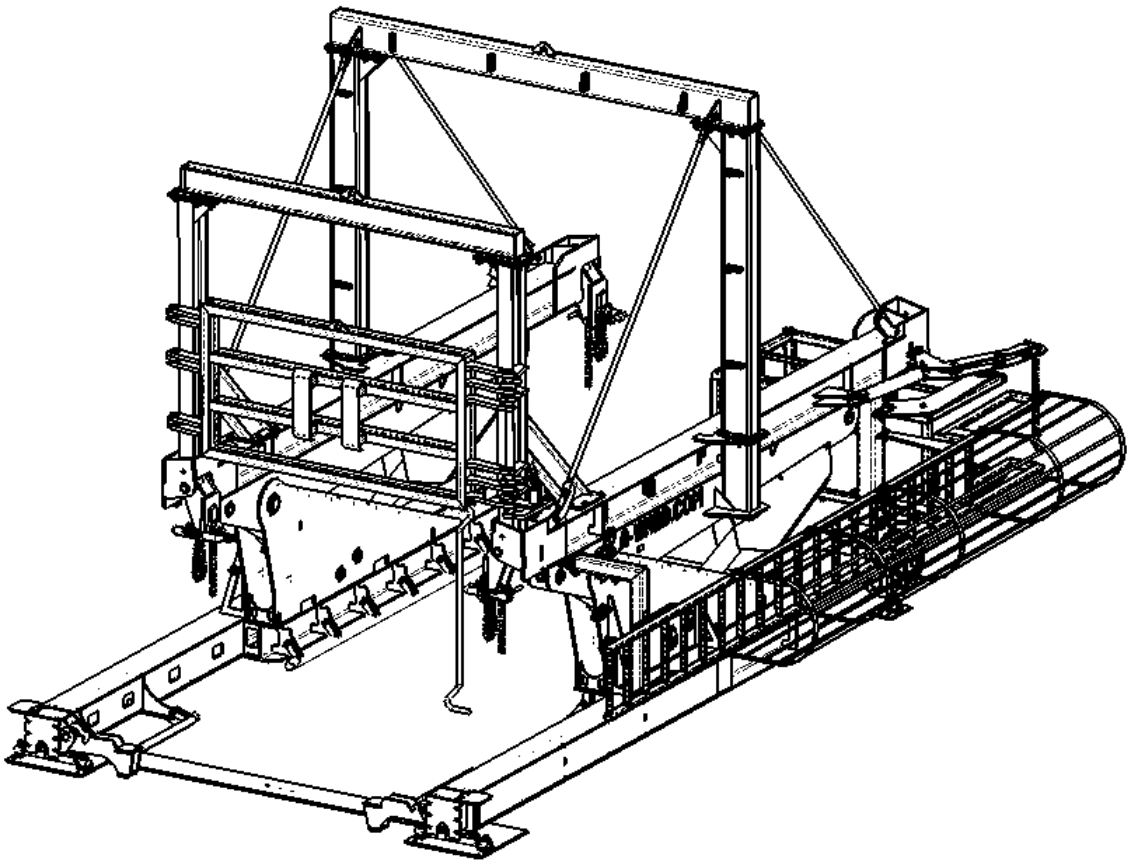
CONTAINER LOADER ACT20UOLD

Safety, Operations and Maintenance Manual



Revision	Modified by	Released Date
D	S Williams	15-1-21
E	S Williams	23-8-21
F	D L Malvar	19-09-23

A-WARD

Container Loader – ACT20UOLD

Safety, Operations and Maintenance

WARRANTY INFORMATION

WARRANTY is provided as part of the A-WARD support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate received with the equipment or from your authorized A-WARD Sales Manager. Should the equipment be abused or modified to alter its performance beyond original specifications, the warranty will become void. Setting the hydraulic pressure above specification or changing motor or hydraulic circuits, including cylinders will also void the warranty.

A-WARD's products are covered by one or more of the following patents:

Patent Numbers:

Worldwide PCT Approval:	
PCT/NZ2007/000126	Container Tilter
NZ 547544	Container Tilter
Australia 2007268365	Container Tilter
Europe 7793951.0	Container Tilter
Mexico MX/a/2008/015068	Container Tilter
South Africa 2002/2110	Container Tilter
USA 12302575	Container Tilter
Canada (awaiting filing)	Container Tilter
Russia (awaiting filing)	Container Tilter
NZ 519487	Quickhitch
Australia 49586/00	Quickhitch
USA 09/987,772	Quickhitch
Canada 2,382,124	Quickhitch Attachment
USA 6,655,054	Quickhitch Attachment
NZ 517734	Quickhitch Attachment
Australia 67429/00	Quickhitch Attachment
Europe 955197.9	Quickhitch Attachment

Trademarks

NZ 753090	AWARD
NZ 753091	A-WARD
USA 78952706	A-WARD
USA 78952708	AWARD

Read the Safety, Operation and Maintenance Manual before operating or servicing the equipment.

Keep the manual with the Container Tilter so it is always available for reference.

WARNING

DO NOT, under any circumstances, compact or press down the product being loaded whilst it is in the container.

Any compaction process will impart forces greater than the mass of the product and could result in damage to the load cells or tilter structure.

Any product compaction from an external force, such as an excavator, in the container will result in the tilter warranty being voided.

WARNING

DO NOT stand on or drive over the load cell cable connection to the powerpack. Doing so may result in damage to the cables. Damaged load cells cables can result in the load cell display not working or giving incorrect readings.

Any misuse of the load cell cables is not covered by the warranty.

WARNING

DO NOT use pressurised water to clean around the load cells. Water ingress at the load cell connections may lead to a loss of, or incorrect load data display results.

Any damage due to the use of pressurised water to clean the load cells or load cell cables will not be covered by the warranty.

WARNING

DO NOT use pressurised water to clean the Powerpack or the area immediately around it. Water ingress into the Powerpack may result in component or Powerpack failure.

Any damage to the powerpack due to the use of pressurised water will not be covered by the warranty.

PREFACE

This manual contains information for the safe and proper operation and maintenance of the A-WARD Container Tilter. Read the entire manual and the manual provided with the loading carrier machine before the initial start-up of the attachment. It is important to know the correct operating procedures of the attachment and all safety precautions to prevent the possibility of property damage and personal injury.

A-WARD products have been designed and manufactured with high quality materials and care in workmanship. The instructions in this manual have been prepared to assist with the operation and care of your purchase. When these instructions are followed properly, the Container Tilter will provide efficient and reliable service.

Continuing product development and improvement may have caused changes in the Container Tilter which are not reflected in this manual. If a question arises regarding the operation or maintenance of your Container Tilter, contact an A-WARD Sales Manager for the most current information available. Contact details are shown below. Please ensure you provide the model and serial number of your A-WARD Container Tilter for correct service and spare parts ordering. The model and serial number can be found on your unit, and should be recorded below for easy reference at a later date.

Model Number _____

Serial Number _____

Reference information

All requests for information, service or spare parts should include attachment model and serial number. For the nearest A-WARD dealer contact:

A-WARD Ltd
345 Church Street,
Penrose
Auckland, New Zealand

Phone: (64-9) 622-3111
Fax: (64-9) 634-5128

www.a-ward.com

CONTENTS OVERVIEW

Warning  **Danger**

Read Rules and instructions for safe and proper operation and maintenance carefully

a cautious operator using common sense is the greatest safety device

Contents

DECLARATION OF CONFORMITY

We declare that the machinery listed below fulfils all the relevant provisions of the following Directives:

Machinery Directive – 2006/42/EC

Low Voltage Directive – 2014/35/EU

EMC Directive – 2014/30/EU

This equipment is NOT to be used in an explosive atmosphere

Machine description	Container Tilter	
Manufactured by	A-WARD Ltd	EUROPEAN REPRESENTATIVE
Address	345 Church Street	JMC Ltd
	Penrose	UK
	Auckland 2024	
	New Zealand	

The following Transposed Harmonised Standards have been applied in the design and construction of this machine:

BSEN12100: parts 1 and 2: Safety of Machinery - Basic concepts, general principles for design

BSEN1050: Safety of Machinery – principles for risk assessment.

BSEN60204 part 1 : Safety of Machinery - Electrical equipment of machines - general requirements.

BSENISO4413: Hydraulic fluid power. General rules and safety requirements for systems and their components

ISO 13854:2017: Safety of Machinery – Minimum Gaps to avoid Crushing of Parts of Human Body

ISO 13857:2008: Safety of Machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs

The manufacturer, stated above, holds the Technical Construction File for this equipment
The European Representative, stated above, can assemble and make available the File.

Name: Simon Ward

Position: Managing Director

Date: 17th January 2018

Signed on behalf of the manufacturer S R Ward

CE

PART I – INTRODUCTION

SPECIFICATIONS

General	
Machine weight	10,000 kg
Safe working load	30,000 kg
Load type	Standard 20ft ISO Freight Container
Tilt angle	0° to 90°
Design Specification:	AS 3990:1993 Mechanical Equipment Steel Work
A-weighted sound pressure level measured at a distance of 1m and a height of 1.6m from powerpack when Tilter is operating with a full container.	<80dB(A) (see General Safety Precautions)
Power pack	
Specifications vary. See manual supplied with powerpack	
Remote	
Manufacturer	IKUSI
Model number	TM 70
Range	30 m

Hydraulic system	
Operating pressure	250 Bar
Reservoir capacity	See manual supplied with powerpack
Number of outputs used	See manual supplied with powerpack
Oil grade	Shell Tellus 46 or equivalent suitable for the ambient operating temperature
Grease grade	Premium graphite based grease SC1 or equivalent

MODEL DESCRIPTION AND INTENDED USAGE

The Universal Frame (UO) (A-WARD Container Tilter) facilitates the fast loading of 20ft shipping containers (ISO Series 1 freight containers). A diverse range of bulk products (such as scrap metal, grains, minerals and even frozen fish) can be loaded quickly and efficiently with the Universal Frame (UO). Shipping costs are reduced because greater load weights can be achieved through material being compacted inside the container.

The machine consists of an open ended frame that is tilted by hydraulic rams. Containers are loaded directly into the Container Tilter from the truck or trailer vehicle. The machine tilts the container on end from horizontal to any angle between horizontal and 90^{o} (vertical), with the doors opened and facing skywards. Material is loaded into the container by using a loading crane or grab bucket fitted to a front loader or similar machine.

The Universal Frame (UO) is portable, allowing material from different locations of a site to be loaded into a container. It is a self-contained unit, fitted with a power generator, hydraulic pump and oil reservoir. The controls are located away from the Tilter and connected to the machine by hydraulic hoses. The maximum tilt speed is fixed by the size of the pump fitted and is designed to reduce material inside the container becoming displaced and unstable.

The Tilter shall be used only in accordance with the operating instructions stated within this Operations Manual.

DO NOT operate the Tilter whilst under the influence of alcohol and/or drugs.

DO NOT load containers onto the Tilter with equipment other than trailers of the correct height and width.

DO NOT allow personnel other than the operator within 10m of the Tilter while it is operating.

DO NOT use the Tilter to tilt anything other than 20' ISO containers.

DO NOT tilt the Tilter if the container locks have not been fully engaged.

DO NOT leave the Tilter unattended while it is under power.

DO NOT obscure or remove any of the Safety decals on the Tilter.

DO NOT crush or interfere with any of the hydraulic hosing.

DO NOT load any container onto the Tilter that weighs more than the max. safe working load.

DO NOT tilt the Tilter more than 20 degrees without a container on the Tilter.

For further information, see the General Safety section of this User Manual.

RESIDUAL RISKS

Risk: Crush Hazard

Risk Level: Low

Description of Hazard:

A significant crush hazard exists from the vertical movement of the container support beams. The risk level is low provided that all personnel are excluded from contact with the machine during raising and lowering operations and all personal are given adequate notice to keep clear during these operations. The Operators Manual states these requirements. However, the risk level is raised to significant during maintenance procedures and particularly during routine pivot point lubrication. The Operators Manual specifically states the requirement to de-activate the auxiliary engine and hydraulic pump, which will prevent movement of the machine and reduce the risk to low.
The Danger Zone, or Hazard Risk area, is considered to be within 10 metres of the Machine. Instruction in the Operators Manual and signage on the Machine state this fact and require all persons to keep clear and outside the 10m danger zone.
Whilst falling debris during loading operations is a significant hazard, there is little opportunity due to the design of the machine, for such debris to jam the machine and initiate a clearing operation by personnel, within the danger zone. Should such an event take place, the Operators Manual states that any clearing of fallen objects must be undertaken with the auxiliary engine shut down. Falling Object Hazard for drivers of the container loading machine has also been addressed within the Operators Manual.

Resolution:

Warning labels on machine and warnings in Operations section of the Manual.
Training also will cover this hazard.
No personnel shall be in close proximity to the Tilter whilst it is raising and lowering.
Maintenance shall only be carried out when the Powerpack has been de-activated.

Risk: Hydraulic oil ejection

Risk Level: Negligible

Description of Hazard:

During normal operation, the hydraulic system is constantly pumping hydraulic oil through a number of flexible hydraulic hoses and connections. Hydraulic oil may be ejected from the machine if an oil line ruptures causing potential eye injury and environmental harm.

Resolution:

Ensure hydraulic lines are maintained on a regular basis in accordance with the maintenance section in the operations manual. Eye protection must be worn during operation of the machine in compliance with the safety requirements stated in the safety section of the operations manual.

Risk: Entrapment
Risk Level: Low
Description of Hazard: The risk of entrapment is low during normal operations as personnel are not required to be close to the machine during machine operation. The only time the operator would be putting themselves in a position whereby they could become entrapped in during maintenance procedures.
Resolution: The Danger Zone, or Hazard Risk area, is considered to be within 10 metres of the Machine. Instruction in the Operators Manual and signage on the Machine state this fact and require all persons to keep clear and outside the 10m danger zone. During maintenance, which requires a person to come into direct contact with the machine, the Powerpack is de-activated, immobilising the machine and minimising the risk of entrapment.

Risk: Operational noise
Risk Level: Low
Description of Hazard: The machine generates noise during operation; primarily from the auxiliary motor driving the hydraulic pressure pump. The machine is designed to operate in an industrial environment and any noise generated from the machine will be less than the background noise generated by other plant and machinery. Testing, indicates that the Sound Pressure Level, at the maximum rpm of the motor, is <80dB(A).
Resolution: The maximum sound pressure level of the machine whilst operating is <80dB(A) which is in accordance with Article 12 of the CE Noise Directive. Hearing protection must be worn at all times in accordance with the safety section of the operations manual.

HAZARD MITIGATION

When the machine is being used for its functional purpose ie loading containers; the machine is in effect; stopped and therefore presents a minimal hazard. A static machine represents the primary form of hazard mitigation.

The operations manual reinforces the requirement for persons to keep clear of the machine when the machine is operational.

The operations manual clearly states that only trained personnel are permitted to operate and/or maintain the machine. Warning signs in conformity to ISO 3864 have been placed on the machine in appropriate places to alert persons unfamiliar with the machines operation, to stay clear.

