

DBW-5/6

General Purpose Portable Electric Winch

Operation Instructions

March 14, 2024

SERIAL NUMBER:	2403278-DBW6
DRUM SIZE:	6.625" core x 12" face width x 22.5" flange
SUPPLY VOLTAGE:	208-220VAC 1-ph 50/60Hz
MOTOR:	TechTop DC81 2HP 1800RPM N140 180VDC

Bordered content like this applies specifically to your winch. Non-bordered content is general information.

Important warnings and instructions are shown like this.

Rev	Description	Date
2.0	Content update for DBW-5/6's and sprocket-assisted manual backup feature	14-Nov-23

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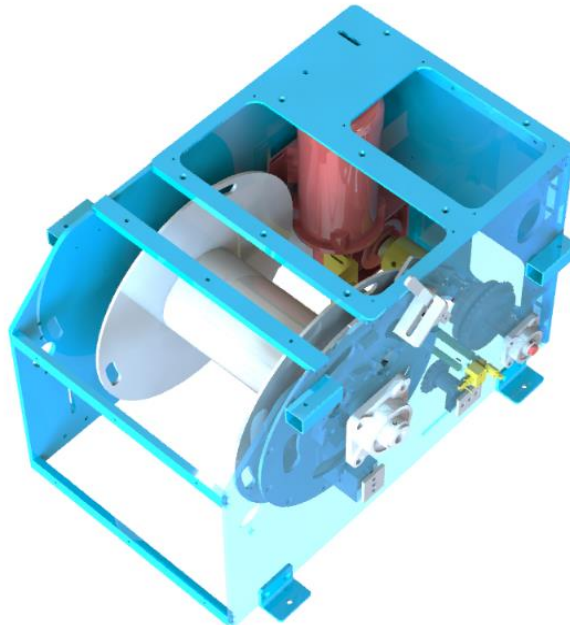
1.0 Introduction

Please read the manual before use.

A.G.O. Environmental Electronics' DBW-5/6 winch models are characterized by having a fully enclosed bolt-together plate frame with the drum positioned in front of a vertical motor and gearbox stack. The number designation (e.g. 5, 6) in the winch model name generally just describes the winch's overall size.

DBW-5/6 winches are comprised of six basic assemblies:

- | | |
|---|---|
| 1.  The winch frame | 4. The motor speed controller (not shown - varies by winch) |
| 2.  The power train | 5. The slip ring assembly (optional - not shown) |
| 3.  The signal cable reel (AKA "drum") | 6.  The dog clutch |



The base winch model can be configured with various standard A.G.O. winch accessories, such as a one-way drum ratchet or levelwind assembly, to suit each client's particular application.

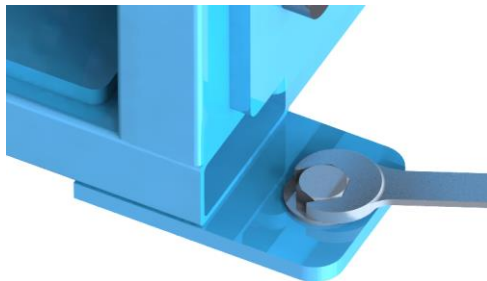
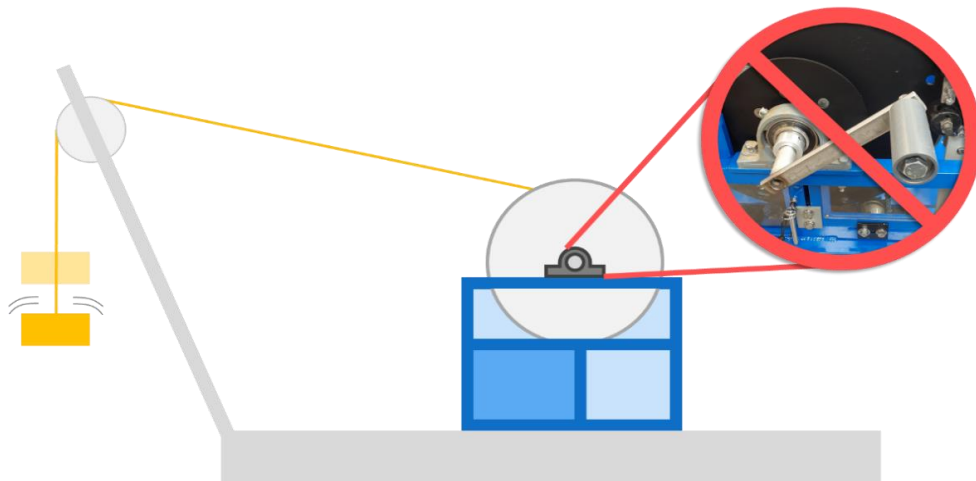
DBW-5/6 winches are designed to be 4-man portable. Where possible, it has been designed around off-the-shelf parts to allow for worldwide ease of access to replacement parts and service.

A.G.O. reserves the right to change specifications without prior notice. All sizing is nominal.

2.0 General Warnings

This is a powered machine. Care must be taken during its operation.

1. Secure the winch to a stable platform with four 1/2" bolts through the four mounting feet on the base of the winch.
2. Keep hands and loose clothing clear of all moving parts.
3. Do not pay out cable or power the winch with the hand crank connected.
4. Disengage the calliper brake and drum pin lock before attempting to drive the winch.
5. Do not unwind the last ten wraps of cable.
6. Do not operate the winch with any of the protective covers or panels removed.
7. **Ensure all emergency stop buttons are retracted prior to operating.**



3.0 Carrying, Shipping, and Storing the Winch

This winch can be lifted manually with 4-people, or lifted with a crane and lifting straps fed under and around the winch frame. It comes with removeable lifting handles, and lifting strap guides integrated into the frame.

