

Australian Standard®

**Earth-moving machinery—Off-the-road
wheels, rims and tyres—Maintenance
and repair**

**Part 1: Wheel assemblies and rim
assemblies**



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- AUSTRROADS
 - Australian Industry Group
 - Construction and Mining Equipment Industry Group
 - Department of Defence
 - Department of Natural Resources and Mines, Qld
 - Department of Primary Industries and Fisheries, Qld
 - Department of Primary Industries, Mine Safety, NSW
 - Safety Institute of Australia
 - WorkCover New South Wales
-

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**Earth-moving machinery—Off-the-road
wheels, rims and tyres—Maintenance
and repair**

**Part 1: Wheel assemblies and rim
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Originated as AS 4457—1997.
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PREFACE

This Standard was prepared by the Standards Australia Committee ME-063, Earthmoving Equipment, at the request of users of earthmoving equipment, particularly those involved in major mining operations, and is supported by the inspectorates of Queensland, New South Wales and Western Australia. These bodies have expressed their concern that wheels, rims and tyres for earthmoving equipment are being subjected to ever-increasing loads and forces. The origin of the forces is the larger, heavier trucks and payloads being introduced and the higher speeds these vehicles can achieve.

Where a wheel or a rim assembly has disintegrated, pieces of the rim or wheel assembly have been thrown for considerable distances. Fatalities and serious injuries have also occurred when correct procedures have not been followed. The release of large quantities of energy in an uncontrolled manner poses a risk to persons nearby and in order that this element of risk be minimized, some controls over the repair, maintenance and inspection of wheels and rim assemblies are considered necessary.

This Standard supersedes AS 4457—1997, *Earth-moving machinery—Off-highway rims and wheels—Maintenance and repair*, and includes revised information relating to tyre inflation pressure and takes into account individual or group site requirements.

The AS 4457 series of Standards comprises two parts as follows:

- Part 1: Wheel assemblies and rim assemblies (this Standard)
- Part 2: Tyres

The term 'normative' has been used in this Standard to define the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

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STANDARDS AUSTRALIA

Australian Standard

**Earth-moving machinery—Off-the-road wheels, rims and tyres—
Maintenance and repair**

Part 1: Wheel assemblies and rim assemblies

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out the requirements for the identification, safe demounting, inspection, maintenance, testing and mounting of off-the-road wheel and rim assemblies for rubber-tyred earth-moving machinery. It applies to the fitment of wheel assemblies and rim assemblies of not less than 600 mm (24 inches) nominal diameter.

1.2 OBJECTIVE

The objective of this Standard is to assist manufacturers, suppliers, employers, repairers and users of earth-moving machinery in minimizing the risk to health and safety of employees working with or otherwise near wheels and rims of earth-moving machinery.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- | | |
|--------|--|
| 1171 | Non-destructive testing—Magnetic particle testing of ferromagnetic products, components and structures |
| 1627 | Metal finishing—Preparation and pretreatment of surfaces |
| 1627.4 | Part 4: Abrasive blast cleaning of steel |
| 2207 | Non-destructive testing—Ultrasonic testing of fusion welded joints in carbon and low alloy steel |

AS/NZS

- | | |
|--------|---|
| 1554 | Structural steel welding |
| 1554.5 | Part 5: Welding of steel structures subject to high levels of fatigue loading |
| 4360 | Risk management |

1.4 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

NOTE: It is suggested that the readers of this Standard also refer to Figures 1.3 to 1.5 for clarification.

1.4.1 Cold inflation pressure

The tyre inflation pressure set in accordance with both the tyre and rim manufacturer's recommendations.

1.4.2 Competent person

A person who has, through a combination of training, education and experience, acquired knowledge and skills enabling that person to perform correctly a specified task.

1.4.3 Rim base

The part of the assembly on which the tyre is mounted and supported. A typical rim base comprises a number of components, e.g. back section, centre section and gutter section which are welded together to form the rim base.

1.4.4 Rim assembly

The assembly of components which together comprise the rim. A typical rim assembly comprises a rim base, flanges, bead seat band and lock ring, but without a tyre mounted. (See Figure 1.1.)

A rim assembly is mounted to earth-moving machinery by a system of wedges or cleats. (Figure 1.2 shows dual rim assemblies mounted by cleats to the wheel hub.)

1.4.5 Wheel

A rotating load-carrying member between the tyre and the axle. It usually consists of two major parts, as follows:

- (a) The rim base.
- (b) The wheel disc/hub/nave plate.

A wheel can consist of a rim base or rim assembly with a disc or integrated hub. (See Figures 1.3 and 1.4.)

The rim and wheel disc may be integral, permanently attached, or detachable.

1.4.6 Wheel disc/nave plate

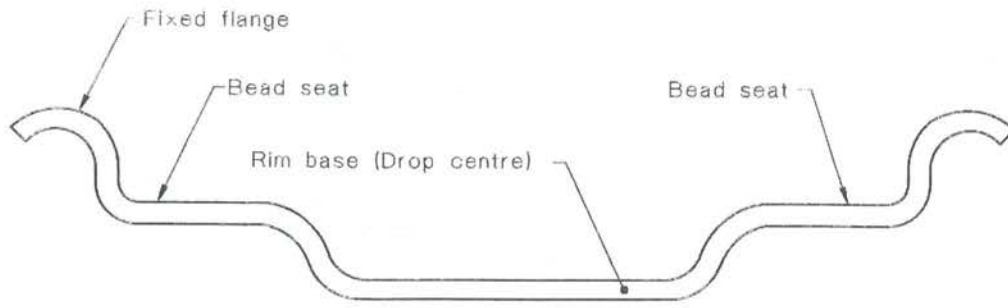
That part of the wheel which is the supporting member between the axle or hub and the rim base.

