

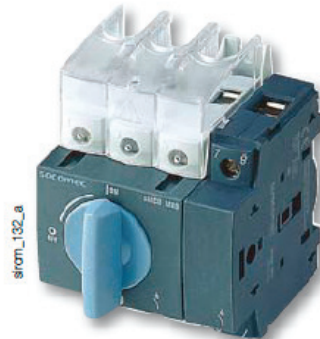


AMERICAN ELECTRICAL, INC.
INDUSTRIAL ELECTRICAL COMPONENTS

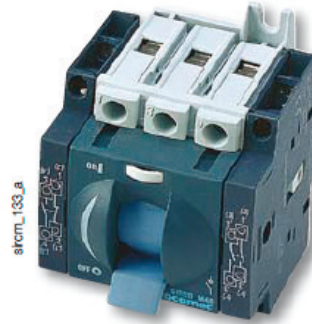
456 SOUTHLAKE BLVD RICHMOND, VA 23236 | FAX: 804-379-8935

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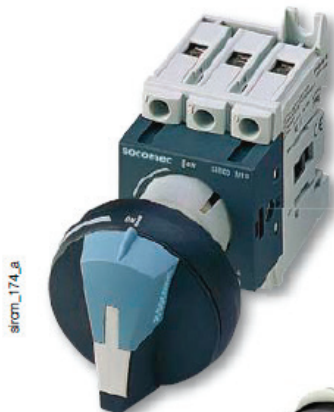
Non-fusible disconnect switches standards UL and CSA from 16 to 100 A



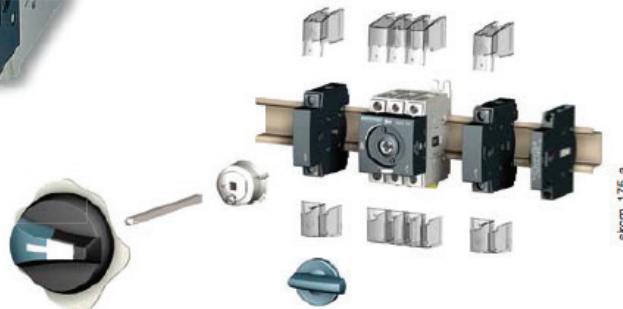
Rotary switch
SIRCO M 3 x 80 A



Toggle switch
SIRCO M 3 x 80 A + 2 auxiliary contacts



Rotary switch
SIRCO M 3 x 80 A



The solution for

- > Industrial control systems



Competitive advantages

- > Positive break indication
- > Direct or external operation
- > Compact footprint
- > DIN-rail or base mounting
- > Wide range of accessories
- > Up to 8 pole or 4 pole MTS

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > UL 508 listed, Guide NLRV, File E173959
- > CSA C22.2§14, class 3211-05, File 112964



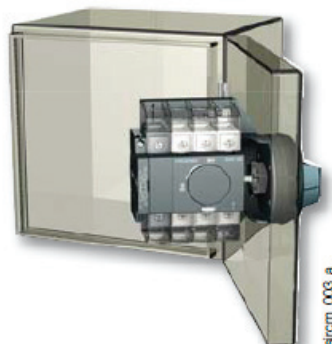
(1) Product reference on request.

Function

SIRCO M UL / CSA are compact and modular non-fusible disconnect switches. They make and break under all types of load conditions and provide safe isolation for any low voltage circuit, especially for machine control circuits.

General characteristics

- Positive break indication.
- Direct or external operation.
- Compact footprint.
- DIN-rail or base mounting.
- Wide range of accessories.
- Up to 8 pole or 4 pole MTS.



UL 508 non-metallic polycarbonate 4.4x enclosed SIRCO M

- > Enclosed SIRCO M switches allow safe control and disconnection of any motor application.





