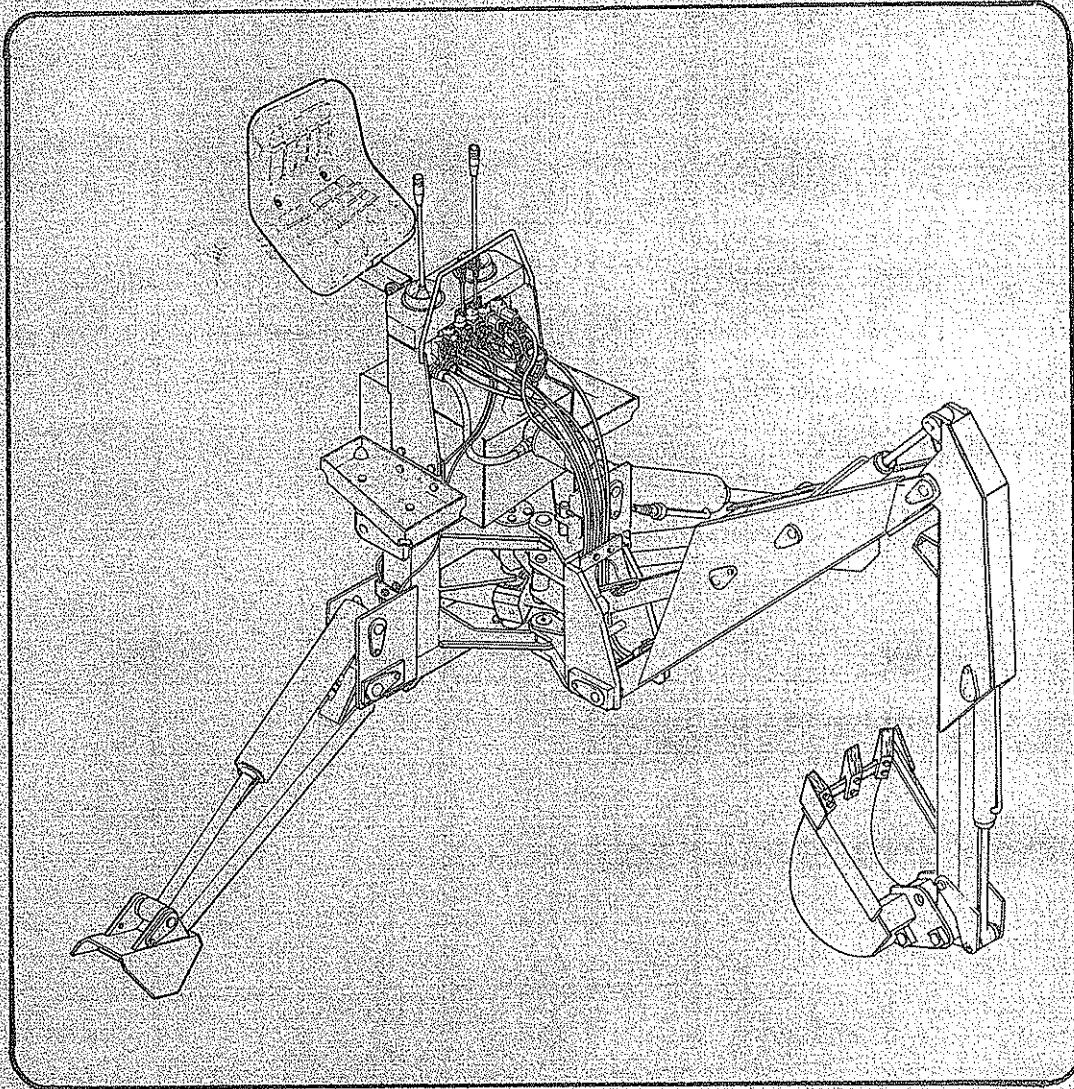
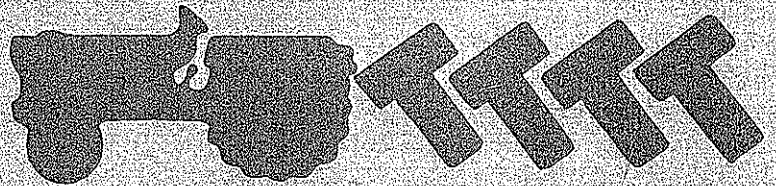


# Operating Instructions and Spare Parts Manual for KM190 tractor mounted backhoe



**KUBOTA**



No-one offers more.



It is often the case that the instruction book is not referred to until the operator or fitter is in trouble. If this happens you have wasted this publication. A few minutes spent reading now could save hours and pounds

**READ THE BOOK FIRST**

**FOR YOUR NOTES**

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## GENERAL INFORMATION

Read this manual before fitting or operating the machine. Whenever any doubt exists contact your dealer or the Kubota Service Department for assistance.

Use only Kubota spare parts on Kubota equipment and machines. This manual includes an illustrated spare parts breakdown and the interpretation which precedes it should be read before ordering replacement components.

### DEFINITIONS

The following definitions apply throughout this manual.

**WARNING**

An operating procedure, technique etc., which can result in personal injury or loss of life if not observed carefully.

### CAUTION

An operating procedure, technique etc., which can result in the damage of either machine or equipment if not observed carefully.

### NOTE

An operating procedure, technique etc., which is considered essential to emphasise

### Left and Right-Hand

This term is applicable to the machine when fitted to the tractor and viewed from the rear. This also applies to tractor references.

Record the serial number of your machine on this page and always quote this number when ordering spares. Whenever information concerning the machine is requested remember to also state the type of tractor to which it is fitted.

MACHINE SERIAL NUMBER	INSTALLATION DATE
MODEL DETAILS	
DEALERS NAME	
DEALERS TELEPHONE NUMBER	

## INTRODUCTION

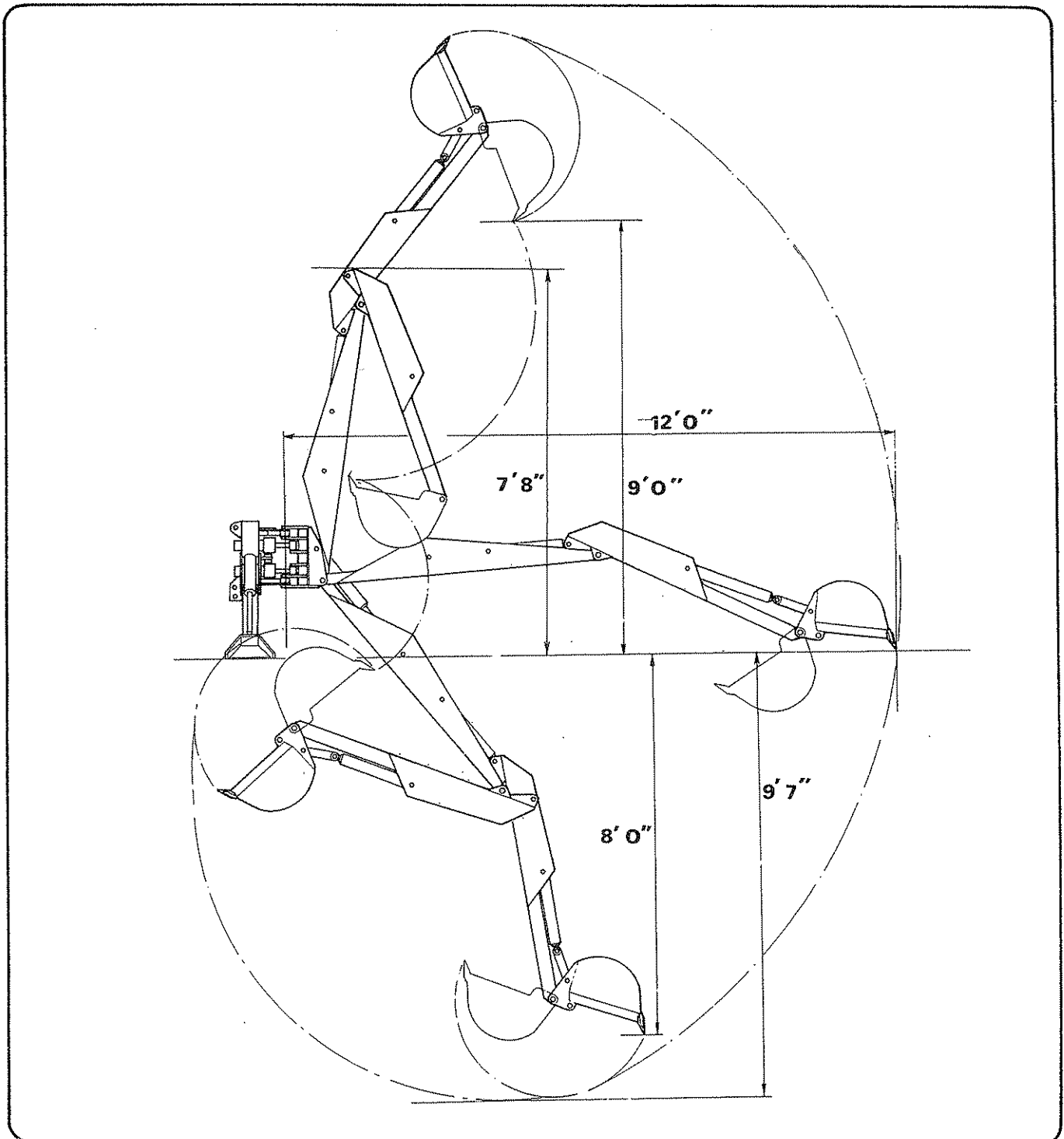
The KM 190 is a rear mounted backhoe designed to be attached to a wide range of tractors by means of a rigid subframe and to be fitted and operated in conjunction with a fore end loader.

The tractors fitted are

B8200, B8200HST & L275. Diggers working on these tractors utilise tractor powered hydraulics as standard with an independent hydraulic model available as an optional extra.

B6200, B7200 and B7100 HST. Diggers working on these tractors are supplied with independent hydraulics as standard equipment.

Features include joystick controls, independently controlled folding hydraulic legs, 190deg slew, a range of four excavating buckets and a ditch cleaning bucket.



## SAFETY PRECAUTIONS



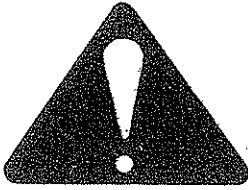
# WARNING

## SAFETY PRECAUTIONS

### NEVER

- ... Permit inexperienced personnel to operate machine without supervision.
- ... Attach pulling devices to the rear of the backhoe for towing purposes as the unit can tip rearwards.
- ... Stand under a raised arm or load
- ... Grasp control levers when mounting the machine.
- ... Use the backhoe for a hoist.
- ... Interfere with factory set hydraulic calibrations as they are carefully calculated and any increase could cause a breakage which may result in injury.
- ... Operate the backhoe unless the loader bucket and digger feet are grounded.



