



## OWNER'S MANUAL

### FOWLER JACKSHAFT 0-4-0 INDUSTRIAL LOCOMOTIVE

*“Moti”* (PFWLJ)

16mm =1 Foot scale Model, with wheels for 45mm gauge tracks and suitable for Radio Control & Diesel Sound.

**PLEASE READ THIS OWNERS MANUAL CAREFULLY BEFORE OPERATING THE MODEL**

## **Caution!!**

This model is an accurate replica of the original locomotive. It has sharp and moving parts. The locomotive drive gears are brass & steel, with sharp edges.

AT ANY TIME, OPERATORS MUST NOT COME IN CONTACT WITH THE MODEL WHILE IT IS POWERED. UNDER NO CIRCUMSTANCES SHALL **Model Engineering Company** OR ANY OF ITS ASSOCIATES BE HELD RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING IN REGARD TO ANY PLINE PRODUCT.

## **Items included:**

1. PFWLJ Model Locomotive X 1 off (Serial No. **2019.X**)
2. Owner's Manual X 1 off

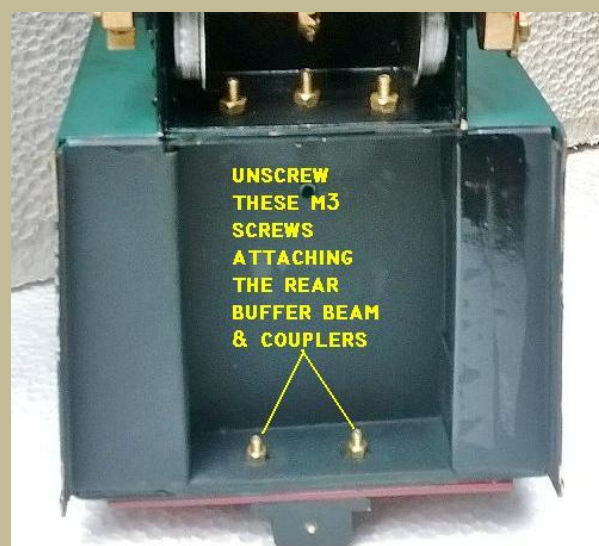
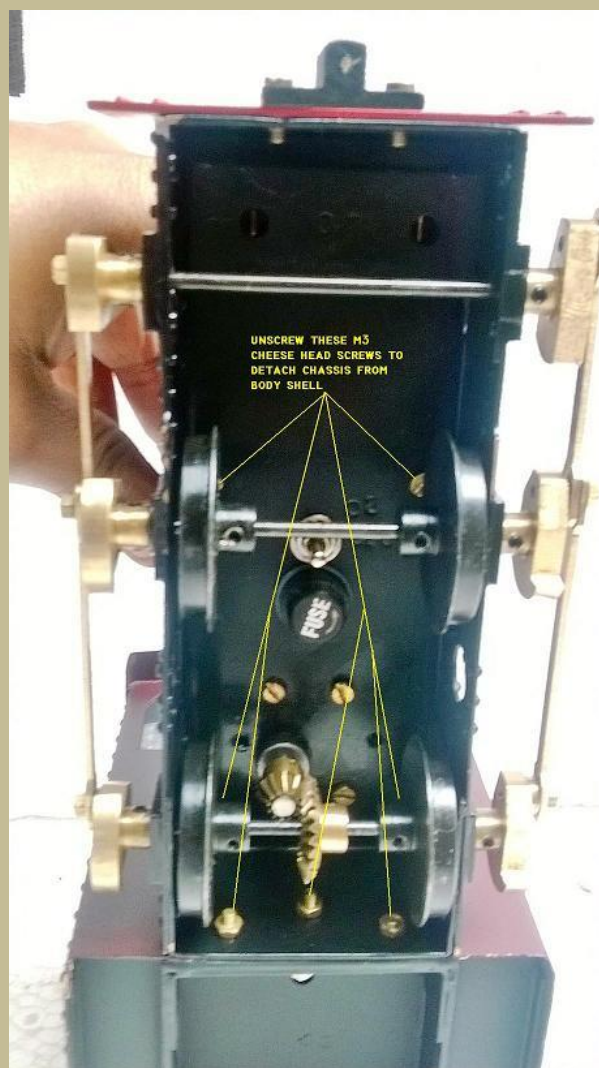
## **Required:**

