● : Standard, ◎: Option, : Not available

Variation	Model No. / JIS symbol	Bore size (mm)	Stroke length (mm)									Max. stroke length (mm)		Mounting style				Cushion				Option												Switch	Page
			200	300	400	500	600	700	800	900	1000			Basic type	Axial foot type	Axial foot type	Axial foot type	Both sides cushion	R side cushioned	L side cushioned	No cushion	Adjustable full-stroke both sides shock absorber	Adjustable full-stroke R side shock absorber	Adjustable full-stroke L side shock absorber	Installing adjustable full-stroke bracket later	Floating joint	Thin floating joint	Intermediate support bracket 00/LB	Intermediate support bracket LB1	C mount bracket	Larger size of table set screw	Height adjustment plate		
														00	LB	LB1	LJ	B	R	L	N	A	A1	A2	A3	Y	Y1	L *	N *	C	H	U		
Double acting/ standard type	SRL2 	12, 16, 20	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
		25	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎			
		32	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎		◎	◎	◎	◎	◎		◎	◎	1488
		40, 50, 63	●	●	●	●	●	●	●	●	●	5000		●	●			●	●	●	●	◎	◎	◎		◎	◎	◎		◎			◎		
		80, 100	●	●	●	●	●	●	●	●	●	5000		●	●			●	●	●	●	◎	◎	◎		◎		◎					◎		
Double acting/ resin guide type	SRL2-G 	12, 16, 20	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎	◎			◎	◎		◎	◎		
		25	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎	◎			◎	◎			◎		
		32	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎				◎	◎			◎	◎	1502
		40, 50, 63	●	●	●	●	●	●	●	●	●	5000		●	●			●	●	●	●	◎	◎	◎				◎				◎		
		80, 100	●	●	●	●	●	●	●	●	●	5000		●	●			●	●	●	●	◎	◎	◎				◎				◎		
Double acting/ position locking function	SRL2-Q 	12, 16, 20	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎	◎	◎		◎	◎		◎	◎		
		25	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎	◎	◎		◎	◎			◎		
		32	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎		◎		◎	◎			◎	◎	1516
		40, 50, 63	●	●	●	●	●	●	●	●	●	5000		●	●			●	●	●	●	◎	◎	◎		◎		◎				◎		
		80, 100	●	●	●	●	●	●	●	●	●	5000		●	●			●	●	●	●	◎	◎	◎		◎		◎				◎		
Double acting/ resin guide type with position locking function	SRL2-GQ 	12, 16, 20	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎	◎			◎	◎		◎	◎		
		25	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎	◎			◎	◎			◎		
		32	●	●	●	●	●	●	●	●	●	5000		●	●	●		●	●	●	●	◎	◎	◎				◎	◎			◎	◎	1526
		40, 50, 63	●	●	●	●	●	●	●	●	●	5000		●	●			●	●	●	●	◎	◎	◎				◎				◎		
		80, 100	●	●	●	●	●	●	●	●	●	5000		●	●			●	●	●	●	◎	◎	◎				◎				◎		
Double acting/ full cowling type	SRL2-J 	25	●	●	●	●	●	●	●	●	●	3000		●			●	●	●	●	●	◎	◎	◎	◎	◎		◎	◎					
		32	●	●	●	●	●	●	●	●	●	3000		●			●	●	●	●	●	◎	◎	◎		◎		◎	◎				◎	1537
		40, 50, 63	●	●	●	●	●	●	●	●	●	3000		●			●	●	●	●	●	◎	◎	◎		◎		◎						

Safety Precautions

Always read before starting use

Refer to Intro 45 for general details on the cylinder, and to Intro 52 for details on the cylinder switch.

Rodless cylinder SRL2 Series

CAUTION Design & Selection

1 Take care when designing the braking control circuit.

With a slit rodless cylinder such as the SRL2, some air leaks due to the structure, so braking cannot be controlled with the all ports closed 3-position valve, and it may not be possible to hold the table stop position. Use a double-sided pressurized control circuit having a PAB connection 3-position valve.

If air pressure drops once and is then pressurized again deenergized, the table may move and the origin deviate.

2 Basic circuit diagram

• For horizontal load

If piping is as shown in Fig. 1, equal pressure is applied on both sides of the piston when stopped, and the table does not pop out when restarting.

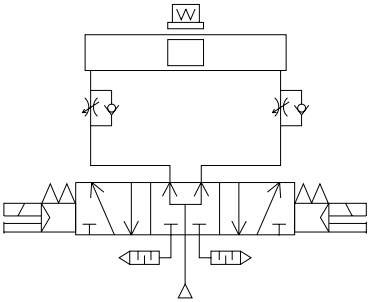


Fig. 1

• For vertical load

If a vertical load is moved as shown in Fig. 2, the table moves in the direction of the load. Install a regulator with a check valve to reduce thrust in the load direction and balance the load.

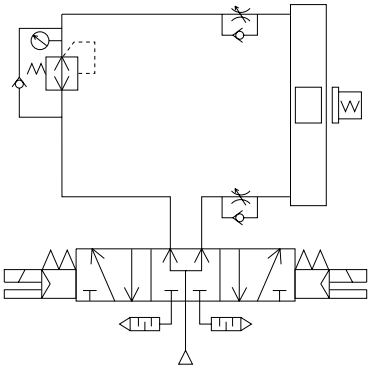


Fig. 2

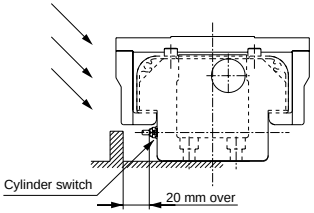
3 The cylinder cannot be used where welding spatter, etc., may contact it. Use a full cowling rodless cylinder (SRL2-J).

4 Precautions for full cowling (SRL2-J)

When installing a wall to keep dirt or coolant away from the device, be sure the wall is nonmagnetic (aluminum, brass, etc.).

For a magnetic material (steel plate, etc.), separate the wall at least 20 mm from the switch edge.

(Same clearance for all diameters)

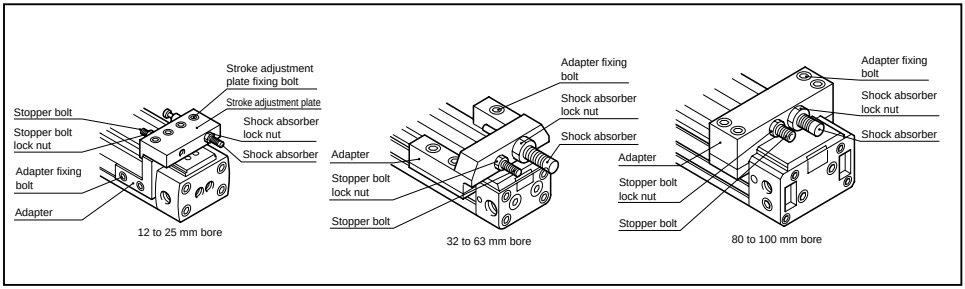


5 With a slit-rodless cylinder, such as the SRL2, air leaks but does not affect speed control.

⚠ WARNING Installation & Adjustment

1 Adjusting the stroke adjustment unit

1. SRL2 Series



(1) Moving the stroke adjustment unit

The stroke adjustment unit is moved by loosening the adapter fixing bolt (adapter fixing bolt and stroke adjustment plate fixing bolt for 12 to 25 mm bore).

(2) Fixing the stroke adjustment unit

After moving the stroke adjustment unit to the required position, tighten and fix the adapter fixing bolt (adapter fixing bolt and stroke adjustment plate fixing bolt for 12 to 25 mm bore) using values in Table 8. If tightened at a lower value, the stroke adjustment unit may deviate.

Table 8 Tightening torque for adapter fixing bolt and stroke adjustment plate fixing bolt

Tightening torque / Model	Adapter fixing bolt (N·cm)	Stroke adjustment plate fixing bolt (N·cm)
SRL2-12/16	100 to 120	50 to 70
SRL2-20	250 to 270	
SRL2-25	520 to 560	250 to 270
SRL2-32	2200 to 2400	-
SRL2-40	4400 to 4800	-
SRL2-50/63	7700 to 8300	-
SRL2-80/100	10000 to 11000	-

(3) Adjusting the stroke with a stopper bolt

With 12 to 20 mm bore, clearance between the table and stroke adjustment plate is small, and fingers may be pinched during adjustment. The stroke must basically be adjusted by moving the stroke adjustment unit.

Loosen the stopper bolt lock nut, turn the stopper bolt, and adjust the stroke.

After adjusting the stroke, tighten and fix the stopper bolt lock nut using values in Table 9.

(4) Adjusting the shock absorber

Shock absorber absorbed energy is adjusted by changing the working stroke of the shock absorber.

Adjust the shock absorber working stroke by loosening the shock absorber lock nut and turning the shock absorber. After adjustment, tighten and fix the shock absorber lock nut using values in Table 9.

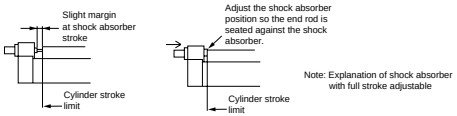
Table 9 Tightening torque for stopper bolt lock nut and shock absorber lock nut

Tightening torque / Model	Stopper bolt lock nut (N·cm)	Shock absorber lock nut (N·cm)
SRL2-12/16	110 to 120	130 to 180
SRL2-20	250 to 270	290 to 390
SRL2-25	880 to 950	450 to 600
SRL2-32	2200 to 2400	750 to 1000
SRL2-40	4400 to 4800	2200 to 3000
SRL2-50	7700 to 8300	5500 to 7000
SRL2-63	20000 to 21600	5500 to 7000
SRL2-80/100	21500 to 23500	10000 to 13000

(5) Precautions for use

• The shock absorber absorbs rated energy with the rated stroke. When the product is shipped, the shock absorber is installed with a slight margin to the stroke at the cylinder stroke limit.

Absorbed energy is smaller than allowable energy absorption for the individual shock absorber (refer to Table 10), so if rated absorbed energy is required, adjust so the full stroke for the shock absorber is used.



• Allowable energy absorption differs with collision speed, so if collision speed is 2000 mm/s, check that one-third of the maximum energy absorption in Table 11 is not exceeded. If collision speed is 1000 mm/s, check that one-half of the maximum energy absorption is not exceeded.

Table 10 Full stroke adjustable shock absorber specifications (defaults)

Type	Absorbed energy (J)	Effective stroke (mm)
SRL2-12/16	2.4	5.5
SRL2-20	5.7	7
SRL2-25	10	9
SRL2-32	18	13
SRL2-40	50	16.5
SRL2-50/63	86	21
SRL2-80/100	143	25

Discontinue

Pneumatic Components

Safety Precautions

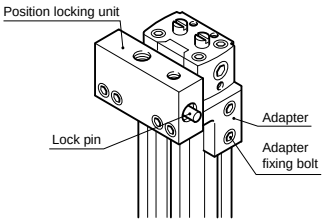
Always read before starting use

Refer to Intro 45 for general details on the cylinder, and to Intro 52 for details on the cylinder switch.

Rodless cylinder SRL2 Series

WARNING Installation & Adjustment

2. SRL2-Q Series (with position locking)



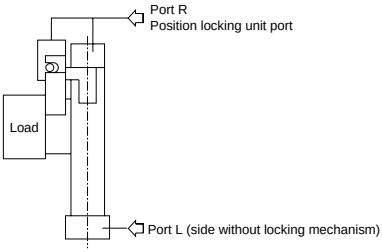
- The positioning locking unit is moved by loosening the adapter fixing bolt.
  Use the type with a shock absorber (A, A1, A2).
  If the stroke is finely adjusted with the shock absorber, the position locking unit deviates and the position cannot be completely locked. Finely adjust stroke with the adapter fixing bolt.
- After moving to the required position, tighten and fix the adapter fixing bolt using the values below. The position locking unit may deviate if the bolt is not tightened to these values.

Model	Tightening torque for adapter fixing bolt (N·cm)
SRL2-Q-12/16	100 to 120
SRL2-Q-20	250 to 280
SRL2-Q-25	520 to 560
SRL2-Q-32	2200 to 2400
SRL2-Q-40	4400 to 4800
SRL2-Q-50/63	7700 to 8300
SRL2-Q-80/100	10000 to 11000

2 Precautions for cylinder with position locking (SRL2-Q)

(Piping)

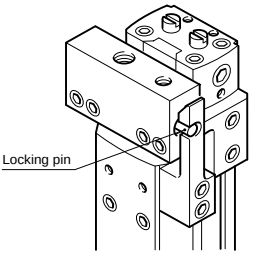
- Piping to the position locking unit is required.



- Branch piping to the rodless cylinder R side using a tee union, etc., and pipe to the position locking unit with similar piping.

(Manual release)

- Release the position locking pin with a rod-shaped object.
  Supply pressure to port L to check that load is not applied to the locking mechanism before releasing the lock.
  If both ports R and L are exhausted and pressure is supplied to port R while the piston is locked, the lock is released and the table may suddenly move, creating a hazard.



