

# Mark 75E Series

## Wafer Style Control Valves With Modular, Stackable Actuator

The Mark 75E wafer style control valve with its modular, stackable actuator was developed by Jordan Valve as the next generation of control valves. Featuring all the benefits of the time-tested Sliding Gate seat design, in a lightweight, compact body the Mark 75E also incorporates a modular, stackable actuator to further reduce weight and footprint dimensions while providing additional thrust.

### MODULAR, STACKABLE ACTUATOR

The new actuator design provides 25 square inches of effective diaphragm area per module and can be stacked to multiply the total effective area to 50 or 75 square inches. Aluminum construction ensures a lightweight automated package.

**Powerful** - With a 15-30 bench set and 3bar (45 psi) of air:

- 25M has 1.67kN of thrust (375 lbs)
- 50M has 3.34kN of thrust (750 lbs)
- 75M has 5.00kN of thrust (1,125 lbs)

Compare with our largest 85M actuator and a standard 6-30 bench set:

- 2.27kN of thrust (510 lbs)

### WEIGHT ADVANTAGE

The Mark 75E offers a tremendous weight advantage over other valve designs. A DN100 Mark 75E with a 75M actuator weighs a mere 12.1 kgs! The lightweight and reduced envelope dimensions create savings in transportation, installation and support.



### CAPACITY

The Mark 75E provides great capacity in a compact wafer style body. A DN50 Mark 75 provides 62 Kv (72 Cv) as the linear operating Kv. (Refer to Kv Capacity Charts for information concerning all line sizes).

### EASE OF MAINTENANCE

The Mark 75E features a 'T' slot design connection to the disc. This connection allows for quick and easy reversing of functions. Instead of having to go into the actuator to change action, all that is needed in a Mark 75E is to turn the seats 180°. With this simple rotation, the valve can go from reverse acting to direct acting (or vice versa).

The stroke length of the Mark 75E is a slightly longer stroke than other sliding gate valves. This longer stroke enables better turndown. Combined with the capacity of the Mark 75E, the increased turndown makes for a great control valve.



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**SPECIFICATIONS**

**Sizes:** DN25 (1") thru DN100 (4") ANSI PN25/40

**Body/Bonnet Connection**

- 316 Stainless Steel (ASME SA-479)
- Carbon Steel (SA-105)

**Trim Material**

- 316 Stainless Steel

**Seats Materials**

- Jorcote/316SS – standard
- Jorcote with 303SS - optional

**Yoke Materials**

- 316SST

**Actuator Case Material:** Epoxy Coated Aluminum

**Packing Material**

- Spring loaded Teflon V-Ring to 260°C (450°F)
- Grafoil above 260°C (450°F)

**Shutoff:** ANSI Class IV tightness

**Ranges:**

- 1,03 - 2,07 bar (15-30 psi)
- 2,07 - 4,14 bar (30-60 psi)
- \* positioner required

**Action**

- Direct (ATC)
- Reverse (ATO)

**Body Rating (DN25-DN100)**

- Stainless Steel: 25,3 bar @ 232°C (367 PSI @ 450°F)
- Carbon Steel: 36,7 bar @ 232°C (532 psi @ 450°F)

