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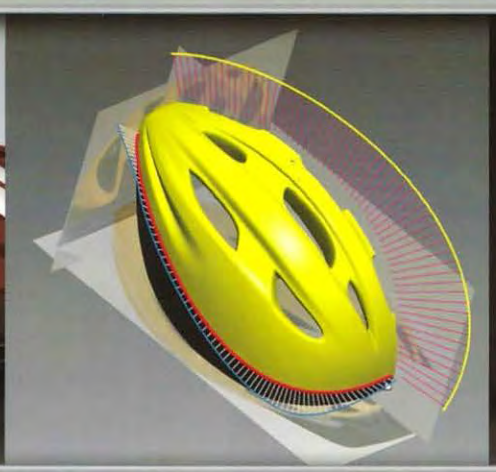
Project Workbook



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Mylapore, Chennai - 600 004.
Ph : 044 [illegible]

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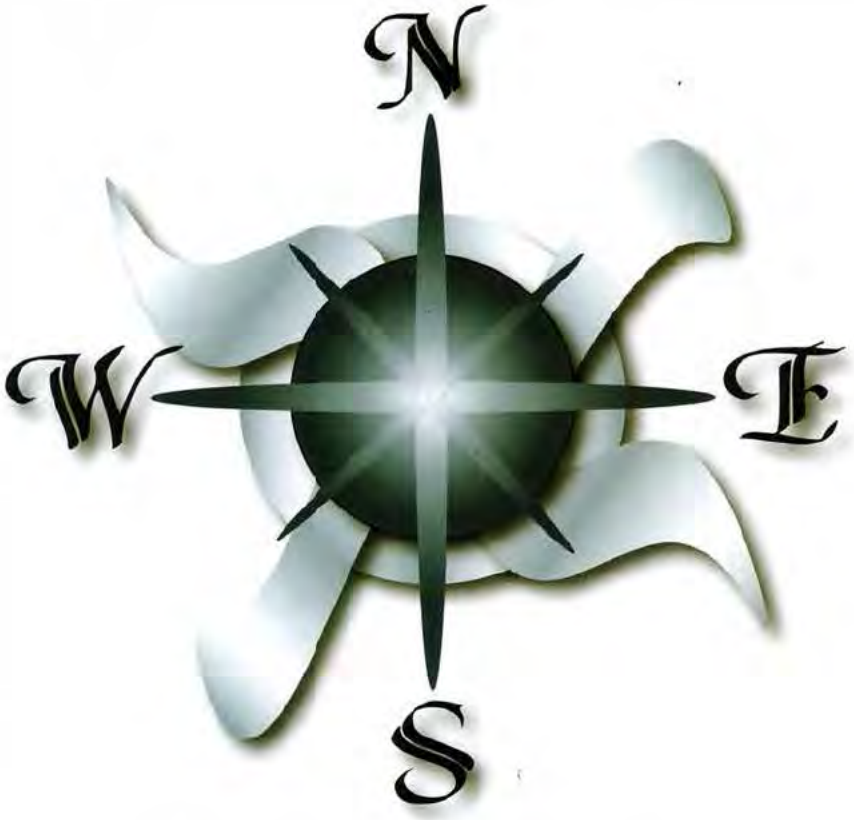
Are You Headed In The Right Direction?



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Pro/ENGINEER

Project Workbook

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Editor

CURRICULUM AND PRODUCT DEVELOPMENT TEAM

We appreciate your valuable feedback/suggestion on this courseware.

Kindly do mail it to us at: cpd@caddcentre.ws

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C P D T
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CCTSPLV531113

This project manual aims to hone your skills in handling the software that you have trained with CADD Centre Training Services Pvt Ltd. We have endeavored on providing industrial applicability experience by combining smart exercises following industry standards wherever necessary/possible. For convenience, all sheets have followed third angle projection. All data essential for completing the project/exercises are available through orthographic views only.

Note the following as you work on these exercises.

1. Periodically save all your work in the destined folder. Write down the full path and file name on the top of each exercise sheet, in the specified column.
2. Each exercise has a stipulated period. Note down the time you took to complete the exercise on top of the exercise sheet.
3. If you are in doubt, please clarify with your project guide. Do not assume.
4. For standard parts refer Design Data Book.
5. Contact your project guide after completion of each project for correction.

If you would like to share your views and comments, please do write to us to the address given below or E–Mail us: cpd@caddcentre.ws

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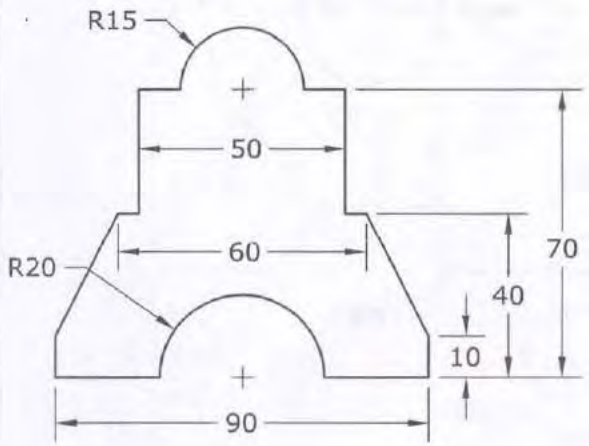
Curriculum and Product Development Team,
CADD Centre Training Services Private Limited,
No.91, Dr. Radhakrishnan Salai,
Gee Gee Crystal, 8th Floor, Office No. 8C & 8D,
Mylapore, Chennai–600004
E–mail: cpd@caddcentre.ws

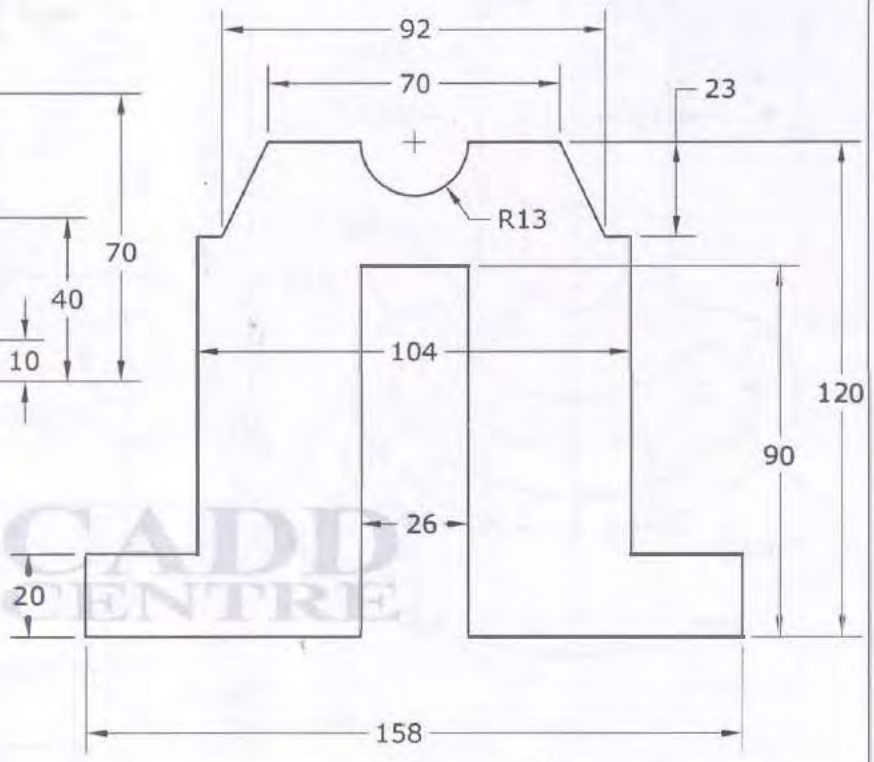
SKETCHER

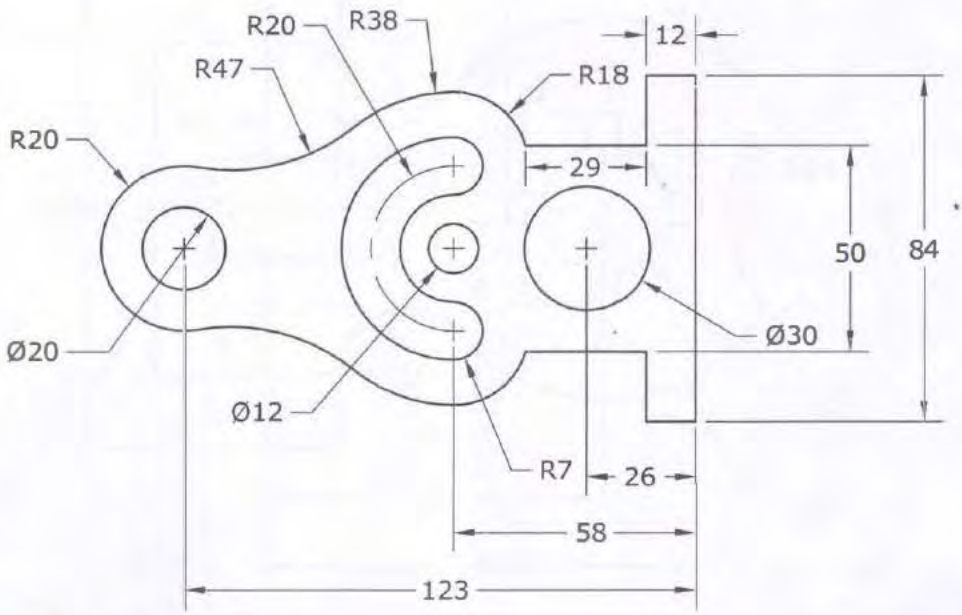
Exercise No: 01	File Name:
Duration: 120min	Actual Hours:

Instruction: -

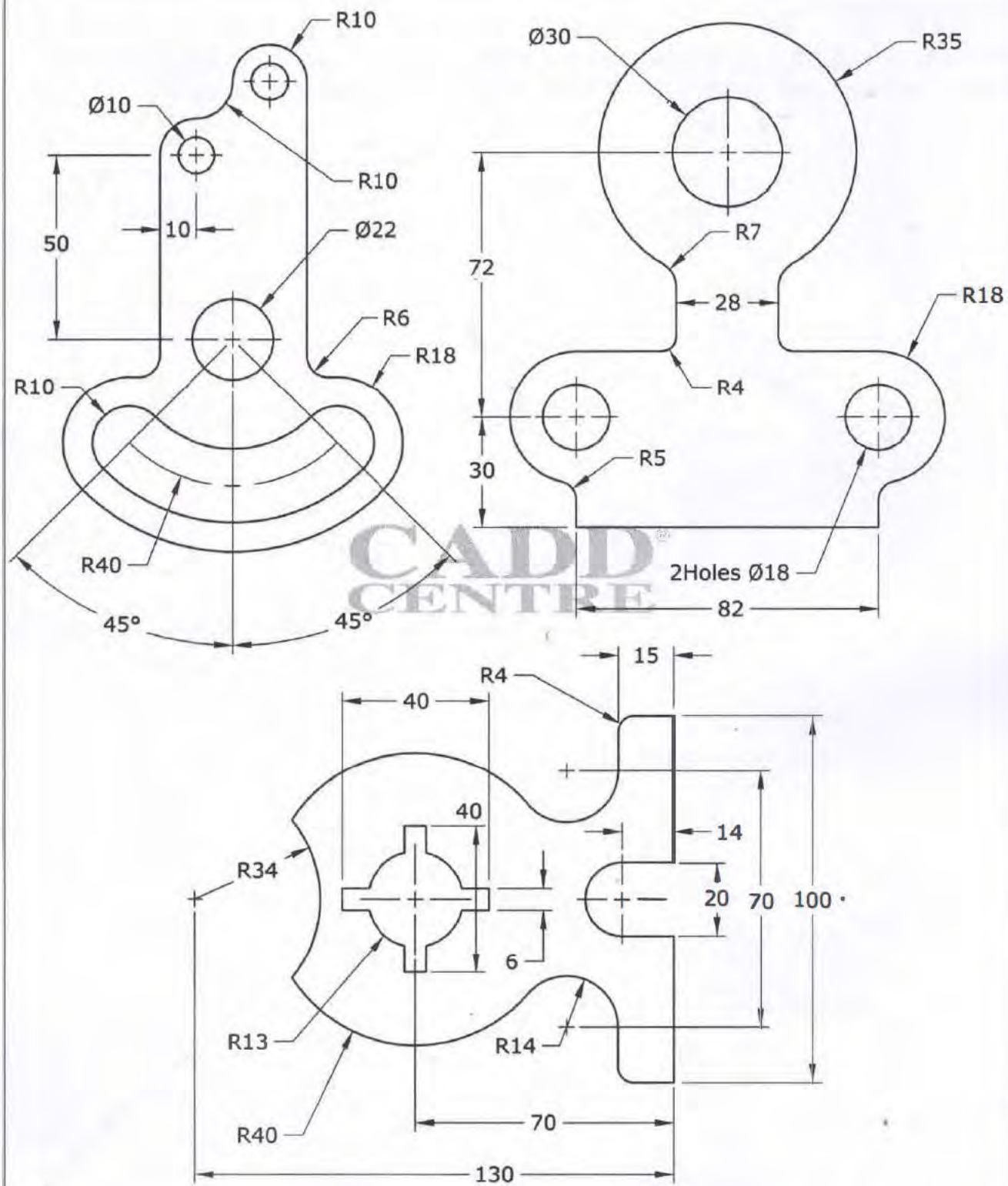
Exercise No 01,02,03 are intended for a Pro/Engineer user to practise sketcher tools, relations and dimensioning efficiently within stipulated duration.







