



**RUFNEK<sup>®</sup>**

with *Intelliguard<sup>™</sup>*



# Planetary Winches

**INTELLIGUARD II RETROFIT KIT  
INSTALLATION MANUAL**

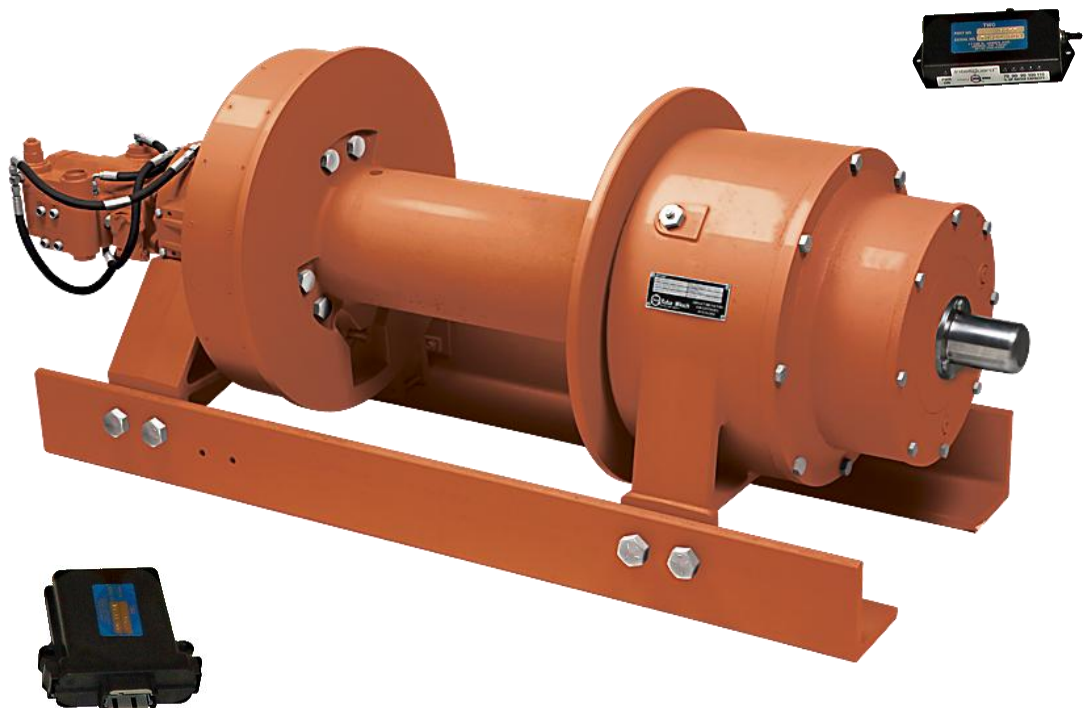
## INTRODUCTION

The torque induced within the winch drive train is measured by a torque sensing unit and relayed to the capacity indicator & the data logger as a 'percentage of allowed torque.' The data logger will only record torque instances that are greater than 80% of the rated torque capacity of the winch. System events such as power on, power off, clutch disengage and clutch engage are also recorded.



