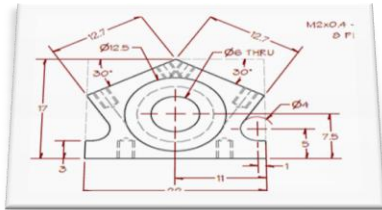


From the Trenches with Autodesk Inventor

Tips, tricks & solutions from daily life with Inventor



<http://inventortrenches.blogspot.com/>



This PDF contains 24 detailed drawings of miscellaneous parts, to be used for practice with Autodesk Inventor (or any 3D CAD package for that matter). Some of the parts are a bit more challenging than others, but none of them are meant to be difficult. However, some are intended for specific modeling tools, and hints have been provided in those cases.

In the event that you find a missing dimension or two, please accept my apologies in advance, but don't let it stop you from modeling the part. Instead, you can consider this an opportunity to exercise "designer's choice" and provide a dimension according to your liking, as there are no right or wrong answers for these practice files.

As you work your way through these, keep in mind the best practice of creating simple sketches, to build well constructed features, which add up to a more complex part. You can reference the [Inventor 101: Simple Fully Constrained Sketches](#) blog article for more on the concept of building complex parts from simple sketches.

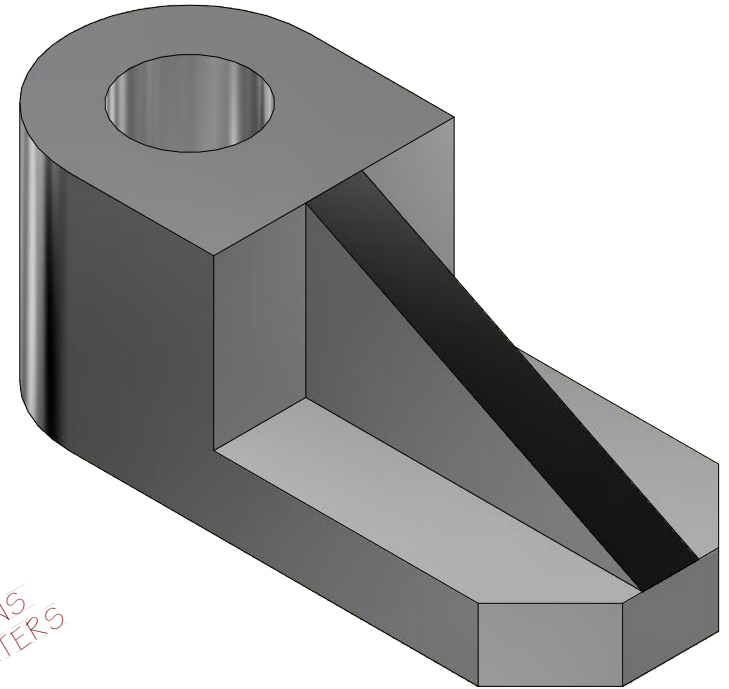
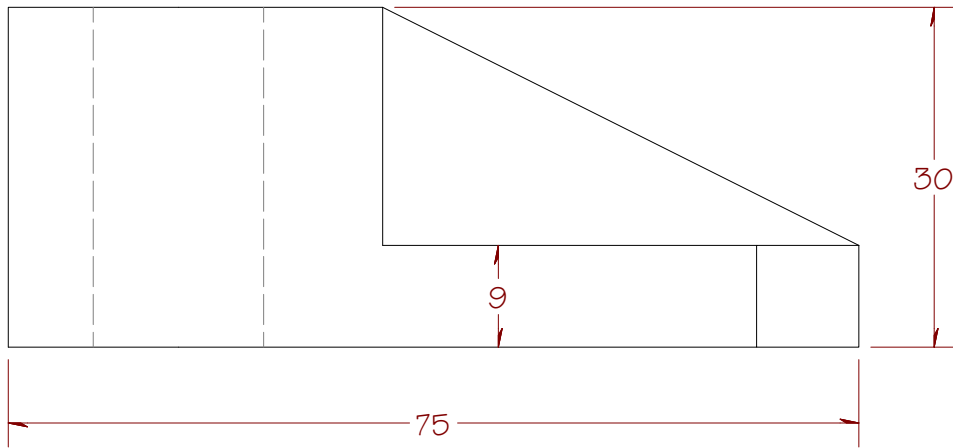
These files are released "as is" and no official support is offered for them, but if you get stuck you can probably find someone to offer a helping hand online at the [Autodesk Inventor forum](#), provided you post a good description of your issue and attach the part file you are struggling with.

Best of luck to you in all of your Inventor and design pursuits,

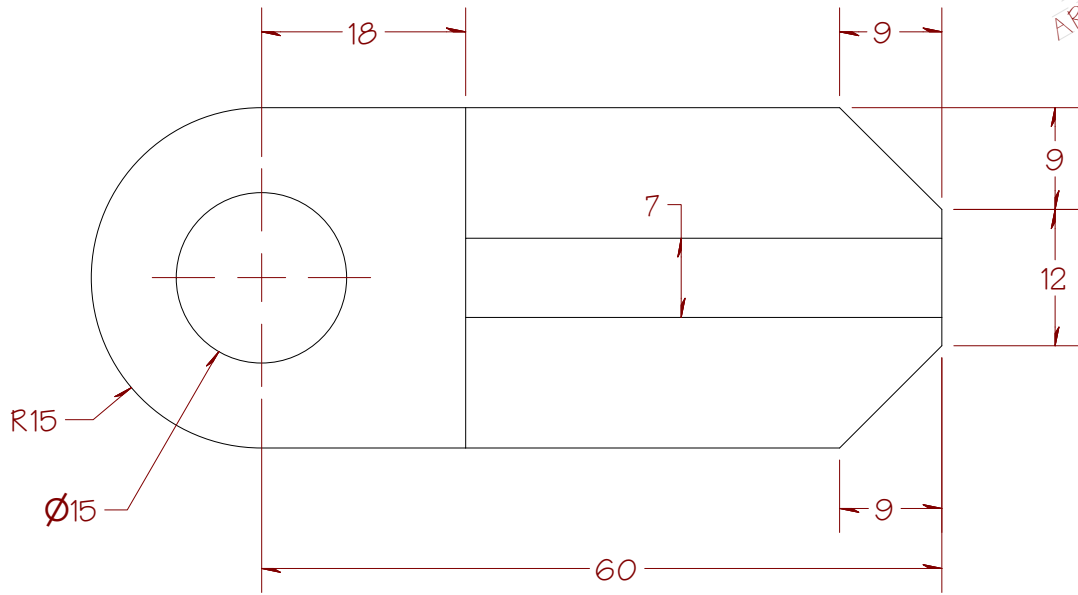
Curtis Waguespack

Author: Mastering Autodesk Inventor



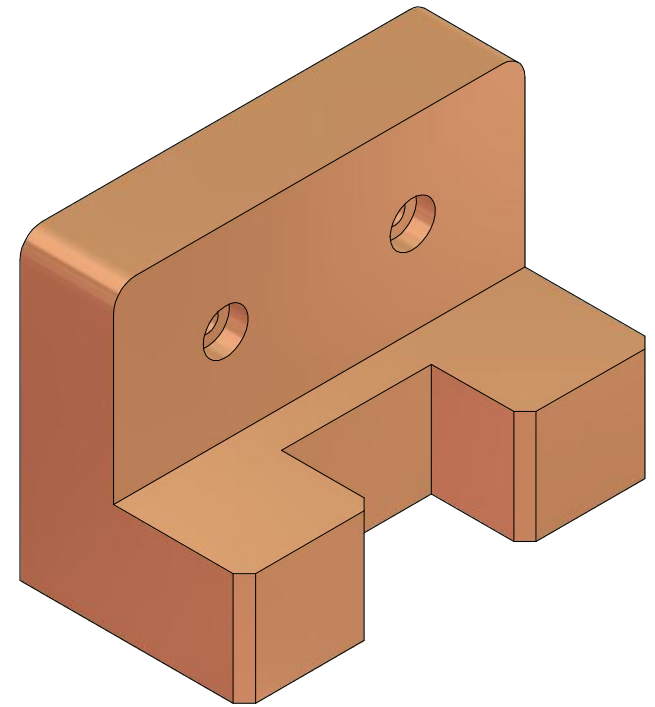
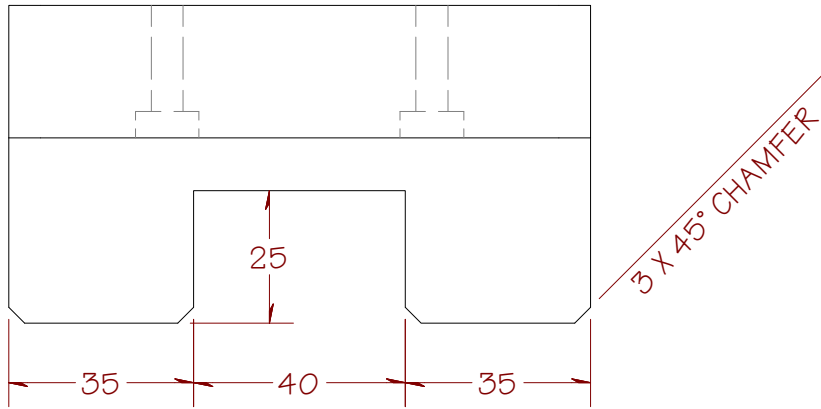


ALL DIMENSIONS
ARE IN MILLIMETERS

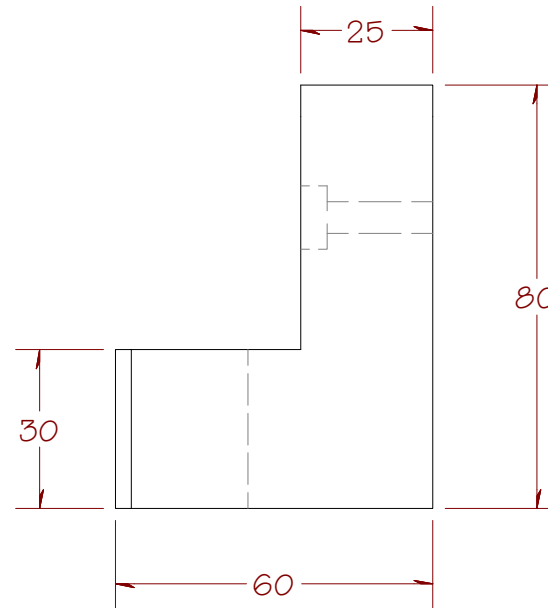
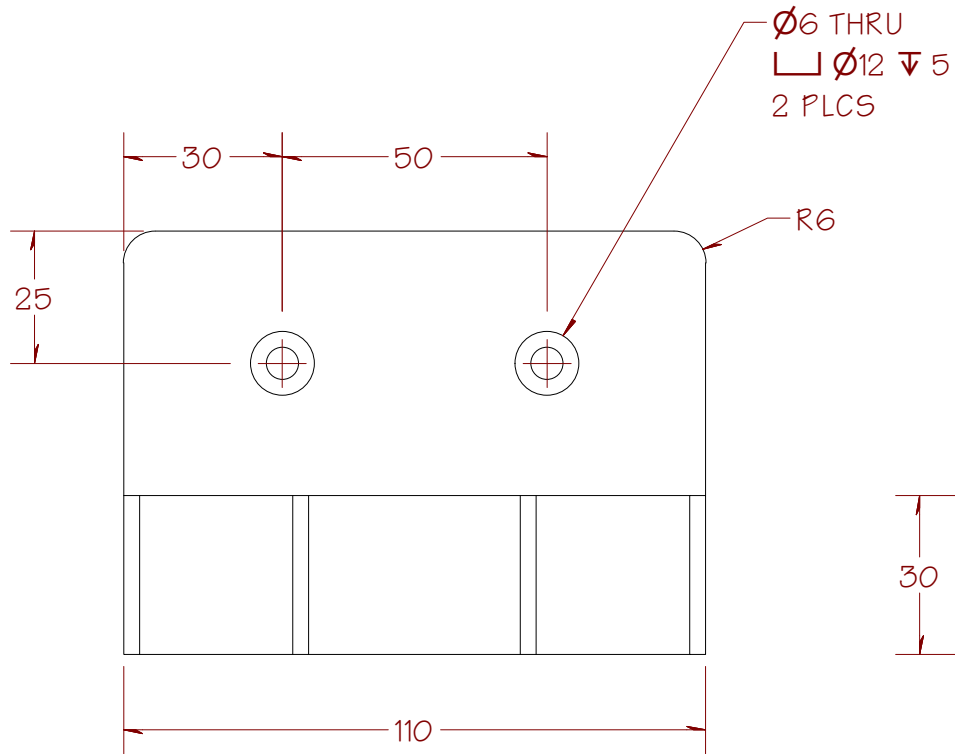


SHEET 2 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME Fixture Block.ipt
	DESCRIPTION Hardware, Fixture Block

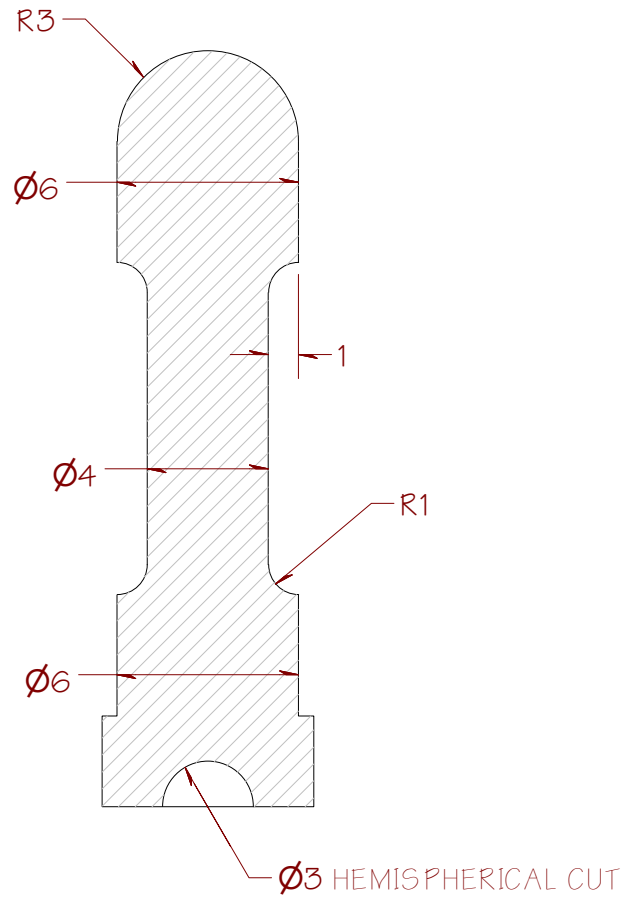
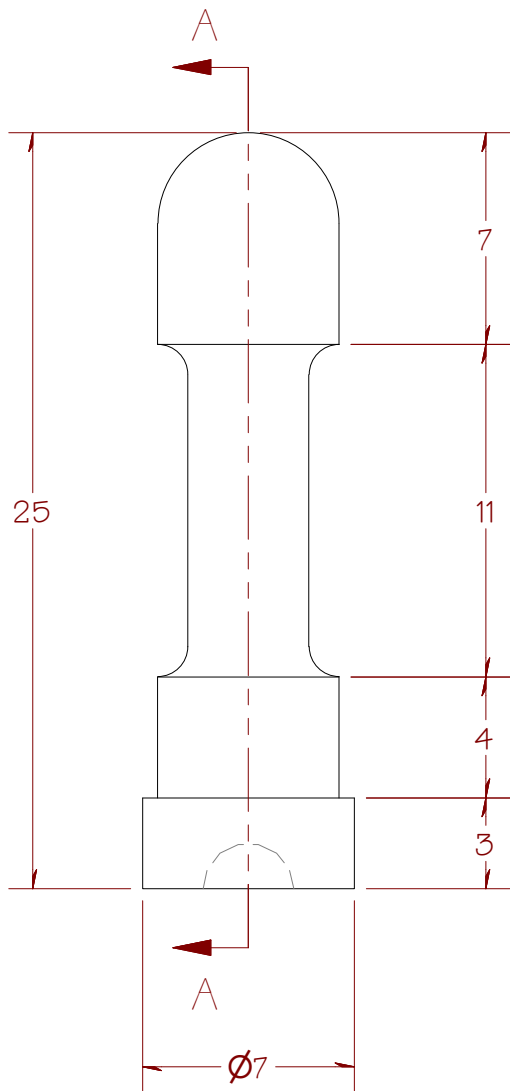


ALL DIMENSIONS
ARE IN MILLIMETERS

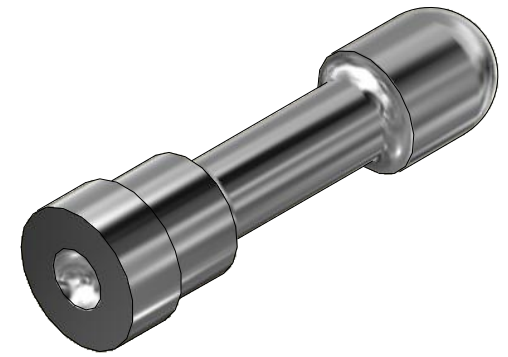


SHEET 3 OF 25

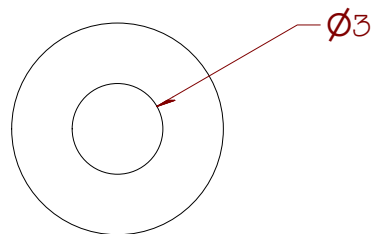
FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME Mount Bracket.ipt
	DESCRIPTION Hardware, Bracket



