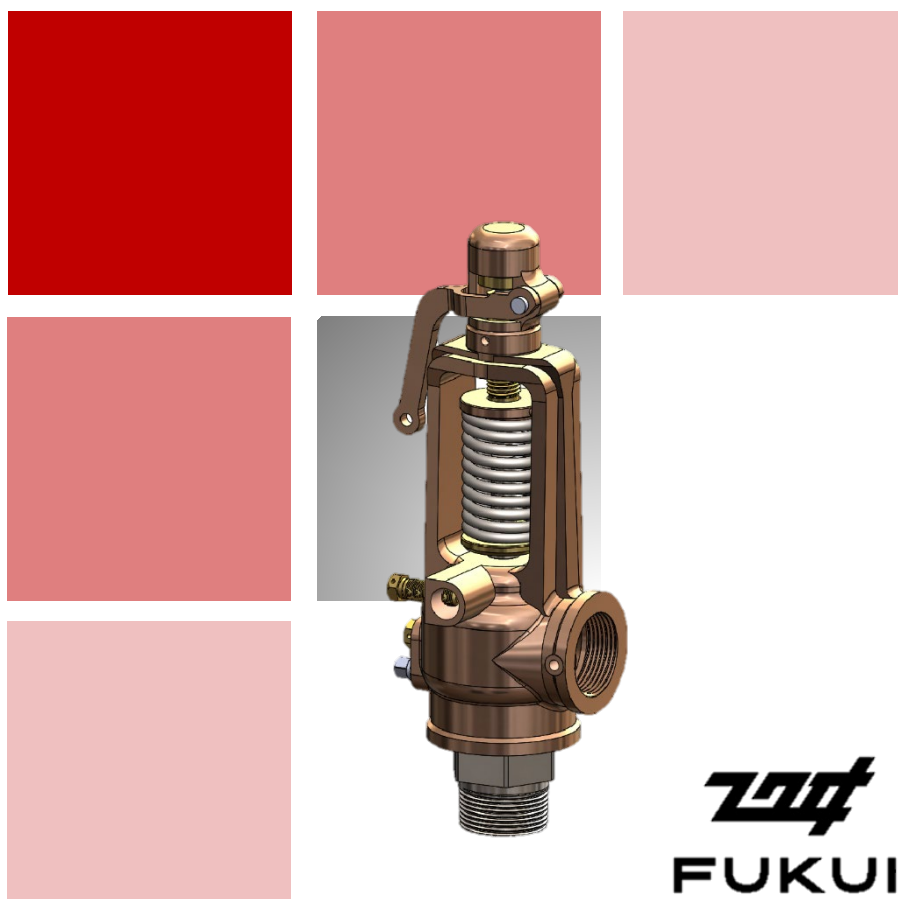




SP Series

## Contents

|                                                   |   |
|---------------------------------------------------|---|
| ◆ Features .....                                  | 2 |
| ◆ Structure .....                                 | 2 |
| ◆ Cap code .....                                  | 4 |
| ◆ Type code.....                                  | 4 |
| ◆ Cross-sectional view and standard material..... | 5 |
| ◆ Actual area .....                               | 6 |
| ◆ Pressure and temperature standard.....          | 6 |
| ◆ Dimensions and weight .....                     | 7 |

