



Type 57 Butterfly Valves

Standard Features (Sizes 1-1/2" – 14")

- Standard model (1-1/2" – 14") has PVC body and PP disc for superior chemical resistance and elevated temperature capabilities
- 316/403 stainless steel shaft has full engagement over the entire length of the disc and is a non-wetted part
- Only solid and abrasion-resistant plastic disc and elastomeric liner are wetted parts
- ISO bolt circle on top flange—no body or stem modifications required for accessories
- Stem retainer—PP retainer to prevent stem removal
- Seat over tightening protection—Molded body stops and seat stress relief area
- Spherical disc design offers increased Cv, ultimate sealing and high cycle life
- 18 position throttle plate for lever handle style

Options

- Pneumatically and electrically actuated with accessories
- Alternate discs:
 - (I) PVC : 1-1/2" – 14"
 - (II) PVDF : 1-1/2" – 14"
 - (III) CPVC : 3", 4", 6" & 8"
- Lug style (stainless steel 304 or 316) for blocking & end-of-line applications
- Stems in 316 stainless steel, titanium, Hastelloy C®
- 2" square nut on stem (1-1/2" - 8" only)
- 2" square nut on gear operator (All sizes)
- Stem extensions (Single stem and two-piece stem)
- Locking devices (Gear type – standard on lever)
- Chain operators
- Manual limit switch - Asahi P-Series
- Tandem arrangements (Patented by A/A, Inc.)

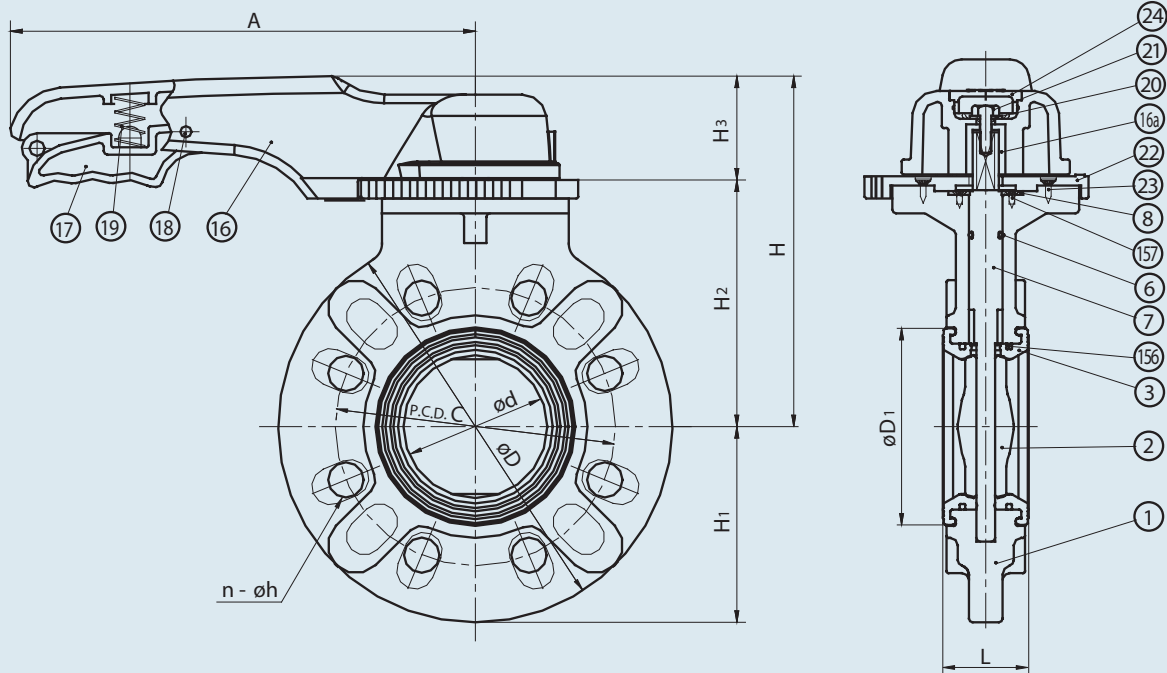
| Specifications | |
|--|--|
| Sizes: | Lever: 1-1/2" – 8" Gear: 8" – 14" |
| Models: | Wafer Style |
| Operators: | Lever and Gear |
| Bodies: | PVC, PP and PVDF |
| Discs: | PVC, PP, PVDF and CPVC |
| Seats: | EPDM, FKM, and Nitrile |
| Seals: | Same as seating material |
| Stems: | 403 and 316 stainless steel, Titanium, Hastelloy C® ‡ |
| PVC/PP/EPDM Models NSF-61 Certified | |
| ‡ Trademark of Cabot Corporation | |

