
PACCAR & DEALER
TMC
Technical &
Maintenance
Conference

BEST PRACTICE COUPLING MAINTENANCE

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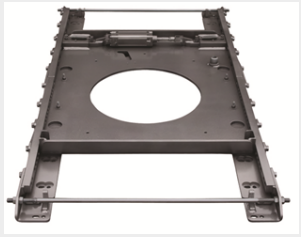
- Nemanja Miletic & Adam Taylor
  SAF-HOLLAND Australia
  Fifth Wheels and Tow Hitches
- Murray Gayski
  BPW Transpec
  AUTOMATIC PIN TYPE COUPLINGS

Nemanja Miletic & Adam Taylor
SAF-HOLLAND Australia

Best Practice Coupling Maintenance

Couplings – different types, different installations, different purposes…









What do they have in common?

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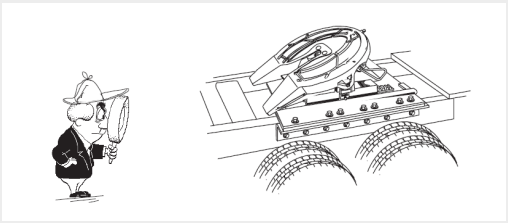
They all need a bit of love… called “maintenance”

It starts with a **daily** inspection and the correct coupling procedure



Periodic inspection and maintenance -
We recommend every 3 months or 50,000km as a minimum, but you know your application better

Rebuild and replace – always replace worn and damaged components with original parts

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Inspection and maintenance - What are we looking for?

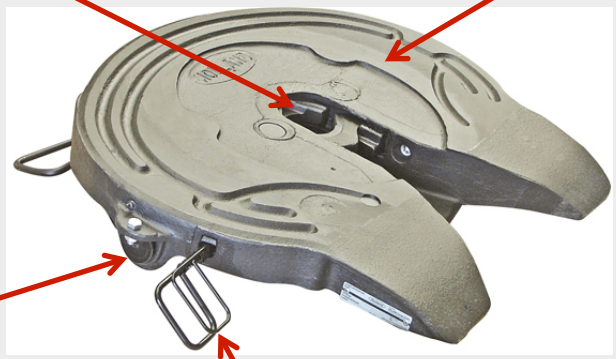
Fifth wheels

LOCKING MECHANISM inspection:

- Correct operation
- Components condition (bent, worn, damaged)
- Adjusting mechanism
- Lubrication
- Jaws/locks, pins condition

ATTACHMENT:

- Condition of bushes
- Wear of foot pins
- Wear in foot pin holes
- Wear in foot pin pockets
- Condition and wear of foot pocket inserts and casting



TOP PLATE inspection:

- Damage
- Wear (indicators, straightness)
- Cracks
- Lube plates condition

Flip it over and check:

- Condition
- Cracks (bridge, foot pockets)

LEVERS – not bent, operational

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Inspection and maintenance - What are we looking for?

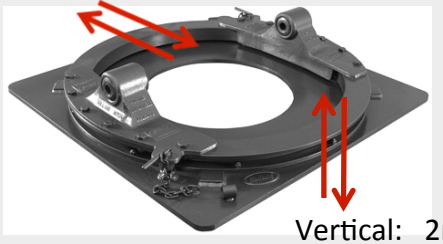
Base plate

INSPECT for:

- Damage
- Cracks
- Feet welds
- Feet wear
- **Bolt tension** (plate and feet – ISO)

Ballrace

For/Aft: 3mm



Vertical: 2mm single row
3.5mm double row

INSPECT for:

- General condition, cracks
- Spinning freely? Tight spots?
- Sound (crunching, rattling)
- Movement – vertical & radial
- Lubrication
- **Bolt tension**

Kingpin

INSPECT for:

- Damage, cracks
- Wear
- **Bolt tension**

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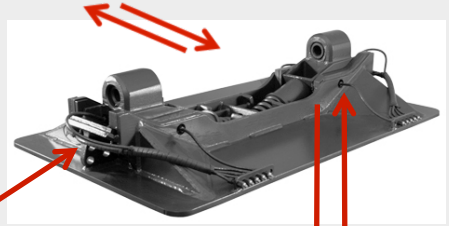
Inspection and maintenance - What are we looking for?

