



SOLUTIONS FOR THE REPAIR RENOVATION AND DECOMMISSIONING OF PIPELINES



## 125mm Pipe Coil Trailer

### Operating Instructions

Steve Vick International Ltd

Treenwood Industrial Estate, Bradford on Avon, Wiltshire, BA15 2AU, UK



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## 1. INTRODUCTION

Since its foundation in 1981, Steve Vick International has been at the leading edge of trenchless techniques for the repair and renovation of underground **gas** distribution pipes.

In the UK, we are a major supplier to the gas distribution networks and many of our techniques have become accepted practice in the industry. We constantly seek to provide our customers with renewal methods which will minimise their costs and maximise their production.

The company has been supplying pipe handler equipment to the **water** utilities and their contractors for over 20 years. More recently we have entered the market with pipe cutting equipment and our sealant technology has been successfully adapted for use in the waste water sector.

In 2014 the company relocated and can be found at:

### **Steve Vick International Ltd**

Treenwood Industrial Estate  
Bradford on Avon  
Wiltshire  
BA15 2AU

**Phone:** +44 (0)1225 864 864

**Email:** [info@stevevick.com](mailto:info@stevevick.com)

**Website:** [stevevick.com](http://stevevick.com)

**Social Media:** #stevevick

## 2. PRODUCT DESCRIPTION

The single-axle 125 trailer handles coils of PE with a pipe diameter from 40mm to 160mm.

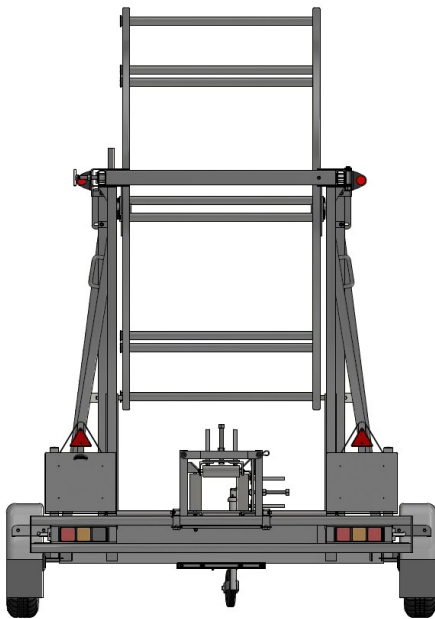


Figure 1: Rear View

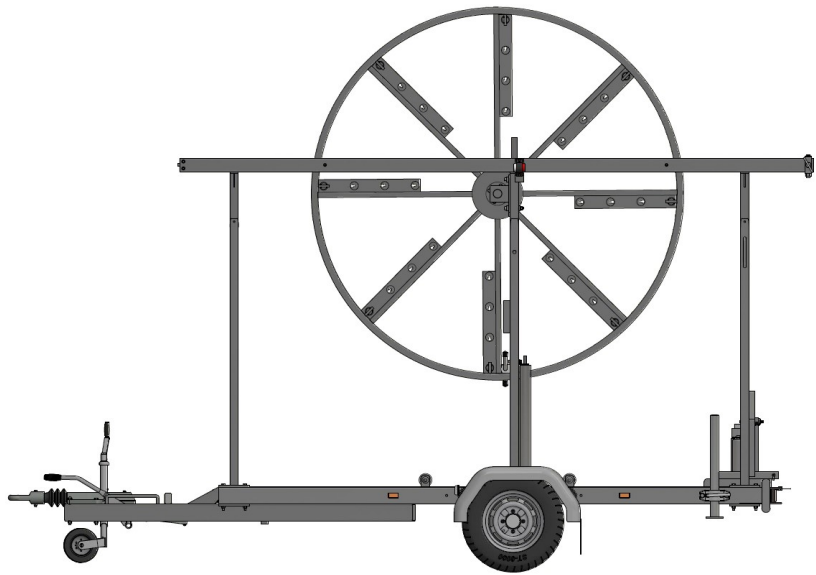


Figure 2: Side View

### 2.1 TRAILER HIGHLIGHTS

Conforms to Gas Industry Standards Specification for Polyethylene Pipe Coil Trailers (GIS E-49)	Conforms to VCA—Vehicle Type Approval
Able to handle large range of coil sizes from 63mm to 125mm	Meets all current UK and EU legislation
Uncoiling is easy due to the carousel allowing a smooth rotation of the coil	Coil is quickly and easily loaded using suitable lifting equipment
Coil fully restrained by radial arms and rollers at all times and pipe never rubs against trailer frame	Central drum prevents pipe pull through during dispensing
Avoids possibility of coil 'springing' - a danger to people and property	Pipe guide anchors pipe for travel and controls PE pipe as it is dispensed
Inner coil end is held firmly in place until the last part of the coil is dispensed by use of pipe end clamp and ratchet strap	All loading and dispensing procedures are carried out from ground level with no need for operatives to step or climb above the anti-slip plates
New models are galvanised as standard	Built-in LED road lighting supplied as standard
Auto reverse brakes fitted as standard	Rear gate/bar locking mechanism requires no climbing onto trailer in line with working at height regulations

