Allied®

WINCH

Operation & Maintenance Manual

For Allied Electric Drive Winches

Lantec Models

200

540

750

A PRODUCT OF

Allied Systems COMPANY

SHERWOOD, OREGON USA

CUSTOMER EDITION

599023W 7/05 Printed in USA

LANTEC MODEL 200 · 540 · 750

ELECTRIC WINCH

OPERATION

&

MAINTENANCE MANUAL

WHEN ORDERING REPAIR PARTS FOR THE ALLIED ELECTRIC DRIVE WINCH ALWAYS QUOTE THE SERIAL NUMBER OF THE UNIT.

Model No. _____
Serial No. _____
Assembly No. _____
Installation No. _____
Date Shipped _____

Allied Systems Company
21433 SW Oregon Street
Sherwood, Oregon 97140, U.S.A.
Telephone: 503.625.2560
Fax: 503.625.7269 503.625.5132
Web Site: http://www.alliedsystems.com
Email Addresses:
parts@alliedsystems.com
service@alliedsystems.com
marketing@alliedsystems.com

Some descriptions or illustrations in this manual may show details or attachments that are different from your winch.

TABLE OF CONTENTS

1. INTRODUCTION

To supplement the following descriptions, consult the Winch Assembly Drawing.

1.1. Winch Components

This Allied Winch consists of the following components:

1. Planetary gear reductions – optional ratios available
2. Drive Shaft
3. Winch Drum
4. Winch Housing

This winch is "power in/power out" with equal speed in both directions.

1.2. Winch Specifications – Gearing After SEW Drive

Model	First Reduction	Second Reduction	Gear Ratio
20X		6.00:1	6.00:1
54X	4.174:1	4.174:1	17.42:1
75X	6.00:1	4.00:1	24.00:1

2. WINCH OPERATION

The Allied Electric Drive Winch is made up of these basic assemblies:

1. Primary drive: Customer-supplied electric motor drive, motor mount, primary planetary reduction. Primary reduction may not be used with all electric motor drives.
2. Final reduction: 1 or 2 planetary reductions
3. Drum group: winch drum, winch frame, drive shaft

The winch is powered by an electric motor driving through a flange-mounted gear reducer. The gear reducer output drives a shaft that passes through the center of the winch drum to the sun gear of the planetary reductions located in the final drive housing.

See electric motor information for brake and operation information.

The speed of the winch in either direction is purely dependent on the input drive speed.

3. INSTALLATION

3.1. Winch Mounting

Allied recommends that the mounting and installation of the winch be carried out by a qualified millwright.

The winch foundation is extremely important for proper winch operation. This foundation must be planar and completely flat, and must be rigid and unyielding under full winch load.

It is important to note that Allied machines and line bores its winch housings, including the winch mounting pads. This is to ensure that the winch mounting pads are planar and parallel to the axial alignment of the winch drum bearings. Therefore, the winch housing must be installed onto a foundation that is within the tolerances specified or the winch drum bearings will become misaligned, causing premature failure.

One method to mount the winch is described below:

1. Sling the winch on its drum and carefully lower it until three of the four winch base pads just contact the foundation.
2. Install mounting bolts, Grade 5 minimum, on the three pads in contact with the foundation and torque them to their correct value. (Refer to a torque chart to determine torque values, which depend on hardware grade, size and pitch.)
   Note: *Hardened flat washers must be used under the bolt heads. DO NOT USE LOCKWASHERS.*
3. Measure any gap between the fourth pad and the foundation with a feeler gauge.
   Note: *The maximum allowed misalignment is 0.002"/ft. from mounting hole to mounting hole on either end of the winch, measuring perpendicular to the drum.*
4. If the misalignment is outside of tolerance then the gap between foundation and the fourth pad must be shimmed to correct this.
5. Once the correct shims are in place, the remaining bolts can be installed and torqued to their correct value.

WARNING

DO NOT WELD TO ANY PART OF THE WINCH.

WARNING

DO NOT OPERATE OR PERFORM ANY LUBRICATION, MAINTENANCE OR REPAIR ON THIS PRODUCT, UNTIL YOU HAVE READ AND UNDERSTOOD THE OPERATION, LUBRICATION, MAINTENANCE AND REPAIR INFORMATION.

3.2. Gear Cavity Lubrication

The pour point of the oil should be lower than the lowest expected starting temperature.

The following table gives the recommended viscosity in relation to speed and ambient temperature:

Drum Speed (See Page 1)	**Ambient Temperature**		
	-10° to +15° C +14° to +59° F	0 to +30°C 32 to +86°F	+10° to +50° C +50° to +122° F
Greater than 100 rpm	AGMA 2EP ISO VG68 68 cSt at 40°C	AGMA 4EP ISO VG150 150 cSt at 40°C	AGMA 5EP ISO VG220 220 cSt at 40°C
Less than 100 rpm	AGMA 3EP ISO VG100 100 cSt at 40°C	AGMA 5EP ISO VG220 220 cSt at 40°C	AGMA 6EP ISO VG320 320 cSt at 40°C

Note: *cSt is the same as mm^2/s.*
For special conditions consult factory for recommendations.

