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## Instruction Manual

# SWIVEL CRANE - Truck or Ute TCS-450

Order Code: (A353)

**MACHINE DETAILS**

<b>MACHINE.</b>	SWIVEL CRANE - TRUCK/UTE
<b>MODEL NO.</b>	TCS-450
<b>SERIAL NO.</b>	
<b>DATE OF MANF.</b>	

IMPORTED BY

AUSTRALIA



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**NOTE:**

*This manual is only for your reference. At the time of the compiling of this manual every effort to be exact with the instructions, specifications, drawings, and photographs of the machine was taken. Owing to the continuous improvement of the HAFCO machine, changes may be made at any time without obligation or notice. Please ensure the local voltage is the same as listed on the specification plate before operating any electric machine.*

**SAFETY SYMBOLS:**

*The purpose of safety symbols is to attract your attention to possible hazardous conditions*



**Note:**


*Indicates a potentially hazardous situation causing injury or death*

*Indicates an alert against unsafe practices.*

*Used to alert the user to useful information*

**NOTE:**

*In order to see the type and model of the machine, please see the specification plate. Usually found on the back of the machine. See example (Fig.1)*



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**PRODUCT SPECIFICATIONS**

Model: TCS-450	Nett Weight: 49.5kg
Capacity: WLL 450kg	MFG Date:

Serial No:

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Made in China

FIG.1

## **C O N T E N T S:**

<b>1. GENERAL MACHINE INFORMATION</b>	
1.1 Specifications.....	4
1.2 Identification.....	4
1.3 Overview .....	5
<b>2. IMPORTANT INFORMATION</b>	
2.1 General Machinery Safety .....	6
2.2 Safety Specific For Cranes .....	7
<b>3. INSTALLATION</b>	
3.1 Unpacking .....	9
3.2 Assembly.....	9
<b>4. OPERATION .....</b>	<b>11</b>
<b>SPARE PARTS .....</b>	<b>12</b>

## 1.1 SPECIFICATIONS

Order Code	A353
Model	TCS-450
Lifting Capacity - Maximum	450kg
Type	Hydraulic - Manual
Lift Capacity Pin Locations	450kg & 230kg
Continuous Manual Rotation	360°
Max. Lifting height (Base to hook)	2350mm
Min. Lifting height (Base to hook)	50mm
Maximum Reach	1060mm
Base Plate	270 x 270mm
Vertical Support	70 x 70mm
Extension Arm Support	70 x 70mm
Hydraulic Ram Capacity	3 TONNE
Overall Height - Lowest Position	1350mm
Nett Weight	50kg

## 1.2 IDENTIFICATION

<b>A</b>	Main Support
<b>B</b>	Boom
<b>C</b>	Boom Extension
<b>D</b>	Load Rated Bow Shackle
<b>E</b>	Hydraulic Ram
<b>F</b>	Pump
<b>G</b>	Pressure Release Valve
<b>H</b>	Swivel Coupling
<b>I</b>	Base Plate
<b>J</b>	Swivel Lock Handle
<b>K</b>	Pump Handle
<b>L</b>	Swivel Lock Handle

