

KOSO HAMMEL DAHL

CONTROL VALVES

KOSO AMERICA, INC.

4 Manley Street

West Bridgewater, MA 02379

Telephone: 508.584.1199

Fax: 508.584.2525

www.hammeldahl.com

Actuator Selection Guide

| Table of Contents | | Page |
|-----------------------------|--|-------------|
| | Instructions and General Notes | 2 |
| Series G110 and G111 | ANSI Class 150, 300 and 600 Globe and Angle Valves Cage-Guided, Balanced Plugs | 3 |
| Series G112 and G113 | ANSI Class 150, 300 and 600 Globe and Angle Valves Cage-Guided, Unbalanced Plugs | 3 |
| Series G120 and G121 | ANSI Class 150, 300 and 600 Globe and Angle Valves Top-Guided Threaded Seat | 4 |
| Series G130 and G131 | ANSI Class 150, 300 and 600 Globe and Angle Valves Top-Guided Cage-Retained Seat | 4 |
| Series V817 | ANSI Class 150, 300 and 600 Globe Valves Extended Neck for Cryogenic "Cold Box" Service | 4 |
| Series V510 and V511 | ANSI Class 900 and 1500 Globe and Angle Valves Cage-Guided, Balanced Plugs | 5 |
| Series V512 and V513 | ANSI Class 900 and 1500 Globe and Angle Valves Cage-Guided, Unbalanced Plugs | 6 |
| Series V520 and V521 | ANSI Class 2500 Globe and Angle Valves Cage-Guided, Balanced Plugs | 7 |
| Series V522 and V523 | ANSI Class 2500 Globe and Angle Valves Cage-Guided, Unbalanced Plugs | 7 |
| Series V800 | ANSI Class 150, 300, 600, 900 and 1500 Globe Valves Double Seated Top & Bottom Guided Semi-Balanced Direct Acting Valve - Push Down to Close | 8 |
| Series V801 | ANSI Class 150, 300, 600, 900 and 1500 Globe Valves Double Seated Top & Bottom Guided Semi-Balanced Reverse Acting Valve - Push Down to Open | 9 |
| Series V830 | ANSI Class 150, 300, and 600 3-Way Valves Converging Service | 10 |
| Series V831 | ANSI Class 150, 300, and 600 3-Way Valves Diverting Service | 11 |

This document is a basic guide for the selection of KOSO HAMMEL DAHL pneumatic spring and diaphragm actuators. The process of sizing and selecting an actuator is dependent on valve construction and application details. Certain constructions and applications may require the use of an actuator other than those shown in this guide. This guide is intended as a simplified method for the selection of actuators for on/off service or use with positioners only.

To select an actuator:

1. Determine the proper page and table based on the valve model/series.
2. Identify the proper table section based on size of the valve.
 - 2a. Some tables require the valve trim size or Cv rating.
3. Identify the proper side of the table based upon the required action.
 - 3a. Action is shown at the top of each column.
4. Determine the smallest actuator which can provide the required maximum shutoff.
5. In some cases, available thrust may be based on the air supply available to the actuator.

General Notes:

Maximum case pressure for D/R Series is 65 psig.

Maximum case pressure for A46/A47 Series is 45 psig.

* indicates that a 17-4PH stem is required (force exceeds 316SS material).

Tables are limited based on the ANSI Class rating.

ANSI Class 600: 1500 psig

ANSI Class 1500: 3705 psig

ANSI Class 2500: 6170 psig

Tables are based on TFE packing only.

When applicable, tables are based on TFE plug seals only.

Tables are based on ANSI Class IV shutoff only.

Series G110 and G111 - ANSI 150/300/600 Balanced Cage Trim

| Valve | | Direct Acting Actuator | | | | | | Reverse Acting Actuator | | | |
|-------|------|-------------------------------|-----------|---------------------|-----------------|-------|-------|-------------------------------|-----------|---------------------|-----------------|
| | | Air to Close - Spring to Open | | | | | | Air to Open - Spring to Close | | | |
| | | Actuator | | Nominal Bench Range | Maximum Shutoff | | | Actuator | | Nominal Bench Range | Maximum Shutoff |
| Size | Code | Size | Model | | Supply Pressure | | | Size | Model | | |
| | | | | | 35 | 45 | 65 | | | | |
| 1.5 | H | 56 | DAC1JA | 3~15 | 1500 | 1500* | 1500* | 56 | RAC2HA | 15~39 | 1500 |
| 2 | J | 56 | DAC1JA | 3~15 | 1500 | 1500* | 1500* | 56 | RAC2HA | 15~39 | 1500 |
| 3 | L | 84 | DBE1EA | 3~15 | 1500 | 1500 | 1500* | 84 | RBE2HA | 12~36 | 1025 |
| | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCE2HA | 12~36 | 1500 |
| 4 | N | 84 | DBE1EA | 3~15 | 1500 | 1500 | 1500* | 84 | RBE2HA | 12~36 | 490 |
| | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCE2HA | 12~36 | 1500 |
| 6 | Q | 140 | DCH1KA | 3~15 | 1500 | 1500* | 1500* | 140 | RCH2LA | 14~38 | 1315 |
| | | 240 | ~ | ~ | ~ | ~ | ~ | 240 | RDH2LA | 11~35 | 1500 |
| 8 | S | 200 | A46AKF8AB | 3~15 | 1500 | 1500 | ~ | 200 | A47AKF8BB | 16~40 | 1500 |
| 10 | T | 200 | A46AKF8AB | 3~15 | 900 | 1500 | ~ | 200 | A47AKF8BB | 16~40 | 820 |
| 12 | U | 200 | A46AKF8AB | 3~15 | 660 | 1330 | ~ | 200 | A47AKF8BB | 16~40 | 585 |
| 16 | W | Consult Factory | | | | | | Consult factory | | | |

