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INSTRUCTION MANUAL “SAXONIAN IK 0-6-0T”



Safety first

All our locomotives are safe to run, and will give many hours of pleasure, providing the following safety procedures are followed:

1. Please read the instructions thoroughly before running for the first time.
2. Always do a complete refill of gas, oil and water. Never refill just the gas to prolong the run.
3. Never let the engine run out of water.
4. When refilling the gas, do not have any naked flame present, and **NO SMOKING!**
5. Do not pick up the engine by the bodywork, chimney or boiler, especially when hot.
6. Only pick up the engine by the buffer beams and, when hot, use old clothes or a cloth.
7. Do not stand over the chimney. Ejected boiling water or steam may cause serious injury.
8. Do not open the smoke box door while the engine is alight.
9. If the locomotive gets slower and finally stops the gas is all. Please close the gas and steam regulator.
10. If the locomotive comes to an abrupt halt, the water is all. Please close immediately the gas supply, otherwise you will risk a boiler overheating.
11. This live steam model is not a toy and does not belong in reach of children under 14 years. Adults should exercise particular caution in steam-operation in the presence of children.

Generell Hints

As with all operating machinery, whether model or full size, wear will occur. In the model steam locomotive much can be done help prolong its life and decrease the amount of time required in the workshop for servicing.

Keep the engine as clean as possible, and the motion free from dirt and garden debris. The valve gear, axles and crank pins should be oiled sparingly with light oil, e.g. our special lubrication oil. Over-oiling attracts dirt and grit, which will increase wear.

Regularly check that all screws and motion bolts are firm. Do not over-tighten, as this strips threads and shears bolts.

When filling the lubricator, always use a high temperate steam oil; this is available from us or other retailers. Failure to use the correct grade of oil can lead to blocked steam pipes, and will invalidate the guarantee.

When running your engine avoid excessive speed and acceleration, both will cause premature wear in the valve gear. Prototypically, narrow gauge locomotives ran at speed of between 10 and 20 M.P.H. and never exceeded 25 M.P.H.

Positions of Fillers and Drains etc.

The cab roof lifts up and tilts to the right hand side to give access to all fillers.

The gas inlet valve is in front near side corner of the cab, at the top of the gas tank turret. The gas control valve is attached to this turret, and can be operated through the nearside cab doorway or open backside.

The lubricator is in the offside front of the cab, just forward of the doorway and reverse lever. The filler cap has a "T" bar in it to aid removal. The lubricator drain is directly beneath the lubricator. To drain, open the ball valve downwards.

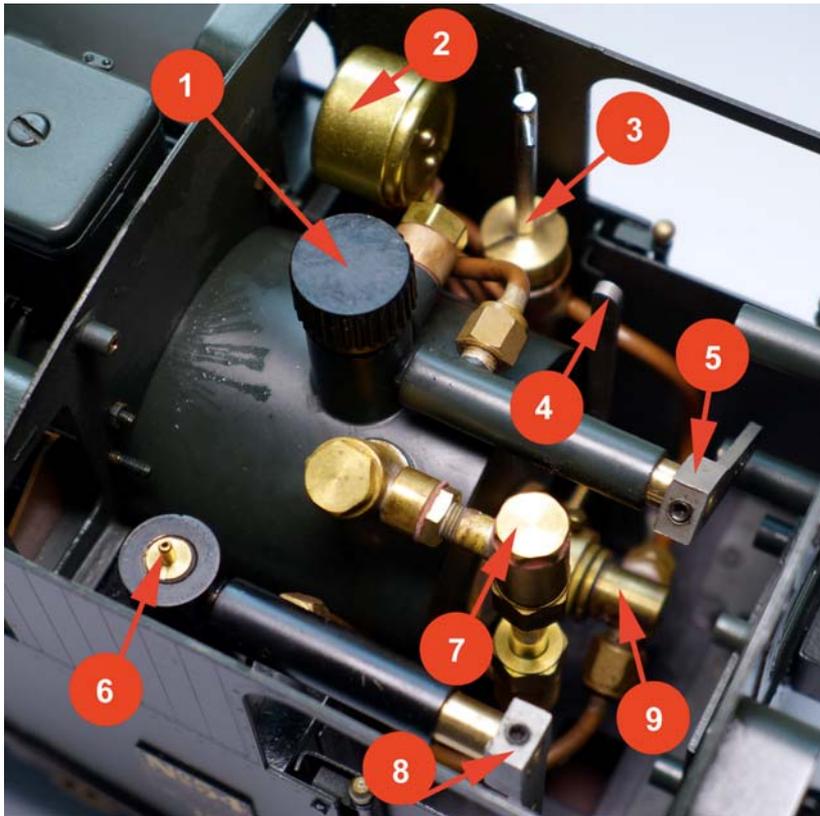
The boiler water filler is on top of the steam turret on the boiler in the middle of the cab. Undo the knurled cap to fill with water.

