

TROUBLESHOOTING GUIDE (INCLUDING DIAGRAMS)

NIW P/N: 700-0806-4006 USED ON DARF (FM) MODELS

7 FUNCTION ELECTRIC OVER HYDRAULIC VALVE

Safety First!

High Pressure fluid is present in most operational hydraulic systems which can be dangerous and cause serious injury or death.

Hydraulic Systems can operate at temperatures above 212 degrees F (boiling) with the potential risk of serious burns.

Always consider gravity before working on a hydraulic machine. Any part of a hydraulic system can remain pressurized after the system has been shut down. Attempting to remove a line or component that is supporting a load can lead to a sudden release of pressure and uncontrolled movement of the machine causing serious personal injury, death or property damage.

Don't guess. Do not make modifications, repairs or adjustments to any electrohydraulic system unless you are a trained and qualified technician or engineer.

Basic Rules

- * Hydraulic pumps create flow, not pressure. * Resistance to flow creates pressure. * Pressure determines cylinder force.
- * Flow determines cylinder speed. * Oil under pressure always takes the path of least resistance.
- * When oil moves from an area of high pressure to low pressure (pressure drop) without doing useful work, heat is generated.

Useful Tools

Stop Watch, Infrared Thermometer, Multimeter, Pressure Gauge, Flow Meter, Logical Process of Elimination.

Where to Start the Troubleshooting

The fundamental design of most hydraulic systems involves a flow producing pump from a remote outlet which is directed to an actuator, the cylinder, to move a load. When the pump flow meets the actuator load, the resistance of the load results in pressure.

Once pressure is built there are two possible results; the first is that the load moves (work is done) or the flow escapes from the pressurized circuit to the tank. These two outcomes usually occur simultaneously.

If the amount of power lost becomes noticeable, e.g. the movement of the load becomes much slower or stops, there is a problem. In the majority of hydraulic troubleshooting situations, the undertaking is to locate the missing flow or, conversely, the component that is allowing an excessive amount of flow to escape from the circuit without doing the work or the flow not getting to the circuit at all. With that being said, experience shows that over 90% of the time the problem is electrical in nature, not hydraulic.

Always rule out the electrical first - such as poor connections, low voltage, or no ground.

Solenoid coils either work or not, there is no in between. They create a magnetic field which shifts the valve when the proper voltage is applied. You can confirm by putting a screwdriver on the top of the coil and feel the magnetic pull.

Troubleshooting is a logical process of elimination which starts with checking the easy things first. This results in the fastest resolution. Don't assume anything, actually check it yourself. In a nutshell, the manifold is a pressure vessel or plumbing, the cartridge valves tell the oil **where** to go, and the solenoid coils tell the cartridge valves **when** to go. Typical troubleshooting strategies involve eliminating a component by isolating it, by changing it, or by backing things out and returning to a previous state that worked. Review the following firing diagram and prints which will help explain the logic behind this electrohydraulic manifold assembly and control, prior to any troubleshooting analysis.

