



**GSA Series Formed Wire Suspension**

## Formed Wire Suspension Unit

AFL is a renowned manufacturer of aluminum conductor accessories, manufacturing numerous products for the electric utility industry since the 1890s. A leader in its markets, AFL offers superior research, development and field experience resulting in experienced professionals who bring a depth of engineering, production and training to our customers. With the broadest product offering in the industry, AFL designs and manufactures a wide variety of compression accessories for all conductor types, bolted and welded substation products, as well as fiber optic hardware. In addition, AFL provides bronze substation products, Alumoweld® and Copperweld® wire and compression tools. Given our history and interest in bringing our customers the most advanced products in the industry, AFL's GSA series suspension unit is designed to supplement protection of the conductor at the point of transmission and distribution. Bringing you performance, reliability and knowledge from a company you've trusted for years, AFL is the solution for your entire transmission, distribution, substation and fiber optic accessory needs.

The GSA Series suspension unit is designed to reduce the static and dynamic stress at the support point of transmission and distribution lines. This allows the conductor to better withstand the effects of Aeolian vibration and wind-induced oscillation. The GSA unit also helps protect the conductor against flashover in the support area. It is designed for use with ACSR, AAC, AAAC, ACAR conductors and all high temperature conductors including ACCR, ACSS and ACCC.

Although the GSA unit provides improved vibration protection, dampers are still required to dissipate the damaging effects from Aeolian vibration. For more information about Aeolian vibration and vibration analysis, visit [www.Vibrec.com](http://www.Vibrec.com).



# Features

## Line Angles

Use the single GSA unit for line angles up to 30 degrees; for 30 to 60 degrees, use the double suspension unit.

## High-Voltage Applications

The rods can be tapered for Extra High Voltage (EHV) applications, 345 kV and above. Specify this requirement by adding a suffix "EHV" to the end of the part number (see ordering matrix below).

## Elevated Temperature

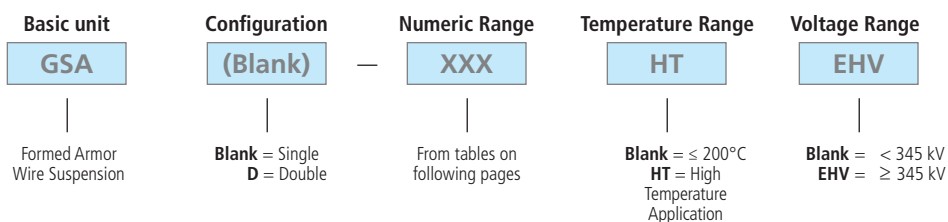
The GSA unit is rated for 200°C continuous temperature applications. The GSA high temperature (HT) unit is rated for 250°C continuous temperature applications. Contact AFL if a high temperature unit with two layers of rod sets are required.

## Technical Support

For more information about the GSA unit, placement or technical questions, contact the AFL Technical Support team at 1.800.866.7385.

