

Installation Instructions

Compression Connectors

Aluminum power connectors may be used for making aluminum-to-copper connections by following the manufacturer's recommended procedures.

Sealants

Remove all oil, grease and moisture in the vicinity of the surfaces to be welded. Completely clean the conductor and power connector welding areas with a clean stainless steel wire brush.

Bi-Metallic Transition Plates

Aluminum to copper power connections between flat NEMA drilled tongues and bars can be made using bi-metallic transition plates (type BM Series). The transition plates are formed from sheets of 80% aluminum and 20% copper that are molecularly bonded together. The use of contact sealant is also recommended. **NOTE:** For best protection, position the aluminum connector above the copper connector.

Hardware

Stainless steel (Alloy 18-8) bolts are recommended for all copper to aluminum connections. The bolts should be installed complete with lock washer, flat washer, and nut. Torque bolts to specifications. See tables below.

RECOMMENDED TIGHTENING TORQUE FOR ALUMINUM BOLTS WITH ALUMILITE 205 FINISH AND LUBRICANT COATING

Bolt	Tor	que	Bolt	Torque	
(inches)	Ft-Lbs	N. m	(inches)	Ft-Lbs	N. m
3/8	15	20	5/8	40	54
7/16	20	27	3/4	60	81
1/2	25	34			

RECOMMENDED TIGHTENING TORQUE FOR SILICON BRONZE BOLTS

Bolt	Tor	que	Bolt	Torque	
Diameter (inches)	Ft-Lbs	N. m	(inches)	Ft-Lbs	N. m
5/16-18	11	14	5/8-11	70	94
3/8-16	20	27	3/4-10	100	135
1/2-13	40	54			

RECOMMENDED TIGHTENING TORQUE FOR GALVANIZED STEEL BOLTS WITH LUBRICANT COATING

Bolt	Tor	que	Bolt	Torque		
(inches)	Ft-Lbs	N. m	(inches)	Ft-Lbs	N. m	
5/16	15	20	5/8	60	81	
3/8	25	34	3/4	75	102	
1/2	40	54				

RECOMMENDED TIGHTENING TORQUE FOR STAINLESS STEEL (18-8)

Bolt	Tor	que	Bolt	Torque	
(inches)	Ft-Lbs	N. m	(inches)	Ft-Lbs	N. m
5/16-18	15	20	5/8-11	55	54
3/8-16	20	27	3/4-10	87	73
1/2-13	40	34			
Ref: PA2014-2960					

The torque values assume the following: Hardware consists of a hex head bolt, hex nut and spring lock washer. Stainless steel nuts are wax

lubricated and used with non-lubricated bolts. No additional lubrication is used during installation.



Installation Instructions

For Copper or Bronze to Aluminum Conductors Using Copper or Bronze Connectors

Copper power connectors may be used for making copper to aluminum connections. **NOTE:** All recommendations for copper connectors apply equally to bronze connectors.

Bi-Metallic Transition Plates

Copper to aluminum power connections between flat NEMA. Drilled tongues and bars can be made using bi-metallic transition plates (type ATP). The transition plates are formed from sheets of 80% aluminum and 20% copper that are molecularly bonded together. The use of contact sealant is also recommended. **NOTE:** For best protection, position the aluminum connector above the copper connector.

Tin Plating

Tin plate the portion of the copper connector that is to be in contact with the aluminum. The use of contact sealant is also recommended. (Tin plating may be specified by adding the suffix "TP" for tinned pad or "SND" for tinned all over to the copper connector catalog number).

Sealants

Copper to aluminum power connections between flat NEMA. Drilled tongues and bars can be made if sealant is freely used. The sealant prevents oxide formation and electrolytic corrosion by sealing out moisture from the connection area. The antioxidant protection exists as long as the sealant remains in place. Transition plates or tin plating are recommended over this method.

Hardware

Stainless steel (Alloy 18-8) bolts are recommended for all copper to aluminum connections. The bolts should be installed complete with lock washer, flat washer, and nut. Torque bolts to specifications. See tables below.

RECOMMENDED TIGHTENING TORQUE FOR ALUMINUM BOLTS WITH ALUMILITE 205 FINISH AND LUBRICANT COATING

Bolt Diameter (inches)	Tor	que	Bolt	Tor	Torque		
	Ft-Lbs	N. m	Diameter (inches)	Ft-Lbs	N. m		
3/8	15	20	5/8	40	54		
7/16	20	27	3/4	60	81		
1/2	25	34					

RECOMMENDED TIGHTENING TORQUE FOR SILICON BRONZE BOLTS

Bolt	Tor	que	Bolt	Tor	ue N. m 94	
(inches)	Ft-Lbs	N. m	(inches)	Ft-Lbs	N. m	
5/16-18	11	14	5/8-11	70	94	
3/8-16	20	27	3/4-10	100	135	
1/2-13	40	54				

RECOMMENDED TIGHTENING TORQUE FOR GALVANIZED STEEL BOLTS WITH LUBRICANT COATING

Bolt Diameter (inches)	Tor	que	Bolt	Torque		
	Ft-Lbs	N. m	Diameter (inches)	Ft-Lbs	N. m	
5/16	15	20	5/8	60	81	
3/8	25	34	3/4	75	102	
1/2	40	54				

RECOMMENDED TIGHTENING TORQUE FOR STAINLESS STEEL (18-8)

Bolt Diameter (inches)	Tore	que	Bolt	Torque	
	Ft-Lbs	N. m	(inches)	Ft-Lbs	N. m
5/16-18	15	20	5/8-11	55	54
3/8-16	20	27	3/4-10	87	73
1/2-13	40	34			

Ref: PA2014-2960

The torque values assume the following: Hardware consists of a hex head bolt, hex nut and spring lock washer. Stainless steel nuts are wax lubricated and used with non-lubricated bolts. No additional lubrication is used during installation.