

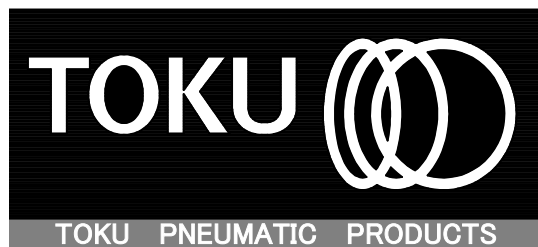
AIR HOIST

TCS-series

TCS-250PE/C

TCS-500PE/C

TCS-1000P2E/C2



www.air-allied.com.au

MANUAL

INSTRUCTION MANUAL

Carefully read all instructions before operating
or servicing any TOKU Products.

Air & Allied Sales (Pacific) Pty Ltd

13-06

No.6

(1) INTRODUCTION

We thank you for your recent purchase of a TOKU CHAIN HOIST


This manual is a guide book which will show you how to use the air chain hoist safely and efficiently. Please read this manual in its entirety and understand the contents before proceeding to operate the hoist. Also convey this information to the actual operators of the hoist.


The air chain hoist was designed to operate on compressed air to lift and lower loads. As a result before operating the hoist it is necessary to also read the instruction manual for the compressor. In addition, for proper regulations about usage of the hoist, consult the “ crane safety regulation standards “

Usage other than the ones written in this manual should be performed with the consideration of safety and responsibility.

PLEASE UNDERSTAND THE FOLLOWING POINTS BEFORE READING THIS MANUAL;

◆ With regards to the safety precautions, the following words are used to identify safety messages in the manual.

 **WARNING;** This word is used on safety messages and labels where a potential dangerous situation could result in serious injury or death if the hazard is not avoided.

 **CAUTION;** This word is used in safety messages and on labels for hazards which could result in minor or moderate injury if the hazard is not avoided.

IMPORTANT; This word may indicate hazards whose result could be damage to the equipment.

◆ Keep this manual handy and read it periodically

◆ If this manual is lost or becomes dirty, ask for a replacement manual from Air & Allied Sales (Pacific) P/L.

◆ If the hoist is not used by one person, please have the new person read this manual before operating the hoist.

◆ If you transfer the hoist to another source, make sure that you give the manual to the new owner.

If you have any questions about the hoist or this instruction manual, please contact Air & Allied Sales (Pacific)

Pty Ltd: sales@air-allied.com.au

www.air-allied.com.au

Ph: +61 7 3272 7999.

(2) Table of Contents

	Page
(1) Introduction	1
(2) Table of Contents	2
(3) Safety Precautions	3
(4) Precautions during operation	6
(5) Specifications	1 2
1 . Operating conditions	1 2
2 . Specifications	1 2
(6) Name of Parts	1 3
(7) Preparation before operation	1 4
1 . Selection of the compressor and drain removal	1 4
2 . Piping	1 4
3 . Preparation of the Air Hose	1 5
4 . Check the strength of the beam before installing the hoist	1 5
5 . Assembly of the chain basket	1 6
6 . Assembly of the Pendant (For PE Type)	1 7
7 . Assembly of the Cord (For C Type)	1 7
8 . Positioning the Air Hoist	1 8
9 . Checking the chain (Double fall type)	1 9
1 0 . Installation for the exhaust	1 9
(8) Before Operation	2 0
1 . Check operating Air Pressure.....	2 0
2 . Lubrication	2 0
3 . Test operation	2 0
4 . Checking of the install position for the chain down stopper	2 1
5 . Checking of the install position for the attachment of lifting and lowering limiter	2 1
6 . Check the lifting and lowering limiters before actual	2 2
7 . Check the sling equipment	2 2
(9) How to operate	2 3
1 . How to start and stop the Air Hoist	2 3
2 . Adjusting the speed	2 3
3 . Lifting and lowering the load	2 4
4 . Emergency stop button (For PE Type)	2 5
5 . Speed adjustment mechanism	2 6
6 . Pendant hose extension adjustment mechanism (PE type)	2 7
(1 0) Maintenance and inspection	2 8
(1 1) How to install the chain	3 0
(1 2) Trouble shooting	3 2

(3) Safety Precautions

WARNING

- When using the chain hoist, obey the safety precautions written in this instruction manual.

WARNING; Obey the safety rules at the job site.

- The people who operate the hoist should be the one who have received instruction to properly operate the hoist.
- Obey all rules, safety procedures and operational methods at the job sit
- When using the hoist with other people, make sure your signals during operation are well discussed before jointly using the hoist.

WARNING; Wear proper clothing and safety protection.

- Wear proper clothing when operating the hoist.
- To protect the body, wear safety items such as a helmet, mask, safety shoes and gloves. Or if the sound level is high, where ear plugs.
- Do not wear a tie or loose fit clothing when operating the hoist. They may get caught in the chain during operation.



WARNING; Safe operation begins with proper posture.

- It is dangerous to operate the hoist when your posture is not in balance. Make sure your footing is proper and your body is stable when operating the hoist.

WARNING; Do not allow unauthorized staff near the hoist area.

- Do not allow unauthorized staff near the hoist area.
Especially children.

 WARNING; Difficult operations will lead to accidents.

- Do not use the hoist for operations over its capacity. These operations may lead to damage of the hoist and should be avoided.

 WARNING; Stop operating the hoist if trouble is detected.

- When operating the hoist if trouble is found, immediately stop operating the hoist and inspect or repair.

 WARNING; Attach the hose properly.

- Make sure the hose socket is securely tight using a hose band.

 WARNING; Do not modify the hoist.

- Do not remove screws of covers which are on the hoist.
- Do not modify the hoist. This will lead to danger.
The responsibility will be yours if an accident occurs due to these modifications.

 WARNING; Handle the hoist with care.

- Do not drop or hit the hoist externally. This will lead to cracks and damage to the hoist. Also, do not stamp or engrave information directly onto the hoist. If a crack develops, and air is leaking through the crack, do not operate the hoist.

 WARNING; Periodically inspection of the hoist is the basics to safety.

- Periodic inspection of the hoist will allow your hoist to operate smoothly and safely.
Referring to the crane safety standards, daily and monthly inspection programs should be performed.

⚠ CAUTION; For inspection or repair of the hoist, consult your dealer.

- Contact your dealer for repairs or inspections of the hoist. When parts are needed to be changed, use only genuine TOKU parts.

⚠ CAUTION; Do not use the chain or hook as an earth connection.

- During a weld operation, do not use the chain or hook as an earth connection. This may lead to the cause of an accident or other damages.

⚠ CAUTION; Keeping the area tidy is the first step to safety.

- Keeping the job site tidy is the first step to a safe environment. Keep the facility clean and neat at all times.

IMPORTANT; Good Maintenance will extend the life of your hoist.

- Keep a good maintenance program for the hoist and keep it clean.

(4) Precautions during Operation

⚠ WARNING; Installation of the hoist must be performed by trained personal only.

- Installation of the hoist must be performed by trained personal only.
If installation is not performed properly this may lead to an accident with personal and is very dangerous.

⚠ WARNING; All supporting materials and installation items must meet safety standards.

- Before installing the hoist, make sure all supporting materials will hold the rated load of the hoist and a the safety factor involved to support the hoist with load. If not performed properly the load may fall and is very dangerous.

⚠ WARNING; Only trained personal are allowed to operate the hoist.

- The hoist must be operated only by personal that have received safety and operational training. If this is not obeyed, this may lead to an accident with personal and is very dangerous.

⚠ WARNING; Before operating the hoist, reconfirm the safety issues with the operators and the personal involved.

- Check the operating position and footing before operating the hoist. Make sure the surrounding personal are safe and make sure everyone is aware of the signals when operating the hoist.

⚠ WARNING; Use agreed upon signals when working with a partner.

- When using the hoist jointly with another person, use signals agreed at the job site and obey them during a joint operation.

⚠ WARNING; Do not over load the hoist.

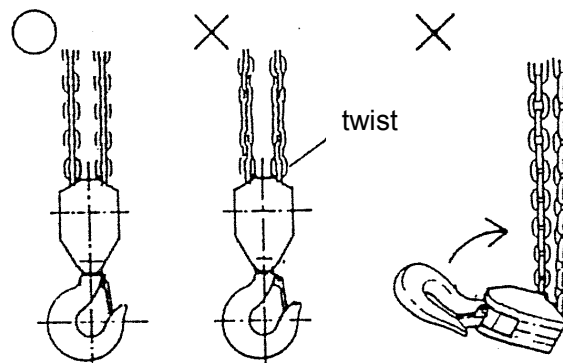
- Before lifting the load, confirm that the load is within the rated load of the hoist.
The hoist or chain may break and the load may fall and this is very dangerous.

⚠ WARNING; Check the slings and hook safety claw before using the hoist.

- Make sure the sling is connected correctly before lifting. Also make sure the hook safety claw is working correctly. If it is used in poor conditions, this may lead to removal of the sling and the load may fall.

⚠ WARNING; Before using the hoist, make sure the chain is not twisted.

- As shown in the diagram, make sure the chain is not twisted during usage of the hoist. If the chain is twisted, this will lead to jamming and also possible breakage of the chain.

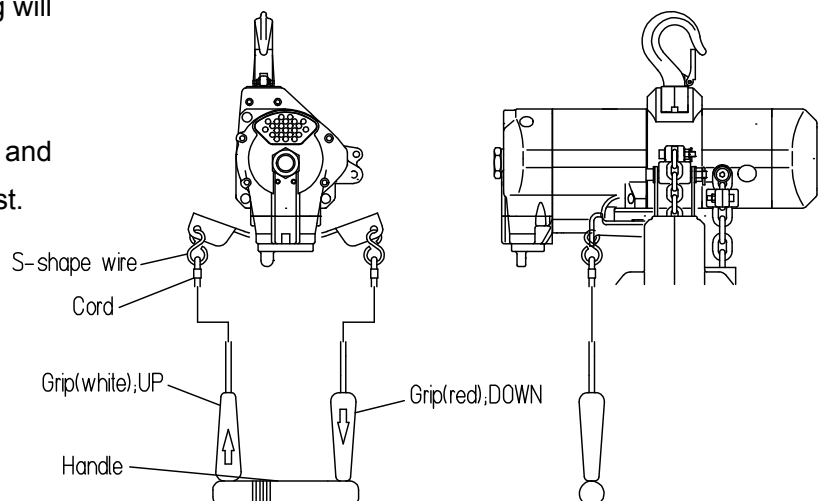


⚠ WARNING; Do not depress the pendant lever unnecessarily.

- Make sure the conditions are correct before operating the hoist. Under poor conditions, the load may fall onto the floor or the load may fall onto the operator. It is very dangerous.