## ◆ Features

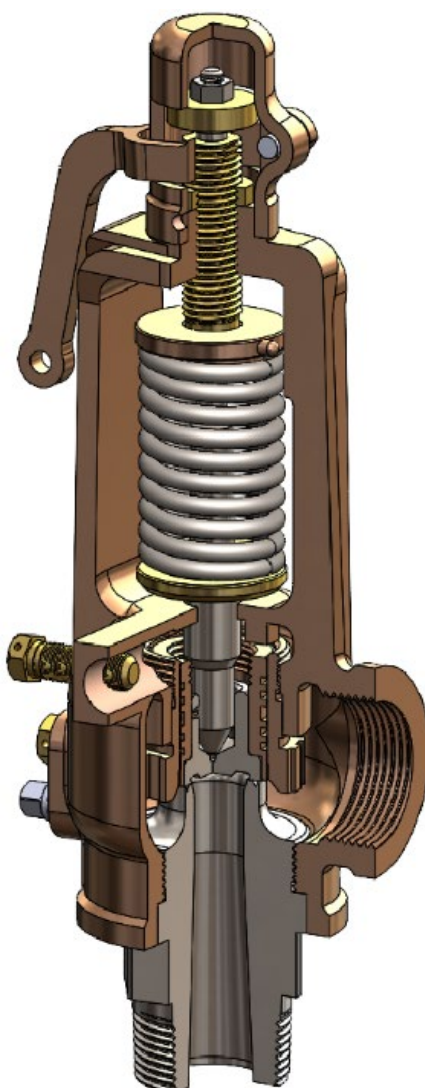
The SP series is developed for steam service applications such as package boilers and marine boilers. The body material is made of bronze casting.

## ◆ Structure

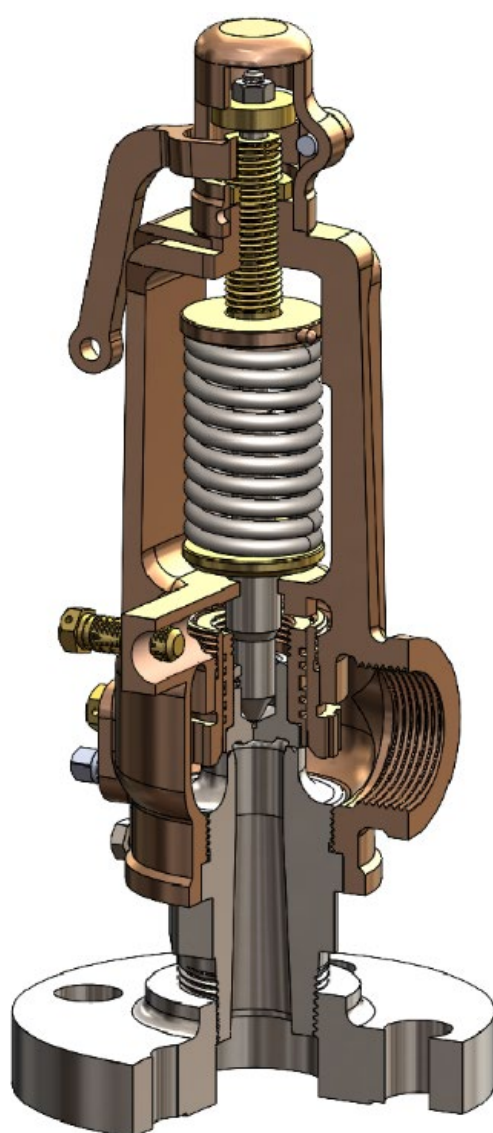
The SP series adopts an integrated cast structure for the body and bonnet to simplify the construction. As one of its key features, it incorporates a back-pressure needle for blowdown adjustment.