Exercise No: 02	File Name:
Duration: 120min	Actual Hours:



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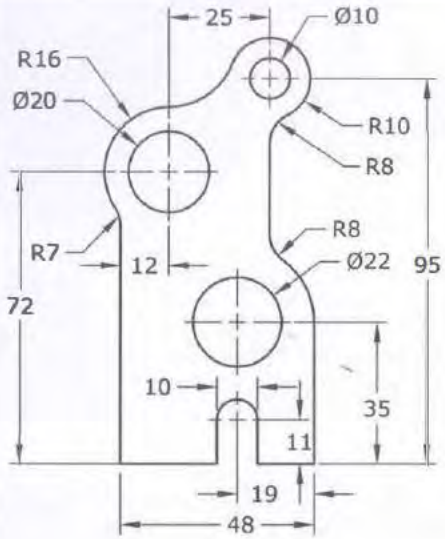
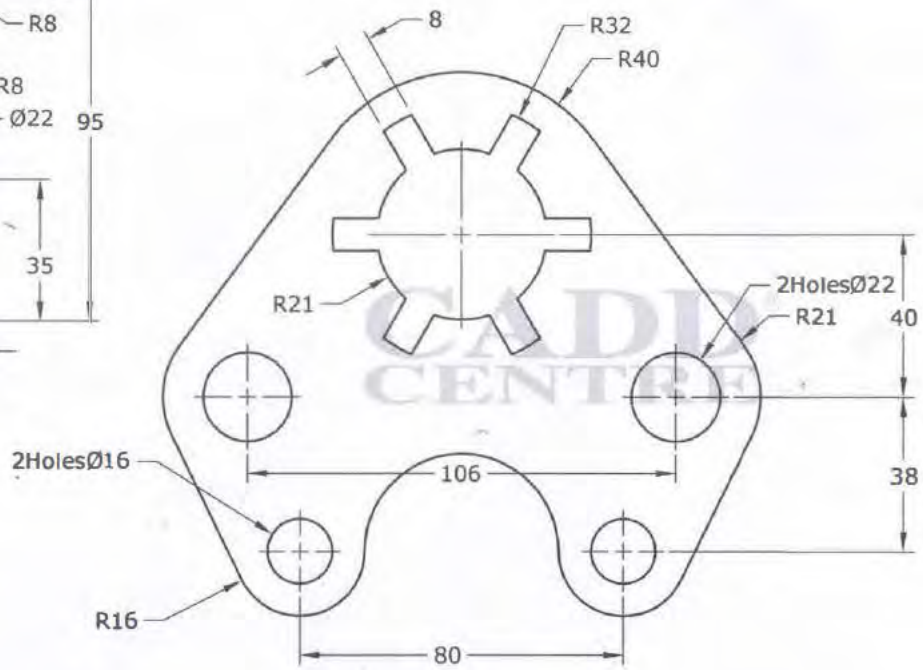
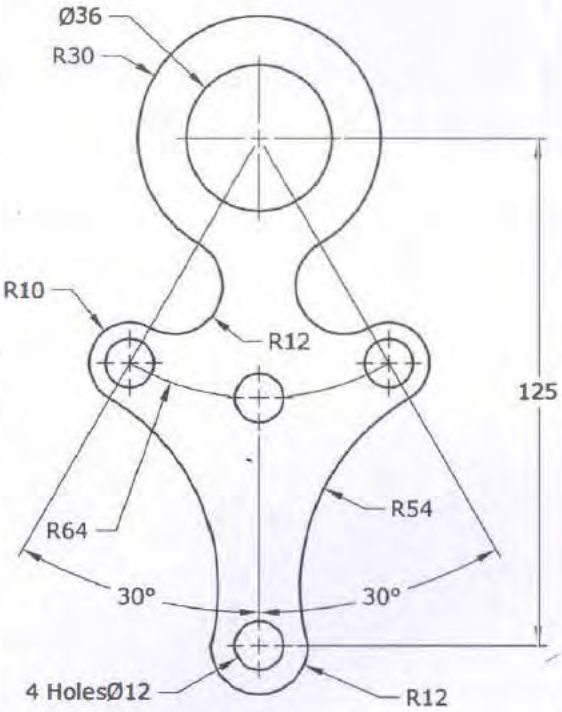
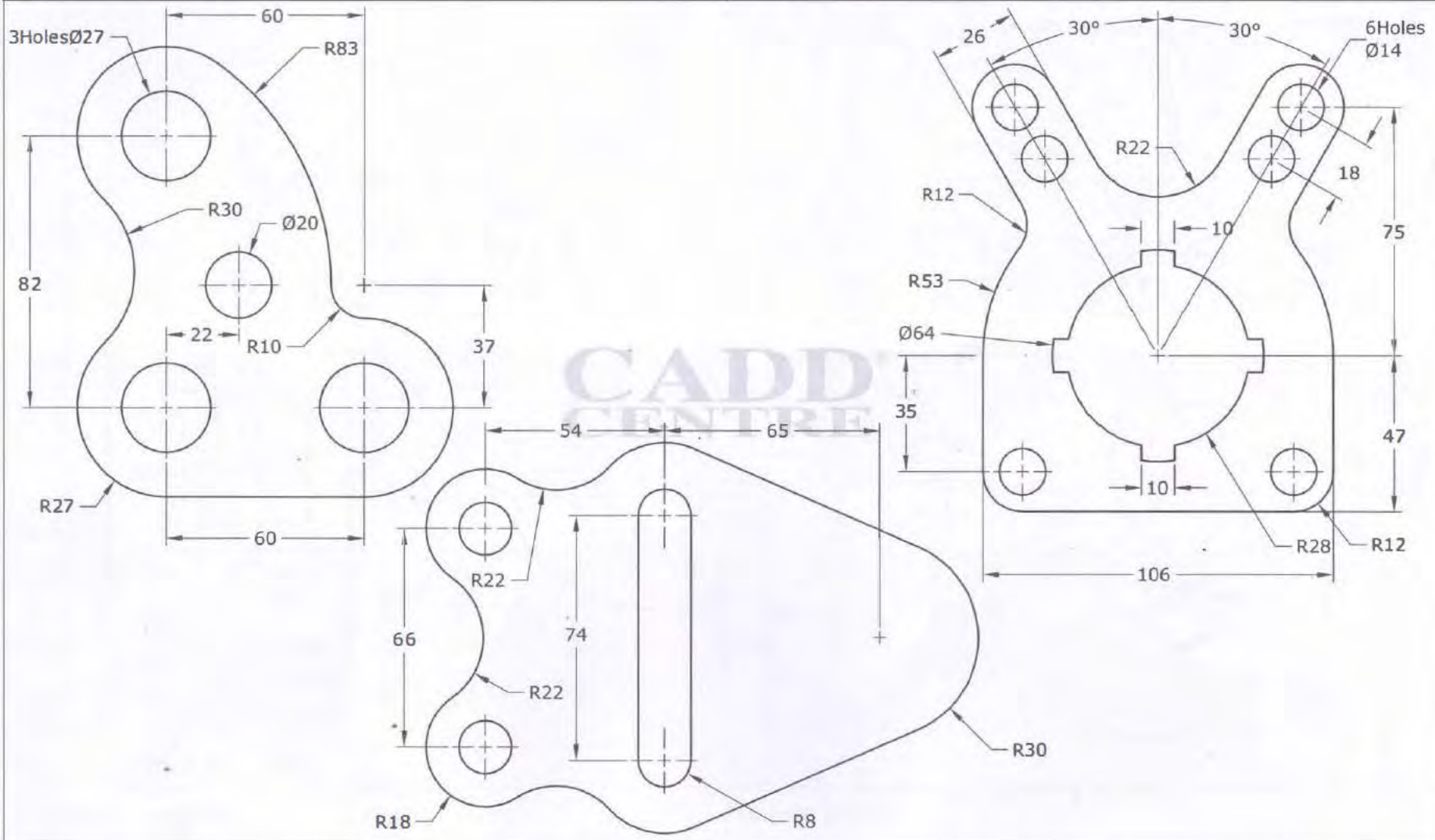
Duration: 120min	Actual Hours:





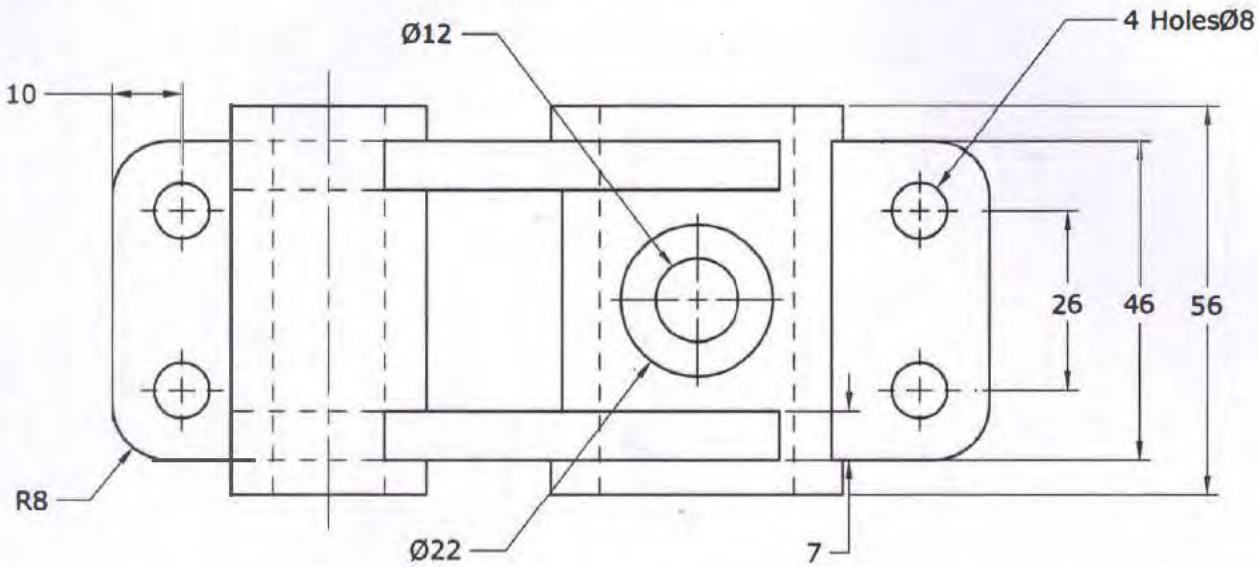


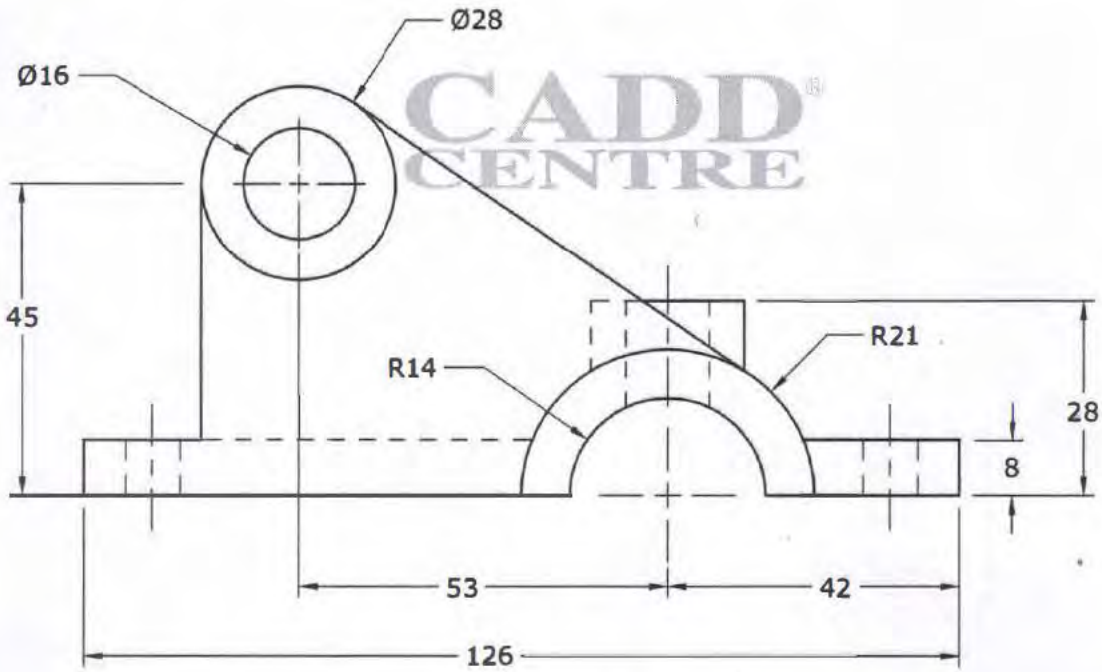
Exercise No: 04	File Name:
Duration: 120min	Actual Hours:



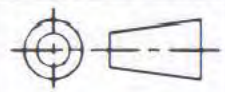
Part Modeling

Exercise No: 05	File Name:
Duration: 120min	Actual Hours:



