EQUIPMENT - SWITCHING 53

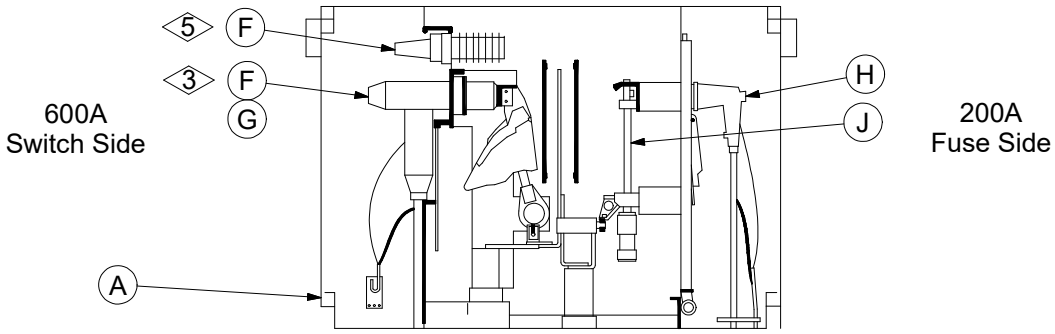
PADMOUNTED SWITCHGEAR - 600A SW / 200A FUSED, MANUAL OPERATION - 15kV.....53 11 01 **

PADMOUNTED SWITCHGEAR - 600A SW / 200A FUSED, REMOTE SUPERVISORY CONTROL - 15kV.....53 11 02 **

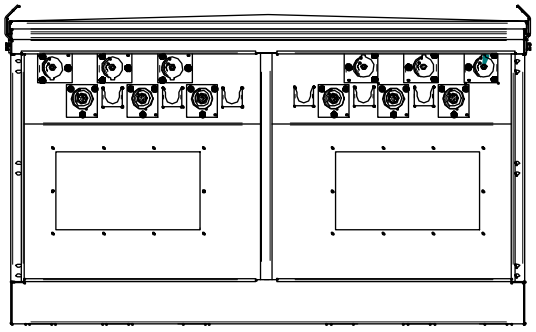
PADMOUNTED SWITCHGEAR - 600A, REMOTE SUPERVISORY CONTROL, S&C VISTA - 15kV.....53 11 05 **

PADMOUNTED SWITCHGEAR - 600A, MANUAL OR REMOTE SUPERVISORY CONTROL S&C VISTA - 35kV.....53 11 06 **

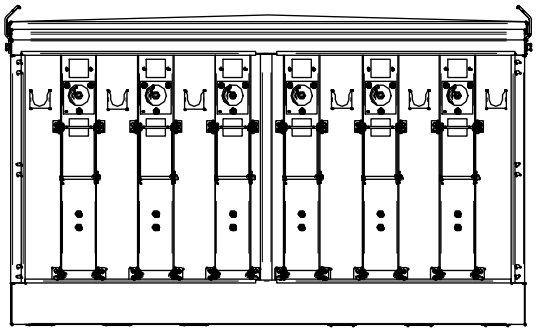
PADMOUNTED SWITCHGEAR - 600A SW / 200A FUSED, FUSE INSTALLATION & REPLACEMENT GUIDE - 15kV.....53 11 10 01



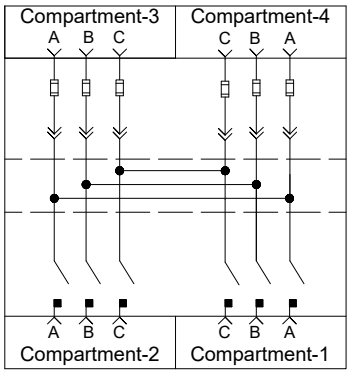
Side View



Front View
600A Switched Compartments

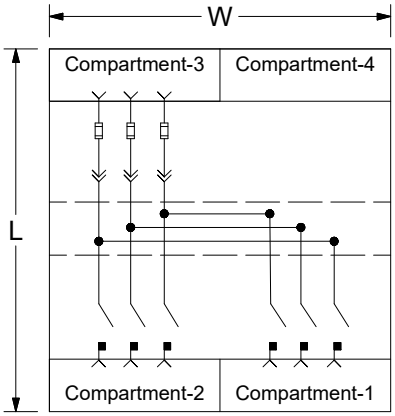


Front View
200A Fused Compartments

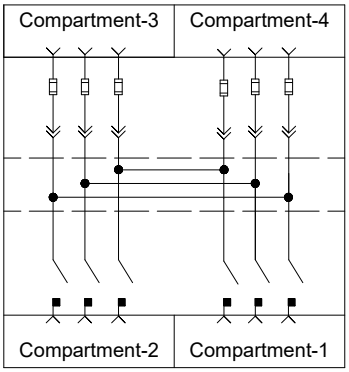


Compartment Phasing
Designation

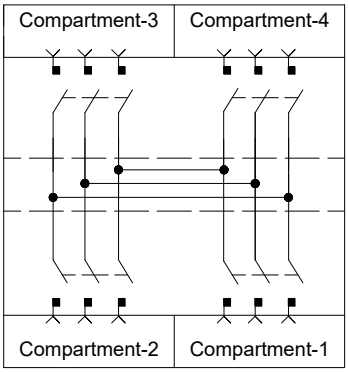
Switchgear Configurations:



53 11 01 05
Type 6



53 11 01 01
Type 9



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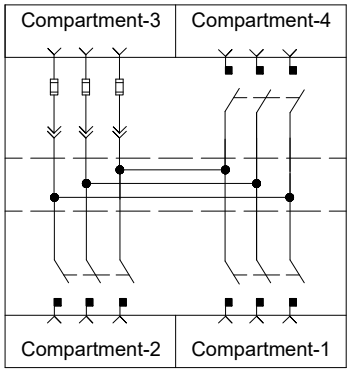
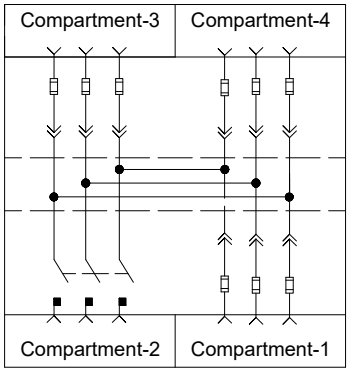
Type 10



53 11 01 03
Type 11



53 11 01 04
Type 12

Switchgear Dimensions	
Height	45-1/8" + 6" Base Adapter (All Types)
Width (W)	75" (All Types)
Length (L)	69-3/4" (Types 6, 9, and 12)
	72-3/4" (Types 10 and 11)

CONSTRUCTION NOTE(s):