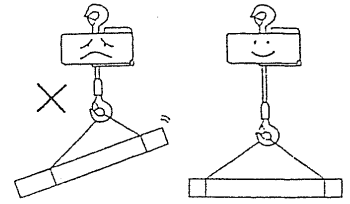
• Depressing the pendant lever will start operation of the hoist and releasing will stop the hoist.

• Pulling the cord will start the hoist and releasing the hoist will stop the hoist.



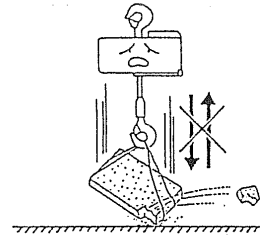
⚠ WARNING; Make sure the load is balanced.

- When using a wire rope or a sling, make sure the load is balanced before lifting. The load may fall and it is dangerous.



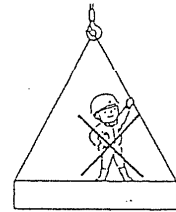
⚠ WARNING; Do not lift/lower suddenly.

- When suddenly lowering the load, this may lead to poor balance of the load and the load may fall.



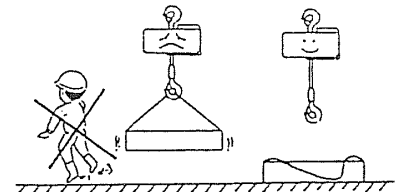
⚠ WARNING; Do not use the hoist to lift people.

- The hoist is used to lift loads. Never lift people using the hoist. This is very dangerous.



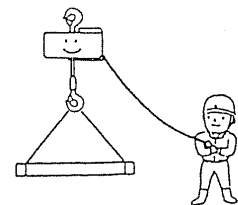
⚠ WARNING; Do not leave the job site.

- Do not leave the job site when a load is in suspension. Always lower the load and un-load the load before departing.



⚠ WARNING; Do not operate the hoist under the load.

- Make sure you are away from the load when operating the hoist. It is dangerous if the load falls.



⚠ WARNING; Do not touch the hoist, under hook area and chain during operation of the hoist.

- It is dangerous if your hand gets caught in these areas.

⚠ WARNING; Do not touch the hoist after operation.

- After operating the hoist, do not touch the hoist. After operation, the hoist may become hot. Please let the hoist cool before touching.

⚠ WARNING; Do not use the limiter to stop the hoist all the time.

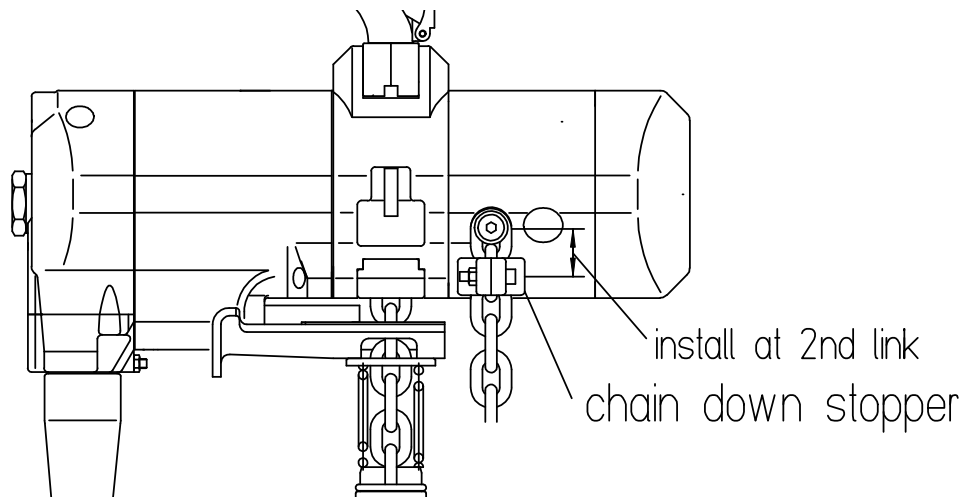
- This mechanism is a safety device. The limiter for over lifting and over lowering will operate continuously using this device may lead to an accident and it is not recommended to use it continuously.

⚠ WARNING; Use one hoist when lifting.

- When lifting for more than 2 hoists, balance becomes a factor and one hoist may be stronger and this type of operation can become dangerous.

⚠ WARNING; Install the chain down stopper at the designated position certainly.

- Chain down stopper is the final safety equipment to prevent the chain from dropping, in case lowering limiter does not operate properly.
If the chain down stopper is not installed at the designated position, limiter may not operate properly, and the hoist and chain may be damaged and it is very dangerous.



 WARNING; Inspect the Air Hoist after the chain down stopper operated.


- The chain down stopper is the final safety equipment and if it operated, it means overload is applied on the hoist and chain. So, the hoist must be inspected at the designated service center. If the hoist is operated without inspection, this may lead to dropping of the load and personal injury, it is very dangerous.

 CAUTION; Do not pull or use the hoist side ways.

- The hoist was designed to be used in the vertical direction. Using the hoist in the horizontal direction is not recommended and may result in an accident or premature wear of parts.

 CAUTION; Do not suddenly change the direction of the hoist.

- Suddenly changing the direction of the hoist will shock certain areas of the hoist and may cause breakage of parts or lead to an accident.

 CAUTION; Do not pull on the pendant hose or cords when trying to move the hoist.

- This will lead to damage to the hose and may cause the hoist to malfunction.

 CAUTION; Use the hoist indoors.

- Using the hoist outside may become effected by rain and moisture allowing the hoist to rust leading to malfunction. Do not use the hoist outdoors.

 CAUTION; Storage must be considered carefully

- Store the hoist away from children in a dry area. When storing the hoist for a longer period of time, to prevent internal rust, apply 3 cc of lubrication into the air hose and operate the hoist for 3-4 sec.

 CAUTION; Make sure the correct air pressure is used with the hoist

- Operating air pressure is 0.6Mpa
Operating at air pressures above 0.6Mpa will effect the durability, performance and safety of the hoist. As a result, it is important to consider the pressure for the air compressor, volume and piping aspects to operate the hoist at its best level.
- ※ Please note the air pressures stated above are actual operating air pressures and not the air pressure when the hoist is not operating, which is normally slightly lower. As a result, always check the air pressure when the air hoist is operating.

 CAUTION; Operate the hoist in the correct ambient temperature.

- The recommended ambient temperature for the hoist is in the range of -10°C~60°C.
«Recommended20°C»
Operating the hoist out of the above temperature range will effect the durability, performance and safety of the hoist.

 CAUTION; Air maintenance is important.

- Always use a air filter, regulator and lubricator (line oiler) near the hoist
The size we recommend is a size larger than the actual piping size and for the air regulator we recommend the pilot type regulator. If a pilot style regulator is not available, we recommend a regulator one size larger than the standard size. (To keep the performance level for the hoist)
With regards to the lubricator (line oiler), we recommend a flow of 10-15 drops/min. of lubrication.
If air maintenance is not performed properly, this will lead to rust, malfunctioning and premature wear of the internal parts, and this may result in personal injury.

IMPORTANT; Avoid operating the hoist with no load for extended periods.

- This may lead to damage to the internal parts of the motor or premature wear of these parts.

(5) Specifications

1. Operation Conditions

- ① Operating Air pressure: 0.6MPa
- ② Operating Ambient Temp. range: -10°C~60°C «Recommended 20°C»
- ③ Operating location: Inside
- ④ Applications: For lifting loads

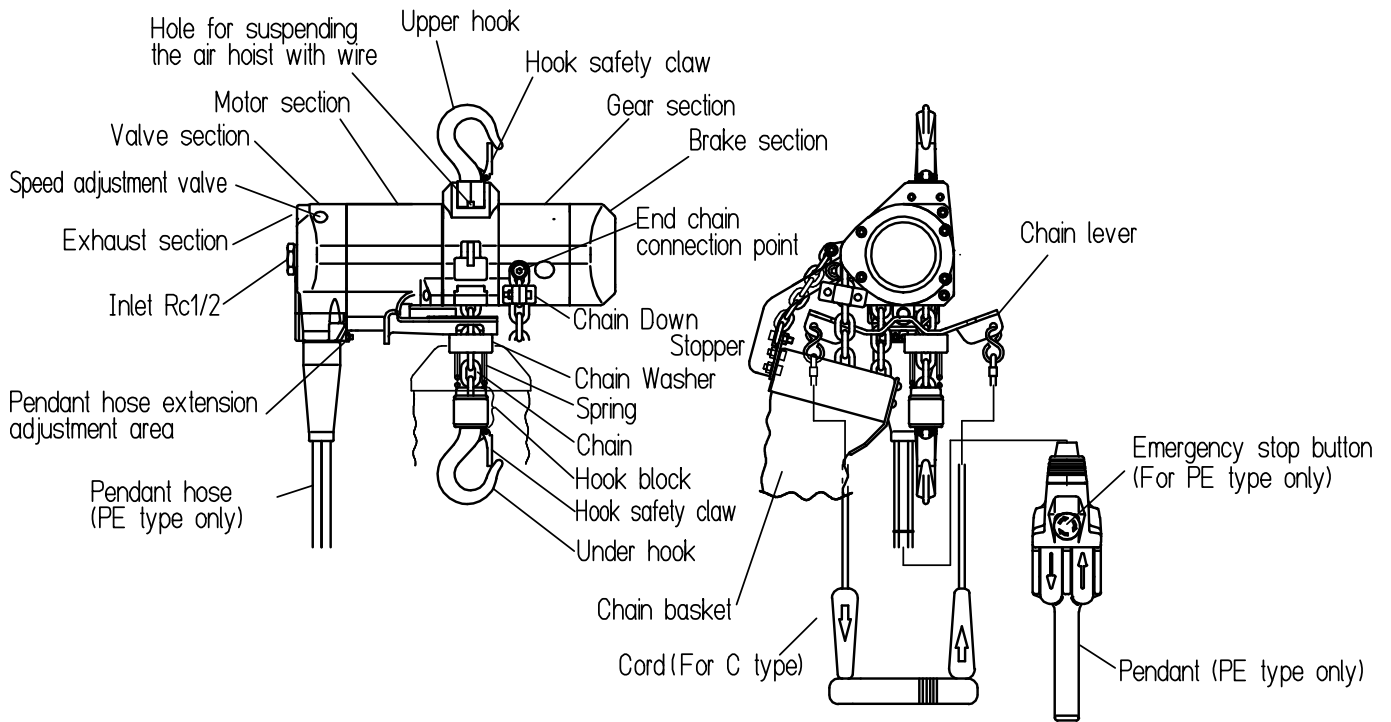
2. Specifications

Model	No. of Falls	Rated Load (kg)	Air Pressure (MPa)	Lift Speed w/Rated Load (m/min) / Air Consumption (m ³ /mini)	Lift Speed w/o Load (m/min) / Air Consumption (m ³ /mini)	Vibration Value (dBA)	Std. Lift (m)	Air Inlet	Weight Inc. Cain (kg)
TCS-250PE	1	250	0.6	34 / 1.7	63 / 2.1	84.9	3	Rc 1/2	19
TCS-500PE		490		17 / 1.7	33 / 2.1				
TCS-1000P2E	2	990		8.5 / 1.7	16 / 2.1				25

