

ALL TERRAIN VEHICLE (ATV), WHEELED, POLARIS SPORTSMAN, MV700, 4 X 4, WITH WINCH (W/W)

DATA SUMMARY

This instruction is authorised for use by command of the Chief of Army. It provides direction, mandatory controls and procedures for the operation, maintenance and support of equipment. Personnel are to carry out any action required by this instruction in accordance with EMEI General A 001.



Figure 1 All Terrain Vehicle, Polar is 4x4 Sportsman 700 Military Variant (MV₇), With Winch.

General

1. This EMEI lists basic data for the All Terrain Vehicle (ATV), Polaris 4x4 Sportsman, 700 Military Variant (MV₇) With Winch (W/W), as shown in Figure 1.
2. **Role.** The role of the Polaris 4x4 Sportsman, 700 MV₇ ATV is to provide mobility to light forces operating away from main-force logistic-support networks or in difficult terrain. The ATV is a highly manoeuvrable, rapid deployment vehicle employed for the movement of lightweight stores and equipment in the Area of Operation (AO).
 - a. **Airmobile/Maritime Operations.** The ATV will enable Special Forces (SF) elements to rapidly deploy key weapon systems and equipment, when initially entering an air/maritime Point of Entry (POE). The ATV will allow elements to be quickly deployed when remote from main-force logistic support or in rugged terrain. The ATV is capable of being transported by aircraft and landing craft.
 - b. **Logistic Tasks.** The ATV is employed by lightly equipped elements that are required to conduct operations, beyond the range of conventional logistic structures or in operational areas that preclude the use of larger vehicles. The ATV will afford SF units with a greater ability to move heavy or large quantities of equipment around an AO. They will assist in sustaining F Echelon sub-units through faster replenishment of high use resources, medical evacuation of personnel and employment during caching of stores.
 - c. **Personnel Deployment.** The ATV will be used in the deployment of personnel throughout an AO. Small teams have the ability to deploy over greater ranges and speed on both cross-country terrain and on established roadways.
3. **Description.** The Polaris 4x4 Sportsman, 700 MV₇ ATV is powered by a liquid cooled, 683 cm³ twin cylinder, 4 stroke petrol engine, equipped with both electric and recoil start. Power is delivered via an automatic transmission incorporating a variable ratio belt drive. Final drive is electronically selectable between 2 and 4-wheel drive. Warn 2500-lb electric winches are fitted to both the front and rear of the ATV. Two fuel tanks are fitted giving a total fuel capacity of 31 litres. Use of the equipment is for single operator only.

Technical Data

4. Dimensions and Mass:

- a. Length.....2260 mm
- b. Width.....1220 mm
- c. Height.....1270 mm
- d. Wheelbase.....1290 mm
- e. Ground Clearance.....267 mm
- f. Turning Radius.....1816 mm (unloaded)
- g. Dry Mass.....450 kg
- h. Gross Vehicle Mass (GVM).....771 kg

5. Engine:

- a. Type.....Polaris, Four-stroke, Liquid Cooled
- b. Number of Cylinders.....2
- c. Bore.....80.0 mm
- d. Stroke.....68.0 mm
- e. Piston Displacement.....683 cm³
- f. Compression Ratio.....9.78:1
- g. Compression Pressure.....150 to 170 psi
- h. Carburetor.....Mikuni BST 34 mm
- i. Fuel.....ULP- 87 Octane (minimum)
- j. Fuel Pump.....Diaphragm, Pressure Regulated (1 to 3 psi)
- k. Air Cleaner.....Element Type with Pre-cleaner Sleeve
- l. Starter System.....Electric/Recoil Backup
- m. Lubrication System.....Pressurised Wet Sump
- n. Idle Speed.....1200 +/- 50 RPM
- o. Maximum Engine RPM.....6000 +/- 50 RPM
- p. Exhaust System.....Single Pipe

6. Transmission:

- a. Clutch.....Belt Drive
- b. Transmission.....Automatic - Polaris Variable Transmission (PVT)
- c. Transmission Lockout.....Engine Braking System (EBS)
- d. Shift Pattern.....Drumshift - H/L/N/R/Park
- e. Gear Ratio – Low.....7.50:1
- f. Gear Ratio – High.....2.89:1
- g. Gear Ratio – Reverse.....5.11:1
- h. Gear Ratio – Front Drive.....3.82:1
- i. Gear Ratio – Rear Drive.....3.10:1

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7. Drive Train:

- a. Drive System..... Shaft Drive
- b. Front Wheel Drive..... Thumb Switch - Engages 'On-demand' True 4-wheel Shaft Drive
- c. Rear Wheel Drive..... Shaft Drive

