

Cxx Series

CC... CF... and CJ... Couplings for use with SQM... Actuators



Description

Cxx... series couplings precisely connect Siemens SQM... actuators to a valve or damper.

Features

- Allow up to 3° of angular shaft misalignment to prevent actuator binding
 - Allow up to 0.063" of parallel shaft misalignment to prevent side loads on the actuator and valve shafts
 - High temperature versions available for FGR applications
 - Will accommodate English shaft sizes from ¼" to 1"
 - Will accommodate Metric shaft sizes from 10mm to 25mm
 - Zero backlash, torsionally stiff
 - Robust and flexible design
 - Maintenance-free
-

Application

Cxx couplings connect Siemens actuators to a wide variety of valves and dampers. The flexible coupling design minimizes side loads on the actuator and valve shafts due to minor misalignment, which helps prevent actuator binding and improves control performance and reliability.

Product Part Numbers

For coupling part number identification only. Not all possible part number combinations are available. See Table 1 on the following page for available coupling part number combinations.

| | Actuator Hub | | | | | | Valve / Damper Hub | | | | | | |
|--|---------------|----------------|---------------|----------------|---------------|----------------|--------------------|-----------------|---------------|-----------------|---------------|-----------------|-----------|
| | C | F | M | 10 | K | C | A | - | E | 8 | R | S | A |
| Coupling | | | | | | | | | | | | | |
| Torque / Temperature Ratings | | | | | | | | | | | | | |
| C = 140 in-lb, 180°F D = 150 in-lb, 425°F F = 340 in-lb, 180°F H = 400 in-lb, 425°F J = 800 in-lb, 180°F K = 800 in-lb, 425°F | | | | | | | | | | | | | |
| Units for Bore Size (Actuator) | | | | | | | | | | | | | |
| E = English ($\frac{1}{16}$ th of an inch) M = Metric (mm) | | | | | | | | | | | | | |
| Bore Size (Actuator) - See Chart Below | | | | | | | | | | | | | |
| For CC & CD = $\frac{3}{8}$ " or 10mm For CF & CH = $\frac{3}{8}$ ", 10mm, or 14mm For CJ & CK = 25mm | | | | | | | | | | | | | |
| Bore Shape (Actuator) | | | | | | | | | | | | | |
| D = D-shaped K = Keyed R = Round S = Square | | | | | | | | | | | | | |
| Type of Hub (Actuator) | | | | | | | | | | | | | |
| C = Clamp | | | | | | | | | | | | | |
| Additional Descriptor (Actuator) | | | | | | | | | | | | | |
| A = All hubs except 14mm keyed B = 14mm keyed | | | | | | | | | | | | | |
| Units for Bore Size (Valve) | | | | | | | | | | | | | |
| E = English ($\frac{1}{16}$ th of an inch) M = Metric (mm) | | | | | | | | | | | | | |
| Bore Size (Valve) - See Chart Below | | | | | | | | | | | | | |
| For CC & CD = $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", 10mm, $\frac{7}{16}$ ", 12mm, $\frac{1}{2}$ ", $\frac{9}{16}$ ", or $\frac{5}{8}$ " For CF & CH = $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ", 12mm, $\frac{1}{2}$ ", $\frac{9}{16}$ ", $\frac{5}{8}$ ", 18mm, $\frac{3}{4}$ ", $\frac{7}{8}$ ", or 1" For CJ & CK = $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ ", or 1" | | | | | | | | | | | | | |
| Bore Shape (Valve) | | | | | | | | | | | | | |
| R = Round | | | | | | | | | | | | | |
| Type of Hub (Valve) | | | | | | | | | | | | | |
| S = Set screw | | | | | | | | | | | | | |
| Additional Descriptor (Valve) | | | | | | | | | | | | | |
| A = Standard | | | | | | | | | | | | | |
| Part Number Segment | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| English Bore Size (inch) | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{11}{16}$ | $\frac{3}{4}$ | $\frac{13}{16}$ | $\frac{7}{8}$ | $\frac{15}{16}$ | 1" |
| Metric Bore Size (mm) | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

Product Part Numbers (continued)

Beginning with the “Part Number Starts With” column and using the previous page as a guide, go from left to right across the table to select a coupling assembly.