**Actuators**

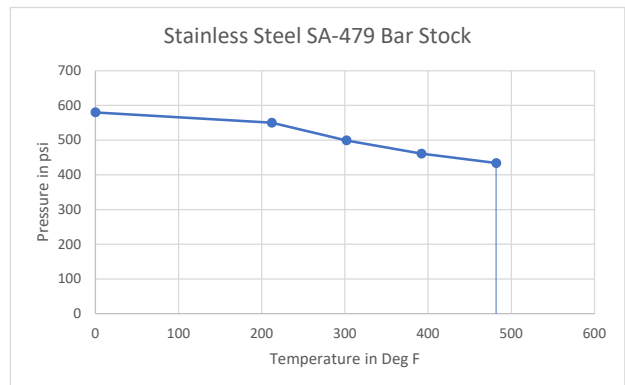
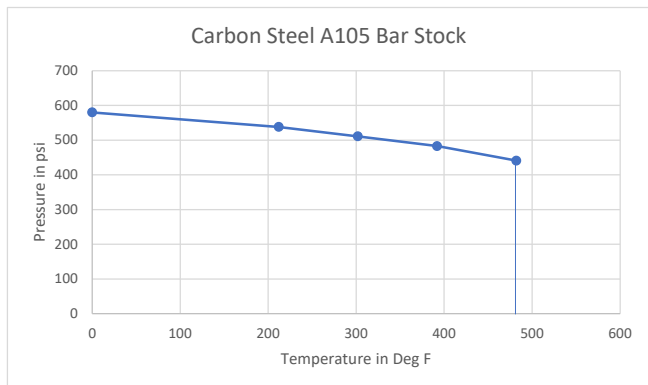
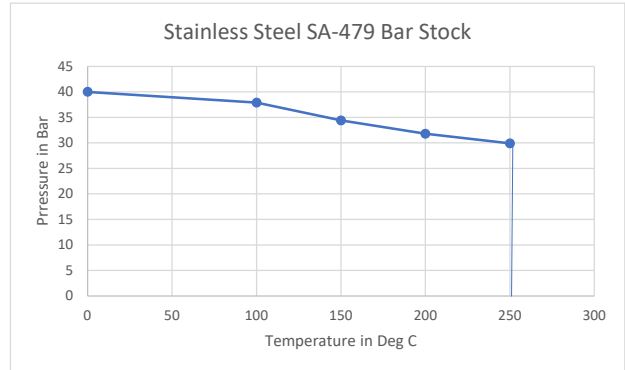
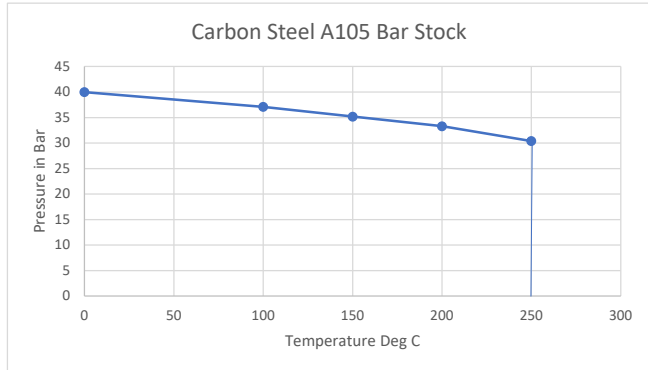
- 25M, 50M, 75M modular actuator (depending on size/pressure drop)

**Turndown Ratio Capability:** Up to 100:1 (depending on application)

**PRESSURE/TEMPERATURE CHART**

**Carbon Steel**

**Stainless Steel**



**Kv/Cv vs TRAVEL – LINEAR**

Kv (Cv)	Flow Characteristics	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
8,2 (9.5)	Linear	0.95	1.90	2.85	3.8	4.75	5.70	6.65	7.60	8.55	9.5
28 (33)	Linear	3.3	6.6	9.9	13.2	16.5	19.8	23.1	26.4	29.7	33
62 (72)	Linear	7.2	14.4	21.6	28.8	36.0	43.2	50.4	57.6	64.8	72
66 (76)	Linear	7.6	15.2	22.8	30.4	38.0	45.6	53.2	60.8	68.4	76
89 (103)	Linear	10.3	20.6	30.9	41.2	51.5	61.8	72.1	82.4	92.7	103
155 (180)	Linear	18	36	54	72	90	108	126	144	162	180

Cv vs Travel curves represent projected performance based on file data. Actual results may vary from system to system.

**MAXIMUM Kv (Cv) VALUES**

Size	Linear Kv	Linear Cv	Equal Percentage Kv	Equal Percentage Cv
DN25 (1")	8,2	9.5	4,9	5.7
DN40 (1-1/2")	28	33	17	20
DN50 (2")	62	72	37	43
DN80 (3")	89	103	54	62
DN100 (4")	155	180	93	108

Note: EQP trim available to full linear Kv if programmed through MK16IQ positioner

