



Twose Series

SR & ST BALLAST ROLLERS
INLINE & TANDEM

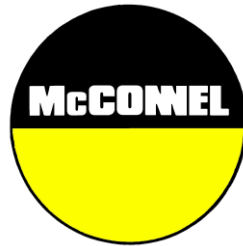
INSTRUCTION & PARTS MANUAL

Publication No: 5291

May 2016

IMPORTANT

VERIFICATION OF WARRANTY REGISTRATION



DEALER WARRANTY INFORMATION & REGISTRATION VERIFICATION

It is imperative that the selling dealer registers this machine with McConnel Limited before delivery to the end user – failure to do so may affect the validity of the machine warranty.

To register machines go to the McConnel Limited web site at www.mcconnel.com, log onto 'Dealer Inside' and select the 'Machine Registration button' which can be found in the Service Section of the site. Confirm to the customer that the machine has been registered in the section below.

Should you experience any problems registering a machine in this manner please contact the McConnel Service Department on 01584 875848.

Registration Verification

Dealer Name:
Dealer Address:
Customer Name:
Date of Warranty Registration:/...../..... Dealer Signature:

NOTE TO CUSTOMER / OWNER

Please ensure that the above section above has been completed and signed by the selling dealer to verify that your machine has been registered with McConnel Limited.

IMPORTANT: During the initial 'bedding in' period of a new machine it is the customer's responsibility to regularly inspect all nuts, bolts and hose connections for tightness and re-tighten if required. New hydraulic connections occasionally weep small amounts of oil as the seals and joints settle in – where this occurs it can be cured by re-tightening the connection – refer to torque settings chart below. The tasks stated above should be performed on an hourly basis during the first day of work and at least daily thereafter as part of the machines general maintenance procedure.

CAUTION: DO NOT OVER TORQUE HYDRAULIC FITTINGS AND HOSES

TORQUE SETTINGS FOR HYDRAULIC FITTINGS

HYDRAULIC HOSE ENDS		
BSP	Setting	Metric
1/4"	18 Nm	19 mm
3/8"	31 Nm	22 mm
1/2"	49 Nm	27 mm
5/8"	60 Nm	30 mm
3/4"	80 Nm	32 mm
1"	125 Nm	41 mm
1.1/4"	190 Nm	50 mm
1.1/2"	250 Nm	55 mm
2"	420 Nm	70 mm

PORT ADAPTORS WITH BONDED SEALS		
BSP	Setting	Metric
1/4"	34 Nm	19 mm
3/8"	47 Nm	22 mm
1/2"	102 Nm	27 mm
5/8"	122 Nm	30 mm
3/4"	149 Nm	32 mm
1"	203 Nm	41 mm
1.1/4"	305 Nm	50 mm
1.1/2"	305 Nm	55 mm
2"	400 Nm	70 mm

WARRANTY POLICY

WARRANTY REGISTRATION

All machines must be registered, by the selling dealer with McConnel Ltd, before delivery to the end user. On receipt of the goods it is the buyer's responsibility to check that the Verification of Warranty Registration in the Operator's Manual has been completed by the selling dealer.

1. LIMITED WARRANTIES

- 1.01. *All mounted machines supplied by McConnel Ltd are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 12 months, unless a different period is specified.*
All Self Propelled Machines supplied by McConnel Ltd are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 12 months or 1500 hours. Engine warranty will be specific to the Manufacturer of that unit.
- 1.02. *All spare parts supplied by McConnel Ltd and purchased by the end user are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 6 months. All parts warranty claims must be supported by a copy of the failed part invoice to the end user. We cannot consider claims for which sales invoices are not available.*
- 1.03. *The warranty offered by McConnel Ltd is limited to the making good by repair or replacement for the purchaser any part or parts found, upon examination at its factory, to be defective under normal use and service due to defects in material or workmanship. Returned parts must be complete and unexamined. Pack the component(s) carefully so that any transit damage is avoided. All ports on hydraulic items should be drained of oil and securely plugged to prevent seepage and foreign body ingress. Certain other components, electrical items for example, may require particular care when packing to avoid damage in transit.*
- 1.04. *This warranty does not extend to any product from which McConnel Ltd's serial number plate has been removed or altered.*
- 1.05. *The warranty policy is valid for machines registered in line with the terms and conditions detailed and on the basis that the machines do not extend a period of 24 months or greater since their original purchase date, that is the original invoice date from McConnel Limited.*
Machines that are held in stock for more than 24 months cannot be registered for warranty.
- 1.06. *This warranty does not apply to any part of the goods, which has been subjected to improper or abnormal use, negligence, alteration, modification, fitment of non-genuine parts, accident damage, or damage resulting from contact with overhead power lines, damage caused by foreign objects (e.g. stones, iron, material other than vegetation), failure due to lack of maintenance, use of incorrect oil or lubricants, contamination of the oil, or which has served its normal life. This warranty does not apply to any expendable items such as blades, belts, clutch linings, filter elements, flails, flap kits, skids, soil engaging parts, shields, guards, wear pads, pneumatic tyres or tracks.*
- 1.07. *Temporary repairs and consequential loss - i.e. oil, downtime and associated parts are specifically excluded from the warranty.*
- 1.08. *Warranty on hoses is limited to 12 months and does not include hoses which have suffered external damage. Only complete hoses may be returned under warranty, any which have been cut or repaired will be rejected.*
- 1.09. *Machines must be repaired immediately a problem arises. Continued use of the machine after a problem has occurred can result in further component failures, for which McConnel Ltd cannot be held liable, and may have safety implications.*
- 1.10. *If in exceptional circumstances a non McConnel Ltd part is used to effect a repair, warranty reimbursement will be at no more than McConnel Ltd's standard dealer cost for the genuine part.*

- 1.11. *Except as provided herein, no employee, agent, dealer or other person is authorised to give any warranties of any nature on behalf of McConnell Ltd.*
- 1.12. *For machine warranty periods in excess of 12 months the following additional exclusions shall apply:*
 - 1.12.1. *Hoses, exposed pipes and hydraulic tank breathers.*
 - 1.12.2. *Filters.*
 - 1.12.3. *Rubber mountings.*
 - 1.12.4. *External electric wiring.*
 - 1.12.5. *Bearings and seals*
 - 1.12.6. *External Cables, Linkages*
 - 1.12.7. *Loose/Corroded Connections, Light Units, LED's*
 - 1.12.8. *Comfort items such as Operator Seat, Ventilation, Audio Equipment*
- 1.13. *All service work, particularly filter changes, must be carried out in accordance with the manufacturer's service schedule. Failure to comply will invalidate the warranty. In the event of a claim, proof of the service work being carried out may be required.*
- 1.14. *Repeat or additional repairs resulting from incorrect diagnosis or poor quality previous repair work are excluded from warranty.*

NB Warranty cover will be invalid if any non-genuine parts have been fitted or used. Use of non-genuine parts may seriously affect the machine's performance and safety. McConnell Ltd cannot be held responsible for any failures or safety implications that arise due to the use of non-genuine parts.

2. REMEDIES AND PROCEDURES

- 2.01. *The warranty is not effective unless the Selling Dealer registers the machine, via the McConnell web site and confirms the registration to the purchaser by completing the confirmation form in the operator's manual.*
- 2.02. *Any fault must be reported to an authorised McConnell Ltd dealer as soon as it occurs. Continued use of a machine, after a fault has occurred, can result in further component failure for which McConnell Ltd cannot be held liable.*
- 2.03. *Repairs should be undertaken within two days of the failure. Claims submitted for repairs undertaken more than 2 weeks after a failure has occurred, or 2 days after the parts were supplied will be rejected, unless the delay has been authorised by McConnell Ltd. Please note that failure by the customer to release the machine for repair will not be accepted as a reason for delay in repair or submitting warranty claims.*
- 2.04. *All claims must be submitted, by an authorised McConnell Ltd Service Dealer, within 30 days of the date of repair.*
- 2.05. *Following examination of the claim and parts, McConnell Ltd will pay, at their discretion, for any valid claim the invoiced cost of any parts supplied by McConnell Ltd and appropriate labour and mileage allowances if applicable.*
- 2.06. *The submission of a claim is not a guarantee of payment.*
- 2.07. *Any decision reached by McConnell Ltd. is final.*

3. LIMITATION OF LIABILITY

- 3.01. *McConnell Ltd disclaims any express (except as set forth herein) and implied warranties with respect to the goods including, but not limited to, merchantability and fitness for a particular purpose.*
- 3.02. *McConnell Ltd makes no warranty as to the design, capability, capacity or suitability for use of the goods.*
- 3.03. *Except as provided herein, McConnell Ltd shall have no liability or responsibility to the purchaser or any other person or entity with respect to any liability, loss, or damage caused or alleged to be caused directly or indirectly by the goods including, but not limited to, any indirect, special, consequential, or incidental damages resulting from the use or operation of the goods or any breach of this warranty. Notwithstanding the above limitations and warranties, the manufacturer's liability hereunder for damages incurred by the purchaser or others shall not exceed the price of the goods.*
- 3.04. *No action arising out of any claimed breach of this warranty or transactions under this warranty may be brought more than one (1) year after the cause of the action has occurred.*

