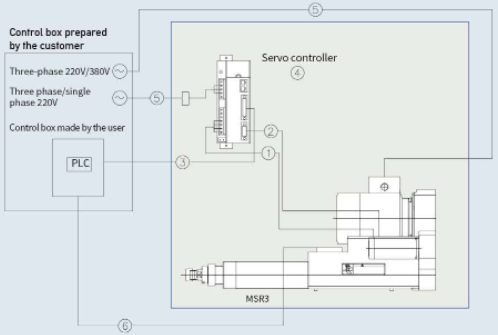
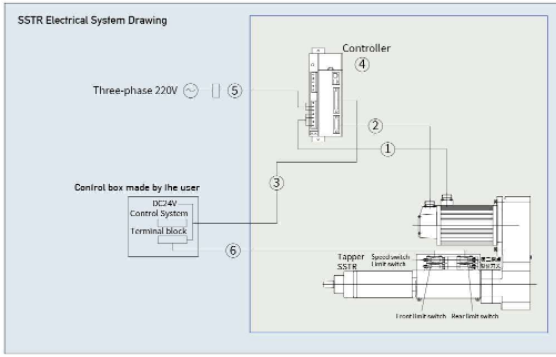
To MSR series



Standard accessories
1. Motor power cable - 4-core x 5m
2. Motor encoder cable - 15-core x 5m
3. I/O signal cable - 19-core x 1m
4. Servo controller - SJC-AP200-0R4

Customer preparation
5. Power cable - 4-core (4×1.5mm2/with individual protecting earthing conductors)
6. Limit switch cable - 4-core (4x1mm2/)

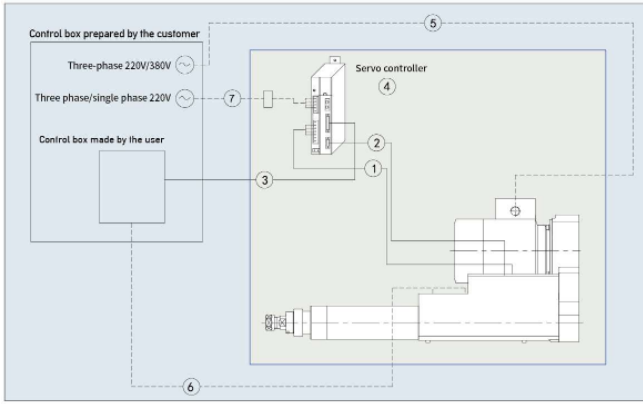
To SSTR series



1. Motor power cable - 4-core x 5m
2. Motor encoder cable - 15-core x 5m
3. I/O signal cable - 17-core x 1m
4. Servo controller - SJC-AP200

Option
5. Power cable
6. Limit switch cable

Servo electric diagram to MSR and SSTR series



Standard accessories
Standard accessories
1. Feed motor power cable - 5m
2. Feed motor encoder cable - 5m
3. I/O signal cable - 1m
4. Servo controller

Option
5. Spindle motor power cable
6. Limit switch cable
7. Servo controller power cable

Servo system developed by Sugino applies to multiple machining environments with easy operation. Please contact Sugino business outlets for more.

Pneumatic feed frilling unit

Model SRV2

The smallest and lightest model in the series, reflecting the true value of small aperture machining

