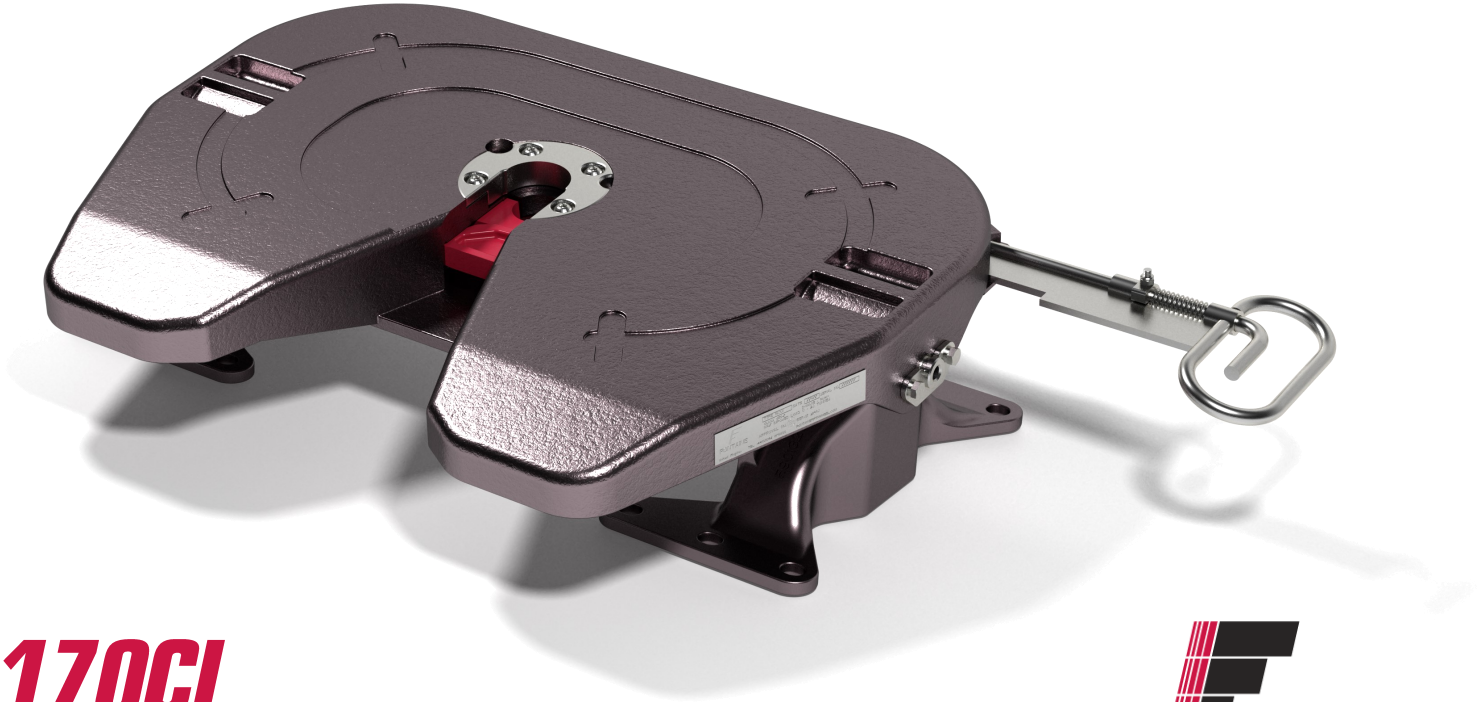
EN

INSTRUCTION MANUAL



170CI

2” CAST FIFTH WHEEL
HEAVY DUTY

FONTAINE®
FIFTH WHEEL

This Instruction Manual covers the Fontaine 170CI Heavy Duty Cast Fifth Wheel. Please be aware of the following symbols when carrying out the tasks.

WARNING

Task contains dangers that could cause serious physical injury or significant material damage, if the safety instructions are not adhered to.

CAUTION

Task could result in minor physical injury or material damage, if the safety instructions are not adhered to.

ADVICE

Any additional important information related to the task.

CONTENTS

EN

FONTAINE FIFTH WHEEL

SAFETY INFORMATION

1. Safety information

It is important to remember that a fifth wheel is a safety critical item and should be treated as such. Proper preventative maintenance, inspection and lubrication are essential for a long, safe and trouble-free service life. Please observe the relevant safety regulations that apply for working with fifth wheel couplings, tractor units and semi-trailers. These regulations will vary in different countries.

1.1 Operation

› Only authorised users are permitted to use the fifth wheel coupling.

› Do not use the fifth wheel coupling and rubbing plates if they show any sign of technical problems.

› The rubbing plate must be larger than the support area of the fifth wheel coupling.

› Any sharp edges must be removed from rubbing plate to prevent damage to the fifth wheel coupling or the top plate liner, if fitted.

