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TECHNICAL DATASHEET

**KROMBACH® Triple-Eccentric
Butterfly Valves AK110
DIN/Metric**

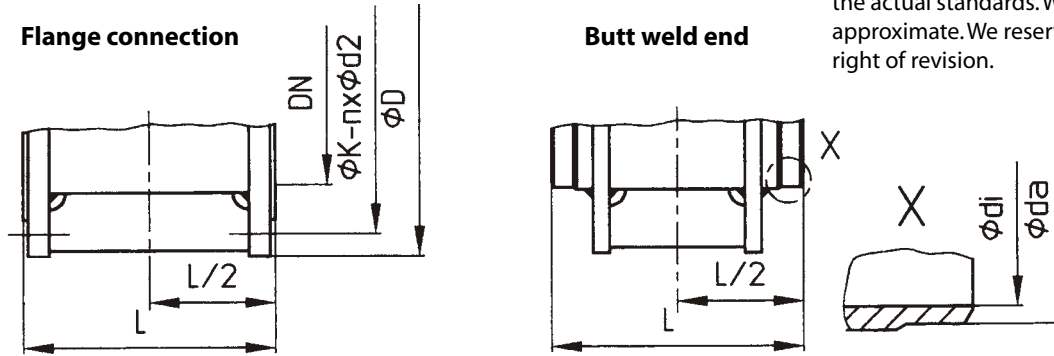


Energy Flow Solutions

www.craneenergy.com

Triple-Eccentric Butterfly Valve Dimensions

AK110 - Fabricated Design



All dimensions according to the actual standards. Weight is approximate. We reserve the right of revision.

Face-to-face dimensions in mm

| Connection | Norm | DN | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|-------------------|------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| Flanged | EN558-2-14 | L | 190 | 200 | 210 | 230 | 250 | 270 | 290 | 310 | 330 | 350 | 390 | 430 | 470 | 510 | 550 | 630 |
| Butt welding ends | EN558-2-14 | | 190 | 200 | 210 | 230 | 250 | 270 | 290 | 310 | 330 | 350 | 390 | 430 | 470 | 510 | 550 | 630 |

Flanged connection in mm

| PN | DN | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| 10 DIN EN 1092-1 | D | 285 | 340 | 395 | 445 | 505 | 565 | 615 | 670 | 780 | 895 | 1015 | 1115 | 1230 | 1455 |
| | kØ | 240 | 295 | 350 | 400 | 460 | 515 | 565 | 620 | 725 | 840 | 950 | 1050 | 1160 | 1380 |
| | n | 8 | 8 | 12 | 12 | 16 | 16 | 20 | 20 | 20 | 24 | 24 | 28 | 28 | 32 |
| | d2 | 22 | 22 | 22 | 22 | 22 | 26 | 26 | 26 | 26 | 30 | 30 | 33 | 33 | 36 |
| 16 DIN EN 1092-1 | D | 285 | 340 | 405 | 460 | 520 | 580 | 640 | 715 | 840 | 910 | 1025 | 1125 | 1255 | 1485 |
| | kØ | 240 | 295 | 355 | 410 | 470 | 525 | 585 | 650 | 770 | 840 | 950 | 1050 | 1170 | 1390 |
| | n | 8 | 12 | 12 | 12 | 16 | 16 | 20 | 20 | 20 | 24 | 24 | 28 | 28 | 32 |
| | d2 | 22 | 22 | 26 | 26 | 26 | 30 | 30 | 33 | 36 | 36 | 39 | 39 | 42 | 48 |
| 25 DIN EN 1092-1 | D | 300 | 360 | 425 | 485 | 555 | 620 | 670 | 730 | 845 | 960 | 1085 | 1185 | 1320 | - |
| | kØ | 250 | 310 | 370 | 430 | 490 | 550 | 600 | 660 | 770 | 875 | 990 | 1090 | 1210 | |
| | n | 8 | 8 | 12 | 16 | 16 | 16 | 20 | 20 | 20 | 24 | 24 | 28 | 28 | |
| | d2 | 26 | 26 | 30 | 30 | 33 | 36 | 36 | 36 | 36 | 39 | 42 | 48 | 48 | |
| 40 DIN EN 1092-1 | D | 300 | 375 | 425 | 515 | 580 | 650 | 685 | 755 | 890 | - | - | - | - | - |
| | kØ | 250 | 320 | 370 | 450 | 510 | 585 | 610 | 670 | 795 | | | | | |
| | n | 8 | 12 | 12 | 16 | 16 | 16 | 20 | 20 | 20 | | | | | |
| | d2 | 26 | 30 | 33 | 33 | 36 | 39 | 39 | 42 | 48 | | | | | |

