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स्वचल वाहन - हवा भरे टायरों के लिए वाल्व एवं वाल्व सहायक अंग- विशिष्टि
(छठवाँ पुनरीक्षण)

Draft Indian Standard

**AUTOMOTIVE VEHICLES - VALVES AND VALVE ACCESSORIES FOR
PNEUMATIC TYRES-SPECIFICATION**
(*Sixth Revision*)

ICS: 43.040.60; 83.160

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FOREWORD

(Formal clause to be added later on)

This standard was first published in 1979 and was revised in 1985, 1992, 2001, 2011 and 2017. This revision has been undertaken to update the standard based on industry practices and incorporate latest development in the field. Following are the major changes in this revision:

- a) Tolerance on rubber Base diameter changed to +1 /-2;
- b) Truck & Bus valves with base diameter 70 added;
- c) New Truck & Bus valves with base diameter 95 and with 10V2 threads & optional core chamber No.3 regularized;
- d) JS 430, PVR 70, F 35 3 17, TR 416S, TR 416, V3.20 Series, V3.22.1, TR 542 Series, TR 570 Series, TR 618A , V3-18 Series, TR J690 series Valves added;
- e) Modifications in figures and tolerances have also been done in order to align them with the present worldwide practices;
- f) In this revision of standard updated valves with optional Core Chamber No.3 wherever applicable; and
- g) Valve accessories added for standardization.

Valves designation system comprising six character alpha-numeric code derived from their major functional as well as basic dimensional characteristics as per IS 10939 : 2023 'Designation system for tyre tube valves for automotive vehicles (first revision), has been used in this standard.

A list of widely used valves with their valve designation along with TR&A, ETRTO and JATMA valve codes is given in Annex A.

The composition of the committee responsible for formulation of this standard is given in Annex XXX (Will be added later).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2: 2022 'Rules for rounding off numerical values (second revision)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

**AUTOMOTIVE VEHICLES — VALVES AND VALVE ACCESSORIES FOR
PNEUMATIC TYRES — SPECIFICATION**
(Sixth Revision)

1 SCOPE

This standard specifies the dimensions, materials, tests and acceptance standards for valves and valve accessories for tyre tubes as supplied for application with inner tubes, and valves for use with automotive vehicles including two wheeled vehicles, off-the-road vehicles and animal drawn vehicles. This standard gives those dimensions of commonly used valves which are important for fitment and interchangeability. Although the tests for valve cores have been included, the dimensions for valve core chambers have not been included since the same is covered in IS/ISO 20562 ‘Tyre Valves-ISO Core Chambers No. 1, No. 2 and No. 3’. Valve caps are also not covered in this standard since these are covered by IS 9453 ‘Specification for valve caps for tyre tube valves for automotive vehicles.’

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS/Other Standards</i>	<i>Title</i>
IS 319 : 2007	Free cutting leaded brass bars, rods and sections (<i>fifth revision</i>)
IS 2500 (Part 1) : 2000	Sampling inspection procedures: Part 1 Attribute sampling plans indexed by acceptance quality level (AQL) for lot-by-lot inspection (<i>second revision</i>)
IS 2704 : 1983	Brass wires for cold-headed and machined parts (<i>first revision</i>)
IS 3168 : 1981	Specification for brass strip and foil for deep drawing (<i>first revision</i>)
IS 3400 (Part 2) : 2014	Methods of test for rubber, vulcanized or thermoplastic Part 2 determination of hardness section 2 hardness between 10 IRHD and 100 IRHD
IS 4170 : 1967	Specification for brass rods for general engineering purposes
IS 6912 : 2005	Copper and copper alloy forging stock and forging-Specification (<i>first revision</i>)
IS/ISO 4570 : 2002 10939 : 2021	Tyre valve threads Designation system for tyre tube valves for automotive vehicles (<i>first revision</i>)

ISO 14960-Part1: 2014 Tubeless tyres Valves and components Part 1: Test methods

IS/ISO 14960-Part 2: 2014 Tubeless tyres - Valves and components: Part 2 clamp - In tubeless tyre valve - Test method

3 VALVE CLASSIFICATION

3.1 Rubberized Valves

- a) Truck valves;
- b) Passenger car valves;
- c) Motor cycle valves, scooter valves, moped (light duty) valves; and
- d) Off-the-road vehicles (OTR) valves, agricultural tractor (including power tiller) valves and animal drawn slow moving vehicle (ADV) valves.

3.2 Supply Condition of Valves

- a) Unless otherwise specified, valves as per respective designation indicates straight form;
- b) Valve designation with suffix 'SB' indicates 'Single bend' form; and
- c) Valve designation with suffix 'DB' indicates 'Double bend' form.

4 DIMENSIONS AND DESIGN FEATURES

4.1 Dimensional tolerances, in mm (*see* Fig.1) shall be as follows (*unless specified*):

Effective length	:	+ 1.00 - 2.00
Rubber base diameter	:	+ 1.00 -2.00
Rubber base thickness	:	± 0.50
Bend height	:	± 1.5
Bend length	:	± 4.0
Bend angle	:	± 2°

4.2 The basic dimensions of the valves classified in 3.1 shall conform to those in Fig. 2 to Fig. 41.

4.3 Details of valve threads shall conform to IS/ISO 4570.

4.4. The basic dimensions of the valves accessories shall conform to those in Fig. 42 to Fig. 59.

5 VALVE DESIGNATION

5.1 Valves shall be designated in accordance with IS 10939.

5.2 Reference may be made to IS 10939 for examples and details for designating widely used valves.

6 REQUIREMENTS FOR RUBBERIZED VALVES

6.1 Material

The metal stems of inserts may be made from brass conforming to IS 319 or IS 2704, IS 4170, IS 6912 or any other suitable brass material. The rubber base shall be butyl rubber / Halo butyl rubber /butyl EPDM and its derivatives and blends. Natural rubber and its derivatives and blends may also be used, if specified by the purchaser.

6.2 Bendability of Valve Stem

6.2.1 Truck valves shall be bendable to 90° and scooter valves to 55° and 90° with the help of the appropriate valve bending tools, without breaking or cracking during bending.

6.3 Hardness

The rubber forming the valve base shall be tested for hardness either by a shore Type A durometer, if practicable or an IRHD Micro-hardness Tester. The hardness shall be between 58 to 73 measured on the shore Type A durometer or on the IRHD Micro-hardness Tester. The testing shall be done in accordance with IS 3400 (Part 2).

6.4 Pull-Out Strength of Rubber Base

Rubber covered valves when tested for stem pull out strength according to **6.4.1**, shall meet the minimum breaking load values specified in **6.4.2**.

6.4.1 Procedure

The rubber base of the valve shall be clamped in a fixture and the cap thread or body thread shall be screwed on the threaded adapter on a suitable tensile testing machine. The hole in the fixture through which the valve comes out shall be 15 mm in diameter for moped valves (*see* Fig 30), 22.2 mm in diameter in case of scooter and motor cycle valves (smaller base diameter) (*see* Figs. 27, 28, 31 and 32) and 31.8 mm diameter for other valves and *38mm for large bore spuds* (*see* Fig.35). A direct pull shall be made at the rate of 15.0 cm/min until the rubber base separates from the stem. The minimum pull out values shall determine conformance of the quality to the acceptable standard.

6.4.2 Minimum breaking (Pull out) load values shall be as follows:

Sl. No.	Valve Type	Valve Designation	Minimum Breaking Load (Pull Out Values) N
(1)	(2)	(3)	(4)
i)	Scooter valves	A 40 2 45 A 47 2 45	450 450
ii)	Motor cycle valves	A 29 1 45	450
iii)	Moped valves	A 29 1 32	350

iv)	Passenger car valves	B 35 3 57 B 35 4 57 B 35 5 57 B 49 5 57 B 35 1 57 B 46 3 57 B 57 3 57	450 500 700 700 350 450 450
v)	Agricultural vehicle off-the-road (OTR) vehicle and animal drawn vehicle valves	B 20 5 63 / B 20 5 82 B 30 5 63 / B 30 5 82	900 900
vi)	Truck and bus valves	A 65 5 82 / A 65 5 95 A 83 5 82 / A 83 5 95 A 97 5 82 / A 97 5 95 A A6 5 82 / A A6 5 95 A B1 5 82 / A B1 5 95 A B4 5 82 / A B4 5 95 A C3 5 82 / A C3 5 95 A D4 5 82 / A D4 5 95 A E7 5 82 / A E7 5 95 A G0 5 82 / A G0 5 95 A 95 5 95	1750 1750 1750 1750 1750 1750 1750 1750 1750 1750 1750
vii)	Spud for large bore	L 08 6 B4	2000

6.5 Adhesion Test

Adhesion test is conducted to test the bond between metal and rubber. In all cases, adhesion shall be considered to be unacceptable, if the total area of separation between brass and rubber, or brass and cement, or cement and rubber is in excess of 41 mm².

6.5.1 Method of Checking

After subjecting the valve to the hot air treatment (*see 6.5.2*) the rubber cover over the stem or metal insert shall be cut down to the metal face. Each side of the cut rubber base or cover shall be gripped suitably and the rubber pulled away from the metal using pliers. As much rubber as possible, shall be removed from the base of the valve and the sides of the insert and the area of separation for rubber to metal bond shall be examined.

6.5.2 Hot Air Treatment

The valves for the adhesion test (*see 6.5*) shall be kept in hot air at a temperature of 165 ± 2°C for 10 min and allowed to cool down to room temperature before testing for adhesion.

6.6 Buffing

Valves shall be buffed (if required, by the purchaser) on the rubber base side which is to be vulcanized on to tubes. Buffing shall not be too rough or too smooth and the rubber base edge shall have a light feathery finish.

6.7 Workmanship

Valves shall be free from defects like incomplete rubber base, blisters larger than the size of a pin head, incomplete or damaged threads, foreign matter embedded in rubber base and cracks or cuts on rubber base or on the metal stem. The through hole in the valve stem shall be perfectly clear. Bloom shall be avoided to the extent of impairing of adhesion of valve base with the tube.

6.8 Marking

Containers of valves shall be clearly marked with the following:

- a) Valve designation; and
- b) Indication of source of manufacturer or code.

If practicable the above markings may also be carried out on the stem of the valve, or on the rubber with or without equivalent TR Code or ETRTO Code.

6.9 REQUIREMENT FOR TUBELESS VALVES

- a) For test methods of rubber covered tubeless snap in valves, refer ISO 14960 - Part 1
- b) For test methods of tubeless clamp-in valves, refer IS/ISO 14960 - Part 2

7 VALVE CORE (*see Fig. 27*)

7.1 Materials

Valve core components may be manufactured from brass conforming to IS 319, IS 2704 or IS 3168 or any other suitable materials. The spring may be made from brass, phosphor bronze or stainless steel wire. The sealing washer material may be synthetic rubber or polymer.

7.2 Valve Core Leakage

Valve cores shall not leak (in excess of one bubble per minute) when tested according to **7.2.1**.

7.2.1 The core shall be fitted into a tested valve stem with a torque of 0.23 to 0.56 Nm for core chamber No.1 and 3 and 0.34 to 0.56 Nm for core chamber No.2. Any desired pressure up to 900 kPa shall then be applied from the back of the valve while the tip of the valve is kept immersed in water, mouth downwards.

7.3 Valve Core Interchangeability

Valve core shall be interchangeable. Valve cores shall be made to dimensions such that when installed and properly tightened in valves, the core pin shall not extend above the level of the tip end of the valve by more than 0.25 mm or below the tip end of the valve by more than 0.9 mm.

7.4 Acceptable Operating Temperatures

The temperatures range of the valve cores functioning shall be between - 40°C and 100°C.

7.5 Marking

The packing / container of the valve core shall be marked with the valve core designation and indication of source of manufacturer or code. Valve Cores may not be marked, if it is not practicable to do so.

7.6 Workmanship

Valve cores shall be free from foreign matter, broken washer, etc. which lead to leakage.

8 QUALITY ASSURANCE PROVISION

8.1 Criteria of Conformity and Sampling for Inspection and Tests

8.1.1 For the purpose of ascertaining conformity to this standard, the extent of sampling and the criteria of conformity shall be subject to agreement between the purchaser and the manufacturer.

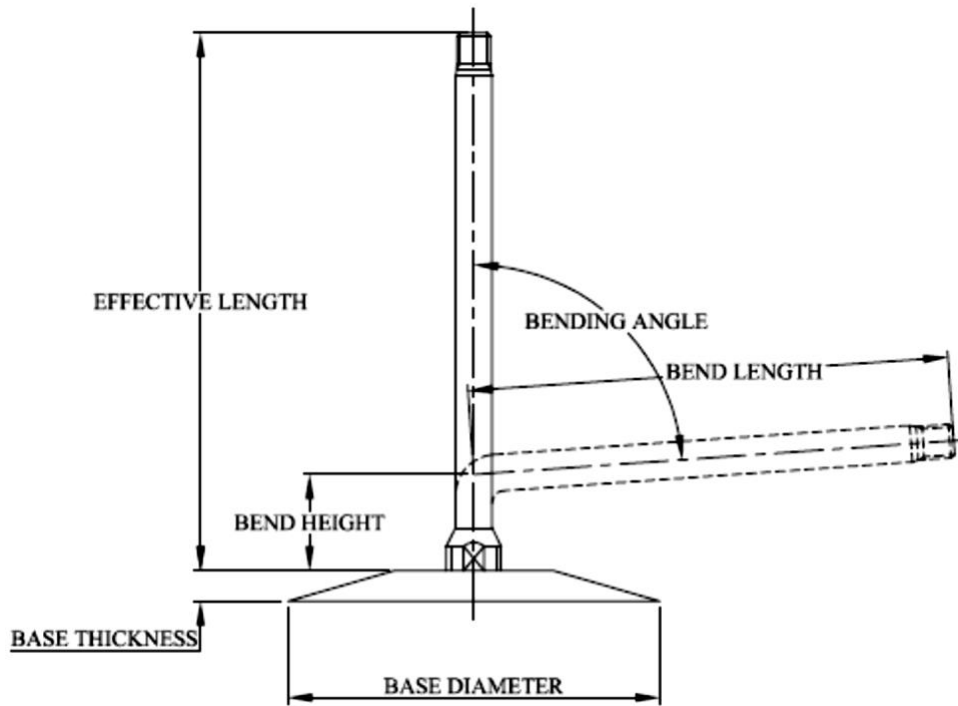
8.1.2 Unless otherwise agreed, the manufacturer is responsible for carrying out all inspection and test requirements as specified herein.

8.2 Sampling shall be according to IS 2500 (Part 1) and the samples shall be selected as per agreement between the manufacturer and the purchaser.

