



PROSYSTEMKI

Complete Sustainable HVAC & Building Performance





TITAN OUTLET Seals Piping Wall Penetrations

TGS Series



- Gasket Compression System Seals Wall Air Leakage & Weather Moisture Wall Damage
- Superior durable quality with U/V resistance & high impact strength design
- Flexible elastomeric outlet sleeve design offers wall isolation, anti-vibration, anti-noise, anti-wind, anti-rodent features



- Outdoor UV/Weather Grade Resistant Construction
- Self-Gripping, Dual-Bonded Hook & Loop Fastening System
- · Removable/Reusable for Maintenance
- Protector and Class II Vapor Retarder (All-In-One)

Copper Piping & Pipe Insulation

2012 & 2015 \\ nternational Energy Conservation Code (IECC)

Residential Section R403.3.1 (2012), R403.4.1 (2015) Commercial Section C403.2.8.1 (2012), C403.2.10.1 (2015) Protection of Piping Insulation:

Piping insulation exposed to weather shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, wind and shall provide shielding from solar radiation that can cause degradation of the material. Adhesive tane shall not be permitted

Air Leakage (Mandatory): Residential Section 402.4 The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.4.

Air Barrier Construction: Commercial Section C402.5.1.1 Penetrations of the air barrier shall be caulked, gask sealed in a manner compatible with the construction materials and locations

Weather Damage Protection













Damage **Protection**

Physical















Residential

Commercial

Multi-Family Units

Approved Material & Performance Testing

- ASTM E283 Standard Test Method for Air Leakage
 ASTM E283 Standard Test Method for Water Penetration
 ASTM E 2178 Air Permeance of Building Materials
 Wall Mounted Outlet (Outdoor-Rated Rigid Plastic)
 ASTM D1525C-09 Temperature Deformation Test
 ASTM D648-07 Temperature Load Deformation Test
 UL 94 HB Flammability Test
 UL 746C Outdoor Suitability f1 Rating
 Wall Outlet Sleeve (Outdoor-Rated Elastomeric Plastic)
 ASTM D573-04 Deterioration Test
 ASTM D746-07 Brittleness Temperature Impact Test
 F-FI FX (LIARD) (Outdoor-Rated PVC, Material)

- ASTM D746-07 Brittleness Temperature Impact Test EF-LEX GUARD (Outdoor-Rated PVC Material)
 ASTM G153 Weatherization and UV Exposure
 ASTM E96 Water/Vapor Permeability
 ASTM G21 Anti-Fungal/Anti-Microbial
 ASTM D412 Tension Deformation Test (UV Exposure & Water Immersion)
 ASTM D570 Water Absorption
 ASTM E84/UL 723 Flame and Smoke Rating 25/450
- *Based on HVAC Industry and Manufacture rs Independent Study on a Combined ROI & Sustainable Energy Savings Calculation. A contributing product to the U.S. Energy Department's 30% Energy Savings Solution Initiative.













Codes & Standards Compliance

- Pipe Insulation Protection Compliance per:

 IECC 2012 Protection of Piping Insulation Commercial Section C403.2.8.1

 IECC 2015 Protection of Piping Insulation Commercial Section C403.2.10.1

 IECC 2015 Protection of Piping Insulation Protection M1411.6.1 Section N1103.4.1

 California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 Commercial Requirement for Pipe Insulation, Section 120.3(a) General Requirements, (b) Insulation Protection

 California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 Residential Requirement for Pipe Insulation, Section 150 0-Mandatory, 150 0(j)3 Insulation Protection. (A),(B)

 ANSI/ASHRAE/IESNA Standard 90.1 2004, 2007, 2010

 Air Leakago/Wall Penetration Compliance per:

- Pipe insulation, Section 150.0-Mandatory, 150.0/1) 3 insulation Protection.(A),(B)

 ANSI/ASHRAE/IESNA Standard 90.1 2004, 2007, 2010

 Air Leakage/Wall Penetration Compliance per:

 IBC 2006, 2009, 2012 Chapter 13

 IRC 2006, 2009, 2012 Chapter 11 Part IV Energy Efficiency Section N1101 General N1101.1 Scope Air Leakage Section N1102.4 Section N1102.4.1 Building Thermal Envelope (1. All joints, seams, penetrations) Chapter 11 Refrigeration Section 1101.0 Scope 1101.3 Protection

 IECC 2006, 2009, & 2012 Air Leakage (Mandatory) Residential Section 402.4.1 and 402.4.1.1 Building Thermal Envelope Penetrations

 IECC 2006, 2009, & 2012 Air Leakage (Mandatory) Commercial Section C402.4.3 and C402.4.2 Building Thermal Envelope Penetrations

