System Specifications

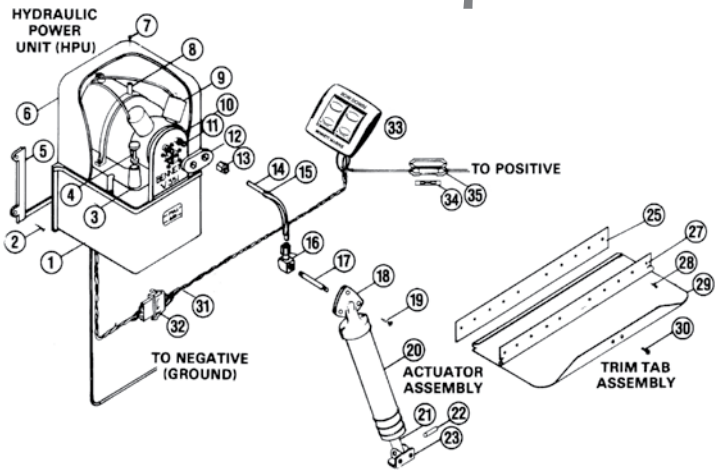

Diagram #	Description	Part #
1	Fluid Reservoir	VP1139
2	#10 x 1" Philip Pan Head Sheet Metal Screw	H1180
3	Filler Stack	——
4	Filler Plug	VP1140
5	Mounting Bracket for HPU	H1179
6	Lexan Cover	VP1138
7	#8 x 3/4" Philip Pan Head Sheet Metal Screw	VP1154
8	Motor Strap	VP1142
9	Solenoid Valve	VP1135-R (red)
		VP1135-G (green)
10	Faceplate for HPU	VP1144
11	1/8 Pipe to 1/4" Tube Connector	VP1146
12	Hex Retainer	VP1141
13	Nut with Ferrule	T1127
14	Hydraulic Tubing (20' unless otherwise specified)	T112520
15	Tube Bending Clip	H1173
16	Female Elbow	H1172
17	Pipe Nipple (3" unless otherwise specified)	H11713
18	Upper Hinge	A1103
19	#14 x 1-1/2" Philip Pan Head Sheet Metal Screw	H1174
20	Cylinder Body	A1105
21	Piston with O-Ring	A1109
22	Lower Hinge Pin	A1115
23	Lower Hinge	A1113
25	Backing Plate	varies with length
27	Hinge Plate	varies with length
28	#10 x 1-1/4" Philip Pan Head Sheet Metal Screw	EH1071
29	Trim Tab Only	varies with size
30	1/4 - 20 x 3/4" Philip Pan Head Sheet Metal Screw	H1175
31	Wire Harness (22' unless otherwise specified)	WH1000
32	Quick-Disconnect Plug	VP1143
33	Euro-Style Rocker Switch Control	ES2000
34	20 Amp Fuse (12 volt system)	H1176
35	Fuse Holder	H1178

System Specifications (continued)

SYSTEM COMPONENT SPECIFICATIONS

Trim Tabs:	Stainless steel
Actuators:	Upper hinge material (Part #A1103) made of flexible nylon. Remainder of actuator made of high impact fiberglass-filled nylon.
Hydraulic Power Unit (HPU):	HPU draws approximately 18 amps (broken-in) and operates on 12 volts DC (except 24 volt HPUs). Approximately 22 ounces of ANY TYPE AUTOMATIC TRANSMISSION FLUID (ATF) is required to fill reservoir to proper level for single actuator installations. With trim tabs fully retracted, proper fluid level is about 2" from bottom of reservoir. The HPU forces both trim tabs full-up to full-down in 8-10 seconds, individually in 4-5 seconds. (Trim tab travel on dual actuator systems takes twice as long).
Helm Control:	Controls on 12 volt systems use 20 amp in-line fuse (24V systems use 10 amp in-line fuse).
Hydraulic Tubing:	Tubing has 1/4" outside diameter
Wire Harness:	Wire colors and their functions:

Red	Port valve
Green	Starboard valve
Yellow	Motor reverse (pump retract)
Blue	Motor forward (pump pressure)
Black on HPU	Ground
Orange on helm control	Positive

