



绿水科技
Greenwater Tech.

GW系列文丘里射流器

GW Series Venturi Injector



成都绿水科技有限公司
ChengduGreenwaterTechnology Co.,Ltd.



成都绿水科技有限公司简介

About Us



成都绿水科技有限公司成立于2003年，自成立以来就专注于射流技术及其产品的研发、设计和制造。通过坚持不懈的努力，建立了经验丰富的技术团队，能够为客户提供专业的射流技术解决方案。

Founded in 2003, Chengdu Greenwater Technology Co., Ltd.(CDGT) is dedicated to design and manufacture different types of jet pumps (injectors, ejectors, eductors...)for varieties of industrial purpose. With experiences of 12 years, CDGT is able to provide its clients with not only cost-saving and quality products, but also system design and customized solutions.

成都绿水科技有限公司的射流器设计的产品目前分为两个系列：

★适用于高效传质反应的GW射流器系列

这种类型的射流器结构和工艺主要为高效传质过程设计，目前主要应用于污水处理过程中空气曝气、纯氧/富氧曝气、臭氧投加和臭氧尾气回用。

★用于流体抽吸、输送各种特定用途的射流器系列

这些射流器的应用覆盖几乎所有的工业和民用领域。对于不同的应用场合和性能要求对应有着花样繁多的结构和特定计算设计。各种液液射流、液气射流、气气射流、气固射流装置被用于完成诸如抽液抽泥、抽真空、固体粉末输送、热力回收等工作目的。而以上功能只是其无限用途中的几个通例。

Up to now, CDGT's jet products and design services are basically classified into two categories as below:

★ Injectors for Substance to transfer&react with each other

The structure design of this series of injectors is made to enable flows to mix and interact rapidly. Due to its high efficiency, it is widely used as injection aerators in wastewater treatment processes.

★ Jet pump/eductor/ejector for various special purpose

This serial of jet pumps covers a wide range of industries and civil applications. Various structures have been developed to meet diverse requirements. Liquid jets liquid(LJL),liquid jets gas(LJG),gas jets gas(GJG),gas jets solid(GJS) have been utilized to fulfill functions as slurry suctioning and conveying, vacuum pump, solid powder convey, heat recollection,...are just a little of their infinite applications.

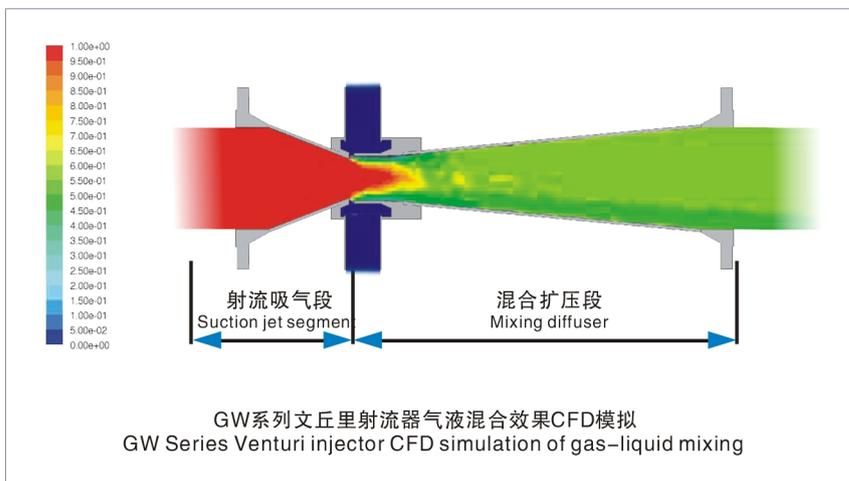
GW 射流传质器

GW Mass-transfer Injectors



一次射流

动力泵出口带压流体从射流器入口进入到喷射腔内形成高速喷射流体。高速流体产生的压降使得待加入物质从吸入口被吸入到工作流体内与之混合。由此形成的混合液通过扩散段到达射流器出口，流速减慢压力回升（低于进口压力）。射流器的结构专为高效混合设计，工作压力范围宽，进出口之间仅需很小压差即可形成负压。

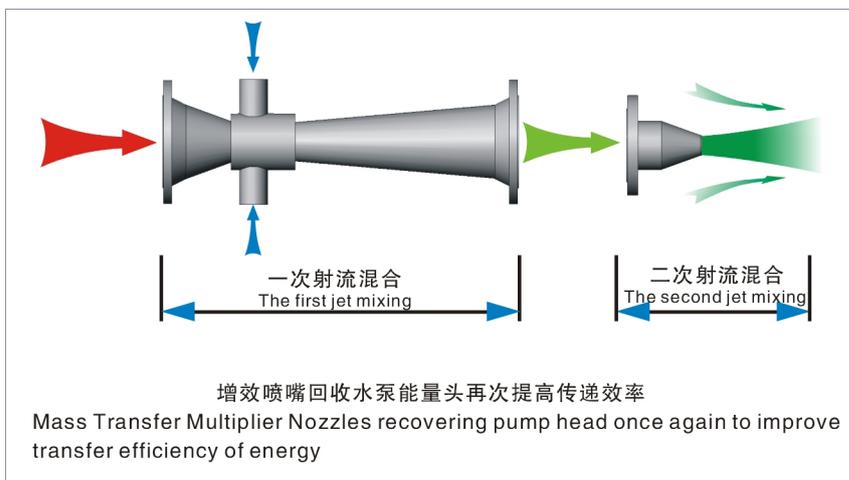


Primary injection

As illustrated by figures, pressurized motive flow (red colour) enters into a convergent nozzle in the injection chamber to form a high velocity jet stream, The vacuum produced by high velocity flow enable materials (blue colour) to be suctioned into the chamber and enters into the motive flow, results in forming a new mix fluid (green colour). The mixture flows through diffuser toward the out let with reducing velocity and increasing pressure.

二次射流

从射流器出口来的混合液经特殊设计配合的增效喷嘴射入池 / 容器 / 管道内，吸引周围4-5倍的流量与之混合，提高吸入物质在主体流体中的混合效率。



Secondary ejection

The fluid mixture from injector ejects into the pond/tank/pipe line, drawing 4-5 times quantity of flow around it, resulting a second mix and a higher transfer efficiency of the suctioned substance.



污水处理用 GW 射流器系列

GW Injectors for Wastewater Treatment

GW射流器为污水处理行业提供了一种替代鼓风曝气和机械曝气的新型曝气技术。它具备以下技术优势：

- ◆更高的氧转移效率，较少供气量需求，能耗低
- ◆管路及安装简单，占地小
- ◆不堵塞、不老化、耐腐蚀、维护少
- ◆长期运行性能不衰减
- ◆运行噪音小
- ◆不放水也可安装完成技术改造

GW series venturi injectors provide water/wastewater industries with a new substitute to blower and mechanical aeration systems with the following advantages.

- ◆Higher oxygen transfer efficiency, less gas delivery required, low power consumption
- ◆Simple pipeline, less facility space taking,
- ◆Less maintenance, no fouling factor in design
- ◆Prolonged using life without performance decline
- ◆Whisper operation
- ◆Applicable to complete innovation installation without draining water from aeration pond/tank

用途 Applications

- 曝气和污泥处理
Aeration and sludge treatment
- 臭氧投加及尾气回用
Ozone addition and off-gas reuse
- 河流、湖泊复氧
River, pond, lake, reoxygenation
- 水产养殖
Aquatic and aquarium



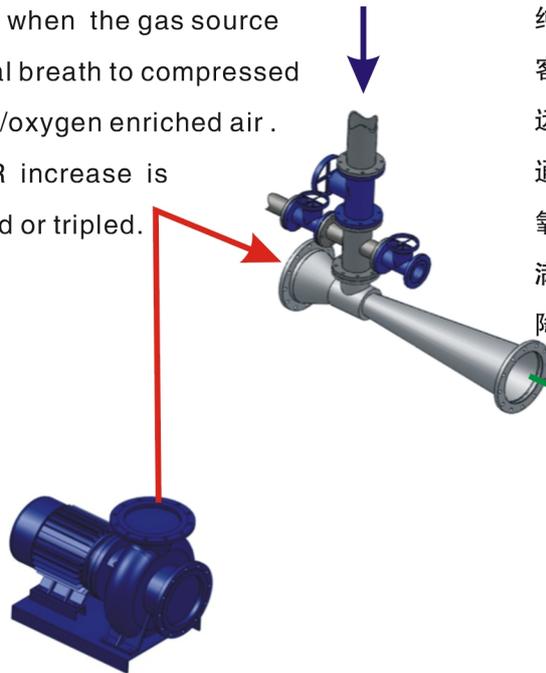
GW 射流曝气系统

GW Injector Aeration System



GW 射流器在自然吸气、鼓风加压供气、纯氧 / 富氧不同供气条件下具备不同的充氧能力，从小到大能力弹性相当大，可以成两倍到三倍地增加。

GW injector shows different oxygen transfer capabilities when the gas source switches from natural breath to compressed air or to pure oxygen/oxygen enriched air . The amount of AOTR increase is considerably doubled or tripled.

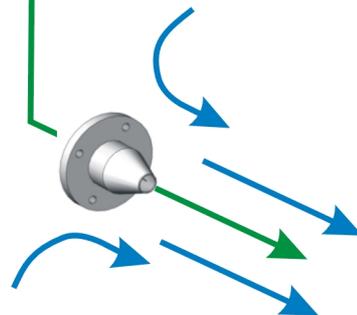


配套喷嘴分为两个类型：深水型（4m及以上）和浅水型（3m及以下），从而保证无论水有多深，也能保证高氧转移效率。客户不需要考虑担心水深问题。

There are two type of nozzles can be used in deep water (4m and above) or shallow water(3m or bellow) respectively to ensure high oxygen transfer efficiency regardless how deep is the water. Customers need not to care about their water depth.

