

LAST NAME : / / / / /

Name : / / / / /

Group :

INSA
LYON
FIMI - SCAN 1st

DESIGN TEST

January 2021 duration : 2h00
No document allowed
Standard calculator allowed

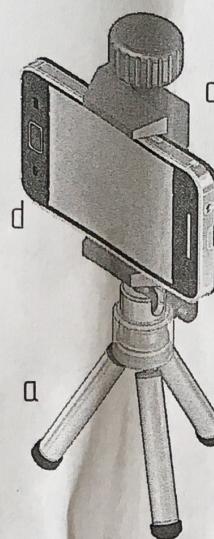
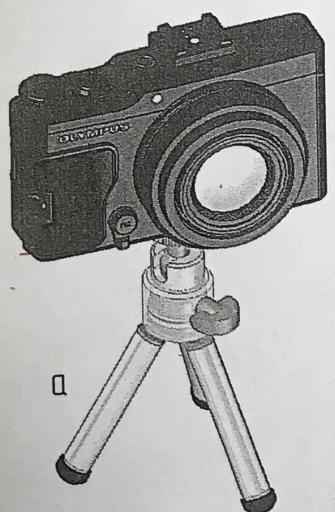
Test content :

2 sheets A3 recto-verso

All questions are independant

Approximate grading :
- DR1 ~ 7 points
- DR2 ~ 2 points
- DR3 ~ 6 points
- DR4 ~ 5 points

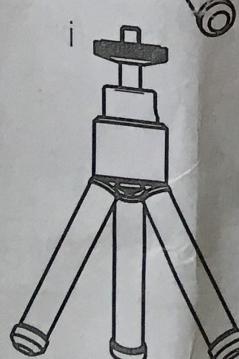
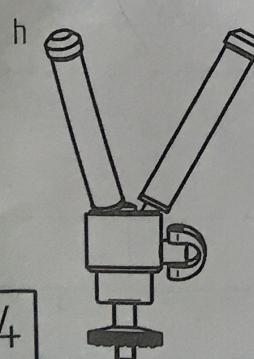
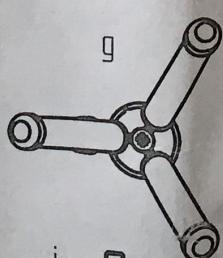
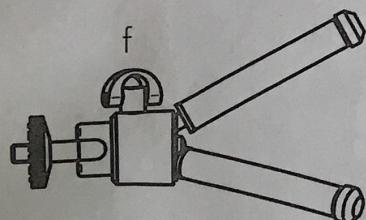
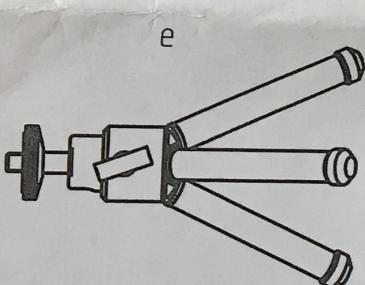
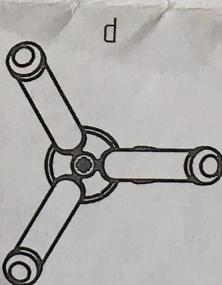
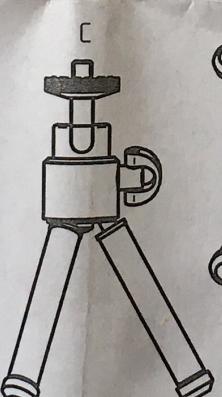
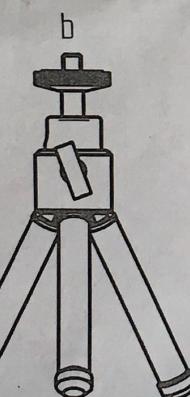
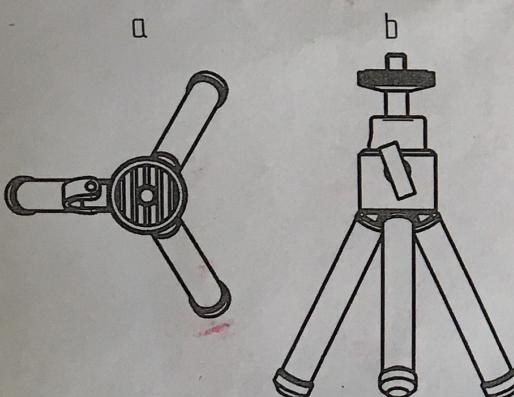
Grades will account for :
the quality of each edge
the care of your drawing.