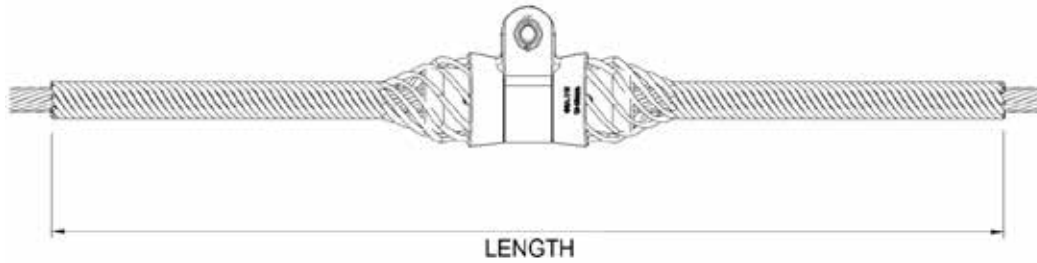


## Ordering Information



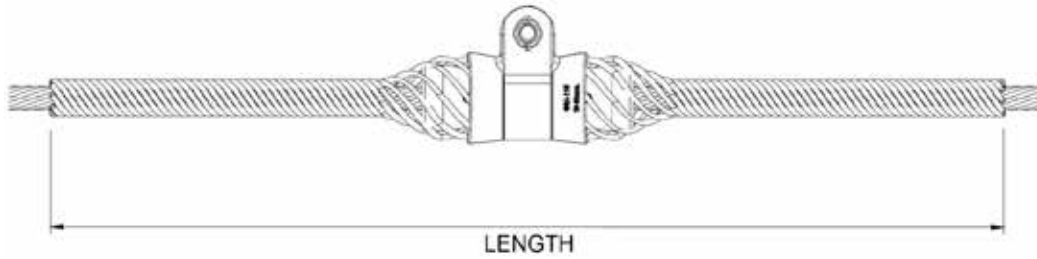
Example: For a single suspension with Aluminum Rods, conductor diameter of 1.091 to 1.118, High Temperature and Extra High Voltage, the complete catalog number is: GSA145-284HTEHV.

# Formed Wire Suspension Clamp



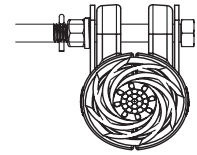
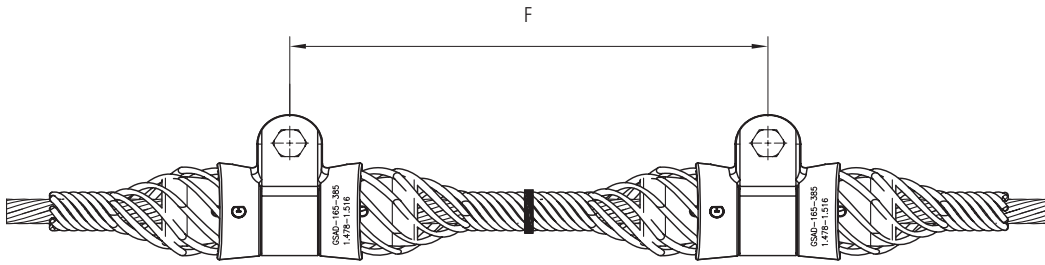
| FORMED WIRE SUSPENSION | DIAMETER RANGE (IN) |       | RODS |             |              | COLOR CODE |
|------------------------|---------------------|-------|------|-------------|--------------|------------|
|                        | AFL NO.             | MIN.  | MAX. | LENGTH (IN) | ROD DIA (IN) |            |
| GSA60-800              | 0.304               | 0.315 | 26   | 0.102       | 10           | BROWN      |
| GSA60-831              | 0.316               | 0.327 | 26   | 0.102       | 11           | ORANGE     |
| GSA60-869              | 0.328               | 0.342 | 26   | 0.102       | 11           | PURPLE     |
| GSA60-902              | 0.343               | 0.355 | 26   | 0.102       | 11           | RED        |
| GSA60-950              | 0.356               | 0.374 | 26   | 0.102       | 12           | BLUE       |
| GSA60-988              | 0.375               | 0.389 | 26   | 0.102       | 12           | GREEN      |
| GSA65-1026             | 0.390               | 0.404 | 36   | 0.128       | 11           | YELLOW     |
| GSA65-1062             | 0.405               | 0.418 | 36   | 0.128       | 11           | BLACK      |
| GSA65-1102             | 0.419               | 0.434 | 36   | 0.128       | 11           | WHITE      |
| GSA65-1143             | 0.435               | 0.450 | 36   | 0.128       | 11           | BROWN      |
| GSA65-1194             | 0.451               | 0.470 | 36   | 0.128       | 12           | ORANGE     |
| GSA65-1222             | 0.471               | 0.481 | 36   | 0.128       | 12           | PURPLE     |
| GSA80-1267             | 0.482               | 0.499 | 40   | 0.167       | 10           | RED        |
| GSA80-1300             | 0.500               | 0.512 | 40   | 0.167       | 10           | BLUE       |