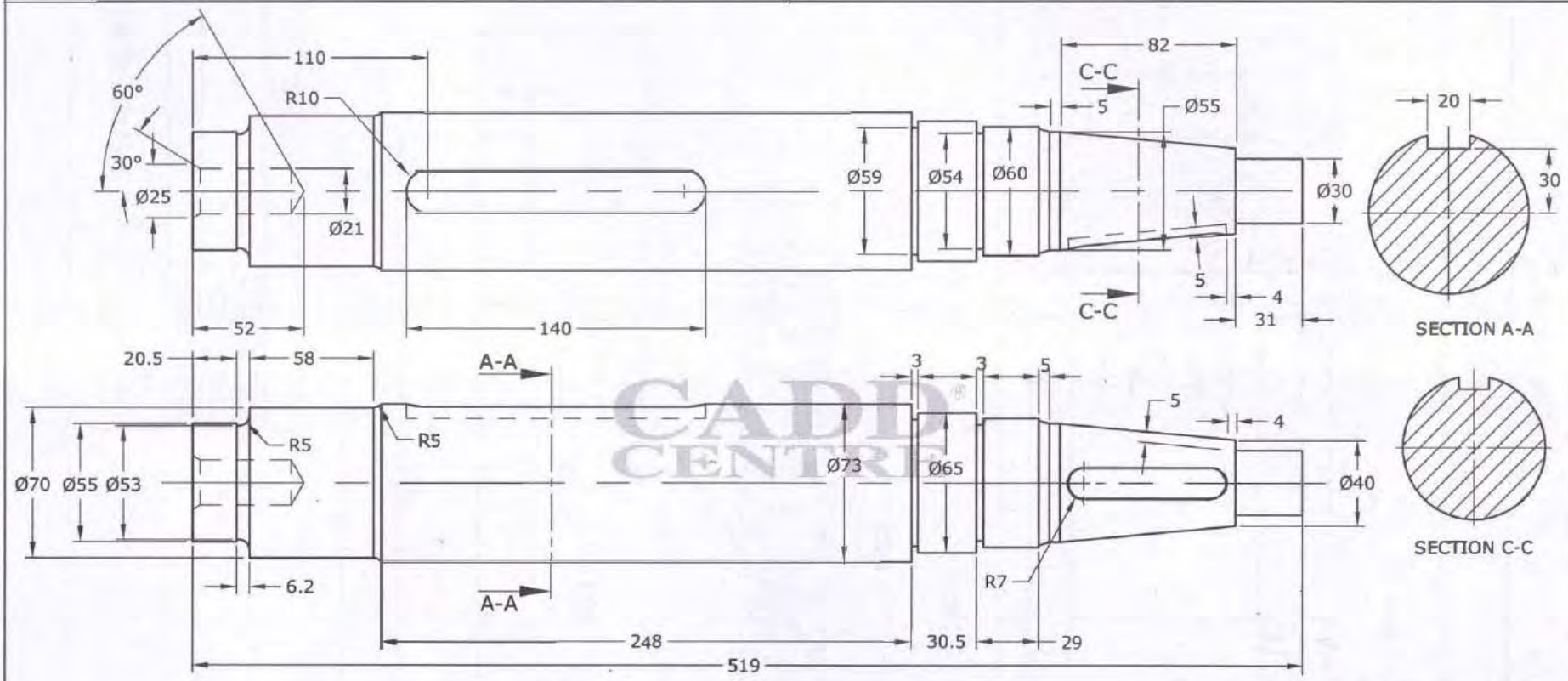


	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		



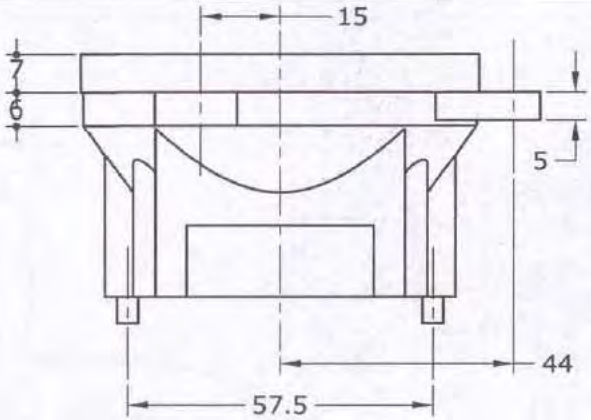
Details of a cover

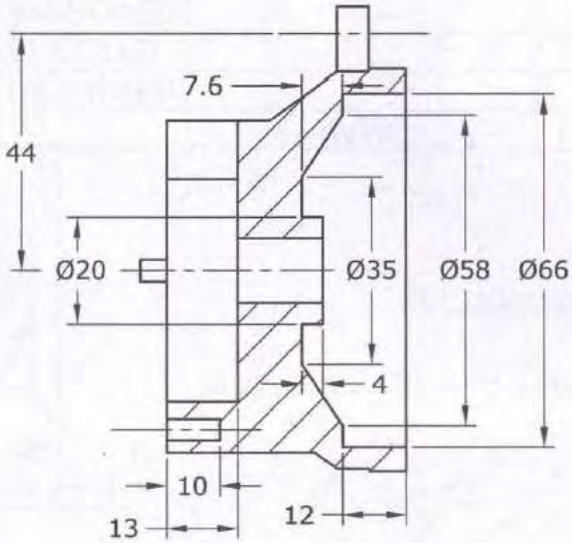
Exercise No: 06	File Name:
Duration: 120min	Actual Hours:



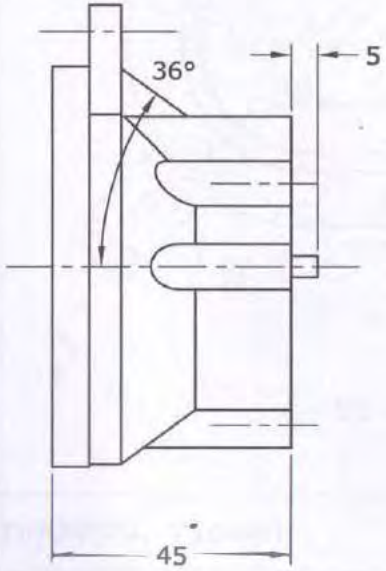
	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	Details of a Coupling Shaft	

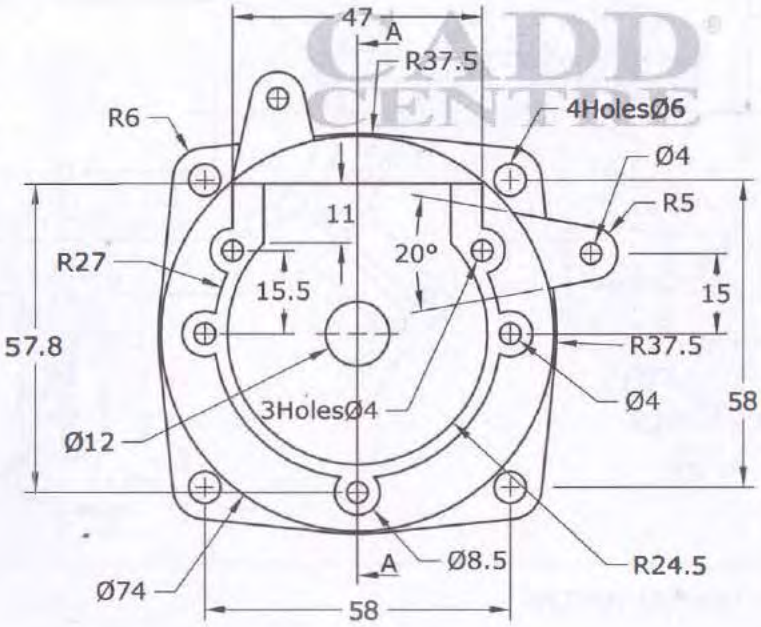
Exercise No: 07	File Name:
Duration: 120min	Actual Hours:



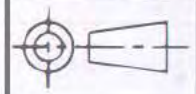


SECTION A-A



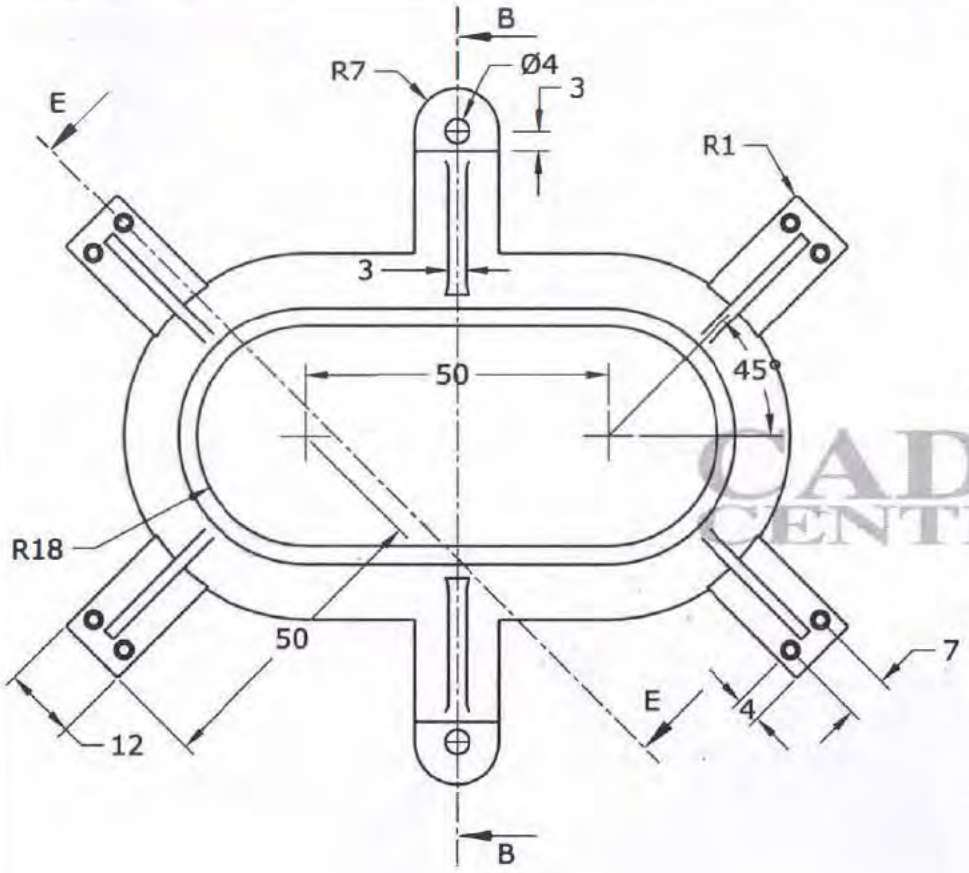


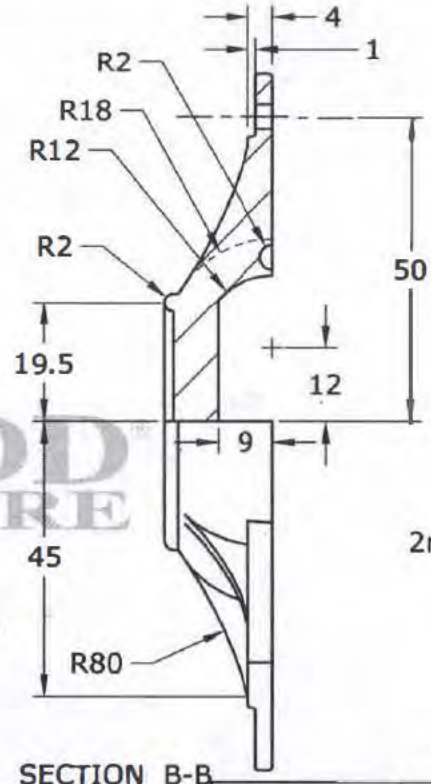
	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		



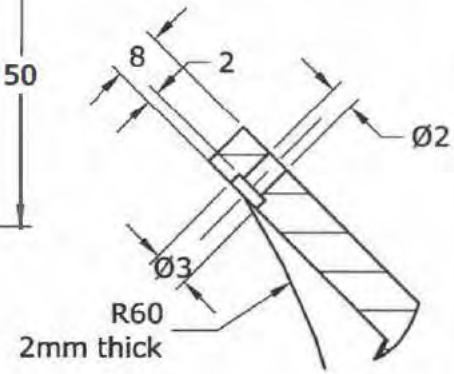
Details of Engine Front Cover

Exercise No: 08	File Name:
Duration: 120min	Actual Hours:





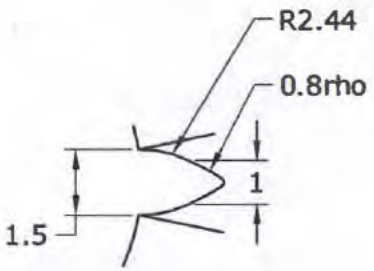
SECTION B-B



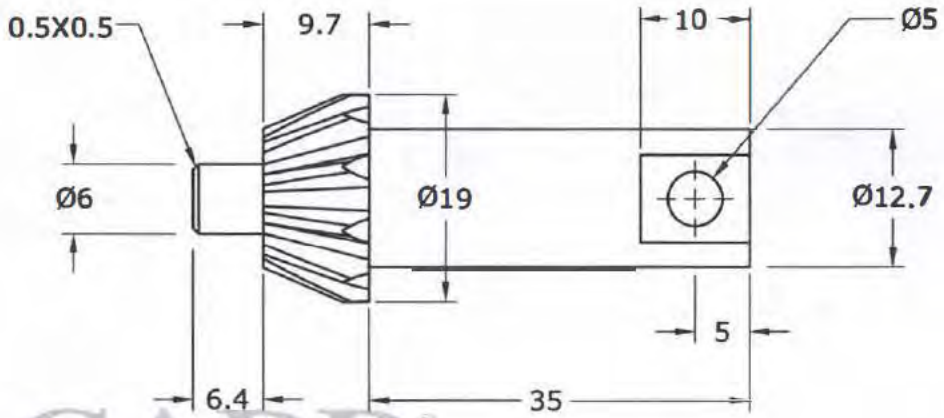
SECTION E-E

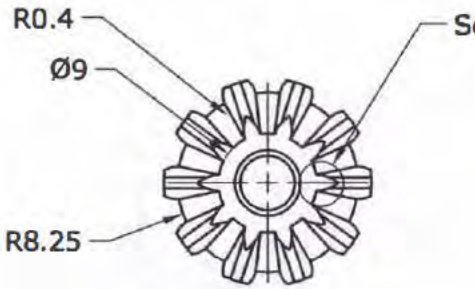
	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	Details of a cover	