› When connecting a semi-trailer ensure all safety regulations are adhered to. e.g. Health and Safety at Work Regulations. A semi-trailer should only be connected on firm, flat ground.

› The rubbing plate should ideally be slightly lower than the top plate when coupling but not by more than 50mm.

› Ensure the locking mechanism is properly locked before starting every journey. The vehicle must only be driven when the mechanism is locked and secured, even when driving without a semi-trailer.

1.2 Installation

› Prior to installation of a fifth wheel on a vehicle the following should be considered:-

- › Current Legislation
- › OEM Vehicle Installation Instructions
- › Fontaine Vehicle Specific Mounting Instructions

› Installation work must only be completed by authorised specialists.

› Installation areas are defined by the tractor unit manufacturer and must not be changed.

› In all cases fifth wheel equipment should be mounted using the mounting holes positioned as supplied.

The fifth wheel coupling must be mounted on the vehicle in compliance with the requirements of Appendix VII of regulation ECE R55-02. It may also be necessary to comply with the licensing regulations of the appropriate country.

1.3 Servicing

› Only use specified lubricants for the servicing work.

› The servicing work should only be completed by trained personnel.

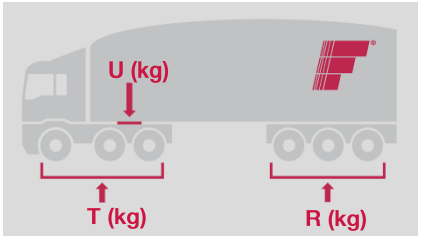
› Only use Original Equipment parts.

SAFETY INFORMATION

1.4 Fifth wheel rating

The Fontaine 170CI Heavy Duty Cast Fifth Wheel is designed and built in accordance to ECE Reg R55-02 class G50-X and have a rating of 25 Tonnes Imposed Load (U) and D-Value of 170kN. These ratings can be found on the "Type Approval Label" of the fifth wheel equipment. Whilst the Imposed Load is straight forward to determine (the vertical load at the kingpin) the D-Value is calculated in the equation below:

$$D = g \times \frac{0.6 \times T \times R}{T + R - U} \ (kN)$$



Where:

g = gravity (9.81m/s^2)

T = Total weight of the tractor unit (including U)

R = Total weight of the semi-trailer

U = Imposed load on tractor

The fifth wheel coupling chosen should be rated with loads equal to or higher than the calculated values. Under no circumstances should a coupling be fitted where the calculated rating is higher than the values indicated on the equipment.

This calculation is also available on our website:

www.fontainefifthwheel.com

1.5 Type approval label

FONTAINE®

Type 170CI | Date XX/XX | Serial No. XXXXXX

Class G50-X | D Value - 170kN

Max Imposed Load U - 25 Tonnes

Approval No. E32 55R-02 XXXX

United Kingdom. Tel: +44(0)1942 686000 Web: fontainefifthwheel.com

Each fifth wheel's type approval label contains the following data:

› 1. Fifth wheel type
› 2. Date produced and serial number
› 3. Class and D-Value
› 4. Max imposed load
› 5. Contact information

1.6 Additional safety information

The operators must comply with regulations set in the Health & Safety at Work Act of their country. The safety information set in the vehicle owner's handbook for the tractor unit must also be adhered to.

When operating the fifth wheel, the operator should only interact with the areas described in the Operation section (3) of this booklet. The following must also be observed:

› Any operation of the unit must only be carried out by authorised persons.

› All limbs should be kept clear of moving parts to avoid any personal injury.

› It should only be operated if in good and technical condition.

› Coupling of a semi-trailer must only occur on an area of firm, flat ground.

INSTALLATION

2. Installation

2.1 Mounting of fifth wheel coupling to mounting frame

A standard fifth wheel coupling should be mounted using 12 bolts size M16 and grade 10.9 unless it is a special application where 8 bolts may be used.

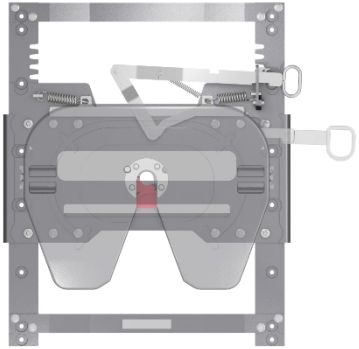
2.2 Mounting of plates, dolly plates, sliding fifth wheels and direct angle mounts

Mounting plates, dolly mounting plates, sliding fifth wheels and direct angle mounts should always be fitted using the correct fixing arrangement. For this reason it is recommended that this equipment always be fitted using Fontaine bolt kits.

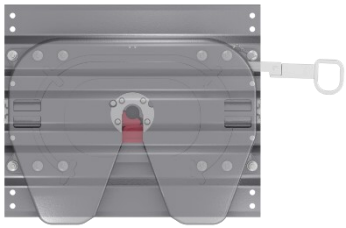
These kits will always be supplied with bolts which match the correct rating of the equipment and the relevant fitting instructions.

