

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 50 - 600 (NPS 2 - 24) ASME CLASS 150, 300 AND 600

The F603 is an angle isolation valve specifically designed for severe service in alumina and mining applications where scale and erosion are present



FEATURES

- Valves can be reground in-line
- Designed to ASME B16.34
- Heavy duty wall and flange thickness well in excess of ASME B16.34 and ASME B16.5
- Pads for fitting drain ports
- Tested to API 598
- Large stem diameters for strength and stiffness
- Stellite 6 hardfacing as standard on disc and seat surfaces
- Hard facing available on stem
- Roller or plain bearings fitted to yoke bush - depending upon size
- Manufactured under quality system ISO 9001:2008, Certificate No. MEL 0929678/A
- Documentation to EN 10424 1999 Type 3.1B (DIN 50409). Material certification for pressure containing components

Options

- Range of internal linings available to combat the effects of erosion or corrosion
- High performance erosion resistant discs and seats
- Custom face to face dimensions
- Custom designs for specific applications

Actuation options

- Spur gear operation standard on larger sizes
- Bevel gear operators
- Patented stem clutch design for easy grind set-up
- Drive adaptations for pneumatic guns
- Customized actuation design
- Range of actuation available including:
 - Electric
 - Pneumatic
 - Hydraulic
 - All with regrounding where required

GENERAL APPLICATION

Designed and engineered specifically for the mining and process industry, or other applications where built up scale or settled slurries need to be cleared to allow flow.

- Alumina - Bauxite slurries, digestion slurries, flash vessel vapour return, green and spent liquor's, washer underflow/overflow, tertiary and secondary thickeners, press filter isolation, mudline disposal
- Precipitation
- Filtrate underflow
- Hydrate slurry storage

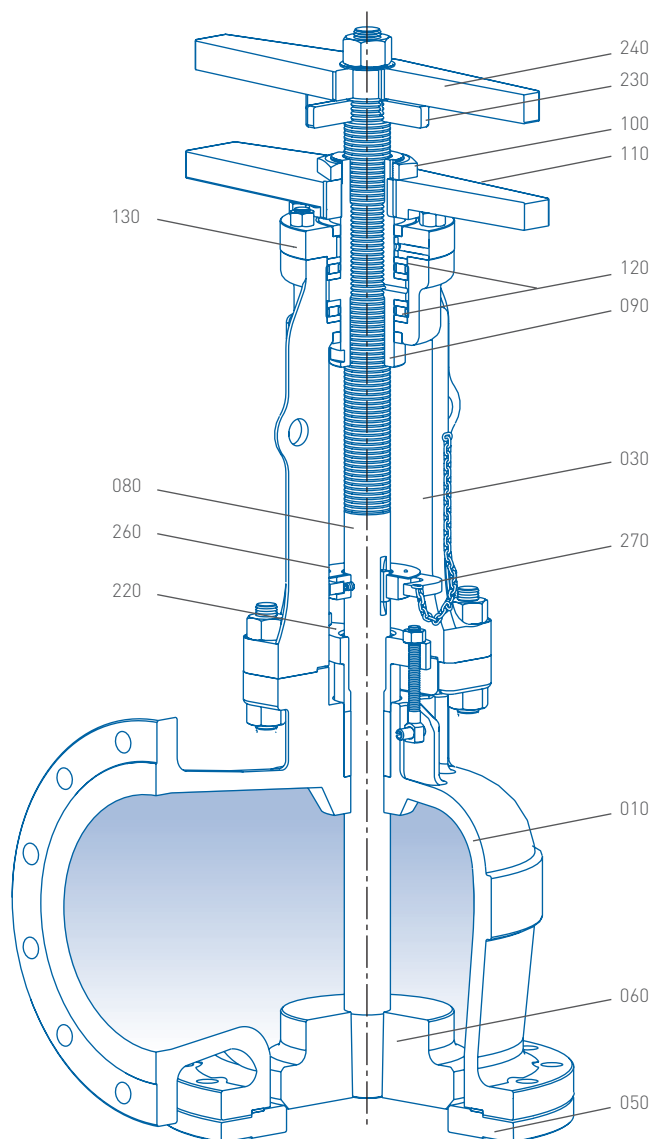
TECHNICAL DATA

Size range: DN 50 - 600 (NPS 2 - 24)
 Temperature rating: Up to 345°C (650°F)
 Pressure rating: ASME Class 150 to 600



LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 50 - 300 (NPS 2 - 12) ASME CLASS 150



PARTS LIST

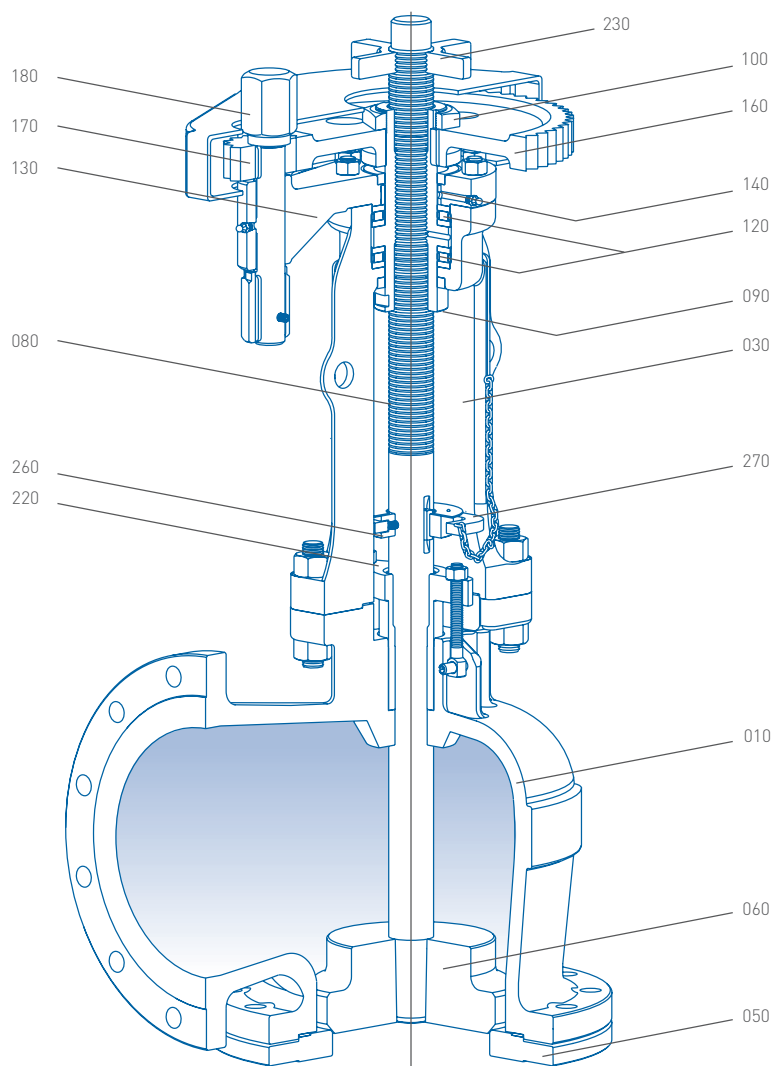
No.	Description	Material standards
010	Body	ASTM A216 - WCB
030	Yoke	ASTM A216 - WCB
050	Seat	ASTM A29 - 1020, 1518 or ASTM A105 - Stellite coated
060	Disc	ASTM A29 - 1020, 1518 or ASTM A105 - Stellite coated
080	Stem	ASTM A29 - 4140
090	Yoke bush	ASTM A29 - 1020
100	Yoke bush locknut	ASTM A29 - 1020
110	Yoke bush handle	ASTM A29 - 1020 or ASTM A216 WCB
120	Bearing - yoke bush	Bronze
130	Retaining cap	ASTM A29 - 1020
220	Gland follower	ASTM A29 - 1020 or ASTM A216 WCB
230	Stem jam nut	ASTM A29 - 1020 or ASTM A216 WCB
240	Stem handle	ASTM A29 - 1020 or ASTM A216 WCB
260	Torque reactor hub	ASTM A29 - 1020
270	Torque reactor pin	ASTM A29 - 1020

