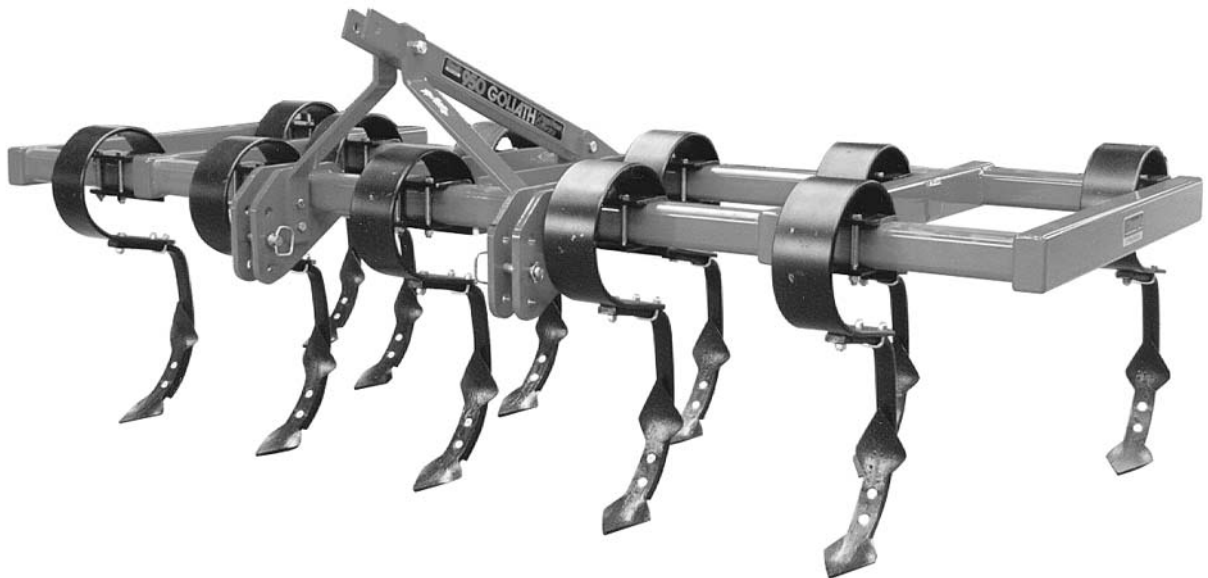


Owners Manual



950 Goliath Chisel Plough



Built to work.

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Introduction

Acquisition & Warranty

On delivery of your new Duncan Goliath Chisel Plough, 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:
.....
.....

The Owner's Manual

Your new Duncan Goliath Chisel Plough 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.



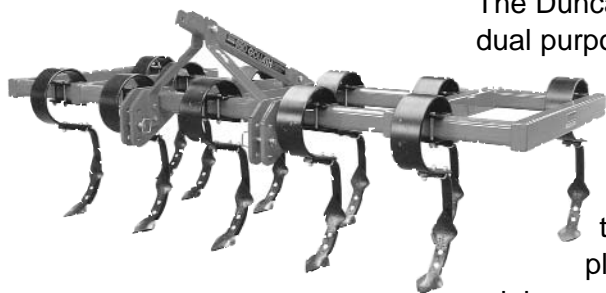
Disclaimer

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.

Description of Machine



The Duncan 950 Goliath Chisel Plough is a heavy duty dual purpose implement that not only handles really bony ground with boulders and roots, but also has the shattering effect of a lighter cultivator or grubber. It is equally at home in the good going, where ground conditions or the elements do not allow for conventional ploughing. The Duncan 950 Goliath, with minimum passes, will till the soil fine enough for final light harrowing with an S Tine Harrow and sowing down. The 950 Goliath has the ability to go deep down and also has a pan-busting affect on compacted ground.

Features

- ▶ **Devastating soil action**
- ▶ **Unique German designed tines**
- ▶ **Flexible steel spring tine attachment**
- ▶ **Heavy duty box section main frame**
- ▶ **Replaceable and reversible tine points**
- ▶ **Model with optional depth wheels**

Size Options

Tine	Width
7 Tine	2.22m
9 Tine	2.82m
11 Tine	3.43m
13 Tine	4.04m
15 Tine	4.65m



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.



