



PREFORMED LINE PRODUCTS
The connection you can count on.

Charpy-Rated Aluminum Suspension (ALS) Clamp

March 2021



Charpy-Rated Aluminum Suspension Clamps

PLP Canada's Aluminum Suspension (ALS) Clamps have Charpy Level 1 rated bolts as per CSA C83:

- Charpy Level 1: Minimum energy absorption of 20 Joules at -20°C

ALS Clamps are intended for use on all aluminum-based conductors. PLP recommends placing armor rods over the conductor at suspension points to minimize the static and dynamic stresses at the ends of the clamp as well as extend the life of the conductor. Standard ALS Clamps are designed for continuous conductor operating temperatures up to 125°C (150°C for two-hour emergencies). When installed over armor rods, they are rated for continuous conductor operating temperatures of up to 250°C.

Please refer to our website for a complete offering of PLP armor rods:
<https://www.preformed.com/energy/transmission/repair-products/armor-rod>



Vertical Ultimate Strength:

The vertical ultimate strength of each Aluminum Suspension Clamp is listed on the table (next page).

Slip load

When initially installed, the ALS Clamps have a minimum slip load of 25% of the conductor's rated breaking strength (RBS).

Line angle

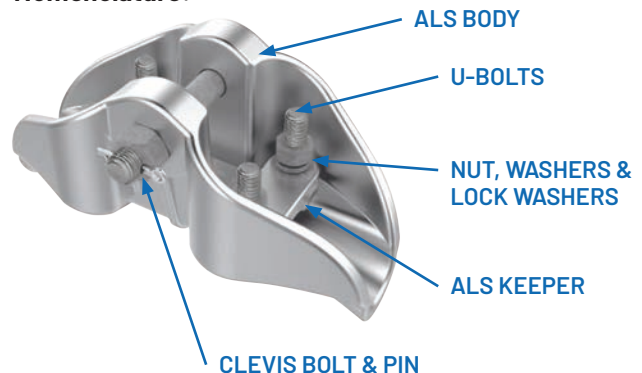
The maximum recommended line angle for the ALS-47CBNK and ALS-67CBNK is 30° as a single suspension and 60° in a double configuration utilizing a yoke plate. The maximum recommended line angle for the ALS-91CBNK, ALS-122CBNK, ALS-181CBNK and ALS-238CBNK is 35° as a single suspension and 70° in a double configuration utilizing a yoke plate.

Features and Benefits:

- The ALS Clamp is shipped assembled, with no loose parts. All fasteners are factory-installed to eliminate lost hardware in the field.
- Aluminum alloy body and keeper.
- Galvanized steel hardware.
- Stainless steel cotter pin.
- Compatible with standard attachment hardware.
- ALS-122CBNK, ALS-181CBNK, and ALS-238CBNK are designed for EHV applications.

