



1 Марка стали, термообработка, способ проковки и испытаний согласно действующей ведомости на детали из спец. стали Твердость средняя  
 2 Требования к качеству огневых кромок по ГОСТ ВЗ-4302-88  
 3 Допуск плоскостности поверхностей 4 мм во внутреннюю сторону и 5 мм во внешнюю  
 4 Неприлегание к профильному шаблону, построенному по номинальным размерам, поверхностей В и Я (А-А) не более 5 мм с каждой стороны, а у верхних кромок не более 3 мм. Допускается производить контроль поверхности Я местным шаблоном  
 5 В местах гибов допускается естественное утонение металла не менее 17 мм  
 6 Допускается радиусы скруглений по контуру 5-5 мм  
 7 На поверхности детали допускаются следы от технологических керн глубиной не более 3 мм, и диаметром не более 7 мм  
 8 Неуказанные радиусы скруглений не более 30 мм  
 9 Отклонение профилей выштамповки от шаблонов, построенных по номинальным размерам и смещение их от номинального положения 0,5 мм, кроме размеров указанных в детали  
 10 Отогнутые участки Н должны лежать в одной плоскости с участками Л (неплоскостность не контролируется)  
 11 Допуск плоскостности поверхностей Э - 7 мм во внешнюю сторону, 2 мм - во внутреннюю  
 12 По поверхностям Д, Ц, Ч, Ш, Ю, Я, Б, Г, Д, Е, Ж, З, И, К, Л, М, Н, П, Р, (Гл. вид) предусмотреть технологический припуск  
 13 Контроль контура выреза Г производить шаблоном, построенным по номинальным размерам выреза детали. Отклонение от шаблона не более 1 мм в сторону уменьшения и не более 3 мм в сторону увеличения. Допуск симметричности выреза Г относительно оси Ц Т/2 - 2 мм. Допуск задиристый  
 14 Размер Э контролировать по торцам выреза А (см. Е, вид сверху)  
 15 Кернить с внутренней стороны  
 16 \* Размер для справок  
 17. Остальные требования по 520 ТУ1

- Grade of steel heat treatment method of acceptance and testing should comply with the existing list of component made out of special steel. Hardness- medium.
- Requirement for quality of gas cutting edges as per ГОСТ ВЗ-4302-88.
- Tolerance of planeness of surfaces should be 4 mm from the inner side and 5 mm from the outer side.
- Loose fit of surfaces В and Я (А-А) with the profile gauge made as per nominal dimensions should not exceed 5 mm from each side, and at the upper edges should not exceed 3 mm, surface Я may be checked by shop template.
- In place of bending natural thinning of metal is allowed by not less than 17 mm.
- Rounding off radii along contour is allowed by 5-5 mm
- On surface of component traces from technological punch is allowed by depth not exceeding 3 mm and by diameter not exceeding 7 mm.
- unspecified fillet radii should not exceed 30 mm.
- Except dimensions specified in component deviation of profile of stamping made as per nominal dimension and their shift from nominal position should be 0,5mm
- Bend section Н should lie in same plane with section Л (non- flatness need not to be checked).
- Tolerance of planeness of surface Э should be 7 mm from the outer side, 2mm from the inner side.
- Along surface Д, Ц, Ч, Ш, Ю, Я, Б, Г, Д, Е, Ж, З, И, К, Л, М, Н, П, Р, (general view) technological allowance should be provided.
- Inspection of contour of cut Г is to be carried out with gauge made as per the nominal dimension of component cut. Deviation from gauge should not exceed 1 mm from the side of decreasing and not exceeding 3 mm from the increasing side. Tolerance of symmetry of cut Г relative to axis Ц Т/2 should be 2 mm. m.m.c (maximum material condition).
- Dimension Y is to be checked along face of cut А1 (see E, top view).
- To be stamped from the inner side.
- \* Dimension for reference.
- Other requirements as per 520 ТУ1.

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

EST. WT. (kg) 443  
 TO BE STAMPED OR MARKED WHERE INDICATED THUS \* (LETTERS)

DRN	172.01.009-15	MATERIAL:-	SPECIAL STEEL	USED ON:-	172.01.198cb-6Cb
CHD	В. 705	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI			
APPD	Blanchet	TITLE:- HULL BOTTEM FRONT PLATE			
DATE	21.7.04	D S CAT NUMBER			
SCALE:-	1:5	DRAWING NUMBER			
DIMENSIONS IN mm		172.01.009-15			
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS -2102-69		ISSUE DATE NATURE OF AMENDMENTS			
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.					
ALL THREADS TO CONFORM TO					

