

VR – Vertical Rail



**CHECKMATE
S A F E T Y**

checkmateuk.com

Technical Specification

VR- Vertical Rail System



CONTENTS

1	OUTLINE OF DEVICE FUNCTION
2	GENERAL VIEW
3	GENERAL ARRANGMENT DRAWINGS
4	STANDARDS
5	PRINCIPAL MATERIAL SPECIFICATIONS
6	PLANNING GUIDE
7	INSTALLATION GUIDE

1 OUTLINE OF DEVICE FUNCTION

VR

The design is of an extrusion that runs inside another extrusion and in the event of a fall a cam locks the trolley within the rail.

The trolley cam is sprung loaded (one torsion spring each side of the cam) to give a mechanical lock or park facility and a gravity lock caused by a fall.

The device is fitted with a SAL absorber sewn directly to the unit. The device will trail a person as they climb and will run down the rail unassisted as they descend. The design allows for the rail sections to be connected with studs and provide a good interface of sections so that the trolley moves between sections un hindered.

In case of temperature variations and the contracting/expanding differences between the rail and the support structure the rails are mounted using sliding “T” bolts that allow variances to be overcome.

2.General View



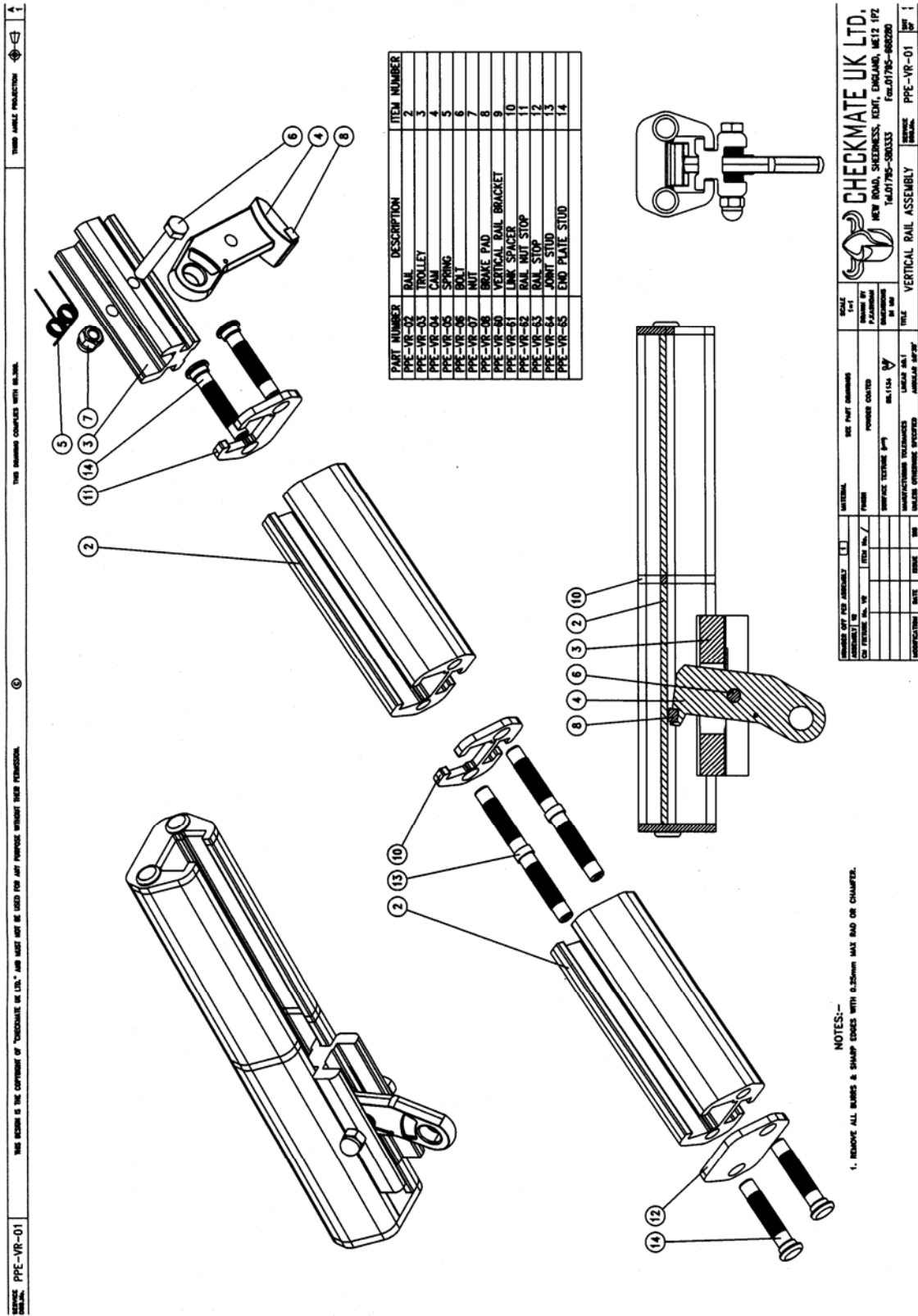
Vertical Rail Trolley Complete with SAL5



