



Escapements

MIW/MIS Series

ø8, ø12, ø20, ø25, ø32

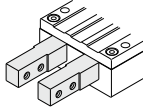
How to Order

Double finger type MIW 12 [] - 12 D 1 A S - M9BW [] - []

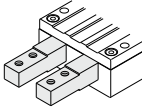
Single finger type MIS 32 [] - 50 D 1 A S - M9BW [] - []

Finger options

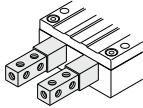
Nil: Basic type (Standard type)



1: Tapped on upper and lower faces



2: Tapped on all faces (5 surfaces including end surface)



Cylinder bore

8	8 mm
12	12 mm
20	20 mm
25	25 mm
32	32 mm

Port thread type

Symbol	Type	Bore size
Nil	M thread	ø8, ø12 ø20, ø25
	Rc	
TN	NPT	ø32
TF	G	

Stroke

* Refer to the next page for standard stroke table.

Scraper

Nil	No
S	Yes

Stroke adjuster

Nil	No
A	Yes

Number of auto switches

Nil	2 pcs.
S	1 pc.

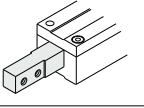
Type of auto switch

Nil	Without auto switch (built-in magnet)
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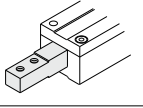
* Refer to the table below for auto switch part numbers.

Finger options

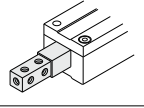
Nil: Basic type (Standard type)



1: Tapped on upper and lower faces



2: Tapped on all faces (5 surfaces including end surface)



Applicable auto switches

Type	Special function	Electrical entry	Indicating light	Wiring (output)	Load voltage		Auto switch models		Lead wire length (m)			Pre-wired connector	Applicable load		
					DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)			5 (Z)	
Solid state auto switch	Diagnostic indication (2-color display)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	○	○	IC circuit	
				3-wire (PNP)				M9PV	M9P	●	●	○	○		
				2-wire				M9BV	M9B	●	●	○	○		—
				3-wire (NPN)				M9NVV	M9NV	●	●	○	○		IC circuit
				3-wire (PNP)				M9PWW	M9PW	●	●	○	○		—
				2-wire				M9BWW	M9BW	●	●	○	○		—
	Water resistant (2-color indicator)	Grommet	Yes	No	3-wire (NPN)	24 V	5 V, 12 V	—	M9NAV	M9NA	○	○	●	●	IC circuit
					3-wire (PNP)				M9PAV	M9PA	○	○	●	●	—
					2-wire				M9BAV	M9BA	○	○	●	●	—
					2-wire				M9BAV	M9BA	○	○	●	●	—

Specifications



Series	MIW (Double finger)	MIS (Single finger)
Fluid	Air	
Operating pressure	0.2 to 0.7 MPa	
Ambient temperature and fluid temperature	-10 to 60°C (No freezing)	
Lubrication	Non-lube	
Action	Double acting	
Auto switch (optional) ^{Note)}	Solid state auto switch (3-wire, 2-wire)	
Stroke tolerance	± ₀ ¹ mm	

Option

Finger options	Standard, Tapped on upper and lower faces, Tapped on all faces (5 surfaces including end surface)
Stroke adjuster (Rear end stroke only)	MI□8: Arrangement range 4 mm
	MI□12: Arrangement range 6 mm
	MI□20: Arrangement range 12 mm
	MI□25: Arrangement range 15 mm
	MI□32: Arrangement range 20 mm
Scraper	Can be mounted on standard products

Theoretical Output

Unit: N

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure MPa					
				0.2	0.3	0.4	0.5	0.6	0.7
8	4	OUT	50	10	15	20	26	31	36
		IN	38	7	11	15	19	23	26
12	6	OUT	113	23	34	45	57	68	79
		IN	85	17	26	34	43	51	60
20	10	OUT	314	63	94	126	157	188	220
		IN	236	47	71	94	118	142	165
25	10	OUT	491	98	147	196	245	295	344
		IN	412	82	124	165	206	247	288
32	12	OUT	804	161	241	322	402	482	563
		IN	691	138	207	276	346	415	484

