



BROWNS

EST: 1830

Agricultural Machinery Co. Ltd

Manufacturers of Farm Implements & Machinery

GRASSMASTER

SPRING TINE GRASS HARROWS

Owners Illustrated Instruction Book & Parts List

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EC Declaration of Conformity

Browns Agricultural Machinery Co Ltd declare that the **Browns Grassmaster**, as defined by the Serial Number attached to the machine, conforms with the following Directives and Regulations, and has been certified accordingly.

EC Machinery Directive 2006/42/EC.
The Supply of Machinery (Safety) Regulations 2008.
The Provision and Use of Work Equipment Regulations 1998.

Specifically related harmonised standards are:

EN ISO 12100-1: 2010 (Safety of Machinery).
EN ISO 12100-2: 2010 (Safety of Machinery).
EN ISO 4254-1 : 2009 (Agricultural machinery - Safety).

THE MANUFACTURER:

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Person empowered to draw up the declaration on behalf of the manufacturer of his authorized representative

Name: David Hanson

Signature:



Job Title: Design & Safety
Place of declaration: LU7 4UX

Employer: Browns Agricultural Machinery
Date of declaration: 25th January 2011

Machine Identification

Enter the relevant data in the following list upon acceptance of the machine.

Serial Number	
Type of Machine	
Machine Width	
Year of Construction	
Delivery Date	
First Operation	
Dealer Name	
Dealer Address	

1.0 Introduction

Congratulations on your purchase of a new Browns machine. In order to correctly use the machine please carefully read this manual. The manual has been written to provide operating and maintenance procedures and related safety information which will allow you to use and maintain this machine in a correct and safe manner.

This operators manual should be regarded as part of the machine. You must ensure that you and anyone else who is operating, maintaining or working with the machine be familiar with the operating and maintenance procedures and related safety information contained in this manual.

Owners must give operating instructions to operators or employees before allowing them to operate this machine. It is the operators responsibility to read and understand all safety and operating instructions in this manual. Remember all accidents can be avoided.

A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes themselves and bystanders to possible serious injury or death.



Caution

This symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury to yourself or others, and carefully read the message that follows.

**The most important safety device on the machine is a
safe operator**

1.1 General Information

The illustrations and data used in this manual were current at the time of printing, but due to possible engineering or production changes, this product may vary slightly in detail. Browns reserves the right to redesign or change components as may be necessary without notification to anyone.

No liability can be accepted for inaccuracies or omissions in this manual, although every possible care has been taken to make it as complete and accurate as possible.

Throughout this manual, references may be made to,

- **LEFT-HAND SIDE** - the side which is on the left only when an observer is facing in the normal forward direction of travel of the machine, i.e. the operator looking forward from rear of machine.
- **RIGHT-HAND SIDE** - the side which is on the right only when an observer is facing in the normal forward direction of travel of the machine.
- **COMPETENT PERSON** - for any task means a person who has acquired through training, qualifications or experience, or a combination of them, the knowledge and skills to carry out that task.

3.0 Safety Notes & Warnings



Only competent and trained operators should use and maintain the machine. Ensure this manual has been read by every person who is intending to use or maintain it.



Be aware of moving parts on the machine that may cause a crushing hazard to the hands and body.



Study operator manual thoroughly before maintenance is carried out and always turn the tractor off and remove key.



Take care that no persons are within the machines hazardous area during the folding and unfolding procedure.



High pressure fluid hazard. Escaping oil under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic pipes. Search for leaks with a piece of cardboard.



Do not allow any person to stand inbetween the machine and the tractor unless the machine is lowered to the ground and the tractor is turned off with the key removed



Manual handling hazard. Perform a manual handling assessment before assembling the machine, seek assistance or lifting equipment as required.



Never allow any person to ride on the machine or the tractor (unless there is a passenger seat provided).



Ensure that the tractor is of sufficient size to provide adequate stability when in operation, refer to the tractors operator manual when operating on sloping ground.

3.1 Machine Decals

The decals should be considered part of the machine. Any decal that refers to warnings or hazards must be replaced immediately if it become lost or illegible.



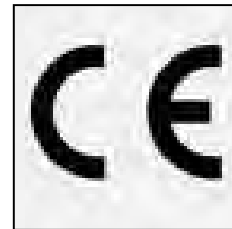
Part No.
80004



Part No.
80003



Part No.
80002



Part No.
80076



Part No.
80020

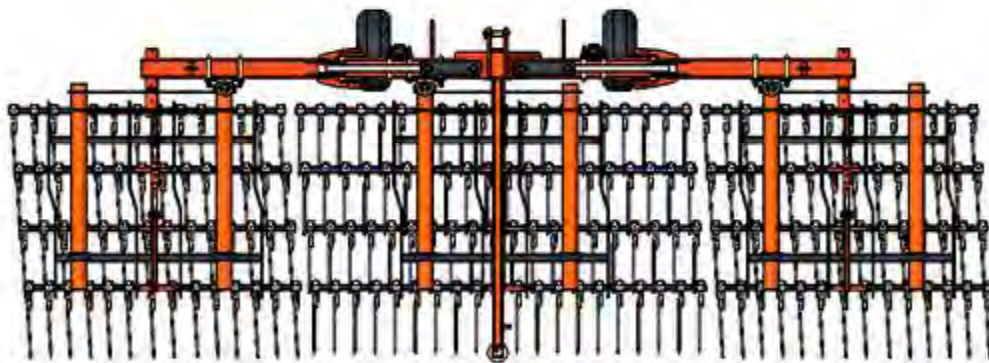
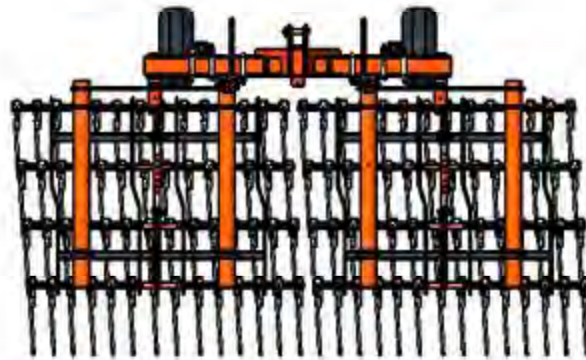
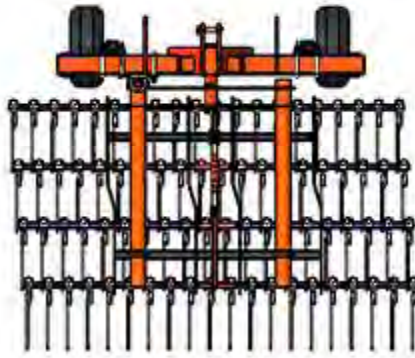


Serial number required
before a duplicate can
be issued

3.2 Delivery

The machine is delivered fully assembled. Only a competent driver should attempt to unload the machine with knowledge of slinging and lifting. A forklift or loader with sufficient lifting capacity should be used, check the technical specifications for the specific model to find the machine weight before any lifting takes place. Place the machine onto a firm flat surface and check all support wheels and parking leg is secure before decoupling the machine.

