



Compact cylinder  
Double acting/Single rod/rubber scraper

Environment-resistant cylinder

# SMG-G-HP1 Series

● Bore size:  $\varnothing 6/\varnothing 10/\varnothing 16/\varnothing 20/\varnothing 25/\varnothing 32$

JIS symbol



Double acting



## Specifications

| Item                        |      | SMG-G-HP1<br>SMG-GL-HP1 (with switch) |                  |                  |                  |                  |                  |
|-----------------------------|------|---------------------------------------|------------------|------------------|------------------|------------------|------------------|
|                             |      | $\varnothing 6$                       | $\varnothing 10$ | $\varnothing 16$ | $\varnothing 20$ | $\varnothing 25$ | $\varnothing 32$ |
| Bore size                   | mm   | $\varnothing 6$                       | $\varnothing 10$ | $\varnothing 16$ | $\varnothing 20$ | $\varnothing 25$ | $\varnothing 32$ |
| Actuation                   |      | Double acting                         |                  |                  |                  |                  |                  |
| Working fluid               |      | Compressed air                        |                  |                  |                  |                  |                  |
| Max. working pressure       | MPa  | 0.7                                   |                  |                  |                  |                  |                  |
| Min. working pressure       | MPa  | 0.12                                  | 0.06             |                  |                  | 0.15             |                  |
| Proof pressure              | MPa  | 1.05                                  |                  |                  |                  |                  |                  |
| Ambient temperature         | °C   | -10 to 60 (no freezing)               |                  |                  |                  |                  |                  |
| Port size                   |      | M5                                    |                  |                  |                  |                  | Rc1/8            |
| Stroke tolerance            | mm   | +1.5<br>0                             |                  |                  |                  |                  |                  |
| Working piston speed        | mm/s | 50 to 500                             |                  |                  |                  |                  |                  |
| Cushion                     |      | With rubber cushion                   |                  |                  |                  |                  |                  |
| Lubrication                 |      | Not required                          |                  |                  |                  |                  |                  |
| Allowable absorbed energy J |      | 0.012                                 | 0.036            | 0.1              | 0.1              | 0.19             | 0.5              |

## Stroke

| Bore size (mm) | Standard stroke (mm)                               | Min. stroke (mm) |
|----------------|----------------------------------------------------|------------------|
| ø 6            | 5, 10, 15, 20, 25, 30, 40, 50, 60                  | 5                |
| ø10            |                                                    |                  |
| ø16            |                                                    |                  |
| ø20            | 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 |                  |
| ø25            |                                                    |                  |
| ø32            |                                                    |                  |

\*1: The custom stroke is available in 5 mm increments. However, the total length is the same as that of the next longer standard stroke.

## Min. stroke with switch

| Bore size (mm)   | 1-color LED                  |                              | 2-color LED                   |                               |
|------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
|                  | K <input type="checkbox"/> H | K <input type="checkbox"/> V | K <input type="checkbox"/> YH | K <input type="checkbox"/> YV |
| $\varnothing 6$  | 5                            |                              | 5                             |                               |
| $\varnothing 10$ |                              |                              |                               |                               |
| $\varnothing 16$ |                              |                              |                               |                               |
| $\varnothing 20$ |                              |                              |                               |                               |
| $\varnothing 25$ |                              |                              |                               |                               |
| $\varnothing 32$ |                              |                              |                               |                               |

### How to order

Without switch (without magnet for switch)

**SMG-G - 32 - 25 - HP1**

With switch (built-in magnet for switch)

**SMG-GL - 32 - 25 - K2H - R - HP1**

**A** Model No.

**B** Bore size

**C** Port thread

**D** Stroke

**E** Switch model No.

### ! Precautions for model No. selection

**\*1: Refer to page 70 for min. stroke with switch.**

**\*2: Copper and PTFE free as standard.**

[Example of model No.]