System Information

Bennett Trim Tabs are built to rigid quality standards. However, the marine environment is harsh. So, in the unlikely event a malfunction occurs, here is some helpful information:

1. If trim tabs do nothing … no movement … no sound from HPU:
   - Inspect for blown 20 amp in-line fuse in helm control's orange wire.
   - Inspect for disconnected or corroded connections on HPU ground wire, orange positive wire from helm control, and quick-disconnect plug.
2. If HPU motor runs but trim tabs do not move:
   - Inspect for disconnected or corroded red and green wire connections at helm control and quick-disconnect plug.
   - The following test can be used to help isolate a malfunction. Remove wires from helm control and touch together as follows:

Operation	Reaction
Orange (+), blue, red	Port trim tab down
Orange (+), blue, green	Starboard trim tab down
Orange (+), blue, red, green	Both trim tabs down
Orange (+), yellow, red	Port trim tab up
Orange (+), yellow, green	Starboard trim tab up
Orange (+), yellow, red, green	Both trim tabs up

   If trim tabs function in each of the above combinations, check helm control. If during this test trim tabs continue to malfunction, inspect HPU.

3. If one trim tab operates and the other one does not:
   - Inspect for disconnected or corroded red or green valve wire connections at helm control and quick-disconnect plug. (Red wire operates port trim tab; green wire operates starboard trim tab).
   - Reverse hydraulic lines at front of HPU to determine if malfunction is in HPU or actuator / hydraulic connections. If after reversing lines, symptom shifts to other trim tab, malfunction may exist in HPU. If symptom remains on the same side, malfunction may exist with the actuator/hydraulic connections.
4. If trim tabs go down but will not retract:
   - Inspect for low voltage of the battery. Check battery voltage while HPU (or another accessory) is running. If voltage is less than 10 volts, valves may not open.
   - Inspect for disconnected or corroded connections on helm control, and quick-disconnect plug.

This general information is not intended to be complete. Please feel free to call Bennett Marine to assist in solving situations not clarified or addressed above. Bennett Marine customer service is available to help Monday through Friday, 8 a.m. to 5 p.m. Eastern time by calling (866) 894-1626.

MAINTENANCE

- Periodically, check fluid level in HPU. With trim tabs completely retracted, fluid level should be about 2" from bottom of reservoir (approximately 22 ounces). To refill, remove lexan cover and filler plug located at the front left hand corner of the reservoir. FILL WITH ANY TYPE AUTOMATIC TRANSMISSION FLUID (ATF) ONLY. Brands or types of ATF can be mixed. Running HPU with an excess or lack of fluid will not cause damage to the trim tab system.
- Periodically, check for clean electrical connections on back of control, HPU ground wire, and quick-disconnect plug.
- Cold temperatures do not affect the trim tab system. No winterization is necessary.
- (SALTWATER ONLY) To deter electrolysis, a zinc anode should be attached to the top of each trim tab. Zinc must make direct contact with stainless steel. Do not paint zinc. Do not ground trim tabs to other underwater appendages.
- Paint trim tabs to discourage marine growth.
    1. Clean surface of all grease, oil, dirt.
    2. Apply two coats of epoxy metal primer.
    3. Apply two coats of anti-fouling paint.
       Actuator, including the piston, may be painted.
- Unpainted trim tabs may acquire an orange discoloration. THIS OXIDATION OF SURFACE CARBON MOLECULES IS NORMAL. The integrity of the stainless steel is not affected. Orange coating can be cleaned off, but may eventually return. **Note:** This discoloration should not be confused with the pitting and corrosion of electrolysis.

SAFETY INFORMATION

- Take immediate action to correct any malfunction or failure of your trim tabs.
- Occasionally, check for loose or corroded wiring connections.
- Stepping on the trim tab may cause damage to the unit, or injury.
- Make sure the HPU is mounted in a dry location to avoid drenching and consequent failure.
- Leaving the actuator extended when boat is not in use will not cause seal damage.
- Occasionally, inspect HPU fluid level.