



**OPERATORS MANUAL**

# TOTALTILT

**SERIAL NUMBER** .....

**MACHINE** .....



**WHITES MATERIAL HANDLING Ltd.**  
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<http://www.whitesmh.co.uk>

**PART NUMBER: WH-CE-0246**

## **CONTENTS.**

- 1. NON-SPECIFIC SAFETY, OPERATION AND MAINTENANCE INSTRUCTIONS.**
  - 1.1. GENERAL SAFETY RULES.
  - 1.2. BEFORE YOU OPERATE THE ATTACHMENT.
  - 1.3. SAFETY DECALS.FAILURE DURING OPERATION.
  - 1.4. FAILURE DURING OPERATION.
  
- 2. SAFETY DURING OPERATION.**
  - 2.1. INSPECTION.
  - 2.2. APPLICATION.
  - 2.3. NORMAL USE.
  - 2.4. HANDLING AND TRANSPORTATION.
  - 2.5. LIFTING EYE.
  
- 3. SAFETY DURING MAINTENANCE.**
  - 3.1. BEFORE ANY SERVICE WORK.
  - 3.2. GENERAL MAINTENANCE INSTRUCTIONS.
  - 3.3. LUBRICATION.
  
- 4. SPECIFIC INSTALLATION INSTRUCTIONS.**
  - 4.1. COUPLERS.
  - 4.2. ALL BUCKETS WHICH ARE CONNECTED TO A COUPLER.
  
- 5. OPERATING INSTRUCTIONS.**
  - 5.1. COUPLER- TO PICK UP A BUCKET.
  - 5.2. COUPLER- TO DISCONNECT A BUCKET.
  
- 6. TESTING & MAINTENANCE.**
  - 6.1. COUPLER – DAILY CHECK.
  - 6.2. MAINTENANCE.
  
- 7. ROTATOR**
  - 7.1. ROTATOR DATA PLATE.
  - 7.2. INTENDED USE.
  - 7.3. REASONABLY FORESEEABLE MISUSE.
  - 7.4. VENTILATION.
  - 7.5. TIGHTENING TORQUES.
  
- 8. WARRANTY.**
  
- 9. PARTS LIST.**

# OPERATORS MANUAL

## FOREWORD

In these Safety and Operating Instructions the following words are defined as follows:-

**'ATTACHMENT BRACKET'**:- A coupler assembly which is classed as a machine under the CE / UKCA machinery Directive. Attachments covered under these Safety and Operating Instructions are Hydraulic Couplers and all other attachments which are classed as a 'machine' under the CE / UKCA Machinery Directive.

**'MACHINE' or 'HOST MACHINE'**:- A wheeled or tracked Excavator or backhoe loader, which connects to and powers the attachment.



## WARNING

**INCORRECT FITTING OR USE OF THIS COUPLER OR FAILURE TO FOLLOW INSTRUCTIONS CONCERNING SAFETY CAN LEAD TO SERIOUS INJURY OR DEATH.**

### **BEFORE USING THIS COUPLER:**

- 1. READ THIS MANUAL CAREFULLY.**
- 2. MAKE SURE THAT THIS COUPLER IS SUITABLE FOR USE ON THE HOST MACHINE.**
- 3. THE COUPLER SHOULD BE FITTED IN ACCORDANCE WITH THE MACHINE MANUFACTURER'S INSTRUCTIONS.**
- 4. LEARN AND PRACTICE SAFE USE OF THIS COUPLER AND HOST MACHINE IN A CLEAR AREA BEFORE YOU OPERATE THIS MACHINE ON A JOB SITE.**
- 5. THIS COUPLER IS DESIGNED FOR USE WITH OEM APPROVED BUCKETS AND ATTACHMENTS UNLESS SUPPLIED AS A MIX / MATCH COUPLER WHERE THE BUCKETS AND ATTACHMENTS FITTED MUST BE SUITABLE FOR THE HOST MACHINE, AND PIN RANGE OF COUPLER.**
- 6. IF FITTED THE LIFTING EYE SHOULD BE USED FOR OBJECT HANDLING, (No Bucket should be connected when object handling).**
- 7. NEVER TRANSPORT OR LIFT PEOPLE WITH THE COUPLER.**
- 8. THE LOAD RADIUS WILL INCREASE WITH A COUPLER FITTED.**
- 9. THE OPERATING CAPACITY WILL DECREASE WITH A COUPLER FITTED.**
- 10. BE AWARE THAT THERE IS A RISK OF A BUCKET or ATTACHMENT FOULING PARTS OF THE HOST MACHINE WITH A COUPLER FITTED.**

It is your responsibility to observe pertinent laws and regulations in respect of the operation of this attachment and the host machine.

### TO THE OWNER

You are the owner of a fully automatic coupler that has been built to operate correctly on your host machine.

The coupler conforms to current safety regulations (see OFFICIAL JUSTIFYING DOCUMENTS below).

Before putting this coupler into service please ensure that: -

1. The operator has read and fully understands this operator's manual.
2. The operator has received necessary training on the functions and capabilities of this coupler.
3. The information on the identification plate, which is fixed to the attachment, matches the information on the Declaration of Conformity.

### UKCA / CE MARKING.

**This fully automatic hydraulic coupler has been designed and manufactured to the requirements of the machinery directive 2006/42/EC, ISO 13031 and EN474-1:2006 standards and is therefore eligible to carry the CE & UKCA mark.**

### OFFICIAL JUSTIFYING DOCUMENTS

	
 MANUFACTURED BY WHITES MATERIAL HANDLING LTD 17/19 EMERY ROAD, BRISTOL. BS4 5PF. UK. 0117 9720006 	
P/N 1:-	
M/C:-	
S/No:-	DATE:-
WEIGHT (Kg):-	BAR (MIN-MAX):-
<small>WH-CE-0205</small>	



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17/19 Emery Road,  
Brislington Trading Estate  
Bristol BS4 5PF, United Kingdom  
Telephone: +44 (0)117 9720006  
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**UKCA**

**CE**

## DECLARATION OF CONFORMITY

DATE OF MANUFACTURE.	CERTIFICATE NO/SERIAL NO.

DESCRIPTION	
PRODUCT	
PART NUMBER	
TO FIT	
WEIGHT	KGS

We, WHITES MATERIAL HANDLING LTD., declare under our sole responsibility that the product detailed above corresponds to the relevant basic safety and health requirements of the Directive 2006/42/EC and that the following standards and/or technical specifications have been respected - BS ISO 13031:2016. BS EN474-1:2006 +A4:2013

FOR AND ON BEHALF OF WHITES MATERIAL HANDLING LTD

Martin Coles - Project Engineer

Form C&L001

Details of Directors are available at Registered Office  
F & B Profiles Limited, Southway Drive, North Common, Warmley, Bristol BS30 5LW  
Registered in England No. 1248229



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 E-mail: sales@whitesmh.co.uk  
 Internet: www.whitesmh.co.uk

<b>UKCA</b>	<b>LIFTING CERTIFICATE</b>
-------------	----------------------------

**THE RATED LIFTING LOAD (RLL) FORMERLY SWL  
 OF A QUICK COUPLER.**

DATE OF MANUFACTURE.	CERTIFICATE NO/SERIAL NO.