In the case of dolly and 12mm flat mounting plates the fifth wheel must be attached to the plate with countersunk bolts and attached to the chassis or ball turntable using the standard Fontaine M16 bolt kit.

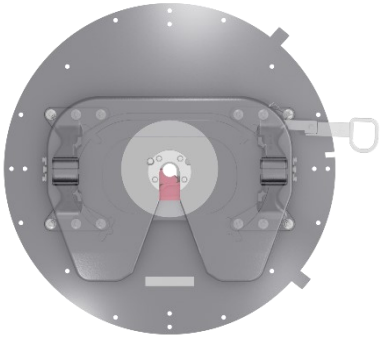
When fitting mounting plates or sliding fifth wheels to chassis fitted with mounting angles higher than the vehicle chassis, special crossmembers may be required. Before fitting any fifth wheel to this type of chassis please consult the Fontaine Technical Department.



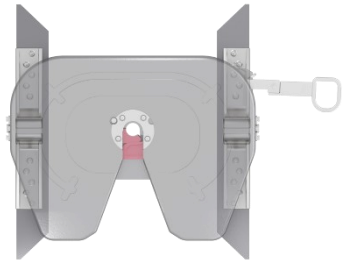
Fifth wheel on slider



Fifth wheel on mounting plate



Fifth wheel on dolly plate



Fifth wheel on angle mounts

INSTALLATION

2.3 Mounting bolts

Fontaine mounting fasteners for installation purposes are available upon request. The fasteners supplied will be rated at the correct grade for the installation.

These bolts should be tightened to the torque values displayed in the table below. All values in Newton Metres (Nm).

FASTENERS	TORQUE (Nm)
M20 G10.9	420
M18 G10.9	347
M16 G10.9	280
M14 G10.9	227

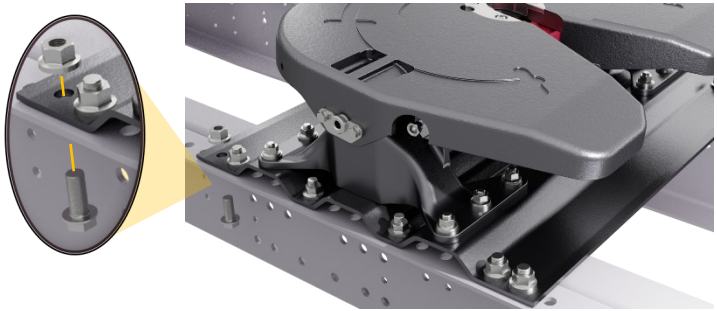
Mounting to Chassis Fastener Requirements; Type, Grade and Torque

2.4 Bolt Positions

In all cases the fifth wheel equipment should be mounted using the mounting holes positioned as supplied. Where pre-drilled holes are supplied in the vehicle chassis or fifth wheel equipment these should always be used. If equipment appears to require further modification then the Fontaine Technical Department should be consulted prior to any alteration of the equipment.

2.5 Positioning of equipment on vehicle

Fifth wheel equipment should always be fitted to the vehicle using the vehicle manufacturer's fifth wheel position as this determines correct



Mounting bolts used in the installation of the fifth wheel complete with mounting plate

axle loading and compliance with national legislation. The fasteners should be orientated so that they are fed upward through the chassis and fifth wheel mounting plate, dolly plate. For sliding fifth wheels the bolts should be fed downwards.If any doubt exists relating to the correct position of the equipment on the vehicle then the Fontaine Technical Department should be consulted.

2.6 Lubrication

Prior to going into operation the areas listed in the servicing section of this booklet must be well lubricated using a high pressure grease with a lithium or calcium base.

Fontaine cannot accept responsibility for any loss or damage caused by equipment which has been modified or that has not been fitted in an authorised manner.

OPERATION

3. Operation

3.1 Coupling procedure for fifth wheel

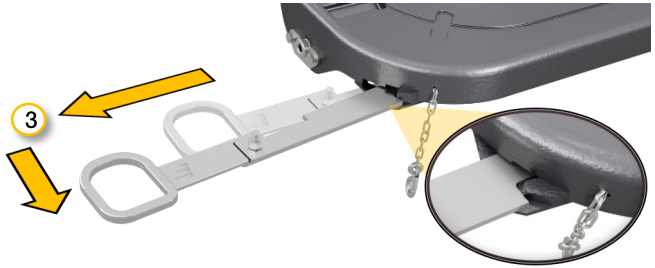
› Ensure the tractor and trailer are on flat, firm ground.

› Secure the trailer by applying handbrake (if fitted) or chocking.

› Check that the fifth wheel is ready to engage. If not, open the mechanism as described in steps 1 to 4 below.