Standard Stroke

Double finger type/MIW (mm)

Bore size	Stroke
8	8 mm
12	12 mm
20	20 mm
25	25 mm
32	32 mm

* For MIW, same stroke as bore size

Single finger type/MIS (mm)

Bore size	Stroke
8	10, 20 mm
12	10, 20, 30 mm
20	10, 20, 30 mm
25	30, 50 mm
32	30, 50 mm

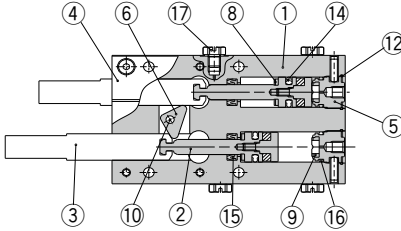
Weight

Model	Model	Stroke (mm)	Weight (g)	Increase by stroke adjuster (g)	Increase by scraper (g)
MIW	MIW8-8D	8	110	6	3
	MIW12-12D	12	240	10	5
	MIW20-20D	20	650	30	10
	MIW25-25D	25	1550	30	20
	MIW32-32D	32	2650	100	35
MIS	MIS8-10D	10	62	3	2
	MIS8-20D	20	80		
	MIS12-10D	10	130	5	3
	MIS12-20D	20	160		
	MIS12-30D	30	190		
	MIS20-10D	10	300	15	5
	MIS20-20D	20	355		
	MIS20-30D	30	410		
	MIS25-30D	30	800	15	10
	MIS25-50D	50	1000		
	MIS32-30D	30	1350	50	18
	MIS32-50D	50	1650		

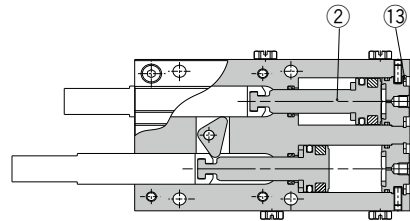


Construction/Double Finger Type (MIW)

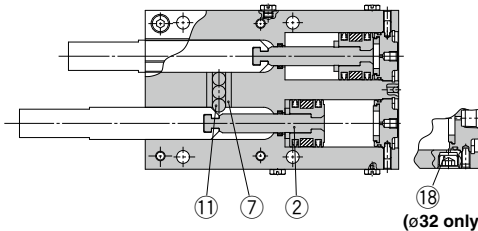
ø8



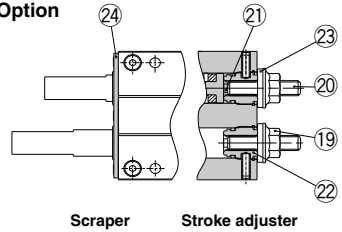
ø12, ø20



ø25, ø32



Option



Scraper

Stroke adjuster

(ø32 only)

Component parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Hard anodized
2	Piston assembly		
3	Finger	Carbon steel	Heat treatment/Special treatment
4	Cover	Aluminum alloy	Hard anodized
5	Cap (W)	Aluminum alloy	White anodized
6	Cam	Stainless steel	Heat treatment (MIW8 to 20)
7	Roller holder	Stainless steel	Heat treatment (MIW25, 32)
8	Bumper	Urethane rubber	
9	Head bumper	Urethane rubber	
10	Needle roller	High carbon chromium bearing steel	(MIW8 to 20)

No.	Description	Material	Note
11	Cylinder roller	Carbon steel	(MIW25, 32)
12	Clip	Carbon steel	(MIW8)
13	R shape retaining ring	Carbon steel	(MIW12 to 32)
14	Piston seal	NBR	
15	Rod seal	NBR	
16	Gasket	NBR	
17	Plug		(MIW8 ... M-3P) (MIW12 to 25 ... M-5P)
18	Hexagon socket taper plug		(MIW32 ... Rc1/8)