4. MISCELLANEOUS

- 4.01. *McConnel Ltd may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.*
- 4.02. *If any provision of this limited warranty shall violate any applicable law and is held to be unenforceable, then the invalidity of such provision shall not invalidate any other provisions herein.*
- 4.03. *Applicable law may provide rights and benefits to the purchaser in addition to those provided herein.*

McConnel Limited



DECLARATION OF CONFORMITY

Conforming to EU Machinery Directive 2006/42/EC

We,

McCONNEL LIMITED, Temeside Works, Ludlow, Shropshire SY8 1JL, UK

Hereby declare that:

The Product; *Tractor Trailed Roller(s)*

Product Code; *TWBR*

Serial No. & Date Type

Manufactured in; *United Kingdom*

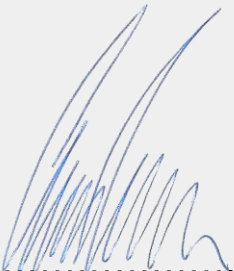
Complies with the required provisions of the Machinery Directive 2006/42/EC
The machinery directive is supported by the following harmonized standards;

- BS EN ISO 12100 (2010) Safety of machinery – General principles for design – Risk assessment and risk reduction.
- BS EN 349 (1993) + A1 (2008) Safety of machinery - Minimum distances to avoid the entrapment with human body parts.
- BS EN ISO 14120 (2015) Safety of machinery - Guards general requirements for the design and construction of fixed and movable guards.
- BS EN 4413 (2010) Hydraulic fluid power. Safety requirements for systems and their components.

McCONNEL LIMITED operates an ISO 9001:2008 quality management system, certificate number: FM25970.

This system is continually assessed by the;

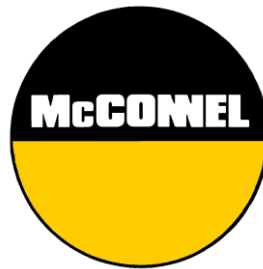
British Standards Institution (BSI), Beech House, Milton Keynes, MK14 6ES, UK
BSI is accredited by UK Accreditation Service, accreditation number: UKAS 003.
The EC declaration only applies if the machine stated above is used in accordance with the operating instructions.

Signed  *Responsible Person*
CHRISTIAN DAVIES on behalf of McCONNEL LIMITED

Status: *General Manager*

Date: *January 2018*

**THIS MANUAL IS TO BE HANDED TO THE CUSTOMER BEFORE
THE MACHINE IS TO BE USED FOR THE FIRST TIME**



McCONNEL LIMITED
TEMESIDE WORKS
LUDLOW
SHROPSHIRE
SY8 1ND

TELEPHONE:
01584 873131

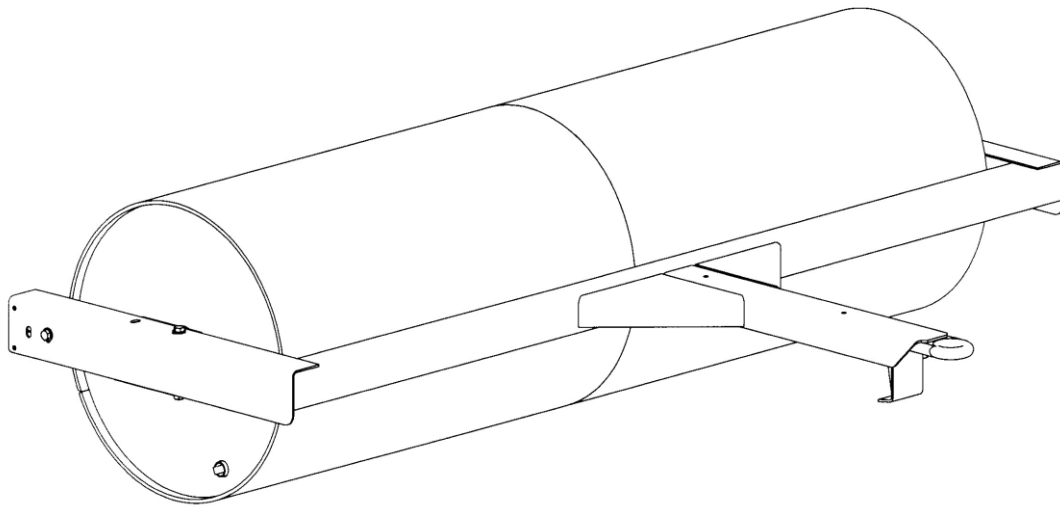
All dimensions and capacities mentioned in this book are approximate. In pursuance of the Companies policy of constant development, the right is reserved to depart, without notice, from any detail illustrated or specified in this book, without incurring the obligation to provide such modifications on machines previously delivered.

No responsibility will be accepted by McConnell Limited for any injury, damage or loss arising from the improper use or lack of maintenance of any machinery supplied by them or from any failure of the user to comply with all instructions published by Tractor or Loader manufacturers, particularly with regard to maximum load capacities, tyre pressures and stability, or with instructions and regulations pertaining to Tractor Cabs.

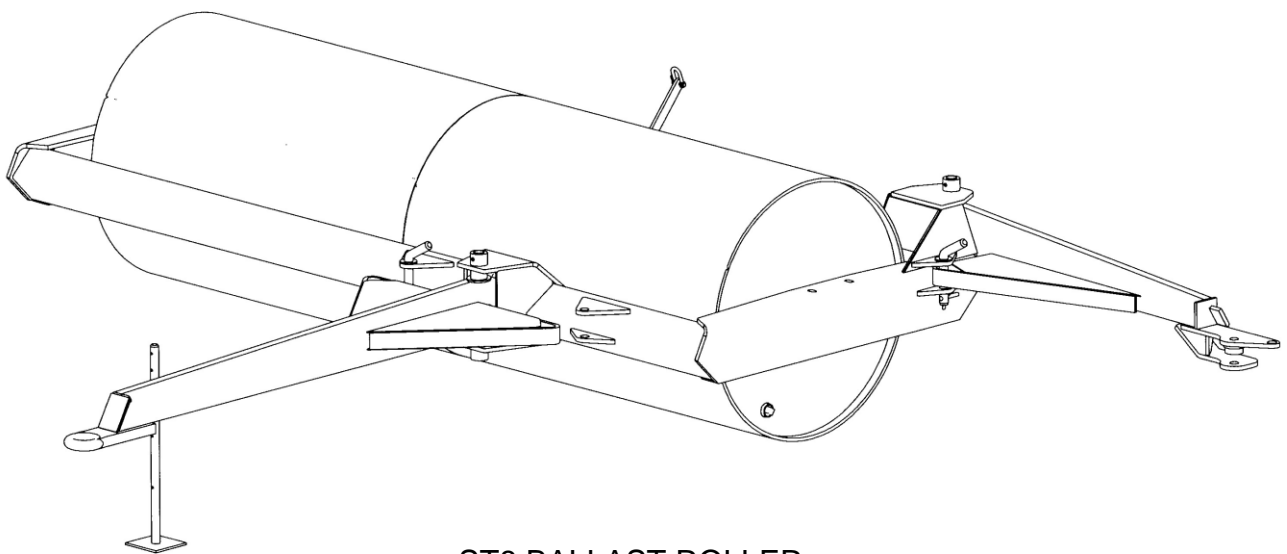
INDEX

GENERAL ARRANGEMENT	1
SPECIFICATION	2
GENERAL INFORMATION	3
SAFETY NOTES AND WARNINGS	4
HEALTH AND SAFETY	5
GENERAL INSTRUCTIONS	7
SAFETY WHEN ROLLING	8
ROUTINE MAINTENANCE AND LAYING-UP	9
HANDLING AND TRANSPORTATION	10
PARTS LIST	11
SR1	12
SR2	14
SR 4	16
SR 8	18
SR10	20
ST 8	22
ST 10	24
SR 25	26
SR 30	28

GENERAL ARRANGEMENT



SR 8 BALLAST ROLLER



ST8 BALLAST ROLLER

SPECIFICATION

	SR1	SR2	SR4	SR8	SR10	ST8	ST10	SR25	SR30	
	60cm (24in) Dia. Drums		76cm (30 in) Diameter Drums					1m (39in) Dia. Drums		
	1,0m (3ft) Single	2.0m (6ft) Single	1.25m (4ft) Single	2.44m (8ft) Single	3.05m (10ft) Single	4.9m (16ft) Tandem	6.1m (20ft) Tandem	2.44m (8ft) Single	3.05m (10ft) Single	
Rolling Width	1.0m (3ft)	2.0m (6ft)	1.25m (4ft)	2.44m (8ft)	3.05m (10ft)	4.9m (16ft)	6.1m (20ft)	2.44m (8ft)	3.05m (10ft)	
Transport Width	1.26m (4ft 2in)	2.3m (7ft 7in)	1.48m (4ft 10in)	2.7m (8ft 10in)	3.3m (10ft 10in)	2.84m (9ft 4in)	3.3m (10ft 10in)	2.7m (8ft 10in)	3.3m (10ft 10in)	
Unladen Weight	290 kg (6cwt)	521 kg (10cwt)	380 Kgs (8cwt)	762 Kgs (15 cwt)	919 Kgs (18 cwt)	1626 Kgs (32 cwt)	1940 Kgs (38 cwt)	1100 Kgs (22 cwt)	1300 Kgs (26 cwt)	
Ballast Weight	520 kg (10 cwt)	1080 kg (21 cwt)	890 Kgs (18 cwt)	1780 Kgs (36 cwt)	2230 Kgs (44 cwt)	3658 Kgs (73 cwt)	6026 Kgs (121 cwt)	2600 Kgs (52 cwt)	3200 Kgs (64 cwt)	
Drum Capacity	280 litres	560 litres	510 litres	1018 litres	1311 litres	1018 litres	1311 litres	1500 litres	1900 litres	

ABOUT THIS MACHINE

This machine is one of a range of, Inline or Tandem Ballast rollers and is designed to be attached to an agricultural vehicle by means of the "Drawbar-hitch" couple-up system. The machine features either one or two steel drums (depending on the model) in a fabricated steel frame; the drums rotate on a steel shaft mounted in replaceable bearing blocks.

