



RED ROOSTER

LIFTING

**RENTAL AIR HOIST
USER MANUAL**

FRONT COVER

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INTRODUCTION AND SPECIFICATION

Thank you for choosing the TCR pneumatic chain hoist which are available from 250 kg to 15 tonne, TCS hoist at 500 kg, TMH hoist from 3 to 6 tonne or TNC hoist from 10 to 50 tonne.

Red Rooster hoists comply with the latest standards and are designed for safe and efficient operation.

Before installing the unit, please ensure that both the personnel responsible for installation, maintenance and operation are fully acquainted with the sections of this manual which are relevant to them.

This manual should be accessible at all times to the relevant person, in case of loss ask your dealer for a new copy.

SWL (TONNE)	MODEL	CHAIN FALLS	WEIGHT (KG)		FULL LOAD LIFTING SPEED (M/MIN)	FLR SIZE	MINIMUM HOSE SIZE (ID)
			3M HOL	EXTRA P/M			
0.25	TCR-250DPE	1	7	0.35	9.3	0.5"	0.5"
0.25 / 0.5	TCR-500	1	31.1	0.8	9.5	0.5"	0.5"
0.5	TCS-500	1	19	0.8	17.0	0.5"	0.5"
1.0	TCR-1000/2	2	35.2	1.6	4.8	0.5"	0.5"
1.0	TCR-1000	1	34	1.1	6.0	0.5"	0.5"
2.0	TCR-2000/2	2	39.7	2.2	3.0	0.5"	0.5"
3.0	TMH-3000	1	99	3.8	5.4	1"	1"
6.0	TMH-6000/2	2	124	7.8	2.7	1"	1"
3.0	TCR-3000	1	69	2.7	2.8	0.75"	0.75"
6.0	TCR-6000/2	2	91	5.4	1.4	0.75"	0.75"
9.0	TCR-9000/3	3	150	8.1	0.9	0.75"	0.75"
10.0	TNC-10TWLPE	2	210	11.4	1.5	1"	1"
12.0	TCR-12000/4	4	170	10.8	0.6	0.75"	0.75"
15.0	TCR-15000/5	5	210	13.5	0.5	0.75"	0.75"
15.0	TNC-15TW/3	3	320	17.1	1.0	1"	1"
20.0	TNC-20TW/4	4	470	22.2	0.7	1"	1"
25.0	TNC-25TWLPE	2	490	21.8	0.6	1"	1"
25.0	TMH-25T	2	581	24.4	1.4	1.5"	1.5"
30.0	TMH-30T	2	581	24.4	1.0	1.5"	1.5"
37.5	TNC-37.5TW/3	3	870	32.7	0.4	1"	1"
50.0	TNC-50TW/4	4	1110	43.6	0.3	1"	1"

Specification sheet gives full details of actual model supplied.

The name plate fitted to the hoist gives the details to identify and gives further information on the hoist.

Notations: The following notations are used throughout this manual.



DANGER

Failure to follow this instruction may result in a dangerous occurrence or fatal injury



CAUTION

Failure to follow this instruction may result in premature wear of the hoist or a component part of the hoist

GETTING STARTED - UNPACKING & SPECIFICATION

1.1 UNPACKING THE HOIST

The hoist will have been packed into a cardboard box, crated or palletised (see weight details in specification) Handling of all models of hoist & trolley will require lifting equipment and shouldn't be moved by hand.

WHEN UNPACKING:

Ensure that both hoist and any ancillary equipment are recovered from the packaging. Small or delicate items may have been packed separately. Check the contents against the supplier's delivery note and advise the supplier immediately of any shortages.

Ensure that the hoist and ancillary equipment are undamaged. If the goods do not reach you in perfect condition, notify your supplier immediately of any damage. Do not proceed with installation if the goods are damaged.

⚠ DANGER

NAME PLATES

The name plate gives important information which must be retained. Hoist serial number, SWL, model, year of manufacture and the manufacturers name and address.

ATEX - Explosive protection

All standard rental hoists can be certified for zone 2 use. The normal ATEX zone 1 rating for Red Rooster air hoists is Group II 2 GD c IIB T4 (135°C). This is based on European ATEX Directive 2014/34/EU.

CERTIFICATION

All rental hoists are supplied with standard certification: Report of Thorough Examination. Other documentation is available by agreement.

IN THE EVENT OF ANY PROBLEMS OR SHOULD YOU REQUIRE ASSISTANCE CONTACT THE SUPPLIER AS DETAILED ABOVE QUOTING THE HOIST MODEL AND SERIAL NUMBER.

PACKAGING MATERIALS SHOULD BE RECYCLED OR DISPOSED OF ACCORDING TO LOCAL REGULATIONS.

1.2 OPERATION

Red Rooster pneumatic hoists are designed for the lifting and lowering of loads within the capacity of the selected hoist model. Our ranges of hoists are all 'CE' marked and conform with the Machinery Directive 2006/42/EC and the powered hoist standard BS EN 14492-2

Our range of hoists are available as hook suspension units, trolley mounted, built into low headroom units and cranes. Nearly all hoist models are also available as ATEX ZONE 1 or 2 hoists for use in hazardous areas, with corrosion protection, and can work in temperatures of -20°C to +70°C. When used outdoor or offshore hoists should be protected against the weather and examination and maintenance interval should be reduced.

Our hoists are extremely robust being developed over many years in the harshest of environments and will require little maintenance if kept lubricated on a regular basis. Noise levels can be found in the technical specification and as motor lubricating oil is supplied through the filter lubricator fitted to the hoist there will be a small amount of oil escaping into the atmosphere through the exhaust air: this can be piped away or collected using an exhaust cleaner. In certain circumstances and temperatures there is a danger of icing of the motor and exhaust silencer.

This can be prevented by using an anti-icing lubricant such as Silkair or by fitting a dryer to the air supply to remove moisture from the air supply. Some anti-icing oil may damage air hoses and the o-rings in the hoist valve. **⚠ CAUTION**



GETTING STARTED - CHECKS BEFORE USE

1.3 CHECKS BEFORE USE

These checks should be carried out during installation and on a frequent and regular basis thereafter. If the hoist is used daily then it is recommended that they are carried out daily as the checks take only minutes to complete and not only help avoid repair bills but significantly reduce the possibility of an accident or dangerous occurrence. Thoroughly examine the equipment prior to installation to ensure that no damage has occurred during transit. Hoists and trolleys should not be altered in any way without contacting Red Rooster for clearance, as this may affect the certification of the unit.

AIR SUPPLY CHECKS:

- Inlet pressure: 5 to 6 bar (there will be pressure losses across the air set and on long hoses) The supply pressure should not exceed 7 bar as this may affect the load limiter.
- Air flow: Check air flow requirement and minimum hose diameter also check that small bore fittings are not strangling the air flow.
- Keep the lubricator topped up with a light turbine oil (ISOVG3256).
- The filter should be checked regularly and manual units drained of water as required.
- **THE AIR HOSE SHOULD BE SUPPORTED SO THAT THE WEIGHT OF HOSE IS NOT HANGING FROM THE AIR SET AND FITTINGS. THE AIR SET IS NOT DESIGNED TO SUPPORT THE WEIGHT OF THE HOSE. SEE PAGES 6 AND 12 IF A HOSE SUPPORT BRACKET AND MANIFOLD IS FITTED TO THE HOIST.**
- The air supply should be clean and relatively dry. Where the compressor produces a lot of water action should be taken to remove the excess water.
- Check air connection size and type are compatible.
- Check security of air hose connection.

AIR SUPPLY CONNECTION:

Every installation is different, so the correct method of supporting the air hose should be reviewed while installing the hoist. This needs to take into account the weight and size of the hose, obstructions both at deck and hoist level, connections, operating conditions and any likely movement of the hoist and air hose.

The fittings and filter lubricator are not designed to take the weight of the hose.

If the air supply hose length is over 10 metres the hose ID should be increased to the next size.

AIR SUPPLY:

Vane type air motors are designed to function using clean, dry, lubricated air. The installation of a filter lubricator although essential cannot in itself compensate for serious contamination in the air supply. When operating the compressor in moist (humid) or dusty atmospheres seek the advice of your compressor supplier with regard to the fitting of a dryer and filter. ⚠ **CAUTION**

AIR PRESSURE:

The hoist is designed to operate best in the pressure range of 5 to 6 bar (72 to 90 p.s.i). The speeds quoted on the manufacturer's literature are obtainable only at 6 bar (90 p.s.i) inlet pressure. The hoist will operate at much reduced speed at pressures below this figure.

AIR FLOW:

Refer to the hoist data sheet, to select the hose diameter which ensures adequate air flow. Failure to provide adequate airflow will result in a pressure drop in the supply line and cause the hoist to stall and the brake to apply until the pressure increases. In addition, the brake will not release cleanly and will overheat. (Although not in itself a hazard [the brake will fail safe] it may prove frustrating to the operator and a hazard may arise as a consequence.)

⚠ **CAUTION**



GETTING STARTED - HOSE SUPPORT BRACKET

1.4 HOSE SUPPORT BRACKET:

Where a hose support bracket and manifold have been fitted to the hoist to take the weight of an air supply hose, several checks must be done.

- Check the hose hangs freely and does not interfere with the hoist chain.
- Check the hose is clear of the load to be lifted.
- Check the pendant hose is not obstructed by the air supply hose.
- Check the air hose is supported by the hose clamp / former / festoon system.



DANGER

- DO use exclusively correctly rated pneumatic hoses and fittings in the air supply line.
- DO support the air line up to the hoist, as the fitting and filter / lubricator are not designed to take a load and may not support the weight of the hose.
- DO maintain the internal diameter (as per the table throughout the supply length) or reduce from the larger diameter to the smaller diameter in the direction of the hoist.
- DON'T use hydraulic fittings. These often have a reduced orifice size resulting in a down line drop in air pressure.
- DON'T increase from smaller to larger diameter or insert a length of smaller diameter hose in the supply line as this will result in reduced flow and pressure.
- DON'T create low points in the air supply line where water may be trapped (or if unavoidable install a drain tap).
- DON'T rely on pneumatic fittings to support airlines; they are not designed for this purpose.
- DON'T shorten the pendant by forming a loop or a coil. This will prevent the strainer wire from supporting the pendant and will cause the hoses to become detached or kinked.



GETTING STARTED - INSTALLATION

1.5 HOIST ASSEMBLY

Normally our hoist or hoist and trolleys will arrive complete ready to be fitted into position, but sometimes for transportation it may be necessary to disconnect the chain collector, trolley or the pendant control system.

- Chain collectors will be supplied with the necessary bolts and fittings to assemble on site along with any safety slings as shown in section 1.8.
- Due to the size of some trolleys it is easier to ship split from the hoist, the trolley GA drawings show the load bar and top eye details for refitting and the control and supply air lines are numbered or colour coded for re-connection.
- Where long controls are fitted to a hoist they are colour coded for re-connection on site.
- When lifting into position either use the lifting points on the hoist or hoist and trolley, if the hoist does not have lifting points fitted securely fit slings to the body of the hoist or use the top hook if possible. Do not lift by the controls, valves, or the filter lubricator.



DANGER

MOUNTING THE HOIST

The air hoist is designed as a LIFTING MACHINE and as such is designed exclusively for lifting loads vertically. Non vertical lifting will result in premature wear of the chain and chain guide and may result in damage to the limit arms or a failure of the limit arms to operate.