**SMG-GL-6-15-K0H-R-HP1**

Model: Compact cylinder

**B** Bore size :  $\phi 6$  mm

**C** Port thread : Rc thread

**D** Stroke : 15 mm

**E** Switch model No. : Reed switch K0H, lead wire length 1 m

**F** Switch quantity : 1 on rod side

**F** Switch quantity

### How to order switch

**SW - K2H**

Switch model No.  
(Item **E** above)

| Code               | Description                                         |
|--------------------|-----------------------------------------------------|
| <b>A Model No.</b> |                                                     |
| <b>SMG-G</b>       | Double acting/Single rod/rubber scraper             |
| <b>SMG-GL</b>      | Double acting/Single rod/rubber scraper with switch |

| <b>B Bore size (mm)</b> |           |
|-------------------------|-----------|
| <b>6</b>                | $\phi 6$  |
| <b>10</b>               | $\phi 10$ |
| <b>16</b>               | $\phi 16$ |
| <b>20</b>               | $\phi 20$ |
| <b>25</b>               | $\phi 25$ |
| <b>32</b>               | $\phi 32$ |

| <b>C Port thread</b> |                                                    |
|----------------------|----------------------------------------------------|
| <b>Blank</b>         | Rc thread                                          |
| <b>NN</b>            | NPT thread ( $\phi 32$ only) (made to order)       |
| <b>GN</b>            | G thread ( $\phi 32$ only) (made-to-order product) |

| <b>D Stroke (mm)</b> |     | <b>Applicable bore size</b> |           |           |           |           |           |
|----------------------|-----|-----------------------------|-----------|-----------|-----------|-----------|-----------|
|                      |     | $\phi 6$                    | $\phi 10$ | $\phi 16$ | $\phi 20$ | $\phi 25$ | $\phi 32$ |
| Standard stroke      | 5   | ●                           | ●         | ●         | ●         | ●         | ●         |
|                      | 10  | ●                           | ●         | ●         | ●         | ●         | ●         |
|                      | 15  | ●                           | ●         | ●         | ●         | ●         | ●         |
|                      | 20  | ●                           | ●         | ●         | ●         | ●         | ●         |
|                      | 25  | ●                           | ●         | ●         | ●         | ●         | ●         |
|                      | 30  | ●                           | ●         | ●         | ●         | ●         | ●         |
|                      | 40  | ●                           | ●         | ●         | ●         | ●         | ●         |
|                      | 50  | ●                           | ●         | ●         | ●         | ●         | ●         |
|                      | 60  | ●                           | ●         | ●         | ●         | ●         | ●         |
|                      | 70  |                             |           |           | ●         | ●         | ●         |
|                      | 80  |                             |           |           | ●         | ●         | ●         |
|                      | 90  |                             |           |           | ●         | ●         | ●         |
|                      | 100 |                             |           |           | ●         | ●         | ●         |

| <b>E Switch model No.</b> |                    |           |         |    |                             |           |
|---------------------------|--------------------|-----------|---------|----|-----------------------------|-----------|
| Lead wire straight        | Lead wire L-shaped | Contact   | Voltage |    | Indicator                   | Lead wire |
| Rate type                 |                    |           | AC      | DC |                             |           |
| <b>K0H*</b>               | <b>K0V*</b>        | Reed      | ●       | ●  | 1-color LED                 | 2-wire    |
| <b>K5H*</b>               | <b>K5V*</b>        |           | ●       | ●  | No LED                      |           |
| <b>K2H*</b>               | <b>K2V*</b>        | Proximity |         | ●  | 1-color LED                 | 2-wire    |
| <b>K3H*</b>               | <b>K3V*</b>        |           |         | ●  |                             | 3-wire    |
| <b>K3PH*</b>              | <b>K3PV*</b>       |           |         | ●  | 1-color LED (made to order) | 3-wire    |
| <b>K2YH*</b>              | <b>K2YV*</b>       |           |         | ●  | 2-color LED                 | 2-wire    |
| <b>K3YH*</b>              | <b>K3YV*</b>       |           |         | ●  |                             | 3-wire    |

| <b>* Lead wire length</b> |                |
|---------------------------|----------------|
| <b>Blank</b>              | 1 m (standard) |
| <b>3</b>                  | 3 m            |
| <b>5</b>                  | 5m             |

| <b>F Switch quantity</b> |                |
|--------------------------|----------------|
| <b>R</b>                 | 1 on rod side  |
| <b>H</b>                 | 1 on head side |
| <b>D</b>                 | 2              |

Consumable parts list (Note: Specify the kit No. when placing an order.)

