

**RTC3311A**  
**Unit Descriptor**  
**Unit Sector**

**Perform specialised machinery maintenance**

Perform specialised machinery maintenance

No sector assigned

ELEMENT	PERFORMANCE CRITERIA
1. Carry out engine/equipment checks	1.1 Timed and regular <b>engine equipment</b> checks are carried out on <b>specialised machinery and equipment</b> as specified in operator's manual 1.2 All relevant grease or lubricant points are lubricated according to manufacturers' specifications 1.3 Oils and filters are changed at intervals prescribed in operator's manual 1.4 Hydraulic hoses and systems checked for deterioration and defects actioned in line with supervisor's instructions 1.5 <b>Occupational Health and Safety hazards</b> in the workplace are identified, risk assessed and reported according to enterprise requirements
2. Carry out transmission checks	2.1 Drive and steering clutches are checked for operation and adjustment in line with operator manual 2.2 Transmission oil levels are checked in line with operator manual 2.3 Tracks/wheels and undercarriage are checked for oil leaks and wear 2.4 Faulty seals or leaks are identified and corrective actions taken according to operator's instructions 2.5 Machine is regularly cleaned as an integral part of maintenance checks
3. Maintain components and attachments	3.1 Suitable <b>personal protective equipment</b> is selected, used, maintained and stored according to <b>Occupational Health and Safety requirements</b> 3.2 <b>Machine operational replacement wear components</b> are checked for wear and condition 3.3 Worn or unserviceable replacement components are replaced as part of daily routines 3.4 Component inspection and replacement activities are completed safely following enterprise and industry guidelines 3.5 <b>Moving operational components</b> are checked for wear and condition and adjusted to the tolerances specified in the operator's manual where applicable 3.6 Work areas are cleaned, returned to operating condition and maintained according to enterprise and Occupational Health and Safety requirements

4. Record maintenance
- 4.1 Identified faults and defects are recorded in machine record
  - 4.2 Maintenance procedures including duplicates usage are recorded in workshop record
  - 4.3 Service or repair requirements are reported and actioned according to prescribed procedures

## KEY COMPETENCIES

What processes should be applied to this competency standard? There are a number of processes that are learnt throughout work and life, which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the key competencies, although others may be added. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process and 3 = perform, administer and design the process.

Key Competency	Example of Application	Performance Level
Communicating ideas and information	By discussing verbally specialised machinery and equipment maintenance with supervisors	1
Collecting analysing and organising information	Maintaining specialised machinery and equipment will require basic maintenance information to be gathered and organised accordingly	1
Planning and organising activities	Maintaining specialised machinery and equipment requires limited planning and organising	1
Working with others and in teams	Maintaining specialised machinery and equipment may require participation with others in a maintenance team	1
Using mathematical ideas and techniques	Associated with machinery and equipment servicing and maintenance can be applied	1
Solving problems	While maintaining specialised machinery and equipment, technical problems may arise requiring simple solution	1
Using technology	May be required to maintain specialised machinery and equipment	1

## RANGE STATEMENT

Specialised machinery and equipment	may include <ul style="list-style-type: none"><li>• heavy earthmoving equipment</li><li>• skid steer loaders</li><li>• self-propelled harvesters and pickers</li><li>• front end loaders</li><li>• irrigation equipments</li><li>• scissor lifts, forklifts, land levellers, feed mixers</li><li>• milking machinery and equipment</li><li>• specialised turf equipment</li><li>• specialised nursery equipment</li><li>• livestock feeding systems</li><li>• watering systems</li><li>• filtering and pumping equipment</li><li>• poultry performance monitoring equipment</li><li>• cultivation equipment</li><li>• fertilising application and grain handling equipment</li></ul>
Workplace maintenance hazards	may include <ul style="list-style-type: none"><li>• exposure to loud noise and fumes</li><li>• solar radiation</li><li>• dust and hazardous substances</li><li>• oil and grease spills</li><li>• electricity</li><li>• mechanical malfunctions and entanglement with machinery and equipment from exposed moving parts including hydraulics</li></ul>
Personal Protective Equipment	may include <ul style="list-style-type: none"><li>• boots</li><li>• hat/hard hat</li><li>• overalls</li><li>• gloves</li><li>• protective eyewear</li><li>• safety harness</li><li>• hearing protection</li><li>• respirator or face mask</li><li>• sun protection, eg, sun hat, sunscreen</li></ul>

**Occupational Health and Safety requirements**

may include procedures for

- operating and maintaining machinery and equipment including hydraulics and guarding of exposed moving parts
- hazard and risk control
- manual handling including lifting and carrying
- the provision of safety decals and signage
- handling, application and storage of hazardous substances
- outdoor work including protection from solar radiation, dust and noise
- lock out or danger tag procedures
- protection of people in the workplace
- the appropriate use, maintenance and storage of personal protective clothing and equipment