- Site the hoist immediately above the load which is to be lifted.
- Ensure that the point from which the hoist is suspended has been designed and tested to at least the same safe working load as the hoist itself.
- Ensure that the suspension point or shackle fits snugly into the bowl of the hoist top hook and that the safety catch closes to prevent escape.
- Use only certified lifting gear with a SWL in excess of the load to be lifted to connect to the load itself.
- Ensure that the lifting gear fits snugly into the bowl of the hoist bottom hook and that the safety catch closes to prevent escape.
- Ensure that the control length (pendant or cords) is adequate to allow the operator to stand away from the load, in a safe and secure position with the cords or pendant at waist height.

CLOSE HEADROOM WORKING

The lower hook of the TCR / TNC / TCS / TMH hoist includes a swivel arrangement. This allows the load to turn without twisting the chain. However, when repeatedly handling loads with the bottom hook close to the hoist, especially when rotation of the load is prevented, there is tendency for the chain to attempt to enter the guide at an angle. This is particularly pronounced on two fall units. If this problem is noticed when doing a trial lift, a high quality ball bearing swivel should be mounted below the bottom hook of the hoist.

CHAIN COLLECTORS

If the hoist has been supplied with a chain collector bag or bucket, and the chain has been stored within it during shipment, remove all the chain from the collector by hand, and remove any knots or twists.

In all cases carefully feed the chain over the load wheel allowing it to fill the collector without any interference as it emerges from the wheel. This way the collector will fill normally. If the chain within the collector is disturbed great care must be taken the next time that the chain is fed out of the collector to ensure that it is not twisted or knotted. Chain bags and buckets are fitted with one or two brackets depending on the model and HOL of the hoist.

⚠ DANGER See additional instructions (Section 6) for large collectors.

GETTING STARTED - TECHNICAL CHARACTERISTICS & HOIST CHECKS

1.6 TECHNICAL CHARACTERISTICS

The WLL of the hoist will be marked on the hoist name plate and also in the hoist specification supplied. The reactions on the powered hoist on the support, runway beam or crane should have been taken into account in the design of the structure. The structure should be at least 25% stronger than when using manual equipment due to the shock loading applied by the operational speeds and the starting and stopping of the hoist.

All Red Rooster hoists are fitted with the following safety features

- Upper and lower mechanically operated travel limits. These are ultimate stops and should not be used to stop the hoist on a regular basis.
- Load limiting valve. After assembly and proof test the load limiting valve set is set to stop the operation of the hoist if an overload is detected. The hoist will stop lifting but will still lower the load.
- The disc brake is spring applied so when the controls are not operated or in the event of loss of air supply the brake is applied holding the load in position.
- On pendant controlled hoists an emergency stop button is fitted which connects to a normally open valve either located in the hoist valve chamber or connected to the hoist. When the emergency stop button is pushed or if the air supply to the hoist is cut off then the valve will close stopping the hoist.
- Red Rooster hoists have a 5:1 factor of safety.

1.7 HOIST CHECKS BEFORE USE

HOIST CHECKS (AIR SUPPLY OFF)

- Hook swivels satisfactorily and the safety catches work correctly.
- Load chain is undamaged and lubricated (light mineral oil).
- The load chain is not twisted through (two full or more models) and that the load chain passed through the limit lever (All models).
- The load chain anchor is sound (both live and slack end).
- Check for damage to the hoist, pendant and control lines.
- Do not operate below -20°C or above 70°C without contacting Red Rooster.

HOIST CHECKS (AIR SUPPLY ON)

- The pendant buttons, levers or cords should be smooth to operate and return to neutral when released (hoist stops and does not run on).
- The hoist is run up and down on a regular basis. Where hoists are hanging in a dry and protected area they should be run weekly, where the hoist is outside and not protected it should be checked, lubricated and run daily.
- The emergency stop button / valve operates immediately. (there may be a slight delay with long pendants, 8 metres or above)
- Upper and lower limit switches / levers work satisfactorily.
- Load chains run smoothly over the pocket wheel.
- The load chain should be examined periodically for cracks, gouges and wear.
- Chain collectors should be checked for security and chain capacity.
- Check chain runs in and out of the chain collector smoothly.
- For hoists with a long drop of chain or a large chain collector a separate suspension point may be required (see section 1.8).
- Cord control hoists should have the toggles marked for raise and lower.
- On cord controls check the spool valve returns to neutral and the hoist stops when the cord is released. (hoist stops and does not run on).
- Check the silencer is not partially blocked by comparing the running speed without load against the speed in the manual. ⚠ **DANGER**

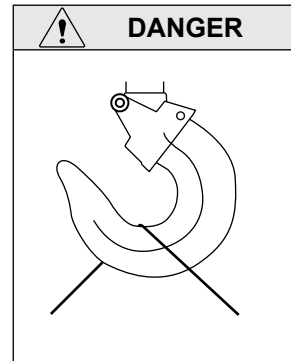
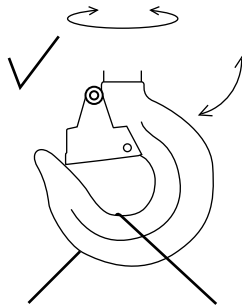
NEVER RELEASE THE EMERGENCY STOP BUTTON UNTIL IT IS SAFE TO DO SO



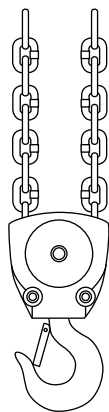
GETTING STARTED - HOIST CHECKS & CONTROLS

- 1.7 Hoist swivels satisfactorily.
Hoist safety claws functional and undamaged.

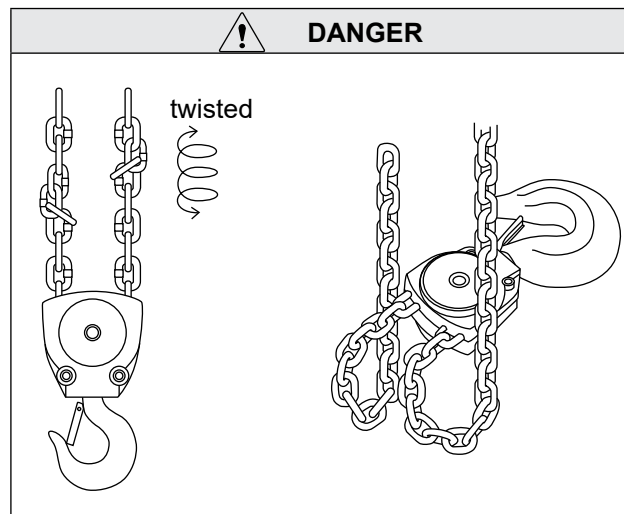
Safety claw



Chain undamaged
Chain not twisted through (two fall models see sketch)



correct



1.8 HOIST CONTROLS

Air hoists can be controlled by either a pull cord or a pendant control operating the spool valve of the hoist operating raise and lower. The diagram in section 1.8 shows the set up for both types of control and the location on the hoist body.

Cord or pendant hose lengths should be long enough for the operator to stand away from under the load but still with the cord toggles or the pendant suspended at a height of around 1 metre from the operating level. Where the controls have to be to the side of the hoist or where the operator cannot see the load travelling the full range of the lift a banksman should be appointed to assist the operator using a reliable means of communication.

Both toggles on the cord controls should be marked for correct operation of the hoist. The emergency stop button on the pendant control should also be marked.



GETTING STARTED - INSTALLATION INSTRUCTIONS

1.9 ADDITIONAL INSTALLATION INSTRUCTIONS

Hook suspension with long chain drops.

Problem:

When a long heavy chain is fitted, and the 'raise' is pressed with the hoist in an unloaded condition, due to the centre line of the hoist having been affected by the weight of chain, the upper limit switch, may fail to operate. In addition, the slack load chain may on some modules foul the limit lever arms, thus preventing it from returning to the centre (neutral position).

Resolution:

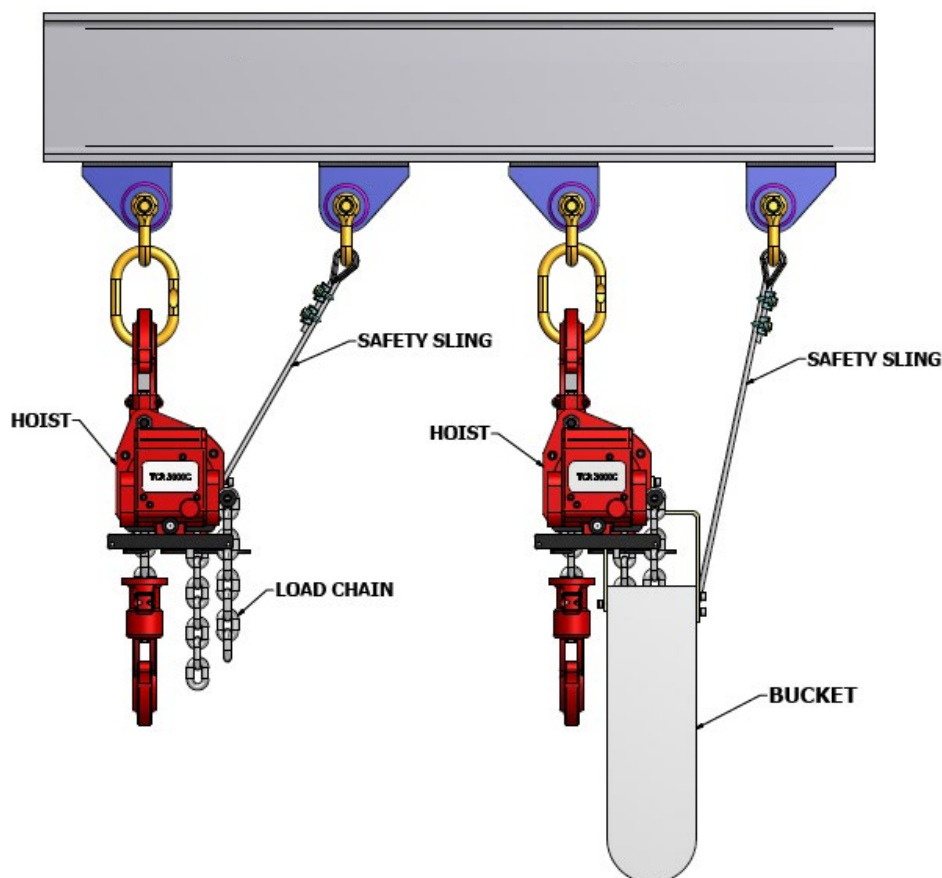
A short length of wire rope, 6mm diameter, is fitted to the hoists and bulldog grips have been supplied.

Suspend the hoist in its final location and with as much chain as possible in use. Apply a small load to the hoist and lift it clear of the ground.

Connect the wire rope sling to the support steel alongside the top hook using bulldog grips.