Butt welding ends DIN 2559-1, Form 22 in mm

| PN | DN | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|-------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|------|------|
| 16-40 | Ø da | 169 | 219 | 273 | 324 | 356 | 406 | 457 | 508 | 610 | 711 | 813 | 914.4 | 1016 | 1220 |

Ø di on request.

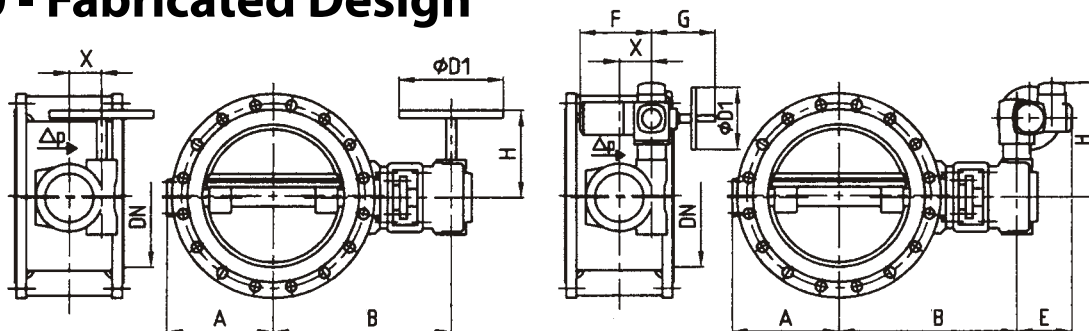
Weight in kg

| PN | DN | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|----|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| 16 | Manual | 35 | 38 | 61 | 66 | 108 | 160 | 175 | 330 | 350 | 510 | 740 | 1050 | 1620 | 1960 |
| | Electric | 59 | 62 | 85 | 99 | 132 | 185 | 200 | 355 | 475 | 540 | 770 | 1080 | 1670 | 2030 |
| 25 | Manual | 44 | 48 | 67 | 104 | 132 | 195 | 270 | 390 | 490 | 650 | 850 | 1620 | 2040 | 2420 |
| | Electric | 68 | 72 | 91 | 128 | 156 | 220 | 295 | 415 | 515 | 680 | 890 | 1650 | 2100 | 2480 |

Consult factory for sizes not listed.

