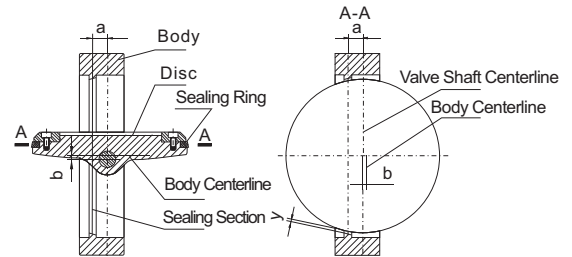


High Performance Butterfly Valve



- Sealing principle of “b” eccentric HPBV

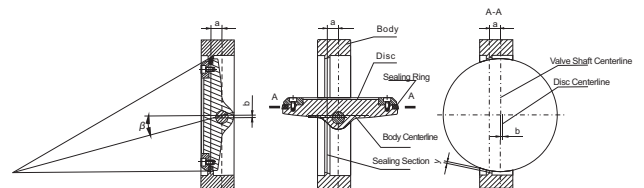


Sealing Structure of Double Eccentric Seal Butterfly Valve

A “b”eccentric is formed up between the centerline of seat and the centerline of body on the base of double eccentric butterfly valve, making disc sealing face immediately disengaged from seat sealing face upon the opening of butterfly valve, and in close contact with the seat sealing face upon closing. When fully opened, a gap ‘Y’, which is the same as that in double eccentric seal butterfly valve, is formed up between the two sealing faces. The design of this type of valves has thoroughly eliminated the mechanical wear and scratch between the two sealing faces, making the sealing performance and service life of butterfly valves greatly improved. When valve is closed, with sealing ring under the extrusion of body sealing face and disc, two upward elastic deformations are produced.

The long and short shafts produce elastic deformation of different directions, thus to maximizing the sealing force between the sealing faces of valve.

This distinctive eccentric combination not only uses cam effect, but also eliminates friction completely, thus to ensure no friction between seat and sealing ring on disc during the 90 stroke of valve, a perfect solution to clear away the possibilities of abrasion and leakage.



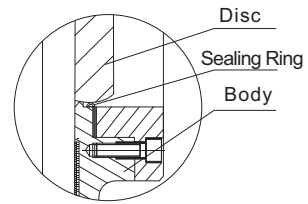
Close State Diagram of Triple Eccentric Seal Butterfly Valve

Open State Diagram of Triple Eccentric Seal Butterfly Valve

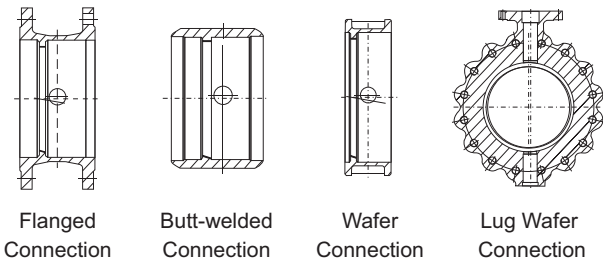
Sealing Principle of Triple Eccentric Seal Butterfly Valve

Butterfly valves are used to open and close (seal type) or adjust the medium flow in pipes in the fields of foodstuff, drinks, chemical, industrial water treatment, high-rise constructions, water supply and drainage etc. They are mainly structured as following:

1. Simple structure, small sizes, light weight and low installation dimensions. According to the types of body connection, they are basically classified to wafer type (including lug wafer type), flanged and welded.



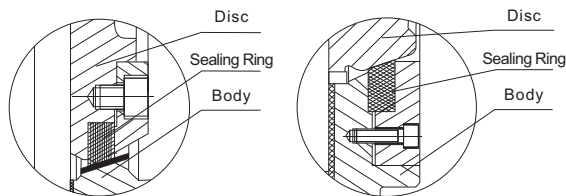
Elastic Ring Hard Seal Structure



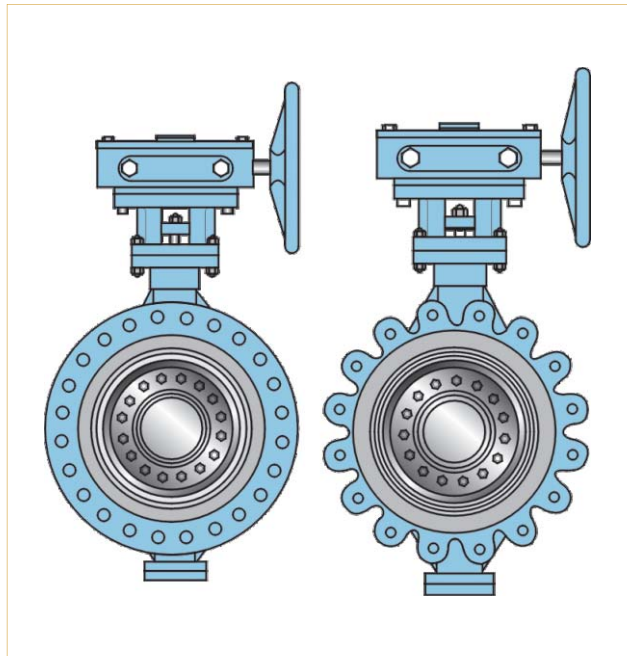
- 3. When butterfly valve is fully opened, flow resistance is low. When partially opened, it may carry out sensitive flow control.
- 4. Low driving moment, easy and quick operation.