Non-fusible disconnect switches standards UL and CSA from 16 to 100 A

UL 508 manual motor controller “Suitable as motor disconnect”

References

Rating (A)	No. of poles	Toggle switch (direct handle included)	Rotary switch	Direct handle	External front and right side handles ⁽⁴⁾	Shaft for external handles	Switched fourth pole module	Auxiliary contacts	Terminal shrouds	Door mounting kit
16 A	3 P	2205 3000	2200 3000	Blue 2299 5012	S00 type I - 0 Black 3R, 12 ⁽¹⁾ 1473 1111	S00/S0 type 150 mm 5.9 in 1407 0515 200 mm 7.9 in 1407 0520 320 mm 12.6 in 1407 0532 ⁽²⁾	1 P 2200 1000	M type 1 AC NO + NC 2299 0001 1 AC 2 NC 2299 0011	1 P 2294 1005 ⁽³⁾ 3 P 2294 3005 ⁽³⁾	2299 3409
20 A	3 P	2205 3001	2200 3001		Red/Yellow 3R, 12 ⁽¹⁾ 1474 1111		1 P 2200 1001			
25 A	3 P	2205 3002	2200 3002		Black 4, 4X ⁽¹⁾ 147D 1111		1 P 2200 1002			
32 A	3 P	2205 3003	2200 3003		Red/Yellow 4, 4X ⁽¹⁾ 147E 1111		1 P 2200 1003			
40 A	3 P	2205 3004	2200 3004				1 P 2200 1004			
63 A	3 P	2205 3006	2200 3006				1 P 2200 1006			
80 A	3 P	2205 3008	2200 3008				1 P 2200 1008			
100 A CD	3 P	2205 3009	2200 3009				1 P 2200 1009			

(1) Nema /UL type.

(2) Please order the shaft guide: 1419 0000 with the shaft.

(3) Top and bottom.

(4) There is no door interlocking when the switch is fitted on the side of the enclosure.

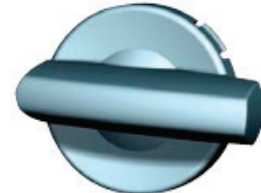


Non-fusible disconnect switches standards UL and CSA from 16 to 100 A

Accessories

Direct operation handle

Rating (A)	Handle color	Handle type	Reference
16 ... 100 CD	Blue	M00	2299 5012



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M00 handle

External operation handle

Use

The handle locking function prevents the user from opening the door of the enclosure when the switch is in the "ON" position (only if the handle is fitted on the door).

Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function with the use of a tool (authorized persons only). The interlocking function is restored when the door is closed. The handle is padlockable with 3 padlocks.



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S00 handle

Front and right side handles I - 0

Rating (A)	Handle color	Handle type	Nema / UL type	Standard Reference	Heavy duty Reference
16 ... 100 CD	Black	S00	3R, 12	1473 1111	
16 ... 100 CD	Red / Yellow	S00	3R, 12	1474 1111	
16 ... 100 CD	Black	S00	4, 4X	147D 1111	
16 ... 100 CD	Red / Yellow	S00	4, 4X	147E 1111	

Shafts for external handle

Use

Standard lengths:

- 150 mm,
- 200 mm,
- 320 mm.

Other lengths: please consult us.

For 3/4 pole switches, shaft extensions for external front and side handle.

For 6/8 pole switches and SIRCOVER M transfer switches.



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Non-fusible disconnect switches standards UL and CSA from 16 to 100 A

Additional pole

4th pole

Rating (A)	No. of poles	Type	Reference
16	1 P	switched	2200 1000
20	1 P	switched	2200 1001
25	1 P	switched	2200 1002
32	1 P	switched	2200 1003
40	1 P	switched	2200 1004
63	1 P	switched	2200 1006⁽¹⁾
80	1 P	switched	2200 1008⁽¹⁾
100 CD	1 P	switched	2200 1009⁽¹⁾

(1) Not UL.

Use

Transforms:

- 3 pole SIRCO M non-fusible disconnect switch into a 4 pole,
- 3 pole SIRCOVER M transfer switch into a 4 pole.



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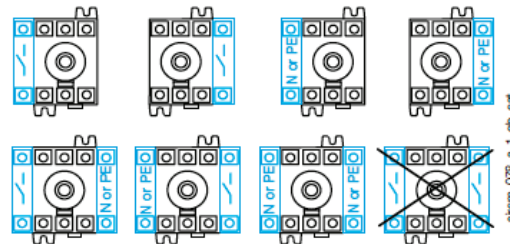
Solid neutral pole

Rating (A)	No. of poles	Type	Reference
16 ... 40	1 P	unswitched	2200 5005⁽¹⁾
63 ... 100 CD	1 P	unswitched	2200 5009⁽¹⁾

(1) Not UL.

Use

Transforms the 3-pole switch into a 3-pole + solid neutral.



