

			<b>TOTAL SHEETS - 114</b>	

	<b>B-92C2</b>		<b>114</b>	<b>1</b>
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	Nomenclature of company	(Marking of part, assembly unit)	<b>3312-100-2</b>	Marking of set of documents	
	<b>OIL PUMP GEAR</b>				

Nomenclature of part (assembly unit)

Set of documents for technological process

### **Machining**

Nomenclature of technological process type

**TECHNOLOGICAL PROCESS OF MECHANICAL TREATMENT**

<b>FOLDER NO. 103</b>	<b>SHEETS 1 TO 114</b>
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<b>F-103</b>
<b>1/114</b>















																			8	
										<b>3312-100-2</b>										
										<b>3312-100-2</b>										
A	Цех	УЧ	PM	Опер	Code, nomenclature operation					Marking of document										
Б	Code, nomenclature of equipment					СМ	проф	Р	УТ	КР	КОИД	БН	ОП	К шт	Т пз	Т шт.				
К/М	Nomenclature of part, assembly unit or material					Marking,code					ОПП	ЕВ	ЕН	КИ	Нрасх					
A01				090	Fitting															
Б 02					Bench					1	1								1.04	
03																				
04																				
05																				
06				095	Fitting															
07					bench					1	1								1.3	
8																				
09																				
10																				
11				100	Inspection															
12					Inspection table					1	1								0.83	
13																				
14																				
15																				
16																				
17																			<b>F-103</b>	
МК		Route sheet																	<b>9/114</b>	

															9	
										3312-100-2						
										3312-100-2						
A	Цех	УЧ	РМ	Опер	Code, nomenclature operation					Marking of document						
Б	Code, nomenclature of equipment					СМ	проф	Р	УТ	КР	КОИД	БН	ОП	К шт	Т пз	Т шт.
К/М	Nomenclature of part, assembly unit or material					Marking,code						ОПП	ЕВ	ЕН	КИ	Нрасх
A01																
Б 02																
03																
04																
05																
06																
07				105	Heat treatment											
8																
09																
10																
11																
12																
13																
14																
15																
16																
17																F-103
МК		Route sheet														10/114













							5	1		
		<b>3312-100-2</b>								
		Oil pump gear								010
Nomenclature of operation		Material	Hardness	EB	МД	Profile and dimension			МЗ	КОИД
Turning										1
Equipment, CNC machine		Marking of program	То	ТВ	Т п.з	Т шт	СОЖ			
Engine lathe 16K20			3.49	2.01	0.44	5.94 Ha 100 0.06Ha 1	по ИЛ352-78 Solution No 1			
<b>P</b>			ПИ	Д or B	L	t	l	S	n	v
01	ИОТ No 27, ИОТ No 250								ТВ	То
02										
03	1.Mount and fasten the part, cover with protective shield									
04									0.3	
05										
06	7102-0072 Chuck 2-1-П Gost 24351-80									
07										
08										
09	Attention! This operation to be carried out for one part from a batch of 100 nos.									
10										
11										
12										
13										
										<b>F-103</b>
OK	Operation chart of mechanical process									<b>17/114</b>

										2	
								3312-100-2		010	
P				ПИ	Д or В	L	t	l	s	n	u
01										<b>TB</b>	<b>To</b>
02	2. Turn the surface by keeping the dimensions $\textcircled{1}$ $\textcircled{3}$ ,									0.38	0.88
03											
04	T9312-1032-02 Tool 25 x 25 x 160 СТП 108-1093-96 (step. 3)										
05	SNMM-120408 Cutting plate MTI (step .3)										
06	2007-1072 Supporting plate TY 19-4206-95-83 (step .3)										
07	Vernier calipers ШЦ I-125-0.1-1 Gost 166-89										
08											
09					60/55	53	2.5	1	0.15	400	69
10											
11	3.Face									0.27	0.51
12											
13	Step 2										
14											
15											
16											
17					55	30.5	1	1	0.15	400	69
18											<b>F-103</b>
OK	Operation chart of mechanical processing										<b>18/114</b>

3312-100-2										
P	ПИ		Д or В		L	t	l	s	n	u
01									<b>TB</b>	<b>To</b>
02	4. Centerdrill the face									
03										
04	03411-54 Drill 60°-4									
05										
06			10	8	5	1	0.1	315	9.9	
07										
08										
09	5. Drill the hole, by keeping the dimension <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">2</span> for L=50									
10									0.45	1,84
11	6101-0127 Bush Gost 18258-72									
12	2301-0058 Drill 17.25 Gost 10903-77									
13	8133-0931 Plug gauge 17H14 Gost 14810-69									
14										
15										
16										
17			17	58	8.5	1	0.1	315	16.8	
18										
OK	Operation chart of mechanical processing									<b>19/114</b>

