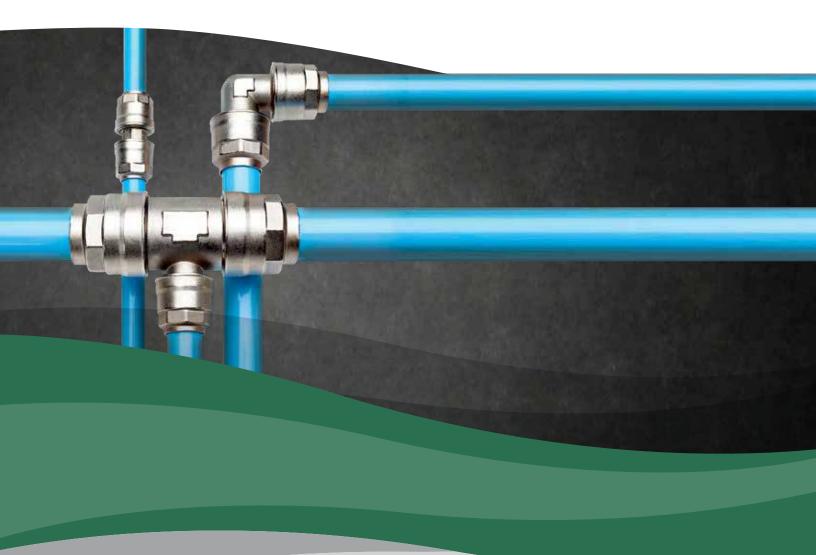


COMPRESSED AIR SYSTEM |  $1\!\!\!/_2''$  TO  $21\!\!\!/_2''$ 

# **Quick-Lock** Tubing



# Why Champion?

### Simply stated - There is no equal

Quick-Lock from Champion has taken piping systems to a new level. Without compromising any structural strength, Champion provides an aluminum product that is ten times lighter than steel. This system is easier to install than plastic and delivers a quality of air, nitrogen, vacuum or inert gas that is equal to that of a high cost stainless steel system.

### Superior Quality

Champion's Quick-Lock tubing is manufactured from a non-corrosive aluminum that prevents rust and system deterioration while maintaining a high quality of air delivery suitable for all internal and external applications. Champion's piping solution offers superior strength within a lightweight design.

Heralded for its innovative design, Quick-Lock offers the performance of heavy, traditional steel piping, at the cost of systems using plastic. Quick-Lock is secured by nickel-plated brass fittings that provide the deepest level of engagement. Its revolutionary lock-and-seal design ensures a totally safe, leak-free system for all compressed air, vacuum, nitrogen and inert gas applications.

### **Total Solution**

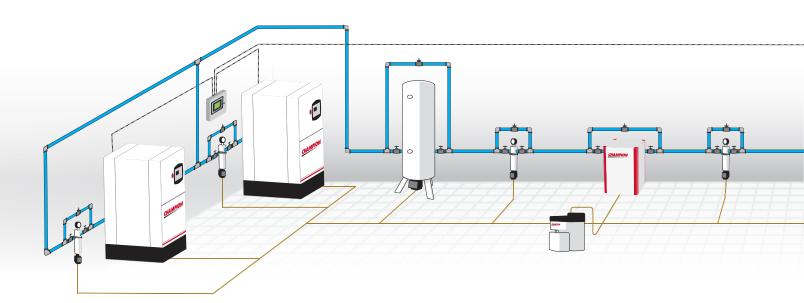
Champion offers a total solution for Compressed Air, Vacuum, Nitrogen and Inert Gas applications. Ranging in size from 14 mm ( $\frac{1}{2}$ ") to 63 mm ( $2\frac{1}{2}$ ") for Quick-Lock and 70 mm ( $2\frac{1}{2}$ ") to 273 mm (10") for Big-Lock, Champion offers four color options to meet all system demands.

With the pairing of Quick-Lock and Big-Lock, Champion can easily provide piping for any application from a 1–2 bay garage to a large industrial manufacturing facility.

# Ease of Installation

Champion offers the easiest and fastest installation available. There is no welding, gluing or threading, and very little skill is needed for a professional installation. With the purchase of nylon clips or wire hangers, an installation crew can clip tubing securely to a wall or hang from the ceiling and around beams. No special tools are required and both pieces are easily adjustable for a quick and efficient install.

