BROWNS

EST: 1830

Agricultural Machinery Co. Ltd

Manufacturers of Farm Implements & Machinery

LOG SPLITTER

Hydraulically Driven

Owners Illustrated Instruction Book & Parts List

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EC Declaration of Conformity

Browns Agricultural Machinery Co Ltd declare that the **Browns Log splitter**, 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:

BS EN 609-1:1999 (Safety of log splitters—Part 1: Wedge splitters)
EN ISO 12100-1: 2003 (Safety of Machinery).
EN ISO 12100-2: 2003 (Safety of Machinery).
EN ISO 4254-1 : 2005 (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 Employer: Browns Agricultural Machinery
Place of declaration: LU7 4UX 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.

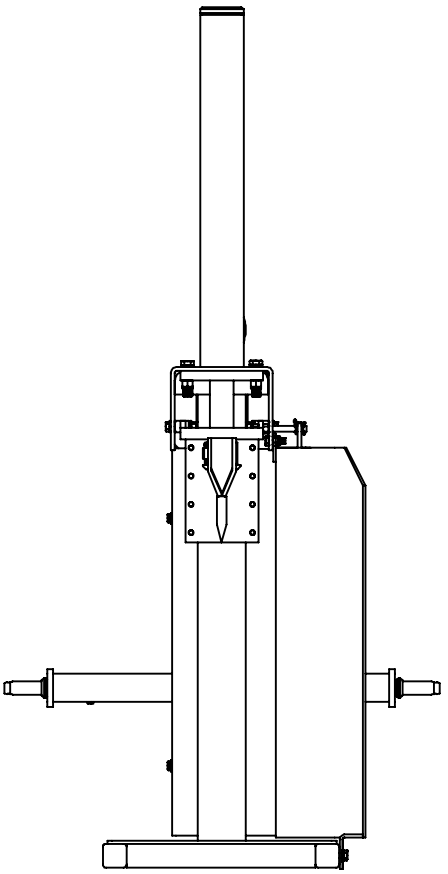
Throughout this manual, references may be made to,

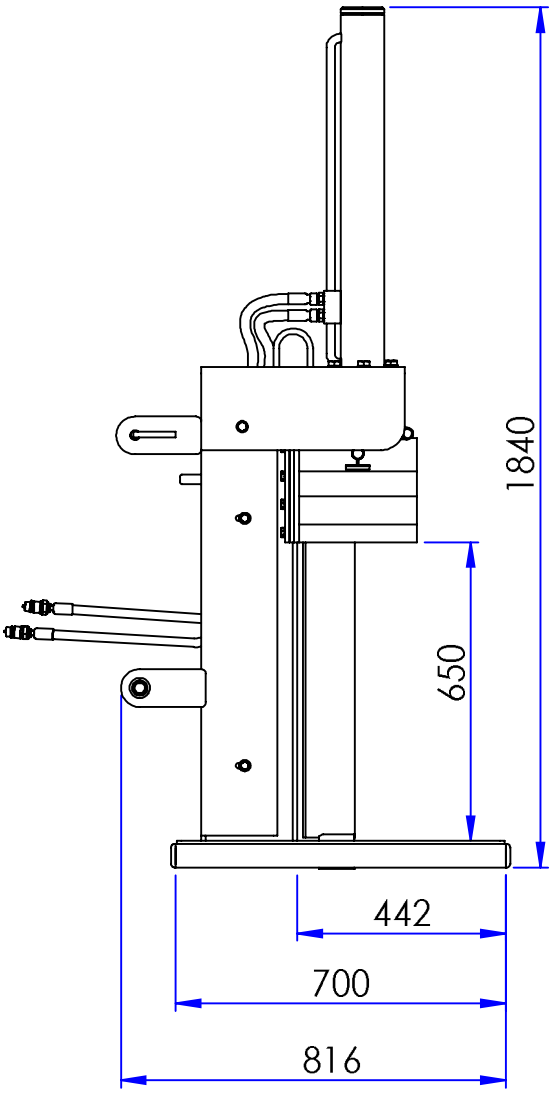
- LEFT-HAND SIDE - the side which is on the left only when an observer is facing in the normal forward direction of travel of the machine, i.e. the operator looking forward from rear of machine.