## 2.2 TRAILER FEATURES

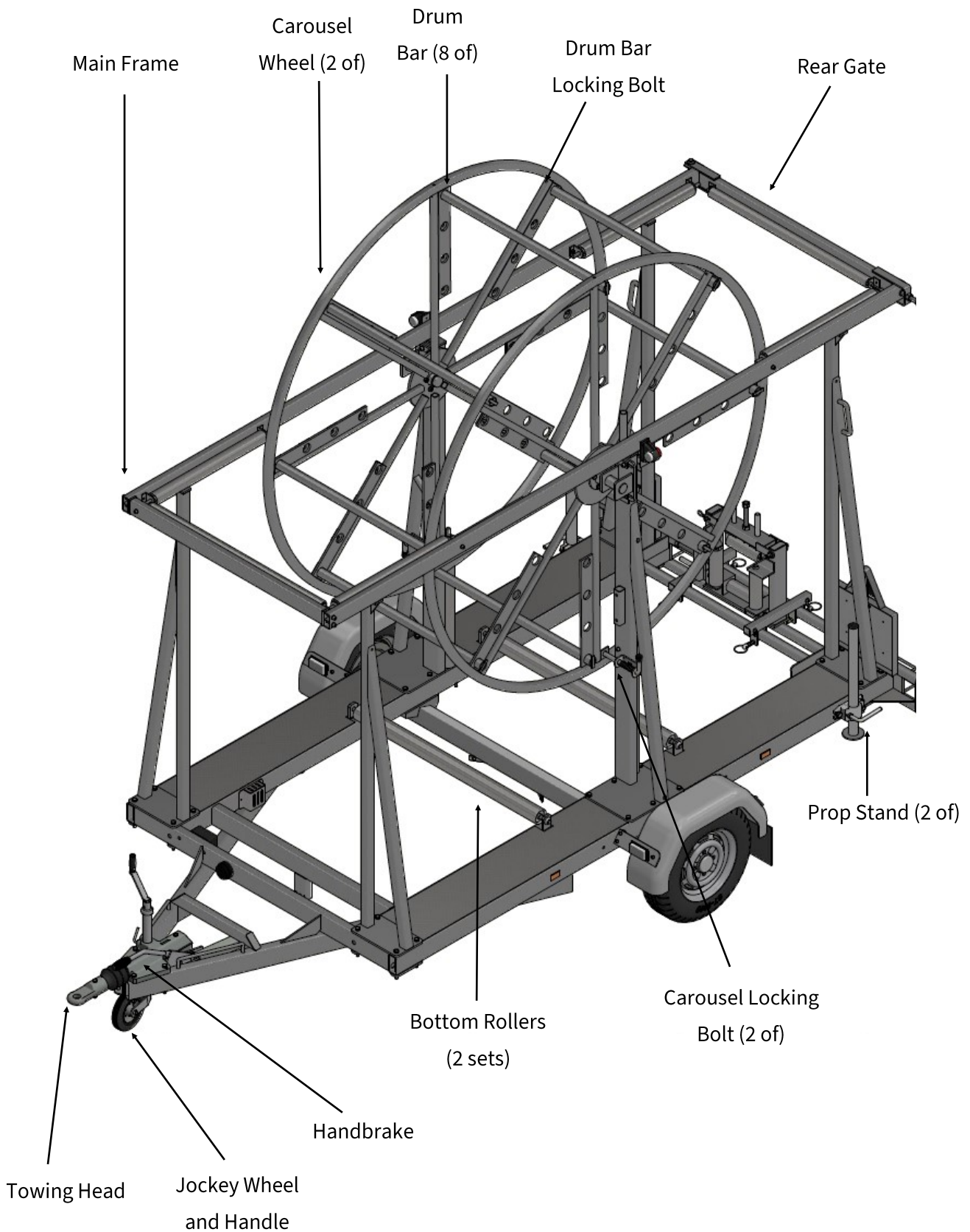


Figure 3: Key feature of the 125 Coil Trailer



### 3. SPECIFICATION

MAXIMUM COIL LENGTH		
PIPE DIAMETER*	COIL LENGTH	
40mm up to 75mm SDR11 or SDR13.6	up to 250m	
90mm SDR17.6	up to 200m	
110mm SDR11 or 17.6	up to 150m	
125mm SDR11 or 17.6	up to 150m	
140mm SDR17.6	up to 100m	
160mm SDR17.6	up to 100m	
MAXIMUM COIL DIMENSIONS		
MAXIMUM COIL O/D	3.3m	
MAXIMUM COIL I/D	0.8m	
MAXIMUM COIL WIDTH	1.0m	
TRAILER DIMENSIONS		
	UNLOADED	LOADED WITH 4.1M. O/D COIL
OVERALL LENGTH	4.5m	4.5m
OVERALL WIDTH	2.3m	2.3m
OVERALL HEIGHT	3.2m	3.7m
TRAILER WEIGHTS		
UNLADEN DESIGN WEIGHT	800kg	
MAXIMUM GROSS WEIGHT	1700kg	
MAXIMUM PAYLOAD	900kg	

