

Safe Working Practices:

SWP- 06 Use of Lifting Equipment

Before doing any type of work you must carry out an assessment of the task to be undertaken. This will include the equipment to be worked on, the task itself, Personal Protective Equipment requirements, the work area and environment, plus the tools and equipment required to carry out the job safely. Consult your team leader if you are not satisfied the job can be carried out in a safe manner.

GENERAL

- 1.0 Lifting equipment must be maintained in accordance with relevant company procedures.
- 1.1 All new equipment purchased must be supplied with a Test Certificate or an EC Certificate of Conformity from the manufacturer, this includes ropes or slings.
- 1.2 Any locally manufactured bridge plate (spreader bar) lifting beam or similar must be tested and certificated by the manufacturer or an independent test house. All such equipment must be uniquely identified and marked with its Safe Working Load (SWL) or Working Load Limit (WLL).
- 1.3 Any such equipment should be retested after any repair or modification.
- 1.4 Personal Protective Equipment consisting of Safety Footwear, Coveralls, Hi Viz, Safety Helmet and work gloves must be worn whilst in the area and involved with lifting operations.

HIRED EQUIPMENT

- 2.0 The supplying hire company must provide an acceptable certificate of "Thorough Examination" with any hired lifting equipment. An assurance that such exists, verbal or written, is not sufficient. Where the equipment is new and unused an EC Certificate of Conformity is acceptable provided that it is less than one year old.
- 2.1 Where the equipment is assembled on site a further thorough examination and certification is required prior to use.

TECHNICIAN LIFTING EQUIPMENT AND ACCESSORIES

- 3.0 To reduce the risk of manual handling injuries while carrying out maintenance, TMH UK technicians are issued with a lifting set consisting of 'D' and 'Bow' shackles and fibre round-slings. The equipment is designed to be used for the removal of counterweights, batteries and other ancillary components. It may be used in conjunction with existing lifting beams or lifting equipment. In some cases, the round-sling may be placed over the forks on a lift truck for lifting purposes with adequate protection.
- 3.1 Training in the use of lifting equipment is provided by the training department and competent members of the Service Support Manager group or other company team leaders.
- 3.2 Before the training takes place, technicians must have attended and passed a Forklift Truck maneuvering course. This is a requirement for all team members involved in the service and repair of Forklift Trucks. The combined competency of these two courses is required for the user of Lifting Equipment to operate a Forklift Truck (categorised on his operator's license) with attachments designed for suspending loads.

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- 3.3 Thorough Examination should be carried out according to the procedure "Thorough Examination of Lifting Equipment". The set items should be inspected before use, along with any equipment used in conjunction with the lifting set. Also refer to procedure "Maintenance of Work Equipment" paragraph 'Lifting Equipment'.
- 3.4 On no account should any items not issued or designed for lifting purposes be used to supplement the lifting set.
- 3.5 The Company requires that all lifting equipment is uniquely identified and listed in the Special Tool Examination Planner. All such equipment must be inspected by a competent person (ie Service Team Manager or Service Support Manager – For Workshops, a competent Team Leader) at least twice annually. The Tool Planner record should be updated accordingly. It is acceptable for the equipment supplied as a "set" identified previously, to be entered as one record. Copy of the record can be retrieved electronically for viewing at point of use or printed if local circumstances demand.

WORK PROCESS GENERAL

- 4.0 Whilst the generic Risk Assessments carried out by the company will be adequate in some lifting circumstances, where a significant lifting operation is required, a specific risk assessment should be conducted. This task specific assessment will be carried out by a team leader, or if a number of people are involved, the appointed Task Leader or the senior person on site. It is mandatory to complete and document this assessment. When working on a customer's premises this should be provided to the main customer contact, so they are fully aware of the task and what they need to provide ie A Safe Working Area.
- 4.1 All SWP's apply where relevant, however when the use of lifting tackle is involved and the elevation of a load is taking place the selection of a safe working area is particularly important (see SWP-01 Work Area).
- 4.2 Some companies will require that a "Working at Height Permit" be obtained prior to work commencing. If in any doubt contact a customer management representative or seek a copy of the companies "Notice to Contractors" terms and conditions.
- 4.3 When using a fork lift attachment, such as a Spreader Bar or similar, the attachment must be secured using the permanently fixed auxiliary chain, locked on in such a way as to prevent the attachment being dragged off the forks. The sole reliance on pinch bolts is **not permitted**. To prevent slippage the forks **MUST** also be level or tilted backwards.
- 4.4 All hooks must be fitted with safety catches, or be specially shaped "safety hooks".
- 4.5 There are occasions where a fibre round-sling may be placed across the forks of a lift truck to carry out lifting tasks with adequate protection.
- 4.6 Only adjustable forks should be used, they should be placed together and centrally on the fork carriage. The round-sling positioned on the forks within the dimensions of the rated load centre of the truck, with the protective sleeve over both forks protecting the sling from the outside edges. If the forks are too wide for the protective sleeve, the lift truck should not be used. To prevent slippage the forks **MUST** be tilted backwards. If practicable, another round-sling can be attached using shackles from the fork back carriage to the lifting operation sling to retain it.
- 4.7 The aforementioned method is only permitted for lifts that have been individually appraised with consideration for factors such as de-ration and the risk of damaging slings that could put the user at risk. (E.g. lifting of motors, gearboxes, small batteries etc.). The lift should be perpendicular and without the risk of a changing sling angle or unbalanced load. (E.g. standing

