



**Industrial Hose
Products/List Prices**



39496-000
July 30, 2007
Supersedes 39496-000
July 1, 2006

Steam Hose

205MB Steam King®

(Specification 3605)

Smooth Cover

Nom. I.D.		Nom. O.D.		Max. W.P.		Suction		Min. Bend Radius		Wt. Per Ft.		Standard Pack	Stock (X) or Minimum Order Qty.	Gates Item No.	List Price Per Ft.
(In.)	(mm)	(In.)	(mm)	(psi)	(MPa)	(In. Hg)	(mm Hg)	(In.)	(mm)	(Lbs.)	(Kg)				
3/8	9.5	.78	19.8	250	1.72	30.0	762	4.0	102	.26	.12	REEL	X	3605-0652	\$5.28
3/8	9.5	.78	19.8	250	1.72	30.0	762	4.0	102	.26	.12	50 ft.	250 ft. (X)	3605-0650	5.28
1/2	12.7	1.06	26.9	250	1.72	25.0	635	7.0	178	.40	.18	REEL	X	3605-0672	6.43
1/2	12.7	1.06	26.9	250	1.72	25.0	635	7.0	178	.40	.18	50 ft.	200 ft. (X)	3605-0655	6.43
1/2	12.7	1.06	26.9	250	1.72	25.0	635	7.0	178	.40	.18	50 ft.-BP**	1500 ft. (X)	3605-0677	6.10
3/4	19.1	1.28	32.5	250	1.72	20.0	508	9.0	229	.49	.22	REEL	X	3605-0678	7.48
3/4	19.1	1.28	32.5	250	1.72	20.0	508	9.0	229	.49	.22	50 ft.	150 ft. (X)	3605-0664	7.48
3/4	19.1	1.28	32.5	250	1.72	20.0	508	9.0	229	.49	.22	50 ft.-BP**	1000 ft. (X)	3605-0679	7.11
1	25.4	1.63	41.4	250	1.72	20.0	508	11.0	279	.78	.35	REEL	X	3605-0668	10.85

Wrapped Cover

Nom. I.D.		Nom. O.D.		Max. W.P.		Suction		Min. Bend Radius		Wt. Per Ft.		Standard Pack	Stock (X) or Minimum Order Qty.	Gates Item No.	List Price Per Ft.
(In.)	(mm)	(In.)	(mm)	(psi)	(MPa)	(In. Hg)	(mm Hg)	(In.)	(mm)	(Lbs.)	(Kg)				
3/4	19.1	1.27	32.3	250	1.72	20.0	508	9.0	229	.57	.26	50 ft.	200 ft. (X)	3605-0901	\$7.48
1	25.4	1.52	38.6	250	1.72	20.0	508	11.0	279	.70	.32	50 ft.	200 ft. (X)	3605-0665	10.85
1	25.4	1.52	38.6	250	1.72	20.0	508	11.0	279	.70	.32	50 ft.-BP**	600 ft. (X)	3605-0669	10.34
1-1/4	31.8	1.81	46.0	250	1.72	20.0	508	16.0	406	.90	.41	50 ft.	100 ft. (X)	3605-0671	15.61
1-1/2	38.1	2.14	54.4	250	1.72	10.0	254	20.0	508	1.21	.55	50 ft.	X	3605-0676	19.68
2	50.8	2.66	67.6	250	1.72	10.0	254	25.0	635	1.57	.71	50 ft.	X	3605-0681	23.54

76 Coupled with Permanent Crimped Steam Hose fittings Male and/or Female.

205MB Assemblies

Nom. I.D.		Nom. O.D.		Max. W.P.		Suction		Min. Bend Radius		Wt. Per Ft.		Standard Pack	Stock (X) or Minimum Order Qty.	Gates Item No.	List Price Per Ea.
(In.)	(mm)	(In.)	(mm)	(psi)	(MPa)	(In. Hg)	(mm Hg)	(In.)	(mm)	(Lbs.)	(Kg)				
3/4	19.1	1.27	32.3	250	1.72	20.0	508	9.0	229	31.90	14.47	50 ft. F/F	1 EA (X)	3605-0736	\$428.03
3/4	19.1	1.27	32.3	250	1.72	20.0	508	9.0	229	30.90	14.02	50 ft. F/M	1 EA (X)	3605-0737	402.24
3/4	19.1	1.27	32.3	250	1.72	20.0	508	9.0	229	29.90	13.56	50 ft. M/M	1 EA (X)	3605-0738	376.44

RECOMMENDED FOR: All types of steam — saturated and superheated — up to 250 PSI and +450°F (+232°C).

