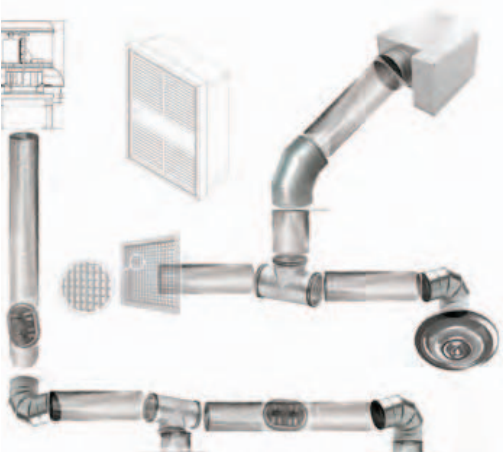


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Determine and implement ways to reduce solid waste and the consumption of energy and water.

REUSE

Choose reusable over disposable when possible. Even small changes can make an overall impact.

RECYCLE

Increase our office waste recycling.

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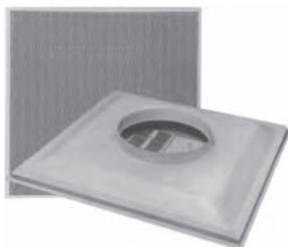
PRICE HVAC	KRUEGER	METAL*AIRE	NAILOR	TITUS	TUTTLE& BAILEY	CARNES
620DF	5880	V4004D	51DV/51DH	300F	A54/A64	RADA
520DF	880	V4004SD	61DV/61DH	300R	T54/64	RSDA
630	S580	RH	5145	350F	A7/A8	RAL/RWL
530	S80	SRH	6145	350R	T7/T8	RSLA
SDG	N/A	4004SP-1	N/A	N/A	N/A	N/A
PDF3	6200	7600/7650	4320CB	PAS	PV-2600	SPF
PDDR	6290	7500R/7600R	4360	PAR	2500/200PR	SPJ
SMD	SH	5500S/5000S	6500	TDC	M	SK
RCDE	SRM1	3100/3100S	N/A	TMR	N/A	N/A
SCD	1400	5700/5800	RNS	TMS	1300/1400	SFTB
SPD	PLQ	5750/5850	UNI	OMNI	N/A	SFPA
AMF	HCF23	TBPF	DFS	TRM	N/A	N/A
STG	5600	DG	51DG	CT-700L	A980/A990	N/A
80F	EG5	CC5	51EC	50	CRE500	RAP
ACVD	5180	N/A	61CC	250	N/A	N/A
540	N/A	4004M	N/A	N/A	N/A	N/A
PFRF	56790	SPRTB	4302	PXP	PT	SPH
10A	S580P	RP	61PR	8F/8R	OG/APG	RSF/RTF
80FF	EG5FF	CC5-FB	51FE	50FF	CRE500FB	N/A
10FF	6290F	RP-FB	61FP	8FF/8RF	APGFB	RS/RT
630FF	S580FF	RHF	51FP	350FF	A70DFB	RA/RW
VPD-HC	5AVDP	N/A	N/A	T3SQ-4	SCHV	SFVP
TBDI4	PTBR	PHPSI-75	57751	TBDI-80	SVPS	DA

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PERFORATED CEILING DIFFUSERS

Models PDDR and PDF



For variable air volume (VAV), heating and cooling applications. Features heavy-gauge steel backpan with perforated face (3/16" dia. holes on 1/4" staggered centers). Discharge pattern can be adjusted to 1-, 2-, 3- or 4-way horizontal throw by rotating pattern controllers after unlatching and dropping face panel. White finish.

Diffusers w/ Steel Face Panel

No.	Face Style	Mount. Type	Size In.	
			Neck	Face
Return Diffusers				
P-PDDR1-2424	Flush	Surface	22 x 22	24 x 24
P-PDDR3-0612	Flush	Lay-In	6 (Dia.)	12 x 12
P-PDDR3-0624	Flush	Lay-In	6 (Dia.)	24 x 24
P-PDDR3-0824	Flush	Lay-In	8 (Dia.)	24 x 24
P-PDDR3-1010/1212	Flush	Lay-In	10 x 10	12 x 12
P-PDDR3-1024	Flush	Lay-In	10 (Dia.)	24 x 24
P-PDDR3-1224	Flush	Lay-In	12 (Dia.)	24 x 24
P-PDDR3-1424	Flush	Lay-In	14 (Dia.)	24 x 24
P-PDDR3-1624	Flush	Lay-In	16 (Dia.)	24 x 24
P-PDDR3-2210	Flush	Lay-In	22 x 10	24 x 12
P-PDDR3-2222	Flush	Lay-In	22 x 22	24 x 24
Supply Diffusers				
P-PDF3-0612	Flush	Lay-In	6 (Dia.)	12 x 12
P-PDF3-0624	Flush	Lay-In	6 (Dia.)	24 x 24
P-PDF3-0824	Flush	Lay-In	8 (Dia.)	24 x 24
P-PDF3-1020	Flush	Lay-In	10 (Dia.)	20 x 20
P-PDF3-1024	Flush	Lay-In	10 (Dia.)	24 x 24
P-PDF3-1220	Flush	Lay-In	12 (Dia.)	20 x 20
P-PDF3-1224	Flush	Lay-In	12 (Dia.)	24 x 24
P-PDF3-1424	Flush	Lay-In	14 (Dia.)	24 x 24
P-PDF3-1624	Flush	Lay-In	16 (Dia.)	24 x 24
P-PDF3BBP-06*	Flush	Lay-In	6 (Dia.)	24 x 24
P-PDF3BBP-08*	Flush	Lay-In	8 (Dia.)	24 x 24
P-PDF3BBP-10*	Flush	Lay-In	10 (Dia.)	24 x 24
P-PDF3BBP-12*	Flush	Lay-In	12 (Dia.)	24 x 24
P-PDF3BBP-14*	Flush	Lay-In	14 (Dia.)	24 x 24
P-PDF3BBP-16*	Flush	Lay-In	16 (Dia.)	24 x 24
Aluminum Return Diffusers				
P-APDDR3-2222	Flush	Lay-In	22 x 22	24 x 24

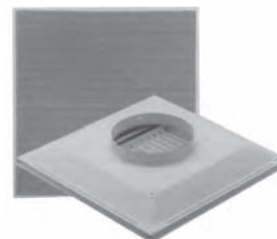
* Black Back Pan

Diffusers w/ Aluminum Face Panel

No.	Face Style	Mount. Type	Size In.	
			Neck	Face
Supply				
P-APDF3-0624	Flush	Lay-In	6 (Dia.)	24 x 24
P-APDF3-0824	Flush	Lay-In	8 (Dia.)	24 x 24
P-APDF3-1024	Flush	Lay-In	10 (Dia.)	24 x 24
P-APDF3-1224	Flush	Lay-In	12 (Dia.)	24 x 24
P-APDF3-1424	Flush	Lay-In	14 (Dia.)	24 x 24

PERFORATED CEILING DIFFUSERS

Curved Blade – Lay-In – Models PDC and APDC



Features heavy-gauge steel backpan with perforated flush face (3/16" dia. holes on 1/4" staggered centers). Discharge pattern can be adjusted to 1-, 2-, 3- or 4-way horizontal or vertical throw by moving curved deflector blades after unlatching and dropping face panel. Round neck; 24" x 24" face panel. White finish.

No.	Face Style	Mount. Type	Size In.	
			Neck	Face
Steel Face				
P-PDC3-0624	Flush	Lay-In	6 (Dia.)	24 x 24
P-PDC3-0824	Flush	Lay-In	8 (Dia.)	24 x 24
P-PDC3-1024	Flush	Lay-In	10 (Dia.)	24 x 24
P-PDC3-1224	Flush	Lay-In	12 (Dia.)	24 x 24
P-PDC3-1424	Flush	Lay-In	14 (Dia.)	24 x 24
P-PDC3-1624	Flush	Lay-In	16 (Dia.)	24 x 24
Aluminum Face				
P-APDC3-0624	Flush	Lay-In	6 (Dia.)	24 x 24
P-APDC3-0824	Flush	Lay-In	8 (Dia.)	24 x 24
P-APDC3-1024	Flush	Lay-In	10 (Dia.)	24 x 24

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PERFORATED CEILING DIFFUSERS

Star Pattern – Lay-In – Model PDS



Generates high induction pattern for maximum throw at lower noise and pressure drop levels than curved-blade designs. Features heavy-gauge steel backpan with hinged perforated face (3/16" holes on 1/4" staggered centers). Airflow pattern can be adjusted for side or corner blow, horizontal or vertical. 24" x 24" flush face. White.

Diffusers With Steel Face Panel

No.	Face Style	Mount Type	Neck Dia. In.	Face Size In.
P-PDS3-0624	Flush	Lay-In	6	24 x 24
P-PDS3-0824	Flush	Lay-In	8	24 x 24
P-PDS3-1024	Flush	Lay-In	10	24 x 24
P-PDS3-1224	Flush	Lay-In	12	24 x 24
P-PDS3-1424	Flush	Lay-In	14	24 x 24
P-PDS3-1624	Flush	Lay-In	16	24 x 24

PERFORATED CEILING PANELS

Return – Lay-In



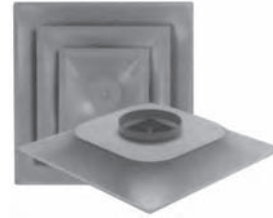
For return/exhaust applications. Features heavy gauge steel construction with perforated flush face (3/16" holes on 1/4" staggered centers) installed appearance matches Series PDF supply diffusers. White.

No.	Face Style	Mount Type	Neck Dia. In.	Face Size In.
P-PFRF-1224	Flush	Lay-In	***	12 x 24
P-PFRF-2424	Flush	Lay-In	***	24 x 24

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THREE CONE CEILING DIFFUSERS

Square – Non-Insulated – Models SCD3, ASCD3, and SCDA3



Three-cone design provides 360° horizontal discharge and protects ceiling from streaks and smudges. Maintains effective room air distribution in variable air volume (VAV) systems. Cones feature one-piece die-stamped construction with no corner joints; inner cones remove as single unit for cleaning. White finish.

Fixed Discharge. Horizontal pattern only.

Adjustable Discharge. Features movable vanes for changing pattern from horizontal to vertical.

Steel Diffusers

No.	Discharge Type	Mount Type	Neck Dia. In.	Face Size In.
P-SCDA3-0624	Adjustable	Lay-In	6	24 x 24
P-SCDA3-0824	Adjustable	Lay-In	8	24 x 24
P-SCDA3-1024	Adjustable	Lay-In	10	24 x 24
P-SCDA3-1224	Adjustable	Lay-In	12	24 x 24
P-SCDA3-1424	Adjustable	Lay-In	14	24 x 24
P-SCD3-0612	Fixed	Lay-In	6	12 x 12
P-SCD3-0624	Fixed	Lay-In	6	24 x 24
P-SCD3-0812	Fixed	Lay-In	8	12 x 12
P-SCD3-0824	Fixed	Lay-In	8	24 x 24
P-SCD3-1020	Fixed	Lay-In	10	20 x 20
P-SCD3-1024	Fixed	Lay-In	10	24 x 24
P-SCD3-1224	Fixed	Lay-In	12	24 x 24
P-SCD3-1424	Fixed	Lay-In	14	24 x 24

Aluminum Diffusers

No.	Discharge Type	Mount. Type	Neck Dia. In.	Face Size In.
P-ASCD3-0612	Fixed	Lay-In	6	12 x 12
P-ASCD3-0624	Fixed	Lay-In	6	24 x 24
P-ASCD3-0824	Fixed	Lay-In	8	24 x 24
P-ASCD3-1024	Fixed	Lay-In	10	24 x 24
P-ASCD3-1224	Fixed	Lay-In	12	24 x 24
P-ASCD3-1424	Fixed	Lay-In	14	24 x 24

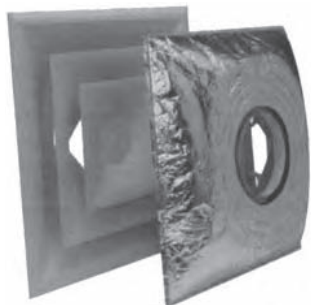
Plastic (Resin) Diffusers

No.	Discharge Type	Mount Type	Neck Dia. In.	Face Size In.
STR-C-6W	Fixed	Lay-In	6	24 x 24
STR-C-8W	Fixed	Lay-In	8	24 x 24
STR-C-10W	Fixed	Lay-In	10	24 x 24
STR-C-12W	Fixed	Lay-In	12	24 x 24
STR-C-14W	Fixed	Lay-In	14	24 x 24





3 CONE INSULATED CEILING DIFFUSERS
Square – Insulated – Models SCD3R6 and ASCD3R6



Three-cone design for lay-in applications. Provides 360° horizontal discharge and protects ceiling from streaks and smudges. Maintains effective room air distribution in variable air volume (VAV) systems. Cones feature one-piece die-stamped construction with no corner joints; inner cones remove as single unit for cleaning. Includes factory installed R-6 foil-backed insulation blanket. 24" x 24" face. White.

Steel Diffusers

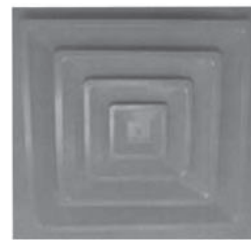
No.	Discharge Type	Mount Type	Neck Dia. In.	Face Size In.
P-SCD3R6-0624	Fixed	Lay-In	6	24 x 24
P-SCD3R6-0824	Fixed	Lay-In	8	24 x 24
P-SCD3R6-1024	Fixed	Lay-In	10	24 x 24
P-SCD3R6-1224	Fixed	Lay-In	12	24 x 24
P-SCD3R6-1424	Fixed	Lay-In	14	24 x 24
P-SCD3R6-1524	Fixed	Lay-In	15	24 x 24

Aluminum Diffusers

No.	Discharge Type	Mount Type	Neck Dia. In.	Face Size In.
P-ASCD3R6-0624	Fixed	Lay-In	6	24 x 24
P-ASCD3R6-0824	Fixed	Lay-In	8	24 x 24
P-ASCD3R6-1024	Fixed	Lay-In	10	24 x 24
P-ASCD3R6-1224	Fixed	Lay-In	12	24 x 24



4 CONE CEILING DIFFUSERS
Square – Non-Insulated – Model SCD4



Features 4-cone design. Face measures 24" x 24". Steel construction with white enamel finish.

No.	Discharge Type	Mount Type	Neck Dia. In.	Face Size In.
P-SCD4C-0624	Fixed	Lay-In	6	24 X 24
P-SCD4C-0824	Fixed	Lay-In	8	24 X 24
P-SCD4C-1024	Fixed	Lay-In	10	24 X 24
P-SCD4C-1224	Fixed	Lay-In	12	24 X 24
P-SCD4C-1424	Fixed	Lay-In	14	24 X 24

SLIDING-BLADE DAMPERS
Model VCR9



For use in flexible duct or where height is limited. Gang-operated design; blades slide at right angles to airflow. Mounts in diffuser neck, flush with top. Measures 1" D. Adjusts from face side of diffuser.

No.	Fits Diffuser Neck Dia. In.
P-VCR9-06	6
P-VCR9-08	8
P-VCR9-10	10
P-VCR9-12	12
P-VCR9-14	14

OPPOSED-BLADE DAMPERS
Model VCR7

Gang-operated design. Three sets of blades distribute air evenly. Adjusts from face side of diffuser. Can be mounted directly to diffuser before installation; requires #8 sheet metal screws (not included).



No.	Fits Diffuser Neck Dia. In.
P-VCR7-06	6
P-VCR7-08	8
P-VCR7-10	10
P-VCR7-12	12
P-VCR7-14	14

ARCHITECTURAL CEILING DIFFUSERS

Square Plaque Diffuser – Lay-In – Model SPD and ASPD



For variable air volume (VAV) systems. Provides tight, horizontal 360° air pattern for effective distribution over wide range. Features curved backpan and removable face panel with radiused edges. White.

No.	Discharge Type	Mount Type	Neck Dia. In.	Face Size In.
Steel Diffusers				
P-SPD-0612	Fixed	Lay-In	6	12 x 12
P-SPD-0624	Fixed	Lay-In	6	24 x 24
P-SPD-0812	Fixed	Lay-In	8	12 x 12
P-SPD-0824	Fixed	Lay-In	8	24 x 24
P-SPD-1024	Fixed	Lay-In	10	24 x 24
P-SPD-1224	Fixed	Lay-In	12	24 x 24
P-SPD-1424	Fixed	Lay-In	14	24 x 24
Aluminum Diffusers				
P-ASPD-0624	Fixed	Lay-In	6	24 x 24
P-ASPD-0824	Fixed	Lay-In	8	24 x 24
P-ASPD-1024	Fixed	Lay-In	10	24 x 24
P-ASPD-1224	Fixed	Lay-In	12	24 x 24
P-ASPD-1424	Fixed	Lay-In	14	24 x 24

ROUND CEILING DIFFUSERS

Round – Model RCDE and ARCD

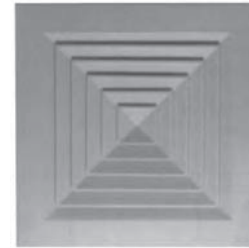


For heating and cooling applications. Three-cone design provides 360° horizontal discharge. Pattern can be altered by adjusting position of two inner cones; position 1 provides maximum capacity, while position 2 provides increased air induction. White.

No.	Dia. Inches	
	Inlet	OA
STEEL		
P-RCDE-06	6	11-1/8
P-RCDE-08	8	14-3/4
P-RCDE-10	10	18-1/4
P-RCDE-12	12	22
P-RCDE-14	14	26
ALUMINUM (Tampa Whse only)		
P-ARCD-06	6	11-1/8
P-ARCD-08	8	14-3/4
P-ARCD-10	10	18-1/4
P-ARCD-12	12	22
P-ARCD-14	14	26
P-ARCD-16	16	26

CEILING DIFFUSERS

Louvered Face – Models SMD and AMD



Designed to visually complement modular ceilings. Provides consistent flow pattern throughout CFM range; ideal for use in variable air volume (VAV) systems. 22-ga. metal border with removable core. White finish.

Fixed Discharge. Horizontal pattern only.

Adjustable Discharge. Features movable vanes for changing pattern from horizontal to vertical.

No.	Discharge Type	Mount Type	Neck Dia. In.	Face Size In.
Steel Diffusers				
P-SMD3-06	Fixed	Lay-In	6	24 x 24
P-SMD3-08	Fixed	Lay-In	8	24 x 24
P-SMD3-10	Fixed	Lay-In	10	24 x 24
P-SMD3-12	Fixed	Lay-In	12	24 x 24
P-SMD3-14	Fixed	Lay-In	14	24 x 24
P-SMD3-16	Fixed	Lay-In	16	24 x 24
P-SMD3-1212	Fixed	Lay-In	12 x 12	24 x 24
P-SMD3-1818	Fixed	Lay-In	18 x 18	24 x 24
P-SMD6-0606	Fixed	Beveled Drop Face	6 x 6	10 x 10
P-SMD6-0909	Fixed	Beveled Drop Face	9 x 9	13 x 13
P-SMD6-1212	Fixed	Beveled Drop Face	12 x 12	16 x 16
P-SMD6-1515	Fixed	Beveled Drop Face	15 x 15	19 x 19
P-SMD6-1818	Fixed	Beveled Drop Face	18 x 18	24 x 24
P-SMD1-0606	Fixed	Surf Mnt	6 x 6	10 x 10
P-SMD1-0909	Fixed	Surf Mnt	9 x 9	13 x 13
Aluminum Diffusers				
P-AMDA3-0606	Adjustable	Lay-In	6 x 6	24 x 24
P-AMDA3-0909	Adjustable	Lay-In	9 x 9	24 x 24
P-AMDA3-1212	Adjustable	Lay-In	12 x 12	24 x 24
P-AMDA3-1515	Adjustable	Lay-In	15 x 15	24 x 24
P-AMDA3-1818	Adjustable	Lay-In	18 x 18	24 x 24
P-AMD3-0606	Fixed	Lay-In	6 x 6	24 x 24
P-AMD3-0909	Fixed	Lay-In	9 x 9	24 x 24
P-AMD3-1212	Fixed	Lay-In	12 x 12	24 x 24
P-AMD3-1515	Fixed	Lay-In	15 x 15	24 x 24
P-AMD3-1818	Fixed	Lay-In	18 x 18	24 x 24
P-AMD6-0606	Fixed	Beveled drop face	6 x 6	10 x 10
P-AMD6-0909	Fixed	Beveled drop face	9 x 9	13 x 13
P-AMD6-1212	Fixed	Beveled drop face	12 x 12	16 x 16
P-AMD6-1515	Fixed	Beveled drop face	15 x 15	19 x 19
P-AMD6-1818	Fixed	Beveled drop face	18 x 18	24 x 24

ALUMINUM BORDER ONLY

For Model AMD with Insulated Back

No.	Neck Size In.
P-AMDW-BO-10-IB	10" RND
P-AMDW-BO-12-IB	12" RND
P-AMDB-BO-12-IB	Black 12" RND



CORE ONLY FOR LOUVERED CEILING DIFFUSER

Cores Only for Model SMD

No.	Discharge Type	Size In.
P-AMDCO-6/1	1 Way	6 x 6
P-AMDCO-6/2CNR	2 Way, Corner Blow	6 x 6
P-AMDCO-6/2OPP	2 Way, Opposing	6 x 6
P-AMDCO-6/3	3 Way	6 x 6
P-AMDCO-9/1	1 Way	9 x 9
P-AMDCO-9/2CNR	2 Way, Corner Blow	9 x 9
P-AMDCO-9/2OPP	2 Way, Opposing	9 x 9
P-AMDCO-9/3	3 Way	9 x 9
P-AMDCO-12/1	1 Way	12 x 12
P-AMDCO-12/2CNR	2 Way, Corner Blow	12 x 12
P-AMDCO-12/2OPP	2 Way, Opposing	12 x 12
P-AMDCO-12/3	3 Way	12 x 12
P-AMDCO-15/1	1 Way	15 x 15
P-AMDCO-15/2CNR	2 Way, Corner Blow	15 x 15
P-AMDCO-15/2OPP	2 Way, Opposing	15 x 15
P-AMDCO-15/3	3 Way	15 x 15
P-AMDCO-18/1	1 Way	18 x 18
P-AMDCO-18/2CNR	2 Way, Corner Blow	18 x 18
P-AMDCO-18/2OPP	2 Way, Opposing	18 x 18
P-AMDCO-18/3	3 Way	18 x 18
P-AMDCOB-12/3	3 Way Black	12 x 12
P-AMDCOB-12/4	4 Way Black	12 x 12

DOOR RETURN GRILLES

Model STG



For use in doors and partitions. 20-ga. V-shaped steel blades block vision and increase strength. Countersunk screw holes for #8 sheet metal screws (included). Satin aluminum finish. Includes auxiliary frame.

No.	Size In.
P-STG1-1212	12 x 12
P-STG1-1408	14 x 8
P-STG1-1414	14 x 14
P-STG1-1616	16 x 16
P-STG1-1812	18 x 12
P-STG1-1818	18 x 18
P-STG1-2412	24 x 12
P-STG1-2418	24 x 18
P-STG1-2424	24 x 24
P-ASTG1-1212	Alum/White 12 x 12
P-ASTG1-1812	Alum/White 18 x 12
P-ASTG1-1818	Alum/White 18 x 18
P-ASTG1-2424	Alum/White 24 x 24

OPPOSED-BLADE DAMPERS

For Use With Square Neck Diffuser – Model VCSI3



For use with square neck diffusers. Lever operated; blades regulate air flow and ensure even air distribution. Steel construction with mill finish. Measures 2-3/8" D. Mounts directly to diffuser neck using sheet metal screws (not included).

No.	Size In.
P-VCSI3-0606	6 x 6
P-VCSI3-0808	8 x 8
P-VCSI3-0909	9 x 9
P-VCSI3-1212	12 x 12
P-VCSI3-1515	15 x 15
P-VCSI3-1818	18 x 18
P-VCSI3-2222	22 x 22

SLOTTED CEILING DIFFUSERS

Slot Diffusers – Models SDS75 and SDS100



For use in variable air volume (VAV) systems; projects uniform blanket of air at low flow rate. Features 180° pattern controller adjustment for regulation of discharge direction and volume. Extruded aluminum construction with white finish; black steel pattern controllers.

6 Foot field-cut design. For use when required length is not known until installation and more than 6" of trimming is required. Pre-punched sides ensure alignment of spacers for rigidity during and after cutting.

No.	No. Slots	Slot Sz. In.	Lgth. Ft.
P-SDS75-1-4	1	0.75	4
P-SDS75-2-4	2	0.75	4
P-SDS100-1-4	1	1	4
P-SDS100-2-4	2	1	4
P-SDS75-2-6	2	0.75	6
P-SD100-1-6	1	1	6
P-SDS100-2-6	2	1	6

PRICE®

UNIVERSAL DISTRIBUTION PLENUMS

Model UPL 75 and UPL 100

For use in slot diffusers. Features universal endcap design; lower portion can be folded up for continuous applications. 24-ga. steel construction. Measures 9" high.



No.	Length Inches	For Slot Diffuser Model	Inlet Size (Inches)
P-UPL75-1-48-8	48	P-SDS75-1-4	8
P-UPL75-1-48-10	48	P-SDS75-1-4	10
P-UPL75-2-48-8	48	P-SDS75-2-4	8
P-UPL75-2-48-10	48	P-SDS75-2-4	10
P-UPL100-1-48-8	48	P-SDS100-1-4	8
P-UPL100-1-48-10	48	P-SDS100-1-4	10
P-UPL100-2-48-8	48	P-SDS100-2-4	8
P-UPL100-2-48-10	48	P-SDS100-2-4	10
*P-UPL100-2-47-08	47	*P-SDS100-2-47	8
*P-UPL100-2-47-10	47	*P-SDS100-2-47	10

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LINEAR DIFFUSERS

Model TBDI



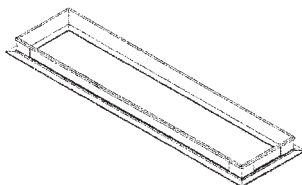
T-bar lay-in design for use in variable or constant-volume heating or cooling systems. 24-ga. steel construction with aluminum vane. Vane adjusts for left, right or vertical throw. 1-1/2" slot width. Black finish. **2-Slot.** Features black center tee.

No.	Lgth. In.	Diffusers	
		No. Slots	Inlet Size In.
P-TBDI4-1-48-8	48 x 2-1/2 x 8	1	8
P-TBDI4-2-24-8	24 x 5 x 8	2	8
P-TBDI4-2-48-8	48 x 5 x 8	2	8
P-TBDI4-2-48-10	48 x 5 x 10	2	10

PLASTER FRAMES FOR LINEAR DIFFUSERS

Model TBDIPF

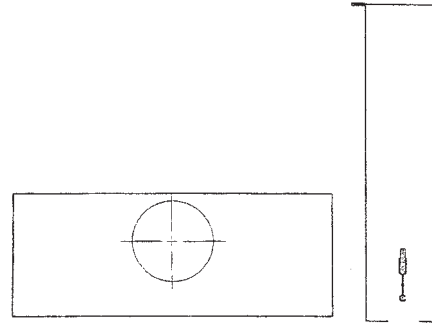
Surface mount frame allows diffuser to be installed in sheetrock or plaster ceilings. Extruded aluminum construction with white finish.



