STEVE VICK INTERNATIONAL

SOLUTIONS FOR THE REPAIR RENOVATION AND DECOMMISSIONING OF PIPELINES

50/90mm 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:

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2. PRODUCT DESCRIPTION

The 50/90 trailer handles coils of PE with a pipe diameter from 40mm to 125mm.

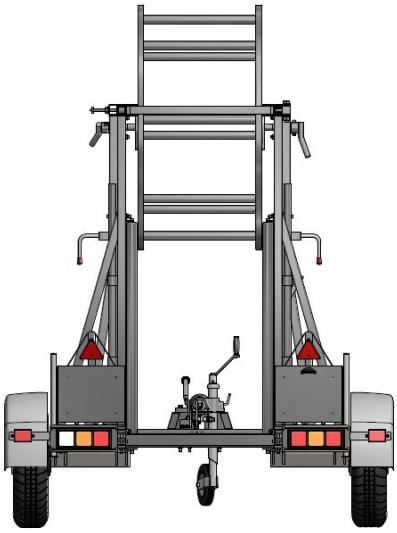


Figure 1: Rear View

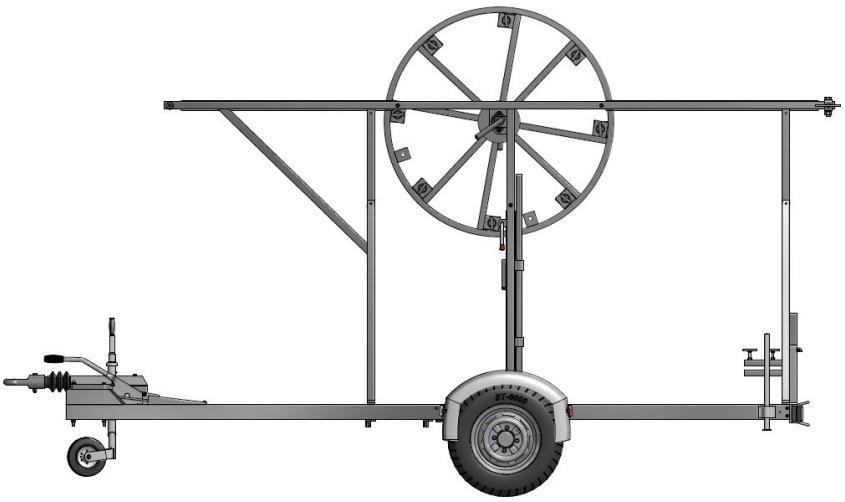


Figure 2: Side View

2.1 TRAILER HIGHLIGHTS

Can be quickly loaded by two operators	Central drum ensures smooth dispending of coils
Large range of pipe sizes from 50mm to 125mm diameter can be handled. See specification for full details	Trailer comes with full lighting
Coil is fully restrained at all times by use of pipe end clamp and ratchet so unloading is not a hazard even if all the restraining bands are cut	Loading is extremely simple, winches and moving parts have been avoided
Inner coil end is firmly held captive during dispensing. This prevents the coil end from jamming in the trailer superstructure or springing free. It also means that the coil end is restrained until the last part of the coil is dispensed	Fitted with fully auto reversing braking system
Can be used for 'live' or 'dead' methods of insertion as well as normal pipe laying techniques	Meets all current EU legislation
Suitable for use as a mobile pipe dispenser, travelling from job to job and dispensing coil as required	

