



## ULTERRA

Our Quality Assurance and Engineering teams are requesting all Ultrerra models that have steering or lift-system issues to come back to the factory for our diagnosis during the first year of production (2015 models). Please direct the consumer to our call center for assistance.

If the motor has an internal lower unit/motor assembly problem (armature, brushes, seals, etc...) please repair the motor, as all service providers should be familiar with this assembly.

Shaft or complete lower unit replacements will also need to be serviced at the factory during 2015.

A large, stylized logo for 'REEL SCHEMATIC' with a gear-like background. The word 'REEL' is in blue and 'SCHEMATIC' is in orange, both in a bold, blocky font.

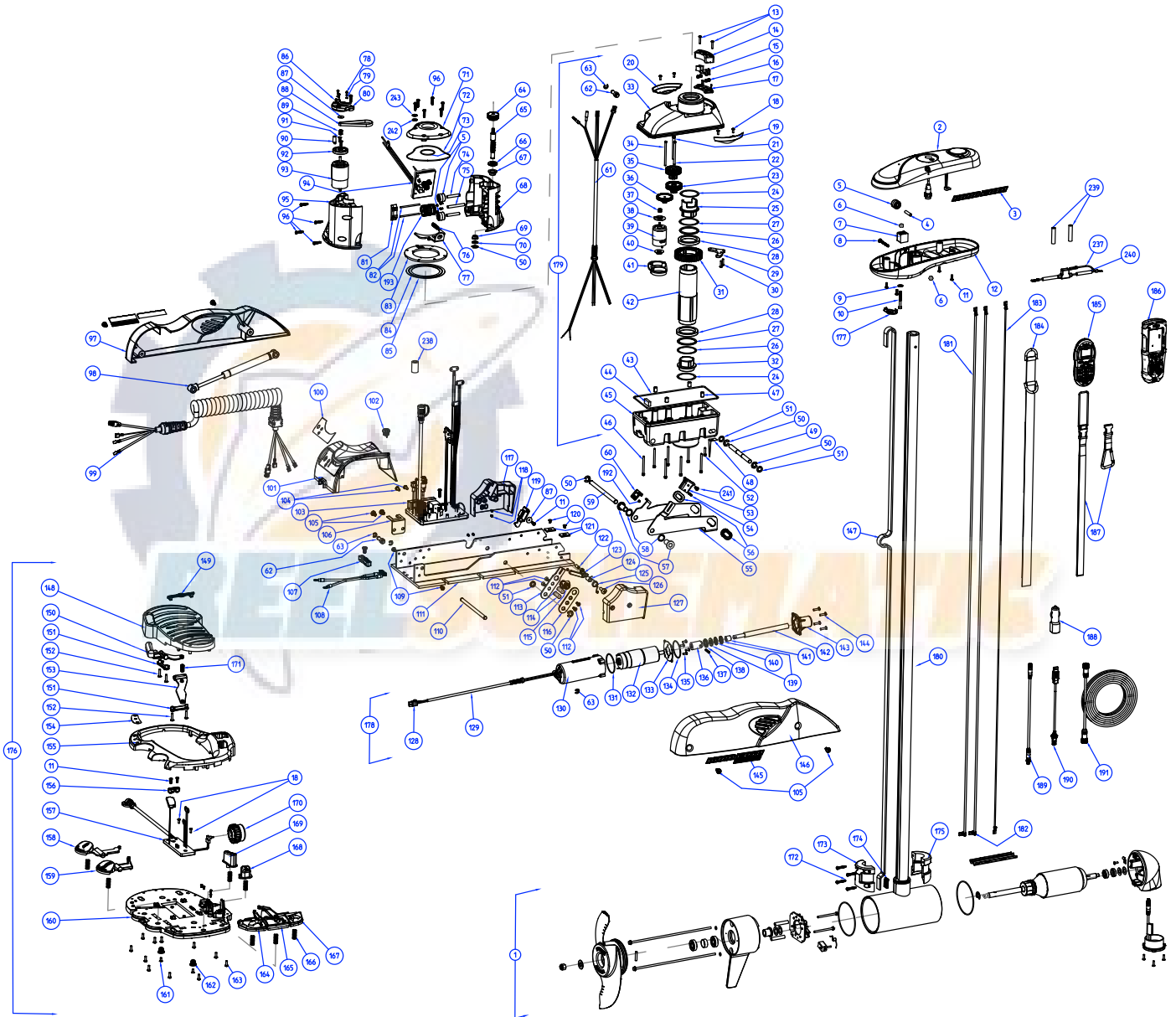
**REEL SCHEMATIC**

# PARTS DIAGRAM

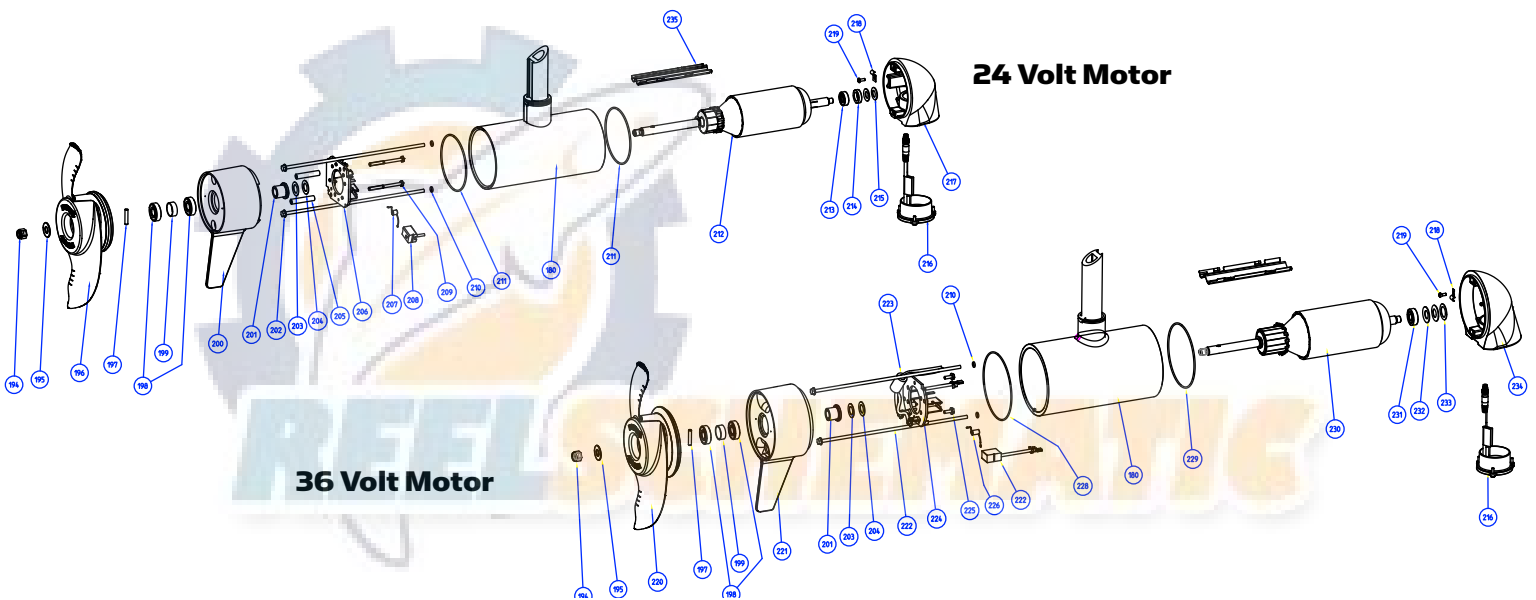
for use with "P" serial numbers 2-year warranty

Ultra 80 & 112

24-volt (56 amps) & 36-volt (52 amps)