BASIC COMPONENTS OF THE UNIVERSAL TILTER (UO)

The Universal Frame (UO) is designed for the container's opening doors to be facing the front of the trailer (towards the cab). This model includes swing locks at both ends.

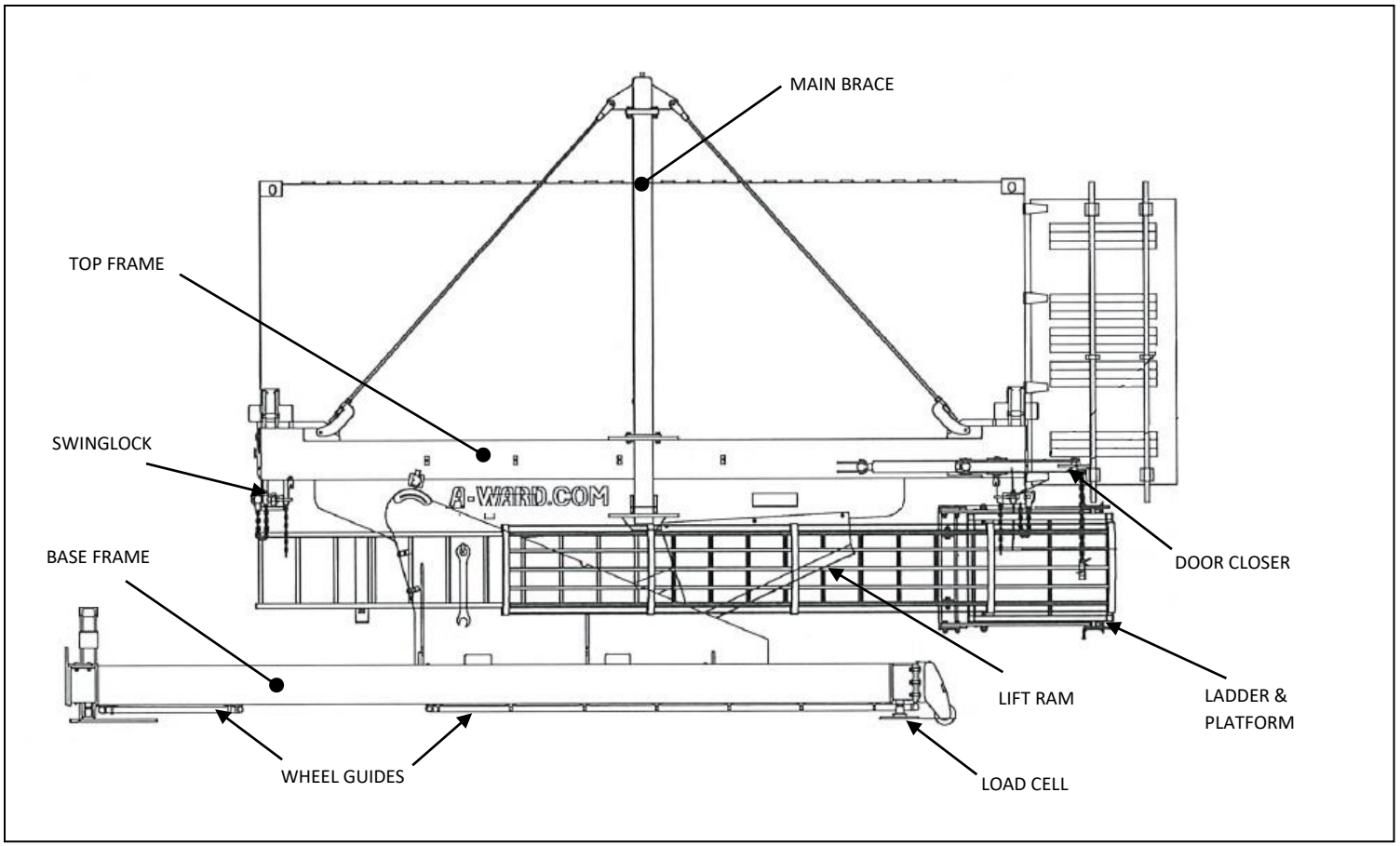


Fig.1: Basic Components

GLOSSARY OF TERMS

Component	Description
Base Frame	The super structure frame has been designed to handle the working conditions and twisting wear and tear of handling containers.
Top Frame	Based around the I-Beam structure to handle continuous bending loads while containers are being loaded and unloaded.
Lift Ram	These two rams are the main power rams for lifting and holding loaded containers while being tilted.
Wheel Guides	Base wheel guides are fitted to each side of the base frame to assist the trailer reversing into the Tilter unit. The container and trailer should be positioned in the centre for quick loading and unloading.
Swinglocks	These locks swing towards the container to engage the container blocks. They are held in place with twistlocks and 'J' hooks.
Door Closer	The door closers rest against the doors whilst loading the container and to push the doors closed and hold them in place until the container door latches are locked.
Main Brace	This arch provides a rigid framework to ensure the frame does not twist whilst under load
Load Cell	This is a deflection bar load scale, using calculated shear beam force for
Ladder & Platform (optional)	The ladder and platform option allows the operator to access the platform when the Tilter is at 90 degrees to inspect the product that has been loaded before it is tilted down to horizontal.
Rear Brace/Gate (optional)	The Rear Brace/Gate provides support to the rear of the container when loading
Mobility Wheels (optional)	The mobility wheel kit comprises 2 wheel assemblies and a transport beam. This kit enables the Tilter to be moved short distances.

NAMING PROTOCOLS OF THE ACT20UOLD

It is important that the Container Tilter and the container are named correctly. The following protocol is used throughout this manual.

FRONT: The end of the Tilter where the container doors open

REAR: The end of the Tilter that remains closed (and is tilted downwards)

LEFT: The left hand side of the Tilter when looking directly at the door end of the container

RIGHT: The right hand side of the Tilter when looking directly at the door end of the container

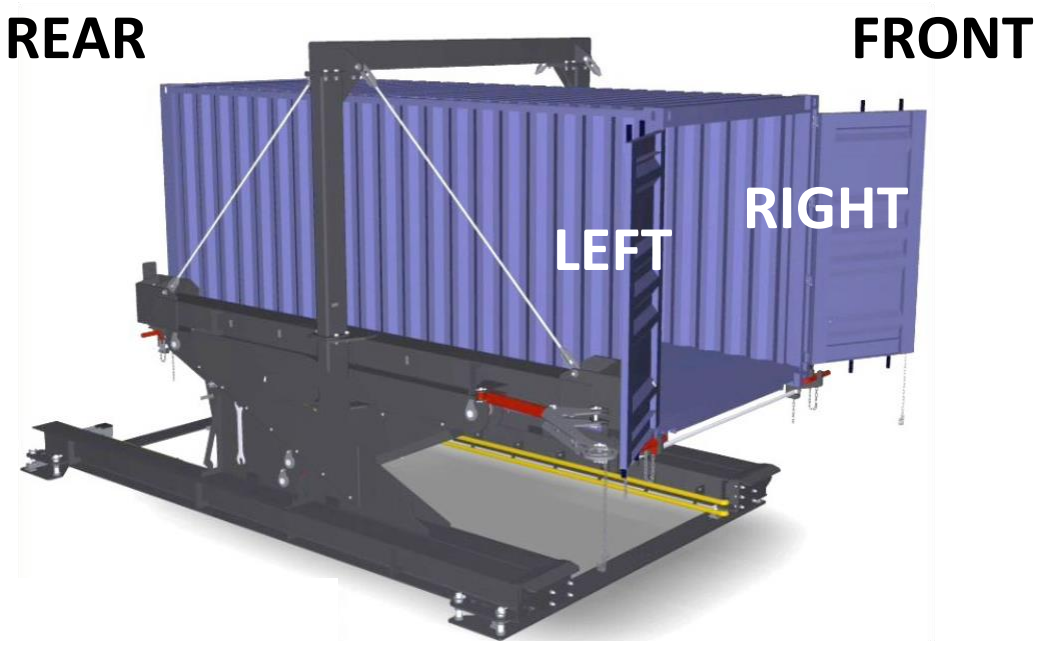


Fig.2: ACT20UOLD naming conventions

PART II – SAFETY SUMMARY

Your safety and the safety of others is dependent on how you operate and maintain your equipment. Read and understand this manual and other safety information provided with the Container Tilter. Be sure that you understand all controls and operating instructions before attempting to operate this equipment.

Observe the same precautions as with other machinery where carelessness in operation or maintenance is hazardous to personnel. Carefully read and understand all safety messages in this manual and safety signs on your equipment. Keep safety signs in good condition and replace missing or damaged safety signs.

The precautions listed in this manual and on the equipment are not all-inclusive. If a procedure, method, tool or part is not specifically recommended by A-WARD, you must satisfy yourself that it is safe to be used by you and others, and that the equipment will not be damaged or made unsafe as a result of your decision.

The basic rules are summarized in this section of the manual. They also appear throughout the manual along with additional specific rules for safety and operation.

WARNING

- Always be aware of the wind speed - **DO NOT** operate Tilter in wind speeds above 108km/h (67 mph)
- Learn how to operate the equipment and how to use the controls properly. Do not let anyone operate the equipment without instructions.
- It is the responsibility of the operator to read and understand all operating manuals supplied with the equipment before operation.
- Improper operation could result in severe personal injury or death.
- Make sure that equipment operators have the necessary safety training for each piece of equipment they are asked to operate.
- Ensure that all operators of this machinery understand the safety procedures.

AW004

SAFETY SIGNALS AND SIGNS

All operators and maintenance personnel must understand all safety signs provided on the ACT20UOLD and explained in this manual. Warning Decals are shown in this section on page 17.

Throughout this manual the following symbols have been used. When you see these symbols and signal words in this manual or on the Container Tilter, be alert to the potential for personal injury or damage to equipment or property. Follow recommended precautions and safe operating practices. All warnings with this symbol require the operator of the ACT20UOLD or other machinery engaged in work with the Tilter to be aware of the hazards and the possible consequences.

DANGER

Indicates immediate hazards which WILL result in severe personal injury or death.

WARNING

Warning: Indicates hazards or unsafe practices which could result in severe personal injury or death.

CAUTION

Caution: Indicates hazards or unsafe practices which could result in damage to the machine or minor personal injury.

SAFETY DECALS AND LABELS

Safety decals and labels are attached to the ACT20UOLD in the appropriate positions. These must not be removed and must be adhered to at all times. Severe injury or death may result if these warnings are ignored. If these labels are missing, please contact your nearest A-WARD Ltd dealer or A-WARD Customer Services Department for replacements.

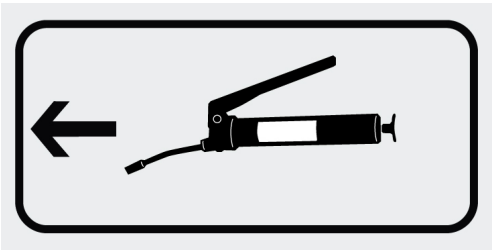
DECALS

A001 – Patent, Serial No and A-Ward detail plate

AW001 – Safety Screws Decal

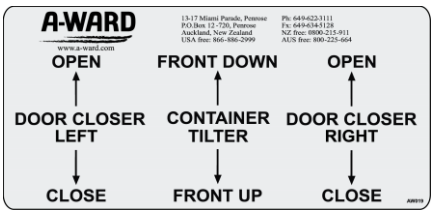
AW002 – Danger Decal

AW004 – Safety first decal



AW016 – Grease Decal

AW050 – Pinch Point Decal



AW019 – Power Pack Control Sticker (fitted to power pack)

AW022 – Rating Capacity Decal

AW025 – High Wind Decal

PLACEMENT OF DECALS ON THE ACT20UOLD

Decals and information labels are located for maximum visibility on the ACT20UOLD. The placement and part numbers are shown below.

Part Number	*Description*
AW001	'Safety screws engaged' safety sticker
AW002	Danger Decal
AW004	Safety First Decal (read manual before operation)
AW016	Grease Decal - one at each grease fitting
AW019	Powerpack control sticker, fitted to powerpack
AW022	Rating Capacity Decal
AW025	High Wind Decal
A001	Patent, Serial Number and A-WARD detail plate

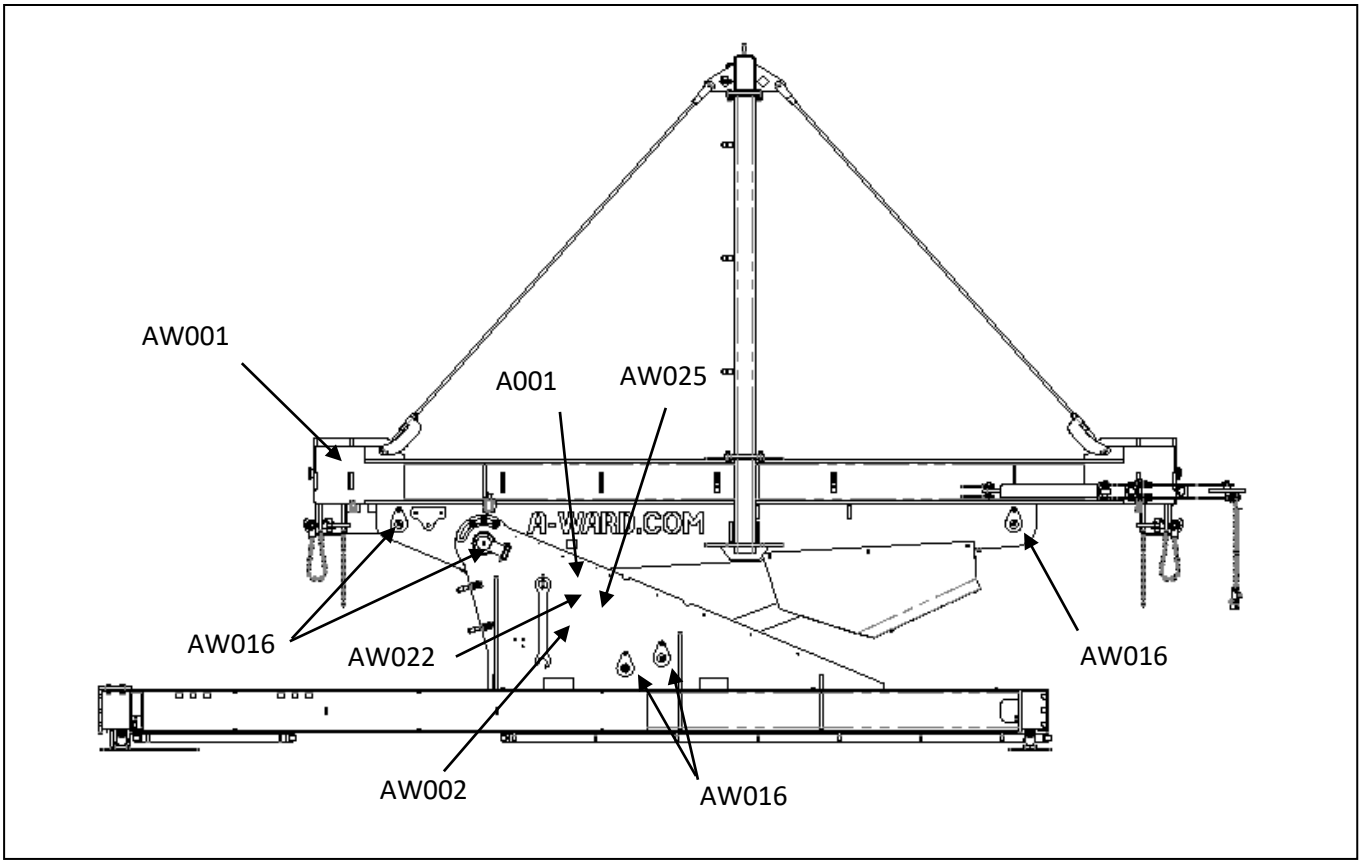


Fig.3: Decal Placement

GENERAL SAFETY PRECAUTIONS

WARNING

Before operating the ACT20UOLD, read the entire manual and observe all safety instructions in the Safety section of this manual and read and understand the Operation and Maintenance sections. If you are unfamiliar with any operation or maintenance procedure, seek instruction from an authorised person.

