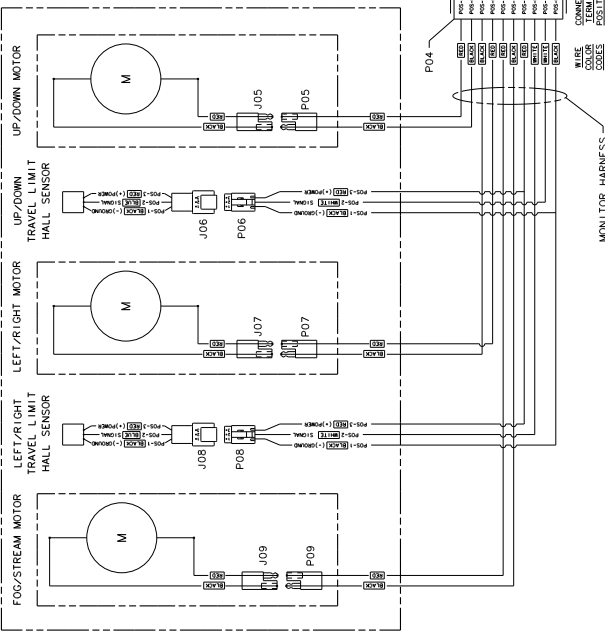
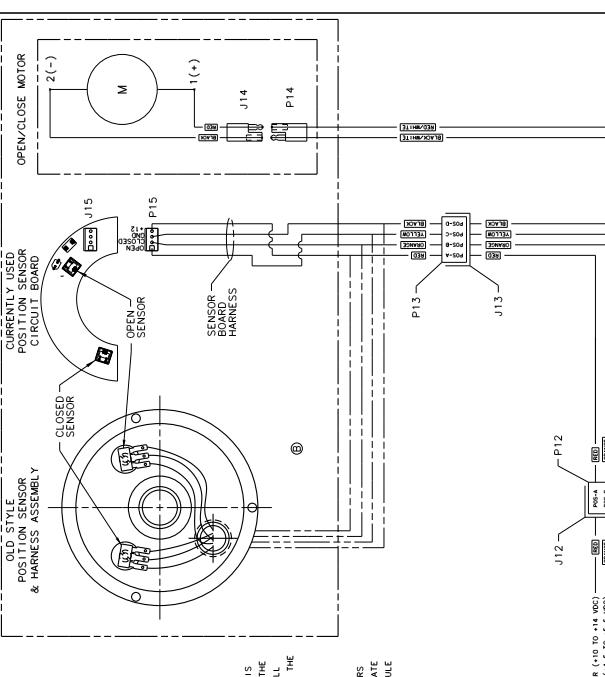