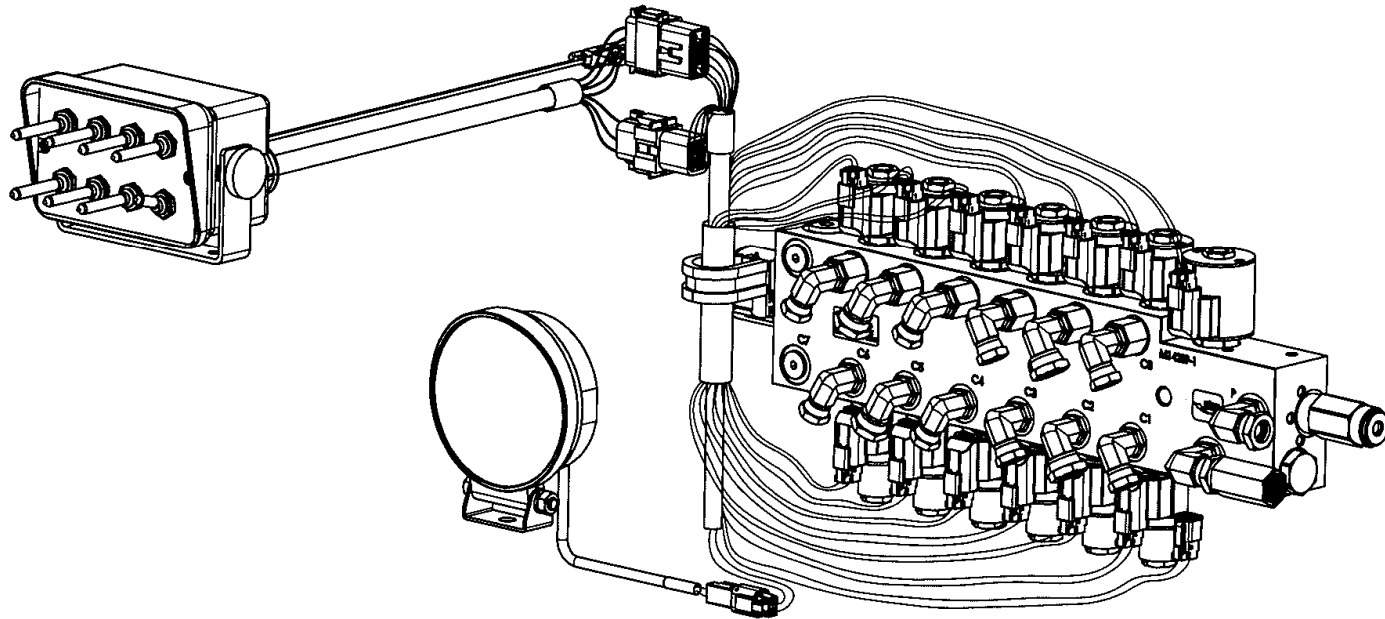
700-0806-4006

Switch #	Boot Color	Switch Position	Hot Wires	Pressure Ports	Tank Ports	Function
1	Yellow	Up	Blue & Wht/Blk & Green	C4	C11	Left Angle Open
		Down	Blue & Wht/Blk & Green & Blk Wht	C11	C4	Left Angle Close
Switch #	Boot Color	Switch Position	Hot Wires	Pressure Ports	Tank Ports	Function
2	Green	Up	Grn/Wht & Blu/Wht & Grn	C5	C12	Left Frame Open
		Down	Grn/Wht & Blu/Wht & Grn & Blk/Wht	C12	C5	Left Frame Close
Switch #	Boot Color	Switch Position	Hot Wires	Pressure Ports	Tank Ports	Function
3	Lt. Blue	Up	Wht & Blu/Blk & Grn	C2	C9	Right Frame Open
		Down	Wht & Blu/Blk & Grn & Blk/Wht	C9	C2	Right Frame Close
Switch #	Boot Color	Switch Position	Hot Wires	Pressure Ports	Tank Ports	Function
4	Gray	Up	Red & Org & Grn	C1	C8	Right Angle Open
		Down	Red & Org & Grn & Blk/Wht	C8	C1	Right Angle Close
Switch #	Boot Color	Switch Position	Hot Wires	Pressure Ports	Tank Ports	Function
5	Red	Up	Blk/Red & Blu/Red & Grn	C6	C13	Left Frame Wheel Raise
		Down	Blk/Red & Blu/Red & Grn & Blk/Wht	C13	C6	LeftFrame Wheel Lower
Switch #	Boot Color	Switch Position	Hot Wires	Pressure Ports	Tank Ports	Function
6	White	Up	Grn/Wht & Red/Wht & Blk/Red & Blue/Red Grn	C3 & C6	C10 & C6	L & R Frame Wheel Raise
		Down	Grn/Wht & Red/Wht & Blk/Red & Blue/Red Grn & Blk/Wht	C10 & C13	C3 & C6	L & R Frame Wheel Lower
Switch #	Boot Color	Switch Position	Hot Wires	Pressure Ports	Tank Ports	Function
7	Blue	Up	Blk/Red & Org/Blk & Grn	C3	C10	Right Frame Wheel Raise
		Down	Blk/Red & Org/Blk & Grn & Blk/Wht	C10	C3	RightFrame Wheel Lower
Switch #	Boot Color	Switch Position	Hot Wires	Pressure Ports	Tank Ports	Function
8	Black	Up	Grn/Blk	****	****	Aux. Light On
		Down	****	****	****	Aux. Light Off
Ground wires			Wht/Red & Org/Red & Blk & Red/Wht			

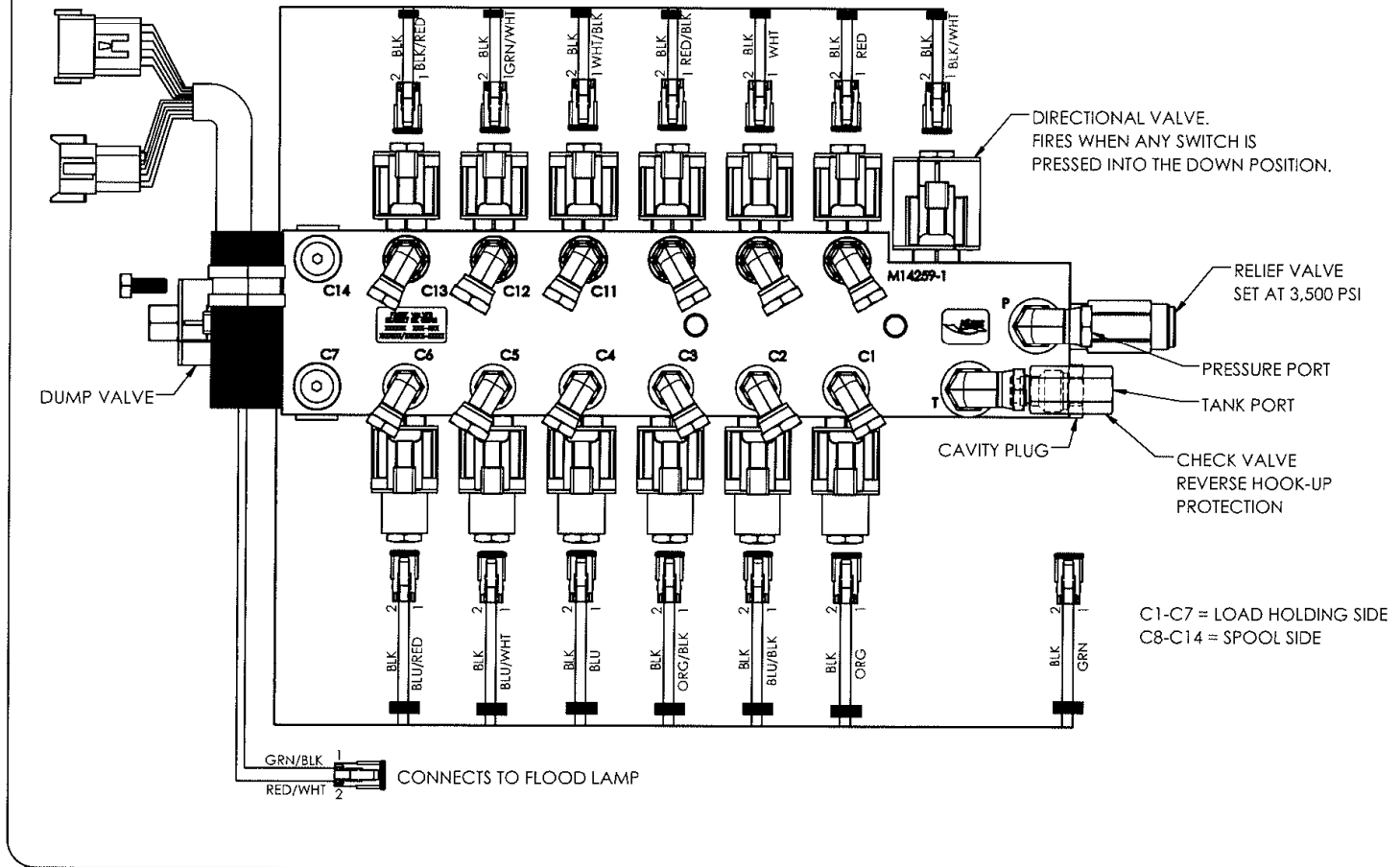
8 Pin Connector	Wire Color
1	WHT/RED
2	RED
3	WHT/BLK
4	BLK/WHT
5	GRN
6	BLK/RED
7	BLK
8	CAVITY PLUG

