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SUPUMPS GRINDER SCREEN

An eco-friendly wastewater pretreatment solution featuring high-efficiency shredding and intelligent protection.



Building an Ecological Water Environment

To Become a Leading System Solution Provider in the Water Industry



Sponge City



Beautiful Countryside



Black and Odorous
Water Remediation



Yangtze River
Conservation

Excellence · Innovation · Inclusiveness · Gratitude · Integrity



Supumps is a professional provider of smart drainage system solutions. As one of the earliest promoters, specialized manufacturers, and large-scale producers of integrated prefabricated pump stations in China, Supumps pioneers the integration of high-tech such as IoT, AI, and big data with drainage equipment. The company develops high-quality products and services for industries including integrated intelligent prefabricated pump stations, integrated pump gates, integrated smart interception & lifting chambers, high-dryness dewatering technology for river/lake sediment and construction slurry, and rainwater regulation, storage and treatment solutions. It delivers high-quality products and services for China's "Sponge City", "Beautiful Countryside", "Black and Odorous Water Remediation", and "Yangtze River Conservation" initiatives. In 2018, Supumps was officially listed on the New Third Board (Stock Code: 873161).

To date, Supumps has obtained over 80 national patents and 7 software copyrights. In 2016, Supumps was successfully selected into the Catalogue of Advanced and Applicable Technologies and Products for Sponge City Construction issued by the Ministry of Housing and Urban-Rural Development (MOHURD), and passed the Construction Industry Scientific and Technological Achievements Evaluation. It is the only company in the industry to receive both honors.

2018: Participated in the compilation of the Green Building Material Evaluation Standard for Integrated Prefabricated Pump Stations, edited by the Science and Technology & Industrial Development Center of MOHURD.

2018: Participated in the compilation of the HMPP Integrated Pump Station Industry Standard, edited by the China Institute of Building Standard Design & Research.

2019: Co-edited the National Standard Reference Atlas for Integrated Pump Stations and the Technical Specification for the Application of Integrated Smart Interception & Lifting Chambers with the China Institute of Building Standard Design & Research.

2020: Participated in the compilation of the Technical Specification for Urban Rainwater Interception Wells in Shanghai, edited by the Shanghai Urban Construction Design & Research Institute and the Shanghai Drainage Administration.

2020: Participated in the compilation of the Technical Specification for Interception Facilities in Combined Sewerage Systems, edited by Beijing University of Civil Engineering and Architecture and Beijing Drainage Group.

2021: Participated in the compilation of the Technical Specification for Urban Rainwater Regulation and Storage, edited by Chongqing Municipal Design Institute.

2021: Participated in the compilation of the Standard Atlas for Municipal Drainage Structures in Chongqing, edited by Chongqing Municipal Design Institute.

2021: Participated in the compilation of the Technical Specification for Integrated Operation Monitoring and Intelligent Management of Urban Drainage Systems and Pump Stations, edited by Tongji University.

2022: Co-edited the national standard Integrated Equipment for Drainage Pump Stations with the China Construction Metal Structure Association.

2023: Participated in the compilation of the national standard Integrated Rainwater Shaft Pump Station Equipment, edited by the Central South Design Institute of China Municipal Engineering.

2024: Participated in the compilation of the national standard Integrated Equipment for Urban Rainwater and Sewage Diversion, Lifting and Pump Stations, edited by the China Institute of Building Standard Design & Research.

SUPUMPS
GRINDER SCREEN



Top-tier
protected motor



High-efficiency
shaftless drum



Innovative
sealing structure



High-strength
wear-resistant blades



Easy installation
and maintenance

An eco-friendly wastewater pretreatment solution featuring high-efficiency shredding and intelligent protection.