1. Multilayer Hard Seal Structure (See fig. right)

Multilayer hard seal structure is applicable. For double and triple eccentric butterfly valves, pressure rating \leq CLASS 600. Triple eccentric butterfly valve can maintain bidirectional leak-tightness. Multilayer sealing ring is composition of stainless steel and nonmetal material. The nonmetal material can be flexible graphite, PTFE or non asbestos material etc. according to the actual working conditions.

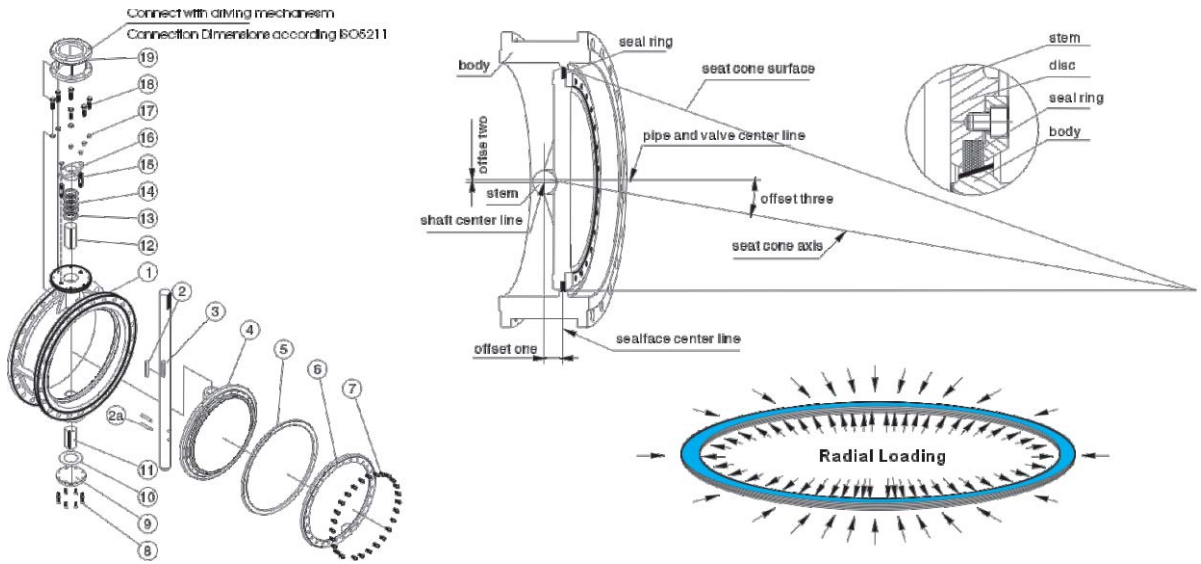


Multilayer Hard Seal Structure



2. Elastic ring hard seal structure (see fig right) is of the structure of J-type metal sealing ring. It is applicable for double eccentric butterfly valves. pressure rating \leq CLASS 300. Provided with fireproof structure to adapt to conditions with great temperature changes, it is featured by outstanding seal, long service life and easy workmanship.

