ScanStone

SOIL PREPARATION SYSTEMS

Operator's Instruction Manual

4 BODY BED MAKER

Models

3845-SB & 3845-AR+

INSTALLATION & REGISTRATION DOCUMENT

ScanStone
SERVICE SUPPORT

Machine Details:

Machine Model:	
Serial No:	
Invoice No:	
Delivery Note No:	
Installation Date:	

Purchaser Details:

Farm / Business Name:	
Address:	
Postcode:	
Contact Tel:	

Acceptance by Purchaser:

I / We have taken delivery and inspected the machine as detailed on this form and acknowledge that it conforms to my / our order placed with the aforementioned dealer / distributor.

I / We have been instructed in the operation, routine servicing procedures and safety precautions and acknowledge the receipt of the Operators instruction manual

I / We understand my / our entitlement to the benefits of the warranty.

I / We will ensure that all operators of the machine will be properly instructed on the operator's manual and that the operator's manual will be available to the users at all times.

☐ **Owner** ☐ **Manager** ☐ **Contractor**

Purchaser Signature: _____

Purchaser Name: _____

Date: _____

Operating Instructions:

I / We have carried out the pre-delivery inspection and have delivered and installed the machined detailed on this form.

I / We have explained to the purchaser, the operation, routine servicing procedures and safety precautions involved with this machine and passed on to the purchaser / operator the operators manual.

I / We have advised the purchaser of his entitlement to warranty.

I / We have carried out the relevant checklist with the purchaser or operator overleaf.

Dealer / Company Representative Details:

Name:	
Depot Address:	

Signature: _____

Name: _____

Date: _____

***Please Note**: This form should be completed by the Dealer / Company representative / Retail customer within 7 days of the installation. Please return to the below postal address or email address.*

East Mains of Burnside, By Forfar, Angus, DD8 2RX T: 01307 818 000
ewan.harper@scanstone.co.uk T: 07976 260 546

EC Declaration of Conformity

in accordance with BS EN ISO/IEC 17050-1:2004

RGS Forfar Ltd.
East Mains of Burnside, Forfar, Angus, Scotland DD8 2RX

declare that:

Equipment: ..... **4 Body Bed Maker** .....

Model No. .....

Serial No. .....

in accordance with the following directive:

2006/42/EC	Conforms with the essential requirements of the Machinery Directive and its amending directives

has been designed and manufactured to the following specifications:

BS EN ISO 12100-1 2003 Safety of Machinery - Basic concepts, general principles for design - Basic terminology, methodology.

BS EN ISO 12100-2 2003 Safety of Machinery - Basic concepts, general principles for design - Technical principles and specifications.

BS EN 982: 1996
Safety of machinery. Safety requirements for fluid power systems and their components - Hydraulics

BS EN ISO 4254-1: 2009
Agricultural machinery - Safety - Part 1: General requirements

BS EN ISO 13857: 2008
Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs.

Signed:-

Gordon Skea
Director
RGS Forfar Ltd.

at:- RGS Forfar Ltd. Forfar, Angus, UK
on:- 7th April 2010

CE

Foreword

ScanStone 3845 series machines have been designed specifically for ridging and bed making purposes and are not intended for any other use. The manufacturer shall not be liable for damage resulting from mis-usage. The user shall bear all responsibility.
Intended use also comprises adherence to the operating, maintenance and servicing instructions outlined by the manufacturer.
The machine must only be used in perfect working condition, in accordance with the aforementioned intended use and with instructions outlined in the operator's handbook. Any functional disorders, especially those which may affect safety of personnel must be rectified without delay.

Following the setting up and operating instructions provided should allow the operator to achieve the best performance from the machine which should result in increased reliability. Owing to wide variations in operating conditions however, it is impossible for the manufacturer to make comprehensive statements in this publication regarding performance or methods of working.
The efficiency of the machine always depends on the suitability of the operating conditions. Working on steep inclines or land that is too wet can significantly affect the finished work.

Operators should read carefully the safety notes contained within the manual prior to using the machine in order to help avoid dangerous situations, expensive repairs and prolonged downtime. In addition operator's should also read all relevant legislation regarding health, safety and accident prevention applicable to the country in which the machine is to be used or resold.

ScanStone products are manufactured to the highest possible standards and specifications in the UK using carefully selected materials and components and in accordance with recognised safety standards.
The right to change specifications, equipment and maintenance instructions at any time, without notice is reserved as part of our policy of continuous development and improvement.
No liability can be accepted for any inaccuracies or omissions in this manual, although every possible care has been taken to make it as complete and accurate as possible.

Owners who encounter a problem not covered in the manual should contact their dealer or ScanStone direct at the following address:-

The Service Manager,
RGS Forfar Ltd.
East Mains of Burnside, Forfar,
Angus, Scotland, DD8 2RX
tel & fax: 00 44 (0) 1307 818994
e-mail:- rgssales@btconnect.com

The serial number plate is attached to the Bed Former main frame. Use the space on the sample plate below to record the serial number for future reference.

ScanStone
POTATO SYSTEMS

SERIAL No.
MODEL
YEAR
UNLADEN WEIGHT (KG)
DRAWBAR WEIGHT (KG)
AXLE WEIGHT (KG)

RGS Forfar Ltd. Burnside, Forfar, Scotland CE

Warranty

ScanStone when supplying new goods guarantee subject to certain conditions that those goods are free of defects both in material and workmanship.

The following conditions apply:-

- That the machine has only been used for ridging and bed making purposes.
- That service and warranty work is carried out only by authorised ScanStone dealerships.
- That the original specification of the machine has not been altered by unauthorised modification.

Correct operation of the machine and regular maintenance will help to prevent breakdowns. If however, operating trouble is experienced during the warranty period the following actions should be adopted:-

Notify the dealer from whom the machine was purchased, quoting the model and serial number.
This should be done immediately!

Do not operate the machine. Even though the original failure may be covered by warranty - resultant damage to the machine arising from delay in reporting the fault will not be covered.

It should be noted that items consumed during normal maintenance services, by operation of the machine and by factors over which the manufacturer has no control are not automatically warrantable.
These items include - hydraulic and lubricating oils and ground engaging parts.

The manufacturer cannot accept liability for damage to machines or third party through operational negligence.

Table of Contents

Part 1 Safety Precautions

Ignoring these precautions may result in serious personal injury or damage to the machine.

Warning Symbol

This symbol is used throughout the manual to draw attention to important information where particular care is required to ensure safe operation and maintenance of the machine.

General

The operator's handbook should be considered as a part of the machine and should be available for immediate use at any time during operation of the machine. Suppliers of new and second hand machines are advised to obtain documentary evidence that this manual was provided with the machine at time of sale.

Owners of machines should ensure that prior to commencement of work the operator has read and understood the operator's handbook and in particular the information regarding safety. This also applies to persons involved in setting up, maintenance and cleaning of the machine.

Reading the instructions after work has begun is too late!

Operator's should also consult the tractor handbook for information and instructions on mounting implements and other related safe working methods.

Before starting work

- Take care when coupling / uncoupling hydraulic hoses to the tractor. Hydraulic oil under pressure can damage your skin. If any fluid is injected into the skin - always seek immediate medical advice
- Do not add to or modify any part of the machine which could affect safety without the prior approval of the manufacturer. This also applies to welding work.
- Check that warning and safety decals are in good condition. Replace any which are missing or those which have become illegible.
- Check the machine to ensure all services are operational and functioning correctly.
- Inspect the field for hazards such as large boulders, poles, overhead power lines and uneven ground. Take care when working to avoid obstacles and when working in unstable conditions.
- Warn bystanders to keep clear of the machine whilst working or when raising or lowering the toolbar or marker arms.
- Use personal protective equipment when circumstances require or to meet legislation. e.g. ear plugs.
  In extremely dry conditions face masks should be worn if dust levels are unacceptable.

During work

Under no circumstances should anyone stand below the toolbar when the frame is in the raised position!

- Reduce tractor speed when working on sloping ground.
- Never leave the driving position of a moving or running tractor.
- Avoid ridging across the face of slopes or on uneven ground where there is a danger of the tractor overturning.
- Check the machine regularly during operations for signs of wear and damage especially if an obstacle is struck.
- Never raise or lower the toolbar or markers arms whilst near overhead power lines.
- Do not allow children to play anywhere near the ridger or on the headlands when the machine is operational especially if hydraulic marker arms are fitted.

After work

- Never park the machine or carry out maintenance work when underneath overhead power lines.
- Return marker arms to transport position and lock with pins provided.
- Adhere to replacement intervals noted in the manual if applicable even if signs of wear to components are not evident.

Safe maintenance and servicing

Never attempt maintenance or servicing work on the machine when the tractor engine is running. All servicing work should be undertaken on flat, level ground with the folding toolbar frames fully lowered and support stands in place for additional stability. Release any residual pressure in the hydraulic system by operating the spool valve lever in both directions.
Always remove the tractor ignition key!

- Check operator's instruction book for details of service and maintenance schedules.
- Take care when carrying out maintenance under the machine. Make sure adequate support devices are in position to prevent sudden lowering.

- When large assemblies are to be lifted make sure lifting devices, slings and suspension systems have the necessary lifting capacity and are properly attached.
- After cleaning the machine check all hydraulic pipes and hoses for leaking or operational damage.
  Repair before putting the machine back in service.
- When servicing is complete, check all nuts and bolts loosened during repairs have been tightened satisfactorily.
- Dispose of hydraulic fluids, filters and contaminated materials safely with due consideration to the environment.
- Always use genuine ScanStone spare parts.

Servicing the Hydraulic system.

Warning - The hydraulic system works under high pressure.

- When servicing or repair work is to be carried out on the machine use only suitably qualified engineers working to the relevant hydraulic standards and codes of practice.
- Check hydraulic lines regularly for any sign of leakage. Do not tighten a leaking fitting whilst the hydraulic system is pressurised. Always de-pressurise before maintenance to hydraulic components.
- Ensure hoses are properly fitted, free from twisting and clear of moving parts of machinery.
- Always replace hoses at the first sign of damage.

Handling of the Machine

The machine should only be moved by means of a tractor connected to the 3 point linkage.

Road Transportation

- Check that the machine is free of earth, stones and clods, tools or other items of loose equipment before driving on public roads.
- Retract the marker arm extension tubes and secure with the pinch screws.
  Remove locking pins from pivot mounts and swing marker arms into transport position, Fig 1. Replace pins.
- Fold retractable frame to transport position and secure using the transport lock.
- Disconnect all hoses from the tractor spool block and secure to the machine.
- When turning or at bends - take the width and load of the machine into consideration.
- When stopped - secure the machine to prevent rolling or unauthorised use.

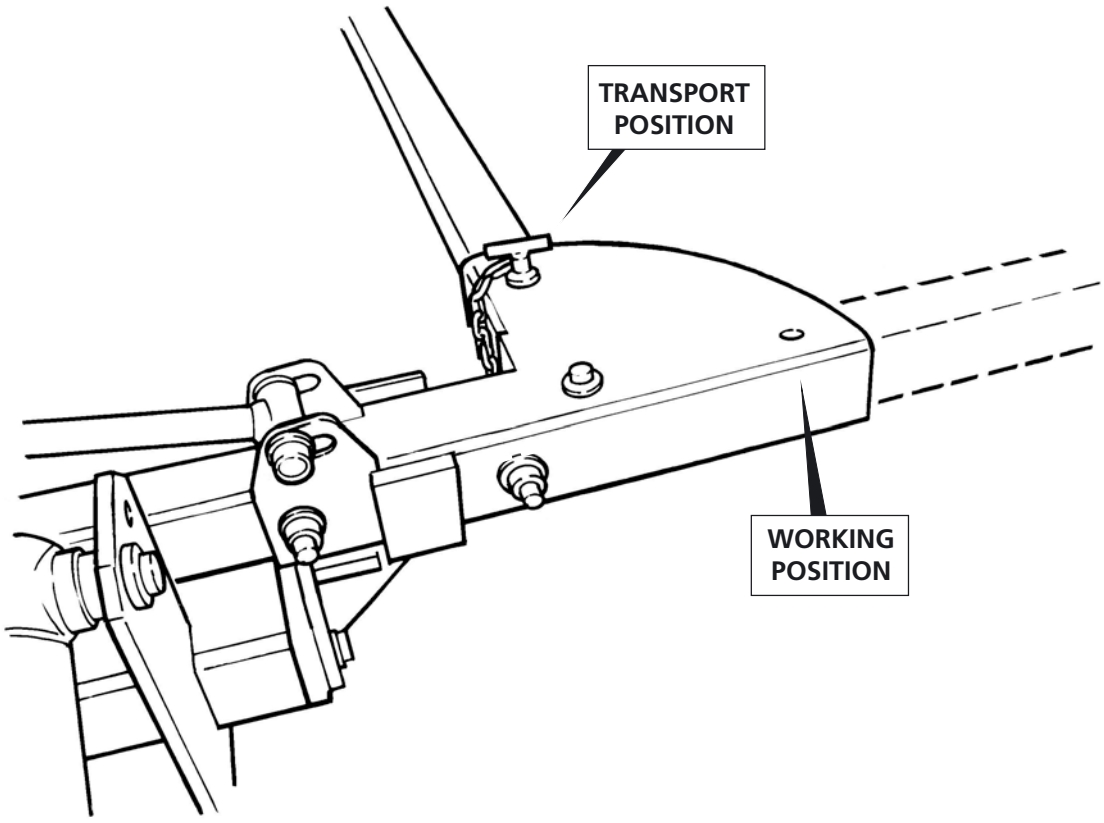
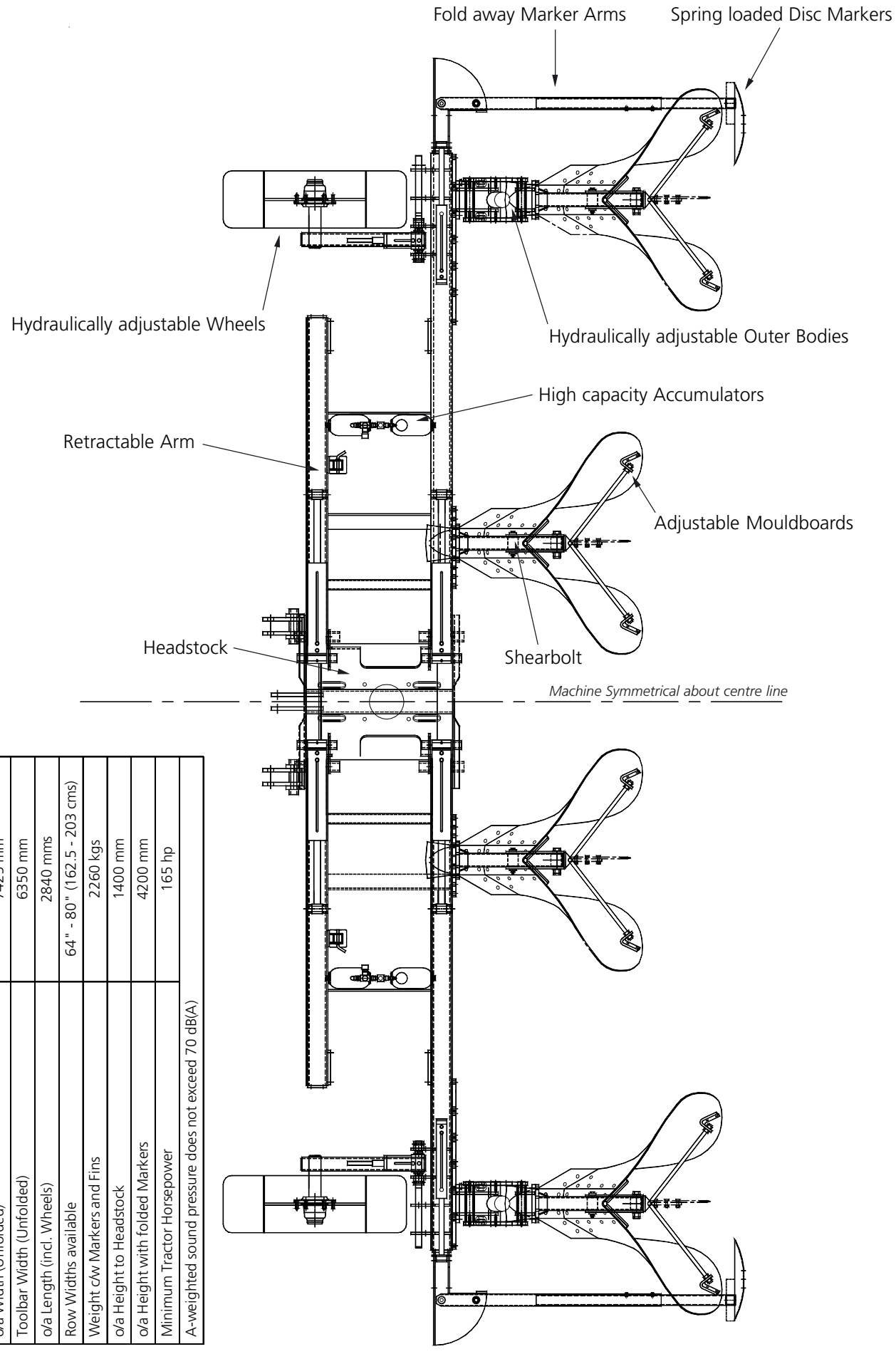


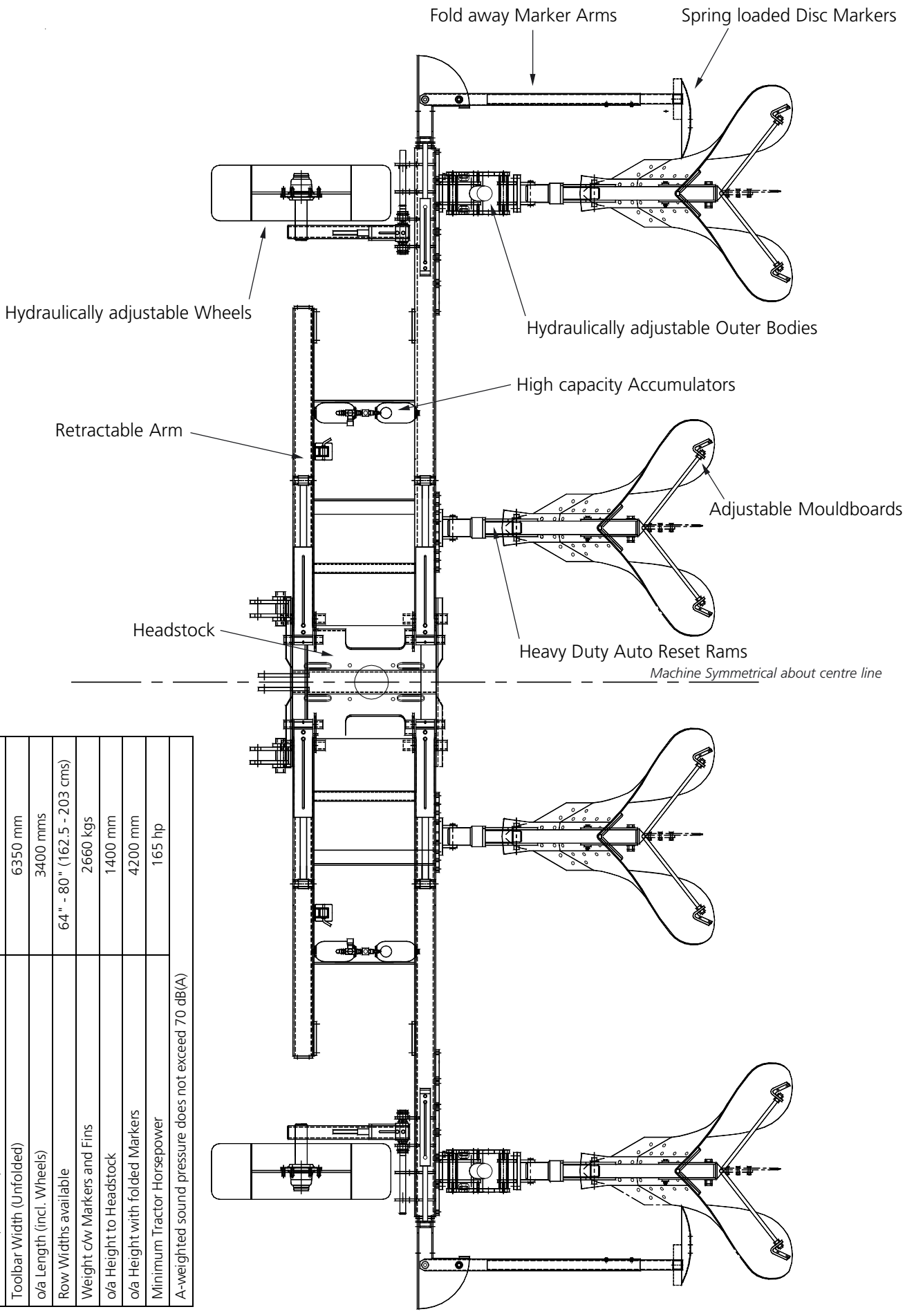
Fig 1

Machine Overview & Specifications



Shearbolt model

o/a Width (Folded)	2468 mm
o/a Width (Unfolded)	7425 mm
Toolbar Width (Unfolded)	6350 mm
o/a Length (incl. Wheels)	2840 mms
Row Widths available	64" - 80" (162.5 - 203 cms)
Weight c/w Markers and Fins	2260 kgs
o/a Height to Headstock	1400 mm
o/a Height with folded Markers	4200 mm
Minimum Tractor Horsepower	165 hp
A-weighted sound pressure does not exceed 70 dB(A)	



Auto-reset model

o/a Width (Folded)	2468 mm
o/a Width (Unfolded)	7425 mm
Toolbar Width (Unfolded)	6350 mm
o/a Length (incl. Wheels)	3400 mms
Row Widths available	64" - 80" (162.5 - 203 cms)
Weight c/w Markers and Fins	2660 kgs
o/a Height to Headstock	1400 mm
o/a Height with folded Markers	4200 mm
Minimum Tractor Horsepower	165 hp
A-weighted sound pressure does not exceed 70 dB(A)	

Part 2 Setting up, Adjustment and Maintenance

Attaching to the tractor Three Point Linkage

The machine is fitted with standard category 2 three point linkage. This linkage combines the Bed Former and the tractor into a single working unit. Lift and position are controlled hydraulically.

