www.ccnozzle.com

Dongguan Changyuan Spraying Technology Co.,Ltd.
Add:Xia bian Industrial Zone,Chang An Town,
Dongguan City,Guangdong Province,P.R.C
Tel:0769-81558016 Fax:0769-81558831
Email: sales@ecyco.cn Website:ccnozzle.com

CYCO®

Dongguan Changyuan Spraying Technology Co.,Ltd.

TANK WASHER NOZZLE

To make the world-class spray nozzle

www.ccnozzle.com

Brief Introduction

Dongguan Changyuan Spraying Technology Limited Company, branding as CYCO, founded in 1999, is a professional manufacturer of spray nozzles and aftermarket sales. We are committed on research and design of industrial spray nozzles which includes full cone nozzles , hollow cone nozzles, spiral nozzles, air atomizing nozzles, tank washing nozzles and millions of different nozzles for over 22 years.

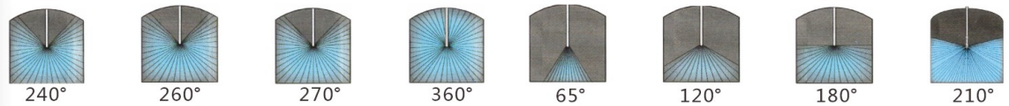
We are supplying many types of spray nozzles which are applied to marine scrubber for Exhaust Gas Cleaning System, such as spiral nozzle, short type full cone nozzle and large flowrate full cone nozzle which are made of plastic, silicone carbide, and stainless steel with various parameters.

Let us walk you through.

Tank washing optimizing

It is a challenging subject that washing your tanks thoroughly by your best way and reduce the expensive chemicals ,water and labor at the meantime. You can maximize the cleaning equipment performance through many respects. We have selected several excellent cleaning solutions for you here which will help to optimize cleaning efficiency.

Covering area of spray



Are you still cleaning tanks manually?

You get the following benefits by applying the automation technology:

The cleaning effect will be more consistent and thoroughly; Avoid direct contact with dangerous chemicals,and workers are safer;

Faster cleaning, downtime minimization, tanks can be quickly restored to working state;

Usage of water and chemicals will be reduced drastically and lower the cost of wastewater disposal .

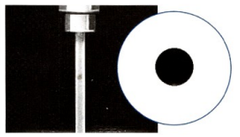
Extra labor freed from cleaning operations can create other benefits for the company.

If you are currently using cleaning nozzles or tank washing machines, you can improve your cleaning efficiency greatly through a few simple changes or try to change the cleaning device .

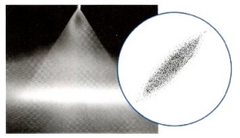
If you want to optimize tank washing, you need to evaluate the proposed operation firstly.

- How many tanks need to be cleaned? Diameter, length and height of each tank.
- Are there any obstacles such as stirrer or mixer inside the tanks that your company using now?
- Compared with other areas, is there any specific area needs to be more careful cleaning, such as degreased line?
- What residues need to be removed? Are these residues sticky? Can residues be washed out easily?
- Whether need detergent, is the water sufficient? Whether need to heat the cleaning liquid?
- Is there any problem with the cleaning method you are currently applying ?
- With the clear answer to these questions, what you need to do next is to evaluate which cleaning product you are going to use.

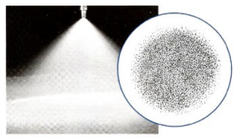
Spraying pattern:



Liquid column spray with high impact force



Fan spray with medium impact force



Solid cone spray with low impact force

Six key specification guidelines

Spray distance

Spray distance is usually expressed as tank diameter. If you are using a tank with a diameter of 20 feet (6m) and a height of 40 feet (12m), you will need two spray tank washers with diameter of 20 feet (6m) or a tank washer with diameter of 40 feet (12m).

Impact force

You can increase the impact by increasing the flow or pressure. Relatively speaking, the way to increase the flow is particularly effective. If the flow rate is doubled, the impact force can also be increased by 100%, while if the pressure is doubled, the impact force can only be increased by 40%. In a word, to ensure the optimal cleaning efficiency, the best solution is still to choose tank cleaning products with sufficient impact force.

Flow rate	Pressure	Relative impact
13gpm(50 l/min)	45 psi(3 bar)	1.0
13gpm(50 l/min)	90 psi(6 bar)	1.4
26gpm(100 l/min)	45 psi(3 bar)	2.4

Flow rate

Operating at the lowest possible flow can significantly reduce operating costs. In this way, cleaning fluid, sewage treatment and energy consumption can be greatly reduced. In view of this, our basic guideline is to use flows between 0.2 gal/min/ft2(7 /min/m2) 2.0.4 gal/min/ft2(1.5 |/min/m2). This guideline usually applies to stationary nozzles where all surfaces of tanks can be flushed simultaneously. Rotating nozzles are usually in contact with tank parts at a certain time, allowing for lower flow rates.

