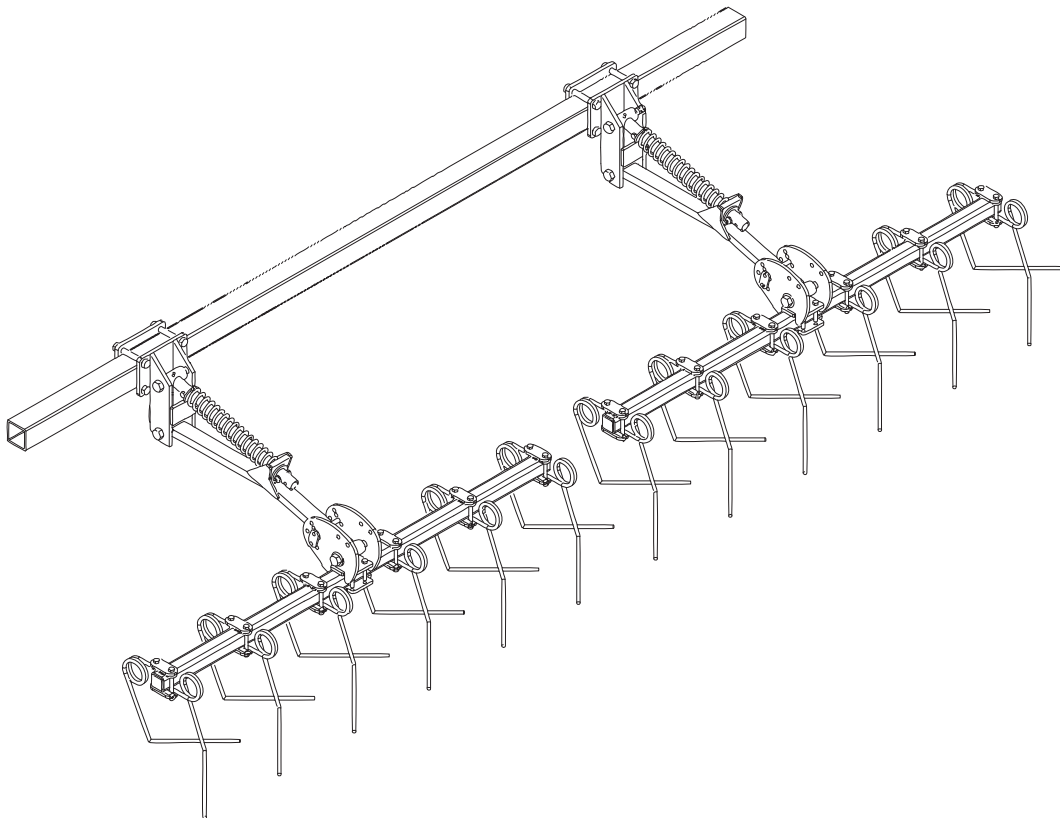


Owners Manual



Tine Harrow

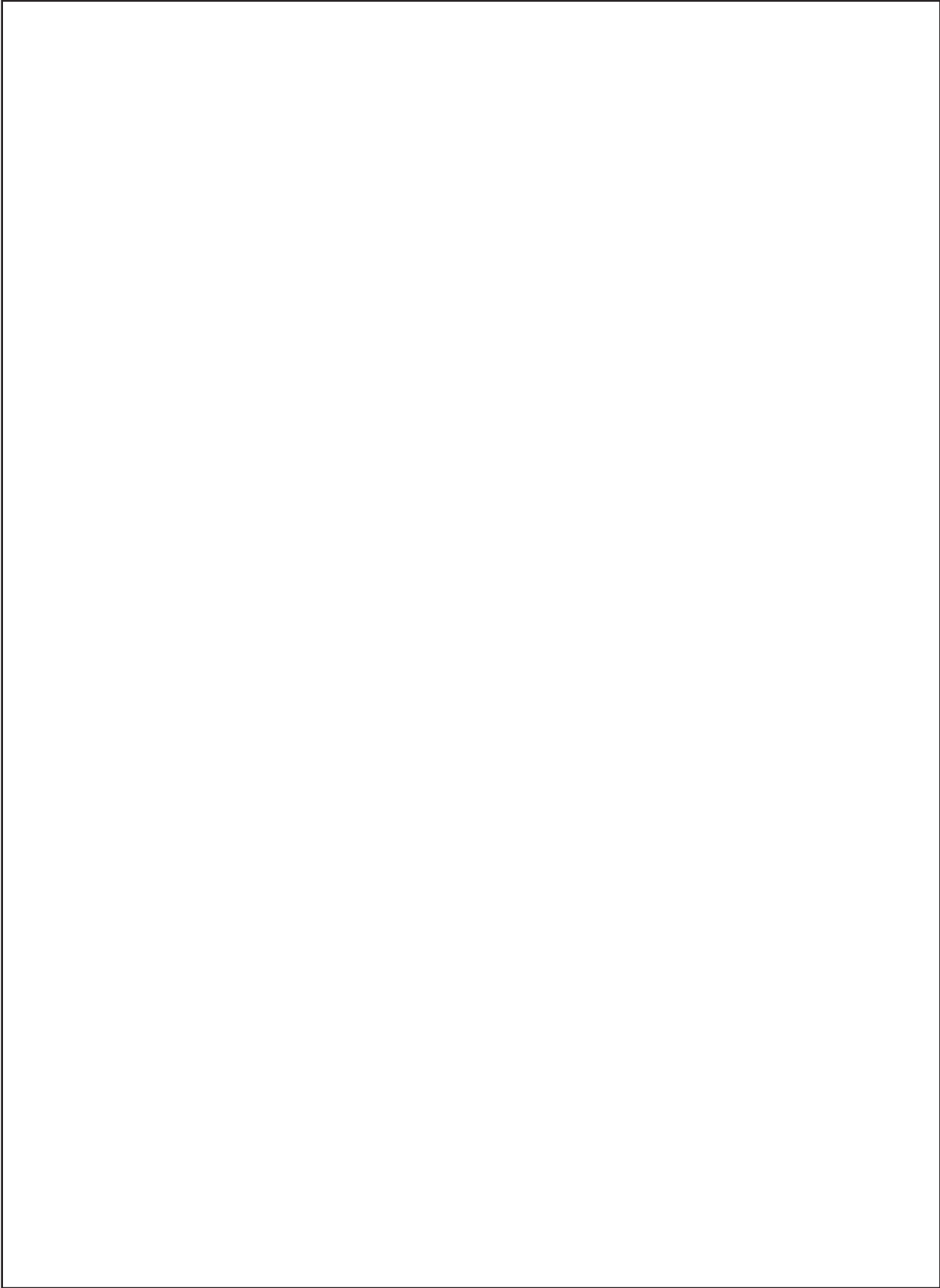


Built to work.

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Introduction

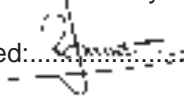
Acquisition & Warranty

On delivery of your new Duncan Tine Harrow please check that the machine is not damaged. In cases of shipping damage, please ask your dealer to arrange for the appropriate claim to be lodged immediately. Assemble any parts supplied loose and inspect your machine with the aid of this manual to familiarise yourself with its features. If you have any queries ask your dealer straight away. The machine is covered by our 12 month warranty on faulty parts, subject to normal use.



Record below the serial number of your machine and keep it in a secure place to help trace the machine and assist us when you order parts.

Model:
Serial No:
Owner:
.....
.....
Delivery Date:
Dealer:
.....
.....