| GSA80-1346             | 0.513               | 0.530 | 41   | 0.167       | 11           | GREEN      |
| GSA80-1377             | 0.531               | 0.542 | 41   | 0.167       | 11           | YELLOW     |
| GSA90-1410             | 0.543               | 0.555 | 44   | 1.820       | 10           | BLACK      |
| GSA90-1455             | 0.556               | 0.573 | 44   | 1.820       | 11           | WHITE      |
| GSA90-1509             | 0.574               | 0.594 | 45   | 1.820       | 11           | BROWN      |
| GSA90-1539             | 0.595               | 0.606 | 46   | 1.820       | 11           | ORANGE     |
| GSA90-1572             | 0.607               | 0.619 | 46   | 1.820       | 11           | PURPLE     |
| GSA90-1638             | 0.620               | 0.645 | 50   | 1.820       | 12           | RED        |
| GSA98-1709             | 0.646               | 0.673 | 54   | 0.204       | 11           | BLUE       |
| GSA98-1753             | 0.674               | 0.690 | 54   | 0.204       | 11           | GREEN      |
| GSA98-1803             | 0.691               | 0.710 | 54   | 0.204       | 12           | YELLOW     |
| GSA98-1857             | 0.711               | 0.731 | 55   | 0.204       | 12           | BLACK      |
| GSA98-1905             | 0.732               | 0.750 | 56   | 0.204       | 12           | WHITE      |
| GSA115-195             | 0.751               | 0.768 | 60   | 0.250       | 10           | BROWN      |
| GSA115-201             | 0.769               | 0.795 | 60   | 0.250       | 11           | ORANGE     |
| GSA115-209             | 0.796               | 0.824 | 61   | 0.250       | 11           | PURPLE     |
| GSA115-514             | 0.825               | 0.845 | 64   | 0.250       | 11           | RED        |
| GSA115-221             | 0.846               | 0.870 | 64   | 0.250       | 12           | BLUE       |
| GSA115-226             | 0.871               | 0.893 | 65   | 0.250       | 12           | GREEN      |
| GSA115-230             | 0.894               | 0.907 | 65   | 0.250       | 12           | GREEN      |