PART NUMBER	TYPE	RLL KGS
	2M-2H	1000 KGS
	3M-3H	2000 KGS
	4M-4H	2500 KGS
	6M-6H	3500 KGS
OTHER AS SPECIFIED		

THE UNDERSIGNED CONFIRMS THAT THE COUPLER DETAILED ABOVE HAS BEEN DESIGN PROOF TESTED TO LIFT THE LOAD STATED, AND COMPLIES WITH THE REQUIREMENTS OF BS ISO 13031:2016, BS EN474-1:2006 +A4:2013, ANNEX E, SECTIONS E.3.2.1 AND E.3.2.2.

**IMPORTANT INFORMATION.** NEVER LIFT LOADS WHICH EXCEED THE RATED LIFTING LOAD OF THE COUPLER OR THE RATED OPERATING/LIFT CAPACITY OF THE EXCAVATOR.

FOR AND ON BEHALF OF WHITES MATERIAL HANDLING LTD



Martin Coles - Project Engineer

Form C&L001

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**SECTION 1.  
NON SPECIFIC SAFETY, OPERATION AND MAINTENANCE INSTRUCTIONS**

**1.1. GENERAL SAFETY RULES:**

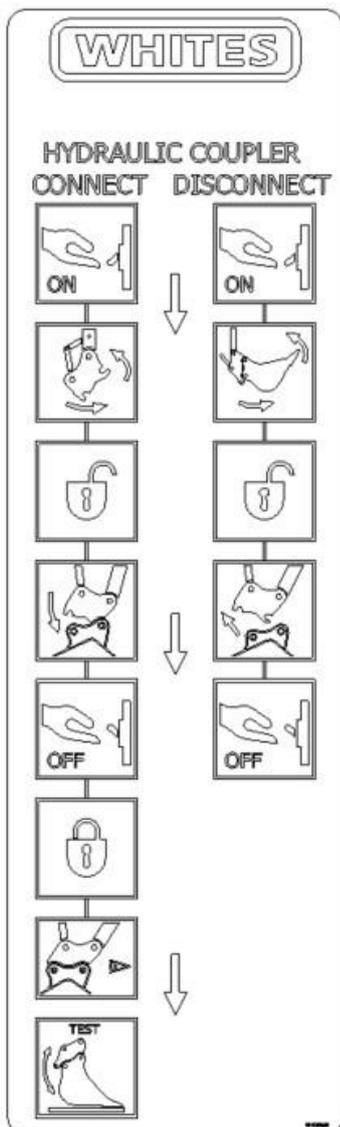
This hydraulic coupler has been designed and built according to the state of the art and meets current safety regulations in force. However, this does not completely exclude the risk of accidents. It is therefore essential to follow basic safety rules and precautions. The strict execution of the instructions provided in this manual will prevent accidents during coupler use and maintenance operations. These instructions will only be effective if the coupler receives correct maintenance. Any defects or anomalies must be repaired immediately. Only use this coupler for the purpose for which it was designed.

**1.2. BEFORE YOU OPERATE THE COUPLER:**

Please be aware that this coupler is designed to be used in conjunction with the host machine. It is essential, therefore, to be fully conversant with the correct operating procedures and safety instructions of the machine. Familiarise yourself with the coupler, and the loads to be carried.

**1.3. SAFETY DECALS:**

An illegible or missing decal may have serious consequences. Replace any that are missing or damaged.



#### 1.4. FAILURE DURING OPERATION:

If a failure occurs during operation, disconnect the coupler from the host machine and take measures against its use until a satisfactory repair has been carried out.

### SECTION 2. SAFETY DURING OPERATION.

#### 2.1. INSPECTION:

UPON DELIVERY;                      Check for transit damage.  
    Check hydraulic system for any damage or leaks.

#### 2.2. APPLICATION:

Ensure that the coupler is suitable for the work in hand. e.g. check that the capacity of the coupler is matched to the density of the load.

**Always carry the load low!**

#### 2.3. NORMAL USE:

This coupler is designed to operate with the host machine under normal working conditions. Care should be taken if weather or site conditions become difficult.

#### 2.4. OTHER USES:

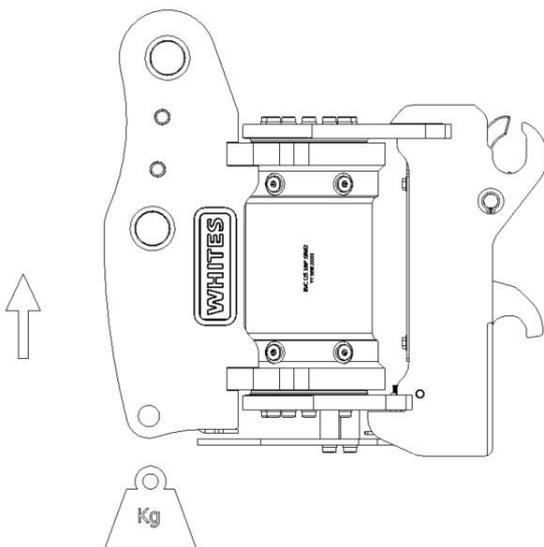
This coupler is designed for a specific application. Do not carry out different applications with this attachment before first checking with Whites Material Handling or their Agent.

#### 2.5 LIFTING EYE:

Where couplers are supplied with a lifting eye, care should be taken during lifting operations.

The rated lifting load of each coupler is stamped on the edge of the coupler near the lifting eye.

Never lift loads which exceed the RATED LIFTING LOAD of the coupler or the RATED OPERATING LIFT CAPACITY of the excavator, Refer to the machine manual for these capacities.



Always use suitable 'D' shackles chains and straps.

Always lift load with lifting eye at the lowest point.

## SECTION 3. SAFETY DURING MAINTENANCE

### 3.1. BEFORE CARRYING OUT ANY SERVICE WORK ON THE ATTACHMENT:

Park the host machine on a hard level surface.  
Lower the attachment to the ground.

When servicing the attachment, place a 'DO NOT START UP' label on the control panel of the machine.

Modifying the attachment without prior permission can cause serious injury. Do not undertake any modification without prior authorisation from Whites Material Handling or their Approved Agent.

Always wear eye protection when using a tool that may project metal particles. Use a hammer with a soft face, such as copper, for installing pins.

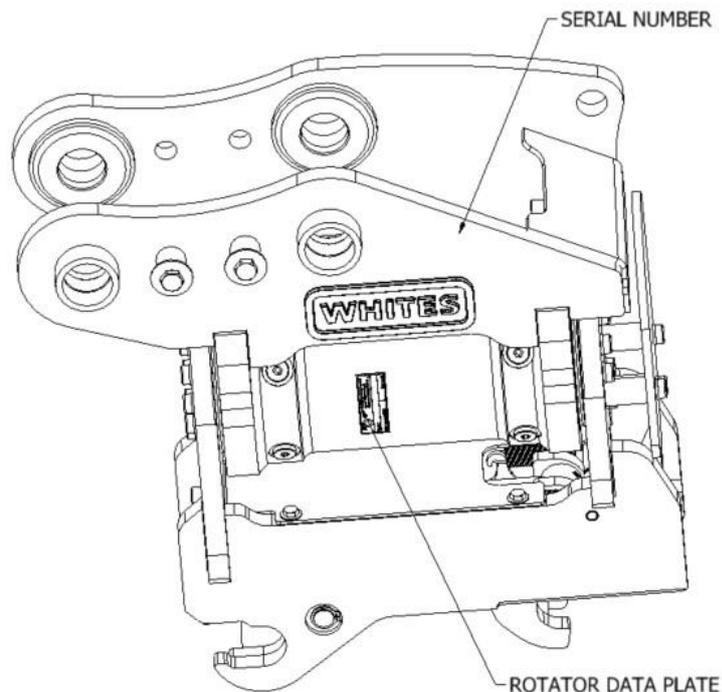
Never attempt to service a hydraulic circuit component without having first made sure it is no longer under pressure.