NOTE

No bolts, washers, gaskets or pins included in parts list.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 150 - 600 (NPS 6 - 24) ASME CLASS 150



PARTS LIST

No.	Description	Material Standards
010	Body	ASTM A216 - WCB
030	Yoke	ASTM A216 - WCB
050	Seat	ASTM A29 - 1020, 1518 or ASTM A105 - Stellite coated
060	Disc	ASTM A29 - 1020, 1518 or ASTM A105 - Stellite coated
080	Stem	ASTM A29 - 1020
090	Yoke bush	ASTM A29 - 1020
100	Yoke bush locknut	ASTM A29 - 1020
120	Bearing - yoke bush	Steel Roller
130	Retaining cap	ASTM A29 - 1020
140	Bearing - retaining cap	Bronze
160	Gear	ASTM A29 - 1020
170	Pinion gear	ASTM A29 - 1020
180	Pinion Shaft	AISI 4140
220	Gland follower	ASTM A29 - 1020 or ASTM A216 WCB
230	Stem jam nut	ASTM A29 - 1020 or ASTM A216 WCB
260	Torque reactor hub	ASTM A29 - 1020
270	Torque reactor pin	ASTM A29 - 1020

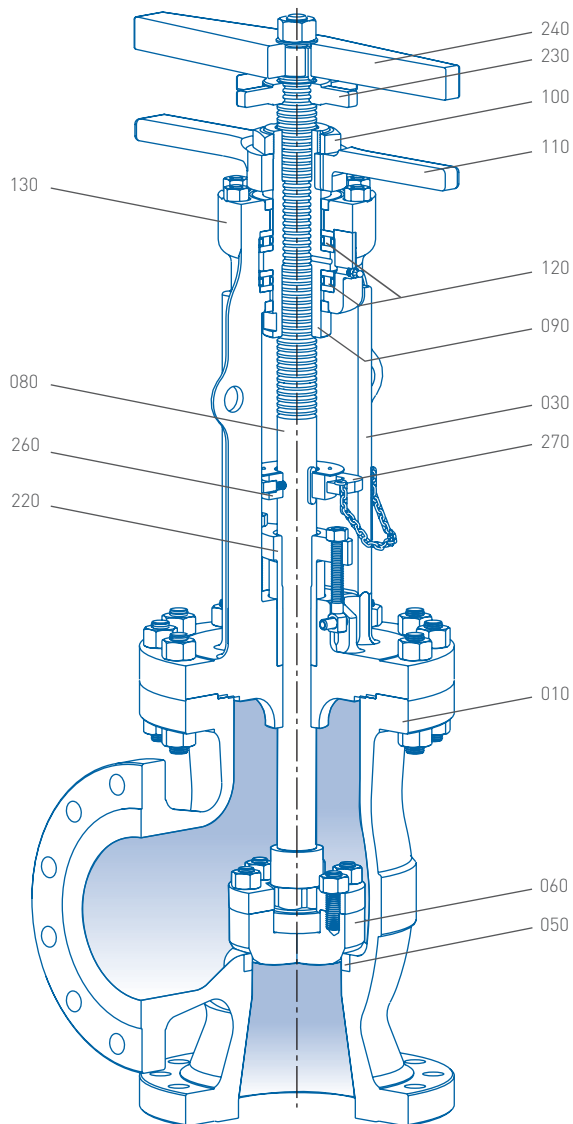
NOTES

No bolts, washers, gaskets or pins included in parts list.

Bevel gear operation option available.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 50 - 150 (NPS 2 - 6) ASME CLASS 300 AND 600



