

# Universal Joints

## Set Pin

■ **Features:** A coupling in which connecting angle can be changed in any manner.

· Rubber Cover  
**CSC** (for Single)

Operating Ambient Temperature: -20°C ~ 100°C

JIS B1454 C Type (UNCA)  
JIS B1454 CC Type (UNCW)

Type	M Material	S Surface Treatment	A Accessory
Single	<b>UNCA</b>	SCM415	Manganese Phosphate
Double	<b>UNCW</b>	(Carburized)	Coating
Rubber Cover	<b>CSC</b>	NBR	-

### Universal Joints

Part Number Type	d	Single		Double		ℓ	C	E	P	Unit Price	
		L	LD	A						UNCA	UNCW
<b>UNCA</b> (Single)	6	12	31	-	-	15.5	9	4.5	3		-
	8	15	36	-	-	18	10	5	3.5		-
	10	20	42	67.5	25.5	21	12	6	4.5		-
	12	23	52	83	31	26	15	7.5	5		-
<b>UNCW</b> (Double)	14	26	59	94.5	35.5	29.5	17	8.5	5.8		-
	16	30	74	117.5	43.5	37	22	11	6.5		-
	18	33	81	-	-	40.5	23.5	11.75	7		-
	20	36	87	139	52	43.5	25	12.5	8		-
	25	44	105	-	-	52.5	30	15	10		-
	30	51	122	-	-	61	35	17.5	11.5		-

### Rubber Cover

Part Number Type	d	KC	Unit Price
	8	25	
	10	32	
	12	35	
	14	40	
	16	46	
	18	52	
	20	58	
	25	68	
	30	82	

\* No rubber covers are available for d=6.

Part Number Type	d	UNCA, UNCW Common					UNCA				UNCW			
		Condition Variable	Allowable Rotational Speed (r/min)	Allowable Operating Angle (°)	Static Tensile Failure Load (N)	Allowable Torque (N · m)	Static Failure Torque (N · m)	GD <sup>2</sup> (kg · cm <sup>2</sup> )	Mass (g)	Allowable Torque (N · m)	Static Failure Torque (N · m)	GD <sup>2</sup> (kg · cm <sup>2</sup> )	Mass (g)	
<b>UNCA</b> (Single)	6	28000	1800	30(*)	5300	5.3	16	0.015	15	-	-	-	-	
	8	42000	1500		7840	11.6	35	0.044	30	-	-	-	-	
	10	70000	1300		13000	27.4	83	0.13	55	20.1	61	0.21	95	
	12	106000	1100		23000	46	140	0.35	110	33	100	0.55	180	
<b>UNCW</b> (Double)	14	133000	1000		26000	66	200	0.67	155	46	140	1	250	
	16	175000	900		39000	102	310	1.5	260	76	230	2.3	410	
	18	203000	800		44000	132	400	2.3	345	-	-	-	-	
	20	239000	700		52000	175	530	3.6	465	129	390	5.7	690	
	25	356000	600		81000	330	1000	9.7	790	-	-	-	-	
	30	465000	550		100000	495	1500	20	1160	-	-	-	-	

\* For Double Type, Allowable Operating Angle (°) on one end

Ordering Example

Part Number
<b>UNCA16</b>
<b>CSC16</b>

### How to Select

① **Conditional Variables (Formula)**

$$\text{Calculation Condition Variable} = \frac{\text{Rotational Speed (r/min)}}{\text{Angle}(\text{°})} \times \text{Torque (N} \cdot \text{m)}$$

Calculation Condition Variable < Allowable Condition Variable

② **Rotational Speed (r/min)**

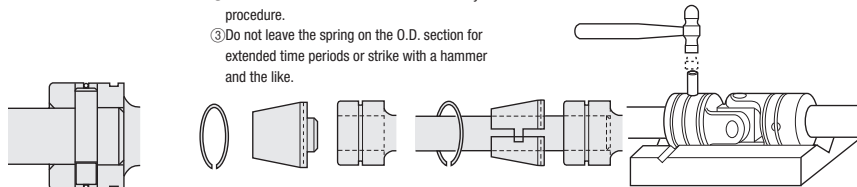
$$\text{Rotational Speed} \times \text{Angle Factor} < \text{Allowable Speed}$$

