



B-SERIES

PARTS COUNTERMAN'S CATALOG

Section 5

Gauges & Controls



WHAT YOU WILL FIND IN THIS SECTION...

Gauges

Control Panels & Components

Throttle Controls

Pendant Controls

Wireless Remotes



REAR CONTROL PANEL

121001341 Rev C (With Pendant Socket)

121004508 Rev A (W/O Pendant Socket)

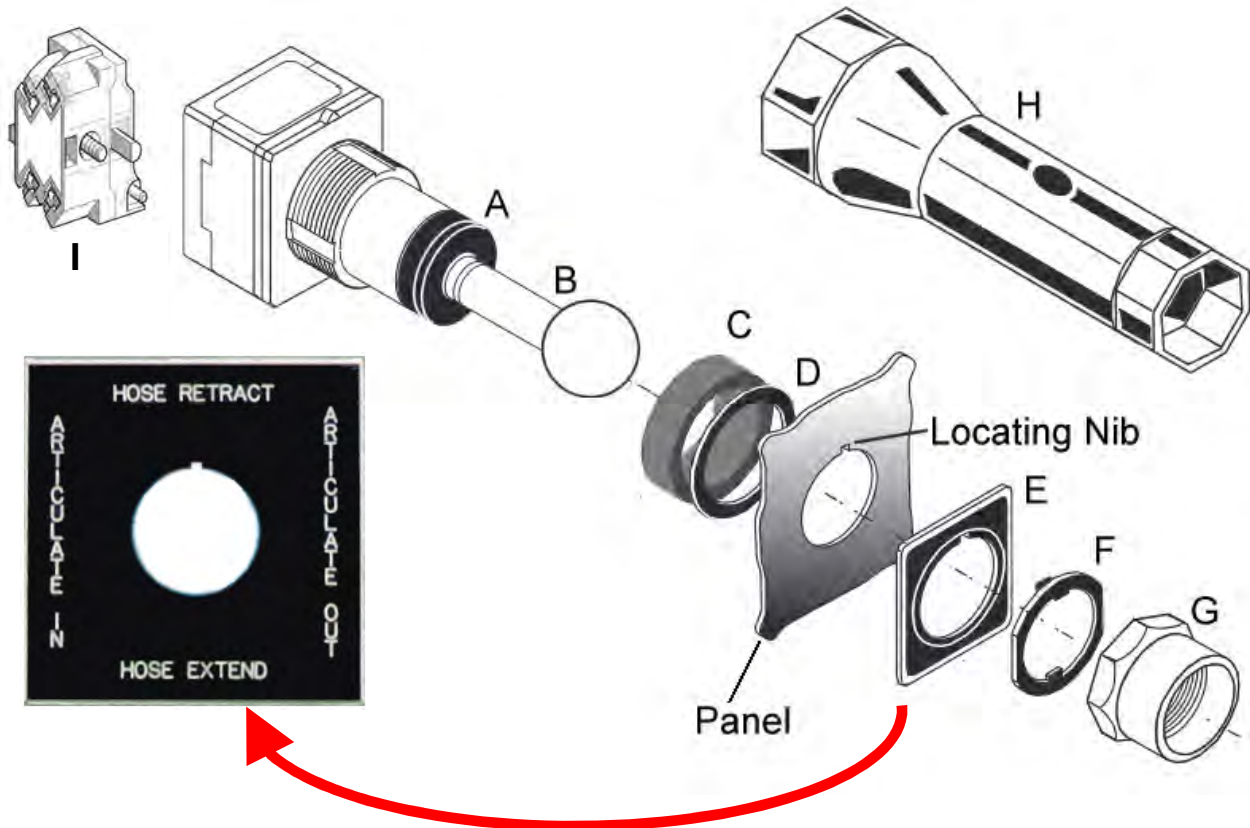


PART NO.	DESCRIPTION	QTY
10000064	Bare Enclosure	1
A383409	Tachometer	1
A131788	Water Pressure Gauge	1
A380131	Emergency Stop Switch	1
A122003-LED	Green Pilot Lamp	1
A122007-LED	Red Pilot Lamp	1
10000068	12V Accessory Socket	1
A110452-2	Boom Joystick	1
121002403	Hose Reel Joystick	1
A120020-LED	Optional Panel Lamp	1
A120180	Toggle Switch, Off-On, 2-Position	AR
A120859-1	Toggle Switch, Off-Mom On, 2-Position	AR
A120861-2	Toggle Switch, Mom On-Off-Mom On, 3-Position	AR
A120861-3	Toggle Switch, Blower & Water Pump	2
A121735	Toggle Switch Rubber Boot	AR



121002403

HOSE REEL CONTROL JOYSTICK



ITEM	PART NO.	DESCRIPTION
A	121002403-RB	Rubber Boot
B	121002403-OP	Operator (Knob)
C	121002403-SP	Plastic Spacer
D	121002403-GK	Gasket
E	121002403-LP	Legend Plate
F	121002403-LW	Locking Thrust Washer
G	121002405	Ring Nut
H	121002403-WR	Ring Nut Tool
I	300001758	Contact Block (2 Used)

SERVICE REPLACEMENT REAR CONTROL PANEL



Pictured below is our basic B-series rear control panel as supplied to us from our panel supplier. Additional items are added during production depending on what options the unit is equipped with, such as toggle switches for work lights, throttle potentiometer for a Cummins engine, or the cable grip and harness for the joystick option. When purchasing a service control panel, these items have to be ordered separately or transferred from the old panel. The table below lists the major items that comes standard with the control panel. NOTE: The current replacement panel may not match the original in appearance as the brand of the NEMA enclosure used has changed over the years. See parts bulletin AQP-B-122 for more information on panel box changes.

Starting in March 2011 we started using split shaft PTOs that include engagement switches to switch on the blower and water pump indicator pilot lights on the rear control panel (positive feedback). Prior to this the blower and water pump engagement toggle switches on the panel switched on the pilot lights. Therefore there is a part number difference between the prior (p/n A246515A-C) and current (p/n A384115) panels.

The older design (p/n A246515A-C) will replace rear control panels on B-series units back to the late 90s when Aquatech began using NEMA enclosures. There are no replacement panel assemblies available for older units built with non-NEMA type enclosures.

A246515A-C	Rear Control Panel for Units Built Prior to March 2011
A384115	Rear Control Panel for Units Built March 2011 Onward

Bill of Material of Major Components

A246115A-C	QTY	PART NO.	DESCRIPTION	QTY	A384115
	1	A246515A-1	Enclosure Only w/Locks, Pre-drilled	1	
	1	A239443	Key for NEMA Enclosure Lock	1	
	1	TBA	Terminal Strip	1	
	1	A383409 *	Tachometer, Murphy Alternator Pulse	1	
	1	A131786	Water Pressure Gauge, 0-5K psi	1	
	1	A131765	Vacuum/Pressure Gauge, 30"hg-15psi	1	
	1	A380131	Emergency Stop Switch	1	
	2	A120861-3	Toggle Switch, Blower & Water Pump	2	
	2	A120145	Metal Guard, Toggle Switch	2	
	2	A122003	Green Pilot Light	2	
		A122007	Red Pilot Light	1	
	1	A120861-2	Toggle Switch, Throttle Control	1	
	1	A120861-2	Toggle Switch, Hose Payout/Retrieve	1	
	1	A120859-1	Toggle Switch, Boom Flapper	1	
	5	A121735	Rubber Boot, for all Toggle Switches	5	
	2	A120610	Push Button Switch, Reel Articulation	2	
	1	A152164-7	Deutsch Panel Wiring Harness Socket	1	
	31	A152176-2	Pins for above Panel Socket	31	
	1	TBA	Lock Washer for above Panel Socket	1	
	1	A152166-1	Retainer Nut for above Panel Socket	1	
1	A381981	5/16" Push-Lok Bulkhead Union	1		

* Note: See Parts Bulletin AQP-B-101

BOOM JOYSTICK

The boom joystick for many years was offered as an add-on option and was mounted next to the rear control panel in a separate metal enclosure. In recent years the same joystick has been integrated into the rear control panel. For your convenience, the replacement components are listed below.



A110454-CAP



A110452-3



A110452-6



A110452-2

ASSEMBLIES & SERVICE COMPONENTS

PART NO.	DESCRIPTION
A110452	Joystick, Enclosure & Harness Assembly w/o Labels * (older models)
A110452-2	Joystick Only (w/o Enclosure & Harness) for both older and current models
A110452-3	Joystick Replacement Microswitch (4 used - North, South, East and West)
A110452-4	Cable, 15 Conductor (sold per foot) for older models
A110452-5	Enclosure Only (Pre-Drilled Metal Housing) for older models
A110452-6	Thumb Rocker Replacement Microswitch (2 used - In & Out)
A110454-CAP	Rubber Cap & Ring for Thumb Rocker Switch
TBA	Legend Plate for current models

* If labels are needed order A224002 Decal Set (A224004 for Spanish)

NOTE: All other components are not serviced separately.