Option: adjuster

No.	Description	Material	Note
19	Hexagon nut with flange	Carbon steel	Nickel plated
20	Adjustment bolt	Carbon steel	Nickel plated
21	Adjustment bumper	Urethane rubber	
22	Adjustment cap	Aluminum alloy	White anodized
23	Die thread		

Option: scraper

No.	Description	Material	Note
24	Scraper	Stainless steel + NBR	

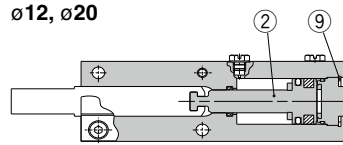
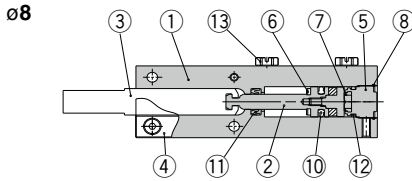
Replacement parts

Model	Description	Finger			Seal kit	Scraper assembly	Grease pack
		Standard	Tapped on upper and lower faces	Tapped on all faces			
MIW8-8D		MI-A0801-8	MI-A0802-8	MI-A0803-8	MIW8-PS	MIW-A0804	MH-G01 (contents quantity 30 g)
MIW12-12D		MI-A1201-12	MI-A1202-12	MI-A1203-12	MIW12-PS	MIW-A1204	
MIW20-20D		MI-A2001-20	MI-A2002-20	MI-A2003-20	MIW20-PS	MIW-A2004	
MIW25-25D		MI-A2501-25	MI-A2502-25	MI-A2503-25	MIW25-PS	MIW-A2504	
MIW32-32D		MI-A3201-32	MI-A3202-32	MI-A3203-32	MIW32-PS	MIW-A3204	
Main parts No.		③ (1 pc.)			⑭, ⑮, ⑯	⑳	

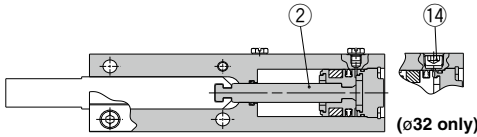


Construction/Single Finger Type (MIS)

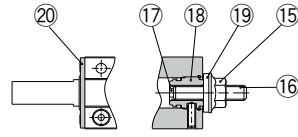
Escapements **MIW/MIS Series**



$\phi 25, \phi 32$



Option



Scraper

Stroke adjuster

Component parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Hard anodized
2	Piston assembly		
3	Finger	Carbon steel	Heat treatment/Special treatment
4	Cover	Aluminum alloy	Hard anodized
5	Cap (S)	Aluminum alloy	White anodized
6	Bumper	Urethane rubber	
7	Head bumper	Urethane rubber	
8	Clip	Carbon steel	(MIS8)
9	R shape retaining ring	Carbon steel	(MIS12 to 32)

No.	Description	Material	Note
10	Piston seal	NBR	
11	Rod seal	NBR	
12	Gasket	NBR	
13	Plug		(MIS8 ... M-3P) (MIS12 to 25 ... M-5P)
14	Hexagon socket taper plug		(MIS32 ... Rc1/8)

Option: adjuster

No.	Description	Material	Note
15	Hexagon nut with flange	Carbon steel	Nickel plated
16	Adjustment bolt	Carbon steel	Nickel plated
17	Adjustment bumper	Urethane rubber	
18	Adjustment cap	Aluminum alloy	White anodized
19	Die thread		