Table 1: Available Coupling Assemblies

| Specifications | | Part Number | | | | |
|----------------|-------------|--------------------------|-------------------------------------|---|---|------------------|
| Torque | Temperature | Part Number Starts With: | Actuator Hub | - | Valve/Damper Hub | |
| | | | | | English | Metric |
| 140 in-lb | 180°F | CC | E6RCA E6SCA M10DCA M10KCA | - | E4RSA E5RSA E6RSA E7RSA E8RSA E9RSA E10RSA | M10RSA M12RSA |
| 150 in-lb | 425°F | CD | | | | |
| 340 in-lb | 180°F | CF | E6SCA M10DCA M10KCA M14KCB | - | E5RSA E6RSA E7RSA E8RSA E9RSA E10RSA E12RSA E14RSA E16RSA | M12RSA M18RSA |
| 400 in-lb | 425°F | CH | | | | |
| 800 in-lb | 180°F | CJ | M25KCA | - | E8RSA E10RSA E12RSA E14RSA E16RSA | |
| | 425°F | CK | | | | |

Accessories

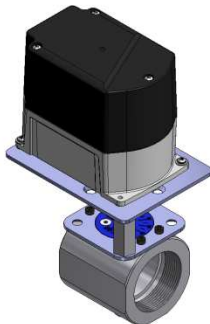
BR... Bracket Kits

Bracket kits are available to mount Siemens SQM... actuators to a wide range of dampers. See Document No. CPBK-2000 for more information.

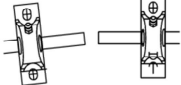



VA... Valve Actuator Assemblies

Pre-built valve actuator assemblies can be ordered to ensure proper shaft alignment and engagement. Assemblies include the valve, actuator, coupling, and bracket which are configured, tested, and shipped as an assembly. Contact SCC Inc. for more information.

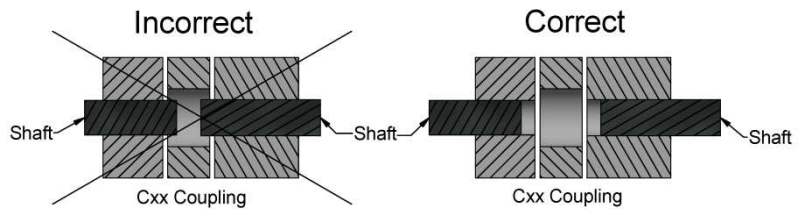


Specifications

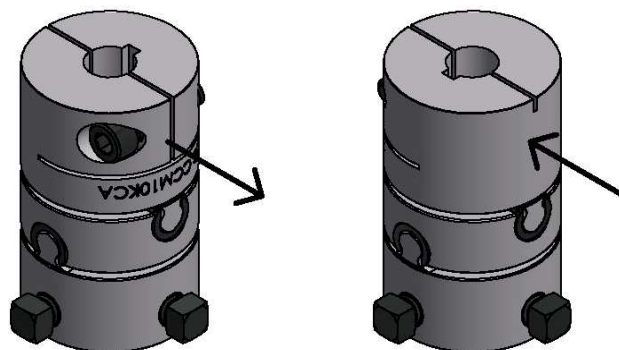
| | | |
|---------------------------------|---|-----------------------------|
| Physical characteristics | Fasteners | Alloy steel |
| | Body (all sizes) | Anodized aluminum |
| | CC..., CF..., CJ... standard bushings | Polymer |
| | CD..., CH..., CK... high-temp bushings | High-temp polymer |
| | Weight – CC... and CD... | 0.25 lbs. [113 g] |
| | Weight – CF... and CH... | 0.70 lbs. [318 g] |
| | Weight – CJ... and CK... | 1.35 lbs. [612 g] |
| Operating environment | Temperature - standard assembly | -20 to 180°F [-29 to 82°C] |
| | Temperature - high-temp assembly | -40 to 425°F [-40 to 218°C] |
| | Max. angular misalignment | 3° |
| |  | |
| | Max. parallel misalignment | 0.063" [1.6 mm] |
| |  | |

Installation

- Neither the actuator shaft nor the valve / damper shaft should protrude into the center hub of the coupling (see below). See “Dimensions” for more information.