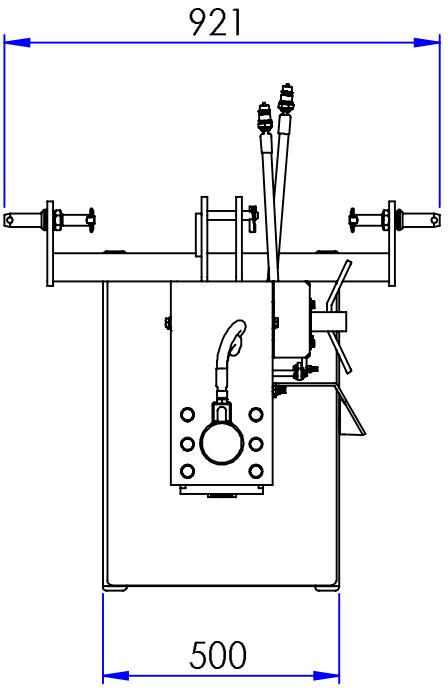
- RIGHT-HAND SIDE - the side which is on the right only when an observer is facing in the normal forward direction of travel of the machine.

- 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.

2.0 Technical Specifications

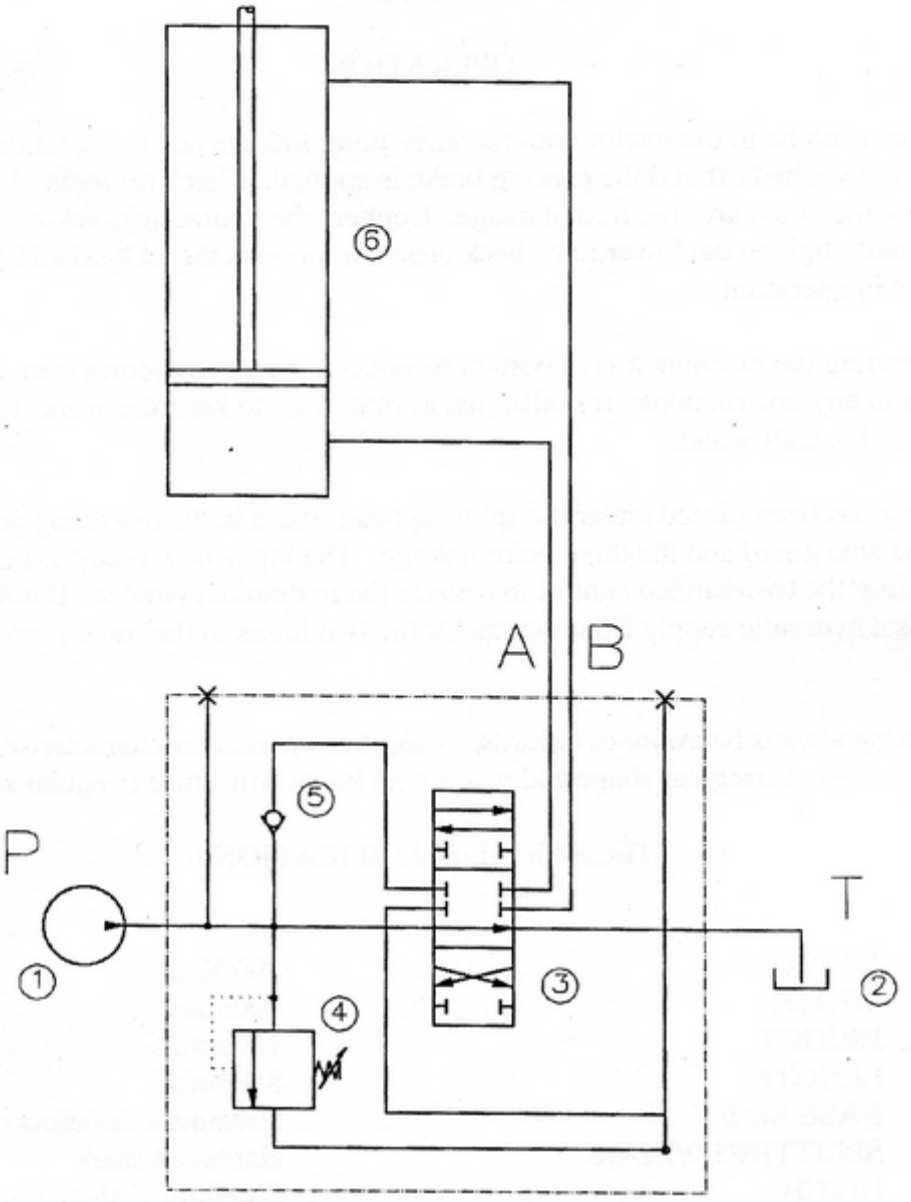






SPECIFICATIONS	
WEIGHT	176 kg
WIDTH	921 mm
HEIGHT	1840 mm
LENGTH	816 mm
BASE SIZE	500 x 442
SPLITTING WEDGE	Boron
HITCH	Cat. 1 & 2
SPLITTING FORCE	10 tonnes
MIN. OIL FLOW	5 gpm
MAX. OIL PRESSURE	300 bar
HYDRAULIC SAFETY	Relief valve
MAX. LOG LENGTH	650 mm
MIN. LOG LENGTH	150 mm
MAX. LOG DIAMETER	700 mm

3.0 Hydraulic Circuit



1	TRACTOR PUMP
2	TRACTOR RESERVOIR
3	DIRECTION CONTROL VALVE
4	PILOT OPERATED RELIEF VALVE
5	ONE WAY CHECK VALVE
6	DOUBLE ACTING CYLINDER

4.0 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.

