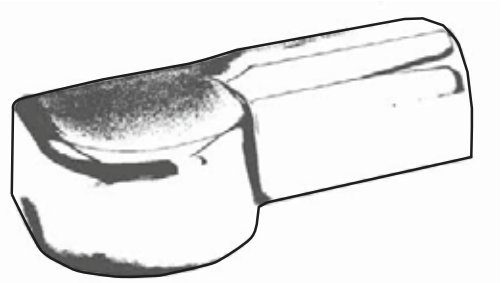
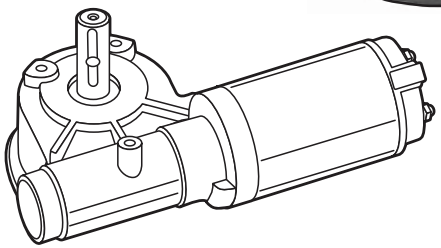
SUPERWINCH®





DC POWER DRIVES

OWNER'S MANUAL

INSTALLATION • OPERATION • MAINTENANCE
SAFETY PRECAUTIONS • REPLACEMENT PARTS

⚠ CAUTION

READ AND UNDERSTAND THIS MANUAL BEFORE INSTALLATION AND OPERATION OF YOUR SUPERWINCH PRODUCT.

Superwinch, LLC.
359 Lake Road
Dayville, CT 06241 USA
tel: 1.800.323.2031
fax: 1.860.963.0811
sales@superwinch.com
www.superwinch.com

Superwinch, LTD.
Union Mine Road
Pitts Cleave
Tavistock, Devon UK
PL19 ONS
tel: +44 (0) 1822 614101
fax: +44 (0) 1822 615204
sales@superwinch.net
www.superwinch.com

61-12880 Rev A 11/08/13

INTRODUCTION

Thank you for purchasing a Superwinch product. It has been designed and manufactured to provide years of trouble-free operation. Please read and understand this Owner's Manual before using your Power Drive. If used unsafely or improperly, there is a possibility that property damage or personal injury can result. Your safety ultimately depends on your caution when using the product. Correct installation is a requirement for correct operation. Pay particular attention to the Safety and Installation sections of this manual.

Superwinch reserves the right to alter model specifications without prior notice. Superwinch, through its continuous improvement policy reserves the right to improve any product through changes in design or materials as it may deem desirable without being obligated to incorporate such changes in products of previous manufacture.

PLEASE KEEP THIS OWNER'S MANUAL WITH THE UNIT.

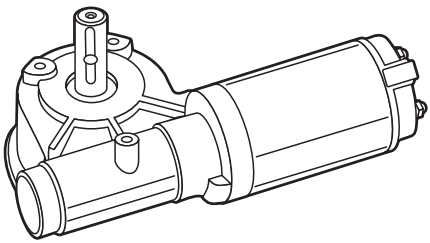
These instructions are designed to assist skilled technicians in the efficient installation of the Power Drive, using the appropriate trade tools.

GENERAL DESCRIPTION

Several models of Power Drives are available to fit your needs. Options include different reduction ratios, DC motor.

Each Power Drive is equipped with a permanent magnet motor and is designed for intermittent use only. This means that the Power Drive must be used for only short periods of time and allowed to cool down.

Figure 1: Power Drive



IF THE MOTOR BECOMES UNCOMFORTABLY HOT TO TOUCH, STOP OPERATION AND ALLOW IT TO COOL.

IF THE MOTOR STALLS, DO NOT CONTINUE TO APPLY POWER TO THE UNIT.

SPECIFICATIONS

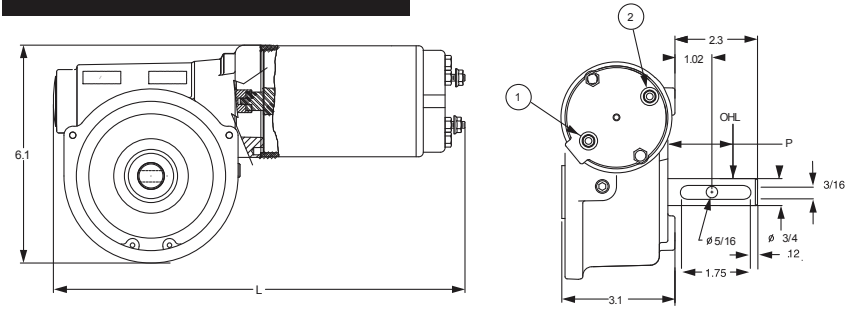
Gearbox Type	Right Angle
Gear Reduction	Worm and Wheel
Braking	Inherent-See Warning in Safety Section
Mounting	Three point bulkhead, requiring three 5/16-18 UNC Grade 5 or better bolts
Output Shaft(s)	3/4 OD with 5/16 through hole and 3/16 keyway

