technical sheet	Tractel Ltd. building maintenance units (BMU) Junior Model B	ref.: T4788 rev. no.: 0 date: 01/09 page: 1/4

DESCRIPTION

Junior Model B Roofcars are designed for permanent facade access for cleaning and maintenance on mid to high-rise buildings. This compact sized unit is capable of servicing buildings with heights up to 720 ft. (220 m).

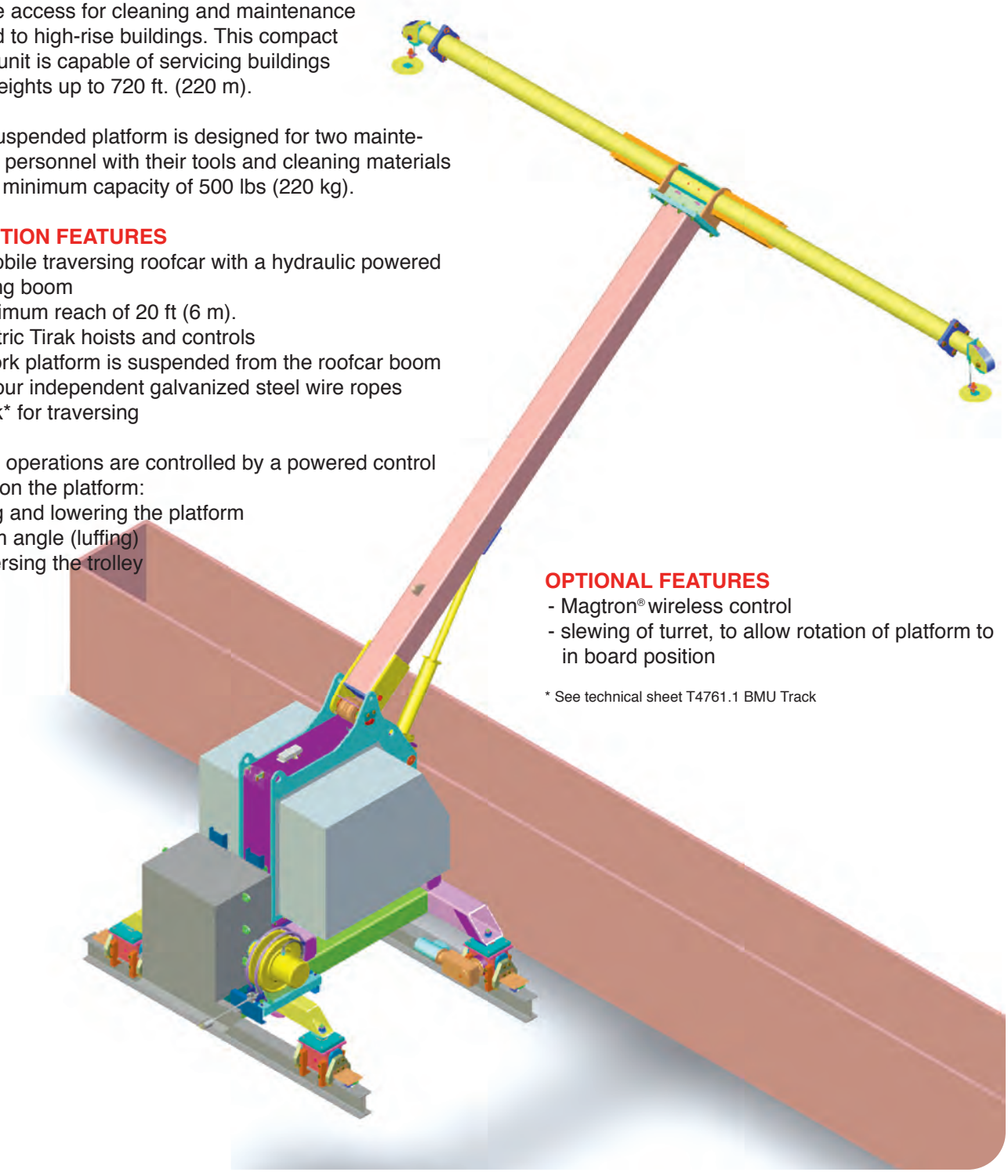
The suspended platform is designed for two maintenance personnel with their tools and cleaning materials with a minimum capacity of 500 lbs (220 kg).