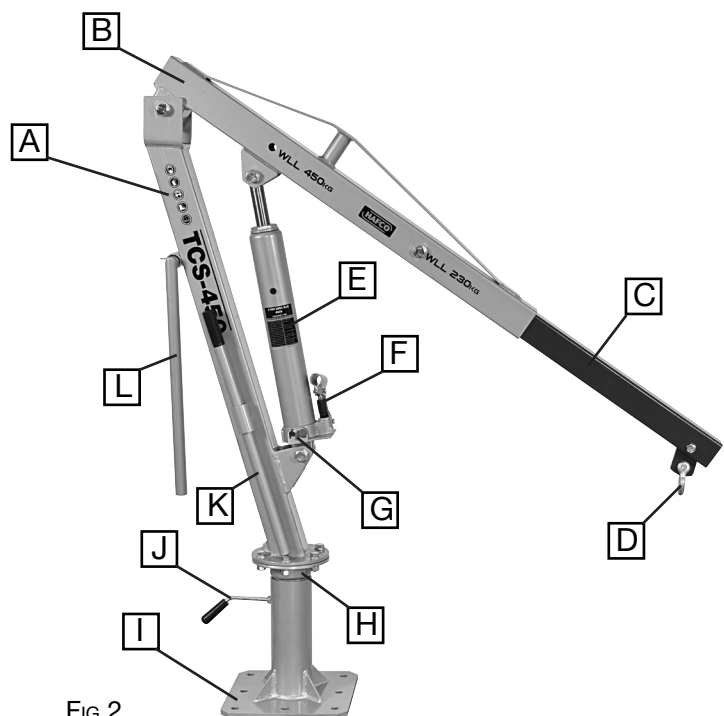
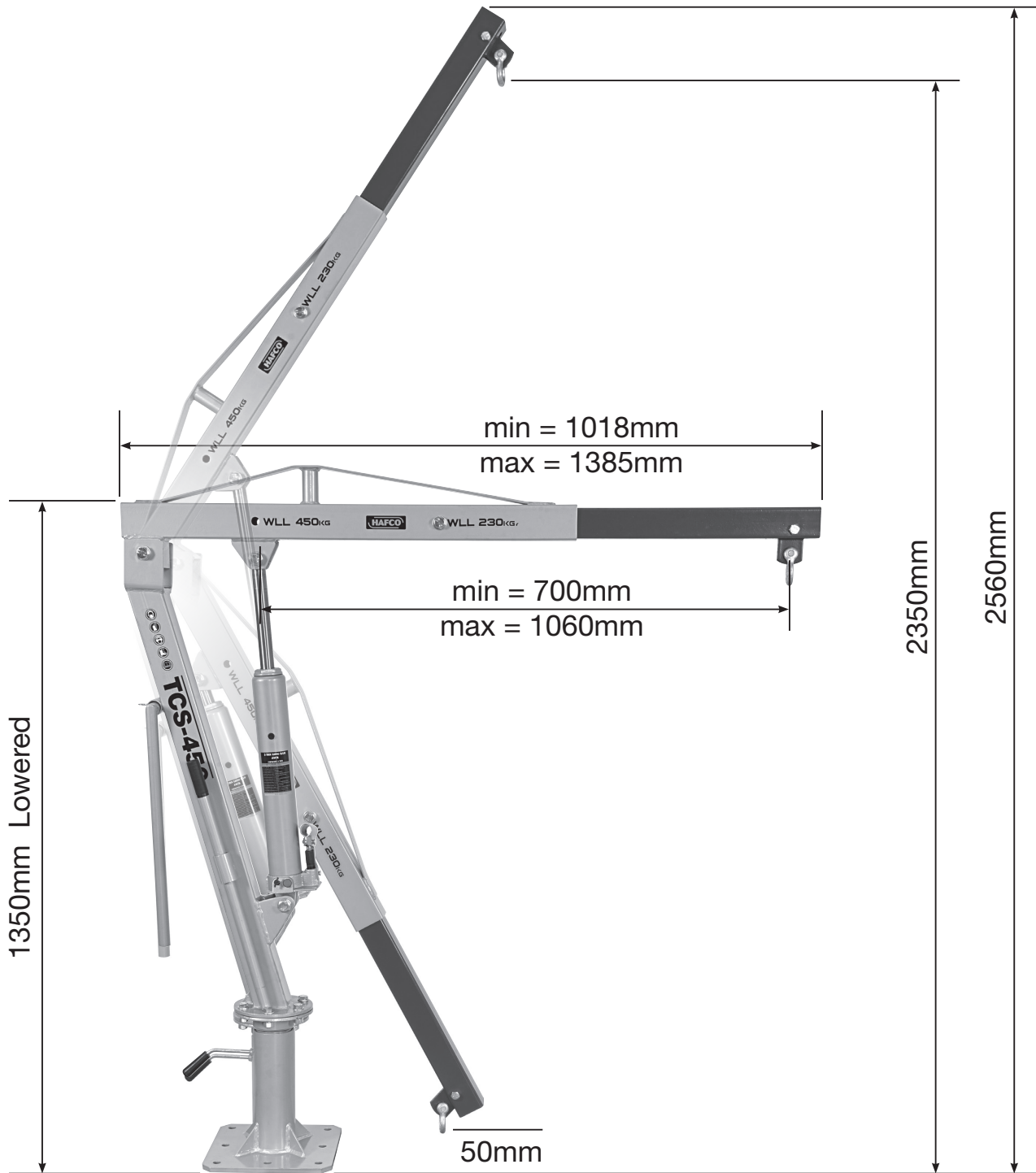