Table 1: Specifications

Power Drive #'s	Ratio	Weight (Lbs.)	Motor Voltage	Power (hp)
719527, 719520	90:1	10.5	12V DC	1.3
719627	90:1	11.5	12V DC	1.8
719537	90:1	10.5	24V DC	1.3
719637, 719630	90:1	11.5	24V DC	1.8
716527	60:1	10.5	12V DC	1.3
716627	60:1	11.5	12V DC	1.8
716537	60:1	10.5	24V DC	1.3
716727	60:1	12.3	12V DC	2.1
719727	90:1	12.3	12V DC	2.1

DIMENSIONS

Figure 2: Power Drive Dimensions



OHL = Overhung Load

Power Drive #'s	"L"	Power Drive #'s	"L"
719527, 719537, 716527	11.0	719630	11.6
719627,719637, 716627	11.4	716727, 719727	12.0

PERFORMANCE

The following performance data is shown to provide a guideline of what speed and current are expected at no load and at rated torque for your Power Drive.

Performance is strongly dependent on voltage applied to the motor. If long lengths of small diameter wire are used, performance will be severely limited due to the voltage drop caused by the wire. The voltage at the motor should be verified to be at or greater than the rated voltage specified in Table 2; this will allow the unit to achieve the performance values shown here. It is also important to verify that adequate current is available to achieve these performance results.

Table 2

DC POWER DRIVE MODELS

	No Load				Rated Torque								
	CW @ Output Shaft		CCW @ Output Shaft			CW @ Output Shaft				CCW @ Output Shaft			
						With 10' Total of 8 AWG (6 AWG for XXX72X)		12V Across Motor - 12V Models 24V Across Motor - 24V Models		With 10' Total of 8 AWG (6 AWG for XXX72X)		12V Across Motor - 12V Models 24V Across Motor - 24V Models	
Power Drive #'s	RPM	Current (A)	RPM	Current (A)	Rated Torque (in-lb)	RPM	Current (A)	RPM	Current (A)	RPM	Current (A)	RPM	Current (A)
716527	90	25	73	36	750	38	170	51	145	37	190	39	190
716627	87	26	73	29	1040	35	225	48	202	30	260	54	230
716537	90	15	78	17	750	51	70	51	70	45	95	39	105
719527	66	21	57	21	790	34	130	42	117	28	165	36	155
719627	60	17	57	24	1125	28	200	39	205	25	250	42	258
719537	60	14	54	17	790	39	62	42	58	36	79	36	79
719637, 719630	60	15	54	16	1125	32	100	32	105	28	116	27	134
716727	96	30	78	30	1200	33	245	54	245	18	330	27	300
719727	64	27	57	28	1200	24	240	36	200	12	330	21	320

If you require further information on the performance of your Power Drive, contact your Superwinch distributor or Superwinch customer service.

