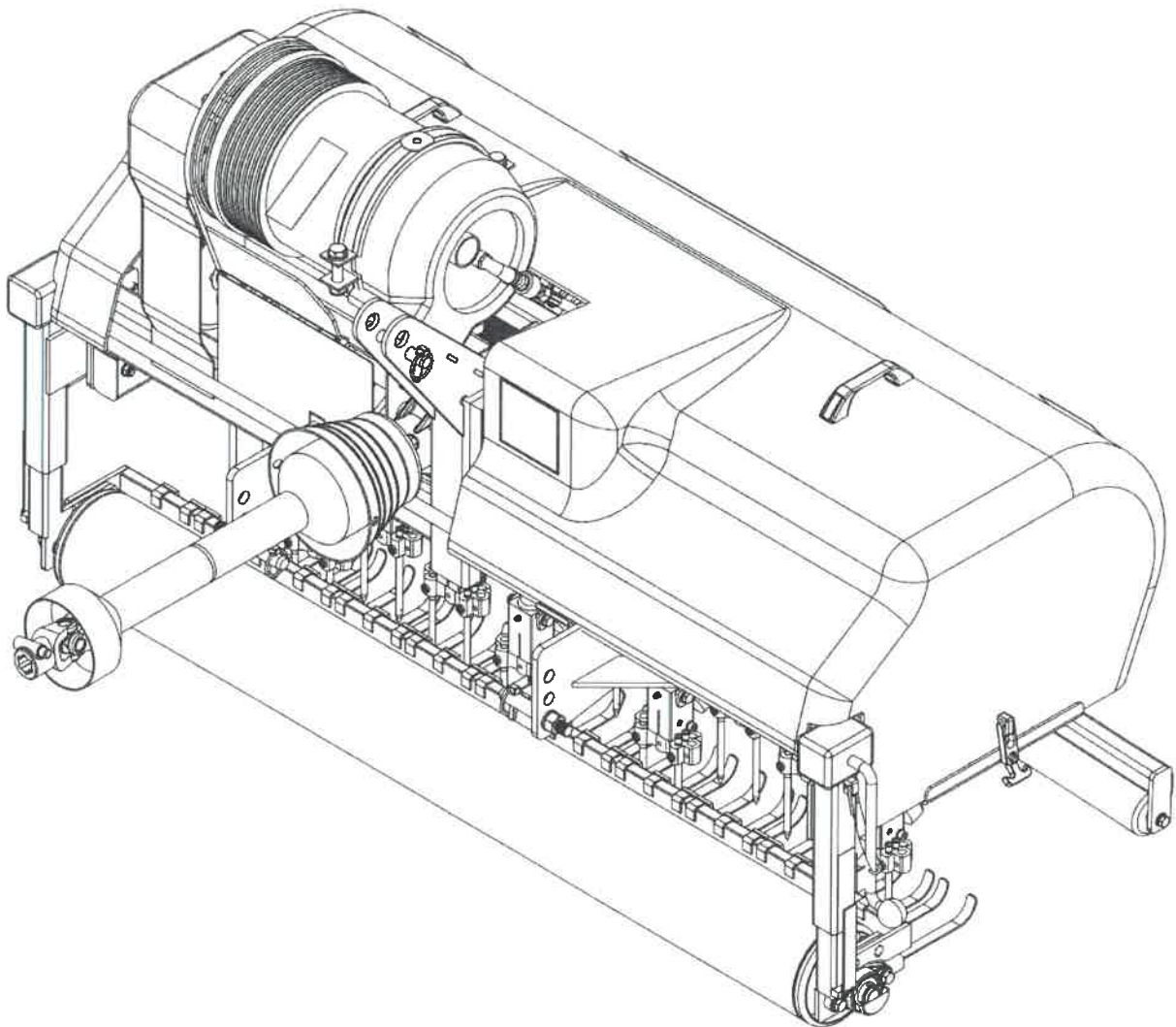


sisis®

JAVELIN AER-AID INSTRUCTION MANUAL



CERTIFICATE OF CONFORMITY

JAVELIN AER-AID CN Code: 84322990

Manufacturer:- Howardson Ltd, Howardson Works, Kirk Langley, Derby, DE6 4NJ. UK

Owner of Technical Document:- Mr I.D. Howard, Howardson Ltd, Howardson Works Kirk Langley, Derby, DE6 4NJ, UK

I the under signed Declare that these machines:-

Model: JAVELIN AER-AIR

Complies with the applicable requirements of:-
- Machine Directive 2006/42/EC

Managing Director



Ian Howard

SERIAL NUMBERS



NOTE:-

MAKE A NOTE OF THE SERIAL NUMBER OF YOUR MACHINE AND ALWAYS QUOTE IT IN ANY COMMUNICATION WITH PERSONNEL AT DENNIS.

MACHINE SERIAL NUMBER

ENGINE SERIAL NUMBER

INTRODUCTION

The reliability and quality of performance of the **SISIS JAVELIN AER-AID** depends upon some simple care maintenance carried out regularly. This manual has been prepared to allow the user to carry out all such work.

It is advisable to read the instructions carefully. Proper care and attention will enable the machine to give a continuous, satisfactory, and reliable service. Failure to carry out regular lubrication and maintenance as outlined in this manual may render any guarantee or warranty invalid.

In the case of any difficulty, or if further information or advice is required, our Service Department is always at your call. In the interests of speed and accuracy of information please quote the serial numbers of the machine and engine when making enquiries.

For the machine, this is to be found on a plate attached to the side frame. The engine number is stamped on either the crank case or the gear casing facing towards the front of the machine. We suggest you write the numbers on the front page of this book.

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TECHNICAL DATA

MODEL	JAVELIN
WIDTH (mm)	1868
LENGTH (mm)	1731
HEIGHT (mm)	1063
WEIGHT (Kg)	597
WORKING WIDTH (mm)	1441

IMPORTANT SAFETY INTRODUCTIONS



CAUTION:-

READ THE INSTRUCTIONS. We want you to obtain the best performance from this machine. If you have any difficulty in carrying out the following instructions please contact your local SISIS dealer.

NEVER

- Carry out adjustments whilst the machine is running.
- Allow any unauthorised person to handle machines in any way at any time.

ALWAYS

- Read the operating instructions carefully and understand the controls before commencing work.
- Be extra careful to avoid spillage, when using petrol or diesel fuel. DANGER no smoking or naked flames.
- Use safety guards and make sure they are correctly in position. They are supplied for your protection.
- Before starting work always visually check machine for damage or wear to parts.
- Look behind before starting to reverse and watch out for children or pedestrians.
- Respect powered machines. Always keep hands and feet clear of moving parts and remember that tine cylinders or drums can continue to rotate even after the power unit is switched off.
- Switch off the power before making adjustments or repairs and never lift or carry a machine whilst any parts are moving.

EYE PROTECTION

In dry, dust or windy conditions it may be necessary to wear eye protection to protect your eyes from flying debris.

FIRE HAZARD

Always clean the machine. Remove all debris from around the engine. Blocked engine cooling fins can cause the engine to over heat.



CAUTION – Please read these operating instructions carefully before commencing work.

We want you to obtain the best performance from this machine. If you have any difficulties in carrying out the following instructions please contact SISIS direct or your local SISIS territory manager or SISIS dealer.

The SISIS JAVELIN is a tractor mounted aerator, which although specifically designed for coring or hollow tining of fine and amenity turf areas, also has a range of tines available for thatch removal, solid and slitting tine treatments. Also available are multi-tines and micro-core tine heads. As it is a machine designed for continuous heavy duty operation, we recommend for stability reasons, that a minimum tractor size of 16KW (21hp) is used and that front weights are fitted.

OPERATING PRINCIPLE

The SISIS JAVELIN mounts directly onto a conventional tractor 3 point linkage. Operational power is transmitted from the tractor PTO shaft at 450-500 rpm, through a gearbox and a heavy duty toothed belt drive to the specially designed crankshaft units.

These units transmit the power from the PTO shaft through 10 rocker mechanisms to the tine carrying bodies which, operate vertically and have freedom to pivot, allowing tine entry and withdrawal while moving forwards – without plucking or hole elongation.

Depth of penetration is infinitely variable and is controlled by a screw mechanism on a full width roller mounted forwards of the tines.

Variations of hole spacing is achieved by a combination of either twin or triple adaptors and altering the tractor forward travel speed whilst maintaining a constant PTO speed.

IMPORTANT POINTS

- a) Thoroughly clean the Javelin after each days work
- b) Carefully inspect the Javelin for loose components or signs of damage or wear. Rectify or replace faulty components before the machine is used further.
- c) Check the toothed belt tension daily and, in necessary adjust the tension,

Never

- a) Never operate the Javelin at high speed. Best results are generally obtained between 450-500rpm and should be determined on site by short trial runs
- b) Never allow operation at PTO speeds in excess of 540rpm
- c) Never leave the tractor seat with the Javelin operating.
- d) Ensure no personnel are close to the machine when operating.

ATTACHING THE JAVELIN TO THE TRACTOR

ALWAYS USE STABILISERS TO ENSURE FULL CONTROL OF THE MACHINE.

- a) Align the tractor with the Javelin, fit the hydraulic lift arms (fitting the left hand side first) and secure with the retaining pins. Fit and secure the tractor top link and adjust its length until the top edge of the javelin chassis is horizontal and parallel with the ground.
- b) Raise the Javelin on the tractor hydraulics and, from behind the machine, visually check that the top edge of the frame is parallel with the ground. Adjust the tractor side arm levelling screws as necessary. (always check that the tractor rear wheels have equal inflation pressures)
- c) Raise the drop leg and secure it in the raised position with the retaining pin. If rollers are fitted, release centre roller securing pin.
- d) Fit the end of the PTO shaft on to the tractor spline and the other end on the gearbox spline. **IMPORTANT** – there must be a minimum clearance of 2" (50mm) between the sliding members of the PTO shaft in their closed position. (See makers leaflet for information on adjusting the length)
- e) Check that the bevel gearbox is filled with oil (SAE 90 or equivalent), to level plug (1.6 litres from empty)
- f) Check that the correct tines are fitted to the machine.
- g) Start the tractor and raise the machine clear of the ground. With the engine at idling speed, gently engage the PTO drive clutch and visually check that the mechanisms are operating freely.

OPERATING THE JAVELIN

The Javelin is designed to operate at a PTO speed of 450-500 rpm. NEVER use a higher tractor PTO speed as any damage resulting from operation at speeds in excess of 540 rpm cannot be considered for component replacement under warranty.

- a) On a test area, lift the machine clear of the ground and set the depth adjustment roller so that the tines will be near to the required setting.

Select the tractor gear for the chosen forward travel speed and engage the PTO shaft drive

Moving forward, lower the javelin into its working position and treat a short run area. Raise the Javelin clear of the ground and disconnect the tractor PTO drive.

Inspect the work done – check the depth of penetration and adjust the depth control roller before, if necessary, doing a further test run, adjusting tine angle to optimum possible.

Check that the hole spacing obtained from the selected tractor forward gear is satisfactory.

- b) ALWAYS operate in straight lines. Before turning or at the end of an operating swath, raise the Javelin clear of the ground and disengage the PTO shaft drive.

As the starting point for the next run is reached, lower the machine into the work as the PTO shaft is re-engaged.

Avoid running over the extracted cores. It is often convenient to leave a parallel area (one machine swath width) all around the work area and treat this after the central area has been completed.

BE SAFETY CONSIDIOUS

NEVER

Leave the machine unattended with the tractor engine running.

Operate the machine with the safety covers removed.

Allow any unauthorised person to handle the machine at any time.

ALWAYS

When disconnecting for storage, lower the drop leg and secure in position, or secure centre roller pressure in the lower position. This ensures that the Javelin is fully stable and the wheels allow the disconnected machine to be easily pushed into its storage area.

When transporting over any distance or when disconnecting the Javelin from the tractor always lower the front depth roller beforehand to avoid possible damage to the tines through operator error or tractor malfunction.

Before starting work always visually check machine for damage or wear to working parts such as blades or tines.

Watch out for children or pedestrians. Always look behind before starting to reverse.

Switch off the power before making adjustments or repairs and never lift or carry a machine whilst any parts are moving.

Use manufacturers genuine guaranteed parts and tines. The manufacturers cannot be held responsible for injury or damage caused by non genuine parts. The CE certificate, working instructions and warranty only apply to parts supplied by SISIS.

PTO DRIVES FROM TRACTOR BEFORE

NEVER

Operate PTO shafts at extreme angles and take particular care to avoid high linkage lift positions with the PTO in operation (ie at the end of working runs)

MANY

Tractors now have multi speed PTO systems. Take special care that the PTO speed selected is suitable for the implement being used e.g never use 1000rpm on an implement designed 540rpm

DAILY MAINTENANCE CHECKS

Check that all bolts are tight and that there is no distortion or impact damage to the main frame or chassis members.

Check that the tines are in good operating condition and replace as necessary.

Check the toothed belt tension at 10mm free movement and adjust as necessary. **DO NOT OVERTENSION.** See diagram.

Apply grease to all lubrication points.

OPTIONAL TINES

To remove the tines, first remove the cap head screws and the nuts with the allen key provided and remove the tine.

Always fit the hollow coring tines with the open side facing backwards.

When new tines are fitted for use on fine turf, we recommend that they are first given a short operational run on outfield turf to "polish" the surfaces in contact with the soil. This will reduce the operating friction which causes lifting if the surface, particularly in areas of poor grass root development.

Round Pointed Solid Tines

Used to assist moisture and air getting to the grass roots during the growing period.

F31730 (5" – 127mm)

Hollow Coring Tines

These remove cores of soil to relieve compaction caused by play and rolling and to exchange soil. In areas where compaction is severe use round solid tine treatment – say 4-6 weeks before hollow tining to allow moisture to penetrate the compacted layer.