Pressurised hydraulic fluid or grease which penetrates the skin can cause serious injury. Take the necessary safety precautions (safety clothing and protection for the face and hands) to avoid such risks.

### 3.2. GENERAL MAINTENANCE INSTRUCTIONS

See maintenance instructions 6.0

When ordering replacement parts always quote the coupler serial number.



## **SECTION 4. SPECIFIC INSTALLATION INSTRUCTIONS**

### **4.1. ALL COUPLERS**

Upon receipt of your Whites Coupler check the contents of the delivery against the packing list and advice note.

Fit coupler to the machine's dipper arm using the pins supplied with the excavator.

**IF PINS ARE SUPPLIED WITH THE COUPLER DO NOT FIT THEM TO THE DIPPER ARM OR TIPPING LINK. THESE PINS ARE FOR USE IN BUCKETS ONLY.**

Position the Safety Warning Label in a visible position inside the cab.

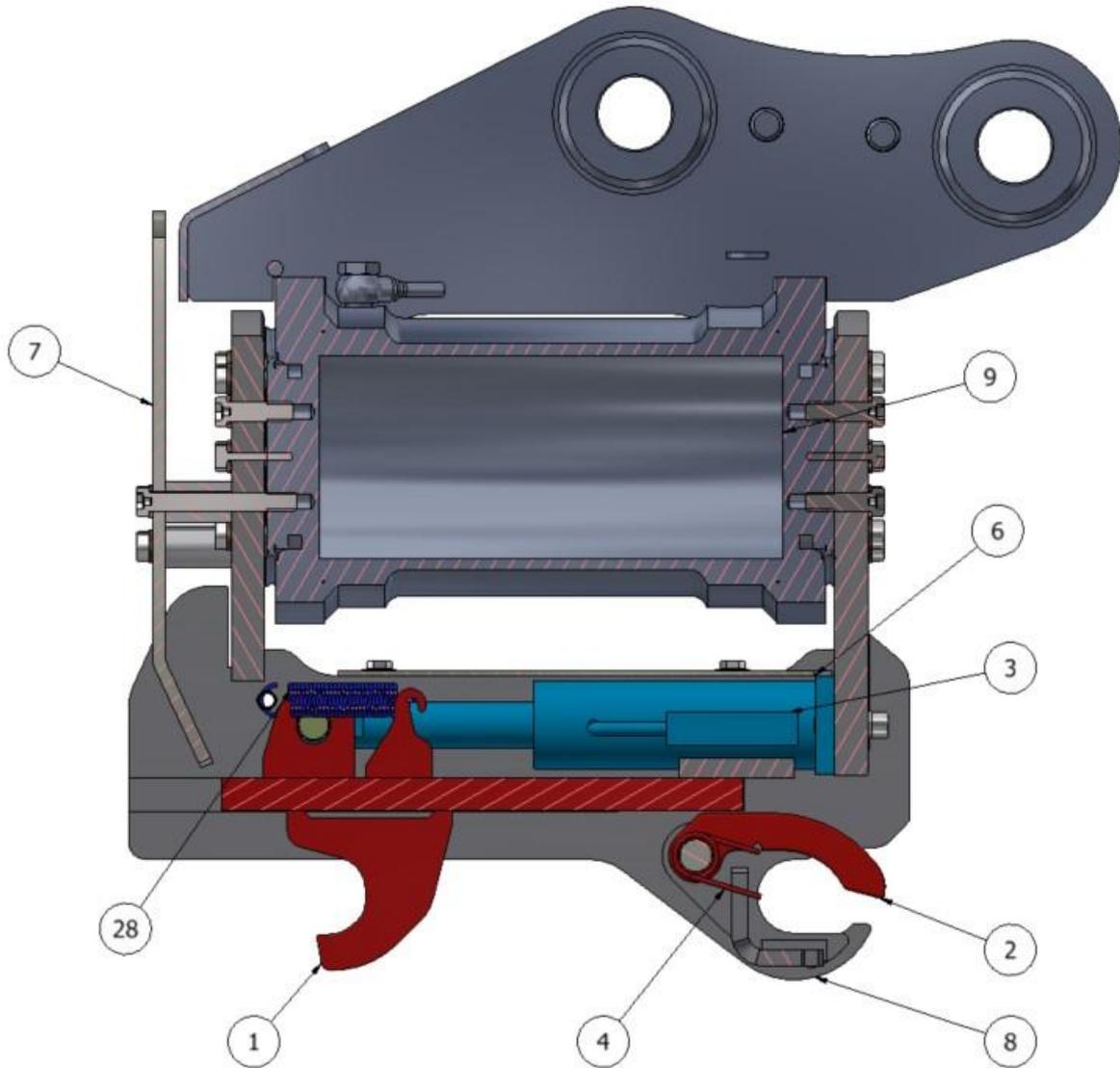
Position the dipper stickers on the dipper arm.

### **4.2. ALL BUCKETS WHICH ARE TO BE CONNECTED TO A WHITES COUPLER.**

Fit two pins into the standard bucket locations on the top of each bucket if required. Always ensure that the pins fit correctly to the bucket. Do not use worn or damaged pins.

Do not use pins of an incorrect diameter.

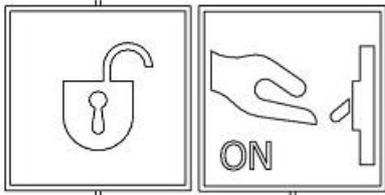
## TOTALTILT COUPLER IN LOCKED POSITION



1	REAR HOOK
2	SAFETY CLAMP
3	HYDRAULIC CYLINDER
4	TORSION SPRING
5	SPRING
6	CYLINDER GUARD
7	REAR GUARD
8	FRONT JAW
9	ROTATOR