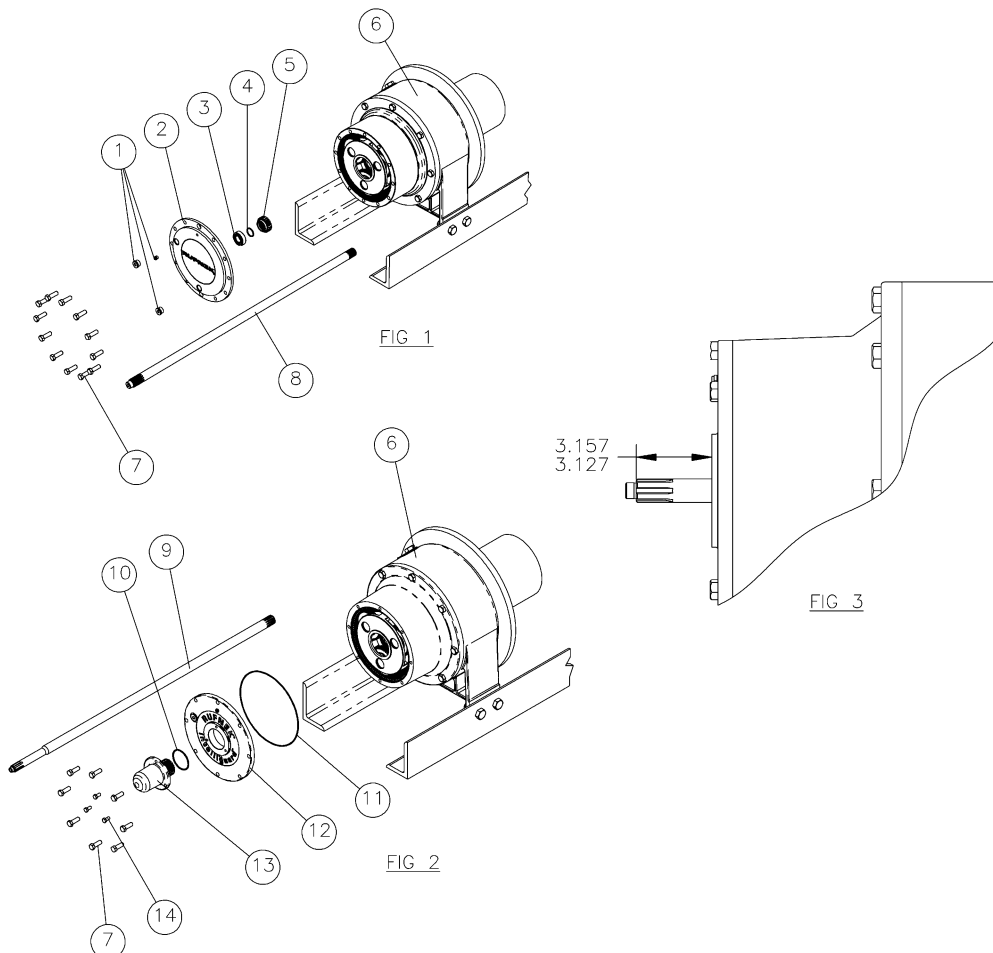
### CAUTION

1. Ensure that the data logger, wiring harness, and capacity indicator are kept with winch. The parts are calibrated from the factory for a particular winch and cannot be mixed without re-calibration.
2. Do not use magnets on or around winches with Intelliguard™.
3. Before any welding is done, disconnect the Intelliguard™ wiring harness from data logger.
4. When installing the Intelliguard™ system, the power supply must be the last thing to be connected. Otherwise the system will invoke an error code indicating one of the components is malfunctioning or is disconnected. This error will also be recorded in the data logger memory.
5. After system is fully installed and powered up, check to ensure that there are no flashing lights on the capacity indicator or data logger. If there are flashing lights refer to page 6 for troubleshooting.

