL

LINE NO. 01 = PART # / MODEL #

LINE NO. 02 = MANUFACTURE LOGO, SIZE & THREAD TYPE

LINE NO. 03 = SET PRESSURE & DATE OF MFG.

LINE NO. 04 = TEMPERATURE RANGE & UNIQUE SR.NO.



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INSTALLATION DIAGRAM

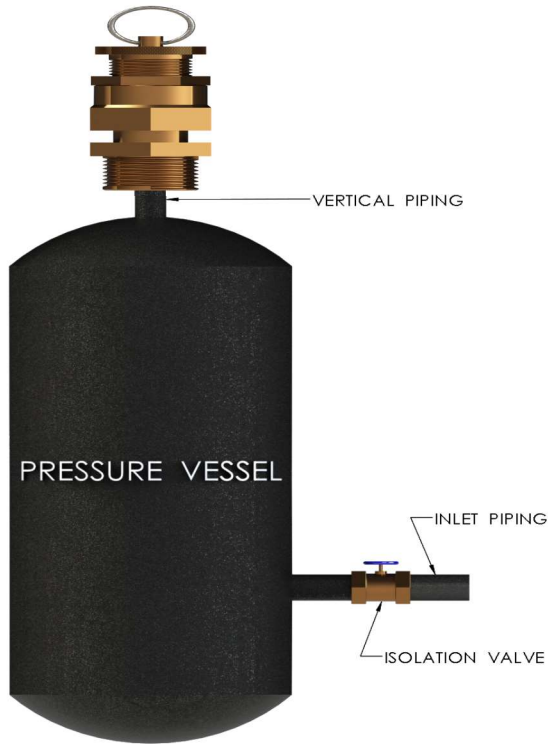


DIAGRAM A

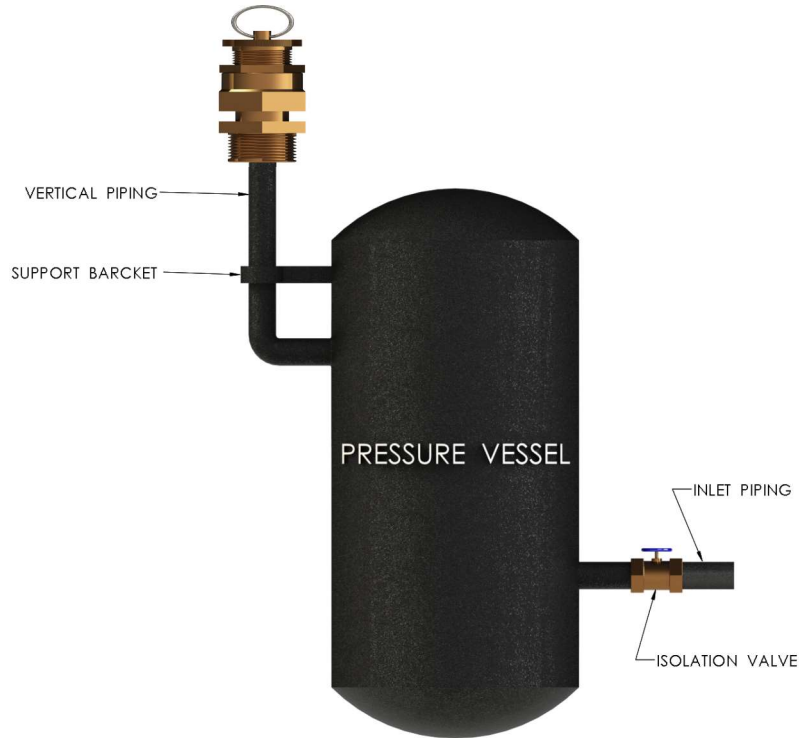


DIAGRAM B



DIAGRAM C

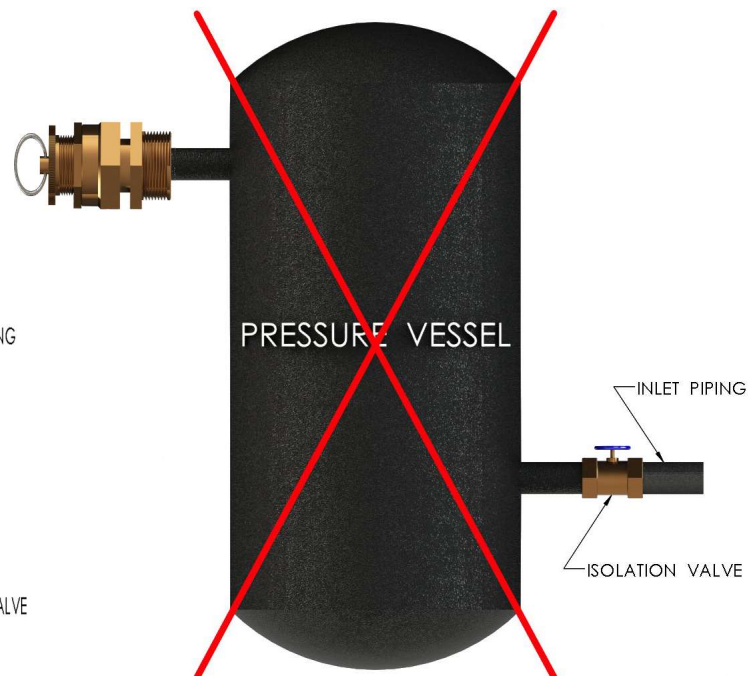


DIAGRAM D



HARSHAD ENGINEERING WORKS

SAFETY VALVE



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AIR CAPACITY TABLE

Air Capacities in Standard Cubic Metres Per Minute (SCFM) @ 15°C & 10% Over Pressure as per API 520			
SET PRESSURE (BARG)	ORIFICE AREA, Sq.In. (in2) as per API 526		
	“B”	“D”	“E”
	0.05 in2	0.12 in2	0.23 in2
1	22	59	113
2	33	90	173
3	44	121	232
4	55	151	291
5	67	182	350
6	78	213	409
7	89	244	469
8	101	274	528
9	112	305	587
10	125	337	646
11	135	367	705
12	147	397	764
13	156	428	823
14	168	459	883
15	179	490	942
16	191	520	1001
17	203	551	1060
18	213	582	1119

NOTE :-

- 1.) CAPACITIES BELOW 2BARG SET PRESSURE ARE CALCULATED AT 0.2BAR OVER PRESSURE.
- 2.) TO DETERMINE CAPACITIES ON GASES OTHER THAN AIR OR VAPOURS, PLEASE CONSULT HARSHAD ENGINEERING WORKS (HEW).



