

Design of Innovative Engineering Products in an Engineering Design and Project Management Course

Ali Panahi, Ph.D., Assistant Professor, College of Engineering and Computing

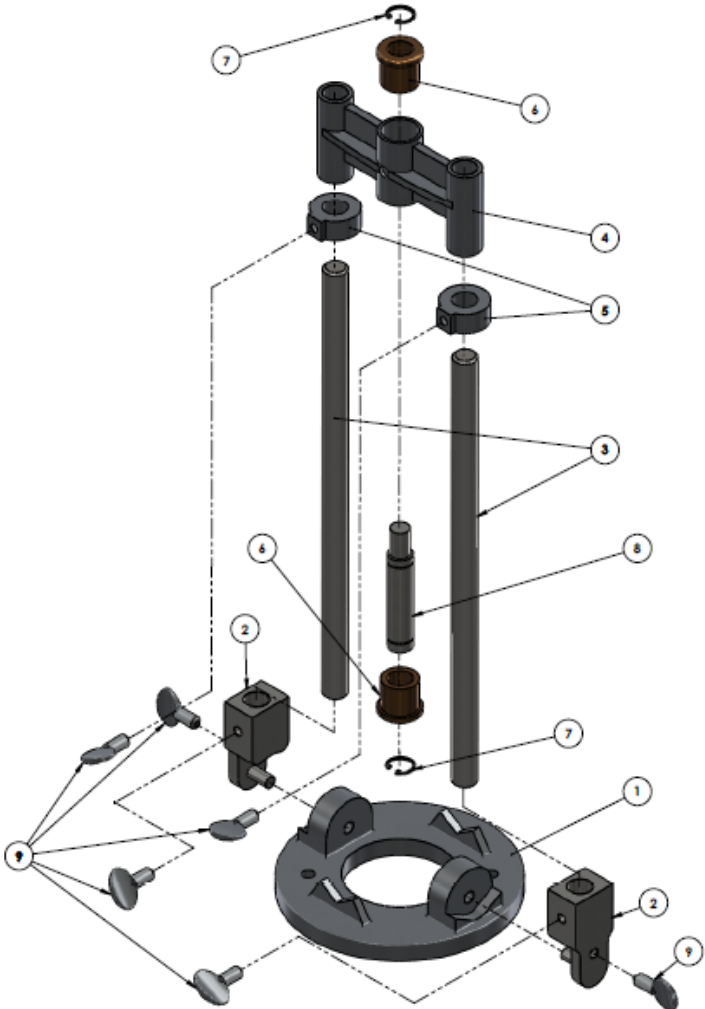
Engineering Design and Project Management II (GENG 3000)

LEARNING OUTCOMES:

- 1) Perform market analysis and identify general needs for product.
- 2) Identify customer requirements and engineering characteristics.
- 3) Design special-purpose parts and select proper standard components.
- 4) Determine the exact values, dimensions, or tolerances of the components or component features that are deemed critical-to-quality.
- 5) Design for sustainability in a way that is compatible with the environment.
- 6) Apply fundamentals of the selection of materials to manufacturing the design.
- 7) Design for brittle fracture, fatigue failure, corrosion resistance, wear resistance and with plastics.
- 8) Apply manufacturing principles to convert a design into a finished product.
- 9) Account for a probability of a risk and bring it to an acceptable level.

Drill Guide

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	QTY.
1	WPI-1000-01	BASE	2014 ALLOY	1
2	WPI-1000-02	ROTATOR	PLAIN CARBON STEEL	2
3	WPI-1000-03	ROD GUIDE	CAST ALLOY STEEL	2
4	WPI-1000-04	SLIDE	2014 ALLOY	1
5	WPI-1000-05	COLLAR	2014 ALLOY	2
6	WPI-1000-06	BUSHING	ALUMINIUM BRONZE	2
7	WPI-1000-07	RETAINING RING B27.1 - NA2-45	ALLOY STEEL	2
8	WPI-1000-08	DRILL ADAPTOR	PLAIN CARBON STEEL	1
9	WPI-1000-09	THUMB SCREW .25-20x0.51 TYPE 8, FLAT POINT-C	2014 ALLOY	6