1. Remove the safety clip.

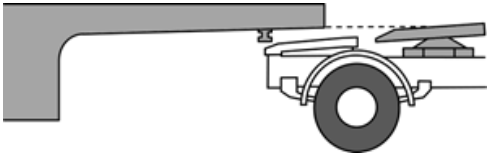
2. Push the handle forward.



3. Pull the handle towards you (approximately 250mm) then move it forward so that the notch of the handle latches onto the skirt of the fifth wheel as shown in the detailed view and release.

4. Knock the handle towards the rear of the vehicle so that the handle comes off the latch.

   The fifth wheel is now ready to engage.



› Ensure that the trailer rubbing plate is slightly below the level of the fifth wheel, but no more than 50mm (as seen above)

› Reverse the tractor at a steady speed (around 2-3kph) keeping the king pin in the centre of the fifth wheel at all times, until the fifth wheel locks.

› The fifth wheel is only correctly locked when the cut-out notch of the handle is partly inside the fifth wheel and the safety clip hole is exposed ready for fitting the safety clip. At this point, fit the safety clip.

If the handle does not close fully by itself, the complete coupling procedure must be repeated

OPERATION

› Only when you have confirmed that the handle is correctly closed, and the safety clip is fitted, a “pull test” must be carried out.

› Carry out a “pull test” in low gear - try to pull tractor forward against the trailer brakes, firstly making sure that the trailer brakes are on.

› Connect the supply lines.

› Raise the landing legs as described in the operator’s manual.

› Release the trailer handbrake (if fitted) or remove chocks.

Failure to check that the handle is closed correctly before carrying out the pull test may result in damage to the fifth wheel.

3.2 Uncoupling procedure for fifth wheel

› Park the tractor and trailer on flat, firm ground and in a straight line.

› Apply the trailer handbrake (if fitted) or secure the trailer by chocking.

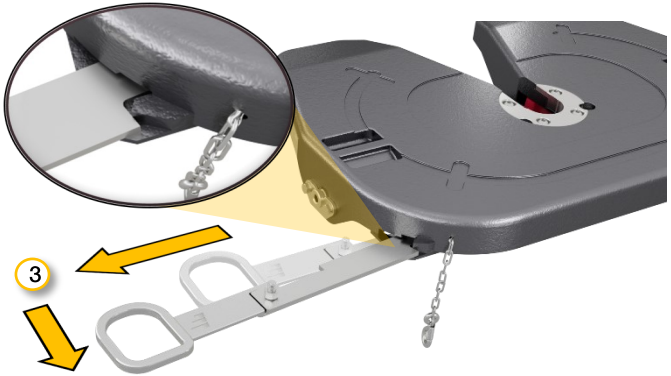
› Lower the landing legs as described in the operator’s manual.

› Disconnect any supply lines such as air and electrical.

› Open the mechanism as described in steps 1 to 3 in this section.

1. Remove the safety clip

2. Push the handle forward



3. Pull the handle towards you (approximately 250mm) then move it forward so that the notch of the handle latches onto the skirt of the fifth wheel as shown in the detailed view. The handle should remain fully out when released

› Drive the tractor away from the trailer slowly. This will unlatch the handle from the block and reset the fifth wheel ready for the next coupling.

3.3 Alternative fifth wheel handles

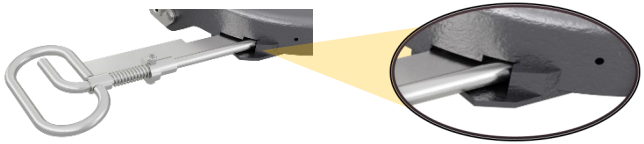
Alternative handles are available for the 170CI fifth wheel, the main option is the interlock handle. The operation is on the next page.

OPERATION

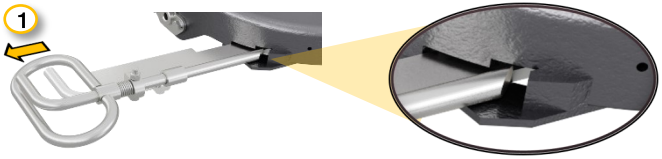
3.3.1 Fifth wheel interlock handle— Opening the mechanism

If the mechanism is not already open, the following steps describe how to open it ready for coupling

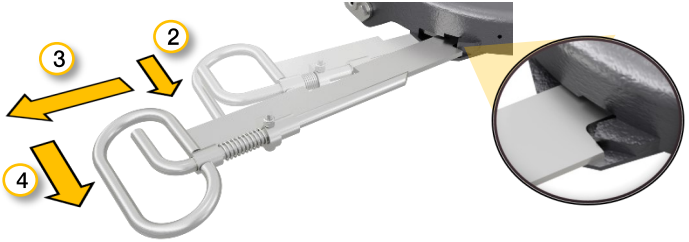
It is important to follow the standard coupling procedure. The steps below are only to open the mechanism. Under no circumstances must any stages of the coupling procedure be ignored.