# Formed Wire Suspension Clamp



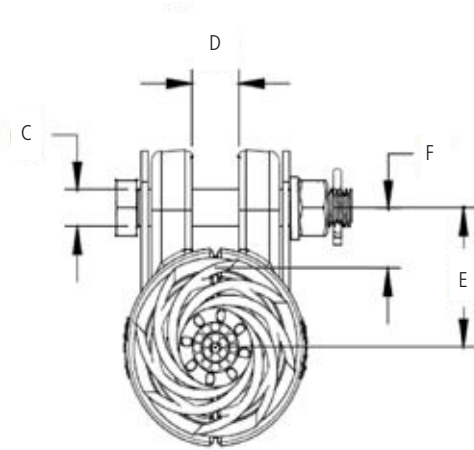
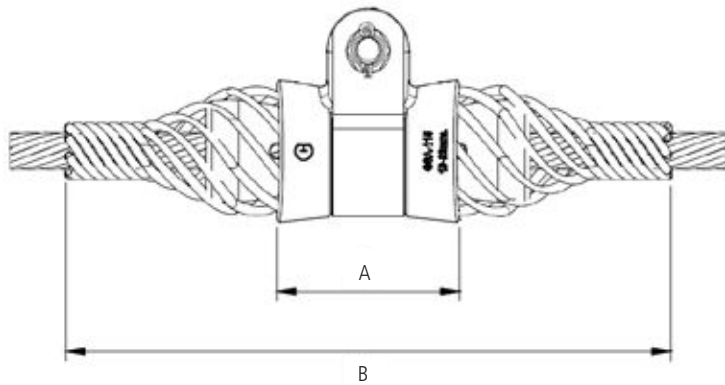
| FORMED WIRE SUSPENSION AFL NO. | DIAMETER RANGE (IN) |       | LENGTH (IN) | RODS         |          | COLOR CODE |
|--------------------------------|---------------------|-------|-------------|--------------|----------|------------|
|                                | MIN.                | MAX.  |             | ROD DIA (IN) | RODS/SET |            |
| GSA127-233                     | 0.908               | 0.920 | 66          | 0.250        | 12       | YELLOW     |
| GSA127-238                     | 0.921               | 0.937 | 66          | 0.250        | 12       | BLACK      |
| GSA127-244                     | 0.938               | 0.962 | 67          | 0.250        | 12       | WHITE      |
| GSA127-250                     | 0.963               | 0.986 | 68          | 0.250        | 13       | BROWN      |
| GSA127-255                     | 0.987               | 1.005 | 69          | 0.250        | 13       | ORANGE     |
| GSA145-259                     | 1.006               | 1.022 | 80          | 0.310        | 11       | PURPLE     |
| GSA145-264                     | 1.023               | 1.040 | 82          | 0.310        | 11       | RED        |
| GSA145-272                     | 1.041               | 1.074 | 82          | 0.310        | 11       | BLUE       |
| GSA145-276                     | 1.075               | 1.090 | 82          | 0.310        | 12       | GREEN      |
| GSA145-284                     | 1.091               | 1.118 | 82          | 0.310        | 12       | YELLOW     |
| GSA145-288                     | 1.119               | 1.136 | 82          | 0.310        | 12       | BLACK      |
| GSA145-292                     | 1.137               | 1.152 | 82          | 0.310        | 12       | WHITE      |
| GSA145-298                     | 1.153               | 1.175 | 82          | 0.310        | 12       | BROWN      |
| GSA145-306                     | 1.176               | 1.208 | 82          | 0.310        | 12       | ORANGE     |
| GSA155-311                     | 1.209               | 1.226 | 88          | 0.365        | 11       | PURPLE     |
| GSA155-319                     | 1.227               | 1.259 | 88          | 0.365        | 11       | RED        |
| GSA155-326                     | 1.260               | 1.286 | 88          | 0.365        | 12       | BLUE       |
| GSA155-333                     | 1.287               | 1.314 | 88          | 0.365        | 12       | GREEN      |
| GSA155-344                     | 1.315               | 1.355 | 88          | 0.365        | 12       | YELLOW     |
| GSA165-354                     | 1.356               | 1.394 | 88          | 0.365        | 12       | BLACK      |
| GSA165-359                     | 1.395               | 1.416 | 88          | 0.365        | 13       | WHITE      |
| GSA165-366                     | 1.417               | 1.442 | 88          | 0.365        | 13       | BROWN      |
| GSA165-375                     | 1.443               | 1.477 | 88          | 0.365        | 13       | ORANGE     |
| GSA165-385                     | 1.478               | 1.516 | 88          | 0.365        | 13       | PURPLE     |
| GSA165-395                     | 1.517               | 1.557 | 88          | 0.365        | 13       | RED        |
| GSA180-401                     | 1.558               | 1.579 | 10          | 0.365        | 14       | BLUE       |
| GSA180-409                     | 1.580               | 1.612 | 10          | 0.365        | 14       | GREEN      |
| GSA180-419                     | 1.613               | 1.650 | 10          | 0.365        | 14       | YELLOW     |
| GSA180-428                     | 1.651               | 1.688 | 10          | 0.365        | 15       | BLACK      |
| GSA180-434                     | 1.689               | 1.711 | 10          | 0.365        | 15       | WHITE      |
| GSA180-445                     | 1.712               | 1.752 | 10          | 0.365        | 15       | BROWN      |
| GSA180-454                     | 1.753               | 1.790 | 10          | 0.365        | 15       | ORANGE     |
| GSA180-464                     | 1.791               | 1.828 | 10          | 0.365        | 15       | PURPLE     |
| GSA180-478                     | 1.829               | 1.882 | 10          | 0.365        | 16       | RED        |
| GSA190-567                     | 2.193               | 2.233 | 10          | 0.365        | 18       | RED        |