A replaceable scraper bar helps prevent a build-up of dirt on the rollers.

The drums are hollow and should be filled with water or waste oil as required. If using water, anti-freeze must be added during winter or the drums drained completely in the winter period to prevent frost damage.

The machine has been designed for agricultural use and its purpose is to roll suitable pieces of land.

At no time must this machine be used for anything other than, or to do any job other than that for which it has been designed (*see note above*).

GENERAL INFORMATION

NOTE:- This handbook has been designed to help the operator and service/mechanic to use and understand the machine fully, safely and efficiently

NOTE:- The handbook/manual will be supplied in a waterproof plastic outer cover to prevent damage from rain, condensation etc. The cover of the handbook will include its own part number, which includes information as to machine type and issue date of manual in question.

DANGER

NOTE:- It is very important that the handbook/manual has been read thoroughly - throughout, and is completely understood before attempting to attach or use machine in any way.

CAUTION: When ordering spares, please state clearly:-

- (a) Machine type and model No.
- (b) Part No. of component.
- (c) Description of component.
- (d) Quantity required.
- (e) Full address to which spares are to be sent.
- (f) Method of delivery required.

CAUTION:- Always insist on genuine and correct spare parts.

NOTE:- Further copies of this handbook/manual can be obtained from:-

McCONNEL LIMITED

Temeside Works

Ludlow

Shropshire

SY8 1ND

Telephone: 01584 873131

Email: sales@mccconnel.com

SAFETY NOTES AND WARNINGS

Throughout the handbook the following sub headings are used to draw attention to various points of importance.



**DANGER
WARNING**

This is to draw attention to very important instructions which MUST be followed precisely to avoid injury or death.

CAUTION

This is used to draw attention to instructions which MUST be followed to avoid damage to operator, machine, process or the environment.

NOTE:-

This is used to highlight points used for supplementary information.

HEALTH AND SAFETY



**DANGER
WARNING**

Never attempt to assemble, couple up, or operate machinery until you understand fully the functions, controls and safety precautions required, as shown in the operators manual.



**DANGER
WARNING**

Always follow tractor safety operations and instructions VERY carefully.
NEVER TAKE RISKS

CAUTION.

Be aware of warning and instruction decals on machine as care must be taken and instructions obeyed.



**DANGER
WARNING**

Never drive machinery at speeds that could cause danger to other persons or properties, or in a manner that may cause accidents.



**DANGER
WARNING**

Never attempt to Service/adjust or work on any machinery in an unsupported state.

Always ensure that machinery is safely supported and propped in position.



**DANGER
WARNING**

Always ensure that the implement is 'chocked' firmly and it will not move, before attempting to 'service' or 'work on' in any way or form.

CAUTION

Always "SWITCH-OFF" tractor engine before attempting to carry out adjustment or service repairs and inspections, on machinery.



**DANGER
WARNING**

Always be aware of your surroundings - and operate machinery accordingly. Beware of confined-tight areas, low height restrictions, buildings and overhangs etc. Also drive and operate bearing in mind weather conditions such as sun, rain, ice, snow, wind etc. (Make allowances in all situations).

CAUTION

Never carry "passengers" on machinery or on tractor.
Ensure bystanders/onlookers are kept well away from operational area of apparatus.

CAUTION

'PARKING UP' MACHINE

When machine is being removed from tractor linkage and being 'parked up' it is essential that a good firm base and level site be found.

Always chock and prop machine to ensure a good firm position to leave parked. Ensure that stand legs of machine are correctly locked into position.

CAUTION

Never allow children to play on, or around, parked machinery.

CAUTION

Never wear loose fitting or ragged clothing which could get caught in machinery or controls.

CAUTION

Always dispose of discarded or worn out parts thoughtfully - by disposing of them in an approved and specified legal scrap site, bin or skip.

GENERAL INSTRUCTIONS



DANGER WARNING

1. Before attaching any machine to a tractor make sure that implement is still standing firmly on good solid - level site as it will be, providing unit was previously parked correctly.
-Check that any wheels are 'chocked' correctly and that supports/props are in position where necessary to prevent booms etc. dropping.
2. Before and during the manoeuvring of the tractor or vehicle in order to attach machinery/implements, - make sure that No other persons are in the vicinity. Keep other persons well clear and make known your intentions, all the while keeping a sharp lookout whilst reversing and aligning machines for coupling up.
3. Always secure tractor into selected position by ensuring that brakes are applied correctly in order to prevent vehicle moving off on its own to cause injury and damage.
4. Check that the hitch on the tractor is in good condition and that the hitch pin used is of the correct size and type to suit the drawbar of the roller, and is properly secured when fitted.
5. Never attempt to work on, adjust or service repair machinery of any kind whilst it is still running or working. Always stop the machine and STOP THE TRACTOR ENGINE - before any service/repairs begin.
(SWITCH OFF TRACTOR ENGINE BEFORE LEAVING TRACTOR SEAT)
6. In transit always use transport stays or locking devices where provided. If, as in the case of some longer machines, the unit is transported lengthways - make sure that the front of the tractor is suitably ballasted to maintain stability.
A method of achieving this would be to add suitable weights to a correctly specified and fitted front weight frame.
7. Always use machines in a sensible and reasonable manner and do not attempt to use them in work for which they are not intended. Avoid overloading and abusing them as this can cause damage to machine and tractor and can be very dangerous.
8. When detaching a machine from a tractor ensure that any stands or legs are securely positioned and that the machine is parked where it will not be a safety hazard or cause annoyance to others.
Make sure that chosen 'parking site' is a firm and level site.
9. Carry out regular periodic maintenance. - Always with safety in mind.

SAFETY WHEN ROLLING



**DANGER
WARNING**

Before starting work with any roller ensure that the bearings are properly greased and that all bolts and nuts are tight.



**DANGER
WARNING**

Remember that a heavy roller will add to your momentum and will require a longer distance for stopping. Particular care will be needed on hilly or sidling ground.



**DANGER
WARNING**

Avoid turning so acutely that the tractors rear wheels foul the rollers drawbar.



**DANGER
WARNING**

Do not attempt to use rollers when the ground conditions are unsuitable i.e.:-

When ground is excessively wet or greasy.

When ground is frozen or thawing after a frost.



**DANGER
WARNING**

Do not attempt to use the rollers on very steep or sidling ground.

ROUTINE MAINTENANCE AND 'LAYING-UP'



**DANGER
WARNING**

DAILY

Check end float and adjust if necessary.



**DANGER
WARNING**

WEEKLY

Grease pivot points thoroughly.



**DANGER
WARNING**

Check all bolts and nuts for tightness.



**DANGER
WARNING**

ANNUALLY AND LAYING-UP

Periodically (once a year should suffice) check the bearings or bushes, spacer and axle for wear; dismantling if necessary. Replace any parts that are appreciably worn.



**DANGER
WARNING**

Lubricate and use anti-corrosion measures when storing the roller



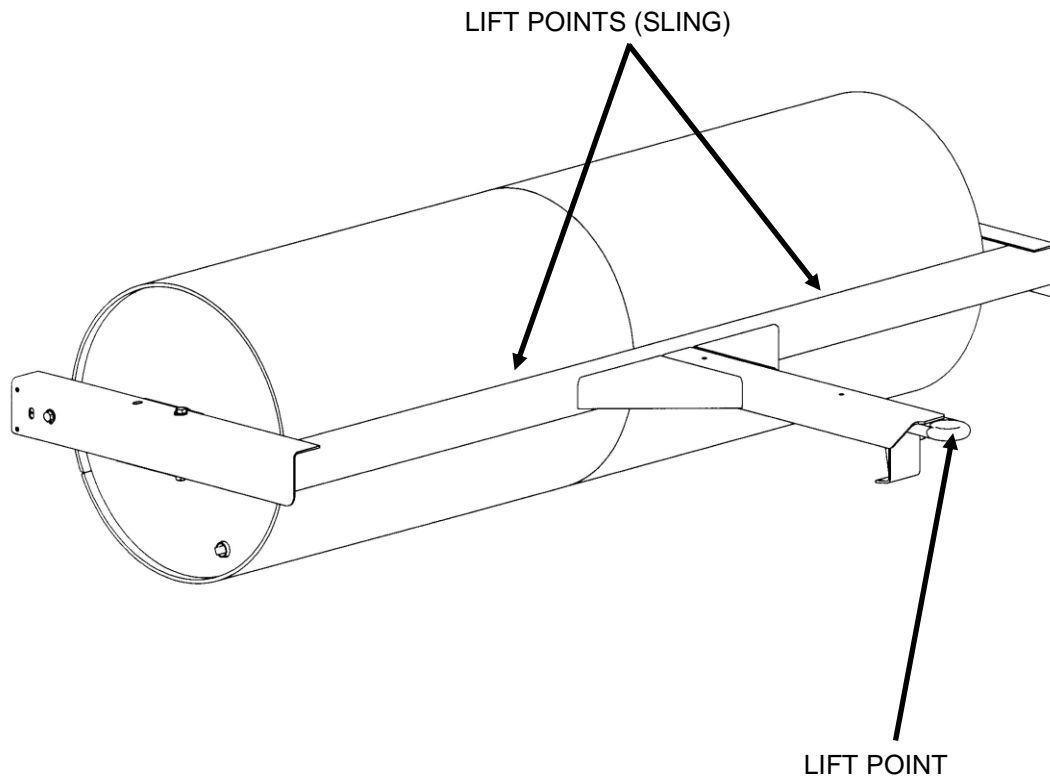
**DANGER
WARNING**

For Ballast Rollers some form of frost protection is strongly advised: be it draining the drum for winter, filling drums entirely with waste oil or the use of anti-freeze.