SECTION A-A

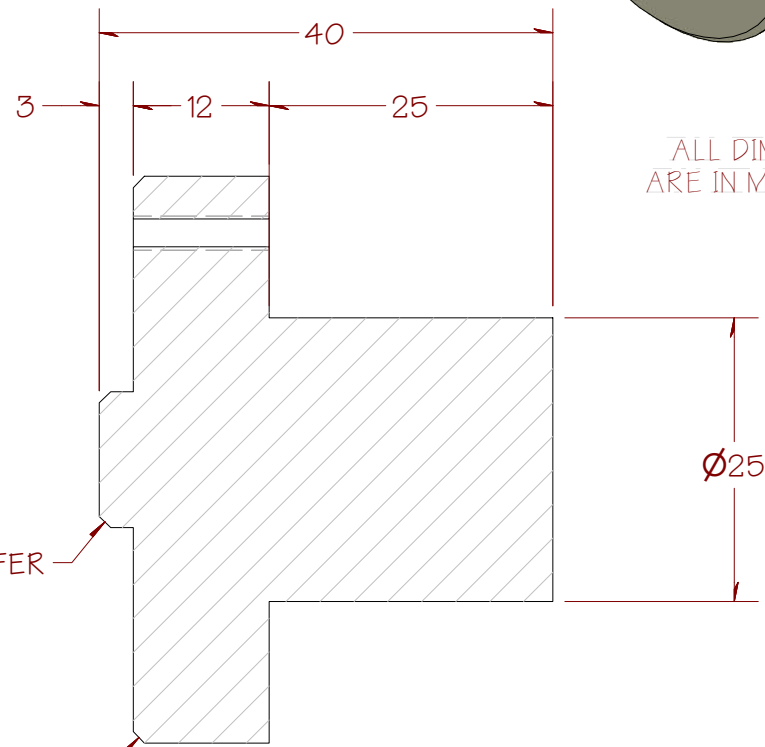
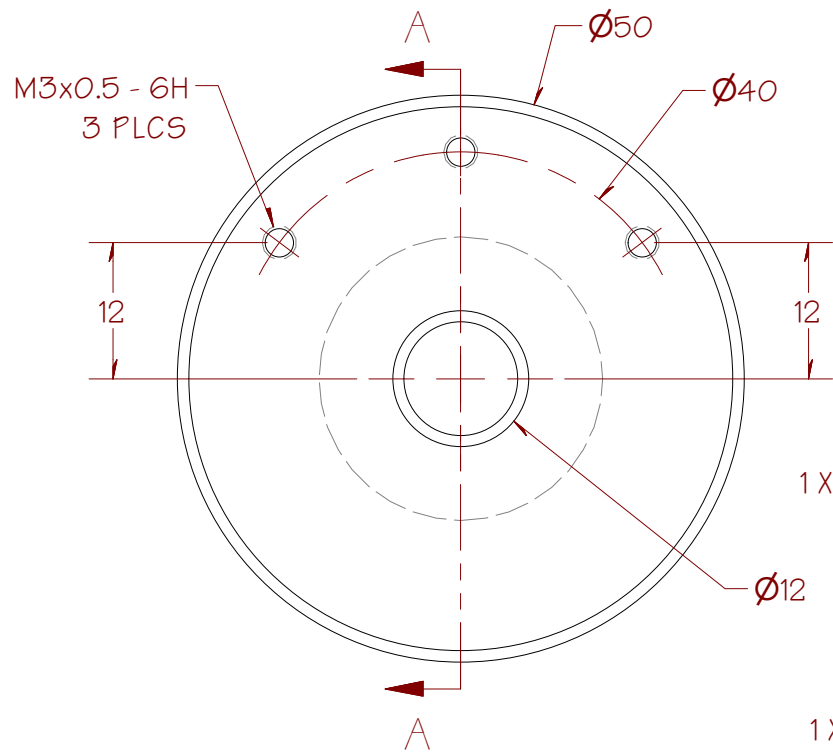
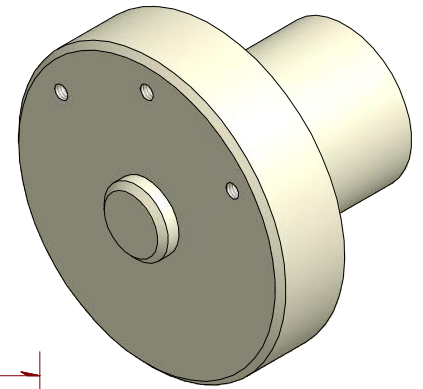


ALL DIMENSIONS
ARE IN MILLIMETERS



SHEET 4 OF 25

FROM THE DESK OF CURTIS WAGUE SPACK	FILE NAME Valve Lifter.ipt
	DESCRIPTION Component, Lifter End

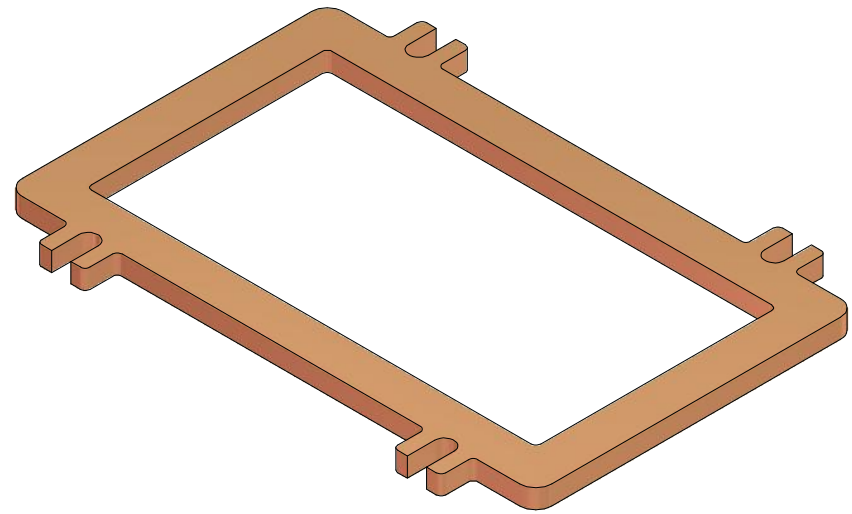
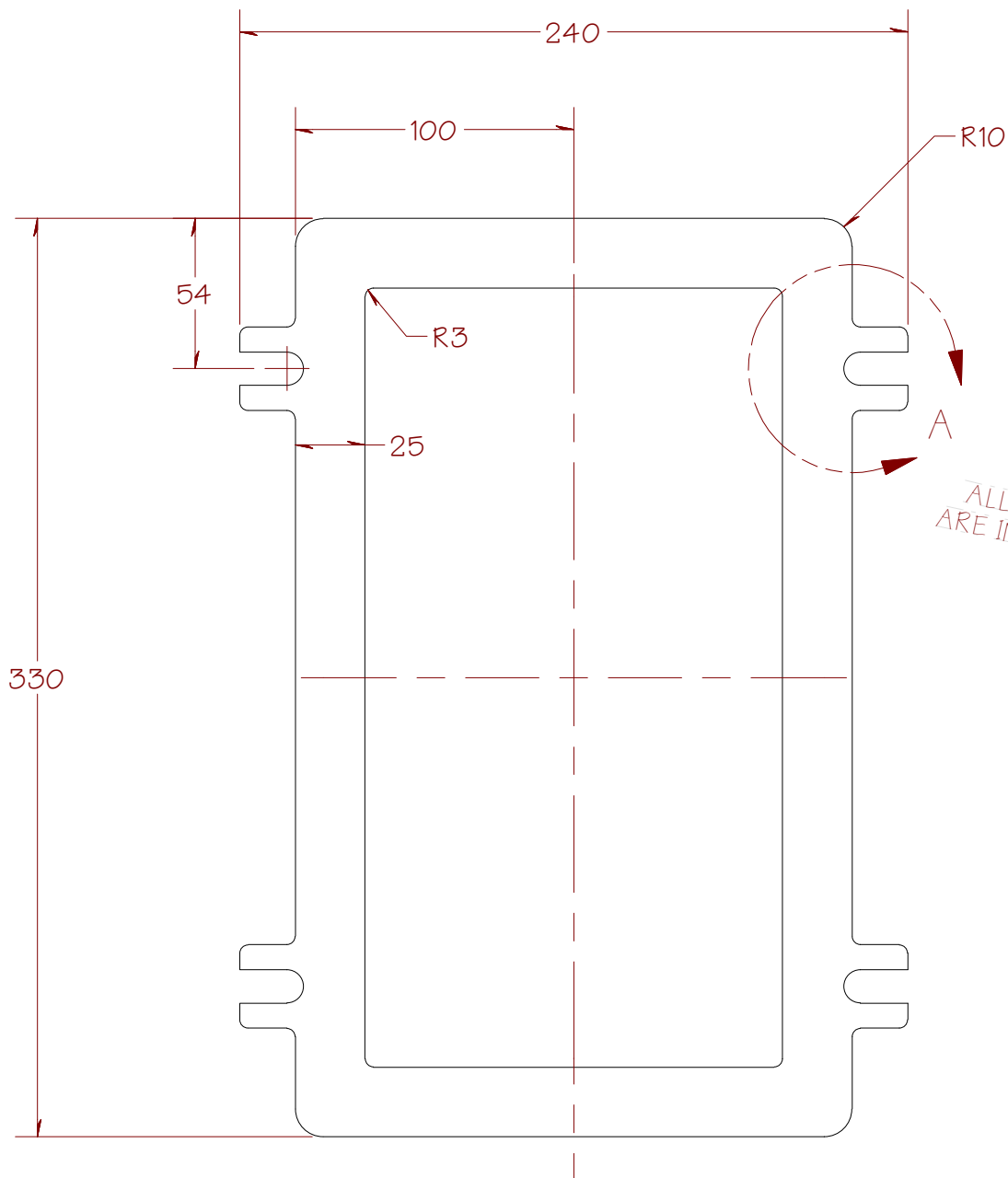


ALL DIMENSIONS ARE IN MILLIMETERS

SECTION A-A

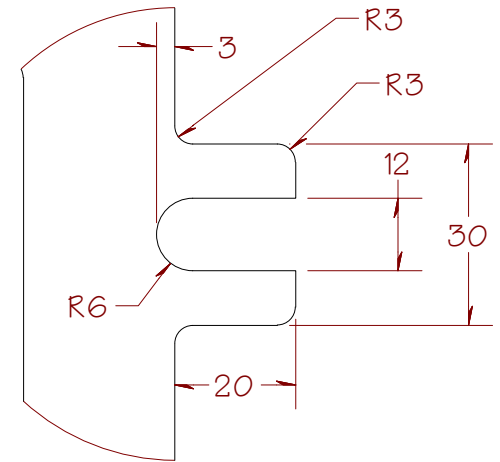
SHEET 5 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME	Housing Fixture.ipt
	DESCRIPTION	Machined, Housing Fixture Guide



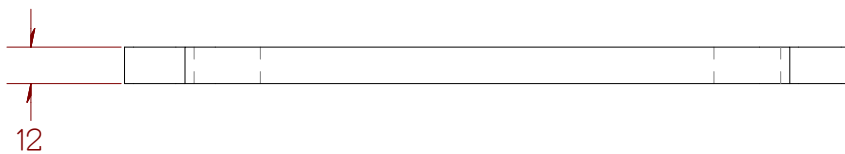
ALL DIMENSIONS
ARE IN MILLIMETERS

NOTCH DETAIL TYPICAL
4 PLCS



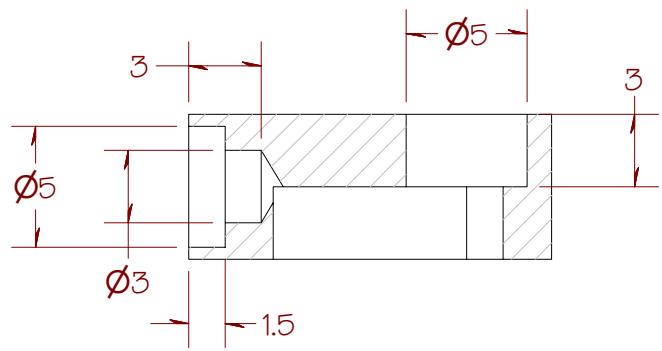
DETAIL A

SHEET 6 OF 25

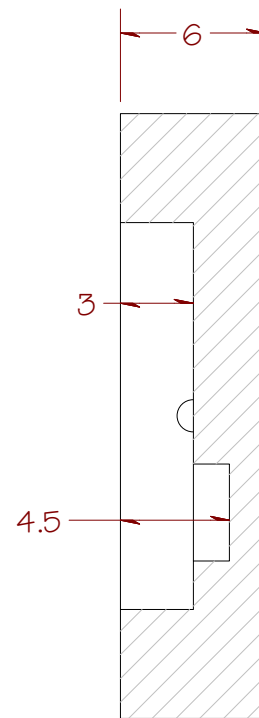
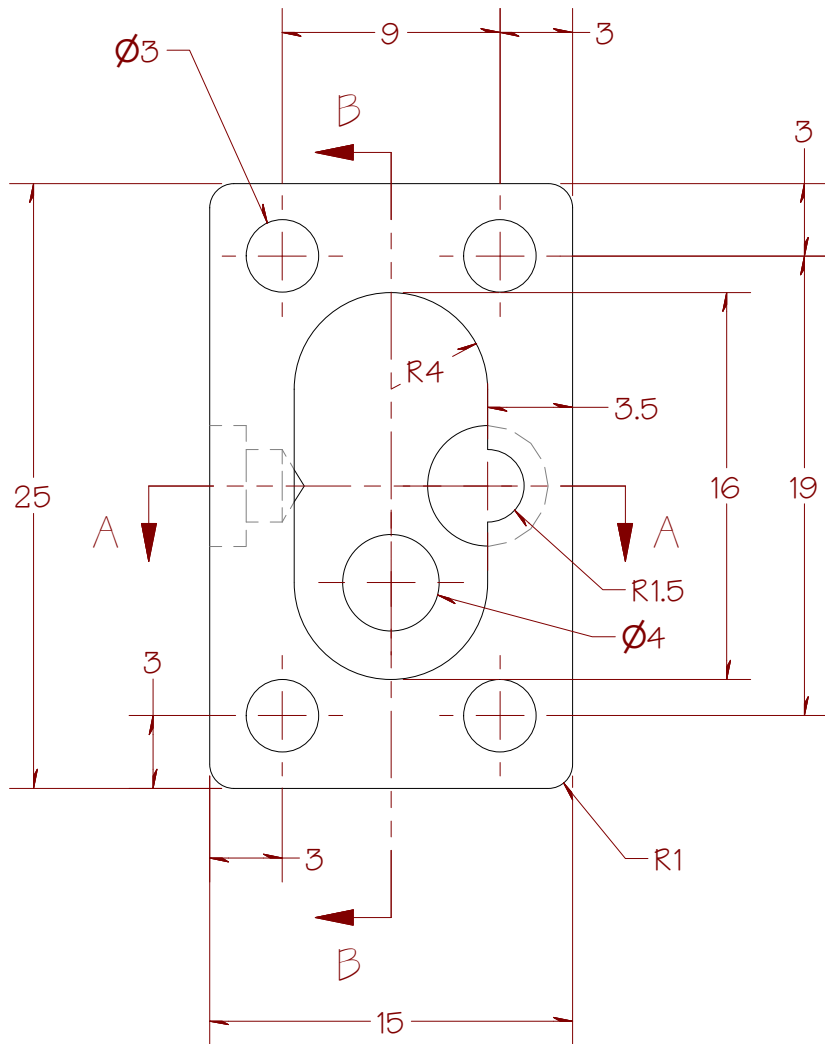


FROM THE DESK OF CURTIS WAGUESPACK

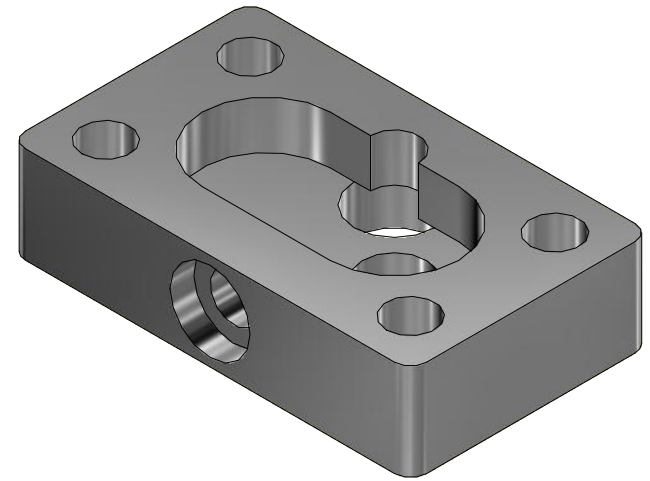
FILE NAME	Hopper Flange.ipt
DESCRIPTION	Laser Cut, Hopper Flange, Copper