This Document contains the Original Operating Instructions for this machine and are verified by the Manufacturer.
Signed:..... 
Product Development Manager

The Owner's Manual

Your new Duncan Tine Harrow will give long and efficient service if given normal care and operated properly.

This owner's manual is provided so that you can become thoroughly familiar with the design of the machine and to furnish information on correct operation, adjustment and maintenance. **Only persons well acquainted with these guidelines should be allowed to use the equipment.**

A separate illustrated parts section has been provided so that if any parts are required your dealer will be able to supply them by reference to part numbers.

The manual is considered as part of your machine and must remain with the machine when it is sold.

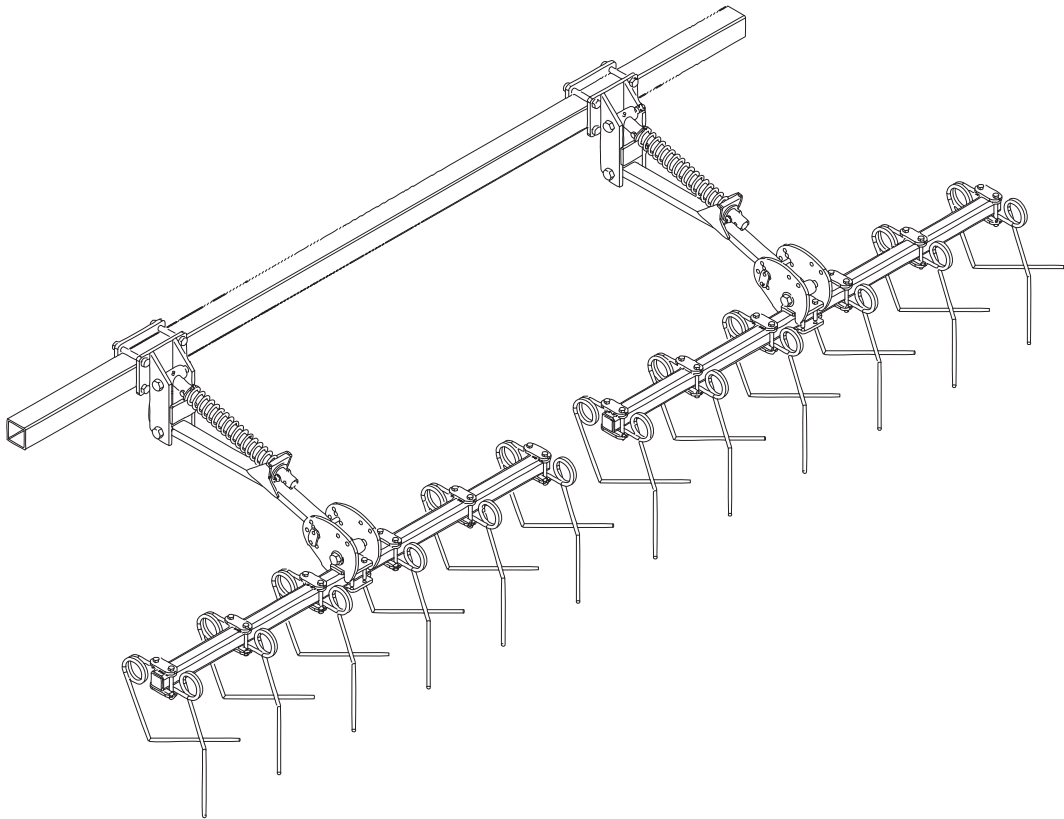
Right and left hand references in this manual are determined by standing behind the machine and facing in the direction of travel.

