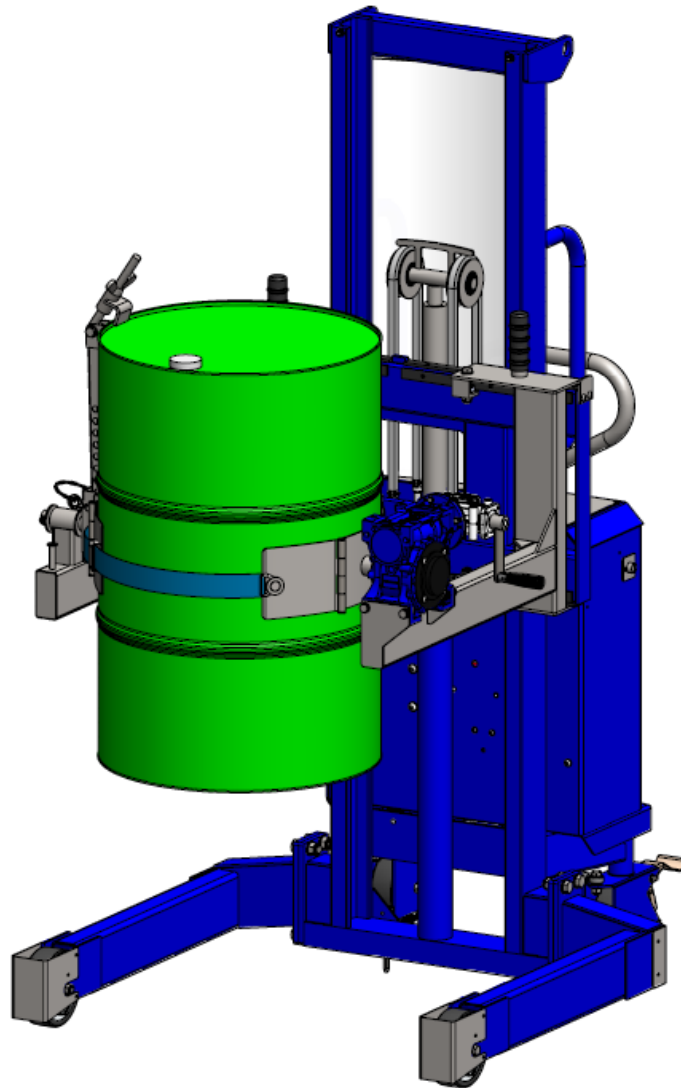


Operating Instructions



STP01-DRU01-Ex

ATEX Rated Pedestrian Pneumatic Hydraulic
Stacker with Manual Drum Rotation

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Section I – Correct Use and Application

General

The unit described in the present operating instructions can be used, operated and serviced in accordance with the present instructions. Any other type of use is beyond the scope of application and can result in damage or injury to personnel, the unit or property. The unit described in the present operating instructions complies with BS EN ISO 17050-1:2010 and the EC Machinery Directive 2006/42/EC.

Foreseeable Misuse of the Unit

WARNING!

Personnel must take care when operating the unit. The following actions must be adhered to:

- The maximum load must not be exceeded;
- Do not travel with a raised load (>500mm);
- Do not carry or lift persons or stand on the unit;
- Do not negotiate on inclines unless otherwise stated;
- Do not stand underneath a raised load or within the confines of the unit during operation;
- Do not exceed the maximum operational speed of 1m/s (3.6km/h);
- The load must be lifted by the attachment provided;
- Do not alter the machine specification from original supply;
- Do not disable, remove or adjust safety mechanisms or switches;
- Observe all instruction decals applied to the unit.

Approved Application Conditions

- Operation in industrial and commercial environments;
- Permissible temperature range 5°C to 40°C;
- Operation only on secure, level surfaces with sufficient capacity;
- Operation only on routes that are visible and approved by the proprietor;
- Operation in accordance with guidance stated within the operating instructions;
- The unit must be maintained in accordance with the maintenance schedule stated within the operating instructions.

Proprietor Responsibilities

For the purposes of the present operating instructions the "proprietor" is defined as any natural or legal person who either uses the unit themselves, or on whose behalf it is used. In special cases (e.g. leasing or renting) the proprietor is considered the person who, in accordance with existing contractual agreements between the owner and user of the unit, is charged with operational duties. The proprietor must ensure that the unit is used only for the purpose for which it is intended and that there is no danger to life or limb of the user and third parties. Furthermore, accident prevention regulations, safety regulations and operating, maintenance and repair guidelines must be followed. The proprietor must ensure that all users have read and understood these operating instructions. The proprietor must perform an onsite risk assessment before the unit is put in to service.