Parts List (Lever: Sizes 1-1/2" – 8")

| PARTS | | | |
|-------|--------------------------|------|-------------------------|
| NO. | DESCRIPTION | PCS. | MATERIAL |
| 1 | Body | 1 | PVC, PP, PVDF |
| 2 | Disc | 1 | PVC, CPVC, PP, PVDF |
| 3 | Seat | 1 | EPDM, FKM, NBR |
| 6 | O-Ring (C) | 1 | EPDM, FKM, NBR |
| 7 | Stem | 1 | Stainless Steel 316 |
| 8 | Stem Retainer | 1 | PP |
| 16 | Handle | 1 | PP |
| 16a | Metal Insert in Handle | 1 | Stainless Steel 316L |
| 17 | Handle Lever | 1 | PPG |
| 18 | Pin | 1 | PPG |
| 19 | Spring | 1 | Stainless Steel 304 |
| 20 | Washer (A) | 1 | Stainless Steel 304 |
| 21 | Bolt (B) | 1 | Stainless Steel 304 |
| 22 | Locking Plate | 1 | PPG |
| 23 | Screw (B) | 4 | Stainless Steel 304 |
| 24 | Cap (A) | 1 | PP |
| 156 | Liner Stabilization Ring | 2 | Stainless Steel (SCS13) |
| 157 | Screw (F) | 4 | Stainless Steel 304 |



Type 57 – Lever Operated Butterfly Valves



Dimensions (Lever: Sizes 1-1/2" – 8")

| NOMINAL SIZE | | ANSI CLASS 150 | | | | | | | | | | | |
|--------------|-----|----------------|-------|---|------|-------|------|------|-------|------|------|------|-------|
| INCHES | mm | d | C | n | h | D | D1 | L | H | H1 | H2 | H3 | A |
| 1 1/2 | 40 | 1.77 | 3.88 | 4 | 0.62 | 5.91 | 2.83 | 1.54 | 6.14 | 2.95 | 3.94 | 2.20 | 8.66 |
| 2 | 50 | 2.20 | 4.75 | 4 | 0.75 | 6.50 | 3.23 | 1.65 | 6.54 | 3.25 | 4.33 | 2.20 | 8.66 |
| 2 1/2 | 65 | 2.72 | 5.50 | 4 | 0.75 | 7.28 | 3.78 | 1.81 | 6.93 | 3.64 | 4.72 | 2.20 | 8.66 |
| 3 | 80 | 3.03 | 6.00 | 4 | 0.75 | 8.31 | 4.17 | 1.81 | 7.52 | 4.15 | 5.31 | 2.20 | 9.84 |
| 4 | 100 | 4.02 | 7.50 | 8 | 0.75 | 9.37 | 5.31 | 2.20 | 8.11 | 4.69 | 5.91 | 2.20 | 9.84 |
| 5 | 125 | 5.08 | 8.50 | 8 | 0.88 | 10.39 | 6.69 | 2.60 | 9.33 | 5.20 | 6.61 | 2.72 | 12.60 |
| 6 | 150 | 5.91 | 9.50 | 8 | 0.88 | 11.22 | 7.52 | 2.80 | 9.92 | 5.61 | 7.20 | 2.72 | 12.60 |
| 8 | 200 | 7.68 | 11.75 | 8 | 0.88 | 13.39 | 9.53 | 3.43 | 11.14 | 6.69 | 8.43 | 2.72 | 15.75 |