WARNING

Wear close-fitting clothing and safety equipment appropriate to the job. Loose, flapping clothing can get caught in machinery and cause injury. Wrist watches, rings and other accessories can also be dangerous. Safety equipment should be worn at all times when viewing, operating, or maintaining the Tilter to prevent injury. Safety equipment including eye protection, hard hat, steel toe shoes, gloves, hearing protection, high visibility clothing **SHALL** be worn at all times whilst operating the machine.

The safety stickers can be obtained from your A-WARD dealer.

The part numbers are shown below.

The full sticker is included with the Tilter (AW031). Individual stickers can be obtained if desired.

Part Number	Description
AW031	Full safety sticker (all included as one sticker)
AW008	Glove protection must be worn
AW009	Visitors must report to site office
AW010	High visibility clothing must be worn
AW011	Approved safety shoes/boots must be worn
AW012	Safety helmet must be worn
AW013	Ear protection must be worn
AW014	Eye protection must be worn

WARNING

Take care around all moving parts. Keep clear of all potential pinch points, including the power pack and electrical connections.

WARNING

Never operate the equipment while under the influence of alcohol or other drugs.

Doing so may cause serious injury or death.

BE PREPARED BEFORE STARTING

GETTING STARTED SAFELY

Adequate external lighting is required for operation at night or during reduced visibility periods.

Before operating, walk completely around the machine to be sure there are no work men next to, under or on it. Warn nearby members of the work crew that you are starting up. In any work area, people constitute a serious safety hazard.

KNOW YOUR EQUIPMENT

READ THE MANUAL provided with the base machine and the loading machine (material handler)

learn their operating and maintenance characteristics, capabilities and limitations. Know what operating clearances your loading machine requires.

Learn the location and function of ALL controls. Ensure proper operation of all controls before commencing work. If any malfunctions are found, shut the machine down and report the malfunction for repair.

Check all container connection points and lift cylinders are not damaged prior to commencing work.

Be familiar with the safety devices on the machine and learn to recognise them, including indicators, warning devices and caution instructions. They will alert you to conditions that may make it hazardous to continue operating.

Learn and know the correct method to fit and remove containers from the unit.

Know the CLEARANCES in the work area. A little time spent checking side and overhead clearances, including power lines, can save a lot of trouble later.

SAFETY DEVICES AND PROTECTIVE CLOTHING

Safety Devices / Protective Clothing

- ☐ Siren and warning lights
- ☐ Shields and guards
- ☐ Proper decals
- ☐ Proper visual or audible warning devices
- ☐ Hydraulic safety locks
- ☐ Barricades
- ☐ Falling Objects Protective Structures (FOPS) fitted to loader
- ☐ Signs and other markings
- ☐ Hard hat
- ☐ Safety shoes
- ☐ Ear protectors
- ☐ Reflective clothing
- ☐ Safety goggles
- ☐ Heavy gloves

KNOW YOUR SAFETY PROGRAMME

WARNING

Learn the traffic rules at the work site.

Know the hand signals used on the job and who is responsible for signalling. Take signals from only **ONE** person.

CAUTION

Know the employer's safety rules for your job.

Consult your foreman for specific instructions and safety equipment required. Know and recognise the many safety and warning devices which tell you what hazards to expect.

BE ON ALERT FOR YOUR FELLOW OPERATORS AND BYSTANDERS.
OPERATORS ARE NO MATCH FOR HEAVY EQUIPMENT.

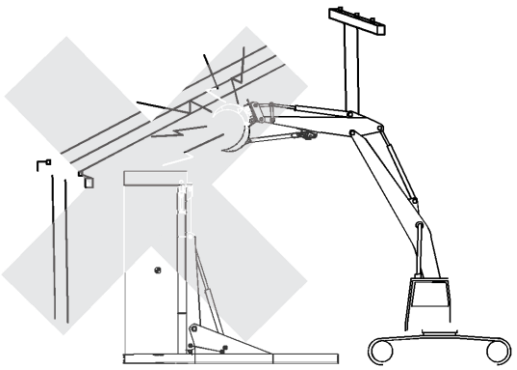
Always be alert for by-standers in or near the operating area. Warn them and don't start until they are out of danger, especially before moving the Tilter frame, loading the container, or manoeuvring the loading device, or truck into position.

Check the location of cables (both overhead and underground), gas lines, and water mains.

Make sure the work site footing has sufficient strength to firmly support the machine.

Position the powerpack a safe distance from the Tilter unit.

Inspect the entire Tilter carefully, especially the safety locks, each day before starting.



Check the location of cables overhead.

ACT20UOLD SAFE WORKING PRACTICES

CAUTION

DO NOT operate a poorly maintained or damaged Container Tilter

WARNING

If the Tilter does not function properly, shut down the powerpack and refer to the troubleshooting procedures on page 62. If in doubt, contact the nearest A-WARD Attachments dealer.

WARNING

Hydraulic oil becomes hot during operation. DO NOT let hot hydraulic oil get in contact with the skin as it could cause severe burns. Wear adequate protective clothing and safety equipment.

WARNING

Do not tamper with any hydraulic lines or components while they are pressurized. Escaping fluid under pressure can penetrate the skin, causing serious injury. Release pressure before unhooking hydraulic or the other lines.

If ANY fluid is injected into the skin or seek medical assistance immediately by a doctor familiar with this type of injury, or gangrene may result.

Take care with hydraulic hoses

Always lower the Tilter to horizontal before leaving the worksite each night. **DO NOT** rely on the pressure safety valves to hold the unit in position for a long period of time.

Hydraulic cylinders are fitted with pressure failure lock valves (counter balance valves). If the pressure fails, these valves will lock the hydraulics in the exact position that the pressure failure occurred.

WARNING

Do not weld on any structural member unless prior authorisation is gained from A-WARD Ltd.

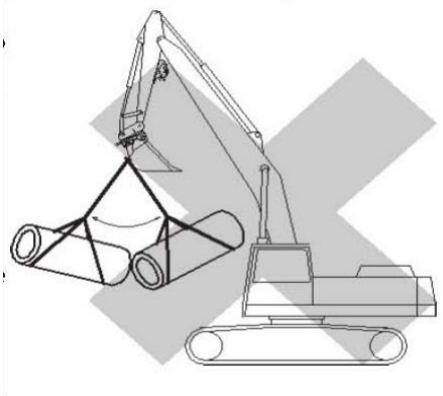
Any unauthorized welding or welding procedures will void the warranty and may cause structural failure or result in personal injury.

DANGER

Clear all persons and equipment from area of operation and machine movement.

When viewing the operation of the Tilter, maintain a safe distance of at least 30 feet (10 metres). Personnel within this perimeter must be inside a cab with adequate guarding or behind a protective structure or barrier which would prevent danger from flying or falling objects.

Maintain safe operating distance between any material suspended and held by an attachment and cab of the machine.



Do not carry suspended material too close to cab.

WARNING

Keep a watchful eye on exposed parts such as cylinder rods, hoses, etc. so as to not damage them when working in confined spaces

WARNING

All loading operations must cease and the working area should be checked before any adjustments are made to the Tilter.

Under no circumstances should any modifications be made to A-WARD equipment without factory authorization. This equipment was designed to do a specific job and alterations to it could result in injury to the operator or damage to the machine and void the warranty.

Noise and vibration reduction

The Tilter, when operating has a maximum sound pressure level of less than 80dB(A). Most of the noise and vibration originates from the powerpack motor and pump. The noise level can be minimised by ensuring that all powerpack panels are closed and locked while operating.

Noise and vibration originating from the Tilter can be minimised by ensuring that all pins and joints have been lubricated in accordance with the instructions in the maintenance section of this manual.

SAFETY WITH LOADER OPERATIONS

DANGER

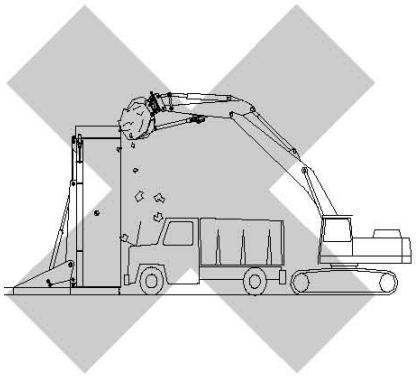
Never operate any equipment without the original manufacturer's safety guards in place.

Ensure that all safety devices are on the machine and ensure that they are working properly.

DANGER

Do not use an excavator to attempt to pack down material into the Tilter.

This is an unsafe way of handling material and could result in structural damages to the Tilter.



Do not load tilter over cab of vehicle

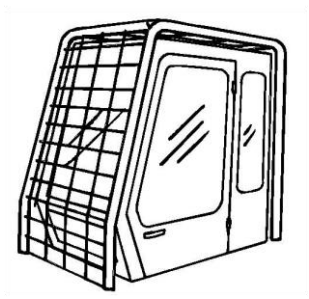
DANGER

Do not load material into the Tilter over the operator's cab.

Operating over a cab result in having severe injury or death from falling debris.

DANGER

Never move a load, process, or cut material above personnel, over machines, or cabs.



Falling Object Protection Structure

In addition to standard cab safety guards, it is recommended that the cab be equipped with an approved Falling Object Protection Structure (FOPS) to protect against falling debris or when working in and around excavation holes. The FOPS must meet the requirements of the relevant National Health and Safety Authority standards. It is also recommended that a transparent shatter-resistant shield cover on the cab.

Contact the original equipment manufacturer or dealer for more information on the availability of FOPS and proper cab protection for your loading machine or excavator.

DANGER

Absence of proper falling object protection (FOPS) may result in injury or death.

Read the Operator's manual for the excavator or loading machine. Know the control levers and functions. Also note ALL safety devices on the machine and ensure they are working properly.

CAUTION

CHECK THE LOAD. DO NOT ASSUME THE WEIGHT OF THE LOAD.

Familiarize with the lifting capacity of the excavator and attachments. DO NOT OVERLOAD the machine. Overloading the machine can cause serious injury to personnel.

DANGER

Never suspend load in the air nor pass load over personnel, vehicles, or buildings. Suspending loads may slip and cause serious injury or death.

DANGER

Maintain at least 15 feet (5 meters) between the loading attachment and any nearby power lines or serious injury could occur.

When leaving the loading machine for any reason, lower the excavator attachment to the ground.

BE SAFE WHEN YOU WORK

REMEMBER... It only takes one unsafe act to cause an accident. Use these safety rules, the operator's manual and follow your employer's instructions to develop safe working habits.

PART III – INSTALLATION AND ASSEMBLY OF THE ACT20UOLD

In order to install your equipment there are some simple checks YOU need to do to ensure a smooth installation.

Use this checklist as a guide while preparing your site.

Make sure that your site meets all of the requirements detailed in these instructions.

General Requirements (pre delivery)

- A-Ward recommend that the customer consult with their own/local civil engineering consultants to design the concrete pad required to suit our loadings as indicated on the drawing (see fig.).
  Many factors need to be considered, such as soil/ground condition, sub-base & sub-grade requirements, reinforcing steels and concrete strength requirement, curing procedure etc.

  In general, concrete strength should be no less than 4000psi (30MPa) min.

- The installation site is confirmed and complies with the required footprint
- The installation site is in compliance with all relevant local Health and Safety regulations
- The installation site is level and has space for trucks to manoeuvre in & out
- Sufficient space around the site is available for all equipment.
- The specified 3 phase electrical supply and power outlets are available where applicable.

General Requirements (installation)

- The principle operator & engineer will be available during the installation
- Tools will be available for the installation
- Equipment handling machinery will be available
- Container truck & trailer will be available
- A Container will be available

You will need basic hand tools including:

30mm RING & OPEN ENDED RING SPANNER
30mm SOCKET & RATCHET
15” ADJUSTABLE SPANNER
PINCHBAR / PRYBAR / PODGER BAR
LEVEL
15” SHIFTER WRENCH
MEASURING TAPE
CONCRETE DRILL c/w 20mm DRILL

You will need equipment handling machines, the preferred is:

1x 5 Ton FORK HOIST
2x LIFTING CHAINS OR STROPS (ideally use spreader bar if available)

The ACT20UOLD will be delivered in a 40ft (12m) container.

Before removing the Tilter from the container, mark out the positions required for fixing the bases to the ground. See Fig.5 for details.

SETTING UP THE ACT20UOLD

An A-WARD Ltd sales representative will ensure the Container Tilter is commissioned correctly. This checklist will help you follow the commissioning process with the A-WARD representative.

All fasteners required for installation are supplied with the Tilter.

Refer to Powerpack and Remote control manual during the Setting up procedure.

