

WARD[®]
INDUSTRIES

HIGH PERFORMANCE CONNECTION

Duct Connection Products
Hangers and Strapping
Access Doors

Product Catalog
Edition 8

HART
COOLEY[®]
install confidence.

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Since 1991, Ward Industries has been a trusted leader in the manufacturing and supply of sheet metal products for commercial and industrial HVAC applications. In 2002, Hart & Cooley, Inc. acquired Ward to add to their comprehensive offering of HVAC products and to expand Ward's business across the United States and Canada.

Ward Industries' main product line centers on high quality duct connectors for rectangular and round/oval sheet metal ductwork, and includes various styles of access doors and much more. In addition to the J and H flange connector systems, Ward Industries offers spiral and oval duct connectors, slips & drive, and vane & rail. Corner systems are available to match almost any flange style.

We've added the QuicKorner™, a new corner engineered to work in insertion machines for easy connection of TDF or TDC roll-formed flanges.

Today, Ward Industries continues to lead the industry with an intense customer focus. By understanding needs and creating value added products, Ward Industries can help increase profitability and create winning results.

Flange

- Available in specialty metals
- Provides a large butyl-filled integrated sealant pocket to ensure proper sealing
- Offers a metal shoulder to protect gasket
- Available in 10' and 20' lengths
- Recommended for 14-gauge through 26-gauge ductwork



Model FLG J

- J-rated Flange
- 20-gauge galvanized steel
- Meets SMACNA rigidity Class J for transverse joints (steel)
- Meets SMACNA rigidity Class H for transverse joints (aluminum)

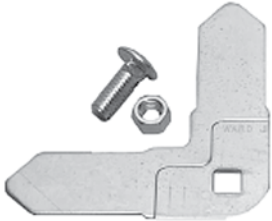


Model FLG H

- H-rated Flange
- 22-gauge galvanized steel
- Meets SMACNA rigidity Class H for transverse joints (steel)

Corner and QuickCorner™

- Formed galvanized steel
- Available in specialty metals to match flange material
- QuickCorner for use in both single and double head auto insertion machines (available in GA & AL only).



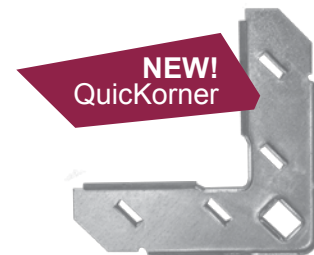
Model CNR J

- J Flange Corner
- Nuts and bolts included (galvanized)



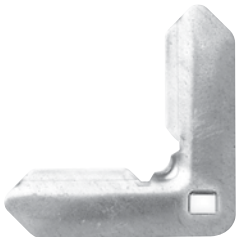
Model CNR H

- H Flange Corner
- Nuts and bolts included (galvanized)



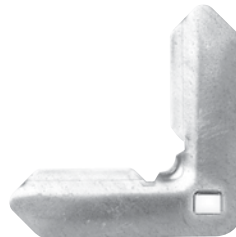
Model CNR QF

- TDF Flange Corner
- Use with TDF



Model CNR TF

- TDF Flange Corner
- Use with TDF-formed flange



Model CNR TC

- TDC Flange Corner
- Use with TDC-formed flange



Model CNR QC

- TDC Flange Corner
- Use with TDC

Cleat

- Formed galvanized steel
- Available in specialty metals to match flange material
- Available in 10' or 6" lengths
- Available in .070" thick extruded PVC for breakaway connections (6" only)



Model CLT W

- W Cleat
- Use with Ward J and H flange, as well as TDC-formed flange

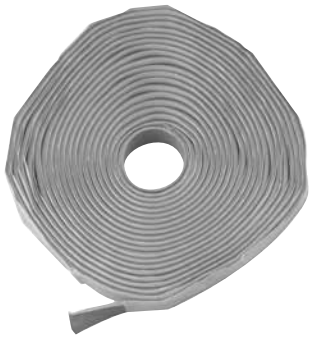


Model CLT F

- F Cleat
- Use with TDF-formed flange

Butyl Gasket

- Provides a nondrying, permanently flexible gasket
- Adheres to a variety of clean, dry surfaces
- Contains high percentage of virgin butyl rubber to enhance its sealing and aging characteristics
- Formulated to retain handling properties through a wide temperature range
- Will not crack or separate while being applied at low temperatures



