Triple E Ltd
Equipment Engineered for Entertainment
Tel: +44 (0)1959 570333
Fax: +44 (0)1959 570888
Email: info@3-eee.com
Web: www.3-eee.com
16 Airport Industrial Estate, Main Road, Biggin Hill, Kent, TN16 3BW

CHAINBEAM SPECIFICATION

Chainbeam is the third in a family of tracks which share running components, offering a complete solutions package. The other tracks are Unitrack, for demountable, semi-permanent and rental installations, and Unibeam for permanent installations. Unibeam has the added advantage of carrying heavier loads and being used as a suspension bar in its own right.

Chainbeam is an aluminium extruded black anodised track section. The external dimensions are 50mm wide x 100mm high, identical to Unitrack and Unibeam. With a duplex chain integrated into a guide channel in the bottom web of the track, Chainbeam offers the ability to motorise the load, whether it be heavy curtains or large scenic items.

The top web of Chainbeam is identical to Unibeam and is designed to accept standard channel nuts for attaching suspension fittings, drive components and joint bars. The lower web is designed for a UHMW guide that takes two 3/8" duplex chains side by side. One chain is for the drive side and the other for the return. A motor can be mounted at one end of the track, either above or below the track, to drive a duplex drive sprocket with a pair of idler guides. At the opposite end is a chain tensioning device that consists of a large diameter duplex chain sprocket and a pair of idler guides. The chain tension can be adjusted by rotating a central bolt.

The Chainbeam master carrier is fitted with a laser profiled drive comb inserted through the side of the carrier to engage with the chain. It is retained by a pair of M8 bolts. This simple arrangement allows the drive to be easily disengaged during commissioning and enables the chain to be bedded in and tensioned prior to the load being applied. Scenic items that require several carriers to support them can have drive combs fitted, thus spreading the pulling force along the chain. With this drive arrangement, the chain is only being used to pull the carriers; the weight is carried by the track extrusion.

Chainbeam can be curved to a minimum radius of 2m, depending on overall track length and the load being carried. A major advantage of Chainbeam is that the UHMW chain guide can be rolled with the extrusion so no additional parts are required to guide the chain around a curve.

Chainbeam installations can be fitted with either incremental or absolute encoders and limit switches can be direct struck and/or belt driven from the gearbox output, depending on the control specification. The duplex chain provides a non-slip drive system, so positional accuracy and reliability are easily maintained.

Triple E Ltd
Equipment Engineered for Entertainment
Tel: +44 (0)1959 570333
Fax: +44 (0)1959 570888
Email: info@3-eee.com
Web: www.3-eee.com
16 Airport Industrial Estate, Main Road, Biggin Hill, Kent, TN16 3BW

Summary

TRACK: An aluminium extruded 'I' beam, Chainbeam is available in 6.1m (20 feet) lengths and can be pre rolled to order down to a radius of 2m (6'6").
Joining and alignment is achieved with pre-tapped steel plates and grub screws.

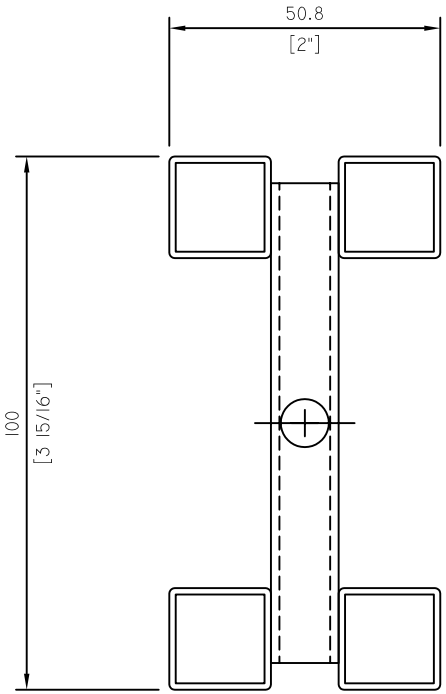
SUSPENSION: All the standard Triple E suspension fittings can be attached with standard 12mm channel nuts that fit into the channel in the top web.