(Valve)

- If the cylinder is held while pressure is applied on the locking mechanism, the locking pin may dislocate and create a very hazard. Do not use a 3-position closed center or PAB connection valve.
- If back pressure is applied while locked, the lock may be released. Use a discrete valve, or use an individual exhaust manifold.
- If dropping speed is increased with a quick exhaust valve, the cylinder may move faster than the locking pin and prevent proper release.
  Use a separate valve for controlling the position locking section, etc., to provide correct timing.

⚠ CAUTION Installation & Adjustment

1 Avoid electric welding after installing the rodless cylinder.

If the current flows into the cylinder and generates sparks between the dust-proof belt and cylinder tube, the dust-proof belt may be damaged.

2 If a unit with excessive inertia, etc., is moved, the cylinder may be damaged or faulty operation occur. Use only within the allowable range.

3 Do not apply strong impact or excessive moment to the table.

4 When connecting to a load with external guide mechanism, align the center carefully.

- The longer the stroke, the greater the shaft center may deviate. Carefully consider connection (floating) so deviation is absorbed.

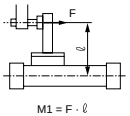
5 Check that moment, including inertia generated when moving or stopping the load, does not exceed the allowable load, or damage may result.

(Overhang is large)

- If overhang is large and the cylinder is stopped at both ends with the piston, the bending moment functions due to load inertia even within internal cushion energy absorption. If kinetic energy is large and an external cushion, etc., is used, try contact with the workpiece center of gravity when possible.

(Using an external stopper)

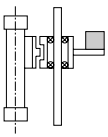
- When selecting an external stopper, consider the bending moment generated by cylinder thrust.
- Moment that functions when stopping with external stopper



M3 = F · ℓ
F : Cylinder thrust
ℓ : Distance from cylinder center to stopper

(Using an external guide)

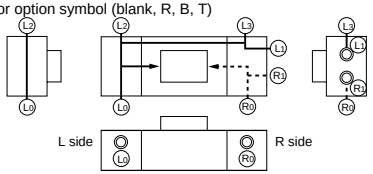
- When an external guide is installed, if the center is not aligned, movement is not smooth and resistance caused by twisting functions as moment. Configure connection so misalignment is absorbed.
- Example of using guide



6 Piping port direction and operating direction

Tube bore of 12 to 20 mm

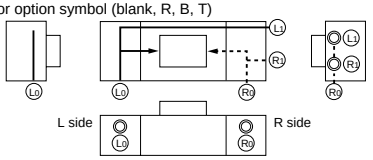
- For option symbol (blank, R, B, T)



(R) indicates the R side pressure port, and (L) indicates the L side pressure port. Before shipping, all plugs other than 1 each at (R) and (L) are sealed with plugs. Pipes are connected to other ports by removing plugs. Option symbols (D, S) cannot be manufactured.

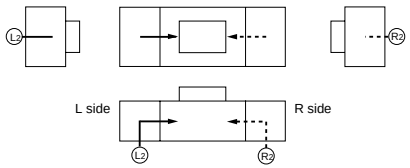
Tube bore of 25 to 63 mm

- For option symbol (blank, R, B, T)



(R) indicates the R side pressure port, and (L) indicates the L side pressure port. Before shipping, all plugs other than 1 each at (R) and (L) are sealed with plugs. Pipes are connected to other ports by removing plugs. Note that pipes cannot be connected to the bottom. Select options (D, S) if such connection is necessary.

- For option symbols (D, S) (bottom piping)



(R) indicates the R side pressure port, and (L) indicates the L side pressure port. There are no ports other than (R_2) or (L_2), so pipes cannot be connected.

Discontinue

Pneumatic Components

Safety Precautions

Always read before starting use

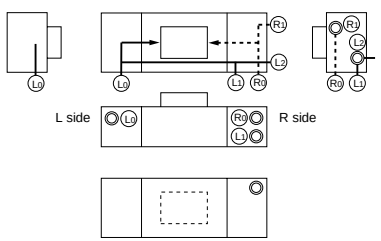
Refer to Intro 45 for general details on the cylinder, and to Intro 52 for details on the cylinder switch.

Rodless cylinder SRL2 Series

CAUTION Installation & Adjustment

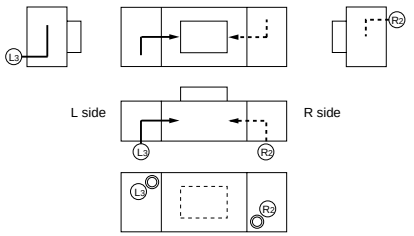
Tube bore of 80 to 100 mm

• For option symbol (blank, R, B, T)



(R) indicates the R side pressure port, and (L) indicates the L side pressure port. Before shipping, all plugs other than 1 each at (R) and (L) are sealed with plugs. Pipes are connected to other ports by removing plugs.

• For option symbols (D, S) (bottom piping)

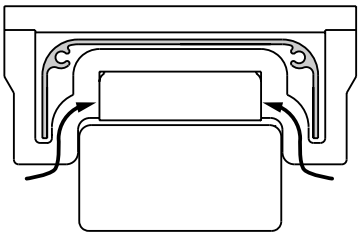


There are no ports other than (R_2) or (L_2), so pipes cannot be connected.

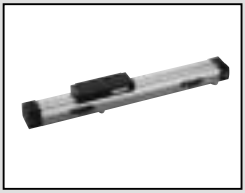
CAUTION During use & maintenance

1 Precautions for full cowling (SRL2-J)

- Suspended particles such as fiber, feathers, or powder may pass through the table adapter passage under the cover and adhere to the cylinder, leading to operation faults.
- If coolant (oil) or cutting chips scatter with force, or if they scatter from an inclined direction, provide another cover on the cylinder and sides, etc.
- Clearance of 2 to 3 mm exists between the movable part (table adapter) and cover. If dirt scatters, it may enter clearance.
- Avoid installing the SRL2-J in reverse. Dirt may accumulate or operation be inhibited by accumulated fluid.
- Regularly remove all dirt from the top and inside of the cover. Failure to do so may lead to operation faults.
- This product provides clearance under the cover for passing the table adapter through. Note that dirt may enter the cover.



<The drawing shows the entry passage.>



Discontinue

Rodless cylinder, double acting

SRL2 Series

• Bore size: 12, 16, 20, 25, 32 mm bore
40, 50, 63, 80, 100 mm bore

JIS symbol

CAD DATA AVAILABLE.

Specifications

Descriptions		SRL2								
Bore size	mm	12 dia.	16 dia.	20 dia.	25 dia.	32 dia.	40 dia.	50 dia.	63 dia.	80 dia.	100 dia.
Actuation		Double acting									
Working fluid		Compressed air									
Max. working pressure	MPa	0.7									
Min. working pressure (Note 2)	MPa	0.2				0.1			0.05		
Withstanding pressure	MPa	1.05									
Ambient temperature	°C	5 to 60									
Port size		M5		Rc1/8		Rc1/4			Rc3/8		Rc1/2
Stroke length tolerance	mm	$^{+2.0}_{0}$ (to 1000)				$^{+2.5}_{0}$ (to 3000)			$^{+3.0}_{0}$ (to 5000)		
Working piston speed	mm/s	50 to 2000 (standard port piping) (Note 1)									
Cushion		Air cushion									
Lubrication		Not required (turbine oil Class 1 ISOVG32 should be used. Continue to lubricate once lubricated.)									

Note 1 : Working piston speed, when using with common port piping, may vary depending on stroke length. Consult with CKD.
Note 2 : For low pressure specifications "LP" (12 to 20 mm bore), 0.1MPa.

Allowable energy absorption

Bore size (mm)	Cushioned		No cushion	With shock absorber (initial set value)	
	Allowable energy absorption (J)	Cushion stroke length (mm)	Allowable energy absorption (J)	Absorbed energy (J)	Effective stroke length (mm)
12 dia.	0.03	14.5	0.003	2.4	5.5
16 dia.	0.22	19.2	0.007	2.4	5.5
20 dia.	0.59	22.2	0.010	5.7	7
25 dia.	1.40	20.9	0.015	10	9
32 dia.	2.57	23.5	0.030	18	13
40 dia.	4.27	23.9	0.050	50	16.5
50 dia.	9.13	24.9	0.072	86	21
63 dia.	17.4	29.6	0.138	86	21
80 dia.	40	45.8	0.393	143	25
100 dia.	67	45.8	0.622	143	25

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
12 dia. 16 dia. 20 dia. 25 dia. 32 dia. 40 dia. 50 dia. 63 dia. 80 dia. 100 dia.	200, 300 400, 500 600, 700 800, 900 1000	5000	The value may vary depending on switch model No. and installation quantity. (Refer to the below table about details.)

• Custom stroke length is available per 1 mm increment.

M type switch installation quantity and minimum stroke length (mm)

Switch quantity	1		2		3		4		5		6		7		8		9	
Switch model No. / Bore size (mm)	M*V	M*H	M*V	M*H	M*V	M*H	M*V	M*H	M*V	M*H	M*V	M*H	M*V	M*H	M*V	M*H	M*V	M*H
12 dia.	10	10	30	45	60	90	90	135	120	180	150	225	180	270	210	315	240	360
16 dia.	10	10	30	45	60	90	90	135	120	180	150	225	180	270	210	315	240	360
20 dia.	10	10	30	45	60	90	90	135	120	180	150	225	180	270	210	315	240	360
25 dia.	10	10	30	45	60	90	90	135	120	180	150	225	180	270	210	315	240	360
32 dia.	10	10	30	45	60	90	90	135	120	180	150	225	180	270	210	315	240	360
40 dia.	10	10	30	45	60	90	90	135	120	180	150	225	180	270	210	315	240	360
50 dia.	15	15	30	45	60	90	90	135	120	180	150	225	180	270	210	315	240	360
63 dia.	15	15	30	45	60	90	90	135	120	180	150	225	180	270	210	315	240	360
80 dia.	25		50		100		150		200		250		300		350		400	
100 dia.	25		50		100		150		200		250		300		350		400	

T type switch installation quantity and minimum stroke length (mm)

Switch quantity	1		2		3		4		5		6		7		8		9	
Switch model No. / Bore size (mm)	T*Y*V	T*Y*H	T*Y*V	T*Y*H	T*Y*V	T*Y*H	T*Y*V	T*Y*H	T*Y*V	T*Y*H	T*Y*V	T*Y*H	T*Y*V	T*Y*H	T*Y*V	T*Y*H	T*Y*V	T*Y*H
12 dia.	5	5	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400
16 dia.	5	5	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400
20 dia.	5	5	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400
25 dia.	10	10	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400
32 dia.	10	10	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400
40 dia.	10	10	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400
50 dia.	10	10	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400
63 dia.	10	10	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400
80 dia.	15	15	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400
100 dia.	15	15	45	50	90	100	135	150	180	200	225	250	270	300	315	350	360	400

Switch specifications

• One color/bi-color indicator

Descriptions	Proximity 2 wire		Proximity 3 wire	
	M2V, M2H	M2WV (2 color indicator)	M3V, M3H	M3WV (2 color indicator)
Applications	Programmable controller		Programmable controller, relay, IC circuit, small solenoid valve	
Power voltage	-		DC4.5 to 28V	DC10 to 28V
Load voltage	DC10 to 30V		DC30V or less	DC30V or less
Load current	5 to 30mA		200mA or less	150mA or less
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)

Descriptions	Reed 2 wire			
	M0V, M0H		M5V, M5H	
Applications	Programmable controller, relay		Programmable controller, relay, IC circuit (without indicator light), serial connection	
Power voltage	-		-	
Load voltage	DC12/24V	AC110V	DC5/12/24V	AC110V or less
Load current	5 to 50mA	7 to 20mA	50mA or less	20mA or less
Light	LED (ON lighting)		Without indicator light	

Note 1: For MO * switch, if load current range is within 7 to 20mA, this switch can be used with AC24V and AC48V.
Note 2: Please refer to Ending 1 about other switch specifications.

• With preventive maintenance output

Descriptions		Proximity 3 wire	Proximity 4 wire	Proximity 3 wire	Proximity 4 wire
		T2YF H/V	T3YF H/V	T2YM H/V	T3YM H/V
Applications		Programmable controller	Programmable controller, relay	Programmable controller	Programmable controller, relay
Light	Installation position adjustment	Red/green LED (ON lighting)			
	Preventive maintenance output	-		Yellow LED (ON lighting)	
Output	Power voltage	-	DC10 to 28V	-	DC10 to 28V
	Load voltage	DC10 to 30V	DC30V	DC10 to 30V	DC30V or less
	Load current	DC5 to 20mA	DC50mA or less	DC5 to 20mA	DC50mA or less
	Internal voltage drop	4V or less	0.5V or less	4V or less	0.5V or less
	Current consumption	-	10mA or less	-	10mA or less
	Leakage current	1mA or less	10 micron A or less	1.2mA or less	10 micron A or less
Preventive maintenance output	Load voltage	DC30V or less			
	Load current	DC20mA or less	DC50mA or less	DC5 to 20mA	DC50mA or less
	Internal voltage drop	0.5V or less		4V or less	2.4V or less
	Leakage current	10 micron A or less			
	Signal holding (Ton)	-	-	0.4 ±0.2sec after installation position adjustment red LED turned on.	
	Signal release (Toff)	-	-	0.7 ±0.2sec after installation position adjustment red LED turned on.	