1.4.7 Wheel assembly

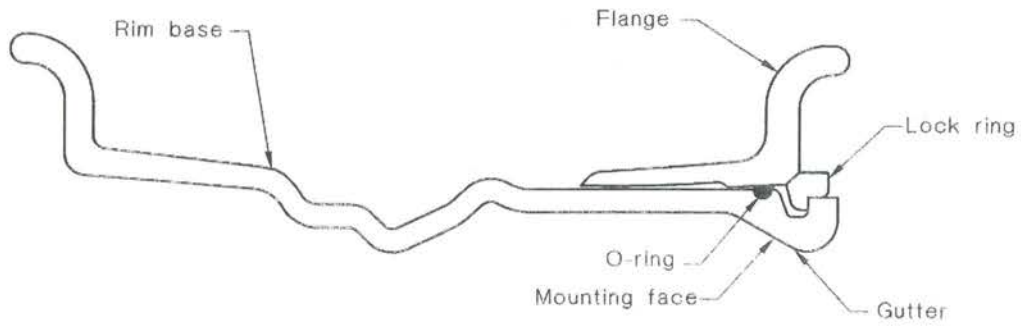
Comprises a rim base, flanges, bead seat band, lock ring and a wheel disc or nave plate welded to the rim base.

A wheel assembly is mounted to earth-moving machinery by a wheel disc and fasteners. (Figure 1.4 shows dual rim assemblies mounted by discs to a wheel hub.)

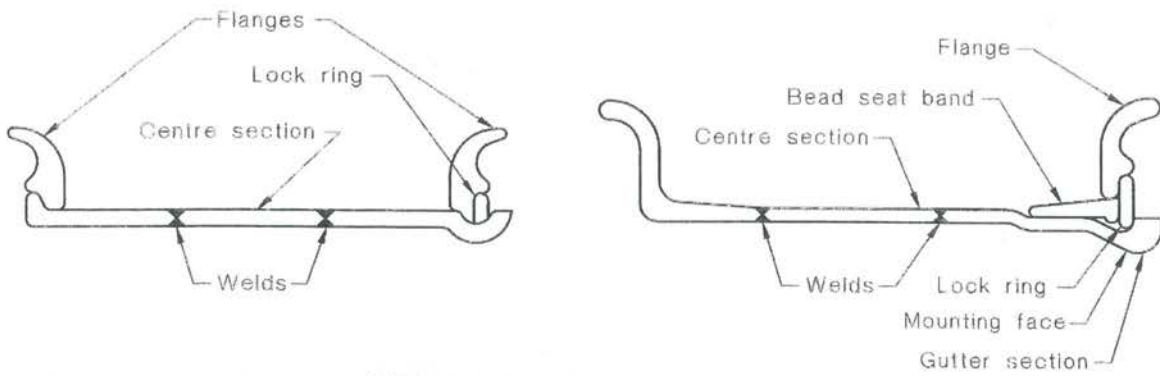
NOTE: Figure 1.5 illustrates the nomenclature used for wheel/rim assemblies.



