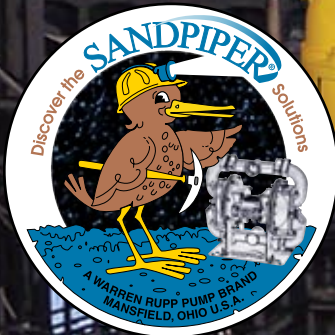


Discover

SANDPIPER®

Rugged Mining Duty Pumps from Warren Rupp



Hard Hat Decals
Available

...your single dedicated
resource for cost-effective
mine pumping solutions

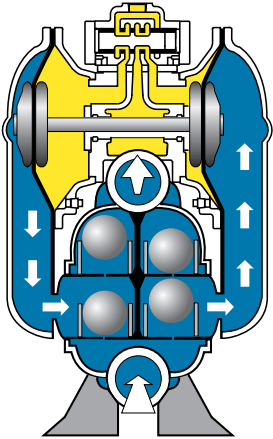
**Over 40 Years
Underground
Pumping
Experience!**

For Rugged Mining Duty

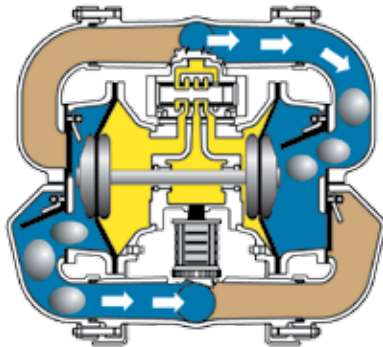
- ▶ **Underground**
- ▶ **Above Ground**
- ▶ **Drift Dewatering**
- ▶ **Muck**
- ▶ **Drillers Mud**
- ▶ **Fuel Transfer**
- ▶ **Dewater High/Low PH Levels Underground**

Warren Rupp Signature Pump Configurations for Every Pumping Application

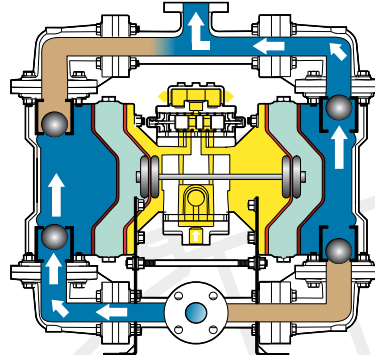
Heavy Duty Ball



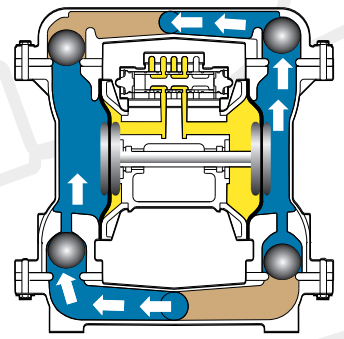
Heavy Duty Flap



Containment Duty



Standard Duty



FEATURES - BENEFITS

ESADS+Plus® - Performance Guaranteed - In-line Serviceable Air Valve System
 Bolted Construction - Safe - Reliable - Easy Maintenance
 Durable, Single-Purpose, Corrosion Resistant, Diaphragm Connecting Rod - Guaranteed
 Bottom Discharge Porting - Eliminates Settling Solids
 Thick Wall Construction
 Horizontal and Vertical Manifold Connections
 Free Standing Base - Reduces Downtime - Easy Re-Build
 Heavy Duty Wear Package - Extends "MTBF"

Weighted Ball Check Valves
 Solids Range
 +1/4" (6mm) to 7/8" (22mm)
 Dry Primes up to 20 Ft of Water

Hinged Flap Check Valves
 Solids Range
 +1" (25mm) to 3" (76mm)
 Dry Primes up to 24 Ft of Water