因此，GW射流曝气系统既可以单纯地按自然吸气方式、或鼓风加压供气方式、或纯氧 / 富氧方式来设计，从而满足不同条件客户的需求；也可以根据客户近期、中期和远期规划，设计用一套GW射流曝气系统，通过采用自然吸气、或鼓风加压供气、或纯氧 / 富氧不同的运行模式，来满足低负荷、满负荷和增加负荷各个时期的污水处理需求，降低投资风险和成本。

A GW injector aeration system can be designed to satisfy oxygen requirements from low loading to full loading ,or even to excessive loading by using different gas source (natural breath, compressed air, oxygen/oxygen enriched air)





GW 二次射流增效喷嘴

GW Secondary Ejection Nozzles



增效喷嘴的作用：

- 1、利用射流器出口来的混合液与池中液体的浓度差进行二次传质。
- 2、用剩余压头完成搅拌混合均匀的过程。

Function of secondary ejection nozzles

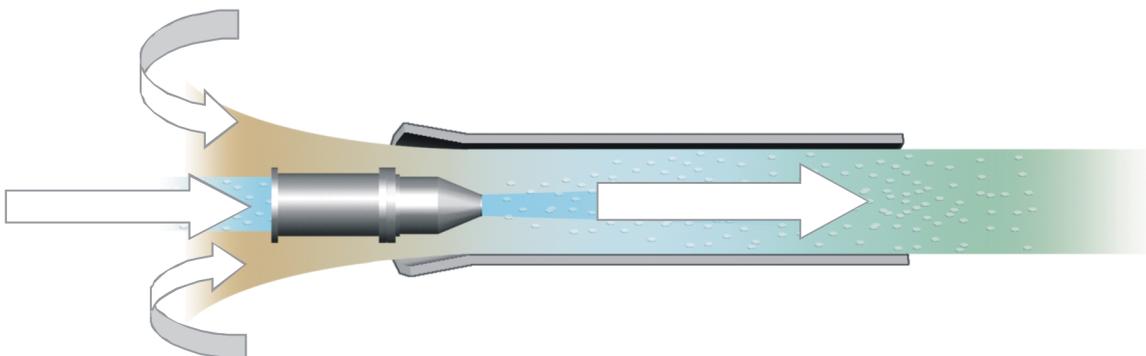
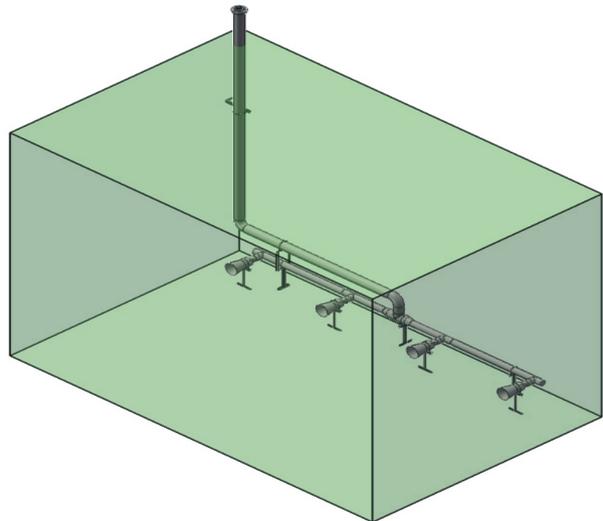
- 1 .To proceed further matter transfer driven by the concentration difference between mixture from the injector and water in ponds/tanks.
- 2 .To do agitation in the ponds/tanks using residue water head from the injector.

等效水深

采用导流筒结构二次喷射增效装置可在不加深水池高度的情况下，延长气体与水体的接触时间，从而起到与加高水深相同的效果。因而GW射流器对使用水深无限制。

To provide enough retention time

A venturi type of cylinder plus to nozzle is designed to maintain contacting time of gas in water. This configuration will have the same effect as increasing the water depth.



GW 射流曝气器型号和参数

GW Injection Aerator Models & Specifications



GW系列射流器型号和参数 GW Injector Models & Specifications

型号 TYPE	进出口 INLET&OUTLET	吸入口 SUCTION INLET	长度(mm) LENGTH	动力流量(m ³ /h) VOLUME OF FLOW	进口压力(kgf/cm ²) INLET PRESSURE
GW200	DN50	DN50	267	7.5~33	0.35~7.03
GW300	DN80	DN50	390	17~74	0.35~7.03
GW400	DN100	DN50	551	30~103	0.35~4.22
GW800	DN150	DN65	766	82~303	0.35~4.92
GW1200	DN200	DN100	1075	130~480	0.35~4.92
GW3600	DN300	DN150	1576	274~1010	0.35~4.57

增效喷嘴型号和参数 Nozzle Models & Specifications

型号 TYPE	进口 INLET	工作流量(m ³ /h) VOLUME OF FLOW	服务宽度 (m) WIDTH OF SERVICE	服务长度(m) LENGTH OF SERVICE
N20	DN50	4.7~12.6	≤1.5	3~7
N30	DN80	10.7~28.3	≤2	3~7
N40	DN100	19.0~50.2	≤2.5	3~7
N50	DN100	29.7~78.5	≤2.5	3~7
N60	DN150	42.7~113.1	≤3	3~7
N70	DN150	58~154	≤3.5	3~7

※ 表中长度及吸入口尺寸根据压力及其他实际条件会有所变动。

Length and Diameter of suction port subject to change with the pressure and other practical conditions.

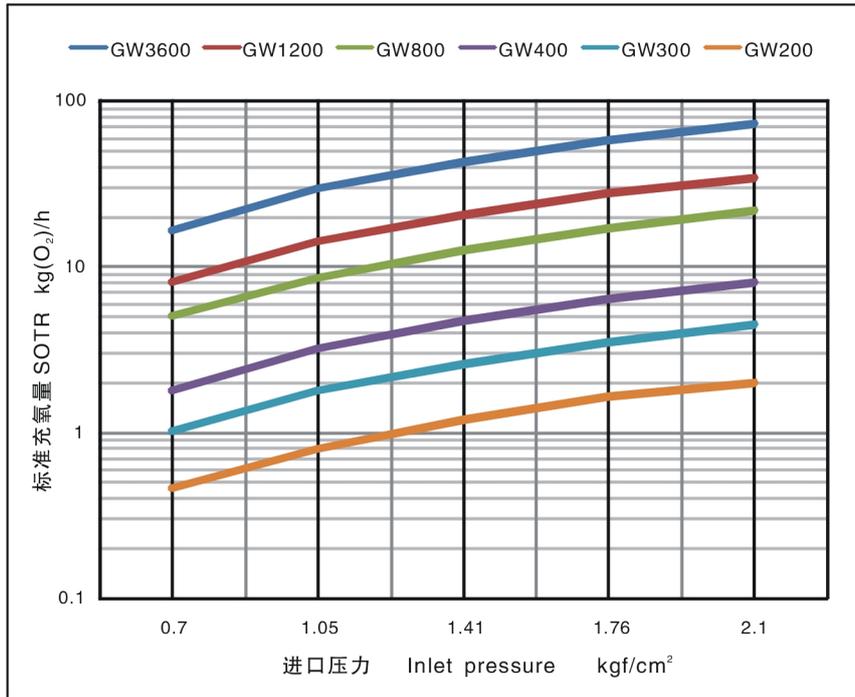
※ 材料一般为不锈钢304/316/316L，也可根据需要选用其他材料。

Stainless steel 304/316/316L are common used for manufacturing, other material is available on request.



GW 自吸射流曝气标准充氧量

GW Injector SOTR by Natural Breath

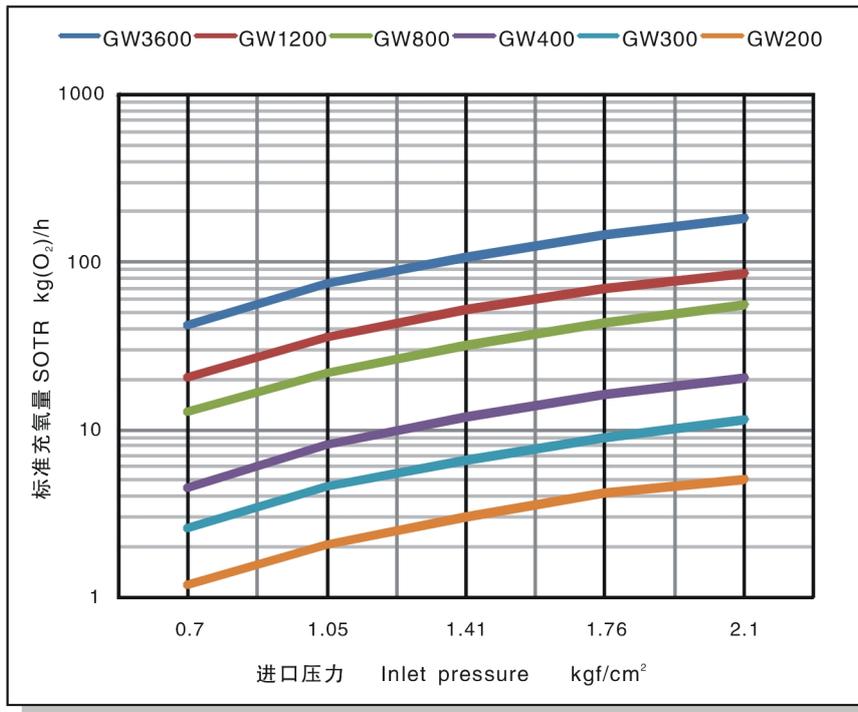


(仅供初步选型使用 For prime data sizing only)



GW 鼓风加压射流曝气标准充氧量

GW Injector SOTR with Compressed Air



(仅供初步选型使用 For prime data sizing only)





GW 射流器用于臭氧投加

GW Injector for Ozone Addition

随着污水处理排放标准的提升，臭氧用于污水深度处理日趋广泛。GW射流传质系统，由于具备高传质效率、性能长期稳定可靠，寿命长、适于各种水深、不堵塞、投资省、安装施工方便，可以不放水施工改造等特点，为满足客户进行污水深度处理需求，提供了高效可靠的技术手段。

Ozone is widely used in wastewater processes. GW injector is very efficient to transfer ozone into water. Furthermore, it has unique advantages such as no fouling, no water depth limit, no chronic decline of performance...over to other diffusers.



