



axis to be punched from the inner side
ось кернить с внутренней стороны

1. Марка стали, термообработка, способ приемки и испытаний согласно действующей ведомости на детали из спец. стали. Твердость средняя.
2. Требования к качеству огневрезных кромок по OST B3-4302-88.
3. Допуск плоскостности поверхностей 4 мм во внутренней стороне и 5 мм во внешнюю.
4. Неприлегание к профильному шаблону, построенному по номинальным размерам поверхности П (А-А) не более 8 мм с каждой стороны, а у верхних кромок не более 3 мм. Допускается производить контроль поверхности и местным шаблоном.
5. В местах гибов допускается естественное утонение металла не менее 17 мм.
6. Допускаются 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. Отклонение профилей вытанпоков от шаблонов, построенных по номинальным размерам и смещение их от номинального положения 0,5 мм, кроме размеров указанных в детали.
9. Опознанные участки Ж должны лежать в одной плоскости с участками И (неплоскостность не контролировать).
10. Допуск плоскостности поверхности К - 7 мм во внешнюю сторону, 2 мм - во внутреннюю.
11. По поверхностям Е, П, Р, С, Т, У, Ф, Ц, Ч, Ш (вид сверху) предусмотреть технологический припуск.
12. Кладить с внутренней стороны.
13. * Размер для справок.
14. Остальные требования по 520 ТУ1.

1. Grade of steel, heat treatment, method of acceptance and testing should comply with the operating list for components made out of special steel. Hardness medium.
2. Requirement for quality of gas cutting faces should be as per OSTB3-4302-88.
3. Tolerance of planeness of surface should be 4mm at inner side and 5mm at the outer side.
4. Loose fit of surfaces H, П (A-A) with profile gauge, made as per nominal dimension should not exceed 8mm from each side, but at the upper edges should not exceed 3mm. Inspection of surfaces H may be carried out by the shop template.
5. In places of bending, natural thinning of metal is allowed by not less than 17mm.
6. Removing off radii is allowed along contour by 5 mm.
7. On component surface traces from technological punch are allowed by depth not exceeding 3mm and with diameter not exceeding 7mm.
8. Deviation of forging profiles from gauges made as per nominal dimension and their shift from normal position should be 0,5 mm, except dimension specified in component.
9. Bend section Ж should be in the same plane with the section И (Non- flatness need not to be checked).
10. Tolerance of planeness of surfaces K should be 7mm from the outer side, 2mm from the inner side.
11. Along surfaces Е, П, Р, С, Т, У, Ф, Ц, Ч, Ш (top view) technological allowances is to be provided.
12. To be stamped from the inner side.
13. * Dimension for reference.
14. Other requirements as per 520 TY1.

DRG. INDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - NIL

356
SUPPLY CODE
U-01-1-2
D90037

F-58
1
SIZE A2x3

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)
556.2	

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

DRN	1.0	MATERIAL:-	SPECIAL STEEL	USED ON:-	172.01.169cb-9Cb
CHD	B. 70	CONTROLLER/ATE OF QUALITY ASSURANCE (HEAVY VEHICLES)	AVADI	TITLE:-	MIDDLE PLATE OF HULL BOTTOM
APPD	Handwritten	D S CAT NUMBER		DRAWING NUMBER	172.01.010-8
DATE	17.6.04	ISSUE DATE NATURE OF AMENDMENTS			
SCALE:	1:5				
DIMENSIONS IN mm					
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS: 200-60					
ALL THREADS TO CONFORM TO					

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 cold 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.			