FEATURES - BENEFITS

ESADS+Plus® - Performance Guaranteed - In-line Serviceable Air Valve System
 Bolted Construction - Safe - Reliable - Easy Maintenance
 Durable, Single-Purpose, Corrosion Resistant, Diaphragm Connecting Rod - Guaranteed
 Top Discharge Porting - Eliminates Entrained Air
 Metallic and Non-Metallic Materials of Construction
 Ball Check Valves • Light Weight - Portable
 90° - 180° Manifold Connection Rotation

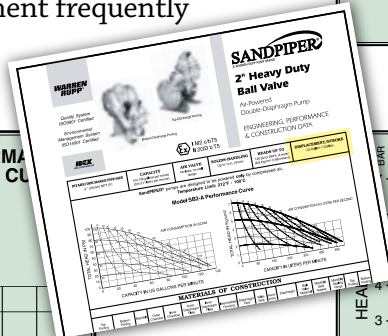
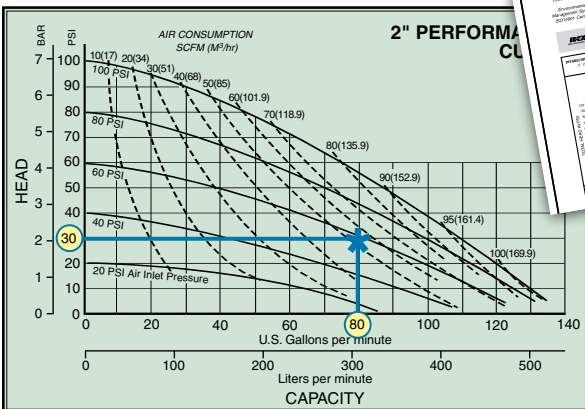
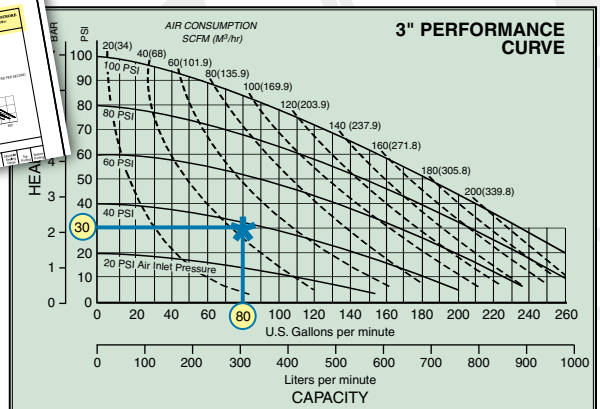
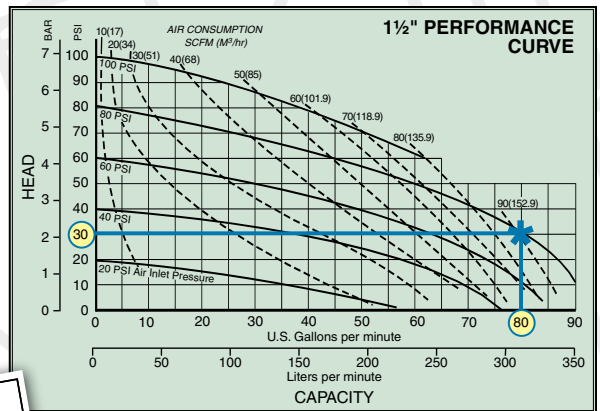
Containment Chamber with Leak Detection
 Hydraulically Balanced / C Coupled Pumping
 and Driver Diaphragm Assemblies
 Solids Range +1/4" (6mm) to 3/4" (18mm)
 Dry Primes up to 18 Feet of Water
 Free Standing Support Base

