

STEVE VICK

INTERNATIONAL



SOLUTIONS FOR THE REPAIR RENOVATION AND DECOMMISSIONING OF PIPELINES



180 Pipe Coil Trailer

Operating Instructions

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I. 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 handling 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**

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2.0 REVISION HISTORY

Version No.	Revision Date	Summary of Changes
01	01/11/2020	Created.
02	12/03/2024	Text and Image changes
03	17/06/2024	Inclusion of safety cages and long reach band cutter tooling
04	27.06.2024	Addition of Off Road/Site Wheels

2.1 APPROVALS

This document requires the following approvals.

Name	Signature	Position	Approval Date	Version No.
Sean Noonan		Director	27/06/2024	4
Elliot Ross		Technical Support Manager	27/06/2024	4

3.0 180 COIL TRAILER INTRODUCTION

Steve Vick Pipe Coil Trailers offer efficiency and ease of dispensing across all methods of pipe laying such as sliplining, open trench and directional drilling. Offering a safe way to transport, store and dispense coiled PE. The 180 Pipe Coil Trailer handles coils of PE with a pipe diameter from 40mm to 180mm. It accommodates a 100 metre coil of 180mm SDR 11/17 PE.

3.1 SCOPE

This manual covers the correct use of the equipment, and maintenance of the coil trailer.

3a. **PRODUCT DESCRIPTION**

The double-axle 180 Pipe Coil Trailer handles coils of PE with a pipe diameter from 63mm to 180mm.

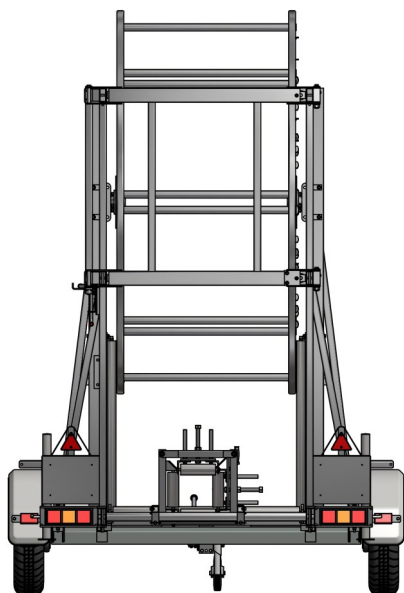


Image 1 Rear View

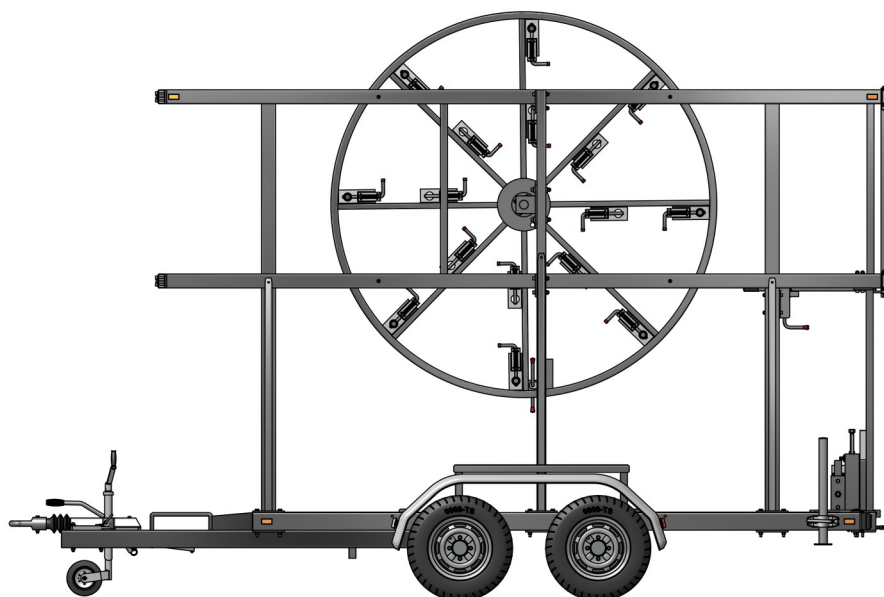


Image 2 Side View

3b **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 180mm	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
Helps to manage the stored energy in PE coils	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 on-to trailer in line with working at height regulations