Option: scraper

No.	Description	Material	Note
20	Scraper	Stainless steel + NBR	

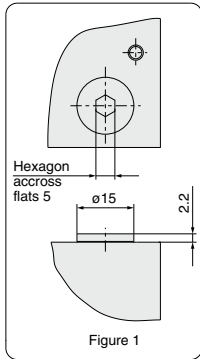
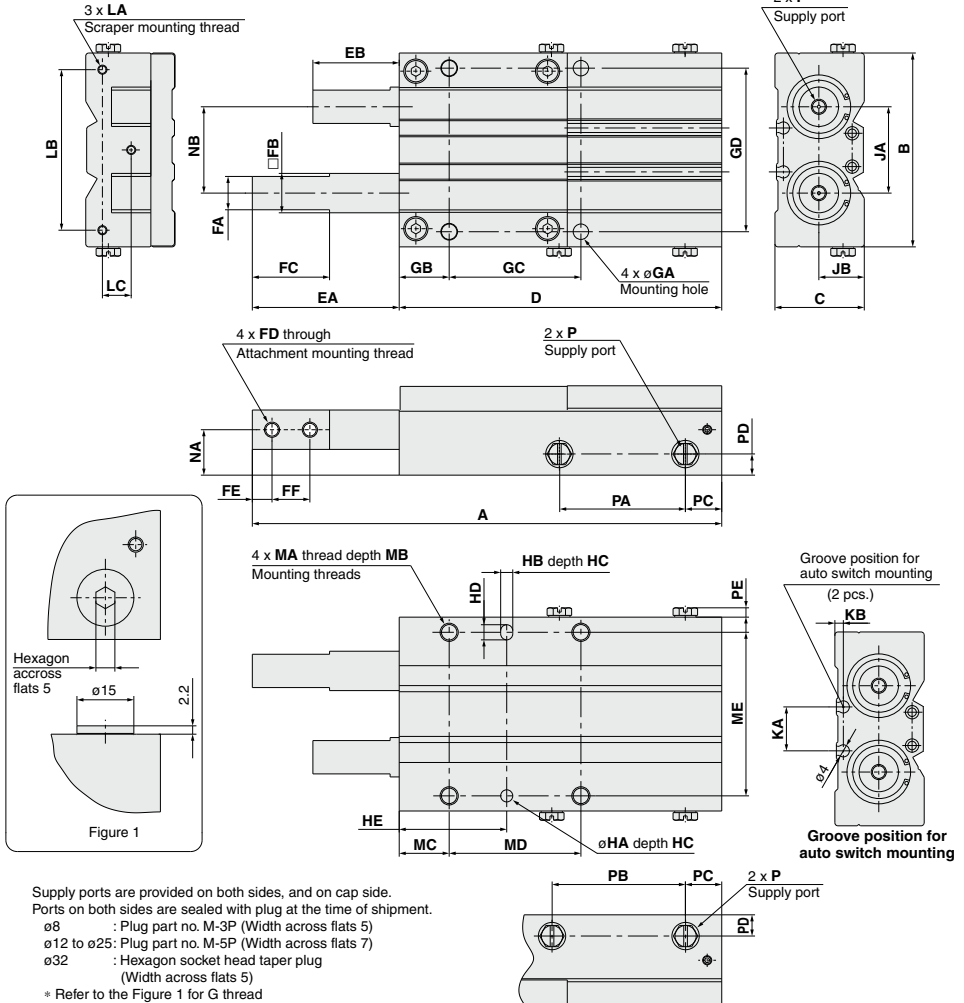
Replacement parts

