



**PRODUCT MANUAL FOR
VALVE FITTINGS FOR USE WITH LIQUEFIED PETROLEUM GAS
(LPG) OF UP TO 250 LITRE WATER CAPACITY
ACCORDING TO IS 8737: 2017**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	Product	:	IS 8737: 2017
	Title	:	Valve Fittings for Use with Liquefied Petroleum Gas (LPG) of up to 250 litre Water Capacity
	No. of Amendments	:	Three
2.	Sampling Guidelines:		
a)	Raw material	:	As per Cl. 4 and 8.1 of IS 8737
b)	Grouping guidelines	:	Each Variety of valve shall be tested for Grant of Licence/Change in Scope of Licence.
c)	Sample Size	:	Please refer ANNEX- A
3.	List of Test Equipment	:	Please refer ANNEX-B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX- C
5.	Possible tests in a day :	:	Please refer ANNEX- D
6.	Scope of the Licence :	:	Please refer ANNEX- E

ANNEX A

Sample Size

Assembled valves- 5 pieces, 6 pieces (*applicable for APSCV*)

Valve body- 2 pieces,

Forged and Machined samples for material testing Izod and tensile- 5pieces each.

Brass rod for chemical test- 2 pieces,

Brass component- upper spindle, lower spindle, adjusting screw- 20pieces each,

Rubber component- Joint packing and rubber gasket- 20 pieces each,

Plastic component- Safety cap and spindle guide- 20 pieces each,

Rubber button- 60 and 70 Shore A - one piece each for hardness test

Spring- 10 pcs

ANNEX B**List of Test Equipment*****Major test equipment required to test as per the Indian Standard***

Sr. No.	Tests with Clause Reference	Test Equipment
1.	Tensile Strength & Elongation Cl. 4.3	UTM (0-50 KN,) Vernier Clipper (200 mm LC 0.02 mm)
2.	Impact Strength Cl. 4.4	Izod impact testing Equipment
3.	Screw Threads on the valves Stem and in cylinder Neck(Valve inlet) Cl 5	Thread gauges(As per type of the threads L1,L8, Truncation Gauges) Profile projector 10X
4.	Valve outlet Connections Cl. 6	See Annex-I(<i>Gauges as per Drawing</i>) <i>List provided below for reference</i>
5.	Design requirement Cl. 7	
	i)Dimensions (Cl 7.1 to 7.5)	i)Suitable Gauges as per drawing
	ii) Security Cap /Nut (Cl.7.6)	Test set up at 17 kg/cm ²
	iii) Rubber & moulded parts(Cl 7.8)	i)Pentane or Commercial LPG . Jar with close fit lid/Beaker, Shore hardness tester. Rubber compression test set up ii) Deep freezer upto -25°C LC 1°C iii) Ageing Oven 0-100 °C, LC 1°C. Gauges/Snap Gauges as per Design
	iv) Spring a) Load Test	Spring load tester Capacity 0-5 kg, Wt. Box with weights of 1kg, 500g,200g and 1 mg to 100g
	b)Permanent set test	Spring tester with weights, feelers gauge
	c)Rust proofness of spring	Conc Nitric acid, Beaker & measuring cylinder 100ml, 500ml
	iv) Minimum Wall thickness Cl 7.10	Ball ended Micrometer LC 0.01 mm
6	Stress Corrosion test Cl. 8.1	Mercurous Nitrate Beaker, Balance 0-200g LC 0.01g Magnifying Glass
7.	Hydrostatic test Cl 8.2	HST Test Set up with pressure gauge up to 30 kg/cm ²
8.	Pneumatic test Cl. 8.3	Test Set ups with pressure differentio-meter, bubble leak detector or other appropriate device to detect and/or/measure leakage.
9.	Cycles test Cl 9.2	Cycle test set up the counter 0-99999 with opening closing mechanism at 1 to

		2 seconds.
10.	Operation test Cl 9.3	Operation test set up to open close Valve(Regulator)
11	Valve Fitting testing Torque .Cl 9.4.	Steel test Rig/set up, Torque wrench up to 200Nm
12.	Impact test Cl 9.5	Steel impact test set up for valve, Impact test set up of suitable height with 13 mm hardened steel ball and ball guide with release mechanism
13.	Inclination test Cl. 8.3.4, <i>applicable for APSCV</i>	Compatible cylinder along with fixture with provision of rotating at appropriate angle
14.	Vibration test Cl. 9.6, <i>applicable for APSCV</i>	Test bench as per Cl. 9.6 of IS 8737

The above list is indicative only and may not be treated as exhaustive.