1. Confirm the visible break through the windows.
2. See DCS **42 34 64 ****** and **59 40 60 01** for 600 amp elbow terminator details.
3. 200 Amp loadbreak elbows with #2 AWG, 1/0 or 4/0 cables may be installed in the switch compartments when necessary. Install a 200 amp to 600 amp bushing adaptor (Stock #17 05 256) on each 600 amp bushing. See DCS **59 40 60 01**.
4. 600 amp elbows are non-loadbreak and can only be removed from a de-energized bushing.
5. 200 amp bushings located above the 600 amp bushings are interconnected, and shall be used for grounding when 600 amp connections are installed or removed.
6. For duct banks terminating in padmounted switchgear, retain approximately 5ft of 4/0 copper bond wire and connect it to a ground rod using a 2 bolt clamp (Stock #17 54 132).
7. Install a label on the switchgear where it can be seen from the street with the proper pad number. Use the appropriate reflective numbers (Stock #'s 16 04 108 to 16 04 116).
8. Install a label on each compartment door with the letters LAT_____or DIP_____. Use reflective letters (Stock #'s 16 04 320, 16 04 317, 16 04 321 or 16 04 148, 16 04 419, 16 04 737) and the appropriate reflective numbers (Stock #'s 16 04 108 to 16 04 116).
9. Install a label by each switch handle with the letter D_____. Use reflective letter (Stock #16 04 418) and the appropriate reflective numbers (Stock #'s 16 04 108 to 16 04 116).
10. Cover all 200 amp load reducing tap plugs on 600 amp elbows with an insulated cap (Stock #17 55 227) or an elbow arrestor (Stock #10 01 138).
11. Add appropriate letters and numbers (Stock #'s 16 01 195 through 16 01 225) to tag holders.
12. Cover all open 600 amp bushings with 600 amp insulated caps (Stock #17 55 386) or 200 amp to 600 amp bushing adapters (Stock #17 05 256).
13. Cover all open 200 amp bushings with insulated caps (Stock #17 55 227). Cover all grounding bushings with insulated caps.
14. 600 amp elbows are installed on bushings in the switchgear using a "T" wrench (Stock #85 41 370) or an "OAT" Operating Tool (Stock #83 28 045).
15. If installing deadfront switchgear on existing livefront pad (Stock #12 06 109), order base adapter (Stock #12 06 195) for type 6, 9, 12, or base adapter (Stock #12 06 194) for type 10 or 11.
16. A fiber optic cable (Stock #18 66 658) can be added at each fault indicator installed for remote viewing on the door. See DCS **59 53 51 00**.
17. See DCS **34 21 10 ****** for pad installation instructions.
18. If conduit bend is cut with saw, install bell end fitting to prevent cable damage.
19. See DCS **53 11 10 01** for fuse installation and replacement instructions.

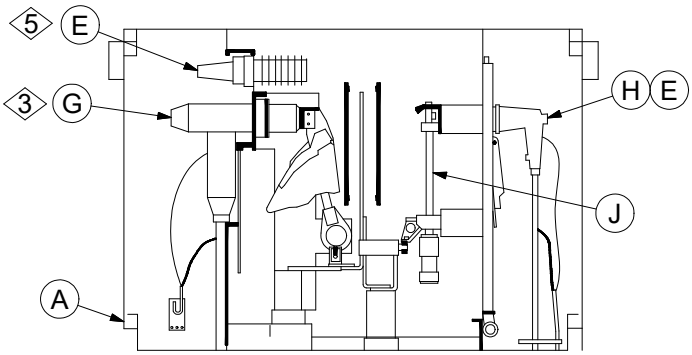
	ITEM	STK / DCS #	DESCRIPTION 53 11 01 **	01	02	03	04	05
	A	54 07 287	Switchgear − Type 9, 2 Sw, 6 Fuses	1	-	-	-	-
		54 07 300	Switchgear − Type 10, 4 Sw	-	1	-	-	-
		54 07 288	Switchgear − Type 11, 3 Sw, 3 Fuses	-	-	1	-	-
		54 07 290	Switchgear − Type 12, 1 Sw, 9 Fuses	-	-	-	1	-
		54 07 529	Switchgear − Type 6, 2 Sw, 3 Fuses	-	-	-	-	1
@	B	**34 21 10 ** **	Pad − Deadfront Switchgear, Composite	1	1	1	1	1
	C	17 54 132	Connector − Wire, 8−350 kcmil Cu.	10	16	13	7	10
	D	17 54 373	Connector − Wire, #2 Cu, Split Bolt	6	-	3	9	3
12 @	E	17 55 386	Cap − Insulating, 15kV, 600A	3	3	3	3	3
10, 13	F	17 55 227	Cap − Insulating, 15kV, 200A	12	24	18	6	12
3 @	G	**42 34 64 ** **	Terminator - Elbow, Deadbreak 600A	6	12	9	3	6
	H	**42 34 62 01**	Elbow − Loadbreak, 200A, #2 AWG	6	-	3	9	3
3 @		**42 34 62 02**	Elbow − Loadbreak, 200A, 4/0 AWG	6	-	3	9	3
		42 34 62 03	Elbow − Loadbreak, 200A, 1/0 AWG	6	-	3	9	3
11 @	I	16 06 276	Holder − Tag, Black, 5 Position	-	-	-	-	-
		16 06 277	Holder − Tag, Black, 7 Position	-	-	-	-	-
@	J		Refill − Fuse, 14.4kV, SMU − 20	6	-	3	9	3
16 @	K	60 55 001	Indicator − Faulted Circuit, 1 PH (350 kcmil)	-	-	-	-	-
		60 55 024	Indicator − Faulted Circuit, 1 PH (750 kcmil)	-	-	-	-	-
@	L	**54 11 01 01**	Arrester − Elbow, 10kV	-	-	-	-	-
15 @	M	12 06 195	Base Adapter − Type 6, 9, and 12	-	-	-	-	-
		12 06 194	Base Adapter − Type 10 and 11	-	-	-	-	-
3 @	N	17 05 256	Bushing Adapter - 200A to 600A	6	12	9	3	6

DESIGN NOTE(s):

20. Switched positions are 600 amp. Fuse positions are 200 amp. Both are rated 14.0kA sym., 22.4kA asym. Fuse holders are SMD-20 style and refills are SMU type.

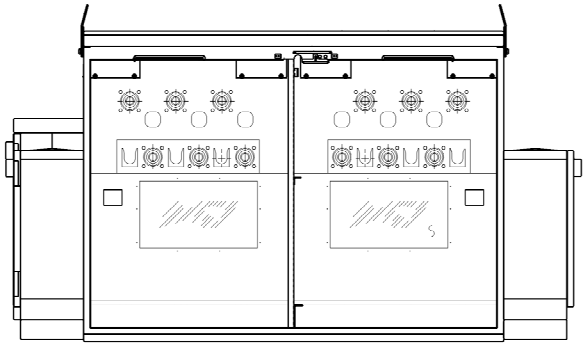
21. See DCS **59 81 51 11** for the required clearance around switchgear.

