



## CAMPBELL FITTINGS COUPLING SELECTION GUIDE

All Campbell couplings, fittings, ferrules and sleeves are engineered as integrated components to provide measurable and repeatable performance for the safest hose systems in the industry.

***Campbell Crimpnology: it's all about the technology!***

| Ratings Chart: maximum system working pressure @ 70F. See temperature de-ratings on page 4. |                   |             |           |      |      |       |       |      |       |      |     |     |     |     |     |     |
|---|-------------------|-------------|-----------|------|------|-------|-------|------|-------|------|-----|-----|-----|-----|-----|-----|
| Hose System Components  |                   |             | Hose Size |      |      |       |       |      |       |      |     |     |     |     |     |     |
| Fitting/Coupling  | Attachment        | Hose Type   | 1/2       | 3/4  | 1    | 1-1/4 | 1-1/2 | 2    | 2-1/2 | 3    | 4   | 5   | 6   | 8   | 10  | 12  |
| Combination Nipple  | Short Sleeve      | Rubber      | 400       | 350  | 300  | 275   | 250   | 225  | 225   | 225  | 175 | 175 | 175 | 150 | 125 | 100 |
| Combination Nipple  | Short Sleeve      | Chemical    | 200       | 200  | 200  | 140   | 130   | 120  | 110   | 100  | 50  | -   | -   | -   | -   | -   |
| Combination Nipple  | Short Sleeve      | PVC         | 150       | 125  | 100  | 90    | 85    | 65   | 60    | 55   | 40  | -   | 30  | 20  | -   | -   |
| Suction Coupling (domestic)   | Short Sleeve      | Rubber      | -         | -    | -    | 275   | 250   | 225  | 210   | 200  | 175 | -   | 150 | 100 | -   | -   |
| Suction Coupling (domestic)   | Short Sleeve      | PVC         | -         | -    | -    | 90    | 85    | 65   | 60    | 55   | 40  | -   | 30  | 20  | -   | -   |
| Ball & Socket Coupling*   | Short Sleeve      | Rubber      | -         | -    | -    | -     | -     | 300  | -     | 250  | 225 | -   | 140 | 60  | -   | -   |
| Ball & Socket Coupling*   | Short Sleeve      | PVC         | -         | -    | -    | -     | -     | 170  | -     | 140  | 100 | -   | 80  | 50  | -   | -   |
| Crimpology Nipple   | Ferrule           | Chem/Rubber | -         | -    | 500  | 350   | 325   | 300  | 275   | 250  | 250 | 250 | 225 | 175 | -   | -   |
| Crimpology Nipple   | Ferrule           | Soft        | -         | -    | 200  | 175   | 150   | 150  | 125   | 100  | 75  | 65  | 50  | 20  | -   | -   |
| Long Crimpology Nipple  | Long Ferrule      | Rubber      | -         | -    | -    | -     | 1000  | 1000 | 650   | 600  | 500 | 400 | -   | -   | -   | -   |
| Crimpology Nipple Swivel  | Ferrule           | Chem/Rubber | -         | 500  | 500  | -     | -     | -    | -     | -    | -   | -   | -   | -   | -   | -   |
| Long Crimpology Nipple Swivel   | Long Ferrule      | Chem/Rubber | -         | -    | -    | 500   | 500   | 500  | -     | -    | -   | -   | -   | -   | -   | -   |
| Crimpology Flange (steel)   | Ferrule           | Chem/Rubber | -         | -    | -    | -     | 285   | 285  | 275   | 250  | 250 | -   | 225 | 175 | -   | -   |