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.

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).

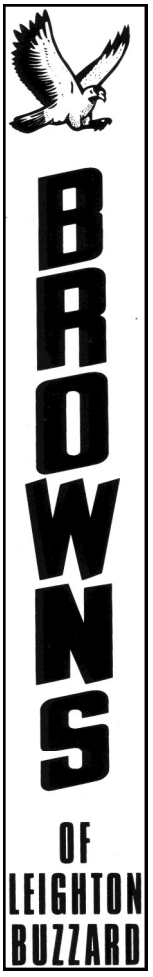
In the process of splitting wood splitters may be ejected. Suitable eye protection must be worn (safety glasses complying with EN166).

Foot protection must be worn to protect feet from falling or dropped logs (complying with EN ISO 20345:2004)

Wearing well fitting and suitable protective gloves may prevent unnecessary injury to hands and fingers . The wedge is a sharp cutting edge.

4.1 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. 80010

Part No. 80003

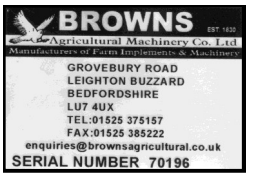
Part No. 80004

Part No. 80062

Part No. 80073

Part No. 80002

Part No. 80076



Serial number required
Before a duplicate can
Be issued.

4.2 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.

5.0 Intended use

The Browns Log splitter is intended to split logs by using hydraulic force to press the log against a fixed base plate using a hardened splitting wedge.

The hydraulic power is from the external tractor services, a pressure feed and a free flowing return is required.

To hold the logs in position the side guard is bent round to prevent lthem from falling off the base plate. It also directs the split wood away from the operator.

The log splitter has a two handed operating lever and has an automatic return for the wedge. Do not leave the operating position until the wedge has come to the end of its travel.

5.1 Operating instructions

Connect the log splitter to the tractor with the three point linkage positions, whilst ensuring that the tractor is switched off and the parking brake applied. Check all hydraulic connections are tight and the hoses are free from damage. Connect the hydraulic quick couplers to the tractor. Finally tighten the lower link check chains to prevent the log splitter moving about while in operation.

Before operating the machine it is important to select a suitable working area, relatively flat and free from any obstructions. It is also just as important to keep the working area free from obstructions, i.e. split wood.

The log splitter is to be operated by one person only using the two handed operating lever whilst stood at the side behind the log splitter guard.

When operating the log splitter always be aware of hazards arising from particular characteristics of wood. For example logs of irregular shape and wood with knots will cause irregular splits.

For operator safety the log splitter is fitted with a safety bar that is mounted above the splitting wedge, when this bar is activated it moves a linkage and put the valve to the neutral position to stop further movement of the wedge, this protects the operator from trapping / crushing hazards which could arise through misuse in the area between the wedge and fixed top frame when the wedge is automatically rising back to the start position. It will also be activated is a log becomes jammed on the wedge.

If a log becomes jammed on the wedge do not intervene. Allow the log to activate the safety stop bar then turn off the tractor to cut hydraulic supply. Knock the log off the wedge then restart the tractor being aware that the wedge will move back to the starting position as soon as hydraulic supply resumes.

Never restart the tractor and hydraulic supply with any person stood by the machine as the automatic wedge return continue as soon as hydraulic supply resumes.

If the log splitter will not operate when connected to the tractor then check if the hydraulic hoses are connected to the correct service on the tractor hydraulics and that the tractor hydraulic system is set to constant pumping. The log splitter need a constant supply of oil through the valve and back to the tractor. If the wedge will not return correctly then check to ensure that there is a completely free flowing return of oil back to the tractor. Any back pressure may effect the operation of the log splitter.

6.0 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 safety devices, parking stands or stay bars if provided.
- If blocking is used, make sure it is solid and secure before leaving area.