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Ground module

Rating (A)	No. of poles	Type	Reference
16 ... 40	1 P	unswitched	2200 9005⁽¹⁾
63 ... 100 CD	1 P	unswitched	2200 9009⁽¹⁾

(1) Not UL.

Use

Adds 1 protective ground module pole to the non-fusible disconnect switch.

Terminal shrouds

Use

Top and bottom additional protection against direct contact with the terminals or connection parts.
1 or 3 poles are available.

Perforation on each terminal cover enables remote thermographic inspection without dismantling.

Rating (A)	No. of poles	Position	Reference
16 ... 40	1 P	top and bottom	2294 1005
16 ... 40	3 P	top and bottom	2294 3005
63 ... 100 CD	1 P	top and bottom	2294 1009
63 ... 100 CD	3 P	top and bottom	2294 3009



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Non-fusible disconnect switches standards UL and CSA from 16 to 100 A

M type Auxiliary Contacts

Use

Pre-break and signaling of positions
0 and I by NO+NC or 2 NO Auxiliary
Contacts.

They can be mounted on the left or
on the right side of the device.

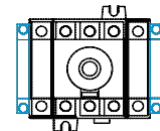
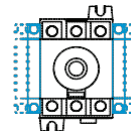
Max 4 Auxiliary Contacts per product
(2 modules).

Characteristics
A300.

Rating (A)	No. of AC	AC type	Reference
16 ... 100 CD	1 AC	NO + NC	2299 0001
16 ... 100 CD	1 AC	2 NO	2299 0011



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sircm_081_a_1_x_cat

Auxiliary contacts configurations for SIRCOM

Conversion kit

Use

These accessories enable the assembly of
2 switches in order to achieve:

- 6 or 8 pole switches
- 3 or 4 pole open or close transition
transfer switches.

Rating (A)	Type ⁽¹⁾	Reference
16 ... 100 CD	Non-fusible disconnect switches 6/8 pole	2269 6009
16 ... 100 CD	Transfer switch 3/4 pole (I - 0 - II)	2209 6009
16 ... 100 CD	Transfer switch 3/4 pole (I - I+II - II)	2299 6009

(1) Non UL.



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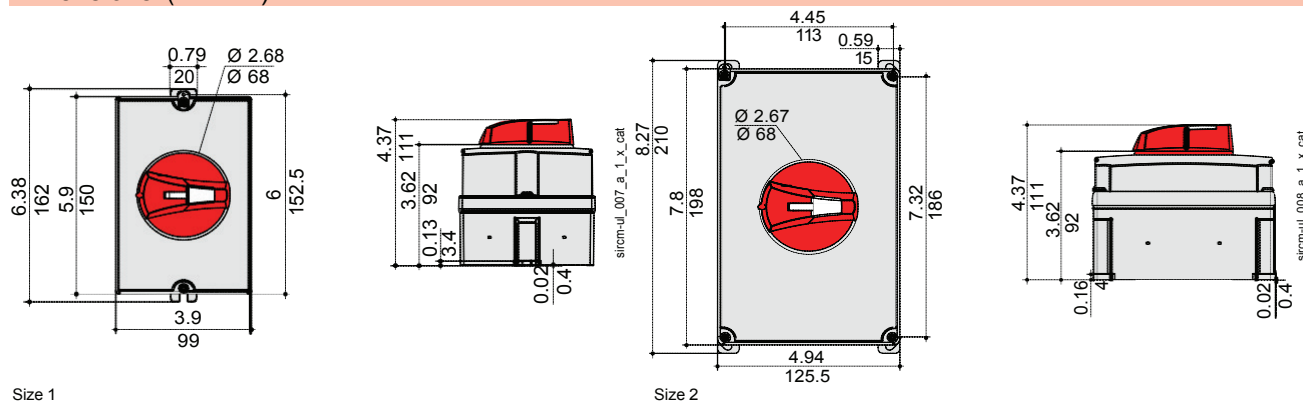
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Conversion kit for 6 or 8 pole
non-fusible disconnect switches

Conversion kit for 3 and
4-pole transfer switches
(I - 0 - II) or (I - I+II - II)



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Non-fusible disconnect switches standards UL and CSA from 16 to 100 A

Characteristics

Characteristics according to UL 508 / CSA22.2#14 suitable as motor disconnect

General use rating (A)	16 A	20 A	25 A	32 A	40 A	63 A	80 A	100 A CD
Short circuit rating at 600 VAC (kA)	65	65	65	65	10/65	50/65	50/65	50/65
Type of fuse	J	J	J	J	J	J	J	J
Max fuse rating (A)	30	30	30	30	60/30	100/60	100/60	100/60

Max. motor hp/FLA 3 ph motor max.

