Steam

Steam Hose

Steam

Steam Hose

EH084 STEAM SLAYER™ Page J-6

Application: Transfer of steam for processing products & cleaning equipment
Tube: Special chlorobutyl blend
Reinforcement: 2-wire braid
Cover: Pin-pricked EPDM
Temp: -40°C to +208°C, (-40°F to +407°F)
For superheated steam, +232°C (+450°F)
Pressure: 17,2 bar / 250 psi

EH080 & EH081 STEAM SLAYER™ Page J-7

Application: Transfer of steam for processing products & cleaning equipment
Tube: Special chlorobutyl blend
Reinforcement: 2-wire braid
Cover: Pin-pricked EPDM
Temp: -40°C to +208°C, (-40°F to +407°F)
For superheated steam, +232°C (+450°F)
Pressure: 17,2 bar / 250 psi

H0084 Concord Standard Page J-8

Application: Transfer of steam for processing products & cleaning equipment
Tube: Special chlorobutyl blend
Reinforcement: 2-wire braid with stainless steel anti-static wire
Cover: Pin-pricked EPDM
Temp: Maximum Operating: +232°C (+450°F)
Pressure: 17,2 bar / 250 psi

H9568 Concord 250 Steam Page J-9

Application: Transfer of steam for processing products & cleaning equipment
Tube: EPDM
Reinforcement: 2-wire braid
Cover: Pin-pricked EPDM
Temp: Maximum Operating: +232°C (+450°F)
Pressure: 17,2 bar / 250 psi

Steam

Introduction and Safety Information

Heat Resisting Patrex or EPDM Tubes

- Eaton products' exclusive elastomers with superior heat resistance provide for longer service life...and will resist flaking rubber particles (popcorning) and will handle most steam cleaner detergents.

Hi-Strength Steel Wire Braided Reinforcement

- Keeps the hose limber and easy to handle. Adds versatility... hot water cleaning to high-pressure process steam service.

EPDM or Oil Resistant

- Stand up to the dragging, scuffing and abuse found in many applications.

Covers

- Ensures maximum service life and value. Exceptional aging, weathering, and heat resisting properties keep the hose flexible and easy to use.

Permanent Branding for Easy Identification

- The name of the hose and the working pressure are molded into the hose cover...can't rub off. This lets the operator know that the hose is for steam service.

The Eaton Brand Reputation for Quality

- Your assurance of dependable performance.

Steam Hose Safety Information

Important!

⚠ **WARNING:** Exposure to steam is hazardous. If not properly controlled, steam can cause property damage, serious bodily injury, or death. In order to avoid property damage, serious injury, or death, you must select the proper steam hose for the given application. Also, proper installation, usage and maintenance of the steam hose you select will contribute to increased operator safety.

⚠ **WARNING:** Failure to properly follow the manufacturer's recommended procedures for the care, maintenance and storage of a particular hose may result in its failure to perform in the manner intended and may result in serious injury, death, and damage to property.

⚠ **WARNING:** Only specially trained persons should engage in applications or testing procedures that require particular skills. Failure to do so may result in damage to the hose products or to other property and more importantly, may result in serious injury.

⚠ **WARNING:** Steam heat is hotter than 212°F (boiling water) and increases in temperature as pressure increases. See safety information in this catalog.

Steam
Safety Tips

Safety Tips

Common Sense with Steam Hose

- Provide operators with adequate safety clothing. Include gloves, rubber boots, full length protective clothing and eye protection. The objective is to provide protection from scalding burns resulting from splash back of steam or hot water.
- Ensure that the work area is free of tripping hazards and other clutter.
- Check the tightness of the coupling with each use.
- Do not allow the hose to remain pressurized when not in service. Turning off the pressure can provide dramatic increases in steam hose service life.
- Periodic maintenance of steam hose can pay big dividends. All steam hoses are expected to wear out in time. It is important to continually be on the lookout for hose that has deteriorated to the point where it can no longer provide safe service. The following guidelines can help in that determination.

Operators should be aware of the obvious signs of trouble:

- Cover blisters or lumps
- Cuts or gouges in the outside of the hose which expose the reinforcement
- Hardened or inflexible hose
- Steam leakages at the coupling ends or anywhere along the length of the hose
- Flattened or kinked areas which have damaged the hose
- A reduction of steam flow indicating that the tube is swelling

When any of the above abnormalities appear it is good safety sense to immediately remove the hose from service. Once removed, the hose can be carefully inspected before further use. Steam hose failures occur near the ends due to flexing and strain at the couplings. In those cases the hose can frequently be cut back and recoupled, providing additional service life. Hose used in continuous high pressure/ temperature service should be inspected periodically for signs of tube hardening. In most cases it is necessary to remove a coupling for tube inspection.