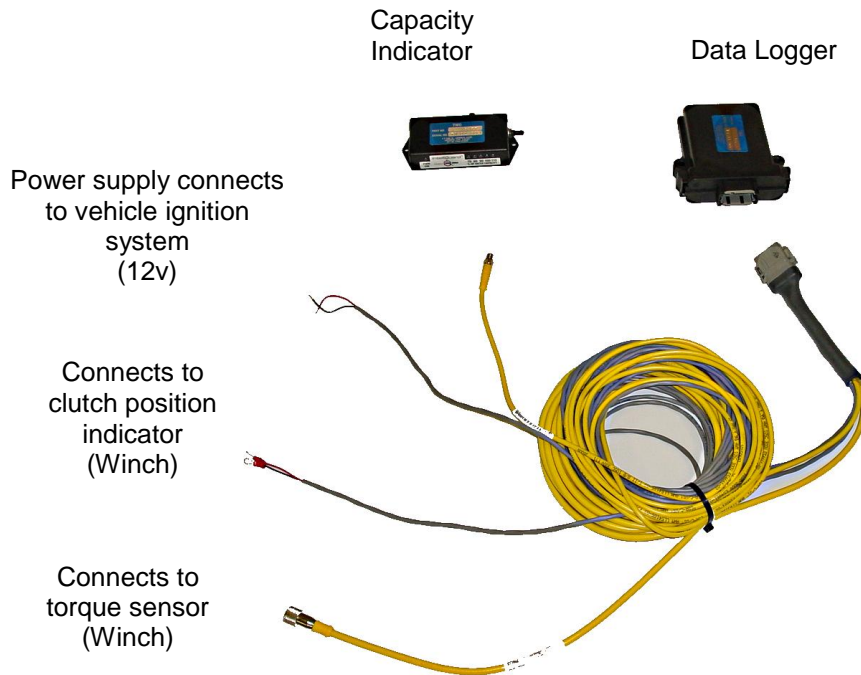


# TORQUE SENSOR INSTALLATION PROCEDURE

1. Drain the oil from the gearbox (6).
2. Remove the cover (2) and input components (3, 4, & 5) from the gearbox (6).
3. Remove the input shaft (8) from the winch.
4. Install the new cover (12) and o-ring (11). Torque the capscrews (7) to 49 ft-lbs (For RN45 only) or to 76 ft-lbs (For all other winches).
5. Install the new input shaft (9) supplied with the kit into the gearbox (6).
6. Measure the input shaft protrusion (Fig. 3). If the measurement falls within range, shimming is unnecessary. However, if the measurement does not meet specification, refer to page 5 for shimming instructions.
7. Install the torque sensor (13) using the supplied capscrews (14) and o-ring (10). Torque the capscrews to 31 ft-lbs. The white timing mark on the input shaft must be lined up with the white mark on the torque sensor gear.
8. Refill the gearbox to the level port with Mobilube SHC75W-90 oil or an equivalent substitute.



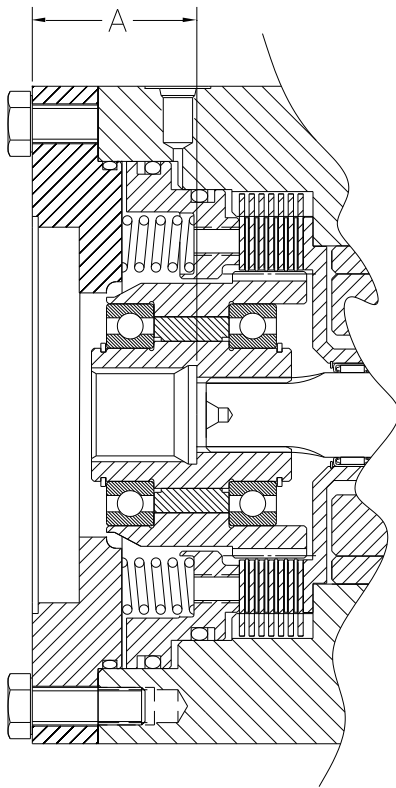
# LIGHTBAR AND DATA LOGGER INSTALLATION PROCEDURE



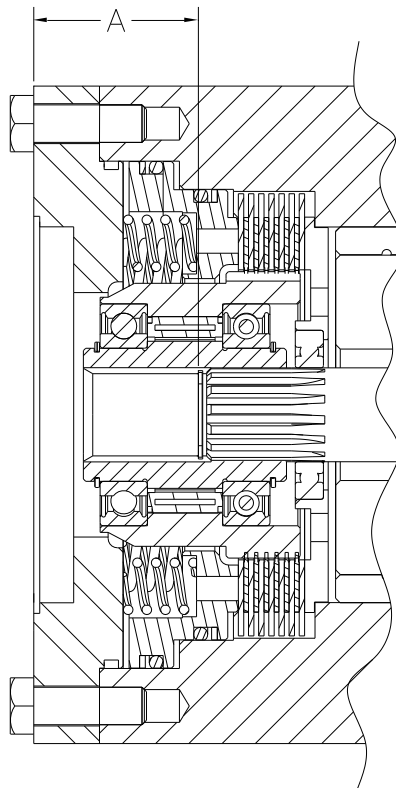
1. Ensure that you have the data logger, wiring harness, and capacity indicator that was calibrated specifically for the winch you are installing onto.
2. Identify the length of cable to be connected from the winch to the data logger then mount the data logger in the truck cab accordingly. If required, a 13' (4 meter) extension cable (P/N 44818) is available. Contact Tulsa Winch at 918-298-8300 or your local dealer.
3. Mount the capacity indicator inside the cab located so that it is visible by the operator when operating the winch. Keep in mind the length of cable when locating the capacity indicator. Connect wiring harness to capacity indicator.
4. Route and connect the torque sensor wire from the data logger to the winch being sure not to coil the wire.
5. Connect the power leads (red +) (black -) to the ignition switch (12v) of the vehicle such that the Intelliguard™ system is powered when the ignition switch is in the ON position.

