

TWOSE

SAND SPREADERS

SPR-1000GA / SPR-1500GA
Operator & Parts Manual

Publication 821 Dec. 2015 (Rev.14.01.16)

IMPORTANT VERIFICATION OF WARRANTY REGISTRATION



DEALER WARRANTY INFORMATION & REGISTRATION VERIFICATION

It is imperative that the selling dealer registers this machine with Twose of Tiverton 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 Twose web site at www.twose.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 Twose Office on 01884 253691.

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 Twose of Tiverton 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.

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 Twose of Tiverton 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 machines supplied by Twose of Tiverton 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.*
- 1.02. *All spare parts supplied by Twose of Tiverton 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 Twose of Tiverton 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 Twose of Tiverton Ltd's serial number plate has been removed or altered.*
- 1.05. *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.*
- 1.06. *Temporary repairs and consequential loss - i.e. oil, downtime and associated parts are specifically excluded from the warranty.*
- 1.07. *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.*
- 1.08. *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 Twose of Tiverton Ltd cannot be held liable, and may have safety implications.*
- 1.09. *If in exceptional circumstances a non Twose of Tiverton Ltd part is used to effect a repair, warranty reimbursement will be at no more than Twose of Tiverton Ltd's standard dealer cost for the genuine part.*
- 1.10. *Except as provided herein, no employee, agent, dealer or other person is authorised to give any warranties of any nature on behalf of Twose of Tiverton Ltd.*
- 1.11. *For machine warranty periods in excess of 12 months the following additional exclusions shall apply:*
 - 1.11.1. *Hoses, exposed pipes and hydraulic tank breathers.*
 - 1.11.2. *Filters.*
 - 1.11.3. *Rubber mountings.*
 - 1.11.4. *External electric wiring.*
 - 1.11.5. *Bearings and seals.*

- 1.12. 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.
- 1.13. 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. Twose of Tiverton 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 Twose of Tiverton Ltd 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 Twose of Tiverton 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 Twose of Tiverton 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 Twose of Tiverton 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 Twose of Tiverton Ltd Service Dealer, within 30 days of the date of repair.
- 2.05. Following examination of the claim and parts, Twose of Tiverton Ltd will pay, at their discretion, for any valid claim the invoiced cost of any parts supplied by Twose of Tiverton 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 Twose of Tiverton Ltd is final.

3. LIMITATION OF LIABILITY

- 3.01. Twose of Tiverton 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. Twose of Tiverton Ltd makes no warranty as to the design, capability, capacity or suitability for use of the goods.
- 3.03. Except as provided herein, Twose of Tiverton 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. Twose of Tiverton 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.



DECLARATION OF CONFORMITY

Conforming to EU Machinery Directive 2006/42/EC

We,

TWOSE of TIVERTON LIMITED,
6 Chinon Court, Lower Moor Way,
Tiverton Business Park, Tiverton, Devon, EX16 6SS, UK

Hereby declare that:

The Product; *Tractor Mounted Sand Spreader*

Product Code; *TFRA*

Serial No. & Date Type

Manufactured in; *Denmark*

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 953 (1997) + A1 (2009) 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.

Signed  *Responsible Person*
CHRISTIAN DAVIES on behalf of TWOSE OF TIVERTON LIMITED

Status: *General Manager*

Date: *September 2015*

LIST OF CONTENTS

Operator Section

General Information	1
Machine Description & Purpose of Use	2
Technical Specifications	2
Safety Information	3
Machine Attachment	4
Machine Components	5
Pre-Operation & Transport	6
Maintenance	6
Accessories	7

Parts Section

SPR-1000GA Assembly	9
SPR-1500GA Assembly	13
3-Point Loading Attachment (Option)	17

GENERAL INFORMATION

Always read this manual before fitting or operating the machine – whenever any doubt exists, contact your dealer or the Twose Service Department for advice and assistance.

Use only Twose Genuine Service Parts on Twose Equipment and Machines

DEFINITIONS: The following definitions apply throughout this manual;

WARNING

An operating procedure, technique etc., which –
can result in personal injury or loss of life if not observed carefully.

CAUTION

An operating procedure, technique etc., which –
can result in damage to either machine or equipment if not observed carefully.