2.2 TRAILER FEATURES

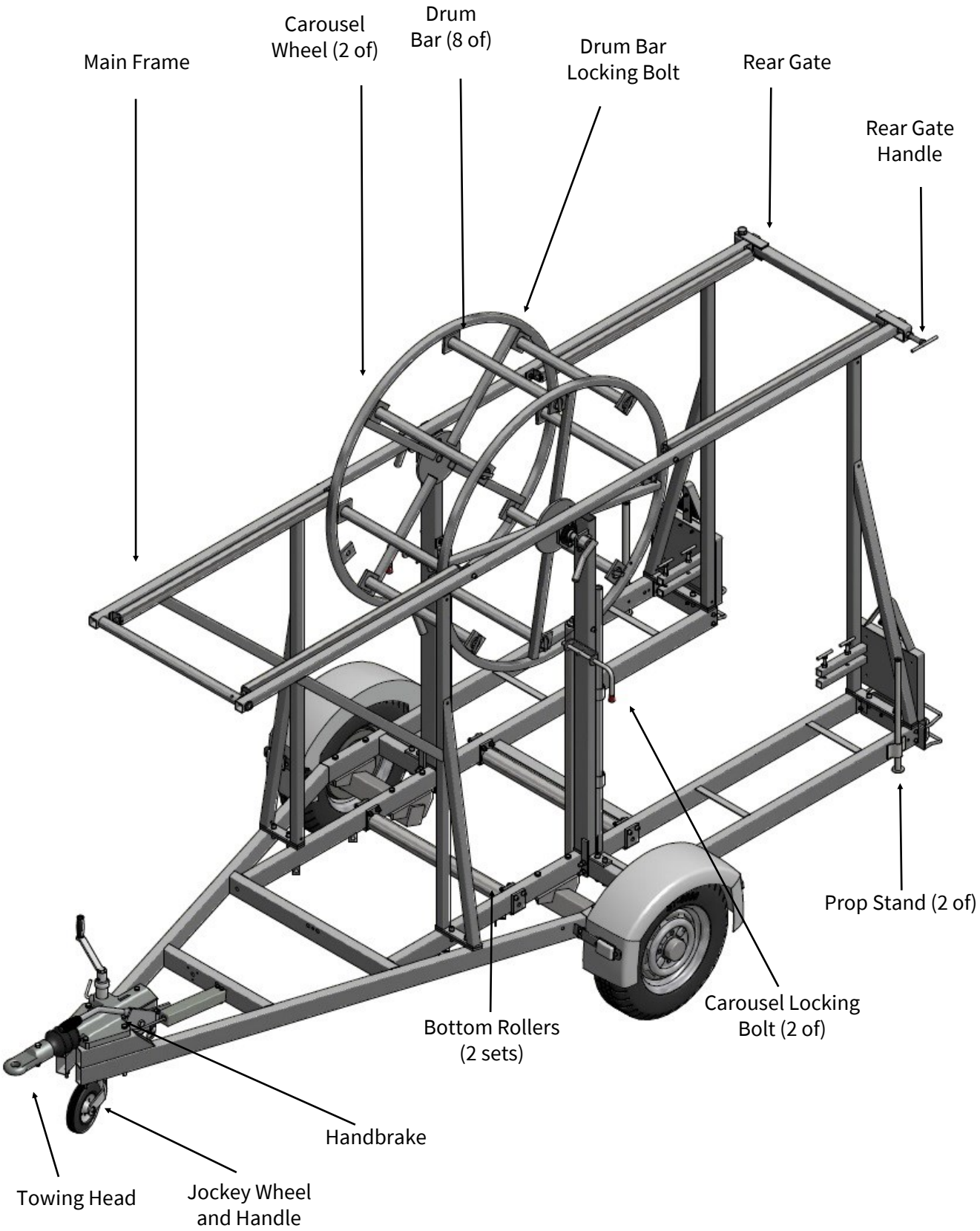


Figure 3: Key feature of the 50/90 Coil Trailer

3. SPECIFICATION

MAXIMUM COIL LENGTH		
PIPE DIAMETER*	**COIL LENGTH**	
40mm, 50mm, 63mm, 755mm & 90mm SDR11	up to 150m	
90mm SDR17.6	up to 150m	
125mm SDR11 or 17.6	up to 50m	
MAXIMUM COIL DIMENSIONS		
MAXIMUM COIL O/D	3.3m	
MAXIMUM COIL I/D	1.2m	
MAXIMUM COIL WIDTH	0.55m	
TRAILER DIMENSIONS		
	UNLOADED	**LOADED WITH 4.1M. O/D COIL**
OVERALL LENGTH	4.1m	4.1m
OVERALL WIDTH	1.8m	1.8m
OVERALL HEIGHT	2.4m	3.5m
TRAILER WEIGHTS		
UNLADEN DESIGN WEIGHT	420kg	
MAXIMUM GROSS WEIGHT	750kg	
MAXIMUM PAYLOAD	330kg	

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

- Carry out daily trailer checks prior to loading procedure as per page 8.
- Ensure a minimum of two operatives are available to carry out the task of safely loading a coil.
- Ensure towing vehicle is suitable for a hitch with a 30mm towing eye and is not exceeding its maximum towing weight for trailer & coil .
- Ensure weight of coil does not exceed maximum capacity of lifting device when fully extended.
- Ensure selected straps are in good working order and rated 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.

Single Carriageway: **50mph**
Dual carriageway: **60mph**

5. OPERATING INSTRUCTIONS

5.4 to 5.13 - Loading using lifting gear
5.14 to 5.25 - Loading manually
5.26 - Dispending pipe

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 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.
Manually apply the handbrake.