Available in 4 Color Options	
Blue	Compressed Air
Green	Nitrogen
Gray	Vacuum
Black	Inert Gas

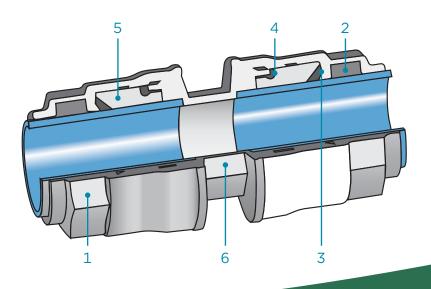


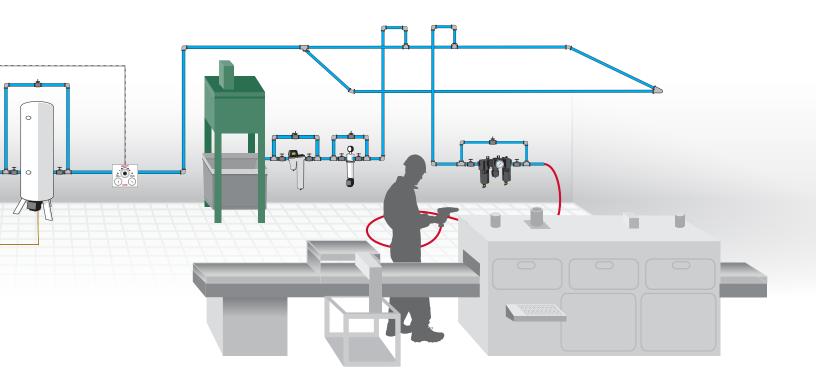
# Features & Benefits

- Manufactured from marine-grade aluminum that prevents rust and system deterioration
- Lightest product in the market
- One-tenth the weight of same diameter steel
- High level of structural strength
- Ease of installation compared to competition
- System flexibility allows for simple modifications and/or additions

- High flow rates / low pressure losses
- Smooth internal diameter of tube maintained throughout life of system
- Lowest cost of ownership available
- Enormous level of piping inventory avoids lengthy lead time
- 30 years of combined design and user experience to support customer base

PART	COMPONENT 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 (-29.6 Hg)

Maximum Pressure 15 bar (220 psi)

#### COMPATIBLE FLUIDS & GASES

Compressed Air
Vacuum
Inert Gases

#### THREADS

Male threads taper in conformity with ISO 228

Female threads in conformity with ISO 228

#### TEMPERATURES

Minimum temperature -4° F (-20° C)

Maximum temperature 176° F (+80° C)

#### FIRE RESISTANCE

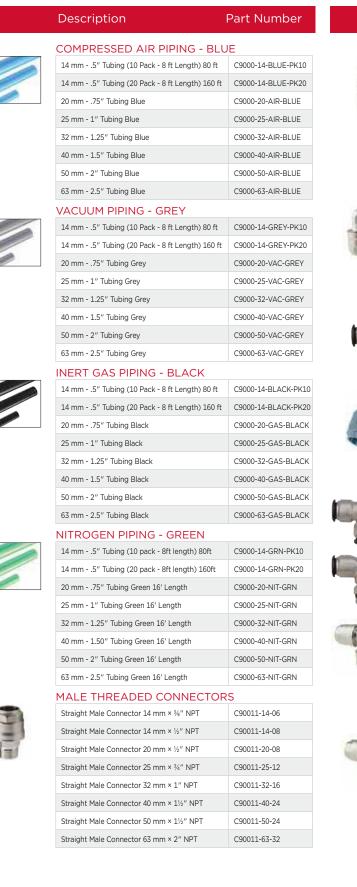
The system does not stoke or propagate any fires

### Don't Jeopardize Air Handling Efficiency

Compressed air piping is responsible for the delivery of compressed air to the point of use. Its material, age and condition impact both system reliability and air quality. Compressed air piping made from iron will rust and corrode, creating buildup on the interior and reducing the functional diameter. This buildup results in pressure drop within the system, contributing to high levels of contamination and poor air quality.