FIG.2

## 1.3 OVERVIEW



## 2.1 GENERAL MACHINERY SAFETY

DO NOT use this machine unless you have read this manual or have been instructed in the use of this machine in its safe use and operation



# WARNING

This manual provides safety instructions on the proper setup, operation, maintenance, and service of this machine. Save this manual, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in serious personal injury—including amputation, or death.

The owner of this machine is solely responsible for its safe use. This responsibility includes, but is not limited to proper installation in a safe environment, personnel training and authorization to use, proper inspection and maintenance, manual availability and comprehension, of the application of the safety devices, integrity, and the use of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.



Safety glasses must be worn at all times in work areas.



Sturdy footwear must be worn at all times in work areas.



Gloves should be worn when using this machine and only removed when using the pump handle or adjusting the pressure release valve.



Long and loose hair must be contained with a net or under a hat

**OWNER'S MANUAL.** Read and understand this owner's manual before using the machine.

**CHECK DAMAGED PARTS.** Regularly inspect the machine for any condition that may affect the safe operation. Immediately repair or replace damaged or parts that are incorrectly fitted before operating.

**TRAINED OPERATORS ONLY.** Operators that have not been trained have a higher risk of being seriously injured. Only allow trained or supervised people to use this Swivel Crane. Never allow children to play on this swivel crane and never carry passengers

## 2.1 GENERAL MACHINE SAFETY Cont.

**WEARING PROPER APPAREL** Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to avoid accidental slips, which could cause loss of operating control.

**USE CORRECT TOOL FOR THE JOB.** Only use this tool for its intended purpose. Do not force the machine or its attachments to do a job for which they were not designed. Never make unapproved modifications. Modifying the machine or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

**AWKWARD POSITIONS.** Keep proper footing and balance at all times when operating the Swivel Crane. Do not overreach! Avoid awkward hand positions that make operating control difficult. This could increase the risk of accidental injury.

**FORCING MACHINERY.** Do not force the Swivel Crane. It will do the job safer and better at the rate for which it was designed.

**NEVER STAND ON MACHINE.** Serious injury may occur if the Swivel Crane is tipped or if crush points are unintentionally contacted

**STABLE MACHINE.** Unexpected movement during operation greatly increases risk of injury or loss of control. Before using the Swivel Crane verify that it is stable

**UNATTENDED OPERATION.** To reduce the risk of accidental injury, never leave the Swivel Crane in use while unattended.

**MAINTAIN WITH CARE.** Follow all maintenance instructions and lubrication schedules to keep the Swivel Crane in good working condition. A Swivel Crane that is improperly maintained could malfunction, leading to serious personal injury or death.

**CHILDREN & BYSTANDERS.** Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

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## 2.2 SAFETY SPECIFIC FOR SWIVEL CRANES

### ALWAYS:

- Be aware of “pinch points” and keep fingers and feet away
- Check there is sufficient height for ram and boom
- Be sure load is secured and cannot move from the vertical line
- Use correctly rated SWL slings or chains to secure load
- The approved lifting weight for each boom position is marked on the boom and must not be exceeded

- The cranes must only be used on smooth, hard, level surfaces.

### DO NOT:

- Modify the crane
- Overload crane
- Twist or pull crane sideways
- Use rope to secure the load
- Work under a loaded crane
- Leave load suspended and unattended
- Lean a ladder against the crane

## 2.2 SAFETY SPECIFIC FOR SWIVEL CRANES Cont.

**DO NOT** use this machine unless you have read the manual or have been trained and assessed to a competent level in its safe use and operation.