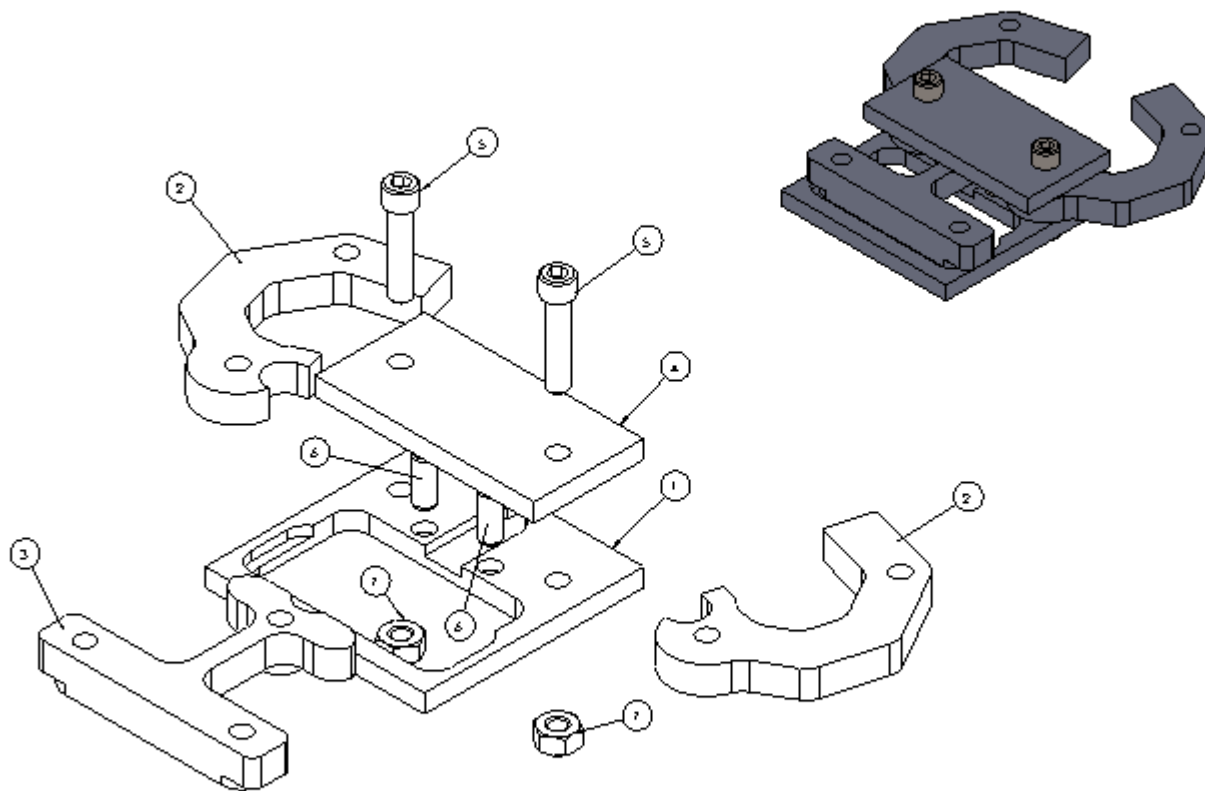


UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES		DESIGN	JLS
TOLERANCES:		CHECKED	
ANGULAR: MAX CHG 1		BY: APE	
ONE PLACE DECIMAL		AND APPR.	
TWO PLACE DECIMAL		S.A.	
INTERPRET DIMENSIONS		COMMENTS	
TOLERANCES PER ASME Y14.5			
MATERIAL			
INITIALS	USED ON		
APPROVED		DO NOT SCALE DRAWING	

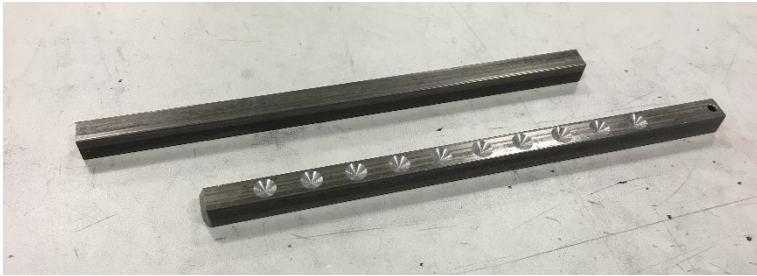
TITLE:	
DRILL PRESS	
SIZE	DWG. NO.
C	DRILL PRESS ASSEMBLY
SCALE: 2:3	WEIGHT:
SHEET 1 OF 2	