• Strong magnetic field

Descriptions	Proximity switch
	T2YD
Applications	Programmable controller
Light	Red/green LED (ON lighting)
Load voltage	DC24V ±10%
Load current	5 to 20mA
Internal voltage drop	6V or less
Leakage current	1.0mA or less

Cylinder mass

Unit: kg

Bore size (mm)	Mass when stroke length 0mm				Additional mass per St = 100mm
	Basic type (00)	Foot type (LB)	Foot type (LB1)	Mass per switch (including bracket.)	
12 dia.	0.24	0.25	0.26	0.02	0.10
16 dia.	0.32	0.33	0.35		0.13
20 dia.	0.52	0.54	0.58		0.18
25 dia.	1.0	1.1	1.1		0.30
32 dia.	1.5	1.6	1.7		0.39
40 dia.	2.4	2.5	-		0.56
50 dia.	3.6	3.7	-		0.78
63 dia.	6.2	6.5	-		1.17
80 dia.	18.4	19.0	-		2.32
100 dia.	26.2	27.2	-		3.38

Discontinue

How to order

Without switch

SRL2 - 00 - 12 B - 200 ——— B

With switch

SRL2 - 00 - 12 B - 200 - MOH - R - B

Ⓐ Mounting style Note 1

Ⓑ Bore size

Ⓒ Cushion

Ⓓ Stroke length

Ⓔ Switch model No. Note 2

Ⓕ Switch quantity

Ⓖ Option Note 3, Note 4 Note 5, Note 6 Note 7

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
LB	Axial foot type
LB1	Axial foot type
Ⓑ Bore size (mm)	
12	12 dia.
16	16 dia.
20	20 dia.
25	25 dia.
32	32 dia.
40	40 dia.
50	50 dia.
63	63 dia.
80	80 dia.
100	100 dia.
Ⓒ Cushion	
B	Both sides cushion
R	R side cushion
L	L side cushion
N	No cushion
Ⓓ Stroke length (mm)	
200, 300, 400, 500, 600, 700, 800, 900, 1000	

Ⓔ Switch model No.

Axial lead wire	Radial lead wire	Contact	Display	Lead wire
M0H *	M0V *	Reed	1 color indicator	2 wire
M5H *	M5V *	Reed	1 color indicator	2 wire
M2H *	M2V *	Proximity	1 color indicator	
-	M2WV *	Proximity	2 color indicator	2 wire
M3H *	M3V *	Proximity	1 color indicator	
-	M3WV *	Proximity	2 color indicator	3 wire
T2YFH *	T2YFV *	Proximity	With preventive maintenance output	3 wire
T3YFH *	T3YFV *	Proximity	With preventive maintenance output	4 wire
T2YMH *	T2YMV *	Proximity	With preventive maintenance output	3 wire
T3YMH *	T3YMV *	Proximity	With preventive maintenance output	4 wire
T2YD *	-	Proximity	Strong magnetic field proof switch	2 wire
T2YDT *	-	Proximity	Strong magnetic field proof switch	2 wire

* Lead wire length	
Blank	1m (standard)
3	3m (option)
5	5m (option)

Ⓕ Switch quantity	
R	One on R side
L	One on L side
D	Two
T	Three
4	4 (When more than 4 pieces, indicate switch quantity.)

Ⓖ Option

	Bore size (mm)	12	16	20	25	32	40	50	63	80	100
A	Adjustable full-stroke both ends with shock absorbers	●	●	●	●	●	●	●	●	●	●
A1	Adjustable full-stroke R end only, with shock absorber	●	●	●	●	●	●	●	●	●	●
A2	Adjustable full-stroke L end only, with shock absorber	●	●	●	●	●	●	●	●	●	●
A3	Adjustable full-stroke bracket later installation	●	●	●	●						
Y	Floating joint	●	●	●	●	●	●	●	●	●	●
Y1	Thin floating joint	●	●	●	●	●	●	●	●		
L *	Intermediate support bracket (for 00, LB)	●	●	●	●	●	●	●	●	●	●
N *	With intermediate support bracket (LB1)	●	●	●	●	●					
C	C mount bracket	●	●	●	●	●	●	●	●		
H	Select larger size of table set screw	●	●	●							
U	Height adjustment plate	●	●	●	●	●	●	●	●	●	●
LP	Low pressure specifications	●	●	●							
Blank	Port position F, Cushion needle position F (standard)	●	●	●	●	●	●	●	●	●	●
R	Port position R, Cushion needle position F (common port)	●	●	●	●	●	●	●	●	●	●
B	Port position F, Cushion needle position B	●	●	●	●	●	●	●	●	●	●
T	Port position R, Cushion needle position B (common port)	●	●	●	●	●	●	●	●	●	●
D	Port position D, Cushion needle position F				●	●	●	●	●	●	●
S	Port position D, Cushion needle position D					●	●	●	●	●	●
X	Port position F, Cushion needle position F (common port)									●	●

⚠Cautions for model No. selection

Note 1: When 12, 16, 20, 25, 32 bore size and option symbol "R" and "T", mounting style "00" or "LB1" is provided. (For option symbol "R" and "T", mounting style "LB" is not available because cannot be piped.)

Note 2: Available other than listed Ⓔ switch model No. (custom order)
Please refer to Ending 1 about details.

Note 3: For L * and N *, * mark shows set quantity. When 2 sets are necessary, indicate as "L2" (for LB), or "N2" (for LB1). Two/set

Note 4: Please refer to dimensions on Page 1496 to 1501 about ports, and cushion needle position indicating symbols.

Note 5: For standard type of 12 to 25 mm, adjustable full-stroke bracket cannot be installed later. "A3" means the option that a mounting plate nut is installed to install an adjustable full-stroke bracket later.

Note 6: For "H", nominal designation of screw thread of 12, 16 dia. is "M4", while nominal designation of screw thread of 20 dia. is "M5".

Note 7: Refer to "optional combination table" on the following page about optional combination.

Note 8: Copper and PTFE free specifications are provided as standard.

<Example of model number>

SRL2-00-12B-200-M0H-R-B

Model: Rodless cylinder

Ⓐ Mounting style : Basic type
Ⓑ Bore size : 12 mm
Ⓒ Cushion : Both sides cushion
Ⓓ Stroke length : 200 mm
Ⓔ Switch model No : Reed switch M0H, lead wire length 1m
Ⓕ Switch quantity : One on rod side
Ⓖ Option : Port position F, cushion needle position B

Optional combination table

● : Combination available ■ : Combination not available

Option	Symbol	Adjustable full-stroke both ends with shock absorbers	Adjustable full-stroke R end only, with shock absorber	Adjustable full-stroke L end only, with shock absorber	Adjustable full-stroke bracket later installation	Floating joint	Thin type floating joint	Intermediate support bracket (for 00, LB)	Intermediate support bracket (LB1)	C mount bracket	Select larger size of table set screw	Height adjustment plate	Low pressure specifications	Port position F, cushion needle position F (standard)	Port position R, cushion needle position F (common port)	Port position F, cushion needle position B	Port position R, cushion needle position B (common port)	Port position D, cushion needle position F	Port position D, cushion needle position D	Port position F, cushion needle position F (common port)
	Symbol	A	A1	A2	A3	Y	Y1	L *	N *	C	H	U	LP	Blank	R	B	T	D	S	X
Option	A		■	■	■	●	●	●	●	■	●	●	●	●	●	●	●	●	●	●
	A1	■		■	■	●	●	●	●	■	●	●	●	●	●	●	●	●	●	●
	A2	■	■		■	●	●	●	●	■	●	●	●	●	●	●	●	●	●	●
	A3	■	■	■		●	●	●	●	■	●	●	●	●	●	●	●	●	●	■
	Y	■	■	■	■		■	●	●	■	■	■	●	●	●	●	●	●	●	●
	Y1	■	■	■	■	■		●	●	■	■	■	●	●	●	●	●	●	●	■
	L *	■	■	■	■	■	■		■	■	●	●	●	●	●	●	●	●	●	●
	N *	■	■	■	■	■	■	■		■	●	●	●	●	●	●	●	●	●	■
	C	■	■	■	■	■	■	■	■		■	●	●	●	●	●	●	●	●	■
	H	■	■	■	■	■	■	■	■	■		■	●	●	●	●	●	●	●	■
	U	■	■	■	■	■	■	■	■	■	■		●	●	●	●	●	●	●	●
	LP	■	■	■	■	■	■	■	■	■	■	■		●	●	●	●	●	●	●
	Blank	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■
	R	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■
	B	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■
	T	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■
	D	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■
	S	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■
	X	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

Note 1: Some combination is impossible depending on bore size. Confirm the conditions of options of "how to order" Ⓖ on the previous page.
Note 2: When port position D, LB1 is not available. (25, 32 mm bore)

Discontinue

How to order switch

(Please refer to Page 1562 to 1564 about components.)

• Switch main body + mounting bracket (Note 1)

SRL2 - M0H * (E)

Switch model No.

• Switch only

SW - M0H * (E)

Switch model No.

* Lead wire length	
Blank	1m (standard)
3	3m (option)
5	5m (option)

* mark indicates lead wire length.

• Mounting bracket (Note 2)

• M type switch

SRL2 - M

• T type switch

SRL2 - T

• Lead wire holder (Note 3)

SRL2 - MH

Note 1. Switch main body + mounting bracket set doesn't include any lead wire holder. When a lead wire holder is necessary, place an order separately.
Note 2. M type switch bracket is different from T type switch.
Note 3: Lead wire holder is 10 pieces/set.

• How to order discrete shock absorber

SRL2 - Ⓑ Bore size - NCK

(One shock absorber, one shock absorber fixing hex. nut)

(Note) Shock absorber fixing hex. nut for SRL2- 40 is a custom part.

Applicable shock absorber model No.

Model	Shock absorber model No.
SRL2-12	NCK-0.3-C
SRL2-16	NCK-0.3-C
SRL2-20	NCK-0.7-C
SRL2-25	NCK-1.2
SRL2-32	NCK-2.6
SRL2-40	NCK-7
SRL2-50	NCK-12
SRL2-63	NCK-12
SRL2-80	NCK-20
SRL2-100	NCK-20

• How to order discrete C mount bracket (for 12 to 63 mm bore)

SRL2 - ⒷBore size - C

(C mount bracket, 4 mounting bolts)

• How to order floating joint set

SRL2 - ⒷBore size - Y

(Mount, mount base, pin, plain washer, pan head machine screw 4 mounting bolts with spring washer)

• How to order discrete intermediate support bracket

LB

SRL2 - Ⓑ Bore size - L (Two/set)

LB1

SRL2 - Ⓑ Bore size - N (Two/set)

• How to order adjustable full-stroke kit

SRL2 - Ⓑ Bore size - A1 (1 set)

• How to order repair parts

SRL2 - ⒷBore size K - ⒹStroke length

• How to order mounting bracket

SRL2 - ⒶMounting style (LB, LB1) - ⒷBore size

(Two brackets, 4 mounting bolts)

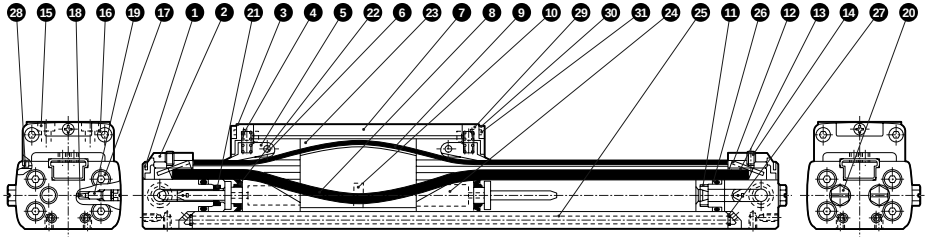
• How to order height adjustment plate set

SRL2 - ⒷBore size - U

(Plate, 4 mounting bolts)

Internal structure and parts list

• 12 to 40 mm bore



Parts list

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Belt cover	Polyamide		17	Hexagon socket head cap screw	Steel	Blackening
2	Cover (L)	Aluminum alloy	Seizure painting	18	Needle gasket	Nitrile rubber	
3	Table cover	Acetar resin		19	Cushion needle	Steel	Galvanizing
4	Spring	Steel	Blackening	20	Plug	Brass or steel	
5	Belt tension	Acetar resin		21	Cushion packing seal	Urethane rubber	
6	Parallel pin	Steel		22	Piston packing seal	Nitrile rubber	
7	Table	Aluminum alloy	Black alumite	23	Yoke	Aluminum alloy	Alumite
8	Seal belt	Urethane rubber		24	Piston	Acetar resin	
9	Dust-proof belt	Stainless steel + nitrile rubber		25	Cylinder tube	Aluminum alloy	Alumite
10	Magnet	Special alloy		26	Cylinder gasket	Nitrile rubber	
11	Cushion adaptor	Acetar resin		27	Common port, O ring	Nitrile rubber	
12	Cover (R)	Aluminum alloy	Seizure painting	28	Dust wiper	Acetar resin	
13	Belt spacer	Steel	Galvanizing	29	2-side adhesive tape		
14	Hexagon socket head set screw	Steel	Blackening	30	Plate	Stainless steel (12 to 20 dia.) Steel (25 to 40 dia.)	
15	Hexagon socket head cap screw	Steel	Blackening				
16	Hexagon socket head cap screw	Steel	Blackening	31	Cross headed tapping screw	Stainless steel	

Repair parts list

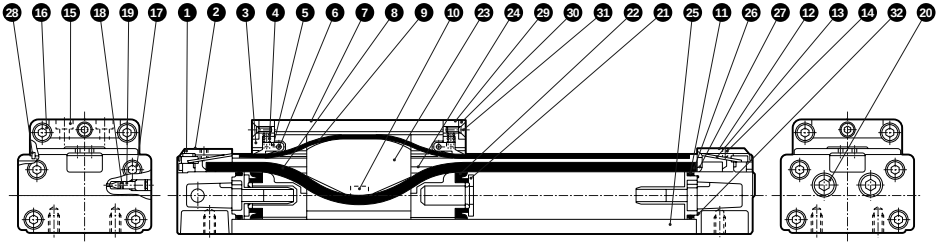
Bore size (mm)	Kit number	Repair parts number
12 dia.	SRL2-12K- *	❽ ❾ ㉑ ㉒ ㉖ ㉗ ㉘
16 dia.	SRL2-16K- *	
20 dia.	SRL2-20K- *	
25 dia.	SRL2-25K- *	
32 dia.	SRL2-32K- *	
40 dia.	SRL2-40K- *	

Note: When placing an order, indicate kit number.
Indicate stroke length at *.