## SECTION 5.

### 5.1. WHITES HYDRAULIC COUPLER - PROCEDURE TO PICK UP A BUCKET

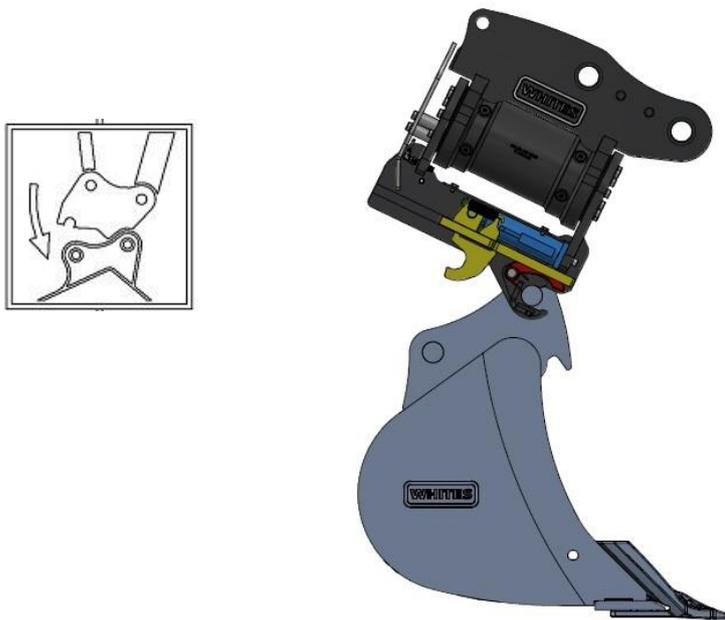


#### 5.1.1.

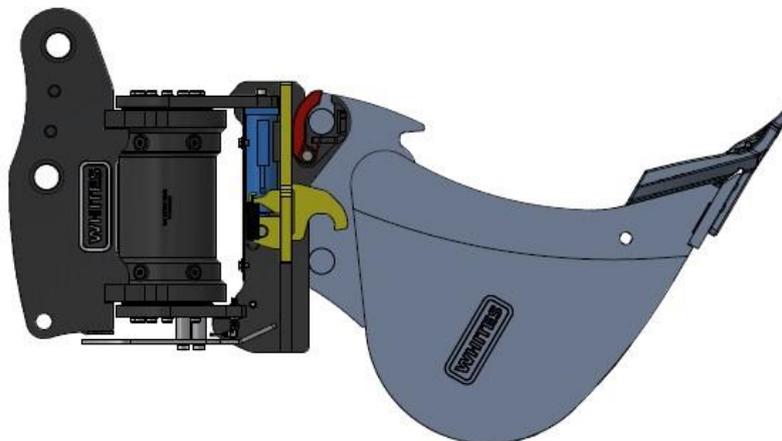
Move the switch to the release position, (The buzzer will sound, and a light will illuminate and change colour, where fitted), hold the lever towards the operator until, the safety clamp retracts.

#### 5.1.2.

Align and hook the front jaw of the coupler around the front bucket pin.

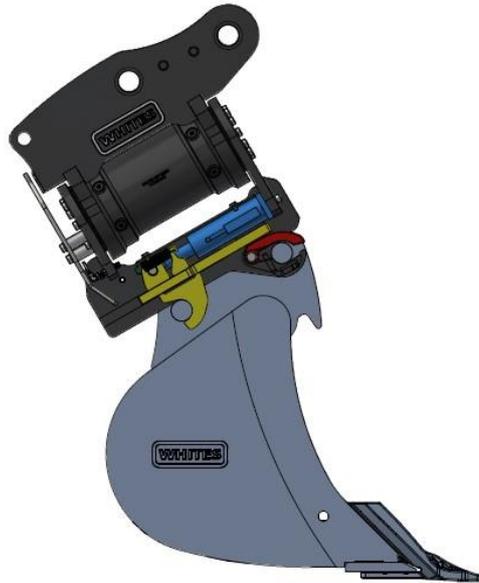
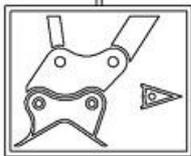
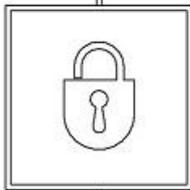


5.1.3. Crowd and Lift the bucket free from the floor, until the bucket is fully engaged in the front jaw of the coupler.



5.1.4.

Move the switch to the locked position. The rear hook will extend, locking the rear pin, the safety clamp will close, the buzzer will cease and light will change colour, where fitted. The coupler will now be in the locked position.

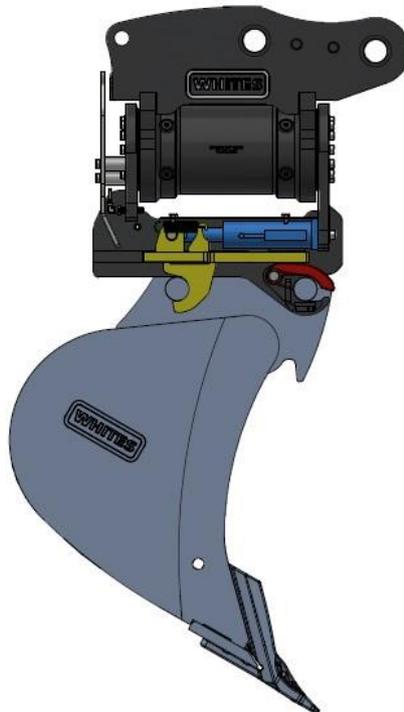
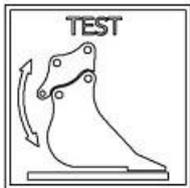


5.1.5.

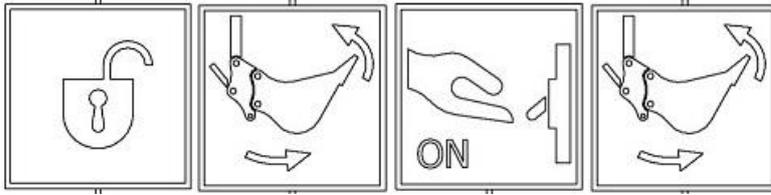
With the bucket placed on the ground, visually check that the coupler is fully engaged and safely locked to the bucket.

5.1.6.

Perform bump test to ensure that the rear pin has engaged correctly.

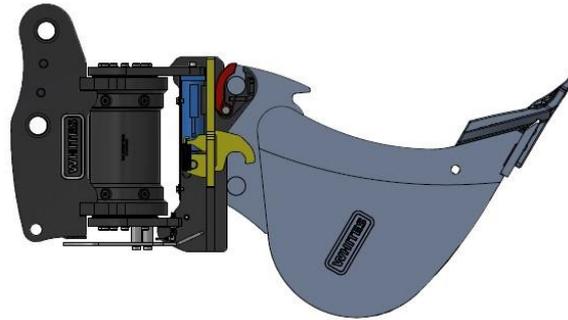


## 5.2. WHITES HYDRAULIC COUPLERS- PROCEDURE TO DISCONNECT A BUCKET



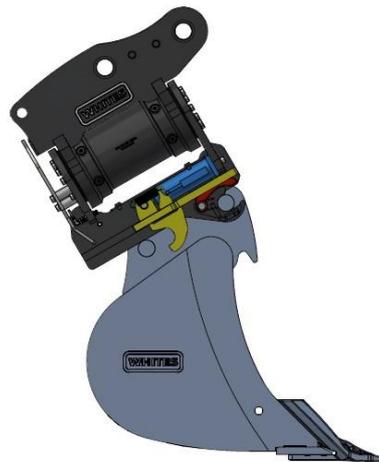
### 5.2.1.

Curl the bucket towards the machine. Move the switch to the release position, (the buzzer will sound and light will change colour, where fitted.) Hold the lever towards the operator until the safety clamp retracts to the un-locked position. The coupler is now unlocked.

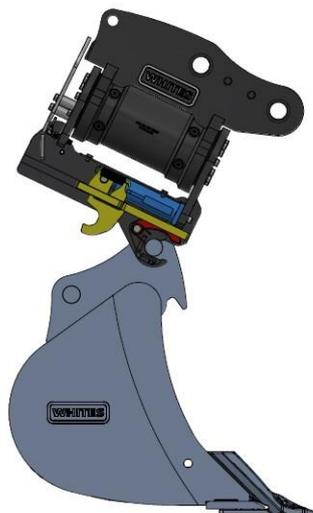


### 5.2.2.

Slowly roll the coupler backwards, away from the cab, and the bucket will disengage from the rear pin before placing the bucket onto the ground.



