

1901

BURRELL

COMPOUND TRACTION ENGINE

OLD DUCH

Registration No. AF 4393

Works No. 2417



1:35
SX-35001



3D-PRINTED
MODEL KIT

Builder's Guide



MEET THE DESIGNERS

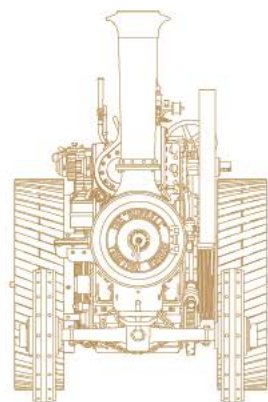
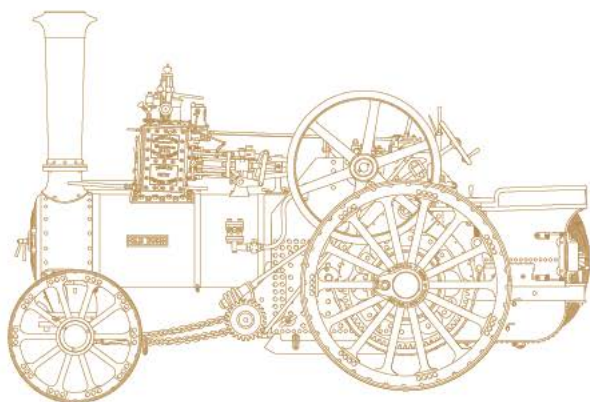
David and Amanda Jones are an experienced husband-and-wife design team. David, an aircraft mechanical technician, handles the 3D scanning and digital engineering, drawing on decades of kit building and design experience.

Amanda is a competitive, award-winning modeller and published photographer with a relentless eye for detail and historical accuracy.

This Traction Engine kit began as a passion project in 2025, designed across borders while David was working abroad. It combines David's innovative 3D workflow with Amanda's skilled 3D sculpting, test building and quality assurance.

Together, they have created a model that balances intricate engineering with artisan authenticity.





HISTORY

"Old Duch" is a 6 NHP Burrell Single Crank Compound traction engine. Its engine serial number is 2417. It is an early example of the type, being built in 1901 by Charles Burrell & Sons at St Nicholas Works in Thetford located in the county of Norfolk.

The engine's distinctive single-crank compound system was developed by Frederick Burrell. The smaller high pressure piston and larger low pressure piston combine at the top of the boiler to drive one crankshaft. This asymmetric cylinder block is an iconic features of these engines.

This particular engine is one of the earliest of its type to survive and there are a number of features that set it apart from later iterations of that model. Burrells are renowned for their lack of standardisation and this one is no exception. It differs greatly from later engines of the same type. Most notably the foot plate entrance is on the left, rather than the right, which was typical of engines only a few years younger. It also has a distinctive brake, which acts directly onto the teeth of one of the large drive gears.

This braking method is not regarded by the current owners as being that effective. It did not feature in later engines of the same model. In fact, at some point during the mid 20th century up to about the 1980's. This engine featured a flywheel brake modification, which no doubt improved handling. This was removed when the engine was restored to represent its original appearance.

The paint scheme is representative of how it would have been during its working life. The main colour is 'Burrell Green', a very distinctive dark shade specific to Burrell engines. The wheels are 'Burrell Chocolate', a dark brown. This striking combination was a standard paint scheme on these agricultural engines in this time period.

These engines were used extensively for threshing and sawing. This particular engine spent its working life at a saw mill called Battets of Stoke Climsland in Cornwall, England.

Traction engines in the UK began to acquire road number plates following the Motor Car Act 1903, which introduced mandatory registration and licensing for motor vehicles using the public roads.

The engine carries a UK road registration plate number and from 1921 was obliged by law to display paper tax disks. Both of these are in the kit and are optional parts depending on the time period you wish to depict this engine from.

This engine was restored to its current condition by Ian Holt and was featured in the popular 1990's UK television series 'Heartbeat', set in the rural Yorkshire of the 1960's.

It currently resides in Yorkshire and can be visited at many UK Steam Rallies, which celebrate these wonderful engines.

GETTING STARTED

Thank You for Choosing SteamX

This highly detailed 3D printed resin scale model kit was developed with a focus on historical authenticity, fine craftsmanship, and faithful representation of the original engine.

We recommend carefully reviewing the instructions and familiarising yourself with the parts before beginning assembly.



Safety notice

Resin dust may be hazardous to health. Assemble the model in a well-ventilated area and avoid inhaling dust generated during sanding or cutting. Wet sanding and the use of a protective mask are strongly recommended.



This product is a scale model kit intended for experienced modellers and is not a toy. Contains small and delicate parts. Keep away from children under 3 years of age. Recommended for modellers aged 14 and above.

Before You Start

Ensure you have the necessary tools before beginning assembly:

- nippers
- a sharp hobby knife
- tweezers
- sanding tools
- a JLC-style micro saw
- and cyanoacrylate (CA) glue, preferably gel type.

Handle small and delicate parts with care. Most support structures are designed to be removed by hand with minimal effort; however, the use of hobby tools such as nippers or a sharp hobby knife is strongly recommended for clean and safe removal.

Some larger components feature more substantial support structures required to preserve dimensional accuracy during the printing process. Their removal may require additional time and patience. Work carefully to avoid damaging fine details.

Always test-fit parts before gluing. Certain larger components may require minor adjustment due to the nature of resin materials and the manufacturing process.

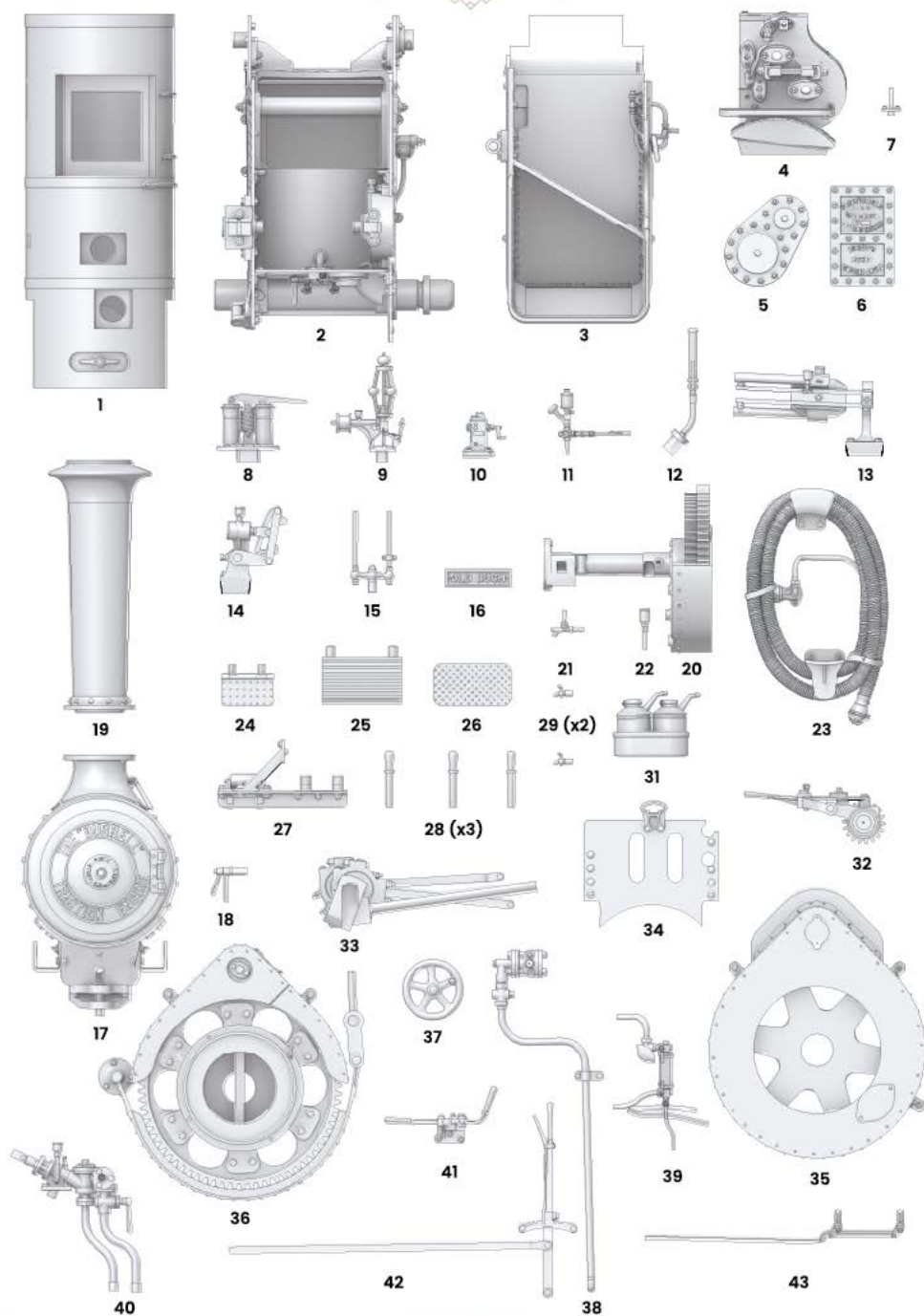
WALKAROUND PHOTOS



Scan the QR code to access the complete high-resolution walkaround archive of "Old Duch" AF 4393 from the personal collection of Amanda and David Jones.



KIT CONTENTS

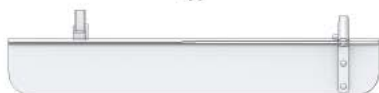




44



45



47



46



48



49 (x2)



53



50



54



56



57



58



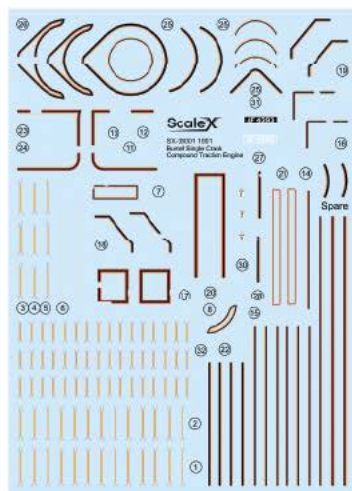
51



52



Artificial Coal



Spring Steel Rod

SYMBOLS USED IN INSTRUCTIONS

4

Section assembled in the step
indicated by the number

7

Decal

REFERENCE COLOURS

BURRELL PAINT FINISHES

Colour	AK 3GEN Acrylics	Mr. Hobby Aqueous
 Burrell Green	AK11147 + AK11130 Mix Ratio 3:1	H80 + H58
 Burrell Red	AK11088	H23
 Burrell Brown	AK11107 + AK11113 Mix Ratio 1:1	H453 + H406
 Soot & Grease	AK11028 + AK11238	H77 + H2
 Gloss Black	AK11029	H2
 Brass	AK11194	H9 + H10
 Copper	AK11197	H10
 Aged Iron	AK11198	H76
 Bare Iron	AK11210	H8
 Greased Iron	AK11211 + AK11212	H8 + H18
 Polished Iron	AK11207	H8
 Soot Black	AK11028 + AK11237	H77
 Dark Wood	AK11109	H406
 White	AK11001	H1

FIGURE PAINT FINISHES

Colour	AK 3GEN Acrylics	Mr. Hobby Aqueous
 Skin Tone	AK11052	H44
 Natural Grey Hair	AK11013	H316
 Linen Shirt	AK11003	H21
 Brown Jacket	AK11125	H310
 Trousers	AK11165	H53
 Dark Grey Hat	AK11022	H68
 Brown Shoes	AK11110	H47
 Shoe Soles	AK11027	H77

Painting Philosophy

The colours shown in this guide are indicative only. Different paint combinations, mixing ratios, and finishing techniques may produce varied and often more realistic results than the use of single base colours alone. We encourage you to use the paints and techniques you trust most to achieve the desired appearance.

PARTS REPLACEMENT

If any parts are missing or damaged, please scan the QR code below to access the replacement parts request form.

Please include the kit name, SKU number, and photographs of the affected parts when submitting your request.



<https://scalex.art/en/contact-us/>

ABOUT STEAMX

ScaleX

SteamX is a dedicated division of ScaleX focused on the research, development, and production of historic steam engine models for scale modelling enthusiasts and collectors.

 shop.scalex.art
 [/ScaleXart.ua](https://www.facebook.com/ScaleXart.ua)
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Produced in collaboration with David and Amanda Jones.