| Crimpology Flange (ss)  | Ferrule           | Chem/Rubber | -         | -    | -    | -     | 230   | 230  | 230   | 230  | 230 | -   | 225 | -   | -   | -   |
| FRAC-16C  | Frac Ferrule      | Rubber      | -         | -    | -    | -     | -     | -    | -     | -    | 400 | -   | -   | -   | -   | -   |
| 100/206 Hose Union (forged steel)   | Ferrule           | Rubber      | -         | -    | -    | -     | -     | 500  | -     | 500  | -   | -   | -   | -   | -   | -   |
| Insta-Lock  | Ferrule           | Chem/Rubber | 250       | 250  | 250  | 250   | 250   | 250  | 150   | 150  | 150 | 75  | 75  | -   | -   | -   |
| Campbell Cobra SS C&G   | Ferrule           | Chem/Rubber | -         | -    | 250  | -     | 250   | 250  | 150   | 150  | 125 | -   | -   | -   | -   | -   |
| Campbell Cobra AL C&G   | Ferrule           | Chem/Rubber | -         | -    | -    | -     | 250   | 200  | 150   | 125  | 75  | -   | 75  | -   | -   | -   |
| Viton Ground Joint/<br>Air Hammer/Male Stem   | U-Bolt Clamp      | Steam       | 1500      | 1250 | 1250 | 1250  | 1250  | 1250 | 800   | 500  | 500 | -   | 300 | -   | -   | -   |
| Viton Ground Joint/<br>Air Hammer/Male Stem   | Long Ferrule      | Rubber      | 1000      | 1000 | 1000 | 1000  | 1000  | 1000 | 650   | 500  | 500 | -   | -   | -   | -   | -   |
| HeatWave Coupling/HW Male   | Staked-on Ferrule | Rubber      | -         | -    | -    | -     | -     | call | -     | call | -   | -   | -   | -   | -   | -   |
| UniversaLock  | Ferrule           | Air         | 300       | 300  | 300  | -     | -     | -    | -     | -    | -   | -   | -   | -   | -   | -   |
| Universal   | Ferrule           | Air         | 150       | 150  | 150  | -     | -     | -    | -     | -    | -   | -   | -   | -   | -   | -   |
| Single-Lock Coupling  | Ferrule           | Air         | 300       | 300  | 300  | -     | -     | -    | -     | -    | -   | -   | -   | -   | -   | -   |
| Double-Lock Coupling  | Ferrule           | Air         | 300       | 300  | 300  | -     | -     | -    | -     | -    | -   | -   | -   | -   | -   | -   |
| ChemJoint/Male Stem   | Ferrule           | Chemical    | 350       | 400  | 450  | 325   | 250   | 250  | 225   | 225  | 200 | -   | -   | -   | -   | -   |
| ChemJoint/Male Stem   | Ferrule           | Rubber      | 350       | 400  | 450  | 425   | 400   | 350  | 325   | 300  | 250 | -   | -   | -   | -   | -   |
| Tri-Clamp   | Ferrule           | Sanitary    | -         | -    | 500  | -     | 450   | 350  | 325   | 300  | -   | -   | -   | -   | -   | -   |
| Tri-Clamp   | Mach. Ferrule     | Sanitary    | -         | -    | 500  | -     | 500   | 400  | 375   | 350  | -   | -   | -   | -   | -   | -   |
| Wine Fitting  | Ferrule           | Sanitary    | -         | -    | -    | -     | 450   | 350  | -     | 300  | -   | -   | -   | -   | -   | -   |
| Wine Fitting  | Band Clamps       | Sanitary    | -         | -    | -    | -     | 100   | 100  | -     | 50   | -   | -   | -   | -   | -   | -   |