Spray pattern

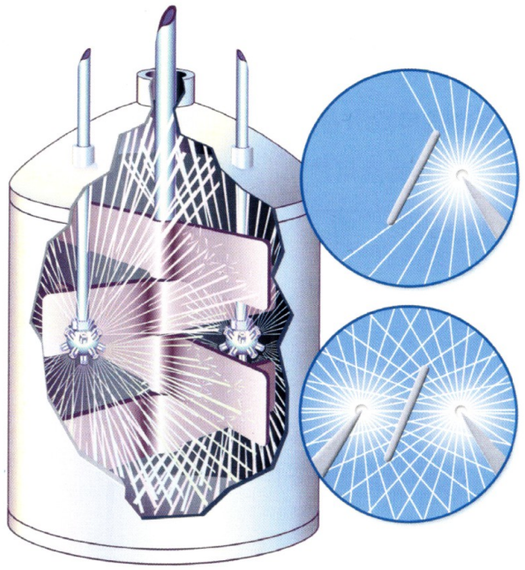
Solid stream sprays provide the greatest impact force, followed by fan and full cone sprays

Spray coverage

Spray coverage of tank washing nozzle varies from 65° to 360°. To reach all areas of the tank, you may need to use multiple nozzles, especially if there is a mixer in the tank.

Material

In view of the durability and high temperature resistance of stainless steel, most tank washing nozzles are made of stainless steel. Nozzles made of PTFE(teflon) or PVDF(polyvinylidene fluoride) are used for operations involving corrosion protection requirements. Make sure the material with the seal or o-ring device is compatible with the cleaning fluid.

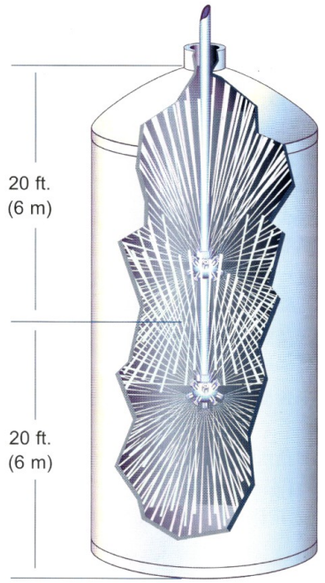


Free evaluation of tank washing:

After you have read this unit, you may consider taking advantage of our free on-site tank cleaning evaluation. Our company will send a tank cleaning expert to the site to conduct field inspection of related operations.

If you are using tank cleaning nozzle, our company's experts will check the nozzle and evaluate its model, layout and position.
Our company's experts will record the flow rate, operating pressure, cleaning fluid and residue to be removed. After the evaluation, our company will submit a written summary report on your previous operation and improvement of cleaning efficiency.

Contents



360-A Tank Cleaning Nozzle

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 Schematic diagram of the decomposition structure of the 360-A bottle cleaning nozzle

Figure 2 Schematic diagram of the external structure of the 360-A bottle cleaning nozzle

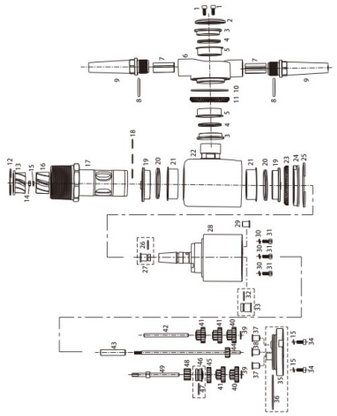


Figure 1

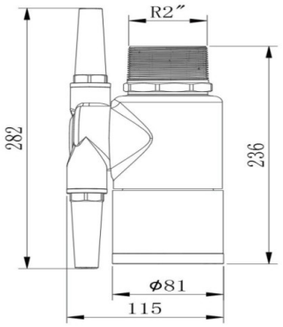


Figure 2

Working principle

The upper impeller (13) is mounted inside the connecting rod (17) and fixed with a clamping spring, the lower impeller (16) is assembled with the shaft assembly (44) and locked, after water enters the 360-A style bottle and tank from the pump, it generates swirling flow through the fixed upper impeller (13), enters the lower impeller (16), then enters the connecting rod (17), and then enters the Y-main body (22), through the X-body (6), the jet is ejected from the nozzle body (9), through the rotating water flow of the upper impeller (13) to drive the shaft feed (44) to rotate, and fixed gears are installed below the shaft assembly (44). The gears of the shaft assembly (44) drive the gears of 40, 41, 45, 48 and 24, the inner gear (24) is fixed with the y-body (22), which drives the Y-body (22) to rotate 360 degrees around the axis perpendicular to the ground; In 360 - A type of water inside the bottles from the two directions of the nozzle body (9) in spraying, rotating force due to water flow in two directions, so that the X-ray (6) around the Y - subject (22) parallel to the surface of shaft direction, X - (6) and the Y - subject (22) is equipped with A bevel gear meshing, the X - (6) around the Y - subject (22) transmission is more stable, this 360 - A type container has realized the two directions of transmission, achieve 360 degrees cleaning.