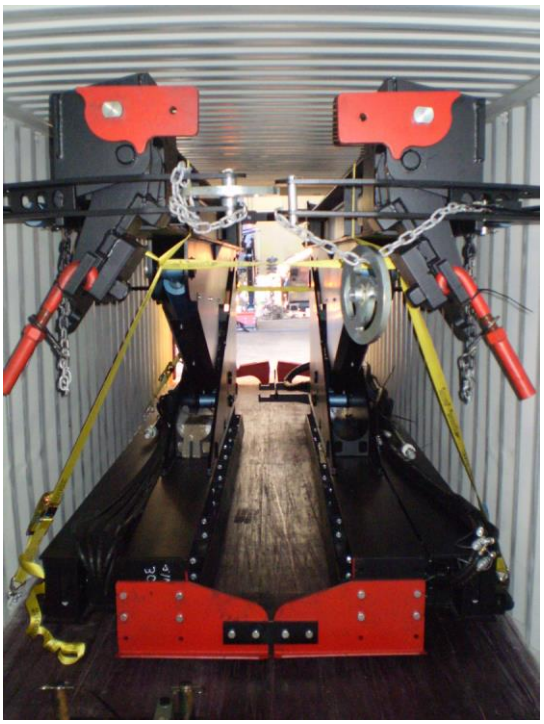
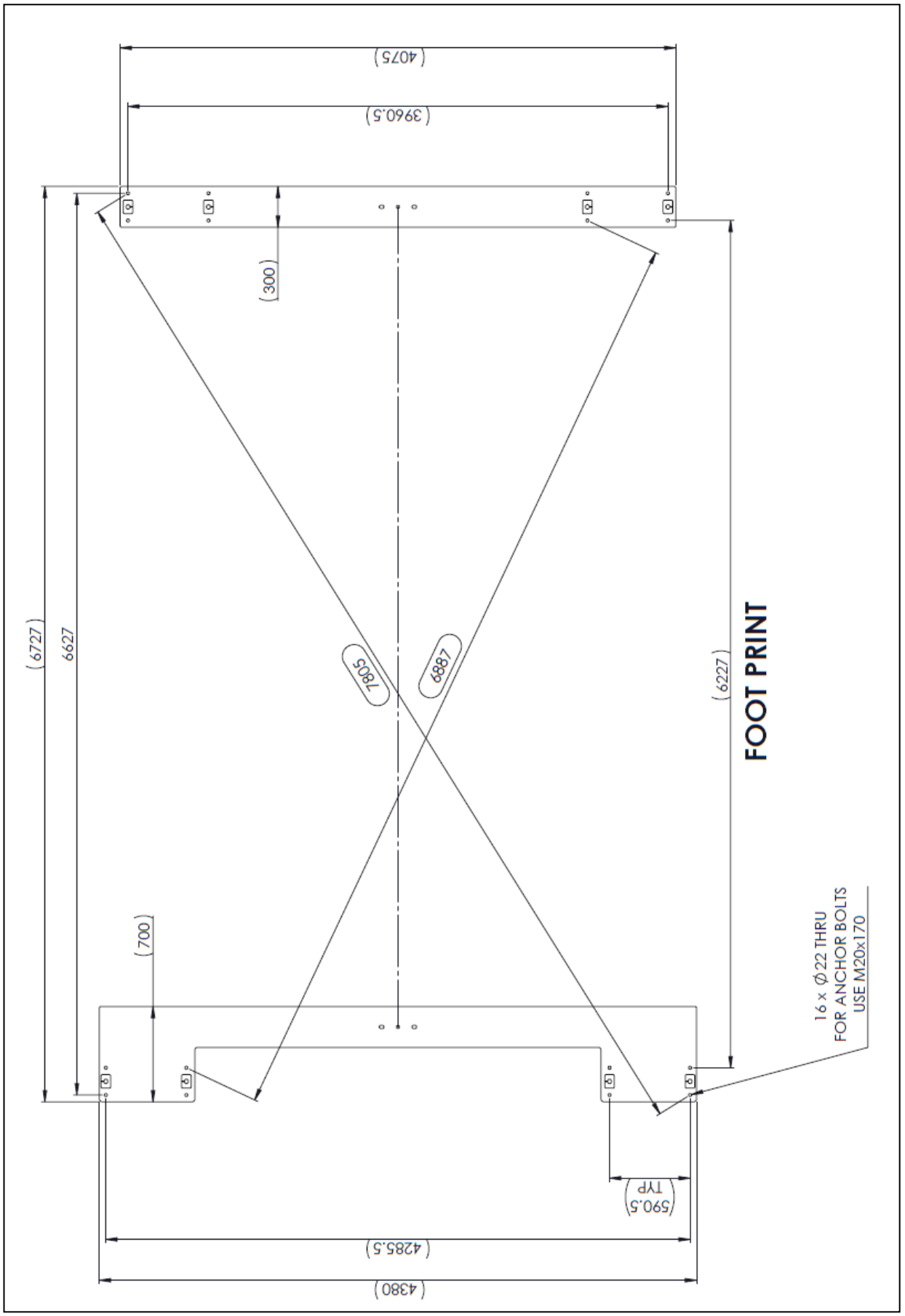
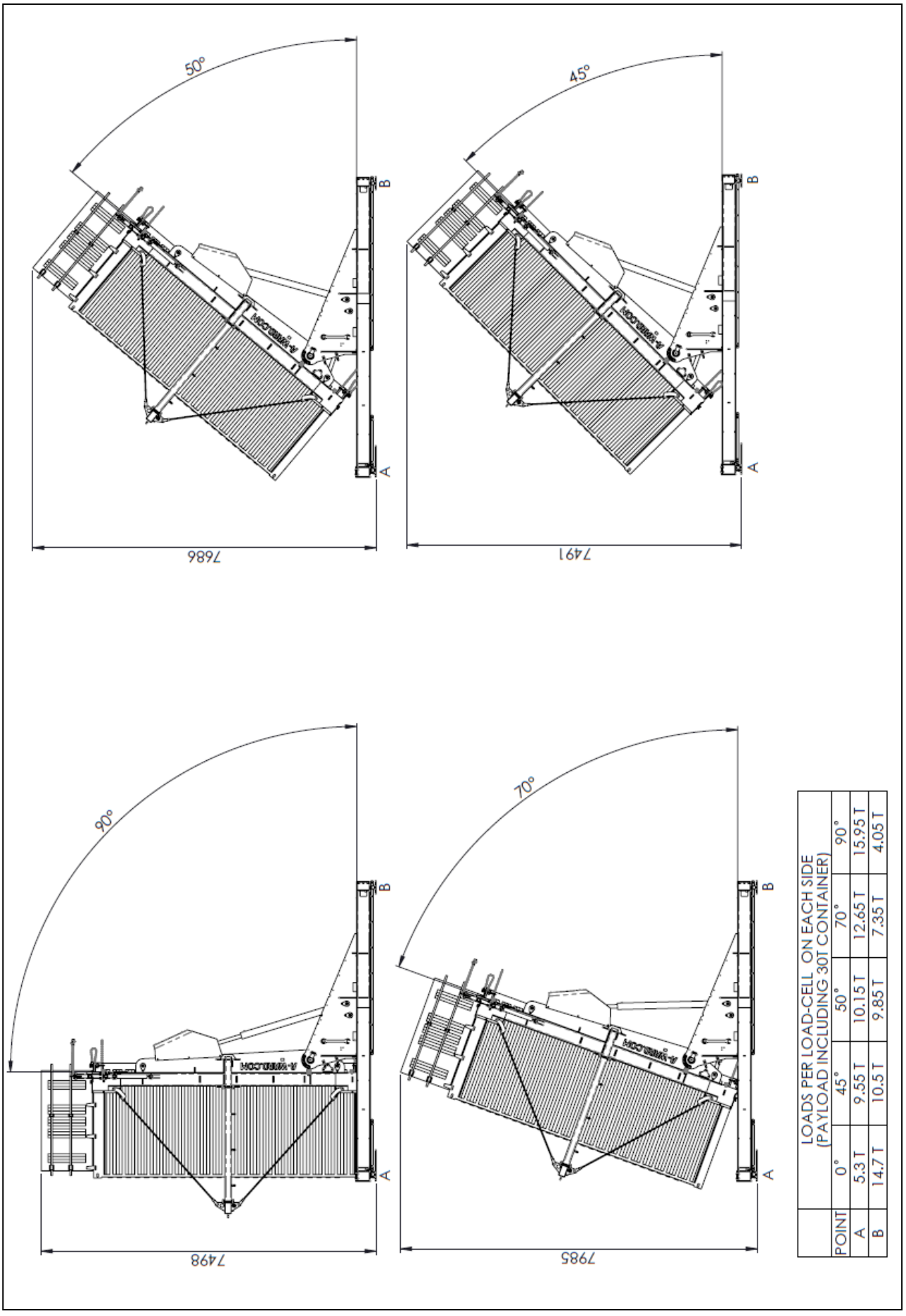


Fig.4: Tilter shown in container

(Tilter model may vary slightly from photo shown)

1. Use fork hoist to remove Tilter from container. (the base frame and top frame are already assembled together).
2. Mark out area where Tilter is to be mounted in accordance with footprint shown in Fig.5.
3. Move Tilter frame to its final position.


FOOT PRINT
(4075)
(3960.5)
(300)
(6727)
6627
(6227)
7805
6889
(700)
16 x Ø22 THRU
FOR ANCHOR BOLTS
USE M20x170
(590.5)
TYP
(4285.5)
(4380)



	LOADS PER LOAD-CELL ON EACH SIDE (PAYLOAD INCLUDING 30T CONTAINER)					
POINT	0°	45°	50°	70°	90°	
A	5.3 T	9.55 T	10.15 T	12.65 T	15.95 T	
B	14.7 T	10.5 T	9.85 T	7.35 T	4.05 T	

Fig.6: Tilter loadings

pockets provided under each
ding upwards through plates.
on marked out earlier in

on using 16 M20 x 170 long
s (Hilti HST type or equiv.)
ot plates and pivot mount blocks

already assembled within the

of wood or equiv. under the
to ensure that the base frames

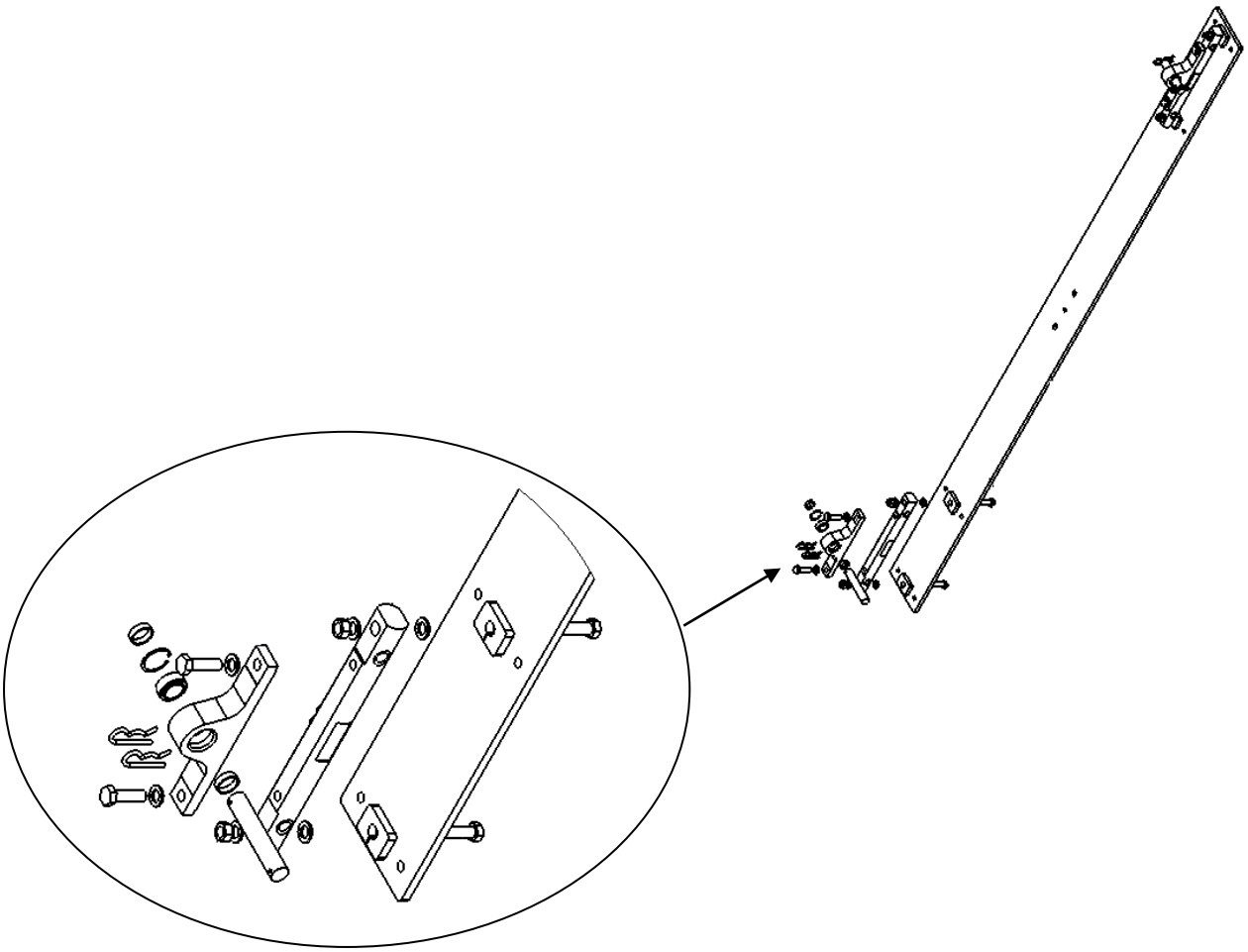


Fig.7: Load cell and base frame assembly

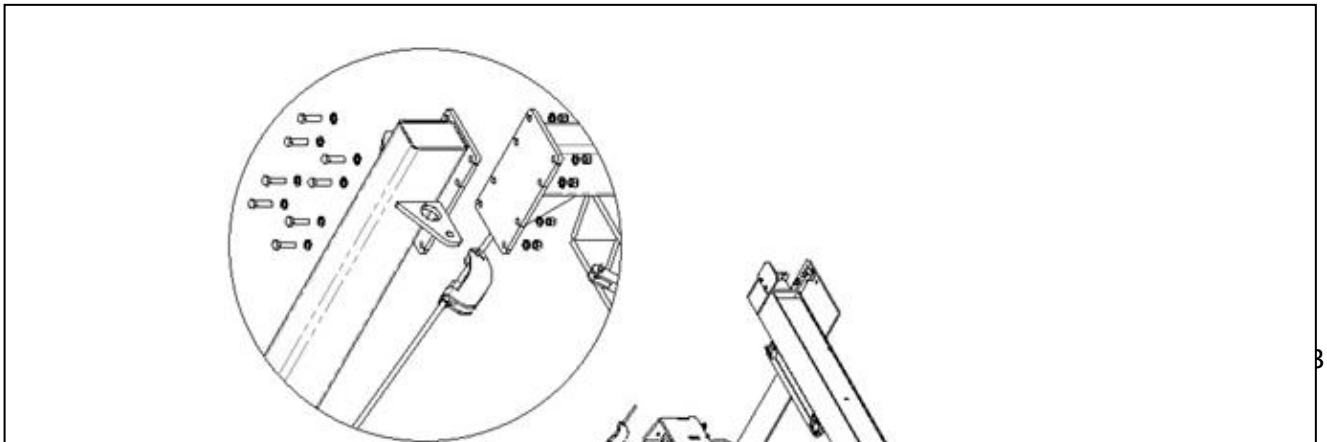


Fig.8: Brace assembly

10. Assemble Brace to side frames as shown
11. Connect hydraulic hosing in accordance with hydraulic circuit.
12. If ladder and platform are fitted as an option. The platform will already be installed to the platform mounting post that is mounted to the underside of the top frame.
13. Attach the ladder to the platform mounting post and the ladder mounting post at the pivot end of the Tilter.