RUNNERS: All master and slave runners for straight and curved tracks from the Unitrack range can be used, as well as the heavy duty scenery carriers designed specifically for Chainbeam and Unibeam.

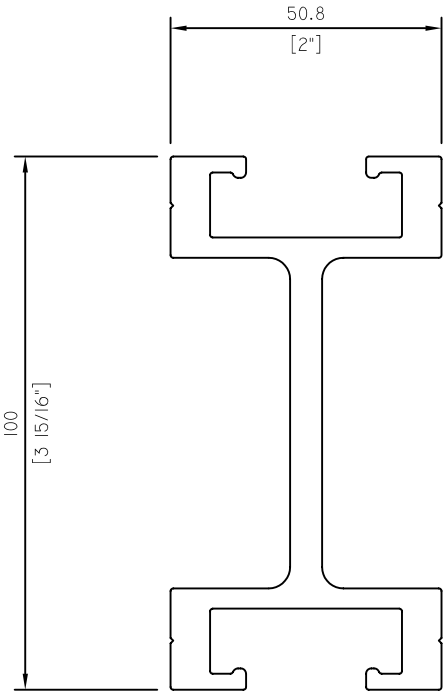
SYSTEMS: Because of its specialised nature Chainbeam is only available as a complete system. It is not sold on an individual parts basis.

SAFE WORKING LOADS:

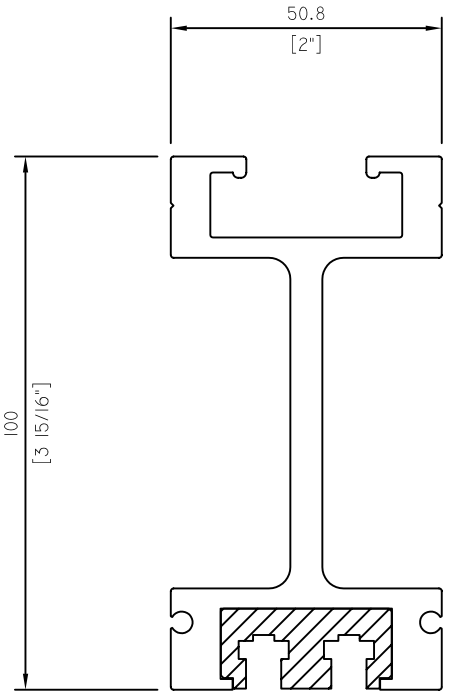
3m centres Point Load 140 Kgs. Distributed Load 280 Kgs.
2m centres Point Load 230 Kgs. Distributed Load 460 Kgs.
1m centres Point Load 430 Kgs. Distributed Load 860 Kgs.
CBM28a Carrier top SWL 320 Kgs.
All S.W.Ls are 5:1