Working Principle

Driven by a dual-purpose explosion-proof motor, high torque is transmitted through a two-stage gear reducer to the serrated intermeshing blade sets on the dual drive shafts for helical cutting. As wastewater flows through the high-strength stainless steel drum, the screen first intercepts solid debris, which is then shredded into fine particles of 8–12mm by the blade sets for easy downstream conveyance and treatment. The shaftless drum design prevents debris entanglement, while the parallel helical winding structure increases flow capacity and reduces head loss.

Process Introduction

The Supumps Grinder Screen is a high-efficiency wastewater pretreatment device that integrates solid waste shredding, screening, and screenings handling. Featuring a unique dual-shaft parallel cutting system and an integrated design for prefabricated pump stations, it solves the key pain points of traditional comminutors: high energy consumption, large footprint, and high maintenance costs. The fully buried unit allows for greening above ground, effectively eliminating odour pollution from debris and protecting downstream wastewater treatment equipment. It is widely used in municipal sewerage, prefabricated pump stations, and industrial wastewater treatment applications.



Installation photo of the grinder screen in a prefabricated pump station



Components working in unison to ensure shredding and screening efficiency

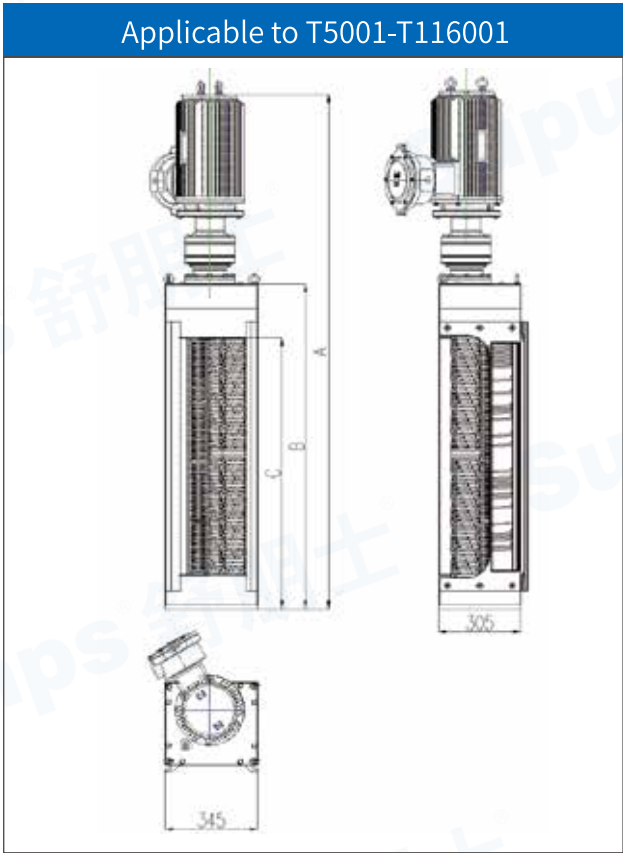
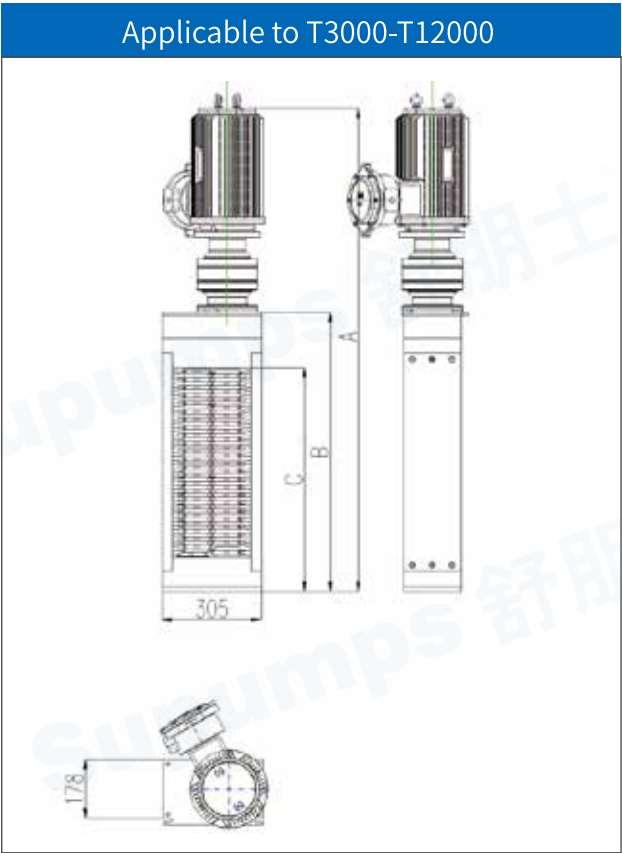
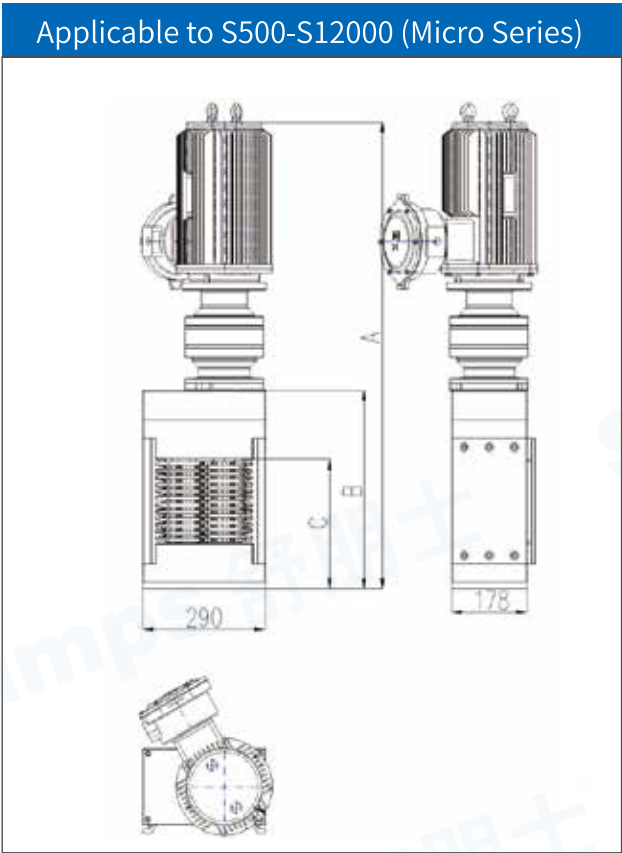