3c TRAILER FEATURES

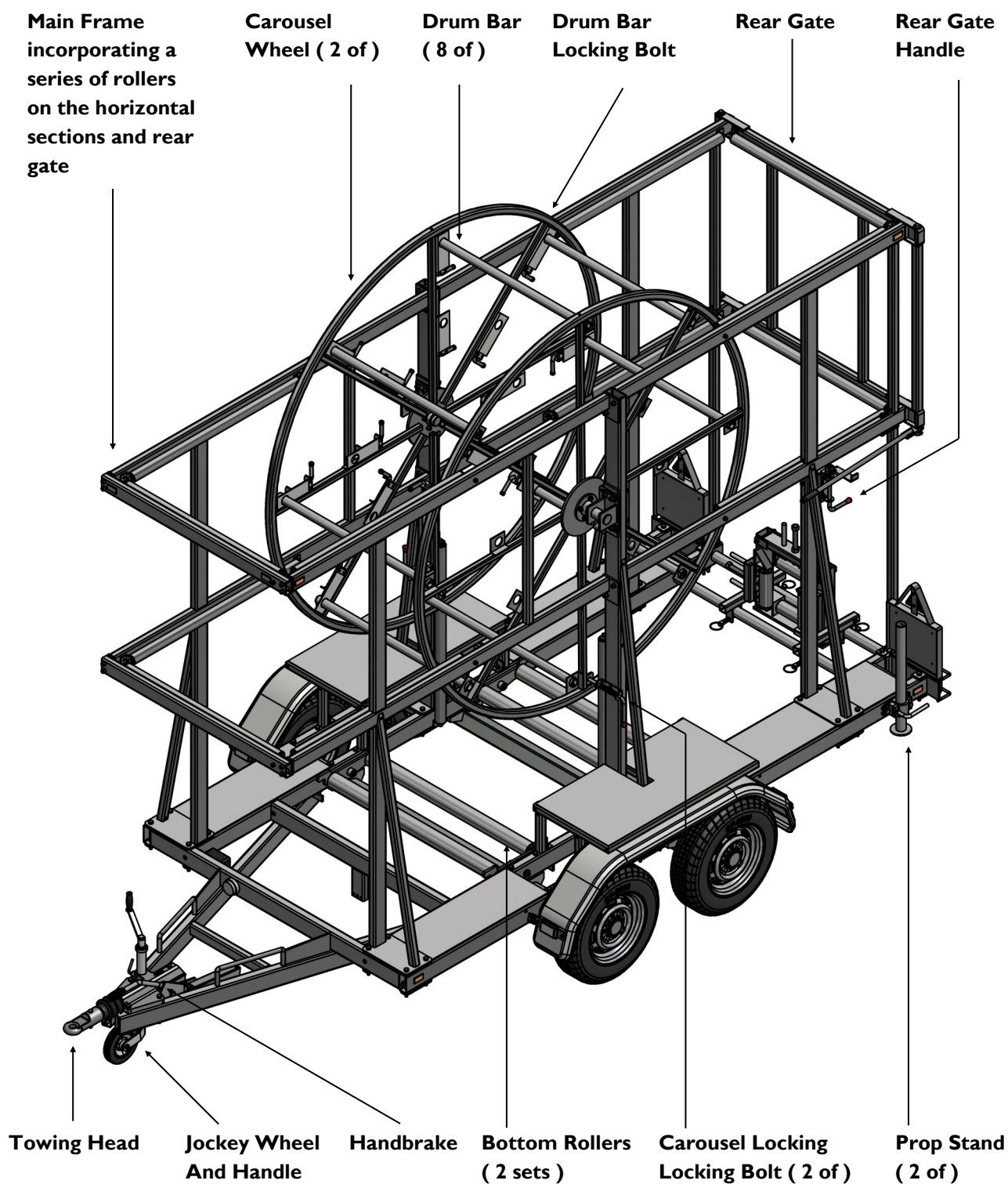


Image 3 Key features of the 180 Pipe Coil Trailer

3d. **SPECIFICATION**

MAXIMUM COIL LENGTH		
PIPE DIAMETER *	COIL LENGTH	
63/75mm SDR11, SDR13.6 or SDR 17.6	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	
180mm SDR17.6	up to 100m	
180mm SDR11	up to 100m	
MAXIMUM COIL DIMENSIONS		
MAXIMUM COIL O.D.	4.1m	
MINIMUM COIL I.D.	0.8m	
MAXIMUM COIL WIDTH	1.0m	
TRAILER DIMENSIONS		
	UNLOADED	LOADED WITH 4.1m. O/D COIL
OVERALL LENGTH	5.0m	5.0m
OVERALL WIDTH	2.3m	2.3m
OVERALL HEIGHT	3.4m	4.5m
TRAILER WEIGHTS		
UNLADEN DESIGN WEIGHT	1250kg	
MAXIMUM GROSS WEIGHT	2600kg	
MAXIMUM PAYLOAD	1350kg	

- 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.
- * This size of coil has been loaded onto this trailer. The other sizes listed *may* be increased in length if their respective measurements fall within the trailer dimensions and within the Maximum Permissible Weight.