Series G112 and G113 - ANSI 150/300/600 Unbalanced Cage Trim

| Valve | | Direct Acting Actuator | | | | | | Reverse Acting Actuator | | | |
|-------|------|-------------------------------|--------|---------------------|-----------------|-------|-------|-------------------------------|--------|---------------------|-----------------|
| | | Air to Close - Spring to Open | | | | | | Air to Open - Spring to Close | | | |
| | | Actuator | | Nominal Bench Range | Maximum Shutoff | | | Actuator | | Nominal Bench Range | Maximum Shutoff |
| Size | Code | Size | Model | | Supply Pressure | | | Size | Model | | |
| | | | | | 35 | 45 | 65 | | | | |
| 1.5 | H | 56 | DAC1JA | 3~15 | 325 | 530* | 935* | 56 | RAC8GA | 19~33 | 250 |
| | | 84 | DBC1CA | 3~15 | 535* | 840* | 1410* | 84 | RBCBHA | 18~36 | 435 |
| | | 140 | DCC1EA | 3~15 | 955* | 1460* | 1500* | 140 | RCCBHA | 18~36 | 775* |
| 2 | J | 56 | DAC1JA | 3~15 | 205 | 340* | 605* | 56 | RAC8GA | 19~33 | 160 |
| | | 84 | DBC1CA | 3~15 | 340* | 540* | 935* | 84 | RBCBHA | 18~36 | 270 |
| | | 140 | DCC1EA | 3~15 | 615* | 950* | 1500* | 140 | RCCBHA | 18~36 | 500* |
| 3 | L | 84 | DBE1EA | 3~15 | 135 | 230 | 405* | 84 | RBE2HA | 12~36 | 50 |
| | | 140 | DCE1JA | 3~15 | 260* | 415* | 710* | 140 | RCEBHA | 22~40 | 275 |
| | | 240 | DDE1KA | 3~15 | 485* | 745* | 1250* | 240 | RDEBLA | 18~36 | 420* |
| 4 | N | 84 | DBE1EA | 3~15 | 80 | 135 | 245* | 84 | RBE2HA | 12~36 | 25 |
| | | 140 | DCE1JA | 3~15 | 155* | 245* | 430* | 140 | RCEBHA | 22~40 | 160 |
| | | 240 | DDE1KA | 3~15 | 290* | 450* | 765* | 240 | RDEBLA | 18~36 | 250* |
| 6 | Q | 140 | DCH1KA | 3~15 | 65 | 105* | 195* | 140 | RCH2LA | 14~38 | 30 |
| | | 240 | DDH1KA | 3~15 | 130* | 205* | 355* | 240 | RDH2LA | 11~35 | 50 |

- Notes:
1. Direct acting actuator thrust is based on available air supply.
 2. Supply pressure must be 5 psig greater than bench set.
 3. (*) 17-4PH stem required.
 4. Flow direction is from under the plug.
 5. G110/G111 table also applicable to the V500 and V501.
 6. G112/G113 table also applicable to the V502 and V503