Triple-Eccentric Butterfly Valve Dimensions

AK110 - Fabricated Design



A, Identical to manual gear

Manual with worm gear in mm

| PN | DN | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|------|------|------|------|
| 10/16 | A | 180 | 215 | 250 | 285 | 320 | 355 | 385 | 420 | 490 | 550 | 640 | 685 | 715 | 845 |
| | B | 405 | 435 | 530 | 575 | 605 | 640 | 660 | 715 | 780 | 855 | 960 | 1245 | 1095 | 1195 |
| | H | 250 | 290 | 320 | 320 | 400 | 400 | 425 | 430 | 430 | 465 | 570 | 570 | 625 | 625 |
| | X | 55 | 70 | 90 | 90 | 125 | 125 | 155 | 90 | 90 | 110 | 70 | 70 | 125 | 125 |
| | ØD1 | 200 | 300 | 350 | 350 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 |
| 16 | B | 405 | 435 | 530 | 575 | 605 | 640 | 670 | 715 | 805 | 875 | 1015 | 1275 | 1095 | 1205 |
| | H | 250 | 290 | 320 | 320 | 400 | 400 | 430 | 430 | 465 | 570 | 625 | 625 | 625 | 755 |
| | X | 55 | 70 | 90 | 90 | 125 | 125 | 90 | 90 | 110 | 70 | 125 | 125 | 125 | 315 |
| | ØD1 | 200 | 300 | 350 | 350 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 500 |
| 25 | A | 190 | 215 | 250 | 285 | 320 | 355 | 385 | 420 | 490 | 560 | 650 | 685 | 715 | 845 |
| | B | 410 | 450 | 530 | 575 | 605 | 650 | 670 | 740 | 825 | 905 | 1040 | 1305 | 1205 | 1455 |
| | H | 290 | 320 | 400 | 400 | 400 | 430 | 430 | 465 | 570 | 570 | 625 | 625 | 755 | 855 |
| | X | 70 | 90 | 90 | 125 | 125 | 90 | 90 | 110 | 70 | 70 | 125 | 125 | 315 | 400 |
| 40 | ØD1 | 300 | 350 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 500 | 500 |
| | A | 190 | 225 | 265 | 300 | 350 | 355 | 425 | 435 | 515 | on request | | | | |
| | B | 410 | 500 | 550 | 595 | 625 | 675 | 730 | 780 | 895 | | | | | |
| | H | 290 | 320 | 400 | 425 | 425 | 430 | 465 | 465 | 570 | | | | | |
| | X | 70 | 90 | 125 | 155 | 155 | 90 | 110 | 110 | 70 | | | | | |
| ØD1 | 300 | 350 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | | | | | | |

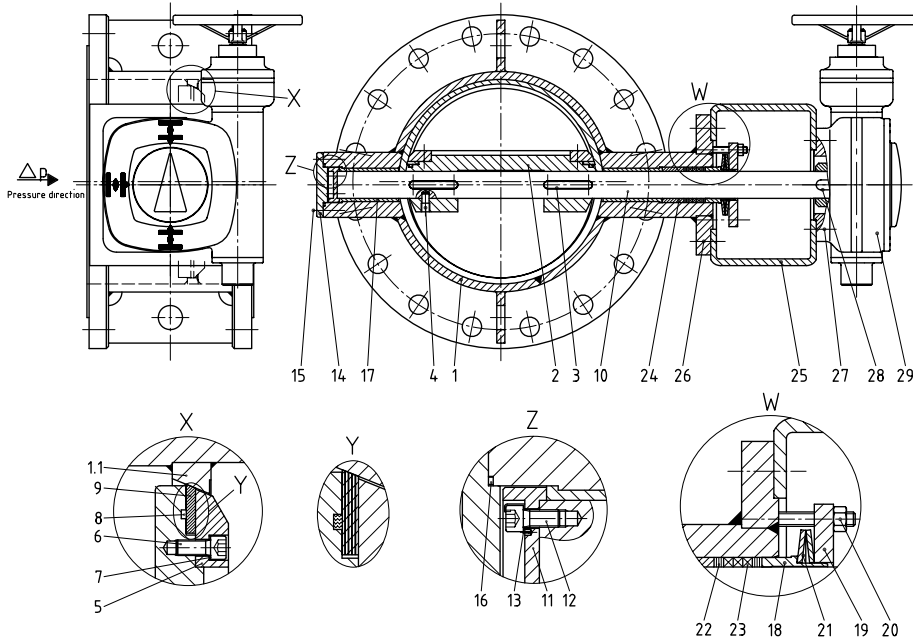
With electric actuator (AUMA) in mm

| PN | DN | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|------|------|------|------|-----|
| 10 | B | 410 | 440 | 525 | 580 | 610 | 665 | 685 | 730 | 795 | 860 | 965 | 1255 | 1100 | 1200 | |
| | E | 240 | 240 | 240 | 250 | 250 | 240 | 240 | 250 | 250 | 250 | 250 | 250 | 285 | 285 | |
| | F | 265 | 265 | 265 | 285 | 285 | 265 | 265 | 265 | 285 | 285 | 285 | 285 | 285 | 385 | 385 |
| | G | 250 | 250 | 250 | 255 | 255 | 250 | 250 | 255 | 255 | 255 | 255 | 255 | 330 | 330 | |
| | H | 375 | 375 | 400 | 405 | 405 | 535 | 535 | 540 | 540 | 615 | 745 | 745 | 860 | 860 | |
| | X | 50 | 50 | 65 | 80 | 80 | 100 | 100 | 125 | 125 | 160 | 200 | 200 | 250 | 250 | |
| | ØD1 | 160 | 160 | 160 | 200 | 200 | 160 | 160 | 160 | 200 | 200 | 200 | 200 | 200 | 315 | 315 |
| 16 | B | 410 | 445 | 535 | 580 | 630 | 665 | 685 | 730 | 810 | 885 | 995 | 1300 | 1100 | 1205 | |
| | E | 240 | 240 | 250 | 250 | 240 | 240 | 250 | 250 | 250 | 250 | 250 | 285 | 285 | 250 | |
| | F | 265 | 265 | 285 | 285 | 265 | 265 | 285 | 285 | 285 | 285 | 285 | 385 | 385 | 285 | |
| | G | 250 | 250 | 255 | 255 | 250 | 250 | 255 | 255 | 255 | 255 | 255 | 330 | 330 | 255 | |
| | H | 375 | 400 | 405 | 405 | 535 | 535 | 540 | 540 | 615 | 745 | 745 | 860 | 860 | 960 | |
| | X | 50 | 65 | 80 | 80 | 100 | 100 | 125 | 125 | 160 | 200 | 200 | 250 | 250 | 315 | |
| | ØD1 | 160 | 160 | 200 | 200 | 160 | 160 | 200 | 200 | 200 | 200 | 200 | 200 | 315 | 315 | |
| 25 | B | 415 | 445 | 535 | 600 | 630 | 665 | 685 | 745 | 835 | 915 | 1045 | 1310 | 1205 | 1455 | |
| | E | 240 | 240 | 250 | 240 | 240 | 250 | 250 | 250 | 250 | 250 | 285 | 285 | 250 | 285 | |
| | F | 265 | 265 | 285 | 265 | 265 | 285 | 285 | 285 | 285 | 285 | 385 | 385 | 285 | 385 | |
| | G | 250 | 250 | 255 | 250 | 255 | 255 | 255 | 255 | 255 | 255 | 330 | 330 | 255 | 330 | |
| | H | 400 | 400 | 405 | 535 | 535 | 540 | 540 | 615 | 745 | 745 | 860 | 860 | 960 | 1105 | |
| | X | 65 | 65 | 80 | 100 | 100 | 125 | 125 | 160 | 200 | 200 | 250 | 250 | 315 | 400 | |
| | ØD1 | 160 | 160 | 200 | 160 | 160 | 200 | 200 | 200 | 200 | 200 | 315 | 315 | 200 | 315 | |
| 40 | B | 415 | 510 | 575 | 620 | 650 | 690 | 735 | 785 | 900 | on request | | | | | |
| | E | 240 | 250 | 240 | 240 | 250 | 250 | 250 | 250 | 250 | | | | | | |
| | F | 265 | 285 | 265 | 265 | 285 | 285 | 285 | 285 | 285 | | | | | | |
| | G | 250 | 255 | 250 | 250 | 255 | 255 | 255 | 255 | 255 | | | | | | |
| | H | 400 | 405 | 535 | 535 | 540 | 540 | 615 | 615 | 745 | | | | | | |
| | X | 65 | 80 | 100 | 100 | 125 | 125 | 160 | 160 | 200 | | | | | | |
| | ØD1 | 160 | 200 | 160 | 160 | 200 | 200 | 200 | 200 | 200 | | | | | | |

Consult factory for sizes not listed.