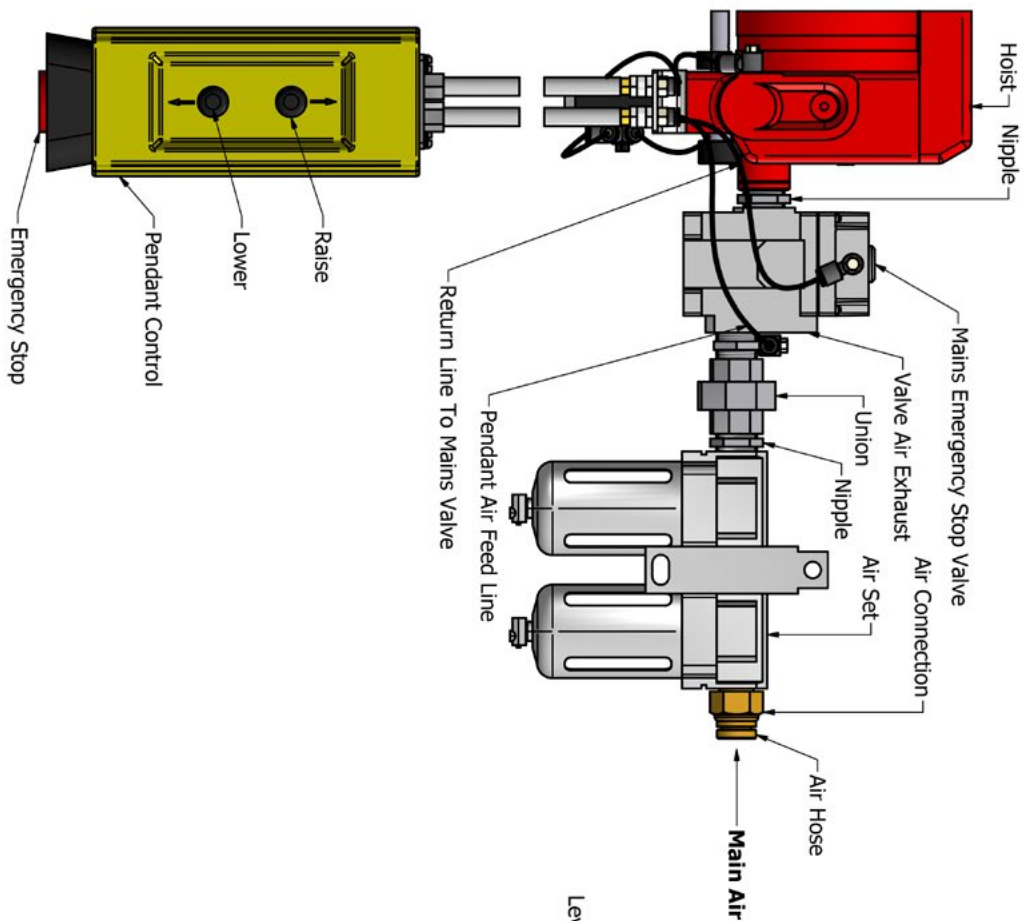
The tension in this sling should be enough to counteract most of the weight of the slack chain produced in the fully raised position, but it must not be tensioned such that it is carrying any of the load supported by the hoist. i.e. if fitted correctly, in an unloaded condition, the sling will be tensioned with the hoist ALMOST in the vertical position. When the load is applied, the tension in the sling will be slack.

THE SLING IS NOT CAPABLE OF HOLDING THE LOADS CARRIED BY THE HOIST

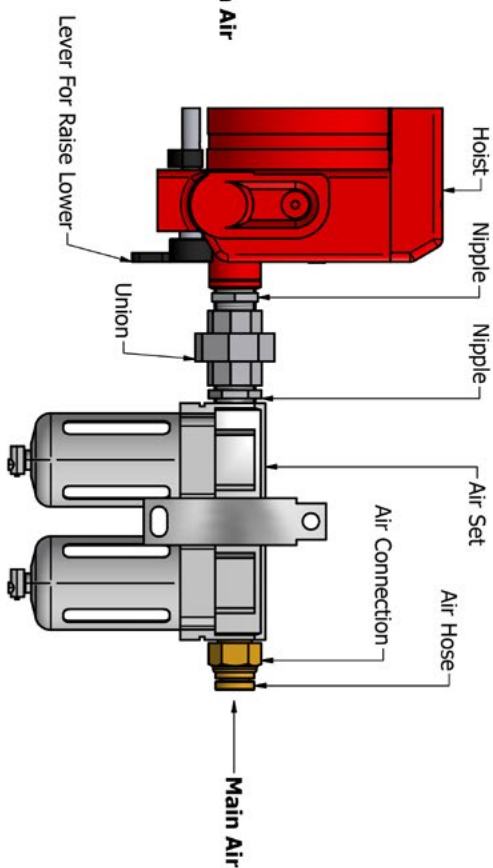


GETTING STARTED

**STANDARD HOSE CONNECTION
PENDANT CONTROL OR
HOIST WITH EXTERNAL
EMERGENCY STOP VALVE**



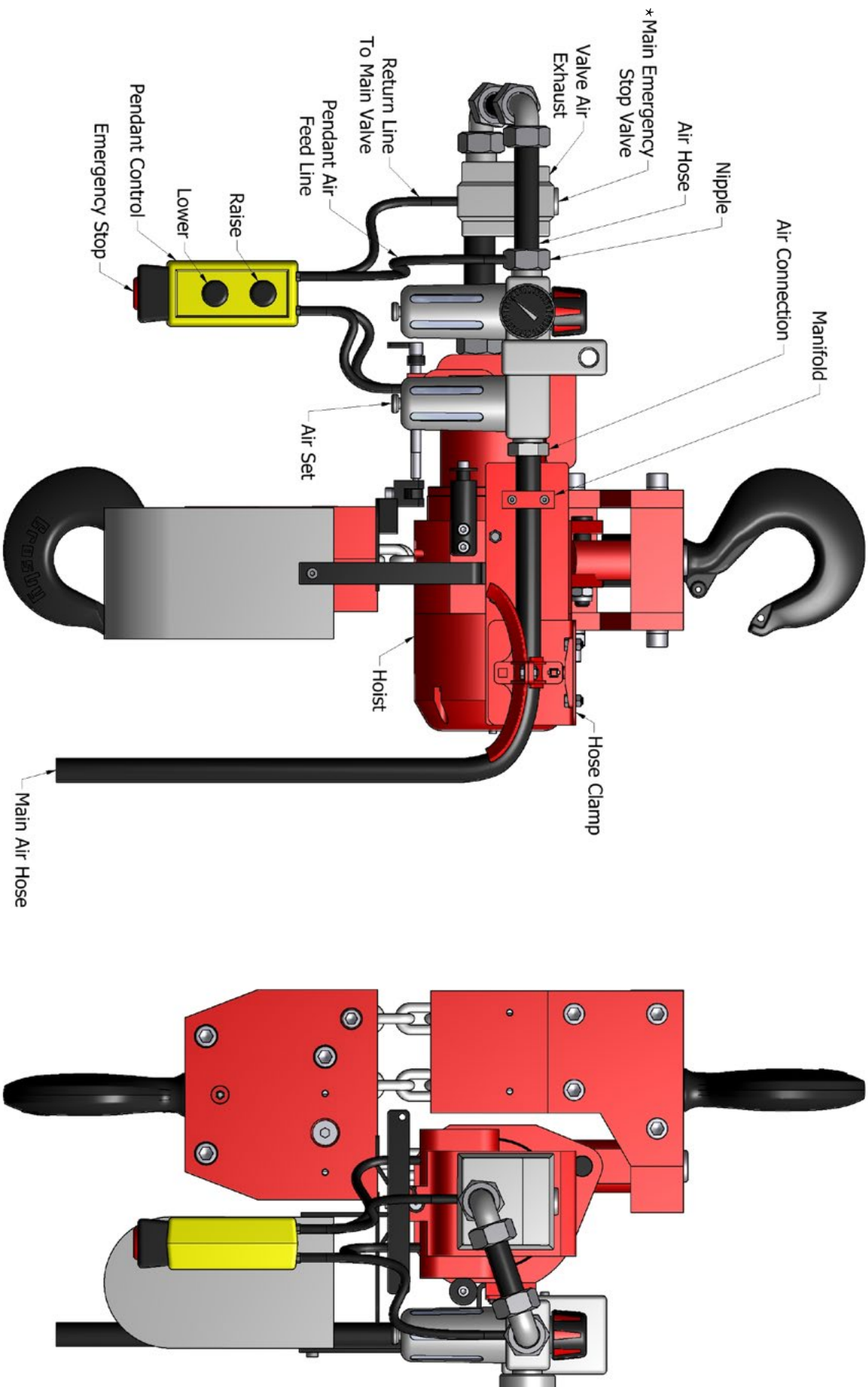
**STANDARD HOSE CONNECTION
CORD CONTROL OR
HOIST WITH INTERNAL
EMERGENCY STOP VALVE**





GETTING STARTED

Air Hose Connection with Hose Clamp and Manifold



* Some hoists are fitted with internal emergency stop valves

LUBRICATION

2.1

Item	Oil Type	Frequency
Lubricator Unit Main Air Supply	Atlub Medium to light turbine oil ISO VG 32-56 Or any quality airline lubricant (See note 1)	10 to 15 drops per minute Do not allow lubricator to run out of oil
Load Chain	Normal industrial - any light mineral oil Clean areas - wax based, semi setting Food industry - suitable vegetable oil (See note 2)	Weekly / monthly subject to environment / use
Limit Lever Linkages and Anchor pins	No. 2 grease	Monthly or more frequently in aggressive environments
Gearbox	High temperature EP2 grease	Only at major overhaul

Note 1

In all cases oil will be expelled from the hoist exhaust. The amount discharged is proportional to the delivery rate of the lubricator. In environments where oil in the exhaust cannot be tolerated, the exhaust can be piped away to a safe area, but this requires specialist modification of the hoist (See air service equipment) - CONSULT YOUR DEALER. ⚠ **CAUTION**

Note 2

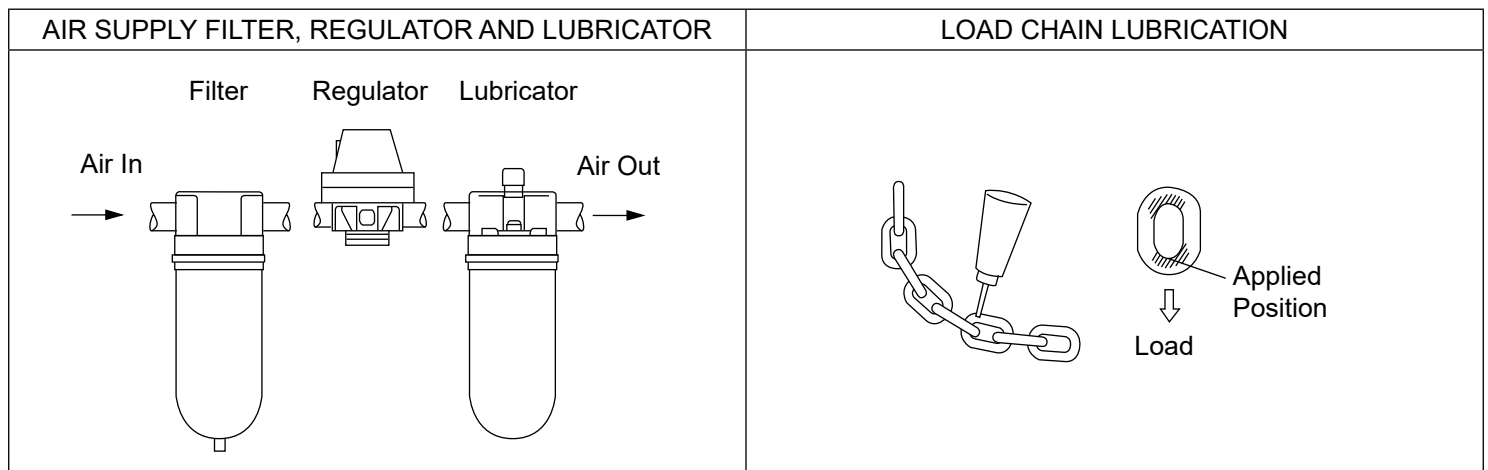
All Red Rooster hoist chain must be lubricated to prevent wear. ⚠ **DANGER**

Keeping load chain clean and lubricated will greatly increase the lifetime of the chain and prevent costly replacement. Very little lubricant is needed and can be easily applied to the chain by cloth, brush or spray.