FUNCTION FEATURES

- a mobile traversing roofcar with a hydraulic powered luffing boom
- maximum reach of 20 ft (6 m).
- electric Tirak hoists and controls
- a work platform is suspended from the roofcar boom by four independent galvanized steel wire ropes
- track* for traversing

All the operations are controlled by a powered control panel on the platform:

- lifting and lowering the platform
- boom angle (luffing)
- traversing the trolley



OPTIONAL FEATURES

- Magtron® wireless control
- slewing of turret, to allow rotation of platform to in board position

* See technical sheet T4761.1 BMU Track

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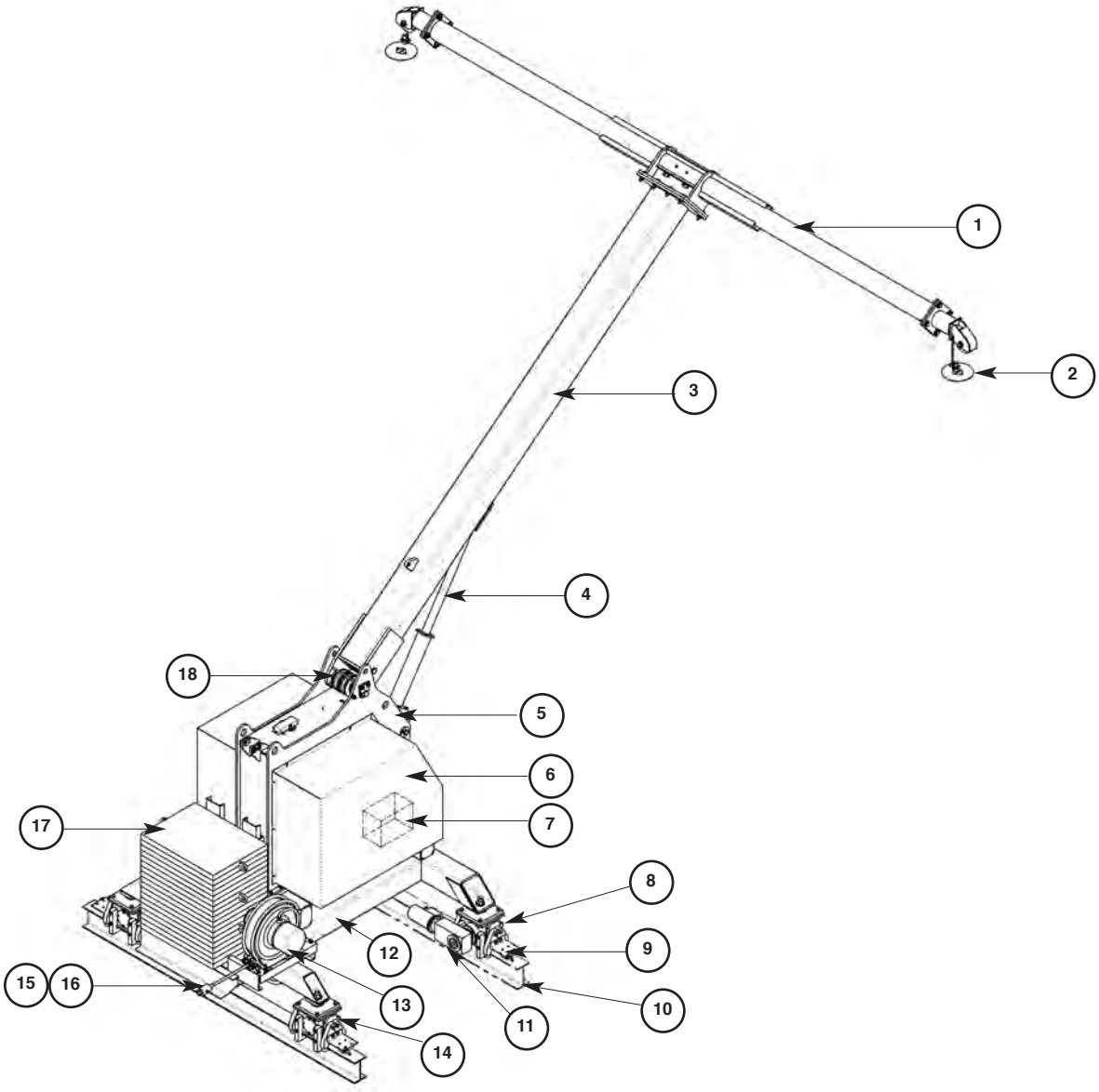