SECTION A-A



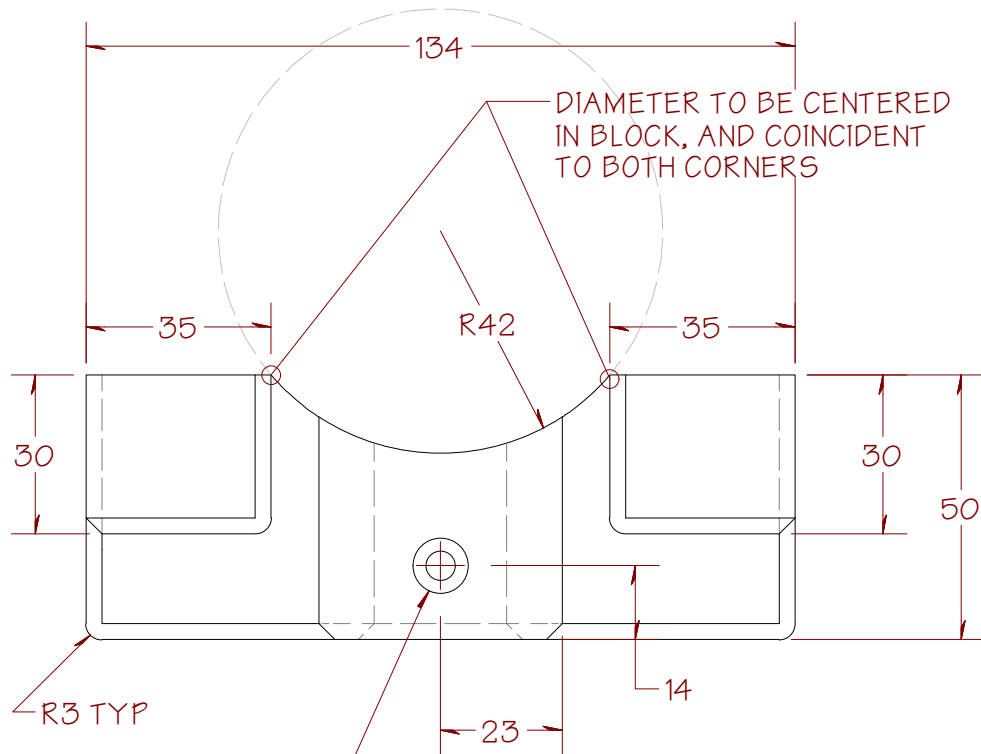
SECTION B-B



ALL DIMENSIONS
ARE IN MILLIMETERS

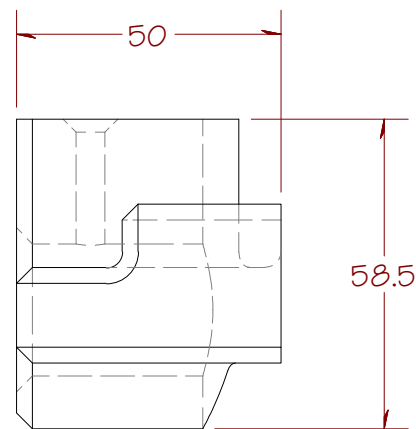
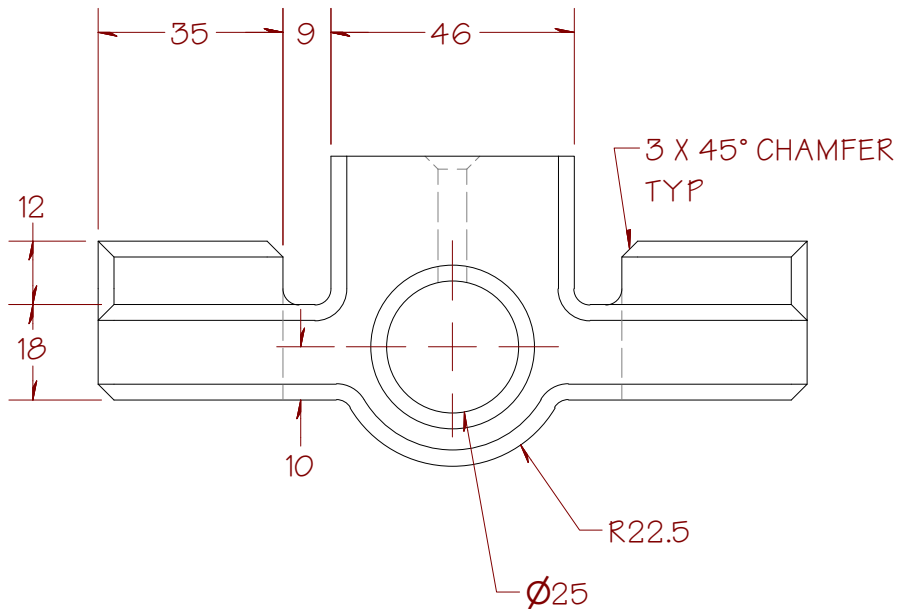
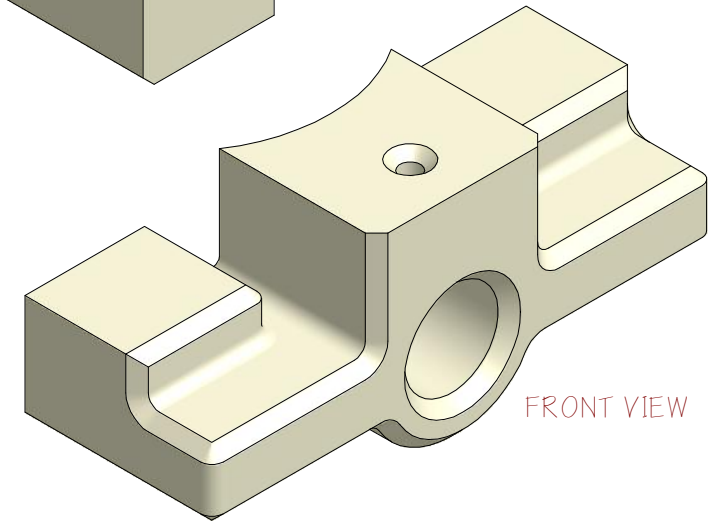
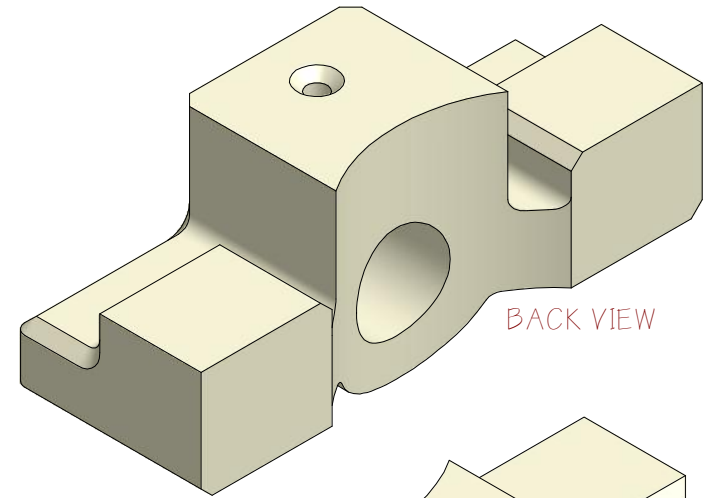
SHEET 7 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME Gear Pump Body.ipt
	DESCRIPTION Machined, Pump Base, K-02



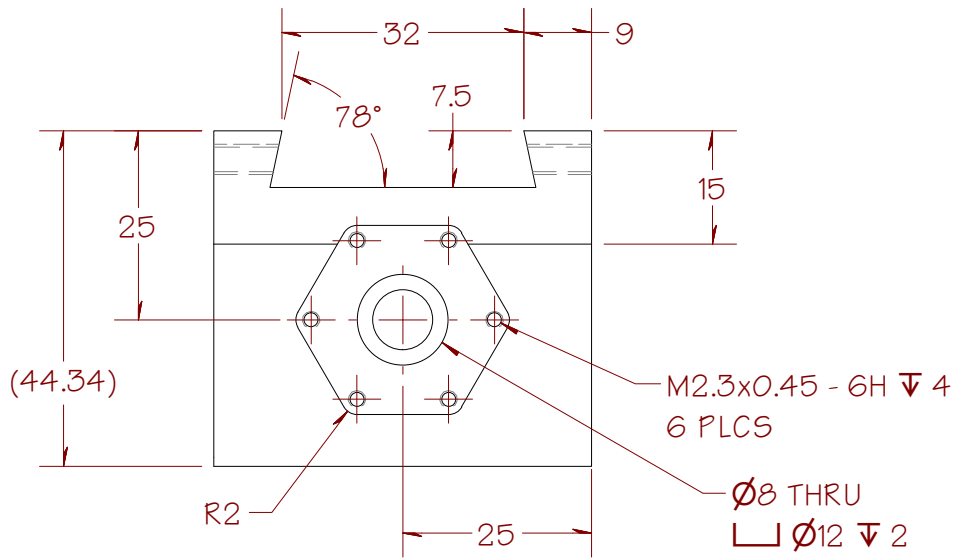
$\checkmark \text{ } \phi 5.5 \nabla 23.81$
 $\checkmark \text{ } \phi 10.4 \times 90^\circ$

ALL DIMENSIONS ARE IN MILLIMETERS

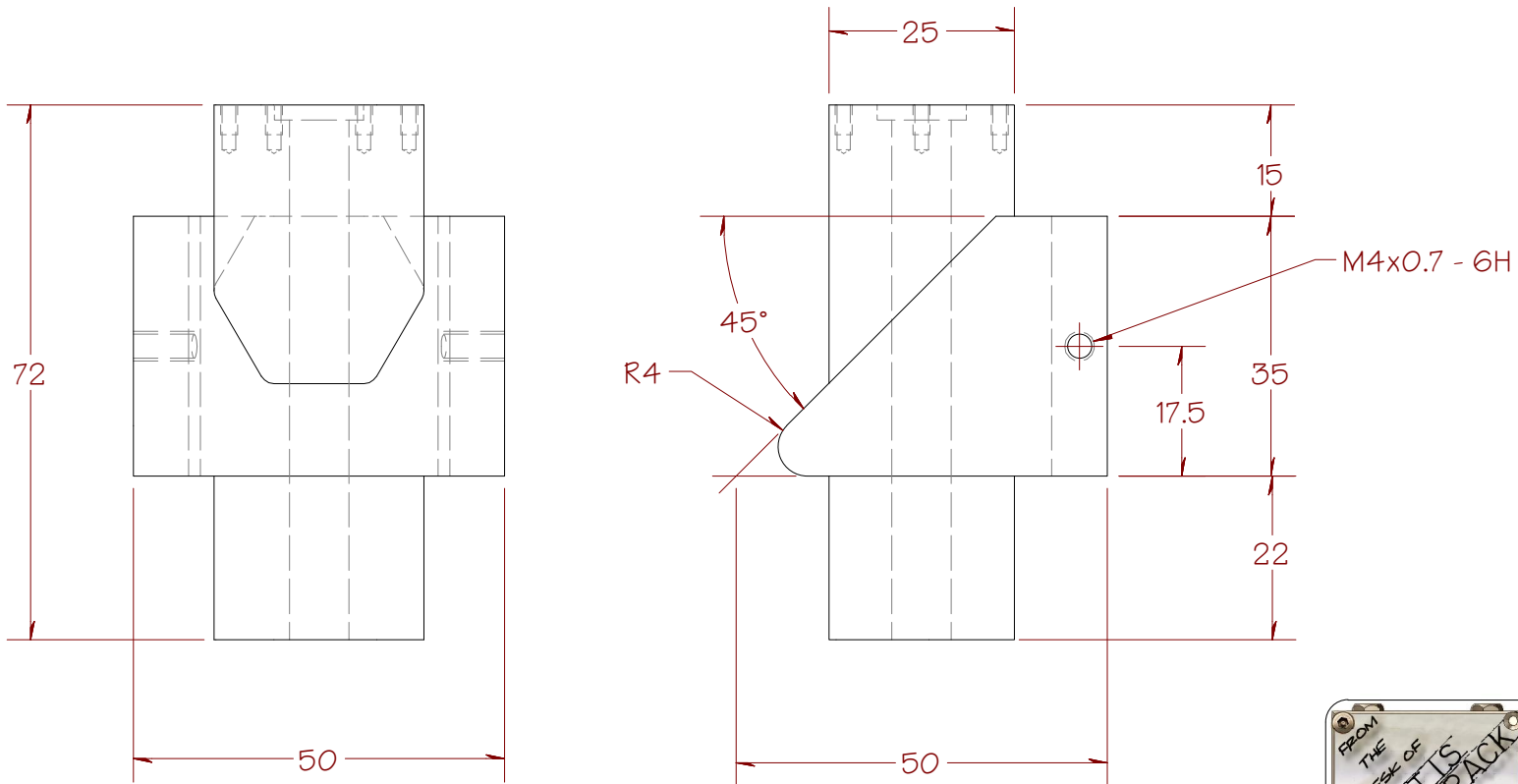
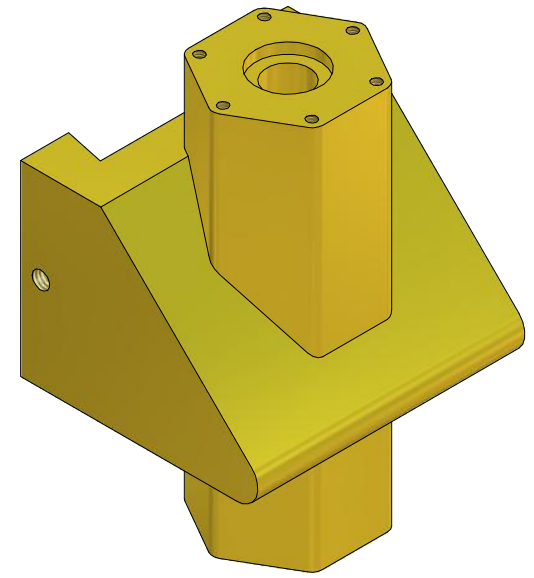


SHEET 8 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME Alignment Bracket.ipt
	DESCRIPTION Hardware, Bracket, R10



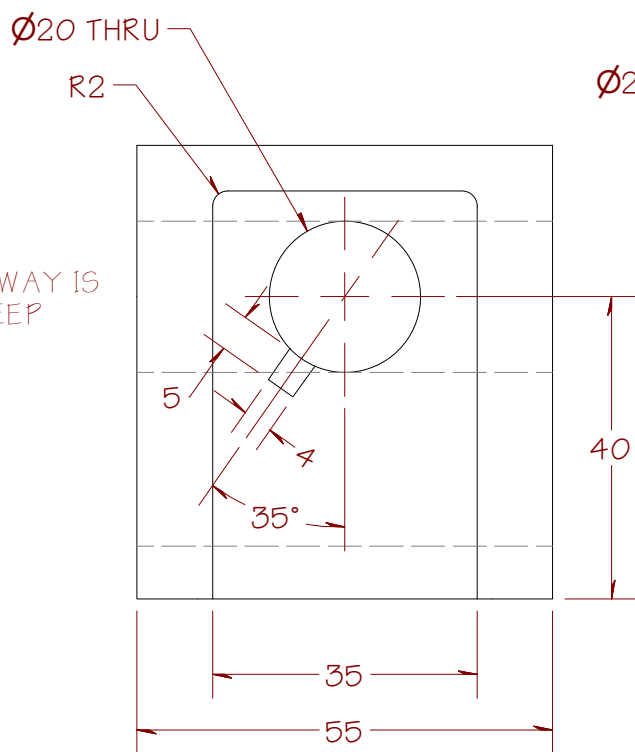
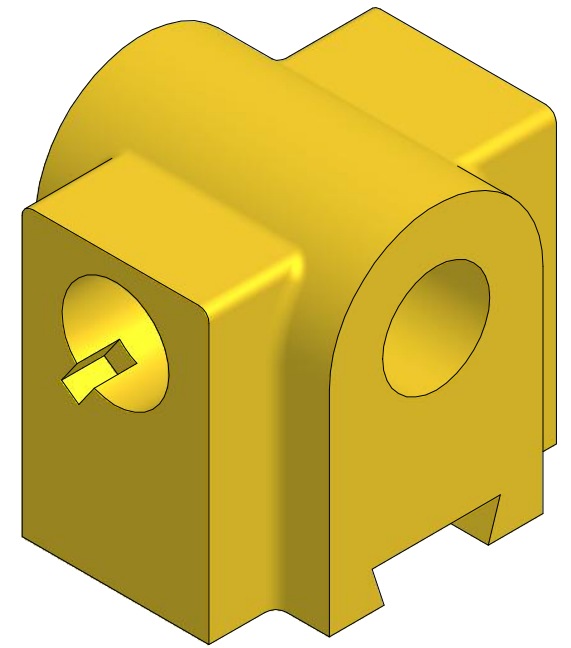
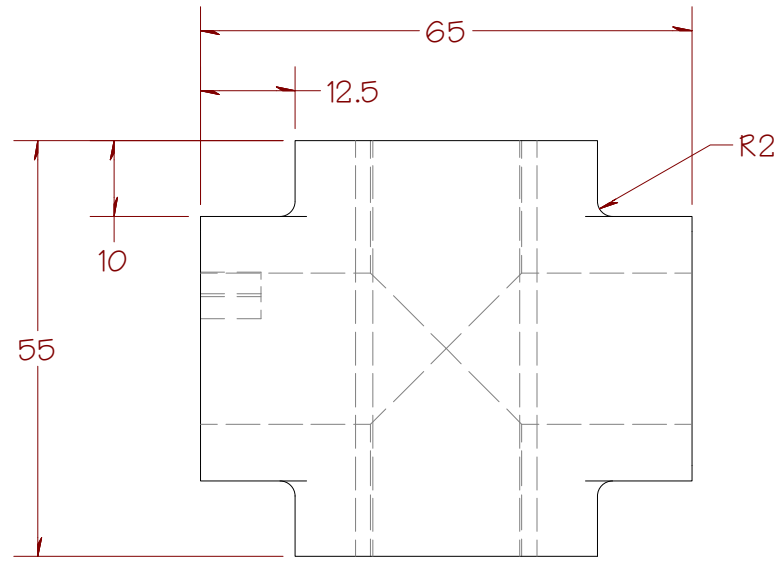
ALL DIMENSIONS
ARE IN MILLIMETERS



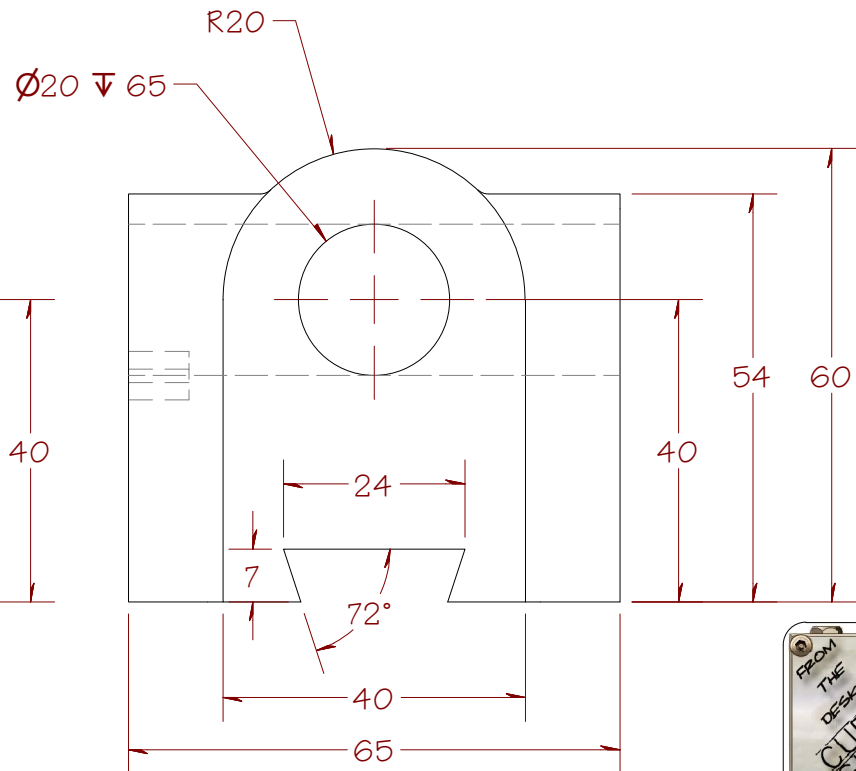
SHEET 9 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME	Dovetail Stop Guide.ipt
	DESCRIPTION	Hardware, Guide Stop, Anodized

