

ALL TERRAIN VEHICLE (ATV), WHEELED, POLARIS SPORTSMAN, 6 X 6 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, Polaris 6x6 Sportsman, With Winch

General

1. This EMEI lists basic data for the All Terrain Vehicle (ATV), Polaris 6x6 Sportsman with Winch (W/W), as shown in Figure 1.
2. **Role.** The role of the Polaris 6x6 Sportsman 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 both on cross-country terrain and established roadways.
3. **Description.** The Polaris 6x6 Sportsman ATV is powered by a liquid-cooled, 499 cm³ single-cylinder 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 4 and 6-wheel drive. A 2500-lb Warn electric winch is fitted to the front on a multi-mount. An alloy cargo tray with tie-down rings and side lockers has been retrofitted on the rear. Use of the equipment is for a single operator only.

Technical Data

4. Dimensions and Mass:

- a. Length.....2667 mm
- b. Width.....1168 mm
- c. Height.....1219 mm
- d. Wheelbase1956 mm
- e. Ground Clearance.....140 mm
- f. Turning Radius3020 mm (unloaded)
- g. Dry Mass406 kg
- h. Gross Vehicle Mass (GVM)891 kg

5. Engine:

- a. Type..... Fuji, Four-stroke, Liquid Cooled, SOHC
- b. Number of Cylinders 1
- c. Bore92.0 mm
- d. Stroke75.0 mm
- e. Piston Displacement499 cm³
- f. Compression Ratio 10.2:1
- g. Compression Pressure 50 to 90 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 CleanerElement Type with Pre-cleaner Sleeve
- l. Starter System..... Electric/Recoil Backup
- m. Lubrication System..... Pressurised Dry Sump
- n. Idle Speed..... 1200 +/- 200 RPM

6. Transmission:

- a. Clutch Belt Drive
- b. TransmissionAutomatic - Polaris Variable Transmission (PVT)
- c. Transmission Lockout Engine Braking System (EBS)
- d. Shift Pattern..... H-Pattern H/L/N/R
- e. Gear Ratio – Low 6.69:1
- f. Gear Ratio – High.....3.34:1
- g. Gear Ratio – Reverse.....5.17:1
- h. Gear Ratio – Final12/38 (80 P chain)

7. Drive Train:

- a. Drive System Concentric/Shaft Drive System
- b. Front Wheel Drive.....Thumb Switch - Engages 'On-demand' True 6-wheel Shaft Drive
- c. Rear Wheel Drive..... Concentric Chain 4x4

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8. **Suspension:**

- a. Front Suspension Type..... A-Arm / MacPherson Strut
- b. Front Suspension Travel..... 170 mm
- c. Rear Suspension Type..... Progressive Rate Single
- d. Center (intermediate) Suspension Travel 160 mm
- e. Rear Suspension Travel..... 191 mm

9. **Brakes:**

- a. Front Brakes Dual Hydraulic Discs
- b. Rear Brake..... Hydraulic Disc (intermediate drive shaft)
- c. Park Brake..... Hydraulic Lock to all Discs

10. **Tyres:**

- a. Front 25 x 8-12
- b. Rear 25 x 11-10
- 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 30° +/- 2° BTDC @ 5000 RPM
- c. Spark Plug NGK - BKR5E
- d. Spark Plug Gap 0.9 mm (0.036 inch)
- e. Cooling Fan 1 x 12 V, Thermostatic Controlled
- f. Thermostatic Switch..... 91°C
- g. Alternator Three-phase AC
- h. Alternator Output 250 W @ 5000 RPM
- i. Voltage Regulator Three-phase
- j. Battery Sealed Low Maintenance, 14 Ah
- 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 Single Beam, 50 W, Quartz Halogen
- p. Low Beam 2 x Single Beam, 27 W, Quartz Halogen
- q. Brake Light..... 26.9 W
- r. Tail Light..... 8.26 W

12. **Winch:**

- a. Winch 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 Polaris Multi Mount

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13. Capacities:

- a. Fuel Tank..... 16.09 litres
- b. Coolant 2.1 litres
- c. Engine Oil (with filter change)..... 1.9 litres
- d. Transmission Fluid 950 ml
- e. Front Gearcase..... 120 ml
- f. Front Drive Hub 75 ml

14. Load Capacities:

- a. Front Carry Rack..... 40.8 kg
- b. Rear Cargo Tray 362.8 kg
- c. Towing 681 kg
- d. Towing Hitch Tongue Weight (Vertical Load) 68.1 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..... 2340-0007
- b. NSN..... 2340-66-147-1524
- c. Equipment Code.....BSB
- d. RPSPolaris, 2005, Commercial Parts Manual (Polaris Part No: 9919501)
- 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. Owner’s Manual..... <http://www.polarissales.com.au/aus-pages/pdfs/brochures/9919500r01.pdf>
- k. Parts Manual.....<http://parts.polarisind.com/Browse/Browse.asp>
- l. User Handbook (as supplied with each ATV).....Polaris 2005 Sportsman 6x6 Owner’s Manual (Polaris Part No: 9919500)
- m. Other EMEI:
 - (1) Vehicle B 096 – Authority for Use
 - (2) Vehicle B 096-1, – Polaris 6x6 Sportsman 2004–2005 Service Manual (Polaris Part No: 9919504)
- n. ILSIMM 10-25
- o. Model Identification..... 2005 Sportsman 500 6x6
- p. Model Number Identification:.....A05CL50AA

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END

Distribution List: **VEH B 03.2 – Code 1** (Maint Level)
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