BIO-ENERGY
"Powered by Nature."
Yarrock Oils
www.bebioenergy.com

Two tank Straight Vegetable Oil conversion catalogue

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"Powered by Nature."

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Please note all prices are GST exclusive except where indicated. Freight not included.

PRICES EFFECTIVE JULY 2009

In line electric heating

VEG-Therm Standard© and VEG-Therm MEGA© in line electric heaters

Instant heat to approx. 70°C! Electric in line heaters for all applications!

These heaters are designed specifically for heating vegetable oil, are self-regulating and require no external thermostat. The heater elements are manufactured from temperature sensing materials and automatically vary the amperage draw as needed. The MEGA heater draws a maximum of approx. 32 amps, while the Standard heater draws approx. 16 amps. In normal operation, typical amp draw is 10-20 amps. Complete with auto-resetting, sealed weatherproof circuit breaker , relay, wiring block, "P" clamps and installation instructions.

Features include;

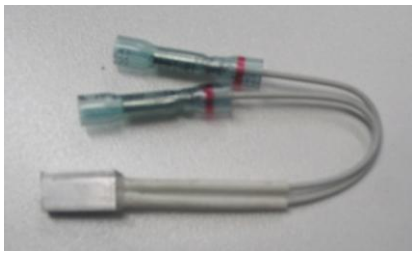
- Instant heat, approx 70°C
- Great for providing additional heat for coolant based systems
- Ideal for heating biodiesel ahead of the fuel filter in cooler months
- Standard heater draws only half the power of the MEGA, making it ideal for "split" heating applications.

Use two in series or parallel (split) flow for larger engines, and/or combine with a VEGmax or TurboFyner coolant heated filter.

Electrical system must be adequate for the additional system load. Alternator, battery, starter, belts, glow plugs, cables and connections must be in top condition and adequate capacity. If in doubt about the capacity of your system, consult your mechanic.

- **VEG-Therm MEGA $295.00**
- **VEG-Therm $245.00**

Vegsensor



The Vegsensor is a thermal switch which operates in the temperature range of ~65C to ~90C. When installed with a VEG-Therm in line electric heater, it will only activate the heater when the temperature range is reached, eliminating the need for a separate toggle switch.

Wiring instructions included.

- **Vegsensor $26.00**

Pre heat, filtration, water separator units

VEGmax 2 pre heat filtration unit

Designed to be connected into the heater hose circuit to pre-filter, pre-heat and separate water from vegetable oil. Features include;

- Two pairs of threaded ports to allow versatile mounting
- Compact size. Will mount in a small area (10x10x25cm)
- Only 40mm height clearance required to change filter element
- Top mounted filter element, makes filter changes a breeze!
- Racor Aqua block 5 micron water-absorbing element
- Two spare coolant ports, to allow additional connections or sensors.
- Includes 1/8" NPT port to install the optional SVSW50C thermal switch.
- Spare threaded ports to mount optional 12V, 3-port valves onto the filter block.
- large drain valve
- convenient ORB fittings included
- Oil resistant, "Filter Cozy" insulation cover for filter element.

TurboFyner pre heat filtration unit

Coolant heated at bottom - more effective heating of filter than filters with coolant at the top.

Easy-to-service filter - spins on from the top. Open drain valve at bottom to drain filter, loosen filter element to break vacuum, let balance of fuel in filter drain, spin off filter and spin on new filter element. Open drain valve at bottom periodically and drain a bit of fuel into a clear container to check for water. Drain valve accepts a 3/8" pipe nipple to extend the drain outflow point.

Excellent filtration - filters to 5 microns, but with flow rates of a 10 micron filter. Flow rate is up to 200 GPH! Complete with Racor Aqua block spin on filter. Filtration media has excellent filtering performance, and experience has shown that it will indeed block water in fuel. However, we still recommend that you do not fuel your vehicle with watery fuel.

Reversible front-to-back threaded mounting holes on two opposite faces makes mounting a breeze.

Hose tail fittings not included.

- **VEGmax 2 - $383.00 each**
- **TurboFyner - $329.00 each**
- **Racor Aqua block filters - $38.50 each**

**Water separators and water block type filter elements are not considered to offer full protection against all forms of water in fuel, which can damage injection pumps and injectors. They do offer secondary protection in the event of the inadvertent presence of water in fuel. For best assurance of long term success, de-water vegetable oil prior to use.*

Fuel selector valves & switches

Pollack 6 port fuel selector valve

The Pollack 6 port fuel valve is a low cost, reliable fuel selector for SVO/diesel tank selection. Only draws power momentarily while switching from one position to the other.
As small amounts of fuel/oil are sent to the opposite tank at each switching, you might consider using two 3-port solenoid valves, and a NADA controller (prevents all SVO from entering the diesel tank). However, this option is more expensive and complicated to install.

All customers have had excellent results using a single 6-port motor drive valve, and it represents excellent value for money, doing the job of two 3-port valves.

The Pollack six port valve cannot be used with the NADA Controller if you want to have the delayed-purge feature. The delayed purge feature requires two electric 3-port solenoid valves. Maximum fuel Inlet pressure is 60 PSI.