4" hollow tines are for those who wish to core more frequently with tines that cause minimal surface disruption.

F31277 (5" - 17mm)

F36447 (4" – 100mm)

Jumbo Thatch Removal

These remove plugs of thatch and the depth of penetration is controlled so that little rootzone material is removed. They are designed for use with the twin head adaptors.

F35967 (4.5" – 110mm)

Pencil Tine

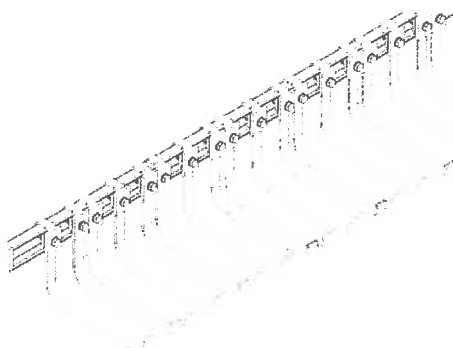
Has all the benefits of the solid tine, but is more acceptable on green because of smaller surface hole. These tines are not as strong as the tapered tine so care should be taken on outfield turf or where stony ground is prevalent.

F33965 (5" – 127mm)

Turf Retainers

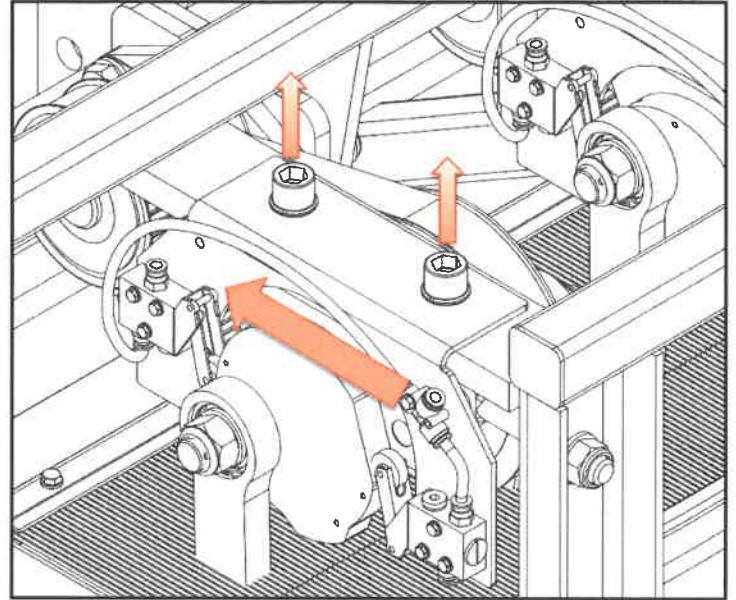
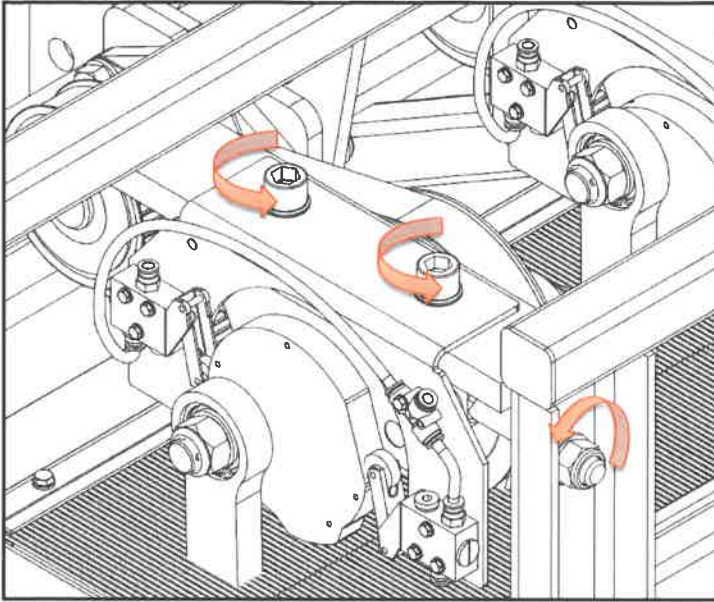
The spring steel feet are fixed to an adjustable slide so that when changing from 2" to 3" spacing the feet may be added or removed. To adjust, loosen the bolts with a 13mm spanner and slide the spring foot into a central position between each tine. This is best done with the machine disconnected from the tractor with the rear drop leg in its down position and the front roller adjusted so that the tines nearly touch the ground. When all turf retainer feet are in the correct positions ensure the bolts are tightened.

To fit or remove the complete turf retainer assembly remove the two bolts from each end of the slide bracket withdraw the complete bracket and replace the bolts through the scraper and retighten.



FITTING A NEW BELT

Remove nut shown in the picture below



Loosen the bolts on top, slide the unit forward until the belt can be removed. If this is a belt inboard of the layshaft bearings remove the bolts through the bearings and the bearing spacer plate.

IMPORTANT – fit new belt. Check alignment of the pulleys with a straight edge.

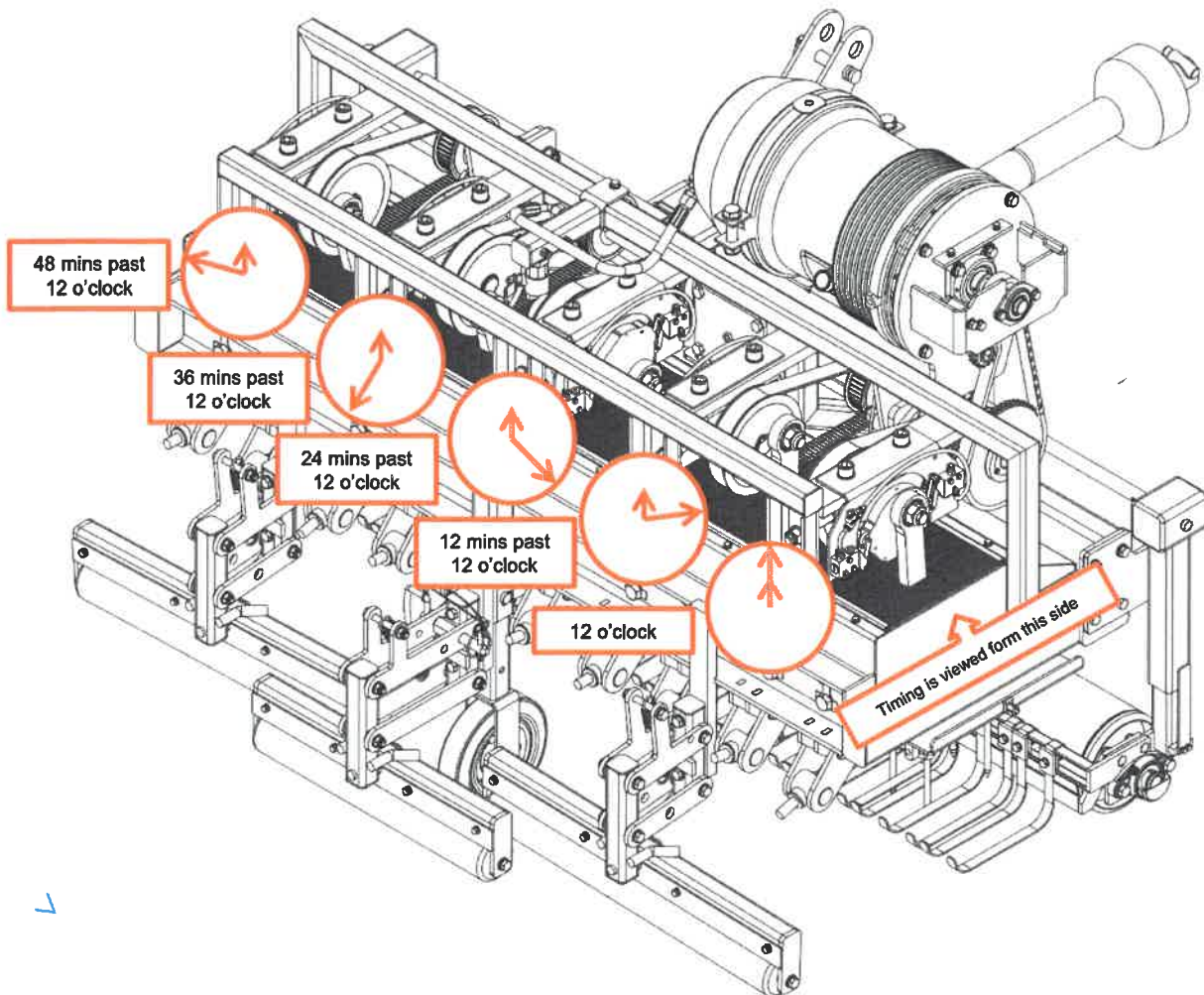
At this stage it is important to ensure that the pulley is timed correctly. With the pulley belt loose move the pulley round until the timing pins line up. See timing diagram.

IMPORTANT – Re-tension the belt leaving 10mm deflection in the top centre of the belt, re-tighten top bolts.

IMPORTANT – These bolts must be tightened with a torque wrench to a setting of 244Nm (180 LBF/FT)

After tightening re-check belt tension and pulley alignment. Run machine on tick over on the tractor to ensure the belt runs in line and all pulleys are timed correctly.

TIMING DIAGRAM



USING THE AER-AID

Before starting to use the Are-Aid take the time to read the working instructions for the Javelin and Aer-Aid supplied with the machine. If there are any points you are not sure about please telephone SISIS equipment or your local SISIS Territory manager or SISIS Dealer for further technical support.

Set up the Javelin on the tractor as per the Javelin working instructions.

Before starting work make a visual check of the machine to ensure that the correct tines are fitted at the required spacings and depth and the PTO shaft is cut to the correct length to suit the tractor, with all the guards fitted, as per the instructions, supplied with the PTO shaft.

When operating with air, ensure the air from the compressor is turned on at the tap on the manifold.

Check all pipework is in good condition and secure.

Ensure outlet holes in tines are not blocked.

Visually check oil level in the compressor sight glass. This should be visible in the sight glass if not top up with Fluid Force 2000 oil. En-sure the tractor PTO is set to maximum of 540rpm. Some tractors have dual PTO speeds. Using a higher speed than 540rpm will cause damage to the machine mechanism.

ALWAYS

Clean the machine after use to avoid soil/sand hardening onto the tines and working parts.

FITTING AIR TINES

The push in air pipe fitting is fitted/removed by pushing the 2.5mm allen key supplied with the machine into the fitting and turning to tighten or slacken the fitting.

CHANGING THE TINES

Worn air tines for new air tines.

When replacing worn air tines with a new set, push the lip seal on top of the air tube connector (on top of the tine) downwards and pull the tube up away from the tine tube. Undo the securing grub screw and remove the tine. Remove the silver air connector from the old tine by unscrewing it and replace it in the new tine. Fit the new tine into the tine foot and re-tighten the grub screw securely. Then push the air tube back into the air connector as far as it will go. Pull the air tube upwards to ensure it is seated and held in the connector.

Removing air tines for standard tines 2" or 3" spacing

Remove the air tines as detailed above. The tine holder has a spare connector. Fit the loose air tube into this holder and retain the pipe whilst using other types of non air tines.

Using The Air-Aid with non air tines

When the non air tines are fitted and the air line has been stowed onto its stowage point open the valve on the manifold to allow the air from the compressor to escape.

AER-AID COMPRESSOR

The Compressor warranty will be invalidated if unapproved spare parts or lubricants are used. Using such items may cause the efficiency and service life of the compressor to be reduced and could create a hazardous condition over which SISIS has no control.

Failure to maintain the compressor correctly, or modifying it without prior approval from SISIS may also create a hazardous condition. This will also invalidate the warranty.

SISIS accept no responsibility for damage or injury caused by use of non-approved parts or lubricants, unauthorised modifications, or failure to comply with maintenance instructions.

Consequential damage of any nature is not covered by the warranty.

Every effort has been made both in design of the compressor and in the preparation of this hand book, to protect the end user from possible dangers.

The majority of accidents can be avoided if basic safety precautions and procedures are adhered to.

COMPRESSOR SERVICING

Check Pressure – Compressor Air-End

To check the air-end pressure, use the pressure gauge located in the air end.

If the correct size of compressor has been installed the gauge should read:

NOTE ** - Stop and see compressor manual if Pressures are greater than those quoted.

Check oil level

When the compressor has stopped the sight glass Should be full

Oil top up procedure

Warning – risk of danger – risk of hot surface

Close the air outlet valve to isolate the compressor from the air line system. Fit a safety notice to the valve advising that it is not to be opened.

Wait until air end vent down cycle is complete

Check that air end pressure gauge reads zero.

Condition	10 Bar
Pressure when stopped	After vent down air end pressure gauge should read 0 bar
Initial start up (3 seconds approximately)	4.0/6.0 – 9.6/10.2
Normal working pressure (PURS)	8.0 – 9.6/10.2 **
When compressor has stopped (PURS)	9.6/10.2 – 0

WARNING – Do not proceed until gauge reads zero

Carefully unscrew oil filler plug.

If any air or oil escapes before the plug is fully removed then stop! Compressor air end is pressurised! DO NOT remove the plug until all pressure is lost. Do not allow any compressed air jets to make contact with your body.

Remove filler plug , retain bonded seal.