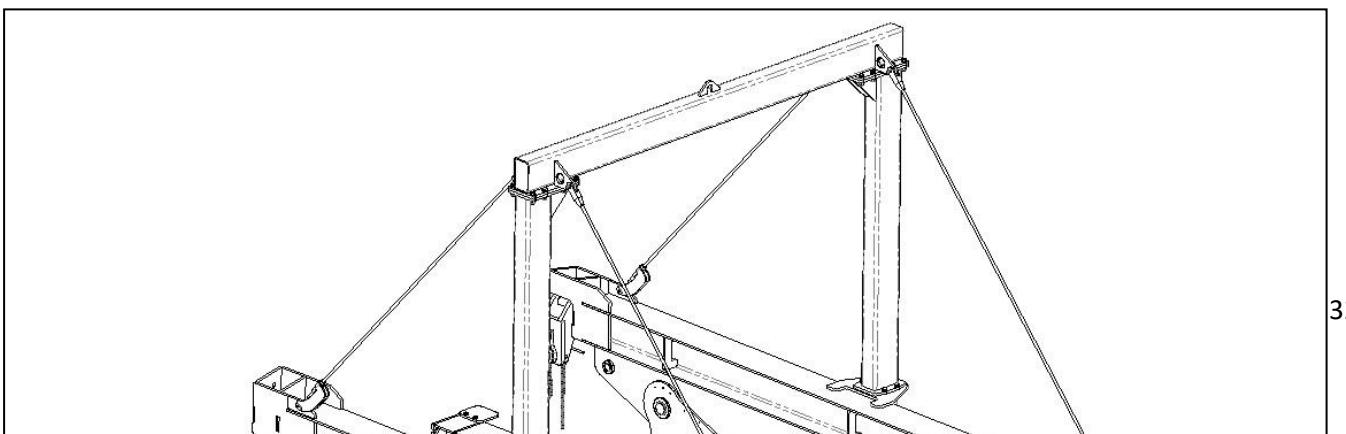


Fig.9: Fully assembled ACT20UOLD with Ladder & Platform option

Fig.10: Colour coded hydraulic hoses

14. Check the hydraulic feed hoses regularly for wear and tear (see the maintenance section in this manual)

15. Connect weight display cable from umbilical to weight scale display. The connector is marked “load cell” on the back of the Griffith Elder weight display.
16. Connect all hydraulic hoses in the umbilical (hose bundle attached to Tilter) to the Powerpack. all connectors are colour coded.
17. Following the instructions in the powerpack manual, fill oil (hydraulic and motor) using engine and hydraulic oil.
18. Following the instructions in the powerpack manual, fill powerpack with fuel (check if motor is petrol or diesel before filling).
19. Check all hose fittings, check for leaks and tighten any loose fittings.

20. Grease all pins, cylinder pivot and main pivot pins.
21. Test all machine functions in manual mode (via the powerpack) and then using the remote control

- **Manual Mode**
  To operate in manual mode, turn the switch on the powerpack to 'Manual'. All control functions will now be controlled by the control levers on the powerpack.

  For **diesel** powerpack, turn the start key to the "GL" position and hold until the glow plug lamp switches off.

  Turn the start key to the "ST" position.

  For **electric** powerpack, turn the power pack on by turning the power switch to the "ON" position.

- **Remote Mode**
  For diesel powerpack, On the power pack, turn the control switch to the "REMOTE" position.

  On the remote control, pull the 'Emergency stop' button.

  Turn the remote power switch to the "On" position.

  Press and hold the remote synchronise button and wait for the green light in the middle of the remote to come on.

  The green light indicates that the remote is communicating with the Powerpack.

  On the powerpack turn the start key to the "GL" position and hold until the glow plug lamp switches off.

  Turn the start key to the "ST" position.

  For electric powerpack, on the power pack, turn the control switch to the "REMOTE" position.

  Turn the power pack on by turning the power switch to the "ON" position.

  Pull out the 'Emergency stop' button.

  Turn the remote power switch to the "On" position

  Press and hold the remote synchronise button and wait for the green light in the middle of the remote to come on.

  The green light indicates that the remote is communicating with the Powerpack.

  Press the remote motor start button.

  Powerpack motor should start.

22. Test powerpack motor – start, stop and then check for leaks and loose items.
23. With a container in the Tilter, extend and retract all hydraulic cylinders.
24. The machine is now ready for operation.

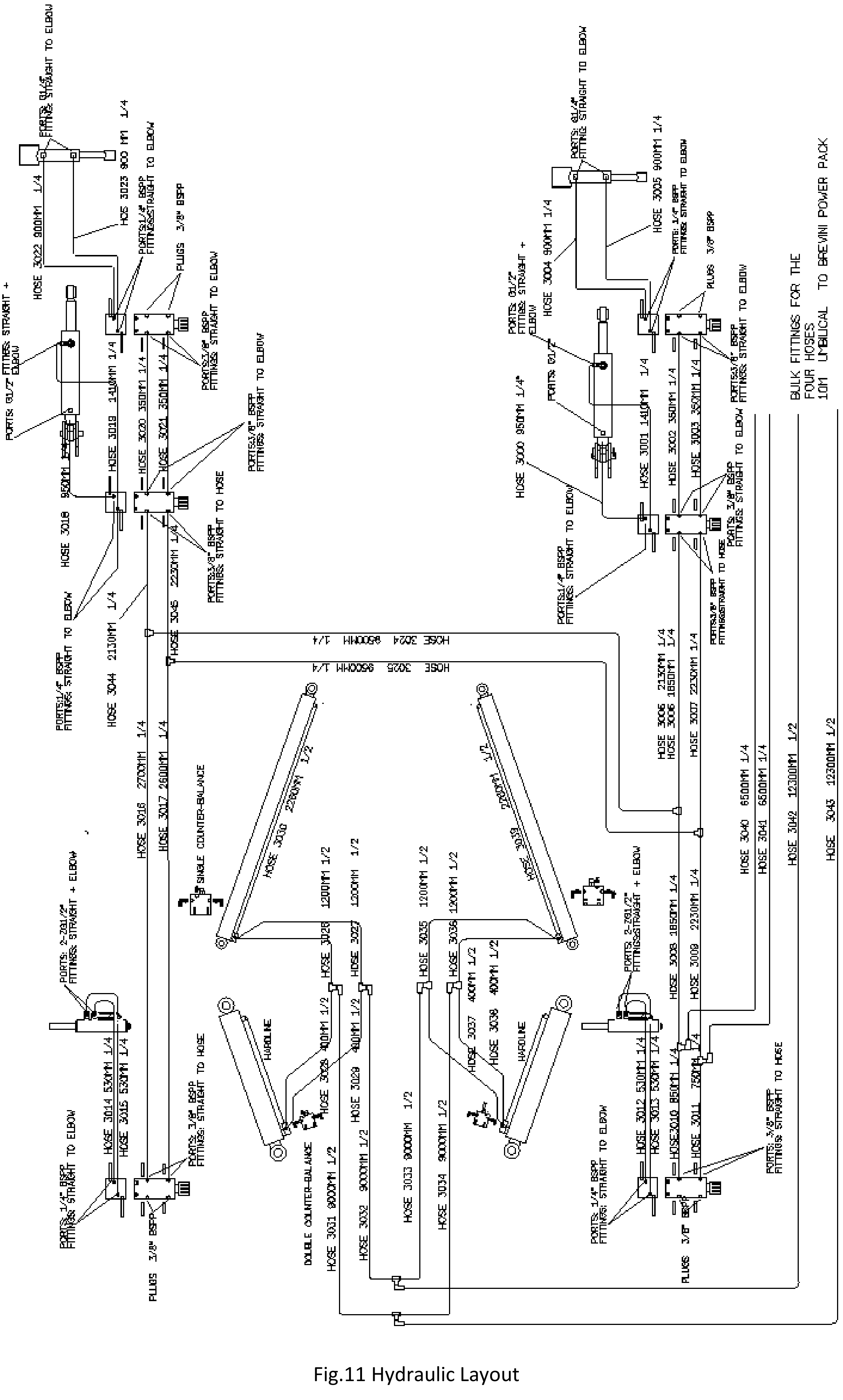


Fig.11 Hydraulic Layout

RADIO REMOTE CONTROL - IKUSI TM70/2

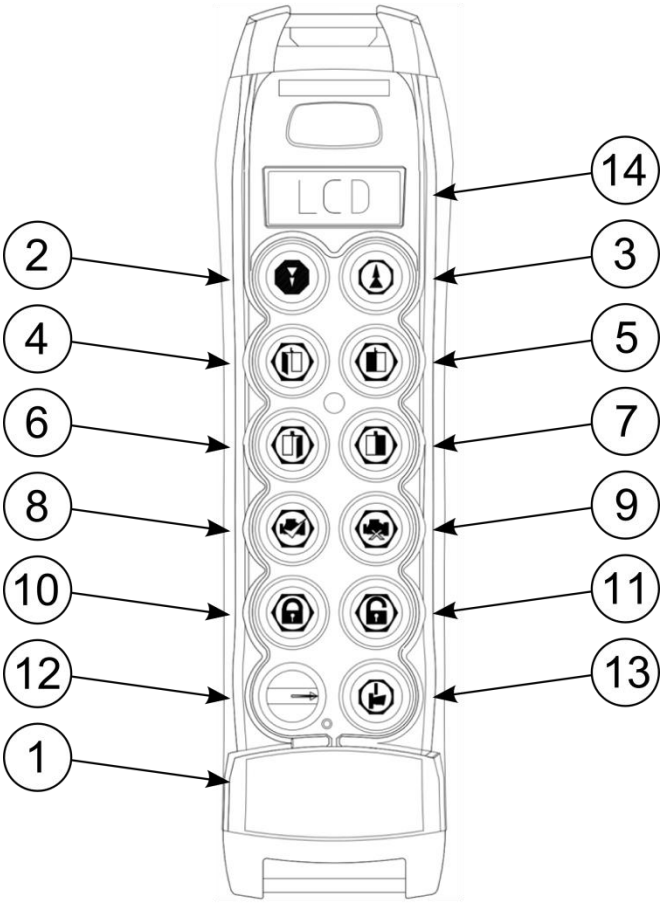


Fig.12 Remote layout

No.	*Description of feature*
1	EMERGENCY STOP
2	Tilt down button
3	Tilt up button
4	Left container door open
5	Left container door close
6	Right container door open
7	Right container door close
8	Motor start button (electric only)
9	Motor stop button (electric only)
10	Container lock (option)
11	Container unlock (option)
12	Remote power switch
13	Remote synchronize button
14	Remote display

For all Set-up, operational and technical information, refer to the separate appendix.

PART IV – OPERATION

WARNING DANGER

Before operating your container Tilter, carefully read the safety instructions in this manual for safe and proper operation and maintenance

A cautious operator using common sense is the greatest safety device

The ACT20UOLD must be operated by trained personnel who have read and understood the instructions in this manual. There are daily checks that should be completed before work is started. Attention to these daily routines and careful operation according to the instructions in this manual, will ensure your ACT20UOLD gives superior performance for many years

AW004

WARNING

If the Tilter fails to function correctly in anyway, stop operating the Tilter immediately and contact your A-WARD dealer. For the nearest A-WARD dealer, see the reference information at the front of this manual.

DAILY START-UP CHECKS FOR THE ACT20UOLD

1. Before starting, complete your daily inspections, safety and service checks.

☐ Grease all the pivot points

☐ Check motor engine oil levels (refer to Powerpack manual)

☐ Check hydraulic tank oil level on the oil level gauge

☐ Check fuel tank level (petrol or diesel)

☐ For motor operation refer to Powerpack Manual. If in doubt, contact your nearest A-WARD dealer. See below for a summary of the operating procedures.

Fig.13: Powerpack

(powerpack model may vary)

2. Do a safety walk around the Container Tilter, check for any oil leaks, weld cracks or steel damage. If there is any damage or if you see any oil leaks, do not operate the Container Tilter and contact your A-WARD service agent before use.

Refer to Appendix: Powerpack manual.

GATE OPTION

WARNING

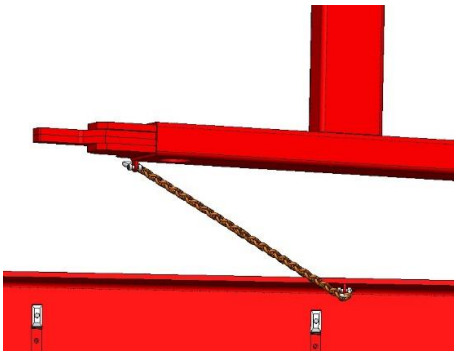
DO NOT open the gate unless the area around the tilter is clear of other personnel.

WARNING

ONLY open a tilter gate when the tilter is horizontal. Opening the gate when not horizontal can lead to serious injury or death.

WARNING

ALWAYS retain an open gate by securing the gate chain to the D shackle on the side of the upper frame.



WARNING

After locking the gate, secure the gate handle and chain in the keeper plate assembly using the locking pin provided.

INITIAL OPERATION OF THE UNIVERSAL FRAME (UO)

WARNING

The machine is exceedingly powerful.. Do not operate carelessly; there is potential for personal injury and equipment damage.. be concerned about safety when preparing to operate the new machine..

Ensure safe operation by inspecting the machine as stated in the Safety section. This inspection amounts to a common sense visual check of the machine at the beginning of every operation. Follow a preventative maintenance program. Such a procedure will reduce the possibility of costly downtime.

Read the Safety section of this manual and understand it..

Before starting the first job with a new machine, it is suggested that the operator finds a good open spot on firm, level ground that's free of obstructions such as trees, buildings and other equipment. The area must also be free of people.

Move the loading machine and the tilter to this area and spend some time just getting to know the operating feel of the machine and the Tilter. Load and unload empty containers on and off the trailer to practice with the controls. This "get acquainted time" will allow the operator to become familiar with the control levers before beginning work.

Refer to the Operations section of this manual regarding the procedure for loading and unloading containers, or ask your A-WARD Attachments sales representative for a copy of the sales video.

When starting any motion of the machine, move the control slightly from neutral until it starts to move, then smoothly move the control to increase motion to the desired speed. When stopping, move the control smoothly to decrease the speed gradually. Release all controls to completely stop any movement.

DANGER

The excavator loading attachment fixing pins must be held securely..

Maintenance is essential since fatigue, wear and damage may cause the attachments to disconnect from the Quick Hitch, causing serious injury or death.

OPERATION

Warning **Danger**

Before operating your Container Tilter, carefully read the safety instructions in this manual for safe and proper operation and maintenance

a cautious operator using common sense is the greatest safety device

The Universal Frame (UO) must be operated by trained personnel who have read and understood the instructions in this manual. There are daily checks that should be completed before work is started. Attention to these daily routines and careful operation according to the instructions in this manual, will ensure your Universal Mount (UO) gives superior performance for many years.

AW004

LOCATING THE CONTAINER IN THE UNIVERSAL FRAME (UO)

PREPARATIONS

1. Check the door closers are in the open position, so the way is cleared for the reversing trailer. If door closers are not fully opened before reversing the container into the unit, this will damage the structure of the Container Tilter.
2. If gate is fitted, check that no other personnel are in the area before removing the pin from the keep plate assembly and using the handle to slowly open the gate and securing the gate chain to the D shackle on the upper frame.