Discontinue

Internal structure and parts list

• Equivalent to 50 to 63 mm



Parts list

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Belt cover	Polyamide		17	Hexagon socket head cap screw	Steel	Blackening
2	Cover (L)	Aluminum alloy	Seizure painting	18	Needle gasket	Nitrile rubber	
3	Table cover	Acetar resin		19	Cushion needle	Steel	Galvanizing
4	Spring	Steel	Blackening	20	Plug	Steel	
5	Belt tension	Acetar resin		21	Cushion packing seal	Urethane rubber	
6	Parallel pin	Steel		22	Piston packing seal	Nitrile rubber	
7	Table	Aluminum alloy	Black alumite	23	Yoke	Aluminum alloy	Alumite
8	Seal belt	Urethane rubber		24	Piston	Acetar resin	
9	Dust-proof belt	Stainless steel + nitrile rubber		25	Cylinder tube	Aluminum alloy	Alumite
10	Magnet	Special alloy		26	Cylinder gasket	Nitrile rubber	
11	Cushion ring	Acetar resin		27	Common port, O ring	Nitrile rubber	
12	Cover (R)	Aluminum alloy	Seizure painting	28	Dust wiper	Acetar resin	
13	Belt spacer	Steel	Galvanizing	29	2-side adhesive tape		
14	Hexagon socket head set screw	Steel	Blackening	30	Plate	Steel	Galvanizing
15	Hexagon socket head cap screw	Steel	Blackening	31	Cross headed tapping screw	Stainless steel	
16	Hexagon socket head cap screw	Steel	Blackening	32	Cushion ring gasket	Nitrile rubber	

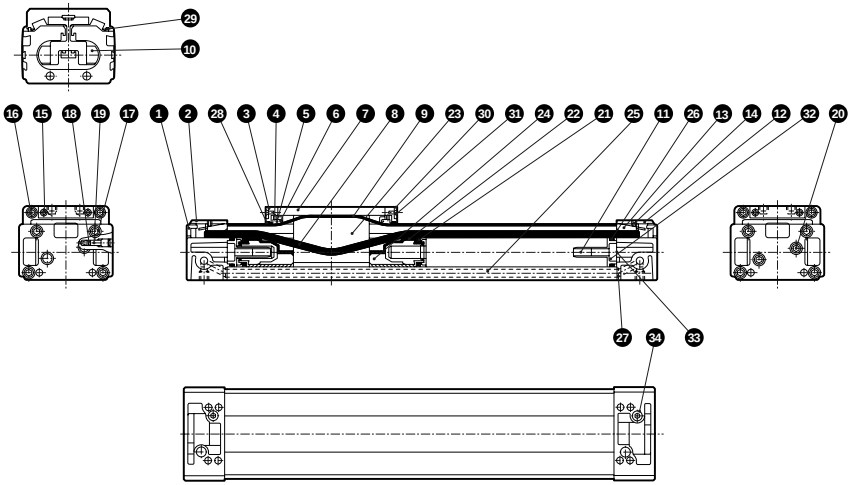
Repair parts list

Bore size (mm)	Kit number	Repair parts number
50 dia.	SRL2-50K- *	❽ ❾ ㉑ ㉒
63 dia.	SRL2-63K- *	㉖ ㉗ ㉘ ㉜

Note: When placing an order, indicate the kit number, and indicate stroke length at *.

Internal structure and parts list

• 80 to 100 mm bore



Parts list

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Belt cover	Polyamide		18	Needle gasket	Nitrile rubber	
2	Cover (L)	Aluminum alloy	Seizure painting	19	Cushion needle	Steel	Galvanizing
3	Table cover	Acetar resin		20	Plug	Steel	
4	Spring	Steel	Blackening	21	Cushion packing seal	Urethane rubber	
5	Belt tension	Acetar resin		22	Piston packing seal	Nitrile rubber	
6	Parallel pin	Steel		23	Yoke	Aluminum alloy	Alumite
7	Table	Aluminum alloy	Black alumite	24	Piston	Acetar resin	
8	Seal belt	Urethane rubber		25	Cylinder tube	Aluminum alloy	Alumite
9	Dust-proof belt	Stainless steel + nitrile rubber		26	Cylinder gasket	Nitrile rubber	
10	Magnet	Special alloy		27	Common port, O ring	Nitrile rubber	
11	Cushion ring	Acetar resin		28	Felt (1)	Wool	
12	Cover (R)	Aluminum alloy	Seizure painting	29	Felt (2)	Wool	
13	Belt spacer	Steel	Galvanizing	30	Plate	Steel	Galvanizing
14	Hexagon socket head set screw	Steel	Blackening	31	Cross headed tapping screw	Stainless steel	
15	Hexagon socket head cap screw	Steel	Blackening	32	Cushion ring gasket (1)	Nitrile rubber	
16	Hexagon socket head cap screw	Steel	Blackening	33	Cushion ring gasket (2)	Nitrile rubber	
17	Hexagon socket head cap screw	Steel	Blackening	34	Plug	Steel	

Repair parts list

Bore size (mm)	Kit number	Repair parts number
80 dia.	SRL2-80K- *	⑧ ⑨ ㉑ ㉒ ㉖
100 dia.	SRL2-100K- *	

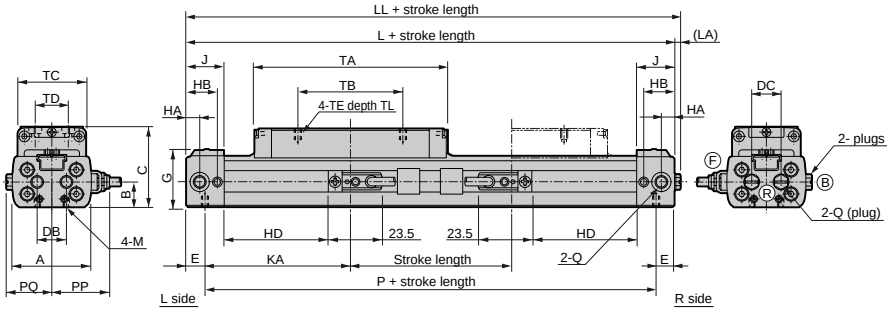
Bore size (mm)	Kit number	Repair parts number
80 dia.	SRL2-80K- *	㉗ ㉘ ㉙ ㉜ ㉝
100 dia.	SRL2-100K- *	

Note: When placing an order, indicate the kit number, and indicate stroke length at *.

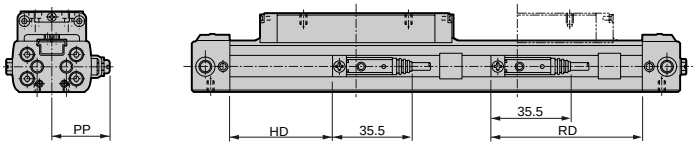
Discontinue

Dimensions (12 to 20 mm bore)

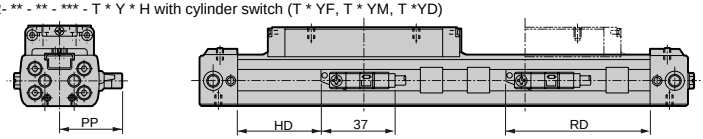
• SRL2- ** - ** - *** - M * V * with cylinder switch (radial lead wire) CAD (File name: Page 1565 or Page ending 150)



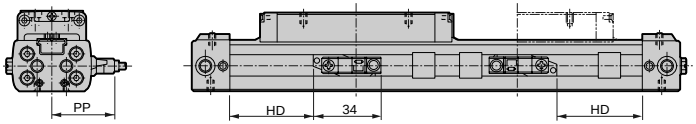
• SRL2- ** - ** - *** - M * H * with cylinder switch
(axial lead wire)



• SRL2- ** - ** - *** - T * Y * H with cylinder switch (T * YF, T * YM, T *YD)



• SRL2- ** - ** - *** - T * Y * V with cylinder switch (T * YF, T *YM)



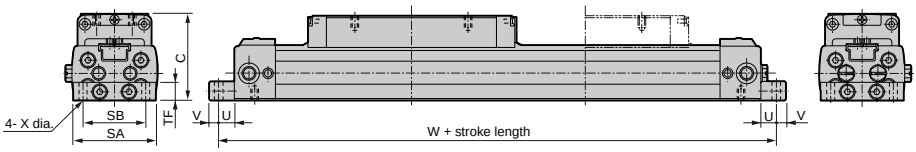
RD: Max. sensitive position HD: Max. sensitive position

Symbol / Bore size (mm)	A	B	C	DB	DC	E	G	HA	HB	J	KA	L	LL	LA	M	P	PQ	Q	TA	TB	TC	TD	TE
12 dia.	33	10.5	33	10	11	8.5	24	6	14	17.5	59.5	136	139	3	M3 depth 5	119	19	M5	81	42	29	13	M3 depth 5
16 dia.	37	12	37	14	12	8.5	27	6	14	17.5	66	149	152	3	M3 depth 5	132	21	M5	88	48	32	15	M3 depth 5
20 dia.	44	14	42	16	16	10.5	31	8.5	18.5	22	74	169	171.5	2.5	M4 depth 6.5	148	24.5	Rc1/8	100	60	38	18	M4 depth 6

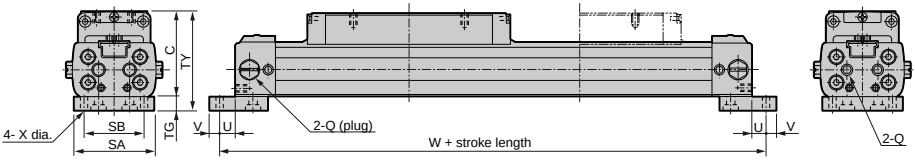
Symbol	With switch								With foot bracket (LB)							With foot bracket (LB1)							
Bore size	HD		RD		PP		PP																
(mm)	M type	T type	M type	T type	M * V	M * H	T * V	T * H	SA	SB	TF	U	V	W	X	SA	SB	TG	TY	U	V	W	X
12 dia.	40.5	36	60.5	65	24.5	26	31	28	32	24	8	6	4	148	3.4	32	24	6	39	6	4	148	3.4
16 dia.	47	42	67	72	26.5	28	33	30	35	26	8	6	4	161	3.4	35	26	6	43	6	4	161	3.4
20 dia.	52.5	48	72.5	77	29.5	31	36	33	43	33	10	6	6	181	4.5	43	33	8	50	6	6	181	4.5

Dimensions (12 to 20 mm bore)

• SRL2-LB- ** - *** with foot bracket CAD (File name: Page 1565 or Page ending 150)



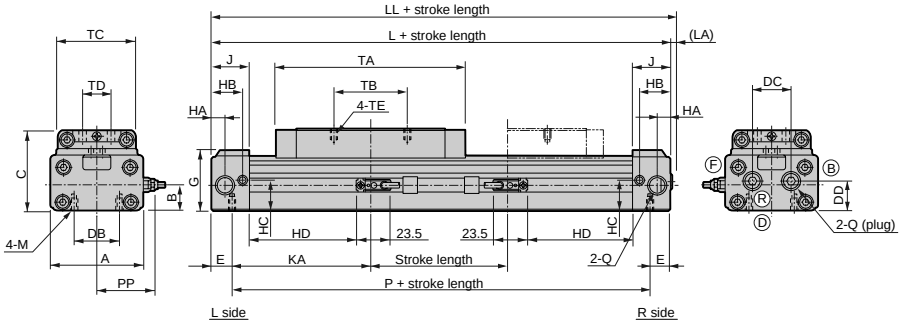
• SRL2-LB1- ** - *** with foot bracket CAD (File name: Page 1565 or Page ending 150)