4. SAFETY AND PRECAUTIONS

4.1 INITIAL CHECKS

- Ensure Safety Zone is established in the area of loading.
- Isolate area from pedestrians and other plant.
- Carry out daily trailer checks prior to loading procedure as per page 19
- Ensure the trailer is equipped with a means to anchor the tail end of the PE during transport and dispensing. See section **5.24 Page 14. This must be fit for purpose and visually inspected for any damage.**

Coils in diameters 63mm to 180 mm contain a considerable amount of stored energy, which could potentially cause injury to personnel, if the coils are not handled and dispensed correctly. Always ensure the tail ends of the coil are restrained and released in a controlled manner. Personnel involved in the handling and dispensing of pipe coils should be trained for this operation. Courses in the safe and correct handling and dispensing of pipe coils are available from SVI & other industry bodies.

- 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 or 40mm towing eye and is not exceeding its maximum towing weight for trailer and coil as per page 6.
- 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 THE FOLLOWING PPE MUST BE WORN AT ALL TIMES



FULLY READ MANUAL BEFORE USE



Hard hat



High visibility jacket



Gloves



Steel toe cap footwear



Wear protective clothing (no loose clothing)



Eye Protection

4.3 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.
- Never stand inside the trailer to carry out **any** activities, for example lifting the pipe guide out, cutting bands etc.
- 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.
- Always refer to customer loading/dispensing procedures as they may differ to this operating instruction
- It is recommended when directional drilling or winching, due to the increased forces consider the use of SVI Test End or a Towing Head instead of a Pipe End Clamp.
- Consideration needs to be given for an exclusion zone around the trailer
- Alignment of trailer: trailer should be inline with the direction of the PE whether insertion or winching
- Trailer should be on level and firm ground
- It is recommended when directional drilling or winching, due to the potential forces additional anchorage may be required.
- The coil must be stationary when cutting the bands ensuring there is a safe and clear system of works to do so.

5. OPERATING INSTRUCTIONS

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.



5.2 Manually apply the handbrake.



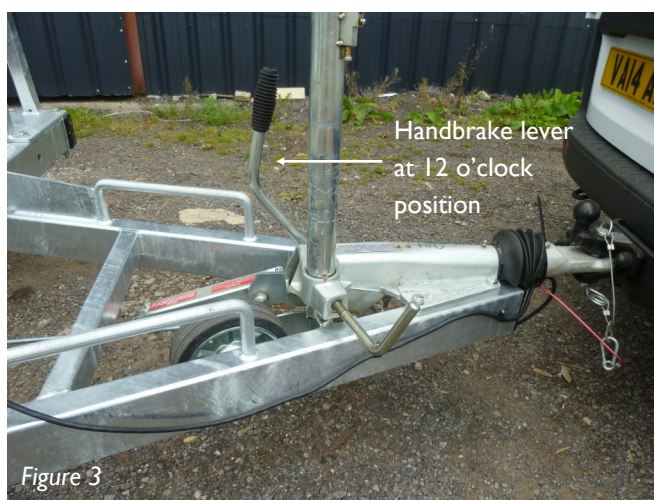
5.3 If the trailer is to be unhooked from the vehicle the roll back test must be carried out first. This process reverses the breaks maintaining a constant breaking force.

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.



Do not continue to reverse once the handbrake lever is in the 12 o'clock position



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.



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.



Figure 5

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 placing left hand on the handle and pull down locking spring with the right hand securing the spring in the open position.



At all times keep a hand on the lever while pulling down on the spring bolt



Figure 6

5.7 Lift the handle up and over the safety catch.



At all times keep a hand on the lever while unhooking the handle



Figure 7

5.8 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. As shown here a cable tie has been used from the handle to the horizontal beam on the main frame.



Figure 8

Cable tie used to temporarily secure handle to frame

5.9 PIPE GUIDE UNIT: Depending on the year of manufacture the trailer will be fitted with a pipe guide unit as shown in Figure 9 or Figure 10. Operating the lid is the same for both.



Figure 9

5.10 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.



Figure 10

5.11 Lift the pipe guide up and out without standing inside the trailer.



Figure 11

5.12 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 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.