Triple-Eccentric Butterfly Valve Materials

AK110 - Fabricated Design



Materials

| Item | Designation | Material up to 400°C DIN-EN |
|------|----------------------|-----------------------------|
| 1 | Body | 1.0425 |
| 1.1 | Body-seat | 1.4301 |
| 2 | Disc | 1.0425 |
| 3 | Fitting key | A2 |
| 4 | Locating pin | A2-70 |
| 5 | Retainer flange | 1.0425 |
| 6 | Filliste head screw | A2-70 |
| 7 | Lock washer | A4 |
| 8* | Spiral-wound gasket | 2.4819 + Graphite |
| 9* | Seal ring | 1.4462 + Graphite |
| 10 | Shaft | 1.4122 |
| 11 | Trust bearing washer | 1.4021 hardened |
| 12 | Filliste head screw | A2-70 |
| 13 | Locking plate | A2 |
| 14 | Bottom flange | 1.0425 |
| 15 | Hex. head screw | A2-70 |
| 16* | Gasket | 1.4541+ Graphite |
| 17 | Body bearing | 1.4301 hardened |
| 18 | Packing bushing | 1.4301 |
| 19 | Gland flange | 1.0038 |
| 20 | Stud bolt with nut | A2-70 |
| 21 | Belleville spring | 1.8159 |
| 22* | Scraper | Carbon yarn |
| 23* | Packing | Graphite |
| 24 | Spacer | 1.4301 |
| 25 | Bracket | 1.0038 |
| 26 | Hex. head screw | A2-70 |
| 27 | Hex. head screw | 8.8 galvanized |
| 28 | Fitting key | 1.006 |
| 29 | Worm ear | |

*Recommended spare part.

Triple-Eccentric Butterfly Valve Flow Characteristics

AK110 - Fabricated Design

Test pressure and max. working pressure pb

| PN | Test pressure | | pb (bar) - Material: DIN-EN 1.0425 | | | | | | | | | |
|-------|---------------|------|------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Body | Seat | t=-10...+40°C | 50°C | 100°C | 150°C | 200°C | 250°C | 300°C | 350°C | 375°C | 400°C |
| PN 10 | 15 | 11 | 10 | 9 | 8,5 | 8 | 7 | 6,5 | 6 | 5,5 | 5 | 5 |
| PN 16 | 24 | 17.6 | 16 | 15 | 13 | 12 | 11 | 10 | 9 | 9 | 8 | 8 |
| PN 25 | 38 | 27.5 | 25 | 23 | 21 | 20 | 18 | 16 | 15 | 14 | 13 | 13 |
| PN 40 | 60 | 44 | 40 | 37 | 34 | 32 | 28 | 26 | 23 | 22 | 21 | 21 |

Flow capacity Kvs [m³] (cv - value = 1.15 x Kvs)

| PN | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|---------------|-----|------|------|------|------|------|-------|-------|-------|------------|-------|-------|-------|-------|
| PN 10 | 635 | 1501 | 2798 | 4557 | 5730 | 7768 | 10137 | 12654 | 17609 | 27489 | 38200 | 49123 | 62480 | 91427 |
| PN 16 / PN 25 | 562 | 1328 | 2476 | 4033 | 5071 | 6874 | 8971 | 11198 | 15583 | 24698 | 34322 | 44136 | 56137 | 82145 |
| PN 40 | 562 | 1112 | 2183 | 3614 | 4409 | 6183 | 8146 | 10103 | 15481 | on request | | | | |

Consult factory for sizes not listed.

Special designs:

- heat resistant steel
- low temperature steel
- high alloy stainless steel
- Other materials as stainless steel, hastelloy or titanium on request

Actuation technology:

- hand gear
- electric
- pneumatic
- hydraulic
- quick acting actuator
- control actuator
- falling weight actuator



KROMBACH
ARMATUREN

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VALVE SERVICES

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