

ARTICULATING SIDEWALK TRACTOR
FOR THE
CLEMENT J. ZABLOCKI VA MEDICAL CENTER

Scope/Objective:

To provide a M-B Model Multi Service Vehicle3 MSV3 for use in snow removal and ice control along 19 miles of sidewalks at the Milwaukee VA Medical Center.

Selection Criteria:

Brand Name or Equal - M-B MSV3

General Specifications:

1. M-B Model Multi Service Vehicle3 MSV3
2. M-B MSV – 115 HP Tier 3 Diesel Engine
3. Wheel Motor Based Ground Drive
4. 31 GPM Load Sensing Hyd Flow
5. Standard Front 540 RPM PTO. CAT 1 CAT 2, two point hitch
6. Rear Hydraulic Brakes
7. Hydraulic Brake Release
8. Tractor Tires and Rims Installed

Product Specifications:

a.	Common Nomenclature (commercial description):	M-B Model Multi Service Vehicle3 MSV3
b.	Kind of material (i.e., type, grade, alternatives, etc.):	1. CONSTRUCTION: High quality heavy duty boxed fabricated steel frame 2. ENGINE: Minimum Cummins QSB4.5, Four Cylinder, Tier 3, Turbo Charged and Charge Air Cooled. 110HP @ 2500 RPM, 115HP @ 2300 RPM
c.	Electrical Data (i.e., 110 v, 60 Hz, 3 Ph, etc.):	1. Fuel tank capacity to be 21 gallons (79.49 liters) Fuel Consumption at max torque: .385 lbs/hp-hr 2. Vehicle and engine ECM networked and controlled by CAN (Controller Area Network) serial bus technology. PLUS+1 [®] operating system and programmable, multi-functional joystick 3. Minimum Cummins QSB4.5, Four Cylinders, Tier 3, Turbo Charged and Charge Air Cooled. 110HP @ 2500 RPM, 115HP @ 2300 RPM

		<p>4. ELECTRICAL: Three phase 95 amp, 12 volt alternator with 1125 CCA battery minimum.</p> <p>5. HYDRAULIC SYSTEM: Eaton radial piston-type, load sensing, flow compensated, driven by engine. Max operating pressure 2700 psi (207 bar)</p> <p>6. PTO: Standard front PTO to operate at 540 RPM @ 2160 engine RPM. Dry type power take off clutch, electronic-over-hydraulic engagement, multi-plate design, 6-spline, 1 3/8" diameter</p> <p>7. STEERING: Articulated steering using twin dual acting 2" steering rams</p> <p>8. BRAKING SYSTEM: Primary – Hydrostatic braking using all four wheel motors and hydrostatic ground drive. Secondary – Dual caliper, automotive style disc brakes on front wheels. Parking - Spring applied, hydraulically released mechanical parking brakes sealed in front wheel motors</p> <p>9. AXLE LOAD: Maximum allowable individual front axle load or rear axle load - 8,000 lbs (3625 kg), at the ground</p> <p>10. GROUND DRIVE: Fully hydrostatic wheel motor based</p> <p>11. PTO: Standard front PTO to operate at 540 RPM @ 2160 engine RPM. Dry type power take off clutch, electronic-over-hydraulic engagement, multi-plate design, 6-spline, 1 3/8" diameter</p> <p>12. CONTROL: Vehicle and engine ECM networked and controlled by CAN (Controller Area Network) serial bus technology. PLUS+1[®] operating system and programmable, multi-functional joystick</p> <p>13. ENGINE: Minimum Cummins QSB4.5, Four Cylinder, Tier 3, Turbo Charged and Charge Air Cooled. 110HP @ 2500 RPM, 115HP @ 2300 RPM</p>
d.	Dimensions, size, capacity:	<p>1. One man Cab certified to SEA One man cab certified to SAE Specification J1040C and ISO 3471. Three point seat belt system complies with Seat Belt Anchorage Test SAE J2292</p> <p>2. Door is removable and replaceable without tools and equipped with a pressurized gas cylinder</p> <p>3. Cab must have three openings. One door w/pop out windows (L.H. & R. H.) & ventilation roof hatch to be used as an emergency exit</p> <p>4. Pentagraph design - intermittent front windshield wiper and washer. Temperature insulation and sound absorbing lining test rating 73 dBA on "A" scale</p> <p>5. Telescoping and tilted steering</p> <p>6. 2 front headlights, 2 front clearance/directional lights, 2 red LED tail/signal/clearance lights, 2 clear LED back up lights and SAE rated audible back up alarm</p> <p>7. Left and right side exterior breakaway rear view mirrors.</p> <p>8. Pressurized ventilation/circulation system with replaceable air filters, 30,000 BTU heat transfer and 19,000 BTU cooling capacity</p> <p>9. AM/FM Radio with weather band. Terminal strip allows for additional installation of communication radio(s)</p>