Kompensator



INSPECT for:

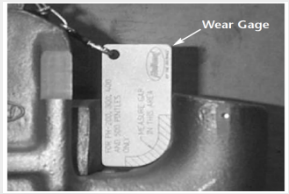
- General condition, cracks
- Welds
- Wear – refer to manufacturers specs
- Lubrication (check shoes)
- Release pressure by using landing legs

Pintle hooks

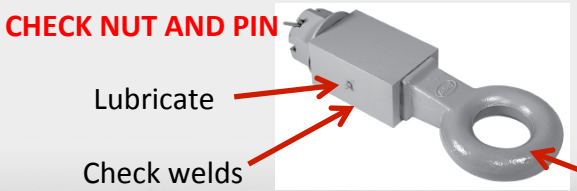
INSPECT for:

- Wear, nicks, cracks
- Back plate, bolt holes, bolts
- Locking mechanism operation
- Plunger operation

WEAR CHECK



Drawbar eye



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Thank you

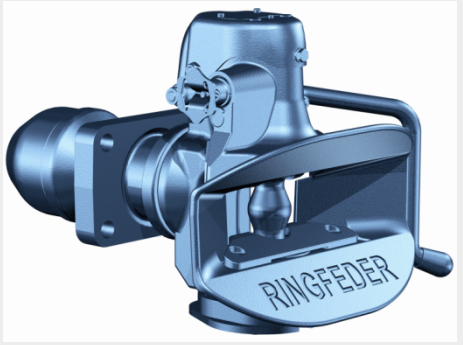
Murray Gayski

BPW Transpec

Automatic Pin Type Couplings

Automatic Pin Type Couplings

- Most common are with 50mm pins
- ADR's and Australian Standards also allow for 40mm and 57mm couplings
- Important to match the rating of the coupling and drawbar eye to the application
- Manufacturer of the trailer must compliance the drawbar assembly



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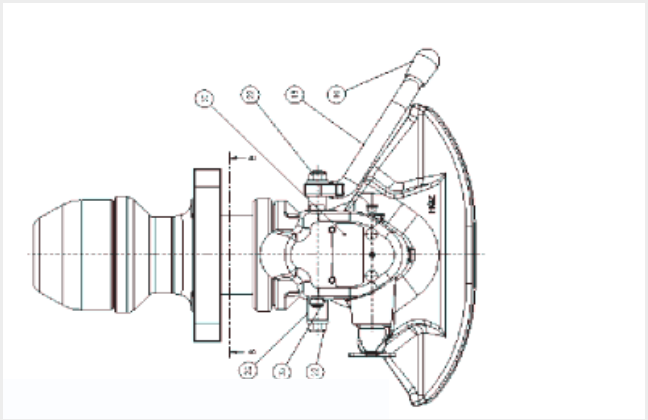
Selection of Coupling

- Is the drawbar fixed or hinged?
- What is the vehicle configuration?
- What are the vehicle weights?
- What is the D rating of the coupling?



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D Rating

- The D Rating is a measure of the pulling capacity of the coupling
- This is not the same as the trailers weight
- The D Rating required for a particular type of combination is listed in Australian Standard AS 2213

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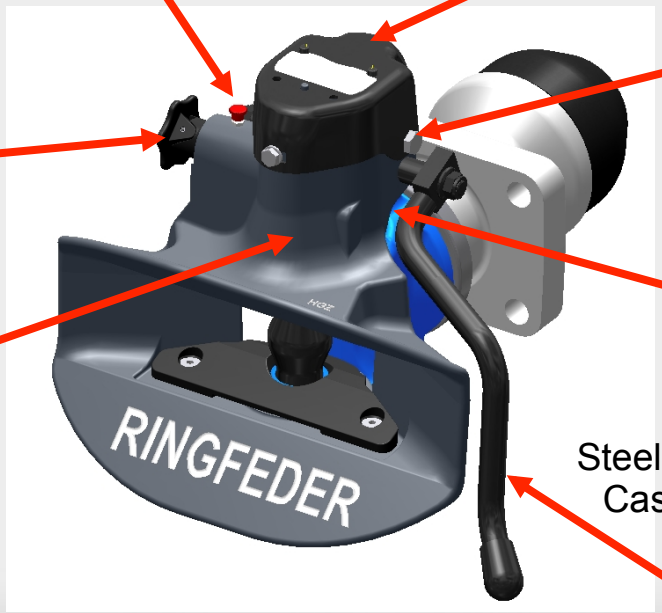
Ringfeder



Grease Nipple

Sealing in Top Cap

Chamfer at Lifting Finger

Black Manual Safety Device

Bigger Slot in Drawbar

Chamfer in Coupling Mouth Bore

Steel Handle (No Cast Material)