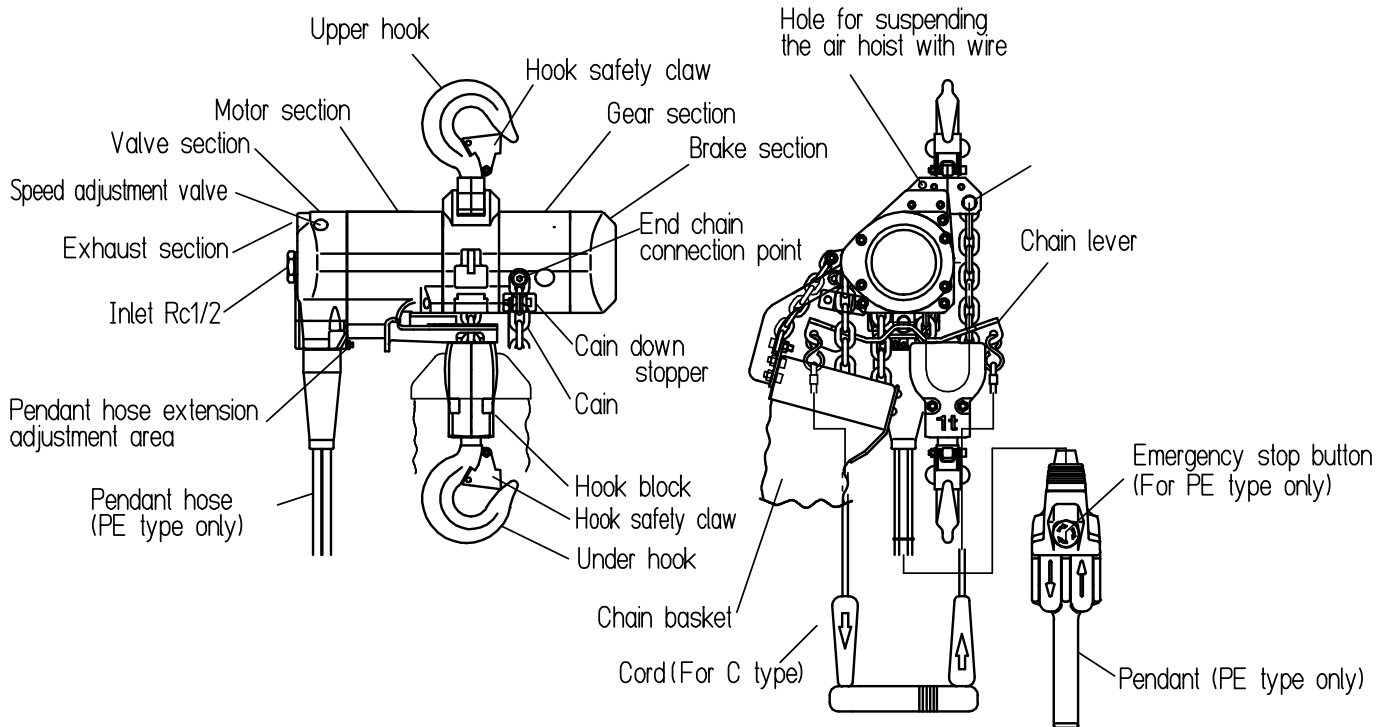
- ※ Lifting speed is measured at 0.6 Mpa with a pendant hose length of 2 meters using cord control.
- ※ Please note, using a pendant valve hose exceeding 2 meters may change the performance specifications.
- ※ The C-type is 1 kg lighter than the PE-type. All other specifications are the same.
- ※ Vibration value on above is the value of “averaged sound power level” based on ISO3744.

(6) Name of parts

TCS-250PE, C
TCS-500PE, C



TCS-1000P2E, C2



(7) Preparation before operation

1. Selection of the compressor and drain removal.

- Method of selection; (Air Consumption for each hoist is shown on Page 12)

$$(\text{Air consumption} \times 10) \times \text{Hoist Quantity} \leq \text{Compressor Horse Power}$$

- Method of drain removal;

Rust will develop leading to the cause of trouble if the drain is not removed from the compressor.

Remove the drain at the bottom of the air tank on your compressor. Remove excess water and oil.

Supply clean dry air to the hoist. (Refer to the compressor manual for details)

2. Piping.

Refer to the diagram below for piping. The main and secondary pipes should be 19mm I.D. and above, and use the large pipe as much as possible.

If the main or secondary pipe is smaller in diameter or too long, the performance of the hoist will be dropped due to the pressure loss.

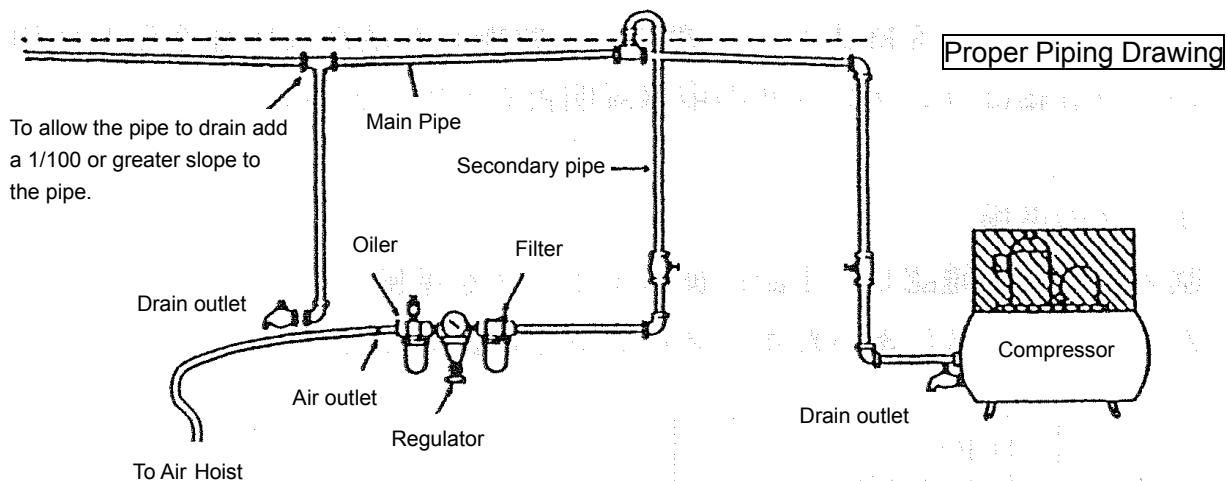
⚠ CAUTION; Always install an Air Filter, regulator and lubricator (Line Oiler) near the hoist.

- Always use an air filter, regulator and lubricator (line oiler) near the hoist

The size we recommend is a size larger than the actual piping size and for the air regulator we recommend the pilot type regulator. If a pilot style regulator is not available, we recommend a regulator one size larger than the standard size. (To keep the performance level for the hoist)

With regards to the lubricator (line oiler), we recommend a flow of 10-15 drops/min. of lubrication.

If air maintenance is not performed properly, this will lead to rust, malfunctioning and premature wear of the internal parts, and this may result in personal injury.



3. Preparation of the Air Hose.

CAUTION; Do not use the quick coupler for the connection.

- Depending on the product, quick coupler may squeeze the air flow too much. This may lead to come down the performance of the hoist remarkably and happen the trouble at the brake and other part. So, please do not use the quick coupler for the connection of hose and piping.

- Size of Hose: The I.D. of the hose should be 12.7mm and above for the hoist. Also, please prepare the suitable hose band for the hose.

•Length of Hose :

IMPORTANT; We recommend to keep the hose length within 5 meters.

- If the hose is too long, the air pressure will drop at the hoist. In order to prevent the pressure drop, use a hose with an I.D. of 19 mm or larger. Please refer to the following chart showing the relationship between air flow and pressure drop for a 10 meter long hose.

Size of Hose (mm)	Air Pressure (kgf/cm2)	Hose; 10 meters in Length with free air flow (m3/min)				
		0.5	1.0	1.5	2.0	2.5
12.7	0.4	0.0105	0.0416	0.0913		
	0.5	0.0089	0.0353	0.0764		
	0.6	0.0764	0.0303	0.0655	0.116	
	0.7	0.007	0.0264	0.0571	0.0979	0.153
19.0	0.4	0.0001	0.0056	0.0122	0.0216	0.0339
	0.5	0.0001	0.0046	0.0106	0.018	0.0223
	0.6	0.0001	0.004	0.0091	0.0156	0.0243
	0.7		0.0035	0.0079	0.0141	0.0212

(MPa)

※The chart information shows the pressure reduction at each Air Pressure at free flow. The pressure drop has been calculated by subtracting the pressure from the inlet of the hose to the outlet port.

※If the hose length is longer than 10 meters, the relationship of the pressure drop if proportional to the extended length. As a result, if the hose length is 20 meters, you would multiply the above chart numbers by 2.

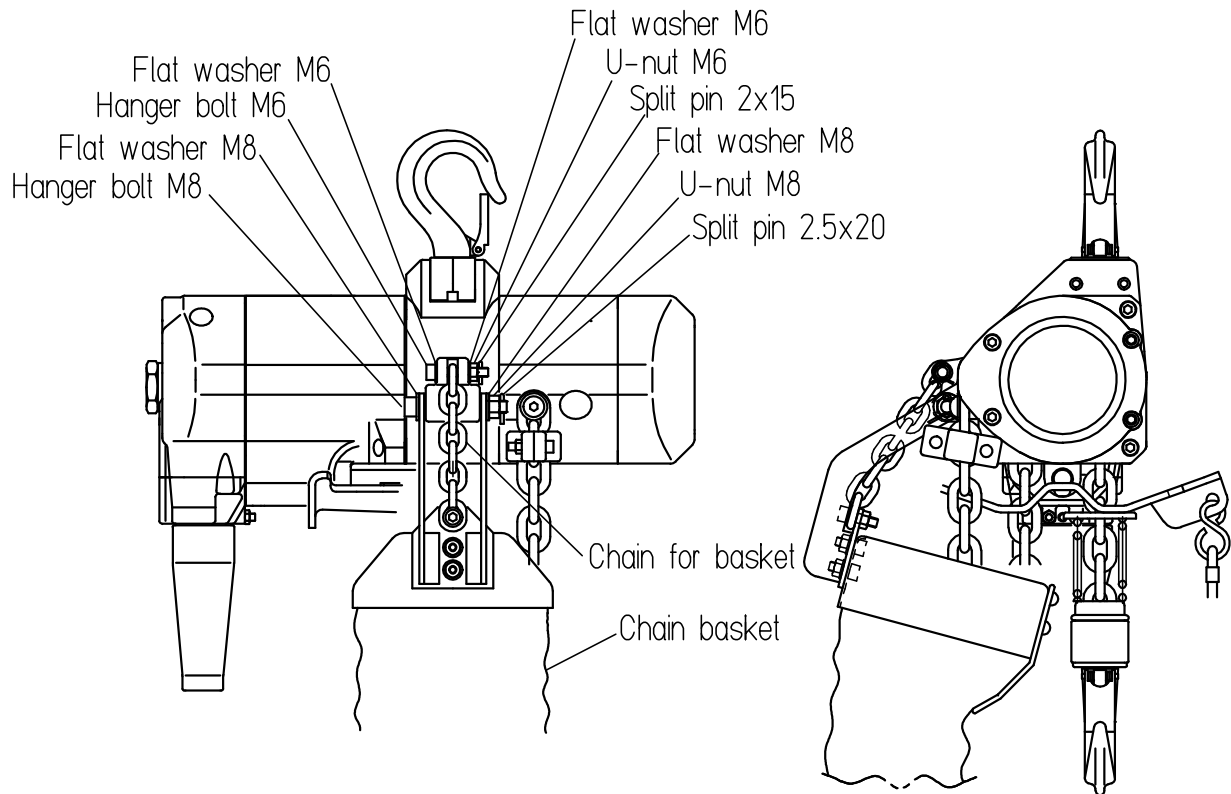
4. Check the strength of the beam before installing the hoist.