NOTE

An operating procedure, technique etc., which –
is considered essential to emphasis.

LEFT AND RIGHT HAND

This term is applicable to the machine when attached to the tractor and is viewed
from the rear – this also applies to tractor references.

Note: illustrations in this manual are for instructional purposes only and may on occasion not show some components in their entirety. In certain instances an illustration may appear different to that of your particular model; where this occurs general operating and/or maintenance procedures apply. E&OE.

MACHINE & DEALER INFORMATION

Record the Serial Number of your machine on this page and always quote this number when ordering parts. Whenever information concerning the machine is requested remember also to state the make and model of tractor to which the machine is fitted.

Machine Serial Number:	Installation Date:
Machine Model details:	
Dealer Name:	
Dealer Address:	
Dealer Telephone No:	
Dealer Email Address:	

MACHINE DESCRIPTION & PURPOSE OF USE

The Two SPA Series Sand Spreaders are hydraulically operated, self-loading spreaders capable of use for the spreading of coarse sand, coarse sand mixed with salt, fine gravel, crushed granite, etc.

Note; these machines should only be used to perform tasks for which they were designed – use of the machines for any other function may be dangerous to persons and damaging to components and therefore not advisable.



TECHNICAL DATA

Technical Specifications

Specification	SPR-1000GA	SPR-1500GA
Working Width	200 cm / 79"	230 cm / 90"
Transport Width	215 cm / 85"	245 cm / 96 ½"
Body Dimension (Top)	106 cm x 200 cm / 42" x 79"	115 cm x 230 cm / 45" x 90"
Container Volume	1500 Litres / 219 UK Gallons	1500 Litres / 330 UK Gallons
3-Point Hitch	Optional	Optional
Stone Release Shutter	Standard	Standard
Rapid Emptying	Standard	Standard
Self-loading	Standard	Standard
Hydraulic Connection	1 x double	1 x double
Hydraulic Agitator	Standard	Standard
Weight	350 kg / 772 lbs	440 kg / 970 lbs

SAFETY INFORMATION

General safety rules:

- ▲ All operators must read this manual fully before attempting to use the machine.
- ▲ Never attempt to operate the machine without proper training.
- ▲ Do not allow others to operate the machine without proper training.
- ▲ Before attempting to use the machine inspect all hoses and couplings are in suitable working condition.
- ▲ Keep hands, feet and clothing clear of all moving parts on the machine.
- ▲ Never use arms or legs to distribute or move any substance in or through the machine.
- ▲ Both operators and the maintenance fitters should be familiar with the machine and fully aware of the dangers that surround improper use or incorrect repairs.
- ▲ Before starting, checks to both tractor and machine should be carried out with regard to functionality, road safety, and accident prevention.
- ▲ During checks and/or repairs, make sure nobody could start the machine by mistake.
- ▲ Never wear loose or fluttering clothes in close proximity to the machine.
- ▲ Ensure persons remain at a safe distance from the working machine at all times.
- ▲ Before starting, check the surrounding area for the likely presence of persons and/or animals. Do not use the machine if persons or animals are in close proximity.
- ▲ Stop the machine immediately if persons or animal enter the work area..
- ▲ Never carry passengers on the tractor.
- ▲ Never carry passengers on the machine.
- ▲ Never attempt to work with the machine in unsuitable conditions.
- ▲ Never attempt to use the machine in poor light or conditions of low visibility.
- ▲ Make yourself aware of the time required to stop and/or shutdown the machine and bear this in mind at all times during operation.
- ▲ Never leave an unattended machine or tractor running; always stop the engine, apply parking brakes and remove the starting key before leaving the machine unattended.

Although the information given here covers a wide range of safety subjects, it is impossible to predict every eventuality that can occur under differing circumstances whilst operating this machine. No advice given here can replace 'good common sense' and 'total awareness' at all times, but will go a long way towards the safe use of your Twose machine.

MACHINE ATTACHMENT

Attachment and removal of the machine must always be performed on a firm level site.

Attaching Machine to Tractor

Machines are supplied ready to use with a standard three-point hitch.

