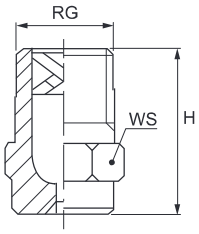
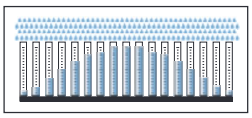


X VANE / TWO-PIECE DESIGN

D series full cone nozzles with wide passage X-vanes offer a full choice of spray angles, capacities ranging from 1.18 and 1.420 l/min and connections from 1/8" to 4".
In continuous casting cooling and other specific applications, they are used spraying upwards and operate at very high temperatures. The X-vane is safely locked into place for all dimensions up to 3/8", to avoid it may escape from the nozzle body in case of size changes due to temperature variations, and allows to assemble the nozzle with any desired orientation. Excellent mist effect and a wide variety of applications make D series nozzles an optimal choice.

- **Thread specification**: BSPT, NPT

Spray section



Convex distribution

Thread size coding table

RG inch	Code	H mm	WS mm
1/8"	DA	19.5	12.0
1/4"	DB	22.0	14.0
3/8"	DC	25.0	17.0
1/2"	DD	33.0	22.0

How to make up the nozzle code

D C Q 1588 T1

- C: 3/8"
- Q: 60°
- 1588: Capacity
- T1: Material

Typical applications

Washing
Food cleaning
Parts cleaning
Pre-treatment for coating process
Cooling
Continuous casting cooling
Product cooling
Tank cooling
Dust control
Remove flying dust in mining and coal plants.
Other applications
Spray of chemicals
Leak test

SPRAY ANGLE 45°

Nozzle type				Code	D mm	D1 mm	Capacity at different pressure values (l/min) (bar)						
DAM	DBM	DCM	DDM				0.7	1.0	2.0	3.0	5.0	7.0	10
•				0740 xx	1.0	0.5	0.36	0.43	0.60	0.74	0.96	1.13	1.35
•	•			1118 xx	1.1	1.0	0.57	0.68	0.96	1.18	1.52	1.80	2.15
•	•			1147 xx	1.2	1.1	0.71	0.85	1.20	1.47	1.90	2.25	2.68
•	•			1188 xx	1.3	1.2	0.91	1.09	1.54	1.88	2.43	2.87	3.43
•	•			1212 xx	1.4	1.2	1.02	1.22	1.73	2.12	2.74	3.24	3.87
•	•	•		1235 xx	1.5	1.3	1.14	1.36	1.92	2.35	3.03	3.59	4.29
•	•	•		1294 xx	1.7	1.5	1.42	1.70	2.40	2.94	3.80	4.49	5.37
•	•	•		1370 xx	2.0	1.8	1.79	2.14	3.02	3.70	4.78	5.65	6.76
•	•	•	•	1470 xx	2.1	2.0	2.27	2.71	3.84	4.70	6.07	7.18	8.58
•	•	•	•	1588 xx	2.3	2.0	2.84	3.39	4.80	5.88	7.59	8.98	10.7
	•	•	•	1659 xx	2.5	2.2	3.18	3.80	5.38	6.59	8.51	10.1	12.0
		•	•	1740 xx	2.7	2.3	3.57	4.27	6.04	7.40	9.55	11.3	13.5
		•	•	1835 xx	2.8	2.6	4.03	4.82	6.82	8.35	10.8	12.8	15.2
		•	•	1940 xx	3.0	3.0	4.54	5.43	7.68	9.40	12.1	14.4	17.2
		•	•	2105 xx	3.2	3.2	5.07	6.06	8.57	10.5	13.6	16.0	19.2
		•	•	2117 xx	3.4	3.3	5.65	6.75	9.55	11.7	15.1	17.9	21.4
		•	•	2147 xx	3.8	3.7	7.10	8.49	12.0	14.7	19.0	22.5	26.8
			•	2188 xx	4.3	4.3	9.08	10.9	15.4	18.8	24.3	28.7	34.3
			•	2235 xx	5.0	4.5	11.4	13.6	19.2	23.5	30.3	35.9	42.9