Remove the drum bars in the numbered sequence shown to avoid any sudden movement of the carousel

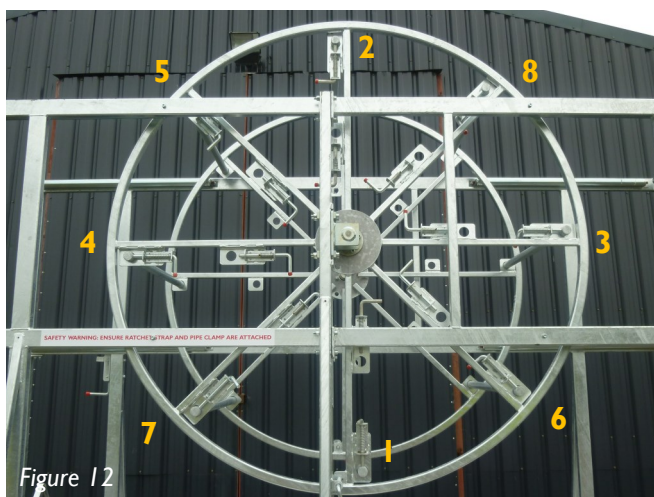


Figure 12

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



5.14 Retract the drum bar locking bolt and secure.



5.15 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.



Never place any limbs inside the spokes of the carousel/curved wheel



5.16 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.



Never place any limbs inside the spokes of the carousel/curved wheel



5.17 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.



Figure 17

5.18 Using suitable lifting gear lift the coil towards the trailer. A suitable strap and lifting eye or a lifting eye on each fork is recommended. The coils should never be hung directly on the forks of a telehandler.

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.



Refer to customer policies and guidance. Ensure the lifting strap is fit for purpose and certified.



Figure 18

5.19 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.



Refer to customer policies and guidance. The banksman holding the guide rope must be safely clear of the lifting equipment and coil



Figure 19

5.20 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 20

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



Figure 21

5.22 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 **5.12** 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 passing through and receiving the drum bars



Figure 22

5.23 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. Ensure lifting gear is away from the trailer.



The strap from the lifting gear must be removed at a safe working height.



Figure 23

5.24 The **tail end** of the PE must be anchored using:

Figure 24a—SVI Test End for LMI. Slide in fully flush with PE and tighten with a spanner.

Figure 24b—Pipe End Clamp for DMI. Slide fully in and tighten both handles.

Figure 24c—Towing Head for Directional Drilling due to potential forces on the PE.

Slide in fully flush with PE and tighten with a bar through the eyelet.



Figure 24a



Figure 24b



Figure 24c

5.25 Attach a ratchet strap to the SVI Test End , Pipe End Clamp or Towing Head. In Figure 25 this is connected with a D-Shackle, an alternative is to use a ratchet strap with a sown in hook.

Please note the process of securing the tail end of the PE to the centre of the coil trailer is the same for both the SVI Test End, Pipe End Clamp or Towing Head.



Figure 25

5.26 Attach the other end of the ratchet strap to an eyelet on the trailer using a D-Shackle as shown in Figure 26. An alternative is to use a ratchet strap with a sown in hook.

Ensure whatever arrangement is used complies with relevant codes of practise. 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

5.27 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 27

5.28 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 28

5.29 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 29

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.

Towing Checklist:

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

- The driver is competent and has the correct license
- The trailer is correctly 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.

DISPENSING THE PE PIPE

5.30 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.

Prior to dispensing, to allow the pipe to slide through the pipe guide, loosen the relevant rollers on the 4-way roller version. When using the 3-roller version ensure the top roller is set in the groove that does not restrict dispensing the pipe but is still correctly locked on top. Continue dispensing to the desired length.


 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 30

5.31 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.

Confirm the pipe roller is tight on the PE so as to restrict any sudden movement.

With the insertion stopped, to aid the slackening of the strap the carousel can be rotated so that the length of the distance between the end of the pipe and where the strap is anchored on the trailer, is at it's shortest. This will slacken the strap. **Under no circumstances should the strap be removed when under tension.**



Figure 31

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

With at least 1m of PE pipe within the trailer replace with a length of rope and loosen the rollers on the pipe guide unit. When using a Pipe End Clamp ensure the rope is restraining the PE when opening the top of the pipe guide unit. There is no need to open the top of the pipe guide unit when using a **SVI Test End or Towing Head**.

