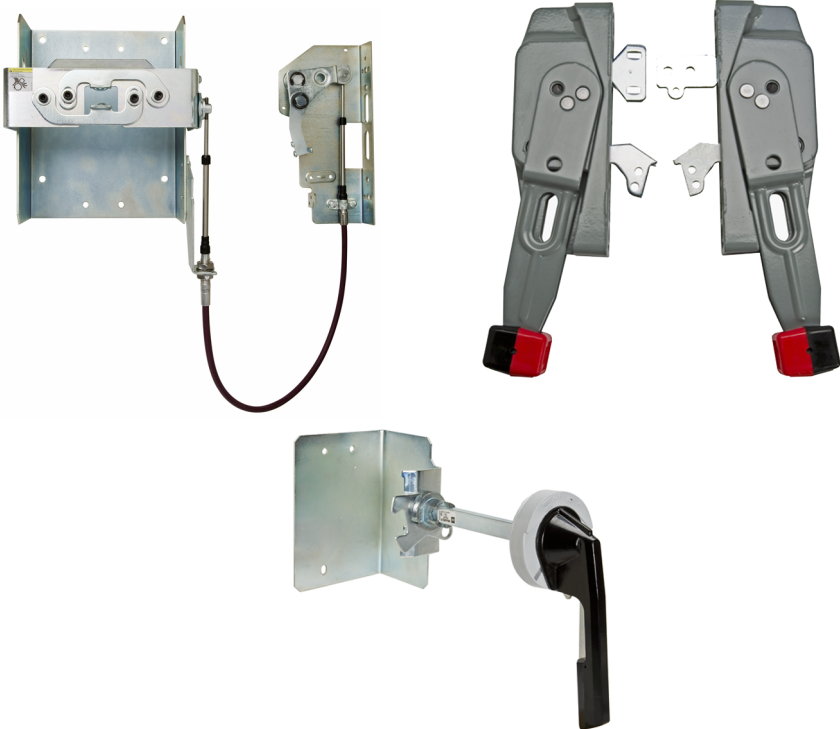


Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms

Catalog
9420CT9701R03/21
2021



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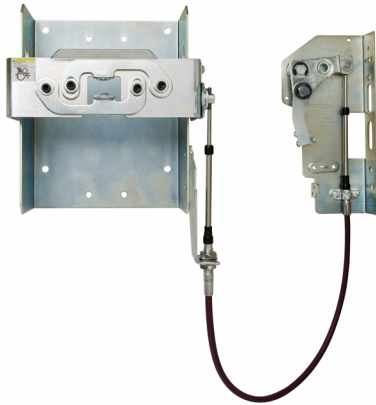


Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms

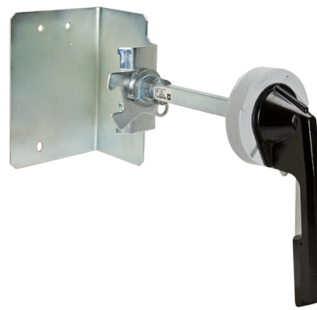
How to Order

How to Order

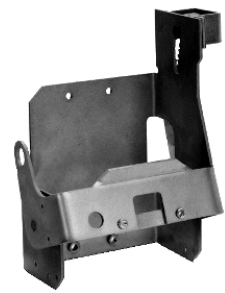
All Square D™ switches and circuit breaker mechanisms are lockable in the Off position, and can be used to comply with OSHA requirements for an Energy Isolation Device.



9422 Circuit Breaker Cable Operator



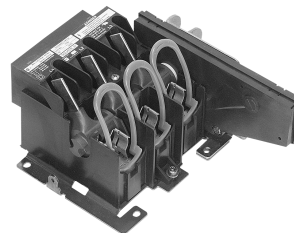
9421L Circuit Breaker Mechanism



9422R Circuit Breaker Mechanism



9423 Door-Closing Mechanisms



NEMA-Style Flange Handle Disconnect Switch

How to Order

To Order, Specify:	Catalog Number	
	Class	Type
1. Class Number 2. Type Number — OR — 1. Class Number 2. Type Number of Switch Body 3. Type Number of Shaft Extension 4. Type Number of Handle Accessories 5. Type Number of Door Interlock Plate 6. Type Number of Any Desired Accessories	9421	LN1

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

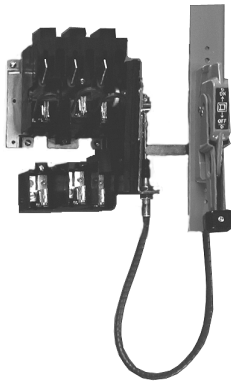
Class 9422 Devices Flange-Mounted, Variable-Depth, and Cable-Operated Disconnect Switches

The Class 9422 Type TCF, TCN, TDF, TDN, TEF, and TEN disconnect switches were designed for control panel installations. These switches include common switch profile 30–100 A, interchangeable fuse clips 30–60 A, and the ability to add fuse clip kits and cable mechanisms. They are compatible with 9422A handle operators and 9423 door mechanisms, and are UL recognized and CSA certified.

Disconnect Switch Size	Variable Depth Mounting Range Min.–Max. (in.)	Maximum Horsepower Ratings				DC Using 2 Poles 250 V Max.	Fuse Type	Fuse Clip Rating (Amperes) Non-Interchangeable Type For Class H, J, K or R Fuses Only		Switch for Use With Cable Operators Only. Does Not Include Handle Mech. or Cable Operator. ¹	Switch and Operating Mech. Only. Does Not Include Handle Mechanism	Switch and Operating Mechanism and Handle Mechanism – Overpacked		
		AC Systems Volts (Motor Volts)						250 V	600 V			Type	Type	Includes Type A1 Handle Mechanism
		208 (200)	240 (230)	480 (460)	600 (575)									
30 A	6.63–18	7.5	7.5	15	20	5	None	—	—	TCN30C	TCN30	ATCN301	ATCN302	
							H, K, J, R	30	—	TCF30C	TCF30	ATCF301	—	
							—	60	30	TCF33C	TCF33	ATCF331	ATCF332	
60 A	6.63–18	15	15	30	50	10	None	—	—	—	TDN60	ATDN601	ATDN602	
							H, K, J, R	60	30	—	TDF60	ATDF601	ATDF602	
							—	—	60	TDF63C	TDF63	ATDF631	ATDF632	
100 A	6.63–18	25	30	60	75	20	None	—	—	TEN10C	TEN10	ATEN101	—	
							H, K, J, R	100	100	—	TEF10C	TEF10	ATEF101	ATEF102
							—	—	—	—	—	—	—	

200–400 A See 9422 TF and TG Disconnect Switches on page 6.

¹ See below for cable operator ordering information.



9422TEF10C with 9422CFT31

Class 9422 Replacement/Retrofit Fuse Clip Kits

Disconnect Switch Size	Switch Type	Fuse Type	Fuse Clip Rating (A)		Line and Load Fuse Clip Kit (Includes Load Base and Fusepullers)
			250 V	600 V	
			Type		
30 A	TCF30 TCN30 TCF33	H, K, J, R	30	—	—
			60	30	TC33
60 A	TDN60	H, K, J, R	60	30	TC33
			—	60	TD63

Class 9999 Electrical Interlocks

Disconnect Switch Size	Switch Types	Electrical Interlock	
		Contacts	Type
30 A 60 A 100 A	TCF, TCN TDF, TDN TEF, TEN	SPDT ¹	TC10
		DPDT ²	TC20
30 A 60 A 100 A	BTCF, BTCN BTDF, BTDN BTEF, BTEN	SPDT ¹	TC11
		DPDT ²	TC21

¹ 1 N.C. or 1 N.O. depending on wiring.

² 2 N.C., 2 N.O. or 1 N.O., 1 N.C. depending on wiring.

Class R Fuse Clip Kits

Disconnect Switch Size	Switch Type	Fuse Type	Fuse Clip Rating (AIR)		Rejection Feature – Class R Kit
			250 V	600 V	
					Type ¹
30 A	TCF30	R	30	—	RFK03
	TCF33	R	60	30	RFK06
60 A	TDF60	R	60	30	RFK06
	TDF63	R	—	60	RFK06H
100 A	TEF10	R	100	100	RFK10

¹ No Class Number required.

Class 9422 Disconnect Switch Cable Operators (must purchase switch separately)

Disconnect Switch Size	Switch Types	Cable Mechanisms ¹			Cable Mechanisms with A1 Handle for Types 1, 3, 3R, 12
		Total Cable Length (in.)	Length of Flexible Portion of Cable (in.)	Type	
30 A, 60 A, 100 A	TCF, TCN TDF, TDN TEF, TEN	36	22	CFT30	CFT31
		48	34	CFT40	—
		60	46	CFT50	CFT51
		120	106	—	—

¹ Must purchase handle mechanism separately.



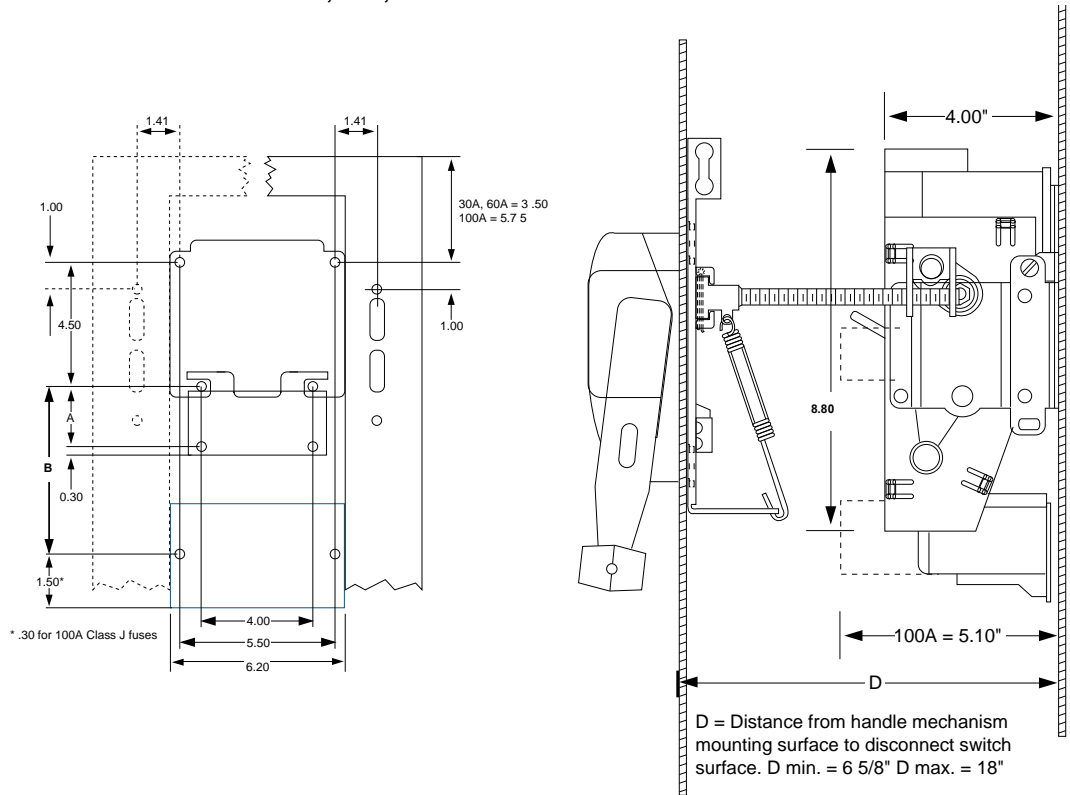
File E52639
CCN: WHTY2



File LR25490
Class 4652 04

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Dimensions for Class 9422 30 A, 60 A, and 100 A Switches



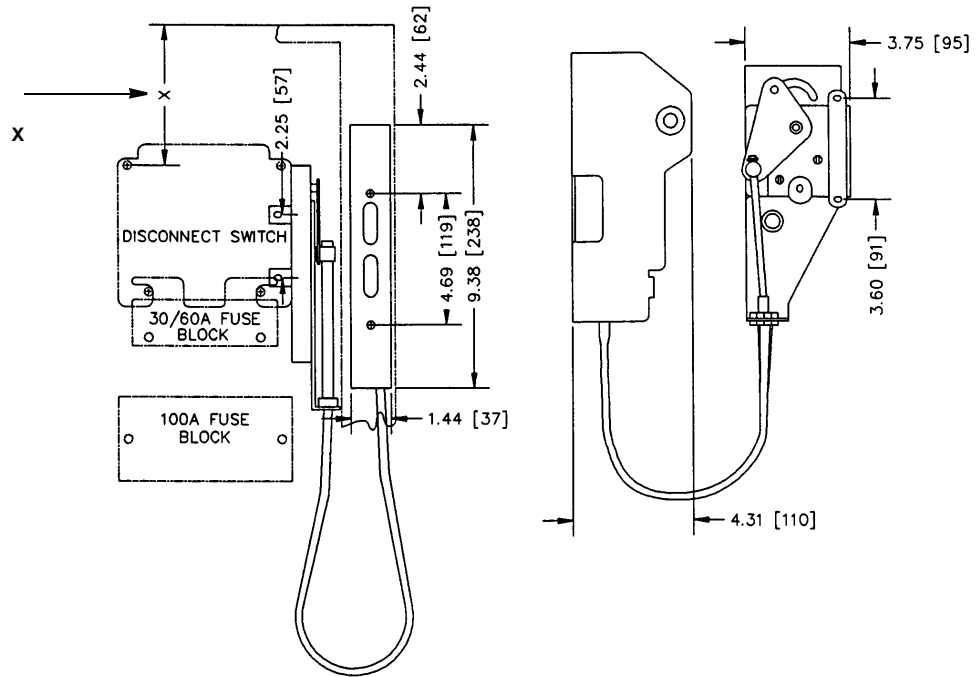
Switch Type	Maximum Voltage	Fuse Type Class	Dimension A (in.)	Dimension B (in.)
30 A	30 A, 250 V	H, K, R	1.625	—
	30 A, 600 V	H, K, R	4.25	
	30 A, 600 V	J	1.625	
60 A	60 A, 250 V	H, K, R	2.25	—
	60 A, 600 V	H, K, R	4.75	
	60 A, 600 V	J	1.625	
100 A	100 A, 250 V	H, K, R	—	3.25
	100 A, 600 V	H, K, R		5.25
	100 A, 600 V	J		3.25

Lug Data

Disconnect Switch Size	Wire Size Minimum-Maximum
30 A	#14-#2 Cu, #10-#2 Al
60 A	#14-#2 Cu, #10-#2 Al
100 A	#10-#0 Cu, #6-#0 Al

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Dimensions for Class 9422 Cable Operators



Type	Cable Length (in.)	Maximum Box Depth (in.)
CFT30	36	24
CFT50	60	36
CFT10	120	36

Dimension X (see the drawing above) is the wire bending space. It is 2.5 in. for 30 A and 60 A devices (#2 wire) and 5.12 in. for 100 A devices (#0 wire). Refer to NEC 430-10.

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Class 9422 Flange-Mounted, Variable-Depth Disconnect Switches

Ordering Information

The 9422 Type T disconnect switches are designed for variable depth, flange-mounting applications. These switches are fully compatible with 9422 handle operators and 9423 door closing mechanisms. They feature: 200 and 400 A; fusible (Classes H, K, J, or R fuses) and nonfusible; right- or left-flange mounting (except 400 A, which mounts only right), UL recognized, and CSA certified.

Disconnect Switches

Disconnect Switch Size	Variable Depth Mounting Range Min.–Max. (in.)	Maximum Horsepower Ratings ¹					DC Using 2 Poles 250 V Max.	Fuse Clip Rating (A) Non-Interchangeable Type For Class H, J, K or R Fuses Only		Switch and Operating Mechanism Only — Does Not Include Handle Mechanism	Switch and Operating Mechanism and Handle Mechanism (Overpacked)	
		AC Systems Volts (Motor Volts)				250 V		600 V	Type		Includes Type A1 Handle Mechanism	Includes Type A2 Handle Mechanism
		208 (200)	240 (230)	480 (460)	600 (575)					Type		
200 A	9.12–19.25 ²	40	60	125	150	40	Non-Fusible		TF1	ATF11	ATF21	
							200 —	200 400	TF2 TF3 ³	ATF12 —	ATF22 ATF23 ³	
400 A Fixed Depth ⁴	11.38	75	125	250	350	50	Non-Fusible		TG1 ^{5,6}	For handle selection, see page 9.		
400 A Adj. Depth ⁴	15.87–19.07 ⁷						400	400	TG2 ^{5,6}			

- ¹ Refers to rating of switch only.
- ² 9422 R extends the maximum mounting depth by 7 in.
- ³ Accommodates Class J fuses only.
- ⁴ Switches are either fixed-depth or adjustable; the handle configuration will determine installation.
- ⁵ Commercially available enclosures may not accept type TG operating mechanisms. Contact enclosure manufacturer for availability of enclosures for use with these switches.
- ⁶ Right-hand flange mounting only.
- ⁷ In steps of 0.63 in.