**MAXIMUM ALLOWABLE PRESSURE REDUCTIONS - JORCOTE SEATS/DIRECT OR REVERSE - BAR (PSI)**

Size	25M	50M	75M	Bench Set <sup>1</sup>	Required Air Supply
DN25 (1")	18,6 (270)	36,9 (535)	36,9 (535)	1-2 bar (15-30 psi)	3,1 (45)
	24,8 (360)	36,9 (535)	36,9 (535)	2-4 bar (30-60 psi)	5,5 (80)
DN40 (1-1/2")	17,6 (255)	35,1 (510)	36,9 (535)	1-2 bar (15-30 psi)	3,1 (45)
	23,4 (340)	36,9 (535)	36,9 (535)	2-4 bar (30-60 psi)	5,5 (80)
DN50 (2")	13,8 (200)	27,6 (400)	36,9 (535)	1-2 bar (15-30 psi)	3,1 (45)
	20,7 (300)	36,9 (535)	36,9 (535)	2-4 bar (30-60 psi)	5,5 (80)
DN80 (3")	22,75 (330)	36,9 (535)	36,9 (535)	1-2 bar (15-30 psi)	3,1 (45)
	30,3 (440)	36,9 (535)	36,9 (535)	2-4 bar (30-60 psi)	5,5 (80)
DN100 (4")	11,4 (165)	22,8 (330)	34,1 (495)	1-2 bar (15-30 psi)	3,1 (45)
	15,2 (220)	30,3 (440)	36,9 (535)	2-4 bar (30-60 psi)	5,5 (80)

1. A tolerance of ± 10% is normal for Bench Range values.

**MAXIMUM WORKING PRESSURE @ 38°C (100°F), BAR (PSI)**

Size	Carbon Steel	Stainless Steel
All/PN40	39,9 (580)	36,9 (535)

**PRESSURE @ MAXIMUM TEMPERATURE, BAR (PSI) @°C (°F)**

Size	Carbon Steel	Stainless Steel
All/PN40	36,7 bar @ 232°C (532 psi @ 450°F)	25,3 bar @ 232°C (367 PSI @ 450°F)

## SLIDING GATE FEATURES & BENEFITS

### Jordan Valve's Sliding Gate Seats

Installed in the widest range of gas, chemical and steam applications the world over, our pressure regulators, temperature regulators and control valves have been providing the following benefits for over sixty years.

### Shorter stroke length than globe or cage designs

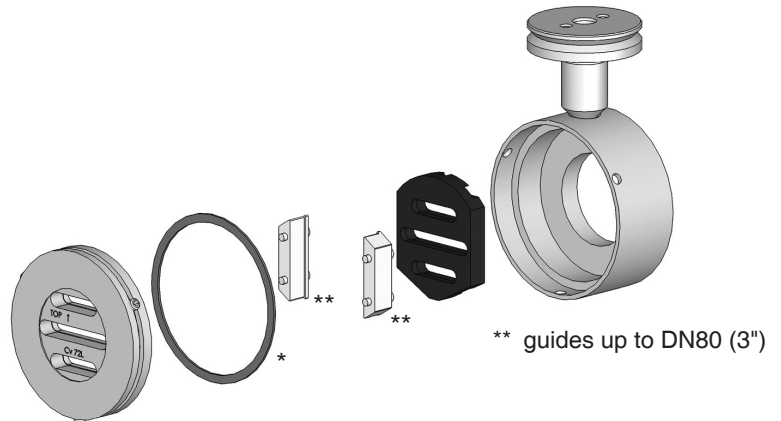
- Provides faster response to input signal changes
- Significantly extends packing and diaphragm life
- Allows for more compact valve/actuator assembly

### Straight-through flow

- Significantly reduces turbulence, thereby reducing noise and erosion
- Markedly increases rangeability associated with "flow to open" and "flow to close" designs
- Eliminate valve "chatter" commonly observed when valve is partially open