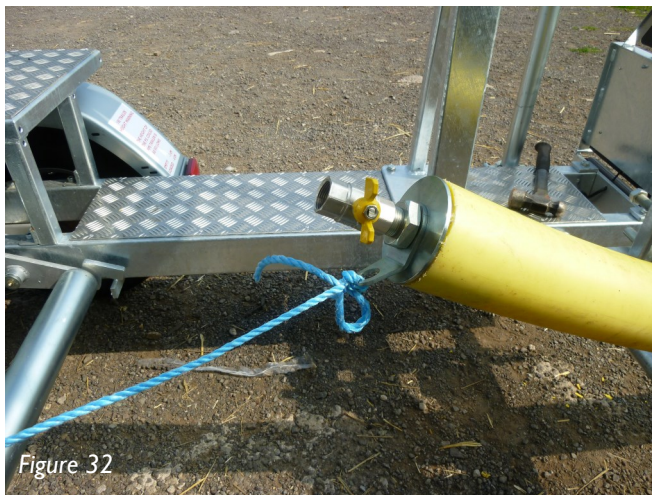


Figure 32

5.33 Loop the rope around the roller and the middle column on the trailer indicated by the arrow in Figure 33 and in the diagram Figure 34. 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.

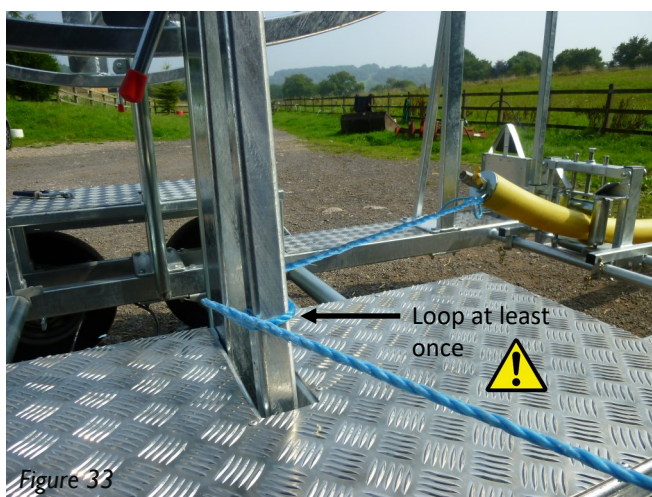


Figure 33

5.34 The rope must be looped round the upright of the trailer at least once as shown in Figure 34. This allows the operative to have control feeding the tail end out and away from the trailer.

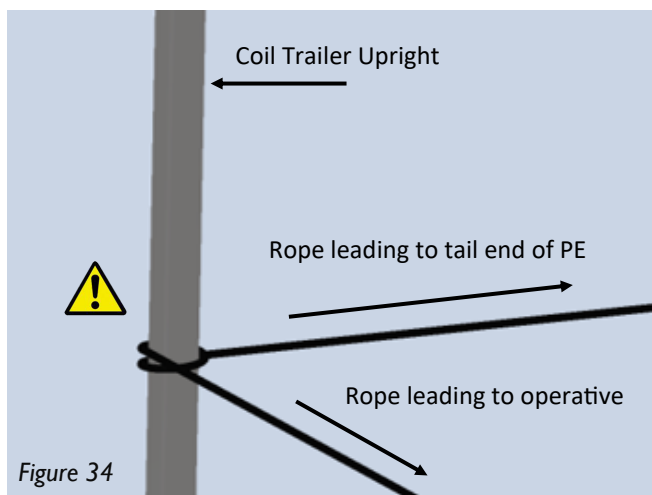


Figure 34

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



Figure 35

6.0 Appendix A—Safety Cages

The following guidance is to give instruction on how to use the safety cages fitted **where fitted**. The safety cages are designed to prevent the tail end of the PE from leaving trailer and causing harm to the operative. It is still essential that a safety zone is in place and the tail end is secured using the equipment described in this Operating Instruction. The cages are fitted to the four lower quadrants of the trailer and can be opened to carry out certain duties like installing the drum bars or tightening the ratchet strap. If during an insertion these duties must only be carried out when the insertion of the PE has been stopped.

6.1 The image left shows the cages fully closed.

6.2 The image left shows one of the safety cages open.



Figure 36



Figure 37

6.3 All operations must be stopped when opening the safety cages. During the loading process the lifting equipment must have the power switched off or if during an insertion the insertion must be stopped with and a good line of communication established.

The safety cage is unlocked by de-latching the lock off mechanism. This allows either cage to be opened to allow access to the carousel or the tail end of the PE.



Figure 38

6.4 Slide open the required safety cage panel to allow access to the carousel for removing/fitting drum bars as outlined in **5.15** and **5.22**. The safety cage may also be opened to allow access to the tail end of the PE if the ratchet trap needs tightening on the tail end anchorage fitting.