A110452 BOOM CONTROL JOYSTICK WIRING LEGEND

Wire Color Code	Joystick Switch	Terminal Strip #	Boom Function
Black	North Ground	1	Common
Green	South Ground		
White/Black Dot	East Ground		
Orange/Black Dot	West Ground		
Red/White Dot	Rocker Switch Ground		
White Wire	North N/O	20	"Up"
Orange Wire	South N/O	21	"Down"
Blue/White Dot	Rocker Switch Down	22	"In"
Green/White Dot	Rocker Switch Up	23	"Out"
Blue/Black Dot	West N/O	24	"Left"
Red/Black Dot	East N/O	25	"Right"
Red	North N/C	Not Used	--
Blue	South N/C		
Green/Black Dot	East N/C		
Black/White Dot	West N/C		



A246891-1 Control Panel



For late 90s B-Series units when Aquatech first began using NEMA enclosures. This is a special order item and the old box must be sent in to match up wiring as no drawings exist for control panels of this vintage.



TYPICAL REAR CONTROL PANEL BOTTOM



- A152176-5** Female Pin, Deutsch (14AWG Wire) (for Harness End Connector) – 31 used (requires special crimp tool)
- A152176-2** Male Pin, Deutsch (14AWG Wire) (for Panel Socket) – 31 used (requires special crimp tool)
- A152164-4** 31 Pin Deutsch Connector (Harness End)
- A152164-BT** Boot, Deutsch (Harness End)
- A152164-7** 31 Pin Deutsch Panel Socket
- A152164-7-PW** Deutsch Panel Socket - Prewired
- A111355** Cable Grip, Plastic, 1/2" NPT
- A111354** Cable Grip, Plastic, 3/4" NPT





POWERDECK 12V CONTROL PANEL
121001340 Rev C (W/O Water Pump Switch)
121004506 Rev A (With Water Pump Switch)



A388545 Green
A388546 Red



A122003 Green
A122007 Red



A122125-LED

PART NO.	DESCRIPTION	QTY
A380131	Emergency Stop Switch	1
10000068	12V Accessory Socket	1
See above	Pilot Lights	AR
A380300	Pendant Socket Assy	1
A120020-LED	Optional Panel Lamp	1
A120180	Toggle Switch, Off-On, 2-Position	AR
A120859-1	Toggle Switch, Off-Mom On, 2-Position	AR
A120861-2	Toggle Switch, Mom On-Off-Mom On, 3-Position	AR
A120861-3	Toggle Switch, Water Pump	1
A380771	Toggle Switch, Optional Floor Flush	1
A121735	Toggle Switch Rubber Boot	AR
A120145	Guard , Water Pump Toggle Switch	1



A384116 J-BOX

Beginning 03/11



The photo above is of the control panel as supplied to us from our panel supplier. Additional items are added during production depending on what options the unit is equipped with such as toggle switches for work lights. For Cummins engines the throttle potentiometer in the picture to the left is substituted for the throttle toggle switch. When purchasing a service J-Box, these items have to be ordered separately or transferred from the old panel.

J-BOX

(AKA JUNCTION BOX, SIDE CONTROL PANEL, POWER DECK PANEL)

P/N A122002
 P/N A122002-24
 P/N A122002A
 P/N A122002A-24
 P/N A122002A-C

12V Pre 2000 (NLA)
 24V Pre 2000 (NLA)
 12V Circa 2000 to 2010
 24V Circa 2000 to 2010
 12V Circa 2010 to 2011



Note: Appearances may vary



TYPICAL COMPONENTS

PART NO.	DESCRIPTION
A120040-JBOX	Optional Blower Hourmeter, Round Display
A120439-6	Diode Array
A120859-1	Toggle Switch, SPST, Off – Mom On
A120861-2	Toggle Switch, SPDT, Mom On – Off – Mom On
A120861	Front Rear Throttle Selector Toggle for Old Style Potentiometer
A120863	Front Rear Throttle Selector Toggle for Current Potentiometer
A122002-ENCL	Enclosure Only (Housing)
A380131	E-Stop Switch
A380300	Pendant Control Socket Assembly w/Cap, Prewired

CONTROL PANEL LOCKS

Since the late 90s, Aquatech has used control panels with NEMA type enclosures. From time to time we get calls for a replacement lock and/or key. The company that supplies us with our panels have, over the years, sourced the enclosures from different manufacturers - therefore the style of locks have changed. Please use the information below to determine which lock you have.



The oldest style lock was made by Rittal. The two features that identifies this lock is the square bezel on the outside of the door and the square lock body held in place by a retainer clip on the inside. The part number for this lock is A381533.



The next style of lock we encountered was made by EMKA. The EMKA lock has a small black face on the outside and is held into the door by a large flat retaining nut. The part number for this lock was A381538 (now obsolete).



In 2006 we started receiving panels with Hoffman locks. The Hoffman lock is held in place by two pal nuts and features a chrome knob on the outside. The part number for the latch (right) is A255020. The part number for the lock knob (left) which includes a key is A255023.



Fortunately the key is the same for all the above locks. The part number is A239443.

GAUGES



A131765 (replaces A131760)
 Pressure/Vacuum, 30hg to 15psi
 1/2"MNPT Flange Mount, Stabilized



A131790
 Pressure/Vacuum, 100hg to 100psi,
 1/4"MNPT Pedestal Mount, Oil Filled



A110000-9
 Hydraulic Oil Reservoir Return Filter
 Pressure, 0 to 60 psi, Oil Filled



A380653-2
 Air Pressure, 0-200psi 1/4"MNPT
 Back Mount



A131782
 0-5000 psi Pressure, 1/4"MNPT
 Pedestal Mount, Oil Filled



A131787
 0-5000 psi Pressure, 1/4"MNPT
 Pedestal Mount, Stabilized



A131780 (NLA - oil filled)
A131786 (NLA - stabilized)
 0-5000psi Pressure, 1/4"MNPT Flange
 Mount



A131788
 0-5000psi Pressure, 1/4"MNPT Flange
 Mount, HD Oil Filled



A131780-1
 Mini Hydraulic Pressure, 0-5000psi,
 1/8"MNPT Pedestal Mount, Oil Filled

GAUGES (CONTINUED)



A110000-5
 Hydraulic Oil Reservoir
 Level & Temperature



A249837
 100-240° Hydraulic Oil Temperature



A383253
 -60 to 60+ 12V Ammeter, Lighted



121004484^{Rev A} 100-400°F
A120134-7 100-500°F
 (Blower) Temperature
 w/Capillary Tube & Probe



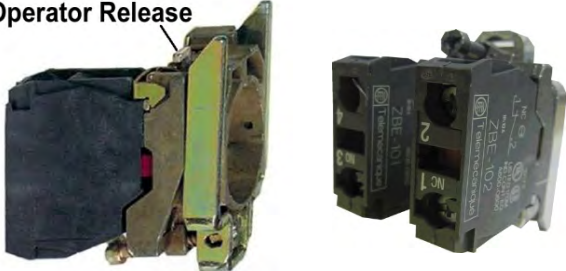




E-STOP SWITCHES

The emergency stop switches listed in many Aquatech owners manuals, are not correct for the application. Please use the information below to insure that you are ordering the correct switch.

 <p>OPERATOR & SWITCHES A120183 (2) A120184 Three piece design</p> <p>1-3/8" Dia. Solid Red Knob Knurled Outer Shank Twist lock body w/set screws Dual Switch: (2) NO</p>	 <p>ASSEMBLY A120183-1 (NC) A120183-2 (NO) One piece design</p> <p>1-5/16" Dia. Solid Red Knob Black Hexagon Threaded Bezel Fastened to panel by Bezel Single Switch Fits 22mm hole</p> <p><u>REPLACEMENT KNOB</u> A120183-3</p>	 <p>ASSEMBLY A380131 Three piece design</p> <p>1-9/16"OD Red Semi-Translucent Knob Yellow "Emergency Stop" Plate Twist lock body w/set screws Dual Switch: (1) NC & (1) NO</p> <p><u>REPLACEMENT SWITCHES</u> for old design* A120065 - N/O (marked ZB2-BE101) A120066 - N/C (marked ZB2-BE102) for new design* A380131-NOCB - N/O (marked ZBE101) A380131-NCCB - N/C (marked ZBE102)</p> <p><u>REPLACEMENT OPERATOR</u> A380131-OP - for old design* (NLA) A380131-NOP - for new design*</p>
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* In late 2007 there was a running change in the design from our vendor.