Model GSK-BT Butyl Tape Gasket

- Product is 3/16" x 5/8" and is available in 25' and 30' rolls



Model GSK-BP Butyl Patch Gasket

- Product is 3/16" thick, and is available in 1" x 2" and 2" x 3" patch sizes

Neoprene Tape Gasket

- Closed-cell foam comprised of neoprene, PVC, and nitrile
- Has good chemical resistance and is flame-rated
- Product is 5/16" x 3/4" and is available in 50' rolls



Model GSK-NT

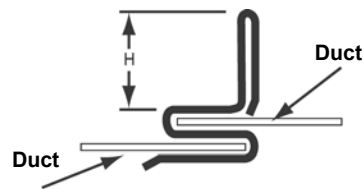
Slip

- Roll-formed galvanized steel
- Available in specialty metals
- Available in 5' and 10' lengths



Model SLS

- Standing slip
- Available in 1/2" in 24-gauge and 26-gauge
- Available in 1" in 20-gauge through 26-gauge



Model SLF

- Flat slip
- Available in 22-gauge through 26-gauge



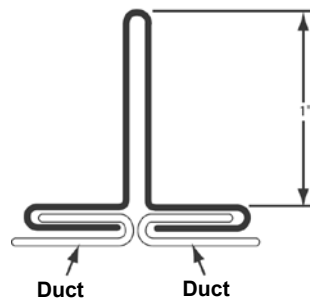
Drive

- Roll-formed galvanized steel
- Available in specialty metals
- Available in 5' and 10' lengths



Model DRS

- Standing drive
- Available in 24-gauge and 26-gauge
- Available in 1" height



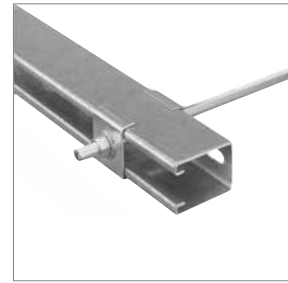
Model DRF

- Flat drive
- Available in 22-gauge through 26-gauge



Trapeze Hanger

- Roll-formed galvanized steel
- Slotted holes 2-1/4" on center
- Available in both 16-gauge and 18-gauge
- Available in 10' and 20' lengths
- Inexpensive, yet strong alternative to standard strut systems
- Compatible with multiple clamp and component items
- Use Trapeze Washer (TZW) and Threaded Rod for a complete system (sold separately)



**Model TZH
and Model TZW**

Threaded Rod

- Zinc-plated threaded rod
- Available in standard thread diameters ranging from 1/4" to 7/8"
- Available in 6', 10' or 12' lengths
- Use with Trapeze Hanger and Washer for a complete hanging system (sold separately)



Model THR

Hanger Strap

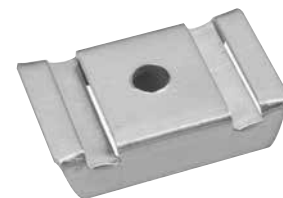
- Galvanized steel
- Available in 16-gauge through 24-gauge
- Available in 200' rolls or 10' flat blanks
- Great multipurpose product for hanging ductwork
- Use with Strap Buckle for quick and easy installation



**Model SHR
Model SHB (10' strip) also available**

Strap Buckle

- Ideal for hanging round duct
- Hanger strap is bent into the strap buckle and suspended with threaded rod



Model SB

Angle Iron

- Roll-formed galvanized steel
- Slotted and punched holes 4" on center
- Available in 14-, 16- and 18-gauge
- Available in 12' lengths
- Great multipurpose product



Model AGS - slotted



Model AGP - punched



Model AGX - solid

Vane and Rail

- Roll-formed galvanized steel
- Available in 10' lengths
- Custom lengths available
- Double-wall turning vane and turning rail designs in accordance to SMACNA guidelines

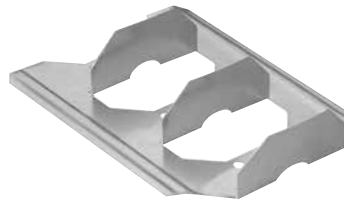


2" Vane

4" Vane

Model VNN

- Roll-formed 24-gauge galvanized steel (4")
- Roll-formed 26-gauge galvanized steel (2")



Model RAL

- Roll-formed 22-gauge galvanized steel (2" and 4")
- Provides extra wide margin for easy fastening
- Rail stacks to minimize storage and shipping requirements
- Self-aligning tabs for easy vane installation