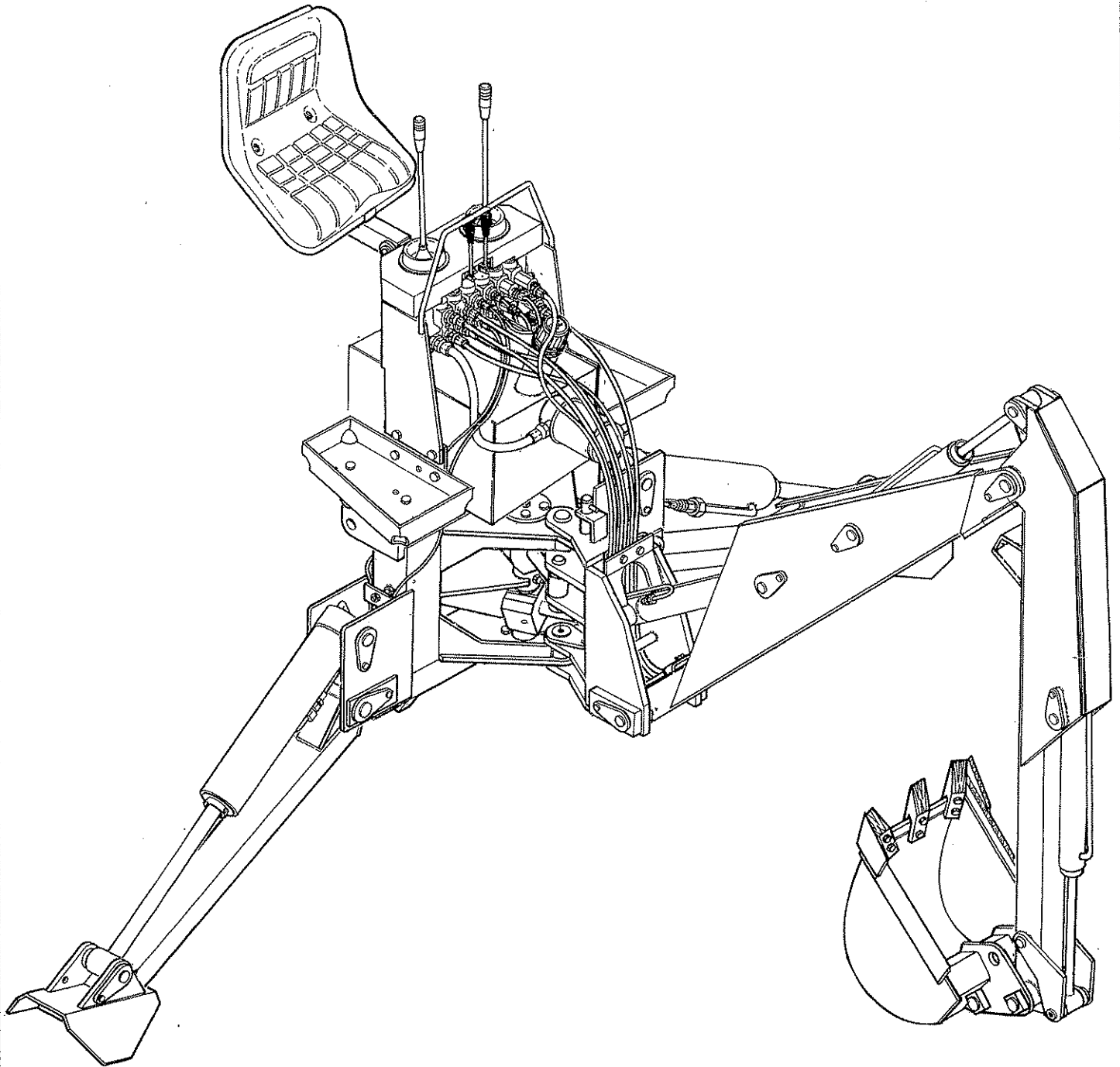


## **WARNING**

### SAFETY PRECAUTIONS

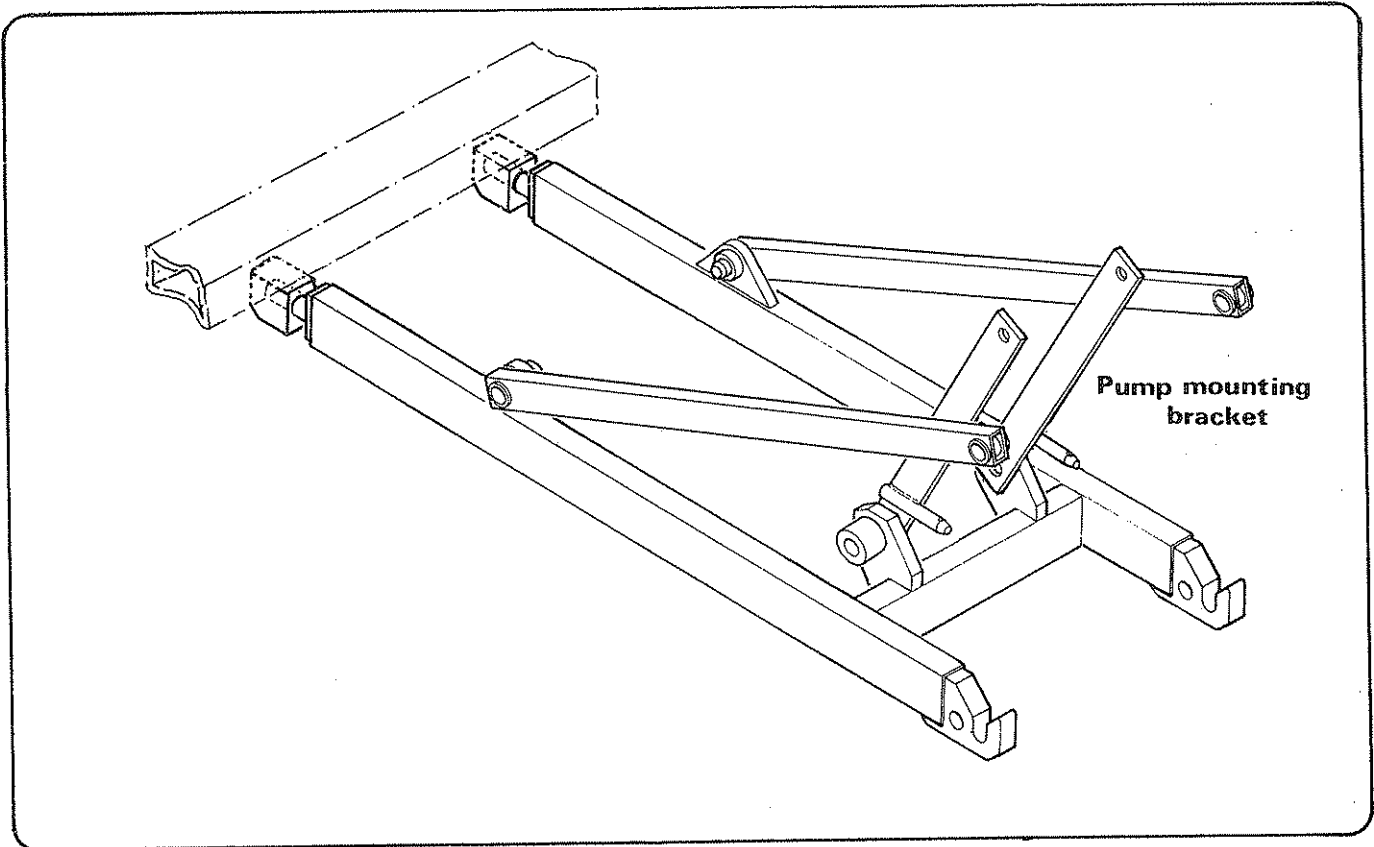
- ALWAYS ... Adjust tractor wheel widths for maximum stability and add front end weights as required.
- ... Read the instruction book thoroughly before attempting to operate the machine.
- ... Keep onlookers at a safe distance.
- ... Replace operational decals when they become illegible.
- ... During transport ensure that the locks are engaged particularly when travelling on the public highway.
- ... Avoid full reach and swinging a loaded bucket to the down hill side when operating on sidling ground.
- ... Be sure of water, gas, sewer or electric line locations before operating the backhoe and in addition watch out for overhead electric cables.
- ... Reverse straight up a steep bank.
- ... Lower legs and bucket to the ground and engage the slew lock when not in use
- ... Practice in an open space with an unladen bucket until familiar with the controls.
- ... Store in a stable position with the slew lock and the lift ram tap engaged.
- ... Lower bucket and feet to the ground, and shut off the engine before dismounting from the unit.
- ... Take extreme care if it becomes necessary to operate the backhoe from a standing position.

**GENERAL VIEW**



**Independent hydraulic model illustrated**

## FITTING



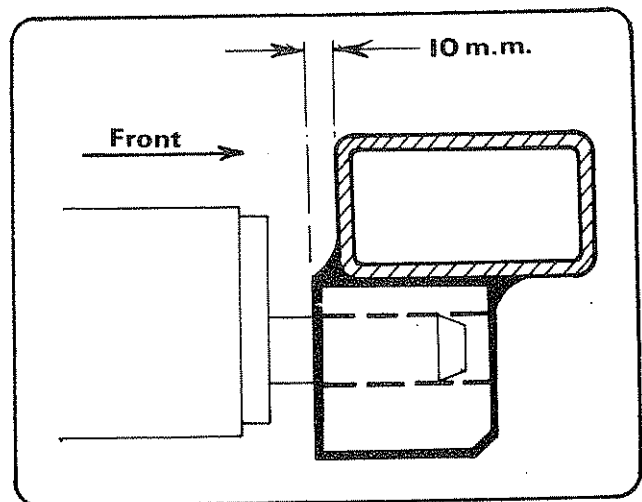
### FITTING SUBFRAME TO B7100 HST TRACTORS

Remove the tractors linkage.

Before attaching the subframe, the pump mounting brackets must be fitted. These are attached between the lift arms and the draft link mounting stubs, and are secured with the existing tractor pins. These brackets are handed and should be positioned with the pump carrying pegs at the lower end and outboard.

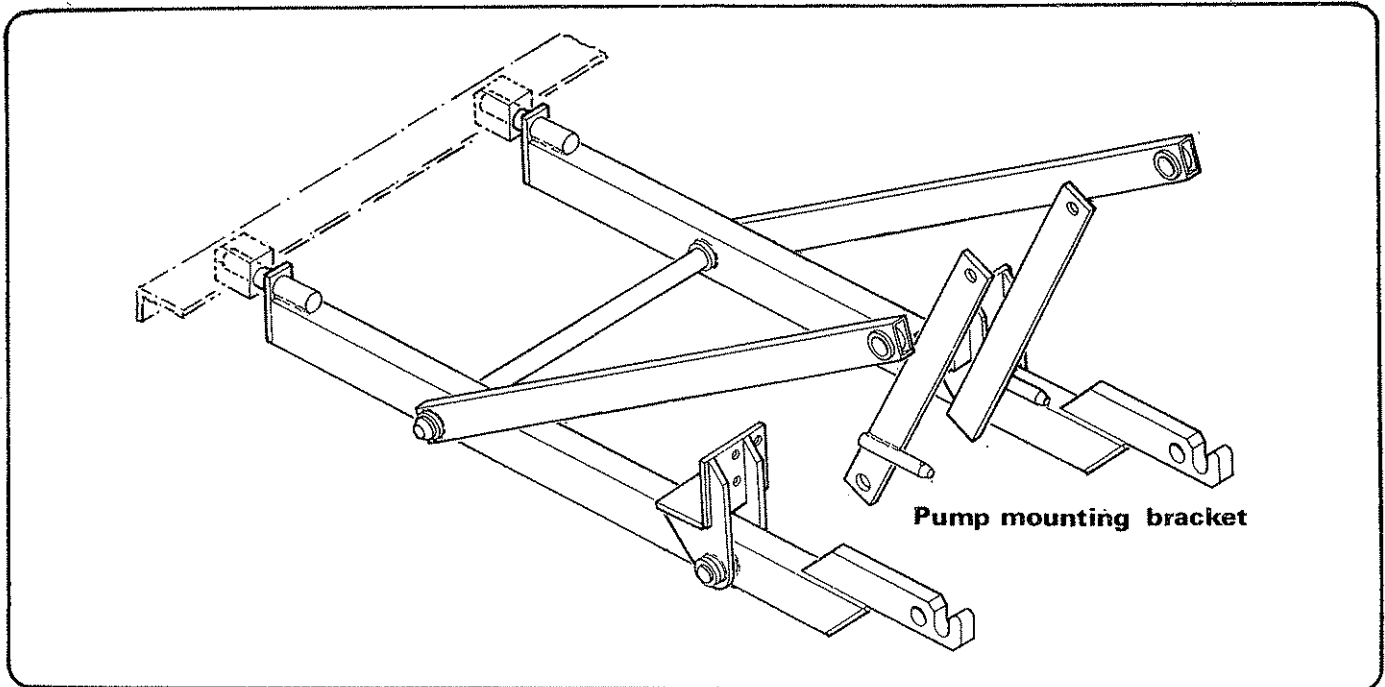
Raise the rear of the frame and hook the jaws over the draft link stubs outboard of the pump mounting brackets. Slide the shouldered sleeves into position and secure with existing lynch pins.

The anchor blocks must be welded to the underside of the loader mounting crossbeam. The blocks, which project 10mm to the rear of the loader frame, are positioned equidistant from the centreline with the chamfer forward and on the bottom, with a distance between the hole centres of 427mm. See diagram. This can be carried out and alignment confirmed by placing the anchor blocks on the beams and using the beams as a jig. Clamp them in place and weld the anchor blocks in the position described.



Pin the digger support stays outboard of the subframe beams.

The tractor is now ready for the digger to be attached.



**FITTING SUBFRAME TO B7200 & B6200 TRACTORS**

Remove the tractor linkage.

Fitting the axle brackets and beams should be completed one side at a time and is carried out as follows.