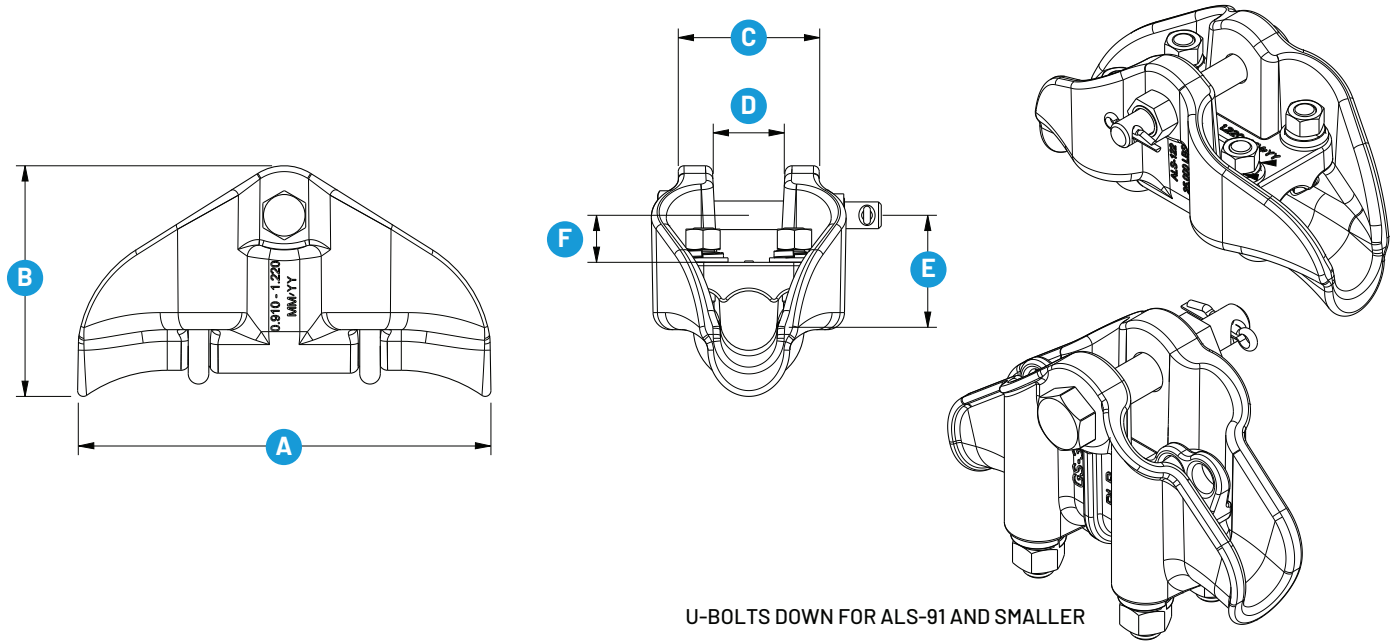
Please contact PLP for additional details.

Nomenclature:



Charpy-Rated Aluminum Suspension Clamps

mm (in.)



CATALOG #	CLAMP RANGE MM (IN)	A MM (IN)	B MM (IN)	C MM (IN)	D MM (IN)	E MM (IN)	F MM (IN)	VERTICAL ULTIMATE LOAD KG (LBS)	ESTIMATED PART WEIGHT KG (LBS)
ALS-47CBNK	5.1 – 11.9 (0.2 – 0.470)	127 (5.0)	78 (3.1)	48 (1.9)	19 (0.8)	31 (1.2)	24 – 31 (0.9 – 1.2)	2,268 (5,000)	0.4 (0.9)
ALS-67CBNK	11.9 – 17 (0.471 – 0.670)	165 (6.5)	95 (3.7)	61 (2.4)	22 (0.9)	48 (1.9)	31 – 36 (1.2 – 1.4)	4,535 (10,000)	0.7 (1.5)
ALS-91CBNK	17 – 23.1 (0.671 – 0.910)	165 (6.5)	101 (4.0)	53 (2.1)	27 (1.1)	58 (2.3)	25 – 31 (1.0 – 1.2)	6,804 (15,000)	1.0 (2.4)
ALS-122CBNK	23.1 – 31 (0.911 – 1.220)	228 (9.0)	127 (5.0)	76 (3.0)	38 (1.5)	64 (2.5)	34 – 42 (1.3 – 1.7)	11,340 (25,000)	2.1 (4.7)
ALS-181CBNK	31 – 46 (1.221 – 1.810)	250 (9.8)	136 (5.4)	84 (3.3)	50 (2.0)	65 (2.5)	21 – 36 (0.8 – 1.4)	11,340 (25,000)	2.5 (5.5)
ALS-238CBNK	46 – 60.5 (1.811 – 2.380)	300 (11.8)	157 (6.2)	117 (4.6)	66 (2.6)	76 (3.0)	28 – 42 (1.1 – 1.6)	11,340 (25,000)	3.1 (6.9)



Armor Rods

Armor rods are designed to protect cable against bending, compression, abrasion, and flash-over. They are also used to repair damaged aluminum-based conductors and restore the conductors' mechanical strength and conductivity.