# PARTS DIAGRAM



# PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	2777016	24 V MOTOR 45° FW
	1	2777015	24V MOTOR 60° FW
	1	2777086	36V MOTOR 45° FW
	1	2777085	36V MOTOR 60° FW
2	1	2990206	HEAD ASSY, FW, IPILOT 1.5
	1	2990208	HEAD ASSY, FW, IPILOT LINK
3	2	2205511	DECAL, CONTROL BOX SIDE
4	1	2202635	PIN-DOWEL, 1/4" OD SS
5	3	2202335	PULLEY, BELT, TOP
6	2	2333101	NUT-HEX #10-24
7	1	2202800	BLOCK, BELT
8	1	2332102	SCREW-#10-24 X 1-3/4
9	1	2201721	WASHER, #10 SAE, SS
10	1	2203411	SCREW-#10-24, SHCS, SS
11	6	2372100	SCREW, #8-18 X 5/8 THD
12	1	2202506	CONTROL BOX BOTTOM
13	2	2203406	SCREW, #6-32 X 0.75 PPH, SS
14	1	2202820	BLOCK-BRUSH, SLIPRING
15	2	2208207	BRUSH SHUNT ASSEMBLY
16	4	2202712	SPRING COMPRESSION, BRUSH
17	1	2202815	INSULATOR, BLOCK-BRUSH
18	6	2332103	SCREW-#6-20 X 3/8 THD, SS
19	1	2205905	RIGHT STEERING ADAPTER
20	1	2205900	LEFT STEERING ADAPTER
21	1	2302615	SHAFT-GEAR, INTERMED. CLUSTER
22	1	2302620	SHAFT-GEAR, THIRD CLUSTER
23	1	2302250	GEAR & PINION, DR. HSG, STAGE 3
24	2	2321704	WASHER-THRUST, STEERING
25	1	2201510	COLLAR-DRIVE, OUTPUT TUBE
26	2	2324608	O-RING, 224, PD PRO STEERING HOUSING
27	2	2321720	SHIM, O-RING
28	2	2327308	BEARING-BALL, SEALED, 6809-2R5
29	1	2201920	BRACKET-SENSOR, STEERING HSG
30	2	2303412	SCREW-#6-20 X 5/8 SELF TAP
31	1	2322200	GEAR-OUTPUT
32	1	2321510	COLLAR-DRIVE, BOTTOM
33	1	2206501	BLACK STEERING HSG COVER
34	1	2302610	SHAFT-GEAR, FIRST CLUSTER
35	1	2302255	GEAR & PINION, STAGE 4
36	1	2302245	GEAR & PINION, STAGE 2
37	1	2302240	GEAR & PINION, STAGE 1
38	1	2300265	CAP-MOTOR, PLASTIC
39	1	2327025	MOTOR-STEERING PD/AP 36V
	1	2327020	MOTOR-STEERING PD/AP 24V
40	1	2300260	CAP-SPACER, PLASTIC
41	1	2328610	CRADLE-MOTOR
42	1	2322030	TUBE-OUTPUT, MACHINED
43	1	2324604	O-RING, CASE SEAL
44	1	2308601	BREATHER FILTER, DR. HSG
45	1	2326506	STEERING HSG, BTM, BLK
46	7	2323408	SCREW-#8-32 X 2.0 SHCS SS
47	4	2302605	PIN-ROLL 5/16" X 1/2"
48	2	2322702	SPRING, LATCH PIN SS
49	1	2202625	PIN-LATCH
50	5	2263011	E-RING 3/8 DIA. SHAFT
51	3	2321702	WASHER-FLAT .375 NYLON
52	1	2323410	SCREW-#8-32 X .75 SHCS SS
53	1	2200100	KNOB, TILT RELEASE
54	1	2383463	SCREW-#6-32 X .625" SET SS
55	1	2201911	BRACKET, TILT, ZP
56	2	2207305	BUSHING, LATCH PIN
57	2	2207310	BUSHING, STRG HSG PIVOT
58	2	2201730	WASHER-FLAT, .56 ID NYLON
59	1	2202601	PIN-PIVOT, DRIVE HOUSING, SS
60	1	2778601	HOLDER, TILT, ZP
61	1	2200600	LEADWIRE, STEERING MTR, 8 COND.
62	2	2202902	STANDOFF, OIL DAMPENER
63	4	2263006	E-CLIP, 5/16
64	1	2202332	PULLEY, TRIM JACKSHAFT
65	1	2772310	WORM SHAFT ASSY W/ PULLEY