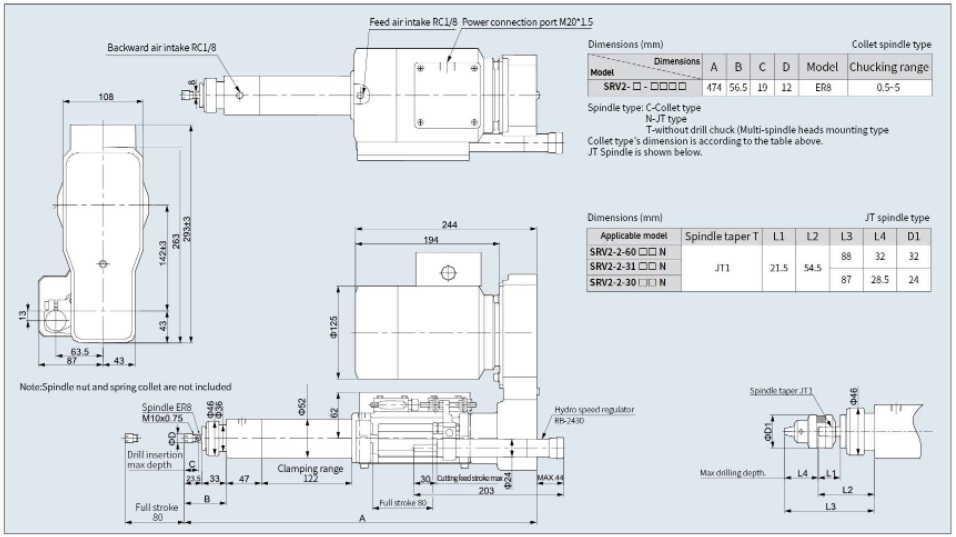
Specifications and Parameters

Operating air pressure: 0.6MPa

Parameters / Model	Spindle speed (No-load) 50Hz	Drill chuck capacity	Maximum drilling diameter 1 spindle Aluminum	1 spindle Cast iron	1 spindle Steel	2 spindles Aluminum	2 spindles Cast iron	2 spindles Steel	Stroke Full stroke	Stroke Cutting Feed Stroke	Power	Poles	Feed Thrust	Air consumption	Weight
	min^{-1}	mm	mm			mm			mm		kW	P	N	L/ Stk	kg
SRV2-2-3100	10,000	3 (非钥匙锁紧型)	2	1.5	1	-	-	-	80	0~30	0.25	2	600	2~3	14
SRV2-2-3075	7,500		3	2	1	-	-	-							
SRV2-2-6051	5,100	6.5	4	3	1.5	4	3	1.5							
SRV2-2-6030	3,000		6.5	5	3	5	4	3							
SRV2-2-6020	2,000		7	6	4.5	6	5	3.5							
SRV2-2-6014	1,400		8	7	6	6	5	3.5							

Notes:
1. Refer to the above table for selecting the model according to the workpiece shape, the material hardness, the drill diameter and the speed (cutting speed).
2. The maximum drilling diameter in the table refers to the value when the hole depth is twice the diameter.
3. The cutting feed stroke is determined by the stroke of the hydraulic damper, and the standard auxiliary hydraulic damper is Model RB-2430. Refer to page 20 if other models are required.
4. Please indicate the required motor voltage and frequency when ordering.
5. This table takes JT spindle as an example.
6. The Physical Dimension shows the recommended standard ER8 spindle.

Dimensions (mm)



Dimensions (mm) — Collet spindle type

Model \ Dimensions	A	B	C	D	Model	Chucking range
SRV2- □ - □□□□	474	56.5	19	12	ER8	0.5-5

Spindle type: C-Collet type
N-JT type
T-without drill chuck (Multi-spindle heads mounting type
Collet type's dimension is according to the table above.
JT Spindle is shown below.

Dimensions (mm) — JT spindle type

Applicable model	Spindle taper T	L1	L2	L3	L4	D1
SRV2-2-60 □□ N	JT1	21.5	54.5	88	32	32
SRV2-2-31 □□ N				87	28.5	24
SRV2-2-30 □□ N						

Refer to the Physical Dimension of this page for spring collet spindle specifications.

Pneumatic feed drilling unit

Model SRV3

The compact body suitable for multiple cutting machining strokes and various environments

- Max. 7500 rpm
- Small hole and deep hole machining
- Light Compact
- Mounting multi-spindle head
- Long stroke