Consult the Tractor Operator's manual for instructions on mounting implements and for rear hitch adjustment.

During hitching operations or when using external lift controls, the operator must at all times keep outside the drawbar frame.

Fit ball ends to the bottom link pins. Carefully reverse the tractor until the lower links are positioned below the pins and lift to engage.
Connect the tractor top link to the machine using one of the three holes in the headstock and secure with the pin provided.

The stabilizer chains on each lower link should be evenly adjusted to reduce side play to approximately 1½" (38mm) to each side of the tractor.

Fit front end weights (1000kg) for stability and steering control as load will be transferred from the front to the rear wheels of the tractor when the three point linkage is raised.

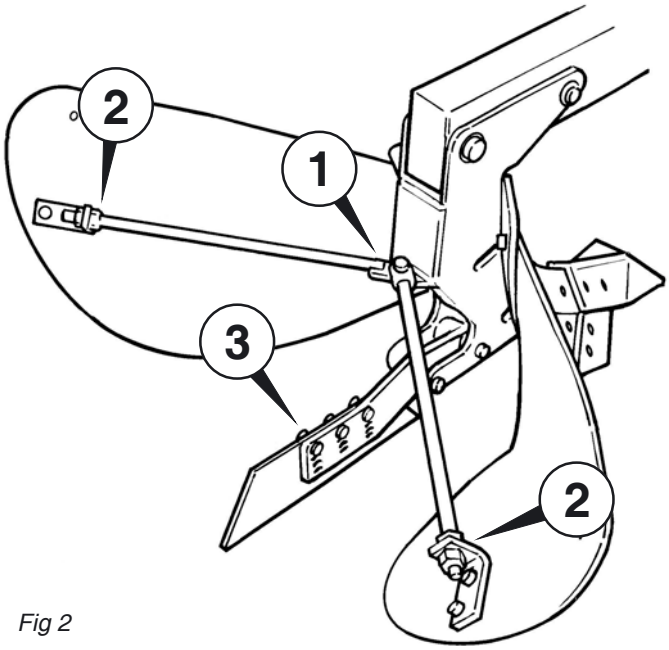


Fig 2

Adjustment of Ploughs

The effective length of the mouldboard stays can be adjusted to increase or decrease the plough width allowing the operator to vary the shape of the bed to suit the type and condition of the soil.

To adjust the width:-
Loosen the nut attaching the inner end of the stays to the plough mounting leg, Fig 2:1.
Loosen the locknuts attaching the stays to the mouldboard brackets, Fig 2:2 and increase or decrease the stay length to suit the new setting required.
Ensure both sides are adjusted equally before tightening nuts.

Although a trial run is often the best way to decide on bed shape - wider plough widths which produce shallow sided ridges are generally more suited to heavier clay type soils.
In moist sandy conditions - narrower ploughs producing a steeper wall angle are more suitable.

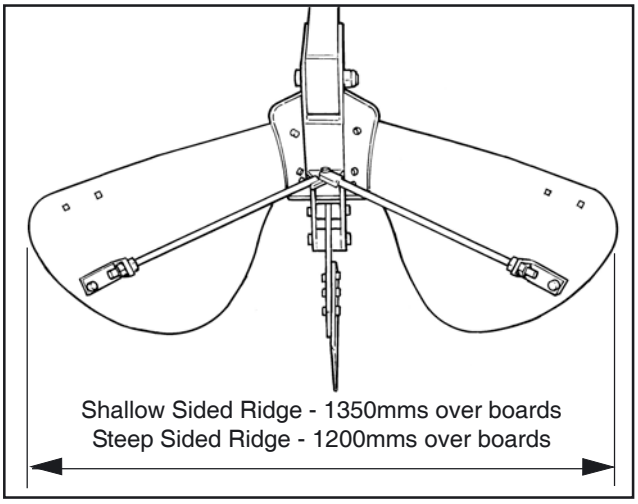


Fig 3

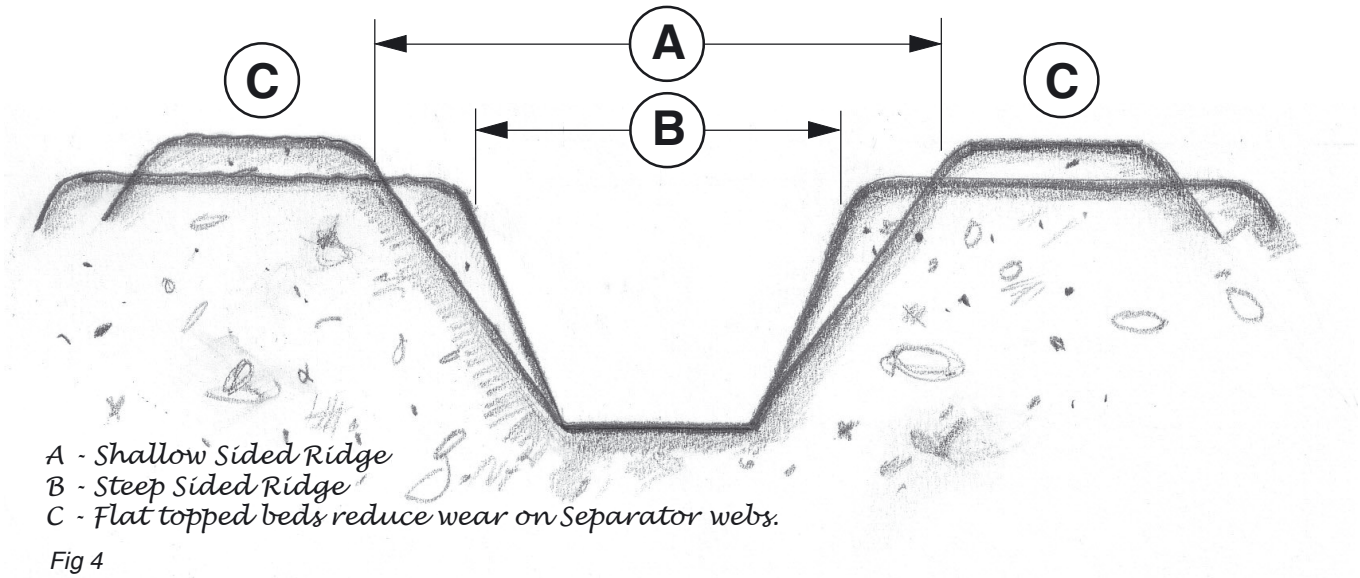


Fig 4

If bed tilling or stone and clod separation is to take place after ridging - note that ridged beds should be prepared with tops as flat as possible. This will help to minimise wear damage to the centre of the machines.

A stabiliser fin is fitted to each plough body to provide stability whilst ridging.
When new, this fin is bolted to the top set of holes in the plough stabiliser bracket, Fig 2:3, but can be fitted to each of 3 other sets of holes as wear occurs.

Hydraulic System Pressure

On Auto-reset models the hydraulic system is pre-charged using the tractor hydraulics to a pressure setting sufficient to hold the ploughs in work.
Accumulators are positioned on both right and left hand toolbar arms.

Follow the instructions below to pressurise the system:-

- Starting with either right or left accumulator - couple the quick release pressurising hose (from the accumulator lock valve) to the tractor auxiliary hydraulic outlet.
- Open the system lock valve by turning in an anticlockwise direction, Fig 5:1.
- Operate the tractor auxiliary system to obtain a pre-charge working pressure shown on the gauge, Fig 5:2, of 115 bar (1670 psi).
- Close the lock valve by turning in a clockwise direction.
- Disconnect the quick release pressurising hose from the tractor auxiliary outlet and tie up to prevent the hose end from trailing on the ground during operation..
- Repeat procedure for opposite side of machine.

The system is now charged and ready for use.

WARNING

Do not use the lock valve to depressurise the system, or at any other time unless the pressure hose is connected to the tractor hydraulic outlet.

Accumulator Pressure

The system twin accumulators are each pre-charged to 110 bar (1595 psi) and require no maintenance.
If a fault develops with either of the accumulators the operator should notify his ScanStone dealer.

Hydraulic Connections - Toolbar Frame

The toolbar frame is fitted with rams which allow the machine to be folded up into the retracted position for transportation or down into the working position.

Locate the 2 quick release hoses leading from the headstock '**lower manifold**' and connect to the tractor spool block.
These hoses are interchangable and may be re-positioned on the spool block if required to obtain functions consistent with the operation of the lever.

Remove the transport lock before operating the toolbar frame lift / lower control.

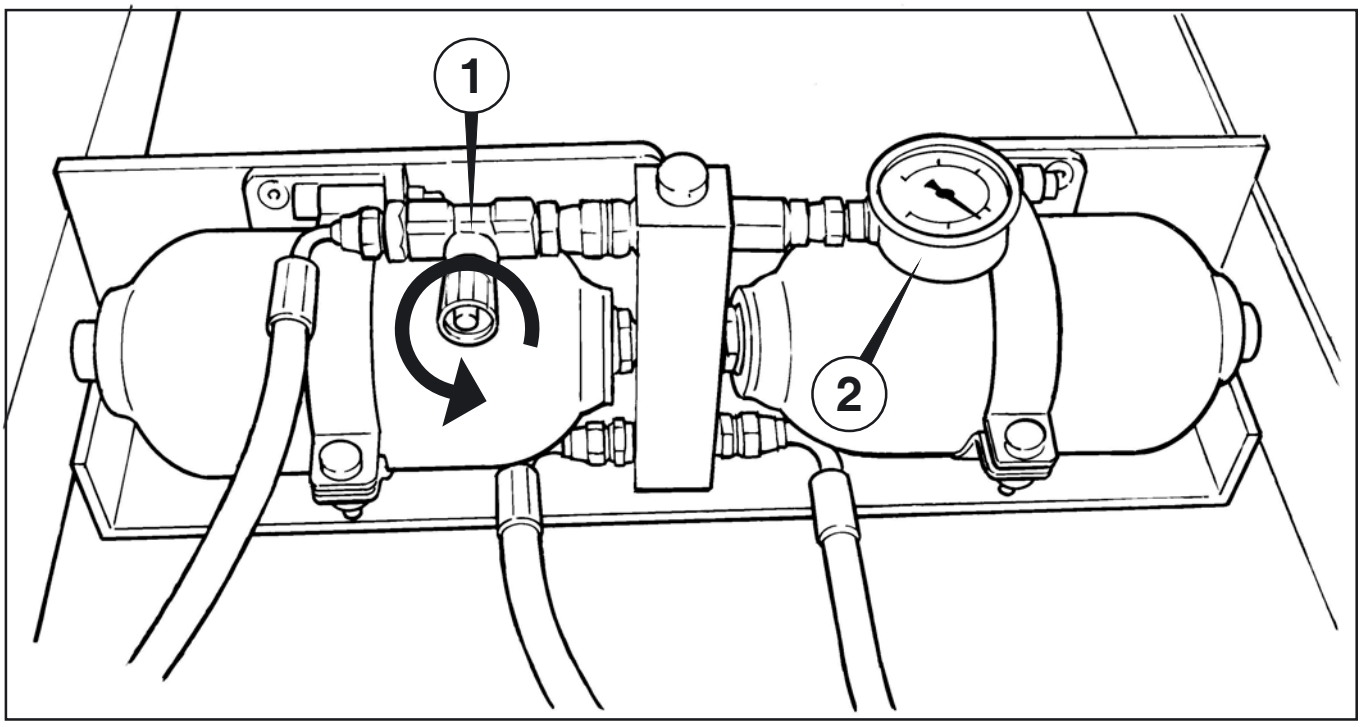


Fig 5

Part 2

Hydraulic Connections - Marker Arms

Hydraulically operated marker arms are fitted to allow the operator to retract the markers when turning at headlands. (see Fig 1 for pin position details).

Note: The marker arm function, wheel lift and outer plough lift are connected to work in sequence. When the instruction is given to raise a marker the wheel and plough are raised simultaneously.

To fold / unfold:-
Locate the 2 quick release hoses leading from the headstock **'upper manifold'** and connect to the tractor spool block.
Use the tractor spool lever to operate the marker rams to fold or unfold.
As with the toolbar frame these hoses are also interchangable and may be repositioned if required.

Note: When the markers are supplied they may be set up to operate in one of the two following ways:-

- When the spool lever is engaged the marker arms at each side of the machine will fold together.
  or
- When the spool lever is engaged the first marker arm will unfold to the working position followed by the other, and vice-versa when folding.

Operators who wish to change from one system to the other can do so by disconnecting the two hose ends on one of the marker arm rams and changing their positions.

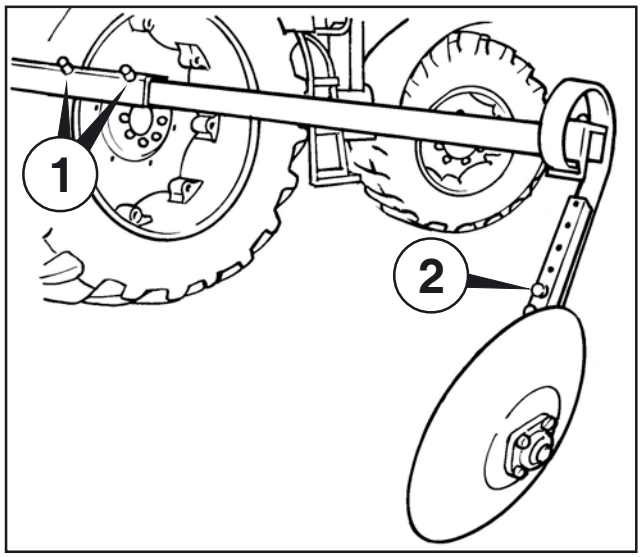


Fig 6

Marker Arms and Discs

Marker Arms consist of inner and outer sliding tubes held by pinch screws, Fig 6:1, which when loosened allow the operator to extend the inner tube to the required position.
A pig tail spring attached to the end of the inner tube holds the marker disc in work.
To increase or decrease the marking depth - remove bolts and reposition them in any of the holes provided, Fig 6:2.

Note: Always retract the marker arm outer tubes and secure with pinch screws before travelling on public roads.

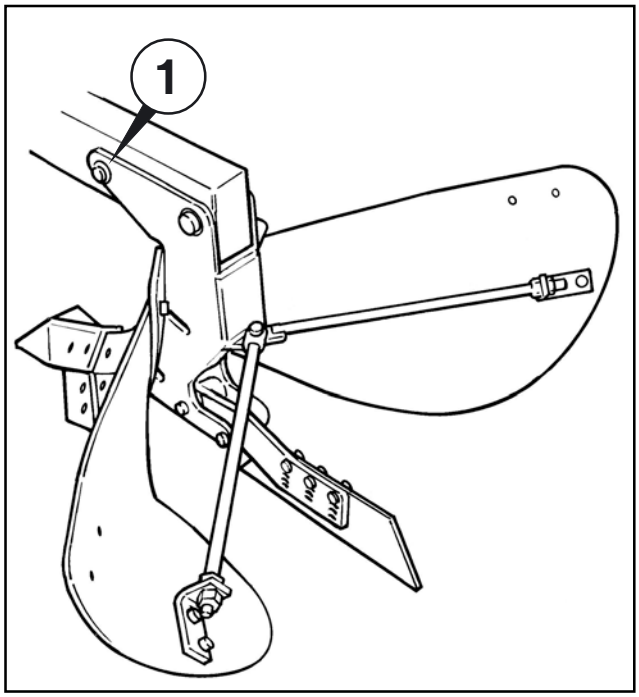


Fig 7

Shearbolts

Plough Stems are connected to the beams using special Shearbolts, Fig 7:1. These Shearbolts will snap free should the plough become snagged on an underground obstruction. Do not replace the shearbolts with ordinary bolts as this could cause serious damage to the mounting plates.

Shut-off Valves

Shut-off valves are fitted to the machine to allow the outer wheel and plough to be operated at ½ or full depth when required.

This adjustment is important when working alongside the headland on the first pass when full depth is required on the outer plough.
The plough and wheel can then be set to work at ½ depth for subsequent passes until the opposite headland is reached when again the outer plough can be locked at full depth for the final pass.

Note: Shut-off valves are in the open position when the lock handle is parallel with the body of the valve, Fig 8.
To close - Turn the lock handle through 90°, Fig 9.

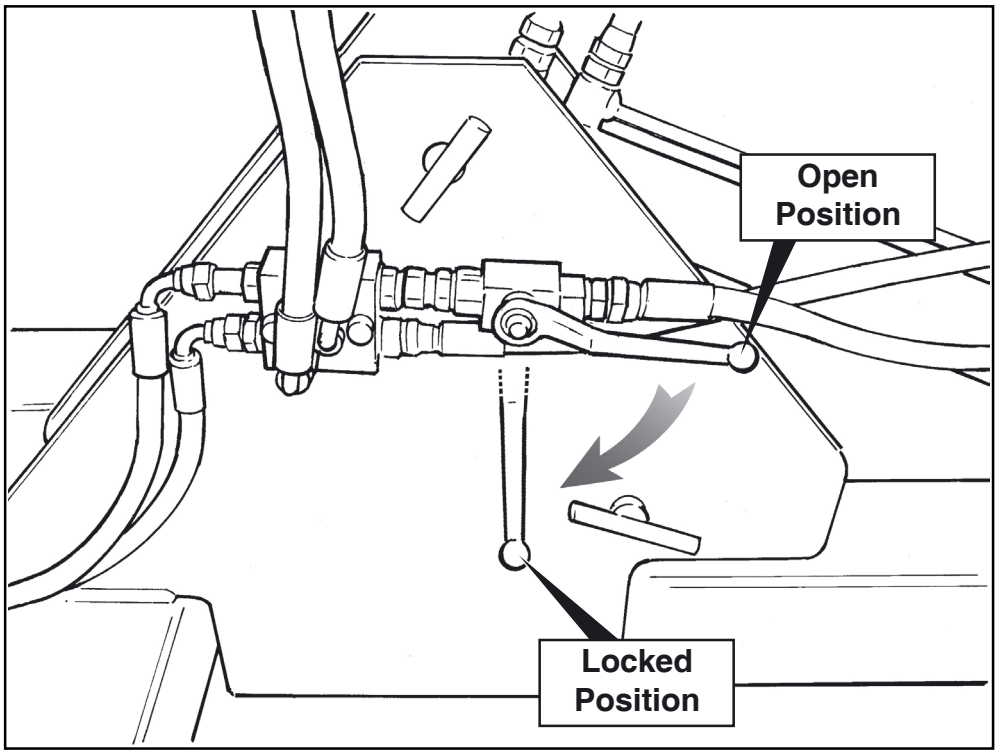


Fig 8

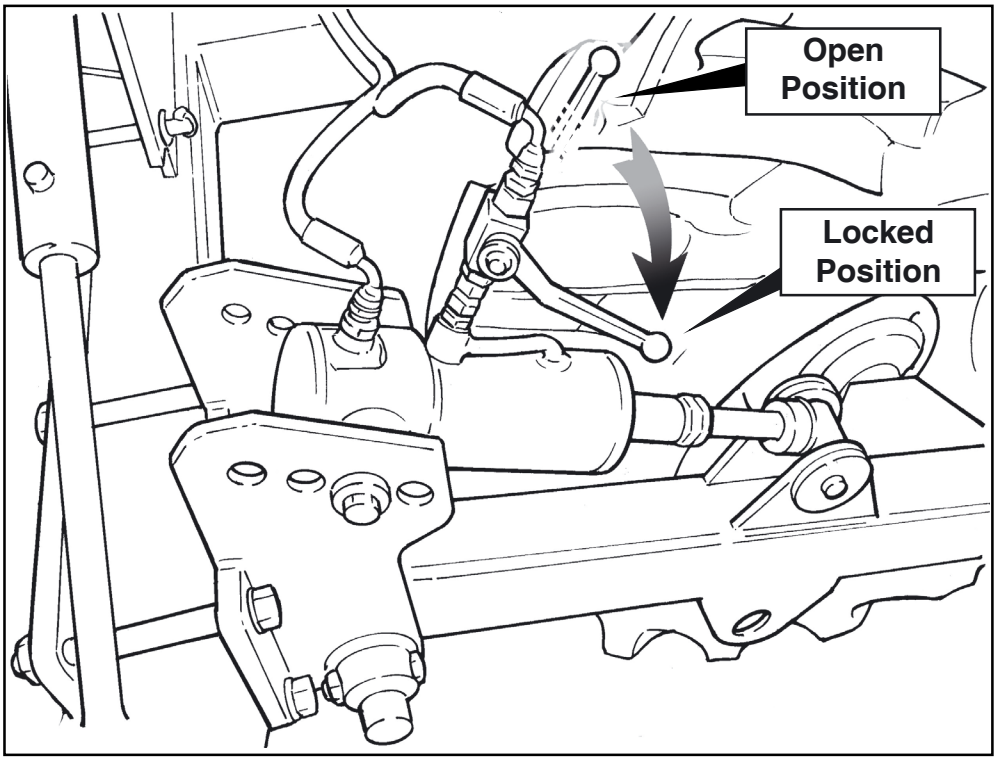


Fig 9

Part 2

Coupling to the ScanStone Bed Tiller

Before coupling to the Bed Tiller the linkage kit should be fitted to the Tiller as shown, Fig 10.
The kit consists of linkage mount frames, Fig 10 (A), mount brackets (B), top link extension brackets (C), top links (D), latches (E), and all necessary pins and bolts.
Fit the pivot pins in either of the 3 height adjustment holes in the mount brackets, Fig 10:1.
Remove the latch retaining bolts, and raise latches ready to mount the Bedmaker, Fig 10:2.

