



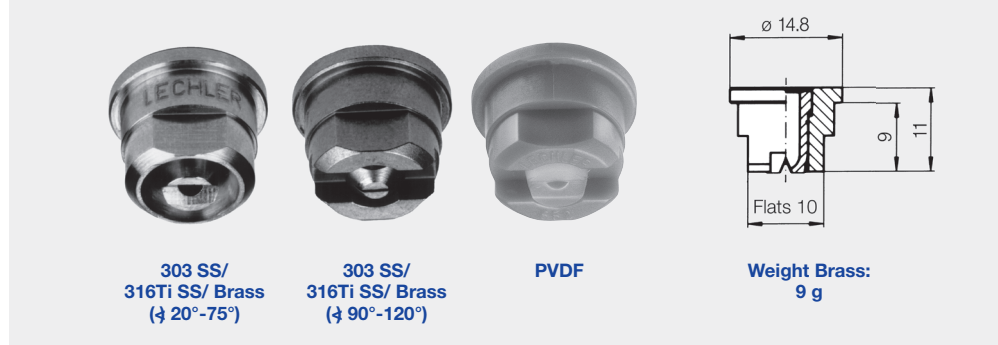
Flat fan nozzles for retaining nut Series 652





Assembly with retaining nut. Easy nozzle changing, simple jet alignment. Uniform, parabolic distribution of liquid. Spray pipes equipped with these nozzles show an extremely uniform total liquid distribution.

Applications:

Spray cleaning, surface treatment, filter cleaning, belt cleaning, lubricating, coating.



Spray angle 	Ordering no.					A Ø [mm]	E Ø [mm]	V̇ [l/min]						Spray width B at p=2 bar 	
	Type	Mat. no.						p [bar]						H = 250 mm	H = 500 mm
		16	17 ¹	30	5E			0.5	1.0	2.0	3.0	5.0	10.0		
20°	652.301	○	○	○	○	0.70	0.60	0.16*	0.23*	0.32	0.39	0.51	0.72	65	125
	652.361	○	○	○	○	1.00	0.80	0.31*	0.44*	0.63	0.77	1.00	1.40	65	125
	652.441	○	○	○	○	1.35	1.10	0.62*	0.88	1.25	1.53	1.98	2.80	65	125
	652.481	○	○	○	○	1.50	1.20	0.80*	1.13	1.60	1.96	2.53	3.58	65	125
30°	652.302	○	○	○	○	0.60	0.50	0.16*	0.23*	0.32	0.39	0.51	0.72	115	230
	652.362	○	○	○	○	1.00	0.70	0.31*	0.44*	0.63	0.77	1.00	1.40	115	230
	652.402	○	○	○	○	1.20	0.90	0.50*	0.71	1.00	1.23	1.58	2.24	115	230
	652.482	○	○	○	○	1.50	1.10	0.80*	1.13	1.60	1.96	2.53	3.58	115	230
	652.562	○	○	○	○	2.00	1.50	1.25	1.77	2.50	3.06	3.95	5.59	115	230
	652.642	○	○	○	-	2.50	1.80	2.00	2.83	4.00	4.90	6.33	8.94	120	230
	652.722	○	○	○	-	3.00	2.40	3.15	4.46	6.30	7.72	9.96	14.09	120	235
	652.762	○	○	○	-	3.50	2.70	4.00	5.66	8.00	9.80	12.65	17.89	120	235
652.802	○	○	○	-	4.00	3.10	5.00	7.07	10.00	12.25	15.81	22.36	120	240	
45°	652.303	○	○	○	-	0.70	0.50	0.16*	0.23*	0.32	0.39	0.51	0.72	180	340