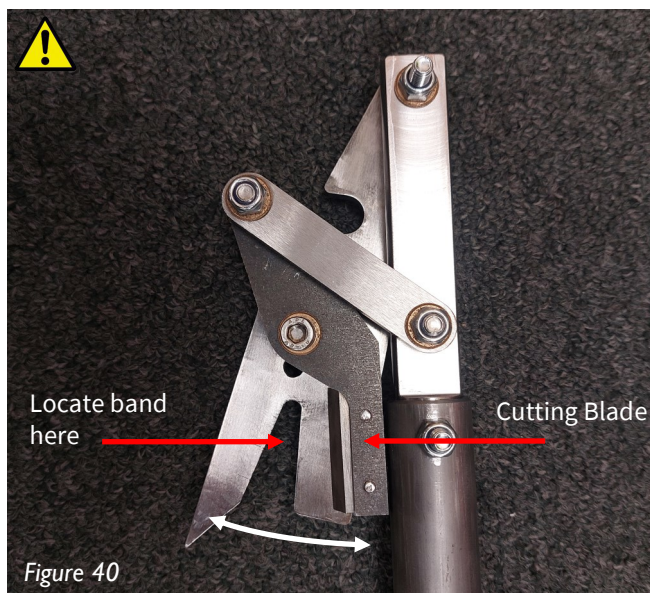


Figure 39

7.0 Appendix B—Long Reach Band Cutter

The following guidance is to give instruction on how to use the Long Reach Band Cutter. This Band Cutter allows the restraint bands that hold a PE coil together to be cut at a safe distance. The Band Cutter is designed to cut the security band and the plastic 'sequence' restraint bands.

The image left shows the cutter mechanism where the blade is located in a sprung 'safe' location when not activated. The red arrow head shows where the band needs to be located. Once in this position the pole of the Band Cutter is pulled sharply downwards, this pivots the cutting blade shown by the white arrow and cuts through the band. The mechanism automatically retracts the cutting blade back into the safety position as shown.



6.1 It is strongly recommended to stand at the jockey wheel end of the coil trailer to cut the PE Coil bands. The dispensing operation **MUST** be stopped when a band requires cutting. It is also essential the correct band is cut in the correct sequence and not all at once.

Extend the Long Reach Band Cutter to a comfortable length and ensure it is firmly locked in place. With the dispensing operation stopped, locate the restraint band inside the band cutter as described above in **6.0**. Hold in this location and when there is a confirmed engagement sharply pull down on the extension pole. If required repeat this operation to complete the cut. Do not attempt to cut the band until locating the band inside the band cutter.



8.0 Appendix C—Off Road/Site Wheel/Tyre

The Off Road Wheel and Tyre are an optional alternative where site conditions dictate that a standard road tyres will not be suitable. They have an enhanced deeper tread and are wider than the standard road tyres.



Figure 42

8.1 The tyres are NOT for road use and for site use only.

Installation: Torque settings as per Service Guide Section 9
Page 22.



Figure 43

8.2 The tyres are inflated to a maximum pressure of 2.5bar
(36 PSI)



Figure 44

9. 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 (88Nm)	Inspect condition of brake shoe lining
Check tyre pressure and inspect for damage. Recommended Tyre Pressure: 4 Bar (60PSI) Off Road/Site Tyre Pressure Max. 2.5Bar (36PSI)	Service and adjust braking system, then check
	Clean grease from hubs, replace and adjust
Check braking system is operating correctly	Lubricate coupling and brake linings
Check wheel nut torque setting - 110Nm	Check chassis and body for damages
	Tighten all clamping bolts
	Check tyres for damage and wheel nut torque settings
	Check all lighting
Check frame bolts as and when required (60Nm)	

10. 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).

10.1 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.

10.2 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.

10.3 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.

10.4 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.

10.5 ADJUSTING AND OPERATING COUPLINGS

Used with suspensions fitted with auto reversing brakes operated by Bowden style cables.