PARTS LIST

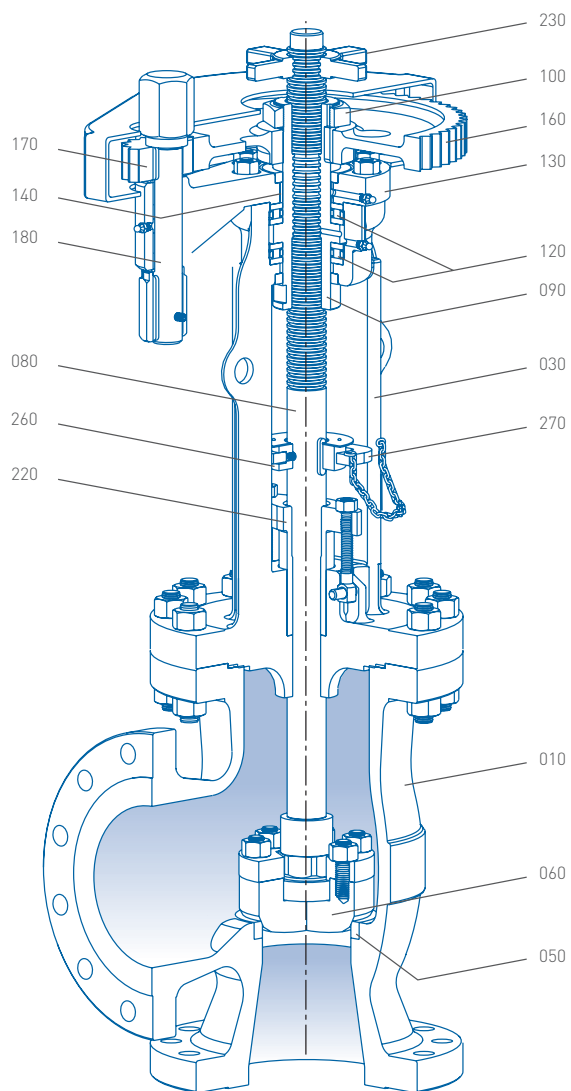
No.	Description	Material standards
010	Body	ASTM A216 - WCB
030	Yoke	ASTM A216 - WCB
050	Seat	ASTM A29 - 1020, 1518 or ASTM A105 - Stellite coated
060	Disc	ASTM A29 - 1020, 1518 or ASTM A105 - Stellite coated
080	Stem	ASTM A29 - 4140
090	Yoke bush	ASTM A29 - 1020
100	Yoke bush locknut	ASTM A29 - 1020
110	Yoke bush handle	ASTM A29 - 1020
120	Bearing - yoke bush	Bronze
130	Retaining cap	ASTM A29 - 1020
220	Gland follower	AISI C1020 or ASTM A216 - WCB
230	Stem jam nut	ASTM A29 - 1020 or ASTM A216 WCB
240	Stem handle	ASTM A29 - 1020 or ASTM A216 WCB
260	Torque reactor hub	ASTM A29 - 1020
270	Torque reactor pin	ASTM A29 - 1020

NOTE

No bolts, washers, gaskets or pins included in parts list.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 150 - 600 (NPS 6 - 24) ASME CLASS 300 AND 600



PARTS LIST

No.	Description	Material Standards
010	Body	ASTM A216 - WCB
030	Yoke	ASTM A216 - WCB
050	Seat	ASTM A29 - 1020, 1518 or ASTM A105 - Stellite coated
060	Disc	ASTM A29 - 1020, 1518 or ASTM A105 - Stellite coated
080	Stem	ASTM A29 - 4140
090	Yoke bush	ASTM A29 - 1020
100	Yoke bush locknut	ASTM A29 - 1020
120	Bearing - yoke bush	Steel Roller
130	Retaining cap	ASTM A29 - 1020
140	Bearing - retaining cap	Bronze
160	Gear	ASTM A29 - 1020
170	Pinion gear	ASTM A29 - 1020
180	Pinion shaft	ASTM A29 - 4140
220	Gland follower	ASTM A29 - 1020 or ASTM A216 WCB
230	Stem jam nut	ASTM A29 - 1020 or ASTM A216 WCB
260	Torque reactor hub	ASTM A29 - 1020
270	Torque reactor pin	ASTM A29 - 1020

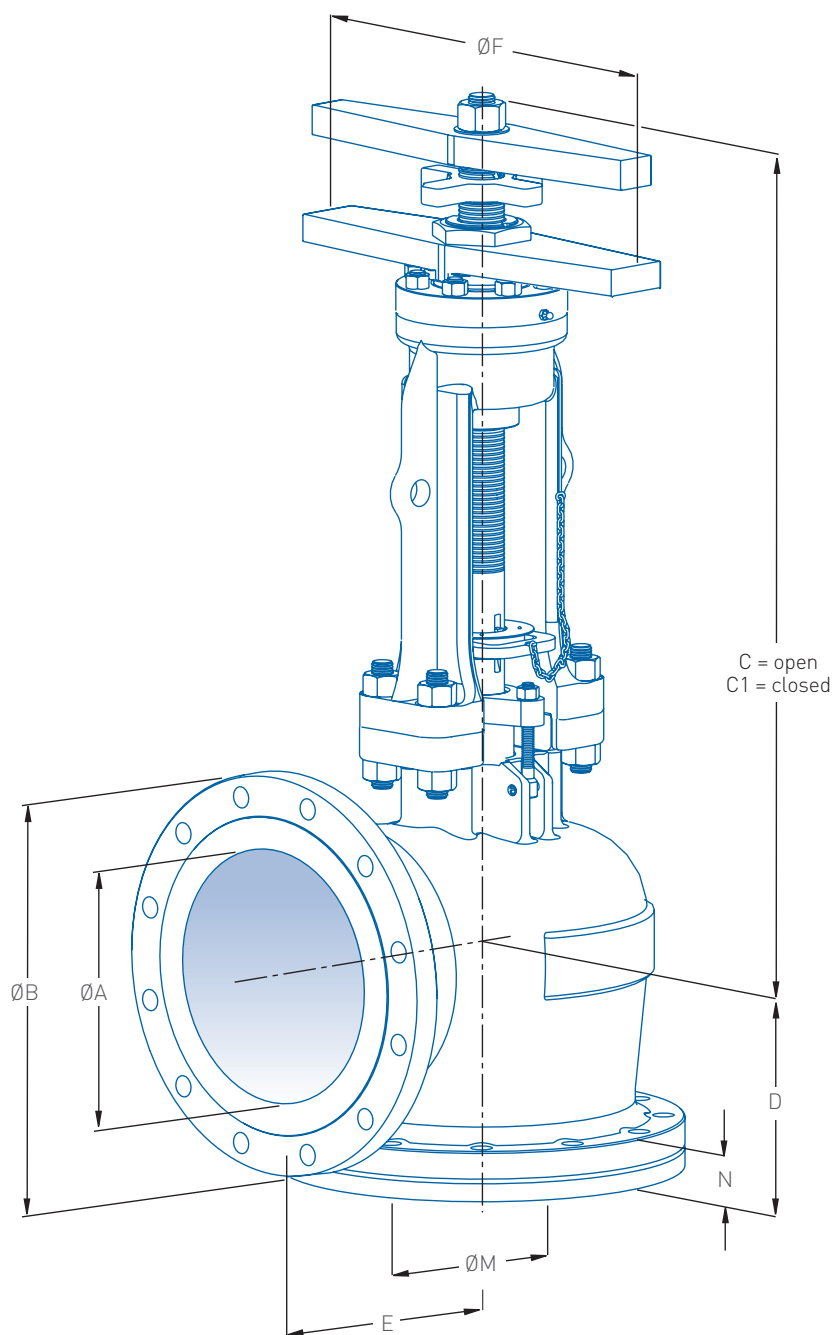
NOTES

No bolts, washers, gaskets or pins included in parts list.