No.	For Use w/ Diffuser
P-TBDIPF-24-2	P-TBDI4-2-24-8
P-TBDIPF-48-1	P-TBDI4-1-48-8
P-TBDIPF-48-2	P-TBDI4-2-48-9 or 10

SLOT DIFFUSERS

Model BS



T-bar lay-in design. Features 24-ga. steel construction with mechanically sealed seams and black finish on exposed surfaces. Wiper blade style pattern controller with felt seal provides adjustability. 8" inlet diameter.

No.	Inlet Size In.	Dim. In. W x L
P-BS-124	8	24 X 2-13/16
P-BS-136	8	36 X 2-13/16
P-BS-148	8	48 X 2-13/16



LINEAR DIFFUSERS

Adjustable Slot – Model K-100



2-slot design. For T-bar lay-in or hard ceiling applications. Features 24-ga. steel construction with extruded aluminum air pattern controller and 1/2" fiber liner insulation. Measures 48" L x 4-1/8" W x 11-5/8" H. Black finish.

No.	Inlet Sz. In.	Inlet Type
K-100-2-08	8	Round
K-100-2-10	10	Oval



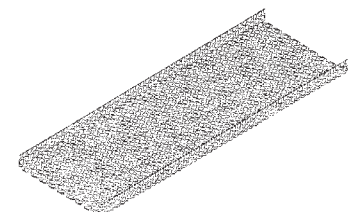
RAYMON
DONCO AIR DISTRIBUTION EQUIPMENT

RETURN STRIPS

Perforated

22-ga. steel construction with 51% open area. Features 1/2" flanges for rigidity. Black.

No.	Dim. In. W x L
BPS-0248	2.5 X 48
BPS-0348	2-13/16 X 48
BPS-0548	5 X 48





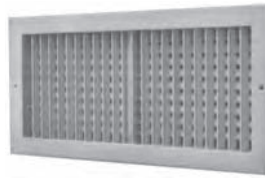
ALUMINUM SUPPLY GRILLES
Double Deflection – Model 620DF



For high humidity areas. Features adjustable aluminum blades with 3/4" spacing, surface mount border, countersunk screw holes and steel opposed bladed damper. White.

No.	Duct Size In.
P-620DF-0606	6 x 6
P-620DF-0804	8 x 4
P-620DF-0806	8 x 6
P-620DF-0808	8 x 8
P-620DF-1006	10 x 6
P-620DF-1008	10 x 8
P-620DF-1010	10 x 10
P-620DF-1206	12 x 6
P-620DF-1208	12 x 8
P-620DF-1210	12 x 10
P-620DF-1212	12 x 12
P-620DF-1406	14 x 6
P-620DF-1408	14 x 8
P-620DF-1410	14 x 10
P-620DF-1412	14 x 12
P-620DF-1606	16 x 6
P-620DF-1608	16 x 8
P-620DF-1806	18 x 6
P-620DF-1808	18 x 8
P-620DF-1810	18 x 10
P-620DF-1812	18 x 12
P-620DF-2006	20 x 6
P-620DF-2008	20 x 8
P-620DF-2010	20 x 10
P-620DF-2012	20 x 12
P-620DF-2406	24 x 6
P-620DF-2408	24 x 8
P-620DF-2410	24 x 10
P-620DF-2412	24 x 12

STEEL SUPPLY GRILLES
Double Deflection – Model 520DF



Features adjustable steel blades with 3/4" spacing, surface mount border, countersunk screw holes and steel opposed-blade damper. White.

No.	Duct Size In.
P-520DF-0606	6 x 6
P-520DF-0806	8 x 6
P-520DF-0808	8 x 8
P-520DF-1006	10 x 6
P-520DF-1008	10 x 8
P-520DF-1010	10 x 10
P-520DF-1206	12 x 6
P-520DF-1208	12 x 8
P-520DF-1210	12 x 10
P-520DF-1212	12 x 12
P-520DF-1406	14 x 6
P-520DF-1408	14 x 8
P-520DF-1410	14 x 10
P-520DF-1412	14 x 12
P-520DF-1606	16 x 6
P-520DF-1608	16 x 8
P-520DF-1806	18 x 6
P-520DF-1808	18 x 8
P-520DF-1810	18 x 10
P-520DF-1812	18 x 12
P-520DF-2006	20 x 6
P-520DF-2008	20 x 8
P-520DF-2010	20 x 10
P-520DF-2012	20 x 12
P-520DF-2406	24 x 6
P-520DF-2408	24 x 8
P-520DF-2410	24 x 10
P-520DF-2412	24 x 12
P-520DF-2414	24 x 14
P-520DF-2418	24 x 18
P-520DF-3006	30 x 6
P-520DF-3008	30 x 8
P-520DF-3010	30 x 10
P-520DF-3012	30 x 12
P-520DF-3606	36 x 6
P-520DF-3608	36 x 8
P-520DF-3610	36 x 10
P-520DF-3612	36 x 12

ALUMINUM CURVED BLADED SUPPLY GRILLES
Surface Mount – Model ACVD

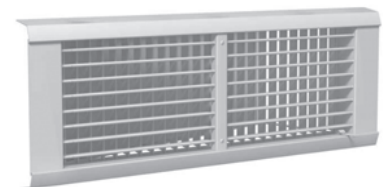


Curved blade directional grilles feature individually adjustable curved blades for direct supply air precisely to suit the desired application.

No.	Directional Blow	Dim. In.
P-ACVD1L-08X04	1 WAY	8X4
P-ACVD1L-10X06	1 WAY	10X6
P-ACVD1L-10X08	1 WAY	10X8
P-ACVD1L-12X06	1 WAY	12X6
P-ACVD1L-12X08	1 WAY	12X8
P-ACVD1L-14X06	1 WAY	14X6
P-ACVD4S-6X6	4 WAY	6X6
P-ACVD4S-8X8	4 WAY	8X8
P-ACVD4S-10X10	4 WAY	10X10
P-ACVD4S-12X12	4 WAY	12X12
P-ACVD4S-14X14	4 WAY	14X14

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SPIRAL DUCT GRILLES



No.	Duct Size In.
P-SDG-1206	12 x 6
P-SDG-1804	18 x 4
P-SDG-1806	18 x 6
P-SDG-2006	20 x 6
P-SDG-2606	26 x 6

Our customer service department has the answers you need!

Return Grilles



Tom Barrow Co.
DELIVERING HVAC SOLUTIONS



ALUMINUM RETURN GRILLES

45° Deflection – Lay-In – Models
630DTB and 630TB



Aluminum construction with white finish.

No.	Size In.	
	Neck	Face
Without Opposed-Blade Damper		
P-630TB-2210	22 x 10	24 x 12
P-630TB-2222	22 x 22	24 x 24
P-630TB-4622	46 x 22	48 x 24
With Opposed-Blade Damper		
P-630DTB-2210	22 x 10	24 x 12
P-630DTB-2222	22 x 22	24 x 24
Black Finish		
P-630TBBLK-2222	22 x 22	24 x 24

ALUMINUM FILTER RETURN GRILLES

45° Deflection – Lay-In
Model 630FFTB

Features 3/4" louver spacing, 1" filter frame and 1/4-turn fasteners. Aluminum construction with white finish.

No.	Size In.	
	Module	Filter
P-630FFTB-2424	24 x 24	20 x 20

STEEL RETURN GRILLES

45° Deflection – Surface Mount –
Model 530F



Features steel blades with 3/4" spacing, reinforced corners and countersunk screw holes. White.

No.	Duct Size In.
Without Opposed-Blade Damper	
P-530F-0606	6 x 6
P-530F-0808	8 x 8
P-530F-1006	10 x 6
P-530F-1010	10 x 10

No.	Duct Size In.
P-530F-1206	12 x 6
P-530F-1208	12 x 8
P-530F-1210	12 x 10
P-530F-1212	12 x 12
P-530F-1406	14 x 6
P-530F-1408	14 x 8
P-530F-1410	14 x 10
P-530F-1412	14 x 12
P-530F-1414	14 x 14
P-530F-1606	16 x 6
P-530F-1608	16 x 8
P-530F-1610	16 x 10
P-530F-1612	16 x 12
P-530F-1614	16 x 14
P-530F-1616	16 x 16
P-530F-1810	18 x 10
P-530F-1812	18 x 12
P-530F-1816	18 x 16
P-530F-1818	18 x 18
P-530F-2010	20 x 10
P-530F-2012	20 x 12
P-530F-2016	20 x 16
P-530F-2020	20 x 20
P-530F-2406	24 x 6
P-530F-2408	24 x 8
P-530F-2412	24 x 12
P-530F-2418	24 x 18
P-530F-2424	24 x 24
P-530F-3012	30 x 12
P-530F-3018	30 x 18
P-530F-3024	30 x 24
P-530F-3030	30 x 30
P-530F-3612	36 x 12
P-530F-3618	36 x 18
P-530F-3624	36 x 24
P-530F-3636	36 x 36
P-530F-4824	48 x 24
P-530F-4836	48 x 36
P-530F-4848	48 x 48

STEEL RETURN GRILLES

45° Deflection – Lay-In
Model 530TB



Features steel blades with 3/4" spacing and reinforced corners. White.

No.	Size In.	
	Neck	Face
Without Opposed-Blade Damper		
P-530TB-2210	22 x 10	24 x 12

No.	Size In.	
	Neck	Face
P-530TB-2222	22 x 22	24 x 24

STEEL FILTER RETURN GRILLES

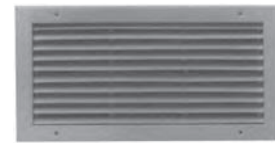
45° Deflection – Model 530FFTB

Features steel blades with 3/4" spacing and reinforced corners. White.

No.	Size In.	
	Neck	Face
P-530FFTB-20	20 x 20	24 x 24

ALUMINUM RETURN GRILLES

45° Deflection – Surface Mount
Model 630F



For high humidity areas. Features aluminum blades with 3/4" spacing, surface mount border with reinforced corners and countersunk screw holes. White.

No.	Duct Size In.
Without Opposed-Blade Damper	
P-630F-0606	6 x 6
P-630F-0808	8 x 8
P-630F-1010	10 x 10
P-630F-1212	12 x 12
P-630F-1414	14 x 14
P-630F-1616	16 x 16
P-630F-1818	18 x 18
P-630F-2412	24 x 12
P-630F-2424	24 x 24
With Opposed-Blade Damper	
P-630DF-0606	6 x 6
P-630DF-0804	8 x 4
P-630DF-0806	8 x 6
P-630DF-0808	8 x 8
P-630DF-1006	10 x 6
P-630DF-1008	10 x 8
P-630DF-1010	10 x 10
P-630DF-1206	12 x 6
P-630DF-1208	12 x 8
P-630DF-1210	12 x 10
P-630DF-1212	12 x 12
P-630DF-1414	14 x 14
P-630DF-1616	16 x 16
P-630DF-1812	18 x 12
P-630DF-1818	18 x 18
P-630DF-2020	20 x 20
P-630DF-2412	24 x 12
P-630DF-2424	24 x 24



OPPOSED-BLADE DAMPERS

For Models 520, 620, 530, 630 and 80F



Slot operated design. Neck-mounted; uses S-clips for easy installation and removal. Galvanized steel construction with mill finish. For use with Series 520, 530 and 80F dampers. Measures 1-5/8" D.

No.	Size In.
P-VCS3-0606	6 x 6
P-VCS3-0808	8 x 8
P-VCS3-1010	10 x 10
P-VCS3-1212	12 x 12
P-VCS3-1414	14 x 14
P-VCS3-1616	16 x 16
P-VCS3-1818	18 x 18
P-VCS3-2210	22 x 10
P-VCS3-2222	22 x 22
P-VCS3-2412	24 x 12
P-VCS3-2424	24 x 24

EGGRATE RETURN GRILLES

Surface Mount – Model 80F



Features 1/2" x 1/2" x 1/2" aluminum grid core; aluminum frame with countersunk screw holes. Baked white enamel finish.

No.	Duct Size In.
Without Opposed-Blade Damper	
P-80F-0606	6 x 6
P-80F-0808	8 x 8
P-80F-1010	10 x 10
P-80F-1210	12 x 10
P-80F-1212	12 x 12
P-80F-1414	14 x 14
P-80F-1616	16 x 16
P-80F-1812	18 x 12
P-80F-1818	18 x 18
P-80F-2412	24 x 12
P-80F-2424	24 x 24
P-80F-3624	36 x 24
P-80F-4824	48 x 24
With Opposed-Blade Damper	
P-80DF-0606	6 x 6
P-80DF-0808	8 x 8
P-80DF-1010	10 x 10
P-80DF-1212	12 x 12
P-80DF-1414	14 x 14
P-80DF-1616	16 x 16
P-80DF-1812	18 x 12
P-80DF-1818	18 x 18
P-80DF-2424	24 x 24

EGGRATE RETURN GRILLES

Lay-In – Model 80TB



Features 1/2" x 1/2" x 1/2" aluminum grid core and aluminum frame. Baked white enamel finish.

No.	Size In.	
	Neck	Face
Without Opposed-Blade Damper		
P-80-3P-1010	10x10	24 x 24
P-80-3P-1212	12x12	24 x 24
AG-2210-RTW	22x10	24 x 12
AG-2222-RTW	22x22	24 x 24
P-80TB-4622	46x22	48 x 24
P-80TB-1010/1212	10x10	12 x 12
With Opposed-Blade Damper		
P-80DTB-2222	22x22	24 x 24

EGGRATE RETURN GRILLES

Filter – Lay-In – Model 80FFTB



Features 1/2" x 1/2" x 1/2" aluminum egg crate core with 1" steel filter frame. White.

No.	Size In.	
	Neck/Filter	Face
P-80FFTB-2412	20 x 8	24 x 12
P-80FFTB-2424	20 x 20	24 x 24

MOUNTING TRIM FRAMES



Lay-in design for installing grilles, diffusers, lights, speakers and other components in plaster or sheetrock ceilings. Aluminum construction with adjustable fastening clips. Can also be suspended from building structure.

No.	Dimension In.
ALPF-1212	12 x 12
P-AMF-1224	12 x 24
ALPF-2424	24 x 24
P-AMF-4824	48 x 24

SECTORIZING BAFFLES

Model SB



For closing off diffuser inlet quadrants to achieve specific air pattern. 90° angle; fits round neck diffusers. Steel construction with black finish. Installs inside diffuser neck using #8 sheet metal screw (not included).

No.	For Duct Dia. In.	Width In.
P-SB-06	6	3
P-SB-08	8	4
P-SB-10	10	5
P-SB-12	12	6

VAV TERMINALS

Single Duct – Model SDV and SPV

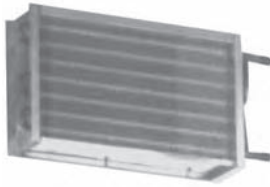


Regulates airflow to zone according to temperature requirements. Features Aero-Cross™ velocity sensor for control of low flow rates. Beaded inlet provides consistent roundness and reduced leakage. Damper design smoothes airflow to reduce sound and leakage levels; features Delrin bearings and 1/2" diameter shaft with position indicator. 1/2" dual density fiberglass-free insulation resists erosion at surface velocities up to 5000 FPM. 22-ga. housing with slip and drive discharge connection. Measures 15-1/2" L.

No.	Max. CFM	Inlet Size In.
P-SDV-06	450	6
P-SDV-08	800	8
P-SDV-10	1350	10
P-SDV-12	2100	12
P-SDV-14	3000	14
P-SDV-16	4000	16
Pneumatic Controls		
P-SPV-06	450	6
P-SPV-08	800	8
P-SPV-10	1350	10
P-SPV-12	2100	12
P-SPV-14	3000	14
P-SPV-16	4000	16



HOT WATER COILS
Two-Row



For use with Series ESV VAV boxes. Features aluminum fin and copper tube construction.

No.	For VAV Size In.
P-COIL-06	6
P-COIL-08	8
P-COIL-10	10
P-COIL-12	12
P-COIL-14	14
P-COIL-16	16

PNEUMATIC CONTROL
Model CP101



The CP101 pneumatic controller is the most versatile pneumatic controller available. This unique controller maintains the air flow dictated by the thermostat while compensating for changes in duct static pressure. The air flow control is pressure independent.

No.	Controls Air Press. PSI	Air Vel. FPM
P-CP101	15-25	0-3000



VAV DIFFUSERS
Therma-Fuser™ – Model TFHC



Features built-in heating and cooling thermostats, actuator and damper. Variable Air Volume design regulates discharge opening in relation to air volume, providing constant velocity, improved room air movement and uniform temperature distribution. Automatic changeover between heating and cooling modes. Temperature setpoint 70°F to 78°F; ±1.5°F accuracy. Diffuser measures 24" x 24".

No.	Inlet OD In.
TFHC-06	6
TFHC-08	8
TFHC-10	10
TFHC-12	12



RETURN GRILLES
Ducted – Eggcrate – Model 80SR

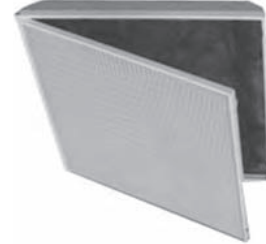


For lay-in installations. Features aluminum eggcrate grille (1/2" x 1/2" grid) with built-in 24-ga. steel plenum. 2-1/2" high beaded collar provides secure duct connection. White.

No.	Duct Dia. In.
24"L X 24" W	
P-80SR-2408	8
P-80SR-2410	10
P-80SR-2412	12
P-80SR-2414	14
P-80SR-2416	16
P-80SR-2418	18
24"L X 12" W	
P-80SR-2412-06	6
P-80SR-2412-08	8
P-80SR-2412-10	10



EGGCRATE FILTER GRILLES
Lay-In – Model ECIR



Features extruded aluminum frame, insulated fiberglass backpan and 1/2" x 1/2" x 1/2" aluminum grid face. Face swings down to allow access to 20" x 20" x 1" filter (not included). Dual locking arms and concealed hinges. Accepts round duct connections up to 16" diameter.

No.	Dim. In. L x W x H
TBC-ECIR	24 x 24 x 3-1/2

EGGCRATE RETURN GRILLES
Lay-In – Model ECIRNF

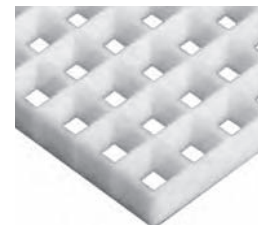
Returns high air volumes with minimal pressure loss. Features extruded aluminum frame with 1/2" x 1/2" x 1/2" aluminum grid face. Fiberglass backpan features foil vapor barrier and accommodates round duct connections from 6" to 14" diameter.



No.	Dim. In. L x W x H
TBC-ECIRNF	24 x 24 x 3-1/2



AMERICAN LOUVER COMPANY®
EGGCRATE GRILLES
Open Cell – Plastic – Model ECP



Improves ventilation, lowers operating temperatures and increases ballast life. Designed to repel dust accumulation. Single-piece, injection molded design. Ship-lap fit provides uniform appearance on joined panels.

No.	Dim. In.
ECP-2412	24 x 12
ECP-2424	24 x 24
ECP-2448	24 x 48

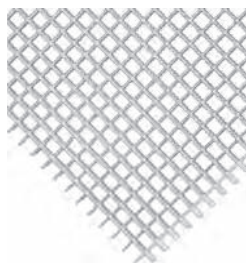


Delivering HVAC Solutions
Since 1955!



AMERICAN LOUVER COMPANY®

EGGCRATE GRILLES
Aluminum – Model ECA



.016" rigid aluminum construction resists damage from handling and installation. For use in air supply and return openings, signs, displays, fluorescent fixtures and lighting applications.

No.	Dim. In.
ECA-2412	24 x 12
ECA-2424	24 x 24
ECA-2448	24 x 48



CEILING DIFFUSERS
Round – AirMate™



Features concentric ring design for maximum performance; ideal for variable air volume (VAV) systems. Steel construction with white finish.

Diffusers – Model 800

No.	Dim. In. Dia. x H
800-06	6 x 1-1/16
800-08	8 x 1-1/4
800-10	10 x 1-1/2
800-12	12 x 1-1/2
800-14	14 x 1-3/4

Butterfly Dampers – Model 800D



Controls volume without restricting performance. Galvanized steel construction with removable operator.

No.	For Diffuser Dia. In.
800D-06	6
800D-08	8
800D-10	10
800D-12	12
800D-14	14



FLEXIBLE AIR DUCT
Insulated – Series 18



For use in air distribution systems, connecting ducts, room inlets or terminal devices. Puncture-resistant. Features flexible corrugated aluminum core with watertight lock seams, wrapped in fiberglass insulation blanket with metalized polyester jacket. Bends easily; maintains shape without sagging. Max. velocity 5000 FPM. 8-ft. length. R-value 4.2. UL 181 compliant.

No.	Dia. In.
ATCO18-06	6
ATCO18-07	7
ATCO18-08	8
ATCO18-09	9
ATCO18-10	10
ATCO18-12	12
ATCO18-14	14
ATCO18-16	16

FLEXIBLE AIR DUCT
Insulated – Series 30



For use as supply or return duct in low to medium pressure systems, or as connection to mixing boxes, diffusers, room inlets or terminal devices. Puncture-resistant. Features encapsulated steel wire helix core wrapped in multiple layers of fiberglass insulation with metalized polyester jacket. Max. velocity 5000 FPM. 25-ft. length. UL 181 compliant.

No.	Dia. In.
#030 – R-Value 4.2	
ATCO30-06	6
ATCO30-08	8
ATCO30-10	10
ATCO30-12	12
ATCO30-14	14
ATCO30-16	16

No.	Dia. In.
ATCO30-18	18
ATCO30-20	20
#031 – R-Value 8.0	
ATCO31-06	6
ATCO31-07	7
ATCO31-08	8
ATCO31-09	9
ATCO31-10	10
ATCO31-12	12
ATCO31-14	14
ATCO31-16	16
ATCO31-18	18

No.	Dia. In.
#036 – R-Value 6.0	
ATCO36-04	4
ATCO36-05	5
ATCO36-06	6
ATCO36-07	7
ATCO36-08	8
ATCO36-09	9
ATCO36-10	10
ATCO36-12	12
ATCO36-14	14
ATCO36-16	16
ATCO36-18	18

FLEXIBLE AIR DUCT
Insulated – Series 70

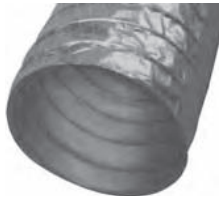


For use as supply or return duct in low to medium pressure systems, or as connection to mixing boxes, diffusers, room inlets or terminal devices. Features encapsulated steel wire helix core wrapped in fiberglass insulation blanket with puncture-resistant gray polyester jacket. 25-ft. length. Max. velocity 5000 FPM. R-value 4.2. UL 181 compliant.

No.	Dia. In.
ATCO70-04	4
ATCO70-05	5
ATCO70-06	6
ATCO70-07	7
ATCO70-08	8
ATCO70-09	9
ATCO70-10	10
ATCO70-12	12
ATCO70-14	14
ATCO70-16	16
ATCO70-18	18
ATCO70-20	20

Thermaflex®

FLEXIBLE DUCT
Noninsulated – Type SLD



For use in low- and medium pressure heating and cooling systems. Features metalized film laminate permanently bonded to spring steel wire helix. Mold, mildew and corrosion resistant. Easily shaped to fit oval inlets and connections. Pressure rating +10" to -1" WG; velocity rating 5000 FPM. 25-ft. length. UL181 listed; NFPA 90A & 90B compliant.

No.	Dia. In.
SLD-04	4
SLD-05	5
SLD-06	6
SLD-08	8
SLD-10	10
SLD-12	12
SLD-14	14



FLEXIBLE DUCT
Non-Insulated – Type NI55



Features aluminum foil, fiberglass and aluminum polyester laminate construction. Pressure rated to +6" and -4" w.g. Rated velocity 4000 FPM. Operating temperature -20°F to 250°F. UL 181 Class 1 listed.

No.	Lgth. Ft.	Dia. In.
NI55-04	25	4
NI55-06	25	6
NI55-08	25	8
NI55-10	25	10
NI55-12	25	12

FLEXIBLE DUCT
Insulated & Acoustical
1M



For low to medium pressure HVAC systems requiring mid-range sound levels. Manufactured to meet the highest quality standards in strength, permeability, and fire resistance. Fabricated with an acoustically transparent PE or CPE inner film which allows mid-range sound to penetrate the duct wall. Pressure rated to +10 and -5 w.g. (18" and 20" to -1 w.g.) Velocity rating 5500 FPM, Temperature range -20°F to 250°F, UL 181 Class 1.

No.	Dia. In.
PE Inner Film	
R-4.2	
1MR404	4
1MR405	5
1MR406	6
1MR407	7
1MR408	8
1MR410	10
1MR412	12
1MR414	14
1MR416	16
1MR418	18
1MR420	20
R-6	
1MR606	6
1MR608	8
1MR610	10
1MR612	12
1MR614	14
1MR616	16

Not all the products we carry are listed in this catalog. If you don't see what you're looking for, please contact your local branch for assistance.

DUCT WRAP



Thick blanket of glass fiber with a vapor barrier on one side which prevents condensation and thermally insulates.

No.	Dim. In. W x Thick.	Lgth. Ft.
TBC-4WRAP	48 x 2	75

Reflectix, Inc.

DUCT WRAP



For use on ducts, pipes, return air duct pans, refrigeration equipment and crawlspaces, as acoustical insulation or water heater jacketing. Helps stop heat loss and provides barrier against radon and vapor. Lightweight. Resists mold and mildew. Environmentally safe; installation does not require respirator or protective clothing. Thermal rating of R-5.6 with spacer, R-4 without spacer. Meets federal and state building codes. ASTM certified.

No.	Dim. In. W x Thick.	Lgth. Ft.
HVPB48050	48 x 5/16	50

DUCT WRAP SPACERS

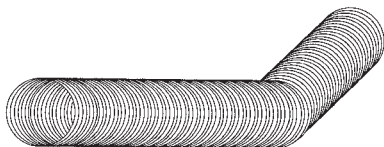


Required with HVPB duct wrap to achieve maximum R-value rating.

No.	Dim. W x L	Linear Ft./Roll	Rolls Per Case
HVSP0202506	2" x 25'	25	6



FLEXIBLE DUCT
Flexell – Model 105

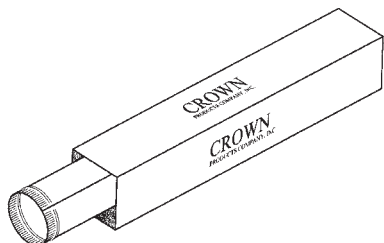


For use in bathroom exhaust and similar applications. Constructed from .005" thick aluminum alloy with triple-lock seams. -60°F to +600°F temperature rating; 5500 FPM velocity rating. 8-ft. length. UL 181 Class 0 listed.

Note: Not recommended for range hood applications.

No.	Dia. In.
T-FIN-04	4
T-FIN-06	6
T-FIN-08	8
T-FIN-10	10
T-FIN-12	12

SNAPLOCK PIPE
26 Ga.



