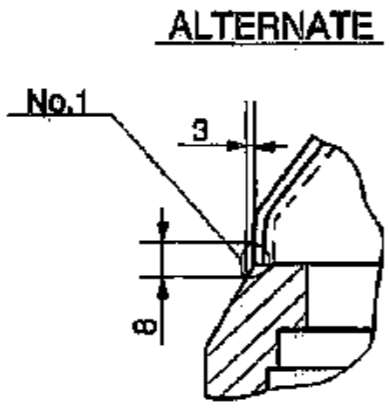
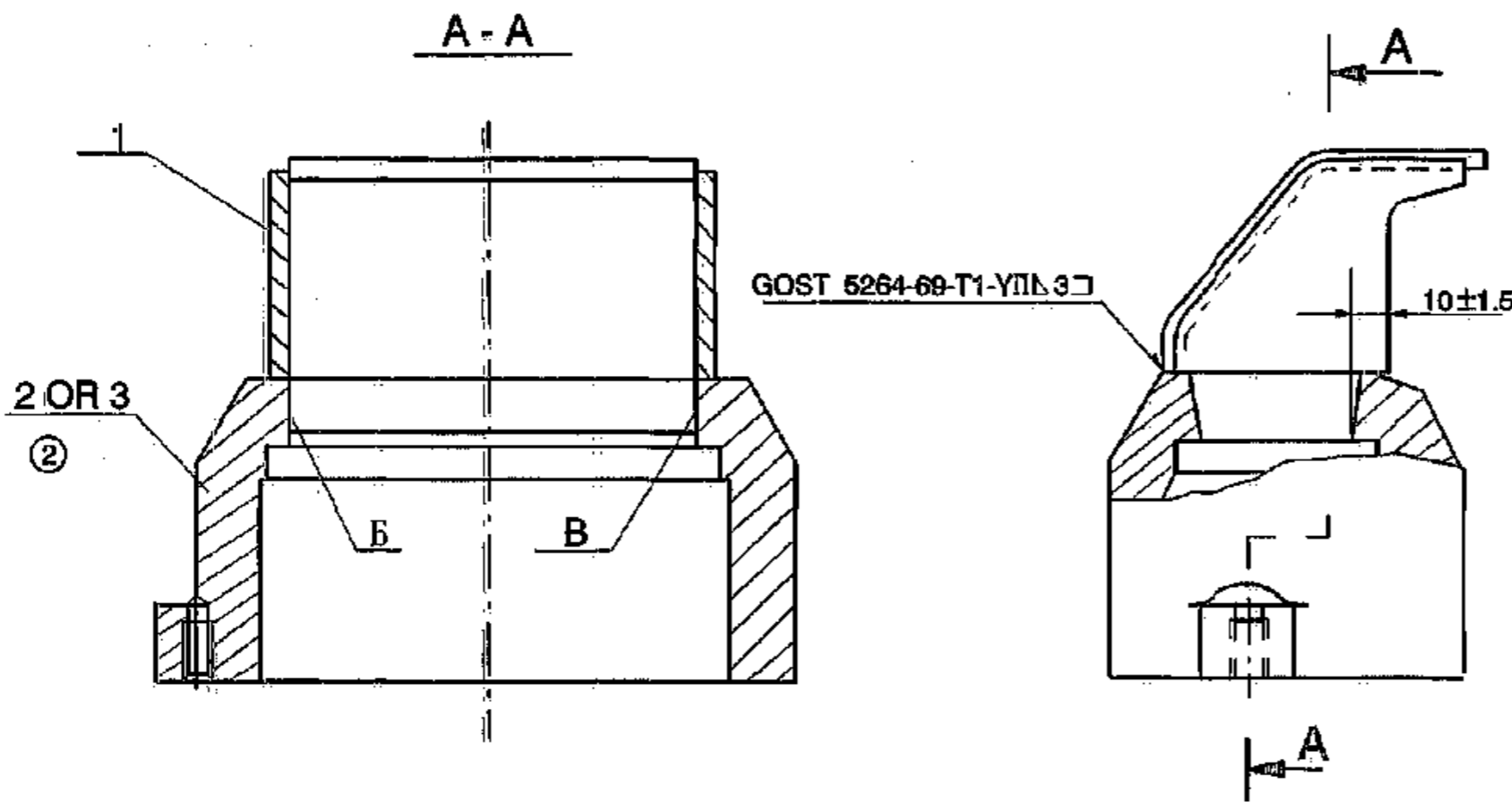


DRAWING NUMBER
172.10.075cbCb /

SHEET No. 1 OF 1

1. GAS SHIELD WELDING OF WELD : 1 IS TO BE DONE SEMI - AUTOMATICALLY.
2. PROJECTION OF SIDE WALLS COVER INTO HOLE BEYOND SURFACE B AND B IS NOT ALLOWED.
3. DIMENSIONS FOR REFERENCE.



DRG. REINDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - 1 / COMMON TO T-90

F-28
32
SIZE A3

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. (Kg) 5.44 / TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)

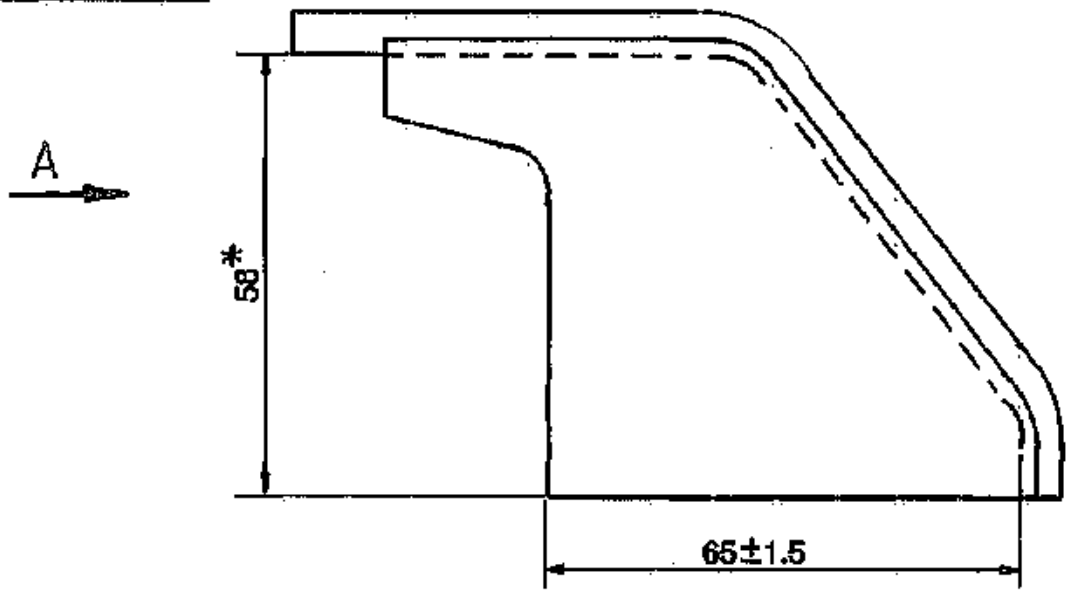
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT-SIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

ISSUE	DATE	NATURE OF AMENDMENTS
2A	05.02.04	N OF A No.CQA(HV)/T-90/10/001 /
2	15.06.89	172M.29'A-87.A.L9/1 /

DRN	Sd/=	MATERIAL :-	USED ON :- 188.10.099cbCb / (2A) 172.10.014cb-3 /
CHD	Sd/=	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
APPD	Sd/=		
DATE	29.10.88 /	TITLE :- HOUSING /	
SCALE:-	1 : 2 /		
DIMENSIONS IN mm		D S CAT NUMBER	DRAWING NUMBER 172.10.075cbCb /
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69			
ALL THREADS TO CONFORM TO			

DRAWING NUMBER
172.10.074cbCb /

SHEET No. 1 OF 1



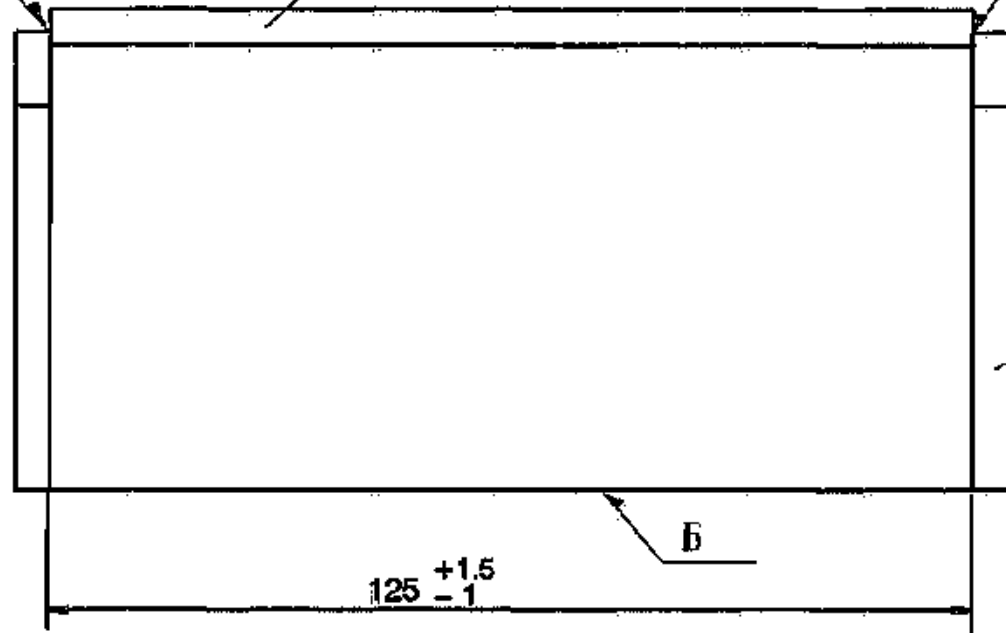
VIEW - A

1. PROJECTION OR FALL-IN OF FACE OF COMPONENT No.2 OVER FACES OF COMPONENTS No.1, IN PLANE '5' SHOULD NOT BE MORE THAN 1 mm.
- 2.* DIMENSION FOR REFERENCE.