Make Your Selection With Safety in Mind

- Be sure to select a hose identified as steam hose.
- Hose identification should be in the form of permanent branding on the hose outer cover, not just on the package.
- You must identify the type of service the steam hose is required to accomplish.
  a) Is the hose manually handled?
  b) What is the anticipated frequency of use?
  c) What is the actual pressure of the steam service?
  d) Is it subject to surges or peak pressures?
  e) What is the temperature of the steam?
  f) Saturated (wet) or superheated (dry) steam?
  g) What are the external conditions in the area where the hose will be used?
- You should recognize that spillage or accumulations of corrosive chemicals or petroleum based materials externally can have a deteriorating effect on the hose cover.

Making Sure the Hose is Installed Properly

- Be certain to use hose couplings designed for steam hose service. Follow the coupling manufacturer's instruction for coupling attachment. Check tightness with each use.
- Avoid extreme flexing of the hose near the coupling. If necessary use elbows in the piping system to assure a straight line connection with the hose.
- Installing and using a shut-off valve between the steam source and the hose will maximize service life and operator safety, and we consider such a value mandatory for safe operation.
- The use of spring guards can relieve some of the acute flexing encountered in heavy manual handling applications.
- Provide a suitable means of storing the hose when not in use. A permanent rack or tray will minimize the damage to the hose in storage. Do not hang the hose on a hook, nail, or other device which could cut or damage the hose.

Recommendations

1. Install an OSHA approved safety cable on the hose at every junction to prevent whipping of the end if the coupling should disconnect.
2. Ensure continuous static grounding of the hose at each coupling.
3. If the clamps are a bolt-on style, tighten them to the correct torque before use. Use calibrated torque wrenches, not impact or other types.
4. Repairs on steam hoses and couplings should be done only by fully qualified distributors or fabricators.
5. All workers near the hose should wear full protective safety gear including gloves, safety shoes, full-length protective clothing and protective glasses or goggles.
6. Perform a complete safety check before the steam is turned on. Inspect the area and remove all unnecessary objects and debris. Inspect the hose for gouges, kinks, worn areas, loose couplings and other potential safety problems.
7. Install a shut-off valve between the source of steam and hose assembly.
8. Use spring guards to protect the hose from kinking when handling of the hose is required.
9. Avoid excessive flexing of the hose, particularly near couplings. Flexing can weaken the assembly.
10. Examine connections to the steam source. Use straight connections instead of bending the hose. Install pipe elbows to ensure either straight vertical connections pointing downward, or a 45° downward angle that allows the hose to gently contact the ground without too much flexing.
11. Be aware of the danger of hammer effect and take steps to prevent it. Hammer effect is caused by spikes of extreme pressure; it can damage hose assemblies and break couplings free. The usual causes are blockage, pinched-off flow or valves being opened or closed too fast. Make personnel aware of both the danger and causes, and urge them to avoid actions that can cause the hammer effect.
12. When finished using steam, always close the pressure valve from the steam source. In addition to providing an extra safety margin, this action can extend the working life of the hose.
13. Add an extra measure of safety by ensuring that all steam hose connections are incompatible with other hoses in the plant or by color-coding for different applications. Manufacturers can often cooperate with these requests and suggest good color-coding systems.
14. Train workers to look for signs of problems during usage, such as steam leakage, loose clamps, hose shrinkage, cover damage or exposed reinforcement.

Steam

Steam Hose

Refer to warnings and safety information on pages M-1 – M-15.

Use of damaged hose or improper use may result in bodily injury or property damage. Please consult Eaton catalog or Technical Support for proper application.

EH084 STEAM SLAYER™

Construction:

Tube: Special chlorobutyl blend

Reinforcement: 2-wire braid

Cover: Pin-pricked EPDM

Operating Temperature:

-40°C to +208°C
(-40°F to +407°F)

For superheated steam +232°C (+450°F)

Application:

- Transfer of steam for processing products and cleaning equipment

Markets:

- Refining and petrochemical
- Paper industry
- Industrial cleaning markets
- Oil and gas exploration
- Steel
- Ship building

Type of Couplings:

- Eaton EJ series

Contact coupling manufacturer for attachment procedure and other coupling recommendations

# Part No.	Hose I.D.			Hose O.D.		Max Operating Pressure		Burst Pressure		Weight		Length	
	DN	mm	in	mm	in	bar	psi	bar	psi	kg/m	lbs/ft	mtr	ft
EH08408	12	12,7	0.50	27,7	1.09	17,2	250	172	2500	0,73	0.49	15,2	50
EH08412	19	19,0	0.75	33,5	1.32	17,2	250	172	2500	0,94	0.63	15,2	50
EH08416	25	25,4	1.00	40,4	1.59	17,2	250	172	2500	1,28	0.86	15,2	50

Refer to warnings and safety information on pages M-1 – M-15.

