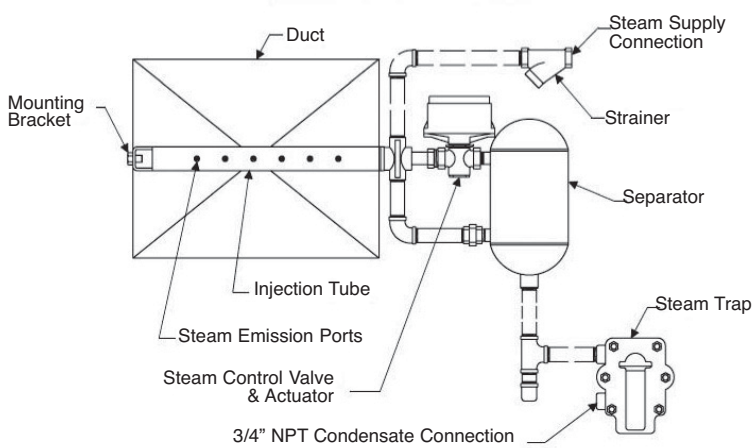


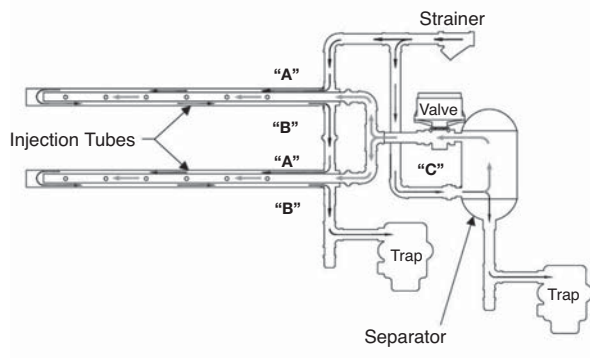
Single Tube Humidifier



Single Tube (WSI)

- For direct injection of steam humidification into air stream
- Many tube length options to accommodate various duct widths
- Recommended for relatively small duct heights where dissipation distance is not critical

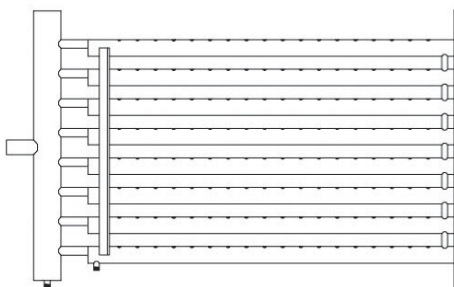
Multiple Tube Humidifier



Multiple Tube (WSI)

- Used for improved dissipation distances in duct heights above 20"
- Number of tubes can be selected to optimize performance
- Many tube length options to accommodate various duct widths

Insty-Pac Manifold-Style Humidifier



Insty-Pac (WIP)

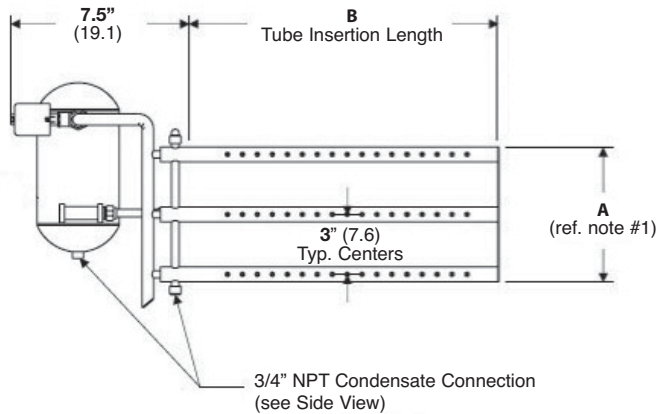
- Custom-engineered manifold design for job-specific requirements
- Used when dissipation distances are critical for optimum air stream humidification
- Number of tubes properly selected to achieve design requirements



Steam Heat Exchanger (WSX)

