



| Quantity | Part Number | Description | Charge Price (ea.) | Extended Value | Manufacturer | Spec Sheet | Current Stock* (for FPVC) |
|----------|-------------|-------------|--------------------|----------------|--------------|------------|---------------------------|
|----------|-------------|-------------|--------------------|----------------|--------------|------------|---------------------------|

Section Total: \$ 162.09

| Control Kit 1 - HMI, Controller, Harnesses, Programming Kit | | Kits include required components needed for programming and use. Wiring harness from controller has flying leads for connections to components. | | | | | |
|--|--|---|--|-----------|--------------------------------|---|--|
| 78700713 | S50, 5" TFT Projected Capacitive Touchscreen, 8GB Flash | \$ 240.00 | | Enovation | Specifications | 6 | |
| 58700010 | (MC-2-18-6) Mobile PLC/Controller with integrated valve driver (PWM and On/Off Solenoid) | \$ 326.00 | | Enovation | Specifications | 6 | |
| | Connection Harness (Programming and Operation) | | | Enovation | | 6 | |

| Battery Kit - Battery, Charger and Battery Adapter | | Kits include required components needed for programming and use. Wiring harness from controller has flying leads for connections to components. | | | | | |
|---|--------------------------------------|---|--|--------|--------------------------------|---|--|
| B09W1BSLX5 | Kobalt Battery Adapter | \$ 18.47 | | Amazon | Specifications | 5 | |
| B08MLDJNC3 | Replacement Kobalt Batter, 25VDC 5Ah | \$ 45.59 | | Amazon | Specifications | 5 | |
| B07QX8H4VS | Kobalt Battery Charger 2445-03 | \$ 70.20 | | Amazon | Specifications | 5 | |

| Sensors | | Sensors provide feedback from your system to the controls. BPS33NVM3000P is limited to (1) per school. | | | | | |
|----------------|--------------------------|--|-----------|-----------|-----------|--------------------------------|----|
| 1 | BSP B250-FV004-A04A1A-S4 | Pressure Sensor, 250Bar, 0-10, 3W | \$ 146.93 | \$ 146.93 | Balluff | Specifications | 4 |
| 1 | 7000-12221-6140500 | Cable -M12 Connector -4 Wire - 5 Meters Long | \$ 15.16 | \$ 15.16 | Murr | Specifications | 4 |
| | BPS33NVM3000P | Pressure Sensor w/ display, AND 0-10V / 4-20mA, M12 4W | \$ 258.53 | | Barksdale | Specifications | 22 |
| | 7000-12221-6140500 | CBL-M12F 4W-BLK PVC 5M | \$ 15.16 | | Murr | Specifications | 8 |
| | BES M12MG-PSC80F-BP05 | Inductive Sensor - 8 MM Distance - 3 Wire - NO contact - PNP - 5M - Non Flush Mount Style | \$ 25.10 | | Balluff | Specifications | 4 |

*Current Stock includes items that are on order and have not yet been received.

Limited Stock



| Quantity | Part Number | Description | Charge Price (ea.) | Extended Value | Manufacturer | Spec Sheet | Current Stock* (for FPVC) |
|----------|-------------|-------------|--------------------|----------------|--------------|------------|---------------------------|
|----------|-------------|-------------|--------------------|----------------|--------------|------------|---------------------------|

Section Total: \$ 1,119.94

| Hand Pumps | | Cartridge style hand pumps that require a valve body or cavity in a manifold. | | | | | |
|------------|-----------|---|----------|--|-------------|--------------------------------|---|
| | DE-HPB-0L | HAND PUMP, PUSH TO PUMP TYPE (.39 CID) (7/8" Handle Needed Max 36") | \$ 76.03 | | Delta Power | Specifications | 8 |
| | ES | ES Line Body Delta 2Way -8 SAE Ports (Delta 2W Cavity) | \$ 27.50 | | Delta Power | Specifications | 8 |

| "Micro" Piston Pumps | | Extremely small displacement pumps. | | | | | |
|----------------------|--------------------------|---|-------------|--|-------|--------------------------------|---|
| | AKP105-0,3-500-V-A*00 | Micro-Axial piston pump .018 CID | \$ 1,619.31 | | Bieri | Specifications | 1 |
| | HRK01-0,34-700-DV-V-A*00 | Micro-Radial piston pump .021 CID (with built-in relief) | \$ 879.53 | | Bieri | Specifications | 1 |
| | HRK01-0,34-700-V-V-A*00 | Micro-Radial piston pump .021 CID (without built-in relief) | \$ 879.53 | | Bieri | Specifications | 2 |

| Gear Pumps - Clockwise Rotation | | Gear pumps with keyed shafts and clockwise rotation. These are <u>not</u> bidirectional. | | | | | |
|---------------------------------|-----------|---|-----------|-----------|-----------|--------------------------------|---|
| | ALP1A-D-2 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 1.4c ³ (.0854in ³)/rev, -8 Inlet, -6 Outlet | \$ 146.90 | | Marzocchi | Specifications | 6 |
| | ALP1A-D-3 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 2.1c ³ (.1281in ³)/rev, -8 Inlet, -6 Outlet | \$ 146.90 | | Marzocchi | Specifications | 5 |
| | ALP1A-D-4 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 2.8c ³ (.1708in ³)/rev, -8 Inlet, -6 Outlet | \$ 146.90 | | Marzocchi | Specifications | 4 |
| 1 | ALP1A-D-5 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 3.5c ³ (.2135in ³)/rev, -8 Inlet, -6 Outlet | \$ 146.90 | \$ 146.90 | Marzocchi | Specifications | 1 |
| | ALP1A-D-7 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 5.2c ³ (.3172in ³)/rev, -8 Inlet, -6 Outlet | \$ 146.90 | | Marzocchi | Specifications | 9 |

| Gear Pumps - Clockwise Rotation | | Gear pumps with keyed shafts and clockwise rotation. These are <u>not</u> bidirectional. | | | | | |
|---------------------------------|---------------|---|-----------|--|------------|--------------------------------|---|
| | GP-F10-13-P-C | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 1.3c ³ (.0854in ³)/rev, -8 Inlet, -6 Outlet | \$ 97.56 | | Dynamic FC | Specifications | 2 |
| | GP-F10-20-P-C | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 2.0c ³ (.1281in ³)/rev, -8 Inlet, -6 Outlet | \$ 97.56 | | Dynamic FC | Specifications | 2 |
| | GP-F10-27-P-C | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 2.7c ³ (.1708in ³)/rev, -8 Inlet, -6 Outlet | \$ 97.56 | | Dynamic FC | Specifications | 2 |
| | GP-F10-34-P-C | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 3.4c ³ (.2135in ³)/rev, -8 Inlet, -6 Outlet | \$ 97.56 | | Dynamic FC | Specifications | 2 |
| | GP-F10-41-P-C | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 4.1c ³ (.2501in ³)/rev, -8 Inlet, -6 Outlet | \$ 105.88 | | Dynamic FC | Specifications | 2 |
| | GP-F10-51-P-C | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 5.1c ³ (.3172in ³)/rev, -8 Inlet, -6 Outlet | \$ 105.88 | | Dynamic FC | Specifications | 2 |