Class R Fuses

Fusible disconnect switches on this page will accept Class R fuses as standard. A field installable rejection kit is available which, when installed, rejects all but Class R fuses. With the rejection kit and Class R fuses installed, the switch is UL component recognized for use on systems with up to 200,000 RMS symmetrical Amperes fault current available.

Switch Ampere Rating	Type	Fuse Clip Rating		Class	Type
		250 Vac	600 Vac		
200	TF	200 A	200 A	9999	SR4
400	TG	400 A	400 A	9999	SR5

Electrical Interlocks

Optional accessory for use with the disconnect switches listed on this page.

For Use On Switch Type	Class	Single Pole Interlock Type	Class	Two Pole Interlock Type
TF, ATF	9999	R8	9999	R9
TG	9999	R35	9999	R36



File E52639
CCN: WHTY2



File LR25490
Class 4652 04

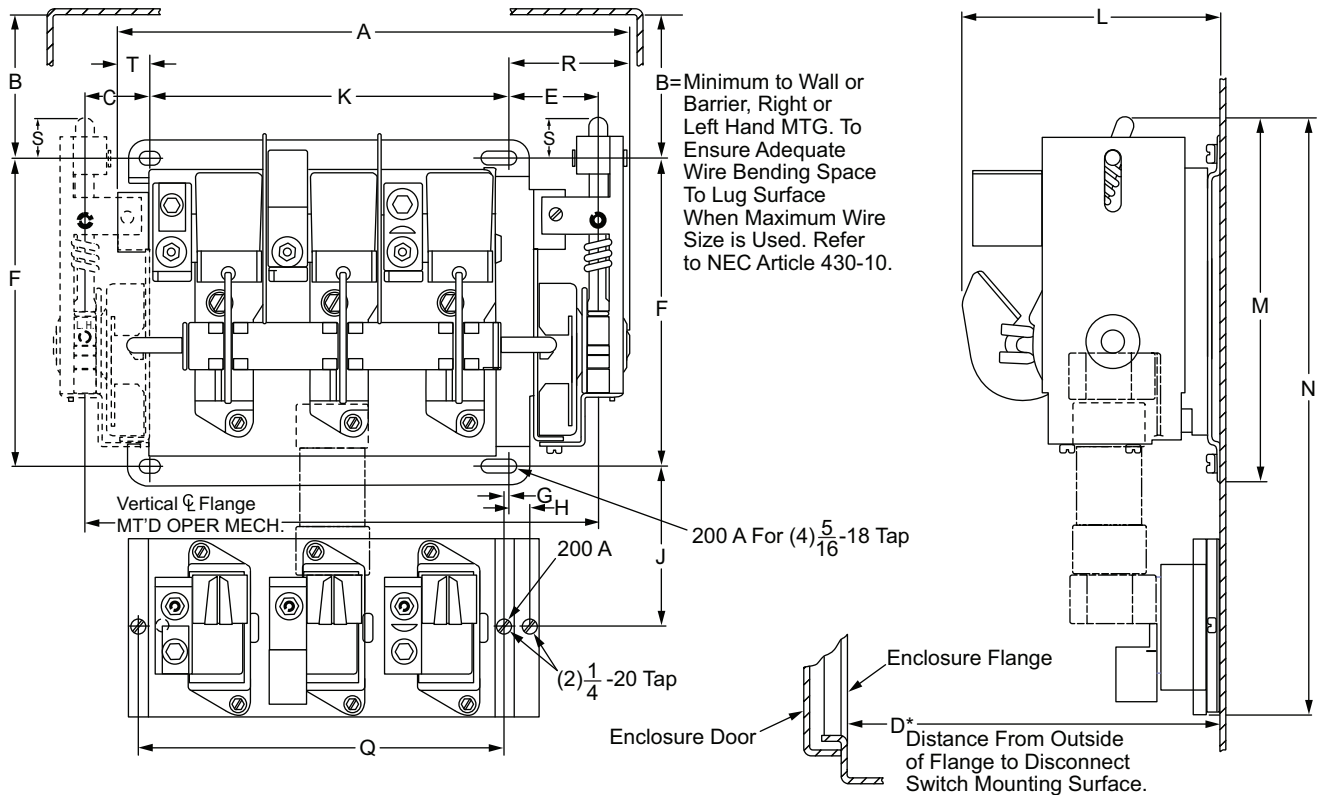
Lug Data

Disconnect Switch Size	Wire Size Min.–Max.
200 A	#6–300 Kcmil Cu or Al
400 A	#4–500 Kcmil Cu

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Class 9422 Flange-Mounted, Variable-Depth Disconnect Switches 200A Type TF

Outline dimensions and location information for 200 A disconnect switches. Non-fusible and non-interchangeable fuse-clip type fusible switches.



Dimension Table—in. (mm)

Type	Switch Size		A	B	C	D ¹		E	F	G	J	K	L	M	N	Q	R	S	T
	Ampere Rating					Min.	Max.												
	Sw	Fuse Clips																	
TF1	200	None	13.33 (339)	9.38 (238)	1.64 (42)	9.12 (232)	19.25 (489)	2.33 (59)	8.00 (203)	—	—	9.44 (240)	6.50 (165)	9.53 (242)	—	—	3.14 (80)	1.03 (26)	0.75 (19)
TF2	200	Class J 200 A 600 V	13.33 (339)	9.38 (238)	1.64 (42)	9.12 (232)	19.25 (489)	2.33 (59)	8.00 (203)	0.09 (3)	2.77 (70)	9.44 (240)	6.50 (165)	—	14.11 (358)	9.63 (245)	3.14 (80)	1.03 (26)	0.75 (19)
TF2	200	Class H, K, R 200 A 250 V	13.33 (339)	9.38 (238)	1.64 (42)	9.12 (232)	19.25 (489)	2.33 (59)	8.00 (203)	0.09 (3)	4.14 (105)	9.44 (240)	6.50 (165)	—	15.48 (393)	9.63 (245)	3.14 (80)	1.03 (26)	0.75 (19)
TF2	200	Class H, K, R 200 A 600 V	13.33 (339)	9.38 (238)	1.64 (42)	9.12 (232)	19.25 (489)	2.33 (59)	8.00 (203)	0.09 (3)	6.64 (169)	9.44 (240)	6.50 (165)	—	17.98 (457)	9.63 (245)	3.14 (80)	1.03 (26)	0.75 (19)
TF3	200	Class J 400 A 600 V	13.33 (339)	9.38 (238)	1.64 (42)	9.12 (232)	19.25 (489)	2.33 (59)	8.00 (203)	0.09 (3)	2.77 (70)	9.44 (240)	6.50 (165)	9.53 (242)	18.53 (471)	9.63 (245)	3.14 (80)	1.03 (26)	0.75 (19)

¹ The D dimension may be extended up to 7 in. with 9422 R2 (two required per switch).

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices



Type A1



File E52639
CCN: WHTY2

Class 9422 Handle Mechanisms

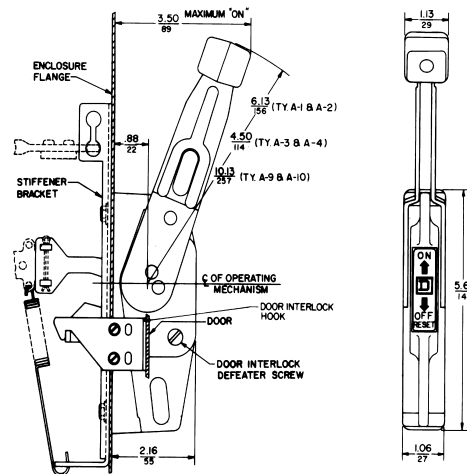
Handle mechanism kits are used with all disconnect switch and circuit breaker installations. The kits contain all parts necessary for mounting the handle to the flange of the enclosure. Types A1 through A4 and A9 through A10 are suitable for right- or left-hand flange mounting. Two mounting methods are offered. Types A5 through A8 are designed for right-hand mounting only.

Description	Type
6 in. HANDLE for use with 30–200 ampere switches and all circuit breaker mechanisms For use in enclosures rated 1, 3, 3R, 4 (sheet steel), and 12 For use in enclosures rated 4X (stainless steel) <i>All external metal parts are either stainless steel or a chrome-plated non-ferrous die casting.</i>	A1 A2
4 in. HANDLE for use with 30–200 ampere switches and all circuit breaker mechanisms Similar to Type A1 Similar to Type A2	A3 A4
12 in. HANDLE for use with 400 Type TG1 and TG2 disconnect switches ONLY For installation in enclosures rated 1, 3, 3R, 4 (sheet steel), and 12 For installation in enclosures rated 4X (stainless steel)	A7 ¹ A8 ¹
10 in. HANDLE for use with Type D2 remote or dual adapter kit ONLY Similar to Type A1 Similar to Type A2	A9 A10

¹ Remove the handle extension arm from the handle linkage for fixed depth operation.

Mounting and Outline Dimensions for Fixed Depth Operation Class 9422 A1, A2, A3, A4, A9, and A10 Handles

All dimensions are shown for right-hand flange mounting. For left-hand flange mounting, transpose all horizontal dimensions. See page 11 for information on A7 and A8 handles.

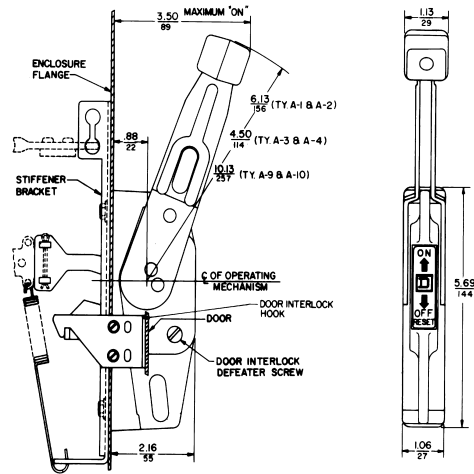
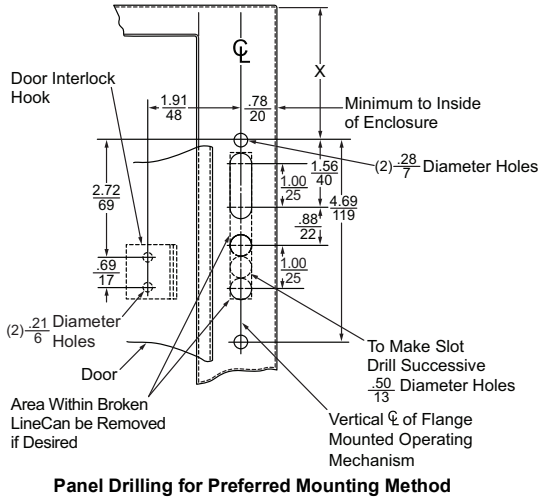


Handle Dimensions

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Preferred Mounting Method

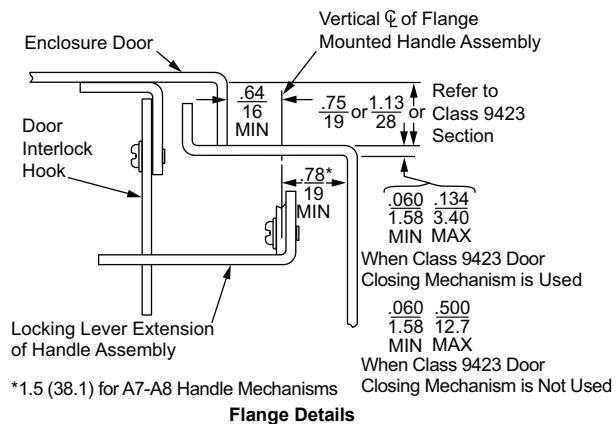
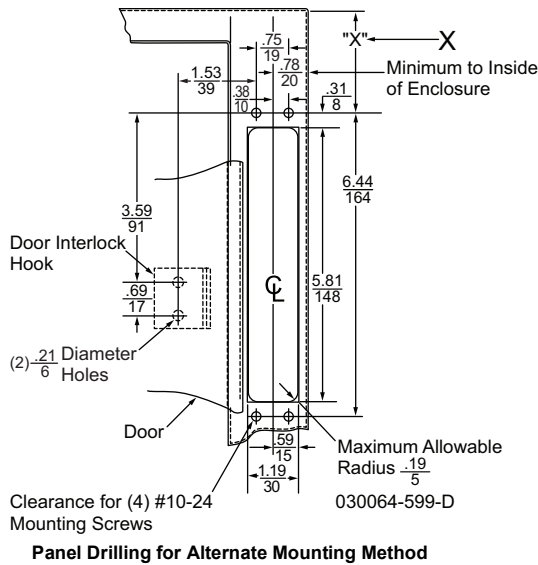
This method is for 16 Ga. to 0.25 in. thick enclosures. It consists of mounting the handle to the outside, and the stiffener bracket to the inside, of the enclosure and securing with two bolts, as shown in the figure below.



Alternate Mounting Method (Square Cutout)

This method is for 16 Ga. to 0.25 in. thick enclosures. It consists of mounting the handle to the stiffener bracket with two bolts, and securing the assembly to the back side of the enclosure flange with four #10-24 screws. A separate mounting kit (Class 9422 AM-2) is required.

Dimension X is the distance from the top inside of the enclosure or other grounded metal parts (such as conduit hubs) to the upper mounting hole of the handle mechanism. See the panel drilling diagrams on page 10. Actual distances are dependent on the disconnect device being used, and should only be determined once the disconnect device is decided upon and the location on the panel determined.



Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Class 9422 Flange-Mounted, Variable-Depth Disconnect Switches 400 A Type TG

Outline dimensions and general location for 400 A disconnect switches. Non-fusible and non-interchangeable fuse-clip type fusible switches.

NOTE: When selecting this switch and handle assembly, be aware that commercial enclosure manufacturers do not make a standard enclosure that will accept the TG switches. Special enclosures must be ordered from the enclosure manufacturers.

Type A7–A8 Handle

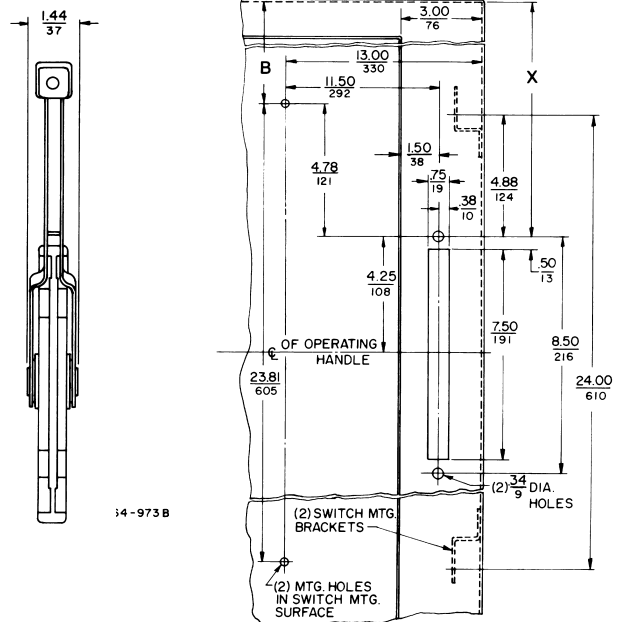
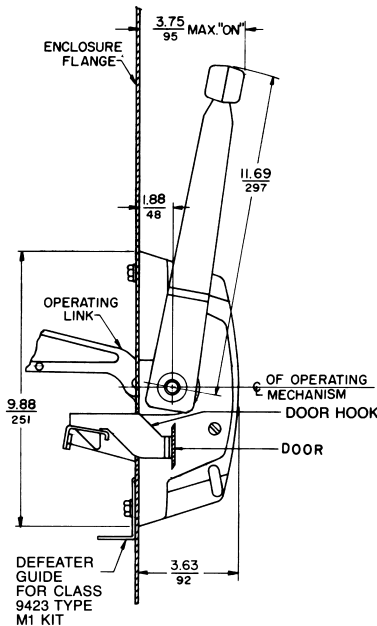
Switch Type	B	X
TG1, TG2	11.28 (286)	16.06 (408)

B and X = Minimum to wall or barrier to ensure adequate wire bending space to lug surface when maximum wire size is used. Refer to NEC Article 430.10. For fusible and non-fusible switches, dimension D is the distance from the outside of the flange to the disconnect switch mounting surface.

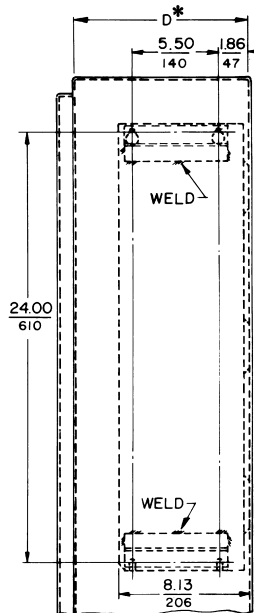
For Type TG1 or TG2 with:

- Type A7 or A8 fixed-depth handle. Remove handle extension from handle linkage. D = 11.38 (289).
- Type A7 or A8 adjustable-depth handle. D min. = 15.87 (403) and D max. = 19 (483), with steps of 0.63 (16).

