

# NGG Circuit Breaker

**Shunt Trip** Contains (1) shunt trip device. A combination includes a shunt trip device and an auxiliary switch with 1A-1B contacts.

Control Voltage			Shunt Trip	Shunt Trip and Auxiliary Switch Combination
AC	DC	Current Draw	Catalog Number	Catalog Number
120	—	0.09A	CQDST120	CQDST120AAS
240	—	0.50A	CQDST240	CQDST240AAS
277	—	0.55A	CQDST277	CQDST277AAS
380 – 415	—		STRGT415 ①	ASTGT415 ①
480	—	0.45A	CQDST480	CQDST480AAS
600	—	0.50A	CQDST600	CQDST600AAS
—	12	1.20A	CQDST12	CQDST12DAS
—	24	0.80A	CQDST24	CQDST24DAS
—	48	0.80A	CQDST48	CQDST48DAS
—	125	0.35A	CQDST125	CQDST125DAS

① This is an IEC only rating

**Auxiliary Switch** Contains (1) or (2) sets of “A” contacts and “B” contacts.

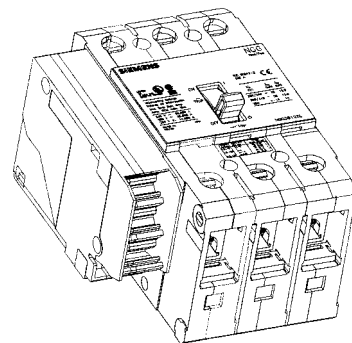
Maximum Control Supply Voltage $U_s$		Single Auxiliary Switch 1A-1B Contact	Max. Operational Current	Double Auxiliary 2A-2B Switch Contacts	Maximum Operational Current
AC	DC	Catalog Number		Catalog Number	
240	125	CQDA1	@240V AC – 15A @125V DC – 0.5A	CQDA2	@240V AC – 15A @125V DC – 0.5A

**Alarm Switch** Contains (1) sets of “A” contacts and “B” contacts.

Maximum Control Supply Voltage $U_s$		Single Alarm Switch Catalog Number	Auxiliary and Alarm Switch Catalog Number	Maximum Operational Current
AC	DC			
240	125	CQDBA	CQDA1BA	@240V AC – 15A @125V DC – 0.5A

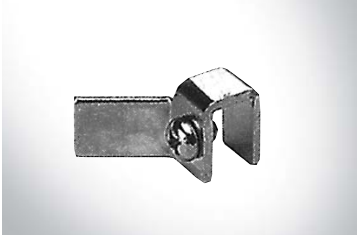
## Available Accessory Combinations

Shunt Trip	Auxiliary Switch	Alarm Contact
1	0	0
0	1	0
0	2	0
1	1	0
0	0	1
0	1	1



Mounted left side only, not available on single pole breakers.

## External Accessories



Handle Blocking Device  
BQDHBD



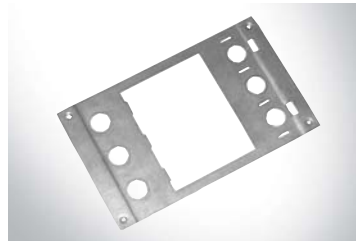
Handle Padlock Device  
HPLG  
(Use BQDPLD in panelboards)



Mounting Screw Kit  
MSKG4



Terminal Shield (3-pole)  
TSSG3A Line  
TSSG3B Load



Face Mounting Plate  
FMPG1 1-pole  
FMPG2 2-pole  
FMPG3 3-pole



Nut Keeper Plate  
TNKG3 (Kit of 3)

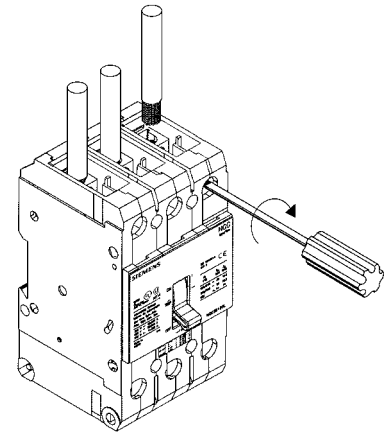
## Terminal Connectors

### Lug Information for NGG

Breaker Amp Rating (A)	Wire Size (AWG)	Torque Inch-lb. (NM)	Lug Catalog No.
15 – 30	#14 – #10 Al #8 Al	35 (4.0) 40 (4.5)	3TC1Q1 (pkg. of 3)
35 – 125	#8 Al or Cu #3 – 1/0 Cu #6 – #4 Al or Cu #3 – 2/0 Al	40 (4.5) 55 (6.2) 45 (5.1) 55 (6.2)	3TC1GG20 (pkg. of 3)

60/75° C wire

Includes retainer clips



It is possible to remove these terminals of the NGG breaker to allow customer-supplied connections.