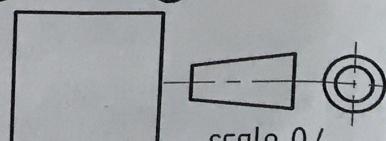
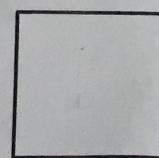
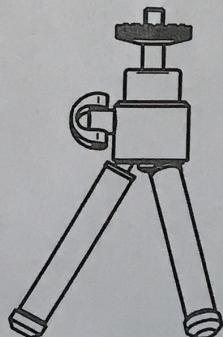
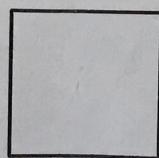
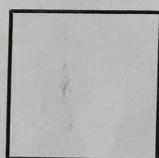
The camera supporting system consists of :

- a) Mini-Tripod (see DR1 and DR2)
- b) Camera
- c) Smartphone adaptator (see DR3 and DR4)
- d) Smartphone

Q1.1 : Choose the 4 views among a, b, c, d, e, f, g, h and i to fill-in the drawing of the mini-tripod, with front view already given in the bottom-right frame.



Q1.1 Answer :

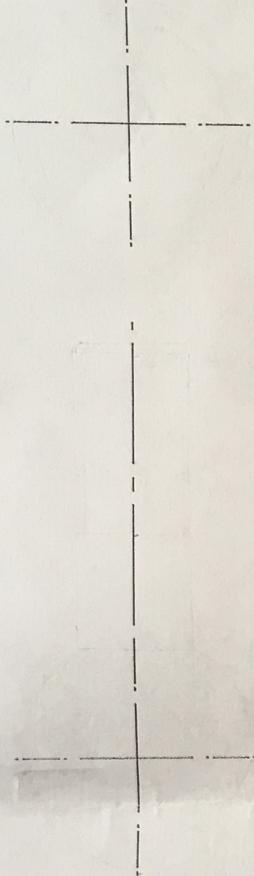


scale 0,4

DR 1/4

Q1.2 : For the sphere (10), complete the drawing at scale 2:1 with 2 views, *without hidden edges* :

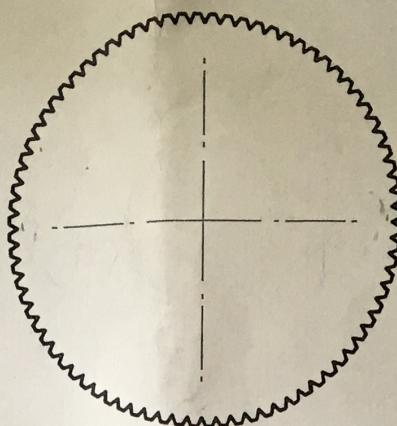
- front view (same orientation as cross-section A-A from the assembly drawing in DR2)
- bottom view



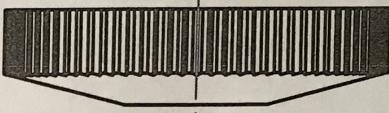
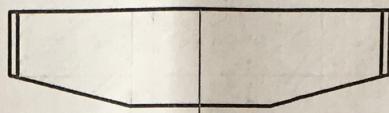
scale 2:1

Q1.3 : For the top tray (11), fill-in *without hidden edges* :