ITEM	QTY	PART NUMBER	DESCRIPTION
66	1	2200000	BEARING-THRUST, NEEDLE
67	1	2207300	BUSHING, TRIM, TOP
68	1	2206525	HOUSING-TRIM, GEAR SIDE
69	1	2207301	BUSHING, TRIM, BOTTOM
70	1	2201710	WASHER-THRUST, 3/8"
71	1	2206410	COVER, TRIM HOUSING
72	1	2204601	O-RING, TRIM HOUSING
73	1	2204600	O-RING, TRIM HSG COVER
74	2	2202610	PIN, BELT PULLEY
75	1	2202621	PIN, 2"X1/4"
76	1	2202701	SPRING, 5/16" OD, SS
77	1	2200901	HANDLE, TRIM HSG RELS, ZP
78	3	2053422	SCREW-M3-.5 X 10 PPH, ZP
79	3	2051710	LOCKWASHER-SPLIT, 3MM, ZP
80	1	2206400	PLATE, MOTOR
81	1	2202825	BLOCK, TUBE DRIVE
82	2	2202636	PIN-DOWEL, 1/8"
83	1	2208620	CARRIER, SLIPRING CONTACTS
84	1	2203011	CONTACT, SLIPRING SMALL
85	1	2203010	CONTACT, SLIPRING LARGE
86	1	2053420	SCREW-SET-#8-32 X 1/4" SS
87	1	2201722	WASHER-#6, .625 OD
88	1	2200810	BELT-TRIM
89	1	2202336	PULLEY, LIFT MOTOR, MACHINED
90	1	2058411	TENSIONER-BELT
91	2	2053424	SCREW-M4 X 10 PFH, ZP
92	1	2051915	PLATE-ADAPTER, LIFT MOTOR
93	1	2207800	MOTOR, TRIM
94	1	2204003	BOARD ASSY, WIRELESS TRIM
95	1	2206520	HOUSING-TRIM, MOTOR SIDE
96	11	3393481	SCREW, #10X.75 HI-LO, SS, PPH
97	1	2203905	SIDEPLATE, LEFT
98	1	2208800	DAMPER, HYBRID, 80#
	1	2208802	DAMPER, HYBRID, 112#
99	1	2991272	COIL CORD ASSY 54/60" U. SONAR
100	1	2205600	DECAL, B. METER/CON/PWR FW, BLK
101	1	2206510	HOUSING-CONTROL, BLACK
102	1	2202910	STRAIN RLF, HEYCO SR 6N3-4
103	1	2774080	MAIN CONTROL BOARD, 24V, 60°, N AMERICA
		2774081	MAIN CONTROL BOARD, 24V, 45°, N AMERICA
		2774082	MAIN CONTROL BOARD, 36V, 60°, N AMERICA
		2774083	MAIN CONTROL BOARD, 36V, 45°, N AMERICA
		2774084	MAIN CONTROL BOARD, 24V, 60°, EUROPE
		2774085	MAIN CONTROL BOARD, 24V, 45°, EUROPE
		2774086	MAIN CONTROL BOARD, 36V, 60°, EUROPE
		2774087	MAIN CONTROL BOARD, 36V, 45°, EUROPE
104	2	2323406	SCREW-#10-24 X .50 CRPH SS
105	7	2323404	SCREW-1/4-20 X 1/2" T-L ZP
106	1	2200821	CLIP-CORD, ZP
107	1	2321310	STRAIN RELIEF
108	1	2090651	LEADWIRE, 10 GA
109	2	2383447	SCREW-#10-32 X 3/8" PPH SS
110	1	2202606	PIN, ACTUATOR, ZP
111	1	2201901	BASE, MACHINED, FW
112	4	2203410	SCREW #10-32 X .5"
113	1	2204201	ARM-LIFT, INNER, ZP
114	2	2202901	STANDOFF, LIFT ARM
115	1	2203100	NUT, TILT MOTOR
116	1	2204206	ARM-LIFT, OUTER, ZP
117	1	2203916	RAMP-MOTOR, LEFT 80#
	1	2203915	RAMP-MOTOR, LEFT 112#
118	10	2373440	SCREW-#4-24 X 1/4 PHCR SS TY B
119	1	2773700	PLUNGER, RAMP
120	2	2203420	SCREW #10-24 X 5/16 PFH
121	2	2205105	PAD, STOP
122	1	2262632	PIN-SPRING 1/4" X 5/8" SS
123	1	2207900	CAM, PIN SENSOR
124	1	2201702	SPACER, PIN SENSOR
125	1	2042711	SPRING-TORSION, SS
126	1	9280710	HDW SCR 1/4 - 20 X 7/8 TRUSS PHIL



# PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
127	1	2203911	RAMP-MOTOR, RIGHT, 80#
		2203910	RAMP-MOTOR, RIGHT, 112#
128	1	2206550	HOUSING, CONNECTOR WPJ
129	1	2200601	LEADWIRE, TILT MOTOR
130	1	2206421	COVER, TILT ACTUATOR
131	1	2204610	O-RING, TILT, LARGE
132	1	2207810	MOTOR, STOW/DEPLOY
133	1	2201930	MOUNTING PLATE, TILT MOTOR
134	1	2204611	O-RING, TILT, SMALL
135	4	2203400	SCREW-M4 X 8, SS
136	1	2200830	COUPLER, STW/DPLY ACTUATOR
137	1	2202631	SPRING PIN, 5MM X 20MM
138	1	2204620	SEAL, TILT MOTOR
139	2	2201713	WASHER-THRUST, TILT MOTOR
140	1	2200005	BEARING-THRUST, TILT MOTOR
141	1	2201704	SPACER, SHAFT
142	1	2202315	SHAFT, STOW/DEPLOY, SS
143	1	2206425	COVER-NOSE, TILT ACTUATOR
144	4	2373483	SCREW-#8-18 X 5/8" PPH
145	2	2205510	DECAL, SIDEPLATE, FW
146	1	2203900	SIDEPLATE, RIGHT
147	1	2200818	BELT-LIFT 5MM HTD
148	1	2324400	PEDAL, HEEL/TOE FOOT PEDAL
149	1	2326710	PLUG, FOOT PEDAL
150	1	2323710	BUTTON, MOM LEFT, FT PEDAL
151	2	2321300	CLAMP-LEFT, FT PEDAL
152	4	2223430	SCREW-#8 X 3/4 PPH
153	1	2328600	FLEX FINGER, FOOT PEDAL
154	1	2205605	DECAL, 3 INDICATORS
155	1	2200200	COVER, HEEL TOE FOOT PEDAL
156	1	2322900	STRAIN RELIEF, FOOT PEDAL
157	1	2204008	PCB ASSY, FOOT PEDAL
158	1	2323725	BUTTON, AP, FT PEDAL
159	1	2323715	BUTTON, MOM/CON, FT PEDAL
160	1	2204500	BASE PLATE
161	2	2323420	SCREW, #8-18 3/8 PFH SS
162	2	2322706	SPRING-BARREL SS
163	11	2301310	SCREW, #8-18 X 1/2" SS
164	1	2203710	BUTTON, LFT STR W/ TRIM UP ARROW
165	1	2203715	BUTTON, MOMENTARY/STOW-DEPLOY
166	7	2322704	SPRING, LARGE SHORT SS
167	1	2203711	BUTTON, RGT STR W/ TRIM UP ARROW
168	1	2203720	BUTTON, SPOT LOCK
169	1	2203725	BUTTON, MODE
170	1	2320100	KNOB-SPEED, FOOT PEDAL
171	1	2322714	SPRING, MOM ASSIST SS
172	4	3393480	SCREW-#10 X 1.0" PPH HI-LO SS
173	1	2201505	COLLAR, BELT CLAMP
174	1	2200800	BELT-RACK, LOWER
175	1	2201500	COLLAR, CLAMP
176	1	2994740	FOOTPEDAL ASSEMBLY
177	1	2224700	PLUG INSERT (IPILOT)
		2224701	PLUG INSERT (IPILOT LINK)
178	1	2997813	TILT MOTOR ASSY
179	1	2996502	STEERING HOUSING ASSY
180	1	2777098	CTR HSG ASSY, CB, 80#, FW, W/TUBE, 45"
	1	2777099	CTR HSG ASSY, CB, 80#, FW, W/TUBE, 60"
	1	2777248	CTR HSG ASSY, CB, 112#, FW, W/TUBE, 45"
	1	2777249	CTR HSG ASSY, CB, 112#, FW, W/TUBE, 60"
181	1	640-118	LEADWIRE, RED, 80#, 45"
	1	640-132	LEADWIRE, RED, 112#, 45"
	1	640-126	LEADWIRE, RED, 80#, 60"
	1	640-135	LEADWIRE, RED, 112#, 60"
182	1	640-027	LEADWIRE, BLACK, 80#, 45"
	1	640-017	LEADWIRE, BLACK, 112#, 45"
	1	640-022	LEADWIRE, BLACK, 80#, 60"
	1	640-045	LEADWIRE, BLACK, 112#, 60"
183	1	640-315	GROUNDWIRE, BROWN, US2.0, 45"
	1	640-316	GROUNDWIRE, BROWN, US2.0, 60"
184	1	2203800	STRAP, EMERGENCY