208 VAC	3/0.6	5/16.7	7.5/24.2	7.5/24.2	7.5/24.2	15/46.2	15/46.2	15/46.2
220-240 VAC	5/15.2	5/15.2	7.5/22	7.5/22	7.5/22	20/54	20/54	20/54
440-480 VAC	10/14	10/14	15/21	20/27	20/27	40/52	40/52	40/52
600 VAC	10/11	15/17	20/22	25/27	25/27	40/41	40/41	40/41

Connection terminals

Solid - 1 wire	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10
Solid - 2 wires	2 x #12	2 x #12	2 x #12	2 x #12	2 x #12	2 x #12	2x #12	2x #12
Stranded - 1 wire	#14 - #4	#14 - #4	#14 - #4	#14 - #4	#14 - #4	#14 - #1	#14 - #1	#14 - #1
Stranded - 2 wires	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#10 - #6)	2 x (#10 - #6)	2 x (#10 - #6)

Auxiliary contacts

Electrical characteristics	A300	A300	A300	A300	A300	A300	A300	A300
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Mechanical characteristics

Endurance (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000
Operating torque (lbs.in / Nm)	7/0.8	7/0.8	7/0.8	7/0.8	7/0.8	8.9/1	8.9/1	8.9/1



Non-fusible disconnect switches standards UL and CSA from 16 to 100 A

Characteristics according to IEC 60947-3

Thermal current I_{th} (40°C)	16 A	20 A	25 A	32 A	40 A	63 A	80 A	100 A CD
Rated insulation voltage U_i (V)	800	800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilization	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	80/80
500 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	-
500 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	63/63	63/63	-
690 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100
690 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	32/40	40/63	63/80	-
690 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	40/40	40/40	-

Operational power in AC-23 (kW)

At 400 VAC without prebreaking AC in AC-23 (kW) ⁽¹⁾⁽²⁾	7.5	9	11	15	18.5	30	37	-
At 500 VAC without prebreaking AC in AC-23 (kW) ⁽¹⁾⁽²⁾	7.5	9	11	15	15	30	37	-
At 690 VAC without prebreaking AC in AC-23 (kW) ⁽¹⁾⁽²⁾	7.5	11	15	18.5	18.5	30	37	-

Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit current (kA rms) ⁽³⁾	50	50	50	50	50	50	50	25
Associated fuse rating (A) ⁽³⁾	16	20	25	32	40	63	80	100

Overload capacity (U_e 415 VAC)

Rated short-time withstand current 0.3 s. I_{cw} (kA rms) ⁽³⁾	2.5	2.5	2.5	2.5	2.5	3	3	1.5
Rated short-circuit making capacity I_{cm} (kA peak) ⁽³⁾	6	6	6	6	6	9	9	2.1

Connection

Minimum Cu cable cross section (mm ²)	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5
Maximum Cu cable section (mm ²)	16	16	16	16	16	35	35	35
Tightening torque min / max (Nm)	2/2.2	2/2.2	2/2.2	2/2.2	2/2.2	3.5/3.85	3.5/3.85	3.5/3.85

(1) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.

(2) The power value is given for information only, the current values vary from one manufacturer to another.

(3) For a rated operating voltage $U_e = 400$ VAC.



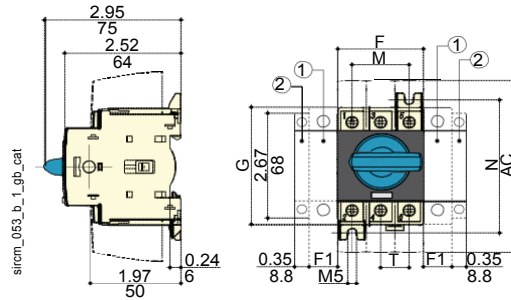
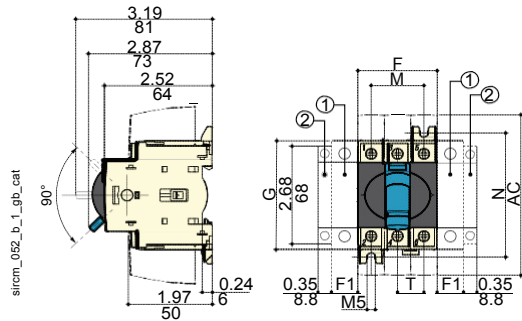
Non-fusible disconnect switches standards UL and CSA from 16 to 100 A

