

Control Switches for the **NAVIGATION LIGHTS** are located on the Engine Control panel :

- For TRICOLOUR    -    Top switch FORWARD
- For BOW & STERN -    Top Switch AFT                      and middle position is OFF

Other switches as marked for STEAMING, DECK and COMPASS -OFF Forward, ON aft.

The following **ENGINE CONTROLS** are located on the starboard side panel inside the main hatch.

- ON / OFF Switch    - Main ENGINE Switch
- Top    Push button - STOP
- Middle Push-button - START
- Bottom Push-button - HEATER
- Rev Counter & hours run
- RED Warning Lights : Fwd - Battery Charging, Middle – Oil Pressure, Aft - Temperature
- Engine Alarm Buzzer - (inside instrument panel)

Engine instrument lights are controlled by the 'Engine Main' switch, and are on when engine is running.

**ENGINE START & STOP PROCEDURES -**

To **START** the engine,  
Check drive is out of gear – red button in,    and set 45 deg. Fwd  
Turn engine water cooling stop cock lever – VERTICAL,    Main Power switch (battery box front) ON  
Switch ON (down) the 'Engine Main' switch  
Buzzer will sound / 2 warning lights will illuminate – Battery Charge & Oil Pressure.  
Press 'Heater' push-button for 10 seconds maximum,  
Press 'Start' push button & hold (for a maximum of 10 seconds)  
Release start button when engine fires.  
Buzzer should stop / Red Battery Charging and Oil Pressure lights should go OFF.  
Check cooling water from exhaust outlet.

If charging light stays on/engine whines , throttle up & back down straightaway –  
light should go out & whine stop as drive belt engages properly.

The 'Engine Main' switch MUST REMAIN ON when the engine is running. When engine is running, check on a regular basis that oil pressure is satisfactory, and use the Battery Monitor to check battery charging.

**OPTIMUM max Rev's 2200 rev/min** – Above and engine could overheat

To **STOP** engine,  
Press upper Stop Button for a maximum 10 seconds / Engine will stop / Buzzer will sound  
Charging and oil lamps will go ON    Fuel pump will stop.  
Switch OFF ( up ) the 'Engine Main' switch    / Buzzer will stop / lamps will go OFF

**ENGINE CONTROLS FAULTS**

If the buzzer sounds while the engine is running, this indicates low oil pressure, OR High temperature OR Battery charge failure as indicated by the light. OIL PRESSURE LAMP: Stop the engine at once, as continued running will almost certainly cause severe damage. Investigate oil level and possible leaks before restarting.

If BATTERY CHARGING lit while the engine is running, the alternator is not functioning correctly and that it is not producing power. The fuel pump and other auxiliaries will be operating on battery power, and continued running will flatten the engine battery. Stop the engine as soon as it is safe to do so, and check the drive belt and pulleys and all the connections on the alternator.

TEMPERATURE : engine overheating – check cooling water out flow. Safe to run engine for short time only.

IF BUZZER SOUNDS and NO light is lit then we have a bulb failure –

You must assume it is Oil Pressure so stop engine immediately.

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**IMPORTANT - GEAR SHIFTING - Engine must be at idle before changing direction.**  
**Pause in neutral when selecting ahead or astern.**

**ENGINE REV's - do not use at full power - optimum operating RPM @ 2200**  
**and thereafter at highrev's only for short bursts.**

**FEATHERING PROPELLER - to feather - engine off, engage reverse gear to lock shaft**

**ENGINE MAINTENANCE & SERVICING**

March 2021

Engine : BETA BD 722 Output 20HP @ 3600 rpm **OPT RPM 2200** 2001  
 Engine No YQ4714 W O C K8737  
 Gearbox : PRM model 90 D2 2.04:1 Serial No 2019  
 Alternator : ford Fiesta 55 amp Alternator 2019  
 Propeller :Darglow FEATHERSTREAM FEATHERING 4 Blade 13" Pitch 10" 2020  
 Stern Seal : Volvo Penta (25 mm shaft) 2019

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 ENGINE OIL : Multi grade Diesel Engine Oil SAE 15 W 40 Capacity 3.8 l  
 GEAR BOX OIL : ATF Dextron III (ATF 430 IGOL is equivalent) 0.3 l  
 ENGINE COOLANT : Antifreeze - diluted 50/50 3.0 L

OIL FILTER (on engine) : BETA 211 63760 or FRAM PH 5317 or Wix WL 7134

FUEL FILTER (on engine) : BETA 211 60210 or FRAM P 4766

FUEL FILTER (on Stb'd bulkhead) : FRAM C 1191 PL / Delphi-Lucas HDF 296 / Crosland 522

AIR FILTER : BETA 211 - 62950

WATER PUMP : JABSCO 18653 - 0001B 00C

FAN / DRIVE BELT : Gates 6215MC / AV x10 875LA

NB Add Anti moisture additive to Fuel tank to inhibit bacterial growth Wynns "Dry Fuel" 325 ml every 6 months

**MAINTENANCE / SERVICING**

Change ENGINE Oil & filter - Every 250 hours or annually before lay up - see manual  
 GEARBOX oil Every 500 hours or annually before lay up "  
 Engine Oil Change - turn on tap (below pump on stb'd side)and pump engine oil out  
 Gear Box Oil change - use special pump -

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**SPARES** - ENGINE OIL - SAE 15 W 40 for DIESEL engines (not Turbo) - Halfords etc  
 FRAM FILTERS - Lloyds Motor Spares  
 JABSCO Water pumps spares - stocked Force 4 Chandlery  
 FAN/ DRIVE BELT - good Motor Factors i.e. Lloyds Motor Spares  
 BETA PARTS - mail order/collect: TS MARINE Ltd(Main Solent Beta agent) 01489 581030  
 Sarisbury Green, Southampton Best phone 0830 - 0900  
 ANODES Prop Hub - Darglow Featherstream 13"  
 Prop Shaft - 2 x MGDuff MGD 25 mm shaft  
 Engine-Beta 209-61840-order from TS Marine or ASAP Ltd

**DAILY MAINTENANCE SCHEDULE** (or every 8 hours running)

- Check engine oil level - dipstick on starboard - SAE 15 W 40 Diesel Eng Oil
- " gearbox " " at rear of engine ATF Dextron III
- " coolant level
- " drive/fan belt tension - must be kept tight
- " stern seal for leaks/drips

**TROUBLE SHOOTING** - refer to Beta Marine & PRM Manuals in Black Maintenance Ring Binder. Please look after the engine and it will last a long time.

**OUTBOARD** - Suzuki DF2.5 2014 - UNLEADED Petrol - 5 litres  
OIL in separate reservoir on engine SAE 10W 40