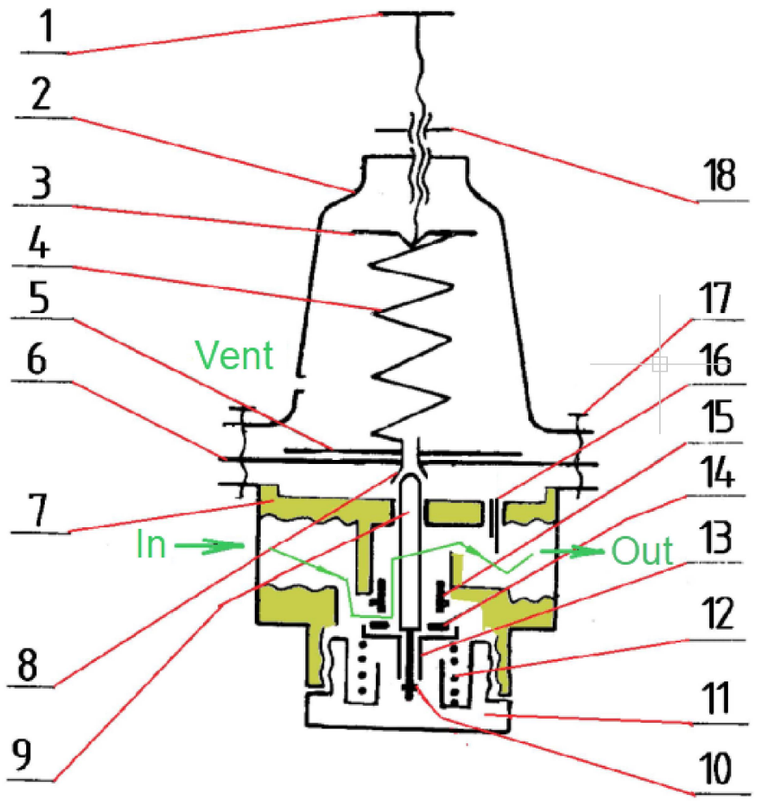
2023 ZWSOFT CAD Competition - 3D Modeling Testpaper (Practice)

Time: Within 24h, create file folder named as "personal Email address", all the answer files need to be put into this file folder

Competition requirement:
Complete all the 3D models and 2D drawing of assembly according to the 2D PDF drawing.

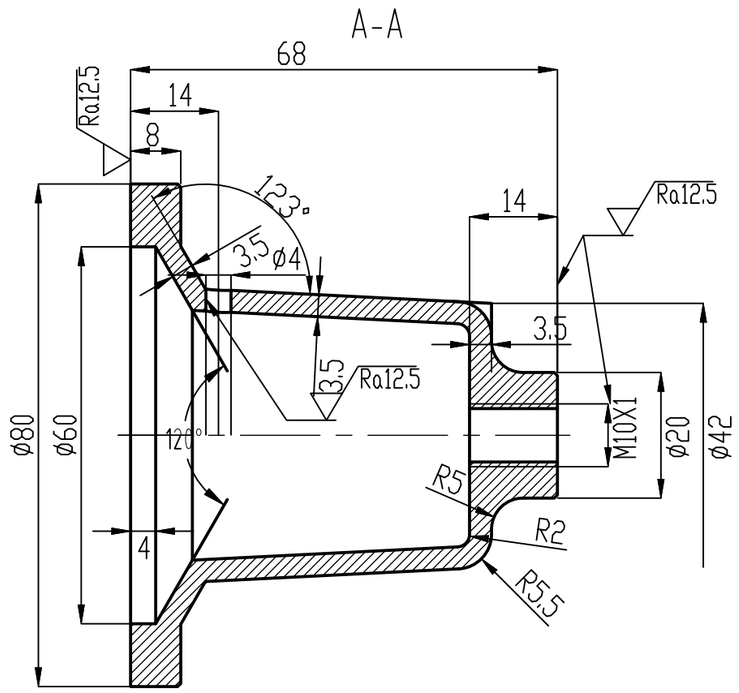
Specific requirements are as follows:
1.Create 3D model of all parts, and name them with the number (Such as 2.Z3PRT);
2.Assemble them according to assembly sketch (shown as below), and submit the assembly model (name as TYF.Z3ASM), to make sure that all the parts are able to be loaded normally, please pack all the parts together and submit it (name as TYF.ZIP);
3.Create the 2D assembly drawing that contains all the parts (Scale 1:1, use the default A3 Frame in ZW3D), and submit the Z3DRW file (name as TYF.Z3DRW).

