

Technical Specification

SCHOPF F 396 E Aircraft Towing Tractor

DESCRIPTION

The SCHOPF F 396 E aircraft towing tractor is the economic alternative to the world-wide best-seller in its class – the SCHOPF F 396. The F 396 E is equipped with 4-wheel drive and 4-wheel steering. It is available in different weight classes, 45,000 / 50,000 / 55,000 / 60,000 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.

The F 396 E 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 one each single-stage pin-type tow hitch (with 3" pin Ø) is fitted front and rear.

ENGINE / TRANSMISSION

ENGINE:

Make:	Deutz
Type:	BF6M 1013 ECP, 6 cylinders, turbo-charged with integrated engine management system EMR
Cooling:	by water
Exhaust emission:	acc. to COM II (EC guidelines 97/68/EG STEP 2) / EPA II
Output:	195 kW (265 HP) at 2,300 rpm acc. to ISO 3046
Torque:	max. 954 Nm at 1,400 rpm
Displacement:	7,146 cm ³

TRANSMISSION:

Make:	ZF
Type:	6 WG 210, 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 hydraulically driven air/oil cooler.

AXLES AND WHEELS

Front and rear axles, make Kessler, LT 91 (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.

The F 396 E is equipped with 16.00 R 25 radial tyres.

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. The cooling fan is driven by engine PTO mounted pump.

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 E 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 front cabin is of all-steel construction. The lockable doors are equipped with sliding windows. There are two upholstered seats for driver and one co-driver. The cabin is ergonomically designed for safety and comfort of the operator with a noise level of less than 80 dBA.

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

- 3 windscreen wipers for the largest wiped area possible
- windscreen washer
- cabin / front screen ventilation
- adjustable steering column
- 2 outside rear-view mirrors
- front tow-hitch mirror
- 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 E (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 kg
Length without tow hitches	
- "short" version (front cabin only)	7,850 mm
- "long" version (front cabin + rear driver's stand or cab)	9,090 mm
Height	
- cabin lowered	1,740 mm
- cabin raised	2,390 mm
Width	2,960 mm
Ground clearance	180 mm
Axle base	3,770 mm
Wheel track, front + rear	2,500 mm
Turning radius - inside (4-wheel steering), approx.	2,500 mm
Turning radius - outside (4-wheel steering), approx.	6,950 mm
Tyres, front + rear	16.00 R 25
Draw-bar pull installed	370 kN / 83,180 lbs

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

Travelling speeds	- forward	- 1 st gear	0 - 3 km/h
		- 2 nd gear	0 - 5 km/h
		- 3 rd gear	0 - 8 km/h
		- 4 th gear	0 - 12 km/h
		- 5 th gear	0 - 18 km/h
		- 6 th gear	0 - 28 km/h

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

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