Detailed parameters:

- Processing customized：: Yes
- Material：316L
- Installation type: Male thread connection
- Working temperature：300℃
- Working pressure：3-14 bar
- Medium: liquid
- Range of application: Environmental protection, cleaning, purification, coating

Advantages and features

- Clean large tank from 8 m to 40 m.
- With unique and precise rotating mechanism(rotating through 47-49).
- The nozzle rotates 360° around the horizontal and vertical axes at the same time, and a dense mesh is made in the container to ensure that every corner of the container is thoroughly cleaned by the high-impact water flow.
- Pressure range: 1-21bar, suggest to run it under 7-13bar.
- Flow rate range: 6-50ton/h
- Cleaning time is from 5min. to 35min..
- Connection size: 1-1/2 to 2inch flange or pipe thread(BSPT,NPT)

Rotary Tank Washing Nozzle CYCO-05

CYCO5-4 data sheet

Model：	CYCO5-4	Type：	Impeller reducer drive
Weight：	2.6Kg	Work Pressure：	4-20bar
Recommend pressure：	5-8bar	Clean cycle：	4-8min
Material：	316L	Clean angle：	360°
Clean Diamete：	5m	Minimum mounting calibre：	100mm

Connection：3/4 BSPP Female（customized connection optional）

Theory: The rotary tank washer nozzle drives the turbine to actuate the internal deceleration mechanismby cleaning liquid. The gear mechanism operates according to the set trajectory to achieve revolution and rotation, thus achieving 360 ° and no dead angle cleaning.

Application：It is suitable for three-dimensional cleaning of medium and small tanks and for tanker trucks and underground tanks, such as tank cleaning, beer, pharmaceutical, chemical, industrial fermentation, and occasions where high impact cleaning is required.

Characteristics：Independent deceleration gear box mechanism, good seal, strong impact water flow.

Order Info

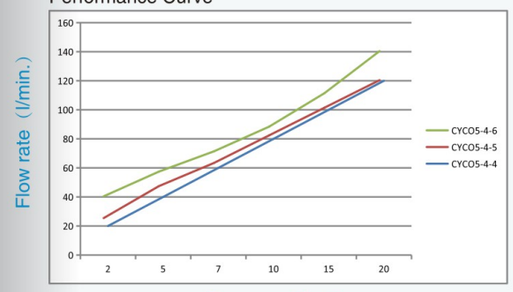
Series：CYCO-05	Orifice：4	Nozzle qty：4
Angle：360°	Materia：316LSS	Connection： BSPP 3/4

CYCO-05Series small 3D tank washing Specification

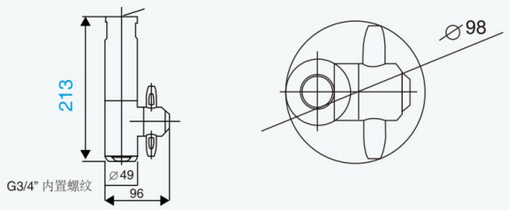
- Material：316LSS PEEK
- Lubrication：Self lubricating through cleaning fluid
- Working Pressure：3-150 bar
- Recommend Pressure：4-100 bar
- Max working Temperature：95°C
- Max Temperature：140°C
- Clean angle：360°
- Clean Diameter：5m
- Min cut size：110mm
- Connection：3/4"BSPP Female
- Weight：2.6 kg
- Clean cycle：3-5 min

Technical Data

Performance Curve

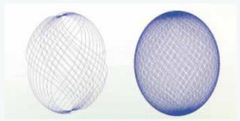


Product Diagram



Performance Feature

1.Optimized structure design, and can produce more impact water flow.
2.Excellent sealing design, leakage of water only 3 %, thus more economical cleaning solution.
3.The design of independent gearbox is adopted to protect the interior gear from damage and can work in poor water quality.



Technical Parameters

working tempreture	30 60 90 120 150 180
working pressure	5 10 15 20 25 30
maximum tank value	1 2 3 4 5 6
manufacturing materials	316L PEEK EPDM
installation method	Any installation method works fine
technical highlights	Self-lubricating, self-cleaning, independent gearbox design
other parameters	Cleaning cycle 2-6 minutes, minimum opening 100mm, weight 2.5KG, interface 3/4BSPT

K4 Tank Washing Nozzle-
6160 Type 10250 Type

Design features

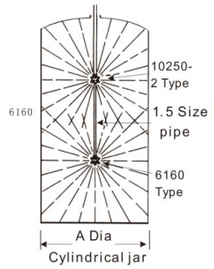
The 6160 fixed tank washing nozzle assembly features a large flow capacity for cleaning tanks up to 3.1 meters in diameter .