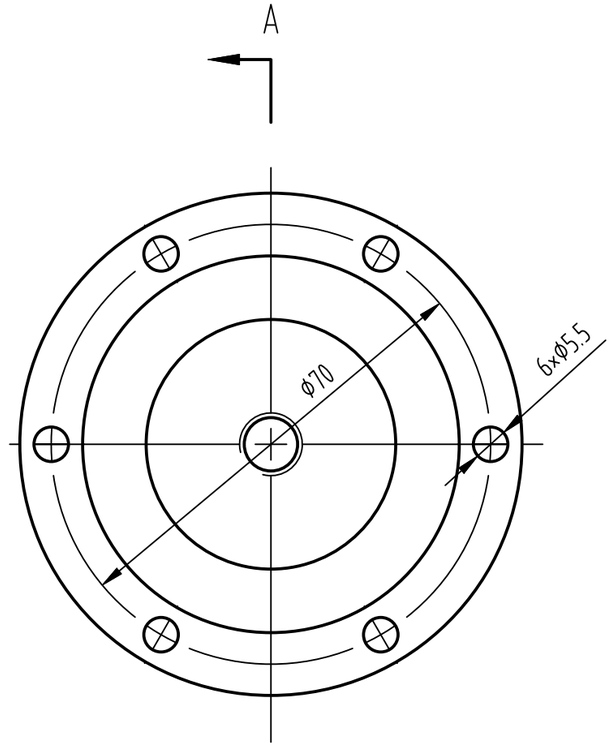
Document submission requirement:
1. The file name of the part model is named by its serial number (such as 2, 3, 4), assembly model and assembly drawing are named as requirement at left;
2. The answers packed includs: 3D model of parts (Z3PRT), 3D assembly (Z3ASM) and 2D assembly drawing (Z3DRW);
3. The standard parts can use the standard part library in the software, and also can be built according to the 2D drawing. However, third party plugins are not allowed;
4. The structure of some parts in the assembly are simplified. The dimensions not specified in the drawing can be customized according to the model.



Technical requirement:
1. The parts must be cleaned before assembly, no burrs, rust, oil, etc.
2. Before assembly, the matching dimensions of parts and components should be reviewed.
3. Test motion after assembly. Rotation should be flexible, normal lubrication
4, Bonding surface of the assembly must not leak

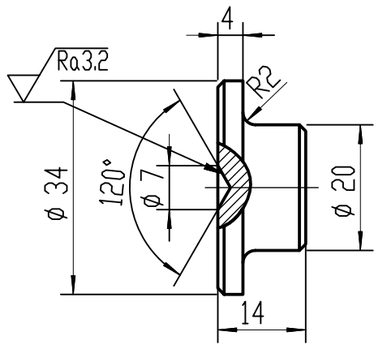
No.	Drawing No.	Name	Qty	Material	Note
18	ISO 8673	Nut M10x1	1		
17	ISO 4762	Screw M5x16	6		
16	TYF-15	Piezometer tube	1	1Cr13	
15	TYF-14	Valve seat	1	H62	
14	TYF-13	Rubber ring	1	Rubber	
13	TYF-12	Valve	1	60Si2Mn	
12	TYF-11	Srping 20x20	1	H62	
11	TYF-10	Bottom bonnet	1	H62	
10	ISO 8734	Pin D1x6	1		
9	TYF-9	Valve rod	1	H62	
8	TYF-8	Valve core	1	H62	
7	TYF-7	Valve body	1	ZAlSi12	
6	TYF-6	Diaphragm	1	4002	
5	TYF-5	Core	1	Q235A	
4	TYF-4	Spring 34x42	1	60Si2Mn	
3	TYF-3	Block	1	H62	
2	TYF-2	Upper bonnet	1	ZAlSi12	
1	TYF-1	Handwheel	1		