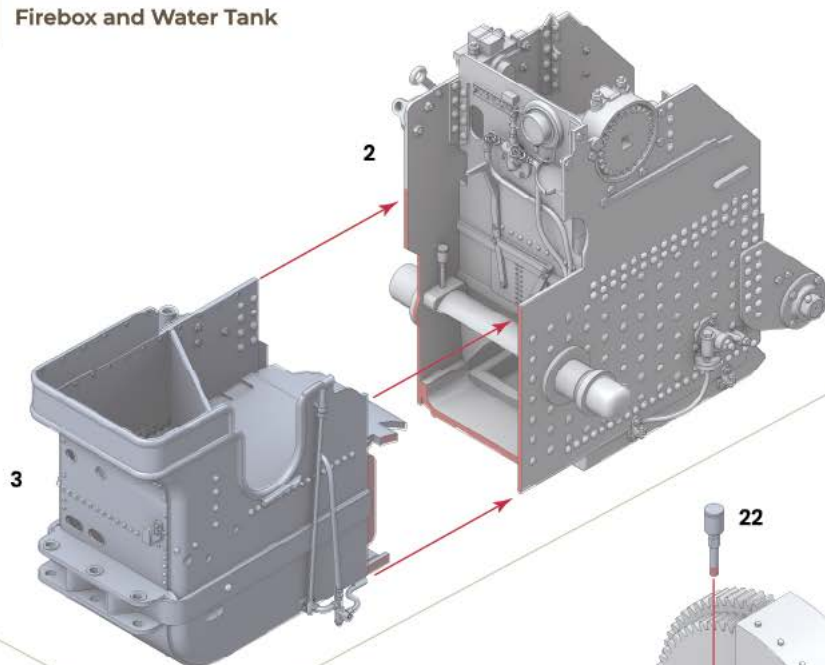
Original research, design, and model development by David and Amanda Jones.

Executive production by SteamX.

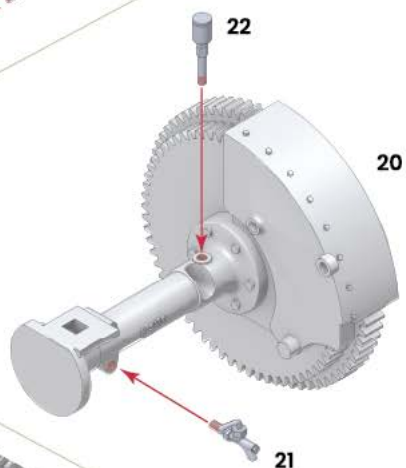


MODEL ASSEMBLY

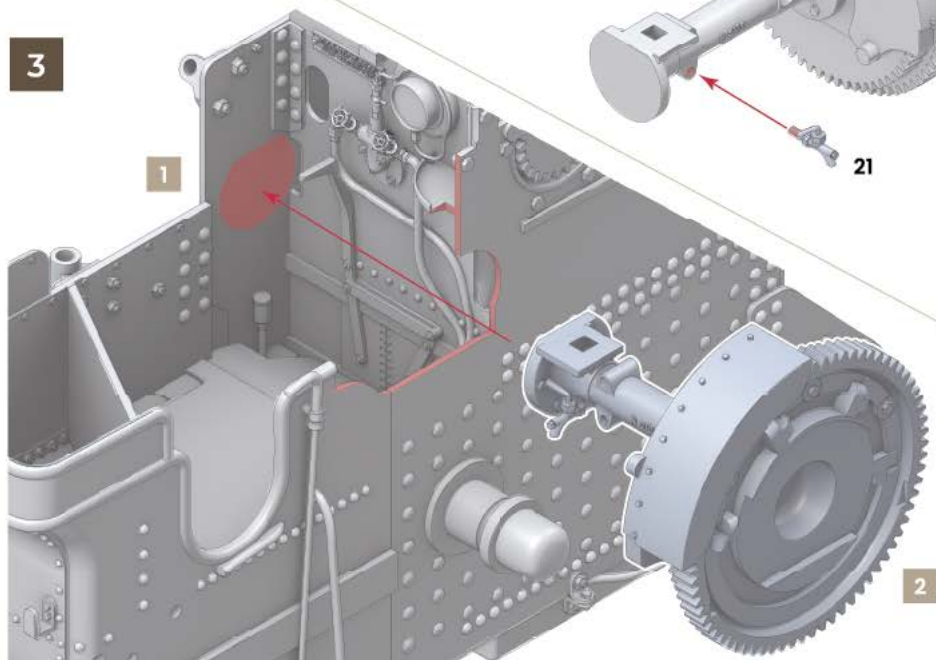
1 Firebox and Water Tank



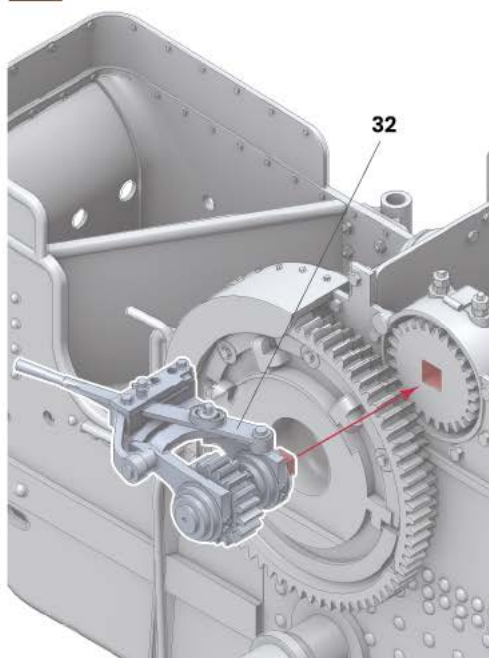
2 Countershaft



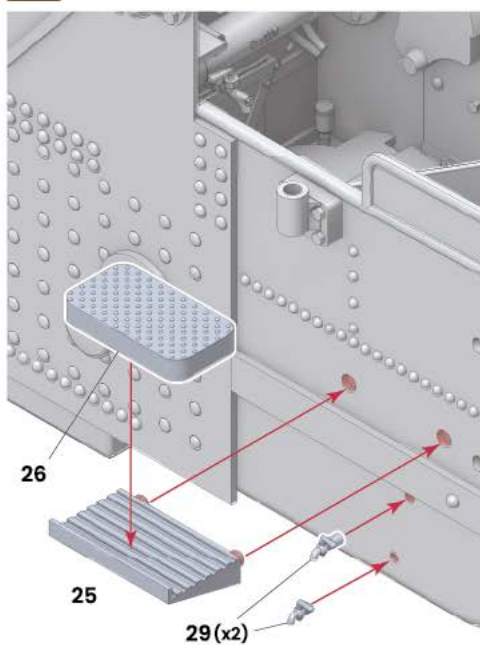
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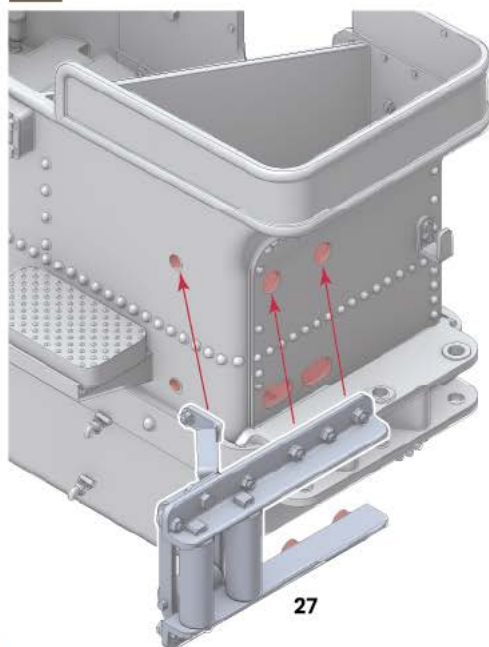
4 Gear Selector