⚠ WARNING; Before installing the hoist to the beam make sure the safety factor is met.

- Before installing the Air hoist to the beam, make sure the rated load for the beam exceeds the rated load for the air hoist with the proper safety factor. If the rated load of the beam does not exceed the rated load of the air hoist, please do not install the air hoist to this location.

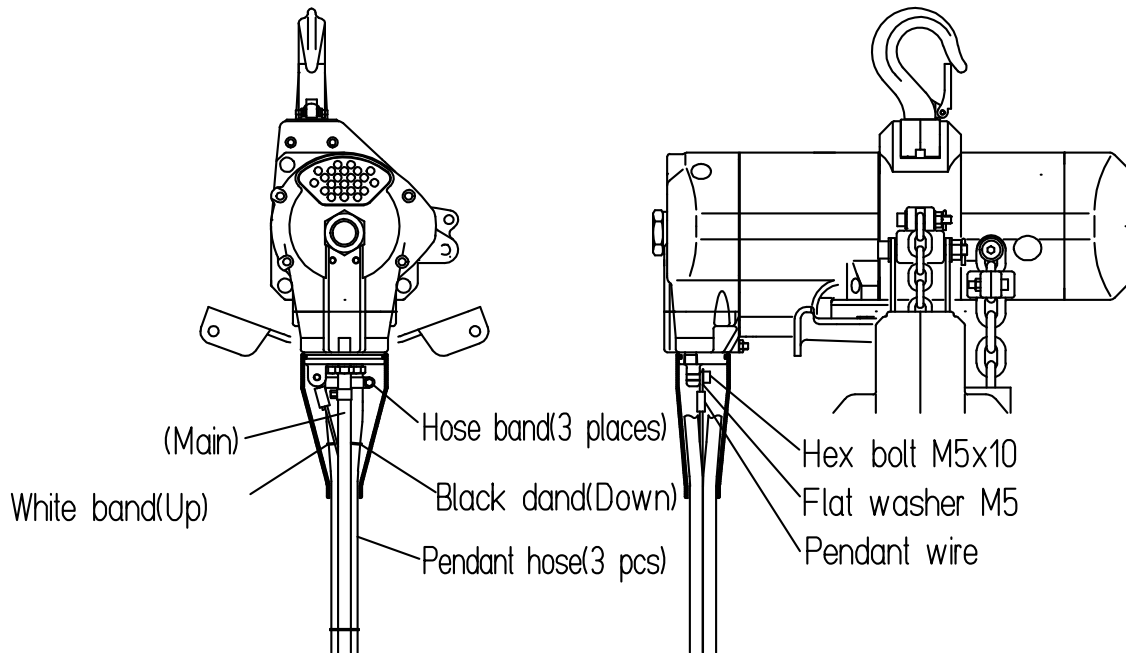
5. Assembly of the chain basket.

- Install the chain basket according to the drawing below.
- Each hanger bolt nut must be screwed on until the split pin can be assembled and secured. Do not over fasten the nut.
- Make sure each split pin is assembled correctly.
- Glue is used on the screws for the Chain basket. Please do not remove them.



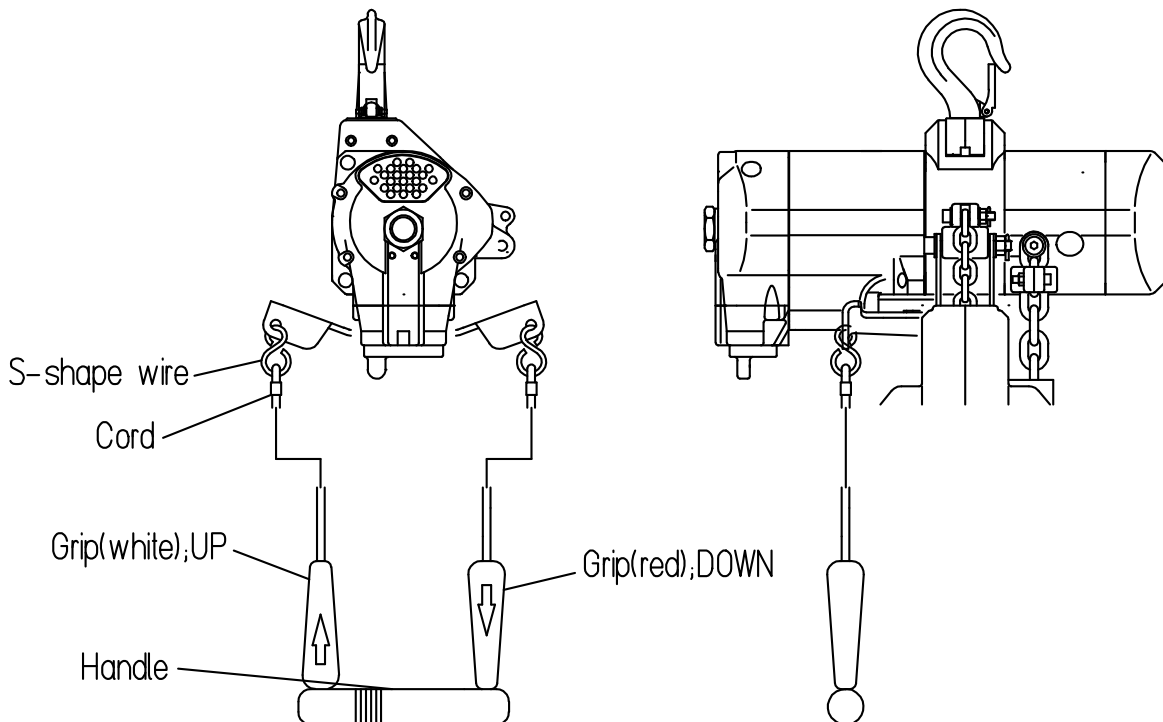
6. Assembly of the Pendant. (For PE Type)

- Install the pendant valve as shown in the drawing below.
- Please make sure each pendant hose is connected to the correct port.
- Tightly secure the hose band.



7. Assemble of the Cord. (For C type only)

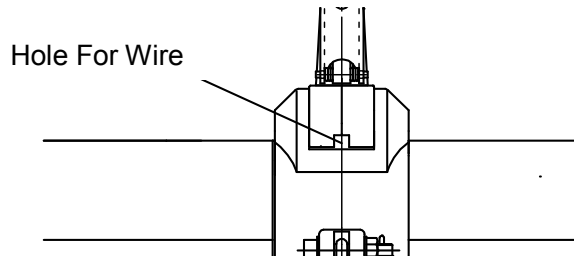
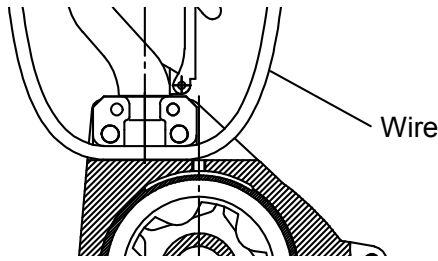
- Install the Pull cords as shown in the drawing below.



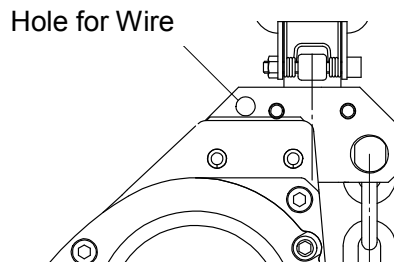
8. Positioning the Air Hoist.

①As shown in the drawing below, you may assemble a wire (For TCS-500PE Max. 6.3 mm, For TCR-1000P2E max. 8 mm) to suspend the Air hoist.

TCS-250PE / C , TCS-500PE / C



TCS-1000P2E / C



②Install the upper hook to the supporting beam.

⚠ WARNING; Make sure the upper hook is assembled correctly.

- Make sure the upper hook is assembled to the recommended material and also make sure the hook safety claw is securely locked.

③Apply seal tape to the hose nipple, and assemble to the Air Hoist.

④Stop the air flow by closing the main valve on the compressor.

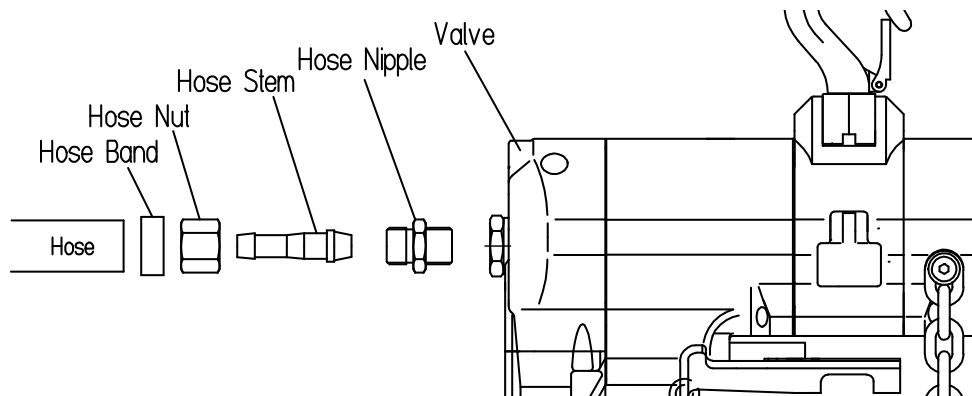
⑤Before connecting the air line to the air hoist, apply 10 drops of lubricating oil into the hose.