Once unloaded check over the machine for any transport damage to hydraulic hoses or the frame.



TECHNICAL SPECIFICATIONS

	65745	65755	65765	65776
MODEL CODE	65745	65755	65765	65776
WORKING WIDTH	2.0m	3.0m	5.0m	6.0m
TRANSPORT WIDTH	2065	2950	4950	6145
PARKED HEIGHT	2065	2950	2500	2500
LENGTH	1650	1650	2350	3000
TINES (8mm)	1745	1745	1745	1745
TINE SECTIONS	80	112	192	240
WEIGHT	1x2m	2x1.5m	1x2 / 2x1.5	3x2m
	280	365	595	630

4.0 Intended use

The Grassmaster is a spring tined harrow intended primarily for permanent pasture land. The main purpose of the machine is to remove dead thatch and moss from the sward to keep it well aerated. This in turn encourages vigorous growth and more efficient use of nitrogen. Dung pats and mole hills can also be efficiently distributed.

The machine is intended to be used on the rear three point linkage of a tractor of sufficient size so the unit remains stable at all times.

The Grassmaster consists of staggered rows of oil hardened spring tines. The tines are set at 25mm apart over the full width of the machine and the angle of the tines can be adjusted using the threaded turnbuckles mounted on each separate tine unit. The tines are mounted on suspended tine frames with a clamp, this allows the tine spacing to be changed if required. The machine also includes depth control wheels to set the working height and protect the machine from grounding.

5.0 Operating instructions

Remove the lower linkage quick attach bar from the machine and attach it the lower link arms of the tractor. Carefully reverse the tractor and slowly hook the lower linkage bar into the Grassmaster main frame hook, lift the lower linkage enough to lock the bar in with the hooks but do not lift the machine. Turn off the tractor, remove key and apply the parking brake, attach the top linkage turnbuckle and the hydraulic hoses if it is a hydraulic folding model. Lift the machine off the ground slightly.

For hydraulic models pressurise the rams and ensure they are retracted fully, the transport bar between the arms can now safely be removed and place in its stowage position on the horizontal stand leg beam. On all models lift the rear stand leg up.



Before lowering the arms, check there is sufficient room and that there is nobody in the danger zone where they could be struck by the arms or trapped in the hinge areas.

Adjust the machine to the required setting for your conditions. The more vertical the tine, the more aggressive it will be on the sward. Adjust the small turnbuckles on the tine frames to give the desired angle and set the land wheels to the desired depth using the series of holes. Lower the machine to the ground. For the harrow to operate correctly the arms of the swinging frames have to pressurize the tine frames on the blocks under the tine frame loops at the rear. If not and the tine frames are left to operate loose it will cause premature wear on the front support chains and on the rear support loops. The harrow will also not run smoothly and the tine frame will drop at the front. To add pressure to the rear blocks extend the tractor top linkage.

Operating speeds will vary dependant on the condition of the sward and the comfort of the operator. When the harrow is set correctly and at an optimum forward speed, the tines will oscillate vigorously from side to side. The recommended speed for operation is between 6 to 12 km/h (3.5 to 7.5 mph)



Always lift the harrow clear of the ground when turning on headlands and never reverse with the tines are in contact with the ground or this could result in tine breakage or machine damage.

The swinging frames are fitted with spring plunges. These stop the tine frames from colliding with each other when the harrow is raised out of work to turn on the headland. Washers can be added or removed to give different spring pressures. If the forward speed is too fast this may cause the harrow to yaw or bounce and vibrate excessively, reduce forward speed. Driving too slow may also cause the harrow to bounce in operation.

If wide models still produce a yaw at the correct speed and setting then try and raise the depth wheels one hole. This will allow the harrow to be suspended from the tractor but still allow the depth wheels to protect the machine for grounding.

When travelling on public roads ensure that the harrow has been fully folded and the transport lock bar is fitted in case of hydraulic hose failure. Make sure you are familiar with the width of the harrow and check if the rear tractor lights are still clearly seen from the rear of the machine.

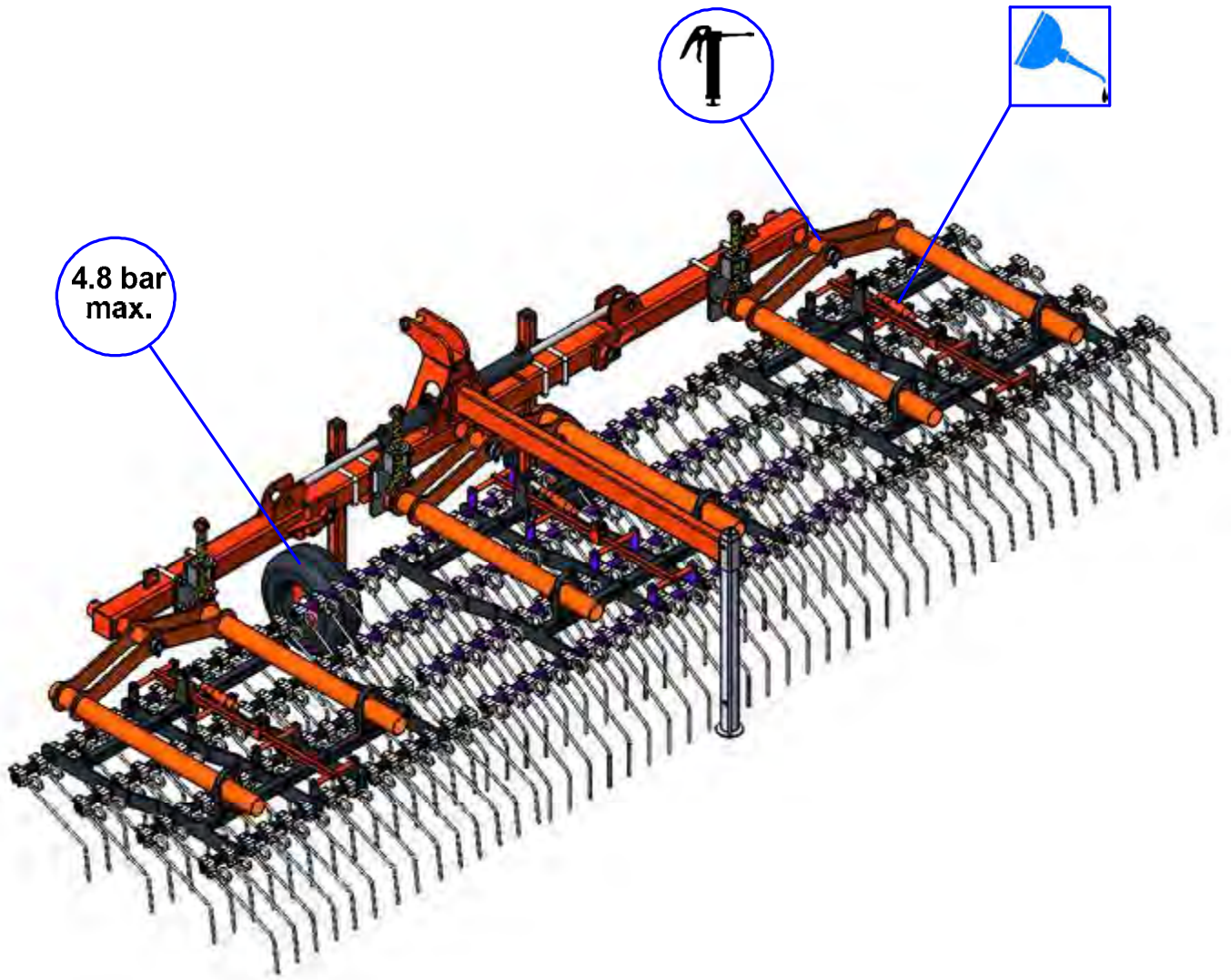
When uncoupling the harrow find a level firm area. Lower and lock the rear support leg and then lower the harrow to the ground. Turn off the tractor and remove key, apply parking brake, release any pressure that may be in the hydraulic system after checking that the transport arm lock is securely fitted. Remove the hydraulic quick couplers. Adjust the tractor top linkage so it can slide freely on the pins, it is now safe to uncouple the top linkage. Uncouple the lower link arms. Finally make sure the hydraulic hoses are left off the ground preferably with a plastic bag on the end to protect them from contamination.

