



The Manufacturers Association

JOB QUALIFICATION STANDARD (JQS)

Occupation: TOOLMAKER

Work Process: Surface Grinder

Practical Hours: 300 hrs.

Standard: Surface Grinding: Apply a working knowledge for setting up, operating, or tending to machines that finish, shape and size a workface to meet required hardness and finish specifications.

Performance Objective: Demonstrate the ability to safely setup and operate machine tools to perform routine grinding operations.

Performance Indicator	Qualification Date/Initial
Demonstrate the ability to select a grinding wheel using information in engineering drawings, charts, and job specifications to ensure that the wheel selected is the correct grade and size needed to finish, shape, and size workface in accordance with the hardness and finish of the workpiece and job specifications.	
Demonstrate the ability to check condition of the grinding wheel for defects, cracks, or chips, and by taking the corrective action or replacing if required, to ensure personal safety and to perform optimum cutting in accordance with job specifications.	
Demonstrate the ability to install the grinding wheel to specified radii and tangents and/or angles using diamond or star-wheel dresser, to ensure personal safety and to perform optimum grinding in accordance with job specifications.	
Demonstrate the ability to locate and position the workpiece in the grinder to the required operational clearances by setting up workholding devices, including angle plate, magnetic holders, vises, chucks, centers, jigs, V-block, or mandrels, so that the workpiece is aligned, secured, and stable during grinding operations in accordance with job specifications.	
Demonstrate the ability to surface grind the workpiece using surface grinders so that the finish, flatness, and size of ground surfaces conform to engineering drawings and job specifications.	
Demonstrate the ability to hone holes using a honing machine and required attachments, so that the dimension and tolerance of the honed hole conforms to engineering drawings and job specifications.	
Demonstrate the ability to lap the workpiece by hand grinding or using a power lapping machine so that the finish and flatness of the lapped surface conforms to engineering drawings and job specifications.	
Demonstrate the ability to grind inside and outside diameters (ID/OD) using machine grinders so that the dimensions and tolerances of ground ID/OD surfaces conform to engineering drawings and job specifications.	



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Demonstrate the ability to grind tools and cutters using pedestal, surface, or tool and cutter grinders, so that the ground cutting edge of the tools or cutters conforms to tool geometry standards to ensure optimum metal removal and finish.	
Demonstrate the ability to check ground surfaces using surface comparators to ensure that the surface is finished as specified in the engineering drawings and job specifications.	
Demonstrate the ability to perform final inspection using precision measuring instruments and checking devices including inside and outside micrometers, vernier height gauges or indicators, gauge blocks, and pin gauges to ensure that the tolerances and dimensions of the workpiece to conform to the engineering drawings and job specifications.	
Demonstrate the ability to complete work documentation including tracking sheets, sign-off sheets, inspection reports, or procedure sheets to record the finalization of jobs and to facilitate traceability of work-in-process and ensure that data is recorded accurately and clearly in accordance with engineering drawings and job specifications.	
Demonstrate the ability to practice good housekeeping in the workplace by cleaning up spills or leaks, keeping work area clean and clear of obstructions, and storing tools or equipment so that the potential for accident or injury is prevented and tools or equipment are in place and available in compliance with safety regulations.	

Apprentice Signature:	Completed: MM/DD/YY
Mentor Signature:	Completed: MM/DD/YY
Supervisor Signature:	Completed: MM/DD/YY
Comments:	