

### Technical Data

**Size Range:** DN40-500 ; 1½-20"

**End Connections (Pressure Ratings):**

**Flanged:** ISO PN16, PN25, PN40 ; ANSI Class 150, 300, 400

**Threaded:** BSP or NPT

**Others:** Available on request

**Valve Patterns:** "Y" (globe) & angle

**Working Temperature:** Water up to 80°C ; 180°F

**Standard Materials:**

**Body:** Cast Carbon Steel; Ductile Iron; Stainless Steel 316

**Cover:** Stainless Steel 316; Bronze

**Internals:** Stainless Steel & Bronze

**Seals:** Synthetic Rubber

**Coating:** Fusion Bonded Epoxy, RAL 5005 (Blue) approved for drinking water or Electrostatic Polyester Powder

### Differential Pressure Calculation

$$\Delta P = \frac{Q}{(Kv; Cv)^2}$$

**ΔP** = Differential Pressure for fully open valve (bar; psi)

**Q** = Flow rate (m³/h; gpm)

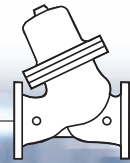
**Kv** = Metric system - valve flow coefficient  
(flow in m³/h at 1 bar ΔP with 15°C water)

**Cv** = US system - Valve flow coefficient  
(flow in gpm at 1 psi ΔP with 60°F water)

$$Cv = 1.155 Kv$$

### Flow Data & Dimensions Table

DN / Size		40	1.5"	50	2"	65	2.5"	80	3"	100	4"	150	6"	200	8"	250	10"	300	12"	350	14"	400	16"	450	18"	500	20"								
Flow Data	800 "Y"																																		
	800 Angle																																		
	800 "Y" Flanged																																		
800 "Y" Flanged	PN10; 16 Class 150	L (mm / inch)	205 8.1	210 8.3	222 8.7	250 9.8	320 12.6	415 16.3	500 19.7	605 23.8	725 28.5	733 28.9	990 39.0	1,000 39.4	1,100 43.3	1,250 49.6	1,440 57.1	1,850 72.8	2,140 84.6	1,990 78.7	2,300 90.9	3,310 130.8	3,820 150.4	3,430 134.8	3,960 156.1	3,550 140.0	4,100 161.4								
		W (mm / inch)	156 6.1	166 6.5	190 7.5	200 7.9	229 9.0	286 11.3	344 13.5	408 16.1	484 19.1	536 21.1	600 23.6	638 25.1	716 28.2	762 30.0	808 31.8	908 35.7	1,008 39.7	1,108 43.7	1,208 47.7	1,308 51.7	1,408 55.7	1,508 59.7	1,608 63.7	1,708 67.7	1,808 71.7	1,908 75.7	2,008 79.7						
		h (mm / inch)	78 3.1	83 3.3	95 3.7	100 3.9	115 4.5	143 5.6	172 6.8	204 8.0	242 9.5	268 10.6	300 11.8	319 12.6	358 14.1	408 16.1	458 18.0	508 20.0	558 22.0	608 24.0	658 26.0	708 28.0	758 30.0	808 32.0	858 34.0	908 36.0	958 38.0	1,008 40.0	1,058 42.0	1,108 44.0					
		H (mm / inch)	260 10.2	265 10.4	278 10.9	327 12.9	409 16.1	526 20.7	650 25.6	763 30.0	942 37.1	969 38.1	1,154 45.4	1,173 46.2	1,211 47.7	1,250 49.6	1,300 51.6	1,400 55.6	1,500 59.6	1,600 63.6	1,700 67.6	1,800 71.6	1,900 75.6	2,000 79.6	2,100 83.6	2,200 87.6	2,300 91.6	2,400 95.6	2,500 99.6	2,600 103.6					
		P (mm / inch)	-	-	-	-	-	135 5.3	135 5.3	142 5.6	154 6.1	154 6.1	191 7.5	191 7.5	191 7.5	191 7.5	228 9.0	228 9.0	265 10.4	265 10.4	302 11.9	302 11.9	339 13.3	339 13.3	376 14.8	376 14.8	413 16.3	413 16.3	450 17.7	450 17.7	487 19.2				