Safety glasses must be worn when operating this equipment



Long and loose hair must be contained when operating this equipment.



Safety footwear must be worn when operating this equipment



Close fitting/protective clothing must be worn when operating the Swivel Crane

### PRE-OPERATIONAL INSPECTION:

#### Engine crane inspection:

- Pre-operation inspection should be done each day
- Operational and maintenance instructions to be available to the operator
- Working Load Limit (WLL) to be prominently displayed on the crane
- Checks pins and bolts are in place
- Check controls for proper response
- No signs of hydraulic fluid leaks
- No signs of cracks/damage to crane parts
- All safety devices checked to be operational

#### Ensure work area:

- There are no obstructions above or around the vehicle that could interfere with or obstruct the lifting procedure
- Exclusion zone in position
- Clear of overhead wires and obstructions
- Access is clear
- Lighting is appropriate.

#### Vehicle:

- Set parking or emergency brake and put gear shift in park
- Manual transmissions should be in lowest gear
- Vehicle ignition off with steering wheel lock on



**NOTE:** If unsure of the reliability of the hand brake, then the wheels should be chocked

#### Hazards

- Pedestrians in work zone
- Vehicles, mobile plant in vicinity
- Slippery / uneven surfaces, objects on ground
- Engine crane – vehicle uncontrolled movement /crane failure
- Hydraulic failure – crane
- Uncontrolled movement of vehicle / plant
- Fluids under pressure
- Falling objects
- Moving machine parts
- Hazardous Manual Tasks - awkward, twisting, bending positions, lifting, carrying, or lowering down objects, pushing, pulling objects.

#### Risks.

- Persons entering exclusion zone distracting workers
- Person/s entering exclusion zone – injured by other vehicles, equipment, etc on site
- Being run over/ struck by vehicle / mobile plant causing serious injury/ death
- Falling over on same level causing bruises, sprains, strains, fractures
- Crane failure - Crushed by the load falling
- Hit by flying / projected object
- Fluid injection injury
- Injury caused by uncontrolled swiveling of the crane

## 3. INSTALLATION

### 3.1 UNPACKING

This Swivel Crane was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. If items are damaged, please contact your distributor.

NOTE: Save all the packaging materials until you are completely satisfied with the Swivel Crane and have resolved any issues with the distributor, or the shipping agent.

When unpacking, check to make sure that all parts shown on page 4 are included. If any parts are missing or broken, please contact the your distributor.

### 3.2 ASSEMBLY

Select the position on the ute, trailer or truck where the crane is to be mounted making sure that the base can be securely mounted.

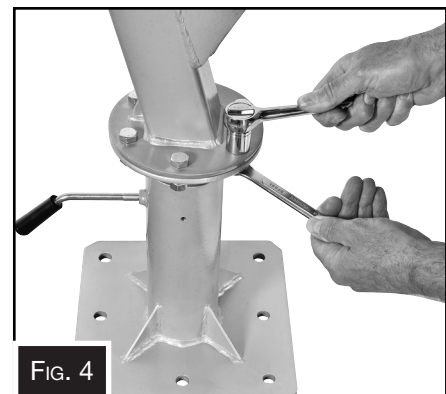
**NOTE:** Check with the truck or ute manufacturer as to the suitability of the position chosen and what mounting requirements should be observed.

1. Thread the Swivel Lock Handle into the base, then mount the base to the floor. (Fig.3) The mounting bolts should be Hi-tensile bolts nuts and spring washers.



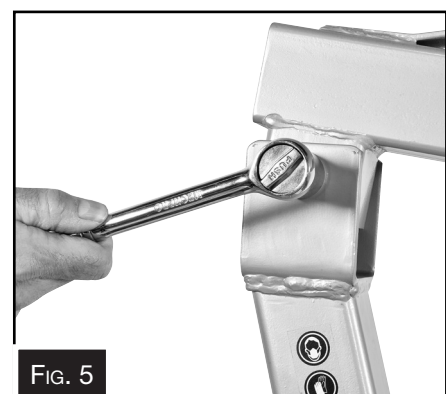
**GREASE:** Routinely grease swivel base (Fig. 3).