HANDLING AND TRANSPORTATION OF MACHINERY

The rollers are delivered mounted on transport stands with the drawbar positioned vertically. Suitable lifting equipment will be needed to enable the stands to be removed.

The illustration below indicates safe lifting points for the machinery.



The unladen weight of this machinery is given in the specification sheet of this book.

A form of lifting gear is required in order to move or handle this machinery safely. The lifting gear can be attached using a chain, rope or strap of sufficient strength, to the positions shown above.

CAUTION

Only personnel experienced in lift and hoist operation should be involved in lifting machines.

To remove the stands;

1. Lift the roller just clear of the ground.
2. Remove the 4 nuts and bolts securing the transport stands.
3. Remove the transport stands.
4. Lower the roller to the ground.
5. Chock the machine to prevent it moving.

Once the machinery has been moved, ensure that it comes to rest in a safe position. Supports or stay bars may be necessary to ensure stability of the machinery. Make sure the supports/stay bars are used whenever the machinery is transported.

PARTS LIST

Always order Two genuine spares for your machine; they are correctly designed to give the best operational results.

When ordering spare parts, please specify:-

Type and Serial Number of machine
Part number, description and quantity of spares required.

Always make sure that you have ordered a sufficient quantity to complete the job.

Always make sure that you have ordered the correct parts. In some instances (e.g. Hydraulic Rams) parts or assemblies are, in the course of time, modified due to introduction of new materials, or improved design.

Always state by what means you wish the goods to be sent. In the absence of specific instructions consignments will be sent by post or carrier.

Always State the number of our Invoice or Sales Slip, and the reason for return should it become necessary to return any items for exchange or credit.

Generic Parts Manual

Generic parts manuals should be used as a general guide to the components used on the machine; to ensure accurate parts information for a specific machine please refer to the 'Interactive Parts Database' on our website which identifies the exact components used on the machine when it was manufactured based on the machine's unique serial number.

Direct access can be gained using the web address or QR code below.
<http://www.mcconnel.com/support/product-support/interactive-parts-database/>



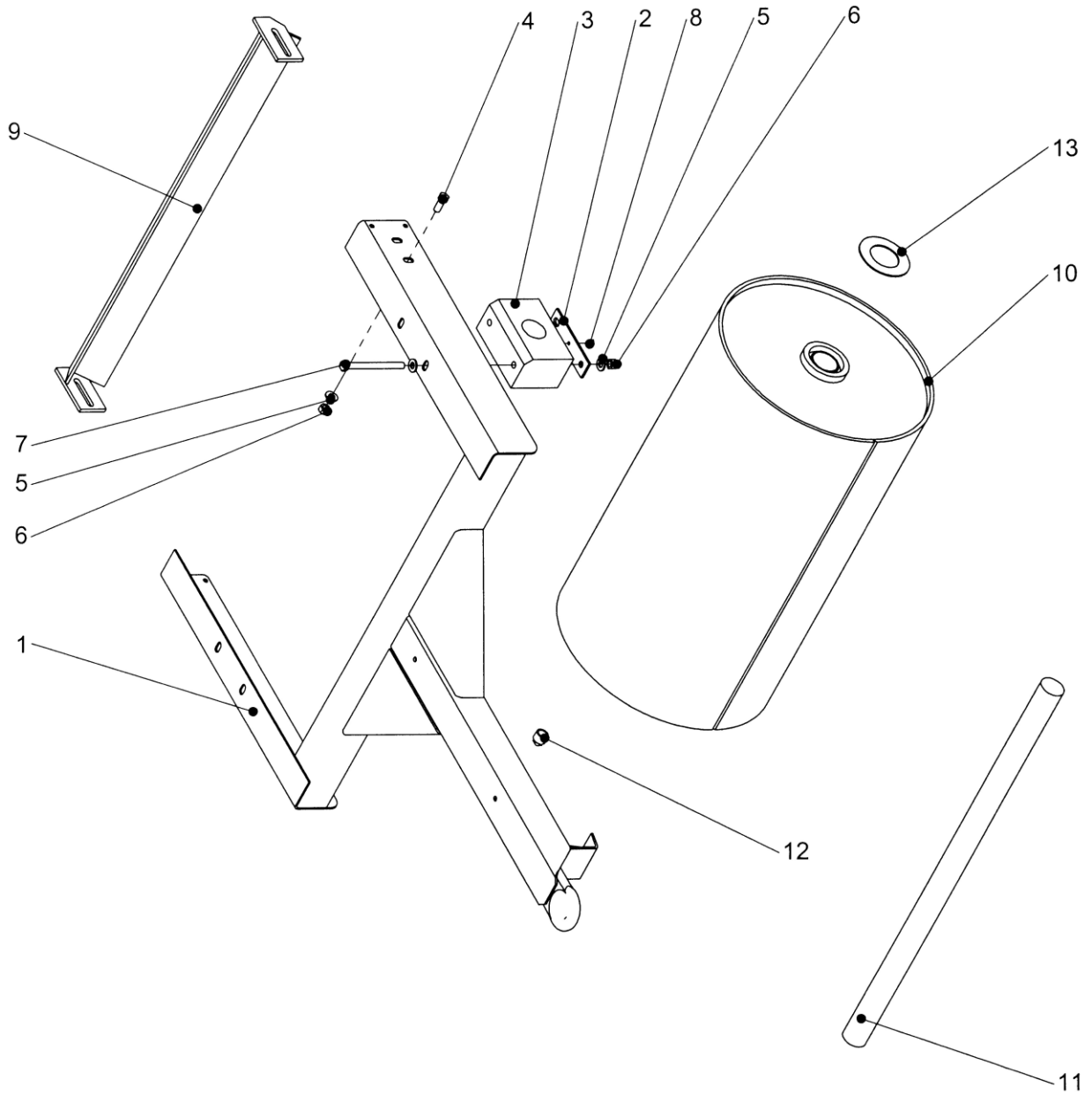
If an interactive search yields no results please contact our Parts Dept. for information.
Tel: +44 (0)1584 873131

All enquiries for parts must be addressed to;

McCONNEL LIMITED
Temeside Works
Ludlow
Shropshire
SY8 1ND

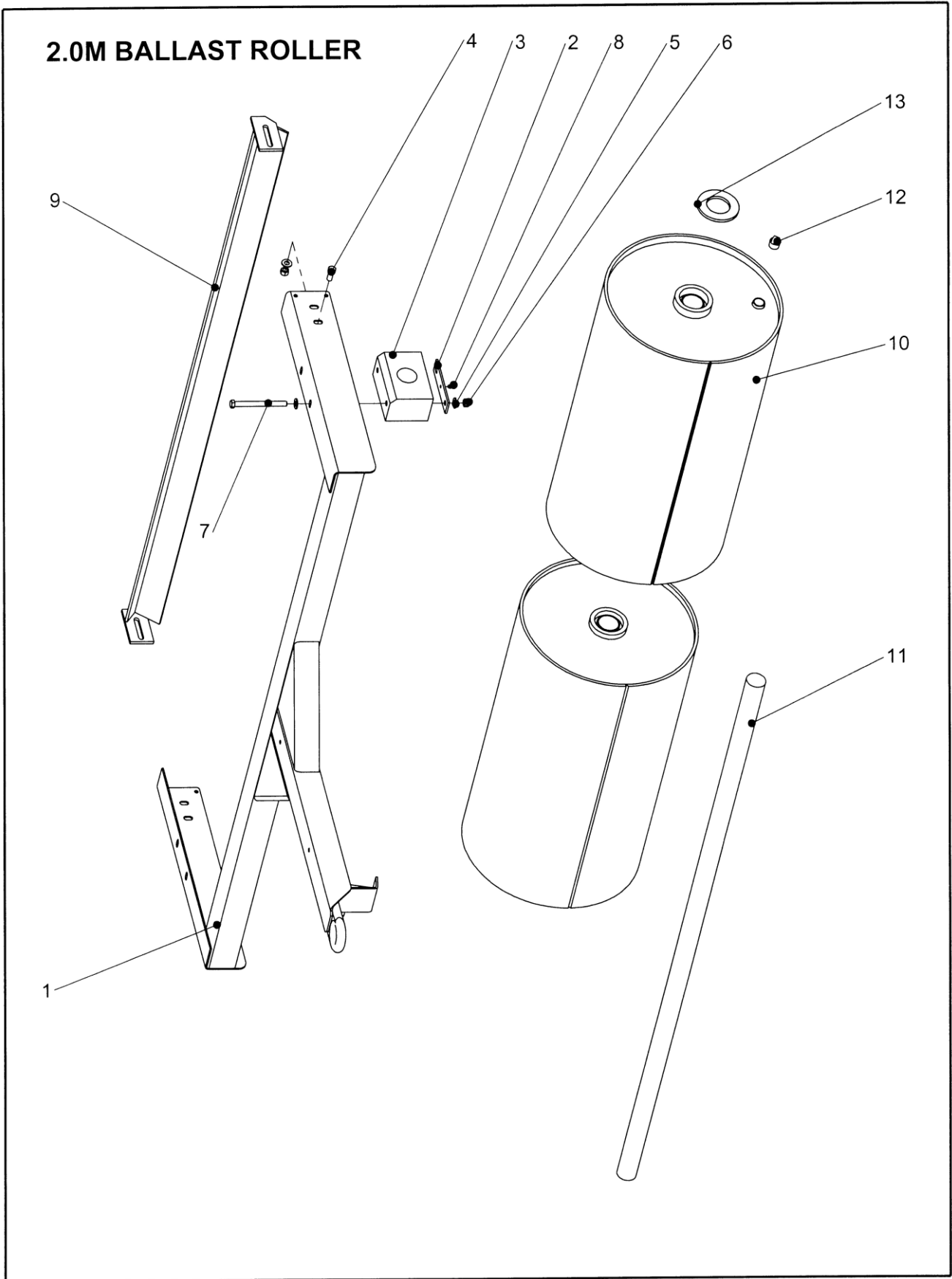
Telephone: 01584 873131
Email: parts@mcconnel.com