GW 射流器用于臭氧投加

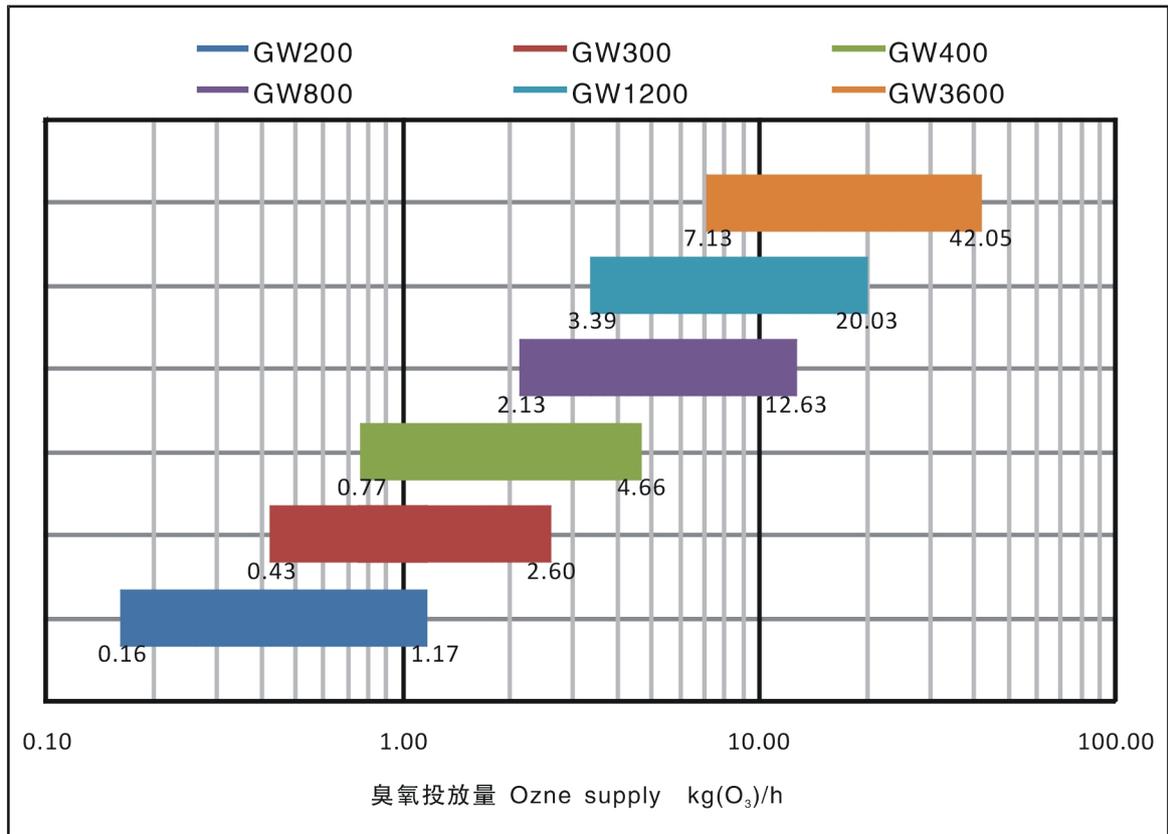
GW Injector for Ozone Addition



臭氧传质效率受水深，气水比，停留时间，水质，pH，水温，水压，臭氧浓度等一系列因素影响。在设计中要做到既保证很高的臭氧转移效率，又保证较低的动力消耗，是一个专业性的事情。依托多年的研究和工程实践经验，我们的专业技术人员为客户提供优化选型服务。下图仅供初步选型使用。

Ozone transfer efficiency is affected by numerous factors as gas/water ratio, water depth, retention time, water characteristic, pH value, water temperature, pressure, ozone concentration etc.

So selection of right injector to ensure high ozone transfer efficiency as well as low power consumption needs expertise and experience. Our professional team will help customer to do optimum selection.





GW 射流器用于臭氧尾气回用

GW Injector for Ozone Off-gas Reuse



极大部分臭氧在污水池进行氧化反应之后又回到氧气形态。将这部分氧气抽取用于曝气，取代原有空气曝气系统，将极大降低曝气电耗，从而降低污水处理厂的综合运行成本。GW射流器系统因其抽气能力大、传质效率高、安全性高安装简便（可不放水安装）、性能长期稳定可靠，成为这一应用领域的最优选择。

After oxidation reaction, ozone turns into the form of oxygen which can be exhausted and delivered into aeration ponds to substitute air aeration system. This innovation will considerably reduce the power consumption for aeration process. GW injector provide strong drawing capability and high transfer efficiency to fulfill the task. Besides, it is safe to be used for pure oxygen delivery and possess long time performance stability, which give the customer with the best choice for this process.



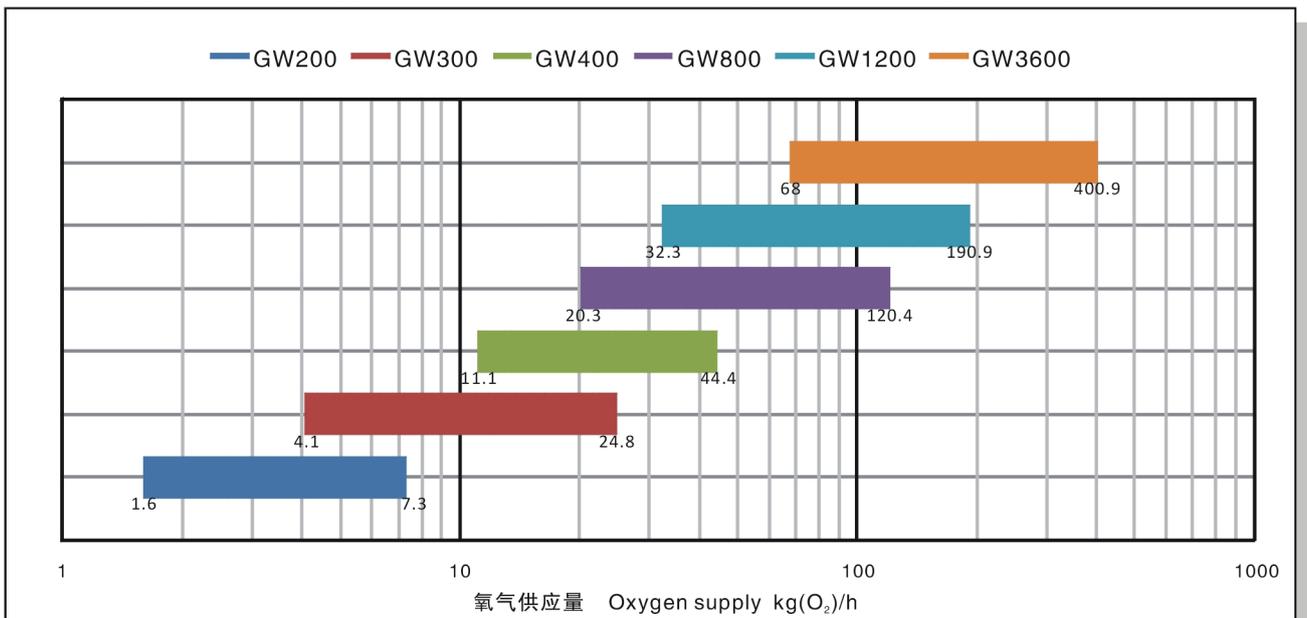
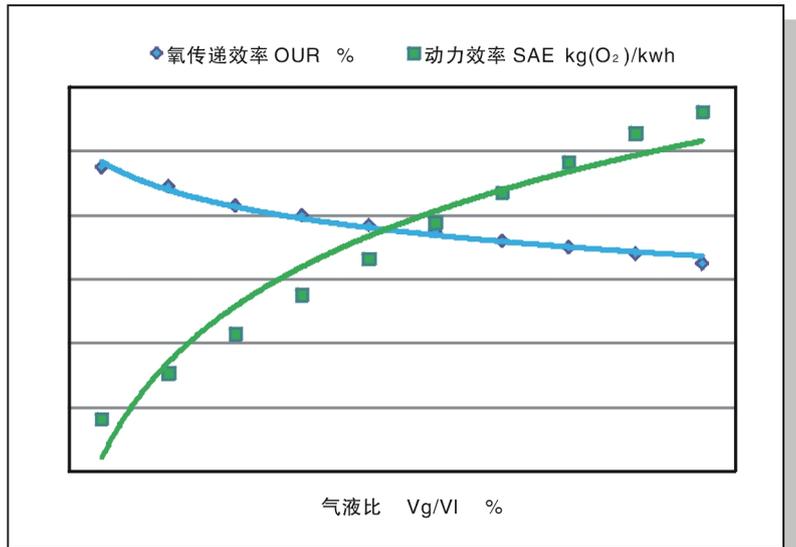
GW 射流器用于纯氧曝气

GW Injector for Pure Oxygen Aeration



纯氧曝气的关键之一是在动力水泵水量选择和氧转移效率之间进行平衡和优化。我们的专业经验帮助客户达到尽量节省能耗的目标。

One of the key factors of pure oxygen aeration is to well balance economicals between the pump water volume (operation cost)and oxygen utilization rate. Our expertise can assist customer to save energy as much as possible.