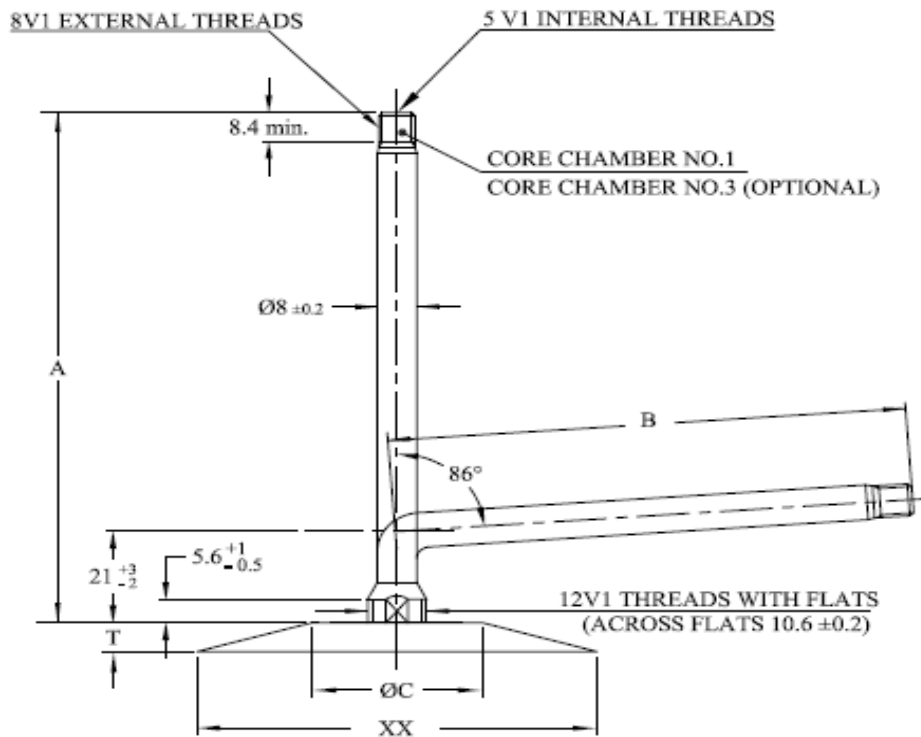
9 BIS CERTIFICATION MARKING

9.1 The product may also be marked with the Standard Mark.

9.2 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards



All dimensions in millimeters
FIG. 1 DIMENSION TOLERANCES

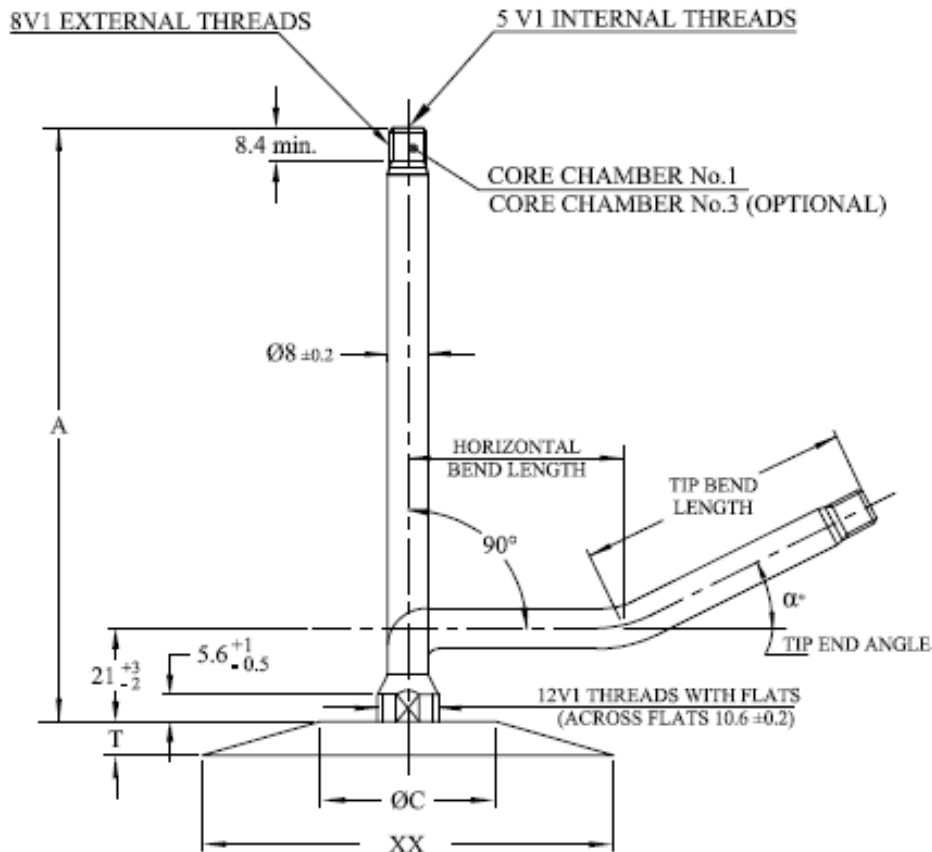


Valve Designation ¹⁾	A	B
A 65 5 XX	65	48
A83 5 XX	83	66
A 97 5 XX	97	80
A A6 5 XX	106	89
A B1 5 XX	111	94
A B4 5 XX	114	97
A C3 5 XX	123	106
A D4 5 XX	134	117
A E7 5 XX	147	130
A G0 5 XX	160	143
¹⁾ Designation with suffix 'SB' indicates single Bend Valve		

XX: For Valves having base diameter 82, T = 7, ØC = 28 max.
 For Valves having base diameter 85, T= 6.7, ØC = 20 max.

XX: i.e., 82 or 95 may be marked either on metal insert or on the rubber has or valve

All dimensions in millimeters
 FIG. 2 TRUCK AND BUS VALVES



Valve Designation ¹⁾	A	Horizontal Bend Length	Tip End Angle (α°)	Tip Bend Length
A 97 5 XX	97	35	31°	48
A A6 5 XX	106	40	31°	51
A B4 5 XX	114	46	26°	54
A E7 5 XX	147	63	21°	70
A G0 5 XX	160	75	21°	70

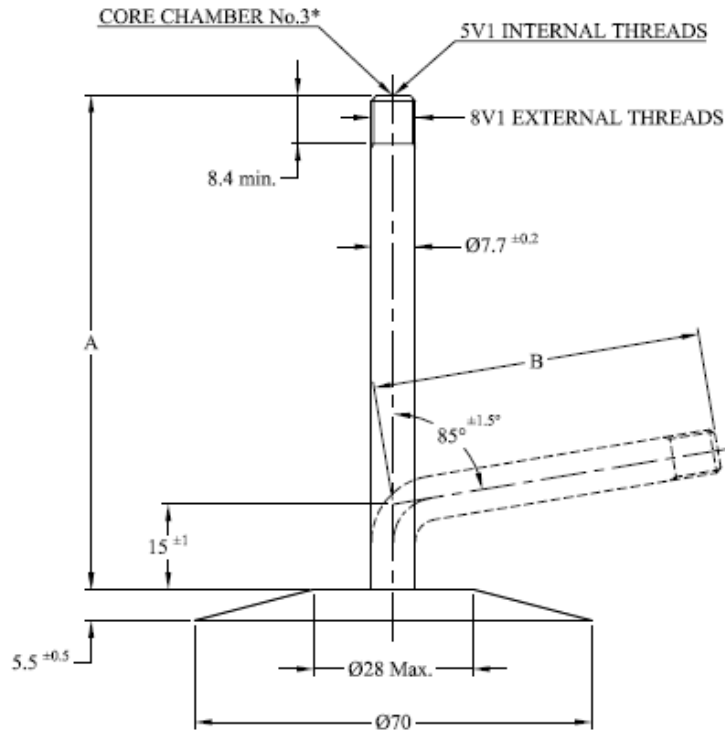
¹⁾ Designation with suffix 'DB' indicates Double Bend Valve

XX: For Valves having base diameter 82, T = 7, $\text{Ø}C$ = 28 max.

For Valves having base diameter 95, T = 6.7, $\text{Ø}C$ = 20 max.

XX i.e., 82 or 95 may be marked either on metal insert or on the rubber base of valve

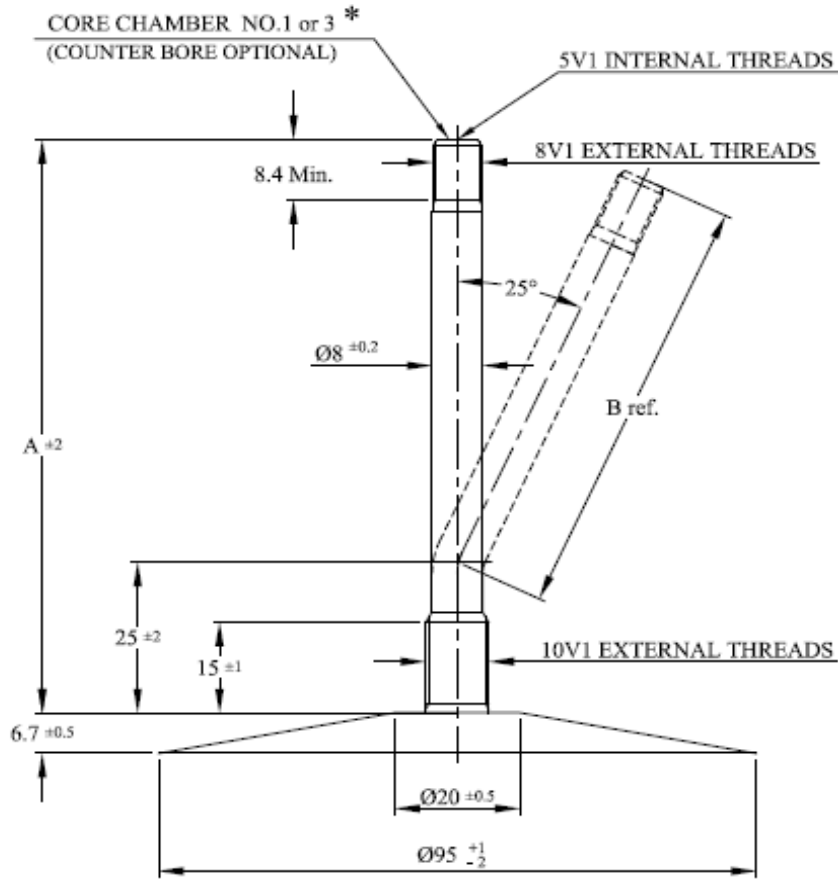
All dimensions in millimeters
 FIG. 3 TRUCK AND BUS VALVES



Valve Designation 1)	A	B
A 85 5 70	85	75
A A5 5 70	105	95
A B5 5 70	115	105
A C5 5 70	125	115
A E5 5 70	140	130
A F5 5 70	155	145
"Designation with suffix 'SB' indicates Single Bend Valve		

NOTE — ACCOMMODATES SHORT CORE ONLY

All dimensions in millimeters.
 FIG. 4 TRUCK AND BUS VALVES

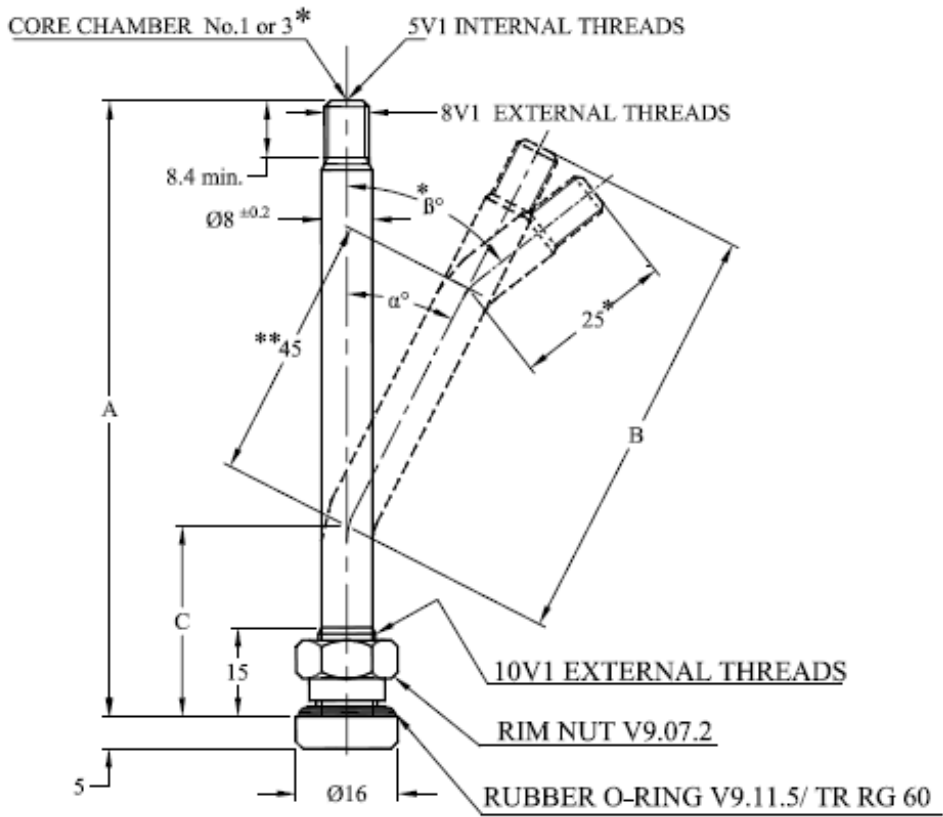


Valve Designation ¹⁾	A	B
A95 5 95	95	70
¹⁾ Designation with suffix 'SB' indicates Single Bend Valve		

* Accommodates shorts core only
 Accessories to be used: TR RW8 Ring washer & V9-07-2 Nut

Valve designation may be marked either on metal insert or on the rubber base of value

All dimensions in milimeters.
FIG. 5 TRUCK AND BUS VALVES



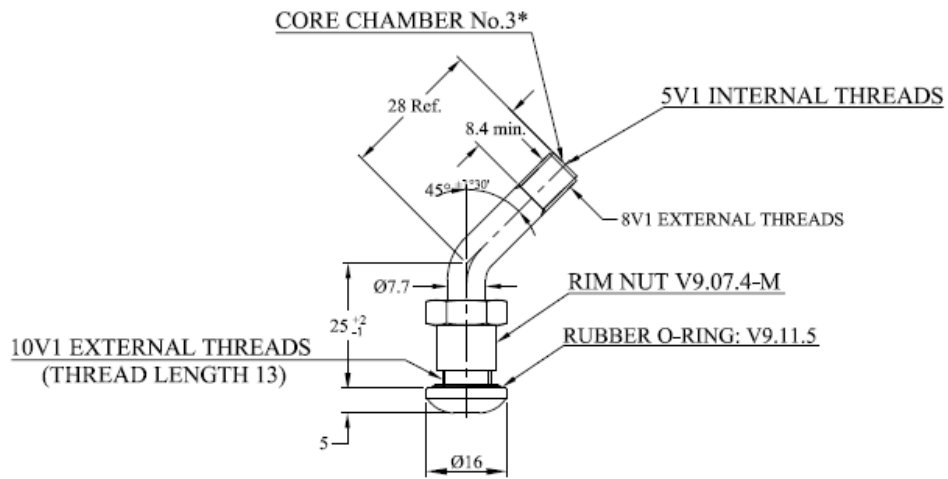
Valve Designation (ETRTO)	A	$B^{±2}$	$C_{-1}^{±2}$	α°	β°	Valve Hole Size in Rim	Installation Torque
V3.20.1	36	-	-	-	-	$\varnothing 9.7^{+0.3}_0$	12 - 15 Nm
V3.20.2	90	60	30	17°30'	-		
V3.20.3	82						
V3.20.4	-	60	25	27	-		
V3.20.5		40	25	27	-		
V3.20.6		85	25	27	-		
V3.20.7		50	25	27	-		
V3.20.8		85	29	12	-		
V3.20.9		52	45	12	-		
V3.20.10	-	25	50	27	-		
V3.20.11	95	.	25	27	42		
V3.20.12	-	70	25	27	-		

** FOR V3-20-11 ONLY

ACCOMMODATES SHORT CORE ONLY

All dimensions in millimeters.