Solids Range + 1/8" (3mm) to 1/2" (12.7mm)
 Dry Primes up to 20 Feet of Water

SIZING to extend MTBF and... lower total cost of ownership

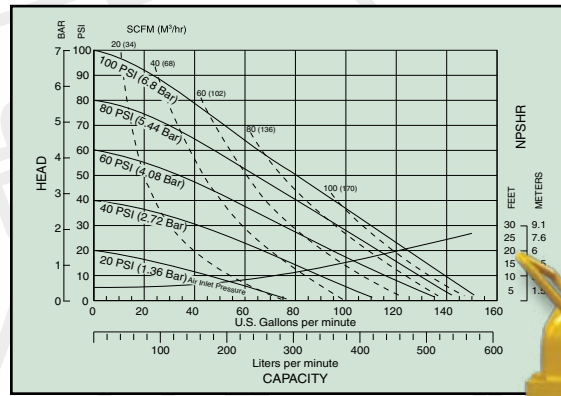
Pumping requirements (flow & head) for most applications can be met by multiple sizes of pumps. Talk to Warren Rupp's application engineers to assist you with a size selection which best fits your total cost of ownership budget. An appropriately sized-up pump will lower the consolidated initial investment, repair, labor and energy costs. This BEST PRACTICE ensures desirable returns on the initial investment frequently measurable in weeks.

EXAMPLE: 80 GPM @ 30 PSI



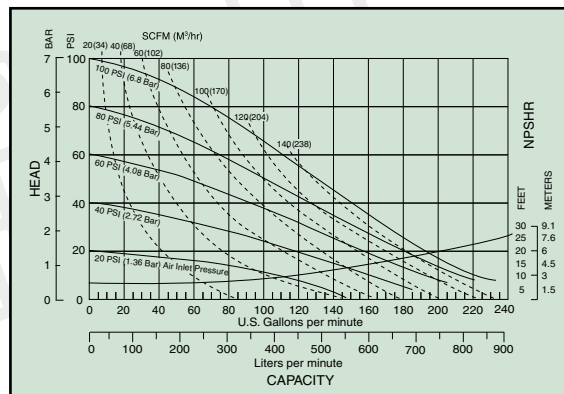
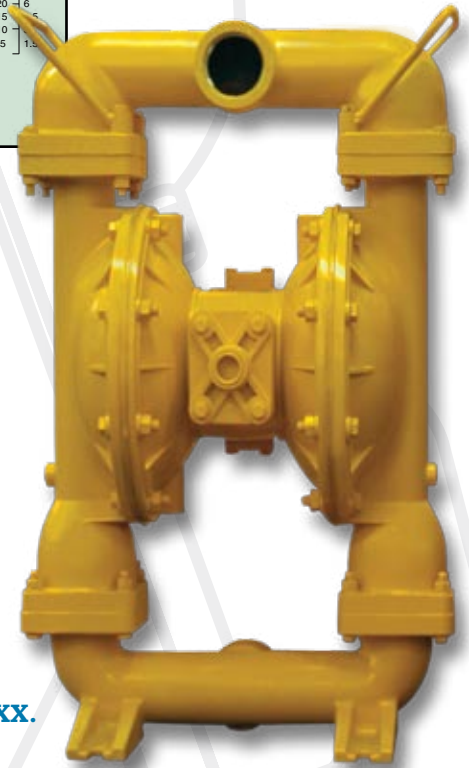
Standard Duty Metallic Pumps Ideal for Mine Duty Applications

Standard Duty Metallic Pumps are ideally suited for on-demand, portable, moderately abrasive fluids, and suspended solids. Standard duty metallic pumps are constructed in Aluminum, Cast Iron, Stainless Steel and Alloy C with elastomer, TPE (thermal plastic elastomer) and PTFE diaphragm and check valve options.