8. Suspension:

- a. Front Suspension Type..... A-Arm / MacPherson Strut
- b. Front suspension Travel 210 mm
- c. Rear Suspension Type..... Progressive Rate Independent/Two x 50 mm Coil-over Shock
- d. Rear Suspension Shock Pre-load Adjustment Ratchet Style - Standard
- e. Rear Suspension Travel..... 241.3 mm

9. Brakes:

- a. Front Brakes Dual Hydraulic Disc
- b. Rear Brake..... Dual Hydraulic Disc
- c. Park Brake..... Hydraulic Lock to all Discs

10. Tyres:

- a. Front 25 x 8-12
- b. Rear 25 x 10-12
- c. Tyre Pressure - Front and Rear..... 36 kPa (5 psi)
- d. Tread Depth (minimum)..... 3 mm

11. Electrical:

- a. Ignition Type..... DC, CDI System
- b. Ignition Timing 13° BTDC @ 1200 rpm
- c. Spark Plug RC7YC
- d. Spark Plug Gap 0.9 mm (0.035 inch)
- e. Cooling Fan..... 1 x 12 V, Thermostatic Controlled
- f. Thermostatic Switch..... 91°C
- g. Alternator Three-phase AC
- h. Alternator Output 330w @ 3000 rpm
- i. Voltage Regulator Three-phase
- j. Battery Sealed Low Maintenance, 30 A h
- k. System Voltage 12 V dc, negative earth
- l. Circuit Breakers Solid State - Electronic Control Module (ECM)
- m. Instrument Cluster LCD
- n. DC Outlet 12 V dc Auxiliary Power
- o. High Beam (pod)..... Single Beam, 50 W, Quartz Halogen
- p. Low Beam (grill)..... 2 x Single Beam, 37 W, Quartz Halogen
- q. Brake Light..... 2 x 26.9 W
- r. Tail Light..... 2 x 8.26 W

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12. Winch:

- a. Winch 2 x Warn Electric, 12 V dc
- b. Rating 2500 lb (1136 kg)
- c. Winch Cable 15 m (50 feet) x 4.75 mm (3/16 inch) Diameter
- d. Winch Mounting.....Permanent Mount 4 bolts
- e. Winch Selection ControlDash Pod Mounted - Selectable Front/Rear
- f. Winch Operation Control Switch - Handlebar Mounted LHS

13. Capacities:

- a. Fuel Tank – Front 16 litres
- b. Fuel Tank – Rear 15 litres
- c. Coolant 3.0 litres
- d. Engine Oil (with filter change)..... 1.9 litres
- e. Transmission Fluid 450 mL
- f. Front Gearcase..... 150 mL
- g. Rear Gearcase..... 300 mL

14. Load Capacities:

- a. Front Carry Rack 68.0 kg
- b. Rear Cargo Tray 136.0 kg
- c. Towing 681 kg
- d. Towing Hitch Tongue Weight (vertical load) 68 kg

15. Manufacturer's Details:

a. Manufacturer:

Polaris Industries
2/100 Highway 55, Medina
MINNEAPOLIS USA
<http://www.polarisindustries.com>

b. Australian Distributor:

Polaris Industries Australia and New Zealand
PO Box 1186, Ballarat Mail Centre
BALLARAT VIC 3354
Tel: (03)5330 4703
Fax: (03)5337 6211

<http://www.polarissales.com.au>

16. Point of Contact:

ADFLM, Light B-Vehicles
LV SPO, DMO
Victoria Barracks, St Kilda Rd
SOUTHBANK VIC 3006

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17. Associated Information:

- a. SIGC..... 2340-0006
- b. NSN..... 2340-01-523-2244
- c. Equipment Code.....BSB
- d. RPSPolaris, 2005, Commercial Parts Manual (Polaris Part No: 9919956)
- e. SCES NA
- f. Grade of Configuration Management (CM).....Grade D
- g. Defence Road Transport Instructions (DRTI) – License CodeR2
- h. DRTI – Paragraph 5.55 Dress Requirements
- i. DRTI – Paragraph 5.58 Pillion Passengers
- j. User Handbook (as supplied with each ATV)..... Polaris 2005 Sportsman MV⁷ Owner’s Manual (Polaris Part No: 9919959)
- k. Other EMEI:
 - (1) [Vehicle B 106](#) – Authority for Use
 - (2) [Vehicle B 106-1](#) – Polaris 2005 Sportsman 4x4 MV⁷ Service Manual (Polaris Part No: 9919963)
- l. ILSI MM 10-25
- m. Model Identification.....2005 Sportsman MV⁷ 4x4
- n. Model Number Identification:.....A05MH68MB
- o. Owner’s Manual.....<http://www.polarissales.com.au/aus-pages/pdfs/brochures/9919959r01.pdf>
- p. Parts Manual.....<http://parts.polarisind.com/Browse/Browse.asp>

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END

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