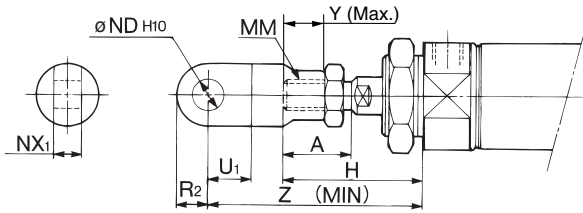


Series CM2

Accessory Bracket Dimensions

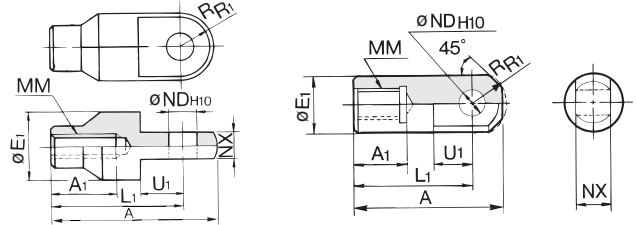
Single Knuckle Joint



Bore size (mm)	A	H	MM	ND _{H10}	NX ₁	U ₁	R ₂	Y	Z
20	18	41	M8 x 1.25	9 ^{+0.058} ₀	9 ^{-0.1} _{-0.2}	14	10	11	66
25, 32	22	45	M10 x 1.25	9 ^{+0.058} ₀	9 ^{-0.1} _{-0.2}	14	10	14	69
40	24	50	M14 x 1.5	12 ^{+0.070} ₀	16 ^{-0.1} _{-0.3}	20	14	13	92

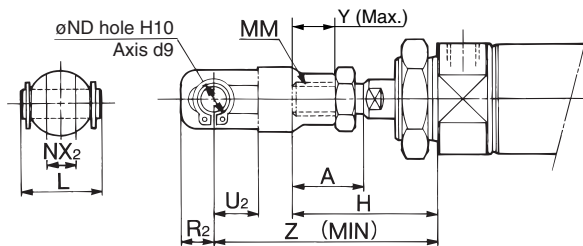
Single Knuckle Joint

I-020B/032B Material: Rolled steel **I-040B** Material: Free cutting sulfur steel



Part no.	Applicable bore size (mm)	A	A ₁	E ₁	L ₁	MM	ND _{H10}	NX	R ₁	U ₁
I-020B	20	46	16	20	36	M8 x 1.25	9 ^{+0.058} ₀	9 ^{-0.1} _{-0.2}	10	14
I-032B	25, 32	48	18	20	38	M10 x 1.25	9 ^{+0.058} ₀	9 ^{-0.1} _{-0.2}	10	14
I-040B	40	69	22	24	55	M14 x 1.5	12 ^{+0.070} ₀	16 ^{-0.1} _{-0.3}	15.5	20

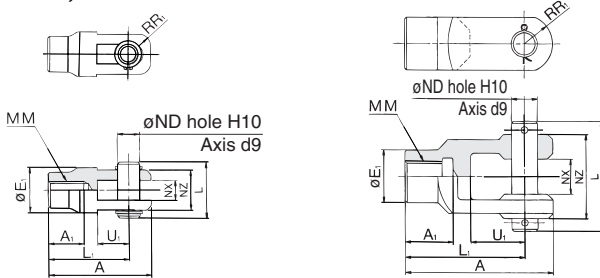
Double Knuckle Joint



Bore size (mm)	A	H	L	MM	ND	NX ₂	R ₂	U ₂	Y	Z
20	18	41	25	M8 x 1.25	9	9 ^{+0.2} _{+0.1}	10	14	11	66
25, 32	22	45	25	M10 x 1.25	9	9 ^{+0.2} _{+0.1}	10	14	14	69
40	24	50	49.7	M14 x 1.5	12	16 ^{+0.3} _{+0.1}	13	25	13	92

