



**OPERATING INSTRUCTIONS**

**MONTRAC COMPONENTS**

Trac

**BA-100050**

english, Edition 04/2006



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## 1. Important information

### 1.1. Introduction

This operating instruction describes the mechanical design, the load limits, installation, maintenance and spare parts of the Tracs.

### 1.2. EU - conformance (to EU Directive on Machines, Appendix II A)

Regulations and standards taken into account:

A Montrac transport system is a machine that consists of, depending on the application, a variety of precisely defined components. The regulations and standards taken into account for the components are mentioned in the respective sub-chapter of the operating instructions.

Montrac transport systems may only be put into operation,

- a) when they are operated with a power supply that complies with the standards described in the operating instructions electrical supply.
- b) when the space beneath transfer gates and crossings is inaccessible in an area with a diameter of 1.6m (Danger of crash for shuttles if transfer gate or crossing is incorrectly switched.)

Manufacturer:

Montech AG, Gewerbestrasse 12 CH-4552 Derendingen  
Tel. +41 32 681 55 00, Fax +41 32 682 19 77

### 1.3. EMV-Guideline

Emission:

- Sound level intensity according to EN 55011 or EN 55022 class A.

Immunity:

- to electromagnetic fields in accordance with IEC 801-3: 10V/m, 1kHz, 80% AM.
- to burst in accordance with IEC 801-4: 2kV.
- to narrow-band conducted interference in accordance with IEC 801-6: 10VEMF.
- to 50Hz magnetic fields in accordance with EN 61000-4-8: 30A/m.
- to discharge of static electricity.
- to conducted noise.

### 1.4. Guideline fulfilled by the Trac

The individual components of the Trac are not subject to the regulations of the machine guideline. However we should like to point out that transport systems in which the Trac must not be operated until it can be ascertained that the requirements in respect of the electrical supply and necessary protective devices (see EU Declaration of Conformity) have been fulfilled.

### **1.5. Safety instructions**

The safety instructions, especially those concerning the electrical connection, must be heeded during commissioning, operation, repair work and decommissioning. Non-compliance with these instructions is an improper use of the transport system and its components.

The operation of a Montrac transport system in an explosive atmosphere (combustible gases, vapors or dust) may lead to their ignition and must therefore not be carried out.

### **1.6. Product description and application**

Montrac is a monorail transport system with self-propelling shuttles, constructed to carry loads of up to 12kg or 24kg (2-axle shuttle) and pallet sizes up to 300x550mm. Montrac is a modular system. Standardized basic components enable customer-specific system configurations to be set up for connection to machining stations, machines, order-picking stations, etc.

Montrac can be used wherever material has to be moved, distributed, processed stepwise (e.g. assembled) or collected together at one point from various senders.

### **1.7. Systemlogistik**

Flexibility:

To enlarge a system, the Tracs only need to be cut to the correct length.

Mechanical connection, thermal expansion:

TracLink is a mechanically-stable connecting element between two Tracs. This element accommodates system thermal expansion.

Electrical connection, ESD:

TracLink provides the electrical connection between power rails. Power infeed to the system is via the TracLink. An inbuilt resistance of 100k $\Omega$  provides for the electrical grounding between the transport system components (Trac, TracLink, curves, etc.) and earth (ESD).

### 1.8. Description of operation

The Trac consists of a colorless anodized aluminum extrusion. The two T-slots on the one side accommodate extruded plastic profiles through which the two conductor rails (24 V DC), for feeding the shuttles, are run.