# High Quality Aluminum Piping Systems



















# STRAIGHT UNIONS Straight Union Connector 14 mm Straight Union Connector 20 mm

Description

Part Number

C90040-14

	000010 11
Straight Union Connector 20 mm	C90040-20
Straight Union Connector 25 mm	C90040-25
Straight Union Connector 32 mm	C90040-32
Straight Union Connector 40 mm	C90040-40
Straight Union Connector 50 mm	C90040-50
Straight Union Connector 63 mm	C90040-63
90° UNION ELBOWS	
Union Elbow 14 mm	C90130-14
Union Elbow 20 mm	C90130-20
Union Elbow 25 mm	C90130-25
Union Elbow 32 mm	C90130-32
Union Elbow 40 mm	C90130-40
Union Elbow 50 mm	C90130-50
Union Elbow 63 mm	C90130-63
90° SWIVEL ELBOWS	
Swivel Elbow 14 mm ¾" NPT Male	C90130-14-06
Swivel Elbow 14 mm $^{\prime\!\prime}\!\!\!/^{\prime\prime}$ NPT Male	C90130-14-08
45° UNION ELBOWS	
Union Elbow 45° 20 mm	C90140-20
Union Elbow 45° 25 mm	C90140-25
Union Elbow 45° 32 mm	C90140-32
Union Elbow 45° 40 mm	C90140-40
Union Elbow 45° 50 mm	C90140-50
Union Elbow 45° 63 mm	C90140-63
TEE UNION	
Union Tee 14 mm	C90230-14
TEE SWIVEL	
Swivel Tee 14 mm ¾" NPT Male	C90230-14-06
Swivel Tee 14 mm $^{1\!\!/}_{2}{}^{\prime\prime}$ NPT Male	C90230-14-08
EQUAL TEE	
Junction Tee 20 mm	C90230-20
Junction Tee 25 mm	C90230-25
Junction Tee 32 mm	C90230-32
Junction Tee 40 mm	C90230-40
Junction Tee 50 mm	C90230-50
Junction Tee 63 mm	C90230-63
OUTLET TEE	
Outlet Tee, 20 mm × 20 mm	C90235-20-20
Reduction Outlet Tee 25 mm × 20 mm	C90235-25-20
Reduction Outlet Tee 32 mm × 20 mm	C90235-32-20
Reduction Outlet Tee 32 mm × 25 mm	C90235-32-25
Reduction Outlet Tee 40 mm × 20 mm	C90235-40-20
Reduction Outlet Tee 40 mm × 25 mm	C90235-40-25
Reduction Outlet Tee 50 mm × 20 mm	C90235-50-20
Reduction Outlet Tee 50 mm × 25 mm	C90235-50-25
	000075 50 70

C90235-50-32

C90235-63-20

C90235-63-25

C90235-63-32

Reduction Outlet Tee 50 mm x 32 mm Reduction Outlet Tee 63 mm × 20 mm

Reduction Outlet Tee 63 mm × 25 mm

Reduction Outlet Tee 63 mm × 32 mm





### 6

#### Description

#### Part Number

C90242-32

C90242-40

C90242-50 C90242-63

C90248-25-08 C90248-32-08

C90248-40-08

C90248-50-08

C90248-63-08

C90249-25

C90249-32

C90249-40 C90249-50

C90249-63

C90260-25

C90260-32

C90260-40

#### OUTLET, SADDLE CLAMP REDUCER

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



Outlet, Saddle Clamp Reducer 63 mm to 25 mm	C90240-63-25		
Outlet, Saddle Clamp Reddcer 05 min to 25 min	030240-03-23		
CUTTING TOOL, SADDLE CLAMP			
Cutting Tool, 25 mm	C90241-25		
Cutting Tool, 32-40 mm	C90241-32-40		
Cutting Tool, 50-63 mm	C90241-50-63		
DRILL JIG, SADDLE CLAMP			

Drill Jig, Saddle Clamp 32 mm

Drill Jig, Saddle Clamp 40 mm

Drill Jig, Saddle Clamp 50 mm

Drill Jig, Saddle Clamp 63 mm

Compact Saddle 32 mm × ½"

Compact Saddle 40 mm × ½"