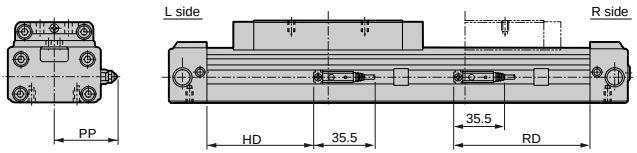
Discontinue

Dimensions (25 to 63 mm bore)

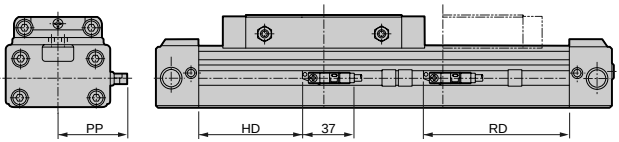
• SRL2- ** - ** - *** - M * V * with cylinder switch (radial lead wire) CAD (File name: Page 1565 or Page ending 150)



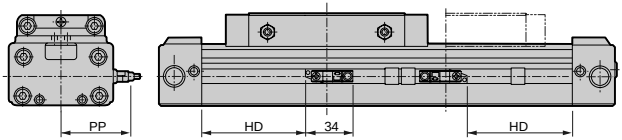
• SRL2- ** - ** - *** - M * H * with cylinder switch
(axial lead wire)



• SRL2- ** - ** - *** -T- Y * H with cylinder switch (T * YF, T * YM, T *YD)



• SRL2- ** - ** - *** - T * Y * V with cylinder switch (T * YF, T *YM)



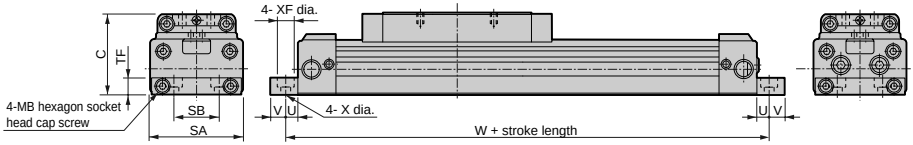
RD: Max. sensitive position HD: Max. sensitive position

Symbol / Bore size (mm)	A	B	C	DB	DC	DD	E	G	HA	HB	HC	J	KA	L	LL	LA	M	P	Q	TA	TB	TC	TD	TE
25 dia.	53	17	53	20	26	19	14	40.5	7.5	20	18.9	24	81	190	192	2	M6 depth 9	162	Rc1/8	122	70	48	20	M5 depth 6
32 dia.	66	18.5	57	32	27	21	15	43.5	10	23.5	21.5	28	98	226	228.5	2.5	M6 depth 9	196	Rc1/4	134	80	56	20	M6 depth 7.5
40 dia.	80	22	67	36	35	28	17	51.5	13	26	27	31	105	244	246.5	2.5	M8 depth 12	210	Rc1/4	148	90	68	30	M6 depth 9
50 dia.	96	28	82	45	35	35	23	61	15	33	35.3	39	106	258	260.5	2.5	M8 depth 12	212	Rc3/8	152	100	80	30	M8 depth 10.5
63 dia.	118	35	95	50	39	42	19	74	15	32	43	39	129	296	298.5	2.5	M10 depth 15	258	Rc3/8	168	110	102	40	M8 depth 11.5

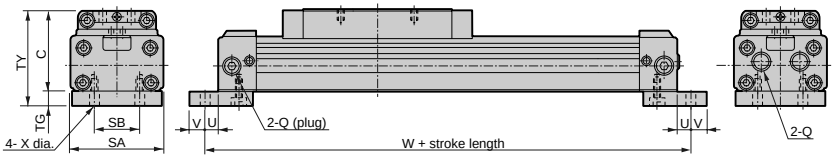
Symbol / Bore size (mm)	With switch								With foot bracket (LB)									With foot bracket (LB1)							
	HD		RD		PP		PP		SA	SB	TF	U	V	W	X	XF	MB	SA	SB	TG	TY	U	V	W	X
	M type	T type	M type	T type	M * V	M * H	T * V	T * H																	
25 dia.	60	56	82	86	34.5	36	41	38	52	20	12	9	11	208	7	-	M5 X 50	50	20	10	63	9	11	208	7
32 dia.	74	70	98	100	41.5	43	48	45	64	32	12	9	11	244	7	-	M5 X 50	64	32	10	67	9	11	244	7
40 dia.	80	78	102	106	48.5	50	55	52	80	36	15	11	9	266	9	14 spot face depth 8.6	M6 X 55	-	-	-	-	-	-	-	-
50 dia.	79	75	101	105	56.5	58	68	60	94	45	20	11	9	280	9	14 spot face depth 8.6	M8 X 65	-	-	-	-	-	-	-	-
63 dia.	98	94	120	124	67.5	69	74	71	116	50	25	13	12	322	11	17.5 spot face depth 10.8	M8 X 70	-	-	-	-	-	-	-	-

Dimensions (25 to 63 mm bore)

• SRL2-LB- ** - *** with foot bracket CAD (File name: Page 1565 or Page ending 150)



• SRL2-LB1- ** - *** with foot bracket CAD (File name: Page 1565 or Page ending 150)



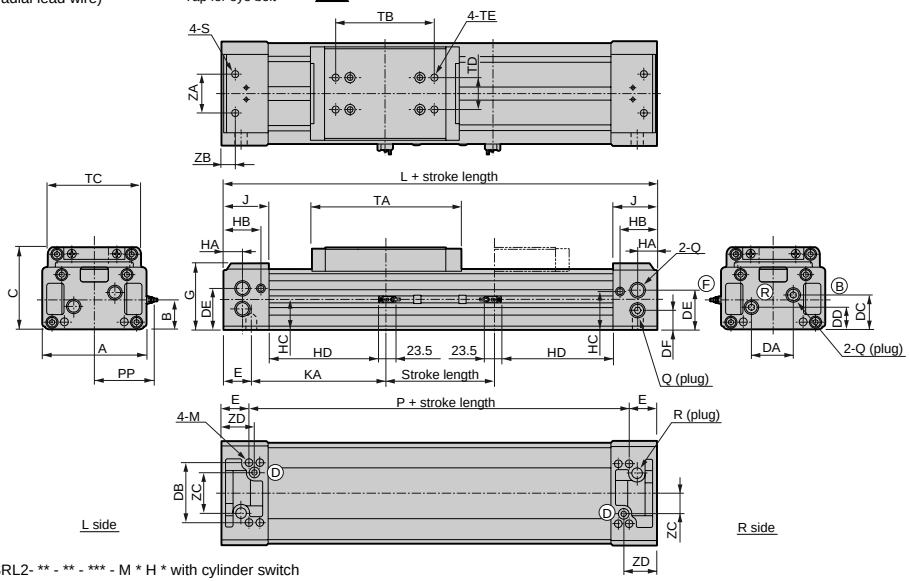
Discontinue

Dimensions (80 to 100 mm bore)

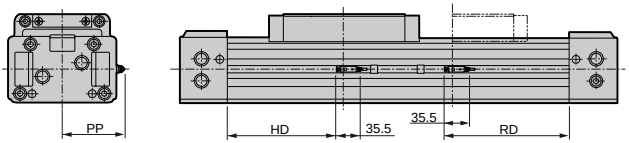
• SRL2- ** - ** - *** - M * V * with cylinder switch (radial lead wire)

Tap for eye bolt

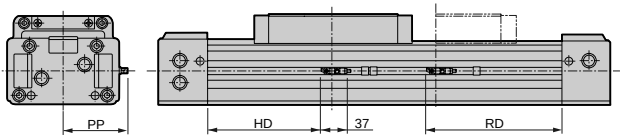
CAD (File name: Page 1565 or Page ending 150)



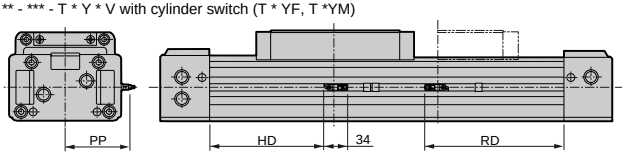
• SRL2- ** - ** - *** - M * H * with cylinder switch (axial lead wire)



• SRL2- ** - ** - *** - T * Y * H with cylinder switch (T * YF, T * YM, T *YD)



• SRL2- ** - ** - *** - T * Y * V with cylinder switch (T * YF, T *YM)



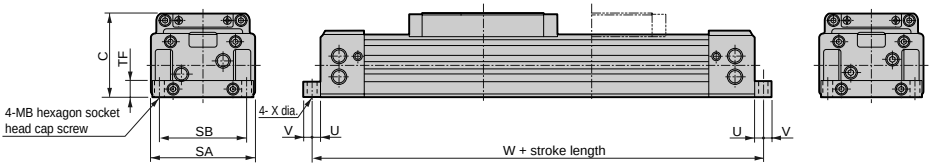
RD: Max. sensitive position
HD: Max. sensitive position

Symbol / Bore size (mm)	A	B	C	DA	DB	DC	DD	DE	DF	E	G	HA	HB	HC	J	KA	L	M	P	Q	R	S
80 dia.	162	49	130	64	93	58	38	65	33	42	106	30	59	64.5	70	208	500	M12 depth 18	416	Rc1/2	Rc3/8	M12 depth 23
100 dia.	198	61.5	150	73	108	71.5	47.5	81.5	41.5	43	125	30	69	76.5	80	222	530	M12 depth 18	444	Rc1/2	Rc1/2	M12 depth 23

Symbol / Bore size (mm)	TA	TB	TC	TD	TE	ZA	ZB	ZC	ZD	With switch								Foot bracket							
										HD		RD		PP		PP		SA	SB	TF	U	V	W	X	MB
										M type	T type	M type	T type	M * V	M * H	T * V	T * H								
80 dia.	228	150	146	50	M12 depth 15	60	21	64	50	170	165	190	195	87.5	89	94	91	162	134	25	13	12	526	14	M12 X 35
100 dia.	238	160	170	60	M12 depth 15	60	21	73	55	175	170	195	200	105.5	107	112	109	198	160	30	15	15	560	14	M12 X 40

Dimensions (80 to 100 mm bore)

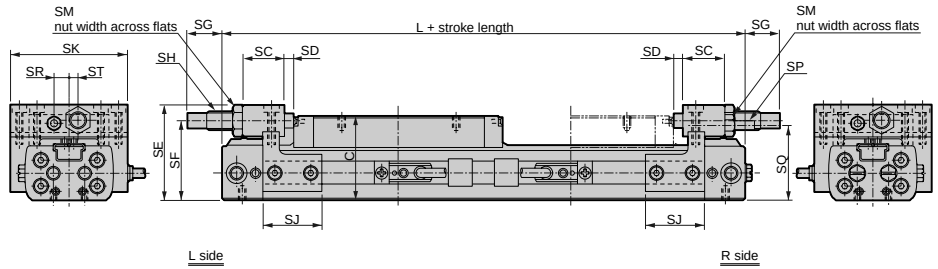
• SRL2-LB- ** - *** with foot bracket CAD (File name: Page 1565 or Page ending 150)



Discontinue

SRL2 series common dimensions: With options (12 to 25 mm bore)

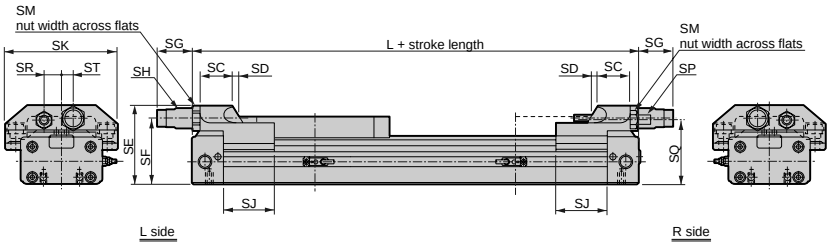
• With adjustable full-stroke shock absorber (SRL2)



Symbol / Bore size (mm)	SC	SD	SE	SF	SG			SH		SJ	SK	SM	SN	SP	SQ	SR	ST	C	L
					MAX time	MIN time	Adjust. width	Screw diameter	Max. energy absorb J										
12 dia.	19.5	2.5	40	32	17.5	7.5	10	M8 X 0.75	3	25	45	12	5.5	M3	30.5	6	3	33	136
16 dia.	18	4	42	35	14.5	4.5	10	M8 X 0.75	3	25	49	12	5.5	M3	34	6	4	37	149
20 dia.	22.5	3.5	48	40	14.5	4.5	10	M10 X 1.0	7	39	57	14	7	M4	38	8	5	42	169
25 dia.	20	2.5	62.5	51.5	14.5	4.5	10	M12 X 1.0	12	50	77	17	10	M6	50	12	10	53	190

SRL2 series common dimensions: With options (32 to 63 mm bore)

