

3.19.2 Power Mechanics Paper 2 (447/2)

1 STATION 1

In the space below, sketch in good proportion a sectional view of a mechanical fuel pump.

Label four major parts.

(10 marks)

2 STATION 2

Using the tools, equipment and materials provided, make the scoop shown in **figure 2**.

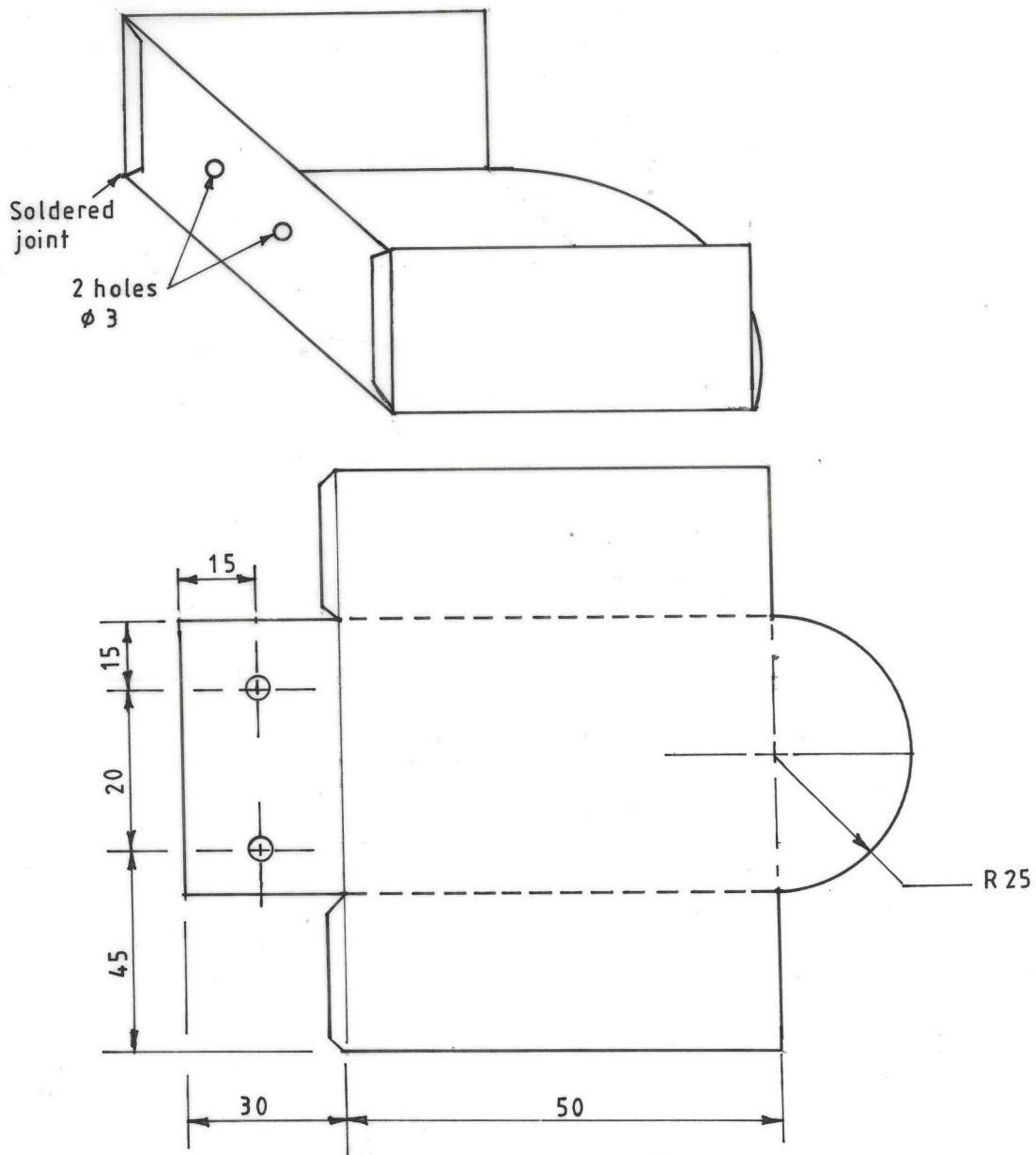


Figure 2

3 STATION 3

On the multi-coil clutch disc provided, perform the following operations:

- (a) measure and record the:
 - (i) depth of the four marked rivets; (4 marks)
 - (ii) depth of the splines. (2 marks)
- (b) Inspect the torsion spring for free play, or damage and comment. (2 marks)
- (c) Inspect the friction surface for its service condition and comment. (2 marks)

(Let the examiner check your work)

4 STATION 4

Identify the measuring tools labelled K to P and for each tool write the accuracy and two areas where it is used.

TOOL	NAME	ACCURACY	USAGE
K			
L			
M			
N			
P			

5 STATION 5

Using the tools and materials provided, connect a twin headlight parallel circuit controlled by a single switch. (10 marks)

Let the examiner check your work.

6 STATION 6

Identify the tools and fasteners labelled A to J and state one use of each. (10 marks)

ITEM	NAME	USE
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		

7 STATION 7

On the single cylinder provided;

- Demonstrate to the examiner how to check the roundness of the camshaft using a dial gauge.
- Count the number of teeth on the crankshaft and the camshaft and calculate the gear ratio.

Crankshaft teeth

Camshaft teeth

Gear ratio teeth

(10 marks)

8 STATION 8

Carry out a compression test on the single cylinder engine provided and record the reading in the space provided.

(Let the examiner check your work). (8 marks)

Compare your reading with the recommended reading provided by the examiner.
Comment on the state of the engine compression. (2 marks)

Comment:

9 STATION 9

Identify the parts labelled P to T. For each part, identify ONE defect and ONE possible effect on vehicle performance. Complete the table below.

PART	NAME	DEFECT	EFFECT
P			
Q			
R			
S			
T			

(10 marks)

10 STATION 10

Using the tools and materials provided perform the following operations on the mechanical fuel pump provided.

- (a) Dismantle the fuel pump. (2 marks)
- (b) Check the service condition of each of the following parts and comment on each.
 - (i) Inlet valve; (2 marks)
 - (ii) diaphragm. (2 marks)
- (c) Assemble the pump and test it using the fuel provided. (4 marks)

(Let the examiner check your work)