(a) Typical one-piece rim

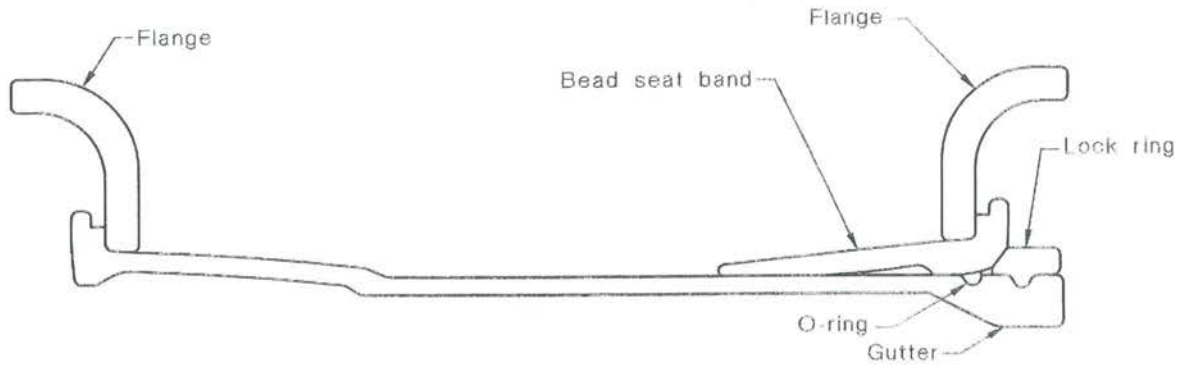


(b) Typical three-piece rim assembly

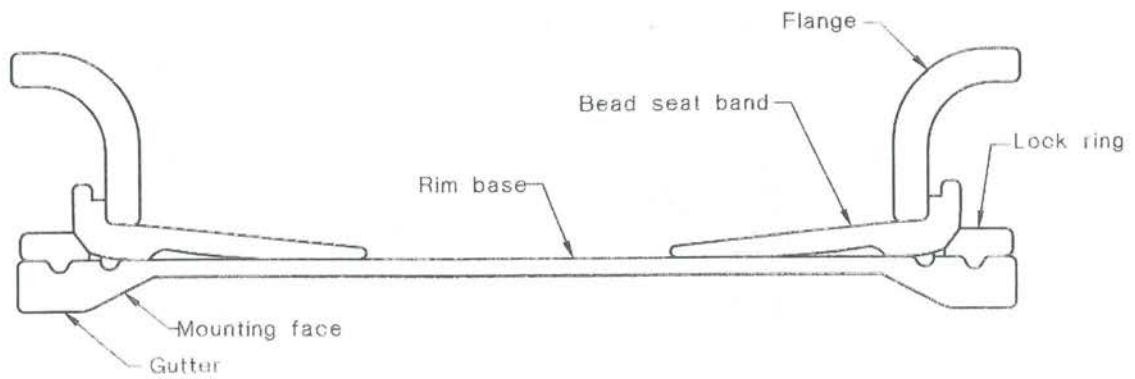


(c) Typical four-piece rim assemblies

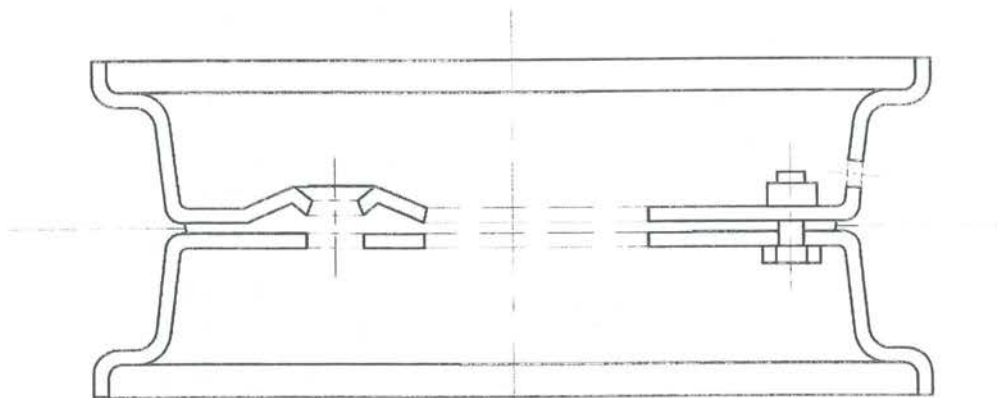
FIGURE 1.1 (in part) TYPICAL RIM ASSEMBLIES



(d) Typical five-piece rim assembly



(e) Typical rim assembly with double gutters



(f) Typical split rim assembly

FIGURE 1.1(in part) TYPICAL RIM ASSEMBLIES

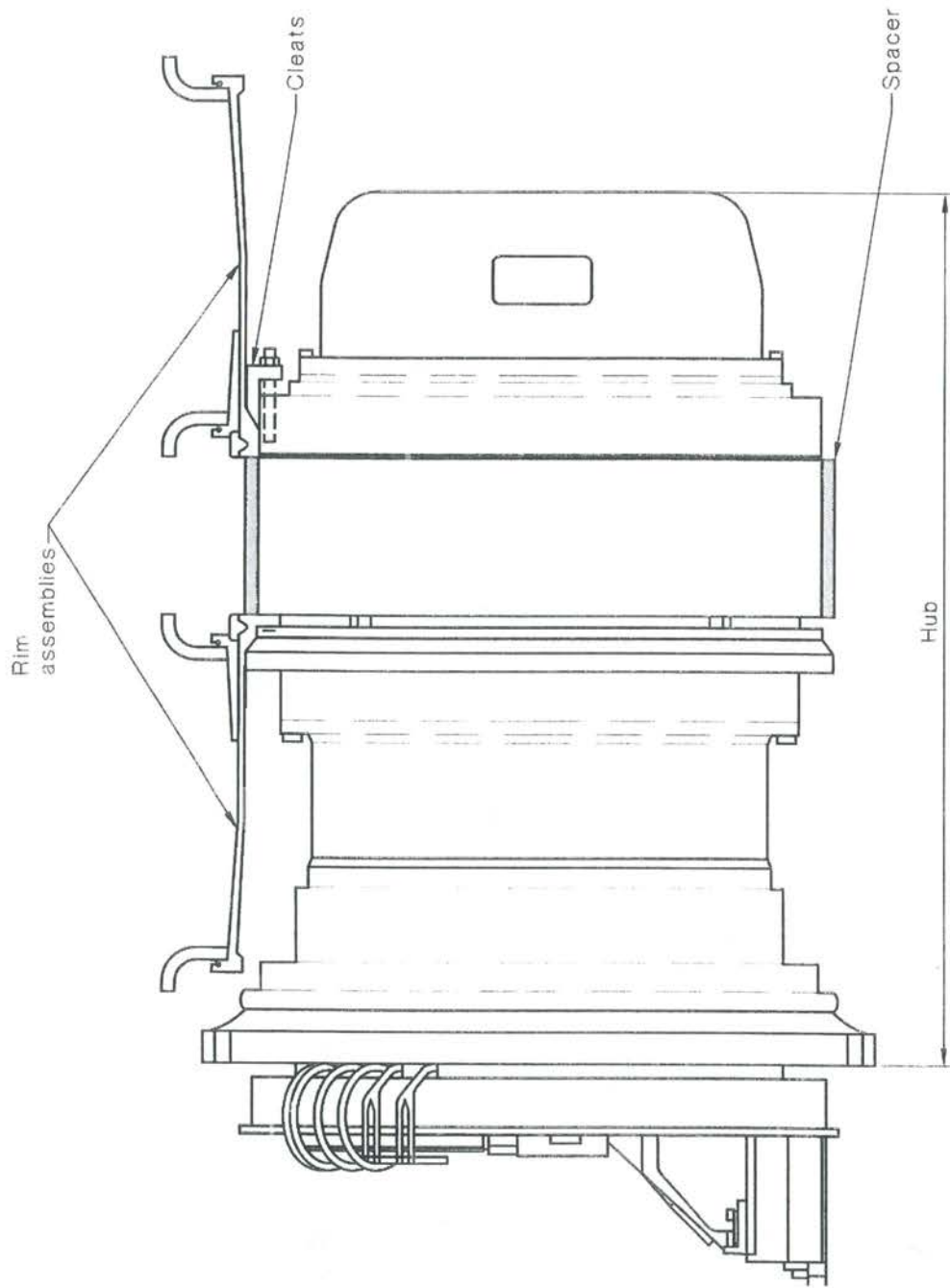
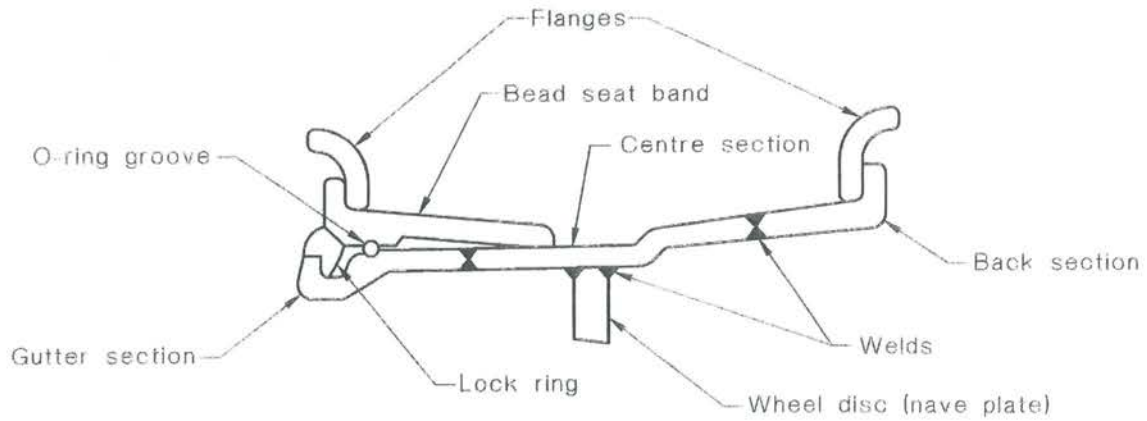