1. 12v 4000mAh rechargeable Battery pack for Locomotive
2. 2.4Ghz Transmitter & Receiver
3. Suitable Electronic Speed Controller (ESC) 20A or more
4. Diesel Sound/Horn unit & matching 1" diameter, 8 ohms Speaker
5. Suitable battery packs & chargers for serials 1 & 2
6. M3 Allen wrench for readjusting the wheel positions
7. Flat blade screw driver suitable for M3 cheese head screws

## ***Battery Pack Selection:***

Your PFWLJ locomotive is not supplied with a Battery Pack, due to International Shipping & Security norms. We recommend any deep-cycle Battery pack with an output of 12v rated at 4000mAh (or higher rating) for the locomotive and batteries for the transmitter as recommended by its manufacturer.

Connect your preferred locomotive battery pack to the terminal Connector leads inside the locomotive's engine cowl, by detaching the body shell from the chassis. This can be achieved by, unscrewing the **9XM3 brass cheese head screws**, (with the help of a flat blade screw driver suitable for M3 screws), that attach the complete body shell (engine cowl and cab), 4XM3 screws located underneath the chassis (you might have to loosen the grub screws (with the help of a M3 Allen wrench), on the wheels in order to get easy access to these 4 screws, 3XM3 screws beneath the cab front wall and chassis and 2XM3 screws attaching the rear buffer beam and coupler. Refer to the picture below.

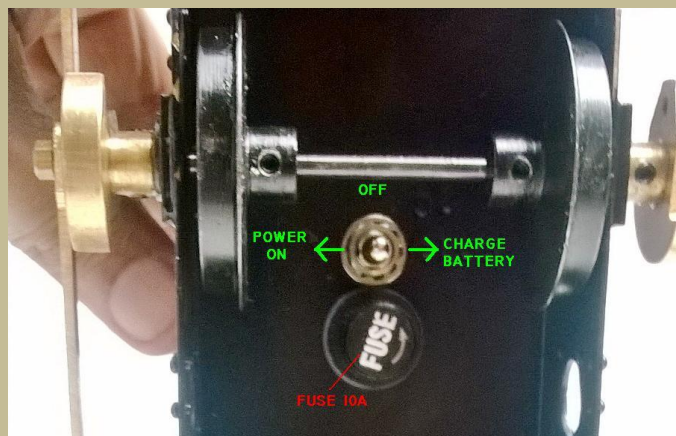


BE CAREFUL TO CONNECT THE CORRECT POLARITY OF THE BATTERY TERMINALS TO THE BATTERY LEAD WIRES (pre wired and marked as 'BATTERY'), COLORED **RED** FOR **+VE** & BLACK FOR **-VE** POLARITIES. INCORRECT POLARITY CONNECTION CAN DAMAGE THE CONTROL SYSTEM OF YOUR MODEL. The locomotive battery pack and the RC received, ESC & Sound units can be housed inside the engine cowl.

### ***Installing Radio Control and Diesel Sound/Horn units:***

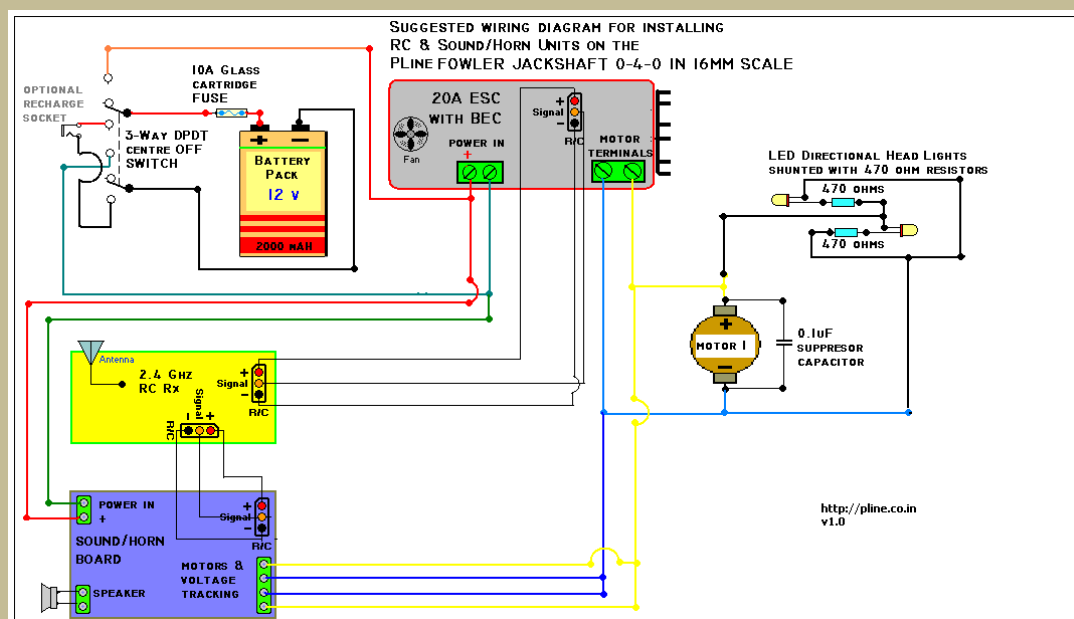
It is highly recommended that prior to installing the Radio Control and Diesel Sound/Horn units, you thoroughly read and understand the manufacturers' installation Instructions, for these items. It is always helpful, to consult a Radio Control and Sound unit installation expert.