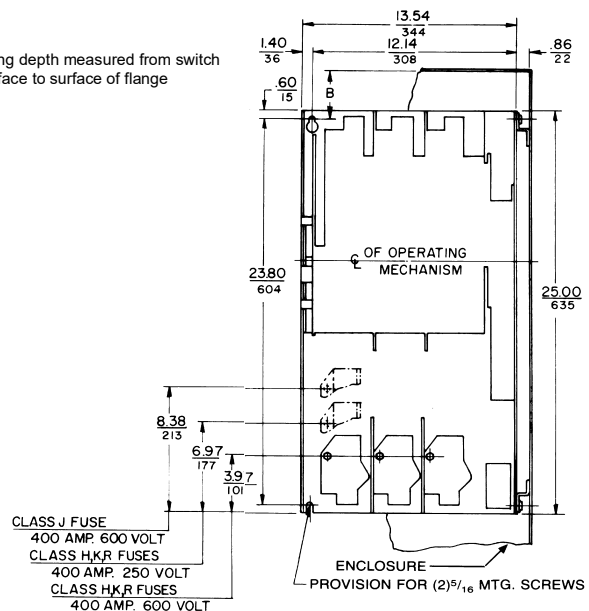
Note that copper lugs are standard on all Type TG disconnect switches.



Non-Fusible and Fusible Switches



* D = Mounting depth measured from switch mounting surface to surface of flange




Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices




Class 9422 Type T Bracket-Mounted Disconnect Devices

Shipped with switch and external handle assembled to a bracket, ready for installation into the enclosure. A trim plate is provided with each kit to eliminate any mounting screws from being accessible from the front and to provide an attractive installation. These switches can be used with Class 9423 door closing mechanisms.

Disconnect Switch Size	Maximum Horsepower Rating					Fuse Type	Fuse Clip Rating		Bracketed Mounted Switch Mechanism and Handle
	AC System Volts (Motor Voltage)				600 VDC		250 V (A)	600 V (A)	
	208 (200)	240 (230)	480 (480)	600 (600)					Type
30 A	7.5	7.5	15	20	5	None	—	—	BTCN30
						H, K, J, R	30	—	BTCF30
							60	30	BTCF33
60 A	15	15	30	50	10	J ¹	60	30	BTCF32
						None	—	—	BTDN60
							H, K, J, R	60	30
100 A	25	30	60	75	20	—		60	BTDF63
						None	—	60	BTDF62
							H, K, J, R	100	100
200 A	40	60	125	150	40	J ¹		100	BTEF11 ²
						None	—	—	TFB1
							J	200	200
						—		400	TFB3

 File E52369
CCN: WHTY2

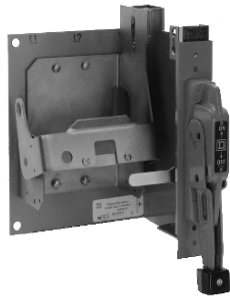
 File LR25490
Class 4652 04

Note: For Lug Data, see page 5; for Electrical Interlocks, see page 17. Some enclosures may not accept the listed operating mechanisms; contact the enclosure manufacturer.

¹ Space saving design. Type J fuses mounted on the non-fused bracket.
² 9422BTEF11 product is for flange mount only.

Class 9422 Bracket-Mounted Operating Mechanisms for Use with Square D Circuit Breakers

The circuit breaker operating mechanisms listed below are shipped with the external operating handle assembled to a bracket. Circuit breakers are not included and must be ordered separately. A trim plate is provided with each kit to eliminate any mounting screws from being accessible from the front and to provide an attractive installation. The operating handle is Type A1. These switches can be used with Class 9423 door closing mechanisms. For Class 9999 electrical interlock kits, see page 17.



For Use With			Operating Mechanism, Right Hand Flange Mounting
Breaker or Interrupter Type	No. of Poles	Frame Size (A)	Catalog No.
FAL, FCL, FHL	2, 3	100	9422BN1
LAL, LHL	2, 3	400	9422BR1
GJL	3	75, 100	9422BG1

NOTE: Some enclosures may not accept the listed operating mechanisms. Contact the enclosure manufacturer.

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Class 9422 Flexible Cable Mechanisms for Use with Square D Circuit Breakers and Class 9422 Handle Operators

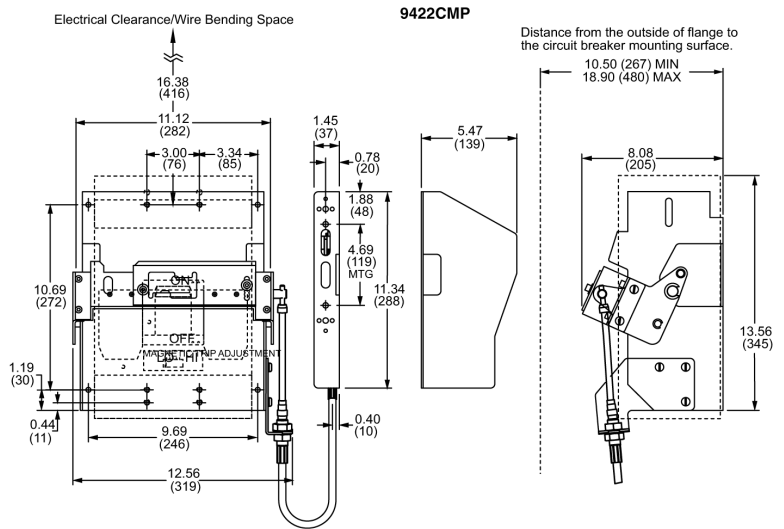
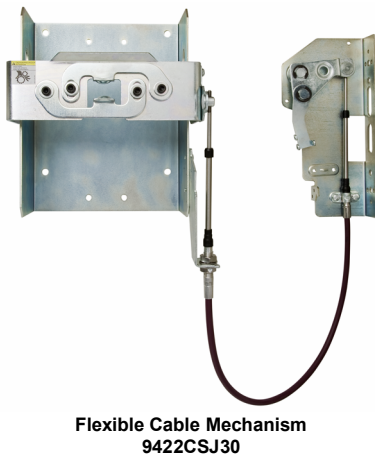
Designed for tall, deep enclosures where placement flexibility is required.



Breaker or Interrupter Type	Number of Poles	Frame Size (A)	Cable Mechanism		Cable Mechanisms with A1 Handle For Types 1, 3, 3R, 12
			Total Length (in.)	Catalog No.	Catalog No.
PowerPact™ B	3	125	36	9422CSB30	N/A
			60	9422CSB50	
			84	9422CSB70	
			120	9422CSB10	
PowerPact D	3	600	36	9422CSJ30	N/A
			60	9422CSJ50	
			120	9422CSJ10	
	4	600	36	9422CSJ304	N/A
			60	9422CSJ504	
			120	9422CSJ104	
PowerPact H	3	150	36	9422CSF30	N/A
			60	9422CSF50	
			84	9422CSF70	
			120	9422CSF10	
PowerPact J	3	250	36	9422CSF30	N/A
			60	9422CSF50	
			84	9422CSF70	
			120	9422CSF10	
PowerPact L	3	600	36	9422CSJ30	N/A
			60	9422CSJ50	
			120	9422CSJ10	
PowerPact M	3	800	48	9422CMP40	N/A
			50	9422CMP50	
			120	9422CMP10	
PowerPact P	3	1200	48	9422CMP40	N/A
			50	9422CMP50	
			120	9422CMP10	
FAL, FCL, FHL	2, 3	100	36	9422CFA30	9422CFA31
			60	9422CFA50	9422CFA51
			120	9422CFA10	—
LAL, LHL	2, 3	400	36	9422CLA30	9422CLA31
			60	9422CLA50	9422CLA51
			120	9422CLA10	—
GJL	3	75, 100	36	9422CGJ30	9422CGJ31
			48	9422CGJ40	—
			60	9422CGJ50	—
			120	9422CGJ10	—

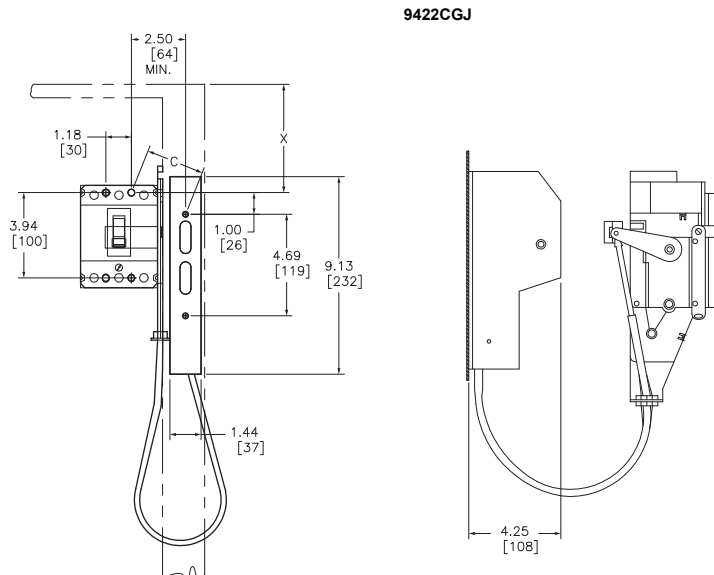
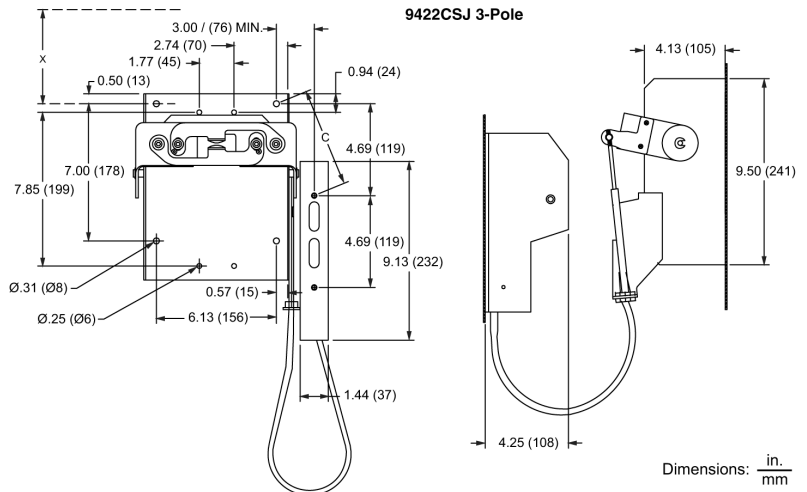
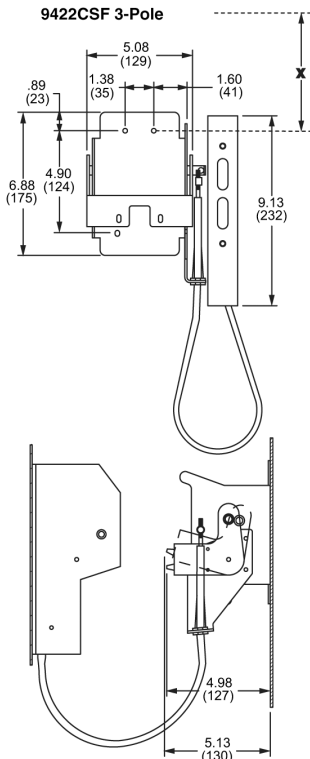
Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Outline Dimensions for Flexible Cable Mechanisms



NOTE: Refer to NEC Article 430-10 for minimum dimension X from circuit breaker top mounting hole to wall or barrier to ensure adequate wire bending space.

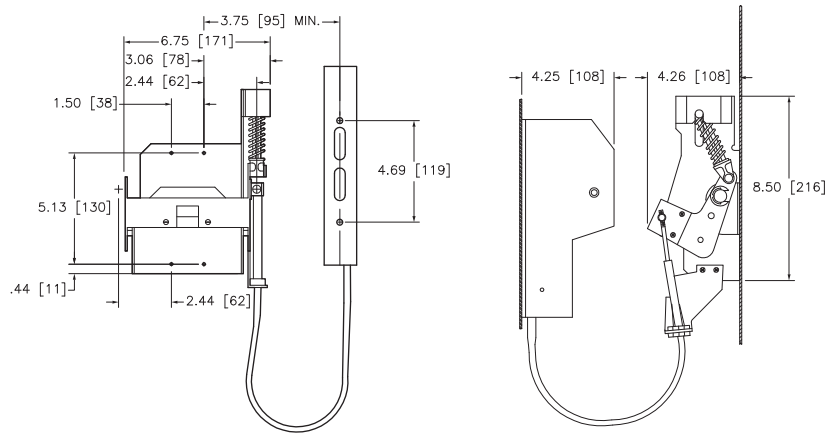
Bend radius in cable must never be less than 6 inches. Electrical clearances must be maintained between cable and live electrical parts.



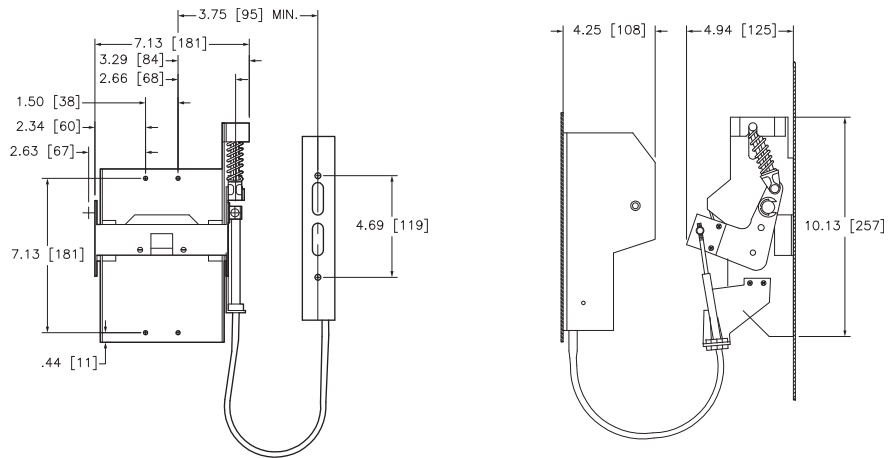
Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Outline Dimensions for Flexible Cable Mechanisms

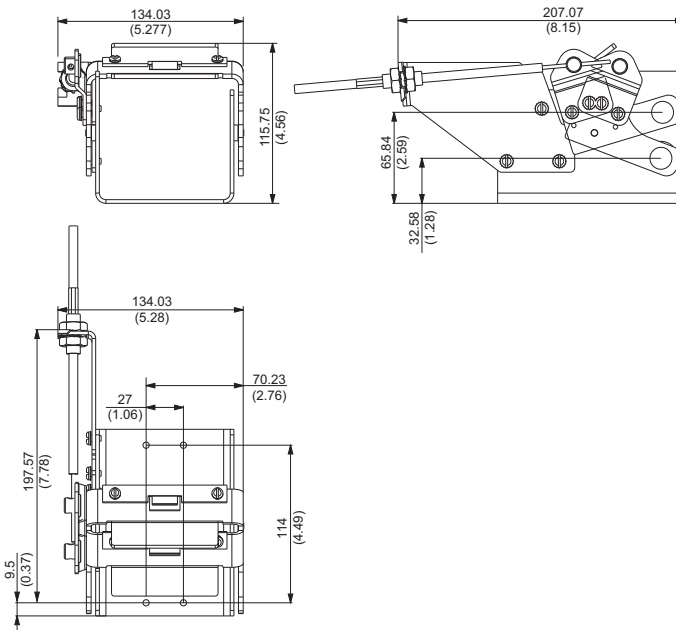
9422CFA



9422CKA

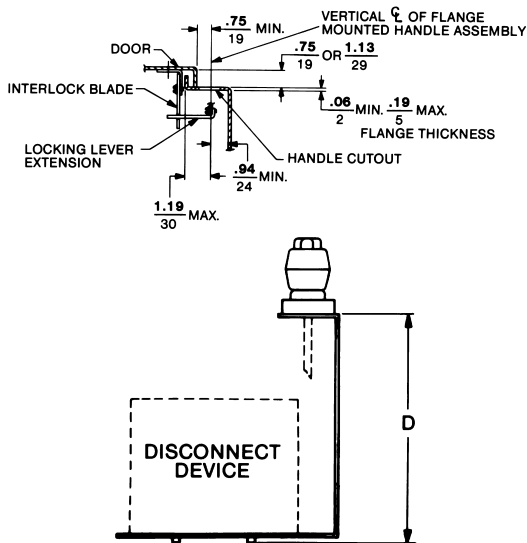
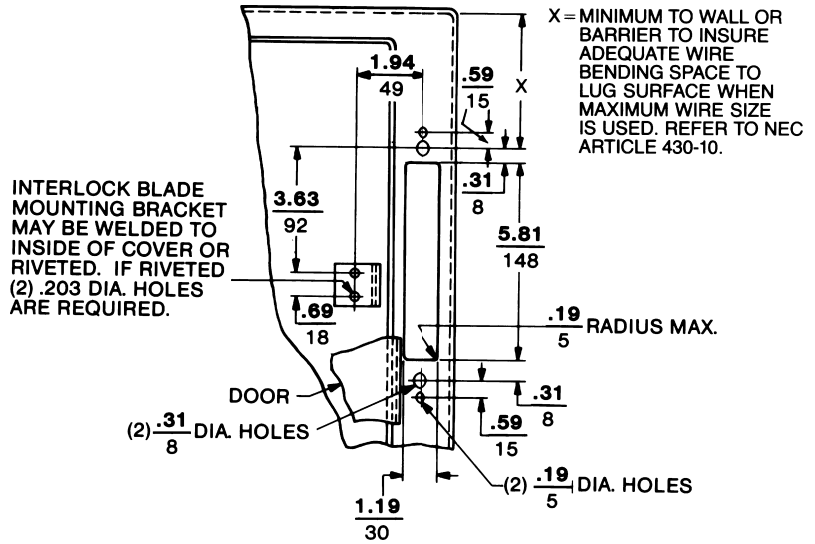
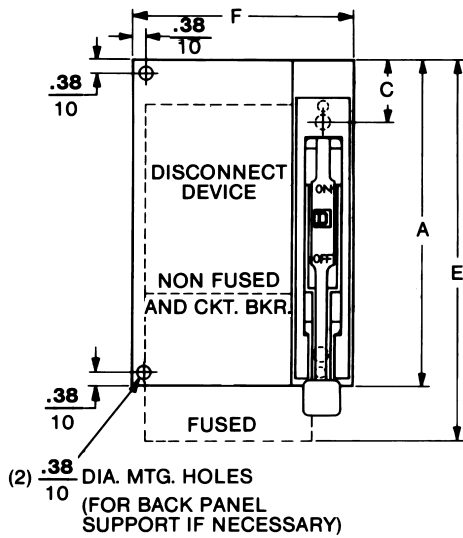


NEMA Cable Operating Mechanisms, PowerPact B-Frame 15–125 A



Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Outline Dimensions and Location Information for Class 9422 Bracket-Mounted Devices



Note: Back panel support is recommended for Types TFB1, 2, and 3. Other devices may also require support if flange is not sufficiently rigid.

