everything water

an EnvirCsmart company

Domino VGS-NG*

Vertical Gravity Separator
New Generation

PUBLICATION DATE

Ver.3 JANUARY 2023

www.everythingwater.com

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Applications

Businesses that use or produce oils (hydrocarbons) generate large amounts of trade waste containing **Oil & Grease,** suspended solids plus numerous other pollutants.

Under current Australian water authority policies, automotive and metal producers are required to install on site pre-treatment devices to reduce the quantity of process water being discharged into the sewer system.

Until now hydrocarbon traps and plate separators have been the most common form of pre-treatment utilised within the automotive and metal producers. Although capable of partially improving the quality of hydrocarbons they have a few major deficencies

1) They become progressively less efficient as hydrocarbons and sludge accumulate.
2) Regular cleaning and pump outs are required to prevent ineffective treatment, blockages, odour problems and health hazards.
3) Even with regular cleaning and pump-outs, hydrocarbon traps still discharge pollutants into the sewer system at levels often higher than those set by the relevant water authorities. Fees and charges are then imposed to cover the costs of treatment.

The **DOMINO VGS-NG*** provides on-site pre-treatment of hydrocarbon wastewater. This system has been developed to continuously and effectively remove hydrocarbons from wastewater.

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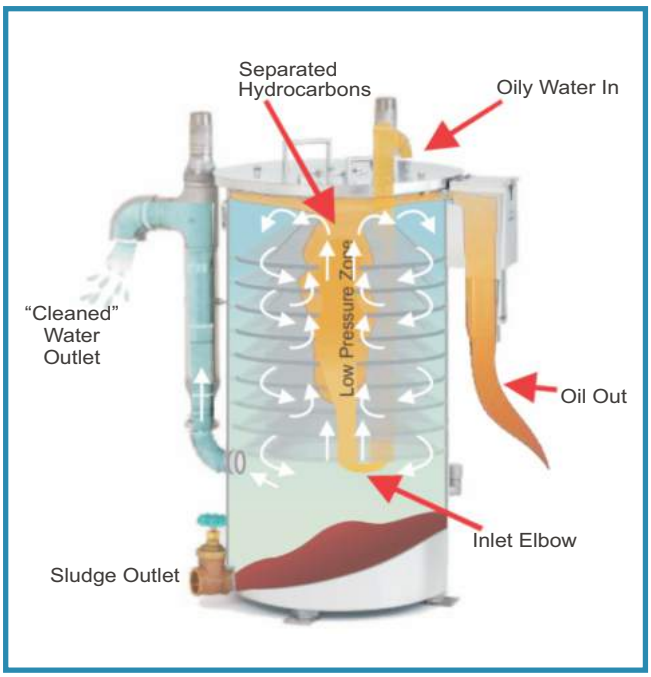
The Technology

The **DOMINO VGS-NG** operates by its ingenious control of both **FLUID VELOCITY AND PRESSURE**.



Features and Benefits

Ease of maintenance: The dimensions of the **Domino VGS- NG*** has been changed to reduce the height of the system for ease of maintenance. The Vertical Gravity Separator is now only 1 metre high which allows for easy access to the cone pack.

Improved Performance: The **Domino VGS-NG*** waste water treatment capabilities is greatly improved by increasing the Cone Plate Surface Area by an additional 70% compared to the original cone packs. This reduces the velocity of the fluid being treated by 65%. The inclusion of a diffuser plate, further enhances the performance of the Domino Vertical Gravity Separator.

Will handle High Concentrations of Oil: The Domino VGS-NG* will handle and accidental ingress of 100% oil or fuel.

Efficient Removal of Suspended Solids: The suspended solids are encapsulated by oils and rise to the top of the separator for discharge with the oil.

Low Flammability: Due to the turbulent flow of the VGS, vapour content of the product is continually reduced to the required level.

Low Cost Modular Design: Tank construction is of polished 304 stainless steel. Cones are made from oleophilic polyethylene that will not distort or react against hydrocarbons or solvents. The vertical cylindrical design minimises precious floor space.

The main body of the unit contains a **continuous truncated conical spiral pack (SPAK)** which is manufactured from an Oleophilic polyethylene.

The greasy wastewater is delivered into the bottom of the main body where it then flows upwards through the centre of the (SPAK) assembly.

