



Synflex® Hose and Fittings

Technical Catalog

Hydraulic, Truck &
Specialty Products

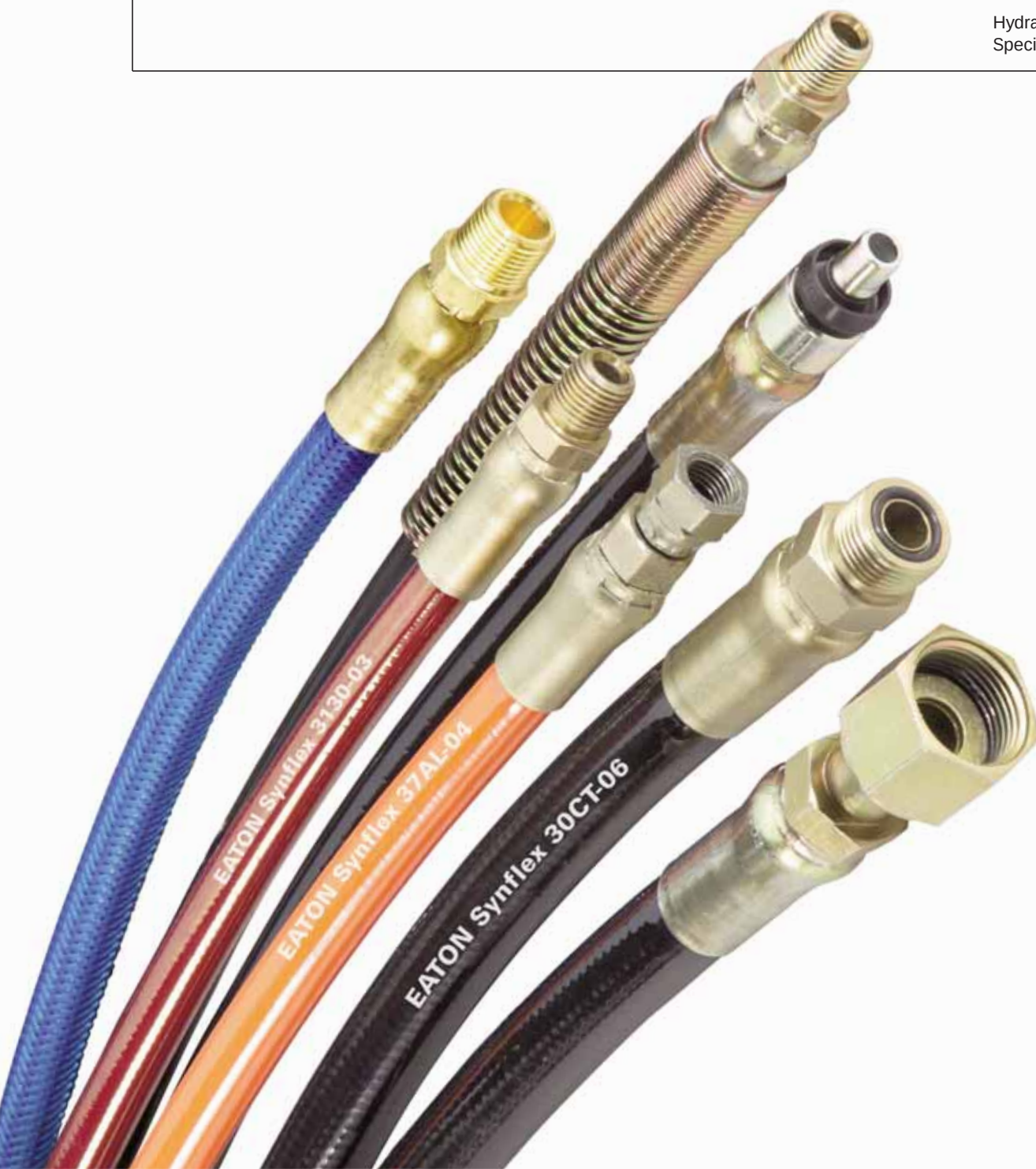


Table of Contents

Hose Selection Chart (by application/product).....	3
Hydraulic Pressure Hose Selection Chart	5
Low and Medium Pressure Hose	7-10
3R30 Low Pressure	7
3130	8
37AL Non-Conductive.....	9
3740 Non-Conductive	9
3580	10
Constant Pressure Hose	11-12
30CT	11
25CT	12
High Pressure Hose	13-16
3R80	13
3800	13
3E80 Non-Conductive ..	14
3V10	15
3VE0 Non-Conductive	16
Twin Line Hose	17
3770	17
Air, Water & Tubing	18-21
3630	18
4207	20
34PW	19
4202	21
4212/4225.....	20
Truck Hose	22-25
4245	22
3SCE.....	23
4KGEN-08	25
3270	22
4294	24
4KGEN-10	25
15CA.....	23
4297	24
Specialty Hose	26-27
3440	26
34CU.....	26
34BA	27
Hose Fitting Selection Chart.....	28
Hose Fitting End Connection Style Code Numbering System	29
Hose Fitting End Connection Style Code Numbers	30-32
Hose Fittings	33-43
Permanent Attached Hose Fittings	33-41
390C Brass Hose Fittings	42-43
Hose Assembly Equipment.....	44-45
Accessories	46-50
Technical Data.....	51-65
Hose Size & Flow Capacity	51
Selection, Installation & Maintenance of Synflex Hose and Assemblies	52-53
Chemical Resistance Data	54-55
How to Assemble Permanent Hose Fittings	56-57
How to Assemble Reusable Hose Fittings	58
How to Separate Twin Line & Multi-Line Hose	59-60
Volumetric Expansion Data	61-62
Charts Conversion Tables	63-65

Introduction

For decades, Synflex® thermoplastic hose and tubing has been replacing rubber hose or metal tubing designs. Synflex hose and tubing offers customers a number of benefits, including flexibility, durability, abrasion resistance, lighter weight materials, superior chemical resistance, variety of colors, high pressure capability and extended product performance.

Synflex Hose, Tubing, Fittings and Accessories are available through distributors and direct sales offices throughout North America, Europe and Asia. Many locations also supply custom hose assemblies for specific applications and general industrial purposes.

This catalog contains the most popular lines of Synflex hose and tubing products. If these do not fit your particular needs, or you require a custom design, please contact us. As a customer-focused organization, satisfying customer needs with new products and innovative solutions is our goal.

Hose Selection Chart

Applications/Product

PRODUCT	Agriculture and Horticulture	Air Tools	Barber/ Dental/ Salon Chairs	Carpet Cleaners	Carwash	Chemical Transfer	Cooling/ Misting/Dust Suppression	Foam Systems	Food Processing	Forestry-Delimer	Gas Transfer	General Construction	Handicap/ Wheel Chair Lift	Hospital Surgical Beds/Tables
1. Hydraulic Hose														
3R30	✓	✓	✓		✓	✓	✓				✓		✓	✓
25CT						✓					✓			
3130	✓		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
3580	✓									✓		✓		
3740										✓				
37AL										✓				
30CT	✓									✓	✓	✓		
3R80	✓					✓			✓	✓	✓	✓		
3800						✓					✓			
3E80										✓				
3V10														
3VE0										✓				
2. Fluid Transfer Tubing														
4212		✓				✓					✓			
4225		✓				✓					✓			
4202						✓								
4207	✓					✓								
3. Gas Transfer Hose														
34BA											✓			
35NG											✓			
4. Air and Water Transfer Hose														
3630	✓	✓		✓	✓						✓			
34PW									✓					
34WH									✓					
5. Specialty Hose and Tubing														
3440						✓		✓			✓			
34CU						✓		✓			✓			

LOW/MEDIUM PRESSURE

CONSTANT PRESSURE HOSE

HIGH PRESSURE

TWIN LINE HOSE

AIR, WATER & TUBING

TRUCK HOSE

SPECIALTY HOSE

HOSE FITTINGS

HOSE ASSEMBLY EQUIPMENT

ACCESSORIES

TECHNICAL DATA

Hose Selection Chart

Applications/Product

PRODUCT	General Hydraulic	Lubrication Systems	Machine Tools/ Robotics	Marine	Material Handling/ Forklifts	Nuclear	Paint Spray Systems	Pneumatic Systems	Pressure Washers	Recreational Vehicles (RVs)	Rental Construction Equipment	Rescue	Tree Trimmers	Utility, Municipalities	Water Jetter, Drain/Sewer
1. Hydraulic Hose															
3R30	✓									✓					✓
25CT	✓				✓										
3130	✓	✓	✓	✓	✓				✓	✓	✓		✓		✓
3580	✓	✓	✓	✓	✓				✓		✓		✓	✓	
3740	✓					✓					✓		✓	✓	
37AL	✓					✓					✓		✓	✓	
30CT	✓	✓	✓		✓						✓				
3R80	✓										✓	✓			
3800	✓								✓	✓	✓	✓			✓
3E80	✓											✓		✓	
3V10	✓											✓		✓	
3VE0	✓											✓		✓	
2. Fluid Transfer Tubing															
4212	✓							✓							
4225	✓							✓							
4202							✓								
4207							✓								
3. Gas Transfer Hose															
34BA				✓											
4. Air and Water Transfer Hose															
3630											✓		✓	✓	
34PW						✓									
5. Specialty Hose and Tubing															
3440															
34CU															

Hydraulic Pressure Hose Selection Chart

HOSE SERIES	SAE J517 SPECIFICATION	DASH SIZE RANGE ⁽²⁾	RECOMMENDED PRESSURE RANGE PSI	TEMPERATURE RANGE F°	TEMPERATURE RANGE C°	KEY FEATURES AND APPLICATIONS
Low and Medium Pressure Hose						
3630	—	-3 to -16	250-300	-10 to 150	-23 to 66	Pneumatic Tools, Industrial Water Supply
3R30	100R3 ¹	-3 to -8	1,000-1,750	-40 to 212	-40 to 100	Low Pressure Hydraulic Equipment
3130	100R7	-2 to -16 ³	1,000-3,000	-40 to 212	-40 to 100	General Hydraulics/Pneumatics, Best Value 100R7 Hose
3580	100R1, R7 ¹	-4 to -12	2,250-3,500	-40 to 225	-40 to 107	Wire Reinforced, Cut Resistant, Rugged, Heavy Design
3740	100R7	-3 to -16	1,000-3,000	-40 to 212	-40 to 100	General Hydraulics/Pneumatics, Non-Conductive
37AL	100R7/ANSI	-3 to -8	3,000	-65 to 212	-54 to 100	General Hydraulics, Aerial Lift Equipment, Complies with ANSI A 92.2 non-conductive
Constant Pressure Hose						
30CT	100R18	-3 to -10	3,000	-65 to 200	-54 to 94	General Hydraulics, Material Handling, Freezer Applications
25CT	100R7 ¹	-8	2,500	-65 to 200	-54 to 94	General Hydraulics, Material Handling
High Pressure Hose						
3R80	100R8	-3 to -16	2,000-5,000	-40 to 212	-40 to 100	Long Life in Impulse Cycling and Flexing, Reusable Fittings
3E80	100R8	-3 to -16	2,000-5,000	-40 to 212	-40 to 100	Non-Conductive Specification, Reusable Fittings, Aerial Equipment
3800	100R8	-2 to -8	3,500-6,000	-40 to 212	-40 to 100	Hose Performance With 100R7 Dimensions – Fitting Versatility
Very High Pressure Hose						
3V10	—	-3 to -6	8,000-10,000	-40 to 150	-40 to 66	High Pressure Performance, Hydraulic Jacks
3VE0	—	-3 to -6	8,000-10,000	-40 to 150	-40 to 66	Non-Conductive Specification, High Pressure Performance, Safety Near High Voltage Sources

(1) Meets or Exceeds Specifications in Performance

(2) Dash Size = Hose I.D. in 16ths of One Inch. Ex. -3 = 3/16 inch I.D.

(3) SAE 100R7 Does Not Apply to -2 Size

LOW/MEDIUM
PRESSURE

CONSTANT
PRESSURE HOSE

HIGH
PRESSURE

TWIN LINE
HOSE

AIR, WATER
& TUBING

TRUCK
HOSE

SPECIALTY
HOSE

HOSE
FITTINGS

HOSE ASSEMBLY
EQUIPMENT

ACCESSORIES

TECHNICAL
DATA

Hydraulic Pressure Hose Selection Chart

HOSE SERIES	HOSE COVER	REINFORCEMENT MATERIAL	CORE TUBE	BONDED LAYERS	TWIN-LINE OR MULTI-LINE
Low and Medium Pressure Hose					
3R30	Polyurethane	Synthetic Fiber	Nylon	•	•
3630	PVC	Synthetic Fiber	PVC	•	•
3130	Polyurethane	Synthetic Fiber	Nylon	•*	•
3580	Polyurethane	Steel Wire	Polyester	•	•
3740	Polyurethane	Synthetic Fiber	Nylon	•	•
37AL	Polyurethane	Synthetic Fiber	Polyester	•	•
Constant Pressure Hose					
30CT	Polyester	Synthetic Fiber	Polyester	•	•
25CT	Polyester	Synthetic Fiber	Polyester	•	•
High Pressure Hose					
3R80	Polyurethane	Synthetic Fiber	Nylon	•*	•
3E80	Polyurethane	Synthetic Fiber	Nylon	•*	•
3800	Polyurethane	Aramid	Nylon	•	•
Very High Pressure Hose					
3V10	Polyurethane	Aramid	Nylon	•	•
3VE0	Polyurethane	Aramid	Nylon	•	•

* Not All Sizes Are Bonded

Low Pressure Hose

3R30 Low Pressure Hose

Meets SAE 100R3 Performance Specifications



#													
PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB KG		AVAILABLE LENGTHS
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	feet
3R30-03003	3/16	4.8	.384	9.8	1	25	1,750	120	7,000	480	3.6	5.4	250
3R30-04003	1/4	6.4	.487	12.4	1-1/4	32	1,500	103	6,000	414	5.3	7.9	250
3R30-06003	3/8	9.5	.637	16.2	2	51	1,250	86	5,000	344	8.1	12.1	250
3R30-08003	1/2	12.7	.818	20.8	3	76	1,000	69	4,000	276	14.1	21.0	250

Features

- Low volumetric expansion
- Rugged design

Applications

- Low pressure hydraulics (hospital beds)
- Hand tools: air power tools (impact tools, nail guns, stapler guns and tire inflation)
- Lubrication systems
- High pressure pneumatic systems
- Pressure wash hose
- Cooling mist systems

Construction

- Black perforated polyurethane cover
- Spiraled synthetic fiber reinforcement (-03 thru -06, -08 is braided)
- Nylon-lined core tube

Temperature Range

± *1-°C qI / . / °C
 %*1-°C qI . - -°C @ I o
 qI .2-°C %33°@&
 with water-based or
 fire-resistant fluids

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
3R30-03	3W3	903
3R30-04	3W4	903
3R30-06	3W6	903
3R30-08	308	903

* Part No. 4540

**For stainless steel fittings availability, see hose fitting selection chart on page 28.

Medium Pressure Hose

3130 Medium Pressure Hose

Meets SAE 100R7 Specifications



#													
PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB KG		
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	feet
3130-02003*	1/8	3.2	.335	8.5	1/2	13	2,500	172	10,000	689	2.6	3.7	250
3130-03003	3/16	4.8	.427	10.8	3/4	19	3,000	207	12,000	827	4.5	6.8	250
3130-04003	1/4	6.4	.510	13.0	1-1/4	32	3,000	207	12,000	827	6.1	8.5	250
3130-04007	1/4	6.4	.510	13.0	1-1/4	32	3,000	207	12,000	827	6.1	8.5	750
3130-05003	5/16	7.9	.594	15.1	1-3/4	44	2,500	172	10,000	689	7.5	10.3	250
3130-05005	5/16	7.9	.594	15.1	1-3/4	44	2,500	172	10,000	689	7.5	10.3	500
3130-06003	3/8	9.5	.669	17.0	2	51	2,250	155	9,000	620	8.4	14.1	250
3130-06005	3/8	9.5	.669	17.0	2	51	2,250	155	9,000	620	8.4	14.1	500
3130-08001	1/2	12.7	.816	20.7	3	76	2,000	138	8,000	552	11.4	21.0	400
3130-08003	1/2	12.7	.816	20.7	3	76	2,000	138	8,000	552	11.4	21.0	250
3130-12008	3/4	19.1	1.067	27.1	5	127	1,250	86	5,000	345	17.6	28.7	200
3130-16008	1	25.4	1.340	34.0	8	203	1,000	69	4,000	276	31.1	39.3	200

* SAE 100R7 does not apply to 1/8" size. The nylon core tube is a single wall and not bonded to the reinforcement.

Features

- Long continuous lengths
- Low elongation
- Best value 100R7 hose

Applications

- General hydraulics
- Material handling
- Forklift
- High pressure gas transfer
- Chemical transfer

Construction

- Black perforated polyurethane Cover
- Spiraled or braided synthetic fiber reinforcement
- Nylon-lined core tube

Temperature Range

- -40°F to 212°F (-40°C to 100° C) or to 150°F (66°C), with water-based or fire-resistant fluids

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
3130-02	302	903
3130-03	303	903
3130-04	304	903
3130-05	305	903
3130-06	306	903
3130-08	308	903
3130-12	312	903
3130-16	316	903

* Part No. 4540

**For stainless steel fittings availability, see hose fitting selection chart on page 28.

Medium Pressure Hose

37AL Non-Conductive Medium Pressure Hose

Complies With ANSI A92.2 for Vehicle Mounted Aerial Devices

Meets SAE 100R7 Non-Conductive Requirements



#	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAX. WORKING PRESSURE ANSI A92.2		MAX. WORKING PRESSURE SAE 100R7		MINIMUM BURST PRESSURE		WEIGHT LB KG		AVAIL. LENGTHS	CONTINUOUS LENGTHS
PART NUMBER	in	mm	in	mm	in	mm	psi	bar	psi	bar	psi	bar	100ft	100m	feet	
37AL-03003	3/16	4.8	.425	10.8	3/4	19	3,000	207	3,000	207	12,000	827	4.8	7.1	250	
37AL-03005	3/16	4.8	.425	10.8	3/4	19	3,000	207	3,000	207	12,000	827	4.8	7.1	500	•
37AL-04003	1/4	6.4	.485	12.3	1-1/4	32	3,000	207	2,750	190	11,000	759	6.0	8.9	250	
37AL-04005	1/4	6.4	.485	12.3	1-1/4	32	3,000	207	2,750	190	11,000	759	6.0	8.9	500	•
37AL-05003	5/16	7.9	.580	14.7	1-3/4	44	3,000	207	2,500	172	10,000	689	7.5	11.2	250	
37AL-05005	5/16	7.9	.580	14.7	1-3/4	44	3,000	207	2,500	172	10,000	689	7.5	11.2	500	•
37AL-06003	3/8	9.5	.635	16.1	2	51	3,000	207	2,250	155	9,000	620	9.5	14.1	250	
37AL-06005	3/8	9.5	.635	16.1	2	51	3,000	207	2,250	155	9,000	620	9.5	14.1	500	•
37AL-08003	1/2	12.7	.815	20.7	3	76	3,000	207	2,250	155	9,000	620	14.3	21.3	250	
37AL-08007	1/2	12.7	.815	20.7	3	76	3,000	207	2,250	155	9,000	620	14.3	21.3	400	•

Features

- SAE J517 non-conductive hose construction
- Less than 50 micro-amperes leakage when subjected to 75,000 volts/ft for 5 minutes
- Flexible in low temperatures
- Abrasion resistant cover
- UV resistant cover
- Can use both permanently attached and reusable fittings
- Long continuous lengths

Applications

- Electric utility truck Hydraulic systems
- Mobile equipment (picker, utility vehicles)

Construction

- Orange non-perforated non-stick polyurethane cover
- Braided synthetic fiber reinforcement
- Polyester core tube

Temperature Range

- -65°F to 212°F (-54°C to 100°C) or to 140°F (60°C), with water-based or fire-resistant fluids

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
37AL-03	303	903
37AL-04	3W4	903
37AL-05	305	903
37AL-06	306	903
37AL-08	308	903

* Part No. 4540

**For stainless steel fittings availability, see hose fitting selection chart on page 28.

3740 Non-Conductive Medium Pressure Hose

1,000–3,000 psi (69–207 bar) Working Pressures

Meets SAE 100R7 Specification



#	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB KG		SWAGE DIE	PERMANENT FITTING SERIES*
PART NUMBER	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	Part No. 4540	Steel
3740-12‡	3/4	19.0	1.070	27.2	5	127	1,250	86	5,000	345	19.3	28.7	312	903
3740-16‡	1	25.4	1.342	34.1	8	203	1,000	69	4,000	276	26.4	39.3	316	903

‡ Run-to-order hose. Contact your Eaton representative for details.

Features

- SAE J517 non-conductive hose construction. Less than 50 micro-amperes leakage when subjected to 75,000 volts/ft for 5 minutes
- Very flexible through temperature range

Applications

- General hydraulic systems that may contact high voltage sources
- Aerial equipment
- Mobile hydraulics
- Rescue apparatus and tools

Construction

- Non-conductive marking and color code
- Orange polyurethane non-perforated cover
- Braided synthetic fiber reinforcement
- Nylon-lined core tube

Temperature Range

- -40°F to 212°F (-40°C to 100°C) or to 140°F (60°C), with water-based or fire-resistant fluids

Medium Pressure Hose

3580 Medium Pressure Hose

Meets or exceeds SAE 100 R1 & R7 Performance Specifications
Steel Wire Reinforcement



#													
PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT		AVAILABLE LENGTH
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	feet
3580-04004	1/4	6.4	.485	12.3	1-3/4	44	3,500	241	14,000	965	10.3	15.3	500
3580-06004	3/8	9.5	.645	16.4	2-1/4	57	3,250	224	13,000	896	18.1	26.9	500
3580-08001	1/2	12.7	.765	19.4	3-1/4	83	3,000	207	12,000	828	20.7	30.8	400
3580-12006	3/4	19.1	1.065	27.1	6	152	2,250	155	9,000	620	33.6	50.0	200

Features

- Single permanent fitting series fits all sizes
- SAE 100R7 dimensions
- Cut resistant – heavy duty design
- Crush resistant

Applications

- Lubrication systems
- Mobile general hydraulics
- Agriculture equipment

Construction

- Black polyurethane non-perforated cover
- Braided bronze coated steel wire reinforcement
- Polyester core tube

Temperature Range

- -40°F to 225° F (-40°C to 107°C) or to 140°F (60°C), with water-based or fire-resistant fluids

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
3580-04	3W4	903
3580-06	306	903
3580-08	308	903
3580-12	312	903

* Part No. 4540
 **For stainless steel fittings availability, see hose fitting selection chart on page 28.

Constant Pressure Hose

30CT Constant Pressure Hose

Meets or Exceeds SAE 100R18 Specifications



#	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT		AVAILABLE LENGTHS
PART NUMBER	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	feet
30CT-03003	3/16	4.8	.420	10.7	1	25.4	3,000	207	12,000	828	5.3	7.9	250
30CT-04003	1/4	6.4	.478	12.1	1-1/4	31.8	3,000	207	12,000	828	6.0	8.9	250
30CT-05003	5/16	7.9	.610	15.5	1-1/2	38.1	3,000	207	12,000	828	9.9	14.7	250
30CT-06003	3/8	9.5	.660	16.8	2	50.8	3,000	207	12,000	828	12.2	18.2	250
30CT-08003	1/2	12.7	.850	21.5	3-1/2	88.9	3,000	207	12,000	828	16.6	24.6	250
30CT-10003	5/8	16.0	1.062	27.0	4	101.6	3,000	207	12,000	828	27.8	41.2	250

Features

- Highly flexible, even in cold temperatures
- Small O.D.
- Lightweight, yet rugged construction

Applications

- Forklift
- Construction
- General hydraulics
- Chemical and gas transfer
- Agricultural equipment
- Material handling
- Freezer applications
- Machines tools and robotics
- Lubrication equipment
- Portable hydraulic tools

Construction

- Black non-stick perforated polymeric cover
- Braided synthetic fiber reinforcement
- Polymeric core tube

Temperature Range

- -65°F to 200°F (-54°C to 94°C) or -65°F to 150°F (-54°C to 66°C), with water-based or fire-resistant fluids

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
30CT-03	303	903
30CT-04	3W4	903
30CT-05	305	903
30CT-06	306	903
30CT-08	A08	903
30CT-10	N10	90N

* Part No. 4540

**For stainless steel fittings availability, see hose fitting selection chart on page 28.

Constant Pressure Hose

25CT Constant Pressure Hose

Meets or Exceeds SAE 100R7 Specification



#	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT		AVAILABLE LENGTHS
PART NUMBER	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft LB	100m KG	feet
25CT-08003	1/2	12.7	.830	21.1	3	76.2	2,500	172	10,000	689	14.3	21.3	250

Features

- Highly flexible, even in cold temperatures
- Small O.D.
- Lightweight, yet rugged construction

Applications

- Forklift
- Construction
- General hydraulics
- Chemical and gas transfer
- Agricultural equipment
- Material handling
- Freezer applications
- Machine tools and robotics
- Lubrication equipment
- Portable hydraulic tools

Construction

- Black non-stick perforated polymeric cover
- Braided synthetic fiber reinforcement
- Polymeric core tube

Temperature Range

- -65°F to 200°F (-54°C to 94°C), with water-based or fire-resistant fluids

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
25CT-08	308	903

* Part No. 4540
 **For stainless steel fittings availability, see hose fitting selection chart on page 28.