Nut Keeper Plates are available instead of lugs for use with customer-supplied connections.

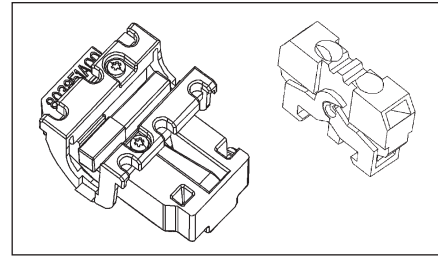
# VL Circuit Breakers

## Internal Accessories for DG 150A and FG 250A Frames

*Selection*

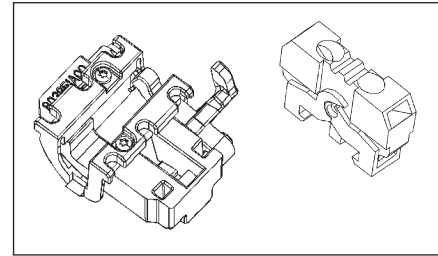
### Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket <sup>①</sup>	Catalog Number
1 Alarm Switch 1A/B <sup>③</sup> Bases AMBL2 & AMBL3	Left, Right <sup>②</sup>	ASKL1
2 Aux. Switches 1A + 1B Bases AMBL1	Left, Right	ASKL2
2 Aux. + 1 Alarm Switch 1A + 1B, 1A/B <sup>③</sup> Bases AMBL2 & AMBL3	Left, Right <sup>②</sup>	ASKL3



### Auxiliary/Alarm Switch Mounting Base Only

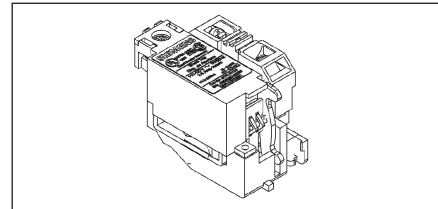
Description	Mounting Pocket	Catalog Number
Up to 3 Auxiliary Switches	Left, Right	AMBL1
2 Aux. + 1 Alarm Switch	Left Pocket Only	AMBL2
2 Aux. + 1 Alarm Switch	Right Pocket Only	AMBL3



### Auxiliary/Alarm Switch Only

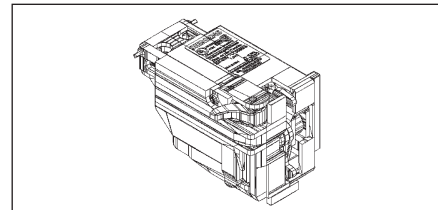
Common to DG - PG Frames

Description	Catalog Number
1 Normally Open Contact (1A)	ASWPA
1 Normally Closed Contact (1B)	ASWPB



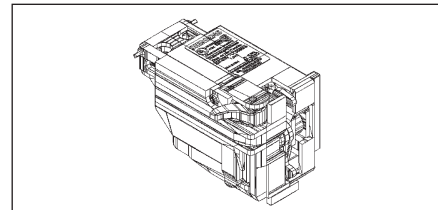
### Shunt Trips

Description	Mounting Pocket	Catalog Number
24 VDC	Right Pocket Only	STRLB24DC
48-60 VDC		STRLC60DC
110-127 VDC		STRLD125DC
220-250 VDC		STRLE250DC
48-60 VAC		STRLM60
110-127 VAC		STRLN120
208-277 VAC		STRLS277
380-600 VAC		STRLV600



### Undervoltage Release

Description	Mounting Pocket	Catalog Number
12 VDC	Right Pocket Only	UVRLA12DC
24 VDC		UVRLB24DC
48 VDC		UVRLC48DC
60 VDC		UVRLG60DC
110-127 VDC		UVRLD125DC
220-250 VDC		UVRLE250DC
24 VAC		UVRL24
110-127 VAC		UVRLN120
220-240 VAC		UVRLR240
208 VAC		UVRLP208
277 VAC		UVRLS277
380-415 VAC		UVRLT415
440-480 VAC		UVRLU480



① Refer to the "Accessory Locations" chart on page 7-152 for guidelines and limitations about which pockets may be used for accessory combinations.