FIGURE 1.2 DUAL RIM ASSEMBLY SECURED BY CLEATS



Typical five-piece wheel assembly

NOTE: The configuration of the wheels shown is solely for the purpose of illustration. It does not purport to denote design requirements.

FIGURE 1.3 TYPICAL WHEEL ASSEMBLY

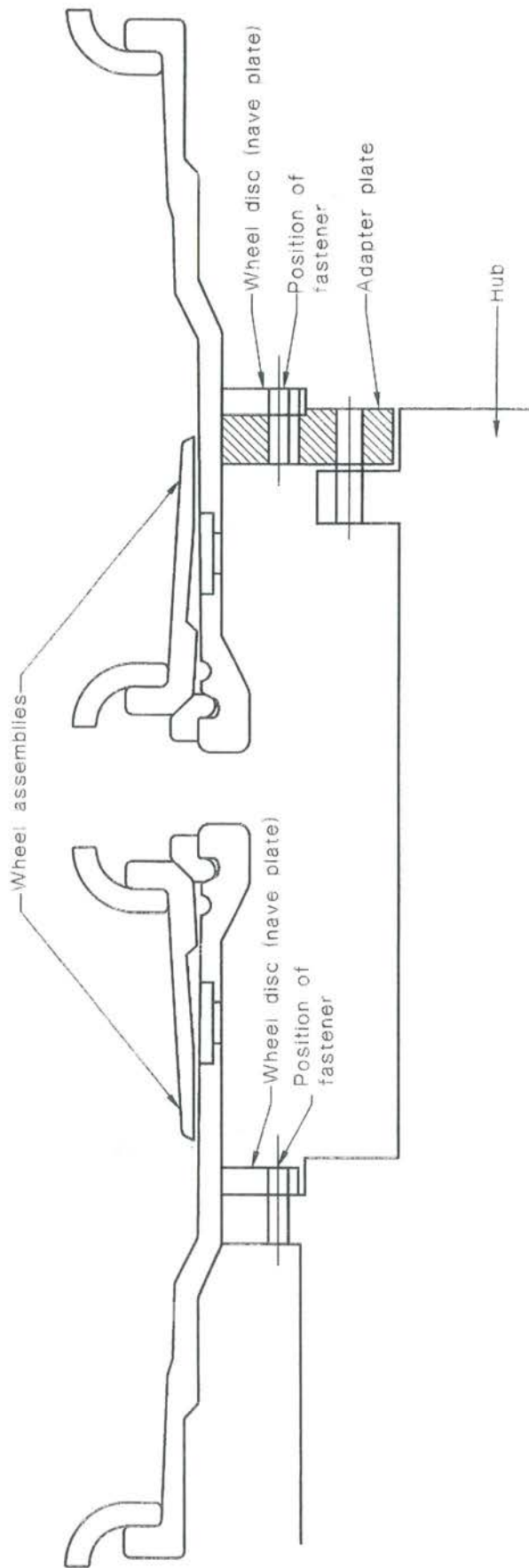


FIGURE 1.4 DUAL WHEEL ASSEMBLIES

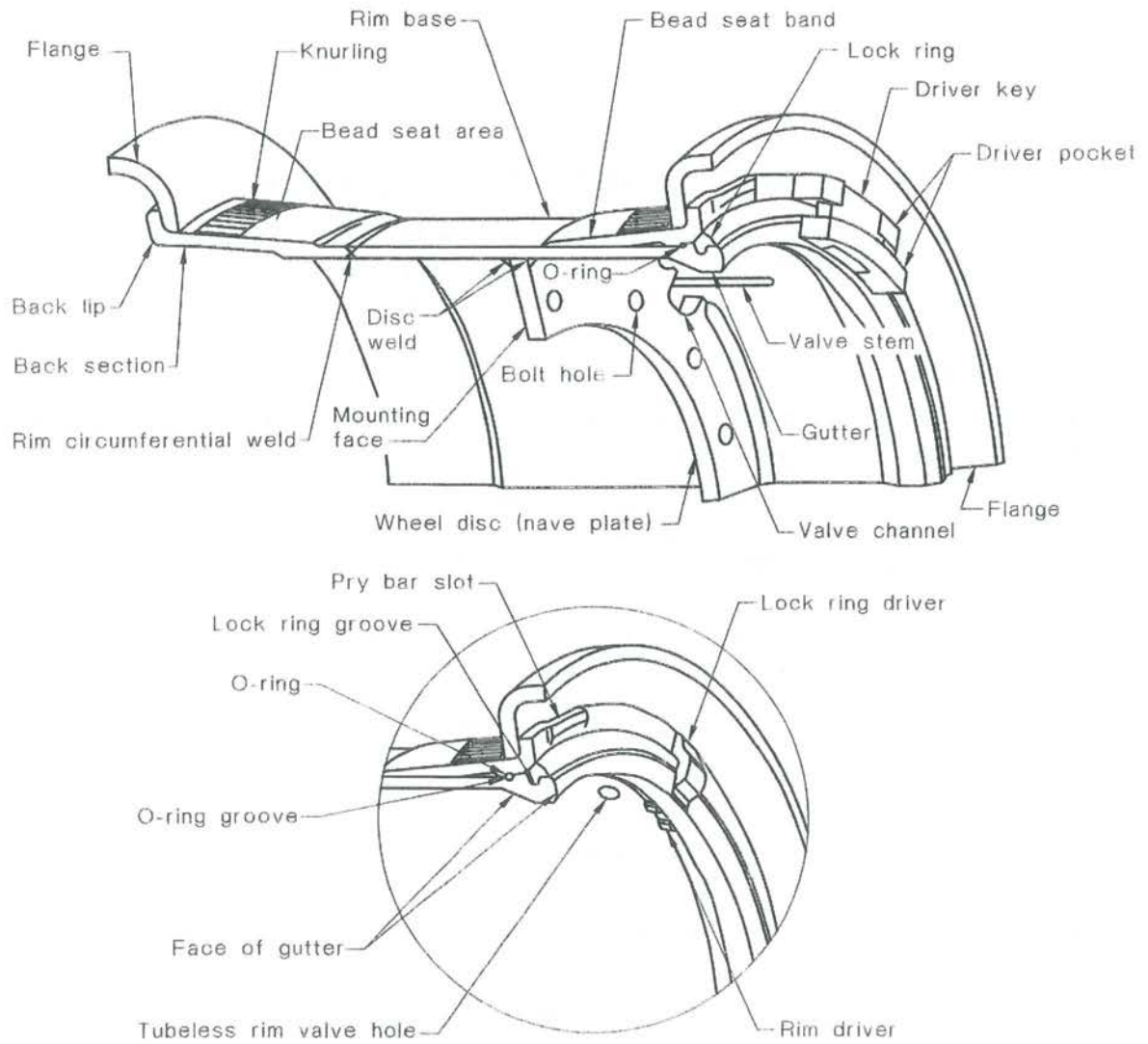


FIGURE 1.5 WHEEL/RIM NOMENCLATURE

SECTION 2 GENERAL REQUIREMENTS

2.1 DESIGN AND CONSTRUCTION OF REPAIRABLE PARTS

Wheel and rim assemblies are designed and constructed so as to withstand the forces and loadings foreseen by the designer. Any replacement rim or wheel component, base section or rim assembly shall provide a performance not inferior to that of the original.

2.2 WELDING

Where welding is required on wheels or rims, it shall be in accordance with the accepted code of practice for the material involved. Welding and testing shall be carried out in accordance with the relevant requirements of AS/NZS 1554.5.

Welding or the application of heat shall not be applied to fasteners, any wheel or rim assembly that is mounted with a tyre regardless of whether the tyre is deflated or not. This also includes final drive type wheels.

NOTE: For final drive type wheels, e.g. scraper wheels, there is risk from the lubricants or flammable materials within the final drive assembly exploding if heated. Appropriate controls should be used to reduce the risk from the hazard.

2.3 IDENTIFICATION

Rim bases shall be permanently marked with a unique, clearly seen identification number. There shall also be permanent markings of types/styles, rim size and date of manufacture. Such identification shall be visible after the tyre has been fitted and inflated.

Acceptable means of identification include stamping or embossing the components with alphanumeric codes.

It is the responsibility of the user to ensure that a wheel and rim shows identification marks before it enters service.

SECTION 3 REMOVAL AND INSTALLATION

3.1 GENERAL

Components shall be checked for compatibility prior to assembly.