Mount the Bed Tiller on the tractor 3 point linkage and raise the Support Stand.
Fit lower link pins to the Bedmaker, in either upper or lower holes, Fig 10:3.

Reverse the mounted Tiller slowly toward the Bedmaker until in position below the Bedmaker lower link pins. Raise the Bed Tiller to engage the lower link pins and ensure they are properly seated in the linkage jaws. Re-fit the latch plate retaining bolts.
Connect the top links and adjust so that the Bedmaker is leaning back slightly.
Test run the combined unit adjusting the top link if necessary to ensure that the ridge bottom width is sufficient for stone and clod placement during separation and that the plough points are not bringing up uncultivated soil onto the ridge.

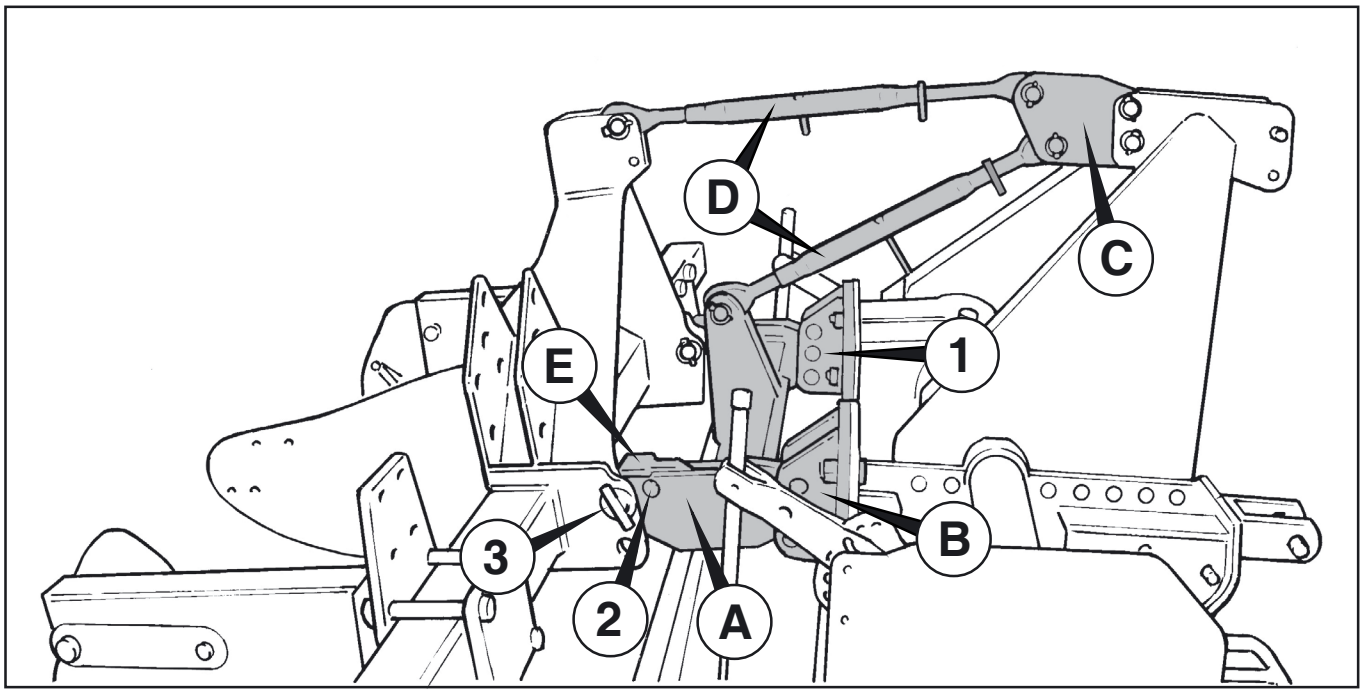


Fig 10

Maintenance Note

Hose Replacement Intervals - Hoses should be replaced every 5 years even if signs of wear or damage is not apparent.

When replacing hoses always use the correct specification*:-

***SAE 100 R2 AT • DIN EN 853 2SN**

SIZE	WORKING PRESSURE	MIN. BURST PRESSURE
1/4"	400 Bar (5800 psi)	1600 Bar (23200 psi)
3/8"	330 Bar (4800 psi)	1320 Bar (19150 psi)

Lubrication

4 grease nipples are fitted on main fold ram ends, and 4 on lift frame pivot bushes, (as arrowed Fig 11). Grease daily.
8 grease nipples are fitted on beam mounts, (as arrowed Fig 12). Grease daily.
12 grease nipples are fitted on Auto-reset models, located on ram ends and beam pivot pins, (as arrowed Fig 13). Grease daily.
Grease nipples are fitted on marker disc bearings, (Fig 14) (2 per disc) - grease every 40 hours.

End of Season Storage

- Park the machine on even level ground with toolbar frames lowered and resting on parking stands.
- Clean the machine thoroughly to remove all remains of dirt.
- Check for any signs of wear or damage, and replace badly worn parts as necessary.
- Inspect shearbolts for damage replacing only with special ScanStone shearbolts.
- Grease all plough parts thoroughly, and exposed chrome parts of rams.
- Store the machine in dry conditions under cover.
- Tie up all hydraulic hoses ensuring ends are clear of the ground.

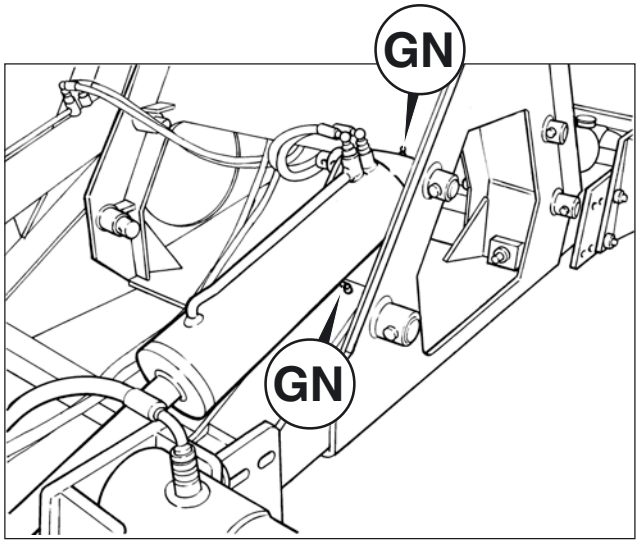


Fig 11

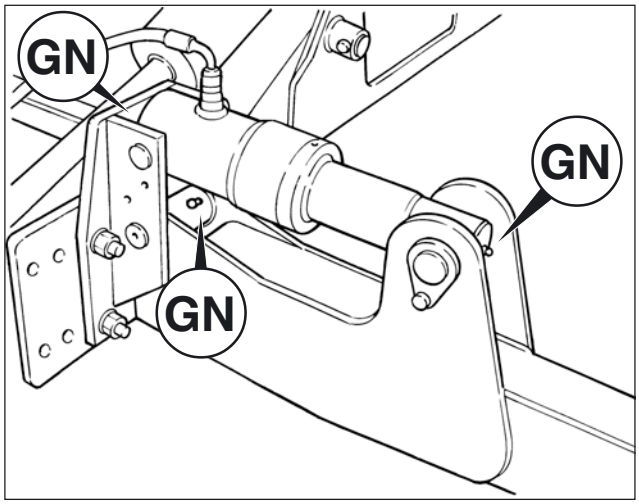


Fig 12

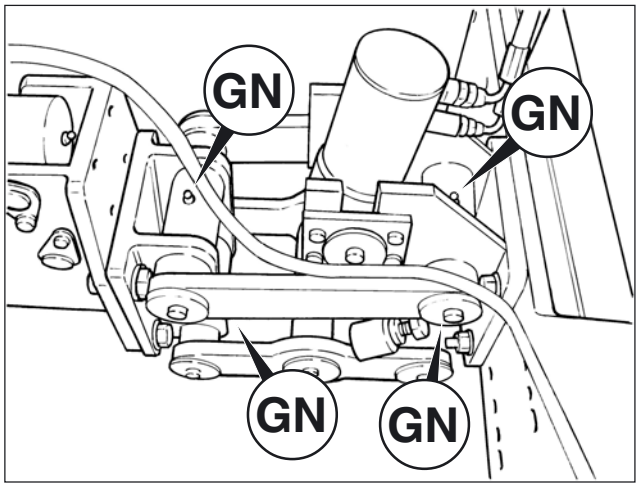


Fig 13

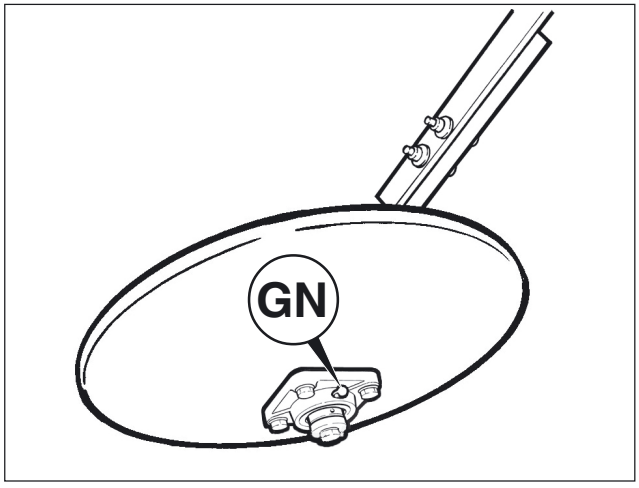
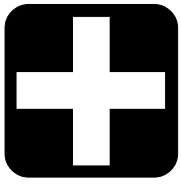


Fig 14

Part 3 Troubleshooting

Problem	Probable Causes	Suggested Remedy
● Ploughs trip too easily.	● Extremely hard or compacted subsoil.	● Subsoiling/deep cultivation required with chisel plough or similar prior to ridging.
	● Low hydraulic pressure.	● Charge system until working pressure shown on gauge is 115 bar (1670 psi). ● Connect the quick release pressurising hose to the tractor auxiliary outlet, and allow the hydraulic oil to flow back to the tractor. With the ploughs in the ground move the tractor forward until the ploughs are in the maximum trip position. Disconnect the hose from the first ram and drain the remaining oil into a container for safe disposal. Take care to avoid sudden discharge of oil due to residual system pressure when disconnecting the ram hose. Use the tractors hydraulic system to flush the hose allowing oil to expel as much air as possible. Loosely reconnect the hose to the ram to allow any remaining air to be bled before final tightening up of connector. Repeat these procedures for the second ram. The system should now be free of trapped air and can be charged up to working pressure.
● Excessive Shearbolt failure.	● Ploughs are snagging under large rocks, tree roots or other obstacles.	● Reduce system working pressure and tractor forward speed when working in fields which have roots or other hidden obstructions. ● Have the accumulator pressures checked by your local ScanStone dealer.



Handling Oil & Grease

Oil and grease products used on this machine are not considered to be particularly hazardous to health unless ingested. Handle these products responsibly and in accordance with good industrial hygiene and safety practices.

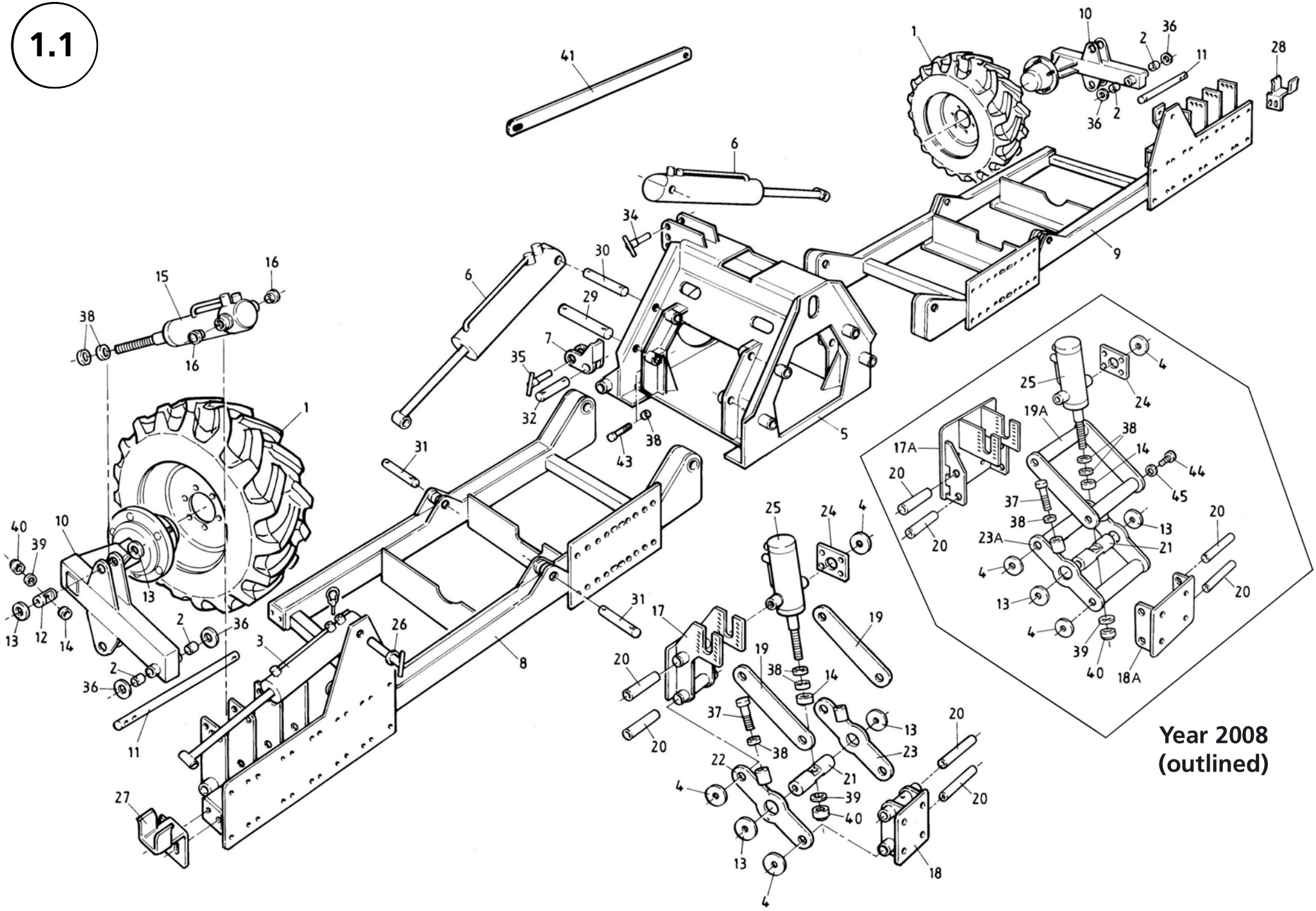
Contact with skin:-
Wash skin with plenty of soap and water for several minutes.
Seek medical attention if irritation develops or persists.

Contact with eyes:-
Flush eyes with plenty of water for several minutes.
Seek medical attention if irritation develops or persists.

***Warning:** Diesel fuel or hydraulic fluid under pressure can penetrate the skin or eyes and cause serious personal injury, blindness or death. Fluid leaks, under pressure, may not be visible. Use a piece of cardboard or wood to find leaks. DO NOT use your bare hand. Wear safety goggles for eye protection. If any fluid is injected into the skin, it MUST be surgically removed within a few hours by a doctor familiar with this type of injury.*

Parts List - Assembly Groups

1.1



Assembly Group 1.1 - Main Frame (up to 2007)

Item	Description	Part No.	Qty.
1	Wheel (Complete) 312 / 80 R20 Track Grip	UN-01135	2
2	Bush	UN-10161	4
3	Marker Ram	UN-15070	2
3A	Marker Ram Seal Kit	UN-15071	
4	Washer	UN-17036	20
5	Headstock	UN-17050	1
6	Main Fold Ram	UN-17067	4
6A	Main Fold Ram Seal Kit	UN-01720	
7	Lower Link Bracket	UN-17070	2
8	Arm Assembly LH	UN-17075	1
9	Arm Assembly RH	UN-17100	1
10	Stem Assembly	UN-17105	2
11	Pivot Pin	UN-17114	2
12	Trunnion	UN-17115	2
13	Trunnion Washer	UN-17116	8
14	Trunnion Collar	UN-17117	4
15	Wheel Ram	UN-17118	2
15A	Wheel Ram Seal Kit	UN-01718	
16	Mount Boss	UN-17119	4
17	Beam Mount (Up to 2007)	UN-17120	2
17A	Front Link Mount (2008 onwards)	UN-17227	2
18	Plough Mount Bracket (Up to 2007)	UN-17125	2
18A	Rear Link Mount (2008 onwards)	UN-17232	2
19	Upper Link (Up to 2007)	UN-17129	4
19A	Upper Link (2008 onwards)	UN-17236	2
20	Pivot Pin	UN-17130	8
21	Long Trunnion	UN-17131	2
22	Lower Link LH (Up to 2007)	UN-17132	2
23	Lower Link RH (Up to 2007)	UN-17135	2
23A	Lower Link (2008 onwards)	UN-17240	2
24	Fixing Plate	UN-17136	4
25	Plough Ram	UN-17137	2
25A	Plough Ram Seal Kit	UN-01719	
26	Marker Pin	UN-17153	2

Item	Description	Part No.	Qty.
27	Marker Arm Support Bracket LH	UN-17158	1
28	Marker Arm Support Bracket RH	UN-17162	1
29	Pivot Pin	UN-17165	4
30	Ram Pin Inner	UN-17166	4
31	Ram Pin Outer	UN-17167	4
32	Lower Link Pin	UN-17168	2
34	Top Link Pin	UN-17190	1
35	Bottom Link Pin	UN-17193	2
36	M36 Form A Washer		4
37	Hex Bolt M24 x 75		4
38	Half Nut M24		16
39	Plain Washer M24		4
40	Nyloc Nut M24		4
41	Transport Lock	UN-17196	1
42	Grommet	UN-00591	48
43	Hex Bolt M24 x 120		4
44	Set Screw M10 x 30		20
45	Spring Washer M10		20

