

Universal Joints

Set Pin

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



UNCA (Single)

UNCW (Double)

• 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	UNCA	EN 1.7242 Equiv. (Carburized)	Manganese Phosphate Coating
Double	UNCW		Strong Set Pin (Tolerance m6) 2 pcs. Ring Snap Pin 2 pcs.
Rubber Cover	CSC	NBR	Ring Spring 2 pcs.

Universal Joints

Part Number	Type	d	D	Single		Double		ℓ	C	E	P	Unit Price	
				L	LD	A						UNCA	UNCW
UNCA (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				
	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				
UNCW (Double)	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				
	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
CSC (Single)	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		UNCA, UNCW Common				UNCA				UNCW			
Type	d	Condition Variable	Allowable Rotational Speed (r/min)	Allowable Operating Angle (°)	Static Tensile Failure Load (N)	Allowable Torque (N · m)	Static Failure Torque (N · m)	GD² (kg · cm²)	Mass (g)	Allowable Torque (N · m)	Static Failure Torque (N · m)	GD² (kg · cm²)	Mass (g)
UNCA (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
	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	-	-	-	-
UNCW (Double)	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
	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
UNCA16
CSC16

How to Select

① Conditional Variables (Formula)

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

$$\text{Calculation Condition Variable} < \text{Allowable Condition Variable}$$

② Rotational Speed (r/min)

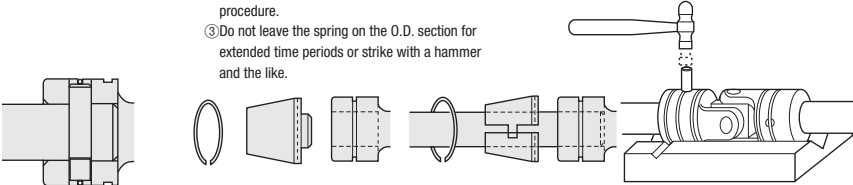
$$\text{Rotational Speed} \times \text{Angle Factor} < \text{Allowable Speed}$$

=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

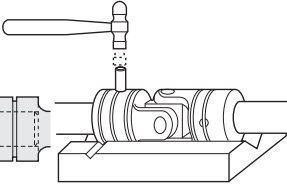
High Strength Dowel Pins

- ① Material EN 1.7242 Equiv. is carburized and ground to an m6 tolerance.
- ② Effective section is shouldered as shown and tightly engaged only on one side.
- ③ Small misalignment is allowed on the mating side hole, but should be finished to an H8 tolerance.



How to Handle Ring Spring

- ① Spring may lose its tension if reused.
- ② A fixture as shown would assist the assembly procedure.
- ③ 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.



UNKA (Single)

UNKW (Double)

• 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	UNKA	EN 1.7242 Equiv. (Carburized)
Double	UNKW	
Rubber Cover	CSC	NBR

Universal Joints

Part Number	Type	d	D	Single		Double		ℓ	C	E	b	t	M (Coarse)	Unit Price	
				L	LD	A								UNKA	UNKW
UNKA (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				
	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				
UNKW (Double)	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				
	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		UNKA, UNKW Common				UNKA				UNKW			
Type	d	Condition Variable	Allowable Rotational Speed (r/min)	Allowable Operating Angle (°)	Static Tensile Failure Load (N)	Allowable Torque (N · m)	Static Failure Torque (N · m)	GD² (kg · cm²)	Mass (g)	Allowable Torque (N · m)	Static Failure Torque (N · m)	GD² (kg · cm²)	Mass (g)
UNKA (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
	16	200000	1400		39000	102	310	1.5	260	76	230	2.3	410
UNKW (Double)	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		KC	Unit Price
Type	d		
CSC (Single)	10	32	
	12	35	
	14	40	
	16	46	
	20	58	

 Ordering Example

Part Number
UNKA16
CSC12

How to Select

① Conditional Variables (Formula)

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

$$\text{Calculation Condition Variable} < \text{Allowable Condition Variable}$$

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