Gripper Project

ITM NO	PARAMETER	DESCRIPTION	QTY
1	Circuit for		1
2	2-J Circuit for		2
3	Circuit for		1
4	Circuit for		1
5	4X-4CS 025- 20+1 125+1 125+4		2
6	OPW 0250 225		1
7	4W 0250-0-0-4		2

[illegible]

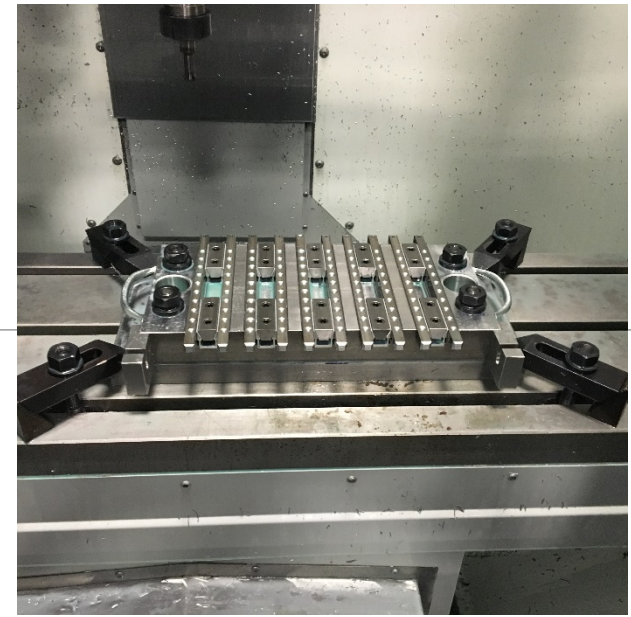
Quick Clamp bar Fixture



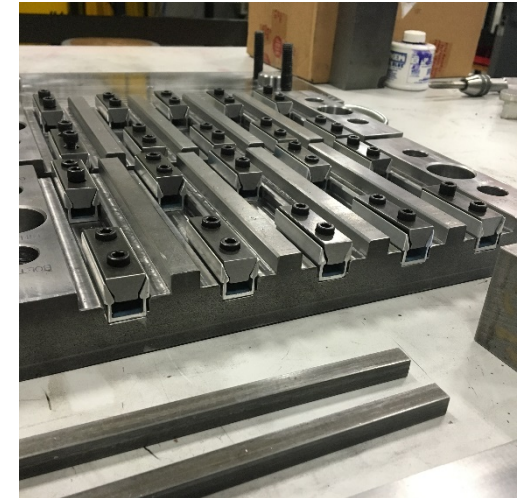
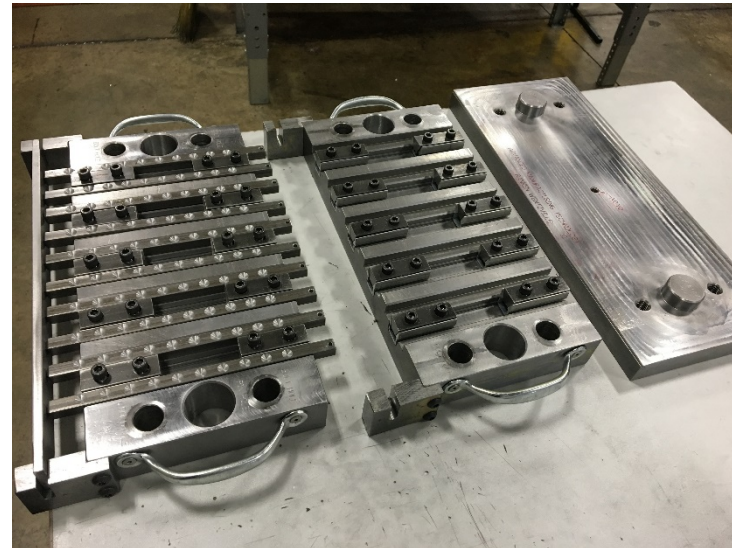
Quick Clamp Bar
Used in automobile alignment equipment



Old production method



New production method



Thank you.