A380131 E-STOP SWITCH PARTS

OLD STYLE	NEW STYLE
 <p>A380131-OP Push Pull Operator (NLA)</p>	 <p>A380131-NOP Push Pull Operator</p>
 <p>PN-TBA Block Assembly</p>	<p>Operator Release</p>  <p>PN-TBA Block Assembly</p>
 <p>PN-TBA Legend Plate</p>	 <p>PN-TBA Legend Plate</p>
 <p>A120065 N/O Green Contact Block A120066 N/C Red Contact Block</p>	 <p>A380131-NOCB N/O Green Contact Block A380131-NCCB N/C Red Contact Block</p>

TACHOMETERS

In the past, Hi-Vac Corporation has offered several different tachometers depending on where the tachometer hooked up to receive its signal, i.e. flywheel pick-up, alternator or distributor. The Murphy tachometers we now receive from our supplier are universal and will function with all three types of signals:

1. Magnetically by the pulses obtained from the ring gear of an engine flywheel by means of an electromagnetic sensor (magnetic pickup). The instrument is designed to function with flywheels having anywhere from 50 to 300 teeth;
2. Electrically by the engine-driven alternator, producing pulses with 4, 8, 12, 14 or 16 poles on the rotor (3 - 52 PPR) when it charges the battery. In this instance, the alternator must have a terminal for the tachometer.
3. From the coil or a tachometer output from the ignition system of 2 - 10 cylinder, 4 cycle spark-ignited engines.

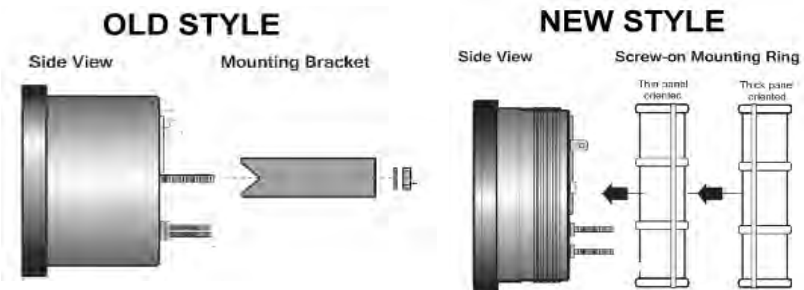
The current design is compatible with 12 and 24 VDC systems and has a 0 to 3000 RPM range. They fit a standard size 3-3/8" panel hole.

The new design will be a running change for the following part numbers:



All standard size tachometers previously used by Hi-Vac Corporation, regardless of make, can be replaced by one of the above part numbers, whichever is the most appropriate.

Since the above part numbers are running changes, it may at some point become necessary to determine if you have the current or older style tach. The diagrams to the right illustrate the differences. This info is applicable to Murphy tachs only.



HOURMETERS

 <p>10K</p> <p>Honeywell QUARTZ 0000 1/10 HOURS</p> <p>A120040 10-80VDC - up to 9999.9 Hours</p>	 <p>10K</p> <p>0-0-0-0-0-1/10 HOURS</p> <p>A120040A 10-80VDC - up to 9999.9 hours</p>	 <p>100K</p> <p>QUARTZ 000300 1/10 HOURS</p> <p>30000813 10-80VDC - up to 99999.9 hours</p>
 <p>10K</p> <p>SenDEC HOURS 25.0 1/10</p> <p>A383788 5-80V AC/DC - up to 9999.9 Hours</p> <p><i>Inactive</i></p>	 <p>100K</p> <p>HOURS 00000 1/10 VDO</p> <p>U3201-0048-03 12VDC - up to 99999.9 Hours, 2.125"</p> <p><i>Inactive</i></p>	 <p>100K</p> <p>ENM 00000 1/10 HOURS</p> <p>10000284 Used on Dynablast Water Heaters 12VDC - up to 99999.9 Hours</p>

PARTS SUPERSESSIONS

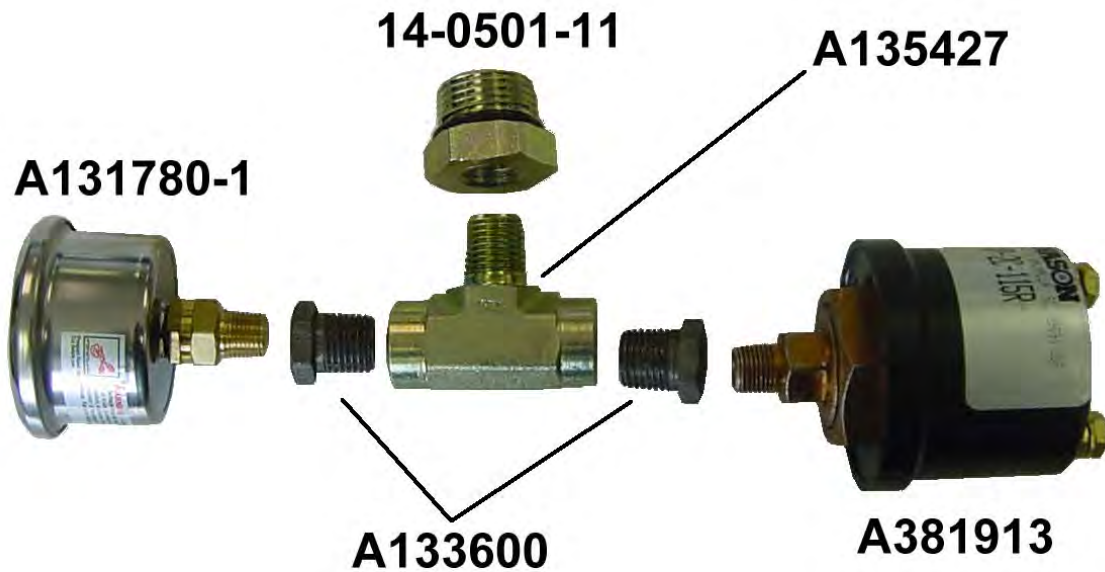
A120040-JBOX use 30000813
U4108-0109 use A120040

NOTE: Brands and appearance may vary over time. Inactive items are special order only if available.



B-SERIES ROAD MODE LOCK OUT

Units with automatic transmissions without multiplex circuitry.



A381913	Hydraulic Pressure Switch
A133600	1/4" to 1/8"NPT Pipe Bushing
A135427	1/4"NPT Street Tee
A131780-1	Mini Hydraulic Gauge 0-5000psi
14-0501-11	#10MSPT to 1/4"FNPT Bushing



Air Suspension Kit

121003719 Rev A

PART	PART NO.	QTY/TRUCK
Steer Axle Brackets	TBA	1
Steer deflection sensor	TBA	1
Steer deflection sensor cable	TBA	1
Steer Axle Sensor Cover	TBA	1
Air pressure sensor	TBA	1
Air pressure sensor cable	TBA	1
Interface cable	TBA	1
Comlink	TBA	1
Display	TBA	1

Hendrickson Suspension Kit

121003723 Rev A

PART	PART NO.	QTY/TRUCK
deflection sensor cable, 40 ft drive axle	TBA	2
deflection sensor -drive	TBA	2
Hendrickson J-Bracket Kit with Hardware	TBA	2
Display	TBA	1
Comlink	TBA	1
Interface cable	TBA	1
Steer Axle Brackets	TBA	1
Steer deflection sensor	TBA	1
Steer deflection sensor cable	TBA	1
Steer Axle Sensor Cover	TBA	1

T&M-Ride, TufTrac & Single Rear Axle Susp.

121003722 Rev A

PART	PART NO.	QTY/TRUCK
deflection sensor cable, 40 ft drive axle	TBA	1
deflection sensor -drive	TBA	1
T-Ride - Bracket Kit with Hardware	TBA	1
Display	TBA	1
Comlink	TBA	1
Interface cable	TBA	1
Steer Axle Brackets	TBA	1
Steer deflection sensor	TBA	1
Steer deflection sensor cable	TBA	1
Steer Axle Sensor Cover	TBA	1



CONTROL CABLES



PUSH PULL CABLES

PART NO.	DESCRIPTION	TYPICAL APPLICATION
A381967	4' Universal Push Pull Cable	No History
A162992	7' Universal Push Pull Clutch Cable	SJ-300E
A162991	9.5' Universal Push Pull Clutch Cable	SJ-600E Prior to 1987
A162990	10' Universal Push Pull Clutch Cable	SJ-600E 1987 & Later
A162996	18' Universal Push Pull Clutch Cable	some SJ-600P



VERNIER (THROTTLE) CONTROL CABLES

PART NO.	DESCRIPTION	TYPICAL APPLICATION
A160190	10' Vernier Control Cable	SJ-300P, SJ-600P, JV-1000
A160930	15' Vernier Control Cable	Some Aquatech B-10s
A160910	25' Vernier Control Cable	SJ-2000, Older Front Reel B-Series

Also used for swash plate control on older hydrostatic drive units.