- Single and double support lengths available.
- Thermal rating (continuous) within a high temperature suspension clamp: 250°C; ACSS Repair: 250°C; ACSR Repair: 125°C.
- Available PARROT-BILL ends to meet the corona onset and RIV requirements for most EHV applications.



ALUMINUM CONDUCTORS: INCREASED DIAMETER DUE TO ARMOR RODS

CONDUCTOR DIA. RANGE MM (IN)	ADD TO CONDUCTOR DIAMETER (ARMOR ROD DIA. × 2) MM (IN)
4.9 - 6.2 (0.194 - 0.243)	6.1 (0.242)
6.2 - 7.8 (0.244 - 0.308)	7.4 (0.292)
7.8 - 8.3 (0.309 - 0.326)	6.9 (0.272)
8.3 - 9.9 (0.327 - 0.389)	7.4 (0.292)
9.9 - 10.5 (0.390 - 0.413)	8.5 (0.334)
10.5 - 11.1 (0.414 - 0.436)	7.4 (0.292)
11.1 - 14.0 (0.437 - 0.551)	8.5 (0.334)
14.0 - 17.2 (0.552 - 0.679)	9.2 (0.364)
17.3 - 19.9 (0.680 - 0.782)	10.4 (0.408)
19.9 - 24.8 (0.783 - 0.976)	12.7 (0.500)
24.8 - 30.7 (0.977 - 1.208)	15.7 (0.620)
30.7 - 35.3 (1.209 - 1.390)	18.5 (0.730)
35.3 - 53.1 (1.391 - 2.090)	22.1 (0.872)

EXAMPLE:

ACSR Hawk (477 kcmil) diameter:
21.8mm (0.858")

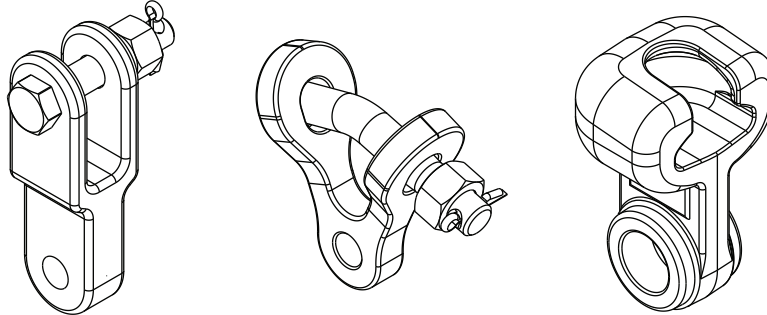
Diameter with PLP Armor Rods:
21.8mm + 12.7mm = 34.5mm
(0.858" + 0.500" = 1.358")

ALS Clamp Selection:
Bare Conductor: ALS-91CBNK
Conductor with Armor Rods: ALS-181CBNK

Please refer to our website for a complete offering of PLP armor rods:
<https://www.preformed.com/energy/transmission/repair-products/armor-rod>

Charpy-Rated Aluminum Suspension Clamp Fittings

All of PLP's Clevis Eye, Y-Clevis Eye, and Socket Eye fittings are Charpy Level 1 rated as per CSA C83:



SUSPENSION CATALOG #	CLEVIS EYE PART #	Y-CLEVIS EYE PART #	SOCKET EYE PART #
ALS-47CBNK	CE-5259C	YC-5206C	SE-9020C
ALS-67CBNK	CE-5259C	YC-5206C	SE-9020C
ALS-91CBNK	CE-5261C	YC-5207C	SE-5152C
ALS-122CBNK	CE-9027C	YC-9032C	SE-5154C
ALS-181CBNK	CE-9028C	YC-9033C	SE-9023C
ALS-238CBNK	CE-9029C	YC-9034C	SE-9024C

Click on part numbers for more information on specific parts.

Refer to **PLP Canada's Line Hardware catalog**:

<http://www.preformed.ca/assets/pdfs/PLPLine-Hardware-2021-02.pdf>



PREFORMED LINE PRODUCTS

The connection you can count on.

1711 Bishop St. N.
Cambridge, ON
N1T 1N5

www.preformed.ca
sales@preformed.ca