HARSHAD ENGINEERING WORKS

SAFETY VALVE



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AIR CAPACITY TABLE

Air Capacities in KG/HR @ 15°C & 10% Over Pressure as per EN ISO 4126			
SET PRESSURE (BARG)	ORIFICE AREA, Sq.In. (mm ²) as per API 526		
	“B”	“D”	“E”
	28.39 mm ²	77.40 mm ²	148.39 mm ²
1	45	123	236
2	69	187	358
3	92	251	481
4	115	315	604
5	139	379	726
6	162	443	849
7	186	507	972
8	209	571	1094
9	233	635	1217
10	256	699	1340
11	280	763	1462
12	303	827	1585
13	327	891	1708
14	350	955	1830
15	374	1019	1953
16	397	1083	2076
17	420	1147	2198
18	444	1211	2321

NOTE :-

- 1.) CAPACITIES BELOW 2BARG SET PRESSURE ARE CALCULATED AT 0.2BAR OVER PRESSURE.
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INSTALLATION & PRESSURE ADJUSTMENT

GUIDELINE



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INSTALLATION GUIDELINE :-

- SAFETY VALVES SHOULD BE ALWAYS MOUNTED VERTICALLY ON THE PRESSURE VESSEL, BOILERS OR PIPELINE.
- ALL THE PACKING MATERIALS SHOULD BE REMOVED FROM THE VALVE CONNECTION PRIOR TO INSTALLATION.
- NEVER LIFT VALVE FROM ITS LIFTING RING, IT DAMAGES THE SPINDLE ALIGNMENT WHICH RESULTS IN MALFUNCTION OR NOT WORK AT ALL.