High Pressure Hose

3R80 High Pressure Hose

Meets SAE 100R8 Specifications



#	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT		AVAILABLE LENGTHS
PART NUMBER	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	feet
3R80-03003	3/16	4.8	.515	13.1	1-1/2	38	5,000	345	20,000	1,379	7.7	11.5	250
3R80-04003	1/4	6.4	.625	15.9	2	51	5,000	345	20,000	1,379	11.8	17.6	250
3R80-06003	3/8	9.5	.765	19.4	2-1/2	64	4,000	276	16,000	1,103	14.8	22.0	250
3R80-08003	1/2	12.7	.892	22.7	4	102	3,500	241	14,000	965	19.0	28.3	250
3R80-12008	3/4	19.1	1.138	28.9	6-1/2	165	2,250	155	9,000	620	25.6	38.1	200
3R80-16008	1	25.4	1.468	37.3	10	254	2,000	138	8,000	552	38.5	57.3	200

Features

- Long life in impulse cycling and flexing
- Designed for permanent or reusable fittings

Applications

- General hydraulic systems
- Hydraulic tools
- Mobile equipment
- High pressure pneumatic systems
- High pressure chemical transfer

Construction

- Black perforated polyurethane cover
- Braided synthetic fiber reinforcement
- Nylon core tube

Temperature Range

- -40°F to 212° F (-40°C to 100°C) or to 150°F (66°C), with water-based or fire-resistant fluids

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
3R80-03	H03	90H/J
3R80-04	H04	90H/J
3R80-06	H06	90H/J
3R80-08	H08	90H/J
3R80-12	H12	90H/J
3R80-16	H16	90H/J

* Part No. 4540

**For stainless steel fittings availability, see hose fitting selection chart on page 28.

3800 High Pressure Hose

Meets SAE 100R8 Specification



#	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT		AVAILABLE LENGTHS
PART NUMBER	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	feet
3800-02003	1/8	3.2	.335	8.5	13/16	20	6,000	552	24,000	1,655	3.2	4.8	250
3800-03003	3/16	4.8	.432	11.0	1-1/2	38	5,000	460	20,000	1,379	5.6	8.3	250
3800-04003	1/4	6.4	.532	13.5	2	51	5,000	460	20,000	1,379	7.9	11.8	250
3800-06003	3/8	9.5	.667	16.9	2-1/2	64	4,000	368	16,000	1,103	10.6	15.8	250
3800-08003	1/2	12.7	.837	21.3	4	102	3,500	322	14,000	965	14.6	21.7	250

Features

- 100R8 hose performance with 100R7 hose dimensions – for fitting versatility
- Low volumetric expansion

Applications

- General hydraulics
- High pressure gas and chemical transfer
- Machine tools
- Mobile equipment
- Agricultural equipment
- Marine steering

Construction

- Black perforated polyurethane cover
- Braided high tensile aramid fiber reinforcement
- Nylon core tube

Temperature Range

- -40°F to 212° F (-40°C to 100°C) or to 150°F (66°C), with water-based or fire-resistant fluids

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
3800-02	302	98E
3800-03	303	903
3800-04	304	903
3800-06	306	903
3800-08	308	903

* Part No. 4540

**For stainless steel fittings availability, see hose fitting selection chart on page 28.

High Pressure Hose

3E80 Non-Conductive High Pressure Hose
Meets SAE 100R8 Specification



#													AVAILABLE LENGTHS
	PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB	
	in	mn	in	mm	in	mm	psi	bar	psi	bar	100 ft	100 m	feet
3E80-03‡	3/16	4.8	.515	13.1	1-1/2	38	5,000	345	20,000	1,379	7.7	11.5	-
3E80-04003	1/4	6.4	.625	15.9	2	51	5,000	345	20,000	1,379	11.8	17.6	250
3E80-06003	3/8	9.5	.765	19.4	2-1/2	64	4,000	276	16,000	1,103	14.8	22.0	250
3E80-08003	1/2	12.7	.892	22.7	4	102	3,500	241	14,000	965	19.0	28.3	250
3E80-12‡	3/4	19.1	1.138	28.9	6-1/2	165	2,250	155	9,000	620	25.6	38.1	-
3E80-16‡	1	25.4	1.468	37.3	10	254	2,000	138	8,000	552	38.5	57.3	-

‡ Run-to-order hose. Contact your Eaton representative for details.

Features

- SAE J517 non-conductive hose construction. Less than 50 micro-amperes leakage when subjected to 75,000 volts/ft for 5 minutes
- Long life for impulse cycling and flexing
- UV resistant cover
- Designed for permanent and reusable fittings

Applications

- General hydraulic systems that may contact high voltage sources
- Aerial equipment
- Mobile machinery
- Rescue tools

Construction

- Non-conductive marking and color code
- Orange polyurethane non-perforated cover
- Braided synthetic fiber reinforcement
- Nylon core tube

Temperature Range

- -40°F to 212°F (-40°C to 100°C) or to 150°F (66°C), with water-based or fire-resistant fluids

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
3E80-03	H03	90H
3E80-04	H04	90H
3E80-06	H06	90H
3E80-08	H08	90H
3E80-12	H12	90H
3E80-16	H16	90H

* Part No. 4540

**For stainless steel fittings availability, see hose fitting selection chart on page 28.

Very High Pressure Hose

3V10 Very High Pressure Hose



#	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT		AVAILABLE LENGTHS
PART NUMBER	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft LB	100m KG	feet
3V10-03003	3/16	4.8	.520	13.2	1-1/2	38	10,000	919	40,000	2,758	8.1	12.1	250
3V10-04003	1/4	6.4	.595	15.1	2-1/2	64	10,000	919	40,000	2,758	10.6	15.8	250
3V10-06003	3/8	9.5	.780	19.8	3	76	8,000	735	32,000	2,205	16.4	24.4	250

Synflex 3V10 hose is available only as completed assemblies through the factory or Eaton Synflex authorized assemblers.

Features

- Compact size
- Low elongation
- Designed for permanent high pressure fittings with hose guards
- Lightweight

Applications

- High pressure hydraulic tools
- Rescue equipment and tools
- High pressure test equipment

Construction

- Black perforated polyurethane cover
- Spiraled high tensile aramid fiber reinforcement
- Nylon-lined core tube

Temperature Range

- -40°F to 150° F (-40°C to 66°C)

3V10 Hose Assembly

Construction

- 3V10 Hose
- 390V Permanent Steel Fitting
- 45J0 Hose Guard
- Warning Tag



LOW/MEDIUM PRESSURE

CONSTANT PRESSURE HOSE

HIGH PRESSURE

TWIN LINE HOSE

AIR, WATER & TUBING

TRUCK HOSE

SPECIALTY HOSE

HOSE FITTINGS

HOSE ASSEMBLY EQUIPMENT

ACCESSORIES

TECHNICAL DATA

Very High Pressure Hose

3VE0 Non-Conductive Very High Pressure Hose



#													
PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB	KG	AVAILABLE LENGTH
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	feet
3VE0-03003	3/16	4.8	.520	13.2	1-1/2	38	10,000	919	40,000	2,758	8.1	12.1	250
3VE0-04003	1/4	6.4	.595	15.1	2-1/2	64	10,000	919	40,000	2,758	10.6	15.8	250
3VE0-06003	3/8	9.5	.780	19.8	3	76	8,000	735	32,000	2,205	16.4	24.4	250

Synflex 3VE0 Hose is available only as completed assemblies through the factory or Eaton Synflex authorized assemblers.

Features

- SAE J517 non-conductive hose construction. Less than 50 micro-amperes leakage when subjected to 75,000 volts/ft for 5 minutes
- Compact size
- Low elongation
- UV resistant cover
- Designed for permanent high pressure fittings with hose guards

Applications

- General hydraulic systems that may contact high voltage sources
- Rescue equipment and tools
- Mobile machinery
- Aerial equipment

Construction

- Non-conductive marking and color code
- Orange polyurethane non-perforated cover
- Spiraled high tensile aramid fiber reinforcement
- Nylon-lined core tube

Temperature Range

- -40°F to 150°F (-40°C to 66°C)

3VE0 Hose Assembly

- Construction
- 3VE0 Hose
 - 390V Permanent Steel Fitting
 - 45J0 Hose Guard
 - Warning Tag



Twin Line Hose

3770 Twin-Line: 30CT Constant Pressure Meets or Exceeds SAE 100R18 Specifications



PART NUMBER	NUMBER OF HOSE	NOMINAL I.D.	SYNFLUX HOSE SERIES	AVAILABLE LENGTHS
3770-20C33	2	1/4"	30CT-04	250
3770-20C43	2	5/16"	30CT-05	250
3770-20C53	2	3/8"	30CT-06	250
3770-20C63	2	1/2"	30CT-08	250

See 30CT Series Hose on page 11 for specification details.

3770 Twin-Line: 3130 Medium Pressure Hose Meets or Exceeds SAE 100R7 Specifications



PART NUMBER	NUMBER OF HOSE	NOMINAL I.D.	SYNFLUX HOSE SERIES	AVAILABLE LENGTHS
3770-21333	2	1/4"	3130-04	250
3770-21343	2	5/16"	3130-05	250
3770-21353	2	3/8"	3130-06	250
3770-21363	2	1/2"	3130-08	250

See 3130 Series Hose on page 8 for specification details.

3770 Twin-Line: 37AL Non-Conductive Medium Pressure Hose

Complies with ANSI A92.2 for Vehicle-Mounted
Aerial Devices
Meets or Exceeds SAE 100R18 Specifications



PART NUMBER	NUMBER OF HOSE	NOMINAL I.D.	SYNFLUX HOSE SERIES	AVAILABLE LENGTHS
3770-27A33	2	1/4"	37AL-04	250
3770-27A53	2	3/8"	37AL-06	250
3770-27A63	2	1/2"	37AL-08	250

See 37AL Series Hose on page 9 for specification details.

Twin-Line and Multi-Line Hose Separating Tool and instructions are located on pages 49 and 59-60.

LOW/MEDIUM
PRESSURE

CONSTANT
PRESSURE HOSE

HIGH
PRESSURE

TWIN LINE
HOSE

AIR, WATER
& TUBING

TRUCK
HOSE

SPECIALTY
HOSE

HOSE
FITTINGS

HOSE ASSEMBLY
EQUIPMENT

ACCESSORIES

TECHNICAL
DATA

Air and Water Hose

3630 General Purpose Air and Water Hose



#														
PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAX WORKING PRESSURE @70°F (21°C)		MAX WORKING PRESSURE @150°F (66°C)		WEIGHT LB KG		COLOR	AVAILABLE LENGTHS
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m		feet
3630-03005	3/16	4.8	.397	10.1	7/16	11	300	20	250	17	4.5	6.7	Gray	500
3630-04005	1/4	6.4	.488	12.4	5/8	16	300	20	250	17	6.3	9.4	Gray	500
3630-04015	1/4	6.4	.488	12.4	5/8	16	300	20	250	17	6.3	9.4	Red	500
3630-04035	1/4	6.4	.488	12.4	5/8	16	300	20	250	17	6.3	9.4	Yellow	500
3630-04055	1/4	6.4	.488	12.4	5/8	16	300	20	250	17	6.3	9.4	Blue	500
3630-04075	1/4	6.4	.488	12.4	5/8	16	300	20	250	17	6.3	9.4	Black	500
3630-06005	3/8	9.5	.637	16.2	7/8	22	300	20	250	17	9.7	14.4	Gray	500
3630-06015	3/8	9.5	.637	16.2	7/8	22	300	20	250	17	9.7	14.4	Red	500
3630-06035	3/8	9.5	.637	16.2	7/8	22	300	20	250	17	9.7	14.4	Yellow	500
3630-06055	3/8	9.5	.637	16.2	7/8	22	300	20	250	17	9.7	14.4	Blue	500
3630-08‡	1/2	12.7	.792	20.1	1-1/4	32	300	20	250	17	13.6	20.2	-	-
3630-12‡	3/4	19.1	1.095	27.8	2-1/2	64	300	20	250	17	22.9	34.1	-	-
3630-16‡	1	25.4	1.391	35.3	3-1/2	89	250	17	250	17	31.4	46.7	-	-

‡ Run-to-order hose. Contact your Eaton representative for details.

HOSE I.D.	PERMANENT STEEL	
in	Fitting Series	Swage Die
3/16	903	4540-303
1/4	903	4540-304
5/16	903	4540-305
3/8	903	4540-306
1/2	903	4540-308
3/4	903	4540-312
1	90H-16	4540-B16

BRASS FITTINGS			
Fitting Series**	Brass Ferrules	Swage Die	Crimp Die
390C	3981-30220	4540-00001	4548-03750
390C	3981-30320	4540-00002	4548-05000
—	—	—	—
390C	3981-19120	4540-00003	4548-06000
390C	3981-30420	—	4548-07500
390C	3981-30520	—	***
—	—	—	—

** For brass fitting availability, see hose fitting selection chart on pages 42-43.

*** Crimp specification for -12, 3/4" I.D. hose: use a power crimper with a flat crimp die that will have a minimum gap between dies when crimped to 1.005 + .010.

Features

- Standard bold colors: gray, red, blue, yellow or black
- Available lengths are continuous
- Excellent abrasion and impact resistance
- Lightweight
- 4:1 Burst to working pressure safety factor
- Long life over rubber hose

Applications

- Air power tools (impact tools, nail guns, stapler guns, tire inflation)
- Pneumatic motion control
- Industrial water supply line

Construction

- Perforated PVC cover
- Spiralled synthetic fiber reinforcement
- PVC core tube

Temperature Range

- -10°F to 150°F (-23°C to 66°C) or to 130°F (54°C), with 390C brass fittings

34PW Pure Water Hose



# PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB KG		AVAILABLE LENGTH
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100 ft	100 m	feet
34PW-04003	1/4	6.4	.520	13.2	1-1/4	32	2,750	190	11,000	758	6.4	9.6	250
34PW-06003	3/8	9.5	.655	16.6	2	51	2,250	155	9,000	620	9.0	13.4	250
34PW-08003	1/2	12.7	.812	20.6	3	76	2,000	138	8,000	552	16.2	24.4	250
34PW-12003	3/4	19.0	1.140	29.0	5	127	1,500	103	6,000	414	24.8	36.9	250
34PW-16003	1	25.4	1.455	37.0	8	203	1,500	103	6,000	414	37.3	55.6	250

Note: Always use accepted cleaning practices to clean finished hose assembly before use.

Features

- Made with NSF, FDA approved materials
- Core tube is free of plasticizers
- Prevents moisture transmission, extraction of contaminants
- Approved by U.S. Navy for pure water applications (MIL-STD-767A Ships)
- Long lengths available

Applications

- Pure water transfer
- Deionized water
- Distilled water
- Potable water
- Food products

Construction

- Non-perforated blue polyurethane cover
- Synthetic fiber reinforcement
- Polyolefin core tube

Temperature Range

- -10°F to 150°F (-23°C to 66°C)

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
34PW-04	304	90A
34PW-06	306	90A
34PW-08	308	90A
34PW-12	H12	90L
34PW-06	B1600-001	90L

* Part No. 4540

**For stainless steel fittings availability, see hose fitting selection chart on page 28.

Tubing

4212/4225 N2
Nylon Tubing



#				NOMINAL WALL THICKNESS										AVAILABLE LENGTHS
PART NUMBER		NOMINAL O.D.				NOMINAL I.D.		MINIMUM BEND RADIUS		MINIMUM BURST PRESSURE @75°F (23.9°C)		LB	KG	
black	natural	in	mm	in	mm	in	mm	in	mm	psi	bar	100ft	100m	feet
4212-21603	4225-21603	1/8	3.2	.016	.41	.093	2.4	1/2	12.7	1,000	69	0.25	0.37	1000
4212-23103	4225-23103	1/8	3.2	.031	.79	.063	1.6	1/4	6.4	2,000	138	0.41	0.61	1000
4212-32503	4225-32503	3/16	4.8	.025	.63	.137	3.5	5/8	16.0	1,000	69	0.57	0.85	1000
4212-34603	4224-34603	3/16	4.8	.046	1.20	.095	2.4	7/16	11.0	2,000	138	0.92	1.37	1000
4212-43503	4225-43503	1/4	6.4	.035	.89	.180	4.6	7/8	22.0	1,000	69	1.06	1.58	750
4212-44003	4225-44003	1/4	6.4	.040	1.00	.170	4.3	13/16	10.3	1,135	78	1.19	1.79	750
4212-46203	4225-46203	1/4	6.4	.062	1.60	.126	3.2	1/2	12.7	2,000	138	1.65	2.46	750
4212-54003	4225-54003	5/16	7.9	.040	1.00	.232	5.9	1-1/8	28.0	1,000	69	1.54	2.29	750
4212-65003	4225-65003	3/8	9.5	.050	1.30	.275	7.0	1-1/8	28.0	1,000	69	2.30	3.42	750
4212-69303	4225-69303	3/8	9.5	.093	2.40	.189	4.8	3/4	19.0	2,000	138	3.71	5.52	750
4212-81243	4225-81243	1/2	12.7	.124	3.10	.252	6.4	1	25.4	2,000	138	6.59	9.81	500
4212-86203	4225-86203	1/2	12.7	.062	1.60	.376	9.5	1-1/4	32.0	1,000	69	3.84	5.71	500

Features

- Premium quality flexible tubing
- High dimensional stability
- Low moisture absorption
- Chemicals resistant
- UV, ozone resistant
- Lightweight

Applications

- Low-pressure hydraulic
- Chemical transfer service
- Pneumatic systems

Construction

- Extruded from highest Quality heat and light stabilized nylon 11 resin

Temperature Range

- 40°F to 200°F (-40°C to 93°C)

Packaging

- Available lengths consist of 250' continuous reels (example: 4212-21603 consists of four 250' reels which equates to 1000'.

4207 Weed Spray Tubing



#													AVAILABLE LENGTH
	PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		WALL THICKNESS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB	
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100 ft	100 m	feet
4207-12754	3/4	19.1	.525	13.3	.075	1.9	325	22	1300	90	3.3	4.9	500'
4207-16754	1	25.4	.650	16.5	.075	1.9	175	12	700	48	6.5	9.7	500'

Note: Always use accepted cleaning practices to clean finished hose assembly before use.

Features

- Offers resistance to most weed spray products
- Can be used for paints and most solvents at pressures up to 100 psi

Applications

- Weed spray control
- Horticultural spray
- Paints & solvents (100psi)

Construction

- Smooth/seamless Nylon 11

Temperature Range

- ± * / - q l (.2 - ºC
 %* / 6 q l (33 ºF @ 100 psi)

Tubing

LOW/MEDIUM
PRESSURE

CONSTANT
PRESSURE HOSE

HIGH
PRESSURE

TWIN LINE
HOSE

AIR, WATER
& TUBING

TRUCK
HOSE

SPECIALTY
HOSE

HOSE
FITTINGS

HOSE ASSEMBLY
EQUIPMENT

ACCESSORIES

TECHNICAL
DATA

4202 Paint Spray Tubing



#	NOMINAL I.D.		NOMINAL O.D.		NOMINAL WALL THICKNESS		MINIMUM BEND RADIUS		*WORKING PRESSURE @75°F (23.9°C)		MIN. BURST PRESSURE @75°F (23.9°C)		WEIGHT		AVAILABLE LENGTH
PART NUMBER	in	mm	in	mm	in	mm	in	mm	psi	bar	psi	bar	100 ft	100 m	feet
4202-04504	1/8	3.2	.275	7.0	.050	1.3	1.50	38.1	475	32.8	2,000	137.9	1.23	1.8	500
4202-08504	1/4	6.4	.350	8.9	.050	1.3	2.50	63.5	275	19.0	1,100	75.9	2.15	3.2	500
4202-12624	3/8	9.5	.499	12.7	.062	1.6	3.00	76.2	200	13.8	900	62.1	3.86	5.7	500

* Recommended Working Pressure

Note: Always use accepted cleaning practices to clean finished hose assembly before use.

Features

- Translucent design for easy inspection of paint flow
- Flexible and lightweight
- Excellent resistance to paint and cleaning solvents
- Available lengths are continuous

Applications

- Low pressure air-operated paint spray systems

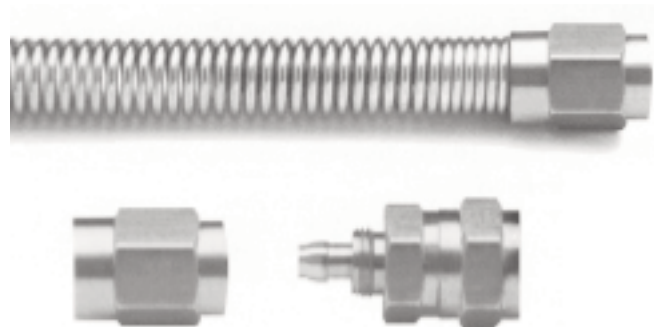
Construction

- Nylon single wall design
- Non-staining, non-swelling core tube

Temperature Range

- -40°F to 150°F (-40°C to 55°C)

4401 Paint Spray Tubing Fittings



Features

- Corrosion resistant plated brass and aluminium fittings
- Contoured nut eliminates need for ferrule; helps eliminate leaks
- With or without spring guard to prevent kinking
- Easy to assemble, completely reusable

TUBING	NOMINAL I.D.	FITTING DESCRIPTION	PART NUMBER
4202-0450	1/8"	1/8 NPT Male	4401-4440
		1/4 NPSM	4401-5480
4202-0850	1/4"	1/8 Male Pipe	4401-4840
		Special 1/8 Male Pipe w/Spring Guard	4401-6840‡
		1/4 NPSM	4401-5880
		Special 1/4 NPSM w/Spring Guard	4401-7880
		9/16 x 20 Straight Mechanical	4401-5818‡
		Special 9/16 x 20 w/Spring Guard	4401-7818‡
4202-1262	3/8"	3/8NPSM	4401-5812
		Special 3/8 NPSM w/Spring Guard	4401-7812
		9/16 x 20 Straight Mechanical	4401-51218‡
		3/8 NPSM	4401-51212

‡ Run-to-order hose. Contact your Eaton representative for details.

LOW/MEDIUM PRESSURE
CONSTANT PRESSURE HOSE
HIGH PRESSURE
TWIN LINE HOSE
AIR, WATER & TUBING
TRUCK HOSE
SPECIALTY HOSE
HOSE FITTINGS
HOSE ASSEMBLY EQUIPMENT
ACCESSORIES
TECHNICAL DATA

Truck Hose

Eclipse Air Brake Tubing

Meets SAE J844, J1131, J2494-3 and DOT-FMVSS 106

Synflex Eclipse Type A Air Brake Tubing

# PART NUMBER	 NOMINAL O.D.		 NOMINAL I.D.		 MINIMUM BEND RADIUS		NOMINAL WALL THICKNESS		 MINIMUM BURST PRESSURE		 WEIGHT KG LB	
	mm	in	mm	in	mm	in	mm	in	kpa	psi	100 m	100 ft
4245-02	3.18	1/8	2.01	.079	6.35	1/4	0.58	.023	6,900	1,000	.49	.33
4245-02	3.96	5/32	2.34	.092	12.70	1/2	0.79	.031	8,300	1,200	.83	.56
4245-03	4.77	3/16	2.97	.117	19.05	3/4	0.89	.035	8,300	1,200	1.06	.71
4245-04	6.35	1/4	4.32	.170	25.40	1	1.02	.040	8,300	1,200	1.77	1.19
4245-05	7.95	5/16	5.89	.232	28.58	1-1/8	1.02	.040	6,900	1,000	2.29	1.54



Synflex Eclipse Type B Air Brake Tubing

# PART NUMBER	 NOMINAL O.D.		 NOMINAL I.D.		 MINIMUM BEND RADIUS		NOMINAL WALL THICKNESS		 MINIMUM BURST PRESSURE		 WEIGHT KG LB	
	mm	in	mm	in	mm	in	mm	in	kpa	psi	100 m	100 ft
3270-06	9.53	3/8	6.38	.251	38.10	1.5	1.57	.062	9,700	1,400	4.2	2.8
3270-08	12.70	1/2	9.55	.376	50.80	2.0	1.57	.062	6,600	950	5.8	3.8
3270-10	15.88	5/8	11.20	.441	63.50	2.5	2.34	.092	6,200	900	10.4	7.0
3270-12	19.05	3/4	14.38	.566	76.20	3.0	2.34	.092	5,500	800	12.8	8.6

Features

- Superior abrasion resistance
- East of cutting
- Enhanced flexibility and extension
- Flow performance

Applications

- Truck air brake systems
- Trailer air brake systems
- Auxiliary air systems
- Formed tubes
- Formed and straight air brake harness assemblies

Construction

- Distinctive patented construction (Pat. No. 6,670,004)
- 100% polyamide construction with polyester yarn reinforcement
- UV stabilized

- Thermoformable
- Available in standard and custom colors
- Available in all standard sizes

Temperature Range

- -65°F to 200°F (-54°C to 93°C).

ECLIPSE ABT PART #	O.D.	COLOR	MASTER PACK QUANTITIES	MASTER PACK CONFIGURATION
4245-02207	1/8"	black	12,000 ft	6 reels of 2000 ft
4245-02227	1/8"	red	12,000 ft	6 reels of 2000 ft
4245-02257	1/8"	green	12,000 ft	6 reels of 2000 ft
4245-02267	1/8"	blue	12,000 ft	6 reels of 2000 ft
4245-02506	5/32"	black	6,000 ft	6 reels of 1000 ft
4245-02526	5/32"	red	6,000 ft	6 reels of 1000 ft
4245-02546	5/32"	yellow	6,000 ft	6 reels of 1000 ft
4245-02556	5/32"	green	6,000 ft	6 reels of 1000 ft
4245-02566	5/32"	blue	6,000 ft	6 reels of 1000 ft
4245-03306	3/16"	black	6,000 ft	6 reels of 1000 ft
4245-03326	3/16"	red	6,000 ft	6 reels of 1000 ft
4245-03356	3/16"	green	6,000 ft	6 reels of 1000 ft
4245-04106	1/4"	black	6,000 ft	6 reels of 1000 ft
4245-04126	1/4"	red	6,000 ft	6 reels of 1000 ft
4245-04136	1/4"	orange	6,000 ft	6 reels of 1000 ft
4245-04146	1/4"	yellow	6,000 ft	6 reels of 1000 ft
4245-04156	1/4"	green	6,000 ft	6 reels of 1000 ft
4245-04166	1/4"	blue	6,000 ft	6 reels of 1000 ft
4245-05204	5/16"	black	3,000 ft	6 reels of 500 ft
4245-05224	5/16"	red	3,000 ft	6 reels of 500 ft
4245-05244	5/16"	yellow	3,000 ft	6 reels of 500 ft
4245-05254	5/16"	green	3,000 ft	6 reels of 500 ft
4245-05264	5/16"	blue	3,000 ft	6 reels of 500 ft

ECLIPSE ABT PART #	O.D.	COLOR	MASTER PACK QUANTITIES	MASTER PACK CONFIGURATION
3270-06104	3/8"	black	3,000 ft	6 reels of 500 ft
3270-06124	3/8"	red	3,000 ft	6 reels of 500 ft
3270-06134	3/8"	orange	3,000 ft	6 reels of 500 ft
3270-06144	3/8"	yellow	3,000 ft	6 reels of 500 ft
3270-06154	3/8"	green	3,000 ft	6 reels of 500 ft
3270-06164	3/8"	blue	3,000 ft	6 reels of 500 ft
3270-08104	1/2"	black	1,500 ft	3 reels of 500 ft
3270-08124	1/2"	red	1,500 ft	3 reels of 500 ft
3270-08134	1/2"	orange	1,500 ft	3 reels of 500 ft
3270-08144	1/2"	yellow	1,500 ft	3 reels of 500 ft
3270-08154	1/2"	green	1,500 ft	3 reels of 500 ft
3270-08164	1/2"	blue	1,500 ft	3 reels of 500 ft
3270-10103	5/8"	black	750 ft	3 reels of 250 ft
3270-10123	5/8"	red	750 ft	3 reels of 250 ft
3270-10133	5/8"	orange	750 ft	3 reels of 250 ft
3270-10143	5/8"	yellow	750 ft	3 reels of 250 ft
3270-10153	5/8"	green	750 ft	3 reels of 250 ft
3270-10163	5/8"	blue	750 ft	3 reels of 250 ft
3270-12103	3/4"	black	750 ft	3 reels of 250 ft
3270-12123	3/4"	red	750 ft	3 reels of 250 ft
3270-12133	3/4"	orange	750 ft	3 reels of 250 ft
3270-12153	3/4"	green	750 ft	3 reels of 250 ft
3270-12163	3/4"	blue	750 ft	3 reels of 250 ft

Coil Air Products

Meets SAE J844, Type 3B and
DOT-FMVSS 106 (49 FR571.106)

Synflex Eclipse Standard Coils

# PART NUMBER	VALVE PIGTAIL LENGTH		MALE ENDS VALVE		MALE ENDS GLADHAND		WORKING LENGTH	
	mm	in	mm	in	mm	in	m	ft
15CA12-12	304.80	12"	12.70	1/2"	12.70	1/2"	4.572	15
15CA48-12	1,219.20	48"	12.70	1/2"	12.70	1/2"	4.572	15



Synflex Eclipse Fifth Wheel Slider Coils

# PART NUMBER	VALVE PIGTAIL LENGTH		END FITTING	WORKING LENGTH		RETRACTED LENGTH	
	mm	in		mm	in	mm	in
3SCE-0303304-033	88.90	3.5"	None	16,459.20	648"	254.00	10"
3SCE-0303304-166	88.90	3.5"	1/4" male pipe	16,459.20	648"	254.00	10"

Features

- Lower cost
- Superior abrasion resistance
- Excellent return and coil memory
- Enhanced flexibility and extension
- Flow performance

Applications

- Articulating connections for air brake line systems (connections between towed and towing motor vehicle).
- Tractor-to-trailer air connections used in extremely low temperatures.