Figure 5

5.3 A banksman is needed for the roll back test. Reverse the vehicle and trailer approximately 15cm (6 inches). Push 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 required the trailer can now be unhooked from the vehicle.


Figure 7

5.5 If the trailer is unhooked from the vehicle the prop stand must be lowered down and secured with the locking handle.

Figure 8

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.

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.

Figure 9

5.7 It may be necessary to remove the pipe guide assembly unit.

Figure 10

5.8 Remove Drum Bars (which can either be a single or a two man operation)

Figure 11

5.9 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.
Position coil vertically with leading end of PE facing the rear gate of the trailer.


Figure 12

5.10 Centralise coil around the carousel wheels in order to place the drum bars in without interference from the coil.


Figure 13

5.11 Begin reinserting the drum bars whilst the coil is suspended until all drum bars are securely fitted.

A second operative is required to safely receive the drum bar from the other side.

Never place hands or arms inside the drum wheel.


Figure 14

5.12 Lower the coil so that the top drum bars are taking the weight and remove the strap. Check all bars are tightly secure.


Figure 15

5.13 Close rear gate and secure with screw bolt.

Figure 16

5.14 Install a Test End or End Clamp to the tail end of the PE. With a D-Shackle fitted, slide through ratchet strap.

Figure 17

5.15 Using another D-Shackle, attach other end of ratchet strap to the eyelet on the centre of the drum wheel.

Figure 18

5.16 If required cut sufficient banding to allow the outer end to be put into the pipe guide at the rear of the trailer.

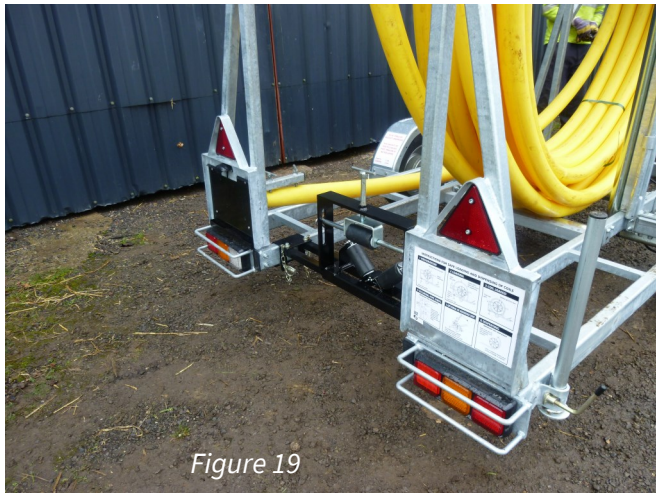


Figure 19

5.17 If the prop stands and jockey wheel were lowered for loading these must be fully retracted before towing the trailer. Hitch to vehicle, releasing the handbrake.

The trailer is now ready for transportation to site. Electrics will need to be hooked up to the vehicle and the lights on the trailer checked before towing.

Figure 20

5.18 ON SITE: Always apply handbrake and lower prop stands.

The PE passes over the bottom rollers and it is strongly recommended to use the guide roller unit.

For open cut work, anchor the end of the PE and tow the Trailer, very slowly, dispensing as you go directly into the excavation.

Figure 21

5.19 The ratchet strap must be removed before the PE pipe finally leaves the trailer but only when the insertion has stopped and the strap is not under any tension.

Figure 22

5.20 Replace the ratchet strap with a guide rope and safely splay out the last few metres of PE pipe.

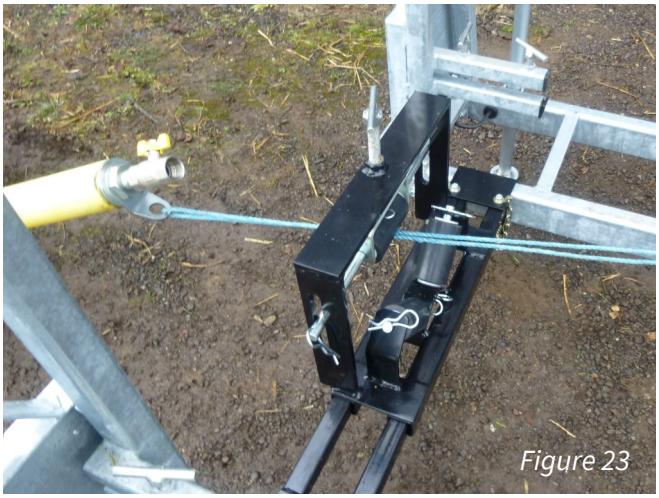


Figure 23

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. Recommended Tyre Pressure: **4 Bar**	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 - 67NM	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.