- **Pollack 6-Port Valve complete with wiring loom - $250.00**
- **Toggle DPDT (Double Pole Double Throw) switch to suit 6 port valve $39.00**

Hydraforce 3 port valves

Genuine Hydraforce valves with Viton seals. Made from Aluminium, these valves can be mounted directly to the body of a VEGmax filter, either on separate sides of the filter, or stacked by using longer bolts. The advantage is neat, compact mounting with valves warmed by the coolant in the base of the VEGmax. These valves can be used with the NADA controller kit to allow automatic switching to SVO, with the delayed purge feature. The Hydraforce valves can be mounted in any position and are compatible with diesel, PPO, WVO, biodiesel and blends.

Large engines may require valves with higher flow rates

Pollack 3 port fuel selector valves

Economy priced Pollack, solenoid style, 3 port selector valve, 3/8” hose tail barbs. This valve can be used with a NADA Controller although more installation room is required.

- **Hydra force 3 port valve - $199.00**
- **Pollack 3 port valve - $130.00**

Please note that only 3 port valves can be used with the NADA Controller to achieve the delayed purge feature.

Illuminated switch for 3-Port Solenoid Valves - ON-OFF-PURGE

Labeled and illuminated three position switch. Designed to power and operate one, two or three 3 port valves.

*INCLUDES WIRING DIAGRAM FOR USE WITH SOLENOID VALVES.

- **Three position illuminated switch $39.00**

Thermo-switch

Simply Install in the engine coolant line, or into the port on the VegMax2 filter. Switch to SVO as soon as you get in the car and start the engine and the system will not change to SVO, nor turn on the VEG-Therm (if desired) until the coolant temperature reaches ~ 50 deg. C.

- **Thermo-switch $54.00**

MFT Purge Timer

This is a microprocessor-controlled timer relay which is adjustable from seconds up to one hour. It can be used in a negative earth 12V DC or 24V DC system and will plug into a standard automotive relay base. The MFT purge timer can supply current up to 10 amps, so it can for example, control a Pollack 6 port motor drive valve, as well as controlling 3-port valves.

If controlling loads higher than 10A, use the MFT to control an external relay. "Delayed purge" is the most common application as used in the NADA Controller kit. It can also be used to have a timed function on activation, for example, such as turning on glow plugs, vegetable oil filter pre-heaters, etc for "x" seconds or minutes when the ignition is turned on.

Pin 87A works in reverse of pin 87, so the MFT purge timer can be used in other clever ways by the experimenter. When pin 87 is OFF, pin 87A is ON and vice versa.

- **MFT Purge Timer - $192.00**

Vegetable oil controllers

NADA Controller kit

This is a simple and low cost way to get the most important functions of more expensive controllers. The NADA vegetable oil controller automatically switches from diesel to vegetable oil when a coolant temperature of 60°C is reached, and limits the upper temperature of VEG-Therm in line electric heater to 90°C. The NADA Controller also allows for an adjustable delay-purge (time is user-determined) of one of the two 3-port valves (sold separately) to prevent any SVO from entering the diesel tank.

The NADA Controller kit includes a Vegsensor, Thermo-switch, programmable timer relay, Bosch type relay socket and instructions.

NOTE: Cannot be used with a single 6-port valve if you want the delayed-purge feature. The delayed purge feature requires the use of 2 or 3 - 3-port valves. One valve is for supply, one for return, and the (optional) 3rd valve unloops the fuel supply when purging is selected.

- **NADA controller kit $300.00**

Vegetable oil tanks

Universal Tanks

Universal tanks can be used to store and cart any type of liquid and are ideal for the caravan, camper and boat. Manufactured from tank grade polyethylene, makes these tanks suitable for drinking water. Also available in diesel grade.

Features include;

Quality one piece construction
Food grade polyethylene
UV resistant material
Suitable for water, waste or chemical
Standard inlet & outlet threads

Options:
Brass tank fitting from 15mm to 50mm
4" & 6" Inspection ports
Natural opaque colouring for use with some chemicals. A thread can also be tapped anywhere in the tank as required.

Universal tank chart

Tank	Length	Width	Height	Dry Weight	Fittings	RRP inc GST
Uni 25lt	545mm	365mm	150mm	3.5kg	4 x 25mm	$108.90
Uni 30lt	600mm	300mm	200mm	4kg	2 x 25mm	$113.30
Uni 35lt slim	890mm	595mm	95mm	5kg	2 x 25mm	$132.00
Uni 50lt	600mm	500mm	200mm	6kg	2 x 25mm	$159.50
Uni 50lt long	1005mm	320mm	205mm	7kg	2 x 25mm	$159.50
Uni 60lt slim	890mm	595mm	145mm	8kg	2 x 25mm	$165.00
Uni 75lt	800mm	500mm	220mm	8kg	1 x 25mm 1 x 40mm	$176.00
Uni 80lt	470mm	475mm	455mm	9kg	1 x 25mm	$181.50
Uni 85lt slim	890mm	595mm	195mm	8kg	2 x 25mm	$184.80
Uni 100lt	720mm	510mm	290mm	9kg	1 x 25mm 1 x 40mm	$187.00
Uni 100lt long	720mm	510mm	290mm	9kg	1 x 25mm 1 x 40mm	$187.00
Uni 100lt Extra Long	1710mm	350mm	200mm	14kg	2 x 25mm	$187.00
Uni 125lt	920mm	600mm	250mm	11kg	1 x 25mm 1 x 40mm`	$264.00
Uni 150lt	920mm	600mm	300mm	12kg	1 x 25mm 1 x 40mm	$286.00
Uni 200lt	1710mm	440mm	300mm	25kg	2 x 25mm	$330.00

