

Quick-Lock Tubing

Total Solutions for Air, Vacuum
& Inert Gas Systems



GD
GARDNER DENVER™

Experience Proven Results™

Description	Part Number
-------------	-------------



Compressed Air Piping - Blue

14mm - .5" Tubing (10 pack - 8ft Length) 80ft	C9000-14-BLUE-PK10
14mm - .5" Tubing (20 pack - 8ft Length) 160ft	C9000-14-BLUE-PK20
20mm - .75" Tubing Blue	C9000-20-AIR-BLUE
25mm - 1" Tubing Blue	C9000-25-AIR-BLUE
32mm - 1.25" Tubing Blue	C9000-32-AIR-BLUE
40mm - 1.5" Tubing Blue	C9000-40-AIR-BLUE
50mm - 2" Tubing Blue	C9000-50-AIR-BLUE
63mm - 2.5" Tubing Blue	C9000-63-AIR-BLUE



Vacuum Piping - Grey

14mm - .5" Tubing (10 pack - 8ft Length) 80ft	C9000-14-GREY-PK10
14mm - .5" Tubing (20 pack - 8ft Length) 160ft	C9000-14-GREY-PK20
20mm - .75" Tubing Grey	C9000-20-VAC-GREY
25mm - 1" Tubing Grey	C9000-25-VAC-GREY
32mm - 1.25" Tubing Grey	C9000-32-VAC-GREY
40mm - 1.5" Tubing Grey	C9000-40-VAC-GREY
50mm - 2" Tubing Grey	C9000-50-VAC-GREY
63mm - 2.5" Tubing Grey	C9000-63-VAC-GREY



Inert Gas Piping - Black

14mm - .5" Tubing (10 pack - 8ft Length) 80ft	C9000-14-BLACK-PK10
14mm - .5" Tubing (20 pack - 8ft Length) 160ft	C9000-14-BLACK-PK20
20mm - .75" Tubing Black	C9000-20-GAS-BLACK
25mm - 1" Tubing Black	C9000-25-GAS-BLACK
32mm - 1.25" Tubing Black	C9000-32-GAS-BLACK
40mm - 1.5" Tubing Black	C9000-40-GAS-BLACK
50mm - 2" Tubing Black	C9000-50-GAS-BLACK
63mm - 2.5" Tubing Black	C9000-63-GAS-BLACK



Male Threaded Connectors

Straight male Connector 14mm x 3/8" NPT	C90011-14-06
Straight male Connector 14mm x 1/2" NPT	C90011-14-08
Straight male Connector 20mm x 1/2" NPT	C90011-20-08
Straight male Connector 25mm x 3/4" NPT	C90011-25-12
Straight male Connector 32mm x 1" NPT	C90011-32-16
Straight male Connector 40mm x 1-1/2" NPT	C90011-40-24
Straight male Connector 50mm x 1-1/2" NPT	C90011-50-24
Straight male Connector 63mm x 2" NPT	C90011-63-32

Description	Part Number
-------------	-------------



Straight Unions

Straight Union Connector 14mm	C90040-14
Straight Union Connector 20mm	C90040-20
Straight Union Connector 25mm	C90040-25
Straight Union Connector 32mm	C90040-32
Straight Union Connector 40mm	C90040-40
Straight Union Connector 50mm	C90040-50
Straight Union Connector 63mm	C90040-63



90° Union Elbows

Union Elbow 14mm	C90130-14
Union Elbow 20mm	C90130-20
Union Elbow 25mm	C90130-25
Union Elbow 32mm	C90130-32
Union Elbow 40mm	C90130-40
Union Elbow 50mm	C90130-50
Union Elbow 63mm	C90130-63

90° Swivel Elbows

Swivel Elbow 14mm 3/8" NPT male	C90130-14-06
Swivel Elbow 14mm 1/2" NPT male	C90130-14-08



45° Union Elbows

Union Elbow 45 deg. 20mm	C90140-20
Union Elbow 45 deg. 25mm	C90140-25
Union Elbow 45 deg. 32mm	C90140-32
Union Elbow 45 deg. 40mm	C90140-40
Union Elbow 45 deg. 50mm	C90140-50
Union Elbow 45 deg. 63mm	C90140-63

Tee Union

Union Tee 14mm	C90230-14
----------------	-----------

Tee Swivel

Swivel Tee 14mm 3/8" NPT male	C90230-14-06
Swivel Tee 14mm 1/2" NPT male	C90230-14-08

