Friction Clutch

MSC-2 / 6 / 48 / SP-1 MTLA-57 / 115 / 230 MTLA-57SR / 115SR / 230SR





Features

Principle	A clutch that uses frictional forces to control the power between the driven and driven in one or two shafts
Slipped torque	Can be set arbitrarily
Misalignment	If there is misalignment between the two axes, select types C and D with couplings
Mounting and Dismounting	Set screw
	Fixes a shaft by digging sets crews into the shaft directly
	Clamp
	Fixes a shaft using elastic deformation of hub notch by tightening cap screws
Torque transmission characteristics	The torque between the driven and driven can be controlled
Consumable goods	MTLA series: friction plates C, D types: torque discs
Backlash	about 2 degrees
Electric isolation	A, B types: No magnetic properties C, D types: Electrically isolated
Magnetic properties	Magnetic

MSC/MTLA series slipped torque range



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Torque limitter MSC-2/6

Slipped torque 0.03~1.3 Nm

Size MSC-2 $(0.03 \sim 0.5 \text{ N} \text{ m})$

MSC-6 (0.08~1.3 N·m)

Inner diameter G6 6~12 mm

Set-screw Clutch side

MSC-A

1shaft Hollow shaft Adjuster cap Mounted with pulley/sprocket

Housing MSC-B 2 shafts



Set-screw mounted with rigid adapter

MSC-C 2 shafts



MSC-D CD adapter 2 shafts



Set-screw mounted with oldham coupling Clamp mounted with oldham coupling

Clamp Clutch side

MSC-A-CL 1 shaft



Mounted with pulley/sprocket

MSC-C-CL 2 shafts Set-screw mounted with oldham coupling



MSC-D-CL 2 shafts

MSC-B-CL

2 shafts



Clamp mounted with oldham coupling

Set-screw mounted with rigid adapter

Specifications

	Тул	~		Slipped torque Max.	Slipped torque Min.	Limiting heat dissipation	Lateral	Angular	Endplay	Inertia	Mass
	IAF	Je		[N∙m]	[N∙m]	[W] (at20°C)	[mm]	[°]	[mm]	[kg⋅m²×10⋅8]	[g]
	2		—	0.5	0.03	7.0	—	—	—	242	37
	-	Δ	CL	0.5	0.03	7.0	—	—	_	317	47
	6		—	1.3	0.08	8.6	—	_	—	312	48
			CL	1.3	0.08	8.6	—	—	_	381	58
	2		—	0.5	0.03	7.0	—	_	—	382	50
	-	R	CL	0.5	0.03	7.0	—	—	_	441	60
	6		—	1.3	0.08	8.6	—	_	—	451	60
MSC			CL	1.3	0.08	8.6	—	—	_	530	71
Mac		С	—	0.5	0.03	7.0	3.0	1	0.2	425	58
	2	D	—	0.5	0.03	7.0	3.0	1	0.2	416	58
		С	CL	0.5	0.03	7.0	3.0	1	0.2	511	69
		D	CL	0.5	0.03	7.0	3.0	1	0.2	508	68
		С	—	1.3	0.08	8.6	3.0	1	0.2	516	69
	6	D	_	1.3	0.08	8.6	3.0	1	0.2	529	68
		С	CL	1.3	0.08	8.6	3.0	1	0.2	590	80
		D	CL	1.3	0.08	8.6	3.0	1	0.2	617	79

Materials

All	Housing	Hollow shaft	Adjuster cap	Rigid adapter	CD adapter	
types	Al alloy	Steel	Al alloy	Al alloy	Al alloy	

*For C/Dtypes, please refer to the outer diameter of oldham coupling size25.