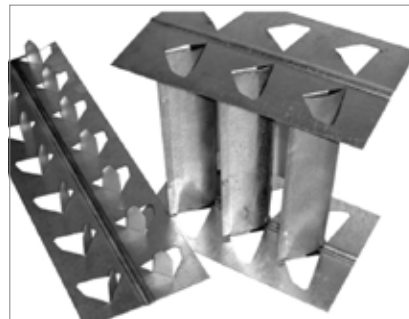


Vane and Rail assembly

Quick Rail™

Model FRI RAL Quick Rail™

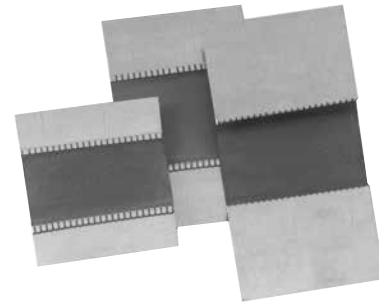
- Roll-formed 22-gauge galvanized steel (2" Rail Only)
- Eliminates the tedious process of bending each vane to secure it to the rail
- Two tabs instead of one
- Eliminates loose connections that can cause annoying rattle over time
- Self-aligning tabs for easy vane installation
- Self-centers vanes onto rails
- Holds the vanes tangent to the airstream eliminating trailing edges



Quick Rail™ eliminates extra assembly steps

Flexible Connector

- Roll-formed galvanized steel and fabric
- Available in specialty metals
- Available in both commercial and residential grades
- Available with two different styles of seam wraps
- Available in 100' rolls
- All fabrics rated to 10" S.P.
- Absorbs sound and vibration to prevent from transmitting throughout system



Model FC

Grade	Composition	Gauge	Metal	Fabric*	Wrap
TDC/TDF Commercial	4" Metal 4" Fabric 4" Metal	24	Galvanized Aluminum Stainless Steel	All Types	Double
Commercial	3" Metal 3" Fabric 3" Metal	24	Galvanized Aluminum	All Types	Double
Economy	2.75" Metal 4" Fabric 2.75" Metal	28	Galvanized	Neoprene Vinyl	Standard
Residential	1.75" Metal 3" Fabric 1.75" Metal	28	Galvanized	Neoprene Vinyl	Standard

*The proper fabric can be easily selected by using our Flexible Connector Fabric Chart (see pg. 26) after careful consideration of the installation requirements, such as, pressure of the system, temperature range, indoor and out door installation, proximity to chemicals or fumes and approvals required.

Keating Koupling™

- Formed 20-gauge galvanized steel
- Available in specialty metals
- Provides a large, butyl-filled, integrated sealant pocket to ensure proper sealing
- Available for both round and flat oval duct
- Available in sizes ranging from 10" to 36"
- Provides a connection that is virtually airtight up to 16" S.P.
- Provides a smooth, clean appearance for exposed installation



Model KKC - round



Model KKC - oval



Installed

Compression Duct Door

- Formed galvanized steel
- Available in specialty metals
- Available in sizes 8" x 4", 10" x 6" and 16" x 12"
- Available for both flat and round duct
- Self-adhesive template included for proper installation



Model DSA

for Single-Wall Duct

- Formed 20-gauge galvanized steel
- Utilizes closed-cell neoprene gasket to ensure proper sealing requirements
- Pressure tested to over 20" WG

Model DSA DW

for Double-Wall Duct

- Formed 20-gauge galvanized steel
- Utilizes closed-cell neoprene gasket to ensure proper sealing requirements
- Increased bolt length allows door to encompass double wall or insulated duct
- Pressure tested to over 20" WG

Model DSA HT

for High-Temperature Duct

- Formed 16-gauge black iron
- Utilizes ceramic rope gasket
- For applications up to 2000°F

Spin-In Access Doors

- Formed 22-gauge galvanized steel frame
- Formed 24-gauge galvanized steel door
- Fiberglass encapsulated in 1" thick door, providing an estimated R-value of 3
- Utilizes closed-cell neoprene gasket
- Available in sizes from 8" to 24" diameter
- Tested to 20" S.P. with minimal leakage



Model DSP

Square Access Doors

- Formed 22-gauge galvanized steel frame
- Formed 24-gauge galvanized steel door
- Fiberglass encapsulated 1" thick door
- Preformed dovetail tabs allow for easy and quick installation
- Available in sizes from 6" x 6" to 24" x 24"
- Available in both styles for high pressure applications



Model DCM
Square Cammed Door

- Provides an estimated R-value of 3
- Utilizes open-cell polyester foam gasket
- Dual-cam design offers complete removal of door for accessing duct
- Tested to 4.5" S.P. with minimal leakage

