

TECHNICAL SPECIFICATION
TREPEL CONVENTIONAL AIRCRAFT TRACTOR
CHALLENGER 160



Dimensions

Length	5.315 mm	(209")
Width	2.300 mm	(91")
Height	2.000 mm	(79")
Wheelbase	2.460 mm	(97")
Track of drive axles	1.930 mm	(76")
Turning radius, 2-wheel steering (outer contour)	7.350 mm	(289")
Turning radius, 4-wheel steering (outer contour)	4.900 mm	(193")
Weight (without ballast)	12.800 kg	(28.218 lb.)
Weight (ballasted)	up to 16.800 kg	(37.026 lb.)

Capacity

Towing / pushing capacity	up to 180.000 kg	(396.825 lb.)
Drawbar pull	142 kN	(31,924 lbf)

(Calculated theoretical value, dependent on ballasted weight and adhesion factor)

Performance data

Driving speed (depends on the ballasted weight)	30 km/h	(19 mph)
Brake deceleration min.	35 %	

Power System

Diesel engine: DEUTZ AG, TCD 2012 L4 2V
Liquid cooled,
COM 3A / EPA – TIER 3/CARB
96 KW (130 HP)

Fuel tank capacity 125 L (33 US Gal.)

Transmission

ZF-Power shift transmission,
converter gear, 6 speed forward,
3 speed reverse

Axle

Front axle with hydro pneumatic
suspension
Rear axle without suspension

Tyres

Front and rear axle: pneumatic tyre 9.00 R20

General description

- o Designed for push-back and towing of aircrafts up to 180.000 kg (A310 / B767-300)
- o Single operator handling
- o Four wheel drive
- o Four wheel steering including crab steering
- o Driver's cabin (not liftable), 2 seat
- o Operation controls integrated in drivers cabin dashboard
- o Lift able power-pack engine compartment for maintenance work

Chassis / Drive system

- o Mechanically drive system powered by L4 liquid cooled diesel engine with flanged ZF-Power shift transmission with cooling system
- o Torque converter
- o Direct powered engine cooling system
- o Front and rear steering drive axle powered by Power shift transmission and cardan shaft
- o Front axle with hydro pneumatic suspension, automatically lockable (depends on drive speed)
- o Rear axle without suspension

Steering System

- Hydraulic power steering with emergency steering in case of engine failure
- Forward axle always operates by ORBITROL, backward axle electronically controlled. Changes automatically through selection of drive direction
- Both axles are equipped with redundant angle transmitters
- Steering modes available:
 - Front axle steering
 - Rear axle steering
 - Diagonal steering (crab steering)
 - Four wheel steering

Brake System

- Dual-circuit hydraulic brake system
- Disc brakes on each wheel
- Safety brake pressure accumulators for emergency braking in case of engine failure.
- Fail-safe emergency and parking brake on rear axle

Driver's cabin

- Driver's cabin, 2 seats
- Windshield heated
- Back window heated
- Roof window
- Rear view mirror's electrical adjustable and heated
- Interphone connection from driver's cabin to rear of chassis

Controls on Driver's stand

- Steering wheel (left hand drive)

Dashboard

- Fuel gauge
- Working hour counter
- Tachometer
- Display
- Warning light switch
- Menu bottom display

Switches

- Ignition switch
- Parking/driving light
- Steering column switch
 - Horn
 - Windscreen wiper front
 - Windscreen washer front
 - Indicator
 - Main beam
- Air conditioning system (Option)
- Preselect Steering program
 - Forward axle steering
 - Backward axle steering
 - Diagonal steering
 - Circular steering
- Suspension front axle off
- Suspension front axle lift/lower
- Suspension front axle level
- Window heating front
- Window heating rear
- Windscreen wiper rear
- Windscreen washer rear
- Beacon light
- Working light rear

Switch/Controls on electric switchbox

- Key switch emergency operation on

Tow-bar coupling

- Single stage coupling front and rear. For 3" drawbar eye. Designed for vehicle max. drawbar pull

Variable ballast system (Optional)

- Removable ballast weights with forklift pockets

Hydraulic System

- Variable Axial Piston Pump with pressure flow controller
- Steering emergency pump driven from the axle.
- Central located hydraulic control unit
- All valves with manual emergency hand lever.
- All fittings and tubes electro-galvanized
- Manual emergency system with emergency power unit and hand pump for all functions.

Electric System

- 24 V DC system
- Two 12 V 150 Ah batteries
- Voltage transformer 24V / 12V
- Back-up horn

Standard lighting

- Tow headlights
 - Park/driving/main light
 - Indicator
- Two backlights
- Two backlights/indicator
- Two backlights/brake light
- Two backlights/reverse light
- Two working lights rear

Safety Features

- Steering unit with shock valve
- Two-circuit brake system with pressure reservoirs for emergency braking
- Spring-loaded parking brake automatically brakes the vehicle in case of loss of brake pressure
- Emergency steering in case of engine failure for towing.
- Steering emergency pump driven from the axle.

Paintwork and Labelling

- Anti-corrosion primer and acrylic lacquer RAL 9010 / white
- Joints, corners and hollow spaces are sealed with special filler
- Hydraulic measure points are labelled in accordance with the hydraulic schema

Rules, Guidelines, Documentation

- IATA AHM 910 / 913 / 955
- EG Machines Directive
- CEN Standards EN 1915, Part 1, Part 2 / EN 12312-7

One complete set of technical documentation (Hard Copy) will be supplied with each unit in English language, respectively in customer's language along with a CD-ROM

- Operation manual
- Emergency manual
- Transport instructions
- Maintenance manual
- Vehicle data sheet with adjustment protocol and brake test protocol
- Hydraulic and brake schema, hydraulic hoses list
- Electric diagrams
- Illustrated parts list

Options

Variable ballast system

- Removable ballast weights with forklift pockets
 - 2 t
 - 4 t

Chassis

- Multi-stage coupling for bolt diameter 75 mm and 50 mm
- Mirror on front and rear towing coupling
- Mirror on front and rear towing coupling heated
- Central lubrication system

Driver's cabin

- Air conditioning system
- Park heating system

Back up camera

- Monitor inside drivers cabin

Electric

- Remote control attachable to front or rear of vehicle for function: Drive forward/reverse and brake
- Working light on front and rear towing coupling
- External power socket
- Switchbox interior lighting
- Engine compartment lighting

Winter kit

- Heating fuel filter
- Battery recharger
- Engine cooling liquid heating
- Heating hydraulic oil

This technical specification describes the standard execution as well as major options.

Other specific equipment and / or special requirements on request

**We reserve the right of technical alternations
All dimensions with tolerance of +/- 3%**

AIRCRAFT COMPATIBLY GUIDELINE