• With adjustable full-stroke shock absorber (SRL2)

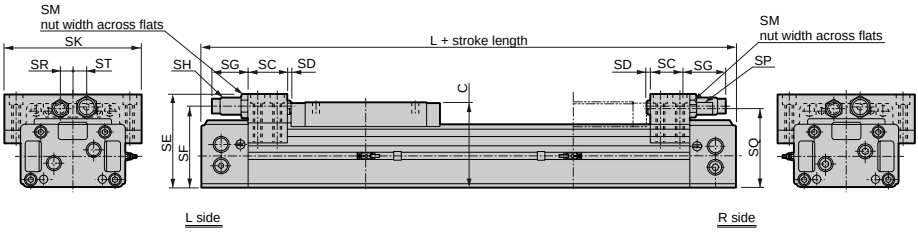


Symbol / Bore size (mm)	SC	SD	SE	SF	SG			SH		SJ	SK	SM	SN	SP	SQ	SR	ST	C	L
					MAX time	MIN time	Adjust. width	Screw diameter	Max. energy absorb J										
32 dia.	22	7	66.5	55.5	27	17	10	M14 X 1.5	26	46	98	19	13	M8	53.5	14	12	57	226
40 dia.	32	7	78.5	65.5	34	24	10	M20 X 1.5	70	51	112	24	17	M10	63.5	17	12	67	244
50 dia.	38	8	99	80	55	45	10	M25 X 1.5	120	53	136	32	19	M12	77.5	22	17	82	258
63 dia.	38	8	112	93.5	44	34	10	M25 X 1.5	120	64	158	32	24	M16	89	25	20	95	296

Discontinue

SRL2 series common dimensions: With options (80 to 100 mm bore)

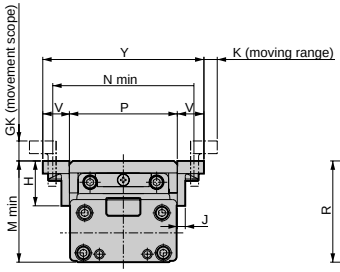
• Adjustable full-stroke shock absorber



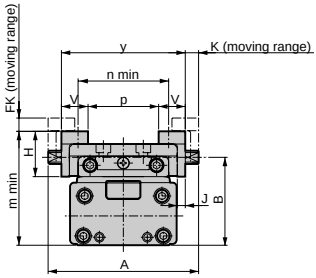
Symbol / Bore size (mm)	SC	SD	SE	SF	SG			SH		SK	SM	SN	SP	SQ	SR	ST	C	L
					MAX time	MIN time	Adjust. width	Screw diameter	Max. energy absorb J									
80 dia.	60	6	145	125.5	50	40	10	M27 X 1.5	200	214	32	27	M20	123	20	20	130	500
100 dia.	60	6	164	144.5	50	40	10	M27 X 1.5	200	250	32	27	M20	142	20	20	150	530

Dimensions: With options

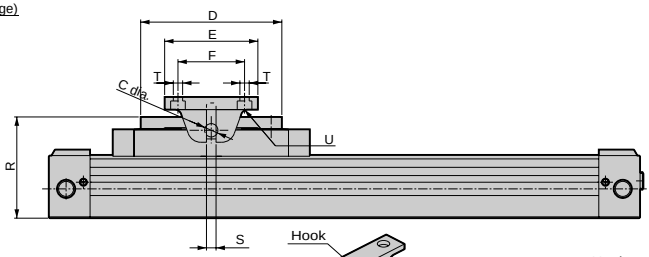
• Thin type floating joint (Y1) 12 to 63 mm bore

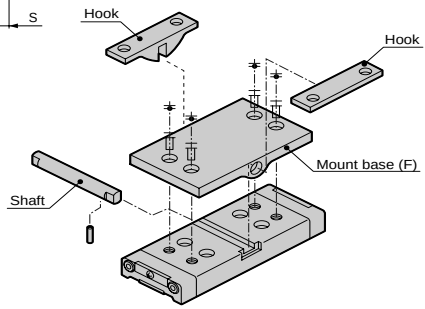


<Hook extrinsic installation>



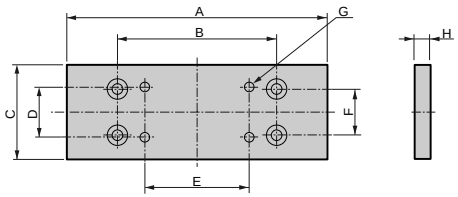
<Hook intrinsic installation>





Symbol / Port size	A	B	C	D	E	F	G	H	J	K	FK	GK	M min	m min	N min	n min	P	p	S	V	Y	y	T	U
12 dia.	52	32	5	60	40	30	5	20	3	6	6	9	38	43	47.5	26.5	34	16	3.5	12	58	40	3.4 dia.	6.5 dia. spot face depth 3.3.
16 dia.	56	36.5	5	60	40	30	5	20	3	6	6	9	42	47	51.5	30.5	38	20	3.5	12	62	44	3.4 dia.	6.5 dia. spot face depth 3.3.
20 dia.	64	41	6	84	56	40	8	24.5	4	6	6	9	48.5	56.5	62	34	44	22	4	15	74	52	4.5 dia.	8 dia. spot face depth 4.4
25 dia.	74	53	6	84	56	40	8	24.5	4	6	6	9	60.5	68.5	72	44	54	32	4	15	84	62	5.5 dia.	9.5 dia. spot face depth 5.4.
32 dia.	99	56.5	8	106	70	50	9.5	34	6	10	10	15	66	75.5	92	54	67	39	5.5	20	107	79	6.6 dia.	11 dia. spot face depth 6.5.
40 dia.	113	66	10	116	70	50	9.5	34	6	10	10	15	76	85.5	106	68	81	53	7	20	121	93	6.6 dia.	11 dia. spot face depth 6.5.
50 dia.	133	81	12	120	90	70	13	43	8	10	10	15	93	106	129	81	97	63	8.5	25	147	113	9 dia.	14 dia. spot face depth 8.6.
63 dia.	155	94	14	136	90	70	13	43	8	10	10	15	107	120	151	103	119	85	10	25	169	135	9 dia.	14 dia. spot face depth 8.6.

• Height adjustment plate

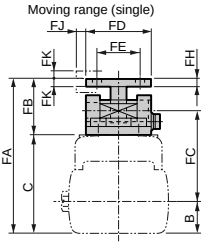


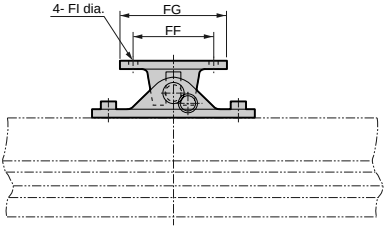
Symbol / Port size	A	B	C	D	E	F	G	H
12 dia.	80	42	29	16	30	13	4-M3 pene.	8
16 dia.	87	48	32	16	30	15	4-M3 pene.	6
20 dia.	99	60	38	20	40	18	4-M4 pene.	7
25 dia.	121	70	48	20	40	20	4-M5 pene.	10.5
32 dia.	134	80	56	30	50	20	4-M6 pene.	10.5
40 dia.	147	90	68	30	50	30	4-M6 pene.	12.5
50 dia.	151	100	80	40	70	30	4-M8 pene.	18
63 dia.	167	110	102	40	70	40	4-M8 pene.	18
80 dia.	227	150	146	50	90	50	4-M12 pene.	18
100 dia.	237	160	170	60	110	60	4-M12 pene.	18

Discontinue

SRL2 series common dimensions: With options

• Floating joint CAD (File name: Page 1565 or Ending 150)

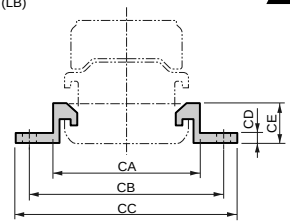


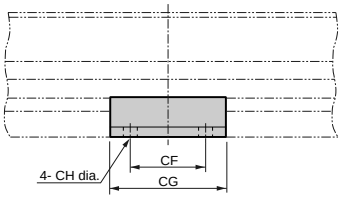


Symbol / Bore size (mm)	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	B	C
12 dia.	54	21	31.5	24	16	30	40	3	3.4	3	3	10.5	33
16 dia.	58	21	34	24	16	30	40	3	3.4	3	3	12	37
20 dia.	67	25	39	30	20	40	56	4	4.5	3	3	14	42
25 dia.	78	25	47	30	20	40	56	4	6	3	3	17	53
32 dia.	95	38	55.5	45	30	50	70	6	7	5	5	18.5	57

Symbol / Bore size (mm)	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	B	C
40 dia.	105	38	62	45	30	50	70	6	7	5	5	22	67
50 dia.	126	44	73	60	40	70	90	8	9	5	5	28	82
63 dia.	139	44	79	60	40	70	90	8	9	5	5	35	95
80 dia.	188	58	107	80	50	90	120	11	14	10	5	49	130
100 dia.	220	70	120.5	90	60	110	140	13	14	10	5	61.5	150

• Intermediate support bracket (this bracket is an auxiliary bracket to prevent deflection.) CAD (File name: Page 1565 or Ending 150)

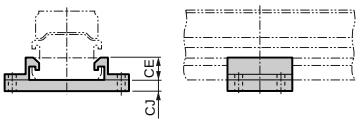




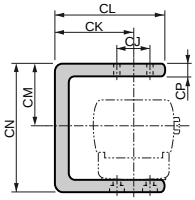
Symbol / Bore size (mm)	CA	CB	CC	CD	CE	CF	CG	CH	CJ	CK
12 dia.	38	52	60	3	11	16	30	4	6	17
16 dia.	42	56	64	3	12	20	35	4	6	18
20 dia.	49	64	75	4	14	20	38	5	8	22
25 dia.	60	76	88	6	19.5	20	40	7	10	29.5
32 dia.	74	88	100	6	21.5	20	40	7	10	31.5
40 dia.	90	108	124	6	24.5	30	60	9	-	-
50 dia.	106	124	140	8	30.5	30	60	9	-	-
63 dia.	130	152	172	10	38.5	50	90	11	-	-
80 dia.	172	210	236	12	32	60	110	14	-	-
100 dia.	208	246	272	12	32	60	110	14	-	-

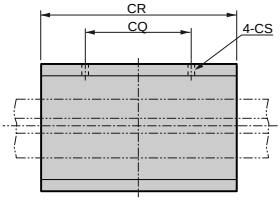
L * (LB) N * (LB1)

N * (LB1)



• C mount bracket CAD (File name: Page 1565 or Ending 150)





Symbol / Bore size (mm)	CJ	CK	CL	CM	CN	CP	CQ	CR	CS
12 dia.	13	27	40	22.5	50	5	42	81	M3
16 dia.	15	35.5	50	29	60	6	48	88	M3
20 dia.	18	32.5	50	26	60	6	60	100	M4
25 dia.	20	45	69	28	71	5	70	116	M5

Symbol / Bore size (mm)	CJ	CK	CL	CM	CN	CP	CQ	CR	CS
32 dia.	20	54	81.5	33.5	80	7	80	128	M6
40 dia.	30	63	95.5	38	91.5	8	90	138	M6
50 dia.	30	74	113	48	112.5	10	100	142	M8
63 dia.	40	88	138	58	131	13	110	158	M8

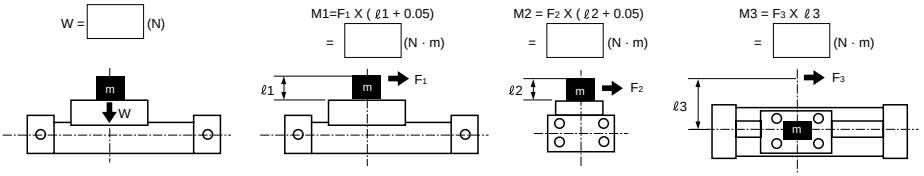
Discontinue

Rodless cylinder selection guide

<STEP1>

1 Find the static moment.

• How to find moment



Note: Above 0.05 (m) is the temporary distance from the piston center to the table surface.

2 Find a rough value of coefficient G according to <Table 1>.

<Table 1>

$$\text{Va (average speed)} = \frac{\text{Moving distance}}{\text{Travel time}} \text{ (m/s)}$$

Va (average speed) (m/s)	Vm (speed at stroke end) (m/s)	Coefficient G
0.3	to 0.65	9
0.6	to 1.00	15
0.9	to 1.30	23
1.2	to 2.00	40

Coefficient G = ☐

Select a bore size roughly.

M1 X G = ☐ (N · m) → (dia.)

M2 = ☐ (N · m) → (dia.)

M3 X G = ☐ (N · m) → (dia.)

W = ☐ (N) → (dia.)

$E_0 = \frac{1}{2} \times m \times Vm^2 \times \left(m \frac{W}{9.8}\right)$ = ☐ (J) → (dia.)

Select the maximum bore size temporally.

☐ dia.

<Table 2> Allowable value — Refer to the value in ( ) for C mount bracket.