The flow rates can be changed by using the size of 1/4″ or 1/8″ full cone spray nozzle .The 6160 nozzle can pass throught tank mouth of 130mm of large in diameter .

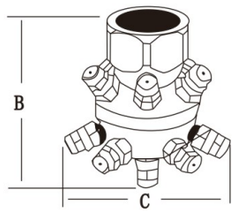
For cleaning large tanks where extra-large flow capacity is use to clean the tank which diameter reaches 6.7 meter. It uses size of1/2", 3/4 "or 1" full cone to change the flow rates

The 10250-1 nozzle assembly can pass throught tank mouth of 230mm in diameter .For deep tanks the 10250-1 version is available with a 1.5 inch bottom outlet connection for use with a pipe extension and a 6160 nozzle assembly.

6160 Type



10250 Type



On Application

■ Washbox defoaming ■ Stock tank cleaning

Performancedata

Pipe Size NPT or BSPT (Female)	Nozzle in the first order number	Flow rate (l/min.) at diferent pressures & Aprox. Max. Tank Dia								Tank dia A (m)	Size	
		1.5 Bar		2 Bar		3 Bar		3.5 Bar				
		l/min	diameter jar A (m)	l/min	diameter jar A (m)	l/min	diameter jar A (m)	l/min.	diameter jar A (m)		Height B (mm)	Dia C (mm)
3 Inch	10250-1-1/2	280	3.0	320	3.5	390	3.5	415	4.5		166	191
	10250-1-3/4	580	3.5	660	4.0	800	4.5	860	5.0		174	210
	10250-1-1	1000	4.0	1130	5.0	1370	6.0	1470	6.5		183	229
1 ½ Inch	6160-1/4GG5	35		40		48		52		1.2	114	114
	6160-1/4GG10	70		80		97		104		2.1	114	114
	6160-1/4GG22	155		177		215		230		3.0	121	127

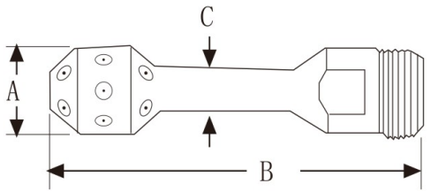
K4 Tank Washing Nozzle-
9800 model

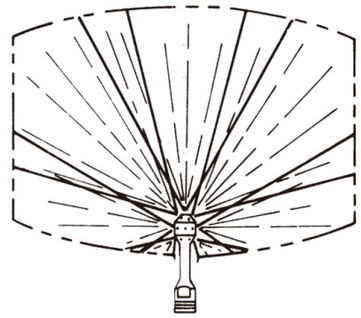
Design features

The 9800 washing nozzle is designed for effective cleaning of small containers .

The nozzles is available in a choice of 15 or 21 full cone spray tips that can provide complete coverage of the interior surface of the small containers at pressure up to 10 bar.

The 9800 nozzle fit throught a standard drum mouth .It can be installed on a self driven drum washer .The biggest diameter of the spray tip is 35mm with a 16mm reduced neck design .Constructed of SS,this nozzle is an ideal application when max. corrosion resistance is required.





Performance data

Nozzle order number	Capacity (l /min.)								
	1Bar	2Bar	3Bar	4Bar	5Bar	6Bar	7Bar	10Bar	10Bar
9800-15-SS	–	–	–	20	23	25	26	31	31
9800-21-SS	–	–	–	28	31	34	36	43	43

Diamensions and weight

Based on largest /heaviest version of each type

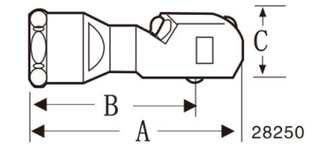
Nozzle serial number	9800-			
Pipe joints NPT or BSPT (male)	1 Inch	Pipe joints NPT or BSPT (male)	1 Inch	Net Weight (Kg)
A(mm)	35	C (mm)	16	0.51
B(mm)	156			0.51

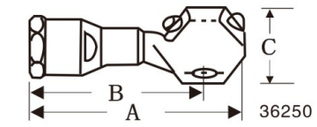
K4 Tank Washing Nozzle-36250 28250

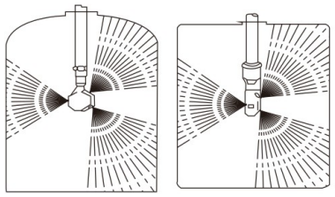
Design features

Feature of 36250/28250 Compact Nozzle:
There are three high-pressure flat fan spray nozzles at the rotary spray head. The spray tip should be precisely oriented, in order to well wash all inner surface.
Therefore, there two models ofnozzle can be used to effectively wash inner of small bottle, jarand barrel.

36250 Nozzle body is made of anticorrosive plastic, and bearing spring is made of hard stainless steel for max. wearable life and high pressure washing with max. Pressure of 5 bar.
28250 Impact Nozzle can pass inlet with diameter of 42 mm. The sector spray head with low flux has good effect to wash small container. The spray body is made of 316 stainless steel for max. wearable life and high pressure washing with max. pressure of 7 bar.