ANNEX C
Scheme of Inspection and Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipments. The following equipments shall be calibrated at a frequency shown against each and records kept:

1.1.1 Universal Testing Machine - Once in a year

1.1.2 Impact Testing Machine- Once in a three years

1.1.3 Pressure Gauges - Once in a month

1.1.4 Pyrometer used for heating furnace- Once in six months

1.1.5 Master gauges against which inspection gauges are checked periodically shall be sent for rechecking in an independent laboratory once in three years.

1.2 The firm shall procure a set of certified gauges for inspection of different components. A typical set of these gauges is given in Annex - I for guidance only.

1.3 **QUALITY CONTROL**- All units manufacturing and supplying valves shall obtain and hold valid Quality Management System certification in accordance with IS/ISO 9001 from BIS to ensure that the manufacturer adheres to various steps during each stage of manufacturing process constantly.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity. Records of all the tests made at the valve manufacturer's work shall be kept and copies of test certificates shall be forwarded to the purchaser of the valve and the inspecting authority.

3. LABELLING AND MARKING – As per the requirements of IS 8737: 2017.

4. CONTROL UNIT – A lot of forged valve bodies of the same type and size forged in a day/different days from the material of the same consignment/ supplier under similar process of production shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 Each control unit of finished valves shall be offered for inspection to BIS before dispatch (See Table 3). Valves failing to meet the requirements of the specification shall not be marked with the BIS Standard Mark.

5.2 A certificate as per **Annexure -VI** shall be issued by the BIS Inspecting Officer in respect of every batch/inspection lots of cylinders marked with BIS Standard Mark.

5.3 Valve without threaded outlet connections shall be fitted with suitable security caps and inlet shall be fitted with a thread cap before dispatch.

5.4 The manufacturer shall maintain a system of works inspection at all stages of manufacture to ensure that the individual valve fittings are free from all manufacturing defects and comply in all respects with the requirements of the Indian Standard Specification.

5.5 FORGING & MACHINING

The licensee shall possess all the requisite infrastructure for the forging and machining of the valve housing in their own premises. Under no circumstances, the forgings of valve housing (body) or machining there of shall be permitted to be sub-contracted or bought from outside.

5.6 LOW TEMPERATURE & HIGH TEMP TEST

Low temperature test and high temperature test shall be done on assembled valves as per Annex H of IS 9798 and then tested for the performance in open and closed position (Temperature Range – 20° C to + 65° C).

5.7 BOUGHT OUT COMPONENTS

All other components manufactured/bought from outside shall be inspected by the licensee as per details given in Table 2 and records maintained. Guidelines indicated in Annex-V shall be followed during component/assembled valve inspection.

6. DESIGN AND FABRICATION – The valve shall conform to all the requirements given in *clauses 5, 6 7 & 9.1* of IS 8737.

6.1 At the time of design approval the valve shall be checked for conformity to all the requirements of the specification and those given in the approved drawing including the cycle test. Whenever there is a change in material or design of the valve, it shall be retested for conformity to all the requirements of the specification.

6.2 The relevant specification for the raw material for other components shall also be declared by the manufacturer and clearly indicated in their drawings and scheme of manufacture.

7. MATERIAL

The manufacturer shall declare in their scheme of manufacture/drawing the relevant specification/chemical composition of the raw material (Brass) used for valve body, which meets the requirement of forgings as given in IS 8737:2017.

7.1 One sample from each consignment of raw material received in the factory shall be analysed for chemical composition. The composition shall be such that the material is compatible under the conditions of service with LPG and with the material of cylinder. If the material is accompanied by a test certificate, further testing is not required. The manufacturer of the valve should establish means to identify the valve with the certificate. Material with seams, cracks, lamination or other injurious defects shall not be used.

7.2 Each consignment of rubber components received shall be subjected to the following tests at the frequency given in Table 2:

- (i) Shore hardness (as given in approved drawing)
- (ii) Immersion test as per *clause* 4.4 of IS 9798 for valve seat and as per *clause* 4.5 of IS 9798 for 'O' seal)

7.3 The relevant specification for the raw material for other components shall also be declared by the manufacturer and clearly indicated in their drawings and scheme of manufacture.