GOST 5264-69-Y2-YII

2

GOST 5264-69-Y2-YII



125 +1.5 / -1

B

IR. RAMANI, JTO
20-12-05

DRG. REINDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - 1 - 105
COMMON TO T-90

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. (Kg) TO BE STAMPED OR MARKED WHERE INDICATED THIS # (LETTERS)
0.838 /

ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT-SIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

ISSUE	DATE	NATURE OF AMENDMENTS
1A	05.02.04	N OF A No. CQA(HV)/T-90/10/001 /

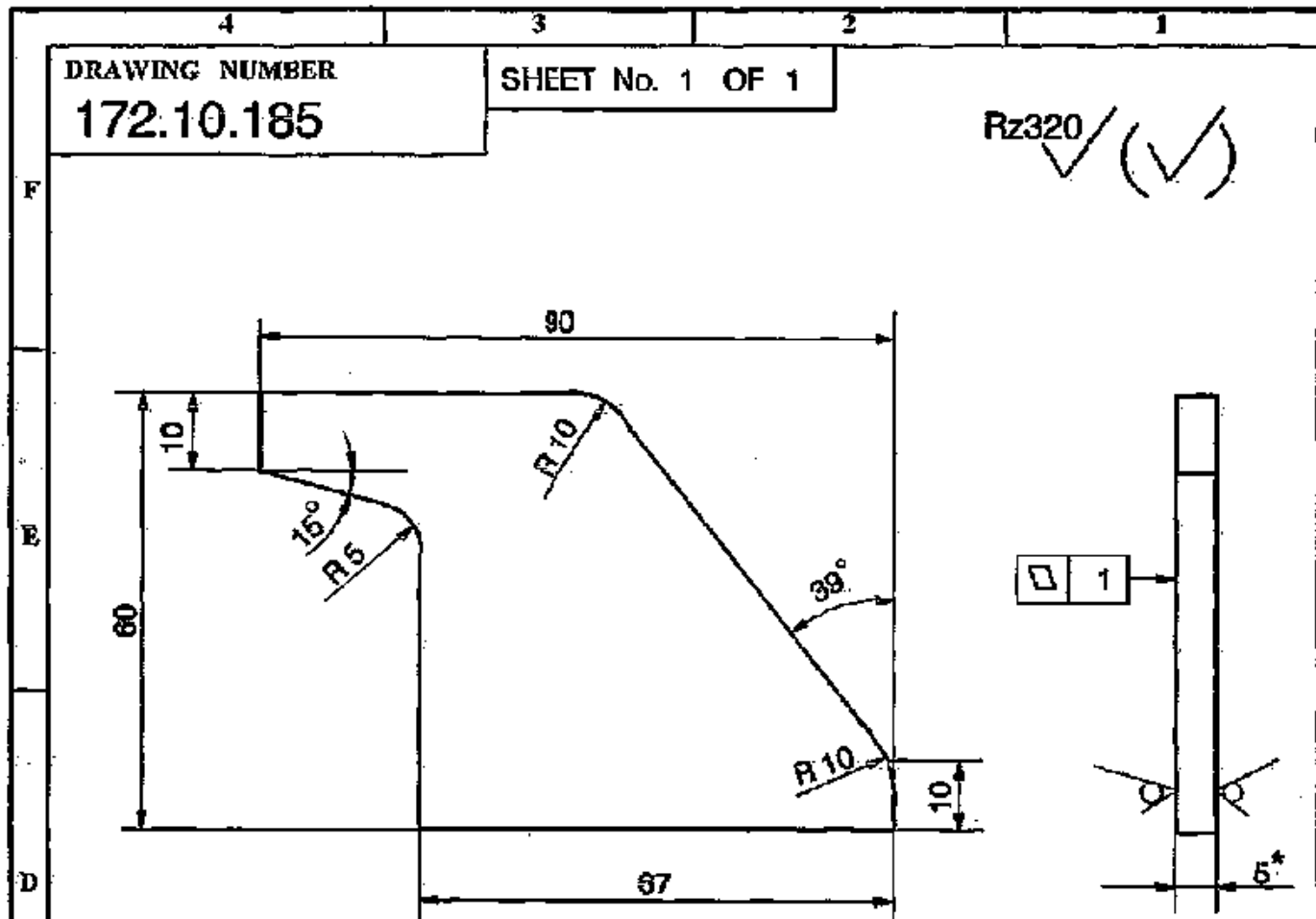
DRN	Sd/=	MATERIAL :-	USED ON :- 188.10.099cbCb / (1A) 172.10.075cb. /
CHD	Sd/=		
APPD	Sd/=	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
DATE	26.10.88 /		
SCALE:- 1 : 1 /		TITLE :- COVER /	
DIMENSIONS IN mm			
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102 - 69		D S CAT NUMBER	
ALL THREADS TO CONFORM TO			
DRAWING NUMBER 172.10.074cbCb /			

F-28
31

SIZE A3

DRG. REINDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - NIL 28-12-05
 COMMON TO T-90

F-30
18



1. ALTERNATE MATERIAL : SHEET 5 GOST 19903-74
40 GOST 1577-70
2. DEVIATION FROM CONTOUR TEMPLATE: CONSTRUCTED AS PER NOMINAL DIMENSION NOT TO EXCEED 1.5 mm.
3. REQUIREMENTS TO THE COMPONENT ACCORDING TO 520 TY 1.
- 4.* DIMENSIONS FOR REFERENCE.