In areas of high corrosion, plated chain can be used along with special lubricants to prevent corrosion from sea water and spray. Chains used in these areas should be re-lubricated on a regular basis.

NEVER use heavy grease or bitumen based products to lubricate the chain as these will foul the chain guide, idler, load wheels and bearings. ⚠ **DANGER**

Remove dust and water drops on the Load Chain and then apply lubricant. Application of lubrication influences on the life of the Load Chain considerably. Apply the lubricant sufficiently.





SAFE OPERATION

- 3.1 The contents of this section are designed for the guidance of personnel using the hoist. For the most part, they are 'common sense' procedures. Most dangerous occurrences involving lifting machines are not as a result of defect developing in the machine itself but are as a result of an error or act of carelessness by the operator. As such, the vast majority of accidents or dangerous occurrences are avoidable. The operator is responsible for his safety and the safety of others in the area of the hoist.

It is further recommended that only authorised personnel should be permitted to use the hoist and that all staff should be properly trained and have adequate knowledge in both safe use and visual examination.

ALWAYS - follow company procedures, work safely, report faults and comply with regulations.

SAFE OPERATION



DANGER

3.1 GUIDELINES FOR PERSONNEL USING AIR HOIST

- Read the instruction manual before use.
- Test run the equipment prior to application of a load and ensure that the equipment, including its control and safety devices are functioning correctly.
- Do not touch the hoist body immediately after extensive use, as it may be hot or very cold.
- Do not wear loose clothing (ties, scarves etc.) which may get dragged into the hoist or bottom block.
- Wear safety boots or shoes (together with a safety helmet if lifting overhead).
- Ensure that a positively engaged isolator requiring an appropriate operation to re-engage, is fitted between the air supply and the machine (lever, button or quarter turn valve). The isolator should isolate only the machine itself or where the safety of other machines may be affected by isolation of the machine, all machines affected must be isolated at the same time.
- Large hoists and trolleys have lifting eyes that can be used for handling and installation. Where no lifting eyes are fitted, a sling may be fitted round the hoist body using a choker hitch.
- Ensure that the load is securely supported by certified lifting gear (slings and shackles) with a higher safe working load in the configuration used, than the load to be lifted and that it cannot 'escape' whilst being lifted.
- Stand clear of the load when lifting or lowering and ensure that the point at which you are standing is secure. Do not touch moving chain.
- When there is a brief pause in the lifting operation where the operator lets go of the pendant control, he must stay in the area and make sure the pendant hangs vertically and cannot swing or get blown against anything.
- When there is a longer break in the lifting operation and the load has been landed, then the emergency stop button should be actuated so that a positive action is required before the hoist or hoist and trolley can be operated.
- If the hook is still attached to an item then a sign should be attached to the pendant and depending on the circumstances the power supply locked off.
- Ensure that other personnel cannot enter the immediate area where the lift is taking place.
- Never lift the load higher than necessary.
- Ensure that the control length (cord or pendant) is adequate to allow the operator to stand away from the load in a position to see the load at all stages of lift.
- The pendant should hang from the hoist and not be placed onto objects where the controls could be activated.
- If it is not possible to site yourself in a position where you can see the load at all stages, appoint a 'banksman' to cover the area which you cannot see and establish a reliable method of communication (verbal or hand signals) before starting the lift.
- If you suspect that the equipment is defective or is developing a fault, stop the lifting operation immediately.
- In the event of an emergency make the area safe by returning the load to a rest position. If this is not possible cordon off the area and seek advice of your superior or safety officer. Never repair a hoist with the load suspended.
- If it is not possible to lower a load to the ground to make it safe, then a lifting plan must be in place to recover the load or make it safe in case of hoist failure.
- In the case of complex lifting operations a lifting plan must be in place to control the lift stipulating the hoists to be used, operating conditions, operator instructions and the different parts of the lift taking part in the agreed sequence. Carry out a practice lift with a small load if necessary to confirm the lifting operation.
- The starting and stopping of the hoist and taking up of slack chain at high speed can apply high forces which could be higher than the load being lifted. Always operate hoists smoothly and in a controlled manner
- The attachments must be capable of withstanding the expected forces.
- External vibration can affect the hoist and can cause damage and wear.
- Do not use the hoist outside in high winds, bad weather conditions, or when temperatures are likely to be outside the operating temperature of the hoist.
- Only use the hoist to make a lift safe when a warning alarm has been activated in the area and then isolate the hoist.

AT ALL TIMES THINK BEFORE YOU ACT - PLAN EVERY LIFT

SAFE OPERATION - HOIST OPERATORS

 DANGER

- 3.1
- Hoist operators must be healthy and not under the influence of alcohol, drugs or medication when operating the hoist.
 - Hoist operators should be trained in the operation of hoists proper rigging procedures for the attachment of loads to the hoist.
 - The operator is always responsible for his own safety and anybody else in the operating area.
 - Always start the lowering or lifting movement slowly and smoothly.
 - When using the hoist jointly with another person, use signals agreed upon at the job site (standardized signals).
 - When using the hoist without chain collector, avoid the slack chain to fall, catch or impact as this can cause hazards.
 - In case of air pressure loss, secure the load and area. Ensure that turning the air supply back on cannot result in a dangerous occurrence.
 - Stop using the hoist in case of abnormal sounds.

 DANGER

3.2 SAFETY EQUIPMENT - PPE

Safe systems of work should be appropriate for the working conditions that the hoist is being used in with method statements stating what the hoist is being used for, the authorisation of staff to operate hoists and the PPE requirements in place. In general overalls, safety shoes, hearing protection and gloves are normal but other sites will require safety glasses and hard hats.

 DANGER

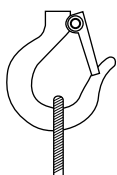
3.3 LIFTING GEAR BELOW THE HOIST

Where lifting gear is connected into the bottom hook of the hoist it should be sized for at least the capacity of the hoist and physically fit well into the body of the hook allowing the safety catch to close.

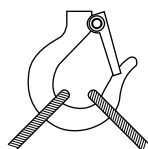
Where a larger item such as a spreader beam is used this may have an effect on the lifting capacity of the hoist, so the SWL should be reduced to reflect this.

HOW TO SLING THE LOAD PROPERLY

DO NOT CARRY OUT DANGEROUS HOOKING AS SHOWN BELOW



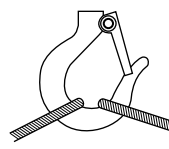
Sling the load at the extended line of the hook shaft



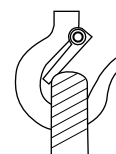
120° or less



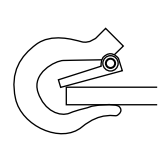
Improper hooking position of the lifted load or the sling



Angle exceeding 120° angle too wide



Unable closing of the hook latch



Hooking of the load at the tip of the hook

SAFE OPERATION - FORESEEABLE INCORRECT USE



DANGER



CAUTION

- 3.3
- Where the supporting steel work transfers a vibration or oscillation through the hoist this can cause increased wear between the links of the load chain.
 - Where the hoist or hoist and trolleys are fitted with lifting points they should only be used for lifting the hoist and trolley, they are not designed to take the full WLL of the hoist.
 - Before carrying out any work on the hoist the main air should be turned off and the residual are vented or the hoist run to dissipate the air pressure.
 - Do not exceed the stated WLL or duty rating. (Fig. A)
 - Operate the hoist smoothly. Do not suddenly change direction as this may exert both shock loads acceleration forces may well in excess of the weight of the load being lifted.
 - Do not use the hoist to lift / lower personnel. (Fig. B)
 - Only use the hoist to lift a load vertically. It is not designed to pull or drag loads without modification and or a lift plan being used for special lifting operations, such as cross hauling. (Fig. C)
 - Ensure that the load is securely supported by its lifting gear (slings shackles etc.) and that it cannot escape whilst being lifted.
 - Ensure that the lifting assembly (slings, shackles etc.) has a higher WLL in the configuration used than the load to be lifted.
 - Ensure that the point at which the hoist is to be suspended has an equal or greater WLL than the hoist.
 - Ensure that the load is free to move and will clear all obstructions.
 - Avoid swinging the load or hook.
 - Do not use the hoist if the chain is damaged, twisted, kinked or worn.
 - Ensure that the load is stable and in balance at starting lifting or setting down as tilting or falling loads can cause accidents.
 - Never allow loads to “fall” into the load chain. (Fig. D)
 - Never lock the control elements of the pendant or controls.
 - Never use the chain, hooks or hoist as an electrical ground for welding or electricity.
 - Do not use the limits as a means of stopping the hoist (these are safety devices).
 - Do not use controls as a means of moving the hoist (the pendant is designed to support its own self weight only).
 - Stand clear of the load when lifting and lowering and ensure that the point at which you are standing is safe and secure. (Fig. E)
 - Do not hold onto the load chain when controlling a load (fit a tag to the load if necessary to ensure that the load is controlled).
 - Do not apply a load to the tip of the Bottom Hook or the Hook Latch. (Fig. F)
 - Do not bind a load with the load chain directly. (Fig. G)
 - Do not operate the Load Chain while it is in contact with any sharp edges. (Fig. H)

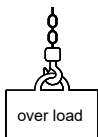


Fig. A

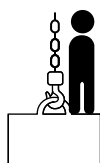


Fig. B

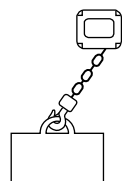


Fig. C

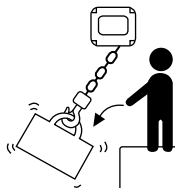


Fig. D



Fig. E

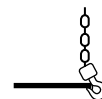


Fig. F

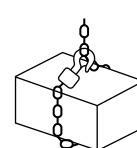


Fig. G

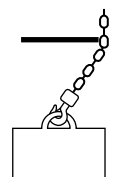


Fig. H



SAFE OPERATION

**DANGER****3.4 MOUNTING ON TROLLEYS**

- Ensure that the trolley is properly mounted on the beam and set correctly for the beam with adequate wheel clearance.
- Ensure that the stops for the trolley mounted on the runway beam are correctly positioned and securely installed.
- Ensure that the top hook or link plate of the hoist fits properly on the suspension point of the trolley and is assembled properly with the hoist at the centre of the load bar.
- Ensure that the load bar and tie bar nut have been secured and the trolley side plates are set parallel to the beam web.
- Ensure that the tie bars are correctly adjusted in the slots with the anti-tilt roller close under the beam with enough clearance to allow the trolley to run along the beam.