Construction

- Utilizes Synflex® Eclipse™ Air Brake Tubing patented construction (Pat. No. 6,670,004)
- 100% polyamide construction with polyester yarn reinforcement
- Brass end fittings with corrosion resistant spring guards

Temperature Range

- -65°F to 200°F (-54°C to 93°C).

Truck Hose

Diesel Fuel Tubing

Meets SAE J844, J1131, J1394

Meets ASTM D471, D624, D638, D648, D709, D746, D742, D2240



Low-Flex 4294 Series

- ± L mbo^qfkd qb j mbo^qrobp *1- q l / - - ÁC %*1- q l 60Á@&
- When a rigid product is required
- Well suited for formed fuel harness applications
- Lowest cost

High-Flex 4297 Series

- ± L mbo^qfkd qb j mbo^qrobp *2- q l / 2- ÁC %*12 q l . / / Á@&
- When flexibility is required
- Well suited for individual line installation

PART NUMBER	O.D.	COLOR
4294-06	3/8"	Black, Aluminum
4294-07	7/16"	Black, Aluminum
4294-08	1/2"	Black, Aluminum, Purple
4294-10	5/8"	Black, Aluminum

PART NUMBER	O.D.	COLOR
4297-06	3/8"	Black, Aluminum
4297-07	7/16"	Black, Aluminum
4297-08	1/2"	Black, Aluminum
4297-10	5/8"	Black, Aluminum

#												
PART NUMBER	NOMINAL O.D.		NOMINAL I.D.		WALL THICKNESS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		MINIMUM BEND RADIUS	
	mm	in	mm	in	mm	in	bar	psi	bar	psi	mm	in
Low-Flex 4294 Series												
4294-06	9.91	.390	6.35	.250	1.78	.070	5.17	75	34.48	500	28.70	1.13
4294-07	11.12	.440	7.62	.300	1.78	.070	5.17	75	34.48	500	31.75	1.25
4294-08	13.33	.525	9.53	.375	1.90	.075	5.17	75	34.48	500	76.30	3.00
4294-10	17.15	.675	12.10	.476	2.54	.100	5.17	75	34.48	500	88.90	3.50

High-Flex 4297 Series												
4297-06	9.91	.390	6.35	.250	1.78	.070	3.45	50	34.48	500	28.70	1.13
4297-07	11.12	.440	7.62	.300	1.78	.070	3.45	50	34.48	500	31.75	1.25
4297-08	13.33	.525	9.53	.375	1.90	.075	3.45	50	34.48	500	76.30	3.00
4297-10	17.15	.675	12.10	.476	2.54	.100	3.45	50	34.48	500	88.90	3.50

Features

- Multiple colors
- Formed or unformed harnesses
- Designed SPECIFICLALLY for diesel fuel applications
- Pre-cut with or without barbed fitting
- Lightweight fuel tube assemblies can weigh up to 66% less

Applications

- Transportation — trucks, busses and off-highway vehicles
- Construction machinery and equipment
- Agriculture machinery and equipment
- Marine, boats and yachts
- Diesel engines and parts

Diesel 4KGEN Fuel Kits

Features

- Specifically designed for modification and repair of OEM fuel systems that use Synflex 4294 or 4297 series fuel tubing
- Utilize VOSS OEM barbed end fittings to maintain O-ring sealing end connection of the original OEM fuel system
- OEM colors to maintain the same OEM color code integrity in the modified or repaired fuel system

Applications

- Transportation – trucks, busses, off-highway
 - Construction machinery & equipment
 - Agriculture machinery and equipment
 - Diesel engines & parts
- Synflex 4KGEN kits can be used to modify tank locations, routings and repair fuel systems in these and many other applications where diesel fuel is used.

Contents

Synflex 4KGEN Kits contain:

- OEM male, female, straight and 90 degree VOSS barbed fittings
- Synflex 4294 or 4297 series tubing
- Contact Synflex for other kits or assemblies

1/2" FUEL TUBING EXTENSION

Kit Part #: 4KGEN-08-001

Contains the following:

- 1/2" Plastic Female Fittings (P/N 4408-08710 - Qty. 4)
- 1/2" Plastic Straight Fittings (P/N 4408-08310 - Qty. 2)
- 1/2" Black Fuel Tubing (P/N 4294-0810K - 25 feet)
- 1/2" Silver Fuel Tubing (P/N 4294-081FK - 25 feet)

5/8" FUEL TUBING EXTENSION

Kit Part #: 4KGEN-10-001

Contains the following:

- 5/8" Brass Female Fittings (P/N 4408-10710 - Qty. 4)
- 5/8" Plastic Straight Fittings (P/N 4408-10310 - Qty. 2)
- 5/8" Black Fuel Tubing (P/N 4297-1010X001 - 25 feet)
- 5/8" Silver Fuel Tubing (P/N 4297-101FX-001 - 25 feet)

Specialty Hose

3440 Moisture-Lok Hose



#													AVAILABLE LENGTHS
PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB KG		AVAILABLE LENGTHS
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100 ft	100 m	feet
3440-04003	1/4	6.4	.520	13.2	1-1/4	32	2,750	190	11,000	758	6.4	9.5	250
3440-06003	3/8	9.5	.655	16.6	2	51	2,250	155	9,000	620	9.0	13.3	250
3440-08003	1/2	12.7	.812	20.6	3	76	2,000	138	8,000	552	12.2	18.1	250
3440-12003	3/4	19.0	1.140	29.0	5	127	1,500	103	6,000	414	24.6	36.8	250
3440-16003	1	25.4	1.455	37.0	8	203	1,500	103	6,000	414	37.3	55.4	250

Features

- High moisture barrier core tube
- No plasticizers in the core tube
- UV resistant cover
- Custom colors available

Applications

- Conveying urethane foam components
- Moisture sensitive chemicals

Construction

- Perforated polyurethane cover
- Synthetic fiber reinforcement
- Polyolefin core tube

Temperature Range

- -10°F to 150°F (-23°C to 66°C)

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
3440-04	304	903
3440-06	306	903
3440-08	308	903
3440-12	H12	90H
3440-16	B1600-001	90H

* Part No. 4540
 **For stainless steel fittings availability, see hose fitting selection chart on page 28.

34CU High Pressure Transfer Hose

Kynar® Core Tube



#													AVAILABLE LENGTHS
PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB KG		AVAILABLE LENGTHS
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	feet
34CU-04003	1/4	6.4	.51	13.0	1-1/2	38	4,000	276	12,000	828	7.5	24.6	250
34CU-06003	3/8	9.5	.71	18.0	3	76	4,000	276	12,000	828	13.7	44.9	250

Features

- Higher pressures than 3440 Moisture Lok series
- High moisture barrier core tube
- High chemical compatibility core tube
- UV resistant cover
- Custom colors available

Applications

- Two part urethane conveyance
- Chemical transfer under pressure

Construction

- PVDF fluoropolymer-lined core tube (Kynar®)
- Polyester reinforcement
- Black perforated polyurethane cover

Temperature Range

- -40°F to 212°F (-40°C to 100°C)

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series**
34CU-04	304	903
34CU-06	J06N	90H

* Part No. 4540
 **For stainless steel fittings availability, see hose fitting selection chart on page 28.

34BA Breathing Air Hose



#	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		MAXIMUM WORKING PRESSURE		WEIGHT		AVAILABLE LENGTHS	CONTINUOUS LENGTHS
PART NUMBER	in	mm	in	mm	in	mm	psi	bar	100 ft	100 m	feet	
34BA-06007	3/8	9.5	.697	17.7	1-1/2	38	250	17	13.7	20.7	300	•

Features

- Bright safety yellow cover
- Lightweight kink-resistant design
- Clean, non-contaminating thermoplastic core tube
- Abrasion resistant cover

Applications

- Self-contained rescue air tanks
- Breathing air lines for asbestos removal environment
- Sand blasting area breathing apparatus

Construction

- Yellow perforated PVC cover
- Synthetic fiber reinforcement
- Polyester-lined core tube

Temperature Range

- -15°F to 150°F (-26°C to 66°C)

DIE & FITTING CHART

Part No.	Swage Die*	Permanent Fitting Series
34BA-06	H06	90L

* Part No. 4540

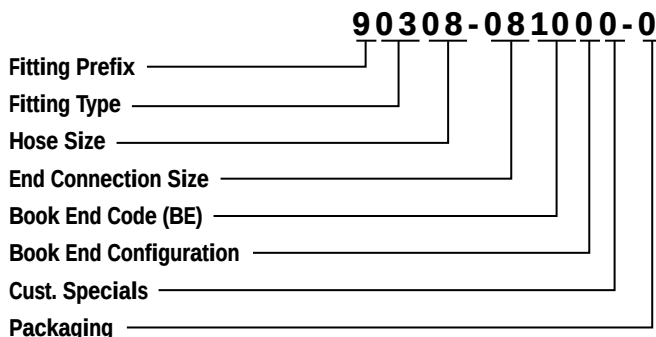
Hose Fitting Selection Chart

FITTING SERIES	PERMANENT FITTING	REUSABLE FITTING	HOSE SERIES AND DASH SIZE RANGE*
Zinc Plated Steel			
903	•		3630 (-03 to -12), 3R30, 3130, 37AL, 3800, 3840, 3580, 3440 (-04 to -08), 30CT (-04 to -08)
90H	•		3630 (-16), 3R80, 3E80, 3440 (-12 to -16)
90N	•		30CT-10
90V	•		3V10, 3VE0
7903	•		3630 (-03 to -12), 3R30, 3130, 3580, 37AL, 3800, 3840, 3440 (-4 to -8), 30CT (-04 to -06)
790H	•		3630 (-16), 3R80, 3E80, 3440 (-12 to -16)
Stainless Steel			
90A	•		3630 (-3 to -12), 3R30, 3130, 3580, 37AL, 3800, 3840, 34PW (-4 to -8), 31B0, 30CT (-03 to -06)
90L	•		3630 (-16), 3R80 (-3 to -16), 3E80 (-3 to -16), 3440, 34PW (-12 to -16), 34BA (-6), 30CT (-08)
Brass			
390C	•		3630 (-3 to -12)
906	•		Made to Order for Many Hose Series
4401		•	4202

* Dash Size = Hose I.D. in 16th of One Inch. Example: -3 = 3/16 Inch I.D. , Where Hose Series Only is Listed, All Cataloged Dash Sizes Attach to Fitting Series.

Hose Fitting End Connection Style Code Numbering System

A fitting part number is composed of several different elements, all combined to make the final number. The following is a diagram of a fitting part number and the elements that go into creating that number:



The Fitting prefix plus the Fitting Type becomes the Fitting Series. This is followed by the hose size. Then a dash separates the hose size from the end connection size. The bookend code (may use first two digits of old bookend code) is followed by a configuration code, which defines the orientation of the fitting. A digit for customer specials follows that. Another dash separates the packaging code from the number.

The following sections detail each of these part number components.

Fitting Prefix

The fitting prefix is the easiest part of the fitting part number to determine. It is always 9. If a part number begins with "9" you know it is a fitting number.

Fitting Type

See **Chart 1** in fitting type section for a list of available Fitting types.

Hose Size

These are the fourth and fifth digits in the fitting part number. The hose size code is the diameter of the hose in sixteenths of an inch. In this example, the code 08 indicates a 1/2" hose diameter, since 8/16" is equal to 1/2 inch. All existing fitting series have fractional hose sizes.

If metric hose sizes become available the two digit diameter code would represent the diameter of the hose in millimeters. 16 = 16mm.

Fitting Type

There are many different fitting types. They are represented by the second and third digit in the fitting part number. **Chart 1** on page 28 shows the part number character code that corresponds to the fitting type.

Customer Specials Suffix

Alpha-numeric consecutive suffix. 0 denotes a standard part. M denotes marking with old part number for military purposes.

Packaging

Alpha or numeric code to denote shipping or pack quantity.

Book End Configuration

In order to determine the book end orientation the book end configuration code is assigned. It is the tenth digit in the fitting part number. The configuration code is new to the part numbering system. It reduces the number of end connection codes needed. **Chart 2** below shows the book end configuration code.

Code	Configuration
0	Straight
2	22.5° Bend
3	30° Bend
4	45° Bend
5	135° Bend
6	60° Bend
7	67.5° Bend
9	90° Bent tube (No short or long reference)
A	Angle to be specified on print (special)
B	90° Block
E	Long Neck (Machined Bar or Tube)
H	Bulkhead
L	90° Bend, long drop
M	Multiple bends
S	90° Bend, short drop

Book End Code

The end connection code defines the style of the book end on the fitting. Along with the configuration code it may replace some previous end connection codes.

Chart 3 on pages 30-31 lists the end connection codes. It also shows the book end configuration code, and the resultant code. The former code is shown for reference.

Example:

To find the last six digits using the connection type code, end connection configuration code, and the end connector size, simply arrange the codes in the correct order.

End connector size 3/8" = 6/16" = 06	06
Male Pipe Rigid, code 10	10
Configuration, straight 0	0
Customer Special, 0 standard	0
Final 6-digit code	061000

Hose Fitting End Connection Style Code Numbers

Chart reference is located
on page 28.

Chart 1 - Fitting Type

Code	Description	Code	Description
01	Reusable, plated steel, medium pressure	0R	Permanently attached, 303/304 stainless, medium pressure 03 style
02	Reusable, plated steel, medium pressure, for 37NC nonconductive hose	0S	Permanently attached, all Monel, 3R80; OH style
03	Permanently attached, plated steel, medium pressure	0T	Permanently attached, Brass, low pressure, trepanned, 3600 hose
04	Reusable, brass, medium pressure	0V	Permanently attached, plated steel, very high pressure hose
05	Permanently attached, brass, high pressure, for breathing gas hose	0W	Permanently attached, plated steel, tube o-ring, refrigerant hose
06	Permanently attached, brass, medium pressure, purchased	2V	Permanently attached 316 stainless steel, high pressure, 3390 hose
07	Reusable, 303/304 stainless steel insert, steel shell, 01 style	7H	Permanently attached, plated steel, high pressure - metric, BSP, JIS, (non-domestic ends)
08	Reusable, 303/304 stainless steel, medium pressure, 01 style	7N	P/A plated steel, 3350/3360 hose - metric, BSP, JIS, (non-domestic ends)
09	Reusable, brass, 34MS-05 hose	8E	P/A, 316 plated steel, Monel or mild steel, 38LV hose
10	Barbed brass, low pressure	A3	Permanently attached, plated steel, medium pressure
11	Barbed brass, low pressure	A4	Permanently attached, Monel, 33CP hose, 904 style
12	P/A, plated steel, medium pressure, 1000 series hose	A5	Permanently attached, Monel, 3410 hose, very high pressure, 925 style
13	P/A, brass, medium pressure, trepanned, swaged	A6	Permanently attached, Monel, 3700, 3131, 3000 medium pressure, 926 style
53	P/A, plated steel, medium pressure, crimped	B3	Permanently attached, Monel, 3LVE, 38LV hose, 924 style
54	P/A, plated steel, Monel, or stainless, 33CP hose	B4	Permanently attached, Monel, 100R8, high pressure, 923 style
55	P/A, plated steel, medium pressure eyeletless crimped, 3420 & 3421 hose	C2	Reusable, 316 stainless, medium pressure, 37AL nonconductive hose, 902 style
56	P/A, 316 plated steel, Monel, or mild steel, 38HW hose	C4	Permanently attached, stainless steel, 33CP hose, 904 style
73	P/A, plated steel, medium pressure - metric, BSP, JIS, (non-domestic ends)	C6	Permanently attached, brass, medium pressure crimp only
0A	Permanently attached, 316 stainless, 903 style	E2	Reusable, 303/304 stainless, medium pressure, 37AL nonconductive hose, 902 style
0B	Permanently attached, zinc phosphated, 903 style	G3	Permanently attached, plated steel, medium pressure
0C	Permanently attached, with ferrule, all brass, 3600 & 3630 hose	AE	Permanently attached, Monel, very high pressure, 902 style
0D	Permanently attached, Chrome plated brass, low press. Breathing gas hose 3270	AV	Permanently attached, very high pressure, 902 style
0E	Permanently attached, plated steel, monel or stainless steel, 3LVE hose	CE	Permanently attached, 316 stainless steel, 3LVE hose, 90E style
0G	Permanently attached, plated steel, medium pressure	CN	Permanently attached, 316 stainless steel, 3350/3360 hose, 90N style
0H	Permanently attached, plated steel, high pressure	CV	Permanently attached, 316 stainless steel, very high pressure, 90V style
0J	Reusable, plated steel, high pressure	DE	Permanently attached, 316 stainless steel, 38LV hose, 98E style
0K	Reusable, 303/304 stainless steel, high pressure, 0J style		
0L	Permanently attached, 316 stainless steel, high pressure, OH style		
0M	Permanently attached, plated steel, medium pressure, 3500 hose		
0N	Permanently attached, plated steel, 3350 & 3360 hose		
0P	Permanently attached, all Monel, medium pressure, 03 style		

Hose Fitting End Connection Style Code Numbers

Chart reference is located
on page 28.

LOW/MEDIUM
PRESSURE

CONSTANT
PRESSURE HOSE

HIGH
PRESSURE

TWIN LINE
HOSE

AIR, WATER
& TUBING

TRUCK
HOSE

SPECIALTY
HOSE

HOSE
FITTINGS

HOSE ASSEMBLY
EQUIPMENT

ACCESSORIES

TECHNICAL
DATA

Chart 3 - End Connection Codes

Book End Code (BE)	Book End Configuration (BEC)	BE & Configuration	Former Code	Description
10	0	100	100	Male Pipe Rigid
14	0	140	140	Male Pipe Swivel
14	B	14B	270	Male Pipe Swivel, 90° Block
20	0	200	200	Female NPT Rigid
24	0	240	240	30° Female Inverted Flare (NPSM)
40	0	400	400	O-Ring Face Seal, (SAE Proposal), Straight
40	4	404	440	O-Ring Face Seal, 45°, Bent Tube
40	S	40S	470	O-Ring Face Seal, 90°, (Short) Bent Tube
40	L	40L	670	O-Ring Face Seal, 90°, (Long) Bent Tube
50	0	500	500	JIC 37° Male Rigid
54	0	540	540	JIC 37° Female Swivel (some SAE 45° Female swivels), Dual Seat
55	0	550	540	JIC 37° Female Swivel, Single Seat
55	4	554	600	JIC 37° Female Swivel, 45° Bent Tube
55	E	55E	T40	JIC 37° Female Swivel, Straight Tube
55	2	552	740	JIC 37° Female Swivel, 22-1/2° Bent Tube
55	5	555	770	JIC 37° Female Swivel, 135° Bent Tube
55	7	557	800	JIC 37° Female Swivel, 67-1/2° Bent Tube
55	L	55L	840	JIC 37° Female Swivel, 90° (Long) Bent Tube
55	S	55S	640	JIC 37° Female Swivel, 90° (Short) Bent Tube
55	3	553	870	JIC 37° Female Swivel, 30° Bent Tube
55	6	556	900	JIC 37° Female Swivel, 60° Bent Tube
57	0	570	570	JIC 37° Male Swivel
94	0	940	940	SAE 45° Male Rigid
A0	0	A00	A00	SAE 45° Female Swivel
A0	4	A04	A40	SAE 45° Female Swivel 45°, Bent Tube
A0	9	A09	B40	SAE 45° Female Swivel, 90°, Bent Tube
A0	E	A0E	B70	SAE 45° Female Swivel, Straight tube
A0	L	A0L	C00	SAE 45° Female Swivel, 90° (Long) Bent Tube
AL	0	AL0	-	Alger quick disconnect
B0	0	B00	B	BSP Female Swivel, 60° Male Cone
B0	4	B04	B-300	BSP Female Swivel, 60° Male Cone, 45° Bent Tube
B0	9	B09	B-100	BSP Female Swivel, 60° Male Cone, 90° Bent Tube
B0	B	B0B	B-600	BSP Female Swivel, 60° Male Cone, 90° Block
BM	0	BM0	BM00	DIN 7642 Metric Banjo
C4	0	C40	Q40	SAE 45° Inverted Flare Male Swivel
C4	4	C44	C40	SAE 45° Inverted Flare Male Swivel, 45° Bent Tube
C4	9	C49	C70	SAE 45° Inverted Flare Male Swivel, 90° Bent Tube
CG	0	CG0	-	CGA connection
CP	0	CP0	-	CPV for female swivel
D0	0	D00	D00	Male O-ring Straight Thread, Rigid
D4	0	D40	D40	Male O-ring Swivel, Straight Thread, Swivel
D4	B	D4B	E70	Male O-ring Swivel, Straight Thread, 90° Block
F7	0	F70	F70	Oxygen, Style B, Female Swivel
FC	0	FC0	-	Autoclave female, medium pressure
GF	0	GF0	GHF	Garden Hose, Female Swivel
GM	0	GM0	GHM	Garden Hose, Male Rigid
GS	0	GS0	GHS	Garden Hose Fitting Set

Hose Fitting End Connection Style Code Numbers

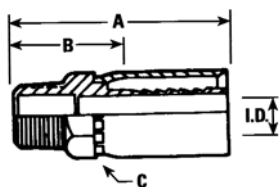
Chart reference is located
on page 28.

Chart 3 - End Connection Codes (continued)

Book End Code (BE)	Book End Configuration (BEC)	BE & Configuration	Former Code	Description
G0	0	G00	G00	Tube O-ring, Female Swivel, Straight Tube
G0	4	G04	G40	Tube O-ring, Female Swivel, 45° Bent Tube
G0	9	G09	G70	Tube O-ring, Female Swivel, 90° Bent Tube
H0	0	H00	H00	Flange Seal, 34F1 & 34F2 Hose
H4	0	H40	H40	Triple 30° Flare Cone
J0	0	J00	J00	Tube Shank End or Straight Tube, Fractional size
JL	0	JL0	J-XX0	Female Swivel, O-ring, metric thread, light duty (DK0)
JL	4	JL4	J-XX3	Female Swivel, O-ring, metric thread, light duty, 45° tube
JL	9	JL9	J-XX1	Female Swivel, O-ring, metric thread, light duty, 90° tube
JS	0	JS0	J-XX0	Female Swivel, O-ring, metric thread, heavy duty (DK0)
JS	4	JS4	J-XX3	Female Swivel, O-ring, metric thread, heavy duty, 45° tube
JS	9	JS9	J-XX1	Female Swivel, O-ring, metric thread, heavy duty, 90° tube
K4	0	K40	K40	SAE Male Flareless, Rigid
L0	0	L00	L00	Globe Seal -DIN 3902
L1	0	L10	L00	SAE Flareless Female Swivel
L4	0	L40	L40	Flange Head, Straight Tube
L4	2	L42	M00	Flange Head, 22-1/2° Bent Tube
L4	3	L43	N70	Flange Head, 30° Bent Tube
L4	4	L44	M40	Flange Head, 45° Bent Tube
L4	6	L46	P00	Flange Head, 60° Bent Tube
L4	9	L49	N40	Flange Head, 90° Bent Tube
MA	0	MA0	MFS-400	Male O-ring face seal, SAE J1453, style A (straight groove)
MB	0	MB0	MFS-XXX	Male O-ring face seal, SAE J1453, style B (dovetail groove)
N0	0	N00	N00	Metric Standpipe N Series
N0	4	N04	N-300	Metric Standpipe, N Series, 45° Bent Tube
N0	9	N09	N-100	Metric Standpipe, N Series, 90° Bent Tube
R0	0	R00	R00	SAE 45° Inverted Flare Female Rigid
R1	0	R10	Q	BSP Male Rigid, 60° female seat
SL	0	SL0	S	Male Rigid, metric, low pressure (DK0 male)
S0	0	S00	-	SAE J512 Tube Connection
SS	0	SS0	S	Male Rigid, metric, high pressure (DK0 male)
S7	0	S70	S70	Female Swivel Nut, Spool with O-ring-Air Breathing Apparatus
T4	0	T40	T40	JIC 37° Female Swivel, Straight tube
T7	0	T70	T70	JIC 37° Female Swivel, Spool with O-ring, Orifice
V0	0	V00	V00	BSP Female Swivel, 60° Female Cone
V4	0	V40	V40	BSP Female Swivel, 60° Male Cone
VC	0	VC0	-	VCO for female swivel
W0	0	W00	W00	Splice Connector, Field Attachable, Consists of two couplings joined with an adapter
W4	0	W40	W40	Splice Connector, In-house Attachable
W7	0	W70	W70	Splice Connector, Field Attachable (left and right hand thread)
Z0	0	Z00	Z00	Fillet weld Socket Joint

Permanent Attached Hose Fittings

Male Pipe Rigid



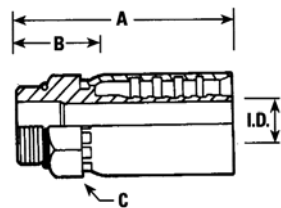
HOSE I.D.	PIPE SIZE	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	FORMER PART #
1/8	1/8	90302-021000-0	MP023	.074	1.296	3/4	1/2	3903-02102
1/8	1/4	90302-041000-0	MP026	.074	1.481	15/16	5/8	3903-02104
3/16	1/8	90303-021000-0	MP001	.109	1.870	1-1/16	9/16	3903-03102
3/16	1/4	90303-041000-0	MP004	.109	2.057	1-1/4	11/16	3903-03104
3/16	3/8	90303-061000-0†	MP005	.109	2.151	1-3/8	3/4	3903-03106
1/4	1/8	90304-021000-0	MP002	.156	2.120	1	5/8	3903-04102
1/4	1/4	90304-041000-0	MP004	.156	2.307	1-3/16	11/16	3903-04104
1/4	3/8	90304-061000-0	MP005	.156	2.401	1-5/16	3/4	3903-04106
5/16	1/4	90305-041000-0	MP004	.219	2.307	1-3/16	11/16	3903-05104
5/16	3/8	90305-061000-0	MP005	.219	2.401	1-1/4	3/4	3903-05106
3/8	1/4	90306-041000-0	MP005	.281	2.589	1-5/16	3/4	3903-06104
3/8	3/8	90306-061000-0	MP005	.281	2.589	1-5/16	3/4	3903-06106
3/8	1/2	90306-081000-0	MP009	.281	2.839	1-7/16	15/16	3903-06108
1/2	3/8	90308-061000-0	MP008	.391	2.776	1-5/16	7/8	3903-08106
1/2	1/2	90308-081000-0	MP009	.391	3.026	1-1/2	15/16	3903-08108
3/4	3/4	90312-121000-0	MP011	.625	3.213	1-5/8	1-1/8	3903-12112
1	1	90316-161000-0	MP013	.812	3.964	1-7/8	1-3/8	3903-16116
3/16	1/8	90H03-021000-0	MP001	.109	1.870	1-1/16	9/16	390H-03102
3/16	1/4	90H03-041000-0	MP004	.109	2.057	1-1/4	11/16	390H-03104
3/16	3/8	90H03-061000-0†	MP005	.109	2.151	1-3/8	3/4	390H-03106
1/4	1/8	90H04-021000-0	MP002	.156	2.120	1-1/16	5/8	390H-04102
1/4	1/4	90H04-041000-0	MP004	.156	2.307	1-1/4	11/16	390H-04104
1/4	3/8	90H04-061000-0	MP005	.156	2.401	1-5/16	3/4	390H-04106
3/8	1/4	90H06-041000-0	MP005	.281	2.589	1-5/16	3/4	390H-06104
3/8	3/8	90H06-061000-0	MP005	.281	2.589	1-5/16	3/4	390H-06106
3/8	1/2	90H06-081000-0	MP009	.281	2.839	1-9/16	15/16	390H-06108
1/2	3/8	90H08-061000-0	MP008	.391	2.776	1-1/4	7/8	390H-08106
1/2	1/2	90H08-081000-0	MP009	.391	3.026	1-1/2	15/16	390H-08108
3/4	3/4	90H12-121000-0	MP011	.625	3.213	1-5/8	1-1/8	390H-12112
1	1	90H16-161000-0	MP013	.812	3.964	1-7/8	1-3/8	390H-16116
3/4	3/4	90N12-121000-0	MP011	.625	3.298	1-5/8	1-1/8	390N-12112
1	1	90N16-161000-0†	MP013	.813	3.966	1-7/8	1-3/8	390H-16116

† Run-to-order product. Contact your Eaton representative for details.