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

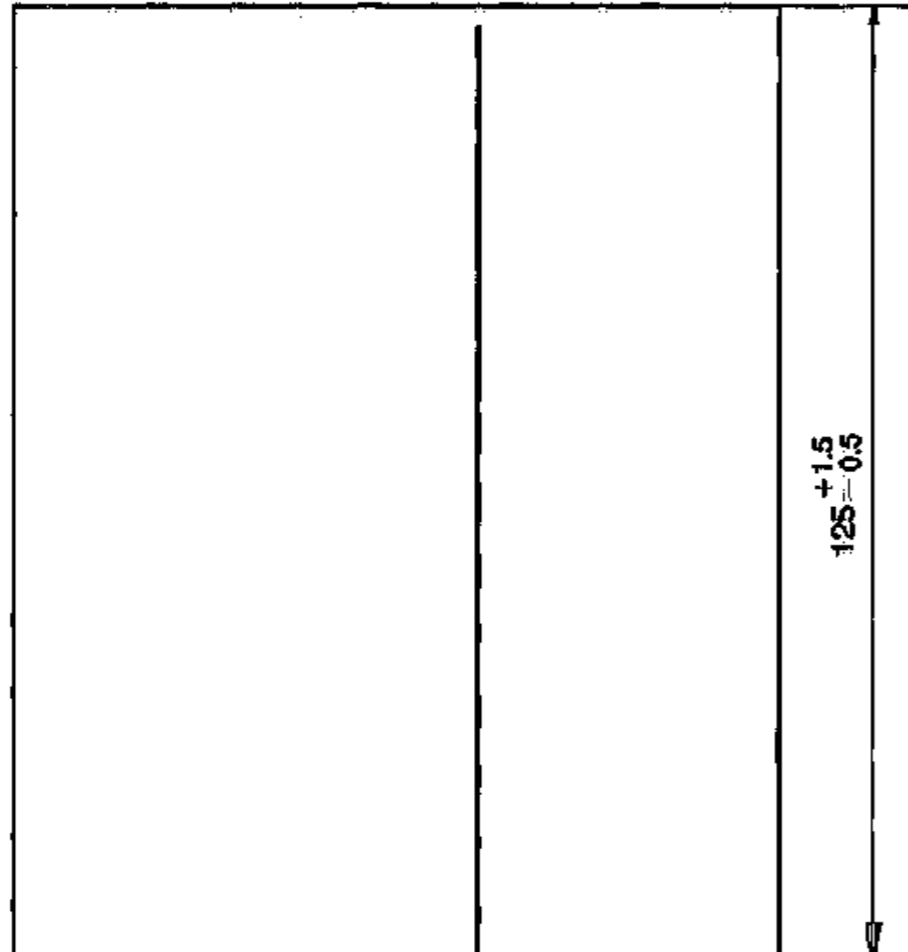
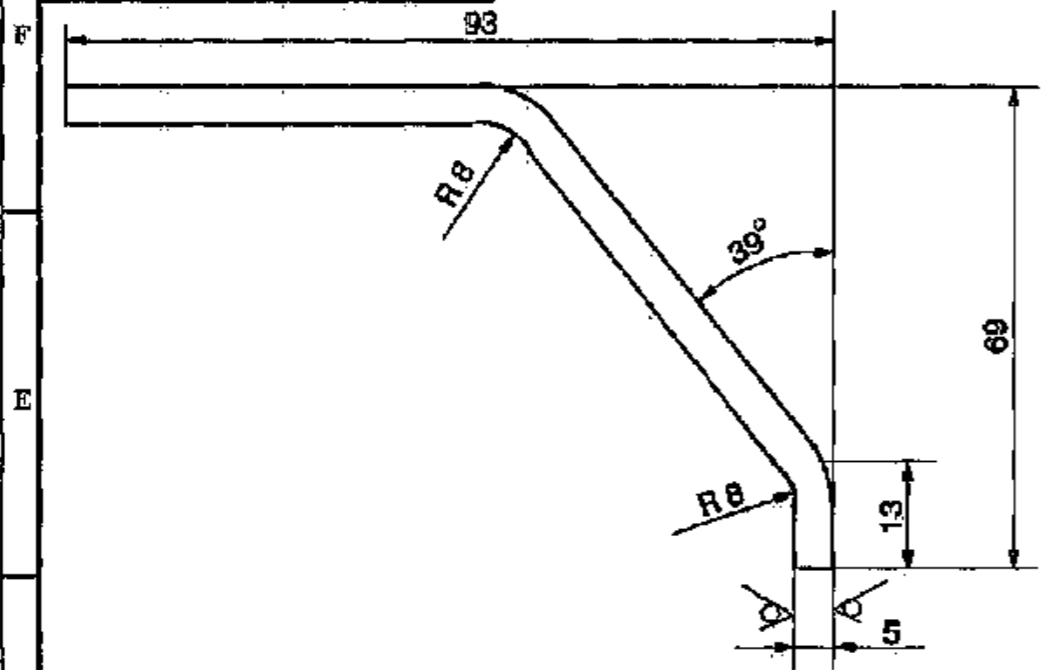
		EST. WT. (Kg)	TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)
		0.101	
		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT-SIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.	
		MATERIAL :- SHEET	USED ON :-
		5 GOST 19903-74	172.10.074cbCb
		15 GOST 1577-70	
ISSUE DATE	NATURE OF AMENDMENTS		
DRN	SCALE :- 1 : 1	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
Sd/=	DIMENSIONS IN mm		
CHD	TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS : 2102 - 69	TITLE :- SIDE FRAME	
Sd/=			
APPD			
DATE	ALL THREADS TO CONFORM TO	D S CAT NUMBER	DRAWING NUMBER
27.10.88			172.10.185

SIZE A1

DRAWING NUMBER
172.10.186

SHEET No. 1 OF 1

Rz320 ✓ (✓)



1. ALTERNATE MATERIAL : SHEET 5 GOST 19903-74
40 GOST 1577-70
2. DEVIATION FROM PROFILE TEMPLET CONSTRUCTED AS PER NOMINAL DIMENSION SHOULD NOT BE MORE THAN 1.5 mm.
3. REQUIREMENTS OF COMPONENT ACCORDING TO 520 TY 1.
4. * DIMENSIONS FOR REFERENCE.

DRG. REINDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - NIL
COMMON TO T-90

IR. RAMANI, JTO
28-12-05

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. (Kg) 0.635 TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)

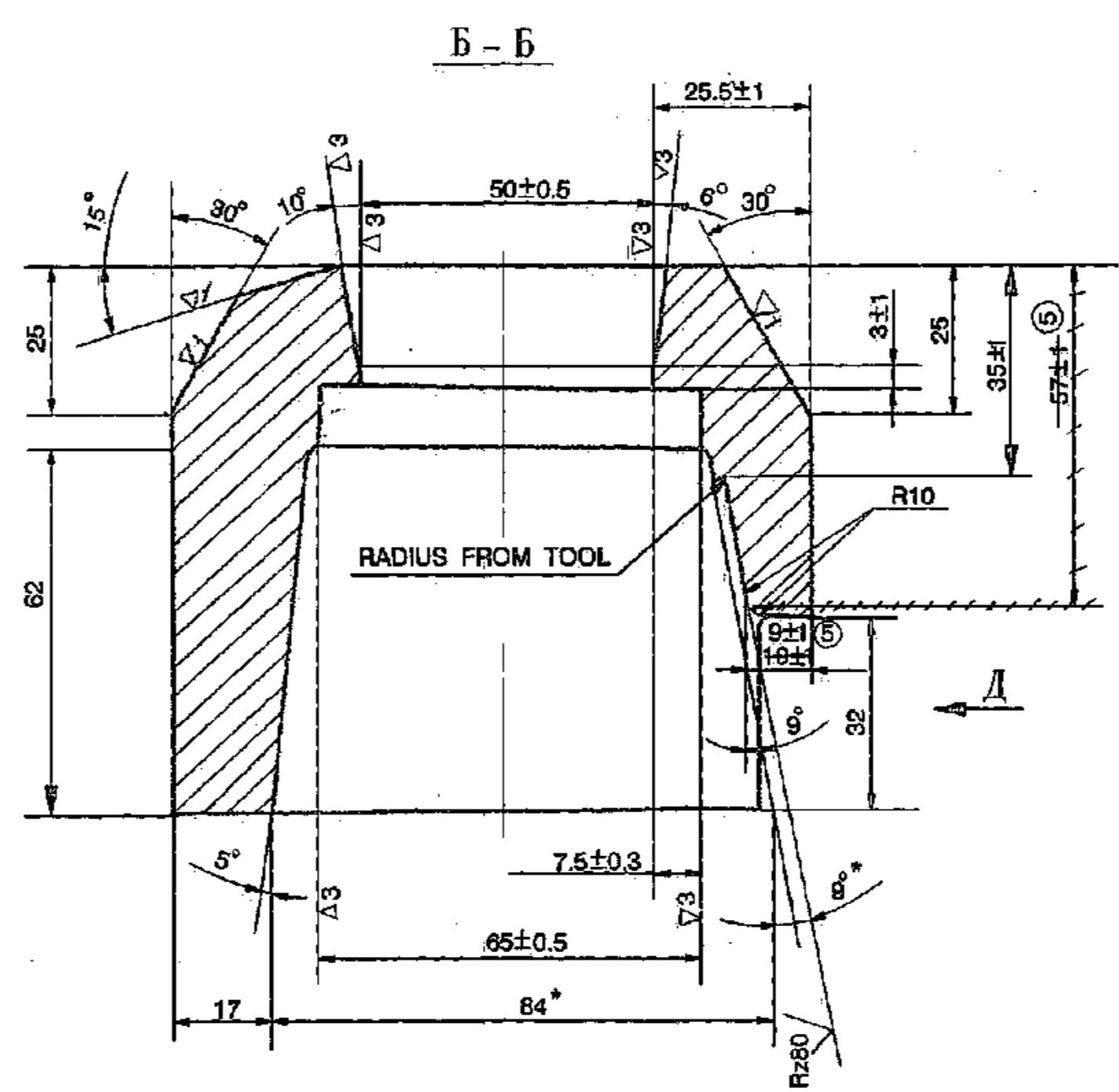
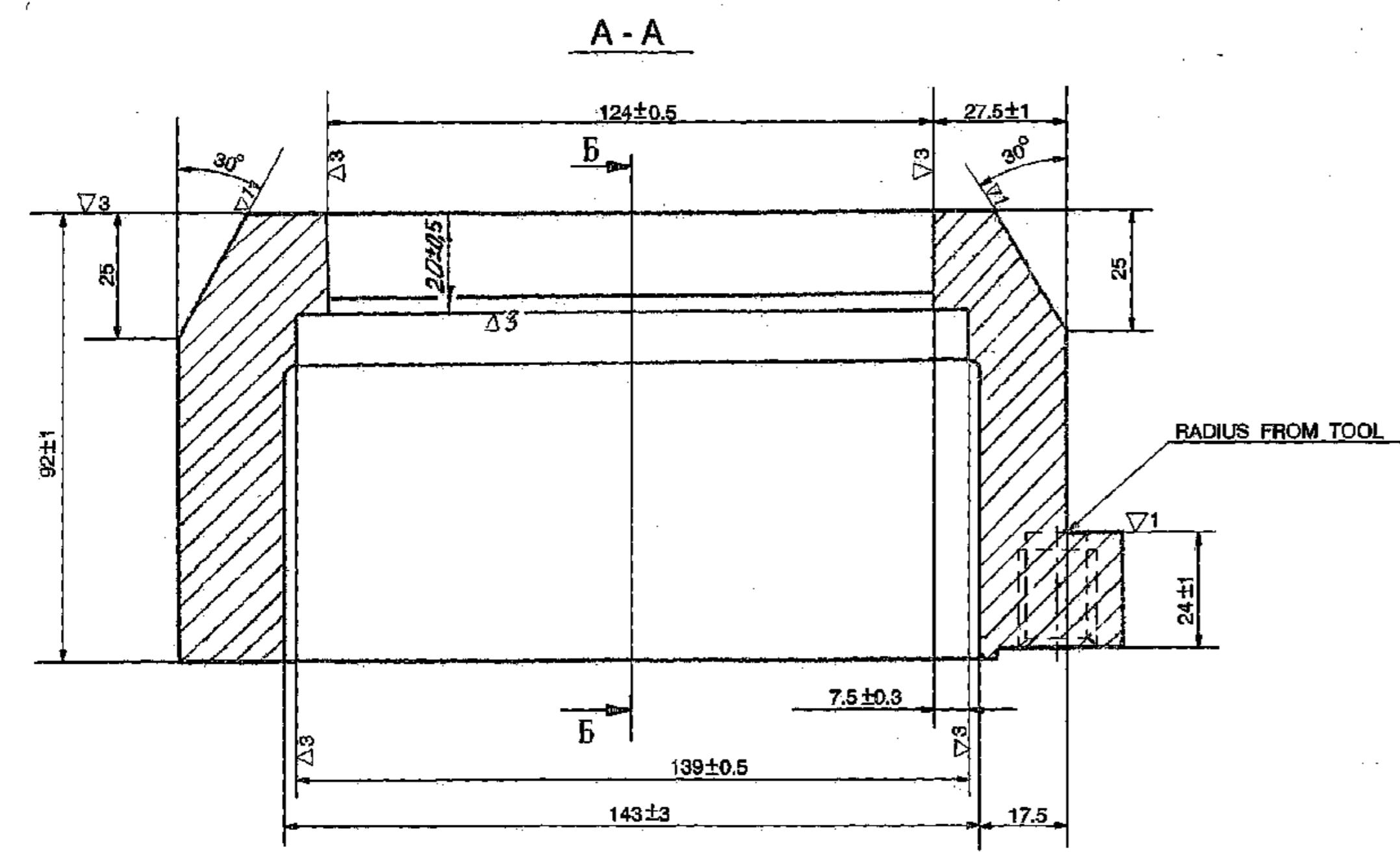
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT-SIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DRN	Sd/=
CHD	Sd/=
APPD	Sd/=
DATE	26.10.88
SCALE:-	1 : 1
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69	
ALL THREADS TO CONFORM TO	
ISSUE	DATE
NATURE OF AMENDMENTS	