6.0 Attachments

The harrow can be used in conjunction with either a Stocks Fanjet or a Stocks Turbojet seed unit to renovate or reseed worn pasture land. The units are supplied with their own operator manuals. The brackets required to fit the units are contained in the parts lists in this manual.

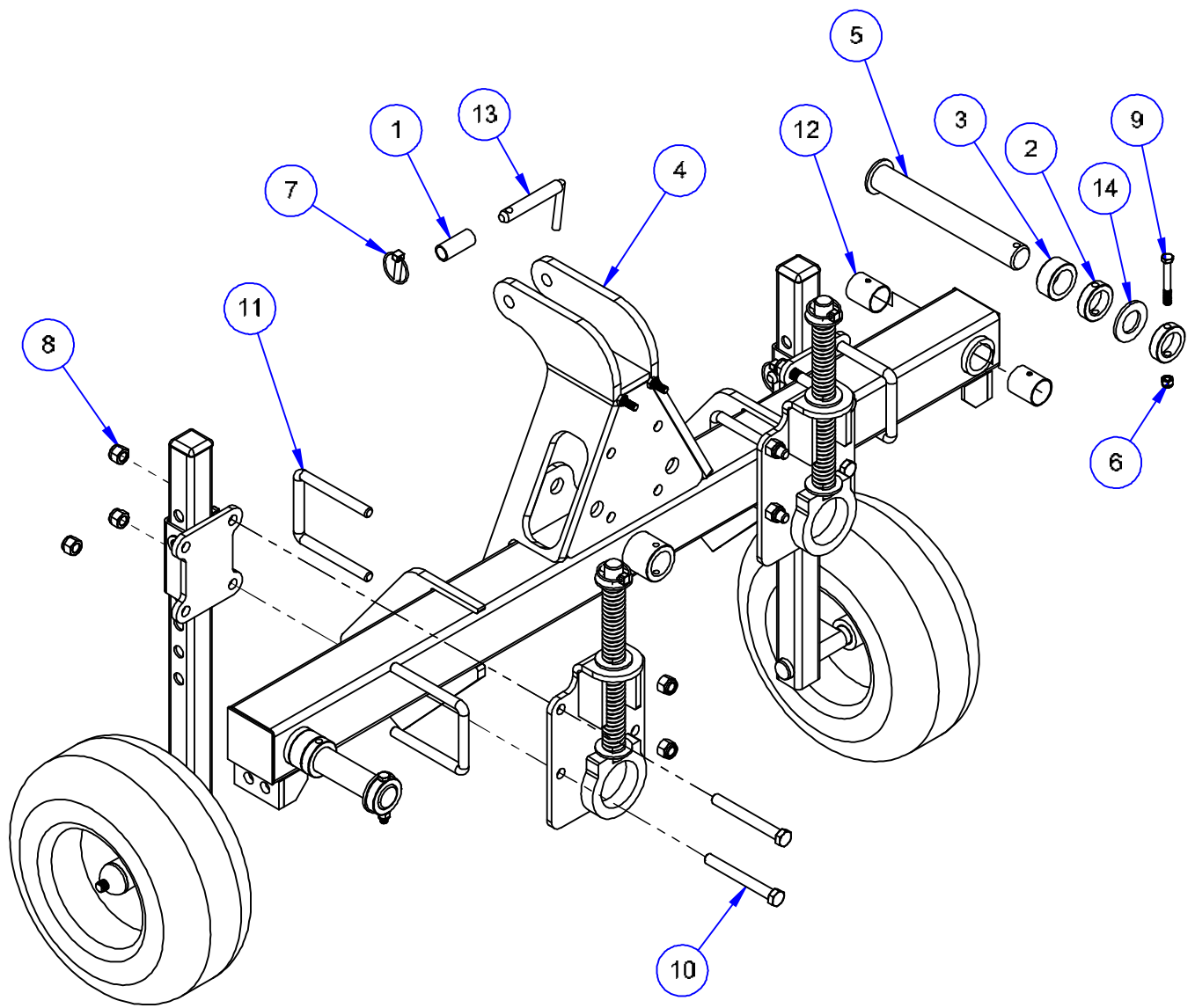
7.0 Storage

- Store the unit undercover if possible.
- Thoroughly clean and grease the unit before storage to ensure it is in full operating condition when next required.
- Protect and exposed areas against rust. If you need to spray areas with oil, use light biologically degradable oils such as rape oil.
- Store the unit in an area away from human activity.
- Do not park equipment where it will be exposed to livestock. Damage and livestock injury could result.
- Do not allow children to play on or around the stored unit.
- Make sure all parked machines are on a hard, level surface and engage all