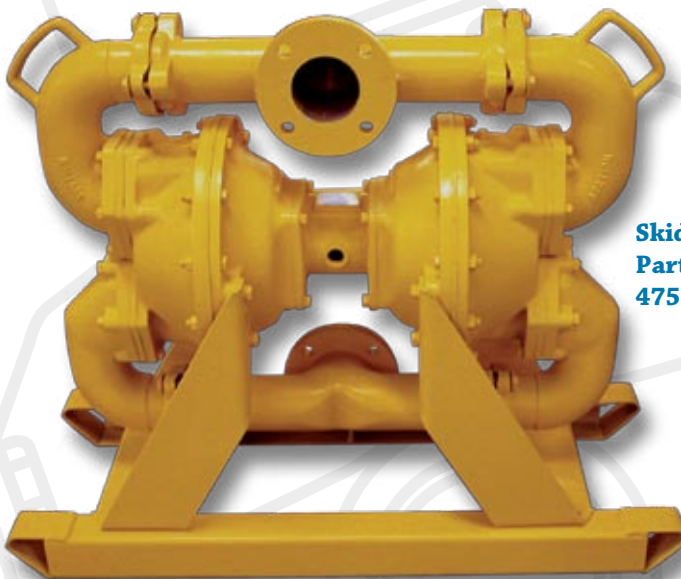
S20 Performance Curve

S20XXXXXXXXHXXX.



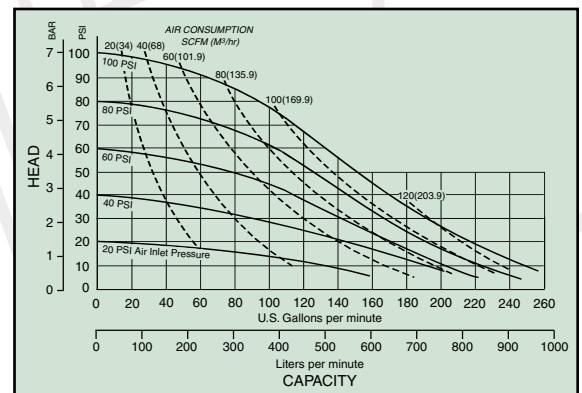
S30 Performance Curve

S30XXXXXXXXHXXX.



**Skid Base Kit
Part #
475.040.000.**

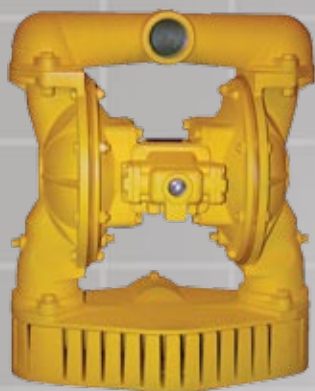
SA3-C Performance Curve



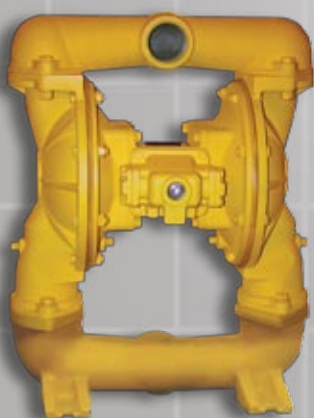
Consult factory for skid base dimensions.

Skid Mounted SA3-C

Common Air End Center Section Kit a 2" Mine Service Duty Ball Valve

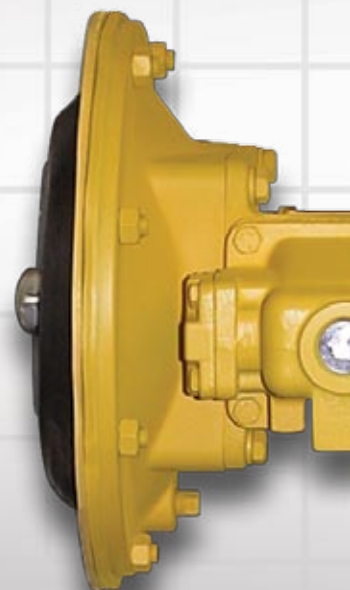


Model MSB2-A
Common Air Center
Section Kit 475.246.XXX.* +
Fluid End Conversion
Kit 475.248.000. =
Mine Service Duty Ball Valve
Pump with Strainer Base



Model MSB2-B
Common Air Center
Section Kit 475.246.XXX.* +
Fluid End Conversion
Kit 475.249.000. =
Mine Service Duty Ball Valve
Pump with Suction Manifold
Mounting Feet