| Bore size (mm) | Kit No.              | Part name                                          |
|----------------|----------------------|----------------------------------------------------|
| $\phi 6$       | <b>SMG-G-6K-HP1</b>  | Scraper, lube keeping structure, CR ring snap ring |
| $\phi 10$      | <b>SMG-G-10K-HP1</b> | Rod packing, cushion rubber R, piston              |
| $\phi 16$      | <b>SMG-G-16K-HP1</b> | Packing, cushion rubber H, cover gasket            |
| Bore size (mm) | Kit No.              | Part name                                          |
| $\phi 20$      | <b>SMG-G-20K-HP1</b> | Scraper, lube keeping structure, rod packing,      |
| $\phi 25$      | <b>SMG-G-25K-HP1</b> | Cushion rubber R, piston packing,                  |
| $\phi 32$      | <b>SMG-G-32K-HP1</b> | Cushion rubber H, cover gasket                     |

|        |                                        |
|--------|----------------------------------------|
| SCPD3  | Long service life cylinder             |
| CMK2   |                                        |
| SCM    |                                        |
| SSD2   |                                        |
| MDC2   |                                        |
| MSD    |                                        |
| MSDG-L |                                        |
| SMG    |                                        |
| LCR    |                                        |
| LCG    |                                        |
| STM    |                                        |
| STG    |                                        |
| STR2   |                                        |
| SCPD3  | Environment-resistant cylinder         |
| CMK2   |                                        |
| SCM    |                                        |
| SCG    |                                        |
| SSD2   |                                        |
| SMG    |                                        |
| LCR    |                                        |
| STG    |                                        |
| STS    |                                        |
| STL    |                                        |
| LSH    | Linear Slide Hand                      |
| LSHL   |                                        |
| LSHM   |                                        |
| LST    | Low-profile long stroke hand           |
| LSTM   |                                        |
| HMC    | Wide Parallel Hand                     |
| CKW    | Chuck                                  |
| ABP2   | Air Booster                            |
| SCPD3  | Compatible with rechargeable batteries |
| CMK2   |                                        |
| SCM    |                                        |
| SSD2   |                                        |
| MSD    |                                        |
| MSDG-L |                                        |
| SMG    |                                        |
| STG    |                                        |
| STM    |                                        |
| LCR    |                                        |
| LCG    |                                        |
| STR2   |                                        |
| LSH    |                                        |
| LSHL   |                                        |
| SCPD3  | Supports food mfg. processes           |
| CMK2   |                                        |
| SCM    |                                        |
| SCG    |                                        |
| SSD2   |                                        |
| STG    |                                        |