### 5.2.3. Disengage the front pin.



#### 5.2.4.

Move the switch to the locked position. The safety clamp will close, the buzzer and light will cease where fitted.



## SECTION 6. TESTING & MAINTENANCE

### 6.1. COUPLER – DAILY CHECK

- Check coupler for damaged or missing parts, loose pins, bolts and damaged hoses. Repair or replace as necessary. Repair any hydraulic leaks.

**WARNING.** At all times be aware that the coupler has moving parts and powerful mechanical components. When testing or maintaining your coupler keep hands and feet clear at all times. Always wear adequate protective clothing to avoid injury.

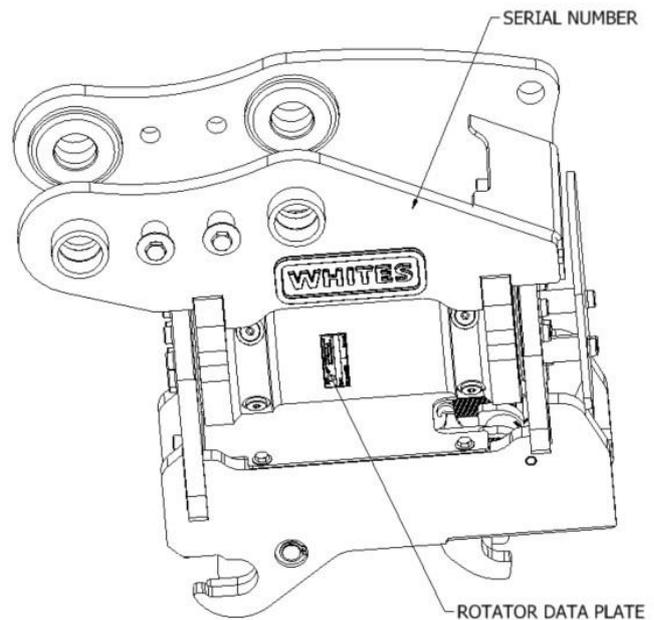
### 6.2. MAINTENANCE

- Check structure and welds for signs of defects.
- Ensure coupler is kept free from build up of dirt, mud, concrete and stones which will impact on the operation and safety of the coupler.
- Check for excessive wear on locking jaw, pins and hinge pins.
- Where parts need replacing ALWAYS replace with genuine parts.

## SECTION 7. ROTATOR

### 7.1. ROTATOR DATA PLATE

		
<b>HKS Dreh-Antriebe GmbH®</b> Leipziger Straße 55 • 63607 Wächtersbach / Germany T +49 6053 6163-0 • info@hks-partner.com www.hks-partner.com • Made in Germany		
● Typ: ●		
Bezeichnung:		
Art.Nr.:		
SN.Nr. / Komm.Nr.:		
Gewicht [kg]:	Bj:	P <sub>max</sub> [bar]:



### 7.2. INTENDED USE

The rotator is designed to rotate the bottom of the coupler, and hence any connected attachment through 180° about the centre line of the boom. 90° clockwise, 90° anti-clockwise.

The rotary actuators always form part of another machine. Commissioning this machine is forbidden until it has been proven that the machine complies with the safety and health requirements of the Machinery Directive 2006/42/EC.

- The actuator may be exclusively used for positioning excavator buckets.
- The actuator may be exclusively used for positioning special milling cutters.
- The actuator may be exclusively used for positioning bank mowing devices.
- The actuator may be exclusively used for positioning trench excavation buckets.
- The actuator may be exclusively used for positioning grab buckets.
- The actuator may be exclusively used for positioning hydraulic hammers or similar long attached equipment.
- **(Optional hammer operation) Only short-term and right-angled use permitted.**
- The actuator may be exclusively used for suspension of a driver's cab in loading cranes.
- The actuator may be exclusively used for positioning grab buckets.

**Other applications must be coordinated with Whites Material Handling.**

**The following specifications must be adhered to:**

- Oil change: 50% of the displacement during complete pivoting. Due to its design, the

actuator will run in over time. It is therefore normal for slight debris to settle in the oil.

For this reason, an oil exchange should be strictly observed.

- The actuator must be positioned before excavator operation.
- Using the actuator in explosive areas is forbidden.
- Maintenance work must be adhered to.
- The actuator must be designed for the size of the construction machine (in

coordination with Whites Material Handling.

- Construction machine and attached equipment must be suitable or converted for installation of the actuator (in coordination with Whites Material Handling. Attached equipment that is taken up with the actuator must be matched to the respective size of the construction machines (EC Machinery Directive 2006/42/EC).
- (Optional) Suitable attached equipment (e.g. load hook) must be available for lifting and transporting loads.
- Mount hydraulic hammers or similar long attached equipment only after consultation with Whites Material Handling. Do not make any technical modifications or alterations to the grippers.
- For digging work, the attached equipment must be wider than the actuator's attachment periphery to avoid damage to hoses and connections.
- Further intended uses can be found in the operating instructions of the respective quick change unit manufacturers.
- The maximum bucket width in conjunction with actuators may not exceed the following specifications.

<b>BV</b>	<b>100</b>	<b>115</b>	<b>125</b>	<b>130</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>225</b>	<b>240</b>
Bucket width mm	1000	1100	1200	1300	1400	1500	1600	1700	1800

*Max. bucket width*

<b>BV</b>	<b>250</b>	<b>260</b>	<b>270</b>	<b>300</b>	<b>350</b>	<b>420</b>	<b>450</b>		
Bucket width mm	1900	2000	2200	2400	2600	2700	2800		

Any use that has not been coordinated with Whites Material Handling is considered as not in accordance with the intended use. Solely the operating company shall be responsible for any damages and dangers resulting thereof.

Compliance with these assembly instructions and adherence to the maintenance instructions as well as the environmental conditions is a prerequisite for using the rotary actuator in accordance with the regulations.

### **7.3. REASONABLY FORESEEABLE MISUSE.**

The manufacturer's warranty obligation shall cease in case of reasonably foreseeable misuse and the operating company shall bear the sole responsibility.

Reasonably foreseeable misuses are:

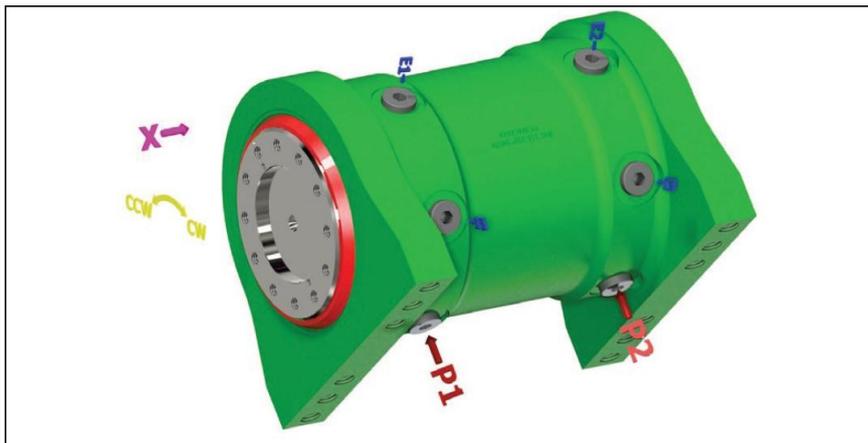
- Do not turn the excavator superstructure over the shaft and actuator.
- Using the actuator for abrupt pulling or impact work.
- The actuator may not be moved to the limit of travel with external power assistance (e.g. excavator weight).
  - When using a hydraulic hammer or similar long attached equipment, the actuator may only be used for positioning and not for leverage.
  - Lifting the hydraulic hammer (excessive lever forces) or similar long attached tools may damage the actuator.
- Using the actuator for transporting persons in attached equipment.