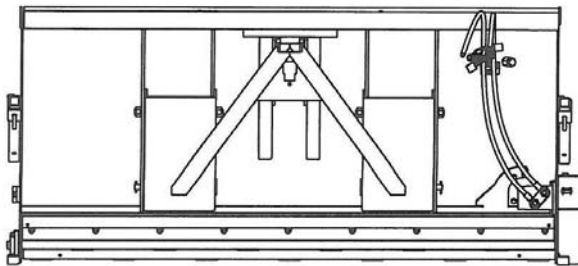
Self-loading spreaders are available with a variety of attachment options that are easy to fit using suitable bolts. Options are; SMS, EURO, 3-Point, A-frame, Volvo BM and Schäffer.

In its mounted position, the machine should be horizontally level to the ground.

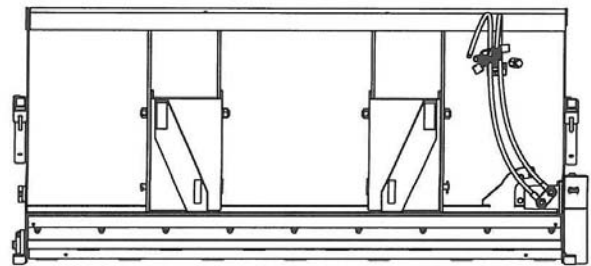
For self-loading applications, it should be mounted in a manner whereby the rear of the machine lays horizontal.



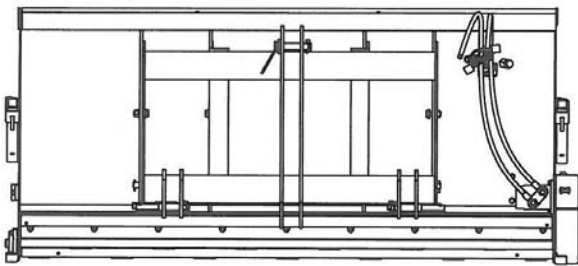
Mounting Types



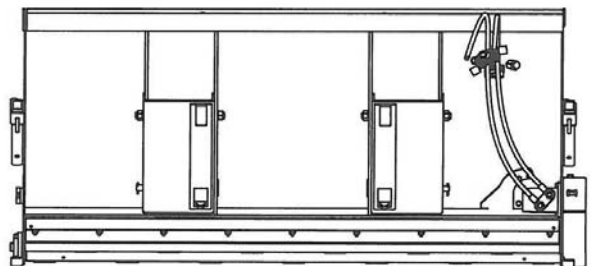
A-Frame Fitting



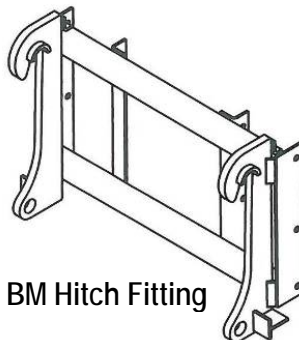
Euro Fitting



3-Point Hitch Fitting



SMS Fitting

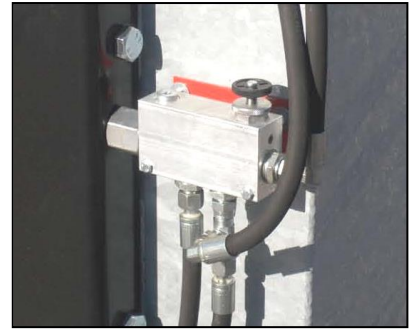


Volvo BM Hitch Fitting

Hydraulics

For unregulated hydraulic applications, a Flow Control Valve (P/No. FD3624) is available; this is used to set the working speed of the machine thus regulating the volume of material being spread.

Hoses and hydraulic connections must always be checked prior to operation to ensure the machine has been connected up correctly and there are no signs of oil leaks or damaged hoses.