=Angle Factor Table=

Angle	5° or Less	10°	15°	20°	25°	30°
Angle Coefficient	1.00	1.05	1.18	1.43	1.82	2.50

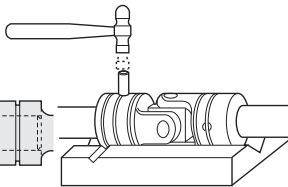
### High Strength Dowel Pins

- Material SCM415 is carburized and ground to an m6 tolerance.
- Effective section is shouldered as shown and tightly engaged only on one side.
- Small misalignment is allowed on the mating side hole, but should be finished to an H8 tolerance.



### How to Handle Ring Spring

- Spring may lose its tension if reused.
- A fixture as shown would assist the assembly procedure.
- Do not leave the spring on the O.D. section for extended time periods or strike with a hammer and the like.



# Universal Joints

## Keyway / Tapped

■ **Features:** Shaft does not require pin hole machining, and keyway alone can tighten it.

· Rubber Cover  
**CSC** (for Single)

Operating Ambient Temperature: -20°C ~ 100°C

JIS B1454 C Type (UNKA)  
JIS B1454 CC Type (UNKW)

Type	M Material	S Surface Treatment
Single	<b>UNKA</b>	SCM415
Double	<b>UNKW</b>	(Carburized)
Rubber Cover	<b>CSC</b>	NBR

### Universal Joints

Part Number Type	d	D	Single		Double		ℓ	C	E	b	t	M (Coarse)	Unit Price	
			L	LD	A								UNKA	UNKW
<b>UNKA</b> (Single)	10	19	42	67.5	25.5	21	12	6	3	1.4	M5			
	12	23	52	83	31	26	15	7.5	4	1.8	M5			
	14	26	59	94.5	35.5	29.5	17	8.5	5	2.3	M6			
<b>UNKW</b> (Double)	16	30	74	117.5	43.5	37	22	11	5	2.3	M6			
	20	36	87	139	52	43.5	25	12.5	6	2.8	M6			

Part Number Type	d	UNKA, UNKW Common					UNKA				UNKW			
		Condition Variable	Allowable Rotational Speed (r/min)	Allowable Operating Angle (°)	Static Tensile Failure Load (N)	Allowable Torque (N · m)	Static Failure Torque (N · m)	GD <sup>2</sup> (kg · cm <sup>2</sup> )	Mass (g)	Allowable Torque (N · m)	Static Failure Torque (N · m)	GD <sup>2</sup> (kg · cm <sup>2</sup> )	Mass (g)	
<b>UNKA</b> (Single)	10	80000	2000	30(*)	13000	27.4	83	0.13	55	20.1	61	0.21	95	
	12	121000	1800		23000	46	140	0.35	110	33	100	0.55	180	
	14	151000	1600		26000	66	200	0.67	155	46	140	1	250	
<b>UNKW</b> (Double)	16	200000	1400		39000	102	310	1.5	260	76	230	2.3	410	
	20	273000	1000		52000	175	530	3.6	465	129	390	5.7	690	

\* For Double Type, Allowable Operating Angle (°) on one end

### Rubber Cover

Part Number Type	d	KC	Unit Price
	10	32	
	12	35	
	14	40	
	16	46	
	20	58	

Ordering Example

Part Number
<b>UNKA16</b>
<b>CSC12</b>

### How to Select

① **Conditional Variables (Formula)**

$$\text{Calculation Condition Variable} = \frac{\text{Rotational Speed (r/min)}}{\text{Angle}(\text{°})} \times \text{Torque (N} \cdot \text{m)}$$

Calculation Condition Variable < Allowable Condition Variable

② **Rotational Speed (r/min)**

$$\text{Rotational Speed} \times \text{Angle Factor} < \text{Allowable Speed}$$

=Angle Factor Table=

Angle	5° or Less	10°	15°	20°	25°	30°
Angle Coefficient	1.00	1.05	1.18	1.43	1.82	2.50