\* Refer to PE Pipe manufactures guide to weights of coils, paying attention to the SDR rating, length and size of coil. Ensure lifting equipment, for example straps and hooks are rated, certified and within specified date and the weight of the coil is under the SWL for the mechanical lifting equipment being used.

#### Vehicle Type Approval (VCA)

The 125 Trailer has Vehicle Type Approval. VCA is the designed UK Approval Authority and Technical Service for type approval to all automotive European Community (EC) Directives and the equivalent United Nations Economic Community for Europe (ECE) Regulations. **Vehicle Type Approval** is the confirmation that production samples of a design will meet specified performance standards.

## 4. SAFETY AND PRECAUTIONS

### 4.1 PREPARATION PRIOR TO LOADING

The following PPE must be worn at all times:

- A. Eye protection
  - B. Hard hat
  - C. High visibility jacket
  - D. Gloves
  - E. Steel toe cap footwear
- Ensure Safety Zone is established in the area of loading.
  - Isolate area from pedestrians and other plant equipment.
  - Carry out daily trailer checks prior to loading procedure as per page 16.
  - It is recommended a minimum of two operatives are available to carry out the task of safely loading a coil and have had relevant training.
  - In most cases the coil is loaded using a certified strap correctly attached to a mechanical lifting device —**using a strap also prevents the possibility of damaging PE with unprotected fork blades.**
  - Ensure towing vehicle is suitable for a hitch with a 30mm towing eye and is not exceeding its maximum towing weight for trailer and coil as per page 5.
  - Ensure weight of coil does not exceed maximum capacity of lifting device when fully extended.
  - Ensure straps/hooks used with the trailer are in good working order, certified and within service date to safely handle the weight of the coil.
  - Check the lifting device can suspend the coil by a minimum of 550mm from the ground.

### 4.2 IMPORTANT POINTS

The trailer is designed to carry coils of PE in the size range stated and should not be used for anything else. Ensure the following points are adhered to:

- Do not strap ancillary equipment to the trailer. If a vent stack is installed this should be a permanent fitting and carried out by a competent professional.
- Do not stand in the trailer especially when travelling.
- Do not tow the trailer if your licence does not permit you to do so - refer to up to date regulations.
- Do not drive above the relevant speed limit when towing the trailer.
- Observe driving conditions at all times when towing the trailer.

## 5. OPERATING INSTRUCTION

**5.1** It is recommended to connect the trailer to a suitable vehicle for loading.

Ensure the locking pin is secured through the eyelet on the towing hitch and the breakaway cable is attached.



Figure 4

**5.2** Manually apply the handbrake.



Figure 5

**5.3** If the trailer is to be unhooked from the vehicle the roll back test must be carried out first. This process reverses the breaks maintaining a constant breaking force.

A banksman is needed for the roll back test.

Reverse the vehicle and trailer approximately six inches which pushes the handbrake lever into the 12 o'clock position.

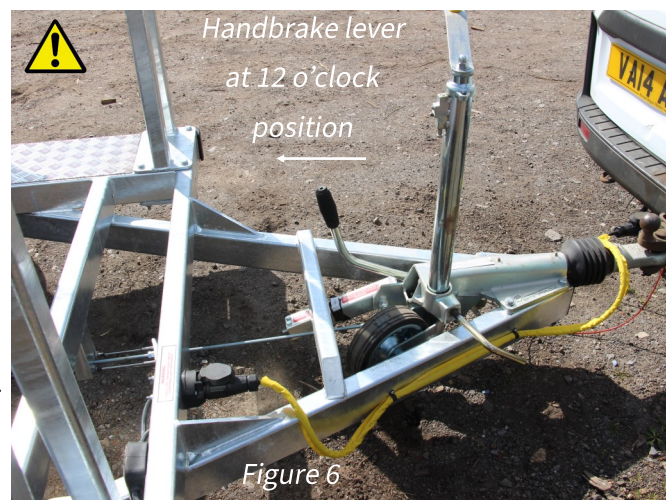


Figure 6

**5.4** Before unhooking the trailer from the vehicle, the jockey wheel must be lowered onto the ground and secured in place at a height that keeps the trailer level.

If necessary the trailer can now be unhooked from the vehicle.



