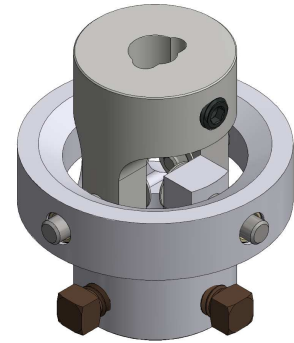


Cxx Series

C2... and C6... Couplings for use with SQM... Actuators



Description

Cxx... series rotary shaft couplings are zero backlash flexible couplings used to precisely connect a Siemens actuator to a valve or damper.

Features

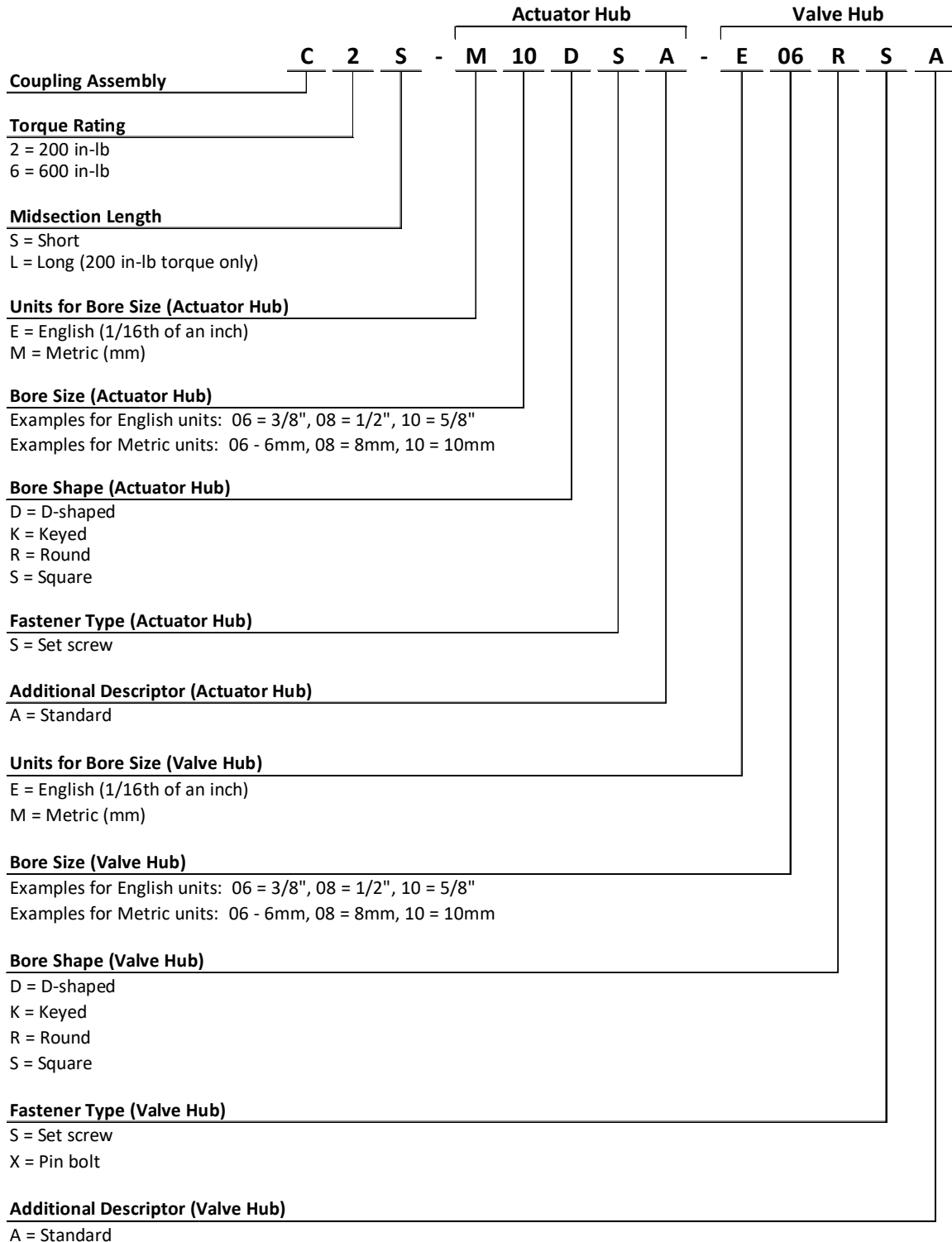
- Allow up to 4° of angular shaft misalignment to prevent actuator binding
 - Allow up to 0.080" of parallel shaft misalignment to prevent side loads on the actuator and valve shafts
 - High temperature rating for FGR applications
 - Accommodate English shaft sizes from 1/4" to 1"
 - Accommodate Metric shaft sizes from 10mm to 25mm
 - Zero backlash, torsionally stiff
 - 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 Tables 1-3 on the following pages for available coupling part numbers.