Dimensions (in/mm)

16 to 100 A

Toggle operation

Direct operation with handle

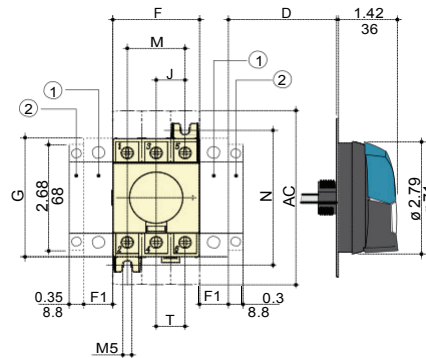
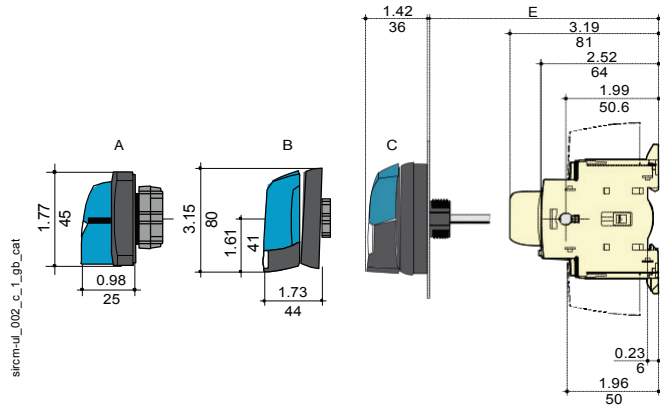


1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective ground module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

External front handle

External side handle



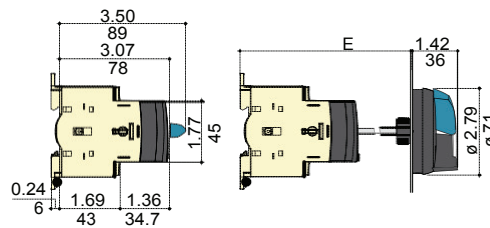
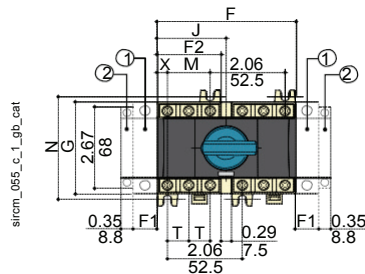
1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 ground module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

Rating (A)	Units	Overall dimensions				Terminal shrouds		Switch body				Switch mounting		Connection
		D min	D max	E min	E max	AC	F	F1	G	J	M	N	T	
16 ... 40	in	1.18	9.25	3.94	14.64	4.33	1.77	0.59	2.67	0.59	1.18	2.95	0.59	
	mm	30	235	100	372	110	45	15	68	15	30	75	15	
63 ... 100 CD	in	1.18	9.25	3.93	14.64	4.33	2.06	0.69	2.99	0.69	1.38	3.35	0.69	
	mm	30	235	100	372	110	52.5	17.5	76	17.5	35	85	17.5	

Direct front handle for 6/8-pole non-fusible disconnect switches
or 3/4-pole transfer switches

External front handle for 6/8-pole non-fusible disconnect switches
or 3/4-pole transfer switches



1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 ground module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

Rating (A)	Units	Overall dimensions		Switch body					Switch mounting		Connection	
		E min	E max	F	F1	F2	G	J	M	N	T	X
16 ... 40	in	4.13	14.64	3.83	0.59	1.77	2.67	1.92	1.18	2.95	0.59	0.29
	mm	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63 ... 100 CD	in	4.13	14.65	4.13	0.69	2.06	2.99	2.06	1.38	3.35	0.69	0.34
	mm	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75



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Non-fusible disconnect switches standards UL and CSA from 16 to 100 A

External handles dimensions (in/mm)

16 to 100 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
S00 type			With 4 fixing screws 	With fixing nut

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Handle type	Front operation Direction of operation	Door drilling	
S00 type Transfer switches		With 4 fixing screws 	With fixing nut

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