Bevel gear operation option available.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 50 - 300 (NPS 2 - 12) ASME CLASS 150



DIMENSIONS mm (inches)

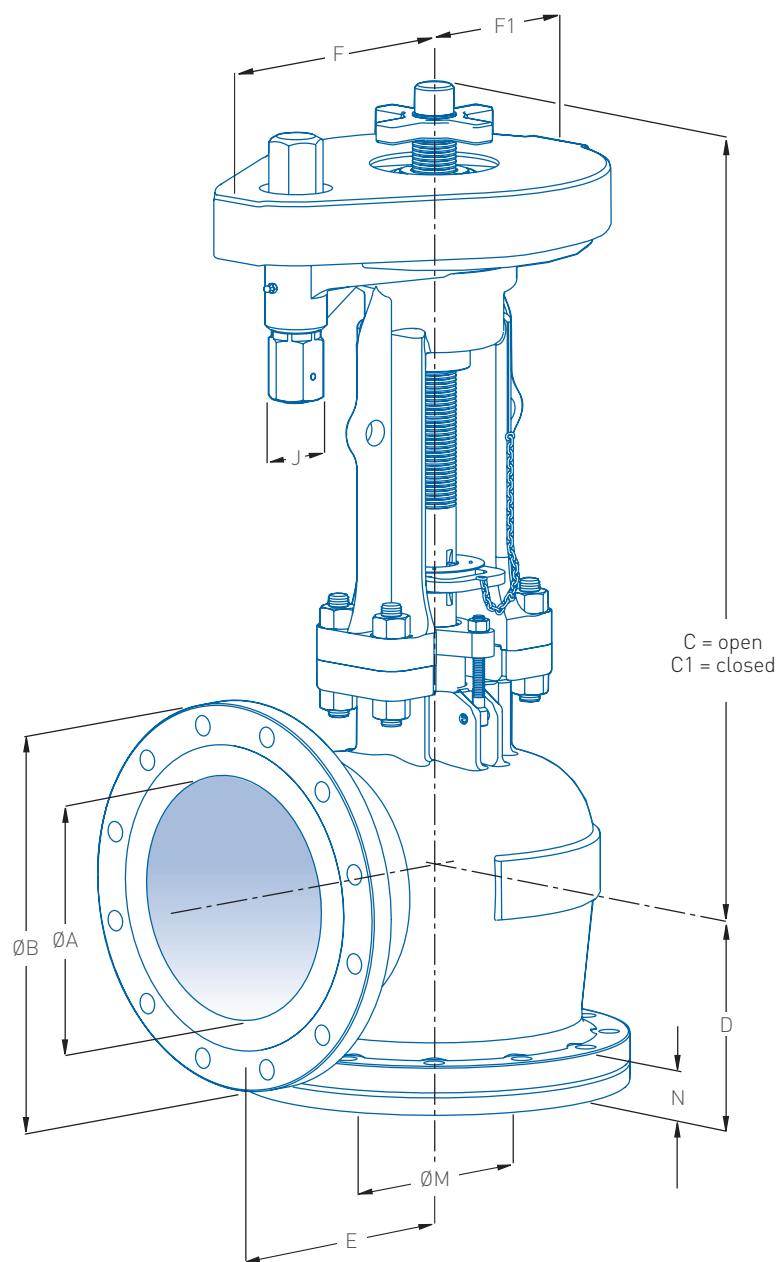
Valve size DN (NPS)	ØA bore	ØB	C open	C1 closed	D	E	ØF	ØM bore	N min
50 (2)	51 (2.00)	152 (6.00)	405 (15.94)	369 (14.53)	60 (2.36)	114 (4.49)	205 (8.07)	44 (1.73)	33.5 (1.32)
80 (3)	76 (3.00)	191 (7.50)	433 (17.05)	380 (14.96)	79 (3.11)	140 (5.51)	205 (8.07)	51 (2.01)	43.0 (1.69)
100 (4)	102 (4.00)	229 (9.00)	614 (24.17)	517 (20.35)	125 (4.92)	165 (6.50)	305 (12.01)	76 (2.99)	46.5 (1.83)
150 (6)	152 (6.00)	280 (11.00)	815 (32.09)	692 (27.24)	159 (6.26)	203 (7.99)	410 (16.14)	121 (4.76)	50.0 (1.97)
200 (8)	203 (8.00)	343 (13.50)	901 (35.47)	749 (29.49)	197 (7.76)	248 (9.76)	410 (16.14)	171 (6.73)	53.5 (2.11)
250 (10)	254 (10.00)	406 (16.00)	1162 (45.75)	960 (37.80)	241 (9.49)	292 (11.50)	520 (20.47)	216 (8.50)	57.5 (2.26)
300 (12)	305 (12.00)	483 (19.00)	1275 (50.20)	1034 (40.71)	276 (10.87)	349 (13.74)	520 (20.47)	267 (10.51)	59.5 (2.34)

NOTE

Dimension E is from the valve center to the flange raised face.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 150 - 600 (NPS 6 - 24) ASME CLASS 150



DIMENSIONS mm (inches)

