

**Re: LARGEST TREATMENT
PLANT IN THE WORLD**

1.3 billion GPD (gallons per day) capacity

V-RAM
SOLIDS

Application Report

Fall 2008



Come see the high solids V-Ram Pumping Systems in Chicago

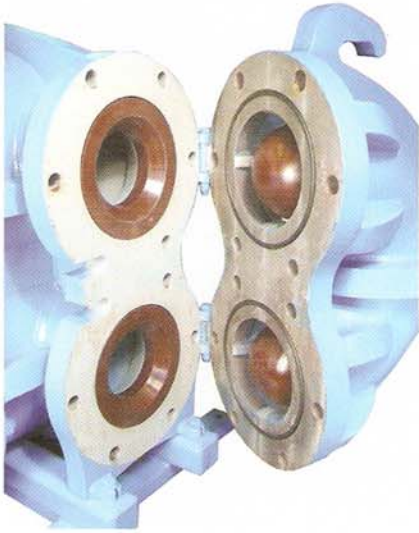
*Four V-Ram pumping systems at MBM
Biosolids Pelletizing Facility in Stickney,
Illinois meeting complex process demands*

V-Ram delivers wet cake sludge to pelletizing
operation with four 8DDH pump modules with:

- Double 96" x 16" augers
- 100GPM / 100HP hydraulic units
- PLC controls
- 17-ton enclosed hoppers with load cells



V-Ram warranties Ball Valve System for 30,000 hours

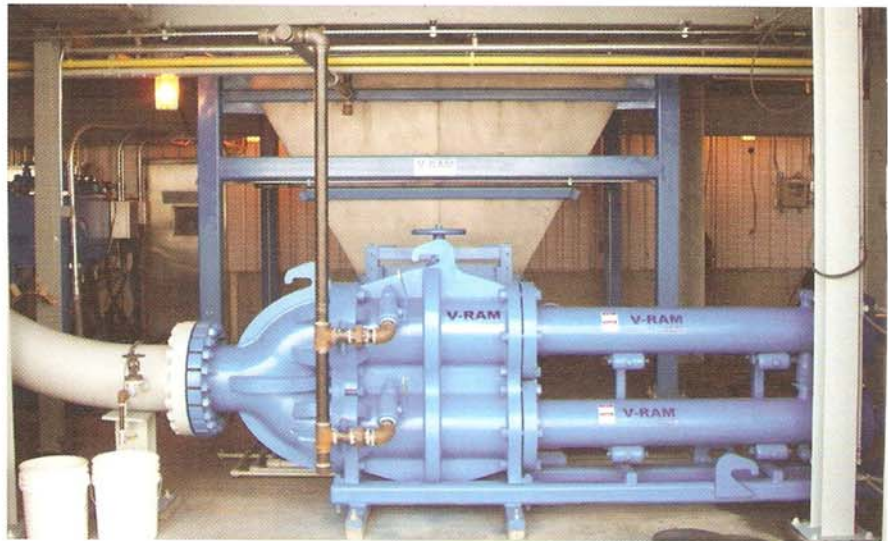


The V-Ram Solids Ball Valve and Seat is a product resulting from years of experience pumping high solids municipal sludge. The need for a simple valving system was the driving force in a four-year development program. The Ball Valve has far superior wear and maintenance characteristics compared to poppet valves.

Ball valves have superior wear and maintenance characteristics

Ball Check Valves:

1. Have a self-cleaning action for rags and other materials which would block other types of valves.
2. The effective wear surface of the ball valve is 50 times greater than that of poppet valves. The urethane wear life is ideal for this application.
3. Ball valve components are readily accessible through hinged sections of the pump head and can be replaced within two to three minutes after the pump is open.



V-Ram pumping piston advantage:

With the V-Ram piston, instead of replacing the whole piston, the customer replaces only the worn seals. The seals are 20 percent of the cost of a complete piston and last two to five times longer than the typical Buna-N piston. Including the saved labor of replacement, V-Ram pistons average five percent of the maintenance cost of the typical Buna-N piston.