7.4 In respect of all other clauses of the specification and at all stages of manufacture, the factory shall maintain appropriate control and checks to ensure that their products conform to various requirements of the specification.

8. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement : Required (R) or Sub-contracting permitted (S)	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
4	MATERIAL						
	Components	4.1	IS 8737	S	One	Each Consignment	No further testing is required, if accompanied with test certificate or ISI marked. The approved material as per drawing shall only be used.
	Valve body(Chemical composition)	4.2.1	IS 8737	S	One		
	Tensile Strength and Elongation	4.3	IS 8737	R	As per Annex A of IS 8737		--
	Impact Strength	4.4	IS 8737	R			
	Non-metallic materials	4.6	IS 8737	S	One		No further testing is required, if accompanied with test certificate or ISI marked. The approved material as per drawing shall only be used.
5	Screw threads on the valve stem and in cylinder neck (Valve Inlet Threads)						
	*Thread checking	5	IS 8737	R	One	Every 15 minutes production from each machine	The threads shall be checked with the help of certified gauges (L1 & L8) and truncation gauges. Valves threads having burrs shall be cleaned for burrs and then checked. In case of failure all the valves produced in preceding 15 minutes shall be checked.

	Dimensions		IS 8737	R	Each valve		Valves failing in any of the critical dimensions shall be rejected (See Annex IV also)
6	Valve Outlet Connections	6	IS 8737	R			
7	Design requirements						
	Dimensions	7.1 to 7.5	IS 8737	R	Each valve		As per the approved drawing as applicable
	Security Cap/Nut	7.6	IS 8737	R	Five caps/Nuts	Each lot	As per the approved drawing as applicable. Sealing test at 17 Kgf/Cm2 by fitting to the valve in open position.
	Minimum finished wall thickness	7.10	IS 8737	R	One piece	Each Control Unit	In case of failure two samples shall be tested. Repeat failure shall result in rejection of the lot.
	Valve Body seat profile	As declared/given in the drawing Longitudinal section will be cut and seat profile checked with the help of shadowgraph or templates		R	One valve	Each shift	In case the profile is not as per drawing double the number of sample shall be tested. Repeat failure shall result in rejection of the lot.
	Dimensions and profile						
	Visual smoothness free from cuts and burrs	-	-	R	Each valve		General checking with magnifying glass. Valve housing having cuts, burrs or other defects on the seat shall be rejected
8	TESTS						
8.1	Stress Corrosion test for copper alloy		IS 2305	R	Two piece	Once in a week	

8.2	Hydrostatic test	8.2	IS 8737	R	As per sampling plan provided at Annex A of IS 8737	More stringent sampling plan if agreed to between the manufacturer and purchaser may be agreed to. In case of any failure, additional specimens equaling twice the number of sample size for the failed test in the same lot shall be taken and tested. If any of these specimen again fail to meet the requirements, the entire lot represented shall be rejected.
8.3	Pneumatic test	8.3	IS 8737	R	Each Valve	
8.3.4	Inclination test, <i>applicable for APSCV</i>	8.3.4	IS 8737	R	As per sampling plan provided at Annex A of IS 8737	
9	TYPE APPROVAL TEST					
9.2	Cycle Test	9.2	IS 8737	R	One valve	20000 valves of same type or one month whichever is earlier
9.3	Operation Test	9.3	IS 8737	R	One Valve	-
9.4	Valve Fitting Testing Torque	9.4	IS 8737	R	One Valve	-
9.5	Impact Test	9.5	IS 8737	R	One Valve	-
9.6	Vibration test, <i>applicable for APSCV</i>	9.6	IS 8737	R	One Valve	-

For each type. Whenever there is a change in material of any component or change in design, these tests shall be repeated.

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: The control unit and levels of control as decided by the Bureau are obligatory, to which the licensee shall comply with.

*Note-3: Levels of control given in column 3 for thread checking are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval.

