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INSTRUCTION MANUAL  
AND  
PARTS CATALOGUE  
FOR

MDE KOALA  
TREE SHEARS

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## EU CERTIFICATE OF CONFORMITY

CONFORMING TO EC Machinery Directive 2006/42 EC

**We:**

MDE Machinery  
110 Seagahan Road  
Collone  
Co. Armagh  
BT60 2BJ



declare in sole responsibility, that the products

**Type: KOALA TREE SHEAR**

to which this certificate applies, conforms to the basic safety  
and health requirements of the EC Machinery Directive 2006/42 EC,  
and the Transposed Harmonised Standards:

BS EN 1553 (2000)

A handwritten signature in black ink, appearing to read 'DBL', is written over a horizontal line.

Mark Belford

**Managing Director**

# SAFETY INSTRUCTIONS

## IMPORTANT - READ BEFORE USE

This manual is provided to assist you in getting the best results from your machine and ensure that you do so safely. If you have any queries about the use of the machine contact your dealer before use. Please keep this manual for future reference.

### INTENDED USE

The intended use of a Koala Tree Shear is to efficiently and safely cut down trees, large branches, and other woody vegetation.

### FUNDAMENTAL PRECAUTIONS

On delivery, your dealer gave you an explanation of the operation and maintenance of this MDE Koala Tree Shear. Please read and understand these operating instructions before operating the machine for the first time. It is essential that you observe all safety instructions.

Incorrect use or mishandling of the machine can endanger:

Life and Limb of the operator, other persons or animals within the vicinity of the machine.

The machine and other material assets of the owner or third persons.

The performance of the machine.

Anyone who is involved in the commissioning, operation or maintenance of the Koala Tree Shear must read and understand these instructions very carefully and observe them at all times.

**NEVER DISTRACT ANYONE WHO IS USING A MACHINE.**

### AUTHORISED OPERATORS

Youths under the age of 16 must not operate this implement. The owner of the machine must provide the operator with the operating instructions and make sure they have read and understood them. Only then may the machine be put into operation.

The owner must ensure that only authorised persons operate/work on this machine. He is responsible for keeping any third persons or animals out of the working area of the machine.

**THE OPERATOR MUST BE FULLY TRAINED BEFORE USING THE IMPLEMENT. A SAFE DISTANCE OF AT LEAST 50M MUST BE OBSERVED BY ANYONE WITHIN THE VICINITY OF THE KOALA TREE SHEAR.**

## **GENERAL SAFETY AND ACCIDENT PREVENTION REGULATIONS**

Familiarise yourself with the tree shear before use. Knowledge about wood felling and tree maintenance is also preferred.

Ensure the implement is correctly and securely attached to the operating vehicle. Only use genuine MDE pins.

Always use the correct mounting bracket and ensure that it is fitted by a trained and competent operator who has been approved by your MDE dealer. It is recommended to use an MDE interface plate for optimum performance.

NEVER attach to a excavator which would be rendered unstable when the implement is operated at its full capacity. Take note of the maximum load permissible on excavator.

Take extra care when operating machinery on sloping ground. NEVER operate on ground where there is a risk of the tractor becoming unstable.

When the unit is stationary always ensure it is lowered to the ground.

When detaching the implement from the excavator always ensure that it is stable and safely positioned on a level surface.

The attaching and detaching of the implement must be carried out by only one operator.

There should not be any other people in the vicinity of the implement or in the excavator.

Before operation make yourself familiar with all elements and controls of the machine as well as their functions.

Before operation inspect the area around you. Keep children away. All visitors and unauthorised persons should be kept well away from work area at all times.

Under NO circumstances should anyone, authorised or otherwise attempt to use the tree shear as a means of personal transport. It is designed as a specialist purpose tree felling implement and is unsuitable for the safe transportation of passengers. NEVER allow anyone especially children to travel anywhere between the excavator and an implement.

NEVER use this implement to lift items other than wood it has felled. Do not extract parts stuck in the ground.