Equal Tee

Junction Tee 20mm	C90230-20
Junction Tee 25mm	C90230-25
Junction Tee 32mm	C90230-32
Junction Tee 40mm	C90230-40
Junction Tee 50mm	C90230-50
Junction Tee 63mm	C90230-63



Description

Part
Number**Outlet Tee**

Outlet Tee, 20mm x 20mm	C90235-20-20
Reduction Outlet Tee 25mm x 20mm	C90235-25-20
Reduction Outlet Tee 32mm x 20mm	C90235-32-20
Reduction Outlet Tee 32mm x 25mm	C90235-32-25
Reduction Outlet Tee 40mm x 20mm	C90235-40-20
Reduction Outlet Tee 40mm x 25mm	C90235-40-25
Reduction Outlet Tee 50mm x 20mm	C90235-50-20
Reduction Outlet Tee 50mm x 25mm	C90235-50-25
Reduction Outlet Tee 50mm x 32mm	C90235-50-32
Reduction Outlet Tee 63mm x 20mm	C90235-63-20
Reduction Outlet Tee 63mm x 25mm	C90235-63-25
Reduction Outlet Tee 63mm x 32mm	C90235-63-32

**Outlet, Saddle Clamp Reducer**

Outlet, Saddle Clamp Reducer 32mm to 20mm	C90240-32-20
Outlet, Saddle Clamp Reducer 32mm to 25mm	C90240-32-25
Outlet, Saddle Clamp Reducer 40mm to 20mm	C90240-40-20
Outlet, Saddle Clamp Reducer 40mm to 25mm	C90240-40-25
Outlet, Saddle Clamp Reducer 50mm to 20mm	C90240-50-20
Outlet, Saddle Clamp Reducer 50mm to 25mm	C90240-50-25
Outlet, Saddle Clamp Reducer 63mm to 20mm	C90240-63-20
Outlet, Saddle Clamp Reducer 63mm to 25mm	C90240-63-25

Cutting Tool, Saddle Clamp

Cutting Tool, 32-40mm	C90241-32-40
Cutting Tool, 50-63mm	C90241-50-63

Drill Jig, Saddle Clamp

Drill Jig, Saddle Clamp 32mm	C90242-32
Drill Jig, Saddle Clamp 40mm	C90242-40
Drill Jig, Saddle Clamp 50mm	C90242-50
Drill Jig, Saddle Clamp 63mm	C90242-63

**Drain Coupling**

Drain Coupling 25mm	C90260-25
Drain Coupling 32mm	C90260-32
Drain Coupling 40mm	C90260-40
Drain Coupling 50mm	C90260-50
Drain Coupling 63mm	C90260-63

Description

Part
Number**Outlet Manifold**

Outlet Manifold 4x1/2" NPT female outlet ports	C90601-14-08
1/2" npt F inlet - 1/2" NPT F base port for drain	C90610-08-NPT

**Outlet Elbow c/w Mtg Bracket**

Outlet Elbow /Bracket Assy 20mm x 1/2"NPT	C90601-20- 08
Outlet Elbow /Bracket Assy 25mm x 1/2"NPT	C90601-25- 08
Outlet Elbow /Bracket Assy 32mm x 1/2"NPT	C90601-32- 08

**Plug - Cap End Fitting**

Plug Cap 14mm	C90610-14
Plug Cap 20mm	C90610-20
Plug Cap 25mm	C90610-25
Plug Cap 32mm	C90610-32
Plug Cap 40mm	C90610-40
Plug Cap 50mm	C90610-50
Plug Cap 63mm	C90610-63

**Reducer - Fitting Body to Tube**

Reducer, 25mm Body to 20mm Tube	C90620-25-20
Reducer, 32mm Body to 20mm Tube	C90620-32-20
Reducer, 32mm Body to 25mm Tube	C90620-32-25
Reducer, 40mm Body to 20mm Tube	C90620-40-20
Reducer, 40mm Body to 25mm Tube	C90620-40-25
Reducer, 40mm Body to 32mm Tube	C90620-40-32
Reducer, 50mm Body to 25mm Tube	C90620-50-25
Reducer, 50mm Body to 32mm Tube	C90620-50-32
Reducer, 50mm Body to 40mm Tube	C90620-50-40
Reducer, 63mm Body to 40mm Tube	C90620-63-40
Reducer, 63mm Body to 50mm Tube	C90620-63-50