Common Air Center
outer plate t
Kit 475.2



***AVAILABLE MATERIALS: Kit 475.246.354. Santoprene • Kit 475.246.360. Buna •**
Kit 475.246.363. Viton • Kit 475.246.364. EPDM • *Kit 475.246.365. Neoprene

Rely on the field-proven experience, below and above ground, of SANDPIPER®
...to deliver the rugged performance needed for all mine

Here's Why:

A Modular Family of Air-Operated Double Diaphragm (AODD) Pumps that Share a Common Air Center Section

The unique, common air center section design found on both the SANDPIPER® MSA2 Flap Valve Pump and MSB2 Ball Valve Pump allows easy on-site reconfiguration of either pump to meet above or below ground pumping requirements.

For Above Ground Applications such as dewatering, sump transfer, chemical or wastewater treatment, acid bath and mined product processing operations, the SANDPIPER design:

- is available as a standard or heavy duty ball valve pump or industry-leading flap valve pump for large solids up to 2" diameter.

- **commonality of parts** results in **easier maintenance, reduced service training time, and lower parts inventories.**

For Below Ground Applications such as drift dewatering, mine face dewatering, sump transfer, and nuisance dewatering, the SANDPIPER pump's:

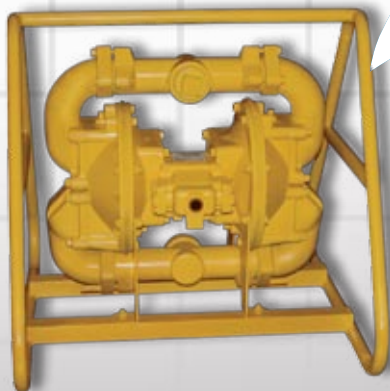
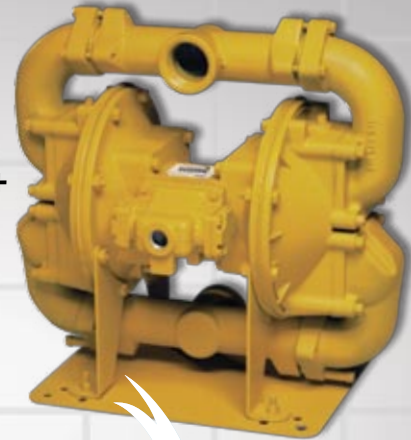
- **rugged, heavy duty** thick wall castings offer a longer *Mean Time Between Failures (MTBF)* than other standard duty pump designs specified for underground use.
- **field-proven sealless, self-priming, dry-running design and on off/on reliability air valve**
- **performance guaranteed** Externally Serviceable Air Distribution System (**ESADS+Plus®**) make it ideal for below ground applications.

Easily Accommodates On-Site Change from to a 2" Mine Service Duty Flap Valve

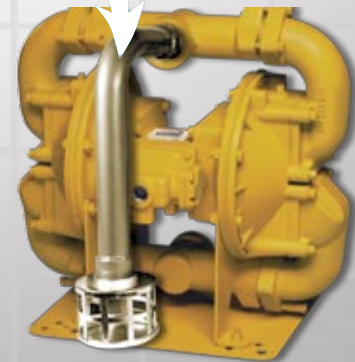
ter Section from
o outer plate
246.XXX.*



Model MSA2-A
Common Air Center
Section Kit 475.246.XXX.* +
Fluid End Conversion
Kit 475.247.000. =
Mining Service Duty
Flap Valve Pump



Model MSA2-A with
Optional Roll Cage Base
Kit 474.042.000. =
Model MSA2-B Pump



Model MSA2-A with
Optional Suction Stub &
Strainer Kit 474.039.000.

Pumping Solutions from the industry-leading pump manufacturer Warren Rupp
pumping applications at the lowest possible cost of ownership.