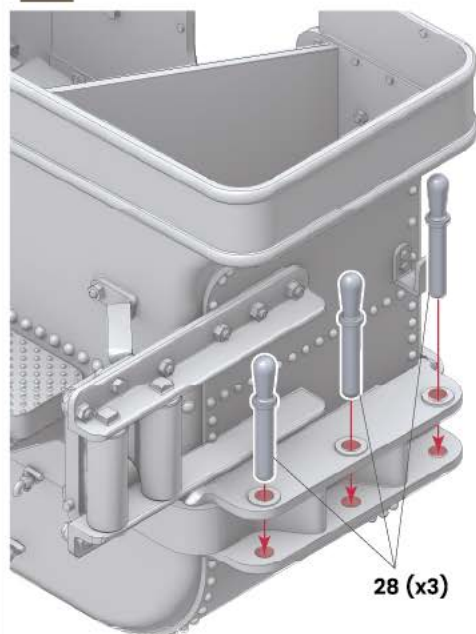
5 Step, Water Tank Taps



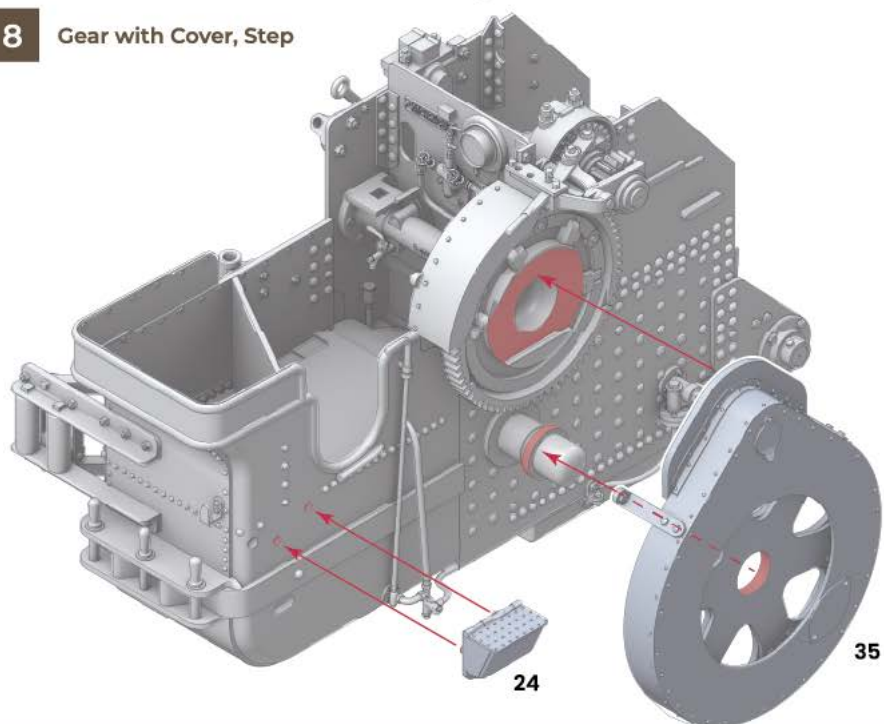
6 Winch Roller



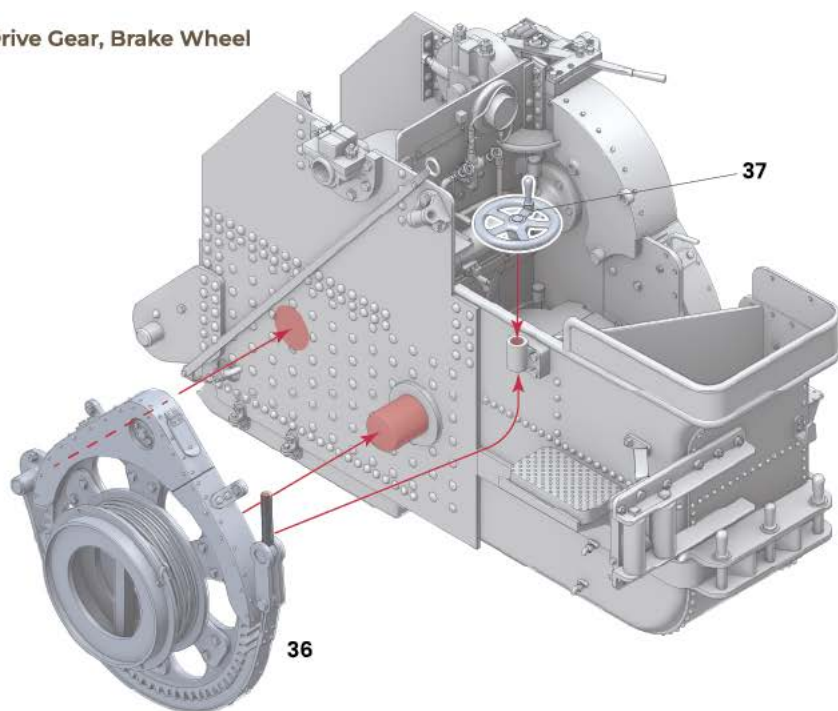
7 Tow Pins



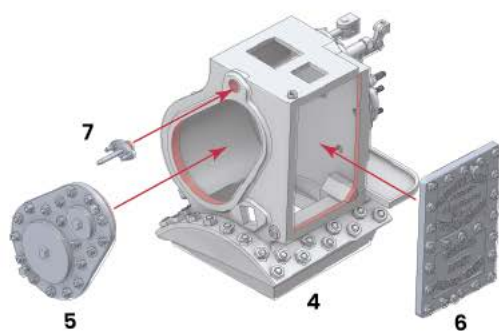
8 Gear with Cover, Step



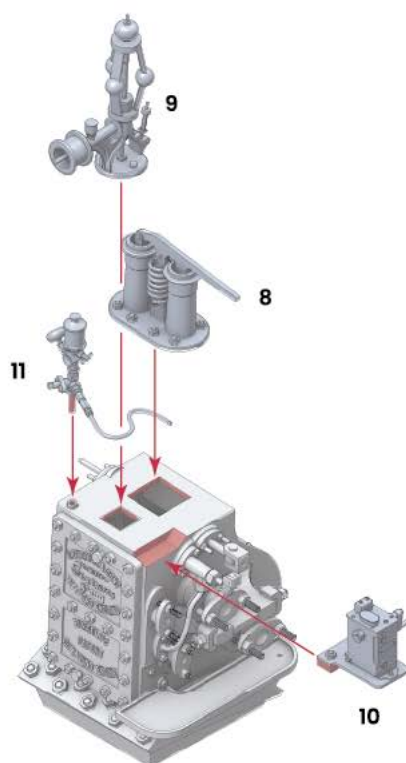
9 Drive Gear, Brake Wheel



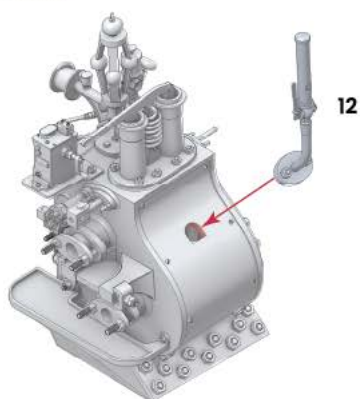
10 Valve and Piston Covers



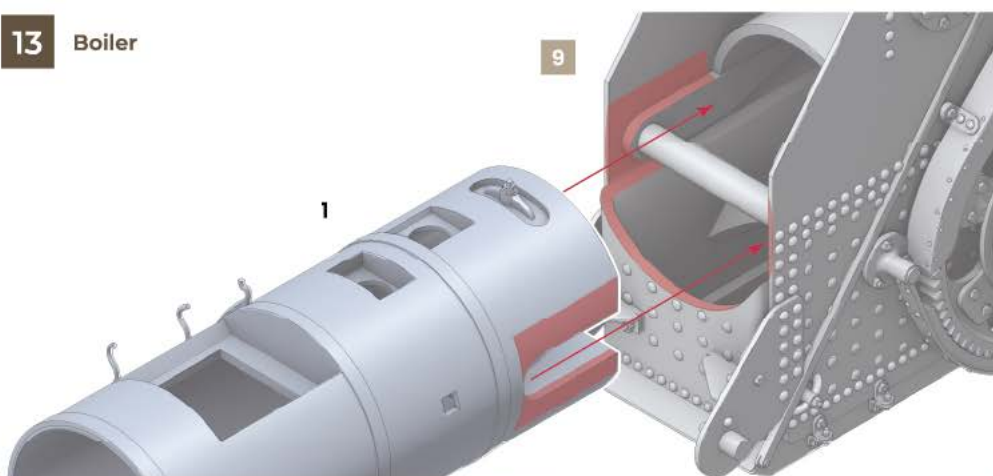
11 Governor, Safety Valve, Greaser, and Grease Box



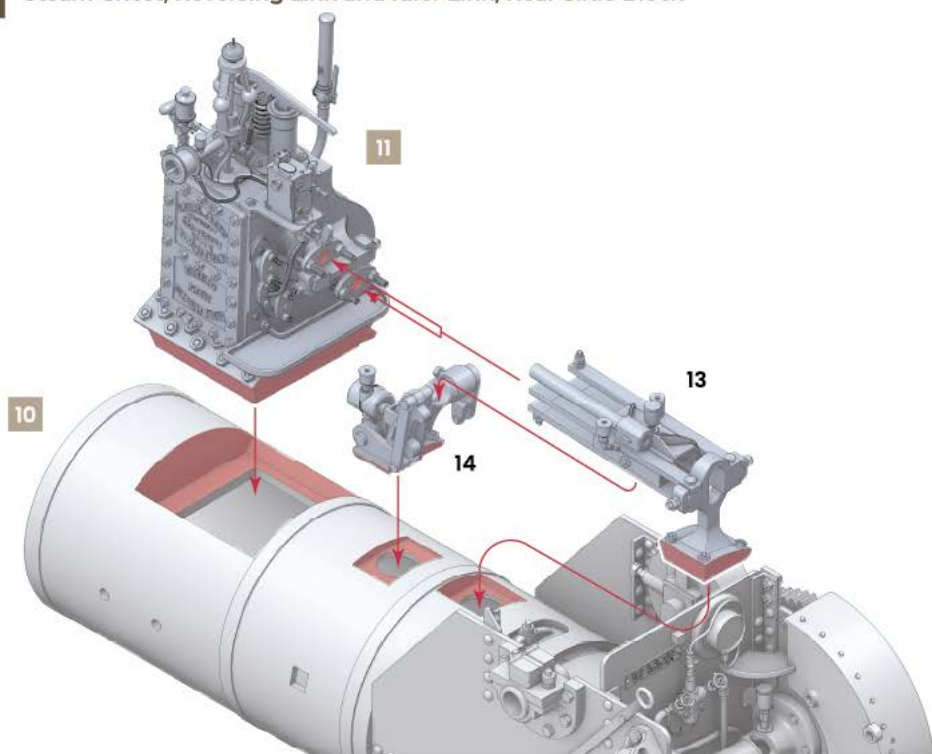
12 Whistle



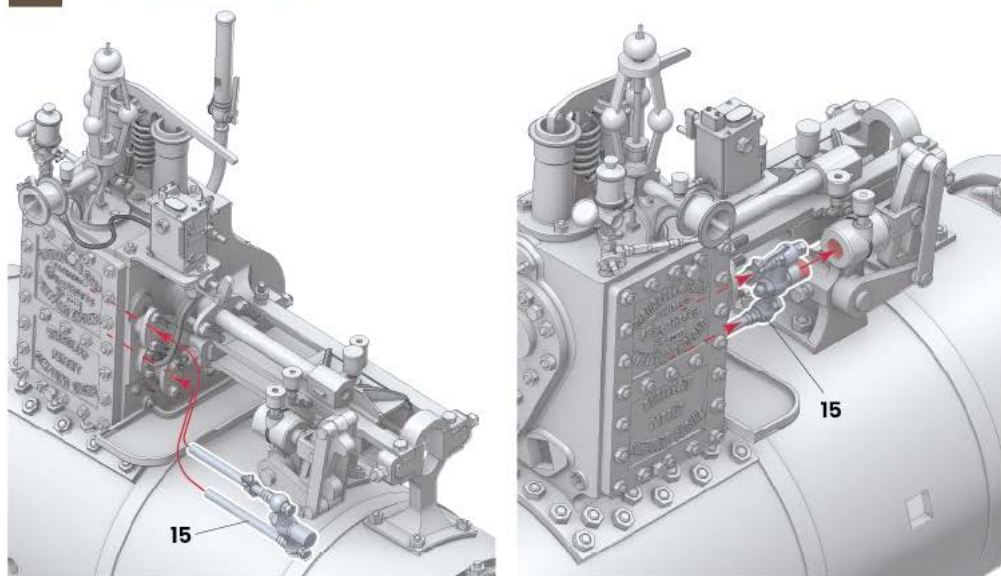
13 Boiler



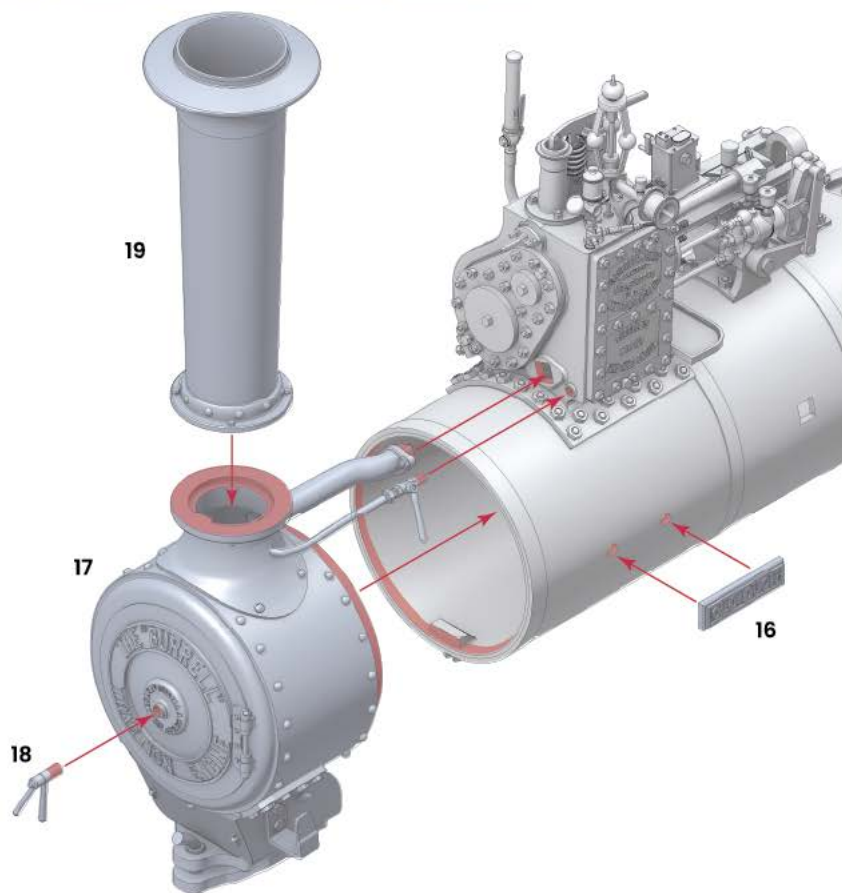
14 Steam Chest, Reversing Link and Idler Link, Rear Slide Block



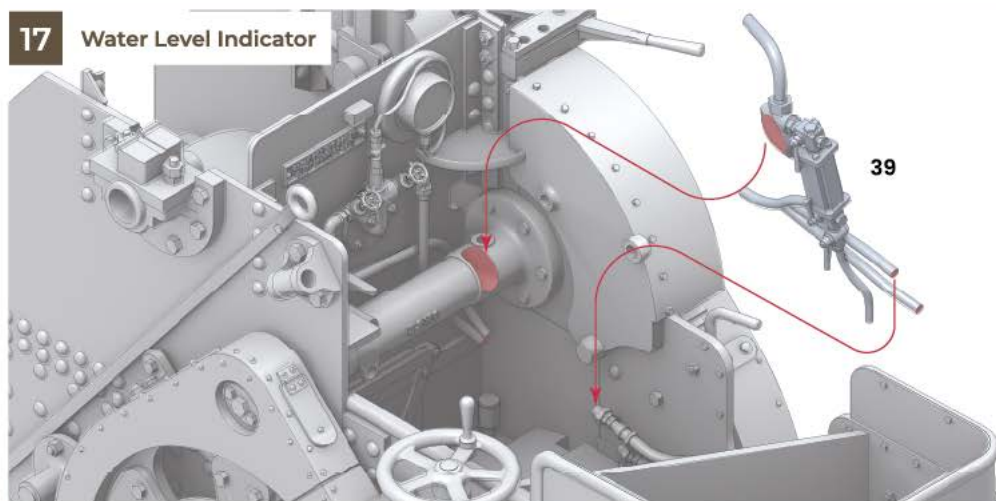
15 Steam Valve Linkage



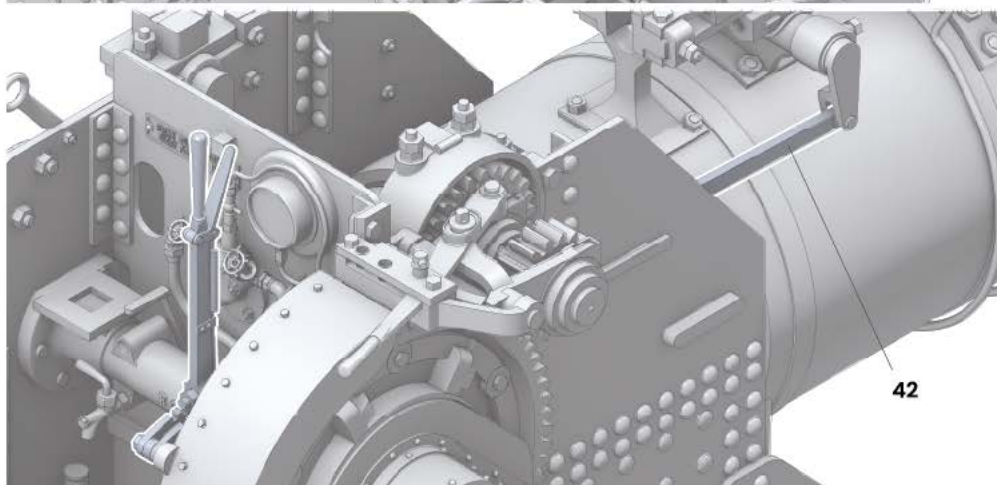
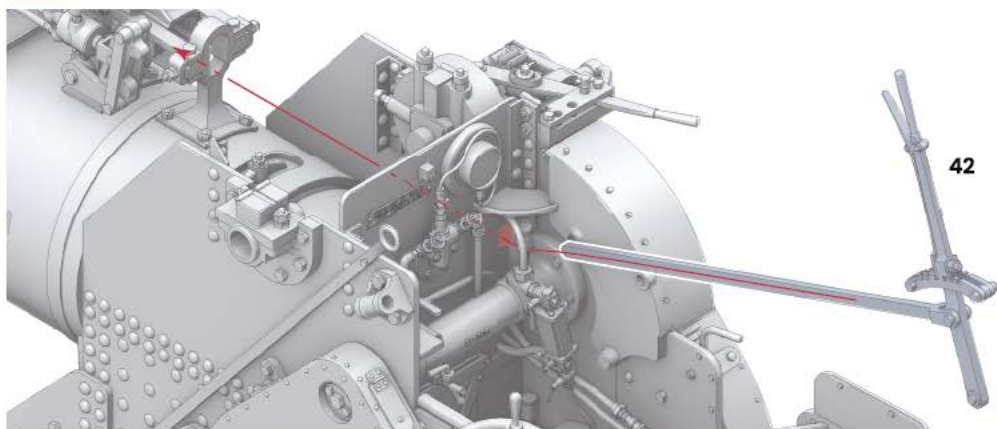
16 Smokebox, Smokebox Door Lock, Chimney, Name Plate