ALL DIMENSIONS
ARE IN MILLIMETERS



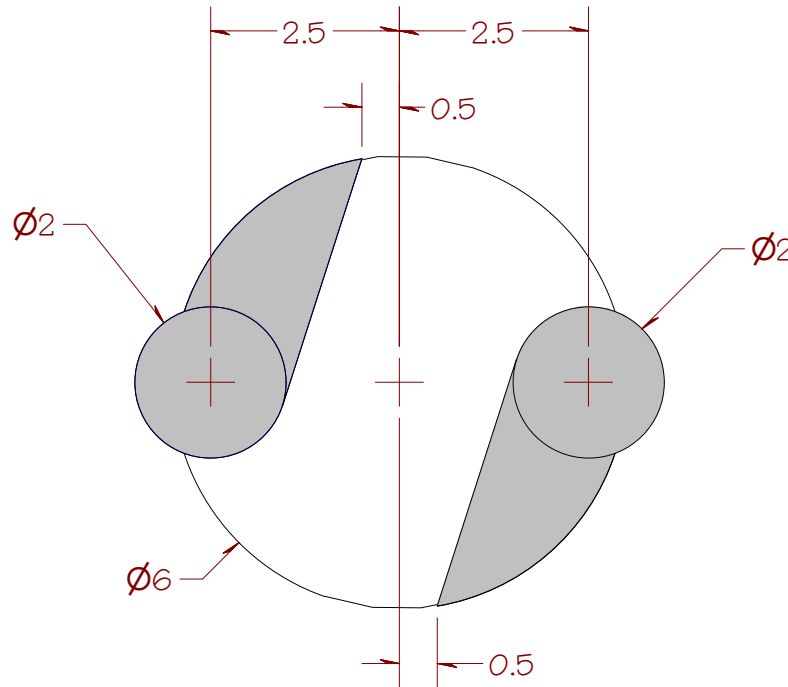
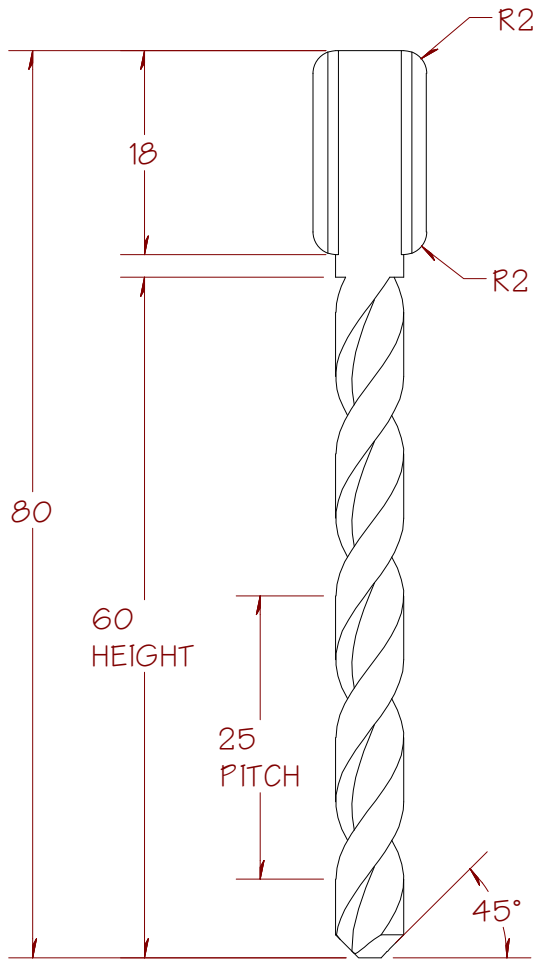
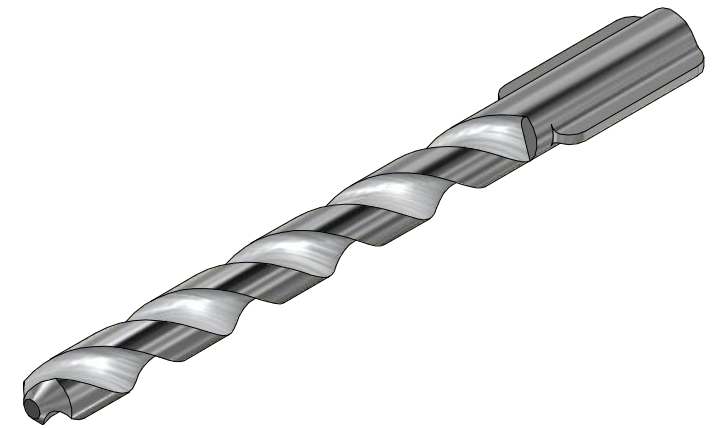
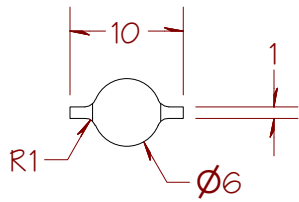
KEYWAY IS
8 DEEP



SHEET 10 OF 25

FROM THE DESK OF CURTIS WAGUESPACK

FILE NAME	Anchor Slide.ipt
DESCRIPTION	Hardware, Anchor Slide, HM-T



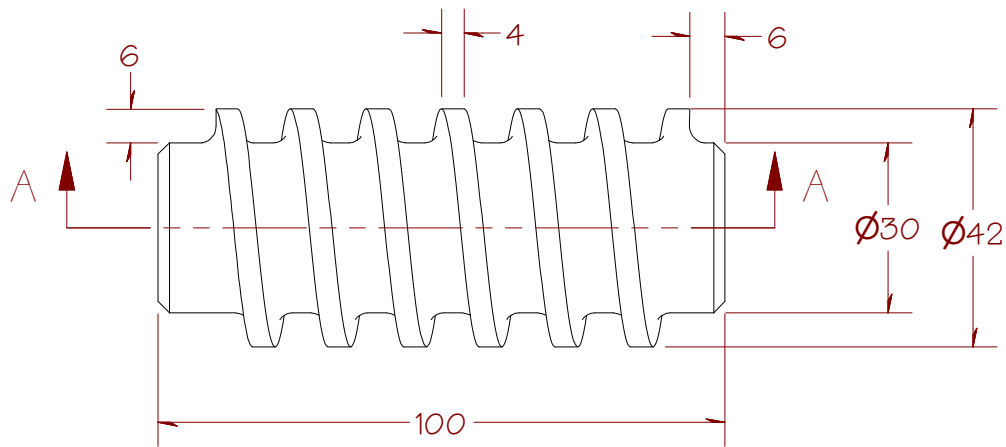
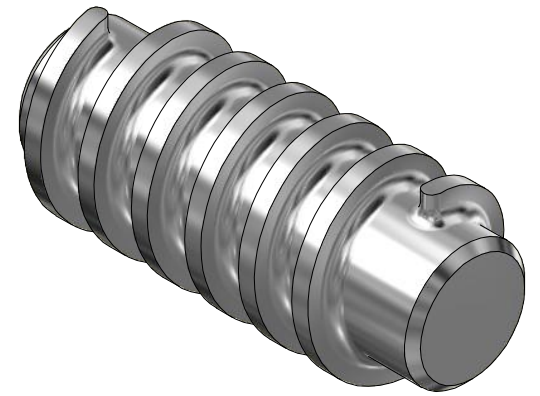
END VIEW WITH
CUT PROFILES
(SHOWN SHADED)

ALL DIMENSIONS
ARE IN MILLIMETERS

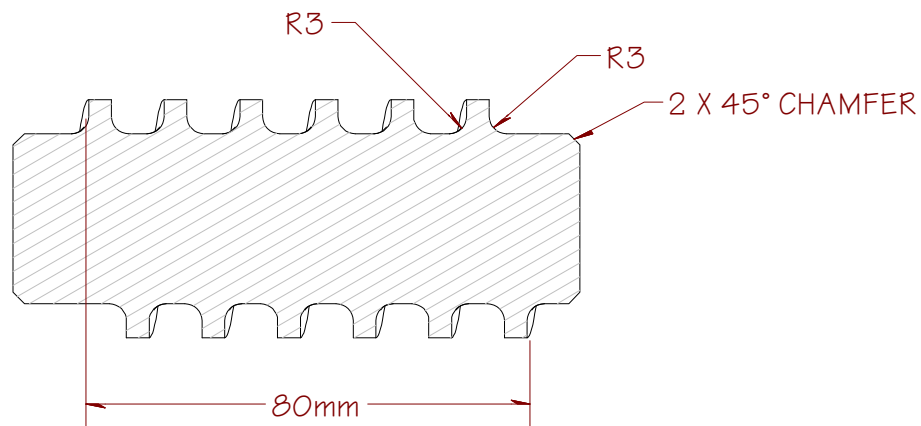
HINT:
CREATE A COIL CUT AND
THEN PATTERN THE CUT
AROUND THE AXIS

SHEET 11 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME Drill Bit.ipt
	DESCRIPTION Hardware, Splined Drill Bit



ALL DIMENSIONS
ARE IN MILLIMETERS

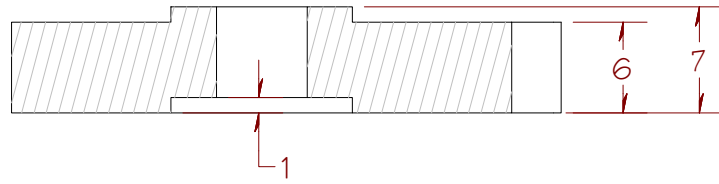


COIL 6 REVOLUTIONS AT 80 mm

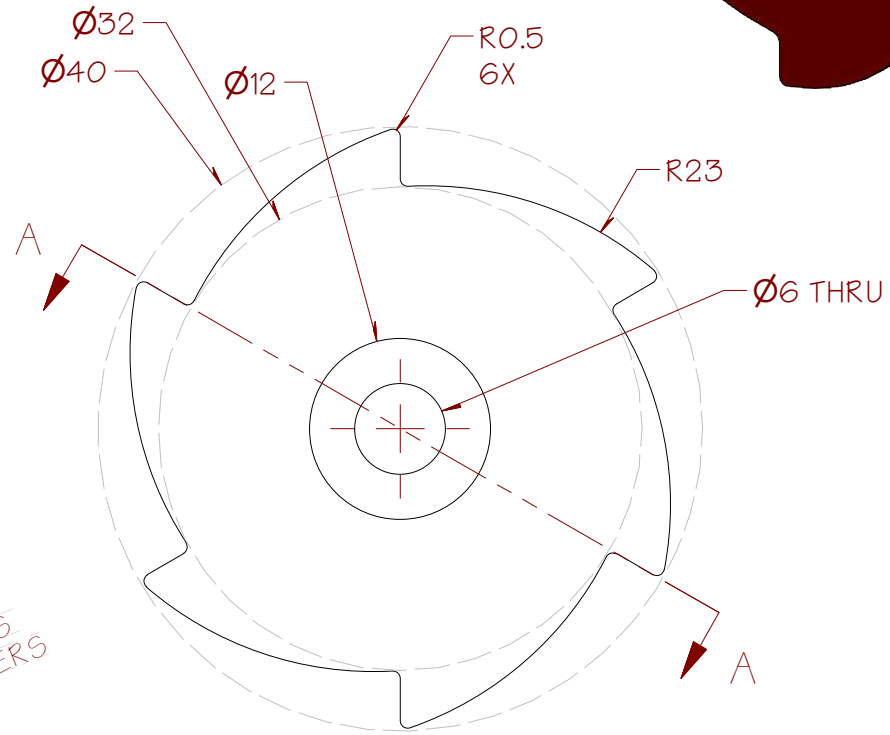
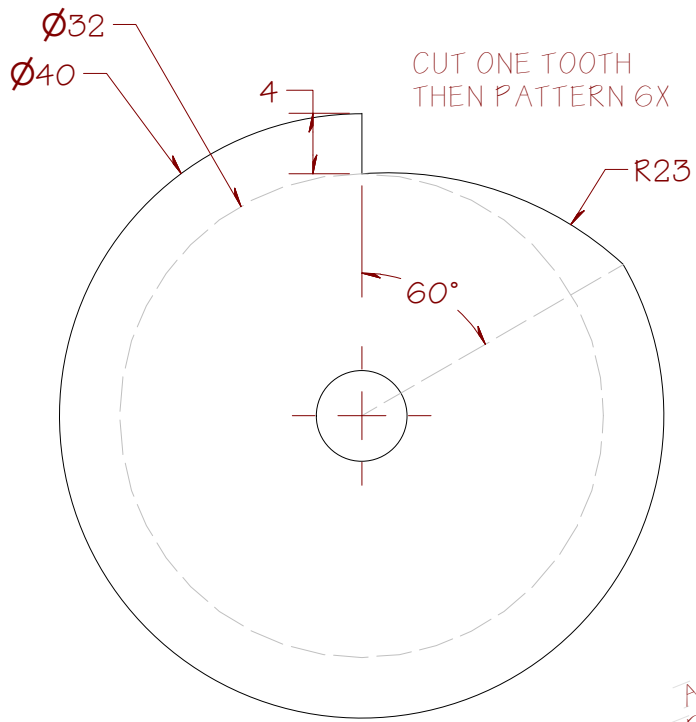
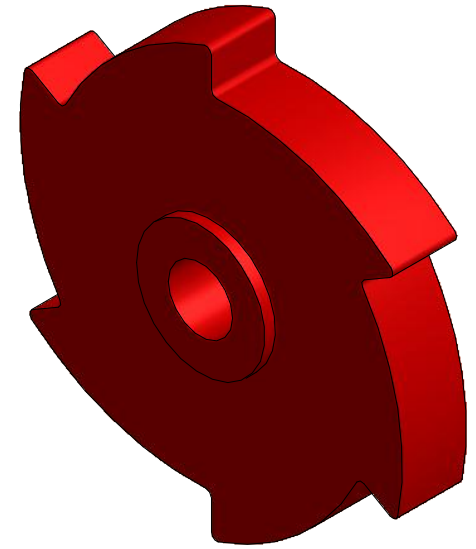
SECTION A-A

SHEET 12 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME	Drive Insert.ipt
	DESCRIPTION	Hardware, Drive Insert, GH-076



SECTION A-A

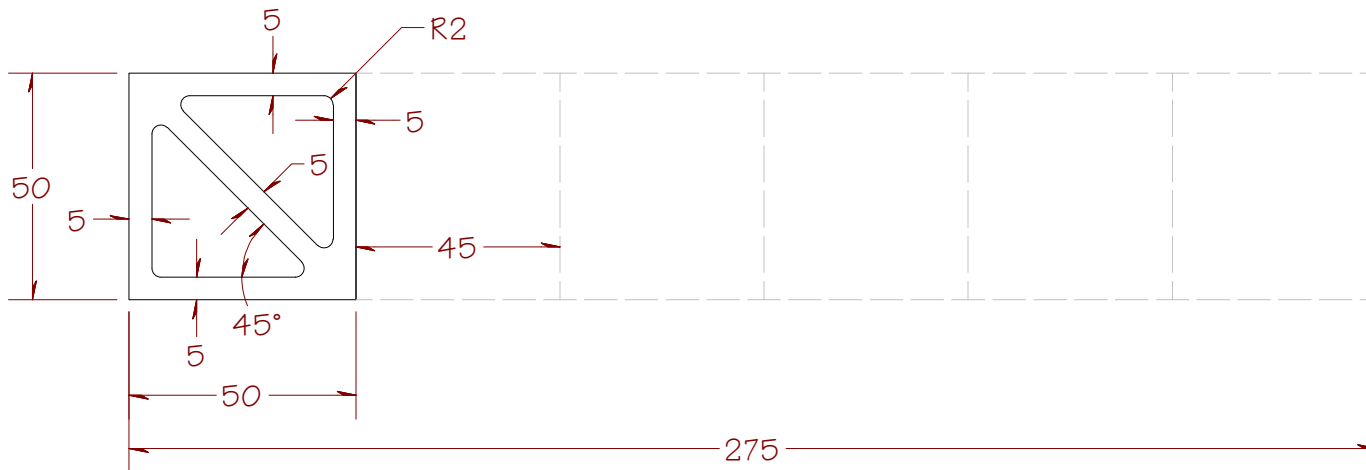
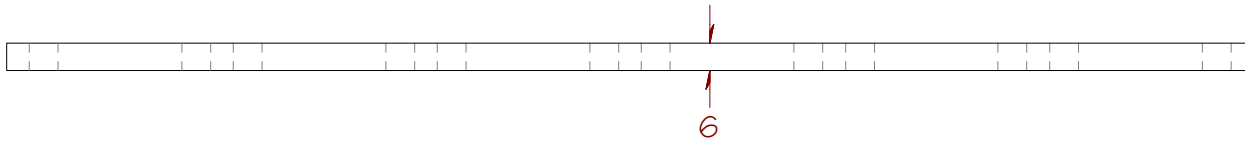
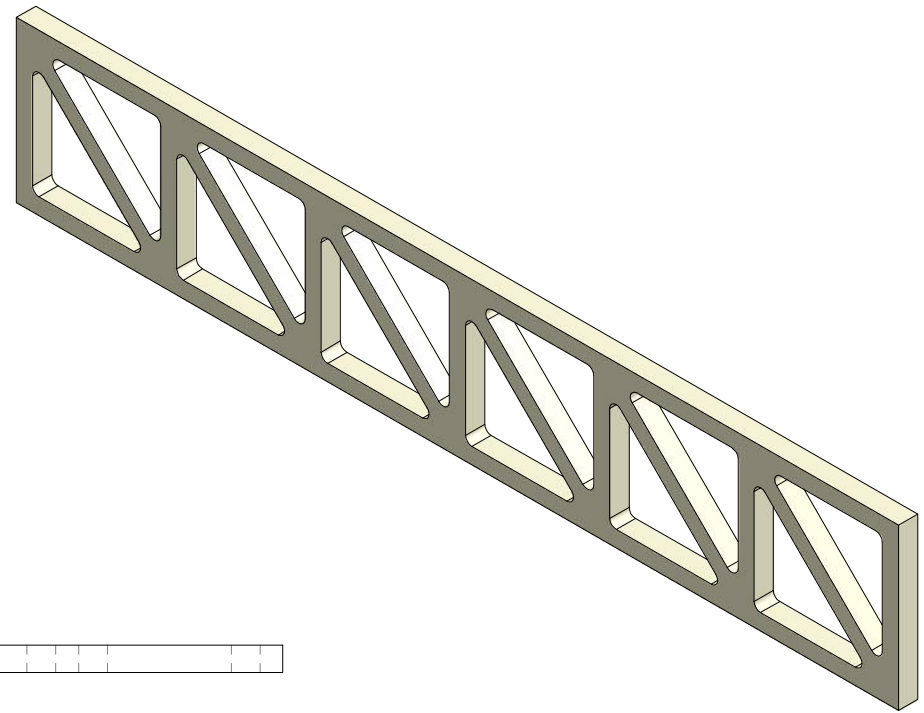