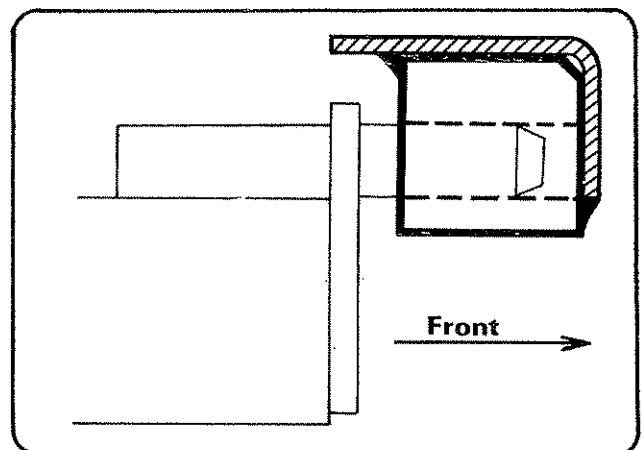
Remove the bolts that secure the roll frame to the axle. Extract the two plastic plugs from the tapped holes in the underside of the axle.

The axle bracket can now be fitted round the rear of the axle over the loader frame mounting plate and secured in position using the setscrews and spring washers provided. The shorter setscrews fit in the underside of the axle. The axle brackets are handed components. Study the drawing carefully and ensure that the mounting plates project towards the centreline of the tractor.

Lift the beam into the jaws of the axle bracket and pin in position.

Repeat the procedure for the other side.

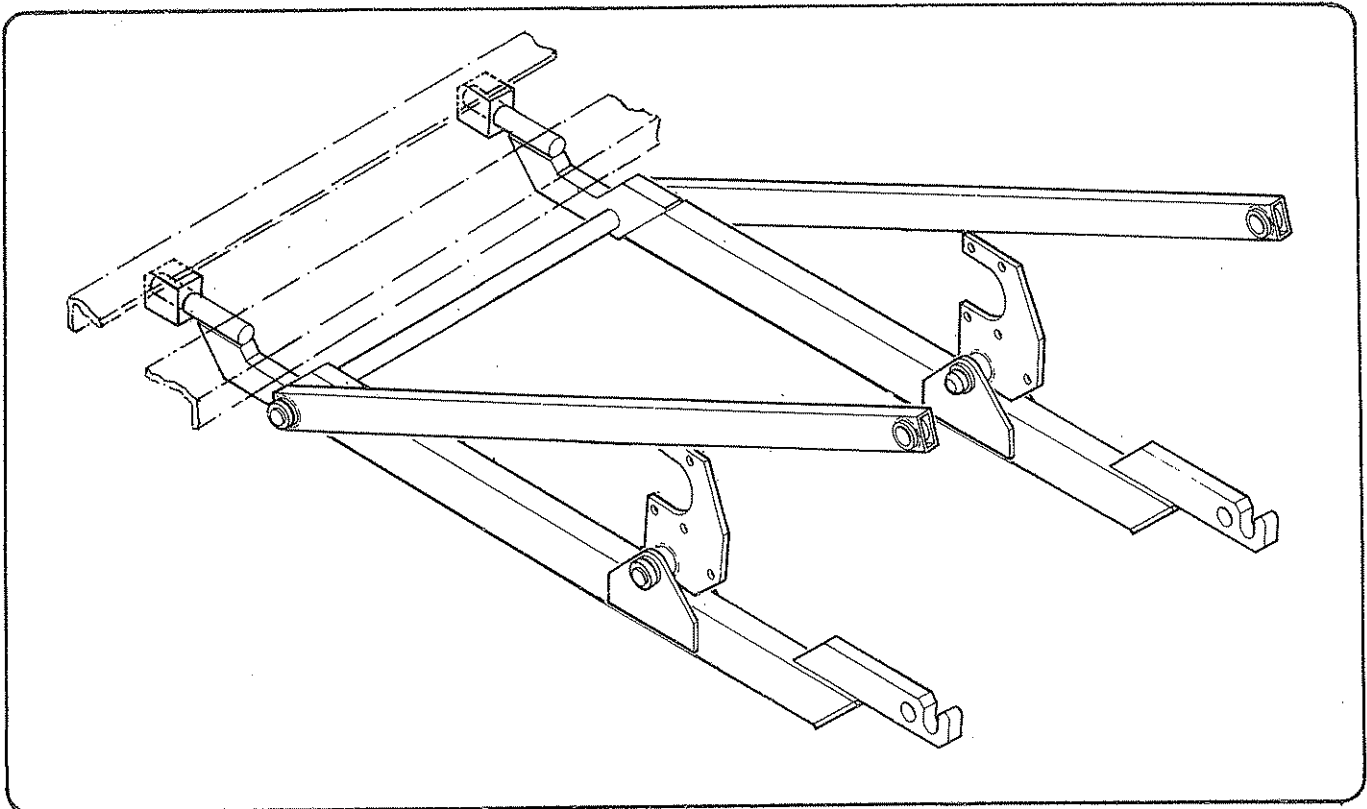
The anchor blocks must be welded to the underside of the loader mounting crossbeam. They are positioned equidistant from the centre line with the chamfer forward and uppermost and with a distance between the hole centre of 432mm. This can be carried out and alignment confirmed by placing the anchor blocks on the beams and using the beams as a jig. Clamp them in place and weld the anchor blocks in the position described.



Fit the stays outboard of the beams and pin in position.

In addition the pump mounting brackets must be fitted. These which are attached between the lift arms and the draft link mounting stub are secured in position with the existing tractor pins. These brackets are handed and should be positioned with the pump carrying pegs at the lower end and outboard.

The tractor is now ready for the digger to be attached.



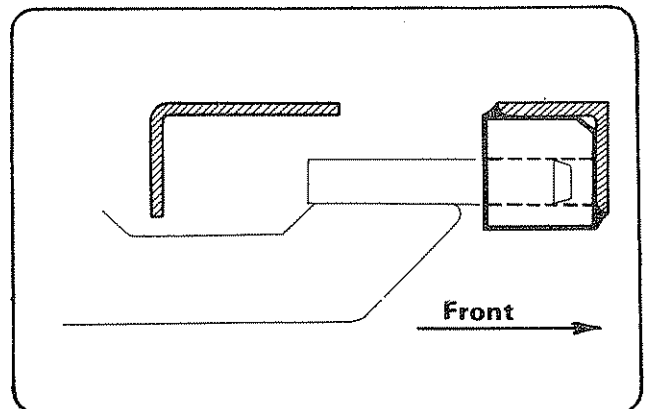
**FITTING SUBFRAME TO B8200 and B8200 HST TRACTORS**

Remove the tractors linkage.

Fitting the axle brackets and beams should be completed one side at a time and is carried out as follows.

Remove the four nuts that secure the bottom of the mudwing and the check chain anchor bracket. Slacken the remaining mudwing mounting bolts until there is sufficient movement to allow the bottom of the mudwing to be sprung clear of its mounting stud. Remove the mudwing spacer and the check chain anchor brackets. Utilizing the existing studs, fit the axle bracket in position with the jaws facing forward. Refit the mudwing, replace the nuts and tighten. Remember to tighten the mudwing bolts previously loosened to allow fitting.

The anchor blocks must be welded to the underside of the loader mounting crossbeam. They are positioned equidistant from the centreline with the chamfer forward and uppermost, and with a distance between the hole centre of 595mm. This can be carried out and alignment confirmed by placing the anchor blocks on the beams and, using the beams as a jig clamp them in place and weld the anchor blocks in the position described.

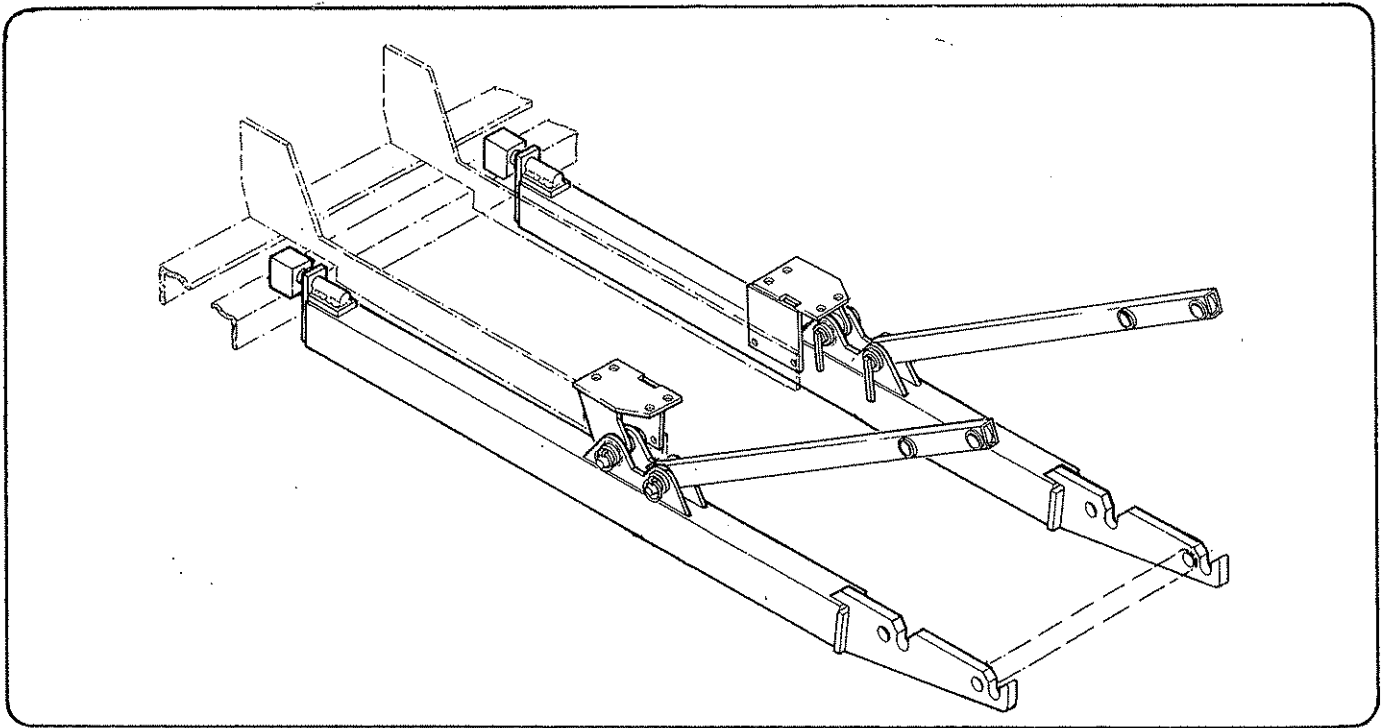


Position the nose of the subframe beam into the socket in the anchor block; lift the beam until the jaws are located either side of the axle bracket and pin in position.

Repeat the procedure for the other side.

Fit the stays outboard of the beams and pin in position.

The tractor is now ready for the digger to be attached.



### FITTING SUBFRAME TO L275 TRACTOR

Remove the tractor linkage.

Fit the subframe beams to the tractor one side at a time as follows.

Unbolt the longitudinal loader brace at the two bolts beneath the axle.

Remove the existing Kubota cab mounting bracket/loader brace anchor.

Using the existing bolts fix the subframe axle bracket in position.

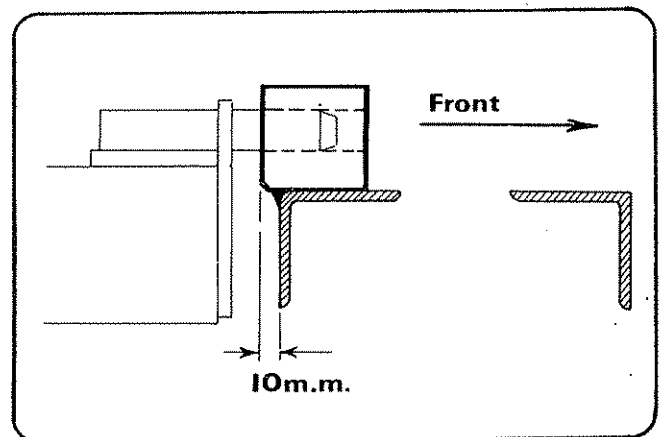
Note that these are handed components and are fitted correctly when the chamfered corner of the flange mounting plate is outboard and to the rear. Re-bolt the longitudinal loader brace in position on the axle brackets using the existing bolts. Do not tighten these or the axle bracket bolts at this stage.

Repeat for the other side.

Pin the beams in position ensuring that the peg nose of the beam is above the loader cross beam. Note that the beams are handed components and are fitted correctly when the pick up hooks are outboard. Fixing pins are inserted nose outwards.

Fit the spacer tube in position between the pick up hooks using the diggers bottom hitch pin.

The subframe anchor blocks must now be welded in position on top of the loader cross beam. They are positioned equidistant from the tractor centre line with hole centres 575mm apart, with the chamfer on the bottom, and with the back face of the block projecting 10mm to the rear of the loader cross beam. See diagram. This can be carried out and alignment confirmed by placing the blocks on the beam and using them as a jig, clamp in position prior to welding.