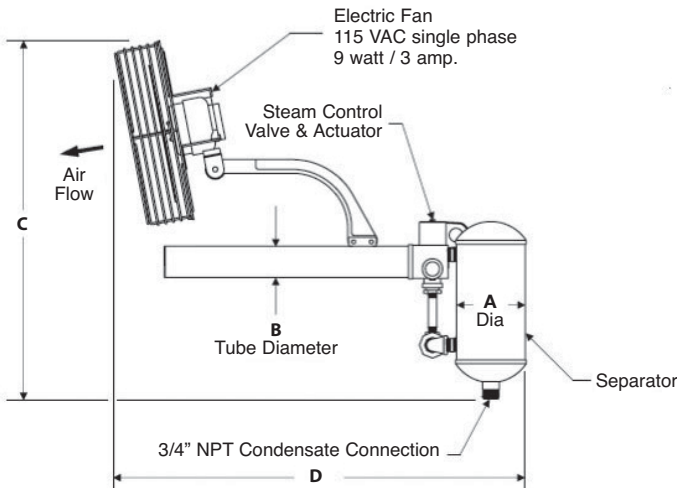
- Provides humidification for today's stringent indoor air quality requirements
- Utilizes boiler steam to heat tap water providing injection steam free from chemical or mineral carry-over
- Ideal for use where electric humidifiers would be cost-prohibitive

Mini-Mult Front View



Mini-Mult

- Designed for applications that require small humidification loads in a small duct size
- Ideal for any high humidity job where fast steam dissipation in cool air in a short-run duct is essential
- Number of tubes can be specified per duct size and job requirements



Area Type

- Designed for applications that require humidification without the use of duct work
- Ideal for area humidity control in paper, textile or wood manufacturing applications as well as printing plants and storage areas



Series "WSI"
Steam Injection
Humidifiers



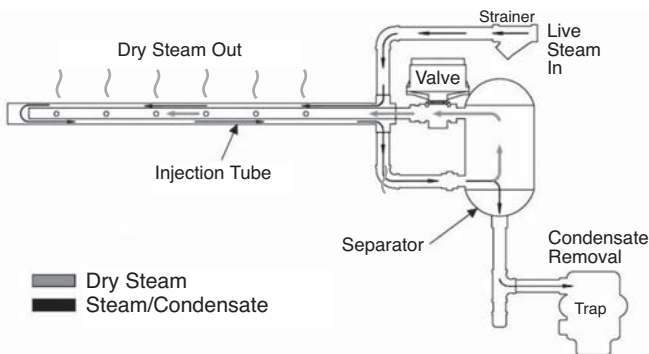
Series "WIP"
INSTY-PAC
Steam Injection
Humidifiers

Typical Applications

A Steam Injection Humidifier supplies precise humidity control from the facility steam boiler into the air stream. Typically used in manufacturing plants, printing plants, commercial offices, hospitals and any other facilities which require a critical balance between temperature and humidity control.

How It Works

The Steam Injection Humidifier receives steam directly from the boiler (live steam), removes the condensate and injects the dry steam into the duct work or an air stream. Live steam enters a steam jacket to preheat the injection tube. Steam then flows into the separator where condensate is removed. Dry steam is then discharged through the injection tube for circulation into the air stream.



MATERIALS

Separator	304 SS
Dispersion Tube	304 SST

Features

- Provides accurate humidity control
- Simple and cost efficient system to meet high humidity requirements
- Available for regular or purified boiler steam
- Available for single or multiple tube applications
- Capacities up to 2900 lbs/hr
- Pressure ranges from 2-60 PSIG
- Available for pneumatic or electric controls
- All stainless steel distributors and nozzles ensure permanent bond
- Separator and Steam Jacket included to provide highest quality steam

Installation

Distributor must be mounted level in a straight section of duct, with steam outlets facing into the air stream. A steam trap should be installed on the separator outlet, allowing for proper condensate removal. Also include a strainer upstream of humidifier inlet.

Maintenance

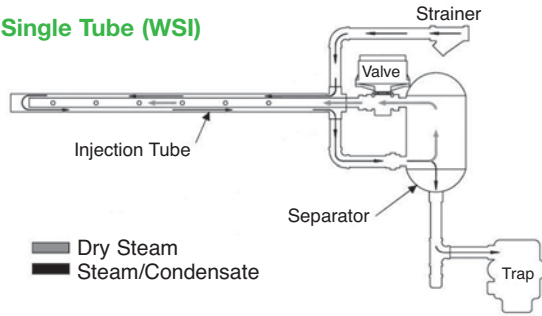
The strainer should be cleaned periodically. The valve, actuator, steam trap and temperature switch should be inspected annually to confirm proper operation. For full maintenance details, see installation and maintenance manual.

