

model	drive	flow lit/min	pressure range(bar)
CVR200	mechanical	60-300	0-4
VRM175	mechanical	90-210	0-5
VRH175	hydraulic	90-210	0-50
VRM250	mechanical	240-420	0-5
VRH250	hydraulic	240-500	0-50
VRH350	hydraulic	500-900	0-30
VRH400	hydraulic	900-1200	0-30
VRH500	hydraulic	1200-1800	0-30

Sludge Ram Pumps



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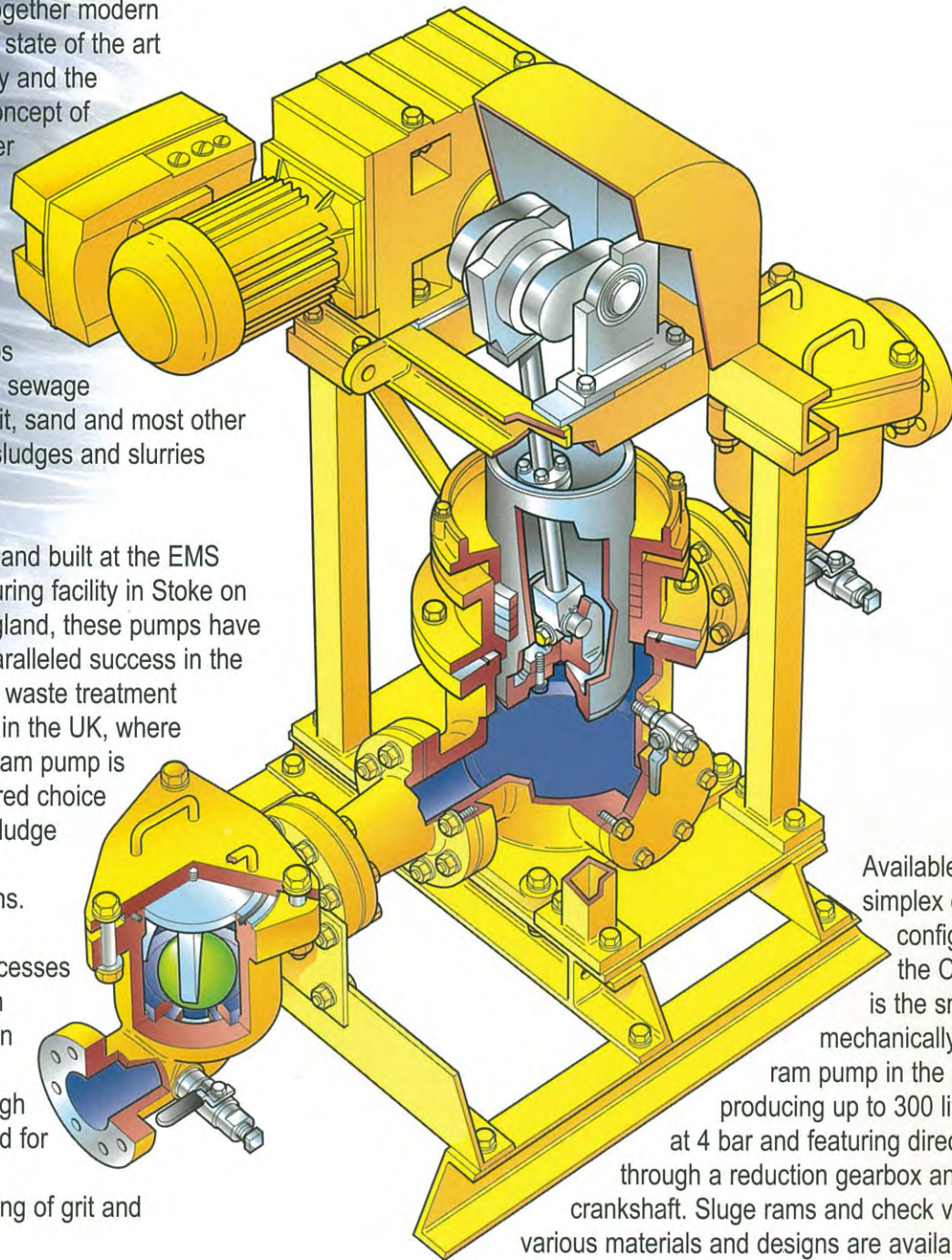
Stoke-on-Trent
England

CVR
Mechanically driven

Over the past ten years, EMS Industries Ltd has brought together modern materials, state of the art technology and the ancient concept of the plunger pump to produce a range of robust reliable ram pumps that pump sewage sludge, grit, sand and most other abrasive sludges and slurries with ease.