Descriptions / Bore size (mm)		Wmax (N)	M1max (N · m)	M2max (N · m)	M3max (N · m)
SRL2	12 dia.	30(15)	1.5(1)	0.6(0.3)	0.6(0.6)
	16 dia.	140(70)	5(3.5)	1(0.5)	1(1)
	20 dia.	200(100)	10(7)	1.5(0.7)	3(3)
	25 dia.	360(180)	17(12)	5(2.5)	10(10)
	32 dia.	620(310)	36(25)	10(5)	21(21)
	40 dia.	970(485)	77(54)	23(11.5)	26(26)
	50 dia.	1470(735)	154(108)	32(16)	42(42)
	63 dia.	2320(1160)	275(193)	52(26)	76(76)
	80 dia.	3500	460	70	100
	100 dia.	5000	750	95	130
SRL2-G	12 dia.	30(15)	1.5(1)	0.6(0.3)	0.4(0.4)
	16 dia.	140(70)	5(3.5)	1(0.5)	0.6(0.6)
	20 dia.	200(100)	10(7)	1.5(0.7)	1(1)
	25 dia.	360(180)	17(12)	5(2.5)	2(2)
	32 dia.	620(310)	36(25)	10(5)	4(4)
	40 dia.	810(485)	41(41)	18(11.5)	5(5)
	50 dia.	1440(735)	76(76)	32(16)	9(9)
	63 dia.	1630(1160)	98(98)	51(26)	12(12)
	80 dia.	3500	351	70	37
	100 dia.	4130	386	95	42
SRL2-J	25 dia.	350	12	3.5	10
	32 dia.	600	25	7	21
	40 dia.	950	55	17	26
	50 dia.	1440	107	23	42
	63 dia.	2280	200	38	76

<Table 3> Allowable energy absorption of SRL2 (E0)

Bore size (mm)	Integrated air cushion (J)	Shock absorber (J)	Model
12 dia.	0.03	2.4	NCK-0.3-C
16 dia.	0.22	2.4	NCK-0.3-C
20 dia.	0.59	5.7	NCK-0.7-C
25 dia.	1.40	10.0	NCK-1.2
32 dia.	2.57	18.0	NCK-2.6
40 dia.	4.27	50.0	NCK-7
50 dia.	9.13	86.0	NCK-12
63 dia.	17.4	86.0	NCK-12
80 dia.	33.0	143.0	NCK-20
100 dia.	57.0	143.0	NCK-20

3 Find composite moment at stroke end (M_T).
(Confirm that bore size selected at **2** should meet the expression below.)

$$M_T = \frac{M1 \times G}{M1max} + \frac{M2}{M2max} + \frac{M3 \times G}{M3max} + \frac{W}{Wmax} < 1$$

M : Composite moment (should be smaller than 1.)
G : Coefficient G
Wmax : Max. allowable value of W (from Table 2)
M1max : M1 maximum allowable value (from Table 2)
M2max : M2 maximum allowable value (from Table 2)
M3max : M3 maximum allowable value (from Table 2)

<STEP2>

Then increase accuracy of load factor, effective thrust, speed at stroke end, and composite moment value.

• Find load factor.

$$\alpha = \frac{F_0}{F} \times 100[\%]$$

α : Load factor
F_0 : Required force to move a work piece (N).
F : Cylinder effective thrust (N) (Fig1 to 4)

At horizontal operation	When vertical operation
$F_0 = F_W + F_1 + F_2 + F_3 + F_L$	$F_0 = W + F_1 + F_2 + F_3 + F_L$

F_W: W X 0.2 (N)
F_1: M1 X 10 Note (N)
F_2: M2 X 30 Note (N)
F_3: M3 X 10 Note (N)
F_L: Other resistance (guide resistance etc.) (N)
W: Load (N)

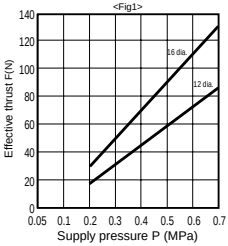
Note: When moment is applied, coefficient compensating increase of generated frictional force.

<Table 4> Reference of load factor

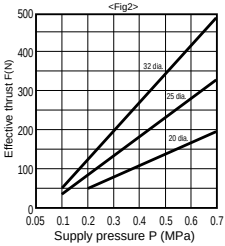
Working pressure (MPa)	Load factor (%)
0.2 to 0.3	$\alpha \leqq 40$
0.3 to 0.6	$\alpha \leqq 50$
0.6 to 0.7	$\alpha \leqq 60$

• Graph of effective thrust

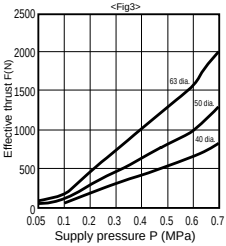
<Fig1>



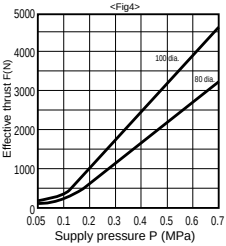
<Fig2>



<Fig3>



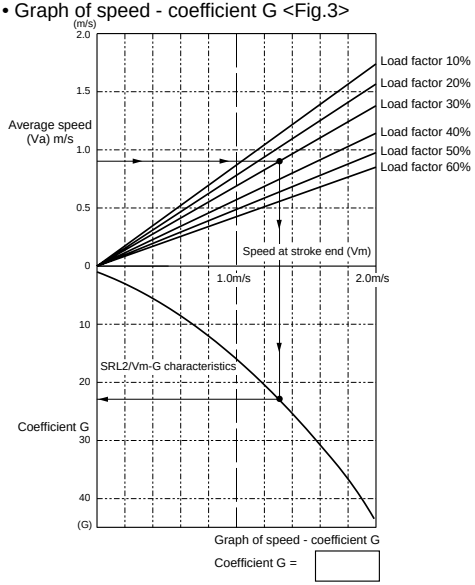
<Fig4>



<STEP3>

Find speed at stroke end (Vm) according to coefficient G, average speed (Va), and load factor found at STEP 2. Refer to <Fig.3>.

• Graph of speed - coefficient G <Fig.3>



Graph of speed - coefficient G

Coefficient G =

• Arrow (→) in figure shows
Average speed: 0.9m/s
Load factor: 30%

Speed at stroke end: 1.3m/s
Coefficient G: Example finding 22.5 is shown.

Discontinue

<STEP4>

• Check composite moment (M_T) according to coefficient G, and coefficient of speed at stroke end (Vm) found at STEP 3.

M1 X G =F_1 X (ℓ1 + a) X G = (N · m)

M2 =F_1 X (2 ℓ +a) = (N · m)

M3 X G =F_3 X ℓ3 X G = (N · m)

W = (N)

$$M_T = \frac{M1 \times G}{M1max} + \frac{M2}{M2max} + \frac{M3 \times G}{M3max} + \frac{W}{Wmax}$$

$M_T \leqq 1$

↓

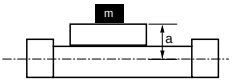
Bore size decision (*Refer to <Table 2> at STEP 1)

↓

Cushion faculty confirmation

<Table 5> Value of a

Bore size	a(m)	
	SRL2, SRL2-G, SRL2-Q, SRL2-GQ	SRL2-J
12 dia.	0.023	-
16 dia.	0.025	-
20 dia.	0.028	-
25 dia.	0.036	0.061
32 dia.	0.039	0.068
40 dia.	0.045	0.074
50 dia.	0.054	0.091
63 dia.	0.060	0.097
80 dia.	0.081	-
100 dia.	0.089	-



<STEP5>

• Confirming cushion faculty

$$E = \frac{1}{2} \times m \times Vm^2$$

E : Kinetic energy at work piece final end (J)
M : Load mass (kg)
Vm : Piston cushion rush speed (m/s)

<Table 3> Allowable energy absorption of SRL2 (E0)

Bore size (mm)	Integrated air cushion (J)	Shock absorber (J)	Model No.
12 dia.	0.03	2.4	NCK-0.3-C
16 dia.	0.22	2.4	NCK-0.3-C
20 dia.	0.59	5.7	NCK-0.7-C
25 dia.	1.40	10.0	NCK-1.2
32 dia.	2.57	18.0	NCK-2.6
40 dia.	4.27	50.0	NCK-7
50 dia.	9.13	86.0	NCK-12
63 dia.	17.4	86.0	NCK-12
80 dia.	33.0	143.0	NCK-20
100 dia.	57.0	143.0	NCK-20

<STEP6>

• Bore size determined by cushion faculty is assumed as [A dia.] (Bore size determined at STEP5)

• Bore size determined according to load conditions is assumed as [B dia.] (bore size determined according to STEP 4)

A dia. ≧ B dia. → Select [A dia.]

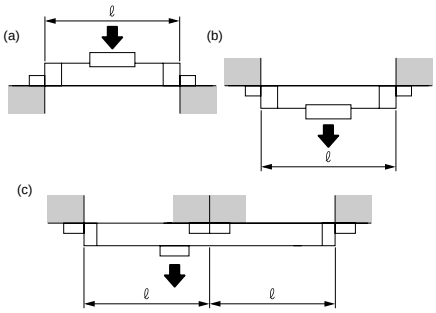
or

→ [B dia.] using with an external damper together.

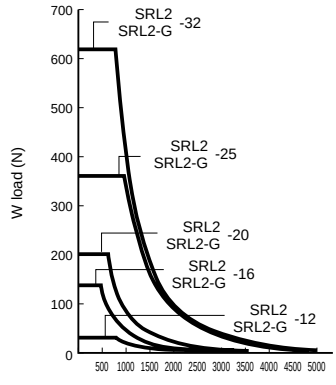
A dia. < B dia. → Select [B dia.]

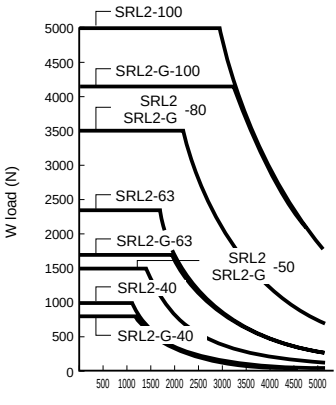
1 Restriction of vertical load

• Long stroke length causes cylinder tube deflection by cylinder self-weight/load. In this case, adjust the intermediate support bracket to meet the conditions such as support intervals ℓ on the following diagram should be the graph value or less. (Intermediate support bracket is an auxiliary bracket for deflection prevention, but not fixing bracket).

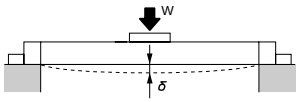


• Allowable load for support methods above (a) (b) (c)

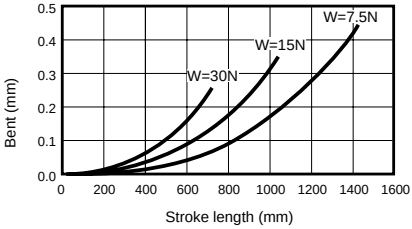




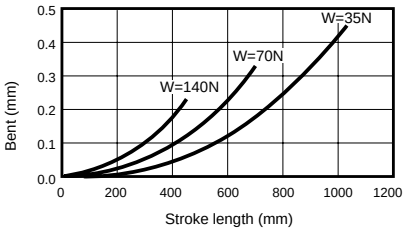
2 Bent of cylinder tube δ



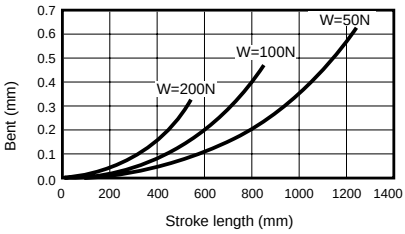
• SRL2-12, SRL2-G-12 (12 mm bore)



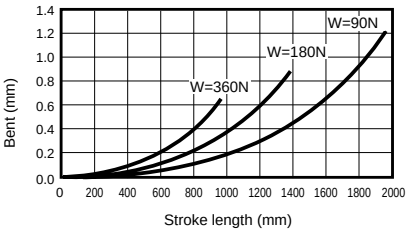
• SRL2-16, SRL2-G-16 (16 mm bore)



• SRL2-20, SRL2-G-20 (20 mm bore)

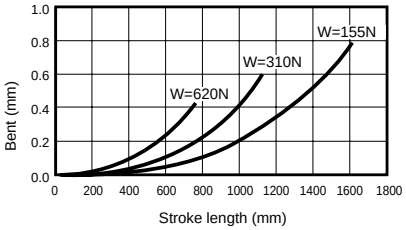


• SRL2-25, SRL2-G-25 (25 mm bore)

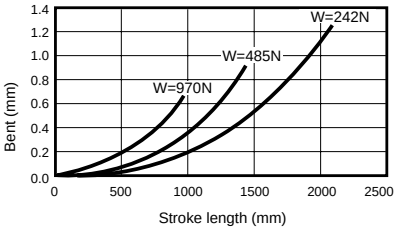


Discontinue

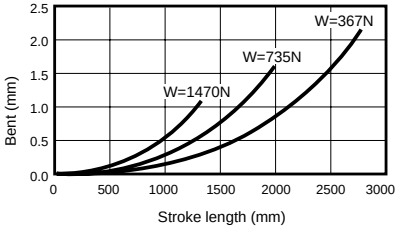
• SRL2-32, SRL2-G-32 (32 mm bore)