Figure 7



**5.5** It is recommended to lower the prop stands even if the trailer is to remain connected to the vehicle. It is especially important if the trailer is unhooked from the vehicle. The prop stands help to stabilise the trailer during loading and dispensing.

Prop stands must be lowered down and secured with the locking handle.



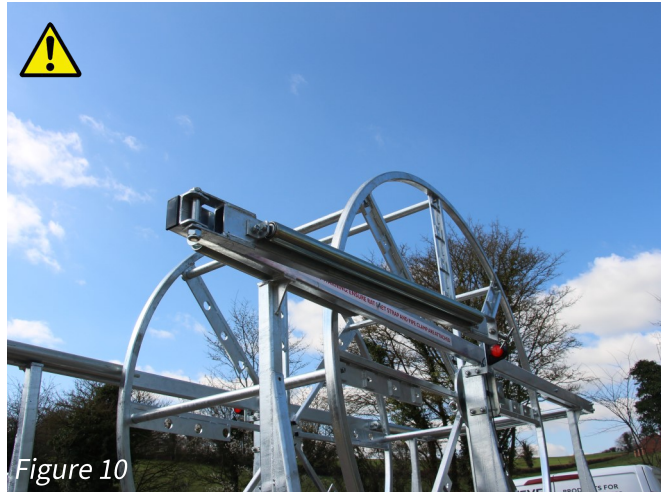
**5.6** The trailer may be loaded from the side and the coil lifted over the carousel. In this instance the rear gate may remain shut. If the trailer is to be loaded from the rear end the rear gate must be opened.

Open rear gate by unscrewing the locking screw  
KEEPING HOLD OF THE GATE AT ALL TIMES.



**5.7** Fully swing gate round to side of trailer.

If the rear gate will not stay to the side of the trailer it may be necessary to temporarily tie the gate to the trailer main frame.



**5.8** The pipe guide may need to be removed if it will foul the coil as it is loaded. If the coil can be loaded over the pipe guide then the pipe guide can remain attached to the trailer.

Remove the four swivel pins and hang them loose.





**5.9** The pipe guide should be lifted up off the bars at the lifting points shown. It may be necessary to consider a second operative to help if the weight is considered too much for the operative.

Never stand inside the trailer when lifting the pipe guide.

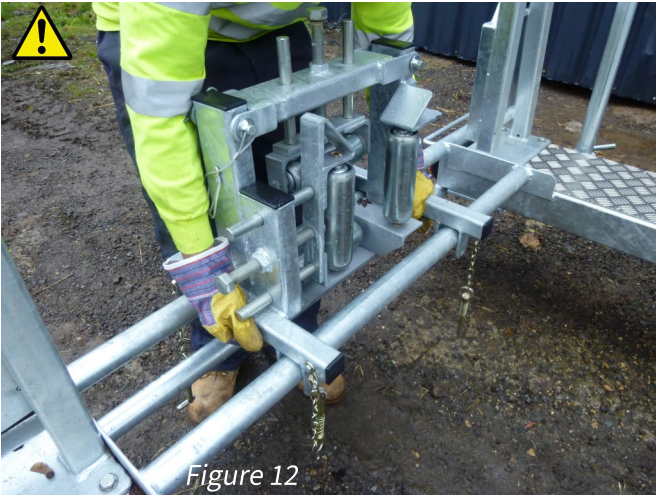


Figure 12

**5.10** It is advised to have a second operative help in removing the drum bars to stabilise the carousel. When removing the drum bars it is recommended to remove them in a diagonal sequence (see fig.14) to keep the carousel as stable and evenly balanced as possible. At all times during the process an operative must hold the carousel without placing any part of the body inside the carousel.

Removing the drum bars in the numbered sequence shown will help to avoid any sudden movement of the carousel.

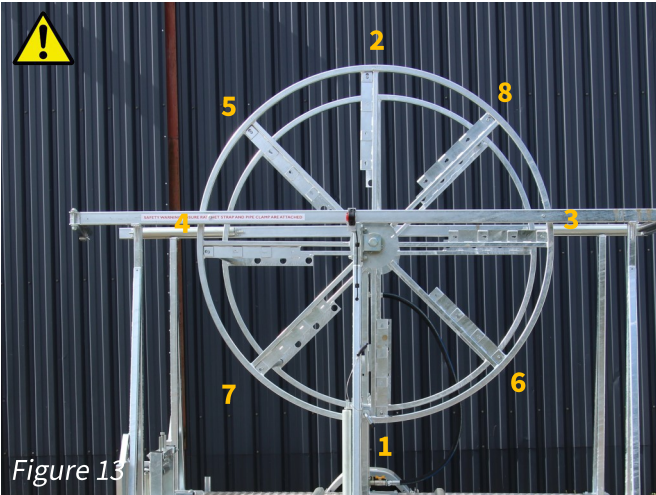


Figure 13

**5.11** Retract the carousel locking bolt and secure to avoid it fouling the carousel.



Figure 14

**5.12** Unscrew the locking bolt using the Allen key originally provided.



Figure 15



**5.13** The second operative pulls through the drum bar and at all times keep hands and limbs **BELOW** the carousel and never between the carousel spokes.