Galvanized steel construction.

No.	Lgth. In.	Dia. In.	Pkg. Qty. Ft.
SL PIPE-04-26-5	60	4	50
SL PIPE-06-26-5	60	6	50
SL PIPE-08-26-5	60	8	50
SL PIPE-10-26-5	60	10	30
SL PIPE-12-26-5	60	12	30
SL PIPE-14-26-5	60	14	30

Our daily objective is to meet and greet our customers in a prompt, kind and courteous manner.



SNAPLOCK PIPE

Packed 10 pieces per bundle.



No.	Gauge	Lgth. In.	Dia. In.
SNAPLOCK-04	30	60	4
SNAPLOCK-05	30	60	5
SNAPLOCK-06	30	60	6
SNAPLOCK-07	30	60	7
SNAPLOCK-08	30	60	8
SNAPLOCK-09	30	60	9
SNAPLOCK-10	30	60	10
SNAPLOCK-12	30	60	12
SNAPLOCK-14	28	60	14
SNAPLOCK-16	28	36	16
SNAPLOCK-18	26	36	18
SNAPLOCK-20	26	36	20

ELBOWS

90° – Adjustable

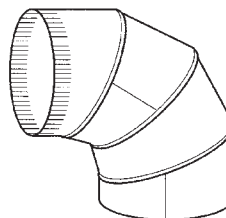
No.	Gauge	Dia. In.	Bundled Quantity
ELLS-04	30	4	12
ELLS-05	30	5	12
ELLS-06	30	6	12
ELLS-07	30	7	12
ELLS-08	30	8	12
ELLS-09	30	9	12
ELLS-10	30	10	6
ELLS-12	28	12	6
ELLS-14	28	14	4
ELLS-16	26	16	4
ELLS-18	26	18	4
ELLS-20	26	20	4



ELBOWS

90° – Adjustable – #111

Galvanized steel construction.



No.	Dia. In.	Ga.	Ctn. Qty.
ELLS-04-26	4	26	12
ELLS-06-26	6	26	12
ELLS-08-26	8	26	12
ELLS-10-26	10	26	8
ELLS-12-26	12	26	4
ELLS-14-26	14	26	4
ELLS-16-24	16	24	4
ELLS-18-24	18	24	4



REDUCERS Snaplock



No crimp.

No.	Gauge	Dia. In.
SNAPRED-08/06	30	8 x 6
SNAPRED-10/08	30	10 x 8
SNAPRED-12/10	28	12 x 10
SNAPRED-14/12	28	14 x 12
SNAPRED-15/14	28	15 x 14
SNAPRED-16/14	28	16 x 14

WYES Snaplock



Full flow design.

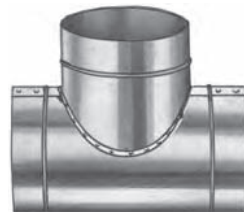
No.	Gauge	Dia. In.
SNAPWY-12/10/10	28	12 x 10 x 10
SNAPWYE-10/8/8	28	10 x 8 x 8
SNAPWYE-8/6/6	30	8 x 6 x 6



Don't see it here?
We can get it for you.
Call us!



TEES Snaplock



No.	Gauge	Dia. In.
SNAPTEE-06	30	6
SNAPTEE-08	30	8
SNAPTEE-10	28	10
SNAPTEE-12	28	12

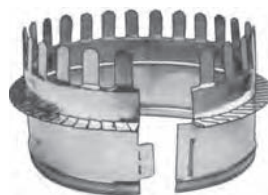
SNAP CAP Snaplock



Round.

No.	Gauge	Dia. In.
SNAPCAP-06	30	6
SNAPCAP-08	30	8
SNAPCAP-10	28	10
SNAPCAP-12	28	12

TAB COLLARS

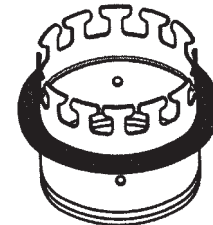


For use with ductboard.

No.	Dia. In.
STS-06	6
STS-08	8
STS-10	10
STS-12	12
STS-14	14



STARTING COLLARS Tabbed - w/ Gasket



For 1" and 1-1/2" ductboard. Includes thermal-seal gasket.

No.	Dia. In.
616G-06	6
616G-08	8
616G-10	10
616G-12	12
616G-14	14
616G-16	16



DUCT HANGING STRAPS

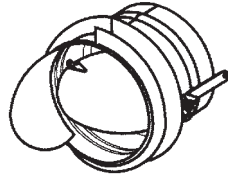


No holes.

No.	Ga.	Lgth. Ft.
HANGING STRAP	26	100



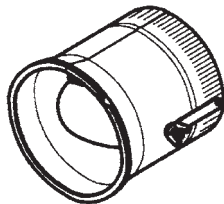
SPIN-IN COLLARS
Twist Lock



For use on 1-1/2" ductboard. Includes scoop and damper.

No.	Dia. In.
626FL-04	4
626FL-06	6
626FL-07	7
626FL-08	8
626FL-09	9
626FL-10	10
626FL-12	12
626FL-14	14
626FL-16	16
626FL-18	18

SPIN-IN COLLARS

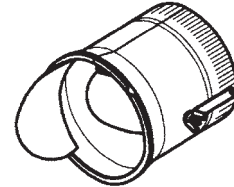


For use on sheet metal duct. Includes damper and stand-off.

No.	Dia. In.
3724S-06	6
3724S-08	8
3724S-10	10
3724S-12	12
3724S-14	14
3724S-16	16



SPIN-IN COLLARS
Model 3726



For use on sheet metal duct. Includes scoop and damper.

No.	Dia. In.
3726-04	4
3726-05	5
3726-06	6
3726-07	7
3726-08	8
3726-09	9
3726-10	10
3726-12	12
3726-14	14
3726-16	16
3726-18	18
With 2" Stand-Off	
3726S-06	6
3726S-08	8
3726S-10	10
3726S-12	12
3726S-14	14
3726S-16	16
3726S-18	18

We welcome the opportunity to quote on any special tools or equipment which you may require.



SPIN-IN COLLARS
w/ Scoop & Damper – Model FLDE



For use on sheet metal duct. Features 26-ga. construction with deep spin groove for secure hold.

No.	Dia. In.
FLDE-06	6
FLDE-08	8
FLDE-10	10
FLDE-12	12
FLDE-14	14
FLDE-16	16

SPIN-IN COLLARS
w/ Damper – Model FLD

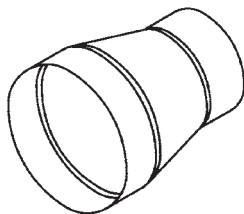


For use on sheet metal duct. Features 26-ga. construction with deep spin groove for secure hold.

No.	Dia. In.
FLD-06	6
FLD-08	8
FLD-10	10
FLD-12	12
FLD-14	14
FLD-16	16



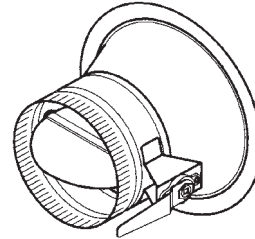
CONICAL REDUCERS
Tapered – Model CR265



No.	Dia. In.
CR265-8/6	8 x 6
CR265-10/8	10 x 8
CR265-12/10	12 x 10



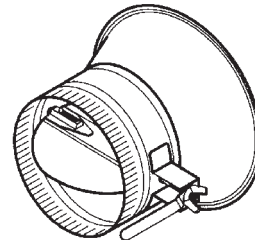
TAKEOFFS
Conical – Model 3210DS



For commercial duct applications. Galvanized steel construction with continuous-weld seam to prevent air leakage. Features therma-seal gasket ring. Damper handle standoff allows use with blanket-type insulation.

No.	Dia. In.	Ga.
3210DS-06	6	28
3210DS-08	8	28
3210DS-10	10	26
3210DS-12	12	26
3210DS-14	14	26
3210DS-16	16	24

TAKEOFFS
Conical – Spin-In – Model 3200DS



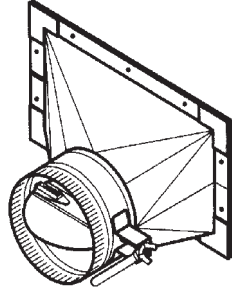
For commercial duct applications. Galvanized steel construction with continuous-weld seam to prevent air leakage. Features damper handle standoff for use with blanket-type insulation.

No.	Dia. In.	Ga.
3200DS-06	6	28
3200DS-08	8	28
3200DS-10	10	26
3200DS-12	12	26
3200DS-14	14	26
3200DS-16	16	24



TAKEOFFS

Rectangular to Round – Model 3300DS



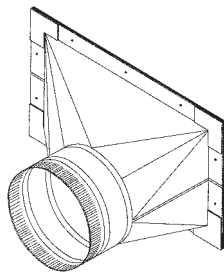
For commercial duct applications. Galvanized steel construction with continuous-weld seam to prevent air leakage. 45° design with gasket flange. Damper handle standoff allows use with blanket-type insulation.

No.	Dia. In.
3300DS-06	6
3300DS-07	7
3300DS-08	8
3300DS-09	9
3300DS-10	10
3300DS-12	12
3300DS-14	14
3300DS-16	16

Jer-Air

TAKEOFFS

45° – Gasketed – Model AT-500

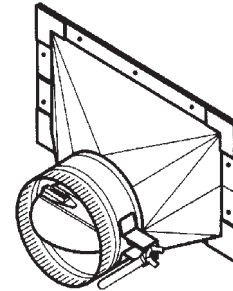


Features galvanized steel construction with continuous-welded seams and 1" wide gasketed flange with pre-drilled screw holes.

No.	Dia.	Dim. In.		Ht.
		Rect.	Open.	
		28 Ga.		
AT-500-06	6	12 x 6		8-1/2
AT-500-08	8	12 x 6		8-1/2
		26 Ga.		
AT-500-10	10	16 x 6-3/4		9-1/2
AT-500-12	12	18 x 8-1/2		10-1/2
AT-500-14	14	20 x 9-1/2		10-1/2
		24 Ga.		
AT-500-16	16	24 x 12		10-1/2

Jer-Air
TAKEOFFS

Rectangular to Round – Model AT-502 w/Damper



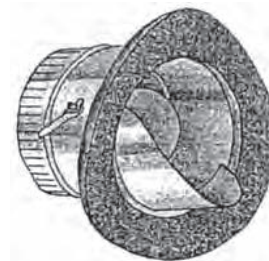
For commercial duct applications. Galvanized steel construction with continuous-weld seam to prevent air leakage. 45° design with gasket flange. Damper handle standoff allows use with blanket-type insulation.

No.	Dia. In.
AT-502-06	6
AT-502-08	8
AT-502-10	10
AT-502-12	12
AT-502-14	14
AT-502-16	16

Note: AT-500 and AT-502 stocked in Smyrna warehouse only.



SADDLE TAPS



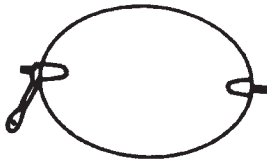
Galvanized sheet metal construction with fire-retardant polyethylene foam gasket. Includes scoop and damper.

No.	Dia. In.	Gauge	For Pipe Dia. In.
SAD-TAP-M174-06	6	30	8 to 12
SAD-TAP-M174-08	8	30	10 to 14
SAD-TAP-M174-10	10	30	12 to 16
SAD-TAP-M174-12	12	28	14 to 18
SAD-TAP-M174-14	14	28	16 to 20

Jer-Air

DAMPERS

Round

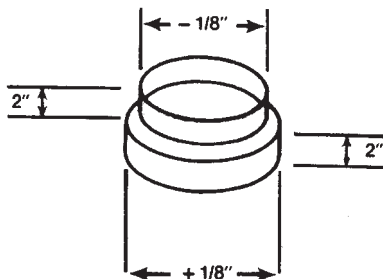


Features 28-ga. steel construction. Includes quadrant.

No.	Model No.	Dia. In.
DQ-06	D-1-06	6
DQ-08	D-1-08	8
DQ-10	D-1-10	10
DQ-12	D-1-12	12
DQ-14	D-1-14	14
DQ-16	D-1-16	16
DQ-18	D-1-18	18
DQ-20	D-1-20	20

REDUCERS

Short – Model SR

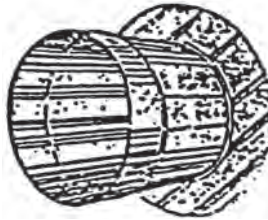


28-ga. steel construction.

No.	Dia. In.
SR-6/4	6 x 4
SR-6/5	6 x 5
SR-8/6	8 x 6
SR-8/7	8 x 7
SR-10/8	10 x 8
SR-10/9	10 x 9
SR-12/8	12 x 8
SR-12/10	12 x 10
SR-14/12	14 x 12
SR-16/14	16 x 14
SR-16/15	16 x 15

TAKEOFFS

Stick-On – Standard – Model S0-S1



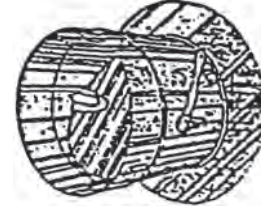
For use on sheet metal or fiberglass trunk duct. Galvanized steel construction with adhesive backing for airtight seal. Eliminates need for joint taping and exact hole sizing.

No.	Dia. In.
S0-S1-04	4
S0-S1-05	5
S0-S1-06	6
S0-S1-07	7
S0-S1-08	8
S0-S1-09	9
S0-S1-10	10
S0-S1-12	12
S0-S1-14	14
S0-S1-16	16
S0-S1-18	18
S0-S1-20	20

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TAKEOFFS

Stick-On – w/ Damper – Model S0-S3

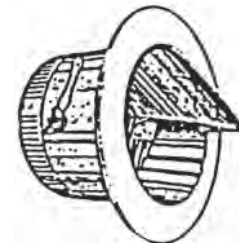


For use on sheet metal or fiberglass trunk duct. Galvanized steel construction with adhesive backing for airtight seal. Eliminates need for joint taping and exact hole sizing.

No.	Dia. In.
S0-S3-06	6
S0-S3-08	8
S0-S3-10	10
S0-S3-12	12
S0-S3-14	14
S0-S3-16	16
S0-S3-18	18
S0-S3-20	20

TAKEOFFS

Stick-On – w/ Scoop & Damper – Model S0-S4

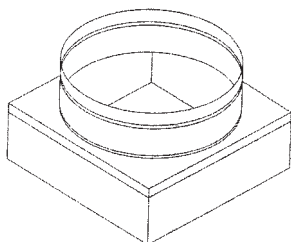


For use on sheet metal or fiberglass trunk duct. Galvanized steel construction with adhesive backing for airtight seal. Eliminates need for joint taping and exact hole sizing.

No.	Dia. In.
S0-S4-06	6
S0-S4-08	8
S0-S4-10	10
S0-S4-12	12
S0-S4-14	14
S0-S4-16	16
S0-S4-18	18
S0-S4-20	20



DUCT TRANSITIONS
Square to Round – Model SRBN



24-ga. steel construction. Features 2-1/2" deep collar with raised bead for secure connections. Black painted interior.

Transitions

No.	Base Dim. In.	Inlet Dia. In.
P-SRBN-6/6	6X6	6
P-SRBN-8/6	8X8	6
P-SRBN-8/8	8X8	8
P-SRBN-9/8	9X9	8
P-SRBN-10/6	10X10	6
P-SRBN-10/8	10X10	8
P-SRBN-10/10	10X10	10
P-SRBN-12/6	12X12	6
P-SRBN-12/8	12X12	8
P-SRBN-12/10	12X12	10
P-SRBN-12/12	12X12	12
P-SRBN-15/14	15X15	14
P-SRBN-16/16	16X16	16
P-SRBN-18/16	18X18	16
P-SRBN-2210-6	22X10	6
P-SRBN-2210-8	22X10	8
P-SRBN-2210-10	22X10	10
P-SRBN-22/6	22X22	6
P-SRBN-22/8	22X22	8
P-SRBN-22/10	22X22	10
P-SRBN-22/12	22X22	12
P-SRBN-22/14	22X22	14
P-SRBN-22/16	22X22	16
P-SRBN-22/18	22X22	18
P-SRBN-22/20	22X22	20

Blank Cans

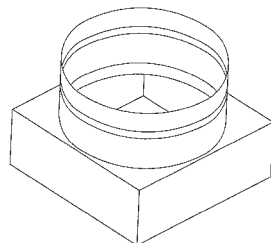
No.	Dim. In.
P-SRBN-1414	14X14
P-SRBN-1818	18X18
P-SRBN-2020	20X20
P-SRBN-2210	22X10
P-SRBN-2222	22X22



PRODUCTS COMPANY, INC.

DUCT TRANSITIONS

Rectangular to Round – Model 666B



26-ga. galvanized steel construction. 6" height.
Notes: Rectangular body is 3/16" oversized to fit over grille neck; round collar is 1/8" under-sized with bead to accept pipe or flexible duct.

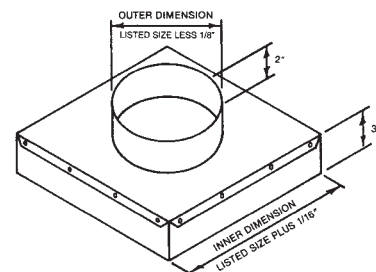
No.	Body Dim. In.	Collar Dia. In.
STRC-1818-06	18 x 18	6
STRC-1818-08	18 x 18	8
STRC-2210-06	22 x 10	6
STRC-2210-08	22 x 10	8
STRC-2210-10	22 x 10	10
STRC-22/6	22 x 22	6
STRC-22/8	22 x 22	8
STRC-22/10	22 x 22	10
STRC-22/12	22 x 22	12
STRC-22/14	22 x 22	14
STRC-22/16	22 x 22	16
STRC-22/18	22 x 22	18



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Jer-Air

DUCT TRANSITIONS
Square to Round – Model TR3



28-ga. galvanized steel construction; riveted design.

No.	Neck Sz. In.	
	Square	Round
TR3-6/5	6	5
TR3-6/6	6	6
TR3-8/6	8	6
TR3-8/8	8	8
TR3-9/7	9	7
TR3-9/8	9	8
TR3-10/8	10	8
TR3-10/10	10	10
TR3-12/6	12	6
TR3-12/8	12	8
TR3-12/10	12	10
TR3-12/12	12	12
TR3-15/12	15	12
TR3-15/14	15	14
TR3-18/12	18	12
TR3-18/14	18	14
TR3-18/16	18	16
TR3-22/6	22	6
TR3-22/8	22	8
TR3-22/10	22	10
TR3-22/12	22	12
TR3-22/14	22	14
TR3-22/16	22	16
TR3-22/18	22	18
TR3-22/22	22	22



VOLUME CONTROL DAMPERS Round – Model WMVCD – Typical



For use in low and medium velocity non-corrosive air systems. Features 20-ga. galvanized steel frame with pressed-in neoprene bearings; 20-ga. galvanized steel blade mounted to 3/8" square axle; quadrant locking handle on 2" standoff. Measures 9" L. Mill finish.

No.	Dia. In.
WMVCD-06	6
WMVCD-08	8
WMVCD-10	10
WMVCD-12	12
WMVCD-14	14



YOUNG REGULATOR

SOCKET WRENCHES



For use with worm gear regulators and Bowden cable controls.

No.	Lgth. In.
030-12-SOCKET	12

MOTORIZED DAMPERS Round – Model YR-4010

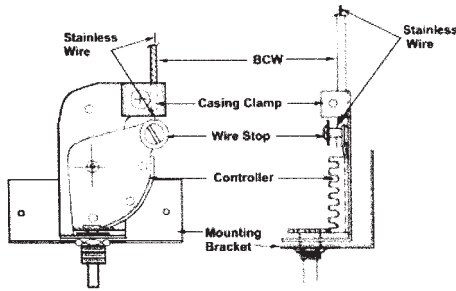


For zone control, make-up air, intake and exhaust applications. 2-position, 90-degree butterfly design. Features heavy-duty spiral shell, 24V motor with side-mounted

control box, 20-ga. V-style damper blade with position indicator and steel shafts.

No.	Dia. In.	Lgth. In.
YR-4010-06	6	12
YR-4010-08	8	12
YR-4010-10	10	12
YR-4010-12	12	12
YR-4010-14	14	14
YR-4010-16	16	16

REMOTE CABLE CONTROLS Bowden – Series 270-275



For positive locking control of dampers in inaccessible locations without access doors. Features steel rack and pinion with flexible casing and stainless steel wire. Can be installed on diffuser frame, inside plenum or on face of floor grille. Includes mounting hardware for most dampers.

No.	Hub Size	Desc.
270-275B-LH	Large	3/8" Sq. to 1/2" Round
270-275B-SH	Small	1/4" Sq. to 5/16" Round

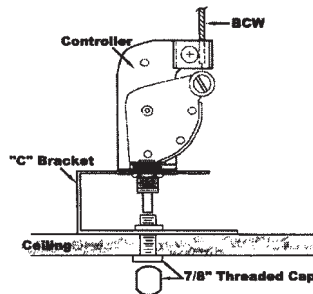
CASING & WIRE Bowden



Runs between damper and remote controller. Features .054" stainless steel torsion-straightened wire with 3/16" flexible galvanized coil spring casing.

No.	Lgth. Ft.
BOWDEN-CW-5	5
BOWDEN-CW-6	6
BOWDEN-CW-10	10
BOWDEN-CW-50	50

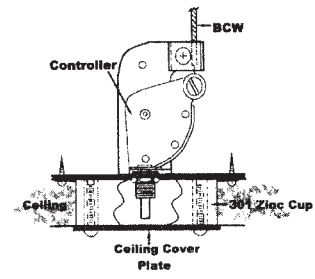
REMOTE CABLE CONTROLS Bowden – Series 270-896



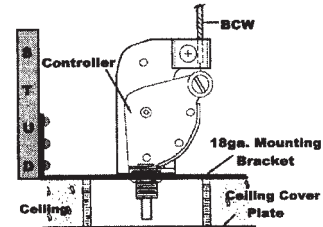
For positive locking control of dampers in inaccessible locations without access doors. Features steel rack and pinion with flexible casing and stainless steel wire. Controller with C-bracket fastens to ceiling or stud. Includes zinc-plated threaded cap, 7/8" diameter.

No.	Hub Size	Desc.
270-896B-LH	Large	3/8" Sq. to 1/2" Round
270-896B-SH	Small	1/4" Sq. to 5/16" Round

REMOTE CABLE CONTROLS Bowden – Series 270-301



Series 270-301



Series 270-301-EZ

For positive locking control of dampers in inaccessible locations without access doors. Features steel rack and pinion with flexible casing and stainless steel wire. For installation at ceiling line. Includes 3" zinc-plated cover and mounting hardware for most dampers.

Series 270-301. Controller mounts atop concealed ceiling cup; unit is flush with finished surface. Cup measures 2-5/8" dia. x 15/16" D.

Series 270-301EZ. Controller and mounting bracket fasten to ceiling stud.

No.	Hub Size	Desc.
Concealed Cup & Cover Plate		
270-301B-LH	Large	3/8" Sq. to 1/2" Round
270-301B-SH	Small	1/4" Sq. to 5/16" Round

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RUSKIN®

FIRE DAMPERS

Curtain Type – Vertical – Model IBD20



Style A



Style R

For use in static systems. Features 20-ga. galvanized steel frame and 24-ga. galvanized steel blades. Integral roll-formed sleeve and retaining angles facilitate installation. Sleeve length 12". UL classified 1-1/2 hour fire protection rating.

Style A – Rectangular

No.	Dim. In.
IBD20-1208	12 x 8
IBD20-1212	12 x 12
IBD20-1610	16 x 10
IBD20-2412	24 x 12
IBD20-3612	36 x 12
IBD20-3618	36 x 18

TOM BARROW CO.
Your Single Source Solution!

FIRE DAMPERS

Curtain Type – Vertical/Horizontal – Model IBD20



Style A



Style B

For use in static systems that shut down during fire. Can be installed vertically in wall or horizontally in concrete floor. Features 12" 20-ga. galvanized steel sleeve, 24-ga. galvanized steel blades, picture frame mounting angles (2 sides) and 165°F fusible link. UL and CUL classified. FM approved.

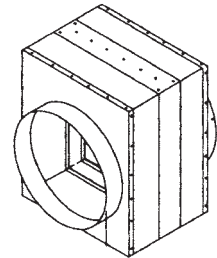
No.	Dim. In.
Style A	
IBD20A-0808	8 x 8
IBD20A-1008	10 x 8
IBD20A-1010	10 x 10
IBD20A-1208	12 x 8
IBD20A-1210	12 x 10
IBD20A-1212	12 x 12
IBD20A-1410	14 x 10
IBD20A-1412	14 x 12
IBD20A-1414	14 x 14
IBD20A-1610	16 x 10
IBD20A-1612	16 x 12
IBD20A-1616	16 x 16
IBD20A-1812	18 x 12
IBD20A-1818	18 x 18
IBD20A-2012	20 x 12
IBD20A-2020	20 x 20
IBD20A-2408	24 x 8
IBD20A-2412	24 x 12
IBD20A-2424	24 x 24

No.	Dim. In.
Style B	
IBD20B-0606	6 x 6
IBD20B-0806	8 x 6
IBD20B-0808	8 x 8
IBD20B-1008	10 x 8
IBD20B-1010	10 x 10
IBD20B-1208	12 x 8
IBD20B-1210	12 x 10
IBD20B-1212	12 x 12
IBD20B-1408	14 x 8
IBD20B-1410	14 x 10
IBD20B-1412	14 x 12
IBD20B-1414	14 x 14
IBD20B-1610	16 x 10
IBD20B-1612	16 x 12
IBD20B-1616	16 x 16
IBD20B-1812	18 x 12

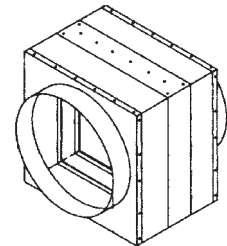
No.	Dim. In.
IBD20B-1814	18 x 14
IBD20B-1818	18 x 18
IBD20B-2012	20 x 12
IBD20B-2020	20 x 20
IBD20B-2412	24 x 12
IBD20B-2418	24 x 18
IBD20B-2424	24 x 24
IBD20B-3612	36 x 12
IBD20B-3618	36 x 18

FIRE DAMPERS

Curtain Type – Vertical/Horizontal – Model IBD20



Style LR



Style R

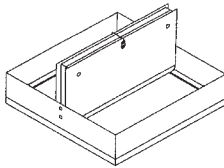
For use in static systems that shut down during fire. Can be installed vertically in wall or horizontally in concrete floor. Features 12" 20-ga. galvanized steel sleeve, 24-ga. galvanized steel blades, picture frame mounting angles (2 sides) and 165°F fusible link. Non-sealed transition for low pressure, 100% free area applications. UL and CUL classified. FM approved.