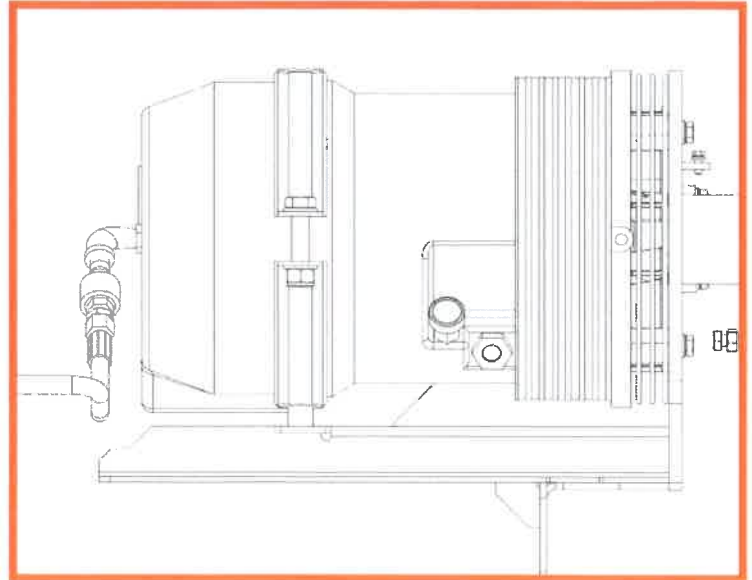
Fill overflow with an approved oil (eg Fluid Force 2000)

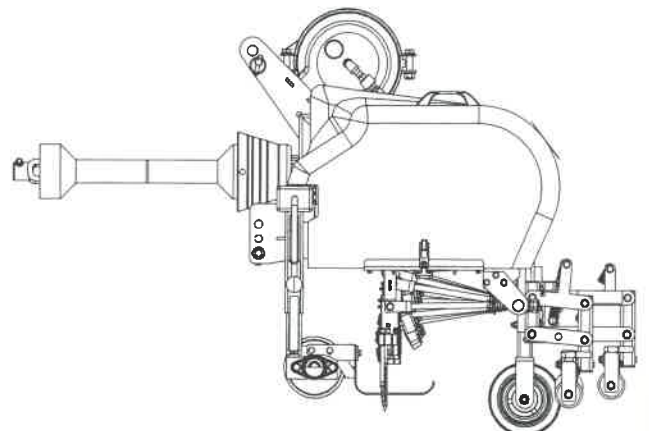
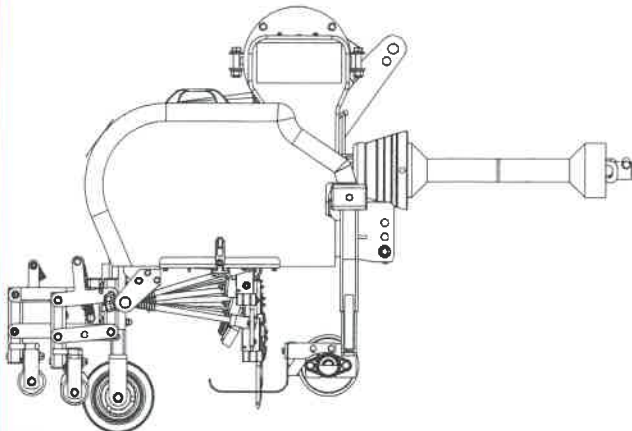
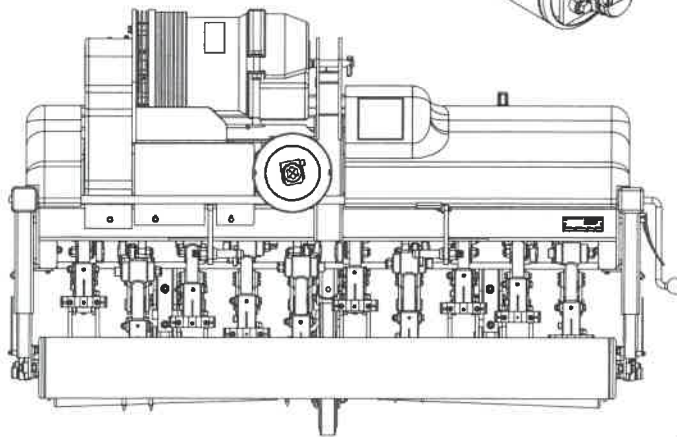
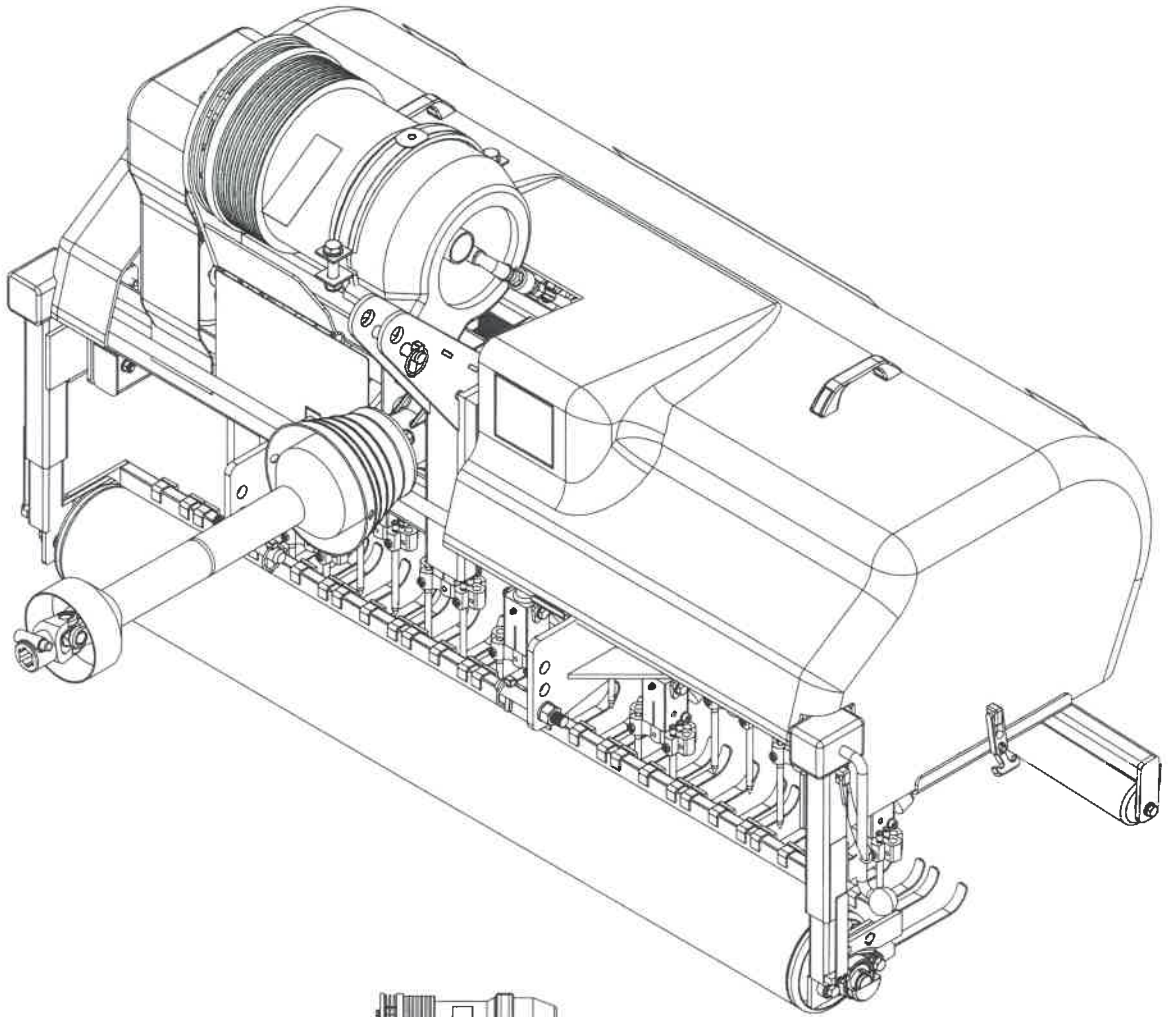
Examine bonded seal, if damaged refit to filler plug.

Refit seal and filler plug, tighten to 40Nm

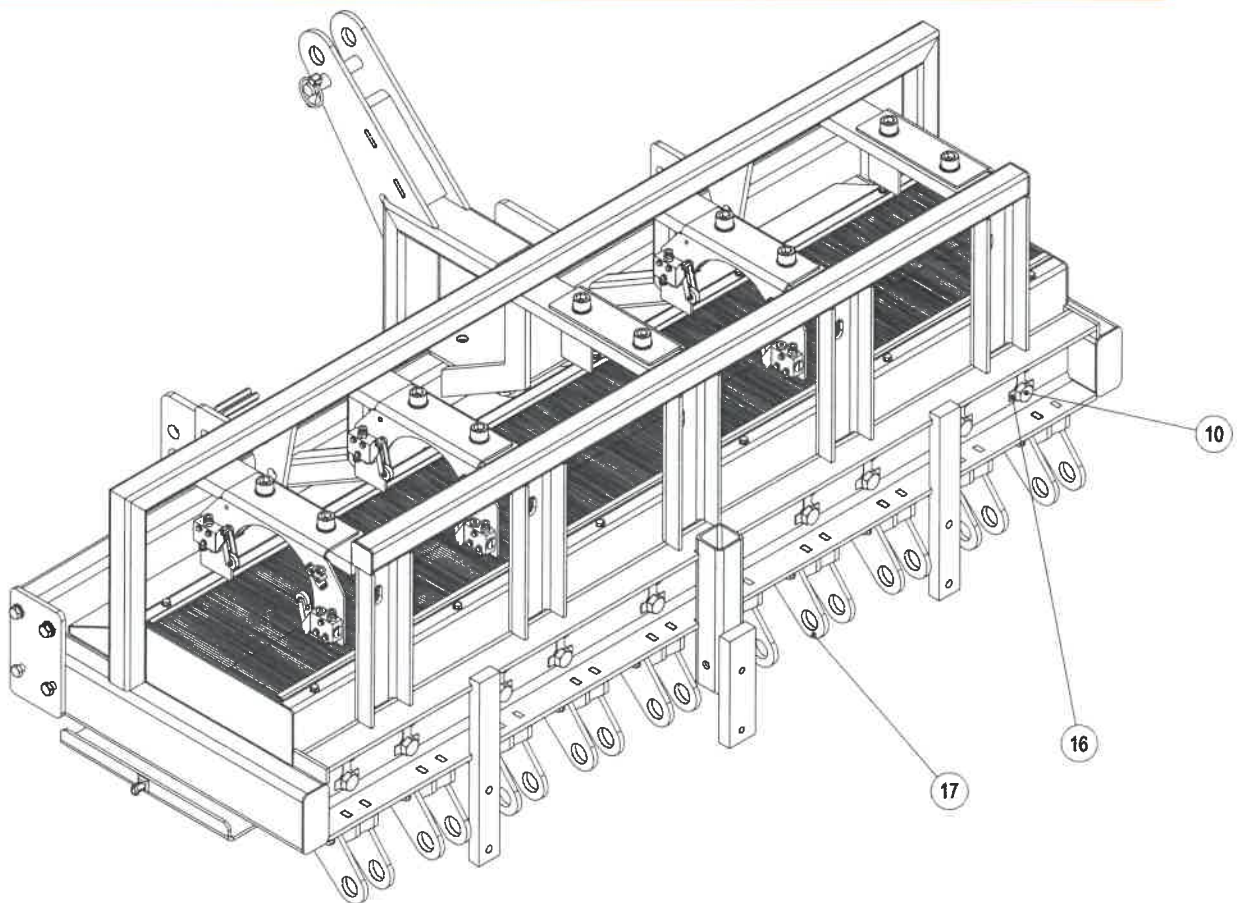
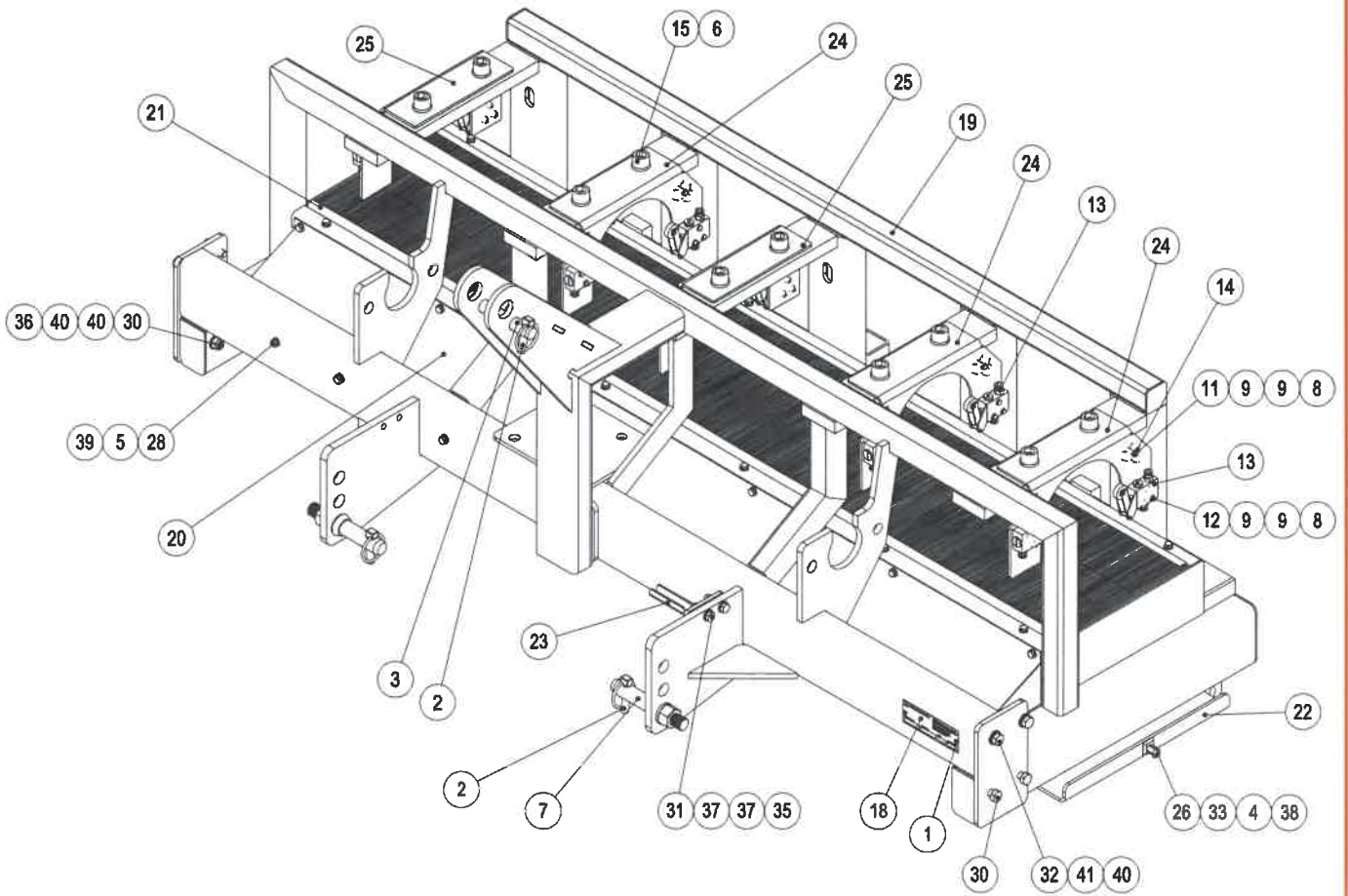
Remove safety notices.

