

H SERIES

1. BEFORE YOU USE THE MACHINE FOR THE FIRST TIME

Before moving the machine for the first time ensure that wheel nuts are securely tightened, and rechecked after plough has been moved.

THE INITIAL SETTING UP OF YOUR MACHINE BEHIND THE TRACTOR IS CRITICAL TO ITS CORRECT PERFORMANCE.

The following information is of the utmost importance for ensuring the satisfactory "running in" of your machine and its continued good performance.

A Grizzly plough requires a RUNNING IN PERIOD just as any tractor or car! In that period, the following operator service must be done:

1. Grease all nipples Lift wheels to grease upper nipples on axle.
2. Securely tighten all nuts
3. Check wheel hub grease cap bolts.
4. Check tyres for correct pressure. See - Servicing Section, for recommended pressures.
5. Rephase hydraulic system fully raising the machine and holding the control lever open for 30 seconds.
6. Cutting Edge Adjustment Please refer to diagram No.8 later in this booklet. Specific settings are given. Cutting edge alignment is part of your Grizzly Dealers predelivery of the plough. If you have any queries on various settings, please refer to the diagram.

CHOOSING THE CORRECT SETTING FOR THE REQUIRED APPLICATION.

Remember that all gangs must be on the same Setting, otherwise forces within the machine will be unbalanced. ALWAYS USE AS LITTLE SET AS POSSIBLE TO ACHIEVE YOUR REQUIRED PLOUGHED DEPTH.

Please note that H Series Rowcrops are not suitable for scrub work; but rather they are suited to deeper penetration, ideally suiting them to reclaiming rowcrop seed beds.

The H Series has a weight factor of between 140kg and 160kg per disc, and so is capable of greater penetration given that conditions are suitable.

In addition however the H Series is capable of general broadcast primary and secondary cultivation producing a level seedbed.

Your H series Grizzly is an extra heavy duty tandem offset. It is a machine of great strength and versatility, designed for arduous cultivation tasks, including clearing of regrowth, in more demanding conditions.

H SERIES APPLICATION

Your Grizzly tandem offset is a minimum tillage machine which will be of most value to your farm program when used with due consideration to soil conditions, soil types and the task to be performed. When working lighter soils, attention should be paid as to the timing of workings, amount of trash cover and future program for the soil in question. Long fallows in light soils should be avoided.

NOTE:

If you are uncertain of any aspect of your machines performance please refer to the appropriate sections of this booklet, your Grizzly Dealer and, if necessary, to Grizzly Engineering Pty. Ltd.

1. That it is the correct machine for the task.
2. That it is used in conjunction with a tractor of the correct specification.
3. That it is delivered in first class mechanical order, and is properly prepared for work.
4. That it is used correctly with understanding of the various limitations and tolerances as explained by your Grizzly Dealer, and in this booklet.
5. That it is serviced and maintained regularly as outlined in this booklet.

depend upon

The extent to which your plough performs to it's potential will

This booklet is provided in line with Grizzly's desire to help you obtain the best possible results from your plough.

Your Grizzly machine has been designed to give you the best possible performance and serviceability over a wide range of conditions and applications.

The reasons for this are as follows.

1. Less HP is required. (Less draught because there is less soil carried on the disc face).
2. It maximises your cutting width.
3. Discs tend to stay sharper and last longer.
4. If obstacles are encountered, discs have a better chance of rolling over them.
5. A finer tilth is produced because the disc is cutting rather than pushing.
6. A greater percentage of straw is left on the surface.
7. Spring adjustment is easier.

In our experience, the common mistakes made by owners are:-

1. THEY HAVE TOO MUCH SET FOR THEIR JOB AND
2. THEIR LEVELLING ADJUSTMENT SPRINGS ARE TOO TIGHT
3. NOT READING THEIR MANUAL CLOSELY.

SETTING 1 (18 Degrees)

Is the best setting to use in the following cases

- a) Peaty country, soil that flows readily.
- b) Initial working in root bound pasture.
- c) Wet or sticky conditions
- d) Secondary working, fallowing
- e) Provide for lowest draft requirements
- f) Where it is desired to leave more trash on the surface (especially with fluted discs) discs wear sharper and cut better.
- g) Where faster working speeds are desired.
- h) Where there is greater likelihood of encountering hidden objects, stumps rocks etc.

1. Working wet or sticky ground as the discs will tend to throw the soil, and the trash handling ability of the machine is compromised.

a) This setting is not suitable for

NOTE: Setting 4 has advantages in some conditions/applications. The following however should be taken into account.

c) to enable working in the tightest conditions.

b) to chip weeds or increase cut out at shallower working depths.

a) to obtain maximum depth in hard bed conditions

The most vigorous of all settings

SETTING 4

c) where more vigorous cultivation is required or it is desired to bury more of the surface cover.

b) where greater penetration is required.

a) For general ploughing when ground is tighter.

SETTING 3 (22 Degrees)

c) For leaving a predominance of stubble on top of worked country.

b) Used to achieve good cut out, but still ensures a fine tilth and level finish.

a) A general purpose setting which ploughs more vigorously. In sticky, buggy or rubbery ground, better penetration can often be achieved on 2 rather than using setting 3 or 4.

SETTING 2 (20 Degrees)

2. Working in stumps or stones as obstacles are struck at a greater angle which puts greater strain on the discs and the frame making them more susceptible to damage.

3. Secondary working, as the soil is moved the most, it is more difficult to achieve the desired level finish. The machine may produce ridges on this setting.
SETTING 1 or 2 will be much more satisfactory.

- b) This setting is more liable to bring the ground up lumpy or cloddy and may cause ridging.
- c) The machine is in its narrowest working width on this setting.
- d) Discs continually used on this setting tend to wear blunt which to some extent reduces the cutting and penetrating ability of the machine

2.

GETTING THE MACHINE SET UP BEHIND THE TRACTOR

DRAWBAR HEIGHT ADJUSTMENT

A range of adjustments to the height of the drawbar can be obtained by using the adjustment holes available and/or inverting the "p" bushes which hold the tongue. It has been noted that with fixed frame machines it is preferable to have it pointing up toward the tractor. This adjustment would be done when the machine is at the desired depth on level ground.

LEVEL ADJUSTMENT SPRINGS

THE FOLLOWING STEPS COULD BE TAKEN

- 1. With the Springs as loose as possible work the machine to the desired working depth.
- 2. Apply equal amounts of tension to the bottom and top springs approximately 5-6 turns equally to each spring.
- 3. Work the machine for approximately 10 metres (NO MORE) noting the quality of the ploughed finish. Adjust if the following occurs.

PLOUGHING TECHNIQUES

a) TURNING AT HEADLANDS

Fitting the machine with a hydraulic pitch control will enable the machine to be adjusted to remove ridges or hollows whilst the machine is being operated, obviating the need to carry out further adjustments to the springs.

(b) If a hollow exists in the centre of ploughed work. Increase pressure on bottom or front most spring, and at the same time remove pressure from the top most spring by an equal amount. Continue this procedure until any hollow in the middle of ploughed work is eliminated.

(a) A ridge in the centre of ploughed work. If a ridge appears it will be necessary to increase the pressure of the top or rear most spring. It should be noted that an equal amount of pressure should be removed from the bottom spring. Repeat this procedure until the centre ridge is eliminated.

b) PLOUGHING PATTERNS

When turning at the end of a run it is desirable to lift discs clear of the ground for two major reasons; hills and gutters will be formed because the front discs due to the twisting effect through the corner; if obstacles such as rocks and stumps are encountered through the corner, disc damage could result because of the very square angle at which the disc strikes.

Grizzly machines are fitted with rear filler discs on each side of the machine, this allows for working in any direction, either perimeters, lands or diagonally

c) WORKING AGAINST A PREVIOUS PASS

Once you have identified the mark left by the filler (3 corner) disc from a previous round, this will establish the placement of the leading disc (on either side). If the filler disc mark is ploughed out then cut-out will be complete.

NOTE: If when working overlapping occurs, then the results may be a line or gutter.

- d) PLOUGHING SOFT GROUND Will require reduced set and speed (especially when ploughing over 4" 100mm deep)
- e) PLOUGHING HARD GROUND or ground which comes up in large clods

It can be necessary to work some country as much as twice to achieve the desired results. Generally the most effective way to approach these conditions is not to try to get full depth on the first attempt. Sometimes depth can be achieved in the first pass on Setting 4, but with the result of leaving large, hard to break clods and boulders. Setting 3 is usually the most appropriate setting, attempt only to gain half the desired depth on the first pass. It is beneficial to work half a plough width over from the first working.

f) STUMPS AND ROCKS

A disc plough is primarily a rolling, chopping machine
This means that -

1. The faster the disc is going, the less penetration is achieved.
2. When stumps, rocks, etc are encountered, the one disc which strikes the obstacle must either break it, cut it or be strong enough to lift the machine over it, which tends to push the object in and not root it out; discs aren't designed to remove stumps.
3. The less set and less speed that can be used the better because:
 - 1) the disc then has a better chance to cut the obstacle. (the more set, the more it tends to bulldoze).
 - 2) the disc has more strength because the forces on the disc produce a lesser twisting, tearing effect, thus giving

the disc a better chance to roll over obstacles and avoid damage. Also the disc exerts less strain on the axle and frame components.

g) WORKING IN MOIST CONDITIONS

Your Grizzly features revolutionary T Bar Scrapers (Patent Nos 552035, PH04294/86) which enable it to operate in conditions in which ploughs with conventional scrapers would fail. However there are limitations to the performance of any disc plough. There are various adjustments which can be made to assist the performance of your plough in trying conditions (refer Gang Angle Selection).

There may be times when even though adjusted to best effect your plough will fail to work. It will be necessary in that situation to wait until conditions are more suitable

h) WORKING ROWCROP SEEDBEDS

Rows are best worked diagonally. This will assist in the even ploughing of ground and will lessen the strain imposed upon specific parts of the plough.

TURNING - Plough must be raised from the ground when turning.

When turning at the end of a run it is desirable to lift discs clear of the ground for two major reasons; hills and gutters will be formed because the front discs due to the twisting effect through the corner; obstacles such as rocks and stumps are encountered through the corner, disc and machine damage will result.

OPERATING SPEED

The optimum speed for the machine will be determined by the condition and task being performed. In general this will be 4 1/2 - 5 mph (7-8 kph)

Secondary working, or working deeper in soft soils or peaty loam soils will require a reduction in speed and or a reduction in gang angle.

NOTE: Working at excessive speed in dry conditions will cause premature disc wear.

5. CHANGING THE GANG ANGLES

If possible, carry out the operation of changing the gang angle on a hard level area.

Fixed Frame Machine

1. Raise the machine so that the gangs can roll on the discs beneath the plough frame. The pivot bolts may need to be loosened.
2. Loosen or remove all bolts in connecting main gang frame
3. Remove angle locating pins.
4. Using the tools supplied (refer diag 4.) adjust lever rotate the gang to the desired setting, taking care to place all gangs on the same set.
5. Replace locating pins in the angle selecting hole
6. Replace and retighten all bolts connecting the gangs to the frame securely.

Folding Frame Machines - with the machine in the laid out (working position)

1. Raise one of the outer wings and pin it in the travel position.
2. Raise the machine on its wheels so that the gangs roll on the discs beneath the plough frame.
3. Loosen all bolts in adjustment locator holes where required.
4. Loosen all bolts holding gangs to plough frame where fitted.
5. Remove all locating pins.
6. Using the tools provided (refer diag 4) rotate the gangs to the desired setting, taking care to place all gangs on the same set.
7. Replace and retighten all bolts connecting the gangs to the frame securely.

When the machine is to be moved any distance, it is suggested that the travel bars be positioned on the rams at each wheel lift. Pins to be located in the travel bar over the spring assembly and the wing retaining pins to be positioned to secure wing on the folding machines.

SERVICING

AFTER 4 HOURS USE:

- 1) Tighten gang bolts (160ft lb/210Nm)
- 2) Firmly tighten all other bolts except scraper adjustment bolts which should be tightened so as to still allow for scrapers to move up to 1" (25mm from disc spool)
- 3) Make sure all bolts on the following are installed with lockite - pull bolts, hinge pin studs and wheel assembly side plate bolts.
- 4) Check scraper settings. On floppy scrapers, adjust so pad drops away from the spool up to 1" (25mm) in moist conditions.
- 5) Tighten gang pivot bolts on centre frame.
- 6) Grease all nipples (Remember to use Molybdenum based grease)

AFTER 12-16 HOURS

Check all of the above as bolts may become loose as parts "bed in" to each other. Grease all nipples

CHECK PERIODICALLY GREASE NIPPLES EVERY 10 WORKING HOURS

CHECK WHEEL BEARINGS

Wheel bearings should have no end float, but wheels should spin freely.