Fifth wheel locked with lever inside the fifth wheel



1. Pull inner lever clear of fifth wheel block.



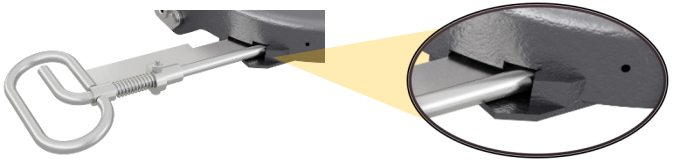
2. Push the handle forward. 3. Pull handle out. approx. 250mm

4. Latch notch onto fifth wheel block and release.

5. Knock the handle towards the rear of the vehicle so that the handle comes off the latch.

The fifth wheel mechanism is now in the open position, ready to engage

3.3.2 Fifth wheel interlock handle— Closing the mechanism

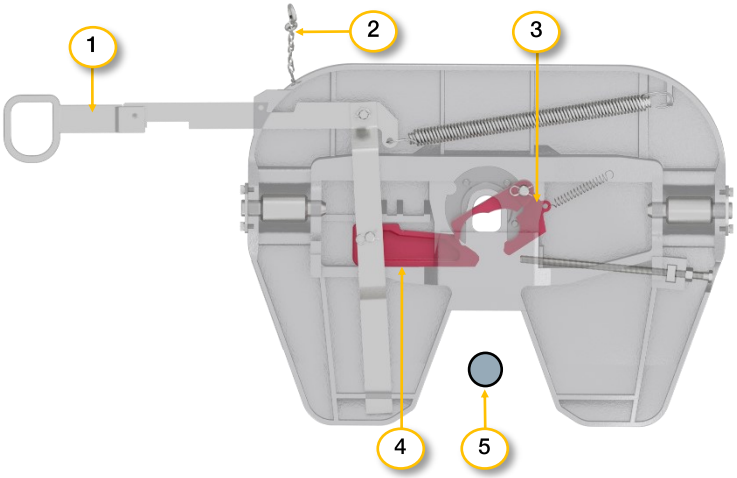


Once coupled to the trailer, the fifth wheel mechanism is only locked when it's lever is inside the fifth wheel as shown above. To check, attempt to open the mechanism using only the outer hand grip. If correctly closed, the handle should not open.

If the handle does not close fully by itself, the complete coupling procedure must be repeated

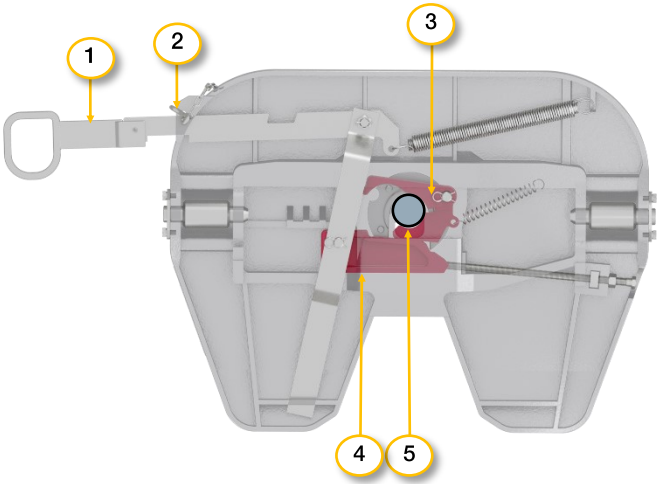
OPERATION

3.4 Mechanism in open and closed positions



Fifth wheel coupling mechanism open and ready for coupling

› 1. Handle
› 2. Safety Clip
› 3. Jaw
› 4. Lockbar
› 5. Kingpin



Fifth wheel coupling mechanism closed and secured

› 1. Handle
› 2. Safety Clip
› 3. Jaw
› 4. Lockbar
› 5. Kingpin

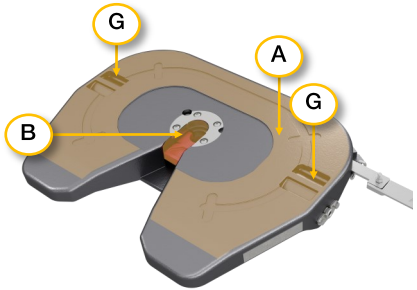
SERVICING

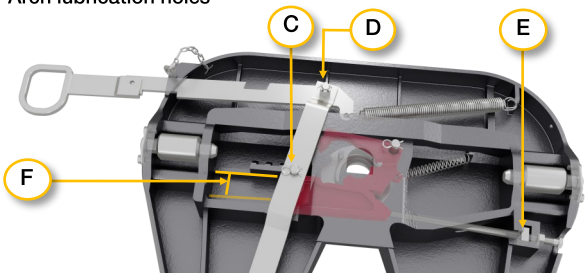
4. Routine fifth wheel maintenance

4.1 Every 10,000 km (or 4-6 weeks)

1. Uncouple tractor, clean the fifth wheel mechanism, rubbing plate and king pin. Inspect the fifth wheel for damage and defects.
2. Regrease all points A to G with a high pressure grease that has a lithium or calcium base.

