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| --- | --- |
| WI Youth Apprenticeship Logo | Agriculture Mechanic Technician  Youth Apprenticeship |

# Agriculture mechanic technician

Agriculture Mechanic Technician youth apprentices gain skills related to the maintenance and repair of agricultural equipment including use of tools, materials, engines, parts, diagnostic tools, welding, hydraulics, electronics, and documentation. Apprentices must adhere to industry safety and security standards.

**Length of Apprenticeship:** One or two years

# required Competencies

Youth apprentices must become proficient in both general employability and occupation-specific competencies. All of these, and examples of how each can be demonstrated, are found in the following pages. **Year 1**: All 13 of the required competencies plus 3 of the additional competencies must be learned for this occupation. **Year 2**: All 13 of the required competencies plus 10 of the additional competencies (including previously completed Year 1 additional competencies) must be learned. Employers may substitute out one of the competencies and should write in the competency they are adding. Youth apprentices must be evaluated on these competencies at least two times each year of their apprenticeship.

| **Agriculture Mechanic Technician Competencies** | |
| --- | --- |
| **Required Occupational Competencies** | **Additional Competencies** |
| 1. Select correct hand tools and light duty power tools required for job 2. Operate hand tools, light duty power tools and stationary tools safely 3. Maintain a safe work environment 4. Use fasteners correctly 5. Handle and store oils, grease, chemicals, cleaners, solvents, etc. according to the Material Safety Data Sheet (MSDS) 6. Test and maintain engines 7. Operate, maintain, and repair engines and equipment safely 8. Perform pre-inspection of equipment components 9. Setup equipment and machinery 10. Retrieve diagnostic trouble codes 11. Check fluid levels and lubricate machinery and equipment 12. Maintain vehicle and machinery appearance and cleanliness prior to inspection delivery      1. Complete written documentation of work performed, and parts used | 1. Look up parts 2. Use specific diagnostic tools 3. Cut metal using an oxyacetylene torch and plasma arc torch 4. Interpret hydraulic symbols and flow on a schematic drawing 5. Maintain and repair basic hydraulic systems 6. Inspect hydraulic components 7. Repair and maintain system components 8. Interpret electrical symbols and wiring schematics 9. Apply basic electrical theory 10. Repair failed components and/or repair of wiring 11. Inspect and diagnose electrical/electronic components 12. Maintain and repair electrical/electronic components 13. Troubleshoot and install instrumentation and data acquisition system 14. Dismantle defective machines and equipment 15. Reassemble machines and equipment 16. Calibrate and monitor equipment |

# Registered Apprenticeship Bridging Opportunities

Some of the related instruction courses can bridge into the following registered apprenticeship:

* Diesel Mechanic
* Maintenance Mechanic

# Post-Secondary Pathway Opportunities

There are several post-secondary pathway opportunities in this area. The following is a partial list.

* Mechanical Maintenance Technical Diploma
* Agronomy Technician

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| WI Youth Apprenticeship Logo | Agriculture Mechanic Technician  Youth Apprenticeship  On-the-Job Learning Performance Standards Guide |

# Youth Apprentice information

|  |
| --- |
| Youth Apprentice Name |
| YA Coordinator |
| YA Consortium |
| School District |

# SIGNATURES

The On-the-Job Learning Performance Standards Guide includes a list of competencies youth apprentices learn through mentoring and training at the worksite.

Instructions for the Worksite Employers/Mentors and School-Based or YA coordinators: This document should be reviewed with the employer/mentor, school-based or YA coordinator on a regular basis with the youth apprentice to record progress and plan future steps to ensure completion of the required competencies. Mentors, school-based/YA coordinator, and the apprentice sign below.