MAIN COMPONENTS OF A JUNIOR MODEL B ROOFCAR

1. Cross Boom Assembly
2. Upper Limit Switch
3. Luffing Boom
4. Hydraulic Cylinder
5. Cylinder Support Assembly
6. Tirak Box Assembly
7. Hydraulic Power Unit, 208v Single Ph
8. Drive Wheel Assembly
9. Roof Car Wheel Sensor
10. BMU Track
11. Geared Motor with Brake
12. Carriage Assembly
13. Reel for Power Supply Cable
14. Rear Wheel Assembly
15. Power Supply Cable
16. Electrical Plug
17. Counterweight
18. Boom Shaft And Sheave Assembly

Not Shown:

Tirak Hoist
Work Platform

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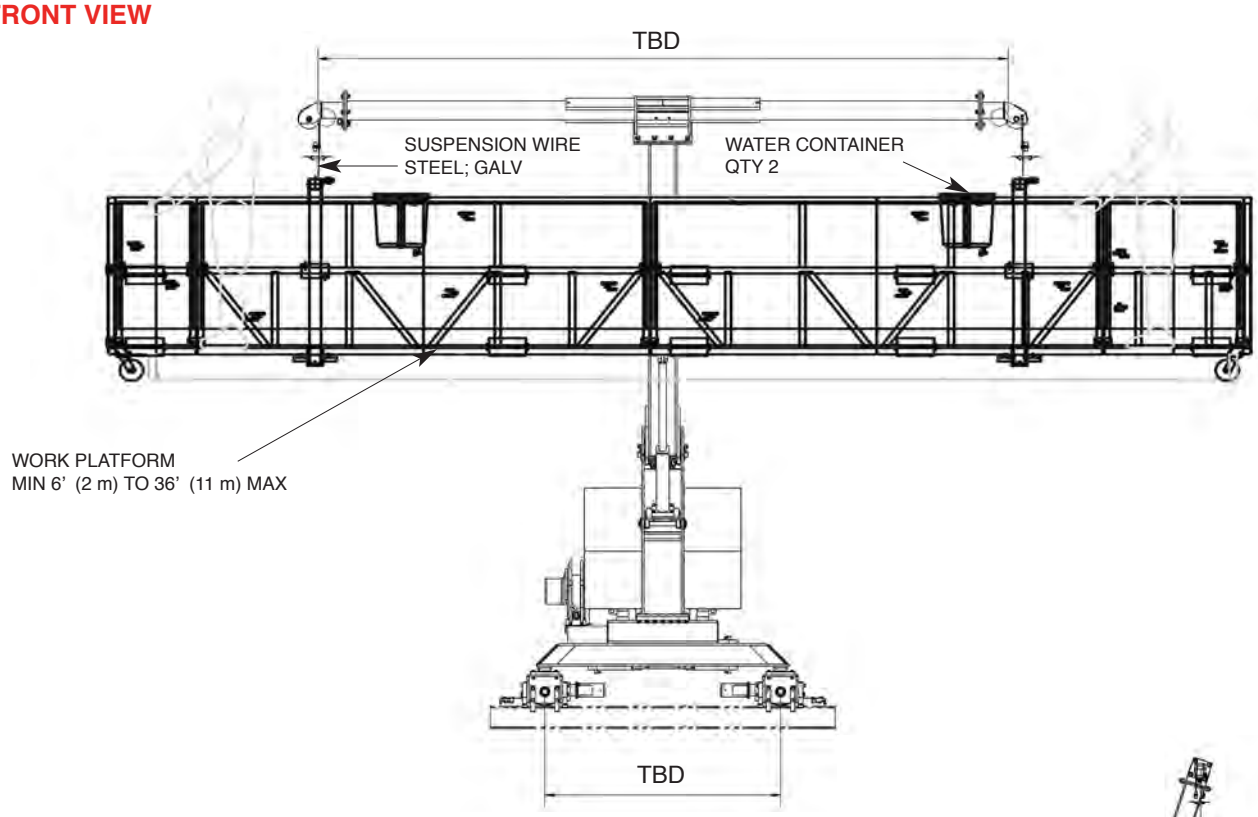
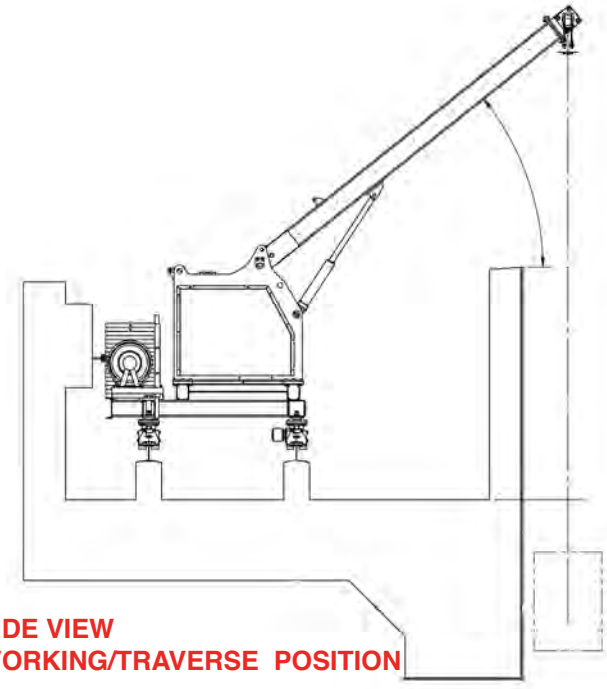
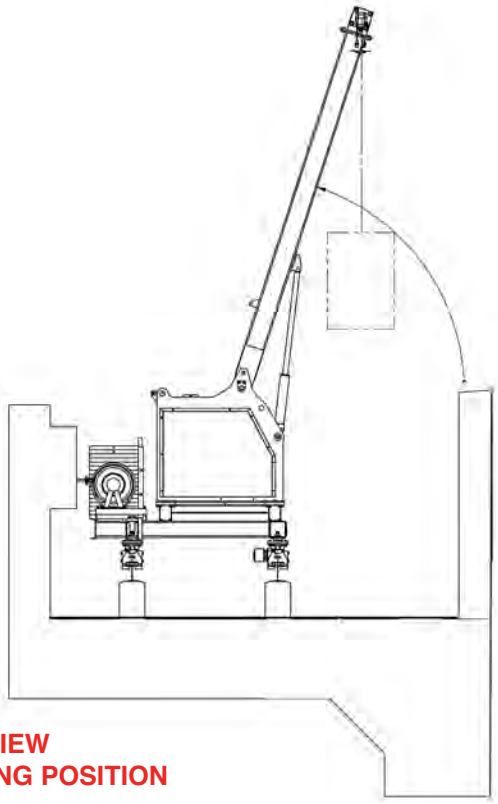
FRONT VIEW