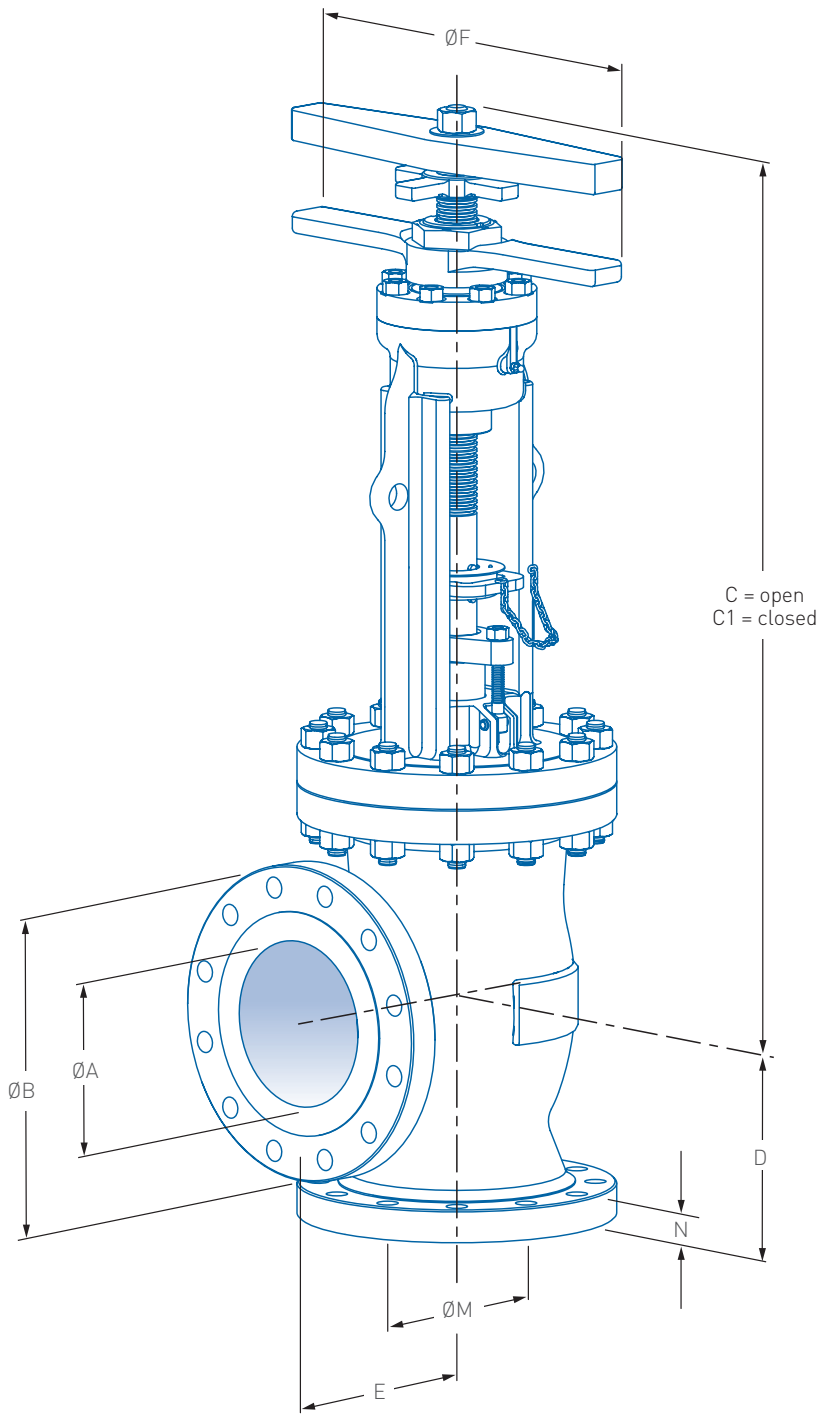
Valve size DN (NPS)	ØA bore	ØB	C open	C1 closed	D	E	F	F1	J (A/F)	ØM bore	N min
150 (6)	152 (6.00)	280 (11.00)	810 (31.89)	683 (26.89)	159 (6.26)	203 (7.99)	295 (11.61)	195 (7.68)	60 (2.36)	121 (4.76)	51.0 (2.01)
200 (8)	203 (8.00)	343 (13.50)	901 (35.47)	749 (29.49)	197 (7.76)	248 (9.76)	295 (11.61)	195 (7.68)	60 (2.36)	171 (6.73)	53.5 (2.11)
250 (10)	254 (10.00)	406 (16.00)	1162 (45.75)	960 (37.80)	241 (9.49)	292 (11.50)	295 (11.61)	195 (7.68)	60 (2.36)	216 (8.50)	57.5 (2.26)
300 (12)	305 (12.00)	483 (19.00)	1275 (50.20)	1034 (40.71)	276 (10.87)	349 (13.74)	330 (12.99)	230 (9.06)	60 (2.36)	267 (10.51)	59.5 (2.34)
350 (14)	336 (13.25)	533 (21.00)	1484 (58.43)	1207 (47.52)	305 (12.01)	368 (14.49)	330 (12.99)	230 (9.06)	60 (2.36)	299 (11.77)	67.5 (2.66)
400 (16)	387 (15.25)	597 (23.50)	1664 (65.51)	1378 (54.25)	340 (13.39)	381 (15.00)	330 (12.99)	230 (9.06)	60 (2.36)	343 (13.50)	71.0 (2.80)
450 (18)	438 (17.25)	635 (25.00)	1682 (66.22)	1389 (54.69)	356 (14.02)	406 (15.98)	330 (12.99)	230 (9.06)	60 (2.36)	387 (15.24)	77.2 (3.04)
500 (20)	489 (19.25)	699 (27.50)	1823 (71.77)	1505 (59.25)	394 (15.51)	457 (17.99)	395 (15.55)	305 (12.01)	60 (2.36)	426 (16.77)	82.5 (3.25)
600 (24)	590 (23.25)	813 (32.00)	1963 (77.28)	1608 (63.31)	451 (17.76)	508 (20.00)	395 (15.55)	305 (12.01)	60 (2.36)	521 (20.51)	92.7 (3.65)

NOTE

Dimension E is from the valve center to the flange raised face.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 50 - 150 (NPS 2 - 6) ASME CLASS 300



DIMENSIONS mm (inches)