Model	Description			Seal kit	Scraper assembly	Grease pack
	Standard	Finger				
		Tapped on upper and lower faces	Tapped on all faces			
MIS8-10D	MI-A0801-10	MI-A0802-10	MI-A0803-10	MIS8-PS	MIS-A0804	MH-G01 (contents quantity 30 g)
MIS8-20D	MI-A0801-20	MI-A0802-20	MI-A0803-20			
MIS12-10D	MI-A1201-10	MI-A1202-10	MI-A1203-10			
MIS12-20D	MI-A1201-20	MI-A1202-20	MI-A1203-20	MIS12-PS	MIS-A1204	
MIS12-30D	MI-A1201-30	MI-A1202-30	MI-A1203-30			
MIS20-10D	MI-A2001-10	MI-A2002-10	MI-A2003-10			
MIS20-20D	MI-A2001-20	MI-A2002-20	MI-A2003-20	MIS20-PS	MIS-A2004	
MIS20-30D	MI-A2001-30	MI-A2002-30	MI-A2003-30			
MIS25-30D	MI-A2501-30	MI-A2502-30	MI-A2503-30			
MIS25-50D	MI-A2501-50	MI-A2502-50	MI-A2503-50			
MIS32-30D	MI-A3201-30	MI-A3202-30	MI-A3203-30	MIS32-PS	MIS-A3204	
MIS32-50D	MI-A3201-50	MI-A3202-50	MI-A3203-50			
Main parts No.	③ (1 pc.)			⑩, ⑪, ⑫	⑳	



Dimensions/Double Finger Type

MIW□-□D



Supply ports are provided on both sides, and on cap side.
 Ports on both sides are sealed with plug at the time of shipment.
 ø8 : Plug part no. M-3P (Width across flats 5)
 ø12 to ø25: Plug part no. M-5P (Width across flats 7)
 ø32 : Hexagon socket head taper plug
 (Width across flats 5)
 * Refer to the Figure 1 for G thread

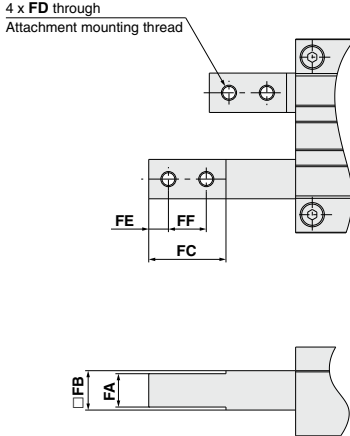
Model	A	B	C	D	EA	EB	FA	FB	FC	FD	FE	FF	FG	GA	GB	GC	GD
MIW8-8	83	34	16	57	26	18	6 ^{±0.1}	7h9 ^{±0.036}	15	M3 x 0.5	4	7	6 (Effective depth 2.5)	2.6	9	22	28
MIW12-12	111	44	21	76	35	23	8 ^{±0.1}	10h9 ^{±0.036}	19	M3 x 0.5	4.5	9.5	6 (Effective depth 3)	3.3	12.5	34	37
MIW20-20	155	64	29.5	106.5	48.5	28.5	11 ^{±0.1}	13h9 ^{±0.043}	25.5	M5 x 0.8	6.5	12.5	10 (Effective depth 4)	5.1	16.5	43.5	54
MIW25-25	200	84	40	134	66	41	15 ^{±0.1}	17h9 ^{±0.043}	37	M6 x 1	10	17	15 (Effective depth 7)	6.8	20	58	71
MIW32-32	256	95	47	169	87	55	19.5 ^{±0.1}	21h9 ^{±0.052}	51	M8 x 1.25	12.5	22	17 (Effective depth 8.5)	8.6	24.5	73	80

Model	HA, HB	HC	HD	HE	JA	JB	KA	KB	LA	LB
MIW8-8	2H9 ^{±0.025}	2	3	15	14.5	7.5	20.3	1.6	M2 x 0.4	28.4
MIW12-12	2.5H9 ^{±0.025}	4	3.5	25	19	11	7.6	2.2	M2.6 x 0.45	37
MIW20-20	4H9 ^{±0.030}	5	5	35.5	28.5	15	14.5	2.8	M3 x 0.5	53
MIW25-25	5H9 ^{±0.030}	5	7	40	35.5	20	24.5	3	M3 x 0.5	70
MIW32-32	6H9 ^{±0.030}	6	8	50	44.5	25	24.1	2.5	M4 x 0.7	81