WARNING!

Failure to comply with the operating instructions shall invalidate the warranty. The same applies if improper work is carried out on the unit by the proprietor or third parties without the permission of the manufacturer.

Adding Attachments and/or Accessories

The mounting or installation of additional equipment which affects or enhances the performance of the unit requires written permission of the manufacturer. Local authority approval may also need to be obtained. Local authority approval does not however constitute the manufacturer's approval. An onsite risk assessment must then be carried out.

WARNING!

Any unauthorised modifications or additions to the unit shall invalidate the warranty and Bespoke Handling Equipment Ltd shall not be liable.

Safety Regulations for the Operation of the Unit

Operator authorisation

The unit may only be used by suitably trained personnel, who have demonstrated to the proprietor, or their representative that they can operate the unit safely and in accordance with the operating instructions.

Operators rights, obligations and responsibilities

The operator must be informed of their duties and responsibilities and be instructed in the operation of the unit and shall be familiar with the operating instructions. The operator shall be afforded all due rights. Safety shoes and appropriate Personal Protective Equipment (PPE) must be worn at all times.

Unauthorised use of unit

The operator is responsible for the unit during the time it is in use. The operator must prevent unauthorised persons from operating the unit.

Damage and faults

The proprietor must be immediately informed of any damage or faults to the unit or attachment. Units which are unsafe for operation must be quarantined until faults have been rectified and the unit deemed safe for operation.

Servicing and Repairs

Only original spare parts must be fitted to the unit. The operator must never disable, remove or adjust safety mechanisms or switches. The unit should only be serviced and repaired by a competent individual as selected by the company the equipment is intended for use with.

Safety devices and warning decals

Safety devices, warning decals and warning instructions in the operating instructions and on the unit must be strictly observed.

Travel routes and operational areas

Only use lanes and routes specifically designated for unit traffic. Unauthorised third parties must stay away from operational areas. The unit must only be operated in operational areas with sufficient lighting to avoid damage or injury to personnel, the unit or property. Additional equipment is necessary to operate the unit in areas of insufficient lighting.

Hazardous area of the unit

WARNING!

The hazardous area is defined as the area in which a person is at risk due to the unit itself or movement of the unit and/or load. This also includes areas which can be reached by falling loads. The operator must:

- Instruct unauthorised personnel to leave the hazardous area;
- Give a warning signal with plenty of time for personnel to leave;
- Stop all operations if unauthorised personnel are within or enter the hazardous area.

Travel conduct

The operator must adapt the travel speed to local conditions. The unit must be driven at slow speed when negotiating bends or narrow passageways, when passing through swing doors and at blind spots. Abrupt stopping (except in emergencies), rapid U turns and overtaking at dangerous or blind spots are not permitted.

Travel visibility

The operator must look in the direction of travel and must always have a clear view of the route ahead. When transporting loads that affect visibility, a second person must safely assist the operator to observe the travel route.

Type of loads to be carried

The operator must make sure that the load is in a satisfactory condition. Loads must always be positioned safely and carefully. Use suitable precautions to prevent parts of the load from tipping or falling down. Prevent liquid loads from spilling out.

Consumables and Parts

Environmental hazards

WARNING!

Parts, oils and fuels must be disposed of in accordance with the relevant environmental protection regulations.

Hydraulic hoses (if applicable)

WARNING!

Brittle hydraulic hose lines cause accidents. Hairline cracks in the hydraulic lines can cause injury and infection. The hydraulic hoses installed on the unit are supplied in accordance with BS EN 857:2015. The hydraulic hoses should only be serviced or replaced by a competent individual as selected by the company the equipment is intended for use with. The proprietor shall maintain the hydraulic hoses in accordance with BS 5244:1986.

Lift chains (if applicable)

WARNING!

Incorrectly cleaned chains can cause accidents. Lift chains are safety-critical parts. They must not contain any serious contamination. Lift chains and pivot pins must always be clean. Never clean chains with steam jet high pressure cleaners, cold or chemical cleaning agents. Immediately after cleaning, dry the lift chain with compressed air and apply a suitable chain spray.

Safety Regulations Governing the Handling of Lead-Acid Batteries (if applicable)

Maintenance Personnel

Batteries may only be charged, serviced or replaced by trained personnel. This operator manual and the manufacturer's instructions concerning batteries and charging stations must be observed when carrying out the work.