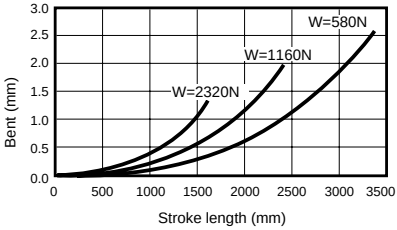
• SRL2-40, SRL2-G-40 (40 mm bore)



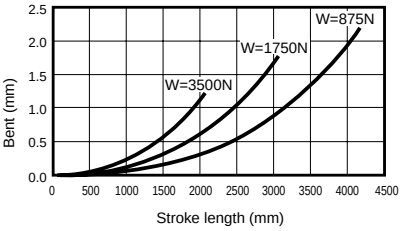
• SRL2-50, SRL2-G-50 (50 mm bore)



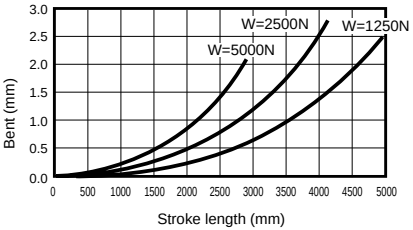
• SRL2-63, SRL2-G-63 (63 mm bore)



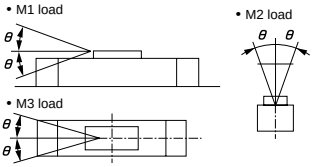
• SRL2-80, SRL2-G-80 (80 mm bore)



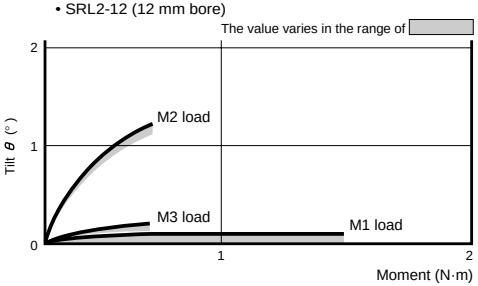
• SRL2-100, SRL2-G-100 (100 mm bore)



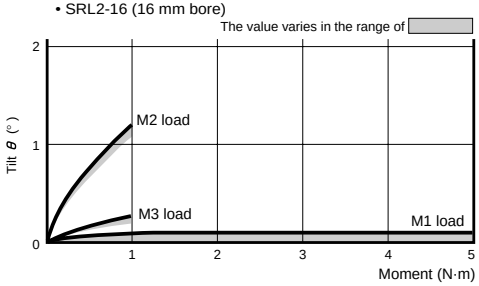
3 Inclination of table θ



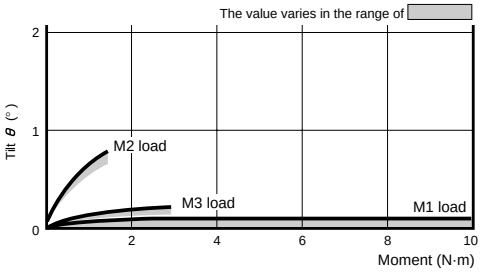
• SRL2-12 (12 mm bore)



• SRL2-16 (16 mm bore)

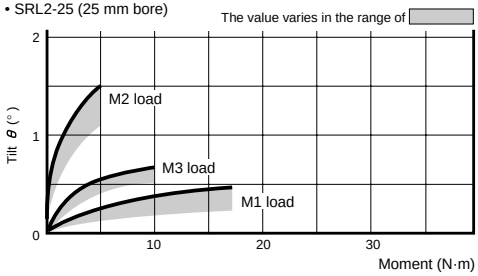


• SRL2-20 (20 mm bore)

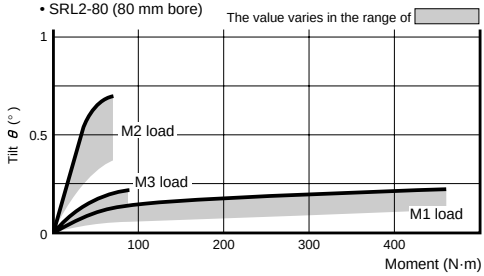


Discontinue

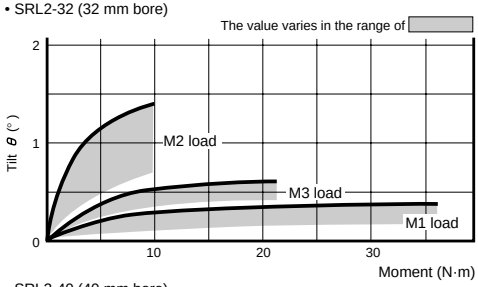
• SRL2-25 (25 mm bore)



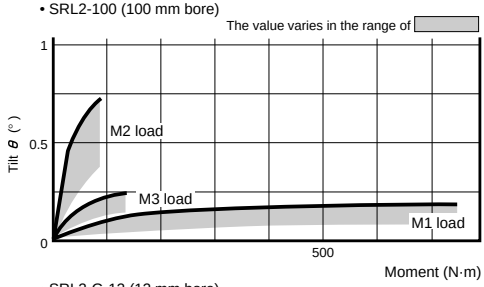
• SRL2-80 (80 mm bore)



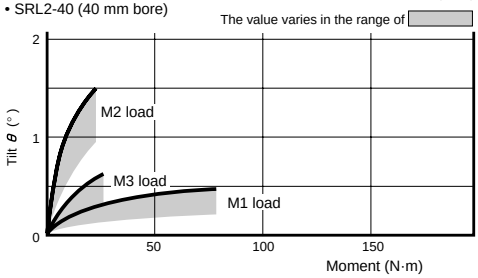
• SRL2-32 (32 mm bore)



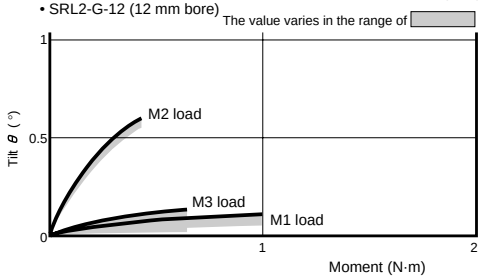
• SRL2-100 (100 mm bore)



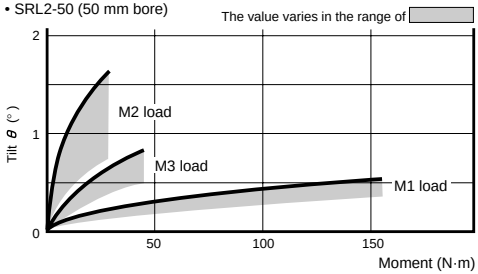
• SRL2-40 (40 mm bore)



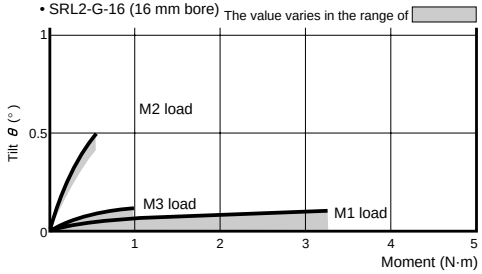
• SRL2-G-12 (12 mm bore)



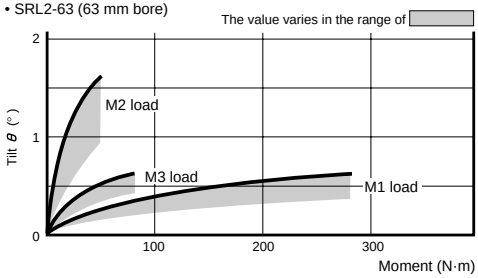
• SRL2-50 (50 mm bore)



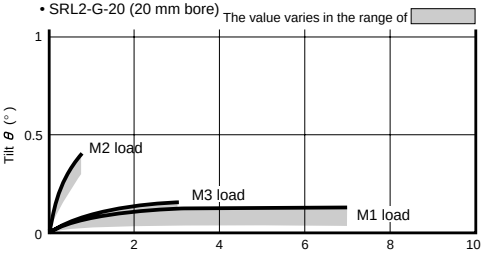
• SRL2-G-16 (16 mm bore)



• SRL2-63 (63 mm bore)

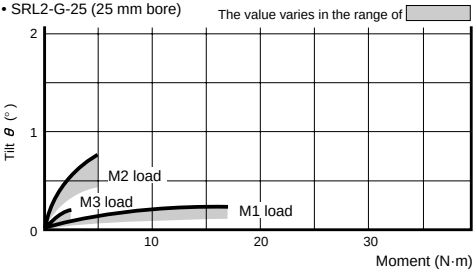


• SRL2-G-20 (20 mm bore)

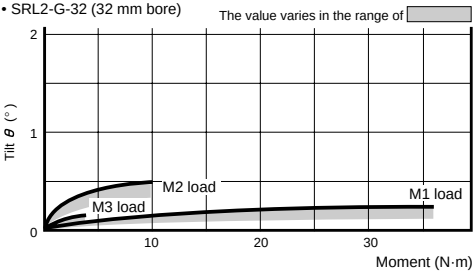


Discontinue

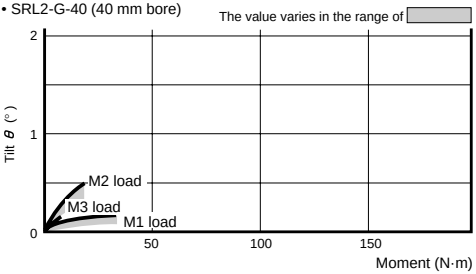
• SRL2-G-25 (25 mm bore)



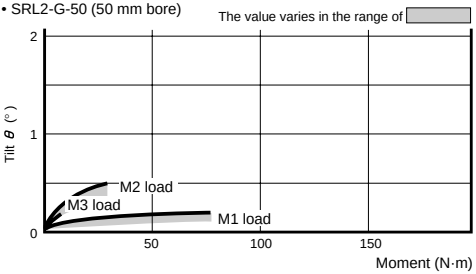
• SRL2-G-32 (32 mm bore)



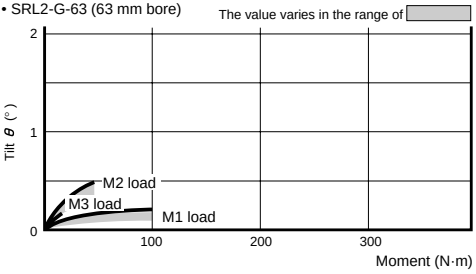
• SRL2-G-40 (40 mm bore)



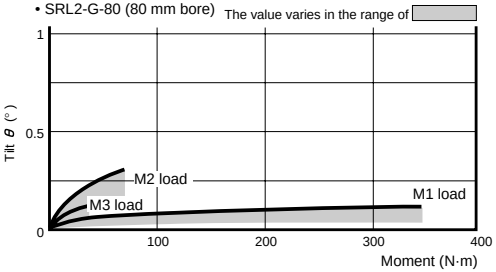
• SRL2-G-50 (50 mm bore)



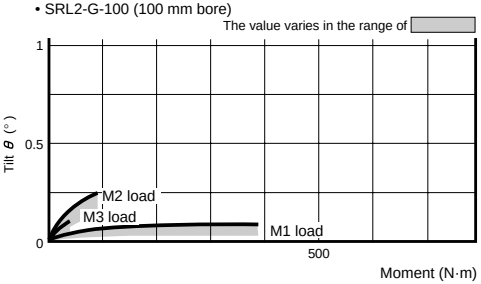
• SRL2-G-63 (63 mm bore)



• SRL2-G-80 (80 mm bore)



• SRL2-G-100 (100 mm bore)

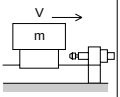
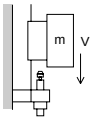
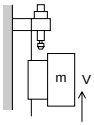


Adjustable full-stroke unit adjustment method

Confirming allowable energy absorption of shock absorber
Calculate mass equivalent to colliding object Me, and absorbed energy E according to the formula on the table below, and Me and E should not be greater than the allowable value of Fig.4, and Table 3 on Page 1554.
Allowable value of mass equivalent to colliding object Me and colliding energy E may vary depending on colliding speed.

• Symbol

E	: Colliding energy	J
Me	: Equivalent to colliding physical mass	kg
m	: Mass of work piece	kg
F	: Cylinder thrust	N
V	: Colliding speed (m/s)	
St	: Stroke length (m) of shock absorber	
g	: Gravity acceleration 9.8 (m/s²)	

Applications	Horizontal movement	Lifting downward vertically	Lifting upward vertically
			
Equivalent to colliding physical mass Me (kg)	$Me = \frac{2 \times E}{V^2}$	$Me = \frac{2 \times E}{V^2}$	$Me = \frac{2 \times E}{V^2}$
Energy E (J)	$E = \frac{mV^2}{2} + F \cdot St$	$E = \frac{mV^2}{2} + (F + mg) \cdot St$	$E = \frac{mV^2}{2} + (F - mg) \cdot St$