

**CHICAGO  
INDUSTRIAL  
PUMP  
COMPANY**

**PITBULL<sup>®</sup> PUMPS**



**P C**





# PITBULL® PUMPS

The SMART technology for pumping solid abrasives, trash, slurries and corrosives.

## PUMPING SOLIDS AND ABRASIVES: WHY THE PITBULL PUMP MAKES SENSE

- The **entire path** through the pump is a full pipe diameter or bigger.
- **Big Diameter Passages = Low Velocity = Low Erosion**
- Pass materials like coal chunks, bottom ash, clinkers, sand and silt without the heavy wear and high cost materials.
- Minimize solids settling problems by removing liquid and solids as they enter the sump instead of waiting for a high level 'on' while the solids settle out.
- The PITBULL® can pump big solids without requiring a high flow rate like a centrifugal pump does. For example; passing a 3" solid against 30' or 200' of discharge pressure can be done by just adjusting the PITBULL's air pressure. The centrifugal would need a different impeller and motor. Change applications? Solids %? Just adjust the air pressure!

## TYPICAL INDUSTRIES:

- Power Generation
- Mining and Refining
- Petrochemical
- Steel and Aluminum
- Grain Processing
- Pulp and Paper
- Wastewater Treatment
- Oil and Gas
- Meat Packing

## HOW IT WORKS

### THE PITBULL PUMPING PRINCIPLE

#### FILL STROKE:

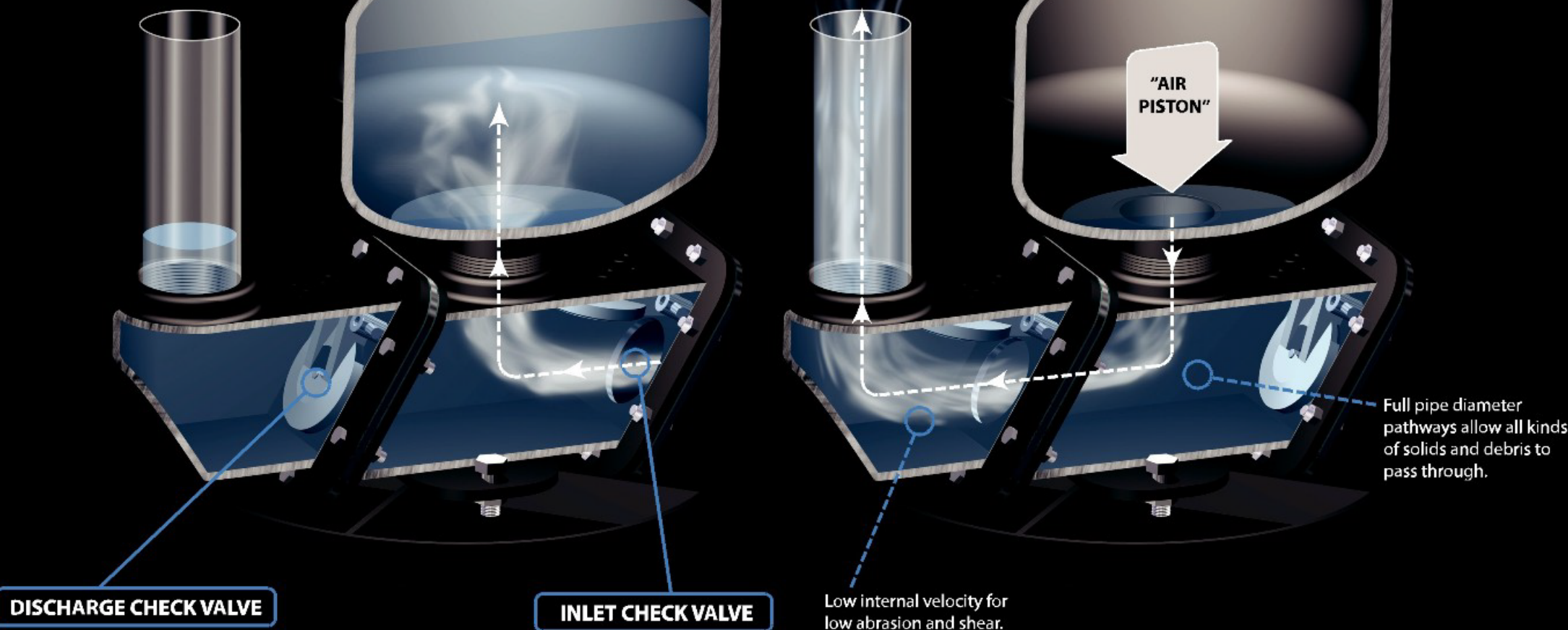
Inlet check valve opens, and liquid is pulled into the PITBULL®. The discharge check valve is held closed.