FIG. 6 TUBELESS CLAMP-IN TRUCK AND BUS VALVE
(O-RING TYPE - ROUND BASE)

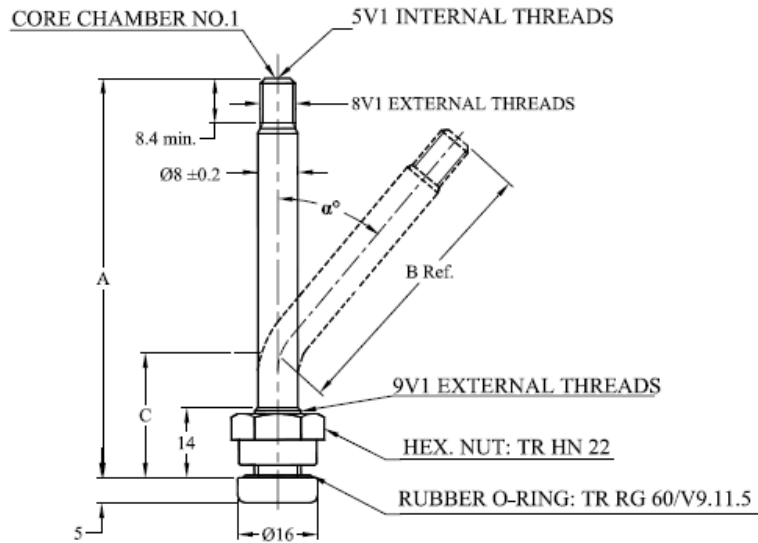


*ACCOMODATES SHORT CORE ONLY

Valve Designation (ETRTO)	Valve Hole Size in Rim	Installation Torque
V3.22.1	$\varnothing 9.7^{+0.3}_0$	12-15 Nm

All dimensions in millimetres.

FIG. 7 TUBELESS CLAMP-IN TRUCK AND BUS VALVE (O-RING TYPE - ROUND BASE)

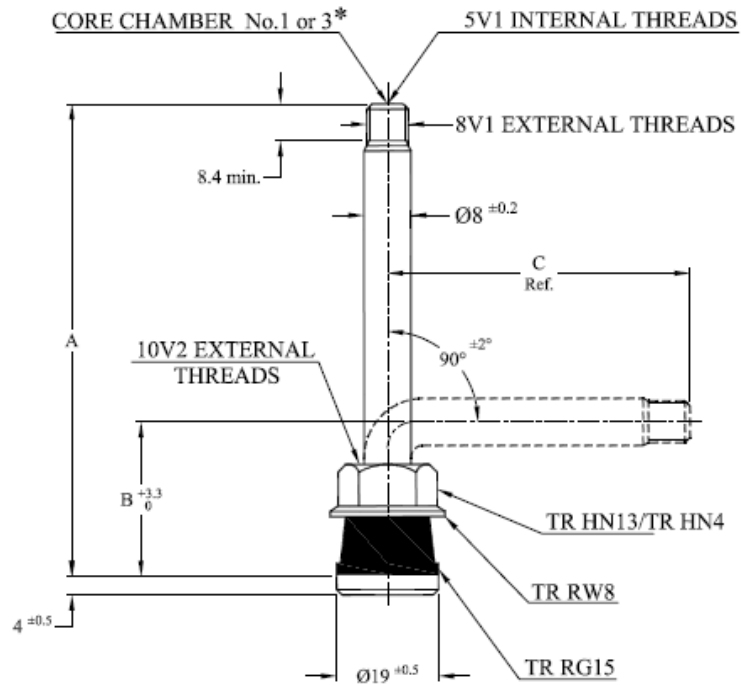


Valve Designation (TR Code)	A	B ± 2	C ⁺² ₋₁	α° ±2	Valve Hole Size in Rim	Installation Torque
TR 542	32	-	-	-	Ø9.7 ^{+0.3} ₀	12-15 Nm
TR 543	59	-	-	-		
TR 543C	59	36.5	23.5	45		
TR 543D	59	35	25	60		
TR 543E	59	35	25	75		
TR 544	73	-	-	-		
TR 544C	73	49	25	45		
TR 544D	73	49	25	60		
TR 545	89	-	-	-		
TR 545D	89	66	25	60		
TR 545E	89	66	25	75		
TR 546	108	-	-	-		
TR 546-36	108	85	25	36		
TR 546 D	108	85	25	60		
TR 546E	108	85	25	75		
TR 547 D	119	96	25	60		

*ACCOMODATES SHORT CORE ONLY

All dimensions in millimetres.

FIG. 8 TUBELESS CLAMP-IN TRUCK AND BUS VALVE
(O-RING TYPE - ROUND BASE)

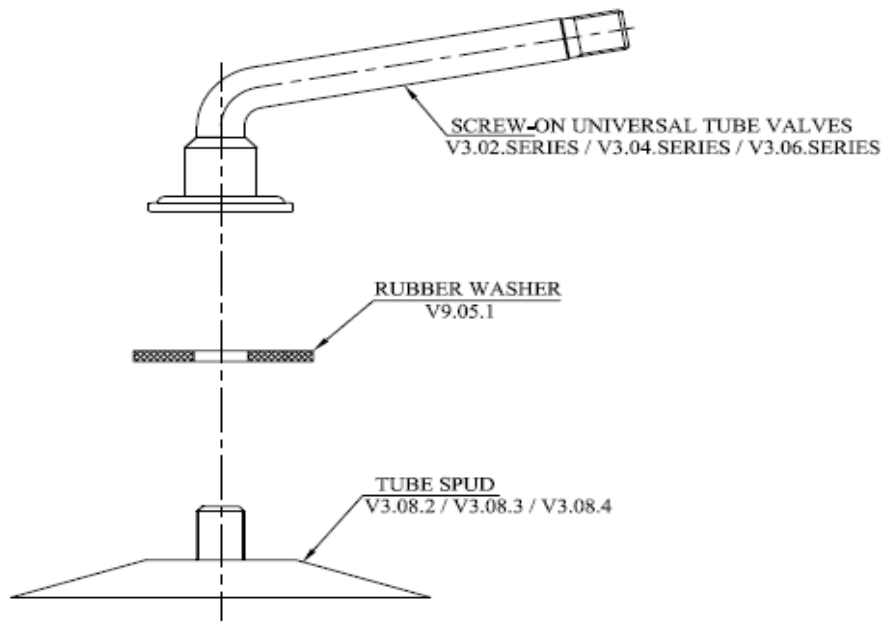


Valve Designation (TR Code)	A	$B^{+3.3}_0$	C Ref.	Valve Hole Size in Rim	Installation Torque
TR 575	29	-		$\text{Ø}15.7^{+0.3}_0$	4-6 Nm
TR 500	51	-			
TR 501	38	-			
TR 570	80	-			
TR 571	86	-			
TR 572	95	-			
TR 573	111	-			
TR 574	127	-			
TR 570C	-	33	51		
TR 571C	-	33	58		
TR 572C	-	33	67		
TR 573C	-	33	83		

*ACCOMODATES SHORT CORE ONLY

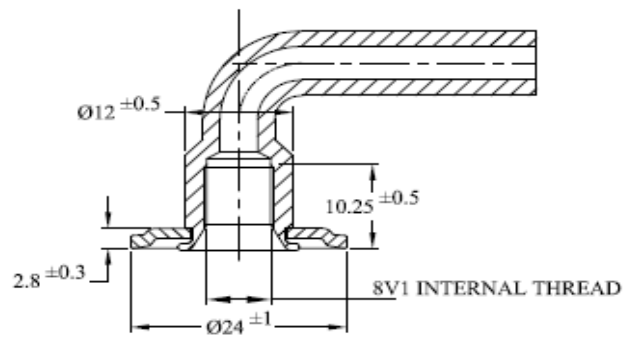
All dimensions in millimetres.

FIG. 9 TUBELESS CLAMP-IN TRUCK AND BUS VALVE
(GORMET TYPE- ROUND BASE)



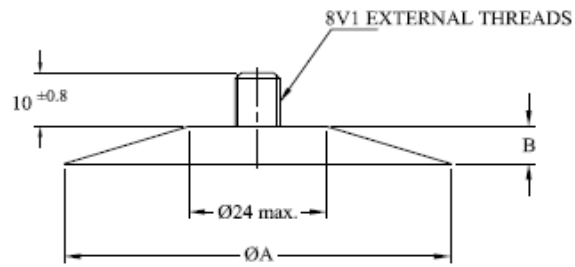
All dimensions in millimeters.

FIG. 10 SCREW-ON UNIVERSAL TUBE VALVES-ASSEMBLY



All dimensions in millimeters.

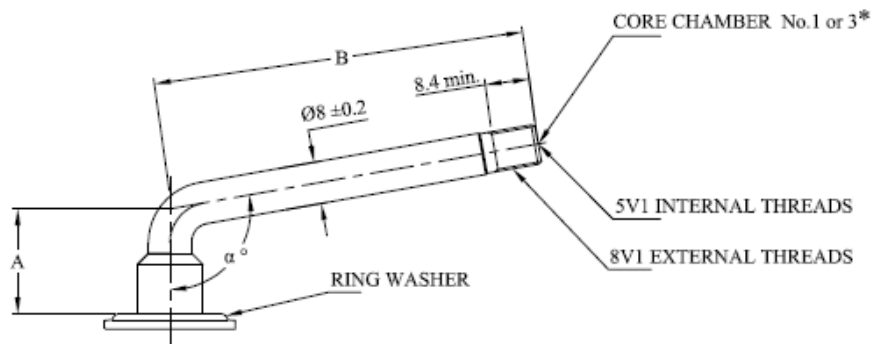
FIG. 11 SCREW-ON UNIVERSAL TUBE VALVES HEAD SHAPE-TRUCK AND BUS VALVES



Valve Designation (ETRTO)	A	B
V3.08.2	70	7
V3.08.3	80	8
V3.08.4	57	5

All dimensions in millimeters

FIG. 12 SCREW-ON UNIVERSAL TUBE VALVE SPUDS TRUCK AND BUS VALVE

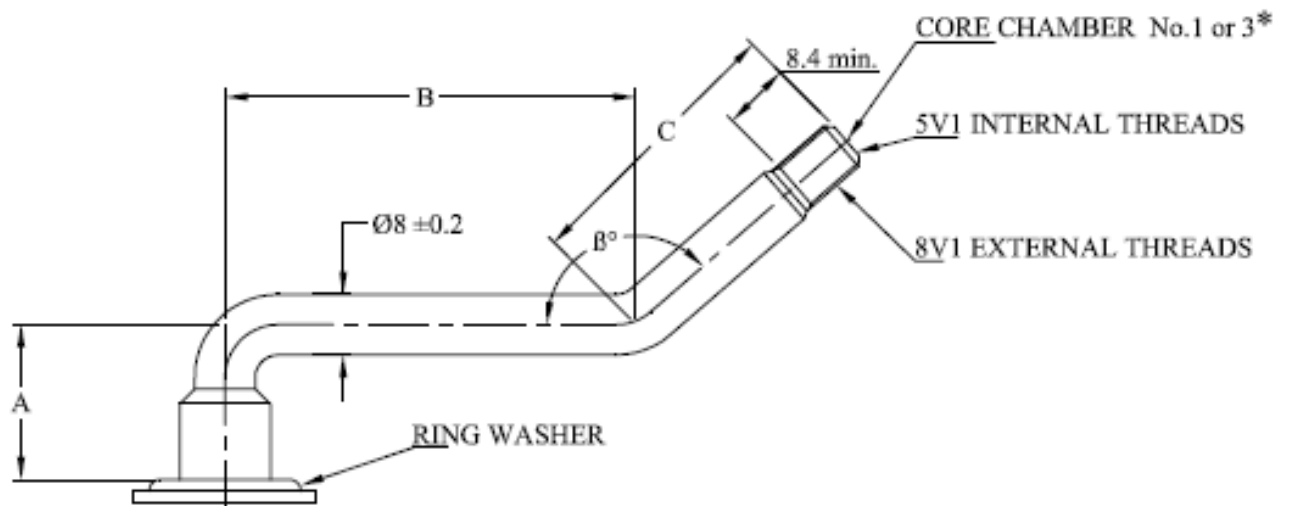


Valve Designation (ETRT0)	A	B	α°
V3.02.7	22.5	71.5	100
V3.02.8	20.5	89.5	94
V3.02.9	20.5	99.5	94
V3.02.10	20.5	115	94
V3.02.11	20	126	98
V3.02.12	20.5	132	94
V3.02.14	20.5	138.5	94
V3.02.15	20.5	145.5	94
V3.02.16	20.5	149.5	90
V3.02.18	22.5	74.5	90
V3.02.19	20.5	60	94
V3.02.20	22.5	56.4	95
V3.02.26	20.5	105	94
V3.02.27	20	75	94
V3.02.29	20	127	94

*ACCOMODATES SHORT CORE ONLY

All dimensions in millimetres

FIG. 13 SCREW-ON UNIVERSAL TUBE VALVE SINGLE BENT TRUCK AND BUS VALVES

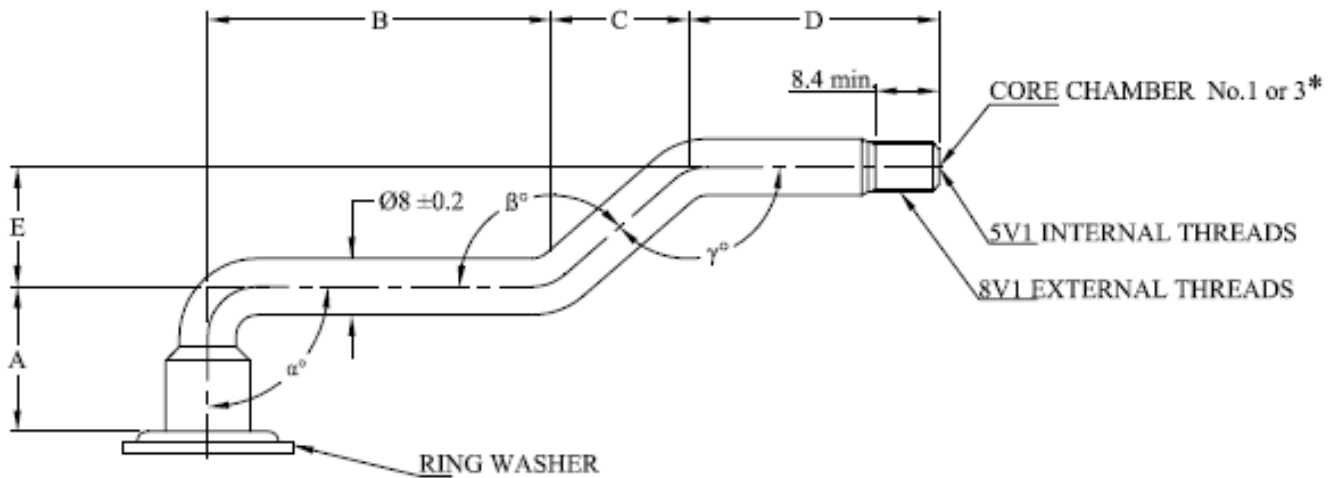


Valve Designation (ETRTO)	A	B	C	α°	β°
V3.04.4	20	74	40	94	144
V3.04.5	20	76	47.5	90	153
V3.04.6	20	86	47.5	90	153
V3.04.10	20.5	47	53	90	154
V3.04.11	20.5	47	63.5	90	154
V3.04.15	20.5	42	38.5	90	120
V3.04.21	20	83	57	94	154
V3.04.25	20	80	47	94	164