SPRAY ANGLE 60°

Nozzle type				Code	D mm	D1 mm	Capacity (l/min) at different pressure values (bar)						
DAQ	DBQ	DCQ	DDQ				0.7	1.0	2.0	3.0	5.0	7.0	10
•				0740 xx	1.0	0.5	0.36	0.43	0.60	0.74	0.96	1.13	1.35
•	•			1118 xx	1.2	0.8	0.57	0.68	0.96	1.18	1.52	1.80	2.15
•	•			1147 xx	1.3	1.0	0.71	0.85	1.20	1.47	1.90	2.25	2.68
•	•	•		1188 xx	1.4	1.1	0.91	1.09	1.54	1.88	2.43	2.87	3.43
•	•	•		1212 xx	1.5	1.2	1.02	1.22	1.73	2.12	2.74	3.24	3.87
•	•	•		1235 xx	1.6	1.2	1.14	1.36	1.92	2.35	3.03	3.59	4.29
•	•	•		1294 xx	1.8	1.3	1.42	1.70	2.40	2.94	3.80	4.49	5.37
•	•	•		1370 xx	2.0	1.4	1.79	2.14	3.02	3.70	4.78	5.65	6.76
•	•	•		1470 xx	2.4	1.9	2.27	2.71	3.84	4.70	6.07	7.18	8.58
	•	•		1588 xx	2.6	2.0	2.84	3.39	4.80	5.88	7.59	8.98	10.7
	•	•		1659 xx	2.7	2.0	3.18	3.80	5.38	6.59	8.51	10.1	12.0
	•	•	•	1740 xx	2.9	2.0	3.57	4.27	6.04	7.40	9.55	11.3	13.5
	•	•	•	1835 xx	3.2	2.8	4.03	4.82	6.82	8.35	10.8	12.8	15.2
	•	•	•	1940 xx	3.2	2.8	4.54	5.43	7.68	9.40	12.1	14.4	17.2
	•	•	•	2105 xx	3.4	3.0	5.07	6.06	8.57	10.5	13.6	16.0	19.2
	•	•	•	2117 xx	3.6	3.0	5.65	6.75	9.55	11.7	15.1	17.9	21.4
		•	•	2147 xx	4.0	3.3	7.10	8.49	12.0	14.7	19.0	22.5	26.8
		•	•	2188 xx	4.5	3.7	9.08	10.9	15.4	18.8	24.3	28.7	34.3
			•	2235 xx	5.2	4.5	11.4	13.6	19.2	23.5	30.3	35.9	42.9
			•	2294 xx	5.8	4.7	14.2	17.0	24.0	29.4	38.0	44.9	53.7