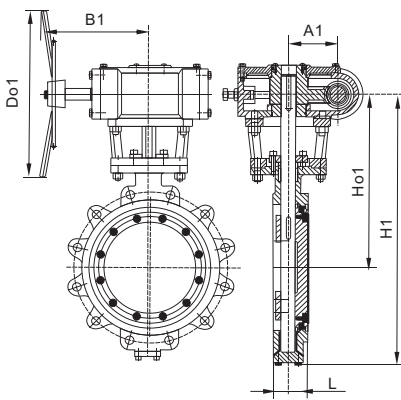
The Triple Offset Geometry



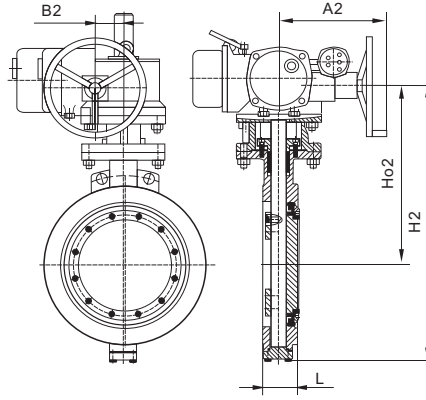
ASTM Materials list of Butterfly Valve

| No. | Part Name | ASTM Materials list of Butterfly Valve | |
|-----|-----------------|--|-------------------------|
| | | Carbon Steel to ASTM | Stainless Steel to ASTM |
| 1 | Body | A216 WCB | A351 CF8 |
| 2 | Key | A182 F6a | SS304 |
| 2a | Pin | A182 F6a | SS304 |
| 3 | Stem | A182 F6a | A182 F304 |
| 4 | Disc | A216 WCB | A351 CF8 |
| 5 | Seal Ring | Graphite+304 | Graphite+SS304 |
| 6 | Retainer Flange | A216 WCB | SS304 |
| 7 | Bolt | A193 B7 | A193 B8 |
| 8 | Bolt | A193 B7 | A193 B8 |
| 9 | Cover | A105 | A182 F304 |
| 10 | Gasket | Graphite | PTFE |
| 11 | Bushing | PTFE+Bronze | PTFE+Bronze |
| 12 | Bushing | PTFE+Bronze | PTFE+Bronze |
| 13 | Packing Seat | SS | SS304 |
| 14 | Packing | Graphite | PTFE |
| 15 | Bolt | - | A193 B8 |
| 16 | Packing Bushing | SS | - |
| 17 | Nut | - | - |
| 18 | Bolt | - | - |
| 19 | Yoke | Carbon Steel | - |

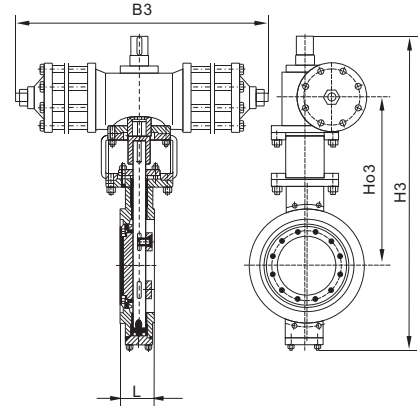
Series 85, 88 and 98



Worm Gear Driven Lug Butterfly Valve



Electric Wafer Butterfly Valve

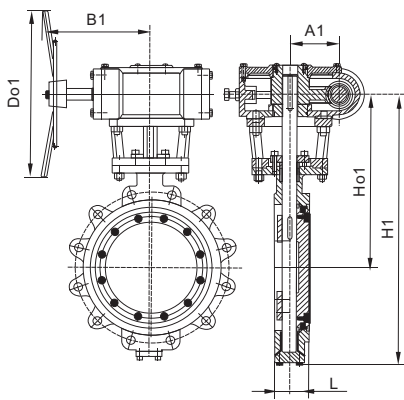


Hydraulic Wafer Butterfly Valve

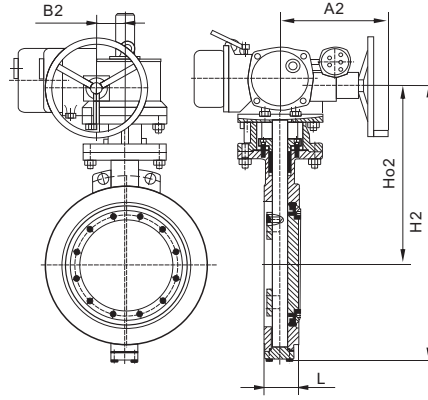
CLASS 150 Main size of Wafer Butterfly Valve outside & weight

| NPS | L | Worm gear | | | Electric driving | | | | | Air driving and hydraulic driving | | | | weight(kg) | |
|-----|-----|-----------|------|------|------------------|------|-----|-----|-----|-----------------------------------|------|-----|-----|------------|------|
| | | H3 | Ho3 | B3 | H1 | Ho1 | B1 | A1 | Do1 | H2 | Ho2 | B2 | A2 | Wafer | Lug |
| 3" | 49 | - | - | - | 320 | 185 | 140 | 63 | 160 | 513 | 263 | 178 | 180 | 9 | 9 |
| 4" | 54 | - | - | - | 342 | 195 | 140 | 63 | 160 | 535 | 282 | 178 | 180 | 11 | 14 |
| 5" | 57 | - | - | - | 365 | 209 | 140 | 63 | 300 | 563 | 293 | 178 | 180 | 15 | 18 |
| 6" | 58 | - | - | - | 415 | 243 | 140 | 63 | 300 | 602 | 322 | 178 | 180 | 17 | 20 |
| 8" | 64 | 690 | 323 | 275 | 510 | 263 | 150 | 84 | 400 | 745 | 296 | 235 | 370 | 25 | 31 |
| 10" | 71 | 750 | 355 | 275 | 567 | 295 | 150 | 84 | 400 | 805 | 325 | 235 | 370 | 40 | 49 |
| 12" | 81 | 955 | 475 | 378 | 665 | 342 | 200 | 108 | 600 | 883 | 365 | 235 | 370 | 61 | 79 |
| 14" | 92 | 1032 | 513 | 378 | 739 | 385 | 200 | 108 | 600 | 965 | 408 | 235 | 370 | 82 | 107 |
| 16" | 102 | 1182 | 598 | 530 | 825 | 430 | 240 | 152 | 600 | 1033 | 443 | 235 | 370 | 123 | 150 |
| 18" | 114 | 1265 | 635 | 530 | 910 | 469 | 240 | 152 | 800 | 1120 | 485 | 235 | 370 | 150 | 182 |
| 20" | 127 | 1335 | 667 | 530 | 990 | 500 | 300 | 168 | 800 | 1186 | 518 | 235 | 370 | 204 | 253 |
| 24" | 154 | 1642 | 830 | 680 | 1210 | 618 | 320 | 192 | 800 | 1380 | 625 | 235 | 370 | 300 | 398 |
| 30" | 167 | 1823 | 1245 | 680 | 1453 | 875 | 512 | 279 | 400 | 1583 | 1005 | 245 | 515 | 454 | 490 |
| 36" | 184 | 2145 | 1329 | 860 | 1775 | 939 | 512 | 279 | 400 | 1905 | 1089 | 245 | 515 | 762 | 771 |
| 40" | 217 | 2235 | 1488 | 860 | 1857 | 1005 | 512 | 279 | 400 | 2010 | 1110 | 360 | 540 | 975 | 1179 |
| 42" | 222 | 2360 | 1456 | 860 | 1980 | 1086 | 512 | 279 | 400 | 2120 | 1216 | 360 | 540 | 1234 | 1338 |
| 46 | 254 | 2445 | 1505 | 1080 | 2070 | 1110 | 570 | 368 | 600 | 2175 | 1260 | 360 | 540 | 1451 | 1724 |
| 48" | 254 | 2535 | 1564 | 1080 | 2165 | 1194 | 570 | 368 | 600 | 2235 | 1324 | 360 | 540 | 1678 | 1928 |
| 54" | 305 | - | - | - | 2382 | 1477 | 630 | 425 | 800 | 2412 | 1503 | 445 | 628 | 2223 | 2634 |
| 60" | 333 | - | - | - | 2684 | 1617 | 630 | 425 | 800 | 2699 | 1687 | 445 | 628 | 2903 | 3447 |