#### AUTOMATIC CYCLING:

As the PITBULL® fills, the Control Panel senses a full pump, and cycles to the discharge stage.

#### DISCHARGE STROKE:

An "air piston" of compressed air pressurizes the chamber to close the inlet check valve, the discharge valve opens and the liquid is pushed out.



## FILL STROKE

## DISCHARGE STROKE

### SIMPLE TO APPLY:

**Flow Rates:** 20 - 800gpm

**Solids capacity:** 2" - 5.5" Diameter

**Discharge Pressure:** 0 - 100psi

**Temperature:** Up to 300°F

- Any flow rate and head to the left of the maximum flow curve will work
- Confirm the solids capacity of the model chosen is big enough
- Pick materials for chemical compatibility
- Cycling is automatically matched to the inflow so no level controls are needed
- Control panels are available in fully pneumatic and electropneumatic configurations
- No electricity required for X-P (Hazardous) or remote locations

### PUMPING CORROSIVES AND PROBLEM FLUIDS:

With **NO mechanical seal, shaft or diaphragm**, corrosive and strong chemical applications are much easier.

A PITBULL® in a chemical sump can handle all of the trash and solids that get carried in while being fully chemical resistant. The best of both worlds.

### SPECIALITY APPLICATIONS:

**Low Shear, Low Emulsion:** Oil/water separators, polymers, etc.

**Skimming Floating Layers and Debris:** Hydrocarbons, polyethylene pellets, scums.

**Hot Condensate:** Boiler blowdown and high temperature service.

- NO IMPELLERS**
- NO SEALS**
- NO DIAPHRAGMS**
- NO MOTORS**
- NO SHAFTS**
- NO BEARINGS**

### PUMPING TRASH AND DEBRIS:

- Full port check valves open wide to pass debris ranging from long and stringy to large and hard.
- The PITBULL's® pumping action cycles the check valves, helping large debris to work through the pump instead of plugging it.
- There is no impeller to wrap stringy materials or bind. There are no diaphragms to cut with sharp objects, attack with heat, chemicals and wear.
- Centrifugal pumps must be large by design to pass large solids, especially with higher heads. This makes them oversized and ill suited for low and medium flow sumps with large debris.

### EXCELLENT AT PUMPING:

Bottom ash, coal slurry and chunks, sand, mud, mill scale, lime slurry, bags, bottle caps, gloves, sewage, blood, fats and hides, manure, mop strings, machining chips, fibers/lint, wood chips, waste pulp, turnings and coolant, hot tallow, offals, broken glass, foundry sand, etc.



