MDSC / MDFC series

SHOCK ABSORBER

Hydraulic industrial shock absorbers

Select the correct shock absorber and it will reduce shock vibration and noise. It will improve efficiency and extend machine life.

The function of shock absorber is to convert the kinetic energy of the moving object into heat and dissipate it into the atmosphere. It can stop a moving object smoothly and quietly before heavy impact occurs.

In order to save cost solid buffers such as polyurethane and rubber are often used. These cause noise and transient shock. The use of shock absorbers alleviates this resulting in both increased reliability and production. Additionally the noise reduction means they are environmentally friendly.

MDSC series: Non-adjustable shock absorbers.
Surface treatment: nickel plated: MDSC-0806, MDSC-1008, MDSC-1210; others are black anodized.

MDFC series: Adjustable shock absorbers.

Operating principles of shock absorbers

Shock Absorber's main structure to combine with body, rod, bearing, inner tube, piston, fluid, spring. On impact the piston rod moves into the shock absorber and the hydraulic fluid is push into accumulator to produce resistant force, the pressure in the inner tube remains constant throughout the entire impact stroke. Shock Absorbers providing a linear deceleration and brings the impacting object to stop smoothly and quietly. At the end of the impact stroke, the return spring pushes the piston to its original position for next cycle

Order example

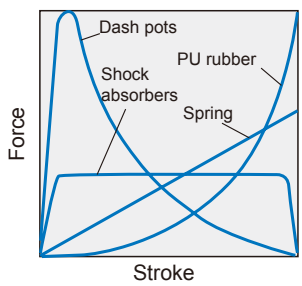
MDSC – 1415 – 1 – □ – M14×1.5

- MDSC – 1415 – 1 – □ – M14×1.5
- TUBE O.D. (mm)
- STROKE (mm)
- Select damping constant from graph
  - **1**: Hight impact speed
  - **2**: Medium impact speed
  - **3**: Low impact speed
- Blank: With impact head
  N: Without impact head
- THREAD
- **MDSC**: Non-adjustable
  MDFC: Adjustable

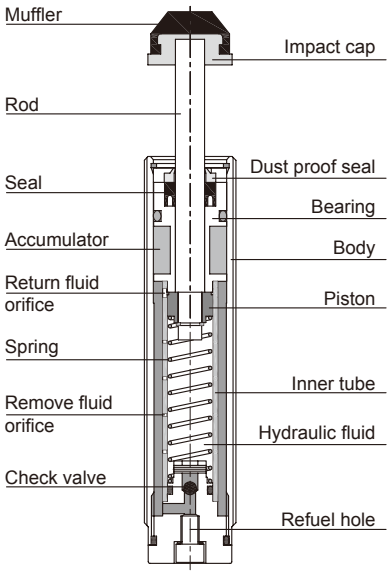
Comparison of shock absorbing of dash pots, PU rubbers, springs and shock absorbers

The springs and PU Rubbers are widespread to use in earlier period, but due to provide non-linear deceleration and to result in strong resistance, all the kinetic energy of moving objects is not absorption and produce counter pressure, this is in low efficiency.

If linear deceleration is necessary for a moving object. Mindman Shock Absorber is your best choice.