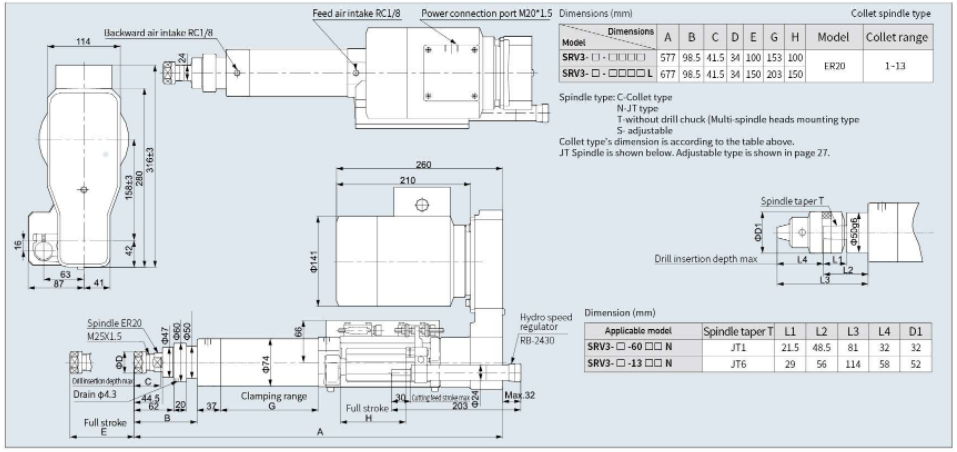
Specifications and Parameters

Operating air pressure: 0.6MPa

Model	Spindle speed (No-load) 50Hz	Drill chuck specifications	Maximum drilling diameter 1 spindle Aluminum	1 spindle Cast Iron	1 spindle Steel	2 spindles Aluminum	2 spindles Cast Iron	2 spindles Steel	3 spindles Aluminum	3 spindles Cast Iron	3 spindles Steel	4 spindles Aluminum	4 spindles Cast Iron	4 spindles Steel	Stroke Full stroke	Stroke Cutting feed stroke	Motor Power	Motor Poles	Feed thrust	Air consumption	Weight
	min⁻¹	mm	mm			mm			mm			mm			mm		kW	P	N	L/ Stk	kg
SRV3-2-6075(L)	7,500	6.5	3	2	1	-	-	-	-	-	-	-	-	-	100 (150)	0~30	0.37	2	1,250	3~5 (4.5~7.5)	20 (22)
SRV3-2-6055(L)	5,500		4	2.5	1.5	4	2.5	1.5	-	-	-	-	-	-							
SRV3-2-6040(L)	4,000		5.5	4	2	5	4	2	4	3.5	2	3.5	3	2							
SRV3-2-6030(L)	3,000		7	5	3	6	5	3	5	4	3	4	3.5	3							
SRV3-2-1330(L)	3,000	13	7	5	3	6	5	3	5	4	3	4	3.5	3							
SRV3-2-1318(L)	1,800		9	7.5	5	7	5.5	5	6	5	4	5.5	4	3.5							
SRV3-6-1325(L)	2,500		7	5.5	3.5	5.5	4.5	3.5	4.5	3.5	3	4	3	2.5			0.25	6			
SRV3-6-1318(L)	1,800		7.5	6	5	6	5	4	5	4	3.5	5	3.5	3							
SRV3-6-1313(L)	1,300		8	7	6	6.5	5.5	5	6	5	4	5.5	4.5	3.5							
SRV3-6-1306(L)	600		11.5	9	8	8.5	7	6	7	5.5	4.5	5.5	4.5	3.5							

Notes: 1. Refer to the above table for selecting the model according to the workpiece shape, the material hardness, the drill diameter and the speed (cutting speed).
2. The maximum drilling diameter in the table refers to the value when the hole depth is twice the diameter.
3. The cutting feed stroke is determined by the stroke of the hydraulic damper, and the standard auxiliary hydraulic damper is Model RB-2430. Refer to page 20 if other models are required.
4. Please indicate the required motor voltage and frequency when ordering.
5. This table takes JT spindle as an example. 6. The Physical Dimension shows the recommended standard E20 spindle.

Dimensions (mm)



Dimensions (mm) — Collet spindle type

Model \ Dimensions	A	B	C	D	E	G	H	Model	Collet range
SRV3- □ - □□□□	577	98.5	41.5	34	100	153	100	ER20	1-13
SRV3- □ - □□□□ L	677	98.5	41.5	34	150	203	150		

Spindle type: C-Collet type
N-JT type
T-without drill chuck (Multi-spindle heads mounting type
S- adjustable
Collet type's dimension is according to the table above.
JT Spindle is shown below. Adjustable type is shown in page 27.

Dimension (mm)

Applicable model	Spindle taper T	L1	L2	L3	L4	D1
SRV3- □ -60 □□ N	JT1	21.5	48.5	81	32	32
SRV3- □ -13 □□ N	JT6	29	56	114	58	52

Refer to page 27 for quick change spindle specifications.