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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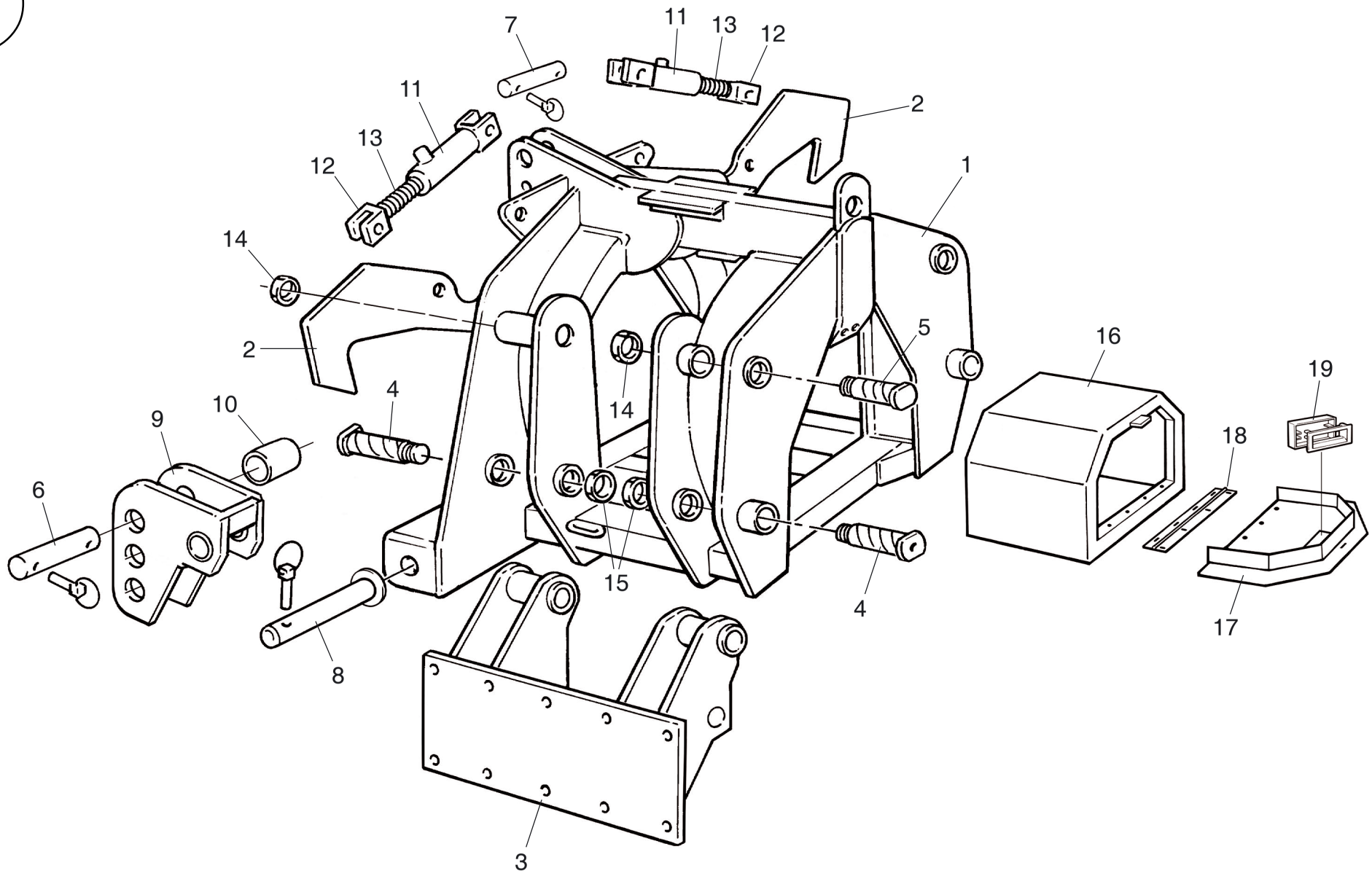

Assembly Group 1.2 - Headstock

Item	Description	Part No.	Qty.
1	Headstock	UN-17600	1
2	Transport Hook	UN-17317	2
3	Pivot Bracket (LH)	UN-17421	1
3	Pivot Bracket (RH- NI)	UN-17423	1
4	Pivot Pin	UN-17593	4
5	Ram Pin	UN-17592	2
6	Bottom Link Pin	UN-17697	2
7	Top Link Pin	UN-17698	1
8	Bottom Link Bracket Pivot Pin	UN-17590	2
9	Bottom Link Bracket	UN-17493	2
10	Bush	UN-17677	2
11	Latch Ram	UN-17678	2
12	Clevis	UN-17679	2
13	Latch Ram Spring	UN-17680	2
14	Castellated Nut	CE-005007	4
15	Castellated Nut	CE-005008	4
16	Toolbox	UN-17350	1
17	Toolbox Door	UN-17355	1
18	Toolbox Hinge	UN-17359	1
19	Handle	UN-00577	1

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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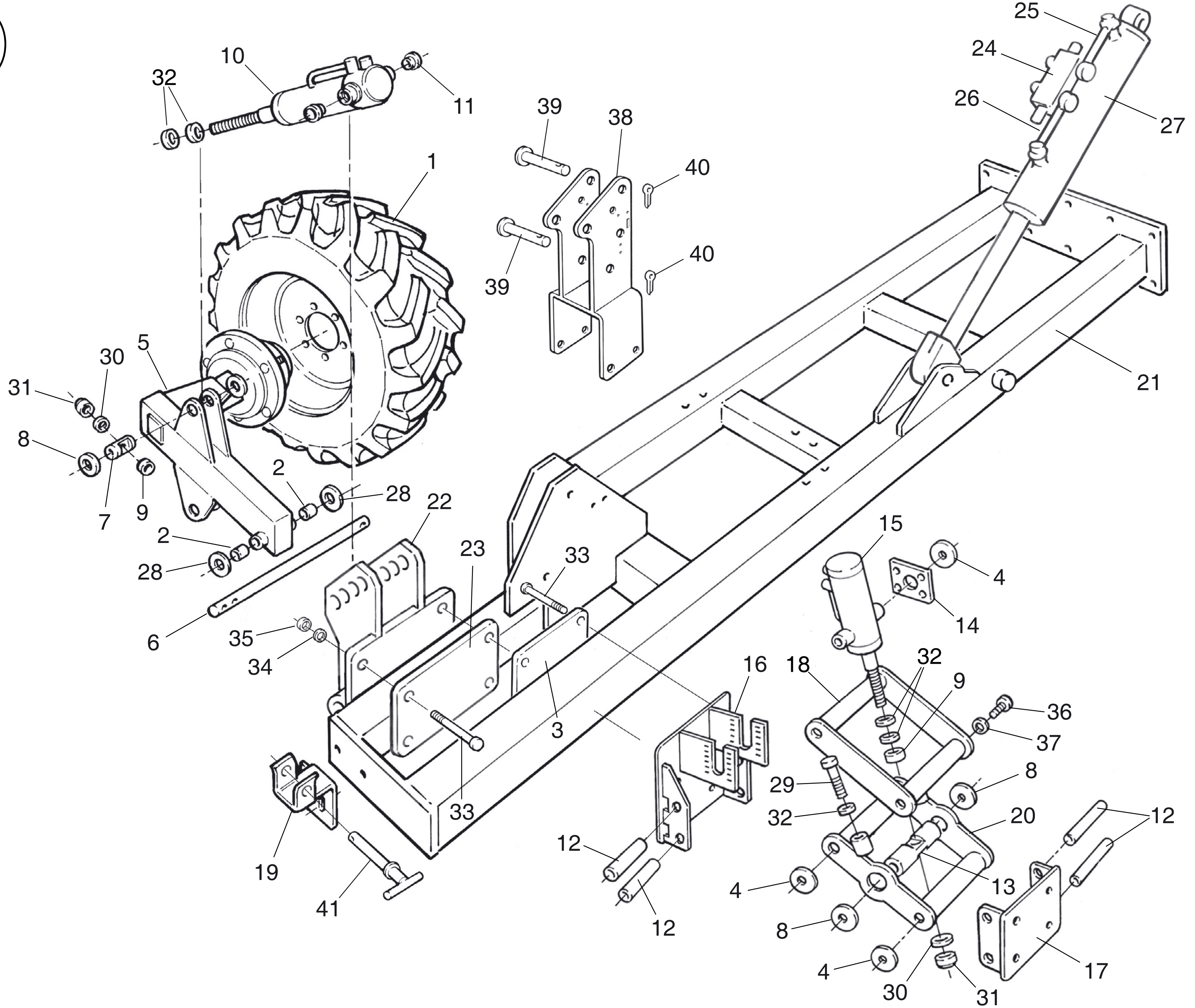

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Assembly Group 1.3 - Lift Arm Assembly - (2008 - 2015)

Item	Description	Part No.	Qty.
1	Wheel (Complete) 312 / 80 R20 Track Grip - Up to 2009	UN-01135	2
1	Wheel (Complete) 12.5 / 80 - 18 Trailer Pattern - 2010 to 2015	UN-01849	2
2	Bush	UN-10161	4
3	Clamp Plate	UN-15001	2
4	Washer	UN-17036	20
5	Stem Assembly	UN-17105	2
6	Pivot Pin	UN-17114	2
7	Trunnion	UN-17115	2
8	Trunnion Washer	UN-17116	8
9	Trunnion Collar	UN-17117	4
10	Wheel Ram	UN-17118	2
	Wheel Ram Seal Kit	UN-01718	
11	Mount Boss	UN-17119	4
12	Pivot Pin	UN-17130	8
13	Long Trunnion	UN-17131	2
14	Fixing Plate	UN-17136	4
15	Plough Ram	UN-17137	2
	Plough Ram Seal Kit	UN-01719	
16	Front Link Mount	UN-17227	2
17	Rear Link Mount	UN-17232	2
18	Upper Link	UN-17236	2
19	Marker Arm Support Bracket	UN-17299	2
20	Lower Link	UN-17240	2
21	Arm Assembly LH - Up to 2013	UN-17270	1
21	Arm Assembly RH (NI) - Up to 2013	UN-17271	1
21	Arm Assembly LH - 2014 (Heavy Duty)	UN-17398	1
21	Arm Assembly RH (NI) - 2014 (Heavy Duty)	UN-17416	1
22	Wheel Bracket Assembly	UN-17290	2
23	Clamp Plate	UN-17295	2
24	Valve	021058	2
25	Pipe	621721	2
26	Pipe	621740	2
27	Lift Ram	671816	2
28	M36 Form A Washer		4

Item	Description	Part No.	Qty.
29	Hex Bolt M24 x 75	B1M24x75	4
30	Plain Washer M24	W2M24	4
31	Nyloc Nut M24	N3M24	4
32	Half Nut M24	N2M24	16
33	Hex Bolt M20 x 180 (to suit UN-17270 / UN-17271)	B1M20x180	16
33	Hex Bolt M20 x 210 (to suit UN-17398 / UN-17416)	B1M20x210	16
34	Spring Washer M20	W1M20	16
35	Hex Nut M20	N1M20	16
36	Set Screw M10 x 30	S1M10 x 30	20
37	Spring Washer M10	W1M10	20
38	Marker Mount (150mm) - 2015	UN-15503	2
39	Marker Pin	UN-15105	4
40	Split Pin 5/16" x 1 1/4"	UN-SCP 5/16 X 1 1/4	4
41	Marker Lock Pin (2014 onwards)	UN-17490	2

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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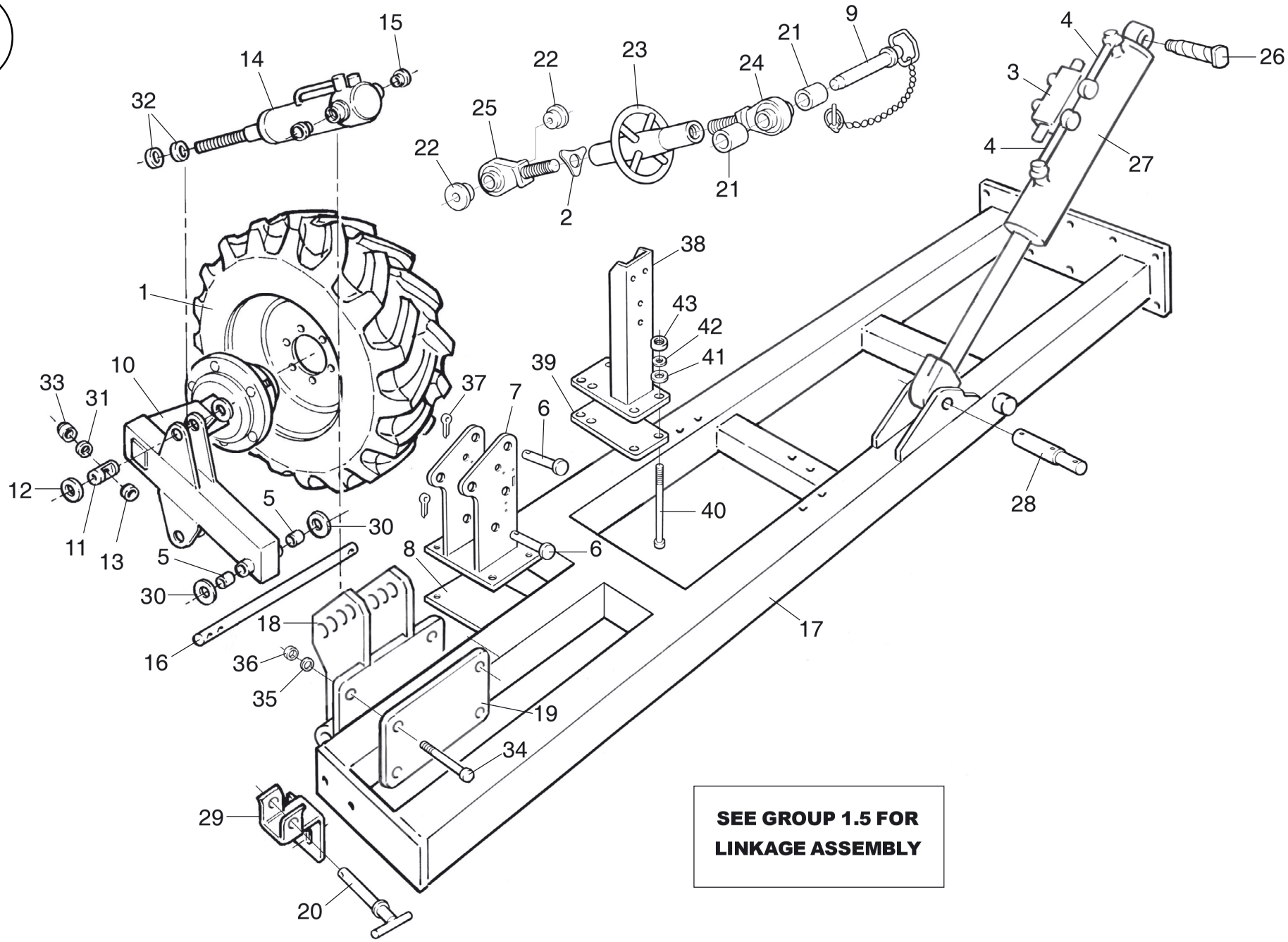
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SEE GROUP 1.5 FOR LINKAGE ASSEMBLY

Assembly Group 1.4 - Lift Arm Assembly - (2016 onwards)

Item	Description	Part No.	Qty.
1	Wheel (Complete) 12.5 / 80-18 Trailer Pattern	UN-01849	2
2	M36 Tri-Lock Collar	UN-02411	2
3	Valve	UN-02871	2
4	Banjo Pipe - 300mm	UN-02872	4
5	Bush	UN-10161	4
6	Marker Pin	UN-15105	4
7	Marker Mount (150mm)	UN-15520	2
8	Clamp Plate	UN-15525	2
9	Hitch Pin	UN-16399	2
10	Stem Assembly	UN-17105	2
11	Trunnion	UN-17115	2
12	Trunnion Washer	UN-17116	8
13	Trunnion Collar	UN-17117	4
14	Wheel Ram	UN-17118	2
	Wheel Ram Seal Kit	UN-01718	
15	Mount Boss	UN-17119	4
16	Pivot Pin	UN-17296	2
17	Arm Assembly - LH	UN-17398	1
	Arm Assembly - RH (NI)	UN-17416	1
18	Wheel Bracket Assembly	UN-17430	2
19	Clamp Plate	UN-17434	2
20	Marker Lock Pin	UN-17490	2
21	Top Pivot Bush	UN-17581	4
22	Bottom Pivot Bush	UN-17582	4
23	Manual Adjuster	UN-17583	2
24	Top Link End - LH	UN-17587	2
25	Top Link End - RH	UN-17588	2
26	Ram Pin	UN-17592	2
27	Lift Ram	UN-17640	2
28	Outer Ram Pin	UN-17642	2
29	Marker Arm Support Bracket - LH	UN-17703	1
	Marker Arm Support Bracket - RH (NI)	UN-17706	1
30	M36 Form A Washer		4
31	M24 Plain Washer		2

Item	Description	Part No.	Qty.
32	M24 Half Nut	UN-N2M24	4
33	Nyloc Nut M24	UN-N3M24	2
34	Hex Bolt M20 x 210	UN-B1M20x210	8
35	Plain Washer M20	UN-W2M20	8
36	Hex Nut M20	UN-N1M20	8
37	Split Pin 5/16" x 1 1/4"	UN-SCP 5/16 X 1 1/4	4
38	Manifold Mount	UN-17700	2
39	Clamp Plate	Un-15446	2
40	Hex Bolt M10 x 190	B1M10x190	8
41	Plain Washer M10	W2M10	8
42	Spring Washer M10	W1M10	8
43	Hex Nut M10	N1M10	8

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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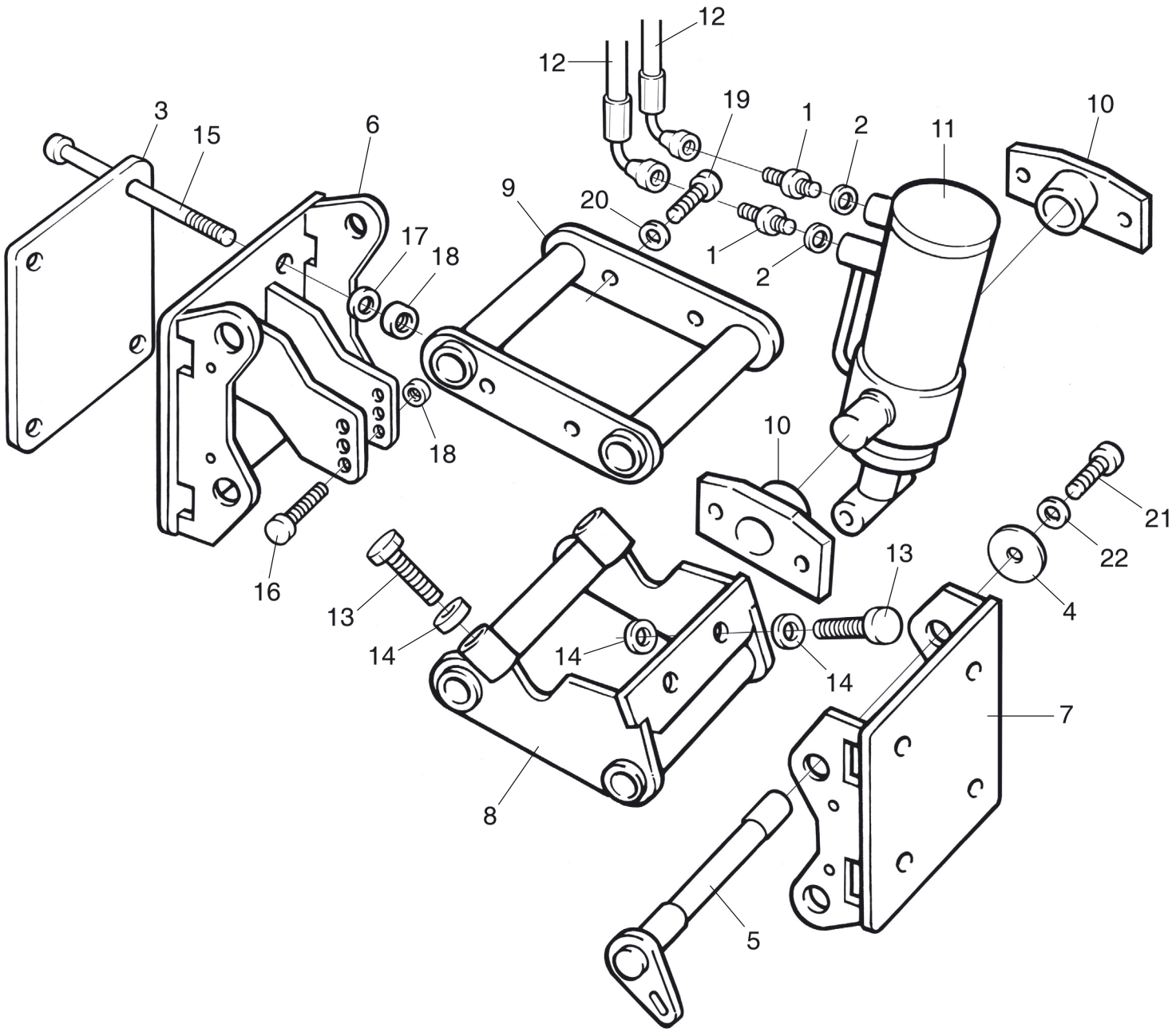


