

TECHNICAL SPECIFICATION



LAWECO

CARGO MASTER TRANSPORTER

CMT 7

Capacity: 7,000 kg

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1. Application

The LAWECO Cargo Master Transporter CMT 7 is a diesel engine powered vehicle designed for handling of pallets/containers (P/G's) on the apron. Loads of up to 7,000 kg can be taken. The maximum driving speed is approx. 25 km / h.

When designing the vehicle, special attention was paid to the simple operation of the vehicle as well as the fast, efficient maintenance options for all components.

2. Technical Data

2.1 Dimensions and Weights

Main data:

Length incl. dolly loading system:	5,930 mm
Width:	3,860 mm
Height:	2,200 mm (incl. cab)
Service weight:	7.700 kg
Ground clearance:	approx. 140 mm (level position)
Turning circle radius:	approx. 8,000 mm

Chassis:

Track:	approx. 3.5600 mm
Wheel base:	approx. 2.900 mm

Front axle:

Tyres:	SE 250-15 (rim 7.0-15)
Vertical adjustment:	+/- 107 mm

Rear axle:

Tyres:	SE 8.25-15 (rim 6.5-15)
Vertical adjustment:	none

Conveying system:

Platform lifting range:

- front:	441 mm – 732 mm
- rear:	439 mm – 540 mm

Conveying surface: approx. 4.050 mm x 2.490 mm (max.)

Distance between P/C-stops: 3.250 mm

Roller spacing: 380 mm

Roller diameter: 159 mm

Roller length: 1.987 mm

2.2 Performance

Payload: 7,000 kg

Loading capacity: 2 – LD1, 2 – LD2, or 2 – LD3 containers in each operation: or 1 – LD6, 1 – LD7, 1 – LD8 container or one pallet up to 2440 mm X 3175 mm (96"X 125)" size. According AHM 909

Travel speed (unloaded): max. 25 km/h

Gradeability: max. 8%

Cargo transfer speed: 0.3 m/s

Platform lift speed (front end): max. 0.1 m/s

3. Vehicle Equipment

3.1 Chassis

The chassis is constructed of robust welded steel sections, shot blasted before machining. It consists of longitudinal beams and cross-members, reinforced at connecting points to provide resistance against deformation due to lateral or frontal impacts through dollies etc. during rigid operation.

Protection ledges are provided at both sides of the vehicle.

Towing devices are provided at front and rear end of vehicle chassis.

Chassis and thus the platform perform height adaptation and therefore allow for optimum load conveying towards corresponding loader or dolly.



3.2 Propulsion system

The power train is accommodated - well accessible - at the driver's side of vehicle directly in front of the rear wheels. Thus positive effects with regard to sound emission at the driver's place are achieved.

The power is generated through an water cooled Deutz diesel engine TCD 2.9 L4 Stage 5, rated 54 kW @ 2,300 rpm,

The hydraulic pump unit is driven via a torsion elastic coupling.

The fuel tank capacity of 70 litres is sufficient for a approx. 12 hours operation.

3.3 Hydraulics

The hydraulic system is operated with two separate hydraulic circuits, of which one is out-put-regulated. The travel function is operated in a closed system. All other functions are operated in an open circuit. 420 bar is the max. hydraulic pressure for the closed system and for the open circuit the max. hydraulic pressure is 190 bar. The Hydraulic system is equipped with a separate hydraulic-oil cooler.

Easy access of all hydraulic components is ensured for maintenance purpose.



3.4 Electrics

The operating voltage is 24 V DC.

The electrical control of vehicle functions is performed through CANopen PLC make Intercontrol Germany. The system is PROVEO ready.

3.5 Axles

The chassis is consisting of a non-driven steering front axle and a driven rear axle.

The front axle is equipped with a disc brake system (service brake) related to both wheels.

For optimal cargo handling the front axle is furthermore adjustable in height by means of two hydraulic cylinders arranged within axle system.

The axle respect. the platform is vertically adjustable by manual control. Thus lifting/lowering as well as positioning of the platform is ensured at any time.