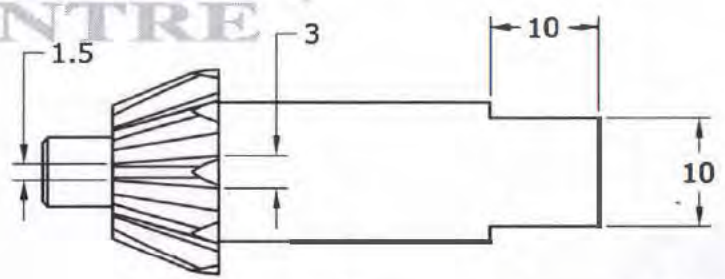
Exercise No: 09	File Name:
Duration: 120min	Actual Hours:



Detail A

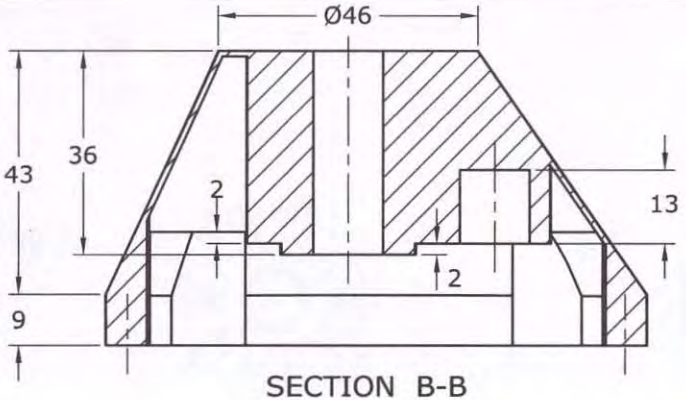




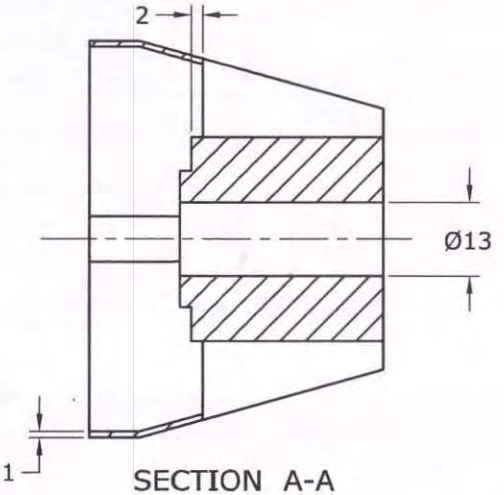


	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	Details of Gear Shaft	

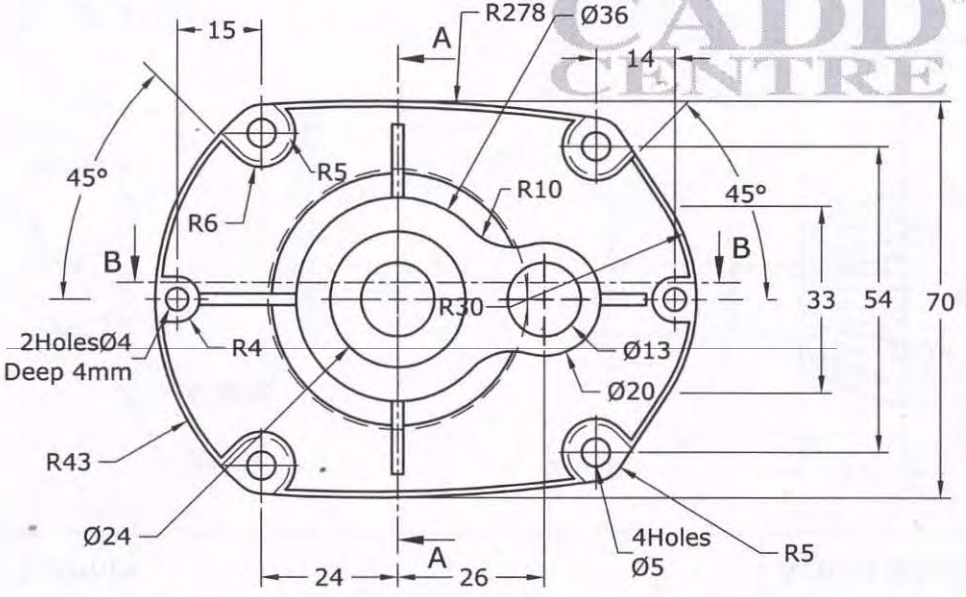
Exercise No: 10	File Name:
Duration: 120min	Actual Hours:



SECTION B-B

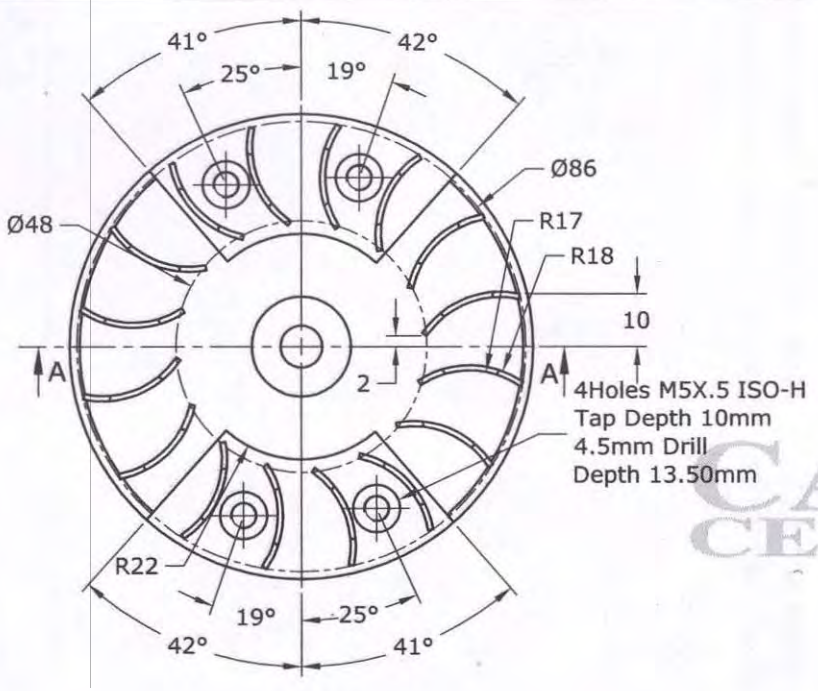


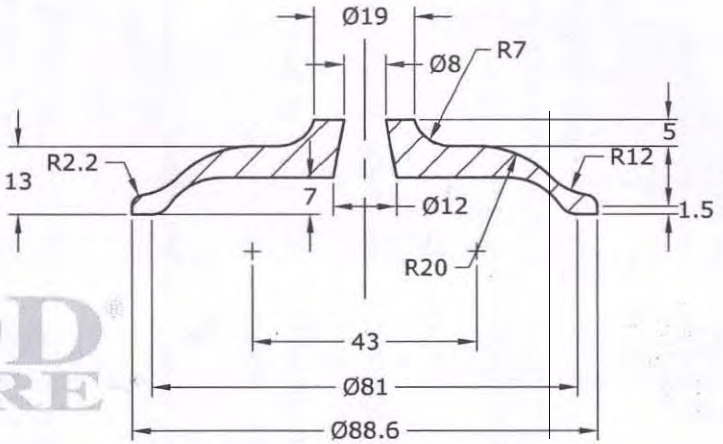
SECTION A-A



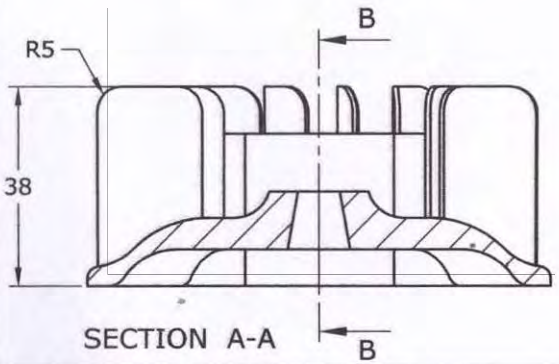
	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	Details of Gear box Cover	

Exercise No: 11	File Name:
Duration: 120min	Actual Hours:

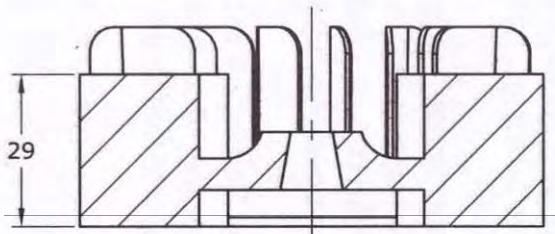




SECTION A-A



SECTION A-A



SECTION B-B

	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		

Details of Flywheel

Exercise No: 12	File Name:
Duration: 120min	Actual Hours:

Directions: -

The objective of this exercise is to add relations to your design intent by adding parametric relations between symbolic dimensions and parameters. Relations capture design intent by defining relationships within features or parts or among assembly components.

Add relations to the following components listed below using details given in next page: -

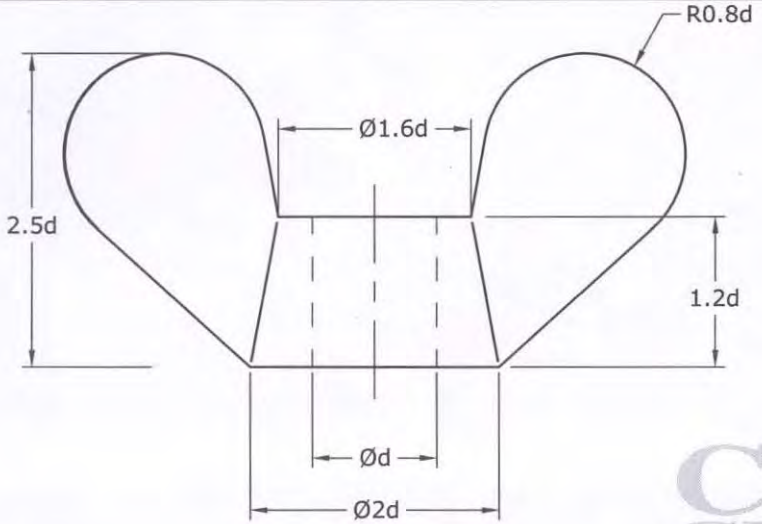
Wing Nut: - Wing nuts are used, when particular type of fasteners are need to be tightened and loosened frequently without use of tools.

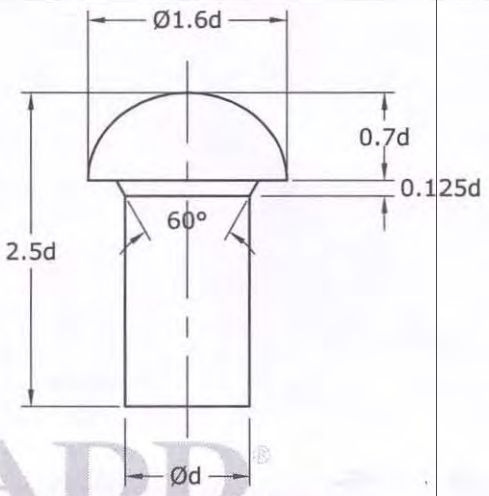
Rivets: - Rivets are used to join plates together. Used in heavy industries such as ship buildings, boiler units etc.

Grub Screw: - A grub screw is s locking device. It is commonly used to prevent the relative motion, usually rotary between the two parts, such as the movement of the hub of a pulley on a shaft. They are used as a locking device only when the power transmitted is small.

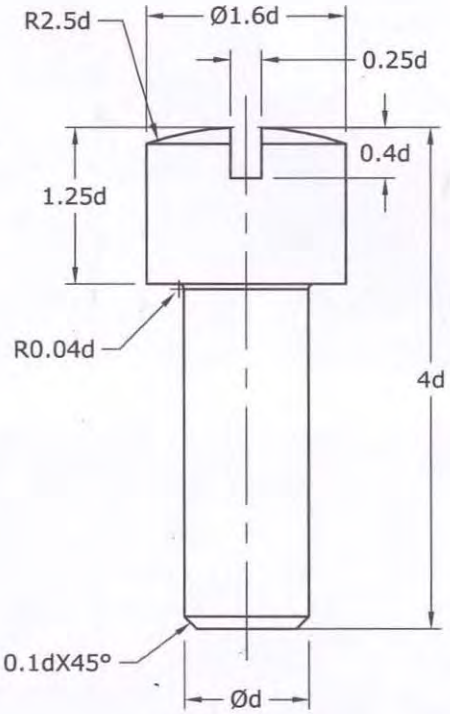
Set Screw: - A set screw in similar to a bolt, but comparatively smaller in size and threaded throughout its length except for a small length the head. These are used to fasten the parts which cannot be connected by bolts or studs and nuts.