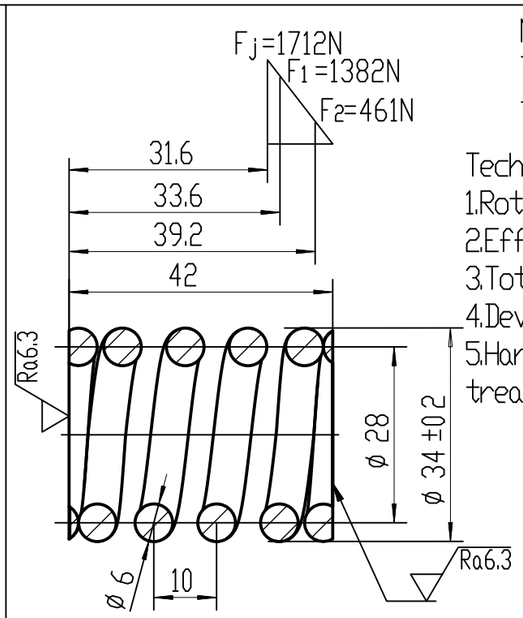
Technical requirement:
1.The casting is not allowed to have cracks, shrinkage and any defects.
2.Unmarked fillet R1~R3.
3.Unmarked chamfer C0.5, surface roughness Ra12.5.

No.	2	Scale	1:1	Qty	1
Name	Upper bonnet	Material	ZAlSi12		



Technical requirement:
1.Deburring, chamfering.
2.Unmarked chamfer C1, surface roughness Ra12.5

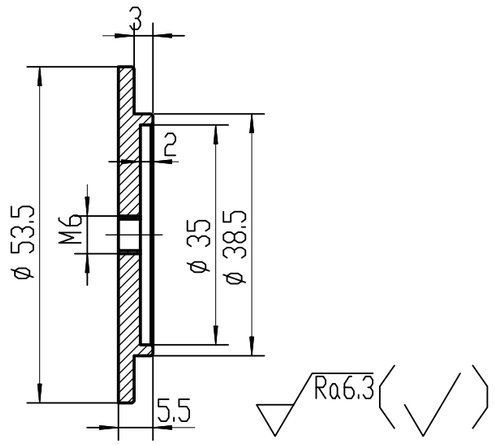
No.	3	Scale	1:1	Qty	1
Name	Block	Material	H62		



Note:
The view shows the free state;

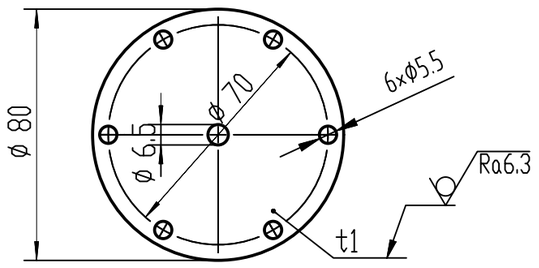
Technical requirement:
1.Rotation: Right
2.Effective number: n=3
3.Total number: n_1=5.5
4.Developed length: L=440
5.Hardness after heat treatment:45-50HRC

No.	4	Scale	1:1	Qty	1
Name	Spring 34x42	Material	60Si2Mn		



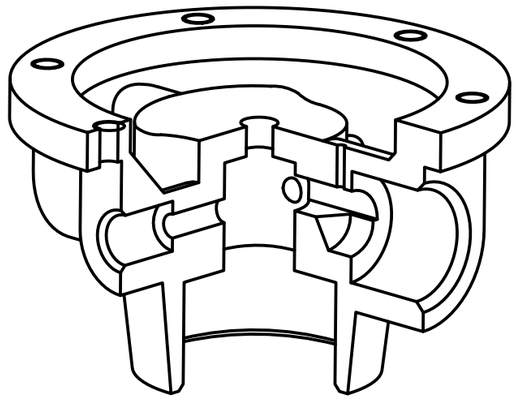
Technical requirement:
1.Deburring, chamfering.
2.Unmarked chamfer C0.3, surface roughness Ra12.5