**Series G120, G121, G130, G131 and V817
ANSI 150/300/600 Unbalanced Contoured Plugs**

| Valve | | | | Direct Acting Actuator | | | | | Reverse Acting Actuator | | | | |
|--------------|-------|------------|--------|-------------------------------|--------|---------------------------|------------------------------------|-------|-------------------------------|----------|--------|---------------------------|--------------------|
| | | | | Air to Close - Spring to Open | | | | | Air to Open - Spring to Close | | | | |
| | | | | Actuator | | Nominal Bench Range | Maximum Shutoff Supply Pressure | | | Actuator | | Nominal Bench Range | Maximum Shutoff |
| Size | Model | 35 | 45 | 65 | Size | | Model | | | | | | |
| 0.5 | D | All | All | 56 | DAD1JA | 3~15 | 1500* | 1500* | 1500* | 56 | RAD2HA | 15~39 | 1500 |
| 0.75 | E | All | All | 56 | DAD1JA | 3~15 | 1500* | 1500* | 1500* | 56 | RAD2HA | 15~39 | 1500 |
| 1 | F | All | All | 56 | DAD1JA | 3~15 | 1500* | 1500* | 1500* | 56 | RAD2HA | 15~39 | 1500 |
| 1.5 | H | 31 32 | A | 56 | DAC1JA | 3~15 | 800 | 1260* | 1500* | 56 | RAC8GA | 19~33 | 655 |
| | | | | 84 | DBC1CA | 3~15 | 1270* | 1500* | 1500* | 84 | RBCBHA | 18~36 | 1040 |
| | | | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCCBHA | 18~36 | 1500* |
| | | 13.9 | B | 56 | DAC1JA | 3~15 | 1500 | 1500* | 1500* | 56 | RAC8GA | 19~33 | 1500 |
| | | | | 84 | ~ | ~ | ~ | ~ | ~ | 84 | RBC2HA | 12~36 | 1500 |
| | | | | 56 | DAC1JA | 3~15 | 1500 | 1500* | 1500* | 56 | RAC2HA | 15~39 | 1500 |
| 2 | J | 50 51 | A | 56 | DAC1JA | 3~15 | 455 | 725* | 1260* | 56 | RAC8GA | 19~33 | 360 |
| | | | | 84 | DBC1CA | 3~15 | 730* | 1136* | 1500* | 84 | RBCBHA | 18~36 | 590 |
| | | | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCCBHA | 18~36 | 1050* |
| | | 32 | B | 56 | DAC1JA | 3~15 | 800 | 1260* | 1500* | 56 | RAC8GA | 19~33 | 655 |
| | | | | 84 | DBC1CA | 3~15 | 1500* | 1500* | 1500* | 84 | RBCBHA | 18~36 | 1040 |
| | | | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCCBHA | 18~36 | 1500* |
| 13.2 13.5 | C | 56 | DAC1JA | 3~15 | 1500 | 1500* | 1500* | 56 | RAC8GA | 19~33 | 1500 | | |
| | | 84 | ~ | ~ | ~ | ~ | ~ | 84 | RBC2HA | 12~36 | 1500 | | |
| 3 | L | 105 | A | 84 | DBE1EA | 3~15 | 300 | 480 | 830* | 84 | RBE2HA | 12~36 | 75 |
| | | | | 140 | DCE1JA | 3~15 | 550* | 850* | 1370* | 140 | RCEBHA | 22~40 | 575 |
| | | | | 240 | DDE1KA | 3~15 | 990* | 1500* | 1500* | 240 | RDEBLA | 18~36 | 860* |
| | | 48 49 | B | 84 | DBE1EA | 3~15 | 720 | 1130 | 1500* | 84 | RBE2HA | 12~36 | 215 |
| | | | | 140 | DCE1JA | 3~15 | 1280* | 1500* | 1500* | 140 | RCEBHA | 22~40 | 1345 |
| | | | | 240 | ~ | ~ | ~ | ~ | ~ | 240 | RDEBLA | 18~36 | 1500* |
| 35 | C | 84 | DBE1EA | 3~15 | 1255 | 1500 | 1500* | 84 | RBE2HA | 12~36 | 405 | | |
| | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCEBHA | 22~40 | 1500 | | |
| 4 | N | 190 217 | A | 84 | DBE1EA | 3~15 | 155 | 260 | 455 | 84 | RBE2HA | 12~36 | 25 |
| | | | | 140 | DCE1JA | 3~15 | 295 | 465* | 800* | 140 | RCEBHA | 22~40 | 310 |
| | | | | 240 | DDE1KA | 3~15 | 545* | 835* | 1400* | 240 | RDEBLA | 18~36 | 470* |
| | | 105 115 | B | 84 | DBE1EA | 3~15 | 300 | 480 | 835 | 84 | RBE2HA | 12~36 | 70 |
| | | | | 140 | DCE1JA | 3~15 | 545 | 845* | 1360* | 140 | RCEBHA | 22~40 | 575 |
| | | | | 240 | DDE1KA | 3~15 | 985* | 1500* | 1500* | 240 | RDEBLA | 18~36 | 860* |
| 53 55 | C | 84 | DBE1EA | 3~15 | 715 | 1120 | 1500 | 84 | RBE2HA | 12~36 | 210 | | |
| | | 140 | DCE1JA | 3~15 | 1275 | 1500* | 1500* | 140 | RCEBHA | 22~40 | 1340 | | |
| | | 240 | ~ | ~ | ~ | ~ | ~ | 240 | RDEBLA | 18~36 | 1500* | | |
| 6 | Q | 390 | A | 140 | DCH1KA | 3~15 | 120 | 195 | 340 | 140 | RCH2LA | 14~38 | 65 |
| | | | | 240 | DDH1KA | 3~15 | 230 | 360 | 610* | 240 | RDH2LA | 11~35 | 95 |
| | | 192 198 | B | 140 | DCH1KA | 3~15 | 290 | 460 | 795 | 140 | RCH2LA | 14~38 | 170 |
| | | | | 240 | DDH1KA | 3~15 | 540 | 830 | 1400* | 240 | RDH2LA | 11~35 | 240 |
| | | 120 | C | 140 | DCH1KA | 3~15 | 540 | 840 | 1435 | 140 | RCH2LA | 14~38 | 325 |
| | | | | 240 | DDH1KA | 3~15 | 980 | 1500 | 1500* | 240 | RDH2LA | 11~35 | 445 |

- Notes: 1) Direct acting actuator thrust is based on available air supply.
2) Supply pressure must be 5 psig greater than bench set.
3) (*) 17-4PH stem required.
4) Flow direction is up through seat ring.