Exercise No: 12	File Name:
Duration:	Actual Hours:

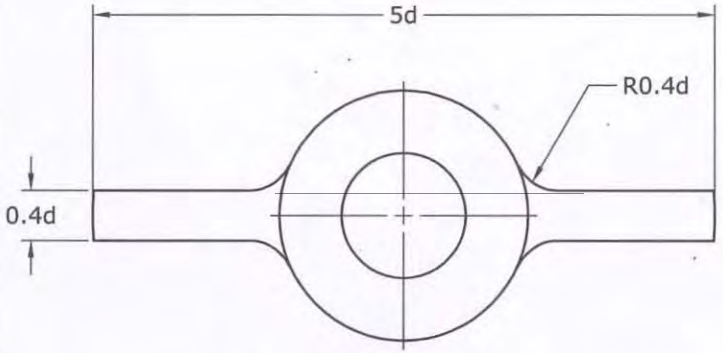




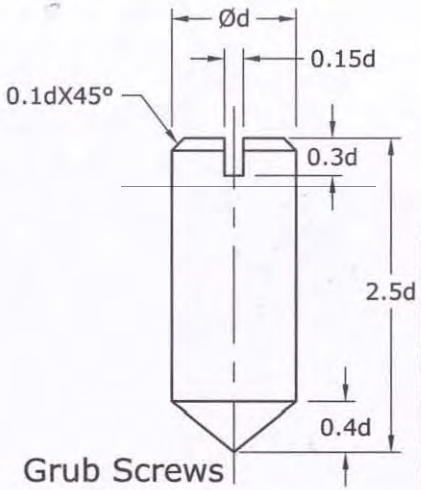
Snap Head Rivet



Set Screw



Wing Nut



Grub Screws

	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		

Details of Wing Nut,
Snap Head Rivet,
Grub Screw, Set Screw

Assembly Modeling

Project: 0A0-000	File Name:
Duration: 240min	Actual Hours:

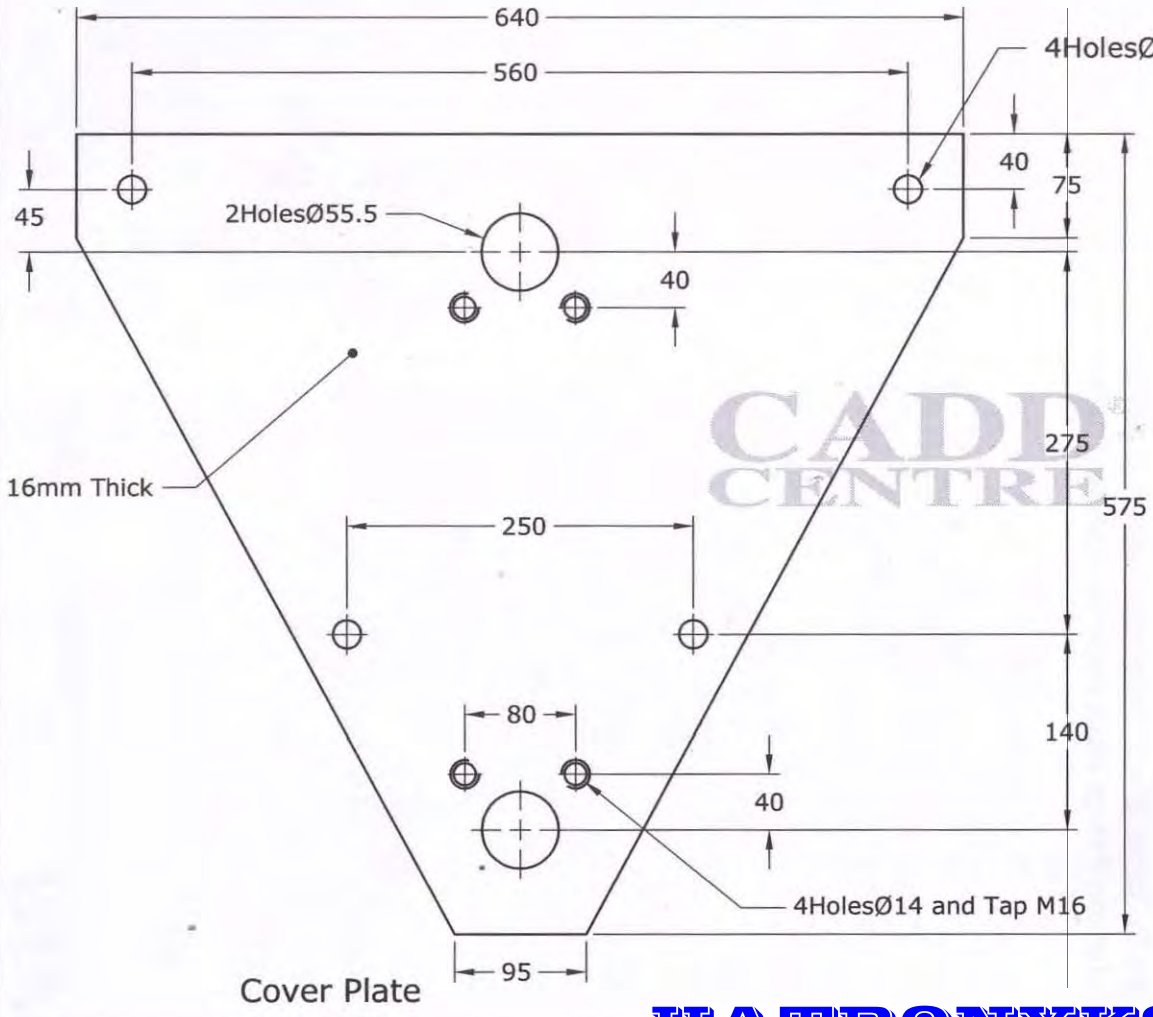
Directions: -

The objective of this project is to create crane hook with pulley block for hoisting tackle. A hoisting tackle is an arrangement of pulleys with one or more number of ropes passing over them and a hook, used for hoisting purposes in the erection of heavy work. The combination of pulley consists of fixed and moving pulleys, so arranged to give a mechanical advantage. The assembly of the pulleys and their mountings is called pulley block or simply block. The bottom block of the hoisting tackle fitted with a crane hook is called hook block or snatch block,

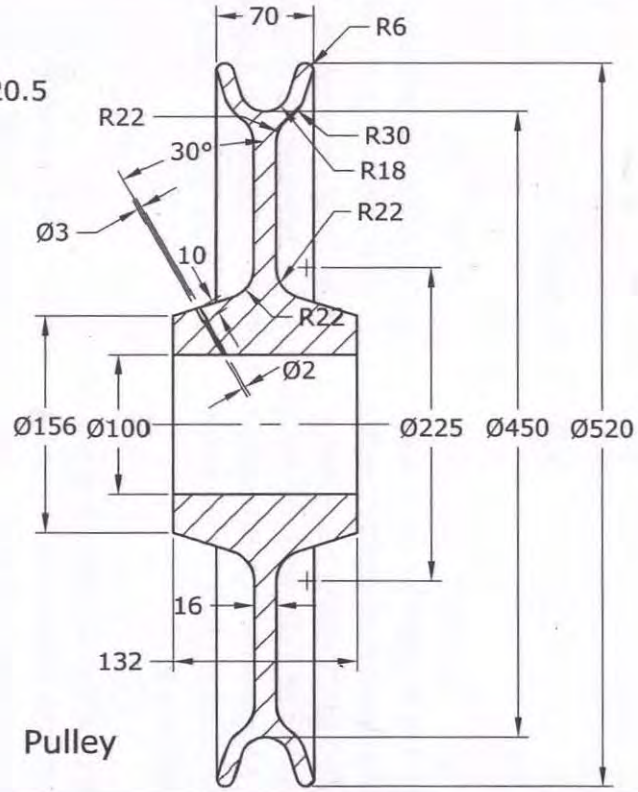
To complete the project follow the procedure given below: -

1. Create the parts from the detailed views shown in the Project 0A0-000.
2. Save each part with specified names in your locker/destined folder.
3. Strictly follow the dimensions given in the project.
4. Refer the design data book for standard parts.

Project No: 0A0-000	File Name:
Duration: 60min	Actual Hours:



Cover Plate

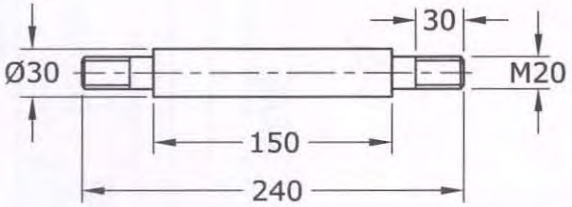


Pulley

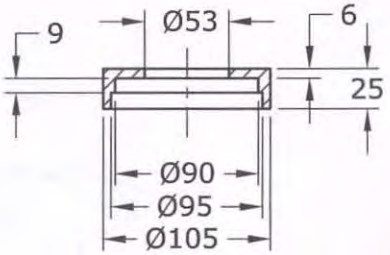
	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		

	SHEET 01/06	Details of Cover Plate and Pulley Pin

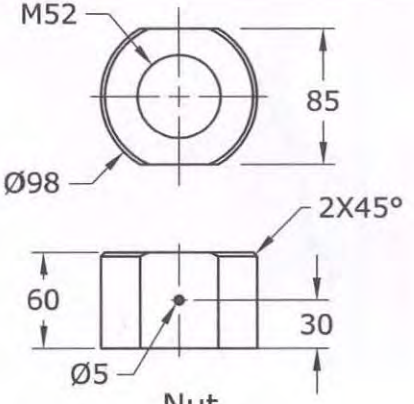
Project No: 0A0-000	File Name:
Duration: 90min	Actual Hours:



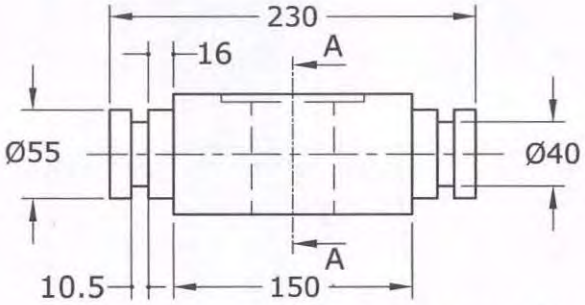
Distance Bolt



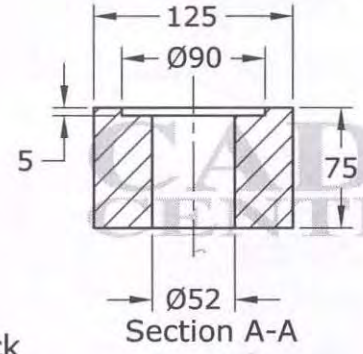
Dust Cover



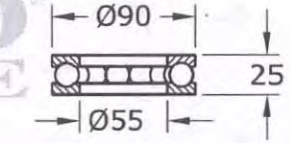
Nut



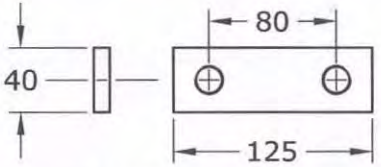
Crosshead Block



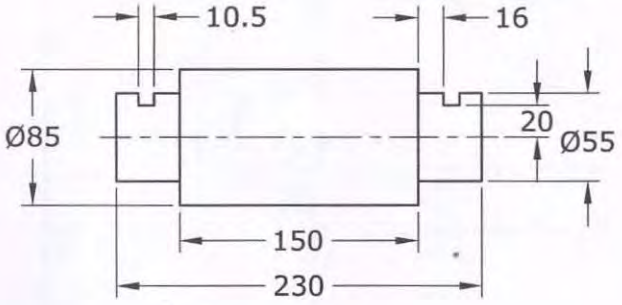
Section A-A



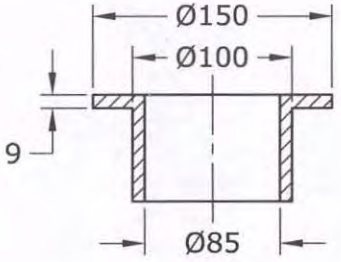
Thrust Bearing



Lock Plate



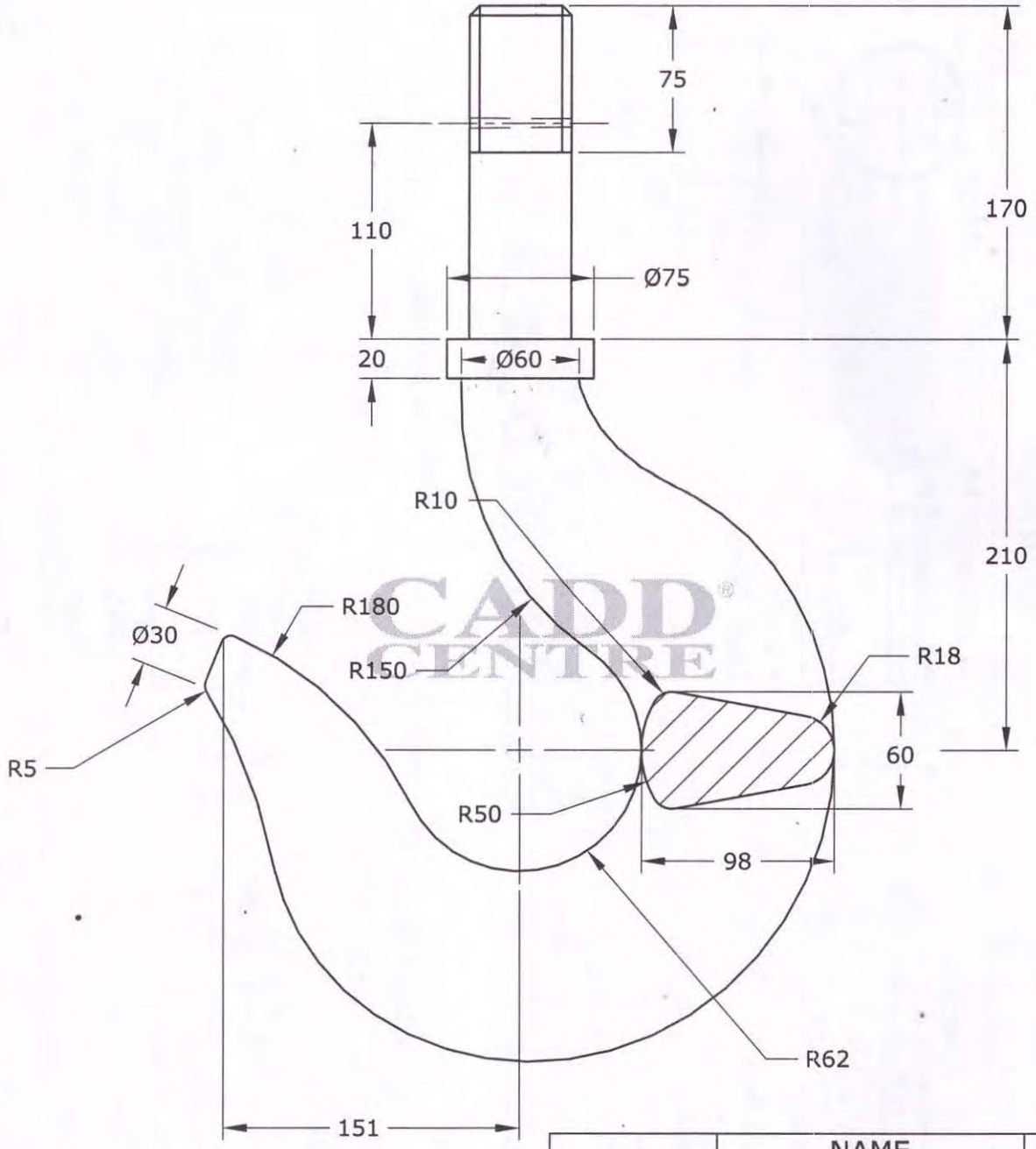
Pulley Pin



Bush

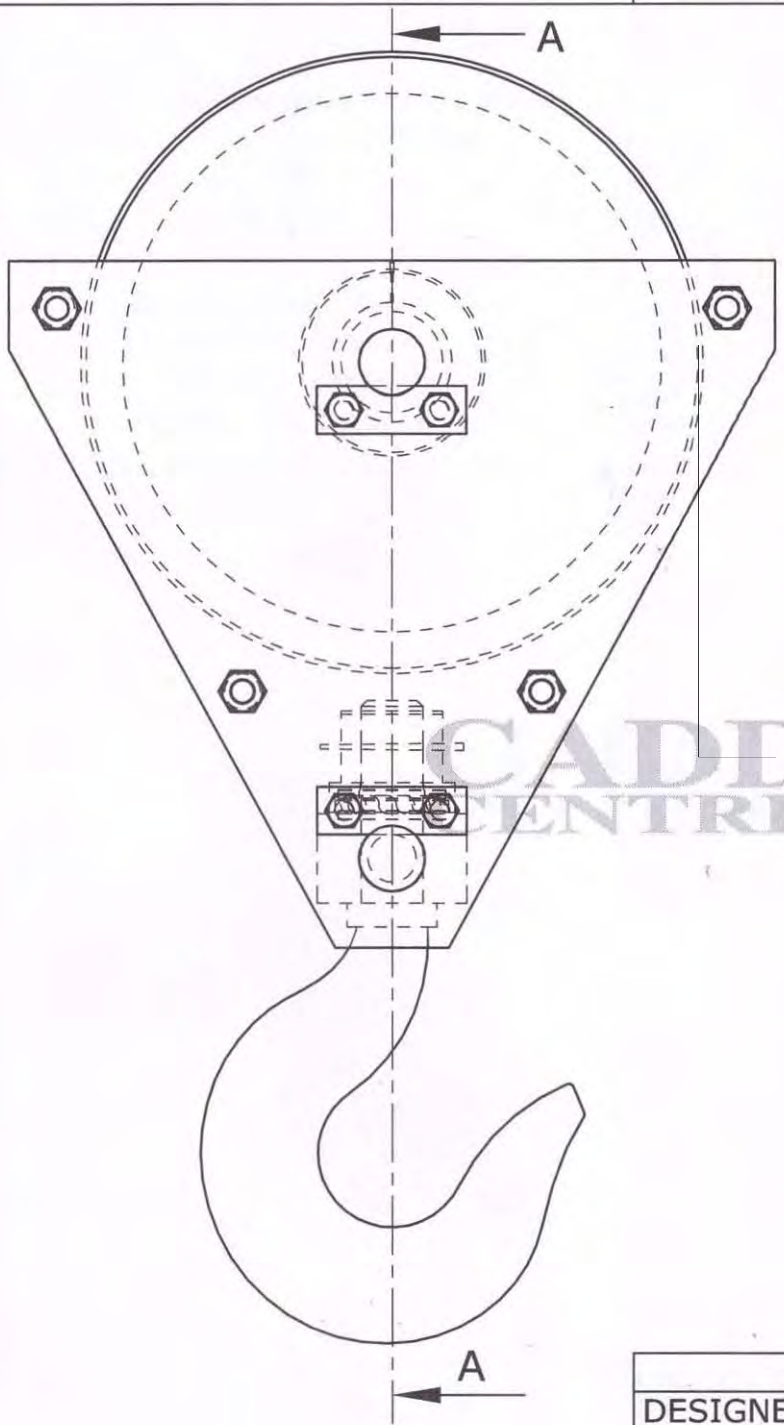
	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	SHEET 02/06	

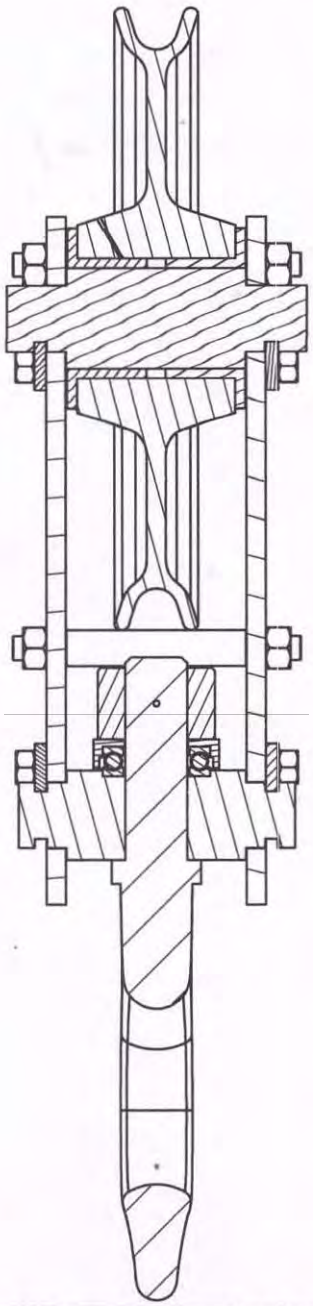
Project No: 0A0-000	File Name:
Duration: 60min	Actual Hours:



	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	SHEET 03/06	Details of Hook

Project No: 0A0-000	File Name:
Duration: 30min	Actual Hours:





	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		

	SHEET 04/06	Details of Crane Hook with Pulley block

Project No: 0A0-010	File Name:
Duration: 240min	Actual Hours:

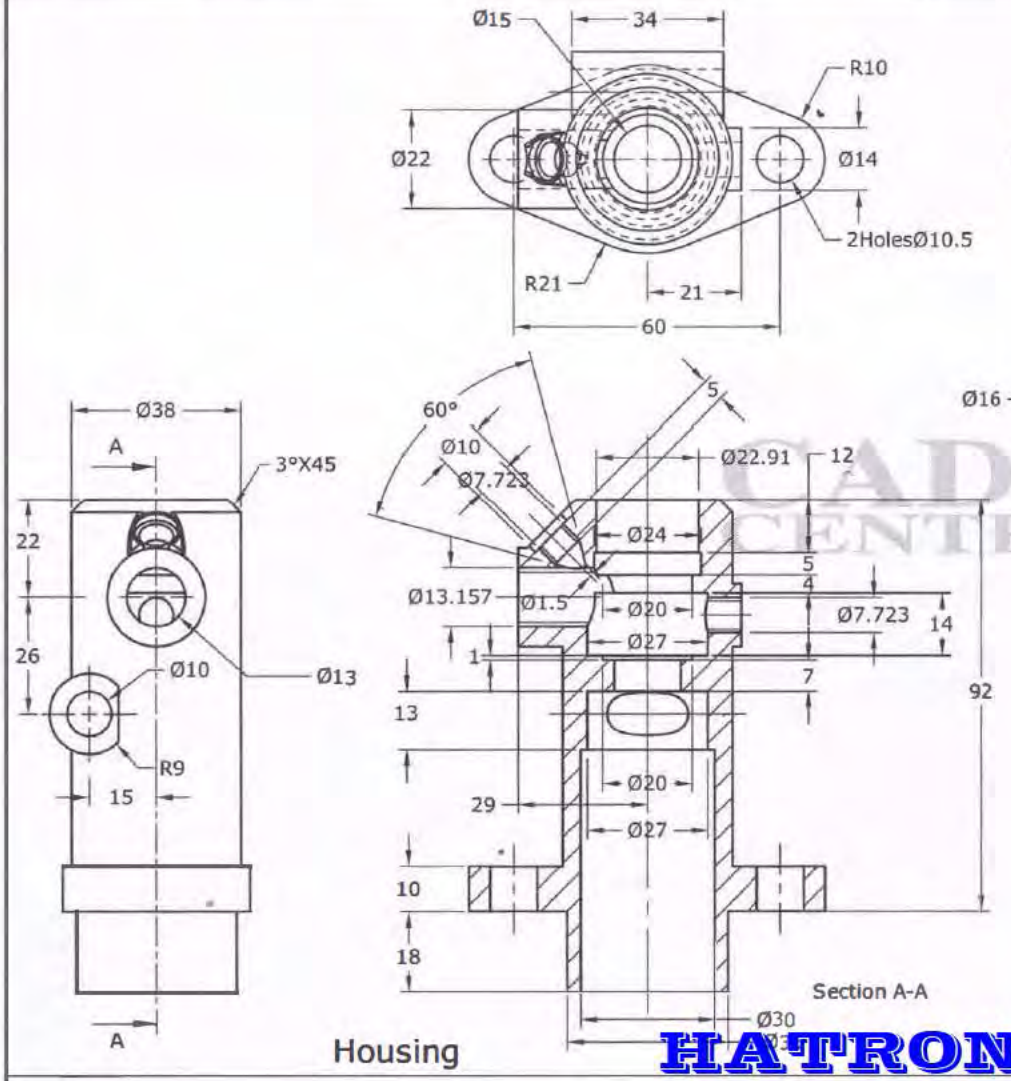
Directions: -

The objective of this project is to create a Fuel pump. Fuel pump driven by the main crankshaft of the engine, is used to raise the pressure of the diesel oil above the compression pressures in the engine to enable its injection through the injector in varying quantities to suit the changing loads on the engine.

To complete the project follow the procedure given below: -

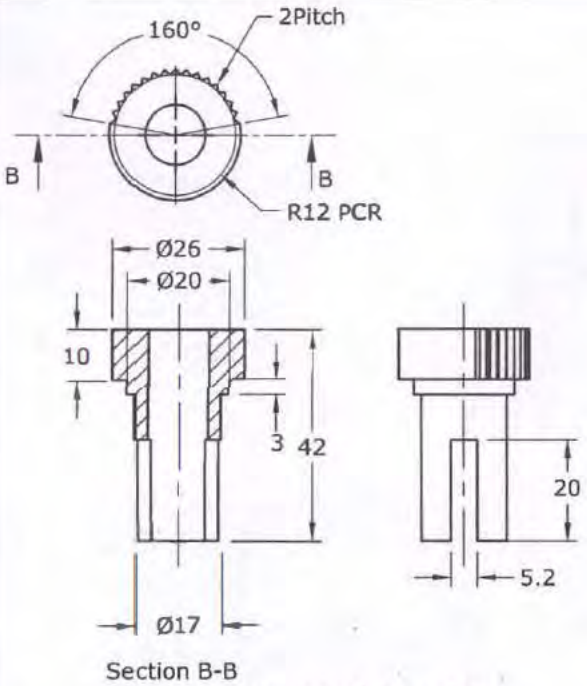
1. Create the parts from the detailed views shown in the Project 0A0-010.
2. Save each part with specified names in your locker/destined folder.
3. Strictly follow the dimensions given in the project.
4. Refer the design data book for standard parts.

Project No: 0A0-010	File Name:
Duration: 100min	Actual Hours:

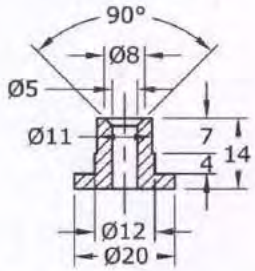


	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	SHEET 01/06	Details of Housing, Rack, Guide Sleeve, Plunger

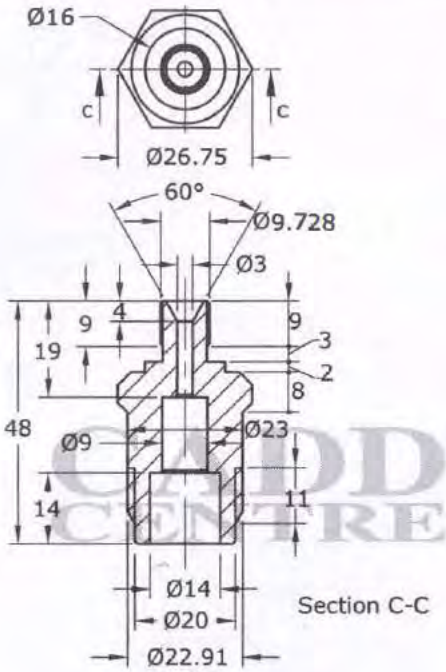
Project No: 0A0-010	File Name:
Duration: 50min	Actual Hours:



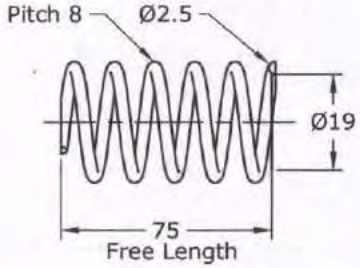
Control Sleeve



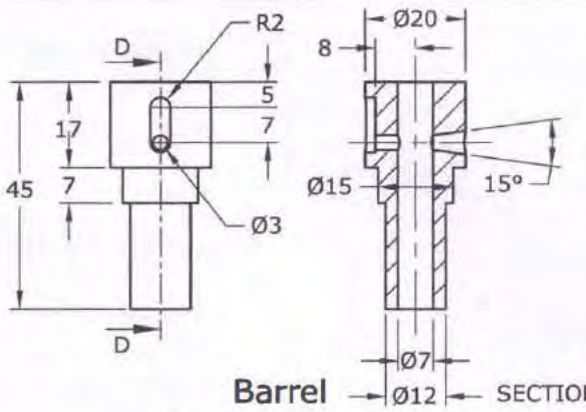
Valve Seat



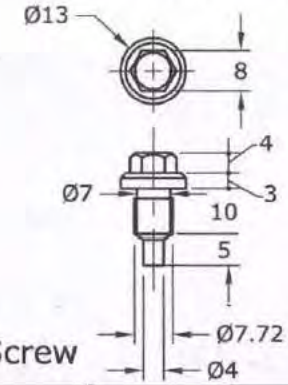
Oil outlet Screw



Spring



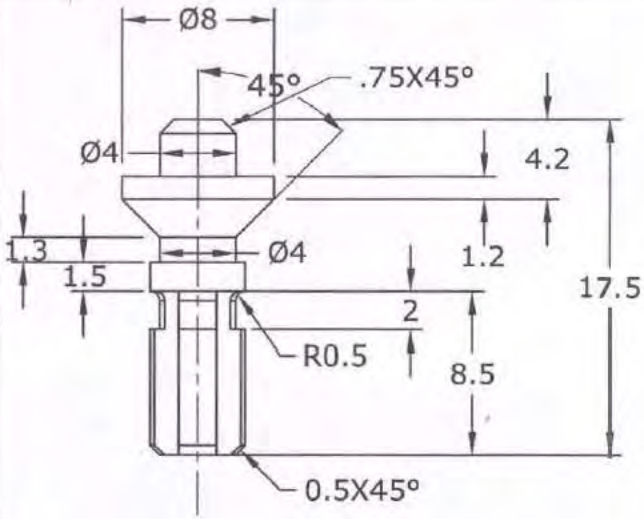
Barrel

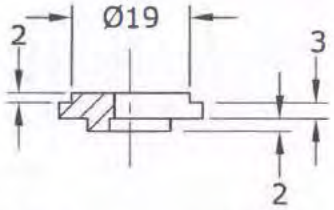


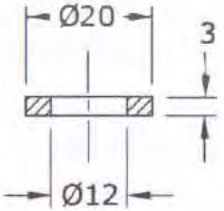
Screw

	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	SHEET 02/06	

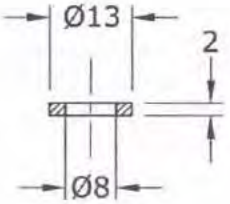
Project No: 0A0-010	File Name:
Duration: 60min	Actual Hours:



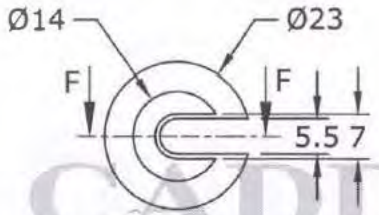




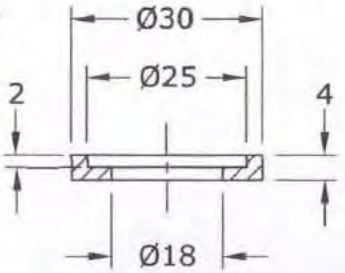
Washer



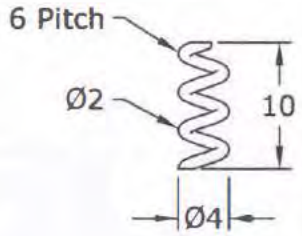
Washer



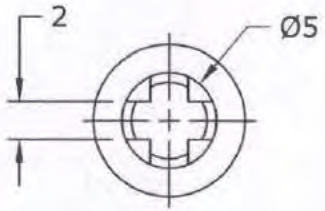
Spring Seat Bottom



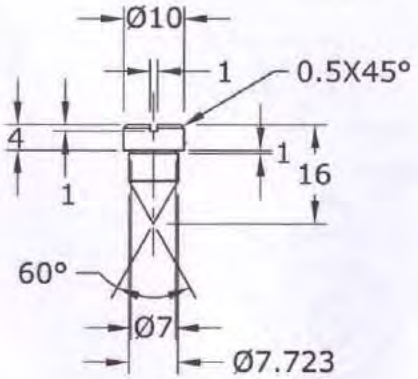
Spring Seat Top



Spring



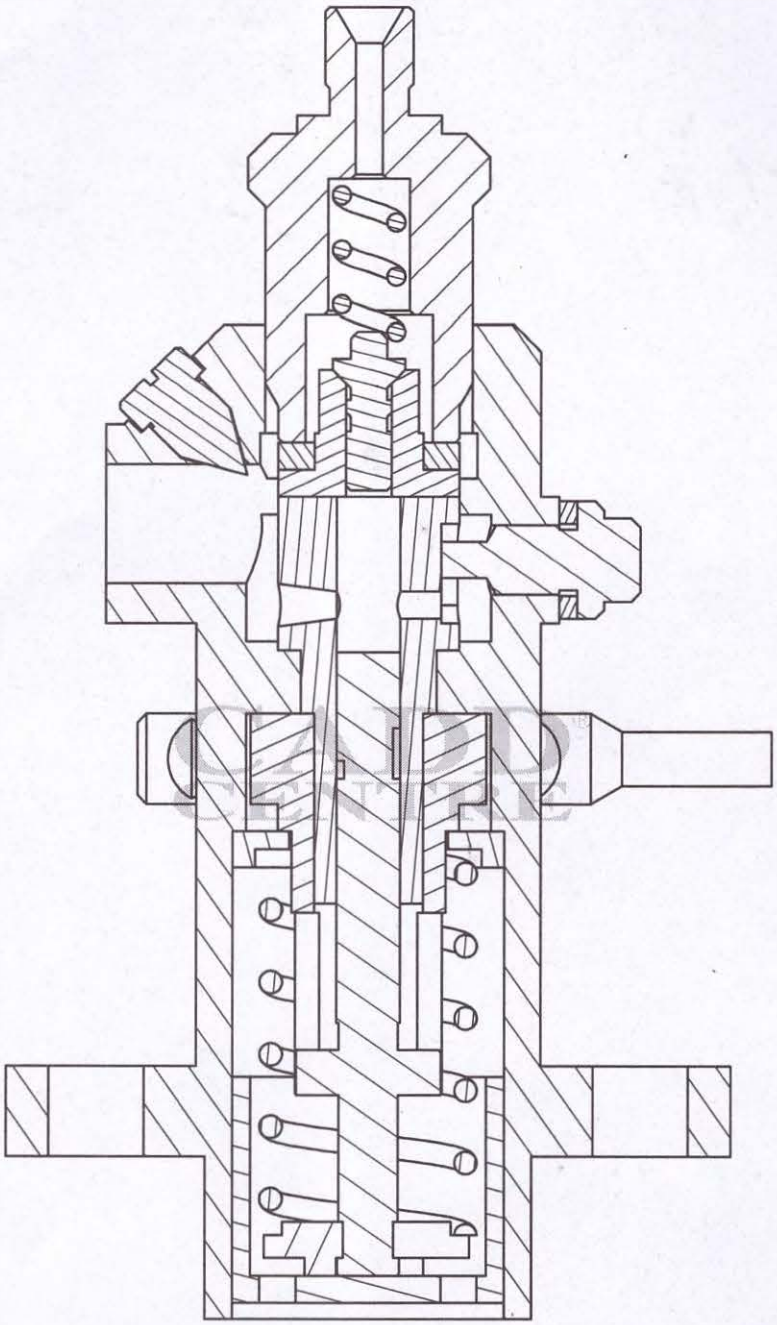
Delivery Valve



Air Release Valve

	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	SHEET 03/06	

Project No: 0A0-010	File Name:
Duration: 30min	Actual Hours:



	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		

	SHEET 04/06	Details of Fuel Pump assembly

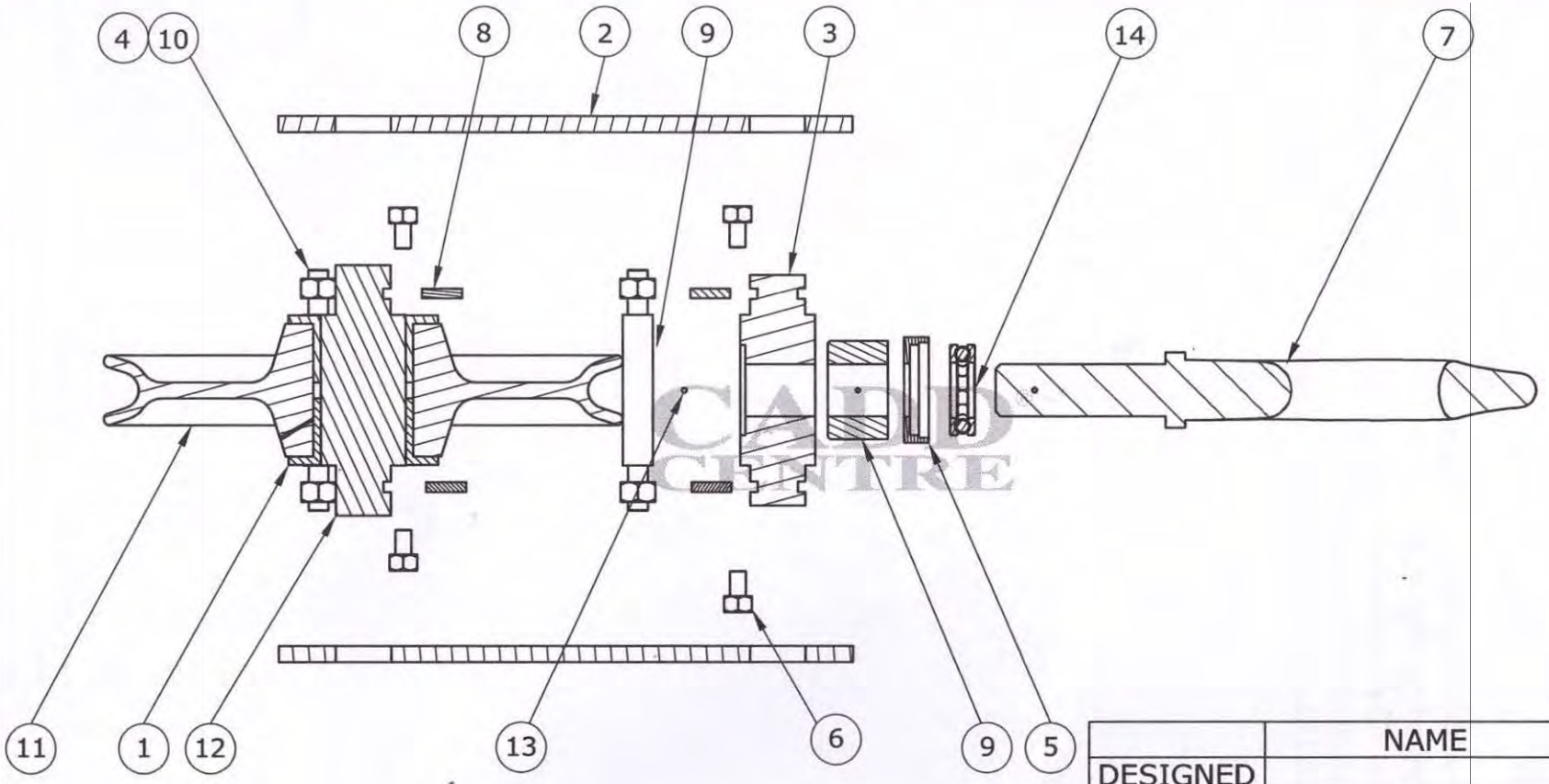
Detailing

Project No: 0A0-000	File Name:
Duration: 120min	Actual Hours:

Directions: -

1. The objective of this project is to make you familiar in preparing production document required for shop floor.
2. Create detailed views for Crane hook for hoisting tackle components, and dimension it as shown in Project0A0-000.
3. Create exploded view of Crane hook assembly and generate BOM.