GW 射流器的安装

GW Injector Installation

GW射流器的安装设计，是根据每一个具体客户的现场实际情况，因地制宜、量体裁衣进行的。因此安装设计的具体方案千变万化，多种多样。尽管如此，安装方式可分为以下两类：

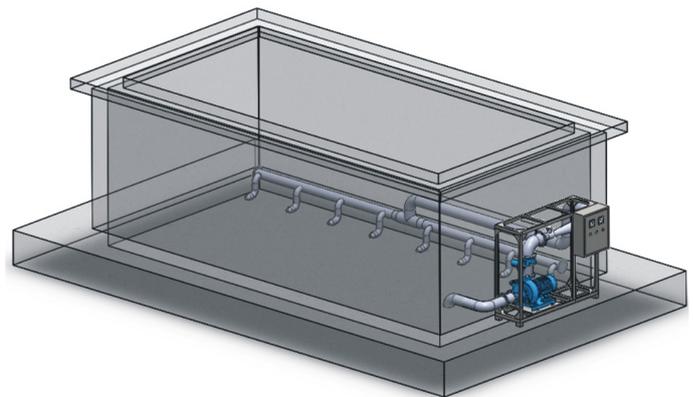
The installation configuration of GW injector is tailored to specific conditions of different customers. So the arrangements of GW injector with nozzles is always different from one to another. Nevertheless, installation design can be classified into two kinds:

1.放水安装方式

这种安装方式管道用材较少，适用于新建设施和方便放水的情况。

1. Dry-out installation

Installation works are carried out with no water in the pond. There are less pipeline needed for the plan. For new facilities and where the drain-out job can be done, empty-pond installation is suitable.



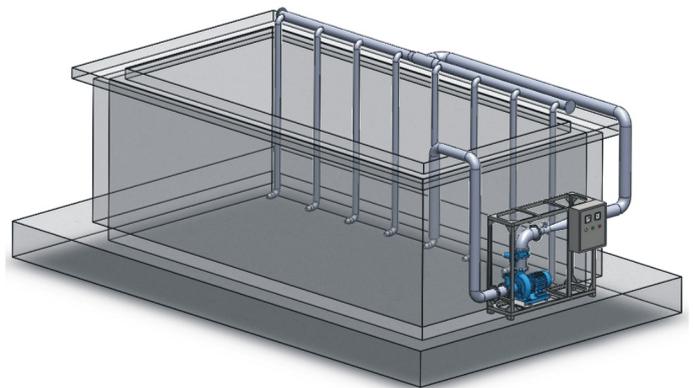
放水安装方式 Dry-out installation

2. 不放水安装方式

GW射流器安装可在不放水的条件下完成。这使得客户能不影响不中断生产的情况下完成他们的技术改造项目。

2. Water-in installation

GW installation work can be carried out without draining out the water from the ponds. This arrangement will facilitate the customers to fulfill their innovation project with no interruption of operation.



不放水安装方式 Water-in installation

GW 流体射流（喷射）器

GW Jet Pumps



通常工业、民用及军用场合都具备有带压的水、油、空气、氮气或蒸汽等资源，这些流体都可以作为喷射器的动力介质，解决成千上万的各种应用问题。诸如：

液体或固体的抽吸输送、空气或其他气体的抽吸输送、真空制备、液体或气体升压、
流体混合、热力回收加热液体、气体洗涤、不一而足……

There are always resources of pressurized water\oil\air\steam\other gases in industry and civil utilities which can be used of as motive flow to solve hundreds of problems such as:

- Pumping and transporting liquid or solid
- Pumping and transporting gas
- Increasing liquid or gas pressure
- Producing vacuum
- Mixing two fluid
- Gaining heat from one fluid
- Scrubbing a gas

比较优势：

- 没有任何运动部件，结构简单。
- 不需要维护检修，性能稳定不衰减。
- 操作控制最为简单。
- 可以安装在极端困难的地方工作。

Competitive advantages:

- No moving parts, simple in structure
- Free of trouble and maintenance, reliable performance
- Easy to operate and control
- Installed and works at difficult or perilous position





GW 液抽液射流器

GW Liquid Jets Liquid Educator

GW52000抽水性能数据表

GW52000 Water Suction Performance Data

动压Pi	0.7	1.1	1.4	2.1	2.8	3.5	4.2	4.9	5.6
背压Pc	Qs								
0.01	9.0	11.0	12.7	13.8	13.1	12.7	12.4	12.2	12.0
0.07	6.4	8.9	10.8	13.8	13.1	12.7	12.4	12.2	12.0
0.14	3.9	6.8	9.0	12.5	13.1	12.7	12.4	12.2	12.0
0.21	1.7	4.8	7.3	11.1	13.1	12.7	12.4	12.2	12.0
0.28		3.0	5.6	9.6	12.8	12.7	12.4	12.2	12.0
0.35		1.1	3.9	8.2	11.5	12.7	12.4	12.2	12.0
0.49			0.8	5.5	9.1	12.0	12.4	12.2	12.0
0.70				1.6	5.6	8.8	11.6	12.2	12.0
1.06						3.7	6.8	9.6	12.0
1.41							2.2	5.3	7.9
1.76								1.0	3.9
动力水量Qi	3.9	4.8	5.5	6.6	7.3	8.0	8.6	9.1	9.7
水功率Wp	0.08	0.14	0.21	0.38	0.56	0.76	1.0	1.2	1.5

规格 modle	GW-52000-25	GW-52000-50	GW-52000-80	GW-52000-100	GW-52000-125	GW-52000-150	GW-52000-200
能力系数 factor f	0.25	1	2.56	4	6.3	9	16

名词术语 Terminology	动压 Pi Motive pressure	背压Pc Outlet pressure	动力水量Qi Motive Flow	抽水量Qs Suction volume	水功率Wp Water power	吸入压力Ps Suction pressure
单位 unit	barg	barg	m ³ /h	m ³ /h	kW	1bar

★ 能力 = (GW52000-50数据) × 能力系数f Capacity= (Data of GW52000-50) × f

★ 表中数据为标准设计规格，如与客户所需条件不符，请与我公司联系来满足客户实际需求。

The data listed in the table are standard, if customer's condition deviates from the above please contact us to satisfy the requirement.

GW 液抽液射流器应用示例

GW Liquid Jets Liquid Eductor Applications

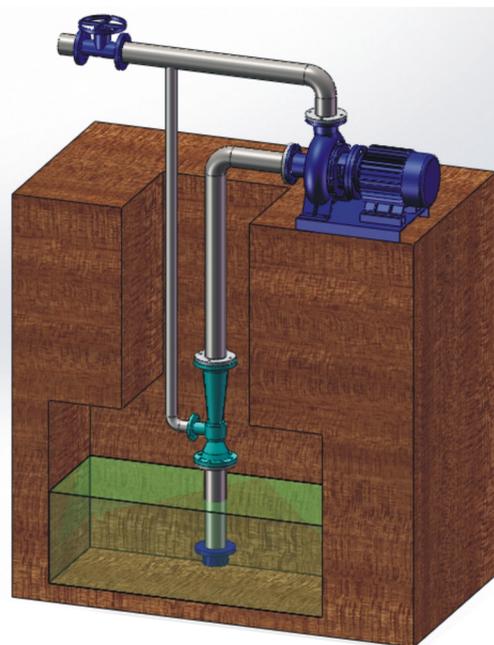


增加水泵吸上高度 – 深井取水

机械水泵在作初始启动后，其出水的一部分作为射流器动力水将低处的水吸入并提升至机械水泵的吸程范围。吸水量的多少取决于水井深度和机械水泵。

Boosting suction pressure of pumps – deep well water fetching

At the initial activation of mechanical pump, a by-pass water from the outlet of the pump jets through an eductor which entrains water and moves it to a point where the mechanical pump can lift water the remaining distance. Capacity of these apparatus depends on the lifting Height and the mechanical pumps.



泥沙抽吸输送

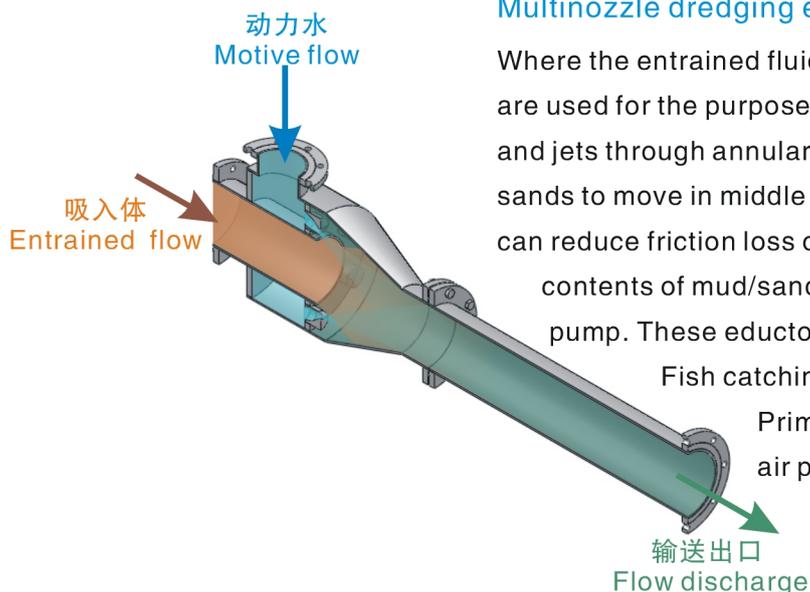
在被抽吸流体为泥沙的情况下，射流器喷射腔内为环形布置的喷嘴，动力水由径向进入喷嘴，泥沙从轴向被吸入和输送以减小阻力损失。泥沙的抽吸能力与泥沙含量、输送距离和高度以及动力水泵相关。这种结构的射流器还可用于：渔业的捕捞和转移输送作业；辅助大型机械泥浆泵初始启动；……