At the top of the main body any free and **low density suspended solids are collected to flow out of the system into the waste tank** or back to the collection pit.

The partially cleaned water is directed to the outside perimeter of the conical (SPAK). It then follows a tortuous pattern cascading down and around the (SPAK).

Here the **lower density fluid** is drawn up the incline of the oleophilic surface of the (SPAK) and back into the low pressure centre of the DOMINO Separator, where it co-mingles with the incoming fluid and is redirected to the top of the main body.

A convection current is thus created within the (SPAK) by the density variation down the fluid column and the upward flow of the incoming water.

The 'treated' water will enter the output leg, at a point when the fluid is most free of contaminants, and flow up and out of the system.

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(with Auto Clean Function)

System Features

1. **Automated SPAK Cleaning:** A 180 Degree air operated valve connected to the lid and (SPAK) will push-pull the (SPAK) to free any built up crud and oil that may be trapped between the spacers of the (SPAK), this sequence is operated whilst the pump is running increasing the flushing effect.

2. **Automated Sludge Removal:** The electrically operated 50mm fully opened sludge valve opens to return the sludge build up from the separation process, the sludge is allowed to discharge back to the feed pit at a controlled rate, the base of the separator has a stainless steel sloping base with a unique internal sludge chute the sludge dump rate is activated whilst the pump is in the off position.

3. **Clean Water Flushing:** Once the sludge valve closes and whilst the pump is still off, the flushing introduces clean water under pressure to create a swirl motion to dislodge any remaining sludge, the flushing valve is also fitted to back flow prevention, and where necessary a hot and cold mixer can be fitted.

Automated Domino VGS-NG*

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Specifications

System Control Panel Manual Operation

A weatherproof System Control Panel is supplied with the system.

The panel is fully programmable and automatically controls the pump, heaters, solenoid valves, air compressor and alarm system.

Alarm System

Located in a prominent position within the premises is a 240V red flashing light that when illuminated will indicate that either:

- High/Alarm Level within Collection Pit (activated by high level in pit)
- Delivery Pump Failure. (activated by pump supply circuit breaker)
- Control Panel Failure. (activated by the control supply circuit breaker)

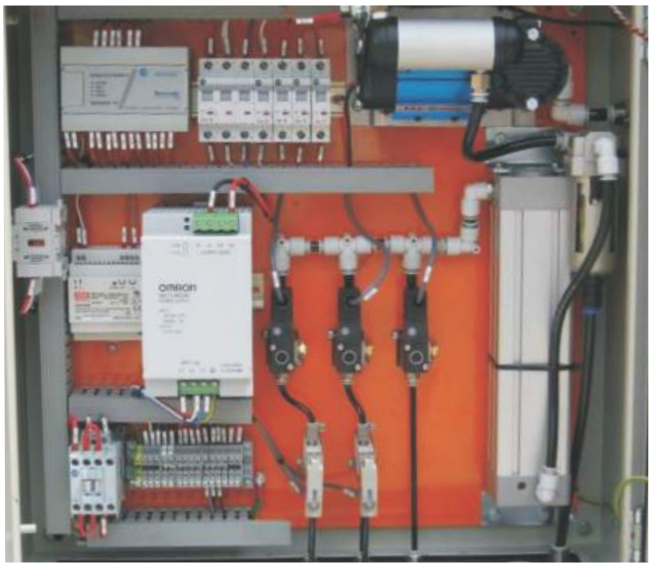
An **alarm response procedure card** is supplied with the system and is to be mounted local to the alarm light.

Auto/Off/Manual selector switches are incorporated in the panel for the:

- Heaters
- Delivery Pump
- Flush Solenoid, and
- Sludge Solenoid

These are for commissioning and service purposes only. In normal day-to-day operations these controls **do not need to be adjusted** by the client.