The recommended working temperature of the sump should be between 50° and 70°C (122° to 158°F).

The intermittent peak temperature of the sump should be no greater than 95°C (203°F).

The winch gear cavities are filled via the filler plug (see Figure 1). Fill with gear oil until it reaches the filler/level plug. **DO NOT OVERFILL** as this may cause the gear reductions to overheat. Use 85W-140 gear oils containing EP additives, which increase the oil film load carrying capacity of the oil.

The winch gear cavity is supplied with a **VENT** (shown on the right end of Figure 1). It is necessary that the oil sump be vented at the highest possible point above the oil level. If the winch base is mounted non-horizontally, it may be necessary to remove the gear reduction opposite the motor and rotate it to position the vent at the highest point possible.

3.3. Lubrication For Storage

Allied routinely ships winches with a small amount of vaporizing storage oil (oxidization inhibitor) in the drive compartments to protect the components during shipping. This protection is sufficient for temporary storage indoors of up to two weeks prior to startup.

For storage up to *two years indoors* or up to *six months outdoors* the following must be done (refer to Figure 1 for locations of plugs and vents):

- If stored outdoors, protect unit from any direct exposure to weather.
- Replace vent and any plastic plugs with appropriate metal plugs and O-Rings.
- Fill gear cavity to approximately 25% capacity (5 US gallons total) with **Shell VSI circulating oil 68** (or equivalent rust inhibiting vaporizing oil).

Prior to Operation:

- Replace metal plugs with appropriate fittings, including vent.
- Drain gear cavity of rust inhibiting oil and fill with gear oil as per section ***3.2. Lubrication***.

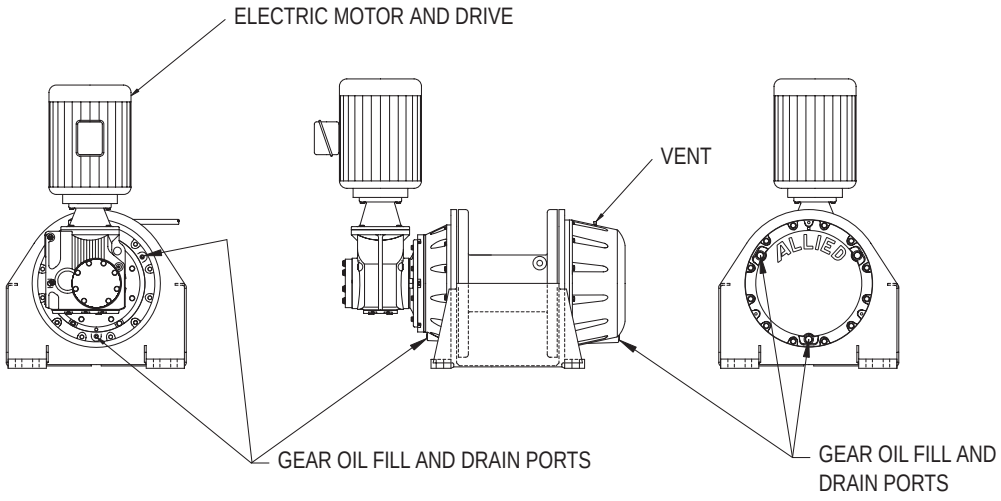

Figure 1

4. START-UP PROCEDURE

DO NOT operate the winch until all conditions in previous sections have been completed.

- Run motor for 2 to 3 minutes in hoisting direction with no load to check that everything is functioning correctly.
- Operate motor for 2 to 3 minutes in lowering direction with no load.
- See motor startup and operating procedures for further information.

WARNING

DO NOT OPERATE OR PERFORM ANY LUBRICATION, MAINTENANCE OR REPAIR ON THIS PRODUCT UNTIL YOU HAVE READ AND UNDERSTOOD THE OPERATION, LUBRICATION, MAINTENANCE AND REPAIR INFORMATION.

5. SERVICE AND GENERAL MAINTENANCE

Once per week the following tasks should be performed:

- Check gear cavity lubricant level; fill as required.
- Check for leaks.
- Check the gear cavity vent periodically for cleanliness, especially in dirty or dusty conditions.

5.1. Gear Lubrication Schedule

The first gear oil change is to be done after **300 hours** of operation. Subsequently, the oil should be replaced every 500 hours of operation or annually, depending on working conditions.

It is recommended to have an oil analysis performed every six months to evaluate the oil's condition. Retain analysis statements for warranty records.

When operating the winch continuously at high temperatures and/or in dusty or dirty atmospheres, oil analyses should be performed frequently as directed by the lubricant manufacturer.

If oil analysis indicates a potential problem, it is recommended that the winch be disassembled, inspected and reassembled as described in ***Section 6. DISASSEMBLY/ASSEMBLY.***

5.2. Maintenance Schedule

Allied recommends the following maintenance be carried out every 12 months or after 500 hours of actual operation, whichever occurs first:

- Disconnect wire rope. Remove the winch from its base, taking note of its position and any shims used.
- Disassemble the winch per the instructions in ***Section 6***.
- Inspect and replace any worn parts.
- Assemble the winch per instructions in ***Section 6***.
- Refill with **NEW** Lubricating Oil.
- Mount the winch on its foundation, making certain to install any shims in their original position.
- Reconnect wire rope.
- Follow start-up instructions in ***Section 4. START-UP PROCEDURE***.