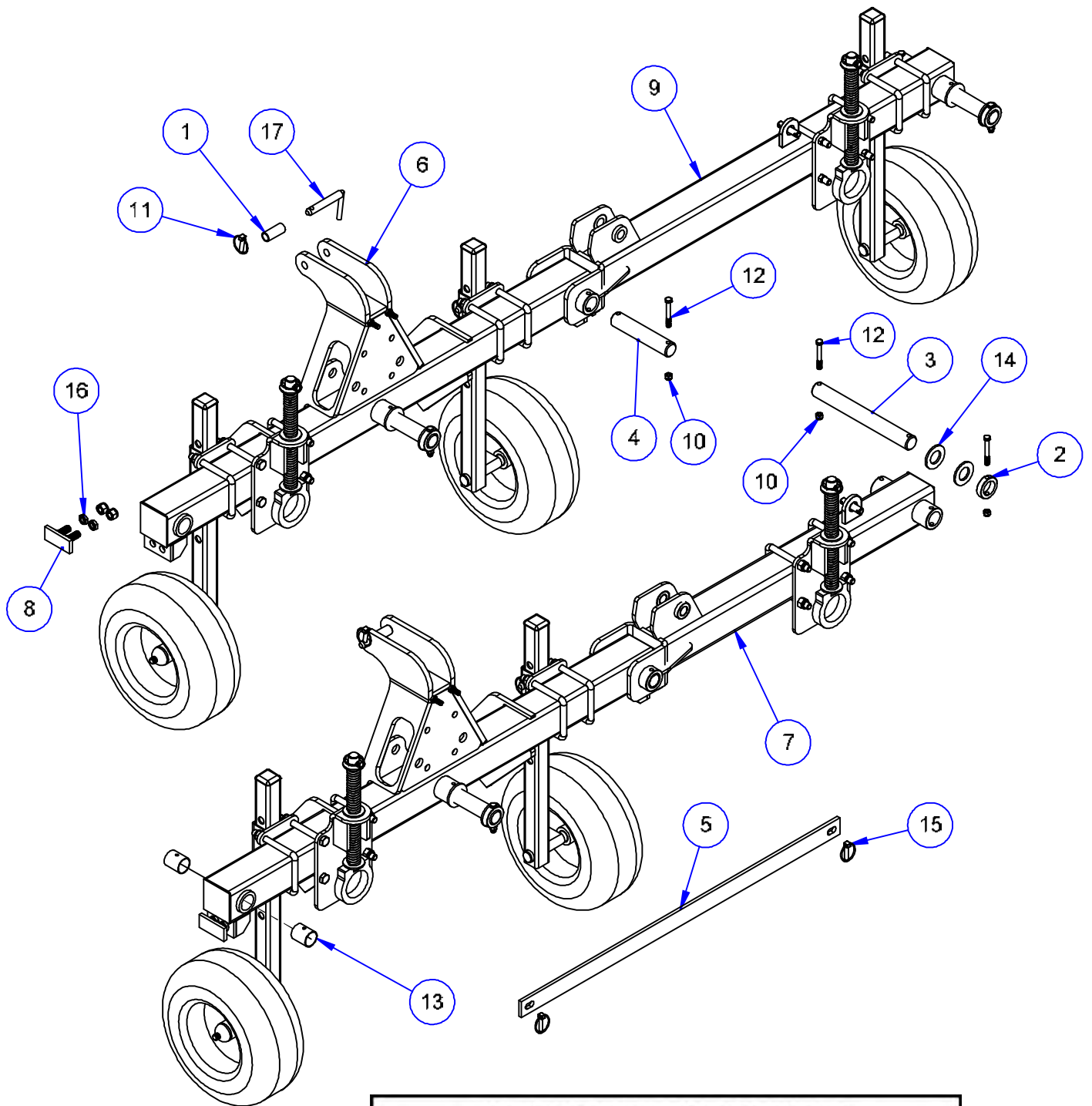


MAINTENANCE	
Daily	
1	Check all frame nuts and bolts are tight
2	Check hydraulic hoses and connectors for damage
3	Check condition of tines & replace any damaged or broken
Weekly	
4	Lubricate grease points on swinging frames
5	Check wheel pressures (maximum pressure 4.8 bar (70 psi)
6	Lightly oil threads on tine unit adjusters
Storage	
7	Use parking stand provided
8	Ensure tine units are floating, not under pressure
9	Clean machine & paint any bare metal
10	Check for any hydraulic leaks
11	Store folded with transport lock bar attached

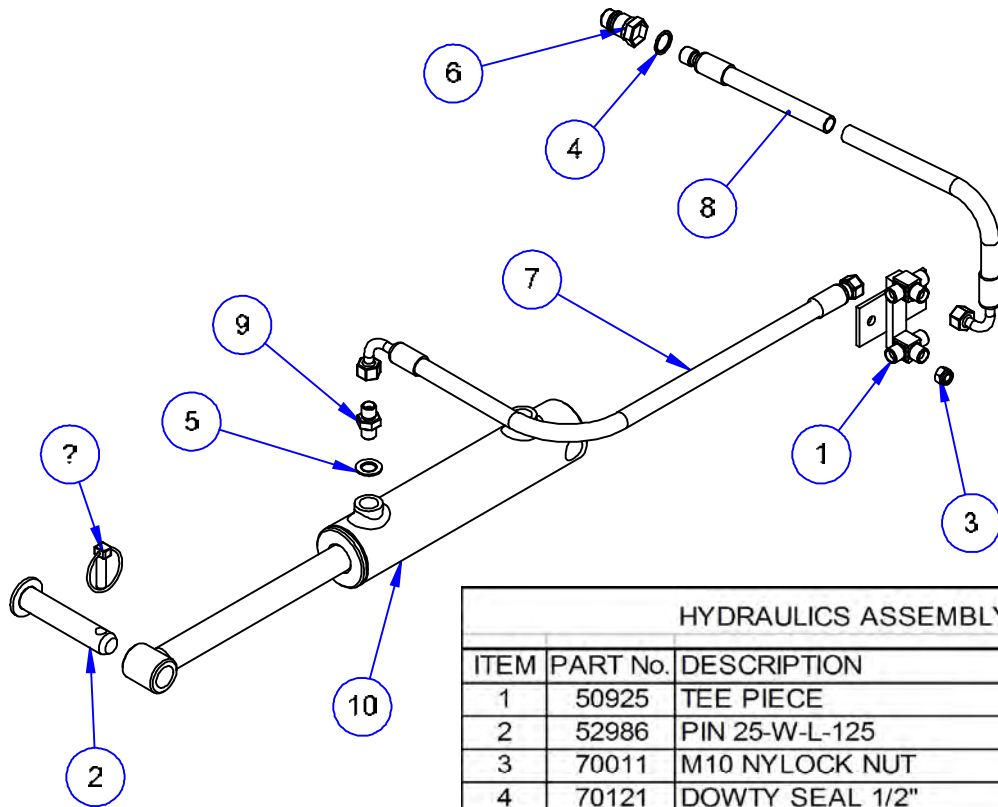
TIGHTENING TORQUES		
Size	Nm	lb-ft
M10 (8.8)	55	40
M12 (8.8)	95	70
M16 (8.8)	240	175



