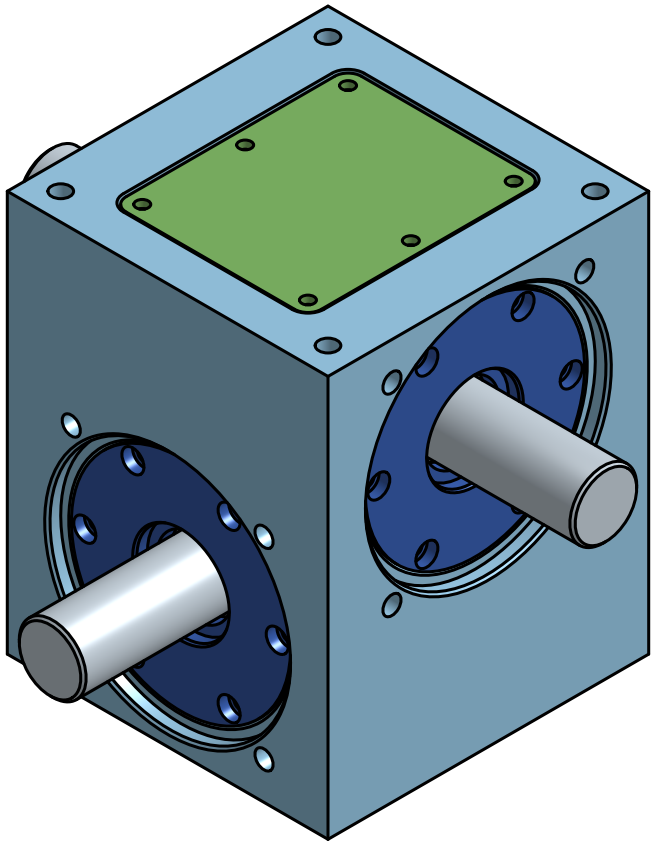
Item	Name	Material	Volume (mm^3)	Mass (kg)
1	Gearbox Housing	Cast Iron	1,078,360	7.522
2	Bearing and Seal Cap	Steel 8620	48,937	0.384
3	Shaft	Steel 8620	124,254	0.975
4	Bearing Assembly	Purchased		
5	Access Hole Seal	Neoprene	4,632	0.006
6	Access Cover	Steel 1020	18,921	0.149
7	Helical Gear (Provided)	Steel 8620	36,360	0.285



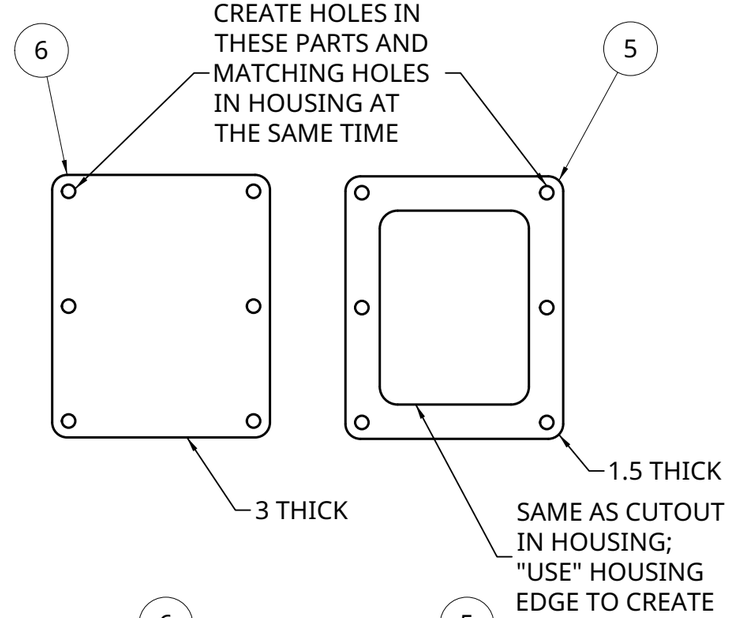
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES .XX = ±.0- .XXX = ±.00- .XXXX = ±.000- ANGULAR = ± ° FRACTIONAL = ± SURFACE FINISH		NAME	DATE
	DRAWN	BRIAN BRADY	08/14/2019
	CHECKED		
	APPROVED		
DO NOT SCALE DRAWING			
BREAK ALL SHARP EDGES AND REMOVE BURRS			
THIRD ANGLE PROJECTION	MATERIAL	VOLUME XXXXX mm³	