Project No: 0A0-000	File Name:
Duration:	Actual Hours:



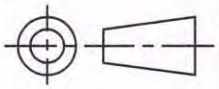
	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		

SHEET 05/06

Exploded view of Crane Hook with pulley block

Project No: 0A0-000	File Name:
Duration:	Actual Hours:

SNO	PART NAME	MATERIAL	QTY
1	Bush	Gun Metal	2
2	Cover Plate	Fe-410 W	2
3	Crosshead Block	Fe-410 W	1
4	Distance Bolt	Fe-410 W	4
5	Dust Cover	Fe-410 W	1
6	Hex.Screw M16X25L	Fe-410 W	8
7	Hook	Cast Steel	1
8	Lock Plate	Fe-410 W	4
9	Nut	Fe-410 W	1
10	Nut M20	Fe-410 W	8
11	Pulley	Cast Iron	1
12	Pulley Pin	Fe-410 W	1
13	Split Taper Pin Ø6X120	Fe-410 W	1
14	Thrust Bearing		1

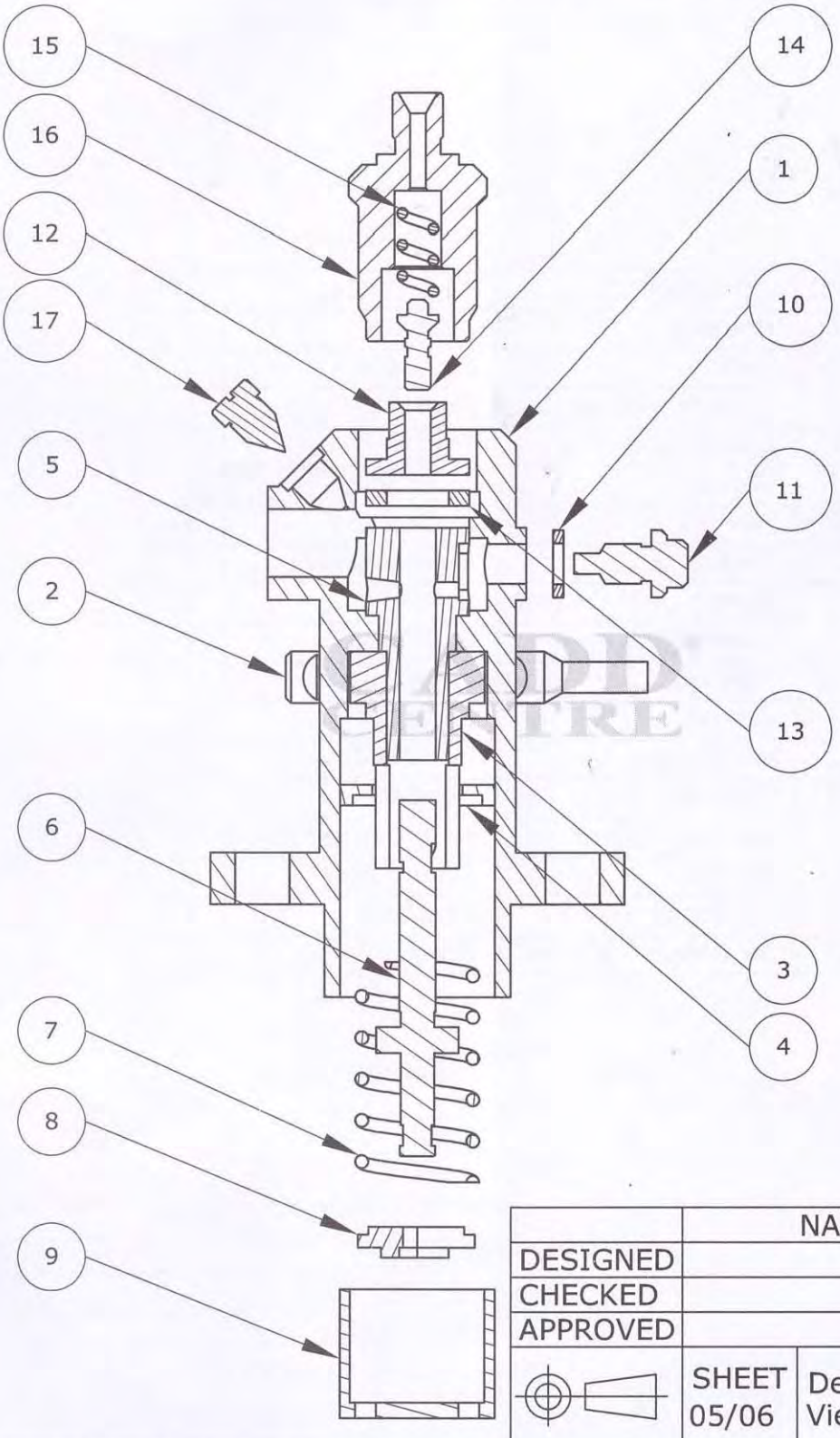
	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	SHEET 06/06	

Project No: 0A0-010	File Name:
Duration: 120min	Actual Hours:

Directions: -

1. The objective of this project is to make you familiar in preparing production document required for shop floor.
2. Create detailed views for Fuel Pump components, and dimension it as shown in Project0A0-010.
3. Create exploded view of Fuel Pump assembly and generate BOM.

Project No: 0A0-010	File Name:
Duration:	Actual Hours:



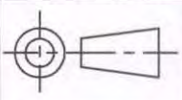
	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		

SHEET 05/06

Details of Exploded View of Fuel Pump

Project No: 0A0-010	File Name:
Duration:	Actual Hours:

SNO	DESCRIPTION	MATERIAL	QTY
1	Housing	Cast Iron	1
2	Rack	Fe 410W	1
3	Control Sleeve	Fe 410W	1
4	Spring Seat Top	Fe 410W	1
5	Barrel	Ni.Cr.Steel	1
6	Plunger	Ni.Cr.Steel	1
7	Spring	Spring Steel	1
8	Spring Seat Bottom	Fe 410W	1
9	Guide Sleeve	Fe 410W	1
10	Washer	Fibre	1
11	Screw	Fe 410W	1
12	Valve Seat	Fe 410W	1
13	Washer	Copper	1
14	Delivery Valve	High Carbon Steel	1
15	Spring	Spring Steel	1
16	Oil Outlet Screw	Fe 410W	1
17	Air Release Screw	Brass	1

	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	SHEET 06/06	

Surface Modeling

Exercise No: 01	File Name:
Duration: 120min	Actual Hours:

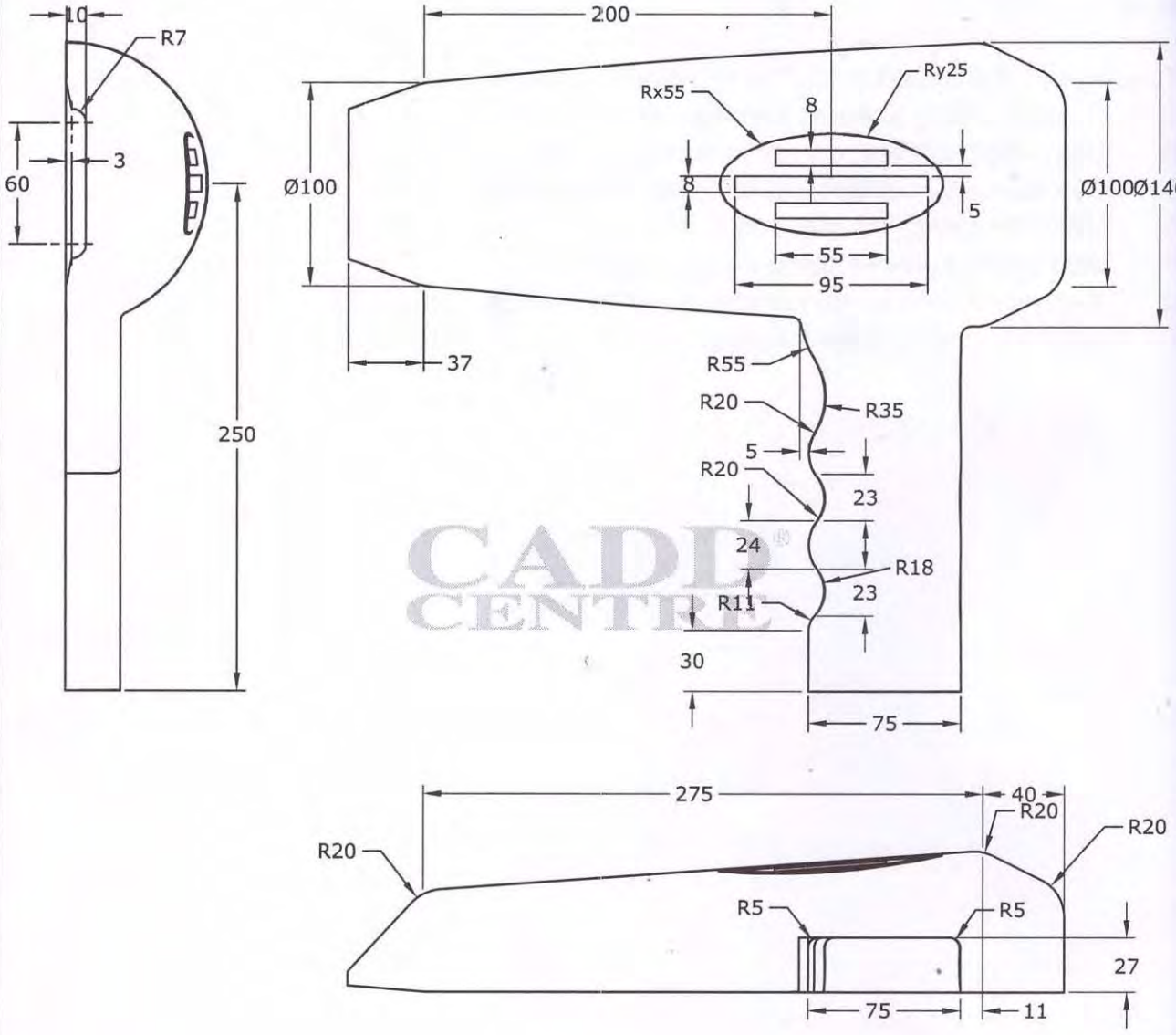
Directions: -

The objective of this project is to create semi finished part of a hair dryer using surface tools.

To complete the project follow the procedure given below: -

1. Create surface features from hair dryer detail views.
2. Use sketch entities, curves to create surfaces.
3. Use boundary surface tool to create surfaces from curves.
4. Use Trim tool to cut required surfaces.
5. Join all the surfaces using merge command.
6. Apply thickness to the surface using Thicken command.
7. Strictly follow the dimensions given.

Exercise No: 01	File Name:
Duration: 120min	Actual Hours:



	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	Details of Hair dryer part	

Exercise No: 02	File Name:
Duration: 120min	Actual Hours:

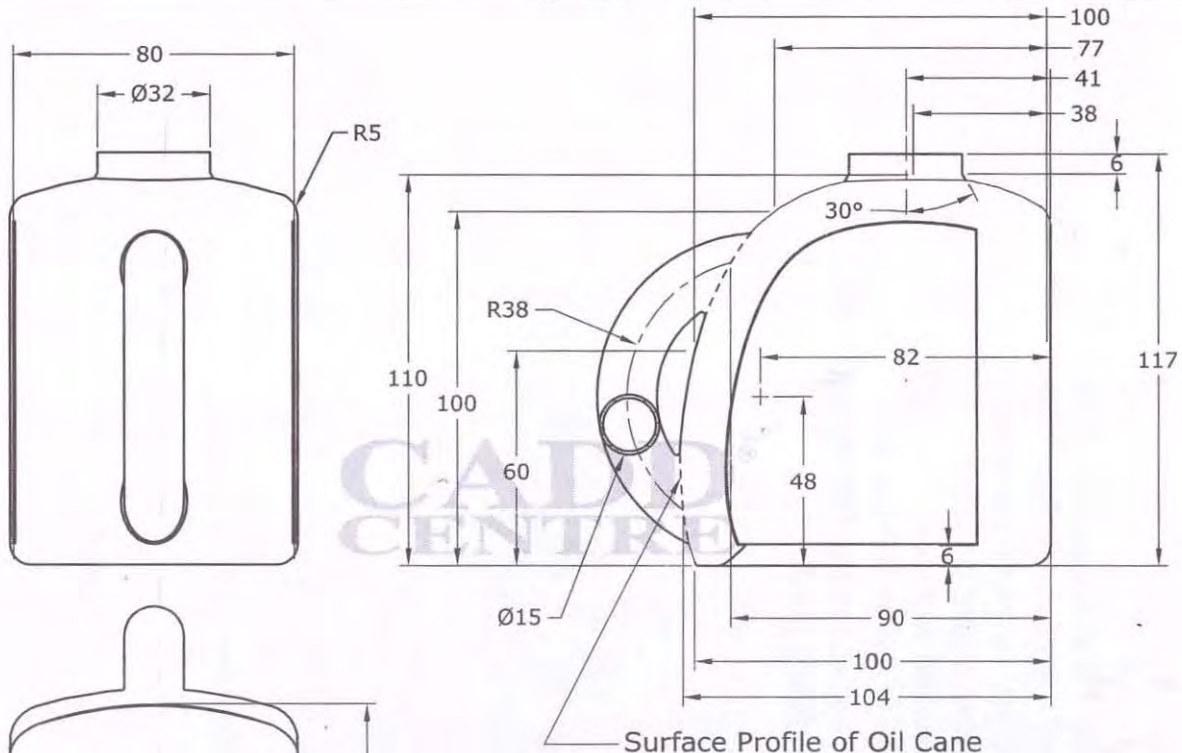
Directions: -

The objective of this project is to create semi finished part of an "oil can" using surface tools.

To complete the project follow the procedure given below: -

1. Create surface features from oil cane detail views.
2. Use sketch entities, curves to create surfaces.
3. Use sweep surface tool to create surfaces.
4. Use Trim tool to cut required surfaces.
5. Join all the surfaces using merge command.
6. Apply thickness to the surface using Thicken command.
7. Strictly follow the dimensions given.

Exercise No: 02	File Name:
Duration: 120min	Actual Hours:



	NAME	DATE
DESIGNED		
CHECKED		
APPROVED		
	Details of a Oil Can	

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Phone No. : Mobile :

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Course Title :

Date of course commencement Date of course completion

Reference book issued during :
Commencement of the course Middle of the course End of the course

Centre location :

Centre's Seal : (Student signature)

Please ☑	Agree	Need Improvement
The instructor was well prepared for the class	☐	☐
The instructor explained the course content in a most effective manner	☐	☐
The instructor has thorough knowledge and expertise in the subject	☐	☐
The instructor has clarified all your doubts	☐	☐
The content of the Reference guide is robust	☐	☐
The Project work book supported the course content well	☐	☐
The training facility is clean and tidy	☐	☐
The computers and other equipments were in good working order	☐	☐
CADD Centre's staff was helpful and friendly throughout the course	☐	☐

Please ☑	Excellent	Good	Need Improvement
The overall rating of your course with us	☐	☐	☐

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Thank you for your participation.

Date :

Student signature

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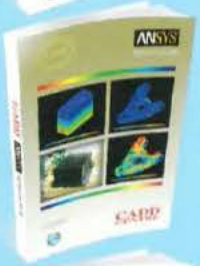



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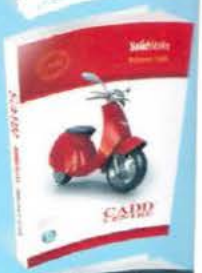


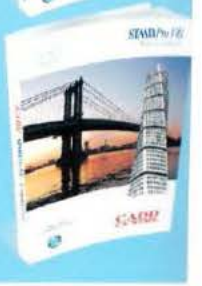

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