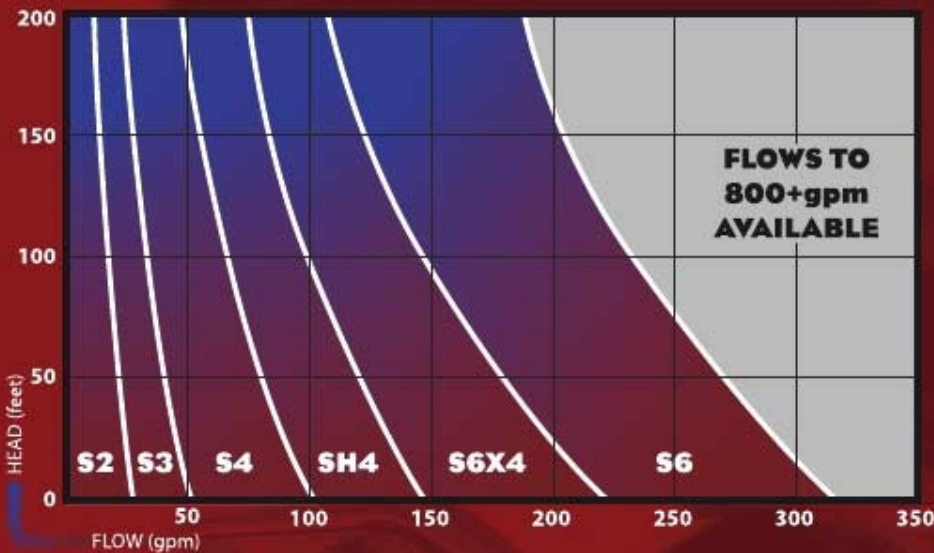
## PUMP SELECTION

1. Find your flow and head requirements on the flow chart.
2. Pick any pump model with a maximum flow curve to the right of your requirement. Factor in max solid size and sump dimensions if applicable.
3. Match material of construction and valve seat option to the liquid.

## AIR CONSUMPTION

1. Find the approximate flow and head on the consumption chart.
2. This scfm number is based on constant, steady flow. But most sumps have intermittent flow and the PITBULL® only uses air to match the incoming rate. So the actual air consumed is matched to the actual gallons pumped (10 gpm of flow from a PITBULL® capable of 200 gpm uses only the 10 gpm requirement).
3. The chart applies to all PITBULL® models, limited by the specific pump's maximum flow curve.

## MAXIMUM FLOW CURVES



## AIR CONSUMPTION IN SCFM

	10ft	20ft	30ft	60ft	90ft	120ft	150ft	200ft
10 gpm	1.9	2.3	2.8	4.1	5.4	6.7	8.0	10.1
20 gpm	3.8	4.7	5.5	8.1	10.7	13.3	15.9	20.3
40 gpm	7.6	9.3	11.1	16.3	21.5	26.7	31.9	40.5
60 gpm	11.4	14.0	16.6	24.4	32.2	40.0	47.8	60.8
80 gpm	15.2	18.7	22.2	32.6	42.9	53.3	63.7	81.1
100 gpm	19.0	23.4	27.7	40.7	53.7	66.7	79.7	101.3
150 gpm	28.6	35.1	41.5	61.0	80.5	100.0	119.5	152.0
200 gpm	38.1	46.7	55.4	81.4	107.4	133.3	159.3	202.6
250 gpm	47.6	58.4	69.2	101.7	134.2	166.7	199.2	253.3
300 gpm	57.1	70.1	83.1	122.1	161.0	200.0	239.0	304.0
400 gpm	76.1	93.5	110.8	162.8	214.7	266.7	318.7	405.3



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## CONTROL PANELS / OPERATION

AP200 (all pneumatic) and EP250 (electro-pneumatic) control panels automatically cycle the pumps to match incoming flow. Additional level control not required.

Panels can be configured to operate the pumps in the gravity filled mode or vacuum filled (flow induced) mode. Use the flow induced mode for heavy solids and/or lowest operating levels.

## MATERIALS OF CONSTRUCTION

### Pump and Valves:

Steel, 304SS, 316SS, Vinyl Ester, A-20, or C-276

### Valve Seats:

Nitrile, Viton, EPDM, Urethane, or Teflon

## PUMP SPECIFICATIONS

Model	Discharge	Footprint	Max Solid (DIAMETER)
S2	2" NPT	12" x 18"	2"
S3	3" NPT	14" x 20"	3"
S4	4" NPT	22" x 27"	3.75"
SH4	4" 150# flg	20" x 30"	3.75"
S6X4	4" 150# flg	24" x 36"	3.75"
S6	6" 150" flg	24" x 36"	5.5"

Go to [pitbullpumps.com](http://pitbullpumps.com) for full specifications

## OTHER PRODUCTS



SLUDGE AND FILTER PRESS FEED PUMPS



TRANSFER PUMPS



SLURRY/SOLIDS SUBMERSIBLE



HOT CONDENSATE PUMP/TANK PACKAGE