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.



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.



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.



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)



WARNING

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.



WARNING

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 *Vehicle Dimension and Mass Rule*, issued by the Land and 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/manufacture'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.

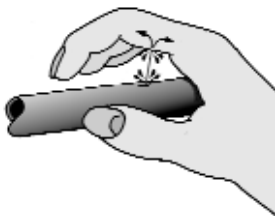
Any symptoms of illness during or after using chemicals should be treated according to the supplier's/manufacture's recommendations. If severe, **call a physician or get the patient to hospital immediately.** Keep the container and/or label for reference.

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 gives specific guidelines for safe operation of the 950 Goliath.

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 with the **SAFETY - General** section (Pages 4-8).

Hazard Points on the Goliath

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, rather than specifically highlighting all possible hazards.

No Ride

Passengers are not permitted anywhere on the machine



NO RIDE

Slippery When Wet

Hazardous areas include all smooth surfaces on the frame structure.



Slippery
When
Wet

Keep Clear

Hazardous areas include:

- ✓ Between the tractor and the plough.
- ✓ Immediately adjacent to the sides of the plough.
- ✓ The rear of the machine.

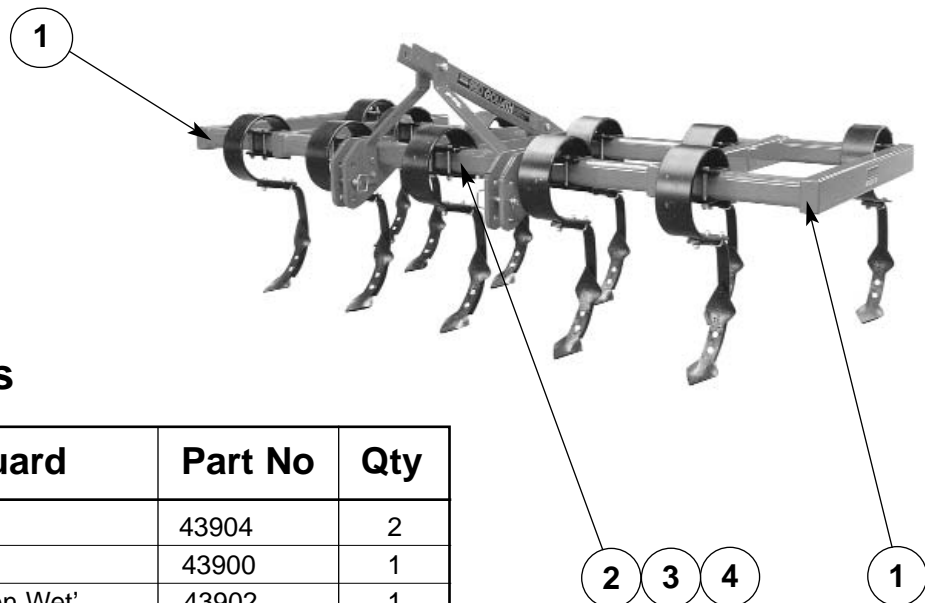
KEEP CLEAR

Sharp Points

Hazardous areas include all tine points.



Sharp
Points



Safety Decals

Item	Decal/Guard	Part No	Qty
1	'Keep Clear'	43904	2
2	'No Ride'	43900	1
3	'Slippery When Wet'	43902	1
4	'Sharp Points'	43903	1

Transport



- 1 Raise the three point linkage as high as possible to maximise ground clearance. Ensure that ground clearance is sufficient.
- 2 Ensure that all linkage pins and security clips are fitted and operate correctly.
- 3 Ensure lighting and oversize warning requirements meet recommendations published by the Land Transport Authority or equivalent.
- 4 Ensure vehicle requirements are adequate for the linkage machine, e.g. mass, brakes. Refer to the recommendations published by the local Land Transport Authority or equivalent.

