

SPECIALTY PRODUCTS

Suction/Mixing Tee

Cast Iron, Bronze or Stainless Steel

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Model	Suction Tee
Sizes	1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3"
Connections	NPT
Body Material	Cast Iron, Bronze & Stainless Steel

PRESSURE/TEMPERATURE RATINGS

Cast Iron NPT 250 PSIG @ 406° F

Bronze NPT 300 PSIG @ 422° F

Stainless Steel NPT 450 PSIG @ 400° F



TYPICAL APPLICATION

The Watson McDaniel Cast Iron, Bronze or Stainless Steel **Suction Tee** is a specialized type of pipe fitting used for blending, agitation, recirculation, mixing, aeration, and heating.

HOW IT WORKS

Heating by Direct Steam Injection: When using a Suction Tee for heating by direct steam injection, the Suction Tee must be completely submerged in the liquid being heated. When steam enters the primary inlet side of the Suction Tee, a low pressure condition is created inside the Suction Tee body. This causes the liquid inside the tank to circulate through the suction tee and intermix with the steam causing the liquid to be heated.

Mixing: When liquid is pumped through the primary inlet of a Suction Tee, a low pressure region is created inside the Suction Tee body. When a Suction tee is submerged, the liquid inside the tank will circulate through the secondary inlet of the Suction Tee causing a mixing action to occur. An alternate method when mixing two different liquids is to pump one liquid through the primary side and the other liquid through the secondary side of the Suction Tee.

Aeration: A tank or reservoir of liquid can be aerated by connecting the secondary inlet of the Suction Tee to an air or gas line under pressure while pumping liquid through the primary inlet.

FEATURES

- Available in cast iron, bronze or stainless steel
- No moving parts
- Quiet operation
- Replaces mixing pumps, propellers & other mechanical devices

INSTALLATION

Installation should include a strainer and isolation valves for maintenance purposes.

MAINTENANCE

Watson McDaniel Suction Tee will operate for extended periods of time without maintenance.

MATERIALS

CAST IRON MODEL	
Body	Cast Iron, A126 CLASS 30
Plug	Cast Iron, A126 CLASS 30
BRONZE MODEL	
Body	Bronze, ASTM B-62
Plug	Stainless Steel, A296, GR 316
STAINLESS STEEL MODEL	
Body	Stainless Steel, A351 GR CF8M
Plug	Stainless Steel, A296, GR 316

SPECIALTY PRODUCTS

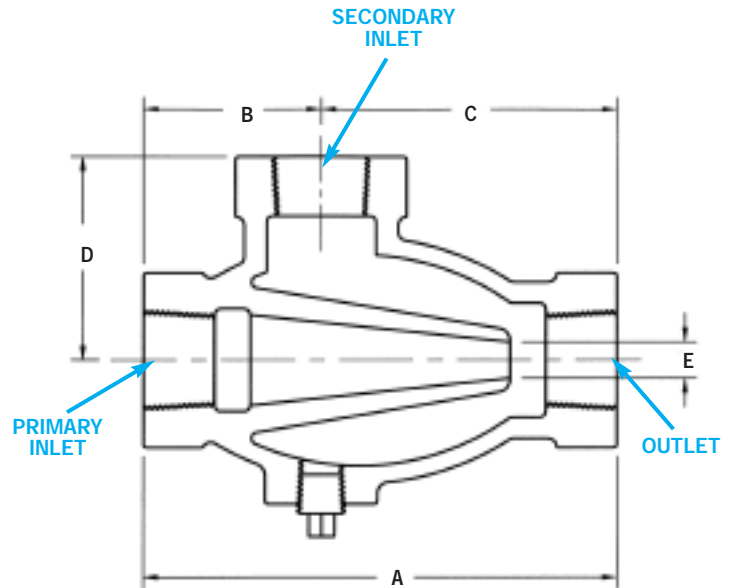
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DIMENSIONS – inches / pounds