2. Line up the holes in the swivel coupling and mount the Main Post to the swivel coupling using the M12 x 40mm bolts, flat washers, spring washers and nuts supplied. Securely tighten all bolts and nuts



**NOTE:** It is important that the bolts supplied are used as they are Hi-Tensile bolts and nuts. If substitute bolts are to be used they must be Hi Tensile. Incorrect bolts could cause a failure of the crane and may cause injury or death.

3. Mount the boom to the main post by lining up the holes and using the M16 x 110mm bolt, flat washer, spring washer and nut supplied and securely tighten the bolt and nut.(Fig.5)



## 3.2 ASSEMBLY Cont.

4. Fix the bottom of the hydraulic jack to the main post by lining up the holes in the base of the jack and the mounting plate on the main post. (Fig. 6) Place the M12 x 95mm bolt supplied through the holes and secure with the flat washer, spring washer and nut.
5. Lift up the boom and line up the holes in the boom with the end of the jack and secure with the M16 x 80mm bolt, flat washer, spring washer and nut supplied. (Fig. 7)
6. With the boom supported with the hydraulic jack, insert the boom extension into the boom making sure that it is secured with the M14 x 90mm bolt, flat washer, spring washer and nut. (Fig. 8)

**NOTE:** The boom has two mounting positions. In the shortest position the capacity of the crane is 450kgs. When the boom is extended to its maximum length the crane has a capacity of 230kgs.

Never move or operate the crane with the boom not secured as it could cause injury to the operator or those



**WARNING**

nearby, and could cause damage to the crane or load.

7. Once the boom has been secured then mount the chain and safety hook assembly, using the M12 x 75mm bolt, flat washer, spring washer and nut supplied. (Fig. 9)
8. Once the crane is fully assembled then re-check and tighten all the bolts to ensure that they all are secure.

The capacity of the crane is based on the use of the bolts that have been supplied with the crane for assembly.



**WARNING**

that have been supplied with the crane for assembly.

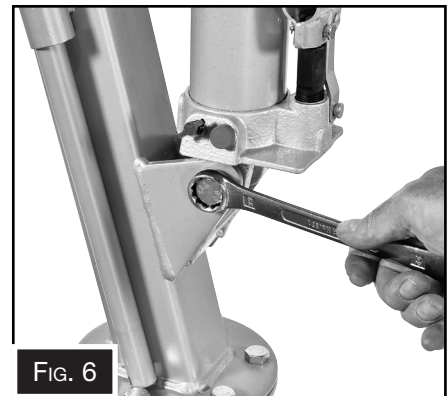


FIG. 6



FIG. 7

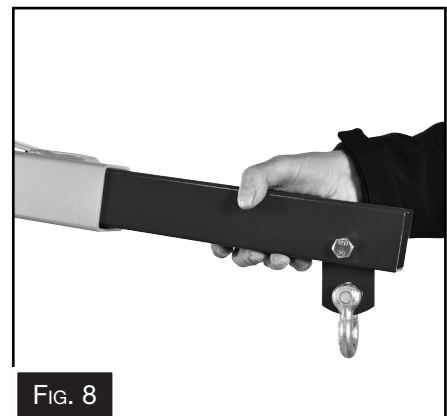


FIG. 8

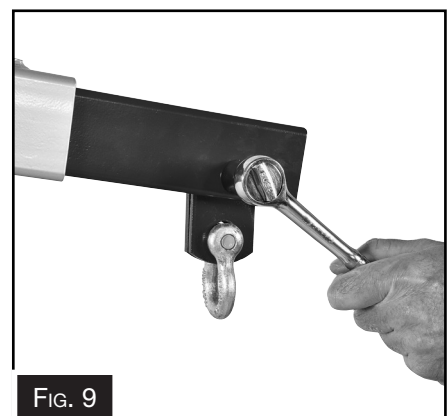


FIG. 9

## 4. OPERATION

Before operating this Swivel Crane make sure that this manual has been read and understood by the operator.