Permanent Attached Hose Fittings

Male O-Ring Straight Thread

Do not swage with O-Ring installed

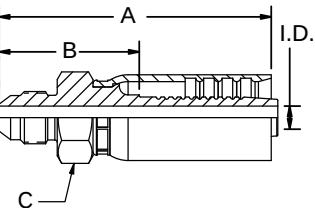


HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	FORMER PART #
3/16	-4	7/16-20	90303-04D000-0	MP001	.109	1.885	1-1/16	9/16	3903-03D04
1/4	-4	7/16-20	90304-04D000-0	MP002	.156	2.105	1-1/32	5/8	3903-04D04
1/4	-5	1/2-20	90304-05D000-0	MP002	.156	2.105	1-1/32	5/8	3903-04D05
1/4	-6	9/16-18	90304-06D000-0	MP004	.156	2.136	1-1/16	11/16	3903-04D06
5/16	-5	1/2-20	90305-05D000-0‡	MP004	.219	2.105	7/8	11/16	3903-05D05
3/8	-6	9/16-18	90306-06D000-0‡	MP005	.281	2.418	1-5/32	3/4	3903-06D06
3/8	-8	3/4-16	90306-08D000-0‡	MP008	.281	2.465	1-3/16	7/8	3903-06D08
1/2	-8	3/4-16	90308-08D000-0‡	MP009	.391	2.714	1-3/32	15/16	3903-08D08
1/2	-10	7/8-14	90308-10D000-0‡	MP018	.391	2.776	1-9/32	1-1/16	3903-08D10

3/16	-4	7/16-20	90H03-04D000-0	MP001	.109	1.860	1-1/16	9/16	390H-03D04
1/4	-4	7/16-20	90H04-04D000-0‡	MP002	.156	2.105	1-1/32	5/8	390H-04D04
1/4	-5	1/2-20	90H04-05D000-0‡	MP002	.156	2.110	1-1/32	5/8	390H-04D05
3/8	-6	9/16-18	90H06-06D000-0‡	MP005	.281	2.423	1	3/4	390H-06D06
3/8	-8	3/4-16	90H06-08D000-0‡	MP008	.281	2.470	1-1/32	7/8	390H-06D08
1/2	-8	3/4-16	90H08-08D000-0‡	MP009	.391	2.782	1-1/32	15/16	390H-08D08
1/2	-10	7/8-14	90H08-10D000-0‡	MP018	.391	2.844	1-5/32	1-1/16	390H-08D10

‡ Run-to-order product. Contact your Eaton representative for details.
 Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

JIC 37° Male Rigid



HOSE I.D.	PIPE SIZE	THREAD	FITTING PART #	PUSHER 4599	LENGTH A	CUT OFF B	HEX C	FORMER PART #
3/16	-3	3/8-24	90303-035000-0‡	MP001	1.974	1-3/16	9/16	3903-03503
3/16	-4	7/16-20	90303-045000-0	MP001	2.045	1-1/4	9/16	3903-03504
1/4	-4	7/16-20	90304-045000-0	MP002	2.295	1-1/4	5/8	3903-04504
1/4	-5	1/2-20	90304-055000-0‡	MP002	2.295	1-1/4	5/8	3903-04505
1/4	-6	9/16-18	90304-065000-0	MP005	2.395	1-5/16	3/4	3903-04506
5/16	-5	1/2-20	90305-055000-0	MP002	2.295	1-3/16	5/8	3903-05505
5/16	-6	9/16-18	90305-065000-0	MP004	2.301	1-3/16	11/16	3903-05506
3/8	-6	9/16-18	90306-065000-0	MP005	2.583	1-5/16	3/4	3903-06506
3/8	-8	3/4-16	90306-085000-0	MP007	2.684	1-7/16	13/16	3903-06508
1/2	-8	3/4-16	90308-085000-0	MP008	2.871	1-3/8	7/8	3903-08508
1/2	-10	7/8-14	90308-105000-0	MP009	3.043	1-9/16	15/16	3903-08510
1/2	-12	1-1/16-12	90308-125000-0‡	MP011	3.140	1-5/8	1-1/8	3903-08512
3/4	-12	1-1/16-12	90312-125000-0‡	MP011	3.327	1-5/8	1-1/8	3903-12512
1	-16	1-5/16-12	90316-165000-0‡	MP013	3.937	1-7/8	1-3/8	3903-16516

3/16	-4	7/16-20	90H03-045000-0	MP001	2.045	1-1/4	9/16	390H-03504
1/4	-4	7/16-20	90H04-045000-0	MP002	2.295	1-1/4	5/8	390H-04504
1/4	-5	1/2-20	90H04-055000-0‡	MP002	2.295	1-1/4	5/8	390H-04505
1/4	-6	9/16-18	90H04-065000-0‡	MP005	2.395	1-5/16	3/4	390H-04506
3/8	-6	9/16-18	90H06-065000-0	MP005	2.583	1-5/16	3/4	390H-06506
3/8	-8	3/4-16	90H06-085000-0	MP007	2.684	1-7/16	13/16	390H-06508
1/2	-8	3/4-16	90H08-085000-0	MP008	2.871	1-3/8	7/8	390H-08508
1/2	-10	7/8-14	90H08-105000-0‡	MP009	3.034	1-9/16	15/16	390H-08510
1/2	-12	1-1/16-12	90H08-125000-0‡	MP011	3.140	1-5/8	1-1/8	390H-08512
3/4	-12	1-1/16-12	90H12-125000-0‡	MP011	3.327	1-5/8	1-1/8	390H-12512

‡ Run-to-order product. Contact your Eaton representative for details.
 Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

Permanent Attached Hose Fittings

LOW/MEDIUM PRESSURE

CONSTANT PRESSURE HOSE

HIGH PRESSURE

TWIN LINE HOSE

AIR, WATER & TUBING

TRUCK HOSE

SPECIALTY HOSE

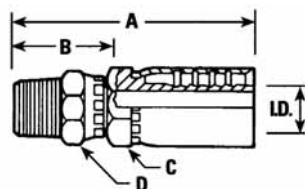
HOSE FITTINGS

HOSE ASSEMBLY EQUIPMENT

ACCESSORIES

TECHNICAL DATA

Male Pipe Swivel

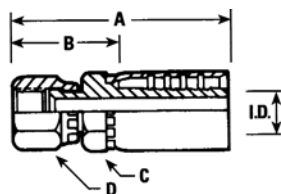


HOSE I.D.	PIPE SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	FORMER PART #
1/8	-2	1/8-27	90302-021400-0	MP027	.078	1.896	1-5/16	1/2	1/2	3903-02142
3/16	-4	1/4-18	90303-041400-0	MP003	.109	2.637	1-13/16	5/8	11/16	3903-03144
1/4	-4	1/4-18	90304-041400-0	MP003	.156	2.877	1-13/16	5/8	11/16	3903-04144
5/16	-4	1/4-18	90305-041400-0	MP003	.219	2.877	1-3/4	5/8	11/16	3903-05144
3/8	-6	3/8-18	90306-061400-0	MP006	.281	3.171	1-15/16	3/4	3/4	3903-06146
3/8	-8	1/2-14	90306-081400-0†	FP025	.281	3.359	2-1/8	3/4	7/8	3903-06148
1/2	-8	1/2-14	90308-081400-0	MP010	.391	3.609	2-1/8	7/8	15/16	3903-08148
3/4	-12	3/4-14	90312-121400-0	MP012	.594	3.858	2-3/16	1-1/8	1-1/8	3903-12152
1	-16	1-11-1/2	90316-161400-0†	MP016	.812	4.665	2-5/8	1-3/8	1-1/2	3903-16156
3/16	-4	1/4-18	90H03-041400-0	MP003	.109	2.637	1-13/16	5/8	11/16	390H-03144
1/4	-4	1/4-18	90H04-041400-0	MP003	.156	2.877	1-13/16	5/8	11/16	390H-04144
3/8	-6	3/8-18	90H06-061400-0	MP006	.281	3.171	1-15/16	3/4	3/4	390H-06146
3/8	-8	1/2-14	90H06-081400-0†	FP025	.281	3.359	2-1/8	3/4	7/8	390H-06148
1/2	-8	1/2-14	90H08-081400-0	MP010	.391	3.609	2-1/8	7/8	15/16	390H-08148
3/4	-12	3/4-14	90H12-121400-0	MP012	.594	3.858	2-3/16	1-1/8	1-1/8	390H-12152
1	-16	1-11-1/2	90H16-161400-0†	MP016	.812	4.665	2-5/8	1-3/8	1-1/2	390H-16156

† Run-to-order product. Contact your Eaton representative for details.

Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

SAE 45° Female Swivel

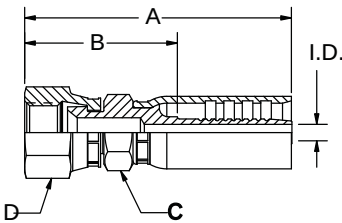


HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	FORMER PART #
3/16	-4	7/16-20	90303-045400-0	FP011	.109	2.151	1-3/8	9/16	5/8	3903-03544
3/16	-5	1/2-20	90303-055400-0	FP011	.109	2.151	1-3/8	9/16	3/4	3903-03545
1/4	-4	7/16-20	90304-045400-0	FP012	.156	2.526	1-7/16	5/8	5/8	3903-04544
1/4	-5	1/2-20	90304-055400-0	FP013	.156	2.526	1-7/16	5/8	3/4	3903-04545
1/4	-6	5/8-18	90304-06A000-0†	FP003	.156	2.526	1-7/16	5/8	13/16	3903-04A06
5/16	-5	1/2-20	90305-055400-0	FP013	.219	2.526	1-3/8	5/8	3/4	3903-05545
5/16	-6	5/8-18	90305-06A000-0†	FP003	.219	2.526	1-3/8	5/8	13/16	3903-05A06
3/8	-6	5/8-18	90306-06A000-0	FP014	.281	2.808	1-9/16	3/4	13/16	3903-06A06
3/8	-8	3/4-16	90306-085400-0	FP005	.281	2.808	1-9/16	3/4	15/16	3903-06548
1/2	-8	3/4-16	90308-085400-0	FP016	.391	3.151	1-5/8	7/8	15/16	3903-08548
1/2	-10	7/8-14	90308-105400-0	FP006	.391	3.151	1-5/8	7/8	1-1/16	3903-08550
3/4	-12	1-1/16-14	90312-12A000-0†	FP008	.625	3.432	1-3/4	1-1/8	1-1/4	3903-12A12
1	-16	1-3/8-12	90316-16A000-0†	FP023	.812	4.247	2-3/16	1-1/2	1-5/8	3903-16A16
3/16	-4	7/16-20	90H03-045400-0	FP011	.109	2.151	1-3/8	9/16	5/8	390H-03544
3/16	-5	1/2-20	90H03-055400-0†	FP001	.109	2.151	1-3/8	9/16	3/4	390H-03545
1/4	-4	7/16-20	90H04-045400-0	FP012	.156	2.526	1-7/16	5/8	5/8	390H-04544
1/4	-5	1/2-20	90H04-055400-0†	FP013	.156	2.526	1-7/16	5/8	3/4	390H-04545
1/4	-6	5/8-18	90H04-06A000-0†	FP003	.156	2.526	1-7/16	5/8	13/16	390H-04A06
3/8	-6	5/8-18	90H06-06A000-0	FP014	.281	2.808	1-9/16	3/4	13/16	390H-06A06
3/8	-8	3/4-16	90H06-085400-0	FP005	.281	2.808	1-9/16	3/4	15/16	390H-06548
1/2	-8	3/4-16	90H08-085400-0	FP016	.391	3.151	1-5/8	7/8	15/16	390H-08548
1/2	-10	7/8-14	90H08-105400-0	FP006	.391	3.151	1-5/8	7/8	1-1/16	390H-08550
3/4	-12	1-1/16-14	90H12-12A000-0†	FP008	.625	3.432	1-3/4	1-1/8	1-1/4	390H-12A12
1	-16	1-3/8-12	90H16-16A000-0†	FP023	.812	4.247	2-3/16	1-1/2	1-5/8	390H-16A16

† Run-to-order product. Contact your Eaton representative for details.

Permanent Attached Hose Fittings

JIC 37° Swivel



Torque Values (in - lbs) for Steel Female Swivel Fittings

Size	Min.	Max.
4	50	150
5	70	200
6	90	300
8	150	500
10	220	700
12	300	1,000
16	450	1,400

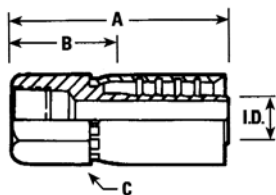
The maximum torques listed are based upon strength rather than sealing properties. Use of any torque within the min-max range will prevent damage or leakage.

HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	FORMER PART #
1/8	-3	3/8-24	90302-035500-0	FP017	.078	1.613	1-1/16	1/2	9/16	3903-02543
1/8	-4	7/16-20	90302-045400-0	FP010	.078	1.703	1-1/16	1/2	5/8	3903-02544
1/8	-5	1/2-20	90302-055400-0‡	FP029	.078	1.675	1-1/16	1/2	3/4	3903-02545
3/16	-3	3/8-24	90303-035400-0‡	FP017	.109	2.151	1-5/16	9/16	9/16	3903-03543
3/16	-4	7/16-20	90303-045400-0	FP011	.109	2.151	1-3/8	9/16	5/8	3903-03544
3/16	-5	1/2-20	90303-055400-0	FP001	.109	2.151	1-3/8	9/16	3/4	3903-03545
1/4	-4	7/16-20	90304-045400-0	FP012	.156	2.526	1-7/16	5/8	5/8	3903-04544
1/4	-5	1/2-20	90304-055400-0	FP013	.156	2.531	1-7/16	5/8	3/4	3903-04545
1/4	-5	1/2-20	90304-055403-0	FP012	.156	2.526	1-7/16	5/8	5/8	3903-04545
1/4	-6	9/16-18	90304-065500-0	FP013	.156	2.536	1-7/16	5/8	3/4	3903-04546
5/16	-4	7/16-20	90305-045400-0‡	FP012	.219	2.526	1-7/16	5/8	5/8	3903-05544
5/16	-5	1/2-20	90305-055400-0	FP013	.219	2.526	1-3/8	5/8	3/4	3903-05545
5/16	-6	9/16-18	90305-065500-0	FP013	.219	2.536	1-7/16	5/8	3/4	3903-05546
3/8	-4	7/16-20	90306-045400-0‡	MP007	.281	2.683	1-7/16	13/16	5/8	3903-06544
3/8	-5	1/2-20	90306-055400-0‡	FP013	.234	2.683	1-7/16	3/4	3/4	3903-06545
3/8	-6	9/16-18	90306-065500-0	FP015	.281	2.818	1-9/16	3/4	3/4	3903-06546
3/8	-8	3/4-16	90306-085400-0	FP005	.281	2.808	1-9/16	3/4	15/16	3903-06548
3/8	-10	7/8-14	90306-105400-0‡	FP006	.281	2.964	1-11/16	7/8	1-1/16	3903-06550
1/2	-8	3/4-16	90308-085400-0	FP016	.391	3.151	1-5/8	7/8	15/16	3903-08548
1/2	-10	7/8-14	90308-105400-0	FP006	.391	3.151	1-5/8	7/8	1-1/16	3903-08550
1/2	-12	1-1/16-12	90308-125500-0	FP008	.391	3.245	1-3/4	1-1/8	1-1/4	3903-08552
3/4	-10	7/8-14	90312-105400-0‡	FP021	.484	3.432	1-5/8	1-1/8	1-1/16	3903-12550
3/4	-12	1-1/16-12	90312-125500-0	FP008	.625	3.432	1-3/4	1-1/8	1-1/4	3903-12552
3/4	-14	1-3/16-12	90312-145500-0‡	FP009	.625	3.494	1-11/16	1-3/8	1-1/2	3903-12554
3/4	-16	1-5/16-12	90312-165500-0‡	FP009	.625	3.494	1-11/16	1-3/8	1-1/2	3903-12556
1	-16	1-5/16-12	90316-165500-0	FP009	.812	4.057	1-11/16	1-3/8	1-1/2	3903-16556
3/16	-4	7/16-20	90H03-045400-0	FP011	.109	2.151	1-3/8	9/16	5/8	390H-03544
3/16	-5	1/2-20	90H03-055400-0‡	FP001	.109	2.151	1-3/8	9/16	3/4	390H-03545
1/4	-4	7/16-20	90H04-045400-0	FP012	.156	2.526	1-7/16	5/8	5/8	390H-04544
1/4	-5	1/2-20	90H04-055400-0‡	FP013	.156	2.526	1-7/16	5/8	3/4	390H-04545
1/4	-6	9/16-18	90H04-065500-0	FP013	.156	2.536	1-7/16	5/8	3/4	390H-04546
5/16	-6	9/16-18	90H05-065500-0‡	FP013	.219	2.536	1-7/16	5/8	3/4	390H-05546
3/8	-4	7/16-20	90H06-045400-0‡	MP007	.281	2.683	1-7/16	13/16	5/8	390H-06544
3/8	-5	1/2-20	90H06-055400-0‡	FP013	.234	2.683	1-7/16	3/4	3/4	390H-06545
3/8	-6	9/16-18	90H06-065500-0	FP015	.281	2.818	1-9/16	3/4	3/4	390H-06546
3/8	-8	3/4-16	90H06-085400-0	FP005	.281	2.808	1-9/16	3/4	15/16	390H-06548
1/2	-8	3/4-16	90H08-085400-0	FP016	.391	3.151	1-5/8	7/8	15/16	390H-08548
1/2	-10	7/8-14	90H08-105400-0	FP006	.391	3.151	1-5/8	7/8	1-1/16	390H-08550
1/2	-12	1-1/16-12	90H08-125500-0‡	FP008	.391	3.245	1-3/4	1-1/8	1-1/4	390H-08552
5/8	-10	7/8-14	90H10-105400-0‡	FP021	.469	3.432	1-7/8	1-1/8	1-1/16	390H-10550
5/8	-12	1-1/16-12	90H10-125500-0	FP008	.469	3.432	1-7/8	1-1/8	1-1/4	390H-10552
3/4	-10	7/8-14	90H12-105400-0‡	FP021	.625	3.432	1-3/4	1-1/8	1-1/16	390H-12550
3/4	-12	1-1/16-12	90H12-125500-0	FP008	.625	3.432	1-3/4	1-1/8	1-1/4	390H-12552
1	-16	1-5/16-12	90H16-165500-0	FP009	.812	4.057	1-15/16	1-3/8	1-1/2	390H-16556
5/8	-10	7/8-14	90N10-105400-0	FP008	.469	3.470	1-7/8	1-1/8	1-1/16	390N-10550
5/8	-12	1-1/16-12	90N10-125500-0	FP021	.469	3.470	1-7/8	1-1/8	1-1/4	390N-10552
3/4	-10	7/8-14	90N12-105500-0‡	FP021	.484	3.472	1-3/4	1-1/8	1-1/16	390N-12550
3/4	-12	1-1/16-12	90N12-125500-0	FP008	.625	3.470	1-3/4	1-1/8	1-1/4	390N-12552
1	-16	1-5/16-12	90N16-165500-0	FP009	.812	4.057	1-7/8	1-3/8	1-1/2	390N-16556

‡ Run-to-order hose. Contact your Eaton representative for details.
Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

Permanent Attached Hose Fittings

Female NPT Rigid

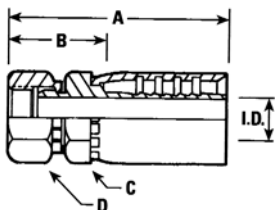


HOSE I.D.	PIPE SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	FORMER PART #
1/4	1/4	1/4-18	90304-042000-0	FP002	.156	2.339	1-1/4	3/4	3903-04204
1/4	3/8	3/8-18	90304-062000-0†	FP004	.156	2.433	1-5/16	7/8	3903-04206
3/8	3/8	3/8-18	90306-062000-0†	FP004	.281	2.621	1-3/8	7/8	3903-06206
1/2	1/2	1/2-14	90308-082000-0†	FP007	.391	2.964	1-1/2	1-1/16	3903-08208
1/4	1/4	1/4-18	90H04-042000-0	FP002	.156	2.339	1-1/4	3/4	390H-04204
3/8	3/8	3/8-18	90H06-062000-0†	FP004	.281	2.621	1-3/8	7/8	390H-06206
1/2	1/2	1/2-14	90H08-082000-0	FP007	.391	2.964	1-1/2	1-1/16	390H-08208

† Run-to-order product. Contact your Eaton representative for details.

Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

30° Inverted Flare NPSM

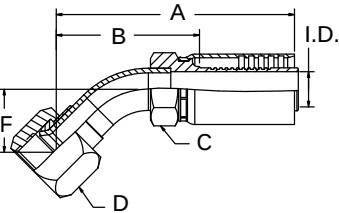


HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	FORMER PART #
1/8	-4	1/4-18	90302-042400-0	FP024	.078	1.651	1-1/16	1/2	11/16	3903-02244
3/16	-4	1/4-18	90303-042400-0	FP002	.109	2.134	1-5-16	5/8	3/4	3903-03244
1/4	-4	1/4-18	90304-042400-0	FP002	.156	2.384	1-5/16	5/8	3/4	3903-04244
1/4	-6	3/8-18	90304-062400-0†	FP004	.156	2.464	1-3/8	3/4	7/8	3903-04246
5/16	-4	1/4-18	90305-042400-0	FP013	.219	2.540	1-7/16	3/4	3/4	3903-05244
3/8	-4	1/4-18	90306-042400-0†	FP013	.218	2.666	1-7/16	3/4	3/4	3903-06244
3/8	-6	3/8-18	90306-062400-0	FP004	.281	2.652	1-3/16	3/4	7/8	3903-06246
1/2	-8	1/2-14	90308-082400-0	FP018	.391	2-989	1-1/2	1	1	3903-08248
3/4	-12	3/4-14	90312-122400-0†	FP008	.625	3.432	1-3/4	1-1/8	1-1/4	3903-12252
1	-16	1-11-1/2	90316-162400-0†	FP009	.812	4.060	1-7/8	1-3/8	1-1/2	3903-16256
3/16	-4	1/4-18	90H03-042400-0†	FP002	.109	2.134	1-5/16	5/8	3/4	390H-03244
1/4	-4	1/4-18	90H04-042400-0	FP002	.156	2.384	1-5/16	5/8	3/4	390H-04244
3/8	-4	1/4-18	90H06-042400-0†	FP013	.218	2.666	1-7/16	3/4	3/4	390H-06244
3/8	-6	3/8-18	90H06-062400-0	FP004	.281	2.652	1-3/16	7/8	7/8	390H-06246
1/2	-8	1/2-14	90H08-082400-0	FP018	.391	2.989	1-1/2	1	1	390H-08248
3/4	-12	3/4-14	90H12-122400-0†	FP008	.625	3.432	1-3/4	1-1/8	1-1/4	390H-12252
1	-16	1-11-1/2	90H16-162400-0	FP009	.812	4.060	1-7/8	1-3/8	1-1/2	390H-16256

† Run-to-order product. Contact your Eaton representative for details.

