



# ACCUCRAFT TRAINS

## MUSEUM QUALITY BRASS MODELS



### **Accucraft Decauville 3.5t Type 1 – 1:13.7**

- B77-531 7/8ths Type 1 Maroon
- B77-532 7/8ths Type 1 Green
- B77-533 7/8ths Type 1 Black

# Instruction Manual for Decauville Type 1



**Note: Please read the entire manual prior to operation**

## Unpacking and Assembly

Remove inner box from the shipping carton, lift open and remove the locomotive, in its cocoon, from the box.

Place the board on a hard surface and using a razor knife cut along the board edge. Carefully pull off the tape and plastic from the locomotive. Discard all tape and plastic.

There is a small parts bag with the tools, tank caps and headlamp.

## General Information

Operating a live steam model is different from an electrically powered version. It is a hands on interactive model. Never leave any working engines unattended once the burner is lit or if the locomotive is under way. Always know where and how the locomotive is operating including the boiler water levels.

- Always read and understand the manual prior to operation for the first time.
- Always maintain the lubrication on the motion parts and lubricator as it is designed for extended run times. The lubricator will last for about 45-60mins.
- Never let the engine run completely out of water – if the locomotive suddenly stops and there is still pressure or if the glass is empty shut down the burner. **DO NOT ADD WATER TO A HOT EMPTY BOILER**
- When filling the gas tank, keep away from any open flame or passing by locomotives, especially Alcohol fired locomotives.
- Do not carry the locomotive by any bodywork, always carry by the front and rear buffers.
- Never stand or look directly over the chimney as hot water or oil can eject at any time.
- Use caution when opening the smokebox door when an engine is hot or burner is lit.
- Never touch the running gear while in operation as it can cause injury.
- Never allow children to operate without adult supervision.

## General maintenance

As with all operating machinery, model or full size, wear will occur. Much can be done to prevent wear and prolong the life of the model.

Keep the engine as clean as possible and the motion free of dirt and garden debris. When running on a garden track always clean after each day of running to keep sand and dirt from damaging the parts.

Routinely check for loose bolts/nuts and tighten as necessary. Do not over tighten, these are small model bolts and can shear or strip easily. Use of blue loctite is advised on any loose bolt.

To clean, fill a spray bottle with hot water and a liquid dish detergent. Spray onto the cool locomotive. It cuts the grease and oils used to lubricate. It also cleans the dirt and sand from the small parts and motion points. Use a 2" soft bristle paint brush to wipe the loco down and get into all the confined spaces. Using warm water, rinse off the locomotive keeping the water away from any R/C gear or electronics that may have been installed or a full gas tank. Allow to dry thoroughly then lubricate as usual and store.

**Using harsh cleaners may damage the paint.**

Lubrication should be done prior to each run. All motion points require a light oil designed for our steam trains. Green Velvet PBJ220 is designed just for that. It is designed to stick and not run. Just a little is required on each point applied with a needle applicator. Do not flood parts with oil as that will just attract dirt and run over the model and eventually onto the rails.

Steam oil should be a light weight ISO460 Steam Oil for our low pressures. Using a heavier oil or non-steam oil will void the warranty.

When filling the in-cab lubricator, only fill to the bottom of the pipe that runs through the lubricator. Overfilling will cause an excess of oil when starting out. Also use a drop of steam oil on the cylinder crossheads, piston rods and valve rods as these rods all enter the cylinders and are exposed to the high temperatures of the steam. This will keep the O-Ring seals well lubricated and extend the life. To drain the lubricator use a syringe or open the lower drain valve under the cab floor.





## Lubrication points for Steam Oil

Displacement lubricator – Under coal load

Piston rods

Valve rods

Crosshead guides

## Lubrication points for lubricating oil

All valve gear linkages and pins or pivot points

Valve gear eccentrics

Main and connecting rod pins/bolts

Journal box to axle

Journal box to frame

## **Preparation to Running**

Always service the engine fully for each run. Gas, Oil and Water

1. To fill the gas tank, Invert gas can onto filler valve in the right side tank and support the locomotive whilst filling to prevent the loco from tilting. Be aware of your surroundings and other running locomotives as Butane creates a puddle of gas that is invisible when filling. Gas will squirt out of the valve when full, at that time remove the can. Open the smokebox door to vent gas in the next step. Open the gas valve (the brake staff handle), DO NOT LIGHT but listen for the gas through the jet, you should hear a smooth gas sound.