The main steam regulator valve is located on the rear of the boiler-filling turret and can be controlled through to open backside of the cab.

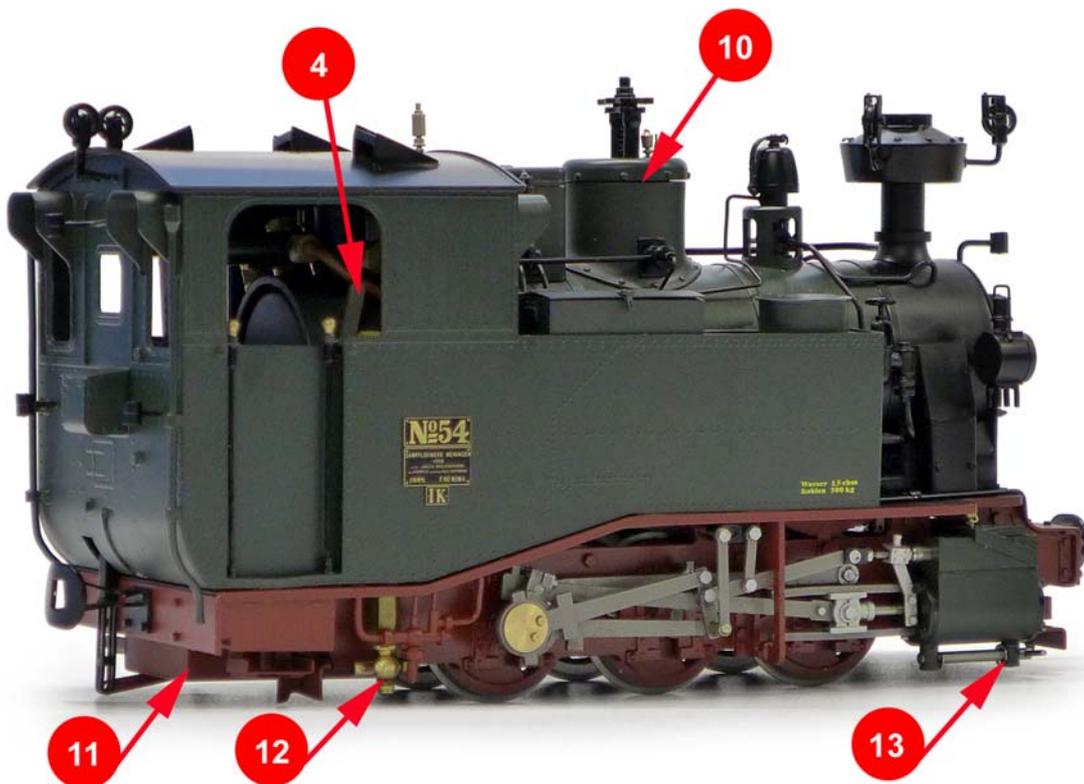
The water gauge is on the backside of the boiler in the middle of the cab near the burner.

The cylinders have drain cocks. To open them please bring the levers in vertical position, to close them in horizontal position. Be careful when you like to drive with open cylinder drain cocks. They can touch the rails and your loco will de-rail !

The direction control is the lever in the offside cab door. To operate pull gently outwards and move to the desired direction. The control is "gated", and will therefore hold itself in the full forward or reverse position.