Designed and built at the EMS manufacturing facility in Stoke on Trent, England, these pumps have seen unparalleled success in the water and waste treatment industries in the UK, where the EMS ram pump is the preferred choice for most sludge pumping applications.

Other successes have been achieved in pumping grout at high pressure into the sea bed for stabilisation beneath oil platforms and the dredging of grit and sand



Available in simplex or duplex configuration, the CVR200 is the smallest mechanically driven ram pump in the range producing up to 300 litres/min at 4 bar and featuring direct drive through a reduction gearbox and crankshaft. Sludge rams and check valves of various materials and designs are available to suit individual applications.

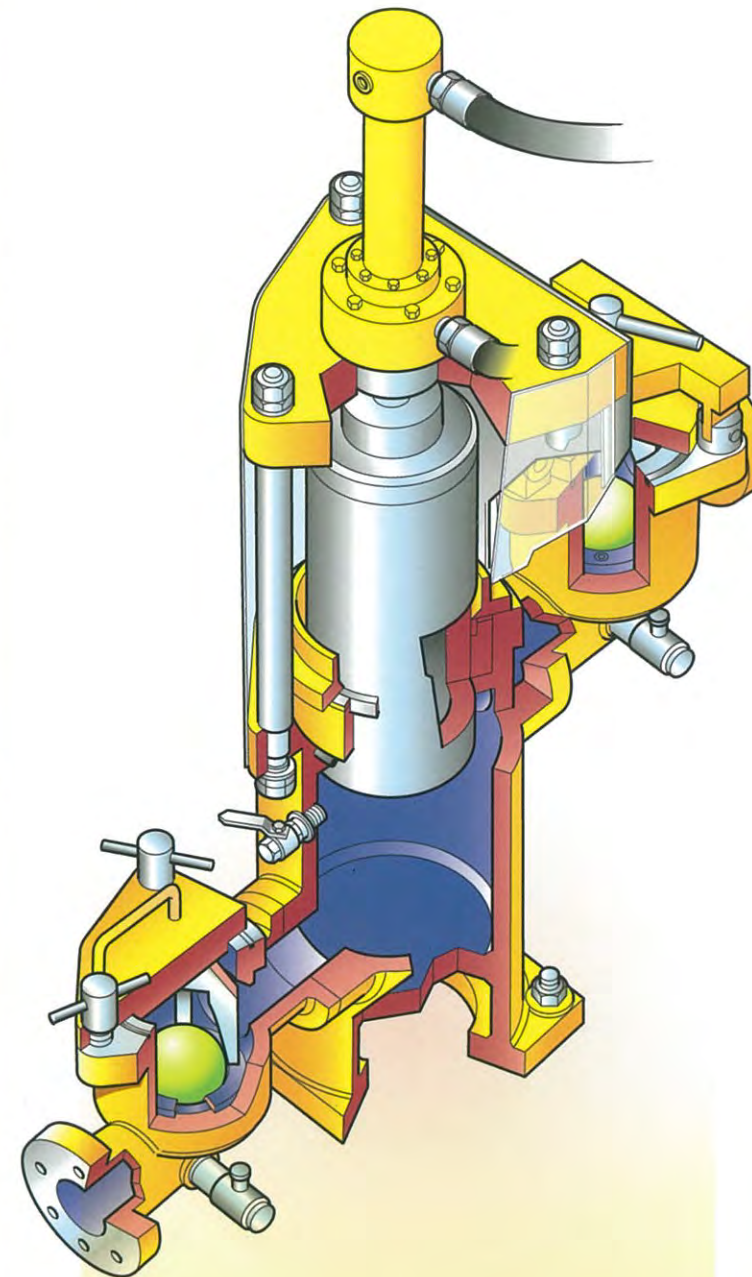
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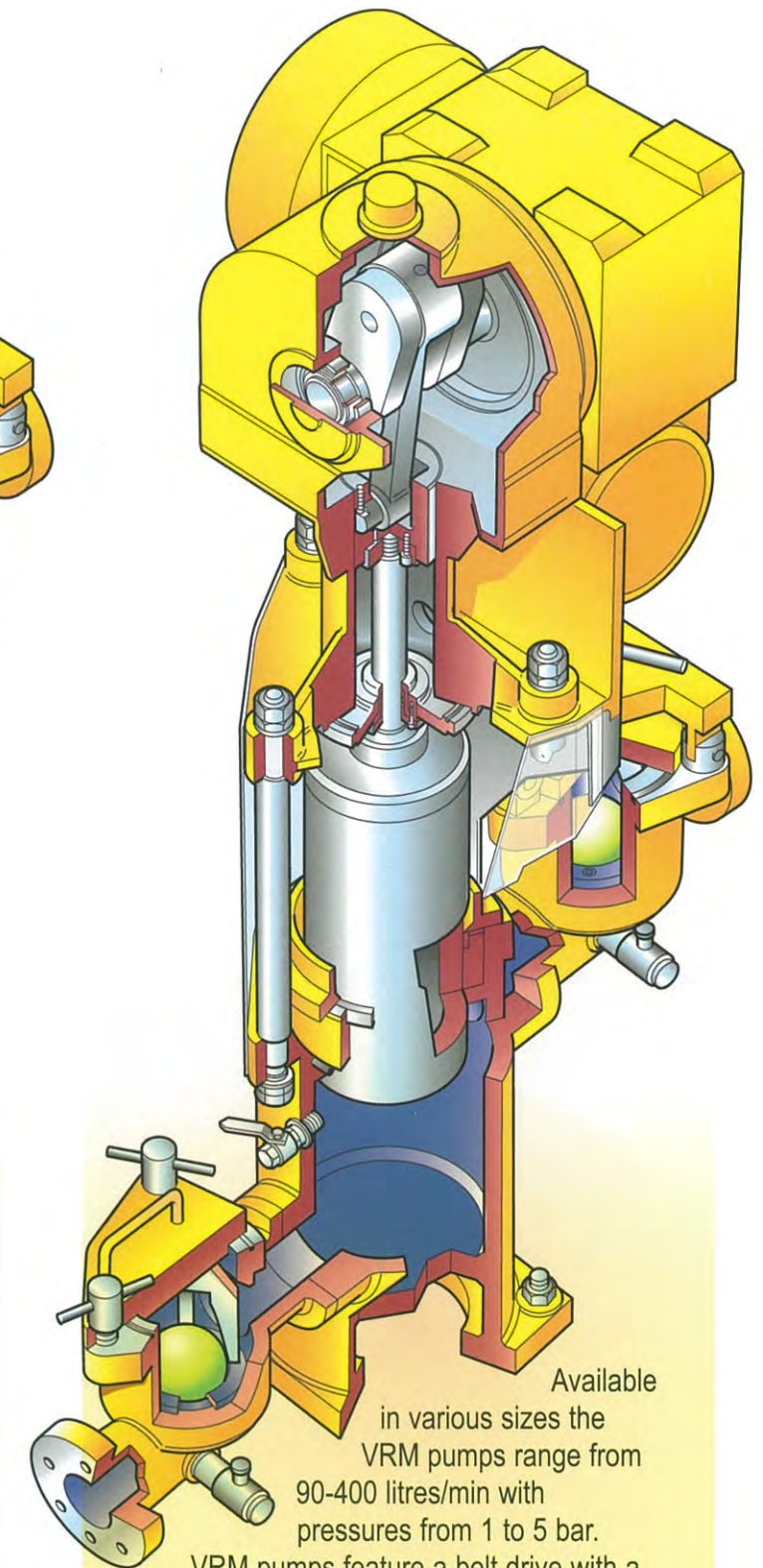
VRH
Hydraulically driven