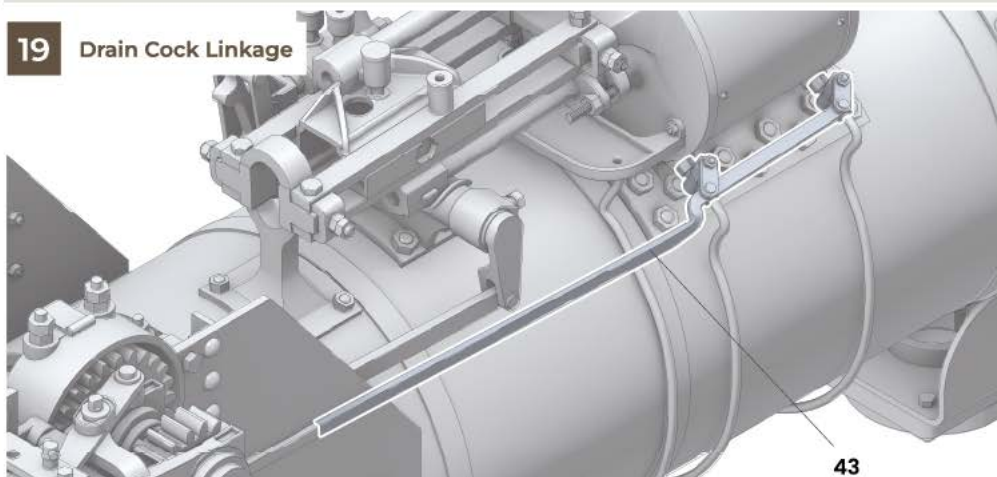
17 Water Level Indicator



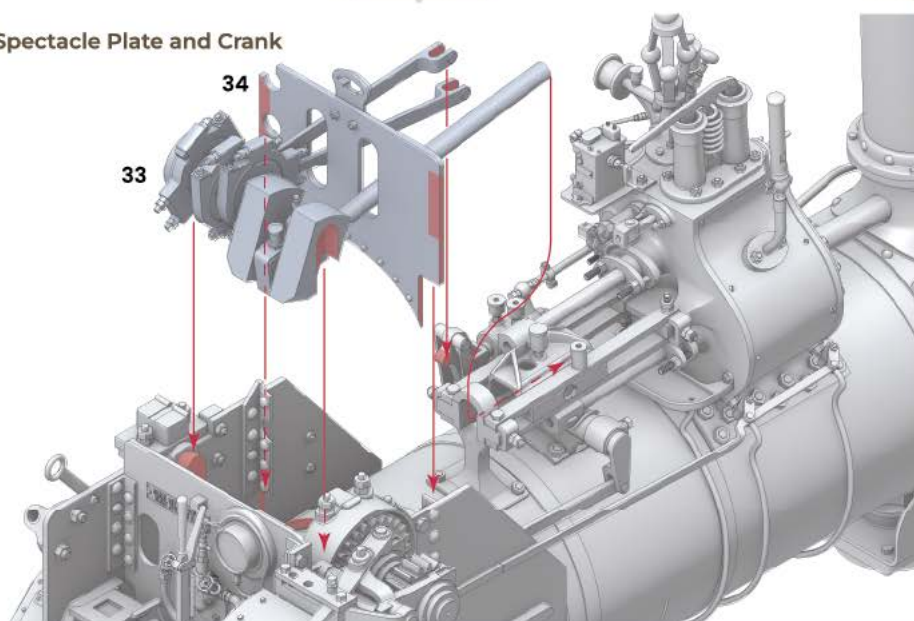
18 Reversing Lever



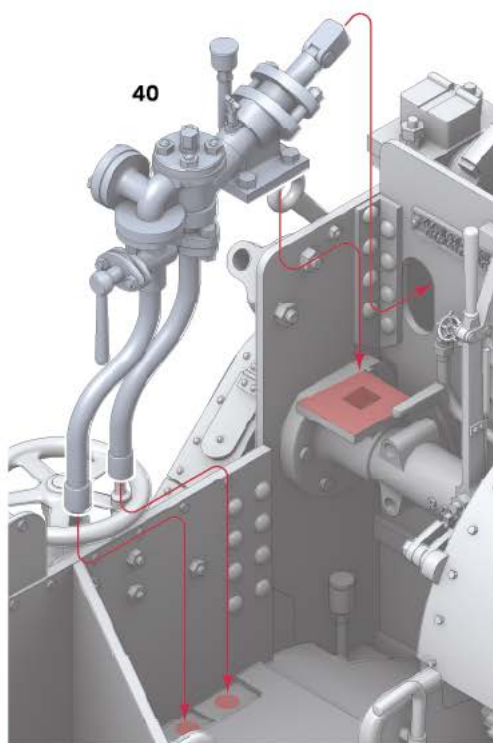
19 Drain Cock Linkage



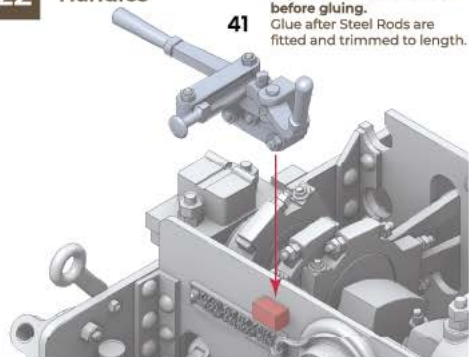
20 Spectacle Plate and Crank



21 Water Pump

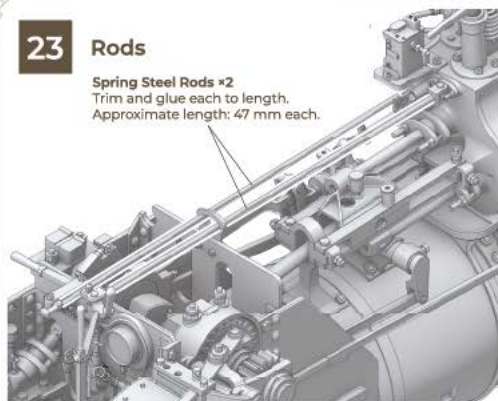


22 Handles

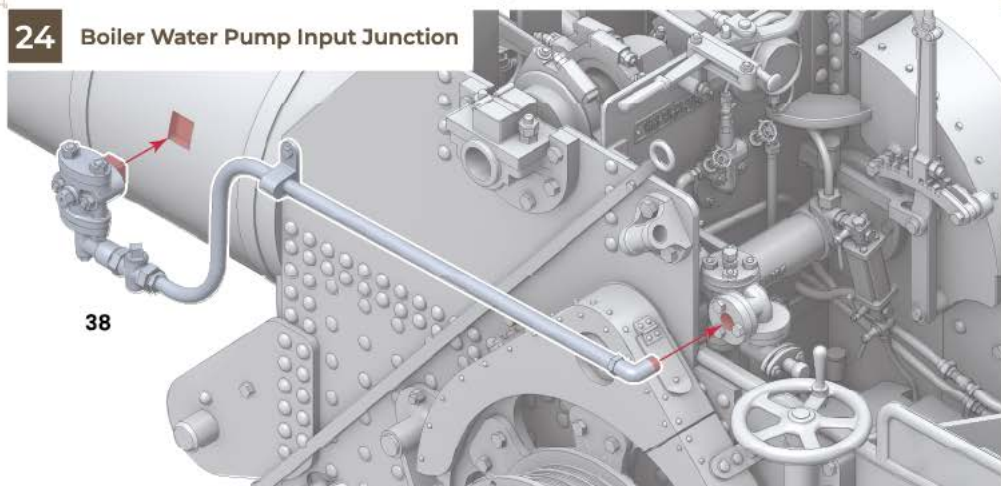


23 Rods

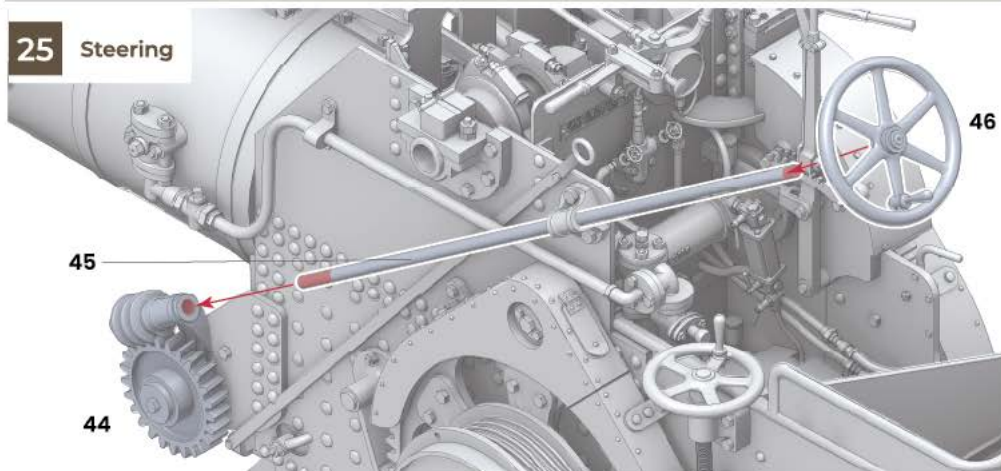
Spring Steel Rods ×2
Trim and glue each to length.
Approximate length: 47 mm each.