Series V510 and V511 - ANSI 900/1500 Balanced Cage Trim

| Valve | | Direct Acting Actuator | | | | | | Reverse Acting Actuator | | | |
|-------|------|-------------------------------|-----------|---------------------|-----------------|-------|-------|-------------------------------|-----------|---------------------|-----------------|
| | | Air to Close - Spring to Open | | | | | | Air to Open - Spring to Close | | | |
| | | Actuator | | Nominal Bench Range | Maximum Shutoff | | | Actuator | | Nominal Bench Range | Maximum Shutoff |
| Size | Code | Size | Model | | Supply Pressure | | | Size | Model | | |
| | | | | | 35 | 45 | 65 | | | | |
| 1.5 | H | 56 | DAC1JA | 3~15 | 3750 | 3750* | 3750* | 56 | RAC8GA | 19~33 | 3620 |
| 2 | J | 56 | DAC1JA | 3~15 | 3750 | 3750* | 3750* | 56 | RAC8GA | 19~33 | 2180 |
| | | 84 | ~ | ~ | ~ | ~ | ~ | 84 | RBCBHA | 18~36 | 3750 |
| 3 | L | 84 | DBE1EA | 3~15 | 3750 | 3750 | 3750* | 84 | RBE2HA | 12~36 | 870 |
| | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCEBHA | 22~40 | 3750 |
| 4 | N | 84 | DBE1EA | 3~15 | 2240 | 3360 | 3750* | 84 | RBE2HA | 12~36 | 190 |
| | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCEBHA | 22~40 | 3750 |
| 6 | Q | 140 | DCH1KA | 3~15 | 2800 | 3750* | 3750* | 140 | RCH2LA | 14~38 | 1065 |
| | | 240 | ~ | ~ | ~ | ~ | ~ | 240 | RDH2LA | 11~35 | 1990 |
| 8 | S | 200 | A46AKF8AB | 3~15 | 1150 | 2160 | ~ | 200 | A47AKF8BB | 16~40 | 1100 |
| 10 | T | 200 | A46AKF8AB | 3~15 | 730 | 1550 | ~ | 200 | A47AKF8BB | 16~40 | 670 |
| 12 | U | 200 | A46AKF8AB | 3~15 | 470 | 1160 | ~ | 200 | A47AKF8BB | 16~40 | 420 |

- NOTES 1) Supply pressure must be 5 psig greater than bench set.
 2) (*) 17-4PH stem required.
 3) Maximum pressure for A46/A47 actuators is 45 psig.

Series V512 and V513 - ANSI 900/1500 Unbalanced Cage Trim

| | | | | Direct Acting Actuator | | | | | | Reverse Acting Actuator | | | |
|-------|------|---------|--------|-------------------------------|-----------|---------------------------|-----------------|-------|--------|-------------------------------|-----------|---------------------------|--------------------|
| | | | | Air to Close - Spring to Open | | | | | | Air to Open - Spring to Close | | | |
| Valve | | Trim | | Actuator | | Nominal Bench Range | Maximum Shutoff | | | Actuator | | Nominal Bench Range | Maximum Shutoff |
| Size | Code | Cv | Code | Size | Model | | Supply Pressure | | | Size | Model | | |
| | | | | | | | 35 | 45 | 65 | | | | |
| 0.5 | D | >2.5 | A, B | 56 | DAD1JA | 3~15 | 3750* | 3750* | 3750* | 56 | RADEBA | 22~42 | 3750* |
| | | <2.5 | C~F | 56 | DAD1JA | 3~15 | 3750* | 3750* | 3750* | 56 | RAD2HA | 15~39 | 3750 |
| 0.75 | E | >6.9 | A | 56 | DAD1JA | 3~15 | 2200* | 3420* | 3750* | 56 | RADEBA | 22~42 | 2350* |
| | | | | 84 | ~ | ~ | ~ | ~ | ~ | 84 | RBDDHA | 20~36 | 3210* |
| | | | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCDDHA | 20~36 | 3750* |
| | | 5.4~2.5 | B, C | 56 | DAD1JA | 3~15 | 3750* | 3750* | 3750* | 56 | RADEBA | 22~42 | 3750* |
| <2.5 | D~G | 56 | DAD1JA | 3~15 | 3750* | 3750* | 3750* | 56 | RAD2HA | 15~39 | 3750 | | |
| 1 | F | >6.9 | A, B | 56 | DAD1JA | 3~15 | 2200* | 3420* | 3750* | 56 | RADEBA | 22~42 | 2350* |
| | | | | 84 | ~ | ~ | ~ | ~ | ~ | 84 | RBDDHA | 20~36 | 3210* |
| | | | | 140 | ~ | ~ | ~ | ~ | ~ | 140 | RCDDHA | 20~36 | 3750* |
| | | 5.4~2.5 | C, D | 56 | DAD1JA | 3~15 | 3750* | 3750* | 3750* | 56 | RADEBA | 22~42 | 3750* |
| <2.5 | E~H | 56 | DAD1JA | 3~15 | 3750* | 3750* | 3750* | 56 | RAD2HA | 15~39 | 3750 | | |
| 1.5 | H | All | All | 56 | DAC1JA | 3~15 | 470 | 770 | 1350 | 56 | RAC8GA | 19~33 | 365 |
| | | | | 84 | DBC1CA | 3~15 | 770 | 1210 | 2080* | 84 | RBCBHA | 18~36 | 625 |
| | | | | 140 | DCC1EA | 3~15 | 1380 | 2110* | 3555* | 140 | RCCBHA | 18~36 | 1120* |
| 2 | J | All | All | 56 | DAC1JA | 3~15 | 255 | 420 | 755 | 56 | RAC8GA | 19~33 | 180 |
| | | | | 84 | DBC1CA | 3~15 | 425 | 680 | 1175* | 84 | RBCBHA | 18~36 | 340 |
| | | | | 140 | DCC1EA | 3~15 | 770 | 1190* | 2020* | 140 | RCCBHA | 18~36 | 625* |
| 3 | L | All | All | 84 | DBE1EA | 3~15 | 170 | 285 | 510 | 84 | RBE2HA | 12~36 | 60 |
| | | | | 140 | DCE1JA | 3~15 | 330 | 520 | 825* | 140 | RCEBHA | 22~40 | 345 |
| | | | | 240 | DDE1KA | 3~15 | 610 | 935* | 1575* | 240 | RDE2LA | 11~35 | 265 |
| 4 | N | All | All | 84 | DBE1EA | 3~15 | 90 | 150 | 280 | 84 | RBE2HA | 12~36 | 25 |
| | | | | 140 | DCE1JA | 3~15 | 180 | 285 | 500* | 140 | RCEBHA | 22~40 | 185 |
| | | | | 240 | DDE1KA | 3~15 | 335 | 520* | 885* | 240 | RDE2LA | 11~35 | 142 |
| 6 | Q | All | All | 140 | DCH1KA | 3~15 | 70 | 120 | 215 | 140 | RCH2LA | 14~38 | 35 |
| | | | | 240 | DDH1KA | 3~15 | 140 | 225* | 390* | 240 | RDH2LA | 11~35 | 55 |
| 8 | S | All | All | 200 | A46AKF8AB | 3~15 | 45 | 80 | ~ | 200 | A47AKF8BB | 16~40 | 45 |
| 10 | T | All | All | 200 | A46AKF8AB | 3~15 | 25 | 45 | ~ | ~ | ~ | ~ | |
| 12 | U | All | All | 200 | A46AKF8AB | 3~15 | 15 | 30 | ~ | ~ | ~ | ~ | |