Available in various sizes the VRH pumps range from 90-1800 litres/min with pressures from 1 to 50 bar. Drive is by a dedicated hydraulic power unit. Sludge rams and check valves of various materials and designs are available to suit individual applications.

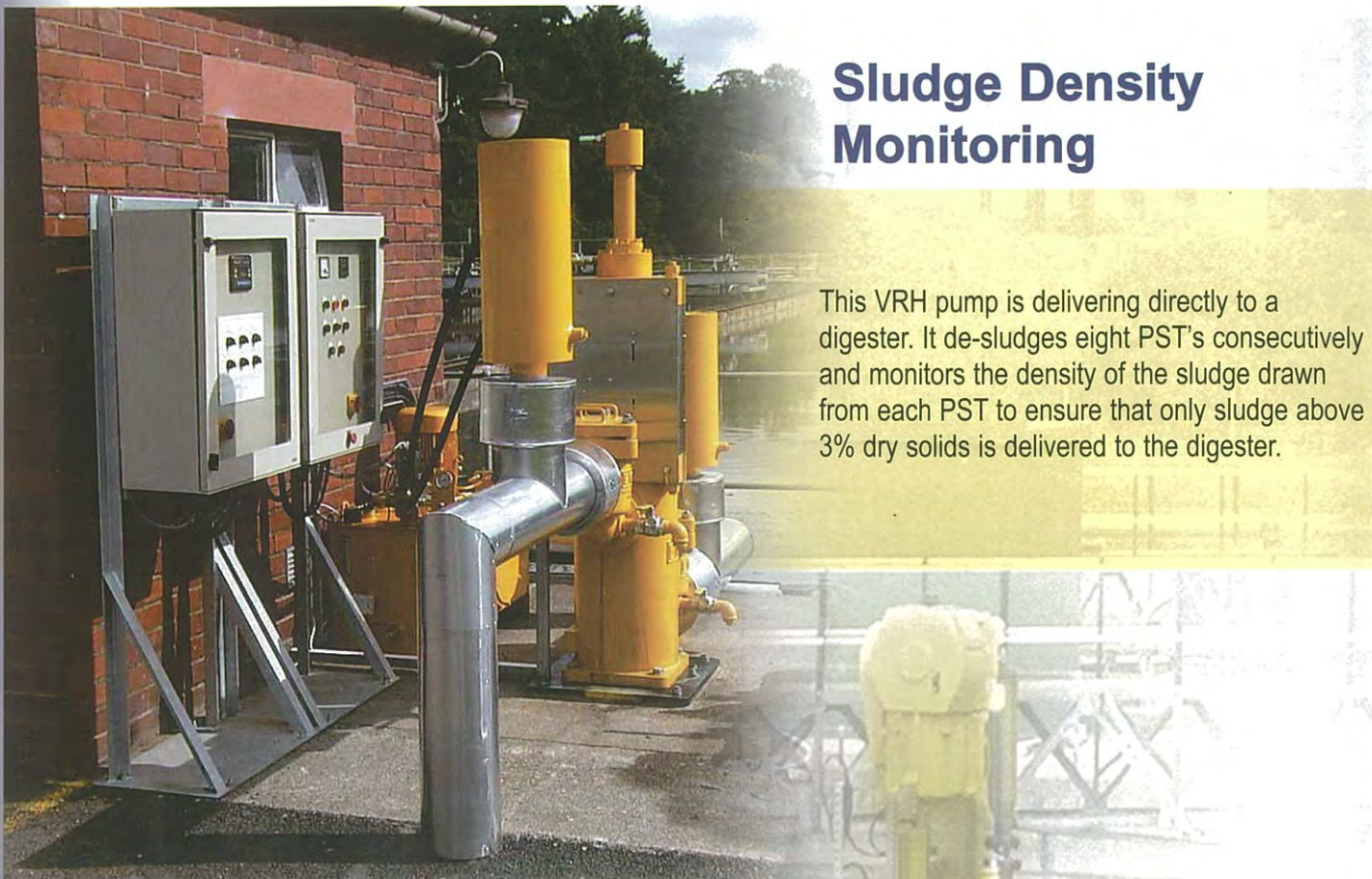
All EMS ram pumps are factory tested and certified to draw 90% vacuum on the suction stroke. This massive suction enables thick sludge to be drawn into the pump.

VRM
Mechanically driven



Available in various sizes the VRM pumps range from 90-400 litres/min with pressures from 1 to 5 bar.

VRM pumps feature a belt drive with a reduction gearbox and crankshaft, which rotates in an oil bath. The crankshaft drives through a crosshead and push rod to impart a perfectly vertical motion to the sludge ram. Sludge rams and check valves of various materials and designs are available to suit individual applications.



Sludge Density Monitoring

This VRH pump is delivering directly to a digester. It de-sludges eight PST's consecutively and monitors the density of the sludge drawn from each PST to ensure that only sludge above 3% dry solids is delivered to the digester.

High Volume - High Pressure

Scottish Water use three VRH hydraulically driven ram pumps operating simultaneously to deliver 4% dry solids sludge at 90 litres/sec and 20 bar pressure from the outlying districts to their central Glasgow waste water treatment works five miles away.



Dredging Grit

Scottish Water use three VRM mechanically driven ram pumps to dredge grit from the main works inlet at their central waste water treatment plant in Glasgow. The bottom of each of the six grit channels is 5 metres below the ram pumps. The VRM pumps self-prime and dredge the grit from the bottom of the channels to pump it into a grit classifier



VRM Mechanical Pump De-sludging

Using patented software the **ems** ram pump can control the density of the sludge drawn from the PST's



Yorkshire Water have sixteen VRM ram pumps on one of their largest waste water treatment works, which is at Leeds. The pump's massive suction capacity draws thick sludge at 8% dry solids from the bottom of the PST's to deliver directly to the incinerator plant.

De-sludging with a CVR

The massive suction available with the EMS ram pump enables the easy de-sludging of these primary settlement tanks for Severn Trent Water with the CVR pump at 6-8% dry solids.



Grout Pumping with a VRH

The pressure generated by the hydraulic power units driving these VRH pumps enables grout to be injected deep into the unstable hillside at approximately 30 bar, on this civil engineering project.



Filter Press Feed with a VRH

These three VRH pumps at Southern Water are injecting backwash filter sand sludge into filter presses for de-watering at approximately 10 bar. The design of the hydraulic power units allows the pumps to hold this pressure on the sand sludge continuously for many hours without overheating or straining the pumps.