Disclaimer Every effort has been made to ensure that the information in this manual was accurate and up to date at the time of going to press. Clough Agriculture reserves the right to make subsequent changes to the machine, where necessary, without notification. The Company will not be responsible for any damage or consequential loss arising out of misinterpretation or failure to follow recommended procedures. Nor will it be liable for any damage caused by or arising out of modification or misuse of its product. The owner has a responsibility to protect himself and others by observing all safety information and by ensuring all operators are well acquainted with the safety information, trained in the correct use of the machine and applying safe work practices.
--

Features of Machine

Adjustable tine pitch
Raises up and down with drill
Adjustable spring tension
Powder coated finish
Adjustable transport/work position
Replaceable tines

Dimensions	2.4m	3.0m	3.5m
Overall Width/mm	2400	3000	3500
Working Width/mm	2400	3000	3500
Weight /kg	64	90	110





ATTENTION

On the machine important safety information is indicated by these symbols. These highlight general safety aspects in regard to the machine rather than specific hazards.



NO RIDE

Do not ride or allow passengers on the machine.

Under no circumstances are passengers to be permitted on the machine while it is in operation or being transported. Any footboards and/or footsteps are provided solely for the purpose of preparing the machine for use.



**Pinch Points
Moving Parts**

Keep clothing and body extremities well clear of pinch points while the machine is operating (seeding or calibrating). Keep well clear of moving parts at all times.

These signs typically occur wherever trapping points exist. These include drive chains, sprockets, shafts, wheels, discs, pivot points, etc. Guards are provided with the machine for safety reasons (where practical without compromising machine performance). Ensure these are always fitted during operation.



**Sharp
Points**

Always exercise extreme caution in the vicinity of sharp edges and points.

Where possible guards are provided with the machine for safety reasons (where practical without compromising machine performance). Ensure these are always fitted during operation.



**Slippery
When
Wet**

Footboards, footsteps, drawbars and other machine surfaces may be slippery when wet.

Apply extra caution in wet conditions and in the early morning when surfaces are wet.

KEEP CLEAR

Keep Clear. (It is dangerous to be in this area when the machine is operating.)

SAFETY - General

N.B. Throughout this manual important safety information is indicated by these symbols in the margin:



A prohibition should be observed under all circumstances.



A warning indicates a hazard that could cause death or injury if the warning is ignored.



A caution indicates a hazard that may cause damage to property if the caution is ignored.

This section of the manual offers general guidelines for the safe operation of machinery. It does not replace local safety regulations. These guidelines were current at the time of publication, but may be superseded by later regulations.

Clough Agriculture has made every effort to highlight all risks to personnel or property. Owners and operators have a responsibility to exercise care and safe work practices at all times in the vicinity of the machine.

Owners are advised to keep up to date on safety issues and to communicate these to all users of the machine.

Contact the Occupational Safety and Health Service (OSH) for further information about general safety aspects. If you have safety concerns specifically related to this machine, contact your dealer immediately.

Operator Safety

Read this manual carefully before operating new equipment. Learn how to use this machine safely. Be thoroughly familiar with the controls and the proper use of the equipment before using it.

Take careful note of all safety instructions both in this manual and on the machine itself. Failure to comply with instructions could result in personal injury and/or damage to the machine.

Replace missing or damaged safety signs on the machine and ensure that these remain clearly visible.

It is the owner's responsibility to ensure that anyone who operates, adjusts, lubricates, maintains, cleans or uses the machine in any way has had suitable instruction and is familiar with the information in this manual (particularly with regard to safety aspects).

Operators and other users of the machine should be aware of potential hazards and operating limitations.

Be Prepared for Emergencies

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance, hospital and fire department near your telephone.



SAFETY - General (Continued)



Appropriate Dress

Wear close fitting clothing and avoid rings or other forms of jewellery which could become caught in the machinery.

People with long hair must have it securely fixed and confined close to the head.

Refer to local safety standards for protective clothing and recommended safety equipment.



Transport This Machine Safely

Ensure that all linkage pins and security clips are fitted correctly. With trailing machines tow with the drawbar only, as this is the only safe towing point on the machine.

Always check that bystanders (especially children) are well clear (front and rear) before starting and moving the tractor and the machine.