| Gear Motors - Clockwise Rotation | | Gear motors with keyed shafts and bidirectional rotation. | | | | | |
|----------------------------------|--------------|---|-----------|-----------|-----------|--------------------------------|---|
| 1 | ALM1A-R-4-E2 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 2.8c ³ (.1708in ³)/rev, -12 Inlet, -12 Outlet | \$ 201.50 | \$ 201.50 | Marzocchi | Specifications | 5 |
| | ALM1A-R-5-E2 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 3.5c ³ (.2135in ³)/rev, -12 Inlet, -12 Outlet | \$ 201.50 | | Marzocchi | Specifications | 2 |
| | ALM1A-R-6-E2 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 4.1c ³ (.2501in ³)/rev, -12 Inlet, -12 Outlet | \$ 201.50 | | Marzocchi | Specifications | 4 |
| | ALM1A-R-7-E2 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 5.2c ³ (.3173in ³)/rev, -12 Inlet, -12 Outlet | \$ 201.50 | | Marzocchi | Specifications | 5 |
| | ALM1A-R-9-E2 | Aluminum - 1/2IN Shaft w/ 1/8IN Key, SAE AA 2-bolt mount - 6.2c ³ (.3783in ³)/rev, -12 Inlet, -12 Outlet | \$ 201.50 | | Marzocchi | Specifications | 5 |

| Gear Motors - Clockwise Rotation | | Gear motors with keyed shafts and bidirectional rotation. | | | | | |
|----------------------------------|-----------|---|-----------|--|------------|--------------------------------|---|
| | GM-F10-13 | Gear Motor, 1.3cc, Clockwise | \$ 139.38 | | Dynamic FC | Specifications | 2 |
| | GM-F10-20 | Gear Motor, 2.0cc, Clockwise | \$ 139.38 | | Dynamic FC | Specifications | 2 |

| | | | | | | | |
|--|-----------|------------------------------|-----------|--|------------|--------------------------------|---|
| | GM-F10-27 | Gear Motor, 2.7cc, Clockwise | \$ 139.38 | | Dynamic FC | Specifications | 2 |
| | GM-F10-34 | Gear Motor, 3.4cc, Clockwise | \$ 139.38 | | Dynamic FC | Specifications | 2 |
| | GM-F10-41 | Gear Motor 4.1cc, Clockwise | \$ 151.25 | | Dynamic FC | Specifications | 2 |
| | GM-F10-51 | Gear Motor, 5.1cc, Clockwise | \$ 151.25 | | Dynamic FC | Specifications | 2 |

| | | | | | | | |
|---|-----------|--|--|--|-------------|--------------------------------|---|
| Bent Axis Piston Motor/Pump - Clockwise Rotation | | | A piston motor with a CETOP flange, typically more efficient than gear motors. Metric fittings. | | | | |
| | M5 093840 | Bent Axis Piston Motor CETOP Flange (2 bolt) .305 CID with Keyed Shaft | \$ 643.75 | | Hydro Leduc | Specifications | 4 |

| | | | | | | | |
|--|---------------------|---|---|-----------|-------|--------------------------------|---|
| Bladder Accumulators and Clamps | | | Pressure storage reservoir. These contain a gas bladder that requires a pre-charge of NITROGEN. All accumulators are assumed to ship with no pre-charge. | | | | |
| 1 | SB330-4A1/112S-210C | Bladder Accumulator - 1 Gallon - Carbon Steel Shell - SAE -20 Fluid Connection - 3000PSI | \$ 749.78 | \$ 749.78 | Hydac | Specifications | 3 |
| | HS167 | Clamp type mount for SB330-4A1/112S-210C | \$ 51.94 | | Hydac | Specifications | 3 |
| | SB330-1A1/112S-210C | Bladder Accumulator - 1 Liter (1.06 Quart) - Carbon Steel Shell - SAE -12 Fluid Connection - 3000 PSI | \$ 587.21 | | Hydac | Specifications | 3 |
| | HYRAC 110-118ST | Clamp type mount for SB330-1A1/112S-210C | \$ 44.37 | | Hydac | Specifications | 3 |

| | | | | | | | |
|------------------------------|-------------|-----------------------------|---|--|-------------|--------------------------------|---|
| Pressure Intensifiers | | | Will take oil from the inlet output the oil at a higher pressure at the cost of flow. These work in a similar manner to a transformer with electrical power. | | | | |
| | HC1-2.8-A-1 | Oil Intensifier, 2.8 Ratio, | \$ 963.75 | | Minibooster | Specifications | 2 |

| | | | | | | | |
|--------------------------------|----------------|------------------------------------|---|----------|---------|--------------------------------|----|
| Test Points and Adapter | | | Pressure storage reservoir. These contain a gas bladder that requires a pre-charge of NITROGEN. All accumulators are assumed to ship with no pre-charge. | | | | |
| 2 | D1620-01-04SAE | Test Point Connector, -4 SAE | \$ 10.88 | \$ 21.76 | Dynamic | Specifications | 20 |
| | D1620-01-06SAE | Test Point Connector, -6 SAE | \$ 10.88 | | Dynamic | Specifications | 20 |
| | DGA1620-01 | Dynamic Test Probe adapter 1/4-NPT | \$ 25.00 | | Dynamic | Specifications | 20 |

*Current Stock includes items that are on order and have not yet been received.



Manifold Form

Contact Our Engineering Team: fpvc@ifpusa.com

Last Updated: 9/12/2024

Please populate fields before sending for order.
Email completed sheet to fpvc@ifpusa.com

If viewing this sheet in your browser, please go to File -> Saves As -> Download a Copy

IFP Motion Solutions, INC is offering access to an industry leading solution for manifold design packages.