**Regular maintenance checks**

may include

- gauges, fan, engine oil, air cleaners, eg, wet and dry
- visible gaskets
- exhaust colour, tyres
- tracks
- track roller and carriers
- fuel and oil filters
- crankcase ventilation
- cooling systems
- belts and chains
- transmission
- gearbox
- hydraulic hoses
- hydraulic systems
- final drives
- oilers
- batteries and electrical systems
- level linkage wear
- oil and fuel leaks
- brakes
- Rollover Protection Systems/safety guards
- guards over exposed parts
- sources of hazardous noise

**Machinery and equipment maintenance**

may include

- operating checks
- daily checks
- programmed maintenance
- breakdown maintenance
- prescribed lubrication

## Transmission checks

may include

- clutches
- gearbox
- direct drive and power shaft transmission
- torque converter
- final drives

## Tracks/wheels and undercarriage wear and tear checks

may include

- sprockets
- idler wheels
- track roller frames
- track rollers
- carrier rollers
- track chains
- track shoes and grousers
- tyre pressure and abnormal wear patterns

## Engine equipment

may include

- oil/coolant levels
- filters
- oil
- air
- fuel
- air conditioner
- fuel filters
- crankcase vents
- air cleaners

## Machine operational replacement wear components

may include

- ground engaging components
- buckets
- blades
- cutter teeth and forks

## Moving operational components

may include

- elevator and loading chains
- cutters/knives

The sport and recreation industry

covers

- industry sectors of community recreation, fitness, outdoor recreation and sport
- significant roles played by activity organisations, industry peak bodies, professional organisations
- large volunteer base
- high turnover of volunteers
- high levels of part time and casual employment
- irregular working hours
- relatively few professional positions
- workforce employed mostly in operational positions
- mainly small business or self-employed personnel
- slow to take up technology
- over 2/3 of the sport and recreation industry have no formal/recognised qualifications
- significant reliance upon industry credentials and involvement in the activity itself

## EVIDENCE GUIDE

**Critical aspects of evidence to be considered**

- Assessment must confirm sufficient knowledge in maintaining specialised machinery and equipment
- Assessment of performance should be over a period of time covering all categories from the Range Statements applicable to the learner's work environment
- In particular, assessment must confirm the ability to
  - properly maintain specialised machinery and equipment has been according to enterprise guidelines and industry best practice
  - transfer the skills and knowledge required to maintain specialised machinery and equipment to a range of work environments and contexts, eg, this could include different machinery and equipment, operational systems, maintenance procedures and working environments

**Interdependent assessment of units**

- This unit must be assessed after attainment of competency in the following unit(s)
  - Nil
- This unit must be assessed in conjunction with the following unit(s)
  - Nil
- For the purpose of integrated assessment, this unit may be assessed in conjunction with the following unit(s)
  - Nil

**Required knowledge and skills**

- Required knowledge
  - Engine function principles
  - Turbo charging and after cooling
  - Assessing engine specifications in line with power requirements
  - All engine electric and hydraulic indicators and gauges
  - Transmission and drive systems
  - Safety including relevant Occupational Health and Safety issues, Occupational Health and Safety legislative requirements and codes of practice
  - Machinery and equipment operation principles
  - Occupational Health and Safety responsibilities of employees and employers
  - Hazard identification and control
- Required skills
  - Carry out engine/equipment checks
  - Carry out transmission checks
  - Maintain machinery and equipment components
  - Record maintenance

**Resource implications**

- Physical resources - assessment of this competency requires access to
  - engine equipment
  - personal protective equipment
  - machinery and equipment
  - appropriate documentation and resources normally used in the workplace
- Human resources - assessment of this competency will require human resources consistent with those outlined in the Assessment Guidelines. That is, assessors (or persons within the assessment team) should
  - be competent in this unit
  - be current in their knowledge and understanding of the industry through provision of evidence of professional activity in the relevant area
  - have attained the National Competency Standards for Assessment: BSZ401A, BSZ402A and BSZ403A

**Consistency in performance**

- Competence in this unit must be assessed over a period of time in order to ensure consistency of performance over a Range Statements and contexts applicable to the work environment

**Context for assessment**

- This unit of competency must be assessed in the context of a sport or recreation activity. For valid and reliable assessment the sport or recreation activity should closely replicate the work environment. The environment should be safe with the hazards, circumstances and equipment likely to be encountered in a real workplace
- Assessment of this unit of competence will usually include observation of processes and procedures, oral and/or written questioning on required knowledge and skills and consideration of required attitudes
- Where performance is not directly observed and/or is required to be demonstrated over a "period of time" and/or in a "number of locations", any evidence should be authenticated by colleagues, supervisors, clients or other appropriate persons

**Essential Assessment Information**

There is **essential information about assessing this competency standard for consistent performance and where and how it may be assessed** , in the Assessment Guidelines for this Training Package. All users of these competency standards must have **access** to the **Assessment Guidelines** . Further advice may also be sought from the relevant **sector booklet** .