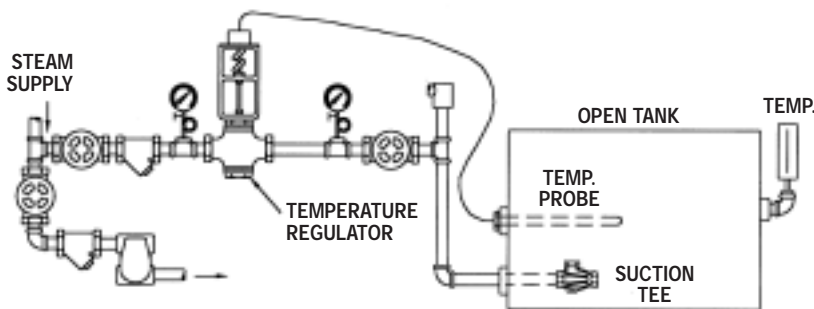
Pipe Size	A	B	C	D	E	Weight (lbs)
125# Cast Iron Body with screwed ends						
1/2"	3 ³ / ₄	1 ¹ / ₂	2 ¹ / ₄	1 ³ / ₄	1/4	1.5
3/4"	5	2	3	2-1/8	3/8	3.25
1"	5 ⁵ / ₈	2 ³ / ₁₆	3 ⁷ / ₁₆	2 ¹ / ₂	11/16	4
1 ¹ / ₄ "	5 ³ / ₄	2 ¹ / ₄	3 ¹ / ₂	2 ¹ / ₂	11/16	4.75
1 ¹ / ₂ "	6 ¹ / ₁₆	2 ⁷ / ₁₆	3 ⁵ / ₈	2 ⁷ / ₈	7/8	5.50
2"	7	2 ⁷ / ₈	4 ¹ / ₈	3	15/16	7
2 ¹ / ₂ "	8 ³ / ₈	3-1/2	4 ⁷ / ₈	3 ⁵ / ₁₆	1	11.75
3"	9 ¹ / ₂	4 ¹ / ₈	5 ³ / ₈	3 ⁷ / ₈	1 ⁵ / ₁₆	20.50
250# Cast Iron Body & SST with screwed ends						
1"	6 ¹ / ₁₆	2 ⁵ / ₁₆	3 ³ / ₄	2 ¹¹ / ₁₆	11/16	6.75
1 ¹ / ₄ "	6 ³ / ₁₆	2 ³ / ₈	3 ¹³ / ₁₆	2 ¹³ / ₁₆	11/16	8
1 ¹ / ₂ "	6 ¹ / ₂	2 ¹³ / ₁₆	3 ¹¹ / ₁₆	2 ⁷ / ₈	7/8	10.50
2"	7 ³ / ₈	3 ¹ / ₁₆	4 ⁵ / ₁₆	3 ¹ / ₄	15/16	16.50



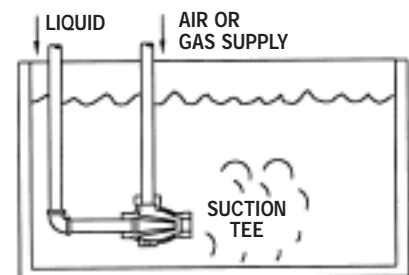
CAPACITIES – Steam (lbs/hr)

Size	Supply Pressure (PSIG)																	
	5	10	15	20	25	30	35	40	45	50	55	60	65	75	85	100	125	150
1/2"	66	96	114	135	156	165	174	207	240	258	276	294	312	354	396	456	552	630
3/4"	108	138	168	198	228	255	282	309	336	363	390	402	414	504	564	648	792	936
1"	312	390	468	549	630	711	792	882	972	1026	1080	1170	1260	1428	1584	1800	2232	2556
1 ¹ / ₄ "	444	558	672	783	894	1005	1116	1230	1344	1461	1578	1689	1800	2010	2232	2592	3168	3708
1 ¹ / ₂ "	612	756	900	1026	1152	1332	1512	1674	1836	1980	2124	2286	2448	2772	3060	3528	4320	5040
2"	798	1008	1206	1410	1614	1815	2016	2214	2412	2610	2808	3024	3240	3636	3996	4680	5652	6696
2 ¹ / ₂ "	912	1152	1368	1584	1800	2052	2304	2538	2772	2997	3222	3447	3672	4140	4608	5292	6480	7560
3"	1332	1656	1980	2304	2628	2970	3312	3636	3960	4302	4644	4986	5328	5976	6600	7620	9300	10800

APPLICATIONS



Controlling temperature of large open tank by steam injection



Aeration or Agitation