

DACUM Research Chart for Industrial Maintenance Mechanic

DACUM Panel

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Duties		Tasks				
A	Maintain Safety Systems	A-1 Implement first aid procedures	A-2 Update MSDS book/database	A-3 Implement lockout/tagout procedure	A-4 Implement evacuation procedures	A-5 Determine material storage area (e.g., hazardous, combustible, corrosive)
		B-1 Review equipment installation project	B-2 Identify tools/parts for equipment installation	B-3 Select equipment installation layout	B-4 Prepare equipment installation layout	B-5 Implement equipment rigging
B	Install Machine & Equipment	B-13 Obtain installed equipment safety approvals	B-14 Test installed equipment functions			
		C-1 Perform vibration analysis	C-2 Perform thermography analysis	C-3 Verify pressure gauges operation settings	C-4 Verify safety systems (e.g., guards, e-stop, interlock)	C-5 Maintain required equipment fluids
C	Perform Equipment Preventative Maintenance	C-13 Measure coupler alignments	C-14 Confirm fasteners proper torque	C-15 Verify equipment switch operations	C-16 Perform scheduled motor replacements	C-17 Perform scheduled pump replacements
		D-1 Troubleshoot fluid power systems	D-2 Maintain fluids in fluid power systems	D-3 Maintain functions of filters in fluid power systems	D-4 Replace fluid power system pumps	D-5 Replace fluid power system seals
D	Repair Machine Fluid Power Systems	E-1 Troubleshoot transmission power systems	E-2 Maintain fluids in transmission power systems	E-3 Maintain grease in transmission power systems	E-4 Replace bearings in transmission power systems	E-5 Replace transmission power systems gears
		E-12 Align transmission power system shafts	E-13 Align transmission power system couplers	E-14 Inspect transmission power system sheaves	E-15 Replace transmission power system sheaves	E-16 Adjust transmission power system V belts
E	Repair Machine Transmission Power Systems	E-23 Adjust transmission power system brake linings	E-24 Replace transmission power system brake linings	E-25 Replace transmission power system pumps (e.g., oil & lube)	E-26 Rebuild transmission power system pumps (e.g., oil & lube)	
		F-1 Troubleshoot gasses/air power systems	F-2 Maintain gasses/air power systems pressure gauges	F-3 Confirm functional operation of gasses/air power system regulators	F-4 Replace gasses/air power system regulators	
F	Repair Machine Air/Gasses Power Systems	F-12 Replace air power pump pistons	F-13 Rebuild air power diaphragm pumps	F-14 Replace air power diaphragm pumps	F-15 Replace gasses/air power system seals	F-16 Replace air boosters
		G-1 Implement work orders	G-2 Implement hot work permits	G-3 Implement confined space permit	G-4 Document lock-out/tag-out procedure	G-5 Implement hazardous work clearance permit
G	Perform Record Keeping					