Winch weight sans cable:

315lbs

3.1 Lifting the winch with people

This winch is designed to be 4-man portable. It is not recommended to attempt to carry the winch with fewer than four people.

1. Insert the removable lifting handles into the corresponding tubes on the winch.
2. Insert the pins to help secure the handles so they can be used to pull the winch.
3. Coordinate the lift. Lift with legs and keep backs straight.



Depending on overall winch weight including cable weight, stronger lifting handles may be required than the ones provided with the winch.

The provided handles are anodized 1" SCH80 aluminum pipe.

Suggested heavier duty lifting handle materials include 1" DOM pipe, SCH160 pipe, or tubing with twice the wall thickness as the provided handles.

3.2 Lifting the winch with a crane

Only lift the winch by feeding lifting straps through the base tubes and lift strap guides.

1. Feed the lift straps through the base tubes.
2. If available, feed the lift straps up through the lift strap guides at the top of the winch frame.
3. Secure the lift straps to an appropriate lifting device rated for the winches weight including cable weight.



3.3 Shipping the winch

The winch can be shipped internationally using the optional plywood shipping crate (if purchased). The crate meets international shipping requirements.

1. Fasten the winch securely to the pallet base with four 1/2" bolts through its anchor feet.
2. Secure any loose accessories.
3. Align the cover over top of the winch and secure it tightly to the pallet base with screws.

3.4 Storing the winch

When not in use, the winch can be stored inside its optional plywood shipping crate if desired. It is recommended to cover the winch when not in use.

1. Rinse the winch with fresh water after every use in a salty environment, and especially before storage.
2. Ensure the winch is clean and dry before storing.
3. If planning to store the winch for a prolonged period, it is recommended to
 - a. Grease the chains before storing, and
 - b. Apply a rust inhibitor or a light layer of marine grease to corrosion-sensitive components like bearing housings to maintain their appearance.

4.0 Commisioning the Winch

Several winch features may need to be set up before the winch is ready to be used. These include:

1. Changing the power plug
2. Installing cable on the drum
3. Installing a slip ring
4. Adjusting the levelwind (if applicable)

4.1 Changing the power plug

Unless configured otherwise, the winch is shipped with a non-IP rated plug used solely for testing. It is the user's responsibility to swap this plug with an equivalent plug for the local supply power that is equivalent to the winch's rated nominal input power. The new plug should have a suitable level of ingress protection.

Nominal winch input power:	208-220VAC 1-ph 50/60Hz
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4.2 Installing cable on the drum

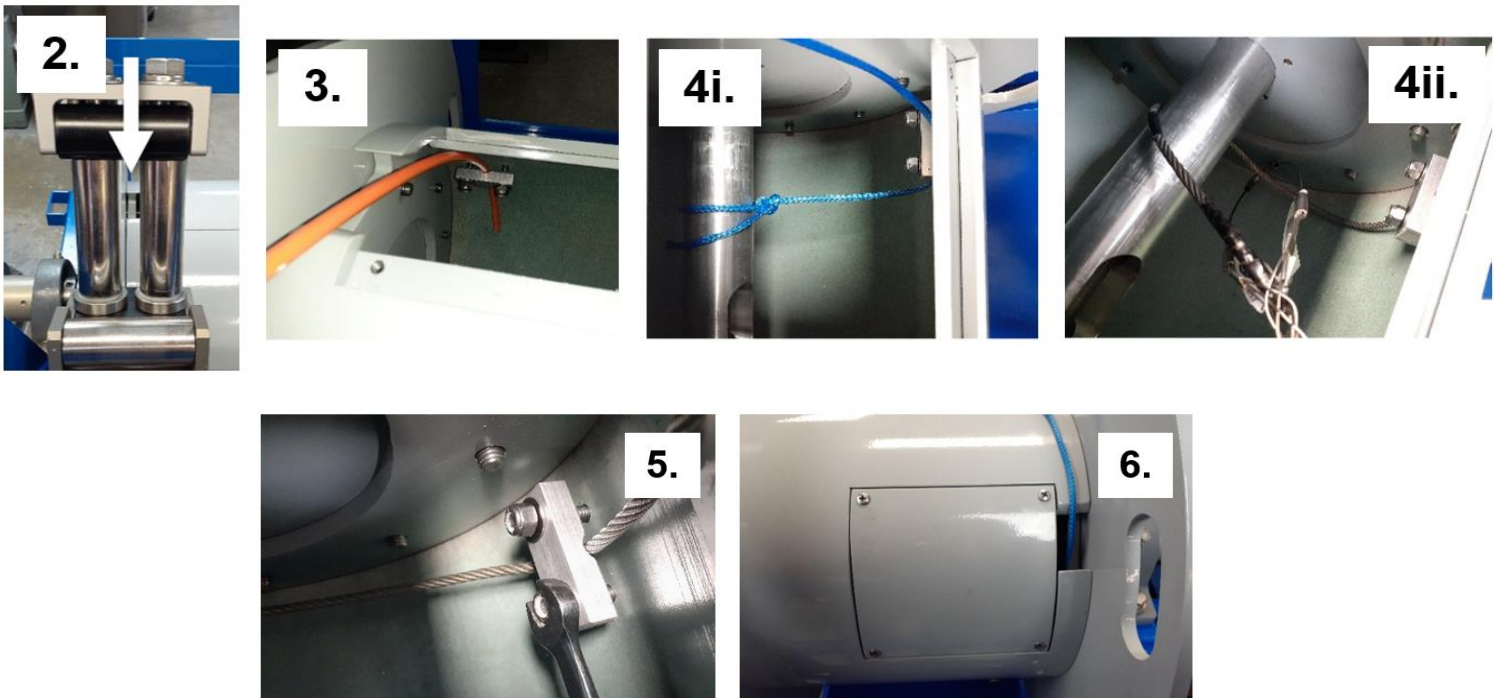
Before installing cable on the drum, collect the following:

- ☐ Spool of cable to be installed
- ☐ Reel holder
- ☐ Durable work gloves
- ☐ Two people (one to drive the winch during spooling, and one to guide and tension the cable)

Follow these steps to install the cable on the drum (refer to next page for reference illustrations):

1. Remove the drum door.
2. If the winch has a levelwind, ensure it is aligned with the cable hole in the drum.
3. Thread the cable...
 - i. Through the levelwind rollers (if applicable)
 - ii. Into the drum door
 - iii. Through the cable clamp
4. Secure the end of the cable:
 - i. If using fiber rope, tie the end to the axle inside the drum using a secure knot (e.g. buntline hitch).
 - ii. If using a wire rope, secure the end around the axle inside the drum using a Kellum grip.
 - iii. If using a cable with conductors, refer to the Installing a Slip Ring section to terminate the cable at the slip ring.
5. Tighten the cable clamp screws and nuts.
6. Replace the drum door, tighten its screws, and seal around the door with RTV silicone sealant.

The cable **MUST** be under tension when being spooled onto the drum. For the initial install, this can be done by hand, but it is highly recommended to fully unspool the cable with the payload attached in field conditions and respool it onto the winch under tension from the weight of the payload.



Spooling the cable onto the drum by hand

1. Set up the supply spool in front of the winch. One person should prepare to run the winch while the other should situate themselves comfortably by the supply spool and put on the work gloves.
2. The supply spool person will (with gloved hands) induce some tension in the cable during spooling to ensure the cable winds tightly and evenly onto the drum. The winch driver person will slowly run the winch in the “Reverse” or “Pay In” direction to spool cable on the drum.
3. Ensure the cable spools neatly. Maintain tension on the cable throughout the spooling operation.
4. When the spooling operation is complete, stop and turn off the winch. Terminate the free end of the cable with whatever connector or accessory is needed for the winch’s payload.

Respooling the cable under tension in field conditions

This should be done before the first actual use of the winch to ensure the cable wraps are sufficiently tight relative to the line tension during actual winch use.

1. Unspool the majority of the cable with the payload attached as it would be used in the field.
2. Using the weight of the payload to induce tension on the cable, respool the cable onto the winch.

Do not unspool the last ten (10) wraps of cable on the drum.

Always ensure the cable is under tension during all spooling and unspooling operations.

4.3 Installing a slip ring

One of two methods can be used to terminate a signal cable at a slip ring on the drum axle.

The following guidelines apply to both methods:

- Backfill the slip ring housing and connections with Dow #4 Silicone Grease after terminating the cable.
- Ensure the slip ring is locked in place on the axle using its fastening features (e.g. set screws).
- Install the slip ring guard after installing the slip ring on the winch.
- Ensure the torque arm on the slip ring is stabilized so that the inner and outer parts of the slip ring rotate independently of each other when the drum rotates. Different slip rings implement the torque arm feature in different ways.

Slip ring installation method 1

This method makes it convenient to disconnect the slip ring from the winch for servicing when needed.

1. With the slip ring removed from the winch, wire the drum-side of the slip ring to a short secondary cable.
2. Install the slip ring on the winch and feed the short secondary cable through the drum axle.
3. Install a terminal strip on the inside of the drum door.
4. Connect the conductors from the free end of the short secondary cable to the terminals on the terminal strip.
5. Clamp the short secondary cable securely to the axle inside the drum.
6. Fasten the signal cable to the drum with the cable clamp as previously described, and then attach each of its conductors to the terminals on the terminal strip.
7. Coat the terminal strip inside the drum with RTV silicone sealant.

Slip ring installation method 2

This method requires no additional modifications to the winch drum.

1. Remove the slip ring from the winch.
2. After passing the main winch cable through the cable clamp, feed it around the axle inside the drum and through the hole to exit the winch.



3. Pull enough cable out through the axle to allow easy termination of the free end to the drum-side of the slip ring.
4. After securing the slip ring to the winch, proceed with securely clamping the cable inside the drum.

4.4 Adjusting the levelwind

The levelwind assembly is driven by the drum through a chain and sprocket drivetrain to automatically facilitate neat and even spooling of cable on the drum. This geartrain includes either a proprietary Double Idler assembly, or a levelwind gearbox. Rarely, some winches may have a levelwind drivetrain with no intermediate gearing between the drum and reversing screw ("direct drive").

Your winch does not have a levelwind.

Before installing cable on the drum, the levelwind rollers must be adjusted to align with the flange where the cable exits the drum. The levelwind may also need to be occasionally adjusted during the winch's service life to ensure optimal spooling alignment.

Unplug the winch from all power sources before adjusting the levelwind.

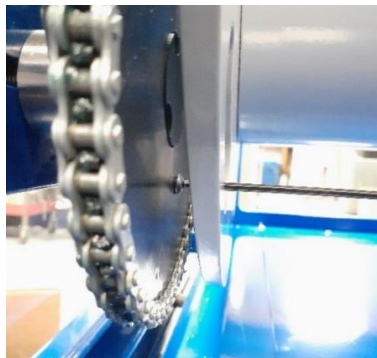
For all levelwind drivetrain types, first:

1. Ensure the dog clutch is retracted so the drum can be rotated by hand.
2. Rotate the drum so the door is oriented up and the cable exits the top of the core towards the front of the winch.

