

Variable Ratio Hydra-Cat®

Mechanical Proportioner

High value variable ratio proportioner that replaces the manual pre-mixing of plural component materials and reduces the cost of wasted paint and labor.

Features and Benefits

- Provides accurately mixed and proportioned materials on demand
- Variable ratio settings allow adjustment to meet requirements and to fine-tune required ratio
- High reliability design for minimum maintenance and maximum up-time
- Easy to use mix manifold allows control of main fluid and catalyst material

Typical Applications

- Plural component materials
- Protective coatings
- Farm and construction equipment manufacturing and refinishing
- Truck and bus manufacturing and refinishing
- General metal fabrication
- Foam and elastomers

Typical Coatings Applied

- Epoxies
- Polyurethanes
- Waterbornes
- Acid-catalyzed wood finishing materials
- Stains, lacquers and varnishes
- Sealants and adhesives



**Variable Ratio Hydra-Cat
Monark Unit
Configured Product**

*Durable and dependable
variable ratio frame*

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Variable Ratio Hydra-Cat

Mechanical Proportioner

The Hydra-Cat is a dispensing system that will proportion and mix two-component fluids. The variable ratio proportioners accurately pump and proportion two-component materials by powering two positive displacement pump lowers from a common air motor. Custom order Variable Ratio Hydra-Cat by choosing all desired options to be factory-integrated. Use configurator form 309025 to configure your custom package.

Variable Ratio Hydra-Cat Options

MOTOR TYPE

| Air Motors | Effective Area Sq. in. (Sq. cm) | Fluid Pressure Range | Flow Rates |
|-------------------------|------------------------------------|---|---------------------------------|
| Monark | 7.0 (45.6) | 239-459 psi (16-32 bar, 1.6-3.2 MPa) | 1.5-4.62 gpm (5.7-17.5 lpm) |
| President | 14.19 (91.6) | 480-3000 psi (33-207 bar, 3.3-20.7 MPa) | 0.58-3.99 gpm (2.2-15.1 lpm) |
| Bulldog | 38.48 (248.26) | 2044-2700 psi (140-186 bar, 14-18.6 MPa) | 2.21-2.95 gpm (8.4-11.2 lpm) |
| Hydraulic Motors | | | |
| Viscount I | 1.48 (9.55) | 837-2455 psi (58-169 bar, 5.8-16.9 MPa) | 0.81-3.11 gpm (3-11.8 lpm) |

Lower Type

VARIABLE RATIO TWO-LOWER DESIGN

- The proportioner achieves the ratio variability based on physical lower size and the position of the secondary lower relative to the pivot point on the rocker arm
- Moving the secondary lower will change the output stroke and therefore the volumetric relationship of the primary and secondary lowers
- A scale on the rocker arm is used to get close to the desired range - a ratio check is required to verify that the desired ratio is correct
- Adjustments of the ratio are done by moving the secondary lower - the farther from the pivot point, the more volume the lower will deliver
- As the secondary lower moves farther from the pivot point, the system will deliver less pressure
- Select an operation point that gives the required ratio and pressure range where the secondary lower is in the farthest setting from the pivot point
- This allows for the longest stroke possible on the secondary lower and the minimal number of changeovers, which increases ratio accuracy

| Lower Identification | Effective Area Sq. In. (sq. cm) | Lower Part No. | Instruction Manual |
|----------------------|------------------------------------|----------------|--------------------|
| (President 10:1) | 1.476 (9.53) | 215932 | 307430 |
| (Bulldog 30:1) | 1.248 (8.05) | 901878 | |
| (President 15:1) | 0.884 (5.70) | 215930 | 307431 |
| 0 | 0.884 (5.70) | 948640 | |
| 1 | 0.740 (4.77) | 948641 | |
| 2 | 0.554 (3.57) | 222012 | 307944 |
| 5 | 0.443 (2.86) | 222015 | 307944 |
| 7 | 0.370 (2.39) | 222017 | 307944 |
| 9 | 0.277 (1.79) | 222019 | 307944 |
| (President 15:1) | 0.884 (5.70) | 217529 | |

Variable Ratio Hydra-Cat

Mechanical Proportioner

Variable Ratio Hydra-Cat Options, continued

MIX MANIFOLD OPTIONS

The mix manifold incorporates two materials and mixes them thoroughly using a 12 in. static mixer. Mix manifolds can be mounted locally on the Hydra-Cat or mounted remotely, closer to the application, in order to reduce material and solvent waste.

- Standard Manifold (CS)
- Control Mixer Manifold (SST)
- Remote Mounted Manifold (CS)
- Remote Mounted Manifold (SST)

How to Select a Hydra-Cat

1. SELECT A MIX RATIO

The mix ratio is usually specified by the material manufacturer.

Note: Ratios other than those shown can often be configured on a special basis. Contact Graco Technical Assistance for details.

2. SELECT PRESSURE RATIO OR MAX PRESSURE

Select a pressure ratio that will allow the proportioner to deliver the required amount of fluid pressure for the application. This is determined by material viscosity and setup parameters.

3. SELECT A FLOW RATE

Select one fluid-to-air ratio that exceeds the total flow requirements of the application device(s) by approximately 30%. This provides an adequate application factor for such variables as tip or nozzle wear and pump/motor characteristics.