\*\* Ball & Socket pressure ratings are based on 1.5x WP

### How Campbell determines Performance Ratings:

Campbell combines two sets of industry standards to establish performance and safety.

1. Performance is established by hydrostatic burst testing hose systems to the ASTM D380 standard.
2. Safety is established by using the RMA safety factor of 3x, 4x, 5x or 10x, depending upon the hose application.

That means when we say our air hose couplings are rated to 1000 psi., then you know they've been tested to beyond 4000 psi. (many times).

## Working pressure and the effects of elevated temperature

The effect of high temperature on any hose system is significant and often overlooked. Since the lay line of most hoses indicates the maximum WP **and** the maximum temperature, it can be assumed the hose assembly can achieve both at the same time. When hot, hoses get softer and more pliable, hampering the ability of the attachment, whether it is a band clamp, bolt clamp or crimped ferrule, to hold the couplings securely on the hose. Since all pressure ratings are established by testing at 70F, Campbell established a pressure de-rating chart.

Below is an example of an elevated temperature test.

| Hose Type               | 70F  | 90F  | 150F | 200F | 250F | 300F | 350F | 400F | 450F |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Steam, Hot Tar, Asphalt | 1.00 | 0.95 | 0.81 | 0.68 | 0.56 | 0.44 | 0.32 | 0.20 | 0.08 |
| PVC                     | 1.00 | 0.82 | 0.30 | n/r  | n/r  | n/r  | n/r  | n/r  | n/r  |
| All Other               | 1.00 | 0.91 | 0.64 | 0.42 | 0.20 | n/r  | n/r  | n/r  | n/r  |



### HYDROSTATIC TEST REPORT - by EMS

**Hose:** Chemical: 3" Goodyear Viper rated to 200 psi.  
**Couplings:** Male thread: 3" Campbell Crimpnology nipples - coupling/ferrule system rated to 250 psi.  
**Attachment:** Crimped: stainless steel ferrules  
**Goal:** Test hose at 180F, verify de-rating factor of .51 (250 x 4 x .51 = 510 psi.)  
**Results:** Hose burst at 689 psi. (both hose and couplings exceeded 4 times de-rated WP)

## Crimp procedures: how to get a perfect crimp in 3 easy steps!

Campbell publishes procedures and crimp specifications for all Campbell products (sample page below) and provides extensive on-sight crimp training.

1. Measure the hose wall (hose wall is easier to measure and more accurate than OD measurement).
2. Based on that measurement, use the **Crimpology Chart** (abbreviated below) to identify the ferrule or sleeve and precise crimp specification for the appropriate fitting.
3. Crimp your assembly into a perfect **system!**