A - Fifth wheel top plate
B - Kingpin contact area
C - Lockbar pivot
D - Handle pivot
E - Adjuster screw
F - Lockbar “track”
G - Arch lubrication holes





Prior to going into operation the areas listed above must be well lubricated using a high pressure grease with a lithium or calcium base as mentioned.

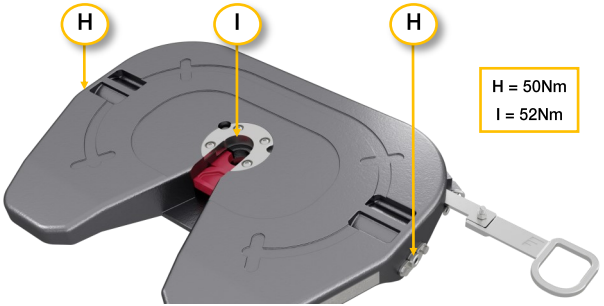
4.1.1 Function check

The fifth wheel is only correctly locked when the cut-out notch of the handle is partly inside the fifth wheel and the safety clip hole is exposed and the safety clip fitted.

Ensure that the fifth wheel handle, handle bracket and safety clip are not bent or damaged and that the safety clip can be fitted into the handle bracket hole when the handle is fully closed.

4.1.2 Torque check

Check that the torques of the pivot bolts (H) and the wear ring bolts (I) are as below.



SERVICING

4.2 Every 50,000km (or 6 months)

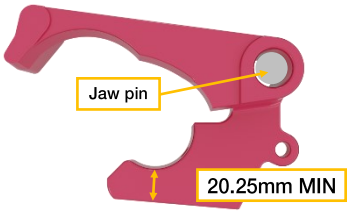
Degrease the fifth wheel, trailer rubbing plate and king pin and check those areas for the following:

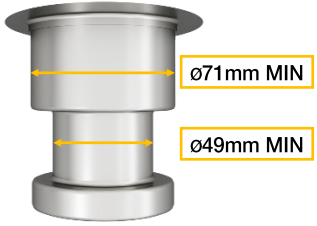
- Function
- Wear
- Corrosion
- Distortion
- Damage
- Cracks

When checking the king pin on the trailer for wear, the minimum diameters are 49mm and 71mm in the areas shown below.

Check the fifth wheel jaw for wear. If dimension shown is less than 20.25mm a replacement jaw kit is required.

If the parts are correct, carry out the 10,000km maintenance procedure from the previous page.





NOTE

The jaw pin is only a pivot pin and is designed to be smaller than the hole in the jaw. This clearance enables the jaw to fully contact the kingpin and lockbar at all times.

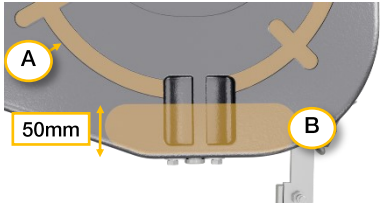
If the wear limit on either the fifth wheel mechanism or the king pin has been reached they must be replaced before using.

A complete jaw kit MUST ALWAYS be fitted to ensure the jaw and lockbar are correctly matched.

After fitting a new jaw kit, the mechanism must be re-adjusted to allow correct running clearance around the king pin. Under no circumstances should you re-adjust the running clearance of the mechanism to compensate for the wear of a king pin.

The adjustment procedure can be found on the next page. Spare parts and kits can be found in the servicing section (4.6) of this booklet.

4.3 Wear on top plate



The top plate needs to be replaced when:

The wear is down to the bottom of the grease groove [A]

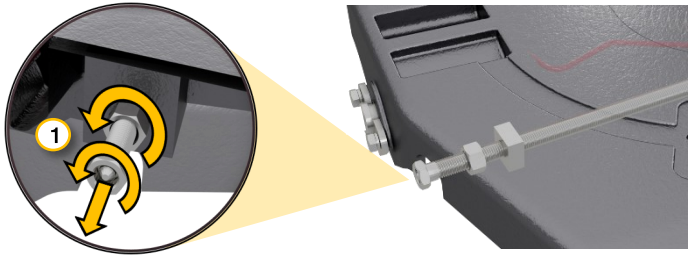
and/or it is worn down by 8mm on the edges [B] (50mm inwards around mounting bracket area)

4.4 Product end of life

A fifth wheel's parts (and it's mounted option) can be categorised into metal, plastic and rubber. All plastic and rubber parts have material markings to aid with recycling. All components must be clean and free of any residual oil or grease prior to disposal. Please refer to your local authority's End-of-Life guidance and regulations.