Multinozzle dredging eductors

Where the entrained fluid contains mud or sand, multiple nozzles are used for the purpose. The motive water enters at radial direction and jets through annularly arranged nozzles and pulls muds and sands to move in middle flow at axial direction. This configuration can reduce friction loss of the flow. The capacity is relative to the contents of mud/sand, distance and height to deliver and motive pump. These eductors can be used as well to:

Fish catching and transition;

Priming of large mechanical pump where there is air pockets;





GW 液抽气射流器

GW Liquid Jets Gas Eductor

GW52000吸空气性能数据表
GW52000 Air Suction Performance Data

动压Pi	0.7	1.1	1.4	2.1	2.8	3.5	4.2	4.9	5.6
背压Pc	Qs								
0.00	5.2	6.3	7.3	9.0	10.3	11.6	12.7	13.7	14.6
0.07	4.1	5.5	6.6	8.4	9.8	11.1	12.3	13.3	14.3
0.14	2.9	4.6	5.9	7.8	9.3	10.7	11.9	12.9	13.9
0.21	1.5	3.6	5.0	7.2	8.8	10.2	11.4	12.5	13.6
0.28		2.5	4.2	6.5	8.3	9.8	11.0	12.2	13.2
0.35		1.1	3.2	5.8	7.7	9.3	10.6	11.8	12.9
0.49			0.7	4.3	6.5	8.3	9.7	11.0	12.1
0.70				1.5	4.5	6.6	8.3	9.7	10.9
1.06						3.3	5.5	7.3	8.8
1.41							2.1	4.3	6.4
1.76								1.0	3.5
动力水量Qi	3.2	3.9	4.5	5.5	6.3	7.1	7.7	8.3	8.9
水功率Wp	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.1	1.3

规格 modle	GW-52000-25	GW-52000-50	GW-52000-80	GW-52000-100	GW-52000-125	GW-52000-150	GW-52000-200
能力系数 factor f	0.25	1	2.56	4	6.3	9	16

名词术语 Terminology	动压 Pi Motive pressure	背压Pc Outlet pressure	动力水量Qi Motive Flow	抽气量Qs Suction volume	水功率Wp Water power	吸入压力Ps Suction pressure
单位 unit	barg	barg	m ³ /h	m ³ /h	kW	1bar

★ 能力 = (GW52000-50数据) × 能力系数f Capacity= (Data of GW52000-50) × f

★ 表中数据为标准设计规格，如与客户所需条件不符，请与我公司联系来满足客户实际需求。

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GW 液抽气射流器应用示例

GW Liquid Jets Gas Eductor Applications



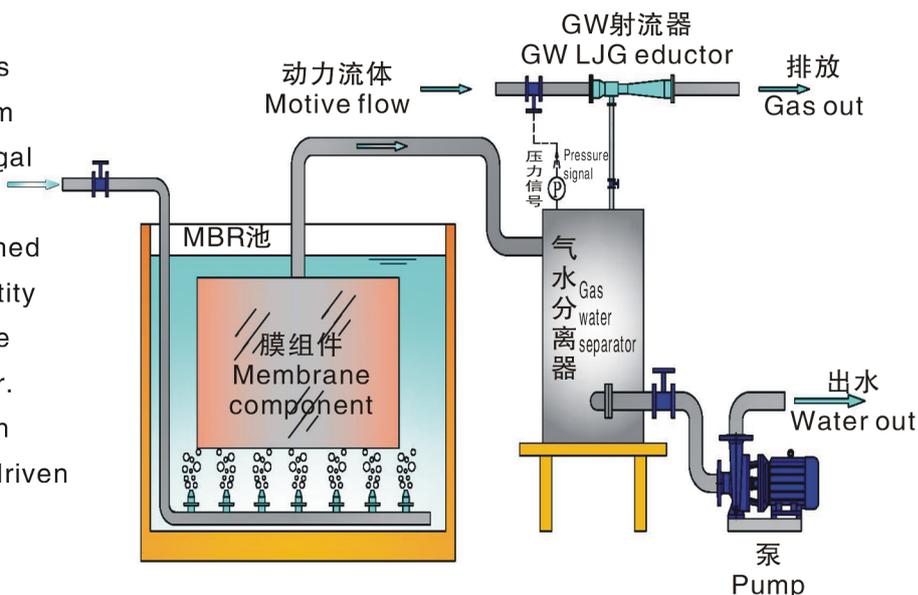
排空气体

在很多工民用场合都会有将气体从密闭空间排出的需求，抽负压辅助启动水泵就是其中一例。一般情况下，水泵启动需要排空的容积都不大，因此只需有适当压力的动力流体（水或加压空气）就可做到这一点。

在某些电驱动排风机不宜使用的危险场合，射流排气也会成为安全不错的选择。

Gas evacuation

In many industries and civil practices there are needs to evacuate gas from hermetic space. Priming of centrifugal pump with LJG eductor is one of the various uses. The volume being primed are generally small, so a small quantity of fluid (pressurized water/air) can be applied as motive flow of the eductor. GW LJG eductor is also a safe option where it is dangerous to use power driven exhauster.



抽气保压

有的装置设备一方面需要保持一定的压力，另一方面又有气体进入或产生，在这种情形下，使用射流器可以达到抽气保压的目的。如上图污水处理中的MBR装置，当气水分离器的压力升高时，压力信号输出致使射流器动力流量阀自动开启，射流器工作吸排气，直到负压达到指定值时阀门关闭停止排气，从而使其压力维持在一定的负压范围之内。动力流体现场都具备，因此这种方案不占地、投资省还节约电耗。

Maintaining pressure

Some apparatus need to keep their internal pressure within a certain extend during operation, meanwhile, there is gas produced or entrained during the process. In this case, GW LJG can be utilized to exhaust gas and keep the pressure at the expected value. The above figure shows an example which is a MBR apparatus for wastewater treatment: When pressure rises in the gas-water separator, a differential pressure signal is given to a motive flow valve which automatically opens and the LJG eductor is activated to draw gas from the separator until the pressure drops to the minus desired point. This configuration not only saves space and investment but also energy since the driving fluid sources (pressure air/water) are always available on-site.



GW 水喷射真空泵

GW Water Jet Vacuum Pumps

GW水喷射真空泵性能数据表
GW Water Jet Vacuum Performance Data

水射流真空泵规格 Water jet vacuum pump model		GW52000-25	GW52000-50	GW52000-100	GW52000-150	GW52000-200	GW52000-250
抽吸口及出口管道规格 Suction and outlet dimension		DN25	DN50	DN100	DN150	DN200	DN250
水压 Water pressure	mH ₂ O	25	25	25	25	25	25
水量 Water volume	m ³ /h	1.7	6.6	26	60	106	165
真空度 Vacuum	bar	0.03	0.03	0.03	0.03	0.03	0.03
平均抽速 Ave.suction rate	m ³ /h	1.2	5	20	45	79	124
最大抽速 Max.suction rate	m ³ /h	2.0	8	33	73	130	203
水功率 Water power	kW	0.11	0.44	1.78	4.00	7.11	11.10
10分钟抽吸容积 Suction volume per 10 minutes	L	55	220	900	2000	3500	5500
备注：抽速含饱和蒸汽量 Note: Suction rates is inclusive of saturated vapor							

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GW 低压气气喷射器

GW Gas Jets Gas Eductor



GW52000低压气气喷射器性能数据表
 GW52000 Gas Jets Gas Eductor Performance Data

Pc			1.02	1.03	1.04	1.06	1.08	1.1	1.12	1.14	1.16	1.18	1.20
Pi	Gi	Qi	Gs										
1.25	130	1.70	235	206	176	110	40						
1.30	136	1.77	251	227	202	147	87	24					
1.35	141	1.84	265	245	223	176	124	69	11				
1.40	146	1.91	277	259	240	199	153	104	52				
1.45	151	1.98	288	273	256	219	178	134	87	38			
1.50	157	2.04	299	285	269	236	200	160	116	71	24		
1.55	162	2.11	308	296	282	252	219	182	142	100	56	11	
1.60	167	2.18	318	306	293	266	236	202	165	126	85	42	
1.65	172	2.25	327	316	304	279	251	220	186	149	110	70	28
1.70	177	2.32	335	325	315	292	265	237	205	170	134	95	55
1.75	183	2.39	343	334	324	303	279	252	222	190	155	118	80
1.80	188	2.45	351	343	334	314	292	266	238	208	175	140	104
1.85	193	2.52	359	351	343	324	303	280	254	225	194	160	125
1.90	198	2.59	367	360	352	335	315	293	268	241	211	179	146

规格 modle	GW-52000-25	GW-52000-50	GW-52000-80	GW-52000-100	GW-52000-125	GW-52000-150	GW-52000-200
能力系数 factor f	0.25	1	2.56	4	6.3	9	16

名词术语 Terminology	动压 Pi Motive pressure	背压Pc Outlet pressure	动力气量Qi Motive Flow	动力气量Gi Motive Flow	抽气量Gs Suction volume	吸入压力Ps Suction pressure
单位 unit	bara	bara	m ³ /min	kg/h	kg/h	1bar

- ★ 能力 = (GW52000-50数据) × 能力系数f Capacity = (Data of GW52000-50) × f
- ★ 表中数据为标准设计规格，如与客户所需条件不符，请与我公司联系来满足客户实际需求。
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GW 气水喷射器