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Dimensions

т	(no		Shaft bore diameter	Shaft bore diameter	Overall length	Outer diameter	Length	Outer diameter	Clearance	Mouting length	Mouting length
	pe		d1[mm]	d2[mm]	L[mm]	D[mm]	La[mm]	Da[mm]	Lc[mm]	Ld1[mm]	Ld2[mm]
	2		6,8	d2=d1	26.4	25.8	5.0	21.96	_	Pana	trable
	6	<u>^</u>	6,8	d2=d1	32.4	25.8	5.0	21.96	_	Felle	liable
	2	ь	6,8	6~12	36.0	25.8	—	-	_	25.0	9.0
MEC	6	P	6,8	6~12	42.5	25.8	—	-	—	31.0	9.0
MSC	2	С	6,8	6~12	46.5	25.8	—	—	0.10	25.0	8.6
	2	D	6,8	6~12	46.5	25.8	—	-	0.10	25.0	8.6
	<u>د</u>	С	6,8	6~12	53.4	25.8	—	-	0.10	31.0	8.6
	•	D	6,8	6~12	53.4	25.8	—	_	0.10	31.0	8.6
Т	vno		Distance	Set screw	Tightning torque	Distance	Distance	Set screw	Cap screw	Tightning torque]
T	ype	:	Distance Pe1[mm]	Set screw S1[mm]	Tightning torque [N·m]	Distance Pe2[mm]	Distance Pc2[mm]	Set screw S2[mm]	Cap screw S2[mm]	Tightning torque [N·m]	
T:	ype 2		Distance Pe1[mm] 2.0	Set screw S1[mm] M3	Tightning torque [N·m] 0.72	Distance Pe2[mm]	Distance Pc2[mm]	Set screw S2[mm]	Cap screw S2[mm]	Tightning torque [N·m]	
T:	ype 2 6	A	Distance Pe1[mm] 2.0 2.0	Set screw S1[mm] M3 M3	Tightning torque [N·m] 0.72 0.72	Distance Pe2[mm] —	Distance Pc2[mm] —	Set screw S2[mm] —	Cap screw S2[mm] —	Tightning torque [N·m]	
T	ype 2 6 2	A	Distance Pe1[mm] 2.0 2.0 2.0	Set screw S1[mm] M3 M3 M3	Tightning torque [N⋅m] 0.72 0.72 0.72 0.72	Distance Pe2[mm] — 3.7	Distance Pc2[mm] — —	Set screw S2[mm] — — M4	Cap screw S2[mm] — —	Tightning torque [N·m] — — 2.0	
T	ype 2 6 2 6	A B	Distance Pe1[mm] 2.0 2.0 2.0 2.0 2.0	Set screw S1[mm] M3 M3 M3 M3 M3	Tightning torque [N·m] 0.72 0.72 0.72 0.72 0.72	Distance Pe2[mm] — 3.7 3.7	Distance Pc2[mm] — — —	Set screw S2[mm] — M4 M4	Cap screw S2[mm] — — — —	Tightning torque [N·m] - 2.0 2.0	
T: Msc	ype 2 6 2 6	A B C	Distance Pe1[mm] 2.0 2.0 2.0 2.0 2.0 2.0	Set screw S1[mm] M3 M3 M3 M3 M3 M3	Tightning torque [N·m] 0.72 0.72 0.72 0.72 0.72 0.72	Distance Pe2[mm] — 3.7 3.7 3.5	Distance Pc2[mm] — — — —	Set screw S2[mm] — M4 M4 M4	Cap screw S2[mm] — — — — —	Tightning torque [N·m] — 2.0 2.0 2.0 2.0	
T: Msc	ype 2 6 2 6 2	A B C D	Distance Pe1[mm] 2.0 2.0 2.0 2.0 2.0 2.0 2.0	Set screw S1[mm] M3 M3 M3 M3 M3 M3 M3 M3 M3	Tightning torque [N·m] 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72	Distance Pe2[mm] 3.7 3.7 3.5 3.6	Distance Pc2[mm] 8.1	Set screw S2[mm] — M4 M4 M4 M4 —	Cap screw S2[mm] M3	Tightning torque [N·m] - 2.0 2.0 2.0 2.0 2.0 2.1	
T: Msc	ype 2 6 2 6 2	A B C D C	Distance Pe1[mm] 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	Set screw S1[mm] M3 M3 M3 M3 M3 M3 M3 M3 M3	Tightning [N·m] 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72	Distance Pe2[mm] — 3.7 3.7 3.5 3.6 3.6 3.5	Distance Pc2[mm] 8.1 8.1	Set screw S2[mm] — M4 M4 M4 M4 — M4	Cap screw S2[mm] M3 	Tightning torque [N·m]	

*Overall length values include clearance.