Fire Protection

Do not smoke and avoid naked flames when handling batteries. Wherever a unit is parked for charging there shall be no inflammable material or lubricants capable of creating sparks within 2m around the unit. The room must be well ventilated. Fire protection equipment must be on hand.

Battery Maintenance

The battery cell covers must be kept dry and clean. The terminals and cable shoes must be clean, secure and have a light coating of dielectric grease.

Battery Disposal

Batteries may only be disposed of in accordance with national environmental protection regulations or disposal laws. The manufacturer's disposal instructions must be followed.

WARNING!

Batteries can be hazardous

Batteries contain an acid solution which is poisonous and corrosive. Above all avoid any contact with battery acid.

- Dispose of used battery acid in accordance with regulations
- Always wear protective clothing and goggles when working with batteries
- Do not let battery acid come into contact with skin, clothing or eyes. If necessary, rinse with plenty of clean water
- Call a doctor immediately in the event of physical damage (e.g. skin or eye contact with battery acid)
- Neutralise any spilled battery acid immediately with plenty of water
- Only batteries with a sealed battery container may be used
- Follow nation guidelines and legislation

WARNING!

Using unsuitable batteries can cause accidents

The weight and dimensions of the battery have a considerable effect on the operation safety and capacity of the unit. Changing the battery features requires the manufacturer's approval, as compensating weights are required if smaller batteries are fitted. When replacing/installing the battery make sure the battery is securely located in the battery compartment of the unit.

Park the unit securely before carrying out any work on the batteries.

Charging the Battery (if applicable)

WARNING!

The gases produced during charging can cause explosions

The battery produces a mixture of nitrogen and hydrogen (electrolytic gas) during charging. Gassing is a chemical process. This gas mixture is highly explosive and must not be ignited.

- Switch the charging station and the unit off first before connecting/disconnecting the charging cable of the battery charging station to/from the battery connector
- The charger must be adapted to the battery in terms of voltage and charge capacity
- Before charging, check all cables and plug connections for visible signs of damage
- Ventilate room in which the unit is being charged
- The battery and battery cell surfaces must be exposed during charging to ensure adequate ventilation
- Do not smoke and avoid naked flames when handling batteries
- Wherever the unit is parked for charging there shall be no inflammable material or lubricants capable of creating sparks within 2m around the unit
- Fire protection equipment must be on hand
- Do not lay any metallic objects on battery
- It is essential to follow the safety regulations of the battery and charger station manufacturers

Lifting the Unit

Lifting and jacking up

WARNING!

Lifting and jacking up the unit safely

In order to raise the unit, the lifting gear must only be secured to the points specially provided for this purpose. You may only work under a raised load handler if they have been secured with a sufficiently strong chain. In order to raise and jack up the unit safely, proceed as follows:

- Jack up the unit only on a level surface and prevent it from moving accidentally
- Always use a jack with sufficient capacity. When jacking up the unit, take appropriate measures to prevent it from slipping or tipping over (e.g. wedges, wooden blocks, etc.)
- In order to raise the unit, the lifting gear must only be secured to the points specially provided for this purpose (see "Transport and Commissioning")
- When jacking up the unit, take appropriate measures to prevent it from slipping or tipping over (e.g. wedges, wooden blocks)

WARNING!

Improper lifting by crane can result in serious accidents

The use of unsuitable lifting gear can cause the unit to crash when being lifted by crane. Prevent the unit from striking other objects when it is being raised, and avoid any involuntary movements. If necessary secure the unit with guide ropes. The strap point on the mast is for loading the unit with lifting gear.

- The unit should only be handled by people who are trained in using lifting slings and tools
- Do not walk into or stand in a hazardous area
- Always use lifting gear with sufficient capacity
- Always attach the slings to the prescribed strap points and prevent them from slipping

WARNING!

Accidental movement during transport

Improper fastening of the unit and mast during transport can result in serious accidents.

- Loading must be carried out by special trained staff in accordance with recommendations contained in Guidelines BS EN 12640:2001. In each case correct measurements must be made and appropriate safety measures adopted
- The unit must be securely fastened when transported on a lorry or trailer
- The lorry/trailer must have fastening rings
- Use wedges to prevent the unit from moving
- Use only tension belts or tie-down straps or with sufficient strength

The strap point on the mast is for loading the unit with crane lifting gear.

Lifting the Unit

Requirements

- Park the unit securely

Tools and Material Required.

- Lifting gear

Procedure

- Secure Lifting slings to the strap points

The unit can now be lifted.

Securing the unit for transport

Tools and Material Required

- Tension belts/tie down straps

Procedure

- Move the unit onto the transporting truck
- Park the unit securely
- Strap the belts around the unit and tension them sufficiently, utilising the strap points on the mast

The unit can now be transported.



