TECHNICAL GUIDE

MODULAR PSC AIR HANDLERS

FOR USE WITH SPLIT-SYSTEM COOLING & HEAT PUMPS

MODELS: MP - 115V SERIES

ISO 9001
Certified Quality
Management System

Due to continuous product improvement, specifications are subject to change without notice.

Visit us on the web at:

www.upgnet.com and www.colemanac.com

Additional rating information can be found at:

www.ahridirectory.org

WARRANTY SUMMARY

Standard 5-year limited parts warranty.

Extended 10-year limited parts warranty when product is registered online within 90 days of purchase for replacement or closing for new home construction.

DESCRIPTION

This unique modular system allows the flexibility to handle any application. These versatile MP blowers may be used for upflow, downflow, or horizontal left or right applications. They may be combined with cased coils to function as a cooling only unit or with a heat pump including electric heat for 1 and 3 phase applications.

FEATURES

COMMON MP AIR HANDLER AND CM COIL FEATURES

RC^2 - Rigid Case Construction interior endoskeleton for structural support, smooth side, and locks in insulation.

Powder-painted - G30 galvanized steel case provide a coated edge that resists corrosion and rust creep.

Quality Construction - Structural components are made of Aluminum or G90 galvanized steel to prevent corrosion.

Improved Insulation Design - Single piece with no external screws to reduce thermal transmission paths to prevent sweating. Foil faced insulation for ease of cleaning.

Case Depth - These models have 20.5” casing which provide ease of attic access and tight applications.

MP AIR HANDLERS

Factory Sealed - Achieves 2% or less total airflow leakage rate at duct leakage test conditions in positive and negative pressure for system airflow verification.

Blowers - All models use direct-drive, multi-speed PSC motors.

CM COILS

MaxAlloy^{TM} Coil - Long life aluminum coils built to deliver lasting performance, efficiency and reliability.

Thermostatic Expansion Valve - The accessory chatleff style TXV provides easy installation to convert the indoor coil to the required refrigerant that does not require brazing to replace or install. Some models are available with factory installed TXV.

Thermoset Drain Pan - Low retention and positive slope for drainage to reduce potential mold or contaminants.

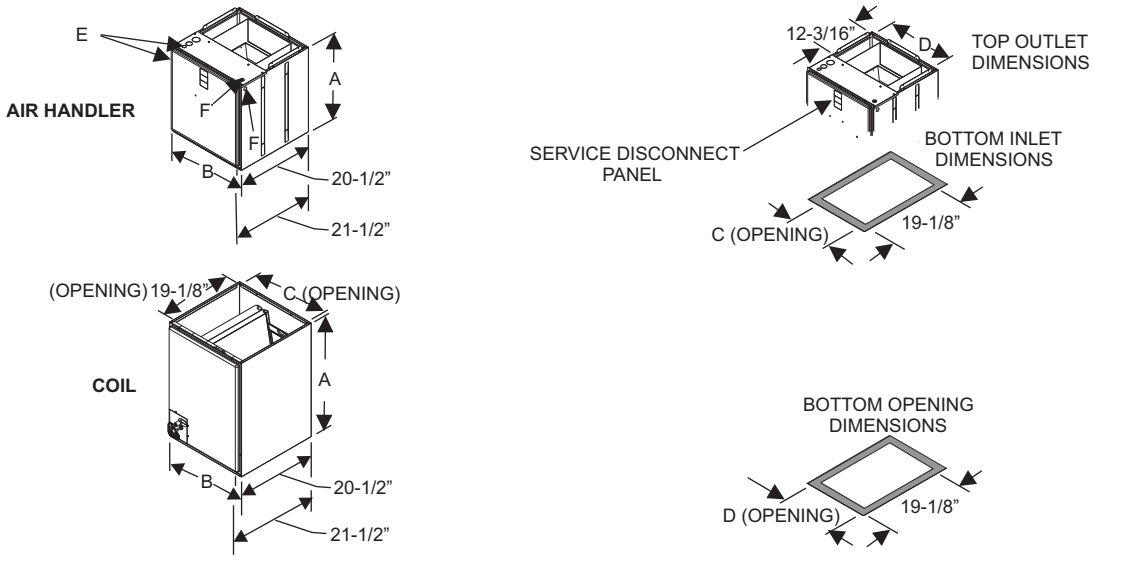
Accessories - A full line of matching accessories available for use with the blower and coils to provide for any type of application.