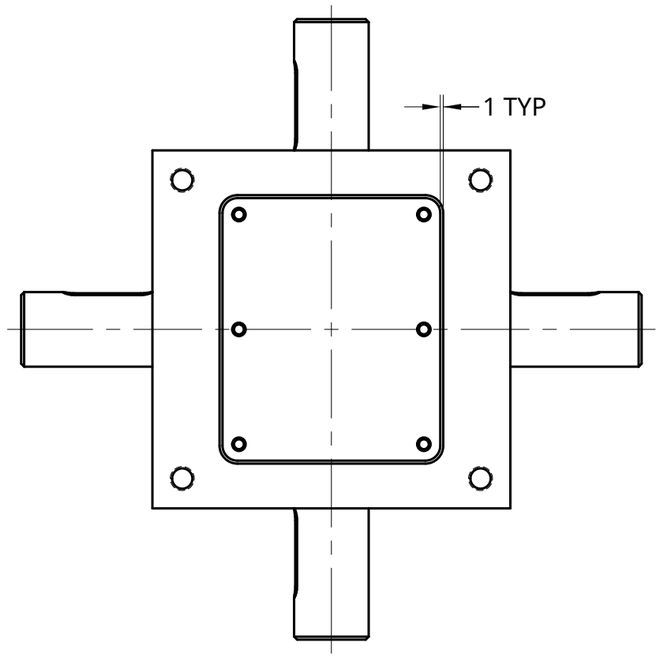
Ferris State University

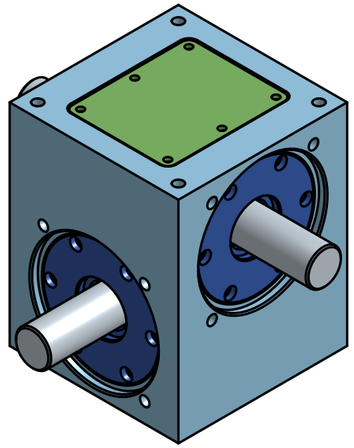
TITLE: Masses and Volumes
Gearbox Top-Down Design
Multi-Part Studio