Fully tighten the axle bracket and loader brace mounting bolts.

Fit the diagonal stays outboard of the subframe beams with the pins provided. Fixing pins are inserted nose outward.

Remove spacer tube and discard.



## ATTACHMENT OF DIGGER TO TRACTOR

The KM 190 will be delivered with the legs fully retracted and the arms folded and secured by packing stays.

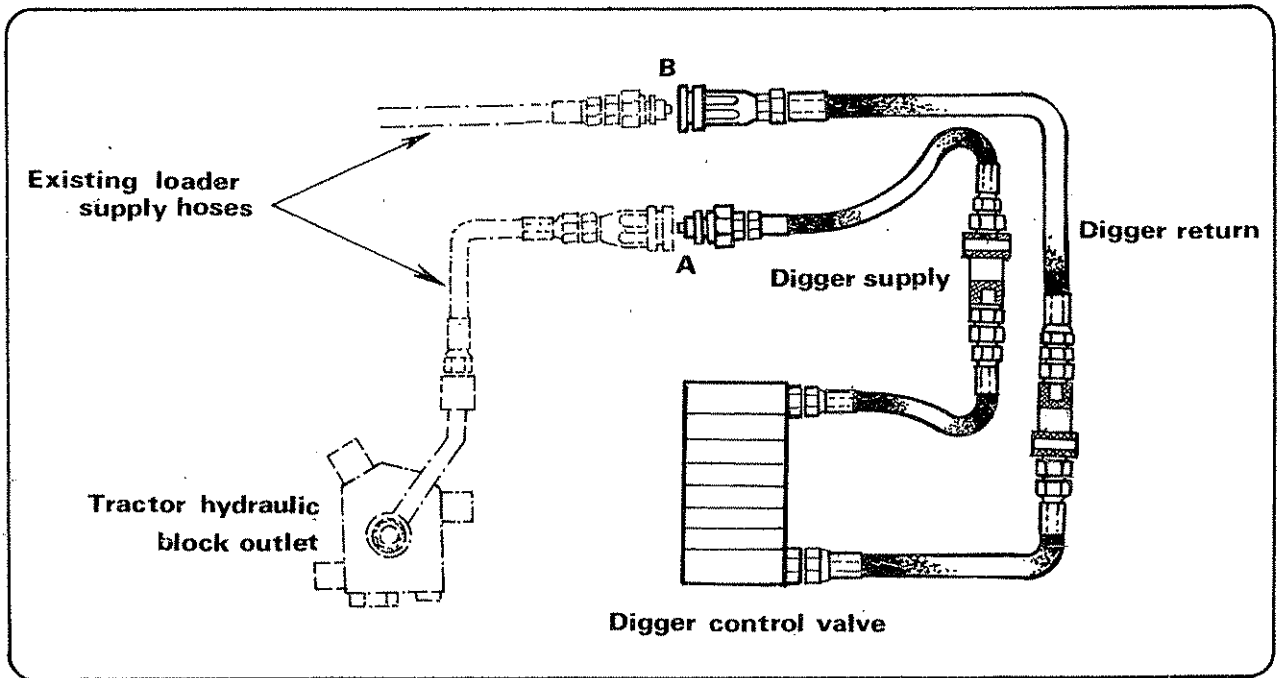
Attachment to the tractor can easily be carried out by a single person.

Select a firm level site.

Reverse the tractor squarely up to the digger and for:-

L275, B8200 and B8200 HST tractors when the digger is powered by tractor hydraulics.

The digger is connected into the loader supply line in the following manner.



Uncouple the loader supply hose at the self seal coupling, the hose from the tractor hydraulic block outlet is then connected to the 3/8 BSP digger supply hose at 'A' and the 1/2BSP digger return hose is then coupled up to the loader control valve supply hose at 'B'.

These connections at 'A' and 'B' can either be made by completing the circuit with a matching self seal coupling or by discarding the loader supply hose self seal coupling and making the connections with a suitable union. For a long term installation it is recommended that the latter alternative is adopted.

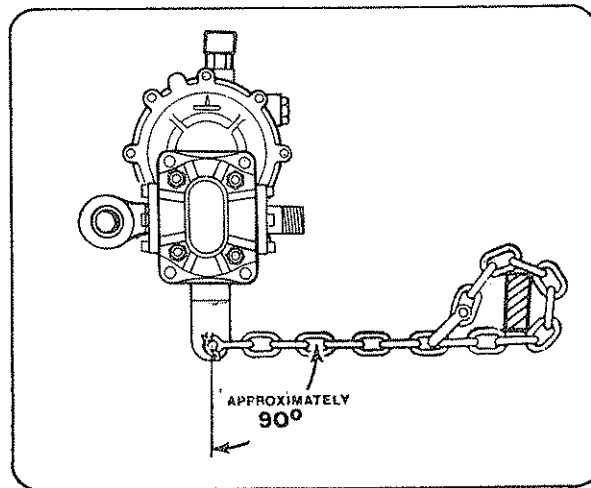
B6200, B7200, B7100HST TRACTORS AND ALSO B8200 , B8200HST  
For diggers with independent hydraulics.

Slide the pump assembly onto the tractors P.T.O. shaft and locate in position on the pegs of the pump mounting brackets for B6200, B7200 and B7100HST tractors or to the pump carrier pin for B8200 and B8200HST tractors. The pump carrier pin which provides mounting pegs for the pump is fitted into the towing hitch and secured with a linch pin.



## L275 TRACTORS with independent hydraulics

Check that the P.T.O. gearbox contains oil. Its capacity is 1/4 pint (150 mls) of E.P.90 gear oil. Fit the gearbox/pump unit onto the tractors P.T.O. shaft in the vertical position as shown ensuring that the spring loaded locking collar is fully engaged. Secure the torque chain so that the angle is approximately 90 deg. to the torque arm and is in lateral alignment. A suitable anchoring point is around the subframe beam.



## ALL TRACTORS with independent hydraulics

Fill the hydraulic tank with 5 gallons of oil selected from the following table.

Supplier	Cold or temperate climate	Hot Climate
Castrol	Agricastrol hydraulic oil Hy-Spin AWS 32	Hy-Spin AWS68
Shell	Tellus 27	Tellus 33
Mobil	D.T.E. 25	D.T.E.26
Esso	Nuto H or A32	Nuto H or A 68
Texaco	Rando HD 32	Rando HD68
Gulf	Hydrasil 32	Hydrasil 68
BP	Energol HLP 32	Energol HLP 68
Dalton	Silkolene Dove 32 or Derwent 32	Silkolene dove 68 or Derwent 68
Elf	Hydrelf 32	Hydrelf 68

Engage the PTO drive and allow the pump to work under a no load condition for several minutes i.e., with the operating controls in neutral with the tractor engine speed at high idle.

Select 'leg down' and operate both equally, to raise the digger frame sufficiently to reverse the subframe hooks under the hitch bars. Raise the legs and lower the hitch bars into the carrying hooks. The subframes c/w their carrying hooks are positioned inboard of the main frame lower lugs for B6200, B7200 and B7100 HST tractors and outboard for B8200, B8200 HST and L275 tractors.

Remove the packing stays, unscrew the lift ram tap, and by use of the 'lift down' and 'reach out' services manoeuvre the main frame into a vertical position.

Fit the diagonal stays to the top mounting lugs on the digger main frame.

For the KM190 use the following location holes for the diagonal stay.

B7200 HST use lower holes inboard of the lugs.

B7200 and B6200 use upper holes inboard of the lugs.

B8200, B8200HST and L275 use upper holes outboard of the lugs.

Fit the bottom hitch locking pin in position.

Release the slew lock and operate the machine throughout its work cycle to purge all air from the system. Check that no hoses are being trapped, frayed, kinked or stretched in any way.

Ensure that all transport locks are engaged before proceeding to the worksite.

### REMOVAL FROM TRACTOR

Select a firm level site for parking the machine.

Lower the feet to the ground and take the weight of the machine to remove tension from the hitch locking pins. Extend the bucket ram fully. With the arms directly to the rear operate the lift and reach to place the bucket firmly on the ground with the dipper in a vertical position.

Engage the slew lock pin and fully close the lift ram tap.

Remove the locking pins from the lower hitch plate and disconnect the diagonal stays from the digger.

Simultaneously lower the legs sufficiently to allow the hitch pins to be lifted clear of the subframe beam hooks.

### ALL TRACTORS WITH INDEPENDENT HYDRAULICS

Remove the pump from the P.T.O. shaft and loop conveniently over the digger to keep it clear of the ground.

Remove the pump mounting stays.

For B8200, B8200HST and L275 when powered by tractor hydraulics.

Switch off the tractor. Disconnect the supply and return hoses at the self seal couplings - those nearest the digger if two sets are retained in the circuit.

Connect the digger supply and return hoses into a loop to prevent dirt entering the self seal couplings.

Couple up the remaining self seal couplings to complete the loader supply line.

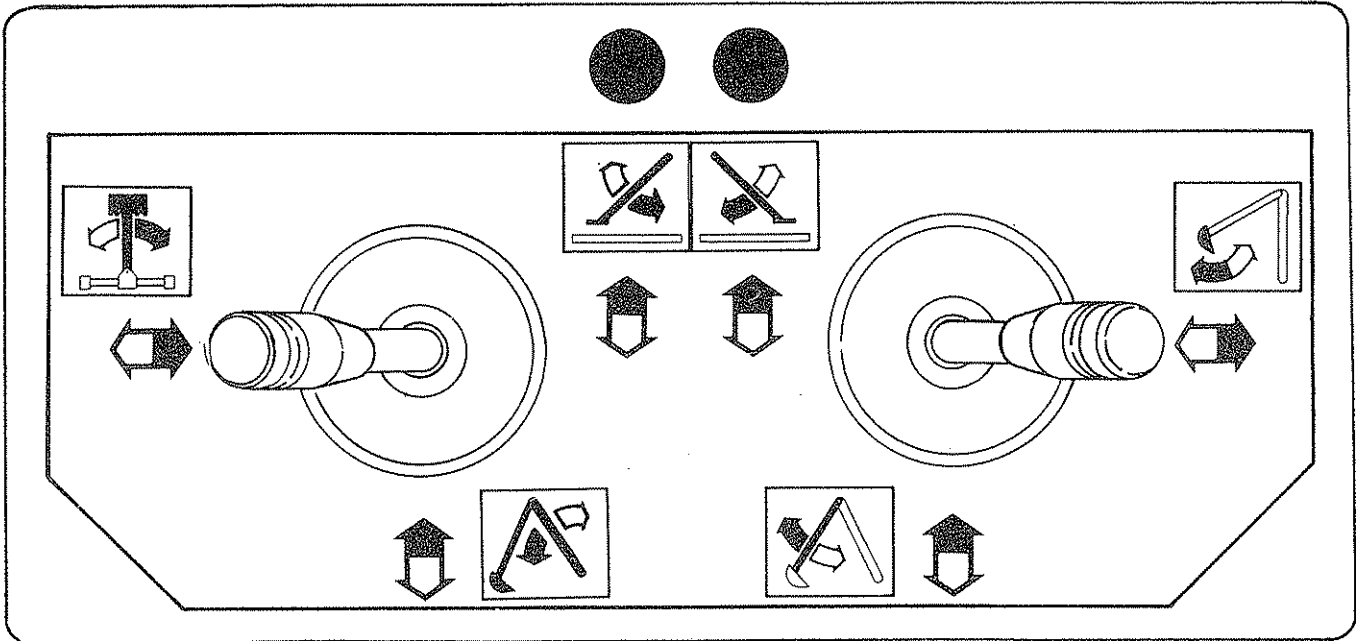
The tractor can now be driven forward from the digger.

For normal three point linkage operation, the beams and diagonal stays must be removed. The axle brackets, which for the B8200, B8200HST and L275 also provide check chain anchor points can remain in position.

## OPERATION

### SAFETY

Before commencing operation read this manual carefully paying particular attention to aspects relating to safety. THEY ARE FOR YOUR OWN GOOD



### MACHINE CONTROLS

The main controls of the KM190 i.e., for lift, bucket, reach and slew are operated by two joystick control levers each controlling a pair of functions either individually or in unison. When moved on a '+' axis the levers will activate a single service but if operated with an 'x' axis two services will be simultaneously selected. Lever sensing is such that moving the lever away from the operator or to the right will cause the arm to move away or, in the case of the slew service, to the right. i.e., moving a lever away or to right will result in Main arm down, Reach out, Bucket open and Slew right. The lever knobs are colour coded according to function. green and red control the reach and bucket operation, black and yellow the slew and lift.