DRG. INDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - 1

356  
 SUPPLY CODE U-01-1-2  
 D90057  
 F-57  
 82  
 SIZE A2x3

Sl. No.	Nomenclature & Drawing No.	Manufacturing Technology & Testing /Inspection Facilities required to produce the item		Must be possessed by the vendor in his own premises (List of Plant & Machinery and Testing/Inspection facility to be submitted)	COMPLIANCE	Must be possessed by the vendor in his own premises (or) may be out sourced. (Name and Address of sub-contractor, list of Plant & Machinery and Testing / Inspection facility to be submitted).	COMPLIANCE
1	HULL BOTTOM FRONT PLATE Drg.No. 172.01.009-15 LF.No. 6201001031	Technology 1	RAW MATERIAL			Under taking by Vendor that vendor will procure Raw material from SAIL ( Who is the approved source of Raw material for HVF as of now) or any other source approved by HVF in future or Russia OEM with suitable documents proof required.	
2	BOTTOM PLATE FRONT Drg.No. 172.01.009-9 LF.No. 6206801680						
3	FLOOR PLATE MIDDLE Drg.No . 172.01.010-2 LF.No. 6206801111						
4	MIDDLE PLATE OF HULL BOTTOM Drg.No. 172.01.010-8 LF.No. 6201001032						
5	REAR PLATE OF HULL BOTTOM Drg.No. 172.01.011-5 LF.No. 6201201136						

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Technology 2	GAS CUTTING			CNC Gas Cutting Machine:- Capacity to cut 20 mm thick plate.	
Technology 3	HEATING FOR FORMING AND HARDENING	Gas Fired Chamber Furnace : 3000X5500 MM , Loading temperature in furnace : 900-1000°C Heating temperature : 900-980 °C Heating time : 20-40 minutes. Holding time : 40-70 minutes with facilities:- Rotary loading unit 7T , Over Head Crane 10T & Water bath.			
Technology 4	FORMING	Hydraulic Press - 10000 T Pressing Force 7500-10000T Holding time 10-15 seconds. Transfer time of blank from furnace till complete dipping in water Max. 4 minutes. Cooling time in water Min.1.5 minutes Water temperature 20-40°C Straightening Hydraulic Press 400T.			

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Technology 5	HIGH TEMPERING	Gas Fired Chamber Furnace : 3000X5500 MM Loading temperature in furnace : 570-620°C Heating temperature : 580-620 °C Heating time : 1.0 -1.50 Hrs Holding time : 1.0 -1.50 Hrs Transfer time Max.4 minutes, Cooling time in water Minimum 2 minutes water temperature 20 - 60 °C with facilities:- Rotary loading unit 7T, Over Head Crane 10T & mechanized bath.		
Technology 6	SURFACE TREATMENT			Shot Blasting Machine
Technology 7	MILLING			Vertical Milling Center
Technology 8	TESTING	Surface Table for inspection, Measuring instruments, profile/receiver gauges. Portable / Universal Hardness testing equipments.		

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1	SHEET STREN BOTTOM Drg.No. 175.01.007-4 LF No.6206801291	Technology 1	RAW MATERIAL			Under taking by Vendor that vendor will procure Raw material from SAIL ( Who is the approved source of Raw material for HVF as of now) or any other source approved by HVF in future or Russia OEM with suitable documents proof required.	
2	HULL REAR LOWER PLATE Drg.No. 175.01.007-5 LF No.6201201126			Technology 2	GAS CUTTING		
		Technology 3	BENDING	Bending in clod condition Load under closed die : 3500T Holding time in die: 5-10 sec Straightening Hydraulic Press 400T.			

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Technology 4	HARDENING	Gas Fired Chamber Furnace : 3000X5500 MM Loading temperature in furnace : 860-950°C Heating temperature : 880-950 °C Heating time : 40-60 minutes. Holding time : 45-75 minutes Transfer time . Max.4 Minutes Cooling time in water: 6-8 Minutes Temperature of water: 30-45°C with facilities:- Quenching press 1600 T Rotary loading unit 7T , Over Head Crane 10T			
Technology 5	HIGH TEMPERATURE TEMPERING	Gas Fired Chamber Furnace : 3000X5500 MM Loading temperature in furnace : 570-640°C Heating temperature : 570-640 °C Heating time : 60-90 minutes. Holding time : 60-90 minutes Transfer time . Max.4 Minutes Cooling time in water: 3-5 Minutes Temperature of water: 30-45°C with facilities:- Quenching press 1600 T Rotary loading unit 7T , Over Head Crane 10T			
Technology 6	SURFACE TREATMENT			Shot Blasting Machine	
Technology 7	TESTING	Surface Table for inspection, Measuring instruments, profile/receiver gauges. Portable / Universal Hardness testing equipments.			