- **MSA2 Flap Valve Pump** features a **bottom discharge design** for heavy solids concentration to eliminate broken or bent connecting rods and premature diaphragm failures.
- **MSB2 Ball Valve Pump** self-primers to 20 feet of water and the MSA2 Flap Valve Pump primes to an industry-best 24 feet of water for lift applications.
- **All Bolted Construction**—simplifies maintenance and provides safe, field-proven leak-free operation (a Warren Rupp feature since 1965).
- **Exclusive 5 Year Warranty**—is your guarantee workmanship and materials meet quality control standards built into Warren Rupp's Six Sigma manufacturing philosophy.

*Consult factory for details concerning Warranties.

Reconditioning Wet End Kits: for MSB2

476.042.354. - Santoprene
476.042.360W. - Buna
476.042.363W. - Viton
476.042.364W. - EPDM
476.042.365W. - Neoprene

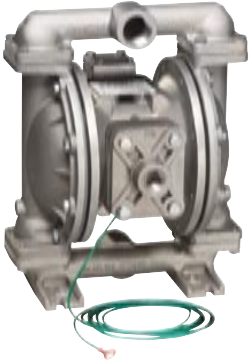
for MSA2

476.243.354. - Santoprene
476.243.360. - Buna
476.243.363. - Viton
476.243.364. - EPDM
476.243.365. - Neoprene

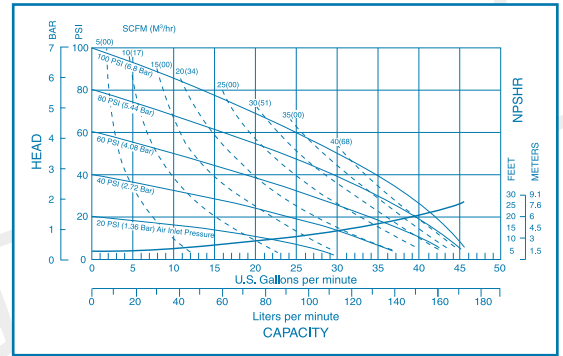
SANDPIPER
A WARREN RUPP PUMP BRAND

Other SANDPIPER® Special Duty Mining Products

UL Listed for Flammable Liquid Pumping Requirements



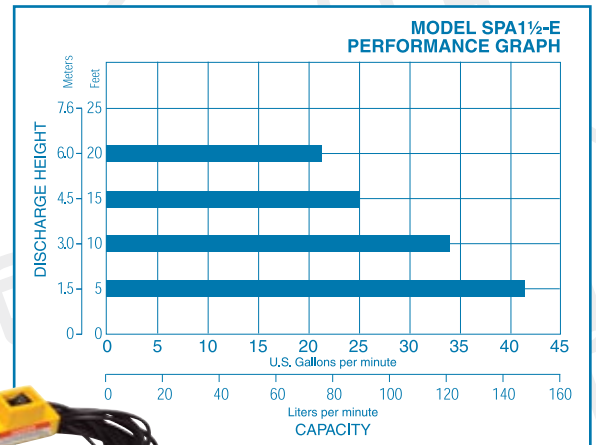
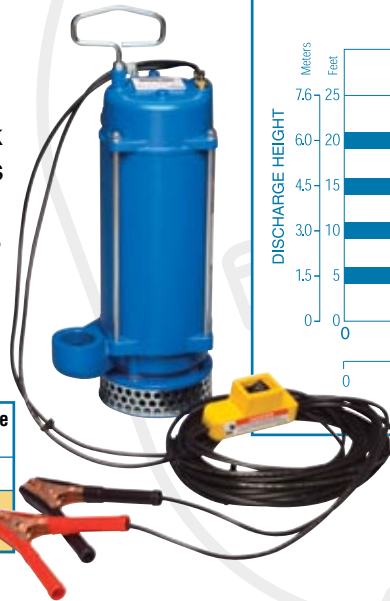
SANDPIPER® UL Pumps are designed to meet UL79 (Underwriters Laboratory) standards for diaphragm pumps handling flammable liquids. The pump features all aluminum construction with approved Buna or Virgin PTFE elastomers and is fully groundable to prevent static discharge. In addition, SANDPIPER Pumps are ATEX 100A Compliant together making SAFETY our utmost concern.