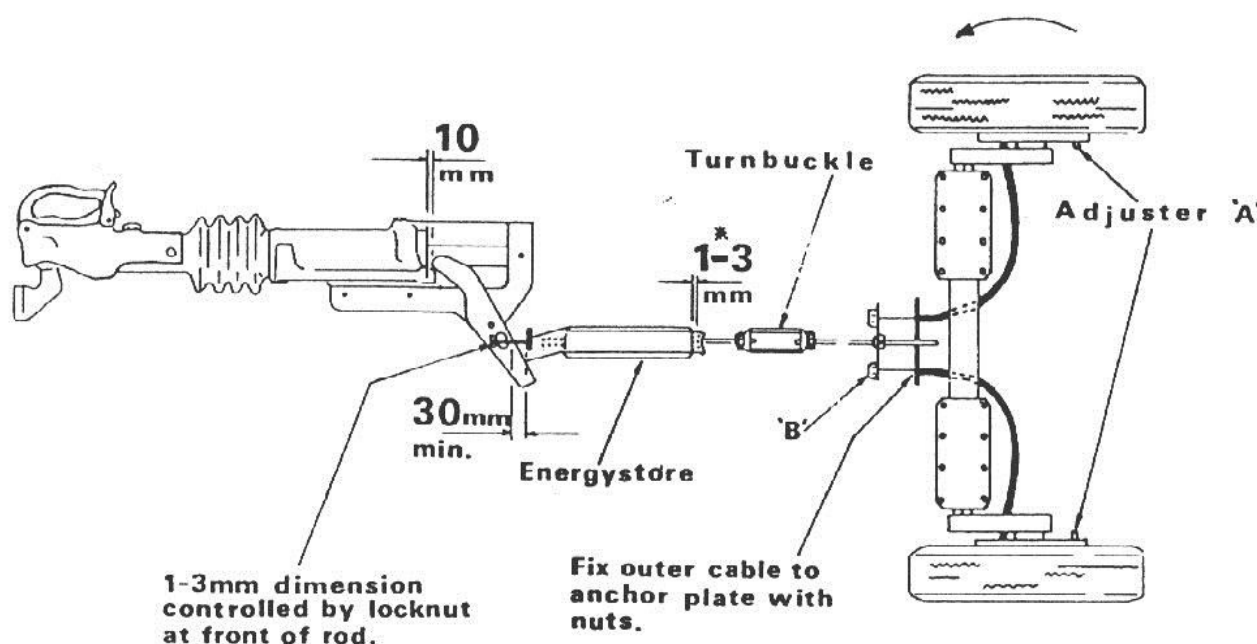
Adjusting and setting up.

10.5.1	Each wheel brake must be adjusted in turn as follows:
a.	Rotate wheel in forward direction at all times during adjustment.
b.	Adjust until brakes lock up using adjuster 'A'.
c.	Back off until slight resistance is felt during rotation.
N.B.	This helps new brakes to bed-in and obtain optimum performance
10.5.2	Having firmly and rigidly attached outer case of the Bowden cable to anchor plate attached to the chassis, connect inner wires to compensator using nuts 'B' supplied with cables.
10.5.3	Connect brake rod and locknut to turnbuckle.
10.5.4	Fully release parking brake and ensure gap of 10mm between brake link and end of tow shaft.
10.5.5	Take up slack and ensure all locknuts are secured.
10.5.6	Set gap between energy store and rod of 1-3mm by locknut at front of rod. The

Note

Until the brake shoes have bedded in, care should be taken to ensure that the handbrake and energy store are applied such that the trailer does not roll backwards when parked facing uphill.

Figure 45 Braking System layout



9.6 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 instructions)
	Dirty flasher unit terminals
	N.B. If the above check are satisfactory and the indicator lights operate at 60 - 120 per minute, but the warning light stays on or

Incorrect rate of flash	Incorrect bulb wattage (check flasher instructions)
	Poor bulb holder, switches or fuse connections/contacts