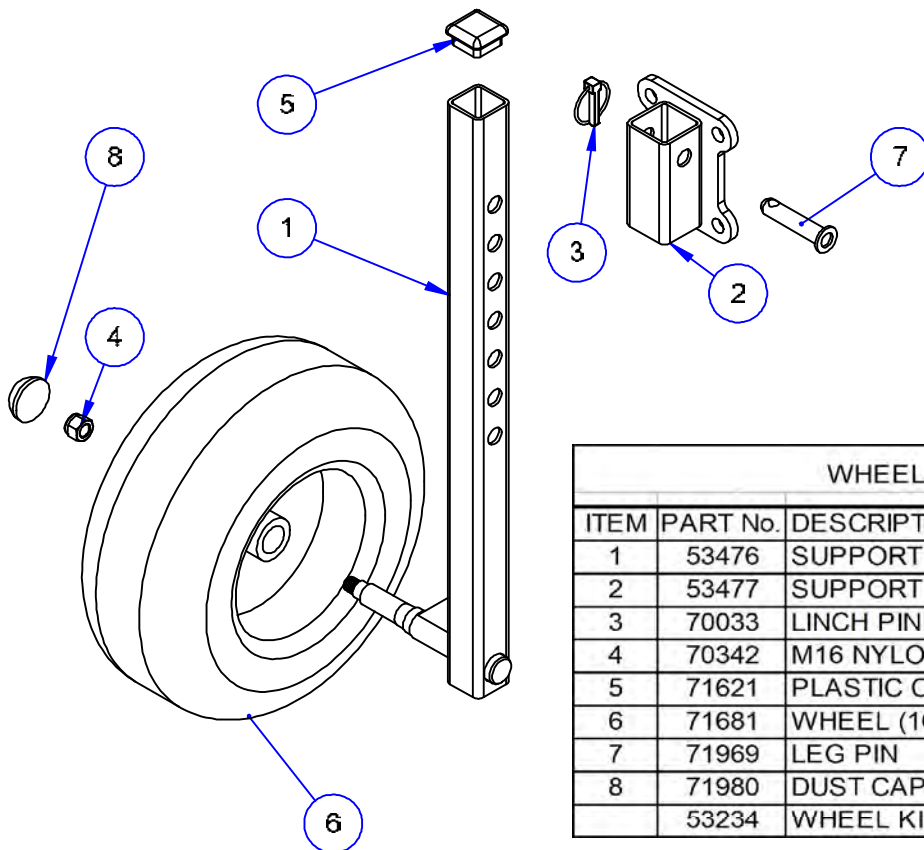
3.0m MAIN FRAME ASSEMBLY			
ITEM	PART No.	DESCRIPTION	QTY
1	13784	SLEEVE	1
2	16352	COLLAR (16)	4
3	17459	COLLAR (26)	2
4	52972	MAIN FRAME	1
5	53487	MAIN PIN 3.0m	2
6	70011	M10 NYLOCK NUT	4
7	70033	LINCH PIN	1
8	70342	M16 NYLOCK NUT	12
9	70815	M10 (8.8) x 80 BOLT	4
10	70989	M16 (8.8) x 140 BOLT	4
11	71654	M16 U BOLT	4
12	71675	BUSH MB 4050 DX	4
13	71856	PIN Cat1 TOP	1
14	71963	M42 WASHER	2



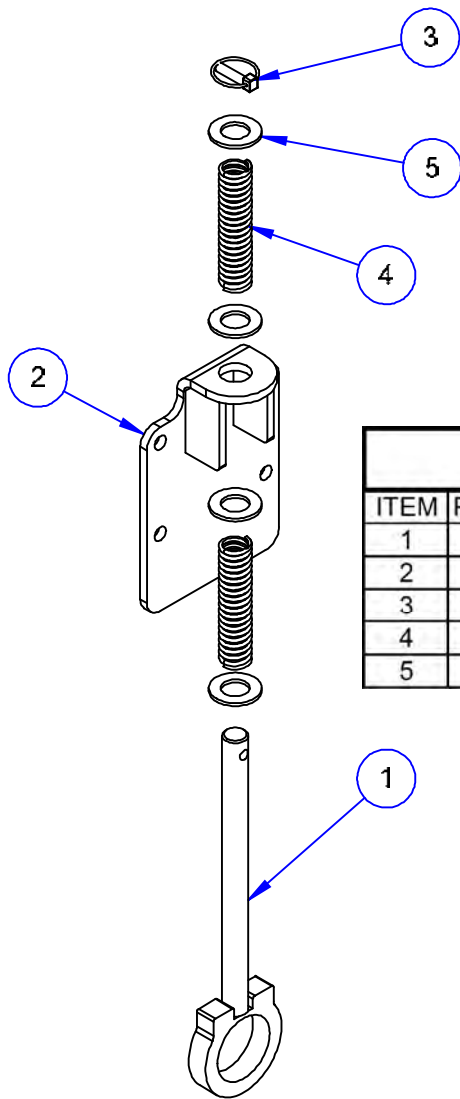
5.0m & 6.0m MAIN FRAME ASSEMBLIES			
ITEM	PART No.	DESCRIPTION	QTY
1	13784	SLEEVE	1
2	16352	COLLAR (16)	3
3	16554	MAIN PIN (346mm)	3
4	16555	PIVOT PIN (202mm)	2
5	16895	TRANSPORT LOCK	1
6	52972	MAIN FRAME	1
7	52990	5.0m ARM	1
8	53079	HORIZONTAL STOP	2
9	53420	6.0m ARM	1
10	70011	M10 NYLOCK NUT	10
11	70033	LINCH PIN 7/16R	1
12	70815	M10 (8.8) x 80 BOLT	10
13	71675	BUSH MB 4050 DX	4
14	71963	M42 WASHER	6
15	71748	LINCH PIN 6mm	2
16	71818	M16 HALF NUT	8
17	71856	PIN Cat1 TOP	1



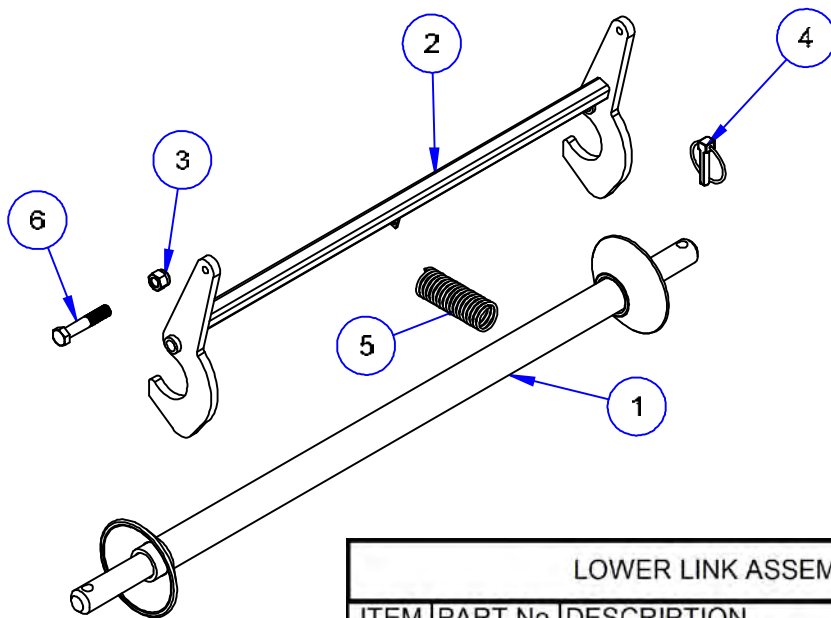
HYDRAULICS ASSEMBLY			
ITEM	PART No.	DESCRIPTION	QTY
1	50925	TEE PIECE	1
2	52986	PIN 25-W-L-125	4
3	70011	M10 NYLOCK NUT	2
4	70121	DOWTY SEAL 1/2"	2
5	70342	DOWTY SEAL 3/8"	4
6	70364	Q/R PROBE 1/2"	2
7	71033	HOSE 3/8" x 0.6	2
8	71361	HOSE 3/8" x 2.0	2
9	71859	RESTRICTOR 3/8m x 3/8m (1mm)	4
10	71931	RAM 60x30 (500/300)	2