## **SHIMMING INSTRUCTIONS**

1. Drain the oil from the brake.
2. Detach the hose from the brake.
3. Remove the motor (20) and hoses from the brake cover (17).
4. Install the torque sensor (13) using the supplied capscrews (14) and o-ring (10). Torque the capscrews to 31 ft-lbs. The white timing mark on the input shaft must be lined up with the white mark on the torque sensor gear.
5. Measure dim "A" as shown, making sure the input shaft is fully engaged in the torque sensor.
6. Place shims inside the clutch/driver assembly, so the shim(s) rest between the motor shaft and brake driver. Install as necessary to achieve the nominal measurement (2.195-2.225) using the shims provided.
7. Reattach the motor (20) to the brake cover (17). Torque capscrews (16) to 57 ft-lbs.
8. Connect the hose to the brake housing (18).
9. Refill the gearbox to the level port with Mobilube SHC75W-90 oil or an equivalent substitute.



RN45, RN60



RN80, 100, 130

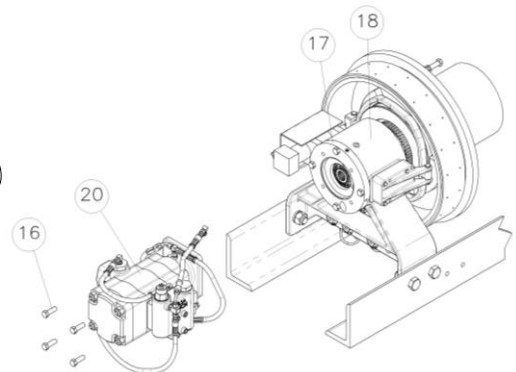
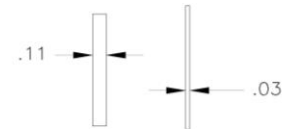


FIG 4



SHIMS

# **ERROR HANDLING AND TROUBLESHOOTING**

Some errors are transient and may be the result of the installation process (i.e., Loss of Communications), while others indicate a system hardware problem that demands factory servicing.

Table 6 Errors and Their Disposition

| Error | Disposition   |
|-------|---|
| 167   | Hardware must be serviced, please call Tulsa Winch Inc.   |
| 168   | <ol style="list-style-type: none"> <li>1. Make sure that the cables are securely connected</li> <li>2. Connect USB-CAN adapter and run the <i>DataloggerGUI</i> program</li> <li>3. Using <i>DataloggerGUI</i>, select the Technician mode and enter PIN “9707”</li> <li>4. Select the Administrator mode as well, and enter PIN “1234”</li> <li>5. Click on ‘Clear Errors’ button to clear the error states.</li> <li>6. Click on ‘Clear Flash’ to clear the Datalogger memory</li> <li>7. Turn off the power supply and retest</li> </ol> <p>If the error persists, please call Tulsa Winch Inc.</p>  |
| 169   | <ol style="list-style-type: none"> <li>1. Connect USB-CAN adapter and run the <i>DataloggerGUI</i> program</li> <li>2. Using <i>DataloggerGUI</i>, select the Technician mode and enter PIN “9707”</li> <li>3. Select the Administrator mode as well, and enter PIN “1234”</li> <li>4. Click on ‘Display Time’ to show the current Datalogger time.</li> <li>5. If the displayed time is correct, click on ‘Clear Errors’ to clear the error state and then click on ‘Erase Flash’ to clear the memory.</li> <li>6. If the displayed time is not correct, click on ‘Set Clock’ to update the Datalogger to the current time on the PC</li> <li>7. After setting the time, click on ‘Display Time’ to verify that the time was correctly saved.</li> <li>8. Turn off the power supply and retest</li> </ol> <p>If the error persists, please call Tulsa Winch Inc.</p> |
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