Double Knuckle Joint

Y-020B, Y-032B Material: Rolled steel **Y-040B** Material: Cast iron



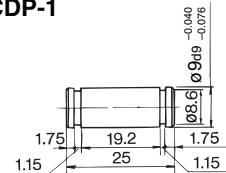
Part no.	Applicable bore size (mm)	A	A ₁	E ₁	L	L ₁	MM	ND	NX	NZ	R ₁	U ₁	Applicable pin part number	Snap ring Cotter pin size
Y-020B	20	46	16	20	25	36	M8 x 1.25	9	9 ^{+0.2} _{+0.1}	18	5	14	CDP-1	Type C 9 for axis
Y-032B	25, 32	48	18	20	25	38	M10 x 1.25	9	9 ^{+0.2} _{+0.1}	18	5	14	CDP-1	Type C 9 for axis
Y-040B	40	68	22	24	49.7	55	M14 x 1.5	12	16 ^{+0.3} _{+0.1}	38	13	25	CDP-3	ø3 x 18ℓ

* Clevis pin and snap ring (cotter pin for 40) are attached.

Double Clevis Pin / Material: Carbon steel

Bore size: ø20, ø25, ø32

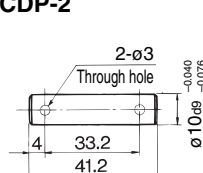
CDP-1



Snap ring: Type C9 for axis

Bore size: ø40

CDP-2

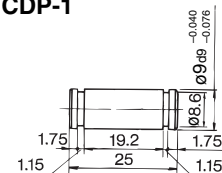


Cotter pin ø3 x 18ℓ

Double Knuckle Pin / Material: Carbon steel

Bore size: ø20, ø25, ø32

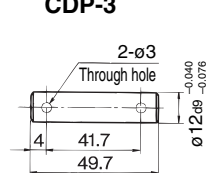
CDP-1



Snap ring: Type C9 for axis

Bore size: ø40

CDP-3



Cotter pin ø3 x 18ℓ

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

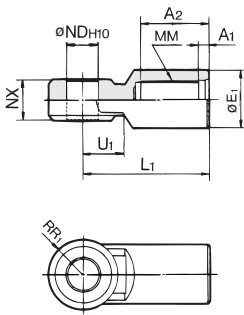
20-

Data

Series CS1

Accessory Bracket Dimensions

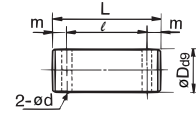
I Type Single Knuckle Joint*



Material: Cast iron

Part no.	Applicable bore size (mm)	A ₁	A ₂	E ₁	L ₁	MM	ND _{H10}	NX	RR ₁	U ₁
I-12	125	8	54	46	100	M30 x 1.5	25 ^{+0.084} ₀	32 ^{-0.1} _{-0.3}	27	33
I-14	140	8	54	48	105	M30 x 1.5	28 ^{+0.084} ₀	36 ^{-0.1} _{-0.3}	30	39
I-16	160	8	60	55	110	M36 x 1.5	32 ^{+0.1} ₀	40 ^{-0.1} _{-0.3}	34	39
I-18	180	8	67	70	125	M40 x 1.5	40 ^{+0.1} ₀	50 ^{-0.1} _{-0.3}	42.5	44
I-20	200	8	67	70	125	M45 x 1.5	40 ^{+0.1} ₀	50 ^{-0.1} _{-0.3}	42.5	44
I-25	250	9	75.5	86	160	M56 x 2	50 ^{+0.1} ₀	63 ^{-0.1} _{-0.3}	53	66
I-30	300	9	84.5	105	175	M64 x 2	63 ^{+0.12} ₀	80 ^{-0.1} _{-0.3}	66	71