7.0 Tightening torques and spanner sizes

Size	Grade 8.8				Grade 10.9				Grade 12.9				Spanner Sizes
	lubricated (1)		dry (2)		lubricated (1)		dry (2)		lubricated (1)		dry (2)		
	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	mm
M6	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5	10
M8	22	16	28	20	32	24	40	30	37	28	47	35	13
M10	43	32	55	40	63	47	80	60	75	55	95	70	17
M12	75	55	95	70	110	80	140	105	130	95	165	120	19
M14	120	88	150	110	175	130	225	165	205	150	260	190	22
M16	190	140	240	175	275	200	350	255	320	240	400	300	24
M18	260	195	330	250	375	275	475	350	440	325	560	410	27
M20	375	275	475	350	530	400	675	500	625	460	800	580	30
M24	650	475	825	600	925	675	1150	850	1075	850	1350	1000	36
M30	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000	46

(1) "lubricated" means that the screws are treated with a lubricant such as engine oil, or that phosphated or oiled screws are used.

(2) "dry" means that normal or galvanized screws without any lubrication are used.

The tightening torques listed above are for reference values. They apply provided that operating instructions do not specify other tightening torques for certain screws or nuts.

8.0 Maintenance

Before operating the log splitter and after prolonged periods of constant use, every four hours of constant operation, the following maintenance should be carried out.

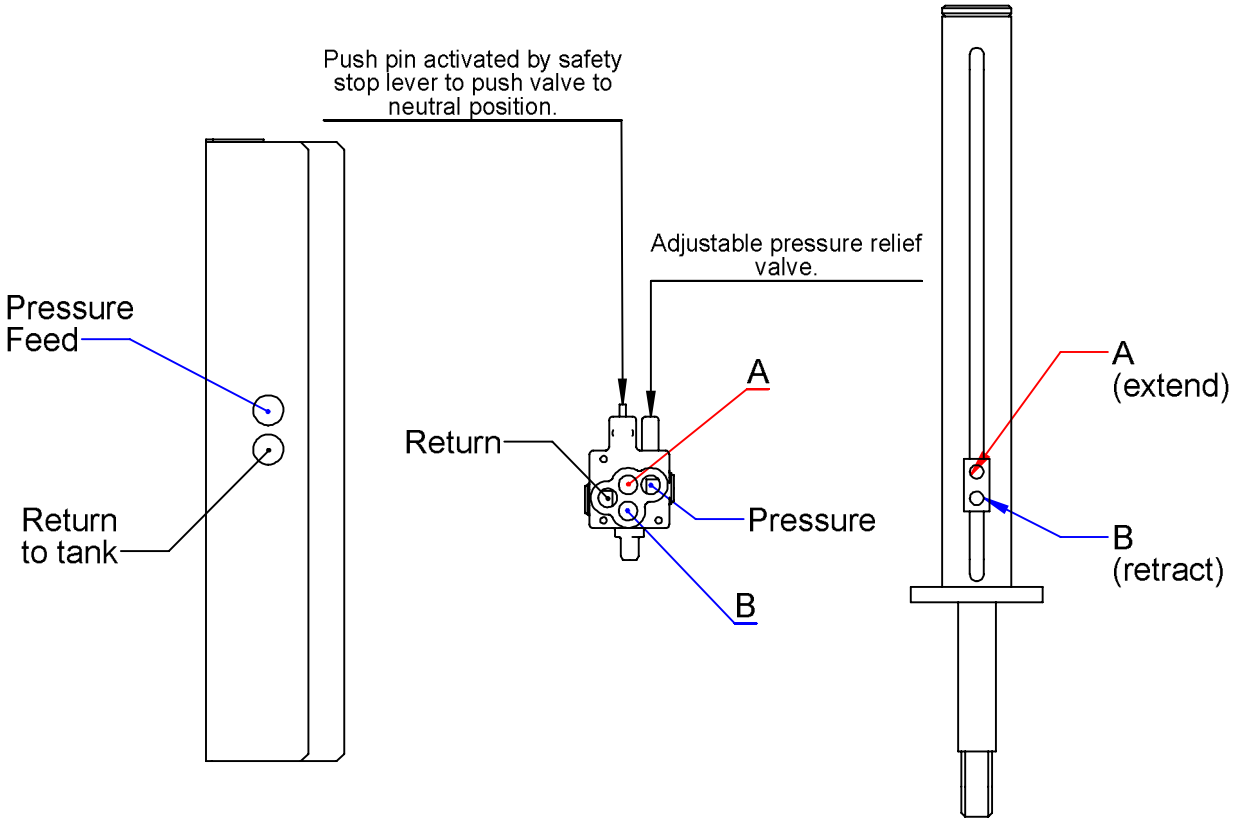
- Check all nuts and bolts are tight (refer to chapter 7.0)
- Lightly grease the beam where the splitting wedge travels.
- Check hydraulic hoses for damage.
- Ensure that all the hydraulic connections are tight with no leaks.