VR with T Bolt Fixings



3. General Arrangement Drawings



4.0 Standards

All **CHECKMATE** Fall Arrest Products comply with current CE: BS EN Standards where applicable.

The VR range fully complies with BS EN 353-1
SAL 5 Sewn Direct to keep MAX loads below 6kN

Full Test Reports and Independent Test Certificates carried out by SGS United Kingdom can be produced if required.

5. Principal Materials

HTB 3

BS 1400

Tensile strength - 48 - 52 tonf/in²

0.2% proof stress - 26 - 30 tonf/in²

Elongation - 11 - 18 %

Brinell Hardness - 150 - 230

Chemical composition

Copper - 55

Chromium - 0

Tin - 0.20

Phosphorus - 0

Nickel - 1.0

Lead - 0.20

Zinc - Remainder

Iron - 1,5 - 3.5

Aluminium - 3 - 6.0

Manganese - 4.0

Silicon - 0.10

Equivalent standards

American - ASTM B147-63 or CDA 862/CDA 868

6. Planning Guide

When specifying the **CHECKMATE VR SYSTEM** you need to check the suitability and location for the system. (Access ladders for; roofs, cranes, chimneys, platforms, flaps, poles, communication towers and any other height access areas)

You need to check for:

- *split levels in ladders and platforms,*
- *fixing locations and position,*
- *that the area below is clear of obstructions and potential hazards*
- *if permanent end stops are required*
(if you never want the user to leave the system)
- *any angles (systems must not deviate from 12°)*
- *number of users*

Accurate dimensions and information are required for:

- *ladder length and width (to check foot room)*
- *fixing location (central or side)*
- *fixing type (rung or fabricated mounting plates)*

7. Installation Guide

1. *Check you have the correct amount of equipment before starting the installation. This can be checked against orders and packing list within packaging.*
2. *Check you have the correct tools for the installation. See tool guide for details.*
3. *Check you and your team have the correct PPE Equipment necessary to install systems if on site and at height. (If in doubt consult CHECKMATE for recommendations)*

Tools: 19mm spanner or socket with wrench, torque wrench with a range of (0-50 Nm) and hammer, level, tape (for location of T bolts) pencil or marker.

See section 3 (General Arrangement) plan for system set up.

a) Position extrusion on ladder or alternative location and mark where the fixing locations are to be. (Min number of fixings per length of 4m extrusion is 2 sets)
Next slide the 'T' bolt sets down the 'T' slot and using a small amount of tape hold in a rough position so as to stop them sliding.
Present extrusion to location and hold in position, the second installer can then place back plates over rungs or brackets and using washers and nuts provided hand tighten.
Once hand tight check level and position of system. Hold and tighten with spanner to till the system is true. Using the torque wrench, torque fixings to 35Nm (-0+5).

- b) If another extrusion length is to be joined, locate dowels in through holes of extrusion and using hammer tap down until flush with head of dowel. Place the expansion plate over the dowels. The first rail is now ready for the second extrusion to be located and fitted in place.
- c) Follow procedure a) and repeat.
- d) If end plates are to be fitted follow procedure b) but use end dowels and end plate.
- e) Install certification plate to accessible area, date and number system.