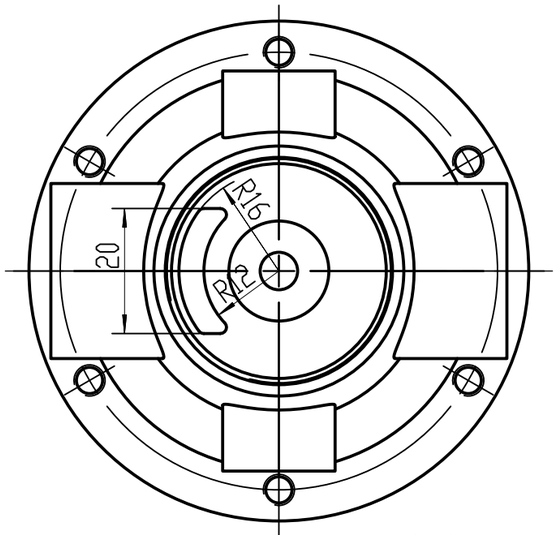
No.	5	Scale	1:1	Qty	1
Name	Core	Material	Q235A		



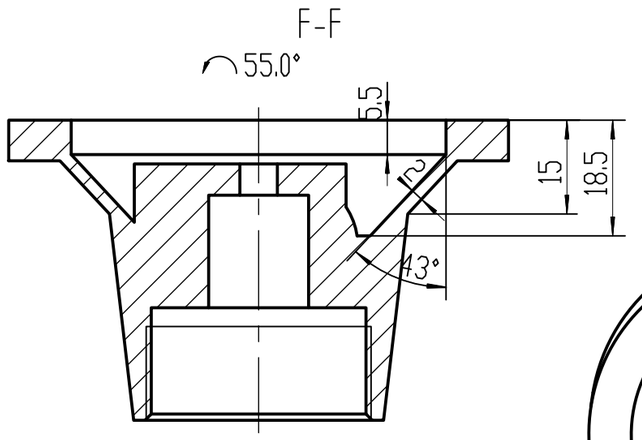
Technical requirement:
Deburring, chamfering.

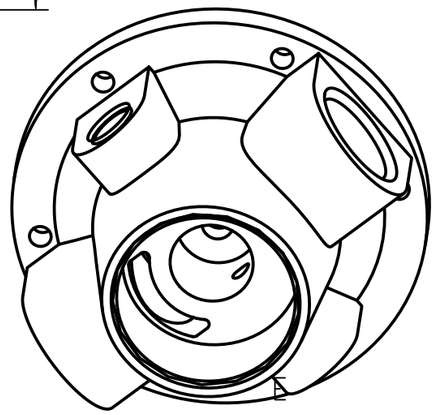
No.	6	Scale	1:2	Qty	1
Name	Diaphragm	Material	4002		