The wedge is produced from hardened steel and if dull or chipped can be sharpened carefully with a grinding disc. Suitable protection must be worn during this process. Safety glass and gloves.

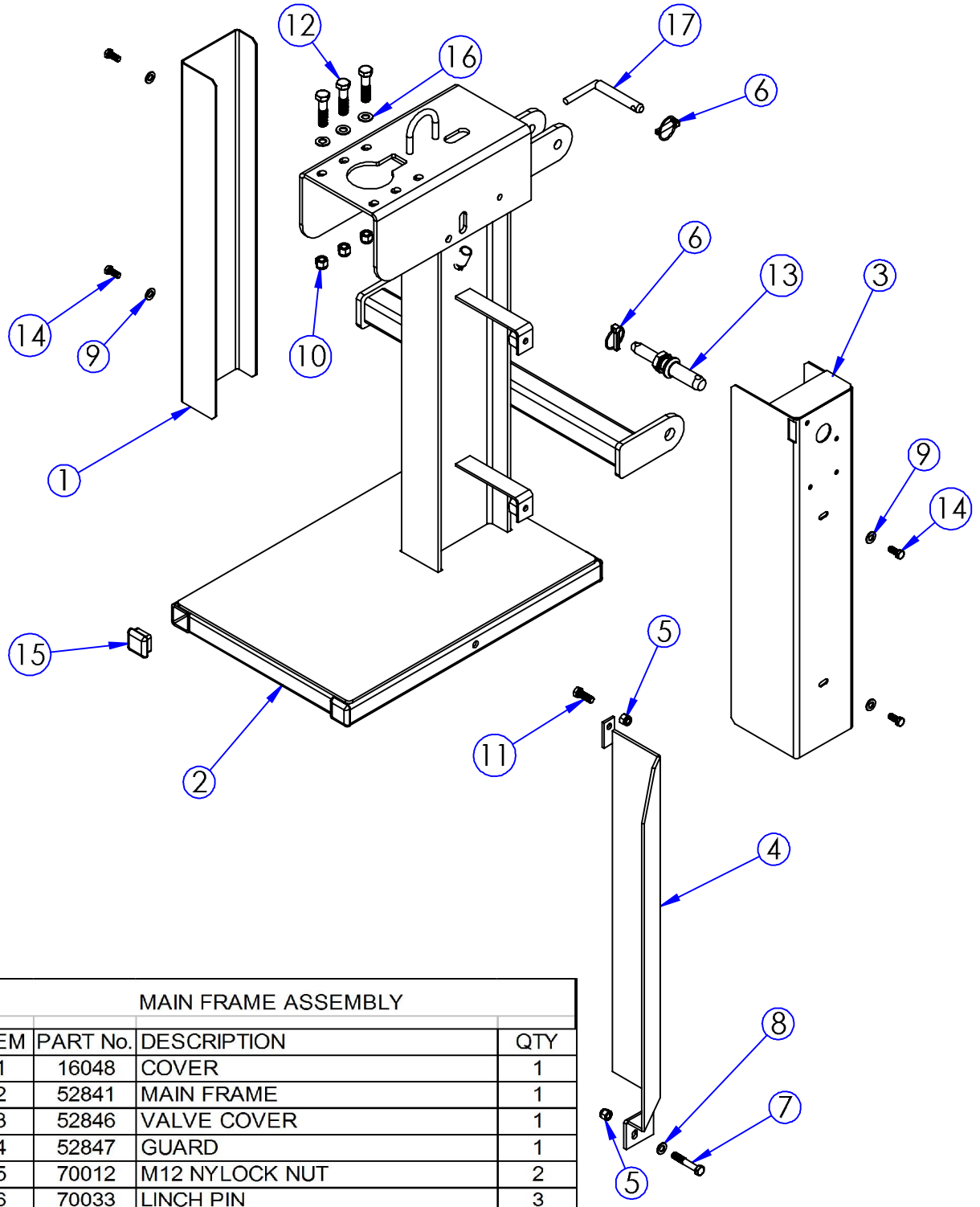
The splitting wedge is a sharp cutting edge, care must be taken when maintaining the log splitter and safety gloves must be worn.