Performance data

Nozzle Order Number	Capacity (l/min.)					
	1Bar	1.5Bar	2Bar	2.5Bar	3Bar	4Bar
36250-STCN16-PP	49	59	68	76	84	94
36250-STCN18-PP	101	121	140	159	179	201
36250-STCN27-316SS	22	27	32	38	43	49
36250-STCN29-316SS	40	48	55	62	70	79

Size and weight

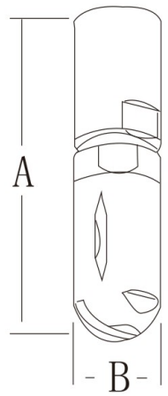
Nozzle Model	Joint NPT or BSPT (Female)	A (mm)	B (mm)	C (mm)	C (mm)	Hexagon (mm)	Net Weight (KG)
36250-	3/4 inch	145	115	85	85	75	0.55
28250-	3/4 inch	122	100	56	56	44.5	0.68

K4 Tank Washing Nozzle-19250

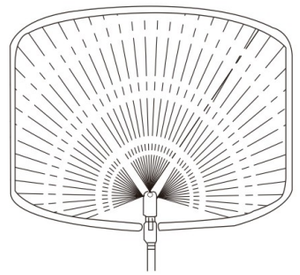
Design features

19250 Compact Nozzle can generate self-rotary drive for side spraying by two flat fan spray tip with 25 mm hole. The top hatch makes a whole global spraying available.

The main material is 316 stainless steel, while axletree and axletree circle are made of rigid stainless steel for longest wearability life.
The max. pressure is 13 bar and max temperature is 180 centigrade.



Diameter



Performance data

Nozzle Order Number	Capacity (l/min.)							
	1.5Bar	3Bar	4Bar	5Bar	6Bar	8Bar	10Bar	12Bar
19250-STCN5-316SS	49	19.7	23	25	28	32	36	39
19250-STCN6-316SS	15.9	22	26	29	32	37	41	45
19250-STCN7-316SS	19.5	28	32	36	39	45	50	55
19250-STCN8-316SS	22	32	36	41	45	52	58	63
19250-STCN9-316SS	28	39	46	51	56	64	72	79

Size and weight

Nozzle Number	19250	A(mm)	89	B(mm)	25.4	Net Weight(KG)	0.23	

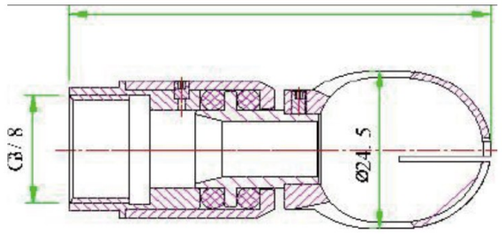
12810 Tank Washing Nozzle

Design features

The 12810 nozzle is a compact, easy install small rotating Rotary cleaning nozzle, which can extends into the bottle neck as diameter 25 mm for an effective cleaning.

The unique design, the four flat fan spray nozzle produce a driving force for their special positions to the tank for 360 degree.

So the 12810 is very effective for the small tank and drum cleaning.



Tech Datas

Order No.	Capacity (l/min.)						
	1bar	1.5bar	2bar	3bar	4bar	5bar	weight (g)
12810-3/8	23.2	28.6	33.8	45.2	49.4	56	72

M-50 Rotating Tank Washing Nozzle

Design features

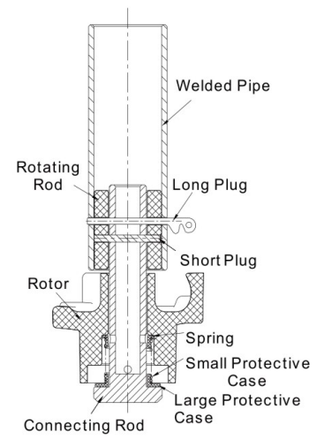
- Compact design fits through small openings. O.D.: M50-49mm
- Superior cleaning at low pressures and low flow rates for greater economy
- Self cleaning
- No ball bearing to corrode

Spray Characteristics

- High impact scrubbing action
- Slow rotation speed provides better cleaning
- Wide coverage
- Flow rate: 76 to 132 l/min.

M-50 Nozzle Components

M-50 consists of the welded pipe of 304SS, long plug, short plug, spring, small protective case of Teflon, big protective case of Teflon, rotating rod of POM, rotor and connecting rod of 316SS .