600A
Switch Side

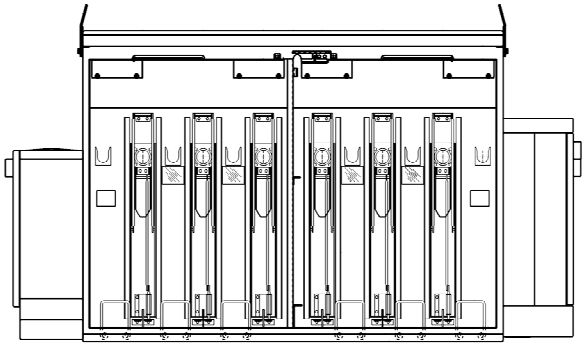


200A
Fuse Side

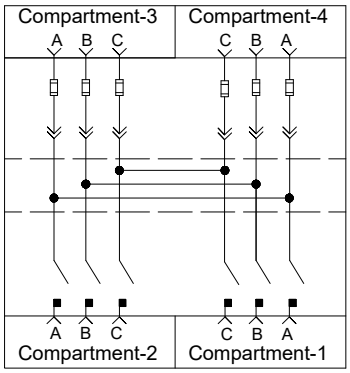
Side View



Front View
600A Switched Compartments



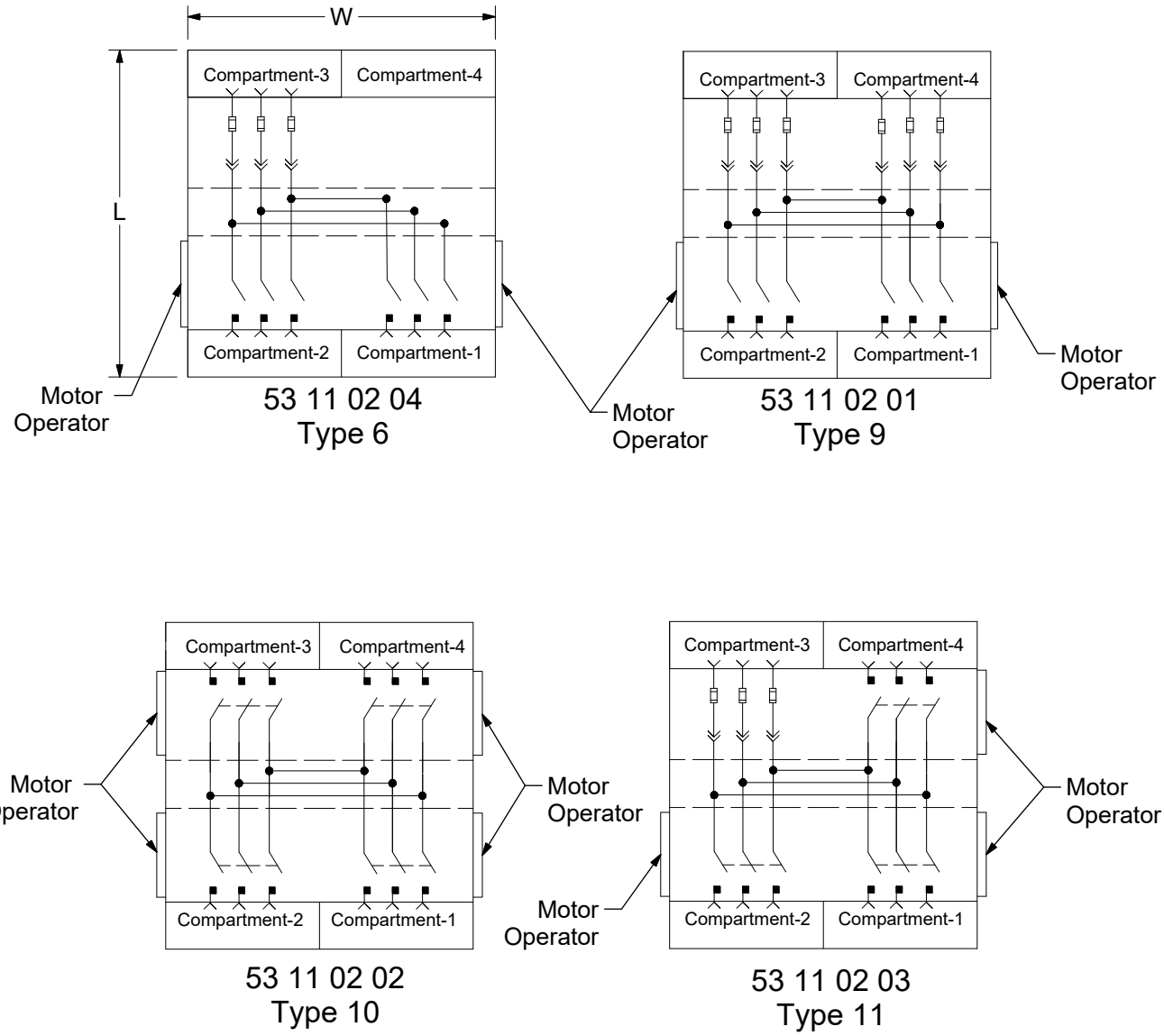
Front View
200A Fused Compartments



Compartment Phasing
Designation

REV	DATE	ENG	DESCRIPTION
0	04/01/2023	JMW	New, moved from 53 11 05 **, updated format

Switchgear Configurations:



Switchgear Dimensions	
Height	45-1/8" + 6" (All Types)
Width (W)	75" (All Types)*
Length (L)	69-3/4" (Types 6 and 9)
	72-3/4" (Types 10 and 11)

*Each motor extends 14" beyond the cabinet width.

REV	DATE	ENG	DESCRIPTION
0	04/01/2023	JMW	New, moved from 53 11 05 **, updated format

CONSTRUCTION NOTE(s):