For more compressor information see compressor manual supplied with the machine.

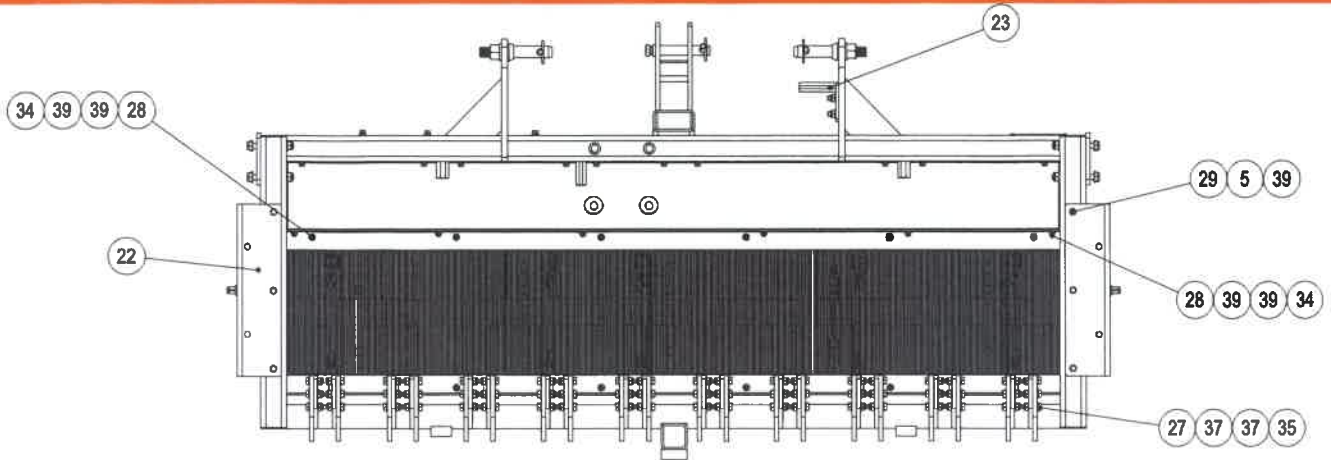




CHASSIS

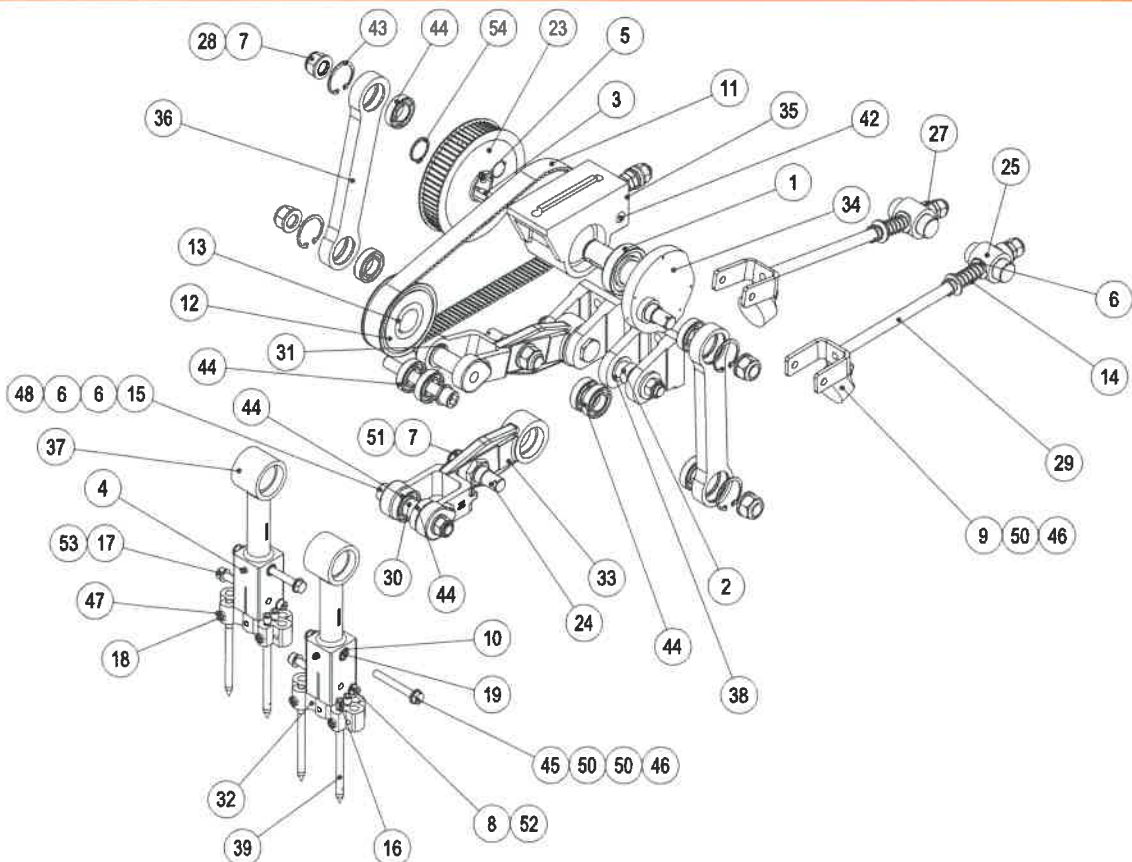
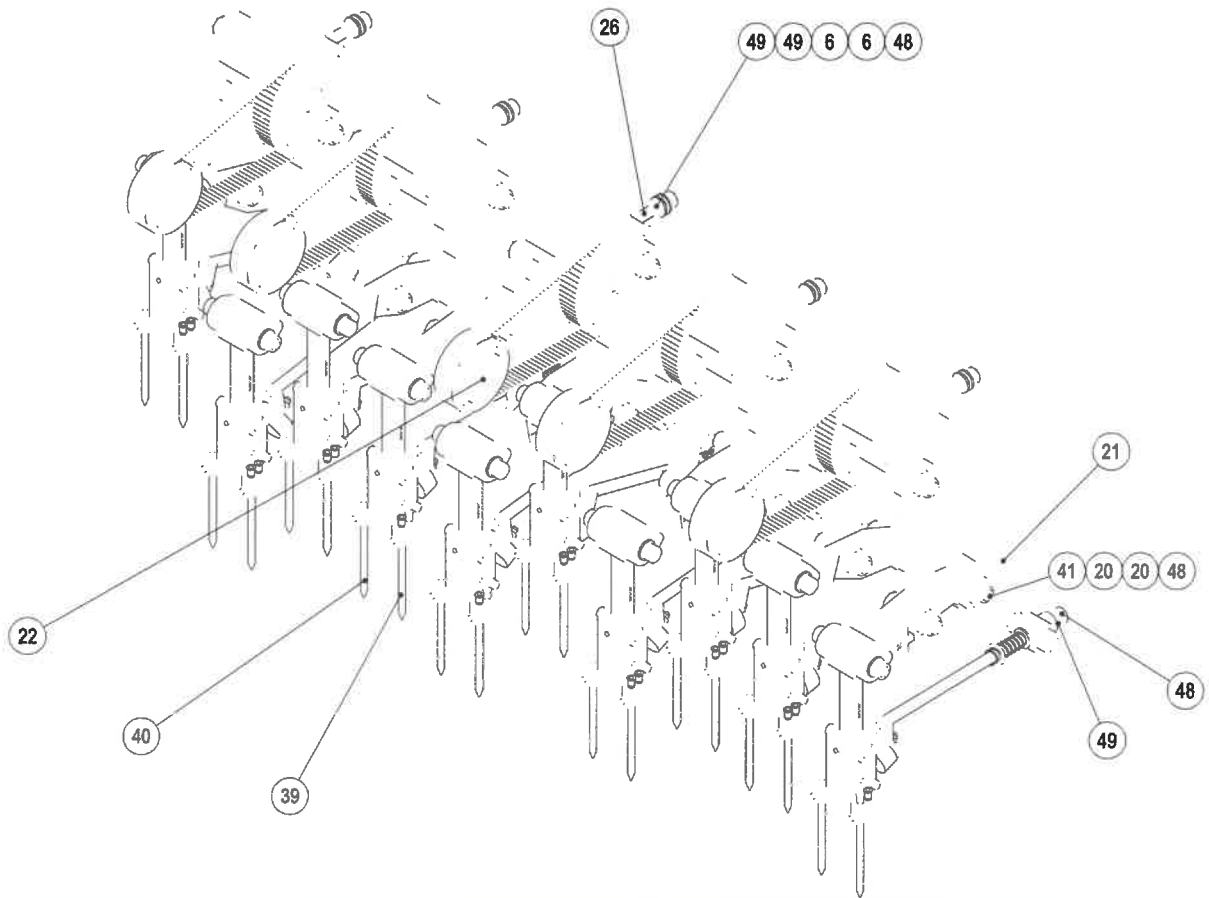


CHASSIS



ITEM NO.	PART NUMBER	DESCRIPTION	chassis/QTY.
1	D1871_REV1	RIVET 3.2 X 6	2
2	D8326_REV1	PIN LINCH 7/16"	3
3	D8617_REV1	TOP LINK PIN 3/4"	1
4	E1-1060_REV0	M5 SPRING WASHER	2
5	E1-1061_REV0	WASHER M6 SPRING	19
6	E1-1066_REV0	WASHER SPRING M16	10
7	F20327_REV0	IMPLEMENT MOUNTING PIN	2
8	F20431_REV1	NUT M4 NYLOC	35
9	F20803_REV1	WASHER M4 FORM A	70
10	F21017_REV1	HEX SET SCREW M16 X 35	20
11	F21803_REV0	HEX BOLT M4 X 25	5
12	F22043_REV1	HEX SET SCREW M4 X 30	30
13	F22044_REV1	ROLLER LEVER VALVE	10
14	F22045_REV1	T CONNECTOR	5
15	F22277_REV1	CAP HEAD M16 X 50	10
16	F33804_REV2	TAB WASHER	10
17	F35934_REV1	PLATE	20
18	F36000_REV2	SERIAL NO PLATE (SISIS)	1
19	F36371_REV4	FRAME ASSEMBLY (JAVELIN)	1
20	F36386_REV5	INFILL PANEL	1
21	F36387_REV0	BRUSH	2
22	F36393_REV1	COVER PLATE	2
23	F36409_REV1	COVER MOUNT	1
24	F36831_REV1	VALVE PLATE L.H.	3
25	F36832_REV1	VALVE PLATE R.H.	2
26	HUHTM407B_REV1	BONNET CATCH	2
27	SP01005_REV0	HEX SET SCREW M8 X 30	60
28	SP01008_REV0	HEX SET SCREW M6 X 16	31
29	SP01028_REV0	HEX SET SCREW M6 X 20	6
30	SP01032_REV0	HEX SET SCREW M10 X 80	4
31	SP01036_REV0	HEX SET SCREW M8 X 35	2
32	SP01105_REV0	HEX SET SCREW M10 X 30	4
33	SP01123_REV0	CSK SOCKET SCREW M5 X 12	2
34	SP02004_REV0	NUT M6 NYLOC	18
35	SP02006_REV0	NUT M8 NYLOC (T)	122
36	SP02008_REV0	NUT M10 NYLOC (T)	4
37	SP03008_REV0	WASHER M8 FORM A	243
38	SP03009_REV0	WASHER M5 FORM A	2
39	SP03010_REV0	WASHER M6 FORM A	55
40	SP03011_REV0	WASHER M10 FORM A	8
41	SP03034_REV0	WASHER M10 SPRING LOCK	4