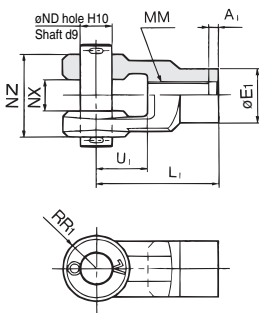
Knuckle Pin, Clevis Pin



Material: Carbon steel

Part no.	Applicable bore size (mm)	Dd9	L	ℓ	m	d (Drill through)	Applicable cotter pin
IY-12	125	25 ^{-0.065} _{-0.117}	79.5	69.5	5	4	ø4 x 40
IY-14	140	28 ^{-0.065} _{-0.117}	86.5	76.5	5	4	ø4 x 40
IY-16	160	32 ^{-0.080} _{-0.142}	94.5	84.5	5	4	ø4 x 40
IY-18	180, 200	40 ^{-0.080} _{-0.142}	115	105	5	4	ø4 x 55
IY-25	250	50 ^{-0.080} _{-0.142}	144	132	6	5	ø5 x 65
IY-30	300	63 ^{-0.100} _{-0.174}	178	166	6	5	ø5 x 80

Y Type Double Knuckle Joint*

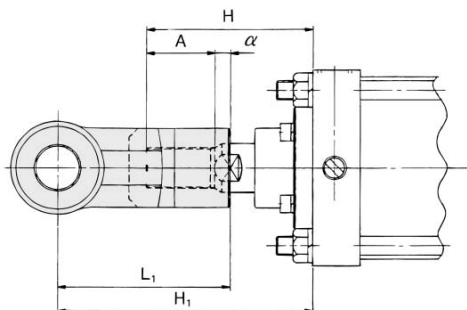


Material: Cast iron

Part no.	Applicable bore size (mm)	A ₁	E ₁	L ₁	MM	ND _{H10}	NX	NZ	RR ₁	U ₁
Y-12	125	8	46	100	M30 x 1.5	25 ^{+0.084} ₀	32 ^{+0.3} _{-0.1}	64 ^{-0.1} _{-0.3}	27	42
Y-14	140	8	48	105	M30 x 1.5	28 ^{+0.084} ₀	36 ^{+0.3} _{-0.1}	72 ^{-0.1} _{-0.3}	30	47
Y-16	160	8	55	110	M36 x 1.5	32 ^{+0.1} ₀	40 ^{+0.3} _{-0.1}	80 ^{-0.1} _{-0.3}	34	46
Y-18	180	8	70	125	M40 x 1.5	40 ^{+0.1} ₀	50 ^{+0.3} _{-0.1}	100 ^{-0.1} _{-0.3}	42.5	54
Y-20	200	8	70	125	M45 x 1.5	40 ^{+0.1} ₀	50 ^{+0.3} _{-0.1}	100 ^{-0.1} _{-0.3}	42.5	54
Y-25	250	9	86	160	M56 x 2	50 ^{+0.1} ₀	63 ^{+0.3} _{-0.1}	126 ^{-0.1} _{-0.3}	53	81
Y-30	300	9	105	175	M64 x 2	63 ^{+0.12} ₀	80 ^{+0.3} _{-0.1}	160 ^{-0.1} _{-0.3}	66	87

- * Use a single knuckle joint or a double knuckle joint individually. (Screw it entirely over the rod end threads and tighten it.)
- * Extend the dimensions of A, H, when using a single/double knuckle joint together with a rod end nut. (To extend dimensions A/H, refer to the table below, and specify the product as Made-to-order -XAO.)
- * Pin and cotter pin are attached for double knuckle joint.

Single/Double Knuckle Joint



Symbol Bore size (mm)	H	A	α	L ₁	H ₁	Applicable knuckle joint part number	
						I type single knuckle	Y type double knuckle
125	110	50	3.5	100	156.5	I-12	Y-12
140	110	50	3.5	105	161.5	I-14	Y-14
160	120	56	3.5	110	170.5	I-16	Y-16
180, 200	135	63	3.5	125	193.5	I-18, I-20	Y-18, Y-20
250	160	71	3.5	160	245.5	I-25	Y-25
300	175	80	3.5	175	266.5	I-30	Y-30

A, H Dimensions when Mounting a Single/Double Knuckle Joint together with a Rod End Nut

Bore size (mm)	A	H
125	65	125
140	65	125
160	76	140
180	83	155
200	88	160
250	106	195
300	115	210