Type	A	X	C	D	Min. Enclosure Depth ¹	Fusible Device E	F
BTCN BDTN BTEN	9.50 (241)	5.50 (140)	1.88 (48)	6.56 (167)	8.0 (203)	—	6.38 (162)
BTCF BTDF BTEF	9.50 (241)	5.50 (140)	1.88 (48)	8.56 (218)	10.0 (254)	11.88 (302)	6.38 (162)
TFB1	11.5 (292)	11.75 (298)	3.88 (98)	9.50 (241)	12.0 (305)	—	13.19 (335)
TFB2 TFB3	20.0 (508)	11.75 (298)	3.88 (98)	9.50 (241)	12.0 (305)	20.0 ² (508)	13.19 (335)
BN1	8.75 (222)	—	1.13 (29)	6.50 (165)	8.0 (203)	—	7.13 (181)
BR1	11.25 (286)	—	2.75 (70)	8.50 (216)	10.0 (254)	—	10.13 (257)

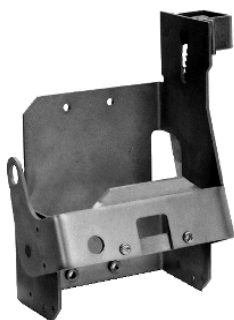
- The min. depth is greater than Dimension D since additional space is needed when mounting the mechanism.
- Fuses and fuse base assembly do not extend beyond the bracket.

Minimum Wire Bend Space for X Dimension—in. (mm)

Type	Circuit Breaker Type	Ampere Rating	Standard Al/Cu Lugs Wire Range	X Min.	Optional Al/Cu Lugs Wire Range	X Min.	Optional Cu Lugs Wire Range	X Min.
BN1	FAL, FCL, FHL	15–30	1 - #14-4 Cu or 1 - #12-4 Al	2.00 (51)	1 - #14-1/0 Cu or 1 - #12-1/0 Al	5.00 (127)	1 - #14-1 Cu	3.00 (76)
BN1	FAL, FCL, FHL	35–100	1 - #14-1/0 Cu or 1 - #12-1/0 Al	5.00 (127)	1 - #14-1 Cu or 1 - #12-4 Al	2.00 (51)	1 - #14-1 Cu	3.00 (76)
BR1	LAL, LHL	125–400	1 - #1 - 600 Kcmil or 1 - #1 - 250 Kcmil	14.00 (356)	1 - 500 - 750 Kcmil	20.37 (517)	1 - #1 - 600 Kcmil Cu or 2 - #1 - 250 Kcmil Cu	14.00 (356)

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Variable-Depth Mechanisms for Use with Square D Circuit Breakers



Designed for installation in custom built control enclosures where main or branch circuit protective devices are required. All circuit breaker operating mechanisms are suitable for either right- or left-hand flange mounting, convertible on the job.

Breaker or Interrupter Type	Use With			Operating Mechanism		
	No. of Poles	Frame Size (A)	Variable Depth Mtg. Range Min.–Max. ¹ (Inches)	Operating Mechanism Only — Does Not Include Handle Mechanism	Operating Mechanism and Handle Mechanism	
					Includes Type A1 Handle Mechanism	Includes Type A2 Handle Mechanism
Catalog No.	Catalog No.	Catalog No.	Catalog No.	Catalog No.	Catalog No.	
PowerPact B	2, 3	125	5.88–17.75	9422RB1	N/A	N/A
PowerPact D	3	600	7.25–12.0625	9422RS1	N/A	N/A
PowerPact H	3	150	6.51–17.88	9422RQ1	N/A	N/A
PowerPact J	3	250	6.51–17.88	9422RQ1	N/A	N/A
PowerPact L	3	600	7.44–18.25	9422RS1	N/A	N/A
PowerPact M	3	800	10.50–18.90	9422RM1	N/A	N/A
PowerPact P	3	1200	10.50–18.90	9422RM1	N/A	N/A
FAL, FCL, FHL	2, 3	100	5.38–17.75	9422RN1	9422ARN11	9422ARN21
LAL, LHL	2, 3	400	7.44–18.25	9422RR1	9422ARR11	9422ARR21
GJL	3	75, 100	6.00–17.75	—	9422ARG11	9422ARG21

¹ Class 9422 Type R2 extends mounting depth by 7 in. with the exception of 9422 RM1.


Electrical Interlocks – Class 9999

External Electrical Interlock Kits Class 9999

Description	Class	Type
Single Pole, Double Throw	9999	R26
Double Pole, Double Throw	9999	R27

For use on 9422RM, RN, RQ, RS, and RR.

 File E62922
CCN: DIHS2/8

 File LR25490
Class 3211 07

Internal Electrical Interlocks

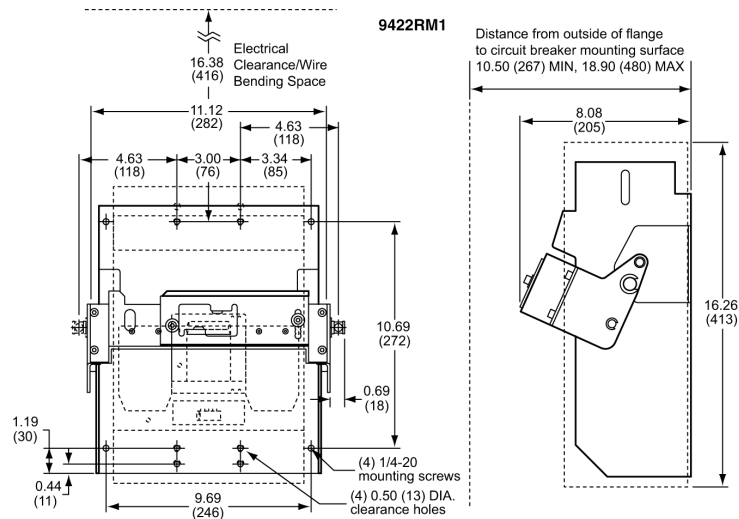
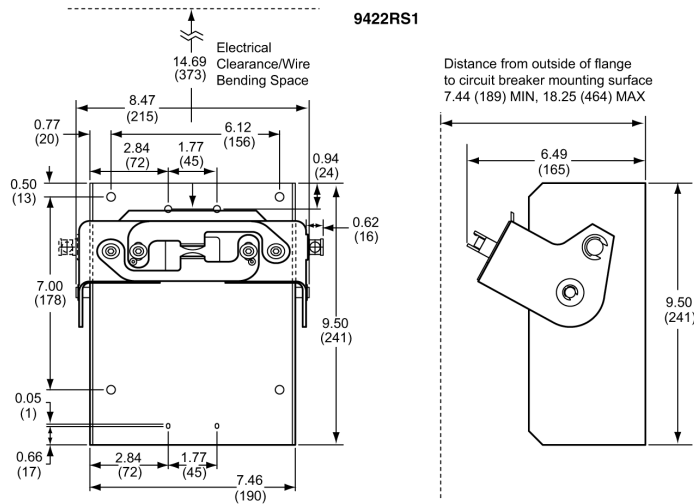
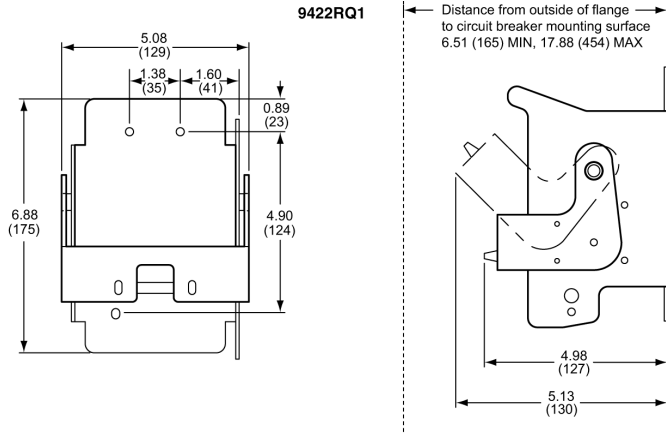
Circuit Breaker Type	Catalog Number	Max. per Circuit Breaker
PowerPact B	S29450	2
PowerPact H	S29450	2
PowerPact J	S29450	2
PowerPact L	S29450	2
PowerPact M	S29450	2
PowerPact P	S29450	2
GJL	AAC	1

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Outline Dimensions for Class 9422 Variable Depth Mechanisms

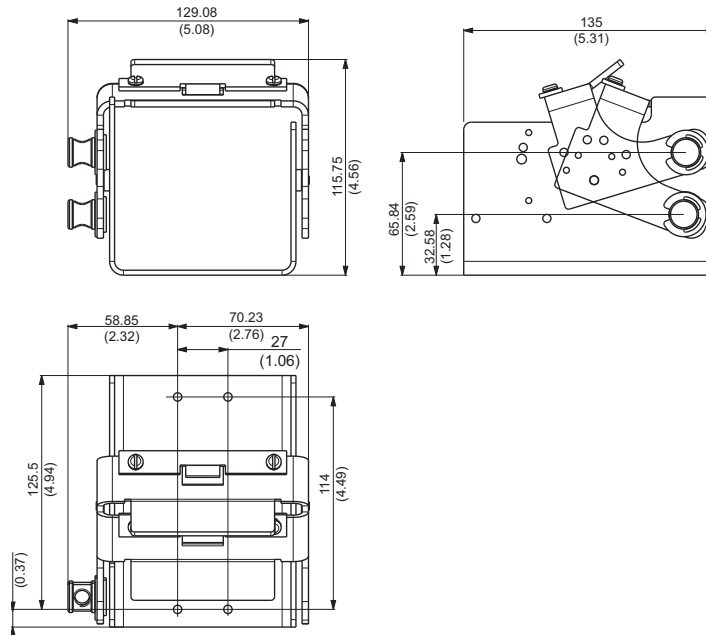
Minimum to wall or barrier to ensure adequate wire bending space to lug surface when the maximum wire size is used with standard lugs.

Dimensions: in. (mm)



Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Outline Dimensions for NEMA 9422 Variable Depth Operating Mechanism, PowerPact B-Frame 15–125 A

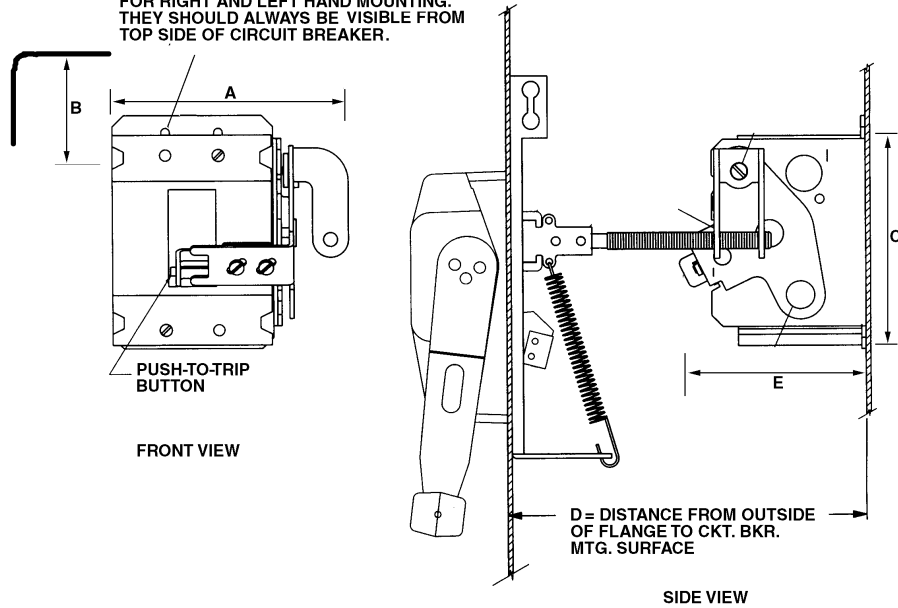


Outline Dimensions and Location Information for 9422 RG1 GJL Circuit Breakers 15 A to 100 A

DO NOT USE TOP SET OF MOUNTING HOLES FOR RIGHT AND LEFT HAND MOUNTING. THEY SHOULD ALWAYS BE VISIBLE FROM TOP SIDE OF CIRCUIT BREAKER.

UL File E62922
CCN: DIHS2/8

SP File LR25490
Class 3211 07



Dimensions—in. (mm)

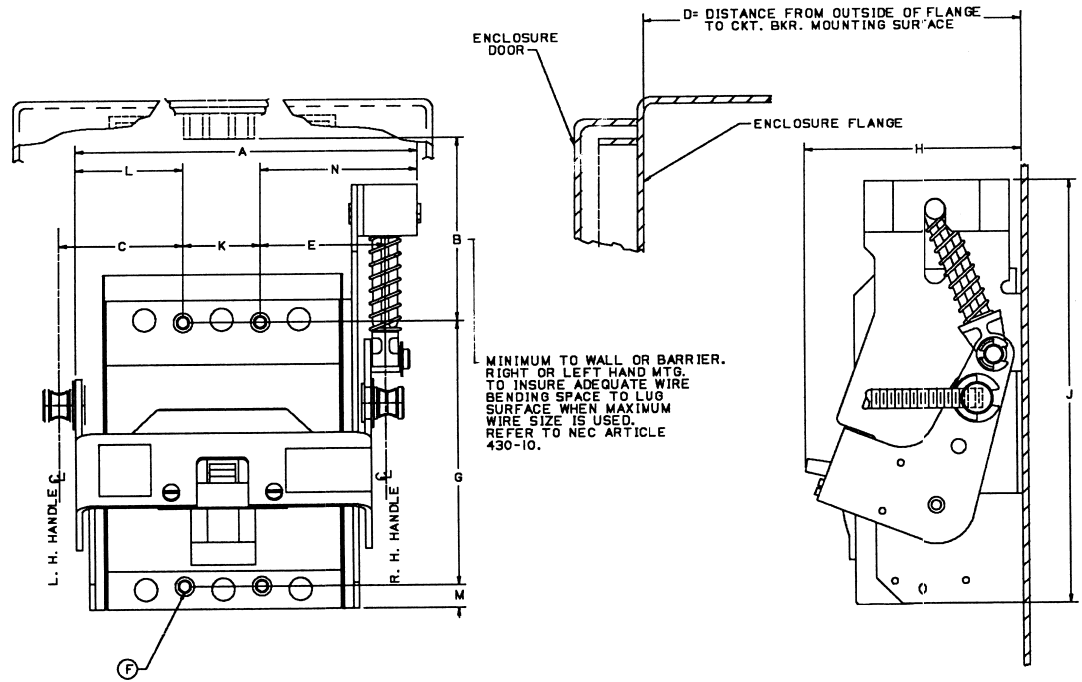
Circuit Breaker Frame Size	Type	Width A	Min. to Wall or Barrier B	Height C	Distance to Enclosure Flange (Min.–Max.) D ¹	Bracket Depth E
GJL	RG1	5.00 (127)	6.00 (152)	4.75 (121)	6.00 (152) – 17.75 (451)	4.00 (102)

NOTE: To ensure adequate wire-bending space to lug surface when maximum wire size is used, refer to NEC Article 430-10.