**Stem Adapter- Male**

Stem Adapter, 20mm X 1/2" NPTM	C90626-20-08M
Stem Adapter, 20mm X 3/4" NPTM	C90626-20-12M
Stem Adapter, 25mm X 1/2" NPTM	C90626-25-08M
Stem Adapter, 25mm X 3/4" NPTM	C90626-25-12M
Stem Adapter, 25mm X 1" NPTM	C90626-25-16M
Stem Adapter, 32mm X 1" NPTM	C90626-32-16M
Stem Adapter, 32mm X 1 1/2" NPTM	C90626-32-24M
Stem Adapter, 40mm X 1 1/2" NPTM	C90626-40-24M
Stem Adapter, 50mm X 1 1/2" NPTM	C90626-50-24M
Stem Adapter, 50mm X 2" NPTM	C90626-50-32M
Stem Adapter, 63mm X 2" NPTM	C90626-63-32M
Stem Adapter, 63mm X 2 1/2" NPTM	C90626-63-40M

Description	Part Number
-------------	-------------

Stem Adapter- Female

Stem Adapter, 20mm X 1/2" NPTF	C90626-20-08
--------------------------------	--------------



Ball Valves-Tube to Tube

Ball valve, 14mm Tube	C90700-14
Ball valve, 20mm Tube	C90700-20
Ball valve, 25mm Tube	C90700-25
Ball valve, 32mm Tube	C90700-32
Ball valve, 40mm Tube	C90700-40
Ball valve, 50mm Tube	C90700-50
Ball valve, 63mm Tube	C90700-63



Bracket Hanging / Wall / Strut

Bracket, Hanging / Wall / Strut 14mm / Pack 10	C90810-14-PK10
Bracket, Flush Wall 14mm / Pack 10	90810-14-PK10-W
Tube Clamp - 20mm-Steel	C90810-20
Tube Clamp - 25mm-Steel	C90810-25
Tube Clamp - 32mm-Steel	C90810-32
Tube Clamp - 40mm-Steel	C90810-40
Tube Clamp - 50mm-Steel	C90810-50
Tube Clamp - 63mm-Steel	C90810-63



Wire Hanging System

Wire Hanger 10ft lengths (pk of 10)	C90830-10
Wire Hanger 15ft lengths (pk of 10)	C90830-15



Cantilever Bracket

Cantilever Wall Bracket	C90830
-------------------------	--------



Outlet "Y" Adaptor

Outlet Y Adaptor 1/2" male x 1/2" female NPT	C82600-08-08
--	--------------



Ball Valves-NPT

Ball valve, 3/8" M x 3/8" F NPT	C86310-06-06
Ball valve, 1/2" F x 1/2" F NPT	C86300-08-08
Ball valve, 1/2" M x 1/2" F NPT	C86310-08-08

Quick Couplers

Universal Socket, 1/4" NPT Male	C80191-04
Universal Socket, 3/8" NPT Male	C80191-06
Universal Socket, 1/2" NPT Male	C80191-08
Universal Socket, 3/8" NPT Female	C80192-06
Universal Socket, 1/2" NPT Female	C80192-08
Universal Socket, 1/4" Hose Barb	C80193-04
Universal Socket, 3/8" Hose Barb	C80193-06



Description	Part Number
-------------	-------------



Universal Socket, 1/2" Hose Barb	C80193-08
Plug, 1/4" NPT Male	C80221-04
Plug, 3/8" NPT Male	C80221-06
Plug, 1/2" NPT Male	C80221-08
Plug, 1/4" NPT Female	C80222-04
Plug, 3/8" NPT Female	C80222-06
Plug, 1/2" NPT Female	C80222-08
Plug, 1/4" Hose Barb	C80223-04
Plug, 3/8" Hose Barb	C80223-06
Plug, 1/2" Hose Barb	C80223-08



Tooling

Tube Cutter	C90870
Deburr tool	C90880



Electronic Drain Valves

Electronic Timer Drain Valve, 1/4" NPT W/Strainer	C90900-04
Electronic Timer Drain Valve, 3/8" NPT W/Strainer	C90900-06
Electronic Timer Drain Valve, 1/2" NPT W/Strainer	C90900-08

Demo Kit

Infinity Demo Kit, pipe & fittings w/case	C90951
---	--------

Sample Kit

Infinity QuickFit Demo Kit, pipe & fittings w/case-14mm	C90952
---	--------



PowerMizer

Flow Controller 75 scfm	CPMZR-75
Flow Controller 200 scfm	CPMZR-200
Flow Controller 1,000 scfm	CPMZR-1000