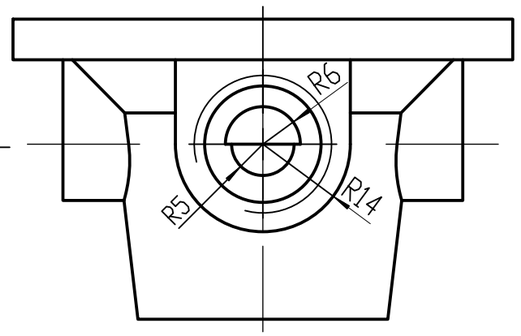




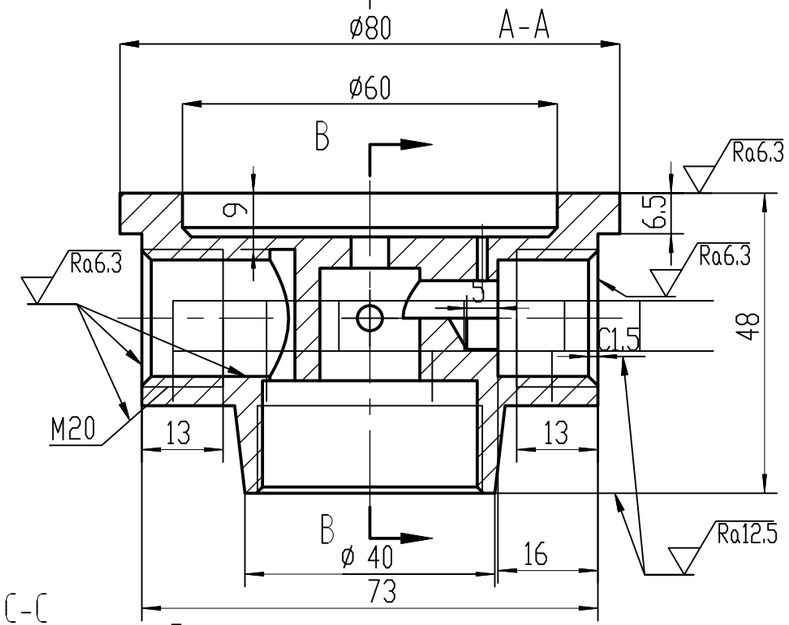
F-F



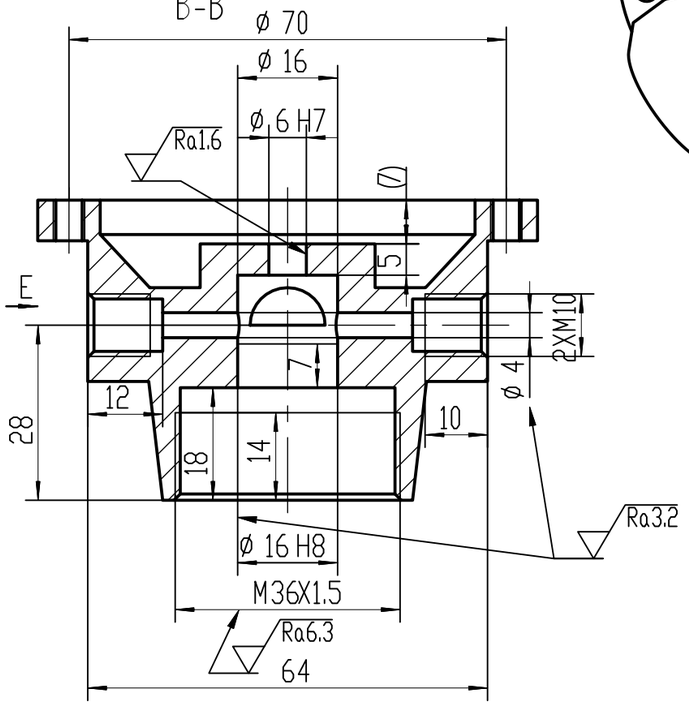


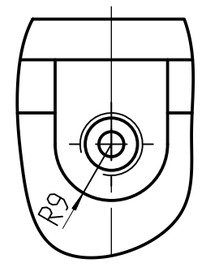


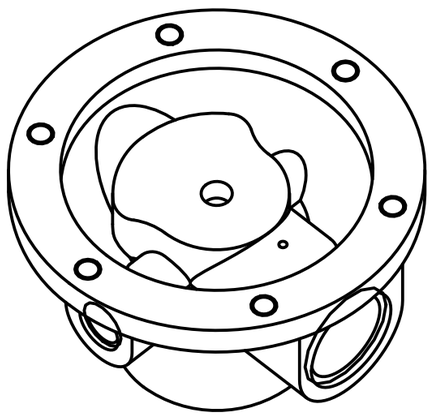
A-A



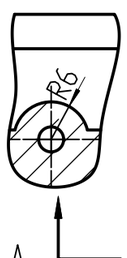
B-B



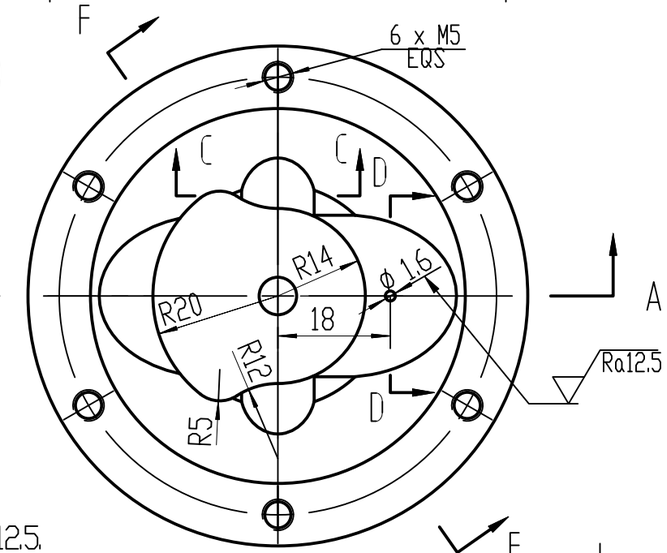




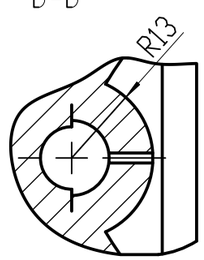
C-C



F

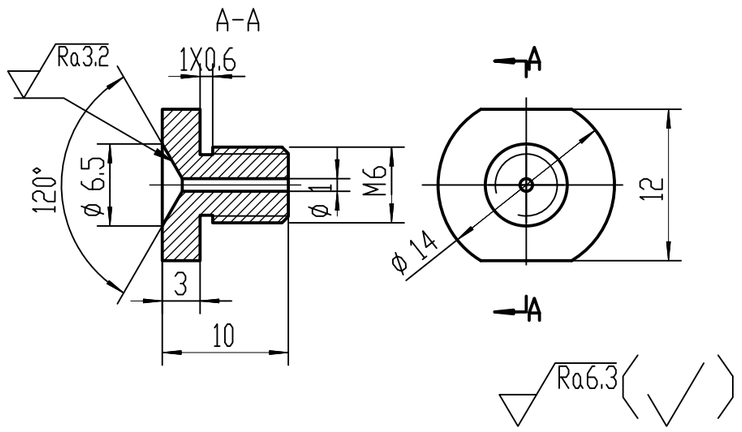