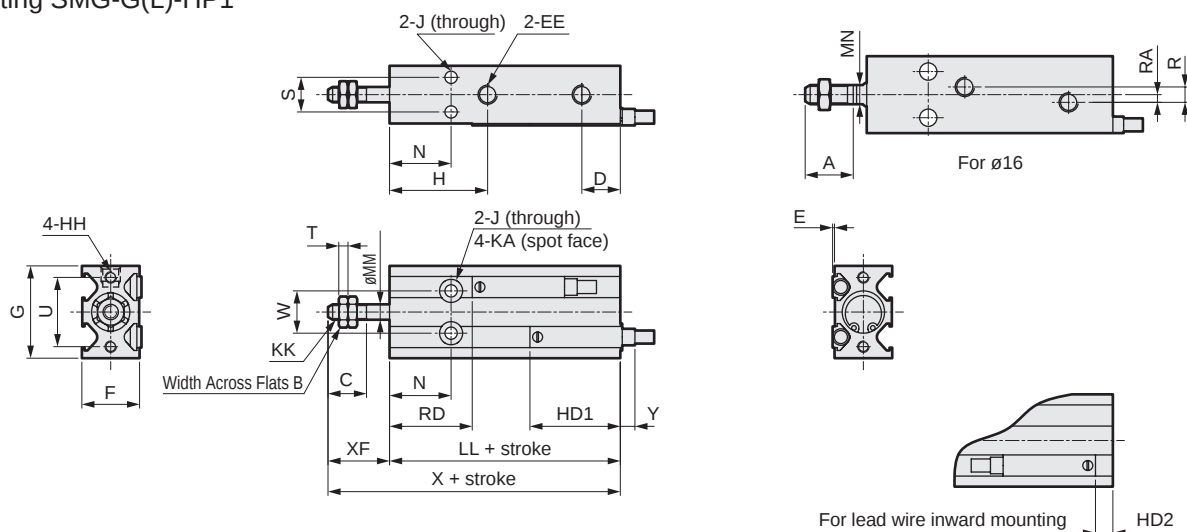
# SMG-G-HP1 Series

## Dimensions

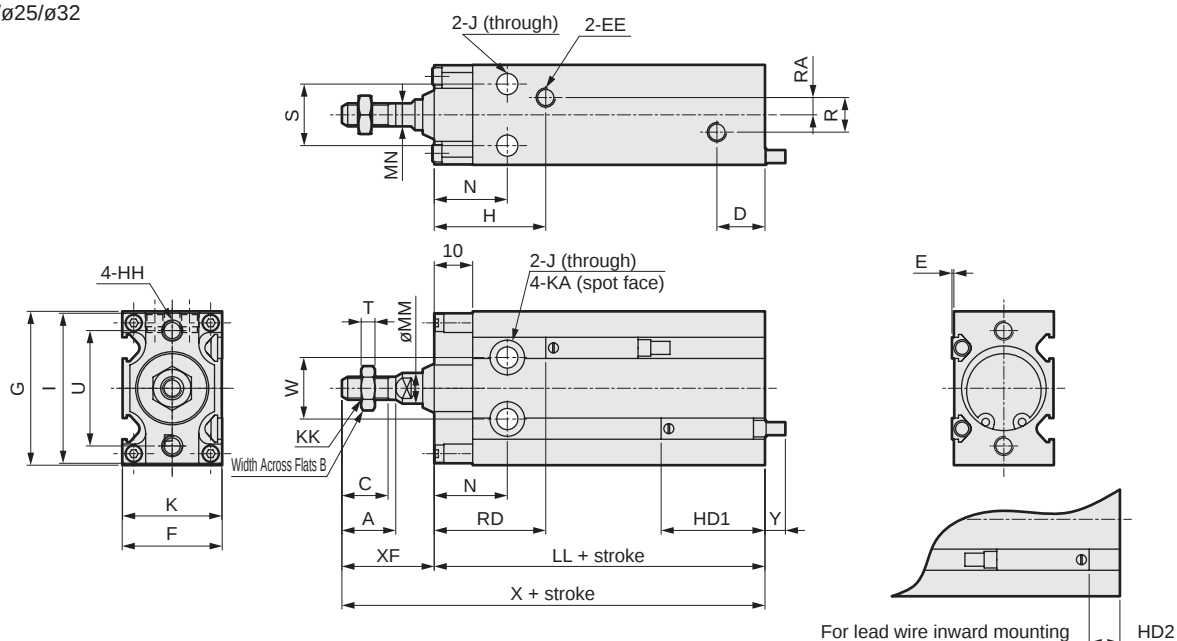


### ● Double acting SMG-G(L)-HP1

●  $\varnothing 6/10/16$



●  $\varnothing 20/\varnothing 25/\varnothing 32$



| Code             | A    | B   | C    | D    | EE    | F  | G  | H       | HH         | I  | J   | K    | KA            | KK          | MM | MN | N    | R    | RA  | S  |
|------------------|------|-----|------|------|-------|----|----|---------|------------|----|-----|------|---------------|-------------|----|----|------|------|-----|----|
| <b>Bore size</b> |      |     |      |      |       |    |    |         |            |    |     |      |               |             |    |    |      |      |     |    |
| $\varnothing 6$  | -    | 5.5 | 7    | 10   | M5    | 13 | 22 | 24.5    | M3 depth 5 | -  | 3.2 | -    | 6 depth 4.8   | M3          | 3  | -  | 16.5 | -    | -   | 7  |
| $\varnothing 10$ | -    | 7   | 10   | 10   | M5    | 15 | 24 | 26      | M3 depth 5 | -  | 3.2 | -    | 6 depth 5     | M4          | 4  | -  | 16.5 | -    | -   | 9  |
| $\varnothing 16$ | 12.5 | 8   | 11   | 11.5 | M5    | 20 | 32 | 26 (*1) | M4 depth 6 | -  | 4.5 | -    | 7.5 depth 6.5 | M5          | 6  | 5  | 16.5 | 4    | 2   | 12 |
| $\varnothing 20$ | 14   | 10  | 12   | 12.5 | M5    | 26 | 40 | 29      | M5 depth 8 | 39 | 5.5 | 25.8 | 9 depth 8     | M6          | 8  | 6  | 19   | 9    | 4.5 | 16 |
| $\varnothing 25$ | 18   | 13  | 15.5 | 13   | M5    | 32 | 50 | 31.5    | M5 depth 8 | 49 | 5.5 | 22   | 9 depth 9     | M8          | 10 | 8  | 20   | 9    | 4.5 | 20 |
| $\varnothing 32$ | 22   | 17  | 19.5 | 12.5 | Rc1/8 | 40 | 62 | 33      | M6 depth 9 | 61 | 6.6 | 29   | 11 depth 11.5 | M 10 x 1.25 | 12 | 10 | 21   | 13.5 | 4.5 | 24 |