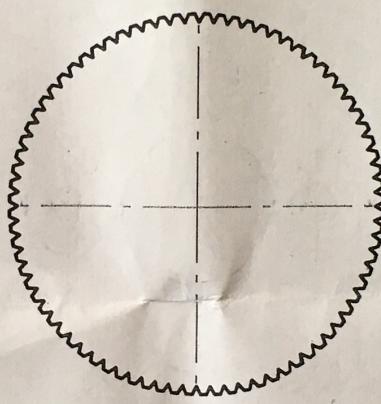
- front view in cross-section A-A
- bottom view
- top view



A-A



A

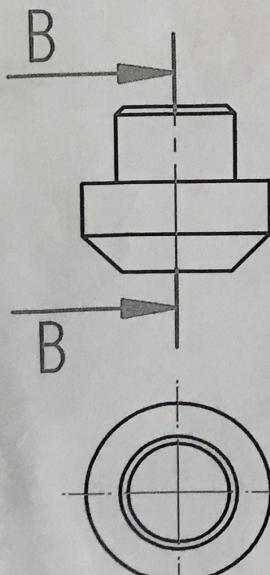


A

scale 2:1

The nomenclature for A20 (Leg assembly) is not detailed. One of the part of A20 is a base, whose front and top views are given below.

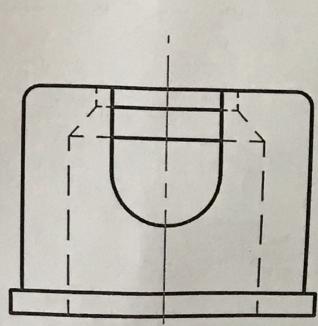
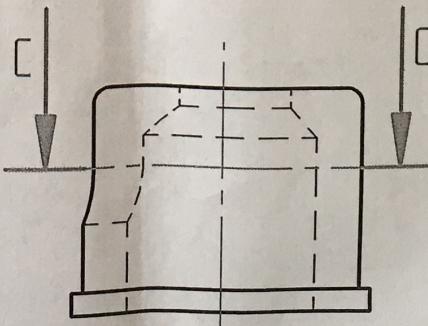
Q1.4 : Draw the left view in cross-section B-B, *without hidden edges*.