Any attempt to overload the machine will risk life and limb of the operator and immediately invalidate warranty.

To avoid personal injury keep hands and limbs well away from the moving parts.

ENSURE that the operator is aware of the overhang when the implement is mounted on the front of the excavator.

Always keep the tree shear and load as low as possible to maximise stability.

NEVER attempt to move the implement manually.

During overhead work, fragments or blocks of material can fall. Make sure that the machine on which the attachment is installed has the necessary protections for performing this type of work and has an FOPS cabin (Fig. 2.2.1). Base machine (excavator) should have appropriate guarding/armoured glass. It is mandatory to check that all safety devices of operating machine must be activated.

Use the appropriate individual protection devices (gloves, goggles, hard hat, and safety shoes) during both work and maintenance.

Do not use the attachment if it is not working properly.

Before cutting the tree it's mandatory to check that the area involved for the breakdown is enough and free from any obstacles.

The unloading of tree must be done only when the material is parallel and near to the ground.

Do not exceed the attachment clamping load reported in specification.

Pay attention to put the trees on ground in safety condition.

Never perform hasty or makeshift repairs that could compromise the good operation of the attachment. In the case of doubt, always request service by specialised personnel.

It is forbidden to perform checks and/or replace parts during work. Unless expressly specified by this manual, avoid repairing or adjusting the attachment (or parts of it) during work, in order to avoid being hooked by moving parts.

The attachment can only be used after checking alignment with all specification of the operating machine, particularly the stability, and properly installed.

The operator, before leaving the operating machine control, must stop the attachment in safety condition.

The arm must be moved safely, with slow, precise movements. Avoid brisk movements.

Do not use the attachment to: pull, push on the front or side, pound or hit.

Do not bring the operating machine closer than 50 meters from aerial power lines under voltage.

Do not make any adaptations or changes that the manufacturer has not previously agreed to and approved in writing.

Do not operate under the attachment if not safety supported.

Do not operate with the attachment and operating machine on closed area without proper ventilation.

The operator never use drugs or alcohol.

Only allowed to use the attachment when there are: properly ambient condition (enough light; low wind; without snow load), stable ground, operating area is totally free and guaranteed the operator visibility from the machine.

Do not remove safety devices or protective guards.

It is absolutely prohibited for anyone to use the attachment for any purpose other than that expressly allowed and documented. The attachment must always be used in the manner and at the times and places required by good practice and in conformity with the current laws of every country, even if there are no laws regulating the sector in the country of use.

## **PUTTING INTO OPERATION**

Warn persons in its vicinity that the attachment is going into operation.

Check all the safety systems.

Check the protections and signage. Before putting the attachment in operation, it is necessary to perform a series of checks and controls to prevent errors or accidents while putting it in operation. In case of problems, it's necessary to solve it immediately.

Check that the attachment has not been damaged during mounting;

Check the blade condition and tightening torque of related fixing bolts;

Carefully check the integrity of the hydraulic hoses, valves and various components;

Check that all moving parts are moving freely.

Check that the hydraulic connections are tight to prevent dangerous leaks.

In case of working on public area the end user must be check the correspondence of system (operating machine & attachment) to the local compliance.

## **OPERATING CYCLE FOR SINGLE CUTTING**

First of all check that the material to be cut does not exceed the load capacity of the attachment and the lifting capacity of operating machine. In order to avoid problems of instability operate with the load more closed to the operating machine.

Activate all the safety devices provided on the operating machine checking the functionality.

Operate with slow movements and only after having reached full confidence with the attachment operating machine especially when working on sloping ground.

Reach with the operating machine the working area.

Make sure that nobody is in the range of action of the operating machine and attachment or, in any case, in the danger area.

Ensure that the base at the trunk base there are no foreign objects that may damage the blade during the cutting phase, and ensure the full visibility of the entire working area for safely operation.

Bring the attachment with arm open the trunk to be cut. Check the proper alignment of the tree with the vertical axis of the attachment, eventually adjust it with the articulations available for improving the grip

In case of a high tree it's necessary to make more cuts starting from the top.