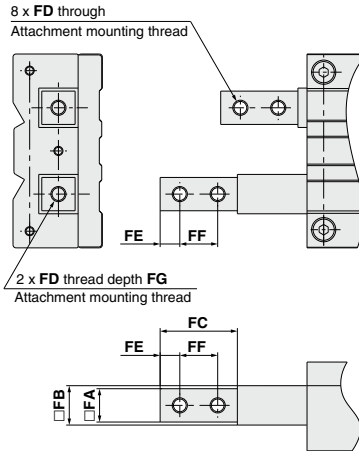


Finger options

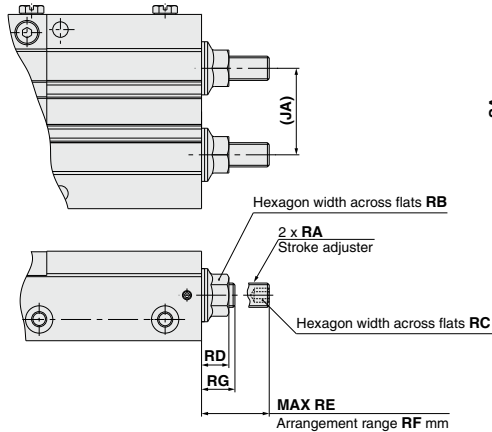
Tapped on upper and lower faces



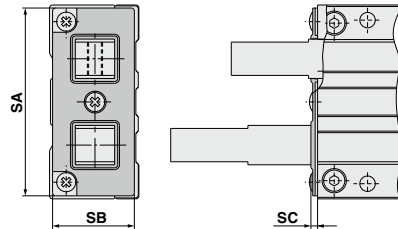
Tapped on all faces



Stroke adjuster



Scraper



Note) Observe the specified adjustment range when adjusting with a stroke adjuster.

Model	LC	MA	MB	MC	MD	ME	NA	NB	P	PA	PB	PC	PD	PE	RA	RB	RC	RD
MIW8-8	4.5	M3 x 0.5	6	9	22	28	7.5	14.5	M3 x 0.5	22.5	24	8	4.5	2.2	M4 x 0.7	7	2	5.7
MIW12-12	7.5	M4 x 0.7	7	12.5	34	37	11	19	M5 x 0.8	25	27	10	6	2.8	M5 x 0.8	8	2.5	6
MIW20-20	9.5	M6 x 1	10	16.5	43.5	54	15	28.5	M5 x 0.8	41.5	44	12	7	2.7	M8 x 1	12	4	9
MIW25-25	12	M8 x 1.25	12	20	58	71	20	35.5	M5 x 0.8	50	55	14	8.5	2.7	M8 x 1	12	4	9
MIW32-32	16.5	M10 x 1.5	15	24.5	73	80	25	44.5	Rc1/8	69.5	75.5	14.5	11	—	M12 x 1.25	17	6	12.4