HOW TO ORDER

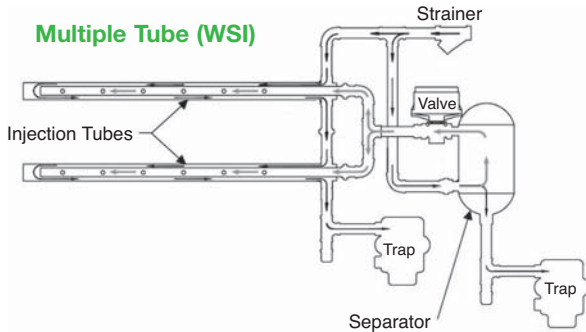
Consult factory for sizing and selection. Provide required humidification load, steam pressure at humidifier inlet, duct dimensions, actuator type and any accessories.

Steam Humidifiers

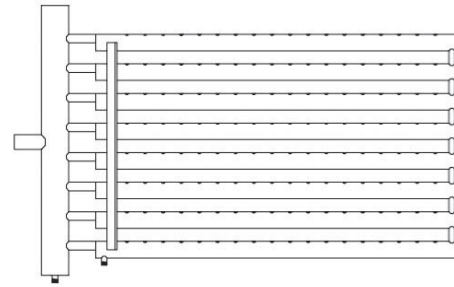
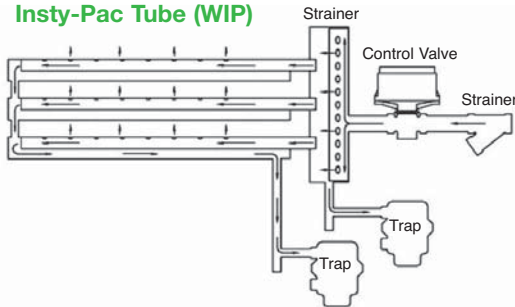
Single Tube (WSI)



Multiple Tube (WSI)



Insty-Pac Tube (WIP)



To prevent condensation on in-duct objects, such as dampeners, coils, filters or turning vanes, it is very important that the dissipation distance be shorter than the distance from the humidifier to the in-duct object. The following recommendations should be used when designing a multiple injection tube system:

Duct Height	Recommended Qty. of Tubes †
Up to 36"	2
37" - 48"	3
49" - 72"	4
73" - 96"	5
Above 96"	6

† Final duct relative humidity, air velocity and available dissipation distance will affect the quantity of tubes required.

MODEL NUMBERS

Insty Pac	Single Tube	Multi Tube	Valve / Size Cv / NPT	Steam Pressure to Humidifier Supply Connection (PSIG)																						
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	20	25	30	35	40	45	50	55	60
BP-1	50-10	50	.10 (1/2")	1.6	1.9	2.3	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.3	4.4	5.1	5.7	6.3	6.8	7.3	7.7	8.1	8.5	8.9
			.22 (1/2")	3.5	4.2	5.0	5.6	6.5	6.6	7.1	7.6	8	8	9	9	10	10	11	13	14	15	16	17	18	19	20
			.40 (1/2")	6.4	7.6	9.1	10	11	12	13	14	15	15	16	16	17	18	20	23	25	27	29	31	33	34	36
			.75 (1/2")	12	14	17	19	21	23	24	26	27	28	30	31	32	33	38	43	47	50	54	57	60	63	66
			.95 (1/2")	15	18	21	24	27	29	31	33	34	36	38	39	40	42	48	54	59	64	68	72	76	80	84
			1.30 (1/2")	21	24	29	33	36	39	42	44	47	49	51	53	55	57	66	74	80	87	93	99	104	109	114
			1.75 (1/2")	28	33	40	44	49	52	55	60	63	66	69	72	74	76	88	99	107	116	124	132	139	146	153
			2.20 (1/2")	35	41	50	55	61	66	71	75	79	82	86	90	93	95	111	123	134	146	156	165	174	183	192
			2.80 (1/2")	45	53	64	70	78	84	90	96	100	104	109	114	118	121	141	157	171	186	199	210	221	233	244
			3.25 (1/2")	52	61	73	82	90	96	104	110	116	121	127	132	137	140	163	181	198	214	229	244	257	270	282
4.40 (1/2")	70	83	98	110	121	130	141	149	157	163	172	178	185	190	221	244	256	290	310	328	345	363	381			
BP-2	60-20	60	5.50 (3/4")	85	104	123	138	150	161	176	186	196	204	213	222	231	235	275	305	333	360	385	408	430	451	471
			6.20 (3/4")	96	117	138	155	169	182	198	210	220	230	240	250	259	265	310	343	372	403	434	459	485	508	529
			7.50 (3/4")	116	142	166	186	204	220	238	253	265	277	289	302	312	320	373	412	450	487	525	555	585	614	640
BP-3	70-20	70	8.20 (1")	123	155	180	204	223	240	261	275	290	303	313	328	341	349	407	443	488	529	570	603	635	668	703
			10.0 (1")	150	189	220	248	272	293	317	335	354	370	380	400	414	423	497	540	595	645	695	735	770	810	850
BP-4	80-30	80	12.0 (1")	180	228	264	296	326	351	378	402	422	441	456	465	492	505	595	648	714	774	828	876	-	-	-
			20.0 (1-1/4")	300	375	440	494	540	582	630	666	702	736	750	772	814	834	990	1060	1180	1280	1376	1460	-	-	-
BP-5	N/A	90	28.0 (1-1/4")	420	511	612	686	756	812	873	927	980	1024	1044	1075	1128	1165	1383	1484	1638	1778	1912	2044	-	-	-
			40.0 (2")	300	375	440	494	540	582	630	666	702	736	750	772	814	834	990	1060	1180	1280	1376	1460	-	-	-