Section II – Unit Description

The STP01-DRU01-Ex is a four-wheeled pedestrian stacker with a universal drum rotator band. It is designed for use on level surfaces to lift, rotate and transport a variety of drums. The unit is pneumatic-hydraulic powered with manual drum rotation.

The drum should be stood vertical; the unit can then approach the drum and straddle either side. The band is pushed flush to the drum and then fastened around. Once the rim clamp is adjusted and fastened to the top lip of the drum, it can then be lifted, transported and rotated.

The STP01-DRU01-Ex is designed to pick up and rotate drums ranging from 50–220 litres, steel or plastic drums with a diameter of between 400-600mm.

The unit incorporates enclosed, smooth geometry with rounded edges to ensure safe handling of the unit. The unit is fitted with a fully enclosed pump/ram unit which is operated by two-handed controls to keep operator's limbs away from dangerous machinery movement.

ATEX CERTIFICATION

This equipment has been certified by STS for use in Zone 1, 2, 21 and 22 areas for protection under constructional safety "c" and control of ignition source "b".

Ex II 2 G D

Ex cb IIB T4 Gb

Ex cb IIIB T135°C Db

THE SAFE WORKING LOAD (SWL) OF THIS UNIT IS 350KG

THIS UNIT IS DESIGNED FOR USE ON FLAT AND LEVEL FLOORS ONLY

Section III – Unit Operation

Set Up

1. The unit requires a dry and clean air supply; which should be connected to the unit via a flexible air hose of minimum 12.5mm bore fitted with a quick release coupling. The unit will operate with a maximum pressure of 9 BAR, a recommended minimum of 6 BAR and a recommended minimum flow rate of 400 litres per minute.
2. The unit is now ready to use.
3. The unit requires an airline to be connected to operate any powered functions but the air supply may be disconnected to manoeuvre the unit. The head will remain at its current position when the airline is disconnected.

ISOLATE AIR SUPPLY WHEN NOT IN USE

Moving the Unit

Requirements

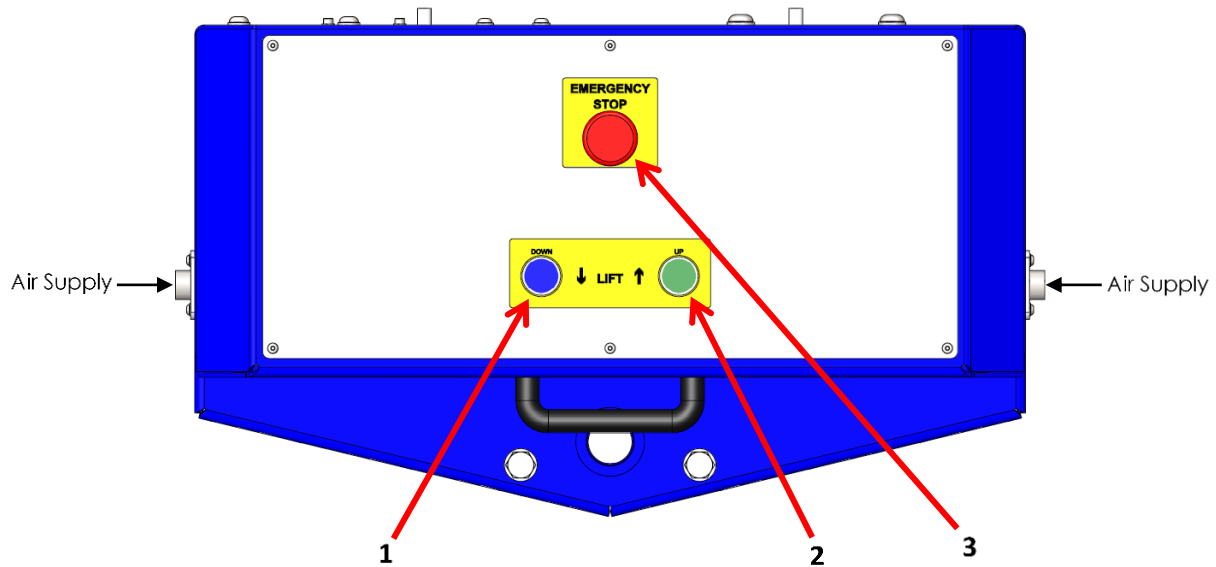
- If loaded, the load must not exceed the unit's capacity.
- If loaded, load undamaged.
- Load at correct height for transport (< 500mm).
- Flat and level ground conditions.