Max cut length should be no longer than 5 metres in length and should not exceed excavator safety loading.

Operate the hydraulic control of the main line to close the grapple seizing the trunk. Arise in the condition that the load cannot reach the operating machine.

Check that the tree is completed clamp into the grapple;

If you cannot complete the cutting operation of the single trunk it is necessary to repeat the cut with the sequence below. This type of operation is not allowed when the accumulator grapple have material inside.

Now the cutting cycle is completed and it's necessary to start the dumping phases.

As first, fix store area for the material ensuring the necessary safety conditions without hindering the work area of the operating machine, for the subsequent phases of work that will follow.

With the articulation of the operating machine work equipment put the trunk in parallel to the ground.

Place the trunk as much as possible closer to the ground, ensuring the minimum distance for the articulation of the grapples, in order to avoid conditions of instability of the operating machine during the dumping phase.

## **STOP**

First of all it is mandatory to put in place safety conditions before the attachment is stopped. The attachment is stopped by simply leaving the controls of the relative hydraulic distributors in their rest positions. Under normal conditions, if the controls are not activated, the attachment does not perform any movements. Before leaving the operating machine it is necessary to stop the engine.

## **TAKING OUT OF SERVICE**

On the occasion of long periods of inactivity, it is necessary to close all articulations and then disconnect the hydraulic power from the attachment.

Check that all parts are intact, and all bolts are right tightening torque, in case of trouble it is necessary to repair.

Clean the attachment removing all residual material in order to avoid rust problem.

Spray a protective product on the attachment in order to avoid rust and seizure problems.

Grease all articulation.

Recover the attachment in safety condition; in covered area with low humidity..

## **WASTE DISPOSAL**

The user is responsible for the correct disposal of the waste produced by the attachment in conformity with the current law in the country of use. Lubricants and replaced parts must be disposed of in conformity with the current law in the country of use of the attachment.



## **MAINTENANCE**

As a rule, disengage the driving system and stop the engine prior to carrying out maintenance, servicing, cleaning or repair work. ALWAYS remove the ignition key.

Prop the machine with appropriate supports before carrying out any maintenance work. The manufacturer will not be responsible for any damages or injuries caused by unauthorised repair, alterations or mishandling of the product.

Maintain product with care. Check periodically for damage that would affect the safe operation of the implement.

Only use original MDE replacement parts to replace worn parts.

ALWAYS ensure all warning stickers are kept clean and in good condition.

Regularly check the bolts at the hinge points and tighten if necessary.

Regularly lubricate the hydraulic cylinder and hinges using clean grease.

Cover the chromed area of the hydraulic cylinder with a layer of grease during prolonged periods of inactivity.;

The maintenance required for this attachment is divided into:

1. Regular
2. Scheduled
3. Extraordinary

They include operations relative to lubrication, cleaning, adjustment, replacement, inspection, tightening, etc. In performing maintenance and/or repairs, it is a good idea to follow these recommendations:

Before beginning work, display a card, "ATTACHMENT BEING MAINTAINED" in a visible position;

Do not use solvents or inflammable materials;

Take care not to spill lubricants on the ambient;

When accessing parts of the attachment, use suitable means for the operations to be performed;

Do not operate under the attachment if not safety supported

When finished working, correctly replace and attach all the protections that were removed and/or opened;

Carefully clean individual components with an appropriate degreaser and without using compressed air (which just moves dirt around);

Determine the frequency of maintenance based on the specific need in relation to the production cycle of the attachment;

Before putting the attachment in operation every day, the operator should visually check the general state of its components and request maintenance if he notices strange noises or anomalous situations;

Check that the mechanical parts are always well lubricated (only those components that need lubrication).

When performing cleaning, mounting, dismounting, maintenance and transport, take care to place the attachment in a condition of perfect stability.



