

Universal Groove Clamps

Through extensive research, AFL has developed a "universal groove" design which accepts a range of conductor sizes. The blended radii proved to be the shape that accommodates a wide range of conductors and have the desired low electrical resistance for each conductor size. This patented groove shape is utilized in all of AFL's clamps and connectors.

Positive Alignment and Weather Protection

Extended lip aligns clamp as bolt is tightened. Clamp base section forms a weather shield for the grooves. Compound stays in place, connections last longer.

Corrosion Resistant Lubricated Hardware

Bolts are made of high-strength aluminum alloy and maintain high contact pressure during heating and cooling cycles (bolts, extrusions and conductors have the same coefficients). Bolts have an Alumilite 205 finish and are coated with a lubricant for additional corrosion protection and reduced friction.

Self-Measured Tightening

Rotational tightening method for 396.6, 395.5 and 490.0 clamps provides accurate torquing. Set assembly finger tight and wrench tighten bolt indicator 1-1/4 turns.

No Loose Parts

Extruded clamps can be applied "hot" without taking them apart. No losing nuts or washers or fumbling for loose parts.

Conductance

The electrical conductivity of the heavy-duty 480 Series clamps exceeds that of the conductor. Each clamp is designed and tested for the conductor sizes in its stated range.

Groove Range Identification

Raised ridges on both sides of the cap and base of multiple bolt clamps identify groove range sizes. The two ridges visible on the clamp in the photo on the left, indicate a No. 2 groove with a range of .464" to .743" (11.8 mm to 18.9 mm).

Greater Strength

Aluminum extrusions have the inherently strong construction of wrought metal. For parallel groove clamps, a tough heat-treated alloy is used.

Available Prefilled

All clamps are available with Alnox Joint Compound in the grooves. Clamps with equal grooves are available in "strip" packages (shown). These packages retain the compound until ready for use and are easily removed while wearing gloves. All clamps are available poly wrapped in polyethylene shrink packaging.

Minimum Sizes to Stock

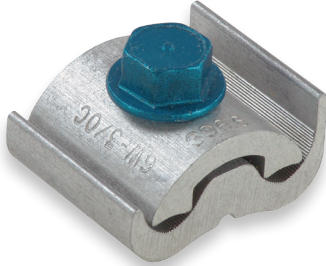
Minimum number of clamps to cover No. 8 AWG to 1750 MCM connecting applications.

No Loose Parts

Compact assembly simplifies taping and handling resulting in a neater, more professional job.



Distribution Parallel Groove Clamps (Series 390 and 490)

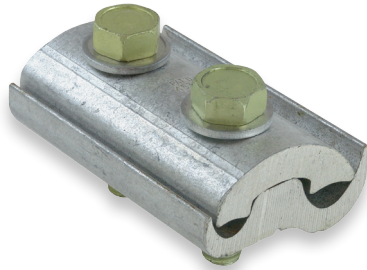


Catalog 390 and Catalog 490 Series Distribution Parallel Groove Clamps with a single bolt accommodate a range of conductors in each groove. This type of clamp is commonly used for service drop connections and as a tap from large to relatively small conductors.

| AFL NO. | GROOVE SIZE* – RUN 1 – | GROOVE SIZE* – TAP 2 – | BOLT SIZE (in) | TORQUE (ft / lbs) | NOMINAL WEIGHT | |
|---------|---------------------------|---------------------------|-------------------|----------------------|----------------|------|
| | | | | | (lb) | (Kg) |
| 490.0 | 0 | 0 | 5/16" | 10 | .060 | .03 |
| 395.5 | 5 | 5 | 3/8" | 15 | .092 | .04 |
| 396.6 | 6 | 6 | 3/8" | 15 | .129 | .06 |
| 392.6 | 2 | 6 | 1/2" | 25 | .316 | .14 |
| 393.6 | 3 | 6 | 5/8" | 40 | .642 | .29 |

* Groove size designation on following page.

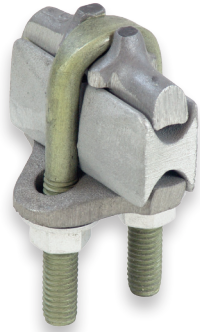
Center Bolt Clamps (Series 480)



Catalog 480 Series Center Bolt Clamps are a multiple bolt heavy duty universal groove design which can handle the full electrical load of the conductor. They offer the convenience of installation without any loose parts. Catalog 480 Clamps are made from extruded high strength aluminum alloy and can be taped easily. Additionally, they have a minimum bulk, which results in a neat appearance.

| AFL NO. | GROOVE SIZE* – SIDE 1 – | GROOVE SIZE* – SIDE 2 – | NUMBER OF BOLTS | BOLT SIZE (in) | TORQUE (ft / lbs) | NOMINAL WEIGHT | |
|---------|----------------------------|----------------------------|-----------------|-------------------|----------------------|----------------|------|
| | | | | | | (lb) | (Kg) |
| 481.0 | 1 | 0 | 2 | 3/8" | 15 | 0.3 | .14 |
| 481.1 | 1 | 1 | 2 | 3/8" | 15 | 0.3 | .14 |
| 482.1 | 2 | 1 | 2 | 1/2" | 25 | 0.6 | .27 |
| 482.2 | 2 | 2 | 3 | 1/2" | 25 | 1.1 | .50 |
| 483.2 | 3 | 2 | 2 | 5/8" | 40 | 1.8 | .82 |
| 483.3 | 3 | 3 | 3 | 5/8" | 40 | 2.8 | 1.27 |

* Groove size designation on following page.