	652.363	○	○	○	○	1.00	0.60	0.31*	0.44*	0.63	0.77	1.00	1.40	185	340
	652.403	○	○	○	○	1.20	0.90	0.50*	0.71	1.00	1.23	1.58	2.24	185	340
	652.483	○	○	○	○	1.50	1.10	0.80*	1.13	1.60	1.96	2.53	3.58	185	340
	652.563	○	○	○	○	2.00	1.40	1.25	1.77	2.50	3.06	3.95	5.59	185	340
	652.643	○	○	○	○	2.50	1.80	2.00	2.83	4.00	4.90	6.33	8.94	185	345
	652.723	○	○	○	-	3.00	2.40	3.15	4.46	6.30	7.72	9.96	14.09	190	355
	652.763	○	○	○	-	3.50	2.60	4.00	5.66	8.00	9.80	12.65	17.89	190	355
652.803	○	○	○	-	4.00	3.00	5.00	7.07	10.00	12.25	15.81	22.36	195	360	
60°	652.304	○	○	○	○	0.70	0.40	0.16*	0.23*	0.32	0.39	0.51	0.72	275	525
	652.334	○	○	○	○	0.90	0.50	0.22*	0.32*	0.45	0.55	0.71	1.01	275	525
	652.364	○	○	○	○	1.00	0.60	0.31*	0.44*	0.63	0.77	1.00	1.40	275	525
	652.404	○	○	○	○	1.20	0.80	0.50*	0.71	1.00	1.23	1.58	2.24	275	525
	652.444	○	○	○	○	1.35	0.90	0.62*	0.88	1.25	1.53	1.98	2.80	280	530
	652.484	○	○	○	○	1.50	1.00	0.80*	1.13	1.60	1.96	2.53	3.58	280	530
	652.514	○	○	○	○	1.65	1.10	0.95*	1.34	1.90	2.33	3.00	4.25	280	530
	652.564	○	○	○	○	2.00	1.30	1.25	1.77	2.50	3.06	3.95	5.59	280	525
	652.604	○	○	○	○	2.20	1.50	1.58	2.23	3.15	3.86	4.98	7.04	280	520
	652.644	○	○	○	○	2.50	1.60	2.00	2.83	4.00	4.90	6.33	8.94	275	520
	652.674	○	○	○	○	2.70	1.80	2.38	3.36	4.75	5.82	7.51	10.62	275	520
	652.724	○	○	○	○	3.00	2.10	3.15	4.46	6.30	7.72	9.96	14.09	275	520
	652.764	○	○	○	-	3.50	2.30	4.00	5.66	8.00	9.80	12.65	17.89	270	515
	652.804	○	○	○	○	4.00	2.60	5.00	7.07	10.00	12.25	15.81	22.36	270	510
	652.844	○	-	-	○	4.50	3.00	6.25	8.84	12.50	15.31	19.76	27.95	270	510
	652.884	○	-	○	-	5.00	3.40	8.00	11.31	16.00	19.60	25.30	35.78	270	505