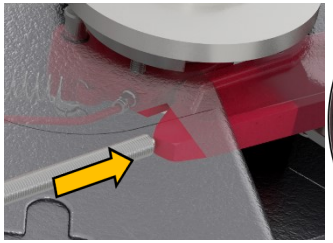
SERVICING

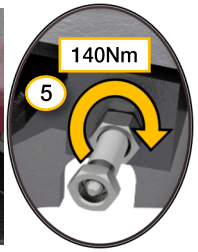
4.5 Adjustment procedure



1. Undo the adjuster locknut and wind out the adjuster (anticlockwise) until it is protrudes approximately 15mm outside the fifth wheel skirt.

2. Insert the king pin (or king pin test unit part no 59004124) and ensure the mechanism is fully closed.
3. Screw the adjuster clockwise until it touches the end of the lockbar.
4. Screw inwards a further 3 complete turns (to give 0.525mm running clearance).





5. Tighten the adjuster locknut to 140Nm.
6. Open the fifth wheel mechanism and remove the king pin/test unit

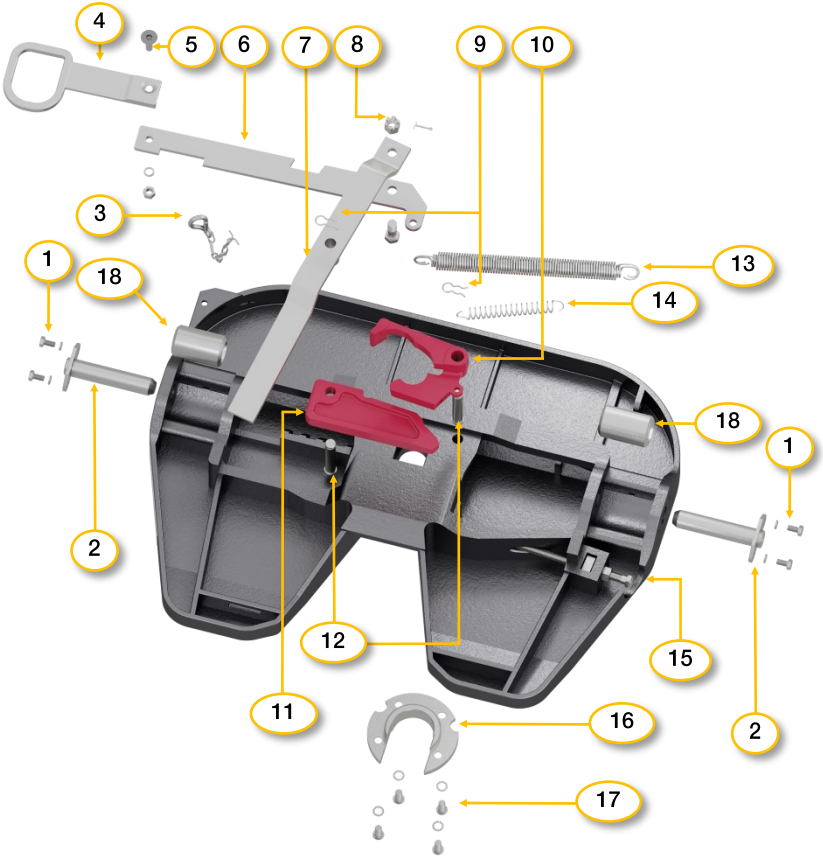
4.6 Fifth wheel spare parts & kits

Information on where to buy spare parts or for general queries, please contact your local distributor or the website; fontainefifthwheel.com

4.6.1 Fifth wheel spare part kits

DESCRIPTION	CONTAINS ITEMS	KIT PART NO.
Full Mechanism Repair Kit	8, 9, 10, 11, 12, 13, 14, 17, 18	59013581
Pivot Kit	1, 2, 20	59013196
Safety Clip	3	59004114
Release Handle Kit	4, 5, 6, 8	59015102
Lever Assembly Kit	7, 8	59015257
Spring Kit	13, 14	59015067
Adjuster Kit	15	59015256
Wear Ring Kit	17, 18	59015237

SERVICING



4.6.2 Fifth wheel bill of materials

ITEM	QTY	DESCRIPTION	PART NO.
1	4	M10 Bolt	08206139
	4	M10 Spring Washer	08206192
2	2	Pivot Pin	59004111
3	1	Safety Clip	59004114
4	1	Hand Grip	59015917
5	1	M12 Bolt	08206407
	1	M12 Safety Washer	08206390
	1	M12 Nut	08206408
6	1	Handle	59015917
7	1	Lever	59013321
8	1	M16 Cross-drilled Bolt	08206506
	1	M16 Binx Nut	08206263
	1	Split Pin	08206505
9	2	Spring Clip	59013393
10	1	Jaw	59015178
11	1	Lockbar	59013320
12	2	Jaw & Lockbar Pivots	59013330
13	1	Main Spring	59013326
14	1	Jaw Spring	59004042
15	1	Adjuster Stud Assembly	59015256
16	1	Wear Ring	59013740
17	4	M12 Screw	08206159
	4	M12 Washer	08206230
18	2	Rubber Bush	59007260

EN

WARRANTY

5. Terms of Warranty

The company (defined as MHT Europe) warrants that all Fontaine Fifth Wheels produced by the company will be free from defects in material and workmanship.

