Multi-State Advanced Manufacturing Consortium

US DOL SPONSORED TAACCCT GRANT: TC23767

MSAMC Master Performance Based Objectives (PBO) Review Template

Instructions

The following tab lists PBOs for the topic area ***Basic Mechanical Power Transmissions*** . Please review each of the PBOs, and rate each PBO with one of the following ratings:

1 = Skill or understanding is required for employees.

2 = Skill is useful, but is not crucial for employees.

3 = Skill is not useful for employees, or isn't relevant for typical work assignments.

0 = PBO is unclear.

Additionally, for each PBO, note any comments or recommendations that you may have about how to improve the PBO. If any PBOs or skill sets seem to be missing from the list, please add them in the space at the bottom of the list.

Please enter your information below	
Name:	
Company/Plant:	
Department/Division:	
Industry/Segment:	
Email:	
Phone:	

Basic Mechanical Power Transmissions

M-S AMC Industry Partner PBO Review

Please review the following PBOs to identify the appropriate skill set for a given job title / category / classification (see row 10 below).

* In the "**Importance**" column, identify how important each PBO is for someone in the relevant position. For each PBO, type 1 if the PBO must be covered in the coursework, enter 2 if the PBO is helpful but not necessary and would not impair the performance of the employee in the workplace if missed, and enter 3 if the PBO would not benefit the student or doesn't apply to the typical work assignments. If you don't understand the PBO, enter 0.

* Note any comments or feedback for improving each PBO (in the "Comments" column).

Note: It is the intention of competency based instruction to have each student individually demonstrate their proficiency of the skills indicated.

Reviewing PBOs fc ***TYPE JOB TITLE HERE*** (from whose perspective are you rating PBO importance?)

Sub-Topic	Level	Topic	PBO ID	Performance Based Objective (PBO)	Importance 1 = Need 2 = nice to have 3 = N/A 0= Don't understand	Comments *Notes to improve the PBO, PBO is unclear, etc.*
Prepatory Work	1	PT	2	Perform lockout/tagout, blockout, and release of stored energy requirements using proper procedures.		
	1	PT	3	Explain common hazards and identify associated personal protective equipment (PPE).		
	1	PT	4	Match components utilizing information on a blueprint.		
	1	PT	5	Select the correct tool for a job or activity.		
Shafts & Couplings	1	PT	6	Identify the different functions of shafts.		
	1	PT	7	Identify the types of couplings used in mechanical systems and describe the functions of each.		
	1	PT	8	Maintain and troubleshoot various types of coupling systems.		
	1	PT	9	Demonstrate the installation of various types of coupling systems.		
	1	PT	10	Align various types of couplings - Using a straight edge and a feeler gage to align shafts. - Align shafts using dial indicators. - Align shafts using precision alignment tools.		
Bearings and Seals	1	PT	11	Identify and describe: - Plain bearings - Ball bearings - Roller bearings - Angular contact bearings - Associated seals		
	1	PT	12	Identify and describe various types of seals.		
	1	PT	13	Troubleshoot and install - Plain bearings - Ball bearings - Roller bearings - Angular contact bearings - Associated seals		
	1	PT	14	Identify and describe common types of belts used for flexible belt drives.		
	1	PT	15	Perform V-belt sheave alignment and belt tensioning.		
	1	PT	16	Properly install and tension timing belts.		
	1	PT	17	Install variable-speed belt drives.		
	1	PT	18	Perform belt drive system identification and visual inspection		
	1	PT	19	Perform run-out and balance of a pulley		
	1	PT	20	Perform pulley fit to shaft		
	1	PT	21	Install set screws and keys		
	1	PT	22	Troubleshoot pulley wear		
	1	PT	23	Perform belt or drive unit replacement		

Mechanical Drives	**1**	**PT**	**24**	Identify and describe common types of chains used for flexible chain drives.		
	1	**PT**	**25**	Install roller chain drives and sprockets.		
	1	**PT**	**26**	Perform chain and sprocket alignment and tension.		
	1	**PT**	**27**	Identify and describe silent chain drives.		
	1	**PT**	**28**	Identify the various engineering chain types and drive chain sprockets		
	1	**PT**	**29**	Identify and describe the three types of chain lubrication and the correct application of each.		
	1	**PT**	**30**	Install chain guards.		
	1	**PT**	**31**	Perform chain drive system identification and visual inspection.		
	1	**PT**	**32**	Check for excessive wear and run-out of the sprockets.		
	1	**PT**	**33**	Perform sprocket fit to shaft.		
	1	**PT**	**34**	Install set screws and keys.		
	1	**PT**	**35**	Inspect for sprocket wear.		
	1	**PT**	**36**	Perform chain or drive unit replacement.		
	1	**PT**	**37**	Properly perform alignment and chain tension.		
Clutches and Brakes	**1**	**PT**	**38**	Identify clutch and brake functions and uses.		
	1	**PT**	**39**	Identify friction and electromagnetic types of clutches.		
	1	**PT**	**40**	Identify mechanical-lockup interfaces and actuation methods.		
	1	**PT**	**41**	Perform clutch and brake identification and visual inspection.		
	1	**PT**	**42**	Install a clutch/brake assembly.		
	1	**PT**	**43**	Disassemble a clutch and/or brake.		
Gear Drives	**1**	**PT**	**44**	Identify and describe gear drive functions and uses.		
	1	**PT**	**45**	Identify and describe open gears and enclosed gears.		
	1	**PT**	**46**	Identify and describe associated seals, breathers, and lubrication.		
	1	**PT**	**47**	Explain gear ratings and application.		
	1	**PT**	**48**	Recognize and explain gear identification.		
	1	**PT**	**49**	Assemble - A parallel shaft gear drive. - Assemble a worm and wheel gearbox drive unit. - Assemble an angle shaft gear drive.		
Industrial Cams	**1**	**PT**	**52**	Identify industrial cam followers and functions		
	1	**PT**	**53**	Identify industrial cam follower bushing types and operating clearances		
	1	**PT**	**54**	Identify the common types of cam followers and rod ends		
	1	**PT**	**55**	Replace, install, and adjust cam followers and rod ends		

Additions: Please add any additional objectives that we may have overlooked.

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