1.0M BALLAST ROLLER



209.218 SR1 PARTS MODULE

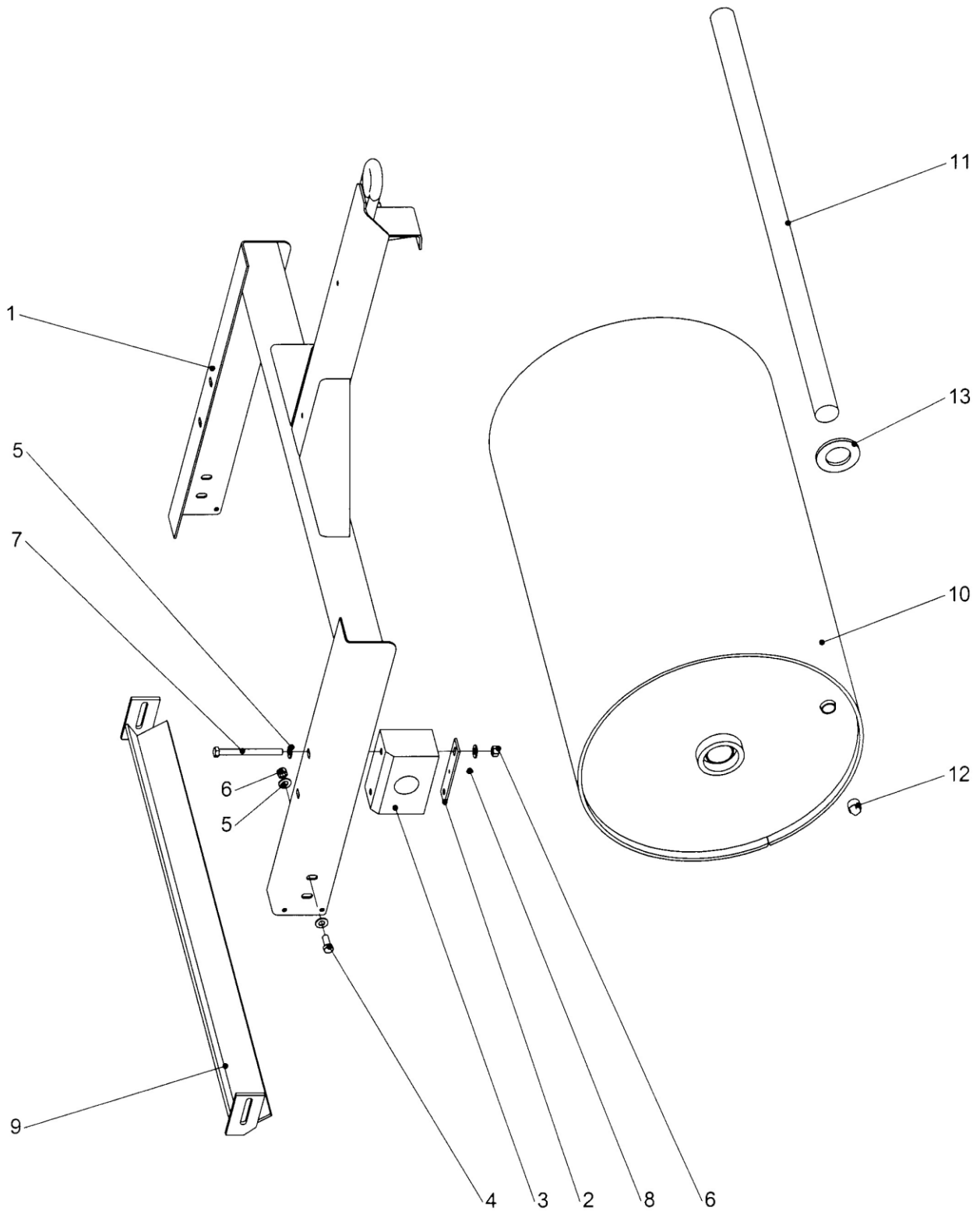
1	209.067	ROLLER FRAME	1
1	45429.01	SERIAL NUMBER PLATE	1
1	05.227.71	HAMMER DRIVE SCREW	2
2	039.020	GREASER PLATE	2
3	039.025	BEARING BLOCK	2
4	05.264.35	SETSCREW	4
5	05.281.04	FLAT WASHER	16
6	05.287.04	SELF LOCKING NUT	8
7	05.292.39	BOLT	4
8	05.953.04	GREASE NIPPLE	2
9	209.068	SCRAPER BAR	1
10	209.055	BALLAST DRUM	1
11	209.069	AXLE	1
12	T1698	PLUG	1
13	209.088	SPACER	-



209.219 SR2 PARTS MODULE

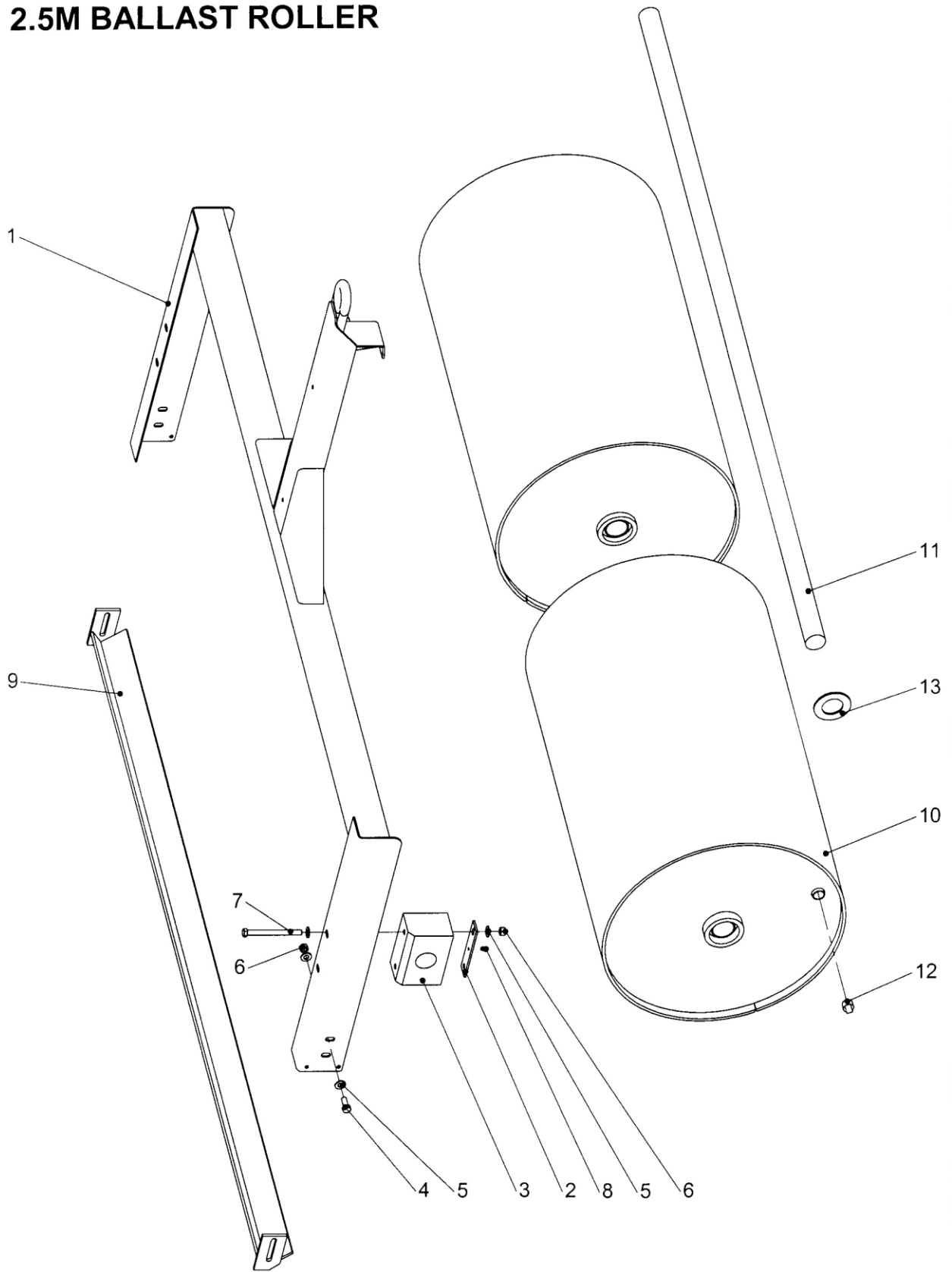
1	209.060	ROLLER FRAME	1
1	45429.01	SERIAL NUMBER PLATE	1
1	05.227.71	HAMMER DRIVE SCREW	2
2	039.020	GREASER PLATE	2
3	039.025	BEARING BLOCK	2
4	05.264.35	SETSCREW	4
5	05.281.04	FLAT WASHER	16
6	05.287.04	SELF LOCKING NUT	8
7	05.292.39	BOLT	4
8	05.953.04	GREASE NIPPLE	2
9	209.061	SCRAPER BAR	1
10	209.055	BALLAST DRUM	2
11	209.059	AXLE	1
12	T1698	PLUG BSP	2
13	209.088	SPACER	-