SIDE VIEW
WORKING/TRAVERSE POSITION



SIDE VIEW
PARKING POSITION

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2. DESCRIPTION OF THE COMPONENTS

2.1 Traversing frame

The lower frame is constructed of galvanized rectangular steel tube. Four wheel assemblies are fitted to the frame. The 2 front wheels are powered and the two rear wheels are mounted on an articulated beam to ensure an even load distribution.

2.2 Traversing system

Traversing is powered by an electrical motor with a speed approximately 20 ft./min (6 m/min.) In general, only the two wheels nearest the building facade are powered.
The Traversing Frame is guided along the track by guide wheels placed laterally on the wheel assemblies, whether 'L' shaped guide track (Fig. 4), or I-beam track (Fig. 5) is used.

Fig. 4 - Traversing on concrete track, with 'L' shaped guide rail

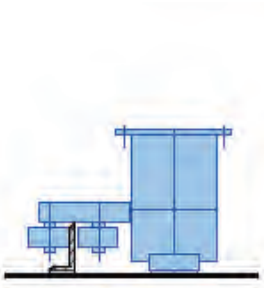
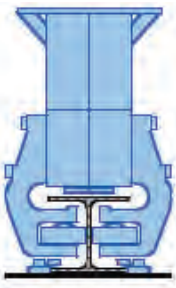


Fig 5 - Traversing on rails



2.3 Lifting mechanism

The lifting mechanism is the TIRAK electric traction hoist, especially designed for man-riding applications. The operation of the TIRAK is based on the principle of pressure pulleys. The gripping of the wire rope in the pulley is achieved by a set of rollers, activated by a compression spring (Fig. 6).

2.4 Hydraulic system

A single hydraulic cylinder is used to operate the angle of the boom. Adjusting the boom angle determines the various working positions on the building, from upright (park position) to horizontal (maximum reach).