UNITRACK



UNIBEAM

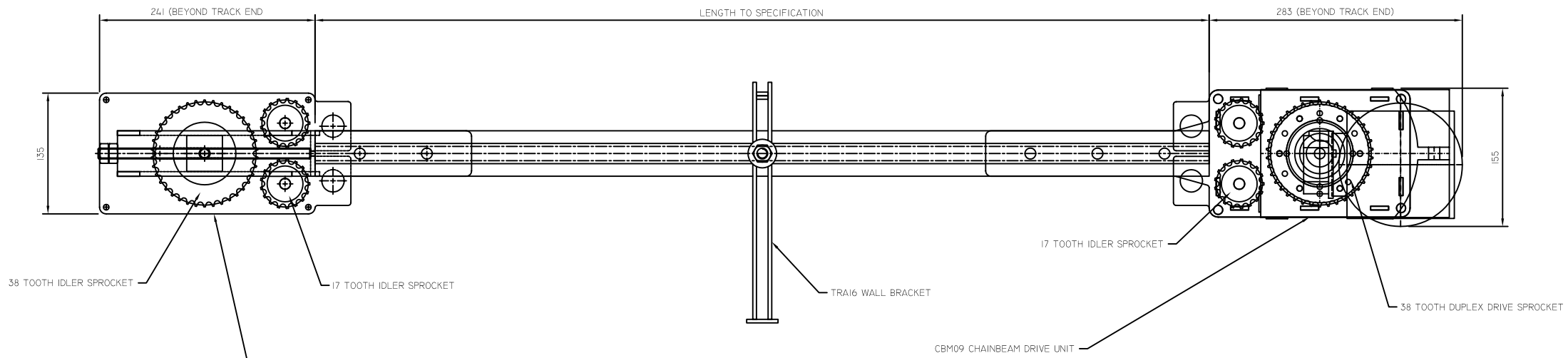


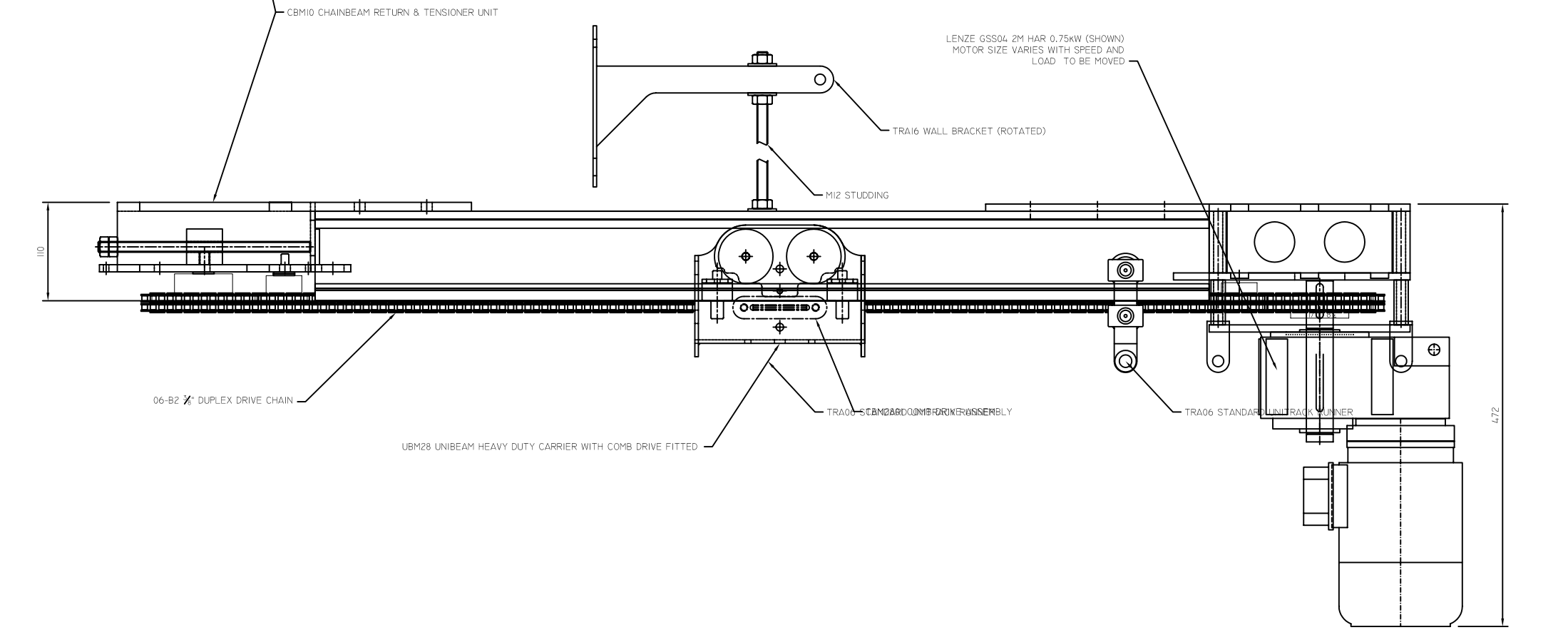
CHAINBEAM

DWG No
CBD-SPEC

THIRD ANGLE PROJECTION

SPECIAL INSTRUCTIONS





DO NOT SCALE

ISSUE	DATE	REVISION
1	25/7/08	FIRST ISSUE

TRIPLE E LTD
16 AIRPORT IND EST
MAIN RD, BIGGIN HILL
KENT, TN16 3BW
TEL: 01959 570333
FAX: 01959 570888

CLIENT: TRIPLE E CHAINBEAM

TITLE: GENERAL ARRANGEMENT STANDARD TRACK SYSTEM

ALL DIMENSIONS IN MILLIMETRES (mm) TOLERANCES UNLESS OTHERWISE STATED DIMENSIONAL ±0.2

MATERIAL

FINISH

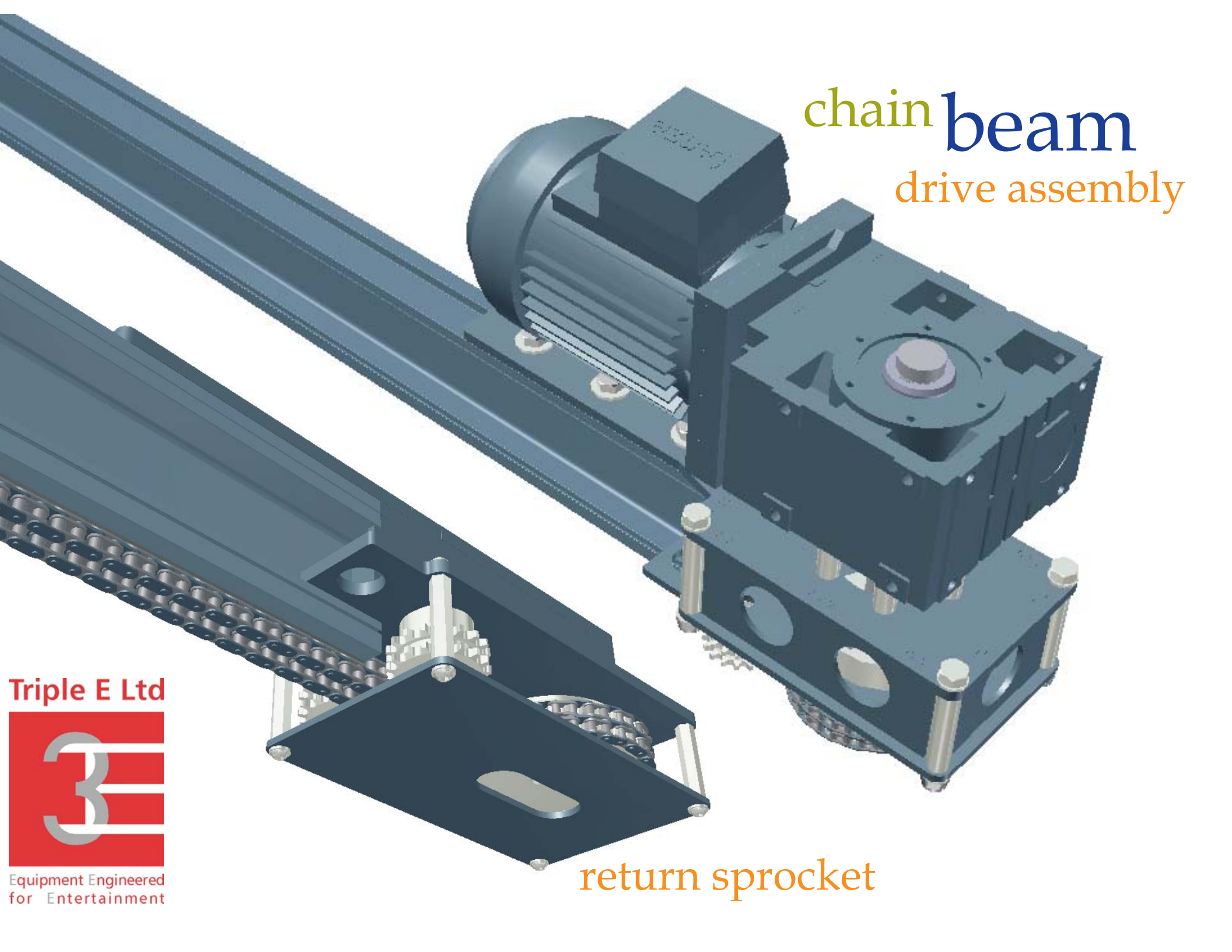
DRAWN MPK

SCALE 1:3

APPD

DATE 21/9/09

DWG No
CBM-SUSP r1



Triple E Ltd

Equipment Engineered
for Entertainment

CHAINBEAM TRACK MANUAL.

SETTING-UP & TENSIONING

It is important that all chain tensioning devices are fully retracted before the initial cutting of the chain to length, so to minimise any surplus chain when the system is first run.

Initial setting-up and tensioning **MUST** be carried out without any curtains attached to the chain. It is important that the limit striker flags are not fitted at this stage.

Prior to the first run of each system the chain should be tensioned to give a maximum deflection of no more than 6mm between sprockets in the drive system or unguided sections of chain.

The system can now be operated (without the curtains suspended) and run for several minutes, by which time additional chain slack will appear in the system.