MONITOR W/NOZZLE



WATER VALVE



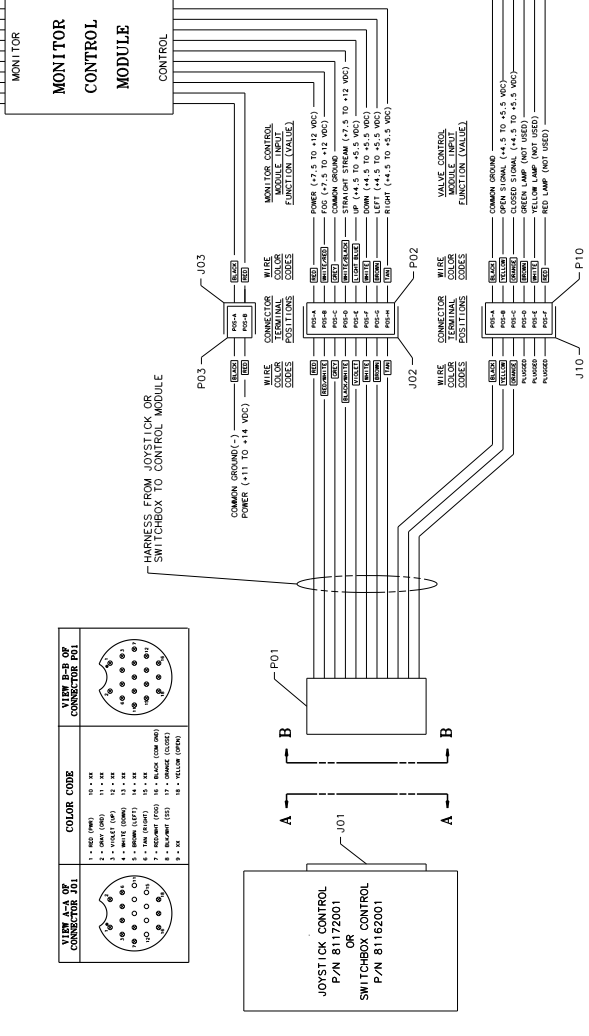
MONITOR FUNCTIONS (UP, DOWN, LEFT, RIGHT):
MONITOR FUNCTIONS ARE ACTIVATED BY SWITCHING THE SIGNAL VOLTAGE FOR THE DESIRED FUNCTION TO COMMON GROUND ON THE CONTROL SIDE OF THE MONITOR CONTROL MODULE. THE RESULTING MONITOR CONTROL MODULE OUTPUT CONTINUES UNTIL THE INPUT SIGNAL IS REMOVED OR THE HALL SENSOR CONTROLLING THAT FUNCTION TRAVEL LIMITS IS TRIGGERED. ONCE THE HALL SENSOR HAS BEEN TRIGGERED THE MONITOR CONTROL MODULE OUTPUT THAT WAS ACTIVE WHEN THE SENSOR WAS TRIGGERED WILL BE TERMINATED AND ONLY AN OUTPUT FOR THE OPPOSITE DIRECTION OF TRAVEL WILL BE ALLOWED UNTIL THE SENSOR SIGNAL IS REMOVED.

MONITOR TRAVEL LIMIT HALL SENSOR FUNCTION:
THE HALL SENSORS REQUIRE POWER, GROUND, AND SIGNAL VOLTAGE TO OPERATE. WHEN THE SENSORS DETECT A MAGNET THAT SENSORS SIGNAL VOLTAGE IS SWITCHED TO GROUND SIGNALING THE MONITOR CONTROL MODULE TO TERMINATE THE OUTPUT THAT WAS ACTIVE WHEN THE SENSOR WAS TRIGGERED. UNTIL THE SENSOR SIGNAL IS REMOVED ONLY A MONITOR MODULE OUTPUT FOR THE OPPOSITE DIRECTION WILL BE ALLOWED.

NOZZLE FUNCTIONS:
THE NOZZLE ARE ACTIVATED BY SWITCHING THE SIGNAL VOLTAGE OF THE DESIRED FUNCTION TO COMMON GROUND ON THE CONTROL SIDE OF THE MONITOR CONTROL MODULE. THE RESULTING MONITOR CONTROL MODULE OUTPUT WILL CONTINUE UNTIL THE INPUT SIGNAL IS REMOVED. (ELKHART BRASS NOZZLE ACTUATORS FREE SPIN AT BOTH ENDS OF TRAVEL.)

VALVE FUNCTIONS:
VALVE FUNCTIONS ARE INITIATED BY SWITCHING THE SIGNAL VOLTAGE FOR DESIRED FUNCTION TO COMMON GROUND ON THE CONTROL SIDE OF THE VALVE CONTROL MODULE. THE RESULTING VALVE CONTROL MODULE OUTPUT CONTINUES UNTIL THE INPUT IS REMOVED. AT A TIME LIMIT OF 12 SECONDS EXPIRES, OR THE HALL SENSOR CORRESPONDING TO THE OUTPUT IS TRIGGERED. ONCE THE SIGNAL IS TRIGGERED, THE VALVE CONTROL MODULE OUTPUT FOR THE OPPOSITE DIRECTION OF TRAVEL WILL BE ALLOWED UNTIL THE SENSOR SIGNAL IS REMOVED. (THE 12 SECOND TIME LIMIT ON THE VALVE CONTROL MODULE OUTPUT IS THERE TO PROTECT THE VALVE MOTOR IN THE EVENT A SENSOR FAILS.)