SIZE	DWG NO.	REV.
A	M7	

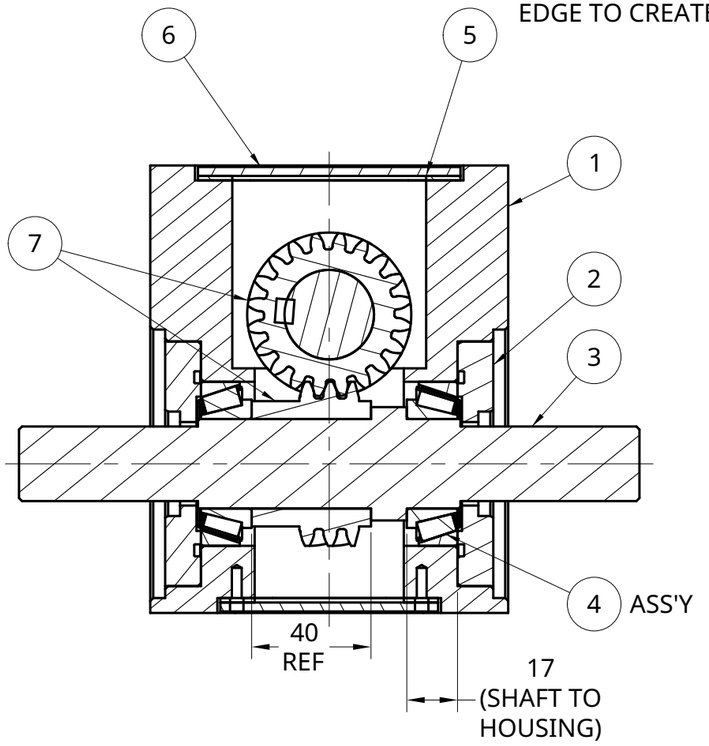
SCALE	WEIGHT	SHEET
1:2	X.XXX kg	1 of 4



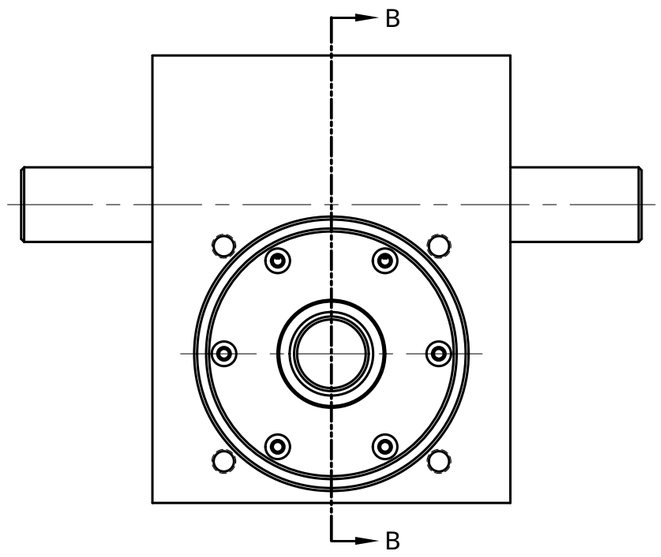


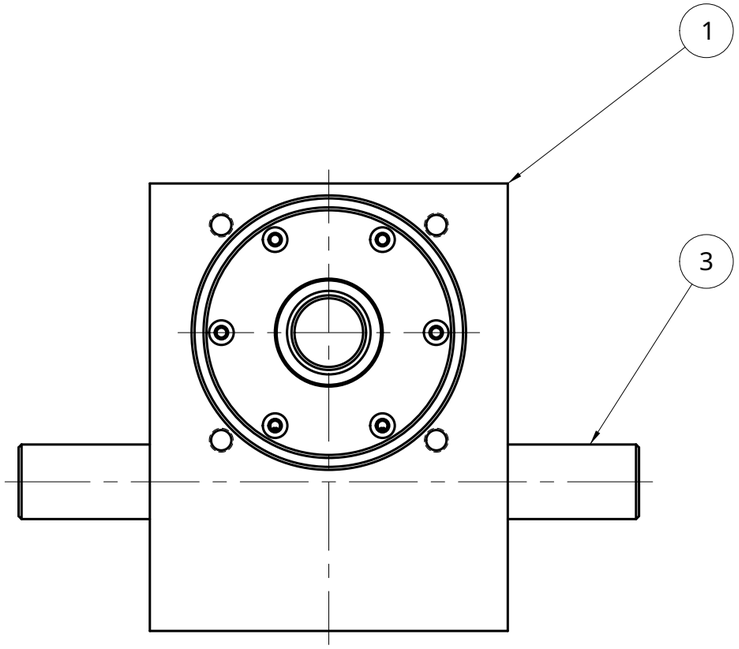


Item No.	Quantity	Description	Material
1	1	GEARBOX HOUSING	Cast iron
2	4	BEARING AND SEAL CAP	Steel 8620
3	2	SHAFT	Steel 8620
4	4	BEARING ASSEMBLY (PROVIDED)	N/A
5	2	ACCESS HOLE SEAL	Neoprene
6	2	ACCESS COVER	Steel 1020
7	2	HELICAL GEAR (PROVIDED)	Steel 8620



SECTION B - B





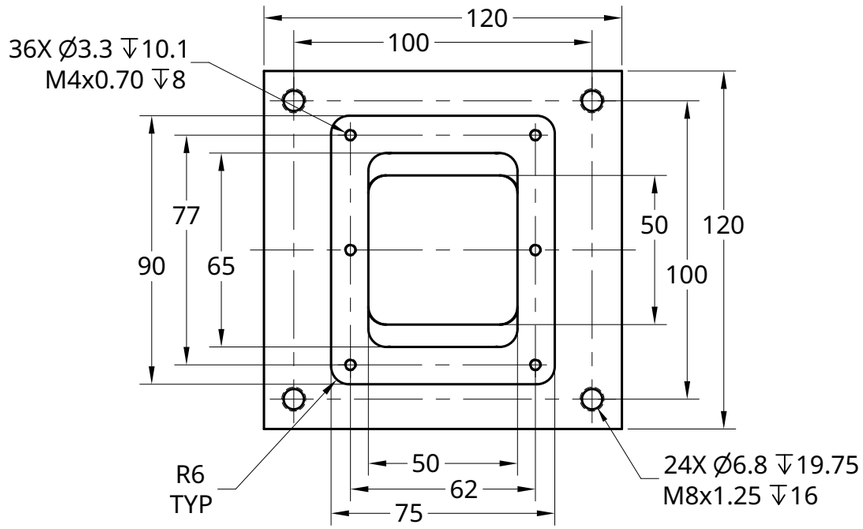
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES .XX = ±.0- .XXX = ±.00- .XXXX = ±.000- ANGULAR = ± ° FRACTIONAL = ± SURFACE FINISH		NAME	DATE
	DRAWN	BRIAN BRADY	08/14/2019
	CHECKED		
	APPROVED		
DO NOT SCALE DRAWING			
BREAK ALL SHARP EDGES AND REMOVE BURRS			
THIRD ANGLE PROJECTION	MATERIAL	VOLUME XXXXX mm³	