Operation

General Guidelines

- 1 Use a sufficiently powerful tractor which is heavy enough to operate the machine safely.
- 2 Typical travel speeds when cultivating range from 6 - 10km/hr in good conditions. Slower speeds may be more suitable in less ideal conditions.
- 3 Check that the cultivator is level during cultivation.
- 4 Raise the cultivator out of the ground before turning, to prevent tine breakages and excess stress on the framework.
- 5 **Recommended Hp.**
Tillage results will be affected by the Hp. The figures here are guidelines only, and will depend on ground conditions.

Recommended Hp		
2.22m	7 Tine	90
2.82m	9 Tine	110
3.43m	11 Tine	135
4.04m	13 Tine	160
4.65m	15 Tine	180



Caution

Using a tractor with excessive Hp can overload the framework.

Maintenance & Care



General Safety and Accident Prevention

- 1 Make sure that if the tractor remains attached to the drill that the ignition key is removed.
- 2 During maintenance the implement should be supported in such a manner that if hydraulic failure was to occur the machine would still be adequately supported.
- 3 Wear gloves when handling components with cutting edges such as worn discs.
- 4 Disconnect the electrical supply from the tractor before doing any electrical maintenance.
- 5 Refer to safety sections for more safety information.



1 Electric Welding

With the electronic equipment in modern tractors and on implements, it is advisable to completely disconnect the implement from the tractor, or at the very least disconnect the alternator before attempting any welding.



2 Hydraulics

Ensure hydraulic couplings (male and female) are clean before connecting. Dirty couplings will result in hydraulic oil contamination, hydraulic cylinder seal damage and bore scores. This in turn will result in oil leakage past the piston seals.

No filter is fitted to the hydraulic system. If hydraulic fittings and oil supply are not going to be kept clean it is recommended that a filter be fitted to prevent hydraulic cylinder damage.



3 Water Blasting

Water blasting, steam cleaning or other pressurised cleaning processes can force dirt etc. into undesirable places that may cause damage or rapid part wear to items such as bearings, seals, chains, bushes. Caution must be exercised.

Maintenance & Care (Continued)

Your new Goliath Chisel Plough will provide long and efficient service if given normal care and maintained properly.

Maintenance Schedule

1 Bolted Connections

All bolted connections on the machine should be checked after the first use (or 50Ha) and retightened if necessary. Thereafter, check the connections at regular intervals to minimise equipment damage and accidents resulting from loosening of the fasteners. It is suggested that this check is done annually or after every 500Ha (whichever occurs first).

2 S Tines and Tine Points

Prior to daily operation, check that all tine clamps and points are tight.

3 Framework

The framework structure should be inspected annually for defects, i.e. cracks in members or welded connections. The framework should be cleaned prior to inspection.

Schedule Summary

Components	Daily (or after 50Ha)	Weekly (or after 250Ha)	Annually (preseason)
S Tines & Points	●	●	●
Bolted Connections		●	●
Framework			●