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

20-

Data

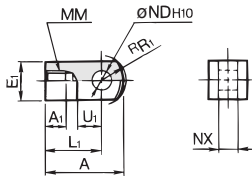
Series CQ2

Accessory Bracket

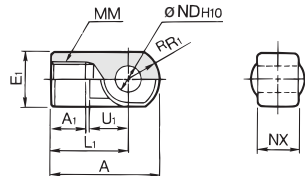
Single Knuckle Joint

For I-G012, I-Z015A
I-G02, I-G03

For I-G04, I-G05
I-G08, I-G10



Material: Carbon steel



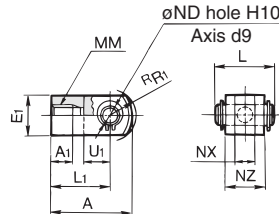
Material: Cast iron

Part no.	Applicable bore size (mm)	A	A ₁	E ₁	L ₁	MM	R _{R1}	U ₁	ND _{H10}	NX
I-G012	12	21.5	6	□10	16	M5 x 0.8	6.3	7	5 ^{+0.048} ₀	5 ^{-0.2} _{-0.4}
I-Z015A	16	32	8	□12	25	M6 x 1	8.1	14	5 ^{+0.048} ₀	6.4 ^{-0.1} _{-0.3}
I-G02	20	34	8.5	□16	25	M8 x 1.25	10.3	11.5	8 ^{+0.058} ₀	8 ^{-0.2} _{-0.4}
I-G03	25	41	10.5	□20	30	M10 x 1.25	12.8	14	10 ^{+0.058} ₀	10 ^{-0.2} _{-0.4}
I-G04	32, 40	42	14	∅22	30	M14 x 1.5	12	14	10 ^{+0.058} ₀	18 ^{-0.3} _{-0.5}
I-G05	50, 63	56	18	∅28	40	M18 x 1.5	16	20	14 ^{+0.070} ₀	22 ^{-0.3} _{-0.5}
I-G08	80	71	21	∅38	50	M22 x 1.5	21	27	18 ^{+0.070} ₀	28 ^{-0.3} _{-0.5}
I-G10	100	79	21	∅44	55	M26 x 1.5	24	31	22 ^{+0.084} ₀	32 ^{-0.3} _{-0.5}

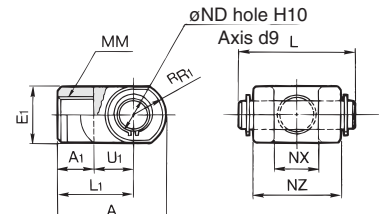
Double Knuckle Joint

For Y-G012, Y-Z015A
Y-G02, Y-G03

For Y-G04, Y-G05
Y-G08, Y-G10



Material: Carbon steel

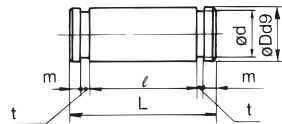


Material: Cast iron

Part no.	Applicable bore size (mm)	A	A ₁	E ₁	L ₁	MM	R _{R1}	U ₁	ND _{H10}	NX	NZ	L	Applicable pin part no.
Y-G012	12	21.5	6	□10	16	M5 x 0.8	6.3	7	5 ^{+0.048} ₀	5 ^{-0.4} _{-0.2}	10	14.6	IY-G012
Y-Z015A	16	28	11	□12	21	M6 x 1	8.1	10	5 ^{+0.048} ₀	6.5 ^{-0.2} _{-0.2}	12	16.6	IY-J015
Y-G02	20	34	8.5	□16	25	M8 x 1.25	10.3	11.5	8 ^{+0.058} ₀	8 ^{-0.4} _{-0.2}	16	21	IY-G02
Y-G03	25	41	10.5	□20	30	M10 x 1.25	12.8	14	10 ^{+0.058} ₀	10 ^{-0.4} _{-0.2}	20	25.6	IY-G03
Y-G04	32, 40	42	16	∅22	30	M14 x 1.5	12	14	10 ^{+0.058} ₀	18 ^{-0.5} _{-0.3}	36	41.6	IY-G04
Y-G05	50, 63	56	20	∅28	40	M18 x 1.5	16	20	14 ^{+0.070} ₀	22 ^{-0.5} _{-0.3}	44	50.6	IY-G05
Y-G08	80	71	23	∅38	50	M22 x 1.5	21	27	18 ^{+0.070} ₀	28 ^{-0.5} _{-0.3}	56	64	IY-G08
Y-G10	100	79	24	∅44	55	M26 x 1.5	24	31	22 ^{+0.084} ₀	32 ^{-0.5} _{-0.3}	64	72	IY-G10

* Knuckle pin and snap ring are included.