**Employer/Mentor**

**1st Evaluation (Required) 2nd Evaluation (Required)**

|  |  |
| --- | --- |
| Employer/Mentor Signature | Employer/Mentor Signature |
| Employer/Mentor | Employer/Mentor |
| Business/Company | Business/Company |
| Date Signed | Date Signed |

**3rd Evaluation (Optional) 4th Evaluation (Optional)**

|  |  |
| --- | --- |
| Employer/Mentor Signature | Employer/Mentor Signature |
| Employer/Mentor | Employer/Mentor |
| Business/Company | Business/Company |
| Date Signed | Date Signed |

**School-Based and/or YA Coordinator**

**1st Evaluation (Required) 2nd Evaluation (Required)**

|  |  |
| --- | --- |
| School-Based and/or YA Coordinator Signature | School-Based and/or YA Coordinator Signature |
| School-Based and/or YA Coordinator | School-Based and/or YA Coordinator |
| School District or Organization | School District or Organization |
| Date Signed | Date Signed |

**3rd Evaluation (Optional) 4th Evaluation (Optional)**

|  |  |
| --- | --- |
| School-Based and/or YA Coordinator Signature | School-Based and/or YA Coordinator Signature |
| School-Based and/or YA Coordinator | School-Based and/or YA Coordinator |
| School District or Organization | School District or Organization |
| Date Signed | Date Signed |

**Youth Apprentice**

**1st Evaluation (Required) 2nd Evaluation (Required)**

|  |  |
| --- | --- |
| Youth Apprentice Signature | Youth Apprentice Signature |
| Youth Apprentice | Youth Apprentice |
| School District / High School | School District / High School |
| Date Signed | Date Signed |

**3rd Evaluation (Optional) 4th Evaluation (Optional)**

|  |  |
| --- | --- |
| Youth Apprentice Signature | Youth Apprentice Signature |
| Youth Apprentice | Youth Apprentice |
| School District / High School | School District / High School |
| Date Signed | Date Signed |

# employability Skills (TO BE COMPLETED BY yA EMPLOYER/MENTOR)

All youth apprentices must demonstrate the key employability skills listed below in order to complete the YA program. They do so by earning at least a "Meets Expectation" rating in each.  **At least two evaluations are required each year of a youth apprenticeship.** More columns are included below for those who choose to conduct more frequent reviews.

|  |  |
| --- | --- |
| **1** | ***Working to Meet Expectations:*** Needs improvement; requires much assistance and supervision; rarely displays this behavior |
| **2** | ***Meets Expectations:***  Meets entry-level criteria; requires some supervision; often displays this behavior |
| **3** | ***Exceeds Expectations:*** Exceeds entry-level criteria; requires minimal supervision; consistently displays this behavior |