Hydraulic Unit

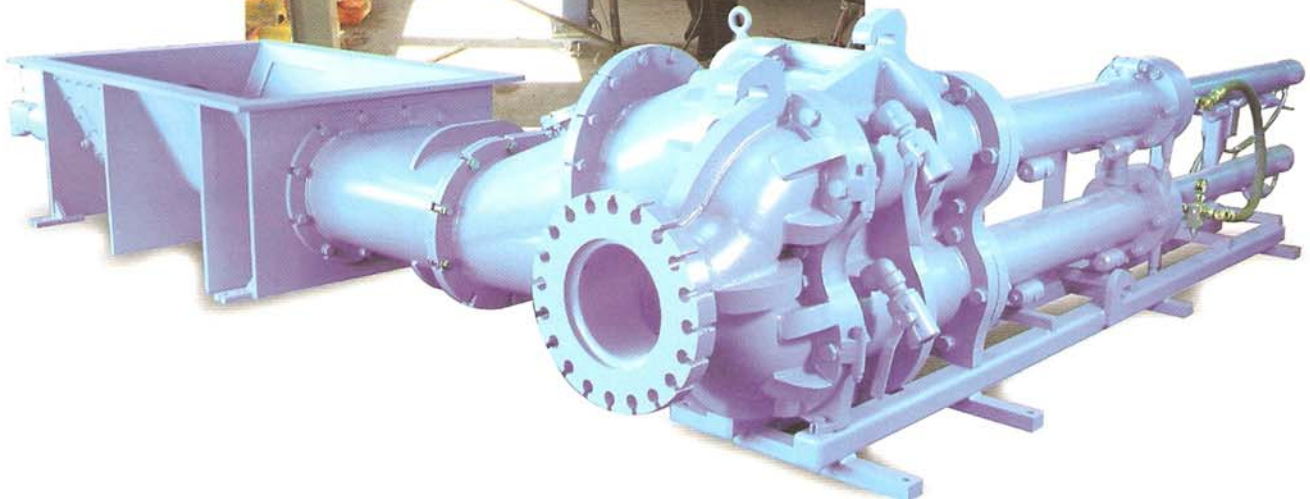
The hydraulic unit consists of a large oil reservoir, a multistage piston pump. The pump and auger run at a controlled speed and efficiency. Pump flow management maximizes output and minimizes pumping module wear.



The V-Ram pumps at the MBM Biosolids Pelletizing Facility in Stickney, IL are working well delivering wet-cake sludge to the dosing hoppers for the pelletizing operation. The pump's controls are easily integrated with MBM Biosolids' other equipment. V-Ram has been able to view the controls remotely and diagnose a problem in minutes, putting the facility back on line quickly.

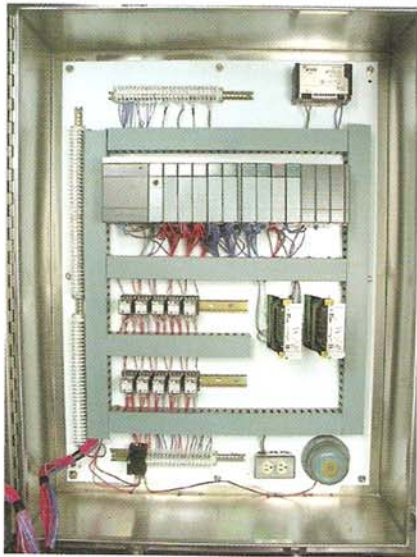


V-Ram offers custom hoppers and silos to fit your application



Controls

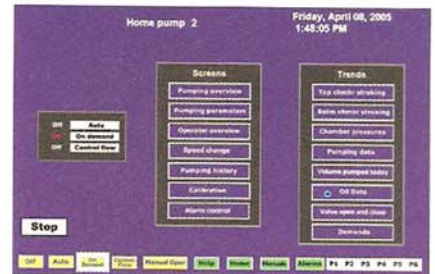
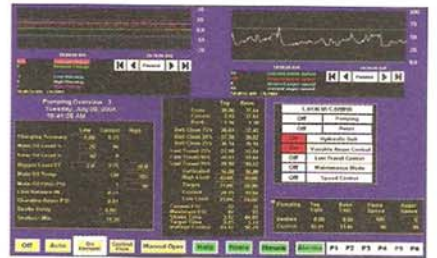
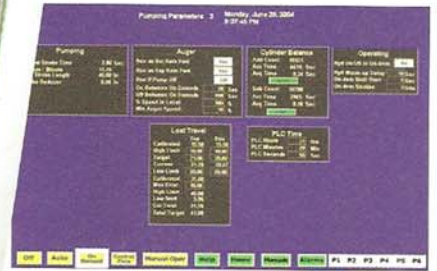
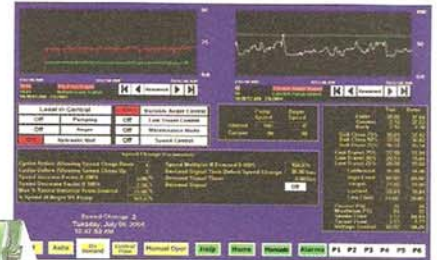
V-Ram controls consist of a PLC and PC operator interface which can be readily integrated into your system and is easily configured. Pumping volume can be controlled and compiled in several ways for EPA reporting. The control monitors pumping faults and informs the operator of proper corrective action.



Let V-Ram help with your maintenance issues by trending pump operation metrics, such as pumping pressure, hydraulic pressure, fill points, auger speed and other diagnostic information. V-Ram has a 95% success rate analyzing and diagnosing issues without leaving the home office by connecting remotely to look at the trends of what the pump was doing when the problem occurred.



*Highly customizable,
PC-based control system
simplifies operations
and reporting*



V-RAM
SOLIDS

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V-Ram has been in material handling since 1895.