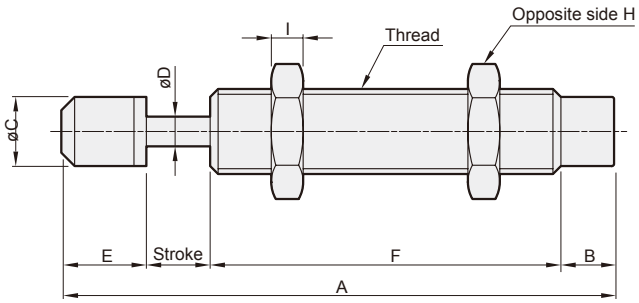


Main structures

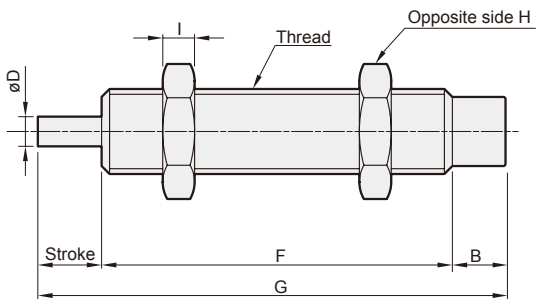


Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDSC-0806-1	6	1.8	0.9 ~ 5.6	2.0	2,400	-10~+70 (No freezing)
MDSC-0806-2	6	1.8	2.5 ~ 10	1.2	2,400	-10~+70 (No freezing)
MDSC-0806-3	6	1.8	5.6 ~ 22.5	0.8	2,400	-10~+70 (No freezing)
MDSC-1008-1	8	3.2	0.9 ~ 4.4	2.6	5,760	-10~+70 (No freezing)
MDSC-1008-2	8	3.2	2.8 ~ 10	1.5	5,760	-10~+70 (No freezing)
MDSC-1008-3	8	3.2	10 ~ 40	0.8	5,760	-10~+70 (No freezing)
MDSC-1210-1	10	6	1.8 ~ 12	2.6	10,800	-10~+70 (No freezing)
MDSC-1210-2	10	6	5.3 ~ 18.7	1.5	10,800	-10~+70 (No freezing)
MDSC-1210-3	10	6	12 ~ 75	0.8	10,800	-10~+70 (No freezing)
MDSC-1412-1	12	16	4.7 ~ 32	2.6	28,800	-10~+70 (No freezing)
MDSC-1412-2	12	16	14 ~ 50	1.5	28,800	-10~+70 (No freezing)
MDSC-1412-3	12	16	56 ~ 200	0.8	28,800	-10~+70 (No freezing)
MDSC-1415-1	15	20	5.9 ~ 27.8	2.6	36,000	-10~+70 (No freezing)
MDSC-1415-2	15	20	17.8 ~ 62.5	1.5	36,000	-10~+70 (No freezing)
MDSC-1415-3	15	20	62.5 ~ 250	0.8	36,000	-10~+70 (No freezing)
MDSC-1425-1	25	28	4.6 ~ 25	3.5	58,800	-10~+70 (No freezing)
MDSC-1425-2	25	28	14 ~ 87.5	2.0	58,800	-10~+70 (No freezing)
MDSC-1425-3	25	28	25 ~ 350	1.5	58,800	-10~+70 (No freezing)



N type

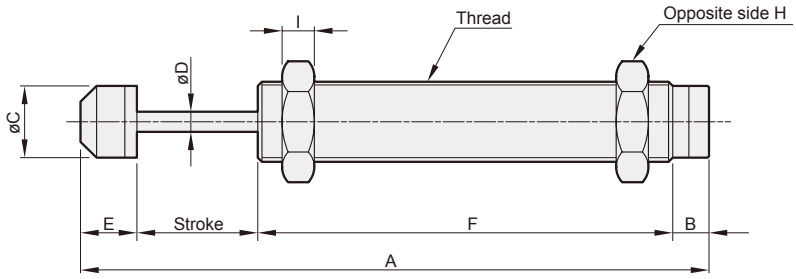


Dimensions

Model	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I	Weight (g)
MDSC-0806	M8×1.0	6	53	5	6.5	2.8	8.5	33.5	—	11	3	12
MDSC-0806-N	M8×1.0	6	—	5	—	2.8	—	33.5	44.5	11	3	11
MDSC-1008	M10×1.0	8	62	5	8.5	3	8.5	40.5	—	12.7	3	20
MDSC-1008-N	M10×1.0	8	–	5	—	3	—	40.5	53.5	12.7	3	19
MDSC-1210	M12×1.0	10	72	4.5	10.5	3	9.5	48	—	14	4	36
MDSC-1210-N	M12×1.0	10	—	4.5	—	3	—	48	62.5	14	4	34
MDSC-1412	M14×1.5	12	92.7	8	12.2	3.5	13.4	59.3	—	19	6	66
MDSC-1412-N	M14×1.5	12	—	8	—	3.5	—	59.3	79.3	19	6	63
MDSC-1415	M14×1.0/1.5	15	103.4	8	12.2	3.5	13.4	67	—	19	6	79
MDSC-1415-N	M14×1.0/1.5	15	—	8	—	3.5	—	67	90	19	6	76
MDSC-1425	M14×1.0/1.5	25	133.4	8	12.2	3.5	13.4	87	—	19	6	90
MDSC-1425-N	M14×1.0/1.5	25	—	8	—	3.5	—	87	120	19	6	86

Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDSC-2020-1	20	35	6.8 ~ 27	3.2	42,000	-10~+70 (No freezing)
MDSC-2020-2	20	35	17.5 ~ 70	2.0	42,000	-10~+70 (No freezing)
MDSC-2020-3	20	35	48.6 ~ 777	1.2	42,000	-10~+70 (No freezing)
MDSC-2030-1	30	46	9 ~ 36	3.2	55,200	-10~+70 (No freezing)
MDSC-2030-2	30	46	23 ~ 92	2.0	55,200	-10~+70 (No freezing)
MDSC-2030-3	30	46	64 ~ 575	1.2	55,200	-10~+70 (No freezing)
MDSC-2050-1	50	62	10.1 ~ 124	3.5	63,240	-10~+70 (No freezing)
MDSC-2050-2	50	62	18.3 ~ 253	2.6	63,240	-10~+70 (No freezing)
MDSC-2050-3	50	62	55 ~ 496	1.5	63,240	-10~+70 (No freezing)



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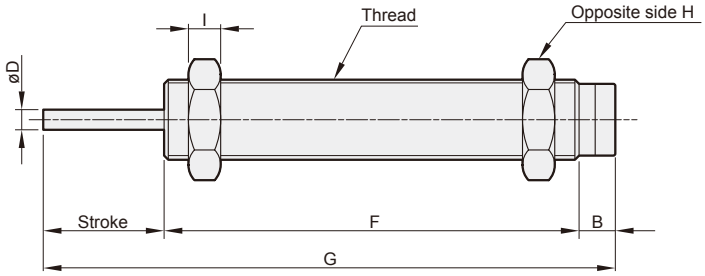


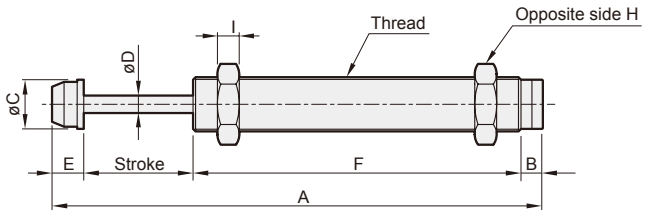
Dimensions

Model	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I	Weight (g)
MDSC-2020	M20×1.5	20	130	9	17.8	5	16	85	—	26	8	200
MDSC-2020-N	M20×1.5	20	—	9	—	5	—	85	114	26	8	196
MDSC-2030	M20×1.5	30	158	9	17.8	5	16	103	—	26	8	221
MDSC-2050	M20×1.5	50	222.5	9	17.8	5	16	147.5	—	26	8	293