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up a mast/counterweight).

- 4.8 A spreader bar will always remain the preferred method of attaching a sling to a fork lift truck.
- 4.9 Under no circumstance should anybody (includes technicians and lifting equipment operatives) be permitted to place themselves under an elevated load for **any reason**.
- 4.10 No elevated load should be transported further than absolutely necessary, loads should be lowered to ground level and palletised if movement over any distance is required.
- 4.11 The use of unnecessarily long chains, ropes or slings should be avoided; any slack should be taken up smoothly before beginning the lifting operation proper. The shortening of any rope or chain should only be done by approved methods e.g. shortening claws. The tying of knots in ropes, slings or chains is not permitted.
- 4.12 All lifting equipment and lifting equipment accessories should be inspected by the user before each occasion of use, to determine that the equipment is safe to operate. This inspection will not be documented.
- 4.13 When undertaking lifting operations as well as the usual overalls, hi-viz and safety footwear, safety helmets are to be worn by all in the vicinity of the lift. Work gloves are to be worn by those attaching chains etc

CHILDREN AND YOUNG PERSONS

- 5.0 See Safety & Environmental Manual procedure "Employment of Young Persons" for precise definitions on children and young persons.
- 5.1 "Children" will not be involved with tasks directly involving the use of lifting equipment. They may be allowed to observe such operations and work practices, but must take no active part, be kept at a safe distance and under the constant supervision of a competent person.
- 5.2 "Young Persons" may be allowed work involving lifting equipment subject to the conditions imposed above and only when under the constant supervision of a competent person.
- 5.3 Nobody under the age of 16 years is permitted to operate powered forklift trucks (includes pedestrian pallet movers) and then only when in possession of an appropriate Operators License and under the supervision of a competent person.

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ILLUSTRATION



See picture example of using a Chain

Note the Spreader Beam tightened on the flat section of the carriage, with forks level or tilted back.

This information is of a general nature only covering the main points for the safe use of manmade fibre roundslings. It should be read before you use any components of the kit. Ensure this single point learning sheet is always kept with the kit.

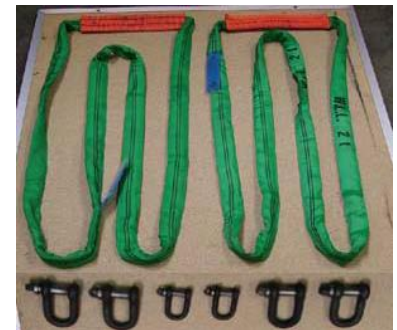
The Lifting accessory pack

Each sling can be identified by an individual reference number, it is important that this reference tag is always clean and clear to identify each sling.

Roundsling in-service Inspection and Maintenance

Maintenance requirements are minimal. Roundslings may be cleaned with clear water, remember weak chemical solutions will become increasingly stronger by evaporation.

Regularly inspect roundslings. In the event of the following defects: Illegible markings; damaged or cut outer cover; damaged stitching; exposed inner core; heat damage; burns or chemical damage then refer the sling to a competent person for thorough examination.



Shackle in- service inspection and maintenance

Maintenance requirements are minimal. Keep shackles clean, threads free of debris and protect from corrosion. Shackles must be identified by a coloured tie wrap and paired with their pins

Regularly inspect shackles and, in the event of the following defects, refer the shackle to a competent person for thorough examination: illegible markings; distorted, worn, stretched or bent body; bent pin; damaged or incomplete thread forms; nicks, gouges, cracks or corrosion; incorrect pin.



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Sling angle

The sling angle is very important and can have a dramatic effect on the rated capacity of the sling.

When this angle decreases (as illustrated) the load on each leg increases. Sling angle of more than 60 degrees should not be used.