CHECK TYRE PRESSURES

Tyre pressures should be checked regularly. Uneven tyre pressure will result in reduced performance of the machine and may result in tyre damage. The following pressures are recommended for Grizzly machines:

TRANSPORTING THE MACHINE

<u>FIXED FRAMES</u>	Maximum	<u>FOLDING WING</u>	maximum
H 24 Plate	325 kpa (47psi)	H56 Plate	375 kpa (54psi)
H 28 Plate	325 kpa (47psi)	H64 Plate	375 kpa (54psi)
H 32 Plate	300 kpa (43psi)		
H 36 Plate	300 kpa (43psi)		
H 40R Plate	300 kpa (43psi)		
H 48 Plate	300 kpa (43psi)		

Tyre pressure should be such that the tyres have ample flex without being flat.

If there is too much pressure in the tyres it may result in -

1. Excessive soil build-up
2. Bouncing and cause structural damage as the tyre is the only suspension cushion available to the machine.

8. ROUTINE MAINTENANCE

Check axle to gang bolts regularly. When working in stump or rocky conditions, check every 4 hours. Anything which is bolted will require work to "bed in". All bolts must be checked periodically during the life of your machine.

CHECK that all pins and clips are in place and not excessively worn.

CHECK that wheel bearings have little or no play.
CHECK that the bearing covers on gangs are in good condition.

GREASE all nipples at least every 10 working hours.

9. GANG BEARING REPLACEMENT

To replace gang bearings, remove the axle locator bolt from both ends of the group of discs. Push assembly forward. Remove the dust covers. Remove axle. Use axle in the failed bearing to twist the bearing in line with the slots in the bearing casting. Finish removal with a hammer

The larger the diameter usually means better economy in the long run. A scallop disc can sometimes reduce performance in heavy stubble because of reduced disc to gang clearance. Larger discs can give better cutout on lesser settings because of greater arc they present to the soil. NOTE: When ordering a set of discs from your Grizzly Dealer, the last ploughing disc on each side at the back is 2" smaller in diameter than the rest. The smaller filler on extreme outside at the back rarely need replacing.

A disc choice of scalloped discs on the front and fluted discs on the rear of the machine can give the dual benefits of increased penetration, and stubble handling ability.

CHOICE OF DISC DIAMETER

The thinner the disc, the greater the penetration, but this has to be weighed against loss of strength. BE PATIENT WITH NEW DISCS! It should be remembered that the initial performance of the disc will be below that which can be expected of the discs once they have been worked for 200 acres or so and have obtained a sharper edge. Often thinner smaller discs on an old machine will penetrate better than a new machine. This is especially true of the fluted discs. The driest, sandiest conditions available, or any country in good, tending to dry condition, will result in speedier sharpening of the disc and better performance.

DISC THICKNESS

Grizzly offer the biggest range of disc options of any manufacturer. This allows you the greatest benefits from your machine. Below is a guide to help you choose your best disc.

DISC CHOICE

Follow the above procedure to remove a group of discs. The job is made easier if the group can be stood on end with the nuts at the top. A ring of boards to support at least 4 of the 6 bolts is required. The bolts can now be undone and the gang disassembled.

DISC REPLACEMENT

Remove bearing. Replace with a genuine bearing from your Grizzly Distributor. If dust seals are damaged, replace. Reassemble using spacer washers to minimise end play. Gang axle components should be assembled under pressure, to assure that seals are pressed against the gang bearings.

12. DISC GANG REASSEMBLY

On reassembly ensure that -

- 1) if using scalloped discs that the scallops are not in line. The scallops should make a spiral or alternatively there should be notch, tab, notch, tab etc.
- 2) The spool is refitted as it came off ie. the end which was in the concave of the disc and the end which was mated to the convex should be returned the same way.
- 3) Axle Relocation - On replacing gang axles. This is best done with the disc gang still in the vertical assembly position. Lower the axle through the top bearing. "Jiggle" the axle through the lower bearing taking care that the axle is not dislodged from either bearing, when being installed back into the machine.

While discs are being fitted or refitted it is an excellent time to replace bearings and dustcovers if required and extra spacer washers fitted so that a tight fit keeps seals close to bearings. Any badly bruised or damaged gang to axle bolts should also be replaced.

SAFETY:

ATTENTION: PLEASE READ CAREFULLY BEFORE ALLOWING ANYONE TO OPERATE THE MACHINE

o not leave equipment in raised position when not in use.
o not transport machine without ensuring that transport lockup systems are in place.

o not transport at speeds in excess of 25kph (16mph).

o not transport with a vehicle with a gross mass less than that of the implement.

o not transport without tractor drawbar being in a locked position.

o not pull implement from any point other than the tractor drawbar or other designated pull points and be certain the tractor drawbar pin is securely latched.

o not operate or transport the implement with a loose wheel, rim or hub and be certain that tyres are inflated to specified pressures.

o not allow any person to ride on or be in any other position of danger when tractor and implement are being transported, or operated.

o not adjust machine until all people who are close to the machine are considered safe from any potential danger which may result from adjustment.

o not use feet to clear disc gangs.

o use safety pins in locating brackets to lockup wings on folding models.

o use hazard warning lamps and signs as required when transporting over width vehicle on public roadways.

o top tractor engine when removing or locating any safety equipment, transport lockup equipment using retaining pins etc.

o use care when adjusting or maintaining any aspect of the machine.
o not allow any person at any time to stand on, or play on any frames or tyres.

14. GETTING THE BEST FROM YOUR GRIZZLY

FAULT	CAUSE	REMEDY
One side digging deeper than the other	a) Rams need rephasing	a) Hold tractor control lever in fully open position on the lift side for one minute.
	b) Ploughing Shallow Ploughing with a large % of weight on wheels	b) Sometimes a large amount of set is required to be able to plough shallow and still plough everything out.
	c) Ploughing with too much set (especially secondary working)	c) Reduce set
	d) Springs adjusted incorrectly Pitch ram not trimmed	d) Loosen springs off and start spring adjustment process.

Not enough depth	a) hard ground	a) more set Rework.
	b) Not enough set	b) More set. Rework
	c) Depth control set too shallow	c) Readjust depth control.
	d) Springs too tight	d) Loosen springs

Ground left uneven	a) Machine travelling too fast. Front discs throwing soil too far for rear discs to gather in.	a) Slow down until soil pattern on worked ground is level,
	b) Machine performing secondary work with too much set (Especially in fluffy or peaty or soft country.	b) Place all gangs on setting <u>one</u> and readjust springs. Rework.

Machine Pre-dominantly hangs to one side

- a) Forces each side of the machine uneven -gangs not all on same set
- b) Paddock has a ridge in it
- c) Tyre pressure uneven of the ridge.
- c) Check pressure guide in previous section.
- d) Rephase as explained prev.
- e) Reduce set to 1, reduce speed until seeded level.
- f) Reduce set. Trail wheels while ploughing

- a) Travelling too fast
- b) Tyre pressure too great
- c) Too much set for conditions

Rib of unploughed ground in middle work area
Cutting edges out of adjustment
see Cutting Edge Diag No. 8. Contact of Grizzly Dealer

- a) Hydraulic rams out of phase
- b) Working in tight country
- a) refer rephasing section earlier
- b) (i) add liquid ballast to centre frame.
- (ii) fit blocks provided between front wing gang frames
- (iii) consider optional depth control castor wheels to limit wing dip (see your dealer)

Trash building
between scraper

a)Wet conditions in
presence of a lot
of straw

a)Adjust scraper so
that gap between
scraper pad & spool
is between 3/4" to
1".
b)Pull out of paddock
until conditions
are suitable

Straw wrapping on
the edge of the
disc

a)Ground wet or soft

b)Too much set and disc
is bulldozing material
Scallop disc. (straw
tends to wrap in the
scallop of the disc
because it has nothing
to cut against)
c)Blunt discs

a)Can sometimes be
helped by going fast-
er or deeper.
or
Pull out of paddock
and wait till
conditions are
suitable

c)When discs are new
they have a very
blunt edge. Ideally
200 acres on Setting
1 in sandiest soil
will both give edge
and polish the discs.

Gutter left in the
middle of work

a)Not enough soil being
brought in ie.rear discs
not working hard enough

a)1.Adjust pitch
control ram,
lengthen to push
weight back

2. Adjust the
drawbar so it
points up to the
tractor more.

b)Going too fast

b) Slow down

Ridge left in the middle of work. (More common in folding machines)

a) Rear discs bringing too much dirt in

b) Clods in the middle are bigger than elsewhere. A small line of large clods in centre of work may be expected

1st working or drag 1 wide width over from work 1/2 a machine

2nd working try to work 1/2 a machine wide width over from 1st working or drag 1 leaf of harrows in the middle.

Machine walks from a) Ground is too hard side to side

b) Hills and hollows are causing uneven ploughing action

Springs too tight. Too much set.

a) Apply more weight/set

b) Reduce tension on springs

Loosen springs. Reduce set and have wheels just rolling over surface to assist tracking.

Damage to spring assembly

1. Disconnect spring undulating

2. Consider fitting hydraulic accumulator and pitch adjusting ram.

Spools show signs of wear

Ploughing in moist conditions

Scraper set too close to spools

Adjust scrapers to be 20 - 24 mm away from spools.

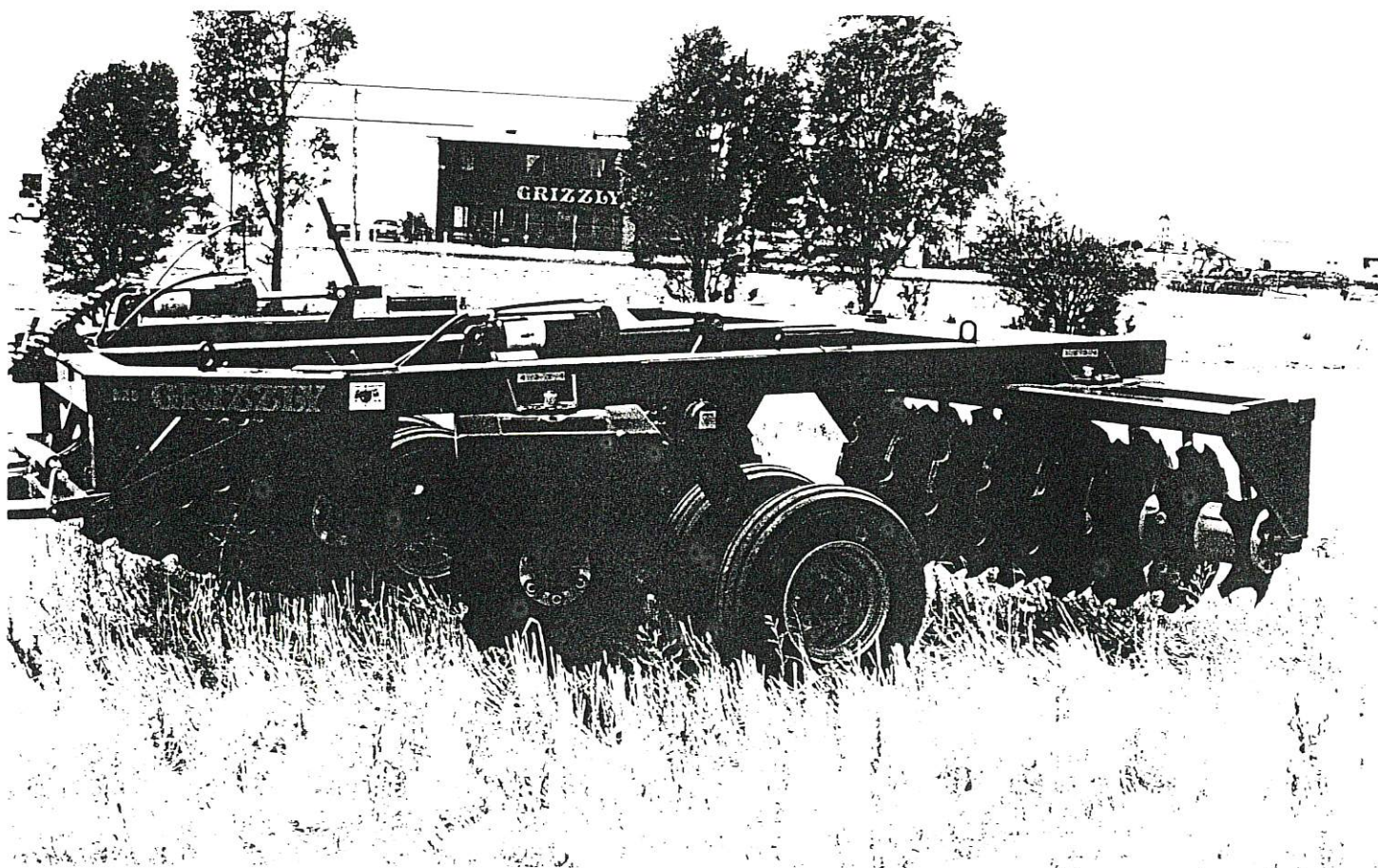
NOTE: Grooves on spools can be formed in some soil types, as long as wear is not excessive. It will not effect the machines performance or service life.