	Weight (Kg/lb)	10.7 24	13 29	16 35	28 62	48 106	94 207	162 356	272 598	455 1,001	482 1,060	1,000 2,200	1,074 2,363	1,096 2,411	1,129 2,484	1,262 2,781	1,495 3,298	1,988 4,381	2,481 5,464	2,974 6,557	3,467 7,640	3,960 8,723	4,453 9,806	4,946 10,889	5,439 11,972	5,932 13,055	6,425 14,138	6,918 15,221	7,411 16,304						
	PN25; 40 Class 300	L (mm / inch)	205 8.1	210 8.3	222 8.7	264 10.4	335 13.2	433 17.0	524 20.6	637 25.1	762 30.0	767 30.2	1,024 40.3	1,030 40.6	1,136 44.7	1,242 48.9	1,500 61.0	1,760 69.3	2,020 81.5	2,280 93.7	2,540 105.9	2,800 118.1	3,060 130.3	3,320 142.5	3,580 154.7	3,840 166.9	4,100 179.1	4,360 191.3	4,620 203.5	4,880 215.7					
		W (mm / inch)	156 6.1	166 6.5	190 7.5	210 8.3	254 10.0	318 12.5	382 15.0	446 17.6	522 20.6	590 23.2	650 25.6	714 28.1	778 30.6	842 33.1	906 35.6	970 38.1	1,034 40.7	1,098 43.2	1,162 45.7	1,226 48.2	1,290 50.8	1,354 53.3	1,418 55.8	1,482 58.3	1,546 60.8	1,610 63.3	1,674 65.8	1,738 68.3	1,802 70.8				
		h (mm / inch)	78 3.1	83 3.3	95 3.7	105 4.1	127 5.0	159 6.3	191 7.5	223 8.8	261 10.3	295 11.6	325 12.8	357 14.1	389 15.3	421 16.5	453 17.8	485 20.0	517 21.3	549 22.6	581 23.9	613 25.2	645 26.5	677 27.8	709 29.1	741 30.4	773 31.7	805 33.0	837 34.3	869 35.6	901 36.9				
		H (mm / inch)	260 10.2	265 10.4	278 10.9	332 13.1	422 16.6	542 21.3	666 26.2	783 30.8	961 37.8	996 39.2	1,179 46.4	1,208 47.6	1,241 48.9	1,274 50.2	1,317 51.5	1,500 61.0	1,683 70.5	1,866 80.0	2,049 89.5	2,232 99.0	2,415 108.5	2,598 118.0	2,781 127.5	2,964 137.0	3,147 146.5	3,330 156.0	3,513 165.5	3,696 175.0	3,879 184.5				
P (mm / inch)		-	-	-	-	-	135 5.3	135 5.3	142 5.6	154 6.1	154 6.1	191 7.5	191 7.5	191 7.5	191 7.5	228 9.0	228 9.0	265 10.4	265 10.4	302 11.9	302 11.9	339 13.3	339 13.3	376 14.8	376 14.8	413 16.3	413 16.3	450 17.7	450 17.7	487 19.2					
Weight (Kg/lb)	11.8 26	15 33	18.4 40	32 70	56 123	106 233	190 418	307 675	505 1,111	549 1,208	1,070 2,354	1,095 2,409	1,129 2,484	1,163 2,559	1,306 2,875	1,549 3,391	1,792 3,907	2,035 4,423	2,278 4,939	2,521 5,455	2,764 5,971	3,007 6,487	3,250 7,003	3,493 7,519	3,736 8,035	3,979 8,551	4,222 9,067	4,465 9,583	4,708 10,099						
800 Angle, Flanged	PN10; 16 Class 150	L (mm / inch)	124 4.9	124 4.9	149 5.9	152 6.0	190 7.5	225 8.9	265 10.4	320 12.6	396 15.6	400 15.7	450 17.7	450 17.7	500 19.7	550 21.7	600 23.6	650 25.6	700 27.6	750 29.5	800 31.5	850 33.5	900 35.4	950 37.4	1,000 39.4	1,050 41.4	1,100 43.3	1,150 45.3	1,200 47.3	1,250 49.3					
		W (mm / inch)	156 6.1	166 6.5	190 7.5	200 7.9	229 9.0	285 11.2	344 13.5	408 16.1	496 19.5	528 20.8	598 23.5	640 25.2	680 26.9	740 29.1	800 31.5	860 33.9	920 36.3	980 38.7	1,040 41.1	1,100 43.5	1,160 45.9	1,220 48.3	1,280 50.7	1,340 53.1	1,400 55.5	1,460 57.9	1,520 60.3	1,580 62.7	1,640 65.1				
		R (mm / inch)	78 3.1	83 3.3	95 3.7	100 3.9	115 4.5	143 5.6	172 6.8	204 8.0	248 9.8	264 10.4	299 11.8	320 12.6	350 13.4	380 15.2	410 17.0	440 18.8	470 20.6	500 22.4	530 24.2	560 26.0	590 27.8	620 29.6	650 31.4	680 33.2	710 35.0	740 36.8	770 38.6	800 40.4	830 42.2	860 44.0			