Proportioner Assembly

- Pumping unit creates pressure and pumps material at designated volumetric ratio
- Separated material moves into mixing manifold and is blended with a static mixer
- Mixed material is delivered to applicator and sprayed
- Proportioner mixes only material required to complete the job
- After spraying, material is shut off and solvent pumped through mixed material line only
- Unit can remain unused for a length of time
- Restart unit simply by opening material lines and flushing out solvent
- Waste is eliminated and a better mix accuracy is ensured

How Proportioner Creates Ratio

- Lower fluid sections of pump are mechanically linked together
- Ratio is selected by matching volumetric output of cylinders and position on lever arm
- Outputs of cylinders are fed into mixing manifold for use at applicator

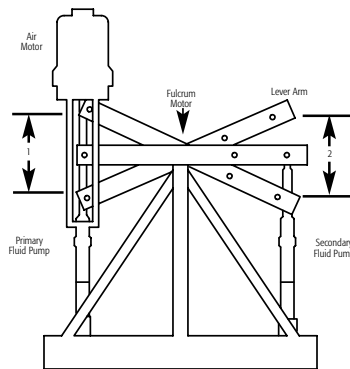
Variable Ratio Hydra-Cat

Mechanical Proportioner

FIGURE A VARIABLE RATIO HYDRA-CAT IN MINIMUM RATIO POSITION

- Air motor is connected directly to primary fluid pump
- Each full stroke of air motor creates full stroke in primary fluid pump
- Air motor is also connected to secondary fluid pump by lever arm, which is supported at fulcrum like a teeter-totter.
- In the Min-Set position, the stroke of the primary fluid pump (1) is equal to the stroke of the secondary fluid pump (2).

Figure A
1 = Primary Stroke 4 in. (102 mm)
2 = Secondary Stroke in
Minimum Ratio Position



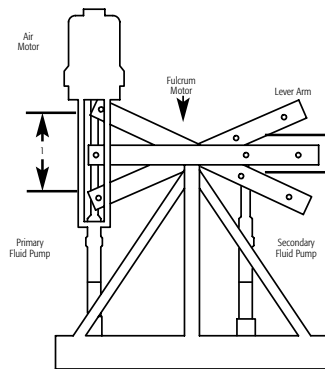
If setting is at Min-Set:

- Mix ratio will be at a minimum
- Pressure ratio will be at a minimum
- Flow Rate will be at a maximum

FIGURE B VARIABLE RATIO HYDRA-CAT IN MAXIMUM RATIO POSITION

- Secondary fluid pump was moved closer to the fulcrum
- In the Max-Set position, air motor and primary fluid pump still make full stroke (1), but secondary fluid pump now makes shorter stroke (3) which is less than 25% of original stroke length.
- By moving the secondary fluid pump closer to or farther from the fulcrum, any ratio in the basic range can be obtained.

Figure B
1 = Primary Stroke
4 in. (102 mm)
3 = Secondary Stroke
in Maximum
Ratio Position



If setting is at Max-Set:

- Mix ratio will be at a maximum
- Pressure ratio will be at a maximum
- Flow Rate will be at a minimum

Variable Ratio Hydra-Cat Mechanical Proportioner

Product Configurator Form

Typical Model Number: VRHC - B - A - A13 - P1 - 2 - 21 - 21 - 12

| Model | Product Description | U.S. List Price |
|-----------------|--|-----------------|
| VRHC-A | Variable Ratio Hydra-Cat | |
| Code B | Air or Hydraulic Powered | Add |
| A | Air (see table 1 VA for air powered Hydra-Cats) | |
| B | Hydraulic (see table 2 VH for hydraulic powered Hydra-Cats) | |
| Code CCC | Table Reference Number – is determined from the table reference number found on the appropriate air (VA) or hydraulic (VH) table. | Add |
| | From Selection Table | \$3,000.00 |
| Code DD | Motor Type – is determined from the motor code column found on the appropriate air (VA table 1) or hydraulic (VH table 2). | Add |
| | M1 Monark® (205997) | \$912.00 |
| | P1 President® (207352) | \$1,565.00 |
| | B1 Bulldog® (208356) | \$2,340.00 |
| | V1 Viscount® I (948699) | \$1,570.00 |
| Code FF | "A" Component Lower – is determined from the "A" component lowers column on the appropriate reference table. | Add |
| | 01 (10:1 President) Cylinder (215932) | \$1,895.00 |
| | 03 (President 15:1) Cylinder (215930) | \$1,645.00 |
| | 13 (30:1 Bulldog) Cylinder (901878) | \$3,330.00 |
| | 14 (#0) Cylinder (948640) | \$2,040.00 |
| | 15 (#1) Cylinder (948641) | \$2,120.00 |
| | 16 (#2) Cylinder (222012) | \$1,125.00 |
| | 17 (#2) Cylinder with Scraper (239388) | \$1,520.00 |
| | 18 (#5) Cylinder (222015) | \$1,125.00 |
| | 19 (#5 SST) Cylinder (948195) | \$4,100.00 |
| | 20 (#7) Cylinder (222017) | \$1,125.00 |
| | 21 (#7 SST) Cylinder (948197) | \$4,710.00 |
| | 22 (#9) Cylinder (222019) | \$1,125.00 |
| | 24 (President 15:1) Cylinder (217529) | \$1,735.00 |