The Main Power **3-way, (centre 'OFF')**, DPDT toggle switch, located on the underside of the chassis, has six terminals. The central terminals connect to the battery Pack's terminals through an inline 10A glass cartridge Fuse (pre-wired and located on the underside of the chassis). The top two terminals (pre wired and marked as 'ESC') are to be used to supply power to the Electronic Speed Controller ESC and Diesel Sound/Horn units. The WHITE colored lead is for +VE. The remaining two lower terminals (pre wired and marked as 'CHG SKT') used to connect a charging socket for the battery pack. The RED colored lead is +VE.



The motor can be wired to the ESC's output by connecting the BLUE and GREEN motor leads, connected through a male/female 2-pin heavy duty, plug-n-socket (pre wired and marked as 'MOTORS').

Taking into consideration that Radio Control & Diesel Sound/Horn units from various manufacturers, are wired differently, we have suggested a generic wiring schematic for your reference below.



## Wire Color Coding:

<b>RED</b>	<b>+VE BATTERY TERMINAL</b>
<b>BLACK</b>	<b>-VE BATTERY TERMINAL</b>
<b>BLUE/GREEN</b>	<b>MOTORS</b>
<b>BROWN/BLACK</b>	<b>DIRECTIONAL LED HEAD LAMPS</b>
<b>GREEN/WHITE</b>	<b>+VE ELECTRONIC SPEED CONTROLLER (ESC)</b>
<b>BLACK/RED</b>	<b>+VE CHARGING SOCKET</b>

## Sound:

Depending on the specifications of Diesel Sound/Horn unit that you have chosen for your model, when the model is powered on and is not moving, you should hear the engine idling sound. As you speed up or down in either forward or reverse directions the engine sound should also rev up or down in a synchronized fashion, and idle when the model comes to a standstill.

