

# Couplings

## Duralumin with Slit Set Screw / Clamping

For Servo Motors

Duralumin couplings have a high torsional rigidity and are compliant with servo motors.

For more misalignment tolerances and higher torque capacities, see the Disc Type. P.1094-1105

**Couplings – Duralumin with Slit Set Screw / Clamping**

RoHS10

**CPSX (Set Screw)**

\*d<sub>1</sub>, d<sub>2</sub> Identical Diameter = d<sub>1</sub> + 0.5  
 \*d<sub>1</sub>, d<sub>2</sub> Different Diameters = Large Shaft Diameter + 0.5  
 The lateral, angular, and axial misalignment values shown are for each occurring individually. When more than one misalignments are occurring simultaneously, the allowable maximum value of each will be reduced by 1/2.  
 For the selection criteria and alignment procedures, see P.1091, 1093.

**CPCX (Clamping)**

Type	Material	Surface Treatment	Accessories
CPSX	Extra Super Duralumin	Clear Anodize	Set Screw
CPCX	Extra Super Duralumin	Clear Anodize	Hex Socket Head Cap Screw

Part Number	Type	D	d <sub>1</sub>	d <sub>2</sub>	L	ℓ	F	M <sub>1</sub>	M <sub>2</sub>	G		
Set Screw Type <b>CPSX</b>	16	5	5	6	17.4	6	3	M3	M2	4.74		
			6	6								
		5	5	6							7	8
		6	6	6.35							7	8
	19	6.35	6.35	8	20	6.8	3.4	M3	M2.5	5.6		
			8	8							*10	
		*10	*10	*10								
		6	6	8							10	
	24	6.35	6.35	8	25	8.5	4.25	M4	M3	8		
			7	8							10	
		8	8	9.525							10	
		9.525	10	10								
Clamping Type <b>CPCX</b>	10	10	*11	*12	30	10.2	5.1	M4	M3	9		
		*11	*12	*12								
	*12	*12	*12									
	8	8	10	11							12	
29	10	10	11	12	35	12	6	M5	M3	11		
		11	12	*14								
	12	12	*14									
	14	14	16									
34	14	14	15	16	35	12	6	M5	M3	11		
		15	16	16								
	16	16	16									
	16	16	16									

CPCX is not available for \* marked sizes.

Part Number	Type	D	Allowable Torque (N-m)	Angular Misalignment (°)	Lateral Misalignment (mm)	Static Torsional Spring Constant (N-m/rad)	Max. Rotational Speed (r/min)	Moment of Inertia (Kg-m <sup>2</sup> )	Allowable Axial Misalignment (mm)	Screw Tightening Torque (N-m)	Compensation Factor	Mass (g)
CPSX	16	16	0.5	0.5	0.05	200	39000	2.8 x 10 <sup>-7</sup>	±0.1	0.7	1	7
		19	1			270	33000	6.2 x 10 <sup>-7</sup>		10		
		24	1.5			790	26000	2.0 x 10 <sup>-6</sup>		22		
		29	2			1400	21000	5.2 x 10 <sup>-6</sup>		40		
CPCX	16	16	0.5	0.5	0.05	200	39000	2.5 x 10 <sup>-7</sup>	±0.1	0.5	1	7
		19	1			270	33000	5.8 x 10 <sup>-7</sup>		12		
		24	1.5			790	26000	1.8 x 10 <sup>-6</sup>		23		
		29	2			1400	21000	4.7 x 10 <sup>-6</sup>		41		
34	3	2200	18000	1.1 x 10 <sup>-5</sup>	62							

Part Number Example: **CPSX19** - Shaft Bore Dia. d<sub>1</sub> = 5 - Shaft Bore Dia. d<sub>2</sub> = 6

# Couplings

## Slit Set Screw / Short Coupling

For higher torque capacities, see Disc Type. P.1094-1105

**Couplings – Slit Set Screw**

RoHS10

**Couplings – Short Type**

**CPL (Aluminum – Standard Type)**

**CPLS (Stainless Steel – Standard Type)**

**CPS (Aluminum – Short Type)**

**CPSS (Stainless Steel – Short Type)**

\*d<sub>1</sub>, d<sub>2</sub> Identical Diameter = d<sub>1</sub> + 0.5  
 \*d<sub>1</sub>, d<sub>2</sub> Different Diameters = Large Shaft Diameter + 0.5  
 - When d<sub>1</sub> is 4 mm or less and d<sub>2</sub> is more than 5 mm, there are 3 set screws.  
 - When both d<sub>1</sub> and d<sub>2</sub> are less than 4 mm, there are 2 set screws.  
 The lateral, angular, and axial misalignment values shown are for each occurring individually. When more than one misalignments are occurring simultaneously, the allowable maximum value of each will be reduced by 1/2.