Procedure

1. Disengage the rear parking brakes.
2. The unit can then be manoeuvred to the desired location.
3. Steering is controlled from the rear of the stacker using the tiller.
4. Travel at a constant speed.
5. Adapt your travel speed to the conditions of the route and the load you are transporting.
6. Always transport loads at as low a height as possible to retain the stability of the unit.
7. When finished manoeuvring, the rear parking brakes should be engaged.

THIS UNIT IS DESIGNED FOR USE ON FLAT AND LEVEL FLOOR ONLY

Operation of the Lift and Lower



No.	Function
1	Lower Button
2	Lift Button
3	Emergency Stop Button

IMPORTANT

Before using this unit, operators must read and understand this instruction manual. Failure to observe the instructions in this manual will invalidate the warranty.

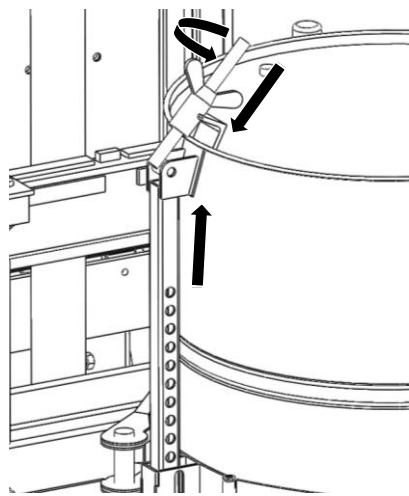
Requirements

- Good ground conditions.
- Load undamaged, if lifting a load.
- Load within SWL limit of unit.
- Air supply of maximum 9 Bar is connected.

Procedure

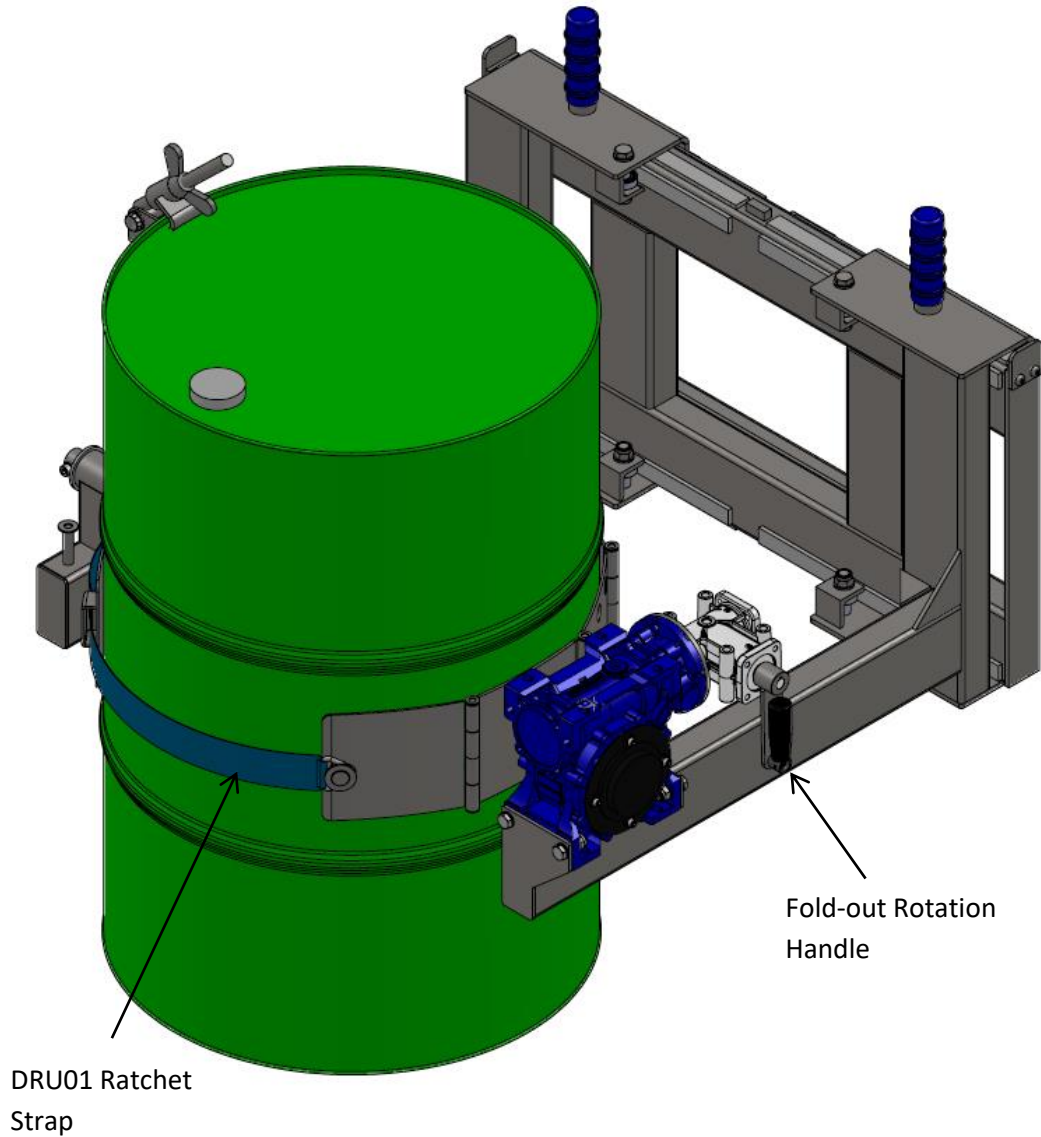
1. To lift the carriage, push the lift button on the control panel.
2. To lower the carriage, push the lower button on the control panel.
3. Once the lift or lower button is released, the carriage will remain at the attained height.
4. There is a red emergency stop button on top of the control panel. To stop all powered movement of the unit, press the button down. To reset the button, turn clock-wise.
5. The unit is safe even if the airline is disconnected during the operation of the unit, the load will simply stay in its current position. The airline can be disconnected to manoeuvre the unit.