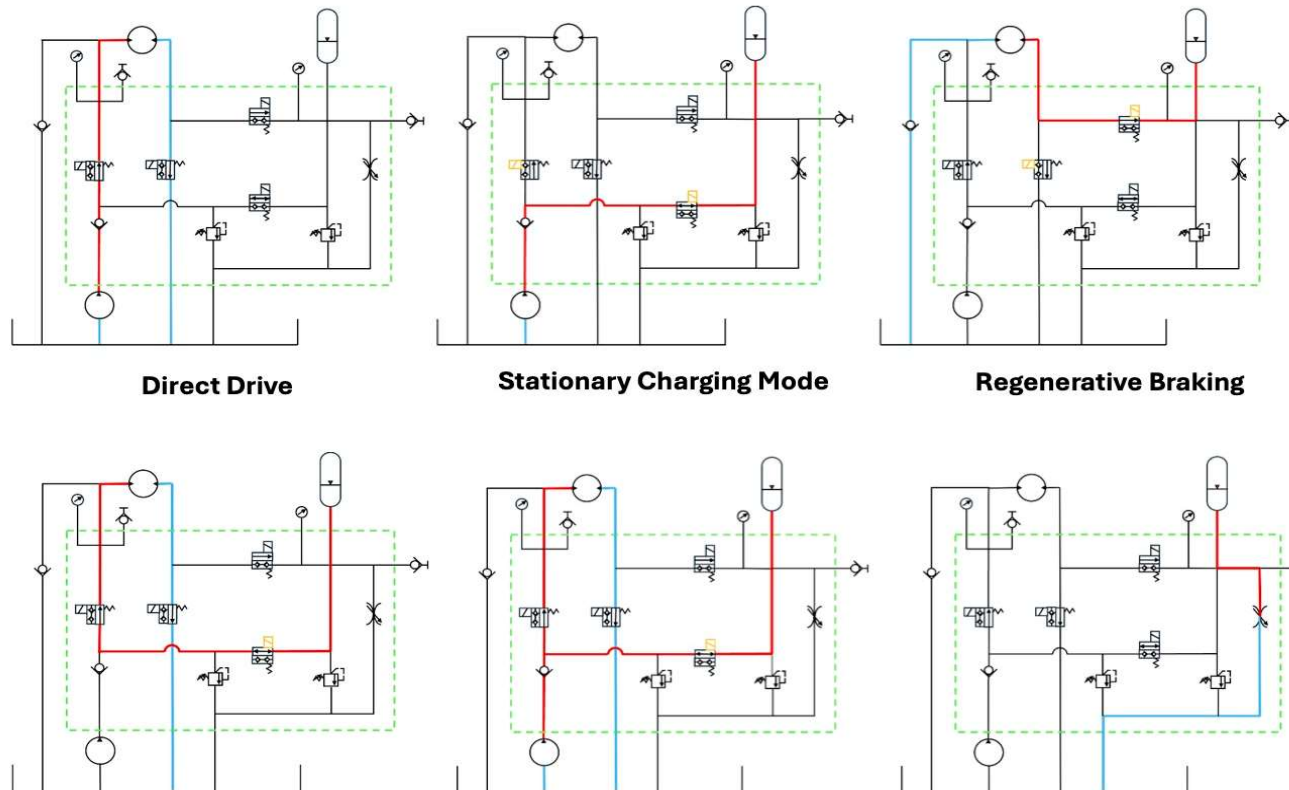
Contact IFP via fpvc@ifpusa.com with the following information:

Subject: FPVC Manifold Request; FAMU-FSU College of Engineering

Attachments: This order sheet with Start Here filled out, Manifold schematics, any other relevant information

Body: We are requesting a custom manifold from IFP. Our team contact is: Ethan Mercado, emm18b@fsu.edu, (757) 754-0620. Our industry mentor is: Dean Eberhardt, deberhardt@ifpusa.co, (612) 770-5300, AND Cory Fisher, cory.fisher@sunhydraulics.com, (941) 362-1288 . Our schematic is attached/below and is inteded to function in these modes: **DIRECT DRIVE MODE:** No valves energized. **STATIONARY CHARGING MODE:** DTDF-1 and DTBF-2 energized. **REGENERATIVE BRAKING MODE:** DTDF-2 and DTBF-1 energized. **DISHARGE MODE:** DTBF-2 energized. **DIRECT WITH BOOST:** DTBF-2 energized. **ACCUMULATOR PRESSURE RELEASE:** No valves energized

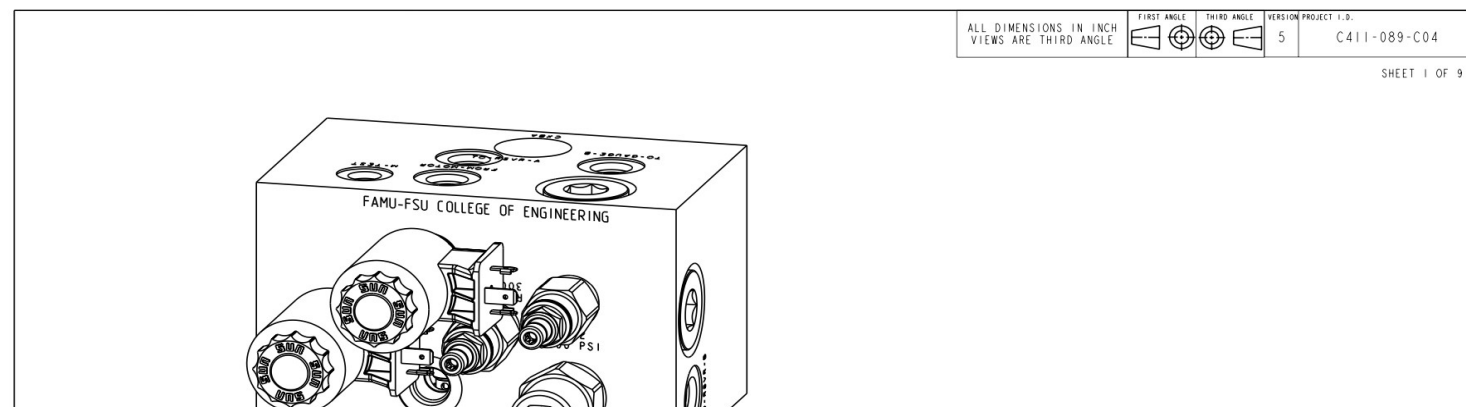
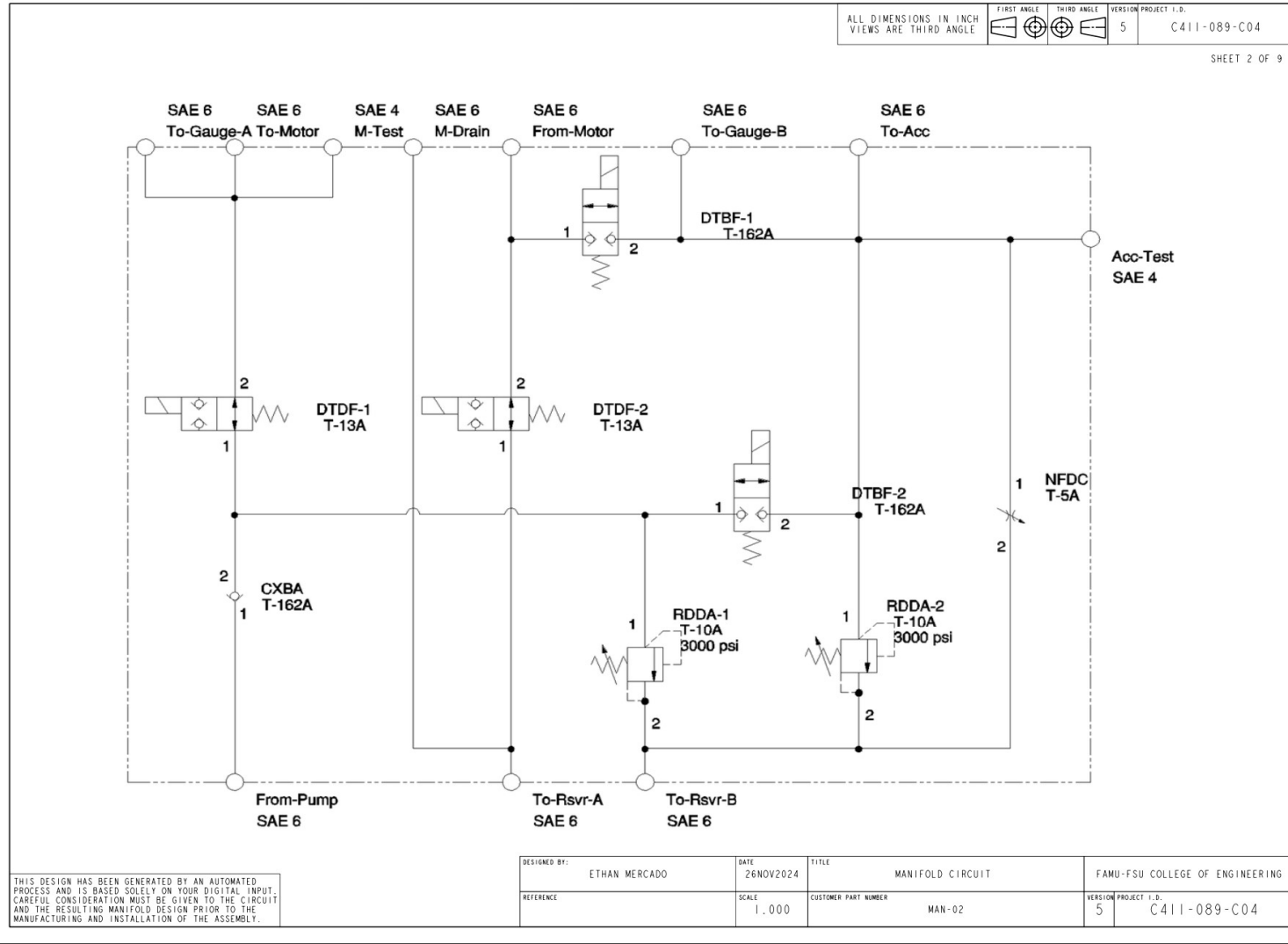
Your manifold will be shipped to you without valves or fittings installed. When designing your manifold please use valves that are located in the Valves and Accessories tab. You may use a mix of HYDAC and Sun Hydraulics valves. If you need to use a valve other than what is being offered please contact IFP prior to selecting. It is your responsibility to make sure that all necessary components are ordered for your manifold assembly (valves, coils, cables, fittings, etc).