### SP Structure

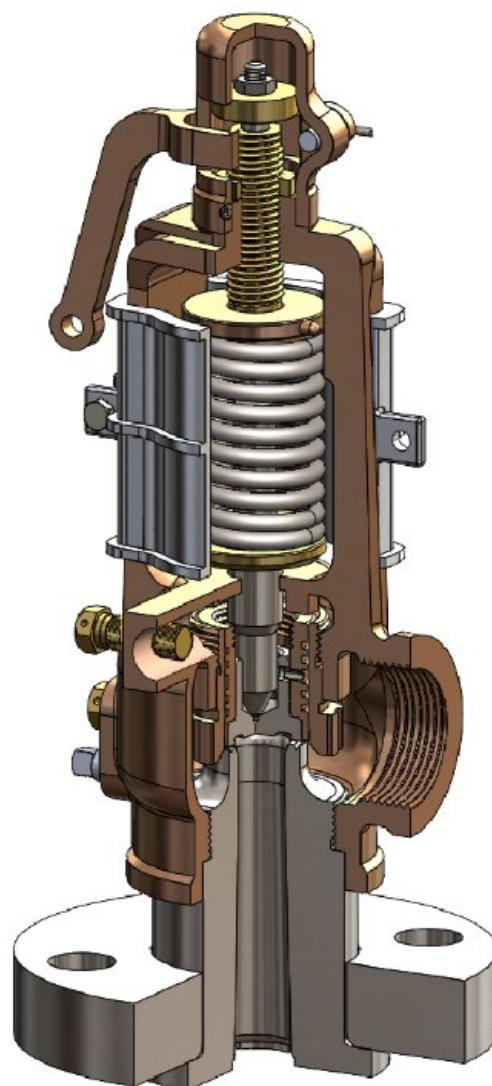
- ◆ Full nozzle
- ◆ Lower ring adjustment function
- ◆ Blowdown adjustment needle