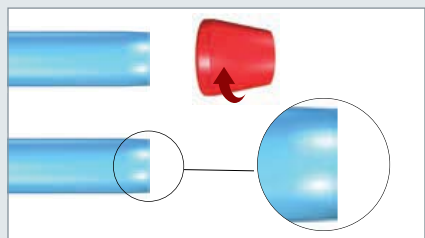


Zero Loss Drain Valve

Flow Rate 200 scfm	CZLD-200
Flow Rate 500 scfm	CZLD-500
Flow Rate 500 scfm-HP*	CZLD-500-HP
Flow Rate 2,000 scfm	CZLD-2000
Flow Rate 5,000 scfm	CZLD-5000
Flow Rate 18,000 scfm	CZLD-18000
Flow Rate 53,000 scfm	CZLD-53000

* Non stock, special order

Quick-Lock Tubing Installation Instructions



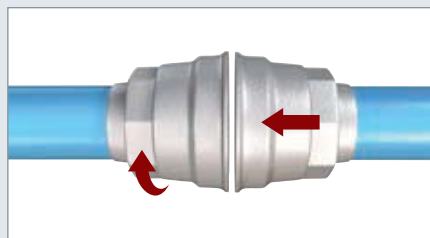
1. Remove burrs from the outside diameter of the tube. Clean and remove any shavings.



2. Add oil on tube before inserting into the fitting.



3. Fittings D14, D20, D25, D32 and D40mm are supplied fully assembled. Insert the tube into the fitting. To make insertion easier, rotate the tube on itself while making the connection. Be sure tubing is securely and fully inserted into the fitting.

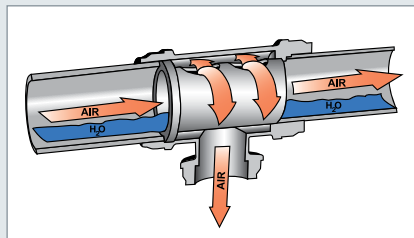


4. Use the following table to properly tighten the fittings:

Tube Diameter	Torque
14	Push lock, no torque needed.
20	300 cN.m (26 in-lbs)
25	300 cN.m (26 in-lbs)
32	400 cN.m (35 in-lbs)
40	650 cN.m (58 in-lbs)

5. Only for tube dimensions D50 and D63mm. To facilitate installation, fittings are supplied with unscrewed nuts. Once the tab is inserted into the fitting, tighten the nuts to the torque specified below:

Tube Diameter	Torque
50	65 N.m (48 ft-lbs)
20	65 N.m (48 ft-lbs)



Outlet/Reducing Tee Fitting

This fitting is a valid alternative to the traditional swan neck, and proves itself as a fast and low-cost solution. The efficient internal system allows air to reach the point-of-use and drain toward the most convenient low point of the system, so that no moisture stays within the main circuit. This fitting is also an alternative to a traditional goose neck (up and over) take-off point. It prevents water from dropping out of the main piping loop into the drop line. All systems should be installed with a slight slope to allow moisture to collect at one point in the system. This point should be fitted with a drop line and terminated with a condensate drain.

CAUTION!

Do not loosen the compression nuts prior to pipe installation. The fitting compression nuts are torqued at the factory. To install the pipe, push and rotate the pipe into the fitting until fully seated. Verify the compression nuts are tightened to the proper torque displayed in the above tables.

PIPE REMOVAL:

Loosen the fitting compression nut 1 to 1.5 turns, push the pipe into the fitting and then pull out.

Quick-Lock Tubing System Test Procedure

WARNING! Before pressurizing the system, the following instructions must be carried out.

1. Check that all nuts on body of fittings are securely tightened.
2. Insure that all tubing is fully inserted into each fitting.
3. Insure that all mounting and hanging brackets are securely fastened to a solid structure and to the tubing.
4. Insure that a safety relief valve is installed and fully operational in the system to prevent over-pressurization.
5. Insure that an isolation valve is installed between the compressor(s) and the piping system and is in a "closed" position. Install a pressure gauge downstream of the isolation valve so that system pressure can be viewed when isolation valve is in either open/closed position.
6. Close all outlet points in piping system.
7. Insure that the test area is vacated for the duration of the pressure test.
8. Open isolation valve slowly and allow system pressure to build to 15 psig and then close the valve. Hold pressure for 10 minutes and inspect system for any leakage or joint slippage. If system is secure, repeat the 15 psig increments, making the required checks, until the maximum working pressure is reached.
9. When full system working pressure is achieved, hold system pressure for 1 hour. (Max. working pressure must not exceed 220 psig).
10. Re-inspect system for leakage and loose/slipping joints.
11. If any faults are found in the system, depressurize the system, correct the faults and retest.