Model DCM-HP
Square Cammed Door

- Provides an estimated R-value of 3
- Utilizes closed-cell neoprene foam gasket
- Multi-cam design offers complete removal of door for accessing duct
- Tested to 10" S.P. with minimal leaking



Model DHG
Square Hinged Door

- Provides an estimated R-value of 3
- Utilizes open-cell polyester foam gasket
- Full-length hinge allows door to pivot out of the way for easy access to the duct
- Tested to 4.5" S.P. with minimal leakage

Model DHG-HP
Square Hinged Door

- Provides an estimated R-value of 3
- Utilizes closed-cell neoprene foam gasket
- Full-length hinge allows door to pivot out of the way for easy access to the duct
- Tested to 10" S.P. with minimal leaking

Rod Lock

- Zinc-plated grade 5 bolt
- Zinc-plated washer with neoprene gasket
- Zinc-plated nut with spring steel seat plates
- Available in both 1/2" and 3/4" sizes
- Use with standard conduit to provide quick and easy installation of tie rods
- Use for both joint and center tie rods
- Pull-tested to over 1,900 lbs.
- Use rod lock tool for easy installation (sold separately)



Model RL

Weld Pins

- Available in 1/2", 3/4", 1", 1-1/2" and 2" sizes
- Available in both cupped and flat head
- Compatible with most weld machines used to apply pins up to 2" in length



Model WP CH

Stik-Pins

- No tools needed for the application of hangers to sheet metal.
- Insulation may be installed immediately because of positive adhesion of hanger to metal.
- Application of hanger is clean, fast and simple with no toxic fumes.
- Available in copper plated, 12 gauge (.106 dia.) material



Crimper

- Installs Ward TDC corners in TDC-formed flange
- Installs Ward TDF corners in TDF-formed flange
- Forms hem, presses to crimp, and secures the corner in the flange



Model CRIMPER

Rod Lock Install Tool

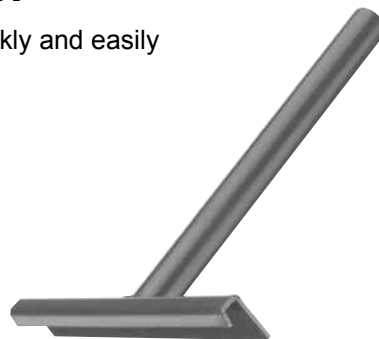
- Installs Rod Lock nuts quickly and accurately in conduit