CAUTION: COMPONENTS ASSOCIATED WITH A WHEEL OR RIM ASSEMBLY ARE NOT ALWAYS INTERCHANGEABLE WITH OTHER SIMILAR COMPONENTS.

The total energy stored within an inflated tyre is sufficient to cause death or severe injury to persons nearby in the event of the unexpected release of that energy. For this reason, any operation within the scope of this Standard shall be performed by competent personnel following defined procedures, which shall include as a minimum those given in Clause 3.2.

Procedures for the mounting and demounting of tyres to and from wheel and rim assemblies are provided in Appendix A.

3.2 REMOVAL AND DEMOUNT PROCEDURE

3.2.1 Inspection prior to removal

Before commencing any work to remove the tyre and rim or wheel assembly from the machine, the person who will be carrying out the removal shall determine the reason for removal. The person shall also visually inspect the assembly to ensure that, as far as is practicable, no immediate threat to health and safety is posed.

If the rim or wheel assembly is part of a dual assembly then both tyres and rim or wheel assemblies on the dual assembly shall be inspected prior to commencement of removal.

3.2.2 Location of machine

The machine should be parked at a safe distance from any traffic on a nominally level, accessible, adequately lit, well ventilated and a well-compacted and well-drained surface.

3.2.3 Removal of tyre, rim and wheel assembly

The tyre, rim and wheel assembly shall be removed in accordance with the equipment manufacturer's or the site's written procedures.

Prior to loosening securing fasteners, any tyre fitted to a rim or wheel assembly should be deflated to zero pressure or nominal handling pressure. If the pressure is to remain above zero, undertake a risk assessment in accordance with AS/NZS 4360 to consider the risk from all the associated hazards. It is necessary to compare the handling difficulties of tyre assemblies at zero pressure with catastrophic failure or disassembly of rim or wheel components from pressures above zero.

For dual assemblies both tyres shall be deflated.

Any cleats and wedge bands, if fitted, shall be loosened prior to the complete removal of fasteners.