D-D



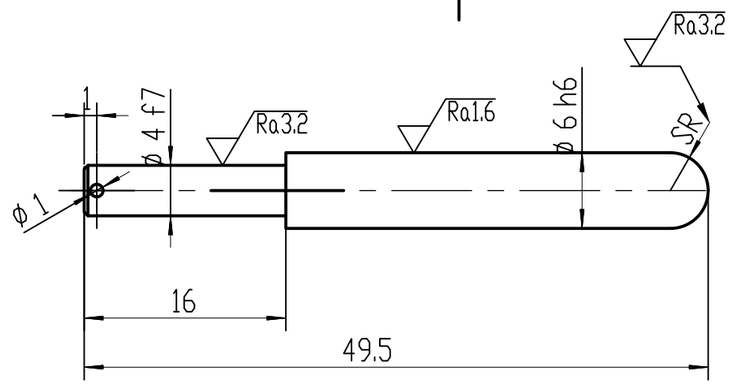
Technical requirement:
1.The casting is not allowed to have cracks, shrinkage and any defects.
2.Unmarked fillet R1~R3.
3.Unmarked chamfer C1, surface roughness Ra12.5.

No.	7	Scale	1:1	Qty	1
Name	Valve body	Material	ZAlSi12		



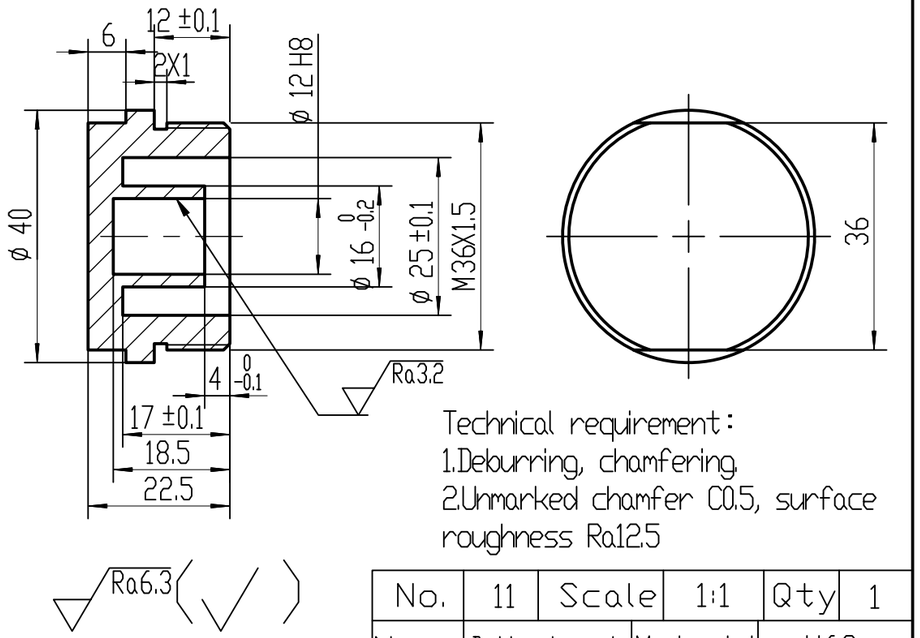
Technical requirement:
1.Deburring, chamfering.
2.Unmarked chamfer C0.5, surface roughness Ra12.5