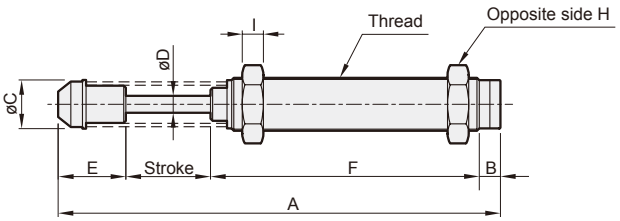
Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDSC-2525-1	25	78	15 ~ 69	3.2	70,200	-10~+70 (No freezing)
MDSC-2525-2	25	78	39 ~ 433	2.0	70,200	-10~+70 (No freezing)
MDSC-2525-3	25	78	108 ~ 1733	1.2	70,200	-10~+70 (No freezing)
MDSC-2540-1	40	122	20 ~ 108	3.5	87,840	-10~+70 (No freezing)
MDSC-2540-2	40	122	50 ~ 381	2.2	87,840	-10~+70 (No freezing)
MDSC-2540-3	40	122	244 ~ 1991	1.0	87,840	-10~+70 (No freezing)
MDSC-2550-1	50	140	20 ~ 124	3.7	100,800	-10~+70 (No freezing)
MDSC-2550-2	50	140	48 ~ 438	2.4	100,800	-10~+70 (No freezing)
MDSC-2550-3	50	140	194 ~ 2286	1.2	100,800	-10~+70 (No freezing)
MDSC-2580-1	80	198	24.7 ~ 99	4	118,800	-10~+70 (No freezing)
MDSC-2580-2	80	198	44 ~ 396	3.0	118,800	-10~+70 (No freezing)
MDSC-2580-3	80	198	176 ~ 1584	1.5	118,800	-10~+70 (No freezing)
MDSC-2725-1	25	78	15 ~ 69	3.2	70,200	-10~+70 (No freezing)
MDSC-2725-2	25	78	39 ~ 433	2.0	70,200	-10~+70 (No freezing)
MDSC-2725-3	25	78	108 ~ 1733	1.2	70,200	-10~+70 (No freezing)
MDSC-3660-1	60	260	57 ~ 231	3.0	124,800	-10~+70 (No freezing)
MDSC-3660-2	60	260	130 ~ 813	2.0	124,800	-10~+70 (No freezing)
MDSC-3660-3	60	260	520 ~ 3250	1.0	124,800	-10~+70 (No freezing)

MDSC-2525
MDSC-2550
MDSC-2725



MDSC-2540
MDSC-3660



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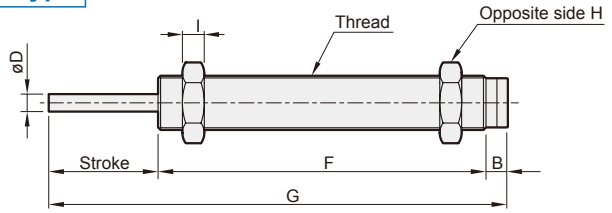
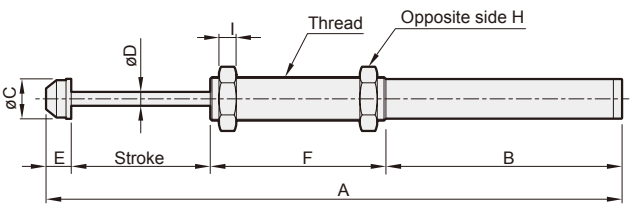


MDSC-2580

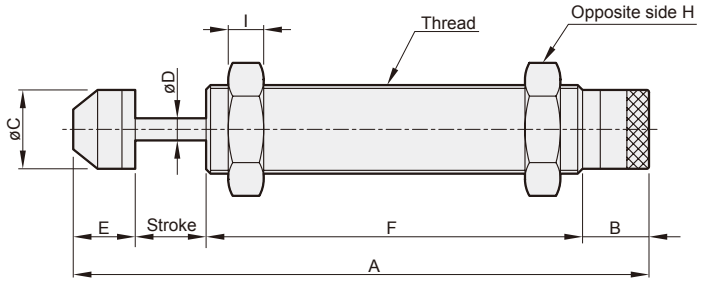


Dimensions

Model	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I	Weight (g)
MDSC-2525	M25×1.5/2.0	25	152.6	10	23	8	16.6	101	—	32	10	341
MDSC-2525-N	M25×1.5/2.0	25	—	10	—	8	—	101	136	32	10	336
MDSC-2540	M25×1.5/2.0	40	211	10	23	8	34	127	—	32	10	430
MDSC-2550	M25×1.5/2.0	50	226.6	10	23	8	16.6	150	—	32	10	430
MDSC-2580	M25×1.5/2.0	80	333.6	137	23	8	16.6	100	—	32	10	578
MDSC-2725	M27×3.0/1.5	25	152.6	10	23	8	14.5	101	—	32	10	335
MDSC-2725-N	M27×3.0/1.5	25	—	10	—	8	—	101	136	32	10	330
MDSC-3660	M36×1.5	60	247	11	36	10	22.5	153.5	—	46	15	1074

Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDFC-1410	10	15	2.9 ~ 120	3.2	27,000	-10~+70 (No freezing)
MDFC-2016	16	28	5.4 ~ 224	3.2	33,600	-10~+70 (No freezing)
MDFC-2020	20	35	6.8 ~ 280	3.2	42,000	-10~+70 (No freezing)
MDFC-2525	25	78	15 ~ 624	3.2	70,200	-10~+70 (No freezing)
MDFC-2550	50	140	27 ~ 1,120	3.2	100,800	-10~+70 (No freezing)
MDFC-2725	25	78	15 ~ 624	3.2	70,200	-10~+70 (No freezing)



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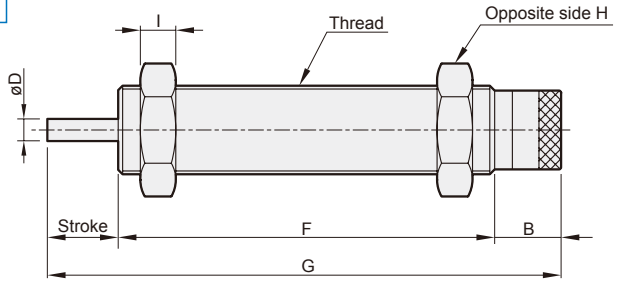


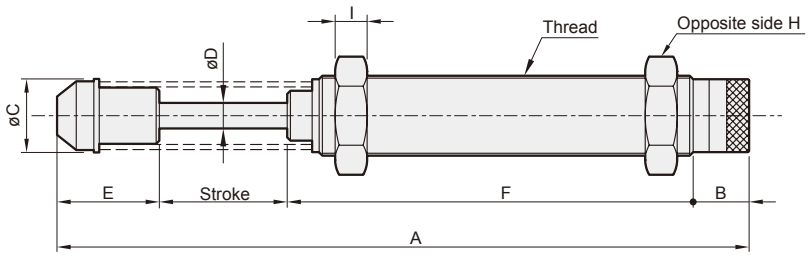
Dimensions

Model	Thread	Stroke (mm)	A	B	C	D	E	F	H	I	Weight (g)
MDFC-1410	M14×1.0 / 1.5	10	101.9	11.5	12.2	3.5	13.4	67	19	6	81
MDFC-1410-N	M14×1.0 / 1.5	10	88.5	11.5	–	3.5	–	67	19	6	78
MDFC-2016	M20×1.5	16	132	15	17.8	5	16	85	26	8	218
MDFC-2016-N	M20×1.5	16	116	15	–	5	–	85	26	8	214
MDFC-2020	M20×1.5	20	136	15	17.8	5	16	85	26	8	219
MDFC-2020-N	M20×1.5	20	120	15	–	5	–	85	26	8	215
MDFC-2525	M25×1.5 / 2.0	25	158.1	15.5	23	8	16.6	101	32	10	361
MDFC-2525-N	M25×1.5 / 2.0	25	141.5	15.5	–	8	–	101	32	10	356
MDFC-2550	M25×1.5 / 2.0	50	232.1	15.5	23	8	16.6	150	32	10	470
MDFC-2725	M27×1.5 / 3.0	25	158.1	15.5	23	8	16.6	101	32	6.5	355
MDFC-2725-N	M27×1.5 / 3.0	25	141.5	15.5	–	8	–	101	32	6.5	350

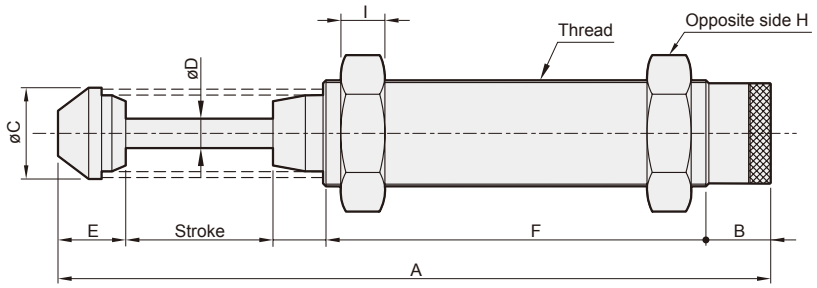
Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDFC-2540	40	122	23.8 ~ 976	3.2	87,840	-10~+70 (No freezing)
MDFC-3625	25	110	21 ~ 880	3.2	52,800	-10~+70 (No freezing)
MDFC-3650	50	220	43 ~ 1,760	3.2	105,600	-10~+70 (No freezing)