- Notes:
1. Direct acting actuator thrust is based on available air supply.
 2. Supply pressure must be 5 psig greater than bench set.
 3. (*) 17-4PH stem required.
 4. V510/511 flow is either direction.
 5. V512/513 flow direction is from under the plug.

Series V520 and V521 - ANSI 2500 Balanced Cage Trim

| Valve | | Direct Acting Actuator | | | | | | Reverse Acting Actuator | | | | | |
|-------|------|-------------------------------|--------|---------------------------|-----------------|-------|-------|-------------------------------|--------|---------------------------|--------------------|-------|-------|
| | | Air to Close - Spring to Open | | | | | | Air to Open - Spring to Close | | | | | |
| | | Actuator | | Nominal Bench Range | Maximum Shutoff | | | Actuator | | Nominal Bench Range | Maximum Shutoff | | |
| Size | Code | Size | Model | | Supply Pressure | | | Size | Model | | | | |
| | | | | | 35 | 45 | 65 | | | | | | |
| 1.5 | H | 56 | DAC1JA | 3~15 | 4570 | 6250* | 6250* | 56 | RAC8GA | 19~33 | 3350 | | |
| | | 84 | ~ | | ~ | ~ | ~ | 84 | RBCBHA | | | 18~36 | 6250 |
| 2 | J | 56 | DBA1JA | 3~15 | 2980 | 5670* | 6250* | 56 | RAB9BA | 18~40 | 2020 | | |
| | | 84 | ~ | | ~ | ~ | ~ | 84 | RBBBHA | | | 18~36 | 4295 |
| | | 140 | ~ | | ~ | ~ | ~ | 140 | RCBBHA | | | 12~36 | 4810* |
| 3 | L | 84 | DBE1EA | 3~15 | 3045 | 5760 | 6250* | 84 | RBE2HA | 12~36 | 345 | | |
| | | 140 | ~ | | ~ | ~ | ~ | 140 | RCEBHA | | | 22~40 | 6250 |

Series V522 and V523 - ANSI 2500 Unbalanced Cage Trim

| Valve | | Direct Acting Actuator | | | | | | Reverse Acting Actuator | | | | | | |
|-------|------|-------------------------------|--------|---------------------------|-----------------|-------|-------|-------------------------------|---------|---------------------------|--------------------|--------|-------|-------|
| | | Air to Close - Spring to Open | | | | | | Air to Open - Spring to Close | | | | | | |
| | | Actuator | | Nominal Bench Range | Maximum Shutoff | | | Actuator | | Nominal Bench Range | Maximum Shutoff | | | |
| Size | Code | Size | Model | | Supply Pressure | | | Size | Model | | | | | |
| | | | | | 35 | 45 | 65 | | | | | | | |
| 1 | F | 56 | DAD1JA | 3~15 | 840* | 1350* | 2350* | 56 | RADFBFA | 21~40 | 800* | | | |
| | | 84 | DBD1JA | | 3~15 | 1350* | 2120* | 3620* | 84 | | | RBDDHA | 20~36 | 1255* |
| | | 140 | DCDCJA | | 1~11 | 2880* | 4160* | 6250* | 140 | | | RCDDHA | 20~36 | 2215* |
| 1.5 | H | 56 | DAC1JA | 3~15 | 450 | 745* | 1325* | 56 | RAC8GA | 19~33 | 355 | | | |
| | | 84 | DBC1CA | | 3~15 | 750* | 1190* | 2060* | 84 | | | RBCBHA | 18~36 | 600 |
| | | 140 | DCC1EA | | 3~15 | 1355* | 2090* | 3535* | 140 | | | RCCBHA | 18~36 | 1100 |
| 2 | J | 56 | DAB1JA | 3~15 | 240 | 410* | 745* | 56 | RAB9BA | 18~40 | 185 | | | |
| | | 84 | ~ | | ~ | ~ | ~ | 84 | RBBBHA | | | 18~36 | 325 | |
| | | 140 | DCB1JA | | 3~15 | 760* | 1180* | 2010* | 140 | | | RCBBHA | 12~36 | 610* |
| 3 | L | 84 | DBE1EA | 3~15 | 165 | 280 | 510* | 84 | RBEEHA | 14~34 | 80 | | | |
| | | 140 | DCE1JA | | 3~15 | 320* | 510* | 890* | 140 | | | RCEBHA | 22~40 | 335 |
| | | 240 | DDE1KA | | 3~15 | 600* | 925* | 1570* | 240 | | | RDEBLA | 19~37 | 520* |

- Notes:
1. Direct acting actuator thrust is based on available air supply.
 2. Supply pressure must be 5 psig greater than bench set.
 3. (*) 17-4PH stem required.
 4. V520/521 flow is either direction.
 5. V522/523 flow direction is from under the plug.