② These kits include two bases, one for mounting switches in the left pocket and another for mounting in the right.

③ Includes 1A and 1B contact for alarm purposes, only one of which may be installed at any time.

'A' refers to a normally open contact (open when the breaker contacts are open).

'B' refers to a normally closed contact (closed when the breaker contacts are open).

External Accessories pages 7-137 through 7-151

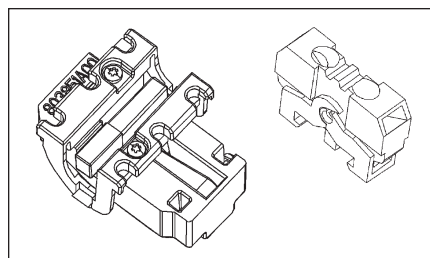
# VL Circuit Breakers

## Internal Accessories for JG 400A and LG 600A Frames

*Selection*

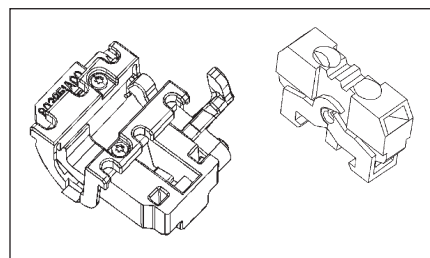
### Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket <sup>①</sup>	Catalog Number
1 Alarm Switch 1A/B <sup>③</sup> Bases AMBL2 & AMBL3	Left, Right <sup>②</sup>	ASKL1
2 Aux. Switches 1A + 1B Bases AMBL1	Left, Right	ASKL2
2 Aux. + 1 Alarm Switches 1A + 1B, 1A/B <sup>③</sup> Bases AMBL2 & AMBL3	Left, Right <sup>②</sup>	ASKL3



### Auxiliary/Alarm Switch Mounting Base Only

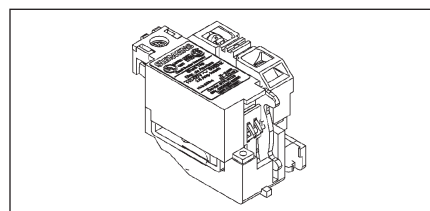
Description	Mounting Pocket	Catalog Number
Up to 3 Auxiliary Switches	Left, Right	AMBL1
2 Aux. + 1 Alarm Switch	Left Pocket Only	AMBL2
2 Aux. + 1 Alarm Switch	Right Pocket Only	AMBL3



### Auxiliary/Alarm Switch Only

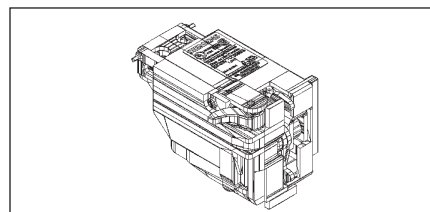
Common to DG - PG Frames

Description	Catalog Number
1 Normally Open Contact (1A)	ASWPA
1 Normally Closed Contact (1B)	ASWPB



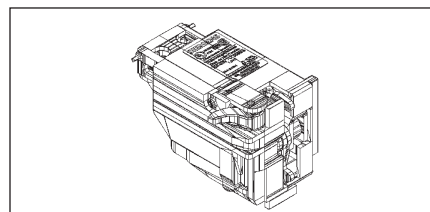
### Shunt Trips

Description	Mounting Pocket	Catalog Number
24 VDC	Right Pocket Only	STRLB24DC
48-60 VDC		STRLC60DC
110-127 VDC		STRLD125DC
220-250 VDC		STRLE250DC
48-60 VAC		STRLM60
110-127 VAC		STRLN120
208-277 VAC		STRLS277
380-600 VAC		STRLV600



### Undervoltage Release

Description	Mounting Pocket	Catalog Number
12 VDC	Right Pocket Only	UVRLA12DC
24 VDC		UVRLB24DC
48 VDC		UVRLC48DC
60 VDC		UVRLG60DC
110-127 VDC		UVRLD125DC
220-250 VDC		UVRLE250DC
24 VAC		UVRLI24
110-127 VAC		UVRLN120
220-240 VAC		UVRLR240
208 VAC		UVRLP208
277 VAC		UVRLS277
380-415 VAC		UVRLT415
440-480 VAC		UVRLU480



① Refer to the "Accessory Locations" chart on page 7-152 for guidelines and limitations about which pockets may be used for accessory combinations.

