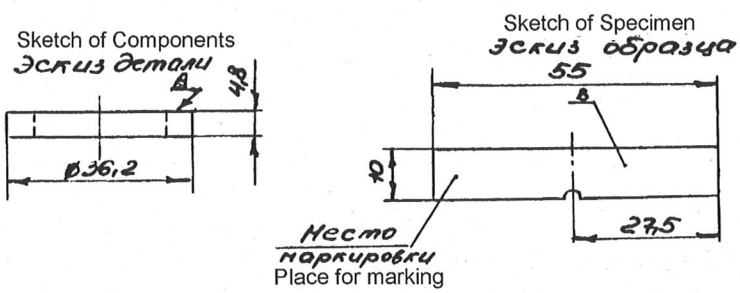




### Technological process Chart for heat treatment

**Sheet 1**  
**Sheets 5**

Article	Component No.	Nomenclature of component	Material grade	Weight of comp. kg.
AO - 18	01.028	Shutter ring	Steel 25Kh17N2B-Sh	~ 0.01



Set

Oper. No.	Nomenclature of operation	Equipment	Mode			Fixture LK0772	No. of fixtures	No. of comp. on fixture
			t°C of heating	Time of heating, min.	Cooling			

Get familiar with safety instruction No.100 and 05042520000014

Components for heat treatment should be dispatched in batches of same melting, 48 components (not more than) each for a batch. Each batch should be received from mechanical shop with certificate and six specimens for testing impact viscosity. Specimens should have following marking: Designation of component, melting number and batch number.

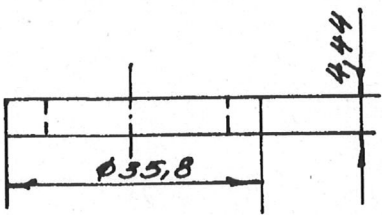
0030	Checking of grade of steel of components and specimens						
0040	Tying of components and specimens (48 components each in a tie)						
0050	Hardening with tie						
1. Heating	Electric furnace cabinet	1100-1120	30	Oil 40-80°	4050	2	96
2. Washing	Washing machine	70-100°		Air			
3. Cold machining	In liquid nitrogen or argon medium	not above -70°	20		LK 0741-4145	1	48

Technical condition for test					Depth of carburizing layer, mm	Hardness HRC <sub>E</sub>	Test place and test %	Polishing
$\sigma_V$ kg/mm <sup>2</sup>	$\delta$ %	$\varphi$ %	ak, kgm/cm <sup>2</sup>	Qty. and type of test specimen				
				Separable	Impact			

Remark					
	No.p/p	Reason for amendment	Sign	Date	

Technological process Chart for heat treatment				Sheet 2						
				Sheets 5						
Article		Component No.		Nomenclature of component		Material grade		Weight of comp. kg.		
AO - 18		01.028		Shutter ring		Steel 25Kh17N2B-Sh		~ 0.01		
							Set			
Oper. No.	Nomenclature of operation	Equipment	Mode			Fixture LK0772	No. of fixtures	No. of comp. on fixture		
			t°C of heating	Time of heating, min.	Cooling					
Get familiar with safety instruction No.100 and 05042520000014										
Remark:										
Conduct tempering after cold machining, not earlier than 2 hours of attainment of room temperature by components										
Mount diagram										
0060	Tempering									
	Heating	Salt peter tank	250-320°	120	Water, air	4012	1	192		
Remove diagram										
0070	Untying									
0080	Inspection of tempering mode by BTK as per diagram.									
0090	Cleaning on hydro sandblasting equipment									
0095	Cleaning of places meant for checking hardness of components and specimens.									
Technical condition for test						Depth of carburizing layer, mm	Hardness HRC <sub>E</sub>	Test place and test %	Polishing	
$\sigma_V$ kg/mm <sup>2</sup>	$\delta$ %	$\varphi$ %	ak, kgm/cm <sup>2</sup>	Qty. and type of test specimen						
				Separable	Impact					
Remark										
						No.p/p	Reason for amendment	Sign	Date	
30										