		h (mm / inch)	85 3.3	85 3.3	109 4.3	102 4.0	127 5.0	152 6.0	203 8.0	219 8.6	273 10.7	279 11.0	369 14.5	370 14.6	460 18.1	460 18.1	550 21.7	550 21.7	640 25.6	640 25.6	730 29.1	730 29.1	820 32.7	820 32.7	910 36.3	910 36.3	1,000 40.0	1,000 40.0	1,090 43.7	1,090 43.7	1,180 47.3	1,180 47.3			
		H (mm / inch)	252 9.9	252 9.9	271 10.7	308 12.1	390 15.4	476 18.7	619 24.4	717 28.2	911 35.9	915 36.0	1,144 45.0	1,144 45.0	1,373 53.0	1,373 53.0	1,602 61.0	1,831 69.0	2,060 77.0	2,289 85.0	2,518 93.0	2,747 101.0	2,976 109.0	3,205 117.0	3,434 125.0	3,663 133.0	3,892 141.0	4,121 149.0	4,350 157.0	4,579 165.0	4,808 173.0	5,037 181.0			
	P (mm / inch)	-	-	-	-	-	141 5.6	141 5.6	156 6.1	156 6.1	191 7.5	191 7.5	228 9.0	228 9.0	265 10.4	265 10.4	302 11.9	302 11.9	339 13.3	339 13.3	376 14.8	376 14.8	413 16.3	413 16.3	450 17.7	450 17.7	487 19.2	487 19.2	524 20.6	524 20.6	561 22.0				
	Weight (Kg/lb)	10.7 24.0	13 29.0	16 35.0	26 57.0	46 101	90 198	153 337	259 570	433 953	459 1,010	950 2,090	950 2,090	1,020 2,244	1,020 2,244	1,163 2,559	1,406 3,094	1,649 3,639	1,892 4,184	2,135 4,729	2,378 5,274	2,621 5,819	2,864 6,364	3,107 6,909	3,350 7,454	3,593 7,999	3,836 8,544	4,079 9,089	4,322 9,634	4,565 10,179	4,808 10,724				
	PN25; 40 Class 300	L (mm / inch)	124 4.9	124 4.9	149 5.9	159 6.3	200 7.9	234 9.2	277 10.9	336 13.2	415 16.3	419 16.5	467 18.4	467 18.4	515 20.3	563 22.1	606 23.5	650 25.6	694 27.7	738 29.8	782 31.9	826 34.0	870 36.1	914 38.2	958 40.3	1,002 42.4	1,046 44.5	1,090 46.6	1,134 48.7	1,178 50.8	1,222 52.9	1,266 55.0			
		W (mm / inch)	150 5.9	155 6.1	190 7.5	200 7.9	254 10.0	318 12.5	381 15.0	446 17.6	522 20.6	586 23.1	650 25.6	716 28.2	782 30.8	846 33.3	910 35.8	974 38.3	1,038 40.8	1,102 43.3	1,166 45.8	1,230 48.3	1,294 50.8	1,358 53.3	1,422 55.8	1,486 58.3	1,550 60.8	1,614 63.3	1,678 65.8	1,742 68.3	1,806 70.8	1,870 73.3	1,934 75.8		
		R (mm / inch)	78 3.1	85 3.3	95 3.7	105 4.1	127 5.0	159 6.3	191 7.5	223 8.8	261 10.3	293 11.5	325 12.8	358 14.1	390 15.4	422 16.7	454 18.0	486 19.3	518 20.6	550 21.9	582 23.2	614 24.5	646 25.8	678 27.1	710 28.4	742 29.7	774 31.0	806 32.3	838 33.6	870 34.9	902 36.2	934 37.5	966 38.8	998 40.1	
h (mm / inch)		85 3.3	85 3.3	109 4.3	109 4.3	135 5.3	165 6.5	216 8.5	236 9.3	294 11.6	299 11.6	386 15.2	386 15.2	473 60.8	473 60.8	560 74.4	560 74.4	647 88.0	647 88.0	734 101.6	734 101.6	821 115.2	821 115.2	908 128.8	908 128.8	995 142.4	995 142.4	1,082 156.0	1,082 156.0	1,169 169.6	1,169 169.6	1,256 183.2	1,256 183.2		
H (mm / inch)		252 9.9	264 10.4	271 10.7	315 12.4	398 15.7	491 19.3	632 24.9	733 28.9	930 36.6	935 36.8	1,160 45.7	1,160 45.7	1,390 53.9	1,390 53.9	1,620 62.0	1,850 70.3	2,080 78.6	2,310 86.9	2,540 95.2															



