AGO

ENVIRONMENTAL ELECTRONICS LTD

Product brochure:

# ODE MkI 3kW SERVO WINCH

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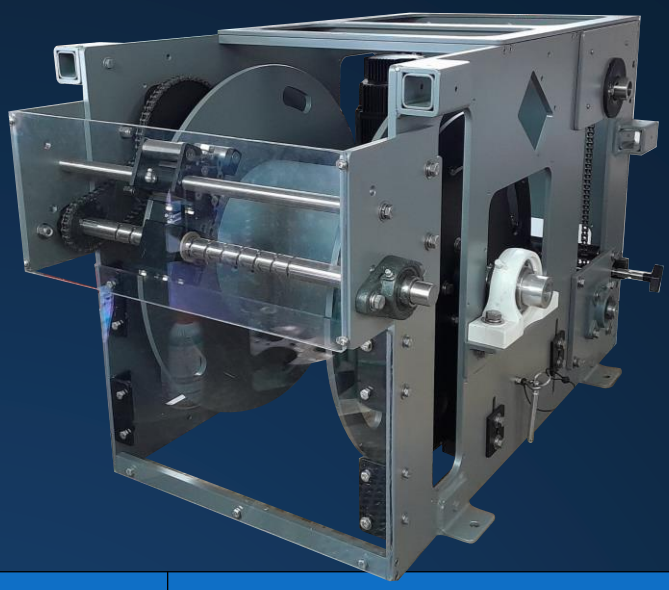
# OVERVIEW



The ODE MkI is A.G.O.'s test platform winch for experimenting with implementing servo motors as a potential future alternative drivetrain option for A.G.O. winches. Servo motors carry several benefits over traditional AC induction motors – primarily offering a higher power-to-size ratio, and coming with a built-in encoder that can be used for wire counting calculations.

This is a unique model. Only one is available as-is and no duplicates will be made.

## Rated capabilities

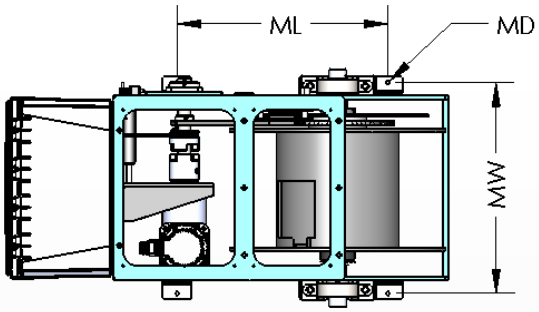
| | Core | Full drum |
|---|---|---|
| **Line speed** | 0 to ~96 ft/min (29 m/min) | 0 to ~150 ft/min (46 m/min) |
| **Maximum line pull** | 1090 lbs (494 kg) | 660 lbs (299 kg) |
| **Electric brake hold *** | 1090 lbs (494 kg) | 660 lbs (299 kg) |

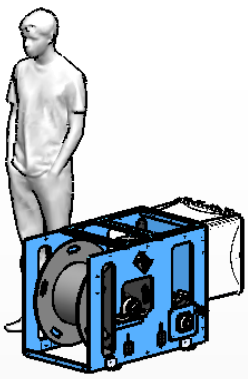
Please review the sample applications that have been validated against this winch's capabilities on the following page. Check with A.G.O. to verify winch's capabilities against other cable and payload combinations before using winch with other cables or payloads. The winch may be suitable for use with cables and/or payloads other than those listed on the following page.

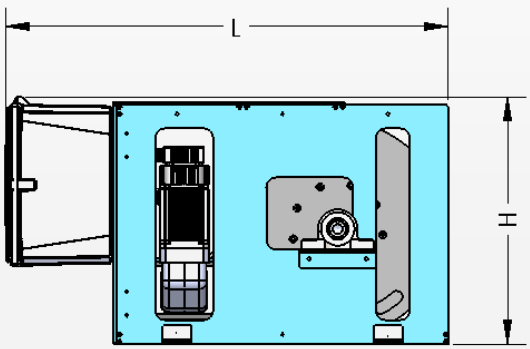
* **Caution:** The servo motor's built-in electric brake is only rated to hold the motor's rated line pull capacity. There is **no** safety factor between the brake hold and the nominal line pulls. Using the winch in marine applications may result in the brake slipping when the winch is stopped if heave forces exceed the nominal line pull ratings.

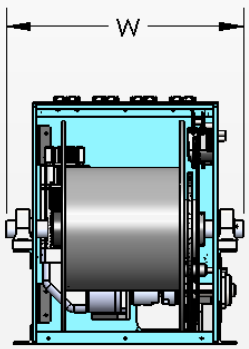
## Nominal dimensions

| | |
|---|---|
| **Weight** | 320 lbs<br>145 kgs |
| **L** | 51 in<br>129.5 cm |
| **W** | 26 in<br>66 cm |
| **H** | 26 in<br>66 cm |
| **ML** | 22 in<br>55.88 cm |
| **MW** | 22 in<br>55.88 cm |
| **MD** | For 3/8" bolts<br>For M8 bolts |






Exact dimensions may vary slightly from nominal. Overall weight varies depending on winch's specific drivetrain and feature configuration. Images shown may not represent all features included.