GRIZZLY

H SERIES

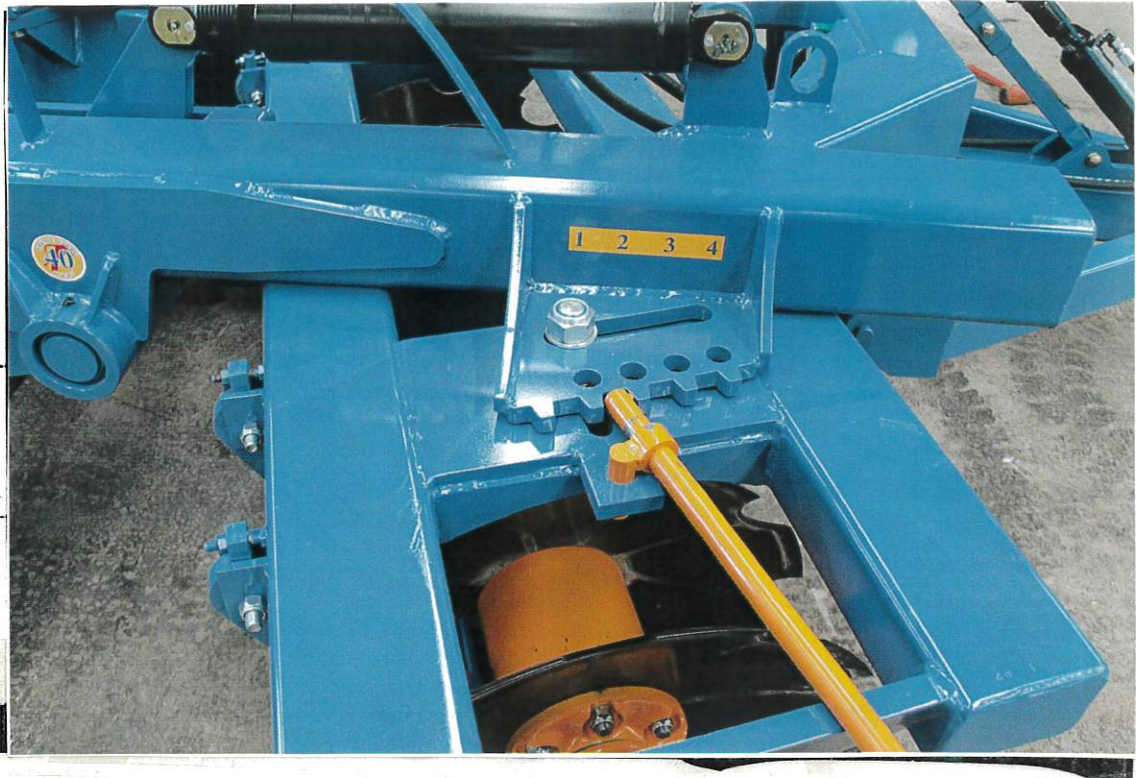
ASSEMBLY INSTRUCTIONS

(THIS BOOKLET IS TO BE USED IN CONJUNCTION WITH THE ILLUSTRATED MANUAL AND HANDBOOK PROVIDED WITH EACH MACHINE)



GANG ANGLE ADJUSTMENT

3. Using socket bar and slide element as shown below



Diag 4

4. Work the gangs to the desired point and replace locating pins and tighten all locating bolts.

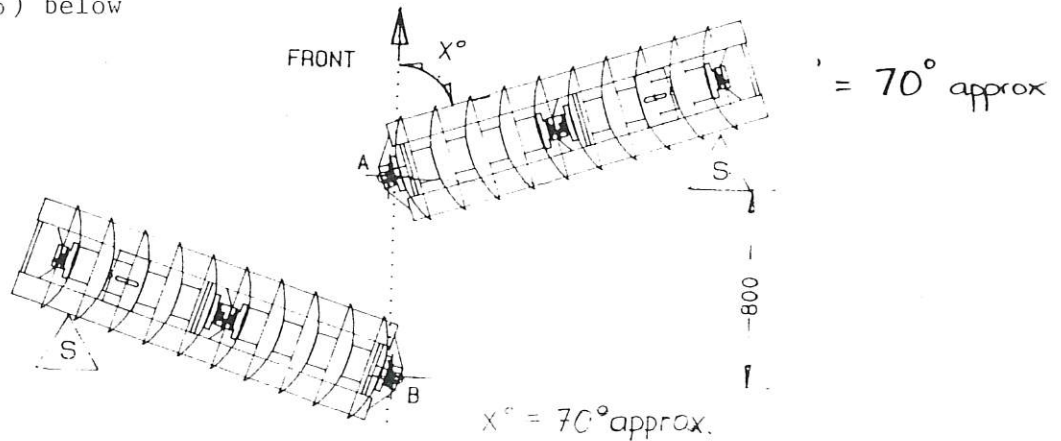
NOTE: Cutting edges should not require adjustment when changing gang angles.

B ASSEMBLY H24 and H28

Assembly instructions for H24 and H28 are largely the same as those required for H32 H36 H40.

Please note however

1. Set out front gangs supporting them on the scraper side where indicated (in Diagram 5) below



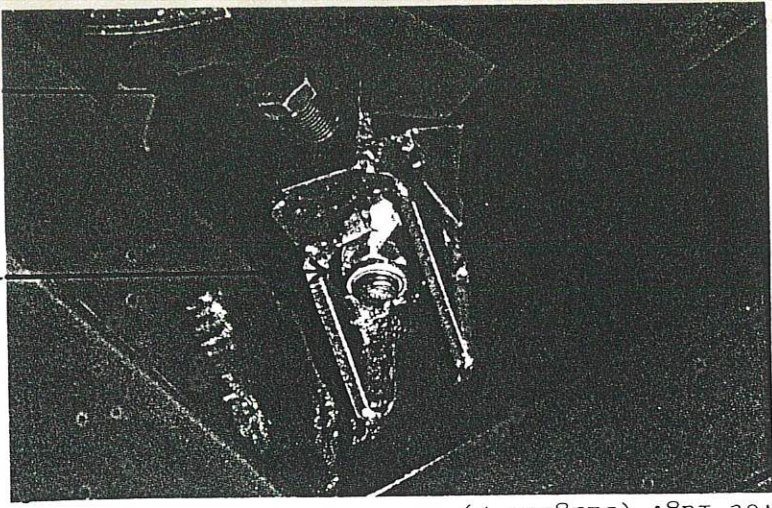
Diag 5.

2. Lower (using a crane) the main frame onto the gang frames so that the front two centre pivot lugs on main frame are positioned above the corresponding lugs on the two front gangs. (Use a podgee bar to assist in the alignment of holes and enabling the fitment of the pivot bolts (75 x 25mm bolt and nyloc nut)

The bolts should be inserted from the underside with nyloc nuts being fitted on top.

Pivot bolts need
to be loosened

Adjusting bolt

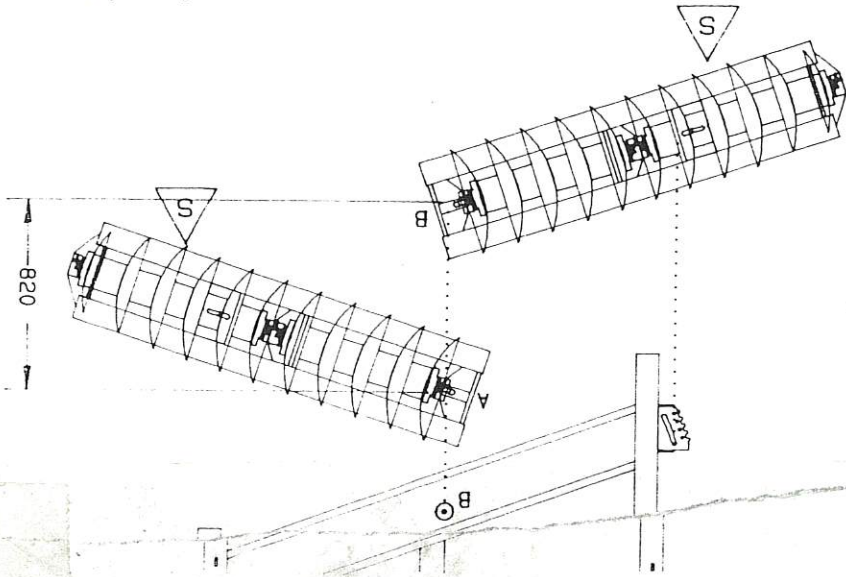


Cutting edge adjustment is by way of a bolt which is located horizontally at each gang pivot lug. (Diagram 7)

Cutting Edge Alignment

6. Lower the main frame onto the rear gangs using a podgee bar to enable easier location of the pivot bolts, which once again are inserted from the underside.

Diag 6



Assistance will be required to align the pivot lugs on the main frame with the corresponding lugs on the gang frames.

5. Position rear most gangs so as to allow the main frame to be reversed over them (Once again supporting gangs on the scraper side, where shown in Diagram 6)

4. Attach all axles, wheels and the drawbar at this stage (if not previously done). Fit hydraulic hoses and clamps in the position required and connect the plough to the tractor.

3. Fit gang to main frame bolts from the underside of the gang where indicated (see diagram 2). The bolts should be aligned through the slots provided. Affix the nylon nuts from the top still allowing for some movement at this stage. A pin and clip are provided so that the appropriate gang setting may be made (We suggest setting 2 be used as a starting point).

3. Fit gang to main frame Diagram 2
Fit bolts from the underside of gang frames where indicated in Diagram 2. The bolts should be aligned through slots provided. Afix the nyloc nuts from the top, still allowing for some movement at this stage.

A pin and clip are provided so that the appropriate gang setting may be chosen. (We suggest setting 2 be used as a starting point).

4. Attach all axles, wheels and drawbar. Fit hydraulic hoses and clamps in the position required and connect the plough to the tractor.
5. Position the rearmost gang so as to allow the main frame to be reversed over it. (Once again supporting the gang on the scraper side) (See Diagram 3)

Assistance will be required to align the rearmost pivot lug on the main frame with the corresponding lug on the gang frame.

6. Lower the main frame onto the rear gang, using a podgee bar to enable easier location of the pivot bolt, which once again is inserted from the underside.