¹ 9422 R2 will extend dimension by 7 in. (two required).

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Outline Dimensions and Location Information for FAL and FHL Circuit Breakers (100 A Frame)



Dimensions—in. (mm)

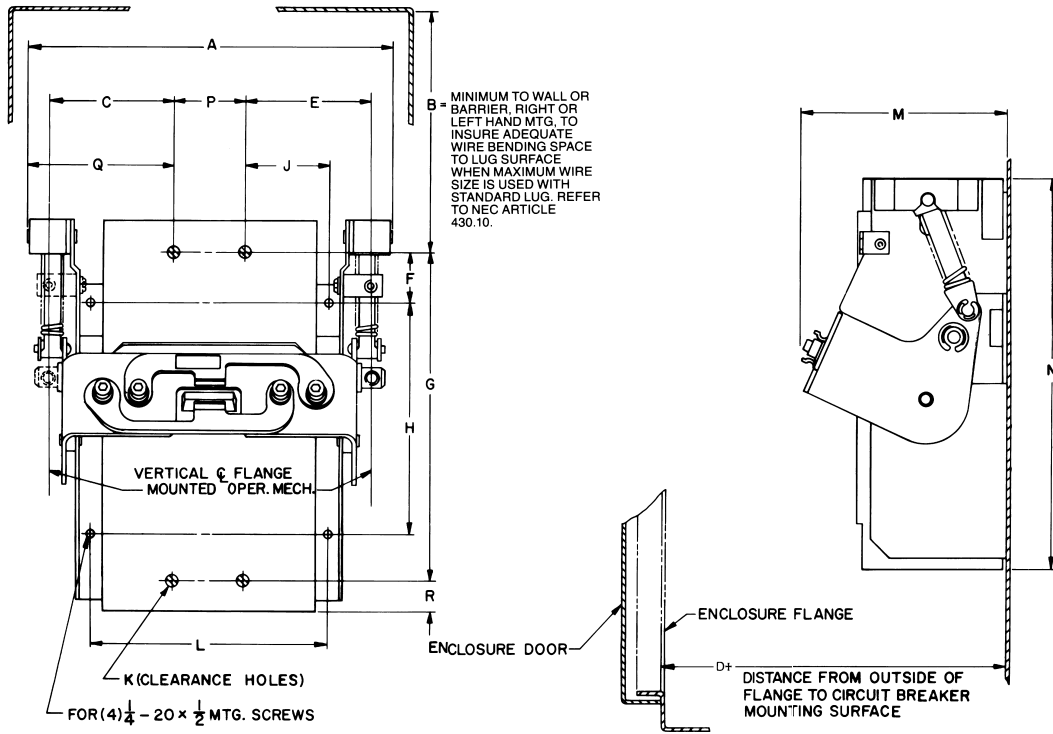
Circuit Breaker Frame Size	Type	A	B	C	D ¹ Min.	D ¹ Max.	E	F ²	G	H	J	K	L	M	N
		(171)	(137)	(62)	(140)	(451)	(62)	#8-32(4)	(130)	(108)	(216)	(38)	(56)	(11)	(78)
FAL, FHL	RN1	6.75	5.38	2.44	5.51	17.75	2.44	#8-32(4)	5.13	4.26	8.50	1.50	2.19	0.44	3.06

NOTE: To ensure adequate wire-bending space to lug surface when maximum wire size is used, refer to NEC Article 430-10.

- 1 9422 R2 will extend dimension by 7 in. (two required).
- 2 Dimension for panel drilling.

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Outline Dimensions and Location Information for LAL and LHL Circuit Breakers (400 A Frame)



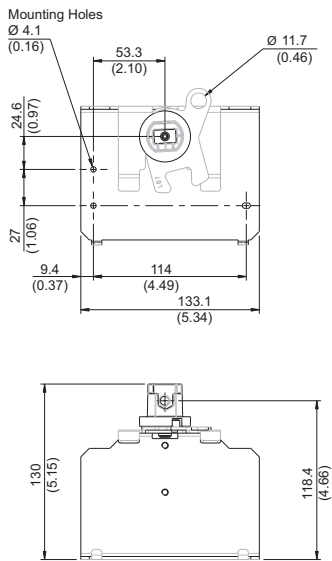
Dimension—in. (mm)

Circuit Breaker Frame Size	Type	A	C	D ¹ Min.	D ¹ Max.	E	F	G	H	J	K	L	M	N	P	Q	R
LAL, LHL	RR1	10.19 (259)	3.56 (90)	7.44 (189)	18.25 (464)	3.56 (90)	1.38 (35)	9.25 (235)	6.56 (167)	2.31 (59)	0.38 (10) Dia. (4)	6.63 (168)	6.00 (152)	11.00 (279)	2.00 (51)	4.13 (105)	0.88 (22)

NOTE: To ensure adequate wire-bending space to lug surface when maximum wire size is used, refer to NEC Article 430-10.

¹ 9422 R2 will extend dimension 7 in. (two required).

Outline Dimensions for Door-Mounted Operating Mechanisms, PowerPact B-Frame 15–125 A



Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices



9422CSFD33

Dual Cable Operating Mechanisms for Square D Circuit Breakers

Dual Cable Operating Mechanisms are designed for use with Square D brand PowerPact D, H, J, and L circuit breakers through 600 A frame sizes. The cable mechanisms allow for a single handle operator, Class 9422Ax, to operate both circuit breakers. The cable mechanism is designed especially for tall, deep enclosures where placement flexibility is required. There are numerous cable arrangements to choose from to accommodate many applications.

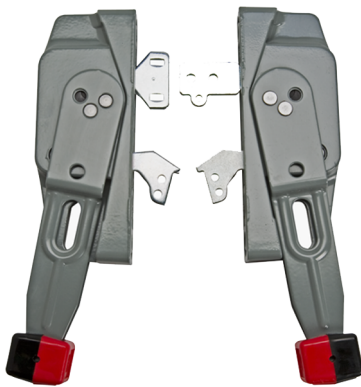
Features

- Separate cables for each circuit breaker
- Rugged metal flange handle operator
- Maximized flexibility of circuit breaker placement for existing and new applications
- Control panel can be fed from two separate supply voltages (if required)
- Dual mechanism allows both separate supply voltages to be controlled by a single handle to improve security features

Circuit Breaker Type	Cable Length in. / mm (quantity)	Catalog Number	Frame Size (max.)
PowerPact H & J MG NSF	120 in. / 3048 mm (2)	9422CSFD1	250 A
	36 in. / 914 mm (1) 60 in. / 1524 mm (1)	—	
	60 in. / 1524 mm (1-CSF 3 pole) 60 in. / 1524 mm (1-CSF 4 pole)	9422CSFD345	
	36 in. / 914 mm (1) 120 in. / 3048 mm (1)	9422CSFD31	
	36 in. / 914 mm (2)	9422CSFD33	
	60 in. / 1524 mm (1) 120 in. / 3048 mm (1)	—	
	60 in. / 1524 mm (2)	9422CSFD55	
PowerPact D & L MG NSJ	60 in. / 1524 mm (2-CSJ)	9422CSJD50 ¹	600 A
	120 in. / 3048 mm (2-CSJ)	9422CSJD10 ¹	
	60 in. / 1524 mm and 120 in. / 3048 mm (2-CSJ)	—	250 A and 600 A
	120 in. / 3048 mm (1-CSF) and 120 in. / 3048 mm (1-CSJ)	9422CSFJD10	
60 in. / 1524 mm (1-CSF) 600 A 60 in. / 1524 mm (1-CSJ)	9422CSFJD50		

¹ Must use the 9422AP1 or 9422AP2 operating handle with this operating mechanism.

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices



Handle Mechanisms

Handle Mechanisms

These handle mechanism kits are used with the circuit breaker variable depth and cable operating mechanisms. The kits contain all parts necessary for mounting the handle to the flange of the enclosure. Types A1/AP1 to A4 are suitable for right or left-hand flange mounting.

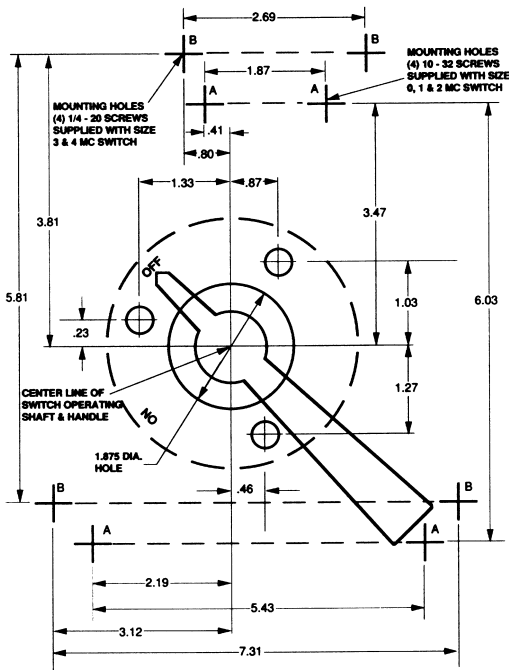
Type of Handle	NEMA Type Enclosure	Type
6 in.	1, 3, 3R, 4 (sheet steel), 12	A1
	4, 4X (stainless) ¹	A2
6 in. ²	1, 3, 3R, 4 (sheet steel), 12	AP1
	4, 4X (stainless) ¹	AP2
4 in.	1, 3, 3R, 4 (sheet steel), 12	A3
	4, 4X (stainless) ¹	A4

¹ All external metal parts are either stainless steel or a chrome-plated non-ferrous die casting.

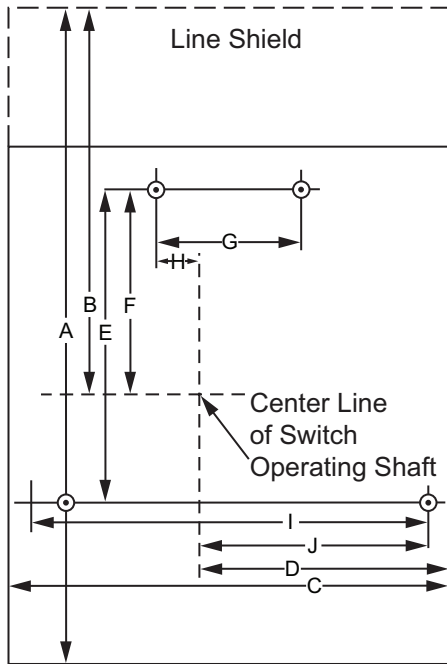
² Must be used with 9422RM1, 9422CMP, and 9422CSJD (dual cable mechanism) only.

NOTE: See the *Digest* for dimensions.

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices



Rotary Handle Dimensions (in.)



Switch Dimensional Sketch

Switch Interrupting and Withstandability Ratings

Switch Rating (A)	Interrupting Rating Amperes Symmetrical 600 Vac, 3 Phase	Withstandability I ² T (Amperes ² seconds)
30	1,200	0.38 x 10 ⁶
60	1,800	1.28 x 10 ⁶
100	2,000	2.62 x 10 ⁶
200	3,600	5.25 x 10 ⁶

NOTE: These switches are for motor circuit applications.

Lug Data

Switch Rating (A)	Number Per Pole	Wire Range	Wire Type
30	1	AWG 14-8	Cu
60		AWG 14-4	Cu
100		AWG 14-1/0	Al - Cu
200		AWG 6-250 kcmil	Al - Cu

Switch Dimensions (in.)

Switch Rating (A)	Length		Width		Mounting Hole Dimensions							Depth	
	A	B	C	D	E	F	G	H	I	J	K ¹	I ²	
30	7 ⁹ / ₁₆	4 ¹⁵ / ₃₂	5 ⁷ / ₈	3 ¹⁵ / ₃₂	6	3 ¹⁵ / ₃₂	1 ⁷ / ₈	1 ³ / ₃₂	5 ⁷ / ₁₆	3 ¹ / ₄	4 ³ / ₃₂	4 ¹¹ / ₃₂	
60	7 ⁹ / ₁₆	4 ¹⁵ / ₃₂	5 ⁷ / ₈	3 ¹⁵ / ₃₂	6	3 ¹⁵ / ₃₂	1 ⁷ / ₈	1 ³ / ₃₂	5 ⁷ / ₁₆	3 ¹ / ₄	4 ¹¹ / ₃₂	4 ¹¹ / ₃₂	
100	9 ²⁷ / ₃₂	5 ¹¹ / ₃₂	8 ³ / ₁₆	4 ⁵ / ₈	5 ¹³ / ₁₆	3 ¹³ / ₁₆	2 ¹¹ / ₁₆	5 ¹ / ₆₄	7 ⁵ / ₁₆	4 ³ / ₁₆	5 ²³ / ₃₂	4 ²⁷ / ₃₂	
200	12 ³ / ₁₆	7 ⁷ / ₃₂	8 ³ / ₁₆	4 ⁵ / ₈	5 ¹³ / ₁₆	3 ¹³ / ₁₆	2 ¹¹ / ₁₆	5 ¹ / ₆₄	7 ⁵ / ₁₆	4 ³ / ₁₆	5 ²³ / ₃₂	4 ²⁷ / ₃₂	

¹ Maximum depth with largest fuse

² Depth, including insulating barrier on service entrance switches

Class 9421 Type L Circuit Breaker Mechanisms

Type L door-mounted, variable-depth operating mechanisms feature heavy duty, all metal construction with trip indication. All can be padlocked in the Off position when the enclosure door is open. Further, the handle assemblies can be locked Off with up to three padlocks, which also locks the door closed. The 3 in. handle accepts one padlock.



3 in. Handle Assembly

Complete Kits

Complete kits are rated for NEMA Type 1, 3R, and 12 enclosures. A door-drilling template is supplied to facilitate installation. The kits include a handle assembly, operating mechanism, and shaft assembly.

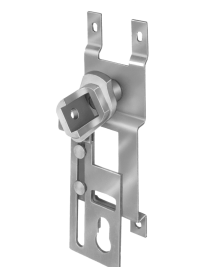


Standard Handle Assembly

Complete Kit Does Not Include Circuit Breaker.			Includes: Operating Mechanism Standard 6 in. Handle Standard Shaft Kit		Includes: Operating Mechanism Standard 6 in. Handle Long Shaft Kit		Includes: Operating Mechanism Short 3 in. Handle Long Shaft Kit	
Use With			Catalog No.	Mounting Depth ¹ Min.–Max.	Catalog No.	Mounting Depth ¹ Min.–Max.	Catalog No.	Mounting Depth ¹ Min.–Max.
Circuit Breaker or Interrupter Type	Number of Poles	Frame Size (A)	Catalog No.	Mounting Depth ¹ Min.–Max.	Catalog No.	Mounting Depth ¹ Min.–Max.	Catalog No.	Mounting Depth ¹ Min.–Max.
PowerPact™ B	3	125	9421LB1	5.5–10.75	9421LB4	5.5–21.38	9421LB3	5.5–21.3
PowerPact H	3	150	9421LJ1	5.5–10.75	9421LJ4	5.5–21.38	9421LJ3	5.5–21.38
PowerPact J	3	250	9421LJ1	5.5–10.75	9421LJ4	5.5–21.38	9421LJ3	5.5–21.38
PowerPact L	3	600	9421LD1	7.25–12.06	9421LD4	7.25–22.63	—	—
PowerPact L (DC only)	4	1200	9421LD14	—	9421LD44	—	—	—
PowerPact M ²	3	800	9421LW1	9.0–12.5	9421LW4	9.0–23.5	—	—
PowerPact P ²	3	1200	9421LW1	9.0–12.5	9421LW4	9.0–23.5	—	—
FAL, FCL, FHL	2, 3	100	9421LN1	5.5–10.44	9421LN4	5.5–21.0	9421LN3	5.5–21
LAL, LHL	2, 3	400	9421LR1	6.31–10.88	9421LR4	6.31–21.5	—	—
GJL	3	75, 100	9421LG1	5.5–10.25	—	5.5–20.88	9421LG3	5.5–20.875

¹ Mounting depth measured from circuit breaker mounting surface (control panel) to outside of enclosure door in inches.

² Includes standard 8 in. handle 9421LHP8.



Operating Mechanism (includes lockout)

Component Parts

Component parts kits are rated for NEMA Type 1, 3, 3R, and 12 enclosures. All handle assemblies are painted (the handle is flat black and the base ring is silver).