No.	Dia. In.
Style LR	
IBD20LR-06	6
IBD20LR-08	8
IBD20LR-10	10
IBD20LR-12	12
IBD20LR-14	14
IBD20LR-16	16
IBD20LR-18	18
Style R	
IBD20R-06	6
IBD20R-08	8
IBD20R-10	10
IBD20R-12	12
IBD20R-14	14

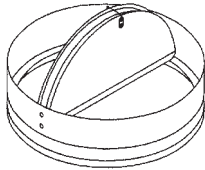
RUSKIN®

FIRE DAMPERS

Ceiling – Models CFD & CFDR



Rectangular



Round

Protects against flame and heat in HVAC ceiling penetrations. Features 20-ga. galvanized steel frame and blades with mill finish. Blades hinge in center and are held open with fusible link. UL classified 3-hour fire protection rating.

Rectangular

No.	Dim. In.
CFD-0606	6 x 6
CFD-0808	8 x 8
CFD-0909	9 x 9
CFD-1010	10 x 10
CFD-1212	12 x 12
CFD-1515	15 x 15
CFD-2020	20 x 20
CFD-2210	22 x 10
CFD-2222	22 x 22
CFD-2412	24 x 12
CFD-2424	24 x 24

Round

No.	Dia. In.
CFDR-06	6
CFDR-08	8
CFDR-10	10
CFDR-12	12
CFDR-14	14
CFDR-16	16

FIRE DAMPER ACCESSORIES

No.	Desc.
BLKT-RCF	Ceramic radiation blanket, 24" x 24"
EXT SHAFT-R	Ext. shaft for manual damper, 1/2" round
EXT SHAFT-S	Ext. shaft for manual damper, 3/8" square
SH10J24	Spring kit for horizontal fire dampers up to 24"

RUSKIN®

LOUVERS

Stationary – Drainable –
Model GFL800D



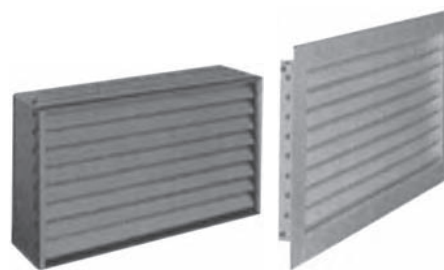
Features front flange; extruded aluminum 4" deep frame and non-adjustable 45° blades on 5" centers; 5/8" x .040" aluminum birdscreen on removable frame. Mill finish. Max. airflow 748 FPM; max. wind load 20 lbs./sq. ft.

No.	Dim. In.
GFL800D-1212	12 x 12
GFL800D-1616	16 x 16
GFL800D-1812	18 x 12
GFL800D-1818	18 x 18
GFL800D-2418	24 x 18
GFL800D-2424	24 x 24
GFL800D-3636	36 x 36
GFL800D-4848	48 x 48



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BRICK VENTS Aluminum



Style EX

Style FL

Extruded aluminum construction with .125" minimum thickness. Features 1" deep overlapping blades set at 45°, continuous bottom weepage and clear anodized finish.

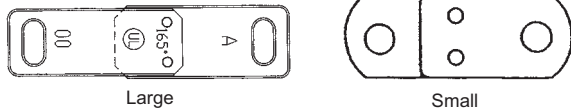
Style EX. For commercial and industrial applications. Features storm stop at rear of blades and water stop at rear of vent.

Style FL. For bathroom exhaust and flood vent applications. Flange covers rough opening edges when installed in existing walls, providing attractive appearance.

No.	Style	Opening Dim. In.
BV-157	EX	15-5/8 x 7-3/4
EX808	EX	8-1/8 x 7-3/4
FL808	FL	8-1/8 x 7-3/4



RUSKIN®
FUSE LINKS



Large. For IBD curtain-type fire dampers (except IBDT models).
Small. For CFD ceiling fire dampers and all pneumatic fuse links.

No.	Desc.	Sz. In.
Large		
FUSELINK165-LG	165°F	3
FUSELINK212-LG	212°F	3
Small		
FUSELINK165-SM	165°F	1.5
FUSELINK212-SM	212°F	1.5

RUSKIN®
DUCT ACCESS DOORS
Removable – Model ADC24



For use with steel ductwork. Manual locks provide secure closure. Features 22-ga. steel frame; cammed, removable double-skin door; foam gasket seal and 1" thick fiberglass insulation.

No.	Dim. In.	No. Locks
ADC24-0606	6 x 6	2
ADC24-0808	8 x 8	2
ADC24-1010	10 x 10	2
ADC24-1212	12 x 12	2
ADC24-1410	14 x 10	2
ADC24-1414	14 x 14	2
ADC24-1616	16 x 16	2
ADC24-1812	18 x 12	4
ADC24-1818	18 x 18	4
ADC24-2020	20 x 20	4
ADC24-2424	24 x 24	4

DUCT ACCESS DOORS
Hinged – Model ADH24



For use with steel ductwork. Manual locks provide secure closure. Features 22-ga. steel frame; double-skin door with continuous piano hinge; foam gasket seal and 1" thick fiberglass insulation.

No.	Dim. In.	No. Locks
ADH24-0606	6 x 6	1
ADH24-0808	8 x 8	1
ADH24-1010	10 x 10	1
ADH24-1212	12 x 12	1
ADH24-1414	14 x 14	1
ADH24-1616	16 x 16	1
ADH24-1818	18 x 18	2
ADH24-2020	20 x 20	2
ADH24-2424	24 x 24	2



ACCESS DOORS
Flush – Universal – Model UF5000



For installation in drywall, plaster, masonry or tile ceilings and walls. Features rounded safety corners, one-piece trim flange and continuous concealed hinge. 1-1/4" deep mounting frame with screwdriver-operated cam latch. Gray baked enamel finish.

No.	Dim. In.		No. Latches
	Door	Ceiling/Wall Open.	
UF5000-08	8 x 8	8-3/8 x 8-3/8	1
UF5000-12	12 x 12	12-3/8 x 12-3/8	1
UF5000-16	16 x 16	16-3/8 x 16-3/8	2
UF5000-18	18 x 18	18-3/8 x 18-3/8	2
UF5000-24	24 x 24	24-3/8 x 24-3/8	4
UF5000-2436	24 x 36	24-3/8 x 36-3/8	5

Babcock-Davis

ACCESS DOORS

General Purpose – Model WBGD



Features 18-ga. steel frame, 14-ga. steel door, concealed piano-type hinge and flush cam latches. 170° opening angle. Gray enamel finish.

No.	Dim. In.	
	Opening	Door
WBGD-1212	12-1/4 x 12-1/4	12 x 12
WBGD-1818	18-1/4 x 18-1/4	18 x 18
WBGD-2424	24-1/4 x 24-1/4	24 x 24



THOMAS ENTERPRISES

ACCESS PANELS

Model TM



Provides service access to plumbing, heating, air conditioning and electrical systems. For use in masonry, tile or wood walls. Features 14-ga. steel door, 16-ga. steel frame with 1" flange, concealed hinges and screw-driver-operated cam locks.

No.	Dim. In.		No. Latches
	Door	Wall Open.	
TM-12	12 x 12	12-3/8 x 12-3/8	1
TM-16	16 x 16	16-3/8 x 16-3/8	1
TM-18	18 x 18	18-3/8 x 18-3/8	1
TM-24	24 x 24	24-3/8 x 24-3/8	4

RUSKIN®

DUCT ACCESS DOORS

Models ADR1 & ADR2

For use on round duct. Features galvanized steel construction with mill finish, synthetic knobs with threaded metal inserts, and sponge gasket. Max. pressure 20" w.g.



No.	Dim. In.	Ga.	For Duct Dia. In.
ADR1-06	10 x 6	22	6
ADR1-08	10 x 6	22	8
ADR1-10	10 x 6	22	10
ADR1-12	10 x 6	22	12
ADR1-14	10 x 6	22	14
ADR1-16	10 x 6	22	16
ADR1-18	10 x 6	22	18
ADR1-20	10 x 6	22	20
ADR2-16	16 x 12	20	16
ADR2-18	16 x 12	20	18
ADR2-20	16 x 12	20	20
ADR2-22	16 x 12	20	22
ADR2-24	16 x 12	20	24

DUCTMATE

DUCT ACCESS DOORS

Rectangular – "The Sandwich"

Airtight pressure vessel design. Features galvanized steel outer door, high-density fiberglass insulation and galvanized steel inner door with flat inside cover and closed-cell neoprene gasket. Plastic hand knobs feature metal inserts and zinc coated springs. Tested to pressures of +20" and -10" WG. Includes self-adhesive template for installation.



No.	Dim. In. L x H
DI106GA	10 x 6
DI128GA	12 x 8
DI1814GA	18 x 14
DI2418GA	24 x 18

GREASE DUCT ACCESS DOORS



Features galvanized steel outer door with permanently bonded ceramic fiber gasket, galvanized steel inner door with smooth inside cover, and 16-ga. black iron backing plate. Zinc coated wing-nuts with conical springs for opening and closing. Gasket rated to 2300°F; meets NFPA 96 standards. Includes self-adhesive template for installation.

No.	Dim. In. L x H
DMAD-1006	10 x 6
DMAD-1208	12 x 8
DMAD-1814	18 x 14



DUCTMATE

GREASE DUCT ACCESS DOORS

Ultimate



Sandwich design reduces installation time, eliminates need for welding and minimizes duct penetration. Grease-tight. Black iron construction. UL and CUL listed. Meets NFPA 96 standards.

No.	Dim. In. L x H	
	Opening	Door
D66ULBI	6 x 6	8 x 8
D106ULBI	10 x 6	12 x 8
D128ULBI	12 x 8	14 x 10



THOMAS ENTERPRISES

ACCESS PANELS

Fire-Rated – Model FD



Provides access to utilities in walls or ceilings of stairwells, shafts and corridors. Features 20-ga. steel door with automatic close/latch mechanism and 2" insulation; 16 ga. steel frame with masonry anchors and bolt holes. Gray enamel finish. UL and WHI listed.

No.	Door	Dim. In.	
		Wall Open.	Ceiling Open.
FD 12	12 x 12	12-3/8 x 12-3/8	13-5/8 x 13-5/8
FD 18	18 x 18	18-3/8 x 18-3/8	19-5/8 x 19-5/8
FD 24	24 x 24	24-3/8 x 24-3/8	25-5/8 x 25-5/8

ACCESS DOORS

Fire-Rated – Model WBFR



For vertical wall applications. Features 16-ga. steel frame, 18-ga. steel door, 1-7/8" mineral wool insulation, concealed pivot-type hinge, automatic closer and inside release. 140° opening angle. Self-latching. Gray enamel finish. UL and Warnock Hersey listed.

No.	Dim. In.	
	Opening	Door
WBFR-1212	12-1/4 x 12-1/4	12 x 12
WBFR-1818	18-1/4 x 18-1/4	18 x 18
WBFR-2424	24-1/4 x 24-1/4	24 x 24

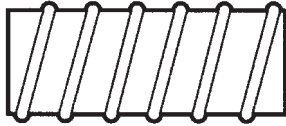
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SPIRAL DUCT

Gasketed – Eastern Tight™

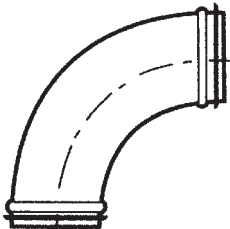


Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.	Ga.
SP-06	6	28
SP-08	8	26
SP-10	10	26
SP-12	12	26
SP-14	14	26
SP-16	16	24
SP-18	18	24
SP-20	20	24
SP-22	22	24
SP-24	24	24

PRESSED ELBOWS

90° – Gasketed – Eastern Tight™

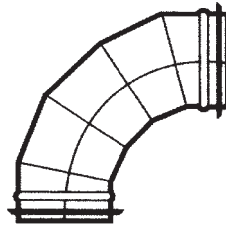


Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.
PE90T-06	6
PE90T-08	8
PE90T-10	10
PE90T-12	12

FABRICATED ELBOWS

90° – Gasketed – Eastern Tight™

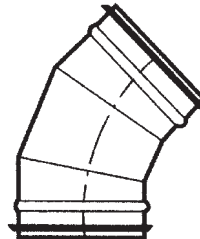


Single-wall, 5-piece design. Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.
E90T-14	14
E90T-16	16
E90T-18	18
E90T-20	20
E90T-22	22
E90T-24	24

FABRICATED ELBOWS

45° – Gasketed – Eastern Tight™

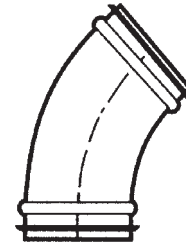


Single-wall, 3-piece design. Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.
E45T-14	14
E45T-16	16
E45T-18	18
E45T-20	20
E45T-22	22
E45T-24	24

PRESSED ELBOWS

45° – Gasketed – Eastern Tight™

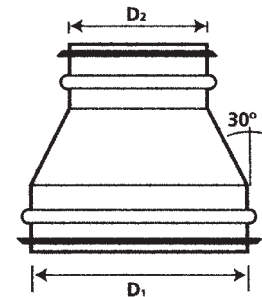


Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.
PE45T-06	6
PE45T-08	8
PE45T-10	10
PE45T-12	12

PRESSED REDUCERS

Gasketed – Eastern Tight™



Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.		Lgth. In.
	D1	D2	
PRDT-08-06	8	6	3-5/8
PRDT-10-06	10	6	5-3/8
PRDT-10-08	10	8	3-5/8
PRDT-12-08	12	8	5-3/8
PRDT-12-10	12	10	3-5/8

Quality Products

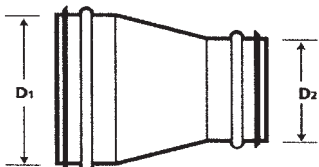
Quality People



Eastern Sheet Metal

FABRICATED REDUCERS

Gasketed – Eastern Tight™

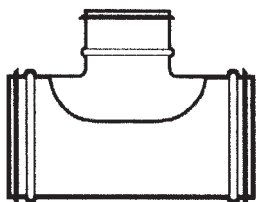


Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.		Lgth. In.
	D1	D2	
RDT-14-08	14	8	10
RDT-14-10	14	10	8
RDT-14-12	14	12	8
RDT-16-10	16	10	10
RDT-16-12	16	12	8
RDT-16-14	16	14	8
RDT-18-12	18	12	10
RDT-18-14	18	14	8
RDT-18-16	18	16	8
RDT-20-14	20	14	10
RDT-20-16	20	16	8
RDT-20-18	20	18	8
RDT-22-20	22	20	8
RDT-24-18	24	18	10
RDT-24-20	24	20	8
RDT-24-22	24	22	8

PRESSED TEES

Gasketed – Eastern Tight™

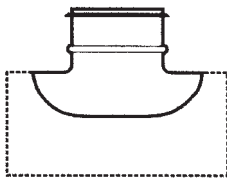


Assembled tee with saddle tap. Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.		Rad. In.	Body Lgth. In.
	Inlet	Outlet		
PTT-06-06	6	6	.787	16
PTT-08-08	8	8	.787	18
PTT-10-10	10	10	1.00	20
PTT-12-12	12	12	1.00	22

PRESSED TAPS

Field Installed – Gasketed Eastern Tight™

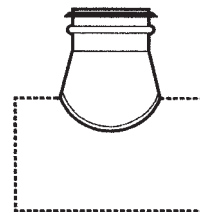


Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	For Duct Dia. In.	Rad. In.	Inlet Dia. In.
PFTCT-06-06	6	.787	6
PFTCT-08-06	8	.787	6
PFTCT-10-06	10	.787	6
PFTCT-12-06	12	.787	6
PFTCT-14-06	14	.787	6
PFTCT-16-06	16	.787	6
PFTCT-14-08	14	.787	8
PFTCT-16-08	16	.787	8
PFTCT-08-08	8	.787	8
PFTCT-10-08	10	.787	8
PFTCT-12-08	12	.787	8
PFTCT-20-08	20	.787	8
PFTCT-24-08	24	1.00	8
PFTCT-10-10	10	1.00	10
PFTCT-12-10	12	1.00	10
PFTCT-14-10	14	1.00	10
PFTCT-16-10	16	1.00	10
PFTCT-18-10	18	1.00	10
PFTCT-22-10	22	1.00	10
PFTCT-12-12	12	1.00	12
PFTCT-14-12	14	1.00	12
PFTCT-16-12	16	1.00	12
PFTCT-20-12	20	1.00	12
PFTCT-24-12	24	1.00	12

CONICAL TAPS

Field Installed – Gasketed Eastern Tight™

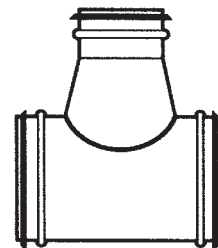


Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. 7" height. Meets ASTM A653 and A924 specifications.

No.	For Duct Dia. In.	Inlet Dia. In.
FTCT-14-14	14	14
FTCT-16-14	16	14
FTCT-22-14	22	14
FTCT-16-16	16	16
FTCT-24-16	24	16
FTCT-18-14	14	18
FTCT-18-16	16	18
FTCT-18-18	18	18
FTCT-24-18	24	18
FTCT-20-16	16	20
FTCT-20-18	18	20
FTCT-20-20	20	20
FTCT-22-20	22	20
FTCT-24-20	24	20
FTCT-22-18	18	22
FTCT-22-22	22	22
FTCT-24-24	24	24

CONICAL TEES

Gasketed – Eastern Tight™



Assembled tee with conical tap. Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.		Body Lgth. In.
	Inlet	Outlet	
CTT-14-14	14	14	20
CTT-16-16	16	16	22
CTT-18-18	18	18	24

Visit our Website at www.tombarrow.com!



Eastern Sheet Metal

SPIRAL DUCT COUPLINGS

Male – Gasketed – Eastern Tight™

Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.



No.	Dia. In.
PCPT-06	6
PCPT-08	8
PCPT-10	10
PCPT-12	12
PCPT-14	14
PCPT-16	16
PCPT-18	18
PCPT-20	20
PCPT-22	22
PCPT-24	24

FITTING COUPLINGS

Non-Female – Gasketed – Eastern Tight™



No.	Dia. In.
FCPT-06	6
FCPT-08	8
FCPT-10	10
FCPT-12	12
FCPT-14	14
FCPT-16	16
FCPT-18	18
FCPT-20	20
FCPT-22	22
FCPT-24	24

BELLMOUTH TAKEOFFS

Gasketed – Eastern Tight™

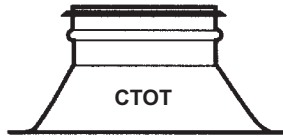


For installation on rectangular duct, plenum or other flat surface. Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Inlet Dia. In.	Rad. In.
PBT-06	6	.787
PBT-08	8	1.00
PBT-10	10	1.00
PBT-12	12	1.00

CONICAL TAKEOFFS

Gasketed – Eastern Tight™



For installation on rectangular duct, plenum or other flat surface. Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design and 1/2" flange. 7" body height. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.
CTOT-14	14
CTOT-16	16
CTOT-18	18
CTOT-20	20
CTOT-22	22
CTOT-24	24

END CAPS

Gasketed – Eastern Tight™



Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design and 1/2" flange. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.
ECT-14	14
ECT-16	16
ECT-18	18
ECT-20	20
ECT-22	22
ECT-242	

PRESSED END CAPS

Gasketed – Eastern Tight™



Triple-lipped EPDM rubber gasket provides airtight seal and reduces installation time by eliminating need for joint sealing. Galvanized steel construction with single-wall design and 1/2" flange. -20°F to +212°F temperature rating. Meets ASTM A653 and A924 specifications.

No.	Dia. In.
PECT-06	6
PECT-08	8
PECT-10	10
PECT-12	12



EQUIPMENT HANGING SYSTEMS

Hang-Fast



Provides lighter, easier and faster alternative to threaded rod for hanging mechanical, electrical and HVAC equipment. Ready to use; requires no additional preparation time. Includes cable with loop or stud end fixing; grip secures free end of cable and allows height adjustment of hanging object.

Loop. For wrap-around anchoring on bar joists or other roof structures.

Stud. For anchoring into concrete or metal. Includes 1/4" drop-in expansion anchor.

Hangers

No.	Cable Lgth. Ft.	End Fixing
100-Lb. Load Rating		
HF0205L	5	Loop
HF0210L	10	Loop
HF0215L	15	Loop
HF0215S	15	Stud
HF0230L	30	Loop
200-Lb. Load Rating		
HF0305L	5	Loop
HF0310L	10	Loop
HF0315L	15	Loop
HF0330L	30	Loop

Accessories

No.	Description
HFCCS	Corner saddle for rectangular ductwork
HFWRC	Cable & wire rope cutter

CADDY SPEED LINK

(Atlanta Only)



No.	Description	Box Qty.
Caddy Speed Link SLK with loop		
SLK2L2LP	2mm Wire, 5.6' Length	10 pc
SLK2L3LP	2mm Wire, 3.9' Length	10 pc
SLK2L5LP	2mm Wire, 16.4' Length	10 pc
SLK2L10LP	2mm Wire, 32.8' Length	5 pc
Keyless Caddy Speed Link Wire System w/loop		
SLK3L3LP	3mm Wire X 9.9' Long	10 pc
SLK3L5LP	3mm Wire X 16.4' Long	10 pc
SLK3L10LP	3mm Wire X 32.8' Long	5 pc



LOREN COOK COMPANY

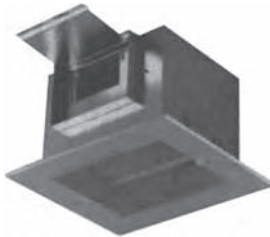
CEILING EXHAUST FANS

Gemini™ Series GC 120–900

Direct drive centrifugal design. Can be ceiling, wall or inline mounted. Features steel fan housing and wheels. Open drip-proof motor mounted on vibration isolators. Includes wiring box and disconnect receptacle, adjustable prepunched mounting brackets and white steel grille. AMCA certified; UL and CUL listed.



GC-120 to GC-180



GC-200 to GC-700



GC-800 & GC-900

Ceiling Fans

No.	CFM .25"		Speed Controller	Discharge Type	Watts	Dim. In. L x W x H
	Low	High				
GC-120	32	63	FSC-1	6" Round	29	14 x 12-3/4 X 6-11/16
GC-140	90	132	FSC-1	6" Round	47	14 x 12-3/4 X 6-11/16
GC-160	145	162	FSC-1	6" Round	57	14 x 12-3/4 X 6-11/16
GC-180	218	244	FSC-1	6" Round	113	14 x 12-3/4 X 6-11/16
GC-200	81	108	FSC-1	8"x6"	27	12-3/8 X 9-3/4 X 9-3/4
GC300	165	224	FSC-1	8"x6"	82	12-3/8 X 10-3/4 X 10-3/4
GC400	282	295	FSC-1	8"x6"	109	17 X 11-7/8 X 11-7/8
GC500	201	361	FSC-1	8"x6"	135	17 X 11-7/8 X 11-7/8
GC600	461	548	FSC-1	10-1/2" X 4-3/4"	197	17 X 11-7/8 X 11-7/8
GC700	653	775	FSC-1	10-1/2" X 4-3/4"	366	17 X 11-7/8 X 11-7/8
GC800	904	1266	FSC-1	20" X 6"	423	27 X 14-11/16 X 14-11/16
GC900	1356	1588	FSC-2	24-1/4" X 6"	504	31 X 14-11/16 X 14-11/16

Accessories

No.	Desc.	No.	Desc.
GEM-200	Internal Housing for GC-200	GEM-800	Internal Housing for GC-800
GEM-300	Internal Housing for GC-300	GEM-900	Internal Housing for GC-900
GEM-400	Internal Housing for GC400	GEM-400M	Motor only for GC-400
GEM-500	Internal Housing for GC-500	GEM-COVER PLATE	Cover plate for GC-100 Series
GEM-600	Internal Housing for GC-600	GEM-GRGC120	Replacement grille for GC-120
GEM-700	Internal Housing for GC-700		

TRANSITIONS FOR LOREN COOK EXHAUST FANS

No.		For Gemini Fan Model(s)
	Inlet Side Dimensions (inches)	
IT-GC100	4 1/4" X 3 1/2" TO 6" RND	GC-120, 140, 160, 180
IT-GC200	12 5/8" X 10" TO 8" RND	GC-200
IT-GC300	12 5/8" X 11" TO 10" RND	GC-300
IT-GC300-08	12 5/8" X 11" TO 8" RND	GC-300
IT-GC400-700/08	17 1/4" X 12 1/8" TO 8" RND	GC-400, 500, 600, 700
IT-GC400-700/10	17 1/4" X 12 1/8" TO 10" RND	GC-400, 500, 600, 700
IT-GC800	27 1/4" X	GC-800
IT-GC-900	17 1/4" X 12 1/8" TO 8" RND	GC-900
	Outlet (Discharge) Side	
OT-GC200-500/08	8 1/4" X 6 1/4" TO 8" RND	GC-200, 300, 400, 500
OT-GC200-500/10	8 1/4" X 6 1/4" TO 10" RND	GC-200, 300, 400, 500
OT-GC600-700	10 3/4" X 5" TO 10" RND	GC-600, 700
OT-GC600700/08	10 3/4" X 5" TO 8" RND	GC-600, 700
OT-GC800	20 1/4" X 6 1/4" TO 12" RND	GC-800
OT-GC900	24 1/4" X 6 1/4" TO 14" RND	GC-900



LOREN COOK COMPANY

EXHAUST VENTILATORS

Roof Mounted – Direct Drive – Model ACED

Downblast centrifugal design with aluminum base. Includes two-piece top cap with heavy-duty motor and cast iron drives. Motor, bearings and drives enclosed in weathertight compartment separated from air stream. Oil- and heat-resistant belts. Built-in lifting lugs. 115V, 60Hz, 1 phase. Includes disconnect and backdraft damper. AMCA certified; UL and CUL listed.

No.	CFM .25"	Roof Open. In.	Dim. In. W x H	Motor RPM	Curb Size In.
ACED-70C15DH (HR)	249	13-1/2 X 13-1/2	13-5/8 X 13-13/16	1650	16-1/2 X 16-1/2
ACED-90C10DH	215	13-1/2 X 13-1/2	18-3/4 X 16-13/16	1075	16-1/2 X 16-1/2
ACED-90C15DH (HR)	640	13-1/2 X 13-1/2	18-3/4 X 16-13/16	1550	16-1/2 X 16-1/2
ACED-100C10DH	344	13-1/2 X 13-1/2	18-3/4 X 16-13/16	1075	16-1/2 X 16-1/2
ACED-100C15DH (HR)	755	13-1/2 X 13-1/2	18-3/4 X 16-13/16	1550	16-1/2 X 16-1/2
ACED-120C10D (HR)	950	15-1/2 X 15-1/2	28-7/16 X 26-9/16	1075	18-1/2 X 18-1/2
ACED 135C10D (HR)	1415	15-1/2 X 15-1/2	28-7/16 X 26-9/16	1075	18-1/2 X 18-1/2
ACED-150C10D	2004	19-1/2 X 19-1/2	32-7/8 X 28-11/16	1075	22-1/2 X 22-1/2

*(HR) Denotes fans available with Florida/Miami Dade High Wind/Hurricane Ratings.



EXHAUST VENTILATORS

Roof Mounted – Belt Drive – Model ACEB

Downblast centrifugal design with aluminum base. Includes two-piece top cap with heavy-duty motor and cast iron drives. Motor, bearings and drives enclosed in weathertight compartment separated from air stream. Oil- and heat-resistant belts. Built-in lifting lugs. 115V, 60Hz, 1 phase. Includes disconnect and backdraft damper. AMCA certified; UL and CUL listed.