ALL DIMENSIONS
ARE IN MILLIMETERS

SHEET 13 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME Ratchet Wheel.ipt
	DESCRIPTION Hardware, Ratchet Wheel, 6 Tooth

ALL DIMENSIONS
ARE IN MILLIMETERS

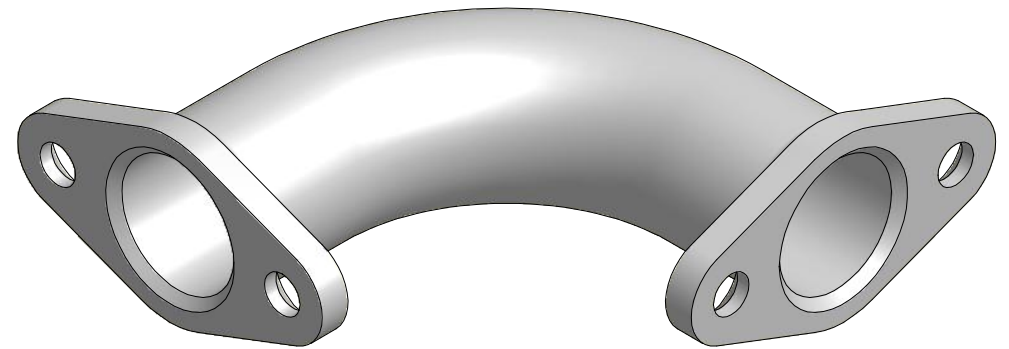
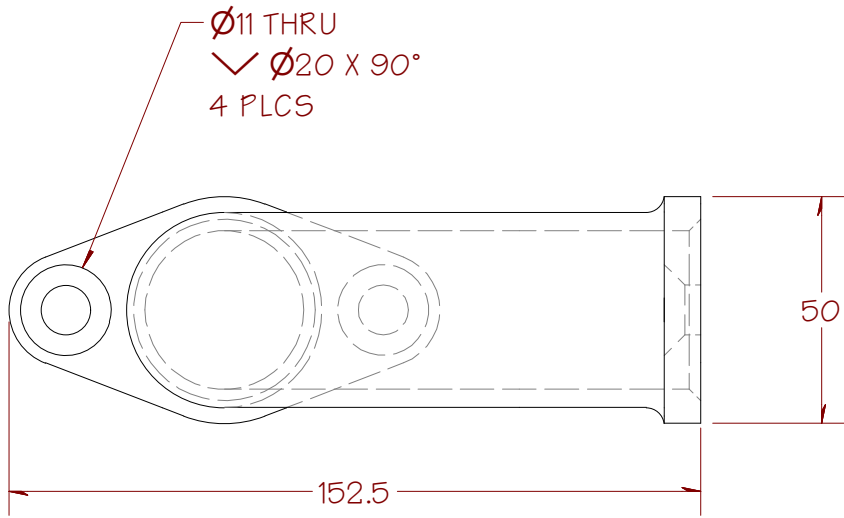


CREATE ONE UNIT AS SHOWN
THEN PATTERN 6X

SHEET 14 OF 25

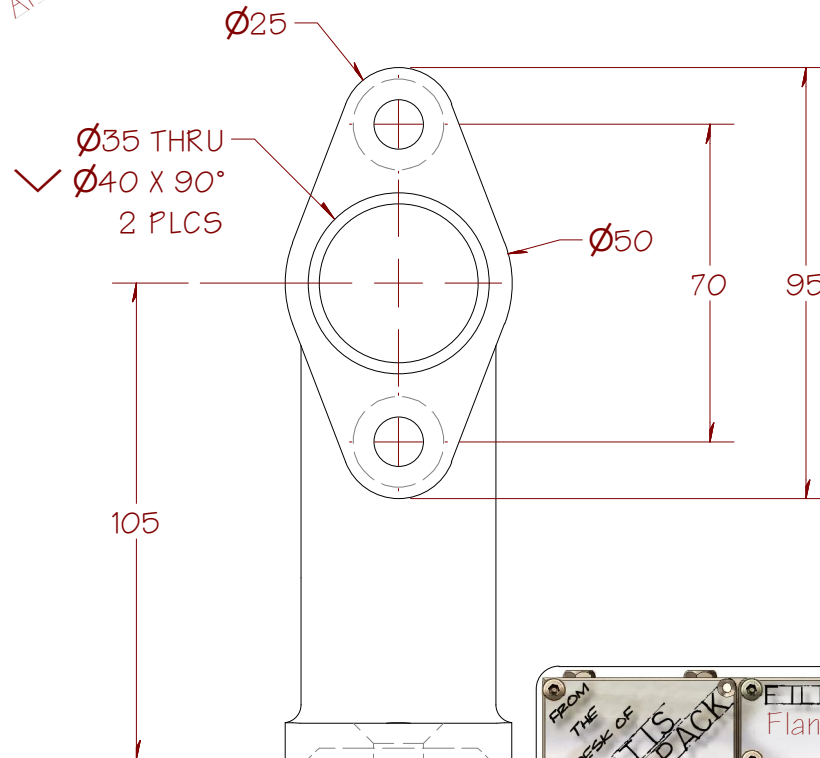
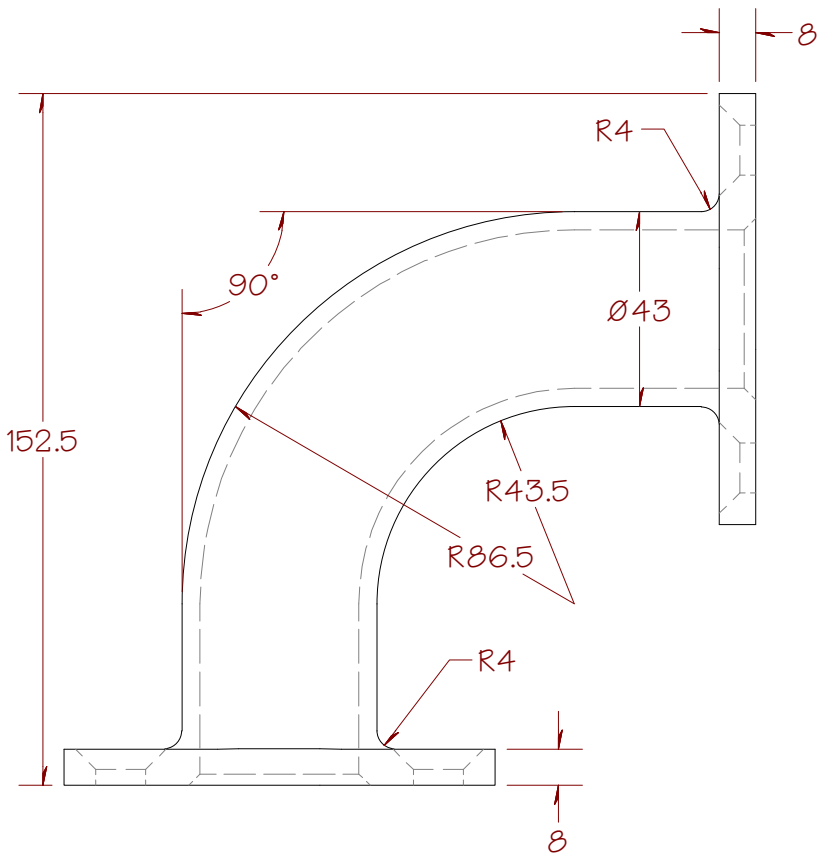
FROM THE DESK OF CURTIS WAGUESPACK

FILE NAME	Truss Flange.ipt
DESCRIPTION	Component, Truss Flange, ABS



HINT: CREATE ONE HALF AND THEN MIRROR IT

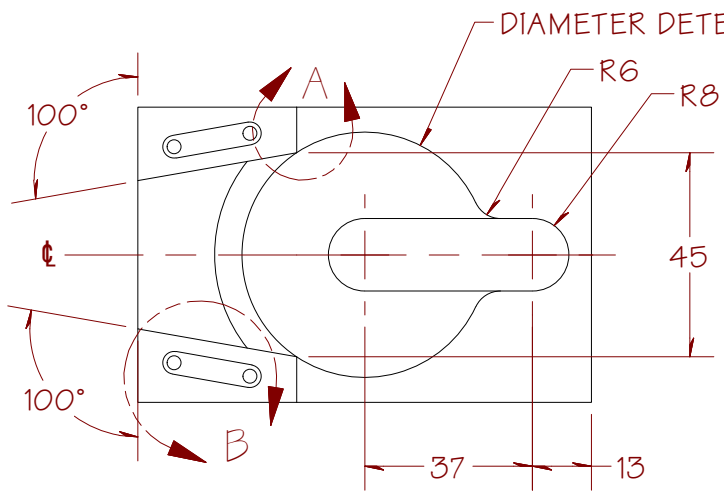
ALL DIMENSIONS
ARE IN MILLIMETERS



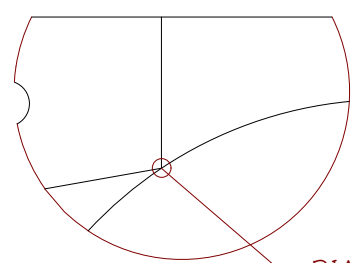
SHEET 15 OF 25

FROM THE DESK OF CURTIS WAGUESPACK

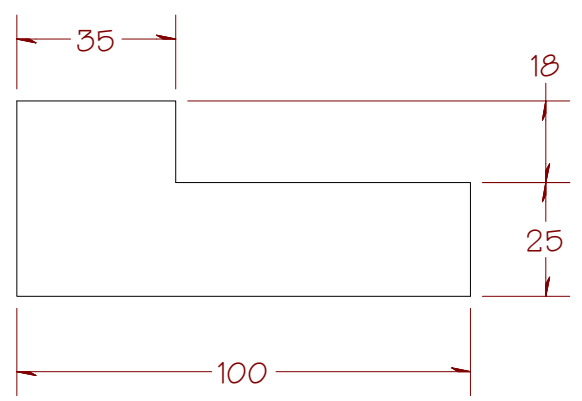
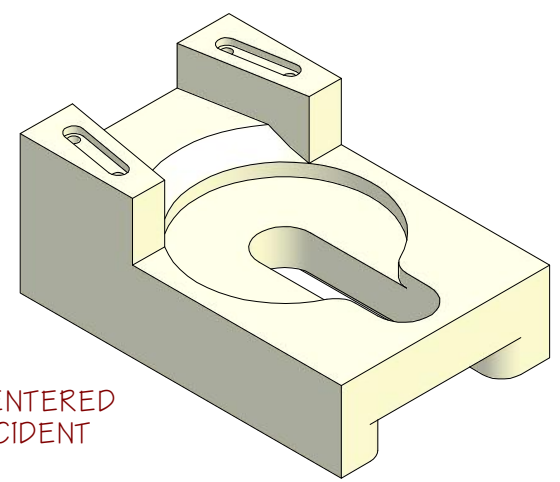
FILE NAME	Flanged 90 Elbow.ipt
DESCRIPTION	Hardware, Flanged Elbow, 90 degrees



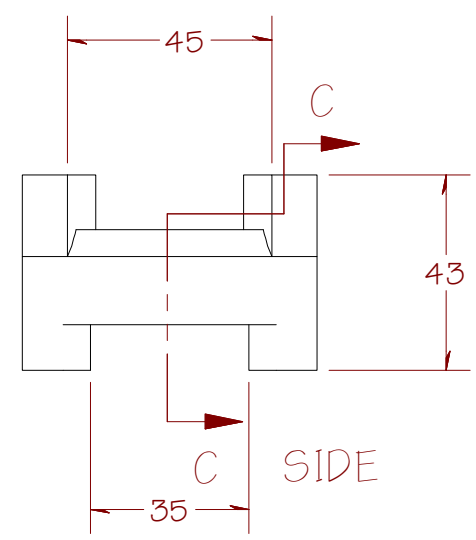
TOP



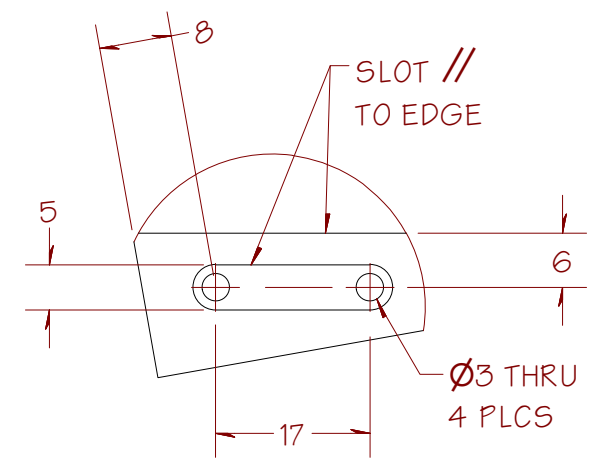
DETAIL A



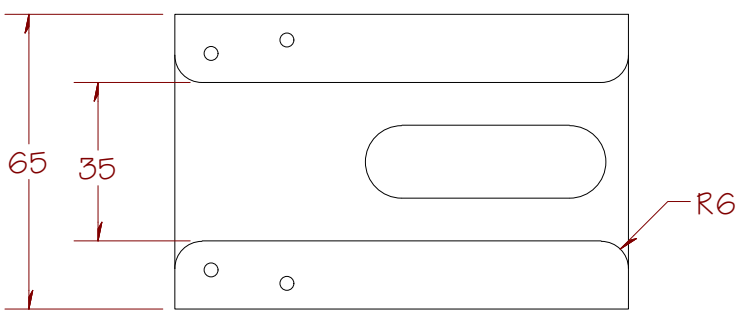
FRONT



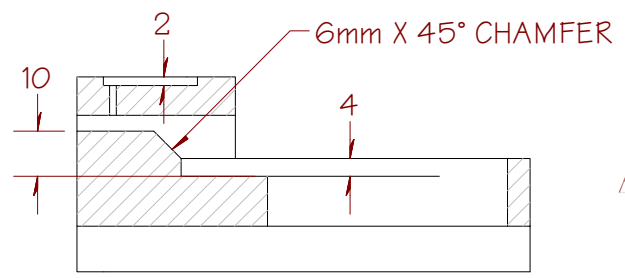
SIDE



DETAIL B



BOTTOM



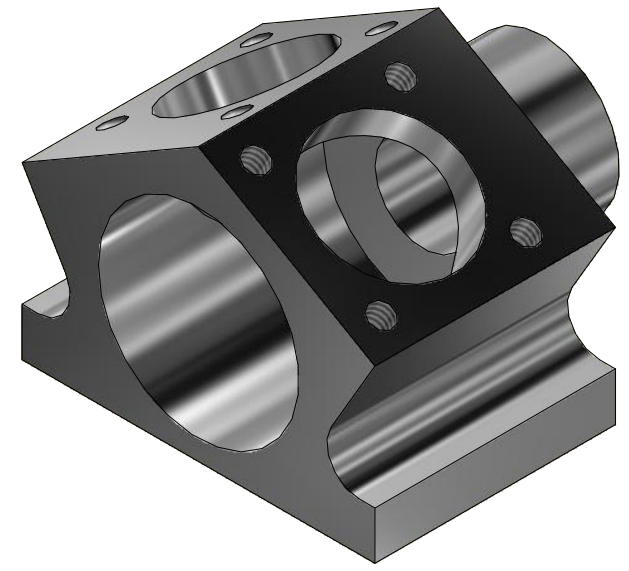
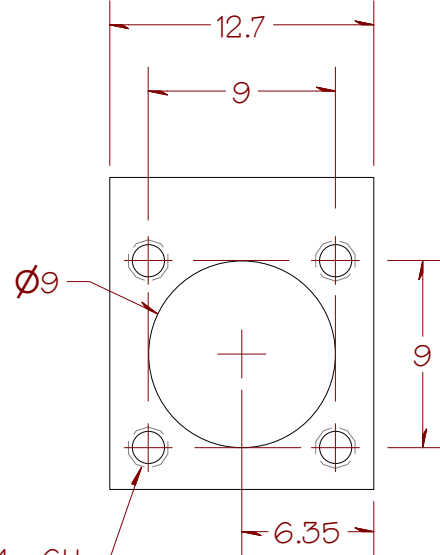
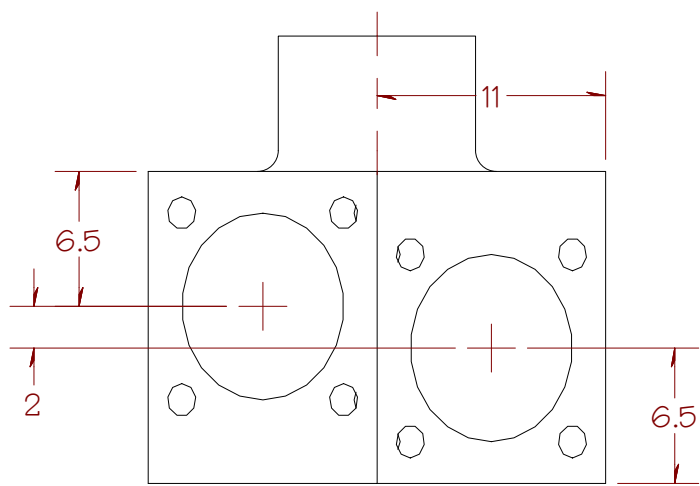
SECTION C-C