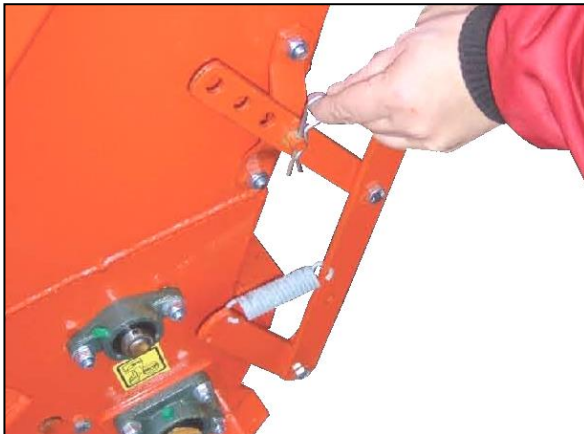
Motor & Drive

The hydraulic motor drives the agitator and the spreader unit via sprockets and chain.

Agitator Unit



The hydraulically-driven rotating agitator is fitted with slanted vanes specifically designed to stop the spreading material from 'bridging' above the spreader unit.



Stone Shutter

Machines feature a stone shutter mechanism to prevent large stones from becoming trapped at the spreader rotor. The shutter mechanism has four adjustment positions allowing the machine to be altered for the particular size of material being used.

The mechanism can also be used as a means of enabling rapid unloading.

Support Legs

Machines are equipped with two adjustable support legs for use when the machine is 'parked' on the ground; these should be manually raised to their lifted position when the machine is mounted on the tractor and subsequently returned to their support position prior to parking the machine.



PRE-OPERATION & TRANSPORT

Pre-Operation Checks

- Check condition of linkage pins (*if applicable*) and ensure security pins are fitted.
- Check all guarding/protection is in good working condition and correctly installed.
- Check all components for signs of excessive wear or damage; *replace if necessary*.
- Check tightness of nuts and bolts; re-torque if required.
- Check condition of hydraulic hoses and fitting (*if applicable*); replace if required.
- Grease all lubrication points on a daily basis.

Transport Width

In the majority of cases, the transport width of the machine will fall within the confines of the carrying vehicle. Great care must always be taken when transporting the machine to avoid collisions with other objects; where the transport width is wider than the carrying vehicle additional care must be adopted.

Transport Speed

The acceptable speed of transport will vary greatly depending upon the ground conditions. In any conditions avoid driving at a speed which causes exaggerated bouncing as this will put unnecessary strain on machine and/or vehicle components and in certain instances can produce a dangerous effect on the vehicles steering.

MAINTENANCE

General Maintenance

The machine must be cleaned after use and stored in a clean dry environment; it is important to always clean the machine thoroughly if it has been used for spreading salt in order to reduce the risk of damage that can be caused by rust.

Bearings, chains and relevant moving components should be greased on a regular basis and always prior to storage.

For extended periods of storage it is advisable that the machine be kept in a clean dry environment protected from the elements to avoid risk of corrosion. The machine should be thoroughly cleaned and lubricated prior to storage. At this point it is good practice to check the machine for worn or damaged components - any parts that require replacing should be ordered and fitted at the earliest opportunity so the machine is fully prepared for the next seasons work.

Please Note

When ordering replacement components please inform your parts advisor of the type of machine finish, *i.e. painted or galvanised*; this will ensure relevant parts are ordered to match the specific finish of your machine.

OPTIONAL ACCESSORIES



Safety Guard (SPR-1500GA models)
Part No. FD3666



Spread Limiter (Bolt on)
Part No. FD3626



Vertical Standing Loading Ram
(For 3-point linkage on self-loading models)
Part No. FD3621