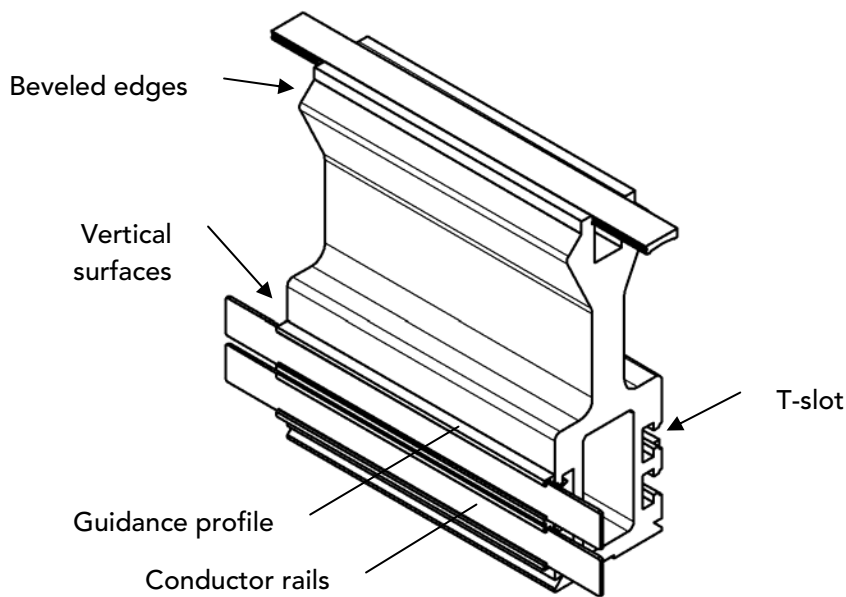
The conductor rails opposite the T-slot are used for securing cams to control the shuttles.

The Trac is compatible with Quick-Set.

The four main rollers of the shuttle run on the two upper beveled edges of the Trac. The shuttles are also supported by two additional rollers that run on the vertical surfaces above the T-slot.

The individual Trac sections are linked by an expandable TracLink. Power can be provided to any TracLink.

Fig. 1-1: Trac

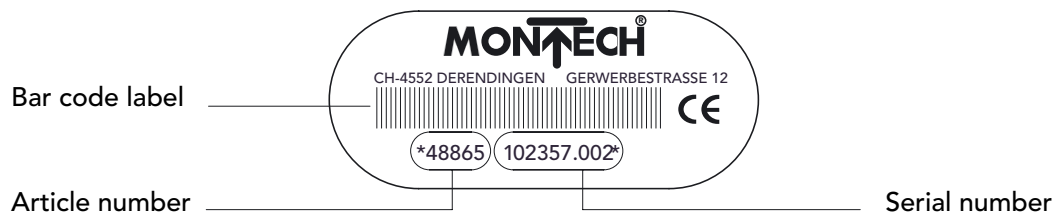


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### 1.9. Additional information

The present operating instruction is intended to allow proper and safe use of your Trac. Should any information for your particular application be missing, please contact the manufacturer. When reordering operating instruction, it is imperative that you quote the serial number (see Fig. 1-2). This document is also available on our homepage [www.montech.com](http://www.montech.com).

Fig. 1-2: Description type plate



Montech AG  
Management

U. D. Wagner

C. Wullschleger

### 1.10. Validity of the Operating Instructions

Our products are continually updated to reflect the latest state of the art and practical experience. In line with product developments, our User Manuals are continually updated.

Every User Manual has an article number e.g. BA-100050.

The article number and the date of edition are evident on the title page.

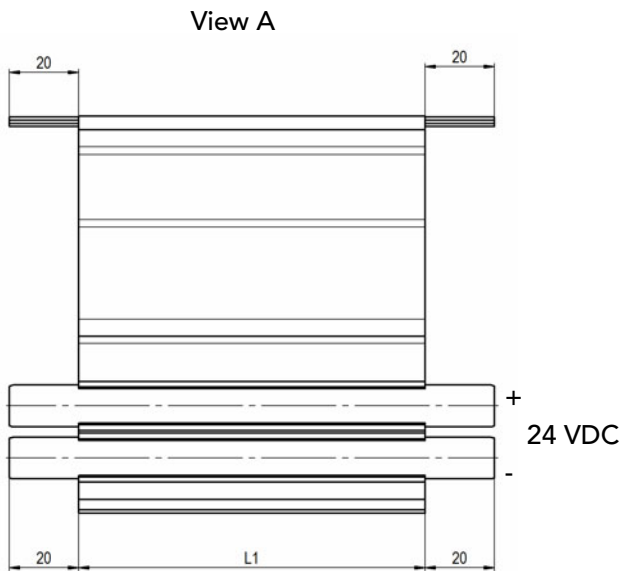
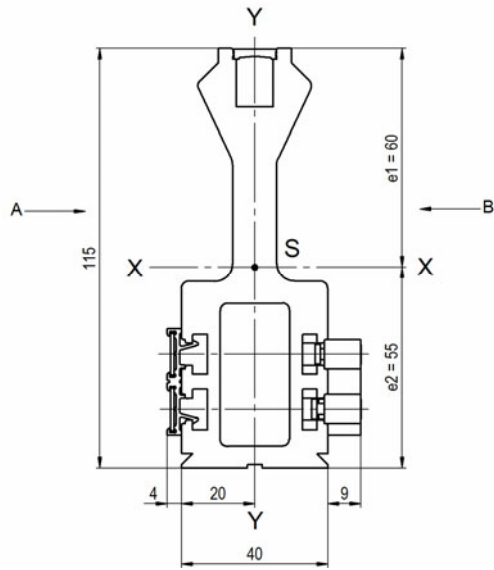
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## 2. Technical Data