1. Boiler Water Filler
2. Pressure Gauge
3. Lubricator
4. Reverse Lever
5. Steam-Regulator
6. Gas Inlet Valve (Ronson Type)
7. Water-Gauge
8. Gas Control
9. Burner with Nozzle
10. Safety Valve inside
11. Box for RC-Receiver
12. Lubricator Drain
13. Cylinder Drain Cocks



Preparation for running

The Saxonian IK is fitted with a water gauge; this allows the driver to keep the model in steam continuously for longer periods of time than the usual single fill system. This is done using a boiler Top-up System available from us or your dealer. The initial fill up with gas, oil and water is the same as for a basic run, but then to carry on and run for longer periods requires supervision of the boiler water level, topping up of the lubricator and refilling of the gas. These procedures will be explained in another section after the Running section instructions.

Always service the engine in the following order; first gas, oil then water.

To fill the gas tank: invert the gas can and apply the nipple to the gas inlet valve on the top of the tank turret. It is advisable to support the loco under the gas tank whilst filling, to prevent the engine tipping over. You will know when the tank is full; gas will blow back from the inlet valve in a strong jet. A small amount of gas and air will escape during filling, but the difference between this and when the gas tank is full is always clear. Always keep the gas can vertical when filling the gas tank.

Filling the lubricator: as you will read in the instructions for the end of the run, the lubricator should be empty of oil and water with the valve left in open position. Now close the valve and remove the lubricator filler cap. Fill up the lubricator with steam oil to about $\frac{1}{4}$ of an inch (about 1 cm) below the top. Leave the filler cap off for the present, so that any trapped air can escape. It can be refitted after you have filled up the boiler.

To fill the boiler: remove the filler cap and fill up the boiler approximately $\frac{3}{4}$ with water - ideally use filtered rainwater or distilled water using the large syringe provided. Replace the boiler filler cap, check that the lubricator does not need topping up, and then replace its filler cap also. Filler caps should be firm tight. They are sealed with a trapped "O" ring and, therefore should not be over-tightened.

Lighting Up

Open the smokebox door; just pull it open by the door handle. Light your lighter/match etc. and gently open the gas control valve until a gentle hiss is heard in the burner. Apply your light into the smokebox and the flame should “pop” down the fire tube and ignite the burner inside the fire tube.

If the gas valve is open too much the flame will not pop back; it will either fail to ignite, will roar in flame out of the smokebox, or there will be a ball of flame around the front of the engine, which will then blow the whole fire out (after giving the driver a fright)!

When the fire sound has stabilised, after about 30 seconds the gas can be turned up until a healthy roar is heard. The smoke box door may be shut after about two minutes. Now leave the locomotive to raise steam. When the pressure starts to rise, water will be seen running out of the boiler blow down valve. When the water reaches its correct level steam will be seen. Now close the check valve and let the locomotive raise at least 40 p.s.i..

Running

When the engine has raised about 40 p.s.i. you are ready to start running. Open the cylinder drain cocks with the levers in vertical position. Be sure that the levers did not touch the rails (the loco would derail), now open carefully the steam regulator.

It is advisable to run the engine in reverse first; it clears the condensed water from the cylinders best this way. When no more water comes out of the drain cocks please close them by bringing the levers in the horizontal position.

Before commencing your first run of the day, it is advisable to put a cloth loosely over the chimney for a few minutes, as condensed water will be ejected from the chimney. This is quite normal; the motion of the engine will be jerky until all condensate has been ejected. **Do not** stand over the chimney as ejected boiling water/steam could cause serious scalding.

Place the direction lever into the reverse position, and then open the main steam valve. The engine should start to move off in the reverse direction. From starting from cold it will be jerky, this is normal, as it has

to clear the condensate from the system. The more the main steam valve is opened, the faster the engine will go; our advise is to start slowly and learn the road with your engine.

After a minute or so, remove the cloth and continue running. I running it is correct practice to balance the boiler pressure against the load being pulled and the track conditions.

With a light load and level track the pressure may need to be only 25-30 p.s.i. therefore, turn the gas control valve down to keep this pressure.

When running a heavy train with steep gradients, increase the pressure by turning up the gas.

The ideal running pressure can be learned by experience and is one of the pleasures of running a live steam engine.