7.5 ADJUSTING AND OPERATING COUPLINGS

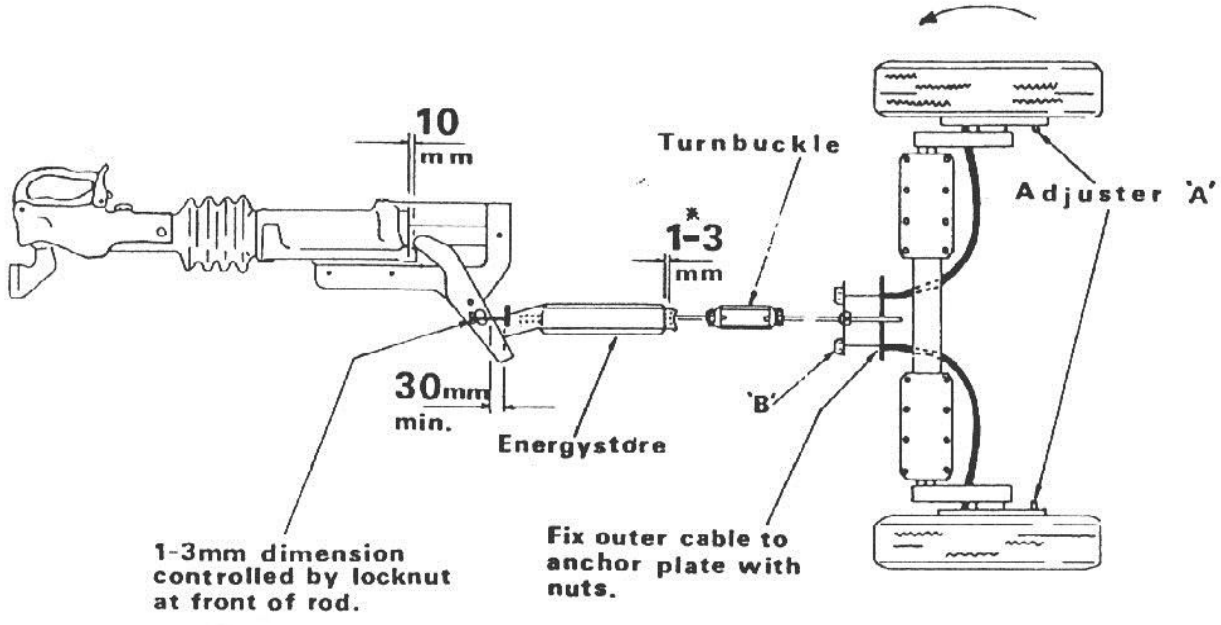
Used with suspensions fitted with auto reversing brakes operated by Bowden style cables.
Adjusting and setting up.

7.5.1	Each wheel brake must be adjusted in turn as follows:
a. b. c. **N.B.**	Rotate wheel in forward direction at all times during adjustment. Adjust until brakes lock up using adjuster 'A'. Back off until slight resistance is felt during rotation. **This helps new brakes to bed-in and obtain optimum performance**
7.5.2	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.
7.5.3	Connect brake rod and locknut to turnbuckle.
7.5.4	Fully release parking brake and ensure gap of 10mm between brake link and end of tow shaft.
7.5.5	Take up slack and ensure all locknuts are secured.
7.5.6	Set gap between energy store and rod of 1-3mm by locknut at front of rod. The system is now ready for service.