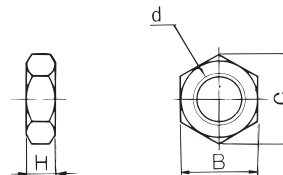
Knuckle Pin (Common with double clevis pin)



Material: Carbon steel

Part no.	Applicable bore size (mm)	Dd9	L	d	l	m	t	Applicable snap ring
IY-G012	12	5 ^{-0.030} _{-0.060}	14.6	4.8	10.2	1.5	0.7	Type C 5 for axis
IY-J015	16	5 ^{-0.030} _{-0.060}	16.6	4.8	12.2	1.5	0.7	Type C 5 for axis
IY-G02	20	8 ^{-0.040} _{-0.076}	21	7.6	16.2	1.5	0.9	Type C 8 for axis
IY-G03	25	10 ^{-0.040} _{-0.076}	25.6	9.6	20.2	1.55	1.15	Type C 10 for axis
IY-G04	32, 40	10 ^{-0.040} _{-0.076}	41.6	9.6	36.2	1.55	1.15	Type C 10 for axis
IY-G05	50, 63	14 ^{-0.050} _{-0.093}	50.6	13.4	44.2	2.05	1.15	Type C 14 for axis
IY-G08	80	18 ^{-0.050} _{-0.093}	64	17	56.2	2.55	1.35	Type C 18 for axis
IY-G10	100	22 ^{-0.065} _{-0.117}	72	21	64.2	2.55	1.35	Type C 22 for axis

Rod End Nut

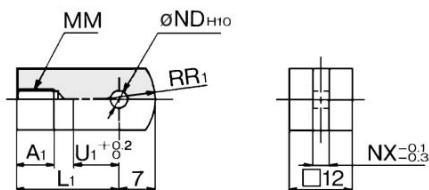


Material: Carbon steel

Part no.	Applicable bore size (mm)	d	H	B	C
NTJ-015A	12	M5 x 0.8	4	8	9.2
NT-015A	16	M6 x 1	5	10	11.5
NT-02	20	M8 x 1.25	5	13	15.0
NT-03	25	M10 x 1.25	6	17	19.6
NT-04	32, 40	M14 x 1.5	8	22	25.4
NT-05	50, 63	M18 x 1.5	11	27	31.2
NT-08	80	M22 x 1.5	13	32	37.0
NT-10	100	M26 x 1.5	16	41	47.3

Accessory Bracket Dimensions

Single Knuckle Joint

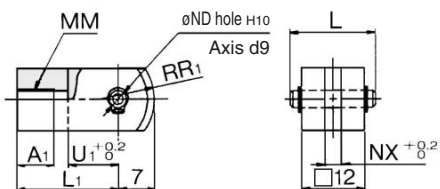


Material: Rolled steel

Part no.	Applicable bore (mm)	A ₁	L ₁	MM	ND ^{H10}	NX	R ₁	U ₁
I-J010B	10	8	21	M4 x 0.7	3.3 $^{+0.048}_0$	3.1	8	9
I-J016B	16	8	25	M5 x 0.8	5.3 $^{+0.048}_0$	6.4	12	14

Double Knuckle Joint

* Knuckle pin and set ring are shipped together.