Stop the drive and remove sufficient surplus chain from the system to achieve 6mm slack as above and keep repeating this process until chain slack remains constant. This initial tensioning process will take several operations to complete. If the chain tensioner has reaches its full extension then fully retract the chain tensioners in order to cut out any surplus chain and then continue as above.

Once a stable chain length is achieved operate the system and run for at least 15 minutes continuously to allow the liner and chain to bed in.

Check the chain tension again and repeat the above process if required.

TENSIONER

End of track Tensioner – This consists of an idler sprocket assembly Tension adjustment is made by turning the adjusting screw which extends beyond the assembly. Winding it in a clockwise direction tightens the chain.

Ideally the chain tension is best increased whilst the system is running as this gives the chain a chance to balance out around the circuit, however with chainbeam this may not be practical unless you can ensure the “return” sprocket bolt which must be slackened to enable the sliding block to move is kept fairly tight to stop the return sprocket leaning at an angle until the bolt is re-tightened.

When the system has settled down and you are happy the chain is not showing signs of surplus at the drive sprocket you should find the chain will not be “drum tight”, if it is this is too much tension.

DO NOT JUST WIND THE TENSION UP SO IT IS DRUM TIGHT it may take a little time till it settles down, if possible run the system without the drive combs inserted into the carriers so the chain can circulate and leave it running for half an hour occasionally increasing the tension.