Technical Characteristics

Component part and materials

1	Nut: Nickel-Plated Brass
2	Seal: High Nitrile
3	Clamping Washer: Inox AISI 304
4	O-Ring Seal Made in NBR
5	Safety Ring: Technopolymeric
6	Body: Nickel-Plated Brass

Pressures

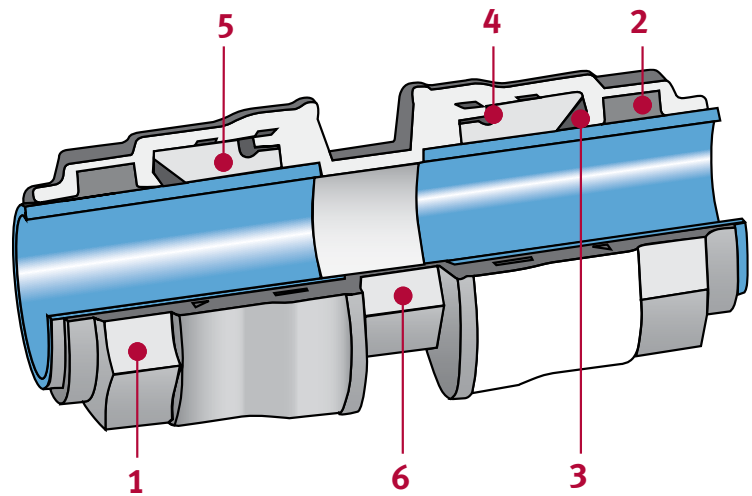
Minimum pressure -0.99 bar (-29.6Hg)
Maximum pressure 15 bar (220psi)

Compatible fluids and gases

Compressed Air
Water
Vacuum
Inert Gases

Threads

Male threads taper in conformity with ISO 228
Female threads in conformity with ISO 228



Temperatures

Minimum temperature -20°C (-4°F)
Maximum temperature +80°C (176°F)

Fire resistance

The system does not stroke or propagate any fires

Linear Expansion and Contraction

All materials expand and contract under the effects of temperature change. To allow for this, use the following formula during system installation.

$$L = T \times L \times a \text{ i.e.:}$$

ΔL = Linear expansion - shrinkage in mm

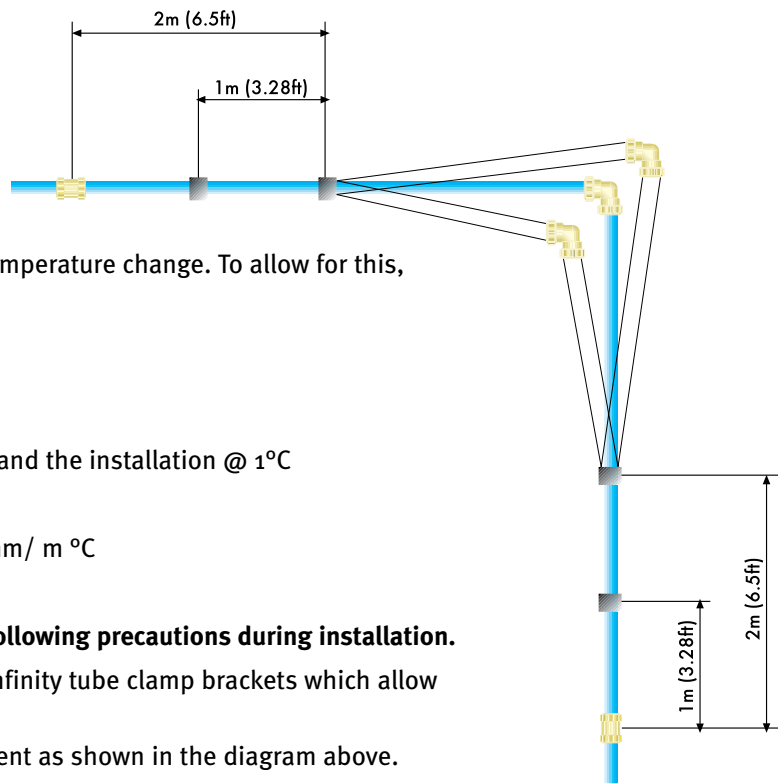
T = Heat variation between operating temperature and the installation @ 1°C

L = Tube length in mm

a = Linear expansion factor for aluminum is 0.024mm/ m °C

To compensate for heat expansion/shrinkage, use the following precautions during installation.