INSTALLATION ON PRESSURE VESSELS:-

- WHEN FITTING A SAFETY VALVE ONTO PRESSURE VESSELS, THE INLET CONNECTION PIPE SHOULD BE AS SHORT AS POSSIBLE AND THE BORE SHOULD BE AT LEAST EQUIVALENT TO THE NOMINAL BORE SIZE OF THE VALVE. SO THAT THE PRESSURE DROP BETWEEN THE VESSEL AND THE VALVE SHOULD BE NO MORE THAN 3% RATED CAPACITY.
- IT IS ESSENTIAL THAT NEW INSTALLATIONS ARE FULLY FLUSHED AND ALL DEBRIS AND FOREIGN PARTICLES REMOVED PRIOR TO INSTALLING THE VALVE AS SERIOUS DAMAGE CAN BE CAUSED TO THE VALVE SEATS RESULTING IN CONTINUOUS LEAKAGE AND MALFUNCTION.
- THERE SHALL BE NO INTERVENING STOP VALVES BETWEEN THE VESSEL AND SAFETY VALVES.

LIFTING RING:-

MANUAL LIFTING RING SHALL BE POSSIBLE TO LIFT THE SAFETY VALVE DISC WHEN THE SYSTEM PRESSURE IS $\geq 85\%$ OF SET PRESSURE.

PRESSURE ADJUSTMENT GUIDELINE :-

EVERY VALVE IS FITTED WITH A SUITABLE SPRING AND TESTED BEFORE LEAVING THE FACTORY. SAFETY VALVES CAN BE PRESET ON REQUEST BUT TO ALTER THE SET PRESSURE, THE ADJUSTING SCREW, WHEN VIEWED FROM THE TOP, SHOULD BE SCREWED DOWNWARDS IN A CLOCKWISE DIRECTION TO INCREASE THE SET PRESSURE AND UPWARDS IN AN ANTI-CLOCK WISE DIRECTION TO DECREASE IT. SET PRESSURE ADJUSTMENT MUST BE CARRIED OUT BY EXPERIENCED AND APPROVED PERSONNEL. ANY CHANGE IN SET PRESSURE MUST BE WITHIN THE RANGE OF EXISTING SPRING, IF IT EXCEEDS THE RANGE, A NEW SPRING WILL BE REQUIRED.

DISMANTLING THE VALVE:-

FOLLOWING POINT MUST BE OBSERVED AT TIME OF DISMANTLING THE SAFETY VALVE:-

- THERE WILL BE ABSOLUTE NO PRESSURE IN THE PRESSURE VESSEL. PRESSURE MUST BE DRAIN BEFORE THE
- PRESSURE VESSEL MUST BE COOL BEFORE STARTING THE DISMANTLING THE SAFETY VALVE.
- DISMANTLING MUST BE PERFORMED ONLY BY QUALIFIED PERSONNEL ONLY.

SERVICE, MAINTENANCE & CALIBRATION:-

A SET PRESSURE FUNCTION TEST SHOULD BE CARRIED OUT AT LEAST ONCE A YEAR. THE DETAILED TEST PROCEDURE IS DETERMINED BY THE USER.

SAFETY VALVE REQUIRES REGULAR MAINTENANCE AND CALIBRATION ONCE A YEAR.