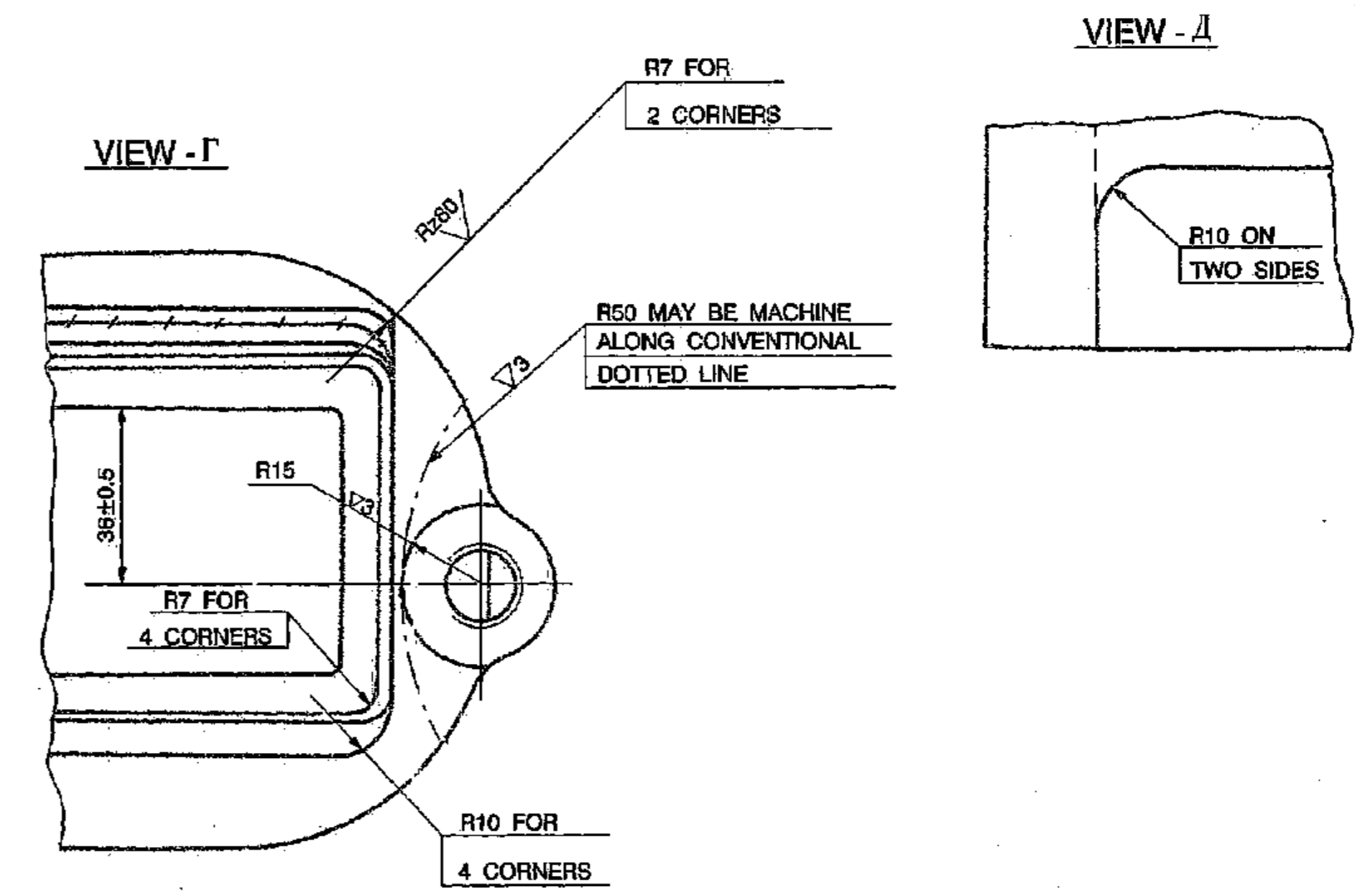
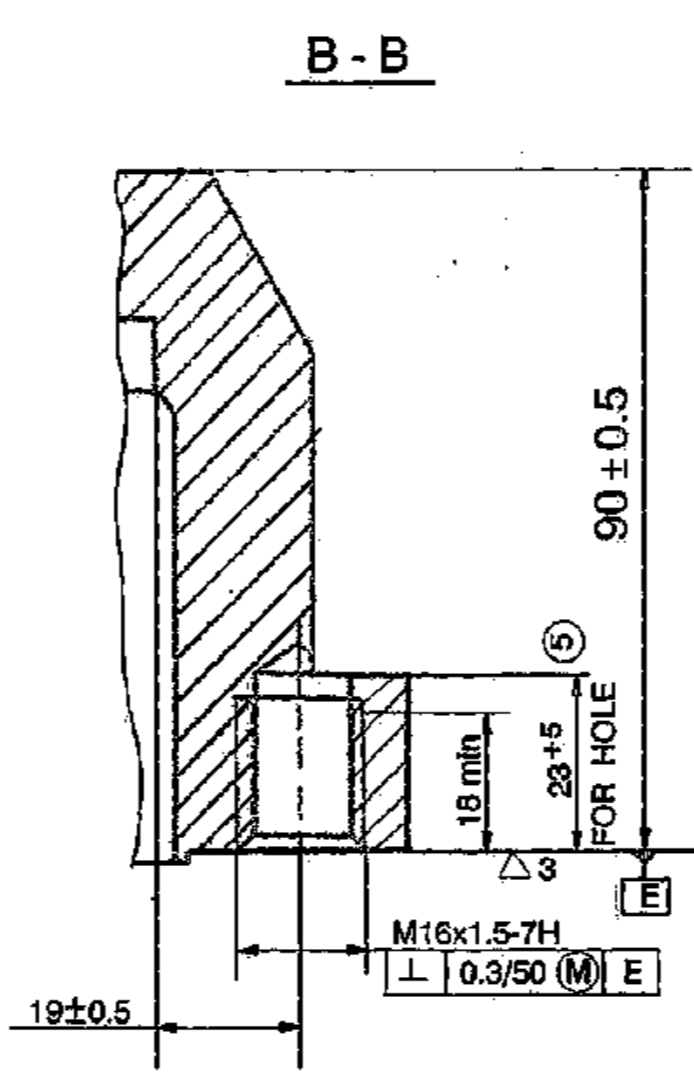
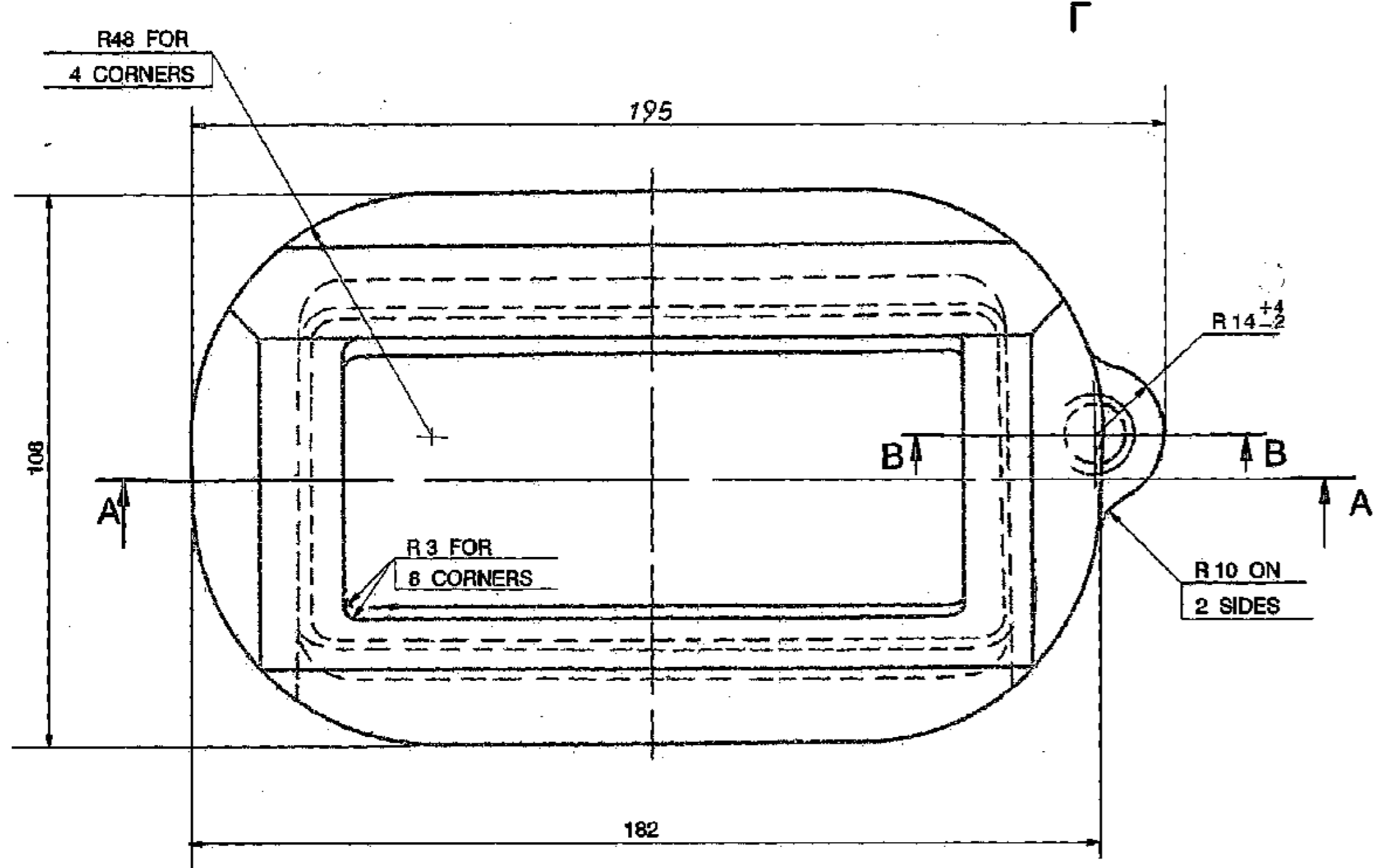
MATERIAL:- SHEET	USED ON :-
5 GOST 19903-74	172.10.074cbCb
15 GOST 1577-70	
CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
TITLE:-	SCREEN
D S CAT NUMBER	DRAWING NUMBER
	172.10.186