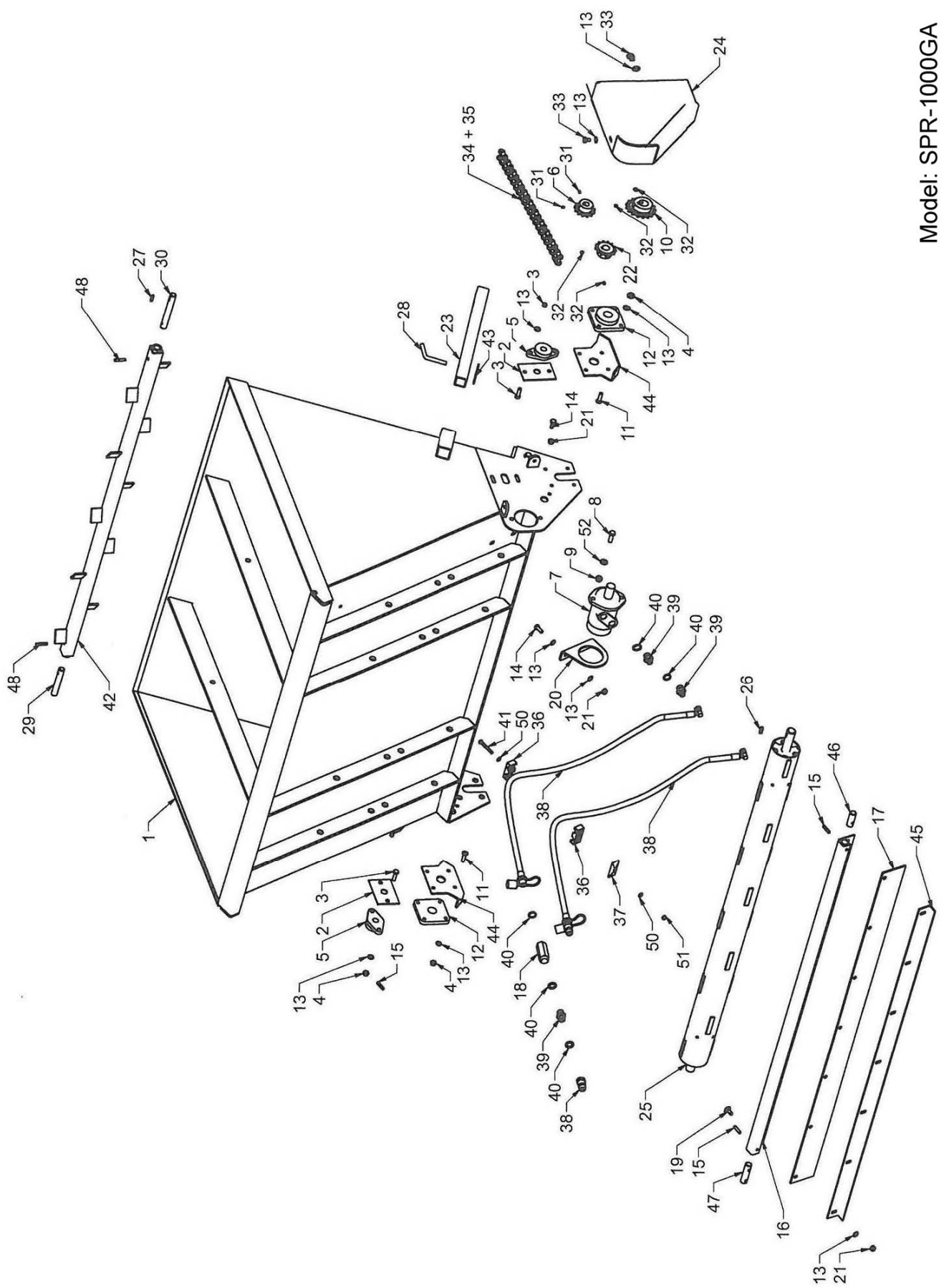
Tarpaulin Cover (SPR-1500GA models)
Stitched Elasticated Edge
Part No. FD3631