SP Structure

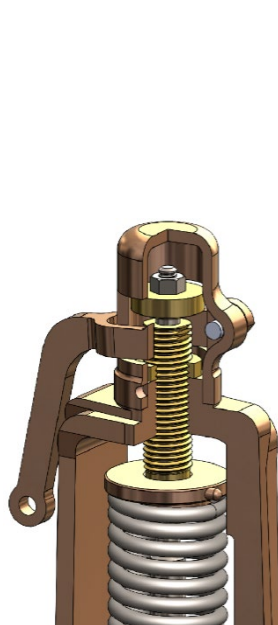


Threaded flange fixed by welding

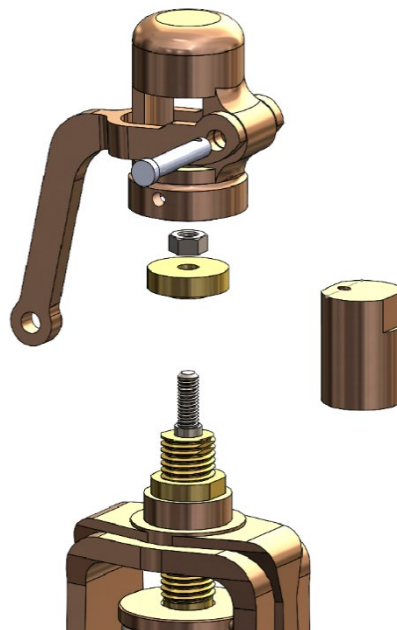


Loose flange with spring cover

## Cap code



(C) Open lever



(T) Open lever + test gag

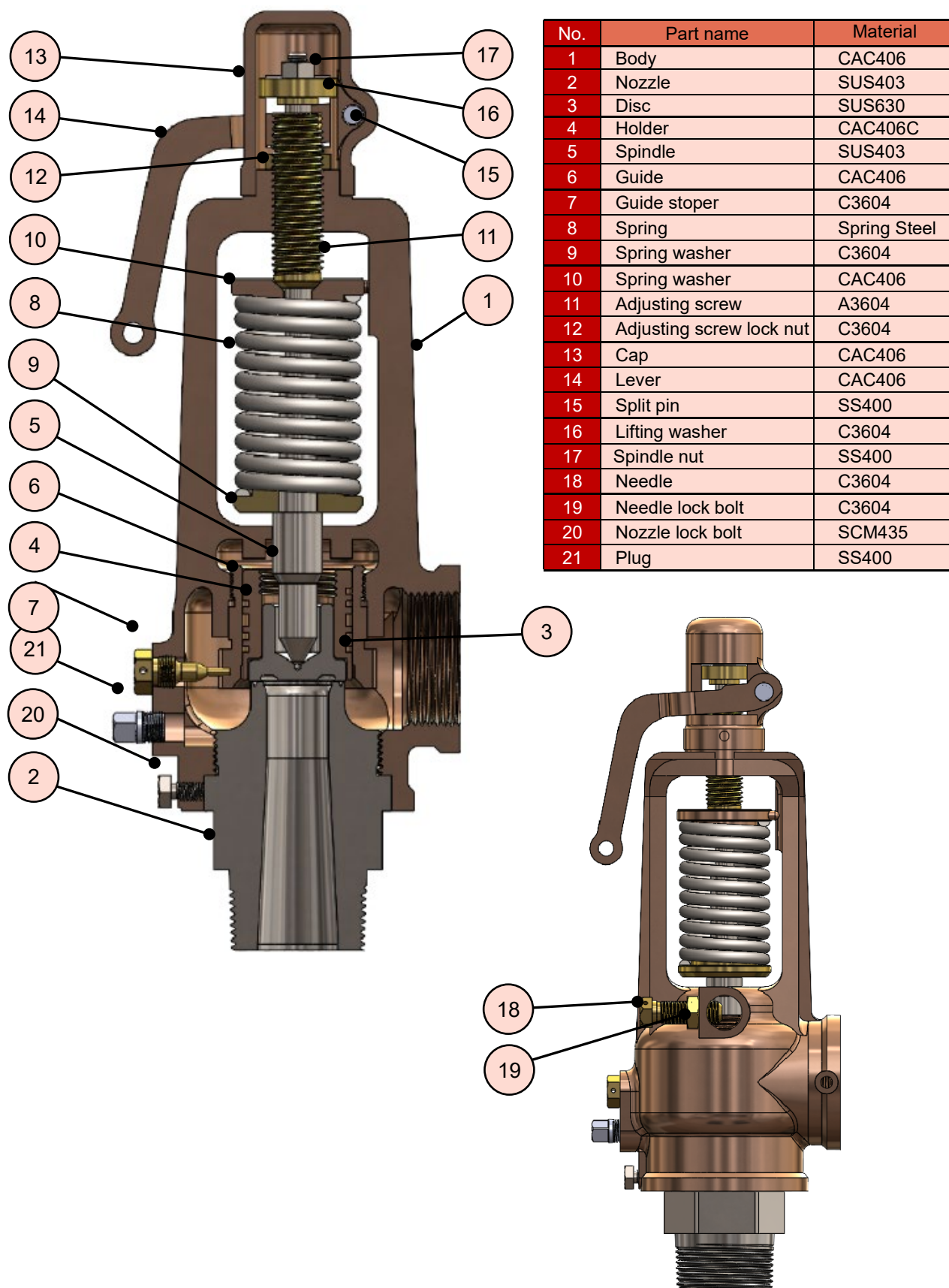
Remove the cap, lever, and lifting washer, then install the test gag.

## Type code

| SP                      |       |            | (C)      |                                  |        |                      |
|-------------------------|-------|------------|----------|----------------------------------|--------|----------------------|
|                         |       |            | Cap code |                                  |        |                      |
|                         |       |            | (C)      | Lever                            | (T)    | Lever + test gag     |
| Type code ① + ② + ③ + ④ |       |            |          |                                  |        |                      |
| ①                       | ②     | ③          |          |                                  | ④      |                      |
| SP                      | L     | LRS code   | U        | JIS B 8210-1986 20K Loose flange | (-)*2M | With spring cover    |
|                         | Blank | Other code | U9       | JIS B 8210-1994 20K Loose flange | Blank  | Without spring cover |
|                         | —     | —          | -F1      | JIS B 2210 10K flange*1          | —      | —                    |
|                         |       |            | -F2      | JIS B 2210 20K flange*1          |        |                      |
|                         |       |            | -B1      | JIS B 8210-1986 10K flange*1     |        |                      |
|                         |       |            | -B2      | JIS B 8210-1986 20K flange*1     |        |                      |
|                         |       |            | -B19     | JIS B 8210-1994 10K flange*1     |        |                      |
|                         |       |            | -B29     | JIS B 8210-1994 20K flange*1     |        |                      |
|                         |       |            | -A1      | ASME Class 150 flange*1          |        |                      |
|                         |       |            | -A2      | ASME Class 300 flange*1          |        |                      |
|                         |       |            | -P1      | JPI Class 150 flange*1           |        |                      |
|                         |       |            | -P2      | JPI Class 300 flange*1           |        |                      |
|                         |       |            | Blank    | R Thread                         |        |                      |