12 Pin Connector	Wire Color
1	RED/WHT
2	GRN/BLK
3	BLU/BLK
4	WHT
5	BLU/WHT
6	GRN/WHT
7	ORG/BLK
8	RED/BLK
9	BLU/RED
10	BLU
11	ORG/RED
12	ORG

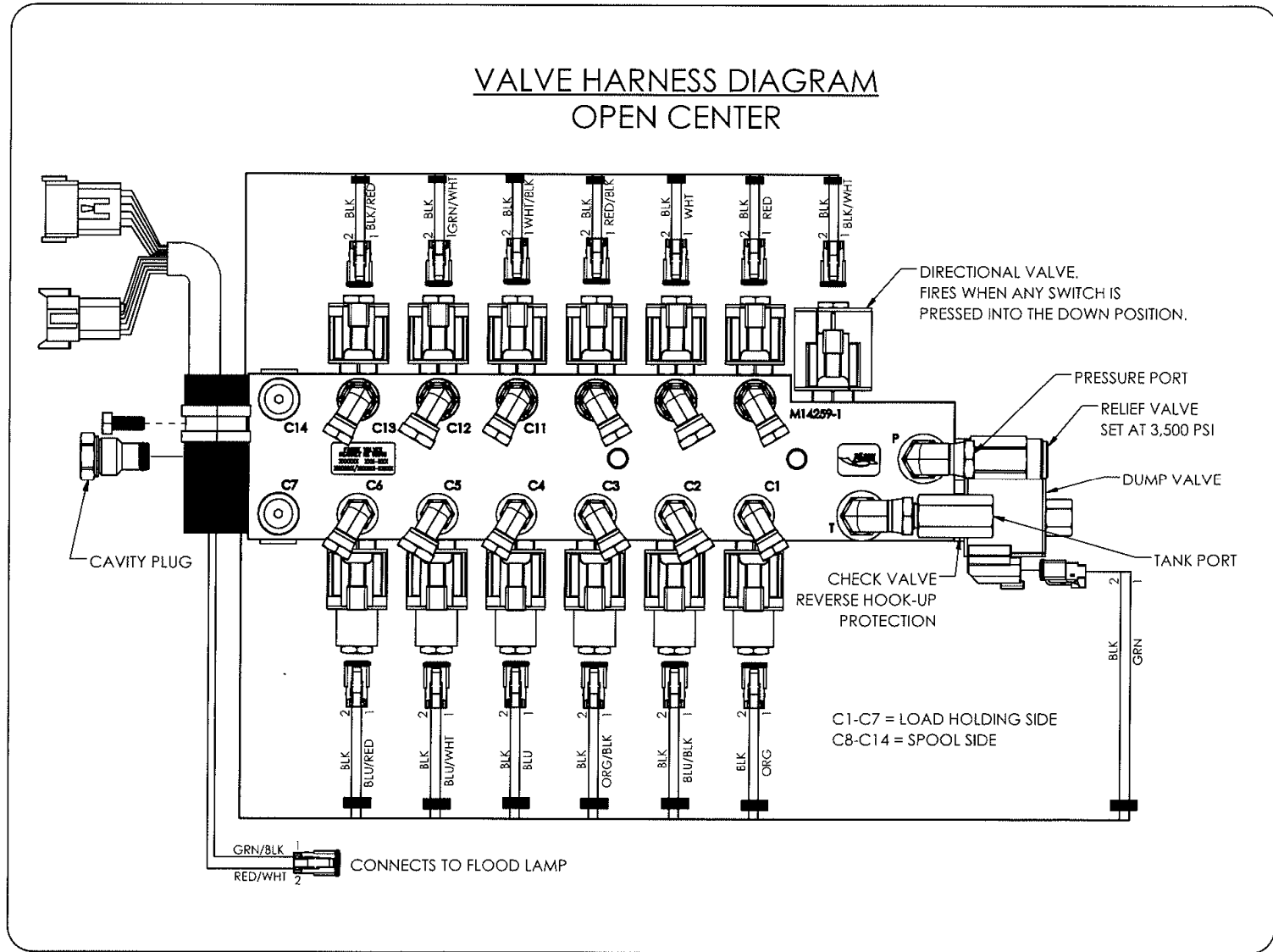
700-0806-4006

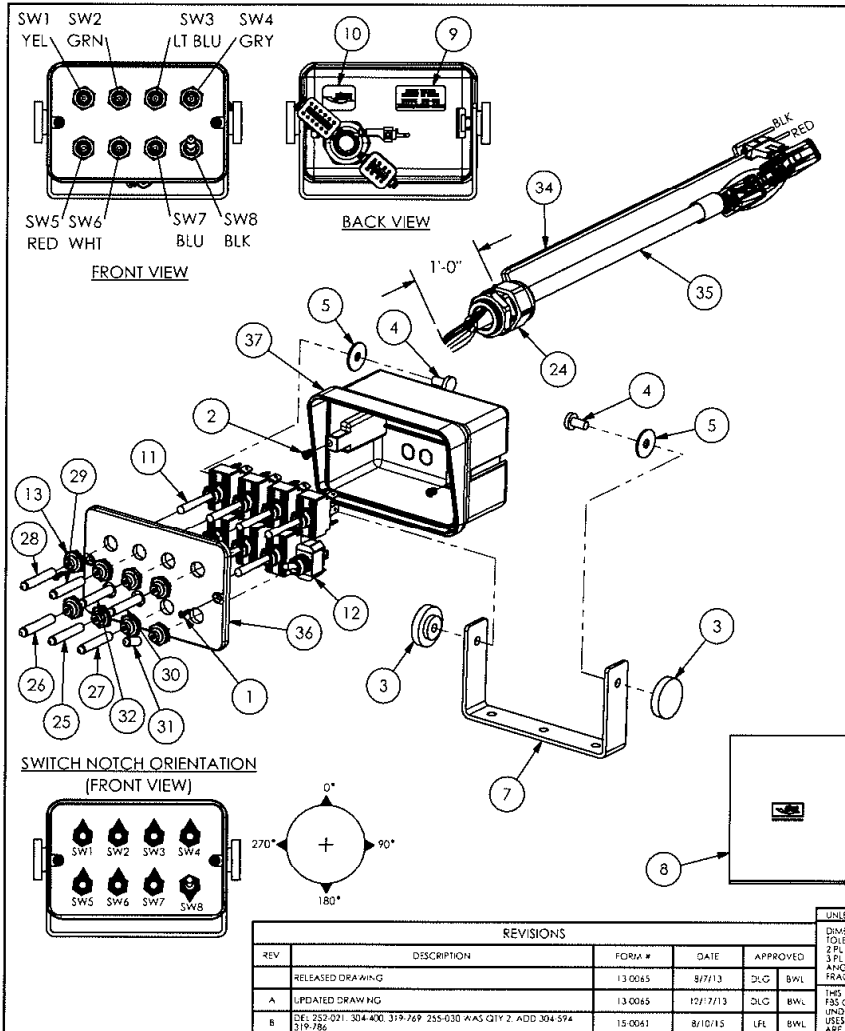


VALVE HARNESS DIAGRAM CLOSED CENTER



VALVE HARNESS DIAGRAM OPEN CENTER





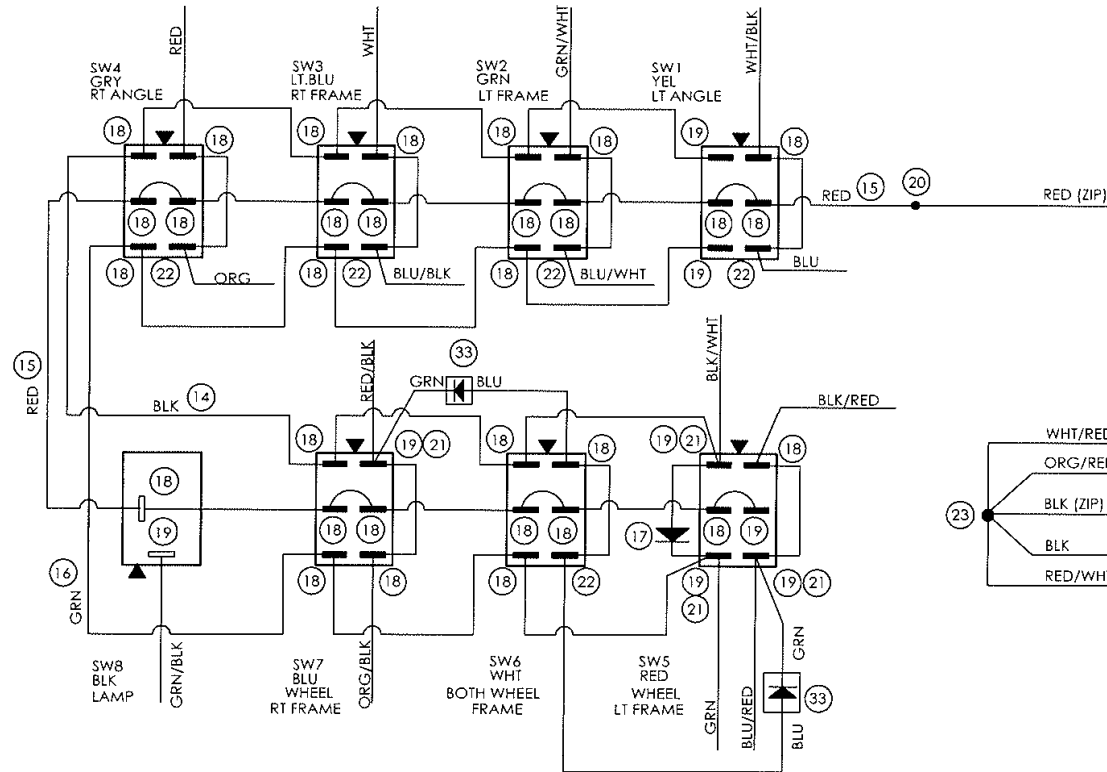
PARTS LIST			
NO.	PART NUMBER	QTY	PART DESCRIPTION
1	212-184	2	SCREW PHIL PAN #6-32X3/8" BLK
2	212-202	2	SCREW INSERT BRASS #6-32X3/8"
3	212-215	2	KNOB FEMALE 1/4"-20
4	212-231	2	SCREW WELDED 1/4"X.20X.625"
5	213-335	2	WASHER NYLON FLAT 1/4"-20
6	214-002	14	CABLE TIE BLK 8.5"
7	219-300	1	BRKT MNTN BLK AL
8	230-057	1	BAG POLY 14X18 2MIL LOGO
9	232-050	1	DECL S/N SILVER
10	232-058	1	DECAL FASSE BLK/GOLD 1"X.75" RND CRNR
11	250-013	7	SW TOG D/PDT 3P MOM LONG
12	250-020	1	SW TOG SPST 2P STAT SHORT
13	250-023	8	BOOT TOG 15/32" OPN BLK
14	252-058	1	WIRE 18GA BLK