9.7 WIRING DIAGRAM

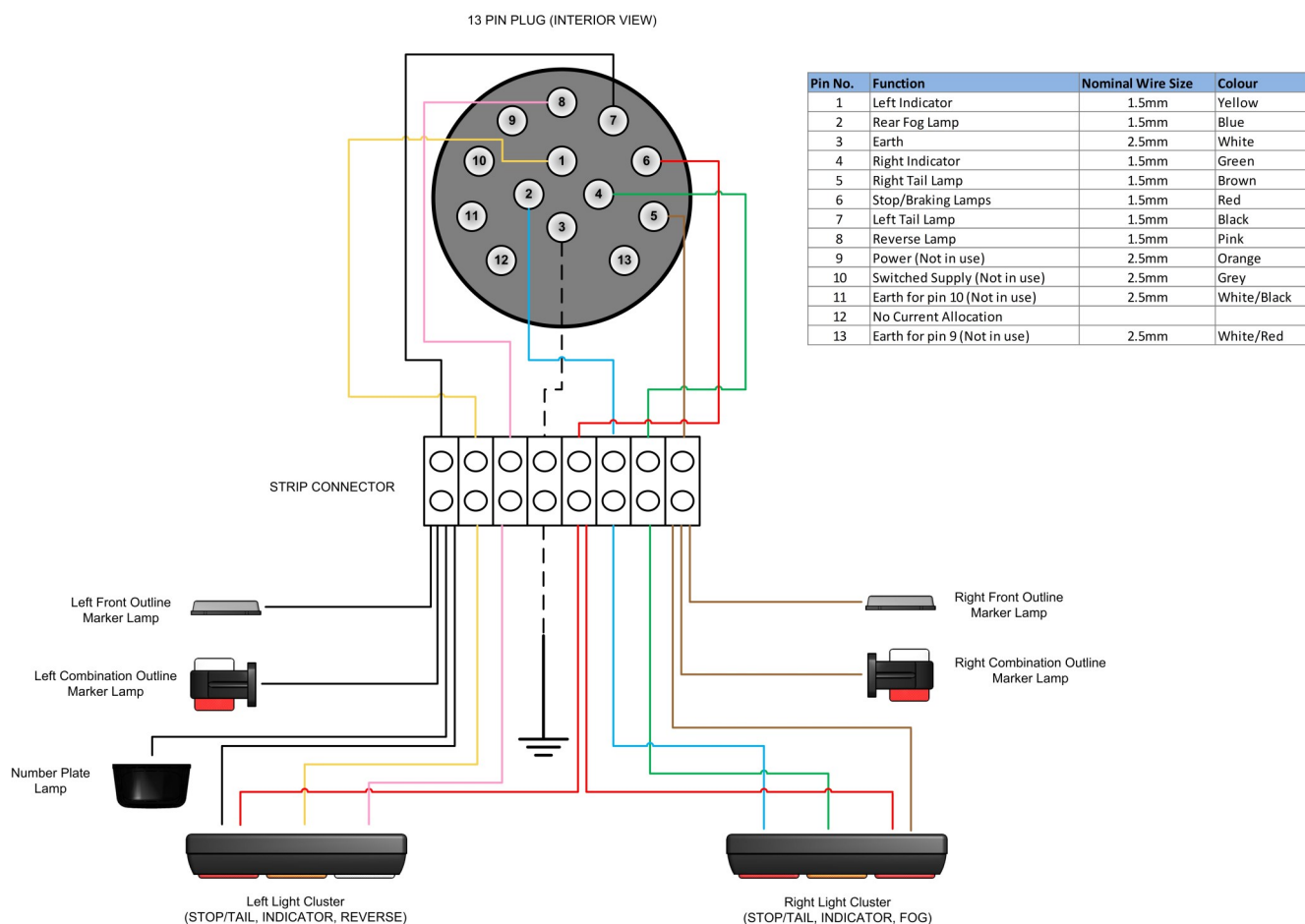
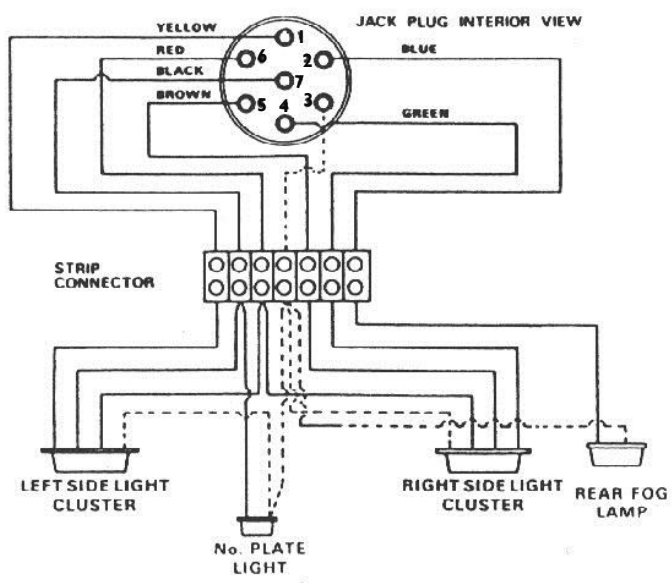


Figure 46 Wiring schematic and table for trailer lights—13 Pin



No.	Reference	Colour	Function
1	L	Yellow	Nearside Indicator
2	54G	Blue	Rear Fog Lamp
3	3I	White	Earth
4	R	Green	Offside Indicator
5	58R	Brown	Offside Tail
6	54	Red	Stop Lights
7	58L	Black	Nearside Tail and Number Plates

Figure 47 Wiring schematic and table for trailer lights—7 Pin

10.0 CONTACT DETAILS

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