TWOSE
SAND SPREADERS
SPR-1000GA / SPR-1500GA
Parts Manual

SPR-1000GA ASSEMBLY

REF.	QTY.	PART No.	DESCRIPTION
			SPR-1000GA ASSEMBLY
1	1	FD28500	MAIN FRAME
2	2	FD28241	BRACKET
3	4	FD740210320	BOLT
4	18	FD740420010	LOCK NUT
5	2	FD28211	BALL BEARING
6	1	FD28207	GEAR WHEEL
7	1	FD28210	MOTOR
8	2	FD740210410	BOLT
9	2	FD740420012	LOCK NUT
10	1	FD28208	GEAR WHEEL
11	8	FD741130300	BOLT
12	2	FD28212	BALL BEARING
13	32	FD740600030	SHIM
14	4	FD740210310	BOLT
15	5	FD741190208	SPLIT PIN
16	1	FD28204	BRACKET
17	2	FD28213	RUBBER
18	1	FD28219	NON-RETURN VALVE
19	18	FD740150225	COACH BOLT
20	1	FD28220	BRACKET
21	18	FD740390010	NUT
22	1	FD28209	GEAR WHEEL
23	2	FD28202	SUPPORT LEG
24	1	FD28205	SHIELD
25	1	FD28203	SPREAD BOOM
26	1	FD42445	KEY
27	1	FD28206	KEY
28	2	FD15558	PIN
29	1	FD28236	SHAFT
30	1	FD28237	SHAFT
31	2	FD741010135	SCREW
32	2	FD741010175	SCREW
33	2	FD740210302	SET SCREW
34	1	FD28218	CHAIN
35	1	FD1511125	CHAIN CONNECTING LINK
36	1	FD28214	HOSE CLAMP
37	1	FD28215	PLATE
38	2	FD28216	PIPE
39	2	FD41474	CONNECTOR

Continued...



Model: SPR-1000GA

SPR-1000GA ASSEMBLY

REF.	QTY.	PART No.	DESCRIPTION
			SPR-1000GA ASSEMBLY
40	4	FD42415	GASKET
41	1	FD740211215	BOLT
42	1	FD28201	AGITATOR BOOM
43	2	FD1220035	COTTER
44	2	FD28200	BRACKET
45	2	FD28228	BRACKET
46	3	FD28235	BOLT
47	1	FD28230	BOLT
48	2	FD741190213	SPLIT PIN