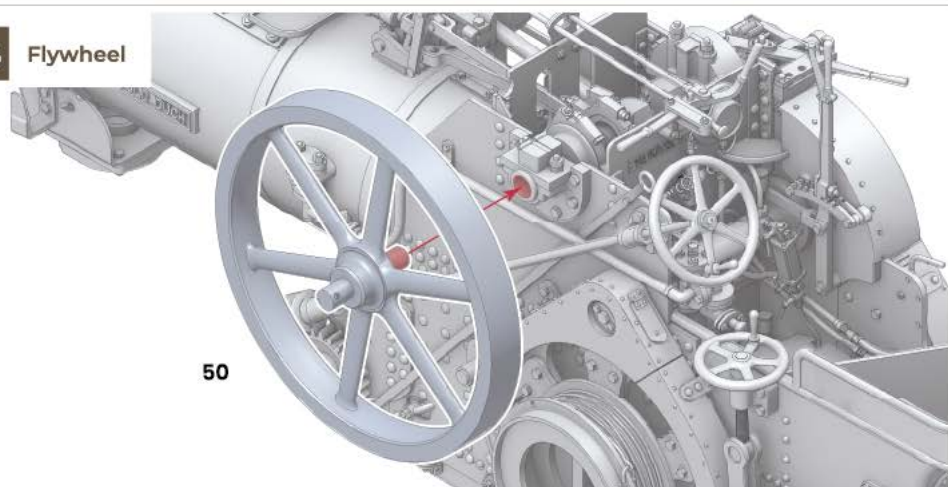
24 Boiler Water Pump Input Junction



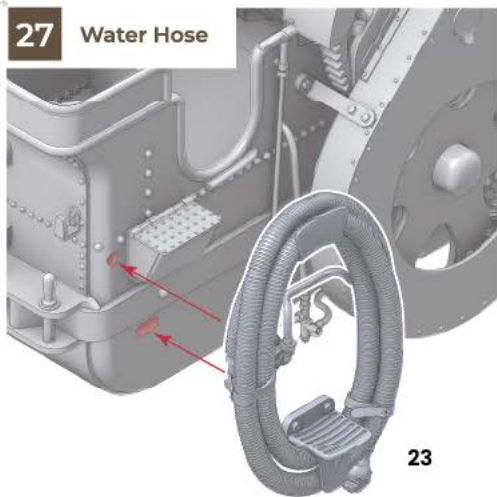
25 Steering



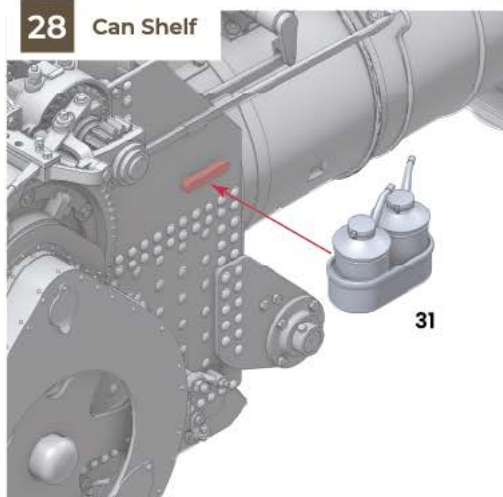
26 Flywheel



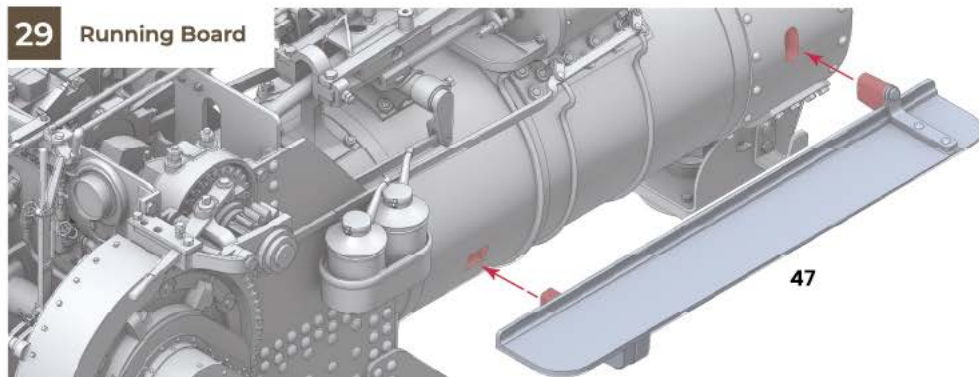
27 Water Hose



28 Can Shelf



29 Running Board



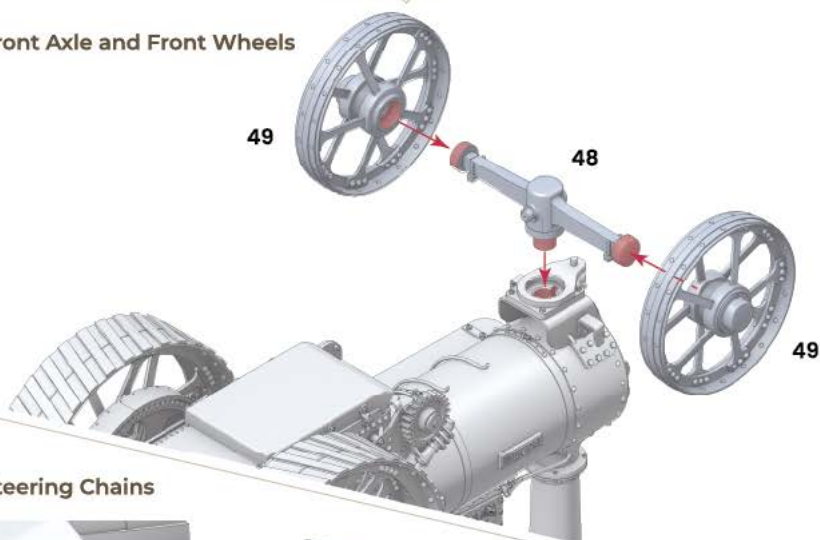
30 Left Driving Wheel



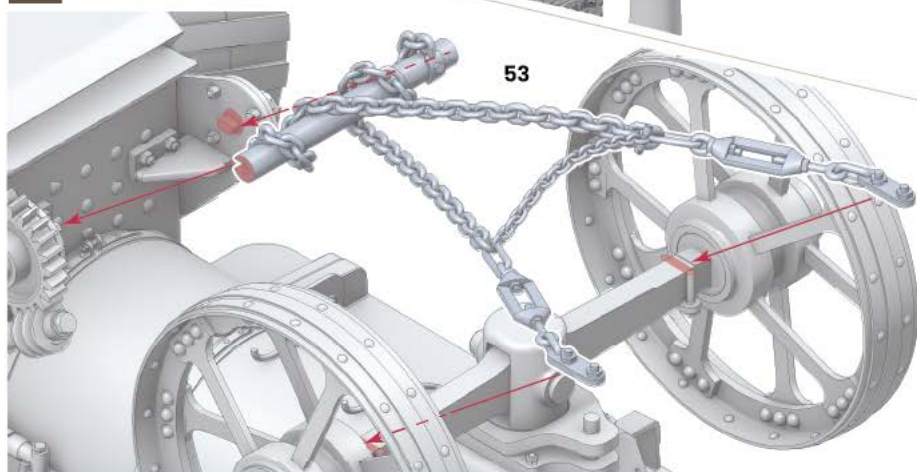
31 Right Driving Wheel



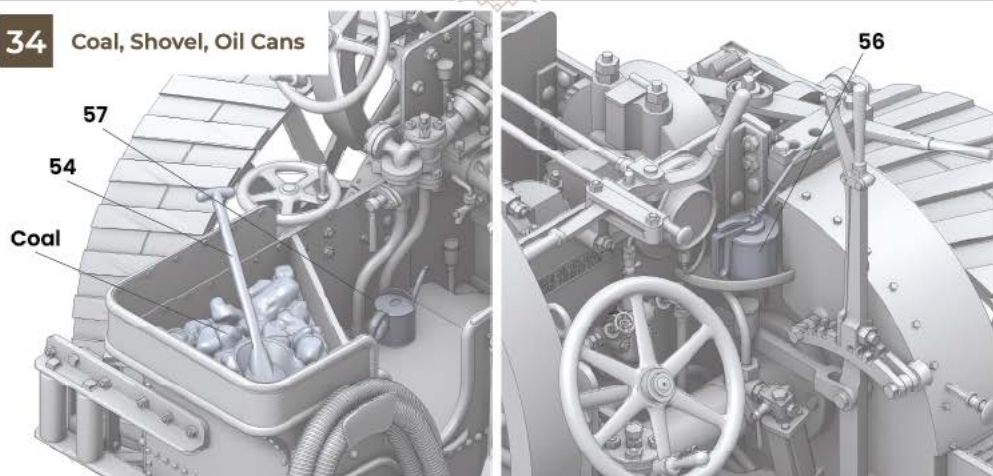
32 Front Axle and Front Wheels



33 Steering Chains



34 Coal, Shovel, Oil Cans



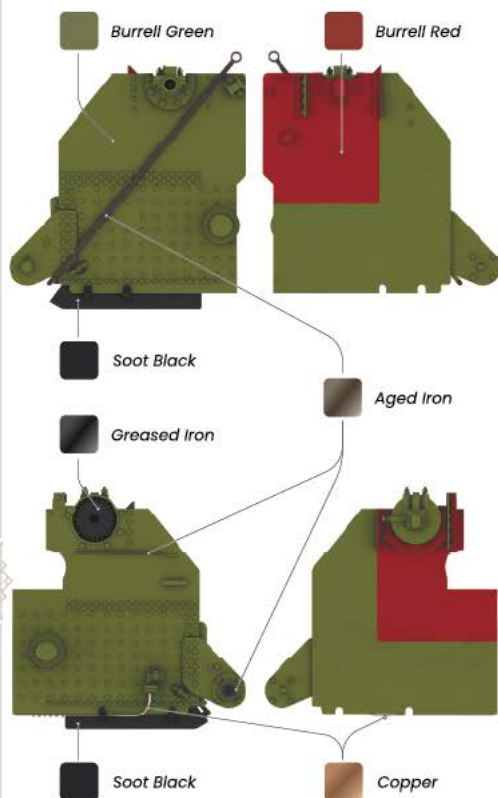


PAINTING GUIDE

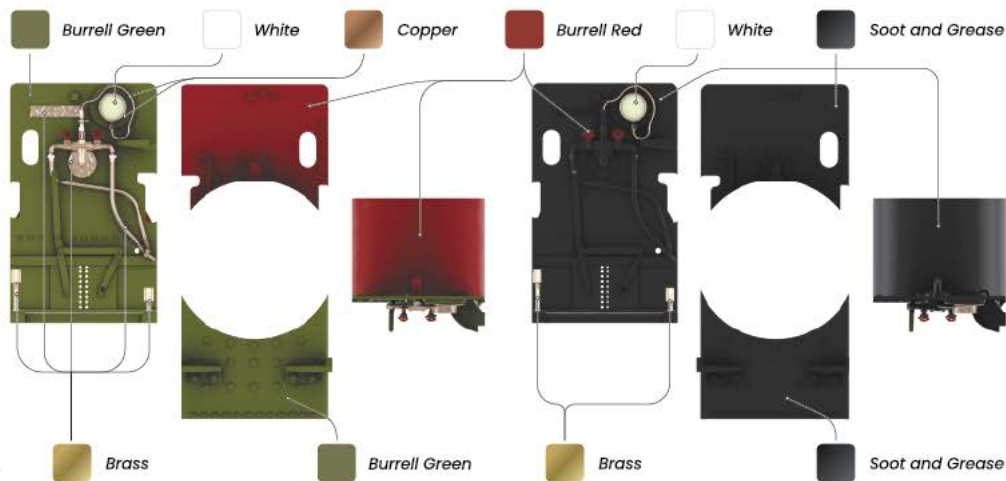
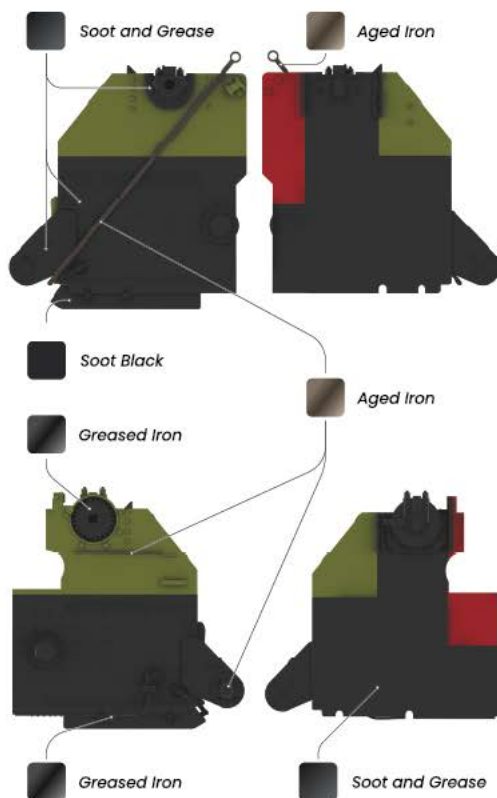


1 Firebox

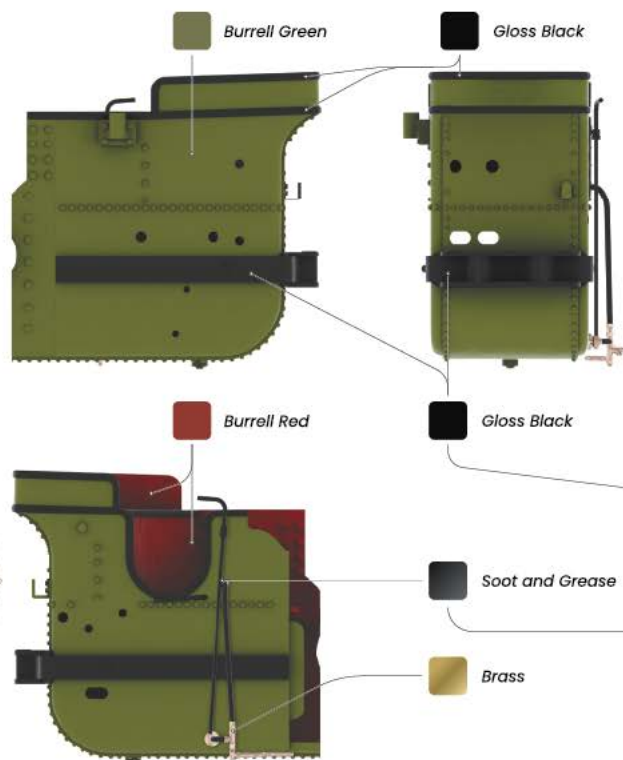
COLOUR SCHEME A



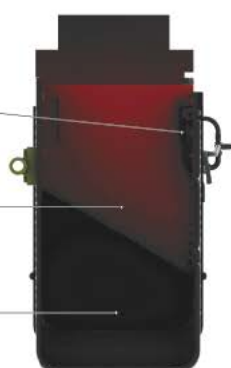
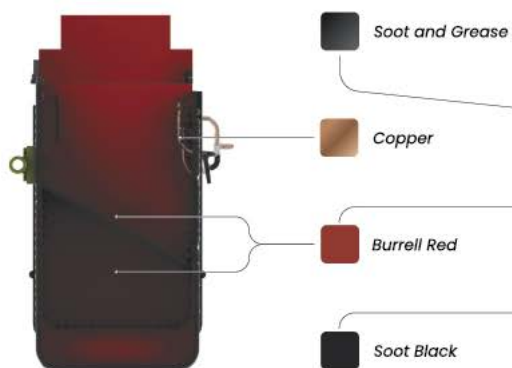
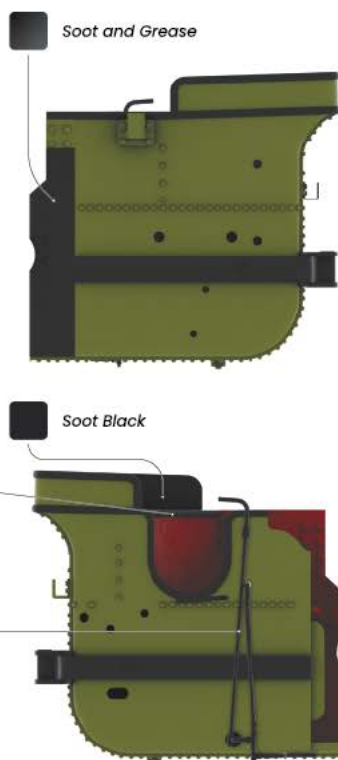
COLOUR SCHEME B