Pump Models	A	B	C	D	E	Connection Style	Pipe Size	Displacement Per Stroke	Max Flow Per Minute	Max Solids Handling	Max Discharge Pressure
	Height	Width	Depth	Bottom of Base to Center Line of Suction	Center Line of Discharge						
	inches (mm)	inches (mm)	inches (mm)	inches (mm)	inches (mm)		inch (mm)	gal (liter)	gal (liter)	inch (mm)	psi (bar)
U1F	12 23/32 (323)	10 1/4 (260)	10 3/8 (264)	1 3/32 (28)	11 27/32 (301)	1" NPT	1 (25)	.11 (.42)	45 (170)	.25 (6)	125 (8.6)

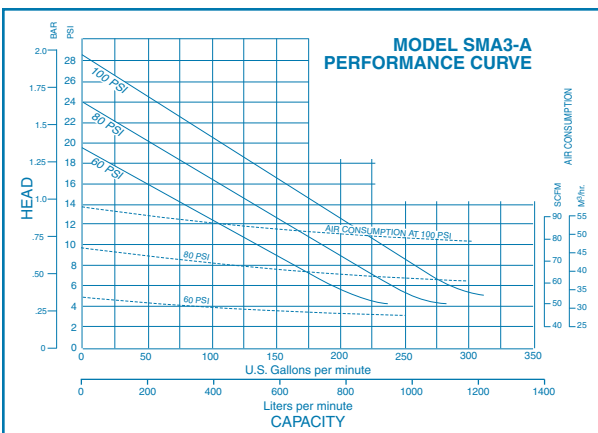
Dewatering Duty—Submersible PortaPump®

PortaPump® Submersible, Battery-Powered Pumps operate using any 12-volt car or truck battery. Extremely portable, the pump weighs only 33 pounds (15 kg), can fit through openings as small as 10" (25 cm), and comes equipped with cables and battery clamps. It is also electronically safe and whisper quiet.



Pump Models	Pipe Size	Max Flow Per Minute	Max Solids Handling	Max Discharge Height
	Inches (mm)	gal (liters)	Inches (mm)	feet (m)
SPA11/2-E3	1.5 (40)	43 (163)	1/16 (1)	25 (7.6)
SMA3-A	3 (80)	300 (1140)	1.5 (38)	65 (19.8)