Series V800 - Double-Seated Push-to-Close

| Valve | | | | Direct Acting Actuator | | | | | | Reverse Acting Actuator | | | |
|-------|-------|-------------|------|-------------------------------|-----------|---------------------------|------------------------------------|-------|-------|-------------------------------|-----------|---------------------------|--------------------|
| | | | | Air to Close - Spring to Open | | | | | | Air to Open - Spring to Close | | | |
| | | | | Actuator | | Nominal Bench Range | Maximum Shutoff Supply Pressure | | | Actuator | | Nominal Bench Range | Maximum Shutoff |
| Size | Model | 35 | 45 | 65 | Size | | Model | | | | | | |
| Size | Code | Cv | Code | Size | Model | Range | 35 | 45 | 65 | Size | Model | Range | Shutoff |
| 1 | F | All | All | 56 | DAA1JA | 3~15 | 1500* | 1500* | 1500* | 56 | RAA2GA | 15~39 | 1500 |
| 1.5 | H | All | All | 56 | DAC1JA | 3~15 | 1500 | 1500* | 1500* | 56 | RAC2HA | 15~39 | 1500 |
| 2 | J | 70 60 | A | 56 | DAC1JA | 3~15 | 1500 | 1500* | 1500* | 56 | RAC8GA | 19~33 | 1500 |
| | | 40~ 25 | B, C | 56 | DAC1JA | 3~15 | 1500 | 1500* | 1500* | 56 | RAC2HA | 15~39 | 1500 |
| 3 | L | 150 160 | A | 84 | DBE1EA | 3~15 | 1500 | 1500 | 1500* | 84 | RBE2HA | 12~36 | 935 |
| | | 140 | ~ | ~ | ~ | ~ | ~ | ~ | 140 | RCE2HA | 12~36 | 1500 | |
| | | 100 104 | B | 84 | DBE1EA | 3~15 | 1500 | 1500 | 1500* | 84 | RBE2HA | 12~36 | 1260 |
| | | 140 | ~ | ~ | ~ | ~ | ~ | ~ | 140 | RCE2HA | 12~36 | 1500 | |
| 4 | N | 60 65 | C | 84 | DBE1EA | 3~15 | 1500 | 1500 | 1500* | 84 | RBE2HA | 12~36 | 1500 |
| | | 225 265 | A | 84 | DBE1EA | 3~15 | 1500 | 1500 | 1500* | 84 | RBE2HA | 12~36 | 535 |
| | | 140 | ~ | ~ | ~ | ~ | ~ | ~ | 140 | RCEBHA | 22~40 | 1500 | |
| | | 147 163 | B | 84 | DBE1EA | 3~16 | 1500 | 1500 | 1500* | 84 | RBE2HA | 12~36 | 935 |
| 6 | Q | 140 | ~ | ~ | ~ | ~ | ~ | ~ | 140 | RCE2HA | 12~36 | 1500 | |
| | | 100 | C | 84 | DBE1EA | 3~17 | 1500 | 1500 | 1500* | 84 | RBE2HA | 12~36 | 1260 |
| | | 140 | ~ | ~ | ~ | ~ | ~ | ~ | 140 | RCE2HA | 12~36 | 1500 | |
| | | 540 580 | A | 140 | DCH1KA | 3~15 | 1500 | 1500* | 1500* | 140 | RCH2LA | 14~38 | 960 |
| 8 | S | 225 140 | B, C | 140 | DCH1KA | 3~15 | 1500 | 1500* | 1500* | 140 | RCH2LA | 14~38 | 1435 |
| | | 1070 780 | A | 140 | DCH1KA | 3~15 | 1270 | 1500* | 1500* | 140 | RCH2LA | 14~38 | 555 |
| 10 | T | 240 | ~ | ~ | ~ | ~ | ~ | ~ | 240 | RDH2LA | 11~35 | 910 | |
| | | 520 | B | 140 | DCH1KA | 3~15 | 1270 | 1500* | 1500* | 140 | RCH2LA | 14~38 | 960 |
| | | 240 | ~ | ~ | ~ | ~ | ~ | ~ | 240 | RDH2LA | 11~35 | 1435 | |
| | | 260 | C | 140 | DCH1KA | 3~15 | 1500 | 1500* | 1500* | 140 | RCH2LA | 14~38 | 1500 |
| 12 | U | 1250 | A | 200 | A46AKF8AB | 3~15 | 1130 | 1500 | ~ | 200 | A47AKF8BB | 16~40 | 1100 |
| | | 830 | B | 200 | A46AKF8AB | 3~15 | 1500 | 1500 | ~ | 200 | A47AKF8BB | 16~40 | 1500 |
| | | 520 | C | 200 | A46AKF8AB | 3~15 | 1500 | 1500 | ~ | 200 | A47AKF8BB | 16~40 | 1500 |
| 12 | U | 1550 | A | 200 | A46AKF8AB | 3~15 | 840 | 1250 | ~ | 200 | A47AKF8BB | 16~40 | 800 |

- Notes:
1. Direct acting actuator thrust is based on available air supply.
 2. Supply pressure must be 5 psig greater than bench set.
 3. (*) 17-4PH stem required.
 4. Flow direction is between plugs.
 5. Contact factory for ANSI class ratings 900 and above.