| Model | Product Description | U.S. List Price |
|----------------|---|-----------------|
| Code GG | "B" Component Lower – is determined from the "B" component lowers column on the appropriate reference table. | Add |
| | 01 (10:1 President) Cylinder (215932) | \$1,895.00 |
| | 03 (President 15:1) Cylinder (215930) | \$1,645.00 |
| | 13 (30:1 Bulldog) Cylinder (901878) | \$5,330.00 |
| | 14 (#0) Cylinder (948640) | \$2,040.00 |
| | 15 (#1) Cylinder (948641) | \$2,120.00 |
| | 16 (#2) Cylinder (222012) | \$1,125.00 |
| | 17 (#2) Cylinder with Scraper (239388) | \$1,520.00 |
| | 18 (#5) Cylinder (222015) | \$1,125.00 |
| | 19 (#5 SST) Cylinder (948195) | \$4,100.00 |
| | 20 (#7) Cylinder (222017) | \$1,125.00 |
| | 21 (#7 SST) Cylinder (948197) | \$4,710.00 |
| | 22 (#9) Cylinder (222019) | \$1,125.00 |
| | 24 (President 15:1) Cylinder (217529) | \$1,735.00 |
| Code HH | Manifold Options – is determined from the "Mix Manifold Options" table. | Add |
| | 00 None | |
| | 11 Standard Manifold, CS (241692) | \$1,270.00 |
| | 21 Control Mixer Manifold SST | \$2,600.00 |
| | 31 Remote Mounted Manifold, CS (241808) | \$1,560.00 |
| | 41 Remote Mounted Manifold, SST (240225) | \$4,830.00 |

**Fax completed form and Purchase Order to Graco Customer Service.
Toll-Free Fax (877) 340-6427 - North America
(612) 623-6884 - International**



Ordering Information (Not intended for quoting purposes. Purchase order must accompany order. No verbal orders accepted).

Note: Codes DD, E, FF and GG are copied from the appropriate table after Codes BB and CCC are selected.

| | | | | | | | | |
|---|---------------------------|-----|----|--------------------------|----|-------|----|------------------------|
| VRHC - B - | - | - | - | - 2 - | - | - | - | SAE Application (397) |
| Code | B | CCC | DD | E | FF | GG | HH | Industrial Application |
| Note: Orders cancelled prior to shipment are subject to a 25% restocking fee. Configured products are not returnable. | | | | | | | | |
| Order Quantity | _____ x List Price (each) | | | _____ = Total List Price | | _____ | | |
| Distributor Requested Ship Date | _____ | | | | | | | |
| (Please contact Graco Customer Service for delivery information) | | | | | | | | |

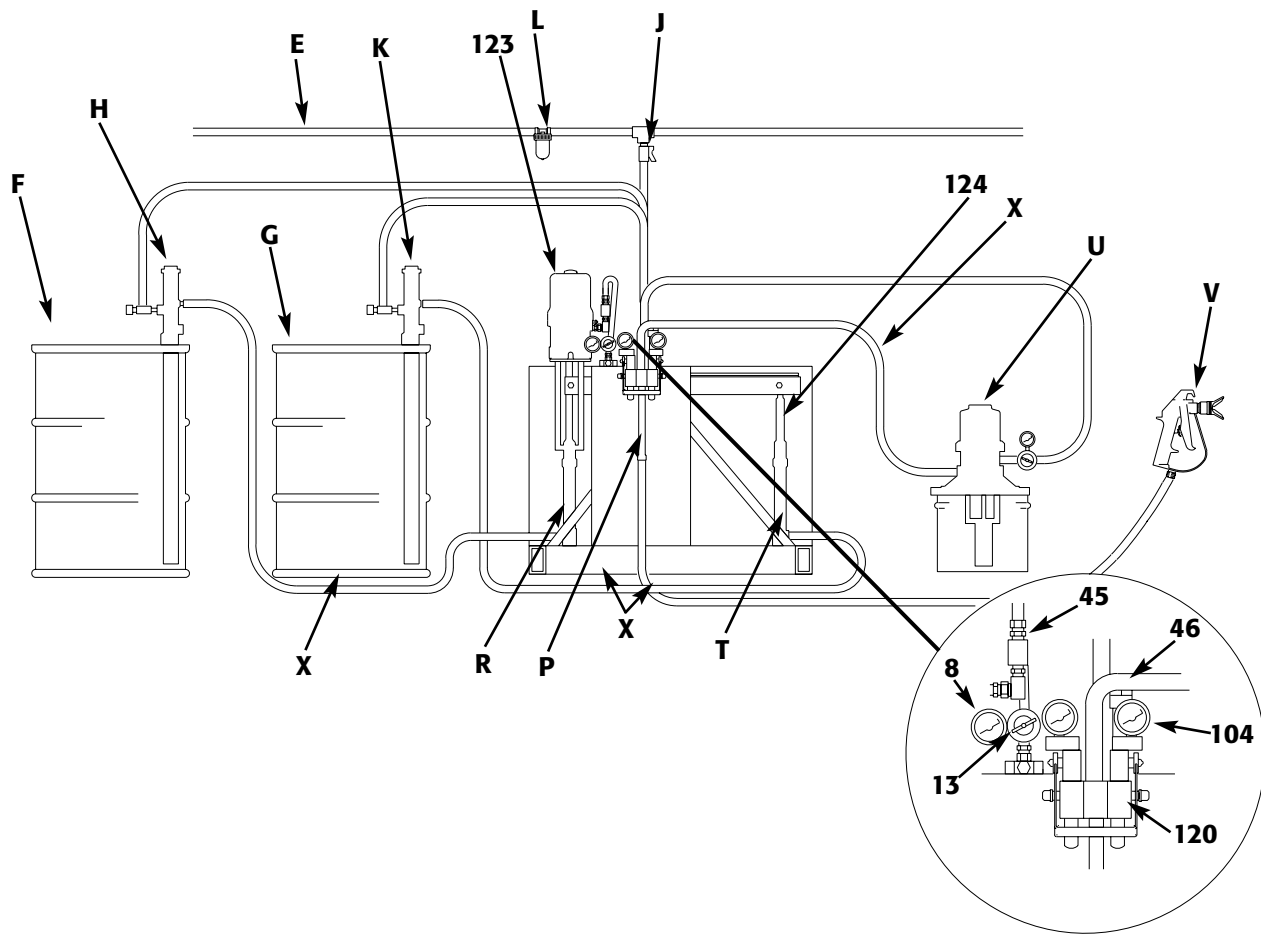
Print Name _____ Signature _____ Date _____

Note: For the full Variable-Ratio Hydra Cat configured order form and instructions, order Graco form 309025.