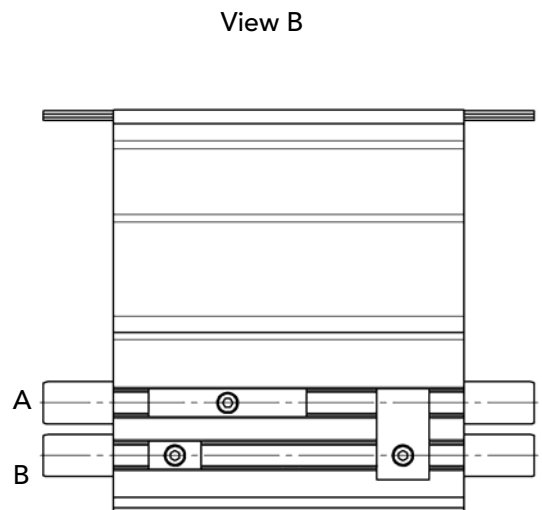
Trac weight	[kg/m]	5.3
Cross-sectional area	[mm <sup>2</sup> ]	1957
Section modulus Wx	[cm <sup>3</sup> ]	37.7
Wy	[cm <sup>3</sup> ]	10.8
Inertia moment Jx	[cm <sup>4</sup> ]	230
Jy	[cm <sup>4</sup> ]	21.6
Length allowance	[mm]	±0.5
Torsion allowance	[mm/m]	1
Straightness tolerance	[mm/m]	1
Material		Aluminium, Copper nickel plates, Plastic
Rated voltage	[V DC]	24
Current carrying capacity	[A]	64
Ambient conditions: Temperature	[°C]	10-40
Rel. humidity		5% ... 85% (without condensation)
Air purity		normal workshop atmosphere

**2.1. Dimension sheet**

Fig. 2-1: Dimension sheet



L1 = Trac length

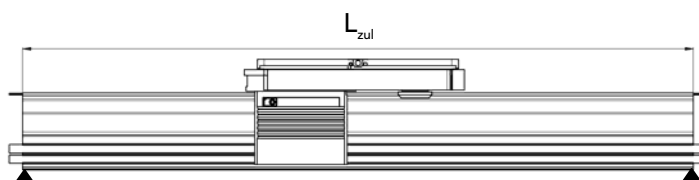
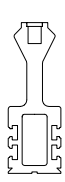
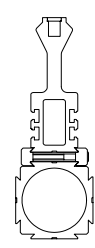
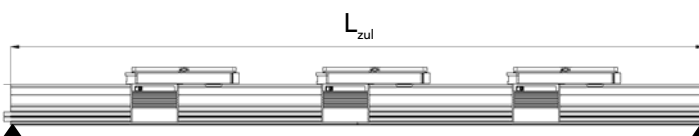
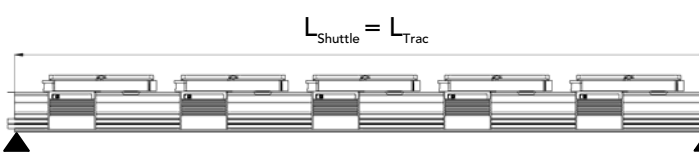