15	252-059	1	WIRE 18GA RED
16	252-060	1	WIRE 18GA GRN
17	254-001	1	DIODE RECTIFIER 6A05-T 6A 50V SILICON R-6
18	255-002	31	TRM PO T-TAP F 18-14GA
19	255-006	8	TRM PO F INS 22-18GA
20	255-030	1	TRM SPLICE CLOSED END 16-18GA
21	255-070	4	TRM PO M/F 16-14GA
22	255-119	5	TRM PO F INS 16-14GA
23	255-285	1	TRM SPLICE CLOSED END LRG 14-16GA
24	255-710	1	STR RLF HEYCO .45"-.705"ID. HOLE DIA 1.115"
25	259-004	1	GRIP TOG VNYL WHT .187"
26	259-005	1	GRIP TOG VNYL RED .187"
27	259-015	1	GRIP TOG VNYL BLU .187"
28	259-022	1	GRIP TOG VNYL YEL .187"
29	259-023	1	GRIP TOG VNYL GRN .187"
30	259-027	1	GRIP TOG VNYL GRY .187"
31	259-031	1	GRIP TOG VNYL BLK .187"
32	259-044	1	GRIP TOG VNYL LT BLU .187"
33	300-327	1	DIODE ASSY 6A .5"
34	304-594	1	HRN 2CON 16GA R/B ZIP 10A FUSE 7"
35	312-082	1	HRN 19CON 18GA DTP12P(11) & DTP8P(7) 6"
36	312-083	1	ENCL FP DRILL MNTN SW8 NIKKEL IRON
37	319-786	1	ENCL DRILL MNTN BX 1 1/8" STR RLF