 IMC 2006, 2009, & 2012 Chapter 3 General Regulations Section 301.1 Scope Sections 301.10, 301.11, 301.14, 301.15, 305.1, 305.2, 305.4

 UMC 2006, 2009, & 2012 Chapter 11 Refrigeration Section 1101.0 Scope Section 1101.1 General Requirements Section 1106.0 Section 1106.2 Sections 1111.1, 1111.2, 1111.4

 California Building Energy Efficiency Standards (Title 24 Energy Code) 2016, Part 6 Section 110.7-Mandatory Requirements to Limit Air Leakage





72170 Dunham Way, Suite D | Thousand Palms, CA 92276 | (760) 343-2277 | FAX (760) 343-5599

A Combined HVAC Pipe Penetration Wall Seal and Piping Insulation Protection AIREX PROSYSTEMKIT	2in	Energy Efficient Products	Contracte Date Specifica	or	UBMITTAL SHEET eference
TITAN OUTLET EXTERIOR WALL OR PARAPET WALL SEAL PENETRATION OUTLET WITH ELASTOMERIC LINE-SET COMPRESSION SLEEVE TYPE "TITAN GS30" BY AIREX MANUFACTURING INC.	EXTERIOR WALL OR PARAPET WALL	Airex Par	PRO-S		TEM KIT MODEL NUMBERS Model TGS: Stucco, Masonry Applications
B COVER TYPE "E-FLEX GUARD" B COVER TYPE "E-FLEX GUARD" BY AIREX MANUFACTURING INC.	WALL ANCHOR SCREWS PART OF COMPONENT "A"	TGS-650G TGS-650G TGS-675	G-72E-B -72E-W G-72C-B	White Black	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube
OUTDOOR CONDENSING UNIT	WALL SURFACE GASKET SEAL PART OF COMPONENT "A"	TGS-675G TGS-610G	G-72X-B -72X-W	White Black White	or 1/2" wall thickness pipe insulation with 1-1/8" tube. Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8"
CONDENSER	STAINLESS STEEL CLAMP PART OF	Airex Part TSS-6500 <i>TSS-650G</i> TSS-6750	3-72E-B 72E-W	Black White	Model TSS: Siding, Compact Applications Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube
	COMPONENT "A"	TSS-675G-	72C-W	White	or 1/2" wall thickness pipe insulation with 1-1/8" tube.

Product Description and Specification

TSS-675G-72C-W TITAN OUTLET¹³

Color Options

Gray - G

When ordering, substitute Gray (G) for White (W)

White - W

Substitute Black (B) for White (W)

Black - B

E-FLEX GUARD™

Color Options

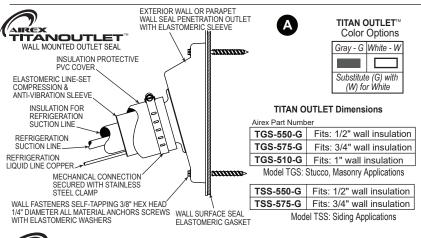
AIREX PRO-SYSTEM KIT™ (a combined wall seal and insulation protection system) by Airex Manufacturing Inc., to be provided and installed for sealing HVAC refrigerant line "wall penetrations" and protection of refrigerant "line set piping insulation". The combined use of a compression gasket and wall seal system is required by energy codes to prevent: wall air-leakage, moisture intrusion, weather intrusion, rodent intrusion, piping vibration control, physical wall or piping damage, especially when mechanically connecting to thermal insulated refrigerant piping. In addition, pipe insulation is also required to be protected from sun, wind, snow, ice, equipment maintenance and physical damage. AIREX PRO-SYSTEM KIT™ to be provided is to ensure healthy building indoor air quality, long-term building durability, sustainable building energy efficiency and optimal HVAC system performance.

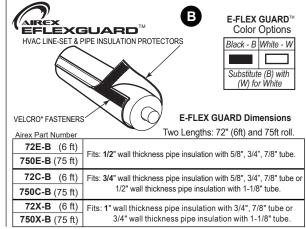
UV CABLE TIES PART OF

COMPONENT "B

AIREX TITAN OUTLETT A wall outlet seal by Airex Manufacturing Inc., shall be provided and installed with its compression gasket mounting method and must be fastened to wall surface with supplied ICC-ES listed and approved non-corrosive screws with pre-loaded neoprene washers. Wall Outlet must also integrate an over-molded, flexible, elastomeric sleeve for sealing, supporting and isolating refrigerant pipes to also control vibration. The Wall Outlet shall also feature outdoor-rated durability and shall provide wall expansion and contraction protection features achieved by gaskets and seals as per energy code requirements. A stainless steel clamp must be utilized to create a "Mechanical Connection" between wall seal and pipe insulation protector as intended per energy codes to allow removable/reusable maintenance capabilities and designed to co-act with the AIREX E-FLEX GUARD™ Pipe Insulation Protection Cover. Wall Outlet seal and insulation protector must both be sustainably and securely installed, mechanically fastened together as one, due to piping vibration, and shall be assembled without the use of adhesives or adhesive tapes as per energy code requirements. Wall Outlet shall be tested and must meet the following testing: ASTM E 331 (Water Penetration), ASTM E 283 (Air Leakage), and ASTM E 2178 (Air Permeance of Building Materials).