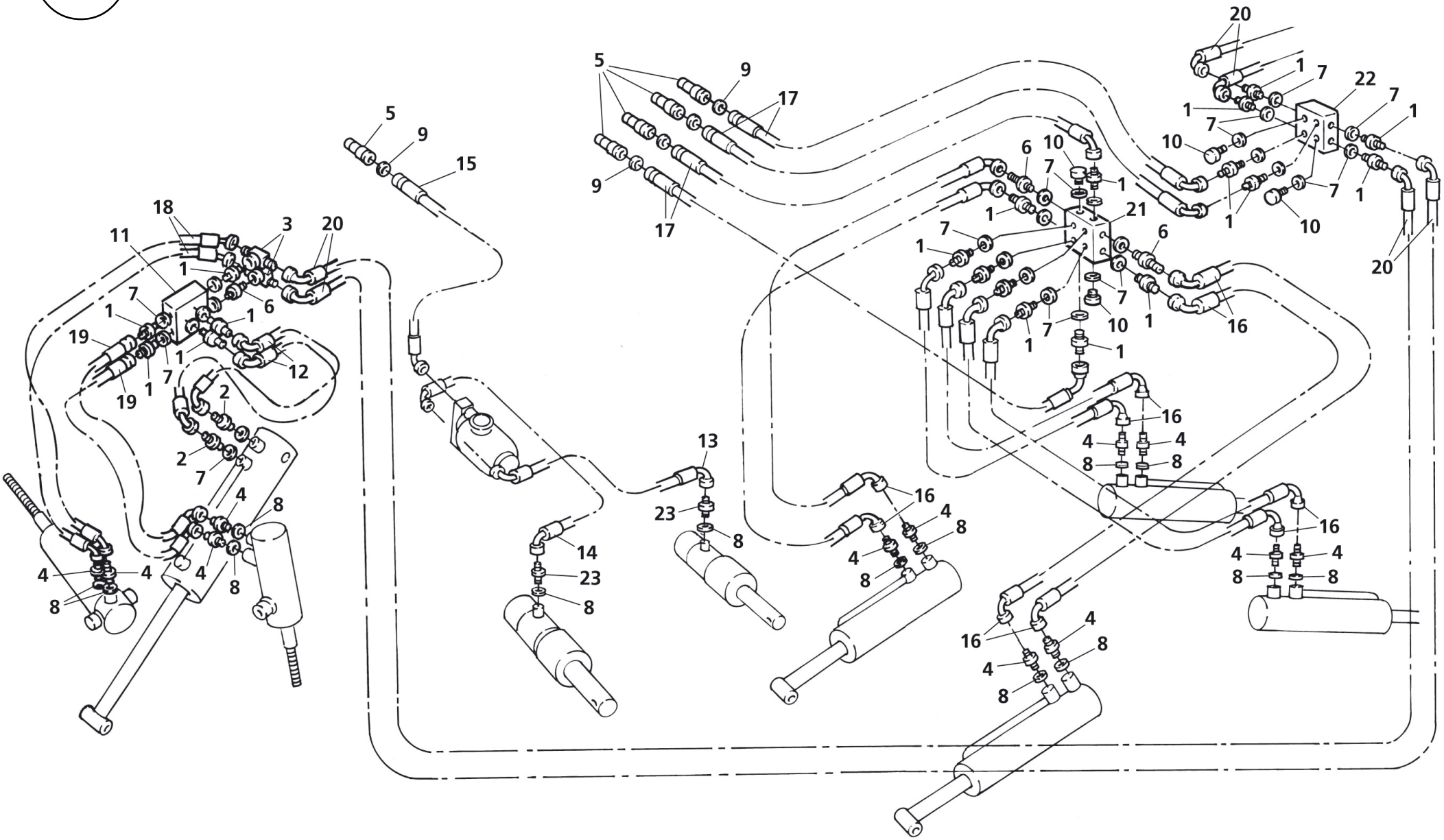
Assembly Group 1.5 - Linkage Assembly - (2016 onwards)

Item	Description	Part No.	Qty.
1	1/4" BSP M x 3/8" BSP M Adapter	UN-05003	4
2	1/4" BSP Dowty Washer	UN-05101	4
3	Clamp Plate	UN-15457	2
4	Washer	UN-17116	8
5	Linkage Pin	UN-17576	8
6	Front Mount Plate	UN-17644	2
7	Rear Mount Plate	UN-17649	2
8	Lower link	UN-17650	2
9	Upper Link	UN-17653	2
10	Ram Mount Bracket	UN-17656	4
11	Plough Ram	UN-17660	2
12	Hose: Outer Plough Lift Ram		4
13	Set Screw M24 x 80	UN-S1M24x80	8
14	Half Nut M24	UN-N2M24	12
15	Hex Bolt M20 x 210	UN-B1M20x210	8
16	Hex Bolt M20 x 110	UN-B1M20x110	2
17	Plain Washer M20	UN-W2M20	8
18	Hex Nut M20	UN-N1M20	10
19	Set Screw M16 x 40	UN-S1M16x40	8
20	Plain Washer M16	UN-W2M16	8
21	Set Screw M12 x 35	UN-S1M12x35	8
22	Spring Washer M12	UN-W1M12	8

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

2.1



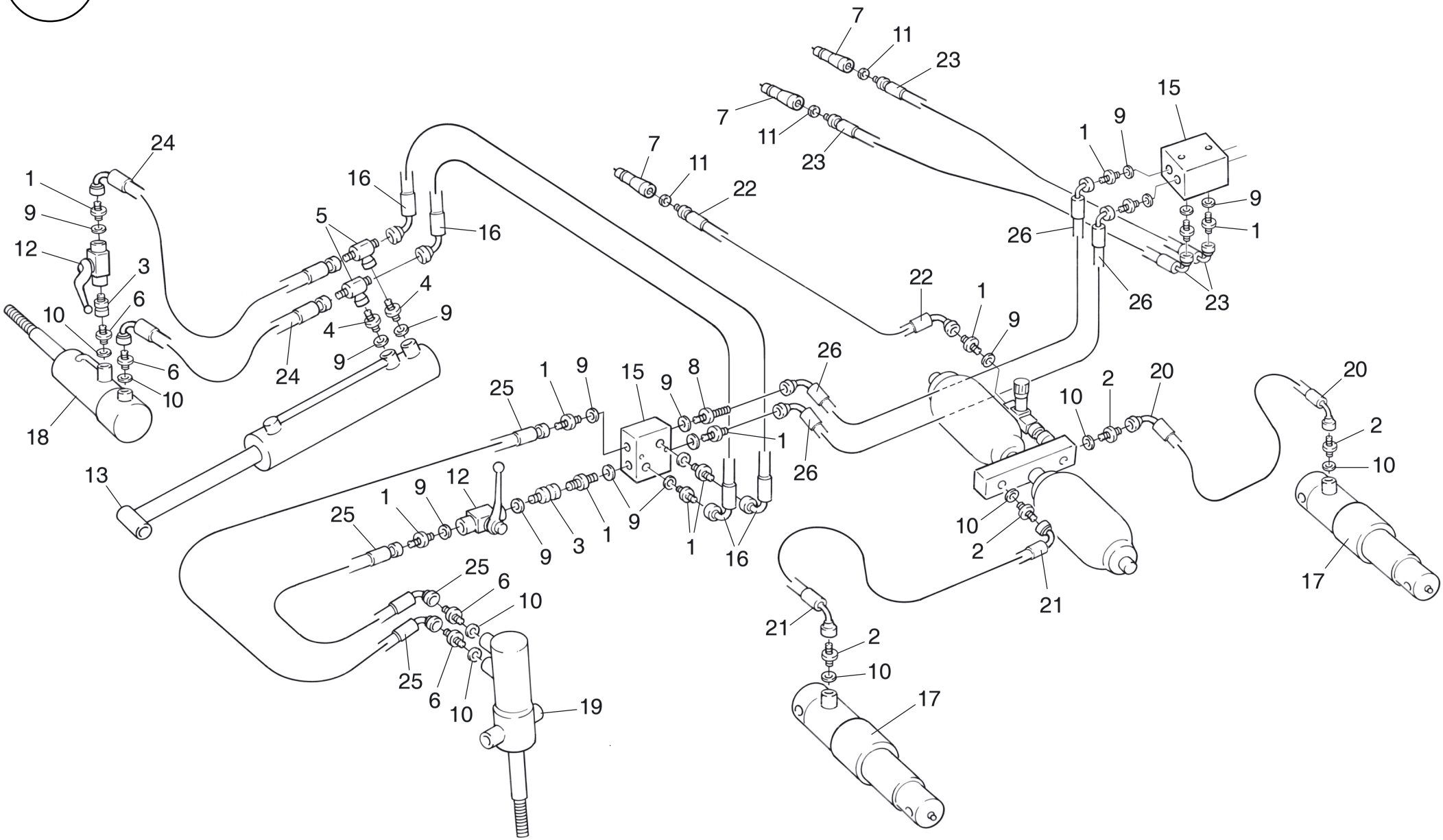
Assembly Group 2.1 - Hydraulic System (Up to 2007)

Item	Description	Part No.	Qty.
1	1/4" BSP MM Adapter	UN-05000	24
2	1/4" BSP MM Restrictor (1/32" 2 - way)	UN-05050	4
3	1/4" BSP MMF Tee	UN-05055	4
4	3/8" BSP M x 1/4" BSP M Restrictor (1/32" 2 - way)	UN-05065	16
5	1/2" BSP Probe	UN-05075	*
6	1/4" BSP Bulkhead Adapter	UN-05080	3
7	1/4" BSP Dowty Washer	UN-05100	36
8	3/8" BSP Dowty Washer	UN-05101	20
9	1/2" Dowty Washer	UN-05102	*
10	1/4" BSP Plug	UN-05072	4
11	Manifold	UN-15085	2
12	Hose: Marker Ram to Manifold	UN-15086	4
13	Hose: Centre Auto Reset Rams to Accumulator (not Shearbolt)	UN-17175	2
14	Hose: Outer Auto Reset Rams to Accumulator (not Shearbolt)	UN-17176	2
15	Hose: Auto Reset System Charge Hose	UN-17177	2
16	Hose: Main Lift Ram	UN-17178	8
17	Hose: Tractor Feed and Return	UN-17179	**
18	Hose: Wheel Lift Ram	UN-17180	4
19	Hose: Outer Plough Lift Ram	UN-17181	4
20	Hose: Centre Manifold to Outer Manifold	UN-17182	4
21	Manifold (12 port)	UN-17197	1
22	Manifold (8 port)	UN-17225	1
23	3/8" BSP MM Adapter	UN-05001	4
	*Qty = 6 on Auto Reset : 4 on Shearbolt		
	**Qty = 4 on Auto Reset : 2 on Shearbolt		

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

2.2



Assembly Group 2.2 - Hydraulic System (2008 - 2013)

Item	Description	Part No.	Qty.
1	1/4" BSP MM Adapter	UN-05000	22
2	3/8" BSP Male / Male Adaptor	UN-05001	8
3	1/4" x 1/4" BSP Male / Female Swivel Adaptor	UN-05023	4
4	1/4" BSP MM Restrictor (1/32" 2 - way)	UN-05050	4
5	1/4" BSP MMF Tee	UN-05055	4
6	3/8" BSP M x 1/4" BSP M Restrictor (1/32" 2 - way)	UN-05065	8
7	1/2" BSP Probe	UN-05075	*
8	1/4" BSP Bulkhead Adapter	UN-05080	2
9	1/4" BSP Dowty Washer	UN-05100	30
10	3/8" BSP Dowty Washer	UN-05101	16
11	1/2" Dowty Washer	UN-05102	*
12	KHR 1/4" Ball Valve	UN-05196	4
13	Marker Ram	UN-15070	2
14	Marker Ram Seal Kit	UN-15071	
15	Manifold	UN-15085	3
16	Hose: Marker Ram to Manifold	UN-15086	4
17	Auto Reset Beam Ram	UN-15131	4
	Auto Reset Beam Ram Seal Kit	UN-15132	
18	Wheel Ram	UN-17118	2
	Wheel Ram Seal Kit	UN-01718	
19	Plough Ram	UN-17137	2
	Plough Ram Seal Kit	UN-01719	
20	Hose: Centre Auto Reset Rams to Accumulator (not Shearbolt)	UN-17175	2
21	Hose: Outer Auto Reset Rams to Accumulator (not Shearbolt)	UN-17176	2
22	Hose: Auto Reset System Charge Hose	UN-17177	2
23	Hose: Tractor Feed and Return	UN-17179	2
24	Hose: Wheel Lift Ram	UN-17180	4
25	Hose: Outer Plough Lift Ram	UN-17181	4
26	Hose: Centre Manifold to Outer Manifold	UN-17182	4
	*Qty = 4 on Auto Reset : 2 on Shearbolt		

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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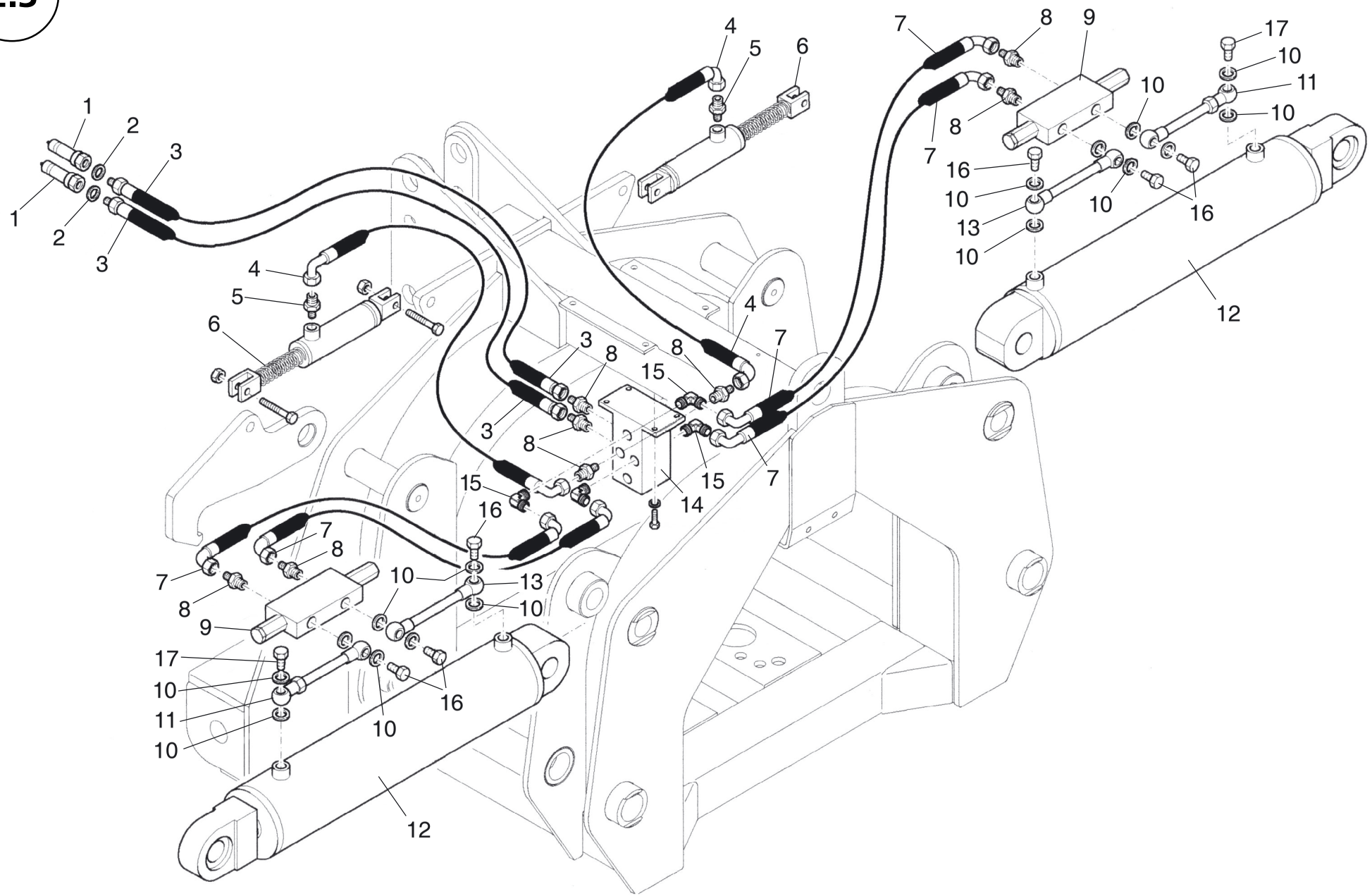

Assembly Group 2.3 - Hydraulic Lifting System (2008 - 2013)

Item	Description	Part No.	Qty.
1	Probe	022082	2
2	Dowty Washer	022087	2
3	Hose: Tractor Feed and Return	023178	2
4	Hose: Manifold to Transport Lock	023119	2
5	MM Adapter	022130	2
6	Transport Lock Ram	671777	2
7	Hose: Valve to Manifold	023184	4
8	MM Adapter	022129	8
9	Valve	021058	2
10	Dowty Washer	022086	16
11	Pipe	621740	2
12	Lift Ram	671816	2
13	Pipe	621721	2
14	Manifold	462265	1
15	MM Elbow Adapter 90°	022120	4
16	Banjo Bolt	022070	2
17	Banjo Bolt	022175	2

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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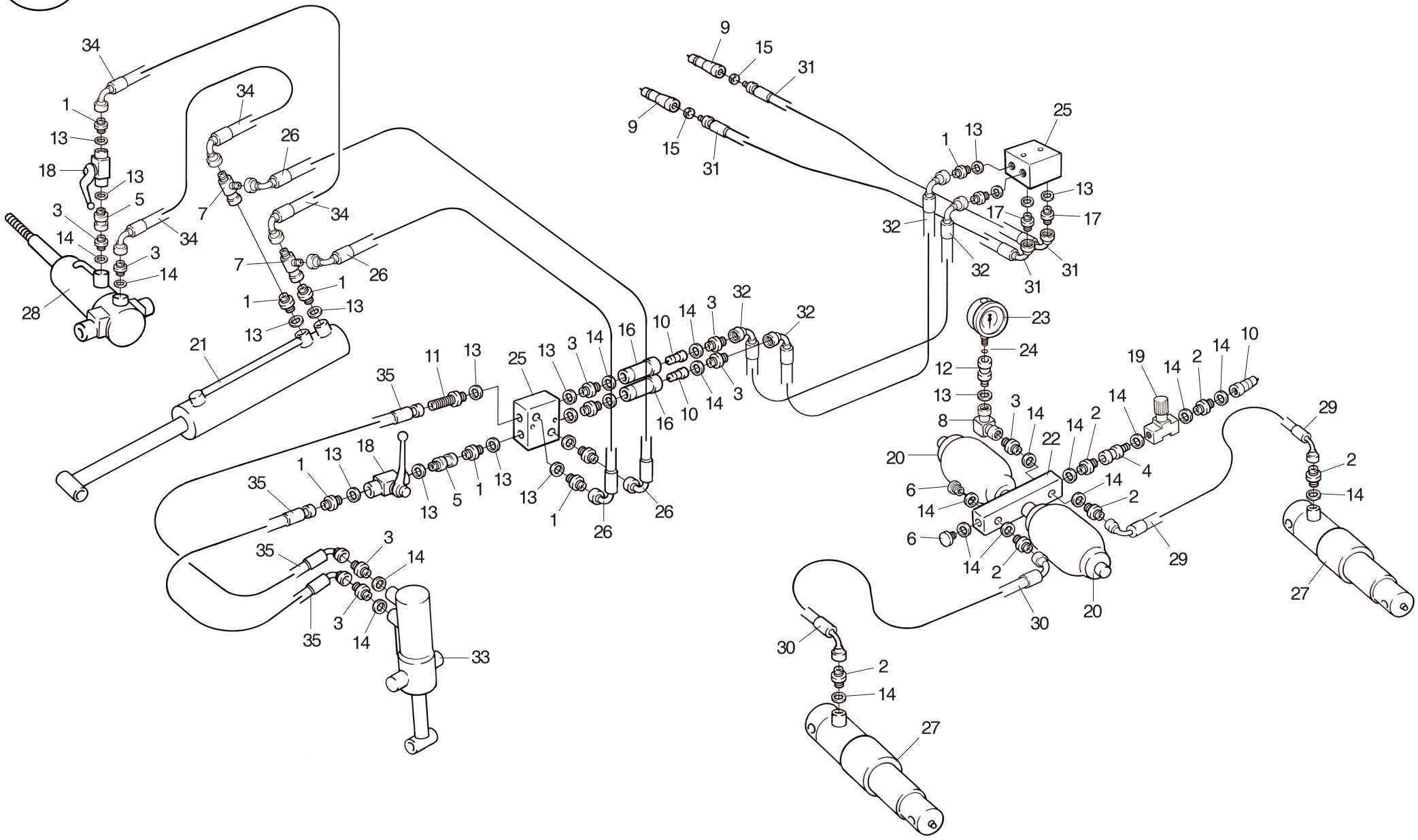
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Assembly Group 2.4 - Hydraulic System (2014 onwards)