Permanent Attached Hose Fittings

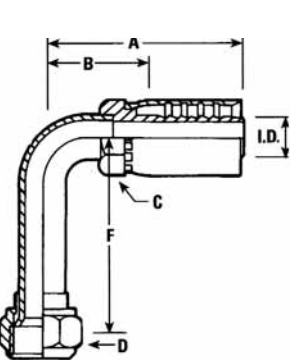
45° Bent Tube Female Swivel, JIC 37°



HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	DROP F	FORMER PART #
3/16	-4	7/16-20	90303-045540-0†	TP204	.109	2.298	1-1/2	9/16	9/16	.467	3903-03604
1/4	-4	7/16-20	90304-045540-0†	TP204	.156	2.548	1-1/2	5/8	9/16	.467	3903-04604
1/4	-5	1/2-20	90304-055540-0†	TP205	.156	2.640	1-9/16	5/8	5/8	.526	3903-04605
1/4	-6	9/16-18	90304-065540-0†	TP206	.156	2.728	1-5/8	5/8	11/16	.588	3903-04606
5/16	-6	9/16-18	90305-065540-0	TP206	.219	2.728	1-5/8	5/8	11/16	.588	3903-05606
3/8	-6	9/16-18	90306-065540-0	TP206	.281	2.916	1-11/16	3/4	11/16	.588	3903-06606
3/8	-8	3/4-16	90306-085540-0†	TP208	.281	3.097	1-7/8	3/4	7/8	.713	3903-06608
1/2	-8	3/4-16	90308-085540-0	TP308	.391	3.278	1-13/16	7/8	7/8	.713	3903-08608
1/2	-10	7/8-14	90308-105540-0†	TP310	.391	3.455	1-15/16	7/8	1	.839	3903-08610
3/4	-12	1-1/16-12	90312-125540-0†	TP312	.625	4.261	2-9/16	1-1/8	1-1/4	1.118	3903-12612
1	-16	1-5/16-12	90316-165540-0†	TP316	.812	4.951	2-7/8	1-3/8	1-1/2	1.146	3903-16616
3/16	-4	7/16-20	90H03-045540-0†	TP204	.109	2.298	1-1/2	9/16	9/16	.467	390H-03604
1/4	-4	7/16-20	90H04-045540-0†	TP204	.156	2.548	1-1/2	5/8	9/16	.467	390H-04604
1/4	-5	1/2-20	90H04-055540-0†	TP205	.156	2.640	1-9/16	5/8	5/8	.526	390H-04605
3/8	-6	9/16-18	90H06-065540-0	TP206	.281	2.916	1-11/16	3/4	11/16	.588	390H-06606
3/8	-8	3/4-16	90H06-085540-0†	TP208	.281	3.097	1-7/8	3/4	7/8	.713	390H-06608
1/2	-8	3/4-16	90H08-085540-0†	TP308	.391	3.278	1-13/16	7/8	7/8	.713	390H-08608
1/2	-10	7/8-14	90H08-105540-0†	TP310	.391	3.455	1-15/16	7/8	1	.839	390H-08610
3/4	-12	1-1/16-12	90H12-125540-0†	TP312	.625	4.261	2-9/16	1-1/8	1-1/4	1.118	390H-12612
1	-16	1-5/16-12	90H16-165540-0†	TP316	.812	4.951	2-7/8	1-3/8	1-1/2	1.146	390H-16616

† Run-to-order product. Contact your Eaton representative for details.
Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

90° Long Bent Tube Female Swivel, JIC 37°

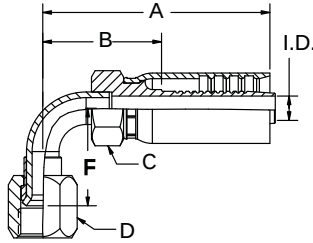


HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	DROP F	FORMER PART #
3/16	-4	7/16-20	90303-0455L0-0†	TP204	.109	2.058	1-1/4	9/16	9/16	1.800	3903-03844
1/4	-4	7/16-20	90304-0455L0-0	TP204	.156	2.308	1-1/4	5/8	9/16	1.800	3903-04844
1/4	-5	1/2-20	90304-0555L0-0†	TP205	.156	2.370	1-5/16	5/8	5/8	1.770	3903-04845
1/4	-6	9/16-18	90304-0655L0-0†	TP206	.156	2.456	1-3/8	5/8	11/16	2.180	3903-04846
5/16	-6	9/16-18	90305-0655L0-0	TP206	.219	2.432	1-5/16	5/8	11/16	2.180	3903-05846
3/8	-6	9/16-18	90306-0655L0-0	TP206	.281	2.620	1-3/8	3/4	11/16	2.180	3903-06846
3/8	-8	3/4-16	90306-0855L0-0	TP208	.281	2.751	1-1/2	3/4	7/8	2.430	3903-06848
1/2	-8	3/4-16	90308-0855L0-0	TP308	.391	2.932	1-7/16	7/8	7/8	2.430	3903-08848
1/2	-10	7/8-14	90308-1055L0-0	TP310	.391	3.057	1-9/16	7/8	1	2.570	3903-08850
3/4	-12	1-1/16-12	90312-1255L0-0†	TP312	.625	3.870	2-3/16	1-1/8	1-1/4	3.730	3903-12852
1	-16	1-5/16-12	90316-1655L0-0†	TP316	.812	4.685	2-5/8	1-3/8	1-1/2	4.330	3903-16856
3/16	-4	7/16-20	90H03-0455L0-0†	TP204	.109	2.058	1-1/4	9/16	9/16	1.800	390H-03844
1/4	-4	7/16-20	90H04-0455L0-0†	TP204	.156	2.308	1-1/4	5/8	9/16	1.800	390H-04844
1/4	-5	1/2-20	90H04-0555L0-0†	TP205	.156	2.370	1-5/16	5/8	5/8	1.770	390H-04845
1/4	-6	9/16-18	90H04-0655L0-0†	TP206	.156	2.456	1-3/8	5/8	11/16	2.180	390H-04846
3/8	-6	9/16-18	90H06-0655L0-0	TP206	.281	2.620	1-3/8	3/4	11/16	2.180	390H-06846
3/8	-8	3/4-16	90H06-0855L0-0	TP208	.281	2.751	1-1/2	3/4	7/8	2.430	390H-06848
1/2	-8	3/4-16	90H08-0855L0-0†	TP308	.391	2.932	1-7/16	7/8	7/8	2.430	390H-08848
1/2	-10	7/8-14	90H08-1055L0-0	TP310	.391	3.057	1-9/16	7/8	1	2.570	390H-08850
3/4	-12	1-1/16-12	90H12-1255L0-0†	TP312	.625	3.870	2-3/16	1-1/8	1-1/4	3.730	390H-12852
1	-16	1-5/16-12	90H16-1655L0-0†	TP316	.812	4.685	2-5/8	1-3/8	1-1/2	4.330	390H-16856

† Run-to-order product. Contact your Eaton representative for details.
Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

Permanent Attached Hose Fittings

90° Short Bent Tube Female Swivel, JIC 37°



Torque Values (in - lbs) for Bent Tube Fittings with Female Swivels

Size	Min.	Max.
4	37	112
5	52	150
6	67	225
8	112	375
10	165	525
12	225	750
16	337	1,050

The maximum torques listed are based upon strength rather than sealing properties. Use of any torque within the min-max range will prevent damage or leakage.

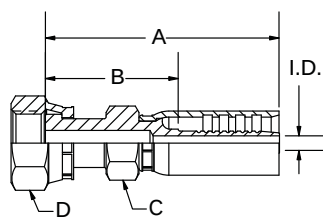
HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	DROP F	FORMER PART #
1/8	-3	3/8-24	90302-0355S0-0†	TP204	.078	1.483	15/16	1/2	7/16	0.750	3903-02643
1/8	-4	7/16-20	90302-0455S0-0†	SP038	.078	1.671	1-1/8	1/2	9/16	0.875	3903-02644
3/16	-4	7/16-20	90303-0455S0-0	TP204	.109	2.058	1-1/4	9/16	9/16	0.875	3903-03644
1/4	-4	7/16-20	90304-0455S0-0	TP204	.156	2.308	1-1/4	5/8	9/16	0.875	3903-04644
1/4	-5	1/2-20	90304-0555S0-0	TP205	.156	2.370	1-5/16	5/8	5/8	1.000	3903-04645
1/4	-6	9/16-18	90304-0655S0-0	TP206	.156	2.432	1-3/8	5/8	11/16	1.125	3903-04646
5/16	-5	1/2-20	90305-0555S0-0†	TP205	.219	2.370	1-1/4	5/8	5/8	1.000	3903-05645
5/16	-6	9/16-18	90305-0655S0-0	TP206	.219	2.430	1-5/16	5/8	11/16	1.125	3903-05646
3/8	-4	7/16-20	90306-0455S0-0†	TP204	.156	2.501	1-1/4	3/4	9/16	0.875	3903-06644
3/8	-6	9/16-18	90306-0655S0-0	TP206	.281	2.620	1-3/8	3/4	11/16	1.125	3903-06646
3/8	-8	3/4-16	90306-0855S0-0	TP208	.281	2.751	1-1/2	3/4	7/8	1.375	3903-06648
1/2	-8	3/4-16	90308-0855S0-0	TP308	.391	2.932	1-7/16	7/8	7/8	1.375	3903-08648
1/2	-10	7/8-14	90308-1055S0-0	TP310	.391	3.057	1-9/16	7/8	1	1.625	3903-08650
3/4	-12	1-1/16-12	90312-1255S0-0†	TP312	.625	3.870	2-3/16	1-1/8	1-1/4	2.312	3903-12652
1	-16	1-5/16-12	90316-1655S0-0†	TP316	.812	4.683	2-5/8	1-3/8	1-1/2	2.500	3903-16656
3/16	-4	7/16-20	90H03-0455S0-0	TP204	.109	2.058	1-1/4	9/16	9/16	0.875	390H-03644
1/4	-4	7/16-20	90H04-0455S0-0	TP204	.156	2.308	1-1/4	5/8	9/16	0.875	390H-04644
1/4	-5	1/2-20	90H04-0555S0-0†	TP205	.156	2.370	1-5/16	5/8	5/8	1.000	390H-04645
1/4	-6	9/16-18	90H04-0655S0-0†	TP206	.156	2.432	1-3/8	5/8	11/16	1.125	390H-04646
5/16	-6	9/16-18	90H05-0655S0-0†	TP206	.219	2.433	1-5/16	5/8	11/16	1.125	390H-05646
3/8	-4	7/16-20	90H06-0455S0-0†	TP204	.156	2.501	1-1/4	3/4	9/16	0.875	390H-06644
3/8	-6	9/16-18	90H06-0655S0-0†	TP206	.281	2.620	1-3/8	3/4	11/16	1.125	390H-06646
3/8	-8	3/4-16	90H06-0855S0-0	TP208	.281	2.751	1-1/2	3/4	7/8	1.375	390H-06648
1/2	-8	3/4-16	90H08-0855S0-0	TP308	.391	2.932	1-7/16	7/8	7/8	1.375	390H-08648
1/2	-10	7/8-14	90H08-1055S0-0	TP310	.391	3.057	1-9/16	7/8	1	1.625	390H-08650
5/8	-12	1-1/16-12	90H10-1255S0-0	TP312	.469	3.870	2-5/16	1-1/8	1-1/4	2.312	390H-10652
3/4	-12	1-1/16-12	90H12-1255S0-0†	TP312	.625	3.870	2-3/16	1-1/8	1-1/4	2.312	390H-12652
3/4	-16	1-5/16-12	90H12-1655S0-0†	TP316	.625	4.117	2-7/16	1-1/4	1-1/2	2.500	390H-12656
1	-16	1-5/16-12	90H16-1655S0-0†	TP316	.812	4.683	2-5/8	1-3/8	1-1/2	2.500	390H-16656

† Run-to-order product. Contact your Eaton representative for details.

Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

Permanent Attached Hose Fittings

Straight with Female Swivel, O-Ring Face Seal

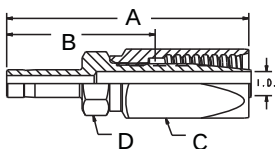


HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	FORMER PART #
1/8	-4	9/16-18	90302-044000-0‡	MP045	.078	1.780	1.219	5/8	11/16	3903-02404
1/4	-4	9/16-18	90304-044000-0	MP045	.156	2.600	1.520	5/8	11/16	3903-04404
1/4	-6	11/16-16	90304-064000-0‡	SP031	.156	2.502	1.422	5/8	7/8	3903-04406
5/16	-4	9/16-18	90305-044000-0‡	MP045	.219	2.600	1.475	5/8	11/16	3903-05404
5/16	-6	11/16-16	90305-064000-0	MP037	.375	2.670	1.545	5/8	13/16	3903-05406
3/8	-6	11/16-16	90306-064000-0	SP031	.272	2.690	1.440	3/4	7/8	3903-06406
3/8	-8	13/16-16	90306-084000-0	MP046	.272	3.038	1.788	3/4	15/16	3903-06408
1/2	-8	13/16-16	90308-084000-0	FP040	.382	3.060	1.565	15/16	1-1/16	3903-08408
1/2	-10	1-14	90308-104000-0‡	TP310	.391	3.325	1.830	7/8	1-1/8	3903-08410
3/4	-12	1-3/16-12	90312-124000-0	MP039	.610	3.642	1.955	1-1/8	1-3/8	3903-12412
1	-16	1-7/16-12	90316-164000-0‡	MP042	.811	4.360	2.170	1-3/8	1-5/8	3903-16416

1/4	-4	9/16-18	90H04-044000-0	MP045	.156	2.600	1.520	5/8	11/16	390H-04404
3/8	-6	11/16-16	90H06-064000-0	SP031	.272	2.690	1.440	3/4	7/8	390H-06406
1/2	-8	13/16-16	90H08-084000-0	FP040	.382	3.060	1.565	7/8	1-1/16	390H-08408
1/2	-10	1-14	90H08-104000-0‡	TP310	.382	3.325	1.830	7/8	1-1/8	390H-08410
5/8	-10	1-14	90H10-104000-0	TP312	.469	3.632	2.060	1-1/8	1-1/8	390H-10410
3/4	-12	1-3/16-12	90H12-124000-0‡	MP039	.610	3.642	1.995	1-1/8	1-3/8	390H-12412
1	-16	1-7/16-12	90H16-164000-0‡	MP042	.811	4.360	2.170	1-3/8	1-5/8	390H-16416

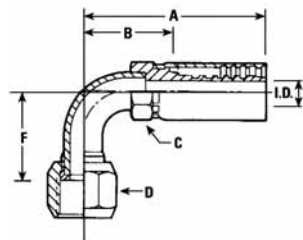
‡ Run-to-order product. Contact your Eaton representative for details.

Fractional Stand Pipe with Hoke Groove



HOSE I.D.	TUBE O.D.	FITTING PART #	LENGTH A	CUT OFF B	NIPPLE HEX C	HEX SIZE D	FORMER PART #
1/4	.250	90404-04JK00-0	2.193	1-3/8	5/8	1/2	3904-04J04-KOH
3/8	.375	90406-06JK00-0	2.730	1-3/4	13/16	5/8	3904-06J06-KOH
1/2	.500	90408-08JK00-0	3.295	2	1	13/16	3904-08J08-KOH

Female Swivel, 90° Elbow O-Ring Face Seal (Short Drop)



HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	DROP F	FORMER PART #
1/8	-4	9/16-18	90302-0440S0-0‡	TP204	.078	1.676	1-1/8	1/2	11/16	.779	3903-02474
1/4	-4	9/16-18	90304-0440S0-0	TP204	.156	2.313	1-1/4	5/8	11/16	.779	3903-04474
5/16	-4	9/16-18	90305-0440S0-0‡	TP204	.219	2.313	1-3/16	5/8	11/16	.779	3903-05474
5/16	-6	11/16-16	90305-0640S0-0	TP206	.281	2.493	1-15/16	3/4	13/16	.902	3903-05476
3/8	-6	11/16-16	90306-0640S0-0	TP206	.281	2.681	1-7/16	3/4	13/16	.902	3903-06476
1/2	-8	13/16-16	90308-0840S0-0‡	TP308	.391	2.980	1-1/2	7/8	15/16	1.150	3903-08478
3/4	-12	1-3/16-12	90312-1240S0-0‡	TP312	.625	3.709	2	1-1/8	1-3/8	1.882	3903-12482

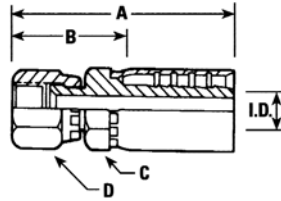
1/4	-4	9/16-18	90H04-0440S0-0‡	TP204	.156	2.313	1-1/4	5/8	11/16	.779	390H-04474
3/8	-6	11/16-16	90H06-0640S0-0	TP206	.281	2.681	1-7/16	3/4	13/16	.902	390H-06476
1/2	-8	13/16-16	90H08-0840S0-0‡	TP308	.391	2.980	1-1/2	7/8	15/16	1.150	390H-08478
3/4	-12	1-3/16-12	90H12-1240S0-0‡	TP312	.625	3.709	2	1-1/8	1-3/8	1.882	390H-12482

3/4	-12	1-3/16-12	90N12-1240S0-0‡	TP312	.625	3.747	2	1-1/8	1-3/8	1.882	390N-12482
-----	-----	-----------	-----------------	-------	------	-------	---	-------	-------	-------	------------

‡ Run-to-order product. Contact your Eaton representative for details.

Permanent Attached Hose Fittings

JIC 37° Female Swivel, AISI 316 Series Stainless Steel

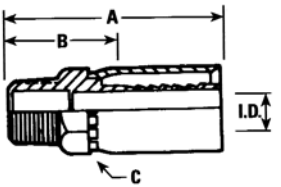


HOSE I.D.	DASH SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	FORMER PART #
3/16	-4	7/16-20	90A03-045400-0	FP011	.109	2.151	1-5/16	9/16	5/8	390A-03544
1/4	-4	7/16-20	90A04-045400-0	FP012	.156	2.526	1-7/16	5/8	5/8	390A-04544
3/8	-6	9/16-18	90A06-065500-0	FP015	.281	2.818	1-9/16	3/4	3/4	390A-06546
1/2	-8	3/4-16	90A08-085400-0	FP016	.391	3.151	1-5/8	7/8	15/16	390A-08548
1/2	-10	7/8-14	90A08-105400-0†	FP006	.391	3.151	1-5/8	7/8	1-1/16	390A-08550
3/4	-12	1-1/16-12	90A12-125500-0†	FP008	.625	3.432	1-3/4	1-1/8	1-1/4	390A-12552
1	-16	1-5/16-12	90A16-165500-0†	FP009	.813	4.057	2	1-3/8	1-1/2	390A-16556

3/16	-4	7/16-20	90L03-045400-0	FP011	.109	2.151	1-3/8	9/16	5/8	390H-03544
1/4	-4	7/16-20	90L04-045400-0	FP012	.156	2.526	1-7/16	5/8	5/8	390H-04544
3/8	-6	9/16-18	90L06-065500-0	FP015	.281	2.818	1-9/16	3/4	3/4	390H-06546
3/8	-8	3/4-16	90L06-085400-0	FP005	.281	2.808	1-9/16	3/4	15/16	390H-06548
1/2	-8	3/4-16	90L08-085400-0	FP016	.391	3.151	1-5/8	7/8	15/16	390H-08548
1/2	-10	7/8-14	90L08-105400-0	FP006	.391	3.151	1-5/8	7/8	1-1/16	390H-08550
3/4	-12	1-1/16-12	90L12-125500-0	FP008	.625	3.432	1-3/4	1-1/8	1-1/4	390H-12552
1	-16	1-5/16-12	90L16-165500-0	FP009	.812	4.057	1-15/16	1-3/8	1-1/2	390H-16556

† Run-to-order product. Contact your Eaton representative for details.

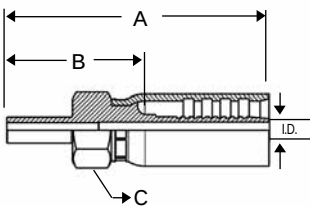
Male Pipe Rigid Stainless Steel



HOSE I.D.	PIPE SIZE	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	FORMER PART #
1/4	1/4	90L04-041000-0	MP004	.156	2.307	1-1/4	11/16	390H-04104
3/8	3/8	90L06-061000-0	MP005	.281	2.589	1-5/16	3/4	390H-06106
1/2	1/2	90L08-081000-0	MP009	.391	3.026	1-1/2	15/16	390H-08108
3/4	3/4	90L12-121000-0	MP011	.625	3.213	1-5/8	1-1/8	390H-12112
1	1	90L16-161000-0	MP013	.812	3.964	1-7/8	1-3/8	390H-16116

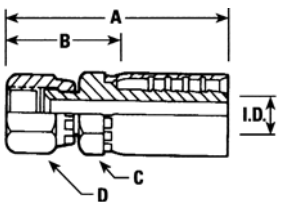
† Run-to-order product. Contact your Eaton representative for details.

Stand Pipe, Straight, Stainless Steel



HOSE I.D.	PIPE SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	FORMER PART #
1/4	1/4	-	90A04-04J000-0	TP204	.156	2.495	1-7/16	5/8	390A-04J04
3/8	3/8	-	90A06-06J000-0	TP206	.281	2.752	1-1/2	3/4	390A-06J06
1/2	1/2	-	90A08-08J000-0	TP208	.391	3.195	1-11/16	7/8	390A-08J08
1/4	0.250	-	90L04-04J000-0	TP204	.156	2.495	1-7/16	5/8	390L-04J04
3/8	0.375	-	90L06-06J000-0	TP206	.281	2.752	1-1/2	3/4	390L-06J06
1/2	0.500	-	90L08-08J000-0	TP308	.391	3.195	1-11/16	7/8	390L-08J08

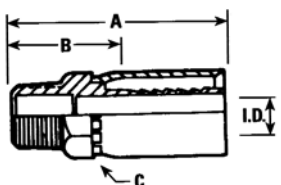
JIC 37° Female Swivel Brass



HOSE I.D.	PIPE SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	HEX D	FORMER PART #
3/16	-4	7/16-20	90603-045400-0†	FP011	.125	1.556	7/8	9/16	5/8	3906-03544
1/4	-4	7/16-20	90604-045400-0	FP022	.156	2.219	1-1/8	11/16	11/16	3906-04544
3/8	-6	9/16-18	90606-065500-0†	FP014	.281	2.813	1-3/8	3/4	13/16	3906-06546

† Run-to-order product. Contact your Eaton representative for details.

Male Pipe Rigid Brass



HOSE I.D.	PIPE SIZE	THREAD	FITTING PART #	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B	HEX C	FORMER PART #
1/4	1/4	-	90604-041000-0	MP004	.156	2.048	1-1/8	11/16	3906-04104
3/8	3/8	-	90606-061000-0†	MP005	.281	2.589	1-5/16	3/4	3906-06106

† Run-to-order product. Contact your Eaton representative for details.

Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

390C Brass Fittings for 3630 Series Hose

390C Series Brass Fittings are ordered by selecting components from the parts shown to the right and on the next page.

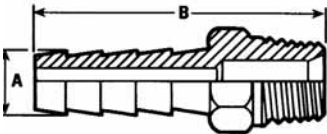
Fittings are intended for use with hose clamps or brass ferrules.

Dimensions are in inches unless otherwise specified.

Construction

- Machined from 360 alloy brass
- Pipe Thread manufactured to dryseal specifications
- 3/16" ID Hose Barb Stems contain three barbs; 1/4" ID and larger contain four barbs.

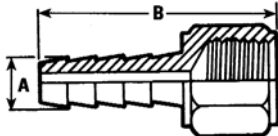
NPT Male/Hose Barb



SIZE	NPT THREAD	FITTING PART #	LENGTH B	HEX
3/16	1/8-27	3980-77320	1.36	7/16
3/16	1/4-18	3980-77420‡	1.54	9/16
1/4	1/8-27	3980-71720‡	1.58	1/2
1/4	1/4-18	3980-71820	1.76	9/16
1/4	3/8-18	3980-71920	1.76	11/16
3/8	1/4-18	3980-72020	1.76	9/16
3/8	3/8-18	3980-72120	1.76	11/16
3/8	1/2-24	3980-72220	1.97	7/8
1/2	3/8-18	3980-77520	1.76	11/16
1/2	1/2-14	3980-77620	1.97	7/8
1/2	3/4-14	3980-77920‡	1.97	1-1/16
3/4	1/2-14	3980-77720‡	2.19	7/8
3/4	3/4-14	3980-77820‡	2.19	1-1/16

‡ Run-to-order product. Contact your Eaton representative for details.

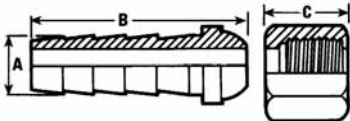
NPT Female/Hose Barb



SIZE	NPT THREAD	FITTING PART #	LENGTH B	HEX
3/16	1/4-18	3980-82320‡	1.44	5/8
1/4	1/4-18	3980-71520	1.66	5/8
3/8	1/4-18	3980-84420‡	1.66	5/8
3/8	3/8-18	3980-71620	1.66	3/4

‡ Run-to-order product. Contact your Eaton representative for details.

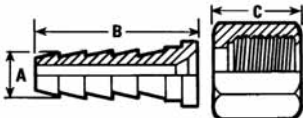
NPS Female Swivel/Hose Barb Ball Seat Type



SIZE A	NPS THREAD	FITTING PART #	STEM LENGTH B	NUT LENGTH C	HEX
3/16	1/4-18	3983-24412‡	1.17	.53	5/8
1/4	1/4-18	3983-24413	1.39	.53	5/8
3/8	3/8-18	3983-24605	1.45	.63	3/4
1/2	1/2-14	3983-24802	1.54	.69	15/16
3/4	3/4-14	3983-25202‡	1.69	.75	1-1/8

‡ Run-to-order product. Contact your Eaton representative for details.

Female Swivel/Hose Barb 37°JIC/ 45° SAE



SIZE A	TUBE O.D.	THREAD	FITTING PART #	STEM LENGTH B	NUT LENGTH C	HEX
3/16	1/4	7/16-20	3983-54416	1.02	.60	9/16
1/4	1/4	7/16-20	3983-54417	1.24	.60	9/16
1/2	1/2	3/4-16	3983-54806	1.34	.84	7/8
3/8	3/8	5/8-18	3983-A0606	1.27	.68	3/4
1/4	3/8	9/16-18	3983-54614	1.31	.69	11/16
3/8	3/8	9/16-18	3983-54615	1.31	.69	11/16

390C Brass Hose Fittings

390C Series Brass Fittings are ordered by selecting components from the parts shown to the right and on the previous page.

Fittings are intended for use with hose clamps or brass ferrules.

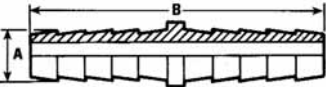
Dimensions are in inches unless otherwise specified.

*Contact Customer Support for 390C Series Swaging Pusher recommendations.

Construction

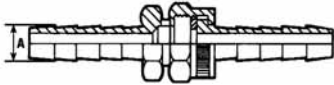
- Machined from 360 alloy brass
- Pipe Thread manufactured to dryseal specifications
- 3/16" ID Hose Barb Stems contain three barbs; 1/4" ID and larger contain four barbs.