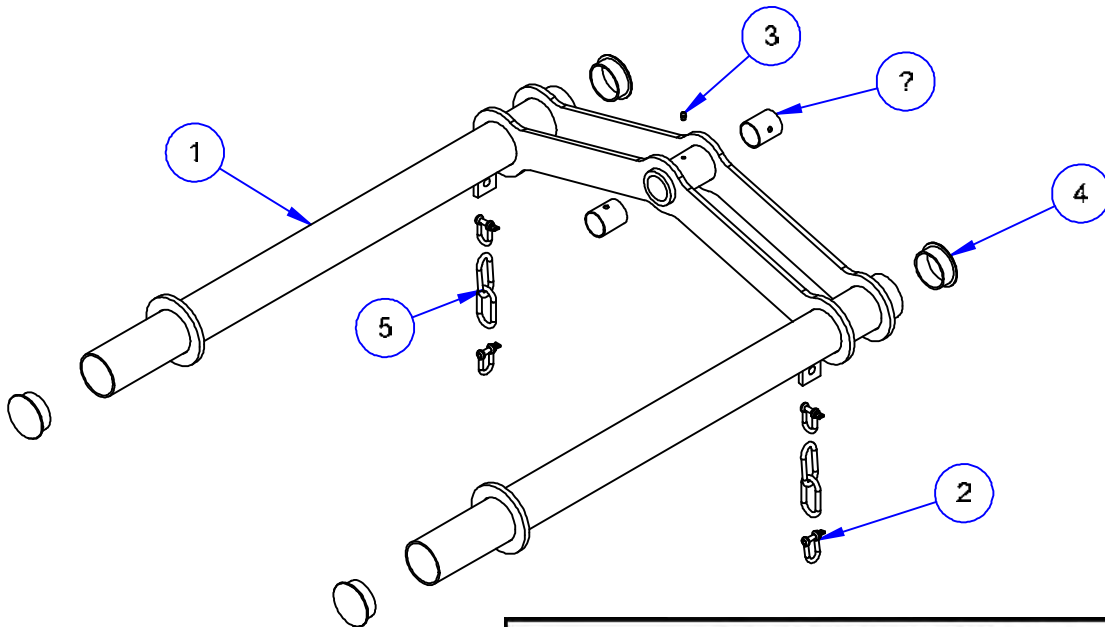
WHEEL ASSEMBLY			
ITEM	PART No.	DESCRIPTION	QTY
1	53476	SUPPORT WHEEL LEG	1
2	53477	SUPPORT WHEEL SOCKET	1
3	70033	LINCH PIN	1
4	70342	M16 NYLOCK NUT	1
5	71621	PLASTIC CAP 50x50x3-5	1
6	71681	WHEEL (16.5x6.5-8 6 PLY)	1
7	71969	LEG PIN	1
8	71980	DUST CAP	1
	53234	WHEEL KIT (COMPLETE PAIR)	



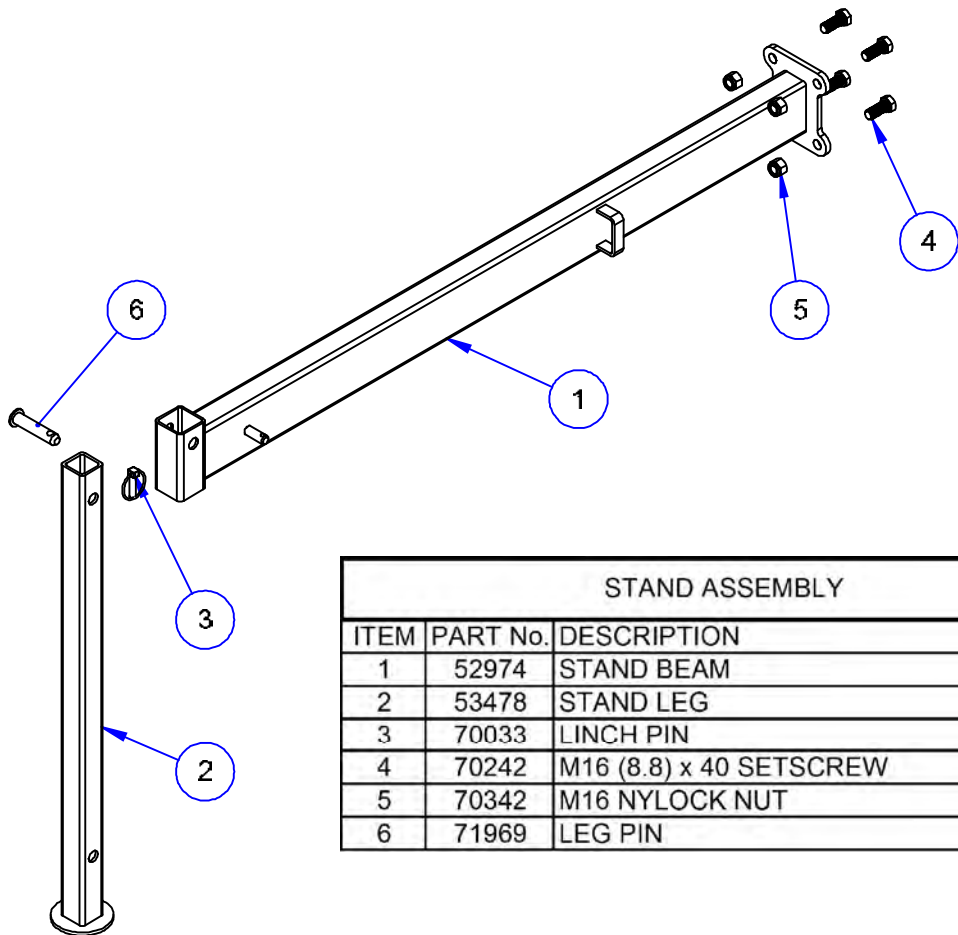
PLUNGER ASSEMBLY			
ITEM	PART No.	DESCRIPTION	QTY
1	53474	SPRING PLUNGER	1
2	53475	PLUNGER BRACKET	1
3	70033	LINCH PIN	1
4	71030	SPRING	2
5	71973	M30 WASHER	4