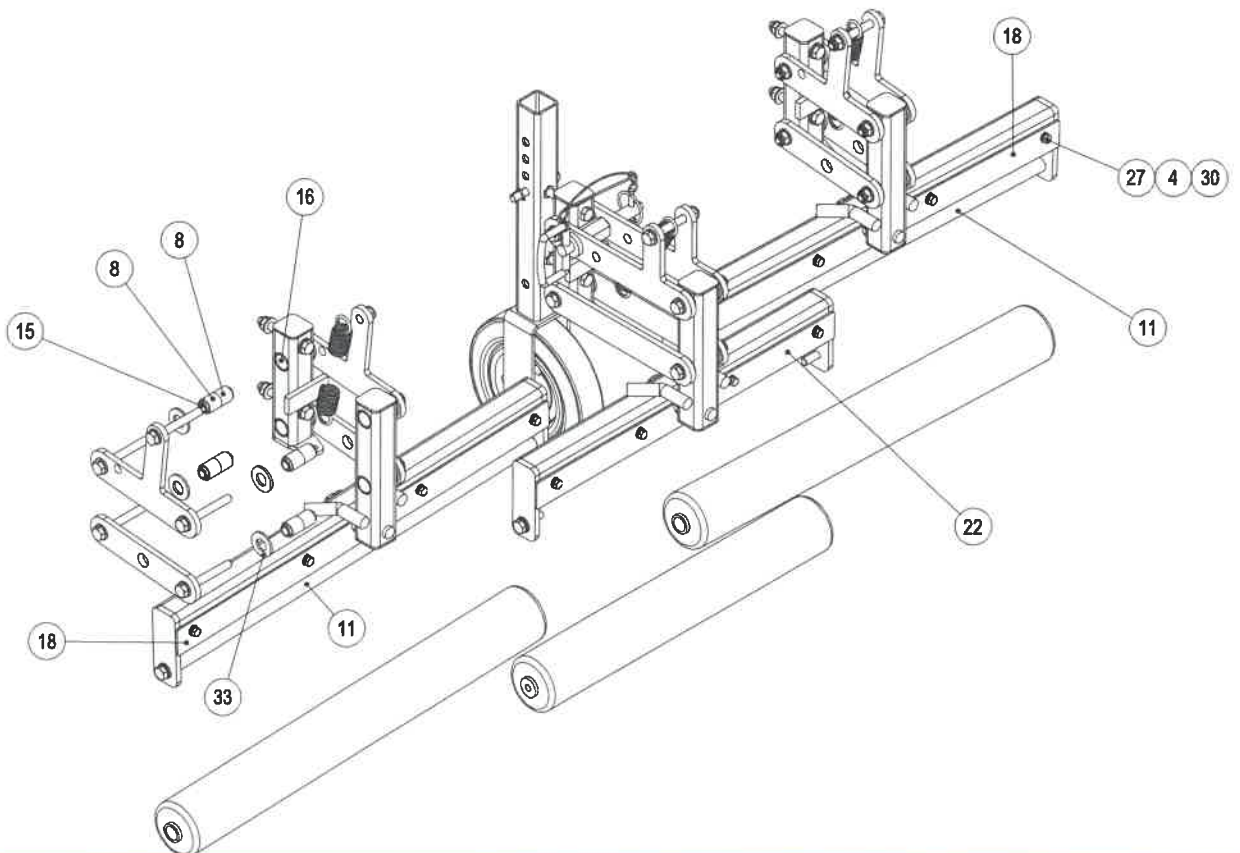
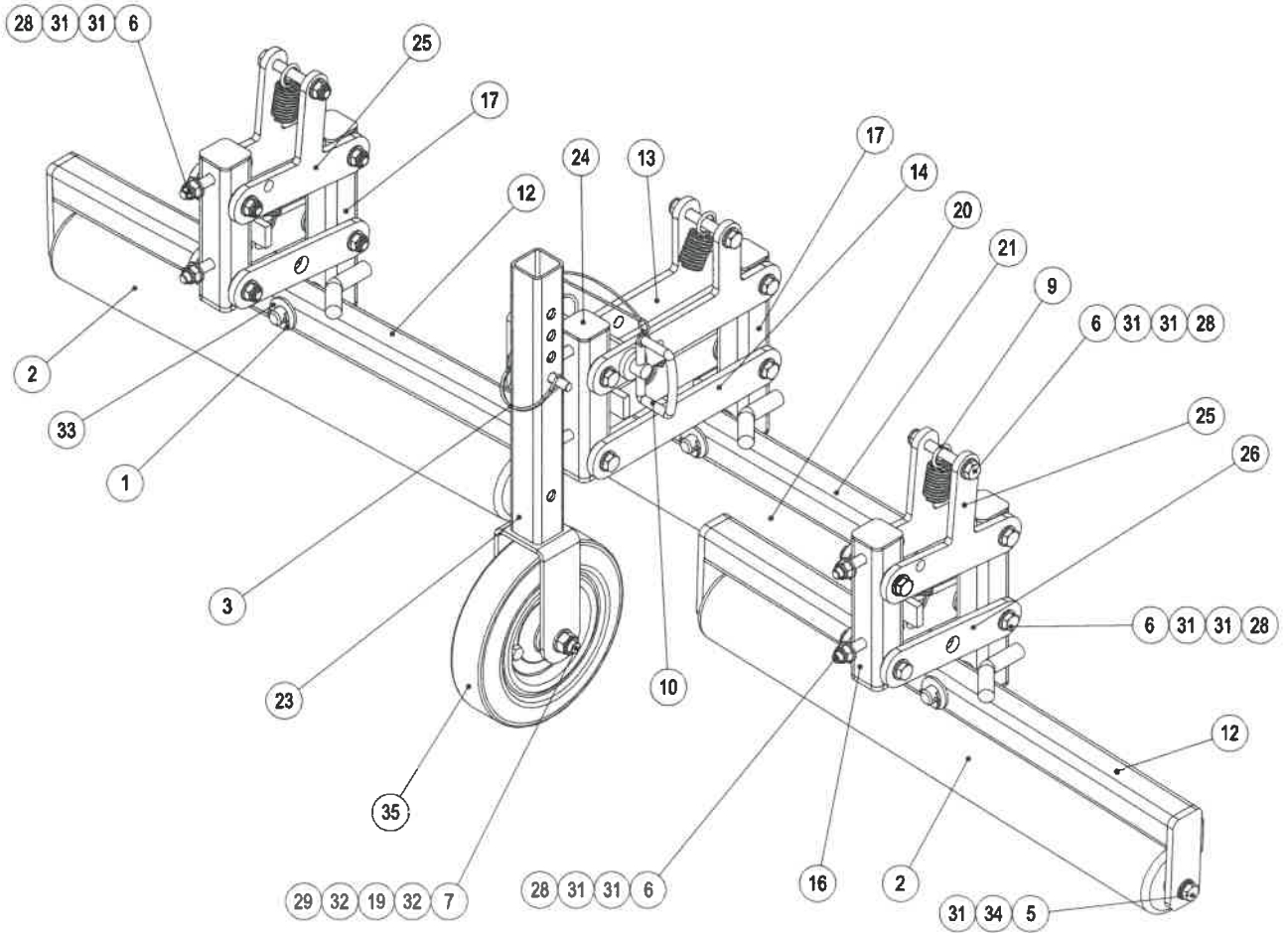
MECHANISM



MECHANISM

ITEM NO.	PART NUMBER	DESCRIPTION	MECHANISM/QTY.
1	062276_REV0	BEARING 6207-2RS 3	10
2	402157_REV0	SPACER	10
3	D1935_REV1	KEY 8 X 8 X 35	10
4	D1947_REV1	GREASE NIPPLE M6	10
5	D8154_REV1	GRUB SCREW M8 X 16	5
6	E1-1080_REV0	WASHER M16 FORM A	50
7	E1-1634_REV1	M20 NYLOC T	30
8	F20005_REV0	CAP HEAD M8 X 40	10
9	F20080_REV0	RUBBER STOP	10
10	F20774_REV1	BEARING MB1620DU	20
11	F21891_REV1	TOOTHED BELT	5
12	F21930_REV0	PULLEY 40T 8mm	4
13	F21935_REV0	TAPER LOCK BUSH 1615 - 35	4
14	F21987_REV1	COMPRESSION SPRING	10
15	F21997_REV1	CAP HEAD M16 X 115	10
16	F22051_REV1	MALE STUD M5	20
17	F22074_REV1	CAP HEAD M10 X 50	10
18	F22395_REV1	GRUB SCREW M8 X 16 S/S CONE POINT	20
19	F33229_REV3	SPACER BUSH	10
20	F33230_REV2	WASHER	10
21	F33802_REV2	PIVOT ARM MOUNT	10
22	F35855_REV0	40 T PULLEY	1
23	F35856_REV12	PULLEY ASSY	5
24	F35932_REV3	CRANKPIN	10
25	F35946_REV7	SHAFT SWIVEL	10
26	F35959_REV2	ADJUSTER	5
27	F36407_REV3	SPACER	10
28	F36477_REV1	WASHER	20
29	F36651_REV0	SPRING FORK	10
30	F36683_REV2	BEARING SPACER	10
31	F36684_REV2	SPACER	20
32	F36904_REV7	MULTI TINE FOOT	10
33	F36911_REV2	PIVOT ARM	10
34	F36913_REV1	CRANK SHAFT	5
35	F36914_REV3	BEARING UNIT	5
36	F36915_REV3	LINK	10
37	F36916_REV2	TINE HOLDER	10
38	F36918_REV1	SPACER	20
39	F36948_REV9	AER TINE	10
40	F36949_REV9	TINE ASSY (SOLID)	10
41	F37197_REV1	SWIVEL PIN	10
42	F37198_REV1	SWIVEL	5
43	J20319_REV1	CIRCLIP D1300 - 0470	20
44	J209040_REV1	BEARING 6005-2RS	60
45	SP01032_REV0	HEX SET SCREW M10 X 80	10
46	SP02008_REV0	NUT M10 NYLOC (T)	20
47	SP02012_REV0	NUT M8 LOCK (THIN)	20
48	SP02028_REV0	NUT M16 NYLOC (T)	35
49	SP02029_REV0	NUT M16 LOCK (THIN)	20
50	SP03011_REV0	WASHER M10 FORM A	30
51	SP03022_REV0	WASHER M20 FORM A	10
52	SP03029_REV0	WASHER M8 SPRING LOCK	10
53	SP03034_REV0	WASHER M10 SPRING LOCK	10
54	SP07010_REV0	CIRCLIP D1400 - 032	5

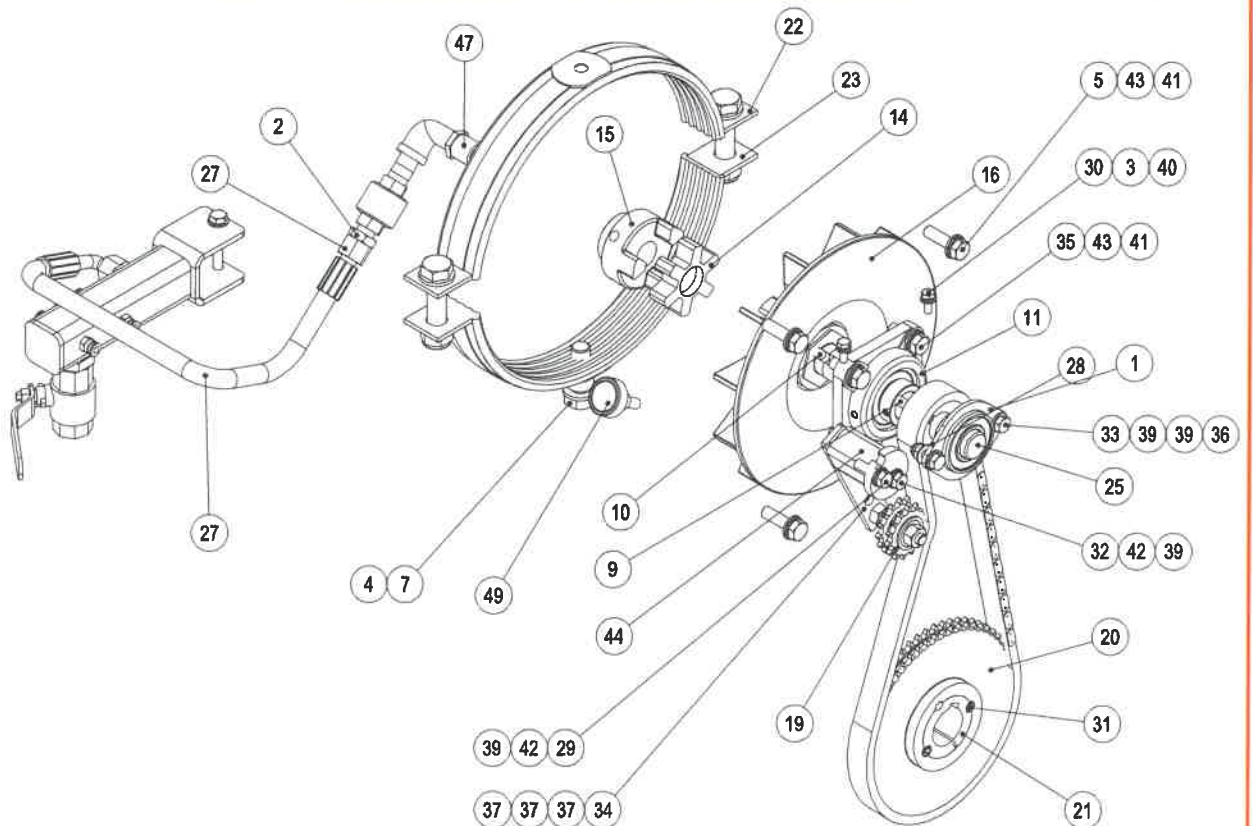
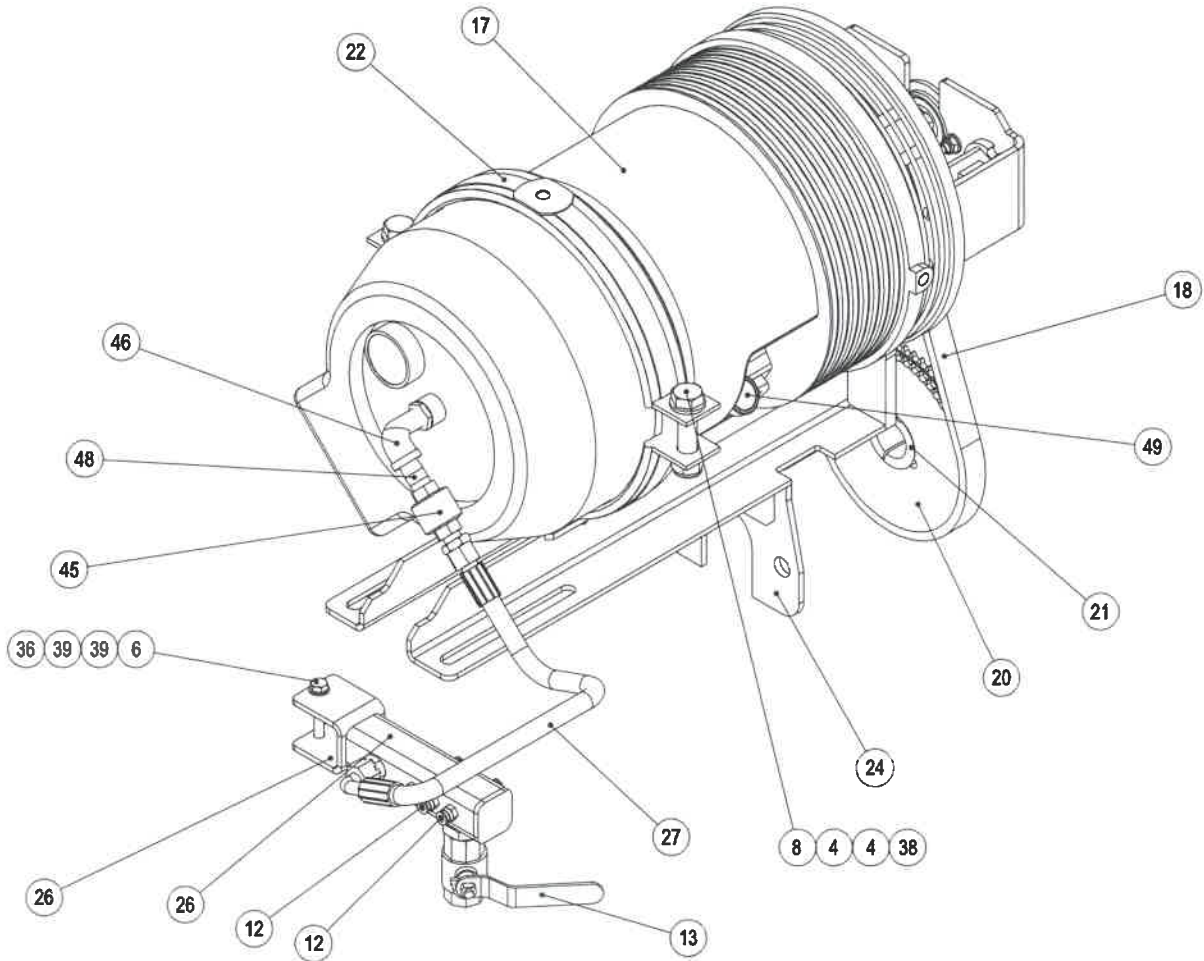
PRESSURE ROLLERS