If there is any sputtering or squirting of gas allow it to pass until it is smooth. Shut the gas valve, the gas tank is now ready and full. Bleeding off the tank allows the liquid in the tank above the valve to vent so lighting is easier and large fires are avoided.

2. Lubricate each motion point with a lubrication oil as discussed previously. Fill the displacement lubricator in the cab (Mounted under the faux coal load) until the oil is just below the steam pipe on the side of the lubricator. Use a ISO460 oil only. Use a syringe or dispensing type bottle.

3. To fill the boiler, remove the sand dome by lifting off, then open the filler cap atop the boiler and fill with distilled water only, Fill to about 1/4" below the top of the sight glass OR fill to the top and remove 30-40ml. Leaving a space will allow the steam to build and water to expand allowing for easier starting when cold. You can maintain the water level using a Goodall valve replacing the filler cap during operation. Re-install the boiler filler or Goodall valve do not over tighten as damage to the O-ring will happen.



## Lighting up

Be sure the throttle is closed and the Johnson bar is in neutral. Open the smokebox door and slightly open the gas valve. Using a stick lighter bring the flame to the smokebox door and light the gas. The burner should light and pop back into the flue. Be sure the fire is not in the smokebox. Check the flame and make sure it is a strong blue flame, if yellow or green adjust the air collar on the burner flange in the cab.

Once the pressure is up to 50-60psi the safetyvalve should lift and you are ready to run and clear the cylinders. Reverse works best for this as the boiler surges water away from the throttle takeoff. Water and oil will eject from the chimney, a cloth or towel will help deflect and keep the loco clean. Once the cylinders are warm and cleared of condensate you are ready to set the locomotive off onto the main line.

Adjust the burner level to suit the running conditions and keep as low as possible while maintaining the needed steam supply. Excessive blowing of the safety is wasting fuel and water and shortens the run time.

Maintain the boiler level using an optional Goodall Valve. Never allow the water level to get below the top of the burner as that exposes the flue from water inside the boiler.

This fuel tank will last about 25-30 mins on average. The boiler water level can run low if you are running a very high burner setting. This is not healthy for the boiler when operating. Be aware of the water level when running.

Be aware that this is a large locomotive. Use caution when operating for the first time on less than perfect track-work as it can derail with speed or on tighter curves. Also check clearances for height and width. The chassis is sprung for a smooth operation on the track.

## End of run

When the fire goes out or if you shut the gas down, stop at a convenient place off the mainline to cool down and drain or to refill for continued running. If shutting down, close the gas and throttle valves, open the lubricator drain valve and release the oil/water into a rag or paper towel. Do not open the lubricator until you know the pressure is at 0 PSI on the gauge and has cooled. The locomotive will be hot at first.

Once cooled the locomotive should be wiped down with a cotton cloth. Check the running gear for dirt. Clean the motion as described earlier if dirty, otherwise wipe and apply oil.

Always store in a temperature controlled environment unless completely drained of water as freezing temperature will shatter the sight glass.

The locomotive may drip oil or water during storage so keep a cloth or towel underneath.

Special thanks are extended to David Fletcher and Jason Kovac for their attention to detail and accuracy bringing this model to completion. Hannes Paling, a Sandstone Estate patron in South Africa, provided measurements and hundreds of images of the prototype locomotive. Without his contribution this project would have been impossible.





## **Decauville Type 1 Specifications**

Scale 1:13.7

Gauge 32/45mm

Weight 6lb

Length 10.1"

Width 4.9"

Height 7.5"

Min Radius 24"

Butane fired

Slide valve cylinders

Walschaerts Valve Gear

Lubricator

Water level gauge

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