SMALL CONTROL (CHOKE OR THROTTLE) CABLES

PART NO.	DESCRIPTION	TYPICAL APPLICATION
A160180	10' Universal Choke Cable	Pre-History
A160175	15' Universal Choke Cable	Aquatech SJ-600E

THROTTLE CONTROLS

This is an informational bulletin listing the various throttle controls found on the control panels of the B-series jet-vac units.

AIR VALVE	TOGGLE SWITCH	POTENTIOMETER	TOGGLE SWITCH
 <p>A111215 Used on pre-Hi-Vac models with pneumatic throttle control. Used in conjunction with the Air Throttle Actuator pictured below.</p>	 <p><i>Mom. On - Off - Mom. On</i> A120855 DPDT, 6 Blade Terminals</p> <p>55054 DPDT, 6 Screw Terminals Used on export and older domestic models with a linear throttle actuator. Used in conjunction with one of the Electric Throttle Actuators pictured below.</p>	 <p><i>(Early Version)</i> A247069 Used up to late 2018 on units with Cummins ISC & ISM, Mercedes, Detroit w/DDEC and some early International T444E & DT466E engines.</p>	 <p><i>Mom. On - Off - Mom. On</i> A120861-2 SPDT, 3 Screw Terminals Used on late model units with onboard computers commonly referred to as an Electronic Control Module (ECM), Engine Control Unit (ECU) or Central Control Module (CCM).</p>
 <p>A111217</p>	 <p>A120724 (12V)</p>  <p>A120724-1 (12V) A120724-24 (24V)</p>	<p>PLEASE NOTE: This throttle control has been replaced by p/n A383925 (pictured below), but please refer to Parts Bulletin AQPБ-160 before ordering.</p>  <p>A383925</p>	<p>121002675 A Digital to Analog Converter</p>  <p>Used instead of the throttle potentiometer to the left on recent units (starting 2018) allowing us to use a toggle switch such as the above to control engine speed.</p>

Throttle Control Potentiometer Change

The three terminal throttle control potentiometer that we have used for many years for Mercedes and ISC/ISM series Cummins engines (our p/n A247069) has been discontinued by the manufacturer and has been replaced by a newer style six terminal control (to which we assigned p/n A383925). The new design incorporates a more dependable and accurate hall effect sensor. It is fully sealed and resistant to environmental and chemical intrusion.

However, for most of our B-Series machines this is not a "plug and play" supersession. This is because on the majority of these units, we use two of these throttle controls; one in the rear control panel and one in side control panel (J-Box). Unlike it's predecessor, the design of the new throttle control does not allow for two controls to be in circuit with the engine, therefore an A384113 Side/Rear Selector Switch Retro-Fit Kit will be required to completely isolate one control from the other.

Also, the previous throttle control had the weatherpack receptacle pointing directly out of the back and the new control has the receptacle coming out of the side, so some minor modifications to the control panel may be necessary to mount the new control.

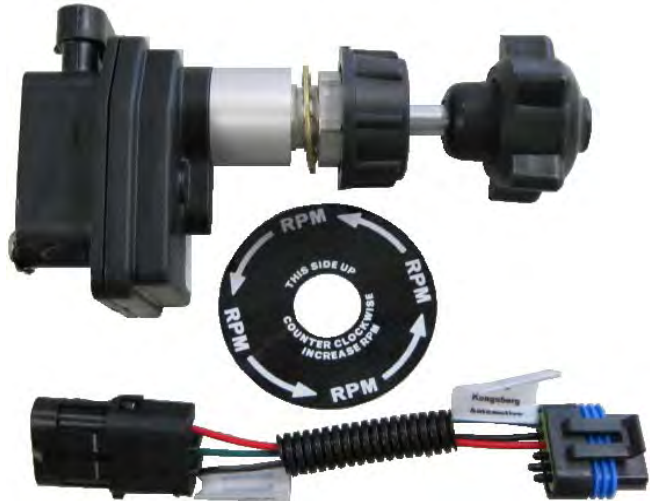
We realize that this retrofit may cause some inconvenience and we invested a lot of time researching for alternatives. However, due to changing technologies, we could not find a manufacturer that still produces a compatible three terminal throttle control potentiometer. Your understanding is greatly appreciated

<p>A247069 (OLD DESIGN)</p>	<p>A383925 (NEW DESIGN)</p> <p>Includes 6 to 3 pole Jumper Harness</p>
<p>OLD & NEW WIRING COMPARISON</p> <ul style="list-style-type: none"> A - Increase Speed (APS Signal) ⎓ 3 B - Ground ⎓ 9 C - Decrease Speed (APS Signal 5V) ⎓ 4 D, E & F - Not Used <p>APS = Accelerator Position Sensor</p>	<p>A384113 Wiring schematic included</p>

Throttle Control Potentiometer Harness Fix

The A383925 throttle control potentiometer used with Cummins, Mercedes and certain Detroit and International engines comes supplied with a six terminal to three terminal adapter harness so that this control will retrofit a discontinued three wire control.

NOTE: See parts bulletin 160 for more information on the retrofit.



The adapter harness comes supplied with the black and green wires (A & B terminals) crossed as pictured at left. We brought this to our supplier's attention and they reported back that this was correct for most applications. However for our equipment the wires need to be parallel (A to A and B to B).

To easily swap the wires with terminals in the plastic connector, you will need to use a Weather Pack™ terminal extractor tool. This tool slides into the connector housing and over the terminal pin and compresses the retention barbs to release the terminal from the connector.

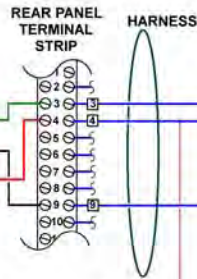
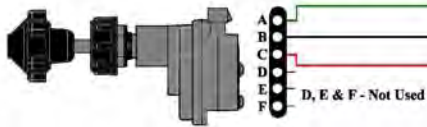


For your convenience, below are some sources for this tool.

Waytek item no. 421
Delphi/Packard part no. 12014012
OTC part no. 7738
NAPA part no. NW 726153

Quickcar Racing Products part no. 50-399
PICO part no. 0660PT
SPX Kent Moore part no. J-38125-10A
Longacre part no. LAR-44909

BACK THROTTLE CONTROL



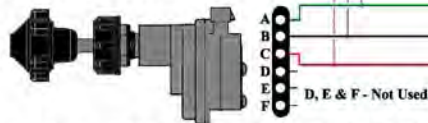
A383925 Throttle Control

- GREEN** Accelerator Position Signal (APS) Increase Speed
- RED** Accelerator Position Signal (APS) 5V - Decrease Speed
- BLACK** Common [GND] (Accelerator Position Return)



Sometimes the adapter harness comes in with the A & B wires crossed as above. Notice the green wire goes from A to B and the black wire goes from B to A. If this is the case, they need to be swapped A to A and B to B.

A383925 Throttle Control



SIDE THROTTLE CONTROL



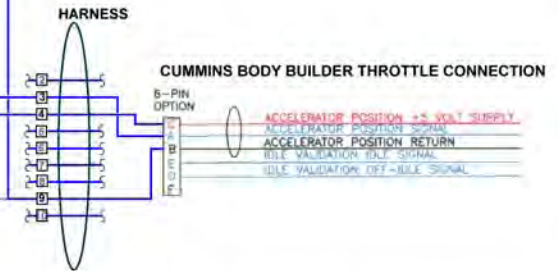
OLD WIRING

OLD WIRING



A384113 Switch Kit

Required when one or both obsolete 3-terminal A249069 throttle controls is replaced by the current 6-terminal A383925 throttle control.



This simplified diagram shows ultimately how the throttle controls are to be wired without taking into account wire terminal strips, wiring harnesses, connector plugs, etc.



To operate correctly, these controls have to be completely isolated from one another.



WITH ROD OUTPUT:

Used to control hydraulic valves on hydrostatic and KD units.