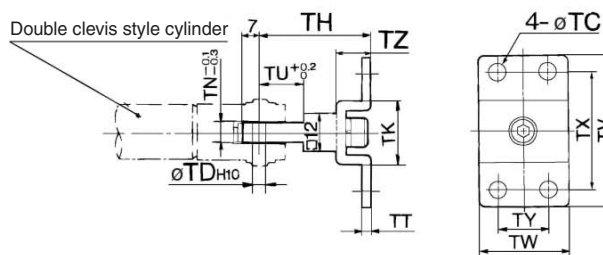


Material: Rolled steel

Part no.	Applicable bore (mm)	A ₁	L	L ₁	MM
Y-J010B	10	8	15.2	21	M4 x 0.7
Y-J016B	16	11	16.6	21	M5 x 0.8

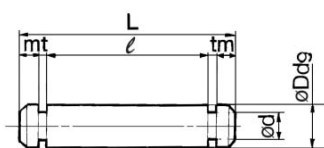
Part no.	ND _{d9}	ND ^{H10}	NX	R ₁	U ₁
Y-J010B	3.3 $^{+0.030}_0$	3.3 $^{+0.048}_0$	3.2	8	10
Y-J016B	5.3 $^{+0.030}_0$	5.3 $^{+0.048}_0$	6.5	12	10

T-bracket



Part no.	Applicable bore (mm)	TC	TD ^{H10}	TH	TK	TN	TT	TU	TV	TW	TX	TY	TZ
CJ-T010B	10	4.5	3.3 $^{+0.048}_0$	29	18	3.1	2	9	40	22	32	12	8
CJ-T016B	16	5.5	5 $^{+0.048}_0$	35	20	6.4	2.3	14	48	28	38	16	10

Clevis Pin

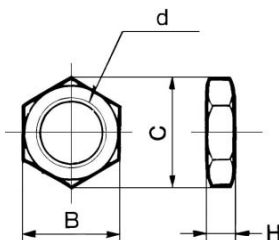


Material: Stainless steel

Part no.	Applicable bore (mm)	Dd ₉	d	L	ℓ	m	t	Applicable snap ring
CD-J010	10	3.3 $^{+0.030}_0$	3	15.2	12.2	1.2	0.3	Type C 3.2
CD-Z015	16	5.3 $^{+0.030}_0$	4.8	22.7	18.3	1.5	0.7	Type C 5
CD-JA010*	10	3.3 $^{+0.030}_0$	3	18.2	15.2	1.2	0.3	Type C 3.2

* For ø10 double clevis style, with air cushion and built-in speed controller.

Mounting Nut

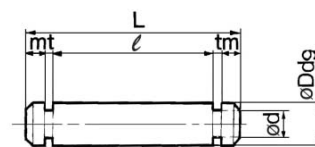


Material: Brass

Part no.	Applicable bore (mm)	B	C	d	H
SNJ-006B	6	8	9.2	M6 x 1.0	4
SNJ-010B	10	11	12.7	M8 x 1.0	4
SNJ-016B	16	14	16.2	M10 x 1.0	4
SNKJ-016B*	16	17	19.6	M12 x 1.0	4

* For ø16 non-rotating type. (Use SNJ-016B for ø10 non-rotating type.)

Knuckle Pin

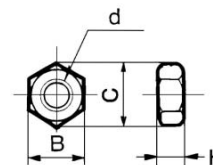


Material: Stainless steel

Part no.	Applicable bore (mm)	Dd ₉	d	L	ℓ	m	t	Applicable snap ring
CD-J010	10	3.3 $^{+0.030}_0$	3	15.2	12.2	1.2	0.3	Type C 3.2
IY-J015	16	5.3 $^{+0.030}_0$	4.8	16.6	12.2	1.5	0.7	Type C 5

* For size ø10, clevis pin is diverted.