Core Structure & Working Principle

Core Components



Component Name	Technical Specifications
Geared Motor	Wet/dry use; IP68 protection class; Class H insulation (heat-resistant to 180°C); dual-purpose explosion-proof design
Grinder Blades	4130 or Cr17 heat-treated alloy tool steel; internal hex spline design
Drive Shafts	4140 heat-treated steel; high strength and wear resistance
Bearings	SKF brand bearings; stable and reliable operation
Base & Housing	QT450 ductile iron; impact-resistant and corrosion-resistant
Sealing System	Silicon carbide seal with floating seal ring; automatic gap compensation
Drum Screen	High-strength 304 stainless steel; minimum bar spacing: 6mm; optional parallel helical winding or perforated design
Mounting Frame	304 stainless steel; compatible with rail-mounted coupling devices

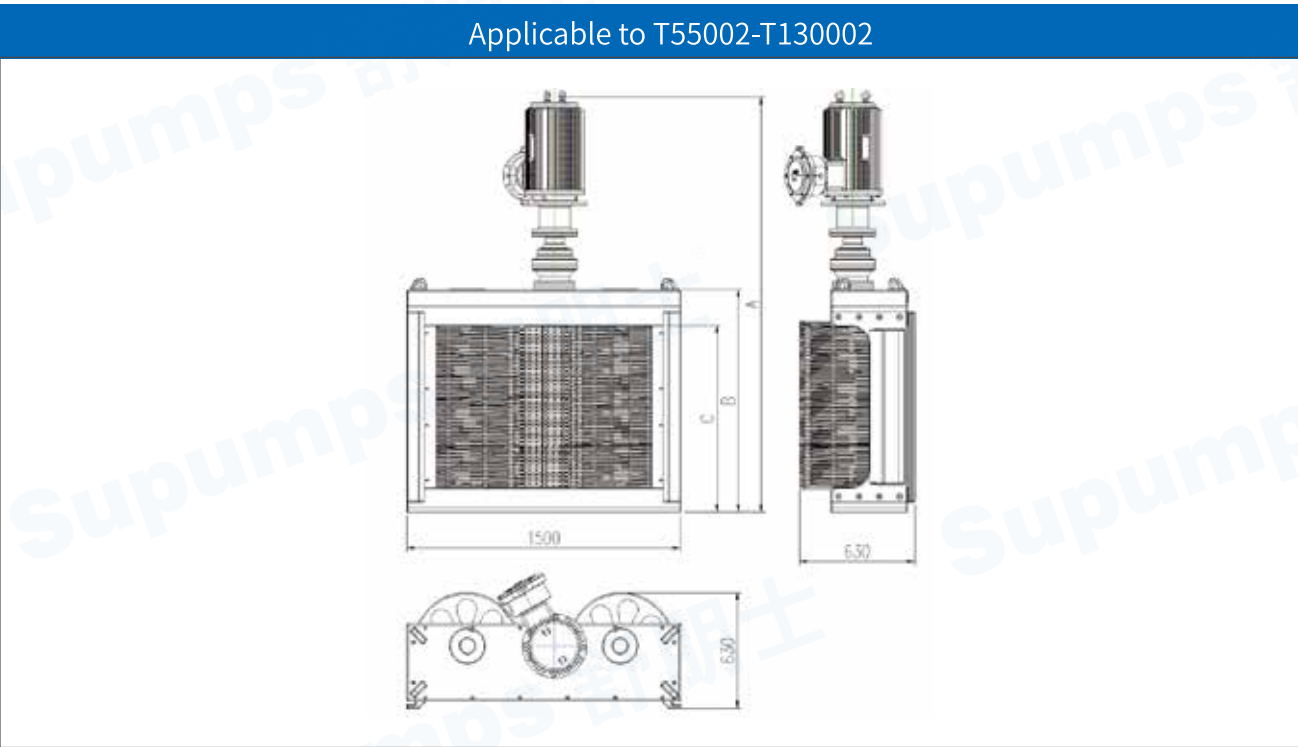
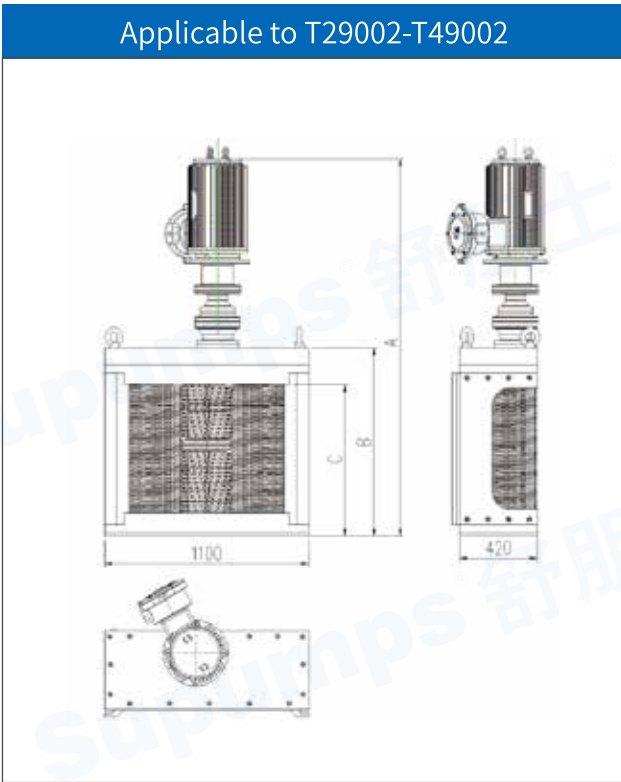
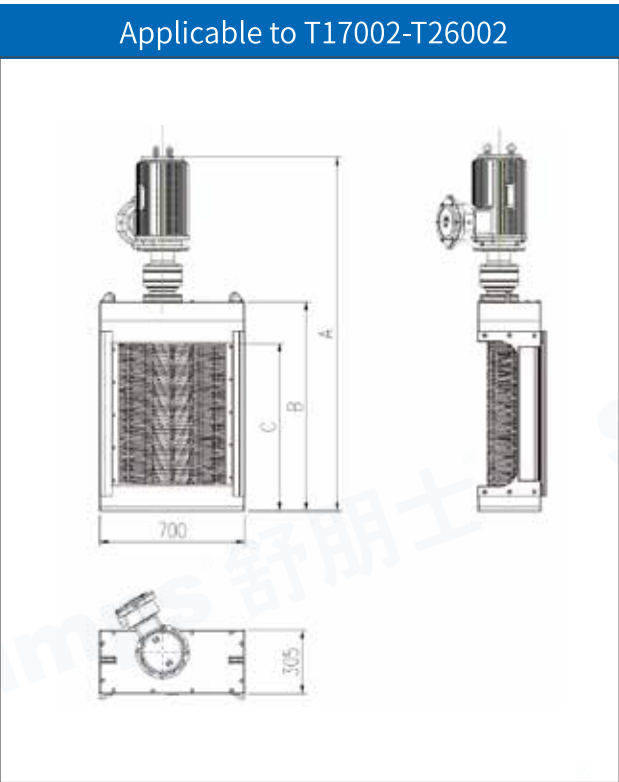