Pneumatic feed drilling unit

Model SRV3P

The compact body suitable for multiple cutting machining strokes and various environments, with upgraded capacity

- Max. 7500 rpm
- Small hole and deep hole machining
- Light Compact
- Mounting multi-spindle head
- Long stroke

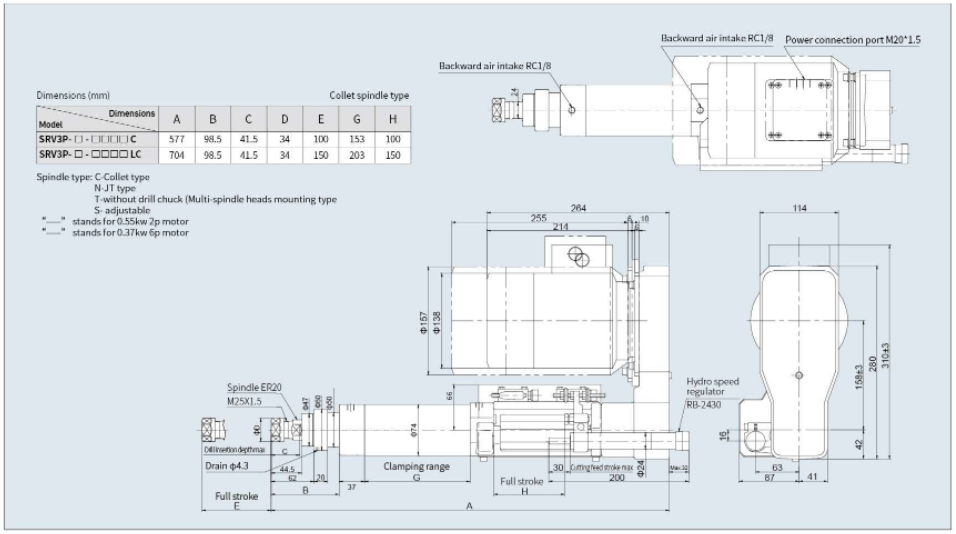
Specifications and Parameters

Operating air pressure: 0.6MPa

Model	Spindle speed (No-load) 50Hz	Drill chuck specifications	Maximum drilling diameter 1 spindle Aluminum	1 spindle Cast Iron	1 spindle Steel	2 spindles Aluminum	2 spindles Cast Iron	2 spindles Steel	3 spindles Aluminum	3 spindles Cast Iron	3 spindles Steel	4 spindles Aluminum	4 spindles Cast Iron	4 spindles Steel	Stroke Full stroke	Stroke Cutting feed stroke	Motor Power	Motor Poles	Feed thrust	Air consumption	Weight
	min⁻¹	mm	mm			mm			mm			mm			mm		kW	P	N	L/Stk	kg
SRV3P-2-6075(L)	7,500	6.5	4	2	1	–	–	–	–	–	–	–	–	–	100 (150)	0~30	0.55	2	1,250	3~5 (4.5~7.5)	20.4 (22.4)
SRV3P-2-6055(L)	5,500		5	3.5	1.5	5	3	1.5	–	–	–										
SRV3P-2-6040(L)	4,000		6.5	5.5	2	6	5	2	5	4	2	4	3.5	2							
SRV3P-2-6030(L)	3,000		8	6	3	7	6	3	6	5	3	5	4	3							
SRV3P-2-1330(L)	3,000	13	8	6	3	7	6	3	6	5	3	5	4	3							
SRV3P-2-1318(L)	1,800		10	7.5	5	8.5	6.5	5	7.5	5.5	4.5	6	4.5	3.5							
SRV3P-6-1325(L)	2,500		7.5	6	3.5	6.5	5.5	3.5	5.5	4	3.5	5	4	3			0.37	6			25 (27)
SRV3P-6-1318(L)	1,800		8	7	5	7	6.5	5	6	5	4	5.5	4.5	3.5							
SRV3P-6-1313(L)	1,300		9	8	7	8	7	6	7.5	6	4.5	6.5	4.5	3.5							
SRV3P-6-1306(L)	600		13	12	10	8.5	7	6.5	7.5	6	4.5	6.5	4.5	3.5							

※ The high power specification adopts timing pulleys

Dimensions (mm)



Dimensions (mm) — Collet spindle type

Model \ Dimensions	A	B	C	D	E	G	H
SRV3P- □ - □□□□ C	577	98.5	41.5	34	100	153	100
SRV3P- □ - □□□□ LC	704	98.5	41.5	34	150	203	150

Spindle type: C-Collet type
N-JT type
T-without drill chuck (Multi-spindle heads mounting type
S- adjustable
"____" stands for 0.55kw 2p motor
"____" stands for 0.37kw 6p motor

Refer to page 27 for quick change spindle specifications.