The secondary controls which are situated between the two main joystick levers consists of two levers each of which individually controls its respective hydraulic leg. Moving the levers away from the operator will cause the legs to lower.

Before commencing work select a clear unobstructed site and operate the digger without load until the controls and the 'feel' of the machine are familiar. This is a wise precaution for all operators and a must for the inexperienced.

### TRACTOR ENGINE SPEED

When the KM190 is powered by the tractors own oil supply the engine should be run at no higher a speed than is necessary to provide the digger with 4.4 gallons per minute (20 l.p.m.) of hydraulic oil flow, which is sufficient for operation. (For correct engine speed see tractor handbook) Increasing the flow does not increase machine performance but merely causes the oil to overheat thus decreasing its working life.

When the KM190 is powered by independent hydraulics the correct oil flow is delivered at 1400 engine revs per minute if 825 r.p.m. PTO is selected and at 2200 engine revs per minute if 540 r.p.m. PTO is preferred.

## OPERATING STABILITY

The machine is operated with the weight supported by the front loader bucket and the digger feet with the tractors wheels clear of the ground.

For maximum stability extend the bucket rams until the bucket is fully open, then lower the bucket to the ground and power down until the weight of the tractor is taken. In this way the edges of the open bucket in contact with the ground will give improved grip and any fore and aft movement caused by the digging action will be minimised.

When working on sidling ground, avoid, if possible operating the digger at extended reach on the downhill side of the unit, also, wherever practicable unload the spoil on the uphill side of the machine.

Side to side levelling is by independent use of the hydraulic legs.

Fore and aft levelling is by interaction of the loader bucket and the hydraulic legs.

## DIGGING DEPTH

Extra digging depth can be achieved by tilting the machine backwards. This is done by pushing down with the loader bucket and raising the feet. When operating in this tilting back mode some deterioration in the performance of the slew circuit is inevitable as the system is always struggling to slew uphill with a laden bucket.

## SEAT ADJUSTMENT

The seat pan c/w with the seat is bolted through any one of four holes in the seat carrier bracket to give 4" of fore and aft adjustment.

Note. The foot rests, although provided with extra holes, are not adjustable for position.

## TRANSPORT

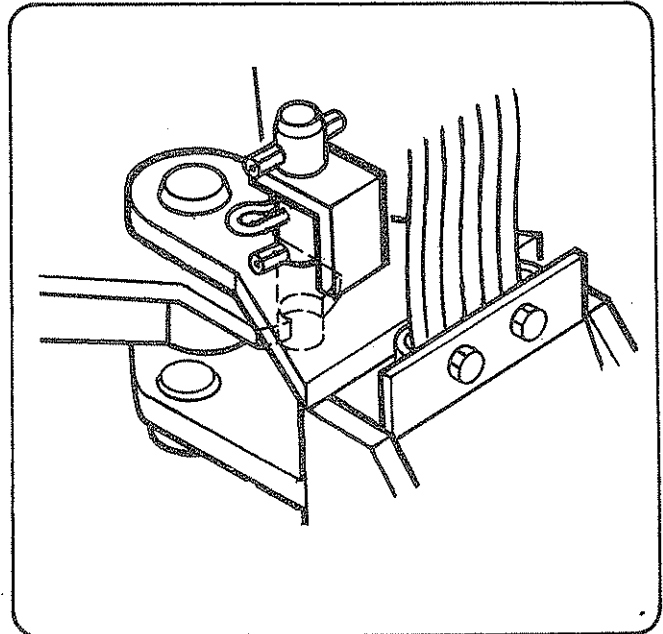
The KM190 is fitted with three separate transport locks which will, when engaged, prevent any movement of the arms caused either by creep or by inadvertent operation of the control handles.

The locks should be engaged at all times during transport, particularly on the highway, and when the machine is parked and removed from the tractor.

### Slew Lock.

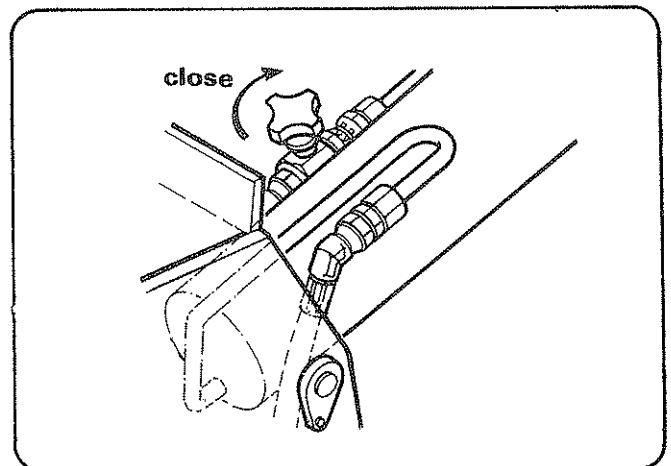
Consists of a captive vertical pin located on the top of the slew column, which, when engaged, locates in a mating notch in the top plate of the main frame and locks the slew column in the transport position directly in line astern of the tractor thus preventing accidental slewing or creeping of the column.

To engage remove the 'R' clip and allow the locking pins to locate in the notch in the main frame. Replace the 'R' clip to prevent the pin jumping out during transport. To disengage, the pin is held up and the 'R' clip re-positioned through its hole above the mounting bracket.



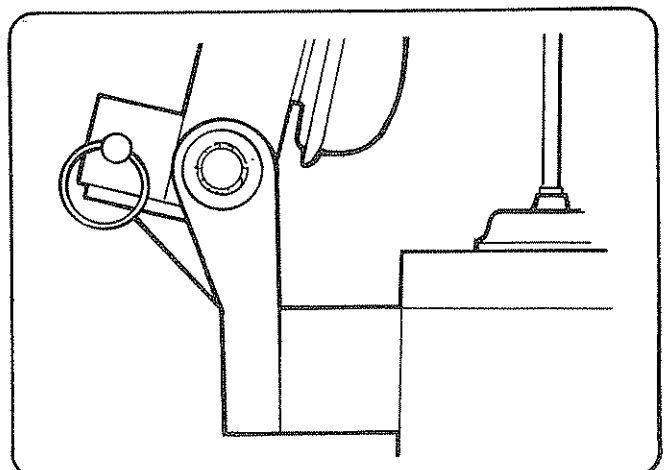
### Lift Ram Tap

Located on the gland connection of the Lift ram, the tap, when fully closed will prevent the arm from creeping or falling to the ground if the control lever is accidentally operated.



### Seat Lock

During transport the digger seat is folded rearward over the control handles. To prevent the seat falling back onto the tractor driver, a sprung loaded locking plunger is provided. Situated just below the seat pivot, it will, when the seat is folded, locate into a mating hole and secure the seat in the transport position.

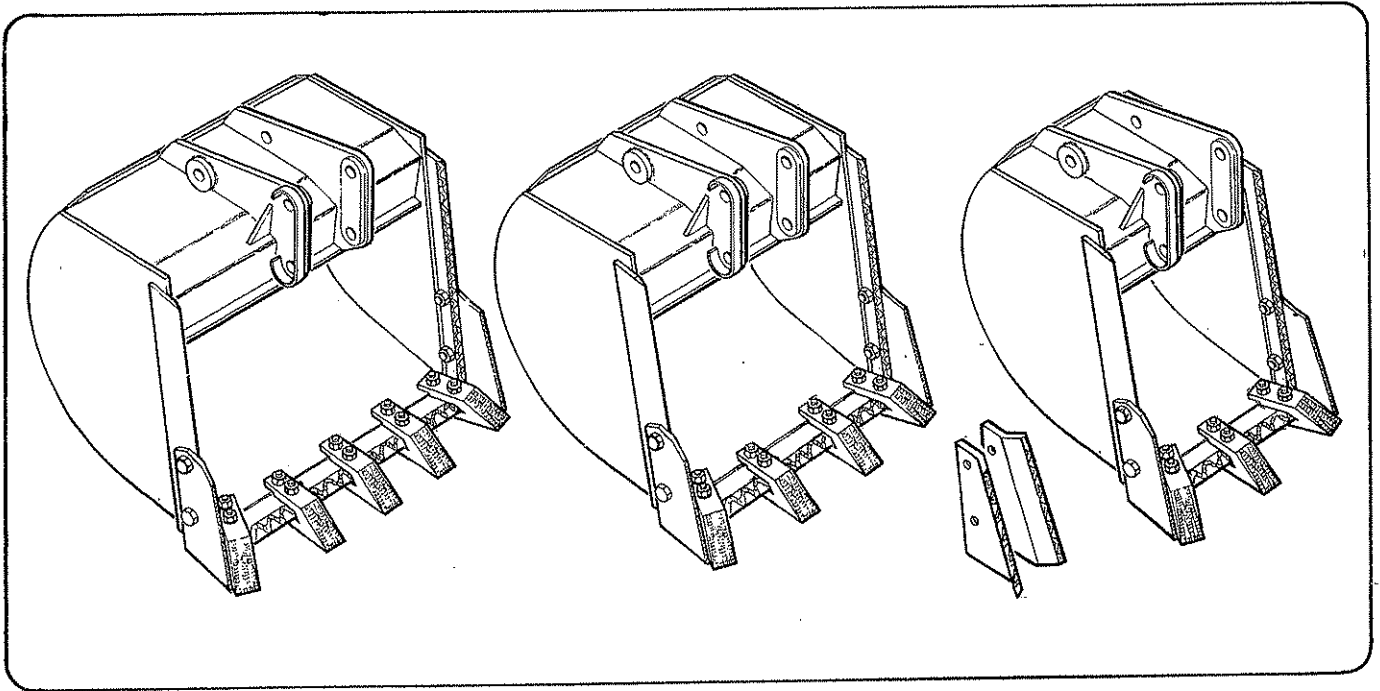


## BUCKETS

Five buckets are currently available for use with the KM 190

### Bucket attachment.

All buckets use the same two pivot pins to attach to the dipper arm and the slave link. To fit, place the bucket on the ground and lower the dipper arm end into position between the pivot plates and fit the bucket pivot pin. Note that the pin heads abut against a triangular stop to prevent the pins from turning. Lift the bucket clear of the ground, adjust the stroke of the bucket ram to enable the slave link to be positioned and pinned into place.

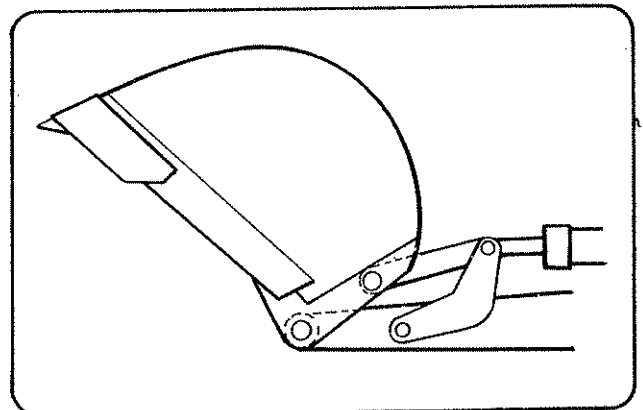


### Excavating Buckets.

Available in 13", 16" or 22" width the buckets, which are equipped with hard faced reinforced teeth, have alternative mounting pivots to give a 'square hole' digging action. Offered as optional extras the side cheek plates will give an extra 2" of digging width.

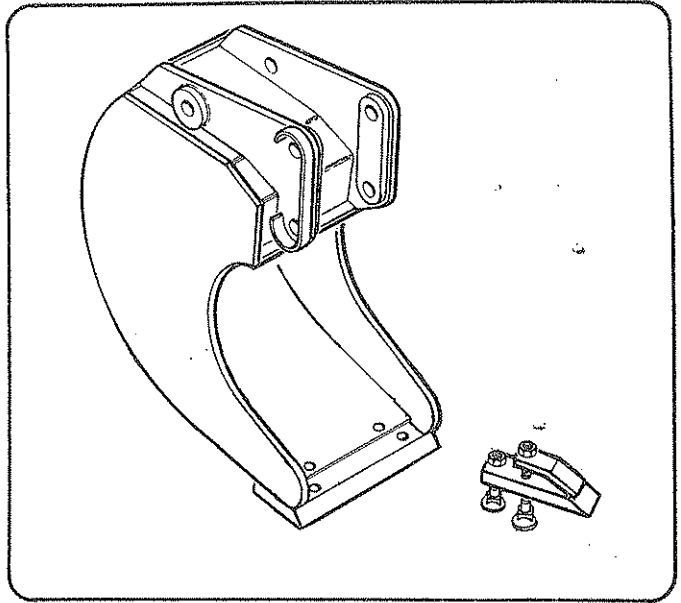
### Square Hole Geometry.