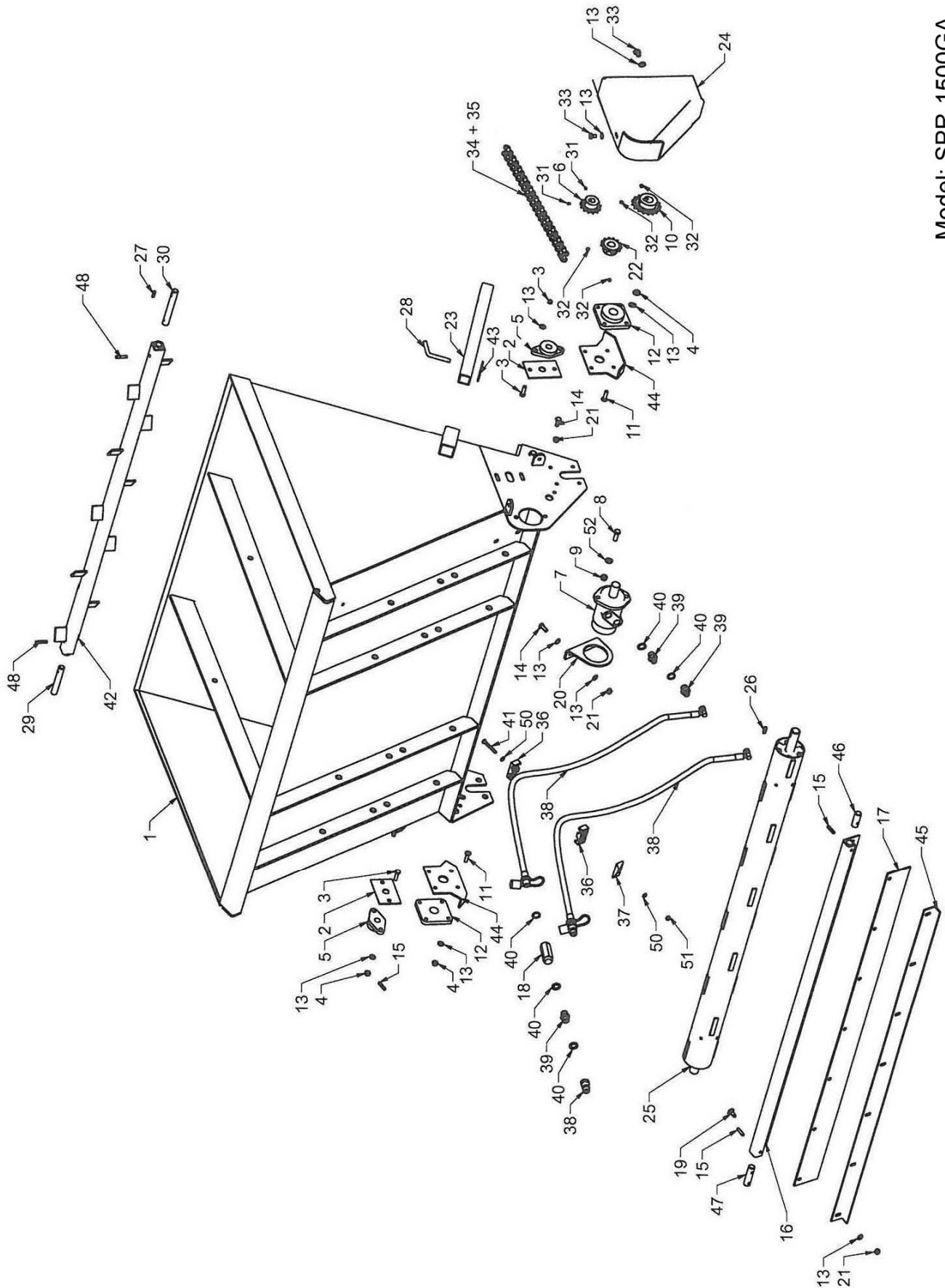
SPR-1500GA ASSEMBLY

REF.	QTY.	PART No.	DESCRIPTION
			SPR-1500GA ASSEMBLY
1	1	FD28600	MAIN FRAME
2	2	FD28241	BRACKET
3	4	FD740210320	BOLT
4	20	FD740420010	LOCK NUT
5	2	FD28211	BALL BEARING
6	1	FD28207	GEAR WHEEL
7	1	FD28210	MOTOR
8	2	740210410	BOLT
9	2	740420012	LOCK NUT
10	1	FD28208	GEAR WHEEL
11	8	FD741130300	BOLT
12	2	FD28212	BALL BEARING
13	34	FD740600030	SHIM
14	4	FD740210310	BOLT
15	5	FD741190208	SPLIT PIN
16	1	FD28604	BRACKET
17	2	FD28613	RUBBER
18	1	FD28219	NON-RETURN VALVE
19	20	FD740150225	COACH BOLT
20	1	FD28220	BRACKET
21	20	FD740390010	NUT
22	1	FD28209	GEAR WHEEL
23	2	FD28202	SUPPORT LEG
24	1	FD28205	SHIELD
25	1	FD28603	SPREAD BOOM
26	1	FD42445	KEY
27	1	FD28206	KEY
28	2	FD15558	PIN
29	1	FD28236	SHAFT
30	1	FD28237	SHAFT
31	2	FD741010135	SCREW
32	2	FD741010175	SCREW
33	2	FD740210302	SET SCREW
34	1	FD28218	CHAIN
35	1	FD1511125	CHAIN CONNECTING LINK
36	1	FD28214	HOSE CLAMP
37	1	FD28215	PLATE
38	2	FD28216	PIPE
39	2	FD41474	CONNECTOR