## HYDRAULIC SAFETY

All regulation, maintenance, repair or cleaning must be performed with the engine stopped and the attachment stably supported on the ground and no residual hydraulic pressure. The residual hydraulic pressure must be discharged by activating the opening and closing controls of the attachment several times with the motor stopped and depressurizing the oil tank. The intervention must be marked on the card in the cabin.

For the hydraulic connections, only and exclusively use hydraulic hoses and fittings conforming to the SAEJ517 or DIN20066 standards for the specified pressures. Failure to observe the above could compromise the safety of the attachment.

Always check the integrity of the hoses to make sure they have not been damaged. If so, have them replaced immediately. Search for leaks using small pieces of paper or cardboard and never with your fingers to avoid possible subcutaneous injections of oil under pressure. The oil can reach very high temperatures. Before performing any service on external surfaces, wait for them to completely cool.

**CAUTION** The hydraulic system is under high pressure.

Ensure that only high-pressure hoses are used to connect supply to the attachments hydraulic cylinder. Check hoses regularly and renew any that are damaged or worn. Hydraulic supply must not exceed what is recommended in the specification table in this document.

Before working on the hydraulics lower the tree shear, release the pressure from the system and stop the tractor engine.

When connecting hydraulic rams make sure that the hydraulic hoses are coupled correctly. Pressure should be released from the system both on the excavator and on the implement side prior to coupling the hoses to the tractor hydraulics.

**CAUTION** Hydraulic oil forced out under pressure can break the skin and cause severe injury. In the event of a hydraulic oil leak stop the excavator flow immediately. **DO NOT PUT HANDS NEAR A LEAKING PIPE.**

In hydraulic fluid power systems, power is transmitted and controlled through liquid under pressure within an enclosed circuit. Solid particle contaminant is always present in the hydraulic fluid, and the amount needs to be determined because the contaminant may cause serious problems. The operating machine must have clean hydraulic in-line filters. These in-line filters prevent contaminants from entering sensitive hydraulic components such as valves, cylinders and motors.

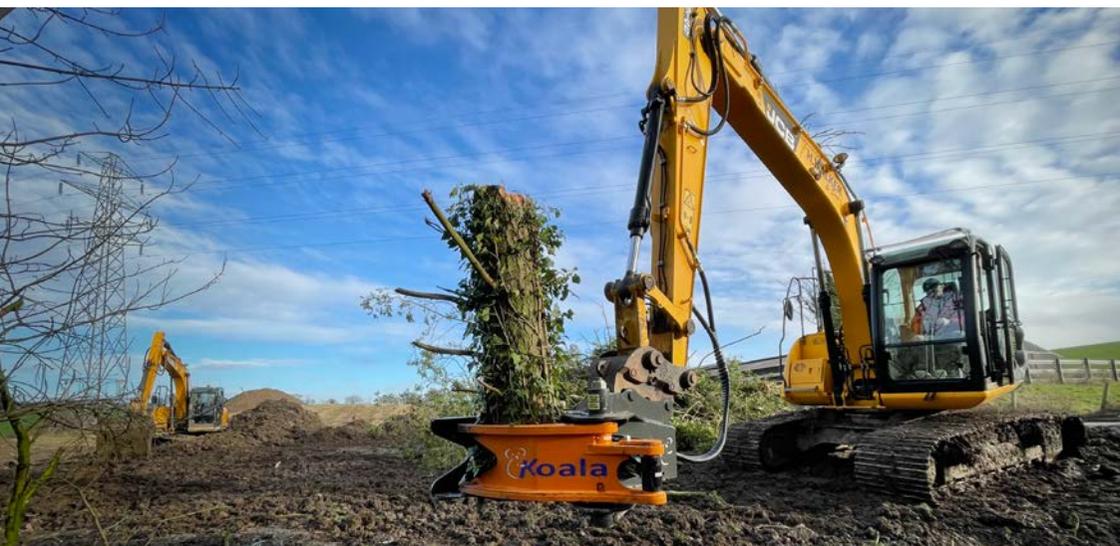
To ensure the attachment and operating machine are kept free from solid particle contaminant, all auxiliary lines powering the attachment must have clean in-line filters. Keeping the hydraulic fluid clean is extremely important for performance and hydraulic oil should be inspected regularly.