¹We reserve the right to deliver 316Ti SS or 316L SS under the material no. 17.

A = equivalent bore diameter · E = narrowest free cross section · *Differing spray pattern



Continued on next page.



Flat fan nozzles for retaining nut

Series 652



Spray angle 	Ordering no.					A Ø [mm]	E Ø [mm]	V̇ [l/min]						Spray width B at p=2 bar 	
	Type	Mat. no.						p [bar]						H = 250 mm	H = 500 mm
		16	17 ¹	30	5E			0.5	1.0	2.0	3.0	5.0	10.0		
	303 SS	316Ti SS/ 316L SS	Brass	PVDF											
75°	652.145	○	-	○	-	0.20	0.12	-	0.04*	0.05	0.06	0.08	0.11	285	550
	652.165	○	-	○	-	0.20	0.14	-	0.05*	0.07	0.08	0.10	0.15	285	555
	652.185	○	-	○	-	0.20	0.16	-	0.06*	0.08	0.10	0.13	0.18	290	560
	652.215	○	-	○	-	0.40	0.20	-	0.08*	0.11	0.14	0.18	0.25	290	560
	652.245	○	-	○	-	0.50	0.30	-	0.12*	0.16	0.20	0.26	0.36	290	560
	652.275	○	-	○	-	0.60	0.30	0.11*	0.16*	0.22	0.27	0.35	0.49	290	560
90°	652.216	○	-	○	-	0.40	0.20	0.06*	0.08*	0.11	0.14	0.18	0.25	380	760
	652.246	○	-	○	-	0.50	0.30	0.08*	0.12*	0.16	0.20	0.26	0.36	380	760
	652.276	○	-	○	-	0.60	0.30	0.11*	0.16*	0.22	0.27	0.35	0.49	450	795
	652.306	○	○	○	○	0.70	0.40	0.16*	0.23*	0.32	0.39	0.51	0.72	450	795
	652.336	○	○	○	○	0.90	0.50	0.22*	0.32*	0.45	0.55	0.71	1.01	450	795
	652.366	○	○	○	○	1.00	0.50	0.31*	0.44*	0.63	0.77	1.00	1.41	450	795
	652.406	○	○	○	○	1.20	0.70	0.50*	0.71	1.00	1.23	1.58	2.24	450	800
	652.446	○	○	○	○	1.35	0.80	0.62*	0.88	1.25	1.53	1.98	2.80	450	800
	652.486	○	○	○	○	1.50	0.80	0.80*	1.13	1.60	1.96	2.53	3.58	450	800
	652.516	○	○	○	○	1.65	0.90	0.95*	1.34	1.90	2.33	3.00	4.25	450	800
	652.566	○	○	○	○	2.00	1.10	1.25	1.77	2.50	3.06	3.95	5.59	450	805
	652.606	○	○	○	○	2.20	1.20	1.58	2.23	3.15	3.86	4.98	7.04	450	805
	652.646	○	○	○	○	2.50	1.30	2.00	2.83	4.00	4.90	6.33	8.94	450	805
	652.676	○	○	○	○	2.70	1.40	2.38	3.36	4.75	5.82	7.51	10.62	450	810
	652.726	○	○	○	○	3.00	1.70	3.15	4.46	6.30	7.72	9.96	14.09	450	810
	652.766	○	○	○	-	3.50	1.90	4.00	5.66	8.00	9.80	12.65	17.89	450	815
	652.806	○	○	○	○	4.00	2.40	5.00	7.07	10.00	12.25	15.81	22.36	450	820
	652.846	-	-	○	○	4.50	2.40	6.25	8.84	12.50	15.31	19.76	27.95	450	820
652.886	○	-	○	○	5.00	3.10	8.00	11.31	16.00	19.60	25.30	35.78	450	835	
120°	652.187	○	-	○	-	0.35	0.20	-	0.06*	0.08	0.10	0.13	0.18	640	1220
	652.217	○	-	○	-	0.40	0.20	-	0.08*	0.11	0.14	0.18	0.25	650	1230
	652.247	○	-	○	-	0.50	0.20	-	0.12*	0.16	0.20	0.26	0.36	655	1245
	652.277	○	-	○	-	0.60	0.30	-	0.16*	0.22	0.27	0.35	0.49	655	1250
	652.307	○	-	○	○	0.70	0.30	0.16*	0.23*	0.32	0.39	0.51	0.72	660	1260
	652.337	○	○	○	○	0.90	0.40	0.22*	0.32*	0.45	0.55	0.71	1.01	660	1260
	652.367	○	○	○	○	1.00	0.50	0.31*	0.44*	0.63	0.77	1.00	1.41	660	1265
	652.407	○	○	○	○	1.20	0.60	0.50*	0.71	1.00	1.23	1.58	2.24	660	1270
	652.447	○	○	○	○	1.35	0.60	0.62*	0.88	1.25	1.53	1.98	2.80	665	1270
	652.487	○	○	○	○	1.50	0.60	0.80*	1.13	1.60	1.96	2.53	3.58	665	1270
	652.517	○	○	○	○	1.65	0.90	0.95*	1.34	1.90	2.33	3.00	4.25	670	1275
	652.567	○	○	○	○	2.00	0.90	1.25	1.77	2.50	3.06	3.95	5.59	670	1280
	652.607	○	○	○	○	2.20	1.10	1.58	2.23	3.15	3.86	4.98	7.04	675	1285
	652.647	○	○	○	-	2.50	1.30	2.00	2.83	4.00	4.90	6.33	8.94	680	1295
	652.677	○	○	○	-	2.70	1.40	2.38	3.36	4.75	5.82	7.51	10.62	685	1300
	652.727	○	○	○	-	3.00	1.60	3.15	4.46	6.30	7.72	9.96	14.09	695	1315
	652.767	○	○	○	-	3.50	1.70	4.00	5.66	8.00	9.80	12.65	17.89	705	1330
	652.807	○	-	○	-	4.00	2.00	5.00	7.07	10.00	12.25	15.81	22.36	705	1330
652.847	-	-	-	○	4.50	2.30	6.25	8.84	12.50	15.31	19.76	27.95	800	1460	
652.887	-	-	-	○	5.00	2.60	8.00	11.31	16.00	19.60	25.30	35.78	800	1460	

¹We reserve the right to deliver 316Ti SS or 316L SS under the material no. 17.
A = equivalent bore diameter · E = narrowest free cross section
*Differing spray pattern · Subject to technical modifications.