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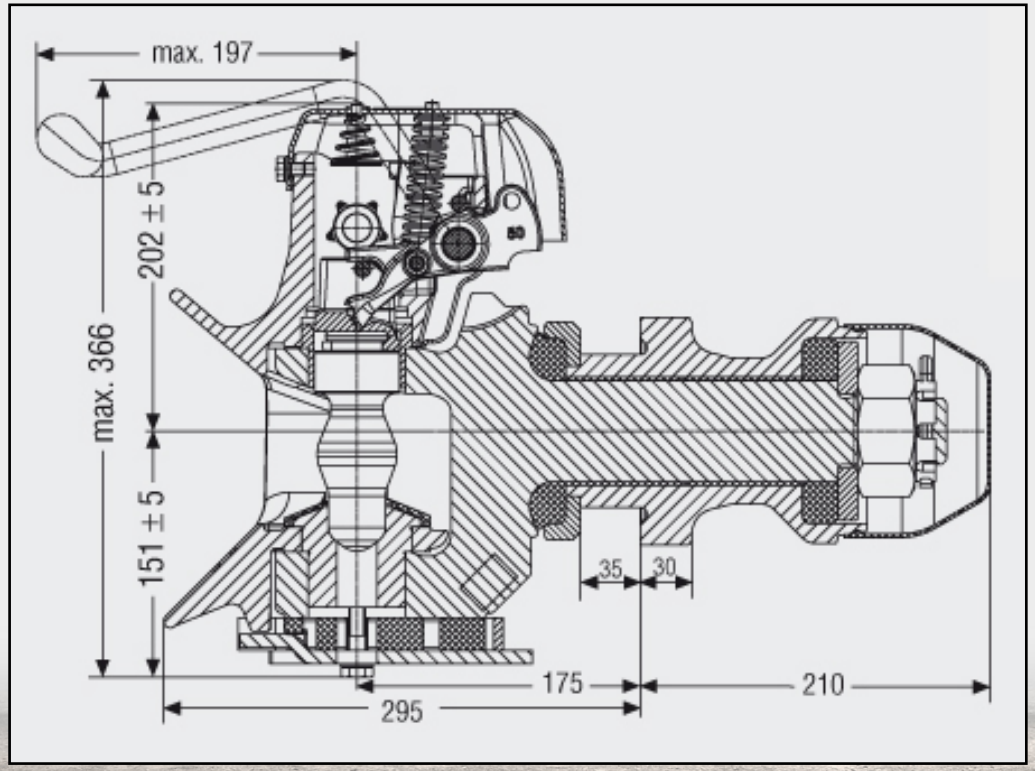
Ringfeder Internals