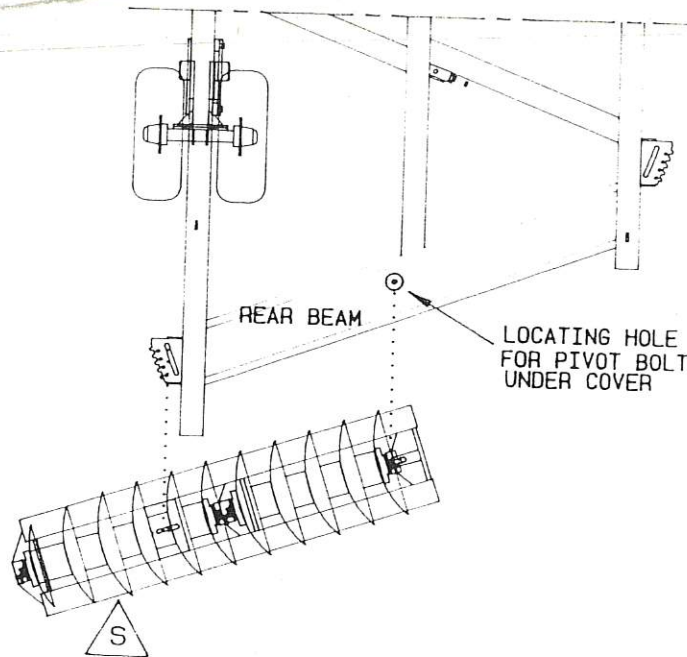


Diagram 3

Fit main frame to gang locating bolts in the slots provided. Taking care that the gang selection is the same as that chosen on the front 2 gangs. A pin and clip are provided for this purpose. (See Diag 2)

CHANGING GANG ANGLE (ALL MACHINES)

1. Lift machine sufficient to allow for movement of gangs
2. Loosen all gang locating bolts with spanners provided and remove gang angle selection pins

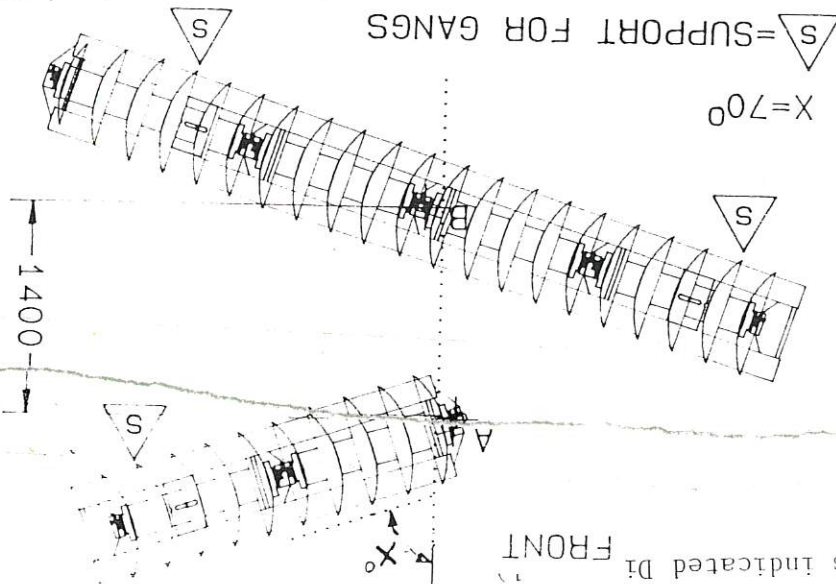
Released August 1987

Equipment Required

- Crane 3 tonne min
- Ranges of sockets 24mm - 36mm (Provided with machine)
- hard level surface
- tractor with hydraulic remotes

(A) Models H32 H36 and H40 (including H36R H 40R and H40E

1. Position the front gang and the long gang at approximately 45° to each other, with pivot lug holes 1.4 metres apart and scrapers to the rear of gangs (as indicated in Diagram 1).

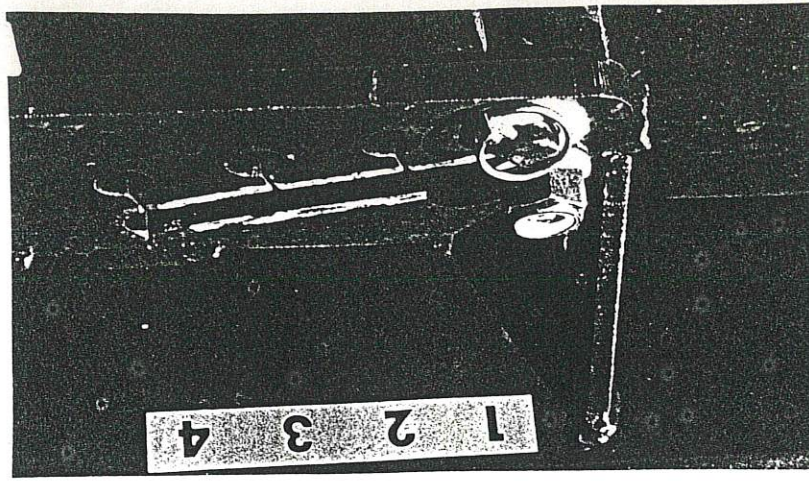


Support will be required for the gangs on the scraper side where indicated above.

2.

Lift main frame onto gangs, lugs aligning the front and centre pivots on the centre beam of main frame with the corresponding pivots. (A & B) of gang beams where indicated in Diagram 1. Use a podgee bar to correctly locate and align holes so as to enable easier fitment of pivot bolts (75 x 25mm bolt, flat washer & nylon nut)

The bolts should be inserted from the underside with the nylon nut being on top.



Diag 2

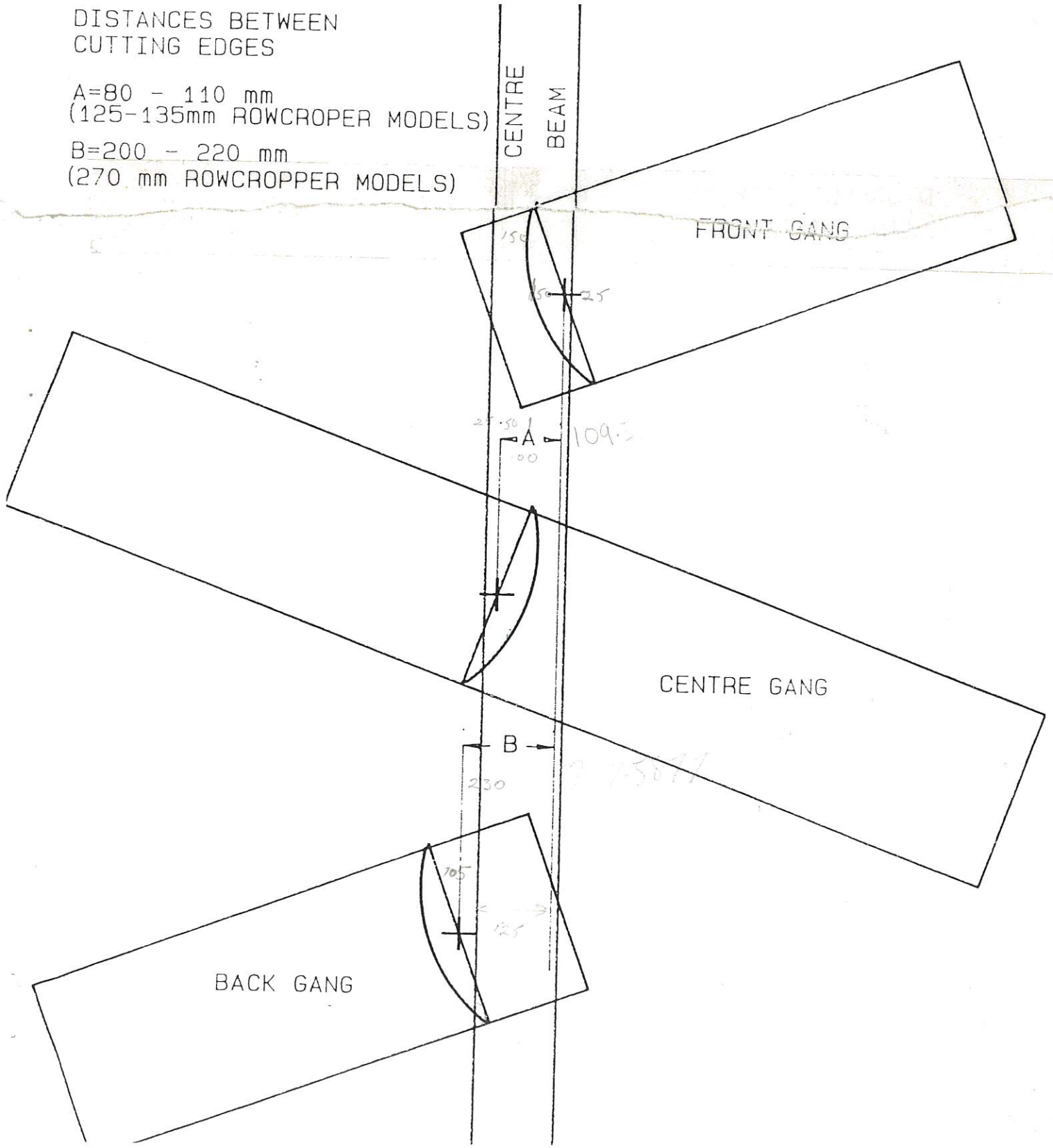
When the machine is fitted with standard discs (28 inch 710mm) the correct position of cutting edges is obtained when the adjustment is centralised in the elongated slot provided on the gang frame. In situations where continuous deep ploughing is required, it will be necessary to increase distance A & B below to maximums given. As the discs wear it will be necessary to push the front disc cutting edges out (away from the centre beam). This is done by screwing in the horizontal bolt (E) at the lugs sufficiently as to provide for the correct spacing between the cutting edges as outlined in Diagram S8

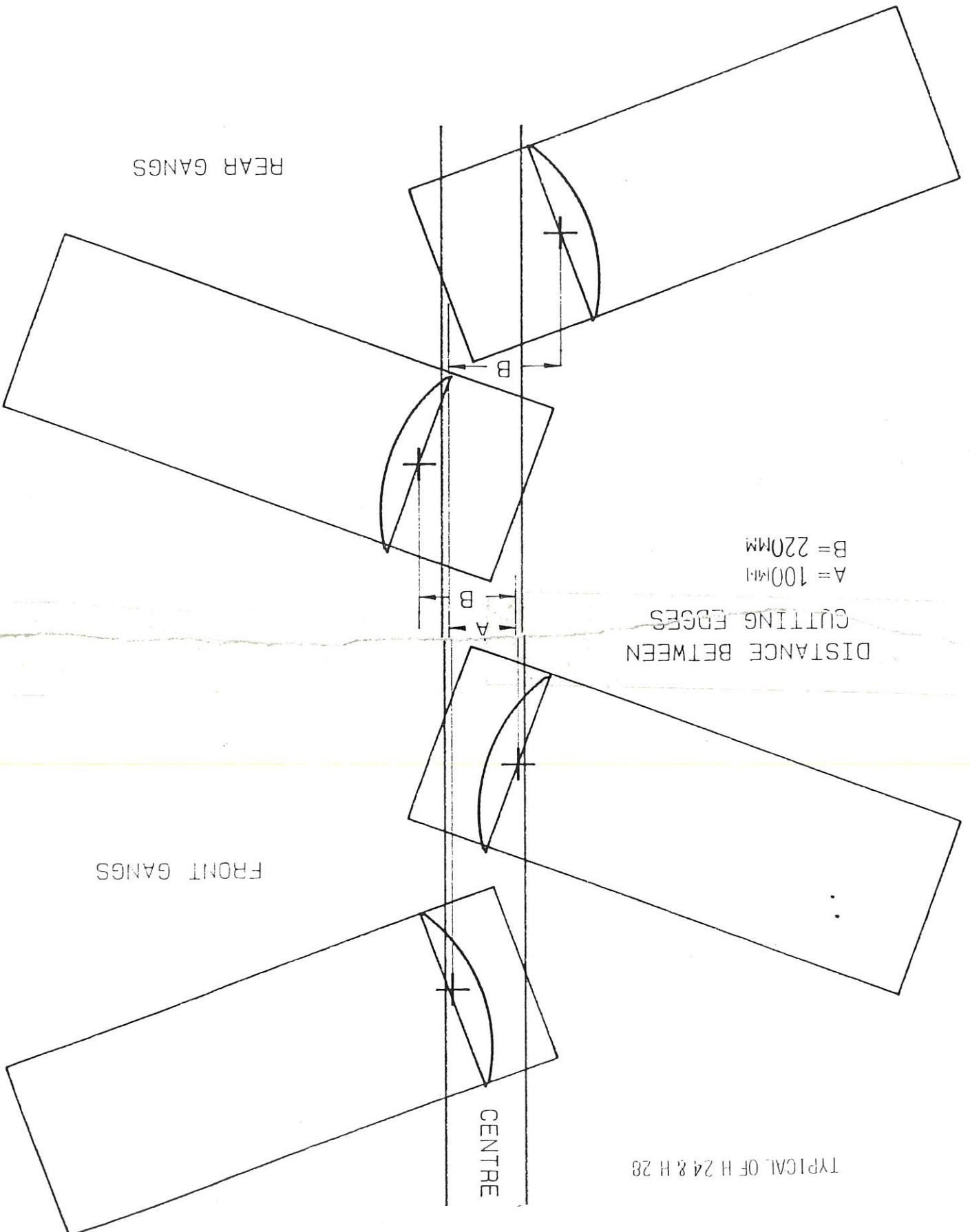
Typical of H32, 36, 40
H36R, H40R, H40E

DISTANCES BETWEEN CUTTING EDGES

A=80 - 110 mm
(125-135mm ROWCROPPER MODELS)

B=200 - 220 mm
(270 mm ROWCROPPER MODELS)





DISTANCE BETWEEN CUTTING EDGES

A = 100mm
B = 220mm

CHECKING CUTTING EDGES

Note that if the cutting edges are correctly positioned, ploughed ground should be even over the full width of the machine. Clear ploughed ground away from the centre of work. When cutting edges are correctly aligned, a rib of 1-1½" high will be evident in the centre of work as in diagram 8(c).