Plan safe routes of travel, and be aware of power lines and other roadside hazards. Take particular care when towing implements on hillsides.

Do not ride or allow passengers on the machine.

This machine is not designed to carry passengers, and no riders are permitted.

Road transport

On public roads,

- A speed of 40km/h must not be exceeded.
- Do not operate during the hours of darkness unless standard lights are fitted and clearly visible. (This also applies when visibility is limited, e.g., in foggy conditions.)

See the guidelines in the *Vehicle Dimensions and Mass Rule*, issued by the Land & Transport Safety Authority.

Avoid tip-overs

Avoid holes, ditches and obstructions which may cause the machine to tip over, especially on hillsides. Never drive near the edge of a gully or steep embankment - it might cave in. Slow down for hillsides, rough ground and sharp turns.



SAFETY - General (Continued)

Handle Agricultural Chemicals Safely

All farm chemicals should be stored, used, handled and disposed of safely and in accordance with the supplier's/manufacturer's recommendations.



Read the product label before using, noting any warnings or special cautions, including any protective clothing or equipment that may be required, ie. respirator.

Do not eat or smoke while handling sprays, fertilisers, coated seeds, etc. Afterwards, always wash your hands and face before you eat, drink, smoke, or use the toilet.



Store sprays, fertilisers, coated seeds, etc. out of reach of children and pets, and away from food and animal feeds.

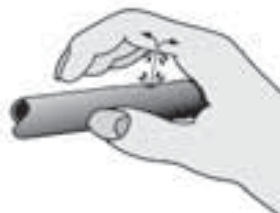
Any symptoms of illness during or after using chemicals should be treated according to the supplier's/manufacturer's recommendations. If severe, **call a physician or get the patient to hospital immediately.** Keep the container and/or label for reference.

Avoid High Pressure Fluids

Avoid any contact with fluids leaking under pressure, because the fluids can penetrate the skin surface.



Any fluid which penetrates the skin, will need to be **removed immediately by a medical expert.** Seek specialist advice on this type of injury.



Relieve the pressure before disconnecting any hydraulic or other lines. Make all repairs and tighten all fittings before re-connection to pressurised fluid.

Keep your hands and body away from any pinholes or high pressure jets. Search for leaks with a piece of cardboard instead of using your hand directly.

Safe Work Practices

All farm machinery is potentially dangerous and should be treated with caution and respect.



Before starting the machine, ensure that all controls are placed in neutral and that bystanders are well clear. Check that the guards have been securely fitted and that any adjustments have been made correctly.

Where possible, disconnect or isolate the drive mechanism to the implement. Lower the machine onto the ground when not in use.

SAFETY - General (Continued)



Practise Safe Maintenance

Keep the machine in safe working condition. Routine maintenance and regular servicing will help reduce risks and prolong the life of the machine.

General Maintenance

Accidents occur most frequently during servicing and repair. The following general rules must be followed when maintaining or working with machinery:

- All operating and maintenance manuals must be read before and referred to while using or servicing any piece of equipment.
- Turn off all machinery power sources and isolate the machine before making adjustments, doing lubrication, repairs or any other maintenance on the machine.
- Ensure that the machine hydraulics are disconnected from the power source.
- Wear gloves when handling components with cutting edges, such as any ground cutting components.
- Beware of hazards created by springs under tension or compression when dismantling or maintaining the machine.
- It is recommended that you clean the machine with a water blaster or similar apparatus before commencing maintenance.

Make Sure the Machine is Well Supported

When machinery is fitted with hydraulics, do not rely on the hydraulics to support the machine. During maintenance or while making adjustments under the machine, always lock the hydraulics and support the machine securely. Place blocks or other stable supports under elevated parts before working on these.



Electrical Maintenance

Disconnect the electrical supply from the tractor before doing any electrical maintenance.



Welding

With electronic equipment in modern tractors it is advisable to disconnect the machine from the tractor, or at least disconnect the alternator and battery before attempting any welding.



Use Only Genuine Spare Parts

Unauthorised modifications or non-genuine spare parts may be hazardous and impair the safe operation and working life of the machine.

Excess lubricants must be disposed of safely so as not to become a hazard.

SAFETY - Machine Specific

This section of the manual gives specific guidelines for the safe operation of the Tine Harrow.

These guidelines were current at the time of publication, but may be superseded by later circumstances. They do not necessarily cover every possible hazard and must be read in conjunction with the **SAFETY - General** section.

Hazard Points on the Tine Harrow

The lists below are not all-inclusive and serve only to highlight the more obvious areas of risk.



The decals attached to the machine are a general reminder that there are hazardous areas on the machine, rather than specifically highlighting all possible hazards.



No Ride

Passengers are not permitted anywhere on the machine.



Pinch Points/Moving Parts



Slippery
When
Wet

Slippery When Wet

Hazardous areas include:

- All smooth surfaces on the frame structure.



Keep Clear

Hazardous areas include:

- Immediately adjacent to the Tine Harrow side.