GW Gas Jets Water Eductor

GW62000气水喷射器性能数据表
GW62000 Gas Jet Water Eductor Performance Data

Pc			1.04	1.08	1.12	1.16	1.20	1.40	1.60	1.80
Pi	Gi	Qi	Gs							
2	85	1.2	601	349	76					
2.5	107	1.5	760	570	364	141				
3	128	1.8	862	715	553	378	189			
4	171	2.4	984	888	783	667	541			
5	213	3.0	1047	984	913	833	745			
6	256	3.6	1081	1039	991	935	873	459		
7	299	4.2	1096	1070	1038	1000	956	649		
8	341	4.8	1099	1085	1066	1041	1011	785	429	
9	384	5.4	1095	1090	1080	1066	1047	884	606	
10	427	6.0	1084	1086	1084	1078	1068	956	741	422

规格 modle	GW-62000-25	GW-62000-50	GW-62000-80	GW-62000-100	GW-62000-125	GW-62000-150	GW-62000-200
能力系数 factor f	0.25	1	2.56	4	6.3	9	16

名词术语 Terminology	动压 Pi Motive pressure	背压 Pc Outlet pressure	动力气量 Qi Motive Flow	动力气量 Gi Motive Flow	抽吸量 Gs Suction volume	吸入压力 Ps Suction pressure
单位 unit	bara	bara	m ³ /min	kg/h	kg/h	1bar

- ★ 能力 = (GW62000-50数据) × 能力系数f Capacity = (Data of GW62000-50) × f
- ★ 表中数据为标准设计规格，如与客户所需条件不符，请与我公司联系来满足客户实际需求。
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GW 气固喷射器

GW Gas Jets Solids Educator



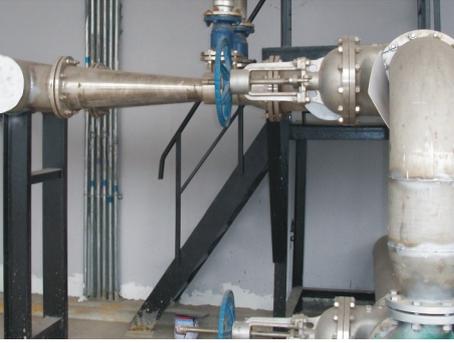
GW62000气固喷射器性能数据表
 GW62000 Gas Jets Solids Educator Performance Data

Pc			1.04	1.08	1.12	1.16	1.20	1.40	1.60	1.80
Pi	Gi	Qi	Gs							
2	85	1.2	479	234						
2.5	107	1.5	618	432	230	12				
3	128	1.8	707	561	401	229	43			
4	171	2.4	810	714	608	492	366			
5	213	3.0	861	796	722	641	551			
6	256	3.6	886	841	789	731	665	241		
7	299	4.2	895	864	828	786	739	416		
8	341	4.8	835	835	835	820	785	540	170	
9	384	5.4	744	744	744	744	744	628	333	
10	427	6.0	664	664	664	664	664	664	456	121

规格 modle	GW-62000-25	GW-62000-50	GW-62000-80	GW-62000-100	GW-62000-125	GW-62000-150	GW-62000-200
能力系数 factor f	0.25	1	2.56	4	6.3	9	16

名词术语 Terminology	动压 Pi Motive pressure	背压 Pc Outlet pressure	动力气量 Qi Motive Flow	动力气量 Gi Motive Flow	抽吸量 Gs Suction volume	吸入压力 Ps Suction pressure
单位 unit	bara	bara	m ³ /min	kg/h	kg/h	1bar

- ★ 能力 = (GW62000-50数据) × 能力系数 Capacity = (Data of GW62000-50) × f
- ★ 表中数据为标准设计规格，如与客户所需条件不符，请与我公司联系来满足客户实际需求。
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GW 气体喷射器的应用示例

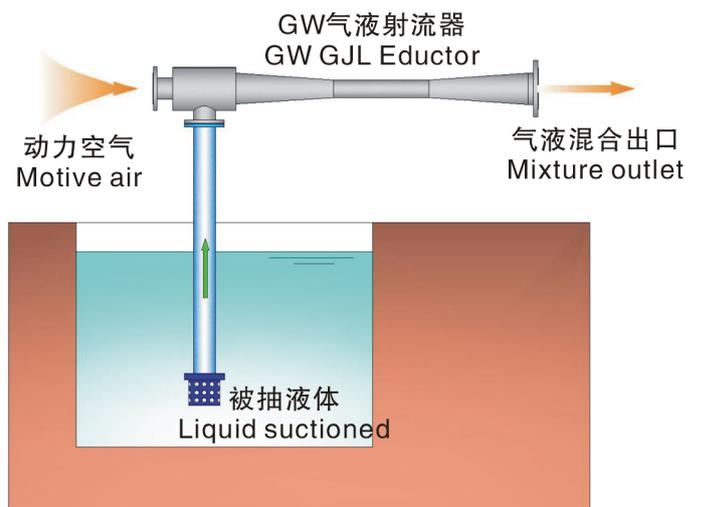
GW Gas Jets Eductor Applications

气力抽提

在有压力空气或其他气源可利用，或使用机械泵很困难或不适用的条件下。用有压气源可以完成液体抽取的任务。典型的例子之一是液体无稀释取样。动力气体通过射流器喷嘴产生的负压可以对管道、容器的液体进行连续或间断取样以供分析。

Gas exhausting

Where it is difficult or unsuitable to use mechanical Pump and pressure air or other gas are available, it is feasible to use gas jet eductors to lift or exhaust liquid from pipeline, vessels or tanks. One of the examples is sampling in which motive gas jets through eductor nozzle and draws sampled liquid out for continuous or interval analyzing.



气力输送

必须在干燥条件下输送固体时，可以用压力空气或氮气输送固体。颗粒状物料在动力气体的喷射吸入效应下进入吸入腔并与气体一起流动，气固混合物在混合后经过扩散段升压后输送到接受点时气固分离。

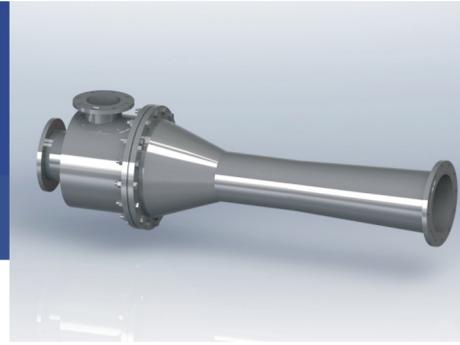
Gas delivery

When the dry delivery is a must, It is applicable to use pressurized air or nitrogen to transport solids. Granular solids enter into the suction chamber under vacuum effect produced by gas jet, mix and move with gas through a diffuser to increase gas-solids mixture pressure. Gas and solids are separated after reaching to the reception point.



GW 射流泥浆泵

GW Water Jet Mud&Sands Pump

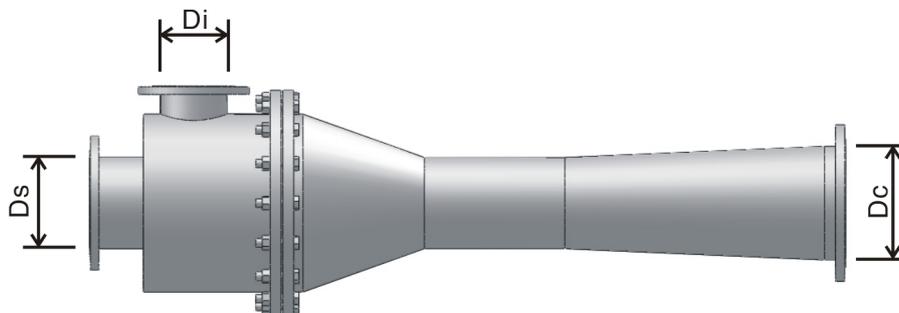


GW44120射流泥浆泵性能数据表

GW44120 Water Jet Mud&Sands Pump Performance Data

射流泥浆泵规格 Water jet mud&sands pump model		GW44120-100	GW44120-150	GW44120-200	GW44120-250	GW44120-300
接口尺寸 connection						
动力进口 Di Motive flow inlet	mm	65	100	125	150	200
抽吸口 Ds Suction inlet	mm	100	120	150	200	250
出口 Dc Outlet	mm	100	150	200	250	300
性能参数 Performance Data						
动力水压 Motive pressure	mH ₂ O	90	90	90	90	90
动力水量 Motive volume	m ³ /h	40	85	120	180	300
抽吸量 Suctioned volume	m ³ /h	45	110	160	260	440
扬程 Eductor head	mH ₂ O	5	5	5	5	5

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GW 气体洗涤分离器

GW Gas Scrubbers and Separators

文丘里射流洗涤器目前已被各类工业用于处理废气，由于射流产生负压，可以抽吸各类高温、粉尘、腐蚀、有毒有害等气体，高速喷射的洗涤剂冲击可以去除颗粒污染物，有害气体和臭味通过吸收和化学作用去除，可以达到很好的洗涤除尘及化学吸收的效果（99.5%），满足下游工艺的使用或合格排放的要求。