**5.14** Rotate the carousel to the next identified drum bar. Do not place any limbs inside the carousel and maintain hold of the carousel at all times during the process. Remove the drum bar as before.



**5.15** Once the last drum bar has been removed the carousel wheels spin independently of each other and will need to be locked in place using the carousel securing bolts.



**5.16** Using suitable lifting gear lift the coil towards the trailer. A suitable strap and lifting eye is recommended and the coils should never be hung from the blades of a forklift.

The leading end of the coil must be facing the gate end of the trailer (when inside the trailer) otherwise the pipe cannot be dispensed.





**5.17** Any swinging movement of the coil can be controlled by an operative using a length of rope tied round the coil usually in the 5 or 7 o'clock position. Do not stand directly underneath the lifting gear.



Figure 20

**5.18** Carefully bring the coil into the frame of the trailer. If the coil is being lifted over the top of the carousel ensure the coil does not foul the carousel wheels as this may damage the trailer and the coil.



Figure 21

**5.19** Suspend the coil so that it is visually central to the carousel wheel and all drum bar location points are accessible.



Figure 22

**5.20** It is recommended to use a second operative when replacing the drum bars.

Replace the drum bars in the opposite manner to which they were removed and secure in place. It is recommended to follow the sequence as described in Fig.14 to keep the carousel as balanced as possible. This will help to prevent the carousel from any sudden movement.

Do not place any limbs inside the carousel and when receiving the drum bar keep arms underneath the carousel.



Figure 23



**5.21** Lower the coil onto the drum bars. With the gate open and the coil free to spin on the carousel, lower the strap towards the open end of the trailer and remove from lifting gear. The strap from the lifting gear must be removed at a safe working height.

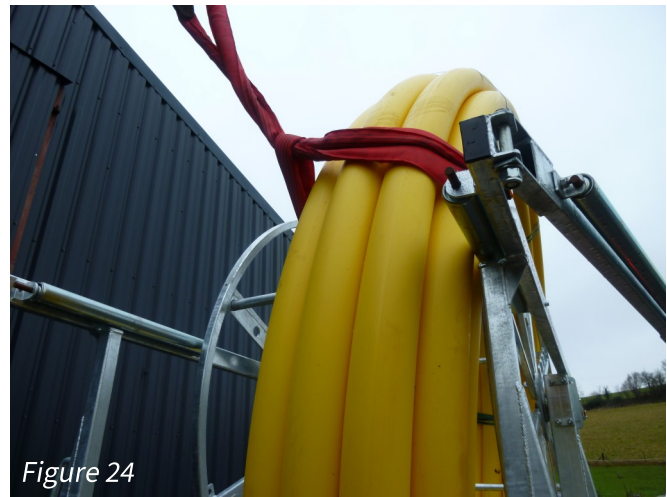


Figure 24

**5.22** The tail end of the PE pipe must be fitted with a Live Test End (for live mains insertion) or a pipe end clamp.

Slide the Live Test End fully into tail end of the PE pipe and tighten with an adjustable spanner.

If using a pipe end clamp slide fully into the tail end of the PE pipe and hand tighten the two handles.



Figure 25

**5.23** Attach a ratchet strap to the Live Test End or pipe end clamp. In Figure 27 this is connected with a D-Shackle, an alternative is to use a ratchet strap with a sown in hook.

*Ensure whatever arrangement is used complies with relevant codes of practice. Ensure ratchet straps, hooks and D-Shackles have all necessary certification.*

**5.24** Attach the other end of the ratchet strap to an eyelet on the trailer using a D-Shackle as shown in Figure 28. An alternative is to use a ratchet strap with a sown in hook.

*Ensure whatever arrangement is used complies with relevant codes of practice. Ensure ratchet straps, hooks and D-Shackles have all necessary certification.*

It is important to use the opposite side to the tail end of the PE pipe as this will help to keep the tail end of the PE pipe away from the main frame of the trailer when dispensing.



Figure 26



Figure 27



**5.25** Ratchet the tail end of the PE pipe towards the middle of the coil and tidy up the loose strap so that it does not get caught in any moving parts.



Figure 28

**5.26** If the pipe guide was removed for loading the PE pipe, return it in the opposite manner to which it was removed.

Lift up top roller by removing the locking pin and pivot to the other side.