IEC-Style Handle

Use With			3 in. Handle Assemblies Type 1, 3R, 12	Std. 6 in. Handle Assemblies Type 1, 3R, 12	Operating Mechanism Includes Lockout	Standard Shaft (Support Bracket Not Required)		Long Shaft (Support Bracket Included)	
Circuit Breaker or Interrupter Type	No. of Poles	Frame Size (A)	Catalog No.	Catalog No.	Catalog No.	Mounting Depth ¹ Min.–Max.	Catalog No.	Mounting Depth ¹ Min.–Max.	Catalog No.
PowerPact B	3	125	9421LH3	9421LH6	9421LB7	5.5–10.25	9421LS8	5.5–21.375	9421LS13
PowerPact H	3	150	9421LH3	9421LH6	9421LJ7	5.5–10.25	9421LS8	5.5–21.375	9421LS13
PowerPact J	3	250	9421LH3	9421LH6	9421LJ7	5.5–10.25	9421LS8	5.5–21.375	9421LS13
PowerPact L	3	600	—	9421LH6	9421DJ7	7.25–12.06	9421LS8	7.25–22.625	9421LS13
PowerPact L (DC only)	4	1200	—	9421LH6	9421LD74	—	—	—	—
PowerPact M	3	800	—	9421LHP8	9421LW7	9.0–12.50	9421LS8	9.0–23.5	9421LS10
PowerPact P	3	1200	—	9421LHP8	9421LW7	9.0–12.50	9421LS8	9.0–23.5	9421LS10
FAL, FCL, FHL	2, 3	100	9421LH3	9421LH6	9421LF1	5.5–10.44	9421LS8	5.5–21	9421LS12
LAL, LHL	2, 3	400	—	9421LH6	9421LL1	6.31–10.88	9421LS8	6.31–21.5	9421LS10
GJL	3	75, 100	9421LH3	9421LH6	9421LG7	5.5–10.44	9421LS8	5.5–21.0	9421LS12

¹ Mounting depth measured from circuit breaker mounting surface (control panel) to outside of enclosure door in inches.

	3 in. Handle Assemblies Type 1, 3R, 12	Std. 6 in. Handle Assemblies Type 1, 3R, 12	8 in. Handle Assemblies Type 1, 3R, 12
Red Handle with Yellow Bezel To be substituted for handles of the same length (for example, 9421LH3 with 9421LH3RY)	9421LH3RY	9421LH6RY	9421LHP8RY
Legacy Circuit Breaker Handle	—	—	9421LH8

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms

Class 9422 Devices

NEMA Type 3 and 4 Handle Assemblies



9421LC43_DA



9421LC46



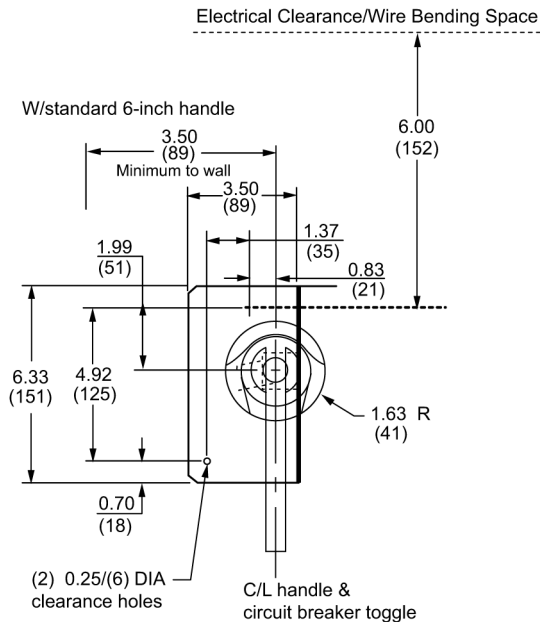
9421LH46

Use With			Standard Handle Assemblies		Special 3 in. Version	
Circuit Breaker or Interrupter Type	No. of Poles	Frame Size (A)	NEMA Type 3, 4 (Painted)	NEMA Type 3, 4, 4X (Chrome Plated)	NEMA Type 3, 4 (Painted)	NEMA Type 3, 4, 4X (Chrome Plated)
			Catalog No.	Catalog No.	Catalog No.	Catalog No.
PowerPact B	3	125	9421LH46	9421LC46	9421LH43	9421LC43
PowerPact H	3	150	9421LH46	9421LC46	9421LH43	9421LC43
PowerPact J	3	250	9421LH46	9421LC46	9421LH43	9421LC43
PowerPact L	3	600	9421LH46	9421LC46	—	—
PowerPact L (DC only)	4	1200	9421LH46	9421LC46	—	—
PowerPact M	3	800	9421LHP48	9421LCP48	—	—
PowerPact P	3	1200	9421LHP48	9421LCP48	—	—
FAL, FCL, FHL	2, 3	100	9421LH46	9421LC46	9421LH43	9421LC43
LAL, LHL	2, 3	400	9421LH46	9421LC46	—	—
GJL	3	75, 100	9421LH46	9421LC46	9421LH43	9421LC43

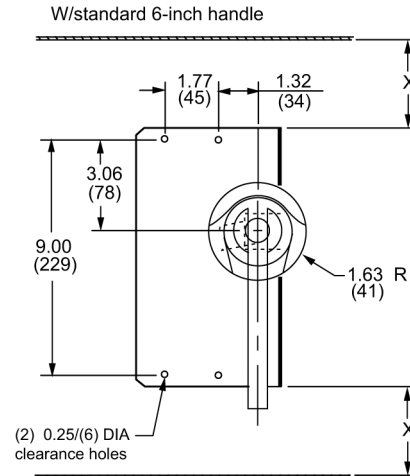
	Std. 6 in. Handle Assemblies, Type 3, 4 (Painted)	Special 3 in. Handle Assemblies Type 3, 4 (Painted)	8 in. Handle Assemblies Type 3, 4 (Painted)
Red Handle with Yellow Bezel To be substituted for handles of the same length (for example, 9421LH3 with 9421LH3RY)	9421LH46RY	9421LH43RY	9421LHP48RY
	—	—	—
Legacy Circuit Breaker Handle	—	—	9421LH8

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

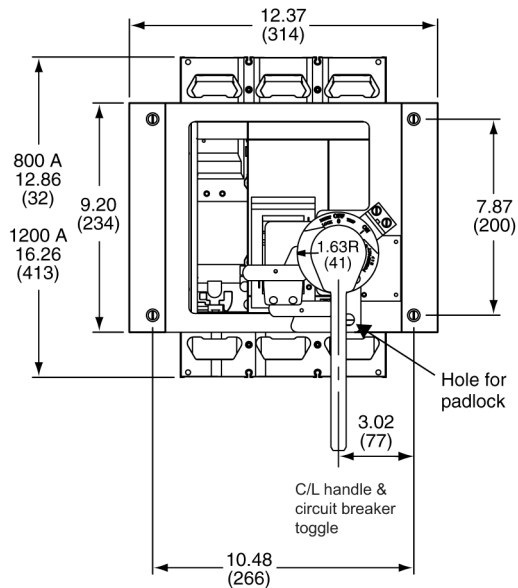
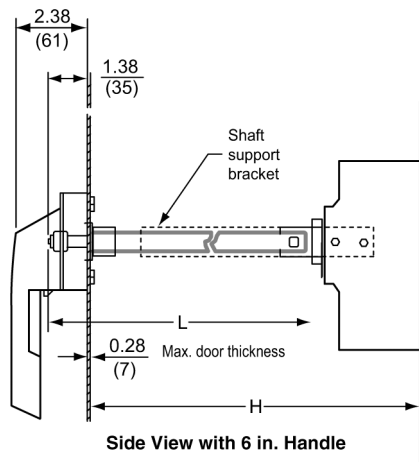
Panel Drilling for PowerPact H and J Circuit Breaker
Operating Mechanisms: 9421LJ1, 9421LJ4, and 9421LJ7



Panel Drilling for PowerPact D and L Circuit Breaker
Operating Mechanisms: 9421LD1, 9421LD4, and 9421LD7



X: Minimum to wall or barrier to insure adequate wire bending space to lug surface when the maximum wire size is used. Refer to NEC 430-10.

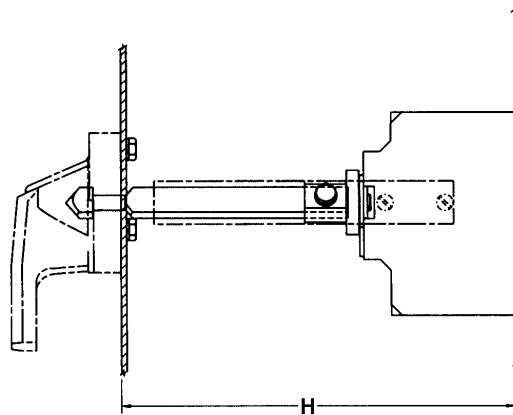
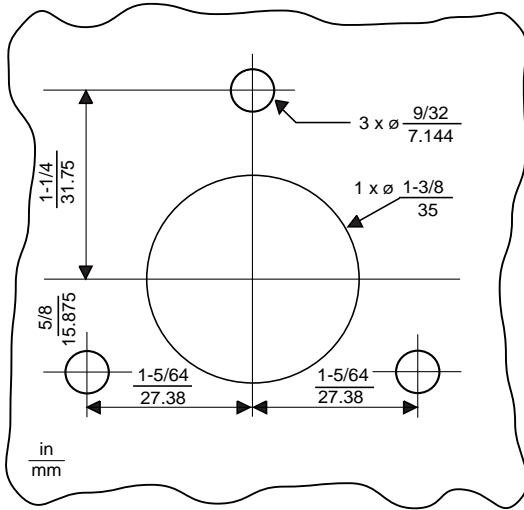


Shaft Cutting Dimensions

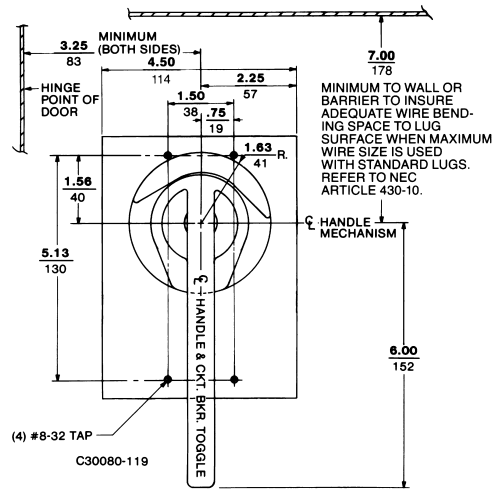
Class	Type	Shaft Length Formula	H = Standard Shaft		H = Long Shaft	
			Min.	Max.	Min.	Max.
9421	LJ1, LJ4, LJ7	$L = H - 3.00 (76)$	5.5 (138)	10.75 (273)	5.5 (138)	21.63 (543)
9421	LD1, LD4, LD7	$L = H - 4.25 (108)$	7.25 (184)	12.06 (306)	7.25 (184)	22.63 (575)
9421	LW1, LW4, LW7	$L = H - 4.89 (124)$	7.19 (183)	11.63 (295)	7.19 (183)	22.25 (565)

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Determination of Shaft Length



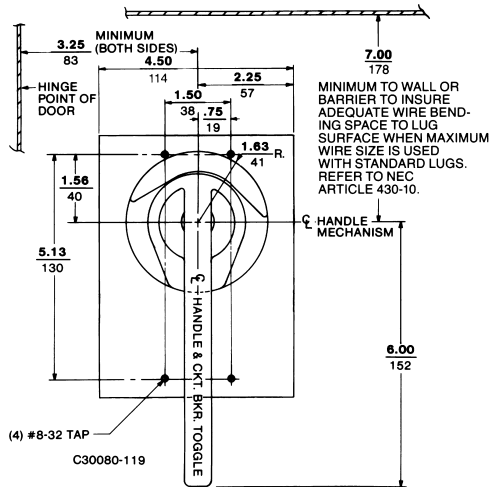
Class	Type	Shaft Length Formula	Standard Shaft		Long Shaft	
			Min.	Max.	Min.	Max.
9421	LG7, LG1, LG4, LG3	$L = H - 2.5$ (64)	5.5 (140)	10.25 (250)	5.5 (140)	20.85 (530)



Dimensions for 3.5 in. Handle Assembly

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Dimensions for FAL, FCL, FHL Circuit Breakers and Circuit Interrupters



Panel Drilling for FAL, FCL, FHL
Circuit Breakers and Operating Mechanisms

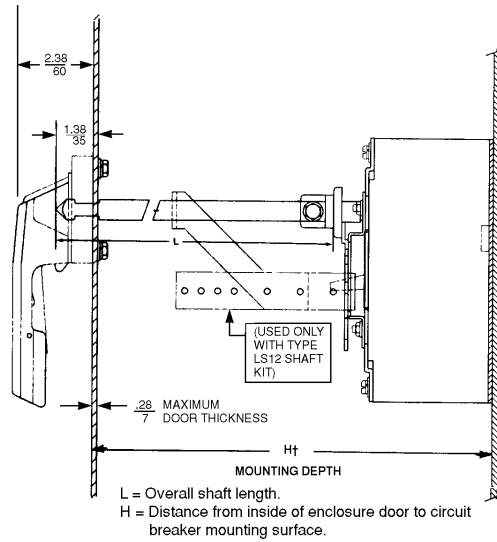
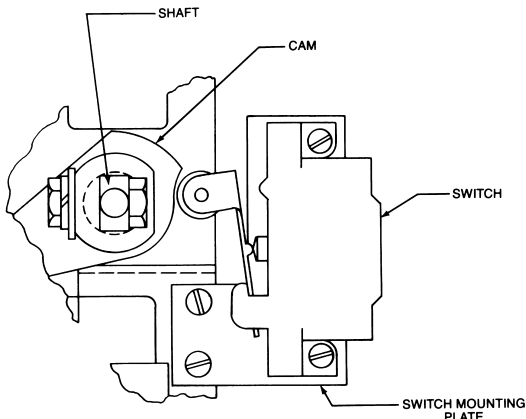


Figure 2
Side View



Electrical Interlock Location – FA
9999R47 or 9999R48

† Mounting depth measured from circuit breaker mounting surface (control panel) to outside of enclosure door.

Determination of Shaft Length—in. (mm)

Class	Type	Shaft Length Formula	Standard Shaft		Long Shaft	
			Min.	Max.	Min.	Max.
9421	LF1, LN1, LN3, LN4	$L = H - 2.88 (73)$	5.5 (140)	10.44 (265)	5.5 (140)	21.00 (533)

Electrical Interlock Kits — Class 9999

External Electrical Interlock Kits Class 9999

Description	Class	Type
Single Pole, Double Throw	9999	R47
Double Pole, Double Throw	9999	R48

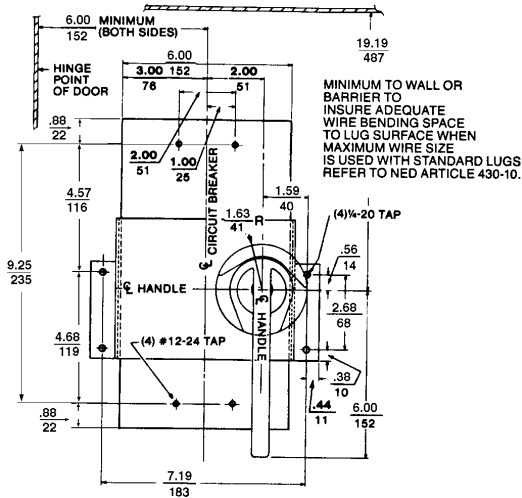
For use on 9421LF1, LN1, LN3, LN4, LL1, LR1, and LR4

Internal Electrical Interlocks

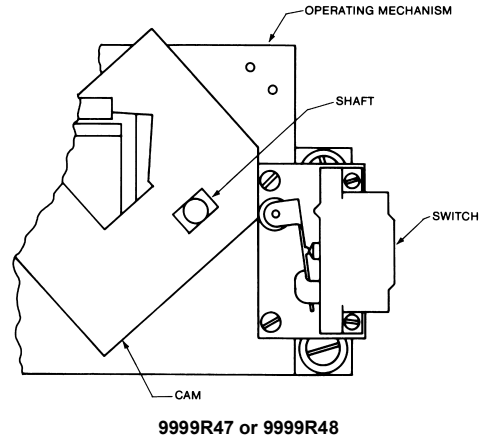
Circuit Breaker Type	Catalog Number	Max. per Circuit Breaker
PowerPact B	S29450	2
PowerPact H	S29450	2
PowerPact J	S29450	2
PowerPact L	S29450	2
PowerPact M	S29450	2
PowerPact P	S29450	2
GJL	AAC	1

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

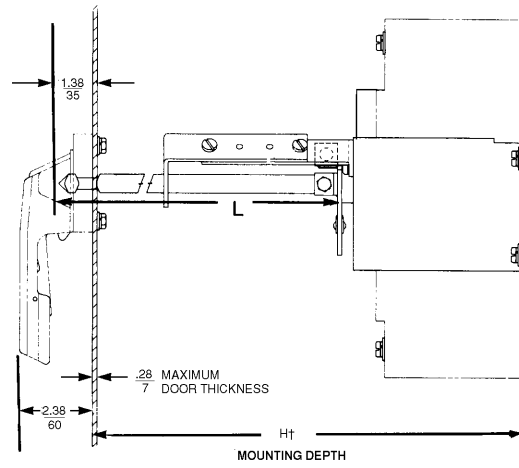
Electrical Interlock Location for LAL, LHL Circuit Breakers and Operating Mechanisms



Panel Drilling for LAL, LHL
Circuit Breakers and Operating Mechanisms



Dimensions for LAL, LHL Circuit Breakers and Circuit Interrupters



L = Overall shaft length.
H = Distance from inside of enclosure door to circuit breaker mounting surface.