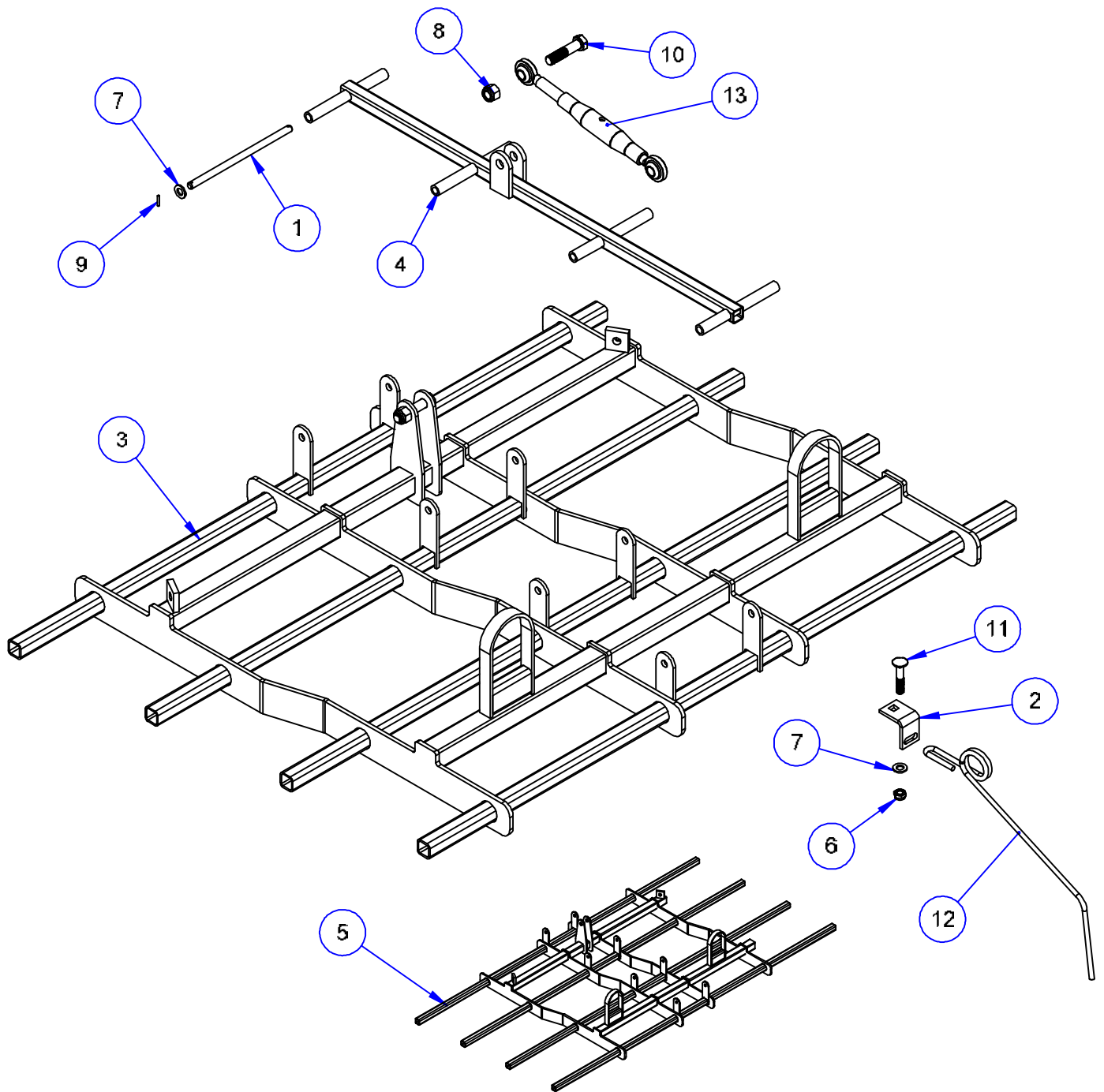
LOWER LINK ASSEMBLY			
ITEM	PART No.	DESCRIPTION	QTY
1	52980	LOWER LINK BAR	1
2	52981	LOWER LINK LOCK	1
3	70012	M12 NYLOCK NUT	2
4	70033	LINCH PIN	2
5	70333	SPRING	1
6	70436	M12 (8.8) x 65 BOLT	2



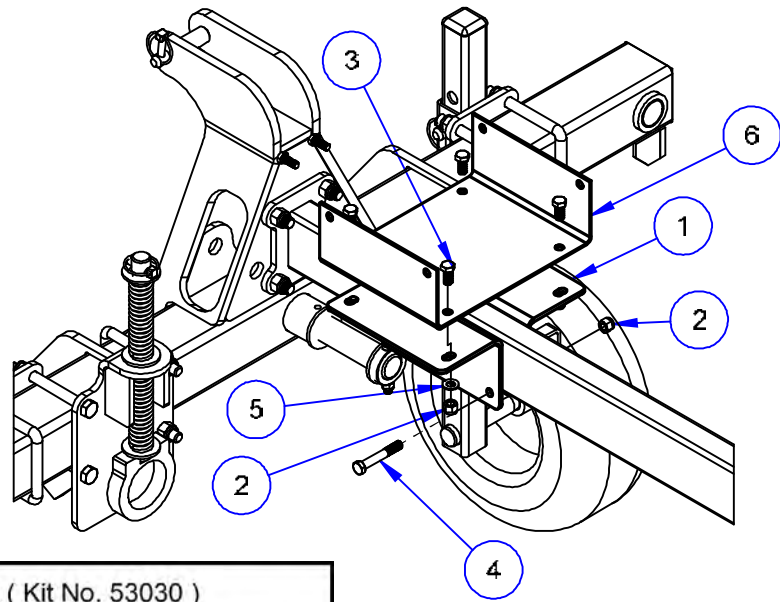
SWING FRAME ASSEMBLY			
ITEM	PART No.	DESCRIPTION	QTY
1	52978	SWING FRAME	1
2	70478	CHAIN SHACKLE	4
3	71055	GREASE NIPPLE	1
4	71668	PLASTIC CAP	4
5	71675	BUSH DX40	2
6	71676	CHAIN	2