PART NUMBER A120724 12VDC



WITH 36" CABLE OUTPUT:

Used as a throttle actuator on various units.

PART NUMBER A120724-1 - 12VDC

PART NUMBER A120724-24 - 24VDC



MANUFACTURERS INFO

This actuator is perfect for a wide range of applications, such as remote control of hydraulic pumps, valves or engine throttles. Its rugged cast-aluminum body requires no field maintenance and delivers 50 lbs. of push/pull force with 100% load locking/holding. It offers an infinite number of position settings and multiple outputs as well as various speeds, mounting options and a potentiometer feedback option. Controlled by a double-pole double-throw switch, it delivers a three-inch maximum stroke and speeds ranging from .25-2 inches/second. It also one of the most durable linear actuators you can find: dustproof and splashproof, it will get the job done whether the temperature is -20° or 150° F. This actuator has proven itself in the field for over 30 years. All this - plus easy installation and operation - for a cost that's comparable to better manual systems.

Features

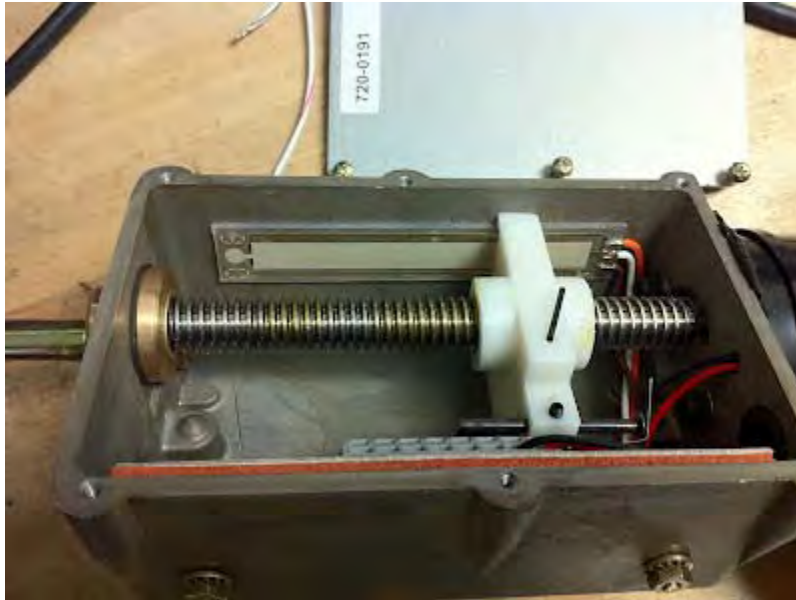
- 100% load locking/holding
- 50 lbs. push/pull force
- Speeds from .25 - 2 inch per second
- Operating temperature range from -20° to 150° F
- Rugged cast-aluminum body
- Potentiometer feedback option
- 3 inch maximum stroke, adjustable via limit switches
- 12 volt DC or 24 volt DC power
- Multiple output options available (Rod, Cable)
- Hard, pivot and shock mounting
- Dustproof and splashproof
- Infinite number of position settings
- Easy installation and operation
- Cost competitive with better manual systems

Benefits

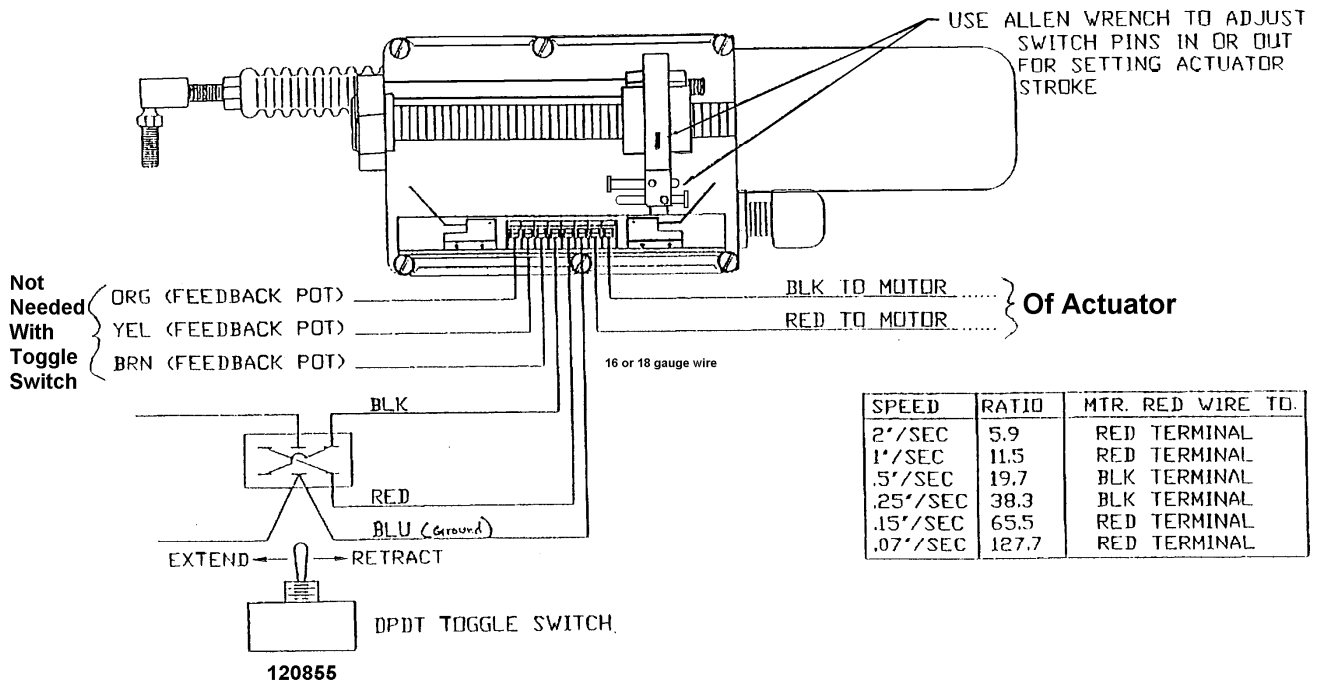
- Excellent for electric remote control operation of hydraulic pumps, valves, or engine throttles
- Multiple outputs, speeds and mounting options available to fit many applications
- 100% load locking up to 50 lbs. provides holding during power loss
- Stroke length can be set to limit maximum RPM, preventing engine overheating
- Infinite position settings are possible providing operator with maximum control capability
- Potentiometer feedback available for position identification
- No field maintenance required
- Proven in the field under various applications for over 30 years

AVAILABLE SERVICE PARTS

 <p>A120724-2 Circuit Board</p>	 <p>A120724-3 Cable for A120724-1</p>	
 <p>A120724-4 12VDC Motor P/N TBA 24VDC Motor</p>	 <p>P/N TBA Pivot Mount</p>	
 <p>P/N TBA Motor Boot</p>	 <p>P/N TBA Ball Joint</p>	 <p>P/N TBA Rod Output Bellows</p>



120724



FOOT PEDAL CONTROL

This is an informational bulletin to be used as a quick reference for the reel control box (part no. 110335). It is used in conjunction with our pneumatic foot control (part no. A242110-1) on our B-Series and SJR machines. Inside, the box consists of two bulkhead tube unions (part no. A110335-1) and two pneumatic pressure switches (part no. A110335-2).

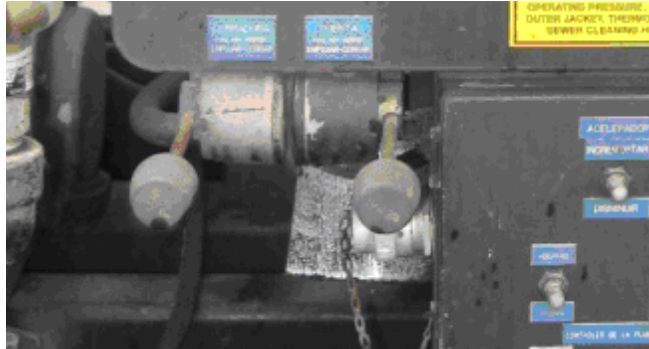
Please note that when servicing this control box, that the cover screws have tamper indicating epoxy on them. If this unit fails under warranty, do not remove the screws as this may void the manufacturers warranty. Always discuss warranty related issues with our Customer Service Manager before disassembling a vendor supplied part.