		<p>10. Eaton radial piston-type, load sensing, flow compensated, driven by engine. Max operating pressure 2700 psi (207 bar)</p> <p>11. GROUND DRIVE Fully hydrostatic wheel motor based</p> <p>12. Articulated steering using twin dual acting 2" steering rams</p> <p>13. Fuel tank capacity to be 21 gallons (79.49 liters), Fuel Consumption at max torque: .385 lbs/hp-hr</p> <p>14. Curb weight - 6620 lbs. (3002 kg).12,000 lbs gross vehicle weight rating at the hubs (5436 kg)</p> <p>15. Minimum Cummins QSB4.5, Four cylinders, Tier 3, Turbo Charged and Charge Air Cooled. 110HP @ 2500 RPM, 115HP @ 2300 RPM</p> <p>16. HYDRAULIC SYSTEM: Eaton radial piston-type, load sensing, flow compensated, driven by engine. Max operating pressure 2700 psi (207 bar)</p> <p>17. ELECTRICAL: Three phase 95 amp, 12 volt alternator with 1125 CCA battery minimum.</p> <p>18. PTO: Standard front PTO to operate at 540 RPM @ 2160 engine RPM. Dry type power take off clutch, electronic-over-hydraulic engagement, multi-plate design, 6-spline, 1 3/8" diameter</p> <p>19. STEERING: Articulated steering using twin dual acting 2" steering rams</p> <p>20. BRAKING SYSTEM: Primary – Hydrostatic braking using all four wheel motors and hydrostatic ground drive. Secondary – Dual caliper, automotive style disc brakes on front wheels. Parking - Spring applied, hydraulically released mechanical parking brakes sealed in front wheel motors</p> <p>21. AXLE LOAD Maximum allowable individual front axle load or rear axle load - 8,000 lbs (3625 kg), at the ground</p> <p>22. TURNING RADIUS Inside turning radius - 80 inches (2032 mm) at angle of 45 degrees. Outside turning radius - 129.5 inches (3289 mm) at angle of 45 degrees</p> <p>23. GROUND DRIVE Fully hydrostatic wheel motor based</p> <p>24. PTO Standard front PTO to operate at 540 RPM @ 2160 engine RPM. Dry type power take off clutch, electronic-over-hydraulic engagement, multi-plate design, 6-spline, 1 3/8" diameter</p> <p>25. CONTROL Vehicle and engine ECM networked and controlled by CAN (Controller Area Network) serial bus technology. PLUS+1[®] operating system and programmable, multi-functional joystick</p> <p>26. ENGINE Minimum Cummins QSB4.5, Four Cylinder, Tier 3, Turbo Charged and Charge Air Cooled. 110HP @ 2500 RPM, 115HP @ 2300 RPM</p>
e.	Principles of operation:	Snow removal and ice control along 19 miles of sidewalks on the VAMC Milwaukee grounds.
f.	Restrictive environmental conditions:	<p>1. Overall vehicle length - 157 inches (398.8 cm). Maximum overall width at the tires - 49.5 inches (125.8 cm) with 10.5 x 80 - 18 winter tires</p> <p>2. Ground clearance - 13.4 inches (34 cm) with winter tires</p>

		<p>3. Inside turning radius - 80 inches (2032 mm) at angle of 45 degrees. Outside turning radius - 129.5 inches (3289 mm) at angle of 45 degrees</p> <p>4. Articulated steering using twin dual acting 2" steering rams</p> <p>5. HYDRAULIC SYSTEM Eaton radial piston-type, load sensing, flow compensated, driven by engine. Max operating pressure 2700 psi (207 bar)</p> <p>6. PTO Standard front PTO to operate at 540 RPM @ 2160 engine RPM. Dry type power take off clutch, electronic-over-hydraulic engagement, multi-plate design, 6-spline, 1 3/8" diameter</p> <p>7. BRAKING SYSTEM Primary – Hydrostatic braking using all four wheel motors and hydrostatic ground drive. Secondary – Dual caliper, automotive style disc brakes on front wheels. Parking - Spring applied, hydraulically released mechanical parking brakes sealed in front wheel motors</p> <p>8. AXLE LOAD Maximum allowable individual front axle load or rear axle load - 8,000 lbs (3625 kg), at the ground</p> <p>9. TURNING RADIUS Inside turning radius - 80 inches (2032 mm) at angle of 45 degrees. Outside turning radius - 129.5 inches (3289 mm) at angle of 45 degrees</p> <p>10. GROUND DRIVE Fully hydrostatic wheel motor based</p> <p>11. PTO Standard front PTO to operate at 540 RPM @ 2160 engine RPM. Dry type power take off clutch, electronic-over-hydraulic engagement, multi-plate design, 6-spline, 1 3/8" diameter</p> <p>12. WEIGHT Curb weight - 6620 lbs. (3002 kg). 12,000 lbs. gross vehicle weight rating at the hubs (5436 kg)</p> <p>13. ELECTRICAL Three phase 95 amp, 12 volt alternator with 1125 CCA battery minimum.</p> <p>14. CONTROL Vehicle and engine ECM networked and controlled by CAN (Controller Area Network) serial bus technology. PLUS+1[®] operating system and programmable, multi-functional joystick</p> <p>15. All Major end item Must from the Same Model Year</p>
g.	Intended use:	Snow Removal and ice control over 19 miles of sidewalks
h.	Equipment with which the item is used with (N/A if not applicable):	Hydraulic Power 61inch V-Plow, Hydraulic Power Rear Drop Spreader, PTO Dual Auger Snow Attachment, MSV Hydraulic Power Brooms for M-B Companies
i.	End item application:	Snow Removal and ice control along 19 miles of sidewalks on the VAMC Milwaukee Grounds
j.	Original equipment manufacturer part number:	M-B Model Multi Service Vehicle3 MSV3
k.	Other pertinent information that describes the item, material or service required:	Provide physical files for user, maintenance, parts, & service guides. Provide Upgrades of Software for Vehicle for 3 Years Standard Warranty.