Pneumatic feed drilling unit

Model SRV5

The high hardness model with high-power motor, large torque and strong thrust

- Max. 6100 rpm
- Mounting multi-spindle head
- Light Compact
- Large hole machining

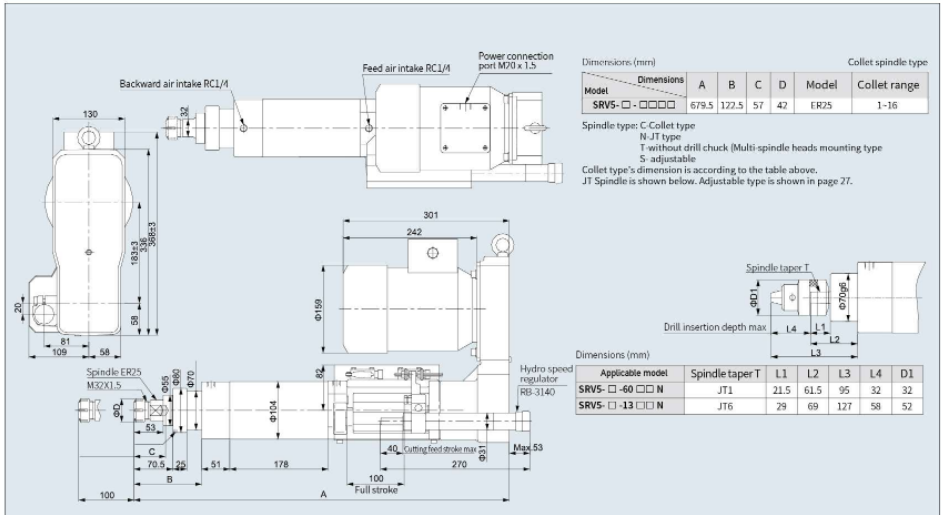
Specifications and Parameters

Operating air pressure: 0.6MPa

Model	Spindle speed (No-load) 50Hz	Drill chuck specifications	Maximum drilling diameter 1 spindle Aluminum	1 spindle Cast Iron	1 spindle Steel	2 spindles Aluminum	2 spindles Cast Iron	2 spindles Steel	3 spindles Aluminum	3 spindles Cast Iron	3 spindles Steel	4 spindles Aluminum	4 spindles Cast Iron	4 spindles Steel	Stroke Full stroke	Stroke Cutting feed stroke	Motor Power	Motor Poles	Feed thrust	Air consumption	Weight
	min⁻¹	mm	mm			mm			mm			mm			mm		kW	P	N	L/Stk	kg
SRV5-2-6061	6,100	6.5	3.5	2.5	1.5	-	-	-	-	-	-	-	-	-	100	0～40	0.75	2	2700	7～10	38
SRV5-2-6040	4,000		5.5	4	2	5.5	4	2	5.5	4	2	5.5	4	2							
SRV5-2-1322	2,200	13	10	7	4	8	6.5	4	7	6	4	6.5	5.5	4							
SRV5-2-1315	1,500		12.5	10	6	9	7.5	6	8	6.5	6	7.5	6	5.5							
SRV5-6-1320	2,000		9.5	8	4.5	7.5	6	4.5	6.5	5.5	4.5	6	5	4.5			0.55	6			
SRV5-6-1313	1,300		11.5	9	7	8.5	7	6.5	7.5	6	5.5	7	6	5							
SRV5-6-1307	750		14.5	12	10	10.5	8.5	7.5	9	7.5	6.5	8.5	7	6							
SRV5-6-1305	500		16	14	12	13	10.5	8.5	11	8.5	7	9	7	6							

Notes: 1. Refer to the above table for selecting the model according to the workpiece shape, the material hardness, the drill diameter and the speed (cutting speed).
2. The maximum drilling diameter in the table refers to the value when the hole depth is twice the diameter.
3. The cutting feed stroke is determined by the stroke of the hydraulic damper, and the standard auxiliary hydraulic damper is Model RB-3140. Refer to page 20 if other models are required.
4. Please indicate the required motor voltage and frequency when ordering.
5. This table illustrates by taking JT spindle as an example. 6. The Physical Dimension shows the recommended standard ER25 spindle.