AIREX E-FLEX GUARD™ - An insulation protective cover by Airex Manufacturing Inc., shall be provided and installed to be flexible, U/V and weather resistant. The PVC plastic pipe insulation cover shall feature an integrated, outdoor-rated durability, industrial-grade, full-enclosure fastening system that is double secured by molecular bonding, allowing custom, cut-to-length installations. The cut-to-length installations shall comprise of a non-unraveling PVC cover material that does not compromise long-term-effectiveness or require specialized tools and cutting equipment. The engineered fastening system is to allow the cover to be removable and reusable for maintenance without the use of adhesives as an attachment in any way shape or form, including either in the protector's construction, installation, or attachment to pipe insulation, as this will negatively affect insulation permeance performance and promote insulation material degradation which causes added energy usage by equipment. WRAPPING TAPE OR ADHESIVE TAPE SHALL NOT BE PERMITTED AS PER ENERGY CODES. Insulation Protector shall be tested and meet the following testing: ASTM E 96 (Vapor Transmission of Materials), ASTM G 153 (Carbon Arc Light Exposure – Accelerated Weathering), ASTM D 412 (Tensile Strength after UV Exposure and Water Immersion) ASTM 570 (Water Absorption of Plastics) ASTM E 84/UL 723 (Surface Burning Characteristics of Building Materials), ASTM G 21 (Fungal Growth). UV/Protector Pipe Insulation Material shall Meet Class II vapor retarder per ASTM E 96 (vapor/moisture permeability test) "1 perm or less". THE USE OF UV PAINT OR NON-PERMEABLE MATERIALS OR ADHESIVES ARE NOT PERMITTED FOR THIS APPLICATION. AIREX E-FLEX GUARD™ combines U/V weather and physical protection with a Class II rated vapor retarder permeability performance material, as required per energy codes.







LIQUID LINE

SUCTION LINE

U.S. Patents #9,091,377 B2, #9,523,200 B2





DSYSTEN

Complete Sustainable HVAC & Building Performance





TITAN OUTLET Seals Piping Wall Penetrations

TGS Series



- Gasket Compression System Seals Wall Air Leakage & Weather Moisture Wall Damage
- Superior durable quality with U/V resistance & high impact strength design
- Flexible elastomeric outlet sleeve design offers wall isolation, anti-vibration, anti-noise, anti-wind, anti-rodent features



- Self-Gripping, Dual-Bonded Hook & Loop Fastening System
- · Removable/Reusable for Maintenance
- Protector and Class II Vapor Retarder (All-In-One)

al Energy Conservation Code (IECC)

Residential Section R403.3.1 (2012), R403.4.1 (2015) Commercial Section C403.2.8.1 (2012), C403.2.10.1 (2015)

Protection of Piping Insulation:
Piping insulation exposed to weather shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, wind and shall provide shielding from solar radiation that can cause degradation of the material. Adhesive tape shall not be permitted.

Air Leakage (Mandatory): Residential Section 402.4 The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.4.

Air Barrier Construction: Commercial Section C402.5.1.1 Penetrations of the air barrier shall be caulked, gasketed ealed in a manner compatible with the construction materials and locations.

Weather **Damag Protection**

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Bird





Oamage

Physical

Damage Protection



Multi-Family Units

Approved Material & Performance Testing

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 ASTM E331 Standard Test Method for Water Penetration

- ASTM E331 Standard Test Method In All Leavage
 ASTM E 3178 Air Permeance of Building Materials
 Wall Mounted Outlet (Outdoor-Rated Rigid Plastic)
 ASTM D648-07 Temperature Deformation Test
 ASTM D648-07 Temperature Load Deformation Test
 ASTM D648-07 Temperature Load Deformation Test
 UL 94 HB Flammability Test
 UL 746C Outdoor Suitability 11 Rating
 Wall Outlet Sieeve (Outdoor-Rated Elastomeric Plastic)
 ASTM D76-07 Brittleness Temperature Impact Test
 ASTM D746-07 Brittleness Temperature Impact Test
 F-IEX GUARD (Outdoor-Rated PVC Material)
 ASTM G153 Weatherization and UV Exposure
 ASTM G96 Water/Yapor Permeability
 ASTM G21 Anti-Fungal/Anti-Microbial
 ASTM D412 Tension Deformation Test (UV Exposure &
 Water Immersion)
 ASTM D570 Water Absorption
 ASTM E84/UL 723 Flame and Smoke Rating 25/450
 Based on HVAC Industry and Manufacturer's Independent Study

"Based on HWAC Industry and Manufacturer's Independent Study on a Combined ROI & Sustainable Energy Savings Calculation. A contributing product to the U.S. Energy Department's 30% Energy Savings Solution Initiative.