Type	Material	Surface Treatment	Accessories
CPL, CPS	Aluminum Alloy	Clear Anodize	Set Screw
CPLS, CPSS	Stainless Steel	—	Set Screw

For the selection criteria and alignment procedures, see P.1091, 1093.

Part Number	Type	D	d <sub>1</sub>	d <sub>2</sub>	L	ℓ	F	M	F	Available Types				
										CPL	CPS	CPLS	CPSS	
CPL (Aluminum)	8	*2	*2	3	14	10	3.5	3.4	M2	1.7	•	•	•	•
			*3	*3										
		3	3	4										
		*4	*4	*5										
	12	*4	*4	*5	18.5	14	5	5.2	M2.5	2.5	•	•	•	•
			*5	*5							6			
		4	4	5							6			
		*5	*5	*6							8			
	16	*5	*5	*6	23	18	6.5	6.8	M3	3	•	•	•	•
			*6	*6							6.35	8		
		6.35	6	6.35							8			
		*6	*6	*7							*8	10		
20	*6	*6	*7	26	20	7.5	7.65	M3	3	•	•	•	•	
		*7	*7							*8	10			
	6.35	6	6.35							8				
	*8	*8	*8							10				
CPLS (Stainless Steel)	*5	*5	*6	31	25	8.5	9.6	M4	4	•	•	•	•	
		*6	*6							6.35	*8	10		
	6.35	6	6.35							8				
	*8	*8	*8							*10	12			
CPS (Aluminum)	*8	*8	*10	31	25	8.5	9.6	M4	4	•	•	•	•	
		*10	*10							10	12			
	9.525	8	9.525							10				
	*10	*10	*10							12				
CPSS (Stainless Steel)	*10	*10	*12	41	32	12	12.6	M4	6	•	•	•	•	
		*12	*12							*12	*14			
	14	14	14							16				
	*12	*12	*12							*14				
40	8	8	9.525	56	—	17	—	M5	8.5	•	•	—	—	
		10	10											
		12	12											
		14	14											
	15	15	15	56	—	17	—	M5	8.5	•	•	—	—	
		16	16											
		16	16											
		18	18											

CPS and CPSS are not available for D40. CPS and CPSS are available in \* marked sizes only.

Part Number	Type	D	Allow. Torque (N-m)	Max Rot. Speed (r/min)	Moment of Inertia (Kg-m <sup>2</sup> )	Static Torsional Spring Constant (N-m/rad)	Lateral Misalign. (mm)	Angular Misalign. (°)	Allow. Axial Misalign. (mm)	Screw Tightening Torque (N-m)	Mass (g)
CPL (Alum.)	8	0.1	78000	1.2 x 10 <sup>-8</sup>	25	0.10	2	±0.2	0.3	1.4	
		0.4	52000	8.3 x 10 <sup>-8</sup>	45			±0.3	0.5	3.7	
		0.5	39000	3.3 x 10 <sup>-7</sup>	80			±0.4	0.7	8.1	
		1	31000	9.0 x 10 <sup>-7</sup>	170			±0.5	1.7	60	
	16	0.5	39000	3.3 x 10 <sup>-7</sup>	80	0.15	2	±0.2	0.3	3	
		1	31000	9.0 x 10 <sup>-7</sup>	170			±0.3	0.5	9.3	
		2	25000	2.6 x 10 <sup>-6</sup>	380			±0.4	0.7	21	
		4	19000	9.6 x 10 <sup>-6</sup>	500			±0.5	1.7	160	
40	8	15000	3.2 x 10 <sup>-5</sup>	700	0.20	2	±0.5	4	350		