IMPORTANT; Remove all dirt or foreign matter from the connecting area of the hose.

- If foreign matter enters the hoist, this may lead to seizure of the hoist or malfunctioning.

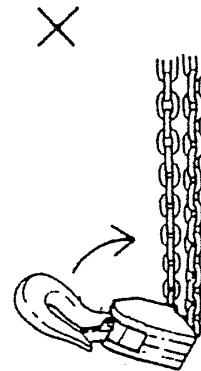
⑥ Assemble the hose stem and nut securely to the hose using the hose band.

(Please note the hose band is not an accessory item)



9. Checking the Chain. (Double fall type)

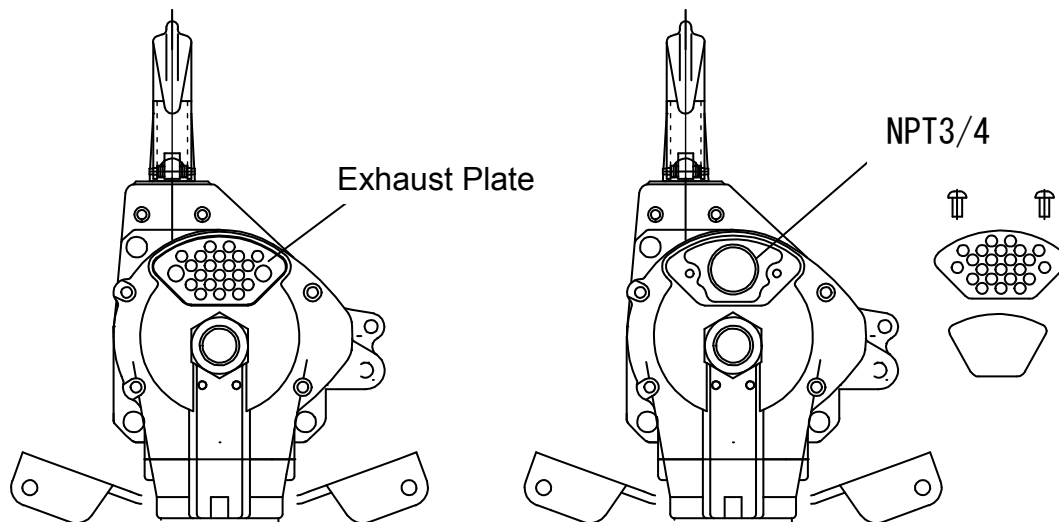
<p>⚠ WARNING; Make sure the chain is not twisted</p>
<ul style="list-style-type: none">• The hook block can get twisted through the chain. In this case make sure the hook block is not twisted before operating the air hoist.. If the hook block is twisted, fix the twist before operating the hoist. If the chain is used twisted, this may lead to personal injury and is very dangerous.



10. Installation for the exhaust.

If you remove the exhaust plate and the silencer, you will be able to see a NPT3/4 female thread. By installing a connection to this port, you will be able to change the direction of the exhaust or feed the exhaust outside or to another location.

In this case, connect a tube within 100 mm of the air hoist at 3/4" (19 mm) and then increase the size of the tube to a minimum of 1" (25 mm) for further distances. If the piping size is any smaller than the above, the performance of the air hoist will drop.



(8) Before Operation

1. Checking the operating air pressure

⚠ CAUTION; Maintain the correct air pressure.

- The operating air pressure is 0.6MPa.
Operating at air pressures above 0.6MPa will effect the durability, performance and safety of the hoist. As a result, it is important to consider the pressure for the air compressor, volume and piping aspects to operate the hoist at its best level.
- ※ Please note the air pressures stated above are actual operating air pressures and not the air pressure when the hoist is not operating, which is normally slightly lower. As a result, always check the air pressure when the air hoist is operating.

2. Lubrication

⚠ CAUTION; Maintain correct lubrication.

- The lubricator (line oiler) in the air line will supply lubrication to the air motor. Oil supply should be 10-15 drops/min. (0.2-0.3 cc)
If air maintenance is not performed properly, this will lead to rust, malfunctioning and premature wear of the internal parts, and this may result in personal injury.
- Lubrication to the reduction gears is not needed on a daily basis. Grease up when the hoist is disassembled.

Lubrication

Type	Grade	Location	Method
Turbine Oil	ISOVG32~56 Or Equivalent	Air Motor	Line Oiler in piping

3. Test operation

⚠ WARNING; Before actual operation, check for abnormal operation or sounds.

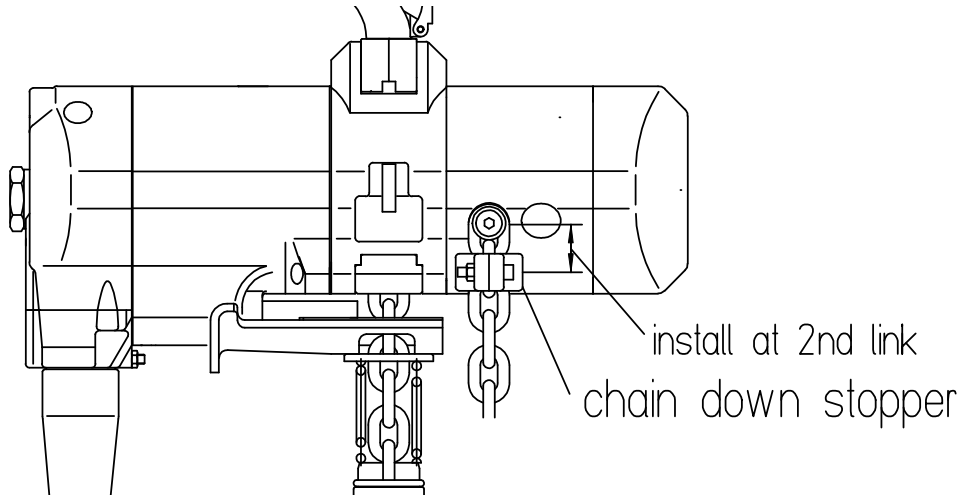
- Operate the hoist with no load up and down at low speed. Check for abnormal operation or sounds.
If abnormal operation or sounds are found, stop operation and return the unit for inspection to your service center. If the hoist is operated with problems this may lead to personal injury.

4. Checking of the install position for the chain down stopper

⚠ WARNING; Install the chain down stopper at the designated position certainly.

•Chain down stopper is the final safety equipment to prevent the chain from dropping, in case lowering limiter does not operate properly.

If the chain down stopper is not installed at the designated position, limiter may not operate properly, and the hoist and chain may be damaged and it is very dangerous.



5. Checking of the install position for the attachment of lifting and lowering limiter.

⚠ WARNING; Install the attachment of lifting and lowering limiter at the designated position certainly.

•Install the attachment of lifting and lowering limiter at the designated position according to this manual page 31-33. If it is installed wrongly, install it again certainly at the designated position.

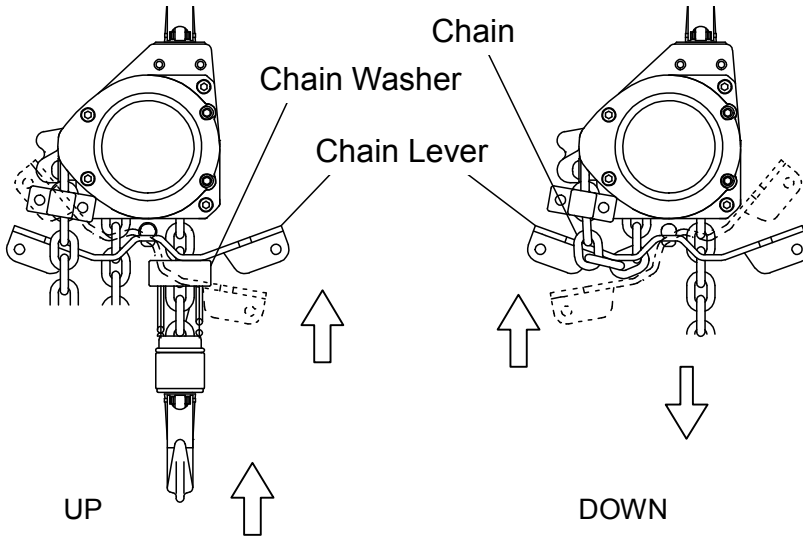
If the attachment is not installed at the designated position, the safety equipment does not operate properly. This may lead to breaking of the chain, dropping of the load and personal injury and it is very dangerous.

6. Check the lifting and lowering limiters before actual operation

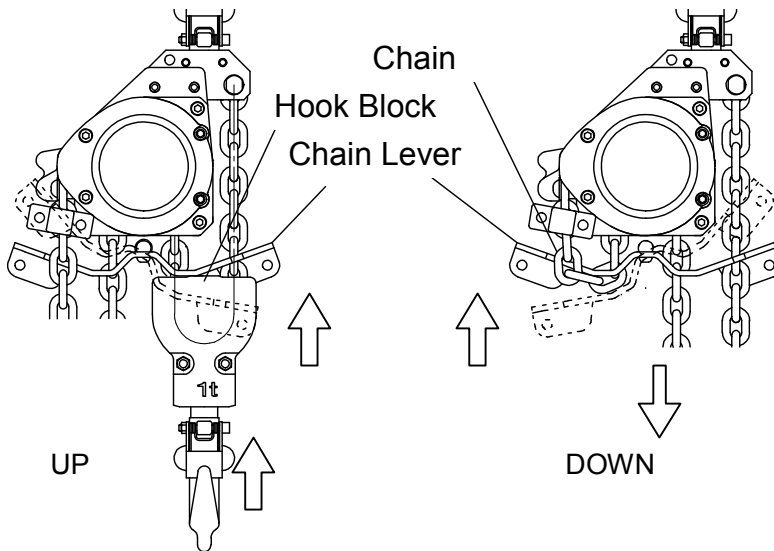
⚠ WARNING; Before actual operation, check the lifting and lowering limiters.

- Using no load, slowly operate the air hoist to check the operation of the limit lever in the UP and DOWN mode. Make sure the air hoist stops properly in both directions and also make sure chain is lifting the chain lever properly.
- If any problems are found, stop operation and return the unit for inspection to your service center.
- If the hoist is operated with problems this may lead to personal injury.