U-Bolt Clamps (Series 580)

Catalog 580 Series U-Bolt Clamps are heavy duty, high efficiency connectors with AFL full-capacity grooves. The U-Bolts are high strength aluminum alloy for excellent thermal expansion and corrosion resistance characteristics.

| AFL NO. | GROOVE SIZE* – SIDE 1 – | GROOVE SIZE* – SIDE 2 – | NUMBER OF BOLTS | BOLT SIZE (in) | TORQUE (ft / lbs) | NOMINAL WEIGHT | |
|---------|----------------------------|----------------------------|-----------------|----------------|-------------------|----------------|------|
| | | | | | | (lb) | (Kg) |
| 581.1 | 1 | 1 | 1 | 3/8" | 15 | .3 | .14 |
| 582.1 | 2 | 1 | 1 | 1/2" | 25 | .6 | .27 |
| 582.2 | 2 | 2 | 2 | 1/2" | 25 | 1.3 | .59 |
| 583.1 | 3 | 1 | 1 | 5/8" | 40 | 1.1 | .50 |
| 583.2 | 3 | 2 | 2 | 5/8" | 40 | 2.6 | 1.18 |
| 583.3 | 3 | 3 | 3 | 5/8" | 40 | 3.9 | 1.77 |
| 584.1 | 4 | 1 | 1 | 5/8" | 40 | 1.7 | .77 |
| 584.2 | 4 | 2 | 2 | 5/8" | 40 | 3.6 | 1.63 |
| 584.3 | 4 | 3 | 3 | 5/8" | 40 | 5.8 | 2.63 |
| 584.4 | 4 | 4 | 3 | 5/8" | 40 | 6.0 | 2.72 |

Standard Groove Numbers

Standard groove numbers are used for the complete range of clamps and connectors. These numbers are incorporated into the AFL part number itself.

| GROOVE SIZE | GROOVE RANGE | | | | CONDUCTOR SIZE | | | |
|-------------|--------------|------|-------|------|----------------------------------|------------------------------------|-------------------|-----------|
| | MIN | | MAX | | ACSR | | STRANDED ALUMINUM | |
| | IN | MM | IN | MM | MIN | MAX | MIN | MAX |
| 0 | .128 | 3.3 | .325 | 8.3 | 6 ⁶ / ₁ | 2 ⁷ / ₁ | 8 & 8W | 2 |
| 5 | .128 | 3.3 | .398 | 10.1 | 6 ⁶ / ₁ | 1/0 | 8 & 8W | 1/0 |
| 6 | .162 | 4.1 | .464 | 11.8 | 6 ⁶ / ₁ | 2/0 ⁶ / ₁ | 6 | 3/0 |
| 1 | .292 | 7.4 | .502 | 12.8 | 2 ⁹ / ₁ | 3/0 | 2 | 3/0 |
| 7 | .368 | 9.3 | .593 | 15.1 | 1/0 | 4/0 | 1/0 | 266.8 MCM |
| 2 | .464 | 11.8 | .743 | 18.9 | 3/0 | 397 ¹⁸ / ₁ | 3/0 | 400 MCM |
| 3 | .743 | 18.9 | 1.152 | 29.3 | 397 ¹⁸ / ₁ | 795 ²⁶ / ₇ | 450 MCM | 1,000 MCM |
| 4 | 1.060 | 26.9 | 1.545 | 39.2 | 795 ⁴⁵ / ₇ | 1590 ⁵⁴ / ₁₉ | 874.5 MCM | 1,750 MCM |

NOTE: NEMA standard abbreviations for aluminum or copper: W = solid conductor, ACSR = aluminum conductor/steel reinforced

Universal Groove Clamps (cont.)

Ordering Information

The information below is provided to define the standard configurations available on the previous pages. **NOTE: Bolt type and fill are the only ordering options available.**

| Bolt Type | Clamp Series | Groove 1 "Run" Size | Groove 2 "Tap" Size | Fill and Wrap |
|--|---|---|--|--|
| S | 39 | 6 | 6 | P |
| Blank = Aluminum Bolt S = Galvanized Bolt | 39 = 390 Series 49 = 490 Series 48 = 480 Series | 0 = 0 5 = 5 6 = 6 1 = 1 2 = 2 3 = 3 4 = 4 | 0 = 0 5 = 5 6 = 6 1 = 1 7 = 7 2 = 2 3 = 3 4 = 4 | Blank = No Prefill P = Prefill with Alnox Compound and Polywrap W = Prefill with Alnox Compound and Paper Wrap |

EXAMPLE: S396.6P

This part number orders: 390 Series Distribution Parallel Groove Clamp with a #6 groove on the run (1) side and a #6 groove on the tap (2) side, galvanized bolts and prefilled with Alnox Compound and a polywrap.

NOTES:

- To order Parallel Groove Clamps prefilled with Alnox Compound, add P or W suffix to part number.
- The use of Alnox Compound liberally in grooves and on wire is recommended. Be sure conductors are clean. All conductors (new and old) should be thoroughly cleaned with a wire brush or emery cloth.
- Extensive field experience and exposure tests show that if a suitable type joint compound is liberally applied over and around the contact area, copper-to-aluminum electric connections can be made satisfactorily with aluminum clamps without copper bushings. Alnox Compound is recommended.