GRIZZLY

SPARE PARTS MANUAL



6	1	GANG NO 3	GBHC11
5	1	GANG NO 2	GBHB21
4	1	GANG NO 1	GBHA10
3	2	WHEEL ASSY	GJHB0012
2	1	FRAME	GCH040
1	1	PULL ASSY	GPIHA0000

NR QTY PART MATERIAL DIMENSIONS PART NO

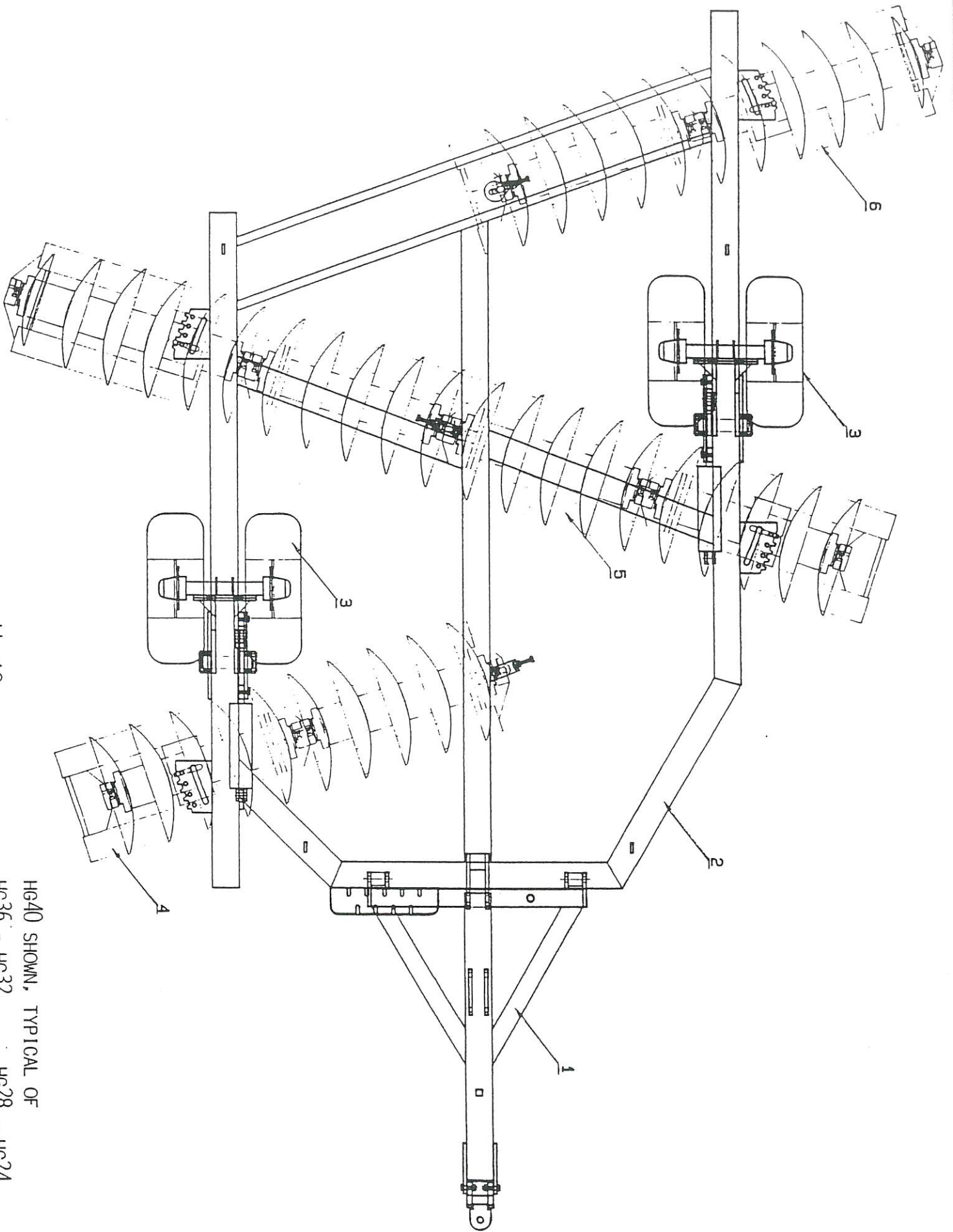
GRIZZLY ENGINEERING PTY

TITLE:H-SERIES 32,36,40

PART NO:

SCALE 1:20 DATE: 1-9-88

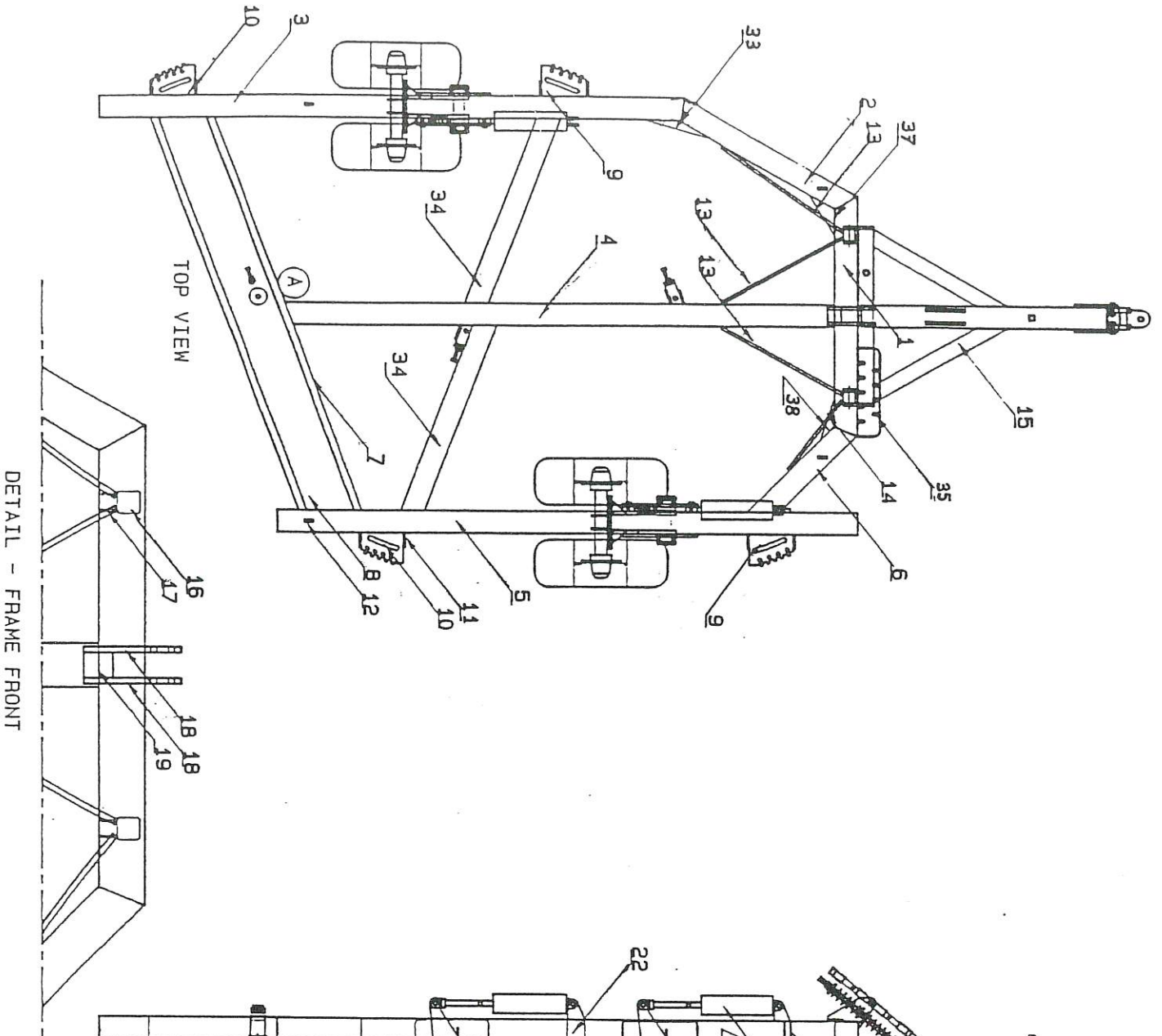
DRG NO: HFTV



H-40

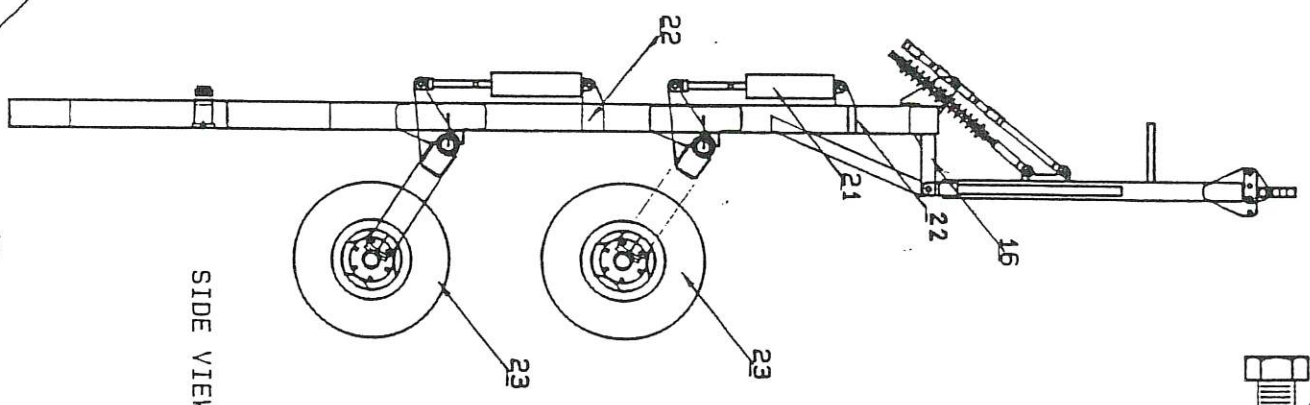
HG40 SHOWN, TYPICAL OF
 HG36 - HG32 HG28 - HG24

38	2	FRAME GUSSET	CABGH000
37	2	FRAME GUSSET	CABGH004
36	2	GUSSET 8mm	CJAZE001
35	1	TOOL BOX ASSY	GNBHE000
34	2	RHS 152 X 152 X 9.5	MGLJB366
33	2	FRAME GUSSET	CABGH000
32	1	THERDED CUP	FUBKA000
31	1	THREDED PIPE	MTBK A024
30	1	PIPE 90 NB HB	MEBKA110
29	2	PIVOT PLATE CIRCULAR	CBBHJ000
28	2	PIVOT PLATE	CBBHM000
27	2	LUG (LONG)	CBBHJ001
26	1	LUG (SHORT)	CBBHJ002
25	3	NUT M20	FFAJA000
24	3	BOLT M20	FABJA110
23	2	WHEEL ASSY	GJHA0001
22	1	RAM LUG	CBBHM001
21	1	RAM & HOSE KIT	HFHA2000
20	3	END CUP	CFBHE000
19	1	BOTTOM PLATE 100 X 16	MAGPA135
18	2	TOP LUG	GBBFJ000
17	5	GUSSET	CJAZE003
16	2	PULL POST 75 X 75	MJASA350
15	1	PULL ASSY	GHGA0000
14	1	GUSSET FLAT 75 X 20	MAHMA615
13	3	GUSSET FLAT 75 X 20	MAHMA900
12	4	LIFTING LUG	CBBZH000
11	11	GUSSET	CJAZG000
10	2	LINK S/HOLE & SLOT	LBFJA171
9	2	LINK S/HOLE & SLOT	LBFJA197
8	2	BACK BEAM PLATE	CGBHE000
7	1	RHS 152 X 102 X 9.5	MHLPC876
6	1	SHS 152 X 152 X 9.5	MGNHA745
5	1	SHS 152 X 152 X 9.5	MGKND900
4	1	SHS 152 X 152 X 9.5	MGKND700
3	1	SHS 152 X 152 X 9.5	MGKND900A
2	1	SHS 152 X 152 X 9.5	MGKNB357
1	1	SHS 152 X 152 X 9.5	MGKNB650