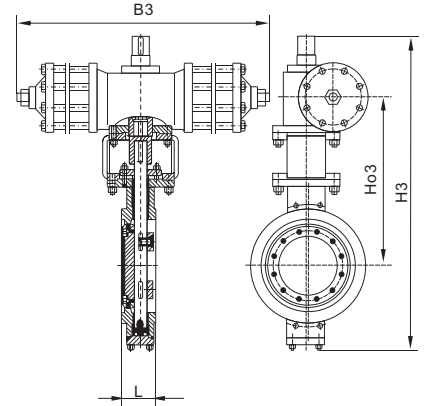
Series 85, 88 and 98



Worm Gear Driven Lug Butterfly Valve



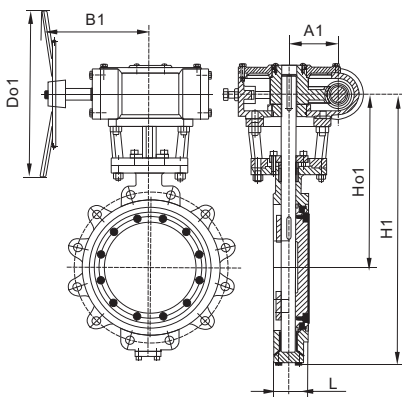
Electric Wafer Butterfly Valve



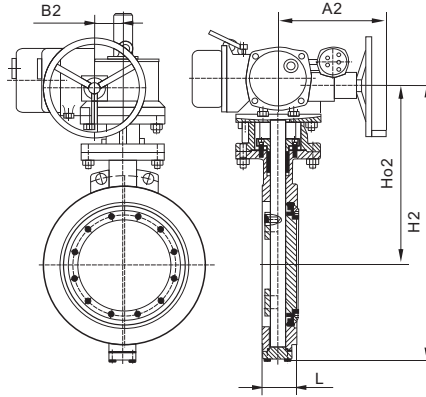
Hydraulic Wafer Butterfly Valve

| CLASS 300 | | | | | | | | | | | | | | | |
|-----------|-----|-----------|-----|-----|------------------|------|-----|-----|-----|-----------------------------------|-----|-----|-----|------------|------|
| NPS | L | Worm gear | | | Electric driving | | | | | Air driving and hydraulic driving | | | | weight(kg) | |
| | | H3 | Ho3 | B3 | H1 | Ho1 | B1 | A1 | Do1 | H2 | Ho2 | B2 | A2 | Wafer | Lug |
| 3" | 49 | - | - | - | 320 | 185 | 140 | 63 | 160 | 513 | 263 | 178 | 180 | 13.5 | 15.5 |
| 4" | 54 | - | - | - | 342 | 195 | 140 | 63 | 160 | 535 | 282 | 178 | 180 | 18 | 21 |
| 5" | 57 | - | - | - | 365 | 209 | 140 | 63 | 300 | 563 | 293 | 178 | 180 | 24 | 28 |
| 6" | 59 | - | - | - | 415 | 243 | 140 | 63 | 300 | 602 | 322 | 178 | 180 | 28 | 34 |
| 8" | 73 | 750 | 368 | 275 | 510 | 263 | 150 | 84 | 400 | 745 | 296 | 235 | 370 | 49 | 60 |
| 10" | 83 | 909 | 442 | 278 | 567 | 295 | 150 | 84 | 400 | 805 | 325 | 235 | 370 | 68 | 88 |
| 12" | 92 | 1075 | 535 | 530 | 665 | 342 | 200 | 108 | 600 | 883 | 365 | 235 | 370 | 109 | 117 |
| 14" | 117 | 1158 | 575 | 530 | 739 | 385 | 200 | 108 | 600 | 965 | 408 | 235 | 370 | 186 | 207 |
| 16" | 133 | 1230 | 610 | 530 | 825 | 430 | 240 | 152 | 600 | 1033 | 443 | 235 | 370 | 264 | 308 |
| 18" | 149 | 1462 | 736 | 680 | 910 | 469 | 240 | 152 | 800 | 1120 | 485 | 235 | 370 | 297 | 408 |
| 20" | 159 | 1328 | 765 | 680 | 990 | 500 | 300 | 168 | 800 | 1186 | 518 | 235 | 370 | 363 | 468 |
| 24" | 181 | - | - | - | 1210 | 618 | 320 | 192 | 800 | 1380 | 625 | 235 | 370 | 454 | 748 |
| 30" | 254 | - | - | - | 1937 | 1180 | 512 | 279 | 600 | 1516 | 716 | 360 | 540 | 816 | 1338 |
| 36" | 305 | - | - | - | 2198 | 1298 | 570 | 368 | 600 | 1669 | 794 | 360 | 540 | 1429 | 2154 |
| 42" | 324 | - | - | - | 2318 | 1358 | 570 | 368 | 600 | 1914 | 914 | 360 | 540 | 2155 | 2427 |