\* 1 Threaded flange fixed by welding \* 2 add “—” in case code ③ is “U”, “U9” or “Blank”  
code

# ◆ Cross-sectional view and standard material



SP Cross-sectional view, Material

### Actual area

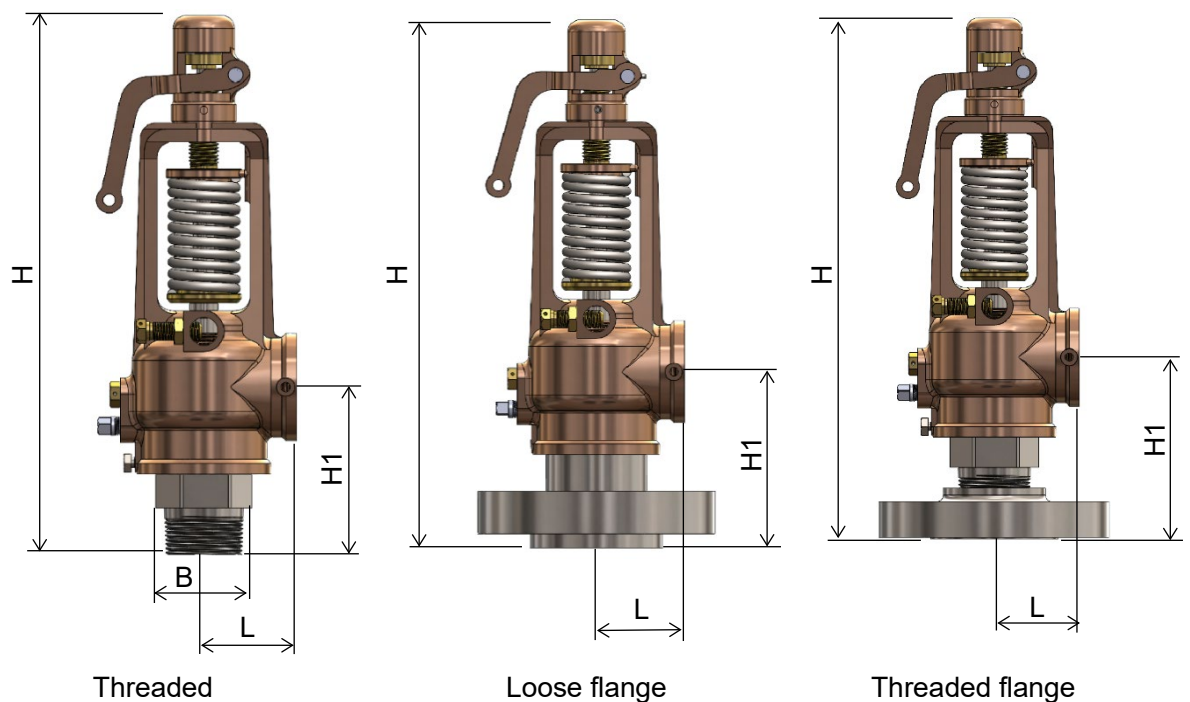
| Size | Thread diameter mm | Area cm <sup>2</sup> | Seat diameter mm | Nominal lift mm |
|------|--------------------|----------------------|------------------|-----------------|
| 20   | 15                 | 1.76                 | 19               | 3.3             |
| 25   | 19                 | 2.83                 | 22               | 4.4             |
| 32   | 24                 | 4.52                 | 28               | 5.5             |
| 40   | 30                 | 7.06                 | 35               | 6.8             |
| 50   | 38                 | 11.34                | 44               | 8.7             |