VISUAL ALARM & SENSORS



CONTROL PANEL
FOR AUTO & MANUAL MODELS

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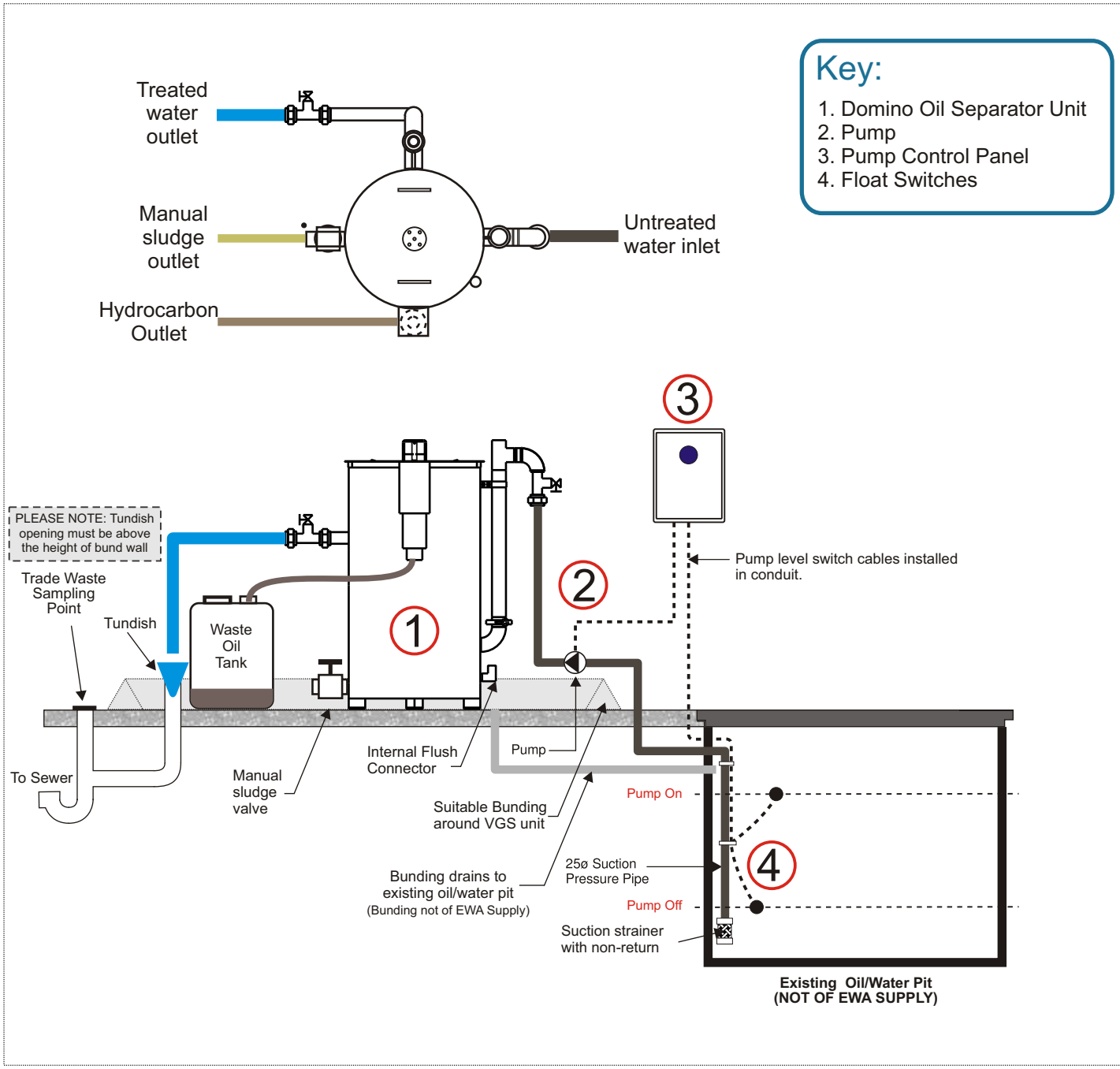
Typical Manual Domino Separator Installation



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WASH PAD CHECK LIST PRIOR TO EQUIPMENT INSTALLATION

✓	DESCRIPTION
	COLLECTION PIT (2 TANK SYSTEM PREFERABLE)
	PERIMETER WASH PAD BUNDING
	BUNDED EQUIPMENT PAD WITH A FLOOR DRAIN TO THE PIT (IF SEPARATE TO WASH PAD)
	INDUSTRIAL WASTE SAMPLING POINT (IWSP)
	REDUCED PRESSURE ZONE (RPZ) FITTED TO WATER SUPPLY HOSE COCK

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