Cv Values

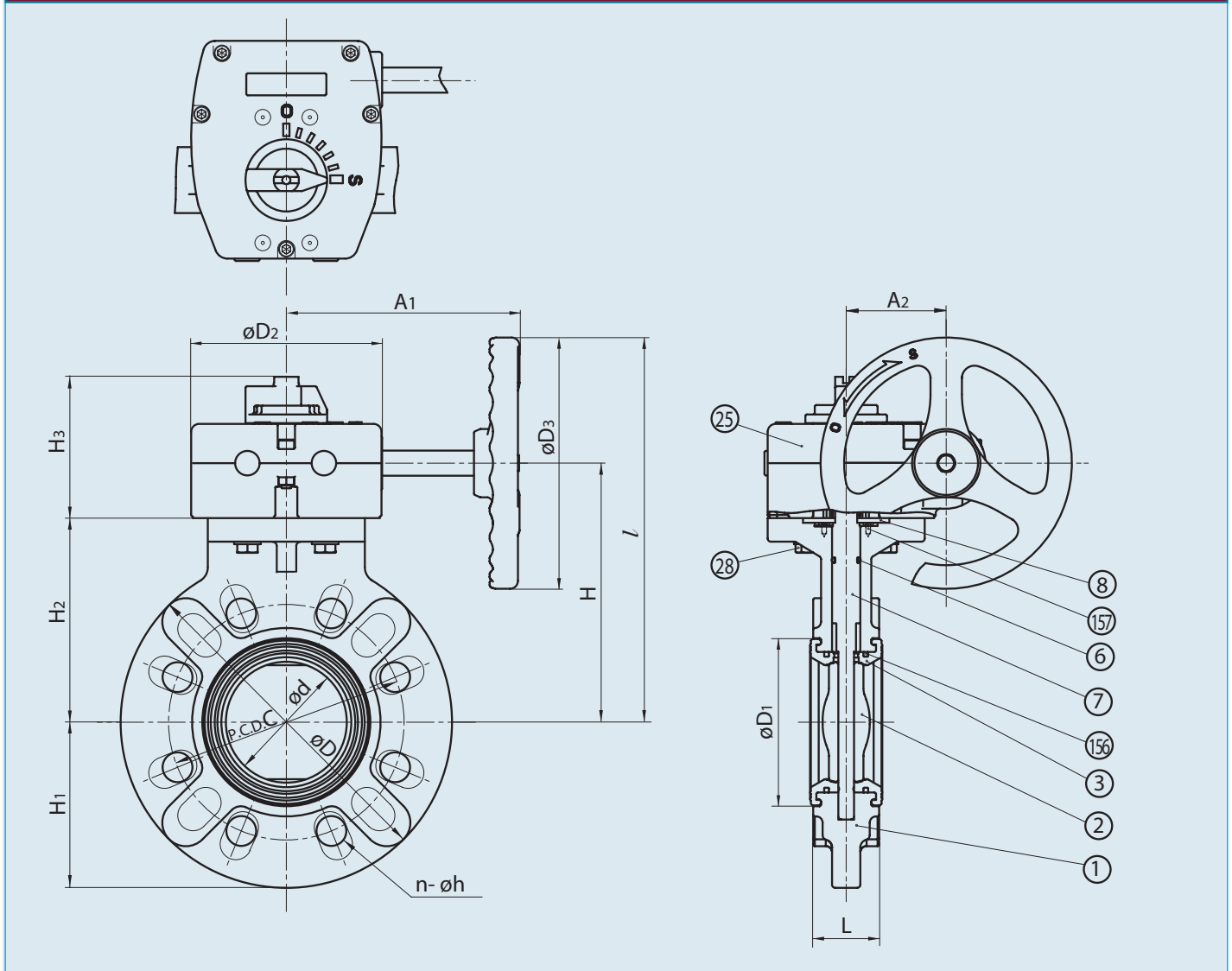
| NOMINAL SIZE | | Cv (at various opening degrees) | | |
|--------------|-----|---------------------------------|------|------|
| INCHES | mm | 30° | 60° | 90° |
| 1 1/2 | 40 | 4 | 43 | 71 |
| 2 | 50 | 7 | 73 | 120 |
| 2 1/2 | 65 | 15 | 153 | 250 |
| 3 | 80 | 18 | 183 | 300 |
| 4 | 100 | 28 | 287 | 470 |
| 5 | 125 | 49 | 506 | 830 |
| 6 | 150 | 66 | 671 | 1100 |
| 8 | 200 | 150 | 1525 | 2500 |