# SAMPLE APPLICATIONS

This is not an exhaustive list of the only applications this winch could be used with. Other payload and cable combinations may be within this winch's capabilities as well. Please check other unlisted payload and cable combinations with A.G.O. to see if this winch would be able to handle them.

These tables are not a reference for what cables and lengths are compatible with different payloads. Please refer to your payload manufacturer for validation on what cables and lengths can be used with your payload.

A.G.O. does not stock any cables or payloads.

**Caution:** The servo motor's built-in electric brake is only rated to hold the motor's rated line pull capacity. There is **no** safety factor between the brake hold and the nominal line pulls. Using the winch in marine towing applications may result in the brake slipping when the winch is stopped if heave forces exceed the nominal line pull ratings.

| 0.188" (4.76mm) wire rope | | Tow speed |
|---|---|---|
| **Up to 1750m length** | Up to 500-600lb payload | N/A – borehole applications only |

| 0.188" (4.76mm) A240185 armoured Rochester 4-conductor cable | | Tow speed |
|---|---|---|
| **Up to 1750m length** | Up to 500-600lb payload<br>E.g. EMIT DigiAtlantis borehole magnetometer | N/A – borehole applications only |

| 0.25" (6.35mm) A240250 armoured Rochester 4-conductor cable | | Tow speed |
|---|---|---|
| **Up to 1000m length** | CMAX CM-2 side scan sonar (optionally with depressor wing) | 7 knots |

| 0.252" (6.4mm) A310255 armoured Rochester 1-conductor cable | | Tow speed |
|---|---|---|
| **Up to 950m length** | Max ~275 lbs (including water weight, cage, and accessories) water sampling rosette<br>E.g. Sea-Bird SBE 55 ECO rosette w/ 6X 4L bottles and SBE 19plusV2 CTD,<br>General Oceanics Model 1018 rosette w/ 12X 2.5L bottles,<br>JFE Advantech AWS1000-5L rosette w/ 10X 5L bottles and CTD | 2 knots |

| 0.26" (6.6mm) Blake BC-7054 4-conductor cable | | Tow speed |
|---|---|---|
| **Up to 900m length** | Up to 600lb payload<br>E.g. Geonics borehole probes; EMIT DigiAtlantis borehole magnetometer | N/A – borehole applications only |

| 0.322" (8.18mm) A320327 armoured Rochester coax cable | | Tow speed |
|---|---|---|
| **Up to 550m length** | EdgeTech 4205, 4200-SP/MP, or 4125 side scan sonar (optionally with depressor wing and magnetometer) | 5 knots |
| | EdgeTech 2050-DSS or 2000-DSS combined side scan sonar and sub-bottom profiler (with no accessories) | |
| | Klein 3000, 3900, 4000, 4K-SVY, S4900, or M-AX View 600 side scan sonar (optionally with depressor wing and magnetometer) | |

# FEATURES AND OPTIONS

| Drivetrain | | Upgradable? |
|---|---|---|
| **Motor** | DMM 3kW 3000rpm 220V IP65 servo motor with encoder | |
| **Electric brake** | DMM (built into servo motor) | |
| **Gearbox** | DMM 20:1 2-stage IP54 right-angle gearbox | |
| **Chain** | #50 Tsubaki Neptune corrosion-resistant treated steel drive chains | |
| **Sprockets** | 17:60 steel sprockets | |
| **Bearings** | Painted cast iron housings with steel bearing inserts | |

| Mechanical features included on winch | | Upgradable? |
|---|---|---|
| **Levelwind** | Stainless steel diamond reversing screw mechanical levelwind system driven from drum by sprocket-and-chain drivetrain | |
| **Dog clutch** | Dog clutch integrated into drivetrain can be manually disengaged to allow the drum to freewheel for rapid payout or emergency manual hand crank recovery | |
| **Sprocket-assisted manual backup** | Additional peripheral sprocket-and-chain drivetrain makes manual hand cranking of heavy loads easier in emergencies | |
| **Drum disk brake** | Drum includes manually-actuated anodized aluminum disk brake in addition to winch's electric brake for controlling drum speed during freewheeling and manual hand cranking | |
| **Drum pin lock** | Brake disk can have a pin inserted through holes around its edge to hard-lock the drum and prevent rotation | |

| Electrical features included on winch | | Upgradable? |
|---|---|---|
| **Winch input power** | Winch requires 208-230VAC 1-phase power, 50 or 60Hz (specs calculated for nominal 60Hz input) | |
| **Operation interface** | Handheld wired remote spring-return joystick with E-stop, and local winch-mounted E-stop button | |
| **Status indicators** | Winch includes two bright beacon lights on electrical enclosure: Green = Winch is on and running, Red = Stopped with E-stop | |
| **Cable lengths** | 3m (10ft) long power cable, 3m (10ft) long joystick cable | **Yes**[1] |
| **Slip ring** | Select from several options available in A.G.O.'s lineup | |

## Available upgrade and add-on options

All options will incur additional costs

1. **Cable length upgrade:** **Extended cable lengths** available to suit site needs
2. **Wire counting system:** **Winch-integrated encoder and PLC** to measure cable payout and line speed
3. **Computer control ready:** The electrical system can have a connection port added to connect the winch to a computer or network router to facilitate **control of the winch via a computer**. Client is responsible for developing a compatible software interface for interacting with the winch via a computer.