Series V801 - Double-Seated Push-to-Open

| Valve | | | | Direct Acting Actuator | | | | Reverse Acting Actuator | | | | | |
|-------|------|-------------|--------|-------------------------------|----------------------------|----------|---------------------|-------------------------------|------------------|----------------|-----------------|----------------|----------------|
| | | | | Air to Open - Spring to Close | | | | Air to Close - Spring to Open | | | | | |
| Trim | | Actuator | | Nominal Bench Range | Maximum Shutoff | Actuator | | Nominal Bench Range | Maximum Shutoff | | | | |
| Size | Code | Cv | Code | | | Size | Model | | Size | Model | Supply Pressure | | |
| | | | | | | | | | 35 | 45 | 65 | | |
| 1 | F | All | All | 56 | DAA2EA | 14~39 | 1500 | 56 | RAA1GA | 3~15 | 1500 | 1500 | 1500 |
| 1.5 | H | All | All | 56 | DAC2DA | 14~39 | 1500 | 56 | RAC1GA | 3~15 | 1500 | 1500 | 1500 |
| 2 | J | 62 70 | A | 56 | DAC2DA | 14~39 | 1450 | 56 | RAC1GA | 3~15 | 1500 | 1500 | 1500 |
| | | 37 40 | B | 56 | DAC2DA | 14~39 | 1500 | 56 | RAC1GA | 3~15 | 1500 | 1500 | 1500 |
| | | 25 28.5 | C | 56 | DAC2DA | 14~39 | 1500 | 56 | RAC1GA | 3~15 | 1500 | 1500 | 1500 |
| 3 | L | 150 160 | A | 84 140 | DBE2DA DCE2DA | 12~36 | 940 1500 | 84 140 | RBE1GA | 3~15 | 1500 | 1500 | 1500 |
| | | 100 104 | B | 84 140 | DBE2DA DCE2DA | 12~36 | 1260 1500 | 84 140 | RBE1GA ~ | 3~15 ~ | 1500 ~ | 1500 ~ | 1500 ~ |
| | | 60 65 | C | 84 | DBE2DA | 12~36 | 1500 | 84 | RBE1GA | 3~15 | 1500 | 1500 | 1500 |
| | | | | | | | | | | | | | |
| 4 | N | 225 265 | A | 84 140 240 | DBE2DA DCE2DA DDE2KA | 12~36 | 540 1330 1500 | 84 140 240 | RBE1GA ~ ~ | 3~15 ~ ~ | 1500 ~ ~ | 1500 ~ ~ | 1500 ~ ~ |
| | | 147 163 | B | 84 140 | DBE2DA DCE2DA | 12~36 | 940 1500 | 84 140 | RBE1GA ~ | 3~15 ~ | 1500 ~ | 1500 ~ | 1500 ~ |
| | | 100 | C | 84 140 | DBE2DA DCE2DA | 12~36 | 1260 1500 | 84 140 | RBE1GA ~ | 3~15 ~ | 1500 ~ | 1500 ~ | 1500 ~ |
| | | | | | | | | | | | | | |
| 6 | Q | 540 580 | A | 140 240 | DCH2KA DDH2KA | 14~38 | 960 1440 | 140 240 | RCH1LA ~ | 3~15 ~ | 1500 ~ | 1500 ~ | 1500 ~ |
| | | 255 140 | B C | 140 140 | DCH2KA DCH2KA | 14~38 | 1500 1500 | 140 140 | RCH1LA RCH1LA | 3~15 3~15 | 1500 1500 | 1500 1500 | 1500 1500 |
| | | | | | | | | | | | | | |
| 8 | S | 1070 780 | A | 140 240 | DCH2KA DDH2KA | 14~38 | 550 910 | 140 240 | RCH2LA ~ | 3~15 ~ | 1270 ~ | 1500 ~ | 1500 ~ |
| | | 520 | B | 140 240 | DCH2KA DDH2KA | 14~38 | 960 1440 | 140 240 | RCH1LA ~ | 3~15 ~ | 1500 ~ | 1500 ~ | 1500 ~ |
| | | 260 | C | 140 | DCH2KA | 14~38 | 1500 | 140 | RCH1LA | 3~15 | 1500 | 1500 | 1500 |
| | | | | | | | | | | | | | |
| 10 | T | 1250 | A | 200 | A46AKF8BB | 16~40 | 1100 | 200 | A47AKF8AB | 3~15 | 1200 | 1500 | ~ |
| | | 830 | B | 200 | A46AKF8BB | 16~40 | 1500 | 200 | A47AKF8AB | 3~15 | 1500 | 1500 | ~ |
| | | 520 | C | 200 | A46AKF8BB | 16~40 | 1500 | 200 | A47AKF8AB | 3~15 | 1500 | 1500 | ~ |
| 12 | U | 1550 | A | 200 | A46AKF8BB | 16~40 | 800 | 200 | A47AKF8AB | 3~15 | 890 | 1500 | ~ |

- Notes:
1. Direct acting actuator thrust is based on available air supply.
 2. Supply pressure must be 5 psig greater than bench set.
 3. (*) 17-4PH stem required.
 4. Flow direction is between plugs.
 5. Contact factory for ANSI class ratings 900 and above.