**DANGER****3.5 OPERATIONAL BREAKDOWN OR ACCIDENT**

If an unloaded hoist stops working then it should be removed from location and sent for repair if none of the remedies in the trouble shooting guide have an effect.

When the hoist is still holding a load then an additional hoist should be used to take the weight of the load so it can be safely lowered and the faulty hoist removed for repair. If another hoist cannot be used to lower the load it is possible to release the brake by slackening the brake cover screws but this should only be done by a Red Rooster engineer or after discussions with Red Rooster as it is not always possible or safe to do so.

The main air supply line to the hoist should be fitted with an easily accessible valve to cut off the air supply to the hoist in case of emergency or for maintenance. Pendant control hoists also have a main air shut off valve.

There should be a safe access to the hoist to carry out maintenance, inspection and lubrication.

SAFE OPERATION - NON-VERTICAL LIFTING

 DANGER
3.6 NON-VERTICAL LIFTING

Non-vertical lifting can cover a range of activities such as horizontal pulling, cross-hauling, or oblique pulling.

Normally Red Rooster pneumatic hoists should only be used for the lifting and lowering of loads vertically, so using standard Red Rooster hoists for lifting at an angle may cause damage to the hoist, the supporting structure or trolley if the equipment and structure have not been confirmed as suitable.

Red Rooster has developed a range of hoists suitable for transferring loads between hoists working up to an angle of 45° angle from the vertical. The range of hoists covered will have 'CH' at the end of the model number confirming the hoist has been modified and is suitable for cross-hauling of loads. Using air hoists with a WLL 20% over the maximum weight of the load being transferred means that neither hoist can be overloaded. For the effect on hoist loadings at different angles see Diagram 2.

The first hoist should be lowering down while the second hoist lifts the load until the second hoist has the full load at the required position, then the hook of the first hoist can be disconnected and then the bottom hook of the third hoist is connected to the load and the sequence of lowering and lifting can carry on until the end of the lift. The modified hoist can only be used when the bottom hook and the load chains are in line and with the live chain pointing towards the load. See Diagram 1.

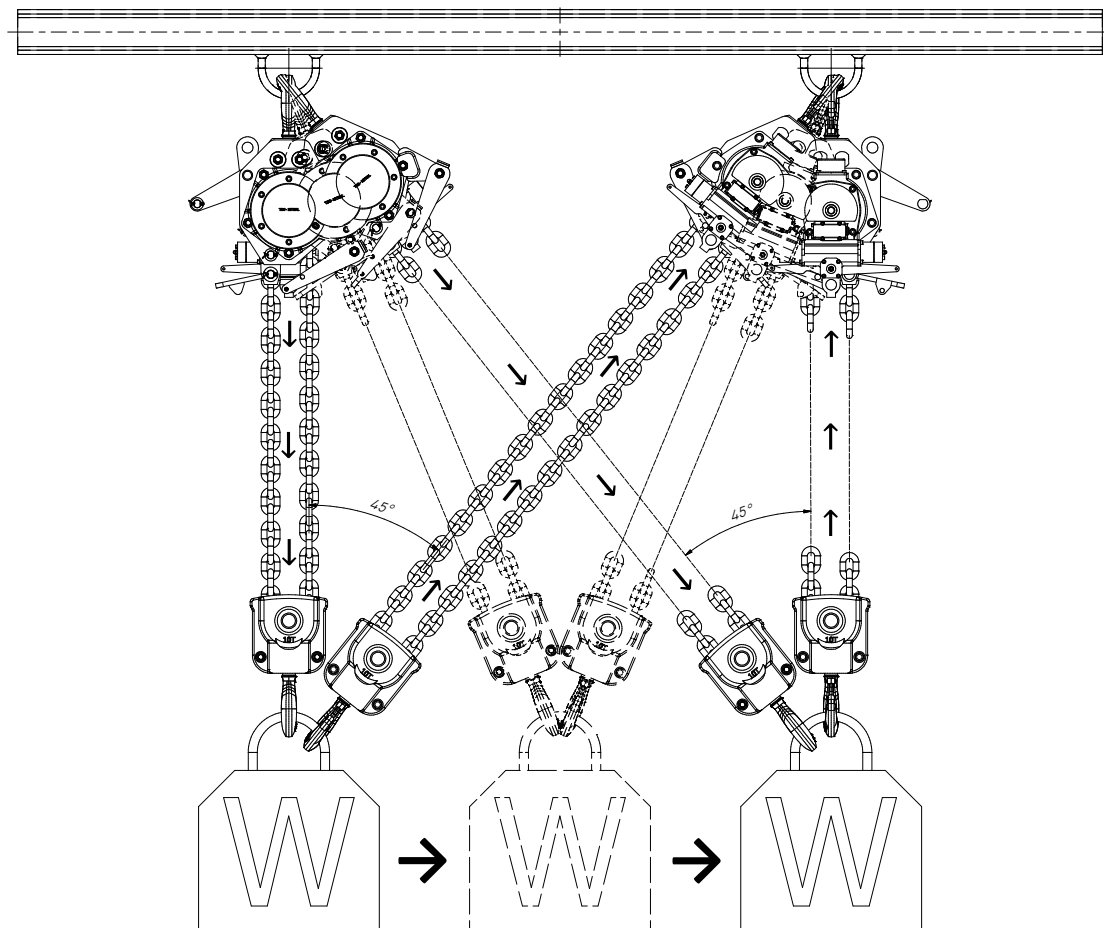


DIAGRAM 1

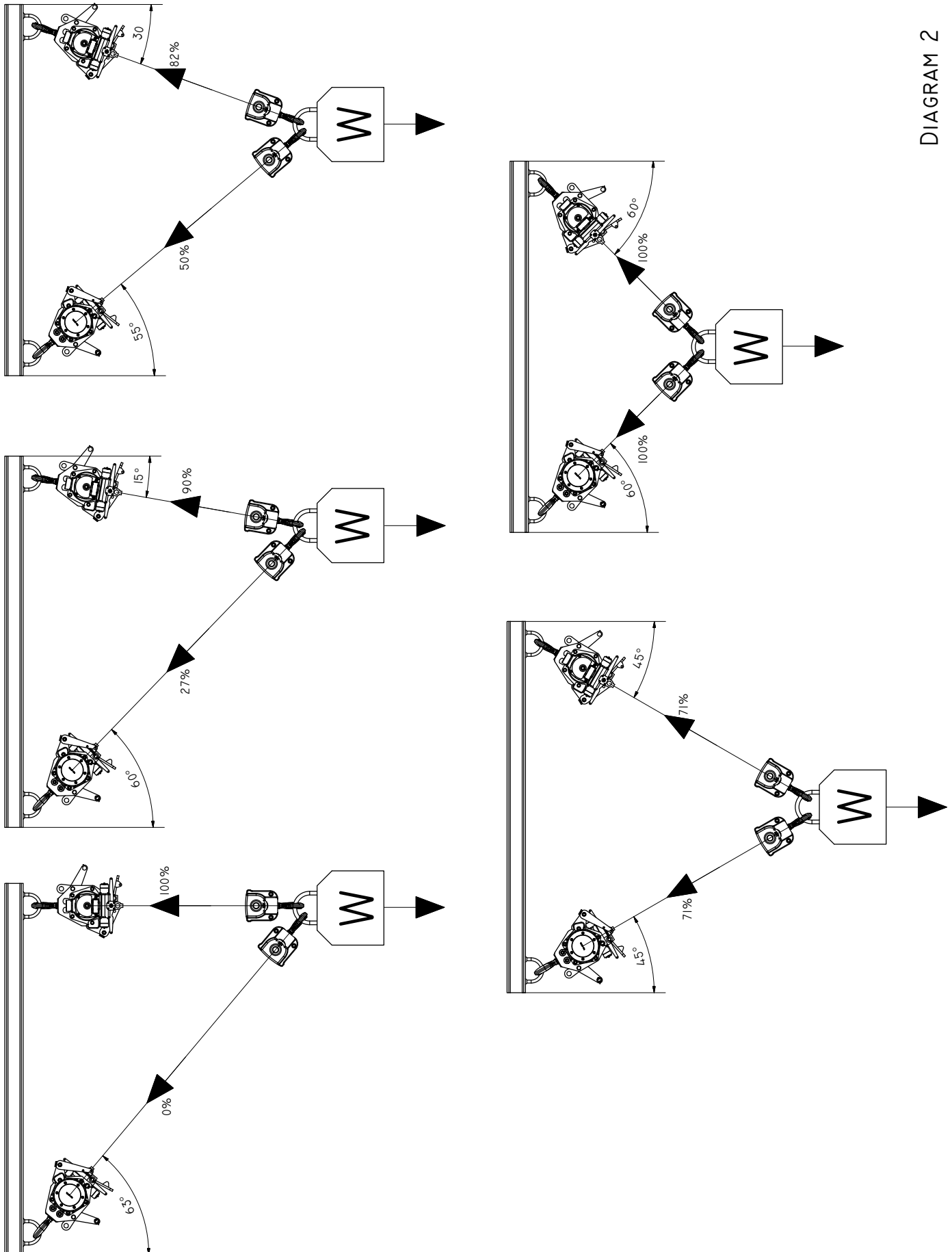


DIAGRAM 2

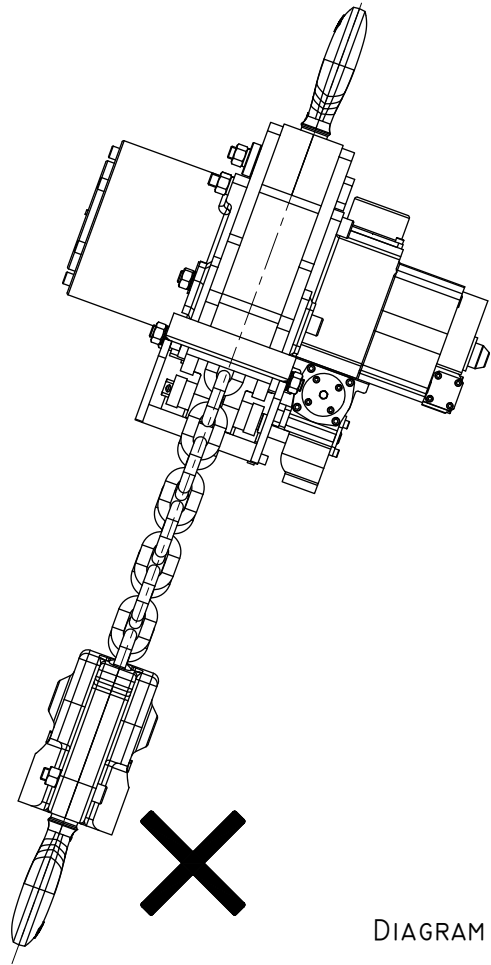
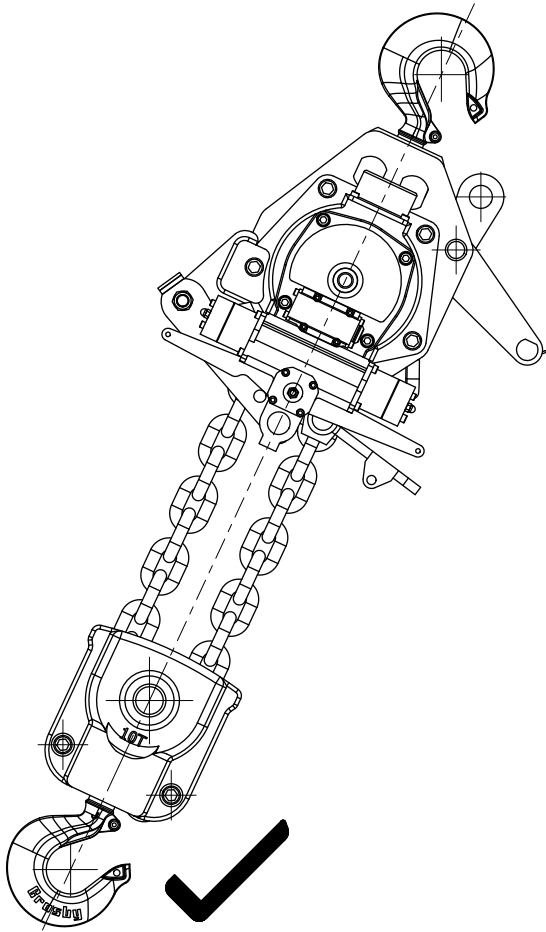