PRESSURE ROLLERS

ITEM NO.	PART NUMBER	DESCRIPTION	PRESSURE ROLLERS/QTY.
1	D1044_REV0	SPLIT PIN 1/8" X 1 1/4"	3
2	D7226_REV3	ROLLER	2
3	D8436_REV1	PIN LINCH DIA 9.2	1
4	E1-1061_REV0	WASHER M6 SPRING	12
5	E1-1119_REV0	HEX SET SCREW M10 X 35	6
6	E1-1134_REV0	HEX SET SCREW M10 X 80	21
7	E1-1150_REV0	HEX SET SCREW M12 X 90	1
8	F20606_REV0	BUSH AM1620 - 20	30
9	F20692_REV1	EXTENSION SPRING ETS 616	3
10	F21746_REV0	HITCH PIN 16DIA	1
11	F32457_REV2	ROLLER SHAFT	2
12	F32458_REV1	ROLLER FRAME	2
13	F32459_REV5	TOP LINK ARM	2
14	F32460_REV3	BOTTOM LINK ARM	2
15	F32461_REV3	PIVOT PIN	12
16	F32462_REV4	PIVOT BRACKET	2
17	F32463_REV2	ROLLER PIVOT BRACKET	3
18	F32464_REV4	SCRAPER BLADE	2
19	F33061_REV1	JOCKEY WHEEL SHAFT	1
20	F33591_REV2	ROLLER	1
21	F33592_REV1	ROLLER FRAME	1
22	F33593_REV2	SCRAPER BLADE	1
23	F36381_REV3	DROP LEG	1
24	F36601_REV3	PIVOT BRACKET	1
25	F36602_REV2	TOP LINK ARM	4
26	F36603_REV2	BOTTOM LING ARM	4
27	SP01008_REV0	HEX SET SCREW M6 X 16	12
28	SP02008_REV0	NUT M10 NYLOC (T)	21
29	SP02010_REV0	NUT M12 NYLOC (T)	1
30	SP03010_REV0	WASHER M6 FORM A	12
31	SP03011_REV0	WASHER M10 FORM A	44
32	SP03012_REV0	WASHER M12 FORM A	2
33	SP03021_REV0	WASHER M16 FORM C	27
34	SP03034_REV0	WASHER M10 SPRING LOCK	6
35	SP09003_REV0	WHEEL 8"	1

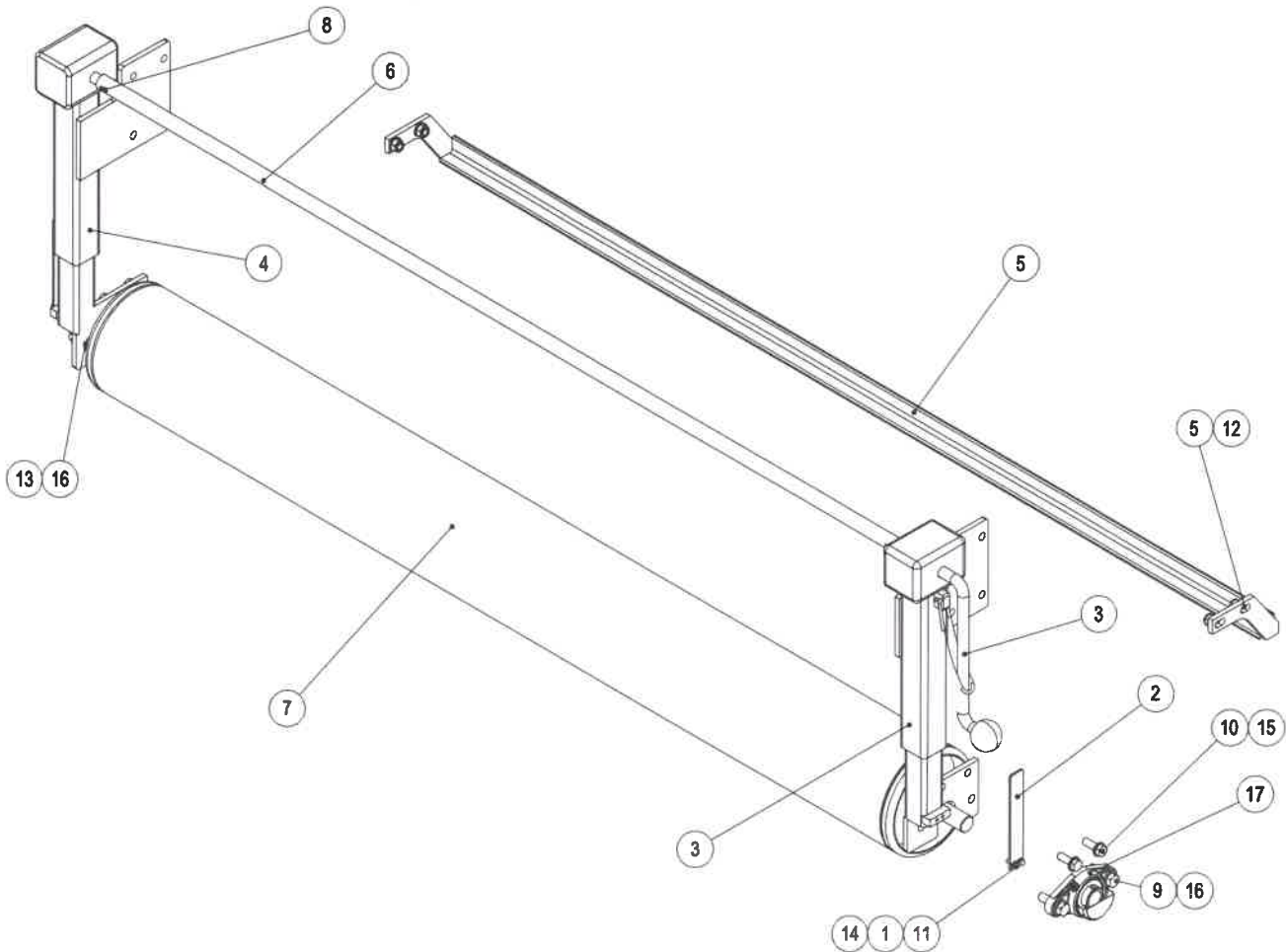
COMPRESSOR



COMPRESSOR

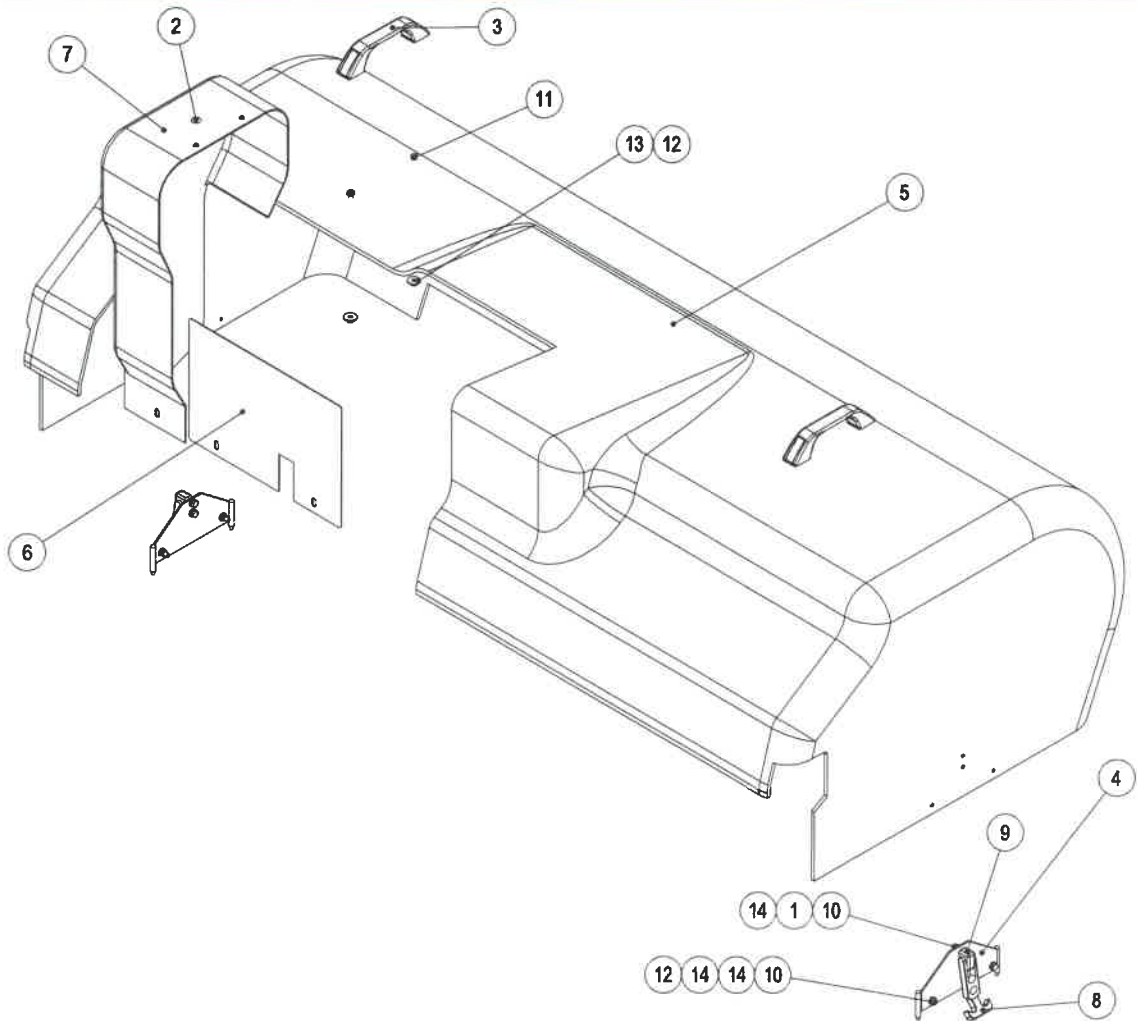
ITEM NO.	PART NUMBER	DESCRIPTION	COMPRESSOR/QTY.
1	D8032_REV0	BEARING BPFL5-25	1
2	D8217_REV1	EQUAL MALE ADAPTOR	1
3	E1-1061_REV0	WASHER M6 SPRING	2
4	E1-1080_REV0	WASHER M16 FORM A	5
5	E1-1119_REV0	HEX SET SCREW M10 X 35	4
6	E1-1422_REV1	HEX SET SCREW M8 X 70	1
7	E1-1576_REV0	HEX SET SCREW M16 X 45	1
8	E1-1578_REV0	HEX BOLT M16 X 70	2
9	F20684_REV0	KEY PARALLEL 8 X 7 X 25	1
10	F22009_REV1	KEY 8 x 7 x 50	1
11	F22041_REV1	BEARING UCF205-25	1
12	F22046_REV1	MALE STUD	5
13	F22049_REV1	BALL VALVE	1
14	F22050-1_REV1	COUPLING SPIDER	1
15	F22050-2_REV1	COUPLING	1
16	F22050-3_REV1	IMPELLOR ASSY	1
17	F22050_REV1	COMPRESSOR	1
18	F22052_REV1	ROLLER CHAIN (REMOVE 4 LINKS)	1
19	F22055_REV1	SPROCKET 06B1 15T	2
20	F22057_REV1	SPROCKET 06B2 57T	1
21	F22059_REV1	TAPERED BUSH 1610 - 35	1
22	F22070A_REV1	COMPRESSOR BAND	1
23	F22070B_REV1	COMPRESSOR BAND	1
24	F36825_REV2	COMPRESSOR BRACKET	1
25	F36838_REV2	COMPRESSOR SHAFT	1
26	F36844_REV2	MANIFOLD BLOCK	1
27	F36862B_REV1	HOSE	1
28	F37196_REV1	SPROCKET 06B1 19T	1
29	SP01005_REV0	HEX SET SCREW M8 X 30	1
30	SP01008_REV0	HEX SET SCREW M6 X 16	2
31	SP01018_REV0	GRUB SCREW M10 X 16	2
32	SP01036_REV0	HEX SET SCREW M8 X 35	1
33	SP01045_REV0	HEX SET SCREW M8 X 25	2
34	SP01047_REV0	HEX SET SCREW M10 X 60	1
35	SP01105_REV0	HEX SET SCREW M10 X 30	4
36	SP02006_REV0	NUT M8 NYLOC (T)	3
37	SP02007_REV0	NUT M10 STD	3
38	SP02028_REV0	NUT M16 NYLOC (T)	2
39	SP03008_REV0	WASHER M8 FORM A	8
40	SP03010_REV0	WASHER M6 FORM A	2
41	SP03011_REV0	WASHER M10 FORM A	9
42	SP03029_REV0	WASHER M8 SPRING LOCK	2
43	SP03034_REV0	WASHER M10 SPRING LOCK	8
44	SP11008_REV0	TENSIONER ARM SE15	1
45	SP26001_REV1	VALVE NON RETURN (57687)	1
46	SP26002_REV1	ELBOW 3/8" M&F	1
47	SP26003_REV1	BUSH 1/2" X 3/8"	1
48	SP26004_REV1	NIPPLE BARREL 3/8" WI GALV. HVY	1
49	SP26005_REV1	PROBE TEMP GUAGE	1