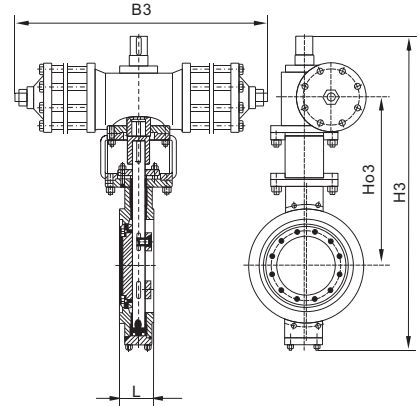
Series 85, 88 and 98



Worm Gear Driven Lug Butterfly Valve



Electric Wafer Butterfly Valve



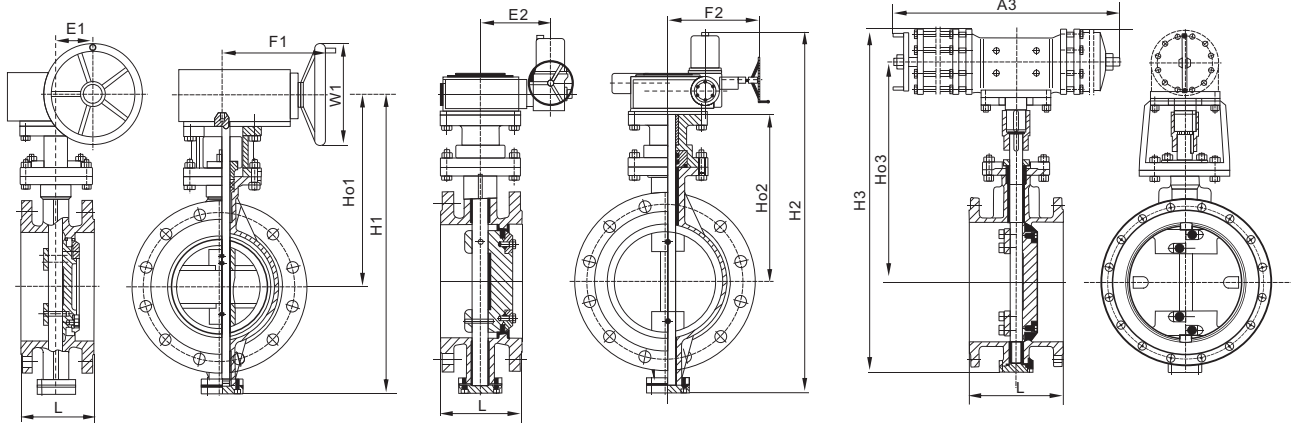
Hydraulic Wafer Butterfly Valve

CLASS 600

| NPS | L | Worm gear | | | Electric driving | | | | | Air driving and hydraulic driving | | | | weight(kg) | |
|-----|-----|-----------|-----|-----|------------------|-----|-----|-----|-----|-----------------------------------|-----|-----|-----|------------|------|
| | | H3 | Ho3 | B3 | H1 | Ho1 | B1 | A1 | Do1 | H2 | Ho2 | B2 | A2 | Wafer | Lug |
| 6" | 78 | - | - | - | 415 | 243 | 140 | 63 | 300 | 602 | 322 | 178 | 180 | 45 | 56 |
| 8" | 102 | 750 | 368 | 275 | 510 | 263 | 150 | 84 | 400 | 745 | 296 | 235 | 370 | 70 | 94 |
| 10" | 117 | 909 | 442 | 378 | 567 | 295 | 150 | 84 | 400 | 805 | 325 | 235 | 370 | 103 | 141 |
| 12" | 140 | 1075 | 535 | 530 | 665 | 342 | 200 | 108 | 600 | 883 | 365 | 235 | 370 | 149 | 201 |
| 14" | 155 | 1158 | 572 | 530 | 739 | 385 | 200 | 108 | 600 | 965 | 408 | 235 | 370 | 243 | 333 |
| 16" | 178 | 1230 | 610 | 530 | 825 | 430 | 240 | 152 | 600 | 1033 | 443 | 235 | 370 | 318 | 401 |
| 18" | 200 | - | - | - | 910 | 469 | 240 | 152 | 800 | 1120 | 485 | 235 | 370 | 431 | 575 |
| 20" | 216 | - | - | - | 990 | 500 | 300 | 168 | 800 | 1186 | 518 | 235 | 370 | 472 | 708 |
| 24" | 232 | - | - | - | 1210 | 618 | 320 | 192 | 800 | 1380 | 625 | 235 | 370 | 826 | 1061 |