GENERAL SAFETY INFORMATION

1. **NEVER CONNECT YOUR POWER DRIVE TO ANY POWER SOURCE OTHER THAN THAT SPECIFIED ON THE MOTOR. THIS CAN CAUSE DAMAGE TO THE MOTOR AND POSSIBLY FATAL ELECTRICAL SHOCK.**
2. ALWAYS DISCONNECT THE UNIT FROM ITS POWER SUPPLY PRIOR TO PERFORMING ANY MAINTENANCE OR REPAIR.
3. NO POWER DRIVE IS TO BE USED IN A CORROSIVE OR EXPOLSIVE ENVIRONMENT.
4. NEVER OBSCURE THE WARNING LABELS ON YOUR UNIT.
5. DO NOT OPERATE THE POWER DRIVE WHEN UNDER THE INFLUENCE OF DRUGS, ALCOHOL OR MEDICATION.
6. POWER DRIVES ARE INHERENTLY SELF-LOCKING, MEANING THAT UNDER MOST CIRCUMSTANCES A TORQUE OF LESS THAN 3000 in-lb APPLIED TO THE OUTPUT SHAFT WILL NOT CAUSE THE SHAFT TO ROTATE. HOWEVER, VIBRATION OR ROTATION OF THE INPUT SHAFT COULD CAUSE THE BOX TO LOSE ITS ABILITY TO RESIST THIS TORQUE, RESULTING IN A RUN-AWAY CONDITION. **FOR THIS REASON, POWER DRIVES SHOULD NOT BE USED AS A BRAKE IN APPLICATIONS WHERE PERSONAL INJURY OR PROPERTY DAMAGE COULD RESULT FROM A RUN-AWAY CONDITION.**
7. DO NOT MACHINE OR WELD ANY PART OF THE POWER DRIVE. SUCH ALTERATIONS MAY WEAKEN THE STRUCTURAL INTEGRITY OF THE UNIT AND WILL VOID YOUR WARRANTY.

INSTALLATION

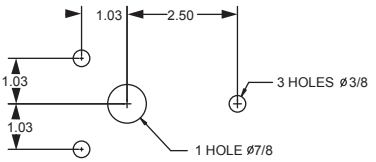
MOUNTING

Three 5/16" UNC x 1/2" deep mounting points are provided on the main output side of the gearbox in order to facilitate bulkhead mounting. The bulkhead should be drilled in accordance with the dimensions in Figure 3. Because of the torque involved, it is important that the mountings are secure, it is recommended that the mounting bolts be of Grade 5 or higher and torqued to 65-75 in-lb.

All three mounting holes must be used. Use only the threaded holes provided, do not drill and tap new hole(s). Do not weld the gearbox or any parts of the unit.

INSTALLATION (CONT.)

Figure 3: Mount Hole Locations (Inches)



COUPLING

Your Power Drive has an output shaft for coupling to a load. Figure 2 on page 3 shows the specifications on the shaft configuration. Care should be taken to ensure that any tube that is rigidly attached to the gearbox is as straight as possible to remove the possibility of an oscillating load.

OVERHUNG LOAD

The table below shows the maximum allowable overhung loads that may be applied to either output shaft at a distance P. P is measured from the oil seal face to the location of the load (see Figure 2).

P (in)	Max. Overhung Load (Lbs.)	P (in)	Max. Overhung Load (Lbs.)
0.75	900	3.75	270
1.75	504	4.75	216

SPLASH COVER

A Splash Cover and 2 mounting screws are provided with each unit. If you have a manual override unit, remove the round black plastic cover from the gearbox (Figure 1) and install it into the access hole in the splash cover. Once the gearbox installation is complete, place the splash cover over the unit and install the two self-tapping screws into the gearbox housing.

ELECTRICAL CONNECTION – DC UNITS

This section applies to the electrical connections of the DC Power Drives only.

⚠CAUTION When attaching wires to the motor terminals, hold the inner nut when tightening the outer nut. Do not allow terminals to rotate causing internal wire breakage.

⚠CAUTION Leave all cable connections to the battery terminals unconnected until all wiring has been installed and checked thoroughly for correct connections. All wiring should be bound and securely fastened to the adjacent structure using cable ties where necessary.

This unit operates on standard automotive direct current. Proper wire size and length are critical for the unit to perform properly. See the Performance section for further information.

ELECTRICAL CONNECTION – DC UNITS, (CONT.)

This section applies to the electrical connections of the DC Power Drives only.

CONNECTIONS

Electrical connection is made via the two 1/4-20 UNC studs on the end of the motor (see Figure 2 on page 3). Hold the inner nut with a wrench when tightening the outer nut. Torgue the outer nut to 21-26 lb. in.

Step (1) Disconnect the battery "negative" terminal connection.

Step (2) Check motor terminals against Figure 2 for identification.

Step (3) Connect stud 1 to the positive terminal and stud 2 to the negative terminal. This will cause the gearbox output shaft to rotate in a clockwise direction as viewed from the mounting side. Reversing the connections will reverse the direction of rotation.

