

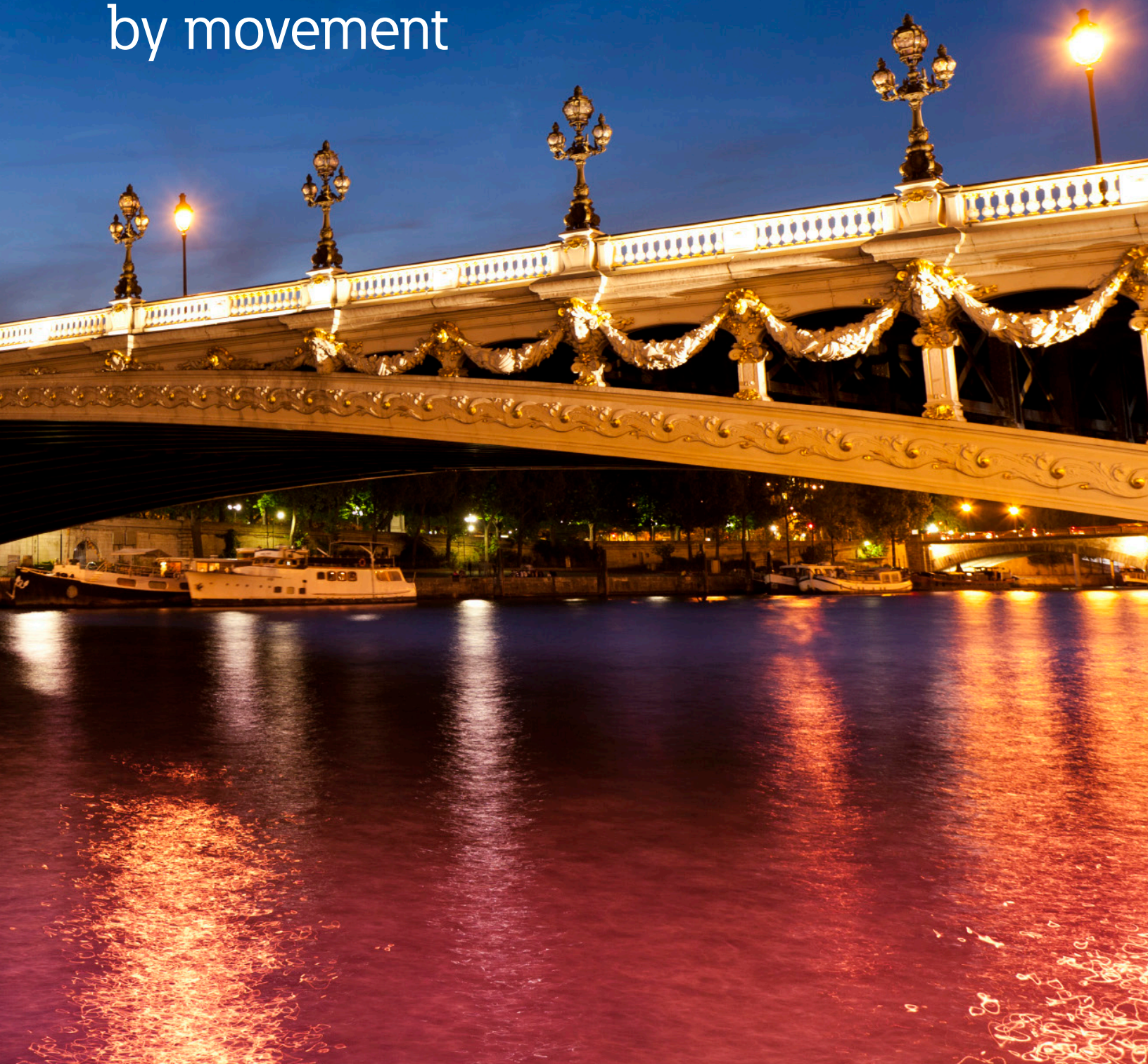
Conduit Expansion/Deflection Couplings



EATON

Powering Business Worldwide

Flexible and water-tight connections
that protect conduit wiring systems
from damage caused
by movement



Conduit Expansion/Deflection Couplings

Conduit expansion and deflection couplings are used to accommodate expansion and deflection in rigid/ IMC and EMT conduit runs in a wide variety of markets and applications. Typical installations for these fittings are driven by structural or geological conditions that often exist in commercial, light industrial and civil construction.