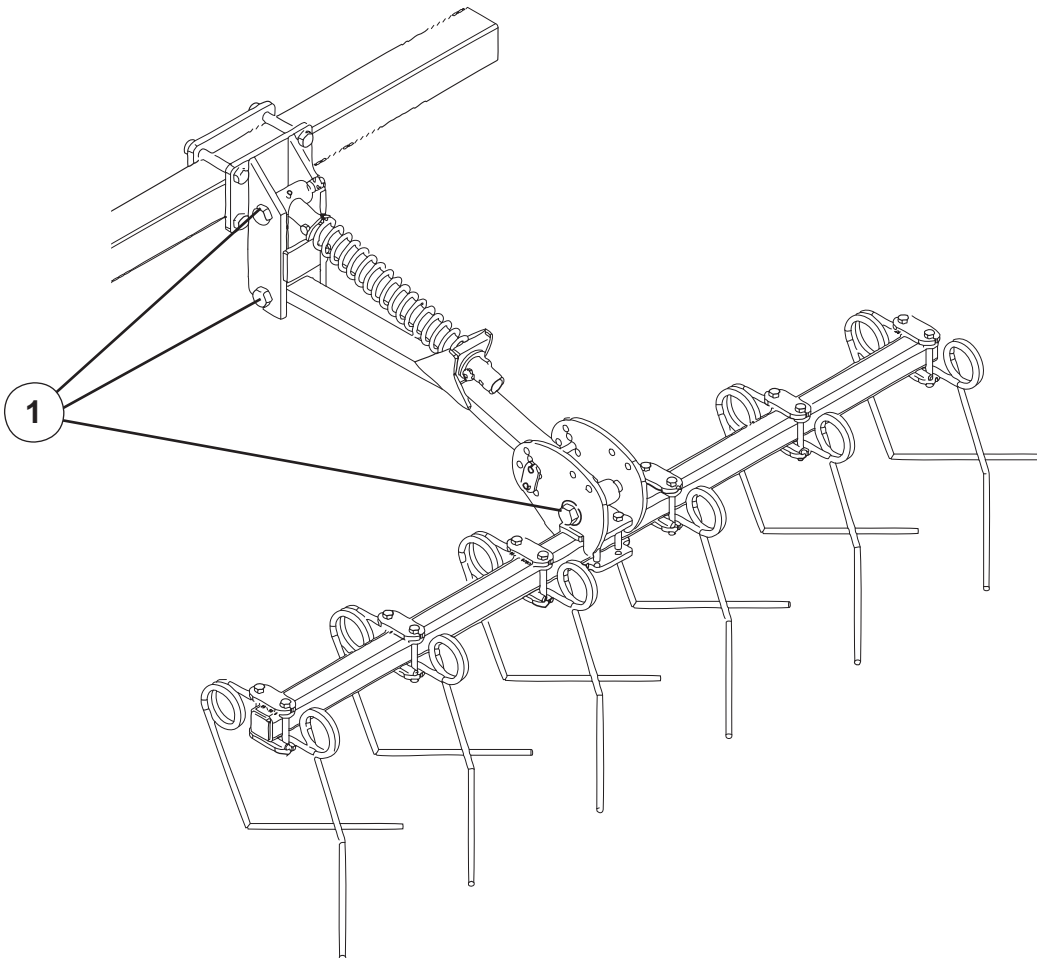
Maintenance & Care - Lubrication Instructions

Precautions with Grease

Greases should not be mixed as the structure may be weakened by the mixes of different types of thickener, which may cause softening and loss of grease from the bearings by running out.