*ACCOMODATES SHORT CORE ONLY

All dimensions in millimeters

FIG. 14 SCREW-ON UNIVERSAL TUBE VALVE DOUBLE BENT TRUCK AND BUS VALVES

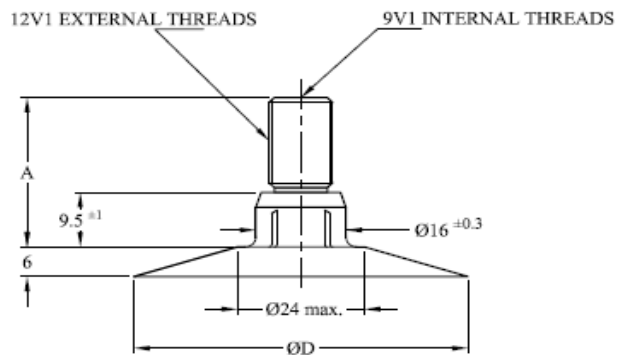


<i>Valve Designation (ETRTO)</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	α°	β°	γ°
V3.06.5	20.5	62.5	19.5	49	17	90	139	139
V3.06.6	20	79.5	19.5	37.5	17	90	139	139
V3.06.7	20.5	45.5	18.5	42.5	17	90	137	137
V3.06.8	24.5	61.5	14.5	50.5	7.5	94	153	153
V3.06.9	20.5	67.5	19.5	54.5	17	90	139	139
V3.06.16	20	62	13	50	7	94	153	153
V3.06.17	20	75	13	50	7	94	153	153

*ACCOMODATES SHORT CORE ONLY

All dimensions in millimeters

FIG. 15 SCREW-ON UNIVERSAL TUBE VALVE DOUBLE BENT TRUCK AND BUS VALVES

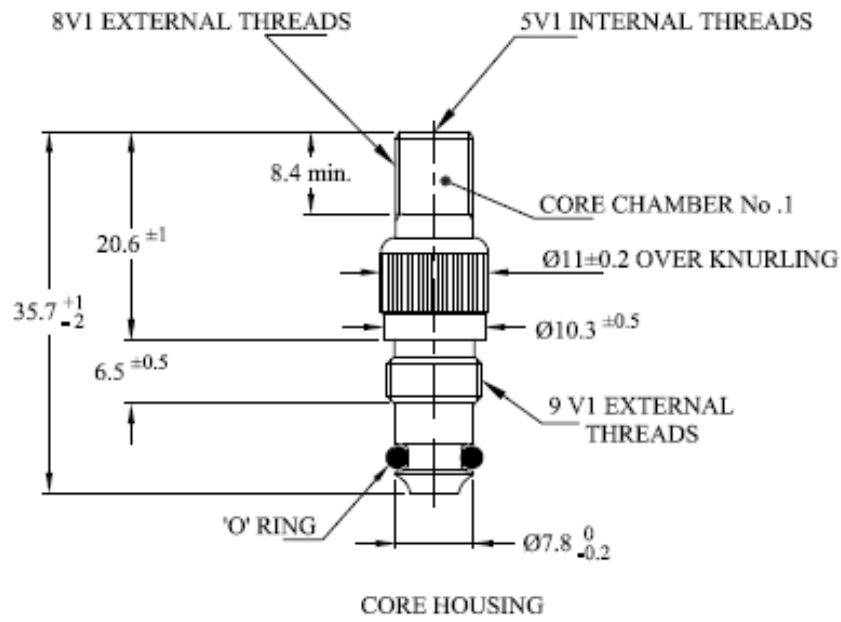


Valve Designation		A
B 20 5 63	B 20 5 82	20
B 30 5 63	B 30 5 82	30

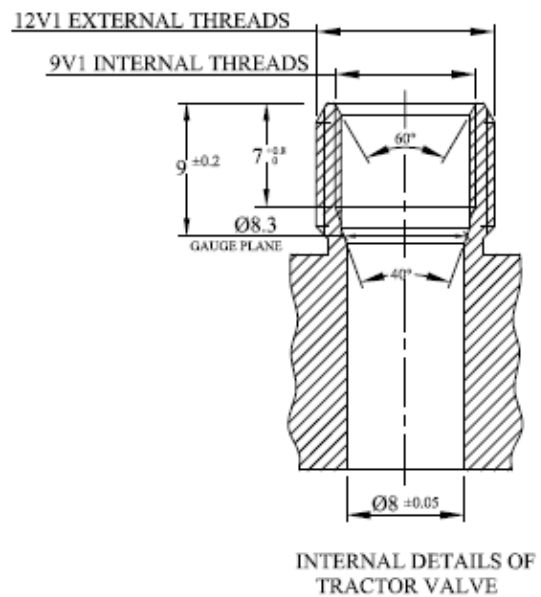
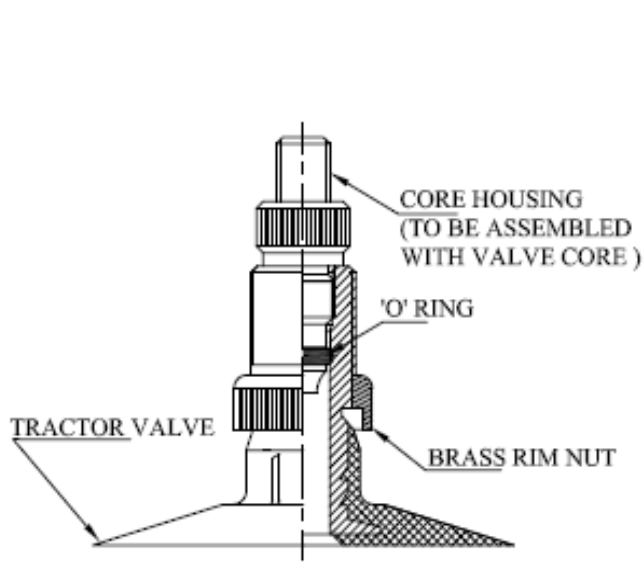
For Valves B 20 5 63 & B 30 5 63, $\text{ØD} = 63$
 For Valves B 20 5 82 & B 30 5 82, $\text{ØD} = 82$

All dimensions in millimeters

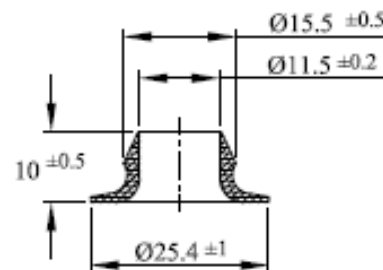
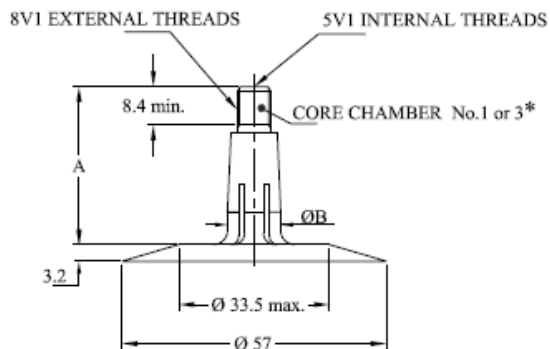
FIG. 16 TRACTOR VALVE AIR WATER FILLING TYPE
 (SEE FIG. 18 FOR ASSEMBLY)



All dimensions in millimeters
 FIG. 17 CORE HOUSING, CH3



All dimensions in millimeters
FIG. 18 TRACTOR VALVE ASSEMBLY



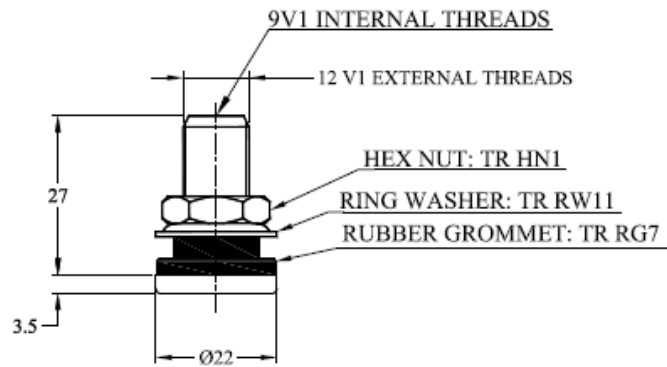
Valve Designation	A	B (±0.3)
B 35 3 57	35	11.7
B 35 4 57	35	13.1
B 35 5 57	35	16.5
B 49 5 57	49	16.5
B 35 1 57	35	9.1

NOTE — Plastic bushing to make up for B dimensions of B 35 5 57 valve where necessary, to suit old design rims of 13 to 15 nominal diameter a valve hole of 15.9 mm

*ACCOMODATES SHORT CORE ONLY

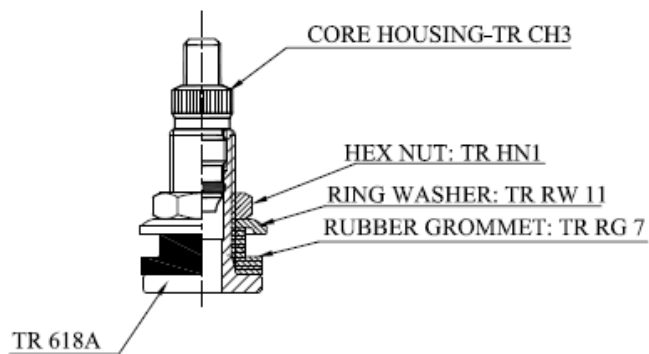
All dimensions in millimeters

FIG. 19 RUBBER COVERED TUBE VALVE — PASSENGER CAR, JEEP, SCOOTER
DERIVATIVES, FRONT TRACTOR LIGHT TRUCK, TRACTOR IMPLEMENT ANIMAL
DRAWN AND FORK LIFT



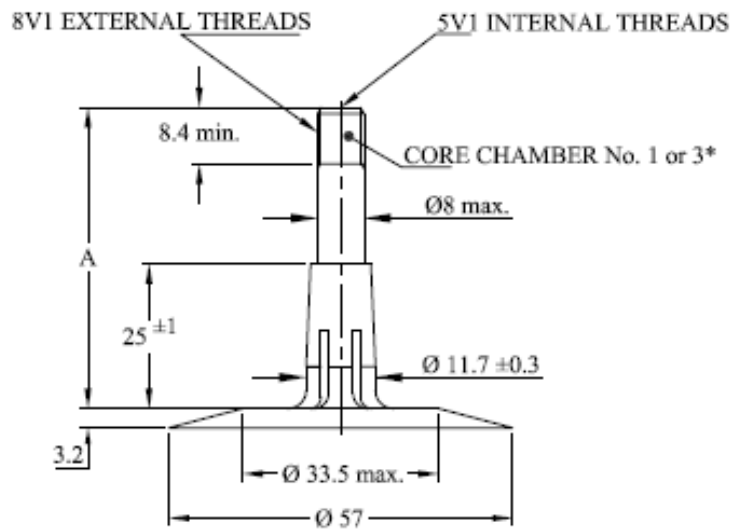
Valve Designation (TR Code)	Valve Hole Size in Rim	Installation Torque
TR 618A	$\varnothing 15.7^{+0.4}_0$	5-8 Nm

FIG. 20 TUBELESS CLAMP-IN TRACTOR VALVE AIR- WATER FILLING TYPE
 (see Fig. 21 for Assembly)



All dimensions in millimetres.

FIG. 21 TUBELESS CLAMP-IN TRACTOR VALVE ASSEMBLY

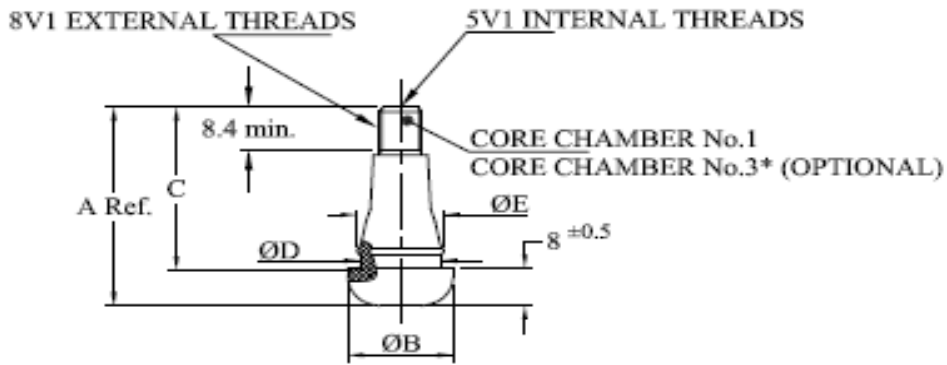


Valve Designation	A
B 57 3 57	57
B 46 3 57	46

*ACCOMODATES SHORT CORE ONLY

All dimensions in milimeters

FIG. 22 RUBBER COVERED TUBE VALVES - PASSENGER CAR



Valve Designation	A	$B \pm 0.5$	C_{-2}^{+1}	D	$E_{0}^{+0.5}$	Valve Hole Size in Rim
F 25 3 19 ¹⁾	33.0	19.5	25.5	15.0 min.	16.0	$\varnothing 11.3_{0}^{+0.4}$
F 35 3 19	42.5	19.5	35	15.0 ± 0.3	16.0	$\varnothing 11.3_{0}^{+0.4}$
F 41 3 19	48.5	19.5	41	15.0 ± 0.3	16.0	$\varnothing 11.3_{0}^{+0.4}$
F 54 3 19	61.5	19.5	54	15.0 min.	16.0	$\varnothing 11.3_{0}^{+0.4}$
F 67 3 19	74.0	19.5	66.5	15.0 min.	16.0	$\varnothing 11.3_{0}^{+0.4}$
F 49 3 19	56.5	19.5	49	15.0 min.	16.0	$\varnothing 11.3_{0}^{+0.4}$
F 35 5 24	42.5	24.0	35	19.2 min.	20.2	$\varnothing 15.7_{0}^{+0.4}$
F 54 5 24	61.5	24.0	54	19.2 min.	20.2	$\varnothing 15.7_{0}^{+0.4}$
F 35 1 16	42.0	16.0	35	12.3 min.	13.2	$\varnothing 8.8_{0}^{+0.3}$

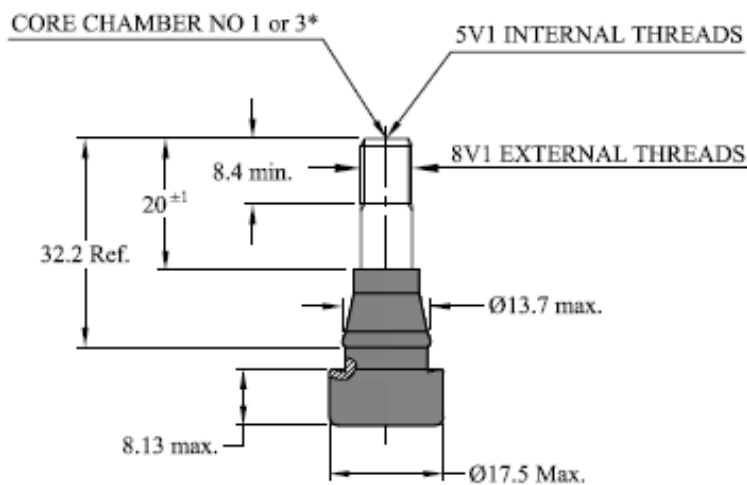
¹⁾ CORE CHAMBER NO.3 FOR F 25 3 19

*ACCOMODATES SHORT CORE ONLY

NOTE — Products for use up to 450 kPa cold inflation pressure maximum & 210 kmph maximum

All dimensions in milimeters

FIG. 23 RUBBER COVERED TUBELESS SNAP-IN VALVES



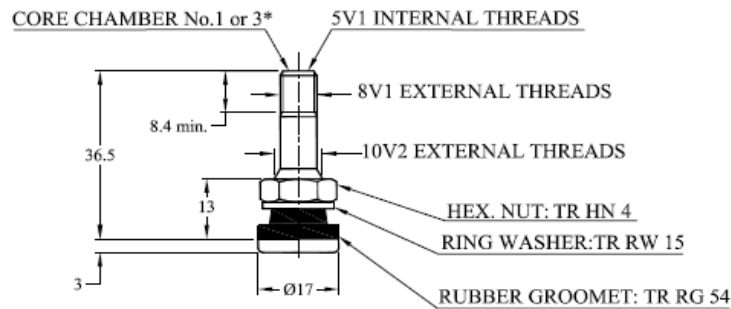
Valve Designation	Valve Hole Size in Rim
F 35 3 17	$\text{Ø}11.3^{+0.4}_0$

* Accommodates short core only

NOTE — Products for use up to 550 kPa Cold Inflation Pressure Maximum & 210 Kmph Maximum.