NOTE: It is recommended that any tyre fitted to a rim be fully deflated before it is removed from any equipment.

3.2.4 Demounting tyre from wheel or rim assembly

The tyre shall be fully deflated and demounted from the wheel or rim assembly in accordance with the written procedures of either the tyre manufacturer and the wheel or rim assembly manufacturer or site specific procedures.

NOTE: It is recommended that the valve core or core housing be removed and a probe inserted into the valve to ensure no obstruction is present which may prevent full deflation.

3.3 INSPECTION AND REPAIR

The wheel or rim assemblies shall be tested and, where necessary, repaired in accordance with the requirements of Sections 4 and 5.

3.4 MOUNT AND FIT PROCEDURE

3.4.1 Mounting tyre on rim or wheel assemblies

The tyre shall be mounted to the rim or wheel assemblies in accordance with either the tyre and equipment manufacturer's procedure or site specific procedures.

Where mounting lubricant is used it shall be non-flammable and of non-hydrocarbon material and recommended by the tyre manufacturers.

Consideration should be given to the use of a suitable rust-inhibiting product to minimize rust and scale build up of the rim and components.

For outer facing lock rings on the outer rim or wheel of a dual assembly a lock ring retainer shall be fitted.

It is recommended lock ring retainers be fitted to all lock rings.

3.4.2 Inflation

Prior to inflating the tyre, the tyre and rim or wheel assembly shall be checked to confirm component compatibility, serviceability and correct assembly.

During initial inflation of a tyre after assembly, the tyre and the rim or wheel components shall be monitored for correct seating, particularly the lock ring and the correct positioning of the beads on the taper bead seats.

If, during initial inflation, the rim components are not seating correctly then the tyre shall be deflated and the rim components disassembled for inspection and the incorrect seating determined and rectified.

3.4.3 Replacing tyre and rim or wheel assembly

The tyre, rim or wheel assembly shall be reinstalled on the machine in accordance with the vehicle manufacturer's written procedures. Wheel fasteners shall be tightened to the torque recommended by the vehicle manufacturer and the tyre inflated to the pressure recommended by the tyre manufacturer.

Where dual assemblies are used, any other tyre on the hub shall also be reinflated.

The wheel fastener torque shall then be checked to ensure correct tension.

NOTE: Some vehicle manufacturers may require multiple checking of wheel fastener torques.

3.4.4 Alignment

The tyre and rim assembly shall be checked for squareness before and after torquing. Clearances should be checked prior to returning the vehicle to service.

SECTION 4 EXAMINATION OF RIM AND WHEEL ASSEMBLIES

4.1 GENERAL

In operation, all rim and wheel assemblies are subjected to loads and forces which can lead to fatigue within the material. This can lead to cracking of the rim or wheel assembly. If cracks are left undetected, the rim/wheel may suffer a catastrophic failure with potential risk to the health and safety of persons in the vicinity. Loss of tyre pressure can be one indication of cracking.

Cracks of the rim or wheel assembly are detected by careful inspection of the components. Where practicable, the inspection should be performed by the original manufacturer of the wheel assembly or rim assembly or by their agent. Where it is not practicable for the original manufacturer or agent to perform the inspection, it should be performed by a competent person in accordance with the requirements of this Standard.

4.2 IN-SERVICE VISUAL INSPECTION

Wheel and rim assemblies should be visually inspected at regular intervals. Faults or damage found during inspection shall be identified, marked and reported to the repairer.

4.3 PERIODIC TESTING

Testing shall be carried out at intervals that take into account work-site conditions and usage. To allow effective monitoring of rim conditions for safety purposes accurate service life should be recorded and test reports shall be retained.

4.4 PREPARATION PRIOR TO TEST

Surface preparation to yield a finish equivalent to that given in AS 1627.4, Class Sa 2, is the minimum requirement.

All areas to be examined shall be free of foreign materials that would interfere with the interpretation of results, e.g. scale, dirt, grease or paint.

4.5 INSPECTION REQUIREMENTS

4.5.1 General

All components of the rim assemblies and wheel assemblies shall be inspected for mechanical damage. Additionally, each component of the rim shall be inspected in accordance with Clauses 4.5.2 to 4.5.6. Indications found shall be classified in accordance with the requirements of Appendix B. Each testing technique shall be performed in accordance with the relevant requirements of the appropriate Australian Standard, as follows:

- (a) Magnetic particle testing..... AS 1171
- (b) Ultrasonic testing AS 2207

4.5.2 Lock ring

The lock ring shall be visually inspected for wear, corrosion and deformation.

If the ends of an unmounted lock ring are not touching or overlapping it should not be used.

4.5.3 Bead seat band

4.5.3.1 Visual inspection

The bead seat band shall be visually inspected for cracks, wear and corrosion in the areas in contact with the lock ring, flange, rim base or any weld.

4.5.3.2 Magnetic particle testing

The area of the bead seat band with which the flange is in contact, as well as any weld on the bead seat band, should be subjected to magnetic particle testing.

4.5.4 Flanges

The area of the flanges which are in contact with the bead seat band or the rim base as well as any butt weld, or other form of weld on the flange, shall be subjected to visual inspection for wear, cracking, fretting, corrosion, deformation or damage.

4.5.5 Rim base

4.5.5.1 Visual inspection

The area of the rim base in contact with any flange, bead seat band or lock ring shall be subjected to visual inspection for wear, cracking, fretting, corrosion or damage.

The valve (spud) hole shall be checked for corrosion, ovality and cracking.

In addition, the area across the inside surface of the rim base shall be visually inspected for corrosion.

The mounting face of the rim base shall be verified that it is in a suitable condition for fitment.

For wheel assemblies, the disc shall be examined for ovality in the holes, and cracking between the holes and at circumferential welds.