Pressure vs. Temperature (PSI, WATER, NON-SHOCK)* Wt. (LBS) / Vacuum Service

| BODY | | PVC | | | PP | | | PVDF | | | | NOMINAL SIZE | PVC | PP | PVDF | NOMINAL SIZE | VACUUM SERVICE (INCHES OF MERCURY) | |
|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|--------|----|--------|--------------|------------------------------------|--------|
| DISC | | PP | | | PP | | | PVDF | | | | | | | | | | |
| NOMINAL SIZE | | 30° F | 121° F | 141° F | -5° F | 141° F | -5° F | 141° F | 176° F | 211° F | INCHES | mm | INCHES | mm | INCHES | mm | | |
| INCHES | mm | 120° F | 140° F | 175° F | 140° F | 175° F | 140° F | 175° F | 210° F | 250° F | | | | | | | | |
| 1 1/2 | 40 | 150 | 70 | 30 | 150 | 100 | 150 | 100 | 85 | 75 | 1 1/2 | 40 | 3 | 3 | 3 | 1 1/2 | 40 | -29.92 |
| 2 | 50 | 150 | 70 | 30 | 150 | 100 | 150 | 100 | 85 | 75 | 2 | 50 | 4 | 3 | 4 | 2 | 50 | -29.92 |
| 2 1/2 | 65 | 150 | 70 | 30 | 150 | 100 | 150 | 100 | 85 | 75 | 2 1/2 | 65 | 4 | 3 | 4 | 2 1/2 | 65 | -29.92 |
| 3 | 80 | 150 | 70 | 30 | 150 | 100 | 150 | 100 | 85 | 75 | 3 | 80 | 5 | 4 | 5 | 3 | 80 | -29.92 |
| 4 | 100 | 150 | 45 | 30 | 150 | 100 | 150 | 100 | 85 | 75 | 4 | 100 | 6 | 5 | 7 | 4 | 100 | -29.92 |
| 5 | 125 | 150 | 45 | 30 | 150 | 100 | 150 | 100 | 85 | 75 | 5 | 125 | 11 | 9 | 13 | 5 | 125 | -29.92 |
| 6 | 150 | 150 | 45 | 30 | 150 | 100 | 150 | 100 | 85 | 75 | 6 | 150 | 13 | 10 | 15 | 6 | 150 | -29.92 |
| 8 | 200 | 150 | 40 | 20 | 150 | 85 | 150 | 85 | 75 | 60 | 8 | 200 | 21 | 16 | 25 | 8 | 200 | -29.92 |

* For lug style data consult factory

Type 57 – Gear Operated Butterfly Valves



Dimensions (Sizes 1-1/2" – 14") Note: Gear operated valve is standard 8" - 14" sizes
 Sizes 1-1/2" - 6" are options

