

# Flat fan nozzle with dove-tail alignment

## Series 660

### Series 660

Assembly with retaining nut.  
Self aligning jet with dove-tail design secures correct spray position for optimal strand surface quality and easy maintenance. Standard version with parabolic liquid distribution.

#### Applications:

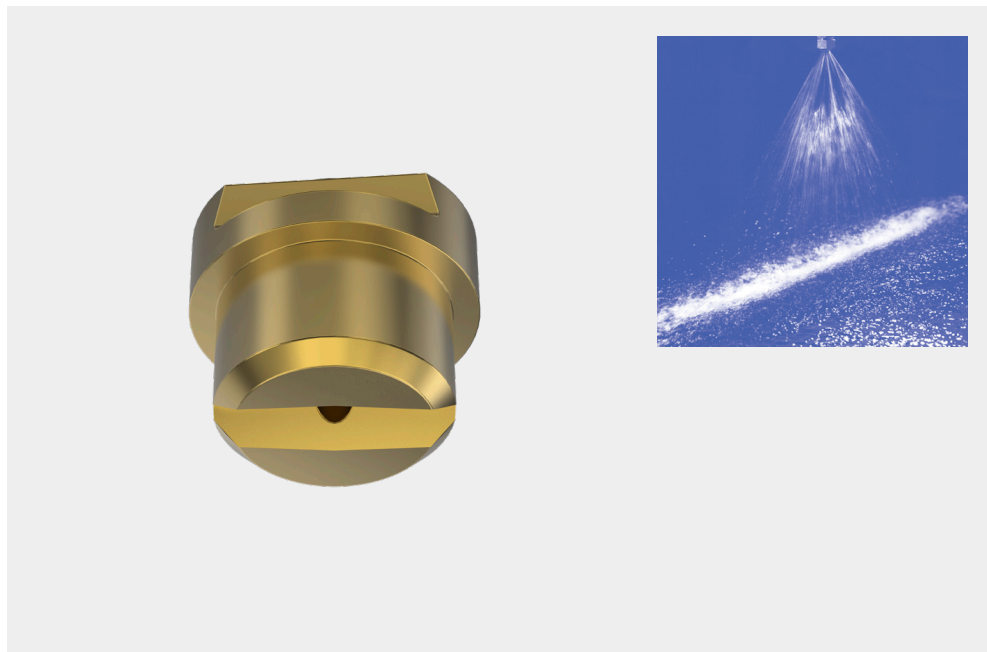
Multi nozzle arrangements for strand cooling in foot roller area of slab casters where space is limited.

Multi nozzle arrangements in segments for water only secondary cooling in stainless steel slab casters with low water flow rates.

- Standard offset angle 5° built into the nozzle
- 0° offset angle available on request 660.xxx.xx.74

Available also with rectangular liquid distribution for single nozzle arrangement (per roller gap) or wide pitches 660.xxx.xx.90.

Available also with rectangular liquid distribution combined with 0° offset angle for single nozzle arrangement (per roller gap) or wide pitches 660.xxx.xx.96 in narrow roller gaps.



#### Special nozzle types:

Type + Material No. + Special No

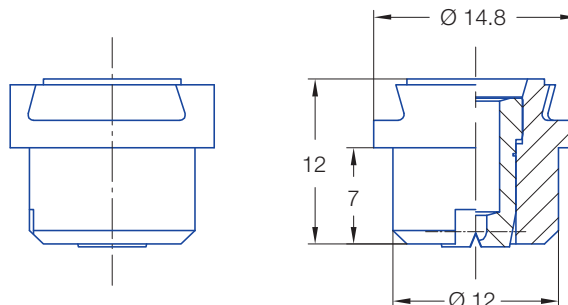
Special No:

00 = standard nozzle

74 = flat jet parallel to dove tail

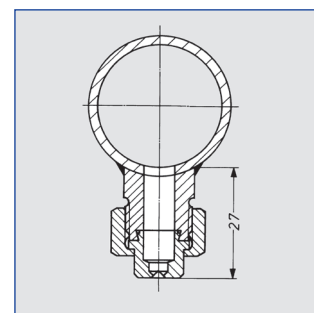
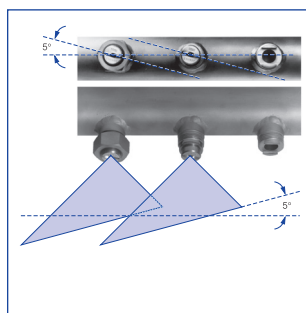
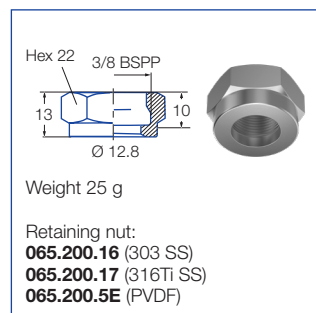
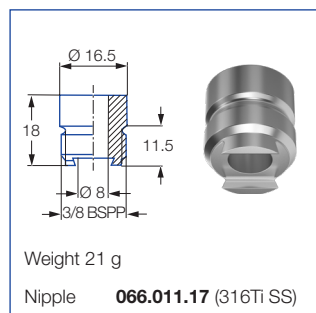
90 = rectangular liquid distribution