Fig.14:line up trailer with tilter

3. Set the wheel guides to position the trailer in the centre of the Tilter and tighten the guide locking bolts (unless the Tilter is fitted with fixed wheel guides).

Fig.15: Line up truck and trailer with Tilter wheel guides

4. Check the swinglocks are fully retracted and held back by the safety chain (see fig.16).

Fig.16: Swing locks retracted to allow trailer to reverse safely

5. Ensure the truck and container trailer are lined up correctly to reverse straight into the Tilter unit.

WARNING

Check all side cylinder locks and front swing locks are clear from the reversing trailer to prevent tilt lock damage

Helpful hint: Disconnect trailer air brakes for easy backing on trailer

POSITION THE CONTAINER IN THE TILTER

Note: 'Front' is the end of the container where the container doors open.

1. Unlock the container locks on the trailer.
2. Reverse the trailer with the container into the Tilter and hold in place . with brakes.
3. Angle the Tilter frame slightly until the rear swinglocks are in alignment with the rear container mounting holes
4. Press the rear swinglock into the side container lock hole as shown in fig.17
5. Locate the twistlocks (in the vertical position) in the container lifting holes
6. Rotate the twistlock handle to the horizontal until you hear a loud 'click'.

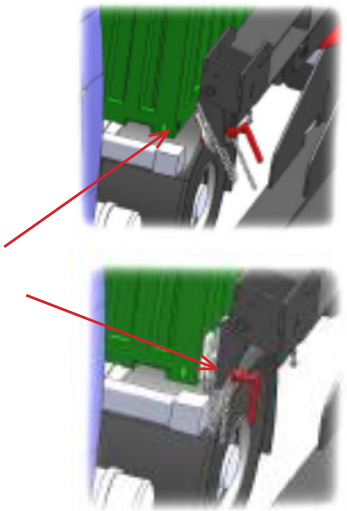


Fig.17: (a,b) Fit the twist lock vertically

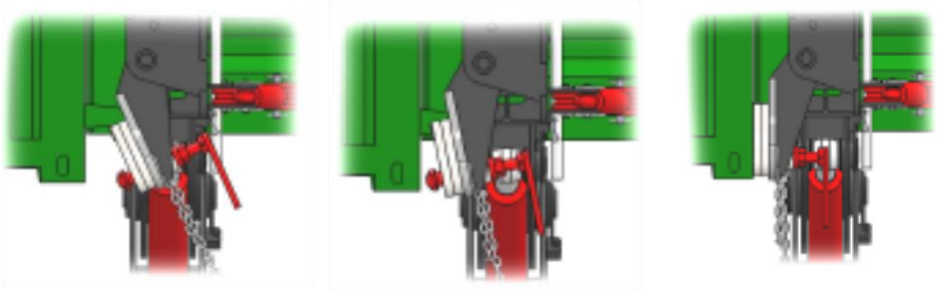


Fig.18: engagement of swing locks

Locating the Container in the Universal Frame (UO) Continued

Note: Ensure locating pins are well greased for ease of operation.

7. Manually tighten the locking nuts on the twistlocks.
8. Lift the rear of the container from the trailer
9. Repeat steps 5 -7 for the “J” hooks

10. Use the spanner provided to firmly tighten the rear twistlocks and “J” hooks and to hold the rear swinglocks in place. This will hold the container safely to the Tilter.

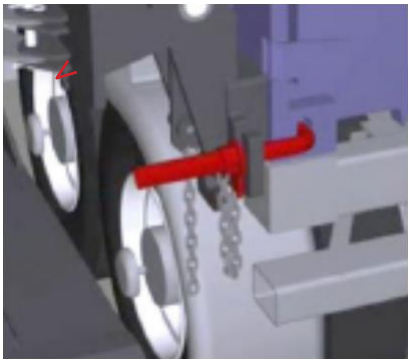


Fig.18: “J” hook in place

Fig.19: (a,b,c) Fitting a “J” hook

FIT THE FRONT OF THE CONTAINER

Note: ‘Front’ is the end of the container where the container doors open.

Angle the Tilter frame up until the front swinglock pins are in alignment with the front container lifting holes. The procedure is the same as for the rear swinglocks.

Repeat steps 3 to 10 for the front of the container.

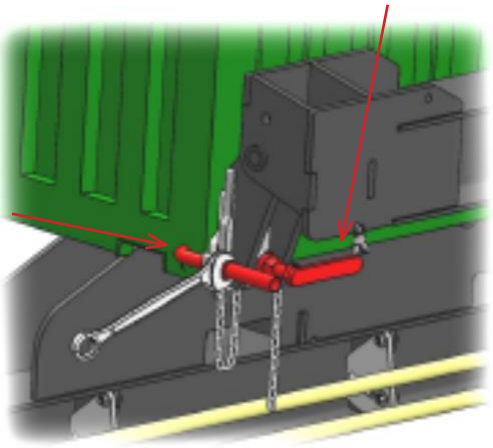


Fig.20:Use the spanner provided to tighten the “J” hook

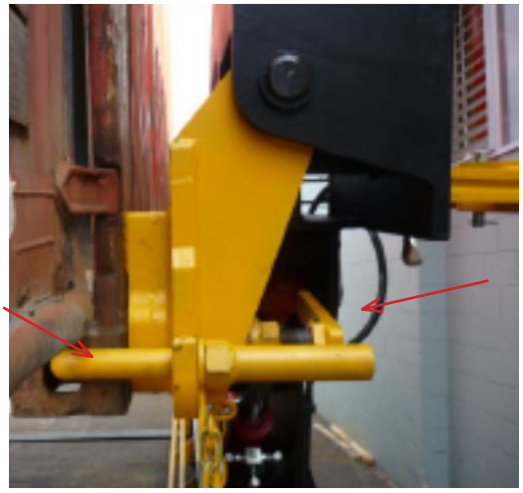


Fig.21: twistlock and “J” hook secured

Locating the container in the Universal Frame (UO) continued

FIT THE REAR OF THE CONTAINER

1. Angle the Tilter frame up until the rear swing lock pins are in alignment with the rear container lifting holes (see figure 4.11). The procedure is the same as for the front swinglocks.

   Note: 'Rear' is the end of the container that remains closed

2. Ensure locating pins are well greased for ease of operation.
3. Lock the rear swing locks in place using the "J" hooks.

Fig.22: Tilt container up to align the rear swinglocks

WARNING

Clear any fallen debris which may cause the Tilter to jam during tilting operation.. Any checking of debris within the 10m safety area must be done with the motor disabled

REMOVE TRAILER FROM TILTER FRAME

1. Angle the Tilter frame up again to make the container horizontal and above the trailer.
2. The container will be safely held by the Tilter above the trailer
3. Drive the trailer out of the Tilter frame.

Fig.23: Carefully drive the truck out of the Tilter frame

Note: Raising the tilter frame allows the trailer to be removed without damage.

WARNING

Do a double check once the trailer is cleared before moving truck to prevent any damage..

4. Lower the container rests down at the rear of the Tilter frame.
5. If gate is fitted, check that no other personnel are in the area before unfastening the gate chain and slowly swinging the gate around and locking in place using the handle. Secure gate handle and chain in keeper plate assembly.

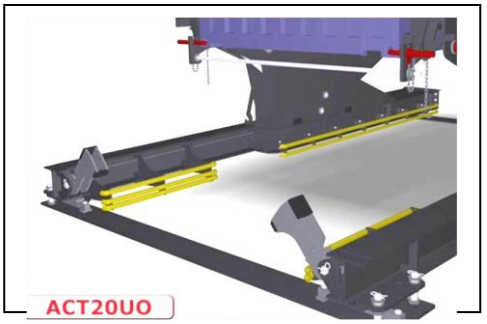


Fig.24: Position the container rests

LOADING THE CONTAINER

WARNING

Double check all screws are tight and secure before tilting or loading product into the unit

OPEN THE CONTAINER DOORS

Fig.25: Door closer wheels

1. Once the trailer is removed, open the container doors and rest the doors against the door closer wheels

2. Connect the door opening clip and chain to the container door bars

3. Clear all personnel from the 10 m (30 feet) safety area ready for loading. Check area and warn personnel prior to commencing operations.

Fig.26: Door opening clip

4. You are now ready to tilt the container to the desired angle of loading

LOAD THE CONTAINER

- Load 25% of the material at a low angle (up to 45º) to protect the rear of the container when loading (see figure 4.17).
- Then tilt up to the full 90º (vertical) to complete loading the container.

Fig.27: Universal Frame (UO) angled (45° and 90°)

Fig.28: Universal Frame (UO) angled

Fig.29: Loading the container

HOW TO WEIGH A CONTAINER

1. Ensure container is in vertical position (resting entirely on its end, 90^0 to the ground)
2. Clear any residual pressure from the line with a couple of quick pushes of the lever downward
3. Lower container. Whilst lowering container ensure lever is completely open
4. Griffith Elder terminal will display “lifting” then “weighing”. It will then display a value. This is the weight.

5. Follow the instructions and service guide provided with the weighing system. Fig.30 shows the weighing display unit.

HOW TO RESET ZERO

1. With the Tilter arms in vertical position and no load repeat steps 2 to 4.
2. If display reads something other than zero, hold zero button to reset.

To adjust calibration settings, refer to the Griffith Elder manual or contact your nearest A-WARD dealer.

Fig.30: Griffith Elder weighing device

LOWERING THE CONTAINER WITH THE UNIVERSAL FRAME (UO)

CLOSE THE CONTAINER DOORS

1. Once the container is loaded with the correct weight and the loading is complete, close the doors and lower the container
2. Use the control levers to close the left door first and then the right door (see fig.31)

CAUTION

Leave the door closer arms in the closed position holding the doors securely in the closed position while lowering the container

Fig.31a,b,c,d: Close the doors

LOWER THE CONTAINER

- Once the doors are held closed firmly, use the remote to lower the container down to a position where the doors can be locked

CAUTION

Make sure the container doors are locked. failure to lock them properly could cause injury or damage through material falling out of the container

- Open the door closer arms using the remote control.
- Ensure all persons are clear of the doors before retracting door closer mechanism

REMOVING THE CONTAINER FROM THE UNIVERSAL FRAME (UO)

Now your container is loaded and the doors are latched closed it is time to fit the container back on the trailer.

Fig.33: Lift container rests

1. Tilt the container until it is sitting horizontal
2. Move the door closer wheels away from the doors
3. Lift the container rests
4. if fitted, open the rear gate fully to allow the trailer to reverse into the Tilter.
5. Reverse the trailer into the tilting frame
6. Lower the rear end of the container by tilting the frame up, and locate the container locking holes with the matching trailer locks
7. Lower the container further with downward pressure onto the trailer until the side locks pressure on the Tilter is reduced
8. Unscrew the twistlocks and “J” hooks at the rear.
9. Lift the swinglocks and hold them clear using the chains

Fig.34: Tilt up to release rear Tilter locks

Fig.35: swinglocks retracted

Fig.36: Tilt down to release front Tilter locks

9. Once both swinglocks are clear, begin tilting the frame down, which lowers the front of the container down to the trailer.
10. Locate the container locking holes with the matching trailer locks
11. Lower the front of the container with downward pressure onto the trailer until the side locks pressure is reduced
12. Unscrew the twistlocks and “J” hooks at the front
13. Lift the swinglocks and hold them clear using the chains
14. The container should now be located on the trailer container locks
15. Tighten the container locks and secure the container to the truck and trailer
16. Drive the trailer straight out of the Tilting frame until it is clear of the unit
17. if fitted, close and lock the rear gate.

WARNING

Ensure you follow these procedures for the safe operation of your Container Tilter.
Load at the angle that suits your material.

PART V – MAINTENANCE

- Inspect the Container Tilter and the loading equipment DAILY
- Inspect and lubricate the Container Tilter daily
- Tighten any loose bolts or fittings

MAINTENANCE SAFETY PROCEDURES

If at any time, the Tilter fails to operate correctly or a potential problem is noticed, stop the Tilter immediately and report the problem.

Before attempting any maintenance procedure, read the entire manual carefully. If any question arises regarding a safety or maintenance procedure, contact your A-WARD dealer. For the nearest A-WARD dealer, see the reference information at the front of this manual.

CAUTION

DO NOT operate a poorly maintained or damaged machine or major structural damage could result.

If it is necessary to work on the unit, always lower the tilt frame to the ground and shut off pump motor before starting checks.

WARNING

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load.

Securely support the frame before working on the hydraulics.

Do not rely on hydraulic cylinder to hold the Tilter frame in the air whilst performing maintenance. When motor is stopped, and controls are moved or hydraulic pressure is removed in any way, the tilt

frame will lock in place. Always support the frame during hydraulics maintenance.

CAUTION

DO NOT attempt to alter or change the mechanical operation of the Container Tilter during the warranty period without first consulting A-WARD.

Note: This could invalidate the manufacturer's warranty.

MAINTENANCE SAFETY PROCEDURES CONTINUED

WARNING

During maintenance of the Container Tilter, turn OFF the engine and pump to prevent injury

Never operate the machine if an unsafe condition exists. Attach a “DO NOT OPERATE” tag to the machine. If more than one person is working on a machine, each must be familiar with the controls and aware of what the others are doing.

WARNING

Before working on the Container Tilter, be sure to tag the controls to ensure no-one else will start it up

Always use two people when making checks with the engine running, the operator at the controls must be able to see the person doing the checking.

WARNING

Keep hands away from moving parts. Never lubricate or work on a machine while it is moving

Always wear proper safety equipment when maintaining the Container Tilter, including eye protection, hard hat, steel toe shoes, work gloves, hearing protection, etc.

CAUTION

DO NOT attempt repairs you do not understand. If you are unsure, ask for help before starting

Be sure you understand a service procedure before working on the machine.

GENERAL RULES FOR MAINTENANCE

Read the maintenance procedures in this manual. Be sure all maintenance personnel read and understand all maintenance procedures.

Use factory approved parts

Use of parts that are not factory approved may cause damage or unnecessary downtime and will void the manufacturer's warranty.

Lubricate frequently

Follow the lubrication schedule outlined in this manual

Use the included Inspection Checklist to make sure all maintenance is completed.

Warm up the pump

Run the pump motor for 5 minutes before tilting commences. This allows the motor and pump oils to warm up and makes the machinery less susceptible to damage.

Do not weld onto the Tilter's structure

Do not weld on to the Tilter' structure without first consulting your A-WARD dealer.

Do not exceed bolt torque specifications

Refer to the Dry Bolt Torque Chart.

Hydraulic hoses

Do not disconnect any hydraulic hoses or fittings without first relieving pump hydraulic pressure by activating the levers with motor off

Do not let hot hydraulic fluid get in contact with the skin as it can cause severe burns.