|  | **Employability Skills** | **Rating** | | | |
| --- | --- | --- | --- | --- | --- |
| **Competency and Rating Criteria** | | **Initial** | **Mid Year 1** | **Mid Year 2** | **Final** |
| 1. Develops positive work relationships with others.   *Examples of qualities and habits that the employee might exhibit include:*   * Interacts with others with respect and in a non-judgmental manner * Responds to others in an appropriate and non-offensive manner * Helps co-workers and peers accomplish tasks or goals * Applies problem-solving strategies to improve relations with others * When managing others, shows traits such as compassion, listening, coaching, team development, and appreciation | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Communicates effectively with others   *Examples of qualities and habits that the employee might exhibit include . . .*   * Adjusts the communication approach for the target audience, purpose, and situation to maximize impact * Organizes messages/information in a logical and helpful manner * Speaks clearly and writes legibly * Models behaviors to show active listening * Applies what was read to actual practice * Asks appropriate questions for clarity | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Collaborates with others   *Examples of qualities and habits that the employee might exhibit include . . .*   * Works effectively in teams with people of diverse backgrounds regardless of sex, race, ethnicity, nationality, sexuality, religion, political views, and abilities * Shares responsibility for collaborative work and decision making * Uses the problem-solving process to work through differences of opinion in a constructive manner to achieve a reasonable compromise * Avoids contributing to an unproductive group conflict   Shares information and carries out responsibilities in a timely manner | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Maintains composure under pressure   *Examples of qualities and habits that the employee might exhibit include . . .*   * Uses critical thinking to determine the best options or outcomes when faced with a challenging situation * Carries out assigned duties while under pressure * Acts in a respectful, professional, and non-offensive manner while under pressure * Applies stress management techniques to cope under pressure | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Demonstrates integrity   *Examples of qualities and habits that the employee might exhibit include . . .*   * Carries out responsibilities in an ethical, legal and confidential manner * Responds to situations in a timely manner * Takes personal responsibility to correct problems * Models behaviors that demonstrate self-discipline, reliability, and dependability | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Performs quality work   *Examples of qualities and habits that the employee might exhibit include . . .*   * Carries out written and verbal directions accurately * Completes work efficiently and effectively * Performs calculations accurately * Conserves resources, supplies, and materials to minimize costs and environmental impact * Uses equipment, technology, and work strategies to improve workflow * Applies problem-solving strategies to improve productivity * Adheres to worksite regulations and practices * Maintains an organized work area | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Provides quality goods or services (internal and external)   *Examples of qualities and habits that the employee might exhibit include . . .*   * Shows support for the organizational goals and principles by own personal actions * Displays a respectful and professional image to customers * Displays an enthusiastic attitude and desire to take care of customer needs * Seeks out ways to increase customer satisfaction * Produces goods to workplace specifications | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Shows initiative and self-direction   *Examples of qualities and habits that the employee might exhibit include . . .*   * Prioritizes and carries out responsibilities without being told * Responds with enthusiasm and flexibility to handle tasks that need immediate attention * Reflects on any unsatisfactory outcome as an opportunity to learn * Improves personal performance by doing something different or differently * Analyzes how own actions impact the overall organization * Supports own action with sound reasoning and principles * Balances personal activities to minimize interference with work responsibilities | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Adapts to change   *Examples of qualities and habits that the employee might exhibit include . . .* Shows flexibility and willingness to learn new skills for various job roles   * Uses problem-solving and critical-thinking skills to cope with changing circumstances * Modifies own work behavior based on feedback, unsatisfactory outcomes, efficiency, and effectiveness * Displays a "can do" attitude | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Demonstrates safety and security regulations and practices   *Examples of qualities and habits that the employee might exhibit include . . .*   * Follows personal safety requirements * Maintains a safe work environment * Demonstrates professional role in an emergency * Follows security procedures * Maintains confidentiality | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Applies job-related technology, information, and media   *Examples of qualities and habits that the employee might exhibit include . . .*   * Applies technology effectively in the workplace * Assesses and evaluates information on the job * Assesses training manuals, website, and other media related to the job | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Fulfills training or certification requirements for employment   *Examples of this requirement may include . . .*   * Participation in required career-related training and/or educational programs * Passing certification tests to qualify for licensure and/or certification * Participation in company training or orientation | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| 1. Sets personal goals for improvement   *Examples of this requirement may include . . .*   * Setting goals that are specific and measurable * Setting work-related goals that align with the organization's mission * Identifying strategies to reach goals * Reflecting on goal progress to regularly evaluate and modify goals | | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |

# occupational Competencies (TO BE COMPLETED BY yA EMPLOYER/MENTOR)

Youth apprentices must earn a rating of **at least "MEETS EXPECTATIONS" in each competency by the conclusion of the apprenticeship. Year** 1: All the required competencies plus 3 of the additional competencies. **Year 2**: All the required competencies plus 10 of the additional competencies (including previously completed Year 1 additional competencies). Employers can substitute 1competency with another occupationally appropriate skill. That skill should be added to the competency list for assessment. **At least two evaluations are required each year of a youth apprenticeship**. More columns are included below for those who choose to conduct more frequent reviews.