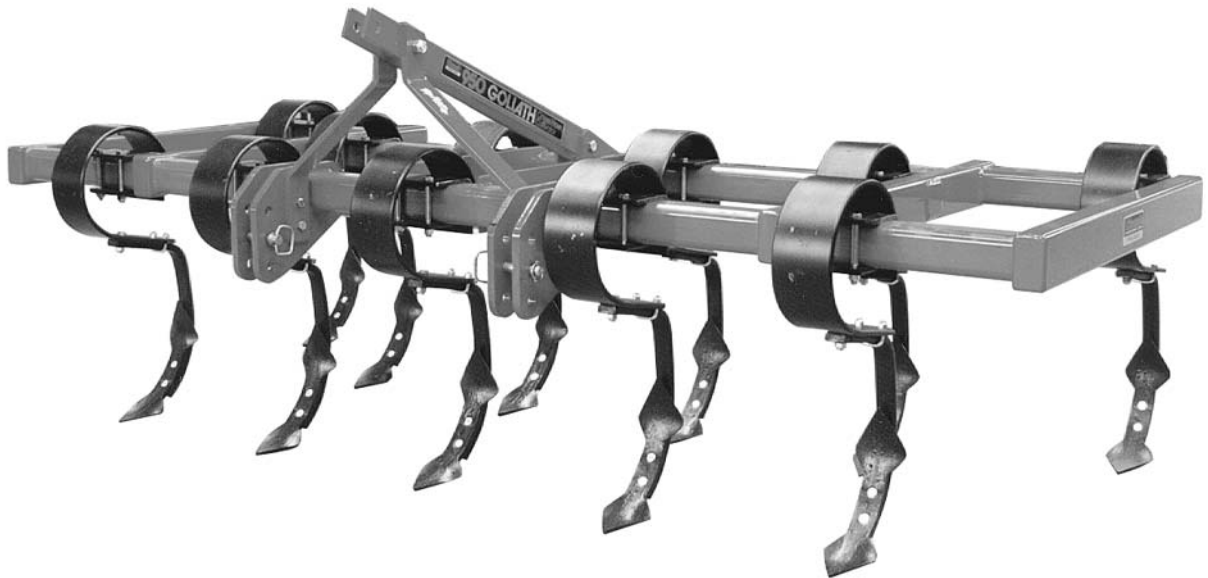
Storage

Before long-term storage, water blast the machine and remove mud and excess soil.