| Hose wall (in) | Hose OD (in) | 1"                |           |         |      | Hose OD (in) | 1 1/2"            |           |         |      | Hose OD (in) | 2"                |           |         |      |
|----------------|--------------|-------------------|-----------|---------|------|--------------|-------------------|-----------|---------|------|--------------|-------------------|-----------|---------|------|
|                |              | Ferrule Selection | Crimp Dia |         |      |              | Ferrule Selection | Crimp Dia |         |      |              | Ferrule Selection | Crimp Dia |         |      |
|                |              |                   | (in)      | (in)    | (mm) |              |                   | (in)      | (in)    | (mm) |              |                   | (in)      | (in)    | (mm) |
| 0.125          |              |                   |           |         |      | 1-48/64      | FxS150160         | 1.862     | 1-55/64 | 47.3 |              |                   |           |         |      |
| 0.133          |              |                   |           |         |      | 1-49/64      | FxS150160         | 1.874     | 1-56/64 | 47.6 |              |                   |           |         |      |
| 0.141          |              |                   |           |         |      | 1-50/64      | FxS150160         | 1.886     | 1-57/64 | 47.9 | 2-18/64      | FxS200232         | 2.416     | 2-27/64 | 61.4 |
| 0.148          |              |                   |           |         |      | 1-51/64      | FxS150160         | 1.899     | 1-58/64 | 48.2 | 2-19/64      | FxS200232         | 2.429     | 2-27/64 | 61.7 |
| 0.156          |              |                   |           |         |      | 1-52/64      | FxS150160         | 1.911     | 1-58/64 | 48.5 | 2-20/64      | FxS200232         | 2.441     | 2-28/64 | 62.0 |
| 0.164          | 1-21/64      | FxS100132         | 1.403     | 1-26/64 | 35.6 | 1-53/64      | FxS150160         | 1.923     | 1-59/64 | 48.8 | 2-21/64      | FxS200232         | 2.453     | 2-29/64 | 62.3 |
| 0.172          | 1-22/64      | FxS100132         | 1.416     | 1-27/64 | 36.0 | 1-54/64      | FxS150160         | 1.936     | 1-60/64 | 49.2 | 2-22/64      | FxS200232         | 2.466     | 2-30/64 | 62.6 |
| 0.180          | 1-23/64      | FxS100132         | 1.428     | 1-27/64 | 36.3 | 1-55/64      | FxS150160         | 1.948     | 1-61/64 | 49.5 | 2-23/64      | FxS200232         | 2.478     | 2-31/64 | 62.9 |
| 0.188          | 1-24/64      | FxS100132         | 1.440     | 1-28/64 | 36.6 | 1-56/64      | FxS150200         | 1.960     | 1-61/64 | 49.8 | 2-24/64      | FxS200232         | 2.490     | 2-31/64 | 63.2 |
| 0.195          | 1-25/64      | FxS100132         | 1.453     | 1-29/64 | 36.9 | 1-57/64      | FxS150200         | 1.973     | 1-62/64 | 50.1 | 2-25/64      | FxS200232         | 2.503     | 2-32/64 | 63.6 |
| 0.203          | 1-26/64      | FxS100132         | 1.465     | 1-30/64 | 37.2 | 1-58/64      | FxS150200         | 1.985     | 1-63/64 | 50.4 | 2-26/64      | FxS200236         | 2.515     | 2-33/64 | 63.9 |
| 0.211          | 1-27/64      | FxS100132         | 1.477     | 1-31/64 | 37.5 | 1-59/64      | FxS150200         | 1.997     | 2       | 50.7 | 2-27/64      | FxS200236         | 2.527     | 2-34/64 | 64.2 |
| 0.219          | 1-28/64      | FxS100132         | 1.490     | 1-31/64 | 37.8 | 1-60/64      | FxS150204         | 2.010     | 2- 1/64 | 51.1 | 2-28/64      | FxS200236         | 2.540     | 2-35/64 | 64.5 |
| 0.227          | 1-29/64      | FxS100136         | 1.502     | 1-32/64 | 38.2 | 1-61/64      | FxS150204         | 2.022     | 2- 1/64 | 51.4 | 2-29/64      | FxS200236         | 2.552     | 2-35/64 | 64.8 |
| 0.234          | 1-30/64      | FxS100136         | 1.514     | 1-33/64 | 38.5 | 1-62/64      | FxS150204         | 2.034     | 2- 2/64 | 51.7 | 2-30/64      | FxS200240         | 2.564     | 2-36/64 | 65.1 |