Residential

Mirati

Codes & Standards Compliance

- Codes & Standards Compliance

 Pipe Insulation Protection Compliance per:

 IECC 2012 Protection of Piping Insulation Commercial Section C403.2.8.1

 IECC 2015 Protection of Piping Insulation Commercial Section C403.2.10.1

 IRC 2018 Refrigerant Line Insulation Protection M1411.6.1 Section N1103.4.1

 California Building Energy Efficiency Standards (Title 24 Energy Code) Residential & Commercial Requirement for Pipe Insulation120.3 Section. 150.0(j) 3a.8 b

 California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 Residential & Commercial Requirement for Pipe Insulation120.3 Section: 150.0(j) 2 & 3 Section 150.0(m) 9

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 AIr Leakage/Wall Penetration Compliance per:

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 IECC 2006, 2009, & 2012 Chapter 3 General Regulations Section 301.1 Scope Penetrations

 IECC 2006, 2009, & 2012 Air Leakage (Mandatory) Commercial Section 402.4.3 and 402.4.2 Building Thermal Envelope Penetrations

 IECC 2009, & 2009, & 2012 Chapter 3 General Regulations Section 301.1 Scope Sections 301.10, 301.1, 301.14, 301.15, 305.1, 305.2, 305.4

 UMC 2006, 2009, & 2012 Chapter 11 Refrigeration Section 1101.0 Scope Section 1101.1 General Requirements Section 1106.0 Section 1106.2, Section 1111.0 Erection of Refrigerant Piping Sections 1111.1, 1111.2, 1111.4

 California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 Air Leakage (Mandatory) All Occupancies Section 117 Joints and other Openings/Exterior Wall Penetrations





A Combined HVAC Pipe Penetration Wall Seal and Piping Insulation Protection System Energy Energy Products		SUBMITTAL SHEET Project					
AIREX PROSYSTEMKIT	2 IN System		Date	tion R	eferer	nce	
TITAN OUTLET" EXTERIOR WALL OR PARAPET WALL SEAL PENETRATION OUTLET WITH ELASTOMERIC LINE-SET COMPRESSION SLEEVE TYPE "TITAN GS30" BY AIREX MANUFACTURING INC.	EXTERIOR WALL OR PARAPET WALL	Airex Part Nu		SYST		KIT MODEL NUMBERS Model TGS: Stucco, Masonry Applications	
E-FLEX GUARD® INSULATION PROTECTIVE PVC COVER TYPE "E-FLEX GUARD" BY AIREX MANUFACTURING INC.	ALL MATERIAL WALL ANCHOR SCREWS PART OF COMPONENT "A"	TGS-650V TGS-650G-	V-72E-W 72E-W	White Gray	White White	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube	
OUTDOOR CONDENSING	WALL SURFACE GASKET SEAL PART OF COMPONENT "A"	TGS-675V TGS-675G- TGS-610V TGS-610G-	72C-W V-72X-W	White	White	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube. Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8" tube.	
UNIT CONDENSER PAD	STAINLESS STEEL CLAMP PART OF COMPONENT "A"	Airex Part N	Part Number		White		
		TSS-675M TSS-675G-	72C-W	White Gray	White	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube.	
			OUTLET™	Gray -	.G W	/hite - W	

UV CABLE TIES PART OF COMPONENT "B" **Product Description and Specification**

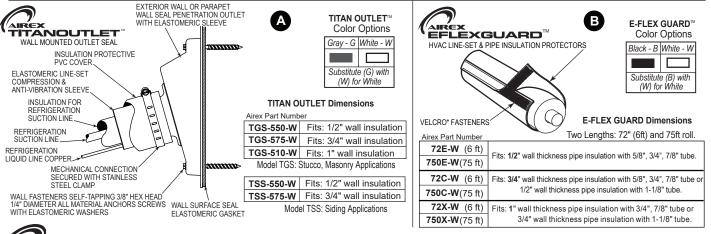
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Substitute Black (B) for White (W)

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U.S. Patents #9,091,377 B2, #9,523,200 B2



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