## KOALA SPECIFICATION

	KOALA 150	KOALA 200	KOALA 300	KOALA 400	KOALA 550
<b>SPECIFICATION</b>					
Excavator Size (tonne)	1.5 - 5	2.7 - 10	6 - 21	12 - 36	16 - 40
Excavator Size (lbs)	3,306 - 11,023	5,952 - 22,046	13,227 - 46,297	26,455 - 79,336	35,274 - 88,184
Weight (kilogram/lbs)	104 / 229	202 / 445	390 / 860	758 / 1,671	1600 / 3,527
Cutting Diameter (mm/inch)	150 / 6	200 / 8	300 / 12	400 / 16	550 / 21 ½
Pressure (bar)	180 - 200	200 - 250	250 - 300	250 - 350	250 - 350
Flow (litre)	40 - 70	40 - 70	70 - 100	80 - 120	80 - 120
Flow (US gallon)	10.56 - 18.49	10.56 - 18.49	18.49 - 26.41	21.13 - 31.70	21.13 - 31.70

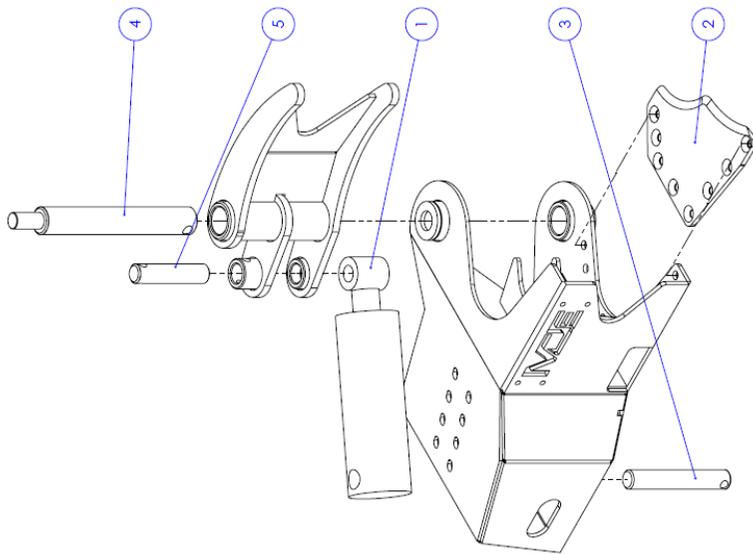
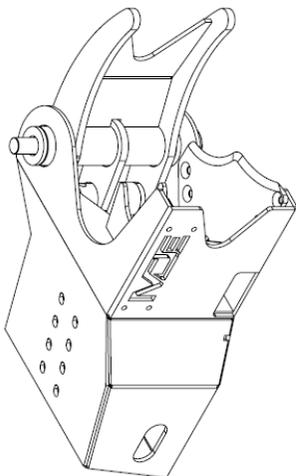
<b>OPTIONS</b>					
55° Tilt Unit	✓	✓	✓	✓	✓
Smart Grip Collector	✗	✓	✓	✓	✓

<b>OPERATING VEHICLE</b>					
Excavator	✓	✓	✓	✓	✓
Skid Steer	✓	✓	✓	✓	✗
Telehandler	✗	✓	✓	✓	✓
Mini Loader	✓	✓	✗	✗	✗
Crane	✓	✓	✓	✓	✓



