

MBX Series Spray dry nozzles

Spray dry nozzles

Spray drying is one of the most complex spraying applications in industry today. The reason for this complexity is due to the interaction of numerous factors such as dryer design, inlet air temperature and volume, feed rate, feed pressure, droplet size and droplet distribution, droplet dispersion in the dryer, as well as the liquid properties of the feedstock. All these factors determine the final quality of the dried product, particle size and distribution, solubility, density, etc.

The Spray nozzle is one of the most important components in spray drying, if not the most, since it has a direct effect not only on metering the correct amount of liquid but also on droplet size, distribution, and ultimately the quality of the final product.

Our orifice inserts and cores are made from a special micron grade tungsten carbide to provide excellent corrosion and abrasion resistance.

All of our products are manufactured to the latest standards and exacting tolerances.

Spray Performance

The MBX series provides a uniform hollow cone spray distribution with flow rates from 21 liters per hour @ 50 bar up to 1.459 liters per hour @ 450 bar and associated spray angles from 50° to 90°. High viscosity feeds do not have a significant affect on the performance.

Nozzle body and cap

The nozzle body and cap are made of stainless steel 303 and 316. The nozzle body can be attached to the feed pipe either by welding or by several thread options. The latest version is equipped with a quick coupling plug for easy removal. See page A4 for more information. The nozzle body has no internal seals, the only O-ring used is an easy to remove EPDM ring between the body and the cap.

Cores

The cores are manufactured in one piece, eliminating the seam between core tips and bodies and thus eliminating the potential for feedstock buildup as seen in other two piece designs.

To help reduce potential feed stock build up on the sides of the core body the sides have been finished to a high surface polished.

The free floating cores maintains sanitary conditions and are provided with a tail for easy removal. The cores are laser marked for clear and easy recognition.

Orifice insert

The orifice inserts were designed to exacting tolerances for excellent feed stock control as well as lower it's susceptibility to damage. The orifice inserts are also laser marked for clear and easy recognition. The orifice inserts are easily installed in the nozzle caps by means of a small hand press, model MBXP. See page A5 for more information.

Anti-drip valve

The MBX nozzle can be equipped with an internal anti-drip valve. The standard opening and closing pressure is 10 bar.

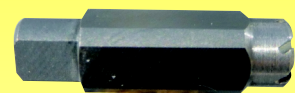
The anti-drip valve can be mounted and dismantled without tools. The sealing part is available in tungsten carbide or special synthetic material.

With this design there is no need for washers to seal the valve. The anti-drip valve prevents fouling of the tower.