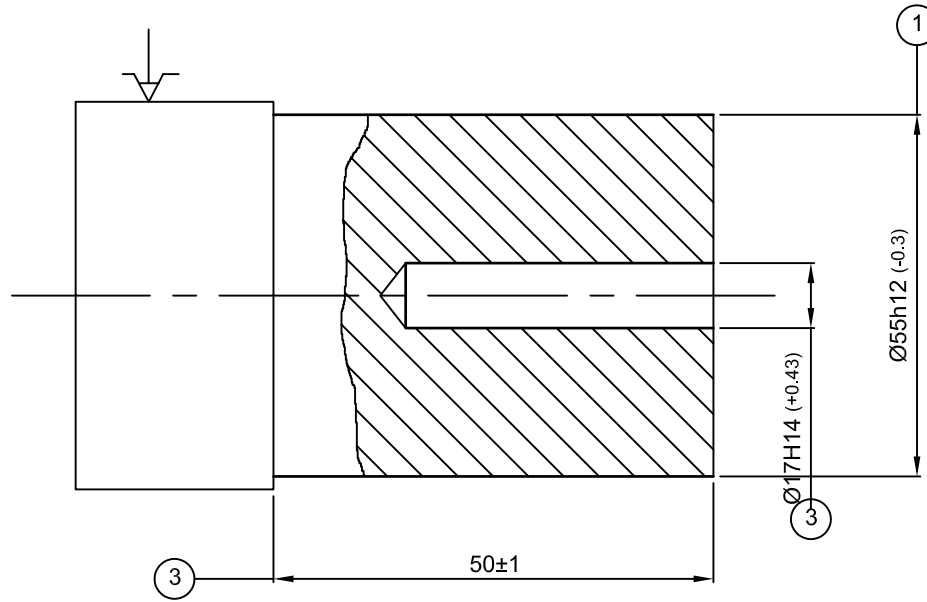


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3312-100-2

010

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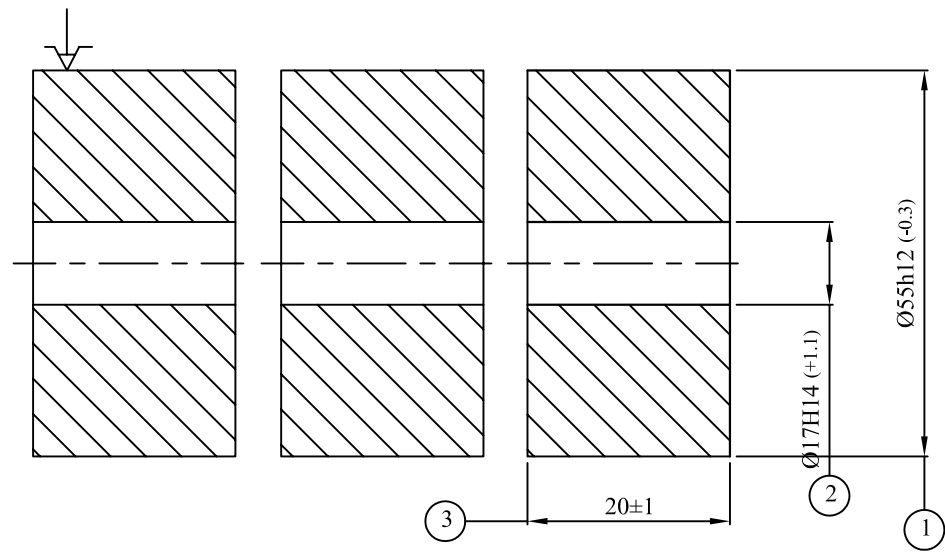
									2		
									<b>3312-100-2</b>	015	
P				ПИ	Д or B	L	t	l	s	n	u
01										<b>TB</b>	<b>To</b>
02	2. Turn the diameter by keeping the dimension (1)										
03											
04	T9312-1032-02 Tool 25x25x160 СТП 108-1093-96			(step .3).							
05	SNMM-120408 Cutting plate MTI			(step 3).							
06	2007-1072 Supporting plate TY 19-4206-95-83			(step. 3).							
07	Vernier calipers ШЦ I-125-0.1-1 Gost 166-89			(step.6).							
08											
09											
10					60/55	33	2.5	1	0.15	400	69
11											
12	3.Face									0.41	0.51
13											
14	Step 2										
15											
16											
17					55	30.5	1	1	0.15	400	69
18											<b>F-103</b>
OK	Operation chart of mechanical processing										<b>23/114</b>