| NOMINAL SIZE | ANSI CLASS 150 | | | | | | D | D1 | D2 | D3 | L | H | H1 | H2 | H3 | l | A1 | A2 | Wheel Cycles | Gear Box Model No. |
|--------------|----------------|-------|-------|----|------|-------|-------|------|-------|------|-------|-------|-------|------|-------|-------|------|-----|--------------|--------------------|
| | INCHES | mm | d | C | n | h | | | | | | | | | | | | | | |
| 1 1/2 | 40 | 1.77 | 3.88 | 4 | 0.62 | 5.91 | 2.83 | 4.80 | 6.30 | 1.54 | 5.12 | 2.95 | 3.74 | 3.54 | 8.27 | 6.57 | 2.52 | 9.5 | 241 | |
| 2 | 50 | 2.20 | 4.75 | 4 | 0.75 | 6.50 | 3.23 | 4.80 | 6.30 | 1.65 | 5.51 | 3.25 | 4.13 | 3.54 | 8.66 | 6.57 | 2.52 | 9.5 | | |
| 2 1/2 | 65 | 2.72 | 5.50 | 4 | 0.75 | 7.28 | 3.78 | 4.80 | 6.30 | 1.81 | 5.91 | 3.64 | 4.53 | 3.54 | 9.06 | 6.57 | 2.52 | 9.5 | | |
| 3 | 80 | 3.03 | 6.00 | 4 | 0.75 | 8.31 | 4.17 | 4.80 | 6.30 | 1.81 | 6.50 | 4.15 | 5.12 | 3.54 | 9.65 | 6.57 | 2.52 | 9.5 | | |
| 4 | 100 | 4.02 | 7.50 | 8 | 0.75 | 9.37 | 5.31 | 4.80 | 6.30 | 2.20 | 7.09 | 4.69 | 5.71 | 3.54 | 10.24 | 6.57 | 2.52 | 9.5 | | |
| 5 | 125 | 5.08 | 8.50 | 8 | 0.88 | 10.39 | 6.69 | 4.80 | 6.30 | 2.60 | 7.68 | 5.20 | 6.30 | 3.54 | 10.83 | 6.57 | 2.52 | 9.5 | | |
| 6 | 150 | 5.91 | 9.50 | 8 | 0.88 | 11.22 | 7.52 | 4.80 | 6.30 | 2.80 | 8.27 | 5.61 | 6.89 | 3.54 | 11.42 | 6.57 | 2.52 | 9.5 | | |
| 8 | 200 | 7.68 | 11.75 | 8 | 0.88 | 13.39 | 9.53 | 4.80 | 6.30 | 3.43 | 9.49 | 6.69 | 8.11 | 3.54 | 12.64 | 6.57 | 2.52 | 9.5 | | |
| 10 | 250 | 9.84 | 14.25 | 12 | 1.00 | 16.57 | 11.89 | 4.80 | 6.30 | 4.33 | 10.87 | 8.31 | 9.49 | 3.62 | 14.02 | 6.57 | 2.52 | 9.5 | 243 | |
| 12 | 300 | 11.93 | 17.00 | 12 | 1.00 | 19.21 | 14.17 | 7.40 | 11.81 | 5.08 | 13.39 | 9.61 | 11.73 | 4.25 | 19.29 | 10.71 | 3.90 | 9.5 | | |
| 14 | 350 | 13.82 | 18.75 | 12 | 1.12 | 21.22 | 15.47 | 7.40 | 11.81 | 5.08 | 14.45 | 10.63 | 12.80 | 4.25 | 20.35 | 10.71 | 3.90 | 9.5 | | |

Type 57 – Gear Operated Butterfly Valves

Parts List (Gear: Sizes 1-1/2" – 14")

| PARTS | | | |
|-------|--------------------------|------|--------------------------|
| NO. | DESCRIPTION | PCS. | MATERIAL |
| 1 | Body | 1 | PVC, PP, PVDF |
| 2 | Disc | 1 | PVC, CPVC, PP, PVDF |
| 3 | Seat | 1 | EPDM, FKM, NBR |
| 6 | O-Ring (C) | 1 | EPDM, FKM, NBR |
| 7 | Stem | 1 | Stainless Steel 316, 403 |
| 8 | Stem Retainer | 1 | PP |
| 25 | Gear Box | 1 | Plasgear™ |
| 28 | Bolt (C) | 4 | Stainless Steel 304 |
| 156 | Liner Stabilization Ring | 2 | Stainless Steel (SCS13) |
| 157 | Screw (F) | 4 | Stainless Steel 304 |