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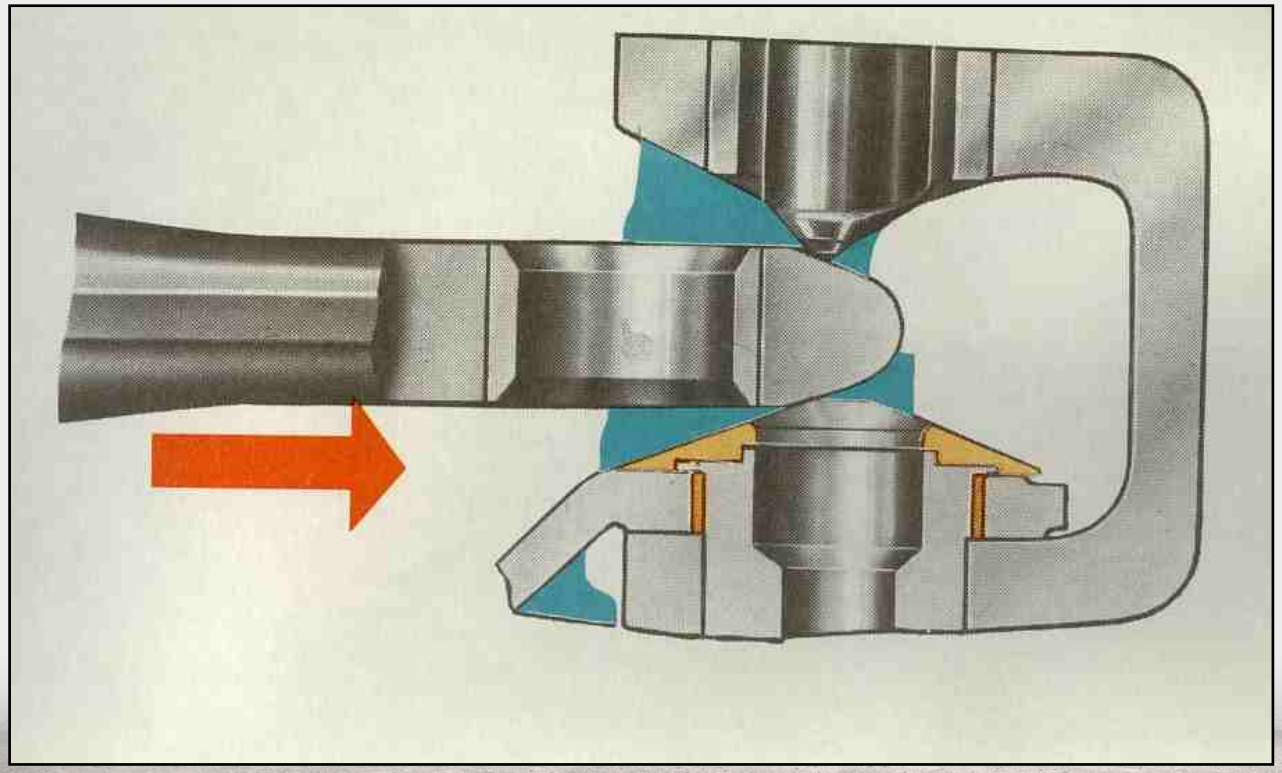
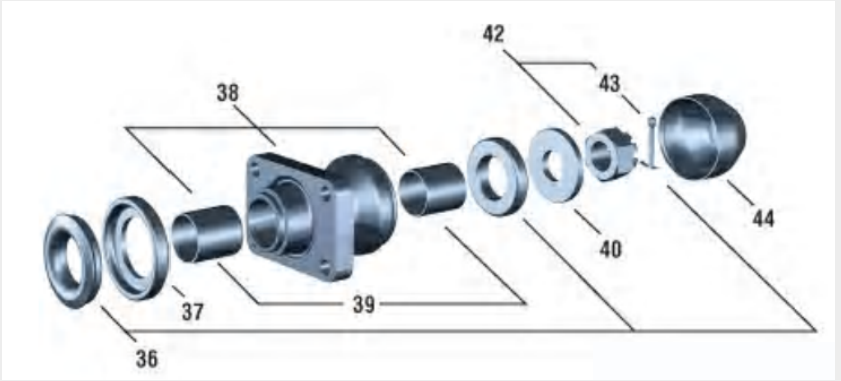
Ringfeder - Operation



Installation

- Disassemble the rear end of the coupling
- Fit the Bar Guide (38) behind the towbar, ie, opposite side to coupling
- Mount the Bar Guide with head of bolts on the same side as the coupling



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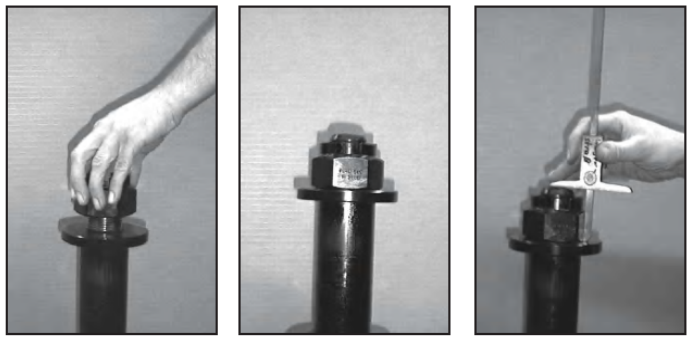
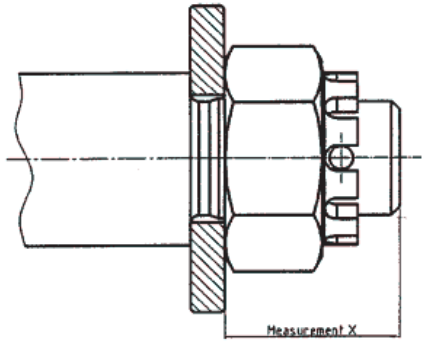
Installation

- Before fitting the coupling to the mounted bar guide, measure how much of the shaft is exposed (dimension X) when it is tightened by hand as far as it can go.