										3	
										015	
P				ПИ	Д or B	L	t	l	s	n	u
01										<b>TB</b>	<b>To</b>
02	4. Centredrill the face.									0.26	0.25
03											
04	03411-54 Drill 60°-4										
05											
06											
07					10	8	5	1	0.1	315	9.9
08											
09	5. Drill the hole, by keeping the dimension <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">2</span>									0.45	1.2
10											
11	6101-0127 Bush Gost 18258-72										
12	2301-0058 Drill 17.25 Gost 10903-77										
13	8133-0931 Plug gauge 17H14 Gost 14810-69										
14											
15											
16											
17					17	38	8.5	1	0.1	315	16.8
18											<b>F-103</b>
OK	Operation chart of mechanical processing										<b>24/114</b>



																			5							
																			3312-100-2				015			

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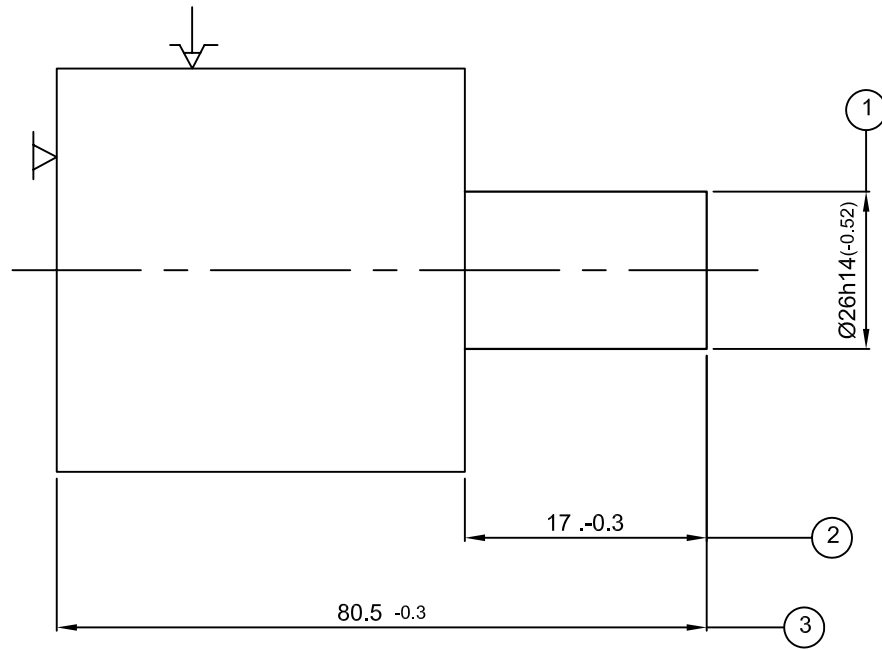


								3		1	
				3312-100-2							
				Oil pump gear						020	
Nomenclature of operation		Material		Hardness	EB	МД	Profile and dimension			МЗ	КОИД
Turning											1
Equipment, CNC machine		Marking of program		То	Тв	Т п.з	Т шт		СОЖ		
Turret lathe 1П365				2.17	1.3	0.29	3.76		по ИЛ352-78 Solution No 1		
<b>P</b>				ПИ	Д or B	L	t	l	S	n	v
01	ИОТ No 27 ИОТ No 250									Тв	То
02											
03	1. Mount and fasten the part, cover with protective shield										
04										0.2	
05											
06	7102-0072 Chuck 2-1-П Gost 24351-80										
07											
08	2. Face, by keeping the dimension <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">3</span>									0.2	0.53
09											
10	T9312-1032-02 Tool 25x25x160 СТП 108-1093-96										
11	SNMM-120408 Cutting plate MTI										
12	2007-1072 Supporting plate TY19-4206-95-83										
13	Vernier calipers ШЦ I-125-0.1-1 Gost 166-89 (step 3)										
										<b>F-103</b>	
Operation chart of mechanical process										<b>27/114</b>	



																		3	
														3312-100-2		020			

10/





										2			
										025			
P						ПИ	Д or B	L	t	l	s	n	u
01												<b>TB</b>	<b>To</b>
02							60	30.5	1.5	1	0.15	385	72.5
03													
04	3.Turn the diameter, by keeping the dimensions (1) (3),											0.8	1.64
05													
06	T9312-1035-02 Tool 25x25x150 СТП108-1093-96												
07	TNMM-220408 Cutting plate MT1												
08	2007-0074 Supporting plate TY19-4206-95-83												
09	Step 2												
10	05500-21 Snap gauge 26h14												
11													
12													
13							60/26	20.5	14.5	3	0.15	385	72.5
14	4. Operator inspection.							34.5		1	0.15	385	72.5
15	Goggles 024 Gost p12.4.013-97											0.1	
16	T6990-0001 Hook СТП108-929-82												
17	T6991-0003 Scoop СТП 108-930-82												
18	Wire brush												<b>F-103</b>
OK	Operation chart of mechanical processing										<b>31/114</b>		