LIST OF SECTIONS

WIRING DIAGRAM 9NOMENCLATURE

PRODUCT TYPE	**M**	**M** = Modular Blower
POSITION MOTOR TYPE	**P**	**P** = Multi PSC **E** = Multi Std ECM **V** = Multi VS ECM
OPTIONS	**-**	**C** = Communications Ready **-** (No Designator) = Standard (No Options)
NOMINAL AIR FLOW	**12**	**08** = 800 CFM **12** = 1,200 CFM **14** = 1,400 CFM **16** = 1,600 CFM **20** = 2,000 CFM
CABINET WIDTH	**B**	**A** = 14.5" **B** = 17.5" **C** = 21.0" **D** = 24.5"
OPTIONS	**N**	**N** = No options
VOLTAGE (Voltage-Phase-Hertz)	**1**	**1** = 115-1-60 **3** = 208/230-3-60 **2** = 208/230-1-60 **4** = 460-3-60
GENERATION (MAJOR REVISION)	**1**	**1** = 1st Gen **2** = 2nd Gen **etc.**
STYLE LETTER (MINOR REVISION) NOT USED FOR ORDERING	**A**	**A** = Style A **B** = Style B **etc.**

DIMENSIONS & DUCT CONNECTION DIMENSIONS



DIMENSIONS - MP MODULAR AIR HANDLERS & CM MULTI-POSITION FULL CASED COILS

Models	Dimensions [1]					
	Height	Width	Opening Widths		Wiring Knockouts	
	A	B	C	D	E	F
					Power	Control
MP08BN11	21-1/2	17-1/2	16-1/2	16-1/2	7/8 (1/2), 1-3/8 (1), 1-23/32 (1-1/4)	7/8 (1/2)
MP12BN11	21-1/2	17-1/2	16-1/2	16-1/2		
MP14DN11	22-1/2	24-1/2	23-1/2	23-1/2		
MP16CN11	22-1/2	21	20	20		
MP20DN11	22-1/2	24-1/2	23-1/2	23-1/2		

Models	Dimensions [1]					
	Height	Width	Opening Widths		Refrigerant Connections [2]	
					Line Size	
	A	B	C	D	Liquid	Vapor
CM18A	19-1/2	14-1/2	13-1/2	13-1/2	3/8	3/4
CM18B	19	17-1/2	16-1/2	16-1/2		
CM24A	19-1/2	14-1/2	13-1/2	13-1/2		
CM24B	19	17-1/2	16-1/2	16-1/2		
CM24C	21	21	20	20		
CM30A	25-1/2	14-1/2	13-1/2	13-1/2		
CM30B	23	17-1/2	16-1/2	16-1/2		
CM30C	23	21	20	20		
CM30D	25	24/1/2	23-1/2	23-1/2		
CM36A	25-1/2	14-1/2	13-1/2	13-1/2		
CM36B	25-5/8	17-1/2	16-1/2	16-1/2		
CM36C	25	21	20	20		
CM36D	25	24-1/2	23-1/2	23-1/2		
CM42C	27	21	20	20		7/8
CM42D	27	24-1/2	23-1/2	23-1/2		
CM48C	33	21	20	20		
CM48D	32-3/4	24-1/2	23-1/2	23-1/2		
CM60C	33	21	20	20		
CM60D	32-3/4	24-1/2	23-1/2	23-1/2		
CM64D	32-3/4	24-1/2	23-1/2	23-1/2		

1. All dimensions are in inches as actual size (Dimensions in parenthesis are Conduit size).
2. Refrigerant line sizes may require larger lines for extended line lengths. See Application Data part number 247077.