1.25M BALLAST ROLLER



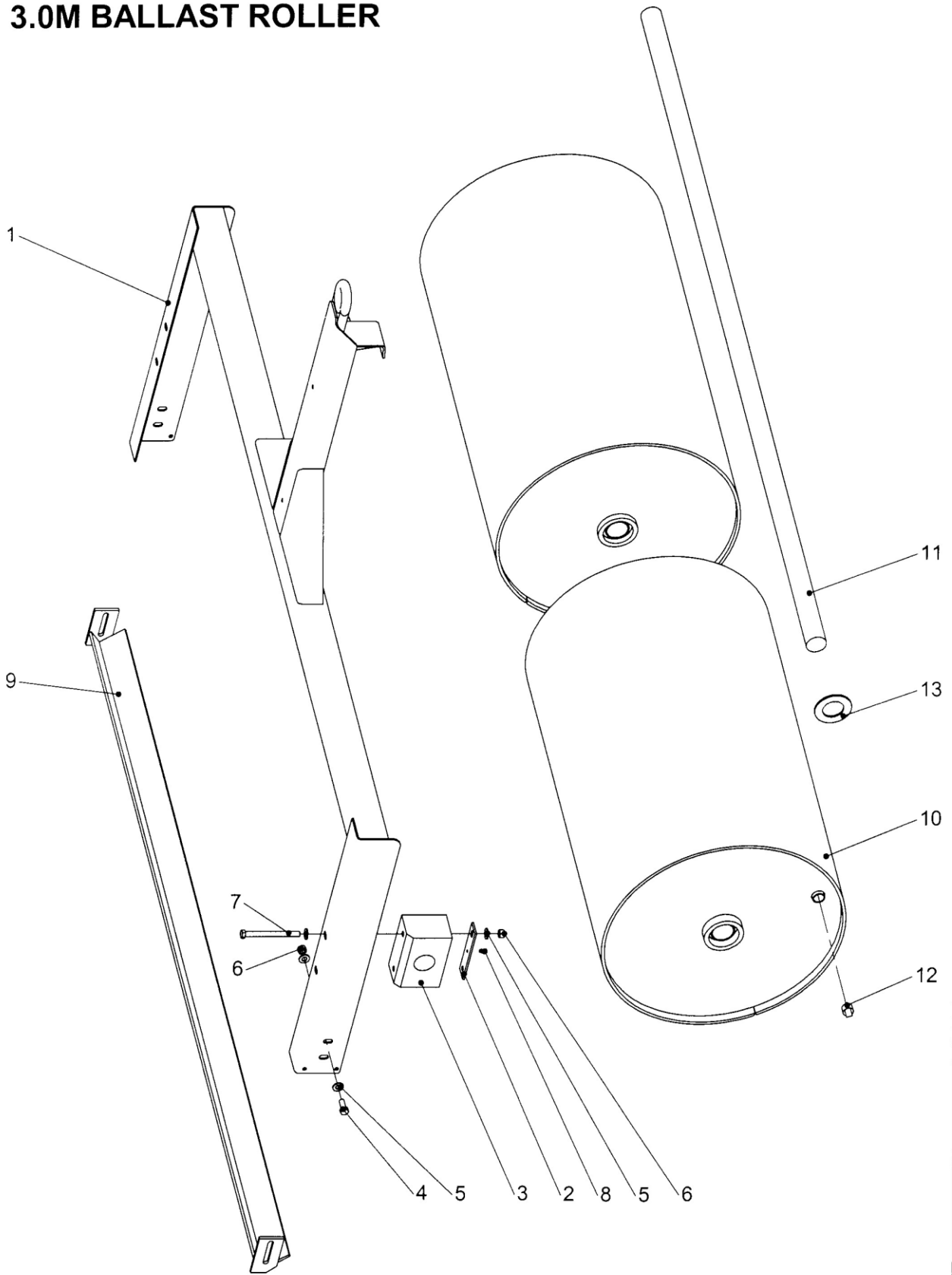
	209.202	SR4 PARTS MODULE	
1	05.264.35	SETSCREW	4
1	209.009	ROLLER FRAME	1
1	45429.01	S/N PLATE	1
2	039.020	GREASER PLATE	2
3	039.025	BLOCK WOODEN - MACHINED	2
4	05.227.01	HAMMER DRIVE SCREW	4
5	05.281.04	FLAT WASHER	16
6	05.287.04	SELF-LOCKING NUT	8
7	05.292.39	BOLT	4
8	05.953.04	GREASE NIPPLE	2
9	209.010	SCRAPER BLADE	1
10	209.019	DRUM - SINGLE	1
11	209.020	AXLE	1
12	T1698	PLUG (HOLLOW)	1
13	039-031-A	PLATE	8