| 0.242          | 1-31/64      | FxS100136         | 1.527     | 1-34/64 | 38.8 | 1-63/64      | FxS150204         | 2.047     | 2- 3/64 | 52.0 | 2-31/64      | FxS200240         | 2.577     | 2-37/64 | 65.5 |
| 0.250          | 1-32/64      | FxS100136         | 1.539     | 1-34/64 | 39.1 | 2            | FxS150208         | 2.059     | 2- 4/64 | 52.3 | 2-32/64      | FxS200240         | 2.589     | 2-38/64 | 65.8 |
| 0.258          | 1-33/64      | FxS100140         | 1.551     | 1-35/64 | 39.4 | 2- 1/64      | FxS150208         | 2.071     | 2- 5/64 | 52.6 | 2-33/64      | FxS200240         | 2.601     | 2-38/64 | 66.1 |
| 0.266          | 1-34/64      | FxS100140         | 1.564     | 1-36/64 | 39.7 | 2- 2/64      | FxS150208         | 2.084     | 2- 5/64 | 52.9 | 2-34/64      | FxS200244         | 2.614     | 2-39/64 | 66.4 |
| 0.273          | 1-35/64      | FxS100140         | 1.576     | 1-37/64 | 40.0 | 2- 3/64      | FxS150208         | 2.096     | 2- 6/64 | 53.2 | 2-35/64      | FxS200244         | 2.626     | 2-40/64 | 66.7 |
| 0.281          | 1-36/64      | FxS100140         | 1.588     | 1-38/64 | 40.3 | 2- 4/64      | FxS150212         | 2.108     | 2- 7/64 | 53.5 | 2-36/64      | FxS200244         | 2.638     | 2-41/64 | 67.0 |
| 0.289          | 1-37/64      | FxS100144         | 1.601     | 1-38/64 | 40.7 | 2- 5/64      | FxS150212         | 2.121     | 2- 8/64 | 53.9 | 2-37/64      | FxS200244         | 2.651     | 2-42/64 | 67.3 |
| 0.297          | 1-38/64      | FxS100144         | 1.613     | 1-39/64 | 41.0 | 2- 6/64      | FxS150212         | 2.133     | 2- 9/64 | 54.2 | 2-38/64      | FxS200248         | 2.663     | 2-42/64 | 67.6 |
| 0.305          | 1-39/64      | FxS100144         | 1.625     | 1-40/64 | 41.3 | 2- 7/64      | FxS150212         | 2.145     | 2- 9/64 | 54.5 | 2-39/64      | FxS200248         | 2.675     | 2-43/64 | 67.9 |
| 0.313          | 1-40/64      | FxS100144         | 1.638     | 1-41/64 | 41.6 | 2- 8/64      | FxS150216         | 2.158     | 2-10/64 | 54.8 | 2-40/64      | FxS200248         | 2.688     | 2-44/64 | 68.3 |
| 0.320          | 1-41/64      | FxS100148         | 1.650     | 1-42/64 | 41.9 | 2- 9/64      | FxS150216         | 2.170     | 2-11/64 | 55.1 | 2-41/64      | FxS200248         | 2.700     | 2-45/64 | 68.6 |
| 0.328          | 1-42/64      | FxS100148         | 1.662     | 1-42/64 | 42.2 | 2-10/64      | FxS150216         | 2.182     | 2-12/64 | 55.4 | 2-42/64      | FxS200252         | 2.712     | 2-46/64 | 68.9 |
| 0.336          | 1-43/64      | FxS100148         | 1.675     | 1-43/64 | 42.5 | 2-11/64      | FxS150216         | 2.195     | 2-12/64 | 55.8 | 2-43/64      | FxS200252         | 2.725     | 2-46/64 | 69.2 |
| 0.344          | 1-44/64      | FxS100148         | 1.687     | 1-44/64 | 42.8 | 2-12/64      | FxS150220         | 2.207     | 2-13/64 | 56.1 | 2-44/64      | FxS200252         | 2.737     | 2-47/64 | 69.5 |
| 0.352          | 1-45/64      | FxS100152         | 1.699     | 1-45/64 | 43.2 | 2-13/64      | FxS150220         | 2.219     | 2-14/64 | 56.4 | 2-45/64      | FxS200252         | 2.749     | 2-48/64 | 69.8 |
| 0.359          | 1-46/64      | FxS100152         | 1.712     | 1-46/64 | 43.5 | 2-14/64      | FxS150220         | 2.232     | 2-15/64 | 56.7 | 2-46/64      | FxS200256         | 2.762     | 2-49/64 | 70.2 |
| 0.367          | 1-47/64      | FxS100152         | 1.724     | 1-46/64 | 43.8 | 2-15/64      | FxS150220         | 2.244     | 2-16/64 | 57.0 | 2-47/64      | FxS200256         | 2.774     | 2-50/64 | 70.5 |
| 0.375          | 1-48/64      | FxS100152         | 1.737     | 1-47/64 | 44.1 | 2-16/64      | FxS150224         | 2.257     | 2-16/64 | 57.3 | 2-48/64      | FxS200256         | 2.787     | 2-50/64 | 70.8 |