Product Part Numbers (continued)

All standard coupling part numbers are listed in Tables 1-3. If a coupling is required that is not listed in Tables 1-3, see "Custom Couplings".

Table 1: Available C2... Couplings (200 in-lb, 2.15" length)*

Coupling Part Number	Actuator Options	Actuator Shaft Size	Valve Shaft Size
C2S-M10DSA-E04RSA	SQM33...	10mm D	1/4" Round
C2S-M10DSA-E05RSA	SQM40.xx5...		5/16" Round
C2S-M10DSA-E06RSA	SQM41.xx5...		3/8" Round
C2S-M10DSA-E08RSA	SQM45.295...		1/2" Round
C2S-M10DSA-E10RSA	SQM50.xx5...		5/8" Round
C2S-M10DSA-M10RSA	SQM53.xx5...		10mm Round
C2S-M10DSA-M10RXA	SQM54.xx5...		10mm Pin Bolt
C2S-E06SSA-E04RSA	SQM40.xx4... SQM41.xx4... SQM50.xx4... SQM53.xx4... SQM54.xx4...	3/8" Square	1/4" Round
C2S-E06SSA-E05RSA			5/16" Round
C2S-E06SSA-E06RSA			3/8" Round
C2S-E06SSA-E08RSA			1/2" Round
C2S-E06SSA-E10RSA			5/8" Round
C2S-E06SSA-M10RSA			10mm Round
C2S-E06SSA-M10RXA			10mm Pin Bolt
C2S-M10KSA-E04RSA	SQM40.xx1... SQM41.xx1... SQM45.291... SQM50.xx1... SQM53.xx1... SQM54.xx1...	10mm Keyed	1/4" Round
C2S-M10KSA-E05RSA			5/16" Round
C2S-M10KSA-E06RSA			3/8" Round
C2S-M10KSA-E08RSA			1/2" Round
C2S-M10KSA-E10RSA			5/8" Round
C2S-M10KSA-M10RSA			10mm Round
C2S-M10KSA-M10RXA			10mm Pin Bolt

*All couplings listed in Table 1 have an overall length of 2.15" and can be used in place of CC... or CD... couplings. See Cxx Coupling Replacement Instructions CPBK-1200 for more information.

Product Part Numbers (continued)

Table 2: Available C2... Couplings (200 in-lb, 2.57" length)*

Coupling Part Number	Actuator Options	Actuator Shaft Size	Valve Shaft Size
C2S-M14KSA-E05RSA	SQM40.xx7... SQM41.xx7... SQM48.497... SQM50.xx7... SQM53.xx7... SQM54.xx7...	14mm Keyed	5/16" Round
C2S-M14KSA-E06RSA			3/8" Round
C2S-M14KSA-E08RSA			1/2" Round
C2S-M14KSA-E08KSA			1/2" Keyed
C2S-M14KSA-E10RSA			5/8" Round
C2S-M14KSA-E12RSA			3/4" Round
C2S-M14KSA-E12KSA			3/4" Keyed
C2S-M14KSA-M10RSA			10mm Round
C2S-M14KSA-M10RXA			10mm Pin Bolt
C2L-M10DSA-E05RSA			SQM33...
C2L-M10DSA-E06RSA	SQM40.xx5...	3/8" Round	
C2L-M10DSA-E08RSA	SQM41.xx5...	1/2" Round	
C2L-M10DSA-E08KSA	SQM45.295...	1/2" Keyed	
C2L-M10DSA-E10RSA	SQM50.xx5...	5/8" Round	
C2L-M10DSA-E12RSA	SQM53.xx5...	3/4" Round	
C2L-M10DSA-M10RXA	SQM54.xx5...	10mm Pin Bolt	
C2L-E06SSA-E05RSA	SQM40.xx4... SQM41.xx4... SQM50.xx4... SQM53.xx4... SQM54.xx4...	3/8" Square	5/16" Round
C2L-E06SSA-E06RSA			3/8" Round
C2L-E06SSA-E08RSA			1/2" Round
C2L-E06SSA-E08KSA			1/2" Keyed
C2L-E06SSA-E10RSA			5/8" Round
C2L-E06SSA-E12RSA			3/4" Round
C2L-E06SSA-E12KSA			3/4" Keyed
C2L-E06SSA-M10RXA			10mm Pin Bolt
C2L-M10KSA-E05RSA	SQM40.xx1...	10mm Keyed	5/16" Round
C2L-M10KSA-E06RSA	SQM41.xx1...		3/8" Round
C2L-M10KSA-E08RSA	SQM45.291...		1/2" Round
C2L-M10KSA-E10RSA	SQM50.xx1...		5/8" Round
C2L-M10KSA-E12RSA	SQM53.xx1...		3/4" Round
C2L-M10KSA-M10RXA	SQM54.xx1...		10mm Pin Bolt