All dimensions in millimetres.

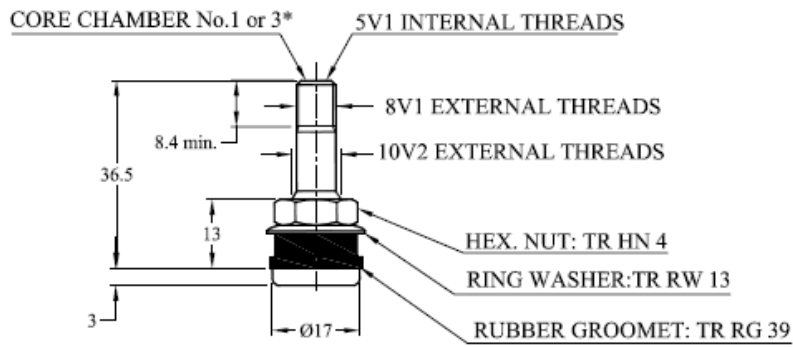
FIG. 24 RUBBER COVERED TUBELESS SNAP-IN SCOOTER VALVES



Valve Designation (TR Code)	Valve Hole Size in Rim	Installation Torque
TR 416 S	$\text{Ø}11.3^{+0.4}_0$	3-5 Nm

All dimensions in millimetres.

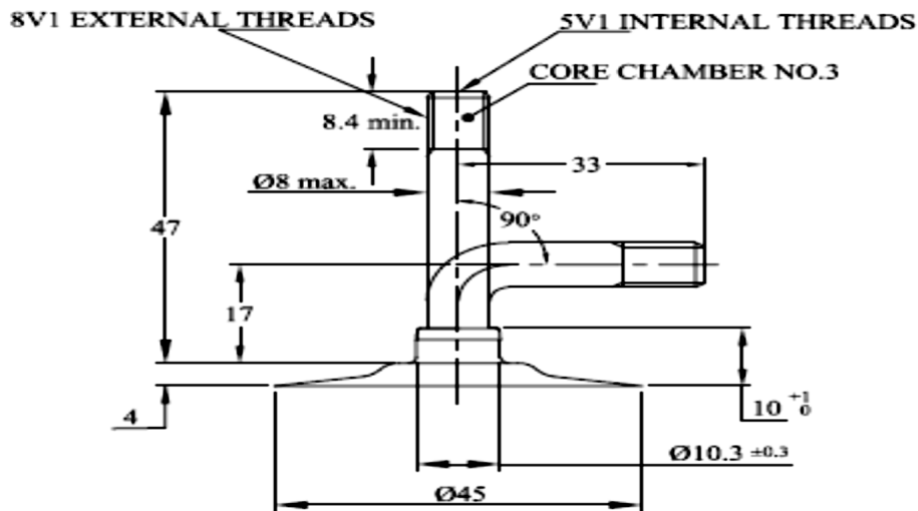
FIG. 25 TUBELESS CLAMP-IN PASSENGER CAR VALVES



Valve Designation (TR Code)	Valve Hole Size in Rim	Installation Torque
TR 416	$\text{Ø}15.7^{+0.4}_0$	3-5 Nm

All dimensions in millimetres.

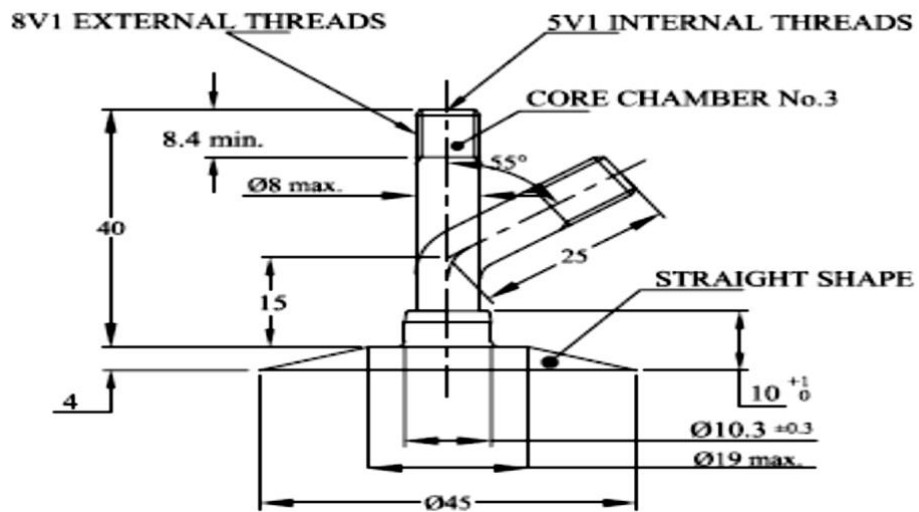
FIG. 26 TUBELESS CLAMP-IN PASSENGER CAR VALVES



NOTE —

- 1) These valve accommodate only the appropriate short core
- 2) Designation with suffix SB indicated single bent valve.

FIG. 27 SCOOTER VALVES A 47 2 45
(Base- Ball Shape/ Straight Shape)

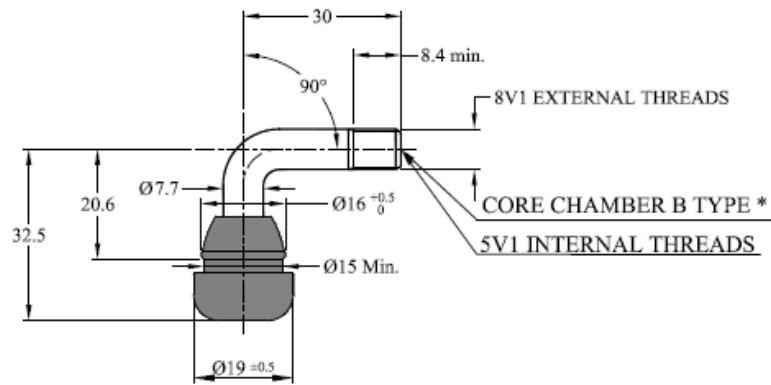


NOTES —

- 1) These valve accommodate only the appropriate short core
- 2) Designation with suffix 'SB' indicated single bent valve.

All dimensions in milimeters

FIG. 28 SCOOTER VALVES A 40 2 45
(BASE – STRAIGHT SHAPE/ BELL SHAPE)

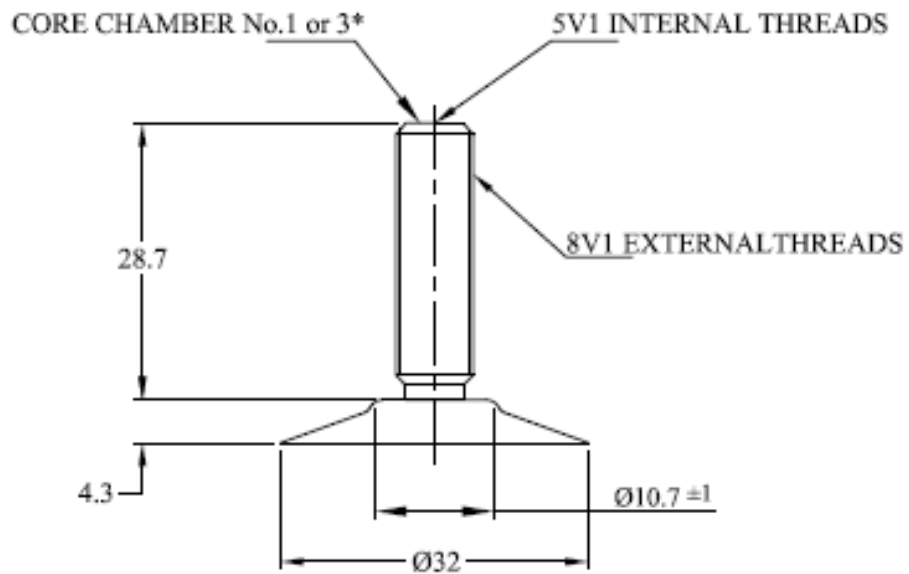


Valve Designation (JATMA)	Valve Hole Size in Rim
PVR 70	$\text{Ø}11.3^{+0.4}_0$

NOTE — Products for use up to 450 kPa cold inflation pressure maximum & 210 kmph maximum
 * Accommodates short core only

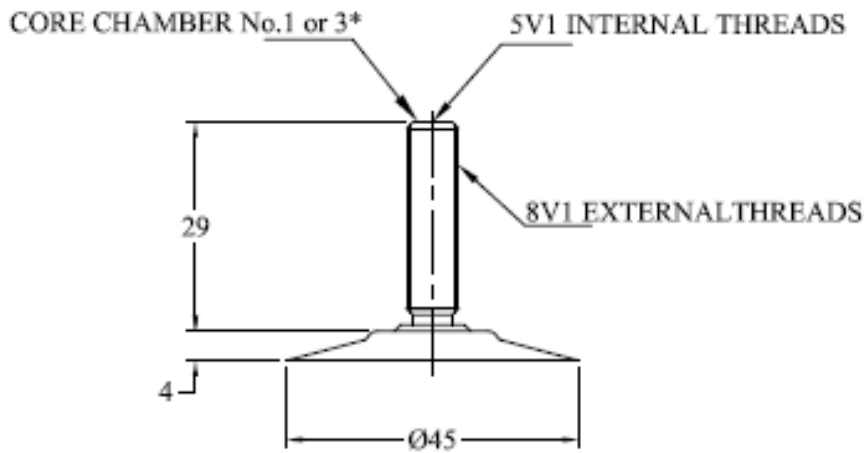
All dimensions in millimetres.

FIG. 29 RUBBER COVERED TUBELESS SNAP-IN SCOOTER VALVES



* Accomodates short core only

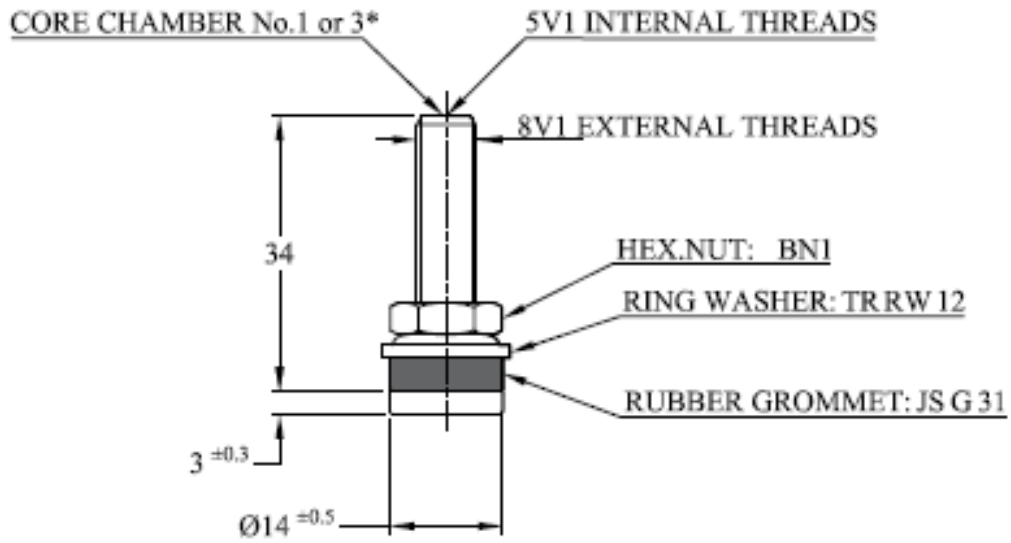
All dimensions in milimeters.
 FIG. 30 MOPED VALVE A 29 1 32



NOTE — The top of rubber base shall have an appropriate shape as shown to allow tubes at valve region to set correctly with certain shallow well rims.

* Accomodates short core only

All dimensions in millimeters
 FIG. 31 MOTORCYCLE VALVES A 29 1 45

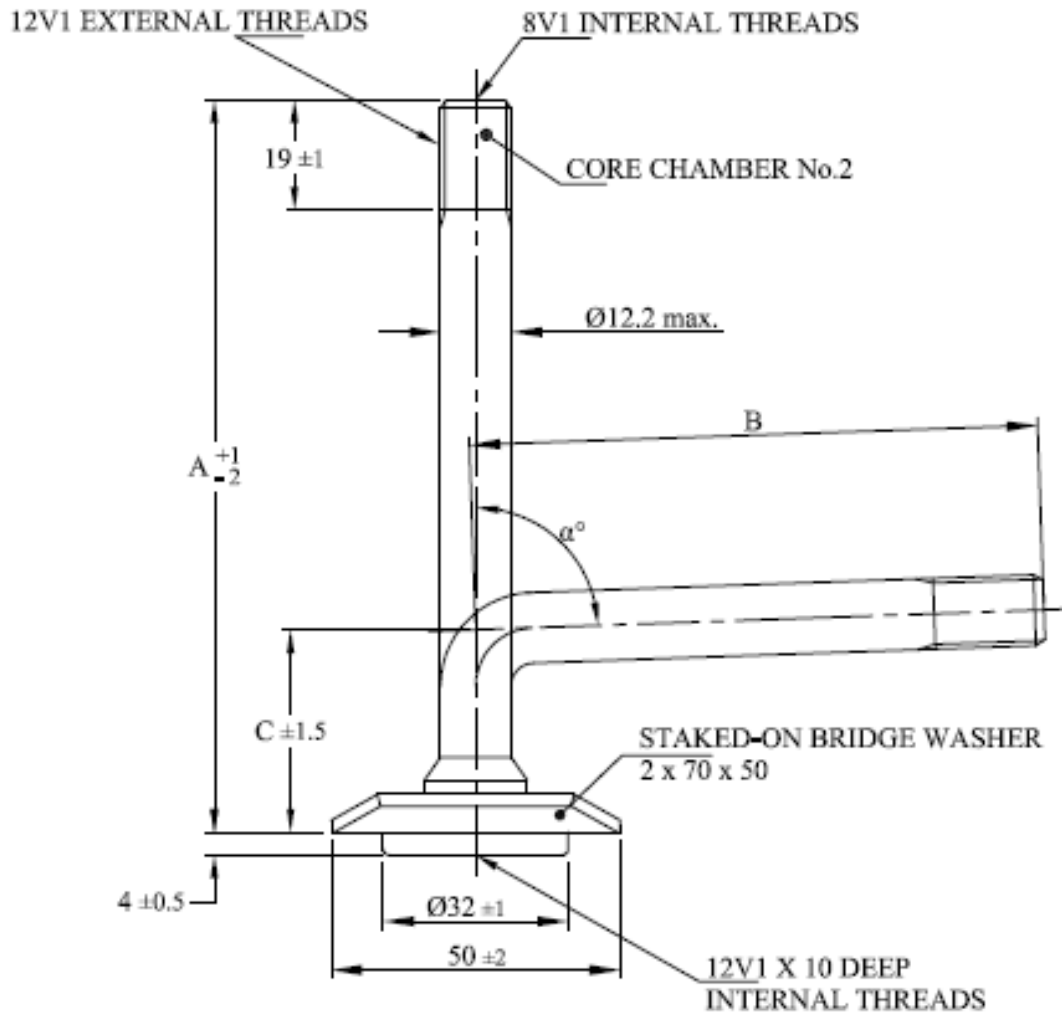


* Accommodates short core only

Valve Designation (JATMA)	Valve Hole Size in Rim	Installation Torque
JS 430	$\text{Ø}8.3^{+0.3}_0$	3-5 Nm

All dimensions in millimetres.