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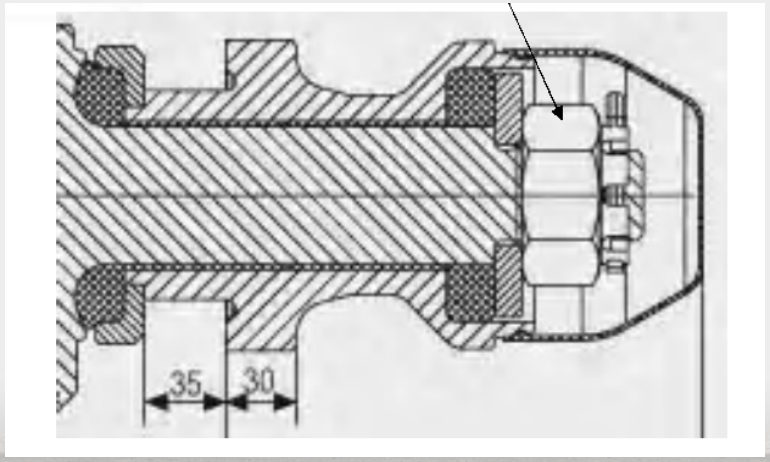
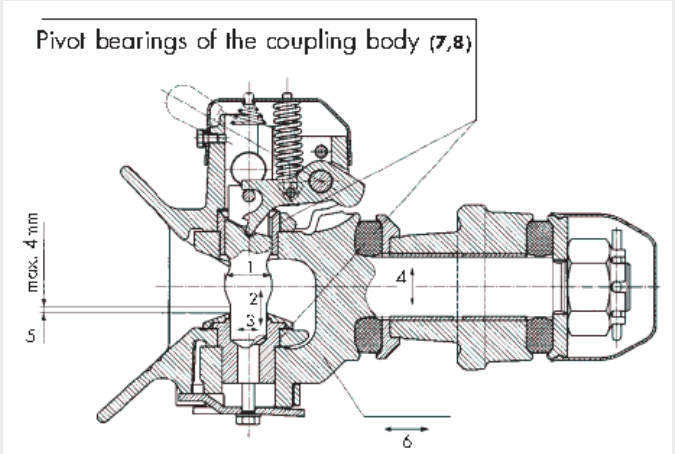
Installation

- After mounting the Coupling into the bar guide, tighten the nut until Dimension X is reached, or at least 700Nm, then fit the split pin. If the split pin does not line up, tighten until it does.



Wear Limits – Type 202 & 101 Ringfeder

- Pin minimum diameter 46.5mm.
- Maximum play 5mm.
- Maximum clearance between pin and bush 2.5mm. Maximum bush diameter 36.5mm.
- Maximum clearance between drawbar shaft and bushes 1mm.
- Maximum wear of wear plate 4mm.
- No fore and aft movement of the drawbar shaft allowable when manipulating by hand.
- Check the bearings for fore and aft movement, maximum play 1mm.
- Check that bearings allow easy sideways movement of the mouth.



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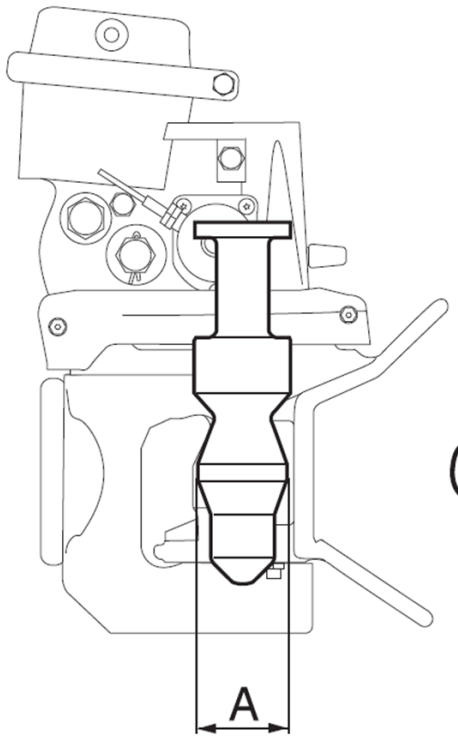
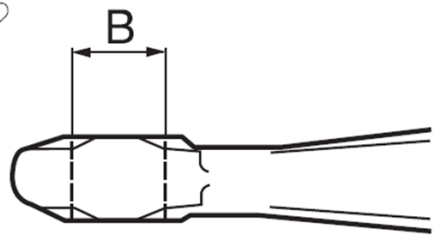
Ringfeder – Wear limits