TCS-250PE / C、TCS-500PE / C



TCS-1000P2E / C2



7. Check the sling equipment

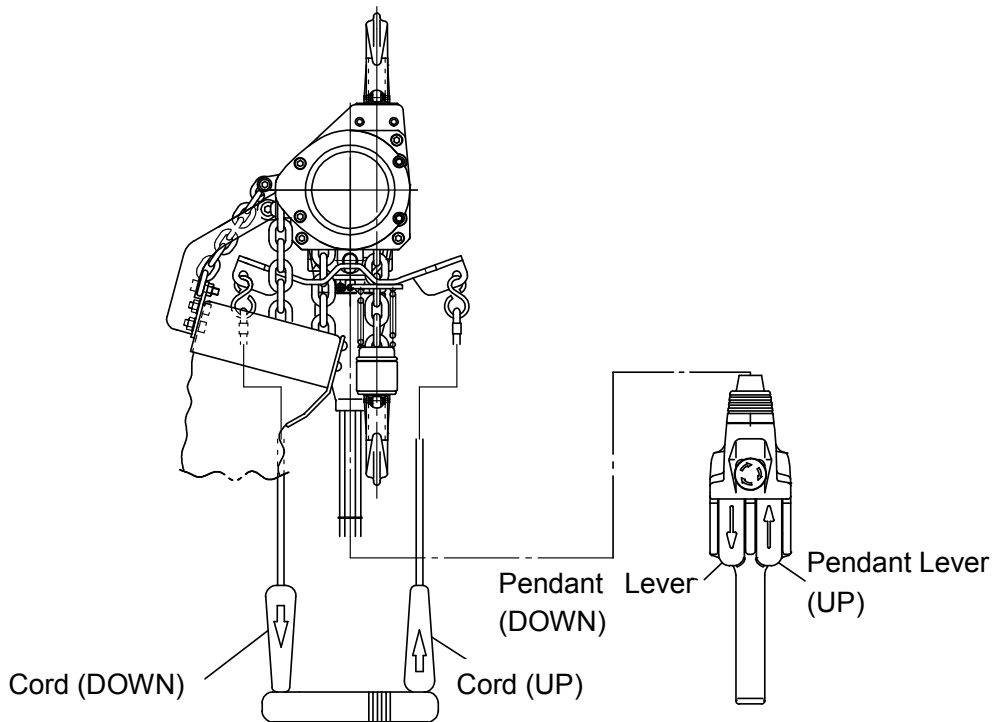
⚠ WARNING; Check the sling chain and wire rope.

- Before using the slings and wire ropes, make sure they are rated correctly to use for the job, and also make sure they are not damaged in any way.
- If the hoist is operated with abnormally, This may lead to dropping of the load and may lead to personal injury.

(9) How to operate

1. How to start and stop the hoist

C-Type	PE-Type
By pulling the Cord, the hoist will operate. By releasing the Cord, the hoist will stop.	Pressing the Pendant lever will start the hoist. Releasing the pendant lever will stop the hoist

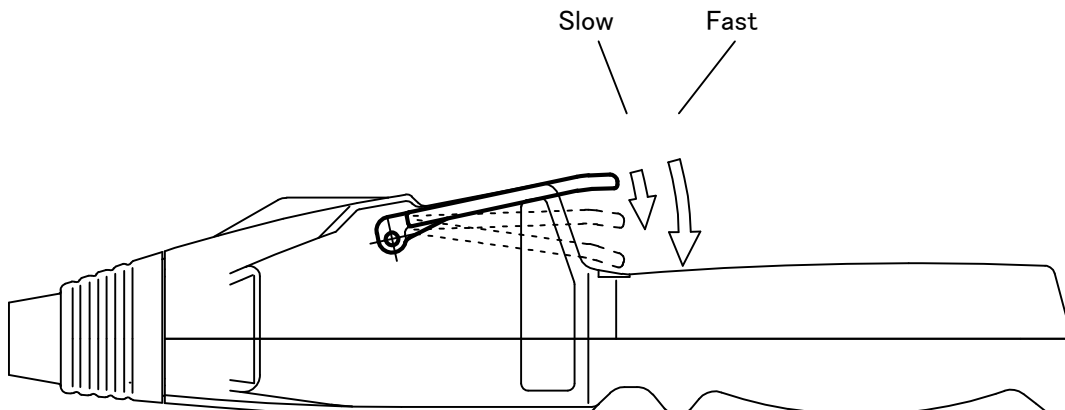


2. Speed Adjustment

•For pendant valve (PE type)

For the pendant type, the more you depress the lever, the faster the hoist will operate.

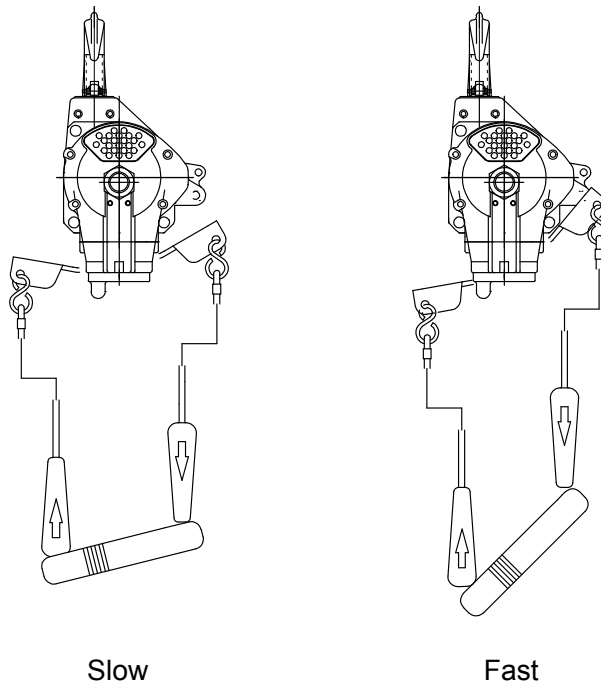
As shown in the diagram below, if you depress the lever a small amount the speed will be slow. The more you depress the lever, the faster the hoist will operate



•Cord Type (C-Type)

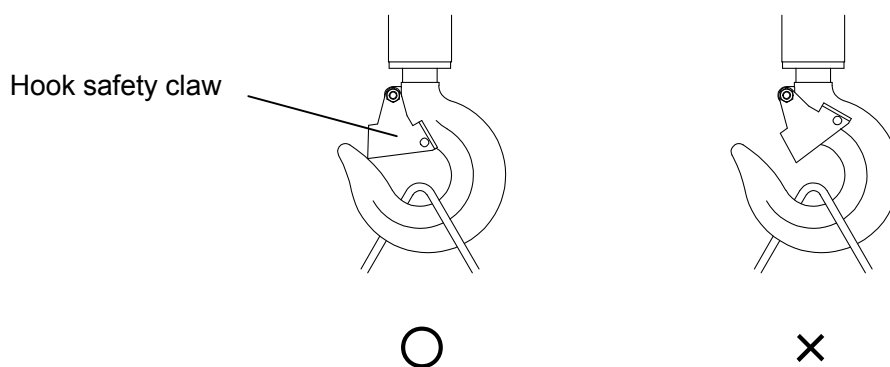
With the Cord type, the more you pull the cord, the faster the air hoist will operate.

As shown in the diagram below, if you pull the cord a small amount the speed will be slow. The more you pull the cord, the faster the hoist will operate.



3. Lifting and lowering the load

- ① Put a wire rope or a chain sling onto the load.
- ② Put the wire rope of chain sling onto the swivel hook.
- ③ Make sure the hook safety claw is locked and secured.



- ④ Operating the hoist slowly, bring the hook up so slowly until the chain is hanging in the air and stop the hoist.
- ⑤ Make sure the wire rope or chain sling has not come off the hook.
- ⑥ In the slow mode, lift UP and make sure everything is secure. If you do not see any problems, proceed to lift the load.
- ⑦ Confirm a stable lowering location and in the slow mode rest the load in the that location.

4. Emergency Button (PE Type Only)

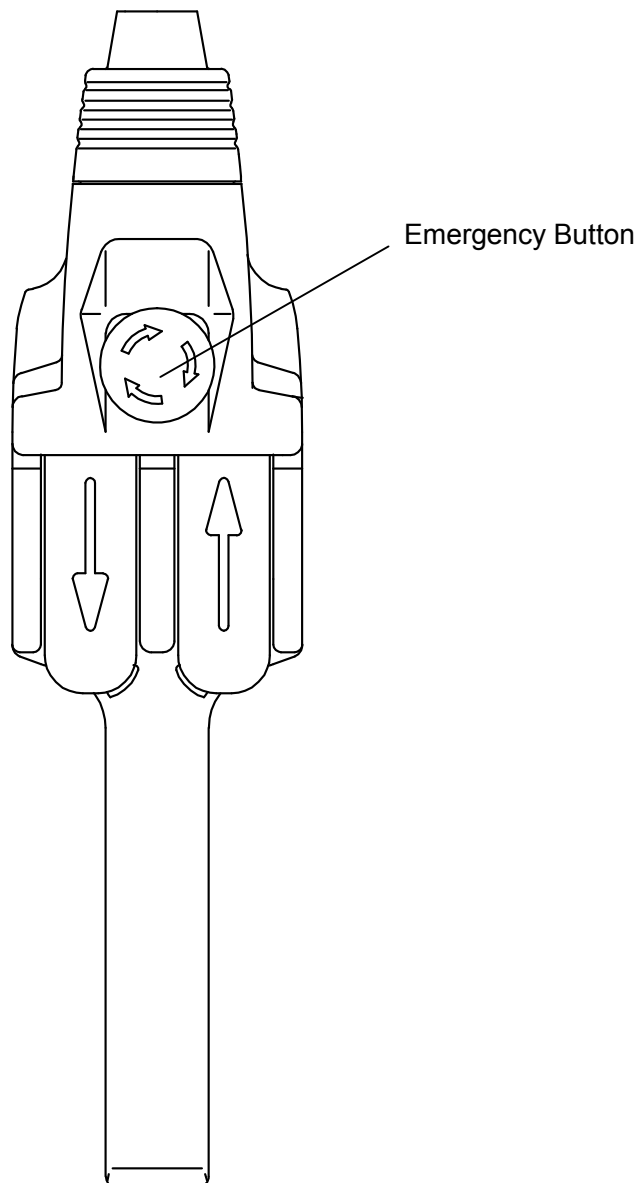
⚠ CAUTION; Do not hit the Emergency Button

- When using the Emergency button, do not hit the button but use your finger.
If you hit the button, it may break and lead to injury of your hand or body and can be dangerous.

During operation of the Air Hoist, if a problem develops with the pendant valve and the hoist does not stop after the pendant lever is released, press the Emergency stop button to stop the hoist

•How to use

By pressing the RED button in the middle of the pendant valve, it will stop the hoist. By turning the knob in the clockwise direction, this will release the Emergency button to its normal state



5. Speed adjustment mechanism;

This hoist is equipped with a speed adjustment mechanism. If you feel the lifting or lowering speed is too fast, the speed can be adjusted slower as needed variably. Also please note that the speed can be adjusted separately for the lifting and lowering mode.

⚠ CAUTION; Do not adjust the speed too slow.