VALVE POSITION HALL SENSOR FUNCTION:
THE VALVE POSITION HALL SENSORS REQUIRE POWER, GROUND, AND SIGNAL VOLTAGE TO OPERATE. WHEN ONE OF THE SENSORS DETECTS A MAGNET THAT SENSORS SIGNAL VOLTAGE IS SWITCHED TO GROUND SIGNALING THE VALVE CONTROL MODULE TO TERMINATE THE OUTPUT THAT WAS ACTIVE UNTIL THE SENSOR SIGNAL IS REMOVED. UNTIL THE SENSOR SIGNAL IS REMOVED ONLY THE OPPOSITE VALVE CONTROL MODULE OUTPUT WILL BE ALLOWED.



WIRE PAIR OF CONNECTOR J01	COLOR CODE
1 - RED (PWR)	10 - BK
2 - ORN (GND)	11 - BK
3 - BK (GND)	12 - BK
4 - BK (GND)	13 - BK
5 - BK (GND)	14 - BK
6 - BK (GND)	15 - BK (CLR)
7 - BK (GND)	16 - BK (CLR)
8 - BK (GND)	17 - BK (CLR)
9 - BK (GND)	18 - BK (CLR)

ATTENTION:
THE SYSTEM SHOWN HERE CONTAINS THE BASIC WIRING PACKAGE. THERE ARE SOME EXTENSION HARNESSES AVAILABLE THAT ARE NOT SHOWN HERE. COLOR CODING OF THE HARNESSES IS NOT UNIFORM FROM HARNESS TO HARNESS. OBSERVE TERMINAL POSITIONS WITHIN THE CONNECTORS RATHER THAN WIRE COLOR WHEN TROUBLE SHOOTING.

NO.	PART NO.	PART NAME	REV.
1	81162001	JOYSTICK CONTROL P/N 81162001	
2	81162002	MONITOR CONTROL P/N 81162002	
3	81162003	VALVE CONTROL P/N 81162003	
4	81162004	MONITOR HARNESS P/N 81162004	
5	81162005	VALVE HARNESS P/N 81162005	
6	81162006	WATER VALVE P/N 81162006	
7	81162007	MONITOR W/NOZZLE P/N 81162007	

NO.	PART NO.	PART NAME	REV.
1	81162001	JOYSTICK CONTROL P/N 81162001	
2	81162002	MONITOR CONTROL P/N 81162002	
3	81162003	VALVE CONTROL P/N 81162003	
4	81162004	MONITOR HARNESS P/N 81162004	
5	81162005	VALVE HARNESS P/N 81162005	
6	81162006	WATER VALVE P/N 81162006	
7	81162007	MONITOR W/NOZZLE P/N 81162007	

NO.	PART NO.	PART NAME	REV.
1	81162001	JOYSTICK CONTROL P/N 81162001	
2	81162002	MONITOR CONTROL P/N 81162002	
3	81162003	VALVE CONTROL P/N 81162003	
4	81162004	MONITOR HARNESS P/N 81162004	
5	81162005	VALVE HARNESS P/N 81162005	
6	81162006	WATER VALVE P/N 81162006	
7	81162007	MONITOR W/NOZZLE P/N 81162007	

NO.	PART NO.	PART NAME	REV.
1	81162001	JOYSTICK CONTROL P/N 81162001	
2	81162002	MONITOR CONTROL P/N 81162002	
3	81162003	VALVE CONTROL P/N 81162003	
4	81162004	MONITOR HARNESS P/N 81162004	
5	81162005	VALVE HARNESS P/N 81162005	
6	81162006	WATER VALVE P/N 81162006	
7	81162007	MONITOR W/NOZZLE P/N 81162007	