TOP VIEW

DETAIL - FRAME FRONT

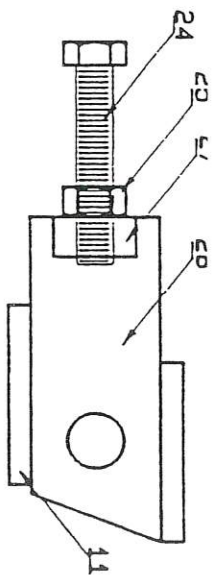


SIDE VIEW

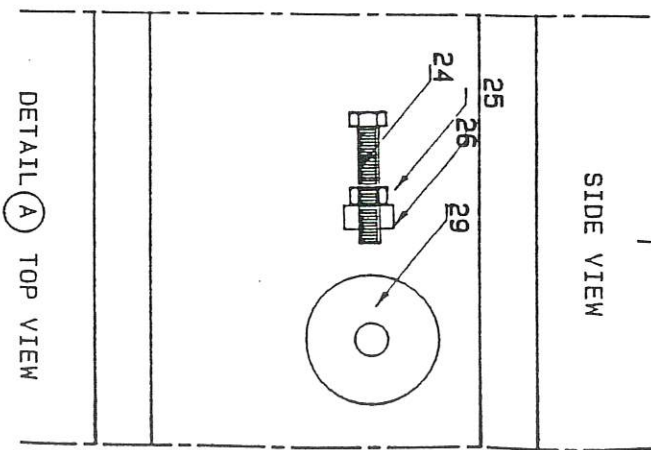
HG40 SHOWN, TYPICAL OF

FRAME

ADJUSTABLE PIVOT



SIDE VIEW



DETAIL A TOP VIEW

HG36 - HG32
HG28 - HG24

11	4	BOLT M20	50mm	FABJA050
10	1	PLATE (INNER) WITH HOLES	20mm	CGBFJ000A
9	1	ARM	25mm	CGEHM001
8	2	GREASE NIPPLE	6mm	BMAAA000
7	2	SPACER PLATE	32mm	CCEFP000
6	1	PLATE (OUTER)	20mm	CGBFJ000
5	2	BUILD PLATE	25mm	CGEHM000
4	2	CAP	8mm	CFEFE000
3	2	HOLLOW BAR 125 OD X 100 ID	65mm	MFWYA065
2	2	BEARING SPHERICAL BUSH		BDMAA000
1	1	ROUND 70mm	295mm	MDDJA295
NR	QTY	PART MATERIAL	DEMENSIONS	PART NO

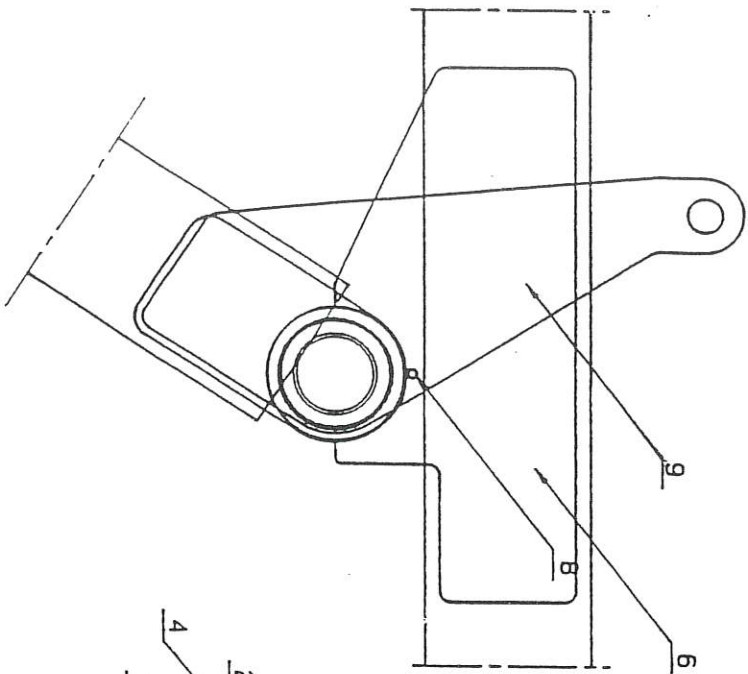
GRIZZLY ENGINEERING PTY

TITLE: WHEEL SWIVEL ASSY

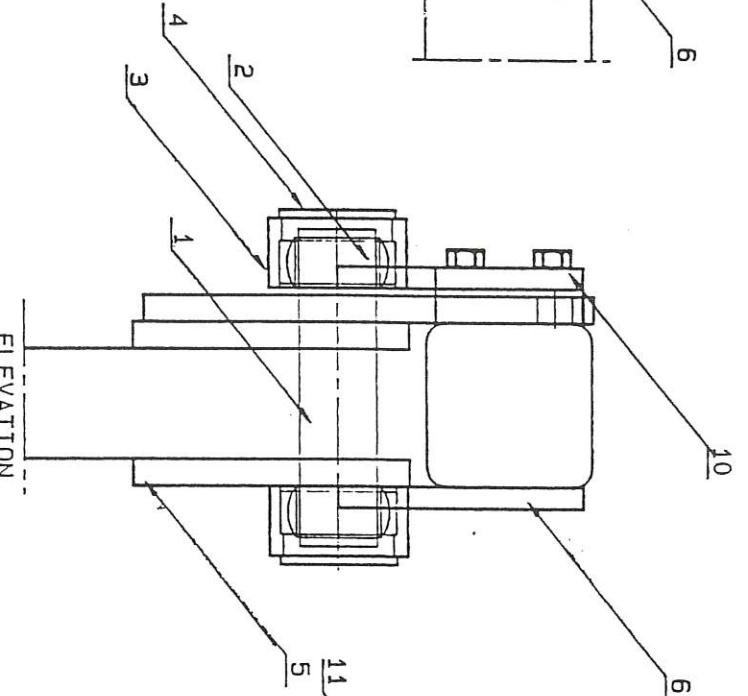
PART NO:

SCALE 1:5 DATE: 24-8-88

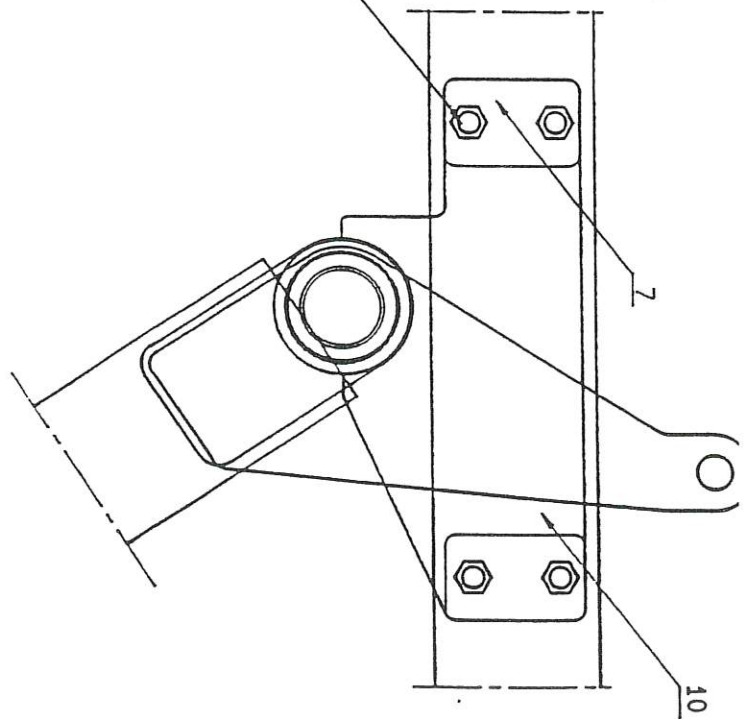
DRG NO: HWSA



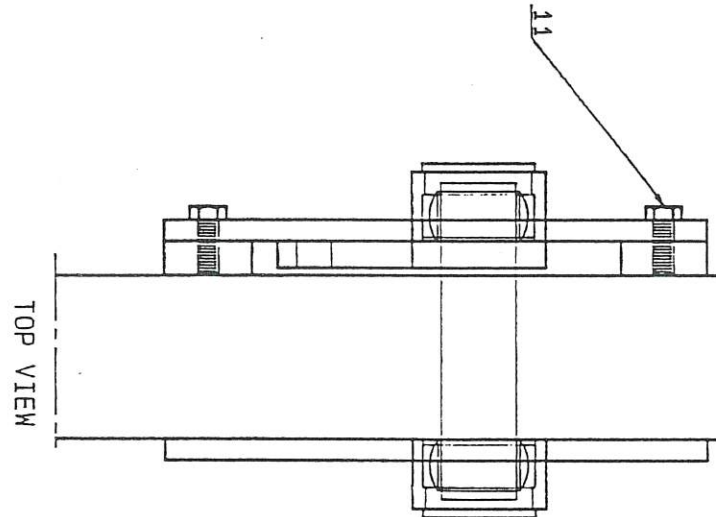
SIDE VIEW (OUTSIDE)



ELEVATION



SIDE VIEW (INSIDE)



TOP VIEW

HG40 SHOWN TYPICAL OF
 HG36 - HG32
 HG28 - HG24

WHEEL SWIVEL ASSY

19	1	ROUND 70mm	295mm	MDDJA295
18	2	BUILD UP PLATE	25mm	CGEHM000
17	1	ARM	25mm	CGEHM001
16	1	RHS 152 X 102 X 9.5	670mm	MHKPA670
15	2	GUSSET	12mm	CJAZG000
14	4	FLAT 25 X 10	50mm	MAEEA050
13	2	BASE PLATE	16mm	CGEFH000
12	4	NUT NYLOC M20		FFBJA000
11	8	WASHER 20ID X 40OD X 4.5		FMCJG000
10	4	BOLT M20	65mm	FABJA065
9	2	GUSSET H70 STUB AXLE	8mm	CAEGE000
8	1	H70 STUB AXLE	740mm	WBMA740
7	2	DUST COVER ASSY		BNMAA000
6	12	WHEEL NUT 16mm		FFFHA000
5	12	STUDS M16	50mm	FDBHA000
4	2	HUB H70		WJJAA000
3	2	WHEEL CENTRE		WDMJA000
2	2	BARE RIM W10		WCMJX000
1	2	TYRE 11.00 X 16		WFDJY000
NR	QTY	PART MATERIAL	DEMENSIONS	PART NO

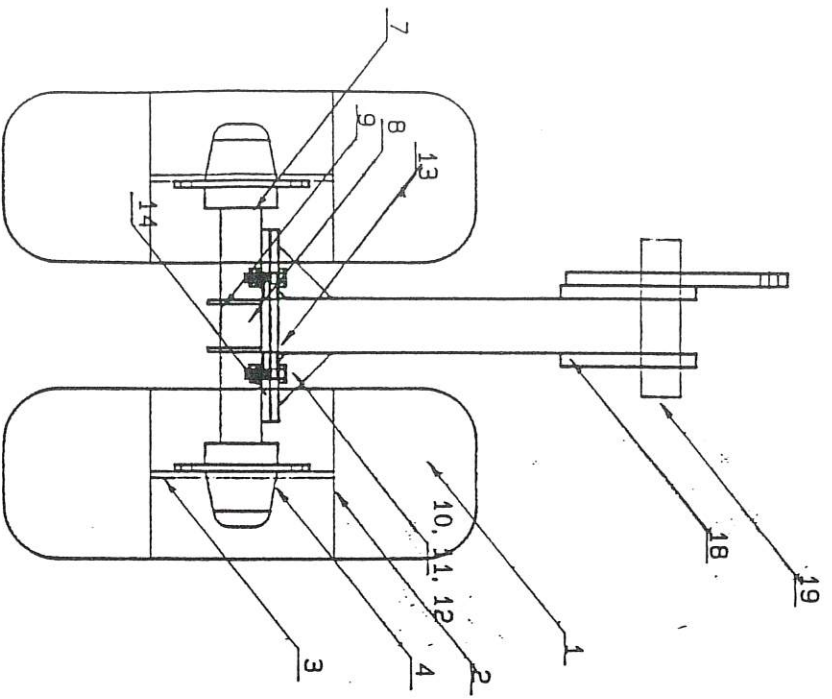
GRIZZLY ENGINEERING PTY

TITLE: WHEEL ASSY(HEAVY)