Technological process Chart for heat treatment				Sheet 3										
				Sheets 5										
Article		Component No.		Nomenclature of component		Material grade		Weight of comp. kg.						
AO - 18		01.028		Shutter ring		Steel 25Kh17N2B-Sh		0.01						
							Set							
Oper. No.	Nomenclature of operation	Equipment	Mode			Fixture LK0772	No. of fixtures	No. of comp. on fixture						
			t <sup>0</sup> C of heating	Time of heating, min.	Cooling									
Get familiar with safety instruction No.100 and 05042520000014														
0100 Checking of hardness of components at point "A" and specimens at point "B"														
Bureau of technical inspection dispatches 2 specimens to OGMet														
for a batch of 48 pcs for testing impact viscosity (4 specimens remain in shop)														
0110 Preparation of certificate after positive conclusion of OGMet.														
0120 Stamping of stamp "I" on tag														
Remark: In case of unsatisfactory results of impact viscosity as per those specified by Chief metallurgical engineer are obtained then either repeat impact viscosity test is conducted on double the quantity of specimens or repeat heat treatment is done.														
Technical condition for test					Depth of carburizing layer, mm	Hardness HRC <sub>E</sub>	Test place and test %	Polishing						
$\sigma V$ kg/mm <sup>2</sup>	$\delta$ %	$\varphi$ %	ak, kgm/cm <sup>2</sup>	Qty. and type of test specimen										
			not less than 4	Separable	Impact		45.5... 51.5	At point A and B 100%	Polishing wheel					
Remark:														
					No.p/p	Reason for amendment		Sign	Date					
31														

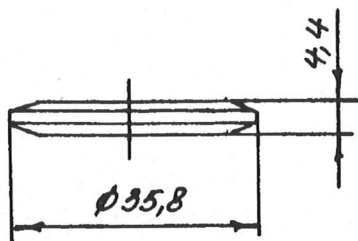
Technological process Chart for heat treatment								Sheet 4	
								Sheets 5	
Article	Component No.		Nomenclature of component		Material grade		Weight of comp. kg.		
AO - 18	01.028		Shutter ring		Steel 25Kh17N2B-Sh		~ 0.015		
							Set		
Oper. No.	Nomenclature of operation	Equipment	Mode			Fixture LK0772	No. of fixtures	No. of comp. on fixture	
			t°C of heating	Time of heating, min.	Cooling				
Get familiar with safety instruction No.100 and 05042520000014									
0143	Tempering for removal of internal stress after grinding.								
	Heating	Electric furnace cabinet	140-160°	6.0-	Air	Basket		48	
				6.5					
Inspection of tempering mode by BTK									
Time of starting tempering not later than 24 hours from start of operation 0130									
Starting time of grinding of faces (operation 0130) and time of starting of tempering should be specified in certificate									
Technical condition for test						Depth of carburizing layer, mm	Hardness HRC <sub>E</sub>	Test place and test %	Polishing
$\sigma_V$ kg/mm <sup>2</sup>	$\delta$ %	$\varphi$ %	ak, kgm/cm <sup>2</sup>	Qty. and type of test specimen					
				Separable	Impact				
Remark:									
						No.p/p	Reason for amendment	Sign	Date
32									

### Technological process Chart for heat treatment

**Sheet 5**

**Sheets 5**

Article	Component No.	Nomenclature of component	Material grade	Weight of comp. kg.
AO - 18	01.028	Shutter ring	Steel 25Kh17N2B-Sh	~ 0.0008



Set

Oper. No.	Nomenclature of operation	Equipment	Mode			Fixture LK0772	No. of fixtures	No. of comp. on fixture
			t°C of heating	Time of heating, min.	Cooling			

Get familiar with safety instruction No.100 and 05042520000014

0143 Tempering for removal of internal stress after turning

Heating	Electric furnace cabinet	140-160°	6.0-	Air	Basket		48
			6.5				

Inspection of tempering mode by BTK

Time of starting tempering not later than 24 hours from start of turning (operation 0150)

Starting time of operation 0150 and time of starting of tempering should be specified in certificate

Technical condition for test

$\sigma V$ kg/mm <sup>2</sup>	$\delta$ %	$\varphi$ %	ak, kgm/cm <sup>2</sup>	Qty .and type of test specimen		Depth of carburizing layer, mm	Hardness HRC <sub>E</sub>	Test place and test %	Polishing
				Separable	Impact				

Remark:

No.p/p	Reason for amendment	Sign	Date
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