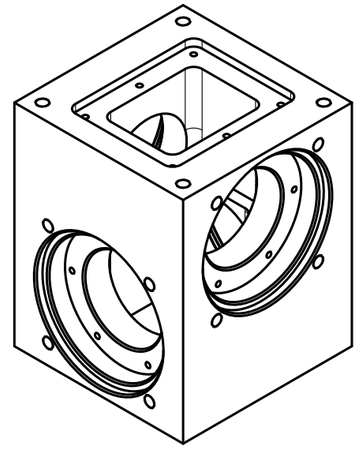
Ferris State University

TITLE: Gearbox Assembly
Gearbox Top-Down Design
Multi-part Part Studio

SIZE	DWG NO.	REV.
B	M7	

SCALE	WEIGHT	SHEET
1:2	X.XXX kg	2 of 4

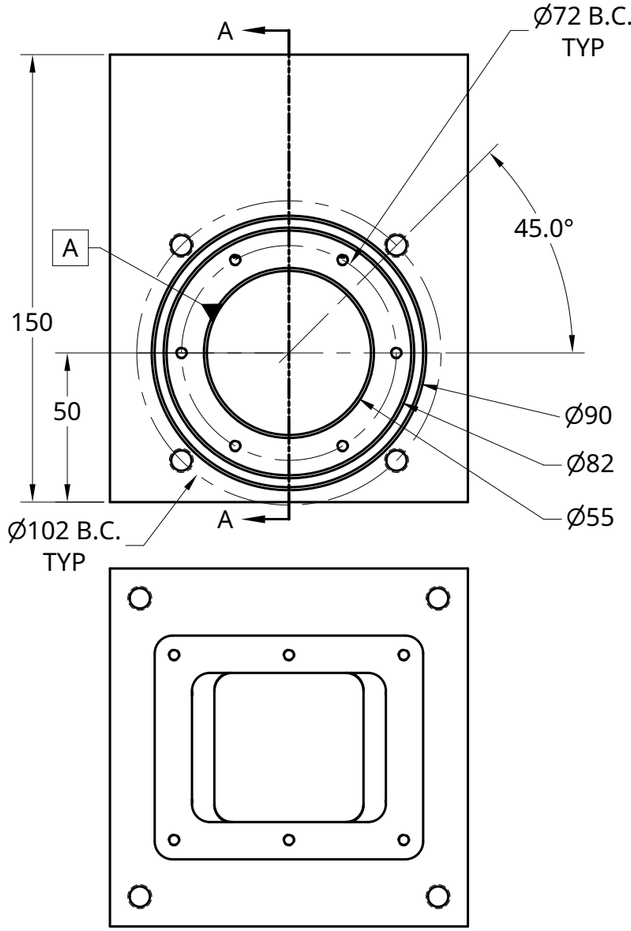


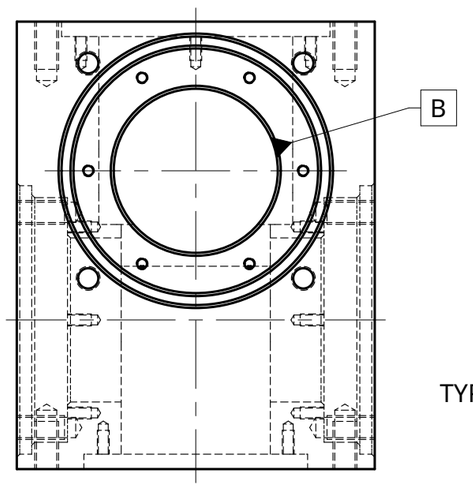


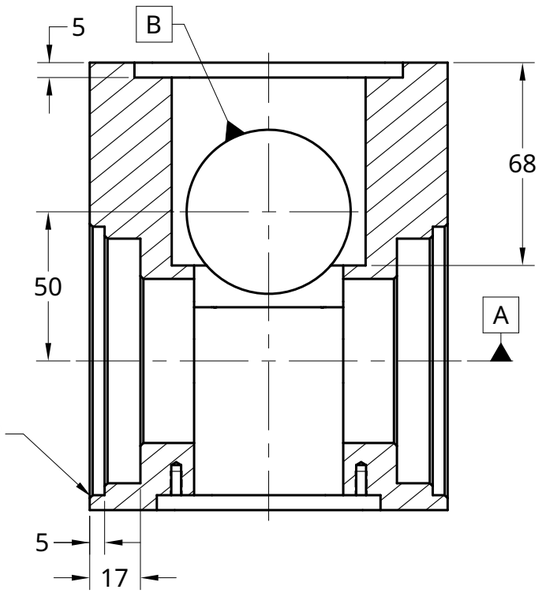
SCALE 1:3

Modeling Notes

Match dimensional design intent while modeling
Orient gearbox part model to match the orthographic views
Use hole tool for all fastener holes
Use symmetry
Top and bottom cover cutouts are oriented 90° to each other; otherwise identical