NOTES:
 1. USE 1 CABLE TIE TO COIL UP HARNESS.
 2. PUT REMAINING CABLE TIES IN BAG.

REVISIONS				
REV	DESCRIPTION	FORM #	DATE	APPROVED
	RELEASED DRAWING	13 0065	9/7/13	DLG BWL
A	UPDATED DRAWING	13 0065	12/7/13	DLG BWL
B	DE: 252-021: 304-400: 319-269: 255-030: WAS QTY 2: ADD: 304-594: 319-786	15 0041	8/10/15	LFL BWL

UNLESS OTHERWISE SPECIFIED:		INITIALS	DATE
DIMENSIONS ARE IN INCHES	TOLERANCES ON:	DRAWN	9/7/2016
2 PL DECIMALS	3 PL DECIMALS	LFL	
ANGLES	FRACTIONS	CHECKED	9/7/2016
		BWL	
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		MNTN BX TOG8-5-DTP12P(12)DTP8P(7)	
		FORM NO	312-081
		SCALE: 1:4	SHEET: 1 OF 2

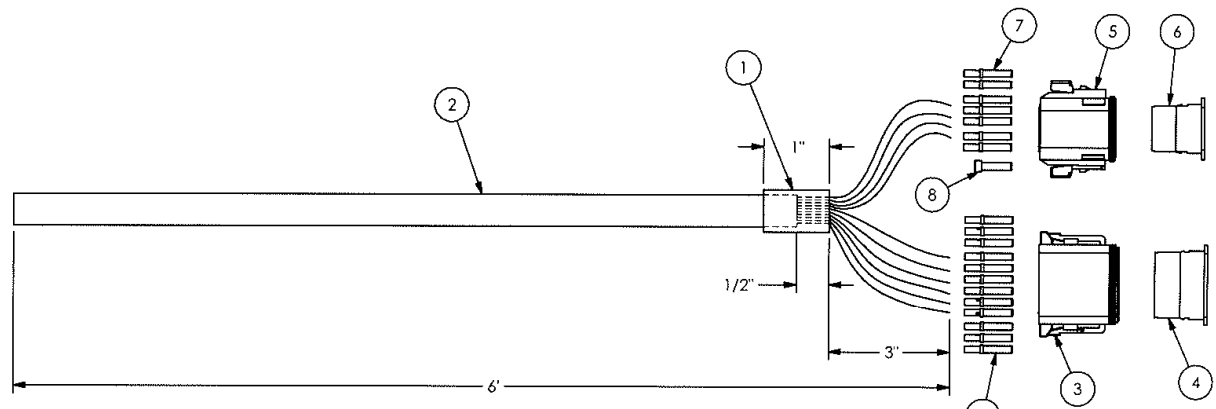
SWITCH WIRING DIAGRAM



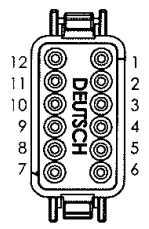
▲ = NOTCH LOCATION

UNLESS OTHERWISE SPECIFIED	INITIALS	DATE	FASSE VALVES SEVEN ROYAL PARK KEARNEY, NE 68848-2348
DIMENSIONS ARE IN INCHES	DRAWN		
TOLERANCES ON:	LFL	9/7/2016	ANTRBX TOG8-5- DTP12P(12)DTP8P(7)
2 PL DECIMALS	CHECKED		
3 PL DECIMALS	BWL	9/7/2016	
ANGLES			TSCW NO
FRACTIONS			DWG NO. 312-081
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			SHEET 2 OF 2

PARTS LIST			
NO.	PART NUMBER	QTY	PART DESCRIPTION
1	231-007	1"	SHRINKTUBING .625" BLK
2	252-004	6'	CABLE 19CON 18GA PVC GRY
3	255-213	1	CONN DEUT DT PLUG 12PIN
4	255-215	1	CONN DEUT LOCK WEDGE 12PIN DTP ORG
5	255-219	1	CONN DEUT DT PLUG 8PIN
6	255-221	1	CONN DEUT LOCK WEDGE 8PIN DTP ORG
7	255-978	19	CONT DEUT SOCKET 16-18GA
8	255-979	1	CONT DEUT CAVITY PLUG

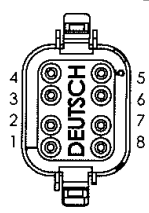


PIN OUT DETAIL ③



- 1 - RED/WHT
- 2 - GRN/BLK
- 3 - BLU/BLK
- 4 - WHT
- 5 - BLU/WHT
- 6 - GRN/WHT
- 7 - ORG/BLK
- 8 - RED/BLK
- 9 - BLU/RED
- 10 - BLU
- 11 - ORG/RED
- 12 - ORG