No.	*CFM .25	Roof Open. In.	Dim. In. W x H	HP	Curb Size In.
ACEB-80C3B	400	13-1/2 X 13-1/2	23-9/16 X 21-1/8	1/4	16-1/2 X 16-1/2
ACEB-100C3B (HR)	700	13-1/2 X 13-1/2	23-9/16 X 21-1/8	1/4	16-1/2 X 16-1/2
ACEB-120C3B (HR)	1200	15-1/2 X 15-1/2	28-7/16 X 26-7/8	1/4	18-1/2 X 18-1/2
ACEB-135C3B	1600	15-1/2 X 15-1/2	28-7/16 X 26-7/8	1/4	18-1/2 X 18-1/2
ACEB-150C5B	2200	19-1/2 X 19-1/2	32-7/8 X 28-7/8	1/2	22-1/2 X 22-1/2
ACEB-165C5B	3000	19-1/2 X 19-1/2	32-7/8 X 28-7/8	1/2	22-1/2 X 22-1/2
ACEB-180C5B	3200	25-1/2 X 25-1/2	37-11/16 X 35	3/4	28-1/2 X 28-1/2

*Note: CFM may be raised or lowered 10% by adjusting motor sheave.

*(HR) Denotes fans available with Florida/Miami Dade High Wind/Hurricane Ratings.

EXHAUST VENTILATORS

Upblast – Belt Drive

Roof mounted centrifugal design. Includes two-piece top cap with quick release latches. Motor, bearings and drives mounted on steel power assembly with solid vibration isolators and enclosed in weather-tight compartment. 1" heat shield protects motor and drive components. Aluminum wheels, heavy-duty motor, cast iron bearings, oil- and heat-resistant belts. Includes built-in lifting lugs. AMCA certified; UL and CUL listed.

Exhaust Ventilators						
No.	HP	CFM @ .75" SP	Volts	Roof Open. In.	Dim. In. W x H	Curb Size In.
VCR135V5B	1/2	1975	115	15-1/2 x 15-1/2	30-3/16 x 28-5/8	18-1/2 x 18-1/2 x 23
VCR165V6B	3/4	2975	115	19-1/2 x 19-1/2	34-11/16 x 30-3/4	22-1/2 x 22-1/2 x 21

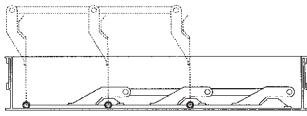
Accessories

No.	Desc.	Dim. In.
GREASETERMINATR	Grease capture and containment system	4-13/16 x 6-3/4





**LOREN COOK COMPANY
BACKDRAFT DAMPERS**



Features .020" aluminum blades, .060" aluminum frame, aluminum hinge pins and nylon bushings. Height 1-7/8" closed, 5-3/16" open. Maximum operating temperature 200°F.

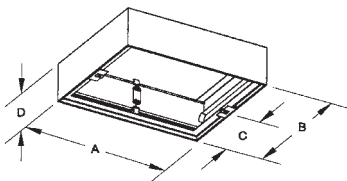
No. BD-12. For use with ACEB & ACED 60-100 Series ventilators.

No. BD-14. For use with ACEB & ACED 120 & 135 Series ventilators.

No. BD-24. For use with ACEB & ACED 180, 195, 210, 225 & 245 Series ventilators.

No.	Dim. In. W x L
BD-12	11-3/4 x 11-3/4
BD-14	13-3/4 x 13-3/4

**RADIATION DAMPERS
Ceiling**



Curtain style design. Functions as heat barrier in air handling penetrations. Fire resistant. UL and CUL classified.

No.	Dim. In.			
	A	B	C	D
For Gemini Series 122 to 184				
CRD1	14-1/2	12-3/8	6-3/16	4-3/16

FAN SPEED CONTROLS



FSC-1



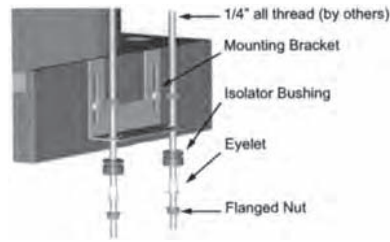
FSC-2

Designed for energy conservation and lower sound levels when full operating capacity of direct drive fan is not required. 115V, 1 phase.

No.	Amps
FSC-1	5
FSC-2	10

ISOLATOR KITS

Hanging – Gemini™

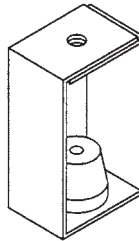


For use with Gemini ceiling and inline units 122 through 740. Features standard Gemini mounting brackets, thermoplastic bushings and flanged nuts.

No.	Rated Load Lbs.
GEM-HANGING KIT	160

VIBRATION ISOLATORS

Shear



No.	Rated Load Lbs.	Qty.
RC-75	75	4

TIME DELAY SWITCHES

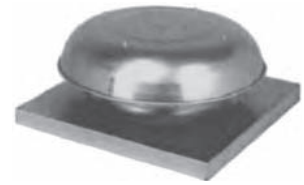


Operates both fan and room light. Fan powers on 15 seconds after light is turned on. Powers off 1 to 10 minutes after light is turned off. (Adjustable) Input: 120 VAC+ 10% 50/60 Hz, 3.5 watts max. Light: 3A resistive @ 120 VAC 500 watts max. Fan: 10A resistive, 1/3 HP @ 120 VAC.

No.	Desc.
T-1517	Time Delay Switch

GRAVITY VENTILATORS

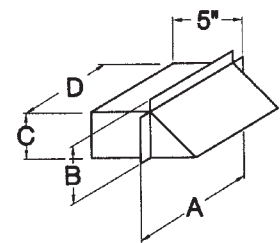
Roof Mounted



Spun aluminum construction with continuously welded curb cap corners on base to prevent leaks. Includes 1/2" mesh birdscreen mounted across air opening.

No.	Dia. In.	CFM @ 500 FPM Face Vel.	Roof Open. In.
PR-08	18-1/4	690	13-1/2 x 13-1/2
PR-12	28-1/4	1020	15-1/2 x 15-1/2
PR-16	28-1/4	1540	23-1/2 x 23-1/2

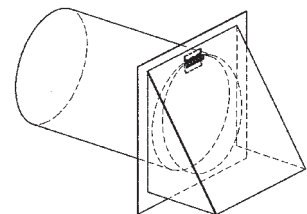
WALL CAPS



Includes 1/2" mesh birdscreen. **Series WCA.** Aluminum. **Series WCG.** Galvanized steel.

No.	Dim. In.			
	A	B	C	D
For Gemini Series 220 to 520				
WCA-2	10-5/16	7-3/16	6-3/16	8-5/16
WCG-2	10-5/16	7-3/16	6-3/16	8-5/16
For Gemini Series 620 to 740				
WCA-6	12-13/16	6	5	10-13/16
WCG-6	12-13/16	6	5	10-13/16
For Gemini Series 822 to 860				
WCA-8	22-5/16	7-3/16	6-3/16	20-5/16

WALL CAPS



Aluminum construction with damper. For use with round duct.

No.	Dia. In.	Dim. In. L x W	
		L	W
For Gemini Series 122 to 340			
WCR-06	6	12-3/4	8
For Gemini Series 220 to 520			
WCR-08	8	14-1/4	10
349-10	10	15	12

BROAN

ROOF CAPS

Sloped



Features built-in birdscreen and backdraft damper. 24 ga. steel construction with baked enamel finish. Black.

No. BROAN634. For 3-1/4" x 10" or up to 8" round duct.

No. BROAN636. For 3" or 4" round duct.

No.	Dim. In. L x W x H
BROAN634	18-3/4 x 14-1/4 x 6-5/8
BROAN636	11 x 10-1/4 x 4-3/8

TRANSITIONS



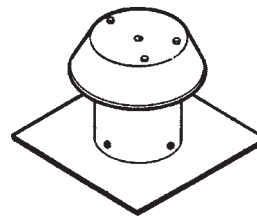
30-ga. galvanized steel construction. Converts 3-1/4" x 10" to 6" round duct.

No.	Ht. In.
BROAN411	9

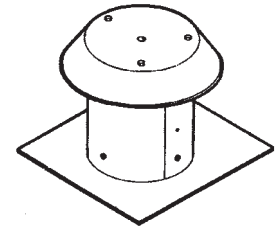
We carry products from the world's largest and best manufacturers.

Centralize your purchases with us!

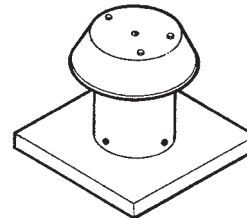
ROOF CAPS



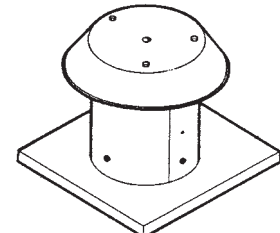
BROAN611



BROAN612



BROAN611CM

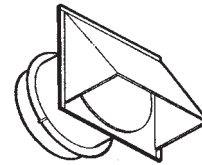


BROAN612CM

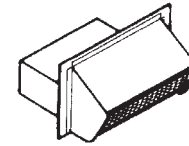
.025" aluminum construction with natural finish. Features built-in birdscreen.

No.	Max. Duct Dia. In.	Dim. In. L x W x H
For Flat Roof Installation		
BROAN611	8	15 x 15 x 9-7/8
BROAN612	12	20 x 20 x 14-1/2
For Curb Mount Installation		
BROAN611CM	8	15-1/4 x 15-1/4 x 11-3/4
BROAN612CM	12	17-1/2 x 17-1/2 x 16-3/8

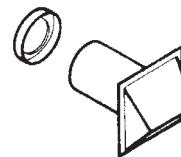
WALL CAPS



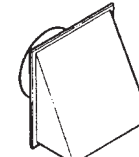
BROAN613



BROAN639



BROAN642



BROAN643

No. BROAN613. High capacity with built-in backdraft damper and birdscreen. .025" aluminum construction with natural finish.

No. BROAN639. Spring-loaded backdraft damper with built-in birdscreen. 24-ga. steel construction with black enamel finish.

No. BROAN642. Built-in damper. Includes 4" to 3" transition. .025" aluminum construction with natural finish.

No. BROAN643. Built-in backdraft damper. .025" aluminum construction with natural finish.

No.	Fits	Dim. In. H x W x D
BROAN613	12" round duct	14-1/2 x 15 x 8-1/2
BROAN639	3-1/4" x 10" duct	5-5/8 x 12-3/4 x 4-7/8
BROAN642	3" or 4" round duct	-
BROAN643	8" round duct	13 x 12-1/2 x 6



BROAN

BATH FANS
Premium Series



Centrifugal blower, 4-pole motor produce high exhaust capacity with low sound. White polymer grille with torsion spring mounting. UL Listed.

No.	CFM	Sones	Grille Dim. In. L x W x H
BROAN676	110	4.0	11-1/8 x 10-5/8 x 1-1/2

We welcome the opportunity to quote on any special tools or equipment which you may require.

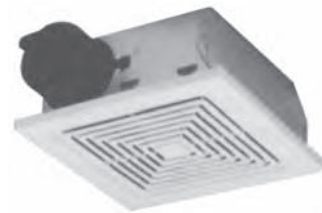
BATH FANS
Deluxe Series



Compact housing installs between ceiling joists or wall studs. Steel mounting flanges with keyhole slots. Metal grille is torsion-spring mounted, attaches without tools. UL Listed.

No.	CFM	Sones	Grille Dim. In. L x W x H
BROAN671	70	3.0	9-1/4 x 9 x 3/8

BATH FANS
Economy Series



Compact housing installs between ceiling joists or wall studs. Metal grille is torsion-spring mounted, attaches without tools. UL Listed.

No.	CFM	Sones	Grille Dim. In. L x W x H
BROAN688	50	2.0	9-1/4 x 9 x 3/8

CERUS INDUSTRIAL

HVAC STARTERS WITH "SMART START" MOTOR PROTECTION

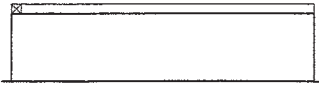
Designed for ease of integration with automated systems. Advanced control inputs eliminate interposing relays. SMART START for superior motor protection. UL Type 1. Combination version include disconnect..



No.	Three Phase HP				SCIC KAIC @ 460V	NEMA SIZE
	200V	230V	400V	600V		
Standard Starters						
BAS1-9/P-40	2	3	5	7 1/2	5	00
BAS1-18/P-40	5	7.5	10	15	5	0
BAS1-32/P-40	7.5	10	20	25	5	1
Combination Starters						
BAS1-9/P-G8-40	2	2	5	5	65	00
BAS1-18/P-G17-40	3	5	10	15	30	0
BAS1-32/P-G32-40	7.5	10	20	25	30	1
Single Phase HP						
No.	230V					
	120V	230V				
BAS-1P Single Phase Starter						
BAS-1P	1	1				



CURBS PLUS INC. ROOF CURBS Insulated



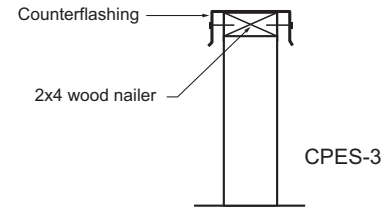
18-ga. galvanized steel construction; welded one-piece design. Features 2 x 2 pressure-treated wood nailer and 1-1/2" thick fiberglass insulation.

No.	Outside Dim. In. W x L x H
CPC-3-121212	12 x 12 x 12
CPC-3-151512	15 x 15 x 12
CPC-3-16512	16.5 x 16.5 x 12
CPC-3-171712	17 x 17 x 12
CPC-3-18512	18.5 x 18.5 x 12
CPC-3-18523	18.5 x 18.5 x 23
CPC-3-191912	19 x 19 x 12
CPC-3-22512	22.5 x 22.5 x 12
CPC-3-22521	22.5 x 22.5 x 21
CPC-3-232312	23 x 23 x 12
CPC-3-26512	26.5 x 26.5 x 12
CPC-3-272712	27 x 27 x 12

No.	Outside Dim. In. W x L x H
CPC-3-28512	28.5 x 28.5 x 12
CPC-3-28518	28.5 x 28.5 x 18
CPC-3-292912	29 x 29 x 12
CPC-3-34512	34.5 x 34.5 x 12
CPC-3-34518	34.5 x 34.5 x 18
CPC-3-58512	58.5 x 58.5 x 12

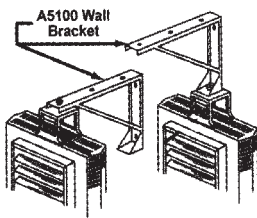
Serving the Southeast with 10 locations in Georgia, Florida, Tennessee and Alabama!

CURBS PLUS INC. ROOF EQUIPMENT SUPPORTS



18-ga. galvanized steel construction; welded one-piece design. Features full-depth C-channel reinforcement and 6" spreader channels on 12" centers; 2 x 4 pressure-treated wood nailer. Galvanized counterflashing attached with tek screws and neoprene washers.

No.	Dim. L x H
CPES-3-0212	2' x 12"
CPES-3-0312	3' x 12"
CPES-3-0412	4' x 12"
CPES-3-0612	6' x 12"
CPES-3-0218	2' x 18"
CPES-3-0318	3' x 18"
CPES-3-0418	4' x 18"
CPES-3-0618	6' x 18"



SUSPENDED UNIT HEATERS Taskmaster 5100 Series

Can be mounted for horizontal or vertical applications. Draw-through design circulates air efficiently and evenly across elements. Field convertible; combination 208/240V and single/3-phase heaters up to 10kW. Fan override purges heater of residual heat after shutdown. Two-stage operation and two-speed motors on 25-50kW models.

No.	KW	MBH	Volts	Phases	Optional Accessories		
					Mounting Bracket	Disconnect	Thermostat Kit
UH-HF1B5103N	3.3/2.5	11.2/8.5	240/208	1	UH-A5105	UH-DCS202	UH-T5100
UH-P3P5103CA1	3.3	11.2	480	3	UH-A5105	UH-DCS403	UH-T5100
UH-G1G5103N	3.3	11.2	277	1	UH-A5105	UH-DCS202	UH-T5100
UH-F2F5103N	3.3	11.2	208	3	UH-A5105	UH-DCS403	UH-T5100
UH-HF1B5105N	5.0/3.7	17.1/12.8	240/208	1	UH-A5105	UH-DCS403	UH-T5100
UH-P3P5105CA1	5.0	17.1	480	3	UH-A5105	UH-DCS403	UH-T5100
UH-F2F5105N	5.0	17.1	208	1 & 3	UH-A5105	UH-DCS403	UH-T5100
UH-P3P5107CA1	7.5	25.6	480	3	UH-A5120	UH-DCS403	UH-T5100
UH-F2F5107CA1	7.5	25.6	208	3	UH-A5120	UH-DCS403	UH-T5100
UH-P3P5110CA1	10.0	34.1	480	3	UH-A5120	UH-DCS403	UH-T5100
UH-G1G5110CA1	10.0	34.1	277	1	UH-A5120	UH-DCS403	UH-T5100
UH-F2F5110CA1	9.9	33.8	208	1 & 3	UH-A5120	UH-DCS403	UH-T5100
UH-P3P5115CA1	15.0	51.2	480	3	UH-A5120	UH-DCS603	UH-T5100
UH-F3F5115CA1	15.0	51.2	208	3	UH-A5120	UH-DCS603	UH-T5100



FAN FORCED WALL HEATERS
Series 3310



Constructed of heavy gauge steel with rough-in dimensions of 19-5/16" H x 14-3/16" W x 4" D. 600 RPM motor drives vane axial blower to deliver 175 CFM downflow air. Features standard thermal overload cutoff and built-in thermostat. Temperature range 55°F to 85°F. Ivory. UL listed.

Wall Heaters

No.	Watts	BTU	Volts	Amps
WH-E3313TRP	1500	5120	120	12.5
WH-HF3315TRP	3000/2250	10,240	240/208	12.5/10.8
WH-HF3316TRP	4000/3000	13,648	240/208	16.6/14.4

Accessories

No.	Desc.
WH-3310EX33	Surface Mounting Frame
WH-3310FPQ	Rough In Box only

Note: Field installed.

FAN FORCED WALL HEATERS
Commercial – Series 3320



Constructed of heavy gauge steel with rough-in dimensions of 19-5/16" H x 14-3/16" W x 4" D. Grille measure 15-29/32" W x 20-27/32" H. 600 RPM motor drives vane axial blower to deliver 175 CFM downflow air. Features standard thermal overload cutoff, fan delay switch, automatic reset thermal limit switch and built-in thermostat. Temperature range 55°F to 85°F. Ivory. UL and CUL listed.

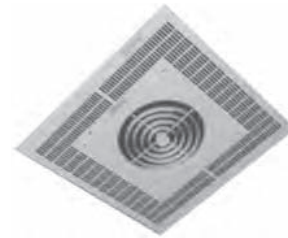
Wall Heaters

No.	Watts	BTU	Volts	Amps
WH-F3326TTD	4000	13,800	208	19.2
WH-G3323TTD	1500	5120	277	4.1
WH-G3325TTD	3000	10,350	277	10.8
WH-G3326TTD	4000	13,800	277	14.4
WH-HF3325TTD	3000/2250	10,350/7763	240/208	12.5/10.8
WH-HF3326TTD	4000/3000	13,800/10,350	240/208	16.7/14.4

Accessories

No.	Desc.
WH-3320EX33	4" Surface Mounting Frame, Field Installed

CEILING HEATERS
Recess-Mounted



Features "bulls-eye" venturi design for uniform air patterns in spaces with up to 12-ft. ceilings. Features enclosed steel fin sheath element, radial diffuser, propeller-style fan blades, manual reset thermal limit and 20-ga. grille. Measures 23-1/16" L x 23-1/16" W x 9-1/8" D. White powder coat finish. Includes factory installed thermostat, transformer and disconnect switch.

No.	kW	BTU	Volts AC
WH-G3484-TA1S	4.0	13,600	277

POWER DISCONNECT SWITCHES

For field installation in unit heater.

No.	No. Poles	Amps	Volts AC
UH-DCS202	2	20	120 to 277
UH-DCS403	3	40	—
UH-DCS603	3	60	120 to 600



THERMOSTATS
Line Voltage



SPDT design for heating or cooling applications. Measures 4.75" H x 2.8" W x 1.5" D. Features built-in bi-metal thermometer. UL and CSA listed.

No.	Setpoint Temp. Range °F		Volts AC
	Cool	Heat	
LVT-STAT	50 to 90	35 to 75	120 to 277

DAMPER REGULATOR EXTENSION KITS

For use with insulation. Includes shaft extension with locking screw and damper regulator extension.

No.	Stand-Off In.
EXT SHAFT KIT	1-1/2



QUADRANT REGULATORS



Plated steel construction with die-cast handle. Fully assembled with setscrews and lock washer.

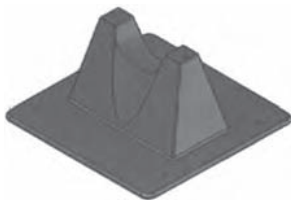
For Ext. Shaft

No.	Type	Sz. In.
RP-4C	Square	3/8
RP-5CR	Round	1/2



PIPE SUPPORTS

Model 1.5

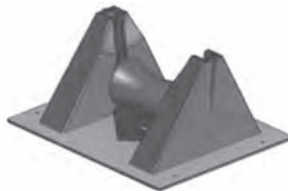


For supporting roof-mounted gas pipes, electrical conduit or mechanical piping. Polycarbonate resin construction; compensates for thermal expansion and contraction of pipe, preventing damage to roof.

No.	Max. Pipe Sz. In.		Max. Load Lbs.	Base Dim. In.
	ID	OD		
MIRO-1.5	1.5	1-9	80	6 x 6

PIPE SUPPORTS

Model 3R



Roller bearing design for supporting roof-mounted gas pipes, electrical conduit or mechanical piping. Polycarbonate resin construction; compensates for thermal expansion and contraction of pipe, preventing damage to roof.

No.	Max. Pipe Sz. In.		Max. Load Lbs.	Base Dim. In.
	ID	OD		
MIRO-3R	3	3.75	100	7 x 7



ROOF FLASHINGS

Silicone – Deck Mate®

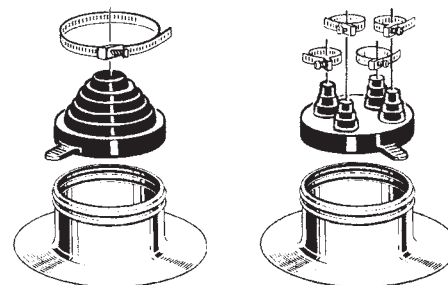


Suitable for extremely high and low temperature applications; service temperature range -100°F to 500°F. Works with any corrugated metal roof. Aluminum flanged base bends to fit irregularities. Forms watertight seal with proper sealant and standard fasteners. Includes clamp.

No.	Pipe OD In.	OA Ht. In.	Base Wdth. In.	Pkg. Qty.
DM-03	1/4 to 4	4	8	15
DM-04	3 to 6	5	10	10
DM-05	4 to 7	5	11	10
DM-06	5 to 9	6	12	10
DM-07	6 to 11	6	14	10
DM-08	7 to 13	6	17	5

ROOF FLASHINGS

Alumi-Flash®



AFSMC-126

AFSMC-212

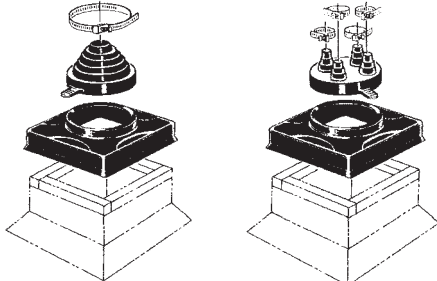
Molded black EPDM 8" diameter cap resists weather and sunlight exposure. Flashing base measures 14" diameter x 4" H; features Weather-Tite pressure seal with 2 beads formed into collar which connect to double grooves inside cap. Base must be roofed in. Service temperature -60°F to 250°F. Resistant to ozone and ultraviolet.

No.	Cap Style	Pipe Config.
AFSMC-126	C-126	(1) 2" to 6"
AFSMC-212	C-212	(2) 3/8" to 1"; (2) 1" to 2"



PIPE ROUTERS

Curb Mounted – Pipe Portal®



PSSMC-126

PSSMC-212

Leakproof, weathertight pipe router for new construction. Mounts vertically or horizontally. ABS plastic roof curb cover with laminated acrylic coating for ozone/UV resistance. Molded sealing rings on collared opening mate with grooves in black EPDM rubber cap. Swivel action clamp. Curb cover service temp. -40°F to 160°F; rubber cap -60°F to 270°F. Curb cover measures 8" wide at top, 14" wide at base. 4" height.

No.	Cap Style	Pipe Config.	Curb Size In.
PSSMC-126	C-126	(1) 2" to 6"	12 x 12
PSSMC-212	C-212	(2) 3/8" to 1"; (2) 1" to 2"	12 x 12

PIPE BOOTS

Neoprene



Designed for use with Pipe Portal® systems. For single-pipe applications on synthetic rubber, hot asphalt or cold tar pitch 1-ply roofs. Conical shape provides secure seal. Black.

No.	Size	Pipe Dia. In.	Body Thick. Mills
PBNM	Medium	1 to 6	60

PIPE CLAMPS

Snaplock



For use on roof, wall and floor penetrations. Features stainless steel band and housing with zinc plated steel bridge.

No.	Dia. In.		Lgth. In.	Screw Sz. In.
	Min.	Max.		
LS188/MOO6	1.75	15	48	.3125

**NELCO
DUCT STRAPS**



Nylon construction. White. 50 per pkg.

No.	Max. Dia. In.
Medium-Duty	
TBC-36	36
TBC-48	48
Heavy-Duty	
N361759L	36



CABLE TIE TOOLS

Manual



For installation of light-heavy and heavy cross-section cable ties in low-volume applications. Features operator-controlled tension and cut-off. Steel construction with travel stop for operator safety. Yellow.

No.	Desc.
STHV	Cable tie installation tool

CABLE TIE TOOLS

Manual



For installation of light, standard and heavy cross-section cable ties. Provides controlled tension for tighter bundling and flush cut-off for safety. Features tension indicator and selector knob. Metal construction. Gray powder coat finish with green trigger and selector knob.

No.	Desc.
GS4H-121W	Cable tie installation tool

Not all products are available at all branches. Contact your local branch for availability.

MIDWEST SNIPS

AVIATION SNIPS

Offset



P6510-L P6510-R

Compound leverage. Capacity 18-ga. cold rolled sheet metal; 22-ga. stainless steel. Serrated, alloy steel blades with grade-8 center pivot bolt and double-overwind spring. Molded plastic grips. Overall length 9-1/4". Cut length 1-1/4". Meets ANSI specifications.

No.	Cut Type
P6510-L	Left
P6510-R	Right

AVIATION SNIPS

Bulldog



Cuts through seams and multiple layers. For cutting slips and drives, rolled edges and thick sheet materials. Capacity 16-ga. cold rolled sheet metal; 18-ga. stainless steel. Serrated, alloy steel blades with grade-8 center pivot bolt and double-overwind spring. Molded plastic grips.

No.	Lgth. In.	Cut Lgth. In.
P6716-B	9	7/8

Visit our Website at
www.tombarrow.com!