COOLING CAPACITY[1]

Models	Rated CFM[2]	Entering Air Dry/Wet Bulb (°F)	MBH@ Evap. Temp. and Corresponding R-410A Pressure (°F/PSIG)			
			35/107.9	40/118.9	45/130.7	50/143.3
CM18B	600	85/72	45.7	41.6	36.8	30.5
		80/67	38.5	33.9	28.5	22.3
		75/62	31.5	26.5	20.5	15.9
		70/57	24.4	19.5	15.2	11.5
CM24B	800	85/72	52.2	47.5	41.8	35.0
		80/67	43.6	38.3	31.9	24.5
		75/62	35.2	29.5	22.7	16.2
		70/57	27.1	20.7	15.5	11.4
CM24C	800	85/72	52.2	47.5	41.8	35.0
		80/67	43.6	38.3	31.9	24.5
		75/62	35.2	29.5	22.7	16.2
		70/57	27.1	20.7	15.5	11.4
CM30B	1000	85/72	75.3	67.8	56.8	47.1
		80/67	62.6	54.6	44.2	34.5
		75/62	50.2	41.3	32.0	22.9
		70/57	37.8	30.1	21.5	16.2
CM30C	1000	85/72	75.3	67.8	56.8	47.1
		80/67	62.6	54.6	44.2	34.5
		75/62	50.2	41.3	32.0	22.9
		70/57	37.8	30.1	21.5	16.2
CM30D	1000	85/72	75.3	67.8	56.8	47.1
		80/67	62.6	54.6	44.2	34.5
		75/62	50.2	41.3	32.0	22.9
		70/57	37.8	30.1	21.5	16.2
CM36B	1000	85/72	82.1	73.7	64.1	54.4
		80/67	68.6	60.1	50.5	39.5
		75/62	56.3	47.0	37.3	29.2
		70/57	43.5	36.0	28.3	21.6
CM36B	1200	85/72	91.6	82.4	71.3	59.4
		80/67	76.5	65.4	54.6	42.8
		75/62	61.3	51.2	40.0	30.5
		70/57	47.5	38.1	28.7	22.3
CM42C	1200	85/72	98.0	88.6	77.4	66.4
		80/67	82.6	72.6	61.7	50.6
		75/62	68.5	57.6	47.5	36.6
		70/57	53.9	44.8	35.0	28.4
CM36C	1200	85/72	91.6	82.4	71.3	59.4
		80/67	76.5	65.4	54.6	42.8
		75/62	61.3	51.2	40.0	30.5
		70/57	47.5	38.1	28.7	22.3
CM36D	1200	85/72	91.6	82.4	71.3	59.4
		80/67	76.5	65.4	54.6	42.8
		75/62	61.3	51.2	40.0	30.5
		70/57	47.5	38.1	28.7	22.3
CM42C	1400	85/72	100.6	89.8	78.2	64.7
		80/67	83.5	73.7	59.8	48.0
		75/62	67.8	55.8	44.7	32.5
		70/57	52.3	41.5	30.7	23.7
CM42D	1400	85/72	100.6	89.8	78.2	64.7
		80/67	83.5	73.7	59.8	48.0
		75/62	67.8	55.8	44.7	32.5
		70/57	52.3	41.5	30.7	23.7

For notes, see Page 5.

COOLING CAPACITY[1] (Continued)

Models	Rated CFM[2]	Entering Air Dry/Wet Bulb (°F)	MBH@ Evap. Temp. and Corresponding R-410A Pressure (°F/PSIG)			
			35/107.9	40/118.9	45/130.7	50/143.3
CM48C	1400	85/72	108.0	98.4	88.1	73.8
		80/67	93.3	82.1	69.7	57.0
		75/62	75.9	64.4	53.1	41.9
		70/57	60.7	49.9	39.4	32.4
CM48C	1600	85/72	115.2	105.0	93.9	79.0
		80/67	88.3	78.2	65.5	52.6
		75/62	72.7	60.8	50.1	37.6
		70/57	57.7	46.9	36.6	29.7
CM48D	1600	85/72	115.2	105.0	93.9	79.0
		80/67	88.3	78.2	65.5	52.6
		75/62	72.7	60.8	50.1	37.6
		70/57	57.7	46.9	36.6	29.7
CM60C	1800	85/72	115.1	103.0	91.7	78.6
		80/67	96.8	85.9	73.7	60.5
		75/62	80.7	69.4	57.5	43.5
		70/57	58.7	48.9	37.7	32.7
CM60D	1800	85/72	115.1	103.0	91.7	78.6
		80/67	96.8	85.9	73.7	60.5
		75/62	80.7	69.4	57.5	43.5
		70/57	58.7	48.9	37.7	32.7
CM64D	1800	85/72	133.6	118.5	103.2	86.6
		80/67	111.4	96.2	80.3	62.8
		75/62	90.7	75.1	60.0	43.5
		70/57	70.6	56.9	42.5	32.8

1. See Condensing Unit or Heat Pump Technical Guide for Total Cooling Capacity and Sensible Capacity.
2. Airflow is calculated for each system tonnage.