F-33
19

SIZE A3



1. STEEL GRADE, HEAT TREATMENT, METHODS OF ACCEPTANCE AND TESTING ARE TO BE IN COMPLIANCE WITH THE LIST OF COMPONENTS MADE FROM SPECIAL STEEL MEDIUM HARDNESS.
2. REQUIREMENTS TO COMPONENT IN ACCORDANCE WITH 172 TY 5.
3. UNSPECIFIED ADMISSIBLE DEVIATION ON ROUGH DIMENSIONS IS ±2 mm.
4. INSTEAD OF R3 MAX FOR 8 CORNERS, CHAMFERS 1.6 x 45° MAY BE DONE.
5. MACHINING OF ROUGH SURFACE TO DIMENSION 143 IS PERMITTED WHILE MACHINING TO DIMENSION 139±0.5.
6. ROUGH SURFACE IS PERMISSIBLE WHILE MACHINING TO DIMENSIONS 35±1, 57±1, 10±1 AND 9°.
7. DIMENSION FOR REFERENCE.



DRG. REINDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - 4
R. RAJAN, JTO
28-12-05
COMMON TO T-90

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. (G) TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)

4.5 ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DRN	Sd/=	MATERIAL:-	USED ON:-
CHD	Sd/=	SPECIAL STEEL	172.10.075cbCb
APPD	Sd/=	SEE POINT 1 OF T.R.	
DATE	14.07.88	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)	AVADI
SCALE:-	1 : 1		
DIMENSIONS IN mm			
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS: 2102-69			
ALL THREADS TO CONFORM TO			
ISSUE	DATE	NATURE OF AMENDMENTS	
5	16.07.88	AMDT. LIST 6/ II, BOOK-3.	

TITLE:-
HOUSING

D S CAT NUMBER
DRAWING NUMBER
172.10.133

**COMPLETING ARTICLES SHOP (69)
Vendor Qualification Criteria (VQC)**

NOMENCLATURE & DRAWING No.: HOUSING to Drg. No. 172.10.075CB, L.F No. 6206807025

1	2	3	4	5	6
	MANUFACTURING TECHNOLOGY & TESTING / INSPECTION FACILITIES REQUIRED TO PRODUCE THE ITEM	MUST BE POSSESSED BY THE VENDOR IN HIS OWN PREMISES - (P&M LIST & TESTING/INSPECTION EQUIPMENT LIST TO BE SUBMITTED)	PROVIDE DETAILS OF THE FACILITIES ASKED IN COLUMN (3) THAT ARE AVAILABLE IN-HOUSE (SELF-DECLARED P&M LIST (Nomenclature of machine, Make/Model, Capacity/Size & accuracy, Date of installation, Vintage of Manufacturing of machine) AND TESTING/INSPECTION EQUIPMENT LIST (Nomenclature of the Testing/Inspection Equipment, Make/Model, Size & Range, Date of calibration) ALSO TO BE SUBMITTED)	MAY BE POSSESSED BY THE VENDOR IN HIS OWN PREMISES OR OUT SOURCED - (MOU/TIE-UP WITH THE OUTSOURCING VENDOR/SUB-VENDOR AND THEIR P&M LIST & TESTING/INSPECTION EQUIPMENT LIST TO BE SUBMITTED)	PROVIDE DETAILS OF THE FACILITIES ASKED IN COLUMN (5) THAT ARE AVAILABLE IN-HOUSE OR OUT-SOURCED FIRMS (NAME AND ADDRESS OF THE OUTSOURCING VENDOR TO BE DECLARED BY THE FIRM IN FIRM'S LETTERHEAD, SELF-DECLARED P&M LIST (Nomenclature of machine, Make/Model, Capacity/Size & accuracy, Date of installation, Vintage of machine/Year of Manufacturing of machine) AND TESTING/INSPECTION EQUIPMENT LIST (Nomenclature of the Testing/Inspection Equipment, Make/Model, Size & Range, Date of calibration) AND MOU/TIE-UP ALSO TO BE SUBMITTED)
Technology 1	STEEL CASTING			Casting: 172.10.133-2, Est.Wt: 5.7kg Approx.	
Technology 2	MATEL CUTTING			Laser/Gas Cutting or Water Jet Cutting Thickness 5mm Max.	
Technology 3	HEAT TREATMENT			Hardening high tempering Dia. of indentation 3.5-3.8 mm	
Technology 4	SURFACE CLEANING			Shot Blasting.	
Technology 5	BENDING			Suitable Mechanical / Hydraulic Power Press	
Technology 6	*MACHINING	Conventional Milling /CNCVMC/HMC Bed Cap. 382x306mm Min.			
Technology 7	FABRICATION	Assy. Welding Electric Metal Arc/CO2			
Test/ Inspection 1	TESTING MACHINE			Brinell Hardness Tester	
Test/ Inspection 2	MEASURING INSTRUMENTS /GAUGES	Required Measuring Instruments/Suitable Standard Gauges.			