X VANE / TWO-PIECE DESIGN

SPRAY ANGLE 90°

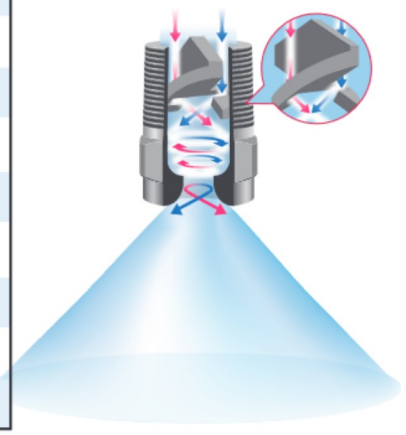
Nozzle type				Code	D mm	D1 mm	Capacity at different pressures values (l/min) (bar)						
DAU	DBU	DCU	DDU				0.7	1.0	2.0	3.0	5.0	7.0	10
•				0740 xx	1.0	0.5	0.36	0.43	0.60	0.74	0.96	1.13	1.35
•				1118 xx	1.2	0.8	0.57	0.68	0.96	1.18	1.52	1.80	2.15
•	•			1147 xx	1.3	1.0	0.71	0.85	1.20	1.47	1.90	2.25	2.68
•	•			1188 xx	1.4	1.2	0.91	1.09	1.54	1.88	2.43	2.87	3.43
•	•			1212 xx	1.5	1.2	1.02	1.22	1.73	2.12	2.74	3.24	3.87
•	•	•		1235 xx	1.6	1.3	1.14	1.36	1.92	2.35	3.03	3.59	4.29
•	•	•		1294 xx	1.8	1.3	1.42	1.70	2.40	2.94	3.80	4.49	5.37
•	•	•		1370 xx	2.0	1.4	1.79	2.14	3.02	3.70	4.78	5.65	6.76
	•	•		1470 xx	2.3	1.8	2.27	2.71	3.84	4.70	6.07	7.18	8.58
	•	•		1588 xx	2.6	1.8	2.84	3.39	4.80	5.88	7.59	8.98	10.7
	•	•		1659 xx	2.7	2.0	3.18	3.80	5.38	6.59	8.51	10.1	12.0
	•	•		1740 xx	2.9	2.0	3.57	4.27	6.04	7.40	9.55	11.3	13.5
	•	•		1835 xx	3.3	2.0	4.03	4.82	6.82	8.35	10.8	12.8	15.2
	•	•		1940 xx	3.3	2.4	4.54	5.43	7.68	9.40	12.1	14.4	17.2
	•	•		2105 xx	3.5	2.6	5.07	6.06	8.57	10.5	13.6	16.0	19.2
		•		2117 xx	3.7	2.7	5.65	6.75	9.55	11.7	15.1	17.9	21.4
		•		2147 xx	4.0	3.2	7.10	8.49	12.0	14.7	19.0	22.5	26.8
		•		2164 xx	4.1	3.2	7.92	9.47	13.4	16.4	21.2	25.1	29.9
			•	2188 xx	4.7	3.2	9.08	10.9	15.4	18.8	24.3	28.7	34.3
			•	2235 xx	5.2	3.8	11.4	13.6	19.2	23.5	30.3	35.9	42.9
			•	2294 xx	5.8	3.8	14.2	17.0	24.0	29.4	38.0	44.9	53.7
			•	2370 xx	6.4	3.8	17.9	21.4	30.2	37.0	47.8	56.5	67.6

SPRAY ANGLE 120°

Nozzle type				Code	D mm	D1 mm	Capacity at different pressures values (l/min) (bar)						
DAW	DBW	DCW	DDW				0.7	1.0	2.0	3.0	5.0	7.0	10
•				0740 xx	1.0	0.5	0.36	0.43	0.60	0.74	0.96	1.13	1.35
•	•			1118 xx	1.2	0.8	0.57	0.68	0.96	1.18	1.52	1.80	2.15
•	•			1147 xx	1.3	0.9	0.71	0.85	1.20	1.47	1.90	2.25	2.68
•	•			1188 xx	1.5	1.0	0.91	1.09	1.54	1.88	2.43	2.87	3.43
•	•			1212 xx	1.6	1.1	1.02	1.22	1.73	2.12	2.74	3.24	3.87
•	•			1235 xx	1.6	1.2	1.14	1.36	1.92	2.35	3.03	3.59	4.29
•	•			1294 xx	1.9	1.3	1.42	1.70	2.40	2.94	3.80	4.49	5.37
•	•			1370 xx	2.1	1.4	1.79	2.14	3.02	3.70	4.78	5.65	6.76
	•	•		1470 xx	2.4	1.6	2.27	2.71	3.84	4.70	6.07	7.18	8.58
	•	•		1588 xx	2.7	1.8	2.84	3.39	4.80	5.88	7.59	8.98	10.7
	•	•		1659 xx	3.0	1.8	3.18	3.80	5.38	6.59	8.51	10.1	12.0
	•	•		1740 xx	3.1	1.9	3.57	4.27	6.04	7.40	9.55	11.3	13.5
	•	•		1835 xx	3.3	1.9	4.03	4.82	6.82	8.35	10.8	12.8	15.2
	•	•		1940 xx	3.5	1.9	4.54	5.43	7.68	9.40	12.1	14.4	17.2
	•	•		2105 xx	3.7	2.3	5.07	6.06	8.57	10.5	13.6	16.0	19.2
		•	•	2117 xx	3.8	2.4	5.65	6.75	9.55	11.7	15.1	17.9	21.4
		•	•	2147 xx	4.2	2.7	7.10	8.49	12.0	14.7	19.0	22.5	26.8
		•	•	2164 xx	4.4	2.7	7.92	9.47	13.4	16.4	21.2	25.1	29.9
		•	•	2188 xx	4.6	3.1	9.08	10.9	15.4	18.8	24.3	28.7	34.3
		•	•	2235 xx	5.3	3.3	11.4	13.6	19.2	23.5	30.3	35.9	42.9
		•	•	2294 xx	5.9	4.1	14.2	17.0	24.0	29.4	38.0	44.9	53.7
			•	2370 xx	6.6	4.7	17.9	21.4	30.2	37.0	47.8	56.5	67.6