Holes (Datums A & B) and counterbores for shafts have identical features except are perpendicular and offset by 50mm







SECTION A - A

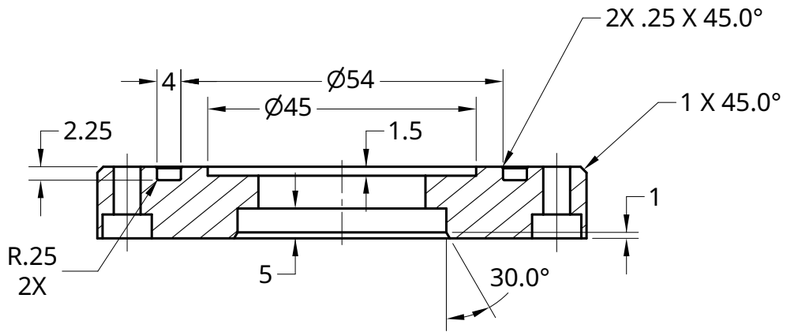
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES .XX = ±.0- .XXX = ±.00- ANGULAR = ± ° .XXXX = ±.000- FRACTIONAL = ± SURFACE FINISH		NAME	DATE
	DRAWN	BRIAN BRADY	08/14/2019
	CHECKED		
	APPROVED		
DO NOT SCALE DRAWING			
BREAK ALL SHARP EDGES AND REMOVE BURRS			
THIRD ANGLE PROJECTION	MATERIAL: CAST IRON	VOLUME: 1078360 mm³	

Ferris State University

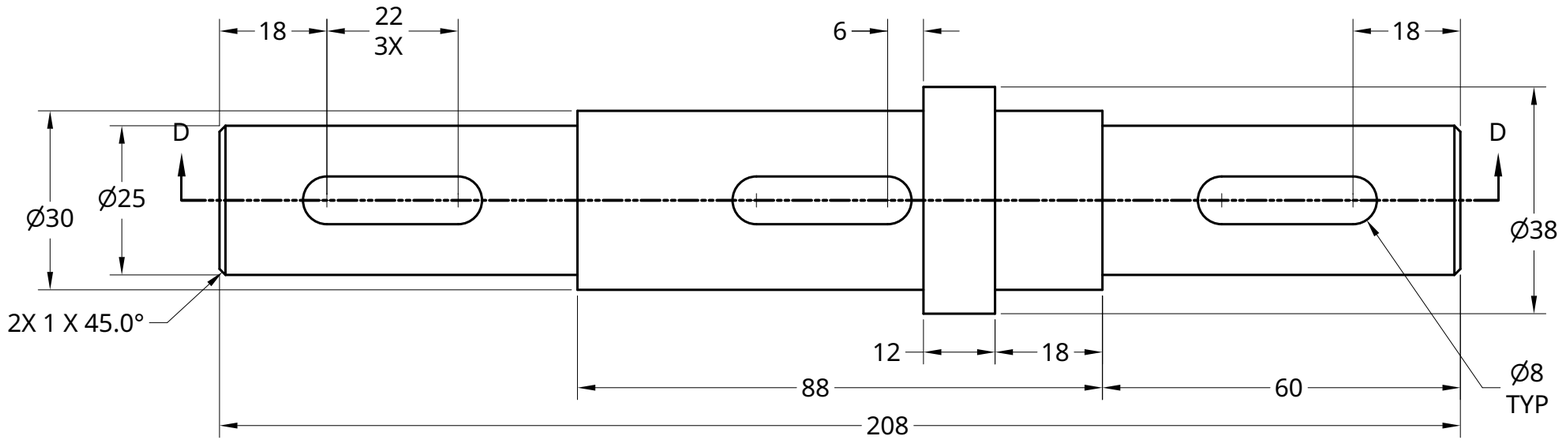
TITLE: Gearbox Housing
Gearbox Top-Down Design
Multi-part Part Studio