8.1 Hydraulic Connections

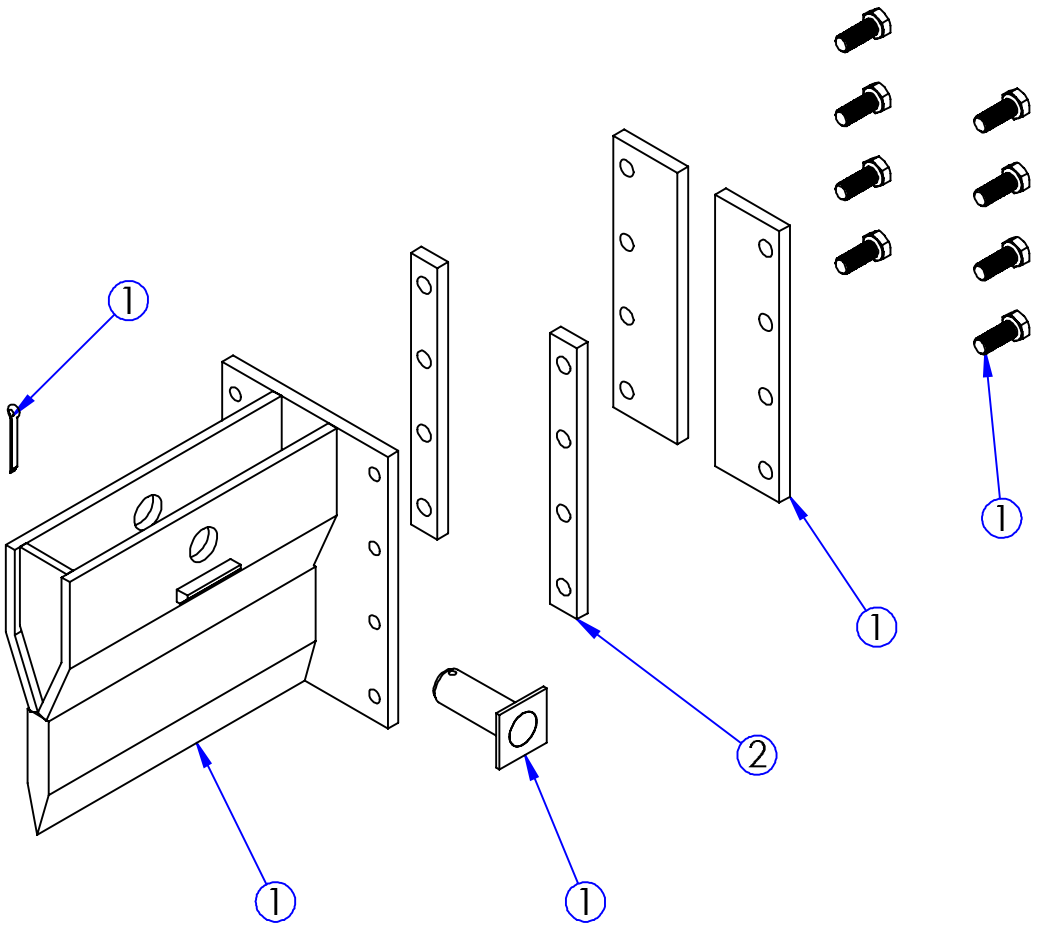
The diagram below shows the hydraulic connections from the tractor through the guard to the valve and then to the hydraulic ram.