PIN OUT DETAIL ⑤



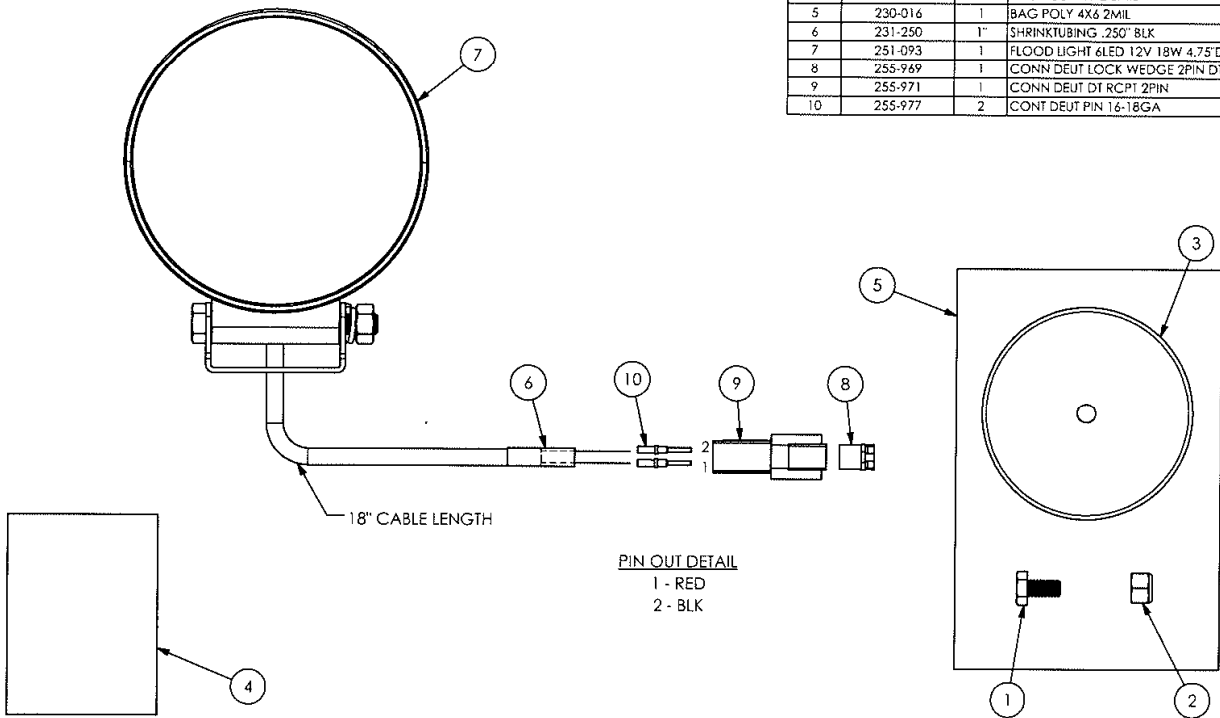
- 1 - WHT/RED
- 2 - RED
- 3 - WHT/BLK
- 4 - BLK/WHT
- 5 - GRN
- 6 - BLK/RED
- 7 - BLK
- 8 - CAVITY PLUG

REVISIONS				
REV.	DESCRIPTION	FORM #	DATE	APPROVED
	RELEASED PRINT	13-0065	8/7/13	DLG BWL

UNLESS OTHERWISE SPECIFIED:	INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN LFL	9/22/2016
TOLERANCES ON:	CHECKED BWL	9/22/2016
2 PL DECIMALS		
3 PL DECIMALS		
ANGLES		
FRACTIONS		

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FASSE VALVES SEVEN HOLLOW PARK KEARNEY, NE 68848-2348	
HRN 19CON 18GA DTP12P(11) & DTP8P(7) 6'	
PIC'G NO.	DWG NO. 312-082
SCALE: 1:2	SHEET: 1 OF 1



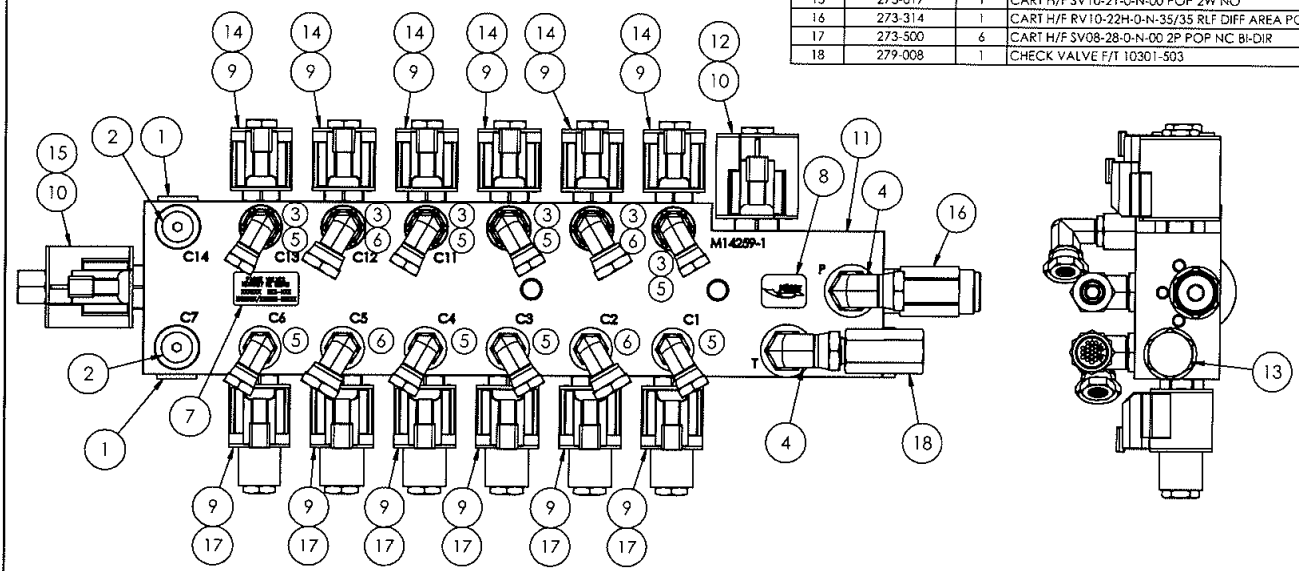
PARTS LIST			
NO.	PART NUMBER	QTY	PART DESCRIPTION
1	212-108	1	BOLT 1/4"-20X .5"
2	213-442	1	NUT HEX NYLON 1/4"-20
3	219-016	1	MAG CERAMIC RND 3.25" DIA DL 18"
4	230-002	1	BAG POLY 9X12 3MIL
5	230-016	1	BAG POLY 4X6 2MIL
6	231-250	1"	SHRINKTUBING .250" BLK
7	251-093	1	FLOOD LIGHT 6LED 12V 18W 4.75" DIA DL 18"
8	255-969	1	CONN DEUT LOCK WEDGE 2PIN DTR GRN
9	255-971	1	CONN DEUT DI RCP1 2PIN
10	255-977	2	CONT DEUT PIN 16-18GA