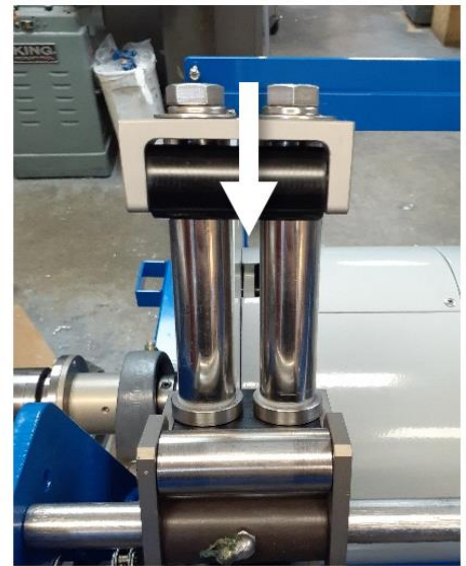
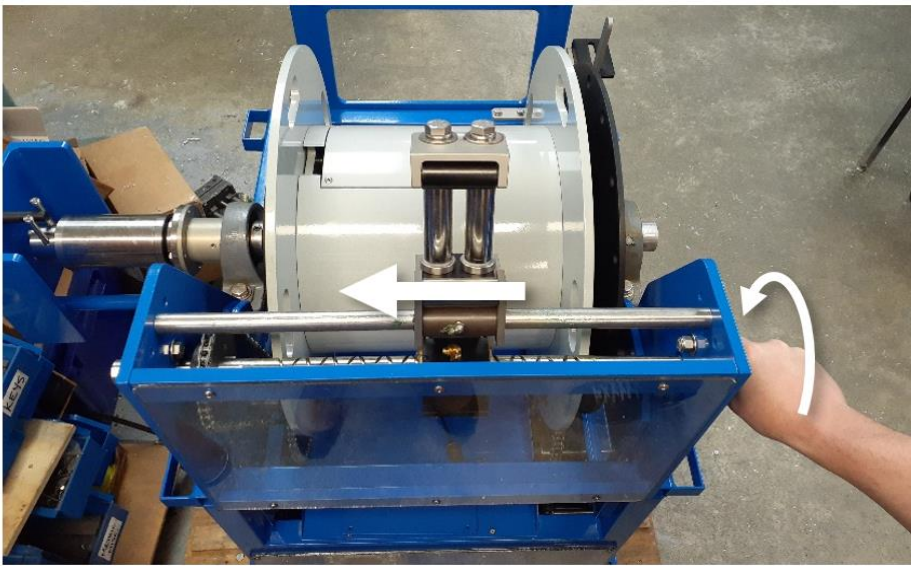


Adjusting a levelwind with a Double Idler assembly

1. Locate the Double Idler assembly. It is the intermediate sprockets in the levelwind drive train between the drum sprocket and the reversing screw sprocket.
2. Access the Double Idler assembly. This may require removing some winch panelling.
3. De-couple the reversing screw rotation from the drum rotation by unscrewing the two screws holding the large sprocket onto the Double Idler assembly. The drum may need to be rotated a little bit to access the screws around other nearby parts.



4. Turn the reversing screw by hand until the levelwind roller carriage reaches the end of the reversing screw travel and is aligned with the cable hole at the top of the drum. (See next page for reference images.)



5. Re-couple the levelwind drive chains by reinstalling the screws in the large Double Idler sprocket. The reversing screw may need to be rotated slightly to align a pair of holes on the sprocket hub with the holes on the sprocket.
6. Reinstall all covers on the winch.

Adjusting a levelwind with a levelwind gearbox

1. Locate the levelwind sprocket on the reversing screw.
2. De-couple the reversing screw rotation from the drum rotation by removing the one screw between the reversing screw sprocket and its hub.



3. Turn the reversing screw by hand until the levelwind roller carriage reaches the end of the reversing screw travel and is aligned with the cable hole at the top of the drum.
4. Re-couple the reversing screw and drum rotation by aligning the screw hole on the reversing screw sprocket hub with a screw hole on the reversing screw sprocket. Reinstall the screw holding the sprocket to the hub.

5.0 Using the Winch

This is a standard overview of how to operate most A.G.O. winches with standard features.

Individual winches may include additional accessories or custom features not mentioned in this standard overview. Refer to any additional instructions provided with your winch for the most relevant information.

5.1 Winch features

Winch operators should familiarize themselves with the following winch features:

Features present on manual and motorized winches:

- A. The manual disk brake caliper
- B. The drum pin lock
- C. The manual backup handle crank