 <p>NOTE: A176076 Coiled Twin Poly Tube Not Included with Control Box</p>  <p>A110335 Control Box Assembly</p>	 <p>A110335-2 Pneumatic Switch (2)</p>
 <p>A242110-1 Foot Pedal Assembly</p>	 <p>A110335-1 Bulkhead Tube Union (2)</p> <p>A110336 Rubber Foot Pedal (2)</p> <p>A176076 Coiled Twin Poly Tubing (1)</p> <p>A242112 Foot Pedal Weldment (1)</p>



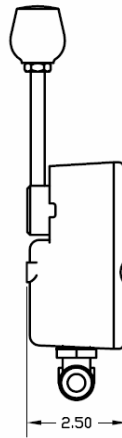
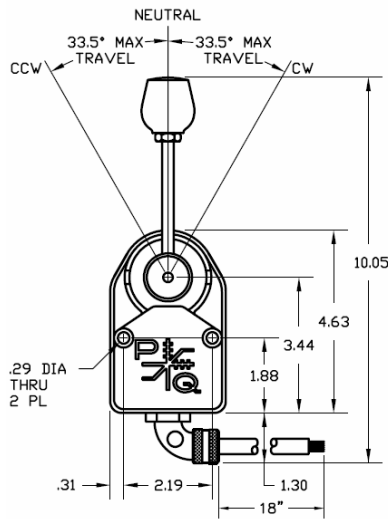
LEFT & RIGHT HAND JOYSTICK CONTROLLERS

(Used for a short while in the late 1990s)



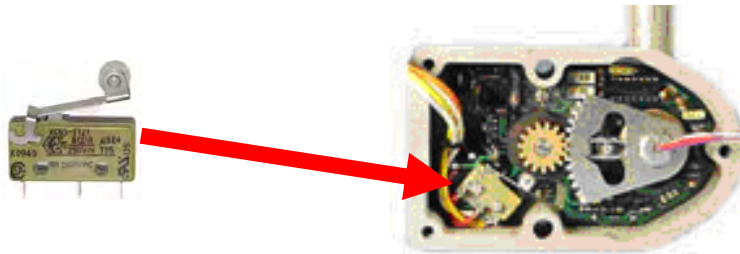
RH Lever (Rear Door) P/N A122222

LH Lever (Rear Door Locks)..... P/N A122223



A122223

Replacement Micro-Switch (for either) P/N A122226



AQUATECH[®]

B-SERIES PENDANTS



A122170

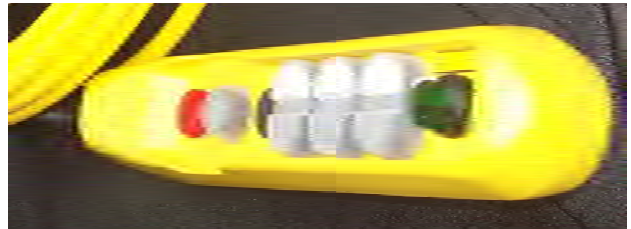
Standard pendant with 35' cord

A122171

Standard pendant with 45' cord

A122175

Standard pendant with 75' cord



A383921

Has extra switch for a vacuum breaker.
35' Cord



A384771

Has extra switch pair for a hose reel pay-in & pay-out and an E-stop switch.

B-SERIES PENDANT CONTROLS

There are four generations of the 7-button pendant control used on the B-Series since the early 90s. Functionally there are all the same, however the components will not necessarily interchange. Please use this bulletin to identify what pendant control you are working with for replacement parts. When replacing the entire pendant control, the current style will have to be ordered. Note: The 35' cable pendant is for all B-Series machines with four water (poly saddle) tanks or less. The 45' cable pendant is used on all B-Series machines with six water tanks.



	OLDER STYLES			CURRENT STYLE
Manufacturer	Telemechanique	Giovenzana	AB (Allen Bradley)	AB (Allen Bradley)
Approximate Years	up to 2003	2003 to 2007	2007 to 2009	2009 on
w/35' cable & plug	A122070-1 (NLA)	A122070-2 (NLA)	A122070-6 (NLA)	A122170
w/45' cable & plug	A122071-1 (NLA)	A122071-2 (NLA)	A122071-6 (NLA)	A122171
w/35' cable/no plug	A121932 *	N/A	N/A	N/A
w/45' cable/no plug	A122072 *	N/A	N/A	N/A
Head only w/o cable	A121952	A121952-1 (NLA)	N/A	A122173
Pendant Case	A121945	A116530	A122405 (NLA)	A122170-HS
Push Button (operator)	A120615	A116540	A122401 (NLA)	TBA
Contact Block (7 used)	 A120065	 A122070-2-CB	A122402 (NLA) use A122070-2-CB	 A122170-CB
Pilot Lamp Base	A120475	A122070-2-CB-1	A122403	A122170-LM
Pilot Lamp Bulb	A120465	TBA	Integral w/Base	Integral w/Base
Pilot Lamp Red Lens	A120485	TBA	A122404	A122170-PL

* Used on older "hard wired" units only (circa 1992 to 1998)



WIRING LEGEND FOR B-SERIES 7 BUTTON PENDANTS
EARLY 1990s & ON (MODELS WITHOUT BOOM POWER PACK)



PANEL TERMINAL STRIP	QUICK CONNECTOR PIN	BOOM PENDANT CONTROL FUNCTION	TELEMECHANIQUE COMPONENTS Cable part numbers A121718 & A121719	GIOVENZANA COMPONENTS			AB (ALLEN BRADLEY) COMPONENTS
			Assembled by Hi-Vac	Purchased Pendants			
			Up to 2003	Early (2003-2004)	Interim (2004-2005)	Current (Circa 2005 & on)	
1	K	Power (12V)	Blue/Black	Brown	Green/Black	Blue/Black	
2	J	Ground	White/Black	Yellow	White/Black	Yellow/Black	
18	L	Vac. Flapper	Black/White	Pink	Red/Black	Red/Black	
20	H	Boom Up	Red	Red	Red	Red	
21	G	Boom Down	Green	Green	Green	Green	
22	F	Boom In	Orange	Orange	Orange	Orange	
23	P	Boom Out	Blue	Blue	Blue	Blue	
24	M	Boom Left	White	White	White	Yellow	
25	N	Boom Right	Black	Black	Black	Black	

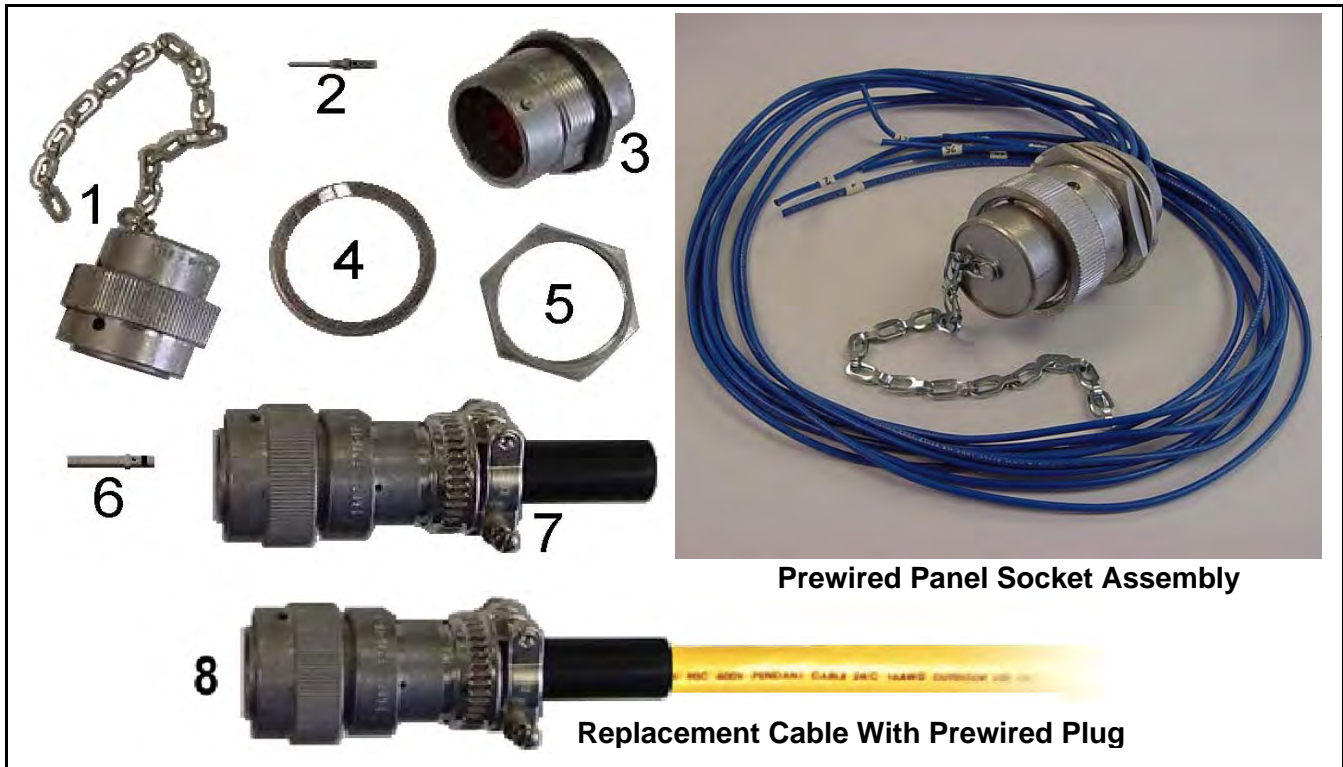
CURRENT PENDANT CONTROL

This is an informational bulletin listing the components of our A122170 and A122171 boom pendant controls. See parts bulletin AQPB-106 for information on the cable & connector plug.