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SPR-1500GA ASSEMBLY

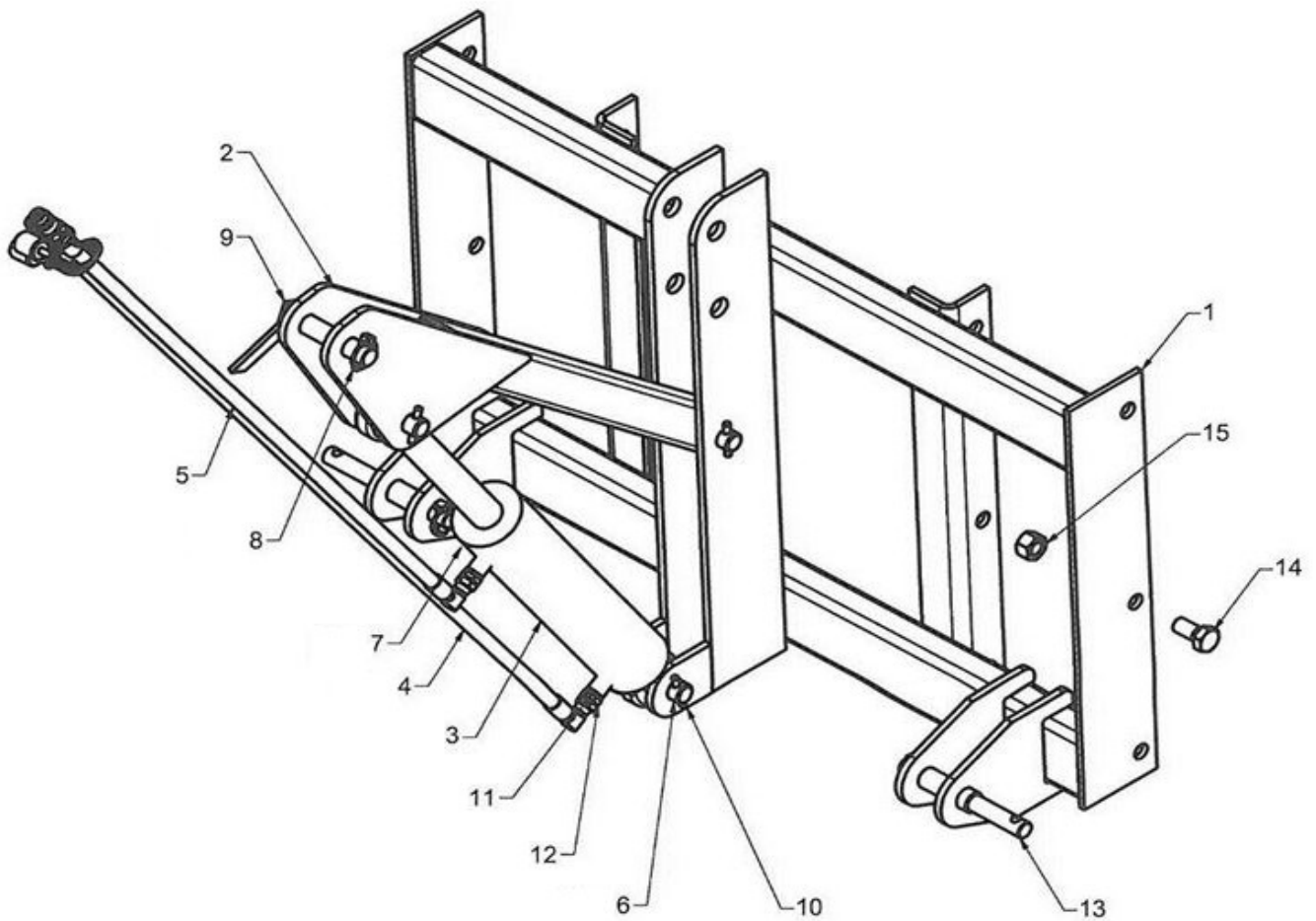
Model: SPR-1500GA



SPR-1500GA ASSEMBLY

REF.	QTY.	PART No.	DESCRIPTION
			SPR-1500GA ASSEMBLY
40	4	FD42415	GASKET
41	1	FD740211215	BOLT
42	1	FD28601	AGITATOR BOOM
43	2	FD1220035	COTTER
44	2	FD28200	BRACKET
45	2	FD28628	BRACKET
46	3	FD28235	BOLT
47	1	FD28230	BOLT
48	2	FD741190213	SPLIT PIN

3-POINT LOADING ATTACHMENT (Option)



REF.	QTY.	PART No.	DESCRIPTION
			3-POINT LOADING ATTACHMENT
1	1	FD28560	3-POINT HITCH (SPR-1500GA Model)
2	1	FD28561	LOADING HITCH
3	1	FD28565	LOADING RAM
4	1	FD28566	HYDRAULIC HOSE
5	6	FD28567	HYDRAULIC HOSE
6	3	FD28554	BOLT
7	2	FD1210100	LOCK PIN
8	4	FD1210080	LOCK PIN
9	1	FD25413	BOLT WITH HANDLE
10	3	FD741190215	PIN
11	2	05.290.04	BONDED SEAL
12	2	FD42419	CONNECTOR
13	2	FD15536	PIN (CAT I/II)
14	12	FD740210650	BOLT
15	12	FD740420020	LOCK NUT