### Ease of maintenance

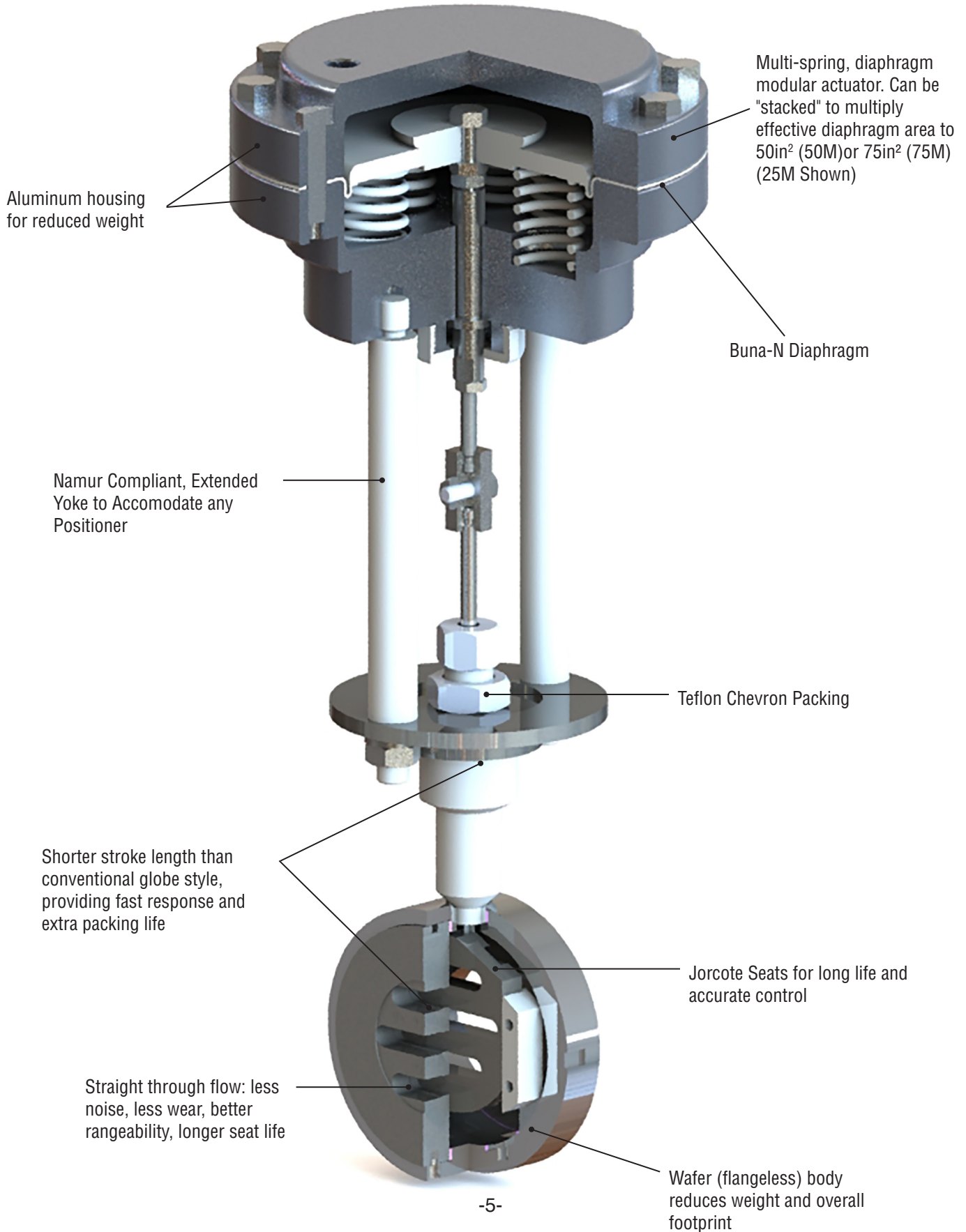
- During seat/Kv change (seats are not screwed or pressed in body)
- Attributable to lightweight, compact design
- Fewer trim components