- When attaching tubing to a solid structure, use only Infinity tube clamp brackets which allow for expansion and contraction.
- When installing a system, be sure to allow for movement as shown in the diagram above.



Quick-Lock Tubing Flow Rates

Tube Internal Diameter		CFM @ 125 psig	CFM @ 150 psig	CFM @ 175 psig	CFM @ 220 psig
mm	(in.)				
14	(0.50")	12	14	17	21
20	(0.75")	36	39	42	48
25	(1.00")	76	81	88	99
32	(1.25")	146	158	171	189
40	(1.50")	266	291	310	348
50	(2.00")	476	526	565	627
63	(2.50")	881	965	1047	1153

Flow rates are based on a 1 psi pressure drop per 100 ft (65 ft for 14mm tubing) run of tube and couplings in a "straight line". For loop systems, flow rates can be doubled.

Technical Information - C9000 Calibrated Aluminum Tubing

Outside Diameter		Typical Compressor Flow CFM @ 125 PSIG	Maximum Pressure barg / psig	Weight lbs/ft	Length ft
mm	(in.)				
14	(0.50")	1.5-10	15 / 220	0.098	8'
20	(0.75")	14-34	15 / 220	0.159	16'
25	(1.00")	44-66	15 / 220	0.202	16'
32	(1.25")	88-132	15 / 220	0.262	16'
40	(1.50")	168-220	15 / 220	0.331	16'
50	(2.00")	258-322	15 / 220	0.592	16'
63	(2.50")	425-540	15 / 220	0.623	16'

Technical specifications of tubing

Properties	Property Specifications
Extruded Aluminum	UNI 9006/1 Al Mg 0.5 Si 0.4 Fe 0.2
Chemical Composition	Si: 0.3 ÷ 0.6 - Mg: 0.35 ÷ 0.6 - Fe: 0.10 ÷ 0.30
Designations	UNI EN 573 - 3 EN AW 6060
Heat Treatment	Bonificato 'T5'/ Drained "T5"
Surface Treatment	Electrostatic painting
Specific Weight	2.70 Kg/dm ³
Specific Resistance	3.25 cm
Thermal Conductivity	1.75 W/(cm °K)
Expansion Coefficient	0.024 mm/(m °C)
Specific Heat @ 100° C (212°F)	0.92 J/(g °K)
Bearing Tensile Stress	205 N/mm ²
Coefficient of Elasticity	66000 N/mm ²
Proportionality Deviation Load	165 N/mm ²
Brinell Hardness	60 ÷ 70 HB
Melting Point	600°C (1112°F)
Percentage Elongation	10%

Aftermarket Parts, Lubricants & Remanufactured Airends



PROTECT THE INVESTMENT IN GARDNER DENVER

Regular maintenance and service of Gardner Denver product is critical to the performance and longevity of the equipment. Only Gardner Denver can provide the assurance that the investment will provide a lifetime of productivity.

RELIABILITY

Only Gardner Denver can provide aftermarket parts and services that are engineered for use in Gardner Denver products. The parts and lubricant have been tested under rigorous conditions at the factory to the highest quality standards.

PERFORMANCE

Only Gardner Denver can provide aftermarket parts designed specifically for the Gardner Denver product. Use of OEM parts ensures that the investment in Gardner Denver will continue to perform year in and year out with the same reliability and efficiency.



EASE OF DOING BUSINESS

Only Gardner Denver can provide the peace of mind of turning to one supplier and one source for all aftermarket needs. Gardner Denver has the support network in place to handle all customer service, service and technical support needs.

VALUE

Only Gardner Denver can provide the high quality aftermarket parts and services for the life of the investment in Gardner Denver. Proper care of the Gardner Denver product is vital to the equipment's performance and efficiency. Lean on a trusted source — Gardner Denver.



I&M Industrials, Inc.
10 Akron Drive
Greenville SC 29605
1-800-868-2450
www.iandmindustrials.com

Gardner Denver®

www.GardnerDenverProducts.com maggie@gardnerdenver.com

Gardner Denver, Inc. 1800 Gardner Expressway, Quincy, IL 62305
Telephone: (800) 682-9868 FAX: (217) 224-7814



Member



©2010 Gardner Denver, Inc. Litho in U.S.A. GA-QLT-100 1st Ed. 2/10