NO.	PART NO.	PART NAME	REV.
1	81162001	JOYSTICK CONTROL P/N 81162001	
2	81162002	MONITOR CONTROL P/N 81162002	
3	81162003	VALVE CONTROL P/N 81162003	
4	81162004	MONITOR HARNESS P/N 81162004	
5	81162005	VALVE HARNESS P/N 81162005	
6	81162006	WATER VALVE P/N 81162006	
7	81162007	MONITOR W/NOZZLE P/N 81162007	

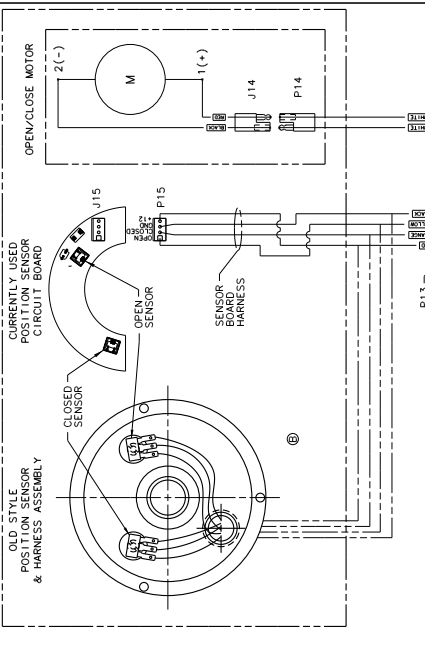
NO.	PART NO.	PART NAME	REV.
1	81162001	JOYSTICK CONTROL P/N 81162001	
2	81162002	MONITOR CONTROL P/N 81162002	
3	81162003	VALVE CONTROL P/N 81162003	
4	81162004	MONITOR HARNESS P/N 81162004	
5	81162005	VALVE HARNESS P/N 81162005	
6	81162006	WATER VALVE P/N 81162006	
7	81162007	MONITOR W/NOZZLE P/N 81162007	

NO.	PART NO.	PART NAME	REV.
1	81162001	JOYSTICK CONTROL P/N 81162001	
2	81162002	MONITOR CONTROL P/N 81162002	
3	81162003	VALVE CONTROL P/N 81162003	
4	81162004	MONITOR HARNESS P/N 81162004	
5	81162005	VALVE HARNESS P/N 81162005	
6	81162006	WATER VALVE P/N 81162006	
7	81162007	MONITOR W/NOZZLE P/N 81162007	

NO.	PART NO.	PART NAME	REV.
1	81162001	JOYSTICK CONTROL P/N 81162001	
2	81162002	MONITOR CONTROL P/N 81162002	
3	81162003	VALVE CONTROL P/N 81162003	
4	81162004	MONITOR HARNESS P/N 81162004	
5	81162005	VALVE HARNESS P/N 81162005	
6	81162006	WATER VALVE P/N 81162006	
7	81162007	MONITOR W/NOZZLE P/N 81162007	

NO.	PART NO.	PART NAME	REV.
1	81162001	JOYSTICK CONTROL P/N 81162001	
2	81162002	MONITOR CONTROL P/N 81162002	
3	81162003	VALVE CONTROL P/N 81162003	
4	81162004	MONITOR HARNESS P/N 81162004	
5	81162005	VALVE HARNESS P/N 81162005	
6	81162006	WATER VALVE P/N 81162006	
7	81162007	MONITOR W/NOZZLE P/N 81162007	

MONITOR W/NOZZLE



MONITOR FUNCTIONS (UP, DOWN, LEFT, RIGHT):
 MONITOR FUNCTIONS ARE ACTIVATED BY SWITCHING THE SIGNAL VOLTAGE FOR THE DESIRED FUNCTION TO COMMON GROUND ON THE CONTROL SIDE OF THE MONITOR CONTROL MODULE. THE RESULTING MONITOR CONTROL MODULE OUTPUT CONTINUES UNTIL THE INPUT SIGNAL IS REMOVED OR THE HALL SENSOR CONTROLLING THAT FUNCTION TRAVEL LIMITS IS TRIGGERED. ONCE THE HALL SENSOR HAS BEEN TRIGGERED THE MONITOR CONTROL MODULE OUTPUT THAT WAS ACTIVE WHEN THE SENSOR WAS TRIGGERED WILL BE TERMINATED AND ONLY AN OUTPUT FOR THE OPPOSITE DIRECTION OF TRAVEL WILL BE ALLOWED UNTIL THE SENSOR SIGNAL IS REMOVED.