Test/ Inspection 3	TESTING MACHINE		Ultrasonic testing, Spectroscope/NABL Certified lab report for Chemical composition, Mechanical properties specified as per material Specification to be produced.	
-----------------------	--------------------	--	---	--

Note: (1) Facilities must be available with vendors own premises - including facilities available with Sister / Parent Concerns / Strategic Partners shall be Considered for Capacity Verification subjected to documentary evidence to prove the relationship / ownership.

- (2) *The firm may indicate the alternate machines/process by which the component can be manufactured as per technical specification/drawing.
 ** Firm should give undertaking that they will develop the all the fixture/testing facility if they get order.
- (3) Firm should be capable to arrange the raw material like Sheet & Casting material etc. as per drawing/specification.
- (4) Firm should be capable to arrange Suitable Furnace for carrying out Hardening and Tempering.


 M. GNANASEKARAN
 DGM/CA


 ANTYAMI PRADHAN
 JWM/QA(OE)(CA)


 LAKSHMINARAYANAN.C
 JWM/CA


 GM/OPERATIONS-II


 JTGm/OP CAK-OP

**RESTRICTED
(DRAFT/PROVISIONAL)
QUALITY ASSURANCE PLAN**

FOR

(HOUSING)

DRG.NO.172.10.075CBCB

(LF NO: 6206807025)

No.HVFT-72C/QAP/10/HOUSING/243524-00

ISSUE No: 00

DATE:MAR-2022

QUALITY ASSURANCE (RIG-SUB ASSEMBLY)

HEAVY VEHICLES FACTORY

AVADI CHENNAI – 600 054

QUALITY ASSURANCE PLAN (QAP)

FOR


HOUSING

DRG. NO. 172.10.075CBCB

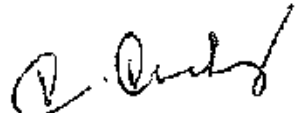
PREPARED BY

REVIEWED BY


(C.NANDA KUMAR)
JWM/QA (RIG-SA)


(D.ARUMUKAJITHKAR)
JWM/QA (RIG-ASSY)

APPROVED BY


(A.ANNACHAMY)
AWM/QA-RIG-(ASSY)

ISSUED BY

QUALITY ASSURANCE (RIG- SUB ASSEMBLY)
HEAVY VEHICLES FACTORY
AVADI CHENNAI – 600 054

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6.	ITEM USED ON	6
7.	LIST OF DRAWINGS	6
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1. IMPORTANT NOTES

Note-1

This is only a provisional and will be amended from time to time according to the requirement. No addition, deletion and reproduction will be done without permission of The Sr. General Manager, Heavy Vehicles Factory, Avadi, Chennai – 54.

Note -2

Any instruction contained in this does not prejudice the terms and conditions of the contract what so ever. In case of any contradiction between the contents of this QAP and the clause in the contract, the latter will prevail.

Note-3

The stores should be manufactured strictly only as per the drawings supplied by the Inspection Authority and not as per the samples, if any received by the manufacturer for guidance purpose.

Note-4

Any amendment issued by the Inspection Authority shall be incorporated in the QAP and the records for the amendments carried out should be maintained as per the Performa at Appendix-"A".

Note-5

In case of any contradiction between the contents of this QAP and drawings/specifications/GOST issued along with the contract, the latter only will prevail.

2. INTRODUCTION

1. This quality plan lays down the inspection and testing procedure to be carried out on the component HOUSINGTO DRG.NO 172.10.076CBCB being procured indigenously. This is prepared, based on the acceptance standards and inspection parameters laid down in collaborators documents and on the inspection test standards followed in respect of similar indigenous items.
2. This QAP is the property of Government of India and is liable for amendments as and when required. The Sr. General Manager, Heavy Vehicles Factory, Avadi, Chennai – 600 054, is the inspecting Authority for this assembly. Any query / clarification on the content of this QAP shall be referred to this Factory. Any departure from these instructions is allowed only after written approval from the above authority. Notwithstanding the tests indicated in this QAP, the inspecting Officer has the right to carry out any test to check conformance to the paper particulars quoted in the Supply Order, which he may consider necessary to satisfy himself about the stores which he has to accept.

3. AIM

The QAP is aimed at standardizing the inspection procedure and acceptance norm for HOUSINGTO DRG.NO:172.10.075CBCB.

It also aims at giving adequate information to the manufacturer on the quality requirements so that the required quality control methods are established.

This is also meant to guide authorized Inspection Officer in his routine inspection and to set out main points to which his attention must be drawn to ensure that the accepted stores meet the stipulated standards.

4. SCOPE:

This QAP outlines in general terms, the checks and methods to be used during inspection of **HOUSING TO DRG. NO. 172.10.075CBCB** including the technical requirements of the drawings, the recommended Quality Plan stipulated herein is mandatory and should be strictly adhered to.

For inspection purpose, only the latest issue of this QAP will be made applicable and copies of this QAP can be obtained from the issuing authority i.e. The Sr. General Manager, Heavy Vehicles Factory, Avadi, and Chennai.

Note:

- i. Tender enquiry (TE) and supply order (S.O) will be issued with QAP stating that inspection will be done as per QAP.
- ii. In case of TE, It is responsibility of the vendor to obtain the copy of QAP and give the statement of compliance that vendor will abide by the QAP in case supply order is placed.
- iii. In case of S.O, it is the responsible of the vendor to obtained copy of QAP and give the statement of compliance that the vendor will follow QAP. However, GM/HVF reserves the right to revise/update the QAP from time to time.

5. DOCUMENTS:

- a) On placement of firm supply order, One set of relevant specification and technical instructions on the subject item to be obtained by the contractor from AHSP through DDO/HVF
- b) Any clarification required on these documents to be obtained from the Inspecting Authority i.e. The Sr. General Manager, Heavy Vehicles Factory, Avadi, Chennai – 600 054. Equivalentents to the collaborators specifications and standards will be decided only by the Inspecting Authority and should not be unilaterally decided. For any change in the specifications, standards or written approval, any alterations in specification can be affected and not otherwise.
- c) The process instruction sheets supplied by the collaborators are available with the Authority Holding Sealed Particulars, i.e. The Controllorate of Quality Assurance (Heavy Vehicles), Avadi, Chennai for the reference. The relevant process sheets may be studied at the premises of the AHSP after obtaining necessary permission.
- d) The supplier after scrutiny of the concerned process sheets and connected paper particulars should establish the necessary production and inspection facilities. Particularly the inspection test rigs, stands, fixtures, template, gauges etc should be provided as recommended in these process sheets. If process sheet / Process Book is not available the details particulars/parameters available in the drawings to be strictly adhered.

6. ITEM USED ON:

- 1) 188.10.099CBCB -
 2) 172.10.014CB-3 -

7. LIST OF DRAWINGS:

SI. NO.	DRG. NO	NOMENCLATURE	REMARKS
	172.10.075CBCB	HOUSING	-
1	172.10.074CBCB	COVER	-
2	172.10.133	HOUSING	MAY BE REPLACED BY ITEM NO 3
3	172.04.133-2	COMPARTMENT	MAY BE REPLACED BY ITEM NO 2
	172.10.074CBCB	COVER	-
1	172.10.185	SIDE FRAME	-
2	172.10.186	COVER/SCREEN	-

8. BILL OF MATERIALS:

SI. NO.	DRG. NO	NOMENCLATURE	MATERIAL SPECIFICATIONS	Qty
	172.10.075CBCB	HOUSING	----	1
1	172.10.074CBCB	COVER	----	1
2	172.10.133	HOUSING	SPECIAL STEEL МБЛ-1 or СБЛ-2	1
3	172.04.133-2	COMPARTMENT	For details refer drawing no; 172.04.133-2	1
	172.10.074CBCB	COVER	-----	
1	172.10.185	SIDE FRAME	SHEET 5 GOST 19903-74 15 GOST 1577-70	2
2	172.10.186	COVER/SCREEN	SHEET 5 GOST 19903-74 15 GOST 1577-70	1

Note: Vendor/Contractor may use approved alternate material, if any specified in drawing/specification.*Also refer Para no: 13

9. CONDITIONS OF USE/STORAGE INSTRUCTIONS

This assembly/item should be properly packed to protect from transit / handling damage and influence of atmospheric precipitations. In addition, the following parameters should be ensured:

- (a) The threaded parts if any should be covered with suitable plastic caps to prevent damages.
- (b) If the item consists of assemblies, each assembly should be packed separately.
- (c) The stores are to be suitably covered for preventing ingress of dust and Dirt/entry of sunlight / moisture.
- (d) The packaging slip shall contains
- (i) Certificate of testing- NABL Certificate.
 - (ii) Guarantee/ Warranty Certificate.
 - (iii) Service and maintenance instructions.
 - (iv) Delivery Slip with Inspector's Acceptance Mark.
 - (v) Undertaking and certificate of conformance (As applicable).
- (e) The stores are not permitted to be stored together with oils. Petrol, acids, alkaline and other substances to avoid damage to the metal / rubber components.