6. DISASSEMBLY / ASSEMBLY

General Procedure Before Starting

- A clean work area, with dust- and grit-free work bench, should be available.
- Thoroughly clean all parts in a good quality, clean solvent, and air dry.
- Discard all disassembled O-Rings, Oil Seals, and Gaskets. Replace with new, well-greased parts.

6.1. Disassembly Of Brake

See electric motor manual for further information.

6.2. Assembly Of Brake

See electric motor manual for further information.

6.3. Disassembly Of Gear Reductions

Following the removal of Gear Reductions proceed as follows (see Figure 4 below):

- For Primary and Intermediate Reductions, remove Sun Gears, Thrust Bearing Washers, and Spacers, as appropriate.
- Straighten Tabs on Lockwasher, loosen and remove Locknut and Lockwasher on three Planet Pins. Lightly tap Planet Pins out of Hub and remove Planet Gears complete with Bearing Assemblies and Spacers.
- Pull Bearings if required. Note which spacers fit between Bearings and which fit between Hub and Bearing.
  Note: *The disassembly procedure is identical for all Gear Reductions.*

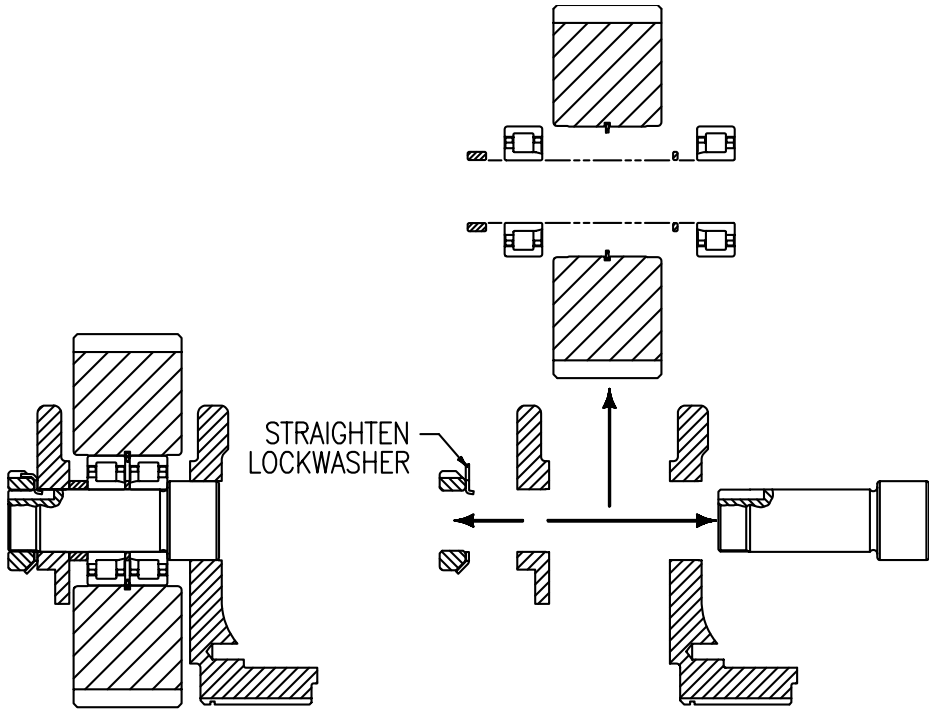

Figure 4

6.4. Adjustment of Drum Bearings

Tighten Adjustment Nut to remove all end play in the Bearings, then loosen Adjustment Nut 1/4 turn. This will give the required 0.020″-0.030″ bearing end play.

7. TROUBLE SHOOTING

7.1 Winch Will Not Pull Load

	PROBABLE CAUSE	REMEDY
	1. Load too heavy.	Reduce wraps of wire on drum.
	2. Circuit breaker open.	Reset circuit breaker.
	3. Brake not releasing.	See electric motor manual.

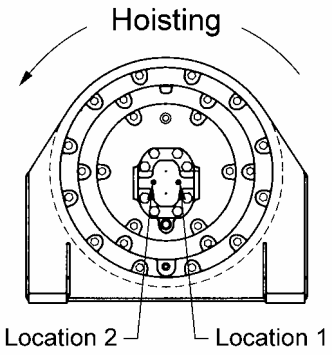

Figure 5

7.2 Brake Will Not Control Or Stop Load When Lowering

	PROBABLE CAUSE	REMEDY
	4. Winch component failure/wear.	Disassemble the winch assembly. Inspect the brake springs, brake plate and brake hub assembly. Check that the brake hub assembly will "lock up" in the required direction of rotation.

To find a dealer in your area,
Call: 503.625.2560,
Fax: 503.625.7269 , or
Email: marketing@alliedsystems.com

Visit our website: http://www.alliedsystems.com

599023W 7/05
Printed in USA