The rear axle is consisting of two hydraulic propulsion motors each comprising a spring loaded multiple disc brake (parking brake). All components are located within the rear wheel.

The tyre sizes ensure a perfect characteristics as well as sufficient rigidity between vehicle and pallet/container loader respect. dolly during cargo handling.

3.6 Hydraulic suspension of front axle (Option)

Providing higher comfort for the operator and preventing the vehicle and the load from vertical impacts (apron) during travelling mode at a high degree, the transported front axle can be equipped with a hydraulic suspension module, based on existing levelling cylinders in combination with an additional accumulator system along with a separate control unit.

During cargo mode, i.e. load transfer to / from loader or dolly, the hydraulic suspension is automatically blocked.

Thus the pre-selected height of the platform ensures along with the blocked, stiff chassis an optimum load transfer.

3.7 Steering system

Minimised effort through a hydrostatic powered steering system. Through integration of the power steering into main hydraulic system, the fluid used for this system is identical to the hydraulic oil used for all other functions.

In case of a hydraulic failure, the emergency steering function enables the transport of the CMT 7. Steering may then be performed manually at a maximum effort of 200 N.

3.8 Braking system

3.8.1 Service Brake

The dual-circuit hydraulic brake system acts on the front wheels by means of disc brakes.

This system is used for stopping purpose (service brake) as well as for securing purpose (locking brake), e.g. during load transfer at running Diesel engine.

The braking ratio of the loaded unit meets at least 25% according to the European standard prEN 1915-1.

Hydraulic accumulators perform a backup in case of a hydraulic pump failure.

3.8.2 Parking Brake

The spring loaded parking brake acts on two rear wheels as soon as the diesel engine is shut off. Thus safe holding of the unit in a slope of 7 % (prEN 1915-1) is ensured.

3.9 Conveying system

The conveying system consists of zinc coated rollers, driven via chain, and in total one hydraulic motor.

The first front roller as well as the last rear roller is designed as rubber coated rollers (**Option**).

The roller table is divided into two sections, which can be operated either separately or simultaneously (**Standard**).

Soft switch valves (**Option**) are available for increased lifetime of involved components.

Positioning of P/C stops ensures a perfect visibility at vehicle's front during travelling, loading and unloading.

The right hand side guide ledge is hydraulically adjustable in parallel at a stroke of about 890 mm (**Option**).

Vehicle's front and rear end can be equipped with a dolly loading system (**Standard**) to facilitate cargo handling in conjunction with related adapted dollies.

3.10 Pallet Stops

Automatically operated pallet stops ensure a safe positioning of cargo on the platform during travelling and lifting operation.

Once the conveying system is activated, the travelling selector switch is in neutral position and the locking brake is (automatically) applied, the front/rear stop is, depending on the conveying direction, automatically retracted.



3.11 Driver's stand

The driver's stand is located on the left-hand side of the platform, well protected within the vehicle contour. Sufficient space in front of the driver's panel is provided for a comfortable manual control of all functions regarding travelling and cargo transfer operations.

All necessary operating controls and indicator lamps are clearly arranged on the driver's control panel and equipped with pictograms according to IATA Airport Handling Manual AHM 915.



3.12 Corrosion prevention / Painting

The steel structure is shot-blasted (level SA 2,5) rinsed and treated with an anti-corrosion coating (60µm).

The top coat colour (40µm) in accordance with customer's specification, is based on RAL colour-code.

For ensuring a maximum safety for the operator, walking surfaces are treated with an anti slip coating.

4. Options

Rubberised conveying roller, 1 ea. at front end rear end

Control of conveying drive by means of one proportional valve per section

Hydraulically (in parallel) adjustable guide ledge (right hand side)

Hydraulic suspension of front axle

5. Technical Guidelines

The CMT 7 meets or exceeds the below IATA requirements.

Airport Handling Manual (AHM) chapters:

Generic GSE : Chapters - 904, 905, 909, 910, 911, 913 & 915.

For Transporter : Chapter - 969.

European and German Norms for Airport Equipment