Hose Splicer



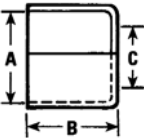
SIZE A	FITTING PART #	LENGTH B
1/4	3980-82920	2.03
3/8	3980-83020	2.06
1/2	3980-83120	2.06
3/4	3680-83220	2.50

Garden Hose Fitting Set



HOSE I.D. A (BOTH FITTINGS)	THREAD	FITTING PART #
1/2	3/4-11-1/2	3983-GHS01
3/4	3/4-11-1/2	3983-GHS02

Brass Ferrule



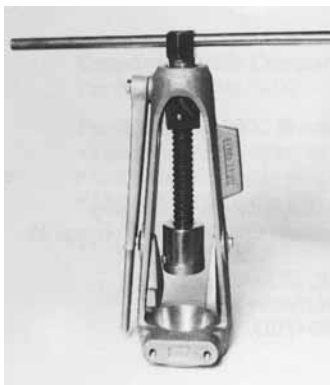
SIZE	FITTING PART #	FERRULE I.D. A	FERRULE LENGTH B	HOSE SIZE C
3/16	3981-30220	.400	.47	.27
1/4	3981-30320	.500	1.00	.34
3/8	3981-19120	.656	1.00	.44
1/2	3981-30420	.812	1.00	.63
3/4	3981-30520	1.150	.88	.88

Hose Fitting Swaging Machines and Tools

Designed to Attach Synflex Permanent Fittings to Synflex Hose

- Synflex swaging equipment produces smooth, uniform fitting surfaces, without raised edges or ridges common in other fitting methods.
- Complete range of fitting swaging pushers and dies, up to -16 size are ordered separately.

SST - Hand Swager



SST

Part No.: 4530-01002

- Portable hand operated machine for field assembly
- Frame can be attached to bench vise or directly to a table with separate mounting bracket
- Weight: 8 lbs (3.6kg)

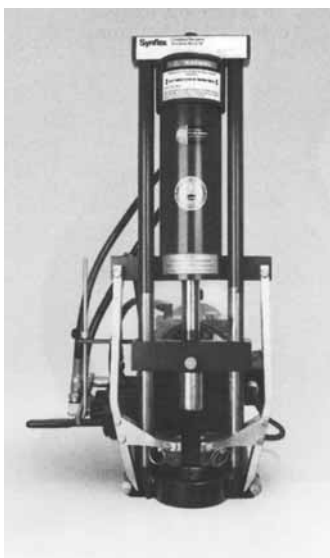
Carrying Case



Carrying Case for Portable Hand Swager SST

Part No.: 45J0-05600

Mark IX



Mark IX

- Fully automatic; opens dies to release completed fitting assembly
- Fast actuation; capable of 5-second cycle time
- Three power supply options for a broad range of production needs
- Weight: 131 lbs (59.4kg). (option 1&2)

Option 1

1HP, 60Hz, 115/208/230V
Single Phase Motor;
Medium Duty;
Part No.: 4530-009S0

Option 2

1HP, 60 Hz, 230/460 V Three Phase Motor; Medium Duty; Part No.: 4530-009S1

Option 3

- For Heavy Duty, continuous high speed production assembly, the Mark IX (a) can be equipped with a high capacity power unit (b)
- (a) Mark IX swaging machine without standard power supply. Part No.: 4530-009S4
- (b) Commercial duty hydraulic power unit with 5HP three phase 230/460 volt motor, 5 gallon reservoir; 4.1 GPM displacement. Part No.: 453C-00020

Pushers, Dies

Pushers



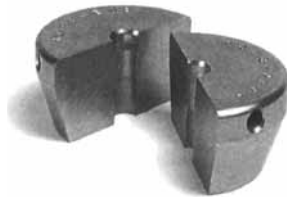
Pushers

- Pusher selection is based on fitting end design chosen from assembly. Pusher part numbers are listed in the Fitting Tables on pages 33-41.

Example:

- To attach a 3/8 inch I.D. hose to a JIC 37° Female Swivel fitting with a -6 thread size Part No. 90306-065500, page 42, use pusher Part No. 4599-FP015

Dies



Dies

- Swaging dies are applied in paired sets. Die selection is based on hose series and size. Die part numbers are listed in hose selection chart.

Example:

- To attach fitting Part No. 90306-065500 to a series 3130 3/8 inch I.D. hose, die Part No. 4540-306 is selected from the table in page 8.

Die Pusher Storage Rack



Die Pusher Storage Rack

- Rack holds 12 pushers and 8 dies. Welded 16 gauge steel frame can be wall mounted or used on bench top. Rack is 19 inches wide; 22-1/2 inches high; extends 3 inches from mounting surface.

Part No.: 45J0-03401

LOW/MEDIUM
PRESSURE

CONSTANT
PRESSURE HOSE

HIGH
PRESSURE

TWIN LINE
HOSE

AIR, WATER
& TUBING

TRUCK
HOSE

SPECIALTY
HOSE

HOSE
FITTINGS

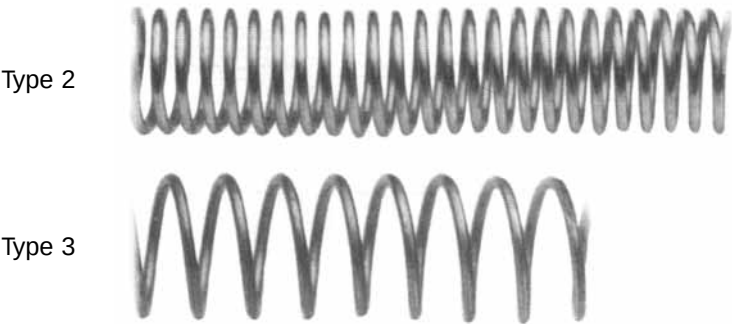
HOSE ASSEMBLY
EQUIPMENT

ACCESSORIES

TECHNICAL
DATA

Hose Accessories

Overall Spring Guards

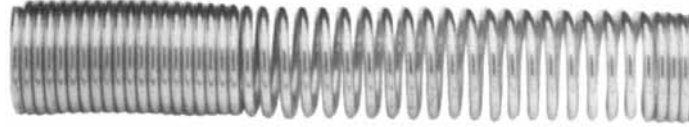


- For assembly abrasion protection and support
- Protects hose from kinking
- Order in multiples of 25-ft (7.6m) lengths

HOSE PART #	STANDARD LENGTH FT	TYPE 2 PART #	TYPE 3 PART #
3800-03, 3R30-03, 3130-03, 37AL-03	25	4521-50000	-
3800-04, 3R30-04, 3440-04, 3130-04, 3V10-03, 37AL-04, 30CT-04	25	4521-51000	4521-02000
3800-06, 3440-06, 34PW-06, 3130-06, 3130-05, 37AL-05, 37AL-06, 30CT-05, 30CT-06	25	4521-53000	4521-04000
3800-08, 3R30-08, 3440-08, 34PW-08, 3130-08, 37AL-08, 30CT-08	25	4521-54000	4521-05000
34PW-10, 3440-10, 3130-12	25	4521-88000	-
3R80-03	25	4521-83000	-
3V10-04, 3130-05	25	4521-84000	-
3R80-06	25	4521-58000	-
3R80-08	25	4521-59000	4521-10000
3R80-12	25	4521-60000	-
3R80-16	10	4521-61000	-
3R80-04	25	4521-57000	-

Hose Accessories

Hose and Spring Guards



- For fitting-to-hose interface protection
- Made from high-grade spring steel wire.
- Hose guards provide protection against kinking at fittings.
- Spring-type guards hand screw to the fitting shell to form a single unit assembly.

HOSE PART #	PART #
3R30-04, 3800-04, 3130-04, 37AL-04, 30CT-04	4521-91005
3130-05, 37AL-05, 30CT-05	4521-90005
3R30-06, 3R80-04	4521-92005
3R30-03, 3800-03, 3130-03, 37AL-03	4521-AG004
3800-06, 3130-06, 37AL-06	4521-94005
30CT-06, 3R80-06	4521-AA005

Plastic Protective Coil Sleeve



- For fitting-to-hose interface protection
- A convenient and economical way to protect hose and tubing lines.
- Can be installed after hose assembly is made.
- Lightweight
- Order in multiples of 20-ft (6m) lengths.

HOSE PART #	PART #
3130-02	4554-04000
3R30-03, 3800-03, 3130-03, 3630-03, 37AL-03	4554-06000
3R30-04, 3130-04, 3630-03, 37AL-04, 30CT-04	4554-07000
3R30-06, 3800-04, 3440-04, 34PW-04, 3130-05, 3R80-03, 37AL-05, 30CT-05	4554-08000
3440-06, 34PW-06, 3130-06, 3R80-04, 37AL-06, 30CT-06	4554-10000
3R30-08, 3800-06, 3130-08, 3R80-06, 37AL-08, 30CT-08	4554-12000
3800-08, 3440-08, 34PW-08, 3R80-08	4554-14000
3130-12, 3R80-12, 3440-10, 34PW-10, 3630-12	4554-16000
3440-12, 34PW-12	4554-19000
3R80-16, 3440-16, 34PW-16	4554-22000

LOW/MEDIUM
PRESSURE

CONSTANT
PRESSURE HOSE

HIGH
PRESSURE

TWIN LINE
HOSE

AIR, WATER
& TUBING

TRUCK
HOSE

SPECIALTY
HOSE

HOSE
FITTINGS

HOSE ASSEMBLY
EQUIPMENT

ACCESSORIES

TECHNICAL
DATA

Hose Accessories

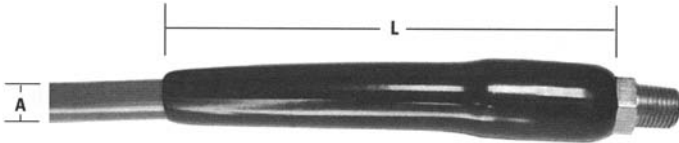
Vinyl Hose Guards



- For assembly abrasion protection and support
- Use when a non-metallic guard is required. Guard assembly may require the use of lubricant on the hose
- Available in 50-ft (15.2m) lengths
- **Note:** 4513-05 100-ft (30m) lengths

HOSE PART #	PART #	GUARD I.D.	GUARD O.D.
3R30-04, 3440-04, 34PW-04, 3130-04, 3R80-03, 37AL-04, 30CT-04	4513-04000	9/16	13/16
3R30-06, 3440-06, 34PW-06, 3130-06, 3R80-04, 3160-06, 37AL-06, 30CT-06	4513-05000	11/16	1-1/16
3R80-06	4513-06000	15/16	1-13/14
3R80-08, 3800-08	4513-10000	15/16	1-5/16
3130-12, 3R80-12	4513-11000	1-3/16	1-11/16

Molded Black PVC Hose Guards



- For assembly abrasion protection and support
- Protects against abrasion and physical abuse when a stiffer, non-metallic guard is preferred
- For hand-held use, keeps hose from kinking at fitting

HOSE PART #	PART #	GUARD I.D. A	LENGTH L
30CT-04, 3R30-04, 3630-04, 3130-04, 3580-04, 3R80-03, 3800-04, 37AL-04	45J0-04801	.55	6.0
30CT-06, 3R30-06, 3630-06, 3130-06, 3580-06, 3R80-04, 3800-06, 37AL-06	45J0-04802	.69	7.0

Accessories

Hand-Held Hose Cutter

Part No. 4523-04006

- A handy tool for cutting Synflex hose 1/8 inch to 1/2 inch in diameter. Blades are replaceable. Vinyl cushioned grips.

Replacement Blade

Part No. 4523-04005



Multi-Line Hose Separation Tool

Part No. 4573-00000

- Designed for Separation of 3, 4 and 5 line hose.

Replacement Blades

Part No. 4573-01000



Swage Lubricant

Part No. 4545-01001

- A lubricant especially for use in assembly of Synflex reusable and permanently attached stainless steel fittings.



Vise Blocks

Part No. 4504-00000

- For 3/16 inch through 1/2 inch I.D. hose

Part No. 4504-01000

- For 3/4 inch and 1 inch I.D. hose. Use in making assemblies.



Twin-Line Hose Separation Tool

Part No. 4574-01000

- Designed for separating Twin-Line hose

Replacement Blades

(set of 10)

Part No. 4574-02000



Insertion Depth Marker

Part No. 45J0-04603



Dies

Part No. 4574-03000-XXX

Synflex De-Twiner Die Reference Chart (4574-03000-xxx)

Hose Product	Die* No.	Hose Product	Die* No.	Hose Product	Die* No.	Hose Product	Die* No.
3R30-03	027	37AL-03	002	3R80-04	009	3840-03	018
3R30-04	003	37AL-04	003	3R80-06	012	3840-04	019
3R30-06	010	37AL-05	007	3R80-08	015	3840-06	020
3R30-08	013	37AL-06	010	3E80-04	009	3840-08	021
		37AL-08	013	3E80-06	012		
3130-02	001	30CT-04	003	3E80-08	015	35NG-03	004
3130-03	002	30CT-05	022			35NG-04	026
3130-04	004	30CT-06	011	3V10-03	005	35NG-06	012
3130-05	008	30CT-08	014	3V10-04	016	35NG-08	015
3130-06	011			3V10-06	017		
3130-08	013	3360-03	002			3V20-04	016
		3360-04	004	3VEO-03	005	3V20-06	017
3160-03	002	3360-05	023	3VEO-04	016		
3160-04	004	3360-06	024	3VEO-06	017	3251-08	006
3160-05	008	3360-08	025				
3160-06	011					31DW-04	005
3160-08	013						

Accessories

Clamps

Plastic – covered clamps to secure hose



HOSE PART #	PART #	BOLT HOSE SIZE (in)
3130-02	45J0-00201	13/32
3130-03, 3630-03, 3800-03, 37AL-03	45J0-00202	13/32
3130-04, 3630-04, 3800-04, 37AL-04, 30CT-04	45J0-00204	13/32
3R80-03, 3130-05, 37AL-05, 30CT-05,	45J0-00203	13/32
3R80-04	45J0-00205	13/32
3130-06, 3630-06, 3800-06, 37AL-06, 30CT-06	45J0-00206	13/32
3R80-06, 3130-08, 3630-08, 3800-08, 37AL-08, 30CT-08	45J0-00207	13/32
3R80-08	45J0-00208	13/32
3130-12	45J0-00209	13/32
3R80-12, 3630-12	45J0-00210	17/32
3R80-16	45J0-00212	17/32

Hose Size vs. Flow Capacity

How to Select the Correct Hose Size

The hose I.D. may be determined if the fluid flow rate and velocity are known by using the nomograph.

Nomograph data is based on the formula:

$$\text{Area} = \frac{\text{Flow Rate} \times 0.3208}{\text{Velocity}}$$

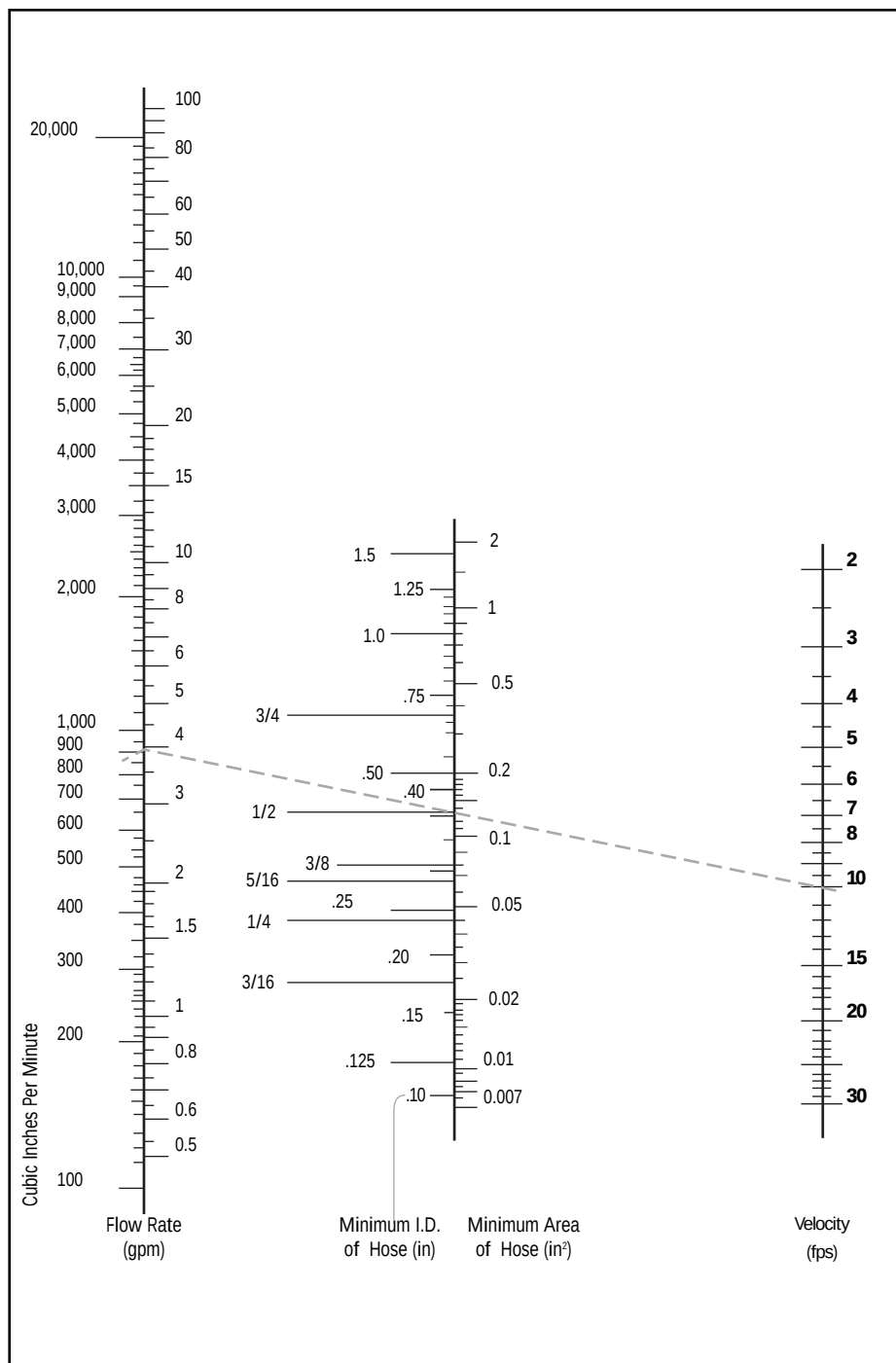
How to Use the Nomograph

- 1 Find the two known values.
- 2 Lay a straightedge to connect the known values.
- 3 The intersection point on the third vertical line identifies the point for that factor.

Example

A pump has a flow rate of 4 gpm. The necessary velocity is 10 fps. What hose size is required?

With a straightedge placed on 4 gpm and 10 fps, the answer is 1/2 inch hose I.D.



Selection, Installation and Maintenance of Synflex Hose and Assemblies

Proper hose selection, installation and maintenance practices should be followed to ensure that hose and hose assemblies have long life and operate safely. Failure to consider these practices could result in unplanned down-time, damage or injury. The general industry practices assembled below are provided as a guide for hose selection, installation and maintenance. Careful consideration for applying these practices is recommended.

Pressure

Determine the maximum operating system pressure and select a hose that will have a maximum working pressure equal to or in excess of the operation system's maximum pressure. It is very important to take into account surge pressures that may be higher than normal operating pressures.

Temperature

Determine the maximum and minimum operating temperatures and select a hose that is designed for use within this temperature range. Consider transient thermal conditions resulting from startup, heat buildup from idling, etc. Special protection from hot equipment may be required.

Chemical and Environmental Resistance

Determine the type and concentration of the fluids and chemicals that will come in contact with the hose core tube I. D. and hose cover. Apply the Hose and Tubing Selection Guide or product construction description to identify the types of polymers used to form the core tube and cover. With this information, locate the compatibility rating of the combination of chemicals and/or fluids with the polymer type described in the Chemical Resistance data on pages 68-69. Contact Eaton Synflex Customer Support to request data for chemicals and conditions not listed.

Size

Select the proper I.D. based on system requirements such as fluid flow rate or velocity. The Hose Selection Nomograph on page 65 can help determine the hose I.D.

Electrical Conductivity

Each hose application should be evaluated for the importance of selecting a hose designed to prevent flow of electrical current (e.g. aerial hydraulics) or a hose designed to sufficiently conduct static electricity to safe ground connections. The conducting hose design requires special conducting fittings which should be selected along with the hose.

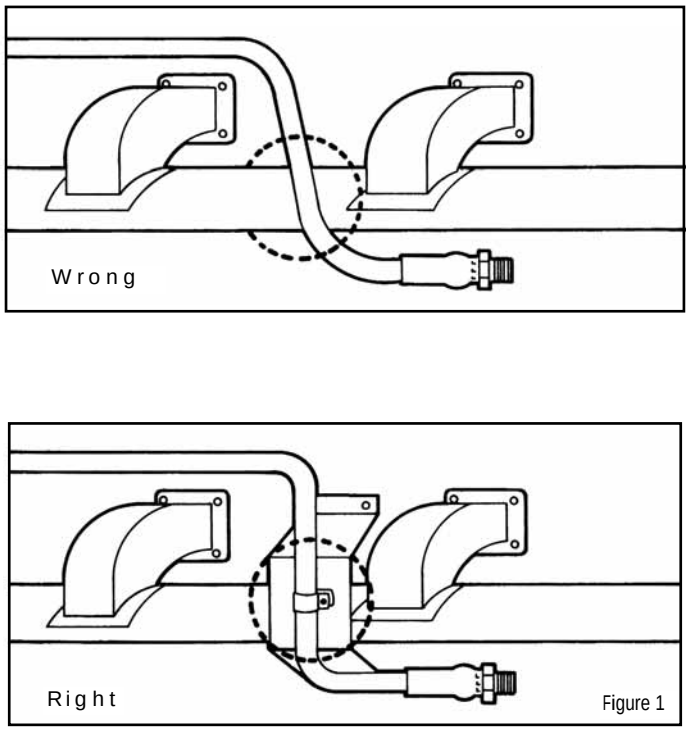


Figure 1

Component Inspection

Prior to installation, inspect hose for I. D. obstruction or damage such as blisters, looseness or cracks in the hose cover and evidence of having been kinked. Check fittings for thread damage or bent fitting components.

Routing

Many problems can be avoided by installing hose and hose assemblies away from hot equipment such as exhaust manifolds. Insulating heat shields may be necessary in some cases (Figure 1).

Selection, Installation and Maintenance of Synflex Hose and Assemblies

Minimum Bend Radius

Tight bends that exceed the hose minimum bend radius should be avoided. Spring guards or stress relief sleeves may be required to protect against exceeding prescribed minimum bend radii (Figure 2).

Torsional Flexing

When equipment parts exhibit relative motion, hose connections should be located so hoses bend instead of twist.

Fitting Connections

Follow the fitting installation instructions provided in this catalog or enclosed with assembly equipment and described in product standards. Attach only the fittings specified for each hose design and do not mix components that are produced by different manufacturers. Proper fitting end selection is very important to eliminate twists and kinks in installed assemblies when connecting fittings to port connections. Swivel fittings are designed to allow for the hex rotation during tightening and bent tube or elbow fittings can eliminate kinks (Figure 3).

Torque Wrench Application

Use torque values where specified when tightening fitting connections to prevent leakage and damage.

Final Check Out

After components are assembled, purge entrapped air and pressurize system to maximum operating pressure. Inspect for leaks and proper function. Perform electrical conductivity tests on designs serving as static electricity discharge paths.

It is important that designers and users consider hose and hose assemblies as having a finite life. Therefore maintenance and replacement is usually necessary at specific intervals.

Maintenance Interval

Frequency of maintenance inspection should be determined by the system designer and user based on the severity of the application, previous service life experience and risk potential.

Maintenance Program

Recommended maintenance should include the following steps as minimum practice:

Leakage – Turn off

equipment and bleed down pressures prior to inspection to minimize risk to personnel. Inspect the full length of the hose and fitting connections for leaks.

Damage

Inspect hose for cuts, abrasion, cracks, blisters, kinked or crushed areas, heat degradation or cover looseness at the port or hose connection. Inspect hose guards for damage using the steps applied to the hose and fittings.

Electrical Continuity

In applications requiring the hose assembly to conduct static electricity to a ground connection, test hose assemblies using a megohmmeter in accordance with recommended procedures described on the permanently attached tag.

Replacement

Hose and/or assembly replacement should be considered at specific intervals under normal conditions. If leakage, loss of conductivity (when required), fitting separation and/or signs of damage are detected, the hose assembly should be replaced immediately.

Hose Routing

Under pressure, a hose may change in length. Always provide some slack in the hose to allow for this shortening or elongation (However, excessive slack in hose lines may cause poor appearance) (Figure 4).

Figure 2

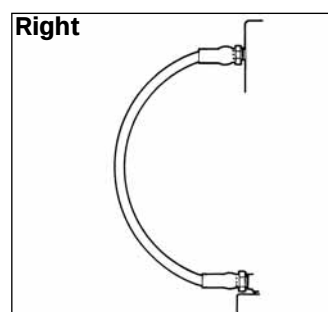
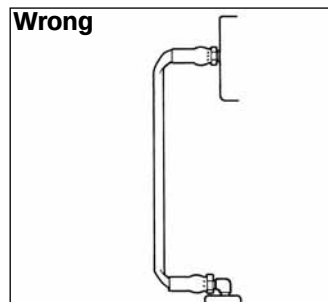


Figure 3

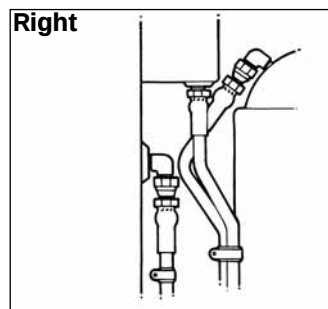
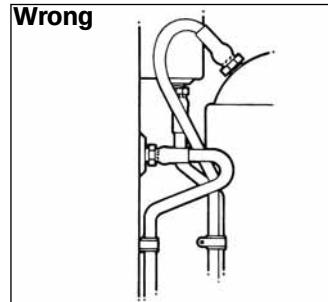
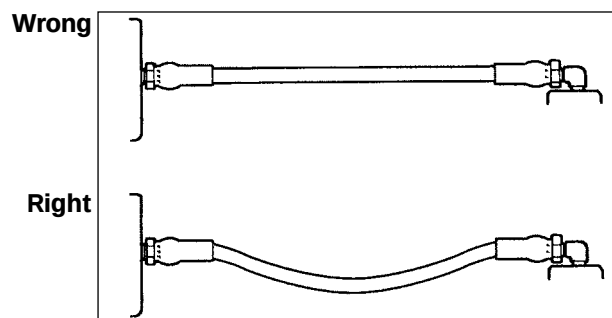


Figure 4



Right

Chemical Resistance Data

This chart is intended to serve as a guide and does not guarantee suitability of hose material with the chemicals listed.

Final selection of materials is dependent on many factors including variations in temperature, pressure and duration of exposure.