| Code             | T   | U  | W  | XF | LL             |             | X              |             | E   | HD1  | HD2  | RD   | Y (*2) |
|------------------|-----|----|----|----|----------------|-------------|----------------|-------------|-----|------|------|------|--------|
| <b>Bore size</b> |     |    |    |    | Without switch | With switch | Without switch | With switch |     |      |      |      |        |
| $\varnothing 6$  | 1.8 | 17 | 10 | 13 | 42.5           | 42.5        | 55.5           | 55.5        | 1   | 20   | 1    | 22.5 | 7      |
| $\varnothing 10$ | 2.4 | 18 | 11 | 16 | 45.5           | 45.5        | 61.5           | 61.5        | 1   | 23.5 | 4.5  | 22   | 3.5    |
| $\varnothing 16$ | 3.2 | 25 | 14 | 16 | 39.5           | 49.5        | 55.5           | 65.5        | 0.5 | 24.5 | 5.5  | 25   | 2.5    |
| $\varnothing 20$ | 3.6 | 30 | 16 | 24 | 46             | 56          | 70             | 80          | 0.5 | 27   | 8    | 29   | 0      |
| $\varnothing 25$ | 5   | 38 | 20 | 28 | 50             | 60          | 78             | 88          | 0.5 | 29   | 10   | 31   | -2     |
| $\varnothing 32$ | 6   | 48 | 24 | 32 | 52             | 62          | 84             | 94          | 0.5 | 30.5 | 11.5 | 31.5 | -3.5   |

\*1: 24 for 5 stroke without switch

\*2: Y dimensions indicate the protruding dimensions from the end surface of the switch body. (Negative dimensions indicate the pull dimensions from the end surface of the body)

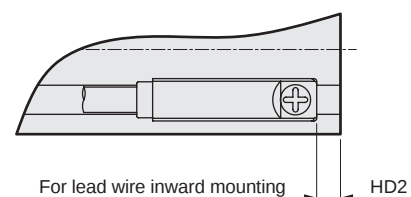
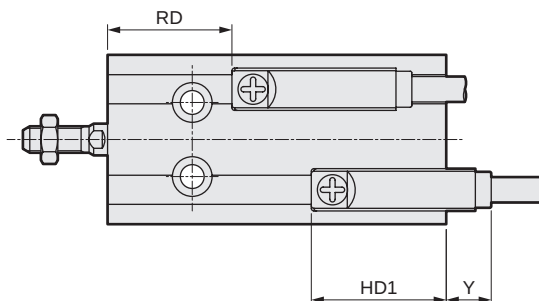
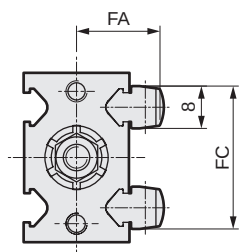
\*3: To calculate LL+ stroke or X+ stroke when using custom stroke, apply the next longer standard stroke (instead of the custom stroke) to the stroke value. (Example: If the custom stroke is 35 mm, apply the standard stroke of 40 mm)

\*4: Refer to page 73 for HD, RD, and protruding dimensions of 2-color LED switches.