1/4MBX



MC645



MI540



Orif.size number	Core size number	Capacity (ltr/hr) @ various pressures (bar)											Approx. sprayangle
		50	75	100	150	200	250	300	350	400	450	500	
MI770	MC220	21	26	30	36	42	47	52	56	59	63	67	60°
MI740	MC216	24	30	34	42	49	54	59	64	69	73	77	70°
MI760	MC417	27	33	39	47	55	61	67	72	77	82	86	61°
MI740	MC220	29	35	40	49	57	64	70	76	81	86	90	70°
MI700	MC216	32	39	45	55	63	71	78	84	90	95	100	80°
MI720	MC220	33	41	47	57	66	74	81	88	94	99	105	70°
MI690	MC260	33	41	47	57	66	74	81	88	94	99	105	80°
MI760	MC421	35	43	50	61	71	79	87	94	100	106	112	50°
MI670	MC216	37	45	52	63	73	82	90	97	103	110	116	85°
MI700	MC220	38	47	54	66	76	86	94	101	108	115	121	75°
MI690	MC220	40	49	56	69	80	89	98	106	113	120	126	75°
MI740	MC421	43	52	60	74	85	95	105	113	121	128	135	50°
MI670	MC220	44	54	62	76	87	98	107	116	124	131	138	80°
MI660	MC220	46	56	65	79	91	102	112	121	129	137	144	80°
MI700	MC417	46	57	65	80	92	103	113	122	130	138	146	70°
MI690	MC417	47	58	67	82	95	106	116	126	134	142	150	70°
MI720	MC417	49	60	69	85	98	110	120	130	139	147	155	55°
MI620	MC220	52	63	73	90	104	116	127	137	146	155	164	85°
MI670	MC417	54	66	76	93	108	121	132	143	152	162	170	75°
MI660	MC417	55	67	77	94	109	122	134	144	154	164	172	75°
MI580	MC220	58	71	82	100	116	129	142	153	164	174	183	90°
MI700	MC421	60	74	85	104	120	135	148	159	170	181	190	60°
MI630	MC417	62	76	88	108	124	139	152	164	176	186	197	80°
MI690	MC421	63	78	90	110	127	142	155	168	180	190	201	60°
MI610	MC417	66	81	94	115	133	148	162	176	188	199	210	80°
MI600	MC417	68	83	96	118	136	152	167	180	192	204	215	80°
MI680	MC421	71	86	100	122	141	158	173	187	199	212	223	60°
MI570	MC417	73	89	103	126	146	163	179	193	207	219	231	85°
MI670	MC421	74	91	105	129	149	167	182	197	211	223	235	65°
MI650	MC241	79	96	111	136	157	176	192	208	222	236	248	65°
MI700	MC427	79	97	112	137	158	177	194	209	224	237	250	50°
MI560	MC417	81	99	114	140	161	180	198	213	228	242	255	85°
MI690	MC427	83	101	117	143	165	185	203	219	234	248	262	50°
MI640	MC421	83	101	117	143	165	185	203	219	234	248	262	65°
MI630	MC421	85	104	120	147	170	190	208	225	240	255	269	70°
MI680	MC427	89	109	126	154	178	199	218	235	251	266	281	55°
MI620	MC421	90	110	127	156	180	202	221	238	255	270	285	70°
MI670	MC427	94	115	133	162	187	210	230	248	265	281	296	55°
MI610	MC421	93	114	132	162	187	209	229	247	264	280	295	70°
MI600	MC421	96	117	135	166	191	214	234	253	270	287	302	70°
MI660	MC427	98	120	138	170	196	219	240	259	277	294	310	55°
MI590	MC421	99	121	140	171	198	221	242	262	280	297	313	70°
MI580	MC421	102	125	144	177	204	228	250	270	288	306	322	75°
MI650	MC427	103	126	146	178	206	230	252	273	291	309	326	60°
MI570	MC421	105	129	149	182	210	235	258	278	297	316	333	75°
MI640	MC427	107	131	152	186	214	240	263	284	303	322	339	60°
MI630	MC427	113	138	159	195	225	252	276	298	319	338	356	60°
MI620	MC427	116	142	164	201	232	260	285	307	329	349	367	60°
MI560	MC421	117	144	166	203	235	262	287	310	332	352	371	75°
MI610	MC427	120	146	169	207	239	267	293	316	338	359	378	60°
MI600	MC427	124	152	176	215	249	278	304	329	352	373	393	60°
MI590	MC427	127	155	179	219	253	283	310	335	358	380	401	65°
MI580	MC427	131	161	186	228	263	294	322	348	372	394	416	65°
MI570	MC427	134	164	189	232	268	299	328	354	379	402	423	55°
MI550	MC421	134	164	189	232	268	299	328	354	379	402	423	80°
MI640	MC628	137	168	194	238	275	307	337	364	389	412	435	50°
MI540	MC421	146	179	206	253	292	326	357	386	412	437	461	80°
MI530	MC421	155	190	220	269	311	347	381	411	439	466	491	85°
MI590	MC628	164	201	232	284	327	366	401	433	463	491	518	50°
MI550	MC427	173	212	245	300	347	388	425	459	490	520	548	70°
MI570	MC628	176	215	248	304	351	393	430	465	497	527	556	55°
MI510	MC421	184	225	260	319	368	412	451	487	521	552	582	85°

Orif.size number	Core size number	Capacity (ltr/hr) @ various pressures (bar)											Approx. sprayangle
		50	75	100	150	200	250	300	350	400	450	500	
MI500	MC421	190	233	269	329	380	425	466	503	538	570	601	90°
MI490	MC421	198	243	281	344	397	444	486	525	561	595	627	90°
MI480	MC421	208	255	294	360	416	465	509	550	588	624	658	90°
MI520	MC427	219	268	309	379	437	489	536	579	619	656	692	80°
MI550	MC428	232	284	328	402	464	518	568	613	656	696	733	60°
MI480	MC427	277	340	392	480	555	620	679	734	784	832	877	85°
MI460	MC427	301	369	426	522	602	673	738	797	852	904	952	85°
MI440	MC427	323	395	456	559	645	722	790	854	913	968	1021	85°
MI400	MC628	486	896	688	843	973	1088	1192	1287	1376	1459	1538	75°

All tables are based on water at room temperature.

How to order

Ordering a complete nozzle	
Ordering a complete nozzle	
Ordering an orifice insert	
Ordering an core	

orifice insert	in mm.	orifice insert	in mm.	orifice insert	in mm.	orifice insert	in mm.
MI400	2,48	MI540	1,39	MI620	0,96	MI690	0,73
MI440	2,18	MI550	1,32	MI630	0,93	MI700	0,71
MI460	2,05	MI570	1,09	MI640	0,91	MI720	0,63
MI480	1,93	MI580	1,06	MI650	0,88	MI740	0,57
MI500	1,77	MI590	1,04	MI660	0,83	MI760	0,50
MI510	1,70	MI600	1,01	MI670	0,81	MI770	0,45
MI530	1,52	MI610	0,99	MI680	0,78		

Core number	Number of slots	Slot width
MC216	2	0,41 mm.
MC417	4	0,41 mm.
MC220	2	0,51 mm.
MC421	4	0,51 mm.
MC427	4	0,64 mm.
MC628	6	0,64 mm.