ALL DIMENSIONS ARE IN MILLIMETERS

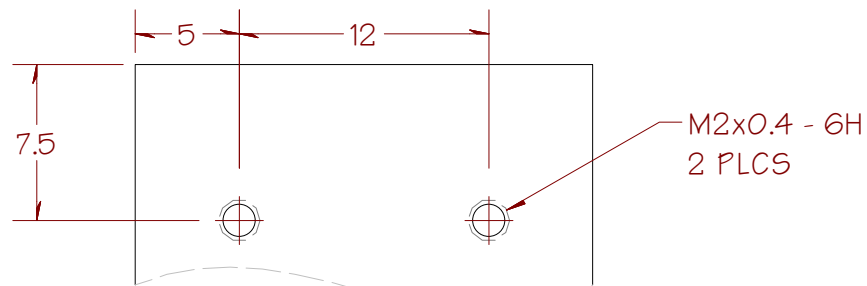
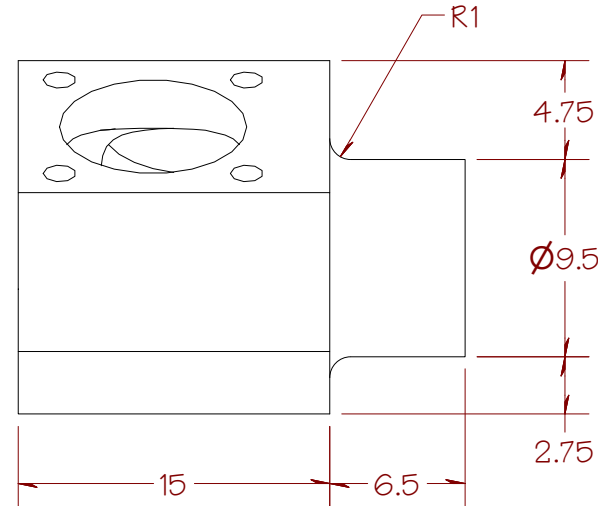
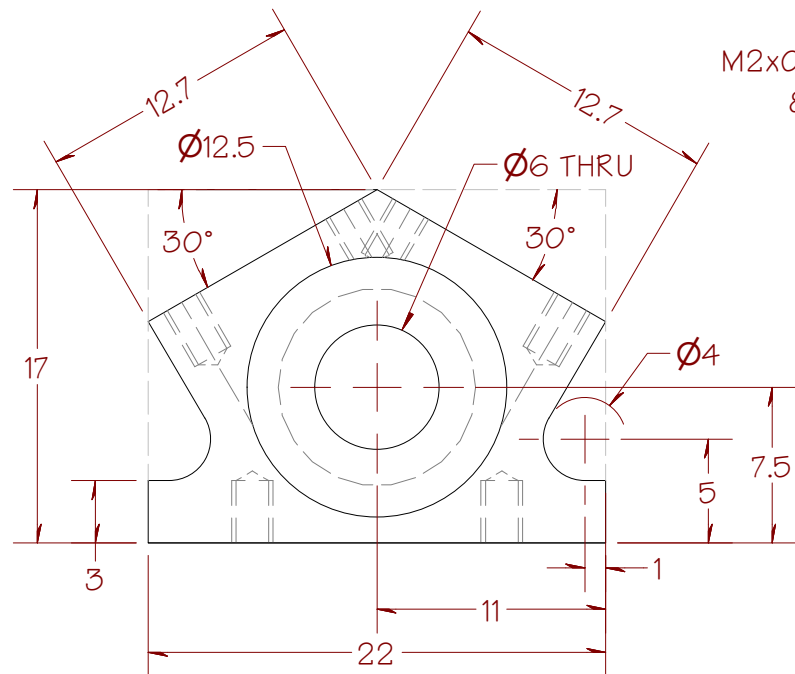
SHEET 16 OF 25

FROM THE DESK OF CURTIS WAGUESPACK

FILE NAME	Alignment Catch.ipt
DESCRIPTION	Fixture, Alignment Catch Block Slide



M2x0.4 - 6H
8 PLCS



BOTTOM VIEW

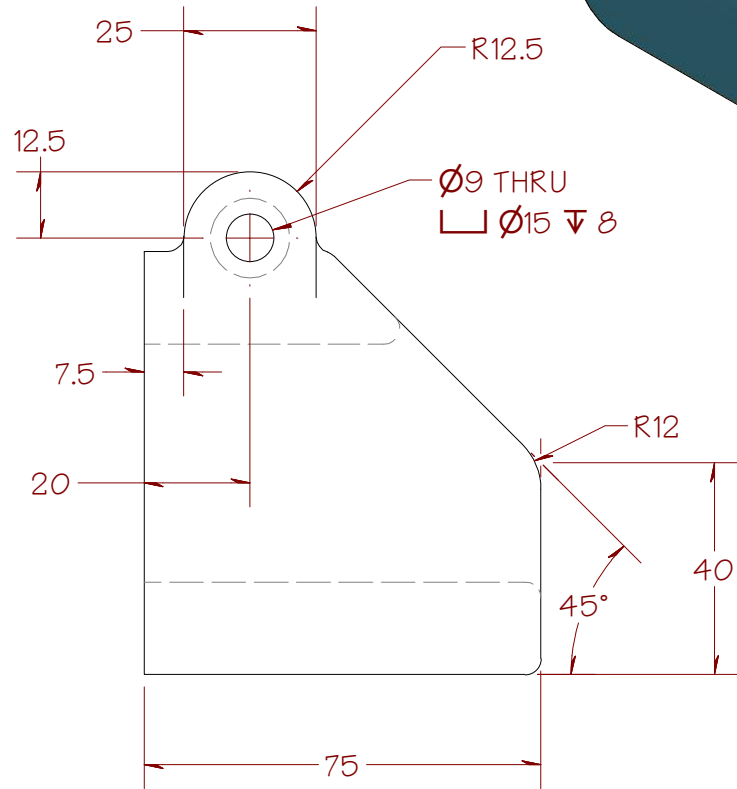
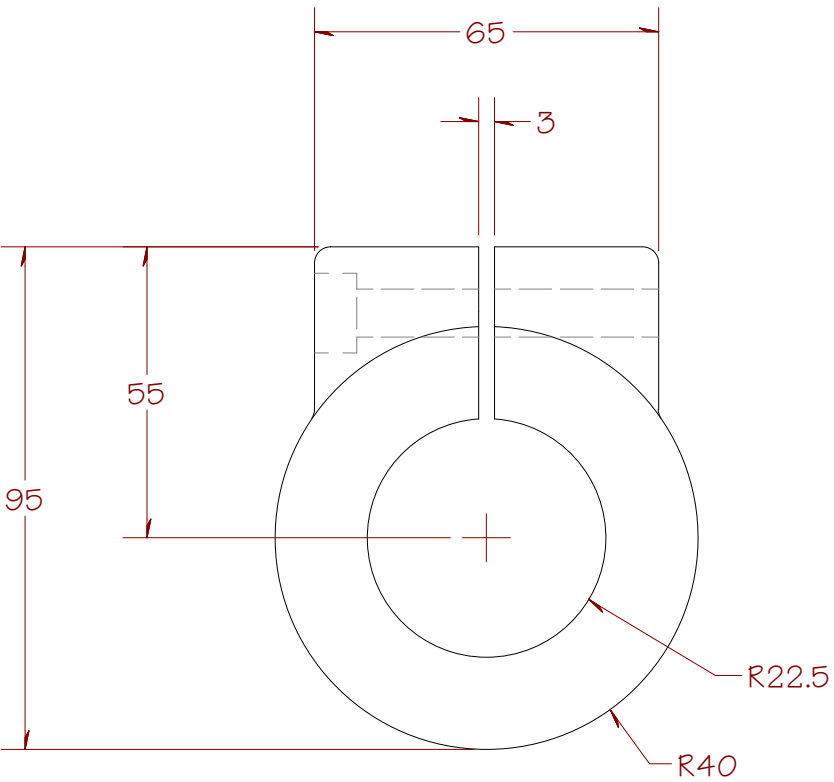
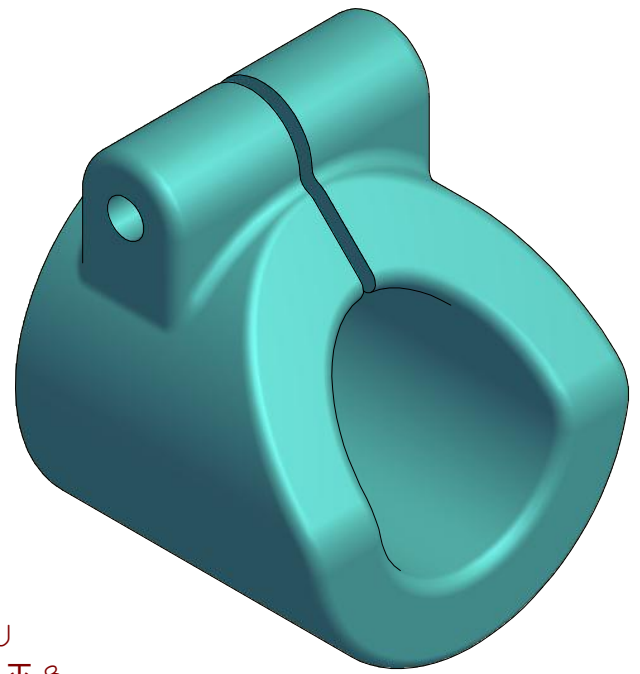
M2x0.4 - 6H
2 PLCS

HINT: START WITH A 17x22x15 BLOCK
THEN CUT FEATURES AS
IF MACHINING IN THE REAL WORLD

ALL DIMENSIONS
ARE IN MILLIMETERS

SHEET 17 OF 25



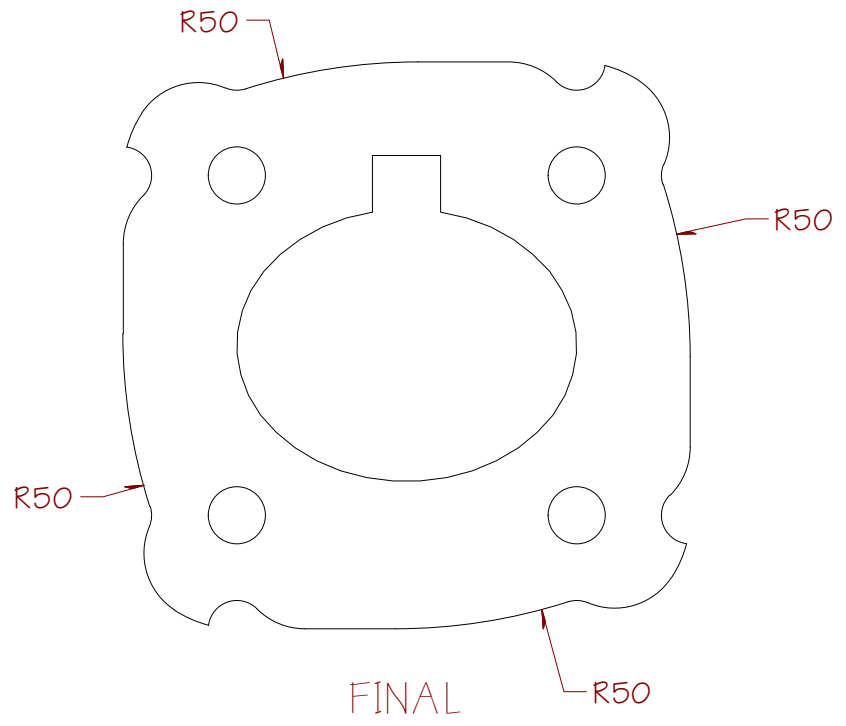
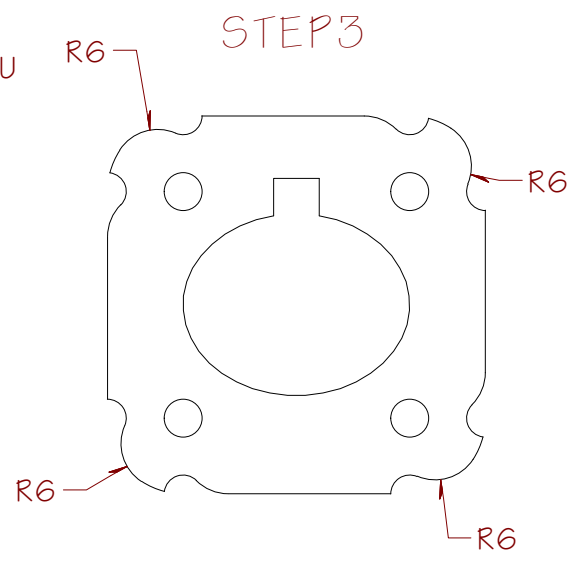
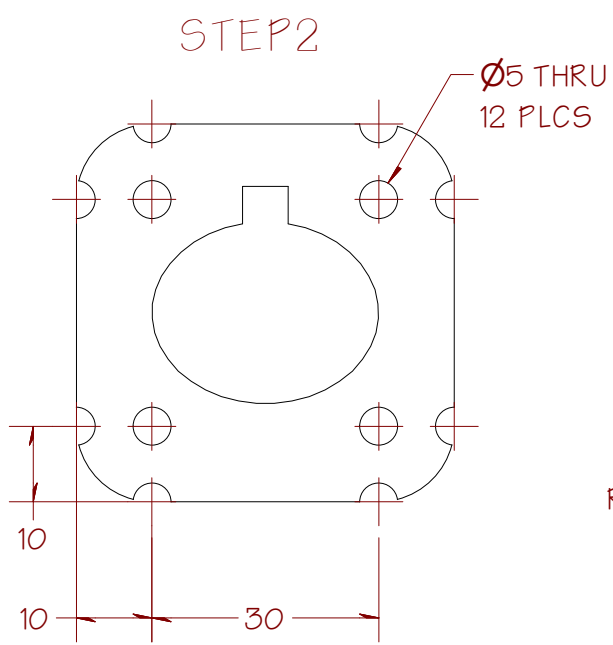
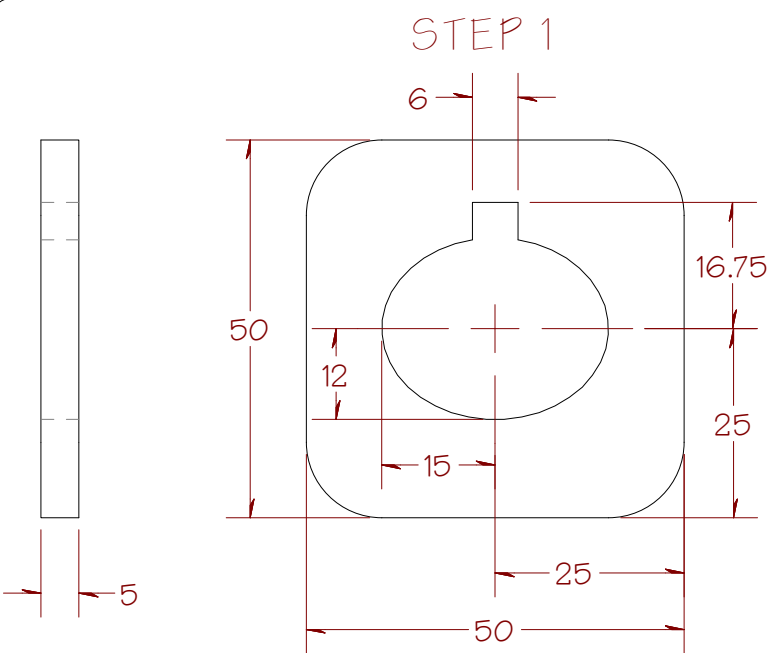


ALL DIMENSIONS
ARE IN MILLIMETERS

ALL FILLETS 3mm
UNLESS OTHERWISE
NOTED

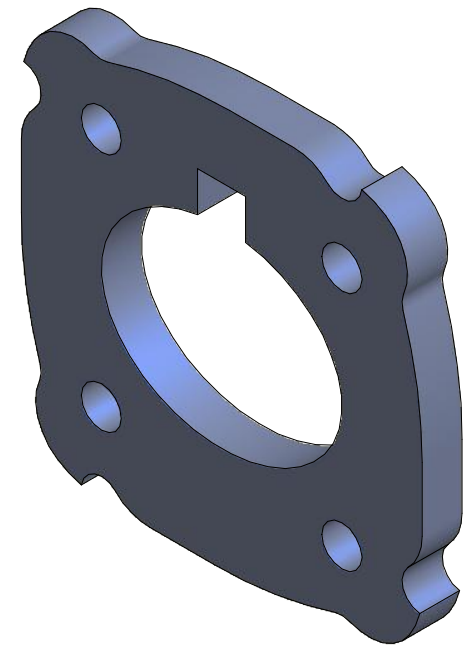
SHEET 18 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME Pinch Fit Cap.ipt
	DESCRIPTION Hardware, Pinch Fit Sleeve/Cap



HINT: START SIMPLE AND ADD FEATURES IN MULTIPLE STEPS.