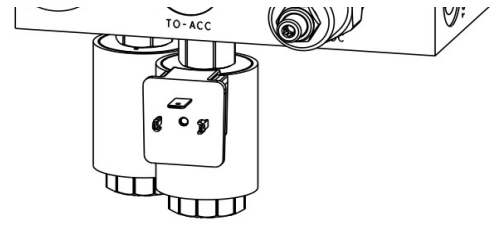


Discharge Mode

Direct with Boost

Accumulator Pressure Release





1. SAE PORTS ARE O-RING SEALING PER ISO 11926-1
2. MOUNTING THREADS .375-16 UNC x .75 IN. (19.1MM) DP.
3. COATING: NONE
4. COILS CAN BE ROTATED ABOUT THE CARTRIDGE AXIS TO EXPOSE STAMPING OR AVOID OTHER CARTRIDGES.

| QTY | PART NO. | SETTING | MATERIAL | PART NAME | QTY |
|-----|----------------|----------|------------------|-------------------------------------|-----|
| 1 | C411-089-C04-Q | | 6061-T6 ALUMINUM | BODY | 1 |
| 2 | DTDFXHN2120 | | | SOLENOID-OPERATED DIRECTIONAL VALVE | 2 |
| 3 | RDDA-LAN | 3000 PSI | | RELIEF VALVE | 2 |
| 4 | NFOCLAN | | | NEEDLE VALVE | 1 |
| 5 | A330-006-008 | | | SAE-8 PLUG | 1 |
| 6 | A330-006-006 | | | SAE-6 PLUG | 1 |
| 7 | DTBF-KCN2120 | | | SOLENOID-OPERATED DIRECTIONAL VALVE | 2 |
| 8 | A330-006-012 | | | SAE-12 PLUG | 2 |
| 9 | CKBA-XZN | | | CHECK VALVE | 1 |

THIS DESIGN HAS BEEN GENERATED BY AN AUTOMATED PROCESS AND IS BASED SOLELY ON YOUR DIGITAL INPUT. CAREFUL CONSIDERATION MUST BE GIVEN TO THE CIRCUIT AND THE RESULTING MANIFOLD DESIGN PRIOR TO THE MANUFACTURING AND INSTALLATION OF THE ASSEMBLY.

| | | | | | | | |
|--------------|---------------|--------|-----------|-----------------------|------------------|---------------------------------|----------------|
| DESIGNED BY: | ETHAN MERCADO | DATE: | 26NOV2024 | TITLE: | MANIFOLD CIRCUIT | FAMU-FSU COLLEGE OF ENGINEERING | |
| REFERENCE: | | SCALE: | 1.000 | CUSTOMER PART NUMBER: | MAN-02 | VERSION/PROJECT I.D.: | 5 C411-089-C04 |

ALL DIMENSIONS IN INCH
VIEWS ARE THIRD ANGLE

FIRST ANGLE THIRD ANGLE

VERSION PROJECT I.D. 5 C411-089-C04

SHEET 3 OF 9

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| 2 | 6 | 7 | 8 |
| 5 | 10 | | |

Face Legend

DESIGNED BY: ETHAN MERCADO

DATE: 26NOV2024

TITLE: MANIFOLD CIRCUIT

FAMU-FSU COLLEGE OF ENGINEERING

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|------------|------|
| REFERENCE: | 5.95 |
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| SCALE: | 0.540 |
| CUSTOMER PART NUMBER: | MAN-02 |