Schematic

Technical Datas

Technical Datas	Flow Rates(l/m.)		Spray Radius (m/ft)
	US	GPM	
1.4/20	76	20	1.8/6
2.1/30	95	25	2.1/7
2.8/40	110	29	2.1/7
3.4/50	125	33	1.8/6
4.1/60	132	35	1.5/5

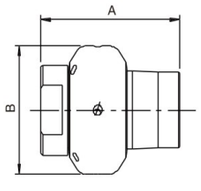
36300 Tank Washing Nozzle

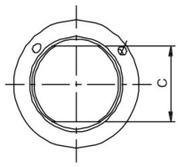
Design features

The maximum diameter is about 7.6meter
It is suitable for CIP(cleaning in place) system
The reaction force of the cleaning liquid turns the nozzle, no need power to drive it
It can be cleaned and rinsed under low pressure
Teflon material has a long service life
Jet Angle range between 180 ° to 360 °

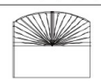
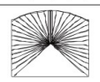
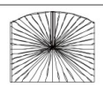
Main Feature

Flow Rate Range: 15-1490l/min.
Highest Temperature： 95℃
Spraying Angle： 180°， 270°，360°
Pressure Range： 0.7-3.5bar
Tank Opening Size： 50-180mm





Spraying Angle

180°Spraying Up	180° Spraying Down	270 Spraying Up	270°Spraying Down	360°
				
A 6 Holes	B 6 Holes	C 7 Holes	D 7 Holes	E 8 Holes

Size(mm)

Model No.	A	B	C	
1/2	60.3	49.2	28.6	
3/4	66.6	57.2	33.3	
1	76.2	69.8	45.3	
2	111	123.8	69.8	
3	149.2	174.6	98.4	

Performance Data

Model No	Orifice diameter (mm)	Capacity (l/min.)					Max. Cleaning Diameter
		0.7bar	1.5bar	2bar	3bar	3.5bar	
1/2-8	2.4	15.3	22	26	32	34	3.0
3/4-18	2.4	34	50	58	71	77	4.3
3/4-32	4.0	61	89	103	126	136	4.3
3/4-46	6.0	88	130	148	182	196	4.3
1”-50	4.0	95	140	161	197	215	5.5
1”-70	5.6	133	195	225	275	300	5.5
1”-90	7.5	172	250	290	355	385	5.5
2”-100	6.0	191	280	320	395	425	6.0
2”-125	6.7	240	350	400	495	530	6.0
2”-150	7.9	285	420	480	590	640	6.0
2”-175	9.5	335	490	560	690	745	6.0
2”-200	10.7	380	560	645	790	850	6.0
3”-250	9.9	475	700	805	985	1056	7.6
3”-300	10.7	570	840	965	1180	1280	7.6
3”-350	12.3	665	975	1130	1380	1490	7.6

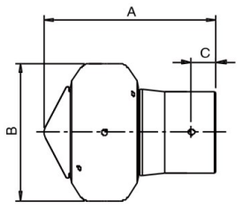
36500 Tank Washing Nozzle

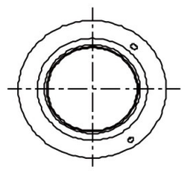
Design features

The maximum diameter is about 7.6meter
It is suitable for CIP(cleaning in place) system
The reaction force of the cleaning liquid turns the nozzle, no need power to drive it
It can be cleaned and rinsed under low pressure
Teflon material has a long service life
Jet Angle range between 180 ° to 360 °

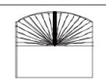
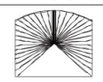
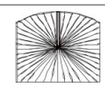
Main Feature

Flow Rate Range: 15-1490l/min.
Highest Temperature： 95℃
Spraying Angle： 180°， 270°，360°
Pressure Range： 0.7-3.5bar
Tank Opening Size： 50-180mm





Spraying Angle

180°Spraying Up	180° Spraying Down	270 Spraying Up	270°Spraying Down	360°
				
A 6 Holes	B 6 Holes	C 7 Holes	D 7 Holes	E 8 Holes

Size(mm)

Model No.	A	B	C	
1/2	60.3	49.2	28.6	
3/4	66.6	57.2	33.3	
1	76.2	69.8	45.3	
2	111	123.8	69.8	
3	149.2	174.6	98.4	

Performance Data

Model No	Orifice diameter (mm)	Capacity (l/min.)					Max. Cleaning Diameter
		0.7bar	1.5bar	2bar	3bar	3.5bar	
1/2-8	2.4	15.3	22	26	32	34	3.0
3/4-18	2.4	34	50	58	71	77	4.3
3/4-32	4.0	61	89	103	126	136	4.3
3/4-46	6.0	88	130	148	182	196	4.3
1”-50	4.0	95	140	161	197	215	5.5
1”-70	5.6	133	195	225	275	300	5.5
1”-90	7.5	172	250	290	355	385	5.5
2”-100	6.0	191	280	320	395	425	6.0
2”-125	6.7	240	350	400	495	530	6.0
2”-150	7.9	285	420	480	590	640	6.0
2”-175	9.5	335	490	560	690	745	6.0
2”-200	10.7	380	560	645	790	850	6.0
3”-250	9.9	475	700	805	985	1056	7.6
3”-300	10.7	570	840	965	1180	1280	7.6
3”-350	12.3	665	975	1130	1380	1490	7.6