Compact Saddle 50 mm ×  $\frac{1}{2}''$ 

Compact Saddle 63 mm × ½"

Compact Saddle Drill Jig 25 mm Compact Saddle Drill Jig 32 mm

Compact Saddle Drill Jig 40 mm

Compact Saddle Drill Jig 50 mm Compact Saddle Drill Jig 63 mm

DRAIN COUPLING

Drain Coupling 25 mm Drain Coupling 32 mm

Drain Coupling 40 mm

COMPACT SADDLE CLAMP Compact Saddle 25 mm × ½"

COMPACT SADDLE DRILL JIG







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	-	-		
- 12	6	-		9
- 1	0	-		8



Drain Coupling 50 mm	C90260-50		
Drain Coupling 63 mm	C90260-63		
OUTLET MANIFOLD			
$\frac{1}{2}^{\prime\prime}$ in, $\frac{1}{2}^{\prime\prime}$ out, plus 4 × $\frac{1}{2}^{\prime\prime}$	C90601-MFD		
$\frac{3}{4}''$ in, $\frac{1}{2}''$ out, plus 4 × $\frac{1}{2}''$	C90602-MFD		
Outlet Manifold $\frac{3}{4}$ " inlet (4 × $\frac{1}{2}$ " NPT Female outlets)	C90602-MFD		
Outlet Manifold $\frac{3}{4}''$ inlet (2 × $\frac{1}{2}''$ NPT Female outlets)	C90602-2-MFD		
Manifold Plug ½" NPT w/Seal	C90610-08-NPT		
Manifold Gauge Kit, 300 psi liquid filled	C90601-G		
PLUGS			
O-Ring Sealed Plugs, ½" NPTM	C90610-08-NPT		

O-Ring Sealed Plugs, ½" NPTM

#### OUTLET ELBOW C/W MTG BRACKET

	OUTLET ELBOW C/W MIG BRACKET			
	Outlet Elbow / Bracket Assy 20 mm × $\frac{1}{2}$ " NPT	C90601-20-08		
	Outlet Elbow / Bracket Assy 25 mm × $\frac{1}{2}$ " NPT	C90601-25-08		
	Outlet Elbow / Bracket Assy 32 mm × $\frac{1}{2}$ " NPT	C90601-32-08		

12	1	D
-	<b>10</b>	























# Description

#### Part Number

DOUBLE OUTLET ELBOW C/W MTG BRACKET			
Double Outlet Elbow / Bracket Assy 20 mm × $\%^{\prime\prime}$ NPT	C90602-20-08		
Double Outlet Elbow / Bracket Assy 25 mm × $\%^{\prime\prime}$ NPT	C90602-25-08		
45° DOUBLE OUTLET ELBOW NPT × NPT W/ MTG BRACKET			
45° Double Outlet Elbow ${\mathscr V}'' \times {\mathscr V}'' \times {\mathscr V}''$	C90633-08-08		
45° Double Outlet Elbow ${}^{3\!\!}_{4}{}''^{\prime\prime}_{2}{}''^{\prime\prime}_{2}{}''$	C90633-12-08		
45° DOUBLE OUTLET ELBOW TUBE × NPT W/ MTG BRACKET			
45° Double Outlet Elbow 20 mm × $\ensuremath{\ensuremath{\mathscr{V}}}\xspace$	C90661-20-08		
45° Double Outlet Elbow 25 mm × $\ensuremath{\ensuremath{\mathscr{V}}}\xspace$	C90661-25-08		
45° DOUBLE OUTLET ELBOW TUBE × NPT W/ VALVE & MTG BRACKET			
45° Double Outlet Elbow w/ Ball Valve 20 mm × $\frac{1}{2}$ " × $\frac{1}{2}$ "	C90665-20-08		
45° Double Outlet Elbow w/ Ball Valve 25 mm × ${\cal V}_{2}''$ × ${\cal V}_{2}''$	C90665-25-08		
PLUG - CAP END FITTING			
Plug Cap 14 mm	C90610-14		
Plug Cap 20 mm	C90610-20		
Plug Cap 25 mm	C90610-25		
Plug Cap 32 mm	C90610-32		
Plug Cap 40 mm	C90610-40		
Plug Cap 50 mm	C90610-50		
Plug Cap 63 mm	C90610-63		