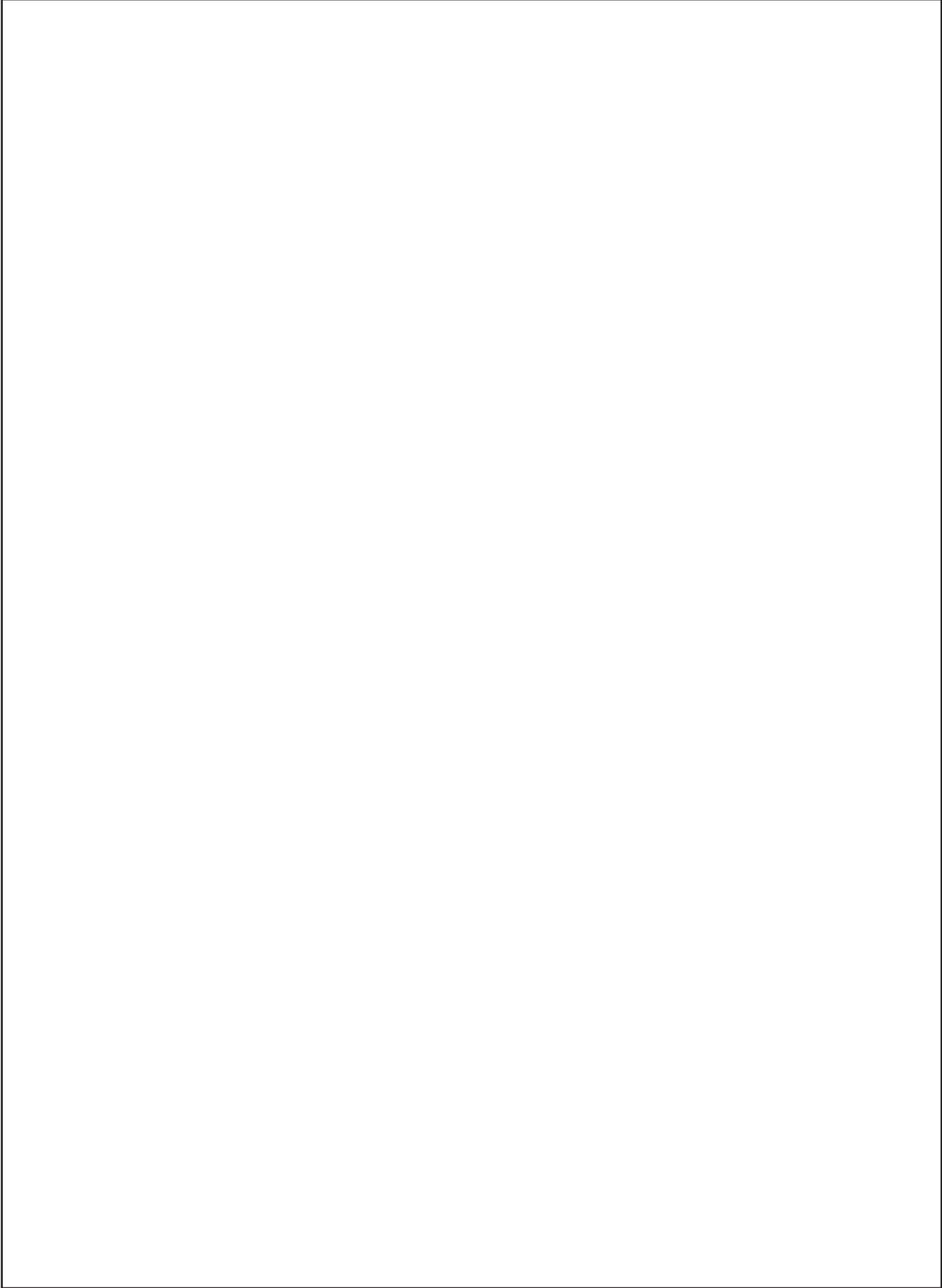
Your new Duncan Tine Harrow will give long and efficient service if given normal care and maintenance.