No.	8	Scale	2:1	Qty	1
Name	Valve core	Material	H62		



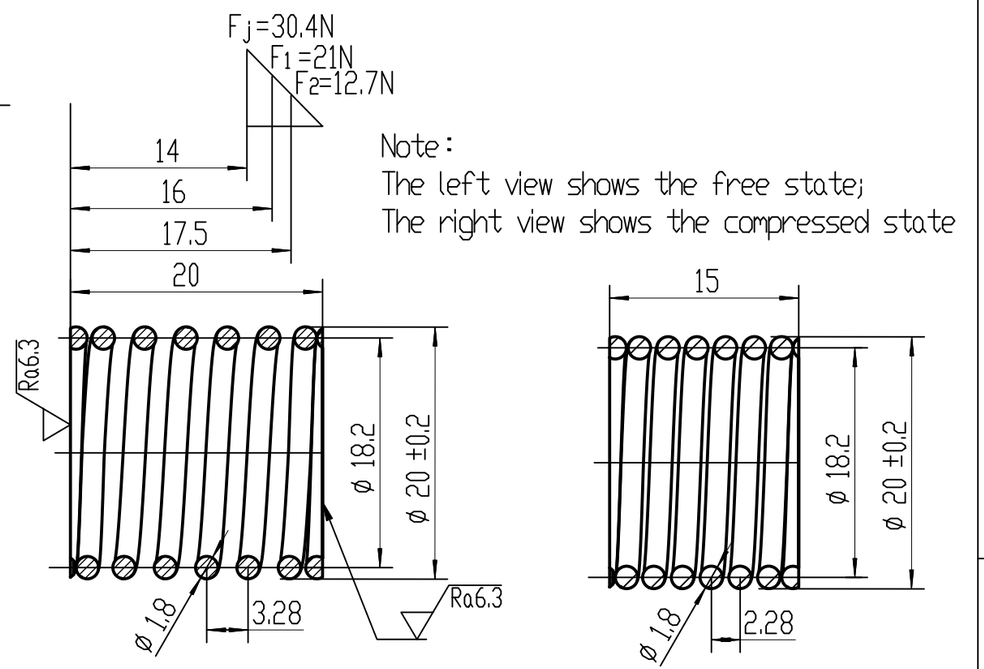
Technical requirement:
1.Deburring, chamfering.
2.Unmarked chamfer C0.5, surface roughness Ra12.5

No.	9	Scale	2:1	Qty	1
Name	Valve rod	Material	H62		



Technical requirement:
1.Deburring, chamfering.
2.Unmarked chamfer C0.5, surface roughness Ra12.5

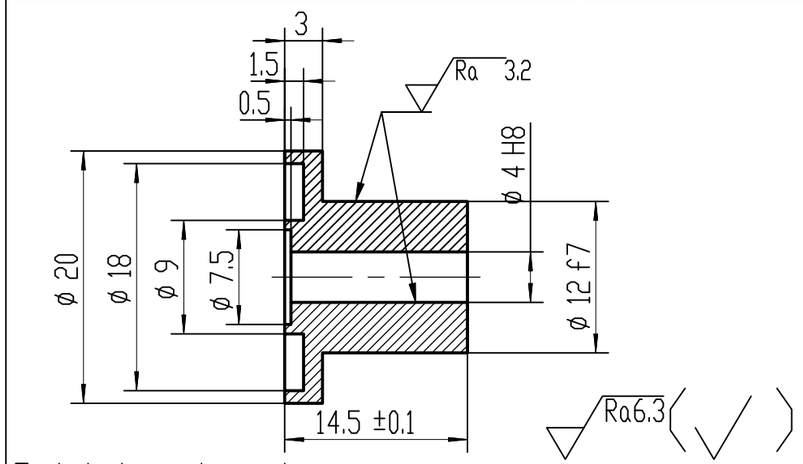
No.	11	Scale	1:1	Qty	1
Name	Bottom bonnet	Material	H62		



Note:
The left view shows the free state;
The right view shows the compressed state