† Mounting depth measured from circuit breaker mounting surface (control panel) to outside of enclosure door.

Determination of Shaft Length—in. (mm)

Class	Type	Shaft Length Formula	Standard Shaft		Long Shaft	
			Min.	Max.	Min.	Max.
9421	LL1, LR1, LR4	$L = H - 3.13 (79)$	6.31 (160)	10.88 (276)	6.31 (160)	21.50 (546)

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9422 Devices

Switch
or
Breaker



Remote operation shown
(handle mechanism
not included in kit)

Accessories for Class 9422 Flange-Mounted, Variable-Depth Disconnect Switches

Remote or Dual Adapter Kit

For the remote or dual operation of 30, 60, 100 and 200 A disconnect switches, or GJL, FAL, FHL, LAL, and LHL circuit breakers.

Remote Operation — permits mounting the Class 9422 Type A9 or A10 handle mechanism at a lower level than the disconnect device it controls. This arrangement is often required where the disconnect device is mounted too high for personnel to easily reach a conventional operator.

Dual Operation — permits controlling two disconnect devices, one in line with and one remote from a single Class 9422 Type A9 or A10 handle mechanism.

NOTE: Class 9422 Type A9 or A10 handle and preferred mounting method **must** be used.

Mounting Depths for Disconnect Devices

Disconnect Device	Enclosure Mounting Depth (in.)		Type
	Minimum	Maximum	
Circuit Breaker			N/A
FAL, FCL, FHL	10.66	19.5	
LAL, LHL	12.13	19.88	
GJL	10.50	19.50	
Disconnect Switch			D2
30 A Type TCF/TCN	10.63	19.50	
60 A Type TDF/TDN	10.63	19.50	
100 A Type TEF/TEN	12.13	20.25	
200 A Type TF	13.13	20.81	

NOTE: Must mount switch or circuit breaker a minimum of 9 in. above or below.

Other Accessories



Alternate Mounting Kit



Channel/Flange Support Kit



Auxiliary Lock Plate

	Description	Class	Type
Alternate Mounting Kit	Permits mounting Class 9422 Type A1 or A2 handle mechanisms in enclosures with flange thickness of 16 gauge to 0.5 inch.	9422	AM2
Channel/Flange Support Kit	Auxiliary kit recommended for use with 30 A and 60 A disconnect switches and FAL, FCL, FHL, KAL, and KHL circuit breaker mechanisms when these devices are to be mounted on the center channel of a multi-door enclosure or when extra rigidity for the flange is required. Supplied as standard with 100 and 200 ampere disconnect switches and LAL, LHL, Q4L, MAL, MHL, MEL, and MXL circuit breaker mechanisms.	9422	C1
Special Lugs for Disconnect Switches	Copper lugs only. Specify Form Y157. Tin-plated aluminum lugs for 400 A Type TG switch. Specify Form Y1572 (000–750 Kcmil Cu/Al wire).	—	—
	Anderson Type VCEL compression lugs. Specify Form Y1574. Exceptions: all 30 A and 60 A disconnect switches are not available with compression lugs.	—	—
Operating Rods	Standard operating rod for use with Class 9422 variable depth mechanisms. Included as standard in each kit.	9422	R1
	Extra long operating rod for use with Class 9422 variable depth mechanisms. Can be used as a substitute for the standard rod included in each kit to increase the maximum mounting depth by 7 in. (Two are required for Types ARR, RR, ART, RT, ATE, TE, ATF, TF).	9422	R2



File E52369
CCN: WHY2

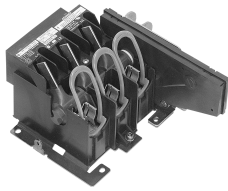
Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms

Class 9423 Devices

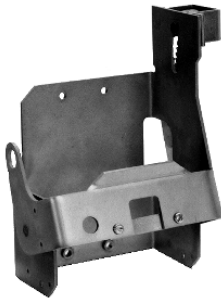
Class 9423 Door-Closing Mechanisms

Class 9423 door-closing mechanisms may be used on enclosures with door openings up to 91 inches. The door closing mechanisms are designed to be used on control enclosures and interlocked with a Class 9422 disconnect device, although they all can be used independently. Three different systems are available and their use is as recommended below. A complete system is available for interlocking all the doors of a multi-door enclosure with the master door when using the 6 in. or 8 in. vault handle mechanism.

“Master door” refers to the door of a single or multi-door enclosure which is interlocked directly with the disconnect device. The master door can be hinged on either the right or left hand side. It can be located in any position on a multi-door enclosure. “Auxiliary door” refers to the remaining door(s) of a multi-door enclosure which is (are) interlocked with the master door by means of the overhead interlocking system as illustrated on the next two pages.



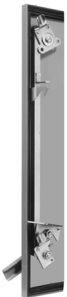


NEMA-Style Flange Handle Disconnect Switch



Circuit Breaker Mechanism

Selection Procedure

- Step 1.** Determine enclosure construction (such as number of doors, door height, and hinge location).
- Step 2.** Determine Class 9422 disconnect device to be used—either a disconnect switch or a circuit breaker mechanism. See examples of these devices to the left.
- Step 3.** Determine the location of disconnect device and handle mechanism (right- or left-hand flange or center channel).
- Step 4.** Select the door closing mechanism required:

Door Closing Mechanism		
60 in. Maximum Door Opening (Recommended)	46–60 in. Door Opening (Recommended)	61–91 in. Door Opening (Recommended)
 <ul style="list-style-type: none"> • 2 Point Locking is Standard • A Third Roller Latch Kit is Available for Three Point Locking • For 3/4 in. Door Depths 	 <ul style="list-style-type: none"> • Use on Single or Multi-Door Enclosures • Use with Doors Hinged on Right or Left Side • For 3/4 in. Door Depths 	 <ul style="list-style-type: none"> • Use on Single or Multi-Door Enclosures • Use with Doors Hinged on Right or Left Side • For 1-1/8 in. Door Depths

- Step 5.** Select auxiliary door closing mechanisms and multi-door interlocking hardware, if required. (A complete system for interlocking all auxiliary doors of a multi-door enclosure with center channel is available for the medium and large enclosures.)

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9423 Devices

Class 9423 Single Door Enclosures: NEMA Type 4 or 12 with 60 in. Maximum Opening

The door closing mechanisms listed in the table below are for use on small to medium size single door control enclosures. They are designed to be used in conjunction with Class 9422 flange mounted disconnect switches and circuit breaker operating mechanisms; however, they can be used independently as well. When used on properly designed and gasketed NEMA Type 12 enclosures, they meet NFPA 79 standards.



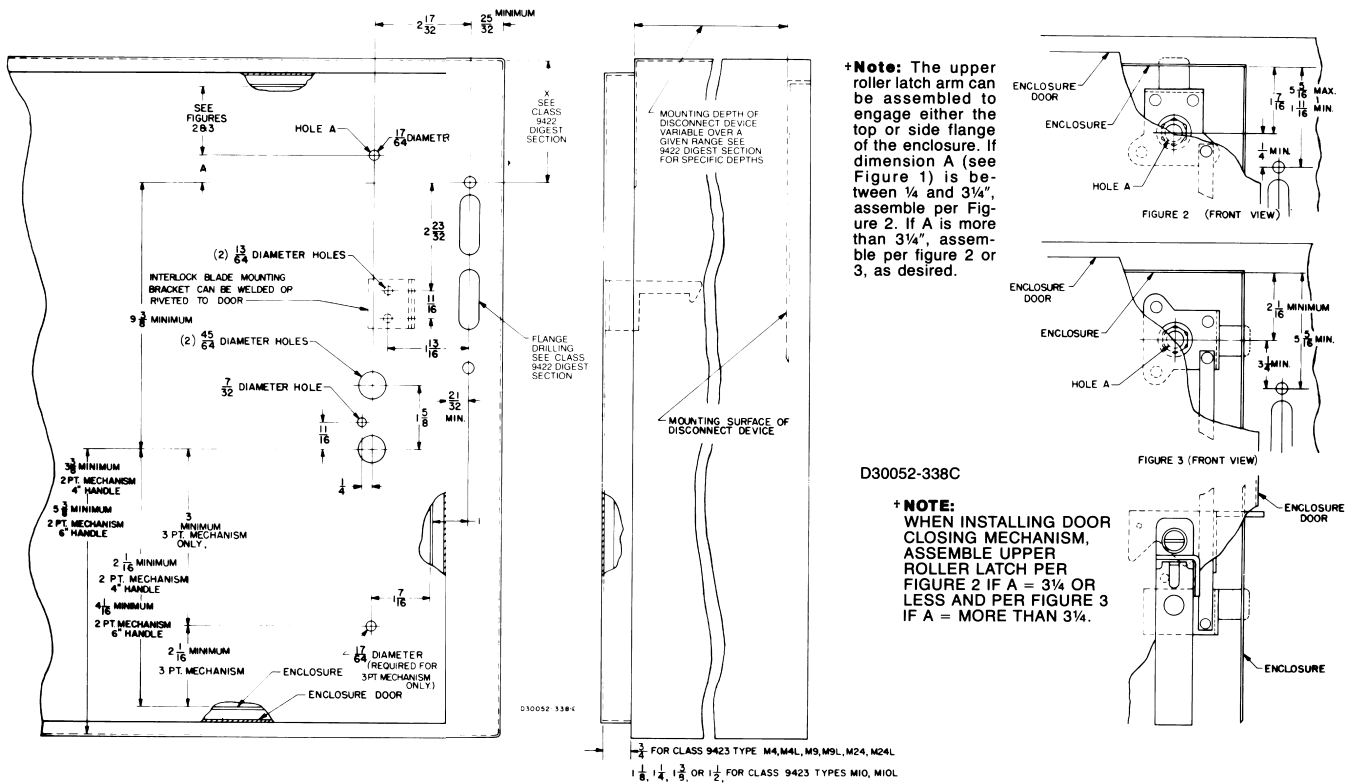
Type M4

Latch bar not included, but most pre-punched enclosures that accept Square D operating mechanisms supply a predrilled latch bar.

Description	Use On (Enclosure Type)	Use In Conjunction With	Door Latch Handle Length (in.)	Suggested Max. Door Opening	Door Depth (in.)	Type
Two Point, Roller Latch, Door Closing Mechanism for Use on Enclosures with DOORS HINGED ON LEFT HAND SIDE.	NEMA Type 4 and 12 Sheet Steel	Class 9422 Types A1, A3, A9	4	Less than 39 in.	3/4	M4 ¹
			6	60 in.	3/4	M9 ¹
Two Point, Roller Latch, Door Closing Mechanism for Use on Enclosures with DOORS HINGED ON RIGHT HAND SIDE.	NEMA Type 4 and 12 Sheet Steel	Class 9422 Types A1, A3, A9	4	Less than 39 in.	3/4	M24
			—	—	—	—
Two Point, Roller Latch, Door Closing Mechanism for Use on Enclosures with DOORS HINGED ON RIGHT HAND SIDE.	NEMA Type 4 and 12 Stainless Steel	Class 9422 Types A2, A4, A10	4	Less than 39 in.	3/4	M24L
			—	—	—	—
Third Roller Latch Kit for Three Point Locking. Used where 3 Point Locking is Desired or Where Door Opening is 39 in. or more.	NEMA Type 4 and 12 Sheet Steel	Class 9423 Types M4, M9, M4L, M9L	—	—	3/4	M3 ¹
			—	—	—	—
	NEMA Type 4 and 12 Stainless Steel	Class 9423 Types M24, M24L	—	—	—	—

¹ Package quantity 10.

Enclosure Construction and Location Information



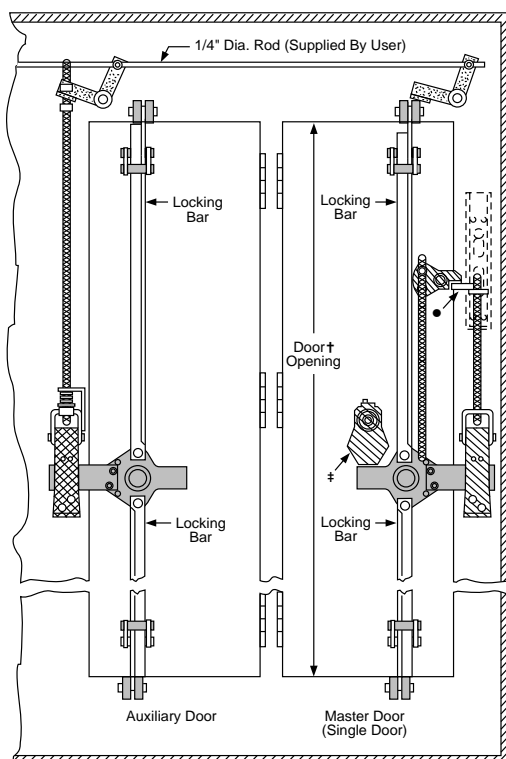
Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9423 Devices

Class 9423 Vault Type for Single Or Multi-Door Enclosures: NEMA Type 12 with 61–90 in. Door Openings

The requirements are shown in the table below:

Single-Door Enclosure		Multi-Door Enclosure		
Without Interlocking	With Interlocking	Without Interlocking	With Interlocking	
1 – M8 door closing mechanism 1 – Type M891 locking bar kit	1 – M8 door closing mechanism 1 – Type M891 locking bar kit 1 – Type M1 (use with 9422A handles)	For each door: 1 – M8 door closing mechanism 1 – Type M891 locking bar kit	For Master door: 1 – M8 door closing mechanism 1 – Type M891 locking bar kit 1 – Type M1 (use with 9422A handles)	Each Auxiliary door: 1 – M8 door closing mechanism 1 – Type M891 locking bar kit Necessary quantities of Types M2 and M7 for each door (see below)

Viewed from Inside Enclosure



Type M8



Type M1



Type M7



Type M2

- Interlocking lever extension of the flange mounted handle mechanism.
- † Actual enclosure opening – not door height.
- †† Screwdriver interlock assembly can be ordered separately. Class 9423 Type CEQ2493.

TYPE M8 DOOR CLOSING MECHANISM

The Class 9423 Type M8 door closing mechanism is designed to close and seal 1.125 in. deep doors of single or multi-door NEMA Type 12 enclosures. The Type M8 can be used on doors hinged on either the left or right hand side. Recommended door openings are from 61–91 in. Vault type handle length is 8 in.

TYPE M891 LOCKING BAR KITS

The lock bar kit for the Type M8 door closing mechanism contains two lock bars and is available from stock. The bars can be cut to fit door openings through 91 in. One lock bar kit is required for each Type M8 ordered.

TYPE M1

The Class 9423 Type M1 mechanical interlock kit is designed to interlock a Class 9422 handle mechanism with the Type M8 door closing mechanism. This kit prevents opening the master door (or single door) with the disconnect handle in the On position, making it mandatory to use a screwdriver to gain entry to the enclosure, regardless of the disconnect handle position.

Required Accessories for Auxiliary Doors

TYPE M2

One Type M2 kit is required for each auxiliary door. This kit is required to interlock any auxiliary door(s) with the master door.

TYPE M7

The first auxiliary door requires two Type M7 kits. Additional auxiliary doors require only one Type M7 kit. The 0.25 in. diameter rod used to interconnect the M7 kits is furnished by the user. If the distance between any two Type M7 kits exceeds 36 in., an additional Type M7 kit should be installed to prevent the rod from buckling.

NOTE: All mechanisms listed on this page are suitable for either left or right hand mounting.

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9423 Devices

Class 9423 Door Closing Mechanisms: Single- and Multi-Door Enclosures

Enclosure Construction and Location Information for Types M5 and M6 and Types M1 and M8

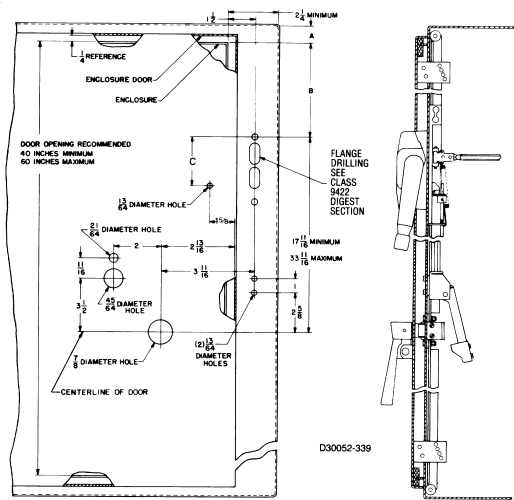
Drilling and location information shown to the left is complete for a single door enclosure with door hinged on the left side. The top drawing shows a Type M6, M5, and Class 9422 handle mechanism; the bottom drawing shows a Type M8, M1, and Class 9422 handle mechanism.

Transpose all horizontal dimensions for doors hinged on the right side.

See the next page for information on flange and channel construction.