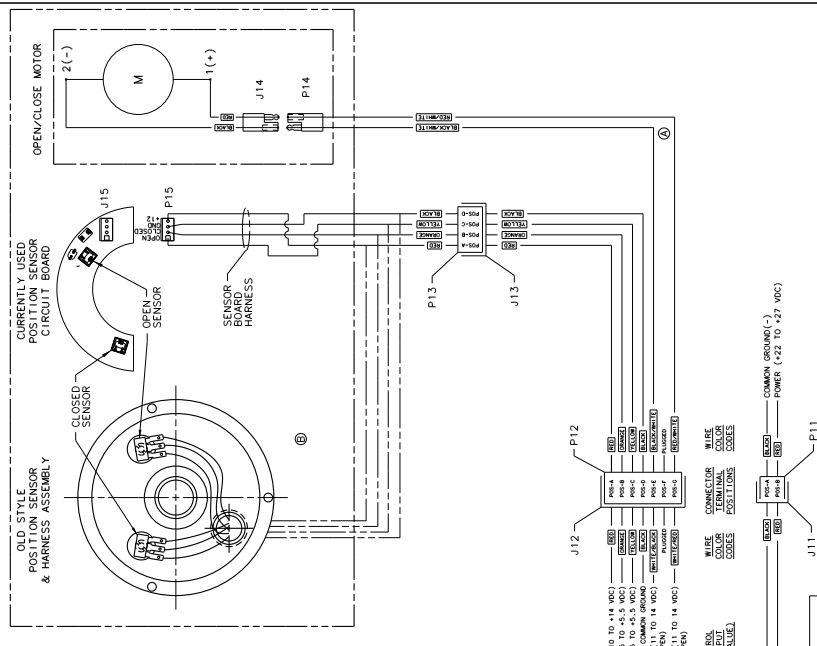
MONITOR TRAVEL LIMIT HALL SENSOR FUNCTION:
 THE HALL SENSORS REQUIRE POWER, GROUND, AND SIGNAL VOLTAGE TO OPERATE. WHEN THE SENSORS DETECT A MAGNET THAT SENSORS SIGNAL VOLTAGE IS SWITCHED TO GROUND SIGNALING THE MONITOR CONTROL MODULE TO TERMINATE THE OUTPUT THAT WAS ACTIVE WHEN THE SENSOR WAS TRIGGERED. UNTIL THE SENSOR SIGNAL IS REMOVED ONLY A MONITOR MODULE OUTPUT FOR THE OPPOSITE DIRECTION WILL BE ALLOWED.

NOZZLE FUNCTIONS:
 NOZZLE FUNCTIONS ARE ACTIVATED BY SWITCHING THE SIGNAL VOLTAGE OF THE DESIRED FUNCTION TO COMMON GROUND ON THE CONTROL SIDE OF THE VALVE CONTROL MODULE. THE RESULTING VALVE CONTROL MODULE OUTPUT CONTINUES UNTIL THE INPUT SIGNAL IS REMOVED. (ELMHART BRASS NOZZLE ACTUATORS FREE SPIN AT BOTH ENDS OF TRAVEL.)