Variable Ratio Hydra-Cat Mechanical Proportioner

Airless Spray Dispensing System

FOR LIGHT VISCOSITY FLUIDS



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Key

- | | | |
|-------------------------------|-------------------------------|---|
| E Air Supply | P Static Mixer | 13 Air Regulator |
| F Base Supply | R Primary Pump Inlet | 45 Bleed-Type Master Air Valve |
| G Catalyst Supply | T Secondary Pump Inlet | 46 Pressure Relief Valve |
| H Base Supply Pump | U Solvent Pump | 104 Pressure Gauge |
| J Air Shutoff Valve | V Airless Spray Gun | 120 Mixer Manifold |
| K Catalyst Supply Pump | X Grounded Fluid Hose | 123 Air Motor |
| L Air Line Filter | 8 Air Pressure Gauge | 124 Secondary Proportioning Pump (Slave) |

Variable Ratio Hydra-Cat

Mechanical Proportioner

Ordering Information

To complete your configured HydraCat Model Number please follow these instructions.

Step 1. Select whether your HydraCat will be air-operated or hydraulic-operated. Enter an A for Air Operated or B for Hydraulic. Select the corresponding following table for all future selections. Table VA = air operated. Table VH = hydraulic operated. Enter the appropriate letter above the code B in the Order Information section located on the bottom of the first page (Configured Product Order Form).

VRHC - B ^x ²

Note: once you've determined the correct reference table you must proceed as follows to select the best proportioner to meet your application requirements.

Required Information: Mix Ratio, Fluid Pressure, & Flow Required

Step 2. Identify the applicable mix ratio to narrow down the rows in the reference table that meet this requirement.

Step 3. Look at the pressure and flow rate combinations available for the ratio identified in Step 2. Select the best pressure/flow rate combination requirements based on materials of construction. This should further narrow down the number of HydraCats that meet the application. In many cases there may only be one appropriate CCC selection in which case you've identified a specific solution.

If there are multiple rows that meet the customer's requirements with the same ratio, pressure and flow rate listed, review the wetted part compatibility option for the "A" and "B" components. Once you've selected compatible wetted parts, you've narrowed down the HydraCat solution to a single entry represented by the CCC table reference code. Enter these three letters above code CCC in the order information selection area on the Configured Product Order Form.

VRHC - B ^x ^{xxx} ²

If no combinations are available it's likely that our standard product offerings do not meet the application requirements.

Step 4. Using the table reference number "CCC" which you have identified in steps 1-3, fill in the next four codes (DD, E, FF, and GG) in the order information portion of the Configured Product Order Form.

VRHC - B ^x ^{xxx} ^{xx} ² ^{xx} ^{xx} ^{xx}

Step 5. Using the Mixed Manifold Options table select the appropriate item and enter the two digit number above the HH code on the Configured Product Order Form.

VRHC - B ^x ^{xxx} ^{xx} ^x ^{xx} ^{xx} ^{xx}

Note: Feed systems and applicators are the responsibility of the qualified Hydra-Cat distributor. Technical Assistance may be able to help define these needs. Design and installation are the responsibility of the Hydra-Cat distributor.

Once completed, please Fax or mail your order form to the number or address located on the Product Configurator Form.