## High Pressure, Check Valve Lift Type

### Model 80N

- Pump check valve
- One-way zone isolation
- Return flow prevention

The Model 80N Check Valve is a non-slam, lift type, non return valve that opens to allow flow in the required direction and smoothly closes drip tight to prevent back flow.

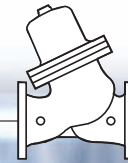


### Features and Benefits

- **Non-slam closing** – Eliminates system surges
- **In-line serviceable** – Easy maintenance
- **Flexible design** – Convertible to hydraulic valve
- **"Y" or angle, wide body** – Minimized pressure loss
- **Semi-straight flow** – Non-turbulent flow
- **Stainless Steel raised seat** – Cavitation damage resistant
- **Obstacle free, full bore** – Uncompromising reliability

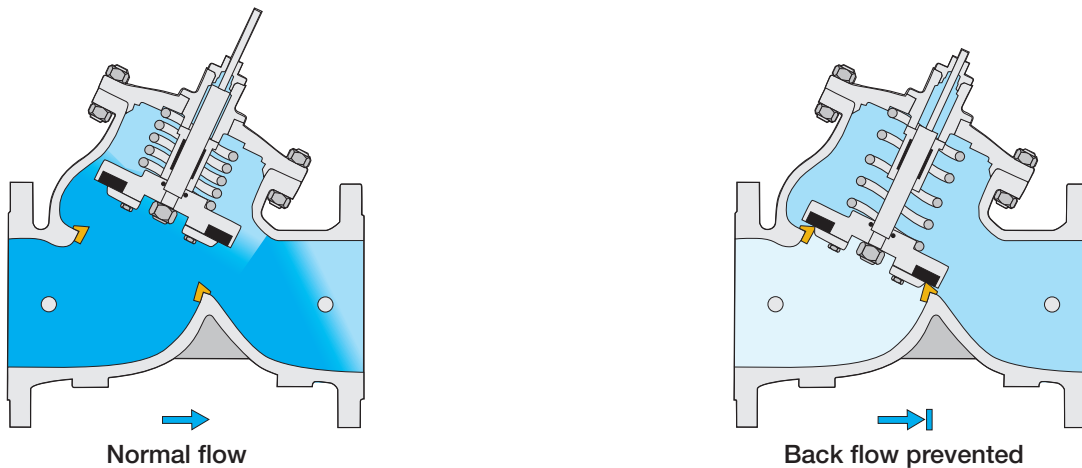
### Major Additional Features

- Valve position indicator – **80N-I**
- Electric limit switch – **80N-S**
- Double check valve – **82N**