FRONT ROLLER



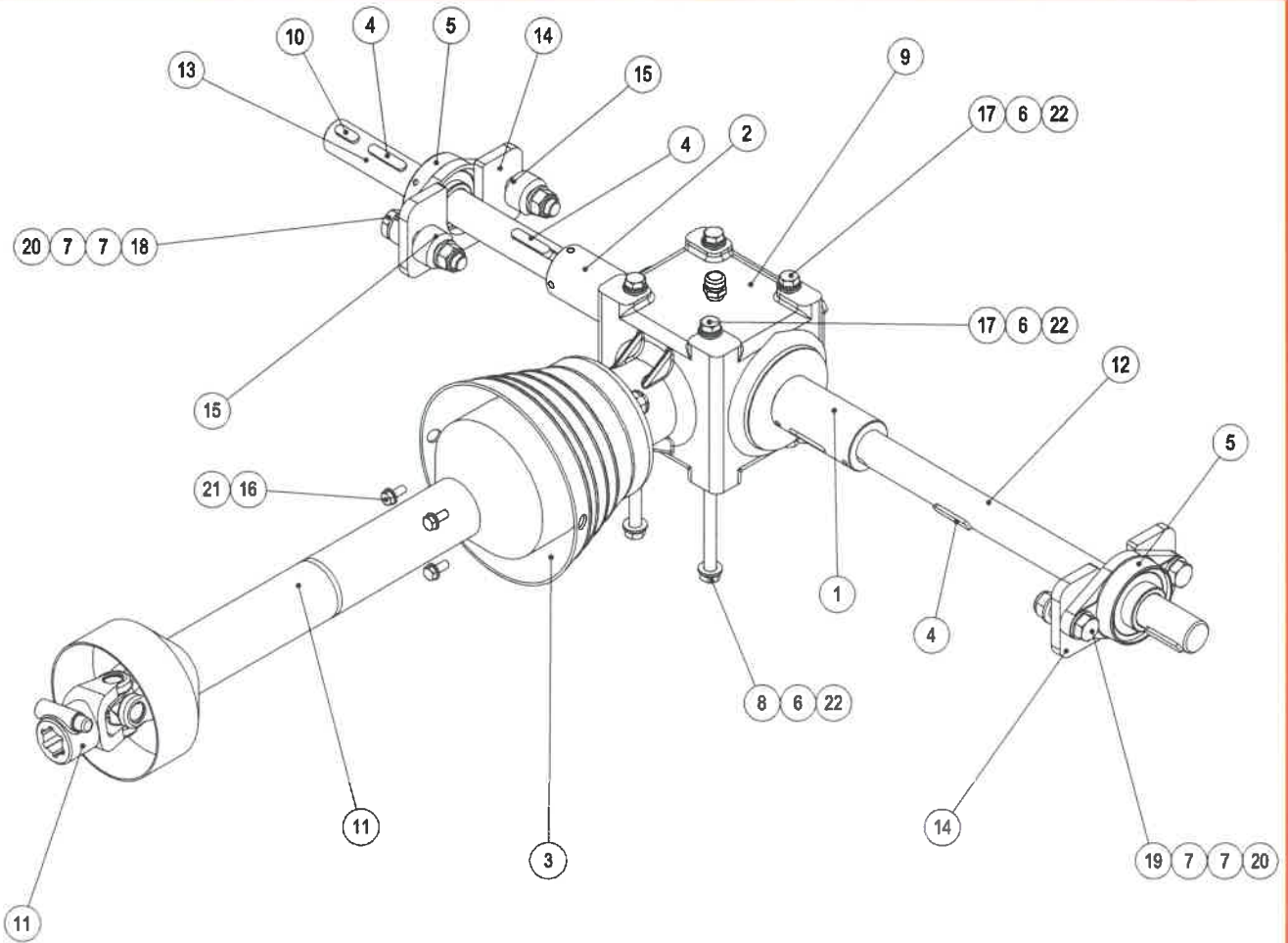
ITEM NO.	PART NUMBER	DESCRIPTION	FRONT ROLLER/QTY.
1	E1-1060_REV0	M5 SPRING WASHER	4
2	F33540_REV4	INDICATOR	2
3	F35937_REV6	L.H. JACK	1
4	F35938_REV6	R.H.JACK	1
5	F36388_REV1	ROLLER SCRAPER	1
6	F36391_REV1	JACKS CROSS BAR	1
7	F36392_REV1	ROLLER JAVELIN	1
8	J20404_REV1	PIN SPIROL M5 X 24	2
9	SP01078_REV0	HEX SET SCREW M12 X 40	4
10	SP01105_REV0	HEX SET SCREW M10 X 30	4
11	SP01135_REV0	HEX SET SCREW M5 X 16	4
12	SP02008_REV0	NUT M10 NYLOC (T)	4
13	SP02010_REV0	NUT M12 NYLOC (T)	4
14	SP03009_REV0	WASHER M5 FORM A	4
15	SP03011_REV0	WASHER M10 FORM A	8
16	SP03012_REV0	WASHER M12 FORM A	8
17	SP06023_REV0	BEARING SFT25 (RHP) INC P25 COVER	2

GUARDS



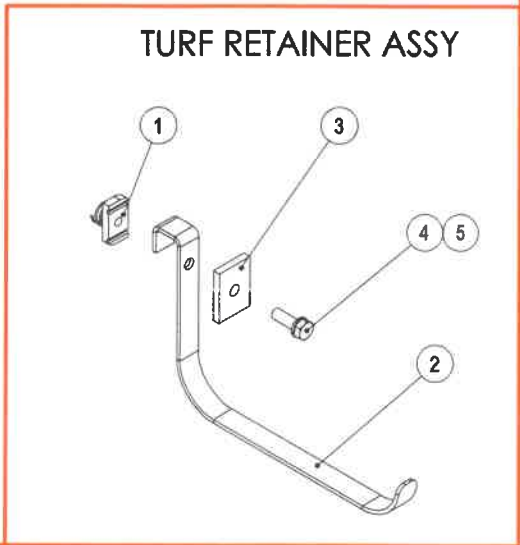
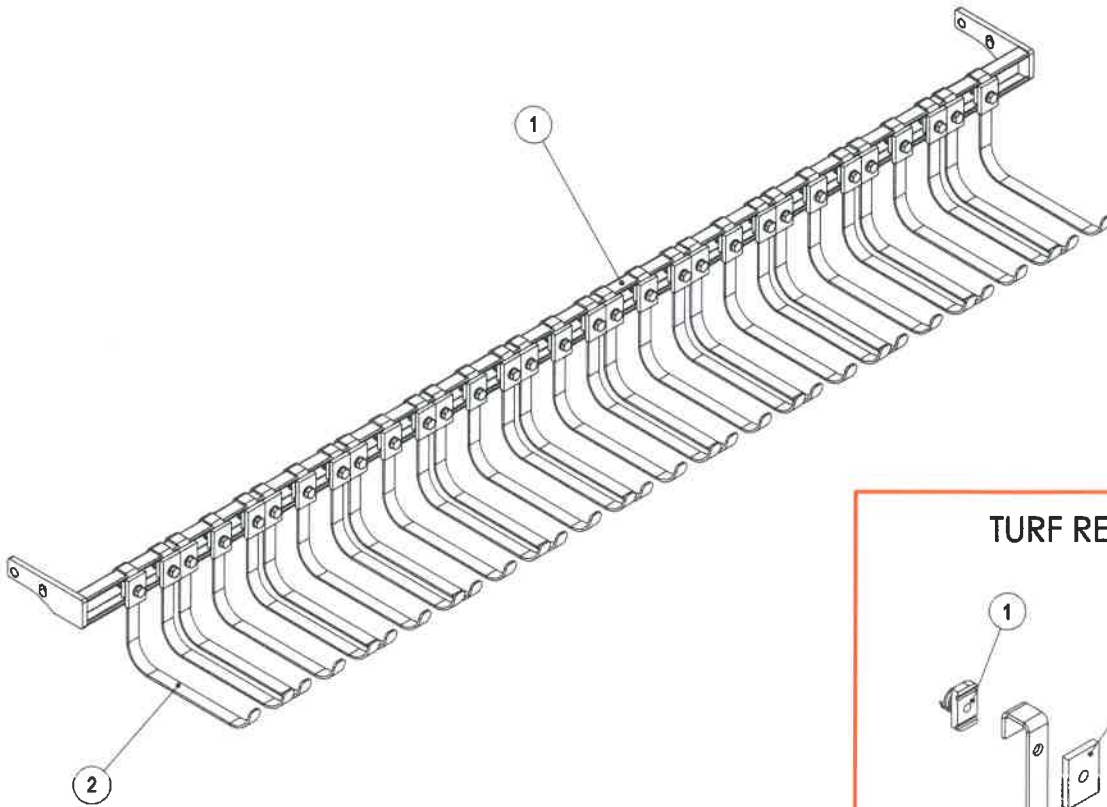
ITEM NO.	PART NUMBER	DESCRIPTION	GUARD/QTY.
1	E1-1061_REV0	WASHER M6 SPRING	4
2	F20055_REV1	PLUG BLANKING	1
3	F20491_REV0	HANDLE	2
4	F36394_REV1	COVER PLATE	2
5	F36840_REV1	COVER	1
6	F36843_REV1	COVER PLATE	1
7	F36933_REV1	CHAIN GUARD	1
8	HUHTM407A_REV1	BONNET CATCH	2
9	HUHTM407C_REV1	BONNET CATCH	2
10	SP01015_REV0	HEX SET SCREW M6 X 25	8
11	SP01101_REV0	SCREW M6 X 25 SLOTTED	4
12	SP02004_REV0	NUT M6 NYLOC	8
13	SP03007_REV0	WASHER M6 X 20	4
14	SP03010_REV0	WASHER M6 FORM A	12

DRIVE



ITEM NO.	PART NUMBER	DESCRIPTION	DRIVE/QTY.
1	401435_REV0	LEFT HAND COLLAR	1
2	401436_REV0	RIGHT HAND COLLAR	1
3	D1734_REV0	IMPLEMENT SHIELD	1
4	D8167_REV0	KEY PARALLEL 10 X 8 X 50 RD END	7
5	D8172_REV1	BEARING UCFL207-35	2
6	E1-1065_REV0	SPRING WASHER M12 SQUARE SECTION	8
7	E1-1080_REV0	WASHER M16 FORM A	8
8	E1-1172_REV0	HEX BOLT M12 X 130	2
9	F21864_REV0	GEARBOX T 1:1 COMER 267.0131.3/8" 6 SPLINE IN 2-35 DIA OUT	1
10	F22056_REV1	KEY 10 X 8 X 30	1
11	F33226_REV1	PTO SHAFT	1
12	F36383_REV3	LEFT HAND SHAFT	1
13	F36384_REV4	RIGHT HAND SHAFT	1
14	F36385_REV1	PLATE	2
15	F36846_REV1	SPACER	2
16	SP01009_REV0	HEX SET SCREW M8 X 20	4
17	SP01065_REV0	HEX SET SCREW M12 X 30	6
18	SP01108_REV0	HEX BOLT M16 X 90	2
19	SP01150_REV0	HEX SET SCREW M16 X 55	2
20	SP02028_REV0	NUT M16 NYLOC (T)	4
21	SP03008_REV0	WASHER M8 FORM A	4
22	SP03012_REV0	WASHER M12 FORM A	8