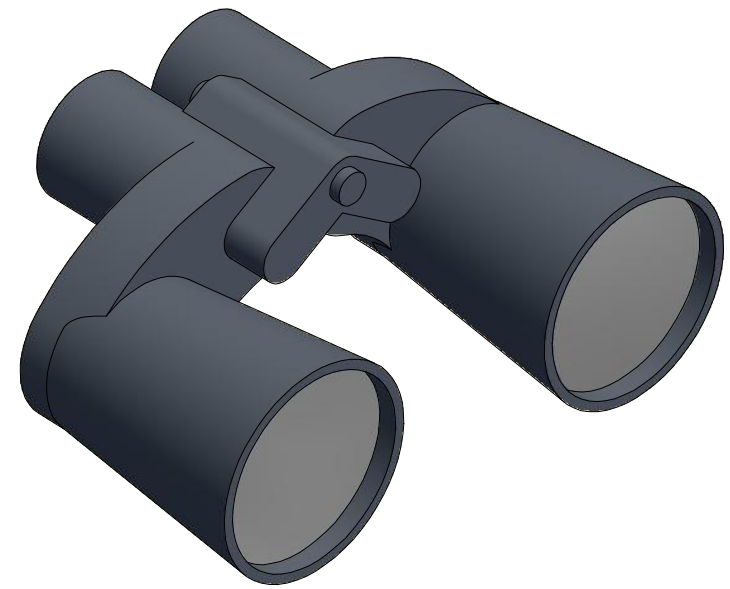
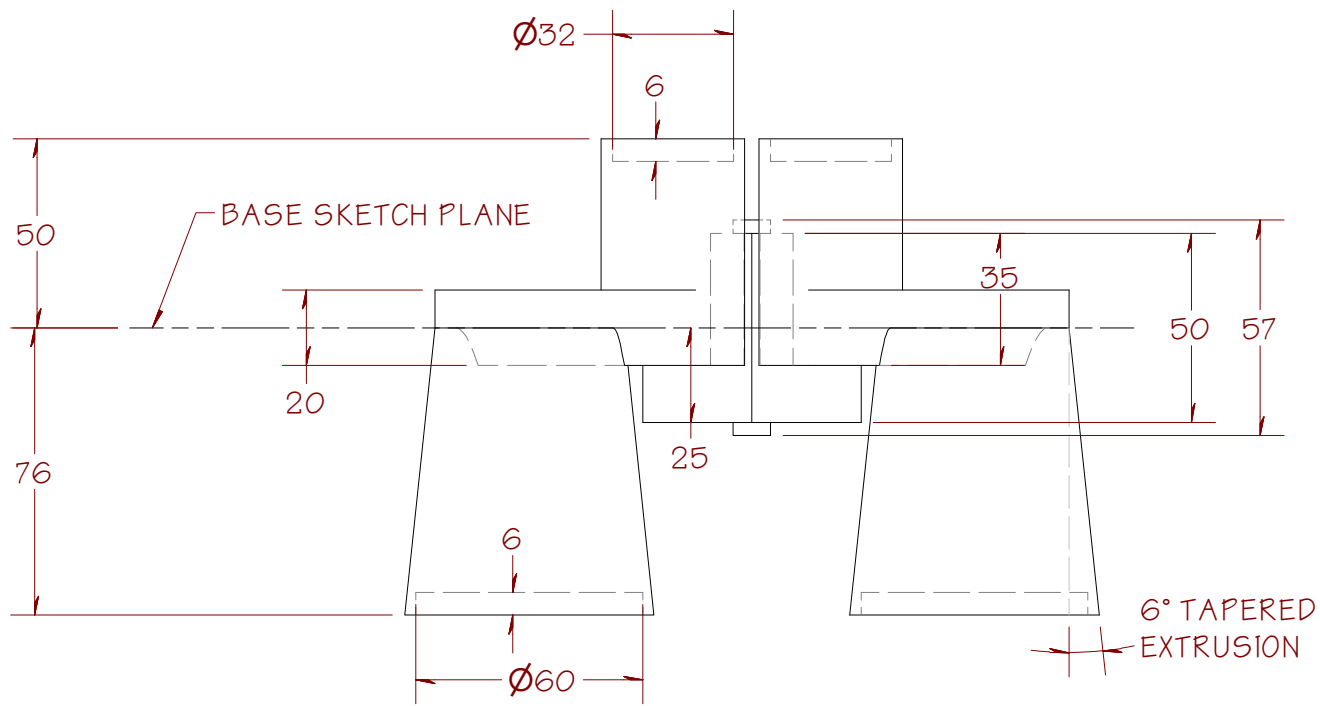
STEP 1, WOULD ACTUALLY BE STEP 3 OR 4 IF YOU STARTED WITH A RECTANGLE, THEN ADDED THE ELLIPSE, THEN ADDED THE KEY CUT, AND THEN ADDED THE FILLETS TO THE CORNERS.



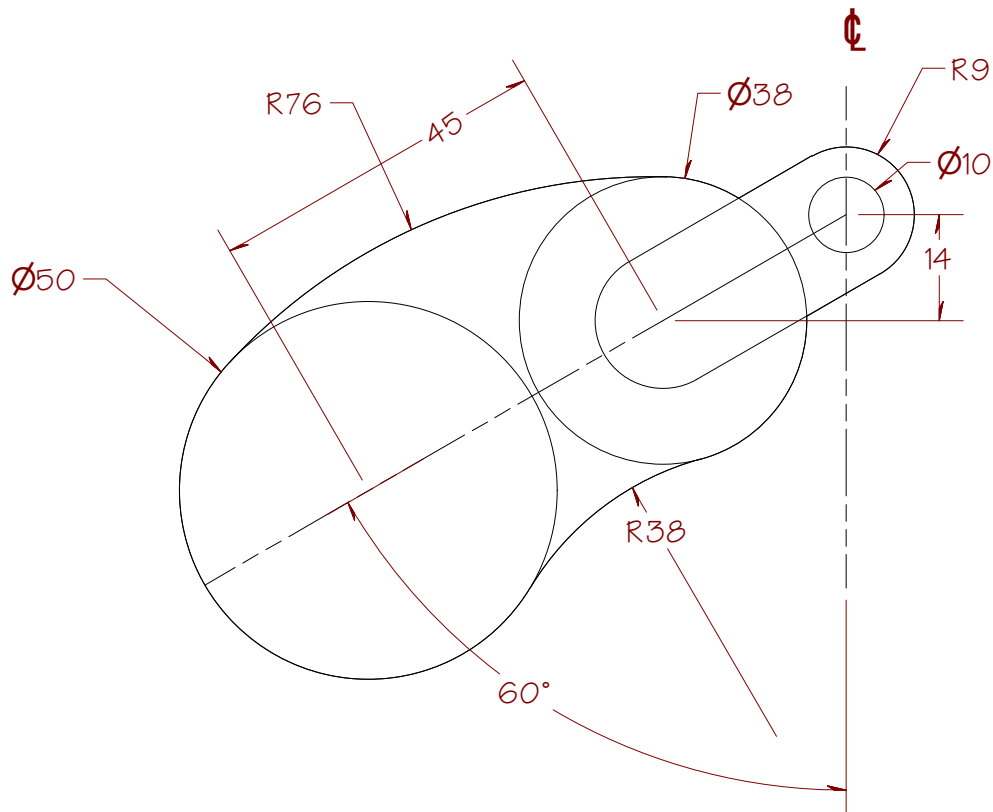
SHEET 19 OF 25

FROM THE DESK OF CURTIS WAGUESPACK

FILE NAME	Slip Nut Insert-03.ipt
DESCRIPTION	Hardware, Insert, Slip Nut, DI-5



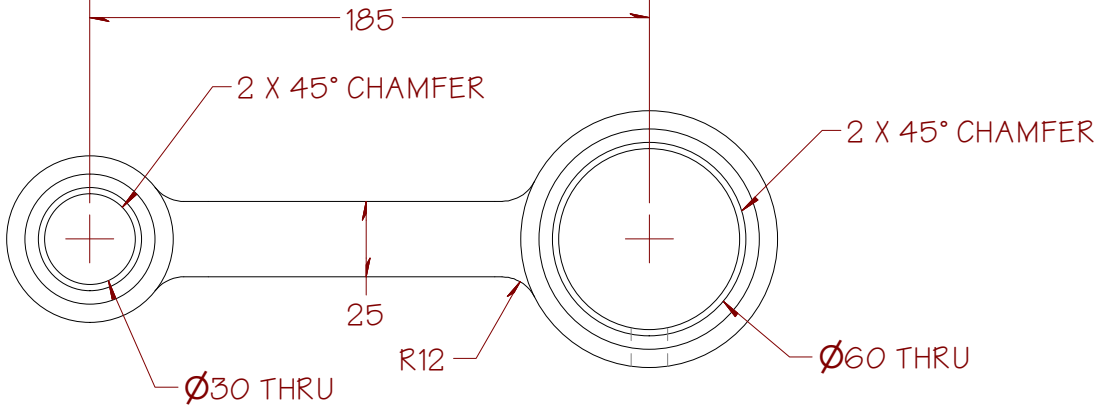
ALL DIMENSIONS ARE IN MILLIMETERS



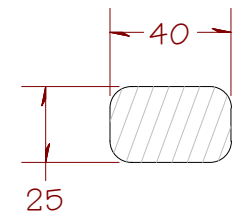
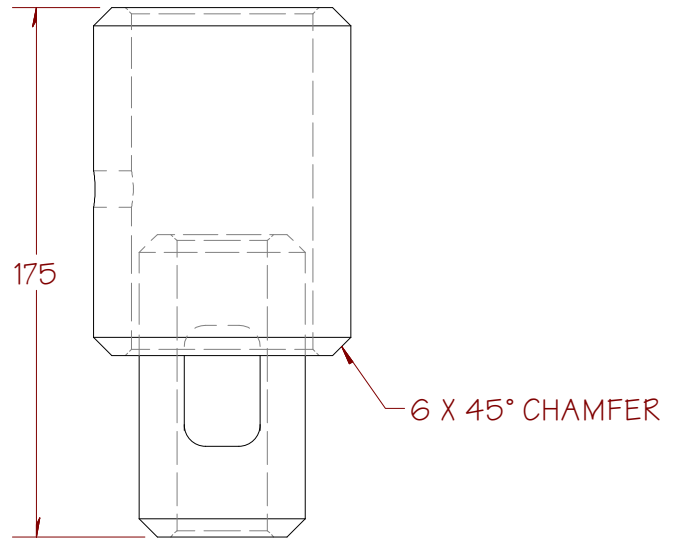
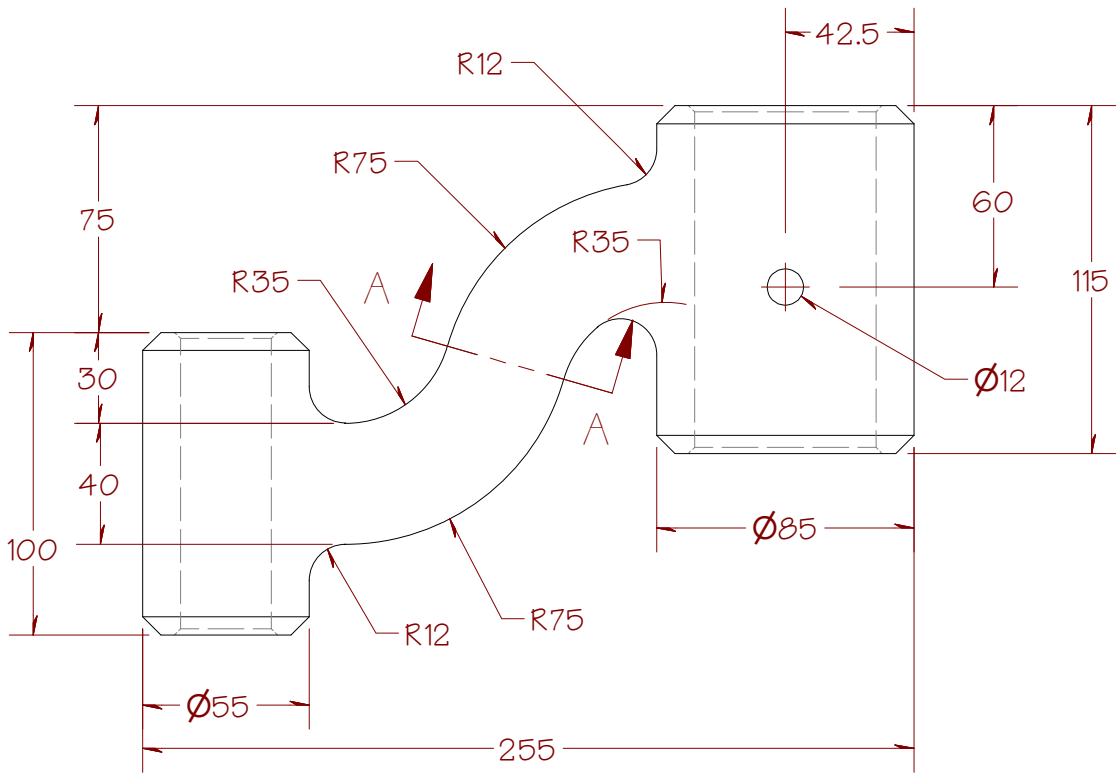
CREATE THIS BASE SKETCH AND THEN CREATE THE BINOCULARS BY SHARING THE SKETCH AND EXTRUDING THE VARIOUS PARTS OF THE BINOCULARS AS SEPERATE FEATURES. THEN MIRROR TO COMPLETE.

SHEET 20 OF 25

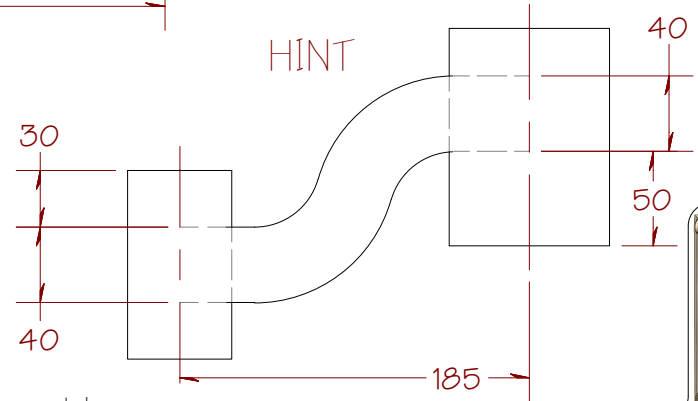
FROM THE DESK OF CURTIS WAGUE SPACK	FILE NAME Field Glass Fun.ipt
	DESCRIPTION Bino Challenge



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ARE IN MILLIMETERS

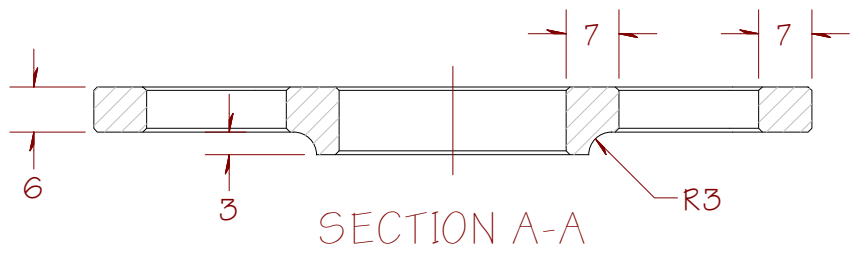


SECTION A-A

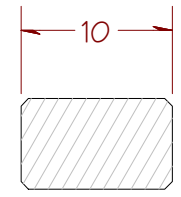
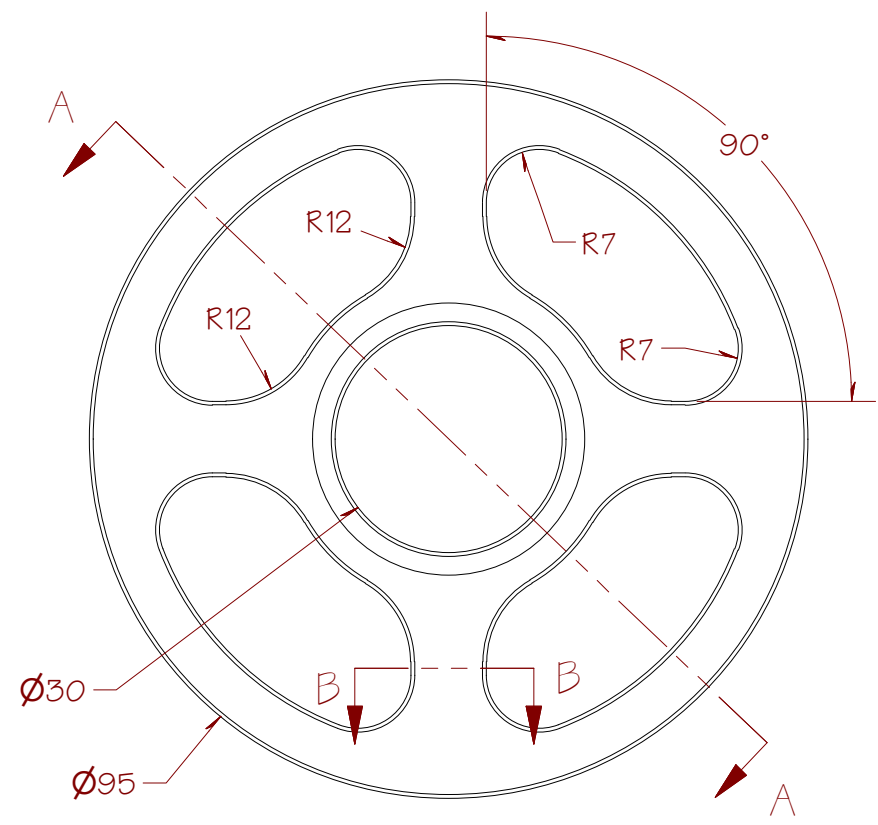
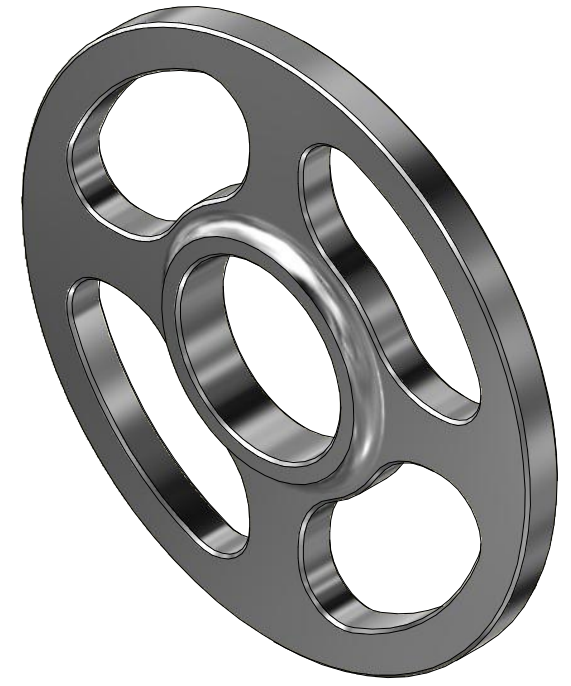