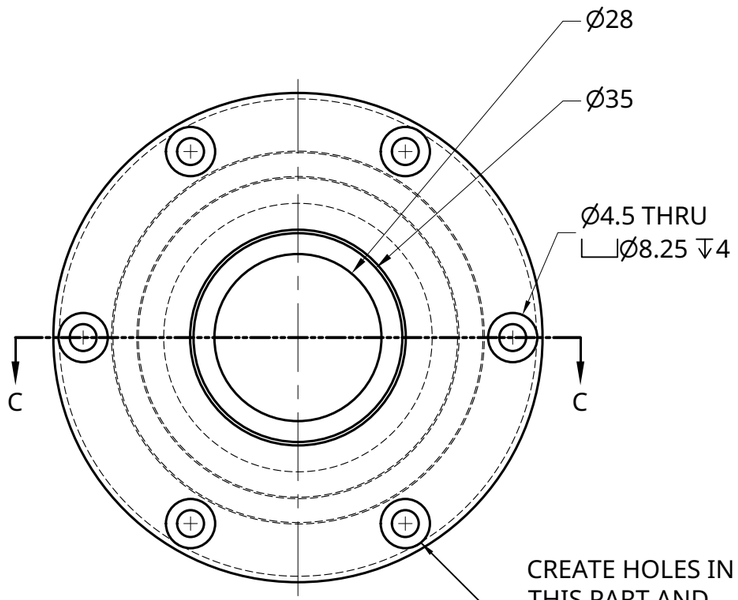
SIZE	DWG NO.	REV.
B	M7	

SCALE	WEIGHT	SHEET
1:2	7.522 kg	3 of 4

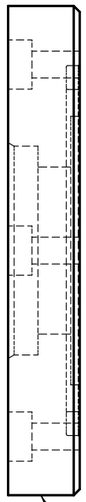


SECTION C - C

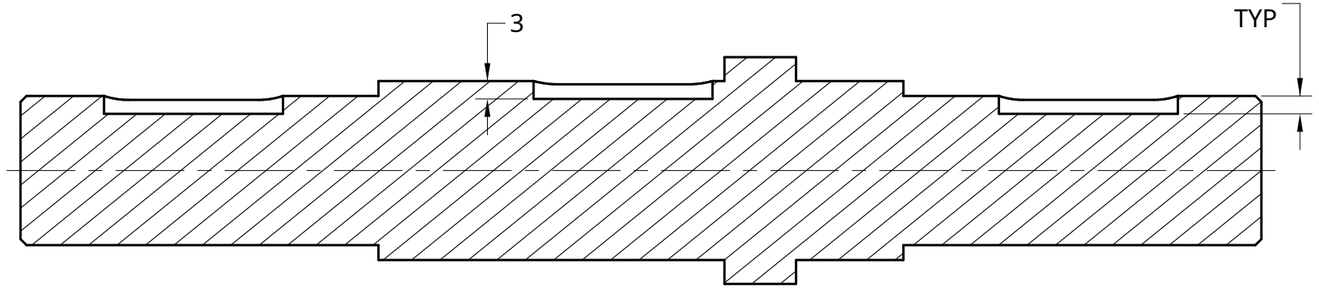




CREATE HOLES IN THIS PART AND MATING HOLES IN HOUSING AT THE SAME TIME



DIAMETER AND THICKNESS SAME AS COUNTERBORE IN HOUSING



SECTION D - D

2 BEARING AND SEAL CAP

3 SHAFT

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES .XX = ±.0- .XXX = ±.00- .XXXX = ±.000- ANGULAR = ± ° FRACTIONAL = ± SURFACE FINISH		NAME	DATE
	DRAWN	BRIAN BRADY	08/14/2019
	CHECKED		
	APPROVED		
DO NOT SCALE DRAWING			
BREAK ALL SHARP EDGES AND REMOVE BURRS			
THIRD ANGLE PROJECTION	MATERIAL: STEEL 8620	VOLUME: XXXXX mm³	

Ferris State University

TITLE: Shaft and Bearing & Seal Cap
Gearbox Top-Down Design
Multi-part Part Studio

SIZE	DWG NO.	REV.
B	M7	

SCALE	WEIGHT	SHEET
1:2	X.XXX kg	4 of 4