HOSE MATERIAL KEY

N = Nylon	H = Polyester
P = Polyolefin	U = Polyurethane
V = PVC - Polyvinyl Chloride	

RESISTANCE RATING KEY

G = Good	P = Poor
L = Limited	NT = Not Tested

	N	H	P	U	V		N	H	P	U	V		N	H	P	U	V
Acetaldehyde	G	G	L	G	P	Carbon Bisulfide	G	L	P	L	P	†Ethylene Glycol	G	G	G	L	G
Acetic Acid	L	L	G	L	G	Carbon Disulfide	G	L	P	L	P	Ethylene Oxide	G	L	L	L	NT
Acetic Anhydride	L	L	G	L	P	Carbon Monoxide	G	G	G	G	G	Fatty Acid	G	G	P	G	G
Acetone	G	L	L	P	P	Carbon Tetrachloride	G	P	P	P	L	Ferric Chloride	L	NT	G	NT	G
Acetyl Bromide	P	P	P	P	P	Carbonic Acid	G	L	G	L	G	Ferric Sulphate	G	G	G	G	G
Acetyl Chloride	P	P	P	P	P	Castor Oil	G	L	G	L	G	Fluoboric Acid	NT	P	G	P	GL
Acetylene	G	G	G	G	NT	Caustic Potash (>20%)	L	L	G	L	L	Fluorine	P	P	P	P	L
Air	G	G	G	G	G	Caustic Potash (<20%)	G	L	G	L	G	Fluorosilicic	NT	NT	G	P	GL
*Alcohols	G	L	G	L	G	Caustic Soda (>20%)	L	L	G	L	L	Formaldehyde	G	L	G	L	G
Aluminum Chloride	P	NT	G	NT	G	Caustic Soda (<20%)	G	L	G	L	G	Formic Acid	P	P	GL	P	GL
Aluminum Sulphate	G	NT	G	NT	G	Cellusolves Union Carbide	G	P	P	P	P	Freon	G	L	L	L	L
Alums	P	NT	G	NT	G	Cellulubes Celanese (Hydraulic						*Fruit Juices	G	G	G	G	G
Ammonia Gas	P	P	P	P	P	Fluid, Phosphate Ester Base)	G	P	P	P	P	Fuel Oil (Aromatic Gas)					
Ammonium Chloride	G	G	G	G	G	Chloracetic Acid	P	P	L	P	P	100 Octane	G	G	L	G	L
Ammonium Hydroxide	P	P	P	P	P	Chloroform	G	P	P	P	P	Fuel Oil	G	G	LP	G	L
Ammonium Nitrate	G	L	G	G	G	Chlordane	G	G	G	G	P	Furfuryl Alcohol	G	G	G	G	G
Ammonium Phosphate	G	L	G	G	G	Chlorinated Solvents	G	P	L	P	P	Galic Acid (<20%)	G	L	G	L	G
Ammonium Sulphate	G	L	G	G	G	Chlorine (Dry)	P	P	P	P	L	** Gas (Natural)	G	G	G	G	G
Amyl Acetate	G	L	P	L	P	Chlorine (Water) (<20%)	L	P	G	L	G	Gas Oil	G	GL	P	G	L
Amyl Alcohol	G	G	G	G	G	Chromic Acid	P	P	GL	P	L	Gasoline	G	G	LP	G	L
Anethole	G	NT	NT	NT	NT	Chromium Salts	G	G	G	G	G	Gasoline (Aromatic)	G	G	LP	G	L
Aniline	L	P	P	P	L	*Cider	G	G	G	G	G	Gasoline (Non-Aromatic)	G	G	LP	G	G
Animal Oils	G	G	P	G	G	Citric Acid	G	L	G	L	G	Gelatin	G	G	G	G	G
Antimony Salts	G	G	G	G	G	Coal Gas	G	G	G	G	G	Glucose	G	G	G	G	G
Apoclor Monsanto (Chlorinated						Copper Chloride	L	G	G	G	G	Glue (Depends on type)	G	G	G	G	G
Hydrocarbon Hydraulic Fluid)	G	L	L	L	L	Copper Sulphate	G	G	G	G	G	†Glycerine	G	G	G	G	G
Aromatic Hydrocarbons	G	L	P	L	P	*Corn Oil	G	G	G	G	G	†Glycol	G	G	G	L	G
Arsenic Salts	G	G	G	G	G	Cottonseed Oil	G	G	G	G	G	Greases	G	G	L	G	G
Asphalt	G	G	G	G	G	Cresosote	P	P	L	P	L	Heavy Water (D2O)	G	G	NT	NT	NT
Auto Transmission Fluid	G	G	G			Cresols	P	P	L	P	L	Heptane	G	G	P	G	L
Barium Chloride	G	G	G	G	G	Cresylic Acid	P	P	L	P	L	Hexane	G	G	P	G	L
Barium Salts	G	G	G	G	G	Crude Petroleum Oil	G	L	P	G	G	†Houghto Safe Houghton 600					
Basic Copper Arsenate	G	G	G	G	G	Cupric Sulphate	L	L	G	L	G	Series (Hyd. Fluid Water					
Benzaldehyde	G	G	L	G	P	Cyclohexane	G	G	NT	G	NT	Glycol Base)	G	L	G	G	G
Benzene	G	L	P	L	P	Cyclohexanone	G	G	P	G	P	†Houghto Safe Houghton 1000					
Benzoic Acid	G	P	G	P	G	Decalin	G	NT	NT	NT	NT	Series (Phosphate Ester					
Benzol (Benzene)	G	L	P	L	P	Diacetone Alcohol	G	L	G	L	P	Base)	G	L	P	L	P
Benzyl Alcohol	L	L	L	L	L	Diammonium Phosphate	G	L	G	P	G	Hydraulic Fluid Petroleum Base	G	G	P	G	P
Borax	G	G	G	G	L	Dibutyl Phthalate	G	L	L	L	NT	†Hydraulic Fluid Water Glycol					
Bordeaux Mixture	G	G	G	G	G	Diesel Fuel	G	G	L	G	L	Base	G	G	G	G	G
Boric Acids	G	G	G	G	G	Diethanolamine (20% conc.)	G	L	NT	L	NT	†Hydraulic Fluid					
Boric Copper Sulphate	G	G	G	G	G	Diethyl Ether	G	L	G	L	L	Phosphate Ester	G	L	P	L	P
Bromine	P	P	P	P	L	Diethyl Phosphate	G	L	P	L	P	Hydraulic Oil	G	G	P	G	NT
Butanol	G	G	G	G	G	Diethylphthalate	G	L	P	L	P	Hydrochloric Acid (10%)	G	P	G	L	G
* Butter	G	G	G	G	G	Enamels	G	G	G	G	G	Hydrocyanic Acid	P	NT	G	NT	G
Butyl Acetate	G	L	P	L	P	Essential Oils	G	G	L	G	G	Hydrofluoric Acid	P	P	L	P	L
Calcium Arsenate	G	G	G	G	G	* Ethanol	G	L	L	L	L	Hydrogen Gas	G	G	G	G	G
Calcium Bisulphide	G	G	G	G	L	Ether	G	L	G	L	L	Hydrogen Peroxide (dil.)	G	G	G	G	G
Calcium Chloride	G	G	G	G	G	Ethyl Acetate	G	L	G	L	P	Hydrogen Peroxide (conc.)	P	P	G	P	L
Calcium Hydroxide (<20%)	G	L	G	L	G	* Ethyl Alcohol	G	L	G	L	L	Hydrogen Sulphide	L	L	G	NT	G
Calcium Hypochlorite	G	L	G	L	G	Ethyl Chloride	G	P	P	P	P	†Hydrolube Union Carbide—					
Calcium Salts	G	G	G	G	G	Ethylene Chlorhydrin	P	P	NT	P	P	(Hydraulic Fluid Water Glycol					
Carbolic Acid	P	P	G	P	P	Ethylene Dichloride	G	P	L	P	P	Base)	G	L	G	G	G

Chemical Resistance Data (continued)

	N	H	P	U	V		N	H	P	U	V		N	H	P	U	V
†Irus Shell 902 Hydraulic Fluid						Oleic Acid	G	G	P	G	L	Sodium Sulphate	G	G	G	G	G
(Water-Oil Emulsion)	G	G	L	G	G	OS 45 Monsanto Hydraulic Fluid						Sodium Sulphide	G	G	G	G	G
Isocyanates	G	G	G	G	NT	(Silicate Ester Base)	G	L	P	L	NT	Sodium Thiosulphate	G	G	G	G	G
Isopropyl Acetate	G	L	L	L	P	Oxalic Acid (-30%)	G	L	G	L	G	Solutions/Emulsions 2-4D					
Kerosene	G	G	LP	G	L	Oxygen	Refer to Factory					DDT Preparation Hydroxy					
Ketones	G	L	G	L	P	Ozone	G	G	P	G	G	Quinoline	G	NT	NT	NT	G
Lacquer Solvents	G	L	G	L	P	Paint (Oil Base)	G	G	L	G	L	Stannous Chloride	L	G	G	G	G
Lactic Acid	G	NT	L	NT	G	Paint Solvents (Oil Base)	G	L	L	L	L	Steam	P	P	P	P	P
Lard	G	G	G	G	G	Palmitic Acid	G	G	G	G	G	Stearic Acid	G	G	G	G	G
Lead Arsenate	G	G	G	G	G	Pentane	G	G	P	G	L	Stearin	G	G	NT	G	NT
Lead Sulphate	G	G	G	G	G	Perchloric Acid	P	P	G	P	L	Stoddard Solvent	G	P	L	P	L
Lead Tetramethyl	G	G	NT	G	NT	Perchlorethylene	G	P	P	P	L	Styrene	G	L	NT	L	NT
Lime	G	G	G	G	G	Petroleum Oils (Sour)	G	L	L	G	G	Sulphur	G	G	G	G	G
Linseed Cake	G	G	P	G	G	Petroleum Oils (Refined)	G	G	L	G	G	Sulphur Dioxide	P	P	G	P	L
Linseed Oil	G	G	P	G	G	Phenolates	L	L	L	G	L	Sulphur Trioxide	L	P	G	P	G
Lubricating Oils, Petroleum						Phenols	P	P	G	P	L	Sulphuric Acid (dil.)	L	LP	L	LP	G
Base	G	G	L	G	G	Phosphoric Acid	G	P	G	P	G	Sulphuric Acid (conc.)	P	P	L	P	P
†Lubricating Oils, Diester Base	G	L	P	L	NT	Picric Acid	L	P	G	P	G	Sulphurous Acid	P	LP	L	LP	L
Magnesium Chloride	G	G	G	G	G	Potash (Potassium Hydroxide)	L	P	G	P	L	Tannic Acid	G	L	G	L	G
Magnesium Hydroxide (<20%)	G	L	G	L	G	Potassium Chloride	G	G	G	G	G	Tar Oil	G	G	G	G	G
Magnesium Sulphate	G	G	G	G	G	Potassium Hydroxide						Tartaric Acid	G	G	G	G	G
Maleic Acid	G	L	G	L	G	(50% conc.)	L	P	G	P	L	Toluene	G	L	P	L	P
Mercuric Chloride	G	G	G	G	L	Potassium Nitrate	G	G	G	G	G	Toluol	G	L	P	L	P
Mercury	G	G	G	G	G	Potassium Permanganate						Tributyl Phosphate	G	L	P	L	P
**Methane	G	G	NT	G	P	(5% conc.)	P	P	P	P	G	Tricesylphosphate	G	L	P	L	P
Methanol	G	L	G	L	P	Potassium Sulphate	G	G	G	G	G	Trichloroacetic Acid	P	P	GL	P	L
Methyl Acetate	G	L	G	L	P	Propane	G	G	G	G	G	Trichloroethylene	G	P	P	P	L
Methyl Bromide	L	P	P	P	P	†Pydraul (Stauffer) F-9, 150, 600,						†Trisodium Phosphate Solution	G	L	NT	L	G
Methyl Chloride	G	P	P	P	P	625	G	L	P	L	P	Turpentine	G	G	P	G	G
Methyl Sulphate	G	G	NT	G	NT	Pyrethrum	G	G	G	G	G	†Ucon Union Carbide (Hydraulic					
Methylethylketone (MEK)	G	L	G	L	P	Pyridine	L	L	G	G	P	Fluid Water Glycol Base)	G	L	G	G	G
Methylisobutylketone (MIBK)	G	L	G	L	P	†Sea Water	G	G	G	G	G	Urea	G	L	G	L	G
*Milk	G	G	G	G	G	†Skydrol Monsanto 500, 7000	G	P	P	P	P	Uric Acid	G	P	G	P	G
Mineral Oil	G	G	LP	G	G	†Soap Solution (conc.)	G	G	L	G	G	Varnish	G	G	L	G	P
Molasses	G	G	G	G	G	* † Soda Water	G	G	G	G	G	Vinegar	G	L	G	L	G
Mustard	G	G	NT	G	NT	Sodium Bicarbonate	G	G	G	G	G	† Water (150°F)	G	G	G	G	G
Naphtha	G	L	P	L	P	Sodium Bisulfite	G	G	G	G	G	White & Bagley No. 2190 Cutting					
Naphthalene	G	L	P	L	P	Sodium Borate	G	G	G	G	G	Oil	G	NT	NT	NT	NT
Nickel Chloride	P	P	G	NT	P	Sodium Carbonate	G	G	G	G	G	*Wine	G	G	G	G	G
Nicotine	G	G	G	G	G	Sodium Chloride	G	G	G	G	G	Wool Oil	G	G	G	G	G
Nitric Acid (<20%)	L	L	G	L	G	Sodium Cyanide	G	G	G	G	G	Xylol	G	L	P	L	P
Nitric Acid (>20%)	L	P	L	P	G	Sodium Hydroxide (<20%)	G	L	G	L	G	Xylene	G	L	P	L	P
Nitrobenzene	G	P	P	P	P	Sodium Hypochlorite	L	L	G	L	G	Zinc Chloride	G	G	G	G	G
* Nitrous Oxide	G	G	LP	G	G	Sodium Nitrate	G	G	G	G	G	Zinc Hydrate	P	L	G	L	G
Oil	G	G	L	G	L	†Sodium Phosphate Solution	G	G	G	G	G	Zinc Sulphate	P	L	G	L	G
* Oil of Turpentine	G	G	L	G	G	Sodium Silicate	G	G	G	G	G						

LOW/MEDIUM
PRESSURE

CONSTANT
PRESSURE HOSE

HIGH
PRESSURE

TWIN LINE
HOSE

AIR, WATER
& TUBING

TRUCK
HOSE

SPECIALTY
HOSE

HOSE
FITTINGS

HOSE ASSEMBLY
EQUIPMENT

ACCESSORIES

TECHNICAL
DATA

Hose Material Reference Chart

- * Does not imply NSF or FDA compliance
- † Recommended operating temperature not to exceed 150° F (66°C)
- ** Does not imply AGA or UL compliance
- ‡ Recommended operating temperature not to exceed 100° F (37.8°C)

SERIES	CORE	COVER	SERIES	CORE	COVER	SERIES	CORE	COVER
25CT	Polyester	Polyurethane	37AL	Polyester	Polyurethane	3VE0	Nylon-Lined	Polyurethane
3630	PVC	PVC	3440	Polyolefin	Polyurethane	34BA	Polyester-Lined	PVC
3R30	Nylon-Lined	Polyurethane	34CU	PUDF	Polyurethane	34PW	Polyolefin	Polyurethane
3130	Nylon-Lined ⁽¹⁾	Polyurethane	3R80	Nylon	Polyurethane	30CT	Polyester	Polyester
3360	Nylon	Polyester	3E80	Nylon	Polyurethane	34CU	PVDF	Polyurethane
3580	Polyester	Polyurethane	3800	Nylon	Polyurethane			
3740	Nylon	Polyurethane	3V10	Nylon-Lined	Polyurethane			

(1) –2 size is a nylon, single-wall design

How to Assemble Permanent Hose Fittings

Instructions for using the Synflex Mark IX Swaging Machines

Permanent Fitting Chart Insertion Depth Table

FITTING SERIES			
INSERTION DEPTH (in)			
Hose I.D. (in)	903, 90H, 90L, 905, 7903, 790H, 90A, 90N	906	
1/8	9/16	-	
3/16	25/32	-	
1/4	1-1/16	7/8	
5/16	1-1/8	-	
3/8	1-1/4	1-1/4	
1/2	1-1/2	1-1/2	
5/8	1-9/16	-	
3/4	1-11/16	-	
1	2-1/16	-	



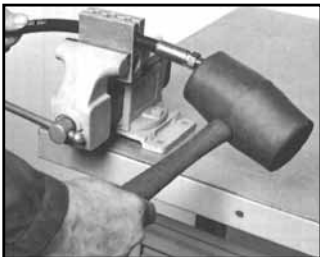
1. Cut hose squarely with Hand-Held Hose Cutter 4523-04006 or Bench-Mounted Hose Cutter 4523-04007.



2. Mark hose for proper insertion depth into fitting. Use insertion depth chart or use Insertion Depth marker 45J0-04603.



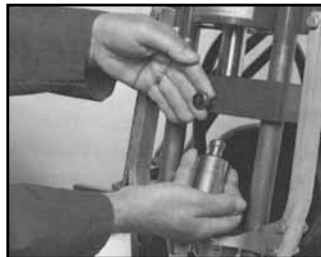
3. Oil inside hose diameter with SAE 20 oil.
Consult Eaton's Technical Support for oxygen system special assembly recommendations.



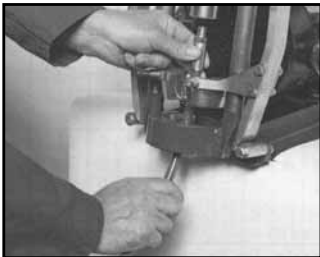
4. Insert hose into fitting to depth mark. (Use Vise Block 4504-00000 or 4504-01000 and rubber mallet to ease assembly.)



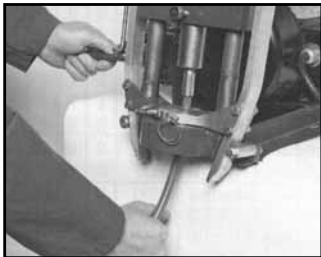
5. Insert the specified die and pusher into the swaging machine.



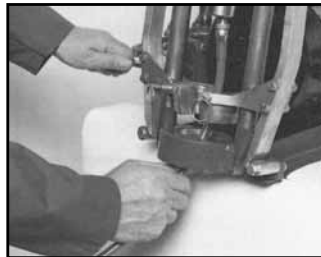
Lubricate die swaging surface with SAE 90 gear oil. For stainless steel fittings use Swage Lubricant 4545-01001.



6. Insert hose end into the pusher.



7. Pull control lever and guide fitting into the die until the pusher bottom is against the top of the die surface.



8. Push control lever to retract pusher and open die halves. Remove swaged hose assembly.

How to Assemble Permanent Hose Fittings

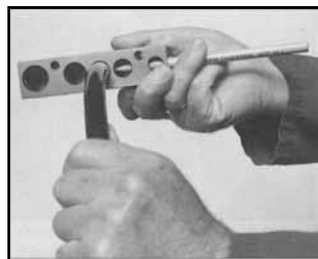
Instructions for using the
Synflex SST Swaging Tool

Permanent Fitting Chart Insertion Depth Table

Hose I.D. (in)	FITTING SERIES	
	INSERTION DEPTH (in)	
	3903, 390A, 390P, 390H, 390L, 390S, 7903, 790H, 390N	3906
1/8	9/16	-
3/16	25/32	-
1/4	1-1/16	7/8
5/16	1-1/8	-
3/8	1-1/4	1-1/4
1/2	1-1/2	-
5/8	1-9/16	-
3/4	1-11/16	-
1	2-1/16	-



1. Cut hose squarely with Hand-Held Hose Cutter 4523-04006 or Bench-Mounted Hose Cutter 4523-00000.

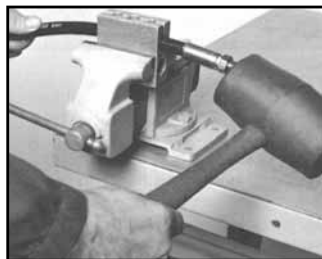


2. Mark hose for proper insertion depth into fitting. See page 14 for insertion depth table or use Insertion Depth marker 45J0-04603.



3. Lubricate inside hose diameter with SAE 20 oil or similar lightweight lubricant.

Consult Eaton's Technical Support for oxygen system special assembly recommendations.



4. Insert hose into fitting to depth mark. (Use Vise Block 4504-00000 or 4504-01000 and rubber mallet to ease assembly.)



5. Insert the specified pusher with the pusher retainer in the raised position. Finger-tighten retaining screw to hold pusher firmly in place. Pusher must be allowed to rotate freely.



6. Place one die half into the base plate. **Lightly oil the inner surface of both die halves with SAE 90 gear oil. For stainless steel fittings use Swage Lubricant 4545-01001.**



7. Insert the assembled hose and fitting through the base plate and firmly into the pusher cavity. Place the other die half in base and lock into place by swinging clamps down firmly against top of dies. Rotate ball screw until fitting reaches the die.



8. With handle provided or 1-1/8 socket and ratchet, rotate screw CW until pusher bottom contacts top of die. Maintain pressure on ball screw and release die clamps. Slowly release pressure and rotate ball screw CCW until it is clear of the die. Remove swaged assembly.

How to Assemble Reusable Hose Fittings

Use Synflex 3000, 3R80, 3E80, 37AL series only.

* Consult Eaton Training for oxygen system assembly recommendations.

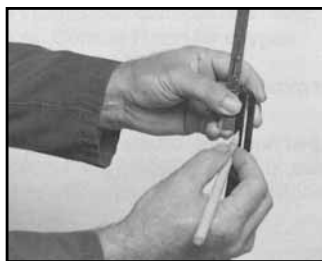


1. Cut hose squarely with Hand-Held Hose Cutter 4523-04006 or Bench-Mounted hose Cutter 4523-00000.

2. Use the table (to the right) to establish the length of hose that is inserted into the fitting socket.

Reusable Fitting Chart Insertion Depth Table

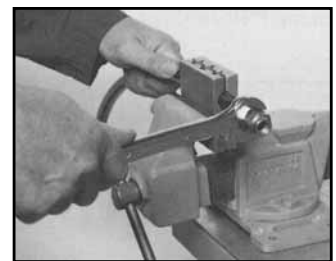
Hose I.D. (in)	FITTING SERIES	
	INSERTION DEPTH (in)	
	3901, 390J, 390K, 3908,	3902
1/8	21/32	-
3/16	27/32	27/32
1/4	1	7/8
5/16	1-3/32	1-1/8
3/8	1-3/16	1-1/4
1/2	1-5/16	1-1/2
3/4	1-1/4	1-11/16
1	1-11/16	-



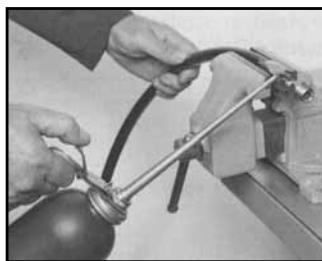
3. Use a rule for measurement and mark the hose with a colored pencil.
4. Insert hose into Vise Blocks (4504-0000 or 4504-01000) and tighten to hold hose firmly in place.



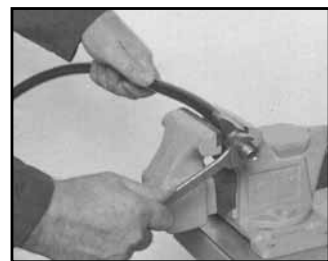
5. Lightly lubricate the outer surface of the hose to make it easier to push the fitting over the hose. For mild steel fittings and standard hose, use SAE 20 motor oil. For stainless steel fittings use Swage Lubricant 4545-01001*.



6. Push fitting socket over the lubricated hose and screw socket on by hand counterclockwise until the socket end is even with the depth mark. The end of the hose should be 3/32 inch to 1/16 inch from the inner shoulder of the fitting socket. It should NOT be bottomed against the shoulder. Do not over-tighten.



7. Remove hose and fitting assembly with Vise Blocks.
8. Place fitting socket in the vise and lubricate the mating fitting threads.



9. Screw the fitting insert clockwise into the socket with a wrench until the bottom of the insert hex contacts the socket shoulder. Do not over-tighten.

How to Separate Twin Line & Multi-Line Hose

Synflex De-Twinner Die Reference Chart (4574-03000-xxx)

Hose Product	Die* No.	Hose Product	Die* No.	Hose Product	Die* No.
3R30-03	027	30CT-04	003	3VEO-03	005
3R30-04	003	30CT-05	022	3VEO-04	016
3R30-06	010	30CT-06	011	3VEO-06	017
3R30-08	013	30CT-08	014		
				3840-03	018
3130-02	001	3360-03	002	3840-04	019
3130-03	002	3360-04	004	3840-06	020
3130-04	004	3360-05	023	3840-08	021
3130-05	008	3360-06	024		
3130-06	011	3360-08	025	35NG-03	004
3130-08	013			35NG-04	026
		3R80-04	009	35NG-06	012
3160-03	002	3R80-06	012	35NG-08	015
3160-04	004	3R80-08	015		
3160-05	008	3E80-04	009	3V20-04	016
3160-06	011	3E80-06	012	3V20-06	017
3160-08	013	3E80-08	015		
				3251-08	006
37AL-03	002	3V10-03	005		
37AL-04	003	3V10-04	016	31DW-04	005
37AL-05	007	3V10-06	017		
37AL-06	010				
37AL-08	013				

*Die number stamped on end.

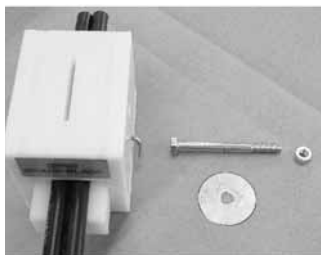
Instructions for using the Twin-Line Hose Separation Tool

**CAUTION: Tool Contains a
Sharp Blade. Do Not Put
Your Hands or Objects
Inside the Tool.**



1. The De-Twinner tool 4574-01000 is designed to split twinned hose without any damage to the hose. Selecting the proper die is critical to operating this tool safely. The proper die can be selected from the attached chart. Customer service can assist in proper die selection. The hose should fit snugly in the die without any extra slop.
2. To insert the die into the tool, first remove the retainer pin. This pin should also fit snugly to prevent the die from moving. **DO NOT REACH INTO THE TOOL OR PUSH ANYTHING THROUGH THE TOOL TO REMOVE THE DIE!** The die extends out one side of the tool to allow ease of removal. Set the tool on its side with the long end of the die pointing up. Remove the die. Insert the new die from the same side and reset the pin.
3. Insert the assembled tool with die into a proper holding fixture (vise or other) and set stop at appropriate distance. The tool is cutting 2" before the exit end of the tool.
4. Apply a water soluble lubricant to the end of the first piece of product to be cut and slide it through the tool to the appropriate stop. Apply a few drops of lubricant to the end of each hose to be cut just before cutting. This will ease the cutting force and prolong blade life.