Where it is desired to form a vertical face as in the digging of a straight sided pit, the bucket may be hinged in the upper pivot position to give a square hole action. This position will also result in 4 1/2" of greater working depth though some loss of power must be expected from this geometry as well as a limitation to the fully closed position of the bucket.



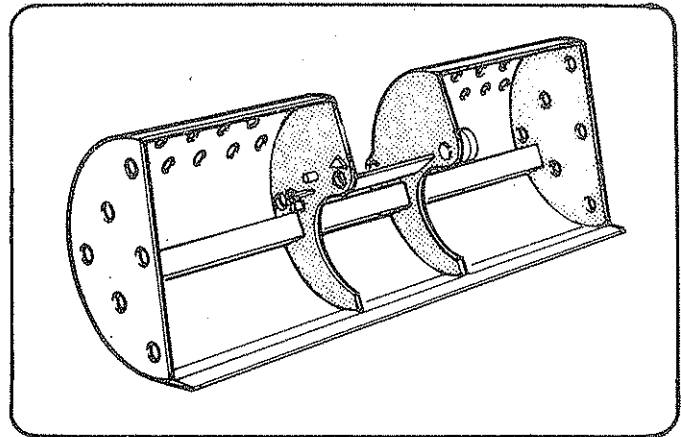
## Trenching Bucket

This bucket having the same profile as the excavating buckets is 8" wide and has the sides cut away to facilitate emptying.

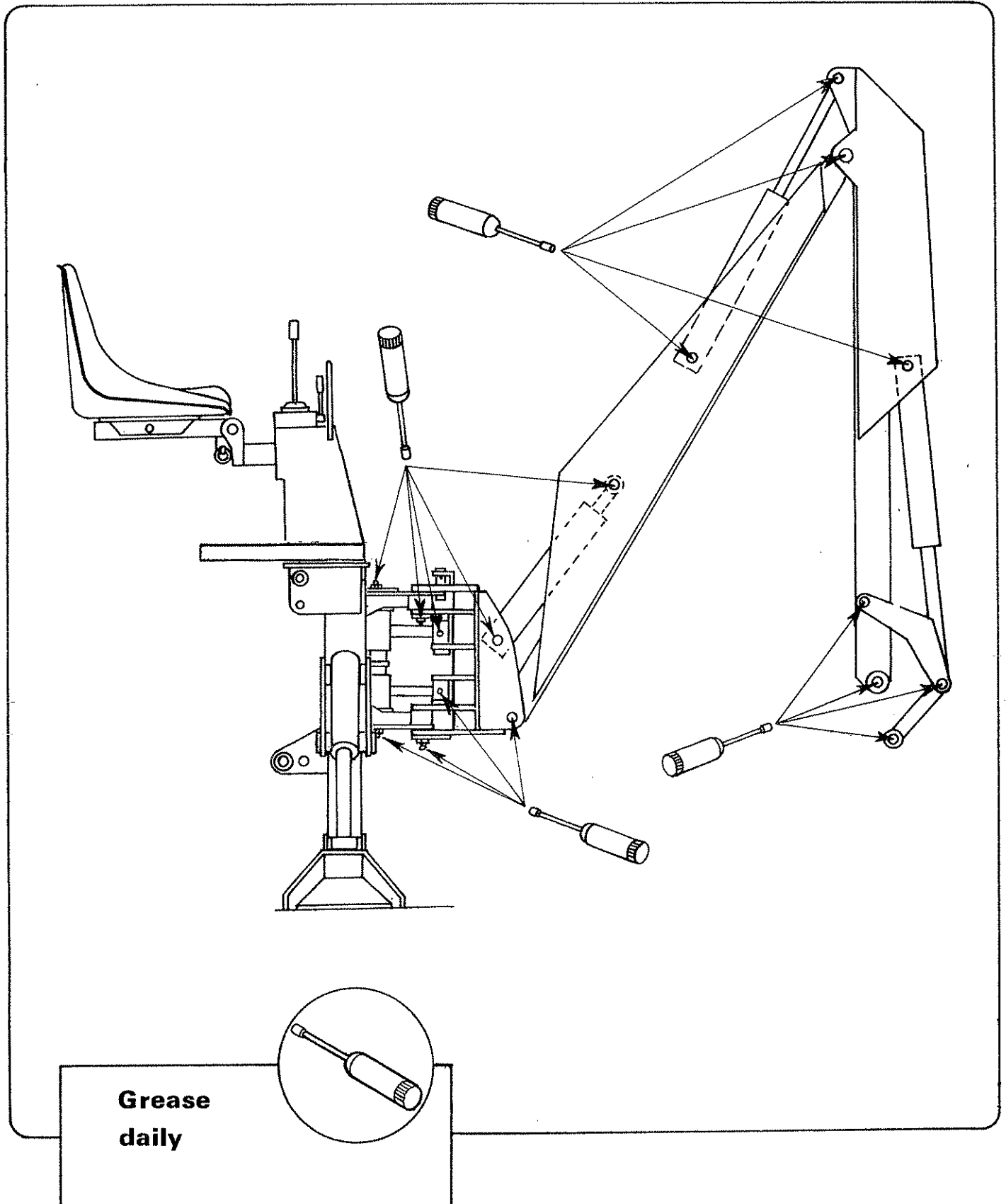


## Ditch Cleaning bucket.

This 36" wide bucket is strictly a maintenance tool and as such has an unobstructed leading edge and a perforated back for water drainage.



# MAINTENANCE



## LUBRICATION

Referring to the lubrication diagrams, grease daily and oil weekly all points shown. Remember conscientious lubrication pays dividends in terms of longer machine life and trouble free operation.



## HOSES

The condition of all hoses should be carefully checked during routine service of the machine. Hoses that have been chafed or damaged on their outer casing should be securely wrapped with waterproof adhesive tape to stop the metal braid from rusting. Hoses that have suffered damage to the metal braid should be changed at the earliest opportunity.

Hose replacement.

- a) Replace one hose at a time to avoid the risk of wrong connections.
- b) When the hose is screwed to an additional fitting or union, use a second spanner on the union to avoid breaking both seals.
- c) Do not use jointing compound on the threads.
- d) Avoid twisting the hose. Adjust the hose line to ensure freedom from rubbing or trapping before tightening hose end connections.

Hose Warranty

Warranty is limited to replacement of hoses which have failed due to faulty materials or manufacture. Warranty will not be considered on hoses that have suffered damage by abrasion, cuts or being pinched or trapped while in work. Neither will a claim be considered where a hose end has been damaged by a blow or where the threads or unions have been damaged by overtightening.

Hose routing.

Although they may look random the layout and the routes of the hoses have been carefully worked out to ensure that they are not trapped, kinked, chafed or pinched during the diggers operation. If replacing a hose take care to fit the replacement in exactly the same way as its predecessor.

## INDEPENDENT HYDRAULIC FILTER

A return line canister type filter is directly attached to the top of the reservoir. It is recommended that this filter is changed after the first fifty hours use and thereafter, annually.

## GEARBOX

Routine maintenance of the gearbox will primarily consist of making a check on the oil level which should be visible through the transparent plug. The complete assembly should be kept clean especially in the input shaft area. An accumulation of dust and grit can have an abrasive effect on the shaft seal and cause leaks. The oil should be changed annually. Shaft seal part no. 86 29 134 and the overhaul seal kit part no. 86 99 178.

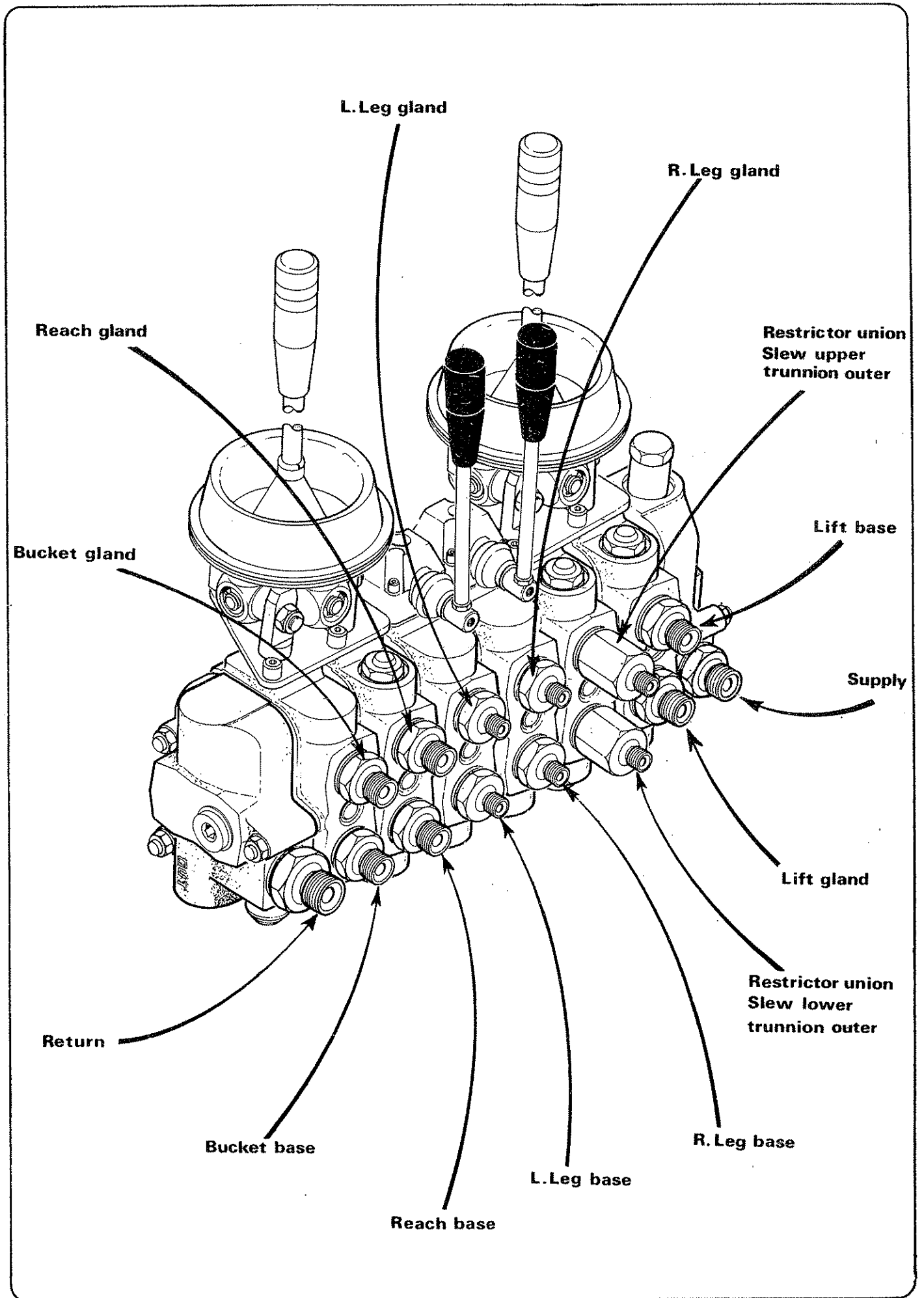
## STORAGE

If the machine is to be left standing for an extended period of time, lightly coat the exposed portions of the ram rods with grease. Subsequently this grease which becomes contaminated with dust and grit should be wiped off before the rams are next moved.

If the machine has to be stored outside tie a piece of canvas or tarpaulin over the control assembly - do not use a plastic bag - this could lead to rapid corrosion.

In addition the seat can be pivoted forward to cover the operating levers.

Support the supply and return hoses clear of the ground to prevent contaminant entering the hose ends.



# Spare Parts

## USE ONLY KUBOTA SPARE PARTS

To be assured of the latest design improvements purchase your genuine replacements from the original equipment manufacturer Kubota UK Ltd through your local dealer or stockist.

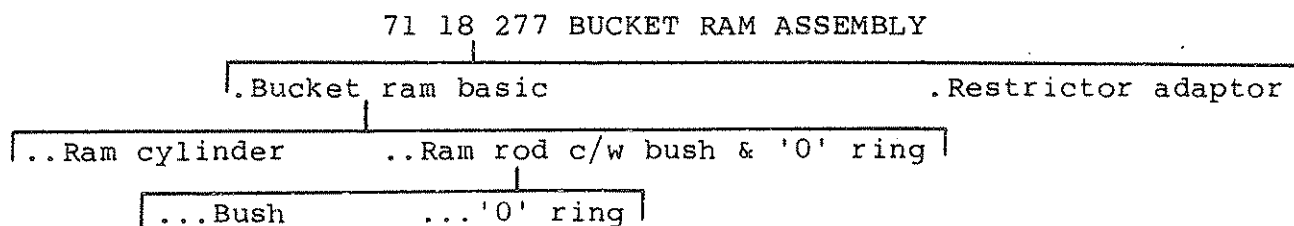
Always quote machine type and serial number as well as the part number.