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| VERSION/PROJECT I.D.: | 5 C411-089-C04 |
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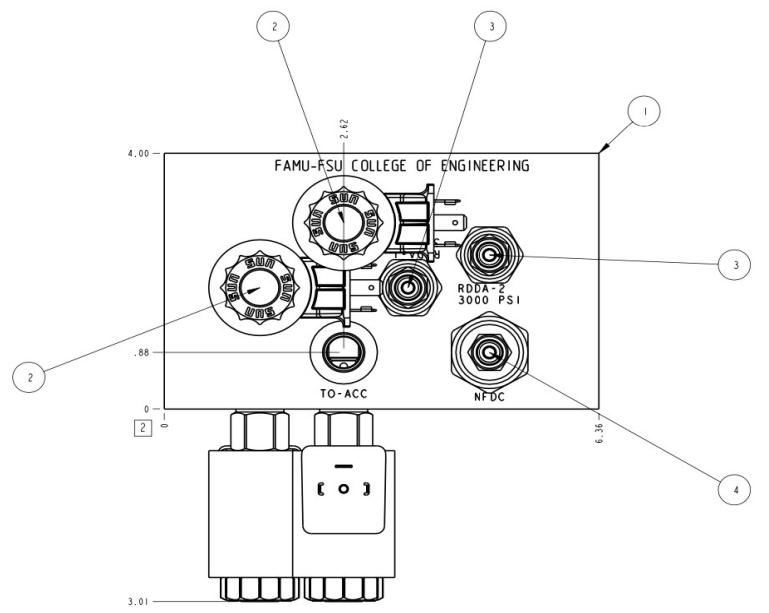
THIS DESIGN HAS BEEN GENERATED BY AN AUTOMATED PROCESS AND IS BASED SOLELY ON YOUR DIGITAL INPUT. CAREFUL CONSIDERATION MUST BE GIVEN TO THE CIRCUIT AND THE RESULTING MANIFOLD DESIGN PRIOR TO THE MANUFACTURING AND INSTALLATION OF THE ASSEMBLY.



SHEET 4 OF 9

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Face Legend



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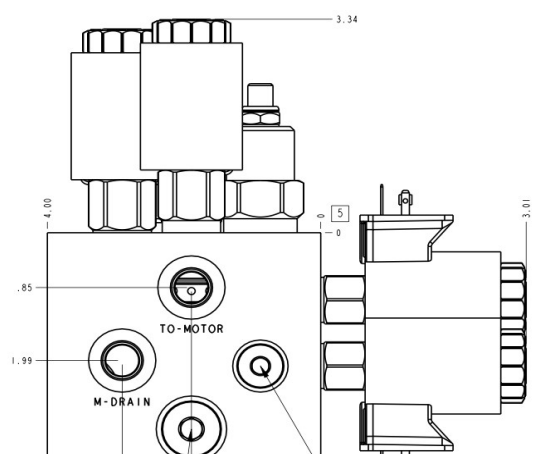
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| DESIGNED BY: | ETHAN MERCADO | DATE: | 26NOV2024 | TITLE: | MANIFOLD CIRCUIT | FAMU-FSU COLLEGE OF ENGINEERING |
| REFERENCE: | | SCALE: | 1.000 | CUSTOMER PART NUMBER: | MAN-02 | VERSION PROJECT I.D. |
| | | | | | | 5 C411-089-C04 |

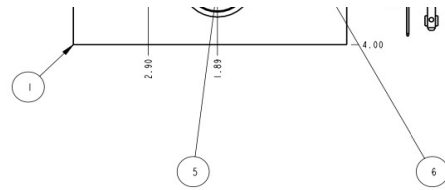


SHEET 5 OF 9

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Face Legend

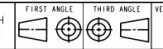




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| REFERENCE: | | SCALE: | 1.000 | CUSTOMER PART NUMBER: | MAN-02 | VERSION PROJECT I.D.: 5 C411-089-C04 |

ALL DIMENSIONS IN INCH
VIEWS ARE THIRD ANGLE

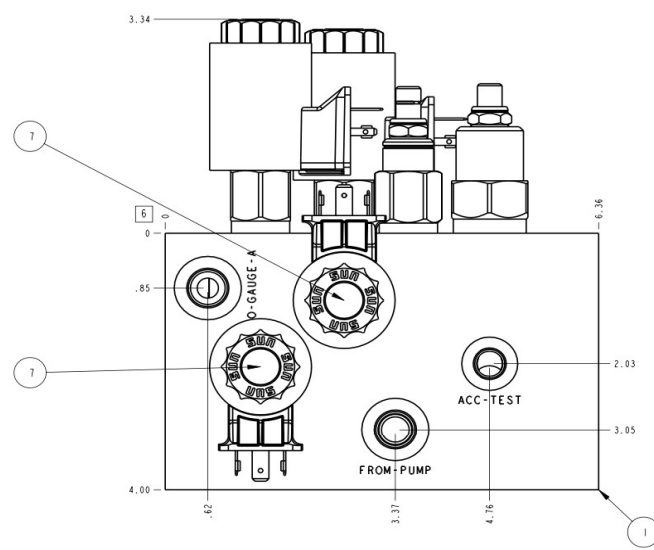


VERSION PROJECT I.D.:
5 C411-089-C04

SHEET 6 OF 9

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Face Legend



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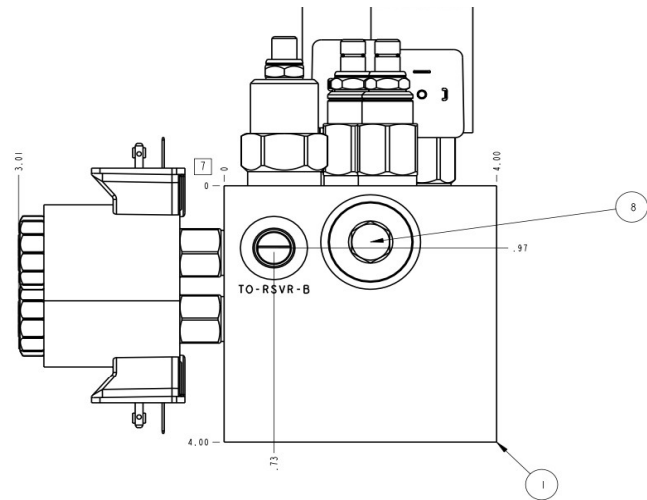
VERSION PROJECT I.D.:
5 C411-089-C04

SHEET 7 OF 9

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Face Legend





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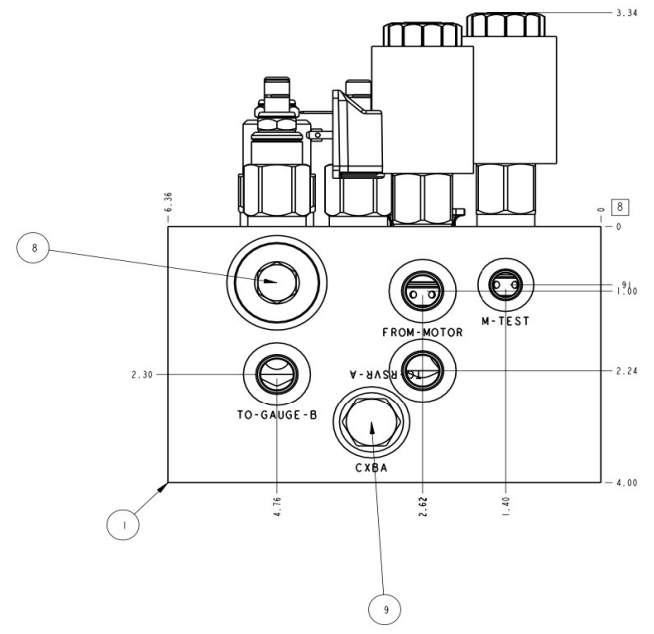


VERSION PROJECT I.D.:
5 C411-089-C04

SHEET 8 OF 9

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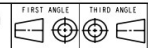
Face Legend