## Test reports: example of full engineering test report



### HYDROSTATIC TEST REPORT

**Hose:** Chemical: 2" Goodyear Viper rated to 200 psi.  
**Couplings:** Cam & Groove: 2" Campbell Cobra stainless steel parts C x E - coupling/ferrule system rated to 250 psi. WP  
**Attachment:** Crimped: stainless steel ferrules  
**Goal:** Burst hose beyond 800 psi. (hose WP of 200 psi. @ 4 to 1 Safety Factor)  
**Results:** Hose burst at 1190 psi. (both hose and couplings exceeded 4 times WP)

All tests are conducted to ASTM (American Society of Testing Materials) D380 standards. See engineering details below.

**End connection #1:** Assembled by Campbell, C-316-200C, 2" Campbell Cobra stainless part C interlocking hose coupler with a FSS200240 stainless steel ferrule. The hose wall on this end measured between .276" and .312" for a .294" average. The current crimp chart due to expire on 12-31-8 was referenced and interpolated for a crimp of 2.589". This end was crimped to 2.589" on a Uniflex S10i using 62 dies. This end was connected to an A-SS-200 2" female NPT part A with a 2 X 1" reducing bushing with a GMS-4 1" male spud through our tester ground joint style connection. Teflon tape and pipe dope was used on the NPT threads. The tester nut was hand tight. See first connection photo.

**End connection #2:** Assembled by Campbell, E-316-200C, a new 2" Campbell Cobra stainless part E interlocking hose adapter with a FSS200240 stainless steel ferrule as above. The hose wall on this end measured between .268" and .298" for a .283" average. The same chart was interpolated for a crimp of 2.571" using the same crimper and dies. This end was connected to a previously used B-316-200 2" male NPT coupler with a 2" female valve adapter with valve attached. Teflon tape and pipe dope was used on the NPT threads. See second connection photo.

**Test:** The assembly was filled with water and air was evacuated from the system by use of the valve at the free end. Due to a slightly cool room and component temperatures, warm water of about 71°F was flowed through the assembly for about 20 minutes to get an assembly test temperature of 70° F. See inlet temp and in tester photos. The assembly was made up and crimped 24 hours before the test. The cam and groove parts were put together just before going in the tester.

Because of the straightness of the hose as seen in the in tester photo, elongation measurements were made at 0, 200, 400, 600, 800 & 1000 psi and were 34", 34 1/2", 35 1/2", 36 1/4", 37" & 37 1/2" respectfully. The hose did exhibit 3 1/2" max elongation (at the 1000 psi) from the original 14" exposed length, which calculates to a 25% elongation.

Pressure was raised steadily until the hose failed in the middle of the exposed length of hose, see burst photo and close up photo. **The highest pressure recorded was 1190 psi.**, see peak photo. There was no movement or leaks detected until the hose failed. The first end showed about 1/32" of the hose elongation between the ferrule and fitting, see first end photo. The second end showed no elongation between the fitting and ferrule, see second end photo. Neither end had any movement of the end of the hose under the ferrule.

Prepared by Randi Kremer, Engineer, Campbell Fittings Inc.

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## Test reports *continued*: abbreviated reports and results

Campbell engineering has conducted hundreds of hydrostatic tests. The following are results from several popular products. Please contact our customer support team to receive test reports on other Campbell products.



### HYDROSTATIC TEST REPORT

**Hose**  
**Fuel drop:** 3" ContiTech (GY) Infinity rated to 100 psi.  
**Couplings**  
**Cam & Groove:** 3" Campbell Cobra aluminum C x E  
- coupling/sleeve system rated to 75 psi. WP  
**Attachment**  
**Crimped:** Aluminum Sleeves  
**Goal**  
Burst hose beyond 400 psi. (hose WP of 100 psi. @ 4 to 1 Safety Factor)  
**Results**  
Hose burst at 508 psi. (system exceeded 4x WP)



### HYDROSTATIC TEST REPORT

**Hose**  
**Chemical:** 2" ContiTech (GY) XLPE rated to 150 psi.  
**Couplings**  
**ChemJoint®:** 2" male x female  
- coupling/ferrule system rated to 250 psi. WP (swivel nut tightened by hand)  
**Attachment**  
**Crimped:** Stainless Steel Ferrules  
**Goal**  
Burst hose beyond 600 psi. (hose WP of 150 psi. @ 4 to 1 Safety Factor)  
**Results:**  
Hose burst at 1426 psi. (system exceeded 4x WP)