Typical Applications

Steam Heat Exchanger Humidifiers can be used for humidification applications where steam injection is to be used, but chemically treated boiler steam is not allowable. They provide humidification to meet stringent indoor air quality requirements and are ideal for use where electric humidifiers would be cost-prohibitive.

How It Works

The **WSX Steam Heat Exchanger Humidifier** works by utilizing existing boiler steam to heat tap water, providing injection steam free from chemical or mineral carry-over. Several steam injection dispersion methods are available to suit the application requirements.

Features

- Single unit capacity up to 2,035 lbs/hr
- 304 Stainless Steel reservoir construction
- Stainless Steel heat exchanger
- Unique side-entry heat exchanger provides a large clean out access section without disturbing the cover or injection tube system's steam supply piping
- Pneumatic modulating steam control valve
- Tri-Probe level controller
- Adjustable surface water flusher
- Motorized drain valve with brass body
- User-adjustable automatic drain system
- Float & Thermostatic steam trap(s)
- Inlet "Y" strainer(s)

Options

- **INTAC microprocessor controller**
- **Electric modulating actuator**
- **Factory-mounted control panel**
- **NEMA 4 weather-tight control panel**
- **Control panel door lock**
- **Seasonal End-of-Use drain system**
- **Door interlock safety switch**
- **Factory-insulated reservoir**
- **Support legs**
- **Wall brackets**
- **Freeze protection**
- **Stand-by water temperature sensing**
- **Blower Pack for area humidification**
- **Variable air volume control**
- **Outdoor air temperature sensing**
- **Drain tempering kit**
- **Remote INTAC microprocessor controller**
- **Outdoor enclosure**



Model	Humidifier Capacity - lbs/hr (kg/hr) †			
	Steam Pressure in at the control valve - PSIG (kPa)			
	5 (34.5)	10 (69.0)	13 (89.6)	15 (103.4)
SX-1R	32 (14.5)	76 (34.5)	100 (45.3)	122 (55.3)
SX-2R	52 (23.6)	108 (48.9)	140 (63.5)	169 (76.7)
SX-3R	102 (46.3)	228 (103.4)	292 (132.5)	348 (157.8)
SX-4R	192 (87.1)	484 (219.5)	655 (297.1)	753 (341.7)
SX-8R	370 (167.8)	840 (381.0)	1200 (544.3)	1350 (612.4)
SX-12R	560 (254.0)	1265 (573.8)	1810 (821.0)	2035 (923.1)

† Actual humidifier capacity may vary due to the heat loss from the humidifier reservoir. The ambient air temperature, air velocity and injection tube system will affect the rate of the heat loss from the reservoir.

The capacities shown are based on a non-insulated humidifier reservoir tested in a 70°F environment.