2.5M BALLAST ROLLER

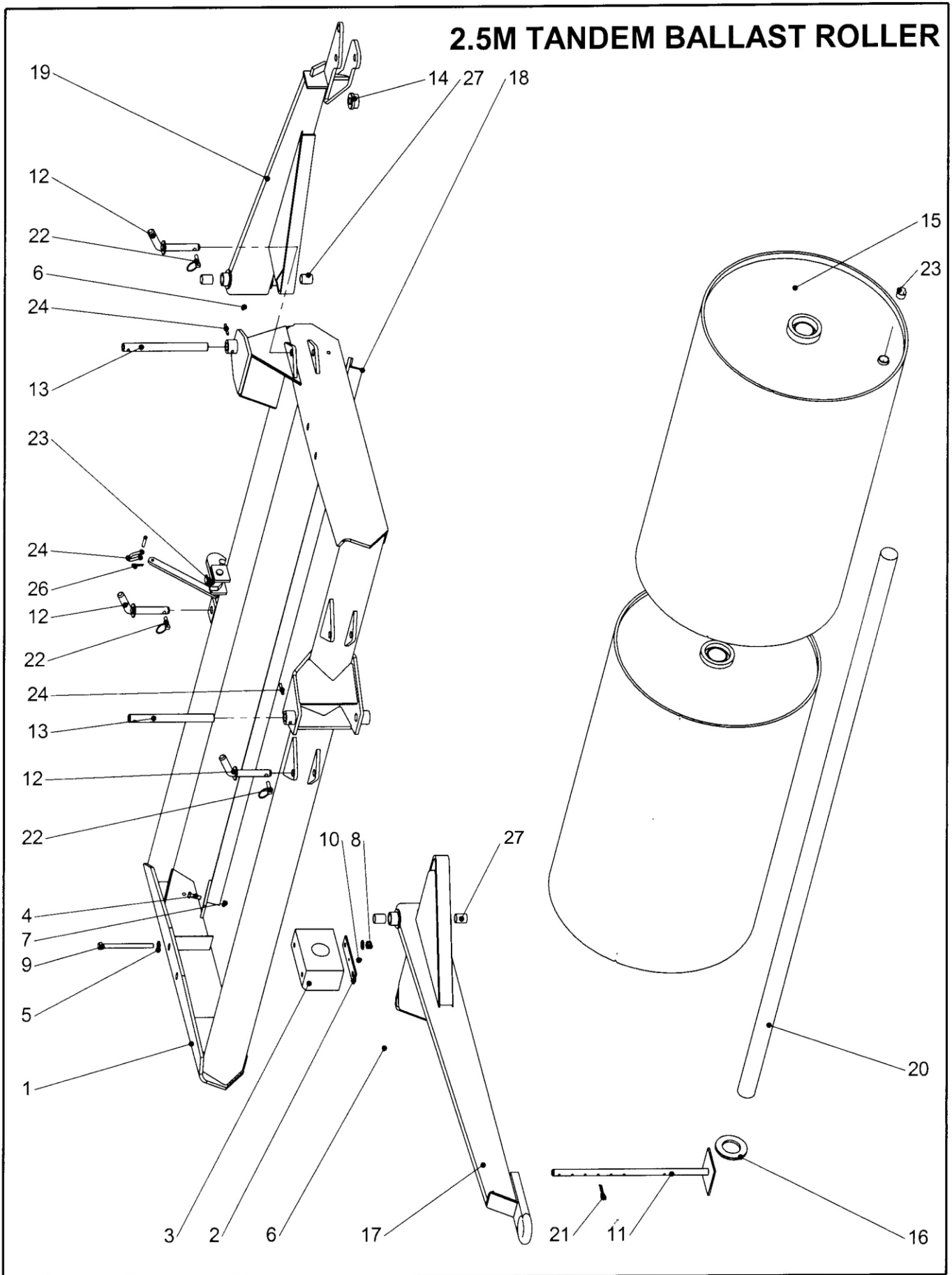


	209.203	SR8 PARTS MODULE	
1	209.005	ROLLER FRAME	1
1	05.227.01	HAMMER DRIVE SCREW	4
1	45429.01	S/N PLATE	1
2	039.020	GREASER PLATE	2
3	039.025	BLOCK WOODEN – MACHINED	2
4	05.264.35	SETSCREW	4
5	05.281.04	FLAT WASHER	16
6	05.287.04	SELF-LOCKING NUT	12
7	05.292.39	BOLT	4
8	05.953.04	GREASE NIPPLE	2
9	209.007	SCRAPER BAR	1
10	209.001	BALLAST DRUM	2
11	209.021	AXLE	1
12	T1698	PLUG (HOLLOW)	2
13	039-031-A	PLATE	8

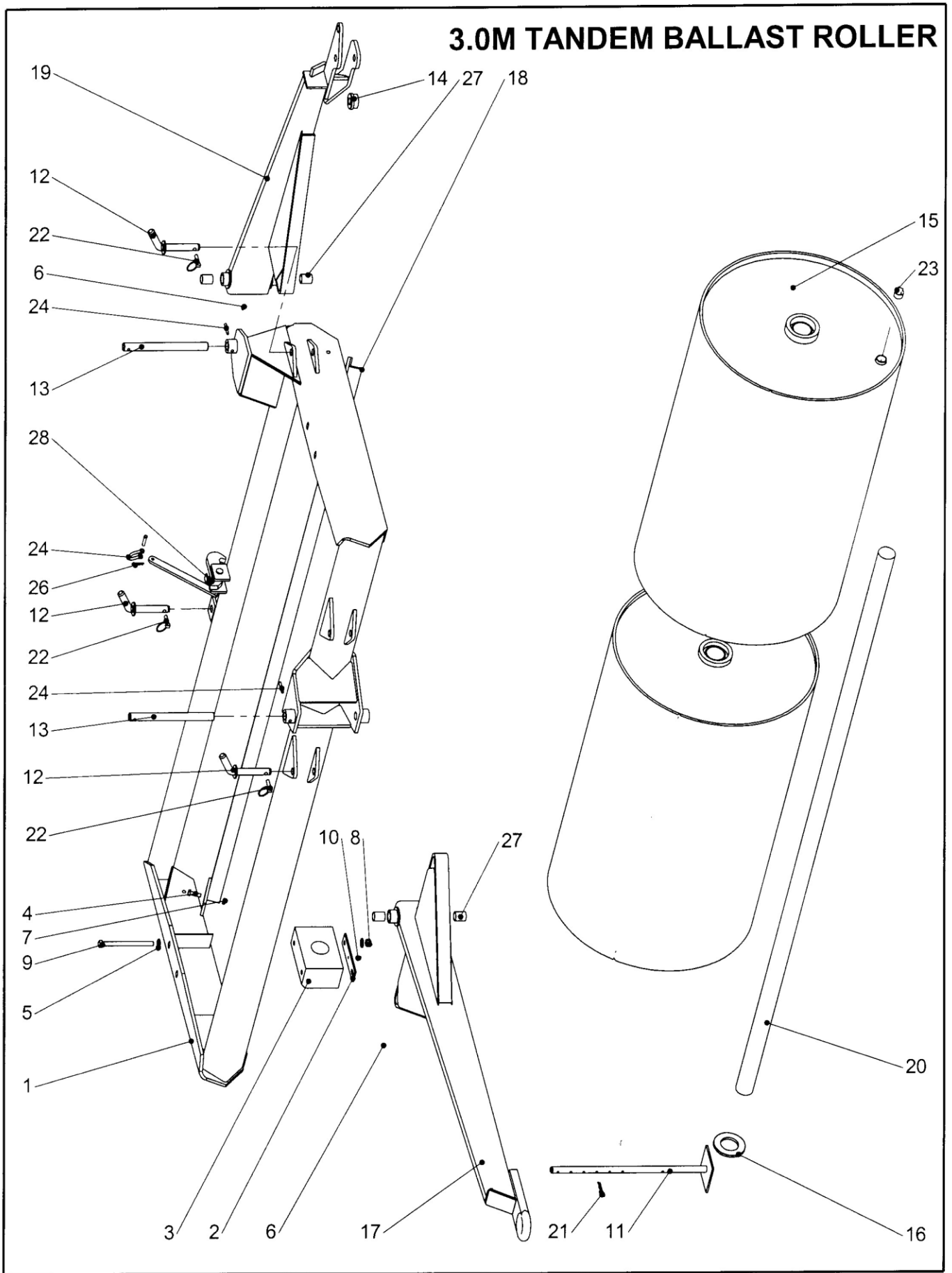
3.0M BALLAST ROLLER



	209.204	SR10 PARTS MODULE	
1	039.053	ROLLER FRAME	1
1	05.227.01	HAMMER DRIVE SCREW	4
1	45429.01	S/N PLATE	1
2	039.020	GREASER PLATE	2
3	039.025	BLOCK WOODEN – MACHINED	2
4	05.264.35	SETSCREW	4
5	05.281.04	FLAT WASHER	16
6	05.287.04	SELF-LOCKING NUT	12
7	05.292.39	BOLT	4
8	05.953.04	GREASE NIPPLE	2
9	039.047C	SCRAPER BAR	1
10	209.002	BALLAST DRUM	2
11	039.021DP	AXLE	1
12	T1698	PLUG (HOLLOW)	2
13	039-031-A	PLATE	8