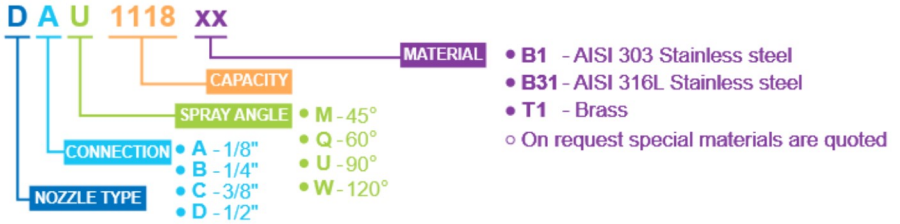
X vane

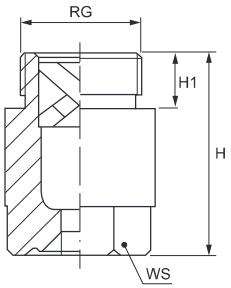
X vanes are widely used, mainly in steelworks. Their simple design is based on two sloping flat surfaces which induce a rotation of the liquid going through the nozzle, and two small slots on each flat part to produce a full-cone spray pattern.
All vanes are secured inside the nozzle body to prevent their moving in case of size changes due to high temperatures or sudden vacuum conditions in the feed pipe.



HOW TO MAKE UP THE NOZZLE CODE

EX.: DAU 1118 B1



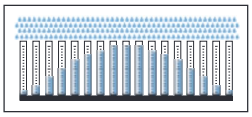


X VANE / TWO-PIECE DESIGN / LARGE CAPACITY

D series full cone nozzles with large capacity are widely used in industry. The provide uniform spray coverage and are available in various thread sizes, spray angles and capacities to comply with environmental requirements. Their X-vane offers the largest free passage available in a nozzle, for an easier handling of the suspended particles and a higher resistance to clogging. D nozzles provide an optimal mist effect and are effective in many industrial applications.

- **Thread specification**
  BSPT, NPT (on request)