- Using the actuator in explosive areas.
- Using the actuator in contaminated areas (radioactive).
- Using the actuator under extreme temperatures (extreme heat or cold).
- Using the actuator to tear down walls with the attached equipment.
- Spraying with high-pressure cleaners or fire extinguishing equipment.
- Neglected wear part changes.
- Non-observed maintenance intervals.
- Neglected maintenance work.
- Incorrectly performed maintenance work.
- Using the actuator as a hammer or knocking device.
- Using the quick-changing device's adaptor hook as load hook.
- Using the quick-changing device's adaptor hook for tearing or as toggle.
- Using the quick-changing device's latching bolts as load hook.
- Using the quick-changing device for pushing, pulling or hammering.
- Further reasonably foreseeable misuses can be found in the operating instructions of the respective quick change unit manufacturers.

## 7.4. VENTILATION

Air in the system may cause the actuator to sag.

- Vent the actuator without load.



Vent screws [E1 and E2], which can be used for venting, are located on both sides of the actuator. The vent holes can also be used as connection bores [P1 and P2]. For this, bring the rotary actuator into an optimum position, so that these are pointing upwards. In case of deviating installation position, please consult the factory.

Miniature measurement connections for venting can be purchased from HKS.

- Remove any load from the actuator (dismantle bucket, etc.).
- Align the actuator to be vented such that the vent holes [E1 and E2] are at the top.
  - Allow the actuator to turn into a final position.
  - Depressurise the system (caution: failure to do so will cause accident hazard!).
    - Unscrew the vent screws [E1 and E2] by a maximum of one turn (caution risk of accident).
    - Apply pressure to the actuator alternately via P1/P2 (caution: max. 8bar otherwise risk of accident) and move to the respective end positions.
      - Air or frothy oil is now leaking from the vent screws [E1 and E2]. Continue the procedure until the leaking oil is free of air. Then screw down the vent screws [E1 and E2].
        - It may be necessary to repeat this procedure.

## 7.5. TIGHTENING TORQUES

In the event of needing to remove the rotator body, the following torques must be used  
When assembling.

Fastening screws must be used in grade 12.9 (DIN EN ISO 4762)! Screws must be greased with a screw paste!

---

**When screws are used, they must be used together with Nord-Lock lock washers.**

### **Fastening screws (cheese head screws 12.9) + Nord-Lock**

Oil-lubricated  $\mu_g$  (thread friction coefficient) = 0.13

Threads	M4	M5	M6	M8	M10	M12	M14	M16
$M_A$ in Nm	4.6	9.1	15.8	38	75	128	204	311

*Table 2.2: Tightening torques cheese head screws 1*

Threads	M18	M20	M24	M27	M30	M33	M36
$M_A$ in Nm	437	610	1052	1533	2091	2815	3633

## **SECTION 8. WARRANTY**

### **36 Months Limited Warranty**

The seller will remedy such defects relating to the main welded assembly of the coupler at its option either by replacement or repair of the defective parts free of charge PROVIDED THAT full details of such defect, including photographic evidence where appropriate, are notified and confirmed in writing to the Seller within 7 days of the defect first appearing. This does not cover moving parts, coupler control systems or associated parts.

### **Twelve Months Limited Warranty**

If within six months from the date when the coupler is first installed or delivered, any defect appears in the Coupler which is due to faulty material or poor workmanship, the Seller will remedy such defects at its option either by replacement or repair of the defective parts free of charge PROVIDED THAT full details of such defect, including photographic evidence where appropriate, are notified and confirmed in writing to the Seller within 7 days of the defect first appearing.

If in the period from six months to twelve months from the date when the coupler is first used, any defect occurs which is due to faulty material or poor workmanship, the Seller will replace the defective parts free of charge but will not pay for the labour costs involved in the removal and/or refitting of the defective parts PROVIDED THAT full details of such defect, including photographic evidence where appropriate, are notified and confirmed in writing to the Seller within 7 days of the defect first appearing.

The Purchaser shall either return the defective coupler or part of the coupler to the Seller (which shall be at the Seller's expense if the coupler or part of the coupler is found to be defective and at the Purchaser's expense otherwise) or shall make available the defective coupler for inspection by the Seller before repair or replacement can be effected.

On proper notification of the defect the Seller may at its sole option sign an authorisation to proceed permitting the Purchaser to arrange for the repair or replacement of the Goods.

### **COSTS**

The Seller will be liable for the Purchaser's costs of repair at the Seller's agreed rates and replacement insofar as agreed by the Seller prior to the commencement of the work. The Seller is not liable for any travelling and/or overnight costs which might occur during the repair of the Coupler.

Once authorisation to proceed has been granted and the amount of the Purchaser's costs agreed, the Seller will issue a credit note to the Purchaser against the original sales invoice to cover the agreed cost of repair or replacement. The Seller will not meet any costs of repair or replacement not previously agreed by it.

#### **BUT, this warranty shall not apply to the following: -**

Defects resulting from fair wear and tear, misuse or failure to carry out the maintenance procedure recommended by the Seller or such maintenance procedures as are reasonable.  
Defects in the Coupler resulting from the repair or maintenance carried out by someone not previously approved by the Seller or repair or maintenance work not authorised by the Seller.  
Defects which are not notified to the Seller in accordance with the terms set out in these Conditions of Sale.

**EXCESSIVE USE OF HYDRAULIC BREAKERS AND COMPACTION PLATES** cause rapid wear to jaws and pins. Couplers should only be used occasionally with a breaker or compaction plate attached. Page 16 of 18 S:\Word\Operators Instructions\WIP WORKING PROGRESS\WHCE0070-V1 - TOTALOCK

**DEFECTS**

The Coupler delivered shall be conclusively presumed to be in all respects in accordance with the contract unless the Purchaser notifies the Seller otherwise within 3 working days of the date of delivery. Claims will only be entertained by the Seller if the Coupler and its component parts are still in the original state.

If the Purchaser establishes to the Seller's reasonable satisfaction that there has been a breach of the warranty or the Coupler is not in accordance with the contract, the Purchaser's sole remedy shall be limited (at the Seller's option) to the replacement of the Coupler or a refund of the purchase price in each case (other than for non receipt) against return of the Coupler. Couplers delivered in accordance with the contract may not be returned without the Seller's express agreement and on such terms as it thinks fit.

**LIABILITY**

Nothing in these conditions affects the statutory rights of a Purchaser where the Coupler is sold to a person dealing as a consumer (as defined in the Unfair Contract terms Act 1977).

Nothing in these conditions shall exclude the liability of the Seller for death or personal injury resulting from its negligence insofar as the same is prohibited by a United Kingdom statute.

Save as expressly provided in these conditions, all terms, conditions, representations and warranties (whether expressed or implied) are excluded to the fullest extent permitted by law.