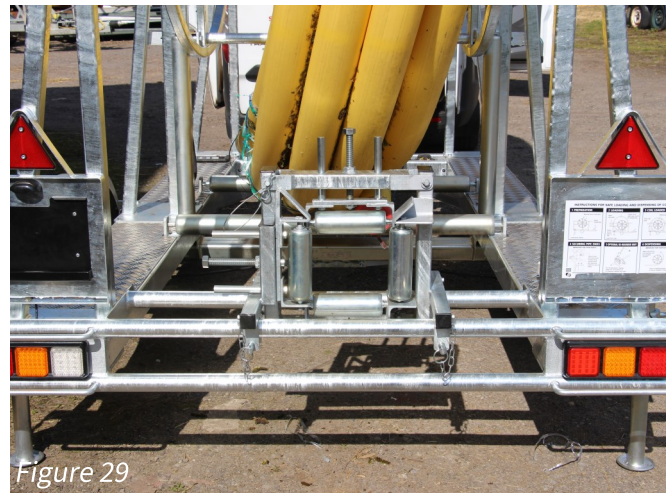


Figure 29

**5.27** To secure the leading end it is recommended to carefully feed leading end of PE pipe into the pipe guide. The first set of bands may need to be cut to allow this. Slide over the top roller and tighten down feed screw and secure PE pipe using a spanner. Alternatively tie the leading end to the frame of the trailer using suitable attachments.



Figure 30

The trailer is now ready for transportation to site. **If the prop stands and jockey wheel were lowered for loading these must be fully retracted before towing the trailer.** The electrics will need to be hooked up to the vehicle and the lights on the trailer checked before towing.



## DISPENSING THE PE PIPE

**5.28** The PE pipe must be cut square before fitting the Live Head or towing head which must end up flush with the end of the pipe.

When dispensing the PE cut the bands at the appropriate time. Never place any limbs inside the carousel and only cut the bands when the PE is NOT rotating.



Figure 31

**5.29** The ratchet strap must be removed before the PE pipe finally leaves the trailer. The remaining few metres must be dispensed slowly and when the tail end is below the carousel and the strap has become slack the dispensing must immediately stop.



Figure 32

**5.30** Remove the ratchet strap from the trailer and from the Live Test End (or pipe end clamp). The ratchet strap must not be removed when the strap is under strain.

Replace with a length of rope.



Figure 33

**5.31** Loop the rope around the roller and the middle column on the trailer. Stand away from the trailer and feed out the remaining few metres of PE pipe until it has left the trailer. This will prevent the PE pipe from springing upwards forcefully when leaving the trailer.



**5.32** When the PE has left the trailer stop the insertion process and remove the rope when it is safe to do so.



**5.33** The trailer can be towed away from site when required. Before towing the vehicle away ensure:

- The towing head is properly attached to the vehicle.
- The rear gate is closed.
- The carousel is locked in place using the carousel locking bolt/s.
- Both prop stands are raised.
- The jockey wheel is fully retracted.
- The trailer lights operate correctly.

## 6. SERVICE GUIDE

Daily Checks	First 160km (100 miles)
Check all lights are operating correctly	Service braking system
Check jockey wheel and prop stand clamps are secure	Clean grease from hubs, replace and adjust
Check for body damage	Lubricate coupling and brake linkages
Check handbrake is operating correctly	Check chassis and body for damage
Ensure End clamp and Ratchet Strap are fitted	Tighten all clamping bolts
Weekly Checks	First 800km (500 miles)
Check nuts on tow hitch are tight (86NM)	Inspect condition of brake shoe lining
Check tyre pressure and inspect for damage.	Service and adjust braking system, then check
Recommended Tyre Pressure: <b>4 Bar</b>	Clean grease from hubs, replace and adjust
Check braking system is operating correctly	Lubricate coupling and brake linings
Check wheel nut torque setting - 7,7 kgm (76NM)	Check chassis and body for damages
	Tighten all clamping bolts
	Check tyres for damage and wheel nut torque settings
	Check all lighting

## 7. ROUTINE MAINTENANCE

Owing to the varied uses which coil trailers are subjected to it is difficult to lay down realistic maintenance intervals. While some will be in daily use, others will be used less frequently. With the latter it is advisable to thoroughly check the trailer's tyres, coupling, brakes, lights, jockey wheel, bearing adjustment and general condition before every journey, and with the more frequently used trailer every 800kms (500 miles).

### 7.1 WHEEL NUT TORQUE

It is most important that the torque setting is not exceeded. Over tightening can result in immediate shearing of the stud, or a fracture, breaking when the trailer is on the road. With the normal size manual wheel brace one is not likely to exceed the settings, but special care should be taken when using impact wrenches. A torque wrench should be used.



## 7.2 TAPER ROLLER BEARINGS

Tighten the axle nut to ensure 0,1mm. end float. Since it is not practical to do this without special measuring equipment it is usually sufficient to first of all pre-compress the bearings to ensure the out bearing inserts are up to the machined shoulders of the hub and then 'back off' the slotted nut until the hub spins freely without any noticeable 'end float'. This is usually approximately 2 castellations. On achieving the correct setting, insert the split pin and ensure it is opened up. Bearings should be readjusted on all new trailers after the first 160kms (100 miles).