- When coupling actuators to round shafts, ensure the shaft is in the correct rotary position before tightening set screws.
- Once the proper rotary position of the valve / damper shaft relative to the actuator shaft is achieved, set screws and / or clamp bolts should be tightened to the proper torque. See “Dimensions” for appropriate tightening torques.
- Couplings must be used with actuator mounting brackets that do not permit shaft misalignment to exceed 3° angular and 0.063” parallel when actuator applies maximum torque to the valve / damper shaft. Cxx couplings transfer torque only. The actuator shaft will not act as an anchor point to brace a flexible bracket. See Document No. CPBK-2000 for more information on bracket kits.
- Every coupling ships as a complete assembly consisting of an actuator hub, midsection, and valve / damper hub. To switch between assembly options, slide one end hub out of engagement, rotate 180°, and slide the hub back for re-engagement (see below).



Dimensions

CC... and CD... Model Couplings

Dimensions in inches; millimeters in brackets

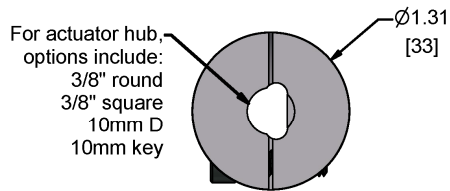
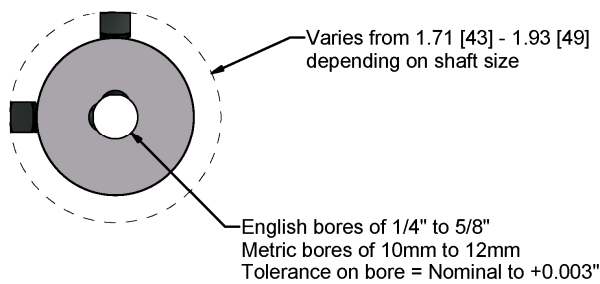
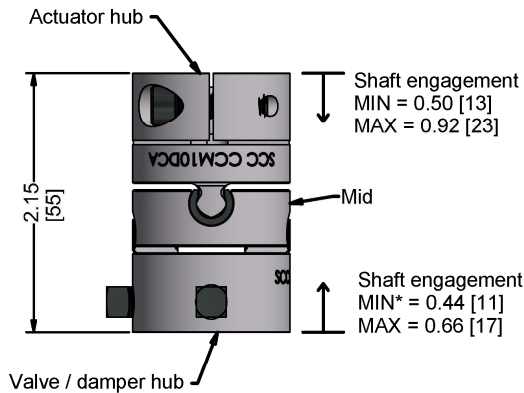


Table 2: CC... and CD... Coupling Fastener Tightening Torques

| Size | Type | Tightening Torque | Coupling Hubs |
|--------|-------------------------|-------------------|---------------------------------------|
| #8-32 | Socket set screw | 20 in-lb | 1/4" round set screw hub |
| 1/4-20 | Square head set screw | 180 in-lb | 5/16" and larger round set screw hubs |
| #12-24 | Socket head clamp screw | 90 in-lb | All clamp hubs |



*If mounting coupling on a 5/16" round valve / damper shaft, minimum shaft engagement is 0.50 [13]

Dimensions (continued)