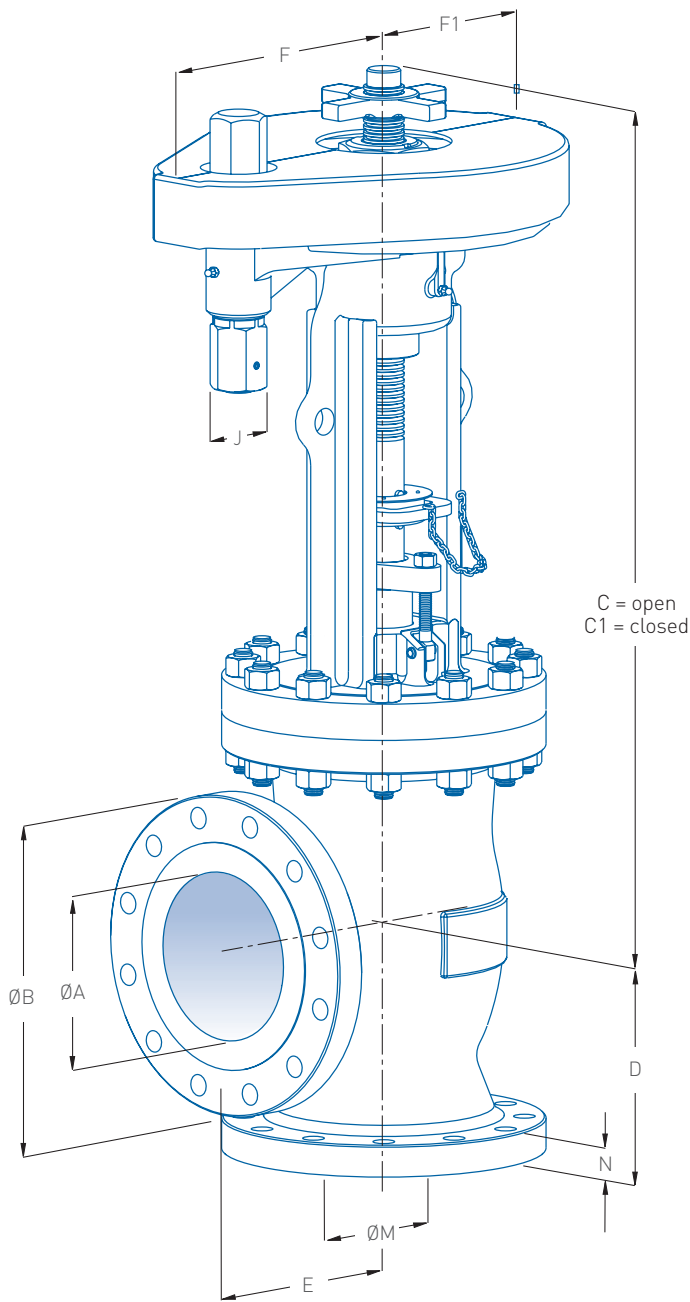
Valve size DN (NPS)	ØA bore	ØB	C open	C1 closed	D	E	ØF	ØM bore	N min
50 (2)	51 (2.00)	165 (6.50)	514 (20.24)	464 (18.27)	127 (5.00)	165 (6.50)	203 (7.99)	51 (2.01)	22 (0.87)
80 (3)	76 (3.00)	210 (8.25)	514 (20.24)	464 (18.27)	152 (5.98)	165 (6.50)	203 (7.99)	51 (2.01)	29 (1.14)
100 (4)	102 (4.00)	254 (10.00)	875 (34.45)	811 (31.93)	178 (7.01)	178 (7.01)	410 (16.14)	76 (2.99)	34 (1.34)
150 (6)	152 (6.00)	318 (12.50)	984 (38.74)	858 (33.78)	216 (8.50)	216 (8.50)	410 (16.14)	127 (5.00)	39 (1.54)

NOTE

Dimension E is from the valve center to the flange raised face.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 150 - 600 (NPS 6 - 24) ASME CLASS 300



DIMENSIONS mm (inches)

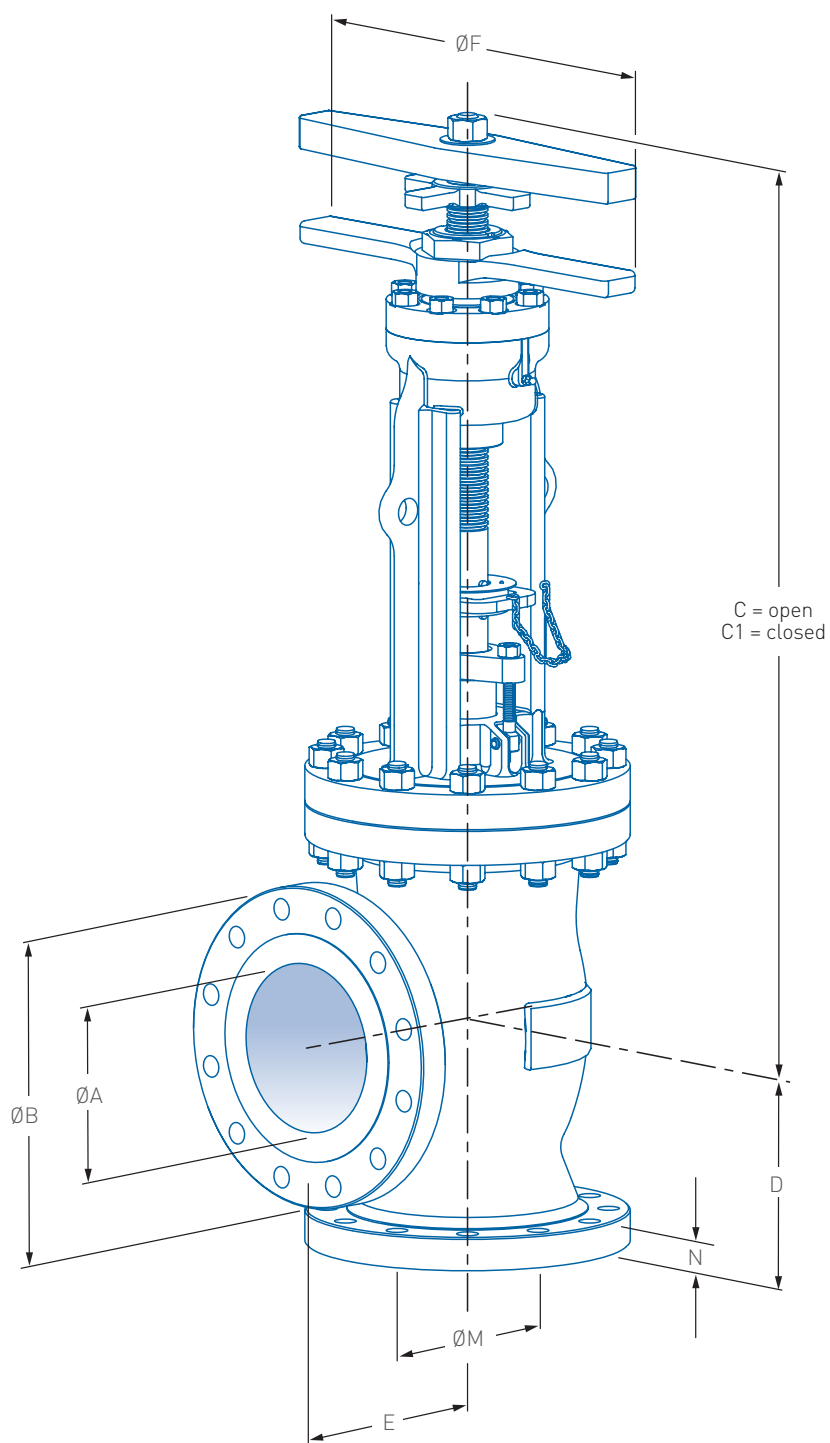
Valve size DN (NPS)	ØA bore	ØB	C open	C1 closed	D	E	F	F1	J (A/F)	ØM bore	N min
150 (6)	152 (6.00)	318 (12.50)	984 (38.74)	858 (33.78)	216 (8.50)	216 (8.50)	295 (11.61)	195 (7.68)	60 (2.36)	127 (5.00)	39 (1.54)
200 (8)	200 (7.85)	381 (15.00)	1250 (49.21)	1074 (42.28)	267 (10.51)	267 (10.51)	295 (11.61)	195 (7.68)	60 (2.36)	152 (5.98)	42 (1.65)
250 (10)	252 (9.90)	445 (17.50)	1378 (54.25)	1172 (46.14)	305 (12.01)	305 (12.01)	330 (12.99)	230 (9.06)	60 (2.36)	203 (7.99)	48 (1.89)
300 (12)	302 (11.90)	521 (20.50)	1730 (68.11)	1465 (57.68)	343 (13.50)	343 (13.50)	330 (12.99)	230 (9.06)	60 (2.36)	254 (10.00)	52 (2.05)
350 (14)	337 (13.25)	584 (23.00)	1867 (73.50)	1598 (62.91)	381 (15.00)	381 (15.00)	330 (12.99)	230 (9.06)	60 (2.36)	305 (12.01)	52 (2.05)
400 (16)	387 (15.25)	648 (25.50)	1909 (75.16)	1634 (64.33)	419 (16.50)	432 (17.01)	395 (15.55)	310 (12.20)	60 (2.36)	362 (14.25)	57 (2.24)
450 (18)	419 (16.50)	711 (28.00)	1991 (78.39)	1713 (67.44)	457 (17.99)	457 (17.99)	395 (15.55)	310 (12.20)	60 (2.36)	400 (15.75)	60 (2.36)
500 (20)	483 (19.00)	775 (30.50)	2108 (82.99)	1810 (71.26)	495 (19.49)	495 (19.49)	445 (17.52)	340 (13.39)	60 (2.36)	457 (17.99)	64 (2.52)
600 (24)	585 (23.00)	915 (36.00)	2483 (97.76)	2127 (83.74)	635 (25.00)	635 (25.00)	445 (17.52)	340 (13.39)	89 (3.50)	549 (21.61)	73 (2.87)