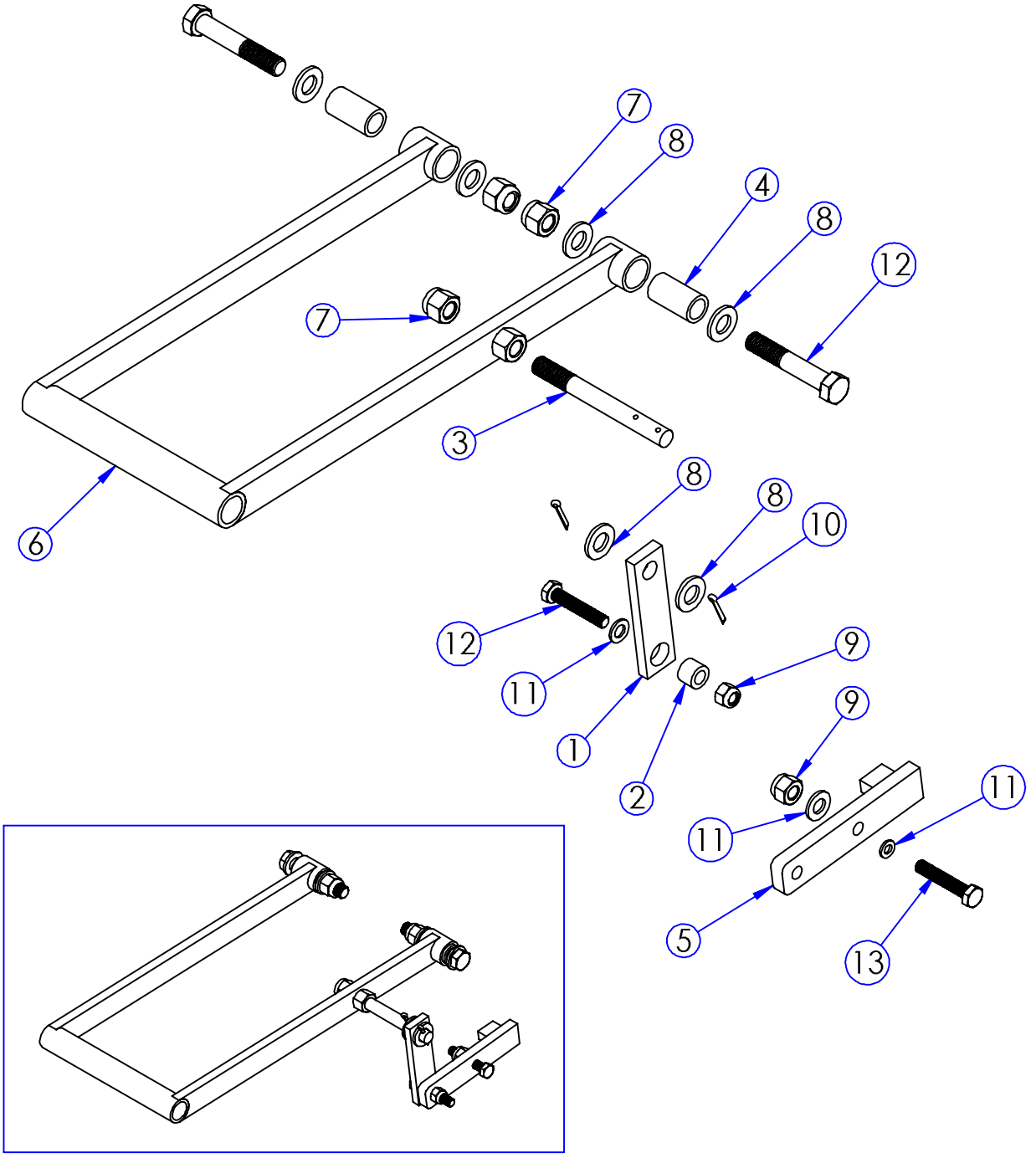
9.0 Spare Parts List



MAIN FRAME ASSEMBLY			
ITEM	PART No.	DESCRIPTION	QTY
1	16048	COVER	1
2	52841	MAIN FRAME	1
3	52846	VALVE COVER	1
4	52847	GUARD	1
5	70012	M12 NYLOCK NUT	2
6	70033	LINCH PIN	3
7	70063	M12 x 75 BOLT (8.8)	1
8	70136	M12 WASHER	1
9	70236	M10 WASHER	4
10	70429	M14 NYLOCK NUT	6
11	70440	M12 x 35 SETSCREW (8.8)	1
12	70469	M14 x 50 BOLT (8.8)	6
13	70660	LOWER LINKAGE PIN	2
14	70752	M10 x 25 SETSCREW (8.8)	4
15	71621	PLASTIC CAP 50x50	4
16	71628	M14 WASHER	6
17	71856	PIN CAT 1 TOP	1