Bearings should be kept packed with a good lithium based grease at all times. When checking grease always ensure that the grease seal, which will either be attached to the rear bearing or inserted into the rear of the hub, is not damaged in any way. If damaged, replace it.

## 7.3 BRAKING SYSTEMS

### Adjustments

Apply the handbrake, having first braked the trailer in the forward direction, to ensure the trailing shoe is correctly positioned, i.e. not in the reversing position. Loosen the wheel nuts on the side to be worked on and jack up the wheel. Make secure by chocking the other wheel. Release the handbrake and remove the wheel.

Most auto reverse brakes have the adjuster on the outside of the brake.

Turn the adjusters clockwise until the shoes are hard onto the drum. Back off just sufficient to allow drum to be turned freely. Very slight rubbing of the shoe drum is permissible. Should the amount of adjustment seem excessive, remove the drum and check that the shoes are correctly fitted into the expander.

### Operation

1. The service brake of this system is designed in such a way that the adjustment of the brakes is required only at regular service intervals. Indications that brake shoe wear is high and adjustment is necessary shows when the brake levers on the hitch reach the last quarter of the 100mm for each brake, having followed the instructions for adjusting. To reverse the trailer simply engage reverse gear.
2. The parking brake differs from a normal brake system in so far as the brakes are actuated via an energy reservoir or energy store. The energy store must be compressed when it is intended to uncouple a trailer which is facing uphill on a slope. The brakes will allow rotation of part of a revolution of the road wheel until the energy reservoir has reapplied the brakes on to the drum wall.

**Note: These brakes are suitable only for the side of the trailer to which they are fitted.**

## 7.4 JOCKEY WHEEL

Release the inner portion of the jockey wheel handle until you are able to extract it. Thoroughly clean road dirt from both portions before smearing grease inside the threaded portion of the inner part and re-assemble. Finally check that the wheel itself spins freely and if not lubricate as required. Any damaged parts should be replaced.



## 7.6 LIGHTS (to be checked against LEDS)

Connect plug to towing vehicle socket and visually check that lights function correctly. Malfunctions should be corrected before taking the trailer on public roads.

Fault Finding	
Fault	Possible Remedy
A light fails to illuminate	Loose or blown fuse
	Defective bulb, or loose in its holder
	Corrosion within the bulb holder
	Poor earth connection (trailer or vehicle)
	Broken wire - insulation chafed (wire shorting to earth)
	Incorrect or faulty wiring connections
Warning light inoperative or remains illuminated.	Defective warning light bulb
	Incorrectly wired warning light
	Poor earth on trailer or vehicle
	Indicator bulbs of incorrect wattage (check flasher
	Dirty flasher unit terminals N.B. If the above checks are satisfactory and the indicator lights operate at 60 - 120 per minute, but the warning light stays on or does not flash, then the flasher unit itself is at fault.
Incorrect rate of flash	Incorrect bulb wattage (check flasher instructions)
	Poor bulb holder, switches or fuse connections/contacts