#### **REDUCER - FITTING BODY TO TUBE**

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

#### STEM ADAPTER - MALE

Stem Adapter, 20 mm × $1\!\!/_2''$ NPTM	C90626-20-08M
Stem Adapter, 20 mm × $3\!\!\!/''$ NPTM	C90626-20-12M
Stem Adapter, 25 mm × $1\!\!/_2''$ NPTM	C90626-25-08M
Stem Adapter, 25 mm × $3\!$	C90626-25-12M
Stem Adapter, 25 mm × 1" NPTM	C90626-25-16M
Stem Adapter, 32 mm × 1" NPTM	C90626-32-16M
Stem Adapter, 32 mm × 1½" NPTM	C90626-32-24M
Stem Adapter, 40 mm $\times$ 1½" NPTM	C90626-40-24M
Stem Adapter, 50 mm $\times$ 1½" NPTM	C90626-50-24M
Stem Adapter, 50 mm × 2" NPTM	C90626-50-32M
Stem Adapter, 63 mm × 2" NPTM	C90626-63-32M
Stem Adapter, 63 mm × 2½" NPTM	C90626-63-40M

#### Description Part Number STEM ADAPTER - FEMALE Stem Adapter, 20 mm × 1/2" NPTF C90626-20-08 BALL VALVES - TUBE TO TUBE Ball Valve, 14 mm Tube C90700-14 Ball Valve, 20 mm Tube C90700-20 Ball Valve, 25 mm Tube C90700-25 Ball Valve, 32 mm Tube C90700-32 Ball Valve, 40 mm Tube C90700-40





BALL VALVES - TUBE TO NPT					
	Ball Valve, 20 mm to ½"	MNPT	C90721-20-08		
1	Ball Valve, 25 mm to 3/4"	MNPT	C90721-25-12		
	STRUT BRACKET (PACK OF 10)				
	Tube mm	Inches	Part Number		
	14	.5	C90810-14-PK-10		

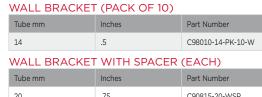
Ball Valve, 50 mm Tube Ball Valve, 63 mm Tube

20	.75	C90810-20-PK-10
25	1	C90810-25-PK-10
32	1.25	C90810-32-PK-10
40	1.5	C90810-40-PK-10
50	2	C90810-50-PK-10
63	2.5	C90810-63-PK-10

C90700-50

C90700-63

C90820-20-25-TD



20	.75	C90815-20-WSP
25	1	C90815-25-WSP
32	1.25	C90815-32-WSP
40	1.5	C90815-40-WSP
50	2	C90815-50-WSP
63	2.5	C90815-63-WSP

TEARDROP HANGING BRACKET (EACH)

Bracket, Hanging - Teardrop 20 mm, 3/8" insert



	Bracket, Hanging - Teardrop 20 mm, $3\!\!\!\!/ 3''$ insert	C90820-20-25-TD			
	Bracket, Hanging - Teardrop 25 mm, ¾" insert	C90820-20-25-TD			
	Bracket, Hanging - Teardrop 32 mm, ¾" insert	C90820-32-TD			
	Bracket, Hanging - Teardrop 40 mm, ¾" insert	C90820-40-TD			
	Bracket, Hanging - Teardrop 50 mm, ¾" insert	C90820-50-TD			
	Bracket, Hanging - Teardrop 63 mm, ¾" insert	C90820-63-TD			
	WIRE HANGING SYSTEM (PACK OF 10)				
)	20-63 mm, 15 ft. long, ¾" stud	C90832-15			
	20-63 mm, 15 ft. long, ¼" stud	C90831-15			
	CANTILEVER BRACKET				
	Cantilever Wall Bracket	C90830			
OUTLET "Y" ADAPTOR					
	Outlet Y Adaptor ½" Male c/w 2 × ½" Female NPT	C82600-08-08			