ANSI HIGH PERFORMANCE FLANGED BUTTERFLY VALVE

Series 85, 88 and 98



Worm Gear Driven Flanged Butterfly Valve

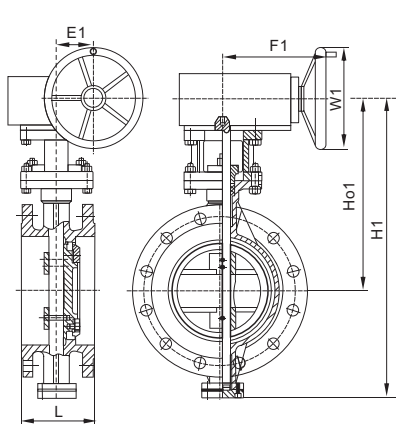
Electric Flanged Butterfly Valve

Hydraulic Flanged Butterfly Valve

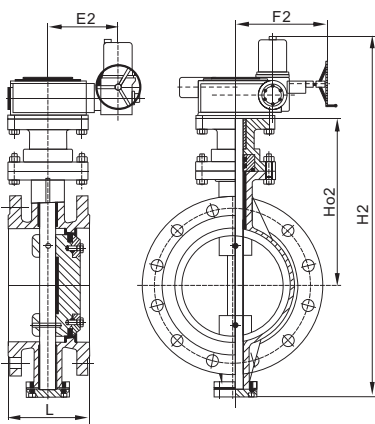
| CLASS 150 | | | | | | | | | | | | | | |
|-----------|-----|-----------|------|-----|-----|-----|------------------|------|-----|-----|-----------------------------------|-----|-----|------------|
| DN | L | Worm gear | | | | | Electric driving | | | | Air driving and hydraulic driving | | | weight(kg) |
| | | H1 | Ho1 | E1 | F1 | W1 | H2 | Ho2 | E2 | F2 | H3 | Ho3 | A3 | Worm gear |
| 3" | 114 | 472 | 350 | 50 | 203 | 203 | 513 | 263 | 180 | 178 | - | - | - | 15.4 |
| 4" | 127 | 520 | 386 | 60 | 191 | 203 | 535 | 282 | 180 | 178 | - | - | - | 23 |
| 5" | 140 | 580 | 395 | 60 | 215 | 250 | 563 | 293 | 180 | 178 | - | - | - | 29 |
| 6" | 140 | 653 | 475 | 67 | 289 | 305 | 602 | 322 | 180 | 178 | - | - | - | 33 |
| 8" | 152 | 773 | 565 | 67 | 308 | 460 | 745 | 296 | 370 | 235 | 690 | 323 | 275 | 50 |
| 10" | 165 | 880 | 640 | 86 | 346 | 460 | 805 | 325 | 370 | 235 | 750 | 355 | 275 | 73 |
| 12" | 178 | 989 | 711 | 111 | 403 | 610 | 883 | 365 | 370 | 235 | 955 | 475 | 378 | 108 |
| 14" | 190 | 1044 | 760 | 60 | 601 | 356 | 965 | 408 | 370 | 235 | 1032 | 513 | 378 | 143 |
| 16" | 216 | 1142 | 826 | 60 | 605 | 457 | 1033 | 443 | 370 | 235 | 1182 | 598 | 530 | 186 |
| 18" | 222 | 1228 | 887 | 60 | 652 | 610 | 1120 | 485 | 370 | 235 | 1265 | 635 | 530 | 234 |
| 20" | 229 | 1337 | 959 | 60 | 805 | 762 | 1186 | 518 | 370 | 235 | 1335 | 667 | 530 | 277 |
| 24" | 267 | 1554 | 1109 | 103 | 763 | 762 | 1380 | 625 | 370 | 235 | 1642 | 830 | 680 | 408 |
| 28" | 292 | 1456 | 956 | 245 | 400 | 315 | 1587 | 745 | 515 | 245 | 1711 | 859 | 680 | 653 |
| 30" | 308 | 1541 | 991 | 310 | 460 | 400 | 1650 | 777 | 515 | 245 | 1782 | 910 | 680 | 816 |
| 32" | 318 | 1611 | 1036 | 310 | 460 | 400 | 1717 | 810 | 515 | 245 | 1856 | 942 | 680 | 914 |
| 36" | 330 | 1743 | 1103 | 410 | 480 | 400 | 1870 | 875 | 540 | 360 | 1920 | 975 | 680 | 1157 |
| 40" | 410 | 1868 | 1173 | 410 | 480 | 400 | 2030 | 965 | 540 | 360 | - | - | - | 1610 |
| 44" | 450 | 1968 | 1223 | 410 | 480 | 400 | 2078 | 1022 | 540 | 360 | - | - | - | 2160 |
| 48" | 470 | 2145 | 1320 | 520 | 640 | 400 | 2188 | 1100 | 540 | 660 | - | - | - | 2359 |
| 52" | 490 | 2300 | 1405 | 520 | 640 | 400 | 2214 | 1150 | 565 | 385 | - | - | - | 2720 |
| 56" | 530 | 2440 | 1475 | 520 | 640 | 400 | 2328 | 1325 | 565 | 385 | - | - | - | 3353 |
| 60" | 570 | 2594 | 1559 | 450 | 785 | 630 | 2530 | 1515 | 565 | 385 | - | - | - | 3629 |