HARDCAST

BRUSHES

Duct Sealant



No.	Width In.
BRUSH	2

DUCT SEALANTS

Water-Based – Duct Seal™ 321



For indoor/outdoor use on metal duct, glass fiber duct board, flex duct, duct fabric and flexible tubing runouts. Non-toxic. Contains UV inhibitors. Smooth consistency; thixotropic. Non-sag formulation. Water solvent with synthetic latex base. Gray color. Time to test approx. 48 hours. Service temperature -20°F to 200°F. Storage temperature 35°F to 110°F. Shelf life 1 year. VOC (less water) 79 GPL. Shore A hardness >20. Coverage up to 320 lin. ft. at 3" width, 20-mil thickness. Resists weather, mold and mildew. Apply to clean, dry, oil-free surface. Cleans up wet with soap and water. Non-flammable. Meets ASTM specifications. UL/CUL classified.

Warning: Do not use where acidic or alkaline chemicals are present (e.g., lab fume hoods, vents, etc.).

No.	Size Gal.
HARDCAST-DS	1

DUCT SEALANTS

Iron Grip™ 601



Water-based, synthetic resins duct sealant. Formulated to provide extended coverage and ease of application. Apply to outer surface of duct joint. Gray.

No.	Size Gal.
HARDCAST-601-4	1

HARDCAST

DUCT SEALANTS

Solvent-Based – Sure Grip™ 404



No-drip, no-string formulation. Heavy brush-on consistency. Toluene and heptane solvent with synthetic rubber resin base. Gray color. Time to test 24 hours. Service temperature -20°F to 200°F. Storage temperature below 90°F. Shelf life 1 year. VOC (less water) 395 GPL. Viscosity 150,000-200,000 cps. Shore A hardness >60. Coverage up to 320 lin. ft. at 3" width, 20-mil thickness. Resists water, mold and mildew. Apply to clean, dry, oil-free surface. Cleans up with solvent. Flammable. Meets ASTM specifications. UL/CUL classified.

Warning: Keep away from open flame. Harmful if swallowed or inhaled. Do not use where acidic or alkaline chemicals are present (e.g., lab fume hoods, vents, etc.).

No.	Size Gal.
HARDCAST-SG-404	1

DUCT SEALANTS

Elastomeric – Foil Grip™



For indoor/outdoor use on sheet metal, duct board, flex duct, PVC coated duct and duct wrap vapor barriers. Remains flexible without cracking. 2-mil aluminum backing with 15-mil GRAY MATTER™ elastomeric modified butyl adhesive. Instant high tack; full bond 24 hours. Service temperature -20°F to 200°F. Storage temperature 35°F to 110°F. Shelf life 2 years. VOC 0 GPL. Tensile strength 955 PSI. Peel strength 16 lbs./linear inch. Typical elongation 560% (adhesive only). Resists weather, mold and mildew. Apply to clean, dry, oil-free surface. Cleans up with solvent. Non-flammable. UL/CUL classified.

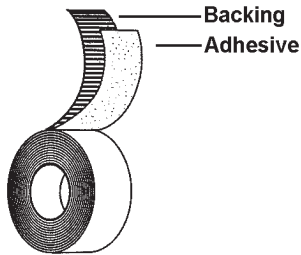
Warning: Do not use where acidic or alkaline chemicals are present (e.g., lab fume hoods, vents, etc.).

No.	Width In.	Lgth. Ft.
Printed		
AFG-1402P-2-2	2	100
Non-Printed		
HARDCAST-FG	3	100



Tyco Adhesives

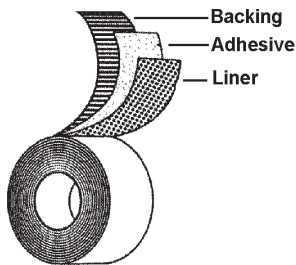
DUCT TAPE High Tensile



Natural rubber adhesive. 10 mils thick. Meets UL 723 requirements.

No.	Width In.	Lgth. Yds
DT	2	60

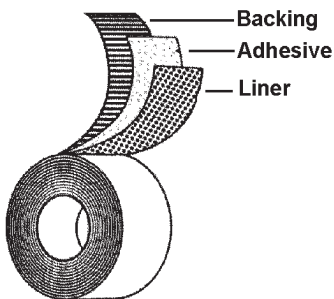
ALUMINUM FOIL TAPE



For rigid, preformed aluminum foil-faced ducts. Features dead-soft foil backing with synthetic rubber adhesive. 3.6 mils thick. 50 yds. per roll. Meets UL 723 requirements.

No.	Width In.
DT-ALUM	2
DT-ALUM-3	3

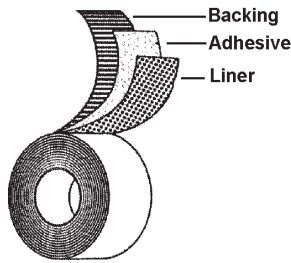
FSK TAPE Diamond-Pattern



Tear resistant. Synthetic rubber adhesive. 35 mils thick. Aluminum color. Meets UL 723 requirements.

No.	Width In.	Lgth. Yds.
DT-FSK	3	50

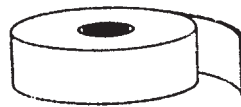
DUCT TAPE Printed



For use on fiberglass duct systems. Dead-soft foil backing with acrylic adhesive. 4.8 mils thick. Meets UL 181 A/B requirements.

No.	Width In.	Lgth. Yds.
DT-UL	2-1/2	60

HARDCAST GYPSUM TAPE



3" width.

No.	Lgth. Ft.
DT-5150	150
HARDCAST-DT	300

MANUFACTURERS' CATALOGS
WE WOULD BE GLAD TO SEND MANUFACTURERS' CATALOGS

PRICE[®] TOUCH UP PAINT

No.
P-PAINT BLACK
P-PAINT WH



FIRESTOP SEALANTS NuFlex™ 814



100% silicone intumescent caulk for sealing service penetrations, expansion joints and separations in fire-rated floors and walls. Also for sealing around communication cables, insulated and PVC pipe. Expands when heated above 300°F to seal out smoke, fire, water and toxic gases. Non-sagging, UV resistant.

No.	Color	Size Fl. Oz.
FIRESTOP SEALANT	Red	10.1

evco

TAPER POINT SCREWS



Features 1/4" slotted hex washer head. Zinc plated. 1000 per box.

No.	Desc.
TEK SCREW	#7 x 1/2"
10X1/2TPM	#10 x 1/2"
10X3/4TPM	#10 x 3/4"

DRILL POINT SCREWS



Features 5/16" hex washer head, #3 point size. Zinc plated. 500 per pkg.

No.	Desc.	TPI
10X3/4DP500	#10 x 3/4"	16

NUT SETTERS Magnetic



Features 1/4" hex drive. Torque applied to flats; resists rounding. 50 per box.

No.	Size In.
DCD1/4	1/4
DCD5/16	5/16

Formulas - Electrical

$$\text{Amps} \times \text{Ohms} = \frac{\text{VOLTS} = \frac{\text{Watts}}{\text{Amps}} \sqrt{\text{Watts} \times \text{Ohms}}}$$

$$\frac{\text{Volts}}{\text{Ohms}} = \frac{\text{AMPS} = \frac{\text{Watts}}{\text{Volts}} \sqrt{\frac{\text{Watts}}{\text{Ohms}}}}$$

$$\text{Volts} \times \text{Amps} = \text{WATTS} = \text{Amps}^2 \times \text{Ohms} = \frac{\text{Volts}^2}{\text{Ohms}}$$

$$\frac{\text{Volts}}{\text{Amps}} = \text{OHMS} = \frac{\text{Volts}^2}{\text{Watts}} = \frac{\text{Watts}}{\text{Amps}^2}$$

$$\text{Power Factor} = \frac{\text{KW}}{\text{KVA}} = \text{Cos } \theta$$

Single Phase	Three Phase
$\text{KW} = \frac{\sqrt{V \times A \times \text{PF}}}{1000}$	$\frac{\sqrt{3} \times V \times A \times \text{PF}}{1000}$
$\text{KVA} = \frac{V \times A}{1000}$	$\frac{\sqrt{3} \times V \times A}{1000}$
$\text{AMPS} = \frac{\text{KVA} \times 1000}{V}$	$\frac{\text{KVA} \times 1000}{\sqrt{3} \times V}$

$$\sqrt{3} = 1.73$$

Approx. Motor KVA = Motor Horsepower (At Full Load)

Capacitors Connected In Parallel $C_1 + C_2 + C_3 = C \text{ Total}$

Capacitors Connected In Series

For Two	More Than Two
$\frac{C_1 \times C_2}{C_1 + C_2} = C \text{ Total}$	$\frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3}} = C \text{ Total}$

VOLTAGE UNBALANCE

% Voltage Unbalance =

$$\frac{100 \times \text{Max. Voltage Deviation From Average Voltage}}{\text{Average Voltage}}$$

BOOST TRANS.:

Rating Plate F.L.A. x Rating Plate VOLTS = KVA

$$\frac{\text{Rating Plate VOLTS}}{\text{Rating Plate VOLTS} - \text{Norm. Line VOLTS}} = \text{FACTOR}$$

$$\frac{\text{KVA}}{\text{FACTOR}} = \text{Trans. KVA Rating}$$

$$\left(\frac{V_2}{V_1}\right)^2 \times \text{Heater Rating} = \text{Rating @ New Voltage}$$

V_1 Rated Volts V_2 = Measured Volts

Typical Ampere Wire Ratings*

COPPER CONDUCTORS, IN CONDUIT*			
AWG MCM	TEMP. RATING OF CONDUCTOR*		
	60°C*	75°C*	90°C*
14	15	15	25°
12	20	20	30°
10	30	30	40°
8	40	45	50
6	55	65	70
4	70	85	90
3	80	100	105
2	95	115	120
1	110	130	140
1/0	125	150	155
2/0	145	175	185
3/0	165	200	210
4/0	195	230	235
250	215	255	270
300	240	285	300
350	260	310	325
400	280	335	360
500	320	380	405
600	355	420	455
700	385	460	490
750	400	475	500
800	410	490	515
900	435	520	555
1000	455	545	585
1250	495	590	645
1500	520	625	700
1750	545	650	735
2000	560	665	775

* Summary only, refer to NEC 310-16, -17, -18, -19 (and others) for limitations.

Typical Electric Wire Size

MOTOR HP	SINGLE PH.		THREE PH.	
	115 VOLT	230 VOLT	230 VOLT	460 VOLT
1-1/3	14	14		
1/2	14	14	14	14
3/4	12	14	14	14
1	12	14	14	14
1-1/2	10	14	14	14
2		12	14	14
3		10	14	14
5			12	14
7-1/2			10	14
10			8	12

From Standards of the National Board of Fire Underwriters.

**Correction Table For
Watts - Amperes - Volts**

WATTS	VOLTAGE (C - Single Phase)			
	120	208	240	277
	AMPERES			
500	4.2	2.4	2.1	1.8
1000	8.3	4.8	4.2	3.6
1500	12.5	7.2	6.3	5.4
2000	16.7	9.6	8.3	7.2
2500	20.9	12.0	10.4	9.0
3000	25.0	14.4	12.5	10.8
3500	29.2	16.8	14.6	12.6



Electrical Units

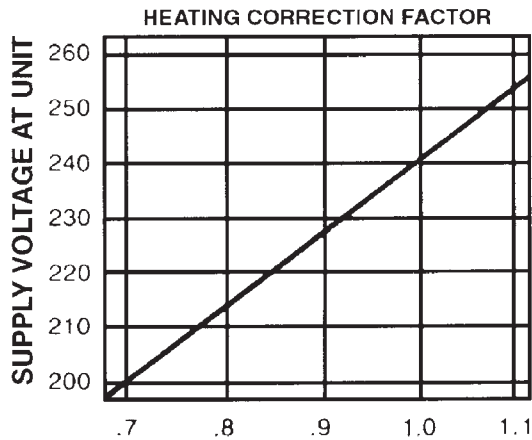
Source: United States Bureau of Standards

The watt is the unit expressing electrical power as horsepower (hp) in mechanics; it is equal to the product of the volts (pressure) times amperes (rate of flow). Thus, 2 volts times 2 amperes would equal 4 watts in a direct current circuit. Electrical energy is sold at so much per watt hour or more generally at a given amount per kilowatt hour - which means 1,000 watt hours. This may represent 1 watt for 1,000 hours or 1,000 watts for one hour. 746 watts are equal to one horsepower or inversely 1 kilowatt (kw) is equal to about 1-1/2 horsepower.

Horsepower represents the power required to lift a weight of 33,000 lbs. 1 foot in 1 minute or 550 lbs. 1 foot in 1 second.

The ohm is the unit of electrical resistance and represents the physical property of a conductor which offers a resistance to the flow of electricity, permitting just 1 ampere to flow at 1 volt of pressure.

Electric Heating Correction Factor



Capacity Correction Factor

For correction of unit output, multiply the correction factor times the KW rating at 240 volts.

$$TR = \frac{3160 \times KW \times VC}{CFM} \text{ or } CFM = \frac{3160 \times KW \times VC}{TR}$$

Where:
 TR = temp rise, F°
 3160 = constant
 KW = KW rating above
 CFM = air flow at specified conditions
 VC = heating correction factor

Formulas – Cooling Capacity *

$$\text{Total BTUH} = \text{CFM} \times (\text{THC}_1 - \text{TCH}_2) \times 4.5$$

THC = Total Heat Content or Enthalpy (BTU per lb. of air)

$$\text{Sensible BTUH} = \text{CFM} \times (T_1 - T_2) \times 1.08$$

T = Dry Bulb Temp (Degrees Fahrenheit)

$$\text{Latent BTUH} = \text{CFM} \times (W_1 - W_2) \times .683$$

W = Specific Humidity (Grains H₂O per lb. of air)
(See Psychrometric Chart)

* Based on standard air at 13.3 cubic feet per lb.

Formulas - Heating Capacity*

$$\text{BTUH} = \text{CFM} \times 1.08 \times \text{Rise}$$

$$Cfm = \frac{\text{BTUH Output}}{108 \times \text{Rise}}$$

$$\text{Rise} = \frac{\text{BTUH Output}}{108 \times Cfm}$$

$$CFM = \frac{\text{BTU Hr. Input}}{135 \times \Delta T} \quad \text{Indoor Furnace 80\%}$$

$$CFM = \frac{\text{BTU Hr. Input}}{144 \times \Delta T} \quad \text{Outdoor Furnace 75\%}$$

$$CFM = \frac{KW \times 3415}{108 \times \Delta T} \quad \text{Electric Heat 92\%}$$

* Based on standard air at 13.3 cubic feet per lb.

Formulas - General Subjects

$$\text{Area of Circle} = 0.7854 \times (\text{Dia.})^2$$

$$\text{Circumference of Circle} = 3.14 \times \text{Dia.}$$

$$\text{Area of Sphere} = 3.14 \times (\text{Dia.})^2$$

$$\text{Volume of Sphere} = 0.524 \times (\text{Dia.})^3$$

Horsepower Conversion Chart

To convert decimal horsepower to commonly available fractional horsepower motors.

0.010	0.014	0.017	0.020	0.025	0.033	0.040	0.050	0.067	0.083	0.100	0.125	0.167	0.250	0.333	0.500	0.750	1.000
1/100	1/70	1/60	1/50	1/40	1/30	1/25	1/20	1/15	1/12	1/10	1/8	1/6	1/4	1/3	1/2	3/4	1



Enthalpy vs. Wetbulb
(Total heat content - BTU per lb. of air)

WET BULB F	TENTHS OF DEGREES									
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9
35	13.01	13.05	13.09	13.14	13.18	13.22	13.27	13.31	13.35	13.39
36	13.44	13.48	13.52	13.57	16.61	13.66	13.70	13.74	13.79	13.83
37	13.87	13.92	13.96	14.01	14.05	14.10	14.14	14.19	14.23	14.27
38	14.32	14.36	14.41	14.45	14.50	14.54	14.59	14.63	14.68	14.73
39	14.77	14.82	14.86	14.91	14.95	15.00	15.05	15.09	15.14	15.18
40	15.23	15.28	15.32	15.37	15.42	15.46	15.51	15.56	15.60	16.65
41	15.70	15.74	15.79	15.84	15.89	15.93	15.98	16.03	16.08	16.12
42	16.17	16.22	16.27	16.32	16.37	16.41	16.46	16.51	16.56	16.61
43	16.66	16.71	16.75	16.80	16.85	16.90	16.95	17.00	17.05	17.10
44	17.15	17.20	17.25	17.30	17.35	17.40	17.45	17.50	17.55	17.60
45	17.65	17.70	17.75	17.80	17.85	17.91	17.96	18.01	18.06	18.11
46	18.16	18.21	18.26	18.32	18.37	18.42	18.47	18.52	18.58	18.63
47	18.68	18.73	18.79	18.84	18.89	18.95	19.00	19.05	19.10	19.16
48	19.21	19.26	19.32	19.37	19.43	19.48	19.53	19.59	19.64	19.70
49	19.75	19.81	19.86	19.92	19.97	20.03	20.08	20.14	20.19	20.25
50	20.30	20.36	20.41	20.47	20.52	20.58	20.64	20.69	20.75	20.81
51	20.86	20.92	20.98	21.03	21.09	21.15	21.21	21.26	21.32	21.38
52	21.44	21.49	21.55	21.61	21.67	21.73	21.79	21.84	21.90	21.96
53	22.02	22.08	22.14	22.20	22.26	22.32	22.38	22.44	22.50	22.56
54	22.61	22.68	22.74	22.80	22.86	22.92	22.98	23.04	23.10	23.16
55	23.22	23.28	23.34	23.41	23.47	23.53	23.59	23.65	23.72	23.78
56	23.84	23.90	23.97	24.03	24.10	24.16	24.22	24.29	24.35	24.42
57	24.48	24.54	24.61	24.67	24.74	24.80	24.86	24.93	24.99	25.06
58	25.12	25.19	25.25	25.32	25.38	25.45	25.52	25.58	25.65	25.71
59	25.78	25.85	25.92	25.98	26.05	26.12	26.19	26.26	26.32	26.39
60	26.46	26.53	26.60	26.67	26.74	26.80	26.87	26.94	27.01	27.08
61	27.15	27.22	27.29	27.36	27.43	27.50	27.57	27.64	27.71	27.78
62	27.85	27.92	27.99	28.07	28.14	28.21	28.28	28.35	28.43	28.50
63	28.57	28.64	28.72	28.79	28.87	28.94	29.01	29.09	29.16	29.24
64	29.31	29.38	29.46	29.53	29.61	29.68	29.76	29.83	29.91	29.98
65	30.06	30.14	30.21	30.29	30.37	30.44	30.52	30.60	30.68	30.75
66	30.83	30.91	30.99	31.07	31.15	31.22	31.30	31.38	31.46	31.54
67	31.62	31.70	31.78	31.86	31.94	32.02	32.10	32.18	32.26	32.34
68	32.42	32.50	32.59	32.67	32.75	32.83	32.92	33.00	33.08	33.17
69	33.25	33.33	33.42	33.50	33.59	33.67	33.75	33.84	33.92	34.00
70	34.09	34.18	34.26	34.35	34.43	34.52	34.61	34.69	34.79	34.86
71	34.95	35.04	35.13	35.21	35.30	35.39	35.48	35.57	35.65	35.74
72	35.83	35.92	36.01	36.10	36.19	36.28	36.38	36.47	36.56	36.65
73	36.74	36.83	36.92	37.02	37.11	37.20	37.29	37.38	37.48	37.57
74	37.66	37.75	37.85	37.94	38.04	38.13	38.23	38.32	38.42	38.51
75	38.61	38.71	38.80	38.90	39.00	39.09	39.19	39.28	39.38	39.47
76	39.57	39.67	39.77	39.87	39.98	40.07	40.17	40.27	40.37	40.47
77	40.57	40.67	40.77	40.87	40.97	41.07	41.18	41.28	41.38	41.48
78	41.58	41.68	41.79	41.89	42.00	42.10	42.20	42.31	42.41	42.52
79	42.62	42.73	42.83	42.94	43.05	43.15	43.26	43.37	43.48	43.58
80	43.69	43.80	43.91	44.02	44.13	44.23	44.34	44.45	44.56	44.67
81	44.78	44.89	45.00	45.12	45.23	45.34	45.45	45.56	45.68	46.79
82	45.90	46.01	46.13	46.24	46.36	46.47	46.58	46.70	46.81	46.93
83	47.04	47.16	47.28	47.39	47.51	47.63	47.75	47.87	47.98	48.10
84	48.22	48.34	48.46	48.58	48.70	48.82	48.95	49.07	49.19	49.31
85	49.43	49.55	49.68	49.80	49.92	50.04	50.17	50.29	50.41	50.54

ABS pipe: Acrylonitrilebutadiene styrene plastic pipe used for water, drains, waste and venting.

Absolute pressure: Gauge pressure plus the pressure of the atmosphere, normally 14.696 at sea level at 68°F.

Absolute zero temperature: The lowest obtainable temperature where molecular motion stops, -460°F (-273°C).

Absorbent (attractant): The salt solution used to attract water in an absorption chiller.

Absorption air conditioning chiller: A system using a salt substance, water and heat to provide cooling for an air conditioning system.

Accumulator: A storage tank located in the suction line of a compressor. It allows small amounts of liquid refrigerant to boil away before entering the compressor. Sometimes used to store excess refrigerant in heat pump systems during the winter cycle.

Acid-contaminated system: A refrigeration system that contains acid due to contamination.

ACR tubing: Air Conditioning and Refrigeration tubing that is very clean, dry and normally charged with dry nitrogen. The tubing is sealed at the ends to contain the nitrogen.

Activated alumina: A chemical desiccant used in refrigerant driers.

Active solar system: A system that uses electrical and/or mechanical devices to help collect, store and distribute the sun's energy.

Air-acetylene: A mixture of air and acetylene gas that when ignited is used for soldering, brazing and other applications.

Air heat exchanger: A device used to exchange heat between air and another medium at different temperature levels, such as air-to-air, air-to-water or air-to-refrigerant.

Air conditioner: Equipment that conditions air by cleaning, cooling, heating, humidifying or dehumidifying it. A term often applied to comfort cooling equipment.

Air conditioning: A process that maintains comfort conditions in a defined area.

Air-cooled condenser: One of the four main components of an air-cooled refrigeration system. It receives hot gas from the compressor and rejects it to a place where it makes no difference.

Air gap: The clearance between the rotating rotor and the stationary winding on an open motor. Known as a vapor gap in a hermetically sealed compressor motor.

Air handler: The device that moves the air across the heat exchanger in a forced-air system – normally considered to be the fan and its housing.

Air pressure control (switch): Used to detect air pressure drop across the coil in a heat pump outdoor unit due to ice buildup.

Air sensor: A device that registers changes in air conditions such as pressure, velocity, temperature or moisture content.

Air, standard: Dry air at 70°F and 14.696 PSI at which it has a mass density of 0.075 lb./cu. ft. and a specific volume of 13.33 cu. ft./lb, ASHRAE 1986.

Air vent: A fitting used to vent air manually or automatically from a system.

Algae: A form of green or black, slimy plant life that grows in water systems.

Allen head: A recessed hex head in a fastener.

Alternating current: An electric current that reverses its direction at regular intervals.

Altitude adjustment: An adjustment to a refrigerator thermostat to account for a lower than normal atmospheric pressure such as may be found at a high altitude.

Ambient temperature: The surrounding air temperature.

American standard pipe thread: Standard thread used on pipe to prevent leaks.

Ammeter: A meter used to measure current flow in an electrical circuit.

Amperage: Amount of electron or current flow (the number of electrons passing a point in a given time) in an electrical circuit.

Ampere: Unit of current flow.

Anemometer: An instrument used to measure the velocity of air.

Angle valve: Valve with one opening at a 90° angle from the other opening.

Anode: A terminal or connection point on a semiconductor.

Approach temperature: The difference in temperature between the refrigerant and the leaving water in a chilled-water system.

ASA: Abbreviation for the American Standards Association (now known as American National Standards Institute [ANSI]).

ASHRAE: Abbreviation for the American Society of Heating, Refrigeration and Air Conditioning Engineers.

Aspect ratio: The ratio of the length to width of a component.

Atmospheric pressure: The weight of the atmosphere's gases pressing down on the earth. Equal to 14.696 PSI at sea level and 70°F.

Atom: The smallest particle of an element.

Atomize: Using pressure to change liquid to small particles of vapor.

Automatic combination gas valve: A gas valve for gas furnaces that incorporates a manual control, gas supply for the lot, adjustment and safety features for the pilot, pressure regulator, and controls for the main gas valve.

Automatic control: Controls that react to a change in conditions to cause the condition to stabilize.

Automatic defrost: Using automatic means to remove ice from a refrigeration coil.

Automatic expansion valve: A refrigerant control valve that maintains a constant pressure in an evaporator.

Back pressure: The pressure on the low-pressure side of a refrigeration system (also known as suction pressure).

Back seat: The position of a refrigeration service valve when the stem is turned away from the valve body and seated.

Baffle: A plate used to keep fluids from moving back and forth at will in a container.

Balanced port TXV: A valve that will meter refrigerant at the same rate when the condenser head pressure is low.

Ball check valve: A valve with a ball-shaped internal assembly that only allows fluid to flow in one direction.

Barometer: A device used to measure atmospheric pressure that is commonly calibrated to inches or millimeters of mercury. There are two types: mercury column and aneroid.

Base: A terminal on a semiconductor.

Battery: A device that produces electricity from the interaction of metals and acid.

Bearing: A device that surrounds a rotating shaft and provides a low-friction contact surface to reduce wear from the rotating shaft.

Bellows: An accordion-like device that expands and contracts when internal pressure changes.

Bellows seal: A method of sealing a rotating shaft or valve stem that allows rotary movement of the shaft or stem without leaking.

Bending spring: A coil spring that can be fitted inside or outside a piece of tubing to prevent its walls from collapsing when being formed.

Bimetal: Two dissimilar metals fastened together to create a distortion of the assembly with temperature changes.

Bimetal strip: Two dissimilar metal strips fastened back to back.

Bleeding: Allowing pressure to move from one pressure level to another very slowly.



Bleed valve: A valve with a small port usually used to bleed pressure from a vessel to the atmosphere.

Blocked suction: A method of cylinder unloading. The suction line passage to a cylinder in a reciprocating compressor is blocked, thus causing that cylinder to stop pumping.

Blowdown: A system in a cooling tower whereby some of the circulating water is bled off and replaced with fresh water to dilute the sediment in the sump.

Boiler: A container in which a liquid may be heated using any heat source. When the liquid is heated to the point that vapor forms and is used as the circulating medium, it is called a steam boiler.

Boiling point: The temperature level of a liquid at which it begins to change to a vapor. The boiling temperature is controlled by the vapor pressure above the liquid.

Bore: The inside diameter of a cylinder.

Bourdon tube: C-shaped tube manufactured of thin metal and closed on one end. When pressure is increased inside, it tends to straighten. It is used in a gauge to indicate pressure.

Brazing: High-temperature (above 800°F) soldering of two metals.

Breaker: A heat-activated electrical device used to open an electrical circuit to protect it from excessive current flow.