1. Confirm the visible break through the windows.
2. See DCS **42 34 64 ****** and **59 40 60 01** for 600 amp elbow terminator details.
3. 200 Amp loadbreak elbows with #2 AWG, 1/0 or 4/0 cables may be installed in the switch compartments when necessary. Install a 200 amp to 600 amp bushing adaptor (Stock #17 05 256) on each 600 amp bushing. See DCS **59 40 60 01**.
4. 600 amp elbows are non-loadbreak and can only be removed from a de-energized bushing.
5. 200 amp bushings located above the 600 amp bushings are interconnected, and shall be used for grounding when 600 amp connections are installed or removed.
6. For duct banks terminating in padmounted switchgear, retain approximately 5ft of 4/0 copper bond wire and connect it to a ground rod using a 2 bolt clamp (Stock #17 54 132).
7. Install a label on the switchgear where it can be seen from the street with the proper pad number. Use the appropriate reflective numbers (Stock #'s 16 04 108 to 16 04 116).
8. Install a label on each compartment door with the letters LAT_____or DIP_____. Use reflective letters (Stock #'s 16 04 320, 16 04 317, 16 04 321 or 16 04 148, 16 04 419, 16 04 737) and the appropriate reflective numbers (Stock #'s 16 04 108 to 16 04 116).
9. Install a label by each switch handle with the letter D_____. Use reflective letter (Stock #16 04 418) and the appropriate reflective numbers (Stock #'s 16 04 108 to 16 04 116).
10. Cover all 200 amp load reducing tap plugs on 600 amp elbows with an insulated cap (Stock #17 55 227) or an elbow arrestor (Stock #10 01 138).
11. Add appropriate letters and numbers (Stock #'s 16 01 195 through 16 01 225) to tag holders.
12. Cover all open 600 amp bushings with 600 amp insulated caps (Stock #17 55 386) or 200 amp to 600 amp bushing adapters (Stock #17 05 256).
13. Cover all open 200 amp bushings with insulated caps (Stock #17 55 227). Cover all grounding bushings with insulated caps.
14. 600 amp elbows are installed on bushings in the switchgear using a "T" wrench (Stock #85 41 370) or an "OAT" Operating Tool (Stock #83 28 045).
15. If installing deadfront switchgear on existing livefront pad (Stock #12 06 109), order base adapter (Stock #12 06 195) for type 6, 9, 12, or base adapter (Stock #12 06 194) for type 10 or 11.
16. A fiber optic cable (Stock #18 66 658) can be added at each fault indicator installed for remote viewing on the door. See DCS **59 53 51 00**.
17. See DCS **34 21 10 ****** for pad installation instructions.
18. If conduit bend is cut with saw, install bell end fitting to prevent cable damage.
19. See DCS **53 11 10 01** for fuse installation and replacement instructions.
20. Motor Operated (M.O.'s) are on switched compartments.

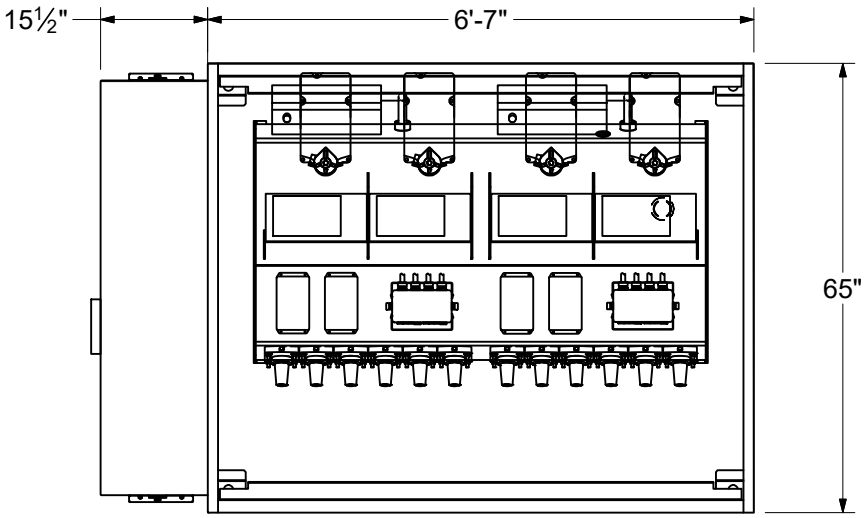
	ITEM	STK / DCS #	DESCRIPTION 53 11 02 **	01	02	03	04
20	A	54 07 547	Switchgear − Type 9, 2 Sw, 6 Fuses, M.O. on 1 & 2	1	-	-	-
		54 07 546	Switchgear − Type 10, 4 Sw, M.O. on 1, 2, 3, & 4	-	1	-	-
		54 07 567	Switchgear − Type 11, 3 Sw, 3 Fuses, M.O. on 1, 2, & 3	-	-	1	-
		54 07 570	Switchgear − Type 6, 2 Sw, 3 Fuses, M.O. on 1 & 2	-	-	-	1
	B	17 54 132	Connector − Wire, 8−350 kcmil Cu.	10	16	13	10
	C	17 54 373	Connector − Wire, #2 Cu, Split Bolt	6	-	3	3
16 @	D	60 55 001	Indicator − Faulted Circuit, 1 PH (350 kcmil)	-	-	-	-
		60 55 024	Indicator − Faulted Circuit, 1 PH (750 kcmil)	-	-	-	-
12 @	E	17 55 386	Cap − Insulating, 15kV, 600A	3	3	3	3
10,13	F	17 55 227	Cap − Insulating, 15kV, 200A	12	24	18	12
@	G	**34 21 10 ** **	Pad − Deadfront Switchgear, Composite	1	1	1	1
3 @	H	**42 34 64 ** **	Terminator − Elbow, Deadbreak 600A	6	12	9	6
3 @	I	**42 34 62 01**	Elbow − Loadbreak, 200A, #2 AWG	6	-	3	3
		42 34 62 02	Elbow − Loadbreak, 200A, 4/0 AWG	6	-	3	3
		42 34 62 03	Elbow − Loadbreak, 200A, 1/0 AWG	6	-	3	3
11 @	J	16 06 276	Holder − Tag, Black, 5 Position	-	-	-	-
		16 06 277	Holder − Tag, Black, 7 Position	-	-	-	-
@	K		Refill − Fuse, 14.4kV, SMU − 20	6	-	3	3
@	L	**54 11 01 01**	Arrester − Elbow, 10kV	-	-	-	-
15 @	M	12 06 195	Base Adapter − Type 6, 9, and 12	-	-	-	-
		12 06 194	Base Adapter − Type 10 and 11	-	-	-	-
3 @	N	17 05 256	Bushing Adapter - 200A to 600A	6	12	9	6

DESIGN NOTE(s):

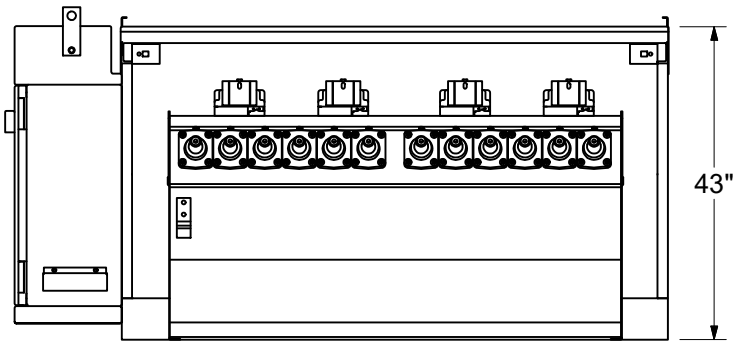
21. Switched positions are 600 amp. Fuse positions are 200 amp. Both are rated 14.0 kA sym., 22.4 kA assym. Fuse holders are SMD-20 style and refills are SMU type.