10.SAMPLING PLAN:

Sl. No.	Sampling Plan	Pilot	Bulk
(i)	Visual Inspection	100%	100%
(ii)	Dimensional Inspection	100%	General Inspection level III, single sampling, Normal Inspection, AQL 2.5 of IS 2500 (Part-I)-2000
(iii)	Material Inspection	1 No	1 No. for each batch of raw material or heat treatment lot as required by specifications.
(iv)	Acceptance test	100%	100%
(v)	Pressure testing	---	---
(vi)	Machining / Fitment/ Performance trial on higher assembly / Tank	01 No.	01 No. per batch / As required.
vii)	Interchangeability Test	02 Nos.	02 Nos Per batch on randomly basis, except selective assembly.
viii)	Test stand/Jigs/ Fixtures/Gauges/Mand rels/etc.	100 %	100 %
ix)	Marking/Identification	100%	100%
x)	Packing/ Preservation	100%	100%

Note:-

A New (First time supplier of this item) supplier should obtain clearance from HVF for bulk production which will be issued only after inspection/evaluation of pilot samples by HVF.

11. VISUAL INSPECTION [Sampling plan as per Para- 10 (i)]

The stores are to be visually examined on 100 % of pilot /bulk and same should be free from any defects and all the finishing requirements shall satisfy as indicated in technical conditions of the assembly / component drawing.

The components shall be checked for the following and should be free from the defects:

- Defects in construction
- Cracks/Dents/Scratches
- Fitment of all components
- Presence of foreign particles
- Moisture and dust
- Corrosion of metal parts
- Mechanical imperfections & distortion
- Any form of deterioration of material and finishing.

Packing and preservation should be ensured as per drawings/relevant TY specification (To be ensured on receipt at consignee end).

12. DIMENSIONAL CHECK [Sampling plan as per Para- 10(ii)]

The dimensions of individual component, sub assembly and major assembly shall be checked and ensured as per respective drawing. Dimensional check should be carried out as per sampling plan. However, the inspecting authority/rep. may at his discretion, tighten the inspection level and acceptance quality level on the critical items and adopt check point during manufacture.

SI. NO.	DRG. NO	NOMENCLATURE	REMARKS
	172.10.075CBCB	HOUSING	All dimensions should be confirmed against each item as per relevant drawing/specification.
1	172.10.074CBCB	COVER	
2	172.10.133	HOUSING	
3	172.04.133-2	COMPARTMENT	
	172.10.074CBCB	COVER	
1	172.10.185	SIDE FRAME	
2	172.10.188	COVER/SCREEN	

NOTE:

1. Surface finish/Roughness should be confirmed as per drawing and Specification.
2. For admissible alternate method for manufacture in dimensions/material if any refer drawing/specification.

13) MATERIAL CHECKS [SAMPLING PLAN AS PARA – 10 (iii)].

Material specimen /test bars of the components shall be in conformity as per the material mentioned in the relevant documents/drawing. NABL test reports for all the parameters as per relevant specifications to be submitted. Test samples to be submitted by the vendor to HVF, if required. The material check will be carried out as per sampling plan. * However, if the manufacturer proposes

any alternative material at the stage of tender enquiry, the same has to be approved and a written concurrence should be obtained from AHSP through DDO/HVF, before usage of such materials.

13.1 HOUSING TO DRG NO:172.10.133

- a)The component should be manufactured from
SPECIAL STEEL to МБЛ-1 or СБЛ-2
- b)Chemical properties: As per SPECIAL STEELМБЛ-1 or СБЛ-2
For details refer
SPECIAL STEELМБЛ-1 or СБЛ-2
- c)Mechanical properties: As per SPECIAL STEEL to МБЛ-1 or СБЛ-2.
For details refer
SPECIAL STEELМБЛ-1 or СБЛ-2
- d) Hardness: DIA OF INDN 3.5 -3.8 mm

13.2 SIDE FRAME TO DRG NO:172.10.185

- a)The component should be manufactured from
SHEET 5 GOST 19903-74
15 GOST 1577-70.
- b) Chemical properties: As per STEEL 15 GOST 1577-70 and GOST 1050-74.

CONTENT OF ELEMENTS%							
C	Si	Mn	Cr	Ni	S	P	Cu
0.12 to 0.19	0.17 to 0.37	0.35 to 0.65	0.25	0.25	0.040	0.035	0.25
MAX							

Note: For mass Fraction of other elements refer GOST 1050-74.

- c) Mechanical properties: As per STEEL 15 GOST 1577-70.
For details refer
SHEET 5 GOST 19903-74
15 GOST 1577-70.
- d) Alternate material: SHEET 5 GOST 19903-74
40 OST 1577-70

13.3COVER/SCREEN TO DRG NO:172.10.186

- a)The component should be manufactured from
SHEET 5 GOST 19903-74
15 GOST 19903-74.
- b) Chemical properties: As per STEEL 15 GOST 1577-70 and GOST 1050-74.

CONTENT OF ELEMENTS%							
C	Si	Mn	Cr	Ni	S	P	Cu
			MAX				
0.12 to 0.19	0.17 to 0.37	0.35 to 0.65	0.25	0.25	0.040	0.035	0.25

Note: For mass Fraction of other elements refer GOST 1050-74.

c) Mechanical properties: As per STEEL 15 GOST 1577-70.

For details refer

SHEET 5 GOST 19903-74
15 GOST 1577-70.

d) Alternate material:

SHEET 5 GOST 19903-74
40 GOST 1577-70

14) PERFORMANCES/ACCEPTANCETEST: HOUSING TO DRG.NO:
172.10.075CBCB:

1. GAS SHIELD WELDING OF WELD : 1 IS TO BE DONE SEMI - AUTOMATICALLY.
2. PROJECTION OF SIDE WALLS COVER INTO HOLE BEYOND SURFACE **B** AND B IS NOT ALLOWED.
3. * DIMENSIONS FOR REFERENCE.

SI. NO.	DRG. NO	NOMENCLATURE	PERFORMANCES/ ACCEPTANCETEST
1	172.10.074CBCB	COVER	All technical requirements (T.R) points to be conformed against each item as per relevant
2	172.10.133	HOUSING	
3	172.04.133-2	COMPARTMENT	
	172.10.074CBCB	COVER	

1	172.10.185	SIDE FRAME	drawing/ specification.
2	172.10.186	COVER/SCREEN	

15) FITMENT AND PERFORMANCE TEST:

- a. Pilot samples should be checked for fitment and Performance test to ascertain the efficacy of the system under different operating conditions by fitting in higher assembly and repeating it for functional checks, wherever required.
- b. Items of Bulk supplies may be subjected to performance trial in tank in case of repeated failure/defects during exploitation.

EXPLANATORY NOTE:

- 1) Stage wise process and inspection of the component as specified in TD Book/ Process Book/ illustration book/specification is to be confirmed by the supplier during manufacturing the components.
- 2) Firm shall submit details of manufacturing process, inspection process and also reports for the same to HVF.
- 3) If required/applicable HVF shall witness/verify stage wise inspection /process details during manufacturing of the components.
- 4) The component may be subject to endurance test, when fitted in higher assembly as specified in process / illustration /TD book.
- 5) Apart from above, all other relevant test for acceptance of the item as specified in GOST / Specification / drawing shall be carried out by the firm and the report/ certificates shall be submitted to HVF.

16) INTERCHANGEABILITY:

The assemblies/component should be interchangeable component wise and assembly wise, except the Component are to be supplied as a set and to be assembled selectively as per sampling plan.

17) CALIBRATION CHECKS

(TEST STANDS/JIGS/FIXTURES/GAUGES/INSTRUMENTS):

The supplier / Contractor should have suitable Instruments, Test Stand, jigs, fixture, mandrels and gauges to carry out quality checks, to ensure conformance of components/assembly as per drawing and Specification /T.R points.

The supplier/contractor should submit calibration reports for instruments/fixtures/gauges/mandrels etc., which are used during process of inspection activities.

18) MARKING/IDENTIFICATION.