Series V830 - ANSI 150/300/600 3-Way Diverging Valve

| Valve | | Direct Acting Actuator | | | | Reverse Acting Actuator | | | |
|-------|---|----------------------------|-----------|-------|-------|---------------------------|-----------------|-------|-------|
| | | Air to Close Lower Port | | | | Air to Open Lower Port | | | |
| | | Spring to Close Upper Port | | | | Spring to Open Upper Port | | | |
| | | Size | Code | Size | Model | Nominal Bench Range | Maximum Shutoff | Size | Model |
| 1.5 | H | 56 | DAC2DA | 15~39 | 285 | 56 | RAC8GA | 19~33 | 360 |
| | | 84 | DBC2CA | 12~36 | 345 | 84 | RBCBHA | 18~36 | 595 |
| | | 140 | DCC2EA | 12~36 | 645* | 140 | RCCBHA | 18~36 | 1050* |
| 2 | J | 56 | DAC2DA | 15~39 | 170 | 56 | RAC8GA | 19~33 | 215 |
| | | 84 | DBC2CA | 12~36 | 215 | 84 | RBCBHA | 18~36 | 375 |
| | | 140 | DCC2EA | 12~36 | 410* | 140 | RCCBHA | 18~36 | 680* |
| 3 | L | 84 | DBE2DA | 12~36 | 75 | 84 | RBE2HA | 12~36 | 75 |
| | | 140 | DCE2DA | 12~36 | 160 | 140 | RCEBHA | 22~40 | 370 |
| | | 240 | DDE2KA | 11~35 | 290 | 240 | RDE2LA | 11~35 | 290 |
| 4 | N | 84 | DBE2DA | 12~36 | 30 | 84 | RBE2HA | 12~36 | 25 |
| | | 140 | DCE2DA | 12~36 | 80 | 140 | RCEBHA | 22~40 | 190 |
| | | 240 | DDE2KA | 11~35 | 150 | 240 | RDE2LA | 11~35 | 145 |
| 6 | Q | 140 | DCH2KA | 14~38 | 40 | 140 | RCH2LA | 14~38 | 35 |
| | | 240 | DDH2KA | 11~35 | 60 | 240 | RDH2LA | 11~35 | 55 |
| 8 | S | 140 | DCH2KA | 14~38 | 15 | 140 | RCH2LA | 14~38 | 15 |
| | | 240 | DDH2KA | 11~35 | 30 | 240 | RDH2LA | 11~35 | 25 |
| 10 | T | 200 | A46AKF8BB | 16~40 | 25 | 200 | A47AKF8BB | 16~40 | 10 |

- Notes:
1. Supply pressure must be 5 psig greater than bench set.
 2. (*) 17-4PH stem required.
 3. Flow direction is into common port and out of upper or lower port.

Series V831 - ANSI 150/300/600 3-Way Converging Valve

| Valve | | Direct Acting Actuator | | | | Reverse Acting Actuator | | | |
|-------|------|----------------------------|-----------|---------------------|-----------------|---------------------------|-----------|---------------------|-----------------|
| | | Air to Close Upper Port | | | | Air to Open Upper Port | | | |
| | | Spring to Close Lower Port | | | | Spring to Open Lower Port | | | |
| Size | Code | Actuator | | Nominal Bench Range | Maximum Shutoff | Size | Model | Nominal Bench Range | Maximum Shutoff |
| 1.5 | H | 56 | DAC2DA | 15~39 | 285 | 56 | RAC8GA | 19~33 | 360 |
| | | 84 | DBC2CA | 12~36 | 345 | 84 | RBCBHA | 18~36 | 595 |
| | | 140 | DCC2EA | 12~36 | 645* | 140 | RCCBHA | 18~36 | 1050* |
| 2 | J | 56 | DAC2DA | 15~39 | 175 | 56 | RAC8GA | 19~33 | 215 |
| | | 84 | DBC2CA | 12~36 | 215 | 84 | RBCBHA | 18~36 | 375 |
| | | 140 | DCC2EA | 12~36 | 410* | 140 | RCCBHA | 18~36 | 680* |
| 3 | L | 84 | DBE2EA | 12~36 | 75 | 84 | RBE2HA | 12~36 | 75 |
| | | 140 | DCE2DA | 12~36 | 160 | 140 | RCEBHA | 22~40 | 370 |
| | | 240 | DDE2KA | 11~35 | 290 | 240 | RDEBLA | 18~36 | 560* |
| 4 | N | 84 | DBE2EA | 12~36 | 30 | 84 | RBE2HA | 12~36 | 25 |
| | | 140 | DCE2DA | 12~36 | 80 | 140 | RCEBHA | 22~40 | 190 |
| | | 240 | DDE2KA | 11~35 | 150 | 240 | RDEBLA | 18~36 | 300* |
| 6 | Q | 140 | DCH2KA | 14~38 | 40 | 140 | RCH2LA | 14~38 | 35 |
| | | 240 | DDH2KA | 11~35 | 60 | 240 | RDH2LA | 11~35 | 55 |
| 8 | S | 140 | DCH2KA | 14~38 | 15 | 140 | RCH2LA | 14~38 | 15 |
| | | 240 | DDH2KA | 11~35 | 25 | 240 | RDH2LA | 11~35 | 25 |
| 10 | T | 200 | A46AKF8BB | 16~40 | 25 | 200 | A47AKF8BB | 16~40 | 25 |

- Notes:
1. Supply pressure must be 5 psig greater than bench set.
 2. (*) 17-4PH stem required.
 3. Flow direction is into upper and lower port and out of common port.