PHYSICAL & ELECTRICAL DATA - COOLING ONLY

Models		MP08B	MP12B	MP14D	MP16C	MP20D
Blower - Diameter x Width		10 x 8	10 x 8	10 x 10	10 x 10	10 x 10
Motor	HP	1/4 HP	1/2 HP	3/4 HP	1/2 HP	1 HP
	Nominal RPM	1075	1085	1085	1075	1007
Voltage		115	115	115	115	115
Full Load Amps @115V		2.8	5.0	6.3	6.3	9.0
Filter[1]	Type	DISPOSABLE OR PERMANENT				
	Size	16 x 20 x 1	16 x 20 x 1	22 x 20 x 1	20 x 20 x 1	22 x 20 x 1
	Bottom Rack Kit	1BR01117	1BR01117	1BR01124	1BR01121	1BR01124
	Permanent Type Kit	1PF0601	1PF0601	1PF0603	1PF0602	1PF0603
Shipping / Operating Weight (lbs.)		52/51	52/51	75/74	68/67	75/74

1. Field Supplied.

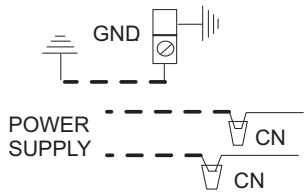
ELECTRICAL DATA - COOLING ONLY

Models	Motor FLA[1]	Minimum Circuit Ampacity	MOP[2]
MP08B	2.8	3.5	15
MP12B	5.0	6.3	
MP14D	6.3	7.9	
MP16C	6.3	7.9	
MP20D	9.0	11.3	

1. FLA = Full Load Amps.
2. MOP = Maximum Overcurrent Protection device; must be HACR type circuit breaker or time delay fuse. Refer to the latest edition of the National Electric Code or in Canada the Canadian electrical Code and local codes to determine correct wire sizing.

POWER WIRING - LINE CONNECTIONS

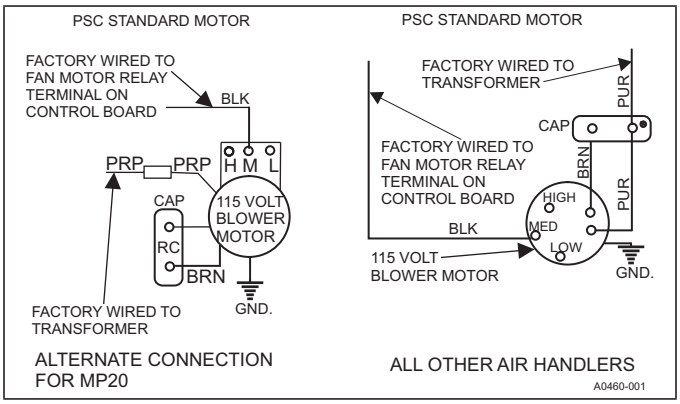
NO ELECTRIC HEAT



COMPONENT CODES
CKT - CIRCUIT
CN - WIRE CONNECTOR/NUT
GND - GROUND LUG
– – – FIELD POWER WIRING (110V/120V)

A0459-001

BLOWER SPEED CONNECTIONS



LIMITATIONS

These units must be wired and installed in accordance with all national and local safety codes.

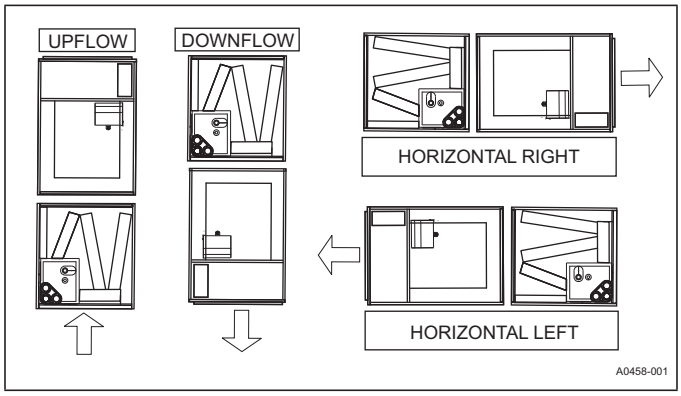
Voltage limits are as follows:

Air Handler Voltage	[1]Normal Operating Voltage Range
110-120-1-60	110-120

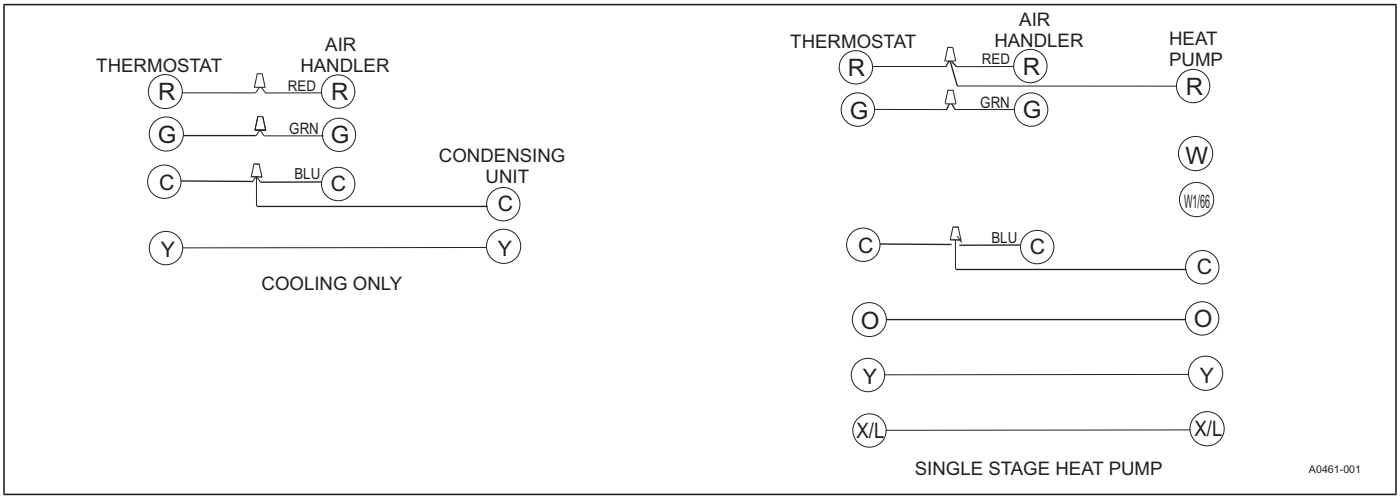
1. Rated in accordance with ARI Standard 110, utilization range “A”.

Airflow must be within the minimum and maximum limits approved for electric heat, evaporator coils and outdoor units.

TYPICAL APPLICATIONS



TYPICAL THERMOSTAT CONNECTION



ACCESSORIES

Refer to Price Manual for specific model numbers where not shown.

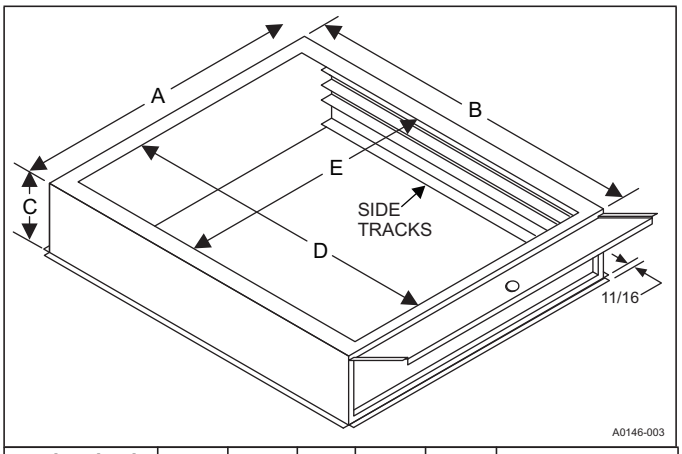
TXV Kits - “Flex-coils” are shipped without a factory installed metering device. For added flexibility, an R-22 or R-410A TXV or piston must be field installed to meet your refrigerant choice. All kits are chatleff style and require no brazing to install.

Breaker Moisture Seal Accessory - A clear circuit breaker moisture barrier seals the breakers from humidity and dust. The flexibility of the clear cover allows circuit breakers to be turned ON or OFF without removing the cover. The cover firmly attaches to the access panel around the circuit breakers with the use of double backed adhesive tape. To ensure that moisture or dust does not contaminate circuit breakers, an S1-02435672000, Circuit Breaker, Cover Seal may be ordered.