Structural length of valve in the table: DN 2000, to ISO5752 13series; DN 2000, to ISO5752 14 series.

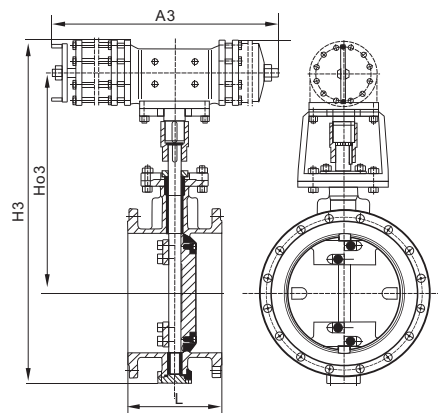
Series 85, 88 and 98



Worm Gear Driven Flanged Butterfly Valve



Electric Flanged Butterfly Valve



Hydraulic Flanged Butterfly Valve

CLASS 300

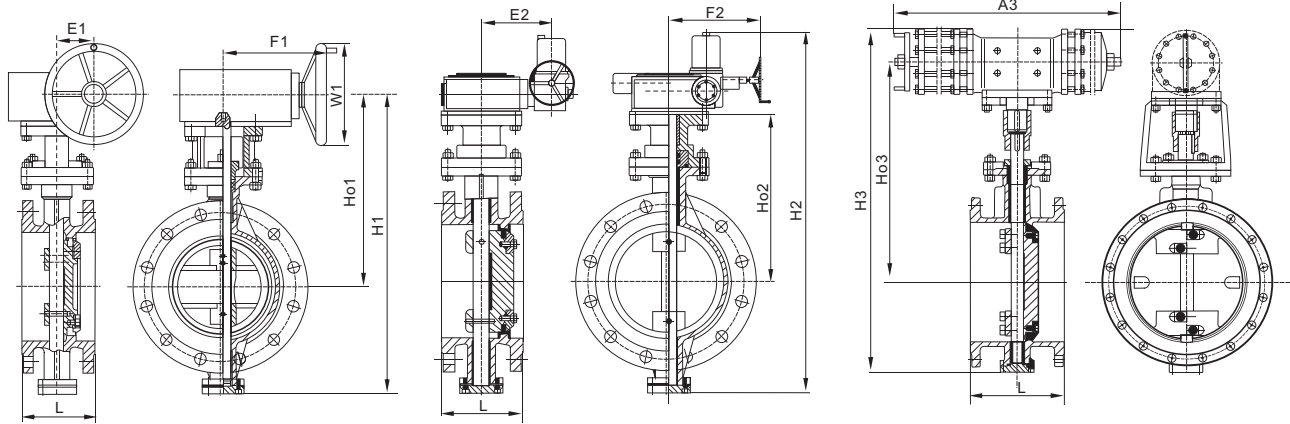
| NPS | L | Worm gear | | | | | Electric driving | | | | Air driving and hydraulic driving | | | weight(kg) |
|-----|-----|-----------|------|-----|-----|-----|------------------|------|-----|-----|-----------------------------------|-----|-----|------------|
| | | H1 | Ho1 | E1 | F1 | W1 | H2 | Ho2 | E2 | F2 | H3 | Ho3 | A3 | |
| 2" | 108 | 365 | 237 | 35 | 169 | 152 | 407 | 237 | 180 | 178 | - | - | - | 19 |
| 3" | 114 | 378 | 253 | 73 | 229 | 152 | 530 | 253 | 180 | 178 | - | - | - | 29 |
| 4" | 127 | 421 | 274 | 73 | 229 | 305 | 552 | 274 | 180 | 178 | - | - | - | 39 |
| 5" | 140 | 482 | 312 | 73 | 229 | 305 | 580 | 310 | 180 | 178 | - | - | - | 48 |
| 6" | 140 | 543 | 351 | 108 | 254 | 305 | 610 | 351 | 180 | 178 | - | - | - | 54 |
| 8" | 152 | 628 | 392 | 108 | 254 | 305 | 755 | 392 | 370 | 235 | 750 | 368 | 275 | 84 |
| 10" | 165 | 855 | 480 | 133 | 305 | 610 | 816 | 480 | 370 | 235 | 909 | 442 | 378 | 118 |
| 12" | 178 | 812 | 515 | 133 | 305 | 610 | 912 | 515 | 370 | 235 | 1075 | 535 | 530 | 170 |
| 14" | 191 | 885 | 555 | 194 | 356 | 610 | 980 | 555 | 370 | 235 | 1158 | 572 | 530 | 231 |
| 16" | 216 | 951 | 590 | 194 | 356 | 356 | 1057 | 590 | 370 | 235 | 1230 | 610 | 530 | 299 |
| 18" | 225 | 1106 | 636 | 194 | 356 | 356 | 1140 | 636 | 370 | 235 | 1462 | 736 | 680 | 390 |
| 20" | 229 | 1308 | 685 | 194 | 356 | 356 | 1243 | 685 | 515 | 245 | 1328 | 765 | 680 | 499 |
| 24" | 267 | 1445 | 934 | 165 | 686 | 686 | 1420 | 934 | 817 | 351 | - | - | - | 726 |
| 28" | 292 | 1495 | 1039 | 165 | 686 | 686 | 1812 | 1039 | 817 | 351 | - | - | - | 1360 |
| 30" | 292 | 1535 | 1060 | 165 | 686 | 686 | 1906 | 1060 | 817 | 351 | - | - | - | 1429 |
| 32" | 318 | 1575 | 1120 | 165 | 686 | 686 | 2021 | 1120 | 817 | 351 | - | - | - | 1757 |
| 36" | 330 | 1605 | 1190 | 165 | 686 | 686 | 2327 | 1190 | 973 | 440 | - | - | - | 2223 |
| 40" | 410 | 1755 | 1234 | 165 | 686 | 686 | 2451 | 1234 | 973 | 440 | - | - | - | 2531 |
| 42" | 430 | 2100 | 1385 | 429 | 805 | 903 | 2515 | 1385 | 973 | 440 | - | - | - | 2781 |
| 44" | 450 | 2175 | 1436 | 429 | 805 | 903 | 2565 | 1436 | 973 | 440 | - | - | - | 2979 |
| 48" | 470 | 2303 | 1570 | 399 | 965 | 903 | 2697 | 1570 | 973 | 440 | - | - | - | 3602 |