- For this mechanism, if the adjustment is set at a extremely low speeds, it will operate with the brake partially actuated. If this is continued for a long period, heat will develop from the brake and may lead to damage. In this case, avoid operating the hoist for extended periods or adjust the speed so that the brake does not operate with no load.

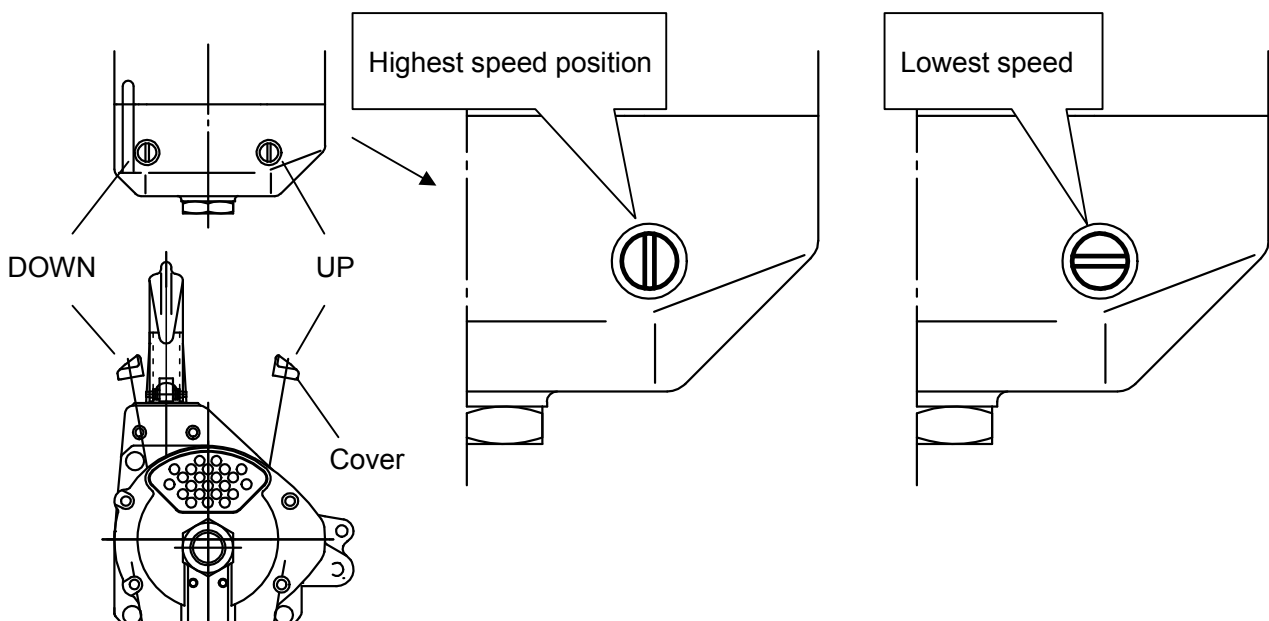
• How to adjust the speed;

Referring to the diagram below, looking at the hoist from the valve side, the speed adjustment screw for Lifting is on the RIGHT, and the lowering adjustment screw is on the LEFT. Both adjustment screws are covered with a red plastic cover and can be removed using a pair of pliers. Behind the plastic cover is a “ minus “ groove and can be adjusted using a standard flat screw driver. In relation to the air hoist, as shown in the drawing below, the vertical direction means the highest speed, and the horizontal position means the slowest speed. (Note; The hoist will stop) The adjustment can be made between these positions.

Adjust the speed only when the hoist is in the stop mode. If the adjustment is made when he hoist is moving, it will be difficult to rotate the screw since the air pressure increase the friction on the O-ring.

※ NOTE; When adjusting the speed adjustment screw, the O-ring friction may make rotation of the screw difficult, but this is not abnormal.

※ NOTE; The speed adjustment mechanism is set at the highest speed when shipped from the factory.



6. Pendant hose extension adjustment mechanism (PE type) ;

The standard length for the pendant hose is 2 meters. When the pendant hose is lengthened, due to a pressure loss, the operation of the pendant valve may become poor or non-functional. This mechanism was developed to improve this situation.

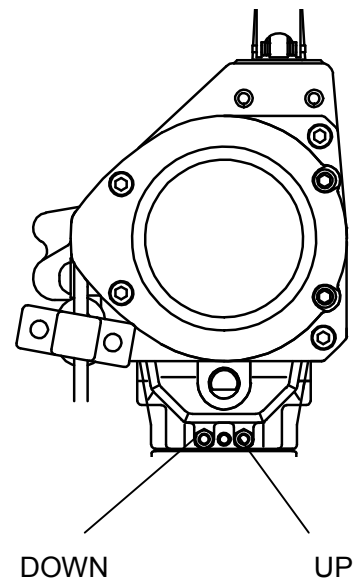
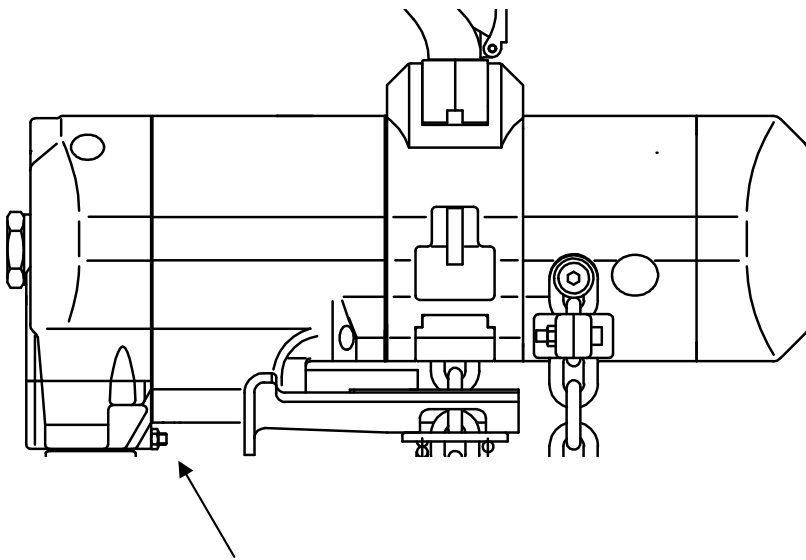
• How to adjust:

Referring to the diagram below, looking at the hoist from the Hex nut side, adjustment screw for Lifting is on the RIGHT, and the lowering adjustment screw is on the LEFT.

When adjustment is needed, loosen the Hex Nut for the side you wish to adjust and using a 2.5 mm Hex wrench turn the hex screw in the right hand direction until the problem is solved. After the adjustment is made, tighten the Hex nut securely.

By tightening the pressure adjustment hole, this will allow better feathering and lengthening the pendant hose will help the pressure loss. Please note, if the screw is tightened too tight, you will lose the feathering capability for the hoist.

※NOTE; When the hoist is shipped from the factory, the pressure adjustment hole is fully open to allow the hoist to have the feathering feature. When the hoist is used under standard specifications, this mechanism does not need any adjustments.



(10) Maintenance and inspection

WARNING; Inspect the Air Hoist regularly

- To operate the hoist safely, it is necessary to obey the crane safety regulations and also perform daily inspections, monthly inspections and annual inspections. If the hoist is not inspected on a regular basis this may lead to damage to the hoist and result in personal injury.

★DAILY INSPECTION

1. Inspection of the air pressure and oil.
Confirm the hoist is operating at 6 kg/cm² air pressure. Also make sure the line oiler is operating correctly. If oil lacks to the motor, this will lead to early wear of the motor parts.
2. Inspect the hook and hook claw;
If the hook is unable to rotate the chain may become twisted and the load may rotate leading to danger. Also make sure the safety hook is working correctly or it will be very dangerous.
3. Is the chain lubricated
The chain may wear prematurely if it is not lubricated properly.
4. Does the hoist operate smoothly without abnormal sounds?
Stop the hoist if you hear any abnormal sounds coming when the hoist is operating

★MONTHLY INSPECTION

1. Inspection of the chain (For damage and elongation)
Inspect the chain according to the maintenance manual.
If the chain is out of tolerance, stop operation and replace the chain.
This may lead to breakage and is dangerous.
2. Check if the brake is operating correctly.
Check the operation of the brake. If the load slips contact your dealer or distribution for repair.
It is dangerous to continue the use of the hoist in these conditions.
3. Inspection of the hook
Inspect the hook for damage, deformation, non-rotation and also confirm the safety claw operates properly. Concerning the shape of the hook, review the maintenance chart for dimensions (L) and (H). If these areas exceed the recommended amount, it is dangerous to use. Replace with a new one.
4. Inspect for loose bolts and nuts
It is dangerous to use the hoist with loose bolts or nuts. And this may cause damage to the other areas of the hoist.
5. Inspect the lifting limiter
Check to make sure the lifting limiter is functioning and stops correctly. Check this function with no load.

★ **ANNUAL INSPECTION** (Disassemble and inspect)

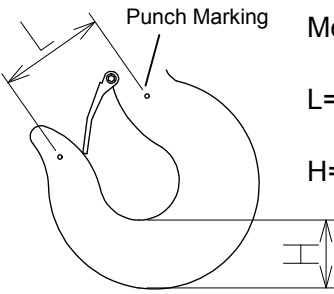
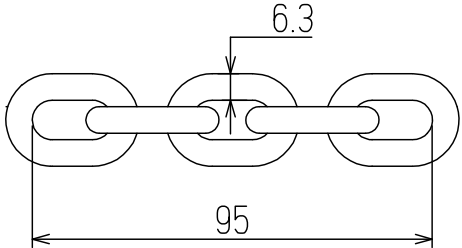
The annual inspection should be performed once a year by the manufacturer or at a authorized service location. As for the servicing, it should be performed once a year, or every 500,000 cycles of operation, or 400 hours of actual operating time of the air hoist,

Which ever comes first. But please note, depending on the environment where the hoist is being used, it may be necessary to inspect the hoist as needed.

INSPECTION AND TEST RESULTS

- ★ When using the hoist with a trolley, according to the crane safety regulations, it is necessary to have a monthly and annual inspection of the equipment and this information must be recorded and kept for a minimum of 3 years.
- ★ When using the chain hoist and trolley together it is necessary to report this equipment to the government authorities.

MAINTENANCE CHART TCS-250,TCS-500,TCS-1000-2 (For TCS-250, please refer to TCS-500)

PART	BASIC DIMENSIONS	CONDITIONS FOR REPLACEMENT
Hook	 <p>Punch Marking</p> <p>Measure when new</p> <p>L= _____</p> <p>H= _____</p>	<ul style="list-style-type: none"> * TCS-500:When the opening of the hook exceeds $L + 0.5\text{mm}$, replace the parts. * TCS-500:Lower hook; Replace part when H reduces by 1 mm. * TCS-1000-2:When the opening of the hook exceeds $L + 2\text{mm}$, replace the parts. * TCS-1000-2:Lower hook; Replace part when H reduces by 2 mm. * When the hook cannot be easily rotated. In this case repair or replace * Make sure the safety latch works properly
Link chain	 <p>6.3</p> <p>95</p>	<ul style="list-style-type: none"> * Replace chain when the length exceeds 96.9 mm for 5 links and when the diameter of the chain is less than 5.9 mm * Replace the chain is damaged.

