

TUG TECHNOLOGIES

Providing Ground Support Solutions Worldwide



Model shown above includes additional options.

TMD/TRD-400 Aircraft Air Start Unit

The TUG Model TMD-400 air start unit represents our 400 ppm variant of our family of air start units. Designed from a clean sheet of paper, these units offer lower operating costs and decreased environmental impact. The TMD-400 unit is specifically designed to meet the engine starting requirements of the B-777, including those equipped with the GE-90 engines. The unit incorporates a multiple hose design that provides excellent operational flexibility.

One of the many standard features of the TMD-400 Air Start unit is the dual-pressure regulators with an "On Demand" automatic engine throttle control system. The operator simply selects either the air start or the air packs mode and the control system automatically adjusts the pressure and throttle settings. Benefits of the "On Demand" system include fuel economy, decreased maintenance, and noise control.

Safety, reliability, and maintainability are key ingredients of our design; decades of experience with both commercial and military GSE provide practical and efficient products. Standard features such as large access doors, remote lube oil drains, and maintenance-free batteries ensure ease of service. These exceptional features, combined with our famous worldwide parts and support make the TMD-400 air start unit the best choice for your operations.

Equipment Sales
Tel: (770) 422-7230
Fax: (770) 428-7315

Parts Sales
Tel: (800) 989-8499
Fax: (770) 422-8730

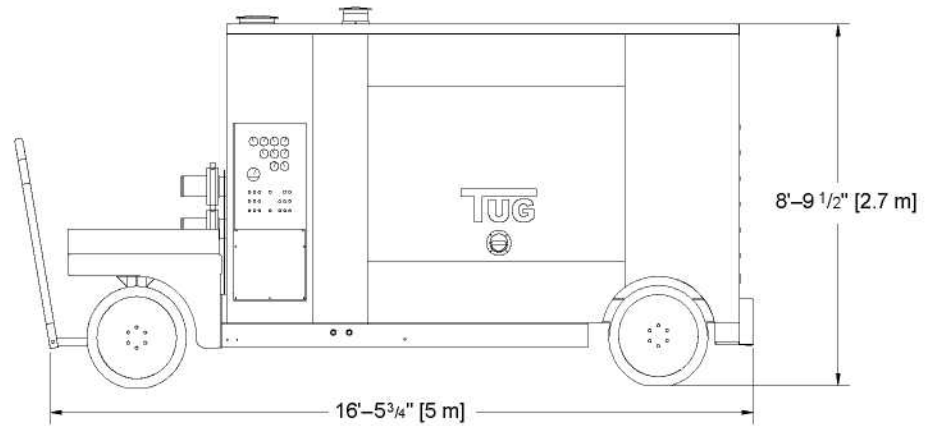
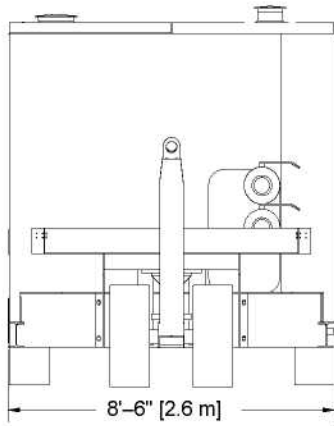
Online
www.tugtech.com

Standard features include:

- Three discharge air outlet with manual shutoff valves
- Automatic discharge air pressure safety relief system to protect aircraft
- Discharge hose manual bleed-down valve
- On Demand automatic engine throttle control
- Leaf spring rear suspension
- Remote lube oil drains
- Maintenance-free batteries
- Large full-length "gullwing" module access doors
- Engine lube oil magnetic sump plug
- Sound and vibration dampening material
- Illuminated operator control panel with complete gauge set
- Rust proof engine/compressor heat exchanger



If it doesn't say TUG, it's not TUG TUFF



Specifications

Model TMD/TRD-400

Aircraft Air Start Unit

General

Vehicle type Continuous-flow, turbine engine
air starter
Application All wide-body aircraft engines
including B-777 with GE-90's

Engine

Manufacturer Detroit Diesel
Model 12V2000DDEC IVECM
Type Direct injection, four-cycle
turbocharged
Horsepower 905 bhp (675 kW)

Compressor

Manufacturer GHH-Rand
Model CD72S
(single element)
Type Rotary dry screw oil free air
Output at 68°F (20°C) 60% RH, sea level 400lbs./min.
(182 kg./min.)
Discharge air temperature 430°F (221 °C) nominal

Engine and Compressor Protection System

Operating conditions below are factory set for operator warning and/or automatic shutdown in "UNLOAD" and "AIR PACK" mode only. All safety shutdowns are inoperative in "JET START" modes with the exception of a manual operator emergency stop.

Engine high coolant temperature 217°F(103°C)
Engine low oil pressure 10 psig (69 kPag)
Compressor high air temperature 502°F(261°C)
Compressor high oil temperature 176°F(80°C)
Compressor low oil pressure 10 psig (69 kPag)

Aircraft Protection System

Discharge air regulating valve 42 psig (289 kPag)
Discharge air safety valve 50 psig (345 kPag)

Electrical System

Starting System 24V DC
Alternator 70A
Batteries Maint. Free 750CCA

Dimensions and Weights

	(trailer mounted)	(truck unit)
Length	16' 5 ³ / ₄ " (5 m)	12' W (3.9 m)*
Width	8'6" (2.6 m)	8'6" (2.6 m)*
Height	8' 9 ¹ / ₂ " (2.7 m)	8' 2" (2.5 m)*
Weight (dry)	21,400 lbs. (8,346 kg)	20,000 lbs. (7,834 kg) plus truck GWW

* Modules dimensions, overall dimensions vary by truck manufacturer

Standard Instrumentation

Tachometer
Fuel pressure
Water temperature
Engine oil pressure
Panel mounted electric and tank mounted mechanical fuel level gauges
Voltmeter
Air output temperature
Air output pressure
Compressor oil temperature
Compressor oil pressure
Safety warning and shutdown indicators

Automatic Control System

Demand air throttle control
Dual-pressure regulation
Engine protection warning lamps and unit shutdown for high coolant temperature, low engine oil pressure
Compressor warning lamps and unit shutdown for high compressor oil temperature, low compressor oil pressure and high output air temperature.

Partial list of options

Truck mounting (TRD)
Skid mounting (SKD)
30', 40', & 50' air discharge hoses (includes ground air connector)
Unit running beacon
Low fuel level warning beacon
Low fuel shutdown circuit
Engine and/or compressor filter indicators
Engine coolant - Engine lube oil - Compressor lube oil and Battery heater circuits
Rub rails
General mechanics tool set
Fire extinguisher
Wheel chocks
Low ambient start kit to -40°
RACOR fuel/water separator (Heated or Non-Heated)
Automatic discharge hose(s) bleed down assembly



Equipment Sales
1995 Duncan Dr. • Kennesaw, GA 30014 USA
Tel: (770) 422-7230 • Fax (770) 428-7315
www.tugtech.com

TUG Genuine Parts
TUG Parts: (800) 989-8499 * (770) 422-8021
Fax: (770) 422-8730
www.tugparts.com