|  |  |
| --- | --- |
| **1** | ***Working to Meet Expectations:*** Needs improvement; requires much assistance and supervision; rarely displays this behavior |
| **2** | ***Meets Expectations:***  Meets entry-level criteria; requires some supervision; often displays this behavior |
| **3** | ***Exceeds Expectations:*** Exceeds entry-level criteria; requires minimal supervision; consistently displays this behavior |

| **Occupational Competencies** | **Ratings** | | | | |
| --- | --- | --- | --- | --- | --- |
| **Competency and Rating Criteria** | **Evaluation**  **Minimum Rating of 2 for EACH Check Rating** | | | | |
| **Initial** | **Mid Year 1** | **Mid Year 2** | | **Final** |
| 1. **Select correct hand tools and light duty power tools required for job**  * use correct hand tools in a safe and appropriate manner * identify capabilities and limitations of hand tools * identify capabilities and limitations of power tools * identify worn, damaged, or abused tools * verify equipment safety procedures * identify proper personal protective equipment (PPE) needed for tool/equipment use * handle and store tools properly | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | |
| 1. **Operate hand tools, light duty power tools and stationary tools safely**  * operate tool/equipment trained to use * operate tool/equipment with guarding devices in manner required for job task * inspect tool/equipment and work area for safety considerations * demonstrate general safety rules for operating all power tools * follow tool checklist * verify tool/equipment is available for use and in working order * verify tool/equipment is current for preventative maintenance and/or calibration * wear the required personal protective equipment (PPE) at all times as required for the operation of the tool/equipment * monitor tool/equipment for safe operation during use * document use and maintenance as required * shut down tool/equipment according to proper use * report abnormal tool/equipment conditions or failures in operation * perform required preventative maintenance procedures | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| 1. **Maintain a safe work environment**  * inspect tools and work area for safety considerations * comply with posted safety warnings and symbols * identify unsafe conditions and/or work habits and * report unsafe conditions to the worksite professional immediately * help maintain a clean and safe working environment free of debris and obstacles * dispose of waste and recyclable materials properly * store materials and tools properly * follow facility procedures for clean-up and shut down after use * clean light fixtures to ensure proper lighting * store tools and equipment properly * clean and dry floors * follow general shop housekeeping procedures | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| 1. **Use fasteners correctly**  * identify correct fasteners for task (screws, bolts, nuts, washers, keys, snap rings, pins, and studs) * select correct tools/equipment to adjust fasteners * measure bolt and nut length, diameter, and thread types accurately * extract broken bolts properly * restore internal and external threads properly | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **5. Handle and store oils, grease, chemicals, cleaners, solvents, etc. according to the Material Safety Data Sheet (MSDS)**   * safely Identify, handles, Store, and uses materials according to company procedure, if applicable * review MSDS sheet to identify hazardous materials * perform the approved storage procedures for flammable materials found in repair facilities * dispose of hazardous materials following safety procedures * wear appropriate personal protective equipment (PPE) | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **6. Test and maintain engines**   * determine appropriate inspections and test(s) to perform based on customer concern * assist with repair using parts manual * develop a preventative maintenance schedule for equipment * adjust equipment for safe and efficient operation * determine the cost of routine equipment maintenance * apply service-related information, including service bulletins, manuals, and parts catalogues | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **7. Operate, maintain, and repair engines and equipment safely**   * assist with follow up on repaired equipment to ensure that corrective action solved the problem * assist with the investigation of abnormal equipment conditions in a timely manner * follow tool/equipment repair manual * follow safety precautions when operating, servicing, and maintaining machines and equipment * research vehicle and service information, vehicle service history, service precautions, and technical service bulletins * verify operation of the instrument panel engine warning indicators * review equipment quality measures for trends and problems * compare current equipment performance to optimal equipment operations * report noted deviations from expected performance * document all monitoring activities | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **8. Perform pre-inspection of equipment components**   * complete a visual inspection * determine appropriate inspections and test(s) to perform based on customer concern * check for operation and leaks of hoses, lines, valves, and nozzles * identify information needed and the service requested on a repair order * locate repair parts, using catalogs, microfiche, and computers. * review vehicle service history | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **9. Setup equipment and machinery**   * organize workspace * verify equipment is available for use and in working order * verify equipment is current for preventative maintenance and/or calibration * stage pieces and materials for assembly * assemble and adjust tools and equipment as required * document service completed | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **10. Retrieve diagnostic trouble codes**   * connect diagnostic software to equipment * operate different types of service software * verify connection to software and equipment using manual * use general computer skills * toggle between screens using software * interpret readings to icons * verify math and make conversions when appropriate * perform procedures as indicated by the service software | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **11. Check fluid levels and lubricate machinery and equipment**   * review manufacturer safety and service procedures * determine the type of lubricant recommended based on original equipment manufacturer (OEM) requirements * identify importance of oil analysis as a management tool * replace torn or missing seals * apply grease to each fitting and wipe away access * inspect fluid levels using dipstick * change oil filters * verify work and adjust | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **12. Maintain vehicle and machinery appearance and cleanliness prior to inspection delivery**   * install shields and hoods * verify machinery is washed and prepped * inspect cleanliness of the cab * assure windows are clean * verify that there are no external leaks from the machinery/equipment * follow any company procedures condition Report | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **13. Complete written documentation of work performed, and parts used**   * identify the purpose and importance of keeping records * demonstrate procedures for keeping records of equipment maintenance and services * document customer concern on repair order * verify work orders, service invoices, and requisitions * prepare a written cost estimate of repair work * document parts used for service repair | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| Competency Substitute (if you replaced a competency above, note the competency and rating) | **Year 1 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Year 2 Rating** | | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | | **1**  **2**  **3** |
| **Comments**: | | | | | |