MDFC-2540



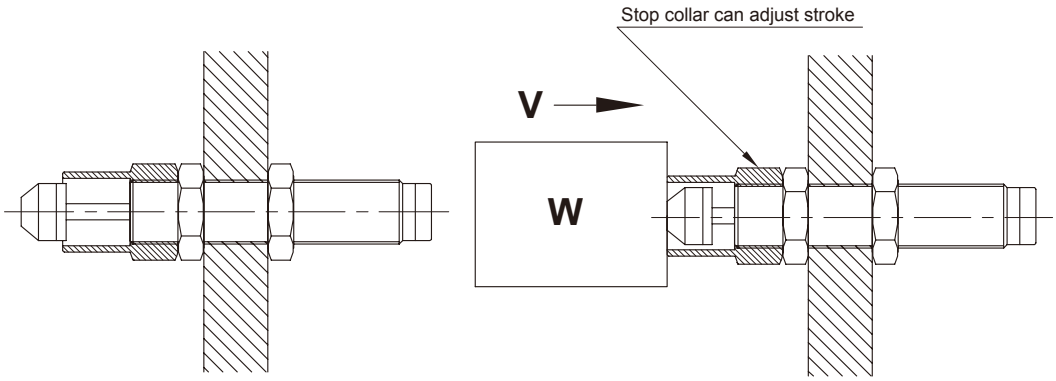
MDFC-3625
MDFC-3650



Dimensions

Model	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I	Weight (g)
MDFC-2540	M25×1.5/2.0	40	216.5	15.5	23	8	34	127	–	32	10	460
MDFC-3625	M36×1.5	25	186	18	36	10	22.5	106.5	14	46	15	974
MDFC-3650	M36×1.5	50	248	18	36	10	22.5	138	19.5	46	15	1144

Installation of stop collar and nut



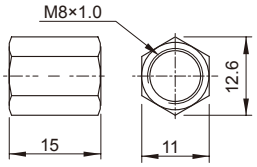
Before Impact

After Impact

Accessories

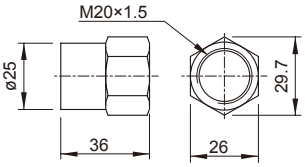
STC-08

Match
MDSC-0806



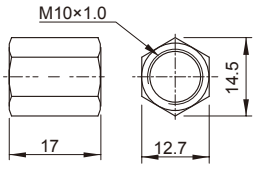
STC-20

Match
MDSC-2020
MDSC-2050
MDFC-2016
MDFC-2020



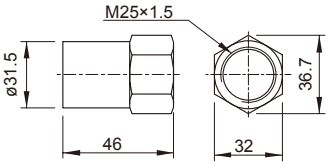
STC-10

Match
MDSC-1008



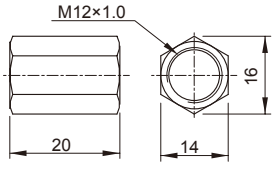
STC-25

Match
MDSC-2525
MDFC-2525



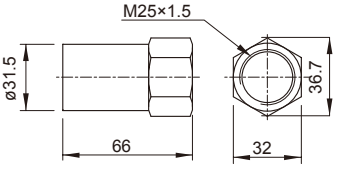
STC-12

Match
MDSC-1210



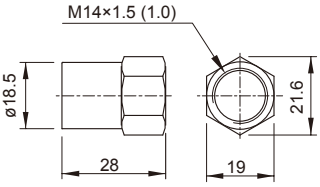
STC-25L

Match
MDSC-2540
MDSC-2550
MDSC-2580
MDFC-2540
MDFC-2550



STC-14

Match
MDSC-1412
MDSC-1415
MDFC-1410



STC-36

Match
MDSC-3660
MDFC-3625
MDFC-3650