### HYDROSTATIC TEST REPORT

**Hose**  
**Oilfield:** 4" ContiTech (GY) FRAC Blender Hose rated to 400 psi.  
**Couplings**  
**Crimpnology Nipple:** 4" FRAC-16 both ends\*  
- fitting/ferrule system rated to 400 psi WP  
**Attachment**  
**Crimped:** Campbell Frac Ferrules, Plated Steel  
**Goal**  
Burst hose beyond 1600 psi. (hose WP of 400 psi. @ 4 to 1 Safety Factor)  
**Results**  
Hose burst at 1715 psi. (exceeded 4x WP)

\* NOTE: similar successful results have been achieved with the Campbell "one-piece" 206 union manufactured with the same hose shank design for the same application.



### HYDROSTATIC TEST REPORT

**Hose**  
**High pressure air:** 3" Boston Bulldog Gold HP Air Hose rated to 600 psi.  
**Couplings**  
**Ground Joint/Male Stem:** 3" Heat Wave® male stem on both ends  
- coupling/ferrule system rated to 600 psi WP  
**Attachment**  
**Crimped:** Staked-on Ferrule  
**Goal**  
Burst hose beyond 2400 psi. at 200°F (hose WP of 600 psi. @ 4 to 1 Safety Factor)  
**Results**  
Hose burst at 3539 psi. at 200°F (system exceeded 4x WP)



### HYDROSTATIC TEST REPORT

**Hose**  
**Frac:** 4" ContiTech Oilfield Fracturing Hose rated to 400 psi.  
**Couplings**  
**206 Hose Union:** Male x female Campbell 206 hose union rated to 400 psi.  
**Attachment**  
**Crimped:** Campbell Frac Ferrules, Plated Steel  
**Goal**  
Burst hose beyond 1600 psi. (hose WP of 400 psi. @ 4 to 1 Safety Factor)  
**Results**  
Hose burst at 1879 psi. (system exceeded 4x WP)



### HYDROSTATIC TEST REPORT

**Hose**  
**High pressure air:** 2" Dayco Wildcatter rated to 3000 psi.\*  
**Couplings**  
**Ground Joint:** 2" Campbell Viton® Seal female x male  
- coupling/ferrule system rated to 1000 psi. WP  
**Attachment**  
**Crimped:** Steel Long Ferrules  
**Goal**  
Establish the limits of the coupling/ferrule system, performed with the wing nut tightened only by hand. \*NOTE: Campbell system is only rated to 1000 psi.  
**Results**  
Hose burst at 9500 psi. (couplings exceeded WP by more than 9x WP)



### HYDROSTATIC TEST REPORT

**Hose**  
**Sanitary:** 1-1/2" Continental Purple Snake rated to 232 psi.  
**Couplings**  
**Sanitary:** 1-1/2" Tri-Clamp  
- fitting/ferrule system rated to 450 psi. WP  
**Attachment**  
**Crimped:** Stainless Steel Ferrules  
**Goal**  
Burst hose beyond 928 psi. (hose WP of 232 psi. @ 4 to 1 Safety Factor)  
**Results**  
Hose burst at 2198 psi. (system exceeded 9.5x WP)



### HYDROSTATIC TEST REPORT

**Hose**  
**Layflat:** 1-1/2" Kuriyama rated to 75 psi.  
**Couplings**  
**Aluminum pin-lug:** 1-1/2" Campbell male x female  
- coupling/sleeve system rated to 150 psi.  
**Attachment**  
**Crimped:** Carbon Steel Sleeves  
**Goal**  
Burst hose beyond 225 psi. (hose WP of 75 psi. @ 3 to 1 Safety Factor)  
**Results**  
Hose burst at 228 psi. (system exceeded 3x WP)