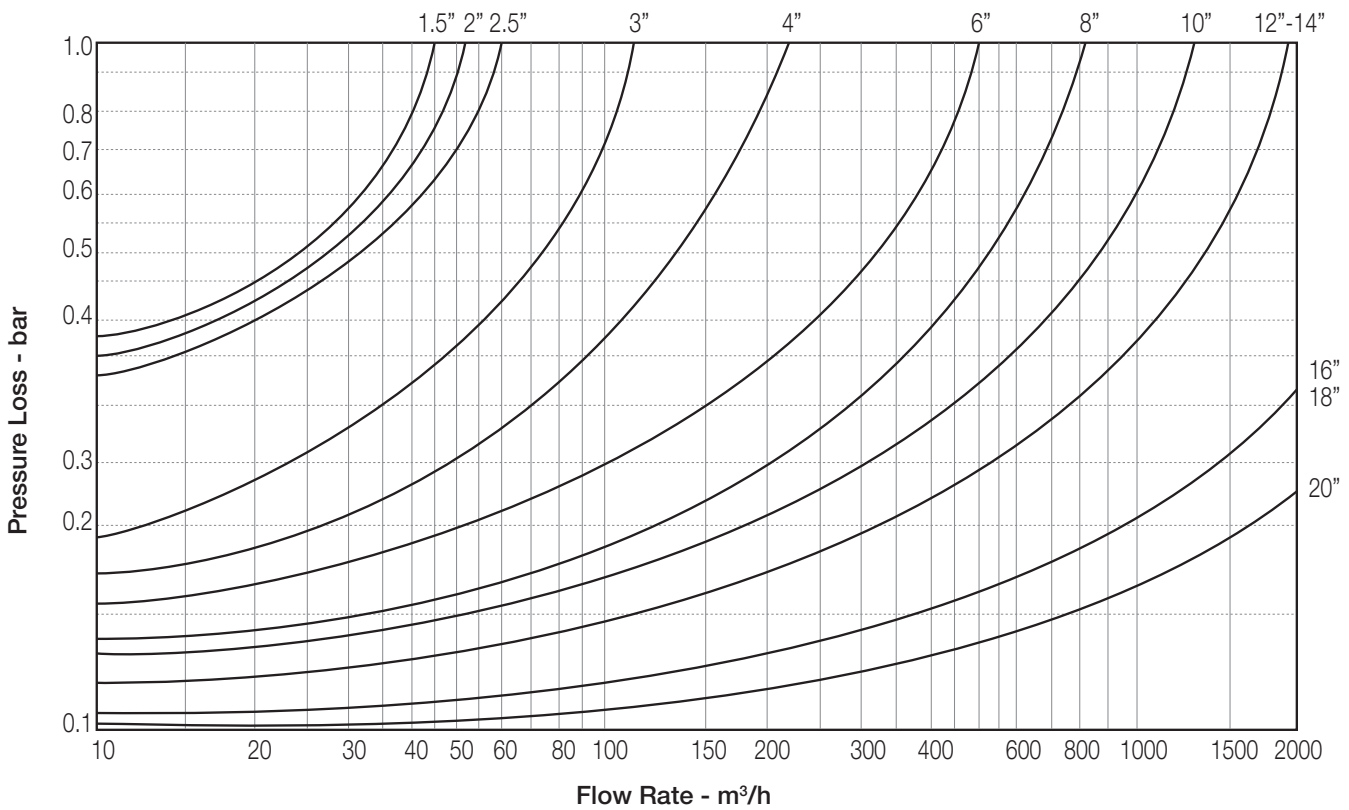


## Operation

The Model 80N is built on a standard 800 Series body assembly and reacts to differential pressure across its seal disk. It opens and closes in a non-slam manner according to the flow. A spring provides additional closing force.

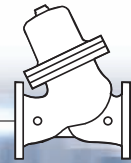


## Flow Chart



### Notes:

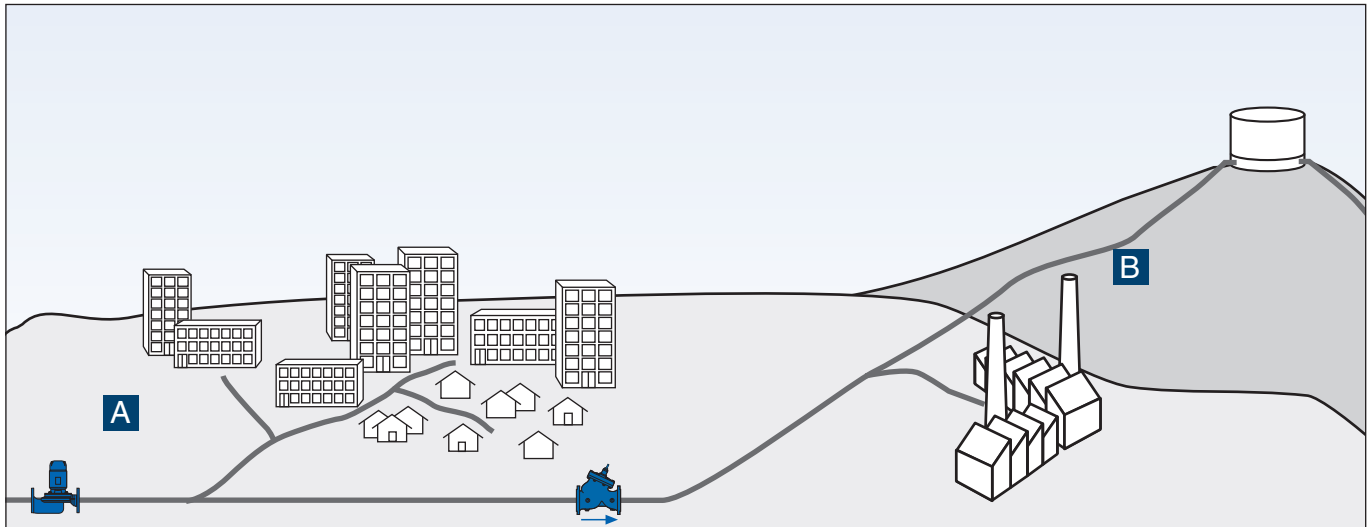
- Recommended continuous flow velocity: 0.3-6.0 m/sec ; 1-20 ft/sec
- Minimum operating pressure: 0.7 bar ; 10 psi.



## Typical Applications

### One-Way Zone Isolation

In complex distribution networks, multiple zones are supplied from multiple sources. Each zone has its own characteristic demands and each source has its characteristic capacity. Often each source is designated to serve a specific zone, with a backup supply designed into the system.



In this system, source **A** supplies zone **A** and backs up the farther zone. Source **B** supplies zone **B**, but does not have enough capacity to backup any other zone.

The Model 80N Check Valve, installed between the zones, allows flow from source **A** to zone **B**, but not from source **B** to zone **A**.

### Pump Check Valve