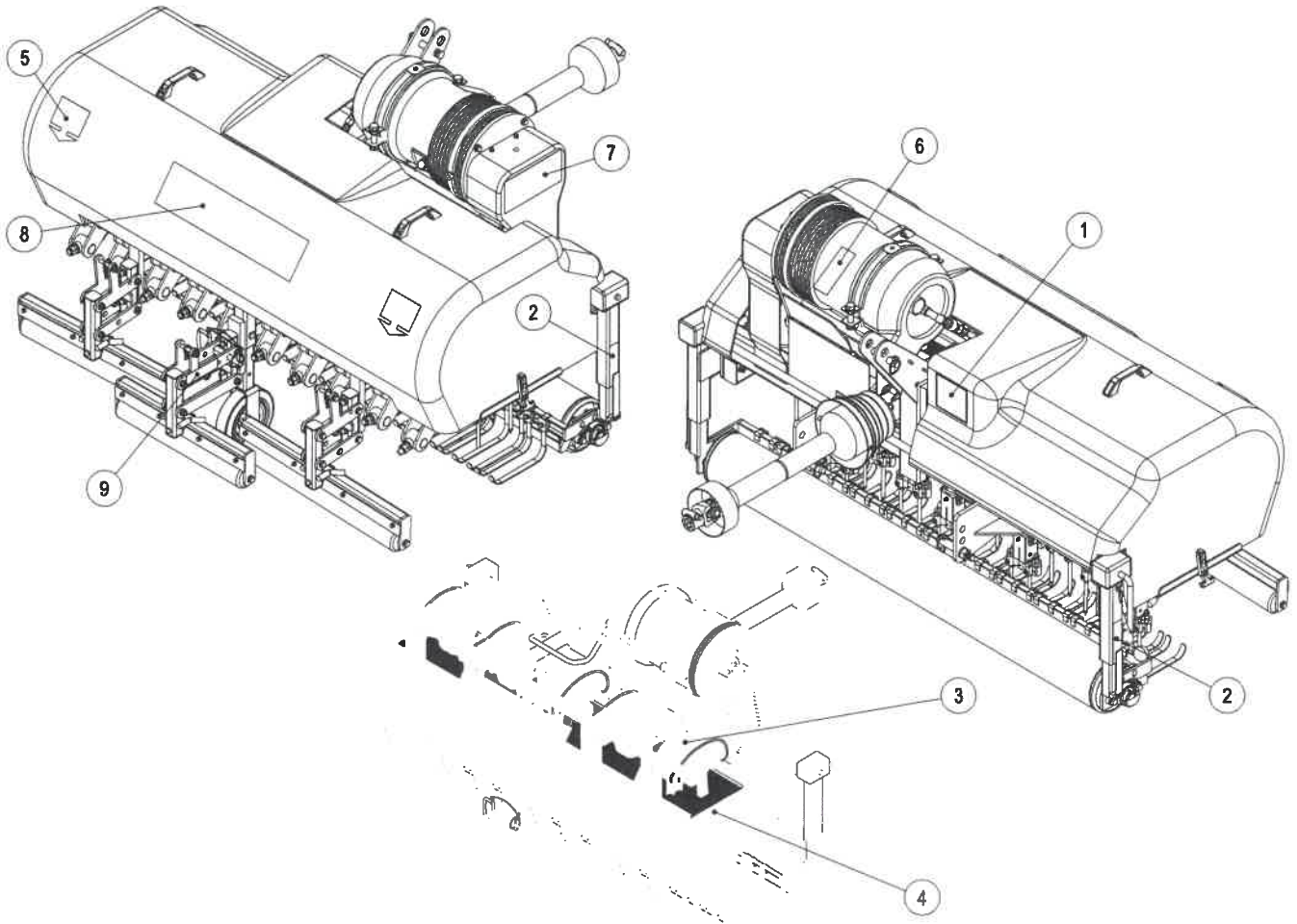
TURF RETAINER



ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
1	F36389_REV3	TURF RETAINER MOUNT	1
2	FS1009A_REV1	TURF RETAINER ASSY	31

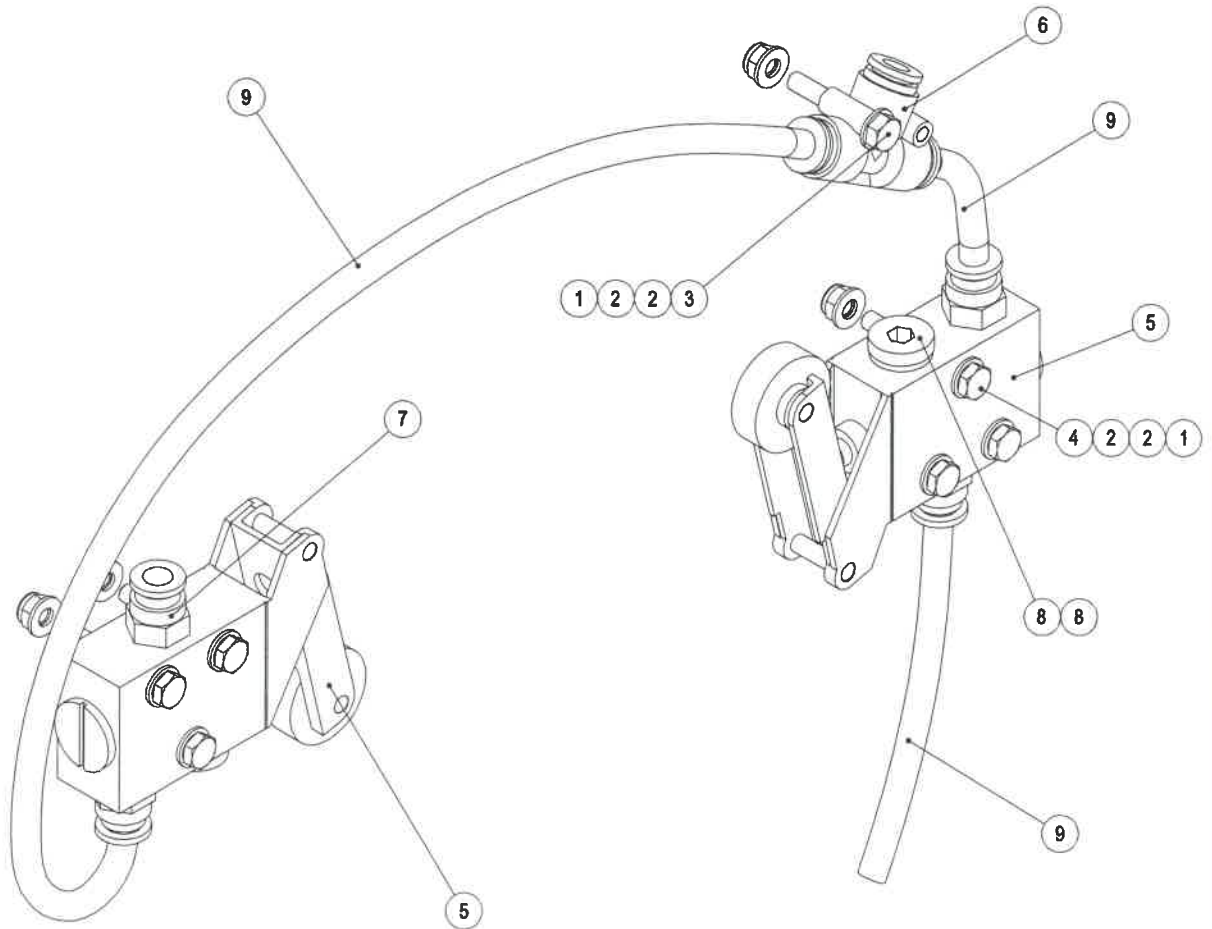
TURF RETAINER ASSY			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	F21308_REV1	NUT M8 (UNI-STRUT)	1
2	F36390_REV1	TURF RETAINER	1
3	F36489_REV1	CLAMP	1
4	SP01045_REV0	HEX SET SCREW M8 X 25	1
5	SP03029_REV0	WASHER M8 SPRING LOCK	1

DECALS



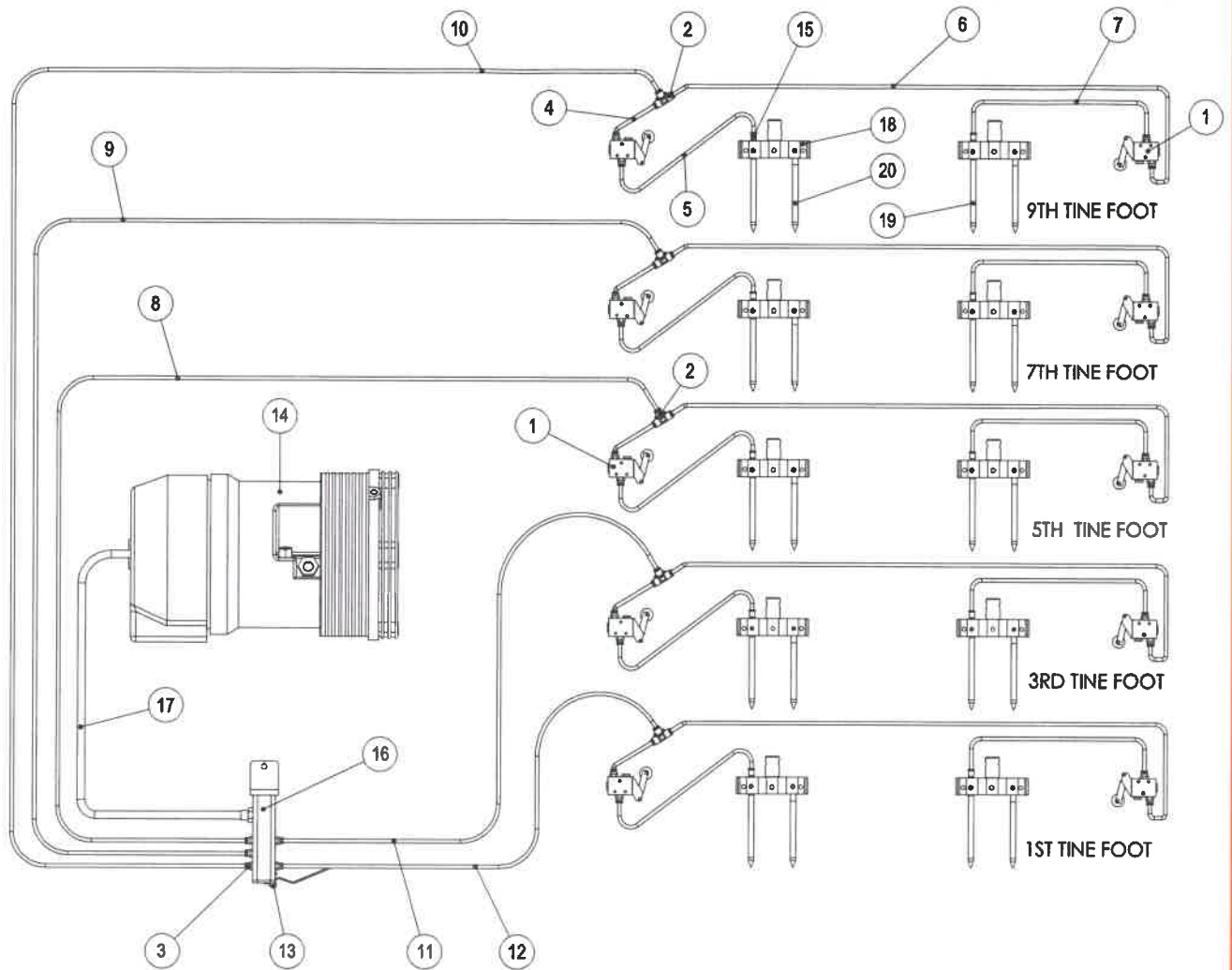
ITEM NO.	PART NUMBER	DESCRIPTION	Decals/QTY.
1	F31154_REV1	SAFETY PTO LABEL	1
2	F33539_REV1	LABEL DEPTH	2
3	F36514_REV1	LABEL TIMING	1
4	F36515_REV1	LABEL TIMING	1
5	F36848_REV1	LABEL	2
6	F36869_REV1	LABEL	1
7	F36934_REV1	LABEL	1
8	F37102_REV1	DECAL AER-AID	1
9	F37381_REV1	TRANSFER	2

ROLLER VALVE DETAIL



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	F20431_REV1	NUT M4 NYLOC	7
2	F20803_REV1	WASHER M4 FORM A	14
3	F21803_REV0	HEX BOLT M4 X 25	1
4	F22043_REV1	HEX SET SCREW M4 X 30	6
5	F22044_REV1	ROLLER LEVER VALVE	2
6	F22045_REV1	T CONNECTOR	1
7	F22046_REV1	MALE STUD	4
8	F22047_REV1	PLUG WITH SEALING RING	2
9	F22048_REV0	TUBING	3

PNEUMATIC DIAGRAM



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	F22044_REV1	ROLLER LEVER VALVE	10
2	F22045_REV1	T CONNECTOR	5
3	F22046_REV1	MALE STUD	5
4	F22048A_REV0	TUBING 65MM LONG	5
5	F22048B_REV0	TUBING 790MM LONG	5
6	F22048C_REV0	TUBING 460MM LONG	5
7	F22048D_REV0	TUBING 1180M LONG	5
8	F22048E_REV0	TUBING 275MM LONG	1
9	F22048F_REV0	TUBING 650MM LONG	1
10	F22048G_REV0	TUBING 965MM LONG	1
11	F22048H_REV0	TUBING 320MM LONG	1
12	F22048I_REV0	TUBING 710MM LONG	1
13	F22049_REV1	BALL VALVE	1
14	F22050_REV1	COMPRESSOR	1
15	F22051_REV1	MALE STUD M5	10
16	F36844_REV2	MANIFOLD BLOCK	1
17	F36862A_REV0	HOSE	1
18	F36904_REV7	MULTI TINE FOOT	10
19	F36948_REV9	AER TINE	10
20	F36949_REV9	TINE ASSY (SOLID)	10



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