THIS DESIGN HAS BEEN GENERATED BY AN AUTOMATED PROCESS AND IS BASED SOLELY ON YOUR DIGITAL INPUT. CAREFUL CONSIDERATION MUST BE GIVEN TO THE CIRCUIT

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| DESIGNED BY: | ETHAN MERCADO | DATE: | 26NOV2024 | TITLE: | MANIFOLD CIRCUIT | FAMU-FSU COLLEGE OF ENGINEERING |
| REFERENCE: | | SCALE: | | CUSTOMER PART NUMBER: | | VERSION PROJECT I.D.: 5 C411-089-C04 |

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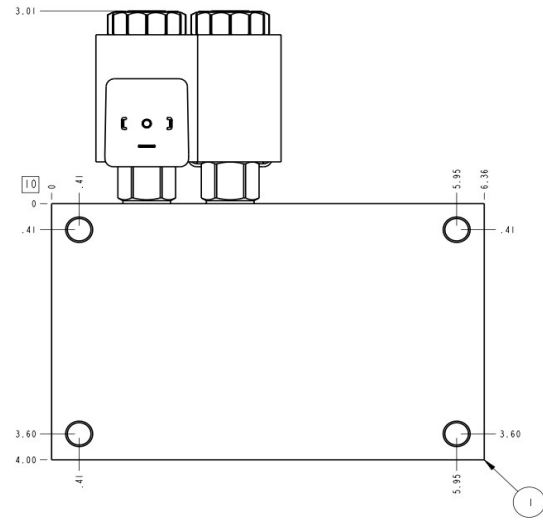


VERSION PROJECT I.D.
5 C411-089-C04

SHEET 9 OF 9

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Face Legend



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|-------------------------------|-------------------|--------------------------------|--|
| DESIGNED BY: ETHAN MERCADO | DATE 26NOV2024 | TITLE MANIFOLD CIRCUIT | FAMU-FSU COLLEGE OF ENGINEERING |
| REFERENCE | SCALE 1.000 | CUSTOMER PART NUMBER MAN-02 | VERSION PROJECT I.D. 5 C411-089-C04 |



NFPA Fluid Power Vehicle Challenge Order Form
2024-2025

Updated 9/11/2024

For product related questions or to place an order, contact: [Michael Gustafson](mailto:Michael.Gustafson@SunSrc.com) Michael.Gustafson@SunSrc.com

Instructions: When ordering parts, it is important to note when accessory items are required. For example, the SVP10-NOR-R00-00-B-00 solenoid cartridge valve must have one CP10-2-8S line body to install it into (unless it is used in a custom manifold, in which case a line body is not needed), plus one R16-type coil to actuate the valve. Click the link under "Reference Information" for additional information on each part.

NOTE: Teams MUST order at least ONE D1620-01-06SAE test point (listed under the SunSource donation items) and have it installed at the accumulator so that pressure can be checked by a judge during the competition using a gauge with a DGA1620-01 mating connector. Use of the mating connector and separate gauge by the team is optional, but suggested.

SunSource is offering these components for consideration in experimental projects. It is up to the team to review the technical data for each part to ensure it meets the needs of the application. For example, minimum rotation RPM on pumps and leakage rates through spool valves, among other technical specifications, need to be considered. While information has been provided in order to better identify potentially suitable product, it is up to the team to review the actual specification pages to ensure that all data is correct. In case a discrepancy is found, defer to the catalog information.

SunSource can provide parts not shown on this list. Please contact SunSource to determine a donation value or separate purchase price. Once the donation limit is surpassed SunSource will quote items and accept credit card orders.

While items highlighted green are preferred items that are typically stocked by SunSource, product availability is not guaranteed and should be confirmed at time of order.

| | |
|---------------------------|--|
| Order Date | 11/27/2024 |
| Name | Ethan Mercado |
| Department | |
| email Address | emm18b@fsu.edu |
| Phone Number | (757) 754-0620 |
| University | FAMU-FSU College of Engineering |
| Ship to Address | 5681 Rustic Dr |
| | |
| City | Tallahassee |
| State | Florida |
| Zip | 32303 |
| Ship to the attention of: | Trace Flowers |

| | | |
|------------------------|----------|---------------------------|
| Danfoss Value: | \$186.00 | \$4000 max combined value |
| SunSource/Other Value: | \$8.00 | \$1000 max |
| Total Value: | \$194.00 | \$5000 max total value |