There is no need to have the safety valve constantly blowing off (it is what its name implies - a safety vent for excess steam pressure). In all our designs, the gas has been programmed to run out just before the water, thus it is important not to refill with gas alone in order to lengthen the run by a few minutes. When the gas runs out a complete gas, oil and water service must be done (remember GOW, also remember to shut the gas regulator before refilling, and **do not** refill with gas near any other live steam loco).

When the locomotive slows as the pressure falls at the end of a run, stop the engine. Gently open the lubricator valve and blow out any condensed water. If you intend to continue running, close the drain when you see oil coming out of it and carry out a general refill. If it is the last run of the day, leave the lubricator open and blow the lubricator clean.

Continuous Running

To run for longer periods of time than the normal "one fill" system you will require a Boiler Filling system. This consists a pump bottle with tube attached and a replacement boiler filler cab, which has a non-return valve on its underside. For the first fill service in the normal way. Then run for about 15 minutes, now have a look at the water level. You will probably need to pump some water into the boiler. Lift and tilt over the cab roof to uncover the filler cap, place the tube in the hole and holding it firmly, pump water into the boiler until the gauge glass is showing $\frac{3}{4}$ full. Keep an eye on the water gauge and try to run between $\frac{1}{2}$ and $\frac{3}{4}$ of the glass.

After another 15 minutes running you will need to refill the lubricator and top up the gas tank. Also check the water level and top up if necessary. Stop the loco in a convenient location, away from other locomotives and turn off the gas. Ensure the fire is completely out and then top up the gas tank.

Blow around the engine so there is no residual gas about, then re-light the fire. To refill the lubricator first put the loco in neutral (mid gear). Open the under floor drain valve then gently open the steam regulator. When the lubricator has blown clean, close the regulator and remove the lubricator cap. Now close the drain valve and refill with superheat steam oil to the correct level. Re-fit the lubricator cap. All this time the engine has had the fire alight and will have a good head of steam, so now carry on running.

Keep an eye on the water level at all times and try to refill the gas tank and lubricator every 20 minutes to half an hour.

End of Run

As previously mentioned, the locomotive will slow (due to pressure dropping) when the fire has gone out, stop at a convenient place and open the lubricator drain valve. Blow out all condensed water and the remaining oil. Leave the drain valve open and allow the remaining steam to blow out. The locomotive should be allowed to cool. When cool clean the engine, check the motion and oil if necessary. The locomotive should always be put away in a clean condition as it attracts less dust and is always ready for the next run (or to be shown to an admiring friend). Always leave the lubricator drain valve open so that the boiler will not be strained if subject to any temperature change. It is advisable to store the locomotive where any residual drips of oil or water do not matter.

Blocked Gas Jets

If the gas jet becomes blocked with particles of dirt within the gas, the jet will have to be removed and cleaned. With a spanner or pliers carefully undo the pipe union on the gas control valve. Remove the pipe hand jet holder assembly from the burner. Holding the jet gently in vice, unscrew the jet. To clear, place the jet nozzle against the inverted gas can nozzle and clear the jet with a blast of gas. Under no circumstances use a pricker wire, this will damage the jet hole.

Replace the jet in the holder, ideally using a thread sealant sparingly on the threads. Ensure it is tightened up firmly. Replace the assembly into the burner and re-connect the pipe to the control valve. Ensure this is done up tightly, test **CAREFULLY** for gas leaks, first with a 50/50 mixture of washing up liquid and water, and then if no bubbles are showing, with a flame and the gas “just on”. Tighten if required.

Note on Radio Control

The IK is ready for Radio Control. We recommend the metal geared Servos Hitec HS85MG and Hitec HS125MG (one of each). The receiver should be housed in the box under the cab floor and the batteries in the right water tank.