FIG. 32 TUBELESS CLAMP-IN MOTOR CYCLE VALVE

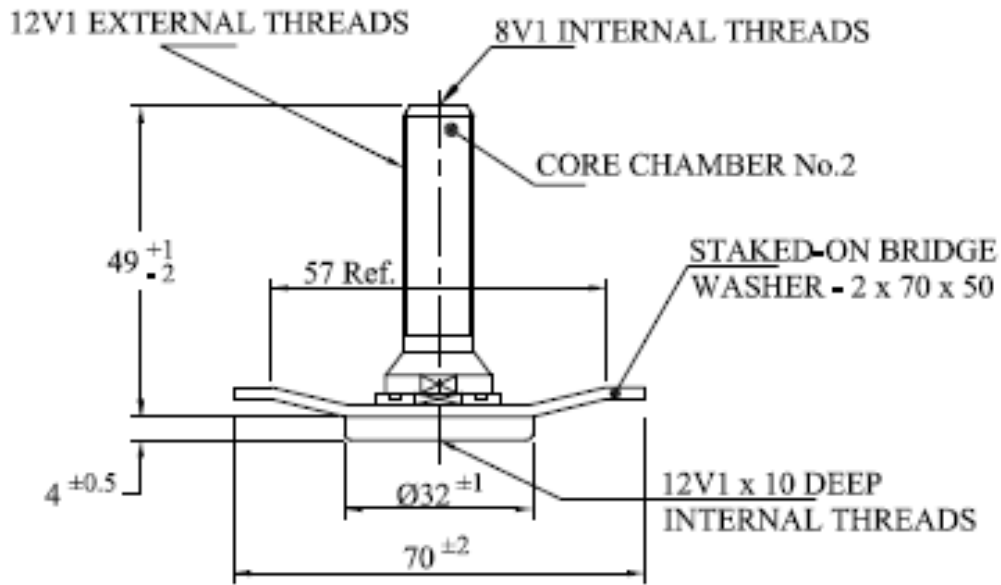


Valve Designation	A	B	C	α°
E D4 6 32	134	—	—	—
E D4 6 32 - SB	—	105	35	88°

NOTE — Available in straight or bend form.

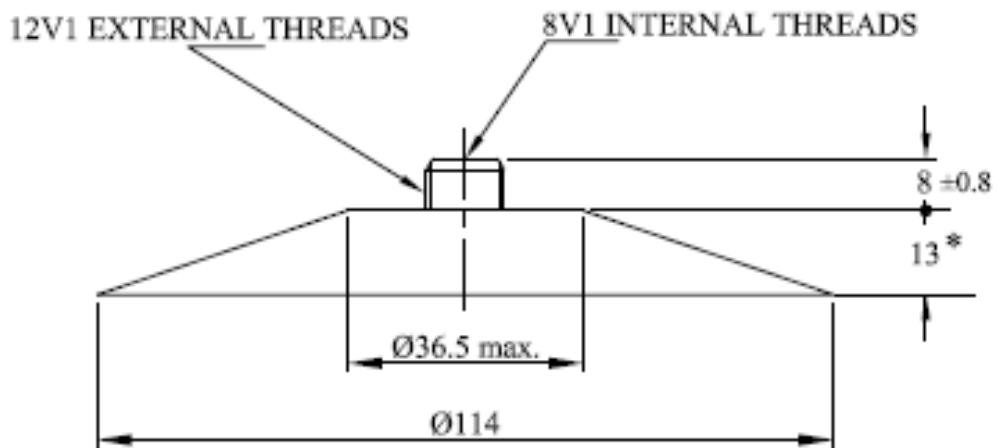
All dimensions in millimetres

FIG. 33 LARGE BORE SCREW-ON TUBE VALVES - (OTR)E D 4 6 32 AND E D4 6 32 SB
(FOR SIDE ELEVATION OF BRIDGE WASHER, SEE FIG. 22)



All dimensions in millimetres.

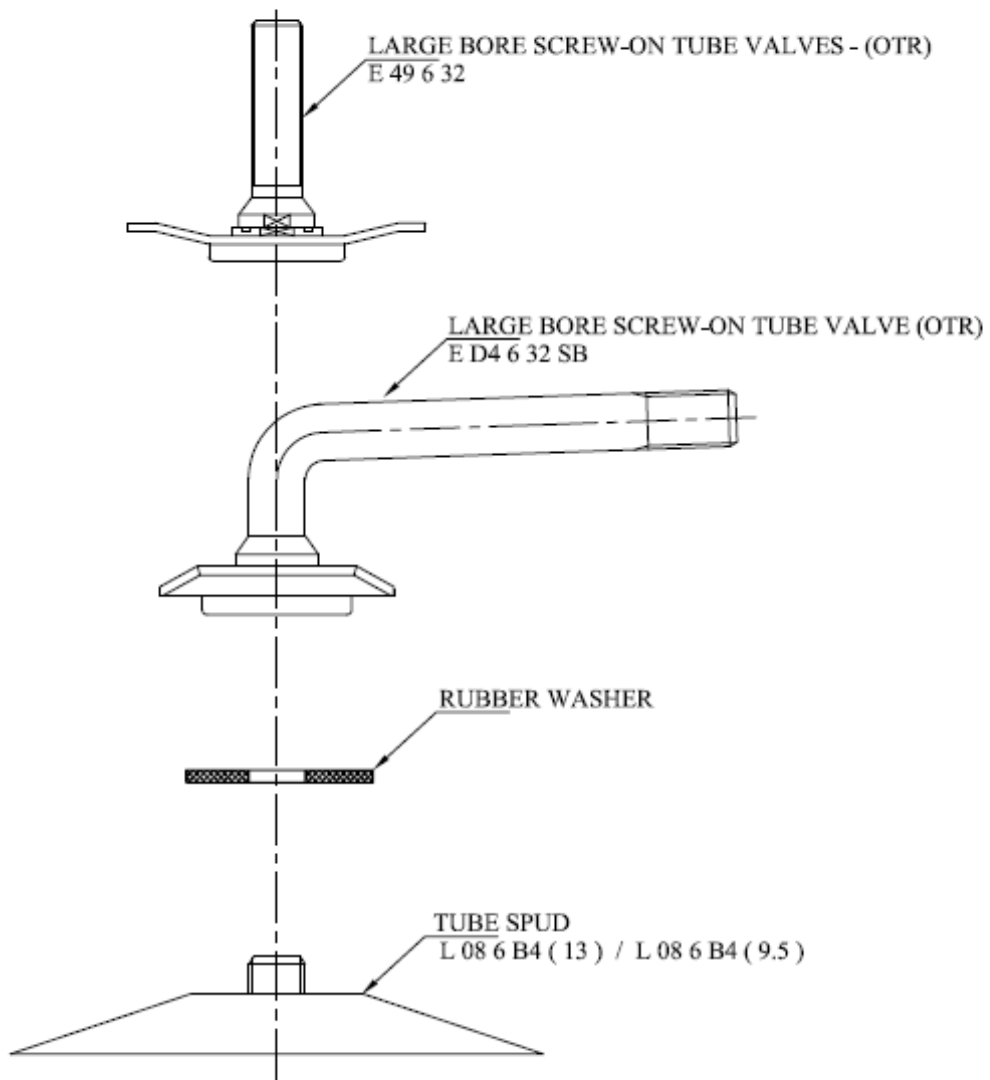
FIG. 34 LARGE BORE SCREW-ON TUBE VALVES - (OTR) E 49 6 32



*Valve available with rubber base thickness of 9.5 mm on special order

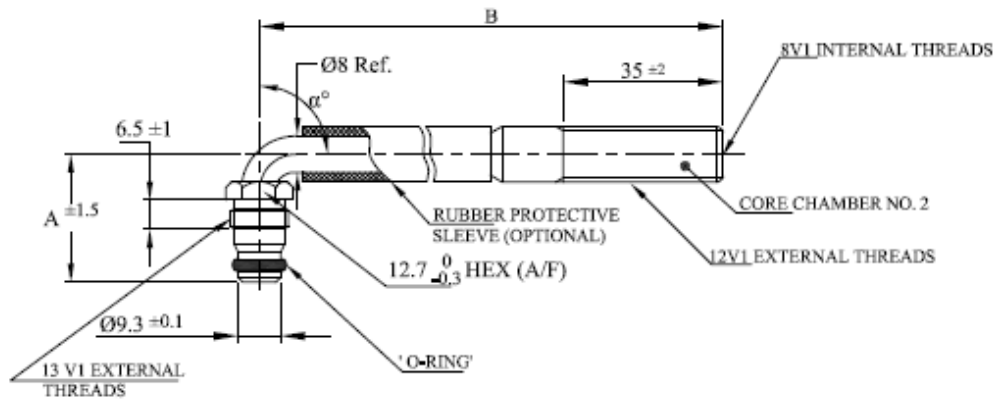
All dimensions in millimetres.

FIG. 35 TUBE SPUD L 08 6 B4



All dimensions in millimetres.

FIG. 36 LARGE BORE SCREW-ON TUBE VALVES – ASSEMBLY

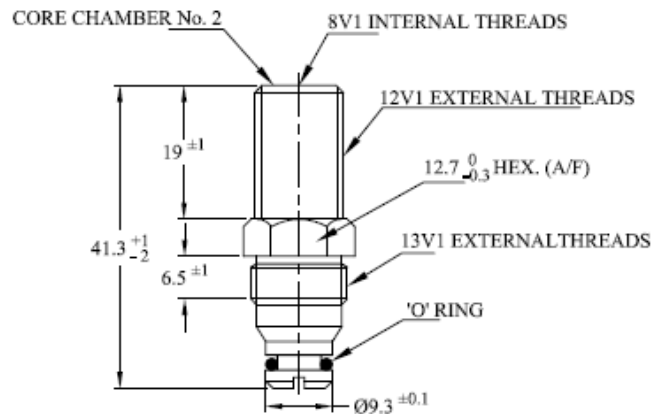


Valve Designation	α°	A	B
R 79 6 09 – SB	80	27	79
R B9 6 09 – SB	90	32	119

NOTE — These swivel stems to be assembled with tubeless spud S 17 7 27 to be available in several standard lengths and 12.5 mm increment (Dimension B).

All dimensions in millimetres.

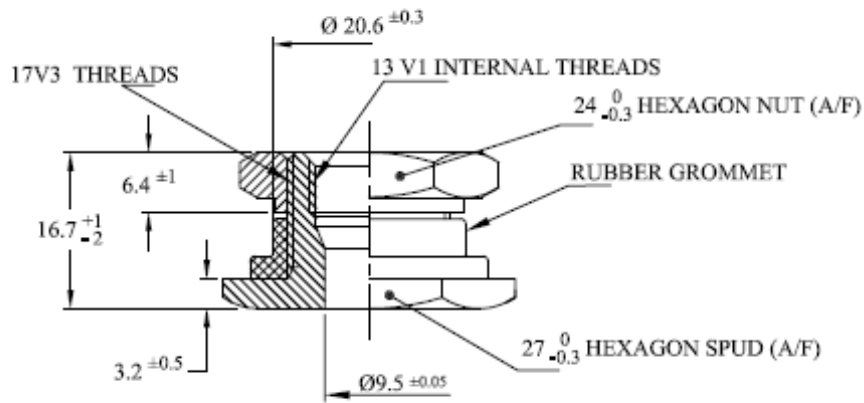
FIG. 37 LARGE BORE (OTR) VALVES R 79 6 09 SB AND R B9 6 SB - SWIVEL TYPE SINGLE BEND



NOTE — This straight stem to be assembled with tubeless spud S 17 7 27

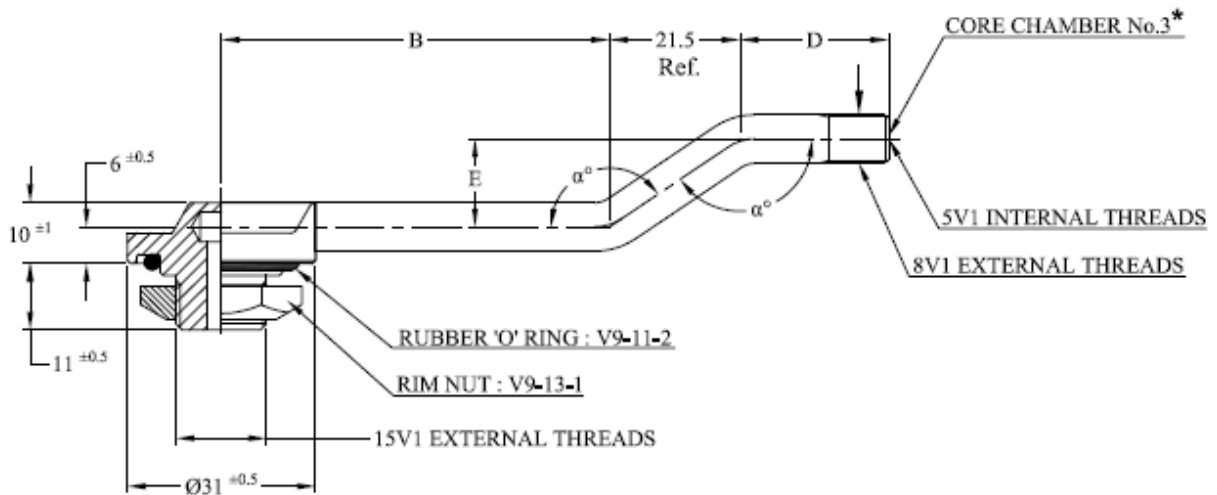
All dimensions in millimetres.

FIG. 38 LARGE BORE (OTR) VALVES R 41 6 09 STRAIGHT TYPE



All dimensions in millimetres.