22. If automated switchgear is used on a 4 kV circuit, the switchgear must be fed by an external 120V voltage source. In addition, a circuit board must be changed in the controls. Use Stock #54 07 581. The PME-9's take one, and the PME-10's and 11's take two circuit.

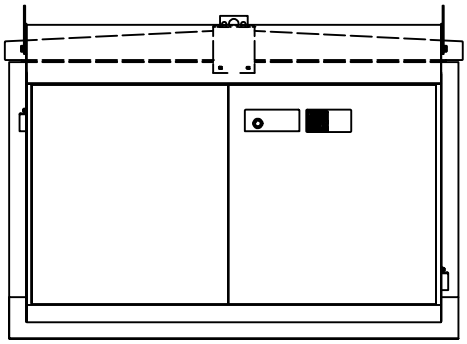
23. See DCS **59 81 51 11** for the required clearance around switchgear.



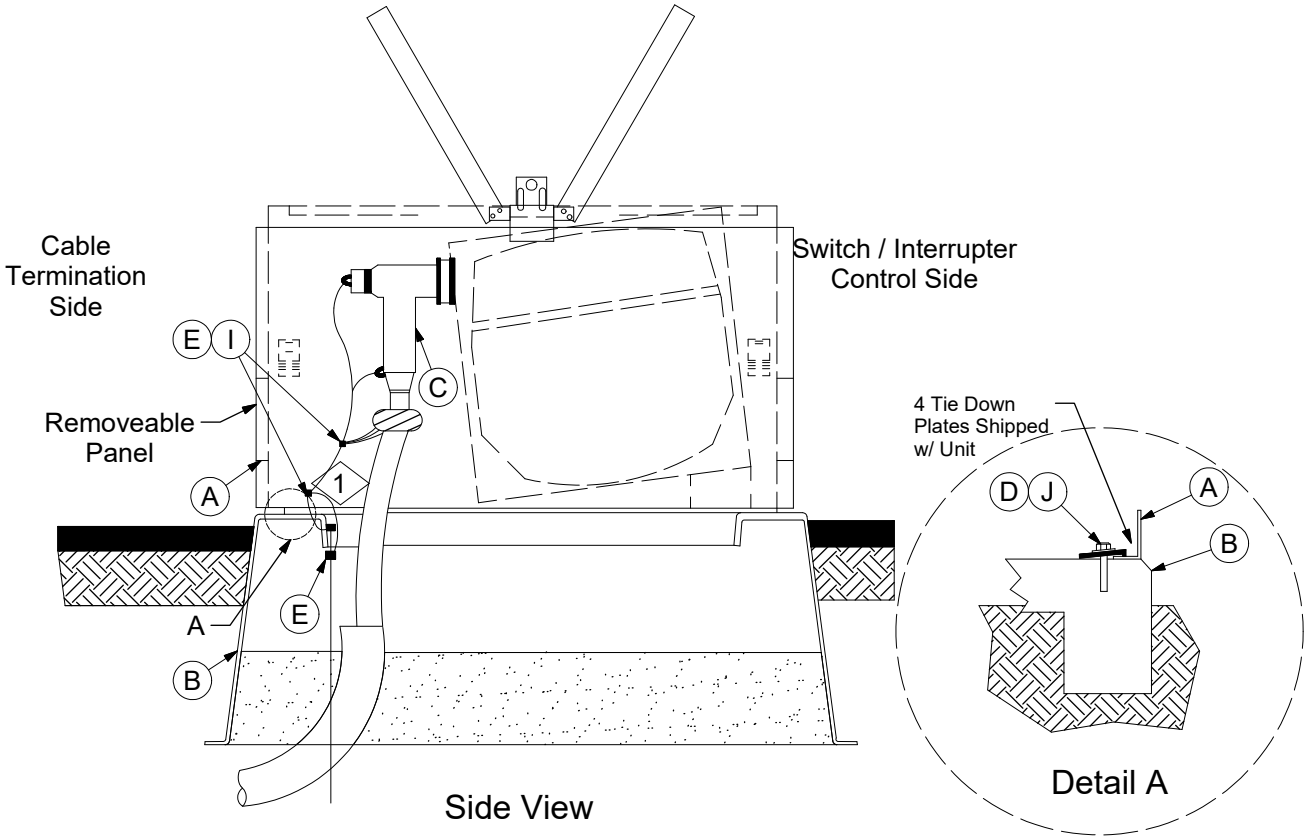
Open Top View



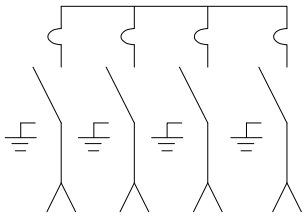
Open Front Termination View



Side View



Switchgear Configuration



53 11 05 **
4 Fault Interrupter Switches

CONSTRUCTION NOTES:

1. Connect neutral wires from each cable to #2 Cu. wire connected to grd. rod and compartment grd. bar. Construct compartment ground bar using 3 ground rods and 2 bolt connectors.

2. Install a label on the switchgear where it can be seen from the street with the proper Pad number. Use the appropriate Reflective Numbers (Stock #16 04 1XX).

3. Install a label on the inside of the compartment lid (both termination and control side) with the letters LAT_____ or DIP_____. Use Reflective Letters (Stock #'s 16 04 320, 16 04 317, 16 04 321 or 16 04 148, 16 04 419, 16 04 737) and the appropriate Reflective Numbers (Stock #'s 16 04 108 to 16 04 116). Also install "15kV" below each LAT or DIP label using Reflective Numbers (Stock #'s 16 04 111 and 16 04 113 and Reflective Letters (Stock #'s 16 04 420 and 16 14 041).

4. Install a label (inside the unit) by each switch handle with the letter D_____. Use Reflective Letter (Stock #16 04 418) and the appropriate Reflective Numbers (Stock #16 04 1XX).

5. See sheets DCS **34 21 10 **** for fiberglass pad installation instructions.

6. Install Faulted Circuit Indicator above the cable jacket cut off.

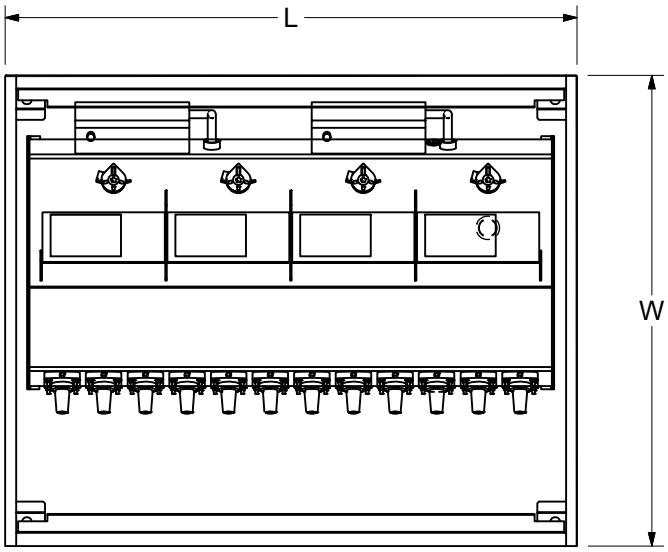
7. Cover over unused bushings with 15kV insulated caps (Stock #17 55 386).