NOTE: DO NOT ALTERNATE USE BETWEEN STEAM AND WATER.

TEMPERATURE: -40°F to +450°F (-40°C to +232°C) continuous service.

CONSTRUCTION: **Tube:** Type P₂ (EPDM). Black.
Reinforcement: Braided, high tensile steel wire.
Cover: Type P₂ (EPDM). Black. All sizes are perforated.

COUPLINGS: **14**, **15** or **76** only. Reference pages 122-133.

PACKAGING: 3/8": Packaged in 200' to 300' reels. Maximum of 3 pieces. Minimum length 25'.
One length under 100'.
1/2", 3/4" and 1": Packaged in 500' reels. Maximum of 3 pieces. All lengths in 50 ft. increments.
3/8" x 50': Packaged 250' per carton, each length coiled and tied.
1/2" x 50': Packaged 200' per carton, each length coiled and tied.
3/4" x 50': Packaged 150' or 200' per carton, each length coiled and tied.
3/4" x 50' coupled. assy: Coiled in a carton, one assembly per carton.
1" x 50': Packaged 200' per carton, each length coiled and tied.
1-1/4" x 50': Packaged 100' per carton, each length coiled and tied.
1-1/2" and 2" x 50': Packaged 50' per carton, each length coiled and tied.
****BP=Bulk Pack, 50' coiled and tied in a pallet carton: 1/2"=1,500'; 3/4"=1,000'; 1"=600'.**

BRANDING: Continuous molded brand. Example: " 205MB STEAM KING® 3/4 INCH 2 WIRE BRAID 250 PSI WP AT 450 DEGREES F MADE IN U.S.A. CAUTION: TIGHTEN CLAMPS BEFORE USING."

SPECIAL ORDER REQUIREMENTS: Special production runs require minimum order quantities of 5,000 feet.

REMNANT LENGTHS: None.

Due to continual product improvements, Gates reserves the right to alter specs and prices without prior notice.



**Industrial Hose
Products/List Prices**



39496-000
July 30, 2007
Supersedes 39496-000
July 1, 2006

Steam Hose

232MB Steam Queen®

(Specification 3602EL)

Nom. I.D.		Nom. O.D.		Max. W.P.		Suction		Min. Bend Radius		Wt. Per Ft.		Standard Pack	Stock (X) or Minimum Order Qty.	Gates Item No.	List Price Per Ft.
(In.)	(mm)	(In.)	(mm)	(psi)	(MPa)	(In. Hg)	(mm Hg)	(In.)	(mm)	(Lbs.)	(Kg)				
3/8	9.5	.80	20.3	250	1.72	30.0	762	4.0	102	.30	.14	50 ft.	X	3602-1051	\$5.49
3/8	9.5	.80	20.3	250	1.72	30.0	762	4.0	102	.30	.14	REEL	X	3602-1061	5.49
1/2	12.7	1.02	25.9	250	1.72	25.0	635	7.0	178	.45	.20	50 ft.	X	3602-1052	6.87
1/2	12.7	1.02	25.9	250	1.72	25.0	635	7.0	178	.45	.20	REEL	X	3602-1062	6.87
3/4	19.1	1.27	32.3	250	1.72	20.0	508	9.0	229	.60	.27	50 ft.	X	3602-1055	8.86
3/4	19.1	1.27	32.3	250	1.72	20.0	508	9.0	229	.60	.27	REEL	X	3602-1065	8.86
1	25.4	1.52	38.6	250	1.72	20.0	508	11.0	279	.73	.33	50 ft.	X	3602-1057	11.27
1-1/2	38.1	2.18	55.4	250	1.72	10.0	254	20.0	508	1.24	.56	50 ft.	X	3602-1059	22.20
2	50.8	2.66	67.6	250	1.72	10.0	254	25.0	635	1.64	.74	50 ft.	X	3602-1060	26.79