Variable Ratio Hydra-Cat

Mechanical Proportioner

Table VA - Variable Ratio, Air-Powered Hydra-Cat

| Minimum Set Position | | | Maximum Set Position | | | Code CCC | Code DD | CODE FF | | | CODE GG | | |
|----------------------|--------------------|----------------------------|----------------------|--------------------|----------------------------|------------------------|----------------|---------------------|------------------|------------|---------------------|------------------|------------|
| Mix Ratio | Max Pressure (PSI) | Fluid Flow at 40 CPM (GPM) | Mix Ratio | Max Pressure (PSI) | Fluid Flow at 40 CPM (GPM) | Table Reference Number | Air Motor Code | "A" Component Lower | | | "B" Component Lower | | |
| | | | | | | | | Wetted Parts | Packing Material | Lower Code | Wetted Parts | Packing Material | Lower Code |
| 1.00 | 239 | 4.62 | 4.50 | 391 | 2.83 | A01 | M1 | SST | TEFLON | 01 | SST | TEFLON | 01 |
| 1.00 | 480 | 3.99 | 4.50 | 786 | 2.44 | A04 | P1 | SST | TEFLON | 01 | SST | TEFLON | 01 |
| 1.00 | 803 | 2.39 | 4.50 | 1314 | 1.46 | A06 | P1 | CS | TEFLON | 3 | CS | TEFLON | 3 |
| 1.00 | 803 | 2.39 | 4.50 | 1314 | 1.46 | A07 | P1 | CS | TEFLON | 3 | SST | TEF/LEATH | 24 |
| 1.00 | 803 | 2.39 | 4.50 | 1314 | 1.46 | A08 | P1 | SST | TEF/LEATH | 24 | SST | TEF/LEATH | 24 |
| 1.00 | 1281 | 1.50 | 4.50 | 2096 | 0.91 | A09 | P1 | CS | TEFLON | 16 | CS | TEFLON | 16 |
| 1.00 | 1602 | 1.20 | 4.50 | 2621 | 0.73 | A12 | P1 | CS | TEFLON | 18 | CS | TEFLON | 18 |
| 1.00 | 1833 | 1.00 | 4.50 | 3000 | 0.61 | A14 | P1 | CS | TEFLON | 20 | CS | TEFLON | 20 |
| 1.00 | 1218 | 1.50 | 4.50 | 2096 | 0.91 | A15 | P1 | CS | CFTEFLON | 17 | CS | CFTEFLON | 17 |
| 1.00 | 800 | 2.40 | 4.50 | 1309 | 1.46 | A19 | P1 | CS | TEFLON/UH | 14 | CS | TEF/UH | 14 |
| 1.00 | 959 | 2.00 | 4.50 | 1659 | 1.22 | A20 | P1 | CS | TEF/UH | 15 | CS | TEF/UH | 15 |
| 1.20 | 1745 | 1.10 | 5.39 | 2702 | 0.71 | B01 | P1 | CS | TEFLON | 18 | CS | TEFLON | 20 |
| 1.20 | 872 | 2.20 | 5.40 | 1350 | 1.42 | B06 | P1 | CS | TEF/UH | 14 | CS | TEF/UH | 15 |
| 1.25 | 1423 | 1.35 | 5.63 | 2175 | 0.88 | C03 | P1 | CS | TEFLON | 16 | CS | TEFLON | 18 |
| 1.34 | 2001 | 0.87 | 6.02 | 3000 | 0.58 | D02 | P1 | CS | TEFLON | 20 | CS | TEFLON | 22 |
| 1.50 | 1536 | 1.25 | 6.74 | 2231 | 0.86 | E03 | P1 | CS | TEFLON | 16 | CS | TEFLON | 20 |
| 1.60 | 987 | 1.94 | 7.19 | 1409 | 1.36 | F03 | P1 | CS | TEFLON | 3 | CS | TEFLON | 16 |
| 1.60 | 987 | 1.94 | 7.19 | 1409 | 1.36 | F04 | P1 | SST | TEF/LEATH | 24 | CS | TEFLON | 16 |
| 1.60 | 1971 | 0.97 | 7.20 | 2813 | 0.68 | F06 | P1 | CS | TEFLON | 18 | CS | TEFLON | 22 |
| 2.00 | 1069 | 1.79 | 8.99 | 1445 | 1.33 | G06 | P1 | CS | TEFLON | 3 | CS | TEFLON | 18 |
| 2.00 | 1069 | 1.79 | 8.99 | 1445 | 1.33 | G08 | P1 | SST | TEF/LEATH | 24 | CS | TEFLON | 18 |
| 2.00 | 1708 | 1.12 | 9.01 | 2305 | 0.83 | G10 | P1 | CS | TEFLON | 16 | CS | TEFLON | 22 |
| 2.40 | 1132 | 1.69 | 10.76 | 1469 | 1.31 | H05 | P1 | CS | TEFLON | 3 | CS | TEFLON | 20 |
| 2.40 | 1132 | 1.69 | 10.76 | 1469 | 1.31 | H07 | P1 | SST | TEF/LEATH | 24 | CS | TEFLON | 20 |
| 2.40 | 2044 | 2.95 | 10.81 | 2650 | 2.27 | H09 | B1 | CS | TEF/POLY | 13 | CS | TEFLON | 16 |
| 3.00 | 2172 | 2.77 | 13.51 | 2696 | 2.23 | J01 | B1 | CS | TEF/POLY | 13 | CS | TEFLON | 18 |
| 3.19 | 1222 | 1.57 | 14.38 | 1501 | 1.28 | K03 | P1 | CS | TEFLON | 3 | CS | TEFLON | 22 |
| 3.19 | 1222 | 1.57 | 14.38 | 1501 | 1.28 | K04 | P1 | SST | TEF/LEATH | 24 | CS | TEFLON | 22 |
| 3.34 | 368 | 1.83 | 15.03 | 449 | 1.50 | M01 | M1 | SST | TEFLON | 01 | CS | TEFLON | 18 |
| 3.59 | 2265 | 2.66 | 16.18 | 2727 | 2.21 | N01 | B1 | CS | TEF/POLY | 13 | CS | TEFLON | 20 |
| 4.80 | 2396 | 2.51 | 21.61 | 2767 | 2.18 | P01 | B1 | CS | TEF/POLY | 13 | CS | TEFLON | 22 |
| 5.34 | 403 | 1.67 | 24.03 | 459 | 1.47 | Q01 | M1 | SST | TEFLON | 01 | CS | TEFLON | 22 |