COLOUR SCHEME A



COLOUR SCHEME B

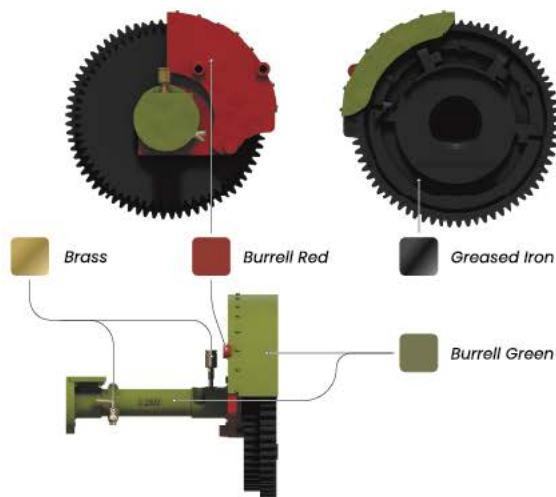


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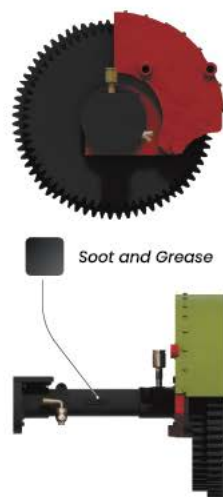
3