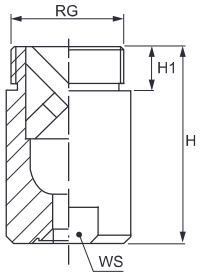
Spray section



Convex distribution

	Code	RG inch	D mm	D1 mm	Capacity at different pressure values (l/min) (bar)							Dimension mm		
					0.7	1.0	2.0	3.0	5.0	7.0	10	H	H1	WS
60°	DEQ 2235 xx	3/4"	4.8	3.5	11.4	13.6	19.2	23.5	30.3	35.9	42.9	43	16	27
	DEQ 2295 xx		5.5	4.5	14.2	17.0	24.1	29.5	38.1	45.1	53.9			
	DEQ 2370 xx		6.0	4.5	17.9	21.4	30.2	37.0	47.8	56.5	67.6			
	DEQ 2470 xx		7.0	4.5	22.7	27.1	38.4	47.0	60.7	71.8	85.8			
	DFQ 2470 xx	1"	7.0	5.6	22.7	27.1	38.4	47.0	60.7	71.8	85.8	58	18	36
	DFQ 2590 xx		7.8	5.6	28.5	34.1	48.2	59.0	76.2	90.1	108			
	DFQ 2740 xx		9.5	5.6	35.7	42.7	60.4	74.0	95.5	113	135			
	DGQ 2740 xx	1¼"	9.5	5.6	35.7	42.7	60.4	74.0	95.5	113	135	74	19	41
	DGQ 3118 xx		12.5	6.0	57.0	68.1	96.3	118	152	180	215			
	DGQ 3147 xx		16.7	6.0	71.0	84.9	120	147	190	225	268			
	DHQ 3147 xx	1½"	13.0	9.0	71.0	84.9	120	147	190	225	268	85	19	50
	DKQ 3188 xx	2"	15.0	9.0	90.8	109	154	188	243	287	343	106	24	60
	DKQ 3235 xx		16.0	11.0	114	136	192	235	303	359	429			
	DKQ 3294 xx		17.0	11.1	142	170	240	294	380	449	537			
	DLQ 3370 xx	2½"	17.5	11.1	179	214	302	370	478	565	676	128	27	75
	DLQ 3470 xx		23.0	11.1	227	271	384	470	607	718	858			
	DMQ 3588 xx	3"	28.0	14.3	284	339	480	588	759	898	1074	153	30	85
	DNQ 3740 xx	3½"	29.0	17.5	357	427	604	740	955	1130	1351	190	32	105
	DNQ 3940 xx		36.0	17.5	454	543	768	940	1214	1436	1716			
	DPQ 4117 xx	4"	39.0	19.0	568	678	959	1175	1517	1795	2145	205	36	110

	Code	RG inch	D mm	D1 mm	Capacity at different pressure values (l/min) (bar)							Dimension mm		
					0.7	1.0	2.0	3.0	5.0	7.0	10	H	H1	WS
90°	DEU 2295 xx	3/4"	5.8	3.0	14.2	17.0	24.1	29.5	38.1	45.1	53.9	43	16	27
	DEU 2370 xx		6.4	4.5	17.9	21.4	30.2	37.0	47.8	56.5	67.6			
	DEU 2470 xx		8.0	4.5	22.7	27.1	38.4	47.0	60.7	71.8	85.8			
	DEU 2590 xx		9.7	4.5	28.5	34.1	48.2	59.0	76.2	90.1	108			
	DFU 2590 xx	1"	8.6	4.5	28.5	34.1	48.2	59.0	76.2	90.1	108	58	18	36
	DFU 2740 xx		9.3	5.0	35.7	42.7	60.4	74.0	95.5	113	135			
	DFU 2830 xx		9.9	6.0	40.3	48.2	68.2	83.5	108	128	152			
	DGU 3118 xx	1¼"	13.0	6.0	57.0	68.1	96.3	118	152	180	215	74	19	41
	DGU 3147 xx		16.0	6.0	71.0	84.9	120	147	190	225	268			
	DHU 3147 xx	1½"	16.0	6.0	71.0	84.9	120	147	190	225	268	85	19	50
	DHU 3188 xx		14.5	9.0	90.8	109	154	188	243	287	343			
	DKU 3235 xx	2"	16.6	11.0	114	136	192	235	303	359	429	106	24	60
	DKU 3294 xx		18.0	11.0	142	170	240	294	380	449	537			
	DKU 3370 xx		25.0	11.0	179	214	302	370	478	565	676			
	DLU 3470 xx	2½"	27.0	11.1	227	271	384	470	607	718	858	128	27	75
	DLU 3588 xx		30.0	14.3	284	339	480	588	759	898	1074			
	DMU 3740 xx	3"	30.0	17.5	357	427	604	740	955	1130	1351	153	30	85
	DMU 3870 xx		32.5	17.5	420	502	710	870	1123	1329	1588			
	DNU 3940 xx	3½"	35.5	17.5	454	543	768	940	1214	1436	1716	190	32	105
	DNU 4117 xx		39.0	19.0	568	678	959	1175	1517	1795	2145			
	DPU 4147 xx	4"	42.8	25.4	710	849	1200	1470	1898	2245	2684	205	36	110