(11) How to install the chain

Installing the chain into the hoist needs experience and is a difficult procedure. We recommend that a service facility perform this procedure.

But if the customer must assemble the chain into hoist, please obey the caution points and proceed as follows.

WARNING;


- Install the chain down stopper at 2nd link from the end of chain as shown in the illustration. If the chain down stopper is not installed properly, hoist body or lowering limiter may be damaged and this may lead to the drop of the chain and it is very dangerous.

WARNING;

- Install the chain washer and spring for TCS-500 and TCS-250 definitely at the designated position. If they are not installed properly, hoist body or lifting limiter may be damaged and this may lead to the drop of the chain and it is very dangerous.

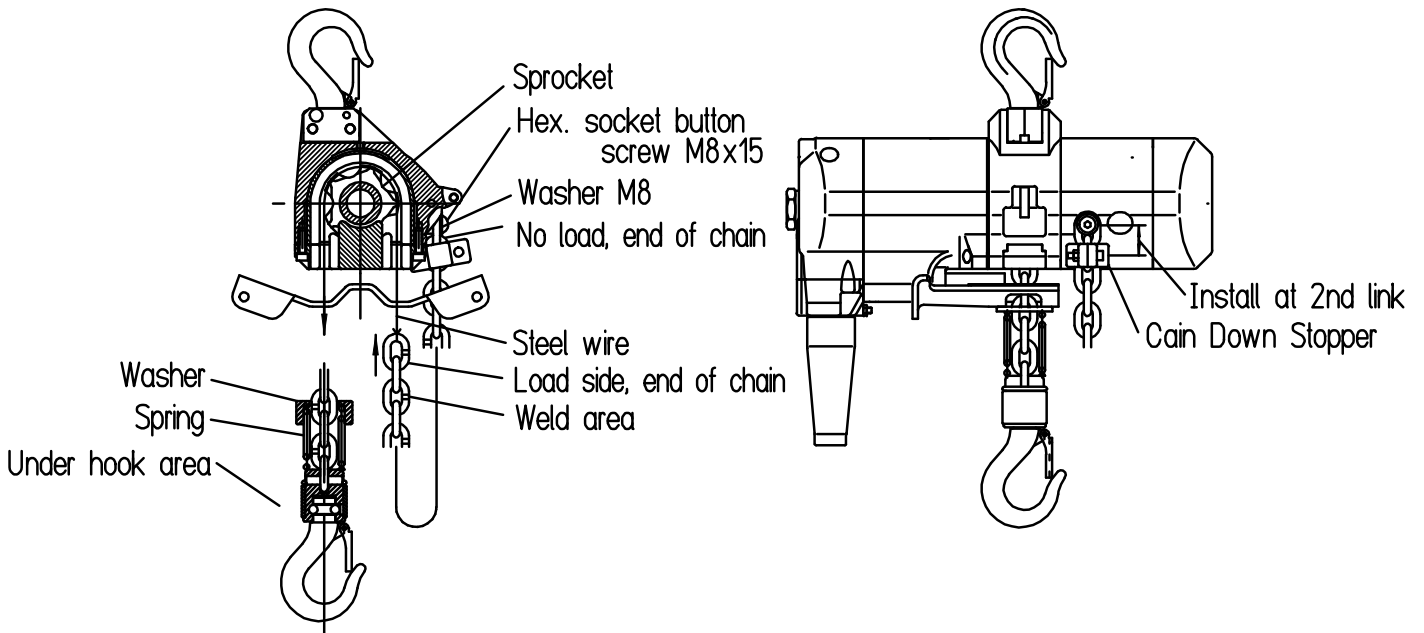
WARNING;

- When connecting the end of the chain to the hoist, make sure the chain is not twisted when assembling the chain through the hook case. If the chain is twisted and assembled, the chain will break and may result in personal injury.

- ① Arrange the chain (We recommend )
- ② Suspend the hoist and attach a wire to the end of the chain.
- ③ Operate the hoist, adjust the chain sprocket as shown in the diagram below.
- ④ Feed the wire into the chain opening on the lower side of the hoist.
- ⑤ Pull the wire and feed the chain into the hoist from the vertical link, and allow the chain to contact the sprocket. Make sure at this time that the weld on the chain link is facing the outside.
- ⑥ Continue to pull the wire and operate the air hoist at slow speed (Down mode) and allow the chain to slowly feed into the hoist. At this time make sure the chain does not jam into the sprocket and guide area. If the chain does get jammed into this area, the chain and the internal parts must be inspected.
- ⑦ Remove the steel wire from the chain and assemble the washer, spring and under hook to the end of the chain as shown in the drawing below.
- ⑧ Secure the end of the chain (No load side) on the side of the hoist. Make sure the chain is not twisted more than 90 degrees when assembling to the hoist

TCS-250PE/C

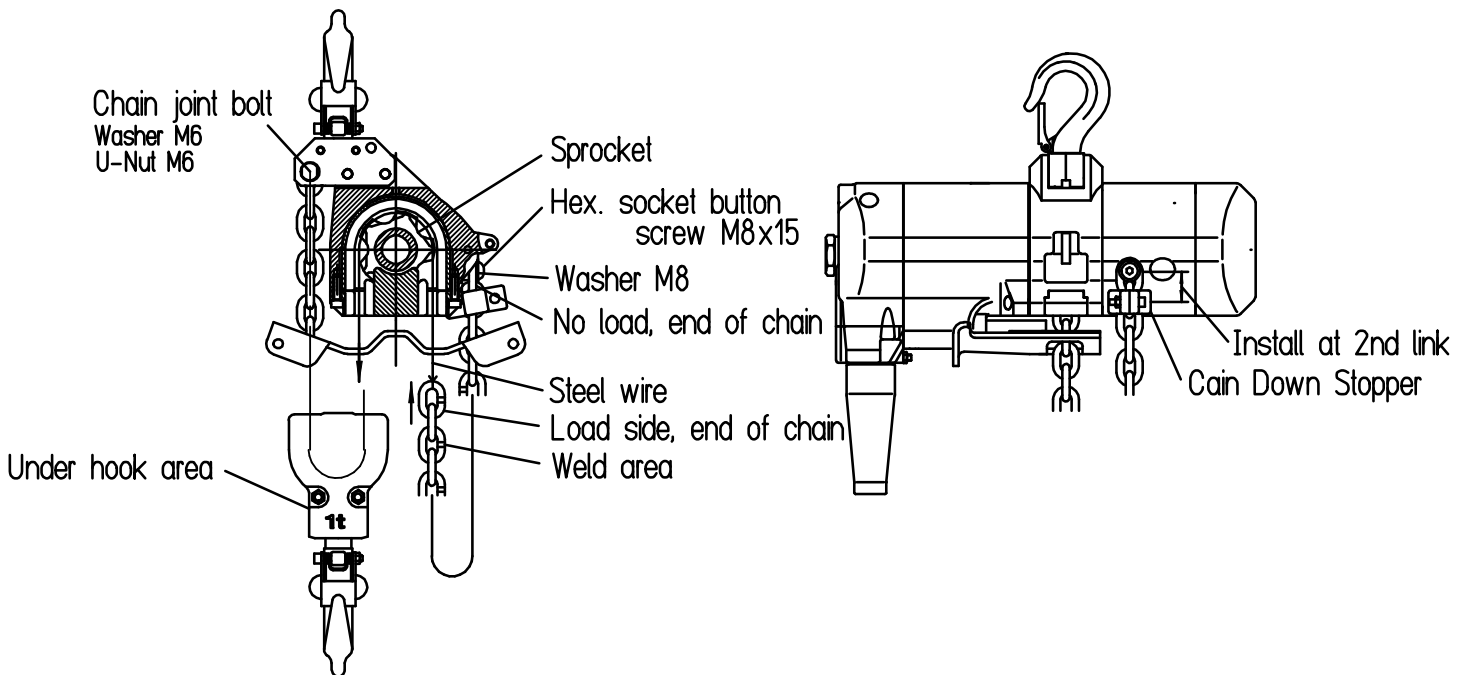
TCS-500PE/C



TCS-1000P2E/C2

Referring to the chain assembly method for TCS-500, assemble the chain as shown in the diagram to the right.

Take caution that the chain is not twisted in each area.



(12) Trouble shooting

⚠ WARNING; Contact 5 Jf/ '5 ``JYX'GU'Yg'fDUMZWL for Inspection and repairs

- When the air hoist needs to be disassembled or repaired, please contact our service team. Use genuine Toku parts to make sure the strength and durability of the parts are correct, if imitation parts are used this may lead to personal injury and is dangerous.

Item	Cause	Countermeasure
Does not operate	<ul style="list-style-type: none"> * Lack of air pressure * Rusting of the valve * Problem with motor area * Problem with brake area * Pressure loss due to pendant length 	<ul style="list-style-type: none"> * Adjust air pressure. Ref; P15 * Repair at Service facility * Repair at Service facility * Repair at Service facility * Adjust with adjusting mechanism P20
Lifting speed is slow	<ul style="list-style-type: none"> * Lack of air pressure * The hose size is too small * Malfunction of brake * Problem with motor area * Plugged silencer area * Pressure loss due to pendant length 	<ul style="list-style-type: none"> * Adjust air pressure * Check hose P1 * Repair at Service facility * Repair at Service facility * Clean the silencer or exchange Ref; P14 * Adjust with adjusting mechanism P20
Cannot lift rated load	<ul style="list-style-type: none"> * Lack of air pressure * Problem with motor area 	<ul style="list-style-type: none"> * Adjust air pressure * Repair at Service facility

CUSTOMER MEMO

Record information such as the distributor name, model number and serial number.

It will be of good use when you bring the unit in for servicing.

Date of Purchase	Distributor Name
Model	
Serial Number	

This is a high precision manufactured product. As a result if the unit does not work

Operate properly do not attempt to repair the unit. Contact Air & Allied Sales (Pacific) Pty Ltd or our

Distributor. Also, if parts are needed or if you have any questions about how the unit works,

please do not hesitate to contact Air & Allied Sales (Pacific) Pty Ltd on:

Phone: +61 7 3272 7999 sales@air-allied.com.au www.air-allied.com.au



Ph: 1300 792 997 or +61 7 3272 7999
Fax: 1300 798 189 or +61 7 3272 7982
sales@air-allied.com.au www.air-allied.com.au