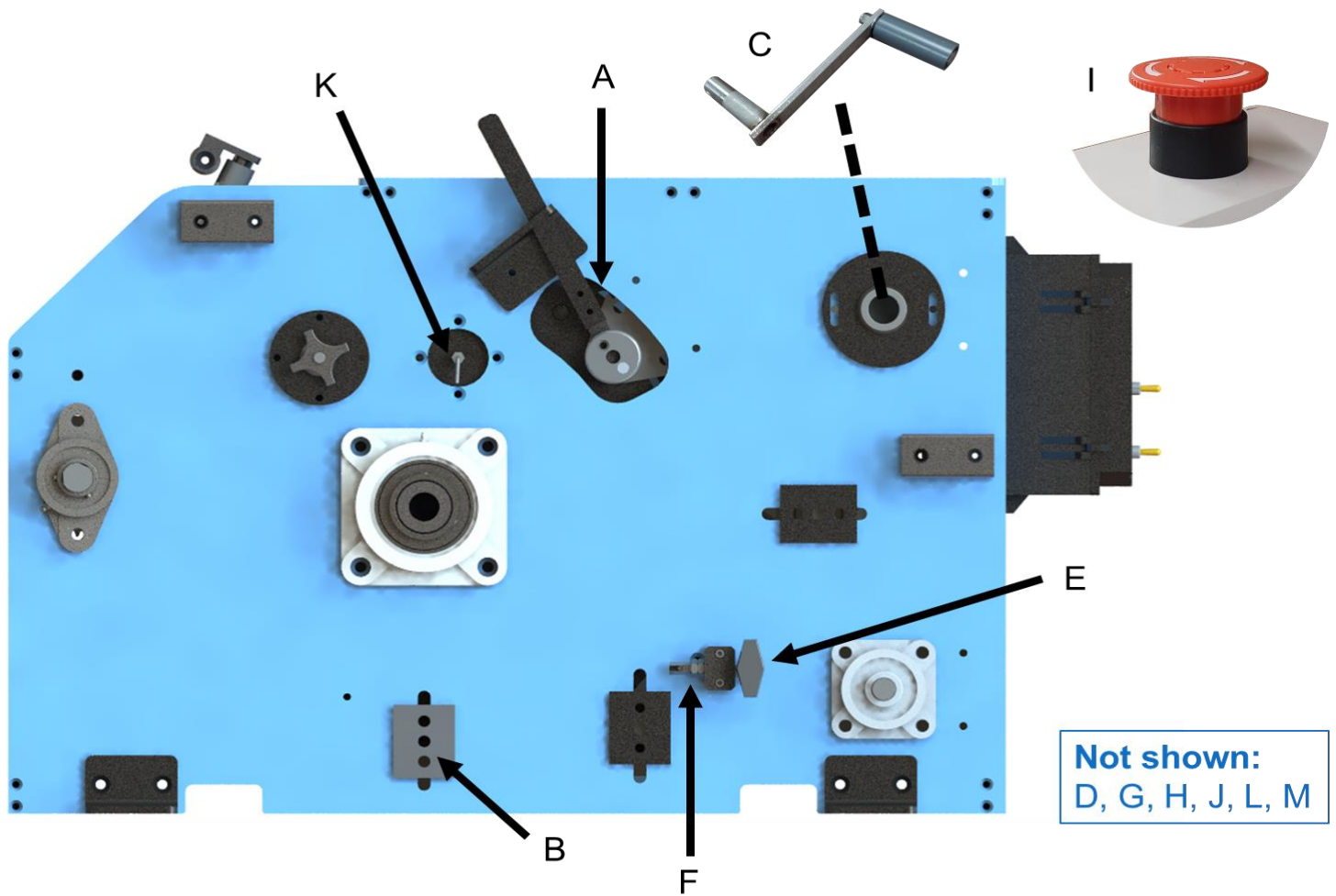
Features present only on motorized winches:

- D. The power cable and plug
- E. The dog clutch pull handle
- F. The dog clutch pin lock
- G. The On/Off switch and indicator lights
- H. The winch speed and direction controls
- I. The emergency stop button(s)

Optional additional features:

- J. The electric brake release lever
(available only with motorized winches)
- K. The drum ratchet pawl release pin
(available with manual and motorized winches)
- L. The wired remote controller cable and its connector on the winch
(available only with motorized winches)
- M. The cable payout meter
(available as either an EWC-6 for use with manual or motorized winches, or a drum-encoder system for use with motorized winches only)

Review the following information about some of the standard winch features before using the winch.



Drive train components

The motor, gearbox, optional electric brake, sprockets, chain, and other drive train components have been specially sized and matched to the power requirements for your particular winch and application loads.

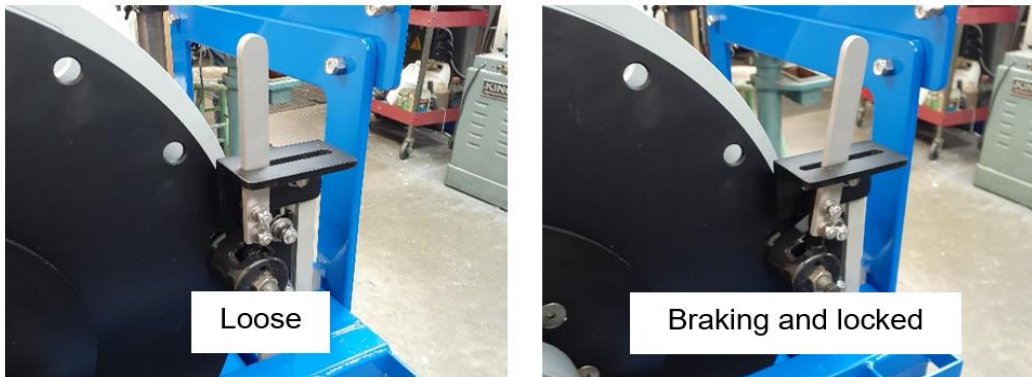
A.G.O. does not guarantee the winch's performance capabilities if drivetrain components are changed out for units with different specifications.

The motor, gearbox, and optional electric brake assembly are aligned relative to each other and the dog clutch jackshaft at A.G.O. at the time of installation. Removing the motor/gearbox/optional electric brake assembly or replacing its components can jeopardize alignment. Failure to sufficiently realign drivetrain components can result in damage to drivetrain components.

Do not replace the motor with a motor that is more powerful than the gearbox's input power rating.

