HydroWhirl® Stinger

(HWS2) Reactionary Force Slotted Spray Nozzle

DESIGN FEATURES

- Patent-pending no-weld design eliminates weak points and uneven surfaces
- Bearing assembly is centered within the spray head for improved balance and spray propagation
- Better spray uniformity can be maintained at lower pressures
- Compact size with industry-leading flow rates fits tri-clamp openings with inside diameters between 23 and 47mm
- Unique patent-pending pipe thread technology flushes to reduce contamination and bacteria growth
- Zirconia ceramic bearings for long service life and extreme chemical resistance
- 32 Ra surface finish ideal for sanitary applications

SPRAY CHARACTERISTICS

- Vigorous spray action
- Optimum cleaning performance @ 3 bar

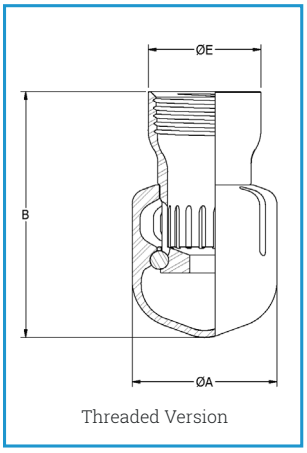
Spray Angles: Complete 360° spray coverage

Flow Rates: 4.15 to 380 l/min

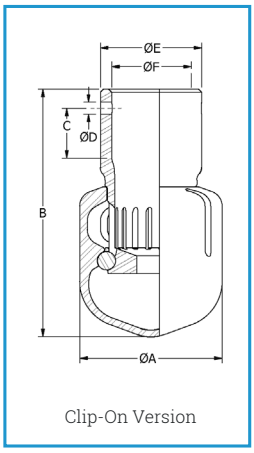
Max Temperature: 200°F/93°C

Filtration:

- Line strainer with a mesh size 0.10 mm/150 mesh for nozzle number HWS2-4 and smaller
- Line strainer with a mesh size 0.07 mm/200 mesh for nozzle number HWS2-7.5 and larger



Threaded Version



Clip-On Version

DIMENSIONS IN MILLIMETERS (CLIP-ON)

Tube Size	A	B	C	D	E	F	Weight (grams)	Min Tank Entry Dia
1"	46.7	86.4	21.3	3.96	33.5	25.4	340	46.7
3/4"	34.3	72.2	12.7	2.18	26.9	19.0	198	34.3
1/2"	21.6	48.3	12.4	2.18	21.3	12.7	85	30.2
3/8"	15.2	34.9	8.61	2.18	14.2	9.52	23	22.9

DIMENSIONS IN MILLIMETERS (THREADED)

Pipe Size	A	B	E	Weight (grams)	Min Tank Entry Dia
1"	46.7	80.0	36.6	298	46.7
3/4"	34.3	69.1	29.2	146	34.3
1/2"	34.3	60.3	24.1	134	34.3
3/8"	21.6	45.2	19.1	40	21.6
1/8"	15.2	31.7	12.8	28	15.2

HYDROWHIRL® STINGER FLOW RATES

Materials: 316L Stainless Steel Body, Ceramic Bearings

Female Connection Type	Nozzle Number	Spray Angles	Flow Rate (LPM) @ Differential Pressure (bar)					Maximum Free Passage	Coverage Dia @ 2 bar
			0.7	1	2	3	4		
			bar	bar	bar	bar	bar	mm	m
1/8" FNPT, BSP 3/8" Tube Clip-On	HWS2-2.1	360°	4.15	4.92	6.83	8.27	9.48	0.64	0.6
	HWS2-4		7.80	9.27	13.0	15.8	18.1	0.99	2
	HWS2-7.5		14.6	17.4	24.3	29.6	34.0	1.60	2
3/8" FNPT, BSP 1/2" Tube Clip-On	HWS2-10	360°	18.8	22.6	32.1	39.5	45.7	0.61	2
	HWS2-12		23.7	28.1	39.0	47.3	54.2	0.99	3
	HWS2-17		32.8	39.1	54.9	67.1	77.3	2.00	3
1/2" FNPT, BSP	HWS2-20	360°	39.0	46.3	64.8	78.9	90.6	0.99	3
	HWS2-26		49.0	58.8	83.6	103	119	1.63	3
3/4" FNPT, BSP 3/4" Tube Clip-On	HWS2-20	360°	39.0	46.3	64.8	78.9	90.6	0.99	3
	HWS2-26		49.0	58.8	83.6	103	119	1.63	3
1" FNPT, BSP 1" Tube Clip-On	HWS2-33	360°	63.5	75.7	107	130	150	0.79	3
	HWS2-55		105	126	177	217	251	1.63	4
	HWS2-66		127	152	213	260	300	2.39	4
	HWS2-84		165	195	272	331	380	3.18	4