Model RODLOCK

Cleat Install Tool

- Installs finishing cleat quickly and easily



Model CLEAT

	Industry Standard High Velocity	General Purpose Low/Med Velocity	Ideal Outdoor High Velocity	All Weather High Velocity	Superior Weathering High Temperatures
	NEOPRENE (Neoprene/Fiberglass)	VINYL (PVC/Nylon/ Polyester)	HYPALON (Polyester/Fiberglass)	EPDM (Polyester)	SILICONE (Silicone/Fiberglass)
Description	A heavy glass fabric, coated on both sides with neoprene. The glass fabric is non-combustible, and the coating is fire retardant, and has no glow time or char length. It is waterproof, airtight, and gasoline and grease resistant.	A nylon polyester fabric with a heavy vinyl coating on both sides. It is an extremely tough connector material. Dark gray in color, the coating is flame retardant, and is airtight, weather resistant and chemical resistant.	A heavy glass fabric, coated on both sides with white Hypalon (CPSE) a synthetic rubber. Fabric is non-combustible and the coating is flameproof. It has excellent weathering quality and is waterproof. Resistant to ozone, acids, alkalis, gasoline and grease.	A polyester fabric with a heavy coating on both sides of EPDM Airtight and watertight fabric has outstanding resistance to weathering, ultraviolet radiation, ozone and is not affected by mildew.	A very heavy glass fabric, coated on both sides with silicone. Silver in color, flameproof, and has excellent resistance to many chemicals and weathering. Designed for high temperature applications.
Approvals	Complies with Federal Specifications MIL-Y-1140 C. Conforms with standards for flexible duct connectors outlined in NFPA 90A. Fabric is U.L. listed per U.L. 181 Class 1, and is LA Approved.	Complies with Federal Specifications MIL-C-20696B. Conforms with standards for flexible duct connectors outlined in NFPA 90A and 90B. Fabric is U.L. listed per U.L. 214, and with the California State Fire Marshall.	Complies with Federal Specifications MIL-C-20696B and MIL-Y-1140 C. Conforms with standards for flexible duct connectors outlined in NFPA 90A. Fabric is U.L. listed per U.L. 214.	Conforms with standards for flexible duct connectors outlined in NFPA 90A. Fabric is U.L. listed and has received Class A Fire Resistance Approval.	Complies with Federal Specifications MIL-Y-1140 H and FTMS 191 A test method 5903 and MIL-C-20696 C. Fabric is U.L. listed per U.L. 214 and 181 Class 0, and is LA Approved.
Weight	ASTM D 751-73 29 oz/sq yd +/- 1.5	Fed Std. 191B 20 oz/sq yd +/- 1.5	ASTM D 751-73 23 oz/sq yd +/- 1.5	Fed Std. 191B 35 oz/sq yd +/- 1.0	ASTM D 751-73 34 oz/sq yd +/- 1.5
Tensile Strength	ASTM D 751-73 475 lbs warp x 375 lbs fill	ASTM D 751-73 225 lbs warp x 250 lbs fill	ASTM D 751-73 475 lbs warp x 375 lbs fill	ASTM D 751-73 200 lbs warp x 200 lbs fill	ASTM D 751-73 610 lbs warp x 512 lbs fill
Fire Resistance	Passed U.L. 214 Flame Resistance Approval. Has 2 sec. glow time and 3.5" char length.	Passed U.L. 214 Class A Fire Resistance Approval.	Federal Standard 191A Does not burn. Has no glow time and only 1/4" char length.	Passed U.L. 214 Class A Fire Resistance Approval.	Federal Standard 191A Flame Resistance. Self-extinguishing.
Temperature Range	ASTM D 2136 and D 573 -40 F to 200 F continuous	ASTM D 2136 and D 573 -40 F to 180 F continuous 200 F intermittent	ASTM D 2136 and D 573 -40 F to 240 F continuous 250 F intermittent	ASTM D 2136 and D 573 -45 F to 200 F continuous 240 F intermittent	ASTM D 2136 and D 573 -67 F to 500 F continuous 600 F intermittent
Tear Strength	ASTM D 751-73 25 lbs warp x 20 lbs fill	ASTM D 751-73 60 lbs warp x 60 lbs fill	ASTM D 751-73 20 lbs warp x 15 lbs fill	ASTM D 751-73 80 lbs warp x 80 lbs fill	ASTM D 751-73 60 lbs warp x 25 lbs fill
Waterproof Qualities	ASTM D 751-73 Hydrostatic Resistance 750 psi	ASTM D 751-73 Hydrostatic Resistance 320 psi	ASTM D 751-73 Hydrostatic Resistance 750 psi	ASTM D 751-73 Hydrostatic Resistance 375 psi	ASTM D 751-73 Hydrostatic Resistance 600 psi
Thickness	ASTM 751-73 .025"	ASTM 751-73 .023"	ASTM 751-73 .020"	ASTM 751-73 .036"	ASTM 751-73 .030"
Pressure Rating	All grades rated to 10" SP	All grades rated to 10" SP	All grades rated to 10" SP	All grades rated to 10" SP	All grades rated to 10" SP
Chemical Resistance	ASTM D 1149 Resistant to acids, alkalis, gasoline and grease.	ASTM D 1149 Resistant to oil, grease, weathering and many other chemicals.	ASTM D 1149 Resistant to ozone, acids, alkalis, gasoline and grease.	ASTM D 1149 Outstanding resistance to weathering, ultraviolet radiation, ozone and is not affected by mildew.	ASTM D 1149 Excellent resistance to acids and alkalis. Adversely affected by gasoline, toluene, acetone and grease.
Applications	Can be used in practically every type of HVAC system. Because of its chemical resistance, it can be used in kitchen and fume hoods. It is absolutely waterproof and airtight, and is ideal for high pressure systems and outdoor applications.	Can be used in practically every type of installation within its temperature range. Low in cost and easy to work with. It has extremely high abrasion, tear and cut resistance, is rot, fungus and UV resistant. Dielectric and thermally weldable.	Can be used in practically every type of installation. White coating reflects heat and is clean appearing. It is ideal for outdoor applications. And because of its chemical resistance, it can be used in kitchen and fume hoods. It is absolutely airtight and is ideal for high pressure systems.	Can be used in practically every type of installation. It is especially recommended for heavy weather applications. It is not affected by ultraviolet radiation, ozone or mildew. Insulated EPDM has a R rating of 2 and will reduce heat loss/gain.	Can be used in practically every type of installation, especially in high temperature applications, and where an airtight connector is required.

WARD[®]
INDUSTRIES

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