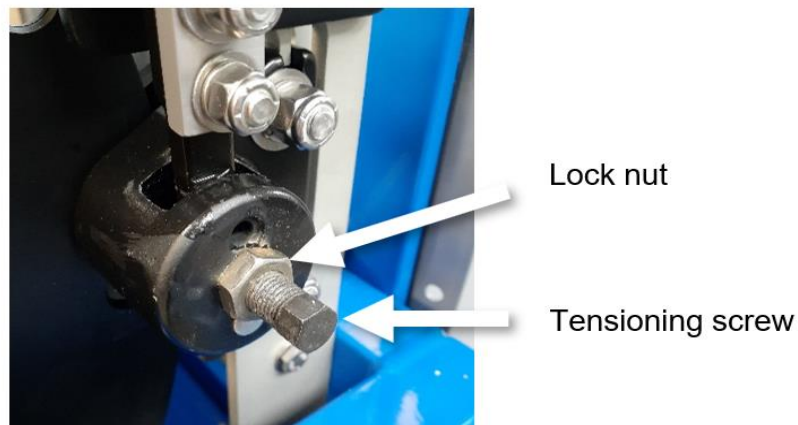
Manual disk brake

In some cases, the manual disk brake caliper may lock if the handle is pushed too far into the braking position.



The brake caliper tension can be adjusted as needed by

1. Loosening the large lock nut on its tensioning screw
2. Turning the tensioning screw in or out to increase or decrease the brake tension, respectively
3. Re-tightening the large lock nut on its tensioning screw



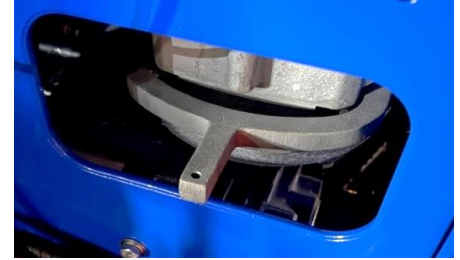
Do not apply excessive force on the brake lever.

The disk brake can stall the motor – do not attempt to drive the winch with the disk brake engaged.

Electric brake

Electric brakes (if equipped) will automatically close in the “braking” position when the winch is unpowered. If needed, this can be overridden by depressing the brake release lever.

Since it is rarely necessary to override the electric brake, some winches may have the lever positioned behind panels rather than openly accessible. Always replace all winch panels and guards before returning the winch to normal service.



Drum pin lock

The drum pin lock can be inserted through the holes in the disk brake to physically lock the drum rotation.

The drum pin lock is useful for locking drum rotation to reduce wear on the winch’s manual and electric brakes (if equipped). For towing applications, the pin can be replaced with a shear pin (e.g. a hot-glue stick or weak plastic dowel) that will snap and allow the drum to unwind if the payload gets snagged. Selection of an appropriate shear pin material is left to the client.



Remove the pin lock before attempting to power drive the winch.

Failure to do so can cause catastrophic system failure.

As an alternative to using a shear pin in the pin lock, AGO winches can optionally be built to include a “slip clutch” friction clutch that keeps the drive train engaged during normal operation, but slips and allows the drum to unwind if the payload gets snagged.

Dog clutch

The dog clutch is used to couple the drum drivetrain to the powered output from the motor/gearbox. It can be engaged to drive the winch using the motor, or disengaged to allow freewheeling and manual hand cranking.

The dog clutch can be disengaged by pulling the lower pull handle out, and engaged by pushing the pull handle in (as long as the dog clutch halves are aligned properly).

The dog clutch pin lock can be engaged in the pull handle rod to prevent accidental disengagement or engagement of the dog clutch.



Do not engage or disengage the dog clutch while the motor is running and the shafts are turning.

Manual backup hand crank

The manual backup crank can be inserted in the brake disk side of the drum axle to permit manual hand cranking of the winch. For motorized winches, the dog clutch must be retracted to permit hand cranking.

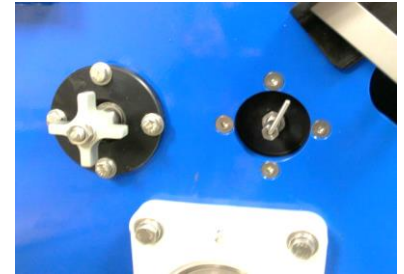
The manual backup has no mechanical advantage or gearing when inserted in the drum axle. Most newer A.G.O. winches include a sprocket-assisted manual backup drive as an alternative hand crank input for easier hand cranking.



Do not operate the winch with motor power with the manual hand crank in the drum axle or sprocket-assisted manual backup drive input.

One-way drum ratchet

For winches with one-way drum ratchets: The ratchet pall can be engaged by pulling the bent handle on the spring pin that holds the pall up. The ratchet pall can be disengaged by twisting the ratchet knob to raise the ratchet pall.



Disengage the ratchet pall before operating the winch with motor power.

Failure to do so can cause catastrophic system failure.

Power source

Even if the correct voltage for the winch is available, ensure that the source can supply enough current to meet the winch's overall power requirements.

Your winch requires 3kW of electrical power.

AC power sources for winches operated in wet conditions should contain Ground Fault Circuits.

5.2 Preparing to use the winch

After commissioning the winch and installing it at its point-of-use location, set it up for use:

1. Plug the winch into its power source. Ensure the power source can supply enough current to meet the winch's power requirements.
2. If using a wired remote controller, plug it into the corresponding connector on the winch.
3. Check the following:
 - ☐ All covers are installed on the winch
 - ☐ No anti-rotation features are engaged on the winch, including:
 - ☐ The manual disk brake
 - ☐ The drum pin lock
 - ☐ The ratchet pall (if applicable)
 - ☐ The dog clutch is engaged and its pull handle is pinned in place
 - ☐ The manual backup crank has been removed from the drum axle
 - ☐ **The emergency stop button(s) are not depressed**
 - ☐ The speed and direction controls are set to neutral and 0% speed
 - ☐ All cables are clear of moving parts

5.3 Turning the winch on and off

A.G.O. winch power systems come in a few standard configurations:

- DC motors with KB Electronics or DART all-in-one drives
- AC motors with VFD's
- Servo motors with servo drives

Your winch uses a DC motor with a KBRC-240D.