4.5.5.2 Magnetic particle testing

The following sections of the rim base shall be subjected to magnetic particle testing:

- (a) The area in contact with the flanges and the back section fillet radius.
- (b) The area in contact with the lock ring and any O-ring groove.
- (c) Any transverse weld.
- (d) Any circumferential weld. (See Clause 4.5.6.)

4.5.5.3 Ultrasonic testing

Where a weld defect is detected by magnetic particle testing, the extent of the damage shall be determined. Suitable methods include ultrasonic testing or grinding out (see Paragraph B4).

4.5.6 Wheel disc

In addition to the testing requirements of Clause 4.5.5, the area around wheel disc welds shall be subjected to both a visual inspection and magnetic particle testing. Mounting holes should be inspected for ovality and circumferential cracking.

The mounting face of the wheel disc shall be verified that it is in a suitable condition for fitment.

SECTION 5 REPAIR

5.1 GENERAL

Where practicable, the repairs should be carried out by the original manufacturer of the wheel assembly or rim assembly or their agent, employing techniques and materials at least equivalent to those used in the original manufacture. Where it is not practicable for the original manufacturer or their agent to carry out repairs, they may be carried out by a competent person in accordance with the requirements of this Standard and the manufacturer's specifications.

Rim and wheel repairers shall have processes in place to ensure that any repaired or modified rim maintains original dimensional and material specifications.

5.2 ALLOWABLE REPAIRS

5.2.1 Rim or wheel base

The gutter or back sections shall not be repaired. It is permitted to part-off or machine off either the gutter or back sections and to replace them with a new section. The damaged sections shall be rendered inoperable.

Rim base accessories such as drivers, valve protectors, valve stem support blocks are repairable to manufacturer's specification.

Wheel discs are replaceable or repairable to manufacturer's specifications.

5.2.2 Components

Unless authorized by the manufacturer no repairs to any lock ring, flange or bead seat band shall be undertaken except as provided in Clause 5.2.3. They shall be rendered inoperable.

5.2.3 Fretting

Fretting may be repaired where a method is specified by the manufacturer or a competent body.

5.2.4 Welds

All welds may be repaired in accordance with Clause 5.3.

5.3 WELDING QUALIFICATIONS

Where repairs are to be made by welding, it shall be performed by persons holding a certificate at least sufficient to permit the holder to carry out welding operations on pressure vessels in accordance with AS/NZS 1554.5. (See also Clause 2.2.)

5.4 STRESS RELIEVING

Where necessary, in the case of some forgings, the wheel assembly or rim assembly should be stress relieved in areas affected by welding.

5.5 SURFACE TREATMENT

The lock ring groove and all mating surfaces should be clean and free from corrosion.

All other surfaces should be treated to minimize corrosion. Suitable means include priming and painting.

5.6 INSPECTION AND TESTING OF REPAIRS

Upon completion of repairs involving welding, the wheel or rim shall be inspected and tested in accordance with Section 4.

5.7 MARKING AND REPORT

5.7.1 Marking

Where a wheel or rim assembly has been repaired, the repairer shall permanently mark the component.

The marking, preferably placed near the valve hole, shall include the following:

- (a) Repairer's identification.
- (b) Date of repair.
- (c) Rim size and unique identification if removed during repair (see Clause 2.3).

NOTE: The purpose of marking repairs is to identify that a particular wheel or rim assembly has been repaired and by whom. In this way, if a particular wheel or rim assembly requires frequent repair or a repairer's workmanship appears doubtful, an appropriate investigation may be initiated.

5.7.2 Report

The repairer shall provide a written report to the owner detailing the location and extent of repairs.

NOTE: The location of the repair may be indicated in terms of degrees clockwise from a reference point, such as the inflation valve.

APPENDIX A
ADDITIONAL REQUIREMENTS FOR MOUNTING AND DEMOUNTING
(Normative)

A1 GENERAL

This Appendix is provided in order to minimize the risks to the health and safety of those persons involved in the mounting and dismounting of tyres to rim and wheel assemblies and fitting and removing wheels and rim assemblies to earth-moving machinery. This Appendix is not intended to overrule any specific instructions provided by employers, rim or wheel manufacturers, or tyre manufacturers.

A2 INITIAL ACTION

When a tyre which is in use is found to be either deflated or running at an inflation pressure of less than 70 percent of the recommended cold inflation pressure, the site specific instructions or the procedure provided in Paragraphs A3 to A10 shall be applied.

NOTE: Tyres which have been run flat or under-inflated may have suffered damage to the casing or carcass, and reinflation may result in a serious or dangerous occurrence.

A3 INSPECTION

The tyre, wheel or rim assembly shall be inspected in order to assess the reason for deflation. The inspection shall include, but not be restricted to, the following areas:

- (a) The tyre, particularly in the area of the tread, side-wall and bead or rim line.
- (b) The rim, particularly in the area of the rim base, the gutter and lock-ring.
- (c) The valve, particularly the valve assembly, valve core, associated hoses and couplings.
- (d) The other tyre in a dual assembly if fitted.

A4 MACHINERY JACKING

A4.1 General

Jacking-up earth-moving machinery shall only be performed by competent persons using equipment that is certified and within the required SWL range for the equipment involved.

A4.2 Pre-jacking check

Prior to jacking the machine, the person who is to perform the task shall consider at least the following:

- (a) That any payload (including that in bowls or buckets) has been removed.
- (b) That the parking brake is applied.
- (c) That the machine is isolated according to the manufacturer's and/or site procedures.
- (d) That the jack and safety stands are certified and correctly rated to support the machine mass.
- (e) That the jacking and support points to be used are those recommended by the machine manufacturer or specified site procedures.
- (f) That sufficient suitable wheel chocks are available for use.

- (g) In the case of scrapers, loaders, graders and dozers, the bowl, bucket, or blade shall be lowered to the ground.
- (h) In the case of articulated vehicles, the turn restraining link shall be in place.