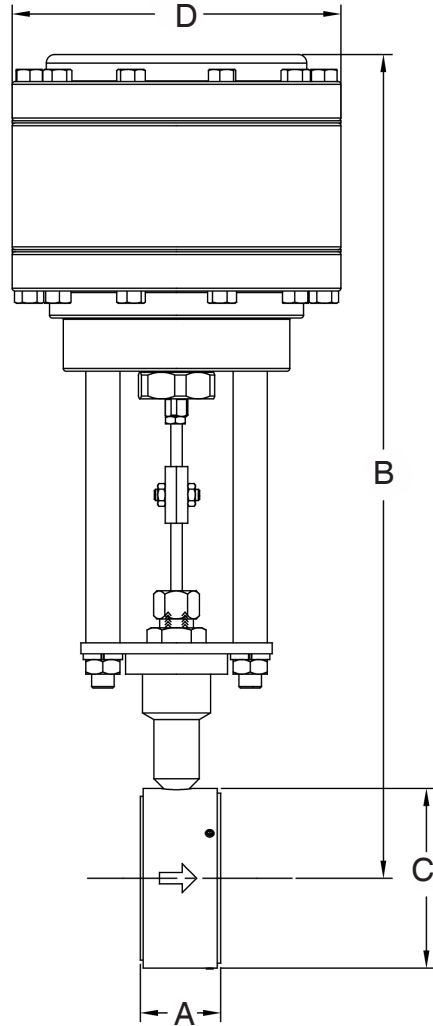
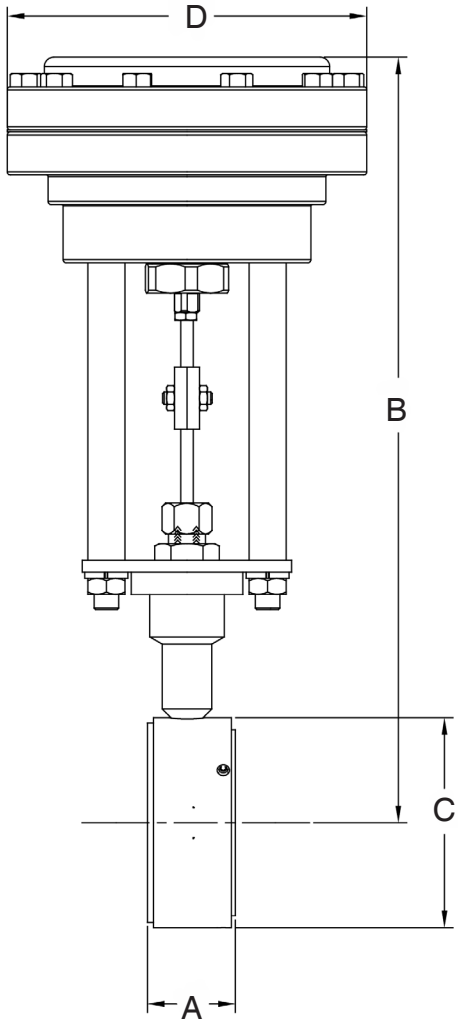
### Features

- Easy installation between flanges with wafer body
- High flow rates
- Self cleaning, self lapping seats
- Reduced noise compared to conventional globe/cage valves
- More resistant to cavitation / flashing with straight through, wafer design