## 2.2. Load limits

Electrical load capacity of the conductor rail, incl. coupling = 64 A

Mechanical load capacity of the Trac

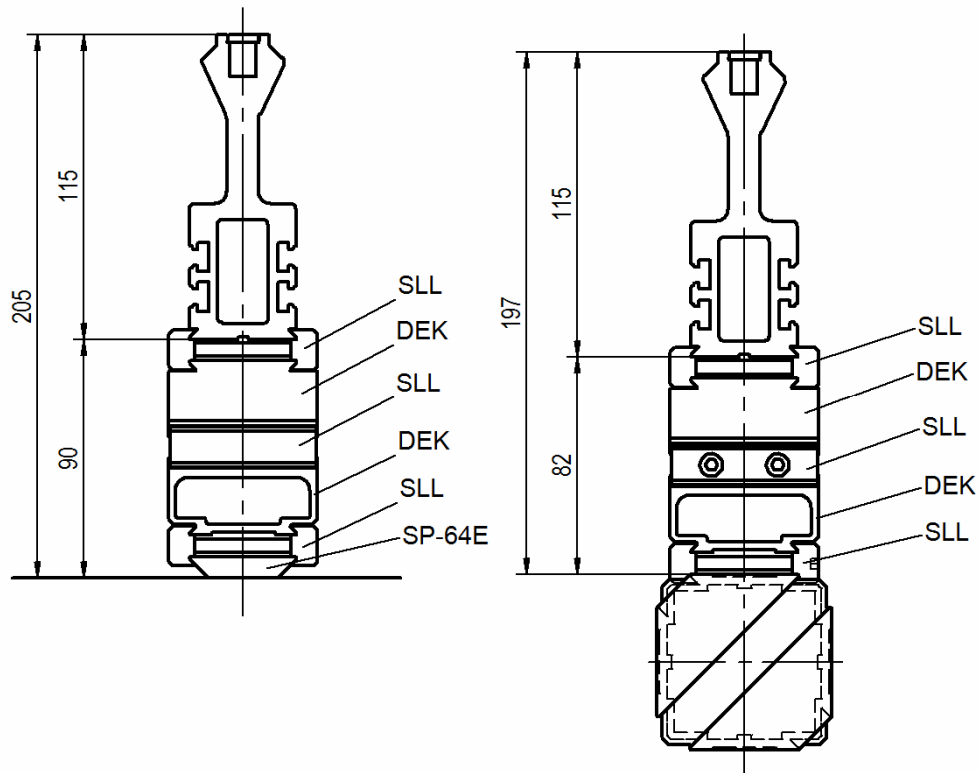
Fig. 2-2: Load limits

Number of fully loaded Shuttles	$L_{zul}$ of a Trac section, supported at both ends.	
	without reinforcement	with reinforcement (TP-66)
 <p style="text-align: center;"><math>L_{zul}</math></p>	  3.8m	  6.1m
 <p style="text-align: center;"><math>L_{zul}</math></p>	2.7m	4.3m
 <p style="text-align: center;"><math>L_{Shuttle} = L_{Trac}</math></p>	2.4m	3.9m

**2.3. Assembly example**

The TracLink normally provides the support between travel section and support structure.