NOTES ON TENSIONING

The exact tension required on curved track system must be gauged in operational use, due to the sideways frictional forces that can be applied by over-tensioning; it is quite possible to stall a system if the chain is over-tightened.

BE CAREFUL – DO NOT OVER TENSION CURVED SYSTEMS

LIMIT MOUNTING & ADJUSTMENT

The system is fitted with 2 No. direct struck limit switch assemblies,

Each switch is mounted on a bracket (see photo 1) that is in turn mounted to the top of the Chainbeam extrusion.

Mount each switch at a position along the track where the roller arm has a clear and unobstructed path. The limits are struck by the profiled side plates on the carriers.

MAINTENANCE

The chain system is virtually maintenance free, apart from periodic re-tensioning of the chain due to stretch.

One a month tension of each system should be checked, if adjustment is required, tensioning should be carried out as in the initial setting-up. If sufficient chain slack appears in the system, retract tensioners and cut out any surplus chain from the system.

One a month functionally test limit switch stopping positions.

Visually check gearbox / motor unit for oil leaks.

Annually Inspect complete system, re-tension chain, check limits and visually inspect chain for defects.

SAFETY

ALWAYS ensure each system is isolated at its supply before any mechanical maintenance is carried.

NEVER PLACE FINGERS BETWEEN MOVING CHAINS AND SPROCKETS.

(Photo 1)