Technical Details

Scale - 1:20.3

Gauge - adjustable between 32 and 45 mm

Height - 147 mm

Width - 93 mm

Length - 277,3 mm

Minimum Radius - 76 cm (LGB R2)

Weight - 3,27 kg

Cylinder with Piston Valve and Drain Cocks, Pressure Gauge, Water Gauge, Lubricator with Drain, Ready for Radio Control

(All Specifications and Designs are subject to change without notice)

Optionally available accessories

Gas Filling Adapter (for Rothenberger Multigas 300 Cans)

Brass syringe (to suck off the oiler)

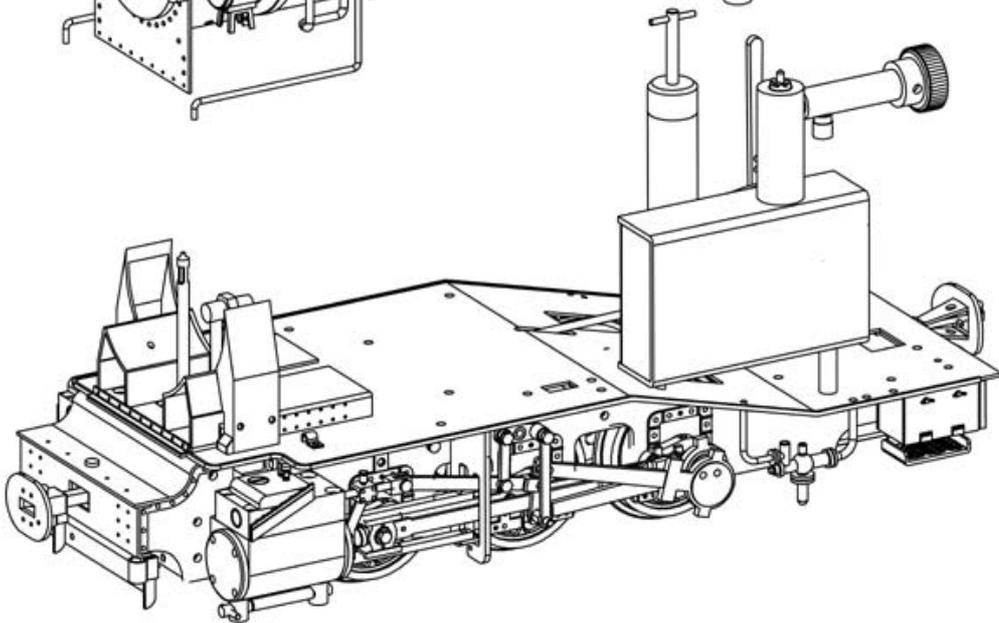
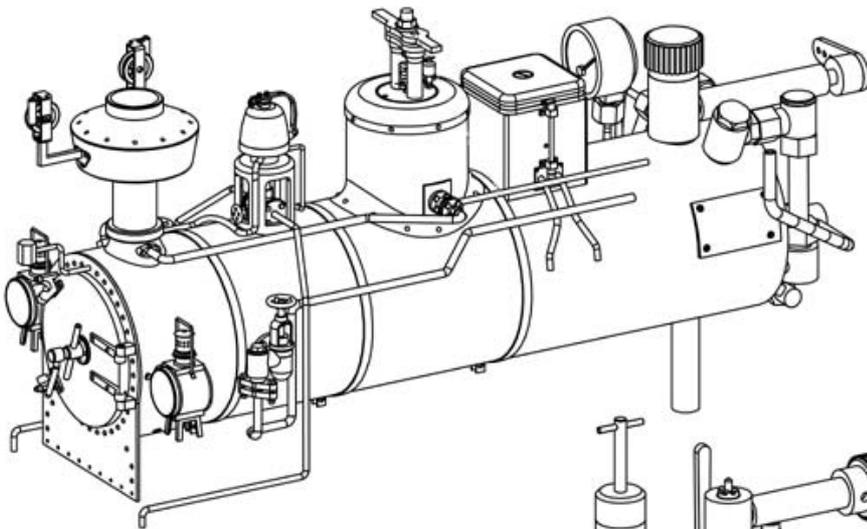
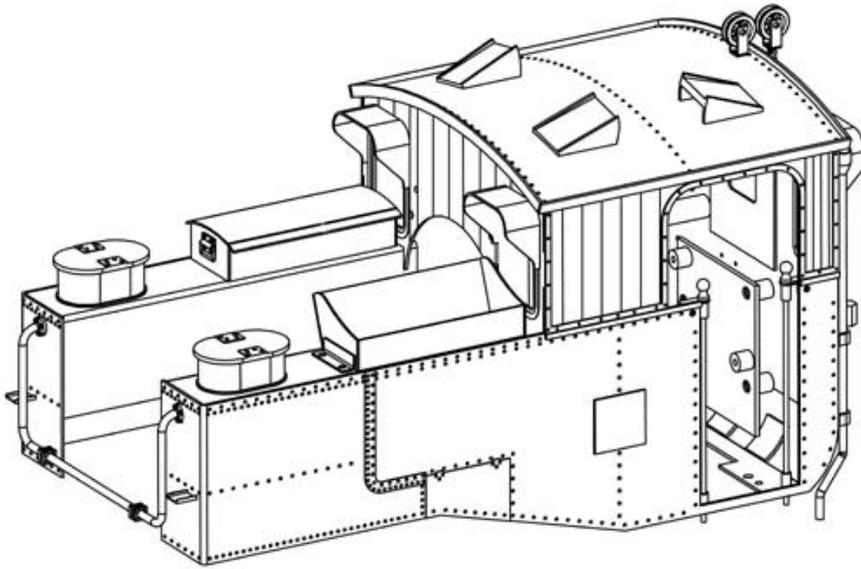
Steam Cylinder Oil ISO 220 (250 ml squeeze bottle)