DIAGRAM 3

SAFE OPERATION - NON-VERTICAL LIFTING



DANGER



CAUTION

- A formal work pack including a lift plan, risk assessment and work permit must be in place before the lift commences.
- There should be a clear and effective communication system between the person in charge of the lift (competent person) and the hoist operators.
- The hoist suspension point must be suitable for the loads applied by the hoist working at an angle and the change from vertical to the full operating angle.
- The structure of the suspension point must have a rated capacity based on the load being lifted and the dynamic loads applied by the hoist.
- Lifting gear must be suitable for the loads applied by the hoist.
- The hoist must be able to swivel in the direction the load needs to travel, taking into account the hoist locations and the route the load will take. See Diagram 3.
- Chain collectors must only be used when it has been checked that chain will run into the chain collector from vertical to the maximum operating angle. The collector should be removed if there is any chance of the chain falling out of the collector.
- Where several hoists are being used to transfer a load each hoist should have a WLL at least 20% over the weight of the load being lifted.
- A pre-use inspection on each hoist must be carried out by a competent person before starting a complex lift and function tests confirming correct operation of the hoist. This should include the automatic brake and the hoist limits.
- Where hoists are not to be used for a long period they should be well lubricated after use and again before continuing with the work (see lay-up instructions).
- Hoists and lifting gear should have current Certificates of Thorough Examination.
- The weight, integrity and stability of the loads should be verified before a lift.
- Red Rooster recommends tag lines are attached to the load wherever possible to prevent the load swinging and helping to direct the load.
- Under no circumstances should the hoist be used for cross hauling at angles exceeding 60 Degrees from the vertical.
- Site conditions shall be taken into account and any signs of changing conditions, such as wind speed, temperature, sea state, rain, snow and ice build-up.
- Avoid overloading the hoist by working at excessive angles, snagging, or uncontrolled movement.
- Stop the operation and check, if anything unusual is noticed during the lifting operation.

Please contact Red Rooster to confirm the suitability of our hoists for the application and if you have any questions.

The following air hoist models can be modified for Cross Hauling - TCR1000, TMH3000, TMH6000, TNC 10T, TMH 10T, TMH 25T & TMH 30T (TNC 25T: 25° of angle).

All Red Rooster hoists modified to be suitable for non-vertical lifting working at angles up to 45 Degrees will have 'CH' at the end of the model number.

For special applications Red Rooster can design and manufacture trolleys where the load is at 90 Degrees to the runway beam.

- Unless stated otherwise trolleys should only be used for vertical lifting.
- The runway beam structure must be suitable for the loading applied by angular lifting.

Red Rooster Lifting has no liability for incidents, accidents or damage resulting from improper use of our hoists.

MAINTENANCE

- 4.1 The Red Rooster range of hoists are heavy duty pneumatic hoists and built to require little maintenance if they are kept lubricated and maintained. The maintenance required will depend on daily operating times, the conditions, quality of the air supply and the percentage of the WLL regularly being lifted. The operators daily checks and the monthly maintenance checks are necessary to check the condition of the hoist. Maintenance work should be carried out by trained and qualified personnel. ⚠ **DANGER**

It is recommended that in the case of the TCR, TNC, TMH & TCS hoist and air trolleys inspections are carried out in accordance with the following schedule, although the frequency of the 'six month inspection' should be increased in high risk environments, aggressive environments or where the usage is particularly heavy to between one and three months. ⚠ **CAUTION**

Air hoists, trolleys and overhead cranes should be inspected as specified in the 'Supply of Machinery (Safety) Regulations 2008 and The Provision of Use of Powered Machinery (PUWER) S12306 sections 5 & 6 and the results recorded in the log book.

External inspection by a competent person every 12 months or as per the examination scheme. The Lifting Operations and Lifting Equipment Regulations SI2306 - 1998.

DAILY OR SHIFT INSPECTION

At the same time on each working day the operator should carry out a basic inspection of the equipment, its operation and lubrication as required.

MONTHLY OR 3 MONTHLY CHECKS

Depending on the frequency of use and the working conditions, inspection and maintenance should be done at suitable intervals to ensure any deterioration of the equipment will be detected and remedied in good time.

ANNUAL INSPECTION

A competent person with the requisite knowledge of the equipment should carry out a full inspection of powered lifting equipment every 12 months or after any exceptional circumstances which could jeopardize the safety of the lifting equipment. A report should be issued and sent to the customer / employer.

DAILY HOIST AND TROLLEY INSPECTION REQUIREMENTS

The items listed below are intended as a guide for performing daily visual inspections of the components that have a direct bearing on the safety of the hoist and or trolley where the status may change with day to day use. The equipment items listed below do not necessarily need to be restricted to these items, but they should form the basis of the inspection.

OPERATING CONTROLS:	Check for malfunction, excessive wear, broken or damaged components and control function labels.
HOIST CHAIN:	Check chain lubrication, twisted chains (multi fall blocks).
AIR SET:	Check oil level indicator.
SAFETY CATCHES:	Check operation and for damage.
NOISE / OPERATION:	Check for any unusual noise and speeds during function tests.
HOIST OPERATION:	Check the hoist starts and stops quickly.

EXTRA CHECKS FOR TROLLEY

OPERATION:	Check movement and control of the trolley.
TROLLEY MOVEMENT:	Check the trolley moves smoothly along the beam.



MAINTENANCE

 DANGER

LOAD CHAIN - Thoroughly examine throughout its length for damage, corrosion or wear. If a defect is found, stop using the hoist and report the problem to your supervisor.

BRAKE - With a load applied check the brake efficiency. If there is any delay in actuation or slippage, the brake is defective and the hoist must be thoroughly overhauled before being returned to service. (Long pendants can cause a slight delay)

HOOKS, SWIVELS AND CLAWS - Examine hooks for wear, deformation, nicks and gouges. Ensure that the hooks swivel smoothly and that the safety claw opens fully and closes under spring tension.

NUTS AND BOLTS - Using suitable spanner and Allen key, check for any loose nuts and bolts.

UPPER AND LOWER LIMIT - Ensure that it functions correctly in both the fully raised and fully (chain lever) lowered positions.

CHAIN COLLECTOR - Check security and condition.

It is recommended that the load chain and linkages are lubricated as part of this inspection routine.

When repairing Red Rooster air hoists only original Red Rooster products should be used.

4.2 REPAIRS

Only minor repairs such as silencers, safety catches and pendant repairs should be done on rental hoists.  **CAUTION**

If the hoist is taken out of service it should be returned to Red Rooster.  **CAUTION**

Hoist and trolleys are heavy along with some parts of some hoist so suitable lifting equipment should be used to dismantle and assemble hoists.  **DANGER**

IF A FAULT IS FOUND STOP USING THE HOIST IMMEDIATELY AND ADVISE YOUR SUPERVISOR TO QUARANTINE THE HOIST AND THEN HAVE THE FAULT REPAIRED OR REQUEST A REPLACEMENT UNIT.

4.3 SILENCING

The Red Rooster hoists are fitted with an internal silencer; the noise output being less than 83 dB at one metre (this conforms to E.C. noise regulations).

TCR-250DPE

The silencer comprises five semi-circular gauzes; two type S, one type F and a further two type S.

TCS-500

The silencer comprises four nylon pads.

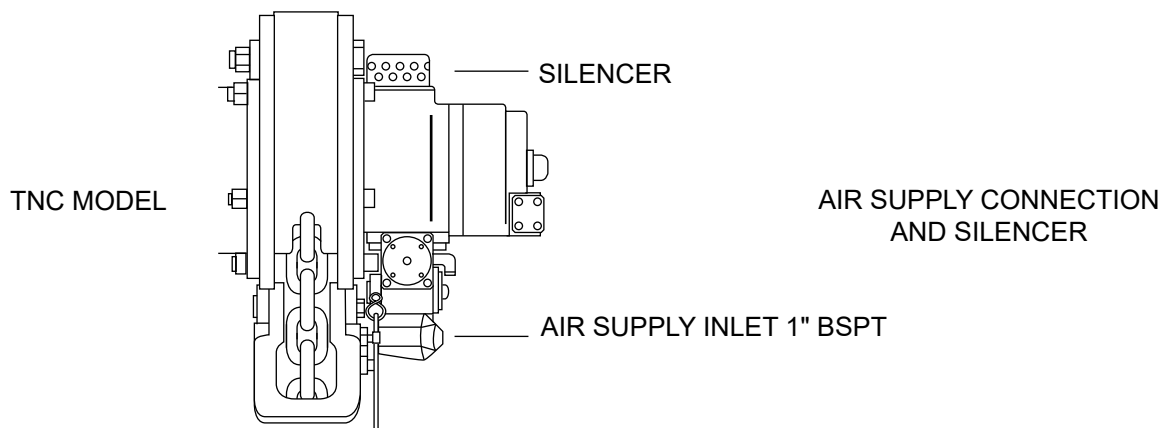
TCR-500, TCR-1000/2, TCR-1000, TCR-2000/2, TCR-3000, TCR-6000/2, TCR-9000/3, TCR-12000/4, TCR-15000/5
These types are fitted with a two stage silencer; the first stage is a nylon pad which traps air borne particles, preventing them from entering the second stage which comprises a multi-layer micro porous steel gauze.

TMH-3000 & TMH-6000/2

The silencer comprises of two type SS, one type F and a further two type SL in this order.

TNC-10TWLPE, TNC-15TW/3, TNC-20TW/4, TNC-25TWLPE, TNC-37.5TWLPE, TNC-50TW/4

These types are fitted with a 2 stage silencer; first stage comprises 1 piece felt, 2 pieces nylon pad and steel disc with holes and the second stage is 1 piece nylon pad circular folded.



The life expectancy of the silencer correlates closely with the quality of air supplied.

The nylon pad may be washed with degreaser and re-used once decontaminated.

Periodic examination of the silencer is not required, nor is it recommended (see below). As the silencer becomes contaminated a reduced speed of operation will be noted. At this point the nylon silencer should be cleaned or replaced and the gauze silencer should be changed.