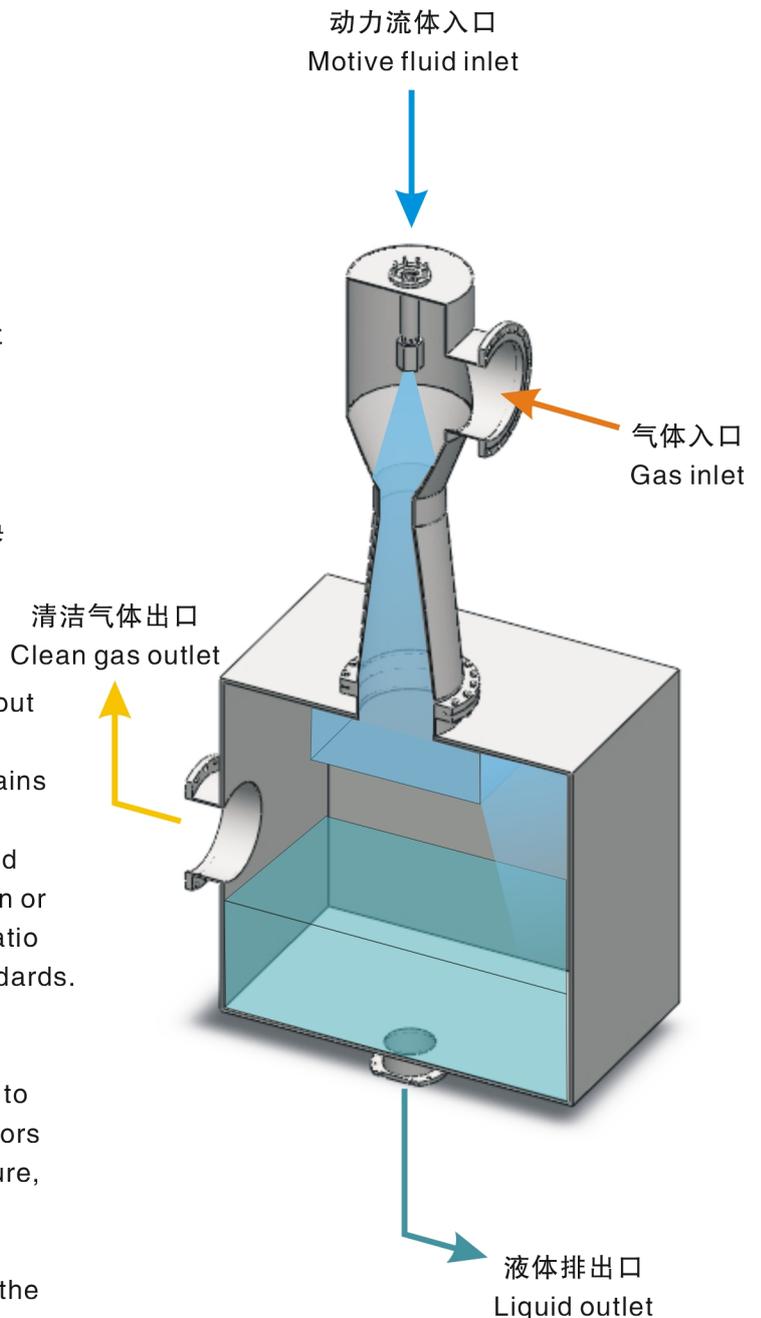
作为一种高效废气处理设备，射流洗涤具备除尘能力强、废气和臭味去除率高、适应高温气体处理、耐腐蚀、不惧处理物毒性等特性，因此被广泛用于各种工民用废气处理中。

为满足不同处理负荷的要求，射流喷嘴为可更换型式。水气混合液排出后通过气液分离器气水分离，让排放气体含湿量尽可能低以确保处理效果。

Venturi ejector scrubbers are widely used throughout industries in waste gases treatment, The vacuum produced by high speed spraying of the nozzle entrains gases into the mixing chamber where particulate contaminants can be removed, and other gases and odors can be eliminated through physical impaction or absorption or chemical reaction. The eliminating ratio can be as high as to 99.5% to meet discharge standards.

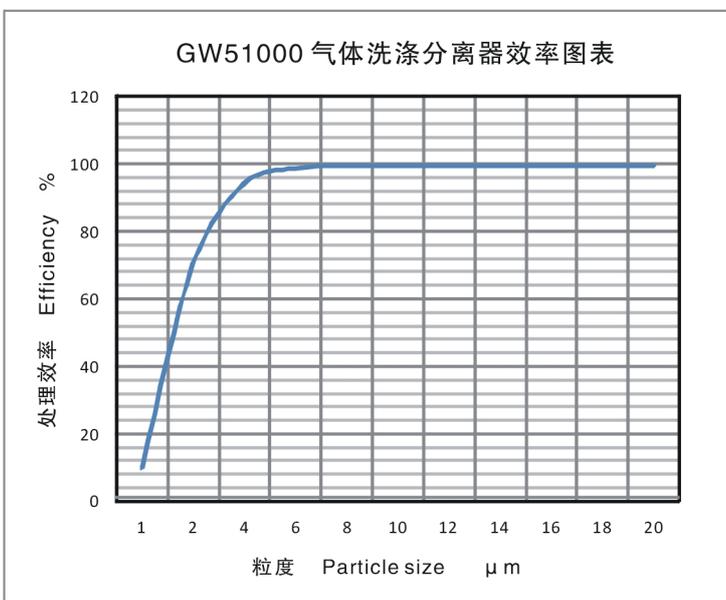
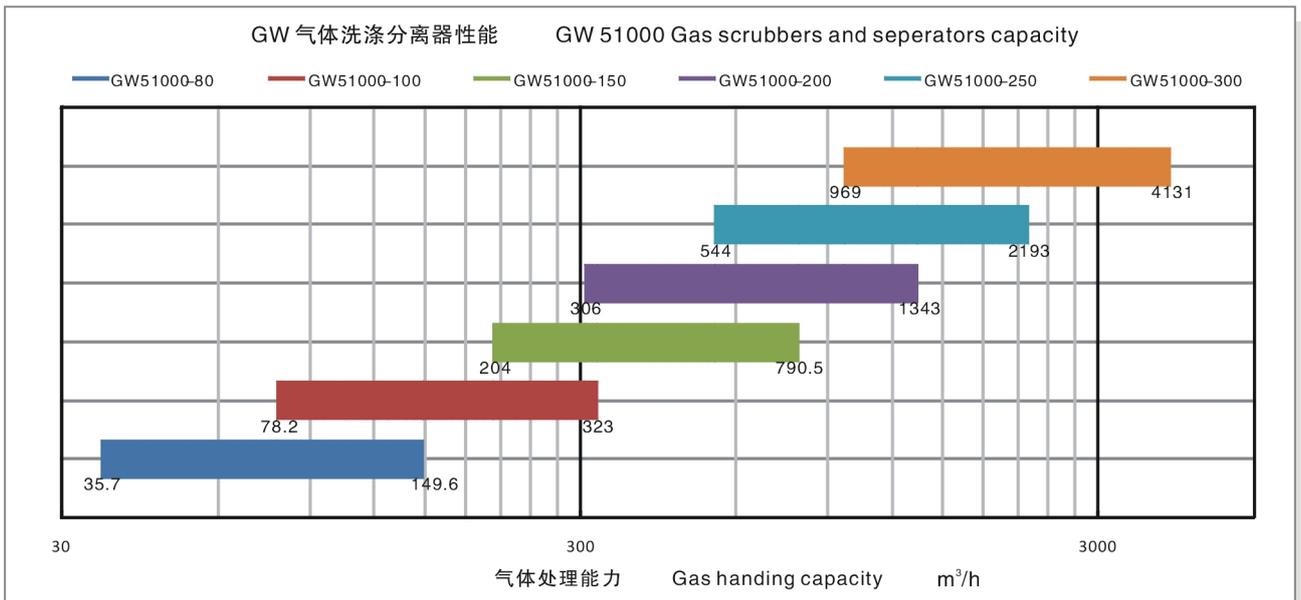
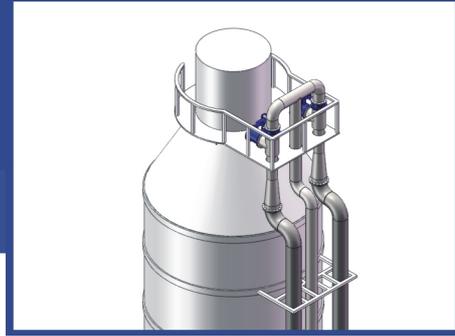
As a high efficient waste gas treatment apparatus, GW51000 ejector gas scrubbers are very effective to eliminate particulates, and variety of gases and odors even at perilous conditions such as high temperature, corrosive and toxic.

To meet the different loading rate, the nozzles are the type of removable. A gas-liquid separator is also provided to minimize the moisture amount at gas outlet to ensure a clean discharge.



GW 气体洗涤分离器性能

GW Gas Crubbers and Separators Capacity



处理能力可按客户需求设计。

去除效率还取决于喷嘴进口压力、颗粒负荷总量和密度等因数。

Capacity can be tailored to customer's special requests.

Efficiency also depends on the particle loading and the density, and nozzle inlet pressure



烟气洗涤及氧化处理

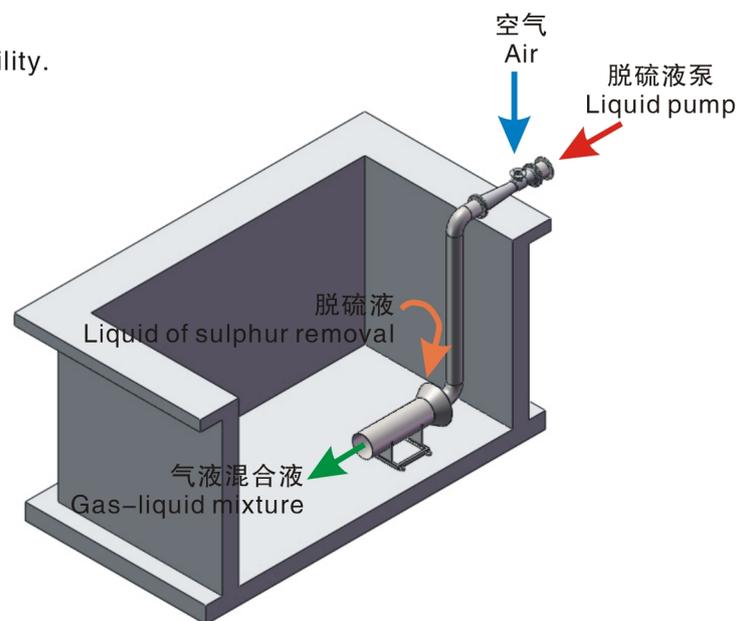
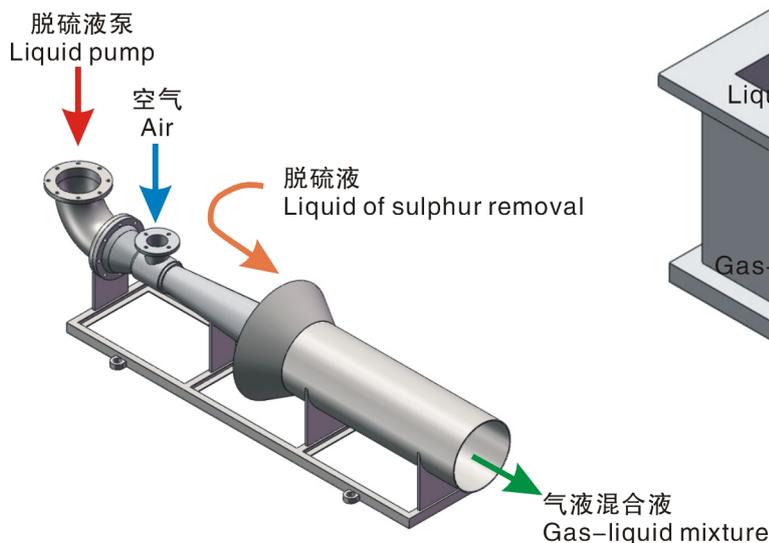
Oxidation of Scrubber Gas Liquid