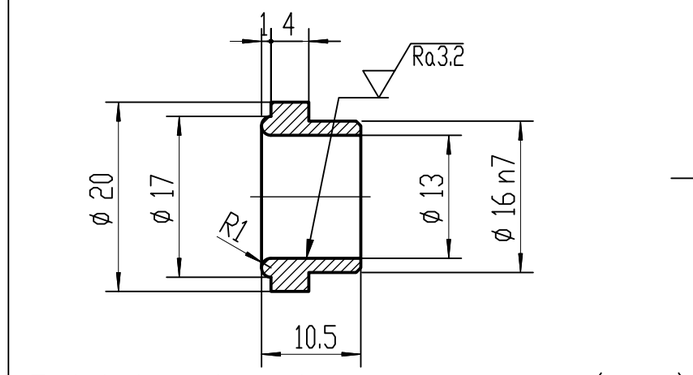
Technical requirement:
1.Rotation: Left
2.Effective number: n=5
3.Total number: n_1=7.5
4.Developed length: L=321.5
5.Hardness after heat treatment:45-50HRC

No.	12	Scale	2:1	Qty	1
Name	Srping 20x20	Material	60Si2Mn		



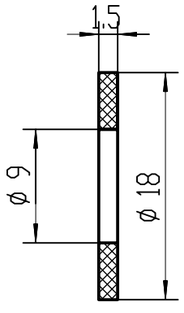
Technical requirement:
Deburring, chamfering.

No.	13	Scale	2:1	Qty	1
Name	Valve	Material	H62		

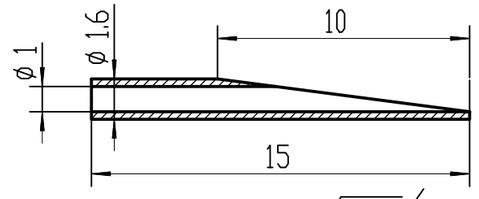


Technical requirement:
1.Deburring, chamfering.
2.Unmarked chamfer C0.5, surface roughness Ra12.5

No.	15	Scale	1.5:1	Qty	1
Name	Valve seat	Material	H62		



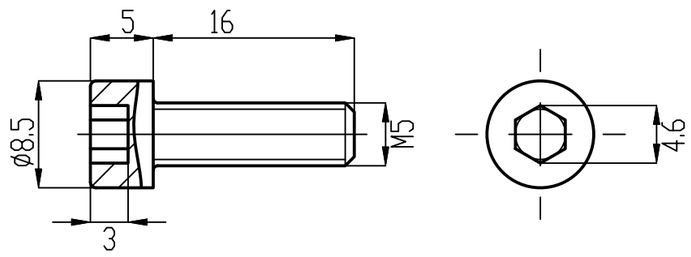
No.	14	Scale	2:1	Qty	1
Name	Rubber ring	Material	Rubber		



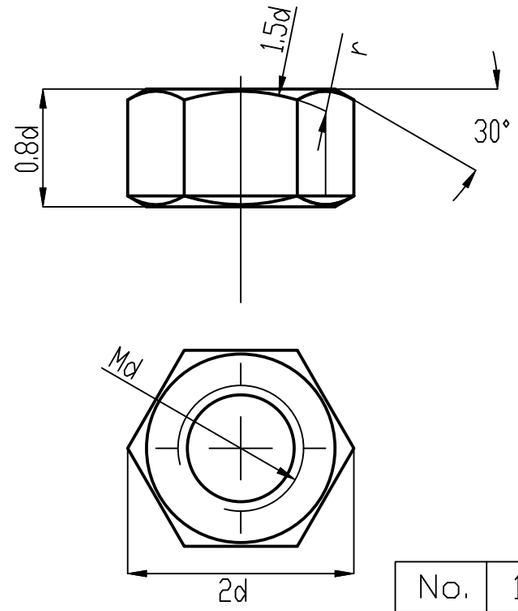
Technical requirement:
Deburring, chamfering.

No.	16	Scale	4:1	Qty	1
Name	Piezometer tube	Material	1Cr13		

No.	10	Scale	10:1	Qty	1
Name	Pin D1x6	Material			



No.	17	Scale	2:1	Qty	6
Name	Screw M5x16	Material			



No.	18	Scale	2:1	Qty	1
Name	Nut M10x1	Material			