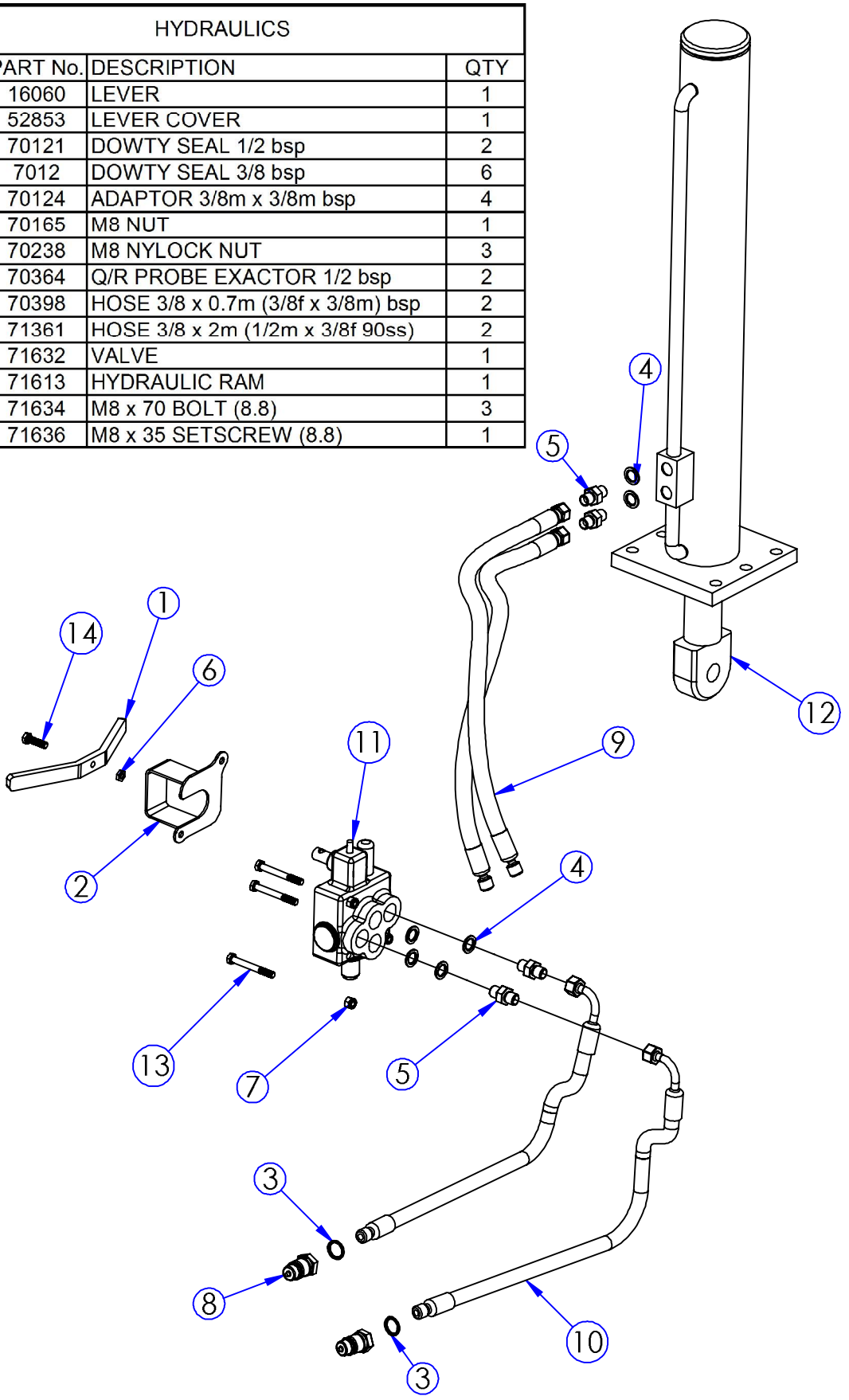


SPLITTER WEDGE			
ITEM	PART No.	DESCRIPTION	QTY
1	16035	BACK PLATE	2
2	16036	SANDWICH PLATE	2
3	52843	WEDGE	1
4	52887	SPLITTER PIN	1
5	70229	M12 x 30 SETSCREW (8.8)	8
6	70540	COTTER PIN 2in x 3/16	1



SAFETY STOP LINKAGE			
ITEM	PART No.	DESCRIPTION	QTY
1	17432	STOP CONNECTOR	1
2	17433	CONNECTOR BUSH	1
3	17434	THREADED CONNECTOR	1
4	17435	SAFETY STOP BUSH	2
5	52851	VALVE STOP	1
6	53412	SAFETY STOP	1
7	70012	M12 NYLOCK NUT	3
8	70136	M12 WASHER	6
9	70238	M8 NYLOCK NUT	2
10	70353	COTTER PIN 1/8 x 3/4	2
11	70438	M8 WASHER	3
12	71308	M12 x 70 BOLT (8.8)	2
13	71641	M8 x 45 SETSCREW (8.8)	2

HYDRAULICS			
ITEM	PART No.	DESCRIPTION	QTY
1	16060	LEVER	1
2	52853	LEVER COVER	1
3	70121	DOWTY SEAL 1/2 bsp	2
4	7012	DOWTY SEAL 3/8 bsp	6
5	70124	ADAPTOR 3/8m x 3/8m bsp	4
6	70165	M8 NUT	1
7	70238	M8 NYLOCK NUT	3
8	70364	Q/R PROBE EXACTOR 1/2 bsp	2
9	70398	HOSE 3/8 x 0.7m (3/8f x 3/8m) bsp	2
10	71361	HOSE 3/8 x 2m (1/2m x 3/8f 90ss)	2
11	71632	VALVE	1
12	71613	HYDRAULIC RAM	1
13	71634	M8 x 70 BOLT (8.8)	3
14	71636	M8 x 35 SETSCREW (8.8)	1



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.

12.0 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.

12.1 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.