# Additional Occupational Competencies (TO BE COMPLETED BY yA EMPLOYER/MENTOR)

| **Additional Occupational Competencies** | **Ratings** | | | |
| --- | --- | --- | --- | --- |
| **Competency and Rating Criteria** | **Evaluation Minimum Rating of 2 for EACH Check Rating** | | | |
| **Initial** | **Mid Year 1** | **Mid Year 2** | **Final** |
| **14. Look up parts**   * locate repair parts, using catalogs, microfiche, and computers * collect necessary information to determine part requirements * locate and accesses serial numbers * identify section and component location on machinery/equipment * review previous repair orders * perform basic computer operation * write up request for parts order * maintain agriculture mechanics business records | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **15. Use specific diagnostic tools**   * verify the causes of concerns with stored or active diagnostic trouble codes * obtain, graph, and interpret scan tool data * determine necessary action * inspect computerized engine control system sensors * test computerized engine control system sensors | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **16. Cut metal using an oxyacetylene torch and plasma arc torch**   * operate all welding and cutting equipment safely * interpret drawings and welding symbols * select appropriate welding and cutting tips for specific applications * diagnose equipment failure * set up, adjust, operate, and shut down oxy-fuel, welding and brazing equipment for a given job * lay out and prepare metals for welding * cut metal to specifications * heat metal parts to assist removal * perform start up and shut down of equipment * weld basic joints in various positions | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **17. Interpret hydraulic symbols and flow on a schematic drawing**   * identify basic hydraulic components * inspect operation of hydraulic circuit * verify basic hydraulic component functions * identify essential safety practices related to the operation of agriculture equipment using hydraulics * perform routine service and maintenance using appropriate service manuals * reference the service manual for correct schematic of component | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **18. Maintain and repair basic hydraulic systems**   * review equipment specifications (relief valve pressures, pump output, engine revolutions per minute (rpm), and operating temperature) to accurately test the system * comply with personal safety practices concerning clothing, tool usage, proper ventilation of fumes and securing machining * inspect system for temperature, pump flow, pressure tests, leakage etc. * use a pressure and flow tester in diagnosing malfunctions and repairing hydraulic system * perform all procedures according to manufacturing requirements | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **19. Inspect hydraulic components**   * complete visual inspection to identify customer complaint based on how the system is supposed to operate * consult with worksite professional to determine appropriate inspection and test(s) to perform based on customer concern * compare test to manufacturer specifications * perform tests according to manual procedures * verify an accurate diagnosis of the problem * wear appropriate personal protective equipment (PPE) when checking for leaks * properly uses safety equipment appropriate to working conditions * adjust pressure control and relief valves * measure pressure within hydraulic system * measure flow within hydraulic system * diagnose hydraulic failure * prepare for service or cleanup work area, return tools to proper location * complete appropriate documentation | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **20. Repair and maintain system components**   * consult with worksite professional to determine appropriate inspection and test(s) to perform based on customer concern * retrieve shop manuals and/or electronic retrieval systems * change filters and drain, flush, and refill the hydraulic system * repair and replace parts of the system according to manufacturing procedures and specifications * verify service and adjust the system for proper operation * check fluid levels and condition * change hydraulic fluids * inspect system for external leaks and correct where necessary * clean and flush system based on MFG specifications and recommendations * maintain cleanliness during repair | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **21. Interpret electrical symbols and wiring schematics**   * locate and inspect sensors and monitoring systems * examine electrical circuits * interpret drawings and symbols in service manuals * apply information from schematics to identify flow through circuit current * test and troubleshoot electrical systems and components | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **22. Apply basic electrical theory**   * identify components in machinery that use electrical components * examine machines that use DC currents * operate tools and equipment to measure electrical output | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **23. Repair failed components and/or repair of wiring**   * interpret a circuit diagram to trouble shoot an electrical problem * test electrical and electronic sensing devices * locate the parts to be tested for electrical problems * use instruments to measure Ohms, amps, and volts | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **24. Inspect and diagnose electrical/electronic components**   * complete visual inspection to identify customer complaint based on how the system is supposed to operate * consult with worksite professional to determine appropriate inspection and test(s) to perform based on customer concern * compare test to manufacturer specifications * perform tests according to manual procedures * verify an accurate diagnosis of the problem * wear appropriate personal protective equipment (PPE) when checking for leaks. * use safety equipment appropriate to working conditions * prepare for service or cleanup work area, returns tools to proper location * complete appropriate documentation | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **25. Maintain and repair electrical/electronic components**   * repair common failures related to electrical components * obtain equipment and materials needed * repair switches, connectors, relays, solenoid devices for proper operation as needed * repair the wires to ensure proper connection and wearing, rubbing, or fraying * inspect devices and wires during maintenance and repairs * clean-up work area and return tools to proper location * complete appropriate documentation | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **26. Troubleshoot and install instrumentation and data acquisition system**   * complete visual inspection to identify customer complaint based on how the system is supposed to operate * connect equipment to diagnostic software to evaluate potential errors * consult with worksite professional to determine appropriate inspection and test(s) to perform based on customer concern * compare test to manufacturer specifications * perform tests according to manual procedures * verify an accurate diagnosis of the problem * wear appropriate personal protective equipment (PPE) when checking for leaks. * uses safety equipment appropriate to working conditions * clean-up work area and return tools to proper location * complete appropriate documentation | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **27. Dismantle defective machines and** **equipment**   * examine assembled product for visual and/or dimensional specification prior to tear down * prepare work area to lay out parts after disassembly * remove parts according to proper procedure * examine parts for defects, such as breakage or excessive wear * document part orientation and location * maintain organization and clean work environment | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **28. Reassemble machines and equipment**   * gather equipment required to reassemble machinery and equipment * study blueprints or manufacturers' manuals to determine correct installation or operation of   machinery   * assemble and adjust agricultural equipment, following manufacturer’s direction * repair or replace broken or malfunctioning components of machinery or equipment * record parts or materials used and orders or requisition new parts or materials as necessary * maintain organized and clean work environment * verify set up meets assembly requirements and product specifications * operate newly repaired machinery or equipment to verify the adequacy of repairs | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **29. Calibrate and monitor equipment**   * perform calibrations of metering equipment * assist a worksite professional with set up prior to calibration * prepare tractors and/or equipment prior to calibration * verify tractor calibrations * assist with diagnosing monitoring systems with onboard vehicle diagnostics * perform calibration and no error codes in the software once calibration is completed | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| Competency Substitute (if you replaced a competency above, note the competency and rating) | **Year 1 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Year 2 Rating** | | | |
| **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** | **1**  **2**  **3** |
| **Comments**: | | | | |

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