*All couplings listed in Table 2 have an overall length of 2.57" and can be used in place of CF... or CH... couplings. See Cxx Coupling Replacement Instructions CPBK-1200 for more information.

Product Part Numbers (continued)**Table 3: Available C6... Couplings (600 in-lb)**

Coupling Part Number	Actuator Options	Actuator Shaft Size	Valve Shaft Size
C6S-E06SSA-E08RSA	SQM56.xx4...	3/8" Square	1/2" Round
C6S-E06SSA-E10RSA			5/8" Round
C6S-E06SSA-E12RSA			3/4" Round
C6S-E06SSA-E12KSA			3/4" Keyed
C6S-E06SSA-E16RSA			1" Round
C6S-E06SSA-E16KSA			1" Keyed
C6S-M14KSA-E08RSA	SQM48.697... SQM56.xx7...	14mm Keyed	1/2" Round
C6S-M14KSA-E10RSA			5/8" Round
C6S-M14KSA-E12RSA			3/4" Round
C6S-M14KSA-E12KSA			3/4" Keyed
C6S-M14KSA-E16RSA			1" Round
C6S-M14KSA-E16KSA			1" Keyed
C6S-M14KSA-E08RSA	SQM91.391A9	25mm Keyed	1/2" Round
C6S-M14KSA-E10RSA			5/8" Round
C6S-M14KSA-E12RSA			3/4" Round
C6S-M14KSA-E16RSA			1" Round

Product Part Numbers (continued)

Custom Couplings

If a non-standard coupling other than those listed in Tables 1-3 is required, custom couplings are available to be made-to-order on a case-by-case basis. Custom couplings are only available for use with a Siemens valve or a Siemens actuator. SCC reserves the right to refrain from making custom couplings depending on application specifics.

Custom couplings with round bores are available in the sizes listed below. For couplings with other bore shapes (square, keyed, etc.), contact SCC Tech Support for availability at techsupport@scccombustion.com.

C2... Valve Hub Custom Bore Sizes

English round bores from 1/4" to 1"

Metric round bores from 7mm to 25mm

C2... Actuator Hub Custom Bore Sizes

English round bores from 5/16" to 1/2"

Metric round bores from 8mm to 14mm

C6... Valve Hub Custom Bore Sizes

English round bores from 3/8" to 1-1/8"

Metric round bores from 10mm to 28mm

C6... Actuator Hub Custom Bore Sizes

English round bores from 3/8" to 1-1/8"

Metric round bores from 10mm to 28mm

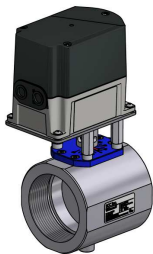
Accessories

BR... Bracket Kits



Bracket kits are available to mount Siemens SQM... actuators to a wide range of valves and 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.

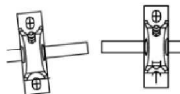
Specifications

Physical characteristics

Max. torque – C2...	200 in-lb [22.6 N·m]
Max. torque – C6...	600 in-lb [68 N·m]
Actuator hubs	Zinc-plated steel
Valve hubs	Aluminum 6061
Midsections	Aluminum 6061
Bearings	High-temp plastic
Fasteners	Alloy steel
Pins	Stainless steel
Retaining clips	Galvanized steel
Weight – C2...	0.4 lb [0.2 kg]
Weight – C6...	1.8 lb [0.8 kg]