36300R Tank Washing Nozzle

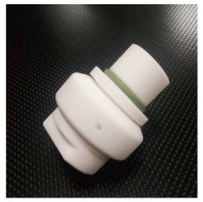
Design features

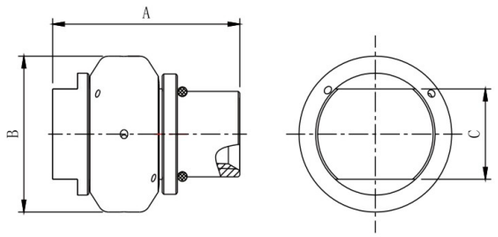
The maximum diameter is about 5.5 meter
No thread, the tapered design facilitates drainage, prevent the formation of nozzle hydrops, better advantage in sanitation application
316SS bolt design, safer and more reliable
Teflon material is suitable for corrosive chemical cleaning agent
Removable design, it can be easily removed during inspection and maintenance
Jet Angle range between 180 ° to 360 °

Main Feature

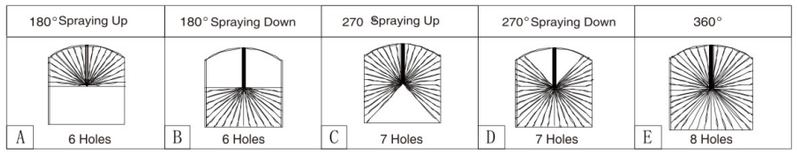
Flow Rate Range: 34-295l/min.
Highest Temperature： 95℃
Spraying Angle： 180°， 270°，360°

Pressure Range： 0.7-3.5bar
Tank Opening Size： 64-102mm
36300R Bolt Type





Spraying Angle



Size(mm)

Model No.	A	B	C	
1/2	60.3	49.2	28.6	
3/4	66.6	57.2	33.3	
1	76.2	69.8	45.3	
2	111	123.8	69.8	

Performance Data

Model No	Orifice diameter (mm)	Capacity (l/min.)					Max. Cleaning Diameter
		0.7bar	1.5bar	2bar	3bar	3.5bar	
3/4-18	2.4	34	50	58	71	77	4.3
3/4-32	4.0	61	89	103	126	136	4.3
3/4-46	6.0	88	130	148	182	196	4.3
1”-50	4.0	95	140	161	197	215	5.5
1”-70	5.6	133	195	225	275	300	5.5
1”-1/2”-53	5.1	101	148	171	209	226	5.5
1”-1/2”-70	6.8	132	185	231	265	295	5.5

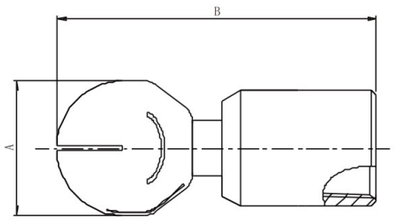
HWS Tank Washing Nozzle

Design features

Compared with static tank nozzles, the cleaning speed is faster under low flow and pressure;
The best choice for surface cleaning treatment;
Welded design,more durable;
316 stainless steel material, more resistant to corrosion;
Multiple connection methods such as: threaded type, bolt type, welded type;
Suitable for CIP (clean in place).

Main Characteristics

Self-cleaning bearing;
High speed rotating spray;
360 degree high efficiency cleaning;
Flow rate: 3.7-89.7l/min.



Nozzle Models

Model No.	Diameter of cleaning（m）	Model No.	Diameter of cleaning（m）	
HWS-20	1.5	HWS-40	4	
HWS-30	2	HWS-50	6	

Connection Ways	Model No.			
	HWS-20	HWS-30	HWS-40	HWS-50
Bolt type	3/8”	3/8” 1/2”	3/4” 1”	1”-1/2”
Welded Type	1/4”	3/8” 1/2”	3/4” 1”	1”-1/2”
Female Threaded Type	1/8”	1/4”	3/4”	1”-1/2”

Technical Parameter

Thread Size	Capacity Code	Capacity Code l/min. @bar						Dimension（mm）		Weigh（g）
		0.7	1.4	2.1	2.8	3.5	4.2	A	B	
1/8”	20	14.08	17.34	20.33	23.85	24.11	24.6	16.6	42.7	24.95
1/4”	30	21.11	32.74	39.4	45.27	49.51	53.37	28	59.5	92.99
3/4”	40	39.63	54.69	66.31	76.5	84.29	91.37	38.2	92.9	306.18
1-1/2”	50	143.68	200.45	243.22	278.58	310.67	339.52	68	158	1524.1

CERTIFICATES

CERTIFICATE OF REGISTRATION

This is to certify that:

Dongguan Changyuan Spraying Technology Co.,Ltd

No. 52, Jingfu Road, Xiabian Industrial Area, Chang'an Town, Dongguan, Guangdong, 523880, China

Operates a

QUALITY MANAGEMENT SYSTEM

Which complies with the requirements of

IATF 16949:2016

For the following scope of registration:

The design and manufacture of nozzle, the manufacture of hardware.