Item	Description	Part No.	Qty.
1	1/4" BSP MM Adapter	UN-05000	18
2	3/8" BSP Male / Male Adaptor	UN-05001	12
3	1/4" BSP M x 3/8" BSP M Adapter	UN-05003	18
4	3/8" BSP M x 3/8" BSP F Swivel Adapter	UN-05010	2
5	1/4" BSP M x 1/4" BSP F Swivel Adaptor	UN-05023	4
6	3/8" BSP Plug	UN-05030	4
7	1/4" BSP MMF Tee	UN-05055	4
8	1/4" BSP F x 1/4" BSP F 90° Compact Elbow	UN-05069	2
9	1/2" Quick Release Coupling Probe	UN-05075	2
10	3/8" BSP Quick Release Coupling Probe	UN-05076	6
11	1/4" BSP Bulkhead Adaptor	UN-05080	2
12	1/4" BSP M x 1/4" BSP F Gauge Adaptor	UN-05085	2
13	1/4" BSP Dowty Washer	UN-05100	32
14	3/8" BSP Dowty Washer	UN-05101	38
15	1/2" Dowty Washer	UN-05102	2
16	3/8" BSP F Quick Release Coupling	UN-05138	4
17	1/4" BSP Male x 1/4" BSP Male Restrictor (Modified - 1.2mm hole)	UN-05163	2
18	KHR 1/4" Ball Valve	UN-05196	4
19	Variable Restrictor	UN-05198	2
20	Accumulator (170 bar)	UN-05304	4
	Accumulator (110 bar - AR+ Type Bodies))	UN-05306	
21	Marker Ram	UN-15070	2
	Marker Ram Seal Kit	UN-15071	
22	Manifold	UN-15080	2
23	Gauge	UN-15081	2
24	Rubber 'O' Ring		2
25	Manifold	UN-15085	3
26	Hose: Marker Ram to Manifold	UN-15086	4
	Auto Reset Beam Ram	UN-15131	
27	Auto Reset Beam Ram Seal Kit	UN-15132	4
	Wheel Ram	UN-17118	2
28	Wheel Ram Seal Kit	UN-01718	
29	Hose: Centre Auto Reset Rams to Accumulator (not Shearbolt)	UN-17175	2
30	Hose: Outer Auto Reset Rams to Accumulator (not Shearbolt)	UN-17176	2

Item	Description	Part No.	Qty.
31	Hose: Tractor Feed and Return	UN-17179	2
32	Hose: Centre Manifold to Outer Manifold	UN-17182	4
33	Plough Ram	UN-17660	2
34	Hose: Wheel Lift Ram		4
35	Hose: Outer Plough Lift Ram		4

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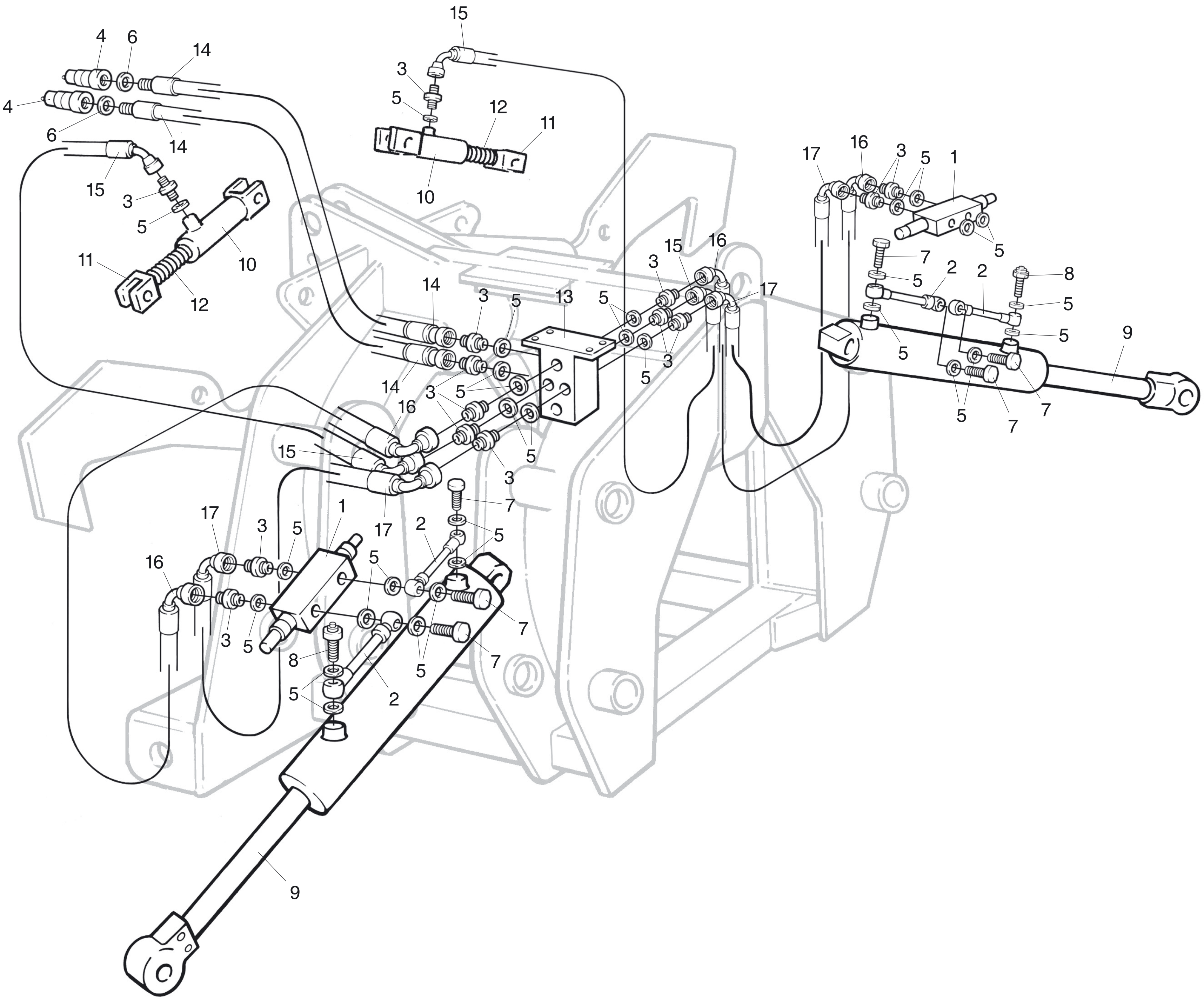

Assembly Group 2.5 - Hydraulic Lifting System (2014 onwards)

Item	Description	Part No.	Qty.
1	3/8" Over Centre Double Acting Valve	UN-02871	2
2	Banjo Pipe (300mm)	UN-02872	4
3	3/8" BSP Male / Male Adapter	UN-05001	14
4	1/2" Quick Release Coupling Probe	UN-05075	2
5	3/8" BSP Dowty Washer	UN-05101	30
6	1/2" BSP Dowty Washer	UN-05102	2
7	Standard 3/8" BSP Banjo Bolt	UN-05106	6
8	Banjo Bolt with Restrictor		2
9	Lift Ram	UN-17640	2
10	Latch Ram	UN-17678	2
11	Clevis	UN-17679	2
12	Latch Ram Spring	UN-17680	2
13	Manifold	UN-17682	1
14	Hose: Manifold to Quick Release Coupling		2
15	Hose: Manifold to Latch Ram		2
16	Hose: Manifold to Lift Ram Valve		2
17	Hose: Manifold to Lift Ram Valve		2

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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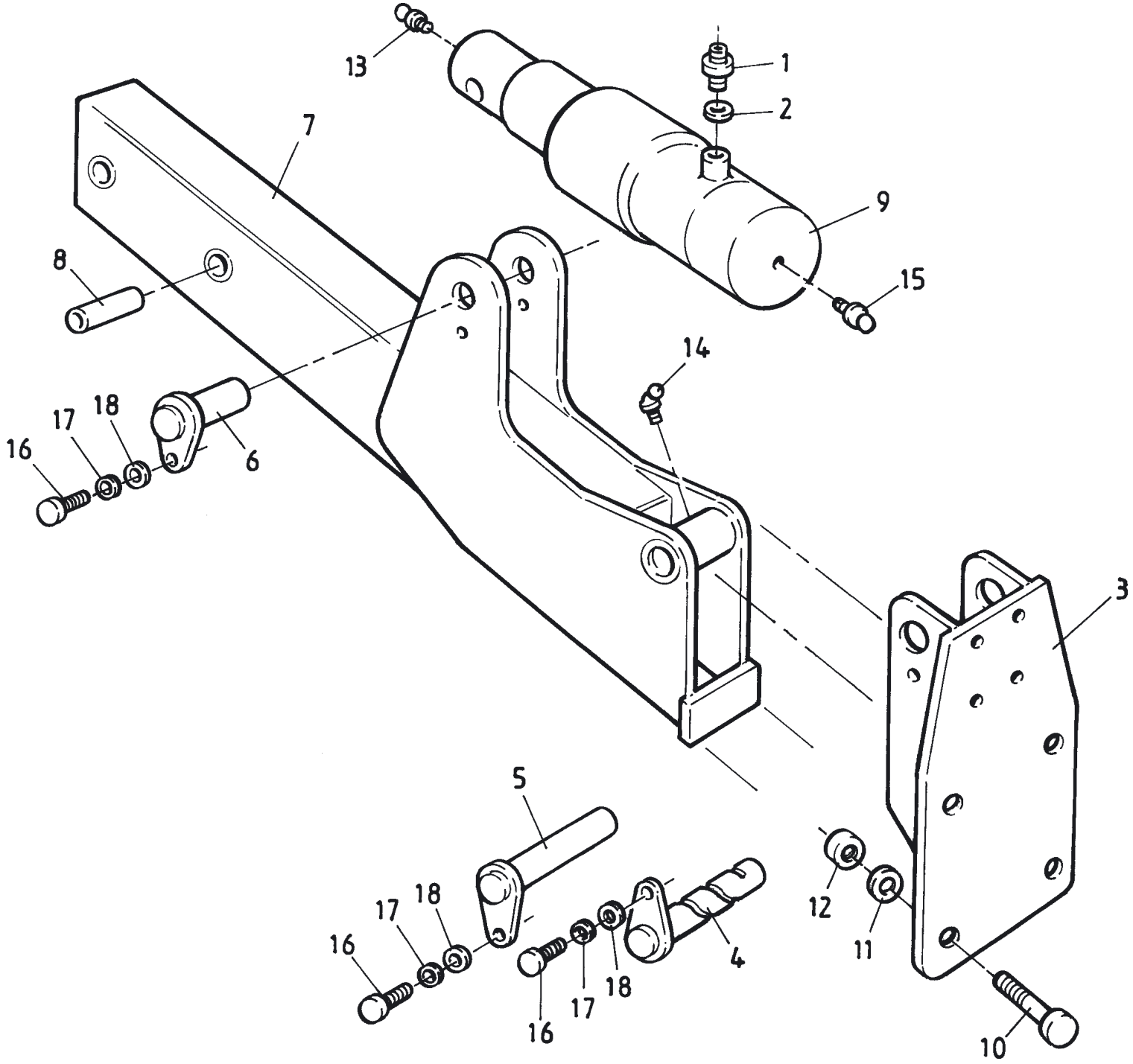

Assembly Group 3.1 - Auto-Reset Beams

Item	Description	Part No.	Qty.
1	3/8" BSP MM Adapter	UN-05001	4
2	3/8" BSP Dowty Washer	UN-05101	4
3	Hinge Backet (up to 2013)	UN-15005	4
3	Hinge Backet (2014 onwards)	UN-15448	4
4	Pivot Pin	UN-15009	4
5	Ram Anchor Pin	UN-15011	4
6	Ram Pin	UN-15012	4
7	Beam (up to 2014)	UN-15020	4
7	Beam (2015 onwards)	UN-15485	4
8	Bush	UN-15022	4
9	Auto Reset Beam Ram	UN-15131	4
9A	Auto Reset Beam Ram Seal Kit	UN-15132	
10	Hex Bolt M20 x 60	UN-B1M20x60	16
11	Spring Washer M20	UN-W1M20	16
12	Hex Nut M20	UN-N1M20	16
13	Grease Nipple M8 x 1.25 - Straight	UN-GNM8	4
14	Grease Nipple M8 x 1.25 x 45°	UN-GNM8x45	4
15	Grease Nipple M8 x 1.25 x 90°	UN-GNM8x90	4
16	Set Screw M10 x 30	UN-S1M10x30	12
17	Plain Washer M10	UN-W2M10	12
18	Spring Washer M10	UN-W1M10	12

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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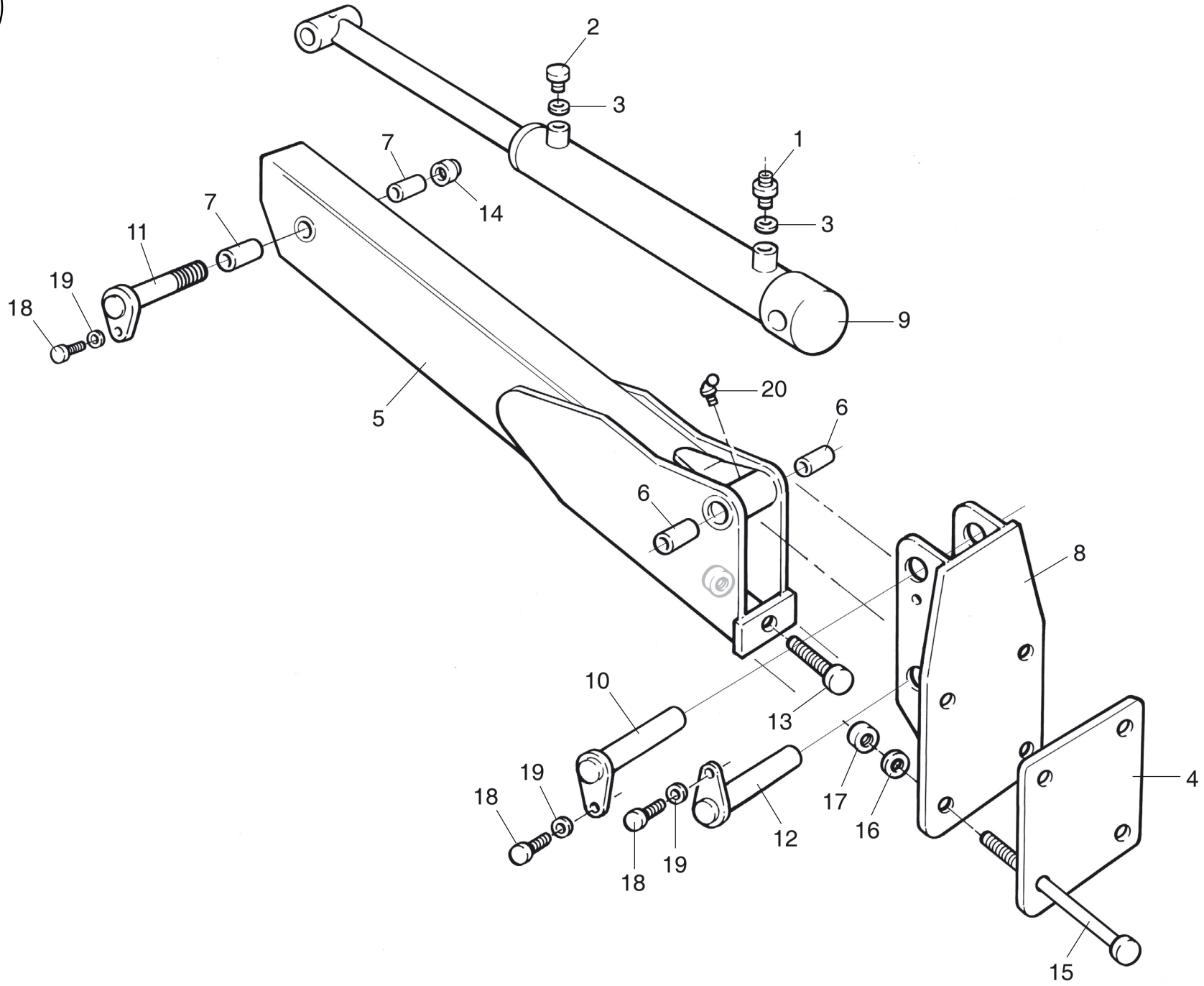

Assembly Group 3.2 - AR+ Double Action Auto-Reset Beams

Item	Description	Part No.	Qty.
1	3/8" BSP MM Adapter	UN-05001	4
2	3/8" BSP Plug	UN-05030	4
3	3/8" BSP Dowty Washer	UN-05101	8
4	Clamp Plate	UN-15457	4
5	AR+ Type Beam	UN-15601	4
6	Large Brass Bush	UN-15607	8
7	Small Brass Bush	UN-15608	8
8	Hinge Bracket	UN-15609	4
9	Auto Reset Ram	UN-15611	4
10	Front Ram Pin	UN-15613	4
11	Leg Pivot Pin	UN-15616	4
12	Beam Pivot Pin	UN-15617	4
13	Set Screw M24 x 65	UN-S1M24x65	4
14	Nyloc Nut M24	UN-N1M24	8
15	Hex Bolt M20 x 220	UN-B1M20x220	16
16	Plain Washer M20	UN-W2M20	16
17	Hex Nut M20	UN-N1M20	16
18	Set Screw M10 x 30	UN-S1M10x30	12
19	Spring Washer M10	UN-W1M10	12
20	Grease Nipple M8 x 1.25 x 45°	UN-GNM8x45	4

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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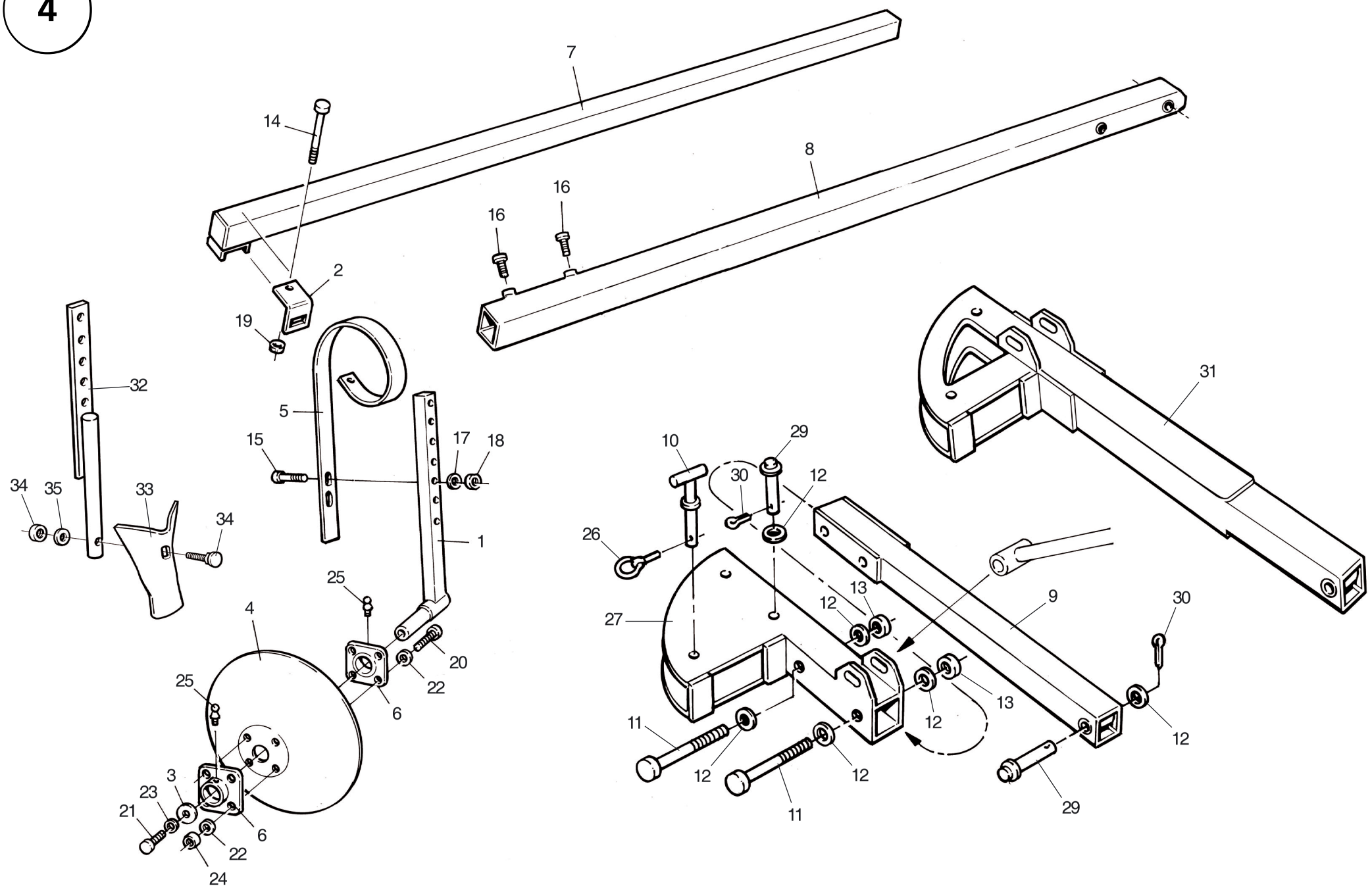
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Assembly Group 4 - Marker Arms & Discs