The warranty period for Fontaine products is:

3 years parts and labour

Or

500,000km (whichever comes first.)

All installations must be carried out in accordance with the company's Fifth Wheel mounting instructions.

These warranty terms cover failures in material and workmanship, but do not cover failures due to the following:

- Vehicles which are not used in conjunction with the Fontaine application guide
- Accidents
- Incorrect installation (refer to Fontaine official mounting instructions)
- General wear and tear
- Misuse, alteration or neglect
- Failure to properly maintain the Fifth Wheel using genuine Fontaine OEM parts (refer to Fontaine official maintenance instructions)

The company must be notified prior to the commencement of any repair. Failure to do this will cause automatic rejection of the claim.

In the event of a warranty claim, Fontaine must be notified so that a Customer Service (CS) number can be issued. Any parts not identified with a valid CS number will not be accepted as a return.

If a Fifth Wheel or component part is required to be returned to the manufacturing plant for examination, then these should be sent freight pre -paid by the claimant and be degreased prior to return.

Under the terms of the warranty the company agrees to replace the defective Fifth Wheel (or relevant parts at their discretion) and these will be supplied on a carriage paid UK or as agreed with the customer. Parts can only be replaced to cover possible warranty claims following the receipt of a valid order number. If the claim is rejected, an invoice will be raised by Fontaine for the replacement parts.

For agreed claims (up to a maximum of 1 hour), labour will be authorised to change the Fifth Wheel or component part at the company's prevailing warranty labour rate. Any invoices not identified with a valid CS number will not be accepted for payment. Fontaine reserve the right to reject any warranty claim it feels is not justified.

OTHER PRODUCTS

FONTAINE FIFTH WHEEL RANGE

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RANGE	MATERIAL	USAGE	APPLICATION	IMPOSED (U) & D-VALUE T / KN	WEIGHT KG	HEIGHT OPTIONS MM (DIN 6)	LOW MAIN-TENANCE	SINGLE-POINT AUTOLUBE	AIR ACTIV–ATION	SINGLE SENSOR SAFETY CLIP	SENSOR SYSTEMS	HANDLE OPTIONS
150SP²	Pressed	**Standard duty** 2" on-road	 **Fit for...** Flexible haulage volume carriers using two and three-axle tractors	20T / 152kN	From 113kg	138 / 148 161 / 185 210 / 230 257	✕	✓	✓	✓	✓	• Standard with safety clip • Extended with safety clip • Interlock
3000	Cast	**Medium duty** 2" on-road & limited off-road	 **Fit for...** Long-distance haulage with silo, tank and volume carriers using both two and three-axle tractors.	20T / 150kN	From 120kg	138 / 148 161 / 185 210 / 230 257	✕	✓	✓	✓	✓	• Standard with safety clip • Extended with safety clip • Interlock
3000LM	Cast	**Medium duty** 2" on-road & limited off-road	 **Fit for...** Long-distance haulage with silo, tank and volume carriers using both two and three-axle tractors.	20T / 152kN	From 120kg	138 / 148 161 / 185 210 / 230 257	✓	✓	✓	✓	✓	• Standard with safety clip • Extended with safety clip • Interlock

OTHER PRODUCTS

FONTAINE MOUNTING OPTIONS

RANGE	USAGE	APPLICATION	IMPOSED(U) & D-VALUE T / KN	WEIGHT KG	HEIGHT MM	AIR / MANUAL	SLIDE TRAVEL	150SP²	3000	3000LM	163CI	RP59	RP90	FHD
SLIDING 150SF	**Medium duty** 2" on-road & limited off-road	 **Fit for...** Long-distance haulage with silo, tank and volume carriers using both two and three-axle tractors.	20T / 152kN	119kg	35mm	Air / Manual	Slide travel 525/750/ 900mm Two-position 300/525mm	✓	✓	✓	✓	✓	✓	✓
MOUNTING PLATE	**Medium duty** 2" on-road & limited off-road	 **Fit for...** Long-distance haulage with silo, tank and volume carriers using both two and three-axle tractors.	20T / 150kN	45kg / 50kg	22mm 40mm	—	—	✓	✓	✓	✓	✓	✓	✓
DIRECT MOUNT	**Standard duty** 2" on-road	 **Fit for...** Flexible haulage volume carriers using two and three-axle tractors.	20T / 150kN	40kg	140mm 160mm 200mm 230mm	—	—	✓	✓	✓	✓	✗	✗	✗

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FONTAINE®
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FIT FOR THE LONG HAUL

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and trailer coupling