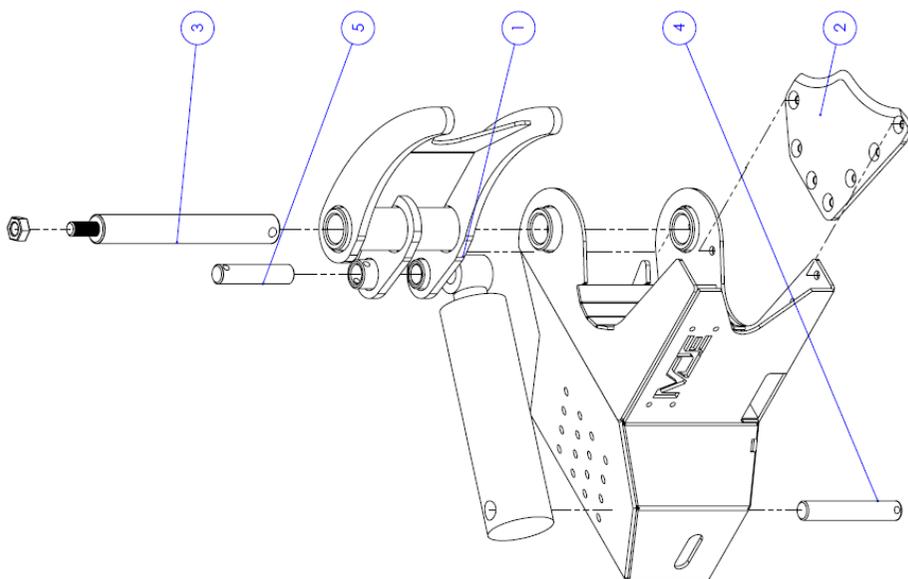
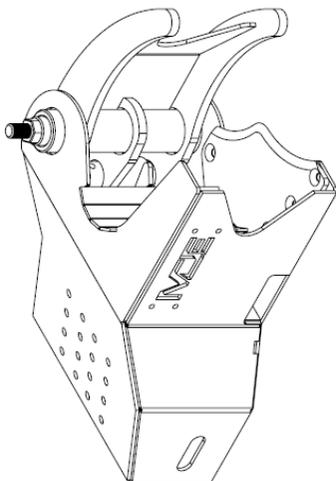
## KOALA 150 PART DIAGRAM

KOALA 150 TREE SHEAR		
ITEM NO.	PART NUMBER	Description
1	MDE-10M	K150 Ram
2	K150P-0001	K150 Blade
3	B160x1	K150 Pin
4	B159x1	K150 Pin
5	B154x1	K150 Pin



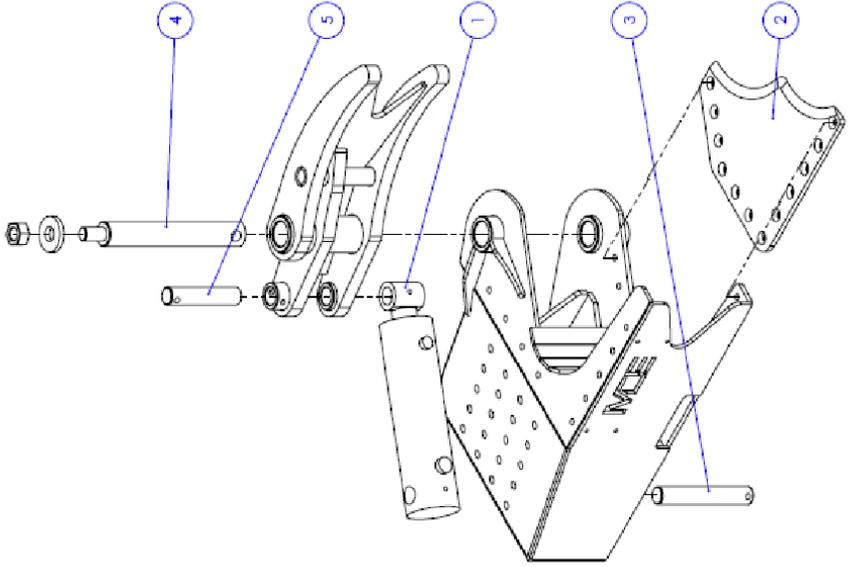
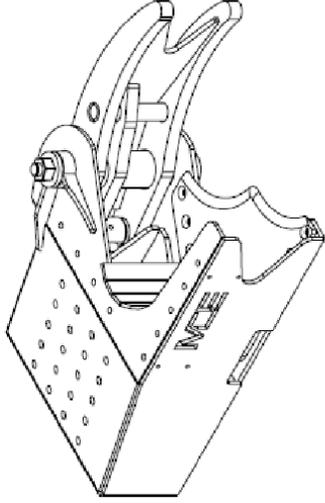
## KOALA 200 PART DIAGRAM