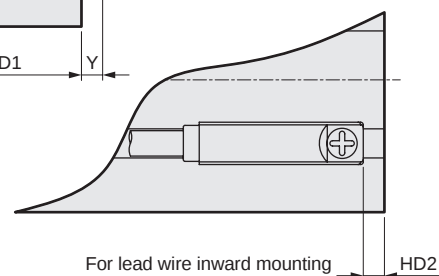
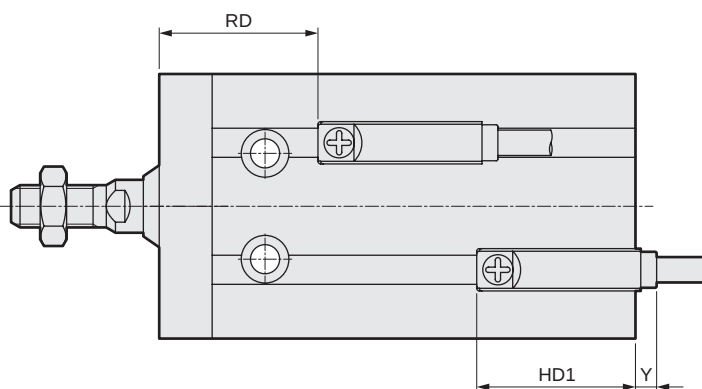
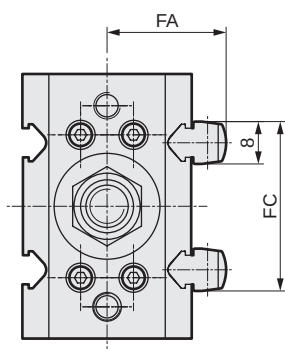
### SMG-G-HP1 Series with switch common dimensions (2-color LED)

● SMG-GL-HP1 (With switch: K2Y<sup>H</sup>/<sub>V</sub>, K3Y<sup>H</sup>/<sub>V</sub>)

● ø6/10/16



● ø20/25/32



| Code      | FA   | FC | HD1  | HD2  | RD   | Y                       |                  |
|-----------|------|----|------|------|------|-------------------------|------------------|
| Bore size |      |    |      |      |      | Lead wire Straight Type | Lead wire L-type |
| ø6        | 13.5 | 18 | 21   | 0    | 21.5 | 13                      | 10               |
| ø10       | 14.5 | 21 | 24.5 | 3.5  | 21   | 9.5                     | 6.5              |
| ø16       | 16.5 | 27 | 25.5 | 4.5  | 24   | 8.5                     | 5.5              |
| ø20       | 19.5 | 29 | 28   | 7    | 28   | 6                       | 3                |
| ø25       | 22.5 | 32 | 30   | 9    | 30   | 4                       | 1                |
| ø32       | 26.5 | 34 | 31.5 | 10.5 | 30.5 | 2.5                     | -0.5             |

\*1: Y dimensions indicate the protruding dimensions from the end surface of the switch body. (Negative dimensions indicate the pull dimensions from the end surface of the body)

|        |                                        |
|--------|----------------------------------------|
| SCPD3  | Long service life cylinder             |
| CMK2   |                                        |
| SCM    |                                        |
| SSD2   |                                        |
| MDC2   |                                        |
| MSD    |                                        |
| MSDG-L |                                        |
| SMG    |                                        |
| LCR    |                                        |
| LCG    |                                        |
| STM    | Environment-resistant cylinder         |
| STG    |                                        |
| STR2   |                                        |
| SCPD3  |                                        |
| CMK2   |                                        |
| SCM    |                                        |
| SCG    |                                        |
| SSD2   |                                        |
| SMG    |                                        |
| LCR    |                                        |
| STG    | Linear Slide Hand                      |
| STS    |                                        |
| STL    |                                        |
| LSH    |                                        |
| LSHL   |                                        |
| LSHM   |                                        |
| LST    |                                        |
| LSTM   |                                        |
| HMC    |                                        |
| CKW    | Chuck                                  |
| ABP2   |                                        |
| SCPD3  |                                        |
| CMK2   |                                        |
| SCM    |                                        |
| SSD2   |                                        |
| MSD    |                                        |
| MSDG-L |                                        |
| SMG    |                                        |
| STG    |                                        |
| STM    | Compatible with rechargeable batteries |
| LCR    |                                        |
| LCG    |                                        |
| STR2   |                                        |
| LSH    |                                        |
| LSHL   |                                        |
| SCPD3  |                                        |
| CMK2   |                                        |
| SCM    |                                        |
| SCG    |                                        |
| SSD2   |                                        |
| STG    |                                        |