MAINTENANCE

4.4 CHANGING THE SILENCER(S) - see parts list.

TCR-250DPE

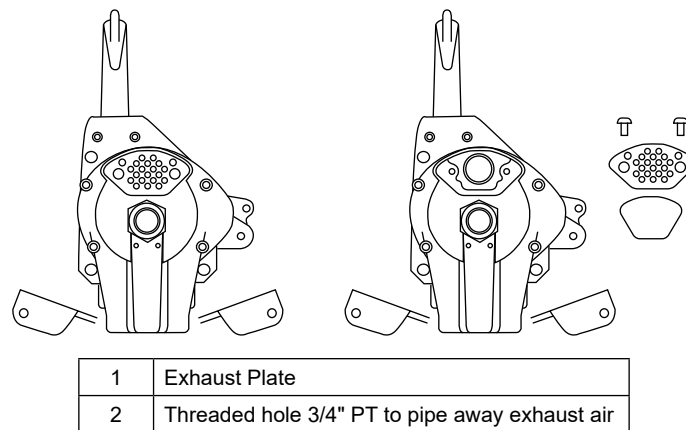
Located at the end of the motor, the silencers are held in place by a semi-circular exhaust plate which is located by means of a screw. (M4).

To replace, remove the screw and plate to access the silencers, which may then be drawn out. When replacing, ensure that the silencers are in the correct order (two type S, one type F and a further two type S).

TCS-500

Located at the end of the motor, the silencers are behind the exhaust plate.

TCS series: The exhaust air can be easily piped away from the hoist body. Disassemble the exhaust plate and silencer, there you will see a 3/4" BSP threaded hole. Assemble a hose joint and connect a hose (inner diameter 25mm)



TCR-500 to TCR-15000/5

The silencer section is located on the top of the hoist body on the motor side.

Remove the three M6 Hex socket cap screws which retain the section and very carefully remove the section taking care not to damage the gasket. (If damaged, the gasket must be replaced as any leak in the gasket will prevent the hoist from functioning).

TMH-3000 & TMH-6000/2

Remove the 5 off M5 hex socket cap screws which retain the exhaust plate. Remove the foam silencers. Replace with the new in the correct order. Fit exhaust plate then secure in place with the 5 off hex socket cap screws.

TNC-10TWLPE, TNC-15TW/3, TNC-20TW/4

Located on top of the motor, disassemble the 4 x M6 screws and take off the cover. In this cover you will find the nylon pad circular folded, replace or clean. On the motor housing is the first stage, loosen the nut and take off the silencer discs, the nylon pads maybe cleaned and the felt has to be replaced.



LAYING UP THE HOIST

**CAUTION****ADJUSTMENTS AND MAINTENANCE OPERATIONS**

Before carrying out any work on the hoist the main air supply should be turned off and the residual air vented or the hoist run to dissipate the air pressure.

Red Rooster hoists normally do not require any adjustment as the brake springs take up any wear and the load limiter and limits should not need adjustment once set.

The lubricator should be checked and topped up weekly in normal use or daily when heavily used.

The load chain should be checked monthly for lubrication and oiled if necessary. Where the load chain is not lubricated for operational reasons the chain should be inspected weekly as a dry chain can wear rapidly.

The top and bottom hooks should only be lubricated if required during checks.

The hoist gearbox is greased during assembly or repair and should not need greased during operation.

There are no hazardous substances in Red Rooster hoists.

5.1 LAYING UP THE HOIST

Whenever the hoist is unused for a period (weekends, holidays or in store), a little preparation will ensure that the hoist operates correctly and safely, either before being put into service for the first time or when being put back into service after a layup.

SHORT LAY UP PERIOD (2 TO 90 DAYS):

Air hoists should be kept clean, lubricated and stored in a clean and dry location.

When not in use seal off from the air supply inlet and run extra oil through the hoist.

Wherever possible keep the hoist protected when in use and installed in an exposed location, protecting controls and hoses from damage.

Turn up the oil delivery rate of the lubricator to maximum and run the hoist for two minutes, thereby ensuring that the hoist motor and control valve are well lubricated. (This also helps to displace any water which may be lying in the hoist). ⚠ **CAUTION**



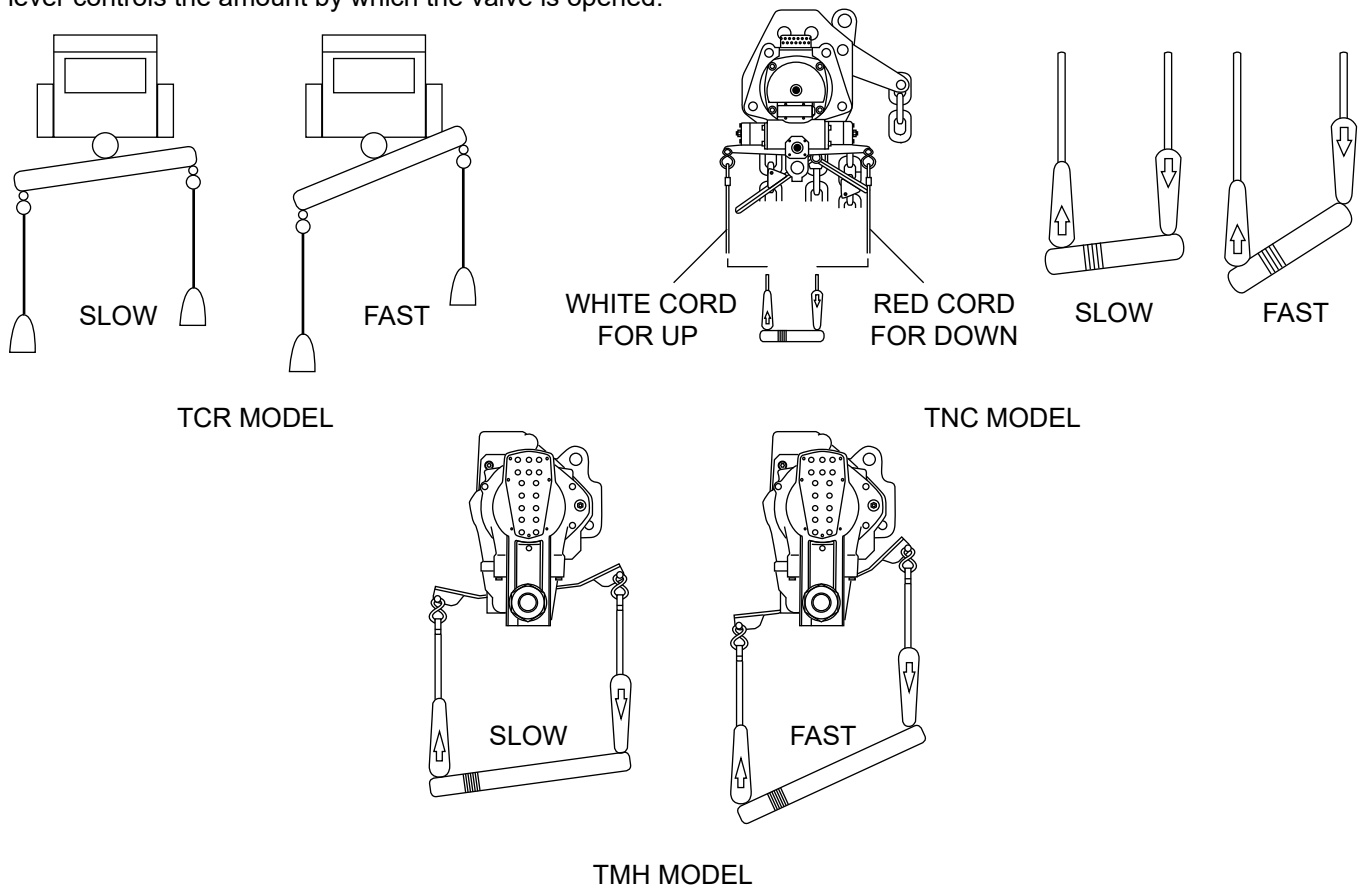
SPEED ADJUSTMENT - TCR & TNC

6.1 SPEED ADJUSTMENT

Every Red Rooster hoist is checked at the factory to ensure the maximum hoisting speed is in accordance with the specification.

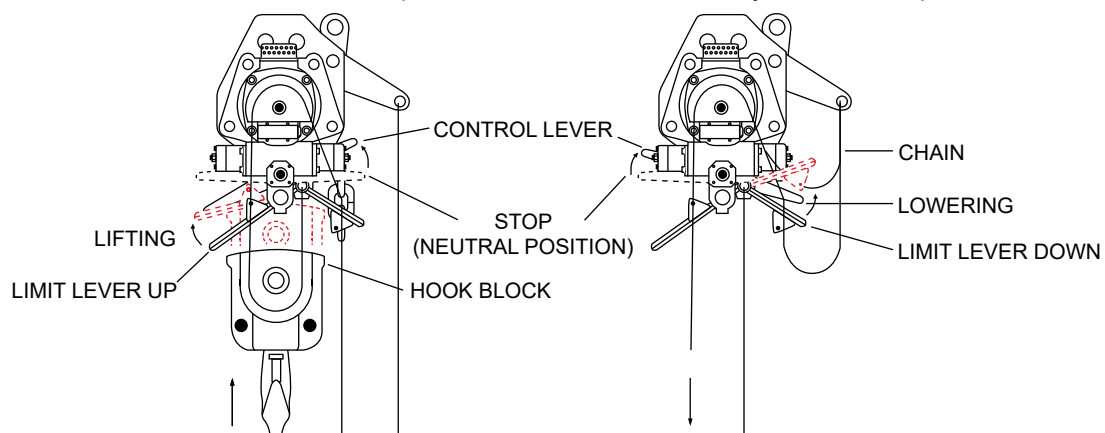
CORD CONTROL HOIST

The speed of the hoist is proportional to the amount of downward movement in the control cord, which via the cord lever controls the amount by which the valve is opened.



CAUTION

Verify that the Chain / Limit Levers are operational and can move freely in both the up and down directions.





6.2 LOAD LIMITER ADJUSTMENT

Maximum load adjustment (Excl. model TCR-250DPE & TCS-500)

On every TCR, TNC and TMH hoist the load limiter is factory set to operate at a load ten percent in excess of the safe working load, at an operating pressure of 6 bar. Unless a lower supply pressure is to be used, the load limiter will not require adjustment.

HOW IT WORKS

Located adjacent to the control valve, the load limiter measures the pressure drop across the motor which is proportional to the load on the motor. Once the pressure drop is increased above that of the load limiter setting, the brake is applied and the hoist will not lift the load. In this case the load should then be reduced or a larger capacity hoist installed. The load can still be lowered when the load limiter cuts in.

OPERATIONAL BREAKDOWN / TROUBLESHOOTING THE TCR, TCS & TNC HOIST

7.1 We list below a number of faults which may occur during use, together with the probable cause and the cure. If you experience a fault and cannot identify the cause, or if you do not feel confident to remedy the fault, please revert to your hoist supplier.