KOALA 200 TREE SHEAR		
ITEM NO.	PART NUMBER	Description
1	MDE-11PH	K200 Ram
2	K200P-0135	K200 Blade
3	B-c001	K200 Grab Arm Pin
4	B-008	K200 Pin
5	B-007	K200 Pin



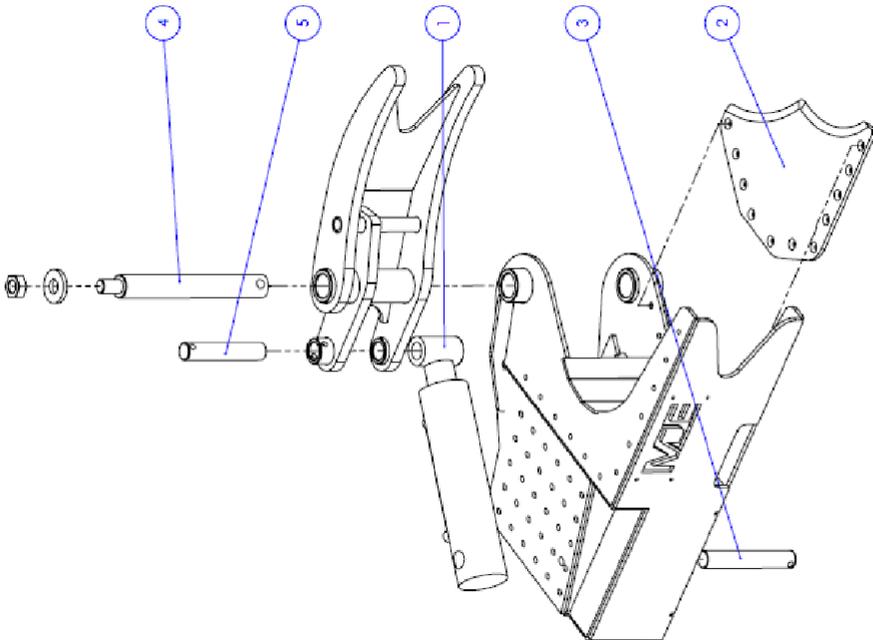
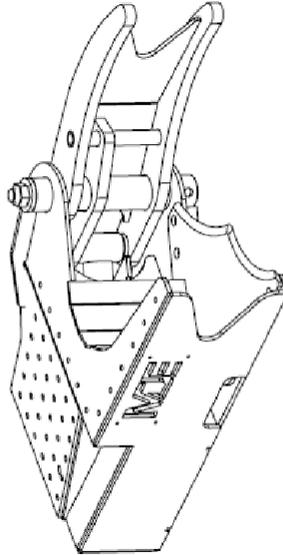
## KOALA 300 PART DIAGRAM

KOALA 300 TREE SHEAR		
ITEM NO.	PART NUMBER	Description
1	MDE-14M	K300 Ram
2	K300P-0001	K300 Blade
3	K300P-0045	K300 Pin
4	K300P-0044	K300 Ram Rod
5	K300P-0046	K300 Pin