Rod End Nut



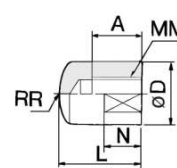
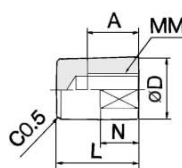
Material: Iron

Part no.	Applicable bore (mm)	B	C	d	H
NTJ-006A	6	5.5	6.4	M3 x 0.5	2.4
NTJ-010A	10	7	8.1	M4 x 0.7	3.2
NTJ-015A	16	8	9.2	M5 x 0.8	4

Rod End Cap

Flat type/CJ-CF□□□

Round type/CJ-CR□□□



Material: Polyacetal

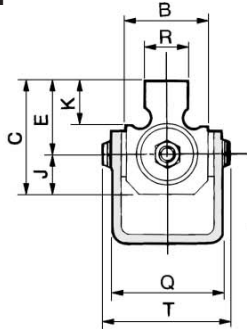
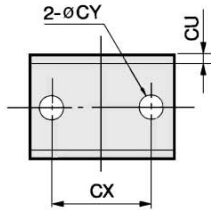
Part no.		Applicable bore (mm)	A	D	L	MM	N	R	W
Flat type	Round type								
CJ-CF006	CJ-CR006	6	6	8	11	M3 x 0.5	5	8	6
CJ-CF010	CJ-CR010	10	8	10	13	M4 x 0.7	6	10	8
CJ-CF016	CJ-CR016	16	10	12	15	M5 x 0.8	7	12	10

- CJ1
- CJP
- CJ2**
- CM2
- CG1
- MB
- MB1
- CA2
- CS1
- C76
- C85
- C95
- CP95
- NCM
- NCA
- D-
- X
- 20-
- Data

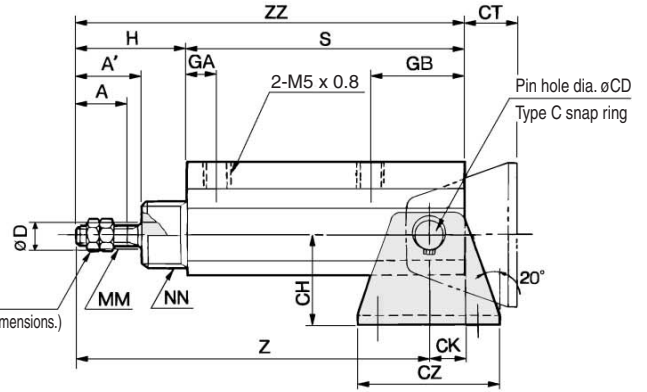
Trunnion Style

CJPT/Without auto switch

Mounting dimensions of trunnion pivot bracket



Rod end nut
(Refer to accessory bracket dimensions.)

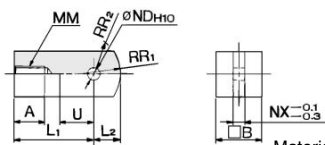


Symbol	A	A'	B	C	D	E	GA	GB	H	J	K	MM	NN	Q	T	CD	CH	CK	CT	CU	CX	CY	CZ
6	7	9	14	16.5	3	10.5	6	11	17	6	8	M3 x 0.5	M10 x 1.0	18.5	20.4	3	16	4	12	1.6	18	3.4	26
10	10	12	15	20	5	13	6	17	20	7	8	M4 x 0.7	M12 x 1.0	20.5	23.9	5	20	6.5	13.5	1.6	24	4.5	33
15	12	14	20	24.5	6	15.5	6	18.5	24	9	8	M5 x 0.8	M14 x 1.0	28	31.7	6	25	8	17	2.9	29	5.5	42

Symbol	S					Z					ZZ					R
	5 st	10 st	15 st	20 st	30 st	5 st	10 st	15 st	20 st	30 st	5 st	10 st	15 st	20 st	30 st	
6	35.5	40.5	45.5	50.5	—	48.5	53.5	58.5	63.5	—	52.5	57.5	62.5	67.5	—	7
10	40.5	45.5	50.5	55.5	65.5	54	59	64	69	79	60.5	65.5	70.5	75.5	85.5	8
15	42	47	52	57	67	58	63	68	73	83	66	71	76	81	91	10

Accessory Bracket Dimensions

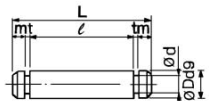
Single knuckle joint



Material: Rolled steel

Part no.	Applicable bore (mm)	A	B	L ₁	L ₂	MM	ND _{H10}	NX	R ₁	R ₂	U
I-P006	6	5	6	12	3.5	M3 x 0.5	3 ^{+0.040}	3	5	4	5
I-P010	10	6.5	10	16	5.5	M4 x 0.7	5 ^{+0.048}	5	8	6.3	7
I-P015	15	7	12	19	7	M5 x 0.8	6 ^{+0.048}	6	10	7.8	9