Item	Description	Part No.	Qty.
1	Marker Adjuster Arm	UN-15124	2
2	Clamp	UN-15125	2
3	Clamp Washer	UN-15126	2
4	18" Disc	UN-15150	2
5	Pig Tail Marker	UN-15152	2
6	25mm Bearing	UN-15153	4
7	Marker Arm Extension	UN-17214	2
8	Outer Arm	UN-17210	2
9	Inner Arm (Up to 2015)	UN-17207	2
10	Marker Pin	UN-17153	2
11	Hex Bolt M20 x 125	UN-B1M20x125	4
12	Plain Washer M20	UN-W2M20	12
13	Nyloc Nut M20	UN-N3M20	4
14	Hex Bolt M12 x 100	UN-B1M12x100	2
15	Hex Bolt M12 x 65	UN-B1M12x65	4
16	Set Screw M12 x 30	UN-S1M12x30	4
17	Spring Washer M12	UN-W1M12	4
18	Hex Nut M12	UN-N1M12	4
19	Nyloc Nut M12	UN-N3M12	2
20	Hex Bolt M10 x 50	UN-B1M10x50	8
21	Set Screw M10 x 30	UN-S1M10x30	2
22	Plain Washer M10	UN-W2M10	8
23	Spring Washer M10	UN-W1M10	2
24	Nyloc Nut M10	UN-N3M10	8
25	Grease Nipple M6 - Straight	UN-GNM6	4
26	Linch Pin Ø6	UN-PLP6MM	2
27	Pivot Mount - LH (Up to 2015)	UN-17200	1
28	Pivot Mount - RH (NI)	UN-17205	1
29	Marker Pin	UN-15104	4
30	Split Pin 5/16" x 1¼"	UN-SCP5/16X11/4	4
31	Marker Pivot Arm - LH (2016 onwards)	UN-17366	1
31	Marker Pivot Arm - RH (NI) (2016 onwards)	UN-17367	1
32	Marker Point Mount (Option - 2014 onwards)	UN-17480	2
33	Marker Point (Option - 2014 onwards)	UN-00607	2

Item	Description	Part No.	Qty.
34	Marker Point Bolt & Nut 3/8" x 50 Csk Sq.	UN-00643	2
35	Washer 3/8"		2

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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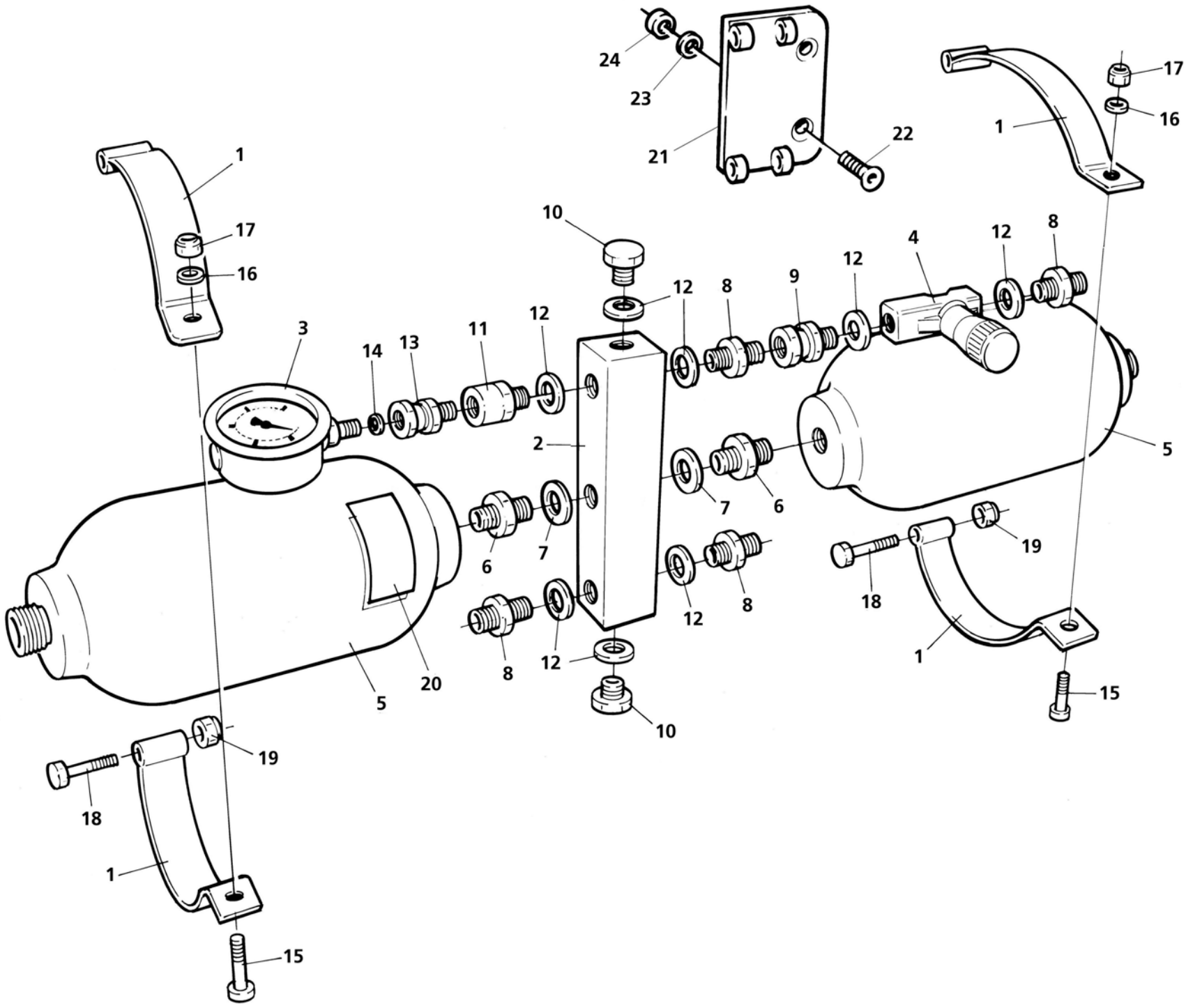


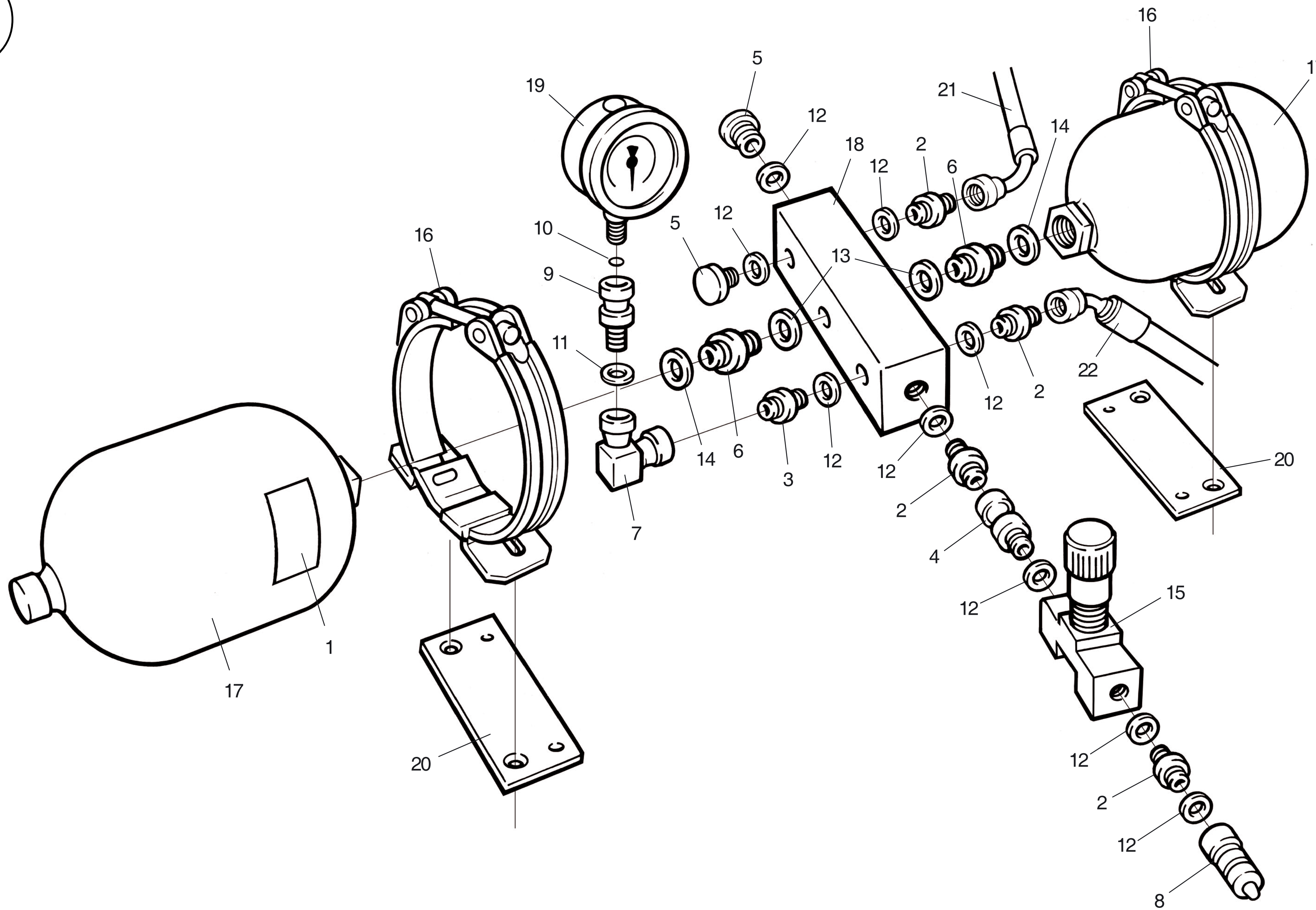
Assembly Group 5.1 - Auto Reset Hydraulics (Up to 2014)

Item	Description	Part No.	Qty.
1	Accumulator Clamp	UN-15031	8
2	Manifold	UN-15080	2
3	Gauge	UN-15081	2
4	Variable Restrictor	UN-05198	2
5	Accumulator	UN-15170	4
6	1/2" BSP M x 1/2" BSP M Adapter	UN-05002	4
7	1/2" BSP Dowty Washer	UN-05102	10
8	3/8" BSP M x 3/8" BSP M Adapter	UN-05001	12
9	3/8" BSP M x 3/8" BSP F Swivel Adapter	UN-05010	2
10	3/8" BSP Plug	UN-05030	4
11	3/8" BSP M x 1/4" BSP F Adapter	UN-05047	2
12	3/8" BSP Dowty Washer	UN-05101	20
13	1/4" BSP M x 1/4" BSP F Swivel Adapter	UN-05085	2
14	Rubber "O" Ring		2
15	Hex Bolt M10 x 50	UN-B1M10X50	4
16	Plain Washer M10	UN-W2M10	8
17	Nyloc Nut M10	UN-N3M10	4
18	Hex Bolt M8 x 70	UN-B1M8X70	8
19	Nyloc Nut M8	UN-N3M8	8
20	Decal - Consult book	UN-01423	2
21	Accumulator Mount	UN-17222	4
22	Countersunk Head Machine Screw M8 x 25		8
23	Spring Washer M8		8
24	Hex Nut M8		8

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

5.2



Assembly Group 5.2 - Auto Reset Hydraulics (2015 onwards)

Item	Description	Part No.	Qty.
1	Decal - Consult book	UN-01423	2
2	3/8" BSP M x 3/8" BSP M Adapter	UN-05001	8
3	1/4" BSP M x 3/8" BSP M Adapter	UN-05003	2
4	3/8" BSP M x 3/8" BSP F Swivel Adapter	UN-05010	2
5	3/8" BSP Plug	UN-05030	4
6	3/4" BSP M x 1/2" BSP M Adapter	UN-05046	4
7	1/4" BSP F x 1/4" BSP F 90° Compact Elbow	UN-05069	2
8	3/8" BSP Quick Release Coupling Probe	UN-05076	2
9	1/4" BSP M x 1/4" BSP F Swivel Adapter	UN-05085	2
10	Rubber "O" Ring		2
11	1/4" BSP Dowty Washer	UN-05100	2
12	3/8" BSP Dowty Washer	UN-05101	18
13	1/2" BSP Dowty Washer	UN-05102	4
14	3/4" BSP Dowty Washer	UN-05103	4
15	Variable Restrictor	UN-05198	2
16	Accumulator Clamp	UN-05303	4
	Accumulator Clamp (AR+ Type Bodies)	UN-05301	
17	Accumulator (170 bar)	UN-05304	4
	Accumulator (110 bar - AR+ Type Bodies)	UN-05306	
18	Manifold	UN-15080	2
19	Gauge	UN-15081	2
20	Accumulator Mount	UN-17579	4
21	Hose: Manifold to Auto-Reset Ram		2
22	Hose: Manifold to Auto-Reset Ram		2

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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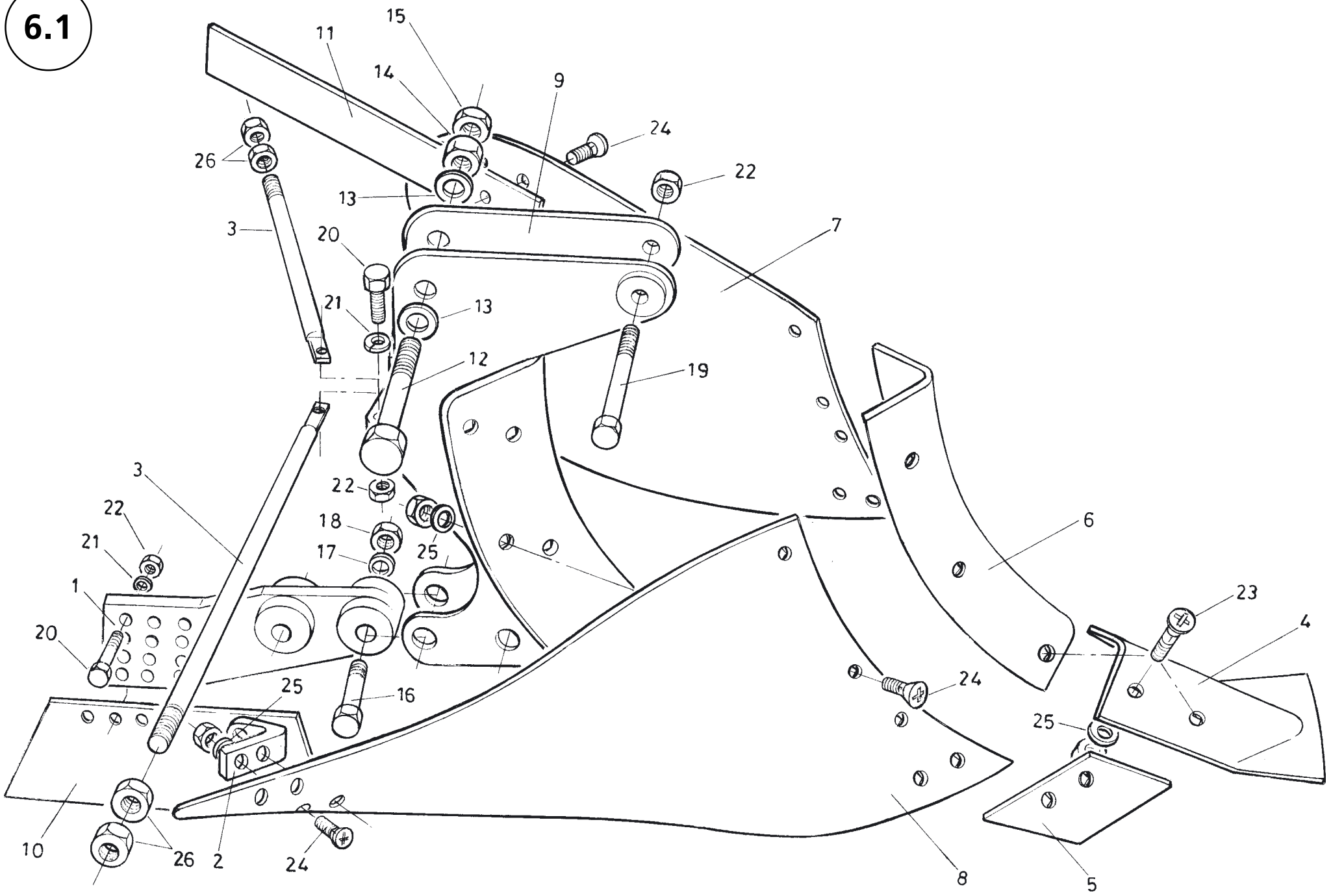
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Assembly Group 6.1 - Plough Assembly

Item	Description	Part No.	Qty.
1	Fin Bracket	UN-15039	4
2	Mouldboard Bracket	UN-15056	8
3	Adjuster	UN-15059	8
4	Point	UN-15632	4
5	Wing	UN-15633	8
6	Shin	UN-15634	4
7	Mouldboard L.H.	UN-15635	4
8	Mouldboard R.H.	UN-15636	4
9	Frog	UN-15639	4
10	Fin	UN-15640	4
11	Extension Wing	UN-00625	A/R
12	Hex Bolt M24 x 140	UN-B1M24X140	4
13	Plain Washer M24	UN-W4M24	8
14	Hex Nut M24	UN-N1M24	4
15	Half Nut M24	UN-N2M24	4
16	Hex Bolt M16 x 120	UN-B1M16X120	8
17	Spring Washer M16	UN-W1M16	8
18	Hex Nut M16	UN-N1M16	8
19	Shearbolt M12 x 140 (Gr. 10.9) c/w Nut	UN-00427	4
20	Hex Bolt M12 x 40	UN-B1M12X40	16
21	Spring Washer M12	UN-W1M12	16
22	Hex Nut M12	UN-N1M16	20
23	Countersunk Square Bolt 7/16" UNF x 50 c/w Nut	UN-00483	24
24	Countersunk Square Bolt 7/16" UNF x 35 c/w Nut	UN-00426	96
25	Plain Washer 7/16"	UN-W2 7/16	120
26	Hex Nut M20	UN-N1M20	16

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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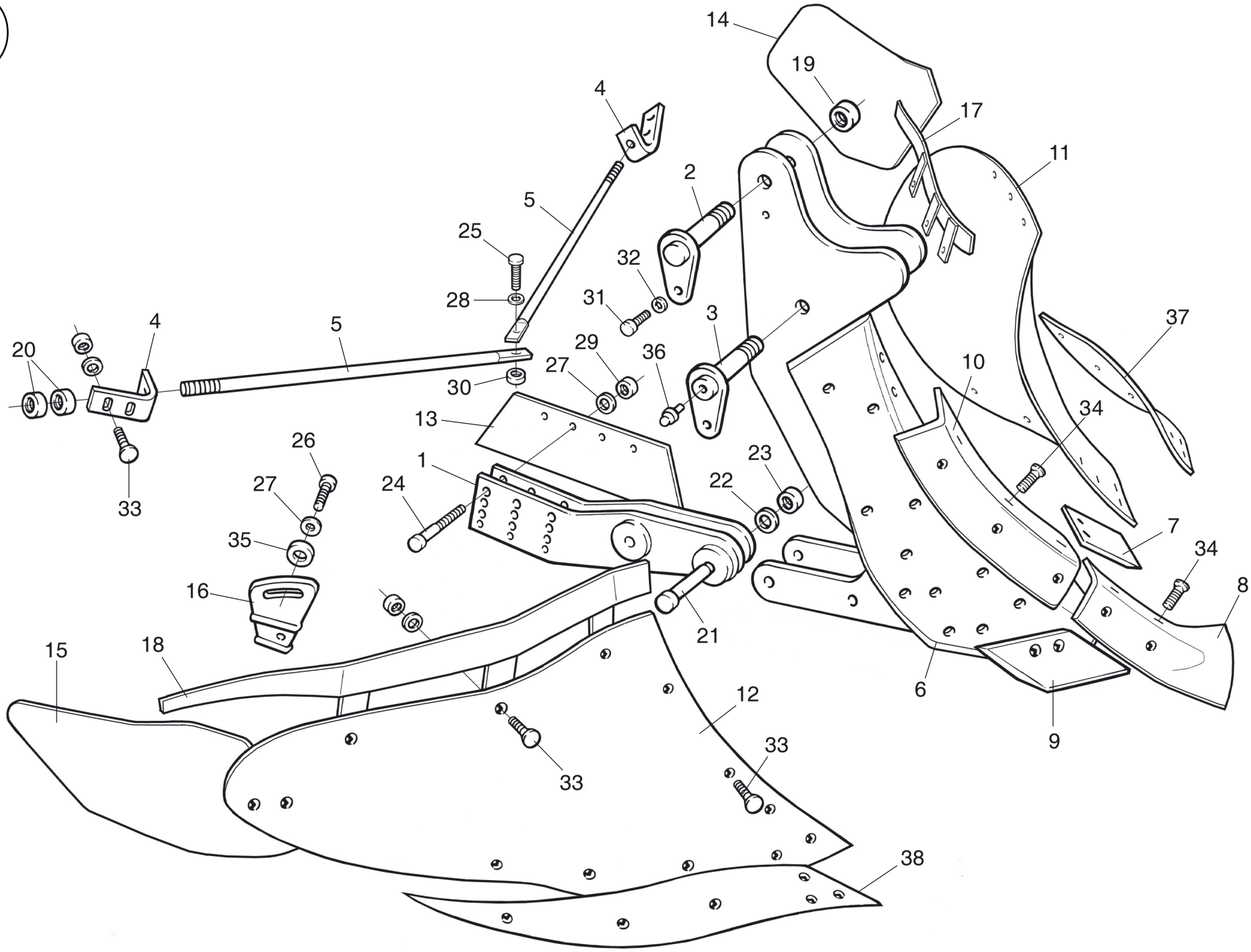
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Assembly Group 6.2 - AR+ Plough Assembly