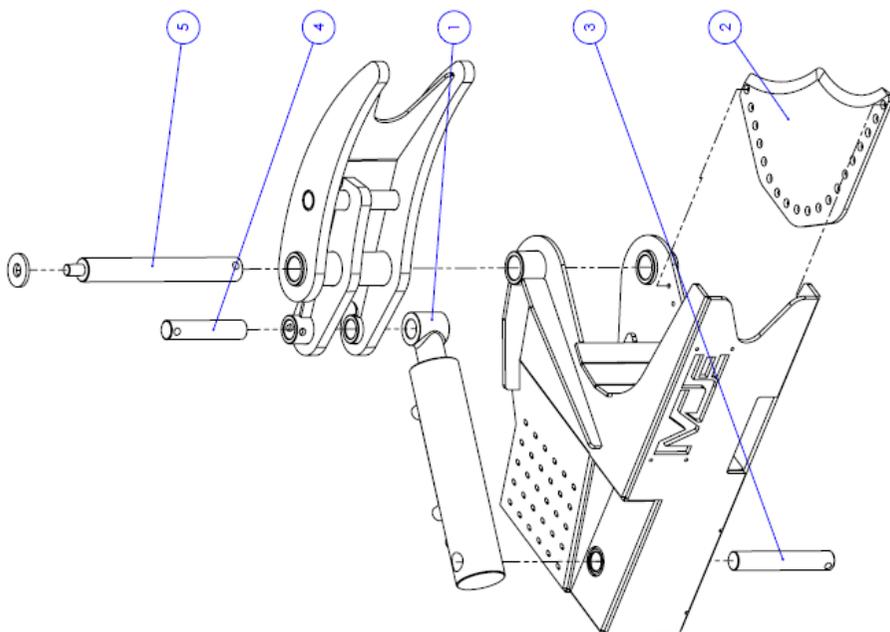
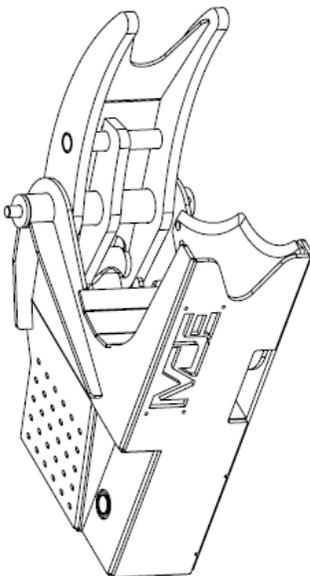
## KOALA 400 PART DIAGRAM

KOALA 400 TREE SHEAR		Description
ITEM NO.	PART NUMBER	
1	MDE-3M	K400 Ram
2	K400P-0001	K400 Blade
3	K400P-0033	K400 Pin
4	K400P-0035	K400 Pin
5	K400P-0034	K400 Pin

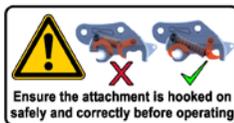


## KOALA 550 PART DIAGRAM

KOALA 550 TREE SHEAR		Description
ITEM NO.	PART NUMBER	
1	MDE-16M	K550 Ram
2	K550P-0052	K550 Blade
3	K550P-0032	K500 Pin
4	K550P-0033	Pin
5	K550P-0034	K500 Arm Pin



## WARNING STICKERS



## INSPECTION / SERVICE RECORD

Work Carried Out	Date	Hours	Completed
Guard Inspection			
Blade Inspection			
Blade Bolts Torqued			
Arm Inspection			
Grease Used			
All Bolts Torqued			
Hydraulic Hose Inspections			
Hydraulic Fitting Inspections			
Visual Check Over			

Work Carried Out	Date	Hours	Completed
Guard Inspection			
Blade Inspection			
Blade Bolts Torqued			
Arm Inspection			
Grease Used			
All Bolts Torqued			
Hydraulic Hose Inspections			
Hydraulic Fitting Inspections			
Visual Check Over			



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**INSPECTION / SERVICE RECORD**

Work Carried Out	Date	Hours	Completed
Guard Inspection			
Blade Inspection			
Blade Bolts Torqued			
Arm Inspection			
Grease Used			
All Bolts Torqued			
Hydraulic Hose Inspections			
Hydraulic Fitting Inspections			
Visual Check Over			

Work Carried Out	Date	Hours	Completed
Guard Inspection			
Blade Inspection			
Blade Bolts Torqued			
Arm Inspection			
Grease Used			
All Bolts Torqued			
Hydraulic Hose Inspections			
Hydraulic Fitting Inspections			
Visual Check Over			