FIG. 39 LARGE BORE (OTR) SPUD (TUBELESS SPUD) S 17 7 27

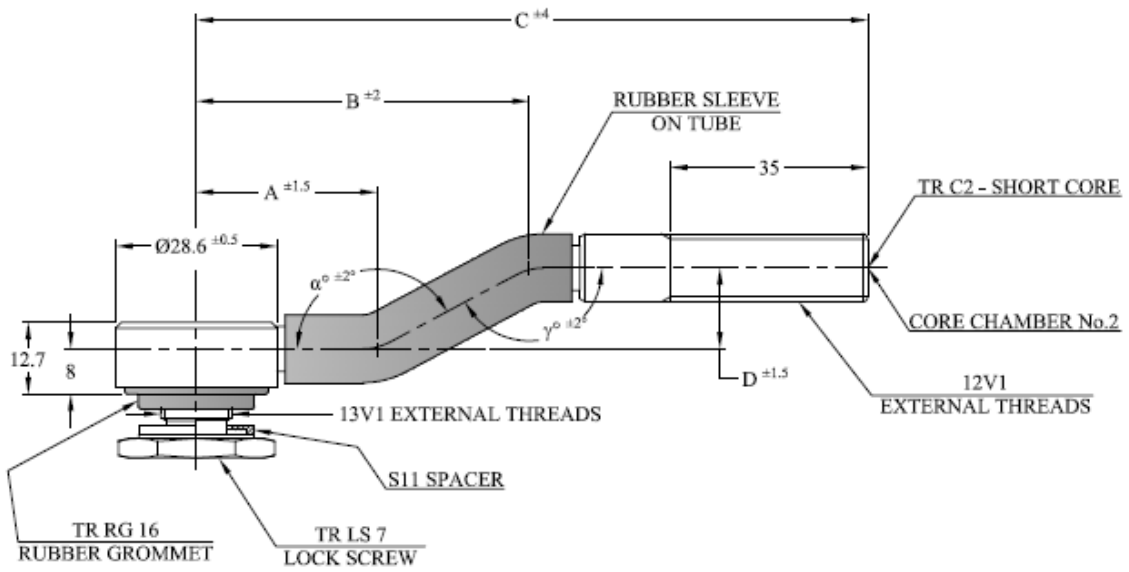


Valve designation (ETRTO)	$B^{\pm 2}$	$D^{\pm 2}$	$E^{\pm 1.5}$	$\alpha^{\circ \pm 2}$	Valve Hole Size in Rim	Installation Torque
V3.18.1	64	24.5	14.5	146	$20.5^{+0.5}_0$	25-31 Nm
V3.18.2	81	24.5	14.5	146		
V3.18.5	68	37.5	19.5	138		

*ACCOMMODATES SHORT CORE ONLY

All dimensions in millimeters.

FIG. 40 TUBELESS CLAMP-IN TRIPLE BEND - TRUCK AND BUS VALVES

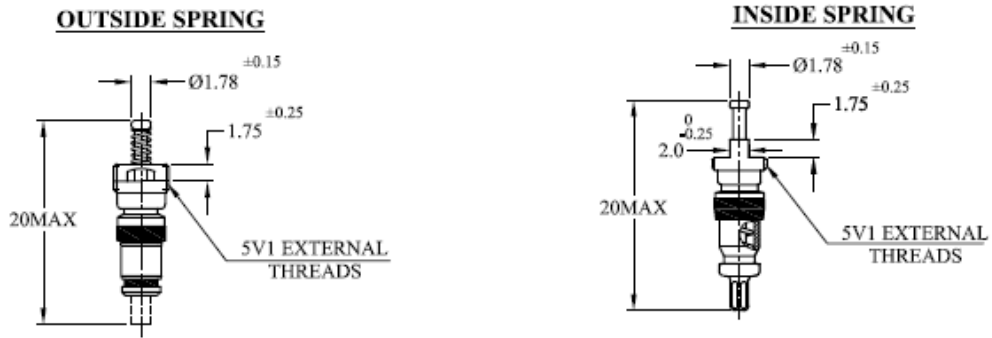


Valve Designation (TR Code)	$A^{\pm 1.5}$	$B^{\pm 2}$	$C^{\pm 4}$	$D^{\pm 1.5}$	$\alpha^{\circ \pm 2}$	$\gamma^{\circ \pm 2}$	Valve Hole Size in Rim	Installation Torque
TR J690	31.75	58.6	119	14.2	152	152	$20.5_0^{+0.5}$	20 - 23 Nm
TR J692	31.75	58.6	119	14.2	162	152		

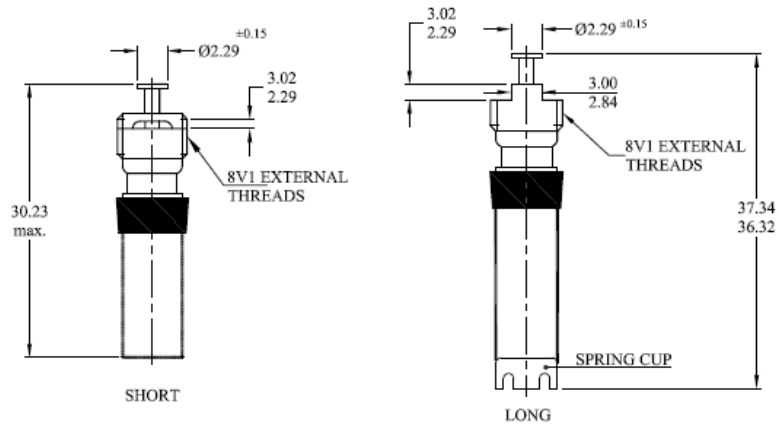
All dimensions in millimeters.

FIG. 41 LARGE BORE TUBELESS CLAMP-IN TURRET TYPE VALVES – OTR

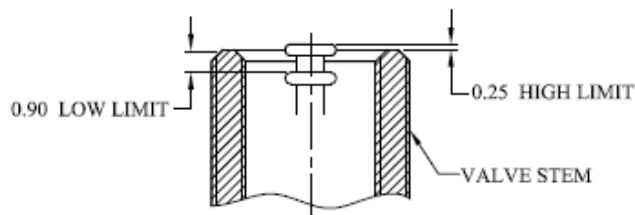
SHORT CORE



NOTE – Recommended torque at installation 0.23 - 0.56 Nm
(A) Type 1 valve Core – Standard Bore

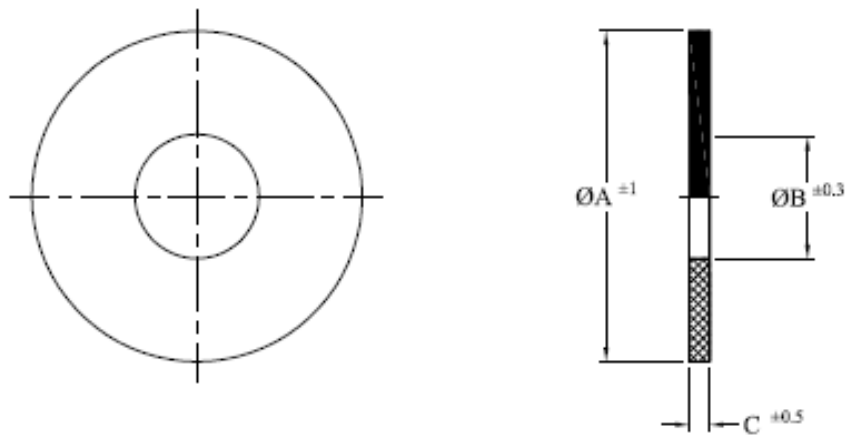


NOTE – Recommended torque at installation 0.34 - 0.56 Nm
(B) Type 2 valve Core – Large Bore



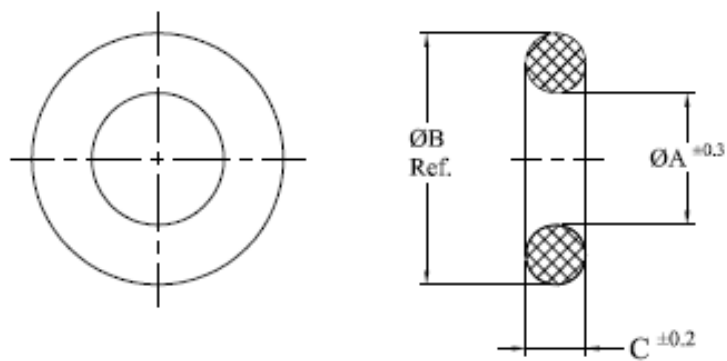
(C) Core Pin Head Position – Type 1 & Type 2

All dimensions in millimetres
FIG. 42 VALVE CORE



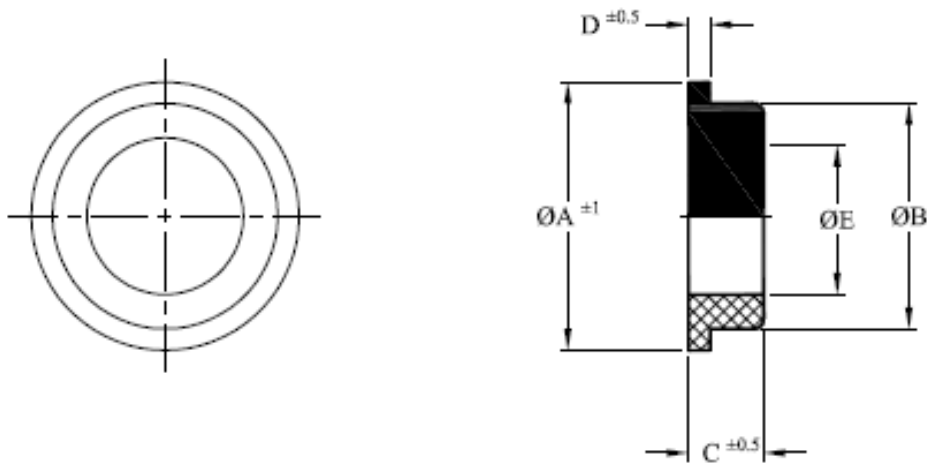
Code	ØA	ØB	C
T-RUW 55	32	12.3	2
V9.05.1	24	8	2.5

FIG. 43 RUBBER WASHERS



Code	ØA	ØB	C
TR RG 60/ V9.11.5	8.9	12.7	1.9
TR RG 66	6	9.6	1.8
TR RG 67	4.4	8	1.8

FIG. 44 RUBBER O-RINGS
All dimensions in millimeters.



Code	ØA	ØB	C	D	ØE Fits to
TR RG 7	22.4	16	8.65	3.2	12V1
TR RG 22	25.4	20.6	6.4	2.3	17V3
TR RG 39/ V9.10.8	18	16	8	2.3	10V2
JS G31	14	10	5	4	8V1

FIG. 45 RUBBER GROMMET

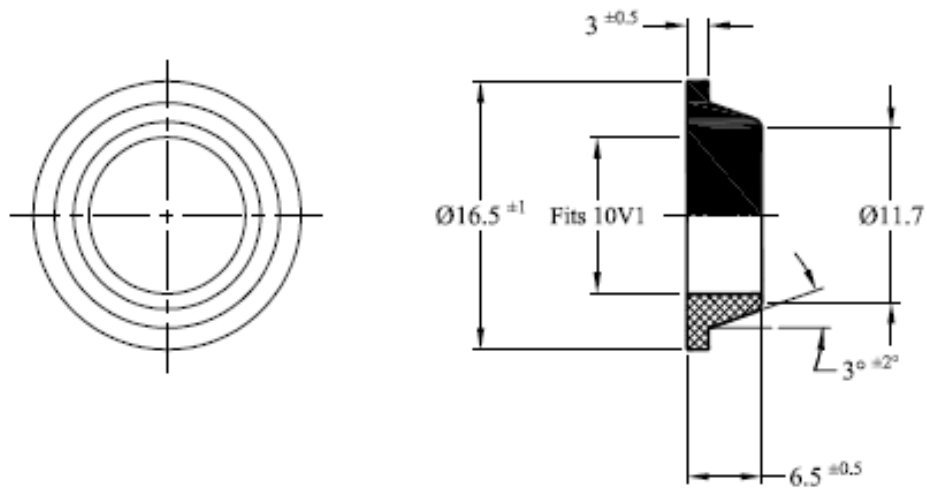
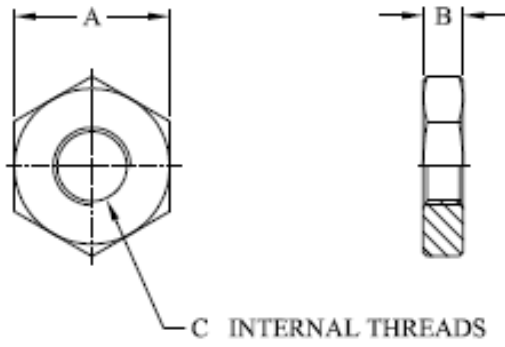


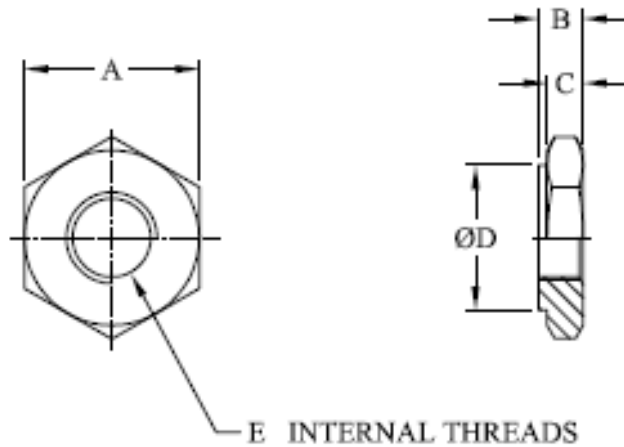
FIG. 46 RUBBER GROMMET – TR RG 54

All dimensions in millimetres.



Code	$A_{-0.3}^0$	B	C
TR HN 1	16	4.8	12V1
TR HN 4 / V9.08.2	14	5	10V2
BN 1	12	4	8V1

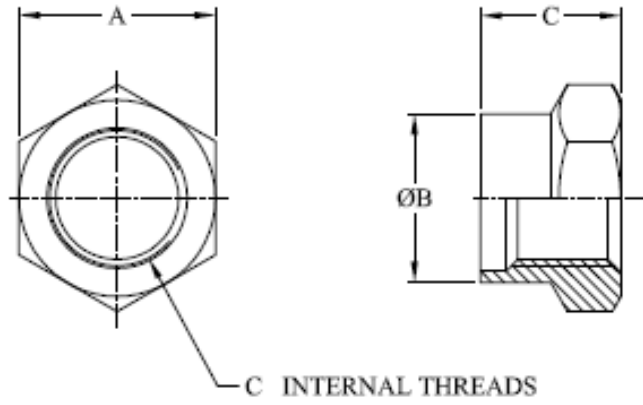
FIG. 47 HEX. NUTS



Code	$A_{-0.3}^0$	$B^{\pm 0.5}$	$C^{\pm 0.5}$	$D^{\pm 0.5}$	E
TR HN 15 / V9.09.1	24	6.4	4.8	20.3	17V3
TR HN 22	16	10.2	5.2	15.5	9V1

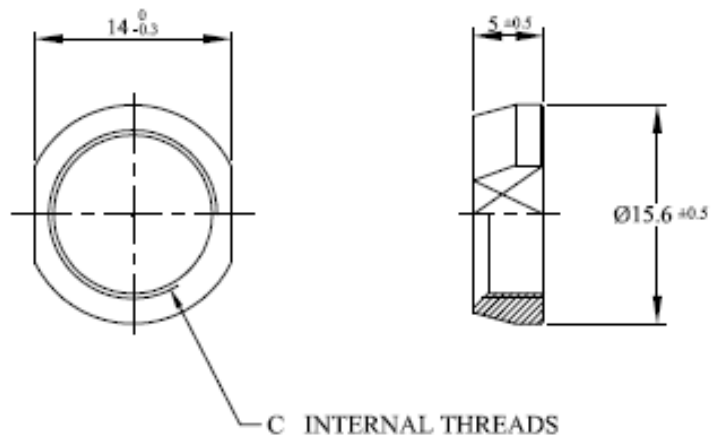
FIG. 48 HEX. NUTS

All dimensions in millimetres.