TABLE 2 LEVELS OF CONTROL
(Para 5 of the Scheme of Inspection and Testing)

TEST DETAILS			LEVELS OF CONTROL			
Cl.	Requirement	Test Methods Clause Reference	No. of samples	Lot Size	Frequency	Remarks
	INTERNAL COMPONENTS					
(i)	Rubber and other Moulded Components					
(a)	Immersion test (Resistance to hydrocarbons)	Annex D IS 9798	One	1000 pieces or less	-	-
(b)	Shore hardness Test	As per approved Drawing	1% with a minimum of 10 pieces or on test slab	Each Consignment		-
(c)	High temperature test	Annex H IS 9798	4 finished valves	One control unit	Once in a week	-
(d)	Low temperature test	Annex H IS 9798	4 finished valves	One control unit	Once in a week	-
(ii)	Spring					
(a)	Load test	As per approved drawing	1% with a minimum of 5 pieces & maximum of 20 pieces.	Each Consignment		Counter check at assembly stage
(b)	Permanent set test	Annex II of SIT	5 pieces.			
(c)	Nitric Acid Immersion test	Annex III of SIT	5 pieces			
(d)	Dimensional check	As per approved drawing	1% with a minimum of 5 pieces & maximum of 20 pieces.			
(iii)	Security (protection) cap spring					
(a)	Nitric Acid Immersion test	Annex III	1% with a minimum of 5 pieces. & maximum of 20 pieces.	Each Consignment		Counter check at assembly stage
(b)	Dimensions	As per approved drawing				

(iv)	Brass Components					
(a)	Upper Spindle (Dimensions)	As per approved drawing using Certified gauges	1% with a minimum of 5 pieces & maximum of 20 pieces.	Each Consignment	-	-
(b)	Lower Spindle (Dimensions)				-	-
(c)	Adjusting Screw				-	-
(d)	Seat & Spindle Assembly (Dimensions & Visual)	As per approved drawing. Height with dial indicator	Each Piece		-	-

Table 3**INSPECTION OF FINISHED LOT**

After testing and inspection by the firm, each lot shall be offered to BIS for release. Numbers of valves shall be selected by BIS officer as per sampling plan given below. The selected valves shall be tested for outside threads on valves inlet, Pneumatic Test specified in *clause 8.3* of IS 8737 and all other dimensions shall be checked as per approved drawings for particular collar diameter valve. The valves shall also be tested for control dimensions (See Annex-IV). The sampling plan will be as under:

Lot Size	No. of valves to be tested	Remarks
Upto 500 valves	20	In case of any failure observed the lot shall be reoffered by the manufacturer after complete recheck. Any repeat failure shall result in the rejection of the whole lot. Lot can be reoffered only once. All rejected valves shall be scrapped.
501-1000	32	
1001-3000	50	
3001-10000	80	
10001-25000	125	
25001 and above	125 + (2 nos. per each additional thousand or part thereof)	

In addition to the testing of samples as above, 2 valves from each lot shall also be subjected to Inclination test as per Cl. 8.3.4 of IS 8737 for APSCV.

Note: In case during inspection by BIS officer valves are found with defects like burrs on valves inlet/outlet connection etc. which may likely to affect the result of inspection, the firm may be advised to segregate/rectify such valves and reoffer for inspection.

ANNEX – I
LIST OF GAUGES FOR VALVE
(Paragraph 1.2 of Scheme of inspection and Testing)

Sl.No.	Gauges	Type of gauge	Limits (in mm)
1	8 ± 0.5	Depth Gauge	H-8.5 L-7.5
2	4.5 ± 0.1	Dial set up	Go-4.6 No Go-4.4
3	$13.2 + 0.1$ $-\emptyset 0.0$	Plug	Go-13.2 $\emptyset$ No Go 13.3
4	$11 \emptyset + 0.1$ $- 0.0$	Plug	Go-11 $\emptyset$ No Go-11.1
5	6.3 ± 0.1 $-\emptyset 0.02$	Plug	Go- 6.28 $\emptyset$ No Go- 6.4
6	1 ± 0.1	Depth Gauge	H- 1.1 L- 0.9
7	32.5 ± 0.1	Dial set up	H- 32.6 L- 32.4
8	$17.15 \emptyset \pm 0.15$	Plug	Go- 17 $\emptyset$ No Go- 17.3
9	$\frac{3}{4}$ NGT	Standard Thread Ring Gauge Standard Truncation Gauge L1 L8 All these gauges - L ₁ , L ₈ & Truncation Gauge must have dial set up – as per IS:15894	
10	$9/ \emptyset$ TPT WHITWORTH	Thread Plug	
11	$10.1 \emptyset \pm 0.15$ 0.0	Plug	Go- 10.1 $\emptyset$ No Go- 10.25
12	$20.5 \emptyset + 0.2$ $- 0.0$	Snap	Go- 20.7 $\emptyset$ No Go- 20.5
13	15.3 ± 0.2 0.0	Dial Set up	H-15.5 L- 15.25
14	$12 \emptyset + 0.1$ -0.0	Plug	Go- 12 $\emptyset$ No Go- 12.1
15	$22.4 \emptyset \pm 0.0$ 0.4	Vernier or Profile Projection	Go- 22.4 $\emptyset$ No Go- 22.2
16	6.8 ± 0.2 0.0	Template	Go- 6.8 No Go- 7
17	$25.6 \emptyset \pm 0.1$ 0.0	Snap	Go- 25.7 $\emptyset$ No Go- 25.6