96 = flat jet parallel to dove tail + rectangular liquid distribution



Flat jet 5° offset against dove-tail

### Accessories



Spray angle 	Ordering no.				A Ø [mm]	E Ø [mm]	V̇ [l/min]						
	Type	Mat. no.					p [bar]						
		16 303 SS	17 <sup>1</sup> 316Ti SS/ 316L SS	30			0.5	1.0	2.0	[US gal./ min] at 40 psi	3.0	5.0	10.0
45°	660.403	○	○	○	1.20	0.90	0.50*	0.71	1.00	0.31	1.23	1.58	2.24
	660.483	○	○	○	1.50	1.10	0.80*	1.13	1.60	0.50	1.96	2.53	3.58
	660.563	○	○	○	2.00	1.40	1.25	1.76	2.50	0.78	3.06	3.95	5.59
	660.643	○	○	○	2.50	1.80	2.00	2.83	4.00	1.24	4.90	6.33	8.94
60°	660.404	○	○	○	1.20	0.80	0.50*	0.71	1.00	0.31	1.23	1.58	2.24
	660.444	○	○	○	1.35	0.90	0.62*	0.88	1.25	0.39	1.53	1.98	2.80
	660.484	○	○	○	1.50	1.00	0.80*	1.13	1.60	0.50	1.96	2.53	3.58
	660.514	○	○	○	1.65	1.10	0.95*	1.34	1.90	0.59	2.33	3.00	4.25
	660.564	○	○	○	2.00	1.30	1.25	1.77	2.50	0.78	3.06	3.95	5.59
	660.604	○	○	○	2.20	1.50	1.58	2.23	3.15	0.98	3.86	4.98	7.04
	660.644	○	○	○	2.50	1.60	2.00	2.83	4.00	1.24	4.90	6.33	8.94
	660.724	○	○	○	3.00	2.10	3.15	4.46	6.30	1.95	7.72	9.96	14.09
660.804	○	-	○	4.00	2.60	5.00	7.07	10.00	3.10	12.25	15.81	22.36	
90°	660.446	○	○	○	1.35	0.80	0.62*	0.88	1.25	0.39	1.53	1.98	2.80
	660.486	○	○	○	1.50	0.80	0.80*	1.13	1.60	0.50	1.96	2.53	3.58
	660.516	○	○	○	1.65	0.90	0.95*	1.34	1.90	0.59	2.33	3.00	4.25
	660.566	○	○	○	2.00	1.10	1.25	1.76	2.50	0.78	3.06	3.95	5.59
	660.606	○	○	○	2.20	1.20	1.58	2.23	3.15	0.98	3.86	4.98	7.04
	660.646	○	○	○	2.50	1.30	2.00	2.83	4.00	1.24	4.90	6.33	8.94
	660.676	○	○	○	2.70	1.40	2.38	3.36	4.75	1.47	5.82	7.51	10.62
	660.726	○	○	○	3.00	1.70	3.15	4.46	6.30	1.95	7.72	9.96	14.09
660.806	-	○	○	4.00	2.40	5.00	7.07	10.00	3.10	12.25	15.81	22.36	
120°	660.517	○	○	○	1.65	0.90	0.95*	1.34	1.90	0.59	2.33	3.00	4.25
	660.567	○	○	○	2.00	0.90	1.25	1.77	2.50	0.78	3.06	3.95	5.59
	660.607	○	○	○	2.20	1.10	1.58	2.23	3.15	0.98	3.86	4.98	7.04
	660.647	○	○	○	2.50	1.30	2.00	2.83	4.00	1.24	4.90	6.33	8.94
	660.727	○	○	○	3.00	1.60	3.15	4.46	6.30	1.95	7.72	9.96	14.09
660.807	○	-	○	4.00	2.00	5.00	7.07	10.00	3.10	12.25	15.81	22.36	

<sup>1</sup> We 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

<b>Example of ordering:</b>	<b>Type</b>	<b>+</b>	<b>Material no.</b>	<b>=</b>	<b>Ordering no.</b>
	<b>660.404</b>	<b>+</b>	<b>16</b>	<b>=</b>	<b>660.404.16</b>

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

