



## **POLYGONMACH PMVS-90 PORTABLE SAND MANUFACTURING & WASHING SYSTEM**

PolygonMach PMVS-90 Portable Sand Manufacturing & Washing Systems provide a versatile and highly efficient solution for sand production and washing. These systems offer a flexible sand manufacturing and precise final sizing solution for processing various materials. The PMVS-90 can handle both hard stone through a Vertical Shaft Impactor (VSI) and soft stone via a Tertiary Impact Crusher (HSI), depending on the application requirements. Arriving on-site as compact, trailer-mounted units, the PMVS-90 ensures quick setup, ease of transportation, and rapid deployment, efficiently removing impurities and achieving optimal sand quality.



### **Washing**

The Washing Screw module enhances the PMVS-90's capability to produce clean, high-quality sand by efficiently removing clay, silt, and other fine impurities. Available as a single or double screw configuration, it can be integrated with both the Vertical Shaft Impact (VSI) and Tertiary Impact Crusher setups. When installed, the vibrating screen is limited to two decks to accommodate the washer's dimensions and optimize slurry handling. This module is ideal for applications requiring high-spec washed sand or when operating in environments with heavily contaminated feed materials.

### **Vertical Shaft Impact (VSI)**

The VSI module uses high-speed rotor technology to achieve precise particle sizing and uniform shaping. It efficiently processes hard stone materials by impacting material against specially designed liners or onto rock shelves. The VSI module includes adjustable rotor speeds for precise production control, capable of handling maximum feed sizes up to 70 mm and achieving capacities between 50-200 tph.



### **Tertiary Impact Crusher (HSI)**

The Tertiary Impact Crusher module provides efficient and gentle crushing of softer stones, ensuring fines material generation while delivering excellent shaping and final sizing. This module offers effective crushing through the interaction between the crushing chamber and rotating hammers, ideal for applications requiring fine and high quality aggregate production.





### Feeder Hopper

**Capacity:** 10 m<sup>3</sup>

**Material:** 6mm S355JR steel, HARDOX 450 lining

**Feature:** Optional hydraulic grid

### Belt Feeder

**Dimensions:** 1200 x 2500 mm

**Power:** 7.5 kW vibrating motor

**Options:** Impact bars, Magnetic Separator, Metal Detector

### Vertical Shaft Impact Crusher (VSI) - PV 90

**Model:** PV 90

**Max Feeding:** 50 mm

**Rotor:** Ø900 mm, adjustable 1200–1800 rpm (50–70 m/s)

**Maintenance & Safety:** Rotor lifter, safety-switch inspection door, V-belt tensioner

**Automation:** Vibration sensor, feed control, operating hours & production estimate display

**Lubrication:** Central oil system

**Options:** Rock on Rock, Rock on Steel, Open Rotor, MAGOTTEAUX wear liners

### Vibrating Washing Screen

**Size:** 2000 × 6000 mm, dual-deck with washing screw or triple-deck (dry)

**Motor:** 22 kW

**Build & Safety:** Huck-bolted, auto lubrication, one-piece S355JR side plate

**Options:** Half or full-length washing nozzles

### Conveyor Systems

**Dimensions:** From 650x10000 mm to 1200x13000 mm

**Hydraulically Operated:** Hydraulic set-up and orientation, oversize to closed loop or to stockpile

**Features:** Heavy-duty belts, auto-lining scrapers, C45 steel drums with vulcanized rubber

**Safety:** Emergency stop buttons, safety pull-cords



### Support & Structure

**Transport:** Two-axle road-legal chassis

**Installation:** Galvanized walkways, platforms, optional plant lighting

**Maintenance:** Full servicing platform around each component allow access to all part for ease of maintenance

### Control & Automation

**Control Panel:** Schneider electric components

**Safety:** High-voltage protection, audible and illuminated emergency warnings

**Automation:** Sequence-operated motor control, VFD feeder speed control

### Mobility & Setup

**Hydraulic Self-Erecting Legs:** Allows crane-free installation on-site, significantly reducing installation time and labor cost.

**Fully Prewired & Preamsembled:** Delivered as a plug-and-play system, minimizing commissioning time and complexity.

**Road Legal Transport:** Built on a certified road-legal chassis, the unit can be transported with a standard truck head, requiring no special transport permits.

### Fine Material Washer

**Dimensions:** Ø800 x 6000 mm single Screw of Ø600 x 5000 mm double screw

**Power:** 2 x 15 kW motors

**Lining:** Rubber or FeroCast

**Safety:** Emergency stops, safety pull-cord

**Options:** Overflow pump for extraction of <100µm to further process







Transport Layout



Full-Lenght Washing Nozzle

## Features & Benefits

- **Variable Speed VSI Control:** Adjustable rotor speeds (1200-1800 rpm) ensure precision sand production tailored to your needs.
- **Tertiary Crushing Control:** 2, 3 or 4 blow bar configurations and a range of wear-resistant alloy options available for adapting to various material types and applications.
- **High-Quality Sand Manufacturing:** Achieve consistent, high-grade sand with the Vertical Shaft Impactor.
- **Superior Washing & Screening:** Double Fine Material Washer and dual-deck vibrating screen ensure clean and market-ready sand.
- **Ease of Transportation & Setup:** Compact, trailer-mounted design with hydraulic legs allows quick relocation.
- **Durability & Low Maintenance:** Robust construction using S355JR steel and HARDOX 450 lining reduces wear and extends lifespan.
- **Integrated Automation & Safety:** Fully integrated Schneider PLC control system with VFD, comprehensive safety features, and easy operational management.

## Warranty & Service

- **Warranty:** Comprehensive 24-month coverage
- **Support:** Global PolygonMach after-sales

## Applications

Ideal for producing premium sand and washing aggregates in construction, mining, and recycling industries, ensuring high yield and maximum operational efficiency.



PV-90 Rock on Steel



Tertiary HSI Crusher

## Optional Features

- Extended up to 5 years warranty
- Polyurethane or rubber lining for increased wear resistance
- Weighing cells for production monitoring
- Compact water treatment system
- Retractable Hydraulic feed hopper
- Hybrid diesel generator (PERKINS)



Washing Screw



Working Layout



Tertiary Impact Version