Variable Ratio Hydra-Cat

Mechanical Proportioner

Table VH - Variable Ratio, Hydraulic-Powered Hydra-Cat

| Minimum Set Position | | | Maximum Set Position | | | Code CCC | Code DD | CODE FF | | | CODE GG | | |
|----------------------|--------------------|----------------------------|----------------------|--------------------|----------------------------|------------------------|----------------------|---------------------|------------------|------------|---------------------|------------------|------------|
| Mix Ratio | Max Pressure (PSI) | Fluid Flow at 40 CPM (GPM) | Mix Ratio | Max Pressure (PSI) | Fluid Flow at 40 CPM (GPM) | Table Reference Number | Hydraulic Motor Code | "A" Component Lower | | | "B" Component Lower | | |
| | | | | | | | | Wetted Parts | Packing Material | Lower Code | Wetted Parts | Packing Material | Lower Code |
| 1.00 | 837 | 2.33 | 4.50 | 1370 | 1.42 | A02 | V1 | CS | TEFLON | 3 | SST | TEF/LEATH | 24 |
| 1.00 | 837 | 2.33 | 4.50 | 1370 | 1.42 | A03 | V1 | SST | TEF/LEATH | 24 | SST | TEF/LEATH | 24 |
| 1.00 | 1336 | 1.46 | 4.50 | 2186 | 0.89 | A04 | V1 | CS | TEFLON | 16 | CS | TEFLON | 16 |
| 1.00 | 1251 | 2.34 | 4.50 | 2048 | 1.43 | A05 | V1 | CS | TEF/UH | 14 | CS | TEF/UH | 14 |
| 1.00 | 1500 | 1.95 | 4.50 | 2455 | 1.19 | A06 | V1 | CS | TEF/UH | 15 | CS | TEF/UH | 15 |
| 1.20 | 1364 | 2.14 | 5.40 | 2112 | 1.38 | A07 | V1 | CS | TEF/UH | 14 | CS | TEF/UH | 15 |
| 1.25 | 1484 | 1.31 | 5.63 | 2269 | 0.86 | B01 | V1 | CS | TEFLON | 16 | CS | TEFLON | 18 |
| 1.50 | 1602 | 1.22 | 6.74 | 2327 | 0.84 | C01 | V1 | CS | TEFLON | 16 | CS | TEFLON | 20 |
| 1.60 | 1029 | 1.89 | 7.19 | 1470 | 1.33 | C03 | V1 | CS | TEFLON | 3 | CS | TEFLON | 16 |
| 1.60 | 1029 | 1.89 | 7.19 | 1470 | 1.33 | C04 | V1 | SST | TEF/LEATH | 24 | CS | TEFLON | 16 |
| 1.67 | 940 | 3.11 | 7.53 | 1326 | 2.21 | D01 | V1 | SST | TEFLON | 01 | SST | TEF/LEATH | 24 |
| 2.00 | 1115 | 1.75 | 8.99 | 1507 | 1.29 | E01 | V1 | CS | TEFLON | 3 | CS | TEFLON | 18 |
| 2.00 | 1115 | 1.75 | 8.99 | 1507 | 1.29 | E03 | V1 | SST | TEF/LEATH | 24 | CS | TEFLON | 18 |
| 2.00 | 1781 | 1.09 | 9.01 | 2405 | 0.81 | E05 | V1 | CS | TEFLON | 16 | CS | TEFLON | 22 |
| 2.40 | 1180 | 1.65 | 10.76 | 1532 | 1.27 | F01 | V1 | CS | TEFLON | 3 | CS | TEFLON | 20 |
| 2.40 | 1180 | 1.65 | 10.76 | 1532 | 1.27 | F03 | V1 | SST | TEF/LEATH | 24 | CS | TEFLON | 20 |
| 3.19 | 1275 | 1.53 | 14.38 | 1565 | 1.25 | H01 | V1 | CS | TEFLON | 3 | CS | TEFLON | 22 |
| 3.19 | 1275 | 1.53 | 14.38 | 1565 | 1.25 | H02 | V1 | SST | TEF/LEATH | 24 | CS | TEFLON | 22 |

Variable Ratio Hydra-Cat

Mechanical Proportioner

Hydra-Cat Motor Table

| Motor Code "DD" | Description | Power Source | Max. Stroke Length | | Effective Area | | Motor Reference Number | Manual Number |
|-----------------|-------------|--------------|--------------------|-------|----------------|--------|------------------------|---------------|
| | | | Inches | cm | Sq. Inch | Sq. cm | | |
| P1 | President | Air | 4.0 | 10.79 | 14.19 | 91.55 | 207352 | 306982 |
| B1 | Bulldog | Air | 4.75 | 12.06 | 38.48 | 248.26 | 208356 | 307049 |
| K1 | King | Air | 4.75 | 12.06 | 78.54 | 506.71 | 207647 | 306968 |
| V1 | Viscount I | Hydraulic | 4.00 | 10.16 | 1.48 | 9.55 | 948699 | 307654 |

Hydra-Cat Pump Lower Table

| Pump Lower Codes "FF" & "GG" | Stroke Length | | Pressure Rating | | Effective Area | | Wetted Material | Packing Material | Lower Reference Number | Manual Number |
|------------------------------|---------------|-------|-----------------|--------|----------------|---------|-----------------|------------------|------------------------|---------------|
| | (Inches) | (cm) | (psi) | (bar) | (Sq Inch) | (Sq cm) | | | | |
| 01 | 4.25 | 10.79 | 1500 | 103.42 | 1.478 | 9.53 | SST | Teflon | 215932 | 307430 |
| 03 | 4.25 | 10.79 | 2000 | 137.89 | 0.884 | 5.70 | CS | Teflon | 215930 | 307431 |
| 11 | 4.75 | 12.06 | 1000 | 68.94 | 3.54 | 22.80 | SST | Teflon | 206792 | 306821 |
| 12 | 4.75 | 12.06 | 1500 | 103.42 | 1.478 | 9.53 | SST | Teflon | 217339 | 307430 |
| 13 | 4.75 | 12.06 | 3000 | 206.84 | 1.248 | 8.05 | CS | Teflon/Poly | 901878 | |
| 14 | 4.75 | 12.06 | 3000 | 206.84 | 0.884 | 5.70 | CS | Teflon/UH | 948640 | 684004 |
| 15 | 4.75 | 12.06 | 3000 | 206.84 | 0.74 | 4.77 | CS | Teflon/UH | 948641 | 684004 |
| 16 | 4.75 | 12.06 | 3000 | 206.84 | 0.554 | 3.58 | CS | Teflon | 222012 | 307944 |
| 17 | 4.75 | 12.06 | 3000 | 206.84 | 0.554 | 3.58 | CS | CFTeflon | 239388 | 307944 |
| 18 | 4.75 | 12.06 | 3000 | 206.84 | 0.443 | 2.86 | CS | Teflon | 222015 | 307944 |
| 19 | 4.75 | 12.06 | 3000 | 206.84 | 0.443 | 2.86 | SST | Teflon | 948195 | |
| 20 | 4.75 | 12.06 | 3000 | 206.84 | 0.37 | 2.39 | CS | Teflon | 222017 | 307944 |
| 21 | 4.75 | 12.06 | 3000 | 206.84 | 0.37 | 2.39 | SST | Teflon/UH | 948197 | |
| 22 | 4.75 | 12.06 | 3000 | 206.84 | 0.277 | 1.79 | CS | Teflon | 222019 | 307944 |
| 23 | 4.75 | 12.06 | 4000 | 275.79 | 0.875 | 5.65 | CS | Teflon | 946196 | |