A4.3 Pre-jacking check-list

Where a tyre or wheel or rim assembly is to be removed away from a workshop, the person should check that—

- (a) access to the machine to carry out the necessary work is possible;
- (b) sufficient space is available around the machine to enable the wheel or rim assembly to be removed with safety;
- (c) the machine is out of any traffic flow;
- (d) the machine is on a nominally flat, well-drained and adequately lit surface;
- (e) a risk assessment has been completed; and
- (f) the surface under the machine is capable of supporting the load without subsidence.

NOTE: If the surface is not capable of supporting the load, it will be necessary to use a suitable jack support plate.

A4.4 Jacking procedure

The machine should be jacked up using the machine manufacturer's approved jacking points it stipulated, or the sites procedures to a height sufficient to allow the safety stand or a self-locking stand to be positioned under the machine. Once the stand has been positioned, the machine may be lowered onto the stand and the jack lowered clear of the machine.

A5 DEFLATION

Deflation of a tyre shall only be performed by a competent person who is wearing appropriate personal protective equipment, for example eye protection, hearing protection and gloves, and using a deflation device operated from a safe position.

NOTE: Consideration should be given to fitting noise suppression devices to the deflation device.

A6 ASSESSMENT AFTER REMOVAL FROM THE MACHINE

Further attempts to determine the cause of deflation should be made after the tyre and rim or wheel assembly has been removed from the machine.

A7 TYRE INNER SURFACE INSPECTION

After the tyre has been demounted the inner surface of the tyre shall be inspected. Particular attention shall be paid to any deformations or irregularities of the inner surface, for example exposed casing or carcass ply, any break in the casing or carcass, or any cracking of the inner liner.

A8 TORQUING PRECAUTIONS

The operator who is to torque the rim or wheel fasteners shall observe at least the following:

- (a) Wear appropriate personal protective equipment, for example hearing protection, eye protection and hand protection.
- (b) Verify that the mounting surfaces are clean and undamaged, for example that there is no oil, grease or paint present and there are no nicks or burrs.
- (c) Check nuts, bolts and studs as appropriate for wear or damage.

- (d) Check rim and wheel mounting hardware for wear and damage.
- (e) Lubricate fastening devices in accordance with manufacturer's specifications.
- (f) Ensure that a regularly calibrated torque wrench is used.
- (g) Torque in a pattern according to the manufacturer's specifications.
- (h) Retorque to the manufacturer's specific requirements.
- (i) Where taper mounting systems are used, ensure that the rim run-out is within acceptable limits.

A9 INFLATION

A9.1 General

A tyre which has been run flat or in a severely under-inflated condition shall not be fitted or inflated until the integrity of the tyre has been established.

Where the tyre is part of a dual assembly then both tyres shall not be inflated until the integrity of the tyre and rim or wheel assembly has been established.

A9.2 Inflation

The operator who is inflating the tyre should observe the following precautions. (See also Clause 3.4.2):

- (a) Ensure that a regularly calibrated pressure gauge is used.
- (b) Before inflating the tyre, check to ensure that the O-rings and lock rings are in place.
- (c) Connect an air-line with an inflation tool and remote deflation valve to the valve assembly. An in-line pressure gauge should also be used.
- (d) Inflate the tyre to a pressure not exceeding 70 kPa while gently tapping the lock ring to ensure the lock ring is seated.
- (e) A pressure of 70 kPa is not exceeded until the lock ring is correctly and firmly seated.
- (f) Stand away from the direct path of any component that may suddenly disassemble.
- (g) Continue to inflate the tyre to the recommended pressure while constantly monitoring the pressure to prevent over-inflation and ensure that the beads are correctly seated.
- (h) Check for leaks after inflation.

A10 STORAGE AND TRANSPORT OF TYRES MOUNTED ON RIM OR WHEEL ASSEMBLIES

A10.1 Storage pressure

Tyres that have been in service that are to be stored either as a tyre and rim assembly or as a tyre and wheel assembly, should be stored at a pressure determined through a risk assessment in accordance with AS/NZS 4360, that has given appropriate consideration to, but not limited to, service life, rim service history and performance, machine application and sizes of the rim.

A10.2 Storage conditions

A10.2.1 Surface

The surface upon which the tyre and rim or wheel assembly is to be stored should be a well-compacted level all-weather surface.

A10.2.2 *Orientation*

The orientation of the tyre and rim or wheel assembly, i.e. flat on its side or on edge, is not critical, however, the tyre should be prevented from the possibility of unplanned movement.

A10.2.3 *Period of storage*

Tyres and rim or wheel assemblies stored in open conditions suffer damage or deteriorate. Tyres and rim or wheel assemblies which are to be stored for long periods should be protected to prevent deterioration or damage.

A10.3 Highway transport

Where the tyre and rim or wheel assembly is to be transported elsewhere, the tyre should be transported at recommended cold pressure or at a pressure in accordance with the owner's written procedures.

APPENDIX B
CLASSIFICATION OF DEFECT
(Normative)

B1 GENERAL

This Appendix sets out the dimensional criteria to be used by a competent person in determining whether a surface indication is a defect needing repair or not. Dents in the gutter section and other parts of the rim base are not classified as defects unless the damage will have a detrimental effect on the service of the rim base.

B2 LENGTH OF INDICATION

Where the length of any surface indication in the lock-ring groove, O-ring, groove or back flange areas is greater than 5 mm, the rim shall be subjected to further investigation to determine the depth and extent of the indication.

B3 DEPTH OF INDICATION

Where the depth of any surface indication in the lockring, O-ring or black flange areas is found to be greater than 1.0 mm, it shall be classified as a defect and shall be repaired in accordance with the requirements of Section 5.

B4 INVESTIGATION

An acceptable method for further investigation is to grind out the indication using a die grinder or similar equipment. Where the depth of any indication is found to be less than 1.0 mm, the area investigated shall be ground to blend in the exploratory grinding. Care should be exercised in the O-ring groove to ensure a seal will still be possible.

NOTES

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