Use of damaged hose or improper use may result in bodily injury or property damage. Please consult Eaton catalog or Technical Support for proper application.

EH080 & EH081 STEAM SLAYER™

Construction:

Tube: Special chlorobutyl blend

Reinforcement: 2-wire braid

Cover: Pin-pricked EPDM

Operating Temperature:

-40°C to +208°C
(-40°F to +407°F)

For superheated steam
+232°C (+450°F)

Application:

- Transfer of steam for processing products and cleaning equipment

Markets:

- Refining and petrochemical
- Paper industry
- Industrial cleaning markets
- Oil and gas exploration
- Steel
- Ship building

Type of Couplings:

- Eaton EJ series

Contact coupling manufacturer for attachment procedure and other coupling recommendations

Part No.	Hose I.D.			Hose O.D.		Max Operating Pressure		Burst Pressure		Weight		Length	
EH080	**DN**	**mm**	**in**	**mm**	**in**	**bar**	**psi**	**bar**	**psi**	**kg/m**	**lbs/ft**	**mtr**	**ft**
EH08008	12	12,7	0.50	27,7	1.09	17,2	250	172	2500	0,73	0.49	15,2	50
EH08012	19	19,0	0.75	33,5	1.32	17,2	250	172	2500	0,94	0.63	15,2	50
EH08016	25	25,4	1.00	40,4	1.59	17,2	250	172	2500	1,28	0.86	15,2	50
EH081													
EH08108	12	12,7	0.50	27,7	1.09	17,2	250	172	2500	0,73	0.49	15,2	50
EH08112	19	19,0	0.75	33,5	1.32	17,2	250	172	2500	0,94	0.63	15,2	50
EH08116	25	25,4	1.00	40,4	1.59	17,2	250	172	2500	1,28	0.86	15,2	50

Steam

Steam Hose

Refer to warnings and safety information on pages M-1 – M-15.

Use of damaged hose or improper use may result in bodily injury or property damage. Please consult Eaton catalog or Technical Support for proper application.

H0084 Concord Standard

Construction:

Tube: Special chlorobutyl blend

Reinforcement: 2-wire braid with stainless steel anti-static wire

Cover: Pin-pricked EPDM

Operating Temperature:

Maximum Operating +232°C (+450°F)

Application:

- Transfer of steam for processing products and cleaning equipment

Markets:

- Refining and petrochemical
- Paper industry
- Industrial cleaning markets
- Oil and gas exploration
- Steel
- Ship building

Type of Couplings:

- Ground joint female
- Boss male

Contact coupling manufacturer for attachment procedure and other coupling recommendations

# Part No.	Hose I.D.			Hose O.D.		Max Operating Pressure		Burst Pressure		Weight		Length	
	DN	mm	in	mm	in	bar	psi	bar	psi	kg/m	lbs/ft	mtr	ft
H008420BK	31	31,8	1.25	50,0	1.97	17,2	250	172	2500	2,0	1.35	15,2	50
H008424BK	38	38,1	1.50	56,4	2.22	17,2	250	172	2500	2,3	1.55	15,2	50
H008432BK	51	50,8	2.00	69,1	2.72	17,2	250	172	2500	2,9	1.94	15,2	50

Refer to warnings and safety information on pages M-1 – M-15.

Use of damaged hose or improper use may result in bodily injury or property damage. Please consult Eaton catalog or Technical Support for proper application.