Parts List



950 Goliath Chisel Plough

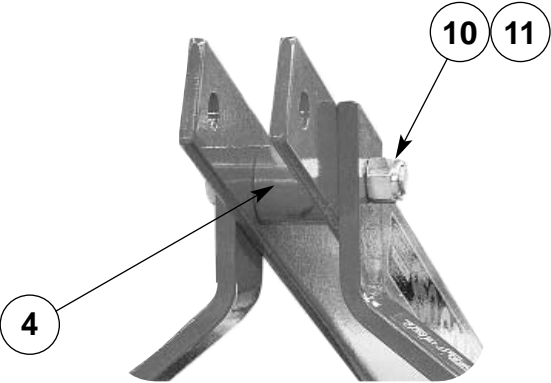


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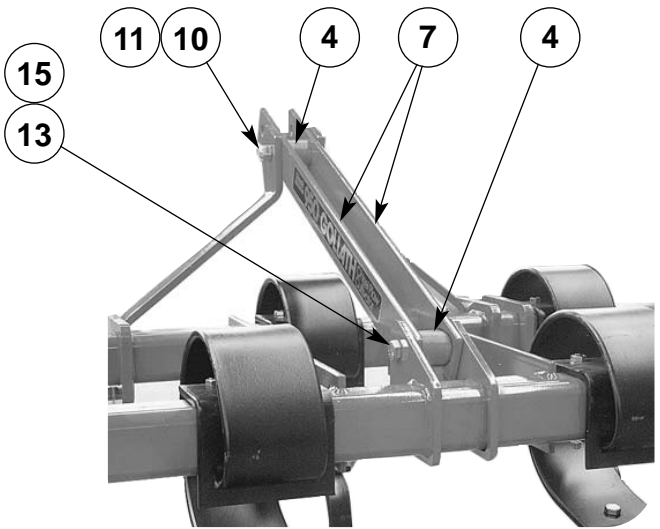
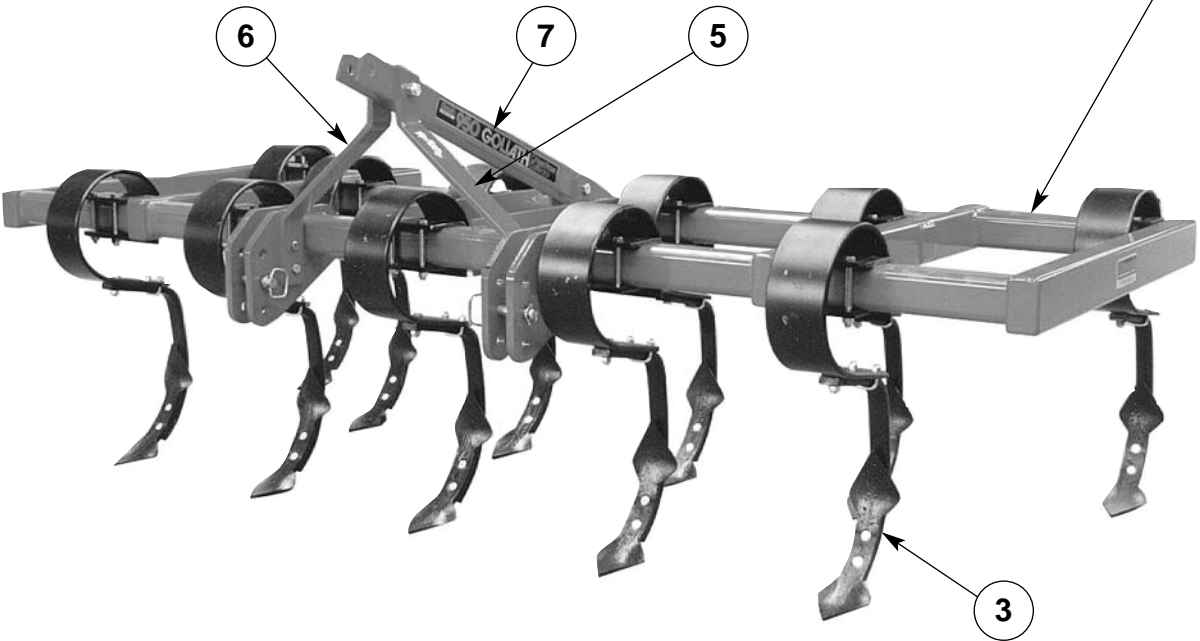
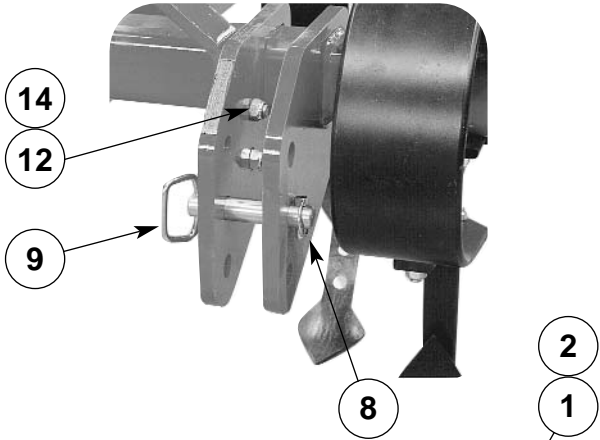
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Top Link Detail



Bottom Link Detail



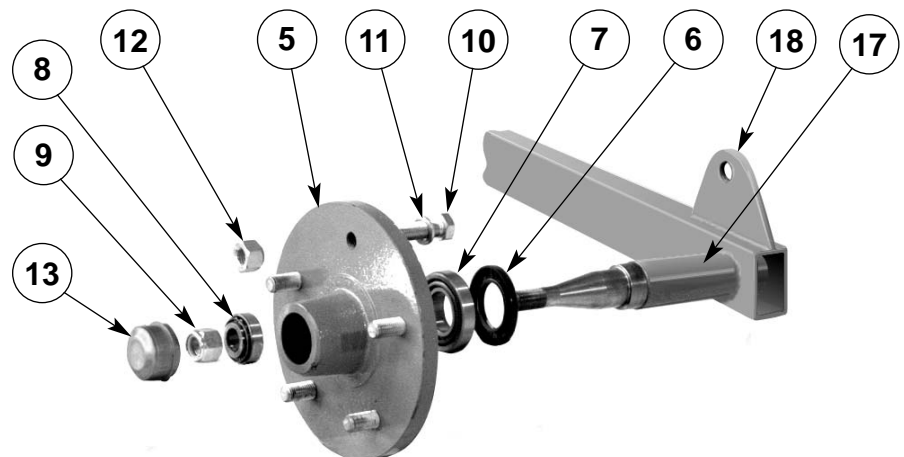
950 Goliath Chisel Plough Complete Assembly