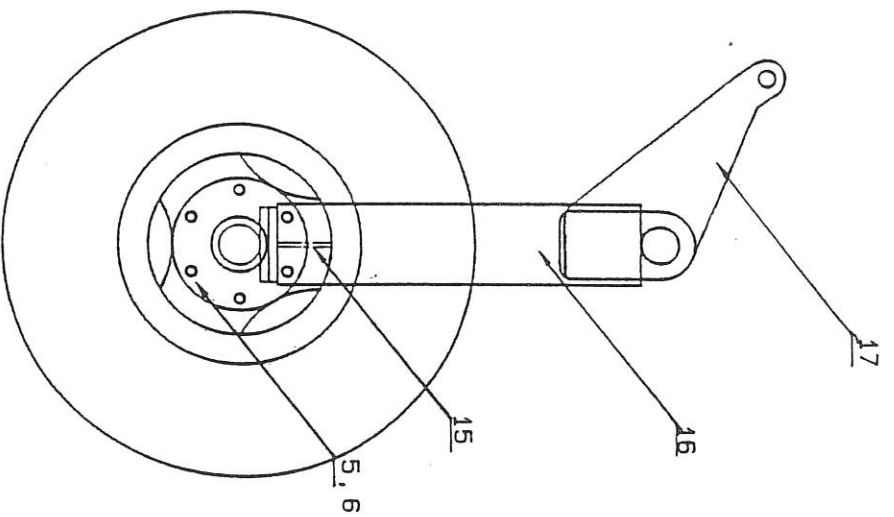
PART NO:

SCALE 1:10 DATE: 25-8-88

DRG NO: HWAAY



ELEVATION



SIDE VIEW

HG40 SHOWN, TYPICAL OF
 HG36 - HG32
 HG28 - HG24

WHEEL ASSY.

16	6	BOLT M20	40PL	1260mm	FAAJB260
16	6	BOLT M20	36PL	1020mm	FAAJB020
16	6	BOLT M20	32PL	1020mm	FAAJB020
15A	1	NUT NYLOC M30			FFBNA000
15	1	BOLT M30		110mm	FACNA110
14A	1	NUT NYLOC M30			FFBNA000
14	1	BOLT M30		90mm	FACNA090
13	1	PIN 25.4 & WASHER		6.5mm	FBKA065
12	9	SPOOL 219 OD		230mm	MEGRA230
		ROWCROPPER STANDARD			MEGRA287
11	12	NUT NYLOC M20			FFBJA000
10	6	BOLT M20	40PL	1020mm	FAAJB020
10	6	BOLT M20	36PL	1020mm	FAAJB020
10	6	BOLT M20	32PL	790mm	FAAJA790
9	1	FILLER DISC 22 X 6			D22CSB05
8	1	DISC 26 X 6			D26DSB26
7	9	DISC 28 X 6			D28DSB08
6	2	THUST BEARING HOUSING ASSY			BHB100B0
5	2	SPACER 56 ID X 75 OD		10mm	MFMJA010
4	2	SPACER 56 ID X 75 OD		5mm	MFMJAG05
3	4	DUST COVER			BNTAA000
2	2	LEAD BEARING HOUSING ASSY			BGB100B0
1	1	FRAME			GBHC11
NR	QTY	PART MATERIAL	DEMENSIONS		PART NO

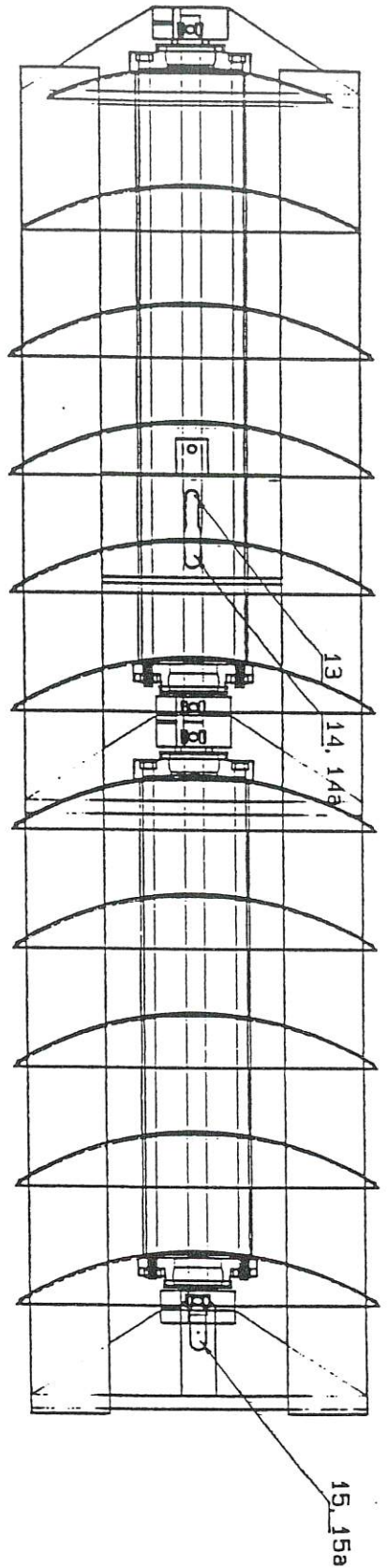
GRIZZLY ENGINEERING PTY

TITLE: GANG NO.3

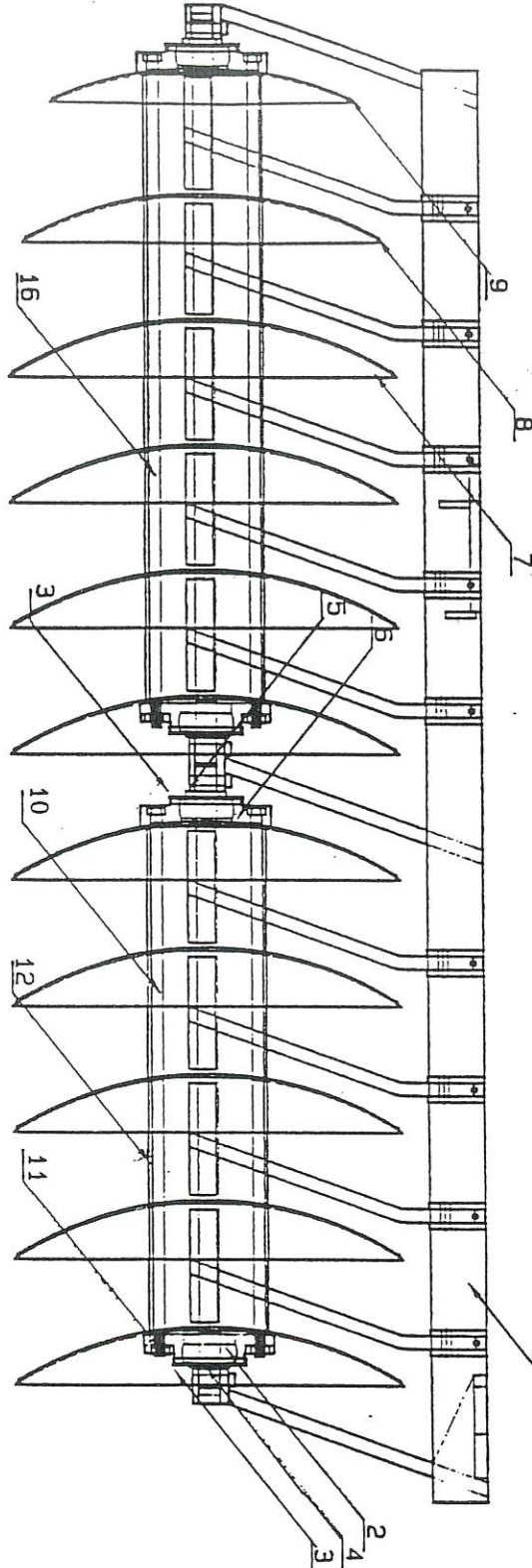
PART NO:

SCALE 1:15 DATE: 28-8-88

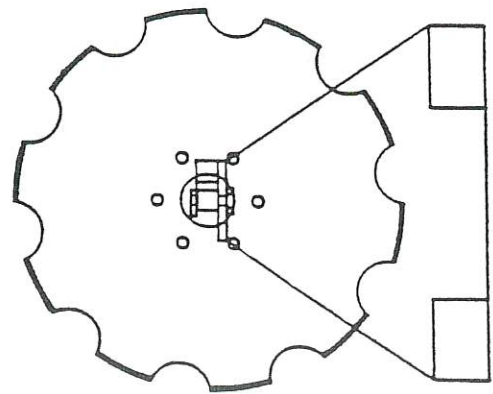
DRG NO: HG2TE



TOP VIEW



BACK ELEVATION



SIDE VIEW

AXLES USED

NO OF DISCS	(STANDARD MACHINES)		(ROW CROPPERS)	
	DBL. HOLE PART NO.	SINGLE HOLE PART NO.	DBL. HOLE PART NO.	SINGLE HOLE PART NO.
3	MJBMA707	MJBMA688	MJBMA878	MJBMA859
4	MJBMA944	MJBMA925	MJBMB172	MJBMB153
5	MJBMB181	MJBMB162	MJBMB466	MJBMB447
6	MJBMB418	MJBMB399	MJBMB760	MJBMB741
7	MJBMB655	MJBMB636	MJBMC054	MJBMC035

HG40 SHOWN, TYPICAL OF
HG36 - HG32
HG28 - HG24

GANG

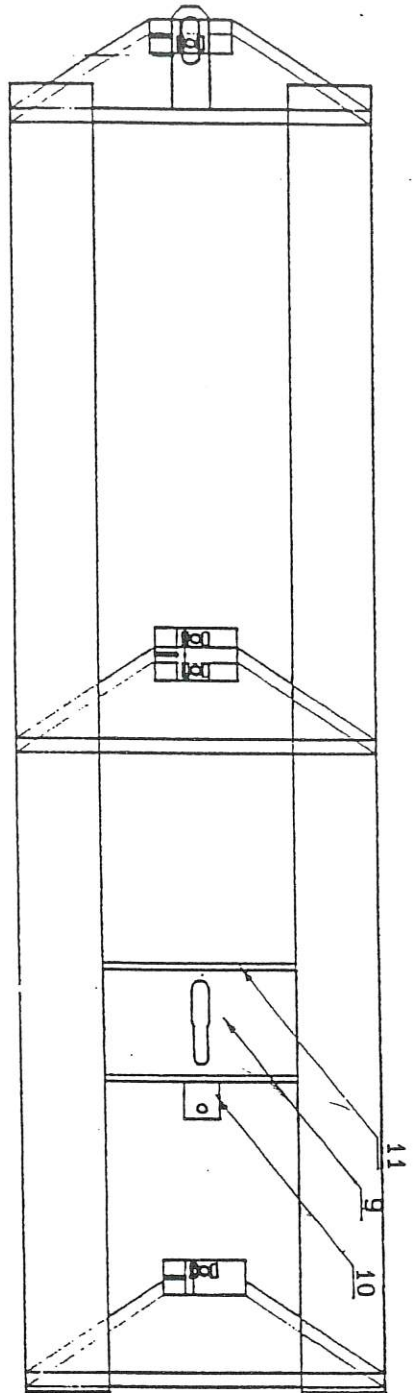
14	SCRAPER ASSY R/CROPPER LEFT				GFJAA250
	SCRAPER ASSY R/CROPPER RIGHT				GFJBA250
13	AXLE SQUARE 38 X 38	40PL	1181mm		MJBMB181
13	AXLE SQUARE 38 X 38	36PL	1181mm		MJBMB181
13	AXLE SQUARE 38 X 38	36PL	944mm		MJBMA944
13	AXLE SQUARE 38 X 38	32PL	944mm		MJBMA944
12	SCRAPER ASSY H LEFT				GFHAA210
	SCRAPER ASSY H RIGHT				GFHBA210
11	GUSSET		12mm		CAAHG000
10	FLAT 65 X 20		70mm		MAHJA070
9	SLOT PLATE 20MM				LAEJA060
8	GUSSET		12mm		CAAHG001
7	PIVOT LUG		25mm		CBAHM000
6A	NUT NYLOC M16				FFBHA000
6	BOLT M16		85mm		FABHA085
5	AXLE CARRIER LEFT				GEFDA000
4	AXLE CARRIER DBL				GEFBA000
3	AXLE CARRIER RIGHT				GEFEA000
2	END PLATE		25mm		CGAHM000
1	RHS 152 X 102 X 9.5	40PL			MHKPC454
1	RHS 152 X 102 X 9.5	36PL			MHKPC217
1	RHS 152 X 102 X 9.5	32PL			MHKPB980
NR	QTY	PART MATERIAL	DEMENSIONS		PART NO