WARNING

Inferior parts can fail and cause equipment damage or personal injury

Do not substitute parts unless you know that they are the same as original factory parts in all characteristics. Always check with you A-WARD Sales Representative before using substitute parts

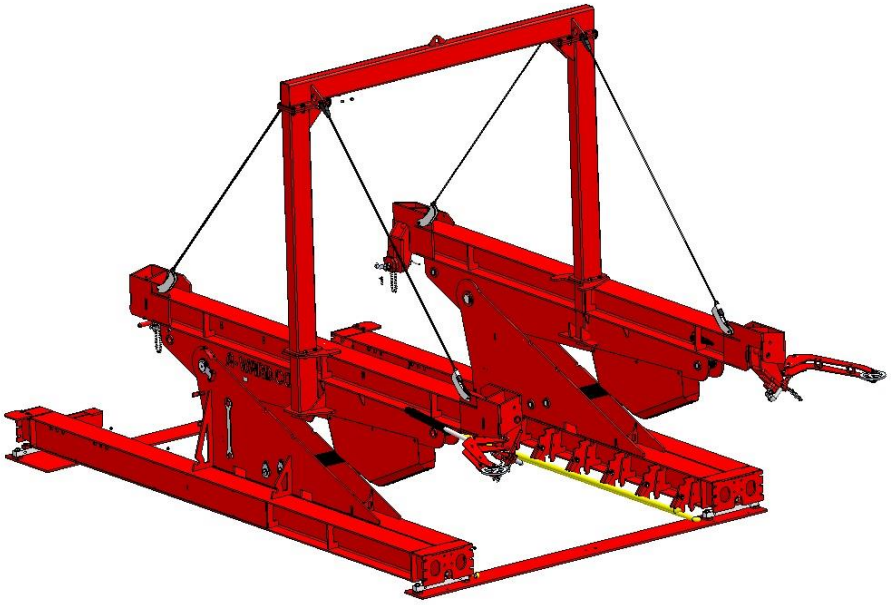
Do not hesitate to call your authorized A-WARD dealer if any problem occurs that is not outlined in this manual.

STORAGE OF THE ACT20UOLD

Lower the tilt frame down fully to protect the hydraulic cylinder from weather. The rams should be fully retracted.

Grease the cylinder, frame pivot and any moving parts. If the unit is being put in storage, also apply a light coating of oil to the cylinder's exposed bar to prevent rust forming.

Apply a light coating of oil to all exposed and unpainted surfaces of the Container Tilter.



TRANSPORTING THE TILTER

The Tilter is most safely transported by packing the Tilter into a 40' ISO container and then putting the container onto a trailer ready for transport in accordance with local regulations.

In order to prepare the Tilter for transporting, the Tilter must be broken down into the sub-assemblies that the Tilter was initially delivered as.

Personnel undertaking this process shall wear/ use all the safety equipment stated in the safety section of the Operations manual and adhere to all local Health and safety regulations.

Procedural steps

1. Lower the tilt frame down to horizontal. Ensure that there is no container on the Tilter.
2. Decommission the powerpack in accordance with the powerpack appendix.
3. Isolate the powerpack from the mains supply (electric powerpack).
4. Empty the powerpack of fuel (see powerpack appendix).
5. Remove Ladder (if applicable).
6. Disconnect all safety sensors.
7. Disconnect and remove the hydraulic hoses from the main brace. Disconnect hoses from door closer rams.
8. Cap or plug all hose ends.
9. Remove main brace and tension cable assemblies.
10. Remove each door closer assembly (including cylinders).

11. Disconnect all load cell cables from the load cells.
12. Remove anchors.
13. Raise one end of the base of the machine slightly and remove the load cell assemblies.
14. Raise other end of base and remove the load cell assemblies.
15. Attach transport plate to each end of the base frame. Using a suitably sized fork hoist, move the base frames toward each other until the transport plate is aligned with the mounting holes in the base frames. Secure transport plates to both base frames.
16. Bolt drum wheel assemblies to transport plate on font of Tilter as shown in Fig.37.

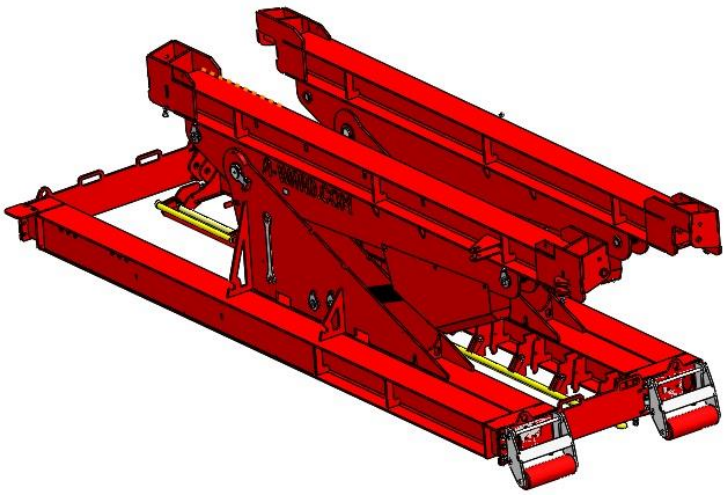


Fig.37: Tilter ready for transport.

17. Using appropriately sized fork hoist, move the frame assembly into a 40’ ISO container. Secure frame in place using strops.
18. Place sub-assemblies, powerpack, fasteners etc. into container.
19. Close and lock container doors.
20. Tilter is now ready to be transported by trailer.

DECOMMISSIONING OF THE TILTER

Personnel undertaking this process shall wear/ use all the safety equipment stated in the safety section of the Operations manual and adhere to all local Health and safety regulations.

If the Tilter that is being decommissioned is to be replaced with a new Tilter, then many of the existing parts of the Tilter may be used as spare parts for the replacement (check with your A-Ward dealer for suitability).

Procedural steps

1. Lower the empty Tilter to Horizontal
2. Remove ladder and platform (if applicable).
3. Decommission the powerpack in accordance with the powerpack appendix
4. Isolate the powerpack from the mains supply (electric powerpack)
5. Disconnect hydraulic hoses from powerpack.
6. Cap or plug hose ends.
7. Remove any mains electrical plugs/sockets from the powerpack.
8. Decommission the powerpack in accordance with the instructions in the powerpack manual.
9. Disconnect and remove the hydraulic hoses from the main brace. Disconnect hoses from door closer rams.
10. Remove main brace and tension cable assemblies.
11. Remove each door closer cylinder.
12. Cap or plug hose ends and ports on cylinders.
13. Remove each door closer assembly.
14. Remove the pins from each door closer assembly.
15. Support the top frame using dunnage or other suitable material/equipment.
16. Use fork hoist to support the main cylinder.
17. Remove the rod end pin assembly.
18. Lower the main cylinder down to the base frame.
19. Remove the lower main cylinder pin.
20. Remove counterbalance valve assemblies from main cylinders.
21. Plug ports of cylinders and counterbalance valves.
22. Remove all hose assemblies from top and base frame and cap all hoses.
23. Using fork hoist, support the top frame assembly.
24. Remove the main pivot pin from each side of the Tilter.
25. Move the top frame assembly away from the immediate working area.
26. Repeat procedure for other side of Tilter.
27. Disconnect all load cell cables from the load cells.
28. Remove anchors.

29. Raise one end of the base of the machine slightly and remove the load cell assemblies.
30. Lower the end of base frame to ground.
31. Raise other end of base and remove the load cell assemblies.
32. Lower the end of base frame to ground.
33. Disassemble the load cell assemblies to isolate the load cells, load cell mounting pivot blocks and the mounting pins.
34. Repeat for bae frame on other side of Tilter.
35. If applicable, the following parts can now be stored as spare parts:
36. All hydraulic cylinders
37. All pins and pin assemblies
38. Load cells
39. Load cell mounting pivot blocks
40. Counterbalance valve assemblies
41. Dispose of all hydraulic hoses in accordance with local authority regulations.
42. The Tilter parts are now ready to be moved to a suitable site for recycling, scrapping or storage.

PERIODIC SERVICE SCHEDULE - ACT20UOLD

Service the ACT20UOLD at specified intervals. Inspect, lubricate, make service checks and adjustments according to the 'Daily Inspection Checklist' included in this manual.

A program of regular service should be established, using the Machine Hour Meter' to determine when the Container Tilter should be serviced. Use the intervals on the service schedule when operating in normal conditions. Service the Container Tilter at shorter intervals when operating in extreme environments or abrasive conditions (snow, dust or extreme heat).

Use the correct lubricants and bolt torques. Refer to the Lubrication Instructions and Dry Bolt Torque Chart in this manual when performing maintenance.

RECOMMENDED HYDRAULIC OIL AND OIL FILTER CHANGES

The hydraulic oil should be changed according to the following schedule:

First hydraulic oil filter (only) change ……..after the first 50 Machine Hours

Subsequent hydraulic oil and oil filter change ……..after the next 500 Machine Hours

Contact you're A-WARD service centre for replacement parts.

DAILY SERVICE REQUIREMENTS

The table below gives the daily service requirements for the A-WARD Container Tilter, ACT20UOLD.

Item	Details
Bolts	Check for looseness or damage.
Re-torqueing bolts	Refer to Bolt Torque tables in this manual. Bolts may be re-torqued once, then must be replaced.
Connecting Pins and Pin Retaining Bolts	Inspect for looseness or damage or wear on cylinder connection pins on Tilter. Check container locking pins for damage or wear.
Grease Fittings	Lubricate according to the instructions in this section. Replace broken fittings.
Motor and Pump	Check the oil level in the hydraulic oil holding tank daily.
Hydraulic Fittings	Check all hydraulic hose connections for any leaks. Tighten or replace before operation.
Container Locking Devices	Check all mechanical points holding the container. Check for wear and/or damage and replace.

The daily inspection checklist is an important tool to ensure your ACT20UOLD is maintained properly. A daily inspection and service will ensure your Container Tilter will continue to work at peak performance for longer.

DAILY INSPECTION CHECKLIST

Model: _____ Powerpack Hour Meter:_____

Tilter Serial Number _____ Date: _____

1: Visually inspect the Tilter for any damage

- _____ Check for cracks or excessive wear to container locking system that may cause structural failure

2: Inspect the Motor and hydraulic pump

- _____ Check for any loose bolts or cracks on frame, locks and base.
- _____ Check hydraulic holding tank oil level.
- _____ Check hydraulic hoses for wear and/or chafing.
- _____ Check control levers return to the neutral position.

3: Inspect all bolts and cables (Hydraulic, ram, mount)

- _____ Visually check all bolts for looseness or damage
- _____ Visually check that all tension cables are tight

4: Inspect pins and pin retaining hardware

- _____ (a) Cylinder pivot pins
- _____ (b) Door closer cylinder pins
- _____ (c) The main Tilter pivot pins

<u>DO NOT</u> operate the Tilter if there are any signs of excessive wear.

Contact your A-WARD service department for advice.

5: Grease all points shown until excess appears

(Use premium graphite based grease SC1 or equivalent)

- _____ Cylinder pivot pins
- _____ Door closer cylinder pins
- _____ The main Tilter pivot pins

Inspected by: _____

DAILY INSPECTION POINTS

The diagram below refers to the lubrication points

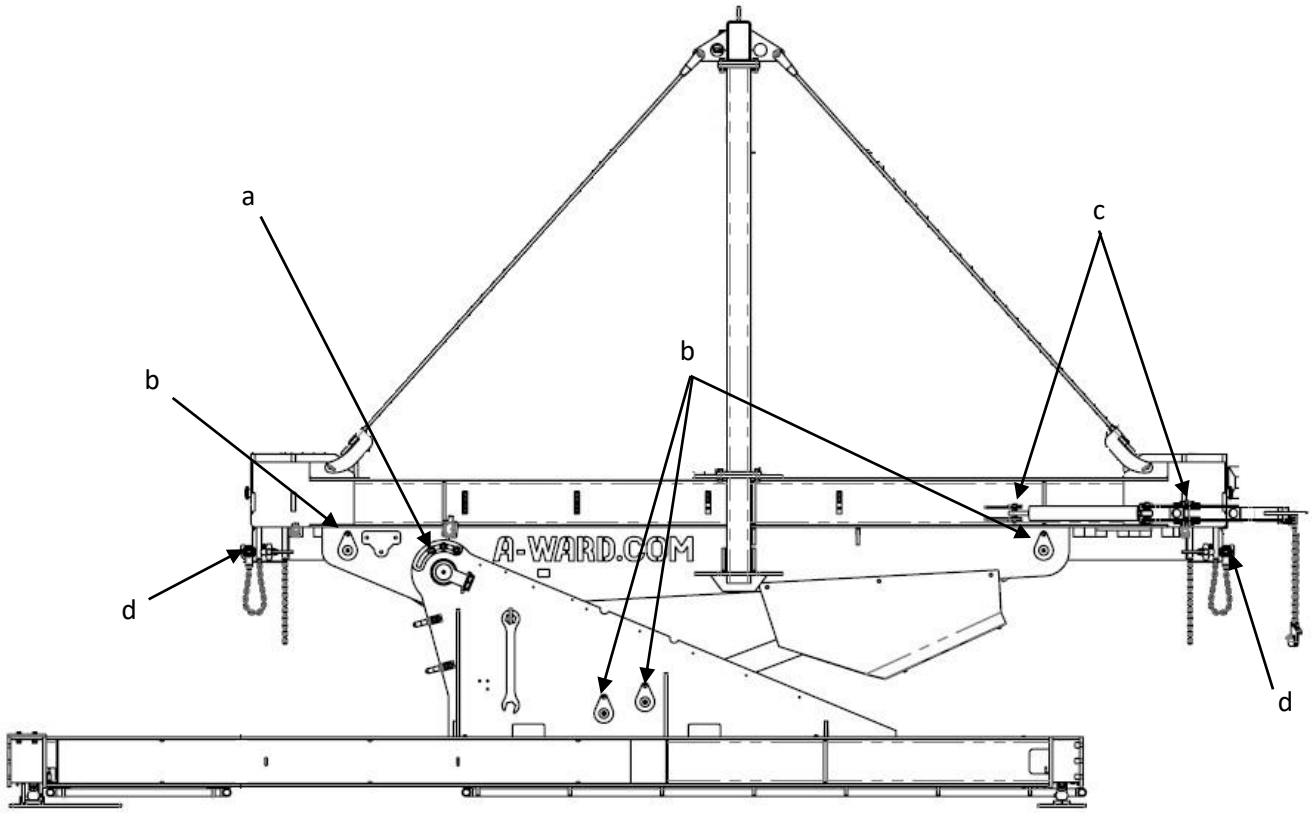


Fig.38: Daily Inspection points

Key

a	Main Pivot Pin
b	Cylinder Pivot Pin
c	Door Closer Cylinder Mount Pin
d	'J' Hook

LUBRICATION POINTS FOR THE ACT20UOLD

Grease all points every 40 hours of operation. Use a premium graphite based grease. Grease fitting locations are indicated on the illustration below and by grease decals on the Tilter.

Fill with grease until excess appears.