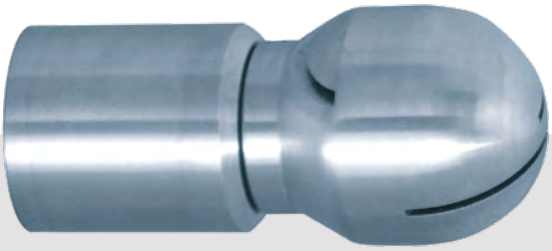
Flow rates represent threaded connections with a 360° spray angle.
Flow rates may vary for other connection types and spray angles.

HWS-ATEX

BETE
DÜSENLÖSUNGEN
individuell. innovativ. effizient.

ROTIERENDE TANKREINIGUNGSDÜSE

ROTATING TANK CLEANING NOZZLE



AUSFÜHRUNG

- Rotierende Tankreinigungsdüse mit 1/8“-, 3/8“-, 3/4“-, 1“- oder 1 1/2“-Innengewinde (ISO 228)
- Anschweiß- und Clip-On Version auf Anfrage
- CIP-fähig

SPRÜHEIGENSCHAFTEN

- 360° rotierend
  – andere Strahlwinkel auf Anfrage
- Angetrieben durch das Reinigungsmedium
- Drehzahl druckabhängig
- Selbstreinigend
- Max. Betr.-Temperatur bei ATEX-Anwedungen: 80°C
- Max. Behälterdurchmesser:
  1/8” HWS – 1000 mm, 3/8” HWS – 2000 mm, 3/4” HWS – 3000 mm, 1” HWS – 4000 mm, 1 1/2” HWS – 6000 mm

WERKSTOFFE

- Düsenkörper: 1.4404 (316L SS)
  – andere auf Anfrage
  (z. B.: 2.4610, 1.4435, etc.)
- Laufkugeln: 1.4401 (316 SS)
  – andere auf Anfrage
  (z. B.: 2.4610, 1.4435, etc.)

DESIGN FEATURES

- Rotating tank-cleaning nozzle with 1/8“-, 3/8“-, 3/4“-, 1“- oder 1 1/2“-female thread (ISO 228)
- Weld- and Clip-On connections on request
- CIP-able

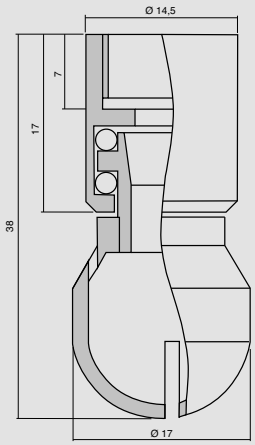
SPRAY CHARACTERISTICS

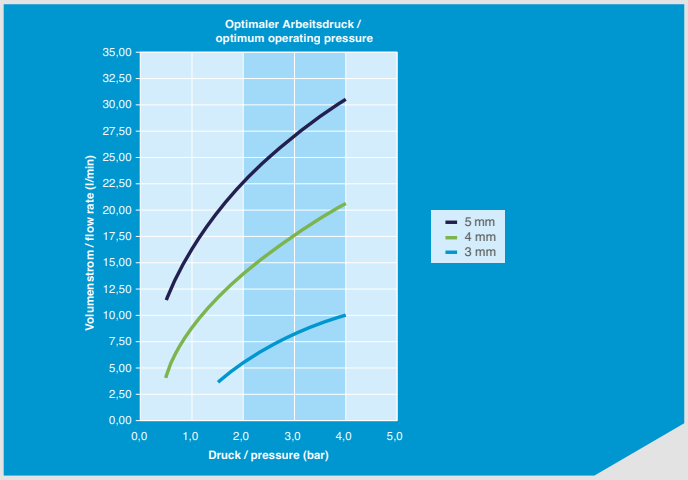
- 360° rotating
  – other spray angles on request
- Driven by the cleaning fluid
- Rotation speed is pressure-dependent
- Self-Cleaning
- Max. oper. temperature for ATEX applications: 80°C (175°F)
- Max. Tank-Diameter:
  1/8” HWS – 1000 mm, 3/8” HWS – 2000 mm, 3/4” HWS – 3000 mm, 1” HWS – 4000 mm, 1 1/2” HWS – 6000 mm

MATERIALS

- Nozzle: 1.4404 (316L SS)
  – other materials on request
  (e.g.: 2.4610, 1.4435, etc.)
- Bearings: 1.4401 (316 SS)
  – other materials on request
  (e.g.: 2.4610, 1.4435, etc.)