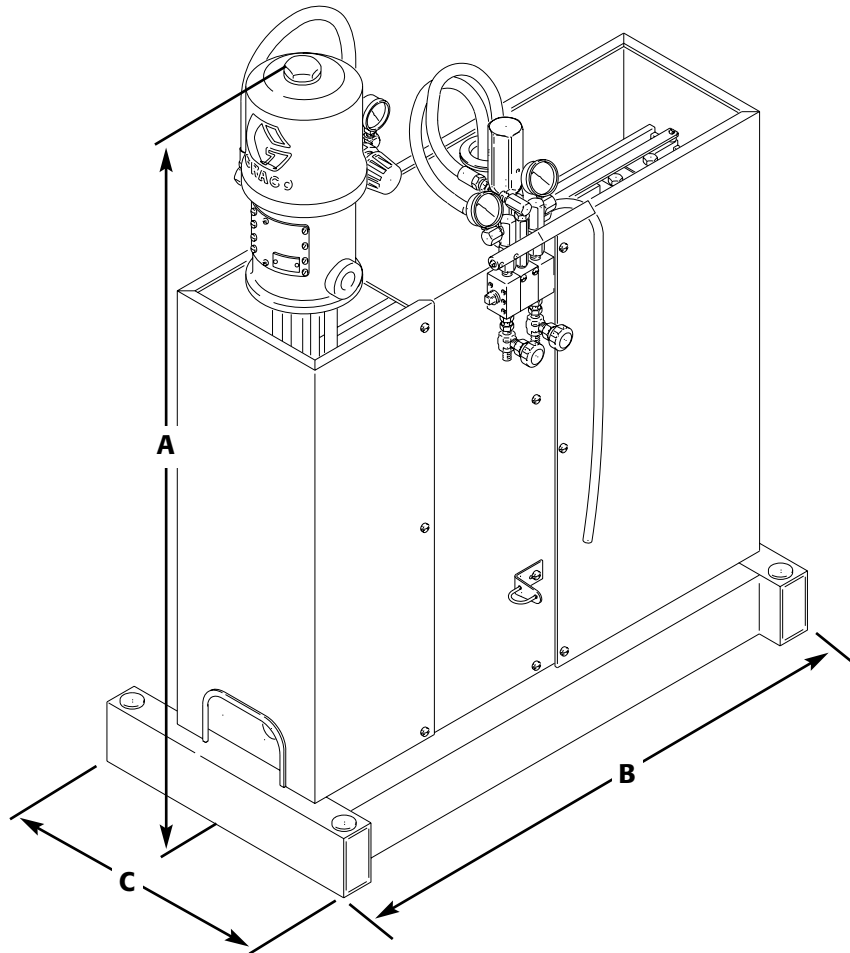
Hydra-Cat Mix Manifold Options

| Code "HH" | Description | Mounting Location | Wetted Material | Pressure Rating | | Manifold Reference Number |
|-----------|--|-------------------|-----------------|-----------------|-------|---------------------------|
| | | | | (psi) | (bar) | |
| 00 | None | N/A | N/A | N/A | N/A | N/A |
| 11 | Standard Manifold, CS 1/4" Ported | Local | CS | 3000 | 207 | 241692 |
| 21 | Remote Mixer Manifold, CS 1/2" Ported | Remote | SST | 3000 | 207 | 241808 |
| 31 | Remote Mounted Manifold, CS 3/8" Ported | Remote | CS | 3000 | 345 | 241809 |
| 41 | Remote Mounted Manifold, SST 1/2" Ported | Remote | SST | 5000 | 207 | 240225 |

Note: All manifolds come with a 1/2" SST Mixer with 32 plastic elements. (#41 uses a SST Mixer Element)

Variable Ratio Hydra-Cat Mechanical Proportioner

Dimensions and Approximate Weights



Dimensions

| | |
|----------|-------------------------|
| A | Determined by air motor |
| B | 35 in. (889 mm) |
| C | 18 in. (457 mm) |

Weights

| Motor Code | Weight (lb./kg) |
|------------|-----------------|
| P1 | 183/83 |
| B1 | 240/109 |
| K1 | 256/116 |
| V1 | 199/90 |
| V2 | 277/126 |

Variable Ratio Hydra-Cat Mechanical Proportioner

Accessories

STAINLESS STEEL FLUID PUMPS

Allows conversion of standard series Hydra-Cat to 304 SST/Teflon® fluid pump construction. Fluid pumps are dimensionally interchangeable with standard carbon steel, Severe Duty™ pumps.