Part Number	Type	D	Allow. Torque (N-m)	Max Rot. Speed (r/min)	Moment of Inertia (Kg-m <sup>2</sup> )	Static Torsional Spring Constant (N-m/rad)	Lateral Misalign. (mm)	Angular Misalign. (°)	Allow. Axial Misalign. (mm)	Screw Tightening Torque (N-m)	Mass (g)
CPLS (Stainless Steel)	8	0.2	78000	3.1 x 10 <sup>-8</sup>	50	0.10	2	±0.2	0.3	3	
		0.3	52000	2.1 x 10 <sup>-7</sup>	64			±0.3	0.5	9.3	
		0.5	39000	8.4 x 10 <sup>-7</sup>	85			±0.4	0.7	21	
		1	31000	2.4 x 10 <sup>-6</sup>	250			±0.5	1.7	160	
	16	0.5	39000	8.4 x 10 <sup>-7</sup>	85	0.15	2	±0.2	0.3	3	
		1	31000	2.4 x 10 <sup>-6</sup>	250			±0.3	0.5	9.3	
		2	25000	6.8 x 10 <sup>-6</sup>	330			±0.4	0.7	21	
		3.5	19000	2.6 x 10 <sup>-5</sup>	850			±0.5	1.7	160	
40	8	15000	8.7 x 10 <sup>-5</sup>	1000	0.20	2	±0.5	4	350		

Part Number Example: **CPL16** - Shaft Bore Dia. d<sub>1</sub> = 5 - Shaft Bore Dia. d<sub>2</sub> = 6

Part Number Alterations: **CPL25** - Shaft Bore Dia. d<sub>1</sub> (LDC) = 5 - Shaft Bore Dia. d<sub>2</sub> (RDC) = 6

Applicable to both Slit Set Screw Type and Clamping Type.

Part Number	Type	D	Allow. Torque (N-m)	Max Rotational Speed (r/min)	Moment of Inertia (Kg-m <sup>2</sup> )	Static Torsional Spring Constant (N-m/rad)	Angular Misalign. (°)	Allow. Axial Misalign. (mm)	Screw Tightening Torque (N-m)	Mass (g)
CPS (Alum.)	8	0.1	78000	1.0 x 10 <sup>-8</sup>	24	1	1	±0.1	0.3	1
		0.4	52000	7.0 x 10 <sup>-8</sup>	80			±0.1	0.5	3.1
		0.5	39000	2.8 x 10 <sup>-7</sup>	180			±0.2	0.7	7.4
	16	0.5	39000	2.8 x 10 <sup>-7</sup>	180	1	1	±0.1	0.3	1
		1	31000	7.5 x 10 <sup>-7</sup>	200			±0.2	0.7	12
		2	25000	2.3 x 10 <sup>-6</sup>	780			±0.2	1.7	24
32	4	19000	8.0 x 10 <sup>-6</sup>	1100	0.20	2	±0.5	4	130	

CPS does not allow eccentricity.

Part Number	Type	D	Allow. Torque (N-m)	Max Rotational Speed (r/min)	Moment of Inertia (Kg-m <sup>2</sup> )	Static Torsional Spring Constant (N-m/rad)	Angular Misalign. (°)	Allow. Axial Misalign. (mm)	Screw Tightening Torque (N-m)	Mass (g)
CPSS (Stainless Steel)	8	0.2	78000	2.4 x 10 <sup>-8</sup>	49	1	1	±0.1	0.3	2.7
		0.3	52000	1.8 x 10 <sup>-7</sup>	140			±0.1	0.5	7.8
		0.5	39000	7.2 x 10 <sup>-7</sup>	240			±0.2	0.7	18
	16	0.5	39000	7.2 x 10 <sup>-7</sup>	240	1	1	±0.1	0.3	2.7
		1	31000	2.0 x 10 <sup>-6</sup>	330			±0.2	0.7	32
		2	25000	6.1 x 10 <sup>-6</sup>	720			±0.2	1.7	63
32	3.5	19000	2.1 x 10 <sup>-5</sup>	1300	0.20	2	±0.5	4	130	

CPSS does not allow eccentricity.

Alterations	Code	Spec.
Shaft Bore Dia.	LDC (Left Shaft)	0.1 mm Increment
	RDC (Right Shaft)	0.1 mm Increment
Ordering Code:		Set Screw Clamping
		D LDC, RDC D LDC, RDC
		8 2-3 12 4-5
		12 3-6 16 5-6
		16 4-8 20 5-8
		20 5-10 25 5-10
		25 5-12 32 8-14
		32 6-16
		40 8-18
		⊗ Not applicable to Clamping Type D=40.
		⊕ LDC and RDC tolerance are values before slit machining.