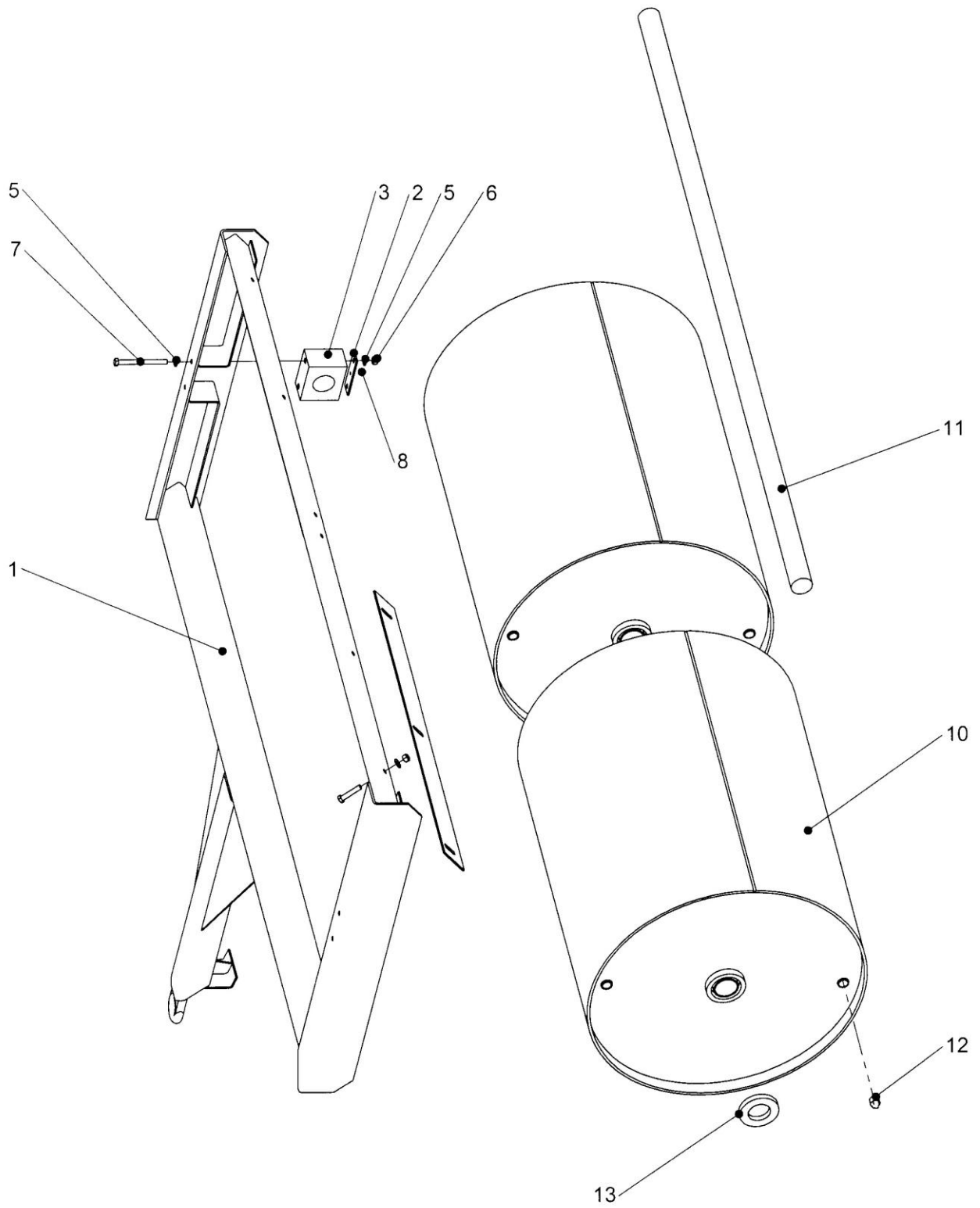


209.207		ST8 PARTS MODULE	
1	05.227.01	HAMMER DRIVE SCREW	4
1	209.015	MAINFRAME	1
1	45429.01	S/N PLATE	1
2	039.020	GREASER PLATE	2
3	039.025	BLOCK WOODEN - MACHINED	2
4	05.264.25	SETSCREW	2
5	05.281.04	FLAT WASHER	8
6	T7824	GREASE NIPPLE	2
7	05.287.03	SELF-LOCKING NUT	2
8	05.287.04	SELF-LOCKING NUT	4
9	05.292.40	BOLT	4
10	05.953.03	GREASE NIPPLE	2
11	071.433	STAND LEG	1
12	115.020B	PIN ASSY	3
13	142.017	PIVOT PIN	2
14	142.045	CONVERSION BUSH DRAWBAR	1
15	209.001	BALLAST DRUM	2
16	039-031-A	PLATE	8
17	209.016	DRAWBAR 2.5M FRONT	1
18	209.017	SCRAPER BLADE	1
19	209.018	2.5M REAR DRAWBAR	1
20	209.023	AXLE	1
21	30.054.00	HAIR CLIP	1
22	T0832	LINCH PIN	3
23	T1698	PLUG	2
24	T2433	D SHACKLE	1
25	T2434	CLEVIS PIN	1
26	T2435	R CLIP	1
27	T3124	BUSH	4
28	T340027	SPRING TORSION	1



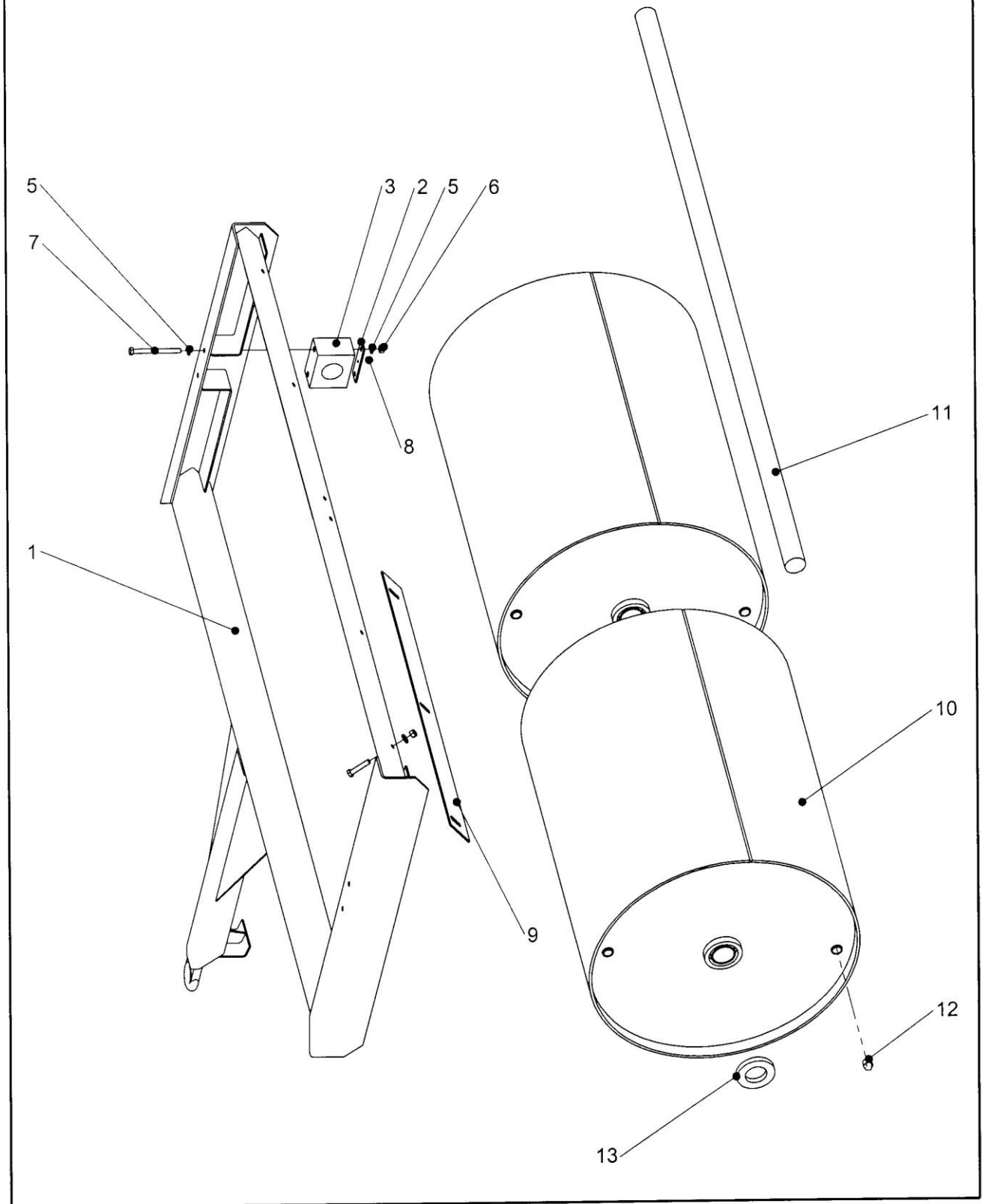
209.208		ST10 PARTS MODULE	
1	05.227.01	HAMMER DRIVE SCREW	4
1	142.041	MAINFRAME	1
1	45429.01	S/N PLATE	1
2	039.020	GREASER PLATE	2
3	039.025	BLOCK WOODEN - MACHINED	2
4	05.264.25	SETSCREW	2
5	05.281.04	FLAT WASHER	8
6	T7824	GREASE NIPPLE	2
7	05.287.03	SELF-LOCKING NUT	2
8	05.287.04	SELF-LOCKING NUT	4
9	05.292.40	BOLT	4
10	05.953.03	GREASE NIPPLE	2
11	071.433	STAND LEG	1
12	115.020B	PIN ASSY	3
13	142.017	PIVOT PIN	2
14	142.045	CONVERSION BUSH DRAWBAR	1
15	209.002	BALLAST DRUM	2
16	039-031-A	PLATE	8
17	142.039	DRAWBAR 3.0M FRONT	1
18	039.011B	SCRAPER BLADE	1
19	142.043	DRAWBAR 3.0M REAR	1
20	039.021DP	AXLE	1
21	30.054.00	HAIR CLIP	1
22	T0832	LINCH PIN	3
23	T1698	PLUG	2
24	T2433	D SHACKLE	1
25	T2434	CLEVIS PIN	1
26	T2435	R CLIP	1
27	T3124	BUSH	4
28	T340027	SPRING TORSION	1

2.5M BALLAST ROLLER (1.0M DIA DRUM)



	209.205	SR25 PARTS MODULE	
1	209.013	ROLLER FRAME	1
1	05.227.01	HAMMER DRIVE SCREW	4
1	45429.01	S/N PLATE	1
2	088.035	GREASER PLATE	2
3	088.001	BLOCK WOODEN – MACHINED	2
4	05.292.31	BOLT	6
5	05.281.04	FLAT WASHER	16
6	05.287.04	SELF-LOCKING NUT	12
7	05.292.39	BOLT	4
8	05.953.04	GREASE NIPPLE	2
9	209.014	SCRAPER BAR	1
10	209.003	BALLAST DRUM	2
11	209.022	AXLE	1
12	T1698	PLUG (HOLLOW)	2
13	088.023-B	SPACER	4
13	088.023-C	SPACER	3

3.0M BALLAST ROLLER (1.0M DIA DRUM)



	209.206	SR30 PARTS MODULE	
1	088.030	ROLLER FRAME	1
1	05.227.01	HAMMER DRIVE SCREW	4
1	45429.01	S/N PLATE	1
2	088.035	GREASER PLATE	2
3	088.001	BLOCK WOODEN – MACHINED	2
4	05.292.31	BOLT	6
5	05.281.04	FLAT WASHER	16
6	05.287.04	SELF-LOCKING NUT	12
7	05.292.39	BOLT	4
8	05.953.04	GREASE	2
9	088.031	SCRAPER BAR	1
10	209.004	BALLAST DRUM	2
11	088.034	AXLE	1
12	T1698	PLUG (HOLLOW)	2
13	088.023-B	SPACER	4
13	088.023-C	SPACER	3



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