Dimensions (mm)



Dimensions (mm) — Collet spindle type

Model \ Dimensions	A	B	C	D	Model	Collet range
SRV5- □ - □□□□	679.5	122.5	57	42	ER25	1~16

Spindle type: C-Collet type
N-JT type
T-without drill chuck (Multi-spindle heads mounting type
S- adjustable
Collet type's dimension is according to the table above.
JT Spindle is shown below. Adjustable type is shown in page 27.

Dimensions (mm)

Applicable model	Spindle taper T	L1	L2	L3	L4	D1
SRV5- □ -60 □□ N	JT1	21.5	61.5	95	32	32
SRV5- □ -13 □□ N	JT6	29	69	127	58	52

Refer to page 27 for quick change spindle specifications.

Pneumatic feed drilling unit

Model SRV5P

Strong thrust, high hardness and most powerful pneumatic power head

- Max. 6100 rpm
- Mounting multi-spindle head
- Light Compact
- Large hole machining

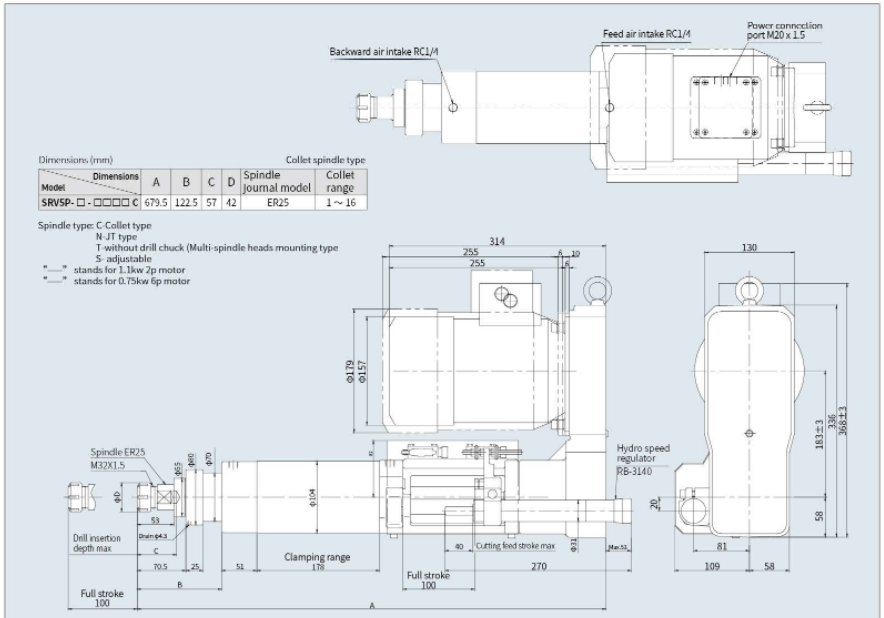
Specifications and Parameters

Operating air pressure: 0.6MPa

Model	Spindle speed (No-load) 50Hz	Drill chuck specifications	Maximum drilling diameter 1 spindle Aluminum	1 spindle Cast Iron	1 spindle Steel	2 spindles Aluminum	2 spindles Cast Iron	2 spindles Steel	3 spindles Aluminum	3 spindles Cast Iron	3 spindles Steel	4 spindles Aluminum	4 spindles Cast Iron	4 spindles Steel	Stroke Full stroke	Stroke Cutting feed stroke	Motor Power	Motor Poles	Feed thrust	Air consumption	Weight
	min⁻¹	mm	mm			mm			mm			mm			mm		kW	P	N	L/Stk	kg
SRV5P-2-6061	6,100	6.5	5	3	2	–	–	–	–	–	–	–	–	–	100	0~40	1.1	2	2,700	7~10	38.5
SRV5P-2-6040	4,000		7	5	2	6.5	5	2	6.5	5	2	6.5	5	2							
SRV5P-2-1322	2,200	13	12	9	4	9.5	8	4	8.5	7.5	4	8	6.5	4							
SRV5P-2-1315	1,500		15	10	6	11	9	6	9.5	8	6	9	7	6							
SRV5P-6-1320	2,000		11	8	5	8.5	7	4.5	7.5	6.5	4.5	7	5.5	4.5			0.75	6			44.7
SRV5P-6-1313	1,300		13	9	7	10	8	7	8.5	7	6.5	8	7	5.5							
SRV5P-6-1307	750		16.5	14	12	12.5	10	8.5	10.5	8	7	9.5	7.5	6							
SRV5P-6-1305	500		18	16	14	15	11	8.5	11	8.5	7	9.5	7.5	6							