PIN OUT DETAIL
 1 - RED
 2 - BLK


REVISIONS					UNLESS OTHERWISE SPECIFIED		NITALS		DATE		
REV.	DESCRIPTION	FORM #	DATE	APPROVED	DIMENSIONS ARE IN INCHES	DRAWN	LFL	9/22/2016	CHECKED	BWL	9/22/2016
	RELEASED PRINT	13-0065	8/12/13	DIG BWL	TO: FRACTIONS ON: 2 P. DECIMALS 3 P. DECIMALS ANGLES FRACTIONS						
A	REVISED DRAWING	13-0065	5/14/14	DIG BWL	THIS DRAWING IS A PROPRIETARY DESIGN BY FASSE CORPORATION/FASSE VALVES AND IS SUBMITTED UNDER A CONFIDENTIAL RELATIONSHIP. EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, ALL RIGHTS ARE RESERVED BY FASSE VALVES.						
B	231-250 WAS 231-313	15-0057	7/29/15	LFL BWL	FASSE VALVES SEVEN ROVAR PARK KEARNEY, NE 68948-2348		FLOOD LIGHT ASSY 6LED 12V 18W DTR 2P(2) 18"		PSC/M NO. DWG. NO. 312-084		
										SCALE 1:2	SHEET 1 OF 1

SPECIFICATIONS:
 MAXIMUM PRESSURE 3000 PSI
 MAXIMUM FLOW 8 GPM
 PORT SIZE (P, T) -8 SAE O-RING
 PORT SIZE (ALL C) -6 SAE O-RING
 MOUNTING HOLES (2) .406 DIA
 MOUNTING HOLES (1) 5/16-18 TAPPED

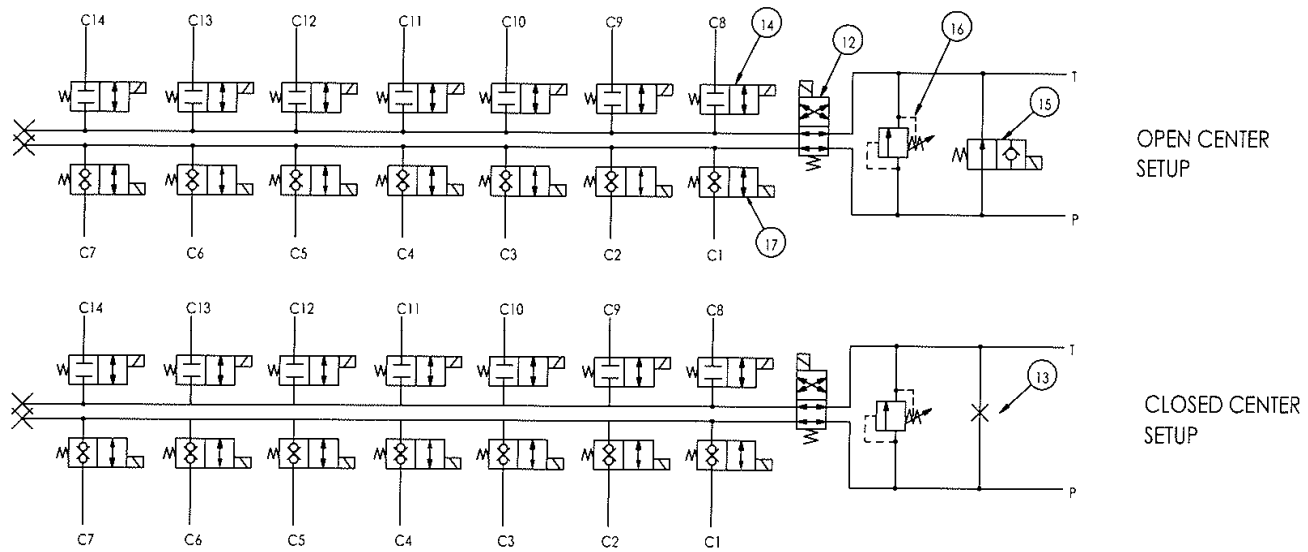
PARTS LIST			
NO.	PART NUMBER	QTY	PART DESCRIPTION
1	210-038	2	FTG 6408-8/MO HHP
2	210-127	2	FTG 6408-6/MO HHP
3	210-151	6	FTG 6410-6-6/S-MO-FO
4	210-166	2	FTG 6901-8-6/E-MO-FPSW
5	210-189	8	FTG 6901-6-4/E-MO-FPSW
6	210-229	4	FTG 6901-6-6/E-MO-FPSW
7	232-050	1	DECL S/N SILVER
8	232-058	1	DECAL FASSE BLK/GOLD 1"X.75" RND CRNR
9	253-590	12	COIL H/F 4304012 E-8 INTG DEUT DTR 12V ZENER DIODE
10	253-593	2	COIL H/F 4304112 E-10 INTG DEUT DTR 12V ZENER DIODE
11	270-011	1	MANI S14259-1 7CIR AL LOCKING CNTR
12	273-008	1	CART H/F SV10-40-D-N-00 SPL 4W 2P
13	273-012	1	CART H/F CP10-20-N CAVITY PLUG 2W
14	273-016	6	CART H/F SV08-24-D-N-00 SPL 2W NC
15	273-017	1	CART H/F SV10-21-D-N-00 POP 2W NC
16	273-314	1	CART H/F RV10-22H-O-N-35/35 RLF DIFF AREA POP 3500PSI
17	273-500	6	CART H/F SV08-28-D-N-00 2P POP NC BI-DIR
18	279-008	1	CHECK VALVE F/T 10301-503



