Medium Tactical Vehicle Replacement

OSHKOSH TRUCK CORPORATION
P.O. Box 2566 • Oshkosh, Wisconsin 54903-2566 • U.S.A.
(920) 235-9151 phone • (920) 233-9506 fax • http://www.oshkoshttruck.com

ADVANCING TRUCK TECHNOLOGY
The Marine Corps Medium Tactical Vehicle Replacement (MTVR) offers a revolution in off-road mobility. This truck redefines performance possibilities for all military vehicles well into the future. With the Oshkosh Modular Independent Suspension (MIS) system, the MTVR achieves levels of performance never before realized in a tactical wheeled vehicle, enabling the MTVR to traverse terrain previously regarded as impassable by trucks. The addition of an all-aluminum cab and a strict anti-corrosion program during production enables the MTVR to continue to perform long after other current tactical vehicles have been sent to the salvage yard. All vehicle systems reflect the same high-quality proven standards of reliability found in other Oshkosh products used throughout the world. Government reliability projections of over 6,200 mean miles between hardware mission failure mean unparalleled availability and exceptionally low operating costs. MTVR will operate in climatic extremes from -50°F to 125°F while carrying a 7.1-ton payload cross-country or up to 15 tons on primary or secondary roads. It is capable of traversing a 60% gradient and a 30% side slope with its maximum cross-country load, finding five feet of water, traveling at 65 mph on paved surface, and has an on-road cruising range of 300-miles. There are very few places that this vehicle cannot go. The pace of modern battle is accelerating rapidly, but a fighting force can move only as fast as its supplies and equipment. The MTVR will allow the fighting force to move whenever and wherever the battle dictates.

**Vehicle Designation**
- MK23 Standard Cargo (14 ft body) Variant w/o winch
- MK25 Standard Cargo (14 ft body) Variant w/ winch
- MK27 Extended Cargo (20 ft body) Variant w/o winch
- MK28 Extended Cargo (20 ft body) Variant w/ winch

**Future Configurations:**
- Wrecker, Dump Truck, MTVR Trailer

**Anti-Lock Brakes (ABS)**

**Automatic-Traction Control (ATC)**

**Features**
- Eaton/Bosch field proven system
- Dual wheel speed sensors
- Enhanced stopping distance
- ABS/ATC ECU communicates with engine ECU
- Monitored by On Board Diagnostics System (OBD)

**Axles**
- Axle Configuration 6x6, Three Axles
- Make and Model Oshkosh MTVR Axle
- Rated Capacity
  - Front Axle: 16,000 lbs [7257 kg]
  - Intermediate Axle: 23,500 lbs [10,659 kg]
  - Rear Axle: 25,500 lbs [11,567 kg]
- Type: Full-time All Wheel Drive; Fixed center differential and planetary hub reduction
- Inter-Axle Differential Lock: Central Tire Inflation System (CTIS); controlled terrain selection, with manual override
- Intra-Axle Differential Lock: Controlled by CTIS terrain selection on all axles, with manual override
- Gear Ratios:
  - Final: 6.000 : 1
  - Differential: 1.687 : 1
  - Wheel Drive: 3.556 : 1

**Brakes, Parking and Emergency**
- Type: Spring brakes on axles 2 and 3; Modulated emergency system
- Make: Eaton: Extended Service S-Cam Intermediate and Rear Axle

**Brakes, Service**
- Type: Drum with internal shoe, dual system air operated
- Make: Front Axle: Meritor RDA Type; 9 wedge Intermediate and Rear Axle: Eaton Extended Service S-Cam
- Size
  - Front Axle: 16.1 x 7.1 in (410 x 180 mm)
  - Intermediate and Rear Axle: 16.5 x 7 in (419 x 178 mm)