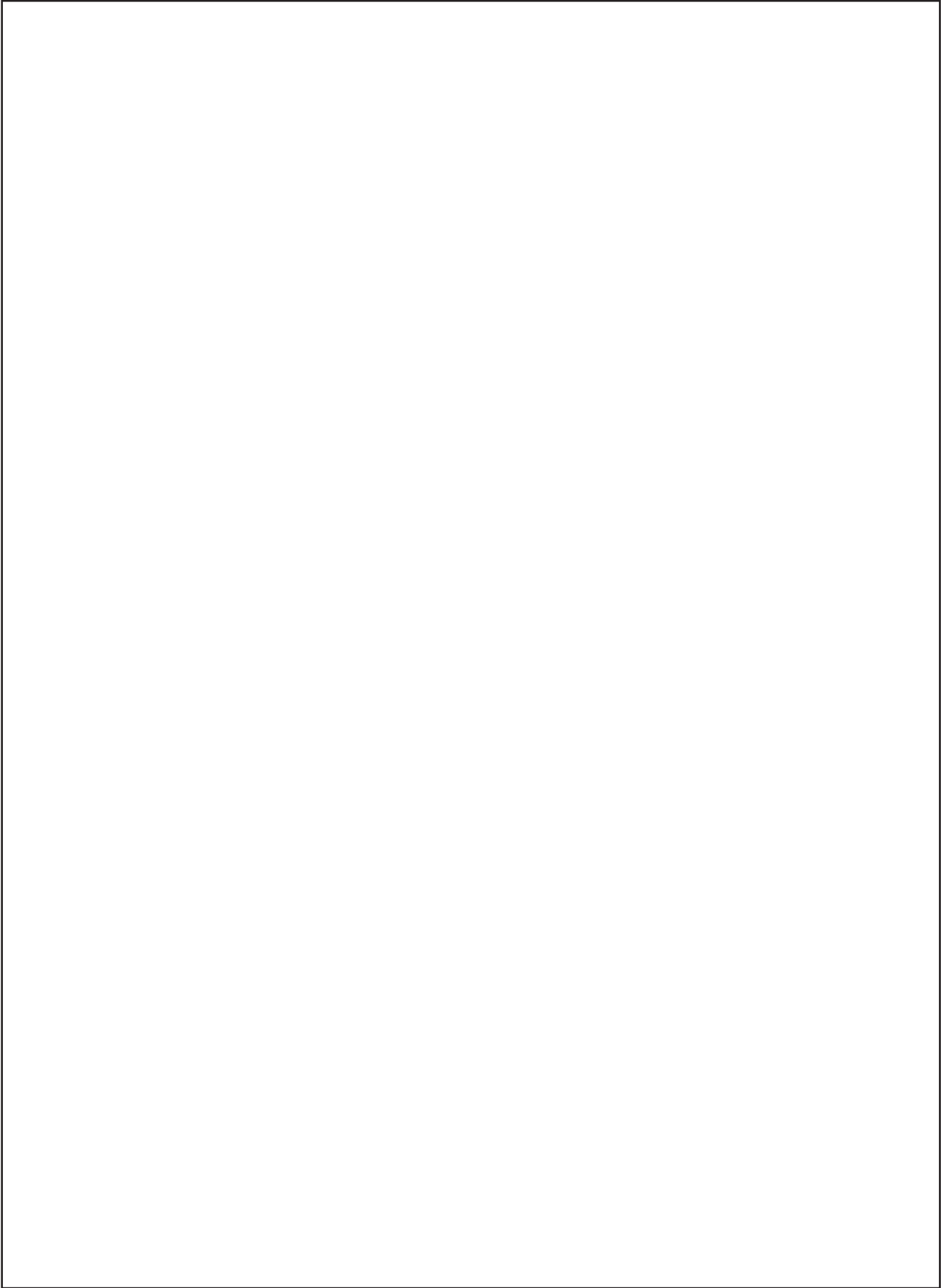


Lubrication Chart

Item	Components	Lubricant	Frequency
1	Pivot Points	Castrol MP Grease	Weekly

* The lubrication frequencies are only a guide. Actual frequency will be dependent on extent of use and ground conditions.

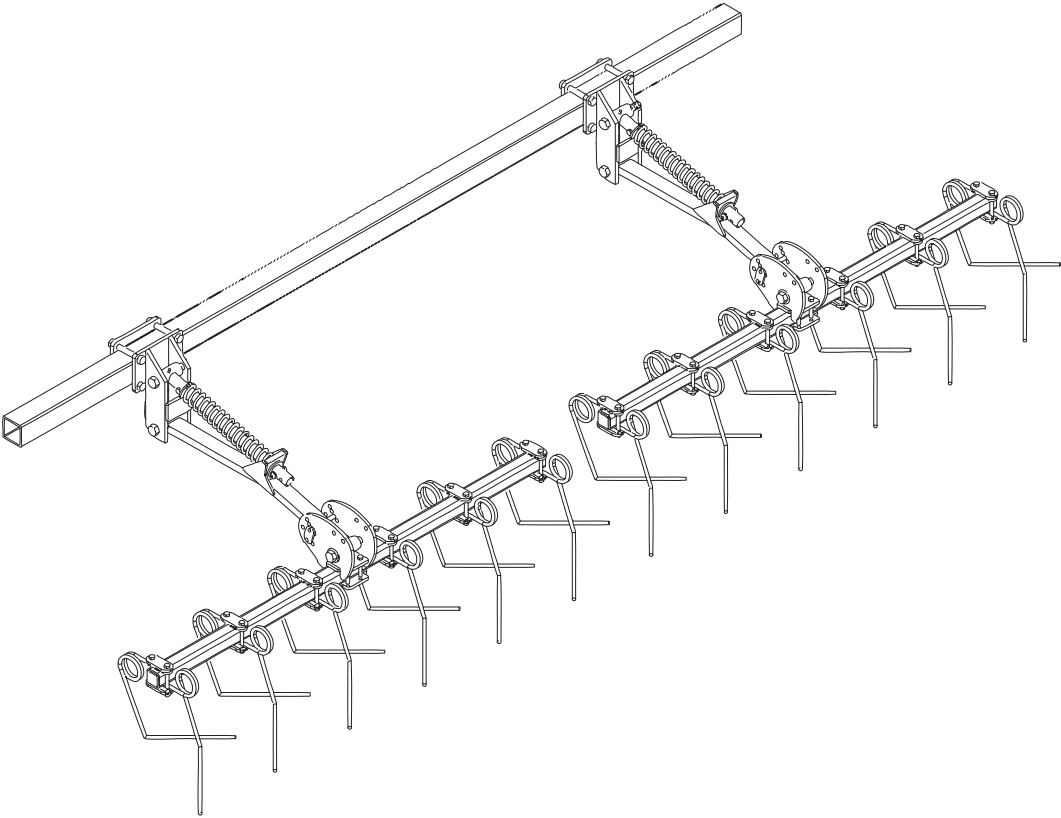




Parts List



'Tine Harrow'