Countershaft

COLOUR SCHEME A



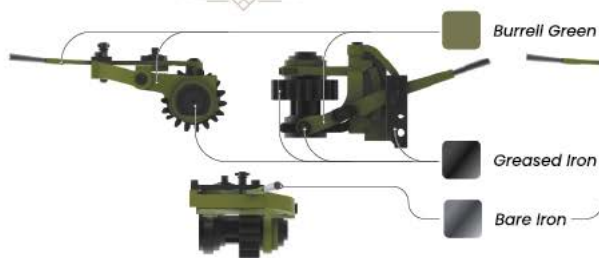
COLOUR SCHEME B



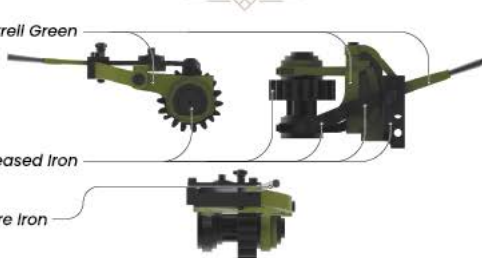
4

Gear Selector

COLOUR SCHEME A



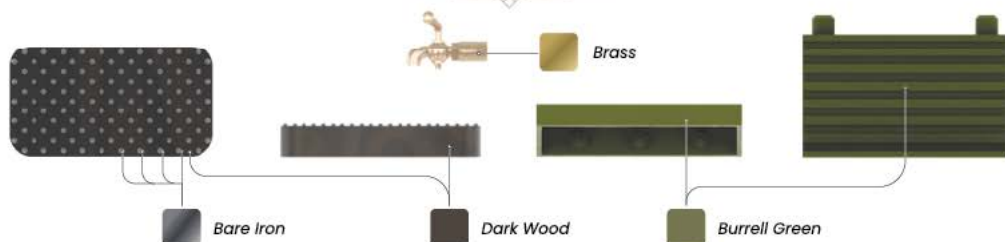
COLOUR SCHEME B



5

Step, Water Tank Taps

COLOUR SCHEMES A & B



6 Winch Roller

COLOUR SCHEMES A & B



 Gloss Black

7 Tow Pins

COLOUR SCHEMES A & B



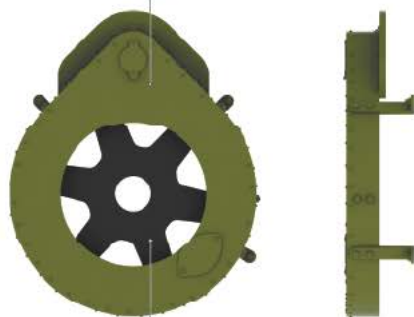
 Aged Iron

8 Gear with Cover, Step

COLOUR SCHEMES A & B



 Burrell Green



 Greased Iron



9 Drive Gear, Brake Wheel

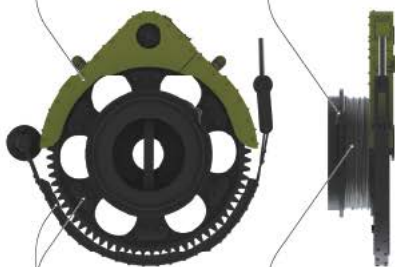
COLOUR SCHEMES A & B



 Burrell Red

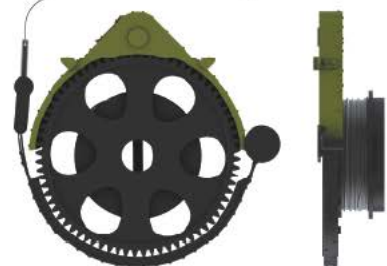
 Burrell Green

 Bare Iron



 Greased Iron

 Aged Iron



COLOUR SCHEME A



Brass



Copper



Soot Black

COLOUR SCHEME B



Gloss Black



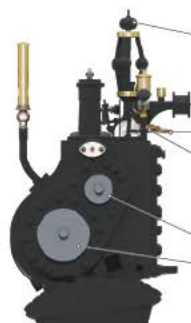
Brass



Copper



Bare Iron



Brass



Aged Iron



Soot Black



Burrell Green



Soot Black



Copper



Aged Iron



13 Boiler

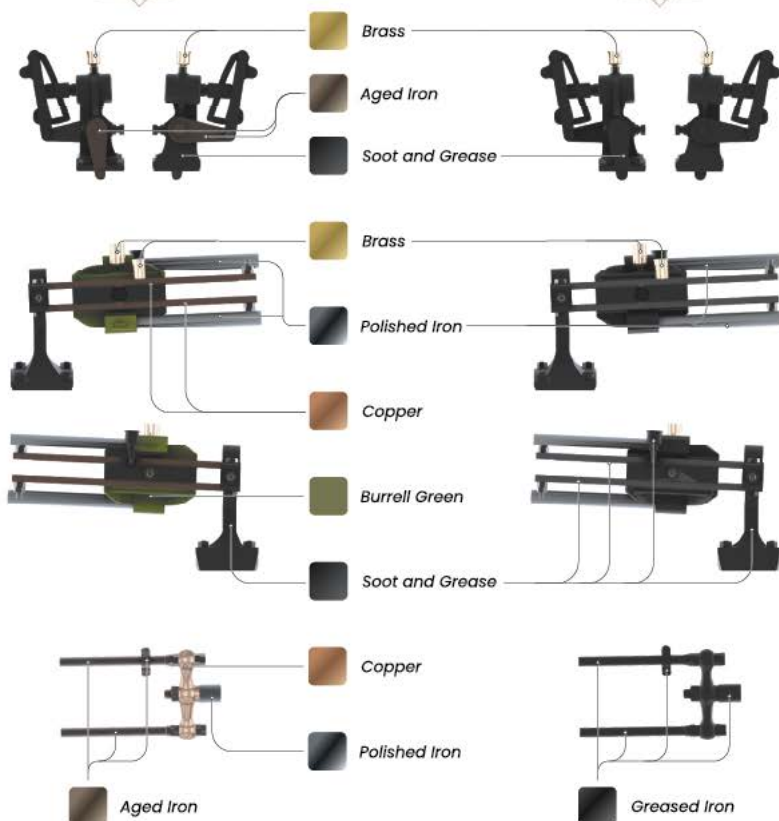
COLOUR SCHEMES A & B



14 15 Reversing Link and Idler Link, Rear Slide Block, Steam Valve Linkage

COLOUR SCHEME A

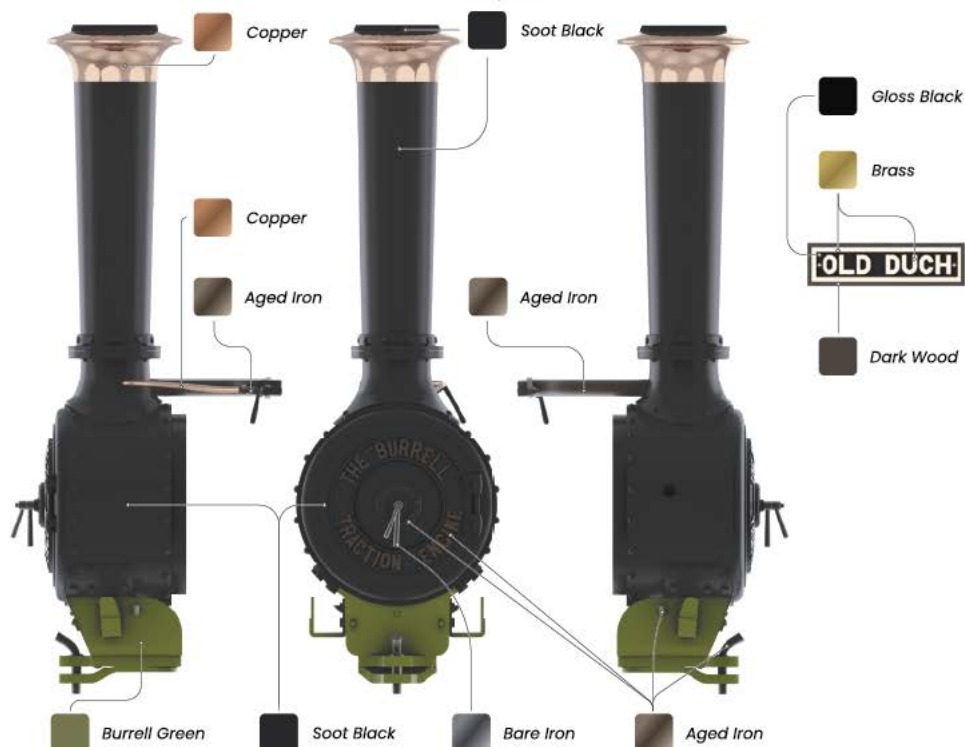
COLOUR SCHEME B



16

Smokebox, Smokebox Door Lock, Chimney, Name Plate

COLOUR SCHEMES A & B

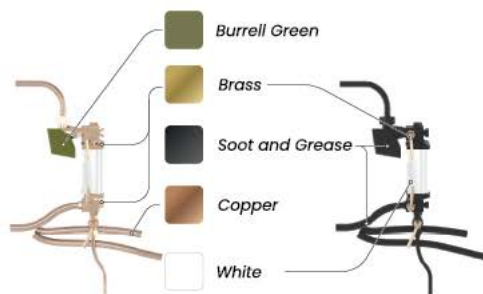


17

Water Level Indicator

COLOUR SCHEME A

COLOUR SCHEME B

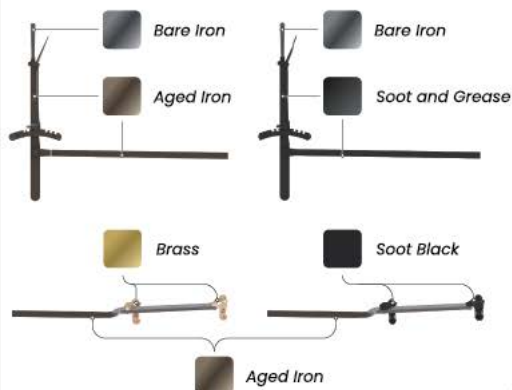


18

Reversing Lever, Drain Cock Linkage

COLOUR SCHEME A

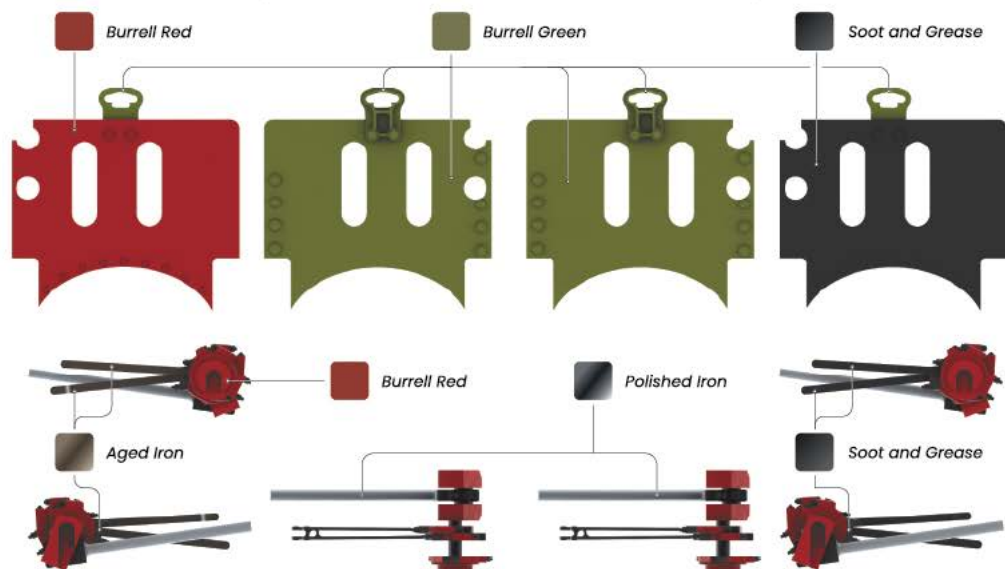
COLOUR SCHEME B



20 Spectacle Plate and Crank

COLOUR SCHEME A

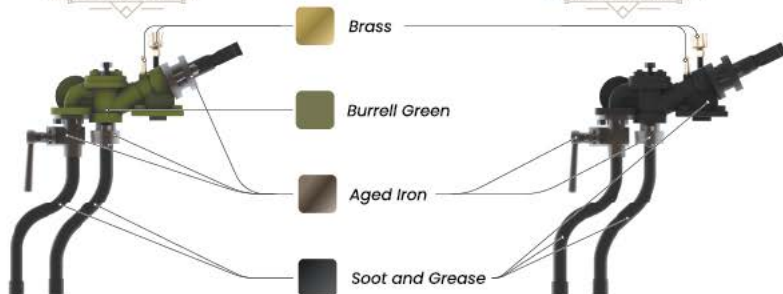
COLOUR SCHEME B



21 Water Pump

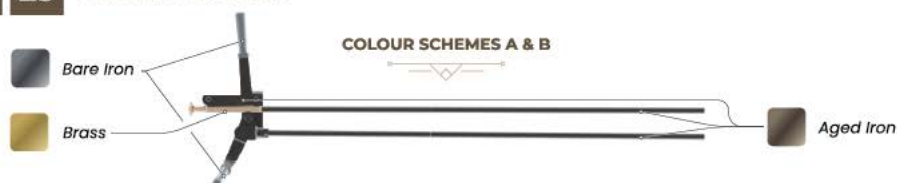
COLOUR SCHEME A

COLOUR SCHEME B



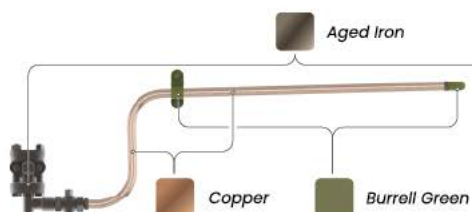
22 23 Handles and Rods

COLOUR SCHEMES A & B

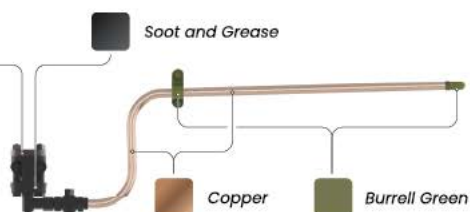


24 Boiler Water Pump Input Junction

COLOUR SCHEME A

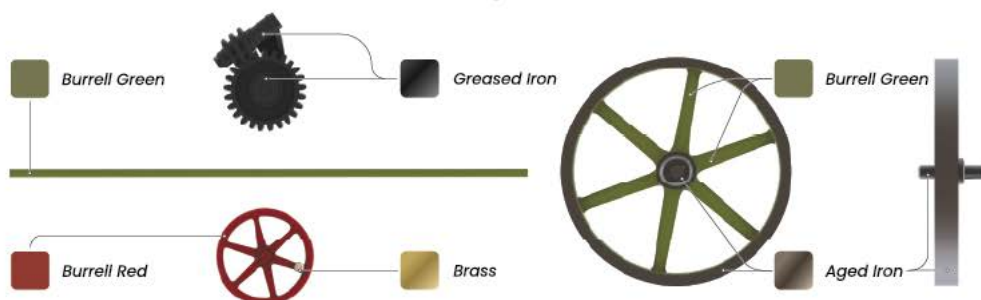


COLOUR SCHEME B



25 26 Steering and Flywheel

COLOUR SCHEMES A & B



27 28 Water Hose and Oil Can Shelf

COLOUR SCHEMES A & B

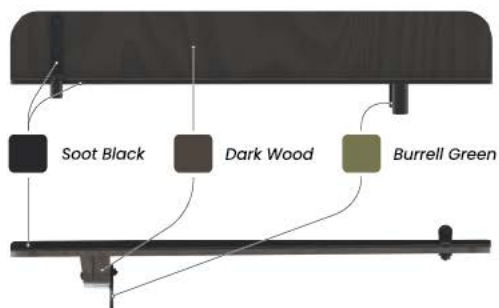


COLOUR SCHEMES A & B



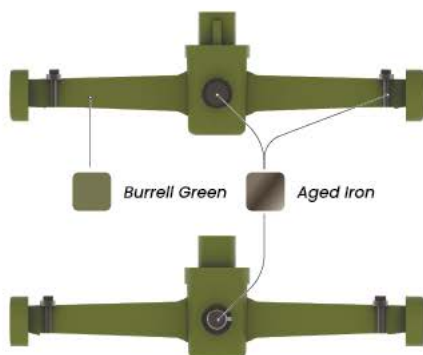
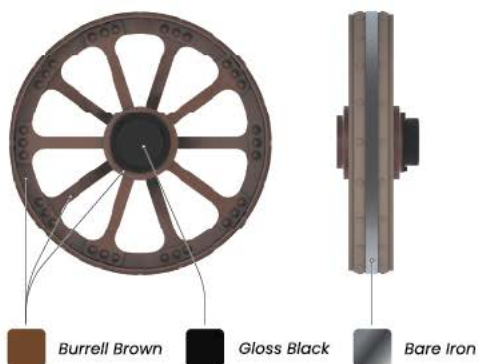
29 Running Board

COLOUR SCHEMES A & B



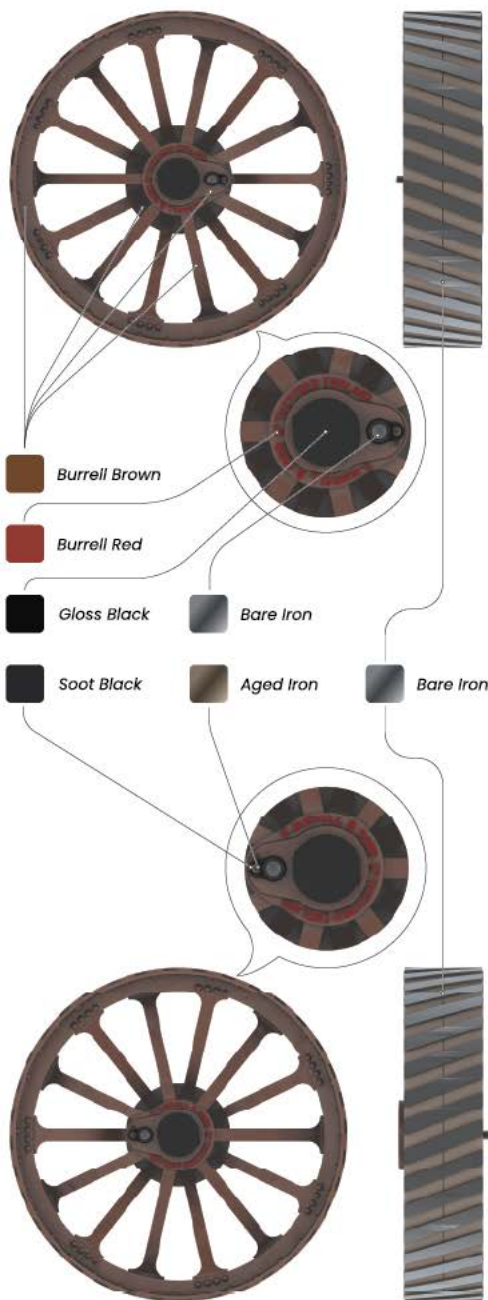
32 Front Axle and Front Wheels

COLOUR SCHEMES A & B

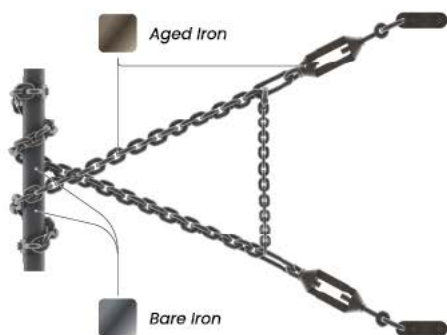


30 31 Left and Right Driving Wheels

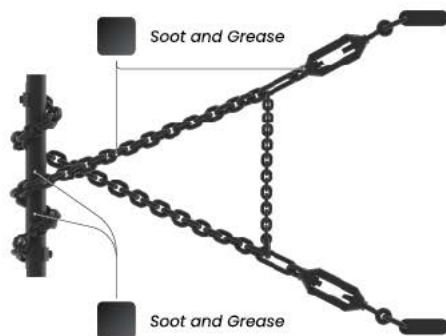
COLOUR SCHEMES A & B



COLOUR SCHEME A



COLOUR SCHEME B



COLOUR SCHEMES A & B



Soot and Grease



Dark Wood



Bare Iron

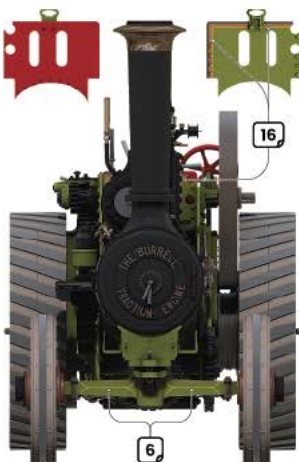
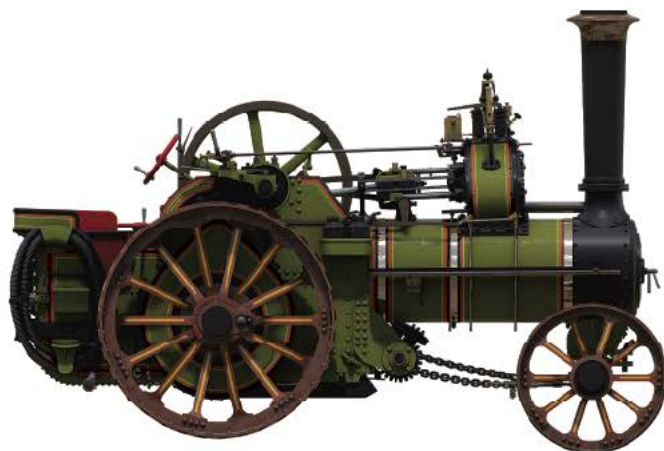
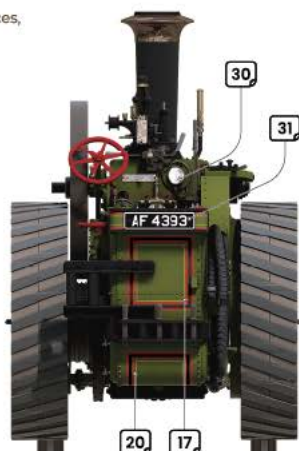
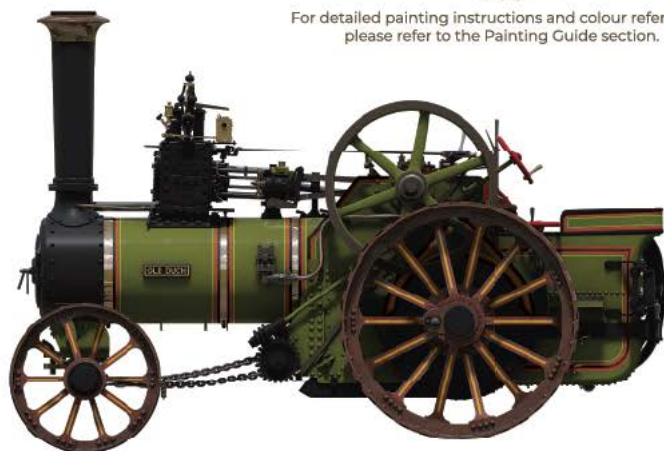
FIGURE PAINT SCHEME



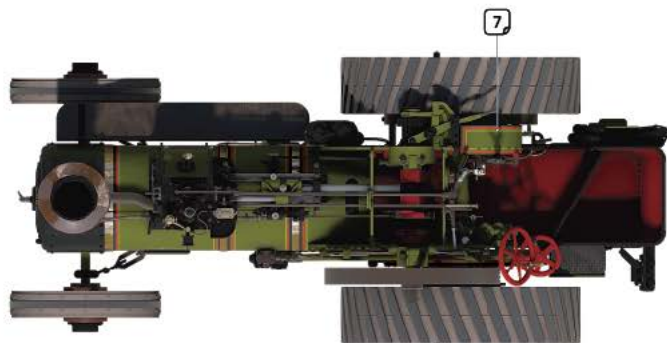
Colour Scheme A — Preserved Finish

Decal Placement & Final Appearance

For detailed painting instructions and colour references, please refer to the Painting Guide section.