76 Coupled with Permanent Crimped Steam Hose fittings Male and/or Female.

232MB Assemblies

Nom. I.D.		Nom. O.D.		Max. W.P.		Suction		Min. Bend Radius		Wt. Per Ft.		Standard Pack	Stock (X) or Minimum Order Qty.	Gates Item No.	List Price Per Ea.
(In.)	(mm)	(In.)	(mm)	(psi)	(MPa)	(In. Hg)	(mm Hg)	(In.)	(mm)	(Lbs.)	(Kg)				
3/4	19.1	1.27	32.3	250	1.72	20.0	508	9.0	229	33.40	15.15	50 ft. F/F	1 EA (X)	3602-0002	\$512.82
3/4	19.1	1.27	32.3	250	1.72	20.0	508	9.0	229	32.40	14.70	50 ft. F/M	1 EA (X)	3602-0003	487.02
3/4	19.1	1.27	32.3	250	1.72	20.0	508	9.0	229	31.40	14.24	50 ft. M/M	1 EA (X)	3602-0004	461.23

RECOMMENDED FOR: All types of steam — saturated and superheated — up to 250 PSI + 450°F (+232°C).
NOTE: DO NOT ALTERNATE USE BETWEEN STEAM AND WATER.

TEMPERATURE: -40°F to +450°F (-40°C to +232°C) continuous service.

CONSTRUCTION: **Tube:** Type P₂ (EPDM). Black.
Reinforcement: Braided, high tensile steel wire.
Cover: Type B₁ (special compound designed to withstand heat and oil). Red. All sizes are perforated.

COUPLINGS: **14**, **15** or **76** only. Reference pages 122-133.

PACKAGING: 50' lengths: Coiled in a carton.
3/8" through 3/4": Packaged in 200' to 300' reels. Maximum of 3 pieces. Minimum length 25'. One length under 100'.
3/4 x 50' coupled. assy: Coiled in a carton, one assembly per carton.

BRANDING: Continuous molded brand. Example: "Gates 232MB STEAM QUEEN® 3/4 INCH 2 WIRE BRAID 250 PSI WP AT 450 DEGREES F MADE IN U.S.A. CAUTION: TIGHTEN CLAMPS BEFORE USING."
Continuous molded brand. Example: "Gates 232MB STEAM QUEEN® 3/4 INCH 2 WIRE BRAID 250 PSI WP AT 450 DEGREES F MADE IN U.S.A." (assemblies only)

SPECIAL ORDER REQUIREMENTS: Special production runs require minimum order quantities of 5,000 feet for sizes less than 1-1/2" and 600 feet for 1-1/2" and larger.

REMNANT LENGTHS: None.

STANDARDS: **Cover:** RMA (Class C) Limited oil resistance.

Due to continual product improvements, Gates reserves the right to alter specs and prices without prior notice.