HARSHAD ENGINEERING WORKS

SAFETY VALVE



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WARRANTY POLICY

HARSHAD ENGINEERING WORKS (HEW) HEREBY WARRANTS THAT THE GOODS DELIVERED UNDER CONTRACT WILL BE FREE FROM DEFECT IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF 18MONTHS FROM SHIPMENT OR 12 MONTHS FROM INSTALLATION WHICHEVER IS EARLIER. WITHIN THIS PERIOD, ANY OF OUR PRODUCTS CLAIMED DEFECTIVE MAY BE RETURNED TO OUR FACTORY IN AHMEDABAD,INDIA AFTER WRITTEN NOTIFICATION TO AND AUTHORIZATION BY US, AND IF FOUND TO BE DEFECTIVE AFTER EXAMINATION BY US, THE PRODUCT WILL BE REPAIRED OR REPLACED FREE OF CHARGE. SUCH DEFECTS SHALL BE EXCLUSIVE OF THE EFFECTS OF CORROSION, EROSION, NORMAL WEAR OR IMPROPER HANDLING OR STORAGE. AFTER EXAMINATION IF IT IS MANUFACTURING DEFECT FREIGHT CHARGES INWARD AND OUTWARD WILL BE BORNE BY US.

HEW MAKES NO REPRESENTATION, WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, WITH REGARD TO OUR PRODUCTS EXCEPT AS SPECIFICALLY STATED. WHEN IN DOUBT AS TO THE PROPER APPLICATION OF AN PARTICULAR PRODUCT, YOU ARE INVITED TO CONTACT HEW OFFICE AT ANY TIME. WE CANNOT OTHERWISE BE RESPONSIBLE FOR THE SELECTION OF UNSUITABLE EQUIPMENT. SUITABILITY OF THE MATERIAL AND PRODUCT FOR THE USE CONTEMPLATED BY THE BUYER SHALL BE THE SOLE RESPONSIBILITY OF THE BUYER.

EXCEPT AS SPECIFICALLY SET FORTH ABOVE AND FOR WARRANTY OF TITLE, HEW MAKES NO WARRANTY, EXPRESS OR IMPLIED, OF ANY KIND INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IF SEAL IS FOUND IN BROKEN CONDITIONS DURING EXAMINATION HEW WILL CONSIDERED THAT THE PRODUCT IS BEEN TEMPERED AND IT WON'T TAKE ANY RESPONSIBILITY OF MANUFACTURING OR WORKMANSHIP OR PERFORMANCE OF THE SAFETY VALVE. MANUFACTURING WARRANTY WILL EXPIRE RIGHT AWAY.

IN NO EVENT WILL HEW BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES

SAFETY VALVE IS SAFETY RELATED COMPONENT INTENDED FOR USE IN CRITICAL APPLICATIONS. THE IMPROPER APPLICATION, INSTALLATION OR MAINTENANCE OF THE PRODUCT OR USE OF PARTS OR COMPONENTS NOT MANUFACTURED BY HEW MAY RESULT IN A FAILURE OF THE PRODUCT. THE ADVICE OF QUALIFIED ENGINEER SHOULD BE SOUGHT PRIOR TO ANY USE OF PRODUCT.

ANY INSTALLATION, MAINTENANCE, PRESSURE ADJUSTMENT, REPAIR OR TEST PERFORMED ON THE PRODUCT MUST BE DONE IN ACCORDANCE WITH THE REQUIREMENTS PF ALL APPLICABLE CODES AND STANDARDS.

THE INFORMATION, SPECIFICATIONS AND TECHNICAL DATA CONTAINED IN THIS DOCUMENT ARE SUBJECT TO CHANGE WITHOUT NOTICE. HEW DOES NOT WARRANT THAT THE SPECIFICATIONS ARE CURRENT AND ASSUMES NO RESPONSIBILITY FOR THE USE OR MISUSE THEREOF. THE PURCHASER SHOULD VERIFY THAT THERE HAVE BEEN NO CHANGES TO THE SPECIFICATIONS PRIOR TO USE.