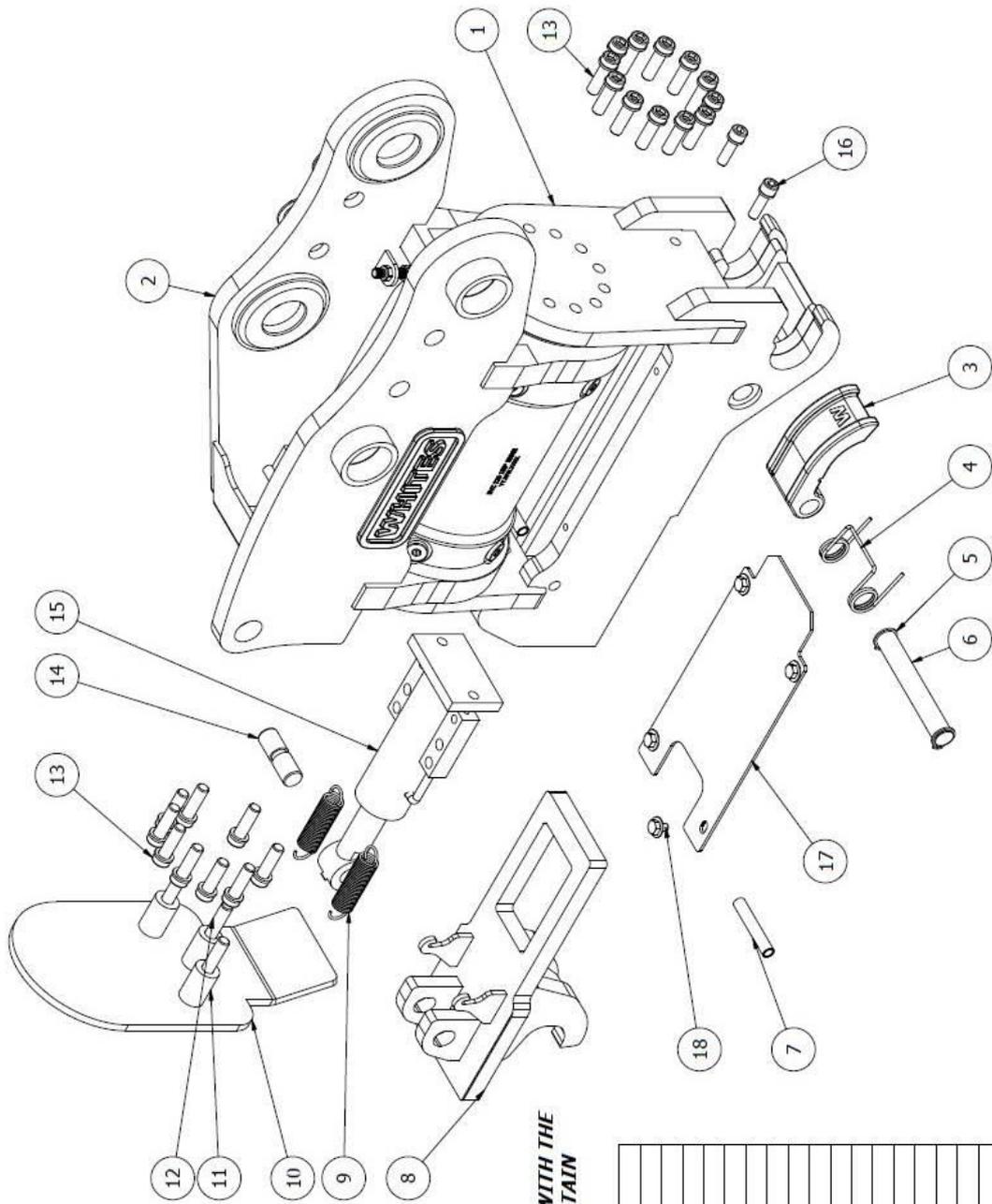
Subject to any other limitation or exclusion of liability in these conditions, the maximum aggregate liability of the Seller, its employees and agents for breach of any contract or otherwise in connection with that contract (including for breach of any statutory duty and any tortious act or omission including negligence) shall so far as permitted by law be limited to the price paid to the Seller under the contract.

The Seller shall not be liable for any loss of profits or goodwill nor any special, indirect, economic or consequential loss.

The Seller shall not be liable for any delay or failure in the performance of its obligations under any contract to the extent due to circumstances beyond its control.

Time for delivery of Couplers and or Services is not of the essence of the contract.