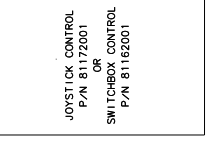
VALVE FUNCTIONS:
 VALVE FUNCTIONS ARE INITIATED BY SWITCHING THE SIGNAL VOLTAGE FOR DESIRED FUNCTION TO COMMON GROUND ON THE CONTROL SIDE OF THE VALVE CONTROL MODULE. THE RESULTING VALVE CONTROL MODULE OUTPUT CONTINUES UNTIL THE INPUT IS REMOVED. A TIME LIMIT OF 12 SECONDS EXPIRES. OR THE HALL SENSOR CORRESPONDING TO THE OUTPUT IS TRIGGERED. ONCE THE HALL SENSOR HAS BEEN TRIGGERED THE VALVE CONTROL MODULE OUTPUT THAT WAS ACTIVE WHEN THE SENSOR WAS TRIGGERED WILL BE TERMINATED AND ONLY AN OUTPUT FOR THE OPPOSITE DIRECTION OF TRAVEL WILL BE ALLOWED UNTIL THE SENSOR SIGNAL IS REMOVED. (THE 12 SECOND TIME LIMIT ON THE VALVE CONTROL MODULE OUTPUT IS THERE TO PROTECT THE VALVE MOTOR IN THE EVENT A SENSOR FAILS.)

VALVE POSITION HALL SENSOR FUNCTION:
 THE VALVE POSITION HALL SENSORS REQUIRE POWER, GROUND, AND SIGNAL VOLTAGE TO OPERATE. WHEN ONE OF THE SENSORS DETECTS A MAGNET THAT SENSORS SIGNAL VOLTAGE IS SWITCHED TO GROUND SIGNALING THE VALVE CONTROL MODULE TO TERMINATE THE OUTPUT CORRESPONDING TO THAT SENSOR. UNTIL THE SENSOR SIGNAL IS REMOVED ONLY THE OPPOSITE VALVE CONTROL MODULE OUTPUT WILL BE ALLOWED.

WATER VALVE



ATTENTION:
 THE SYSTEM SHOWN HERE CONTAINS THE BASIC WIRING PACKAGE. THERE ARE SOME EXTENSION HARNESES AVAILABLE THAT ARE NOT SHOWN HERE. COLOR CODING OF THE HARNESES IS NOT UNIFORM FROM HARNESS TO HARNESS. OBSERVE TERMINAL POSITIONS WITHIN THE CONNECTORS RATHER THAN WIRE COLOR WHEN TROUBLE SHOOTING.



NO.	PART NO.	PART NAME	REQ.
B	81162001	JOYSTICK CONTROL	1
A	81162001	SWITCHBOX CONTROL	1
REL.	RELEASED TO PROD.	TAB USE	
DATE:	07/17/08	BY:	J.C.H.
DATE:	07/17/08	BY:	J.C.H.

NO.	PART NO.	PART NAME	REQ.
B	81162001	VALVE CONTROL MODULE	1
A	81162001	VALVE HARNESS ASSEMBLY	1
REL.	RELEASED TO PROD.	TAB USE	
DATE:	07/17/08	BY:	J.C.H.
DATE:	07/17/08	BY:	J.C.H.

NO.	PART NO.	PART NAME	REQ.
B	81162001	VALVE CONTROL MODULE	1
A	81162001	VALVE HARNESS ASSEMBLY	1
REL.	RELEASED TO PROD.	TAB USE	
DATE:	07/17/08	BY:	J.C.H.
DATE:	07/17/08	BY:	J.C.H.

NO.	PART NO.	PART NAME	REQ.
B	81162001	VALVE CONTROL MODULE	1
A	81162001	VALVE HARNESS ASSEMBLY	1
REL.	RELEASED TO PROD.	TAB USE	
DATE:	07/17/08	BY:	J.C.H.
DATE:	07/17/08	BY:	J.C.H.

NO.	PART NO.	PART NAME	REQ.
B	81162001	VALVE CONTROL MODULE	1
A	81162001	VALVE HARNESS ASSEMBLY	1
REL.	RELEASED TO PROD.	TAB USE	
DATE:	07/17/08	BY:	J.C.H.
DATE:	07/17/08	BY:	J.C.H.