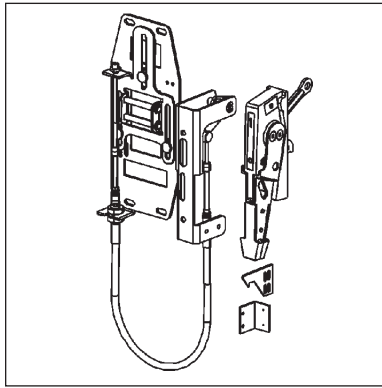
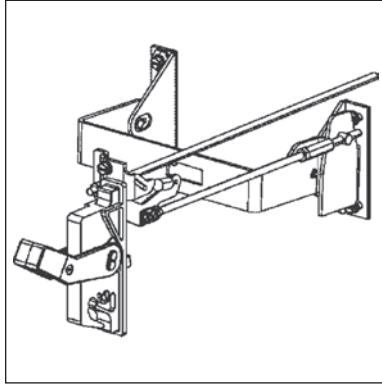
② Includes 1A and 1B contact for alarm purposes, only one of which may be installed at any time. 'A' refers to a normally open contact (open when the breaker contacts are open).

'B' refers to a normally closed contact (closed when the breaker contacts are open).

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# External Accessories

## Operating Mechanisms



Description	For DG and FG Frame 150 to 250 A	For JG and LG Frame 400 to 600 A
	Catalog Number	Catalog Number
<b>Variable Depth Flange Mounted Operator Kit</b> Adjustable from 8" to 16" Complete kit, includes handle and variable depth operator. NEMA 1, 3R, 12 NEMA 4X IEC Black Handle NEMA 1, 3R, 12 NEMA 4X	FHV3R FHV4X FHV3RB FHV4XB	FHV3R FHV4X FHV3RB FHV4XB
<b>Max-Flex™, Variable Depth Flange Mounted Operator Kit</b> Complete kit, includes plastic handle, breaker operator, and cable. NEMA 1, 3R, 12 For DG and FG operators, the cable is 36", all others are 48" May be right- or left-hand mounted	MFKF3R	MFKL3R
<b>Handle Only, for Max-Flex™ Variable Depth</b> NEMA 1, 3R, 12 Plastic NEMA 1, 3R, 12 Steel - epoxy coated NEMA 4, 4X Steel - chrome plated Solid color (all gray) Plastic <sup>①</sup> NEMA 1, 3R, 12 Solid color (black handle) Steel epoxy coated <sup>①</sup> NEMA 1, 3R, 12	MFHM3R MFHM3RS MFHM4X MFHM3RB MFHM3RSB	MFHM3R MFHM3RS MFHM4X MFHM3RB MFHM3RSB
<b>Breaker Operator Mechanism Only, for Max-Flex™</b>	MFMF	MFML
<b>Cable Only, for Max-Flex™ Variable Depth</b> 36" 48" 60" 72" 84" 96" 120" 144"	MFCF036 MFCF048 MFCF060 MFCF072 MFCF084 MFCF096 MFCF120 MFCF144	MFCM036 MFCM048 MFCM060 MFCM072 MFCM084 MFCM096 MFCM120 MFCM144
<b>Handle Auxiliary Switch</b> Form C (1NO - 1NC), early break <sup>②</sup> 1 Aux. switch 2 Aux. switch	MFSFA1 MFSFA2	MFSLA1 MFSLA2

① Max-Flex™ handles are available with solid gray or black handles instead of the customary "Red for On" flange handle.

The black handle is preferred for IEC markets, where red handles have a specific meaning.

② During manual operation, Early Break aux. contacts open before the breaker opens.