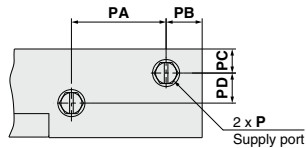
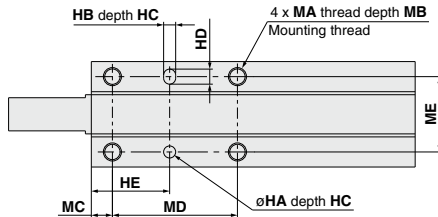
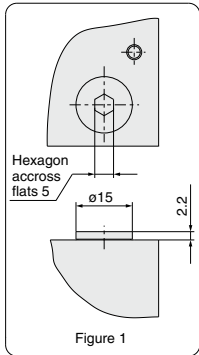
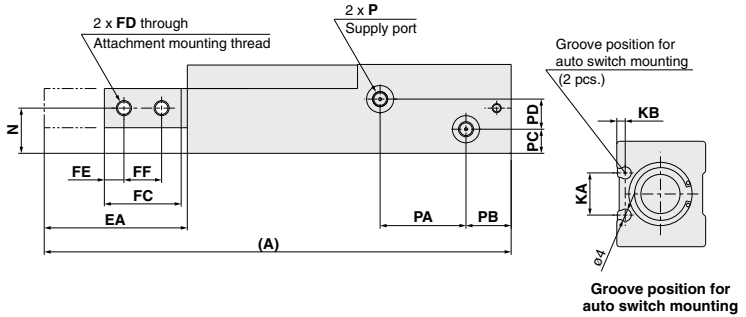
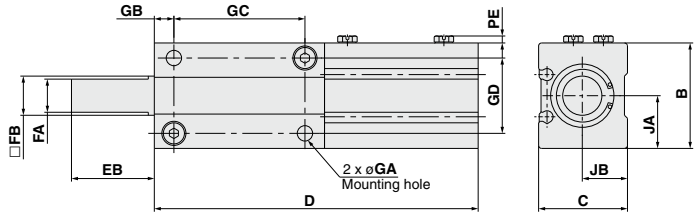
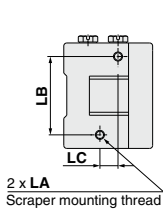
Model	RE	RF	RG	SA	SB	SC
MIW8-8	12.5	4	8.5	33	14.5	1.4
MIW12-12	14	6	8	43	18.5	1.8
MIW20-20	22.5	12	10.5	62	27	2.2
MIW25-25	26	15	11	81	35	2.8
MIW32-32	33	20	13	93	42	3.4

(mm)



Dimensions/Single Finger Type

MIS□-□D



Supply ports are provided on both sides.
A port on a side is sealed with plug at the time of shipment.
ø8 : Plug part no. M-3P (Width across flats 5)
ø12 to ø25: Plug part no. M-5P (Width across flats 7)
ø32 : Hexagon socket head taper plug (Width across flats 5)
* Refer to the Figure 1 for G thread

Model	A	B	C	D	EA	EB	FA	FB	FC	FD	FE	FF	FG	GA	GB	GC	GD	HA, HB
MIS8-10	87	19	16	59	28	18	6 ⁰ _{0.1}	7h9 ⁰ _{0.08}	15	M3 x 0.5	4	7	6 (Effective depth 2.5)	2.6	4	20	13	2H9 ⁰ _{0.025}
MIS8-20	117			79	38											30		
MIS12-10	105	26	21	72	33	23	8 ⁰ _{0.1}	10h9 ⁰ _{0.08}	19	M3 x 0.5	4.5	9.5	6 (Effective depth 3)	3.3	5	28	18	2.5H9 ⁰ _{0.025}
MIS12-20	135			92	43											38		
MIS12-30	165			112	53											48		
MIS20-10	125	35	29.5	86.5	38.5	28.5	11 ⁰ _{0.1}	13h9 ⁰ _{0.043}	25.5	M5 x 0.8	6.5	12.5	10 (Effective depth 4)	5.1	7	32	25	4H9 ⁰ _{0.020}
MIS20-20	155			106.5	48.5											42		
MIS20-30	185			126.5	58.5											52		
MIS25-30	215	41	40	144	71	41	15 ⁰ _{0.1}	17h9 ⁰ _{0.043}	37	M6 x 1	10	17	15 (Effective depth 7)	6.8	10	55	28	5H9 ⁰ _{0.020}
MIS25-50	275			184	91											75		
MIS32-30	250	50	47	165	85	55	19.5 ⁰ _{0.1}	21h9 ⁰ _{0.052}	51	M8 x 1.25	12.5	22	17 (Effective depth 8.5)	8.6	12	64	34	6H9 ⁰ _{0.020}
MIS32-50	310			205	105											84		