Marking of the items is to be carried out as called for in the relevant drawing, drawing/T.R points.

Inscription if any on the components is to be carried out as called for in the drawing/T.R points. Unless otherwise specified in the drawing/ specification, marking should not be carried out over the components.

For traceability, marking of part No., Manufacturer name, supply order No, Serial No/Qty, batch No. and manufacture date & year are to be carried out. Suitable method can be adopted, provided that the above parameters are legible and considering the parameters mentioned in the drawing and specification.

19) PRESERVATION CHECK

- a) Preservative coatings are to be strictly adhered to as called for in the drawing. However, equivalent BIS Standards can also be followed, subject to the thickness of the coating/preservative is maintained as per the drawing/specification.
- b) Other preservations as necessary to prevent damages due to moisture and dust during process, storage and transit are to be carried out. Conventional Methods can also be resorted to.

20) PACKING CHECK

Components / Assemblies are to be packed separately to avoid damages during transit / handling of the same. Part No. and No. of sets are to be marked on the packing.

Packing and preservation should be ensured as per drawings/relevant TY specification (To be ensured on receipt at consignee end).

Finished products shall be wrapped / packed using black and opaque polyethylene sheet or bags.

21) DOCUMENTATION

- i. Firm has to maintain all the documents as per QAP with respect to the SI.No.to have traceability.
- ii. Vendor has to submit Bill of materials, Material test reports, Class 'C' /Endurance test reports (wherever specified in drawing/TY specification/QAP) and Complete PIR (pre-inspection report)at the time of offeringthe item for inspection. HVF will commence inspection only after scrutiny of these documents.
- iii. The testing/inspection responsibility to test all the parameters as per QAP and drawing specifications as mentioned in Annexure -A (enclosed).
- iv. Pre inspection reports (PIR) of firm like, 1. Chemical analysis (NABL Certificate), 2.Mechanical properties (NABL Certificate), 3. Pre-forming process, 4. Coating certification (Wherever applicable), 5. Calibration reports of instruments and 6. 100 % Dimensional inspection reports and other relevant reports for acceptance of the item as specified in GOST/ Specification / drawings etc.

22) REFERENCE

- a) Drawing No. 172.10.075CBCB.
- b) Material Specification as per drawing.

SI. NO.	DRG. NO	NOMENCLATURE	MATERIAL SPECIFICATIONS
	172.10.075CBCB	HOUSING	-----
1	172.10.074CBCB	COVER	-----
2	172.10.133	HOUSING	SPECIAL STEEL МБЛ-1 or СБЛ-2
3	172.04.133-2	COMPARTMENT	For details refer drawing no:172.04.133-2
	172.10.074CBCB	COVER	-----
1	172.10.185	SIDE FRAME	SHEET 5 GOST 19903-74 15 GOST 1577-70
2	172.10.186	COVER/SCREEN	SHEET 5 GOST 19903-74 15 GOST 1577-70

c) GOST 19903-74, GOST 1577-70, GOST 5264-69, GOST 1050-74.

d) Specification 520 TY 1, 172 TY 5.

e) Alternate Material:

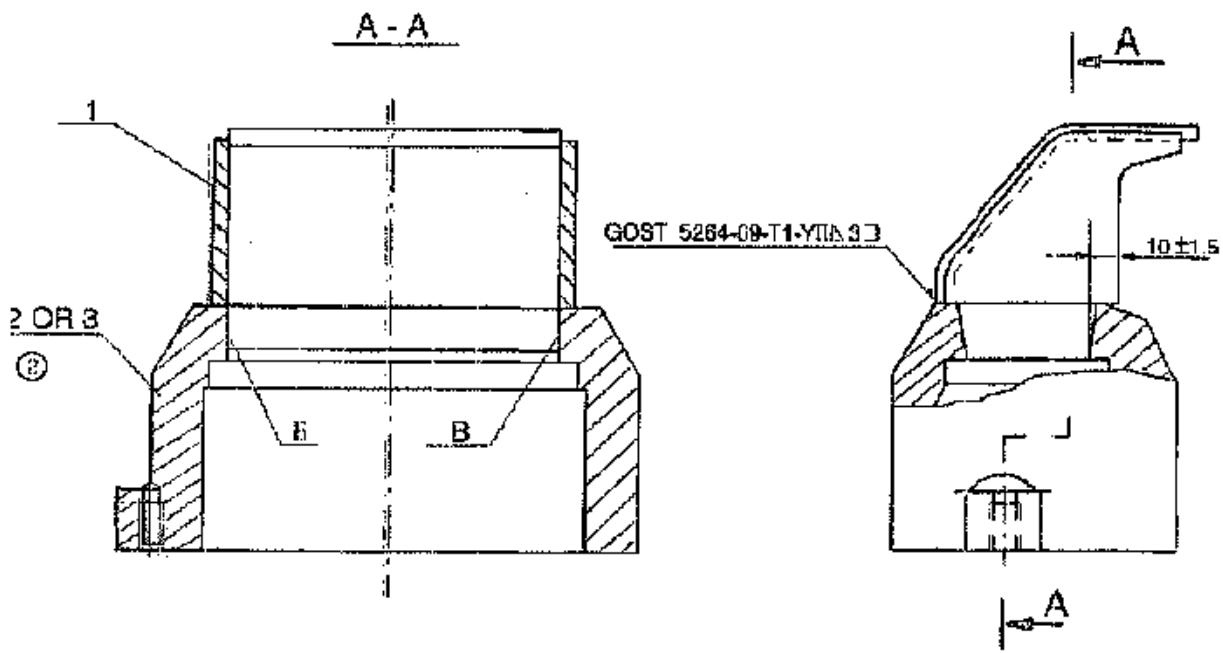
SI. NO.	DRG. NO	NOMENCLATURE	ALTERNATE MATERIAL
1	172.10.185	SIDE FRAME	SHEET 5 GOST 19903-74 40 GOST 1577-70
2	172.10.186	COVER/SCREEN	SHEET 5 GOST 19903-74 40 GOST 1577-70

Sl. NO.	CATEGORY	ASSEMBLY/ SUB ASSEMBLY	TESTS/ INSPECTION PARAMETERS	STANDARDS TO BE REFERRED	ACCEPTANCE CRITERIA	INSPECTION RESPONSIBILITY			REMARKS
						Firm	HVF	DGQA	
1	HOUSINGTO DRG. NO 172.10.076 CBCB	Pre inspection reports (PIR) of firm	Firm has to produce all the document as per QAP	As per the relevant drawing and QAP.	Confirm to drawing and QAP as per bill of material	P	V	R	100% by firm/ vendor.
2		Bill of material (BOM)	Firm has to prepare the BOM as per QAP	Refer QAP Para no: 8 or item list	Confirm to QAP	P	V	R	100% by firm/ vendor.
3		Material tests	Chemical composition & Mechanical / Physical Properties	As per- GOST 19903-74, GOST 1577-70, GOST 1050-74	All the values to confirm with QAP Para no:13.1 to 13.3 (a), (b), (c))	P	WV	R	SP followed by HVF.
4		Hardness check	Hardness	Refer QAP Para no:13.1(d)	Confirm to QAP Para no: 13.1(d)	P	V	R	SP followed by HVF.
5		Dimensional checks	Dimensions as per the drawing	Refer drawing / QAP Para no: 12	Confirm to drawing and QAP	P	W/P	R	100% by firm/ vendor SP followed by HVF.
6		Marking / traceability	Marking / traceability	Refer QAP Para no:18	Confirm to QAP Para no: 18	P	V	R	100% by firm/ vendor.
7		Preservation & packing	Preservation & packing	Refer QAP Para no 19 & 20	Confirm to QAP Para no: 19 & 20	P	V	R	100% by firm/ vendor.

Note:
For conformity of the items (Chemical/Physical/Mechanical properties).
1. One sample per heat / batch shall be tested under NABL Lab/ Govt. Approved lab by firm. In case of non-compliance to standards entire lot shall be rejected or not to use in production further.

2. For cross conformation of material, manufacturer has to submit test sample pieces for the items used / test slab and button for rubber items / HVF will draw samples from supplied lot for Witnessing (W) at HVF premises. In case of non-compliance to standards entire lot will be rejected.

P- Perform W- Witness V-Verify R-Review SP-Sampling Plan



ALTERNATE

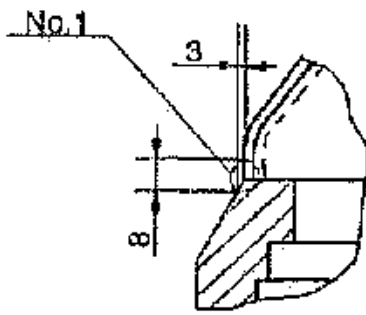


FIGURE: HOUSING TO DRG. NO. 172.10.075CBCB
(For reference only)

RECORD OF AMENDMENTS

Sl. No	Amendment No. & date	Amended by	Date of Insertion	Initial