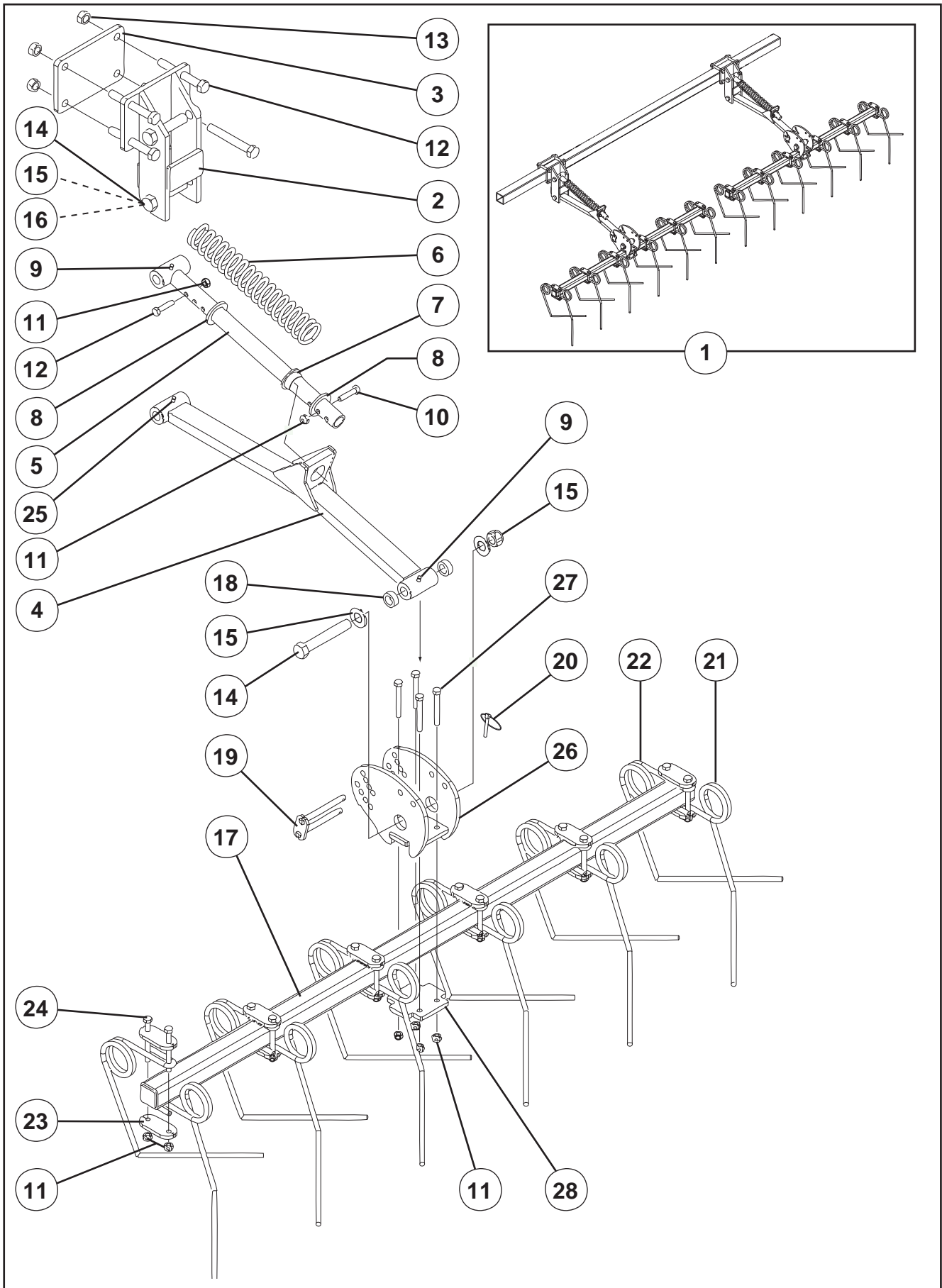


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'Renovator' Tine Harrow (Optional)



‘Renovator’ Tine Harrow (Optional)

ITEM	PART No.	DESCRIPTION	QTY
1	See Below	Tine Harrow for MK4 Renovator	1
2	60426	Tine Harrow Strut W/Assy	2
3	60428	Strut Bolt Plate	2
4	60430	Swinging Arm W/Assy	2
5	60435	Guidingbar W/assy	2
6	60437	Levelling Harrow Spring	2
7	60438	Guiding bar Bush	2
8	60439	Guiding Spacer	4
9	43118	Grease Nipple Straight	2
10	45006	M10 X 45 Gr 8.8 bolt Z/P	4
11	45138	M10 Nyloc Nut	36
12	45050	M16 X 120 Gr 8.8 bolt Z/P	8
13	45140	M16 Nyloc Nut	8
14	45073	M20 X 130 Gr 8.8 bolt Z/P	6
15	45161	M20 HD flat washer Z/P	4
16	45141	M20 Nyloc Nut	6
17	See Below	Levelling Harrow Bar W/Assy	2
18	60440	Swinging Bracket Spacer	4
19	60441	Levelling Harrow Pivot Pin W/Assy	2
20	43675	1/4" x 1 1/2" Lynch Pin	2
21	60255	Levelling Harrow Tine -LH	12
22	60256	Levelling Harrow Tine -RH	12
23	60422P#	Double Retaining Plate Profile	24
24	45016	M10 X 100 Gr8.8 Bolt Z/P	24
25	43120	Grease Nipple 90°	2
26	60421	Tine Harrow Bracket	2
27	45013	M10 x 80 Gr 8.8 bolt Z/P	8
28	60420	Harrow Bar Clamp Plate	2

PART NUMBER FOR DIFFERENT WIDTH MACHINES

ITEM	DESCRIPTION	16R/21R 3.0m	24R 3.0m	20R/24R 3.5m	28R 3.5m
1	Tine Harrow Complete	RFT30		RFT35	
19	Harrow Bar Welded Assy	60423		60424	