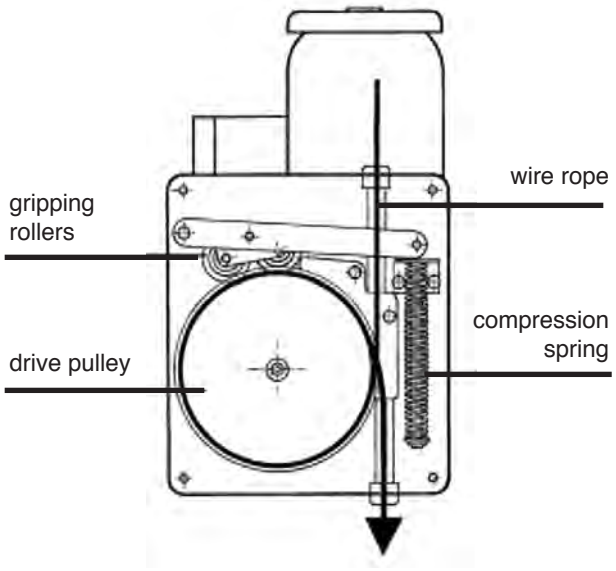


Fig. 6

2.5 Electrical system

The electrical system consists of the following main items:

a) On the building
- the main switch, located on the roof
- power supply points, 3-phase + ground, positioned along the track and protected by a 30 amp circuit-breaker (supplied by the customer).

b) On the traversing frame
- the power supply cable for connecting the roofcar frame to the power points. This cable is stored on a reel under the unit.
- an electrical panel with a control box for the unit.

c) On the platform
- main control panel connected to the roofcar by a flexible cable.

2.6 Platform

Roofcars suspend a 'F-type platforms' as defined by US Federal OSHA (dual-line suspension). The platforms are driven by hoists on the roof unit, instead of on the platform. These work platforms are constructed of tubular aluminum, clad in perforated aluminum panels. Typical length is 10 ft. (3 m), however this may be increased to a maximum of 36 ft. if required. Typical minimum capacity is 500 lbs. (220 kg).

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technical sheet	building maintenance units (BMU) steel track	ref.: T4761 rev. no.: date: 10/99 page: 1/2

1. DESCRIPTION

Building Maintenance Units (BMUs) in the U.S. and Canada typically traverse along steel track. Standard Tractel BMUs are designed to run on flanged track. Special conditions arise from time to time when other track types are employed.

1.1 Standard steel track

The track components are designed for fast and accurate assembly. Track sections are joined together using bolted or welded fishplates.

The track and track supports are hot galvanized to prevent corrosion. The size of the rail depends on the weight of the machine and the distance between the track supports.

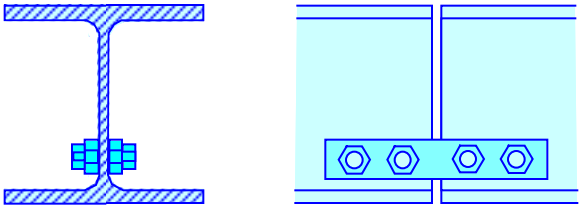
Five rail sizes are recommended: ***W10x22***, ***W10x30***, ***W12x50***, ***S12x31.8***, & ***S12x35***.

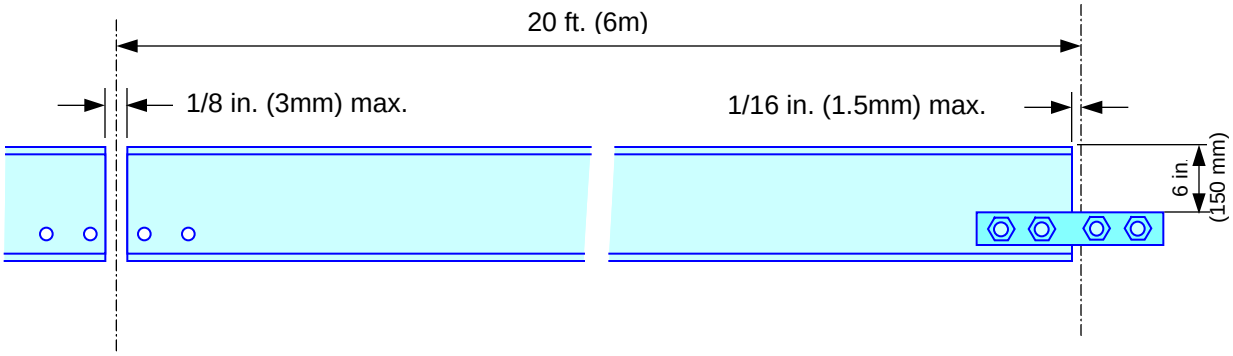
The wheel assembly types are defined by the type of BMU machine (Fig. 2 and 3).