REVISIONS				
REV	DESCRIPTION	FORM #	DATE	APPROVED
	RELEASED DRAWING	3-0045	12/16/13	DLG BWL
A	REVISED DRAWING	14-0076	10/7/14	DLG BWL
B	273-314 WAS 273-018. SCHEMATIC ADDED ON SHEET 2	14-0050	7/15/16	LFL BWL

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE	 FASSE VALVES SEVEN ROVAR PARK KEARNEY, NE 68949-2348	
DIMENSIONS ARE IN INCHES		DRAWN	LFL		9/19/2016
TOLERANCES ARE:		CHECKED	BWL		9/19/2016
2 PL DECIMALS 3 PL DECIMALS ANGLES FRACTIONS					MANI ASSY 0806 6DA CLSD DTR 12V WP6901-6 PT6901-6
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HYDRAULIC SCHEMATICS

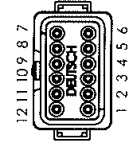


- NOTES: 1. SWITCH ITEMS 15 AND 13 FOR CLOSED CENTER CIRCUITS
 2. CAP PLUG ALL 16 FITTINGS

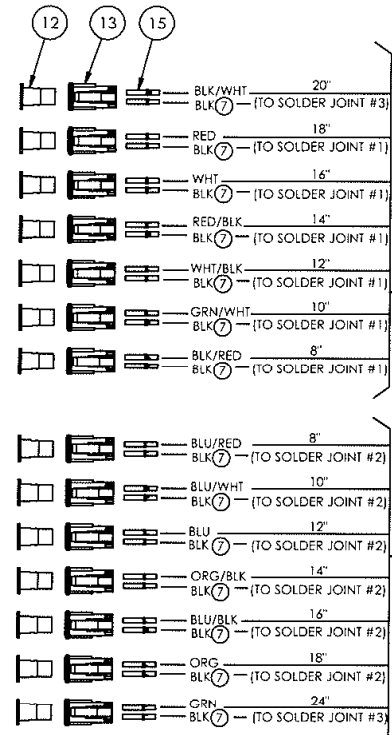
UNLESS OTHERWISE SPECIFIED:	INITIALS	DATE	FASSE FASSE VALVES SEVEN ROYAL PARK KEARNEY, NE 68848-2348
DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PL. DECIMALS 3 PL. DECIMALS ANGLES FRACTIONS	DRAWN LFL	9/19/2016	
	CHECKED BWL	9/19/2016	MANI ASSY 0806 6DA CLSD DTR 12V WP6901-6 PT6901-6
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			DWG NO 302-616
			SCALE 1:3
			SHEET 2 OF 2

PARTS LIST			
NO.	PART NUMBER	QTY	PART DESCRIPTION
1	231-036	4	SHRINKTUBING .375" BLK DUAL WALL
2	231-007	2	SHRINKTUBING .625" BLK
3	231-008	4	SHRINKTUBING .750" BLK
4	231-013	2	SHRINKTUBING .250" BLK DUAL WALL
5	231-187	23	SHRINKTUBING .187" BLK
6	252-004	27	CABLE 19CON 18GA PVC GRN
7	252-058	17	WIRE 18GA BLK
8	255-212	1	CONN DEUT DT RCPT 12PIN
9	255-214	1	CONN DEUT LOCK WEDGE 12PIN DTR GRN
10	255-218	1	CONN DEUT DT RCPT 8PIN
11	255-220	1	CONN DEUT LOCK WEDGE 8PIN DTR GRN
12	255-505	15	CONN DEUT LOCK WEDGE 2PIN DTP ORG
13	255-801	15	CONN DEUT DT PLUG 2PIN
14	255-977	19	CONT DEUT PIN 16-18GA
15	255-978	30	CONT DEUT SOCKET 16-18GA
16	255-979	1	CONT DEUT CAVITY PLUG

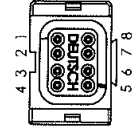
PIN OUT DETAIL (8)



- 1 - RED/WHT
- 2 - GRN/BLK
- 3 - BLU/BLK
- 4 - WHT
- 5 - BLU/WHT
- 6 - GRN/WHT
- 7 - ORG/BLK
- 8 - RED/BLK
- 9 - BLU/RED
- 10 - BLU
- 11 - ORG/RED
- 12 - ORG



PIN OUT DETAIL (10)



- 1 - WHT/RED
- 2 - RED
- 3 - WHT/BLK
- 4 - BLK/WHT
- 5 - GRN
- 6 - BLK/RED
- 7 - BLK
- 8 - CAVITY PLUG

PINOUT DETAIL (DEUT PLUG)



NOTES:

1. REMOVE 2" OF OUTER CABLE JACKET FOR SPLICING.

REVISIONS					
REV	DESCRIPTION	FORM #	DATE	APPROVED	
	RELEASED DRAWING	13-0065	9/7/13	DJG	BWL
A	REVISED DRAWING	14-0013	3/26/14	DJG	BWL
B	REVISED DRAWING	15-0040	5/27/15	DJG	BWL

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES ON:
 2 PL DECIMALS
 3 PL DECIMALS
 ANGLES
 FINISHES

INITIALS	DATE
DRAWN LFL	9/21/2016
CHECKED BWL	9/21/2016

FASSE FASSE VALVES
 SEVEN ROVAR PARK
 KEARNEY, NE 68849-2348

HRN ASSY 19CON 18GA DTR
 12P(12)&8P(8)-15DTP2P(2) 25'

FIG. NO. DWG. NO. 312-076
 SCALE: 1:3 1 SHEET: 1 OF 1

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