## 7.6 WIRING DIAGRAM

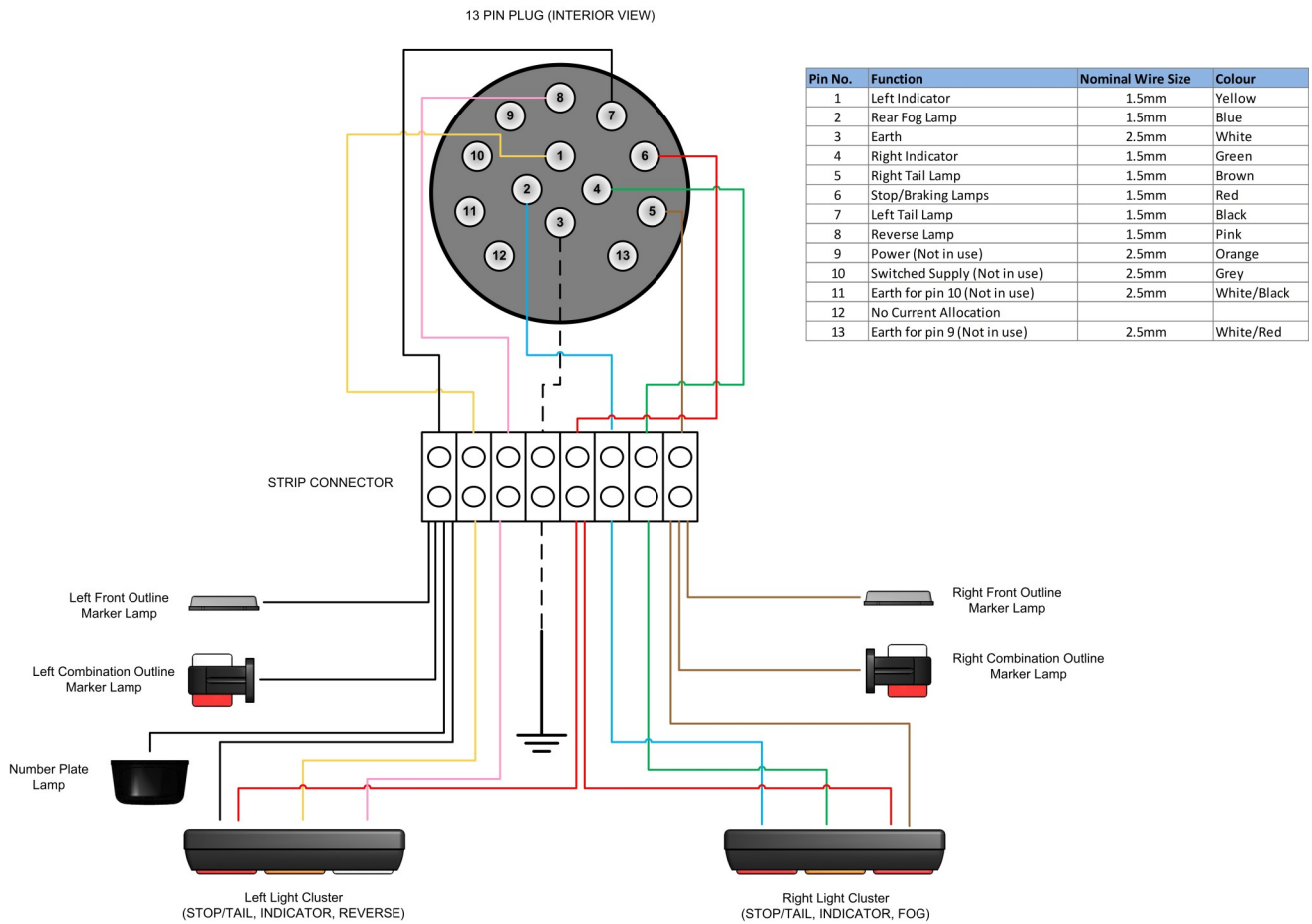


Figure 38 Wiring schematic and table for trailer lights—13 Pin

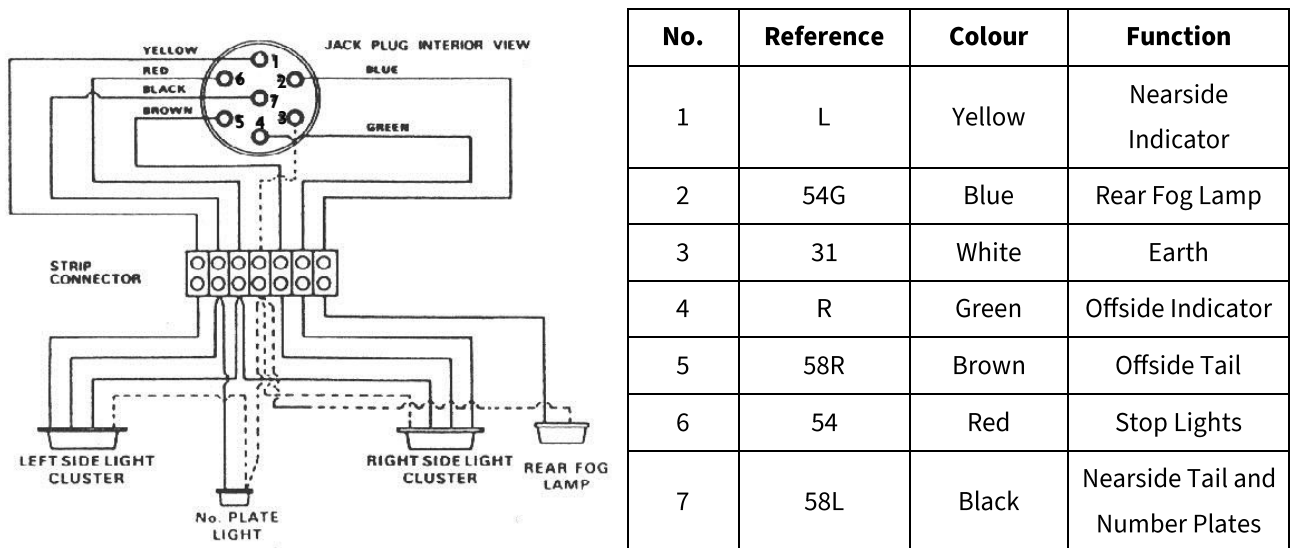


Figure 39 Wiring schematic and table for trailer lights—7 Pin