来自洗涤过程的液体混合物可能需要进一步的氧化反应，例如去除二氧化硫，获得合格副产品的过程。GW射流曝气器是一种理想的替代鼓风机的曝气增氧设备，其具有以下优势：

- 1) GW射流曝气器可产生微小气泡，提供较大的气液接触面积和较长的反应时间，从而可达到较高的氧转移效率。
- 2) 没有活动部件，不会堵塞，具有良好的运行可靠性。
- 3) 具有强大的搅拌能力。
- 4) 结构简单，使用寿命长。

Liquid mixture coming from scrubbing process may need a further oxidation reaction, as of removal of sulfur dioxide, to obtain quality by-products. GW injection aerator is a ideal alternative to substitute blowers in this application for the following advantages:

- 1) Owing to its fine bubble and prolonged gas-liquid contacting time. GW injection aerator shows high oxygen transfer efficiency.
- 2) No moving parts, no clogging/fouling, higher reliability.
- 3) Strong agitation capacity.
- 4) Simple in structure, longer using life.



GW 蒸汽喷射真空泵

GW Steam Ejecting Vacuum Pump



GW蒸汽喷射真空泵性能数据表
 GW Steam Ejecting Vacuum Pump Performance Data

		5级喷射真空泵 5 stages jet	4级喷射真空泵 4 stages jet	3级喷射真空泵 3 stages jet
工作真空 Operation vacuum	Pa	6	60	600
极限真空 Max.vacuum	Pa	1.3	10	100
蒸汽压力 Steam pressure	bara	5	5	5
抽速 Exhaust rate	L/s	25000	24000	18000
抽吸空气量 Air suctioned	kg/h	3	5	13
抽吸蒸汽量 Steam suctioned	kg/h	0	22	186
抽吸当量蒸汽量 Equivalent steam	kg/h	3.0	27.0	200
蒸汽量消耗 Steam consumption	kg/h	1850	1800	1600
冷却水消耗 Cooling waterconsumption	t/h	150	150	150

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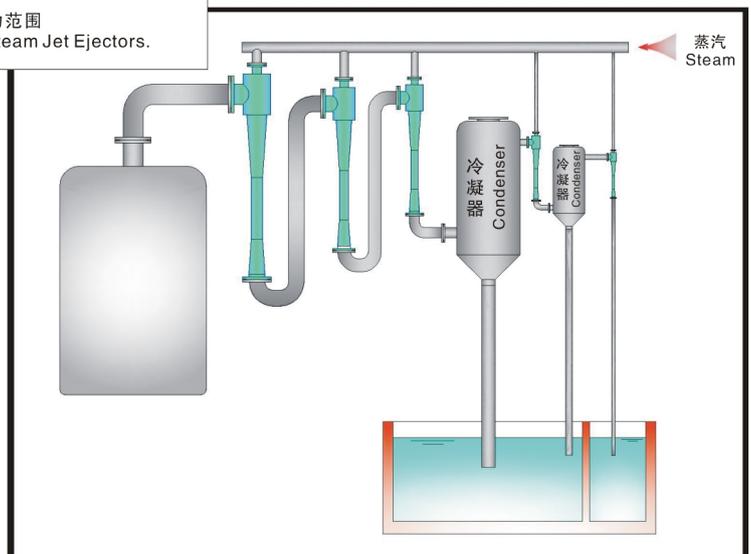
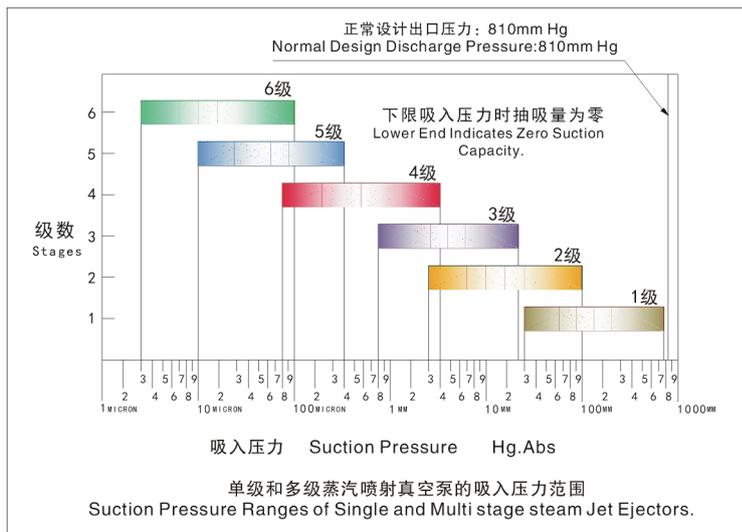


GW 蒸汽喷射真空泵

GW Steam Ejecting Vacuum Pump

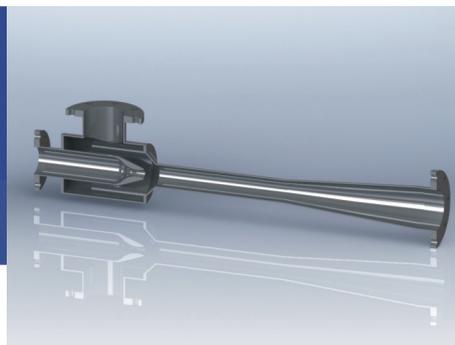
蒸汽通过膨胀喷嘴喷射将压力能转换为速度动能，产生真空吸入流体混合并在扩散段速度减慢压力回升到克服出口背压值排出。除用作真空泵用之外，这种特性为蒸汽射流获得了广泛的用途，如除气、吸收、干燥、过滤、吸热、混合、蒸馏等。

Steam ejects through an expanding nozzle which converts steam's pressure energy into spraying speed, creating a vacuum. Gases or other fluid materials are entrained into the mixing throat and impelled to diffuser where kinetic energy turned back to a pressure which is enough for the mixture to overcome predetermined back pressure and discharge. Besides functioning as vacuum pump, this characteristic has found steam jet a wide utilizations as degass, absorption, distillation, drying, filtration, heat transferring, etc.



GW 超临界气体射流器

GW Ultrasonic Gas Ejector



GW超临界空气射流器性能数据表

GW Ultrasonic Gas Ejector Performance Data

Air		GW63160-25		GW63160-50		GW63160-100		GW63160-100	
Pi	Pc	Gi	Gs	Gi	Gs	Gi	Gs	Gi	Gs
2.5	1.05	27	86	107	343	427	1374	1042	3354
2.5	1.11	27	43	107	171	427	683	1042	1667
2.5	1.15	27	0	107	0	427	0	1042	0
3	1.09	32	85	128	338	512	1352	1250	3302
3	1.15	32	42	128	169	512	676	1250	1650
3	1.20	32	0	128	0	512	0	1250	0
4	1.17	43	82	171	329	683	1314	1667	3208
4	1.23	43	43	171	171	683	683	1667	1667
4	1.29	43	0	171	0	683	0	1667	0
5	1.25	53	80	213	320	853	1282	2083	3129
5	1.32	53	40	213	160	853	640	2083	1563
5	1.38	53	0	213	0	853	0	2083	0
10	1.68	107	73	427	291	1707	1162	4167	2838
10	1.76	107	36	427	145	1707	580	4167	1417
10	1.85	107	0	427	0	1707	0	4167	0

名词术语 Terminology	动压 Pi Motive pressure	背压 Pc Outlet pressure	动力气量 Qi Motive Flow	动力气量 Gi Motive Flow	抽气量 Gs Suction volume	吸入压力 Ps Suction pressure
单位 unit	bara	bara	m ³ /min	kg/h	kg/h	1bar

★ 表中数据为标准设计规格，如与客户所需条件不符，请与我公司联系来满足客户实际需求。
 The data listed in the table are standard, if customer's condition deviates from the above please contact us to satisfy the requirement.

高压气体喷射器中，通过超音速的方式实现负压抽吸以及动量交换，可以将低压的引射介质提升至中压，进行输送。常用于对低压的各类煤气、天然气、蒸汽等的回收与利用，甚至可以取代部分的机械压缩级。

In the so called high pressure ejectors, vacuum entrainment and momentum exchange are realized by ultrasonic jets of motive gases. This process is able to elevate the pressure of suctioned fluid from low to a medium point and be delivered.. General applications are always found in coal gas, natural gas and steam heat recovery and reuse. In some cases, it can be an alternative to a part of mechanical compressor.



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