Clamping the Drum

1. The drum should be sitting on the floor or a pallet vertically.
2. Open up the arms on the rotator to the full width and move the stacker forward so that the rotator band goes around the drum.
3. There are two pivot points, one on each arm. These should be positioned at the middle of the drum. Manoeuvre the unit until the pivots are in the middle of the drum.
4. Push the two arms in so that the two pivot band sections touch the drum.
5. Adjust the height of the clamping band by raising or lowering the carriage until the clamping band is in the middle of the drum (this means top to bottom middle).
6. Adjust the back section of the clamping band to suit the diameter of the drum by removing the two locking 'R' clips from the rear of the clamping band then adjusting the band to the correct diameter of the drum before refitting the two 'R' clips. The rear section of the band should be complete from the two pivot points.
7. Fold the two front sections of the drum clamp band around the front so that they touch the drum.
8. Hook the 'D' ring that is on the end of the blue strap onto the securing pin, which is on the last band section on the left hand arm and pull on the tail of the blue strap to take out the slack. Then use the ratchet to tension the clamping band, this should be tightened until the drum starts to show signs of deflection.
9. The rim clamp must be connected to the top lip of the drum. The height can be set by removing the 'R' clip, which is close to the right hand pivot, and removing the pin. The rim clamp arm can now be set to the correct height to suit the drum size. Ensure that the top of the drum rim clamp arm is positioned under the top rim of the drum. Whilst this is being held in place the top swivelling clamp can be positioned over the rim of the drum. You can now clamp the two together by screwing down the butterfly nut. You should check that the top drum lip is securely clamped between the two sections of the drum rim clamp.
10. Replace the clamping arm adjustment pin through the body of the rotator bracket and replace the locking 'R' clips.
11. **IMPORTANT** - Check steps 1-10 have been completed correctly before you lift the drum off the floor. If you are in any doubt then contact the STS Technical support line. +44 1736 851 050

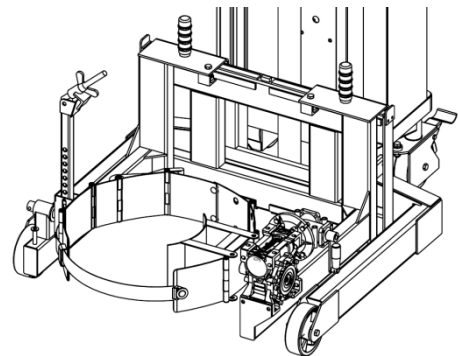
Tipping a Drum

1. The operator simply rotates the fold-out rotation handle to tip the drum forwards and backwards. If the drum is tipped and the handle is released, the drum will stay in its current position.



Using the 25 Litre Adaptor (Optional Extra)

The unit can also be supplied with an adaptor that is fitted to the gearbox side of the clamping band with 2 locking pins. This is used to reduce the clamping width of the clamping band. With this adaptor fitted the clamping system using the ratchet should be used. The adaptor should only be used to pick up small drums that do not fit in the normal head arrangement.