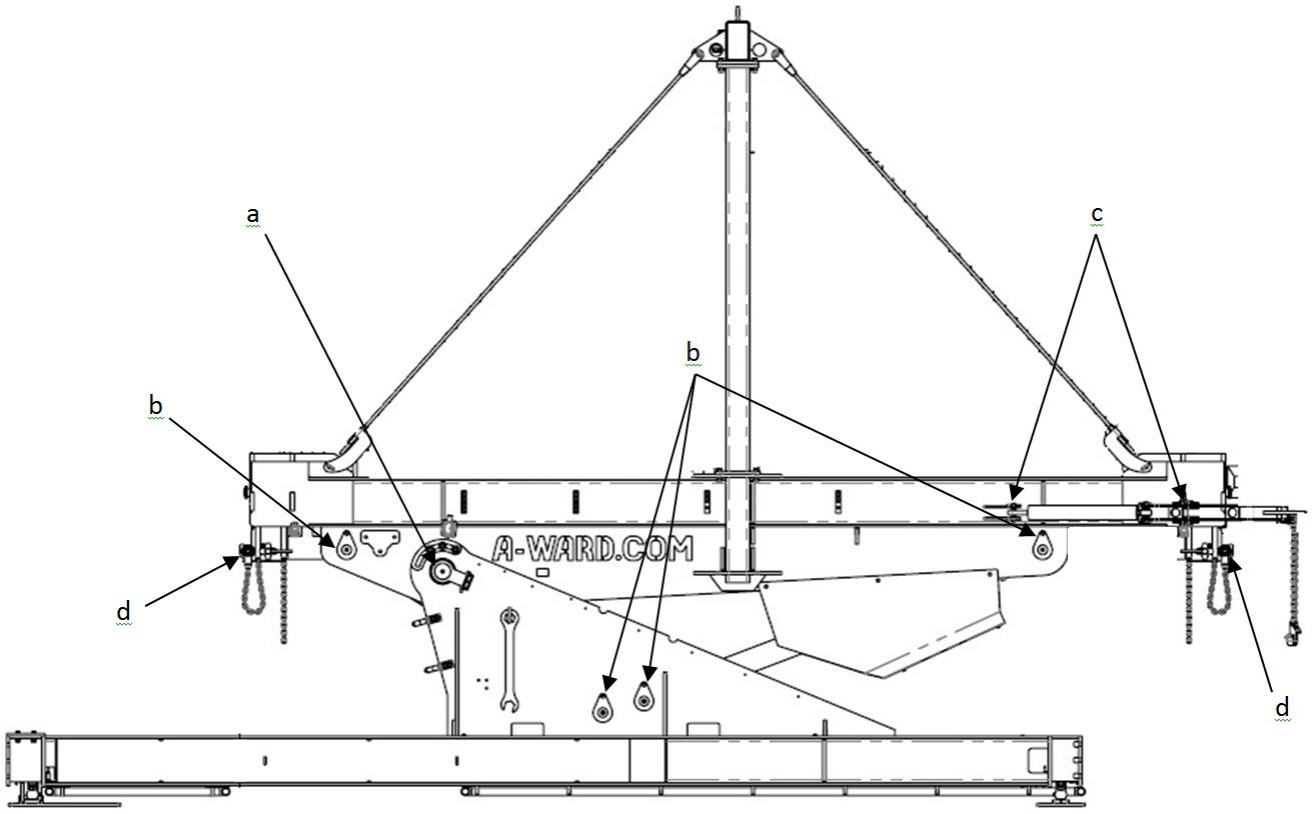


Fig.39: Lubrication points

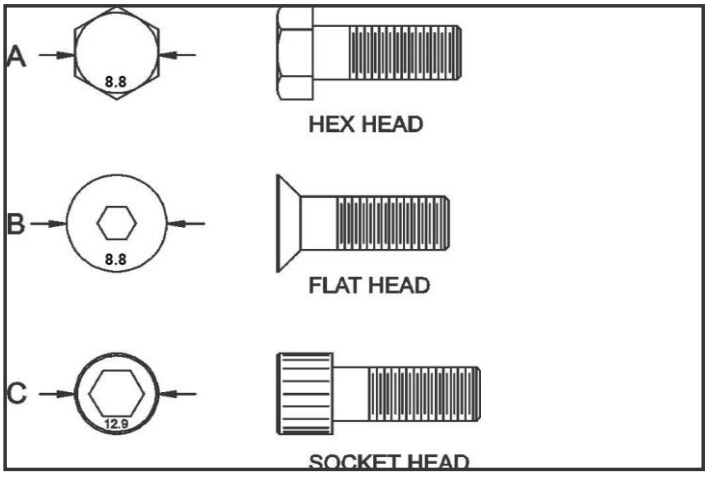
Item	Location on Tilter	Number of pumps
a	Main Pivot Pin	2
b	Cylinder Pivot Pin	8
c	Door Closer Cylinder Mount Pin	4
d	'J' Hook	2

GENERAL BOLT TORQUE GUIDELINES

The metric capscrew size guide is given in the table on the following page. Proper bolt installation is critical to ensure the safe and efficient operation of the Container Tilter. Carefully follow these steps for correct bolt installation.

1. Always replace bolts and nuts with the same size and class of fastener. Replacement fasteners can be ordered from A Ward Service to ensure the correct part is used.
2. Unless otherwise specified, use class 8.8 metric hex head bolts, class 8.8 metric flat head capscrews, class 12.9 metric socket head capscrews.
3. Make sure bolts, nuts and bolt holes are free of dirt, oil, grease and other contaminants.
4. If necessary, use the capscrew size guide to determine the size of the bolt being installed.
5. Use the dry bolt torque chart to find the proper torque. When possible, torque the nut rather than the bolt head.

BOLT TORQUE SPECIFICATIONS



GENERAL BOLT TORQUE GUIDELINES CONTINUED

METRIC CAPSCREW SIZE GUIDE			
Capscrew Size	***HEX HEAD (A)***	***FLAT HEAD (B)***	***SOCKET HEAD (C)***
M10 x 1.50	0.63” (16mm)	0.79” (20mm)	0.63” (16mm)
M12 x 1.75	0.71” (18mm)	0.94” (24mm)	0.71” (18mm)
M14 x 2.00	0.83” (21mm)	1.06” (27mm)	0.83” (21mm)
M16 x 2.00	0.94” (24mm)	1.18” (30mm)	0.94” (24mm)
M20 x 2.50	1.18” (30mm)	1.42” (36mm)	1.18” (30mm)
M24 x 3.00	1.42” (36mm)	N/A1	.42” (36mm)
M30 x 3.50	1.81” (46mm)	N/A1	.77” (45mm)

METRIC CLASS 8.8		
Size	**Ft-Lbs**	**Nm**
M10 x 1.50	38	52
M12 x 1.75	66	89
M14 x 2	104	141
M16 x 2	158	214
M20 x 2.5	308	418
M24 x 3	534	724
M30 x 3.50	1069	1450

METRIC CLASS 12.9		
Size	**Ft-Lbs**	**Nm**
M10 x 1.50	64	87
M12 x 1.75	110	150
M14 x 2	177	240
M16 x 2	269	365
M20 x 2.5	523	710
M24 x 3	899	1220
M30 x 3.50	1806	2450

WARNING

Always replace bolts and nuts with the same class of fastener. Inferior fasteners can fail and cause injury or death and damage to the equipment.

SPARE PARTS

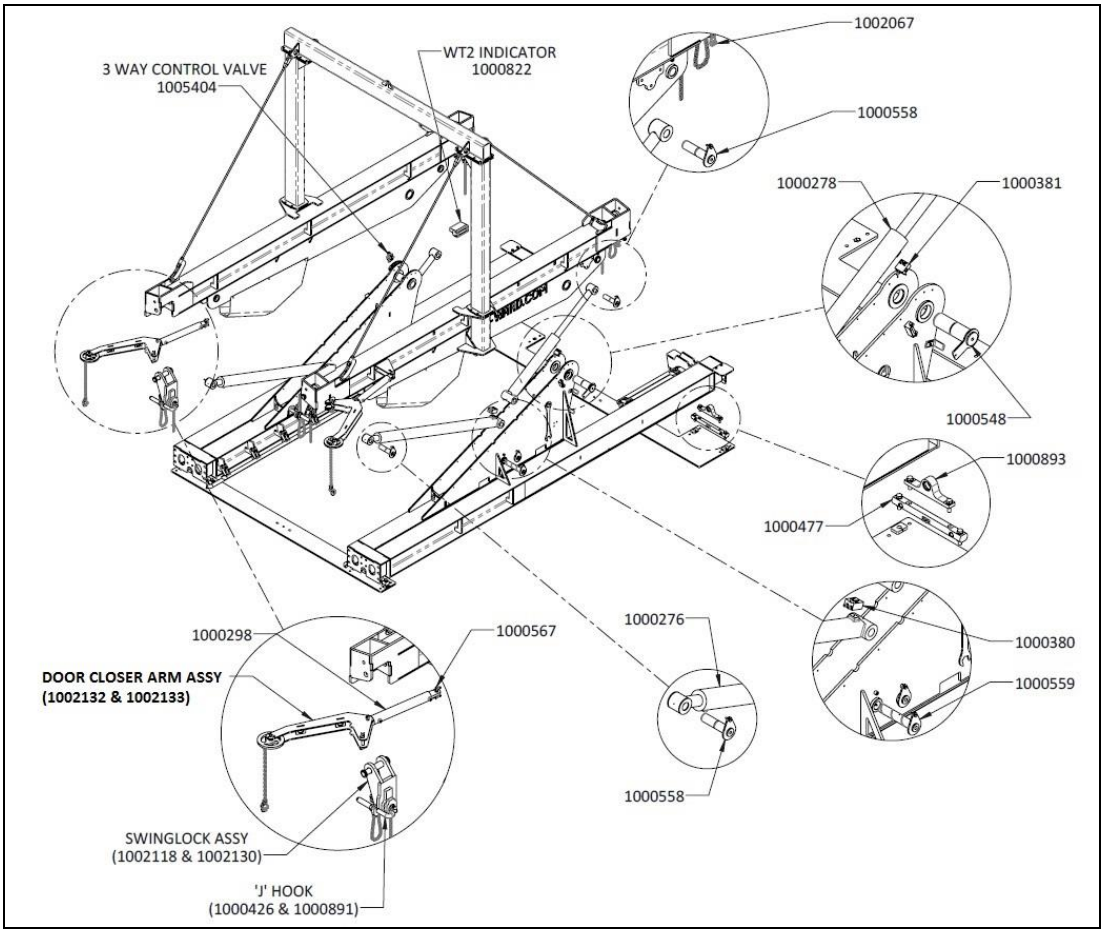


Fig.40: Spare Parts

Part	Description	Qty
1000276	Cylinder, 130/80-2205	2
1000278	Cylinder, 130/80-800	2
1000298	Cylinder, 75/45-530	2
1000380	Double Counterbalance Valve	2
1000381	Counterbalance Valve	2
1000426	'J' Hook	4
1000477	Load Cell, DE-20T-CD	4
1000548	Pin Assy, 100X337	2
1000558	Pin Assy, 60X260	4
1000559	Pin Assy, 60X337	4
1000567	Pin, 25.4X116	2
1000822	WT2 Indicator	1
1000891	'J' Hook Nut	4
1000893	Mounting Pivot Block	4
1002067	Clevis Claw Hook	4
1002118	Pin Assy, 50X325	4
1002129	Swinglock Assy, Front Right	2
1002130	Swinglock Assy, Front Left	2
1002132	Door Closer Arm Assy, Left	1
1002133	Door Closer Arm Assy	1
1005404	3 Way Control Valve	1

PARTS REPLACEMENT SCHEDULE

As part of CE compliance, it is imperative that the machine is kept in safe operating condition. The parts listed below are components that are susceptible to wear over time and as such require replacement at regular intervals in order to maintain the safety level of the machine as it was when it was certified.

Please ensure that the following components are replaced by an authorised A-Ward agent at the intervals stipulated below.

As long as the following schedule is adhered to, a Certificate of Fitness will be issued and fitted annually by the A-Ward agent, upon completion of the annual inspection.

Emergency spares are those that A-Ward believes the operator should have on-hand at all times to ensure the minimum of down-time in the event of a break-down.

Part	Emergency spares	Bi-annually (every 2 years)	Every 6 years
1000276	●		●
1000278	●		●
1000298	●		●
1000380	●		●
1000381	●		●
1000426	●	●	
1000477	●		
1000548	●		●
1000558	●		●
1000559	●		●
1000567	●		●
1000822	●		●
1000891	●	●	
1000893	●		
1002129			●
1002130			●

TROUBLESHOOTING GUIDE

The information below provides a guide to common issues that you may face with the Tilter. These issues are often resolved quite simply by following the suggested solution.

PROBLEM	*POINTS TO CHECK*	*SOLUTION*
Motor will not start	✓ Check fuel ✓ Check oil ✓ Check air filter	Fill up fuel Fill up oil Clean and re-fit oil filter
Will not tilt up	✓ Check weight ✓ Check oil pressure and hydraulic oil level ✓ Check valves on cylinders ✓ Check main control valve	Remove weight Fill up oil, Consult agent Clean or replace cylinder valves Clean or replace main control valve
Door closer will not move	✓ Check oil pressure ✓ hydraulic oil level ✓ Check main control valve ✓ Check all pivot points	 Fill up oil Clean or replace main control valve Grease or replace pins
Trailer not central	✓ Check Tilter is level ✓ Check wheel guides	Reposition Tilter on level ground Adjust guides
Scale weight incorrect	✓ Check wire for damage ✓ Check load bar and bolts ✓ Check display for damage ✓ Check calibration	Replace Replace Replace Re-calibrate
Remote control not working	✓ Check fuse in box ✓ Check battery level ✓ Check remote is talking to receiver	Replace fuse Recharge/replace battery Replace remote control

TRAINING SIGN-OFF CONFIRMATION

On signing this Training Sign-Off Confirmation form the operator confirms that this manual has been read and the operator has a good understanding of the safe operation and of the ACT20UOLD Container Tilter.

This form can be copied and used as a template for all operators of the ACT20UOLD Container Tilter.

I _____ have read and understood the Operations

(PRINT your name here) Manual for the ACT20UOLD Container Tilter.

Tilter serial number: _____

Remote control serial number: _____

Motor serial number: _____ **Griffith Elder serial numbers:** _____

Section	Pages	√
Part I – Introduction	8 – 14	
Part II – Safety Summary	15 – 25	
Part III – Commissioning the ACT20FDLD	26 – 36	
Part IV - Operation	37 – 48	
Part V – Container Tilter Maintenance	49 - 69	

Signed: _____

Reference Information

All requests for information, service or spare parts should include model and serial number.

For the nearest A-WARD dealer, contact:

A-WARD Ltd
345 Church Street,
Penrose,
Auckland.
New Zealand
Phone: +64 (09) 622 3111
Email: Ankit@a-ward.com

DAILY OPERATOR RECORD

The daily operator record form, shown below, is a record of personnel who will be operating the A-WARD Container Tilter, have been trained in the use of this machine and have read and understood this Operators Manual.

I, the undersigned, have been trained in the use of the Container Tilter. By signing this form, I confirm that I have read and understood the contents of this Operators Manual.

Date	Operators Name	Operators Signature