※ The high power specification adopts timing pulleys

Dimensions (mm)



Dimensions (mm) — Collet spindle type

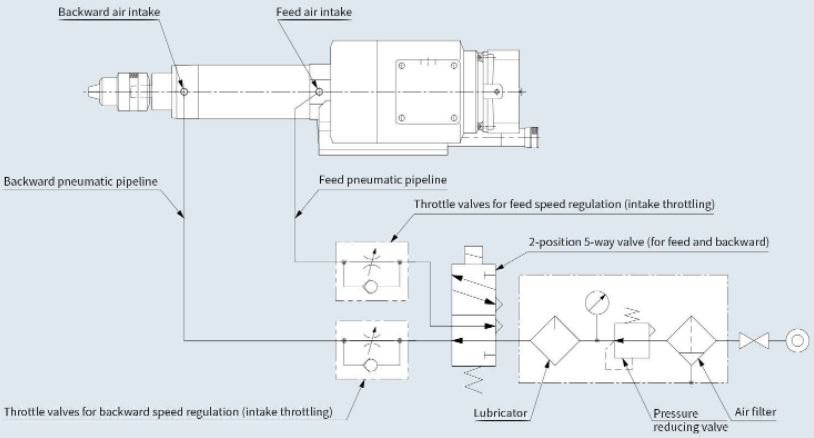
Model \ Dimensions	A	B	C	D	Spindle journal model	Collet range
SRV5P- □ - □□□□ C	679.5	122.5	57	42	ER25	1～16

Spindle type: C-Collet type
N-JT type
T-without drill chuck (Multi-spindle heads mounting type
S- adjustable
"——" stands for 1.1kw 2p motor
"——" stands for 0.75kw 6p motor

Note: Spindle nut and spring collet are not included, which should be self-prepared by the customer or purchased from Sugino separately.

Pneumatic control circuits

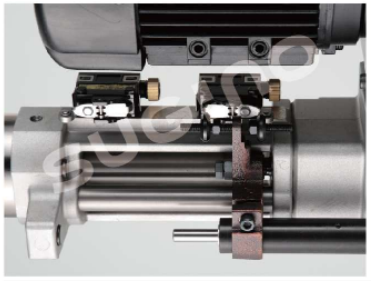
The power head is built in with forward and backward cylinders

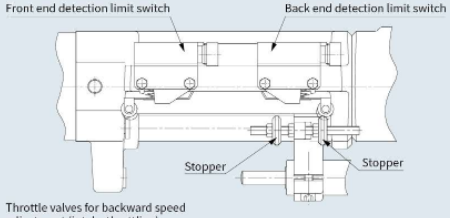


Notes: 1. Please provide 0.4-0.6MPa working pressure.
2. Customers need to prepare various pneumatic components including air source.
3. Because the piston areas on the forward and backward sides of the power head are different, please use the intake throttling check valve to control the loop.

Operate-Signal Kits

The supporting components used to check the forward and backward end positions of the power head, which can be used as a control signal for synchronous operation with other associated devices.





Note: The motor adopts "SL1-P" limit switch made by Yamatake.

selfeeder revo®

revo®, the high precision drilling power head, uses the latest international new technology to provide customers with durable and high cost performance power head for high speed and high precision hole machining

Options

The drilling power head coming out of the "Sugino" technology, capable of adapting to multiple machining requirements, achieving high precision and high efficiency product machining.

Multi-spindle heads

Sugino can provide various drilling and tapping heads according to customers' special requirements on spindle spacing, spindle number and spindle shape.

Spindle spacing adjustable (drilling)

Spindle body replacement

Spindle spacing fixed

Spindle spacing fixed

Spindle spacing adjustable (tapping)

Spindle spacing fixed, narrow spacing drilling head

Mirror finishing tool, Superoll

The surface finish of RZ0.1-0.8μm can be achieved in one feed, indicating that it is a super finishing tool for improving wear resistance and fatigue strength of workpiece.