ITEM	QTY	PART NUMBER	DESCRIPTION
185	1	2994171	REMOTE ASSY, IPILOT L15
186	1	2994180	REMOTE ASSY, IPILOT LINK *LINK ONLY*
187	1	2370817	LANYARD, REMOTE W/ CARABEENER
188	1	2375901	ADAPTER, USB DC POWER *LINK ONLY*
189	1	2211415	CABLE-EXTENSION, PD/AP 110"
190	1	2373241	CABLE, USB REMOTE CHARGER *LINK ONLY*
191	1	490389	CABLE, ETHERNET, 30' * LINK ONLY*
192	9	2378448	.187 X .125 MAGNET
194	1	2093101	NUT-PROP, NYLOCK, SS
195	1	2091701	WASHER-PROP
196	1	2331160	PROP-WW2, 80#
197	1	2262658	PIN-DRIVE 1" X 3/16" SS
198	2	880-025	SEAL
199	1	725-095	PAPER TUBE, SEAL
200	1	421-070	BRUSH END H5G, 80#
201	1	144-017	BEARING, FLANGE
202	2	830-095	THRU BOLT 12-24
203	1	990-052	WASHER, NYLATRON
204	1	990-051	WASHER-STEEL THRUST
205	2	973-025	SPACER, BRUSHPLATE
206	1	9-738-015	BRUSH PLATE ASSY, 4"
207	2	975-041	SPRING-TORSION
208	2	186-094	BRUSH 4"
209	2	830-027	SCREW-BRUSH PLATE 10-32
210	2	701-009	O-RING, THRU BOLTS
211	2	701-043	O-RING, END HOUSINGS
212	1	2-100-214	ARMATURE ASSEMBLY
213	1	140-010	BEARING - BALL
214	1	990-045	SPACER, THRUST
215	2	992-010	WASHER, SPRING BELLEVILLE
216	1	987-113	TRANSDUCER ASSY US 2.5, 80#, 45"
		987-114	TRANSDUCER ASSY US 2.5, 112#, 45"
		987-116	TRANSDUCER ASSY US 2.5, 80# & 112#, 60"
217	1	421-285	PLAIN END HOUSING MACHINED, SONAR
218	1	230038	CABLE CLAMP, STEEL
219	1	2302104	SCREW-#6 X 3/8
220	1	2341160	PROP-WW2, 112#
221	1	421-150	BRUSH END H5G, 112#
222	2	830-094	THRU BOLT 12-24
223	1	2307312	BEAD-FERRITE
224	1	9-738-011	BRUSH PLATE ASSY, 4.5"
225	2	2053410	SCREW-BRUSH PLATE, 10-32
226	2	975-045	SPRING-TORSION
227	2	188-095	BRUSH, 4.5" LU
228	1	701-107	O-RING, BRUSH END
229	1	701-098	O-RING, PLAIN END
230	1	2-100-245	ARMATURE ASSY.
231	1	140-014	BEARING - BALL
232	2	992-011	WASHER, SPRING BELLEVILLE
233	1	990-011	WASHER, 5HIM
234	1	421-245	PLAIN END HOUSING, ASSY
235	1	582-013	CLIP, RETAINING SHORT
236	1	582-016	CLIP-RETAINING, SONAR
237	1	2218200	FUSE HOLDER ASSY
238	1	2307313	FERRITE BEAD
239	2	2065400	WIRE INSULATOR-LGE 1-3/4, BLUE
240	2	2375400	SHRINK TUBE-1/4 OD X 1-3/4
241	1	2203407	SCREW, #6-32 X .5
242	6	3391732	SEALING WASHER
243	6	3394602	FLAT WASHER #8

# PARTS LIST

## SERVICE KITS

DESCRIPTION	PART NO.	ITEM NUMBER INCLUDED / QUANTITY
TRIM MOTOR ASSY	2777810	87 (1), 89 (1), 90 (1), 91 (2), 92(1), 93 (1)
TILT BRACKET ASSY	2774201	50 (1), 51 (1), 112 (4), 113 (1), 114 (2), 115 (1), 116 (1)
OUTPUT GEAR W/ MAGNETS	2772200	31 (1), 192 (4)
CAM W/ MAGNET AND SPRING PIN	2777900	122 (1), 123 (1), 192 (1)
PLUNGER W/ MAGNET	2773700	119 (1), 192 (1)
WORM GEAR W/ MAGNET	2772206	192 (1), 193 (2)
WORM SHAFT ASSY W/PULLEY	2772310	64 (1), 65 (1)
MAGNET HOLDER W/ MAGNET	2778601	60 (1), 192 (1)
RELEASE KNOB W/ SCREW	2770100	53 (1), 54 (1)
SENSOR WIRE W/ BUTT CONNECTORS	2880350	
SLIP RING AND CARRIER KIT	2883010	83 (1), 84 (1), 85 (1)
MOUNTING BAG	2994917	



# MOTOR WIRING DIAGRAM

**NOTE:** This is a universal, multi-voltage diagram. Double-check your motor's voltage for proper connections. Over-Current Protection Devices not shown in this illustration.