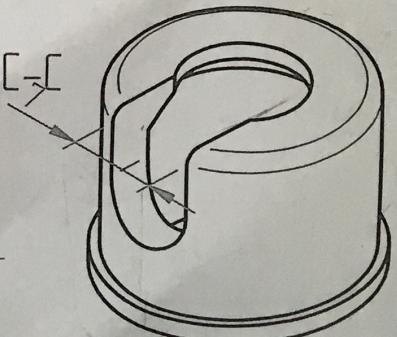
B-B

scale 2:1

Q1.5 : For the sphere support (02), draw the extracted section C-C



Extracted Section C-C



scale 2:1

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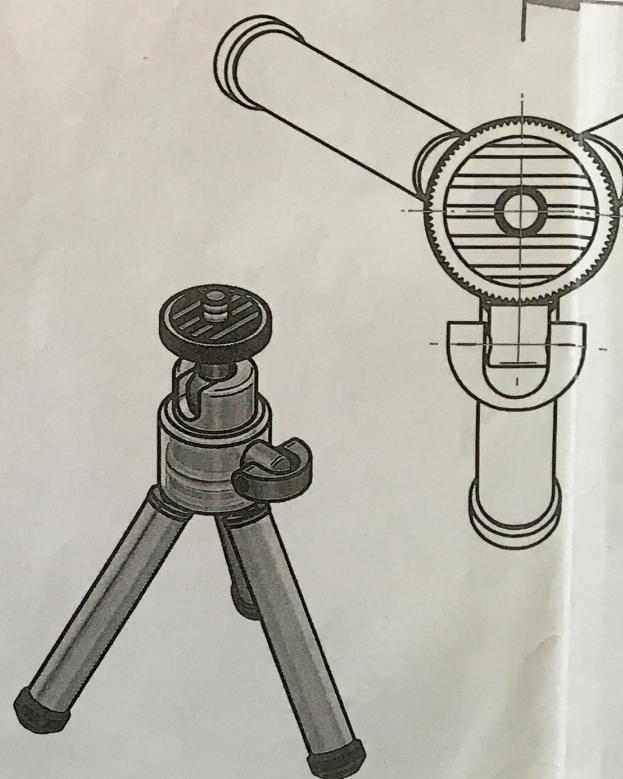
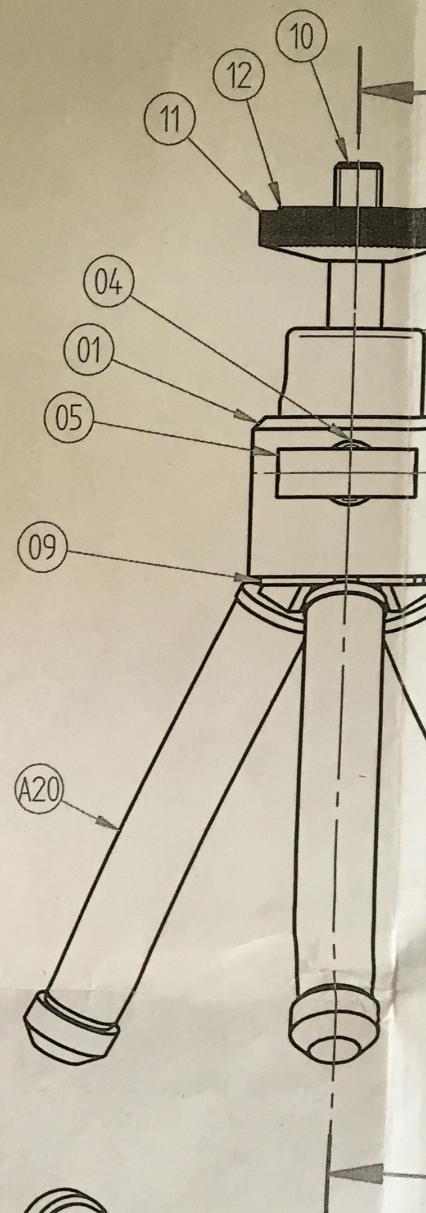
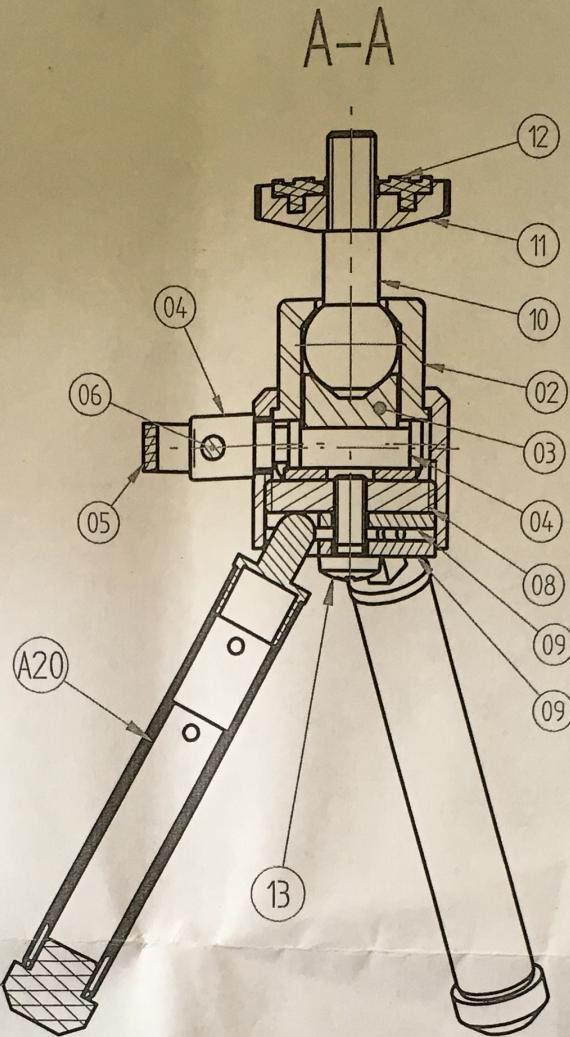
Q2.1 : Give the view type for the view located at extreme right of this document :