Section IV – Unit Maintenance

Maintenance Checklist

The follow servicing checklist indicates the operations to be performed and the respective intervals to be observed. Maintenance intervals are defined as:

- W = Every 50 service hours, at least weekly
- A = Every 1000 service hours, at least annually
- = Standard maintenance interval

During the run-in period – after approx. 100 service hours – the owner must check the wheel nuts/bolts and re-tighten if necessary.

Brakes		W	A
1	Test rear parking brakes.	●	●

Hydraulics and Pneumatics		W	A
1	Test hydraulic system.	●	●
2	Check hydraulic oil and top up if necessary.	●	●
3	Check that hydraulic ports, hose and pipe lines are secure; check for leaks and damage.	●	●
4	Check cylinders and piston rods for damage and leaks, make sure they are secure.		●
5	Test "hydraulic" controls and make sure the labels are present, legible and complete.		●
6	Replace hydraulic oil.		●
7	Check and replace if required pneumatic filter elements.		●
8	Test function of emergency stops.	●	●

Travel		W	A
1	Check wheels for wear and damage.	●	●

Chassis and Superstructure		W	A
1	Check doors and/or covers.	●	●
2	Check labels are legible and complete.	●	●
3	Check mast guard for damage.	●	●
4	Check chassis and screw connections for damage.		●
5	Check the load chain and tension if necessary.		●
6	Visually inspect the mast bearings and check contact surface wear level.		●
7	Check lateral clearance of mast connections and carriage.		●
8	Check the clamping band for wear and damage.	●	●
9	Check for damage to painted surfaces, paint with approved touch up paint.	●	●
10	Ensure earthing chains are fitted and in contact with the ground.	●	●
11	Ensure the anti-static wheels are free from dirt and grime.	●	●

Agreed Performance Level		W	A
1	Carry out a test run with rated load, if necessary, with customer specified load.		●

Consumables

Bespoke Handling Equipment stackers are factory-equipped with Shell Tellus 32 oil for the hydraulic system. It is recommended to use as stated or an equivalent when replacing hydraulic oil.

Approved touch up paint should be used on any damaged painted surfaces, the surface should be rust free before painting with a non-aluminium based paint. STS use RAL 5010 for their blue paint.

If the unit is supplied with a blue ratchet strap, it should be replaced if any stranding of webbing is visible. These are available from Bespoke Handling Equipment. The strap should be changed twice a year even if it shows no signs of wear.

Trouble Shooting

When trying to locate a fault, proceed in the order shown in the table.

NOTE:

Troubleshooting must only be performed by a suitably competent individual as decided by the company the equipment is intended for use with.

If, after carrying out the follow remedial action, the unit cannot be restored to operation, contact the manufacturer's technical helpline. In order for customer services to react quickly and specifically to the fault, the following information is essential:

- Unit serial number
- Description of error
- Unit product name
- Current location / Company

Load cannot be lifted

Possible Cause	Action
The load exceeds the SWL	Reduce mass of load
Hydraulic oil level too low	Check hydraulic oil level
Air pressure too low	Check air supply
Emergency stop engaged	Reset emergency stop button

Load cannot be lowered

Possible Cause	Action
Emergency stop engaged	Reset emergency stop button
Air pressure too low	Check air supply