General track tolerances:

1. Track joints to be within 1/16 in. (1.5mm) max. in all directions
2. Track joints should not exceed 1/8 in. (3 mm) gap.
3. Track to maintain a constant elevation of ±1/4" in. (6.4 mm) over every 120 in. (3m) length.
4. Track system (by elevations) to maintain a constant elevation of ±1" in. (25 mm).

Fig. 1:
Track joint using 2 bolted fishplates





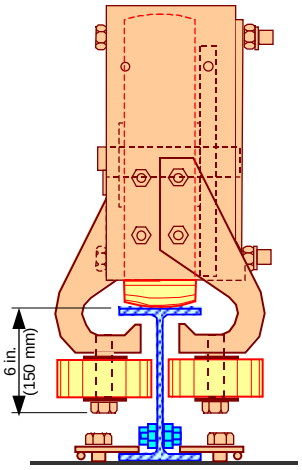


Fig. 2
10 K (45kN) wheel assembly on I-Beam IPE 160

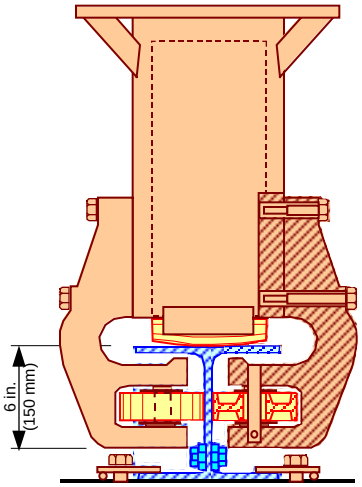


Fig. 3
Over 10K (45kN) wheel assembly on WF-Beam HEB 180

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1.2 Track supports

Track sections are supported on supports every 8 to 10 ft. (2.4 to 3 m) depending on the loading on the BMU wheels.

Standard steel track supports (Fig. 4) are a length of tube section with a welded top plate. The track sections are fixed to the top plates with clamp plates.

The clamps have been specially designed to meet the requirements of Tractel machines, particularly the transverse adjustment and resistance to the lateral pressure applied by the guide rollers.

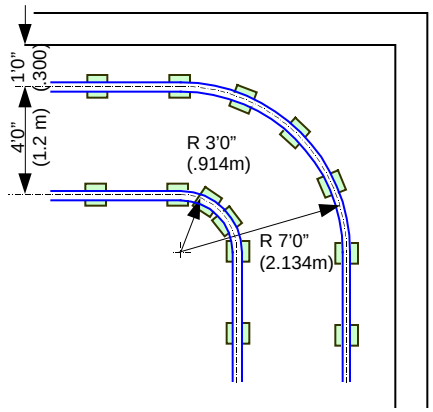


Fig. 5 – Example of track layout

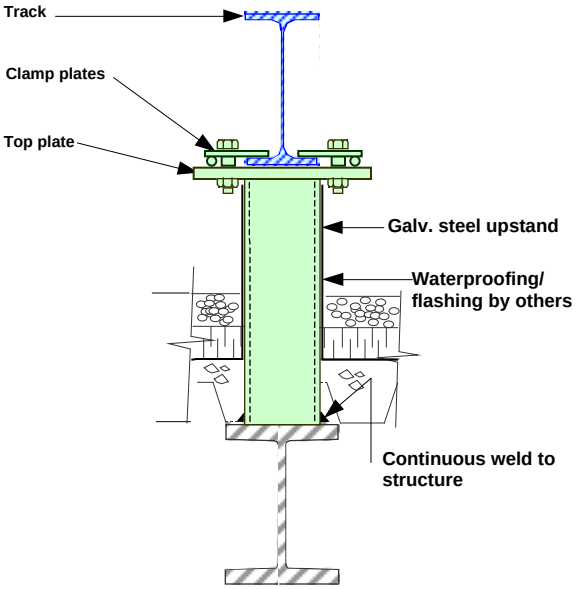
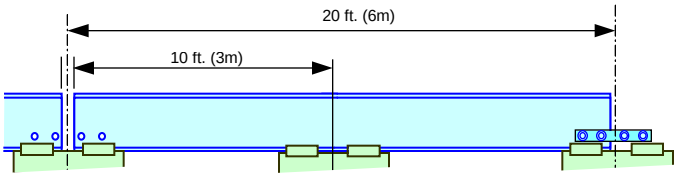


Fig. 4



The low profile clamp plates allow the uninterrupted travel of the wheel assemblies. Each are fixed to the top plate with A235 galvanized bolts.