Bottom Rack Filter Kit - The filter frame accessory allows installation of an external air handler filter in an upflow application, a downflow application, or a horizontal application (refer to the following illustration/table for Filter Rack Dimensions).

Thermostat - Compatible thermostat controls are available through accessory sourcing. For optimum performance, these outdoor units are fully compatible with our Coleman touch screen thermostat with proprietary (patent-pending) hexagon interface. For more information, see the thermostat section of the Product Equipment Catalog.

FILTER RACK DIMENSIONS



Galvanized Models	A	B	C	D	E	Filer Size
1BR01117	17.50	21.56	4.00	18.63	14.25	16 x 20 x 1 or 2
1BR01121	21.00	21.56	4.00	18.63	17.75	20 x 20 x 1 or 2
1BR01124	24.50	21.56	4.00	18.63	21.25	20 x 24 x 1 or 2

Note: Filters - Not supplied with kit.

AIR FLOW DATA - CFM[1]

Models	CM Models	Blower Motor Speed	External Static Pressure (in. wc.)						
			0.10	0.20	0.30	0.40	0.50	0.60	0.70
MP08B	CM18B	High	1142	1126	1093	1057	1009	953	852
		Medium	855	840	826	798	756	696	594
		Low	676	663	638	584	528	482	404
	CM24B	High	1105	1088	1060	1030	987	948	859
		Medium	825	815	802	780	752	678	591
		Low	655	636	616	569	504	467	345
MP12B	CM30B	High	1521	1471	1397	1322	1241	1161	1057
		Medium	1369	1329	1281	1224	1166	1092	1015
		Low	1130	1107	1071	1029	972	910	842
	CM36B	High	1557	1507	1440	1363	1289	1185	1125
		Medium	1351	1321	1266	1207	1153	1076	1019
		Low	1103	1083	1056	1024	976	928	851
MP14D	CM30D	High	2092	2038	1958	1884	1795	1714	1591
		Medium	1725	1697	1634	1598	1534	1454	1179
		Low	1374	1366	1339	1316	1250	1070	904
	CM36D	High	2099	2040	1980	1903	1814	1680	1605
		Medium	1725	1694	1652	1605	1541	1467	1182
		Low	1388	1372	1340	1306	1277	1106	1026
	CM42D	High	2083	2033	1960	1894	1820	1720	1459
		Medium	1690	1662	1623	1587	1534	1460	1233
		Low	1399	1393	1370	1338	1269	1159	1073
MP16C	CM36C	High	1850	1785	1705	1625	1541	1373	1242
		Medium	1693	1642	1574	1499	1378	1261	1145
		Low	1512	1465	1407	1324	1225	1101	1022
	CM42C	High	1815	1754	1680	1593	1472	1278	1206
		Medium	1670	1613	1554	1473	1311	1210	1082
		Low	1488	1445	1376	1259	1181	1056	979
	CM48C	High	1886	1818	1739	1646	1567	1348	1163
		Medium	1742	1683	1622	1538	1461	1237	1121
		Low	1563	1512	1455	1399	1234	1086	1019
MP20D	CM42D	High	2123	2076	2001	1926	1840	1744	1439
		Medium	1999	1959	1896	1821	1744	1651	1347
		Low	1851	1819	1768	1698	1626	1544	1269
	CM48D	High	2178	2107	2034	1953	1878	1775	1604
		Medium	2014	1965	1905	1843	1761	1660	1351
		Low	1867	1832	1779	1727	1661	1544	1280
	CM60D	High	2132	2052	1993	1899	1813	1733	1594
		Medium	1985	1941	1872	1798	1729	1648	1507
		Low	1848	1810	1758	1695	1627	1548	1355
	CM64D	High	2069	2011	1929	1848	1755	1651	1402
		Medium	1962	1902	1832	1758	1675	1558	1335
		Low	1833	1787	1734	1667	1581	1382	1269

1. Air handler units have been tested to UL 1995 / CSA 22.2 standards up to 0.50" wc. external static pressure.
Dry coil conditions only, tested without filters.
For optimal performance, external static pressures of 0.2" to 0.5" are recommended. Applications above 0.5" are not recommended.

5154297-CTG-C-0216
Supersedes: 5154297-CTG-B-1015

York International Corp.
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