1/8” HWS



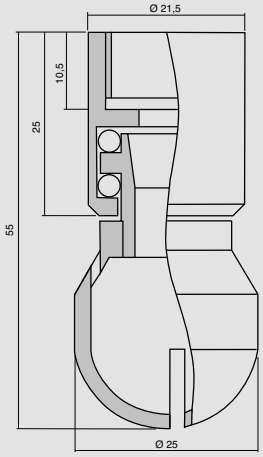


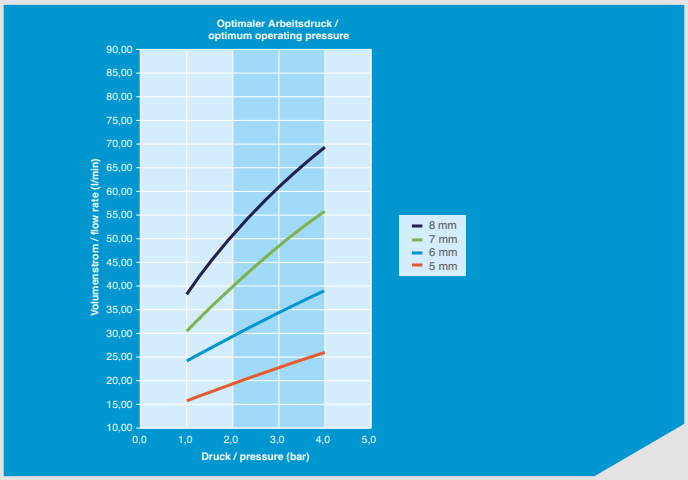
Standard-Bohrungsdurchmesser: 5 mm
Standard-boring: 5 mm

Beispiel für eine vollständige Artikelbezeichnung: 1/8HWS-5,0-36020A
1/8HWS = Düsengröße, 5,0 = Bohrungsdurchmesser, 360 = Strahlwinkel 360°,
20 = Material (1.4404), A = ATEX

Example for a complete nozzle description: 1/8HWS-5,0-36020A
1/8HWS = Size of the nozzle, 5,0 = boring, 360 = 360° spray angle, 20 = Material (1.4404), A = ATEX

3/8” HWS



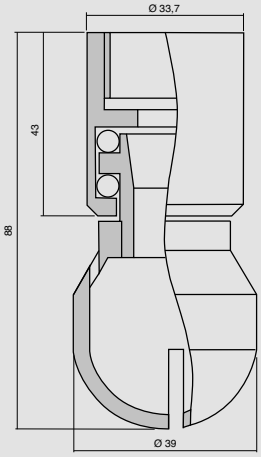


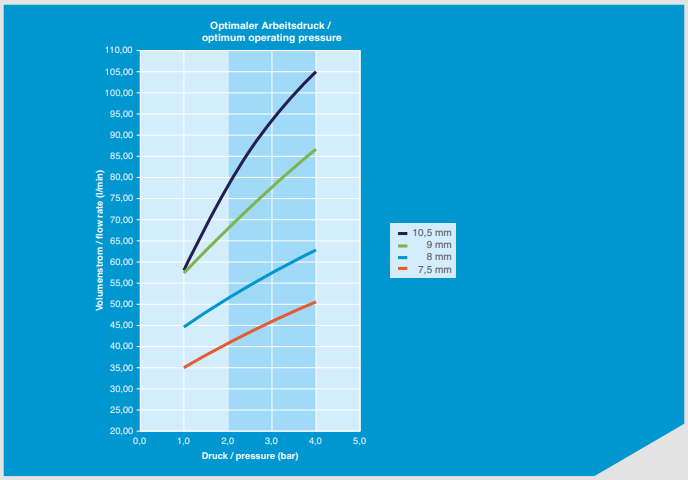
Standard-Bohrungsdurchmesser: 5 + 8 mm
Standard-boring: 5 + 8 mm

Beispiel für eine vollständige Artikelbezeichnung: 3/8HWR-8,0-36020A
3/8HWS = Düsengröße, 8,0 = Bohrungsdurchmesser, 360 = Strahlwinkel 360°,
20 = Material (1.4404), A = ATEX

Example for a complete nozzle description: 3/8HWS-8,0-36020A
3/8HWS = Size of the nozzle, 8,0 = boring, 360 = 360° spray angle, 20 = Material (1.4404), A = ATEX