Sample Specification

All solid thermoplastic butterfly valves sizes 1-1/2" thru 14" shall be of the TYPE 57 lined body design and bubble-tight seal (meeting or exceeding Class VI as defined by American National Standard Institute) with only the liner and disc as wetted parts. The lever handle (sizes 1-1/2" thru 8") shall have a molded provision for a padlock. Gear operators shall be worm gear design, self locking Plasgear.™ The spherical disc design for higher Cv values shall be of solid, abrasion-resistant plastic. Liner shall be molded and formed around the body, functioning as gasket seals with convex ring design on each side of the valve for lower bolt tightening torque and valve body shall have molded body stops and seat relief area to prevent over tightening of mating flanges. Stem shall be of 316/403 stainless steel, non wetted, have engagement over the full length of the disc and be locked into valve body by PP stem retainer. Valves shall have a molded ISO bolt pattern on top flange for actuator mount. PVC shall conform to ASTM D1784 Cell Classification 12454-A, PP conforming to ASTM D4101 Cell Classification PPO210B67272, and PVDF conforming to ASTM D 3222 Cell Classification Type II. All PVC PP and PVDF body valves shall be rated to 150 psi at 70 degrees F, sizes 1-1/2" thru 10" and 100 psi for sizes 12" and 14". Butterfly valves shall be wafer style, as manufactured by Asahi/America Inc.

Troubleshooting

What if fluid still flows when the valve is closed?

1. Make sure lever or gear is in a fully closed position (gear type may require travel stop adjustment).
2. Liner is damaged or worn. Replace liner.
3. Disc is damaged or abraded. Change disc.
4. Foreign material is caught between seat and disc. Remove the substance.
5. Mating flange bolts either over-tightened or unevenly tightened. Retighten properly.

What if fluid leaks outside between seat and mating flange?

1. Seat damage. Change seat.
2. Mating flange bolts not tightened with proper torque or unevenly tightened. Retighten to the appropriate torque.

What if valve does not operate smoothly?

1. Foreign material is caught between disc and seat. Remove the material and clean.
2. Lever or gearbox is damaged. Replace.
3. Mating flange bolts over-tightened. Retighten.

Caution

- Never remove valve from pipeline under pressure.
- Always wear protective gloves and goggles.

Cv Values

| NOMINAL SIZE | | Cv (at various opening degrees) | | |
|--------------|-----|------------------------------------|------|------|
| INCHES | mm | 30° | 60° | 90° |
| 8 | 200 | 150 | 1525 | 2500 |
| 10 | 250 | 232 | 2355 | 3860 |
| 12 | 300 | 342 | 3477 | 5700 |
| 14 | 350 | 386 | 3928 | 6440 |

Pressure vs. Temperature (PSI, WATER, NON-SHOCK)* Wt. (LBS) / Vacuum Service

| BODY | | PVC | | | PP | | PVDF | | | | NOMINAL SIZE | PVC | PP | PVDF | NOMINAL SIZE | VACUUM SERVICE (INCHES OF MERCURY) | | |
|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|-----|----|------|--------------|------------------------------------|--------|--------|
| DISC | | PP | | | PP | | PVDF | | | | | | | | | | | |
| NOMINAL SIZE | | 30° F | 121° F | 141° F | -5° F | 141° F | -5° F | 141° F | 176° F | 211° F | | | | | | | INCHES | mm |
| INCHES | mm | 120° F | 140° F | 175° F | 140° F | 175° F | 140° F | 175° F | 210° F | 250° F | 8 | 200 | 24 | 20 | 28 | 8 | 200 | -29.92 |
| 8 | 200 | 150 | 40 | 20 | 150 | 85 | 150 | 85 | 75 | 60 | 10 | 250 | 33 | 27 | 41 | 10 | 250 | -29.92 |
| 10 | 250 | 150 | 40 | 20 | 150 | 85 | 150 | 85 | 75 | 60 | 12 | 300 | 62 | 53 | 76 | 12 | 300 | -23.62 |
| 12 | 300 | 100 | 30 | 15 | 100 | 60 | 100 | 60 | 45 | 30 | 14 | 350 | 67 | 58 | 81 | 14 | 350 | -23.62 |
| 14 | 350 | 100 | 30 | 7 | 100 | 45 | 100 | 45 | 30 | 15 | | | | | | | | |

* For lug style data consult factory