GREEN = preferred item

| Item | Manufacturer | Part Number | Value | Quantity Requested | Extended Value | Line Body Required (if yes, refer to product specification tab and order separately. Not needed if a custom manifold is used.) | Other Accessories Required (if yes, refer to product specification tab) | Reference Information |
|---|------------------|------------------------|----------|--------------------|----------------|---|---|--|
| Accumulator, 1 gallon, SAE -20 port | Accumulators Inc | A13100-3 | \$907.00 | | | | D1620-01-06SAE | A13100-3 |
| Accumulator, 1 quart, SAE -12 port | Accumulators Inc | A1QT3100-3 | \$626.00 | | | | D1620-01-06SAE | A1QT3100-3 |
| Cartridge Valve, Check, 1 to 2, size 10 | Danfoss | CV10-NP-0.3-B-00 | \$14.00 | | | VC10-2 | | CV10-NP-0.3-B-00 |
| Cartridge Valve, Check, 1 to 2, size 16 | Danfoss | CV11-16-P-0.5 | \$37.00 | | | VC16-2 | | CV11-16-P-0.5 |
| Cartridge Valve, Check, 1 to 2, size 8 | Danfoss | CV08-NP-0.3-B-00 | \$12.00 | | | VC08-2 | | CV08-NP-0.3-B-00 |
| Cartridge Valve, Check, Pilot to open, Single Free flow 2-1 | Danfoss | 4SK303S | \$35.00 | | | T-11A | | 4SK303S |
| Cartridge Valve, Flow Control, Compensated | Danfoss | HFCV10-HRT-P-E-XXX-00 | \$87.00 | | | VC10-2 | | HFCV10-HRT-P-E-XXX-00 |
| Cartridge Valve, Flow Control, Needle Valve | Danfoss | FCV7-10-S-0-NV | \$31.00 | | | VC10-2 | | FCV7-10-S-0-NV |
| Cartridge Valve, Flow Control, Needle Valve | Danfoss | NV1-8-S-0 | \$29.00 | | | VC08-2 | | NV1-8-S-0 |
| Cartridge Valve, Flow Control, Needle Valve Free Flow 1-2 | Danfoss | FCV7-10-S-0-FF | \$43.00 | | | VC10-2 | | FCV7-10-S-0-FF |
| Cartridge Valve, Line Body, T-11A, Aluminum, SAE -8/-6 | SunSource | FV-9171-A | \$28.00 | | | | | FV-9171-A |
| Cartridge Valve, Line Body, VC08-2, Aluminum SAE -6 | Danfoss | CP08-2-6S | \$22.00 | | | | | CP08-2-6S |
| Cartridge Valve, Line Body, VC08-3, Aluminum SAE -6 | Danfoss | CP08-3-6S | \$31.00 | | | | | CP08-3-6S |
| Cartridge Valve, Line Body, VC10-2, Aluminum SAE -8 | Danfoss | CP10-2-8S | \$21.00 | | | | | CP10-2-8S |
| Cartridge Valve, Line Body, VC10-3, Aluminum SAE -8 | Danfoss | CP10-3-8S | \$25.00 | | | | | CP10-3-8S |
| Cartridge Valve, Line Body, VC10-4, Aluminum SAE -6 | Danfoss | CP10-4-8S | \$37.00 | | | | | CP10-4-8S |
| Cartridge Valve, Line Body, VC16-2, Aluminum SAE -16 | Danfoss | CP16-2-16S | \$33.00 | | | | | CP16-2-16S |
| Cartridge Valve, Manual, 2 pos. 2 way, normally closed | Danfoss | MPV1-10-K-0 | \$47.00 | | | VC10-2 | | MPV1-10-K-0 |
| Cartridge Valve, Pump Handle, Doering | Doering | 241016 | \$41.00 | | | | | 241016 |
| Cartridge Valve, Pump, Lever Operated, Push to pump, .601 CID | Doering | DCHP10230 | \$177.00 | | | VC10-2 | Pump Handle | DCHP10230 |
| Cartridge Valve, Reducing/relieving valve, direct acting | Danfoss | PRV1-10-S-0-6 | \$61.00 | | | VC10-3 | | PRV1-10-S-0-6 |
| Cartridge Valve, Relief, Direct Acting | Danfoss | RV1-10-S-0-36 | \$43.00 | | | VC10-2 | | RV1-10-S-0-36 |
| Cartridge Valve, Relief, Direct Acting, low pressure | Danfoss | RV10-10-S-0-5 | \$52.00 | | | VC10-2 | | RV10-10-S-0-5 |
| Cartridge Valve, Shuttle, High side, Ball type | Danfoss | CP128-1-B-0 | \$19.00 | | | VC08-3 | | CP128-1-B-0 |
| Cartridge Valve, Solenoid Coil, 12VDC Deutsch, P Type | Danfoss | 300AA00061A | \$19.00 | | | | Electrical Connector- SA-6707 | 300AA00061A |
| Cartridge Valve, Solenoid Coil, 12VDC Deutsch, R13 | Danfoss | R16-12D-20W-DE | \$21.00 | | | | Electrical Connector- SA-6707 | R16-12D-20W-DE |
| Cartridge Valve, Solenoid Coil, 24VDC Deutsch, P Type | Danfoss | 300AA00062A | \$19.00 | | | | Electrical Connector- SA-6707 | 300AA00062A |
| Cartridge Valve, Solenoid Coil, 24VDC Deutsch, R13 | Danfoss | R16-24D-20W-DE | \$21.00 | | | | Electrical Connector- SA-6707 | R16-24D-20W-DE |
| Cartridge Valve, Solenoid, 2 pos. 2 way Bi-poppet, normally Closed | Danfoss | SBV11-8-C-0-00 | \$85.00 | | | VC08-2 | Coil, "P" | SBV11-8-C-0-00 |
| Cartridge Valve, Solenoid, 2 pos. 2 way Bi-poppet, normally Open | Danfoss | SBV11-8-O-0-00 | \$92.00 | | | VC08-2 | Coil, "P" | SBV11-8-O-0-00 |
| Cartridge Valve, Solenoid, 2 pos. 2 way Uni-poppet Normally Open | Danfoss | SVP10-NOR-R00-00-B-00 | \$52.00 | | | VC10-2 | Coil, "R16" | SVP10-NOR-R00-00-B-00 |
| Cartridge Valve, Solenoid, 2 pos. 2 way Uni-poppet, normally Closed | Danfoss | SVP10-NCR-R00-00-B-00 | \$39.00 | | | VC10-2 | Coil, "R16" | SVP10-NCR-R00-00-B-00 |
| Cartridge Valve, Solenoid, 2 pos. 3 way Spool 1-2/1-3 | Danfoss | SV10-23-04-R00-00-B-00 | \$40.00 | | | VC10-3 | Coil, "R16" | SV10-23-04-R00-00-B-00 |
| Cartridge Valve, Solenoid, 2 pos. 4 way Spool 3-2,4-1 | Danfoss | SV10-24-01-R00-00-B-00 | \$46.00 | | | VC10-4 | Coil, "R16" | SV10-24-01-R00-00-B-00 |
| Cartridge Valve, Solenoid, 3 pos. 4 way (3 blocked, 2-4-1 connected in neutral) | Danfoss | SV10-34-05-R00-00-B-00 | \$82.00 | | | VC10-4 | Coil, "R16" (needs two) | SV10-34-05-R00-00-B-00 |
| Electrical Connector, Deutsch 2 pin (for coils) 24" leads | SunSource | SA-6707 | \$11.00 | | | | | SA-6707 |
| Electrical Connector, Deutsch 4 pin (for pressure transducers) | SunSource | SA-4104-KIT | \$4.00 | 2 | \$8.00 | | Requires cable- not included | SA-4104-KIT |
| Fitting, plug, -4 ORB male, external hex | Brennan | 6408-04-0 | \$1.00 | | | | | 6408-04-0 |