# Formed Wire Suspension – Double

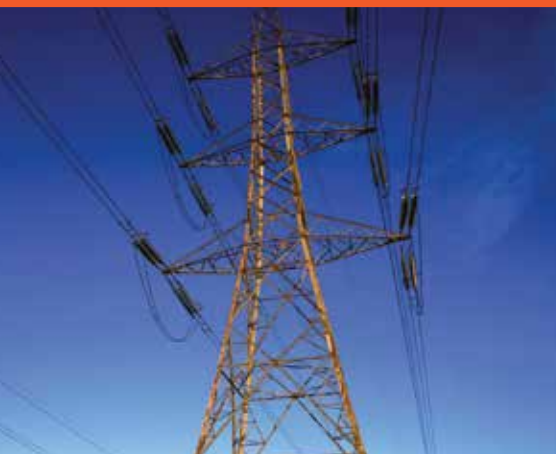


| AFL NO. | DIAMETER RANGE (IN) | LENGTH, (F) |
|---------|---------------------|-------------|
| GSAD60  | 0.304-0.389         | 12"         |
| GSAD65  | 0.390-0.481         | 12"         |
| GSAD80  | 0.482-0.542         | 12"         |
| GSAD90  | 0.543-0.645         | 12"         |
| GSAD98  | 0.646-0.750         | 18"         |
| GSAD115 | 0.751-0.907         | 18"         |
| GSAD127 | 0.908-1.005         | 22"         |
| GSAD145 | 1.006-1.208         | 26"         |
| GSAD155 | 1.209-1.355         | 29"         |
| GSAD165 | 1.356-1.557         | 32"         |
| GSAD180 | 1.558-1.882         | 37"         |
| GSAD190 | 1.883-2.233         | 42"         |

# Formed Wire Suspension – Dimensional Detail



| AFL NO. | DIAMETER RANGE (IN) | DIMENSIONS |                             |     |       |       |       | VERTICAL STRENGTH (LBS) |
|---------|---------------------|------------|-----------------------------|-----|-------|-------|-------|-------------------------|
|         |                     | A          | B                           | C   | D     | E     | F     |                         |
| GSA60   | 0.304-0.389         | 2.362      | See Catalog for Rod Lengths | 5/8 | 0.687 | 2.110 | 1.161 | 15,000                  |
| GSA65   | 0.390-0.481         | 2.559      |                             | 5/8 | 0.687 | 2.110 | 1.102 | 15,000                  |
| GSA80   | 0.482-0.542         | 3.149      |                             | 5/8 | 0.656 | 2.150 | 1.024 | 10,000                  |
| GSA90   | 0.543-0.645         | 3.543      |                             | 5/8 | 0.718 | 2.249 | 1.024 | 10,000                  |
| GSA98   | 0.646-0.750         | 3.858      |                             | 5/8 | 0.750 | 2.317 | 1.024 | 15,000                  |
| GSA115  | 0.751-0.907         | 4.527      |                             | 5/8 | 0.875 | 2.375 | 1.207 | 20,000                  |
| GSA127  | 0.908-1.005         | 5.000      |                             | 5/8 | 0.875 | 2.677 | 1.024 | 20,000                  |
| GSA145  | 1.006-1.208         | 5.708      |                             | 5/8 | 1.187 | 2.933 | 1.024 | 25,000                  |
| GSA155  | 1.209-1.355         | 6.102      |                             | 3/4 | 1.250 | 3.362 | 1.260 | 25,000                  |
| GSA165  | 1.356-1.557         | 6.496      |                             | 3/4 | 1.375 | 3.519 | 1.142 | 25,000                  |
| GSA180  | 1.558-1.882         | 7.086      |                             | 3/4 | 2.250 | 3.811 | 1.142 | 25,000                  |
| GSA190  | 1.883-2.233         | 7.480      |                             | 3/4 | 2.409 | 4.047 | 1.181 | 30,000                  |



**AFL**

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1.800.866.7385