										6	1
<b>3312-100-2</b>											
Oil pump gear											030
Nomenclature of operation		Material		Hardness	EB	МД	Profile and dimension			М3	КОИД
Turning											1
Equipment, CNC machine		Marking of program		То	Тв	Т п.з	Т шт		СОЖ		
Turret lathe 1П365				4.45	2.02	0.52	6.99		по ИЛ352-78 Solution No 1		
<b>P</b>				ПИ	Д or В	L	t	l	S	n	v
01	ИОТ No 27 ИОТ No 250									Тв	То
02											
03	1. Mount and fasten the part, cover with protective shield.										
04										0.2	
05											
06	7102-0072 Chuck 2-1-П Gost 24351-80										
07											
08	2. Turn the face, by keeping the dimension (5)									0.3	0.28
09											
10	T9312-1032-02 Tool 25x25x160 СТП 108-1093-96			(step 4)							
11	SNMM-120408 Cutting plate MTI			(step 4)							
12	2007-1072 Supporting plate ТУ19-4206-95-83			(step 4)							
13	Vernier calipers ШЦ I-125-0.1-1 Gost 166-89			(step 3)							
										<b>F-103</b>	
OK	Operation chart of mechanical process										<b>33/114</b>





P	ПИ	Д or В	L	t	l	s	n	u
01							<b>ТВ</b>	<b>То</b>
02	6.Drill the hole, by keeping the dimension (2)						0.48	3.1
03								
04	6101-0127 Bush Gost 18258-72 (Step.7)							
05	2301-0058 Drill 17.25 Gost 10903-77							
06	8133-0931 Plug gauge 17H14 Gost 14810-69							
07								
08								
09		17	85	8.5	1	0.1	274	14.6
10								
11	7. Countersink the chamfer, by keeping the dimension (4)						0.17	0.15
12								
13	Step 6							
14	2353-0122 Countersink 20 x 60° Gost 14953-80							
15	05424-04 Template 2 x30°							
16	05424-04 Template 1.6x30°							
17								
18								<b>F-103</b>
OK	Operation chart of mechanical processing							<b>36/114</b>

								5		
								<b>3312-100-2</b>	030	
P			ПИ	Д or B	L	t	l	s	n	u
01									<b>TB</b>	<b>To</b>
02				17	2+2	2x30°	1	0.1	274	14.6
03										
04										
05										
06										
07										
08										
09										
10										
11	8. Operator inspection.								0.25	
12										
13	Goggles 024 Gost p12.4.013-97									
14	T6990-0001 Hook СТП 108-929-82									
15	T6991-0003 Scoop СТП 108-930-82									
16	Wire brush									
17										
18										<b>F-103</b>
OK	Operation chart of mechanical processing									<b>37/114</b>





										2	
										035	
<b>3312-100-2</b>											
P			ПИ	Д or B	L	t	l	s	n	u	
01									<b>TB</b>	<b>To</b>	
02				26	7	0.2	1	0.15	385	31	
03											
04	3. Turn the diameter and face by keeping the dimensions										
05	(2) ; (6)										
06									0.26	0.58	
07	T9312-1035-02 Tool 25x25x150 СТП 108-1093-96										
08	TNMM-220408 Cutting plate MT1										
09	2007-0074 Supporting plate TY 19-4206-95-83										
10	05500-20 Snap gauge 25h12										
11	Step 2										
12											
13											
14											
15				26/25	16+14.5+3	0.5	1	0.15	385	31	
16				60		0.7					
17											
18										<b>F-103</b>	
OK	Operation chart of mechanical processing										<b>40/114</b>