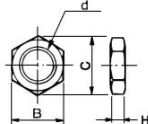
Knuckle pin



Material: Stainless steel

Part no.	Applicable bore (mm)	D ø9	L	d	ℓ	m	t	Snap ring
IY-P006	6	3 ^{-0.020} _{-0.045}	9	2.85	6.2	0.75	0.65	Clip type C3
IY-P010	10	5 ^{-0.030} _{-0.060}	13.6	4.8	10.2	1	0.7	Type C 5
IY-P015	15	6 ^{-0.030} _{-0.060}	15.8	5.7	12.2	1	0.8	Type C 6

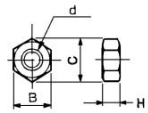
Mounting nut



Material: Brass

Part no.	Applicable bore (mm)	d	H	B	C
SNP-006	6	M10 x 1.0	3	14	16.2
SNP-010	10	M12 x 1.0	3	17	19.6
SNP-015	15	M14 x 1.0	4	19	21.9

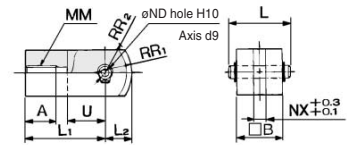
Rod end nut



Material: Iron

Part no.	Applicable bore (mm)	d	H	B	C
NTP-006	6	M3 x 0.5	1.8	5.5	6.4
NTP-010	10	M4 x 0.7	2.4	7	8.1
NTP-015	15	M5 x 0.8	3.2	8	9.2

Double knuckle joint

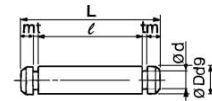


* Knuckle pin and set ring are shipped together.

Material: Rolled steel

Part no.	Applicable bore (mm)	A	B	L	L ₁	L ₂	MM	ND _{d9}	ND _{H10}	NX	R ₁	R ₂	U
Y-P006	6	5	6	9	12	3.5	M3 x 0.5	3 ^{-0.020} _{-0.045}	3 ^{+0.040} ₀	3	5	4	5
Y-P010	10	6.5	10	13.6	16	5.5	M4 x 0.7	5 ^{-0.030} _{-0.060}	5 ^{+0.048} ₀	5	8	6.3	7
Y-P015	15	7	12	15.8	19	7	M5 x 0.8	6 ^{-0.030} _{-0.060}	6 ^{+0.048} ₀	6	10	7.8	9

Trunnion pin

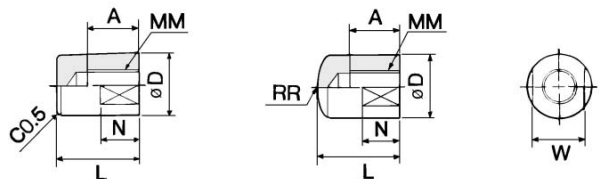


Material: Stainless steel

Part no.	Applicable bore (mm)	D ø9	L	d	ℓ	m	t	Snap ring
CT-P006	6	3 ^{-0.020} _{-0.045}	20.4	2.85	17.6	0.75	0.65	Clip type C3
CT-P010	10	5 ^{-0.030} _{-0.060}	23.9	4.8	20.5	1	0.7	Type C 5
CT-P015	15	6 ^{-0.030} _{-0.060}	31.7	5.7	28.1	1	0.8	Type C 6

Rod end cap

Flat type/CJ-CF□□□ Round type/CJ-CR□□□



Material: Polyacetal

Part no.		Applicable bore (mm)	A	D	L	MM	N	R	W
Flat type	Round type								
CJ-CF006	CJ-CR006	6	6	8	11	M3 x 0.5	5	8	6
CJ-CF010	CJ-CR010	10	8	10	13	M4 x 0.7	6	10	8
CJ-CF016	CJ-CR016	15	10	12	15	M5 x 0.8	7	12	10