Steam Cylinder Oil ISO 460 (250 ml squeeze bottle)

Lubricant Oil (100 ml squeeze bottle)

Goodall Valve

Feedbottle for Goodall Valve



History

Starting in 1881, numerous narrow gauge lines were opened in the Kingdom of Saxony which partly showed a tilt and tortuous course. For this purpose the Royal Saxon State Railways ordered 39 small three-coupled tank locomotives from the Saxon Machine Factory in Chemnitz. 1906 five more to the private Zittau-Oybin-Jonsdorfer Railway Company (ZOJE) delivered specimens were taken over by the state railway. First, they were classified in the genus H V TK, which was changed in 1896 in K I and from 1900 in I K.

27 locomotives arrived in 1920 still in the possession of the Deutsche Reichsbahn. In 1925 they received the new numbers from 99 7501 to 99 7527. A little later, all locomotives were retired.

After First World War, five locomotives were made as War reparations to Poland. During the Second World War, two of this were re-introduced into the herd of the Deutsche Reichsbahn and designated as 99 2504 and 99 2505. They arrived in 1945 to Polish Railways PKP again.

The Saxonian IK - Rebirth of a Legend

In 2006, the delivery of the first three narrow gauge locomotives of the genus IK from the Saxon Machine Factory formerly Richard Hartmann AG to the Royal Saxon State Railways has her 125th anniversary. Until 1892 a total of 44 of this small, strong, three-coupled tender locomotives leaves the factory in Chemnitz. The last locomotive of this genus was scrapped in 1964 after considerable 80 years of service in Schmiedeberg.

From 2006-2009 a unique project was realized in the Free State of Saxony: the faithful reproduction of Saxony's first narrow-gauge locomotive. In this period, a copy of the for decades no longer existing Lokomotive Type was build from ground on new using old and new drawings. After three years of dedicated work, the IK No. 54 was officially privy on 04. July 2009 in Radebeul. Since 29. August 2009 the IK No. 54 locomotive comes to the Saxon narrow gauge railways. Railway enthusiasts and tourists enjoy the rides of the striking train with great enthusiasm.

For the small green black red painted machine were cash and in-kind donations collected valued at more than 800.000 EUR.

She wears now significantly to the increasing of the tourist attractiveness of the Saxon narrow gauge railways.

About the impressive path from the idea to build a replica up to the commissioning of the final locomotive is reported in the book about the IK No. 54 and honors thus the accomplished achievements of many volunteer supporters.

The IG Preßnitztalbahn e.V. as railway transport company has taken over the complete support of the I K No. 54, also for the deployment planning (<http://www.ssb-sachsen.de>).

HAPPY STEAMING!

Guarantee: we will remedy any defect or malfunction occurring with this product during a one year guarantee period from date of purchase.

This guarantee does not extend to malfunctions or defects causes by damage or unreasonable use, including the failure to provide the correct types of lubrication and water.

This guarantee is quoted in addition to all legal right of the purchaser under the Sale of Goods Act, and shall expire one year from the date of purchase. Under no circumstances shall we be responsible for any consequential damages arising in regards to any of our products. Please read the instructions carefully and note the hints for professional operation!



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