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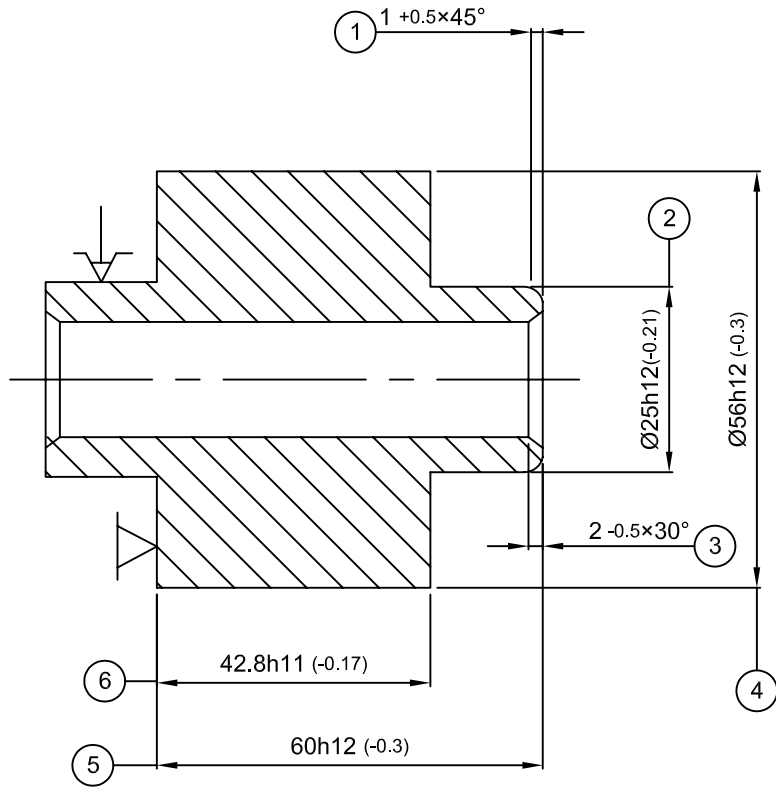
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3312-100-2

035

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										4	
									3312-100-2		040
P				ПИ	Д or В	L	t	l	s	n	u
01										<b>TB</b>	<b>To</b>
02											
03					25/24.3	17.2	0.35		0.85	190	
04					24.3	15	0.3		1.5	190	
05											
06											
07											
08											
09											
10											
11											
12	4.Operator inspection									0.1	
13											
14	Goggles 024 Gost p 12.4.013-97										
15	Wire brush										
16	T6991-0003 Scoop СТП 108-930-82										
17											
18											<b>F-103</b>
OK	Operation chart of mechanical processing										<b>47/114</b>





									2		
						3312-100-2			045		
P			ПИ	Д or В	L	t	l	s	n	u	
01									<b>TB</b>	<b>To</b>	
02											
03	2.Grease datum chamfers.								0.2		
04											
05	Grease 'C' Gost 4366-76										
06											
07											
08											
09											
10											
11	3. Grind the surface, by keeping the dimension										
12	②, ③, ④ and facial and radial runout tolerance										
13	①.								0.37	0.41	
14											
15											
16											
17											
18											<b>F-103</b>
OK	Operation chart of mechanical processing									<b>50/114</b>	



																																				4																							
																																				3312-100-2												045											
P													ПИ	Д or B												L	t	l	s	n	u																												
01																														TB	To																												
02																																																											
03														25/24.3												17.2	0.35		0.85	190																													
04														24.3												15	0.25		1.5	190																													
05																																																											
06																																																											
07																																																											
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09																																																											
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11																																																											
12	4.Operator inspection																													0.1																													
13																																																											
14	Goggles 024 Gost p 12.4.013-97																																																										
15	Wire brush																																																										
16	T6991-0003 Scoop СТП 108-930-82																																																										
17																																																											
18																															F-103																												
OK	Operation chart of mechanical processing																														F-103	52/114																											

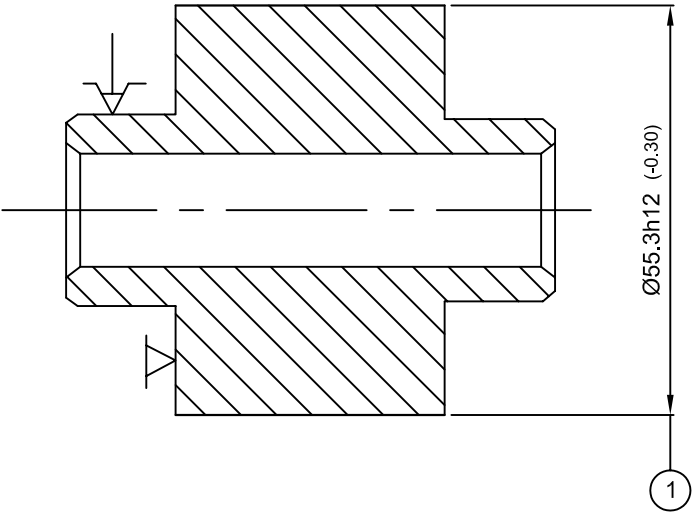






																				3	
														3312-100-2							050

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▽



Sketch Chart

F-103  $\frac{56}{114}$





																	3		
																	3312-100-2	055	

10 / 