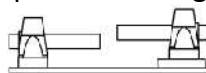
Operating environment

Temperature	-40 to 392°F [-40 to 200°C]
Max. angular misalignment	4°



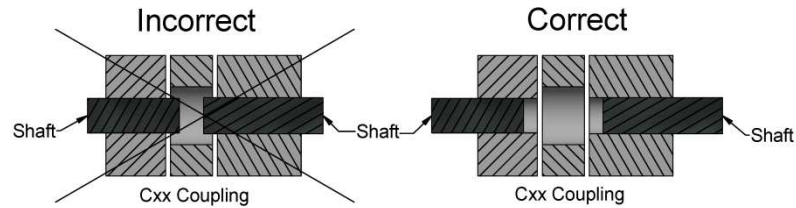
Max. parallel misalignment

0.080" [2.0 mm]



Installation

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



- When connecting 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 should be tightened to the proper torque. See Table 4 for appropriate tightening torques.
- Couplings must be used with actuator mounting brackets that do not permit shaft misalignment to exceed 4° angular and 0.080” 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.

Installation (continued)

Table 4 lists the fasteners provided with each coupling hub and the recommended tightening torque for each type of fastener.

Table 4: Fasteners Used and Recommended Tightening Torque

C2			
	Bore Size	Fasteners Included	Tightening Torque (in-lb)
Actuator Hubs	10mm D	1/4-28 x 1/2" socket set screw	87
	10mm keyed	1/4-28 x 1/2" socket set screw	87
	14mm keyed	1/4-28 x 1/2" socket set screw (x2)	87
	3/8" square	1/4-28 x 1/2" socket set screw (x2)	87
Valve Hubs	1/4" round	1/4-20 x 3/4" square head set screw (x2)	180
	5/16" round	1/4-20 x 3/4" square head set screw (x2)	180
	3/8" round	1/4-20 x 1/2" square head set screw (x2)	180
	1/2" keyed	1/4-28 x 1/2" socket set screw	87
	1/2" round	1/4-20 x 1/2" square head set screw (x2)	180
	5/8" round	1/4-20 x 3/4" square head set screw (x2)	180
	3/4" keyed	1/4-28 x 1/2" socket set screw	87
	3/4" round	1/4-20 x 3/4" square head set screw (x2)	180
	10mm round	1/4-20 x 1/2" square head set screw (x2)	180
	10mm pin bolt	M4-0.7 x 25mm socket head cap screw	41
C6			
	Bore Size	Fasteners Included	Tightening Torque (in-lb)
Actuator Hubs	14mm keyed	1/4-28 x 3/4" socket set screw (x2)	87
	25mm keyed	5/16-24 x 3/4" socket set screw (x2)	165
	3/8" square	1/4-28 x 3/4" socket set screw (x2)	87
Valve Hubs	1/2" round	5/16-18 x 3/4" square head set screw (x2)	350
	5/8" round	5/16-18 x 3/4" square head set screw (x2)	350
	3/4" keyed	1/4-28 x 1/2" socket set screw	87
	3/4" round	5/16-18 x 3/4" square head set screw (x2)	350
	1" keyed	5/16-24 x 3/4" socket set screw	165
	1" round	5/16-18 x 3/4" square head set screw (x2)	350

Dimensions

C2... Couplings

Dimensions in inches [mm]