CF... and CH... Model Couplings

Dimensions in inches; millimeters in brackets

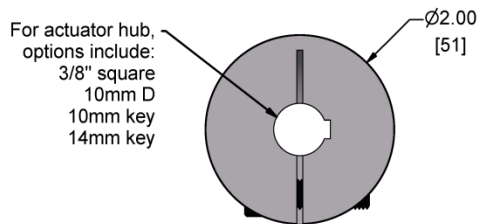
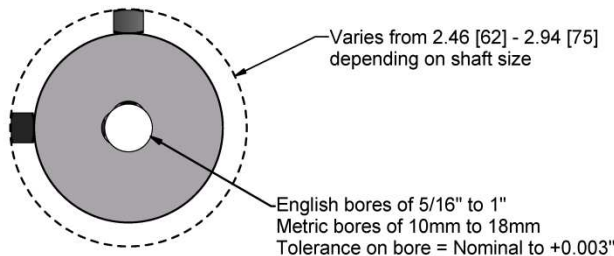
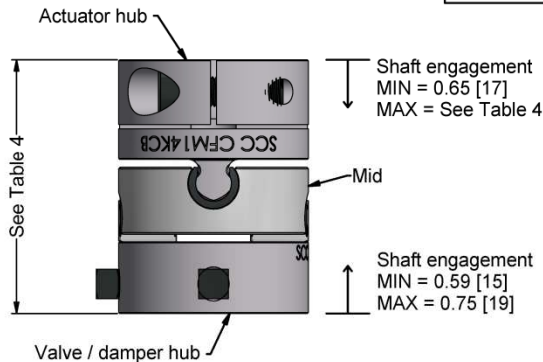


Table 3: CF... and CH... Coupling Fastener Tightening Torques

| Size | Type | Tightening Torque | Coupling Hubs |
|---------|-------------------------|-------------------|---------------------------------------|
| 1/4-20 | Square head set screw | 180 in-lb | 5/16" and 3/8" round set screw hubs |
| 5/16-18 | Square head set screw | 350 in-lb | 7/16" and larger round set screw hubs |
| 5/16-24 | Socket head clamp screw | 150 in-lb | All clamp hubs |

Table 4: CF... and CH... Coupling Length and Engagement

| - | 14mm keyed actuator shaft | Any other actuator shaft |
|-------------------------|---------------------------|--------------------------|
| Max. shaft engagement | 1.05 [27] | 0.95 [24] |
| Overall coupling length | 2.67 [68] | 2.57 [65] |



Dimensions (continued)

CJ... and CK... Model Couplings

Dimensions in inches; millimeters in brackets

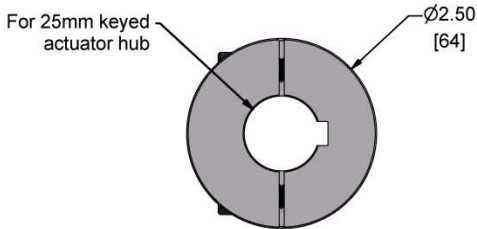
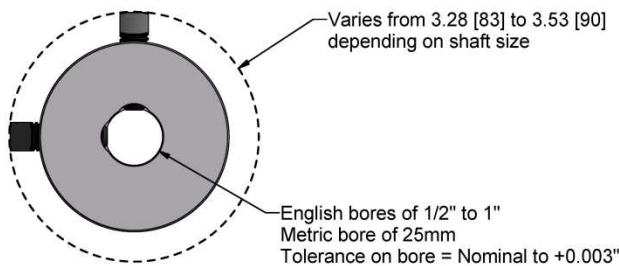
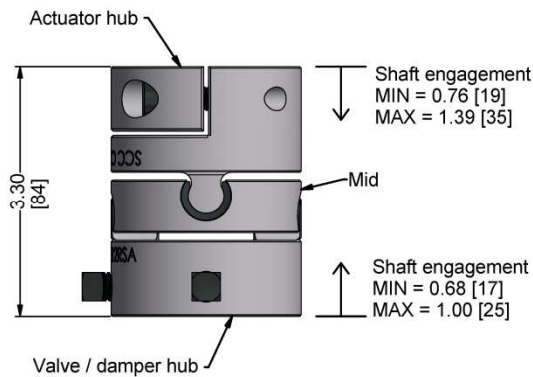


Table 5: CJ... and CK... Coupling Fastener Tightening Torques

| Size | Type | Tightening Torque | Coupling Hubs |
|---------|-------------------------|-------------------|--------------------|
| 3/8-16 | Square head set screw | 700 in-lb | All set screw hubs |
| 5/16-24 | Socket head clamp screw | 150 in-lb | All clamp hubs |



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