

Technical Specification

SCHOPF F 396 C Aircraft Towing Tractor

DESCRIPTION

The SCHOPF F 396 C is an aircraft towing tractor with 4-wheel drive and 4-wheel steering. It is available with 45,000 kg basic weight and can be ballasted up to 50,000 / 55,000 / 60,000 / 70,000 kg.

STRUCTURE

This tractor consists of a sturdy and rigid frame of welded construction. The front axle is mounted to the frame by semi-elliptic laminated leaf springs. The rear axle is rigidly mounted.

Engine, full-power-shift transmission and hydraulic system as well as all other components are placed within the frame, easily accessible for repair and maintenance work. Engine and transmission can be removed as one unit.

The tractor weight is equally distributed on all four wheels. In case additional ballast has been installed, it can be easily removed or mounted depending on the operational requirements.

The F 396 C tractor can be supplied in a so-called "short" or "long" version. In addition to the spacious, elevating cabin for driver and co-driver in front (short version), the tractor can be equipped either with an open platform, an open driver's stand or a fixed single driver's cabin at its rear end (long version).

Various types of tow hitches for fitting a tow bar can be mounted to each of the massive bumpers front and rear. In standard single-stage pin-type tow hitches (with 3" pin Ø) are fitted.

ENGINE / TRANSMISSION

ENGINE:

Make:	Deutz
Type:	BF6M 1015 C, turbo-charged, 6 cylinders, V-type, 4-stroke, diesel, integrated engine management system EMR
Exhaust emission:	acc. to COM II (EC guidelines 97/68/EG STEP 2) / EPA II
Cooling:	by water
Output:	300 kW (408 HP) at 2,100 rpm acc. to ISO 3046
Torque, max:	1,940 Nm at 1,300 rpm
Bore / stroke:	132 / 145 mm
Displacement:	11,900 cm ³

TRANSMISSION:

Make:	ZF
Type:	6 WG 310, ERGOPOWER series, automatic full-power-shift transmission with integrated torque converter, manual and automatic gear-shifting mode,
Gear shift:	electro-hydraulic, 6 gears forward / 3 reverse

The transmission characteristics are especially adapted to the requirements of aircraft towing tractors. At the starting point (1st gear engaged with maximum engine speed) the maximum draw-bar pull is achieved.

Converter and transmission are fed from one common oil system. The oil is cooled by a separate, hydraulically driven air-cooling system.

AXLES AND WHEELS

Front and rear axles, make Kessler, (disc-type brake) are driven by the full-power-shift transmission through joint shafts and reduction gears. Both axles are designed as steering axles with planetary drives in the wheel hubs.

Tyres:

up to 60,000 kg total weight:	16.00 R 25 radial tyres.
70,000 kg total weight:	18.00 R 25 radial tyres only.

HYDRAULIC SYSTEM

Brakes, steering system, cabin-lift and jacks (option) are operated hydraulically. The hydraulic system is fed by a gear-pump combination being flange-mounted to the transmission.

STEERING SYSTEM

Steering is done electro-hydraulically. Four steering modes can be selected electrically through a push button:

- front-wheel steering
- rear-wheel steering
- 4-wheel steering
- crab steering.

An electrically driven "emergency steering pump" is connected to the steering circuit so that the vehicle can be steered temporarily for salvage purposes.

BRAKING SYSTEM

The tractor is equipped with a fully hydraulic 3-circuit safety disk brake system, consisting of a 2-circuit service brake and 1-circuit failsafe parking brake. Emergency parking-brake release is done either by means of the emergency steering pump or mechanically; optionally a hydraulic hand pump is available.

JACKS

The F 396 C can be optionally equipped with four integrated hydraulic jacks to lift each one of the axles. They are operated by means of push buttons in the cabin.

DRIVER'S CABIN

The elevating, full-width cabin in front (in standard with two upholstered seats for driver and one co-driver) is of all-steel construction. The lockable doors are equipped with sliding windows. It has been ergonomically designed with the safety of the operator and the aircraft in mind. Noise insulation and vibration absorption techniques reduce cabin noise to less than 80 dB(A).

For additional safety and comfort the large front cabin is equipped as follows:

- 3 windscreen wipers for the largest wiped area possible
- windscreen washer
- cabin / front screen ventilation system
- adjustable steering column
- 2 outside rear-view mirrors
- front tow-hitch mirror
- adjustable operator's seat (height and weight)
- cabin lights

Furthermore a lot of special equipment is available optionally.

OPEN PLATFORM OR OPERATOR'S STATION AT THE REAR END

The "long version" F 396 C (option) is fitted either with a full-width platform or a fully functional one-man rear operator's station (either open stand or closed cab) with small platform. Both platforms (small and full-width) are designed to either accommodate various GPU models and sizes or can be adapted to other requirements.

LIGHTING SYSTEM

Standard equipment:

- 2 headlights, low and high-beam
- 2 reversing lights
- 2 brake lights
- 2 directional indicator lights (front + rear)

Optional equipment:

- tow hitch lights
- spot lights
- beacon or anti-collision lights
- others upon request

TECHNICAL DATA AND DIMENSIONS:

Operating weights	45,000 / 50,000 / 55,000 / 60,000 / 70,000 kg	
Tyres, front + rear	16.00 R 25	18.00 R 25 (where deviating)
Length without tow hitches		
- "short" version (front cabin only)	7,850 mm	
- "long" version (front cabin + rear driver's stand / cab)	9,090 mm	
Height	- cabin lowered	1,740 mm
	- cabin raised	2,390 mm
Width	2,960 mm	
Ground clearance	180 mm	240 mm
Axle base	3,770 mm	
Wheel track, front + rear	2,500 mm	
Turning radius - inside (4-wheel steering), approx.	2,500 mm	2,700 mm
Turning radius - outside (4-wheel steering), approx.	6,950 mm	7,200 mm
Draw-bar pull installed	420 kN / 94,420 lbs	

The max. transferable draw-bar pull depends on the tractor weight and friction coefficient.

Travelling speeds - forward	1 st gear	0 - 4 km/h	0 - 4 km/h
	2 nd gear	0 - 6 km/h	0 - 6 km/h
	3 rd gear	0 - 9 km/h	0 - 9 km/h
	4 th gear	0 - 14 km/h	0 - 15 km/h
	5 th gear	0 - 20 km/h	0 - 21 km/h
	6 th gear	0 - 30 km/h	0 - 33 km/h
- reverse	1 st gear	0 - 4 km/h	0 - 4 km/h
	2 nd gear	0 - 9 km/h	0 - 9 km/h
	3 rd gear	0 - 20 km/h	0 - 21 km/h

Electrical system	24 V
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Tolerance of mentioned data \pm 3%
Technical modifications reserved.

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7/02 AF/IS, 02/03 IS, 12/03 IS