FROM THE DESK OF CURTIS WAGUESPACK

FILE NAME	Pivot Arm.ipt
DESCRIPTION	Hardware, Pivot Arm, Mount



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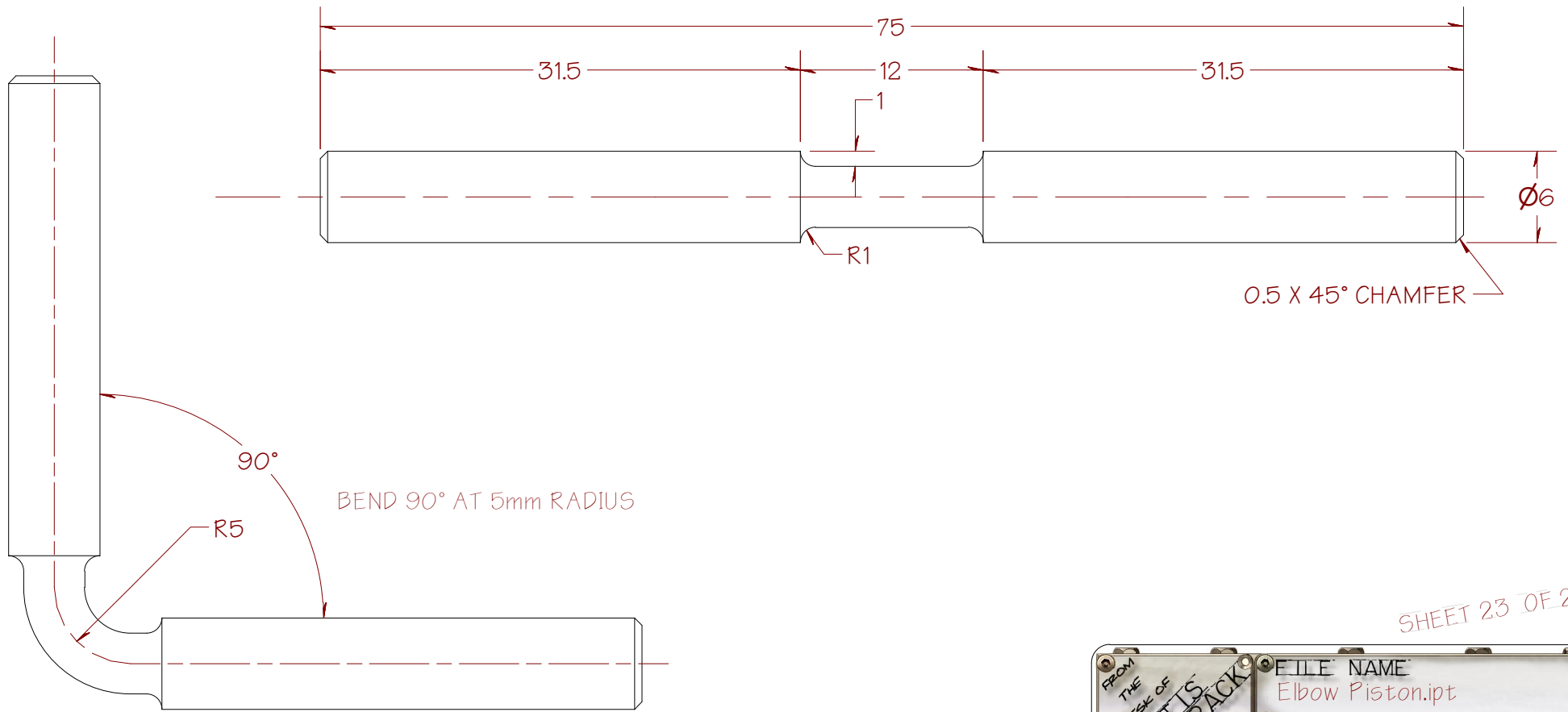
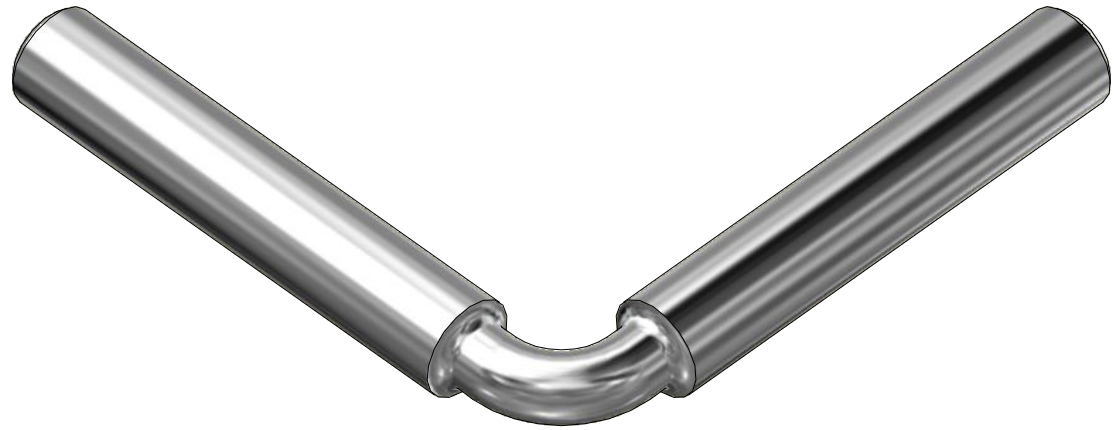


ALL CHAMFERS = 0.5 X 45°

SHEET 22 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME Fly Wheel.ipt
	DESCRIPTION Machined, Aluminum Fly Wheel

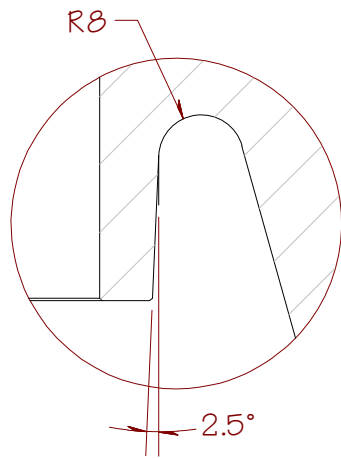
ALL DIMENSIONS
ARE IN MILLIMETERS



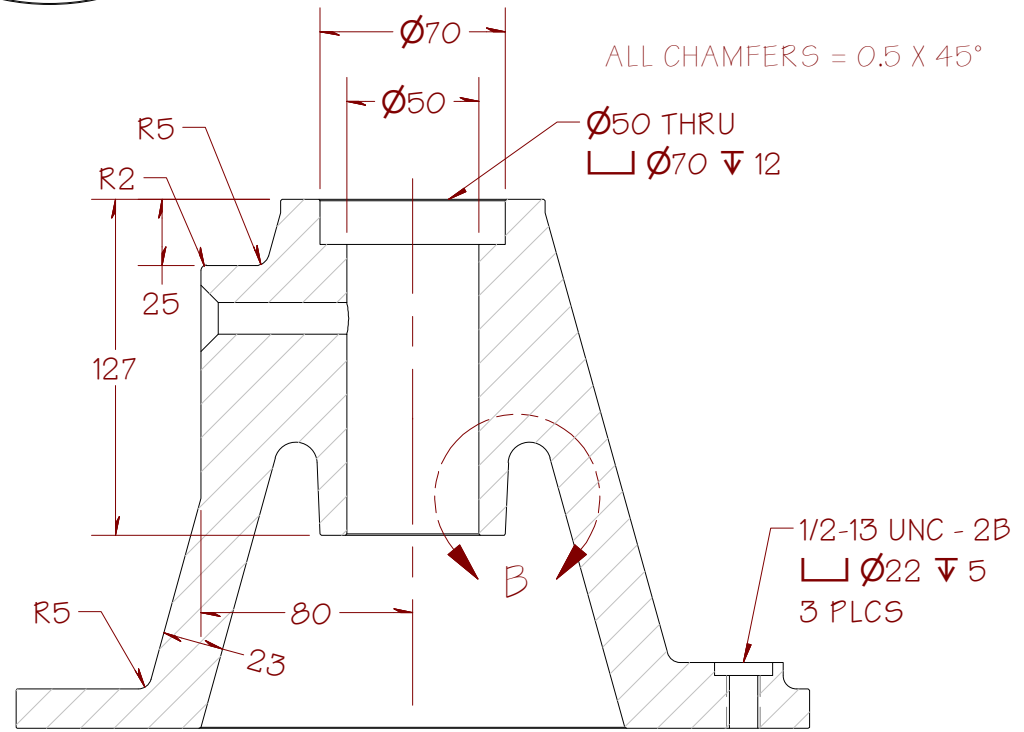
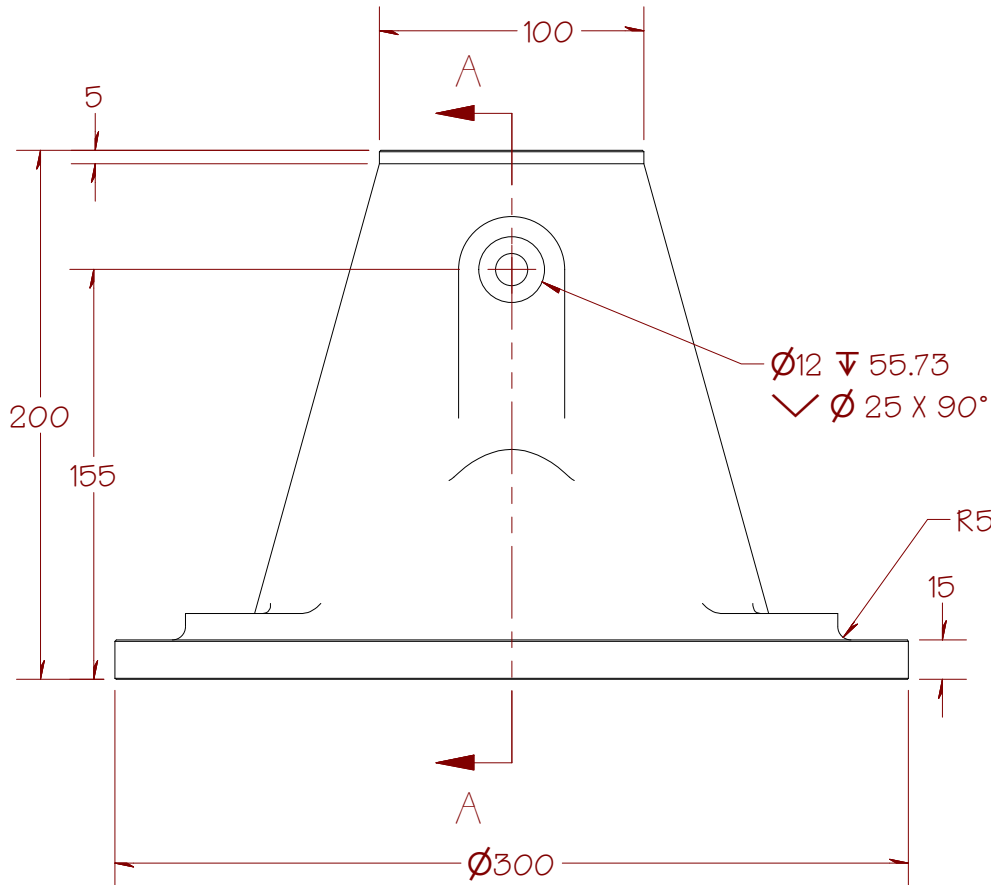
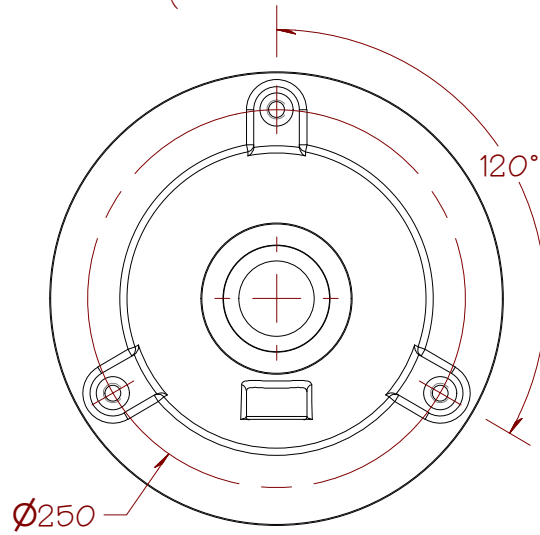
SHEET 23 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME
	Elbow Piston.ipt
	DESCRIPTION
	Machined, Elbow Piston, Bend 90 Degrees

TOP VIEW (shown scaled down)



DETAIL B

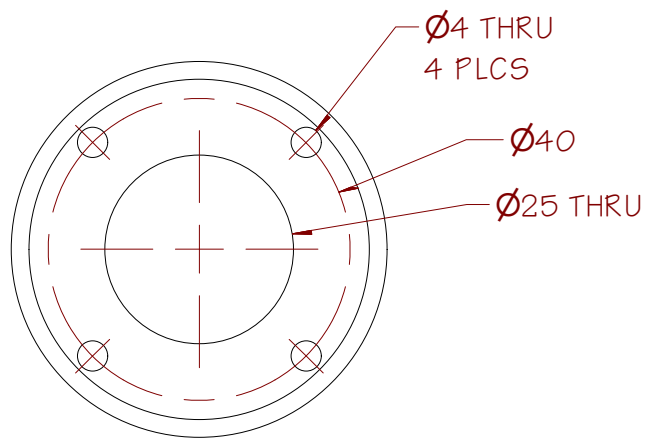


SECTION A-A

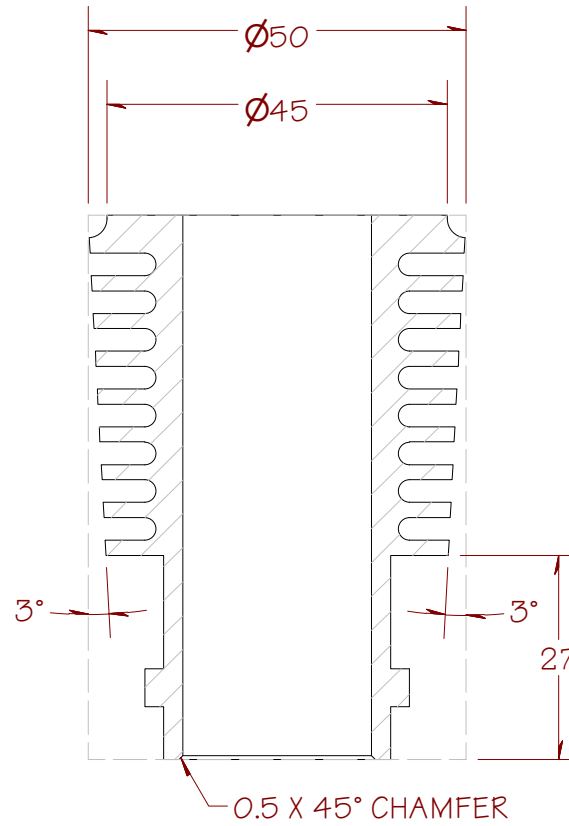
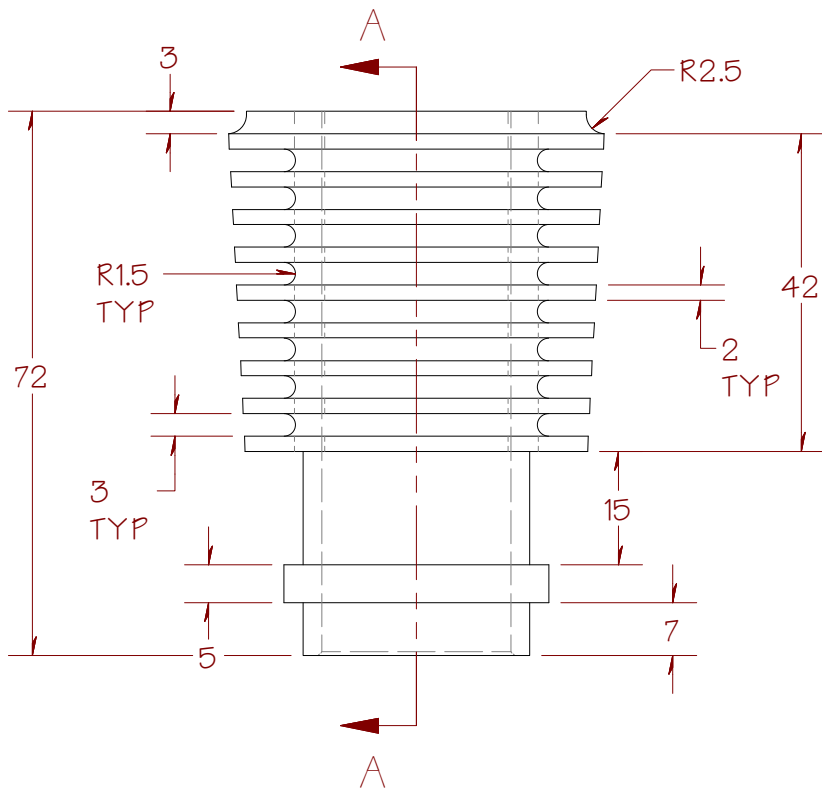
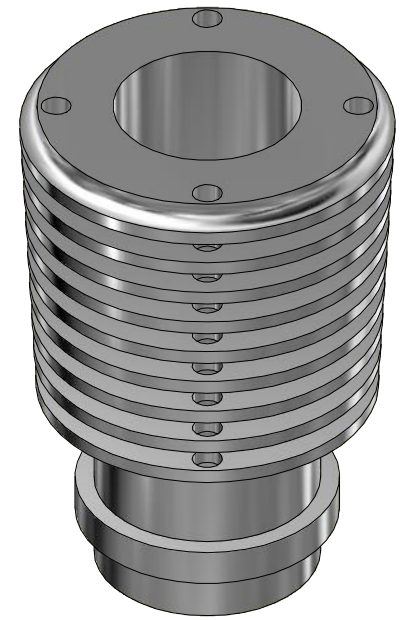
SHEET 24 OF 25

ALL DIMENSIONS ARE IN MILLIMETERS





ALL DIMENSIONS
ARE IN MILLIMETERS



SECTION A-A

SHEET 25 OF 25

FROM THE DESK OF CURTIS WAGUESPACK	FILE NAME Cylinder.ipt
	DESCRIPTION Machined, Miniature Cylinder