The folded page at the end of the catalogue will give you a survey on the various assembly possibilities. For complete assembly accessories, please refer to »Accessories«.

Example of ordering:	Type	+	Material no.	=	Ordering no.
	652.145	+	16	=	652.145.16

Conversion formula for the above series: $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{p_2}{p_1}}$



Flat fan nozzles for belt lubrication

Series 652



**Especially low flow rates.
Parabolic liquid distribution.**

Applications:

Belt lubrication, moistening, spraying of food products, moisturization of rollers, oiling, lubrication of metal sheets.

Operating pressure range:
1 to 5 bar

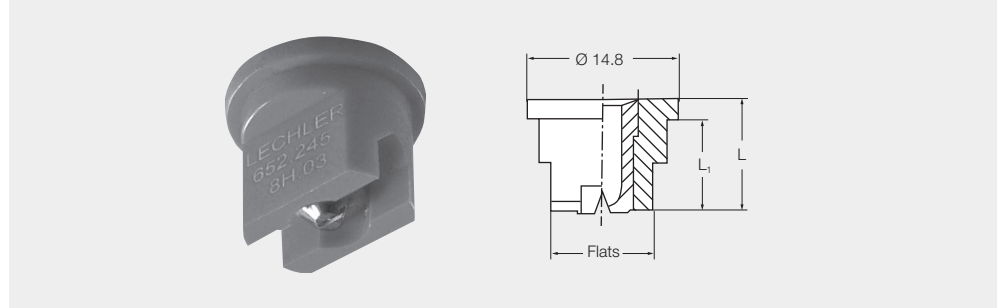
Recommended operating pressure:
3 bar

Viscosity:

The nozzles can be operated with viscous media, e. g. transmission fluid (max. approx. 200 mPas). However the spray angle decreases.

Return valve with filter:

- Prevents dripping and saves medium
- Size of filter mesh: 0.08 mm (200 mesh)
- **095.016.53.11.00**
Opening pressure: approx. 0.5 bar
Closing pressure: approx. 0.3 bar
- **095.016.53.14.63**
Opening pressure: approx. 2.8 bar
Closing pressure: approx. 1.6 bar



Spray angle	Ordering no.				Colour	E Ø [mm]	V̇ [l/min]			
	Type	Mat. no.					p [bar]			
		16	8H.03*	56.03			1.0	2.0	3.0	5.0
75°	652.145	○	○	○	green	0.12	0.04**	0.05	0.06	0.08
	652.165	○	○	-	black	0.14	0.05**	0.07	0.08	0.10
	652.185	○	○	○	red	0.16	0.06**	0.08	0.10	0.13
	652.215	○	○	-	blue	0.20	0.08**	0.11	0.14	0.18
	652.245	○	○	-	orange	0.30	0.12**	0.16	0.20	0.26
120°	652.275	○	○	-	brown	0.30	0.16**	0.22	0.27	0.35
	652.187	○	○	-	grey	0.20	0.06**	0.08	0.10	0.13
	652.247	○	○	-	black	0.20	0.12**	0.16	0.20	0.26
	652.277	○	○	-	black	0.30	0.16**	0.22	0.27	0.35

E = narrowest free cross section
* Housing POM, nozzle insert 303 SS
** Differing spray pattern.
Subject to technical modifications.

Pos.	Name	Ordering no.	Material	Colour	Dimensions [mm]			Filter mesh [mm]
					L	L ₁	Flats	
1	Filter with return valve	095.016.53.11.00	PP	blue	21	1.5	-	0.08
		095.016.53.14.63	PP	green	21	1.5	-	0.08
2	Gasket	065.240.55	PTFE	-	-	-	-	-
		065.240.72	EWP 210	-	-	-	-	-
3	Nozzle	Ordering no. see flow tables	303 SS	-	11	9	10	-
			POM/303 SS*	-	12	10	8	-
4	Cap nut	065.200.16	303 SS	-	13	10	22	-
		065.200.56	POM	black	14.5	11.5	22	-

* Housing POM, Nozzle insert 303 SS
** Size of mesh

