



Prerostal Systems

For the removal of all Floating, Suspended and Settled Solids





Applications that benefit from Prerostal

- SEWAGE & STORM STATIONS
- OILY WATER
- HIGH FAT, OIL & GREASE CONTENT
- WASH DOWN SUMPS
- SUMPS WITH FLOATING MATERIAL
- LIMITED VOLUME STORAGE AVAILABLE
- SHALLOW CONSTRUCTION SITES
- ALTERNATIVE TO ARCHIMEDES SCREW





Prerostal is a unique system developed by Hidrostal in 1970 to provide the pump user with a highly effective sump cleaning system using just the Hidrostal pump, gravity and some clever but simple civil engineering, to incorporate a prefabricated swirl basin.

In addition to this the system naturally offers a flow turndown at lower levels during the maximum cleaning cycle. Flow turndown can be up to 50%. Flow matching between inflow and outflow is also possible, once the station liquor level enters the cleaning zone cycle.

Prerostal has proven to be a globally sustainable product with many installations going strong some 20 to 40 years after installation.



The Prerostal swirl basin is a design that is constructed with a partial weir in front of a prefabricated Prerotation basin. This directs the flow in to the basins integral entrance channel. This tangential entrance channel causes the flow entering the basin to rotate in the same direction as the pump.

The rotational speed of the prerotating flow in the basin varies according to the sump level, reaching a maximum at lowest level. The pump flow will vary in relation to the rotational speed of the liquid in the basin. At high level with low to no rotational speed, the pump operates according to its maximum performance curve. At low level and high liquid rotational speeds the pump operates to a reduced performance curve.

With proper design of weir height, entrance channel width, basin and bellmouth geometry; automatic matching of discharge flow rate to inflow can be achieved with fixed speed pumps.

Prerostal was developed to reduce operational costs (OPEX) in both large and small stations.

User Benefits:

Highest Reliability—Clog free performance that is reliable and simple. A proven low Opex solution.

Self Cleaning—Cleans wet wells by automatically removing floating, suspended and settled materials each time the pump goes through its operating cycle. This also reduces odours.

Simple System—Uses gravity to control output flows and self cleaning.

Standard pumps, controls and instrumentation are utilised. Nothing complex for end users to maintain and operate.



PLAN BELOW COVER SLAB



1] At this level inflow matches standard pump curve AB



2] Inflow rate less than pump capacity. Small amount of prerotation in basin gives new curve A-C so pump output matches inflow.



3] Inflow continues to fall. High degree of prerotation to give curve A-D so pump matches inflow.





The principles are the same for both wet and dry pit versions.





GRP 1.5 m Dia Pegasus Tank

Basin as below dimensions c/w baseplate & Upper Guide Rail Holder, Pumps, Gliding Shoes and Bell Mouths.

Supply and fit guide rail, pipework, valves, access covers, chain bracket & ultrasonic bracket. Control panel optional, if supplied it requires an ultrasonic level sensor controlled run on timer.



Tank to be connected to Hidrostal basin with sleeved joint as shown below





Pegasus option B Sleeved Chamber onto Hidrostal Basin 2m in length

Pegasus option A GRP Cover sleeved or flanged to produce a station of total height circa 2.5 m high



Hidro s	tal 🛛	Data C03	asheet J-LMN1	Immer + CEYS2	sible I 2-GSEQ	^D ump 1 + NA1	A10M-1	LO
Project / Date: Customer: Job No. / Order No.: Pump Title:HydraulicSuction Nozzle: Suction Nozzle:100 n Bischarge Nozzle: 80 mi Type: CO3U Regulable: Impeller: Impeller: Impeller: Inspection cover:MotorType Hidrostal: Voltage / Frequency: Voltage / Frequency: 	nm drilled to PN 16 m drilled to PN 16 m 2 - immersible cW / 50 Hz rpm / 0.78 tal switch t nm², Ø13.3mm PUR / no	14 12 10 8 H [m] 6 4 2 0		rpm	n Pump	25 30	70 60 50 40 30 20 10 35 40	η [%]
Wateria of HydraulicVolute Casing:0.602Impeller:0.706Liner:0.706Seal parts:0.602Shaft:1.402Seal motorside:38 miSeal pumpside:28 miO-Rings:NitrilicInstrumentationMoisture probe:Moisture probe:yesFloat Switch:noBearing Temp. Probe:noTemperature probe:noMiscellaneous~ 102Pump Weight:~ 102	5 (GG25) 0 (GG660) 0 (GG660) 0 (GG20) 1 (X20Cr13) m / F-Type - C/SiC m / G-Type - SiC e	3.5 3 2.5 2 P 1.5 [kW] 1 0.5 0	5 5 5 5 0 5 Mechanical overall are e ISO 9906:20	10 15 seals friction lo only valid for di 012-38	20 Q [I/ csses are incl irect grid ope	25 30 's] uded in motor rration withou	35 40 refficiency data t VFD Testing a	a. P1 and η ccording to
Painting: Stand Paint Thickness: 150µ Drawing dimensions 150µ A 100 mm B 80 mm C 135 mm D 210 mm E 62 mm X 160 mm Y 170 mm Y1 145 mm H 795 mm H1 385 mm U 220 mm	iard Painting <u>m, Standard RAL 5010</u>	Drawing	g does not a	U Ilways show t	T T W W W W W W W W W W W W W W W W W W	ump design.		

fidrostal	Datasheet Immersible Pump D04U-EMN1 + DEYS4-GSEQ1 + NA1A1OM-10
Project / Date: Customer: Job No. / Order No.: Pump Title: Hydraulic Suction Nozzle: 100 mm drilled to PN 16 Discharge Nozzle: 100 mm drilled to PN 16 Type: D04U Regulable: no Impeller: EMN Free passage: 75 mm Inspection cover: no Motor Type Hidrostal: Nominal Rating Pn: 4.00 kW Voltage / Frequency: 400 V / 50 Hz Speed: 1415 rpm Nom. Current / Cos. Phi: 9.6 A / 0.75 Starting Current IA/IN: 4.3 Winding Protection: Bimetal switch Starting Method: Direct Cable details: 7x1.5mm², Ø13.3mm Cable details: 7x1.5mm², Ø13.3mm Cable details: 7x1.5mm², Ø13.3mm Enclosure: IP 68 Insulation: F Fly Wheel: no Insulated Roller Bearings: no Oil wremet: 20 L	$H = \begin{cases} 16 \\ 14 \\ 12 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10$
Material of Hydraulic Volute Casing: 0.6025 (GG25) Impeller: 0.7060 (GGG60) Liner: 0.7060 (GGG60) Seal parts: 0.6020 (GG20) Shaft: 1.4021 (X20Cr13) Seal motorside: 38 mm / F-Type - C/SiC Seal pumpside: 28 mm / G-Type - SiC O-Rings: Nitrile Instrumentation Moisture probe: Moisture probe: yes Float Switch: no Bearing Temp. Probe: no Temperature probe: no Miscellaneous ~ 131 kg Pump Weight: ~ 131 kg	P [kW] 2 Note Mechanical seals friction losses are included in motor efficiency data. P1 and η overall are only valid for direct grid operation without VFD Testing according to ISO 9906:2012-3B
Painting: Standard Painting Paint Thickness: 150μm, Standard RAL 5010 Drawing dimensions A A 100 mm B 100 mm C 132 mm D 270 mm E 82 mm X 190 mm Y 210 mm H 800 mm H1 390 mm U 220 mm	
Subject to change without prior notice	Drawing does not always show the exact pump design. No.: CDS-1235-1415