Description of fault noted	Possible cause of fault	Remedy
Hoist fails to start (when newly installed)	Air supply switched off	Switch on air supply.
	Damaged or kinked pendant hose	Disconnect pendant from control valve and check if there is pressure. Replace as necessary.
	Emergency stop actuated	Re-set emergency stop.
	Control valve sticking	With air supply switched off, open and close the valve using a spanner on the limit lever. Do not use excessive force. If this fails, refer to dealer.
	Air pressure too low	Increase air pressure to the required value. (6 bar)
	Hand control is faulty	Have hand control repaired.
Hoist starts but slows down and stops (when newly installed)	Inadequate air supply	Check compressor output against hoist requirements. Check air hose size against table. Ensure fittings are matched to hose size. Replace incorrect items.
	Regulator set in excess of 7 bar	Reduce to 6 bar / Fit regulator.
	Air supply hoses leaking or loose	Check connections of air supply hose and control hoses and connect properly.
	Silencer is clogged	Replace or clean silencer elements, improve air quality if necessary.
Hoist starts but will not stop	Sticking valve on pendant	Clean and lubricate valve, replace if necessary.
	Contamination within the control valve	Dismantle, clean and lubricate .
Hoist sometimes refuses to start	Worn vanes or damaged vane springs	Dismantle and replace as necessary.
	Motor has run dry	Lubricate motor, check oiler.
	Control valve on motor	Have control valve replaced / serviced.
Load chain jumps or makes a clicking sound	Worn load chain or guide	Dismantle and replace as required.
	Chain twisted	Incorrectly fitted - remove and refit (examine). Bottom block twisted through chain parts (2 fall models only).
	Chain sprocket worn	Replace chain sprocket, check chain guide, replace if necessary.
Motor 'stutters' and recovers periodically	Excessive moisture in air supply	Increase infiltration or fit a dryer.
Premature wear in load chain	Inadequate lubrication of load chain	Lubricate the chain.
	Support Vibration	Find cause of vibration.
	Hoist constantly operating at close headroom	Fit a ball bearing swivel below the hook.



PERIODIC EXAMINATION AND TESTING

8.1 EXAMINATION

UK & European Law requires that a thorough examination of the hoist should be carried out by a competent person:

- Before being put into service.
- At a frequency not exceeding 12 months (6 months for equipment used offshore).
- After being put into service at a new site.
- After involvement in an accident or dangerous occurrence.
- After a significant change in the conditions of use.
- After long periods out of use (time not specified).

Lifting operations and lifting equipment regulations 1998, section 9 refers. (LOLER 1998 №2307)

The record of such examination must be retained for as long as the employer continues to operate the equipment. The regulations also call upon the employer to carry out a risk assessment; to adjust the frequency of inspection according to the potential risk, to determine the nature of inspections and to ensure that the persons carrying out the inspection are competent to do so.

8.2 SIX MONTHLY OFFSHORE INSPECTION

Arrange to have the hoist examined by a person specifically trained and experienced in the examination of lifting machines. This can be done by a Red Rooster engineer or an independent competent person. Ensure that the party is operating to a detailed inspection procedure or code of practice.

THE HOIST MUST BE EITHER INSPECTED OR CHANGED OUT EVERY 6 MONTHS.

EXPLOSION PROTECTION

- 9.1 In Europe and several other parts of the world (check the rules in your own country) the use of non-electrical equipment in hazardous areas is covered by the ATEX 2014/34/EU Directive.

All standard Red Rooster hoists and trolleys from 250 kg to 50 tonne can be certified for use in Zone 2 areas and with additional protection built into the hoist they can be certified for Zone 1 use. The preparation work required to be carried out on our hoists and trolleys varies on the protection level required by the customer. With the information on where the hoist will be operating, we prepare hoists to be suitable for the Zone, gas group and temperature rating.

Hoists and trolleys can be fitted with different types of load chain, bronze sprayed hooks, stainless steel safety catches, and stainless steel name plates among several other modifications. Trolleys can be fitted with bronze wheels along with ATEX rated air motors, gearboxes and valves.

Standard Zone 2 (Gases) Zone 22 (Dust) rating - Group II 3 GD c IIA T4 (135°C)

Standard Zone 1 (Gases) Zone 21 (Dust) rating - Group II 2 GD c IIB T4 (135°C)
(Other gas groups and temperature ratings are available)

These ratings cover air hoists, air trolleys and manual trolleys.



DANGER

- During use the operator must avoid loads or the bottom hook impacting with surrounding steel equipment and structural steel which may result in sparking or frictional sparks caused by dragging loads past fixed structures.
- Any impacts involving light metal or cast iron should be avoided and these materials either protected or removed from the area.
- Damaged or badly corroded coatings or chain should be replaced or repaired to keep up the ATEX rating of the equipment. For assistance contact Red Rooster.
- Earthing of hoists is not usually required as the hook connection to structure allows the hoist to connect to earth.
- The running surfaces of beams and cranes should not be painted to allow wheels to earth to the structure.
- Stainless steel 'C' track systems should be applied with an earth wire to connect onto the structure.
- Plastic junction boxes should only be cleaned with water and a clean cloth to reduce any electrostatic charge coming from the rubbing of the plastic surface.
- Dust should not be allowed to accumulate on the hoist, trolley, crane or junction boxes.
- Plastic pendant should only be cleaned with a damp cloth.

10.1 A filter lubricator should be used with all Red Rooster hoists and trolleys.

AIR SERVICE UNITS:

The correct size of air service unit for each hoist type is stated in the table on page 4. The air service unit must be installed with the lubricator unit down line from the filter unit. The unit should be installed at the hoist inlet port or within eight metres of inlet port. (Siting the unit further away or well below the hoist will result in lubricant being deposited on the internal walls of the supply line and hence it will be necessary to increase the lubricant rate above the levels specified (see section 1.2) to ensure adequate lubrication of the hoist. The ambient temperature range is -5°C to +60°C (with no freezing).

FILTER UNIT (WATER TRAP)

Manual drain units

As the name implies, these units must be drained by the operator as the filter bowl becomes full of water. The frequency of draining is entirely dependent upon the usage of the hoist and the moisture level of the air supply.

⚠ CAUTION

In clean environments e.g. laboratories, paint spray booths, manual drain filters are essential to prevent contamination.

Automatic drain units

These units are automatically self-purging. When the filter bowl is full it will automatically drain itself. Although very convenient to the user, the unit must be sited such that either the purged water is captured by a tray or it purges into an area away from personnel, equipment (particularly electrical equipment) and goods. If contamination from purged water is not a problem then automatic drain units should be selected.

Failure to fit and drain the filter will result in excessive moisture being carried into the hoist valve, motor and brake actuator resulting in internal corrosion and premature failure. **⚠ DANGER**

LUBRICATOR UNIT

There are two types of lubricator available.

Oil mist lubricator

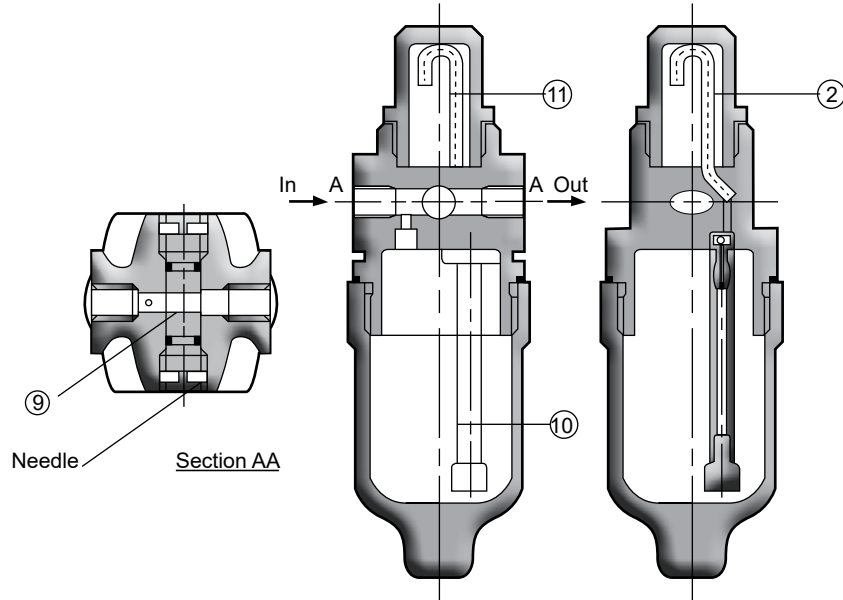
The preferred type, and essential where the lubricator must be sited some distance from the hoist. The unit produces atomised oil particles which remain in suspension in the air longer.

Droplet Lubricator

Due to the larger particle size of the droplets, these may only be used where the lubricator is close to the coupled hoist.

Failure to fit a lubricator and maintain the correct oil flow will result in rapid wear of the rotor vanes within the motor, excessive heat generation and failure of the air motor within a very short period. **⚠ DANGER**

Keep the lubricator topped up with a light turbine oil. **⚠ DANGER**


ACCESSORIES - AIR SERVICE EQUIPMENT
10.1 WORKING PRINCIPLE AND ADJUSTMENT


A portion of the air introduced from the IN side pressurises the lubricant inside the bowl. The remainder of the air passes through the needles (9), and flows to the OUT side. The pressure differential between the inside of the bowl and the inside of the sight dome (2), causes the lubricant inside the bowl into the oil passage (10). The lubricant drips from the dripping tube (11), and lubricate the OUT side. The amount of lubricant is adjusted by the needle (9), on the front face. Turning the needle clockwise increases the amount of lubricant, and turning it counter clockwise until fully opened shuts off the lubricant. The needle on the side that is not used should be left fully opened.



ACCESSORIES - AIR SERVICE EQUIPMENT

10.1 REGULATOR UNIT

Most compressors are supplied with a regulator on the output. However, where a number of different pneumatic tools are supplied from the same compressor it is good practice to maintain the supply line or remain at a higher pressure and to fit a regulator to the supply at each tool.

The operating pressures stated for the air hoist are the pressures required at the hoist inlet manifold. Subject to the type of airline, a pressure drop in the line between 0.1 and 0.35 bar (2 and 5 p.s.i) per 10 metres of line should be anticipated (as a result of the frictional resistance of the walls).

MOUNTING / ADJUSTMENT - WARNING

1. Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
2. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

MOUNTING / ADJUSTMENT - CAUTION

1. Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
 - ▶ Pull the pressure regulator knob up to unlock. (You can visually verify this with the 'orange mark' that appears in the gap.)
 - ▶ Push the pressure regulator knob down to lock. When the knob is not easily locked, turn it left and right a little and then push it. (When the knob is locked, the 'orange mark', i.e. the gap will disappear.)
2. Pulsation will generate when the difference between the inlet and the outlet pressure is large. In this case, reduce the pressure difference between the inlet and the outlet. Please consult with SMC if pulsation problem is not resolved.
3. When the bowl is installed, install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid dropping or damage of the bowl.

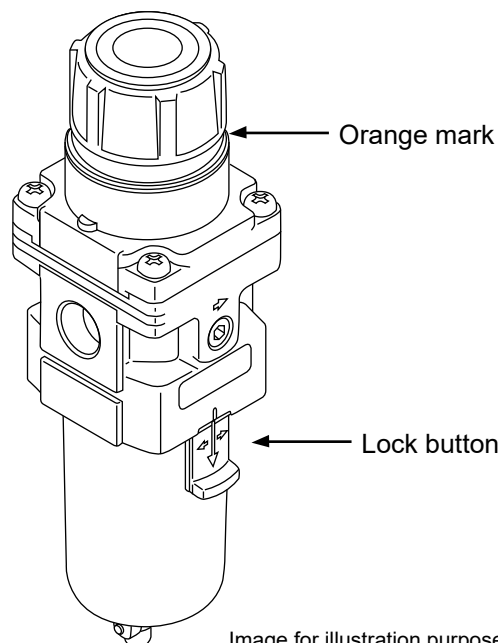


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