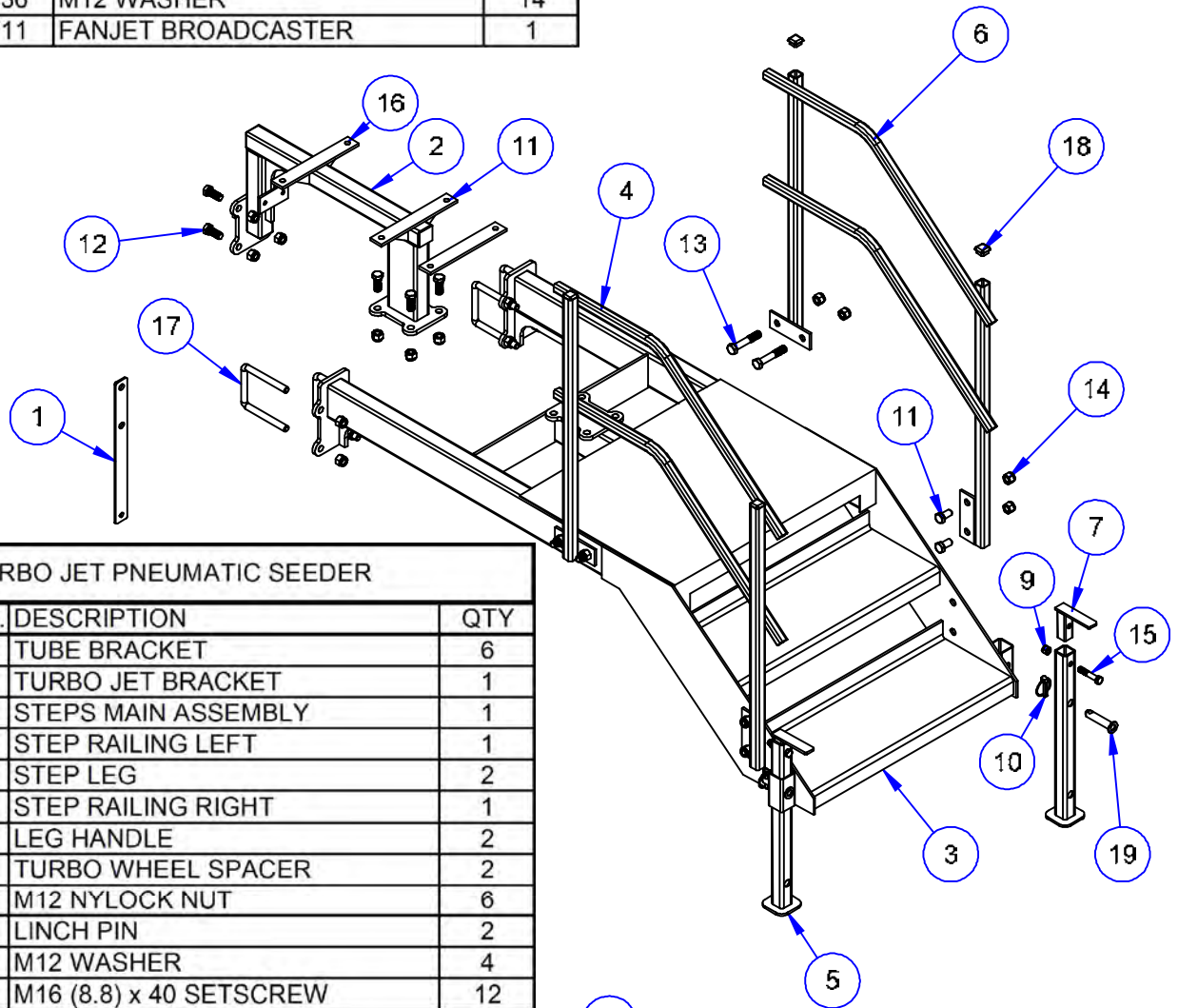
STAND ASSEMBLY			
ITEM	PART No.	DESCRIPTION	QTY
1	52974	STAND BEAM	1
2	53478	STAND LEG	1
3	70033	LINCH PIN	1
4	70242	M16 (8.8) x 40 SETSCREW	4
5	70342	M16 NYLOCK NUT	4
6	71969	LEG PIN	1



TINE UNIT ASSEMBLIES (1.5m & 2.0m)				
ITEM	PART No.	DESCRIPTION	1.5m	2.0m
1	16338	ADJUSTER BEAM PIN	4	4
2	16358	TINE HOLDER	56	80
3	52976	TINE UNIT 1.5m	1	
4	52977	ADJUSTER BEAM	1	1
5	52985	TINE UNIT 2.0m		1
6	70012	M12 NYLOCK NUT	56	80
7	70136	M12 WASHER	64	88
8	70342	M16 NYLOCK NUT	2	2
9	70353	COTTER PIN 1/8 x 3/4	8	8
10	71547	M16 (8.8) x 65 BOLT	2	2
11	71647	M12 (8.8) x 60 CUP SQ. BOLT	56	80
12	71663	TINE 8mm	56	80
13	71677	TOP LINK	1	1
14	52975	TINE UNIT 1.5m Complete Assembly		
15	52984	TINE UNIT 2.0m Complete Assembly		

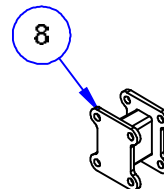


FAN JET DISC SEEDER (Kit No. 53030)			
ITEM	PART No.	DESCRIPTION	QTY
1	16540	BRACKET	2
2	70012	M12 NYLOCK NUT	7
3	70440	M12 (8.8) x 35 SETSCREW	4
4	70437	M12 (8.8) x 90 BOLT	3
5	70136	M12 WASHER	14
6	71711	FANJET BROADCASTER	1



TURBO JET PNEUMATIC SEEDER			
ITEM	PART No.	DESCRIPTION	QTY
1	17450	TUBE BRACKET	6
2	53327	TURBO JET BRACKET	1
3	53422	STEPS MAIN ASSEMBLY	1
4	53424	STEP RAILING LEFT	1
5	53425	STEP LEG	2
6	53426	STEP RAILING RIGHT	1
7	53488	LEG HANDLE	2
8	53500	TURBO WHEEL SPACER	2
9	70012	M12 NYLOCK NUT	6
10	70033	LINCH PIN	2
11	70136	M12 WASHER	4
12	70242	M16 (8.8) x 40 SETSCREW	12
13	70327	M16 (8.8) x 90 BOLT	4
14	70342	M16 NYLOCK NUT	24
15	70436	M12 (8.8) x 65 BOLT	2
16	70440	M12 (8.8) x 35 SETSCREW	4
17	71654	M16 U BOLT	4
18	71669	PLASTIC CAP 30x30x3 RHS	4
19	71969	LEG PIN	2

For TurboJet parts see Stocks Manual



Wheel spacer brackets fitted to 6m to move depth wheel legs away from wing arms to stop wheels touching spreader plate rail.

10.0 Dismantling & disposal

When the machine has come to the end of its useful life it should be dismantled and disposed of in a safe and environmentally friendly manner.

It is very important not to leave the machine in a state that could be dangerous for people or the environment.

Waste oil must be collected and disposed of in accordance with local regulations.

Never pour used oil into drains or onto the floor.

Worn tyres and rubber parts must be disposed of by a licensed waste disposal company.



Protect the environment and ensure contaminated parts or waste oil are always disposed of or cleaned in safe and environmentally friendly manner.

11.0 Warranty Guidelines

The period of liability for warranty relating to our products is 12 months. The warranty period shall become effective upon installation of the machine with the end user. All wearing parts are excluded from the warranty.

Warranty will only be given if the machine has been used for the purpose indicated in this manual and the original specification of the machine has not been subject to unauthorised modification.

All warranty claims must be submitted the Browns via the dealership you purchase the machine from.

All warranty work must be carried out by authorised Browns dealers using original parts.

11.1 Modifications

Your Browns machine should not be modified or altered unless officially authorised by Browns. Any modifications will make the machine out of warranty and will make the declaration of conformity for the machine void.

However, if it is necessary to carry out modifications, then all modifications must be done by a competent person, based on a risk assessment. It is important to emphasise that the competent person who undertakes the modification assumes the role of the designer and manufacturer. All safety features must be retained in the modified machine.



Safety instructions must be reviewed after all modifications are carried out and revised where necessary.