It has an electric brake.

Emergency stopping:

Winches equipped with emergency stop buttons can be stopped quickly by simply pressing the E-stop button.
Remember to disengage all E-stop buttons before re-starting the winch.

The datasheet/manual for the particular drive used in your winch is included in your winch's data package.

Winches with KB Electronics or DART drives

To turn the winch on:

- Flick the ON/OFF switch to the ON position.
- The lights on the KBRC should show green.
- When ready to drive the winch, flick the START/STOP switch to the START position.

To turn the winch off:

- Set speed and direction controls to neutral and 0% speed.
- Flick the START/STOP switch to the STOP position.
- Flick the ON/OFF switch to the OFF position.
- The lights on the KBRC should all be off.



Winches with VFDs or servo drives

A.G.O. winches with VFD's and servo drives usually store all motor controller and power electronic components in an electrical enclosure.



To turn the winch on:

- Twist the big main disconnect switch to the ON position.
- When ready to drive the winch, press the green START button.
- The beacon lights should light up green.



To turn the winch off:

- Set speed and direction controls to neutral and 0% speed.
- Twist the big main disconnect switch to the OFF position.
- The lights on the electrical enclosure should all be off.

5.4 Driving the winch

A.G.O. winch controllers can come in many configurations, but the standard speed and direction control elements are usually either:

Separate speed and direction controls:

Forward-Neutral-Reverse toggle switch
and speed control potentiometer



Combined speed and direction control:

Spring return joystick



Some controllers may include additional features depending on particular client preferences. The below instructions apply only to the speed and direction control features on most A.G.O. controllers.

Your winch uses a spring return joystick in a handheld wired remote controller box.

The winch has four drive modes:

Dog clutch state	Winch direction	
	Pay out cable	Recover cable
Dog clutch engaged	1. Powered payout	2. Powered recovery
Dog clutch disengaged	3. Freewheeling payout	4. Manual recovery

Modes 3 and 4 are independent of the winch’s speed and direction control configuration.

3. To freewheel the winch to pay out cable **without** motor power:
- Disengage the dog clutch by pulling its pull handle out.
 - Ensure the manual backup hand crank is NOT in the drum axle.
 - The drum is now free to spin and unwind as it is pulled by the forces on the payload.
4. To recover cable without motor power:
- Disengage the dog clutch by pulling its pull handle out.
 - Insert the manual backup hand crank into the drum axle and crank to wind in the cable.
 - If the winch is equipped with a sprocket-assisted manual backup**, the manual backup hand crank can be inserted into the sprocket-assisted backup shaft for easier and safer (but slower) cranking.
 - If the winch is equipped with a one-way drum ratchet, the ratchet pall can be engaged by pulling its spring pin to prevent the drum from unwinding when taking breaks while manually cranking.

Disconnect the wired remote controller (if applicable) and/or unplug the winch during freewheeling or manual backup driving to prevent accidents.

Warnings

The following warnings apply to all A.G.O. winch configurations:

Do not:

- Operate the winch without tension on the cable.
- Operate the winch without guards, covers, and panels in place.
- Operate the winch with motor power with the manual hand crank in place.
- Engage or disengage the dog clutch while the motor is running and the shafts are turning.
- Unwind the last 10 wraps of cable.

Emergency stopping

Winches equipped with emergency stop buttons can be stopped quickly by pressing the E-stop button. Remember to disengage all E-stop buttons before re-starting the winch.

The winch start-up procedure may need to be repeated to resume winch use after an E-stop button press.

Driving the winch with separate speed and direction controls

1. To pay out cable with motor power:
 - Engage the dog clutch by pushing in its pull handle.
 - Twist the speed control knob to the desired speed.
 - Flick the Forward-Neutral-Reverse switch to the "Forward" or "Pay Out" position.
2. To recover cable with motor power:
 - Engage the dog clutch by pushing in its pull handle.
 - Twist the speed control knob to the desired speed.
 - Flick the Forward-Neutral-Reverse switch to the "Reverse" or "Pay In" position.

Stopping the winch in non-emergencies:

- Flick the Forward-Neutral-Reverse switch to the center "Neutral" position.
- Twist the speed control knob to 0% speed.

Driving the winch with a joystick

1. To pay out cable with motor power:
 - Engage the dog clutch by pushing in its handle.
 - Push the joystick in the "Forward" or "Pay Out" direction. Pushing the joystick more will make the winch go faster.
2. To recover cable with motor power:
 - Engage the dog clutch by pushing in its pull handle.
 - Push the joystick in the "Reverse" or "Pay In" direction. Pushing the joystick more will make the winch go faster.

Stopping the winch in non-emergencies:

- Release the joystick. It will automatically spring-return to the center "Neutral" and 0% speed position.

6.0 Maintaining the Winch

A.G.O. winches are designed to be relatively easy to maintain. Most maintenance involves regularly greasing moving parts and applying corrosion inhibitors to corrosion-susceptible parts like the manual brake disc caliper.