British thermal unit (BTU): The amount (quantity) of heat required to raise the temperature of 1 lb. of water 1°F.

Bulb, sensor: The part of a sealed automatic control used to sense temperature.

Burner: A device used to prepare and burn fuel.

Burr: Excess material squeezed into the end of tubing after a cut has been made. This burr must be removed.

Butane: A liquefied petroleum gas burned for heat.

Cad cell: A device used to prove the flame in an oil burning furnace containing cadmium sulfide.

Calibrate: To adjust instruments or gauges to the correct setting for conditions.

Capacitance: The term used to describe the electrical storage ability of a capacitor.

Capacity: The rating system of equipment used to heat or cool substances.

Capillary attraction: The attraction of a liquefied material between two pieces of material such as two pieces of copper or brass. For instance, in a joint made up of copper tubing and a brass fitting, the solder filler material has a greater attraction to the copper and brass than to itself and is drawn into the space between them.

Capillary tube: A fixed-bore metering device. This is a small diameter tube that can vary in length from a few inches to several feet. The amount of refrigerant flow needed is predetermined and the length and diameter of the capillary tube is sized accordingly.

Carbon dioxide: A by-product of natural gas combustion that is not harmful.

Carbon monoxide: A poisonous, colorless, odorless, tasteless gas generated by incomplete combustion.

Catalytic combustor stove: A stove that contains a cell-like structure consisting of a substrate, washcoat and catalyst producing a chemical reaction causing pollutants to be burned at much lower temperatures.

Cathode: A terminal or connection point on a semiconductor.

Cavitation: A vapor formed due to a drop in pressure in a pumping system. Air at a pump inlet may be caused at a cooling tower if the pressure is low and water is turned to vapor.

Celsius scale: A temperature scale with 1200 graduations between water freezing (0°C) and water boiling (100°C).

Centigrade scale: See Celsius scale.

Centrifugal compressor: A compressor used for large refrigeration systems. It is not positive displacement but is similar to a blower.

Centrifugal switch: A switch that uses a centrifugal action to disconnect the start windings from the circuit.

Change of state: The condition that occurs when a substance changes from one physical state to another, such as ice to water or water to steam.

Charge: The quantity of refrigerant in a system.

Charging cylinder: A device that allows the technician to accurately charge a refrigeration system with refrigerant.

Check valve: A device that permits fluid flow in one direction only.

Chill factor: A factor or number that is a combination of temperature, humidity and wind velocity that is used to compare a relative condition to a known condition.

Chilled-water system: An air conditioning system that circulates refrigerated water to the area to be cooled. The refrigerated water picks up heat from the area, thus cooling the area.

Chiller purge unit: A system that removes air from a low-pressure chiller.

Chimney: A vertical shaft used to convey flue gases above the rooftop.

Chimney effect: A term used to describe air or gas when it expands and rises when heated.

Chlorofluorocarbons (CFC): Those refrigerants thought to contribute to the depletion of the ozone layer.

Circuit: An electron or fluid-flow path that makes a complete loop.

Circuit breaker: A device that opens an electric circuit when an overload occurs.

Clamp-on ammeter: An instrument that can be clamped around one conductor in an electrical circuit to measure the current.

Clearance volume: The volume at the top of the stroke in a compressor cylinder between the top of the piston and the valve plate.

Closed circuit: A complete path for electrons to flow on.

Closed loop: Piping circuit that is complete and not open to the atmosphere.

Code: The local, state or national rules that govern safe installation and service of systems and equipment for the purpose of safety of the public and trade professionals.

Coefficient of performance (COP): The ratio of usable output energy divided by input energy.

CO2 indicator: An instrument used to detect the quantity of carbon dioxide in flue gas for efficiency purposes.

Cold: The word used to describe heat at lower levels of intensity.

Cold anticipator: A device that anticipates a need for cooling and starts the cooling system early enough for it to reach capacity when it is needed.

Cold junction: The junction opposite the hot junction in a thermocouple.

Cold trap: A device to help trap moisture in a refrigeration system.

Cold wall: The term used in comfort heating to describe a cold outside wall and its effect on human comfort.

Collector: A terminal on a semiconductor.

Combustion: A reaction called rapid oxidation or burning produced with the right combination of a fuel, oxygen and heat.

Comfort chart: A chart used to compare the relative comfort of one temperature and humidity condition to another.

Compound gauge: A gauge used to measure the pressure above and below the atmosphere's standard pressure. It is a Bourdon tube sensing device and can be found on all gauge manifolds used for air conditioning and refrigeration service work.

Compression: A term used to describe a vapor when pressure is applied and the molecules are compacted closer together.

Compression ratio: A term used with compressors to describe the actual difference in the low- and high-pressure sides of the compression cycle. It is absolute discharge pressure divided by absolute suction pressure.

Compressor: A vapor pump that pumps vapor (refrigerant or air) from one pressure level to a higher pressure level.

Compressor displacement: The internal volume of a compressor used to calculate its pumping capacity.

Concentrator: That part of an absorption chiller where the diluted salt solution is boiled to release the water.

Condensate: The moisture collected on an evaporator coil.

Condensate pump: A small pump used to pump condensate to a higher level.

Condensation: Liquid formed when a vapor condenses.

Condense: Changing a vapor to a liquid at a particular pressure.

Condenser: The component in a refrigeration system that transfers heat from the system by condensing refrigerant.

Condenser flooding: A method of maintaining a correct head pressure by adding liquid refrigerant to the condenser from a receiver to increase the head pressure.

Condensing-gas furnace: A furnace with a condensing heat exchanger that condenses moisture from the flue gases resulting in greater efficiency.

Condensing pressure: The pressure that corresponds to the condensing temperature in a refrigeration system.

Condensing temperature: The temperature at which a vapor changes to a liquid.

Condensing unit: A complete unit that includes the compressor and the condensing coil.

Conduction: Heat transfer from one molecule to another within a substance or from one substance to another.

Conductivity: The ability of a substance to conduct electricity or heat.

Conductor: A path for electrical energy to flow on.

Contact: A larger version of the relay. It can be repaired or rebuilt and has moveable and stationary contacts.

Contaminant: Any substance in a refrigeration system that is foreign to the system, particularly if it causes damage.

Control: A device to stop, start or modulate flow of electricity or fluid to maintain a preset condition.

Control system: A network of control to maintain desired conditions in a system or space.

Convection: Heat transfer from one place to another using a fluid.

Cooler: A walk-in or reach-in refrigerated box.

Cooling tower: The final device in many water-cooled systems which rejects heat from the system into the atmosphere by evaporation of water.

Copper plating: Small amounts of copper are removed by electrolysis and deposited on the ferrous metal parts in a compressor.

Corrosion: A chemical action that eats into or wears away a material.

Counter EMF: Voltage generated or induced above the applied voltage in a single-phase motor.

Counterflow: Two fluids flowing in opposite directions.

Coupling: A device for joining two fluid-flow lines. Also the device connecting a motor drive shaft to the driven shaft in a direct-drive system.

CPVC (Chlorinated polyvinyl chloride): Plastic pipe similar to PVC except that it can be used with temperatures up to 180°F at 100 PSIG.

Crankcase heat: Heat provided to the compressor crankcase.

Crankcase pressure regulator: A valve installed in the suction line, usually close to the compressor. It is used to keep a low-temperature compressor from overloading on a hot pull down.

Crankshaft seal: Same as the compressor shaft seal.

Crankshaft throw: The off-center portion of a crankshaft that changes rotating motion to reciprocating motion.

Creosote: A mixture of unburned organic material found in the smoke from a wood-burning fire.

Crisper: A refrigerated compartment that maintains a high humidity and low temperature.

Cross charge: A control with a sealed bulb that contains two different fluids that work together for a common specific condition.

Cross liquid charge bulb: A type of charge in the sensing bulb of the TXV that has different characteristics from the system refrigerant. This is designed to help prevent liquid refrigerant from flooding to the compressor at start-up.

Cross vapor charge bulb: Similar to the vapor charge bulb but contains a fluid different from the system refrigerant. This is a special-type charge and produces a different pressure/temperature relationship under different conditions.

Crystallization: When a salt solution becomes too concentrated and part of the solution turns to salt.

Current, electrical: Electrons flowing along a conductor.

Current relay: An electrical device activated by a change in current flow.

Cut-in and cut-out: The two points at which a control opens or closes its contacts based on the condition it is supposed to maintain.

Cycle: A complete sequence of events (from start to finish) in a system.

Cylinder: A circular container with straight sides used to contain fluids or to contain the compression process (the piston movement) in a compressor.

Cylinder head, compressor: The top of the cylinder on the high-pressure side of the compressor.

Cylinder unloading: A method of providing capacity control by causing a cylinder in a reciprocating compressor to stop pumping.

Damper: A component in an air distribution system that restricts airflow for the purpose of air balance.

Declination angle: The angle of the tilt of the earth on its axis.

Defrost: Melting of ice.

Defrost cycle: The portion of the refrigeration cycle that melts the ice off the evaporator.

Defrost timer: A timer used to start and stop the defrost cycle.

Degreaser: A cleaning solution used to remove grease from parts and coils.

Dehumidify: To remove moisture from air.

Dehydrate: To remove moisture from a sealed system or a product.

Density: The weight per unit of volume of a substance.

Desiccant: Substance in a refrigeration system drier that collects moisture.

Design pressure: The pressure at which the system is designed to operate under normal conditions.

De-superheating: Removing heat from the superheated hot refrigerant gas down to the condensing temperature.

Detector: A device to search and find.

Dew: Moisture droplets that form on a cool surface.

Dew point: The exact temperature at which moisture begins to form.

DIAC: A semiconductor often used as a voltage-sensitive switching device.

Diaphragm: A thin flexible material (metal, rubber or plastic) that separates two pressure differences.

Die: A tool used to make an external thread such as on the end of a piece of pipe.

Differential: The difference in the cut-in and cut-out points of a control, pressure, time, temperature or level.



Diffuser: The terminal or end device in an air distribution system that directs air in a specific direction using louvers.

Diode: A solid state device composed of both P-type and N-type material. When connected in a circuit one way, current will flow. When the diode is reversed, current will not flow.

Direct current: Electricity in which all electron flow is continuously in one direction.

Direct expansion: The term used to describe an evaporator with an expansion device other than a low-side float.

Direct-spar ignition (DSI): A system that provides direct ignition to the main burner.

Discus compressor: A reciprocating compressor distinguished by its disc-type valve system.

Discus valve: A reciprocating compressor valve design with a low clearance volume and larger bore.

Distributor: A component installed at the outlet of the expansion valve that distributes the refrigerant to each evaporator circuit.

Doping: Adding an impurity to a semiconductor to produce a desired charge.

Double flare: A connection used on copper, aluminum or steel tubing that folds tubing wall to a double thickness.

Dowel pin: A pin which may or may not be tapered, used to align and fasten two parts.

Draft gauge: A gauge used to measure very small pressure (above and below atmosphere) and compare them to the atmosphere's pressure. Used to determine the flow of flue gas in a chimney or vent.

Drier: A device used in a refrigerant line to remove moisture.

Drip pan: A pan shaped to collect moisture condensing on an evaporator coil in an air conditioning or refrigeration system.

Dry-bulb temperature: The temperature measured using a plain thermometer.

Duct: A sealed channel used to convey air from the system to and from the point of utilization.

Eccentric: An off-center device that rotates in a circle around a shaft.

Eddy current test: A test with an instrument to find potential failures in evaporator or condenser tubes.

Effective temperature: Different combinations of temperature and humidity that provide the same comfort level.

Electric heat: The process of using resistance to convert electrical energy into heat.

Electrical power: Measured in watts. One watt is equal to one ampere flowing with a potential of one volt. Watt = Volts x Amperes ($P = E \times I$).

Electrical shock: When an electrical current travels through a human body.

Electromagnet: A coil of wire wrapped around a soft iron core that creates a magnet.

Electron: The smallest portion of an atom that carries a negative charge.

Electronic air filter: A filter that charges dust particles using high-voltage direct current and then collects these particles on a plate of an opposite charge.

Electronic charging scale: An electronically operated scale used to accurately charge refrigeration systems by weight.

Electronic expansion valve: A metering valve that uses a thermistor as a temperature-sensing element that varies the voltage to a heat motor-operated valve.

Electronic leak detector: An instrument used to detect gases in very small portions by using electronic sensors and circuits.

Electronics: The use of electron flow in conductors, semiconductors and other devices.

Emitter: A terminal on a semiconductor.

End bell: The end structure of an electric motor that normally contains the bearings and lubrication system.

End play: The amount of lateral travel in a motor or pump shaft.

Energy: The capacity for doing work.

Energy efficiency ratio (EER): An equipment efficiency rating that is determined by dividing the output in BTUH by the input in watts. This does not take into account the startup and shutdown for each cycle.

Enthalpy: The amount of heat a substance contains determined from a predetermined base or point.

Environment: Our surroundings, including the atmosphere.

Ethane gas: The fossil fuel, natural gas, used for heat.

Evacuation: The removal of any gases not characteristic to a system or vessel.

Evaporation: The condition that occurs when heat is absorbed by liquid and changes to vapor.

Evaporator: The component in a refrigeration system that absorbs heat into the system and evaporates the liquid refrigerant.

Evaporator fan: A forced convector used to improve the efficiency of an evaporator by air movement over the coil.

Evaporator pressure regulator (EPR): A mechanical control installed in the suction line at the evaporator outlet that keeps the evaporator pressure from dropping below a certain point.

Evaporator types: Flooded – an evaporator where the liquid refrigerant level is maintained to the top of the heat exchange coil. Dry type – an evaporator coil that achieves the heat exchange process with a minimum of refrigerant charge.

Exhaust valve: The movable component in a refrigeration compressor that allows hot gas to flow to the condenser and prevents it from refilling the cylinder on the downstroke.

Expansion (metering) device: The component between the high-pressure liquid line and the evaporator that feeds the liquid refrigerant into the evaporator.

Expansion joint: A flexible portion of a piping system or building structure that allows for expansion of the materials due to temperature changes.

External drive: An external type of compressor motor drive, as opposed to a hermetic compressor.

External equalizer: The connection from the evaporator outlet to the bottom of the diaphragm on a thermostatic expansion valve.

Fahrenheit scale: The temperature scale that places the boiling point of water at 212°F and the freezing point at 32°F.

Fan: A device that produces a pressure difference in air to move it.

Fan cycling: The use of a pressure control to turn a condenser fan on or off to maintain a correct pressure within the system.

Fan relay coil: A magnetic coil that controls the starting and stopping of a fan.

Farad: The unit of capacity of a capacitor. Capacitors in the HVAC industry are rated in microfarads.

Female thread: The internal thread in a fitting.

Fill or wetted-surface method: Water in a cooling tower is spread out over a wetted surface while air is passed over it to enhance evaporation.

Film factor: The relationship between the medium giving up heat and the heat exchange surface (evaporator). This is related to the the velocity of the medium passing over the evaporator. When the velocity is too slow, the film between the air and the evaporator becomes greater and becomes an insulator, which slows the heat exchange.

Filter: A fine mesh or porous material that removes particles from passing fluids.

Fin comb: A hand tool used to straighten the fins on an air-cooled condenser.

Fixed resistor: A nonadjustable resistor. The resistance cannot be changed.

Fixed-bore device: An expansion device with a fixed diameter that does not adjust to varying load conditions.

Flapper valve: See reed valve.

Flare: The angle that may be fashioned at the end of a piece of tubing to match a fitting and create a leak-free connection.

Flare nut: A connector used in a flare assembly for tubing.

Flash gas: A term used to describe the pressure drop in an expansion device when some of the liquid passing through the valve is changed quickly to a gas and cools the remaining liquid to the corresponding temperature.

Float, valve or switch: An assembly used to maintain or monitor a liquid level.

Flooded system: A refrigeration system operated with the liquid refrigerant level very close to the outlet of the evaporator coil for improved heat exchange.

Flue: The duct that carries the products of combustion out of a structure for a fossil or solid-fuel system.

Flue-gas analysis instruments: Instruments used to analyze the operation of fossil fuel burning equipment such as oil and gas furnaces by analyzing the flue gases.

Fluid: The state of matter of liquids and gases.

Fluid expansion device: Using a bulb or sensor, tube and diaphragm filled with fluid, this device will produce movement at the diaphragm when the fluid is heated or cooled. A bellows may be added to produce more movement. The devices may contain vapor and liquid.

Flush: The process of using a fluid to push contaminants from a system.

Flux: A substance applied to soldered and brazed connections to prevent oxidation during the heating process.

Foaming: A term used to describe oil when it has liquid refrigerant boiling out of it.

Foot-pound: The amount of work accomplished by lifting 1 lb. of weight 1 ft.; a unit of energy.

Force: Energy exerted.

Forced convection: The movement of fluid by mechanical means.

Fossil fuels: Natural gas, oil and coal formed millions of years ago from dead plants and animals.

Four-way valve: The valve in a heat pump system that changes the direction of the refrigerant flow between the heating and cooling cycles.

Freezer burn: The term applied to frozen food when it becomes dry and hard from dehydration due to poor packaging.

Freeze up: Excess ice or frost accumulation on an evaporator to the point that airflow may be affected.

Freezing: The change of state of water from liquid to solid.

Freon: The trade name for refrigerants manufactured by E.I. duPont de Nemours & Co., Inc.

Frequency: The cycles per second (CPS) of the electrical current supplied by the power company. This is normally 60 CPS in the United States.

Front seated: A position on a valve that will not allow refrigerant to flow in one direction.

Frost back: A condition of frost on the suction line and even the compressor body usually due to liquid refrigerant in the suction line.

Frostbite: When skin freezes.

Frozen: The term used to describe water in the solid state; also used to describe a rotating shaft that will not turn.

Fuel oil: The fossil fuel used for heating; a petroleum distillate.

Full-load amperage (FLA): The current an electric motor draws while operating under a full-load condition. Also called the Run-load amperage.

Furnace: Equipment used to convert heating energy such as fuel oil, gas or electricity to useable heat. It usually contains a heat exchanger, a blower and the controls to operate the system.

Fuse: A safety device used in electrical circuits for the protection of the circuit conductor and components.

Fusible link: An electrical safety device normally located in a furnace that burns and opens the circuit during an overheat situation.

Fusible plug: A device (made of low-melting temperature metal) used in pressure vessels that is sensitive to low temperatures and relieves the vessel contents in an overheating situation.

Gas: The vapor state of matter.

Gas-pressure switch: Used to detect gas pressure before gas burners are allowed to ignite.

Gas valve: A valve used to stop, start or modulate the flow of natural gas.

Gasket: A thin piece of flexible material used between two metal plates to prevent leakage.

Gate: A terminal on a semiconductor.

Gauge: An instrument used to detect pressure.

Gauge manifold: A tool that may have more than one gauge with a valve arrangement to control fluid flow.

Gauge port: The service port used to attach a gauge for service procedures.

Germanium: A substance from which many semiconductors are made.

Glow coil: A device that automatically reignites a pilot light if it goes out.

Graduated cylinder: A cylinder with a visible column of liquid refrigerant used to measure the refrigerant charged into a system. Refrigerant temperatures can be dialed on the graduated cylinder.

Grille: A louvered, often decorative, component in an air system at the inlet or the outlet of the airflow.

Grommet: A rubber, plastic or metal protector usually used where wire or pipe goes through a metal panel.

Ground, electrical: A circuit or path for electron flow to the earth ground.

Ground wire: A wire from the frame of an electrical device to be wire to the earth ground.

Guide vanes: Vanes used to produce capacity control in a centrifugal compressor. Also called proration guide vanes.

Halide refrigerants: Refrigerants that contain halogen chemicals; R-12, R-22, R-500 and R-502 are among them.

Halide torch: A torch-type leak detector used to detect the halogen refrigerants.

Halogens: Chemical substances found in many refrigerants containing chlorine, bromine, iodine and fluorine.

Hand truck: A two-wheeled piece of equipment that can be used for moving heavy parts.

Hanger: A device used to support tubing, pipe, duct or other components of a system.

Head: Another term for pressure, usually referring to gas or liquid.

Head pressure control: A control that regulates the head pressure in a refrigeration or air conditioning system.

Header: A pipe or containment to which other pipe lines are connected.

Heat: Energy that causes molecules to be in motion and to raise the temperature of a substance.

Heat anticipator: A device that anticipates the need for cutting off the heating system prematurely so the fan can cool the furnace.

Heat coil: A device made of tubing or pipe designed to transfer heat to a cooler substance by using fluids.

Heat exchanger: A device that transfers heat from one substance to another.



Heat of compression: That part of the energy from the pressurization of a gas or a liquid converted to heat.

Heat of fusion: The heat released when a substance is changing from a liquid to a solid.

Heat of respiration: When oxygen and carbon hydrates are taken in by substance or when carbon dioxide or water are given off. Associated with fresh fruits and vegetables during their aging process while stored.

Heat pump: A refrigeration system used to supply heat or cooling using valves to reverse the refrigerant gas flow.

Heat reclaim: Using heat from a condenser for purposes such as space and domestic water heating.

Heat sink: A low-temperature surface to which heat can transfer.

Heat transfer: The transfer of heat from a warmer to a colder substance.

Helix coil: A bimetal formed into a helix-shaped coil that provides longer travel when heated.

Hermetic system: A totally enclosed refrigeration system where the motor and compressor are sealed within the same system with the refrigerant.

Hertz: Cycles per second.

Hg: The chemical symbol for the element mercury.

High-pressure control: A control that stops a boiling heating device or a compressor when the pressure becomes too high.

High side: A term used to indicate the high-pressure or condensing side of the refrigeration system.

High-temperature refrigeration: A refrigeration temperature range starting with evaporator temperatures no lower than 35°F, a range usually used in air conditioning (cooling).

High-vacuum pump: A pump that can produce a vacuum in the low micron range.

Horsepower: A unit equal to 33,000 ft-lb of work per minute.

Hot gas: The refrigerant vapor as it leaves the compressor. This is often used to defrost evaporators.

Hot gas bypass: Piping that allows hot refrigerant gas into the cooler low-pressure side of a refrigeration system usually for system capacity control.

Hot gas defrost: A system where the hot refrigerant gases are passed through the evaporator to defrost it.

Hot gas line: The tubing between the compressor and condenser.

Hot junction: That part of a thermocouple or thermopile where heat is applied.

Hot pull down: The process of lowering the refrigerated space to the design temperature after it has been allowed to warm up considerably over this temperature.

Hot water heat: A heating system using hot water to distribute the heat.

Hot wire: The wire in an electrical circuit that has a voltage potential between it and another electrical source or between it and ground.

Humidifier: A device used to add moisture to the air.

Humidistat: A control operated by the change in humidity.

Humidity: Moisture in the air.

Hydraulics: Producing mechanical motion by using liquids under pressure.

Hydrocarbons: Organic compounds containing hydrogen and carbon found in many heating fuels.

Hydrochlorofluorocarbons (HCFC): Refrigerants thought to contribute to the depletion of the ozone layer although not to the extent of chlorofluorocarbons.

Hydrometer: An instrument used to measure the specific gravity of a liquid.

Hydronic: Usually refers to a hot water heating system.

Hygrometer: An instrument used to measure the amount of moisture in the air.

Idler: A pulley on which a belt rides. It does not transfer power but is used to provide tension or reduce vibration.

Ignition transformer: Provides a high-voltage current, usually to produce a spark to ignite a furnace fuel, either gas or oil.

Impedance: A form of resistance in an alternating current circuit.

Impeller: The rotating part of a pump that causes the centrifugal force to develop fluid flow and pressure difference.

Impingement: The condition in a gas or oil furnace when the flame strikes the sides of the combustion chamber, resulting in poor combustion efficiency.

Inclined water manometer: Indicates air pressures in very low pressure systems.

Induced magnetism: Magnetism produced, usually in a metal, from another magnetic field.

Inductance: An induced voltage producing a resistance in an alternating current circuit.

Induction motor: An alternating current motor where the rotor turns from induced magnetism from the field windings.

Inductive reactance: A resistance to the flow of an alternating current produced by an electromagnetic induction.

Inert gas: A gas that will not support most chemical reactions, particularly oxidation.

Infiltration: Air that leaks into a structure through cracks, windows, doors or other openings due to less pressure inside the structure than outside the structure.

Infrared rays: The rays that transfer heat by radiation.

In-phase: When two or more alternating current circuits have the same polarity at all times.

Insulation, electric: A substance that is a poor conductor of electricity.

Insulation, thermal: A substance that is a poor conductor of the flow of heat.

Intermittent ignition: Ignition system for a gas furnace that operates only when needed or when the furnace is operating.

Isolation relays: Components used to prevent stray unwanted electrical feedback that can cause erratic operation.

Joule: Metric measurement term used to express the quantity of energy.

Junction box: A metal or plastic box within which electrical connections are made.

Kelvin: A temperature scale where absolute 0 equals 0 or where molecular motion stops at 0. It has the same graduations per degree of change as the Celsius scale.

Kilopascal: A metric unit of measurement for pressure used in the air conditioning, heating and refrigeration field. There are 6.89 kilopascals in 1 PSI.

Kilowatt: A unit of electrical power equal to 1000 watts.

Kilowatt-hour: 1 kilowatt (1000 watts) of energy used for 1 hour.

King valve: A service valve at the liquid receiver.

Latent heat: Heat energy absorbed or rejected when a substance is changing state and there is no change in temperature.

Leak detector: Any device used to detect leaks in a pressurized system.

Lever truck: A long-handled, two-wheeled device that can be used to lift and assist in moving heavy objects.

Limit control: A control used to make a change in a system, usually to stop it when predetermined limits of pressure or temperature are reached.

Line set: A term used for tubing sets furnished by the manufacturer.

Liquefied petroleum: Liquefied propane, butane or a combination of these gases. The gas is kept as a liquid under pressure until ready to use.

Liquid: A substance where molecules push outward and downward and seek a uniform level.

Liquid charge bulb: A type of charge in the sensing bulb of the thermostatic expansion valves. This charge is characteristic of the refrigerant in the system and contains enough liquid so that it will not totally boil away.

Liquid line: A term applied in the industry to refer to the tubing or piping from the condenser to the expansion device.

Liquid receiver: A container in the refrigeration system where liquid refrigerant is stored.

Liquid refrigerant charging: The process of allowing liquid refrigerant to enter the refrigeration system through the liquid line to the condenser and evaporator.

Liquid slugging: A large amount of liquid refrigerant in the compressor cylinder, usually causing immediate damage.

Lithium-bromide: A type of salt solution used in an absorption chiller.

Locked-rotor amperage (LRA): The current an electric motor draws when it is first turned on. This is normally five times the full-load amperage.

Low-pressure control: A pressure switch that can provide low charge protection by shutting down the system on low pressure. It can also be used to control space temperature.

Low side: A term used to refer to the part of the refrigeration system that operates at the lowest pressure, between the expansion device and the compressor.

Low-temperature refrigeration: A refrigeration temperature range starting with evaporator temperatures no higher than 0°F for storing frozen food.

LP fuel: Liquefied petroleum. A substance used as a gas for fuel. It is transported and stored in the liquid state.

Magnetic field: A field or space where magnetic lines of force exist.

Magnetism: A force causing a magnetic field to attract ferrous metals or where like poles of a magnet repel and unlike poles attract each other.