**MK75E DN50/PN40 WITH SINGLE ELEMENT 25M ACTUATOR**



**DIMENSIONS – MK75E**



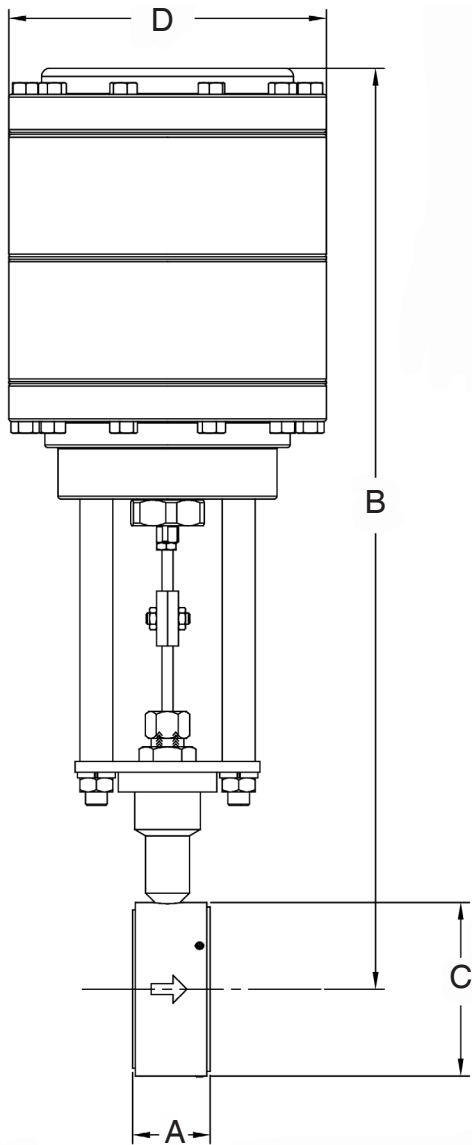
**MARK 75E WITH 25M ACTUATOR**

Valve Size	Dimensions mm (in)				Weight Kgs (lbs)
	A	B	C	D	
DN25	31 (1.24)	379 (14.92)	70 (2.75)	184 (7.24)	4.5 (10.0)
DN40	33 (1.32)	390 (15.34)	97 (3.82)	184 (7.25)	5.0 (11.0)
DN50	45 (1.77)	393 (15.45)	108 (4.24)	184 (7.25)	6.5 (14.3)
DN80	46 (1.82)	433 (17.07)	166 (5.50)	184 (7.25)	8.1 (17.9)
DN100	52 (2.07)	449 (166)	166 (6.57)	184 (7.25)	7.5 (16.5)

**MARK 75E WITH 50M ACTUATOR**

Valve Size	Dimensions mm (in)				Weight Kgs (lbs)
	A	B	C	D	
DN25	31 (1.24)	452 (17.80)	70 (2.75)	184 (7.24)	9.1 (20.0)
DN40	33 (1.32)	463 (18.23)	97 (3.82)	184 (7.25)	9.6 (21.0)
DN50	45 (1.77)	465 (18.31)	108 (4.24)	184 (7.25)	11.1 (24.3)
DN80	46 (1.82)	507 (19.96)	166 (5.50)	184 (7.25)	12.7 (27.9)
DN100	52 (2.07)	522 (20.56)	166 (6.57)	184 (7.25)	12.1 (26.7)

**DIMENSIONS, CONTINUED – MK75E**



**MARK 75E WITH 75M ACTUATOR**

Valve Size	Dimensions mm (in)				Weight Kgs (lbs)
	A	B	C	D	
DN25	31 (1.24)	522 (20.53)	70 (2.75)	184 (7.24)	101 (22.2)
DN40	33 (1.32)	533 (20.95)	97 (3.82)	184 (7.25)	10.6 (23.2)
DN50	45 (1.77)	535 (21.06)	108 (4.24)	184 (7.25)	12.1 (26.5)
DN80	46 (1.82)	577 (22.68)	166 (5.50)	184 (7.25)	13.7 (30.1)
DN100	52 (2.07)	592 (23.29)	166 (6.57)	184 (7.25)	13.1 (28.7)

## MARK 75E SERIES WAFER STYLE CONTROL VALVES

## ORDERING SCHEMATIC MARK 75E

Model No	Size	Body Mat'l	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

Model	
75E	Standard
75ESP	Side Mounted Positioner

Size	
DN25	DN25 (1")
DN40	DN40 (1-1/2")
DN50	DN50 (2")
DN80	DN80 (3")
DN100	DN100 (4")

Body Material	
CB	Carbon Steel Bar
SB	Stainless Steel Bar

1 & 2 End Connections	
I4	DIN PN10/40
ZZ	Non-Standard

3 & 4 Trim	
T6	316SS / TEF Packing
ZZ	Non-Standard

5 & 6 Seats			
Material		Cv	
W	316SS / Jorcote	8	9.5
Y	316SS / Jorcote / Jordanic	A	33
		B	38
		E	72
		F	76
		H	103
		I	180
ZZ	Non-Standard		

7 & 8 Range	
A1	25M 15-30
A3	25M 30-60
B1	50M 15-30
B3	50M 30-60
C1	75M 15-30
C3	75M 30-60
ZZ	Non-Standard

9 & 10 Diaphragm	
E1	BUNA-N 25M
E2	BUNA-N 50M
E3	BUNA-N 75M
ZZ	Non-Standard

11 & 12 Actuator	
A1	25M
B1	50M
C1	75M
ZZ	Non-Standard

13 & 14 Accessory 1	
00	None
ZZ	Non-Standard

15 Action	
0D	Air-To-Close
0R	Air-To-Open

16 Accessory 2	
00	None
Z	Non-Standard

17 PED Compliance	
0	Not Required
F	CE Category 1
Z	Non-Standard

18 SMP	
0	None
G	MK16IQ DIR/REV
H	MK16IQ-B DIR/REV
J	MK16IQ-FF DIR/REV
Z	Non-Standard