Q2.2 : Screw (13) is a "slotted pan head" screw (with symbol BS).
Fill-in its full standard name :
- Vis BS

Q2.3 : Specify the material of the various part below :

- 02 :
- 03 :
- 05 :
- 12 :

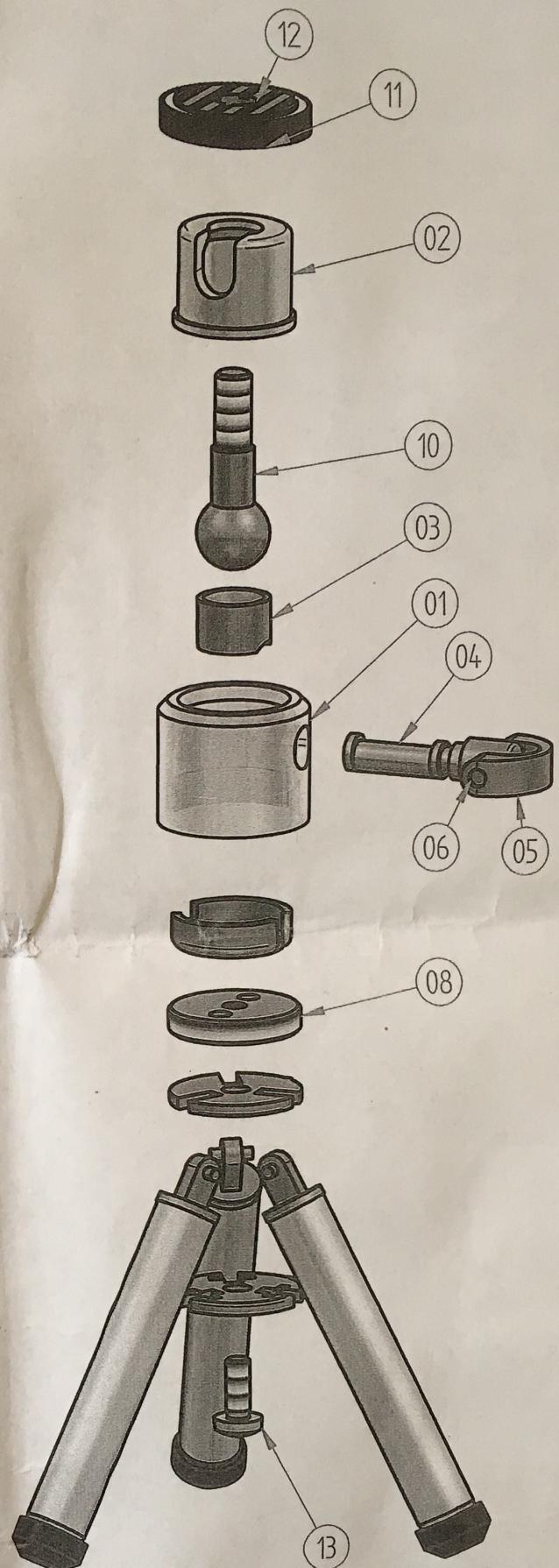
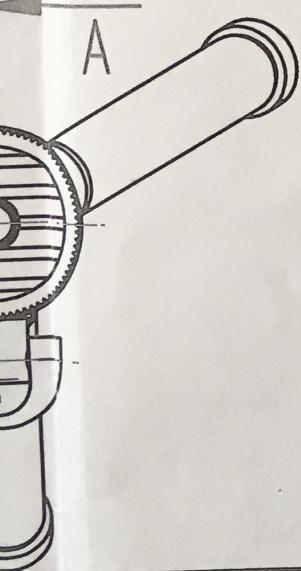
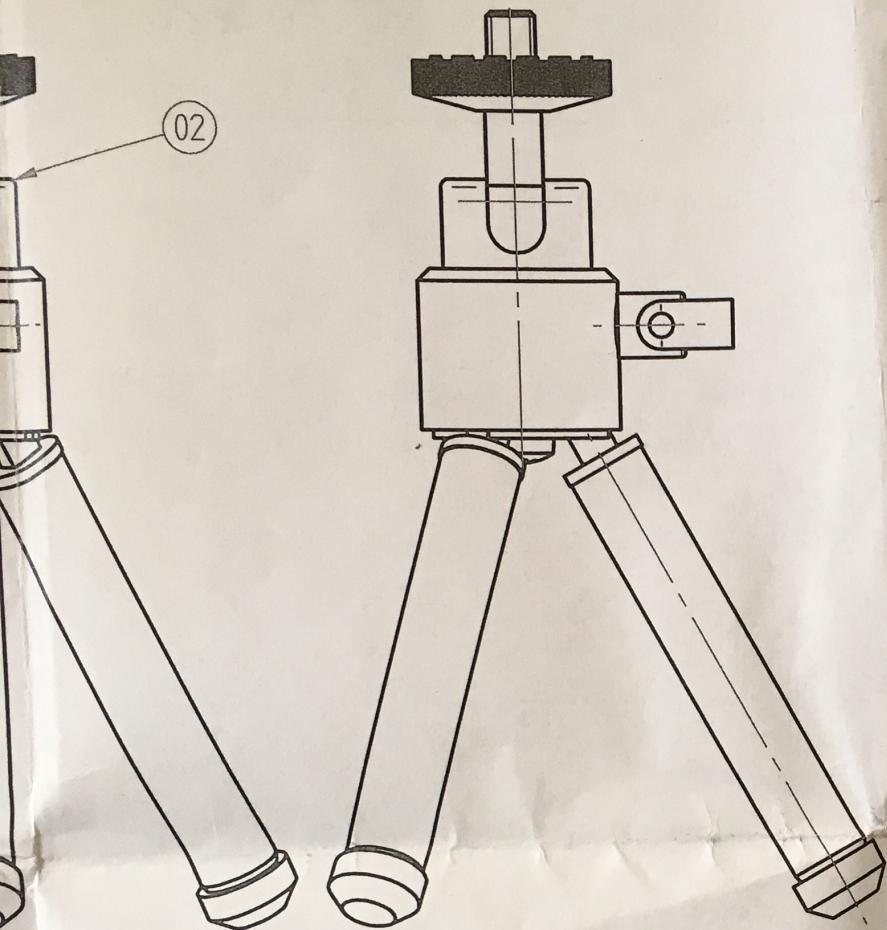
Base (Q14)