	PART NUMBER	DESCRIPTION	QTY.	
 	A122170-HS	Pendant Housing - 5 Hole	1	
	A122170-RS	Rubber Sleeve (Cable Dust Boot)	1	
	A122170-LM	LED Lamp Module	1	
	A122170-PL	Red Pilot Light Lens	1	
	A122170-PLL	Pilot Light Diffuser	1	
	A122170-BT	Push Button Extended Cap 22mm, "CLOSE"	1	
	A122170-CB	N/O Contact Block	7	
	A122170-PB	22mm Operator (W/O Button)	1	
	A122170-DPB	2 Pos. Operator (W/O Buttons)	3	
	A122170-OL	Operator Latch	4	
	A122170-BBD DOWN A122170-BBL LEFT A122170-BBI IN	Engraved LH Black Button	3	
	A122170-WBO OUT A122170-WBR RIGHT A122170-WBU UP	Engraved RH White Button	3	
	A122170-DB	Dual Boot	3	
	A122170-FB	Flush Boot	1	

DEUTSCH™ CONNECTORS & ASSEMBLIES

This is an informational bulletin listing the components of the quick connector used on the B-Series pendant controls. Please note that a special crimping tool is required to install the pins in these connectors. Standard crimpers will "egg-shape" the pin and prevent it from entering it's corresponding hole in the connector. For those who do not wish to invest in the required tooling we also have the prewired connectors listed below.



ITEM	PART NO.	DESCRIPTION
1	A152164-3	Dust cover for A152177 panel socket
2	A152176-6	Connector pin for A152177 panel socket (9 used)
3	A152177	Panel socket
4	A152167-1	Lock washer for A152177 panel socket
5	A152166-1	Retainer nut for A152177 panel socket
6	A152176-5	Connector pin for A152164-2 plug (9 used)
7	A152164-2	Plug, pendant cable end
1 to 5	A380300	Prewired Panel Socket Assembly (inset photo above)
8	A380343	35' replacement cable with prewired plug (units with up to 4 saddle tanks)
8	A122171-C&P	45' replacement cable with prewired plug (units with 6 saddle tanks)
8	A249279	50' replacement cable with prewired plug (extended length)

121001268 Rev C (Replaces Rev B) AARCOMM WIRELESS REMOTE KIT

Note: For production, this one kit replaces all OMNEX kits.



KIT CONTENTS

FOR REV. B	FOR REV. C	Description	Qty
121002734 A	121002734 A	TRANSMITTER 900 MHZ, 12 BUTTON DUAL LCD	1
	121005080 A	PROTECTIVE CASE/POUCH WITH D RINGS	1
	121005081 A	BLACK SHOULDER STRAP WITH CLIPS	1
121002735 A		C220 RECEIVER, 900 MHZ	1
	121005023 A	C220 RECEIVER, 900 MHZ, CAN+IO	1
121002736 A		WHITE WIRELESS CHARGING PAD	1
	121002690 A	BLACK CHARGER BASE, DASH MOUNTED	1
	121006019 A	CHARGER CABLE KIT	1
121002737 A		6 FT CUSTOMIZED BLUNT CUT WIRE	1
	121005024 A	WIRE HARNESS, 6', CAN+IO, BLUNT CUT	1
121002738 A	121002738 A	YELLOW LANYARD -SHORT	1
121002739 A	121002739 A	STUBBY ANTENNA, 900 MHZ	1

Signal Converter, Digital to Analog: 121002675 Rev. A (for Cummins engines)

Circuit	Pins	Cable Wire Color	Description	Hi-Vac Terminal No.	Hi-Vac Wire Color
I/O 0	A2	Org/Grn	Water Flow Increase - Mom.		
I/O 1	A3	Red/Grn	Water Flow Decrease - Mom.		
I/O 2	C3	Wht/Red			
I/O 3	B3	Blue/Red			
I/O 4	C2	Org/Blk	Throttle Up - Momentary	3	Red
I/O 5	B2	Org/Red	Throttle/Down - Momentary	4	Org
I/O 6	D2	Wht/Red/ Blk	Boom Flap - Latched	18	Brn/Blk
I/O 7	E2	Red/Wht/Blk	E-Stop - Latched	8	Brown
I/O 8	K3	Green	Pump on/off - Latched	36	Wht/Blk
I/O 9	K1	Grn/Blk/Wht	Vacuum on/off - Latched	37	Grey/Blk
I/O 10	K2	White	Boom Up - Momentary	20	Blue/Red
I/O 11	J1	Orange	Boom Down - Momentary	21	Blk/Red
I/O 12	H1	Red/White	Boom Left - Momentary	24	Grn/Red
I/O 13	J2	Blue/Black	Boom Right - Momentary	25	Yell/Red
I/O 14	G1	Blue/White	Boom In - Momentary	22	Org/Red
I/O 15	F2	Green/Black	Boom Out - Momentary	23	Yell/red
	E3				
	F3				
Power in	A1	Red	Power in	1	unit pwr/ battery pwr
Batt Grd	H2,D3	Black	Ground	2	Battery Grd

OMNEX WIRELESS REMOTES



OLDER STYLE OMNEX T110 (OBS)

The T110 remote (transmitter) was not field programmable – this means that you could not change the buttons from momentary to latching etc. The old remote looks the same in appearance but it could only operate as it was setup from our supplier. **The T110 has been replaced by the T110C (next page).** The information below is just for reference.

Part number **A383493 (NLA)** - T110 Transmitter & R160 Receiver Wireless Remote Set

A383771 WIRELESS REMOTE SET, OMNEX, X-10

Part Number	Description	Quantity	U/M
A383493 (NLA)	KIT, WIRELESS REMOTE, OMNEX, STD.	1	EA
A383493-1	* LABEL SET, OMNEX REMOTE, X-10	1	EA

A383772 WIRELESS REMOTE SET, OMNEX, X-10HV

Part Number	Description	Quantity	U/M
A383493 (NLA)	* WIRELESS REMOTE, OMNEX, STD UN	1	EA
A383493-2	* LABEL SET, OMNEX, X-10HV	1	EA

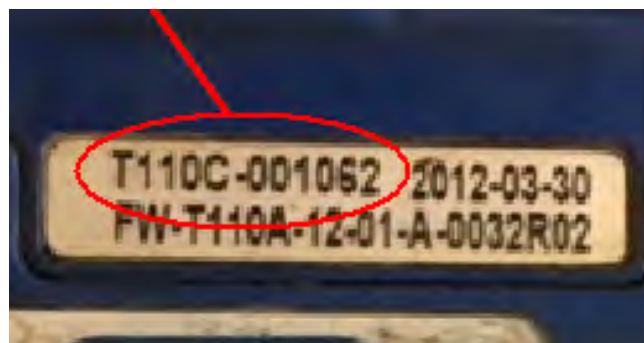
A383773 WIRELESS REMOTE SET, OMNEX, B SERIES

Part Number	Description	Quantity	U/M
A383493 (NLA)	KIT, WIRELESS REMOTE, OMNEX, STD.	1	EA
A383493-3	* LABEL SET, OMNEX REMOTE, BSERI	1	EA

A383774 WIRELESS REMOTE SET, OMNEX, B SER W/POT

Part Number	Description	Quantity	U/M
A383493 (NLA)	* WIRELESS REMOTE, OMNEX, STD UN	1	EA
A383493-4	* LABEL SET, OMNEX REMOTE, B SER	1	EA

To determine if the old remote (transmitter) is a T110 or T110C simply look at the label on the back.



OMNEX WIRELESS REMOTES (CONTINUED)



NEWER STYLE OMNEX T110C

The T110C remote (transmitter) has buttons that are field programmable. Various label sets have been made up to accommodate many of the program setups that we have used on production units. Below are listed the more common configurations. The following pages show all the labels that can be ordered.