POWER DRIVE ASSEMBLY

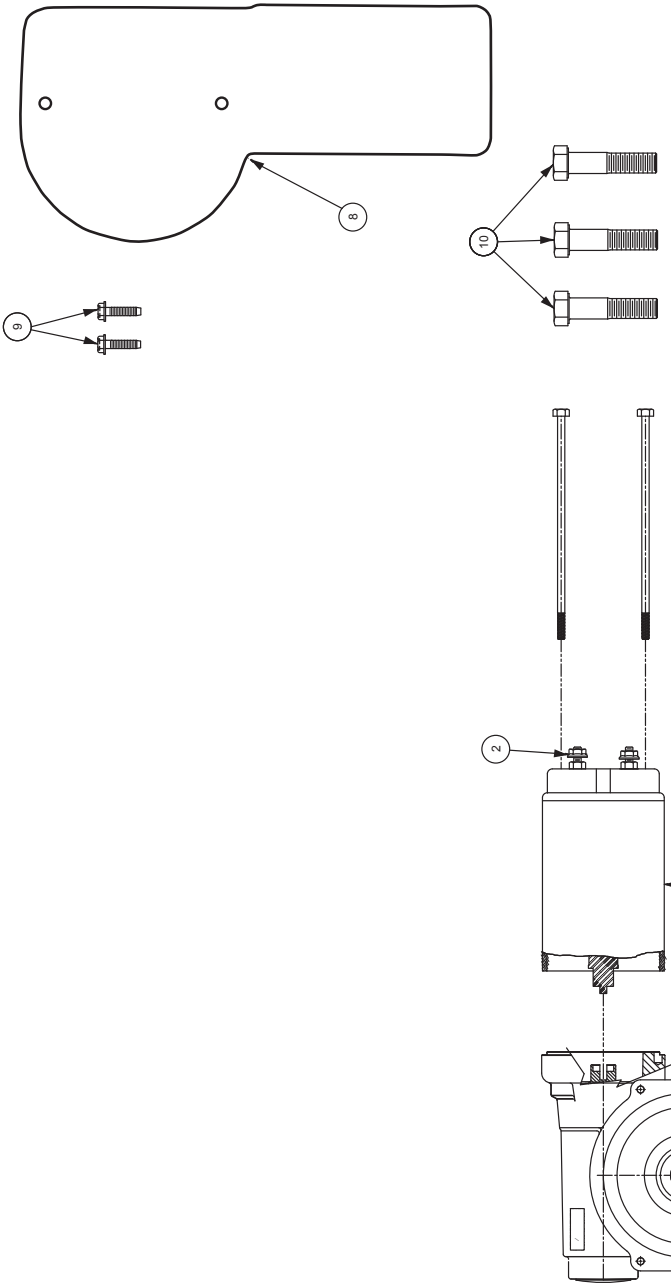


Figure 6: Power Drive Assembly

REPLACEMENT PARTS

Item	Qty.	Description	Part No.
1	1	12V Motor (Power Drive #'s 719527 716527)	90-33319
1	1	12V Motor (Power Drive #'s 719627 716627)	90-33295
1	1	24V Motor (Power Drive #'s 719537 716537)	90-33320
1	1	24V Motor (Power Drive #'s 719637 719630, 719632)	90-33318
1	1	12V Motor (Power Drive #'s 716727 719727)	90-33294
2	2	Flanged Nuts, 1/4 -20	90-23149-02
8	1	Splash Cover (Power Drive #'s 719537, 716537)	60-33291-01

Item	Qty.	Description	Part No.
8	1	Splash Cover (Power Drive # 719630)	60-33302-01
8	1	Splash Cover with Screws (Power Drive #'s 716527, 716627, 716727, 719527, 719621, 719627, 719631, 719637, 719727)	61-17315
9	2	Self-tapping Cover Screw	60-23039-12
10	3	5/16 UNC Grade 5 or Better Mounting Bolts and Washers	Not Supplied

MAINTENANCE AND REPAIR

Periodically check the tightness of mounting bolts and electrical connections. Remove any dirt or corrosion that may have accumulated on the electrical connections.

Repairs should be done by Authorized Superwinch Repair Centers ONLY. Do not attempt to disassemble the gearbox. Disassembly will void your warranty.

LUBRICATION

The gearbox is lubricated and sealed for life. If re-lubrication is necessary (following repair or disassembly), the gearbox should be filled with 5 ounces of Mobil SHC 630 lubricant or equivalent.