NOTE

Dimension E is from the valve center to the flange raised face.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 50 - 150 (NPS 2 - 6) ASME CLASS 600



DIMENSIONS mm (inches)

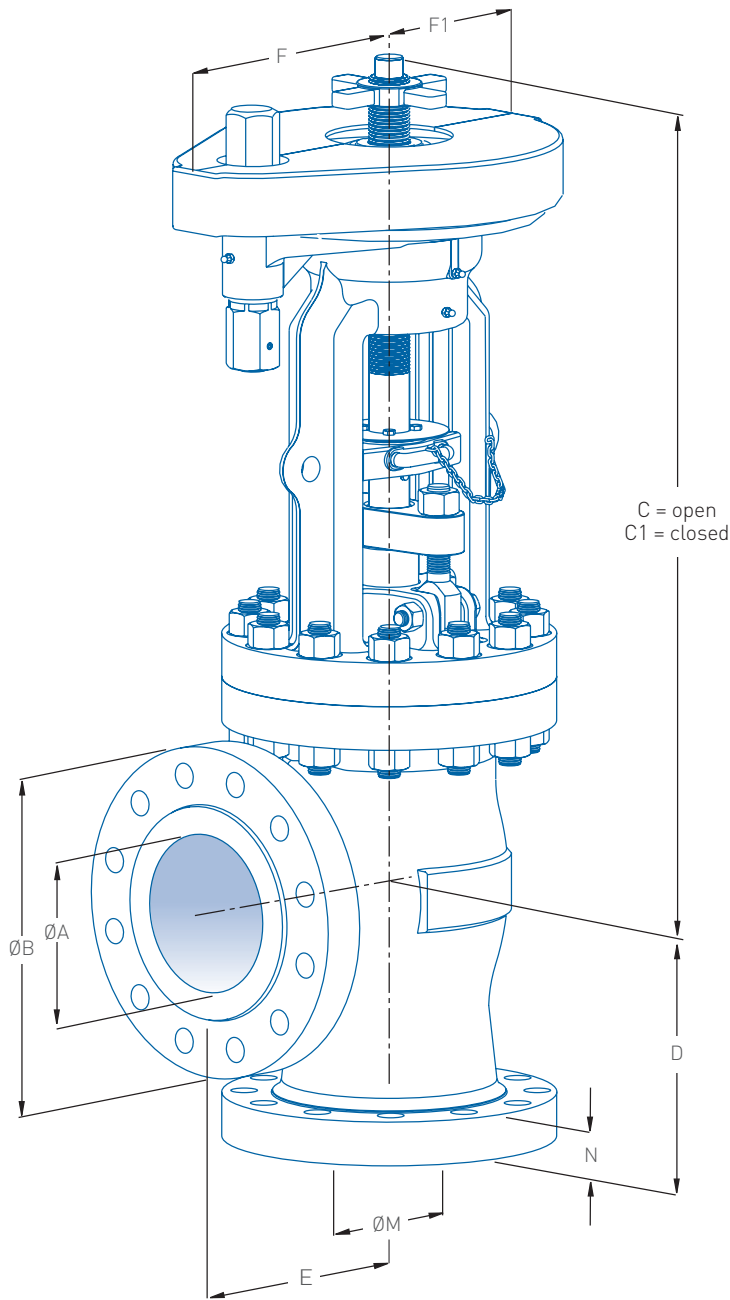
Valve size DN (NPS)	$\varnothing A$ bore	$\varnothing B$	C open	C1 closed	D	E	$\varnothing F$	$\varnothing M$ bore	N min
50 (2)	51 (2.00)	165 (6.50)	600 (23.62)	556 (21.89)	133 (5.24)	133 (5.24)	305 (12.01)	51 (2.01)	32 (1.26)
80 (3)	76 (3.00)	210 (8.25)	712 (28.03)	657 (25.87)	184 (7.24)	184 (7.24)	305 (12.01)	54 (2.13)	38 (1.50)
100 (4)	102 (4.00)	260 (10.25)	762 (30.00)	699 (27.52)	216 (8.50)	216 (8.50)	406 (15.98)	76 (2.99)	44 (1.73)
150 (6)	152 (6.00)	356 (14.00)	1029 (40.51)	929 (36.57)	251 (9.88)	264 (10.39)	410 (16.14)	127 (5.00)	49 (1.93)

NOTE

Dimension E is from the valve center to the flange raised face.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 150 - 600 (NPS 6 - 24) ASME CLASS 600