- **Structural movement** – used where a raceway crosses a structural joint intended for expansion, contraction or deflection, used in buildings, bridges, parking garages or other structures
- **Long conduit runs** – expansion fittings should be used in building installations with long conduit runs subject to expansion or contraction
- **Earth movement** – expansion fittings should be used where movement due to settlement or frost can affect direct-buried conductors, raceways or cables
- **Temperature fluctuation** – expansion fittings should be used where thermal fluctuation exists, causing expansion or contraction in long conduit runs

Bridges and Tunnels:



Marinas, Docks and Piers:



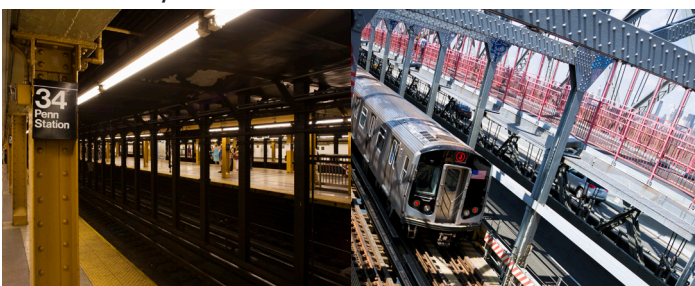
Building Construction and Parking Garages:



Data Centers:



Mass transit System:



Solar:



XJG Rigid/IMC Expansion Couplings

XJG Rigid/IMC expansion couplings provide flexible, water-tight connections that protect rigid and IMC conduit wiring systems from damage caused by movement

Applications:

XJG expansion couplings are used with rigid metal conduit and IMC:

- To couple together two (2) sections of conduit subject to longitudinal movement
- In conduit runs to prevent damage to conduit supports such as in a building or on a bridge
- Indoors or outdoors in long conduit runs to permit linear movement caused by thermal expansion and contraction
- In conduit runs that cross structural joints
- On long conduit runs to prevent conduit from buckling and ensuing circuit failures

Features:

- Weatherproof and approved for use indoors or outdoors without an external bonding jumper
- Available in 1/2" through 6" trade sizes
- For use with rigid metal and IMC conduit
- Available in 4" and 8" maximum conduit movement
- Internal bonding springs and metallic bushings create high integrity internal ground connection and eliminate need for external bonding jumpers and clamps (up to 4" trade size)
- Optional redundant tinned copper bonding jumpers (BJ Series – ordered separately)
- UL Listed for use in wet locations
- Patented design

Certifications and Compliances:

- UL Standard: 514B
- CSA 22.2 No. 18 3-12
- NEMA FB1
- Wet locations
- Third party certified as an effective grounding means (i.e. the path to ground is permanent and continuous) for two sections of conduit subject to expansion or contraction

Options:

Available in copper-free aluminum **SA**
(Not available on 5" and 6" sizes)

Available hot dipped galvanized (standard on 1-1/4" and above) **HDG**

Available with redundant bonding jumper for visible indication of bonding – order separately (BJ Series)†

Materials and Finishes:

Body:

- Steel - electrogalvanized
- Copper-free aluminum - natural
- Feraloy® iron alloy - electrogalvanized (5" and 6" only)

Reducer and Gland Nut:

- 1/2" through 1" - steel - electrogalvanized
- 1-1/4" through 6" - Feraloy® iron alloy - hot dip galvanized and aluminum paint
- Copper-free aluminum - natural

Packing:

- PTFE composite

Washer and Bushing:

- Steel - electrogalvanized

Gasket:

- Vellum

Ground Springs:

- Phosphor bronze - electrogalvanized

Ground Strap:

- Braided tinned copper

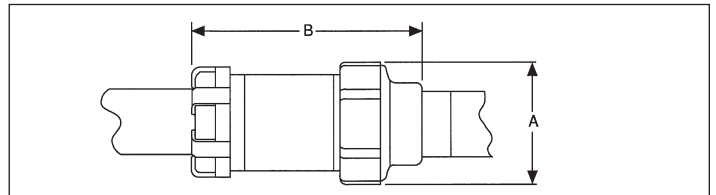
U-Bolts:

- Malleable iron - electrogalvanized



XJG shown with optional bonding jumper
Bonding jumper width: 0.188";
height: 0.875"

Dimensions (In.):



XJG Ordering Information:

Conduit Size	Max. Conduit Movement	XJG Cat. #	XJG - Alum. Cat. #	Optional Bonding Jumper†	A Diameter	B Length	Bonding Jumper Length
1/2	4	XJG14	XJG14 SA	BJ14	2.25"	7.00"	20"
1/2	8	XJG18	XJG18 SA	BJ18	2.25"	11.00"	30"
3/4	4	XJG24	XJG24 SA	BJ24	2.25"	7.00"	20"
3/4	8	XJG28	XJG28 SA	BJ28	2.25"	11.00"	30"
1	4	XJG34	XJG34 SA	BJ34	2.43"	7.38"	20"
1	8	XJG38	XJG38 SA	BJ38	2.43"	11.38"	30"
1-1/4	4	XJG44 HDG		BJ44	3.12"	7.56"	24"
1-1/4	8	XJG48 HDG		BJ48	3.12"	11.56"	30"
1-1/2	4	XJG54 HDG	XJG54 SA	BJ54	3.62"	8.00"	24"
1-1/2	8	XJG58 HDG	XJG58 SA	BJ58	3.62"	12.00"	30"
2	4	XJG64 HDG	XJG64 SA	BJ64	4.38"	8.75"	24"
2	8	XJG68 HDG	XJG68 SA	BJ68	4.38"	12.75"	30"
2-1/2	4	XJG74 HDG		BJ74	4.87"	10.00"	24"
2-1/2	8	XJG78 HDG		BJ78	4.87"	14.00"	36"
3	4	XJG84 HDG	XJG84 SA	BJ84	5.37"	10.25"	30"
3	8	XJG88 HDG	XJG88 SA	BJ88	5.37"	14.25"	36"
3-1/2	4	XJG94 HDG		BJ94	6.62"	10.00"	30"
3-1/2	8	XJG98 HDG		BJ98	6.62"	14.00"	36"
4	4	XJG104 HDG	XJG104 SA	BJ104	6.62"	9.81"	30"
4	8	XJG108 HDG	XJG108 SA	BJ108	6.62"	13.81"	36"
5	8	XJ128 HDG‡		—	7.64"	14.75"	—
6	8	XJ148 HDG‡		—	9.56"	15.13"	—

†XJG expansion couplings use a metallic bushing and ground springs to create a high integrity internal ground connection. External ground straps offer a redundant ground path and easy visible indication of ground.

‡XJ128 and XJ148 are not internally grounded. A pair of 36" bonding jumpers are provided with fitting.

XJG EMT Expansion Couplings

XJG EMT expansion couplings provide flexible, water-tight connections that protect EMT conduit wiring systems from damage caused by movement

Applications:

XJG EMT expansion couplings are used with EMT conduit:

- To couple together two (2) sections of conduit subject to longitudinal movement
- In conduit runs to prevent damage to conduit supports such as in a building or on a bridge
- Indoors or outdoors in long conduit runs to permit linear movement caused by thermal expansion and contraction
- In conduit runs that cross structural joints
- On long conduit runs to prevent conduit from buckling and ensuing circuit failures

Features:

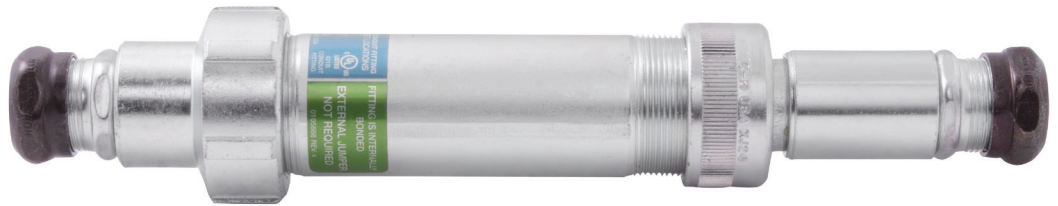
- Weatherproof and approved for use indoors or outdoors without an external bonding jumper
- Available in 1/2" through 4" trade sizes
- For use with EMT conduit
- Available in 4" maximum conduit movement
- Internal bonding springs and metallic bushings create high integrity internal ground connection and eliminate need for external bonding jumpers and clamps (up to 4" trade size)
- Optional redundant tinned copper bonding jumpers (BJ Series – ordered separately)
- UL Listed for use in wet locations
- Flat surface on gland nut provides smooth, flat surface for easy wrenching
- Distinct black gland nut provides quick identification as a wet location fitting
- Patented design

Certifications and Compliances:

- UL Standard: 514B
- CSA 22.2 No. 18 3-12
- NEMA FB1
- Wet locations

Options:

Available with redundant bonding jumper for visible indication of bonding – order separately (BJ Series)†



Materials and Finishes:

Body:

- Steel - electrogalvanized

Reducer and Gland Nut:

- 1/2" through 1" - Steel - electrogalvanized
- 1-1/4" through 4" - Feraloy® iron alloy - hot dip galvanized and aluminum paint

EMT Body:

- EMT compression connector – raintight – steel electrogalvanized
- Coupling – steel electrogalvanized

Packing:

- PTFE composite

Washer:

- Steel - electrogalvanized

Gasket:

- Vellum

Ground Springs:

- Phosphor bronze - electrogalvanized

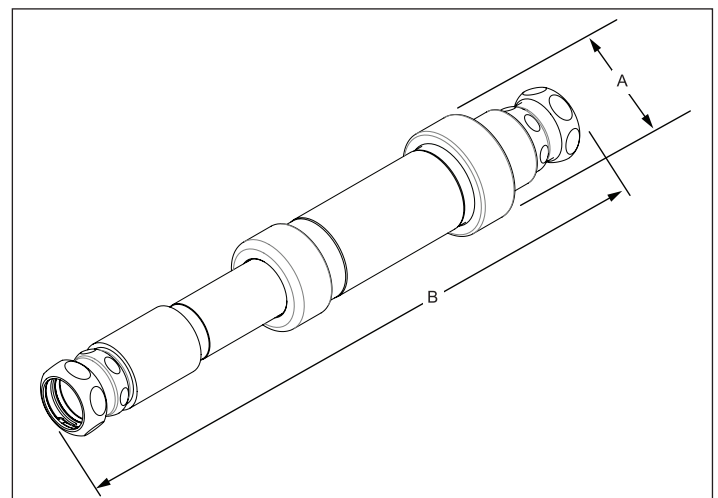
Ground Strap:

- Braided tinned copper

U-Bolts:

- Malleable iron - electrogalvanized

Dimensions (In.):



XJG EMT Ordering Information:

Conduit Size	Max. Conduit Movement	XJG EMT Cat. #	Optional Bonding Jumper†	A Diameter	B Length*
1/2	4	XJG14 EMT	BJ14	1.75"	11.36"
3/4	4	XJG24 EMT	BJ24	2.13"	11.54"
1	4	XJG34 EMT	BJ34	2.44"	11.89"
1-1/4	4	XJG44 EMT	BJ44	3.13"	12.31"
1-1/2	4	XJG54 EMT	BJ54	3.63"	13.37"
2	4	XJG64 EMT	BJ64	4.75"	15.42"
2-1/2	4	XJG74 EMT	BJ74	4.88"	19.05"
3	4	XJG84 EMT	BJ84	5.38"	19.11"
3-1/2	4	XJG94 EMT	BJ94	6.63"	19.64"
4	4	XJG104 EMT	BJ104	6.63"	19.75"

†XJG expansion couplings use a metallic bushing and bonding springs to create a high integrity internal ground connection. External ground straps offer a redundant ground path and easy visible indication of ground.

* (B) Length in fully retracted position, add 2" for mid-point length.

XD Deflection Couplings

XD deflection couplings provide flexible, water-tight connections that protect rigid/IMC or PVC conduit wiring systems from damage caused by axial expansion and contraction up to 3/4" and angular and parallel misalignment

Applications:

XD couplings can be installed indoors, outdoors, buried underground or embedded in concrete in non-hazardous areas. XDs are used with standard rigid conduit or PVC rigid conduit. (PVC requires rigid metal conduit nipples and rigid metal-to-PVC conduit adapters.) XDs provide a flexible and water-tight connection for protection of conduit wiring systems from damage due to movement.

Typical applications include:

- Underground conduit feeder runs
- Runs between sections of concrete subject to relative movement
- Runs between fixed structures
- Conduit entrances in high-rise buildings
- Bridges
- Marinas, docks, piers

Features:

- XD couplings accommodate the following movements without collapsing or fracturing the conduit, and damaging the wires it contains:
 1. Axial expansion or contraction up to 3/4"
 2. Angular misalignment of the axes of the coupled conduit runs in any direction to 30°
 3. Parallel misalignment of the axes of coupled conduit runs in any direction to 3/4"
- Inner sleeve provides a smooth insulated wireway for protection of wire insulation
- Watertight flexible-neoprene outer jacket is corrosion resistant and protects the grounding strap and the attachment points of the hubs
- Tinned copper flexible braid bonding straps assure bonding continuity
- Stainless steel jacket clamps for strength and corrosion resistance
- Standard tapered electrical threads fit standard rigid conduit
- Integral hub bushing protects insulation of conductors

Size Ranges:

- 1" to 6" (smaller sizes can be obtained by using reducing bushings)

Certifications and Complies:

- UL Standard: 514B
- CSA 22.2 No. 18 3-12
- Wet locations

Materials and Finishes:

Hubs:

- Feraloy® iron alloy - hot dip galvanized

Outer Jacket:

- Molded neoprene - natural (black)

Jacket Clamps:

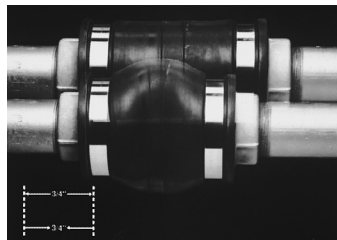
- Stainless steel - natural

Inner Sleeve:

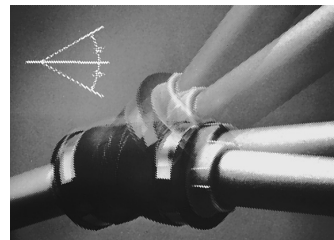
- Neoprene polyester fabric with steel coil

Bonding Strap:

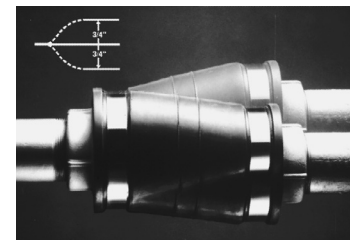
- Braided tinned copper



1. Axial expansion/contraction

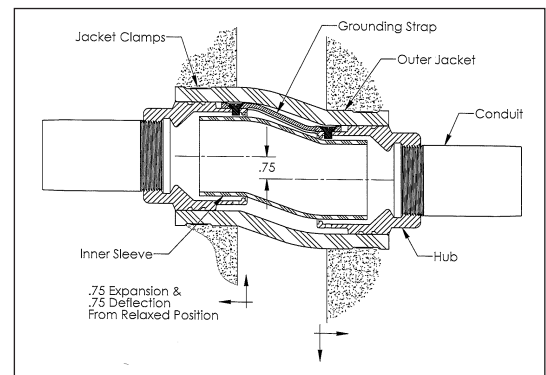
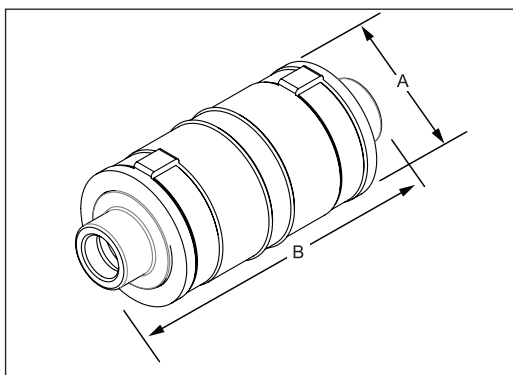


2. Angular misalignment



3. Parallel misalignment

Dimensions (In.):



XD Ordering Information:

Hub Size	Cat. #	A Diameter	B Length
1	XD3 HDG*	3.63"	8.63"
1-1/4	XD4 HDG	3.96"	8.75"
1-1/2	XD5 HDG	4.19"	8.78"
2	XD6 HDG	4.63"	9.16"
2-1/2	XD7 HDG	5.69"	9.53"
3	XD8 HDG	5.72"	10.13"
3-1/2	XD9 HDG	6.22"	10.81"
4	XD010 HDG	6.75"	11.88"
5	XD012 HDG	7.75"	12.50"
6	XD014 HDG	9.00"	13.50"

*3/4" trade size can be created using third party certified 1" - 3/4" reducing bushings.

XJGD Rigid/IMC Expansion/Deflection Couplings

XJGD rigid/IMC expansion couplings provide flexible, water-tight connections that protect rigid and IMC conduit wiring systems from damage caused by expansion and contraction up to 4" and angular and parallel misalignment

Applications:

XJGD combination expansion/deflection couplings are used with rigid metal conduit and IMC:

- To couple together two (2) sections of conduit subject to longitudinal movement
- To accommodate axial expansion, angular misalignment and parallel misalignment:
- Indoors or outdoors in long conduit runs to permit linear and axial movement caused by thermal expansion and contraction
- To maintain electrical continuity without the need for an external bonding jumper and clamps
- In conduit runs that cross structural joints
- In conduit runs to prevent damage to conduit supports such as in a building or on a bridge
- On long conduit runs to prevent conduit from buckling and ensuing circuit failures

Materials and Finishes:

Body:

- Steel - electrogalvanized

Reducer and Gland Nut:

- 1/2" through 1" - Steel - electrogalvanized
- 1-1/4" through 4" - Feraloy® iron alloy - hot dip galvanized and aluminum paint

Hubs:

- Feraloy® iron alloy - hot dip galvanized

Packing:

- PTFE composite

Gasket:

- Vellum

Ground Springs:

- Phosphor bronze - electrogalvanized

XD Component Outer Jacket:

- Molded neoprene - natural (black)

XD Jacket Clamps:

- Stainless steel - natural

XD Inner Sleeve:

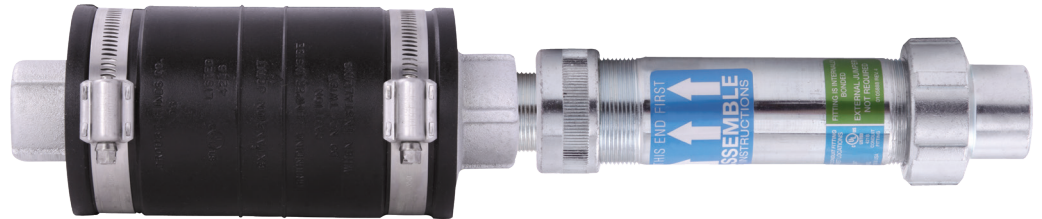
- Neoprene polyester fabric with steel coil

Bonding Strap:

- Braided tinned copper

Certifications and Compliances:

- UL Standard: 514B
- CSA 22.2 No. 18 3-12
- Wet locations

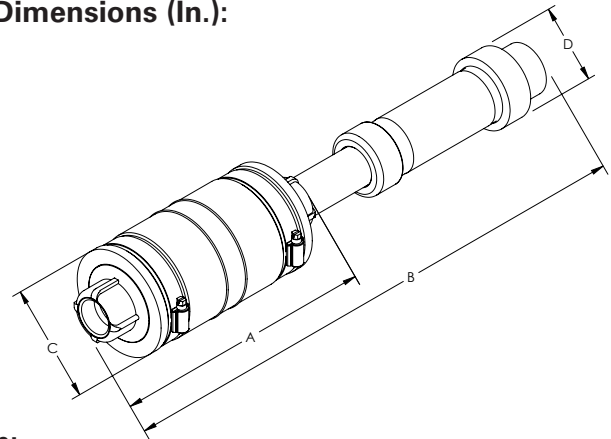


Features:

- XJGD fittings are weatherproof and approved for use indoors or outdoors without an external bonding jumper
- Available in 1/2" through 4" trade sizes
- For use with rigid metal and IMC conduit
- Available in 4" maximum conduit movement
- XJGD Couplings include XD couplings which accommodate the following movements without collapsing or fracturing the conduit, and damaging the wires it contains:
 1. Axial expansion or contraction up to 3/4"
 2. Angular misalignment of the axes of the coupled conduit runs in any direction to 30°
 3. Parallel misalignment of the axes of coupled conduit runs in any direction to 3/4"
- XD component includes inner sleeve which provides a smooth insulated wireway for protection of wire insulation
- XD component contains a watertight flexible neoprene outer jacket which is corrosion-resistant and protects the grounding strap and the attachment points of the hubs
- XD component includes stainless steel jacket clamps for strength and corrosion resistance

- XJG component includes internal bonding springs and metallic bushings to create high integrity internal ground connection and eliminate need for external bonding jumpers and clamps (up to 4" trade size)
- Optional redundant tinned copper flexible braid bonding jumpers assure continuity (BJ Series – ordered separately)
- UL Listed for use in wet locations
- NPT threads fit standard rigid conduit
- Patented design

Dimensions (In.):



XJGD Ordering Information:

Hub Size	XJGD Cat. #	A Length	B Length*	C Diameter	D Diameter
1	XJGD34	8.63"	16.26"	3.63"	2.43"
1-1/4	XJGD44	8.75"	16.54"	3.96"	3.12"
1-1/2	XJGD54	8.78"	16.83"	4.19"	3.62"
2	XJGD64	9.16"	19.31"	4.63"	4.38"
2-1/2	XJGD74	9.53"	19.80"	5.69"	4.87"
3	XJGD84	10.13"	20.47"	5.72"	5.37"
3-1/2	XJGD94	10.81"	21.00"	6.22"	6.62"
4	XJGD104	11.88"	21.97"	6.75"	6.62"

* (B) Length in fully retracted position, add 2" for mid-point length.

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