Certificate No.: AUTO40293
IATF Database No.: 0323004

Issue Date: 9 August 2018
Expiry Date: 8 August 2021

Kevin Goodwin
General Manager Technical Services
SAI Global Assurance

George Azedo
Automotive Technical Manager

Certified System

Registered by:
SAI Global Certification Services Pty Ltd 20 Carlson Court, Suite 200, Toronto, Canada M9W 7K6 ("SAI Global") and subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. To verify that this certificate is current, please refer to IATF oversight website at http://www.iatfglobaloversight.org and enter the IATF certificate number listed above in the certificate validity check section.

SAI GLOBAL

CERTIFICATE OF REGISTRATION

This is to certify that:

Dongguan Changyuan Spraying Technology Co.,Ltd

No. 52, Jingfu Road, Xiabian Industrial Area, Chang'an Town, Dongguan, Guangdong, 523880, China

operates a

QUALITY MANAGEMENT SYSTEM

which complies with the requirements of

ISO 9001:2015

for the following scope

The design and manufacture of nozzle, the manufacture of hardware.

Certificate No: QMS41469

Issued: 9 August 2018
Expires: 8 August 2021

Originally Certified: 4 August 2015
Current Certification: 9 August 2018

Kevin Goodwin
General Manager Technical Services
SAI Global Assurance

Certified System

Registered by:
SAI Global Certification Services Pty Ltd (ACN 108 716 669) 680 George Street Sydney NSW 2000 Australia with SAI Global Pty Limited 680 George Street Sydney NSW 2000 Australia ("SAI Global") and subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. To verify that this certificate is current please refer to SAI Global On-Line Certification register at http://register.saiglobal.com/

SAI GLOBAL

Instructioin

Nozzle	Tank max. diamter(ft)	Working theory	Pressure psi(bar)	Capacity range gpm(l/min)	Spray angle	Tank min. hole size ft ft(lmm)	Temperature °F(℃)
	100 (30)	Liquid-driven turbine	40-350 (28-24)	30-300 (113.5-11356)	360°	6.25 (158.7)	250 (121)
	22 (6)	Liquid-driven turbine	145-580 (10-40)	2.7-54 (10-204)	360°	5 (140)	185 (85)
	17 (5)	Liquid-driven turbine	58-290 (4-207)	7-69 (25-260)	360°	3.5 (105)	203 (95)
	27 (6.7)	Static type	20-50 (1.5-3.5)	72-385 (280-1470)	360°及客户定制喷雾角度	10 (254)	212 (100)
	2 (0.6)	Static type	60-50 (1.5-3.5)	5.5-11.7 (23-43)	210°,360°	2 (51)	212 (100)
	5 (1.5)	Driven by the counter-force of the liquid	10-60 (1-4)	5.0-22 (23-82)	360°	2.25 (60)	350 (177)
	3 (0.9)	Driven by the counter-force of the liquid	20-200 (1.5-1.2)	3.5-22 (14-79)	360° 侧喷	1.03 (26)	350 (177)
	6.5 (2.0)	Driven by the counter-force of the liquid	15-60 (1-4)	2.5-7.3 (9.5-28)	180°上/下, 360°	螺纹:1(25); C|P型:2(50)	300 (149)
	8 (2.4)	Driven by the counter-force of the liquid	10-50 (0.7-4)	2.1-4.5 (7.8-18)	180°上/下, 360°	1 (25)	200 (93)
	25 (7.6)	Driven by the counter-force of the liquid	10-50 (0.7-3.5)	4-391 (15.3-1490)	180°上/下, 270°上/下, 360°	2-7 (51-178)	200 (93)
	18 (5.5)	Driven by the counter-force of the liquid	10-50 (0.7-3.5)	9-78 (34-295)	180°上/下, 360°	2-7 (51-178)	200 (93)
	25 (7.6)	Driven by the counter-force of the liquid	10-50 (0.7-3.5)	4-391 (15.3-1490)	180°上/下, 270°上/下, 360°	2-7 (51-178)	200 (93)
	6.5 (2.0)	Driven by the counter-force of the liquid	15-60 (1-4)	2.5-7.3 (9.5-28)	180°上/下, 360°	螺纹:1(25); C|P型:2(50)	300 (149)
	13 (3.7)	Static type	15-40 (1-2.8)	22-51 (83-192)	360°	1.5-4 (38-102)	400 (204)

Add:Xia bian Industrial Zone,Chang An Town,
Dongguan City,Guangdong Province,P.R.C
Tel:0769-81558016 Fax:0769-81558831
Email: sales@ccnozzle.com Website:ccnozzle.com