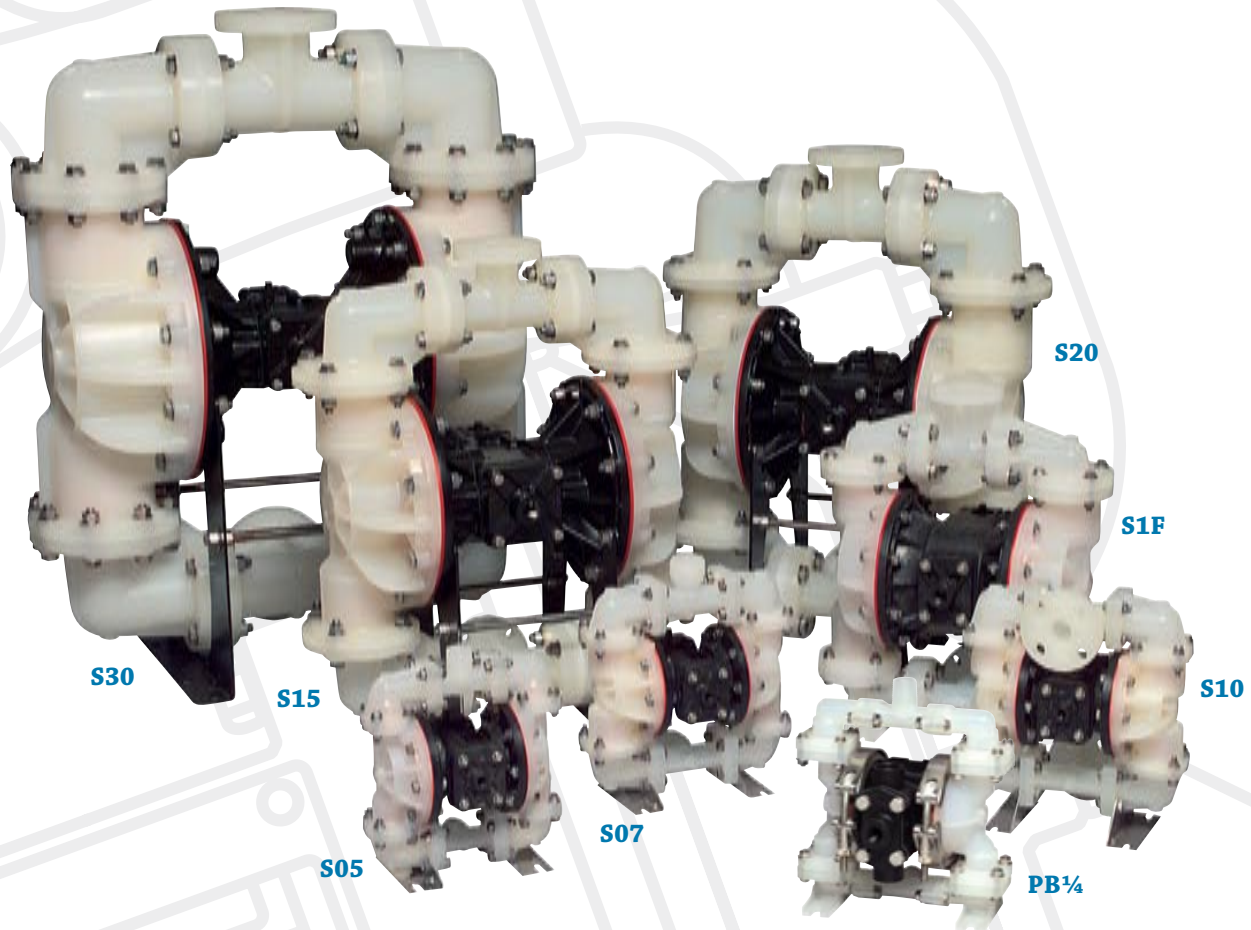
Dewatering Duty - SludgeMaster™ Submersible Trash



SludgeMaster™ Submersible, Air-Powered Trash Pumps handle mud, leaves, twigs, sand, sludge, trash-laden water, and soft solids to 1 1/2" (3.8 cm). High capacity with a low head, the pump weighs only 59 pounds (26 kg), can fit through an opening as small as 14" (35 cm), and features sturdy construction for rough handling and long life. An optional rock screen is available.



Standard Duty Non-Metallic Pumps Ideal for Mine Chemical Duty



Standard Duty Non-Metallic Pumps are ideally suited for highly corrosive fluids, portable, low abrasive fluids, and suspended solids. Standard Duty Non-Metallic Pumps are constructed in Polypropylene, and PVDF/Kynar® with TPE (thermal plastic elastomers) and PTFE options in diaphragms and check valves. Because of the non-metallic materials these pumps can dewater high or low PH levels underground.

Mining Chemical Duty

Low Flow

PB¹/₄ - 0-4 gpm (15 liter)

S05 - 0-14 gpm (52 liter)

S07/S10 - 0-23 gpm (87 liter)

Higher Flow

S1F - 0-45 gpm (170 liter)

S15 - 0-90 gpm (340 liter)

S20 - 0-150 gpm (568 liter)

S30 - 0-238 gpm (9010 liter)

Over 40 Years Underground Pumping Experience!



Coal Mining



**Dewatering -
Solids Handling**



**Concrete Wall Support
Transfer Pumping**



Drift Dewatering



Mud & Muck Pumping



**ATEX/UL Listed
Fuel Transfer Pumping**

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RUPP®**

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