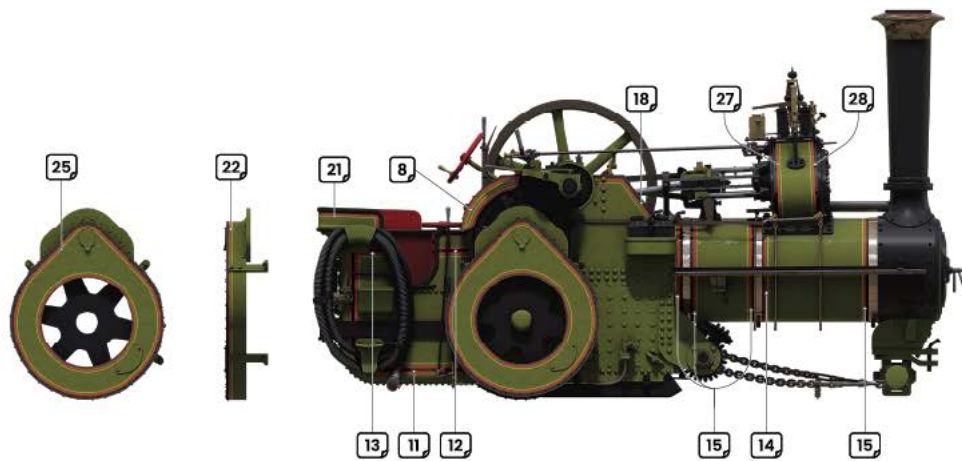
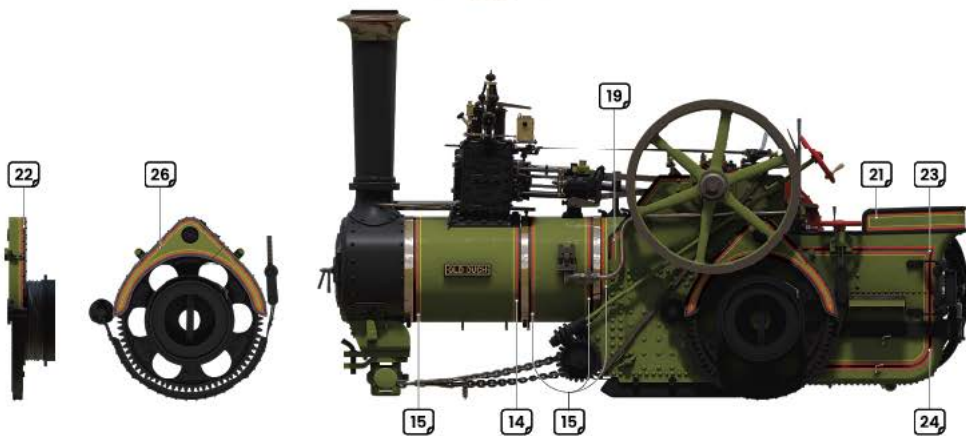


Both Sides

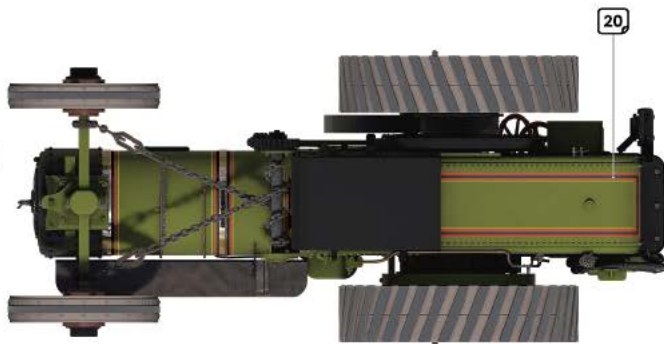


32 x10 per side
Apply to both sides of
each front wheel spoke.

Colour Scheme A — Preserved Finish



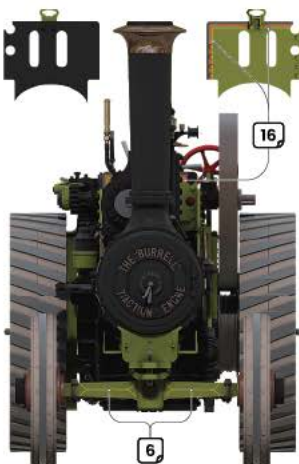
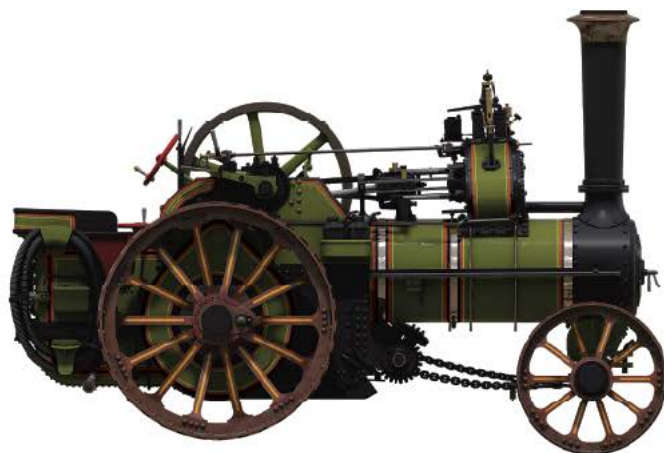
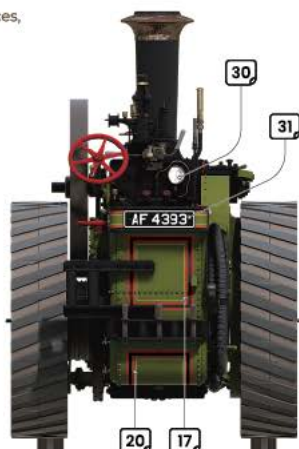
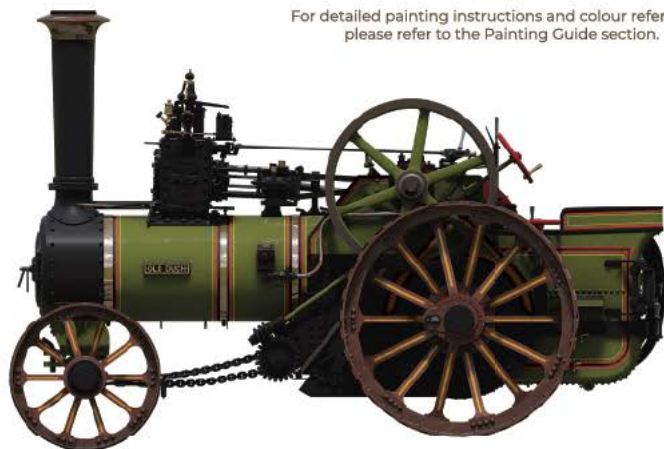
Apply Decals to the outer side of the rear wheels only.



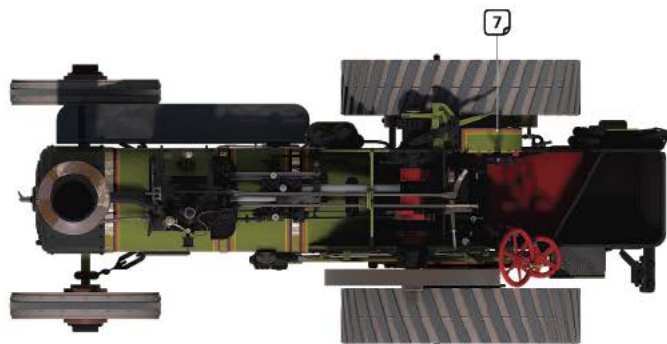
Colour Scheme B — Working Finish

Decal Placement & Final Appearance

For detailed painting instructions and colour references, please refer to the Painting Guide section.

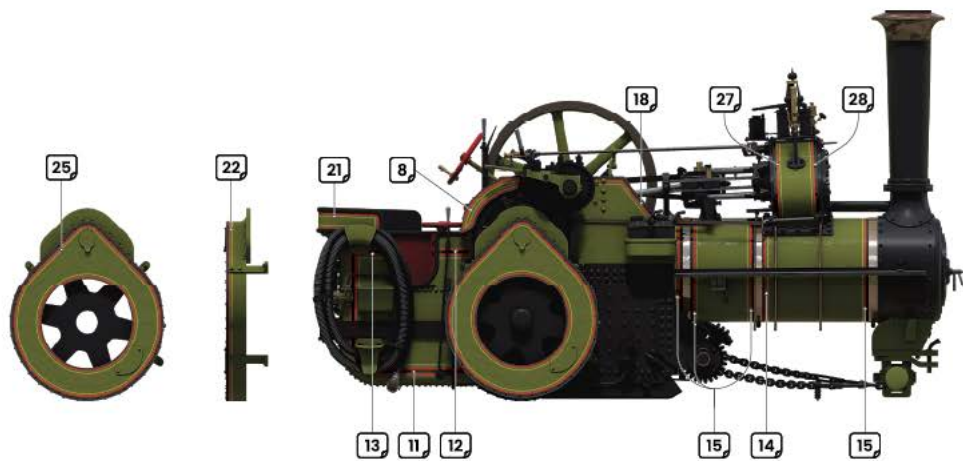
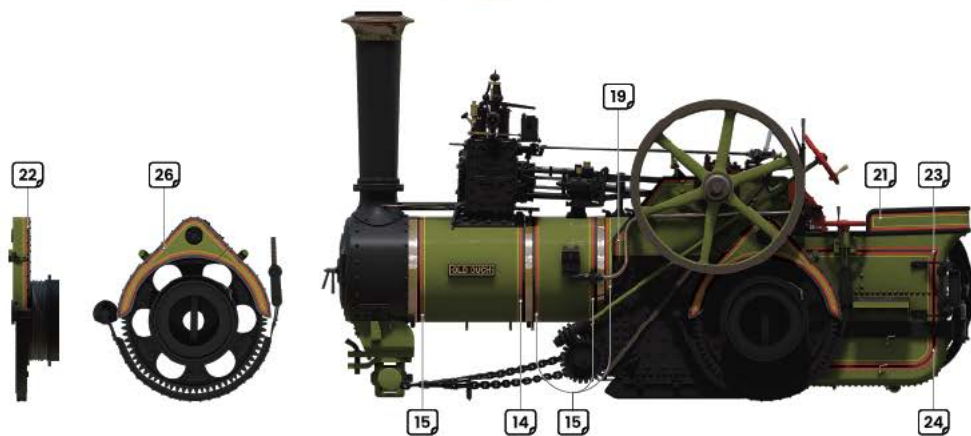


Both Sides

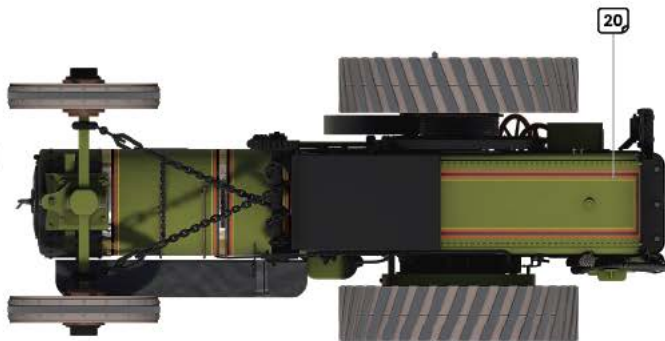


32 x10 per side
Apply to both sides of
each front wheel spoke.

Colour Scheme B — Working Finish



Apply Decals to the outer side of the rear wheels only.



**THANK YOU FOR
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