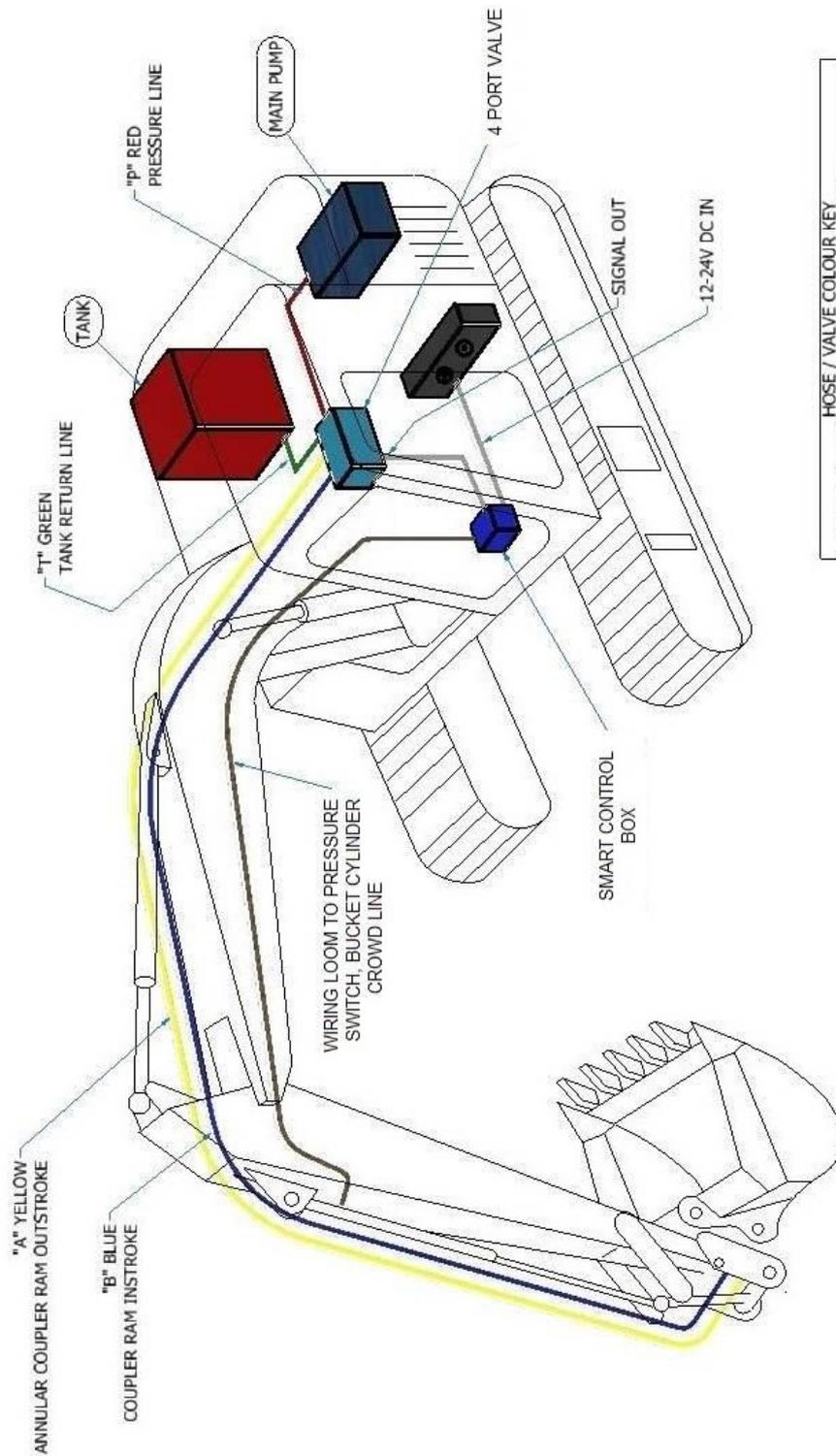
**SECTION 9. PARTS DIAGRAM**



**PROVIDE WHITES MATERIAL HANDLING WITH THE ATTACHMENT SERIAL NUMBER TO OBTAIN COMPONENT PART NUMBERS.**

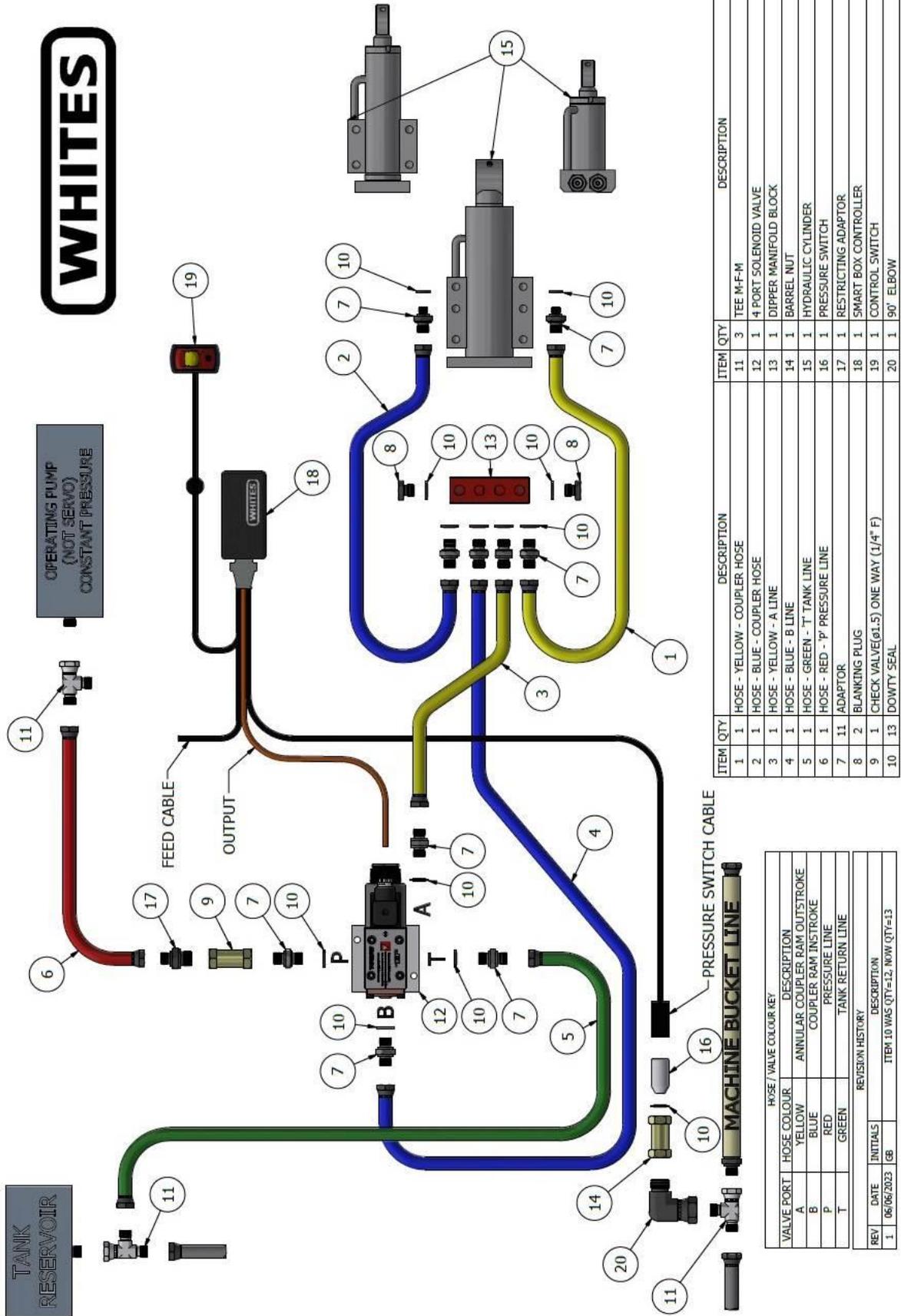
ITEM	QTY	DESCRIPTION
1	1	TOTALTILT COUPLER BASE
2	1	TOTALTILT COUPLER TOP
3	1	SAFETY FINGERS
4	1	DBL. TORSION SPRING
5	2	SAFETY PIVOT PIN
6	1	CIRCLIP
7	2	SPIROL PIN
8	1	COUPLER HOOK
9	2	RXTENSION SPRING
10	1	REAR GUARD
11	3	GUARD SPACER
12	3	GUARD BOLT
13	21	ROTATOR BOLT+WASHER
14	1	RAM ROD PIN
15	1	HYDRAULIC CYLINDER
16	2	CYLINDER BOLT+WASHER
17	1	RAM GUARD, (SOME MODELS)
18	4	RAM GUARD BOLT

# HYDRAULIC DIAGRAM – MACHINE VIEW



HOSE / VALVE COLOUR KEY	
PORT	DESCRIPTION
A	ANNULAR COUPLER RAM OUTSTROKE
B	COUPLER RAM INSTROKE
P	PRESSURE LINE
T	TANK RETURN LINE

# HYDRAULIC DIAGRAM – HOSE LAYOUT



ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
1	1	HOSE - YELLOW - COUPLER HOSE	11	3	TEE M-F-M
2	1	HOSE - BLUE - COUPLER HOSE	12	1	4 PORT SOLENOID VALVE
3	1	HOSE - YELLOW - A LINE	13	1	DIPPER MANIFOLD BLOCK
4	1	HOSE - BLUE - B LINE	14	1	BARREL NUT
5	1	HOSE - GREEN - T TANK LINE	15	1	HYDRAULIC CYLINDER
6	1	HOSE - RED - P PRESSURE LINE	16	1	PRESSURE SWITCH
7	11	ADAPTOR	17	1	RESTRICTING ADAPTOR
8	2	BLANKING PLUG	18	1	SMART BOX CONTROLLER
9	1	CHECK VALVE(61.5) ONE WAY (1/4" F)	19	1	CONTROL SWITCH
10	13	DOWTY SEAL	20	1	90° ELBOW

HOSE / VALVE COLOUR KEY	
VALVE PORT	HOSE COLOUR
A	YELLOW
B	BLUE
P	RED
T	GREEN

REVISION HISTORY	
REV	DATE
1	06/06/2023

DESCRIPTION	
ITEM	QTY
10	13

**WH-CE-0177 (REVISION 1.)**