Blade Replacement



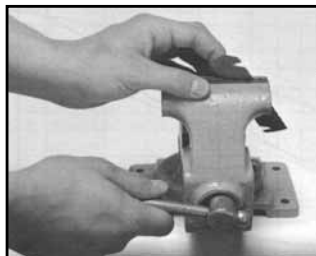
1. Replacement blades are available from Eaton Performance Plastics.
2. Use proper protective gear (cut resistant gloves) when replacing the blade. This blade is very sharp.
3. Remove blade retainer nut and slide out blade retainer bolt. Tip tool over and the blade should fall out from the top. **DO NOT TRY TO REMOVE IT FROM THE SLOT, THE MATERIAL SLIDES THROUGH.**
4. Insert new blade, bolt and nut. Tighten the locking nut only to the point that the bolt rotates as the product is cut. If it is too tight the blade and bolt will wear out prematurely.

5. The blade will last for thousands of cuts if properly installed and the operating procedures are followed correctly.

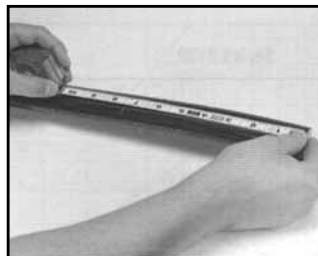


How to Separate Twin Line & Multi-Line Hose

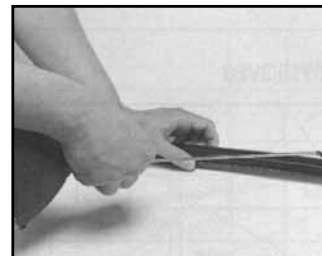
Instructions for using the Twin-Line Hose Separation Tool



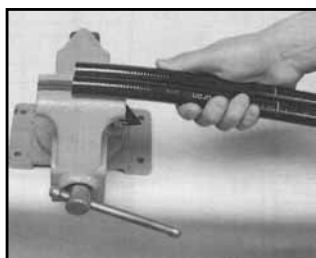
1. Remove the hose separation knife (Part Number 4573-00000) from the handle and place in a vise at a 45° angle to the top of the vise. Fasten securely in the vise jaws.



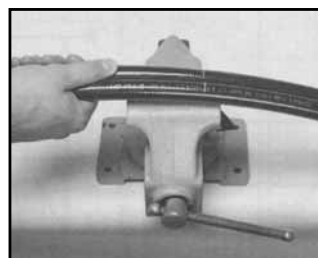
2. Measure and mark the distance to be separated.



3. Lightly lubricate the hoses on both sides at the connecting web with a soap solution or lubricating oil. This step reduces friction between the knife blade and hose cover surfaces, plus keeps the knife centered during the cutting step.



4. Push the hose into the "V" notch on the knife blade using a rocking motion to start the hoses into the blade.



5. Hold the hoses together and aligned with the blade while first pushing then pulling them to the mark, taking care not to cut the hose covers.



6. Remove the lubricant from the hoses and proceed with normal hose assembly.



7. Examine the hose cover material where the hoses were attached to ensure they have not been cut, or the reinforcement fiber exposed. If the hose covers shows signs of damage, the hose assembly should not be placed in service.

Volumetric Expansion Data

The following charts are based on a limited testing of each hose size according to SAE J343.

LOW/MEDIUM
PRESSURE

CONSTANT
PRESSURE HOSE

HIGH
PRESSURE

TWIN LINE
HOSE

AIR, WATER
& TUBING

TRUCK
HOSE

SPECIALTY
HOSE

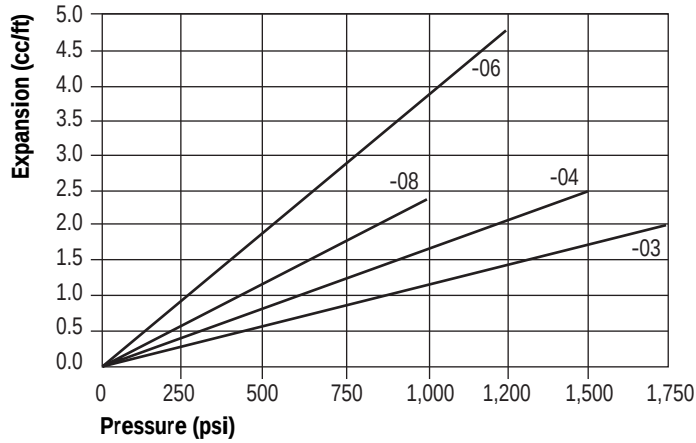
HOSE
FITTINGS

HOSE ASSEMBLY
EQUIPMENT

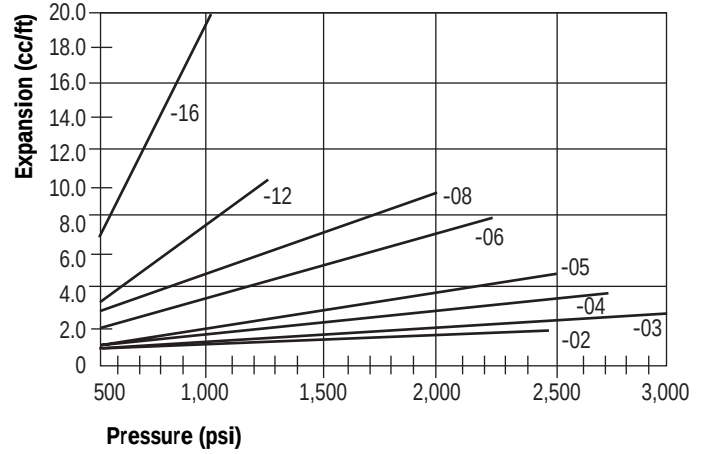
ACCESSORIES

TECHNICAL
DATA

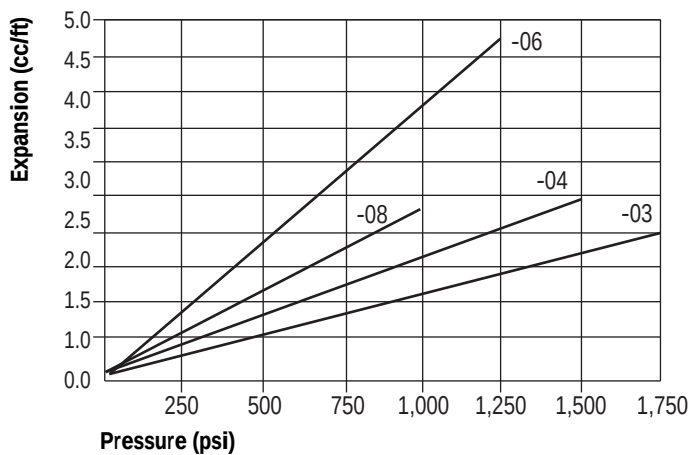
Series 3R30



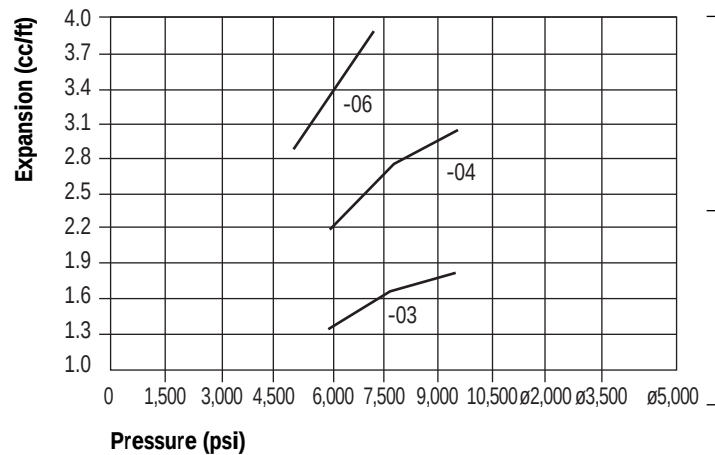
Series 3130



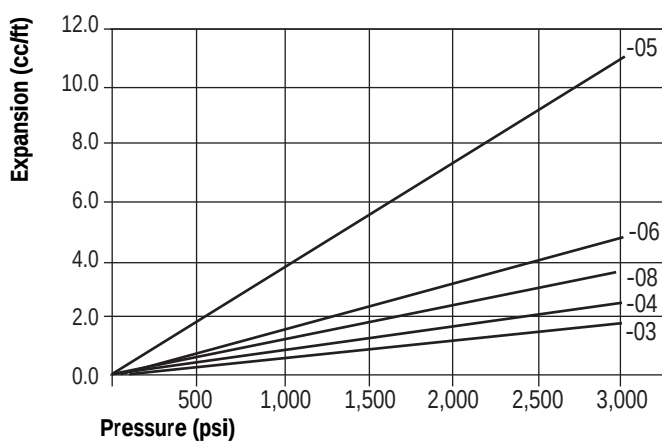
Series 3580



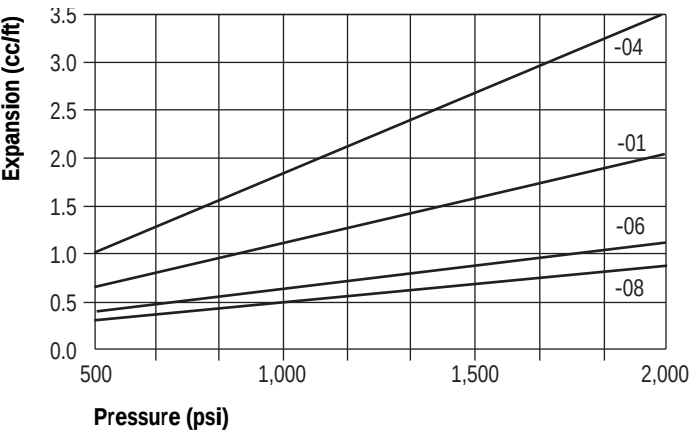
Series 3V10/3VEO



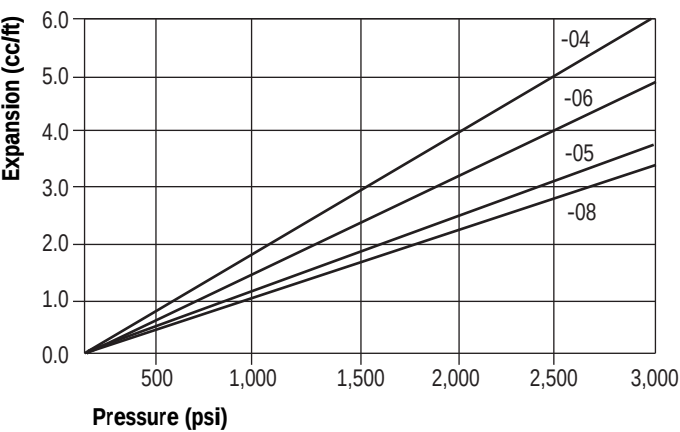
Series 37AL/3750



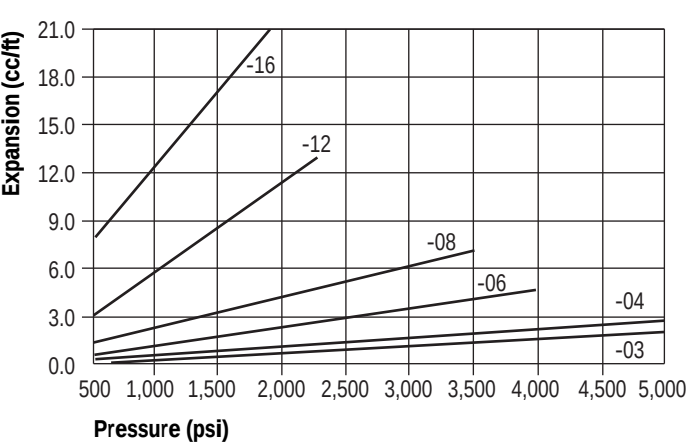
Series 31NO



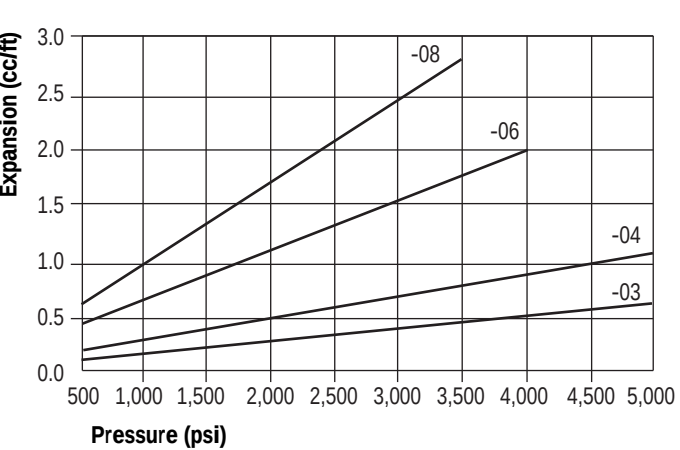
Series 30CT



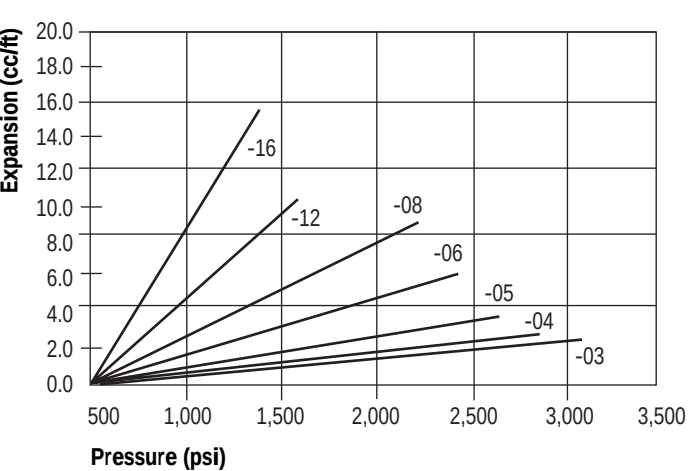
Series 3R80/3E80



Series 3800/3840



Series 3740



Conversion Tables

How to Use Conversion Tables

- Locate known unit symbol in left vertical column - **FROM**
- Locate the desired unit in top horizontal row - **TO**
- The factor at the intersection of the **FROM** row and **TO** column is multiplied by the known unit quantity to calculate the desired unit quantity

Example:

- Convert 3,000 PSI (psi) of a hydraulic pressure to kPa.
- Locate lb/in² row and kPa column in the Pressure Conversion Table; the factor is 6.895
- Calculation:
6.895 x 3,000 PSI = 20,685 kPa.

Pressure Conversions

FROM	TO								
	MMHG	IN HG	IN H ₂ O	FT H ₂ O	ATM	PSI	KG/CM ²	KPA	BAR
mmHg	1	0.03937	0.5353	0.044610	0.00132	0.01934	0.00136	0.1333	0.0013
inHg	25.40	1	13.6	1.133	0.03342	0.4912	0.03453	3.387	0.0339
inH ₂ O	1.868	0.07355	1	0.08333	0.00246	0.03612	0.00254	0.249	0.0025
ftH ₂ O	22.42	0.8826	12	1	0.02950	0.4334	0.03048	2.988	0.0299
atm	760	29.92	406.8	33.9	1	14.7	1.033	101.3	1.013
PSI	51.71	2.036	27.69	2.307	0.06805	1	0.07031	6.895	0.0689
Kg/cm ²	735.6	28.96	393.7	32.81	0.9678	14.22	1	98.05	0.981
kPa	7.5	0.2953	4.016	0.3347	0.00987	0.1451	0.0102	1	0.01

Flow Rate Conversions

FROM	TO					
	L/SEC	GAT/MIN	FT ³ /SEC	FT ³ /MIN	BBL/HR	BBL/DAY
l/sec	1	15.85	0.3532	2.119	22.66	543.8
gal/min	0.06309	1	0.00223	0.1337	1.429	34.3
ft ³ /sec	28.32	448.8	1	60	641.1	1.54x10 ⁴
ft ³ /min	0.4719	7.481	0.01667	1	10.69	256.5
bbl/hr	0.04415	0.6997	0.00156	0.09359	1	24
bbl/day	0.00184	0.02917	6.50x10 ⁵	0.0039	0.04167	1

Length Conversions

FROM	TO					
	FEET	INCHES	KILOMETERS	METERS	MM	MILES
feet	1	12	0.000305	0.3048	304.8	0.0001894
inches	0.08333	1	0.0000254	0.0254	25.4	0.00001578
kilometers	3281	39372	1	1000	1000000	0.6214
meters	3.281	39.37	0.001	1	1000	0.000621
millimeters	0.003281	0.03937	0.000001	0.001	1	—
miles	5280	6360	1.609	1609	—	1

Weight Conversions

FROM	TO			
	G	KG	OZ	LB
g	1	0.001	0.03527	0.0022
kg	1000	1	35.27	2.205
oz	28.35	0.02835	1	0.0625
lb	453.6	0.4536	16	1

LOW/MEDIUM
PRESSURE

CONSTANT
PRESSURE HOSE

HIGH
PRESSURE

TWIN LINE
HOSE

AIR, WATER
& TUBING

TRUCK
HOSE

SPECIALTY
HOSE

HOSE
FITTINGS

HOSE ASSEMBLY
EQUIPMENT

ACCESSORIES

TECHNICAL
DATA

Conversion Tables

Temperature Conversions

$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times .555$
 $^{\circ}\text{F} = (^{\circ}\text{C} \times 1.8) + 32$

Look up the value in the middle column.If in degrees Centigrade, read the Fahrenheit equivalent in right-hand column; if in Fahrenheit degrees, read the Centigrade equivalent in left-hand column.

C	F/C	F	C	F/C	F	C	F/C	F
-73.0	-100	-148.0	5.0	41	105.8	33.3	92	197.6
-68.0	-90	-130.0	5.6	42	107.6	33.9	93	199.4
-62.0	-80	-112.0	6.1	43	109.4	34.4	94	201.2
-57.0	-70	-94.0	6.7	44	111.2	34.0	95	203.0
-51.0	-60	-76.0	7.2	45	113.0	35.6	96	204.8
-46.0	-50	-58.0	7.8	46	114.8	36.1	97	206.6
-40.0	-40	-40.0	8.3	47	116.6	36.7	98	208.4
-34.0	-30	-22.0	8.9	48	118.4	37.2	99	210.2
-29.0	-20	-4.0	9.4	49	120.2	37.8	100	212.0
-23.0	-10	14.0	10.0	50	122.0	43.0	110	230.0
-17.8	0	32.0	10.6	51	123.8	49.0	120	248.0
-17.2	1	33.8	11.1	52	125.6	54.0	130	266.0
-16.7	2	35.6	11.7	53	127.4	60.0	140	284.0
-16.1	3	37.4	12.2	54	129.2	66.0	150	302.0
-15.6	4	39.2	12.8	55	131.0	71.0	160	320.0
-15.0	5	41.0	13.3	56	132.8	77.0	170	338.0
-14.4	6	42.8	13.9	57	134.6	82.0	180	356.0
-13.9	7	44.6	14.4	58	136.4	88.0	190	374.0
-13.3	8	46.4	15.0	59	138.2	93.0	200	392.0
-12.8	9	48.2	15.6	60	140.0	99.0	210	410.0
-12.2	10	50.0	16.1	61	141.8	100.0	212	413.6
-11.7	11	51.8	16.7	62	143.6	104.0	220	428.0
-11.1	12	53.6	17.2	63	145.4	110.0	230	446.0
-10.6	13	55.4	17.8	64	147.2	116.0	240	464.0
-10.1	14	57.2	18.3	65	149.0	121.0	250	482.0
-9.4	15	59.0	18.9	66	150.8	127.0	260	500.0
-8.9	16	60.8	19.4	67	152.6	132.0	270	518.0
-8.3	17	62.6	20.0	68	154.4	138.0	280	536.0
-7.8	18	64.4	20.6	69	156.2	143.0	290	554.0
-7.2	19	66.2	21.1	70	158.0	149.0	300	572.0
-6.7	20	68.0	21.7	71	159.8	154.0	310	590.0
-6.1	21	69.8	22.2	72	161.6	160.0	320	608.0
-5.6	22	71.6	22.8	73	163.4	166.0	330	626.0
-5.0	23	73.4	23.3	74	165.2	170.0	338	640.0
-4.4	24	75.2	23.9	75	167.0	171.0	340	644.0
-3.9	25	77.0	24.4	76	168.8	177.0	350	662.0
-3.3	26	78.8	25.0	77	170.6	182.0	360	680.0
-2.8	27	80.6	25.6	78	172.4	186.0	366	691.0
-2.2	28	82.4	26.1	79	174.2	188.0	370	698.0
-1.7	29	84.2	26.7	80	176.0	193.0	380	716.0
-1.1	30	86.0	27.2	81	177.8	198.0	388	730.0
-0.6	31	87.8	27.8	82	179.6	199.0	390	734.0
0.0	32	89.6	28.3	83	181.4	204.0	400	752.0
0.6	33	91.4	29.8	84	183.2	208.0	406	763.0
1.1	34	93.2	29.4	85	185.0	210.0	410	770.0
1.7	35	95.0	30.0	86	186.8	216.0	420	788.0
2.2	36	96.8	30.6	87	188.6	221.0	430	806.0
2.8	37	98.6	31.1	88	190.4	227.0	440	824.0
3.3	38	100.4	31.7	89	192.2	232.0	450	842.0
3.9	39	102.2	32.2	90	194.0	238.0	460	860.0
4.4	40	104.0	32.8	91	195.8	243.0	470	878.0

Conversion Tables

Thread Chart

DASH NUMBER	O.D. TUBE SIZE	AN 37°	JIC 37°	SAE 45°	NPTF (MALE)
- 2	1/8	5/16-34	5/16-24	5/16-24	1/8-27
- 3	3/16	3/8-24	3/8-24	3/8-24	
- 4	1/4	7/16-20	7/16-20	7/16-20	1/4-18
- 5	5/16	1/2-20	1/2-20	1/2-20	
- 6	3/8	9/16-18	9/16-18	5/8-18	3/8-18
- 8	1/2	3/4-16	3/4-16	3/4-16	1/2-14
- 10	5/8	7/8-14	7/8-14	7/8-14	
- 12	3/4	1 1/16-12	1 1/16-12	1 1/16-14	3/4-14
- 16	1	1 5/16-12	1 5/16-12	1 3/8-12	1-11-1/2

DECIMAL EQUIVALENTS OF INCH FRACTIONS

1/64	0.015625	17/64	0.265625	33/64	0.51563	49/64	0.765625
1/32	0.03125	9/32	0.28125	17/32	0.53125	25/32	0.78125
3/64	0.046875	19/64	0.296875	35/64	0.54688	51/64	0.796875
1/16	0.0625	5/16	0.3125	9/16	0.5625	13/16	0.8125
5/64	0.078125	21/64	0.328125	37/64	0.57813	53/64	0.828125
3/32	0.09375	11/32	0.34375	19/32	0.59375	27/32	0.84375
7/64	0.109375	23/64	0.359375	39/64	0.60938	55/64	0.859375
1/8	0.125	3/8	0.375	5/8	0.625	7/8	0.875
9/64	0.140625	25/64	0.390625	41/64	0.64063	57/64	0.890625
5/32	0.15625	13/32	0.40625	21/32	0.66625	29/32	0.90625
11/64	0.171875	27/64	0.421875	43/64	0.67188	59/64	0.921875
3/16	0.1875	7/16	0.4375	11/16	0.6875	15/16	0.9375
13/64	0.203125	29/64	0.453125	45/64	0.70313	61/64	0.953125
7/32	0.21875	15/32	0.46875	23/32	0.71875	31/32	0.96875
15/64	0.234375	31/64	0.484375	47/64	0.73438	63/64	0.984375
1/4	0.25	1/2	0.5	3/4	0.75	1	1.000000

CONVERSION TABLE - INCHES TO MILLIMETERS

in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/64	0.3969	13/64	5.1594	25/64	9.9219	37/64	14.68	49/64	19.4469	61/64	24.2094	1 9/32	32.544	12 1/32	42.0688
1/32	0.7937	7/32	5.5562	13/32	10.3187	19/32	15.08	25/32	19.8437	31/32	24.6062	1 5/16	33.338	1 11/16	42.8626
3/64	1.1906	15/64	5.9531	27/64	10.7156	39/64	15.48	51/64	20.2406	63/64	25.0031	1 11/32	34.131	1 23/32	43.6563
1/16	1.5875	1/4	6.3500	7/16	11.1125	5/8	15.88	13/16	20.6375	1	25.4001	1 3/8	34.925	1 3/4	44.4501
5/64	1.9844	17/64	6.7469	29/64	11.5094	41/64	16.27	53/64	21.0344	1 1/32	26.1938	1 13/32	35.719	1 25/32	45.2438
3/32	2.3812	9/32	7.1437	15/32	11.9062	21/32	16.67	27/32	21.4312	1 1/16	26.9876	1 7/16	36.513	1 13/16	46.0376
7/64	2.7781	19/64	7.5406	31/64	12.3031	43/64	17.07	55/64	21.8281	1 3/32	27.7813	1 15/32	37.306	1 27/32	46.8313
1/8	3.1750	5/16	7.9375	1/2	12.7000	11/16	17.46	7/8	22.2250	1 1/8	28.5751	1 1/2	38.100	1 7/8	47.6251
9/64	3.5719	21/64	8.3344	33/64	13.0969	45/64	17.86	57/64	22.6219	1 5/32	29.3688	1 17/32	38.894	1 29/32	48.4188
5/32	3.9687	11/32	8.7312	17/32	13.4937	23/32	18.26	29/32	23.0187	1 3/16	30.1626	1 9/16	39.688	1 15/16	49.2126
11/64	4.3656	23/64	9.1281	35/64	13.8906	47/64	18.65	59/64	23.4156	1 7/32	30.9563	1 19/32	40.481	1 31/32	50.0063
3/16	4.7625	3/8	9.5250	9/16	14.2875	3/4	19.05	15/16	23.8125	1 1/4	31.7501	1 5/8	41.275	2	50.800

CONVERSION TABLE - MILLIMETERS TO INCHES

in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1	0.0394	8	0.3150	15	0.5905	22	0.866	29	1.1417	36	1.4173	43	1.6929	50	1.9685
2	0.0787	9	0.3543	16	0.6299	23	0.906	30	1.1811	37	1.4567	44	1.7323	51	2.0079
3	0.1181	10	0.3937	17	0.6693	24	0.945	31	1.2205	38	1.4961	45	1.7716		
4	0.1575	11	0.4331	18	0.7087	25	0.984	32	1.2598	39	1.5354	46	1.8810		
5	0.1968	12	0.4724	19	0.748	26	1.0236	33	1.2992	40	1.5748	47	1.8504		
6	0.2362	13	0.5118	20	0.787	27	1.0630	34	1.3386	41	1.6142	48	1.8898		
7	0.2756	14	0.5512	21	0.827	28	1.1024	35	1.3779	42	1.6535	49	1.9291		