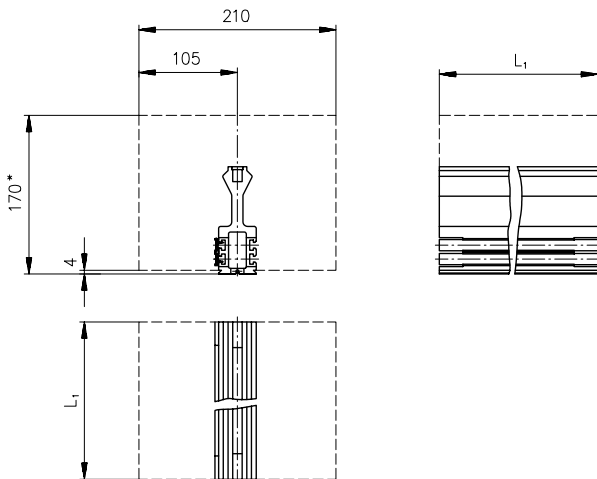
Fig. 2-3: Assembly example



### 2.4. Free space for shuttles

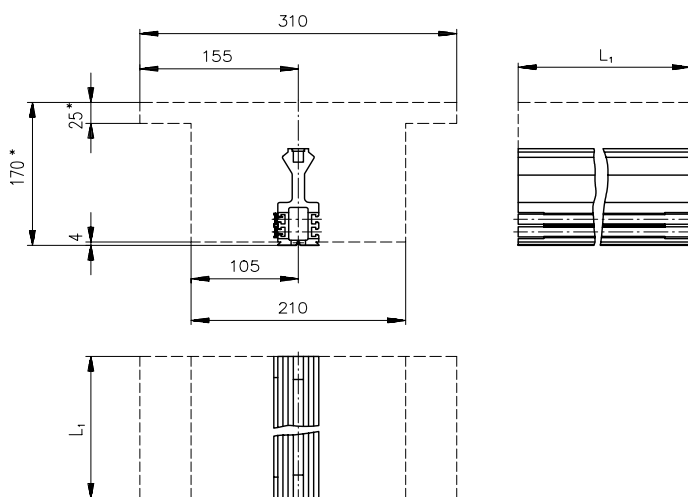
Free space allowance for shuttles with platforms 200x300mm / 200x400mm / 200x550mm

Fig. 2-4: Free space for shuttles



Free space allowance for shuttles with platforms 300x400mm / 300x550mm

Fig. 2-5: Free space for shuttles



L1 = Trac length

-- = Boundary (the space inside this boundary must remain free)

\* Depending on the load, the free space allowance must be increased.

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### **3. Installation**

View operating instruction TracLink.

### **4. Maintenance**

Every 6 months:

Check conductor rails:

The conductor rails should be checked for signs of burning, grease spots or excessive soiling. These areas should be cleaned with aluminum-rubber. The produced rubber abrasion must be removed from the Trac



– The black layer (graphite abrasion) should not be removed. It is electrically conductive and prevents rapid oxidation of the copper!

Clean Trac:

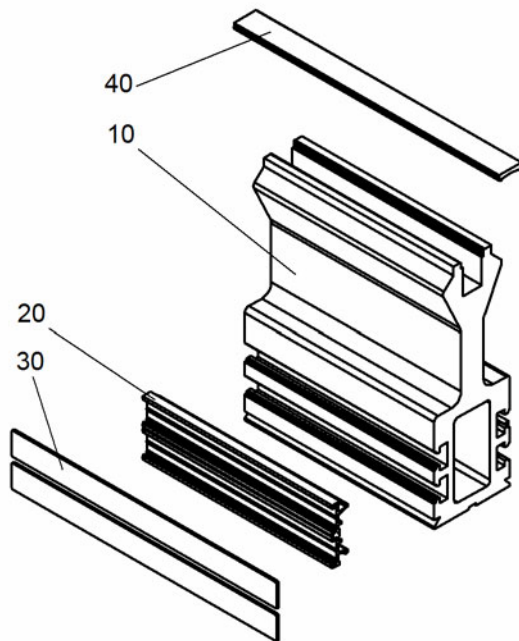
The Trac must be freed from excessive dirt as well as from oil and grease. Remove excessive dirt and dust with a dry cloth. Dirt on the Trac is best removed with aluminum rubber. The produced rubber abrasion must be removed from the Trac.

General check:

The Trac must be checked for damage. If damaged, please contact the company MONTECH.

## 5. Parts list

Fig. 5-1: Drawing Trac



Item	Sym.	Designation	Art. No.	Material
10	◇	Trac	44908/....	Aluminium
20	◇	Guidance profile	90416	ABS
30	◇	Conductor rails	508346	Copper nickel plates
40	◇	Cover profile	91257	TPR

◇ Not available ex stock individually (upon request)

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## 6. General information

### 6.1. Environmental compatibility and disposal

Material used:

- Aluminium
- Copper nickel plates
- ABS (Acrylonitrile butadiene styrene)
- TPR (Thermoplastic, prevulcanized rubber)

Surface treatment:

- Anodic oxidation of aluminium
- Nickel-plating of copper

Shaping processes:

- Profile extrusion of aluminium
- Injection moulding of plastics
- Material-removing processes (metals and plastics)
- Extrusion from ABS

Emissions during operation:

- See EMC Emissions

Disposal:

Trac that are no longer in use are to be dismantled and recycled according to the type of material. The type of material for each part is stated in the spare parts list. Any non-recyclable material is to be disposed of properly according to materials, taking into account the regulations which apply in your location.

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