Structural length of valve in the table: DN 2000, to ISO5752 13series; DN 2000, to ISO5752 14 series.

ANSI HIGH PERFORMANCE FLANGED BUTTERFLY VALVE



Series 85, 88 and 98



Worm Gear Driven Flanged Butterfly Valve

Electric Flanged Butterfly Valve

Hydraulic Flanged Butterfly Valve

CLASS 600

| NPS | L | Worm gear | | | | | Electric driving | | | | Air driving and hydraulic driving | | | weight(kg) |
|-----|-----|-----------|------|-----|-----|-----|------------------|-----|-----|-----|-----------------------------------|-----|----|------------|
| | | H1 | Ho1 | E1 | F1 | W1 | H2 | Ho2 | E2 | F2 | H3 | Ho3 | A3 | |
| 3" | 180 | 541 | 414 | 63 | 140 | 250 | 606 | 295 | 180 | 178 | - | - | - | 82 |
| 4" | 190 | 607 | 447 | 63 | 140 | 250 | 650 | 358 | 180 | 178 | - | - | - | 125 |
| 5" | 200 | 680 | 395 | 108 | 200 | 250 | 695 | 371 | 180 | 178 | - | - | - | 165 |
| 6" | 210 | 686 | 490 | 152 | 240 | 315 | 743 | 387 | 180 | 178 | - | - | - | 191 |
| 8" | 230 | 757 | 536 | 168 | 300 | 315 | 1055 | 417 | 370 | 235 | - | - | - | 247 |
| 10" | 250 | 867 | 641 | 192 | 320 | 315 | 1172 | 465 | 370 | 235 | - | - | - | 413 |
| 12" | 270 | 1034 | 727 | 237 | 368 | 400 | 1392 | 546 | 515 | 245 | - | - | - | 576 |
| 14" | 290 | 1087 | 757 | 237 | 368 | 400 | 1475 | 579 | 515 | 245 | - | - | - | 664 |
| 16" | 310 | 1216 | 825 | 237 | 368 | 400 | 1557 | 643 | 540 | 360 | - | - | - | 971 |
| 18" | 330 | 1240 | 840 | 269 | 559 | 400 | 1625 | 673 | 540 | 360 | - | - | - | 1119 |
| 20" | 350 | 1330 | 978 | 350 | 645 | 400 | 1679 | 701 | 540 | 360 | - | - | - | 1639 |
| 24" | 390 | 1583 | 1070 | 350 | 645 | 400 | 1834 | 775 | 540 | 360 | - | - | - | 2082 |



KASKO DEMİRÇELİK MAKİNE VE İNŞAAT SANAYİ TİCARET LİMİTED ŞİRKETİ

**Güzelyurt Mah. Mehmet Akif Ersoy Cad. No: 38 Gökdemir Plaza Kat: 3 Ofis: 24 Zip Code:
34524 Esenyurt / İSTANBUL**

Tel: +90 850 441 25 67

Cell: +90 541 699 01 34

info@kaskomakine.com

kaskomakine.com