Unit cannot be moved

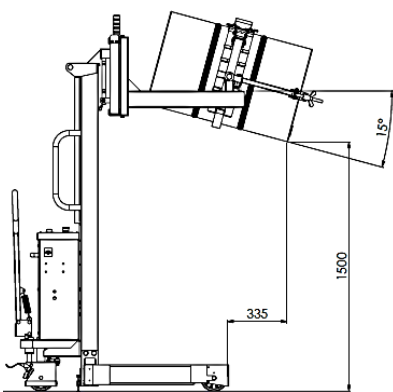
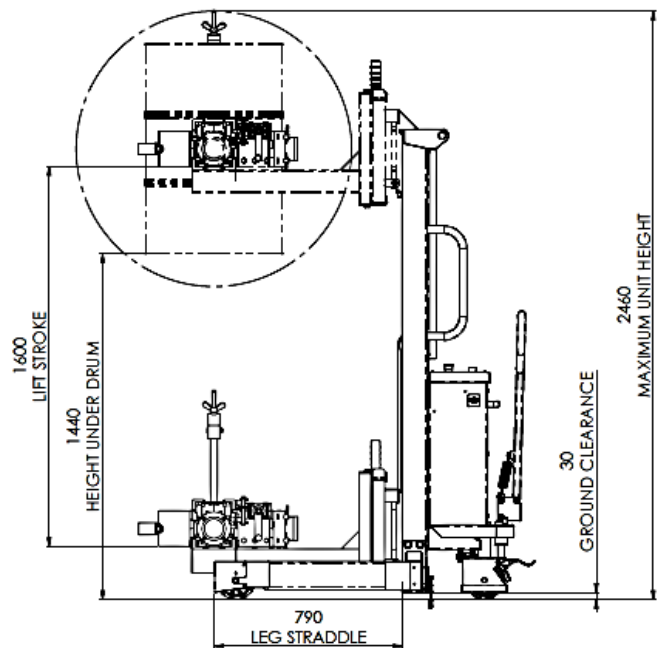
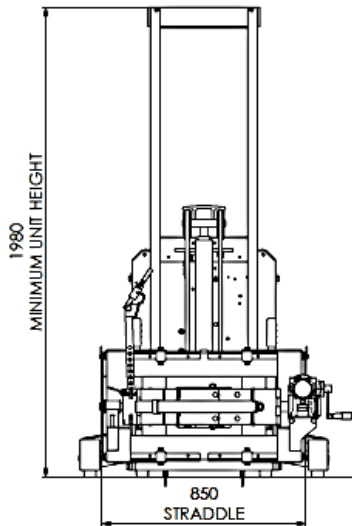
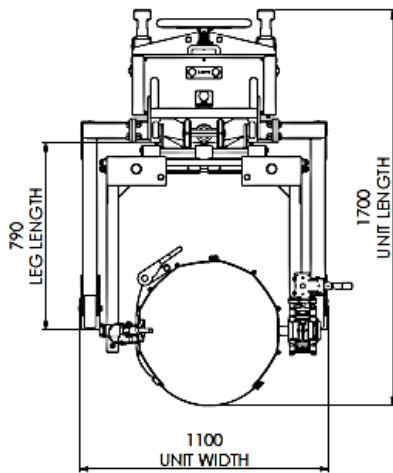
Possible Cause	Action
Rear parking brakes are engaged	Release the rear parking brakes

Load cannot be rotated

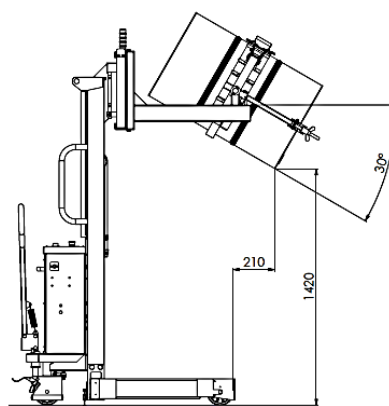
Possible Cause	Action
Off-centred load too high	Reduce off-centred load

Section V - Technical Specification

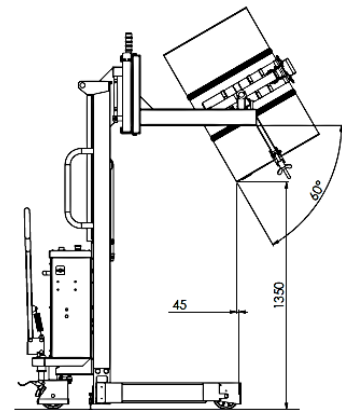
General Arrangement



TIP OF 15°



TIP OF 30°



TIP OF 60°

SWL. 350kg

Net Mass. 340kg

Max Noise Level. 79dBA

Section VI - Decommissioning the Unit

If the unit is to be out of service for more than a month, e.g. for commercial reasons, it must be stored in a frost-free and dry room. All necessary measures must be taken before, during and after decommissioning as described hereafter.

Prior to Decommissioning

- Thoroughly clean the unit.
- Test the brakes (if applicable).
- Check the hydraulic oil and replenish if necessary (if applicable).
- Apply a thin layer of oil or grease to any non-painted mechanical components.

Final Decommissioning and Disposal

Final decommissioning or disposal of the unit must be performed in accordance with the regulations of the country of use. In particular, regulations governing the disposal of batteries, fuels and electronic and electrical systems must be observed.

The unit must only be disassembled by trained personnel.

Safety Tests to be performed at Intervals and after Unusual Incidents

Perform a safety check in accordance with national regulations.

The unit must be inspected at least annually or after any unusual event by a qualified inspector. The inspector shall assess the condition of the unit from purely a safety viewpoint, without regard to operational or economic circumstances.

For further help contact the Bespoke Handling Equipment:

Technical Support Line: 44 (0) 1736 851050

In the interest of all concerned it is essential that equipment of our manufacture is used only for the purposes for which it has been designed and it must be used in accordance with the instructions which are supplied.