9. The 200A tap on the back of each 600A termination can be covered with an elbow arrester (Stock #10 01 138) instead of an insulated cap.

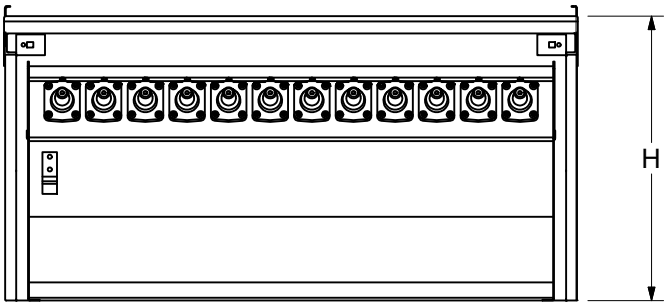
	ITEM	STK / DCS #	DESCRIPTION 53 11 05 **	01
10	A	54 07 580	Switchgear - 4 Fault Interrupters and Switches	1
	B	**34 21 11 02**	Pad - Switchgear, Fiberglass, 66” x 84” x 36”	1
	C	**42 34 64 ****	Termination - Elbow, Deadbreak 600A	-
	D	21 56 078	Bolt - Mach., S.S., Hex, 1/2” x 2”	8
	E	17 54 132	Connector - Wire, 8-350 kcmil Cu.	14
	I	17 54 182	Connector - Wire, #2 Cu., Split Bolt	24
	J	21 75 105	Washers - Rnd., 1/2”, S.S.	8
	K	17 55 386	Cap - Protective, 600A, 15kV	-
@	L	60 55 001	Indicator - Faulted Circuit, 1 PH	-
	M	**54 11 01 01**	Arrester - Elbow, 10kV	-

DESIGN NOTE(s):

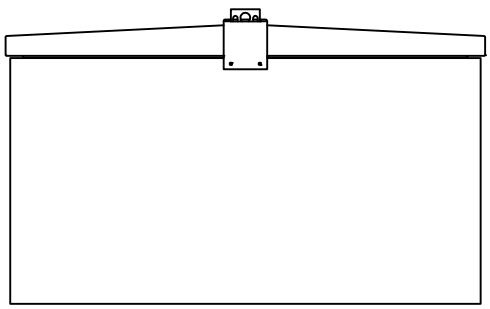
9. All positions are 600 amp. Fault interrupting rating is 25kA asym.
10. Automated switchgear must be fed by an external 120V voltage source.
11. See DCS **59 81 51 11** for the required clearance around switchgear.



Open Top View

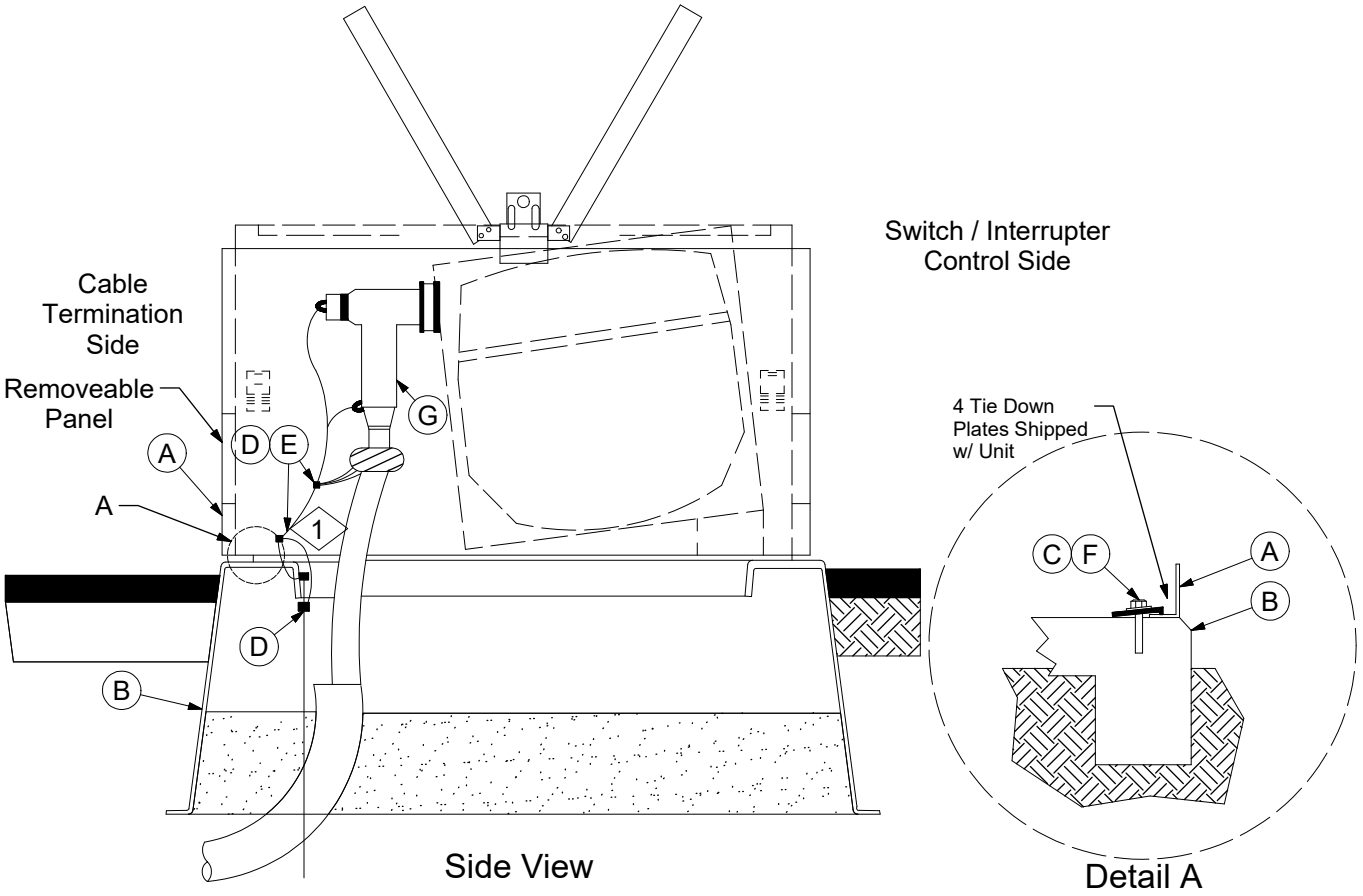


Open Front Termination View

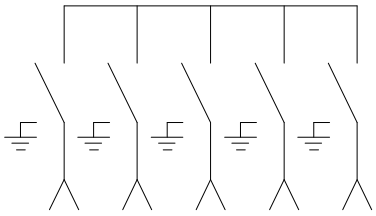


Side View

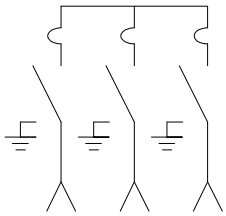
Switchgear Dimensions		
	1, 3, 4 Sw.	5 Sw.
Length (L)	79"	113"
Width (W)	65"	65"
Height (H)	45-3/8"	39-5/16"