A-6 Implement material storage area (e.g., hazardous, combustible, corrosive)		A-7 Implement PPE procedures	A-8 Select guarding (e.g., gates, chains, interlocks)	A-9 Implement guarding (e.g., gates, chains, interlocks)	A-10 Verify pressure release operation	A-11 Maintain clean work area	A-12 Participate in safety meetings
B-6 Level installed equipment	B-7 Anchor installed equipment	B-8 Connect air utilities to installed equipment	B-9 Connect fluid utilities to installed equipment	B-10 Connect gas utilities to installed equipment	B-11 Connect electric utilities to installed equipment	B-12 Obtain safety installation approvals	
C-6 Maintain required equipment grease levels	C-7 Verify belt conditions	C-8 Verify filter conditions	C-9 Check tube fittings conditions	C-10 Confirm operation of back-up systems	C-11 Verify cylinder operations	C-12 Check drive chain & sprockets	
C-18 Confirm equipment operational performances	C-19 Perform load testing on springs						
D-6 Replace bearings in fluid power system	D-7 Replace fluid power system lines	D-8 Replace fluid power system valves	D-9 Rebuild fluid power system pumps	D-10 Rebuild fluid power system valves	D-11 Maintain fluid power system pressure switches	D-12 Verify fluid power system quality	
E-6 Replace transmission power systems bushings	E-7 Replace transmission power system shafts	E-8 Repair transmission power system shafts	E-9 Replace transmission power system pillow blocks	E-10 Repair transmission power system pillow blocks		E-11 Replace transmission power system motors	
E-17 Replace transmission power system V belts	E-18 Adjust transmission power system chains & sprockets	E-19 Replace transmission power system chains & sprockets		E-20 Adjust transmission power system linkages	E-21 Replace transmission power system linkages	E-22 Repair transmission power system linkages	
E-27 Replace transmission power system lines (e.g., lubrication)	E-28 Replace transmission power system seals	E-29 Perform counter balance adjustments	E-30 Verify transmission power system quality				
F-5 Confirm function of air oils	F-6 Confirm functional operation of gasses/air pressure switches	F-7 Inspect gasses/air pressure pop-off valves	F-8 Confirm water separator functions	F-9 Rebuild gasses/air power systems valves	F-10 Replace gasses/air power systems valves	F-11 Replace gasses/air power systems manifold blocks	
F-17 Rebuild air boosters	F-18 Replace gasses/air lines	F-19 Replace gasses/air hoses	F-20 Confirm safety operational gasses parameters	F-21 Verify gasses/air power system quality			
G-6 Complete incident report (e.g., spills, injuries)	G-7 Record thermography histories	G-8 Record vibration history	G-9 Document flow chart readings	G-10 Update machine piping specifications	G-11 Update machine mechanical drawing specifications	G-12 Update machine parts specifications	

Duties		Tasks			
G	Perform Record Keeping – cont.	G-13 Update machine electric specifications	G-14 Update log book		
H	Develop Equipment Design Improvements	H-1 Evaluate functionality of existing parts/equipment	H-2 Modify existing parts/equipment	H-3 Adapt replacement parts/equipment	H-4 Test functionality of modified & adapted parts/equipment
		H-5 Implement new change of parts/equipment	H-6 Verify proper operation of modified or improved parts/equipment	H-7 Document change of parts/equipment	H-8 Participate in Kaizen meetings

General Knowledge and Skills

OSHA regulations
 Communication skills (verbal, written, listening)
 Decision making skills
 Problem solving skills
 Leadership skills
 Time management skills
 Blue print reading
 Measurements
 Data interruption
 Physics, hydraulic, pneumatic
 Team work
 Welding and fabrication
 Machines skills
 Pipe fittings
 NFPA
 Bilingual
 Computer skills

Worker Behaviors

Mechanical aptitude
 Flexible
 Physical flexibility
 Team player
 Positive attitude
 Self motivating
 Adaptable
 Creative
 Determined
 Resourceful
 Patient
 Sense of humor
 Professional
 Multiple tasks
 Role model
 Open minded
 Confident
 Fitness oriented
 Customer service oriented
 Life long learning
 Innovative
 Prompt
 Thick skinned
 Supportive
 Precise
 Alert
 Cautious
 Knowledgeable
 Goal oriented

Tools, Equipment, Supplies and Materials

Air monitor	2-way radio
Measurements (meters)	Computer
Hand tools	Air tools
Power tools	Crimping
Welding	Flaring
Cutting	Inert gasses
Mill machines (lathe)	Oils
Benders, rollers, break	Coolants
Grinder	Manuals
Saws	Blueprints
Presses	Dyes
Stamping	Fluids
Sandblasting	Adhesives, glues
Material handling	Forklift
PPE	Crane
Solvent tanks	Genie boom
Vise	Platform lift

Future Trends and Concerns

Increase educational level (on-going education)
 Rising economy
 Complexity of machines (tolerance)
 Technology changes
 Changes in Federal regulations
 Health risk
 Wage increase
 Changes of repair technicians
 Customer requirements
 International standards

Acronyms

MSDS = Material Safety Data Sheet
 PPE = Personnel Protective Equipment
 OSHA = Occupational Safety and Health Administration
 NFPA = Nation Fire Protection Association