### Pressure and temperature standard

| Size | Pressure (MPa) |         | Temperature (°C) |         |
|------|----------------|---------|------------------|---------|
|      | Minimum        | Maximum | Minimum          | Maximum |
| 20   | 0.324          | 2.16    | -5               | 220     |
| 25   |                |         |                  |         |
| 32   |                |         |                  |         |
| 40   |                |         |                  |         |
| 50   |                |         |                  |         |

## ◆ Dimensions and weight

| Dimension and weight |                                                    |                       |    |             |           | Unit mm, kg           |    |     |        |
|----------------------|----------------------------------------------------|-----------------------|----|-------------|-----------|-----------------------|----|-----|--------|
| Size                 | Thread                                             |                       |    |             |           |                       |    |     |        |
|                      | Threaded size<br>Inlet/outlet                      | Center to face        |    | Length<br>H | Weight    | Wrench size B         |    |     |        |
|                      |                                                    | H1                    | L  |             |           |                       |    |     |        |
| 20                   | R 1                                                | 85                    | 45 | 260         | 2.0       | 41                    |    |     |        |
| 25                   | R1 1/4                                             | 90                    | 50 | 290         | 3.0       | 46                    |    |     |        |
| 32                   | R1 1/2                                             | 100                   | 55 | 325         | 4.0       | 55                    |    |     |        |
| 40                   | R 2                                                | 115                   | 65 | 370         | 7.0       | 65                    |    |     |        |
| 50                   | R2 1/2                                             | 130                   | 80 | 435         | 12        | 80                    |    |     |        |
| Size                 | JIS B 8210 20K Losse flange （Year 1986, Year 1994） |                       |    |             |           |                       |    |     |        |
|                      | Nominal flange<br>Dia                              | Center to face        |    | Length<br>H | Weight    |                       |    |     |        |
|                      |                                                    | H1                    | L  |             | Year 1986 | Year 1994             |    |     |        |
| 20                   | 25A                                                | 90                    | 45 | 265         | 4.1       | 4.1                   |    |     |        |
| 25                   | 32A                                                | 100                   | 50 | 300         | 5.2       | 5.4                   |    |     |        |
| 32                   | 40A                                                | 110                   | 55 | 335         | 7.5       | 7.5                   |    |     |        |
| 40                   | 50A                                                | 115                   | 65 | 370         | 10.5      | 10.5                  |    |     |        |
| 50                   | 65A                                                | 140                   | 80 | 445         | 16.5      | 17.6                  |    |     |        |
| Size                 |                                                    | JIS B 2210 10K Flange |    |             |           | JIS B 2210 20K Flange |    |     |        |
|                      | Nominal flange<br>Dia                              | Center to face        |    | H           | Weight    | Center to face        |    | H   | Weight |
|                      |                                                    | H1                    | L  |             |           | H1                    | L  |     |        |
| 20                   | 25A                                                | 93                    | 45 | 268         | 2.8       | 96                    | 45 | 271 | 2.9    |
| 25                   | 32A                                                | 96                    | 50 | 296         | 4.2       | 101                   | 50 | 301 | 4.4    |
| 32                   | 40A                                                | 109                   | 55 | 334         | 5.6       | 113                   | 55 | 338 | 5.8    |
| 40                   | 50A                                                | 121                   | 65 | 376         | 8.6       | 125                   | 65 | 380 | 8.8    |
| 50                   | 65A                                                | 134                   | 80 | 436         | 13.8      | 138                   | 80 | 440 | 14.0   |





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The product photos and structures are representative examples. Product specifications in the catalog may be changed without notice for product improvement or quality enhancement.