Part Number **A387079** - T110C Transmitter & R160 Receiver Wireless Remote Set

A387082-3 *WIRELESS REMOTE INS,OMNEX T110C (STD B-SERIES)

Part Number	Description	Quantity	U/M
A387079	WIRELESS REMOTE SET,OMNEX T110	1	EA
A383493-11	LABEL SET,OMNEX T110C (STD B-S	1	EA
A120447	RECTIFIER (100V/3AMP)	18	EA

A387082-14 *WIRELESS REMOTE INS,OMNEX T110C (FRONT REEL)

Part Number	Description	Quantity	U/M
A387079	WIRELESS REMOTE SET,OMNEX T110	1	EA
A383493-23	LABEL SET,OMNEX T110C (FRONT R	1	EA
A120447	RECTIFIER (100V/3AMP)	18	EA

A387082-17 *WIRELESS REMOTE INS,OMNEX T110C (X-VAC)

Part Number	Description	Quantity	U/M
A387079	WIRELESS REMOTE SET,OMNEX T110	1	EA
A383493-26	LABEL SET,OMNEX T110C (X-VAC 1	2	EA
A120447	RECTIFIER (100V/3AMP)	18	EA

A387082-18 *WIRELESS REMOTE INS,OMNEX T110C (X-6)

Part Number	Description	Quantity	U/M
A387079	WIRELESS REMOTE SET,OMNEX T110	1	EA
A383493-27	LABEL SET,AMNEX T110C (X-6 STD	1	EA
A120447	RECTIFIER (100V/3AMP)	18	EA

NOTE: For production we now use the Aarcomm remote



TRANSMITTER

**OMNEX WIRELESS REMOTE
STANDARD B-SERIES (A387082-20)
REMOTE #A387097 / LABEL SET #A383493-29**

CONFIGURATION #D122888888/88244488

*Control Panel Terminal Numbers on Smartplex Units

BUTTON	RECEIVER TO PANEL WIRE COLOR	FUNCTION	CONTROL PANEL TERMINAL
F1	Orange/Green	ESTOP	8
Shift (F1)	White	ESTOP	8
F2	Red/Green	FLAPPER	18
Shift (F2)	Orange	VAC BREAKER	60
F3	White/Red	THROTTLE UP	3
Shift (F3)	Red/White	BLOWER ON/OFF	37/*16
F4	Blue/Red	THROTTLE DOWN	4
Shift (F4)	Green/Black	WATER ON/OFF	36/*14
F5	Orange/Black	BOOM IN	22
Shift (F5)	Black/White	REEL IN	33
F6	Orange/Red	BOOM OUT	23
Shift (F6)	Blue/Black	REEL OUT	32
F7	White/Red/Black	BOOM UP	20
F8	Red/White/Black	BOOM DOWN	21
F9	Green	BOOM LEFT	24
F10	Green/Black/White	BOOM RIGHT	25

Note:

Items shown in parenthesis () require the use of the shift button. For directions on how to enable this and all other functions, refer to the manufacturer's manual located in the "Controls" section of the unit "Operations" manual.

Hello

The following are the current production part numbers for Omnex wireless remotes.

PART NO.	REV	DESCRIPTION	ST	COMMENT
A387082-20	A	WIRELESS REMOTE,16 FUNC-B SERIES	√	√
A387082-19	A	WIRELESS REMOTE,16 FUNC-X8	√	√
A387082-17	A	WIRELESS REMOTE,16FUNC-X12	√	√
A387082-14	A	WIRELESS REMOTE,16 FUNC-F SERIES	√	√
A387082-12	A	WIRELESS REMOTE,16FUNC-CB SERIES	√	√
A387082-5	A	WIRELESS REMOTE,16FUNC-HVV4915	√	√

The following part numbers are obsolete and thus no longer available for Production
 These part numbers can still be used for Parts and Service.

A387082-20		WIRELESS REMOTE,16 FUNC-B SERIES	OBS	use latest revision
A387082-18		*WIRELESS REMOTE INS,OMNEX T11	OBS	no longer used
A387082-17		*WIRELESS REMOTE INS,OMNEX T11	OBS	use latest revision
A387082-16		*WIRELESS REMOTE INS,OMNEX T11 0C(BROWN)	OBS	no longer used
A387082-15		*WIRELESS REMOTE,OMNEX T110C,4 915 BOOM/A	OBS	no longer used
A387082-14		*WIRELESS REMOTE,OMNEX T110C (FRONT REEL	OBS	use latest revision
A387082-13		*WIRELESS REMOTE INS,OMNEX T110C(13058)	OBS	no longer used
A387082-12		*WIRELESS REMOTE INS,OMNEX T110C (CB-10)	OBS	use latest revision
A387082-11		*WIRELESS REMOTE INS,OMNEX T110C (JVLT)	OBS	no longer used
A387082-10		*WIRELESS REMOTE INS,OMNEX T110C (HUSKY)	OBS	no longer used
A387082-9		* WIRELESS REMOTE,OMNEX T110C-GREAT LAKE	OBS	no longer used
A387082-8		*WIRELESS REMOTE INS,OMNEX T110C-OBM	OBS	no longer used
A387082-7		*WIRELESS REMOTE INS,OMNEX T110C-TORONTO	OBS	no longer used
A387082-6		*WIRELESS REMOTE INS,OMNEX T110C-POTELCO	OBS	no longer used
A387082-5		* WIRELESS REMOTE,OMNEX T110C,4915 BOOM	OBS	use latest revision
A387082-4		*WIRELESS REMOTE INS,OMNEX T110C (-047)	OBS	no longer used
A387082-3		*WIRELESS REMOTE INS,OMNEX T110C (STD B)	OBS	no longer used
A387082-2		*WIRELESS REMOTE INS,OMNEX T110C(BROWN)	OBS	no longer used
A387082-1		*WIRELESS REMOTE INS,OMNEX T110C (HUSKY)	OBS	no longer used
A387082		*WIRELESS REMOTE SET,OMNEX T110C (BROWN)	OBS	no longer used

Thanks

Todd Hutchings
 Engineering Manager
 Hi-Vac Corporation

OMNEX LABEL SETS

A383493-7	<p>OPS-T110-1008R1</p>
A383493-8	<p>OPST110-1011R4 A383493-8</p>
A383493-9	<p>OPS-T110-1012R1 A383493-9</p>
A383493-10	<p>OPS-T110-1016R1 A383493-10</p>
A383493-11	<p>OPS-T110-1017R1 A383493-11</p>
A383493-12	<p>OPS-T110-1018R1 A383493-12</p>
A383493-13	<p>OPS-T110-1019R1 A383493-13</p>
A383493-14	<p>OPS-T110-1023R1 A383493-14</p>
A383493-15	<p>OPS-T110-1024R1 A383493-15</p>
A383493-16	<p>OPS-T110-1028R1 A383493-16</p>
A383493-17	<p>OPS-T110-1036R1 A383493-17</p>
A383493-19	<p>OPS-T110-1046R1</p>

A383493-20	<p>OPST110-1055R1</p>
A383493-21	<p>OPST110-1056R1</p>
A383493-22	<p>OPST110-1062R1 A383493-22</p>
A383493-23	<p>OPST110-1074R1 A383493-23</p>
A383493-24	<p>OPST110-1089R1 A383493-24</p>
A383493-25	<p>OPST110-1105R1 A383493-25</p>
A383493-26	<p>OPST110-1116R1 A383493-26</p>
A383493-27	<p>OPST110-1119R1 A383493-27</p>



A120447 DIODE, 3A, 100V

Used where receiver wires attach to the control panel terminal strips to prevent signal feedback.



A249043 8-FUNCTION WIRELESS REMOTE CONTROL

(Boom Up/Down, Boom Left/Right, Boom In/Out, Flapper Open/Close)



A383023 14-FUNCTION WIRELESS REMOTE CONTROL

(Boom Up/Down, Boom Left/Right, Boom In/Out, Flapper Open/Close, Exhauster On/Off, Water Pump On/Off, Throttle Up/Down)



- Safer and more convenient than tethered pendant controls.
- Positions the operator away from hazards while operating the equipment.
- Better operator visibility improves safety and productivity.
- Long life sealed switches that are easy to operate.
- Rugged transmitter with no external antenna to break. Long battery life.
- Receiver enclosed in a weather resistant NEMA 4 case.
- Up to 1000 ft. line-of-sight range.

DEBRIS PROBE OPTION
PART # A381947