Dimension A

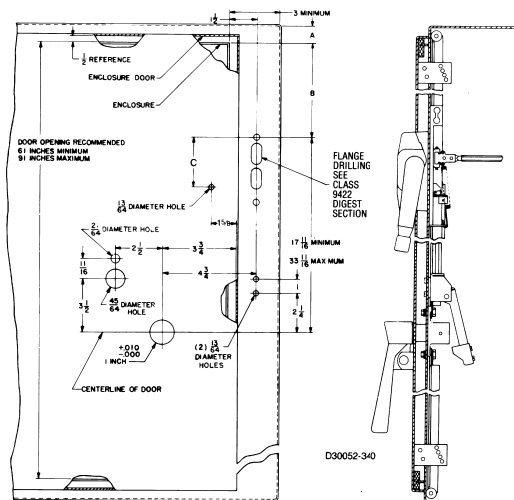
For single-door enclosures and multi-door enclosures overhead interlocking system, minimum is 1 in. (25 mm). For multi-door enclosures with an overhead interlocking system, minimum is 4.5 in. (114mm). (The overhead interlocking system consists of the required number of Class 9423 Type M2 and M7 kits for interlocking the auxiliary doors with the master door. See pages 32 and 33 for more information.



Enclosure with M6, M5, and Class 9422 Handle Mechanism

Dimensions B and C—in. (mm)

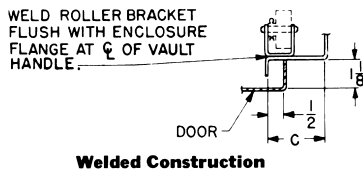
Type	Disconnect Devices	If A = 1 in., Min. B =	If A = 4.5 in., Min. B =	C
With M6, M5, and Class 9422 Handle Mechanism				
TCF, TCN	30A Disconnect Switch	3.44 (88)	2.50 (64)	3.19 (81)
TDF, TDN	60A Disconnect Switch	3.44 (88)	2.50 (64)	3.19 (81)
TEF, TEN	100A Disconnect Switch	5.25 (134)	2.50 (64)	3.19 (81)
TF	200A Disconnect Switch	11.63 (296)	8.13 (207)	3.19 (81)
TG	400A Disconnect Switch	15.07 (383)	11.57 (294)	6.75 (172)
RN1	FAL, FHL Circuit Breaker	4.85 (124)	2.50 (64)	3.19 (81)
With M8, M1, and Class 9422 Handle Mechanism				
TCF, TCN	30A Disconnect Switch	2.94 (75)	2.50 (64)	3.19 (81)
TDF, TDN	60A Disconnect Switch	2.94 (75)	2.50 (64)	3.19 (81)
TEF, TEN	100A Disconnect Switch	4.75 (121)	2.50 (64)	3.19 (81)
TF	200A Disconnect Switch	11.13 (283)	8.13 (207)	3.19 (81)
TG	400A Disconnect Switch	14.57 (370)	11.57 (294)	5.88 (150)
RN1	FAL, FHL Circuit Breaker	4.35 (111)	2.50 (64)	3.19 (81)



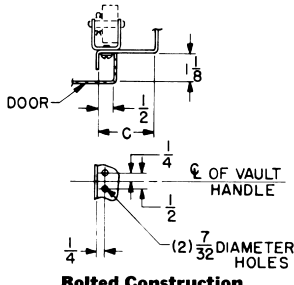
Enclosure with M8, M1, and Class 9422 Handle Mechanism

DRILLING FOR DOOR CLOSING ON RIGHT HAND FLANGE TRANSPOSE HORIZONTAL DIMENSIONS FOR DOOR CLOSING ON LEFT HAND FLANGE.

Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms Class 9423 Devices



Welded Construction



Bolted Construction

Figure 1

(1) $\frac{1}{4}$ DRILL IN EACH LEG OF INSIDE DOOR CHANNEL AT C OF VAULT HANDLE APPLICABLE TO FIGURES 2, 3, & 4.

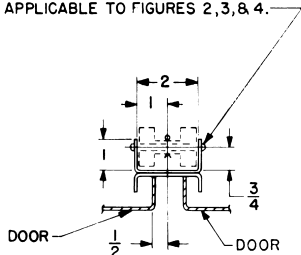


Figure 2

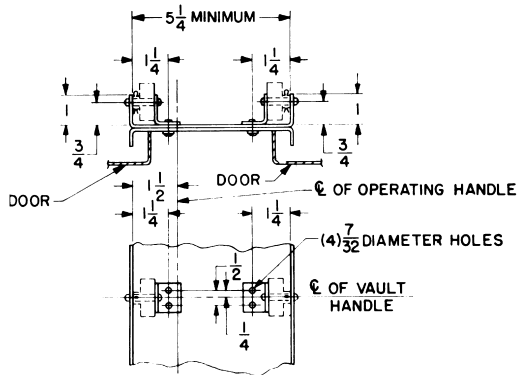


Figure 3

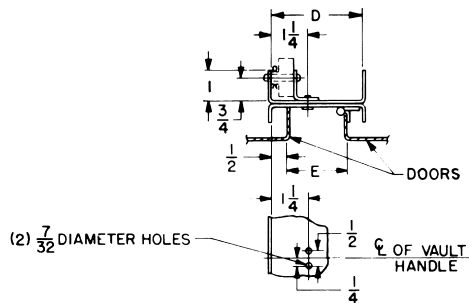


Figure 4

Class 9423 Door Closing Mechanisms: Single- and Multi-Door Enclosures

Enclosure Construction Details for Types M1 and M8 Kits

Single- and multi-door enclosures designed to accept the Class 9423 Type M1 and/or Type M8 kits must be constructed according to the dimensions shown on this page. Imperative in the enclosure design is the door depth, which must be 1.13 in. (29 mm) as shown in Figure 1 regardless of whether a disconnect device is used.

The figures are top views of the flange or center channels with various door configurations. Transpose all dimensions for enclosures with doors closing oppositely of those shown.

Flange Construction

Figure 1 shows flange construction. Dimension C is 3 in. (77 mm) with a Type A7 handle on the enclosure flange. With a Class 9422 Type A1 handle mechanism on the enclosure flange, the minimum dimension for C is 3 in. (77 mm); without a Class 9422 Type A1 handle mechanism on the enclosure flange, the minimum dimension for C is 1.5 in. (39 mm).

Channel Construction

Figures 2 and 3 show the type of channel construction where two doors close on a common channel.

In Figure 2, the dimensions apply when a Type M8 kit is used on each regardless of whether a Class 9423 Type M2 auxiliary door interlock is used.

In Figure 3, the dimensions apply when a Class 9422 Type A1 handle, Class 9423 M1 kit, and a Class 9423 M2 interlock are all located on the channel. (For an alternate door closing method using a similar type of construction, refer to Class 9423 Type M25 on page 41.)

Figure 4 shows the type of channel construction where one door closes on a common channel, while another door is hinged on the common channel. For this type of channel construction, the minimum dimension for E is 3 in. (77 mm) with a Class 9422 A1 handle mechanism in the channel (with or without a Class 9423 M1 kit) or 2 in. (51 mm) without an A1 handle.

Additionally, the minimum for dimension D with this type of channel construction is 4 in. (102 mm) with a Class 9422 A1 handle mechanism in the channel (with or without a Class 9423 M5 kit) or 3 in. (77 mm) without an A1 handle.

Class 9423 Door Closing Mechanisms: Single- and Multi-Door Enclosures

Type M25 Double-Door Interlock Kit

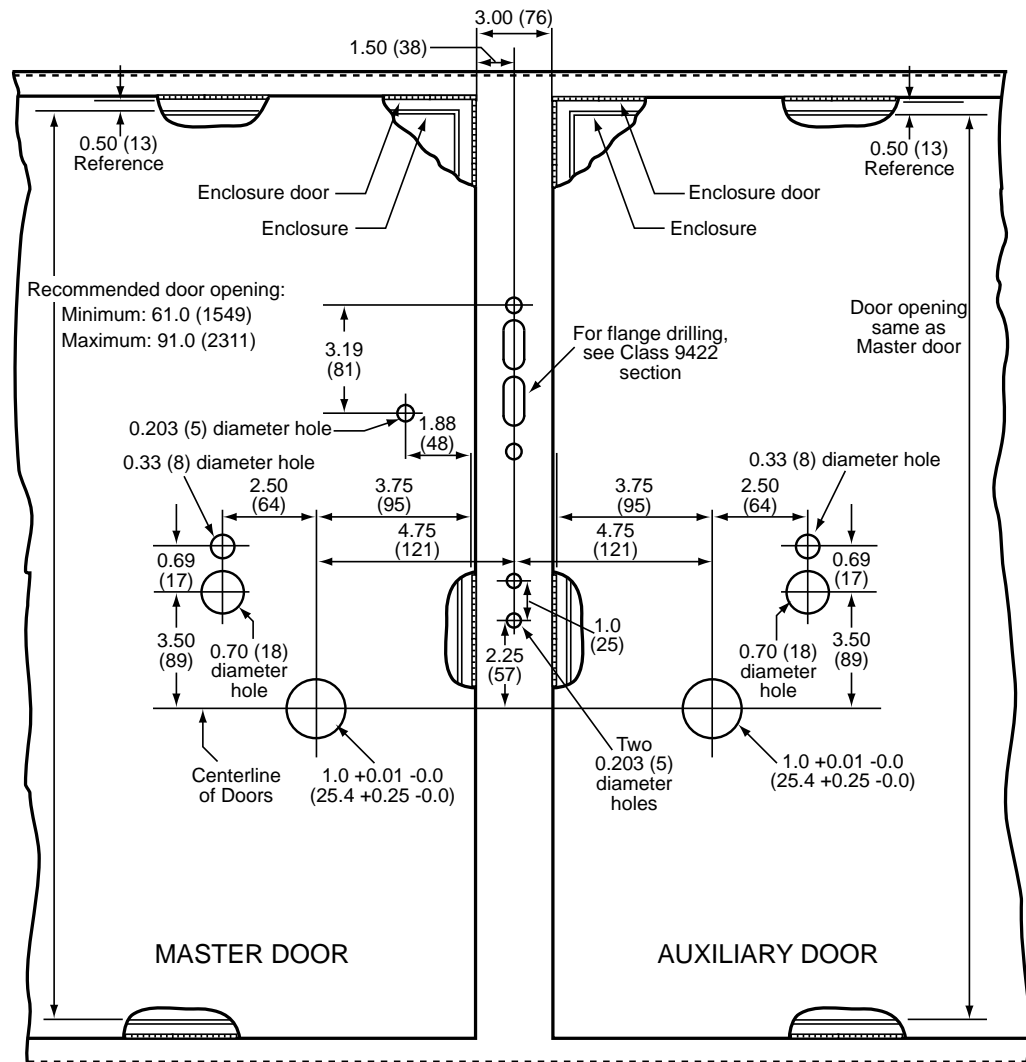
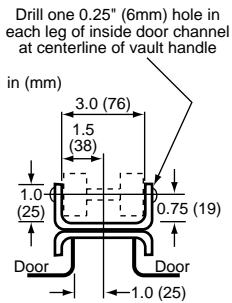
The Class 9423 Type M25 double-door interlock kit is designed for use on enclosures with two doors closing on a center channel, and which has a Class 9422 disconnect device mounted on it. The kit provides for the interlocking of both doors to the disconnect handle with one Class 9423 Type M1 kit. It also prevents the auxiliary door from being opened before the master door is opened, and without the use of a screwdriver to void a mechanical interlock.

Installation

A complete installation of the Type M25 interlock kit requires the following items:

- (2) Class 9423 Type M8 Vault Handles
- (2) Class 9423 Type M891 Lock Bar Kits
- (1) Class 9423 Type M1 Mechanical Interlock Kit
- (1) Class 9423 Type M25 Double-Door Interlock Kit
- (1) Class 9422 Handle Mechanism
- (1) Class 9422 Disconnect Device

Enclosure Construction and Location Information



Operating Mechanisms, Disconnect Switches, and Door-Closing Mechanisms

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Numerics

9421DJ7	25	9422ATDF602	4	9422CSFD55 ...	22	9999SR5	7
9421LB1	25	9422ATDF631	4	9422CSFJD10 .	22	9999TC10	4
9421LB3	25	9422ATDF632	4	9422CSFJD50 .	22	9999TC11	4
9421LB4	25	9422ATDN601 ...	4	9422CSJ10	13	9999TC20	4
9421LB7	25	9422ATDN602 ...	4	9422CSJ104 ...	13	9999TC21	4
9421LC43	26	9422ATEF101	4	9422CSJ30	13		
9421LC46	26	9422ATEF102	4	9422CSJ304 ...	13		
9421LCP48	26	9422ATEN101 ...	4	9422CSJ50	13		
9421LD1	25	9422ATF11	7	9422CSJ504 ...	13		
9421LD14	25	9422ATF12	7	9422CSJD50 ...	22		
9421LD4	25	9422ATF21	7	9422R1	31		
9421LD44	25	9422ATF22	7	9422R2	31		
9421LF1	25	9422ATF23	7	9422RB1	17		
9421LG1	25	9422BG1	12	9422RM1	17		
9421LG3	25	9422BN1	12	9422RN1	17		
9421LG7	25	9422BR1	12	9422RQ1	17		
9421LH3	25	9422BTCF30	12	9422RR1	17		
9421LH43	26	9422BTCF32	12	9422RS1	17		
9421LH46	26	9422BTCF33	12	9422TC33	4		
9421LH6	25	9422BTCN30 ...	12	9422TCF30	4		
9421LHP48	26	9422BTDF62	12	9422TCF30C ...	4		
9421LHP8	25	9422BTDF63	12	9422TCF33	4		
9421LJ1	25	9422BTDN60 ...	12	9422TCF33C ...	4		
9421LJ3	25	9422BTEF11	12	9422TCN30	4		
9421LJ4	25	9422BTEN10 ...	12	9422TCN30C ...	4		
9421LJ7	25	9422C1	31	9422TD63	4		
9421LL1	25	9422CFA10	13	9422TDF60	4		
9421LN1	25	9422CFA30	13	9422TDF63	4		
9421LN3	25	9422CFA31	13	9422TDF63C ...	4		
9421LN4	25	9422CFA50	13	9422TDN60	4		
9421LR1	25	9422CFA51	13	9422TEF10	4		
9421LR4	25	9422CFT30	4	9422TEF10C ...	4		
9421LS10	25	9422CFT31	4	9422TEN10	4		
9421LS12	25	9422CFT40	4	9422TEN10C ...	4		
9421LS13	25	9422CFT50	4	9422TF1	7		
9421LS8	25	9422CFT51	4	9422TF2	7		
9421LW1	25	9422CGJ10	13	9422TF3	7		
9421LW4	25	9422CGJ30	13	9422TFB1	12		
9421LW7	25	9422CGJ31	13	9422TFB2	12		
9422A1	9, 23	9422CGJ40	13	9422TFB3	12		
9422A10	9	9422CGJ50	13	9422TG1	7		
9422A2	9, 23	9422CLA10	13	9422TG2	7		
9422A3	9, 23	9422CLA30	13	9423M1	34		
9422A4	9, 23	9422CLA31	13	9423M2	34		
9422A7	9	9422CLA50	13	9423M24	33		
9422A8	9	9422CLA51	13	9423M24L	33		
9422A9	9	9422CMP10	13	9423M3	33		
9422AM2	31	9422CMP40	13	9423M4	33		
9422AP1	23	9422CMP50	13	9423M7	34		
9422AP2	23	9422CSB10	13	9423M8	34		
9422ARG11	17	9422CSB30	13	9423M891	34		
9422ARN11	17	9422CSB50	13	9423M9	33		
9422ARN21	17	9422CSB70	13	9999R26	17		
9422ARR11	17	9422CSF10	13	9999R27	17		
9422ARR21	17	9422CSF30	13	9999R35	7		
9422ATCF301	4	9422CSF50	13	9999R36	7		
9422ATCF331	4	9422CSF70	13	9999R47	29		
9422ATCF332	4	9422CSFD1	22	9999R48	29		
9422ATCN301 ...	4	9422CSFD31 ...	22	9999R8	7		
9422ATCN302 ...	4	9422CSFD33 ...	22	9999R9	7		
9422ATDF601	4	9422CSFD345 .	22	9999SR4	7		

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RFK03	4
RFK06	4
RFK06H	4
RFK10	4

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D10S1	24
D10S1H	24
D10S2	24
D10S2H	24
D10S3	24
D10S3H	24
D10S4	24
D10S4H	24
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D11N00	24
D11N0C	24
D11N0C2	24
D11NC	24
D11SF10	24
D11SF16	24
D11SF4	24
D12C22	24
D12C23	24
D12C61	24
D12C62	24
D12CJ1	24
D12CJ2	24
D12CO1	24
D12CR61	24
D12CR62	24
D12D02	24
D12D22	24
D12D61	24
D12D62	24
D12D63	24
D12DJ2	24
D12DJ3	24
D12DR21	24
D12DR22	24
D12DR61	24
D12DR62	24
D12E03	24
D12E22	24
D12E23	24
D12E62	24
D12EJ3	24
D12ER23	24
D12F04	24
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D12F64	24
D12FJ4	24
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