For Type 2 and Type 4 thread gauges
Thread size Type 4 (1:8 thread)

Gauges required

- 1) Plain Ring gauge for checking
Major Dia at small end - 'G'
- 2) Plain Ring gauge for checking
Major Dia at large end - 'H'
- 3) Pitch Dia thread Ring gauge – 'F'
- 4) Full Form thread Ring gauge – 'E'

As per IS:7202

All four gauges should satisfy the thread.

Thread size Type 2 (3:25 thread)

Gauges required

- 1) Plain Ring gauge for Major Diameter
I - 9
- 2) Plain Ring gauge for Major Diameter
I – 11
- 3) Threaded Ring gauge for Pitch
diameter I - 10
- 4) Threaded Ring gauge for Pitch
diameter I – 12

As per IS:9122

ANNEX – II

(Table 2 of Scheme of Inspection and Testing)

Test Method for Permanent Set Test

The purpose of set test is to ascertain the loss in compression load after being compressed for 24 hours and maintaining a gap of 0.1 to 0.3 mm in between the coils.

Test Method:

1. Test the spring for the compression load on a spring tester as per requirements given on the drawing and record the load observed.
2. The spring shall kept between two parallel plates and then compressed in such a way that there is a gap of 0.1 and 0.3 mm between the coils. The gap may be checked with the help of a feeler gauge (Strips of wax paper of known thickness may be inserted in between the coils for uniformity).
3. The spring shall be kept in the compressed condition for 24 hours after which the load shall be released. It shall then be kept for 5 hours in Free state.
4. The spring shall be checked again for load test as in (1) above.
5. The difference in the two values of the load applied in (1) and (4) above shall not be more than 100 grams.

NOTE: The spring under test should never be compressed to its solid length since it may spoil the spring and affect the results. Springs compressed to solid length shall be rejected.

ANNEX – III

(Table 2 of Scheme of Inspection and Testing)

Test for Rust-Proofness of springs (Stainless Steel)

(Nitric Acid Immersion Test)

Each lot of springs shall be subjected to rust proof test as per details given below:

1. The spring shall be degreased and buffed with a fine abrasive paper.
2. These shall then be kept immersed in a 2% Nitric Acid solution for one minute.
3. The result can be observed immediately when the material has been taken out of the Nitric Acid solution. If the material is still bright it is rust-proof; if it is black, the material is not rust-proof.

ANNEX – IV

(Table 2 of Scheme of Inspection and Testing)

CONTROL DIMENSIONS TO BE INSPECTED ON ASSEMBLED VALVES:

1. Spindle height 8.5 ± 0.3 mm to be measured with dial indicator **C**
2. Spindle travel $3.5 + 1.0\text{mm}/ - 0.0$ mm to be measured with dial indicator **C**
3. The position of joint packing viewed from the lower edge of the collar must be $0.6 + 0.3$ mm / - 0.2 mm measured with dial indicator. On account of the measuring pressure of dial indicator, this dimension is permitted to exceed the tolerance by 0.05mm on the negative side. **C**
4. In consideration of riveting and the spindle travel – the adjusting screw shall not project beyond the surface where the threads start in the valve housing. It shall be flush with this surface within $0.2 \pm 0.2\text{mm}$ **C**

STRENGTH SPECIFICATION:

5. The riveting of the adjusting screw at the inlet of the valve should be checked for unscrewing torque which should be 5 kg-cm minimum.