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 24 Braking System layout



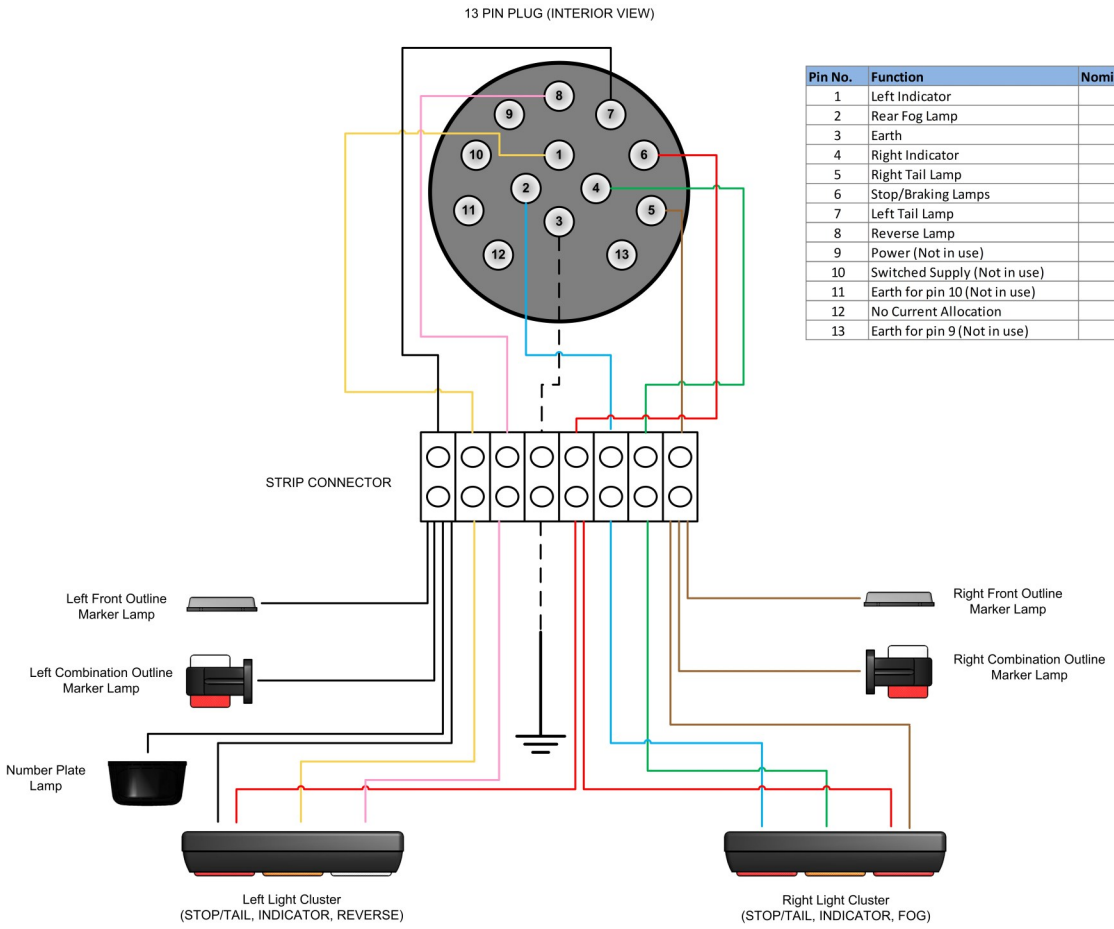
7.6 LIGHTS

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 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

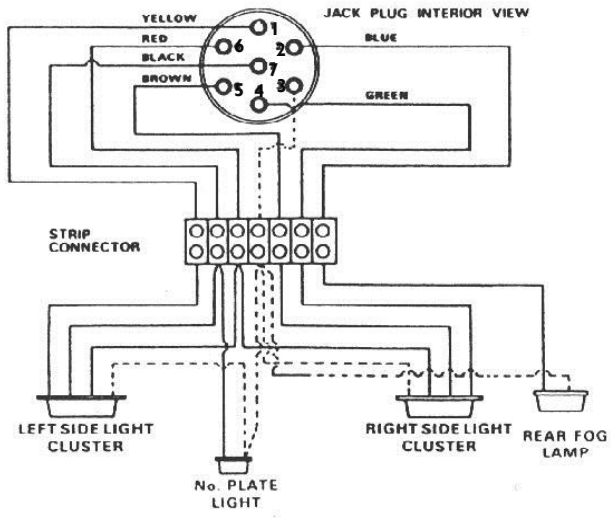
7.7 WIRING DIAGRAM

The following two diagrams show the current LED schematic and the older (pre-2013) models.



Pin No.	Function	Nominal Wire Size	Colour
1	Left Indicator	1.5mm	Yellow
2	Rear Fog Lamp	1.5mm	Blue
3	Earth	2.5mm	White
4	Right Indicator	1.5mm	Green
5	Right Tail Lamp	1.5mm	Brown
6	Stop/Braking Lamps	1.5mm	Red
7	Left Tail Lamp	1.5mm	Black
8	Reverse Lamp	1.5mm	Pink
9	Power (Not in use)	2.5mm	Orange
10	Switched Supply (Not in use)	2.5mm	Grey
11	Earth for pin 10 (Not in use)	2.5mm	White/Black
12	No Current Allocation		
13	Earth for pin 9 (Not in use)	2.5mm	White/Red

Figure 25 Wiring schematic and table for trailer lights (2014 contraction onwards)



No.	Reference	Colour	Function
1	L	Yellow	Nearside Indicator
2	54G	Blue	Rear Fog Lamp
3	31	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 26 Wiring schematic and table for trailer lights using filament bulbs (Pre 2014 constriction)