**Cab**
- Construction and Accessories: Welded aluminum extrusion construction with adhesive bonded corrosion resistant skins; Three-man 82.5 in (2050 mm) cab width; Hinged windshield, roof, side walls, door frames, and rear wall for reducible height to 96 in (2489 mm); One piece front windshield for improved visibility; Piano-type door hinges with stainless steel hinge pins; Suspension driver seat and bench style passenger seat; Two speed electric windshield wipers; Windshield washer; Electric horn; Heater and defroster; 3 point seat belts with retractors; Electric operated air horn
- Instrumentation: Modular dash panels for easy service; Multiplex gauge control; J1708 and J1939 data bus communications; US/metric color band gauges

**Cargo Body**
- MK23, MK25
- Type: ISO and non-ISO payload compatible
- Payload Capability:
  - 15 ton [13,608 kg] non-ISO payload on primary and secondary roads
  - 10 ton [9072 kg] ISO payload on primary and secondary roads
  - 7.1 ton ISO and non-ISO payload on all terrain
• ISO Compatible Payloads: 10 ft EMI/EMC shelters (1 ea), Quad-cons (2 ea), Six-cons (2 ea)

MK27, MK28
• Type: ISO and non-ISO payload compatible

Payload Capability:
• 10 and 15 ton [9072 and 13,608 kg] ISO and non-ISO payload on primary and secondary roads
• 7.1 ton [6441 kg] ISO and non-ISO payload on all terrain
• ISO Compatible Payloads: 20 ft ISO container and shelter (1 ea), 10 ft EMI/EMC shelters (2 ea), Quad-cons (4 ea), Six-cons (3 ea)

Central Tire Inflation System (CTIS)
• Type: Eaton, electronic controlled, terrain and payload biased, automatic upon operator selection
• Control: Transfer case, interaxle, and all axles side-to-side lockup control with manual override
• Features
  • Preset tire pressures for highway, cross-country, mud-sand-snow and emergency. Overspeed function with warning and automatic tire pressure and drive line lock corrections. Run flat function provides continuous air to punctured tire. Utilized SAE J1708 and 1939 data bus for external control functions

Chassis Equipment
• Composite hood
• Front and rear tow eyes
• Blackout lights
• Front and rear identification, clearance, and turn signal lights
• Stop and tail lights on rear
• Four way flashing front and rear
• Two halogen sealed beam headlights
• Service/emergency air brake connectors front and rear
• Slave start connector
• Trailer electrical connector, 24 volt
• Trailer and auxiliary air supply connection
• 78 usable gallon [303 L] fuel capacity
• Pintle

Cooling System
• Type: Cross flow fin and tube type radiator. Internal transmission cooler, external charge air cooler
• Frontal Area: 1,241 in² [8006 cm²]
• Construction: Fabricated end tanks and side members bolted together to form a rigid frame surrounding the radiator core. Built in deaeration system
• Fan: 32 in [813 mm] nine blade, serpentine belt driven
• Fan Clutch: Temperature controlled

Electrical System
• Alternator: 150 amp
• Voltage: 24 volts w/12 volt accessory provision in cab
• Battery: Two 12 volt, 625 CCA each @ -18°F [-28°C]
  • Battery box has provisions for four batteries, 32°F to -50°F operation [0°C to -46°C]

Engine
• Make and Model: Caterpillar C-12 electronic control, Adam III
• Type: 4-stroke, in-line, six cylinder, electronic
• Bore: 5.12 in [130 mm]
• Stroke: 5.91 in [150 mm]
• Displacement: 729 in³ [11.9 L]
• Maximum Horsepower: 425 hp [317 kW] at 1800 rpm
• Peak Torque: 1,550 ft-lb [2101 Nm] at 1200 rpm

Frame
• Type: Formed channel, bolted construction with Grade 8 bolts
• Material: SAE 1027 modified, carbon manganese steel, heat-treated
• Yield Strength: 110,000 psi minimum [758 Mpa]
• Size: 9.75 x 3.0 x 0.38 in [248 x 76 x 9.7 mm]
• Section Modulus: 13.8 in³ [226 cm³]