A20	3	Leg Assembly	
13	1	Screw BS	Steel
12	1	Top pad	
11	1	Top tray	Aluminum alloy
10	1	Sphere	Stainless steel
09	2	Leg Link washer	Galvanised steel
08	1	Threaded disc	Galvanised steel
07	1	Stamped washer	Galvanised steel
06	1	Small button axle	Steel
05	1	Button	
04	1	Eccentric shaft	Steel
03	1	Sphere tightening piece	
02	1	Sphere support	
01	1	Body	Aluminum alloy
Num	Qty	Description	Material

DR 2/4

A



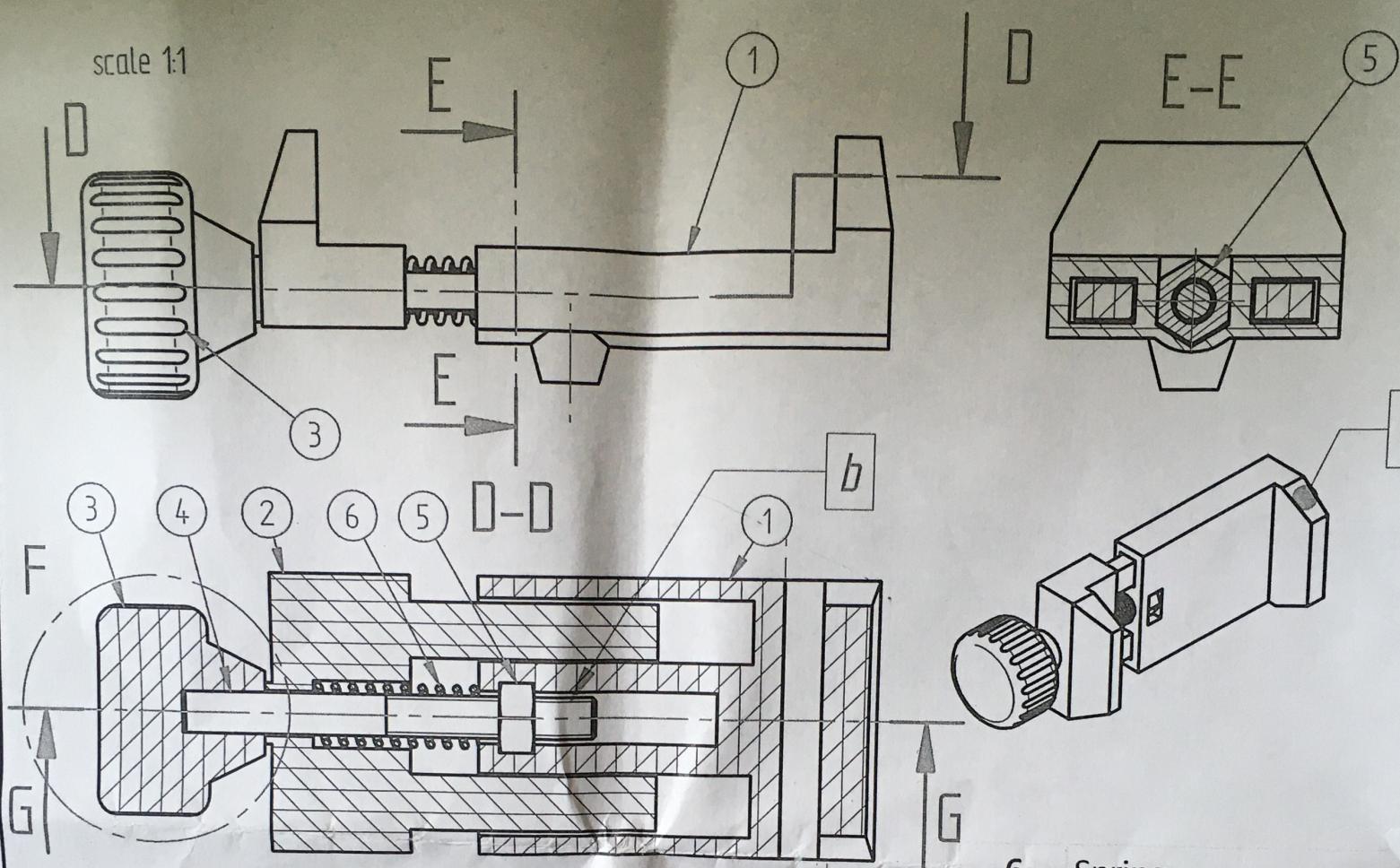
Sheet : 2 / 4	Date : 25/01/2021	Author : dmjac	Grp : GCP
	Project :	MINI-TRIPOD	
	Title :	GLOBAL ASSEMBLY	Scale : 1:1
INSA LYON	Format A3H	Reference : A0	

LAST NAME :

Name :

grp :

In order to improve the versatility of this camera support, an adaptor can be added to plug a smartphone on it.



Q3.1 : Give the name of the shapes :

a :

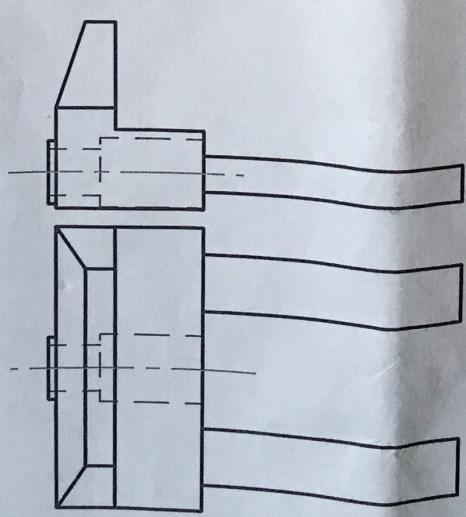
b :

Give the name of the specific cross-section D-D :

.....