Item	Description	Part No.	Qty.
1	Heavy Duty Fin Bracket	UN-15490	4
2	Rear Ram Pin	UN-15615	4
3	Leg Pivot Pin	UN-15616	4
4	Mouldboard Adjuster Bracket	UN-15622	8
5	Mouldboard Adjuster Rod	UN-15623	8
6	Extra High Plough Body	UN-15627	4
7	Wing L.H.	UN-15630	4
8	Point	UN-15632	4
9	Wing R.H.	UN-15633	4
10	Shin	UN-15634	4
11	Mouldboard L.H.	UN-15670	4
12	Mouldboard R.H.	UN-15671	4
13	Fin	UN-15640	4
14	Tail L.H.	UN-17713	4
15	Tail R.H.	UN-17716	4
16	Tail Adjuster	UN-17718	8
17	Mouldboard Extension L.H.	UN-15674	4
18	Mouldboard Extension R.H.	UN-15675	4
19	Nyloc Nut M24	UN-N3M24	8
20	Hex Nut M20	UN-N1M20	16
21	Hex Bolt M16 x 120	UN-B1M16x120	8
22	Plain Washer M16	UN-W2M16	8
23	Hex Nut M16	UN-N1M16	8
24	Hex Bolt M12 x 65	UN-B1M12x65	12
25	Set Screw M12 x 40	UN-S1M12x40	4
26	Set Screw M12 x 25	UN-S1M12x25	8
27	Plain Washer M12	UN-W2M12	8
28	Spring Washer M12	UN-W1M12	4
29	Nyloc Nut M12	UN-N3M12	12
30	Hex Nut M12	UN-N1M12	4
31	Set Screw M10 x 20	UN-S1M10x20	8
32	Plain Washer M10	UN-W2M10	8
33	Countersunk Square Bolt 7/16" UNF x 35 c/w Nut	UN-01778	80
34	Countersunk Square Bolt 7/16" UNF x 45 c/w Nut	UN-01816	56

Item	Description	Part No.	Qty.
35	Washer	UN-11017	8
36	Grease Nipple M6 - Straight	UN-GNM6	4
37	Lower Wearstrip L.H.	UN-15672	4
38	Lower Wearstrip R.H.	UN-15673	4

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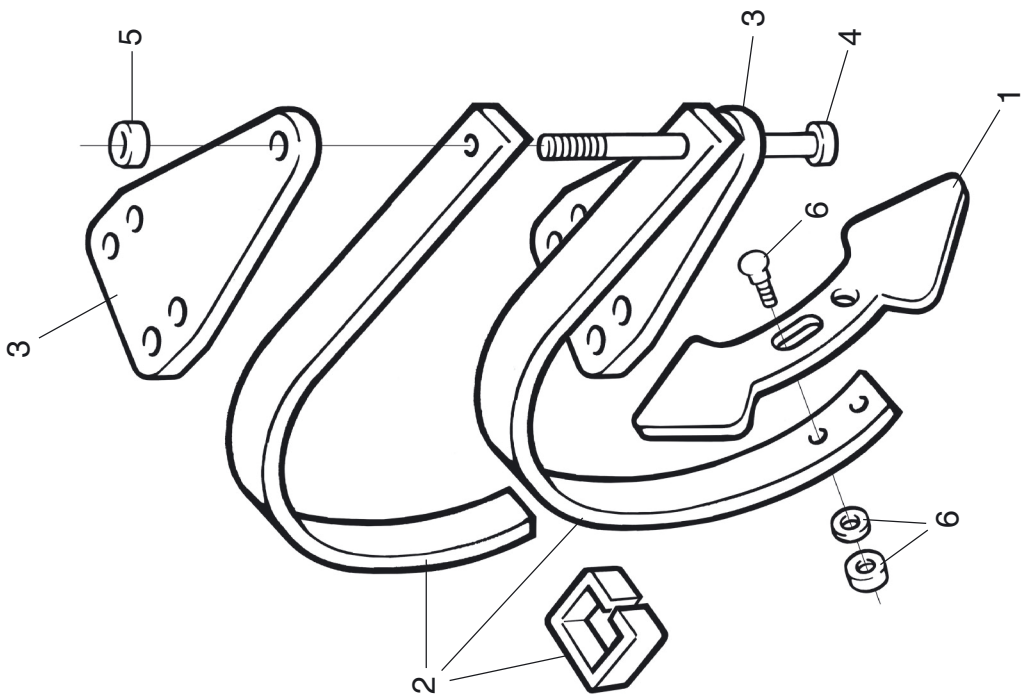

6.3

Assembly Group 6.3 - Ripper Tines

Item	Description	Part No.	Qty.
1	Point	UN-02006	4
2	Spring Tine	UN-02416	4
3	Tine Holder	UN-17722	8
4	Hex Bolt M20 x 260	UN-B1M20x260	12
5	Nyloc Nut M20	UN-N3M20	12
6	Countersunk Square Bolt 7/16" UNF x 55 c/w Nut	UN-01844	8

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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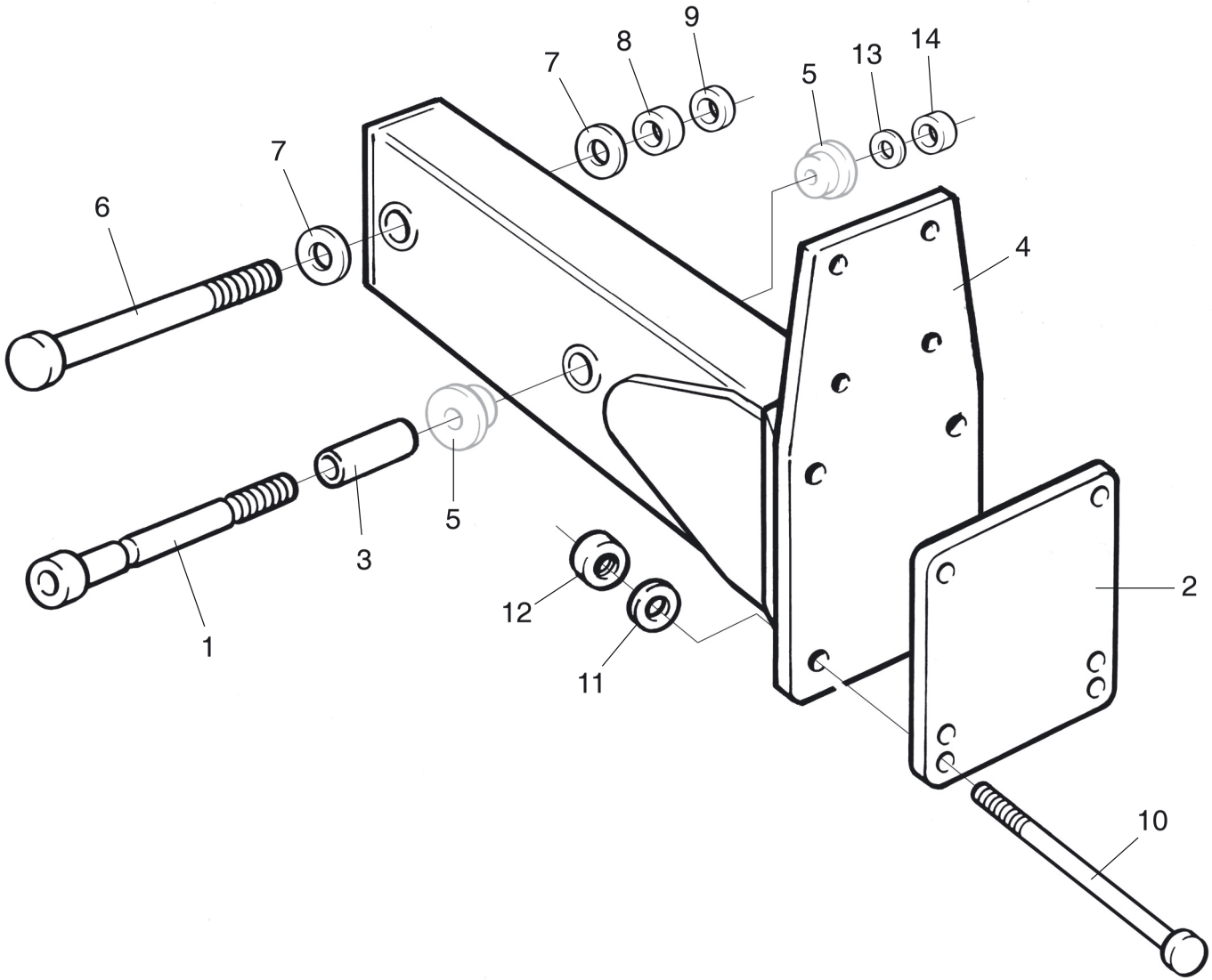
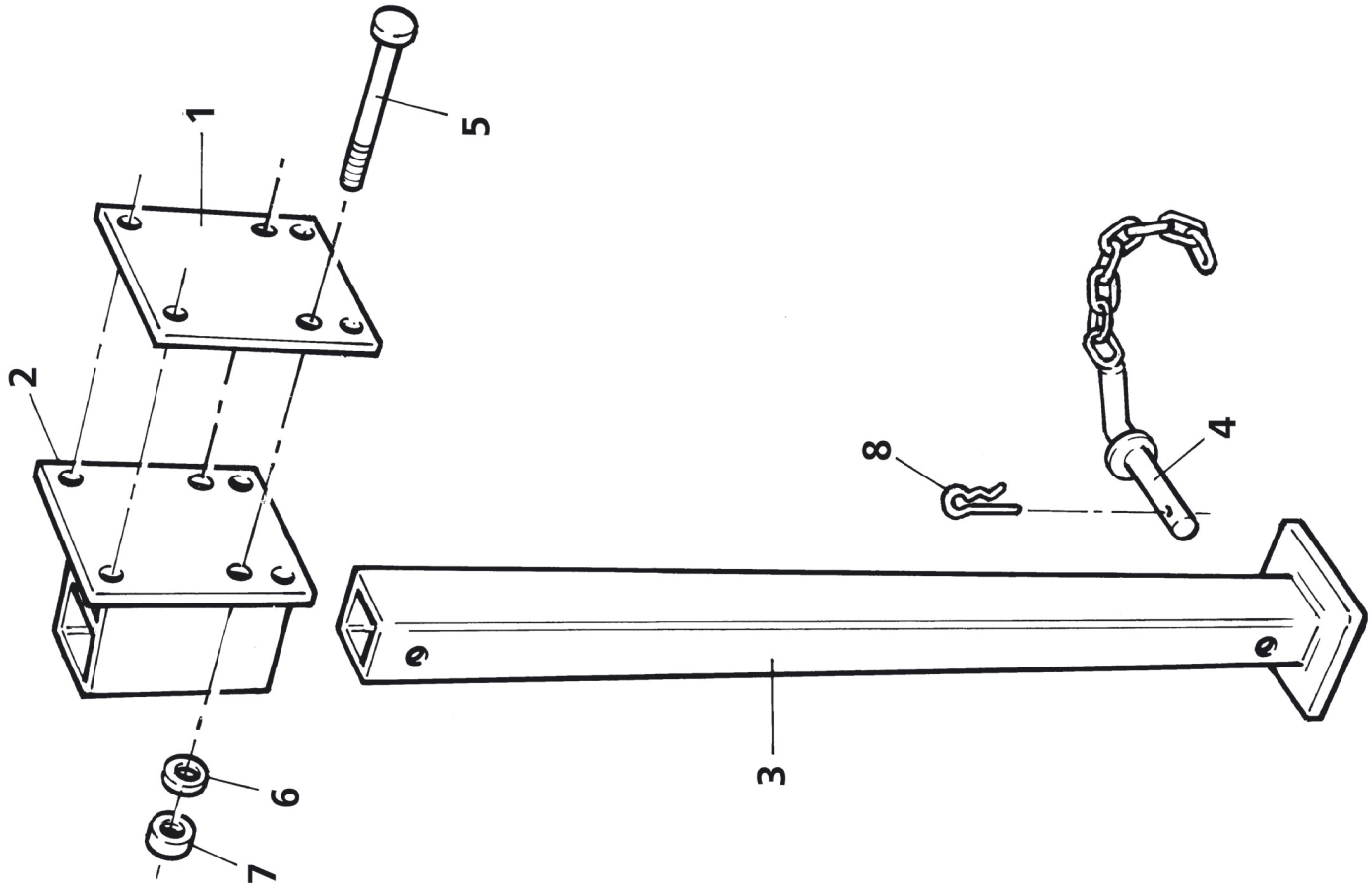


Assembly Group 7 - Shearbolt Beams

Item	Description	Part No.	Qty.
1	Shearbolt M12 x 140 (Gr. 10.9) c/w Nut (Up to 2013)	UN-00427	4
	Shearbolt (2014 onwards)	UN-17471	4
2	Clamp Plate (2008 - 2013)	UN-15001	4
	Clamp Plate (2014 onwards)	UN-15457	4
3	Bush (Up to 2013)	UN-15022	4
	Bush (2014 onwards)	UN-17470	4
4	Beam (Up to 2013)	UN-15044	4
	Beam (2014 onwards)	UN-15459	4
5	Outer Bush (Heavy Duty Bodies only)	UN-17469	8
6	Hex Bolt M24 x 150	UN-B1M24x150	4
7	Plain Washer M24	UN-W2M24	8
8	Hex Nut M24	UN-N1M24	4
9	Hex Half Nut	UN-N2M24	4
10	Hex Bolt M20 x 60 (Up to 2008)	UN-B1M20x60	16
	Hex Bolt M20 x 190 (2008 - 2013)	UN-B1M20x190	16
	Hex Bolt M20 x 200 (2014 onwards)	UN-B1M20x220	16
11	Plain Washer M20	UN-W2M20	16
12	Hex Nut M20	UN-N1M20	16
13	Spring Washer M16	W1M16	4
14	Hex Nut M16	N1M16	4

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable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Assembly Group 8 - Stand Assembly

Item	Description	Part No.	Qty.
1	Clamping Plate	UN-15112	2
2	Stand Bracket	UN-15116	2
3	Stand	UN-15119	2
4	Stand Pin	UN-15121	2
5	Hex Bolt M10 x 160	UN-B1M10x120	8
6	Spring Washer M10	UN-W1M10	8
7	Hex Nut M10	UN-N1M10	8
8	R-Pin 3mm	UN-RRP3mm	2

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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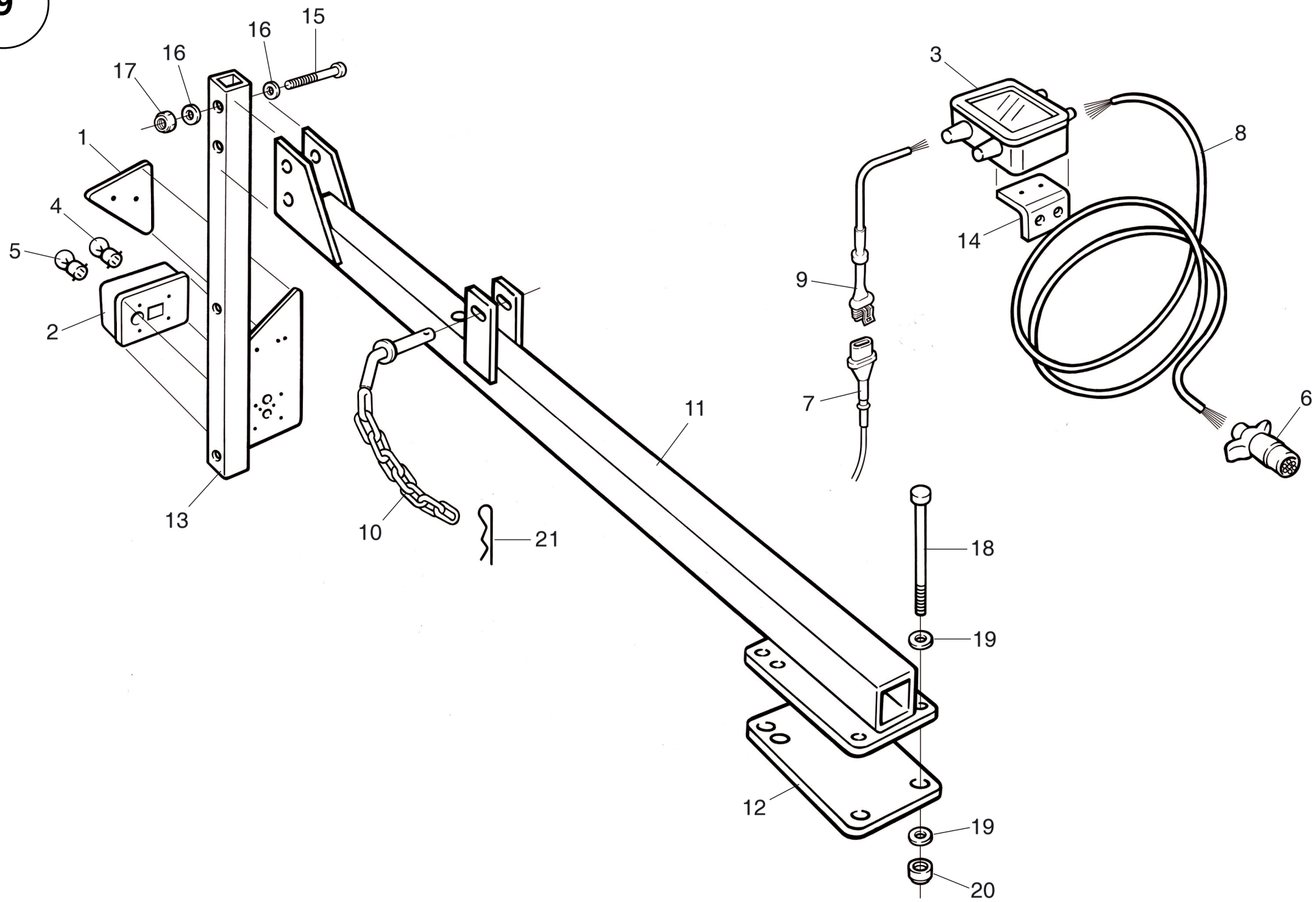

Assembly Group 9 - Lighting Arm Assembly

Item	Description	Part No.	Qty.
1	Triangular Reflector	UN-00225	2
2	Rear Combination Light	UN-00641	2
3	8 Way Junction Box	UN-00922	1
4	Spare Bulb for UN-00641 (Stop Lamp)	UN-00928	
5	Spare Bulb for UN-00641 (Indicator)	UN-00929	
6	12N Plug only (7 pole)	UN-00937	1
7	4.5 m - 4 Core Cable c/w Male Plug	UN-02212	2
8	2.2 m - 7 Core Cable	UN-02213	1
9	200mm - 4 Core Cable c/w Female Plug	UN-02214	2
10	Stand Pin	UN-15121	2
11	Lighting Arm	UN-15350	2
12	Clamp Plate	UN-15361	2
13	Lighting Bracket - RH	UN-15353	1
	Lighting Bracket - LH (NI)	UN-15357	1
14	Mount Plate	UN-16196	2
15	Hex Bolt M12 x 80	B1M12X80	2
16	Plain Washer M12	W2M12	4
17	Nyloc Nut M12	N3M12	2
18	Hex Bolt M10 x 190	B1M10x190	8
19	Plain Washer M10	W2M10	16
20	Nyloc Nut M10	N3M10	8
21	R-Pin		2

Item	Description	Part No.	Qty.

A/R = As Required NI = Not Illustrated N/A = Not Applicable

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