Options

Hydro speed regulators

Hydraulic damper is a hydraulic feed speed control device which can freely adjust the cutting feed from low to high. There are two types of return, namely the spring return and air return, which are alternative as per actual use.In addition, Sugino also has progressive hydraulic damper for pipe machining

RB
Spring return type

When the load on the piston rod of RB hydraulic damper is unloaded, the piston rod automatically returns to its original position.

Feature

1. Compact structure, free mounting direction.
2. The fully enclosed structure without the need for adding working oil can maintain long-term stable control.
3. The change of control speed caused by rapid load change is very small, enabling stable feed speed.
4. Feed speed can be easily adjusted by speed adjusting knob.

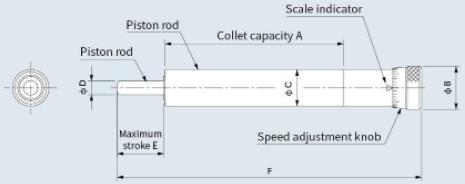
Parameters

Model	Maximum stroke	Load range	Speed control range for various thrusts	Allowable impact energy	Mass (Body)
	mm	N	mm/sec	J	kg
RB-2412	12	98~490	F= 98N 时 0.2~20 F= 290N 时 0.3~30 F= 490N 时 0.4~35	1.47	0.35
RB-2430	30	200~1,500	F= 200N 时 0.1~5 F= 490N 时 0.2~25 F= 980N 时 0.3~40 F=1,500N 时 0.4~50	2.45	0.41
RB-2460	60				0.58
RB-3140	40	490~2,900	F= 490N 时 0.1~10 F=1,500N 时 0.2~25 F=2,200N 时 0.3~35 F=2,900N 时 0.5~40	3.92	0.95
RB-3160	60				1.20

Sugino can also provide dampers beyond those listed in the above table. Please contact business outlets for more.

Physical Dimensions (mm)

RB-2412, RB-2430, RB-2460
RB-3140, RB-3160



Dimensions (mm)

Model \ Dimensions	A	B	C	D	E	F
RB-2430	115	28	24	9	30	200
RB-2460	196				60	311
RB-2412	93				12	160
RB-3140	150	36	31	12	40	270
RB-3160	190				60	311

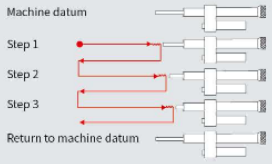
R-A
Air return type

Even when the load on the piston rod of the R-A hydraulic damper is removed, the piston rod remains in its original position and can only be returned by providing compressed air, which enables easy feed control for step drilling.

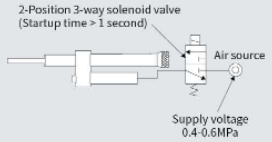
Feature

1. The piston rod can stop at any time on the stroke, achieving efficient step feed.
2. Some models have an extended stroke and can be used for a variety of purposes.

Example of step feed



Example of air line coupling for piston rod return



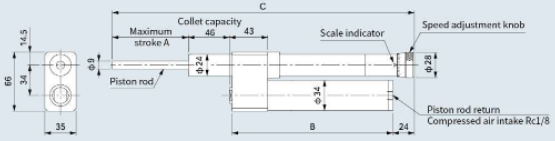
Parameters

Model	Maximum stroke	Load range	Speed control range for various thrusts	Allowable impact energy	Mass (Body)
	mm	N	mm/sec	J	kg
R-2442A	40	200~1,500	F= 200N 时 0.3~5 F= 980N 时 0.5~25 F=1,500N 时 0.8~30	2.45	1.3
R-2462A	60				1.4
R-2482A	80				1.5
R-3182A	80	490~2,900	F= 490N 时 0.3~12 F=2,200N 时 0.5~25 F=2,900N 时 0.8~30	3.92	2.2

Sugino can also provide dampers beyond those listed in the above table. Please contact business outlets for more.

Physical Dimensions (mm)

R-2442A, R-2462A, R-2482A



Dimensions (mm)

Model \ Dimensions	A	B	C	D
R-2442A	40	127	240	-
R-2462A	60		260	-
R-2482A	80	180	333	-
R-3182A	80	39	180	363

R-3182A