| Item | Manufacturer | Part Number | Value | Quantity Requested | Extended Value | Line Body Required (if yes, refer to product specification tab and order separately. Not needed if a custom manifold is used.) | Other Accessories Required (if yes, refer to product specification tab) | Reference Information |
|--|--------------|-----------------------|----------|--------------------|----------------|---|---|--|
| Fitting, plug, -6 ORB male, external hex | Brennan | 6408-06-O | \$1.00 | | | | | 6408-06-O |
| Fitting, plug, -8 ORB male, external hex | Brennan | 6408-08-O | \$1.00 | | | | | 6408-08-O |
| Fitting, straight, -4 JIC male to -4 SAE male adjustable | Brennan | 6400-04-04-O | \$1.00 | | | | | 6400-04-04-O |
| Fitting, straight, -6 JIC male to -6 SAE male adjustable | Brennan | 6400-06-06-O | \$2.00 | | | | | 6400-06-06-O |
| Fitting, straight, -6 JIC male to -8 SAE male adjustable | Brennan | 6400-06-08-O | \$2.00 | | | | | 6400-06-08-O |
| Fitting, straight, -8 JIC male to -8 SAE male adjustable | Brennan | 6400-08-08-O | \$2.00 | | | | | 6400-08-08-O |
| Fitting, 45 degree, -4 JIC male to -4 SAE male adjustable | Brennan | 6802-04-04-NWO-FG | \$4.00 | | | | | 6802-04-04-NWO-FG |
| Fitting, 45 degree, -6 JIC male to -6 SAE male adjustable | Brennan | 6802-06-06-NWO-FG | \$5.00 | | | | | 6802-06-06-NWO-FG |
| Fitting, 45 degree, -8 JIC male to -8 SAE male adjustable | Brennan | 6802-08-08-NWO-FG | \$6.00 | | | | | 6802-08-08-NWO-FG |
| Fitting, 90 degree, -4 JIC male to -4 SAE male adjustable | Brennan | 6801-04-04-NWO-FG | \$3.00 | | | | | 6801-04-04-NWO-FG |
| Fitting, 90 degree, -6 JIC male to -6 SAE male adjustable | Brennan | 6801-06-06-NWO-FG | \$4.00 | | | | | 6801-06-06-NWO-FG |
| Fitting, 90 degree, -8 JIC male to -8 SAE male adjustable | Brennan | 6801-08-08-NWO-FG | \$5.00 | | | | | 6801-08-08-NWO-FG |
| Fitting, 45 degree, -4 JIC male to -4 JIC female swivel | Brennan | 6502-04-04-FG | \$4.00 | | | | | 6502-04-04-FG |
| Fitting, 45 degree, -6 JIC male to -6 JIC female swivel | Brennan | 6502-06-06-FG | \$5.00 | | | | | 6502-06-06-FG |
| Fitting, 45 degree, -8 JIC male to -8 JIC female swivel | Brennan | 6502-08-08-FG | \$5.00 | | | | | 6502-08-08-FG |
| Fitting, 90 degree, -4 JIC male to -4 JIC female swivel | Brennan | 6500-04-04-FG | \$3.00 | | | | | 6500-04-04-FG |
| Fitting, 90 degree, -6 JIC male to -6 JIC female swivel | Brennan | 6500-06-06-FG | \$4.00 | | | | | 6500-06-06-FG |
| Fitting, 90 degree, -8 JIC male to -8 JIC female swivel | Brennan | 6500-08-08-FG | \$5.00 | | | | | 6500-08-08-FG |
| Fitting, "T", -4 JIC male - JIC female swivel - JIC male | Brennan | 6602-04-04-04-FG | \$5.00 | | | | | 6602-04-04-04-FG |
| Fitting, "T", -6 JIC male - JIC female swivel - JIC male | Brennan | 6602-06-06-06-FG | \$6.00 | | | | | 6602-06-06-06-FG |
| Fitting, "T", -8 JIC male - JIC female swivel - JIC male | Brennan | 6602-08-08-08-FG | \$7.00 | | | | | 6602-08-08-08-FG |
| Fitting, straight reducer, -8 JIC female to -6 JIC male | Brennan | 2406-08-06 | \$4.00 | | | | | 2406-08-06 |
| Fitting, Test Point- Accumulator Side, SAE -6 Male, M16-2 test thru | Dynamic FCI | D1620-01-06SAE | \$21.00 | | | | Test Point- Gauge Side | D1620-01-06SAE |
| Fitting, Test Point- Gauge Side, 1/4" NPT Female. | Dynamic FCI | DGA1620-01 | \$47.00 | | | | | DGA1620-01 |
| Gauge, 0-3000 PSI, 1/4" NPT male stem, 2-1/2" diameter. | Dynamic FCI | CF-1P-210-A | \$20.00 | | | | | CF-1P-210-A |
| Gauge, 0-3000 PSI, SAE -4 male adjustable stem, 2-1/2" diameter. | Dynamic FCI | CF-1P-210-A-SAE | \$28.00 | | | | | CF-1P-210-A-SAE |
| Motor, Gear, 0.513 CID, Keyed Shaft .625", Bi-rotation, external drain | Danfoss | 121.20.096.00 | \$359.00 | | | | | SNM2NN-/8.0-B-N-06-GA-M6-E5-E5-NN-N-N/-NNN-N-N |
| Motor, Gear, 0.659 CID, Keyed Shaft .625", Bi-rotation, external drain | Danfoss | 121.20.043.00 | \$365.00 | | | | | SNM2NN-/011-B-N-06-GA-M6-E5-E5-NN-N-N/-NNN-N-N |
| Motor, Gear, 1.025 CID, Keyed Shaft .625", Bi-rotation, external drain | Danfoss | 121.20.045.00 | \$405.00 | | | | | SNM2NN-/017-B-N-06-GA-M6-E5-E5-NN-N-N/-NNN-N-N |
| Pump, Gear, 0.39 CID, 9 tooth spline, CCW rotation | Danfoss | 111.20.347.00 | \$281.00 | | | | | SNP2NN-/6.0-L-N-06-SA-P1-E6-E5-NN-N-N/-NNN-N-N |
| Pump, Gear, 0.39 CID, Keyed Shaft .625", CW rotation | Danfoss | 111.20.370.00 | \$281.00 | | | | | SNP2NN-/6.0-R-N-06-GA-P1-E6-E5-NN-N-N/-NNN-N-N |
| Pump, Gear, 0.39 CID, 9 tooth spline, CW rotation | Danfoss | 111.20.346.00 | \$281.00 | | | | | SNP2NN-/6.0-R-N-06-SA-P1-E6-E5-NN-N-N/-NNN-N-N |
| Pump, Gear, 0.513 CID, 9 tooth spline, CCW rotation | Danfoss | 111.20.349.00 | \$287.00 | | | | | SNP2NN-/8.0-L-N-06-SA-P1-E6-E5-NN-N-N/-NNN-N-N |
| Pump, Gear, 0.513 CID, 9 tooth spline, CW rotation | Danfoss | 111.20.348.00 | \$287.00 | | | | | SNP2NN-/8.0-R-N-06-SA-P1-E6-E5-NN-N-N/-NNN-N-N |
| Pump, Gear, 0.513 CID, Keyed Shaft .625", CW rotation | Danfoss | 111.20.372.00 | \$287.00 | | | | | SNP2NN-/8.0-R-N-06-GA-P1-E6-E5-NN-N-N/-NNN-N-N |
| Pump, Gear, 0.659 CID, 9 tooth spline, CCW rotation | Danfoss | 111.20.131.00 | \$293.00 | | | | | SNP2NN-/011-L-N-06-SA-P1-E6-E5-NN-N-N/-NNN-N-N |
| Pump, Gear, 0.659 CID, 9 tooth spline, CW rotation | Danfoss | 111.20.130.00 | \$293.00 | | | | | SNP2NN-/011-R-N-06-SA-P1-E6-E5-NN-N-N/-NNN-N-N |
| Pump, Gear, 0.659 CID, Keyed Shaft .625", CW rotation | Danfoss | 111.20.243.00 | \$293.00 | | | | | SNP2NN-/011-R-N-06-GA-P1-E6-E5-NN-N-N/-NNN-N-N |
| Transducer, 0-3626 PSI, SAE -6 | Danfoss | 11044547 | \$93.00 | 2 | \$186.00 | | Electrical Connector- Deutsch | 11044547 |
| Transducer, 0-580 PSI, SAE -6 | Danfoss | 11044545 | \$93.00 | | | | Electrical Connector- Deutsch | 11044545 |