Single-Drum Grinder Screen

Model	Power (kw)	Flow Range (m³/s)	Head Loss (m)	Shredded Particle Size (mm)	Weight (kg)	DimensionA (mm)	DimensionB (mm)	DimensionC (mm)
S500	1.5	50	0.3	8~12	130	850	307	148
S800	1.5	80	0.3	8~12	150	898	367	207
S1500	2.2	120	0.3	8~12	190	1170	462	302
S2000	2.2	200	0.3	8~12	210	1329	621	461
S3000	2.2	280	0.3	8~12	231	1487	780	620
S4500	3.7	450	0.3	8~12	295	1766	1019	859
S6000	3.7	550	0.3	8~12	350	2008	1260	1101
S9800	3.7	700	0.3	8~12	390	2266	1519	1359
S12000	3.7	900	0.3	8~12	430	2525	1778	1619
T3000	2.2	300	0.3	8~12	250	1549	847	680
T6000	3.7	600	0.3	8~12	345	2017	1279	1112
T12000	3.7	1000	0.3	8~12	430	2523	1781	1614

Single-Drum Grinder Screen

Model	Power (kw)	Flow Range (m³/s)	Head Loss (m)	Shredded Particle Size (mm)	Weight (kg)	DimensionA (mm)	DimensionB (mm)	DimensionC (mm)
T5001	3.7	500	0.3	8~12	330	1372	626	428
T8001	3.7	800	0.3	8~12	358	1519	772	575
T11001	3.7	1100	0.3	8~12	400	1745	998	801
T13001	3.7	1300	0.3	8~12	435	1939	1193	996
T14501	3.7	1450	0.3	8~12	445	1749	1002	804
T16001	3.7	1600	0.3	8~12	495	1944	1197	999