Description

**BALL VALVES - NPT** 

Ball Valve, 3%" M x 3%" F NPT

Ball Valve, ½" F × ½" F NPT

Ball Valve, 1/2" M × 1/2" F NPT

QUICK COUPLERS

Universal Socket, ¼" NPT Male

Part Number

C86310-06-06

C86300-08-08

C86310-08-08

C80191-04





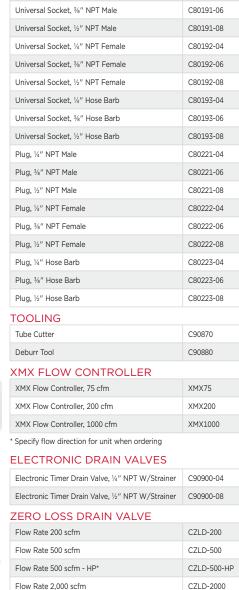












\* Non stock, special order

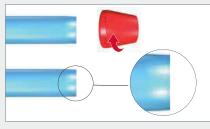
#### SAMPLES

5/111 225	
Quick-Lock Demo Kit, pipe & fittings w/case 14 mm	C90952
Quick-Lock Demo Kit, pipe & fittings w/case 20-63 mm	C90951
GARAGE PIPING KITS *	
Quick-Lock Garage Kit (1-2 Bay)	CGK-1-2
Quick-Lock Garage Kit (3-4 Bay)	CGK-3-4

CZLD-2000

\* See brochure GA-QLT-KIT for more details

# 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.



 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.

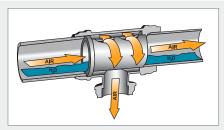


4. Use the following table to properly tighten the fittings:

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 pointof-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.

- Check that all nuts on body of fittings are securely tightened.
- Insure that all tubing is fully inserted into each fitting.
- Insure that all mounting and hanging brackets are securely fastened to a solid structure and to the tubing.
- Insure that a safety relief valve is installed and fully operational in the system to prevent over-pressurization.
- 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.
- Insure that the test area is vacated for the duration of the pressure test.
- 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.

- 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.
- If any faults are found in the system, depressurize the system, correct the faults and retest.

# Lifetime Warranty

Champion is proud to provide our Lifetime Warranty Program covering all pipe and fittings for the Quick-Lock and Big-Lock compressed air product lines. This warranty is possible due to the long history of producing high quality products, continuing our tradition of excellence and customer satisfaction.

We are 100% committed to supplying the finest products available to our customers and always doing our best to exceed their expectations. This Lifetime Warranty is a testament to that commitment!



#### QUICK-LOCK TUBING FLOW RATES

TUBE INTERN MM	AL DIAMETER IN.	CFM @ 125 PSIG	CFM @ 150 PSIG	CFM @ 175 PSIG	CFM @ 220 PSIG
I*II*I	IIN.				
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 14 mm 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		MAXIMUM PRESSURE	WEIGHT	LENGTH
ММ	IN.	BARG / PSIG	LBS / FT	FT
14	0.50	15 / 220	0.098	8
20	0.75	15 / 220	0.159	16
25	1.00	15 / 220	0.202	16
32	1.25	15 / 220	0.262	16
40	1.50	15 / 220	0.331	16
50	2.00	15 / 220	0.592	16
63	2.50	15 / 220	0.623	16

#### TECHNICAL SPECIFICATIONS OF TUBING

PROPERTIES	PROPERTY SPECIFICATIONS
FROFERIES	PROPERT SPECIFICATIONS
Extruded Aluminum	UNI 9006/1 AI 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 6063
Heat Treatment	Bonificato "T5"/ Drained "T5"
Surface Treatment	Electrostatic painting
Specific Weight	2.70 Kg/dm3
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/mm2
Coefficient of Elasticity	66000 N/mm2
Proportionality Deviation Load	165 N/mm2
Brinell Hardness	60 ÷ 70 HB
Melting Point	600°C (1112°F)
Percentage Elongation	10%

# Sales & Service Distributors Across America

# An Extensive Network

Your sales, service and technical support needs will be handled quickly and easily by our extensive network of Champion factory-trained, authorized local distributors. Maintaining and adequately servicing your compressor has never been easier.



# Champion is committed to delivering superior products built with the exceptional standards you expect.



1301 North Euclid Avenue Princeton, Illinois 61356 USA 866-276-4330 www.ChampionPneumatic.com

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🔰 Please recycle after use.



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