	Code	RG inch	D mm	D1 mm	Capacity at different pressure values (l/min) (bar)							Dimension mm		
					0.7	1.0	2.0	3.0	5.0	7.0	10	H	H1	WS
120°	DEW 2295 xx	3/4"	5.1	3.0	14.2	17.0	24.1	29.5	38.1	45.1	53.9	43	16	27
	DEW 2370 xx		6.5	3.5	17.9	21.4	30.2	37.0	47.8	56.5	67.6			
	DEW 2470 xx		8.5	4.5	22.7	27.1	38.4	47.0	60.7	71.8	85.8			
	DEW 2590 xx		9.2	4.5	28.5	34.1	48.2	59.0	76.2	90.1	108			
	DFW 2590 xx	1"	11.5	4.5	28.5	34.1	48.2	59.0	76.2	90.1	108	58	18	36
	DFW 2740 xx		12.0	4.5	35.7	42.7	60.4	74.0	95.5	113	135			
	DFW 2830 xx		13.0	5.6	40.3	48.2	68.2	83.5	108	128	152			
	DGW 3118 xx	1¼"	13.5	6.0	57.0	68.1	96.3	118	152	180	215	74	19	41
	DGW 3147 xx		17.0	6.0	71.0	84.9	120	147	190	225	268			
	DHW 3118 xx	1½"	13.0	6.0	57.0	68.1	96.3	118	152	180	215	85	19	50
	DHW 3188 xx		20.0	9.0	90.8	109	154	188	243	287	343			
	DKW 3235 xx	2"	18.0	11.0	114	136	192	235	303	359	429	106	24	60
	DKW 3294 xx		19.0	11.0	142	170	240	294	380	449	537			
	DKW 3370 xx		21.3	11.0	179	214	302	370	478	565	676			
	DLW 3470 xx	2½"	23.5	11.1	227	271	384	470	607	718	858	128	27	75
	DLW 3588 xx		26.5	14.3	284	339	480	588	759	898	1074			
	DMW 3740 xx	3"	29.5	17.5	357	427	604	740	955	1130	1351	153	30	85
	DMW 3870 xx		32.0	17.5	420	502	710	870	1123	1329	1588			
	DNW 3940 xx	3½"	33.5	17.5	454	543	768	940	1214	1436	1716	190	32	105
	DNW 4117 xx		37.0	19.0	568	678	959	1175	1517	1795	2145			
	DPW 4147 xx	4"	42.0	25.4	710	849	1200	1470	1898	2245	2684	205	36	110

THREAD SIZE CODE (RG)

DE	DF	DG	DH	DK	DL	DM	DN	DP
3/4"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"

Typical applications

Washing: food cleaning, parts cleaning, pre-treatment for coating process
Cooling: continuous casting cooling, product cooling, tank cooling
Dust control: dust suppression in mining and coal plants.
Other applications: spray of chemicals, leak test.

HOW TO MAKE UP THE NOZZLE CODE

EX.: DEQ 2235 B1

D E Q 2235 xx

- NOZZLE TYPE
- CONNECTION
- SPRAY ANGLE
  - Q - 60°
  - U - 90°
  - W - 120°
- CAPACITY
- MATERIAL
  - B1 - AISI 303 Stainless steel
  - B31 - AISI 316L Stainless steel
  - T1 - Brass
  - ○ On request special materials are quoted