Item	Part No.	Description	Qty.
1	Refer Below	Main Frame Assembly (Without Depth Wheel Attachments)	1
2	Refer Below	Main Frame Assembly (Optional Depth Wheel Attachments)	1
3	Refer P 5	P92 Tine Assembly (Refer Table Below for Quantities)	1
4	4950073	Top Link Spacer Assembly	1
5	4950075	Link Support Stay LH	1
6	4950076	Link Support Stay RH	1
7	4950077	Rear Link Stay	2
8	45292	7/16" x 1 1/2" Lynch Pin	2
9	45295	Cat 2 x 4 1/2" Clevis Pin	2
10	47237	7/8" UNF x 5 1/2" Zinc Plated High Tensile Bolt	1
11	47548	7/8" UNF Nylock Nut	1
12	45041	M16 x 55 Class 8.8 Zinc Plated Bolt	4
13	45074	M20 x 140 Class 8.8 Zinc Plated Bolt	1
14	45140	M16 Nyloc Nut	4
15	45141	M20 Nyloc Nut	1

Part numbers for different width machines					
Item	2.22m 7 Tine	2.82m 9 Tine	3.43m 11 Tine	4.04m 13 Tine	4.65m 15 Tine
1	4950023	4950028	4950033	4950038	4950043
2	4950050	4950052	4950054	4950056	4950058

950 Goliath Chisel Plough Depth Wheel (Optional)

Item	Part No.	Description	Qty.
1	4800286	14" Complete Wheel Assembly	2
2	4800284	Wheel Rim Assembly 14"	2
3	30267	Tyre 9.5L x 14 x 8ply	2
4	30266	Inner Tube 9.5 x 14	2
5	4800071	Hub 2 tonne x 5 stud Heavy Duty	2
6	43254	Hub Oil Seal (CC 42 72 08)	2
7	43038	Inner Bearing (30207 J2)	2
8	30348	Outer Bearing (EKLM11910/EKLM11949)	2
9	47546	3/4" UNF Nyloc Nut	2
10	45040S	M16 x 50 Class 8.8 Zinc Plated Set Screw	10
11	45168	M16 Zinc Plated Spring Washer	10
12	45148	M16 Wheel Nut	10
13	43041	Pressed Steel Hub Cap (galvanised)	2
14	43118	M8 x 1.25 Pitch Straight Grease Nipple	2
15	45283	8 Diameter x 55 Long Roll Pin	4
16	4800174	Top Link (16" Centre Tube)	2
17	4800044	Stub Axle (Part of Welded Depth Arm Assembly)	2
18	4950063	Depth Arm Assembly LH	1
19	4950065	Depth Arm Assembly RH	1
20	4950068	Depth Arm Pivot Pin	2
21	45067	M20 x 75 Class 8.8 Zinc Plated Bolt	2
22	45068	M20 x 80 Class 8.8 Zinc Plated Bolt	2
23	45141	M20 Nyloc Nut	4



950 Goliath Chisel Plough Tine Assembly

Item	Part No.	Description	Qty.
1	43195	P92 Goliath Tine Assembly Complete	1
2	43200	P92 Goliath Tine Assembly Without Point	1
3	43205	P92 New Upper Spring	1
4	43203	P92 New Tine Shank	1
5	43198	P92 Tine Point	1
6	43204	P92 Shank "U" Bolt	1
7	43199	P92 Tine Clamp	1
8	45053	M16 x 150 Class 8.8 Zinc Plated Bolt	2
9	45041	M16 x 55 Class 8.8 Zinc Plated Bolt	1
10	45210	M12 x 55 Class 8.8 Point Bolt With Nut	2
11	45139	M12 Nyloc Nut	2
12	45140	M16 Nyloc Nut	3
13	47444	1/2" Zinc Plated Spring Washer	2