## Lights:

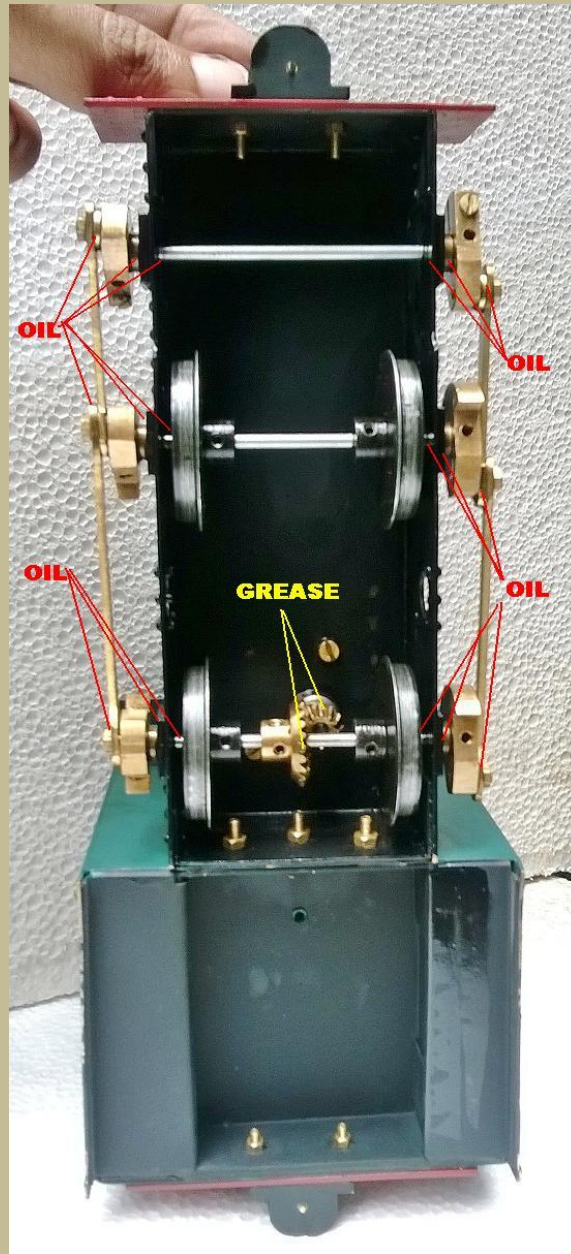
The lights are directional and on the motors. The leads are thinner BROWN and BLACK (pre wired and marked as 'LIGHTS') connected through a male/female 2-pin plug-n-socket. So when the model moves in any direction, the head light, in that particular direction lights up.

## Lubricating:

With a bit of care, your PLine PFWLJ should give you many years of pleasure and reliable service. Lubrication is of prime importance for a model of this type with moving parts. Always use quality lubricants. This should not be a problem, for there are many modern lubricants available in hobby and sport shops. Light oil such as Labelle #108 or Hoppe's Gun Oil would be good enough for lubricating most of the moving parts. For the brass bevel gears, use a light gear grease, or any another hobby gear lubricant. The brass bevel gears driving the rear axle can be lubricated by applying grease on the gear



teeth using a small flat blade screw driver. To access the moving parts of this model, it is best to carefully place it on its side on a soft towel or foam sheet. Use oil that is a bit heavier to lubricate the axle ends, cranks & crank ends and connecting rods. Refer to the picture below. Do not over lubricate, for excess oil only picks up unwanted dirt. Be careful to keep lubrication off the painted surfaces, as this causes shiny areas. Thorough Lubrication of the locomotive should be done every 2 hours of operation.



### **Operating the model:**

Once the Radio Control and Diesel Sound/Horn units have been wired in and battery packs connected to the Locomotive and Transmitter, double check all the wiring to make sure you have the correct

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connections as recommended by the manufacturers of your Radio Control and Diesel Sound/Horn units, screw the model's body shell back onto the chassis, using the nine M3 brass screws.

Next switch the transmitter 'ON'. The model can now be powered 'ON' by flipping the main power 3-way switch in the cab downwards. Always SWITCH 'ON' the Tx first before POWERING ON the model.

Gradually increase the throttle on the transmitter and the locomotive will move in any of the two directions, while gaining speed. Try to move the model in the opposite direction by controlling the direction & throttle controls, on your transmitter. The model should ideally come to a stop when, the 'neutral' position, on the transmitter, is reached. This position can be fine adjusted using the trim buttons on the transmitter (refer to your Radio Control unit's operation manual).

**CAUTION: DO NOT RUN THE MOTOR ON FULL THROTTLE IN THE FIRST 90 MINUTES OF RUNNING.** Run the model at half throttle in any one direction for about 15 minutes, then stop, and then run it again at half throttle for another 15 minutes in the opposite direction. Repeat this procedure for about an hour and a half, until the model runs smoothly in both directions. Once you have run your Model on half throttle in both directions on a test track for at least about an hour and a half, your model should be ready to run at Full throttle on the layout.



### ***Maintenance:***

Post a running session, always clean the crank surfaces, connecting rods and bevel gears with a clean cotton cloth. Also occasionally, clean the body of the Model with a clean soft lint free cotton cloth. To remove stubborn grease stains from the painted surface use a detergent solution with a lint free cloth. With a little care your PLine PFWLRSE locomotive will give you years of trouble free running.

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## **IMPORTANT!**

Some parts may have loosened during shipment. Inspect your model prior to any operation. Please contact us at [info@pline.co.in](mailto:info@pline.co.in) for more assistance.

THANK YOU!

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