Dual-Drum Grinder Screen

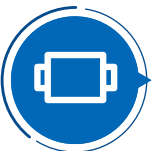
Model	Power (kw)	Flow Range (m³/s)	Head Loss (m)	Shredded Particle Size (mm)	Weight (kg)	DimensionA (mm)	DimensionB (mm)	DimensionC (mm)
T17002	3.7	1700	0.3	8~12	520	1749	1002	804
T21002	3.7	2100	0.3	8~12	610	1944	1197	999
T26002	3.7	2600	0.3	8~12	680	2144	1397	1199
T29002	5	2900	0.3	8~12	1400	2245	1007	811
T39002	5	3900	0.3	8~12	1700	2245	1207	1011
T49002	5	4900	0.3	8~12	2000	2245	1407	1211
T55002	7.5	5500	0.3	8~12	2250	2258	1212	1018
T70002	7.5	7000	0.3	8~12	2650	2458	1412	1218
T85002	7.5	8500	0.3	8~12	3050	2658	1612	1418
T100002	7.5	10000	0.3	8~12	3450	2858	1812	1618
T115002	7.5	11500	0.3	8~12	3850	3058	2012	1818
T130002	7.5	13000	0.3	8~12	4250	3258	2212	2018

Core Advantages



Top-tier Protected Motor

Adopts a dual-purpose explosion-proof motor with an IP68 protection rating, enabling stable long-term operation both above and below water. Featuring Class H insulation (heat-resistant to 180°C), it eliminates overheating/burnout issues common to standard waterproof motors (IP56, Class E insulation), making it suitable for complex working conditions.



Innovative Sealing Structure

Patented floating seal assembly integrates mechanical seals, bearings, and seal rings into an elastic seal seat. It automatically compensates for axial play caused by blade wear and gap changes, ensuring precise meshing, preventing seizing or accelerated wear. Its service life far exceeds traditional designs using nut fixation and tapered roller bearing positioning.



High-Strength Wear-Resistant Blades

Made from ASTM 4130 alloy steel with heat treatment and titanium nitride coating, combining high hardness, wear resistance, and corrosion resistance. The internal hexagonal spline design ensures precise positioning, long-term deformation resistance, and easy maintenance. Solid particles are shredded to 8–12mm, effectively protecting downstream equipment from clogging.



High-Efficiency Shaftless Drum

Constructed from 304 stainless steel, the shaftless drum prevents clogging from fibrous debris entanglement. Available in single/dual-drum configurations to meet varying flow needs, it delivers high throughput with low head loss, guiding particles efficiently into the cutting chamber to boost overall processing efficiency.



Easy Installation & Maintenance

Integrated with prefabricated pump stations and paired with a rail coupling device, installation/removal takes only 30 minutes. The fully buried design allows for green landscaping above ground. Maintenance costs over 5 years are significantly lower than domestic comparable products, reducing long-term operational expenses.

Application Scenarios



Municipal Drainage Channels

Efficiently removes solid debris from pipe networks to ensure unobstructed flow.



Prefabricated Pump Stations

Integrated with pumping stations to simplify system design and reduce footprint.



Industrial Wastewater Treatment

Suitable for pre-treatment of wastewater in food processing, paper manufacturing, textile printing & dyeing, and other industries.



Underground Sewage Systems

Fully enclosed design effectively isolates odors, ideal for underground engineering environments.

Installation & Maintenance



Installation Features

Uses a stainless steel mounting frame dedicated to prefabricated pump stations, paired with a rail coupling device. The simple process requires no complex construction, enabling quick assembly/disassembly by a single person.



Maintenance Advantages

High-quality core components ensure low failure rates; routine checks only require monitoring blade wear and seal conditions. Blades/seals are easy to replace, with long maintenance cycles. Costs over 5 years are far lower than domestic peers, reducing operational/labor costs. Remote monitoring is supported, enabling real-time condition tracking, early fault warnings, and improved system reliability/management efficiency.