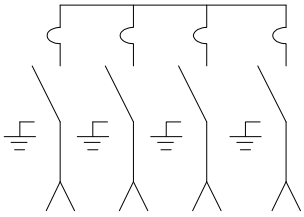
Switchgear Configurations



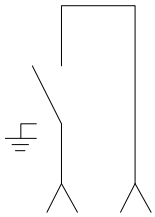
53 11 06 01
5 Load Interrupter Switches



53 11 06 02
53 11 06 03
3 Fault Interrupter Switches



53 11 06 04
4 Fault Interrupter Switches



53 11 06 05
1 Load Interrupter Switch

REV	DATE	ENG	DESCRIPTION
15	04/01/2023	JMW	New model switchgear added, updated format
14	19/07/2017	JMW	

CONSTRUCTION NOTES:

1. Connect neutral wires from each cable to #2 Cu. wire connected to grd. rod and compartment grd. bar. Construct compartment ground bar using 3 ground rods and 2 bolt connectors.

2. Install a label on the switchgear where it can be seen from the street with the proper Pad number. Use the appropriate Reflective Numbers (Stock #16 04 1XX).

3. Install a label on the inside of the compartment lid (both termination and control side) with the letters LAT_____ or DIP_____. Use Reflective Letters (Stock #'s 16 04 320, 16 04 317, 16 04 321 or 16 04 148, 16 04 419, 16 04 737) and the appropriate Reflective Numbers (Stock #'s 16 04 108 to 16 04 116). Also install "35kV" below each LAT or DIP label using Reflective Numbers (Stock #'s 16 04 111 and 16 04 113) and Reflective Letters (Stock #'s 16 04 420 and 16 14 041).

4. Install a label (inside the unit) by each switch handle with the letter D_____. Use Reflective Letter (Stock #16 04 418) and the appropriate Reflective Numbers (Stock #16 04 1XX). Also, label the outside of the unit with 35 kV.

5. See DCS **34 21 10 ****** fiberglass pad installation instructions.

6. Install Faulted Circuit Indicator above the cable jacket cut off.

7. Cover over unused bushings with 35kV insulated caps (Stock #17 55 509).

8. The 200A tap on the back of each 600A termination can be covered with an elbow arrester (Stock #10 01 163) instead of an insulated cap.

9. Add at least 3 grounding elbows per switchgear. Choose type(s) of grounding elbows depending on cable size(s).

	ITEM	STK / DCS #	DESCRIPTION 53 11 06 **	01	02	03	04	05
		54 07 438	Switchgear - 5 L.I. Sw.	1	-	-	-	-
		54 07 437	Switchgear - 3 F.I. Sw.	-	1	-	-	-
11	A	54 07 575	Switchgear - 3 L.I. Sw. remote supv. control	-	-	1	-	-
		54 07 527	Switchgear - 4 F.I. Sw.	-	-	-	1	-
		54 07 534	Switchgear - 1 L.I. Sw.	-	-	-	-	1
	B	**34 21 11 01**	Pad - Switchgear, Fiberglass, 74" x 118" x 36"	1	-	-	-	-
		34 21 11 02	Pad - Switchgear, Fiberglass, 66" x 84" x 36"	-	1	1	1	1
	C	21 56 078	Bolt - Mach., S.S., Hex, 1/2" x 2"	8	8	8	8	8
	D	17 54 132	Connector - Wire, 8-350 kcmil Cu.	17	11	11	14	8
	E	17 54 182	Connector - Wire, #2 Cu., Split Bolt	30	18	18	24	12
	F	21 75 105	Washers - Rnd., 1/2", S.S.	8	8	8	8	8
@	G	**42 44 13 ******	Termination - 1/0 Al. 350 Cu., and 750 Cu. 35kV	-	-	-	-	-
7 @	H	17 55 509	Cap - Protective, 600A, 35kV Bushing	-	-	-	-	-
@	I	60 55 024	Indicator - Fault, CRNT Reset, Vari. Trip	-	-	-	-	-
8 @	J	10 01 163	Arrester - 34kV Elbow, 200A	-	-	-	-	-
9 @	K	17 63 295	Elbow - Grounding, 35kV	3	3	3	3	3

DESIGN NOTE(s):