Design improvements may have altered some of the parts listed in this manual - the latest part will always be supplied when it is interchangeable with an earlier one.

## THE DOT SYSTEM

Many spares are supplied as assemblies or sub assemblies. To help the customer determine the composition of an assembly the dot system is used. The main assembly of a particular page will not show a dot preceding its description and is printed in block capitals. Subsequent assemblies, sub assemblies or individual parts will be identified with one or more dots which designate a pyramid parts structure. In this way a one dot item will include everything below it until the next one dot item is encountered and similarly for two or three or more dot items. See example below. Note also that quantities given in sub assemblies are per assembly and not total off per machine

e.g.



Model.

FRAME & SLEW COLUMN

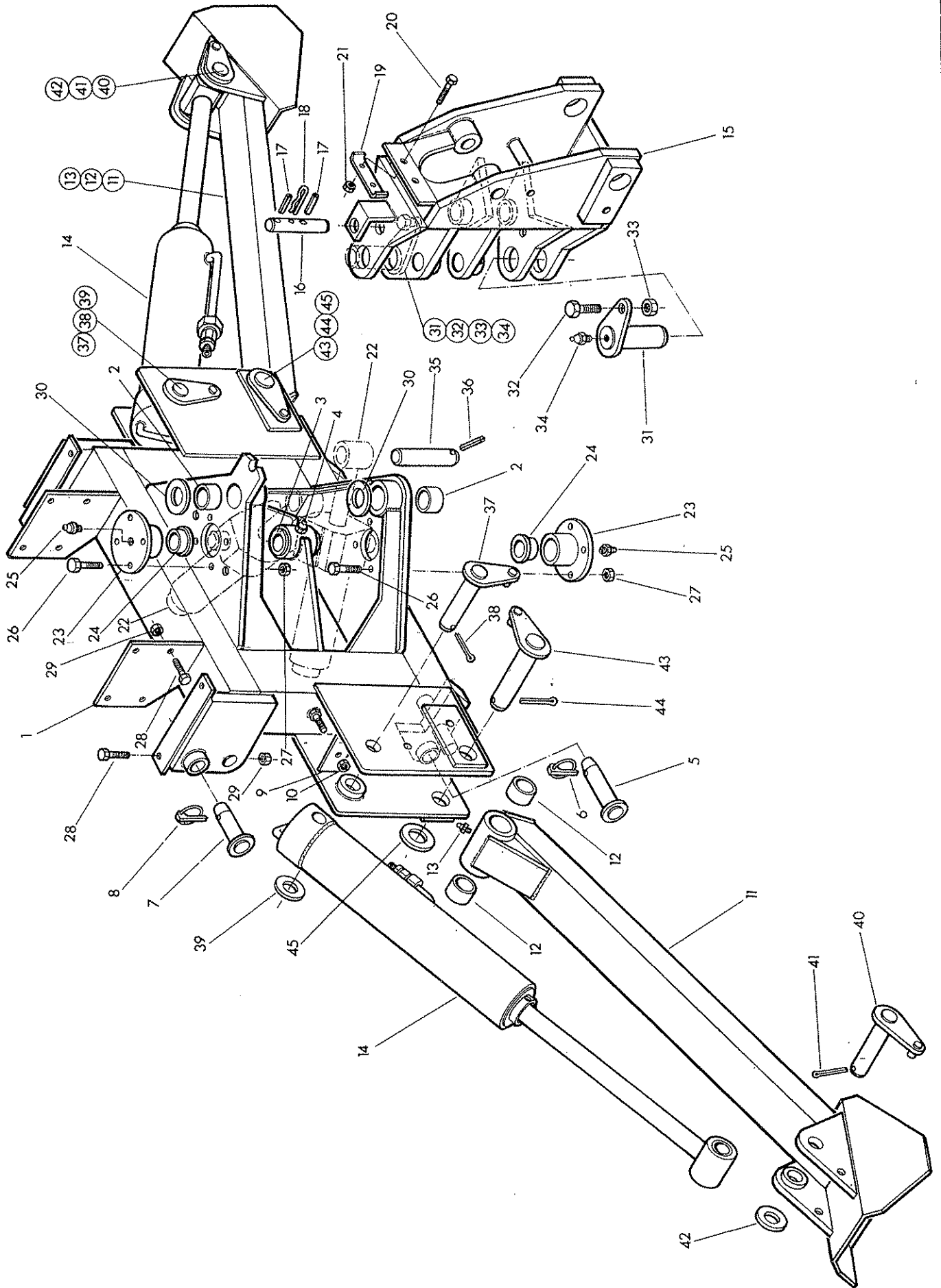


**KUBOTA**

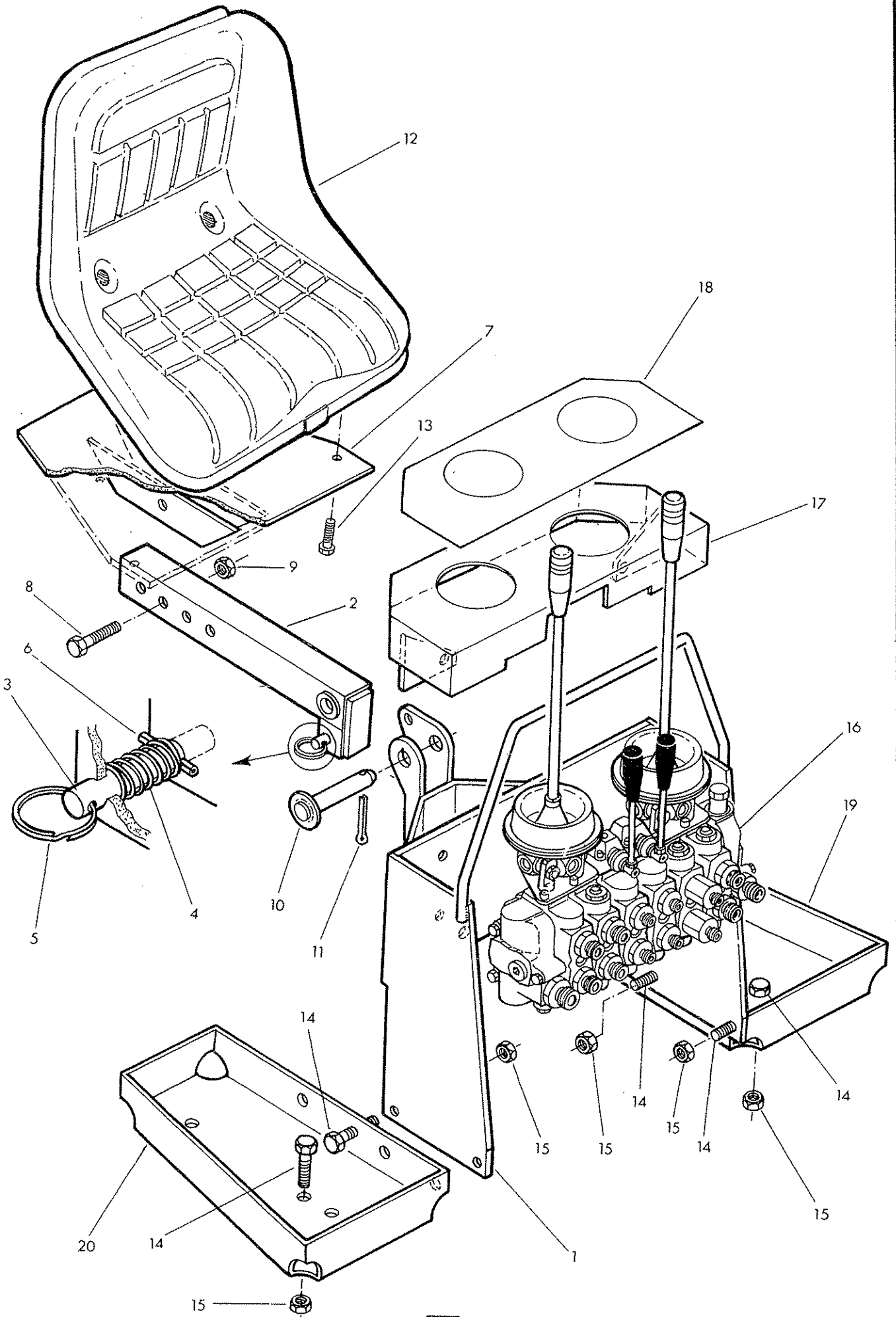
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Ref	Part No.	Qty	Description
			FRAME LEGS & SLEW COLUMN
1	71-20-266		.Mainframe c/w pins, greasers etc.
2	72-13-023	2	..Bush
3	60-02-030	2	..Flanged bush
4	09-01-121	1	..Greaser 1/8 BSP-straight
5	71-18-112	2	..Bottom mounting pin c/w linch pin
6	04-31-217	1	...Linch pin
7	10-65-158	2	..Top mounting pin c/w linch pin
8	04-31-217	1	...Linch pin
9	71-20-085	2	..Hose clamp strip
10	91-43-005	2	..Self locking nut M10
11	71-20-298	2	.Leg c/w bushes and greaser
12	71-01-134	2	..Bush
13	09-01-121	1	..Greaser 1/8 BSP straight
14	71-20-285	2	.Leg ram assembly (see page 45 )
15	71-20-265	1	.Slew column c/w pin, hose clamps etc.
16	71-20-073	1	..Slew lock pin c/w pins
17	04-25-540	2	...Spring dowel $\emptyset$ 5 x 40
18	04-31-105	1	...Spring cotter
19	71-20-074	1	..Hose clamp
20	92-13-094	2	..Bolt M8 x 45
21	91-43-004	2	..Self locking nut M8
22	71-20-282	2	.Slew ram (see page 46 )
23	71-20-048	2	.Trunnion cap c/w bush & greaser
24	60-02-030	1	..Bush - shouldered
25	09-01-121	1	..Greaser 1/8BSP - straight
26	03-11-103	8	.Setscrew 3/8 UNF x 1 1/4" long
27	01-41-003	6	.Self locking nut 3/8 UNF
28	93-13-055	8	.Setscrew M10 x 30
29	91-43-005	6	.Self locking nut M10
30	60-01-136	2	. Thrust washer
31	71-20-110	2	.King Pin c/w nut, bolt and greaser
32	93-13-087	1	..Bolt M16 x 40
33	91-43-007	1	..Self locking nut M16
34	09-01-121	1	..Greaser 1/8 BSP straight
35	71-20-111	2	.Slew ram rod pin c/w spring dowel
36	04-25-845	1	..Spring dowel $\emptyset$ 8 x 45
37	71-20-119	2	.Leg ram base pin c/w split pin & washer
38	95-01-406	1	..Split pin $\emptyset$ 5 x 40
39	01-00-109	1	..Plain washer 1" dia.
40	71 20 117	2	.Leg ram rod pin c/w split pin & washer
41	95-01-406	1	..Split pin $\emptyset$ 5 x 40
42	01-00-109	1	..Plain washer 1" dia.
43	71-20-118	2	.Leg pivot pin c/w split pin & washer
44	95-01-507	1	..Split pin $\emptyset$ 6 x 50
45	72-12-006	1	..Plain washer 1 1/4" dia.



Ref	Part No.	Qty	Description
			CONTROL CONSOLE
	71-20-315	1	.Seat and console compr:-
1	71-20-267	1	..Console
2	71-20-222	1	..Seat mounting bracket c/w plunger
3	71-20-225	1	...Seat latch pin
4	81-30-111	1	...Spring
5	71-05-094	1	...Split ring
6	04-20-812	1	...Spring dowel 1/8" dia x 3/4" long.
7	71-20-221	1	..Seat plate c/w nut & bolt
8	92-13-136	1	...Bolt M12 x 65
9	91-43-006	1	...Self locking nut
10	71-20-226	1	..Seat mounting pin c/w split pin.
11	05-03-095	1	...Split pin 3/16 dia x 1 1/8"
12	71-06-352	1	..Seat c/w screws.
13	71-06-104	4	...Set screw 5/16 UNC
14	93-13-065	6	..Setscrew M10 x 30
15	91-43-005	6	..Self locking nut M10
16	81-28-286	1	.Control valve assembly (see page 31 )
17	71-20-136	1	.Valve cover c/w instruction label
18	71-20-284	1	..Instruction label
19	71-20-317	1	. Footrest R.Hand.
20	71-20-316	1	. Footrest L.Hand

Model.