DIMENSIONS mm (inches)

Valve size DN (NPS)	ØA bore	ØB	C open	C1 closed	D	E	F	F1	J (A/F)	ØM bore	N min
150 (6)	152 (6.00)	356 (14.00)	1029 (40.51)	929 (36.57)	251 (9.88)	264 (10.39)	295 (11.61)	195 (7.68)	60 (2.36)	127 (5.00)	49 (1.93)
200 (8)	200 (7.85)	419 (16.50)	1029 (40.51)	929 (36.57)	330 (12.99)	324 (12.76)	295 (11.61)	195 (7.68)	60 (2.36)	152 (5.98)	58 (2.28)
250 (10)	254 (10.00)	508 (20.00)	1581 (62.24)	1403 (55.24)	394 (15.51)	394 (15.51)	330 (12.99)	230 (9.06)	60 (2.36)	203 (7.99)	68 (2.68)
300 (12)	302 (11.90)	559 (22.00)	1818 (71.57)	1607 (63.27)	419 (16.50)	425 (16.73)	330 (12.99)	230 (9.06)	60 (2.36)	254 (10.00)	71 (2.80)
350 (14)	327 (12.85)	603 (23.75)	1937 (76.26)	1670 (65.75)	445 (17.52)	445 (17.52)	330 (12.99)	230 (9.06)	60 (2.36)	305 (12.01)	76 (2.99)
400 (16)	363 (14.30)	689 (27.15)	2142 (84.33)	1856 (73.07)	502 (19.76)	527 (20.75)	610 (24.02)	498 (19.61)	89 (3.50)	362 (14.25)	81 (3.19)
450 (18)	419 (16.50)	743 (29.25)	2179 (85.79)	1899 (74.76)	546 (21.50)	546 (21.50)	610 (24.02)	498 (19.61)	89 (3.50)	400 (15.75)	83 (3.27)
500 (20)	464 (18.25)	813 (32.00)	2564 (100.94)	2231 (87.83)	597 (23.50)	597 (23.50)	795 (31.30)	415 (16.34)	89 (3.50)	464 (18.27)	90 (3.54)
600 (24)	550 (21.65)	940 (37.00)	3511 (138.23)	2975 (117.13)	685 (26.97)	685 (26.97)	980 (38.58)	595 (23.43)	89 (3.50)	550 (21.65)	108 (4.25)

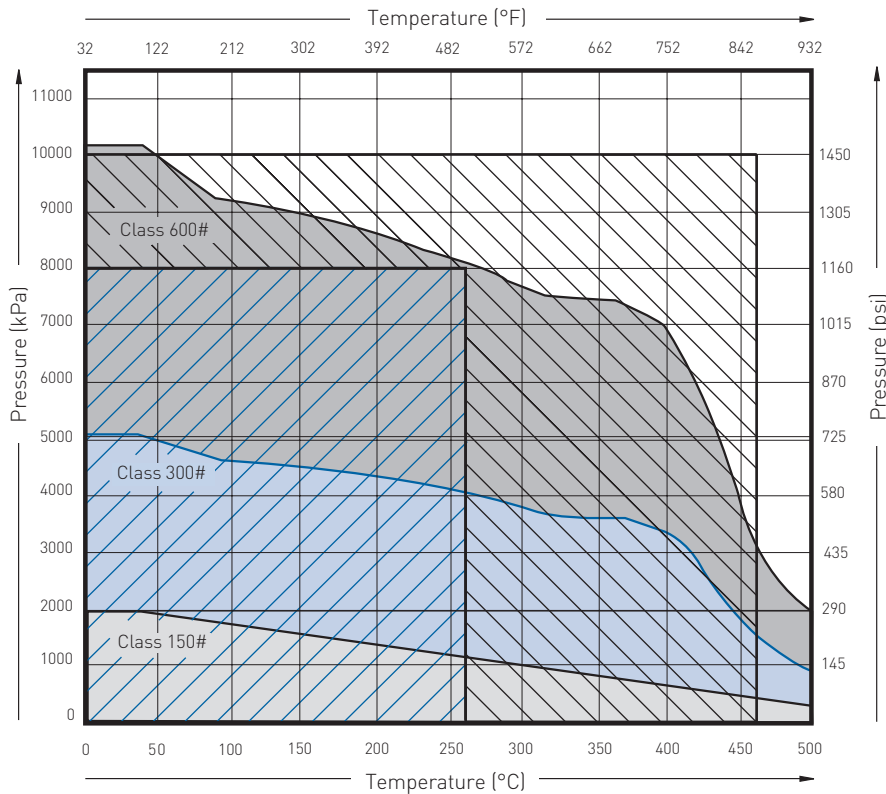
NOTE

Dimension E is from the valve center to the flange raised face.

LUNKENHEIMER FIGURE 603 ANGLE ISOLATION VALVE

DN 50 - 600 (NPS 2 - 24) ASME CLASS 150, 300 AND 600



PRESSURE/TEMPERATURE GRAPH



PRESSURE/TEMPERATURE RATINGS

NOTES

1. The pressure temperature ratings displayed are for carbon steel ASTM A 216 Gr WCB according to ASME B16.5 Table 2.
2. Upper temperature is set by standard gland packing.
3. Customer requested changes to gland packing may affect the temperature ratings of the valve.

-  PTFE braided packing
-  Reinforced graphite packing

TYPICAL SPECIFYING SEQUENCE - CLASS 150, 300 AND 600

100 (4)	F603	3	3	C	3	3	4	3	/	00
Valve size	Figure no.	Flange rating	Flange rating	Body material	Seat trim	Disc trim	Stem trim	Certification code	Valve variant	Standard option

Size range: DN 50 - 600 (NPS 2 - 24)

Figure no.: F603 - Angle Isolation valve Class 150, 300 and 600

Trim code	Flange rating	Flange rating	Body material	Seat trim	Disc trim	Stem trim
11C334	Class 150	Class 150	A 216 Gr WCB	Steel - stellite	Steel - stellite	Grade ASTM A29 - 4140 - Stellite coated
11C353	Class 150	Class 150	A 216 Gr WCB	Steel - stellite	Steel	Grade ASTM A29 - 4140
33C333	Class 300	Class 300	A 216 Gr WCB	Steel - stellite	Steel - stellite	Grade ASTM A29 - 4140
66C334	Class 600	Class 600	A 216 Gr WCB	Steel - stellite	Steel - stellite	Grade ASTM A29 - 4140 - Stellite coated

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