10. All positions are 600 amp. Fault interrupting ratting is 25 kA assym.

11. Remote supv. control switchgear Stock #54 07 575 must be fed by an external 120V voltage source.

12. See DCS **59 81 51 11** for the required clearance around switchgear.

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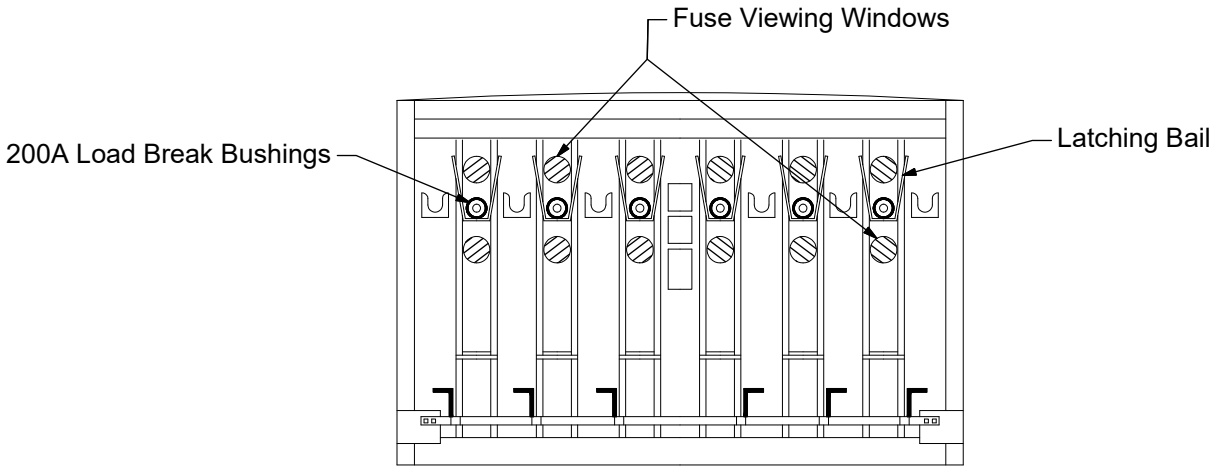
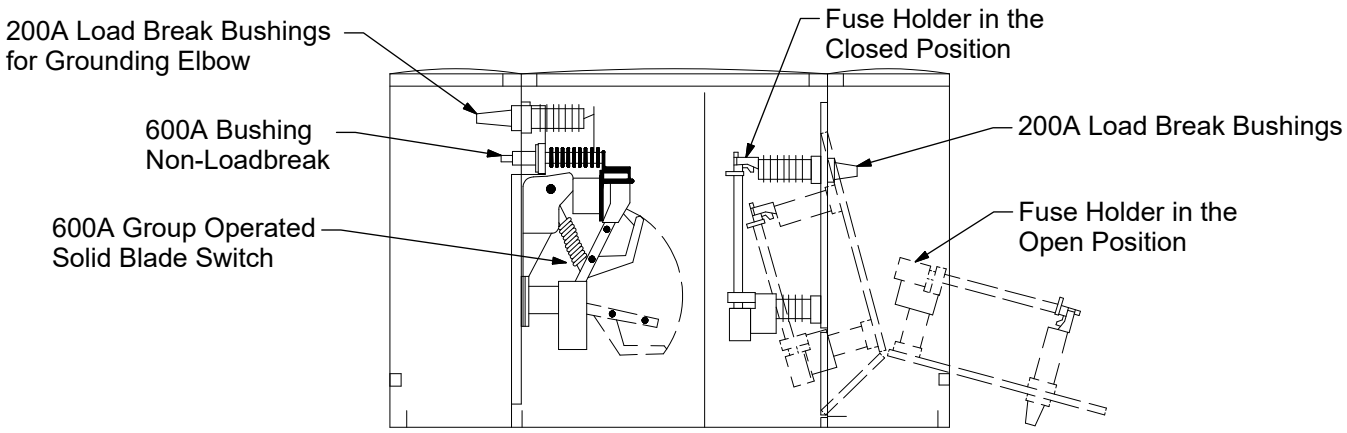
Federal Pacific Switchgear



Front View of 200A Fuse Side

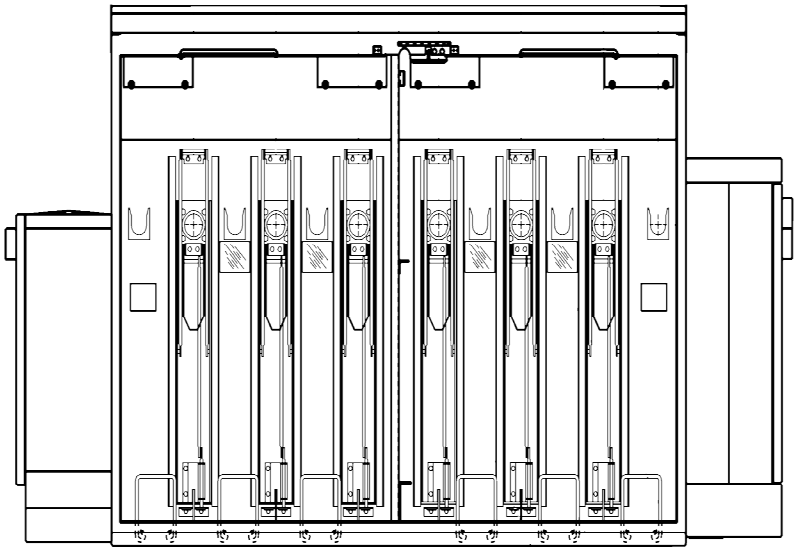


Side View

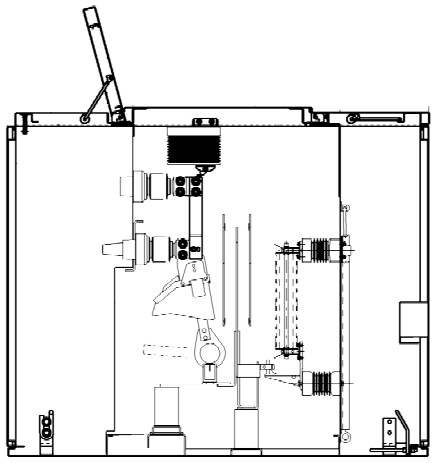
OPERATION NOTE(s):

1. Always use hotline tools when replacing fuses.
2. Loadbreak elbow must be placed on a parking stand before the latching bail can be raised.
3. After the elbow has been parked, the latching bail on the fuse door can be raised with a shotgun stick and the fuse door lowered into position.
4. The fuse can then be removed from the holder with the shotgun stick.
5. These units require S&C SMU-20 fuses. Fittings to hold the fuses are included with new switchgear. If damaged or lost, replacement SML-20 fittings are Stock #20 04 499.

S&C Switchgear



Front View of 200A Fuse Side



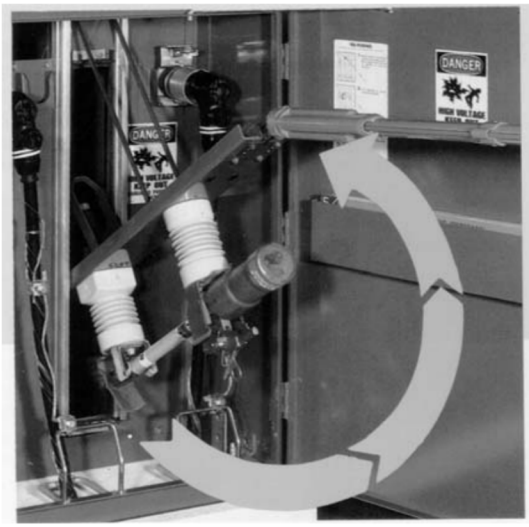
Side View

200A Fuse Operation (S&C)

The operator moves the loadbreak elbow to a feedthru or stand insulator on the parking stand, interrupting any fuse load.

This allows the mechanical interlock to be raised , unlocking the TransFuser Mounting.

A slight pull unlatches the TransFuser Mounting.



The balanced mounting virtually self pivots to its open position and latches in place - its a swift, controlled action that guards against exposure to energized live parts.

In the open position, the de-energized and isolated fuse is accessible to the operator for replacement.

OPERATION NOTE(s):

6. Always use hotline tools when replacing fuses.

7. The fuse installation procedure is a reverse of fuse removal.

8. S&C SMU - 20 fuses and fuse mountings are sandard. S&C Deadfront switchgear uses SME-20 fuse end fittings (Stock #20 04 496).