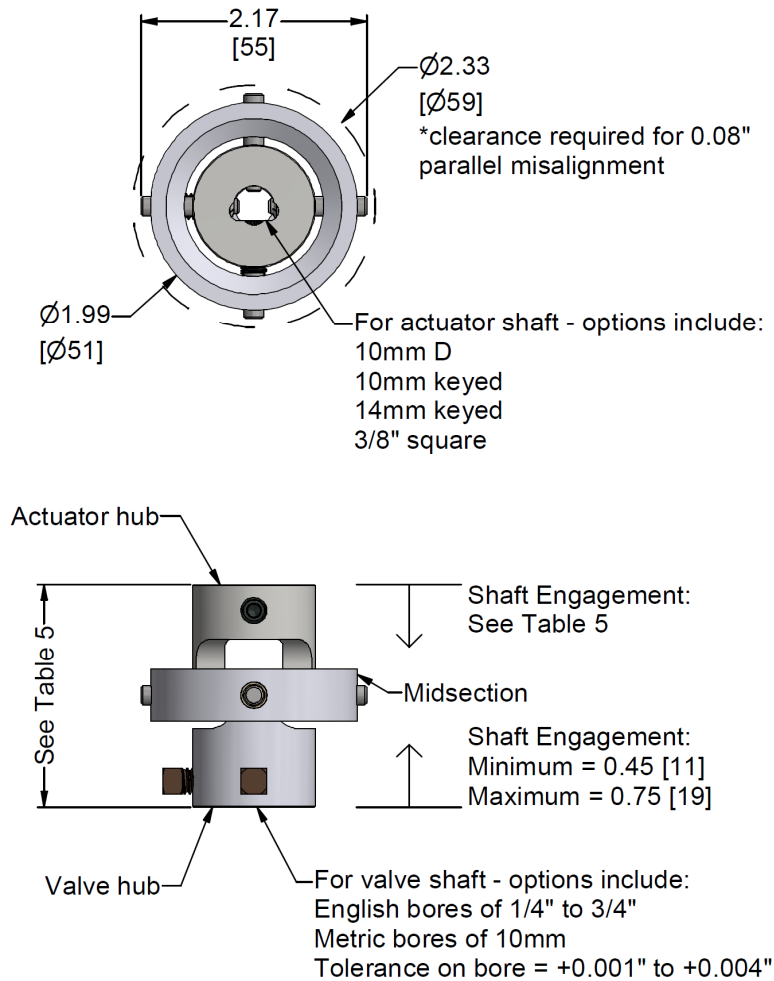


Table 5: C2... Coupling Length and Shaft Engagement

Actuator Hub	Coupling Length	Min. Shaft Engagement	Max. Shaft Engagement
10mm D	C2S...: 2.15 [55] C2L...: 2.57 [65]	0.41 [10]	0.67 [17]
10mm Keyed	C2S...: 2.15 [55] C2L...: 2.57 [65]	0.49 [12]	0.72 [18]
14mm Keyed	2.57 [65]	0.90 [23]	1.24 [31]
3/8" Square	C2S...: 2.15 [55] C2L...: 2.57 [65]	0.30 [8]	0.42 [11]

Dimensions (continued)

C6... Couplings

Dimensions in inches [mm]

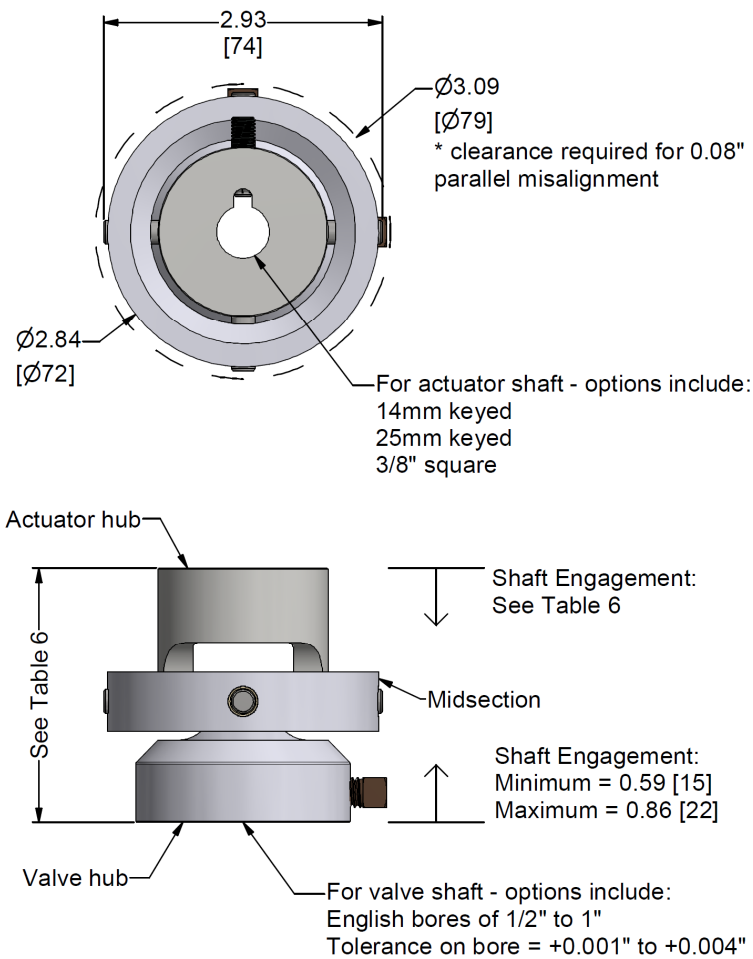


Table 6: C6... Coupling Length and Shaft Engagement

Actuator Hub	Coupling Length	Min. Shaft Engagement	Max. Shaft Engagement
14mm Keyed	2.67 [68]	0.75 [19]	1.09 [28]
25mm Keyed	3.30 [84]	1.10 [28]	1.55 [39]
3/8" Square	2.53 [64]	0.30 [8]	0.42 [11]

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