**WARNING** Make sure that the vehicle's engine has been turned off and positioned on a stable flat ground, handbrake applied, chocked the wheels, and that the area around the crane is clear before commencing the lift. Be aware of any "Pinch Points"

1. Rotate boom into position over the load to be lifted and keeping it to a minimum height.
2. Close of the pressure release valve twisting clockwise on the hydraulic ram pump with the pump handle. (Fig. 10)
3. Using the pump handle supplied, operate the pump to raise the boom to the required height for positioning hook over the load. (Fig. 11)
4. Connect hook to slings around the load making sure that the beam is set to the correct position for the weight of the lift.

**CAUTION** Only use certified slings and lifting equipment. Failure to do so could cause injury to the operator or damage to the load.

5. When in position and ready to lift ensure that the rotary handle has been locked to stop the crane from turning during the raising of the load . Raise the boom using the pump making sure that the load is balanced.
6. Once the load is clear unlock the rotary lock and using the swivel arm (Fig.12) swivel the crane to the required position.
7. Lower the load by **SLOWLY** releasing the pressure release valve by slowly twisting anti clockwise. The rate of decent is controlled by the pressure release valve and must not be loosened anymore than two full rotations.

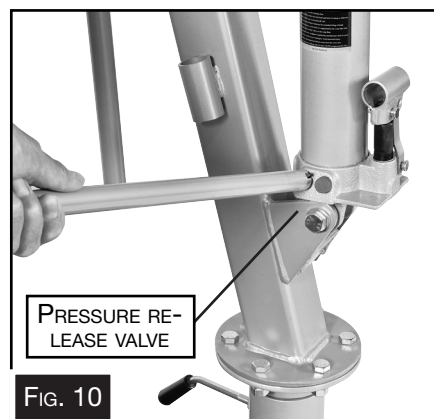


FIG. 10



FIG. 11

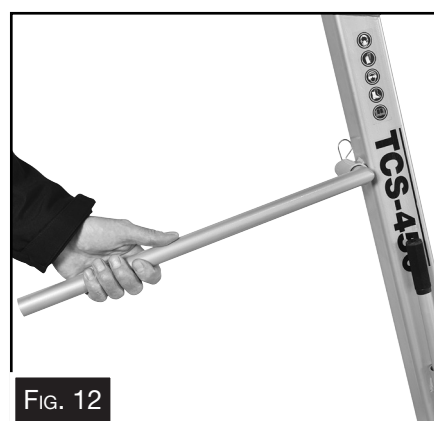


FIG. 12

**WARNING** HAFCO advises that this crane should not be used as a mobile device when the load is lifted. The crane should be stationary at all times. Only the swivel action should be used when under load. **NEVER** work on a load whilst suspended.