Num	Description
6	Spring
5	Nut H-M6
4	Threaded axle
3	Actuating button
2	Mobile jaw
1	Fixed jaw

Q3.2 : Draw by hand (without ruler) a cavaliere or isometric perspective of the mobile jaw (2), without hidden edges.



DR 3/4

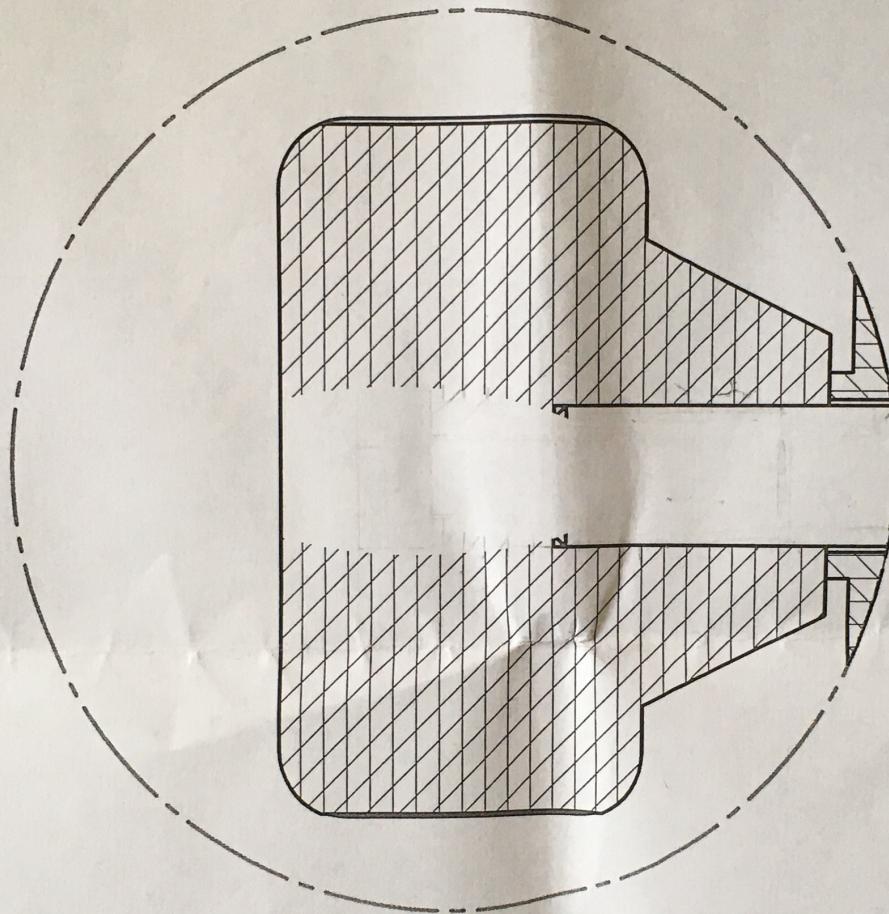
Q3.3 : On the assembly drawing on the right, the actuating button (3) is fixed to the threaded axle (4) by glueing.

In order to reinforce this assembly, we propose to modify this button/axle joint using a screw instead. (ET)

- complete the detailed view F at scale 3:1 by adding a screw Chc M3 15
- the threaded hole in the threaded axle consists of a drilling deep of 15 mm and a thread of 10 mm lenght
- the screw head will be hidden in the actuating button (spot facing in the button)
- in your drawing, draw a local cross-section in the threaded axle.

DETAIL F

scale 3:1



Q3.4 : Represent, on view G-G of the fixed jaw (1), the 2 threaded holes M6, allowing to fix the adaptor on the camera support. Threaded hole 1 (right side) : M6 12 -8

Threaded hole 2 (bottom) : M6 through

G-G

scale 2:1