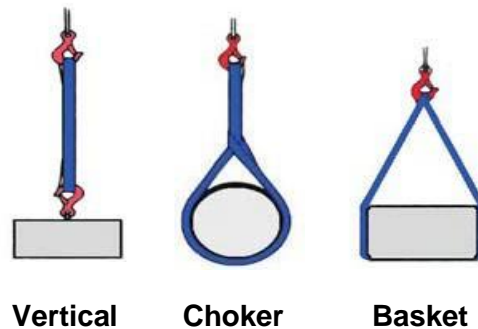
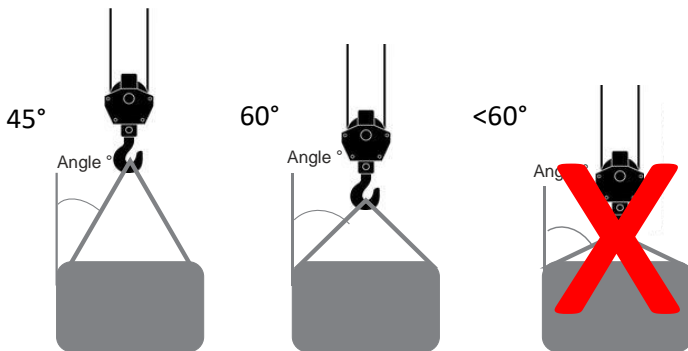
Basic sling hitches

Vertical: When a sling is used in the vertical hitch the full lifting capacity is achieved.

Choker: Due to the stress created at the choke point

slings rigged with this hitch achieve only about 80% of their potential capacity.

Basket: This configuration allows the two extending legs of the sling to function as if they were two separate slings. The capacity of the sling is twice that of the vertical but only if the sling angle of each leg is 90 Degrees.



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Safe slinging practices

- Good slinging practice must ensure that the load is as safe and secure in the air as it was on the ground and that no harm is done to the load, lifting equipment, other property or persons.
- Store and handle Round slings correctly never return wet, damaged or contaminated slings to storage.
- Always inspect Round slings and Shackles before use
- D Shackles can be used for straight lifts only. If the lifting accessory has an angle applied to it, bow shackles should be used instead of D shackles. Bow shackles are required to be de-rated by 30% when using an angle up to 45°.
- Establish the weight of the load, ensure the lifting method is suitable and inspect the sling and attachments for obvious defects. Prepare the landing area making sure the floor is strong enough to take the load. Follow any specific instructions from the supplier.
- Ensure the lifting point is over the centre of gravity. Any loose parts of the load should be removed or secured. Secure the sling firmly to the load by hooks onto lifting points or shackles etc. The sling must not be shortened, twisted, knotted or kinked in any way, never use roundslings with cut or damaged outer covers.
- Use protective sleeves/packing to prevent damage to the sling from corners or edges and to protect the load.
- The term WLL (Working Load Limit) is replacing the Term SWL (Safe Working Load) on some lifting equipment.
- EWL (Effective Working Length) is another term commonly found on sling DATA Tags
- Do not exceed the WLL /SWL or rated angle. Any angle must not exceed 60°.
- Do not hammer, force or wedge slings or shackles into position; they must fit freely ensuring smooth radii are formed which will allow the sling to assume its naturally flattened form under load.
- When attaching more than one sling to the hook of the appliance use a shackle to join the slings and avoid overcrowding the hook, keep labels away from hook and fittings.
- Use an established code of signals to instruct the truck driver.
- Ensure the load is free to be lifted and not, for example, bolted down.
- Check that there are no overhead obstacles such as power lines.
- Keep fingers, toes etc clear ensuring they do not become trapped when lifting, lowering or controlling loads.
- Make a trial lift by raising the load a little to ensure it is balanced, stable and secure and if not lower it and adjust the slinging arrangement.
- Where appropriate use tag lines to control the load.
- Except where special provision is made, do not allow anyone to pass under or ride upon the load. The area should be kept clear, never leave suspended loads unattended.
- Make a trial set down, ensure the sling will not become trapped and the load will not tip when the slings are released. Use supports which are strong enough to sustain the load without crushing.
- Never drag slings over floors etc or attempt to drag a trapped sling from under a load.
- Never use a sling to drag a load or tow a vehicle such as a fork lift truck, or subject it to shock loading.
- Never use slings in contact with chemicals, heat or direct flame (above 80 or below 0 Degrees)
- On completion of the lift return all equipment to proper storage.
- Do not use defective shackles or unidentified pins, ensure the pin is correctly screwed into the shackle eye.
- Shackles should be fitted so that the body takes the load along its centre line, and not subject to side bending loads.
- Ensure the pin is correctly screwed into the shackle eye.
- Check that the thread is fully engaged with the body but is not too long to cause the shackle body to deform
- When using shackles with slings in choke hitch, or in other applications where there may be movement, place the pin through the eye or link of the sling and never in contact with the bight of the choke or moving parts which may cause the pin to unscrew.