Dimensions

-	•	~~		Shaft bore diameter	Shaft bore diameter	Overall length	Outer diameter	Length	Outer diameter	Clearance	Mouting length	Mouting length
	У	Je		d1[mm]	d2[mm]	L[mm]	D[mm]	La[mm]	Da[mm]	Lc[mm]	Ld1[mm]	Ld2[mm]
	2			6,8	d2=d1	34.4	25.8	5.0	21.96	—	Penet	rable
	6			6,8	d2=d1	40.7	25.8	5.0	21.96	—	T CHC	Table
	2	ь		6,8	6~12	44.0	25.8	—	—	—	33.0	9.0
MCC	6		C 1	6,8	6~12	50.3	25.8	—	-	—	39.0	9.0
Mac	2	С	CL	6,8	6~12	54.5	25.8	_	—	0.10	33.0	8.6
	_	D		6,8	6~12	54.5	25.8	—	-	0.10	33.0	8.6
	6	С		6,8	6~12	60.8	25.8	_	-	0.10	39.0	8.6
	Ů	D		6,8	6~12	60.8	25.8	_	_	0.10	39.0	8.6
т	. / r	~		Distance	Distance	Set screw	Tightning torque	Distance	Distance	Set screw	Cap screw	Tightning torque
	<u>у</u> г	Je		Pe1[mm]	Pc1[mm]	S1[mm]	[N∙m]	Pe2[mm]	Pc2[mm]	S2[mm]	S2[mm]	[N·m]
	2			3.5	8.7	M 3	2.1	_	_	—	—	—
	6			3.5	8.7	M 3	2.1	_	-	—	—	—
	2	ь		3.5	8.7	M 3	2.1	3.7	_	M4	—	2.0
MSC	6		C 1	3.5	8.7	M 3	2.1	3.7	-	M4	—	2.0
Mac	2	С		3.5	8.7	M 3	2.1	3.5	-	M4	—	2.0
	-	D		3.5	8.7	M 3	2.1	3.6	8.1	—	M 3	2.1
	6	С		3.5	8.7	M 3	2.1	3.5	-	M4	—	2.0
	0	D		3.5	8.7	M 3	2.1	3.6	8.1	—	M 3	2.1

*Overall length values include clearance.

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Torque limitter
MSC-48

Slipped torque $0.3 \sim 3.0$ N·m

Inner diameter G6 $8 \sim 20$ mm



MSC-48-A 1 shaft



Mounted with pulley/sprocket

MSC-48-C 2 shafts

MSC-48-B 2 shafts



Set-screw mounted with rigid adapter

MSC-48-D 2 shafts



Set-screw mounted with oldham coupling



Clamp mounted with oldham coupling

Specifications

т	(no		Slipped torque Max.	Slipped torque Min.	Limiting heat dissipation	Lateral	Angular	Endplay	Inertia	Mass
туре		:	[N·m]	[N·m]	$[W(at20^{\circ}C)]$	[mm]	[°]	[mm]	[kg·m ² ×10 ⁻⁸]	[g]
		Α	3.0	0.3	14.0	_	-	—	5,548	278
MSC	10	В	3.0	0.3	14.0	_	—	—	7,135	350
MSC	40	С	3.0	0.3	14.0	5.0	1	0.3	8,037	390
		D	3.0	0.3	14.0	5.0	1	0.3	8,037	390

Materials

All	Housing	Hollow shaft	Adjuster cap	Rigid adapter
types	Al alloy	Steel	Al alloy	Al alloy

*For C/Dtypes, please refer to the outer diameter of oldham coupling size41.

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Drawings



Dimensions

т	un c		Shaft bore diameter	Shaft bore diameter	Overall length	Outer diameter	Length	Outer diameter	Clearance	Mouting length	Mouting length
	ype	d1[mm] d2[mm] L[mm] D[mm] La[mm		La[mm]	Da[mm]	Lc[mm]	Ld1[mm]	Ld2[mm]			
		Α	10~16	d2=d1	65.0	48.0	6.0	37.00	—	Pene	trable
MSC	40	В	10~16	10~20	83.0	48.0	—	_	—	65.0	16.0
MSC	40	С	10~16	8~20	101.4	48.0	—	_	0.15	65.0	18.1
		D	10~16	8~20	101.4	48.0		_	0.15	65.0	18.1

Pc2

т	vno		Distance	Set screw	Tightning torque	Distance	Distance	Set screw	Cap screw	Tightning torque
туре		Pe1[mm]	S1[mm]	[N∙m]	Pe2[mm]	Pc2[mm]	S2[mm]	S2[mm]	[N·m]	
		Α	4.0	M6	6.5	—	—	—	_	_
Mag	40	В	4.0	M6	6.5	8.0	_	M5	—	3.9
MSC	40	С	4.0	M6	6.5	5.8	—	M6	—	6.5
		D	4.0	M6	6.5	5.8	14.0	—	M 5	9.6

*Overall length values include clearance.

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Torque limitter MSC-SP-1

Slipped torque

Inner diameter G6



Specifications

Slipped torque Max.	Slipped torque Min.	Limiting heat dissipation	Inertia	Mass
[N·m]	[N∙m]	[W] (at20°C)	[kg·m ² ×10 ⁻⁸]	[g]
0.005	0.001	0.5	30	14

Drawings





Dimensions

Shaft bore diameter	Overall length	Outer diameter	Mouting length	Mouting length	Distance	Set screw	Tightning torque	Distance	Set screw	Tightning torque
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[N·m]	[mm]	[mm]	[N·m]
4	26.0	16.0	7.0	5.0	2.7	M 3	0.72	2.7	M 3	0.72

Materials

Housing	Boss	Bush		
Nylon resin	Brass	Al alloy		

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