| Lower ID | Effective Cylinder Area Sq in. (sq mm) | Part No. |
|----------------|--|--------------|
| President 10:1 | 1.476 (953) | 215932 (SST) |
| President 15:1 | 0.884 (570) | 217529 |
| #5 | 0.443 (286) | 948195 |
| #7 | 0.370 (239) | 948197 |

CONVERSION/REPAIR KITS

| Lower ID | Teflon w/CS Gland | Teflon/UHMWPE w/CS Gland | Teflon w/SST Gland | Teflon/UHMWPE w/SST Gland |
|----------------|-------------------|--------------------------|--------------------|---------------------------|
| - | - | - | - | 215336 |
| Bulldog 30:1 | - | - | - | 948242 |
| President 15:1 | - | - | - | 218559 |
| #0 | - | 948650 | 948750 | 949383 |
| #1 | - | 948651 | 948751 | 949384 |
| #2 | 236597 | 222236 | 948192 | 949379 |
| #5 | 236598 | 222237 | 948195 | 949380 |
| #7 | 236595 | 222234 | 948197 | 949381 |
| #9 | 236596 | 222235 | 948199 | 949302 |

501095 Inlet Valve Spring Load Conversion

Used to provide spring bias for closing foot valve on 2 thru 9 Hydra-Cat pumps. Use with higher viscosity materials to provide faster check valve closing. For use with pressure feed proportioners only.

Variable Ratio Hydra-Cat

Mechanical Proportioner

Accessories (continued)

GUNS AND TIPS

Alpha Plus™ Air-Assisted Airless Gun

Maximum working pressure:
4000 psi (276 bar, 27.6 MPa)
243573 with standard spray tip
243576 with RAC Tip

235463 Silver Plus Gun

Maximum working pressure:
5000 psi (345 bar, 34.5 MPa)
2-finger gun with RAC IV Tip.

238591 Silver Plus Gun

Maximum working pressure:
5000 psi (345 bar, 34.5 MPa)
4-finger gun with Heavy-Duty RAC IV Tip.

GHDxxx HD RAC Tip

965022 2K Mix Gun

Maximum working pressure: 3000 psi (207 bar, 20.7 MPa). Coatings enter the gun separately and are mixed together in the gun. Designed for plural component materials with very short setup times.

HOSES

Whip Hose

Maximum working pressure: 5000 psi (345 bar, 34.5 MPa).
1/4 in ID (0.63 cm), 1/4 npsm(fbe).
214912 3 ft. (0.91 m)
214913 6 ft. (1.83 m)

Nylon Fluid Hose

Maximum working pressure: 5000 psi (345 bar, 34.5 MPa).
3/8 in. ID (9.5 mm ID), 3/8 npt(m) x 3/8 npt(f).
238395 24.6 ft. (7.5 m)
238396 49.2 ft. (15 m)
238397 98.4 ft. (30 m)

Maximum working pressure: 5000 psi (345 bar, 34.5 MPa).
1/2 in. ID (12.7 mm ID), 1/2 npt(fbe).
238716 24.6 ft. (7.5 m)
238717 49.2 ft. (15 m)
238718 98.4 ft. (30 m)

CONTROLS AND VALVES

224040 Pump Runaway Valve

Bleed-Type Air Valve

110224 3/8 in. npt(fbe)
110225 1/2 in. npt(fbe)
110226 3/4 in. npt(fbe)

Check Valves

Maximum working pressure: 3000 psi (206 bar, 20.6 MPa).

501867 1/4 in. npt (mbe)
501684 3/8 in. npt(mbe)
501603 1/2 in. npt(mbe)

Fluid Regulators

222121 Maximum working pressure: 1500 psi (103 bar, 10.3 MPa). Regulated range: 500-1200 psi (34-83 bar, 3.4-8.3 MPa). 1.5 gpm (5.7 lpm), SST.

238890 Maximum working pressure: 6000 psi (413 bar, 41.3 MPa). Regulated range: 500-3000 psi (34-207 bar, 3.4-20.7 MPa). 2 gpm (7.5 lpm), SST.

206661 Maximum working pressure: 3000 psi (207 bar, 20.7 MPa). Regulated range: 1000-3000 psi (69-207 bar, 6.9-20.7 MPa). 3.5 gpm (13.25 lpm), CS.

Fluid Ball Valves

210657 1/4 in. npt(mbe)
5000 psi (345 bar, 34.5 MPa), CS.
240410 3/8 in. npt(mbe)
5000 psi (345 bar, 34.5 MPa), SST.

237073 Optional Safety Relief Valves

3750 psi (259 bar, 25.9 MPa).

ADAPTERS AND FITTINGS

Agitators

224854 Drum bung-mounted Twistork, CS
236760 Drum bung-mounted Twistork, siphon, SST
231414 Heavy-duty back geared with drum cover, elevator and siphon kit, SST

Fluid Heaters – Viscon²

Maximum working pressure: 5000 psi (345 bar, 34.5 MPa). UL and CSA approved.

220522 120V, 16.5 amp
220523 240V, 9.6 amp
220254 480V, 4.8 amp
222307 220-240V, 9.6 amp

FILTERS

Fluid Filter

218029 14 sq. in. (90.3 sq. cm), 5000 psi (344 bar, 34.4 MPa), CS

Replacement Screen Filter Elements

| 3 Pack | 25 Pack | |
|---------------|---------------|-----------------------|
| 238435 | 238436 | 30 mesh (595 micron) |
| 238437 | 238438 | 60 mesh (250 micron) |
| 238439 | 238440 | 100 mesh (149 micron) |