Male thread: A thread on the outside of a pipe, fitting or cylinder; an external thread.

Manometer: An instrument used to check low vapor pressures. The pressures may be checked against a column of mercury or water.

Mapp gas: A composite gas similar to propane that may be used with air.

Marine water box: A water box with removable cover.

Mass: Matter held together to the extent that it is considered one body.

Mass spectrum analysis: An absorption machine factory leak test performed using helium.

Matter: A substance that takes up space and has weight.

Medium-temperature refrigeration: Refrigeration where evaporator temperatures are 32°F or below, normally used for preserving fresh food.

Megger: An instrument (megohmmeter) that can detect very high resistance, in millions of ohms. Megger relates to megohm or 1,000,000 ohms.

Melting point: The temperature at which a substance will change from a solid to a liquid.

Mercury bulb: A glass bulb containing a small amount of mercury and electrical contacts used to make and break the electrical circuit in a low-voltage thermostat.

Metering device: A valve or small fixed-size tubing or orifice that meters liquid refrigerant into the evaporator.

Methane: A combustible hydrocarbon. Natural gas is composed of 90% to 95% methane.

Metric system: System International (SI) – system of measurement used by most countries in the world.

Micro: A prefix meaning 1/1,000,000.

Microfarad: Capacitor capacity equal to 1/1,000,000 of a farad

Micron: A unit of length equal to 1/1000 of a millimeter, 1/1,000,000 of a meter.

Micron gauge: A gauge used when it is necessary to measure pressure close to a perfect vacuum.

Midseated (cracked): A position on a valve that allows refrigerant flow in all directions.

Milli: A prefix meaning 1/1000.

Modulator: A device that adjusts by small increments or changes.

Moisture indicator: A device for determining moisture in a refrigerant.

Molecular motion: The movement of molecules within a substance.

Motor service factor: A factor above an electric motor's normal operating design parameters, indicated on the nameplate, under which it can operate.

Motor starter: Electromagnetic contactors that contain motor protection and are used for switching electric motors on and off.

Muffler compressor: Sound absorber at the compressor.

Mullion: Stationary frame between two doors.

Mullion heater: Heating element mounted in mullion of a refrigerator to keep moisture from forming on it.

Multimeter: An instrument that will measure voltage, resistance and milliamperes.

Multiple evacuation: An procedure for removing the refrigerant from a system. A vacuum is pulled, a small amount of refrigerant allowed into the system and the procedure duplicated. This is often done three times.

National electrical code (NEC): A publication that sets the standards for all electrical installations, including motor overload protection.

National pipe taper (NPT): The standard designation for a standard tapered pipe thread.

Natural convection: The natural movement of a gas or fluid caused by differences in temperature.

Natural gas: A fossil fuel formed over millions of years from dead vegetation and animals that were deposited or washed deep into the earth.

Needlepoint valve: A device having a needle and a very small orifice for controlling the flow of a fluid.

Negative electrical charge: An atom or component that has an excess of electrons.

Neoprene: Synthetic flexible material used for gaskets and seals.

Net oil pressure: Difference in the suction pressure and the compressor oil pump outlet pressure.

Neutralizer: A substance used to counteract acids.

Newton/meter²: Metric unit of measurement for pressure. Also called a pascal.

Nichrome: A metal made of nickel chromium that when formed into a wire is used as a resistance heating element in electric heaters and furnaces.

Nitrogen: An inert gas often used to "sweep" a refrigeration system to help ensure that all refrigerant and contaminants have been removed.

Nominal: A rounded-off stated size. The nominal size is the closest rounded-off size.

Noncondensable gas: A gas that does not change into a liquid under normal operation conditions.

Nonferrous: Metals containing no iron.

North pole, magnetic: One end of a magnet.

Ohm: A unit of measurement of electrical resistance.

Ohmmeter: A meter that measures electrical resistance.

Ohm's law: A law involving electrical relationships discovered by George Ohm: $E = I \times R$.

Oil-pressure safety control (switch): A control used to ensure that a compressor has adequate oil lubricating pressure.

Oil, refrigeration: Oil used in refrigeration systems.



Oil separator: Apparatus that removes oil from a gaseous refrigerant.

Open compressor: A compressor with an external drive.

Operating pressure: The actual pressure under operation conditions.

Organic: Materials formed from living organisms.

Orifice: A small opening through which fluid flows.

Overload protection: A system or device that will shut down a system if an overcurrent condition exists.

Oxidation: The combining of a material with oxygen to form a different substance. This results in the deterioration of the original substance.

Ozone: A form of oxygen (O₃). A layer of ozone in the stratosphere that protects the earth from certain of the sun's ultraviolet wave lengths.

Package unit: A refrigeration system where all major components are located in one cabinet.

Packing: A soft material that can be shaped and compressed to provide a seal. It is commonly applied around valve stems.

Parallel circuit: An electrical or fluid circuit where the current or fluid takes more than one path at a junction.

Passive solar design: The use of non-moving parts of a building to provide heat or cooling or to eliminate certain parts of a building that cause inefficient heating or cooling.

PE (polyethylene): Plastic pipe used for water, gas and irrigation systems.

Permanent magnet: An object that has its own permanent magnetic field.

Permanent split-capacitor (PSC) motor: A split-phase motor with a run capacitor only. It has a very low starting torque.

Phase: One distinct part of a cycle.

Pilot light: The flame that ignites the main burner on a gas furnace.

Piston: The part that moves up and down in a cylinder.

Piston displacement: The volume within the cylinder that is displaced with the movement of the piston from top to bottom.

Pitot tube: Part of an instrument for measuring air velocities.

Planned defrost: Shutting the compressor off with a timer so that the space temperature can provide the defrost.

Plenum: A sealed chamber at the inlet or outlet of an air handler. The duct attaches to the plenum.

Polycyclic organic matter: By-products of wood combustion found in smoke and considered to be health hazards.

Polyphase: Three or more phases.

Porcelain: A ceramic material.

Portable dolly: A small platform with four wheels on which heavy objects can be placed and moved.

Positive displacement: A term used with a pumping device such as a compressor that is designed to move all matter from a volume such as a cylinder or it will stall, possibly causing failure of a part.

Positive electrical charge: An atom or component that has a shortage of electrons.

Positive temperature coefficient start device: A thermistor used to provide start assistance to a permanent split-capacitor motor.

Potential relay: A switching device used with hermetic motors that breaks the circuit to the start windings after the motor has reached approximately 75% of its running speed.

Potentiometer: An instrument that controls electrical current.

Power: The rate at which work is done.

Pressure: Force per unit of area.

Pressure drop: The difference in pressure between two points.

Pressure/enthalpy diagram: A chart indicating the pressure and heat content of a refrigerant and the extent to which the refrigerant is a liquid and vapor.

Pressure limiter: A device that opens when a certain pressure is reached.

Pressure-limiting TXV: A valve designed to allow the evaporator to build only to a predetermined temperature when the valve will shut off the flow of refrigerant.

Pressure switch: A switch operated by a change in pressure.

Pressure/temperature relationship: This refers to the pressure/temperature relationship of a liquid and vapor in a closed container. If the temperature increases, the pressure will also increase. If the temperature is lowered, the pressure will decrease.

Pressure vessels and piping: Piping, tubing, cylinders, drums and other containers that have pressurized contents.

Primary control: Controlling device for an oil burner to ensure ignition within a specific time span, usually 90 seconds.

Propane: An LP gas used for heat.
Proton: That part of an atom having a positive charge.

PSI: Abbreviation for pounds per square inch.

PSIA: Abbreviation for pounds per square inch absolute.

PSIG: Abbreviation for pounds per square inch gauge.

Psychrometer: An instrument for determining relative humidity.

Psychrometric chart: A chart that shows the relationship of temperature, pressure and humidity in the air.

Pump: A device that forces fluids through a system.

Pump down: To use a compressor to pump the refrigerant charge into the condenser and/or receiver.

Purge: To remove or release fluid from a system.

PVC (polyvinyl chloride): Plastic pipe used in pressure applications for water and gas as well as for sewage and certain industrial applications.

Quench: To submerge a hot object in a fluid for cooling.

Quick-connect coupling: A device designed for easy connecting or disconnecting of fluid lines.

R-12: Dichlorodifluoromethane, a popular refrigerant for refrigeration systems.

R-22: Monochlorodifluoromethane, a popular refrigerant for air conditioning systems.

R-123: Dichlorotrifluoroethane, a refrigerant developed for low pressure application.

R134a: Tetrafluoroethane, a refrigerant developed for refrigeration systems and as a possible replacement for R-12.

R-502: An azeotropic mixture of R-22 and R-115, a popular refrigerant for low-temperature refrigeration systems.

Radiant heat: Heat that passes through air, heating solid objects that in turn heat the surrounding area.

Radiation: Heat transfer. See radiant heat.

Random or off-cycle defrost: Defrost provided by the space temperature during the normal off cycle.

Rankine: The absolute Fahrenheit scale with 0 at the point where all molecular motion stops.

Reactance: A type of resistance in alternating current circuit.

Reamer: Tool to remove burrs from inside a pipe after it has been cut.

Receiver-drier: A component in a refrigeration system for storing and drying refrigerant.

Reciprocating: Back-and-forth motion.

Reciprocating compressor: A compressor that uses a piston in a cylinder and a back-and-forth motion to compress vapor.

Rectifier: A device for changing alternating current to direct current.

Reed valve: A thin steel plate used as a valve in a compressor.

Refrigerant: The fluid in a refrigeration system that changes from a liquid to a vapor and back to a liquid at practical pressures.

Refrigerant reclaim: Recovering the refrigerant and processing it so that it can be reused. Refrigerant is processed to new product specifications by means which may include distillation. It requires chemical analysis of the refrigerant to determine appropriate specifications are met. The term usually implies the use of processes or procedures available only at a reprocessing or manufacturing facility.

Refrigerant recovery: To remove refrigerant in any condition from a system and store it in an external container without necessarily testing or processing it in any way.

Refrigerant recycling: To clean the refrigerant by oil separation and single or multiple passes through devices such as replaceable core filter driers, which reduce moisture, acidity and particulate matter. This term usually applies to procedures implemented at the job site or at a local service shop.

Refrigeration: The process of removing heat from a place where it is not wanted and transferring it to a place where it makes little or no difference.

Register: A terminal device on an air distribution system that directs air but also has a damper to adjust air flow.

Relative humidity: The amount of moisture contained in the air as compared to the amount the air could hold at that temperature.

Relay: A small electromagnetic device to control a switch, motor or valve.

Relief valve: A valve designed to open and release liquids at a certain pressure.

Remote system: Often called a split system where the condenser is located away from the evaporator and/or other parts of the system.

Resistance: The opposition to the flow of an electrical current or a fluid.

Resistor: An electrical or electronic component with a specific opposition to electron flow. It is used to create voltage drop or heat.

Restrictor: A device used to create a planned resistance to fluid flow.

Reverse cycle: The ability to direct the hot gas flow into the indoor or the outdoor coil in heat pump to control the system for heating or cooling purposes.

Rod and tube: The rod and tube are each made of a different metal. The tube has a high expansion rate and the rod a low expansion rate.

Rotary compressor: A compressor that uses rotary motion to pump fluids. It is a positive-displacement pump.

Rotor: The rotating or moving component of a motor, including the shaft.

Running time: The time a unit operates. Also called the on time.

Run winding: The electrical winding in a motor that draws current during the entire running cycle.

Rupture disk: Safety device for a centrifugal low-pressure chiller.

Saddle valve: A valve that straddles a fluid line and is fastened by solder or screws. It normally contains a device to puncture the line for pressure readings.

Safety control: An electrical, mechanical or electromechanical control to protect the equipment or public from harm.

Safety plug: A fusible plug.

Sail switch: A safety switch with a lightweight sensitive sail that operates by sensing an airflow.

Saturated vapor: The refrigerant when all of the liquid has changed to a vapor.

Saturation: A term used to describe a substance when it contains all of another substance it can hold.

Scavenger pump: A pump used to removed the fluid from a sump.

Schrader valve: A valve similar to the valve on an auto tire that allows refrigerant to be charged or discharged from the system.

Scotch yoke: A mechanism used to create reciprocating motion from the electric motor drive in very small compressors.

Screw compressor: A form of positive-displacement compressor that squeezes fluid from a low-pressure area to a high-pressure area, using screw-type mechanisms.

Scroll compressor: A compressor that uses two scroll-type components to compress vapor.

Sealed unit: The term used to describe a refrigeration system, including the compressor, that is completely welded closed. The pressure can be accessed by saddle valves.

Seasonal energy efficiency ratio (SEER): An equipment efficiency rating that takes into account that startup and shutdown for each cycle.

Seat: The stationary part of a valve that the moving part of the valve presses against for shutoff.

Semiconductor: A component in an electronic system that is considered neither an insulator nor a conductor but a partial conductor.

Semihermetic compressor: A motor compressor that can be opened or disassembled by removing by removing bolts and flanges. Also known as a serviceable hermetic.

Sensible heat: Heat that causes a change in the level of a thermometer.

Sensor: A component for detection that changes shape, form or resistance when a condition changes.

Sequencer: A control that causes a staging of events, such as a sequencer between stages of electric heat.

Series circuit: An electrical or piping circuit where all of the current or fluid flow through the entire circuit.

Service valve: A manually operated valve in a refrigeration system used for various service procedures.

Serviceable hermetic: See semihermetic compressor.

Shaded-pole motor: An alternating current motor used for very light loads.

Shell and coil: A vessel with a coil of tubing inside that can normally be mechanically cleaned.

Short circuit: A circuit that does not have the correct measurable resistance, too much current flow and will overload the conductors.

Short cycle: The term used to describe the running time (on time) of a unit when it is not running long enough.

Shroud: A fan housing that ensures maximum airflow through the coil.

Sight glass: A clear window in a fluid line.

Silica gel: A chemical compound often used in refrigerant driers to remove moisture from the refrigerant.

Silicon: A substance from which many semiconductors are made.

Silicon-controlled rectifier (SCR): A semiconductor control device.

Silver brazing: A high-temperature (above 800°F) brazing process for bonding materials.

Sine wave: The graph or curve used to describe the characteristics of alternating current voltage.

Single phase: The electrical power supplied to equipment or small motors, normally under 7-1/2 HP.

Single phasing: The condition in a three-phase motor when one phase of the power supply is open.

Sling psychrometer: A device with two thermometers, one a wet bulb and one a dry bulb, used for checking air conditions, temperature and humidity.

Slip: The difference in the rated RPM of a motor and the actual operating RPM.

Slugging: A term used to describe the condition when large amounts of liquid enter a pumping compressor cylinder.

Smoke test: A test performed to determine the amount of unburned fuel in an oil burner flue-gas sample.

Snap-disc: An application of bimetal. Two different metals fastened together in the form of a disc that provides a warping condition when heated. This also provides a snap action that is beneficial in controls that start and stop current flow in electrical circuits.



Solar collectors: Components of a solar system designed to collect the heat from the sun using air, liquid or refrigerant as the medium.

Solar heat: Heat from the sun's rays.

Soldering: Fastening two base metals together by using a third, filler metal that melts at a temperature below 800°F.

Solder pot: A device using a low-melting solder and an overload heater sized for the amperage of the motor it is protecting. The solder will melt, opening the circuit when there is an overload. It can be reset.

Solenoid: A coil of wire designed to carry an electrical current producing a magnetic field.

Solid: Molecules of a solid are highly attracted to each other forming a mass that exerts all of its weight downward.

Specific gravity: The weight of a substance compared to the weight of an equal volume of water.

Specific heat: The amount of heat required to raise the temperature of 1 lb. of substance 1°F

Specific volume: The volume occupied by 1 lb. of a fluid.

Splash lubrication system: A system of furnishing lubrication to a compressor by agitating the oil.

Splash method: A method of water dropping from a higher elevation in a cooling tower and splashing on slots with air passing through for more efficient evaporation.

Split-phase motor: A motor with run and start windings.

Split system: A refrigeration or air conditioning system that has the condensing unit remote from the indoor (evaporator) coil.

Spray pond: A pond with spray heads used for cooling water in water-cooled air conditioning or refrigeration systems.

Squirrel cage fan: A fan assembly used to move air.

Standard atmosphere or standard conditions: Air at sea level at 70°F when the atmosphere's pressure is 14.696 PSIA (29.92 in. Hg). Air at this condition has a volume of 13.33 cu. ft./lb.

Standing pilot: Pilot flame that remains burning continuously.

Start capacitor: A capacitor used to help an electric motor start.

Starting relay: An electrical relay used to disconnect the start winding in a hermetic compressor.

Starting winding: The winding in a motor used primarily to give the motor extra starting torque.

Starved coil: The condition in an evaporator when the metering device is not feeding enough refrigerant to the evaporator.

Stator: The component in a motor that contains the windings; it does not turn.

Steam: The vapor state of water.

Strainer: A fine-mesh device that allows fluid flow and holds back solid particles.

Stratification: The condition where a fluid appears in layers.

Stress crack: A crack in piping or other component caused by age or abnormal conditions such as vibration.

Subbase: The part of a space temperature thermostat that is mounted on the wall and to which the interconnecting wiring is attached.

Subcooling: The temperature of a liquid when it is cooled below its condensing temperature.

Sublimation: When a substance changes from the solid state to the vapor state without going through the liquid state.

Suction gas: The refrigerant vapor in an operating refrigeration system found in the tubing from the evaporator to the compressor and in the compressor shell.

Suction line: The pipe that carries the heat-laden refrigerant from the evaporator to the compressor.

Suction service valve: A manually operated valve with front and back seats located at the compressor.

Suction valve lift unloading: The suction valve in a reciprocating compressor cylinder is lifted, causing that cylinder to stop pumping.

Sump: A reservoir at the bottom of a cooling tower to collect the water that has passed through the tower.

Superheat: The temperature of vapor refrigerant above its saturation change of state temperature.

Surge: When the head pressure becomes too great or the evaporator pressure too low, refrigerant will flow from the high-to the low-pressure side of a centrifugal compressor system, making a loud sound.

Swaged joint: The joining of two pieces of copper tubing by expanding or stretching the end of one piece of tubing to fit over the other piece.

Swaging tool: A tool used to enlarge a piece of tubing for solder or braze connection.

Swamp cooler: A slang term used to describe an evaporative cooler.

Sweating: A word used to describe moisture collection on a line or coil that is operating below the dew point temperature of the air.

Tank: A closed vessel used to contain a fluid.

Tap: A tool used to cut internal threads in a fastener or fitting.

Temperature: The level of heat or molecular activity, expressed in Fahrenheit, Rankine, Celsius or Kelvin units.

Test light: A light bulb arrangement used to prove the presence of electrical power in a circuit.

Therm: Quantity of heat, 100,000 BTU.

Thermistor: A semiconductor electronic device that changes resistance with a change in temperature.

Thermocouple: A device made of two unlike metals that generates electricity when there is a difference in temperature from one end to the other. Thermocouples have a hot and cold junction.

Thermometer: An instrument used to detect differences in the level of heat.

Thermopile: A group of thermocouples connected in series to increase voltage output.

Thermostat: A device that senses temperature change and changes some dimension or condition within to control an operating device.

Thermostatic expansion valve (TXV): A valve used in refrigeration systems to control the superheat in an evaporator by metering the correct refrigerant flow to the evaporator.

Three-phase power: A type of power supply usually used for operating heavy loads. It consists of three sine waves that are out of phase with each other.

Throttling: Creating a restriction in a fluid line.

Timers: Clock-operated devices used to time various sequences of events in circuits.

Ton of refrigeration: The amount of heat required to melt a ton (2000 lb.) of ice at 32°F, 288,000 BTU/24 H; 12,000 BTU/H; or 200 BTU/min.

Torque: The twisting force often applied to the starting power of a motor.

Torque wrench: A wrench used to apply a prescribed amount of torque or tightening to a connector.

Total heat: The total amount of sensible heat and latent heat contained in a substance from a reference point.

Transformer: A coil of wire wrapped around an iron core that induces a current to another coil of wire wrapped around the same iron core. Note: A transformer can have an air core.

Transistor: A semiconductor often used as a switch or amplifier.

TRIAC: A semiconductor switching device.

Tube within a tube coil: A coil used for heat transfer that has a pipe in a pipe and is fastened together so that the outer tube becomes one circuit and the inner tube another.

Tubing: Pipe with a wall used to carry fluids.

Two-temperature valve: A valve used in systems with multiple evaporators to control the evaporator's pressures and maintain different temperatures in each. Sometimes called a hold-back valve.

Ultraviolet: Light waves that can only be seen under a special lamp.

Urethane foam: A foam that can be applied between two walls for insulation.

U-Tube mercury manometer: A U-tube containing mercury, which indicates the level of vacuum while evacuating a refrigeration system.

U-Tube water manometer: Indicates natural gas and propane gas pressures. It is usually calibrated in inches of water.

Vacuum: The pressure range between the earth's atmosphere and no pressure, normally expressed in inches of mercury (in. Hg) vacuum.

Vacuum pump: A pump used to remove some fluids such as air and moisture from a system at a pressure below the earth's atmosphere.

Valve: A device used to control fluid flow.

Valve plate: A plate of steel bolted between the head and the body of a compressor that contains the suction and discharge reed or flapper valves.

Valve seat: That part of a valve that is usually stationary. The movable part comes in contact with the valve seat to stop the flow of fluids.

Vapor: The gaseous state of a substance.

Vapor barrier: A thin film used in construction to keep moisture from migrating through building materials.

Vapor charge valve: A charge in a thermostatic expansion valve bulb that boils to a complete vapor. When this point is reached, an increase in temperature will not produce an increase in pressure.

Vapor lock: A condition where vapor is trapped in a liquid line and impedes liquid flow.

Vapor pump: Another term for compressor.

Vapor refrigerant charging: Adding refrigerant to a system by allowing vapor to move out of the vapor space of a refrigerant cylinder and into the low-pressure side of the refrigeration system.

Vaporization: The changing of a liquid to a gas or vapor.

Variable pitch pulley: A pulley whose diameter can be adjusted.

Variable resistor: A type of resistor where the resistance can be varied.

V belt: A belt that has a V-shaped contact surface and is used to drive compressors, fans or pumps.

Velocity: The speed at which a substance passes a point.

Velocity meter: A meter used to detect the velocity of fluids, air or water.

Volt-ohm-milliammeter (VOM): A multimeter that measures voltage, resistance and current in milliamperes.

Voltage: The potential electrical difference for electron flow from one line to another in an electrical circuit.

Voltmeter: An instrument used for checking electrical potential.

Volumetric efficiency: The pumping efficiency of a compressor or vacuum pump that describes the pumping capacity in relationship to the actual volume of the pump.

Vortexing: A whirlpool action in the sump of a cooling tower.

Water box: A container or reservoir at the end of a chiller where water is introduced and contained.

Water column: The pressure it takes to push a column of water up vertically. One inch of water column is the amount of pressure it would take to push a column of water up one inch.

Water-cooled condenser: A condenser used to reject heat from a refrigeration system into water.

Water-regulating valve: An operating control regulating the flow of water.

Watt: A unit of power applied to electron flow. One watt equals 3.414 BTU.

Watt-hour: The unit of power that takes into consideration the time of consumption. It is the equivalent of a 1-watt bulb burning for 1 hour.

Wet-bulb temperature: A wet-bulb temperature of air is used to evaluate the humidity in the air. It is obtained with a wet thermometer bulb to record the evaporation rate with an air stream passing over the bulb to help in evaporation.

Wet heat: A heating system using steam or hot water as the heating medium.

Window unit: An air conditioner installed in a window that rejects the heat outside the structure.

Work: A force moving an object in the direction of the force. $Work = Force \times Distance$.



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GENERAL POLICIES

NEW ACCOUNTS

Tom Barrow Co. is happy to offer many ways to purchase materials. We can process a properly signed and completed credit application which will allow you to purchase with terms. While the application is being reviewed or if you elect not to apply for terms, you may purchase on a COD basis.

PRODUCT AVAILABILITY

Tom Barrow Co. offers an extensive array of products at all our warehouses, however, we can not guarantee that we will have every product in the quantity you need at all times. We will make every effort to fill your order using all of our resources. Products within our catalog may change without notice, so please call your local branch for most current availability.

SPECIAL ORDERS

Cancellation of these items depends on timing and manufacturers' policies. Special order items may not be returned.

PRICING

Tom Barrow Co. offers competitive pricing, but due to the fluctuating material markets, we may change our pricing without giving prior notification. Special quotations may be given for a specific quantity, for a specific period of time. Prices do not include any present or future sales, use, excise, value added or similar tax. Where applicable, all such taxes shall be paid by the Customer. Customer must furnish evidence of exemption, if applicable.

DELIVERY

All materials delivered must be examined and inspected by the purchaser and/or his representative upon receipt. For all materials examined and inspected, any claim of shortage and/or damage must be made at time of delivery. Where purchaser and/or his representative can not examine and inspect material upon receipt, any and all claims must be made within three (3) working days of delivery. Any claims made after the prescribed time period shall not be honored.

COMMON CARRIER CLAIMS

Tom Barrow Co. is not liable for any loss or damage in-transit by the carrier. Damage or shortages must be noted upon receipt and be countersigned by the carrier's agent. Tom Barrow Co. will provide reasonable information for the buyer to establish a Customer's claim against the carrier. Any claim must be made before any part of the material has been changed from its original condition.

RETURN GOODS

Material may be returned with prior authorization from Tom Barrow Co. Tom Barrow Co. will only accept material for credit that is currently stocked, in as sold condition and packaging within 30 days from the original purchase date. Credit will be issued after inspection of material. All unauthorized returns will be denied a credit. Items that are ordered to your specification cannot be returned. Returns other than defective material or shipping error, will be subject to a minimum 20% restocking charge. All returns are for material credit only and must be shipped "Freight Prepaid" if shipped via common carrier.

TAXES

Unless otherwise noted, prices do not include any present or future sales, use, excise value added or similar tax. Where applicable, all such taxes shall be paid by the Customer. Customer must furnish evidence of exemption, if applicable.



Notes



Notes



Tom Barrow Co.
DELIVERING HVAC SOLUTIONS

Tom Barrow founded his namesake company in 1955 as a manufacturer's representative for commercial HVAC products. Starting with only a few product lines, he quickly earned a reputation for service and integrity. He had one guiding principal -

"The VALUE we add to the products we sell is SERVICE." – Tom Barrow, Founder

As the business grew, the company added more products, as well as sales and support staff. In 1965, Tom Barrow Company expanded, opening an office in Jacksonville, Florida. This was the first of several branch offices added over the next four decades.

For the next 25 years, the company primarily offered products on the air side of HVAC systems. That changed in 1997, when Tom Barrow Company began representing applied equipment products, including custom air handling units, custom packaged equipment, and a variety of specialty products and components.

Today, the company's experienced sales team works closely with mechanical engineers, building owners, and contractors in the selection and application of a wide range of products. And, with offices in Tennessee, Georgia, Florida, and Alabama, Tom Barrow Company is the largest commercial HVAC manufacturer's representative in the Southeast.

A lot has changed since 1955. But after 60+ years in business, Tom Barrow Company is still living its founder's guiding principal and continues to add value through integrity, experience and most importantly, service.



Our founder, Tom Barrow



Tom Barrow Co.
DELIVERING HVAC SOLUTIONS

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