H9568 Concord 250 Steam

Construction:

Tube: EPDM

Reinforcement: 2-wire braid

Cover: Pin-pricked EPDM

Operating Temperature:

Maximum Operating +232°C (+450°F)

Application:

- Transfer of steam for processing products and cleaning equipment

Markets:

- Refining and petrochemical
- Paper industry
- Industrial cleaning markets
- Oil and gas exploration
- Steel
- Ship building

Type of Couplings:

- Eaton EJ Series

Contact coupling manufacturer for attachment procedure and other coupling recommendations

# Part No.	Hose I.D.			Hose O.D.		Max Operating Pressure		Burst Pressure		Weight		Length	
	DN	mm	in	mm	in	bar	psi	bar	psi	kg/m	lbs/ft	mtr	ft
H956808BK	12	12,7	0.50	26,2	1.03	17,2	250	172	2500	0,68	0.46	15,2	50
H95608BK-100*	12	12,7	0.50	26,2	1.03	17,2	250	172	2500	0,68	0.46	30,5	100
H956812BK	19	19,0	0.75	34,0	1.34	17,2	250	172	2500	1,04	0.70	15,2	50
H956812BK-100*	19	19,0	0.75	34,0	1.34	17,2	250	172	2500	1,04	0.70	30,5	100
H956816BK	25	25,4	1.00	39,6	1.56	17,2	250	172	2500	1,43	0.96	15,2	50
H956816BK-100*	25	25,4	1.00	39,6	1.56	17,2	250	172	2500	1,43	0.96	30,5	100

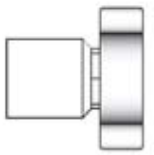
**Also product available in RD-Red for select items

Steam

EJ Series Crimp Couplings

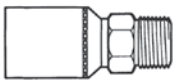
EJ Series Crimp Couplings

Wing Nut Swivel Ground Joint



Part Number	Hose I.D.		Thread Size	DIM A		Hole Dia		DIM D	
	mm	in	NPSM	mm	in	mm	in	mm	in
EJ5323-0808S	12,7	0.50	1 1/2 – 11 1/2	72,3	2.85	12,7	0.50	60,5	2.38
EJ5323-1212S	19,1	0.75	1 1/2 – 11 1/2	72,3	2.85	12,7	0.50	90,4	3.56
EJ5323-1216S	25,4	1.00	1 1/2 – 11 1/2	72,3	2.85	12,7	0.50	90,4	3.56

Male Pipe (NPTF) Rigid



Part Number	Hose I.D.		Thread Size	DIM A		Hole Dia		Hex E	
	mm	in	NPTF	mm	in	mm	in	mm	in
EJ5324-0808S	12,7	0.50	1/2 – 14	76,5	3.01	9,1	0.36	22,2	0.875
EJ5324-1212S	19,1	0.75	3/4 – 14	77,8	3.08	15,5	0.61	30,2	1.188
EJ5324-1616S	25,4	1.00	1 – 11 1/2	82,6	3.25	20,6	0.81	34,9	1.375

Female Spud

Part Number	Hose I.D.		Thread Size (M)	Thread Size (F)	DIM A		Hole Dia		Hex E	
	mm	in	NPSM	NPTF	mm	in	mm	in	mm	in
FF91058-08S	12,7	0.50	1 1/2 – 11 1/2	1 1/2 – 14	30,1	1.185	9,1	0.36	50,8	2.00
FF91058-12S	19,1	0.75	1 1/2 – 11 1/2	3/4 – 14	30,1	1.185	15,5	0.61	50,8	2.00
FF91058-16S	23,9	1.00	1 1/2 – 11 1/2	1 – 11 1/2	30,1	1.185	20,6	0.81	50,8	2.00

* NOTE: EJ Series couplings were specifically designed and tested for use with Eaton hoses and wall thicknesses, use on other hose is not recommended.

Assembly Instructions

Step 1

Cut the hose square to the required length using a cut-off wheel. Clean the cut end and hose bore.

Step 2

Mark the end of the hose with the correct insertion depth by size. See chart.

Step 3

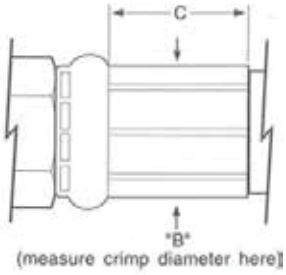
Lubricate the I.D. of the hose with a water based lubricant such as P-80. You can also utilize a 5% dish soap/95% water mixture.

Step 4

Insert the fitting into the hose. Twist the fitting while inserting to help with spreading the lubricant and easier insertion. Be sure the fitting is fully inserted by checking the end of the socket is aligned with the insertion depth mark on the hose.

Step 5

Crimp the hose to the specifications found in chart. Measure the crimp diameter in 3 locations utilizing calipers and take the average to verify that the crimp is within the specified range. Also verify that the insertion depth mark on the hose is still at the end of the socket and that the hose has not pulled off of the fitting during the crimping process.