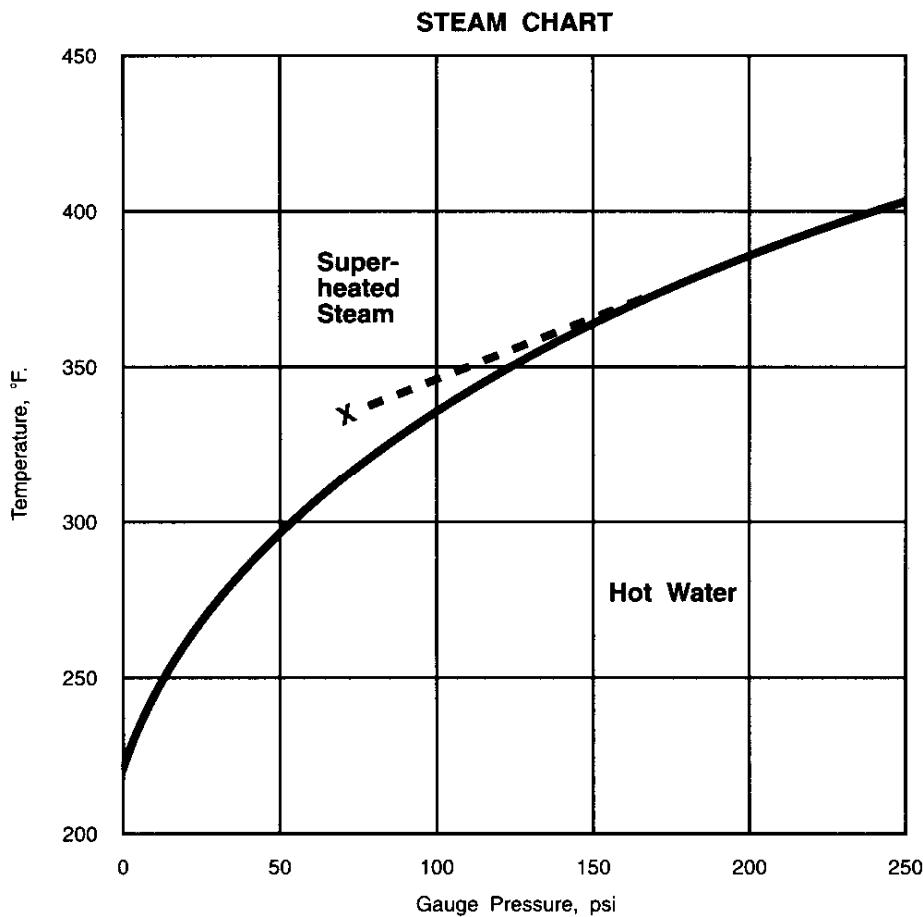
Steam and Its Effect on Hose

Water can exist in three different basic states — solid, liquid or gas — and there are three different conditions of the gas (steam). Which particular condition exists is dictated by the pressure and temperature existing.

These conditions are:

- Wet Saturated Steam or “Wet Steam”**
- Dry Saturated Steam**
- Superheated Steam or “Dry Steam”**

By way of explanation, refer to the steam chart. The heavy black line is the boiling point of water at various gauge pressures. Any point on this line represents saturated steam. Saturated steam may be completely free of unvaporized water particles, or it may carry such particles. In other words, saturated steam may be “Dry” or “Wet.” Any point below the line represents Hot Water — any point above the line represents Superheated Steam.



The dotted line shows the process of saturated steam being transformed into superheated steam. If a steam line is at a pressure of 150 psi, and a temperature of 366°F., it contains saturated steam. If the pressure is substantially reduced by the expansion of the steam (such as the sudden opening of a valve or the steam passing into a larger pipe or hose), the condition of the steam follows the dotted line to some point X in the superheated steam area. This condition may not last very long, but the superheated steam tends to deteriorate the tube stock in ordinary steam hose intended for use with saturated steam. This usually results in hose failure.

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How to Select The Correct Steam Hose Assembly

1. Determine Required Hose Size

The hose size required is usually fixed by size of fittings or pipe to which the hose is to be connected. It is important that you **do not select** a hose with inside diameter **larger** than the diameter of the preceding pipe.

2. Find Actual Rated Working Pressure and Temperature

Take pressure and temperature readings just ahead of the hose connection.

3. Determine Condition of Steam (Saturated or Superheated)

Locate the actual Rated Working Pressure and Temperature on the steam chart on previous page. Any point on the heavy line is saturated steam.

4. Select the Correct Hose

From the table at right, select the hose that fulfills the requirements of both the condition of the steam and the Rated Working Pressure.

5. Determine Length Required

Length required is almost always dictated by the application.

6. Select Couplings Required

Gates recommends interlocking* and permanent crimped types of couplings for steam hose applications. These are identified as:

14 Interlocking, ground joint

15 Interlocking, washer joint

76 Permanent Crimped
Steam Hose Couplings

***Remember to retighten bolts on a regular basis.**

7. Maintenance and Inspection

For proper maintenance and inspection of interlocking and permanent crimped steam hose assemblies, refer to RMA IP-11-1.

NOTE: When electrical continuity is required, ground the wire braid in the hose to couplings with aluminum, copper or stainless steel staples.

STEAM HOSE TABLE

Hose Type	Recommended Service		
	Rated Working Pressure (psi)	Working Temperature (°F)	Type of Steam
232MB Steam Queen®	250	450	Saturated or Superheated
205MB Steam King®	250	450	Saturated or Superheated

Properties of Saturated Steam

(Abridged from Handbook of Chemistry and Physics – 39th Edition.)

Gauge Pressure (psi)	*Temperature of Saturated Steam (°F)	Gauge Pressure (psi)	*Temperature of Saturated Steam (°F)	Gauge Pressure (psi)	*Temperature of Saturated Steam (°F)
10	239	110	344	200	388
25	267	115	347	205	390
30	274	120	350	210	392
35	281	125	353	215	394
40	287	130	356	220	395
45	292	135	358	225	397
50	298	140	361	230	399
55	303	145	363	235	401
60	307	150	366	240	403
65	312	155	368	245	404
70	316	160	371	250	406
75	320	165	373	255	408
80	324	170	375	260	409
85	328	175	377	265	411
90	331	180	380	270	413
95	335	185	382	275	414
100	338	190	384		
105	341	195	386		

*Based on an atmosphere pressure of 14.7 psi.

IMPORTANT: Steam can be dangerous material. Play it safe – stay within the limits of published recommendations!

Do Not Alternate Use Between Steam and Water