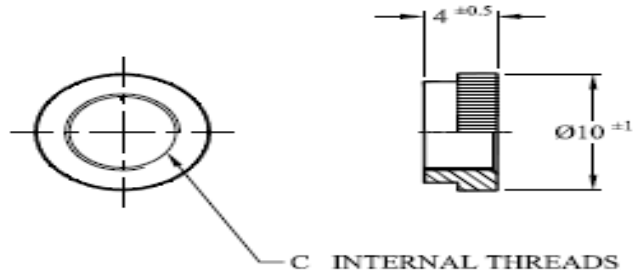
Code	$A_{-0.3}^0$	B	$C_{\pm 0.5}$
V9.07.2	14	12	10V1
V9.07.4-M	14	12	10V1

FIG. 49 RIM NUT



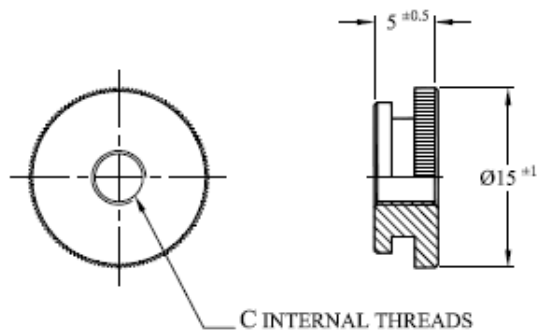
Code	$C_{\pm 0.5}$
T-LN 53	12V1

FIG. 50 RIM NUT
All dimensions in millimeters.



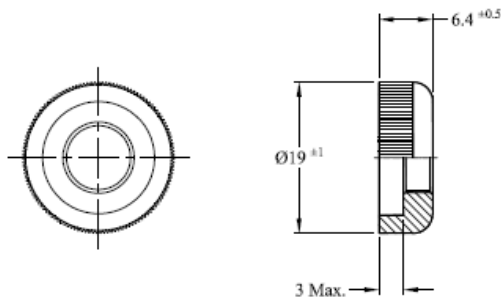
Code	$C^{\pm 0.5}$
63	8V1

FIG. 51 RIM NUT



Code	$C^{\pm 0.5}$
252	8V1

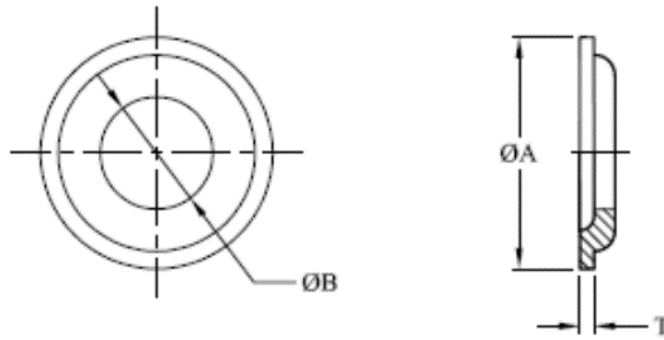
FIG. 52 RIM NUT



Code	$C^{\pm 0.5}$
TR LN 10	12V1

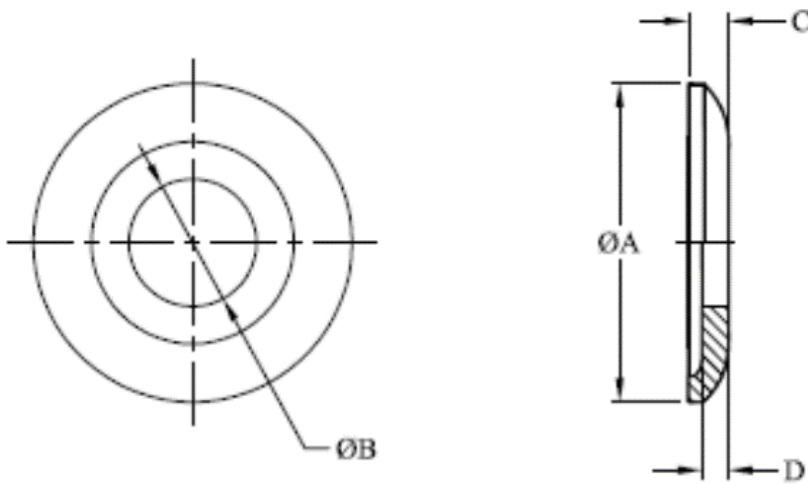
FIG. 53 RIM NUT

All dimensions in millimeters.



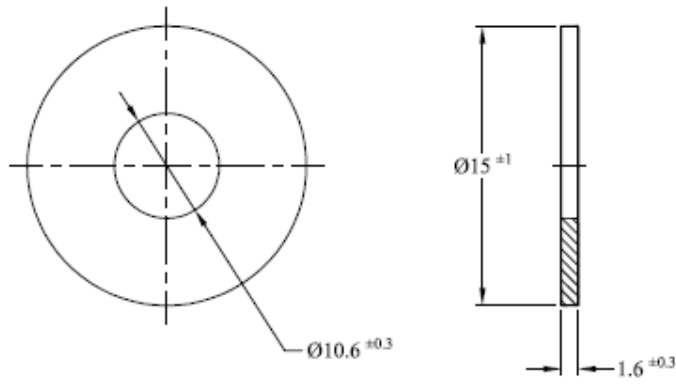
Code	$A^{\pm 1}$	$B^{\pm 0.2}$	$T^{\pm 0.2}$
TR RW 3	27	12.4	1.4
TR RW 11	23.4	12.4	1.6
TR RW 12	16	8	1.6
T-RW 52	24	10.8	1.6

FIG. 54 RING WASHERS



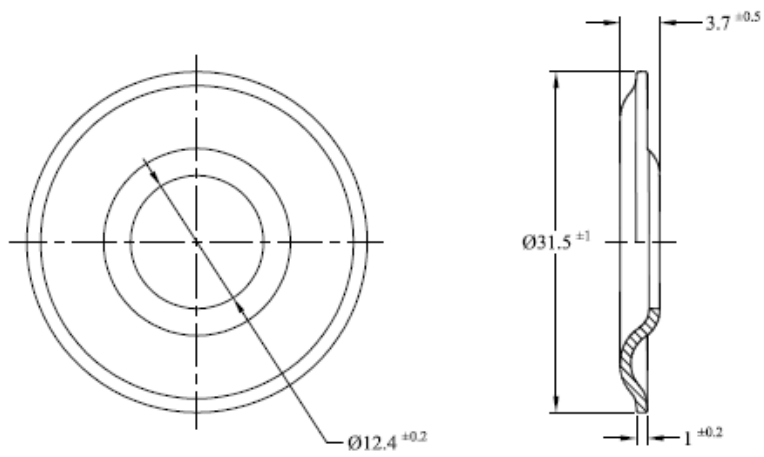
Code	$A^{\pm 1}$	$B^{\pm 0.2}$	$C^{\pm 0.5}$	$D^{\pm 0.2}$
TR RW 8 / V9.01.4	19	10.5	2.5	1.4
TR RW 13	19	10.5	1.5	0.8

FIG. 55 RING WASHERS
All dimensions in millimeters.



Code
TR RW 15

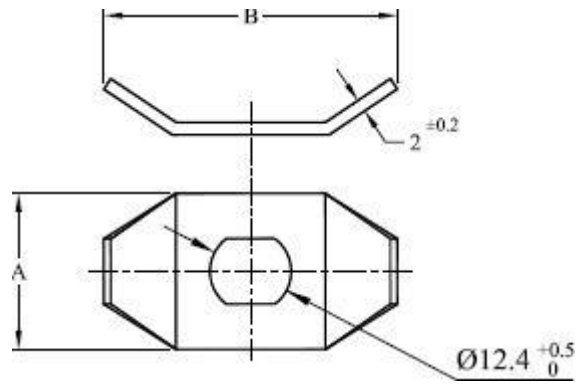
FIG. 56 RING WASHER



Code
T- RW 59

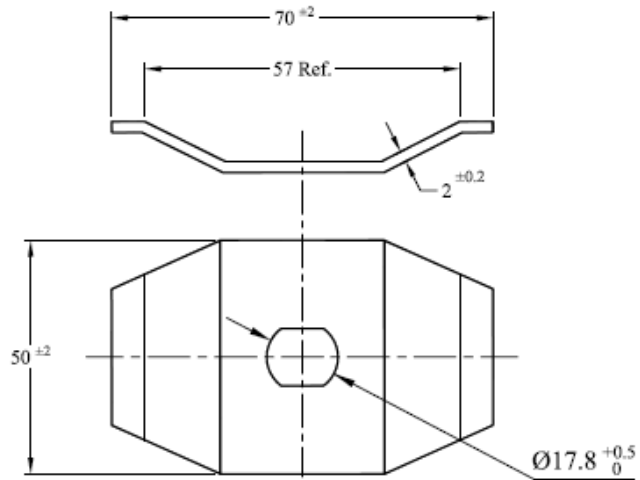
All dimensions in millimeters.

FIG. 57 RING WASHERS



Code	$A^{\pm 1.5}$	$B^{\pm 2}$
TR BW 1	24	47
TR BW 2	28.5	54
TR BW 3	33	57

All dimensions in millimeters.
FIG. 58 BRIDGE WASHERS



Code
TR BW 18

All dimensions in millimeters.
FIG. 59 BRIDGE WASHERS

ANNEX A
(Foreword)

VALVE & VALVE CORE DESIGNATION CROSS REFERENCE

SI. NO	BIS CODE	TR CODE CROSS REFERENCE	FIG. No
1	A 65 5 82	TR 227	FIG.2
2	A 83 5 82	TR 274A	F1G.2
3	A 97 5 82	TR 75A	F10.2
4	A A6 5 82	TR76A	F10.2
5	ABI 582	-	FIG.2
6	A B4 5 82	TR 177A	F10.2
7	A C3 5 82	TR 77A	FIG.2
8	A D4 5 82	TR 175A	FIG.2
9	A E7 5 82	TR 78A	F10.2
10	A GO 5 82	TR 179A	P10.2
11	A 65 5 95	TR 227	FIG.2
12	A 83 5 95	TR 274A	FIG.2
13	A 97 5 95	TR 75A	F1G.2
14	A A6 5 95	TR76A	FIG.2
15	A BI 5 95	-	F1G.2
16	A B4 5 95	TR 177A	F1G.2
17	A C3 5 95	TR 77A	FIG.2
18	A D4 5 95	TR 175A	FIG.2
19	A E7 5 95	TR 78A	F1G.2
20	AGO 5 95	TR 179A	FIG.2
21	A 95 5 95	-	F10.4
22	B 205 63	TR 218A	FIGA I
23	8 30 5 63	TR 220A	FIGA I
24	B 20 5 82	-	FIGA I
25	B 30 5 82	-	FIGA I
26	CH3	TR CH3	FIG.12
27	B 35 3 57	TR 13	FIG.14
28	1335 4 57	TR 14	FIG.14
29	B 35 5 57	TR is	F10.14

SI. NO	BIS CODE	TR CODE CROSS REFERENCE	FIG. No
30	B 35 1 57	-	FIG.14
31	B 57 3 57	-	FIG.15
32	B 46 3 57	-	FIG.15
33	F 25 3 19	TR412	F10.16
34	F 35 3 19	TR 413	FIG.16
35	F 41 3 19	TR 414	F16.16
36	F 54 3 19	TR 418	F10.16
37	F 67 3 19	TR 423	FIG.16
38	F 49 3 19	TR 414L (V2-03-8)	FIG.16
39	F 35 5 24	TR 415	F10.16
40	F 54 5 24	TR 425	P10.16
41	F 35 1 16	TR 438	FIG.16
42	A 291 32	-	FIG.19
43	A 29 1 45	-	FIG.20
44	E D4 6 32	TR1 1175A-M	FIG.21
45	E D4 6 32 SB	TR J 1175C-M	F1G.21
46	E 49 6 32	TR31014-M	F1G.22
47	L 08 6 B4	TR SP 1000	F1G.23
48	R 79609SB	TR 1 650	F10.25
49	R B9 6 09 SB	TRJ 651	FIG.25
50	R 41 609	TR 1670	F1G.26
51	S 17 7 27	TR SP2	FIG.27
52	TYPE 1 SHORT	TR CI SHORT	FIG.28
53	TYPE 2-SHORT	TR C2 SHORT	110.28
54	TYPE 2-LONG	TR C2 LONG	F1G.28
ETRTO CODE			
55	A 47 2 45	V1.08.1	FIG.17
56	A 40 2 45	V1.08.3	F10.18

SI. NO	BIS CODE	TR CODE CROSS REFERENCE	FIG. No
57	-	TR 416 S	FIG.31
58	-	TR 416	FIG.32
59	-	TR 542	FIG.34
60	-	TR 543	FIG.34
61	-	TR 543C	FIG.34
62	-	TR 543D	FIG.34
63	-	TR 543E	FIG.34
64	-	TR 544	FIG.34
65	-	TR 5440	FIG.34
66	-	TR 54413	FIG.34
67	-	TR 545	FIG.34
68	-	TR 545D	FIG.34
69	-	TR 545E	FIG.34
70	-	TR 546	FIG.34
71	-	TR 546-36	FIG.34
72	-	TR 546 D	FIG.34
73	-	TR 546 E	FIG.34
74	-	TR 547 D	FIG.34
75	-	TR 575	FIG.36
76	-	TR 500	FIG.36
77	-	TR 501	FIG.36
78	-	TR 570	FIG.36
79	-	TR 571	FIG.36
80	-	TR 572	FIG.36
81	-	TR 573	FIG.36
82	-	TR 574	FIG.36
83	-	TR 570C	FIG.36
84	-	TR 571C	FIG.36
85	-	TR 572C	FIG.36
86	-	TR 573C	FIG.36
87	-	TR 618 A	FIG.37
JATMA CODE			
88	-	JS 430	FIG.29
89	-	PVR 70	FIG.30

SI. NO	BIS CODE	TR CODE CROSS REFERENCE	FIG. No
90	-	V3.08.2	FIG.7
91	-	V3.08.3	FIG.7
92	-	V3.08.4	FIG.7
93	-	V3.02.7	FIG.8
94	-	V3.02.8	FIG.8
95	-	V3.02.9	FIG.8
96	-	V3.02.10	FIG.8
97	-	V3.02.11	FIG.8
98	-	V3.02.12	FIG.8
99	-	V3.02.14	FIG.8
100	-	V3.02.15	FIG.8
101	-	V3.02.16	FIG.8
102	-	V3.02.18	FIG.8
103	-	V3.02.19	FIG.8
104	-	V3.02.20	FIG.8
105	-	V3.02.26	FIG.8
106	-	V3.02.27	FIG.8
107	-	V3.02.29	FIG.8
108	-	V3.04.4	FIG.9
109	-	V3.04.5	FIG.9
110	-	V3.04.6	FIG.9
111	-	V3.04.10	FIG.9
112	-	V3.04.11	FIG.9
113	-	V3.04.15	FIG.9
114	-	V3.04.21	FIG.9
115	-	V3.04.25	FIG.9
116	-	V3.06.5	FIG.10
117	-	V3.06.6	FIG.10
118	-	V3.06.7	FIG.10
119	-	V3.06.8	FIG.10
120	-	V3.06.9	FIG.10
121	-	V3.06.16	FIG.10
122	-	V3.06.17	FIG.10
123	-	V3.20.1	FIG.33
124	-	V3.20.2	FIG.33
125	-	V3.20.3	FIG.33
126	-	V3.20.4	FIG.33
127	-	V3.20.5	FIG.33
128	-	V3.20.6	FIG.33
129	-	V3.20.7	FIG.33
130	-	V3.20.8	FIG.33
131	-	V3.20.9	FIG.33
132	-	V3.20.10	FIG.33
133	-	V3.20.11	FIG.33
134	-	V3.20.12	FIG.33
135	-	V3.22.1	FIG.35

ANNEX B
(Foreword)

COMMITTEE COMPOSITION

Automotive Tyres, Tubes and Rims Sectional Committee, TED 7

Will be added later