Hose Dash Size	Fitting Insertion Depth	Crimp Diameter "B"	Crimp Position "C"
		±0.12 mm ±0.005 in	±0.75 mm ±0.030 in
Steam Slayer Hose: EH080, EH081, EH084			
-08	34,7 mm 1.37 in	30,23 mm 1.190 in	32,39 mm 1.275 in
-12	35,5 mm 1.40 in	35,94 mm 1.415 in	32,39 mm 1.275 in
-16	34,7 mm 1.37 in	41,40 mm 1.630 in	32,39 mm 1.275 in
Concord 250 Hose: H9568			
-08	34,7 mm 1.37 in	30,23 mm 1.190 in	32,39 mm 1.275 in
-12	35,5 mm 1.40 in	35,94 mm 1.415 in	32,39 mm 1.275 in
-16	34,7 mm 1.37 in	41,78 mm 1.645 in	32,39 mm 1.275 in

None of the hoses listed are to be used as a pressure washer hose.

MTO (Made-to-Order) – Contact Eaton at 800-833-3837 for availability, minimum run quantity, and ordering information.

Steam applications are hazardous to both personnel and equipment. These hazards are due to the high pressures and temperatures of steam conveyance. Hot water, low pressure steam and high pressure steam can cause severe scalding or bodily injury. Operators should use extreme caution to avoid burns. Eaton understands the importance of utilizing quality products that provide maximum safety, especially when it comes to steam application, **safety always comes first.**

Refer to warnings and safety information on pages M-1 – M-15.
Use of damaged hose or improper use may result in bodily injury or property damage. Please consult Eaton catalog or Technical Support for proper application.

FK6496 & FK6500 Eaton Steam Hose Assemblies

Losses from a leaking steam system can cost in many ways. Personal safety, procurement, maintenance, and premature product replacement can all affect the bottom line. Eaton's new steam hose assembly system with our STEAM SLAYER hose and the EJ Series fitting offer a matched engineered assembly that was tested for over 2000 hours without any leakage.

This new matched assembly will also reduce the affects of static electric discharge. These new assemblies not only reduce maintenance cost, but also reduce operator's exposure to hazardous situations. Be sure to choose a matched hose and fitting engineered system designed specifically for steam applications.

50' Steam Hose Assemblies

Base # FK6496

Base # FK6500

Part Number	Hose I.D. (mm)	Hose I.D. (in)	End "A" Male Pipe	End "B" Wing Nut Female Swivel	Hose
FK6496HHH6000	13,0	1/2	- 8	- 8	EH08408 Steam Slayer
FK6496KKK6000	19,1	3/4	-12	-12	EH08412 Steam Slayer
FK6496MMK6000	25,4	1	-16	-12	EH08416 Steam Slayer
FK6500HHH6000	12,7	1/2	- 8	- 8	H956808 Concord 250
FK6500KKK6000	19,1	3/4	-12	-12	H956812 Concord 250
FK6500MMK6000	25,4	1	-16	-12	H956816 Concord 250

Eaton Industrial Reminder

Proper Hose Handling

Proper Hose Handling

Proper hose handling can help preserve hose assembly life and work environment safety. Therefore, consider the following points when handling hose assemblies.

- Avoid crushing or kinking the hose. This can cause severe damage to the reinforcement that isn't always obvious when looking at the cover.
- Do not drag the hose or lift a large bore hose from the middle of its length with the ends hanging down. Doing so can cause kinking, cover cuts, hose reinforcement damage, and coupling damage.
- Limit curvature of the hose to the minimum bend radius recommended by the manufacturer. Also avoid sharp bends at the end fittings and the manifold connections.
- Do not exceed pressure and temperature limits because this could damage the hose and ultimately result in serious bodily injury or property damage. Monitor pressure and temperature during hose use.
- Never allow chemicals, solvents, or any other hazardous materials to drip onto ground. Always comply with environmental laws.
- Never allow chemicals to drip on the exterior of a hose or allow hose to lay in a pool of chemicals. The hose cover may not have the chemical resistance of the tube. If a corrosive material comes into contact with the hose reinforcement, the result could be early hose failure.
- Avoid extreme flexing of the hose near the coupling. If necessary, use elbows in the piping system to assure a straight line connection with the hose.
- Protect hose from heat, flame, cutting and twisting. Use shields or clamps to do this.
- Support hose to avoid mechanical strain on couplings.
- Be aware that dropping or dragging the assembly, chemical incompatibility, exposure to temperature extremes, or extensive internal coupling abrasion can cause leaks and reduce coupling retention.