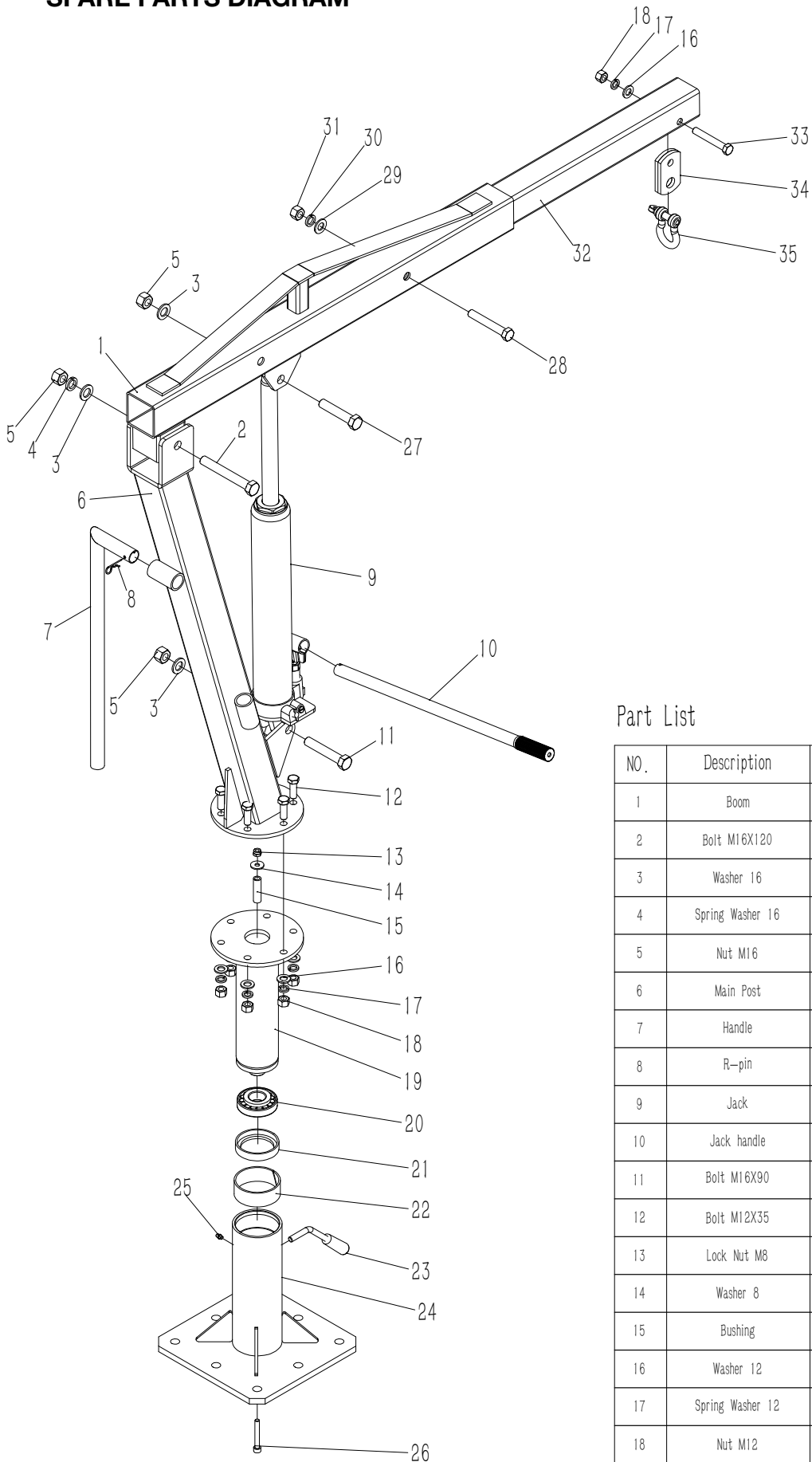
# SPARE PARTS SECTION

The following section covers the spare parts diagrams and lists that were current at the time this manual was originally printed. Due to continuous improvements of the machine, changes may be made at any time without notification.

## HOW TO ORDER SPARE PARTS

1. Have your machines **model number & date of manufacture** on hand, these can be found on the specification plate mounted on the machine
2. A scanned copy of your parts list/diagram with required spare part/s identified
3. Go to [www.machineryhouse.com.au/contactus](http://www.machineryhouse.com.au/contactus) and fill out the inquiry form attaching a copy of scanned parts list.

## SPARE PARTS DIAGRAM



### Part List

NO.	Description	QTY.	NO.	Description	QTY.
1	Boom	1	19	Turntable	1
2	Bolt M16X120	1	20	Bearing	1
3	Washer 16	3	21	Bearing seat	1
4	Spring Washer 16	1	22	Guiding ring	1
5	Nut M16	3	23	Locking Bolt	1
6	Main Post	1	24	Base	1
7	Handle	1	25	Oil Bolt	1
8	R-pin	1	26	Screw M8	1
9	Jack	1	27	Bolt M16X80	1
10	Jack handle	1	28	Bolt M14X90	1
11	Bolt M16X90	1	29	Washer 14	1
12	Bolt M12X35	6	30	Spring Washer 14	1
13	Lock Nut M8	1	31	Nut M14	1
14	Washer 8	1	32	Boom Extension	1
15	Bushing	1	33	Bolt M12X80	1
16	Washer 12	7	34	Connection board	2
17	Spring Washer 12	7	35	Bow shaped shackle	1
18	Nut M12	7	36		



### ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

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