3/4” HWS



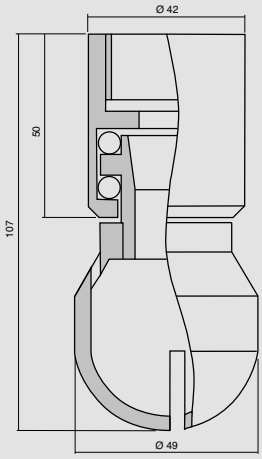


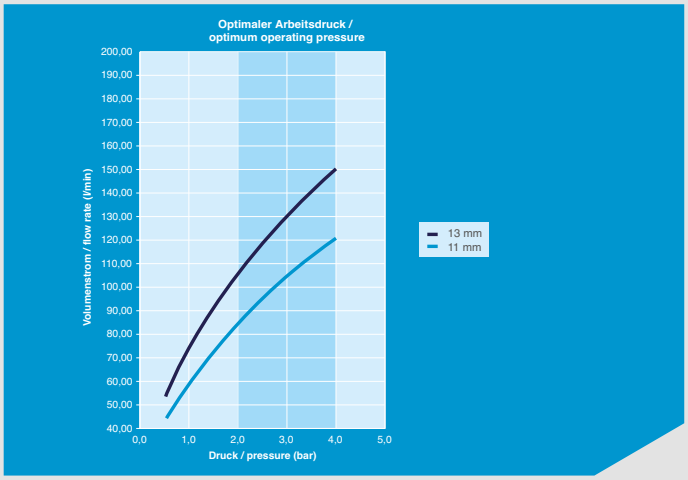
Standard-Bohrungsdurchmesser: 7,5 + 10,5 mm
Standard-boring: 7,5 + 10,5 mm

Beispiel für eine vollständige Artikelbezeichnung: 3/4HWS-7,5-36020A
3/4HWS = Düsengröße, 7,5 = Bohrungsdurchmesser, 360 = Strahlwinkel 360°,
20 = Material (1.4404), A = ATEX

Example for a complete nozzle description: 3/4HWS-7,5-36020A
3/4HWS = Size of the nozzle, 7,5 = boring, 360 = 360° spray angle, 20 = Material (1.4404), A = ATEX

1” HWS



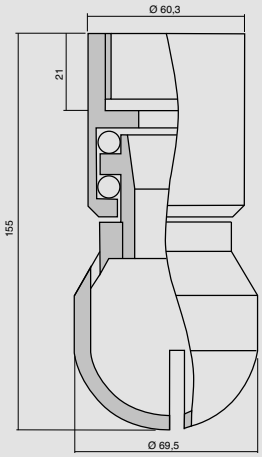


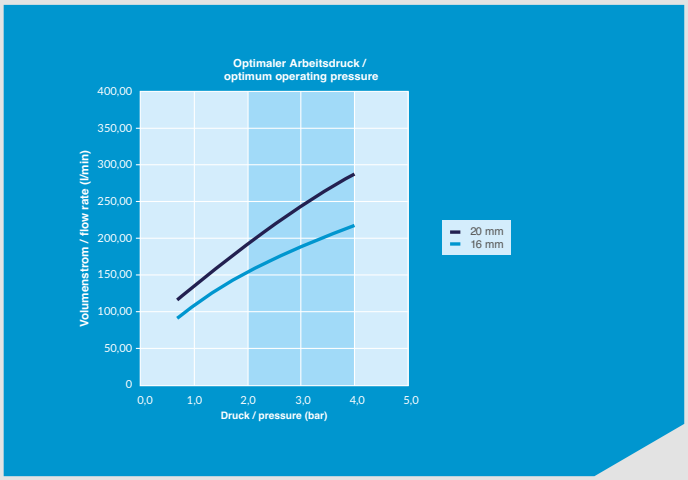
Standard-Bohrungsdurchmesser: 11 mm
Standard-boring: 11 mm

Beispiel für eine vollständige Artikelbezeichnung: 1HWS-11-36020A
1HWS = Düsengröße, 11 = Bohrungsdurchmesser, 360 = Strahlwinkel 360°,
20 = Material (1.4404), A = ATEX

Example for a complete nozzle description: 1HWS-11-36020A
1HWS = Size of the nozzle, 11 = boring, 360 = 360° spray angle, 20 = Material (1.4404), A = ATEX

1 1/2” HWS





Beispiel für eine vollständige Artikelbezeichnung: 1 1/2HWS-20-36020A
1 1/2HWS = Düsengröße, 20 = Bohrungsdurchmesser, 360 = Strahlwinkel 360°,
20 = Material (1.4404), A = ATEX

Example for a complete nozzle description: 1 1/2HWS-20-36020A
1 1/2HWS = Size of the nozzle, 20 = boring, 360 = 360° spray angle, 20 = Material (1.4404), A = ATEX