On Board Diagnostics System (OBDS)
• Features
  • Message Information Center (MIC) has 20 character x 4 line flat panel display
  • RS 232 port for laptop and IETM interface
  • Fault Mode Indicators (FDI) from engine, transmission, ABS, ATC, and CTIS control modules
  • Memory for Vehicle PM logs
  • Runs STE/ICE-R tests with VADS

Performance
• Gradient
  • 60% longitudinal at CCGVW
  • 30% side slope at CCGVW

• Environmental Operation
  • -50°F to 125°F, 150°F storage [-46°C to 52°C (66°C storage)]
  • -25°F to -50°F with kits [-32°C to -46°C]

• Speed Maximum
  • GVW Road 65 mph [105 km/hr]

• Forcing
  • 60 in [1524 mm] without kits

• Cruising Range
  • 300 mi [483 km] CCGVW, Road
Steering System
- Type: R.H. Shepard integral power steering with booster and separate fluid reservoir
- Steering Gear Ratio: 18 : 1
- Turning Circle:
  MK23 & MK25  82 ft wall to wall [24.9 m]
  MK27 & MK28  94 ft wall to wall [28.5 m]

Suspension
- Type: Oshkosh Modular Independent Suspension, coil spring, A-arm
- Wheel Travel
  Front Axle: 16.0 in [406 mm]
  Intermediate Axle: 12.8 in [325 mm]
  Rear Axle: 12.8 in [325 mm]
- Roll Stability
  Anti-roll bar on axles #2 and #3

Tires
- Type: 16.00R20 XZL
- Quantity: Six
  Limp home capability in case of flat tire where CTIS cannot maintain pressure

Towing Capacity
- 22,000 lb trailer towing capacity
- 500 lb vehicle pintle load capacity

Transfer Case
- Make and Model: Oshkosh 30000 Series
- Type: Three-shaft, single speed with torque proportioning differential w/manual differential lock
- Ratios 1.271 : 1
- Torque Split 32% Front, 68% Rear

Transmission
- Make and Model: Allison HD 4070P, Automatic electronic control, WTEC III
- Type: Seven speed automatic with TC-541 torque converter, second gear start
- Ratios:
  Seventh 0.64 : 1
  Sixth 0.74 : 1
  Fifth 1.00 : 1
  Fourth 1.43 : 1
  Third 1.91 : 1
  Second 3.51 : 1
  First 7.63 : 1
  Reverse 4.80 : 1

Transportability
- C5, C17, C130 and C141 aircraft (w/preparation)
- CH53 Helicopter at VCW (MK23 only)
- Shipboard crane loading at CCGVW

Wheels
- Type: Two piece bolt together, steel disc
- Size: 20 x 10 in [508 x 254 mm]

Weights
- Vehicle Curb Weight (VCW)
  MK23 w/o winch 27,800 lbs [12,610 kg]
  MK25 w/ winch 28,690 lbs [13,013 kg]
  MK27 w/o winch 30,178 lbs [13,688 kg]
  MK28 w/ winch 31,069 lbs [14,093 kg]
- Gross Vehicle Weight Rating (GVWR)
  MK23 w/o winch 57,800 lbs [26,218 kg]
  MK25 w/ winch 58,690 lbs [26,621 kg]
  MK27 w/o winch 60,178 lbs [27,296 kg]
  MK28 w/ winch 61,068 lbs [27,700 kg]

Winch, Self Recovery
MK25, MK28 only
- Make and Model: M25 Manufacturing, S 20K
- Capacity: 20,000lbs [9072 kg] first layer
  Rear Deployment only

Kits
- Engine arctic kit
- Cargo personnel arctic kit
- Machine gun mounting kit
- Chemical agency mounting kit
- Decontamination apparatus mounting kit
- S-280 shelter tie-down kit
MK23 & MK25 Standard Cargo Truck

MK27 & MK28 Extended Cargo Truck