Recommended grease for mechanical parts: NLGI Grade 2 marine-grade lithium grease

Recommended grease for subsea connectors: DOW CORNING® #4 Electrical Insulating Compound

6.1 Corrosion care

The best corrosion-prevention advice is to rinse the winch with freshwater regularly, especially for winches used in salty ocean environments. Winches should also be covered when not in use, and stored in a dry location for long-term storage.

Moving parts should be kept greased with an NLGI Grade 2 marine-grade lithium grease. Components with grease nipples can be greased using a grease gun. Parts to keep greased include:

- All chains
- The dog clutch (has a grease nipple)
- The dog clutch slider (has a grease nipple)
- The levelwind reversing screw housing (has a grease nipple)
- The levelwind torque bar slider (has a grease nipple)



Exterior surfaces are susceptible to corrosion that is, for the most part, cosmetic. Parts such as steel sprockets, bearing housings, and the manual brake disc caliper tensioning screw have been coated with a corrosion inhibitor (Corrosion-X) prior to shipping.

A similar rust inhibitor or a light layer of marine grease can be re-applied during the winch's service to maintain the appearance of these parts.



6.2 Preventative maintenance schedule

The following table summarizes recommended frequency of recommended preventative maintenance procedures to keep your winch in good condition:

Recommended PM operations	Recommended frequency						
	Before every use	After every use	Monthly	Quarterly	Yearly	Before long-term storage	After long-term storage
Cleaning & Inspecting							
Ensure covers are in tact	X						X
Rinse the winch with freshwater		X*					
Cover winch (e.g. with a tarp)		X*					
Check chain flexibility				X		X	X
Ensure the winch is dry						X	
Greasing							
Grease the drive chain				X		X	
Grease the levelwind chains (if applicable)				X		X	
Grease the sprocket-assisted manual backup chains (if applicable)				X		X	
Grease the disc brake calliper camshaft support				X		X	
Grease the dog clutch				X		X	
Grease the dog clutch slider				X		X	
Grease the levelwind reversing screw housing (if applicable)				X		X	
Grease the levelwind torque bar slider (if applicable)				X		X	
Other							
Tighten motor bolts					X		X
Apply corrosion/rust inhibitor to bearings, sprockets, and manual disc brake caliper			X*		X	X	
Replace chains if stiff and resistant to bending around sprockets					X**		X**

* Recommended particularly for winches used in salty ocean applications. Also good if winch is dirty or used in a hot and humid environment.

** Not usually necessary if chains are kept well-greased.

7.0 Troubleshooting

This section is a (non-exhaustive) guide to troubleshooting some basic winch errors.

Problem	Possible Causes	Actions
1. The winch will not turn on.	An E-stop button is engaged.	Disengage all E-stop buttons.
	The winch is not plugged in.	Plug the winch into an appropriate power source.
	A circuit breaker has tripped.	Open the winch's power electronics and reset the tripped breaker(s).
2. The winch is on (green lights show) but the motor will not start.	The motor is not plugged into the motor controller/power system.	Connect the motor cable to the corresponding connector on the motor controller/power system.
	The wired remote controller (if applicable) is not plugged into the motor controller/power system.	Connect the wired remote controller cable to the corresponding connector on the motor controller/power system.
3. The motor overloads when attempting to start driving the winch. Or:	The electric brake (if present) is engaged.	Contact A.G.O. Electric brake release lever can be pressed to continue using winch without electric brake.
	The manual disc brake is engaged.	Disengage the manual disc brake lever.
	The disc brake pin lock is engaged.	Remove the locking pin from the disc brake.
4. The circuit breaker trips repeatedly.	The payload is caught on something.	If possible, inspect the payload and dislodge it from anything it may be catching on.
	Drag forces on the payload (for towed payloads) are too high.	If possible, reduce the towing speed before beginning to recover the towed payload. For near-seabed towing that requires a certain boat speed to avoid hitting the seabed with the payload, keep the winch speed low until enough cable has been pulled in that the towing speed can be safely reduced.
	The payload is heavier than the winch's rated capacity.	Do not attempt to use the winch for payloads that are heavier than its rated load capacity. Seek a stronger winch, or reduce the payload weight.
	The power source cannot supply enough power to the winch.	Plug the winch into a power source that is rated to supply the winch's required 3kW of power.
5. The motor starts and runs normally, but the drum will not turn.	The dog clutch is disengaged.	Engage the dog clutch by pushing its pull handle in.

If you experience problems that aren't solved by the suggested actions above, or that aren't covered in this table, contact A.G.O. for advice and refer to the Limited Warranty.

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T: +1 (250) 386-4015

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8.0 Limited Warranty

A.G.O. Environmental Electronics Ltd. (herein known as the Company or A.G.O.), for a period of 12 months from the date of original purchase, will repair or replace, without charge, devices that our examination proves to be defective in design, material or workmanship.

The Company must be notified in writing immediately if any such defect becomes apparent, but in any event, the Company must receive such notification within the said period of 12 months.

This warranty is valid if the unit has not been tampered with by unauthorized persons, misused, abused or improperly installed and has been used in accordance with the instructions and/or ratings supplied.

The foregoing is in lieu of any other warranty or guarantee, expressed or implied, and the Company is not responsible for any expense (including shipping, installation and removal), inconvenience or consequential damage caused by items of our manufacture or sale.

The Company does not assume responsibility for items manufactured by other manufacturers; further, their warranties supersede the A.G.O. limited warranty where applicable. Please note that sub-sea connectors are limited to a 30-day warranty as per the original manufacturer.

Any warranty return units must be returned pre-paid to our facility in Victoria, B.C., Canada for evaluation and repair (if necessary) by our staff.

A.G.O. will not be responsible for any claims for work done in correcting any defects by companies other than A.G.O., unless the Company authorizes the work in writing.