Hose, hose clamps, Brass and steel fittings

Hose

Total flex hose, 10mm (3/8”)	$10.90 per meter
Total flex hose, 12.5mm (1/2”)	$15.95 per meter

Hose clamps

11mm to 20mm hose clamps	$2.65 each

Fittings to suit TurboFyner processor

male brass hose tail, 1/2"HT x 3/8" NPT, 90deg elbow	$18.95ea
male brass hose tail, 1/2"HT x 3/8" NPT, straight	$ 4.95ea
male steel hose tail, 1/2"HT x 1/2" BSP, straight	$ 5.50ea

Other fittings

steel "T" hose tail fitting, 1/2" through, 3/8" tail	$10.50ea
steel reducing hose tail, 1/2" to 3/8"	$ 8.95ea

IMPORTANT INFORMATION and DISCLAIMER – PLEASE READ

With regards to using Straight Vegetable Oil (SVO), it is important to realise that not all fuel injection systems are compatible.
Diesel engines fitted with in line fuel injection pumps as compared to rotary fuel injection pumps, have shown the best performance on Straight Vegetable Oil as an alternative fuel.
Experience has shown that Lucas/CAV rotary fuel injection pumps are less tolerant of the increased viscosity of vegetable oil, and using SVO in these fuel pumps may significantly shorten their operational life.
Bosch rotary fuel injection pumps are more reliable, but may still experience some reduction in performance.
It is possible to overcome this problem by blending 5-20% diesel or biodiesel with the vegetable oil. However, by blending any products with vegetable oil that are defined within the excise legislation, the entire volume becomes excisable, and you will need to register with the ATO as a fuel manufacturer. To apply for a license or for more information, please call the ATO 1300 137 292

It is also important to note, that by blending a flammable or petroleum based fuel/s with vegetable oil, you are also modifying the flash point of the vegetable oil. Even though the flash point of vegetable oil is very high, blending other fuels with it may make the vegetable oil flammable.

When installing any of these components, it is important to remember they are designed to be used with straight vegetable oil, not blended edible oils containing tallow, palm, coconut, hydrogenated oils, etc. If the oil is not clear, yellow and liquid at room temperature, do not use the oil in this system without the installation of an in tank heater (to prevent the vegetable oil solidifying).

When using Waste Vegetable Oil (WVO) in a SVO system, please ensure that the oil has been settled, de-watered and filtered. It is important to remember that suspended water and poorly filtered oil will effect engine performance and/or shorten engine/fuel pump life.
Alternatively, purchase used cooking oil (vegetable oil ONLY) that has been refined by a waste oil recycler. The use of a Vormax / VEGmax pre heating and filtration unit, will shorten the time required for filtration, but remember if there are a lot of contaminants in the oil these will shorten the life of the 'spin on' water/fuel separator filter, which is a part of the Vormax / VEGmax filter.

Also, be aware that using SVO / PPO as an alternative fuel, making any modifications or alterations to your vehicle, MAY VOID any manufacturers warranty, and/or effect your vehicle insurance policy. Please check before proceeding.
Most importantly when installing a second tank for a two tank system ensure that diesel remains in the original manufacturer's tank installed in the vehicle. The manufacture has designed and installed a fuel tank that is the safest place for the storage of fuel in the event of an accident.

Ensure that the vegetable oil tank is mounted and secured (with a tie down bracket or strap) and will not spill, causing a mess in the boot, etc. Loop a couple of meters of extra hose to allow the tank to be removed from the vehicle and 'refilled' on the ground. This prevents messy spills in the vehicle.
An Installation guide is included with all purchases of an in line electric heater, fuel valve and Pre heat, filtration, water separator units Otherwise, installation manuals can be purchased separately for $60 + GST
Payment can be made by cheque, money order or direct debit.
Prices are accurate at the time of publication, but are subject to change.

DISCLAIMER

All components are provided "fit for purpose", but if goods are found to be faulty or broken, please return them within 14 days for a full refund or exchange. This does not cover damage caused to components willfully or by neglect or by reasonable wear and tear or by poor workmanship.
No warranty is express or implied in relation to the quality of vegetable oil or fuel that may be used in conjunction with these components, nor is there any liability for any damage that may result from using these components with such vegetable oil or fuel. These components are sold to the purchaser at their own risk. This in no way effects statutory rights in relation to refunds or credit for faulty or broken goods.