NOTE: **C** – Critical Dimension

ANNEX – V

(Para 5.7 of Scheme of Inspection and Testing)

1. Before inspection all rubber components shall be cleaned of all the moulding wax by washing them in hot water at 65°C .
 - 1.1 After washing, the rubber components should be completely air-dried.
2. Rubber components with fins, burns, moulding defects, loose particles, cavities or having rough surface shall be rejected.
3. Stampings of markings on the hexagonal flats shall be effected in such a way that the internal bores of the valve housings do not get deformed. This shall be ensured with the help of certified gauges.
4. An approved drawing of all the components shall be made available to the BIS Inspecting Officer for reference.
5. Hydrostatic test shall be carried out on samples of valve housing before assembly and these may be counter checked by BIS.

6. Valve housing with pits, burrs, black spots, cracks, cavities and other defects shall be rejected.

ANNEX – VI

(Para 5.2 of the Scheme of inspection and Testing)
Test Certificate for Valve Fittings for use with LPG Cylinders IS 8737

Name of the Manufacturer	IS 8737  CM/L-----		
Certificate No:	Date:		
Purchaser:			
Order No.			
Control Unit No:	Batch No		
Quantity offered for inspection			
VALVE FITTINGS DESCRIPTION			
This is to certify that the valve fittings as mentioned below were inspected at M/s. ----- and these meet the requirements of IS 8737: 2017 and Drawing. No:			
RESULTS OF INSPECTION			
	No. of Valves		
	Inspected	Passed	Rejected
a) Visual inspection			
b) External threads on Valve inlet			
c) Valve outlet connection			
d) Pneumatic Test			
(i) Tightness of joint packing (in valve outlet) & Valve spindle (Clause 8.3.1 of IS 8737: 2017)			
(ii) Tightness of valve spindle and valve Housing (Clause 8.3.2 of IS 8737: 2017)			
(iii) Tightness of joint packing and housing (Clause 8.3.3 of IS 8737: 2017)			
(e) Cycle Test with batch number			
(f) Inclination test (Clause 8.3.4)			
(f) From the test records of manufacturer			
(i) Tensile Strength and % elongation			
(ii) Impact strength			
QUANTITY PASSED :			
Rejected valve fittings and the method for their disposal			
Signature:	Signature:		
Name & Designation of the representative of Licensee	Name and Designation Inspecting Officer of Bureau of Indian Standards		
NOTE: A copy of the certificate may be sent to PESO, Nagpur			

ANNEX – VII

Following method shall be adopted for inspection of I.D. of Joint Packing.

- a) ID & OD of the sealing washer shall be checked with the help of approved plug gauge and ring gauge and in the manner specified in the drawing.

No inspection of I.D. will be required after the fitment of joint packing in the valve housing

- b) Any cross check if so desired by the inspection authority shall be done on pieces which are not removed from assembled/sub-assembled valves, but from stocks inspected and kept ready for assemblies.
- c) To obviate the effect of reduced areas of contact, fitting pressure, compressibility and resilience of rubber, the plug used for checking “GO” size should measure $\varnothing 9.15\text{mm}$ (i.e., $9.3-0.15\text{mm}$), should drop freely and should weigh approx. 20 grams.
- d) The “NO GO” plug should measure $\varnothing 9.4\text{mm}$ (i.e., $9.3+0.1\text{mm}$), should weigh 20 gram approx. and should not pass through by its own weight.
- e) The same type of extra allowance of 0.05 mm could be applied for measurement/gauging of all diameters and heights.

ANNEX D

POSSIBLE TESTS IN A DAY

Sr No	Tests	Clause reference
1.	Tensile Strength & Elongation	Cl. 4.3
2.	Impact Strength	Cl. 4.4
3.	Screw Threads on the valves Stem and in cylinder Neck (Valve inlet)	Cl. 5
4.	Valve outlet Connections	Cl 6
5.	Dimensions	Cl 7.1 to 7.5
6.	Hydrostatic test	Cl. 8.2
7.	Pneumatic test	Cl. 8.3.1, 8.3.2 and 8.3.3
8.	Inclination test (applicable for APSCV only)	Cl. 8.3.4
9.	Cycle test	Cl.9.2
10.	Vibration test (applicable for APSCV only)	Cl. 9.6

ANNEX E**Scope of Licence**

“Licence is granted to use Standard Mark as per IS 8737: 2017 with the following scope:	
Name of the product	Valve Fittings for Use with Liquefied Petroleum Gas (LPG) of up to 250 litre Water Capacity
Variety/Size	
Any other aspect required as per Standard	PESO approved drawing number and approval number
Valve fitted with Anti-Pilferage Device (APD) OR Valve without Anti-Pilferage Device (APD)	