Wear limits

A	Coupling pin	min	46.5 mm
B	Drawbar eye	max	51.5 mm

Vertical play in the coupling pin	max	5.0 mm

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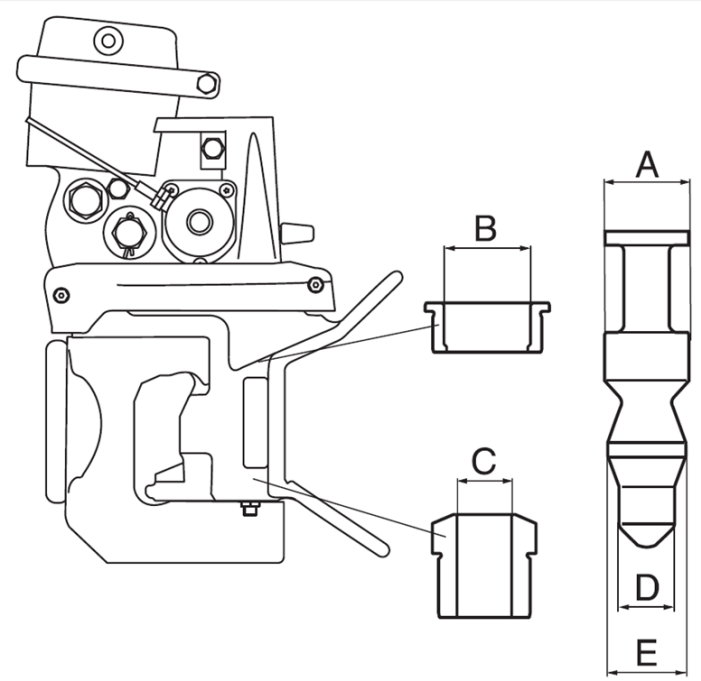
Ringfeder – Wear limits



Wear limits

A	outer diameter	min	51.0 mm
B	inner diameter	max	54.0 mm
C	inner diameter	max	36.5 mm
D	outer diameter	min	33.5 mm
E	outer diameter	min	46.5 mm

Vertical play in the coupling pin	max	5.0 mm

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Secondary Lock Mechanism

- 50mm Automatic pin type couplings have an internal locking mechanism to keep the pin locked in the engaged position. With some couplings this mechanism is disengaged with the handle, with others it is disengaged with a separate control.

Mechanical Safety device

One Hand Operation (EU-Version)

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Secondary Lock Mechanism

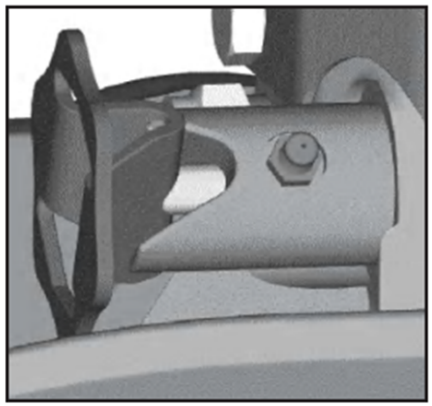

Fig. 1
Trailer coupling
disengaged/uncoupled

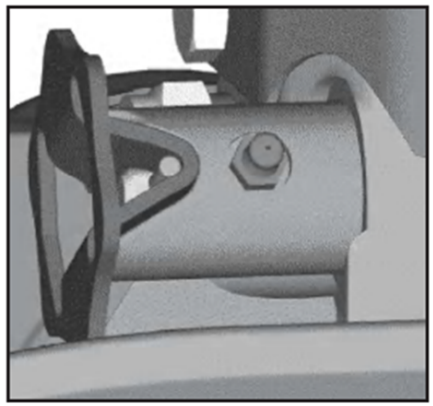

Fig. 2
Trailer coupling
closed and secured

Drawbar Eyes

Three types are available

1. Weld in
2. Demountable with backnut
3. Demountable with clamp in eye

- Ensure that the rating matches the application.
- Ensure that the manufacturers recommendations are adhered to when mounting the drawbar eye.
- Wear limits; 51.5mm max bore, 42.5mm min depth

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Replacement Parts

The Coupling is a major safety item, so it is important to;

1. Regularly inspect the Coupling and repair immediately if wear limits are exceeded
2. USE GENUINE PARTS, as only genuine parts are sure to maintain the rating of the coupling system

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Ringfeder – Worn parts

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Thank you

BEST PRACTICE COUPLING MAINTENANCE DEMONSTRATION

QUESTION TIME