GRIZZLY ENGINEERING PTY

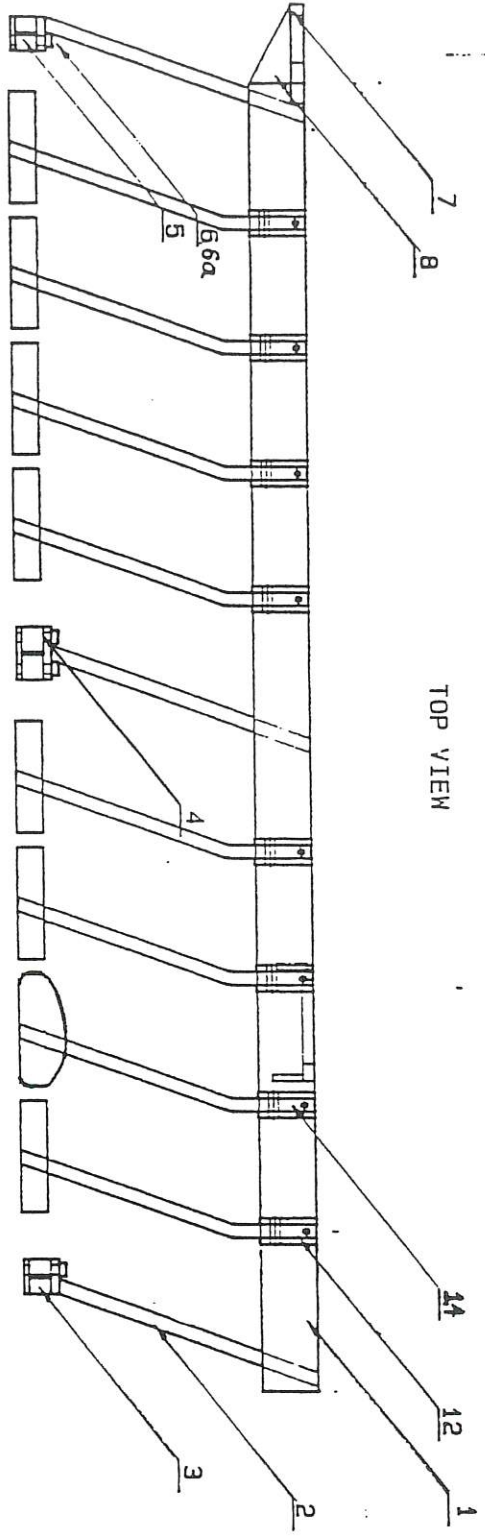
TITLE: GANG FRAME NO.1

PART NO:

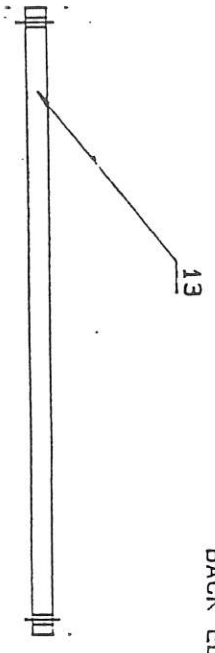
SCALE 1:10 DATE: 25-8-88 DRG NO: HG1FTE



TOP VIEW



BACK ELEVATION



HG 40 SHOWN TYPICAL OF
 HG36 - HG32
 HG28 - HG24

14	2	GUSSET FLAT 50 X 10	1950mm	MAEHB950
13	1	SQUARE 12 X 12	25mm	MJACA025
12	2	PIN 32mm	135mm	MDBVA135
11	2	PULL BACK LUG (SHORT)	20mm	CBCFJ000
10	2	PIN STOP PLATE	8mm	CBCFE000
9	2	BOLT M12	25mm	FABGA025
8	2	PULL LUG (OUTER)	20mm	CBCFJ001
7	2	LEVEL LUG	20mm	CBCFJ002
6	2	RHS 102 X 51	1050mm	MHHGB050
5	1	SQUARE 38 X 38	330mm	MJAMA330
4	1	RHS 152 X 102 X 9.5	1950mm	MHKPB950
3	1	END CAP	8mm	CFBFJ000
2	2	SIDE PLATE	20mm	CGCFJ000
1	1	TONGUE ASSY		GPBBA000
NR	QTY	PART MATERIAL	DEMENSIONS	PART NO

GRIZZLY ENGINEERING PTY

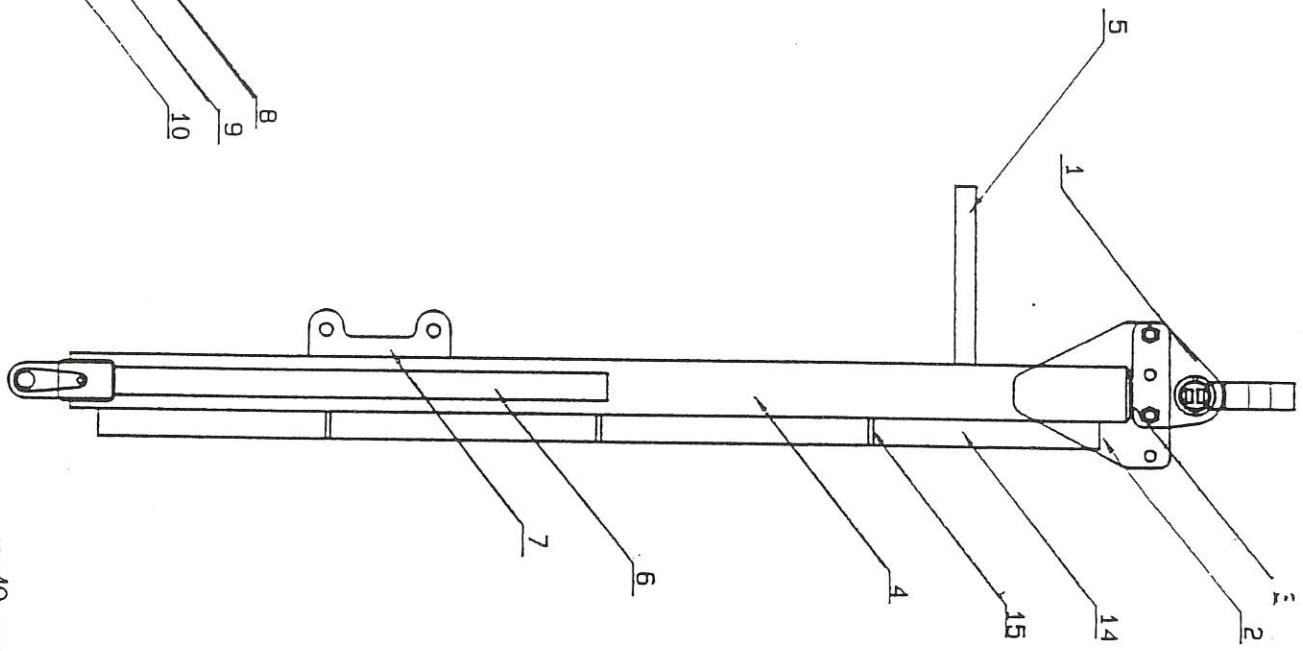
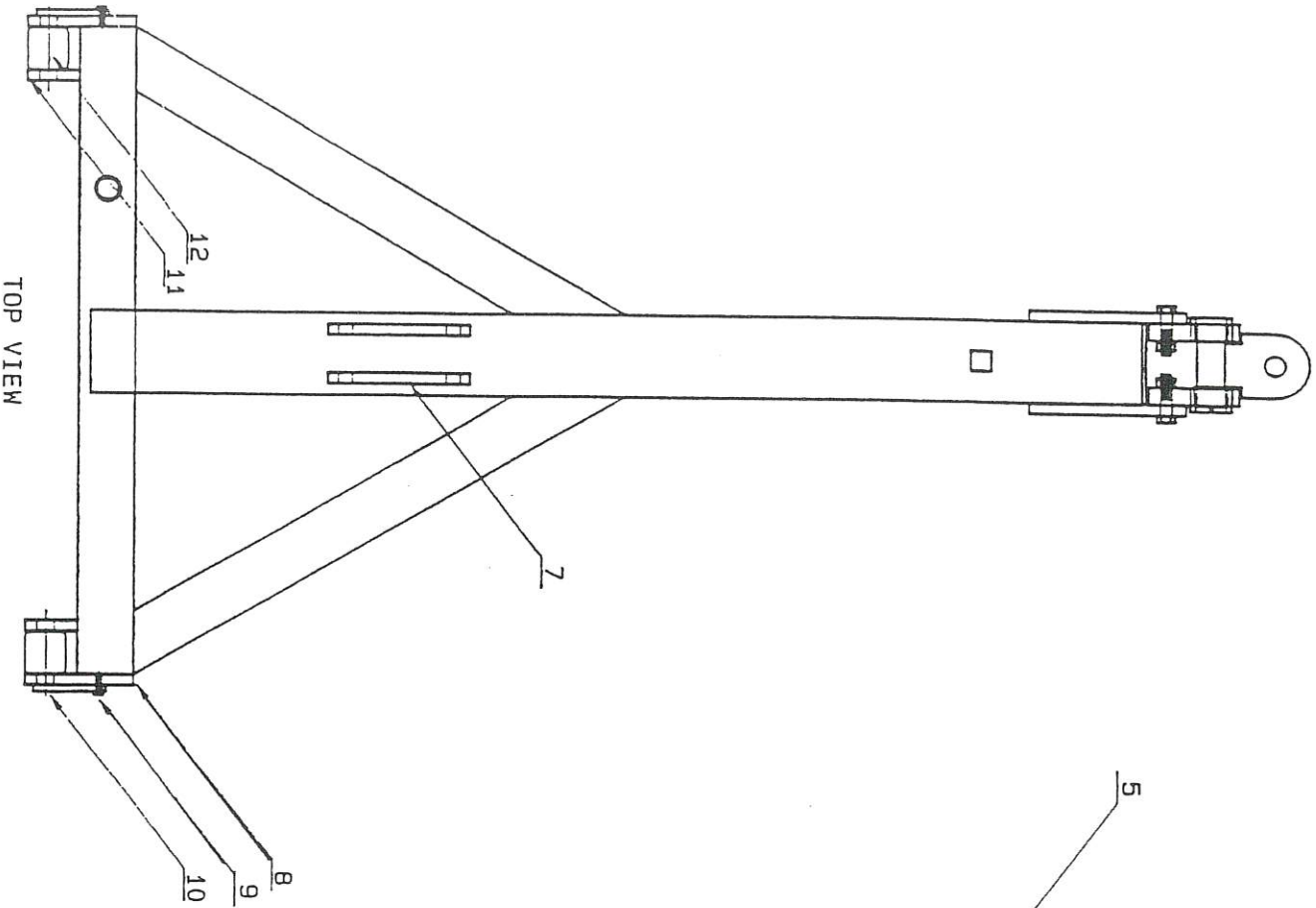
TITLE: PULL ASSY

PART NO:

SCALE 1:2

DATE: 21-8-88

DRG NO: HPP



HG40 SHOWN, TYPICAL OF
 HG36 - HG32
 HG28 - HG24

PULL ASSY.