ARMHEAD

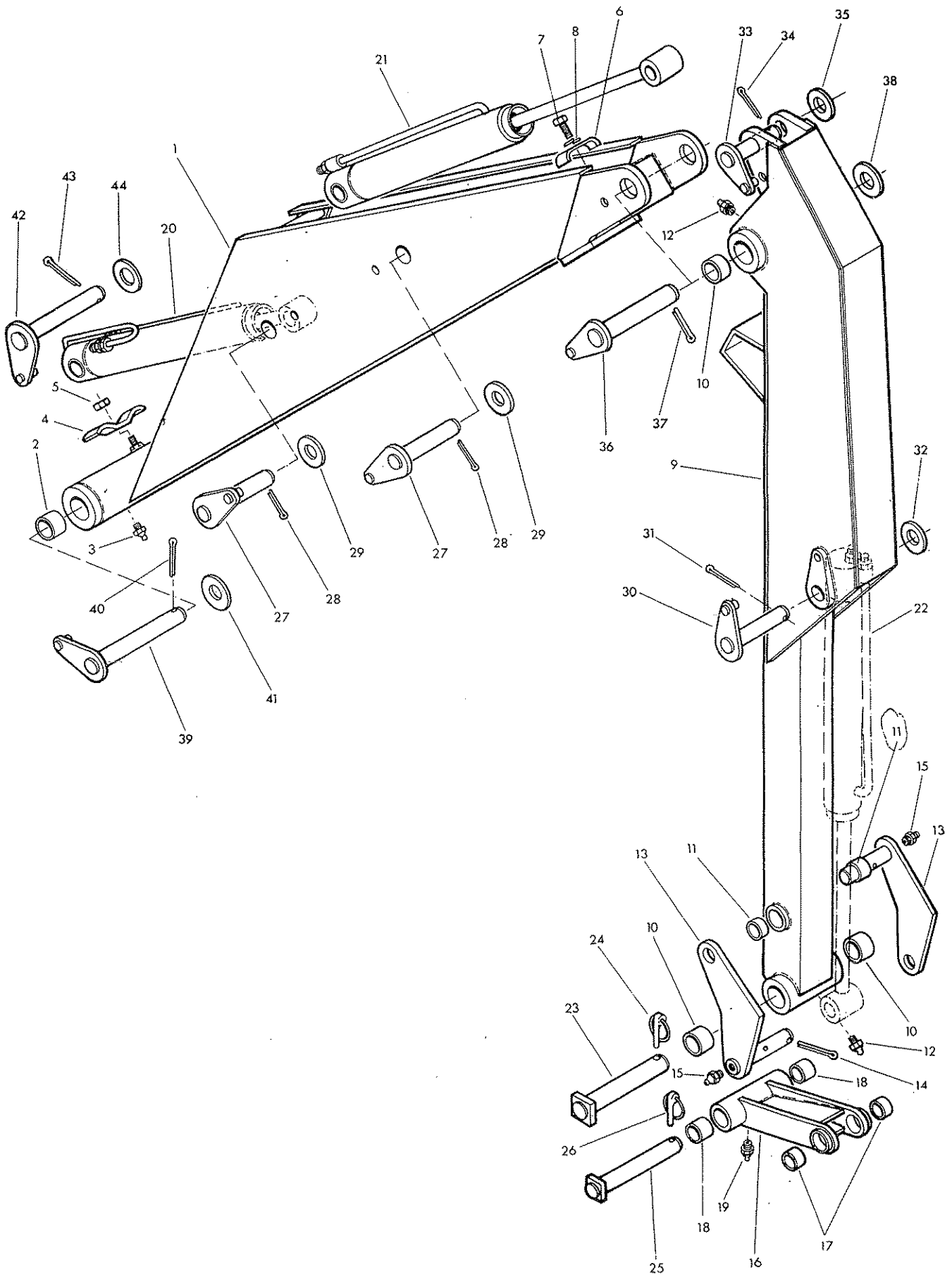


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Ref	Part No.	Qty	Description
			ARMHEAD
1	71-20-270	1	.Main arm c/w bushes, greaser & clamps;
2	71-01-134	2	..Bush
3	09-01-121	1	..Greaser 1/8BSP - straight
4	60-12-026	2	..Hose clamp - lower
5	91-43-005	1	..Self locking nut M10
6	71-35-092	1	..Hose clamp - upper
7	93-13-045	1	..Setscrew M10 x 20
8	91-00-205	1	..Spring washer M10
9	71-20-272	1	.Dipper arm c/w bushes, greaser etc.
10	71-01-134	4	..Bush
11	71-01-083	2	..Bush
12	09-01-121	2	..Greaser 1/8 BSP - straight
13	71-20-293	2	.Radius arm c/w split pin & greaser
14	95-01-406	1	..Split pin $\phi$ 5 x 40
15	09-01-121	1	..Greaser 1/8 BSP - straight
16	71-20-294	1	.Slave link c/w greaser, bushes etc.
17	72-14-060	2	..Bush
18	68-03-010	2	..Bush
19	09-01-121	1	..Greaser 1/8 BSP - straight
20	71-20-286	1	.Lift ram - (see page47)
21	71-20-279	1	.Reach ram - (see page48)
22	71-20-278	1	.Bucket ram - (see page49)
23	71-20-063	1	.Bucket pin c/w linch pin
24	04-31-217	1	..Linch pin
25	71-20-064	1	.Slave link pin c/w linch pin
26	04-31-217	1	..Linch pin
27	71-20-114	2	.Pivot pin c/w split pin & washer Reach base and lift rod.
28	95-01-406	1	..Split pin $\phi$ 5 x 40
29	01-00-109	1	..Plain washer 1" dia.
30	71-20-117	1	.Pivot pin c/w split pin & washer Bucket base.
31	95-01-406	1	..Split pin $\phi$ 5 x 40
32	01-00-109	1	..Plain washer 1" dia.
33	71-20-116	1	.Pivot pin c/w split pin & washer Reach rod.
34	95-01-406	1	..Split pin $\phi$ 5 x 40
35	01-00-109	1	..Plain washer 1" dia.
36	71-20-115	1	.Pivot pin c/w split pin & washer Dipper
37	95-01-507	1	.. Split pin $\phi$ 6 x 50
38	72-12-006	1	..Plain washer 1 1/4 dia.
39	71-20-112	1	. Pivot pin c/w split pin & washer Main arm.
40	95-01-507	1	..Split pin $\phi$ 6 x 50
41	72-12-006	1	..Plain washer 1 1/4" dia.
42	71-20-113	1	. Pivot pin c/w split pin & washer Lift base.
43	95-01-406	1	..Split pin $\phi$ 5 x 40
44	01-00-109	1	..Plain washer 1" dia.

Model. |

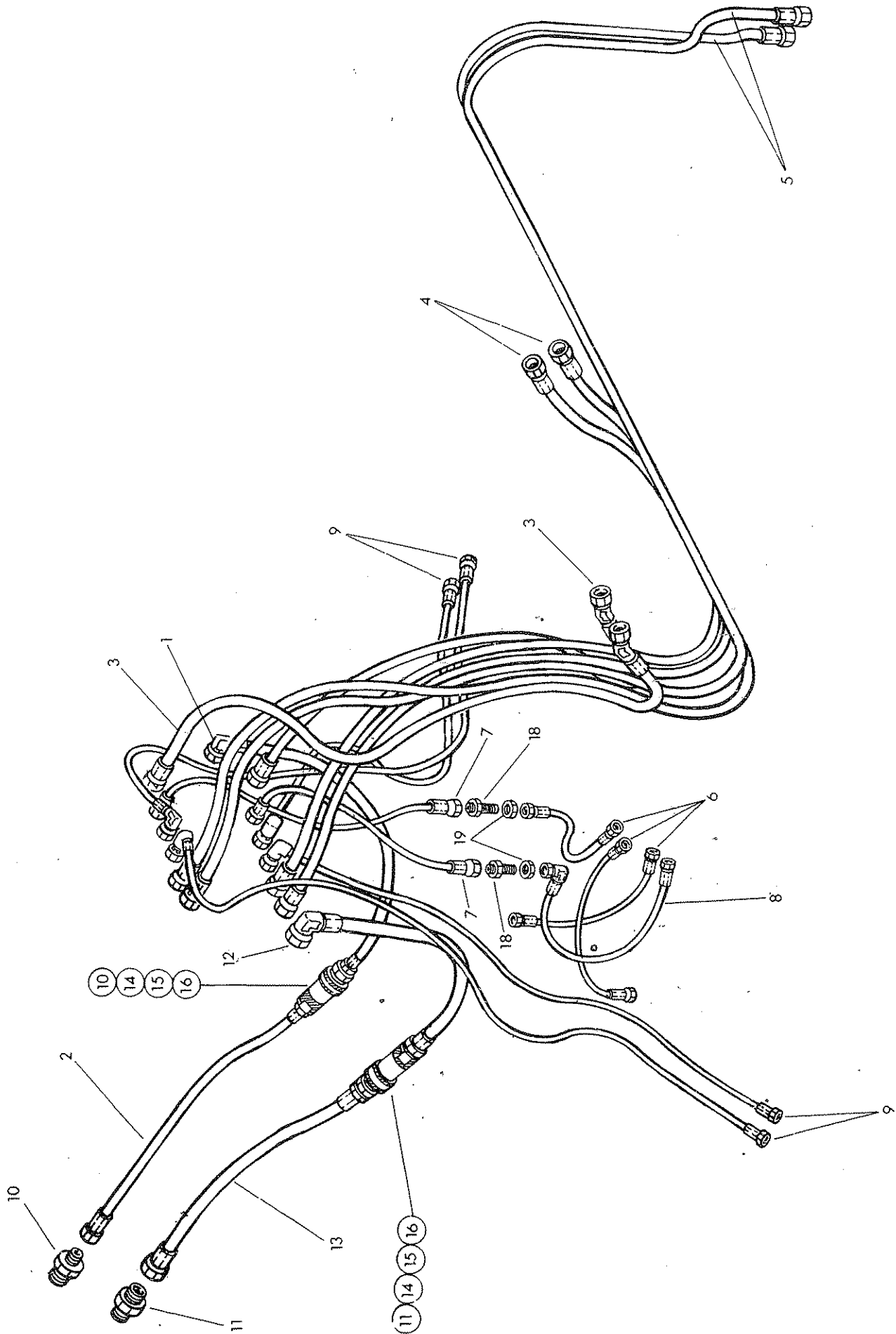
HYDRAULIC INSTALLATION



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Ref	Part No	Qty	Description
			HOSES
1	85-31-343	1	.Hose 3/8 BSP SF-90deg. x 36"lg- supply
2	85-11-333	1	.Hose 3/8 BSP SF-SF x 86"lg - supply
3	85-41-273	2	.Hose 3/8BSP SF-135deg F x 48"lg - lift
4	85-11-333	2	.Hose 3/8BSP SF-SF x 86"long - Reach.
5	85-11-343	2	.Hose 3/8BSP SF-SF x 138"lg - bucket
6	85-15-092	3	.Hose 1/4 BSP SF-SF x 14" long -slew inter-connect upper trunnion inner-lower base and lower trunnion - upper base. Also R.hand bulkhead union to upper slew ram outer trunnion connection.
7	85-15-112	2	.Hose 1/4 BSP SF-SF x 24"lg: valve- bulkhead. Spring end to L.Hand bulkhead union.
8	85-35-102	1	.Hose 1/4 BSP SF-90degF x 17"lg.L.Hand bulkhead. Union to lower slew ram outer trunnion connection.
9	85-35-022	4	.Hose 1/4BSP90°F-SF x 48" long - leg
10	60-00-112	3	.Union 1/2BSP - 3/8BSP M-M
11	85-81-110	3	.Union 1/2"BSP MM
12	85-33-044	1	.Hose 1/2BSP SF 90deg.F x 36" lg.-return
13	85-13-014	1	.Hose 1/2 BSP SF-SF x 84" long Return.
14	85-90-074	2	.Self seal coupling Male Half
15	85-90-084	2	.Self seal coupling Female Half
16	86-50-104	4	.Bonded seal 1/2BSP
17	71-05-153	2	. Extended bulkhead union 1/4 BSP
18	01-39-001	2	.Locknut 1/4 BSP

When KM190 is supplied with independent hydraulics items, 1,2 and 12-16 inclusive are not required. Items 10 & 11 are reduced to 1 off.

Model.

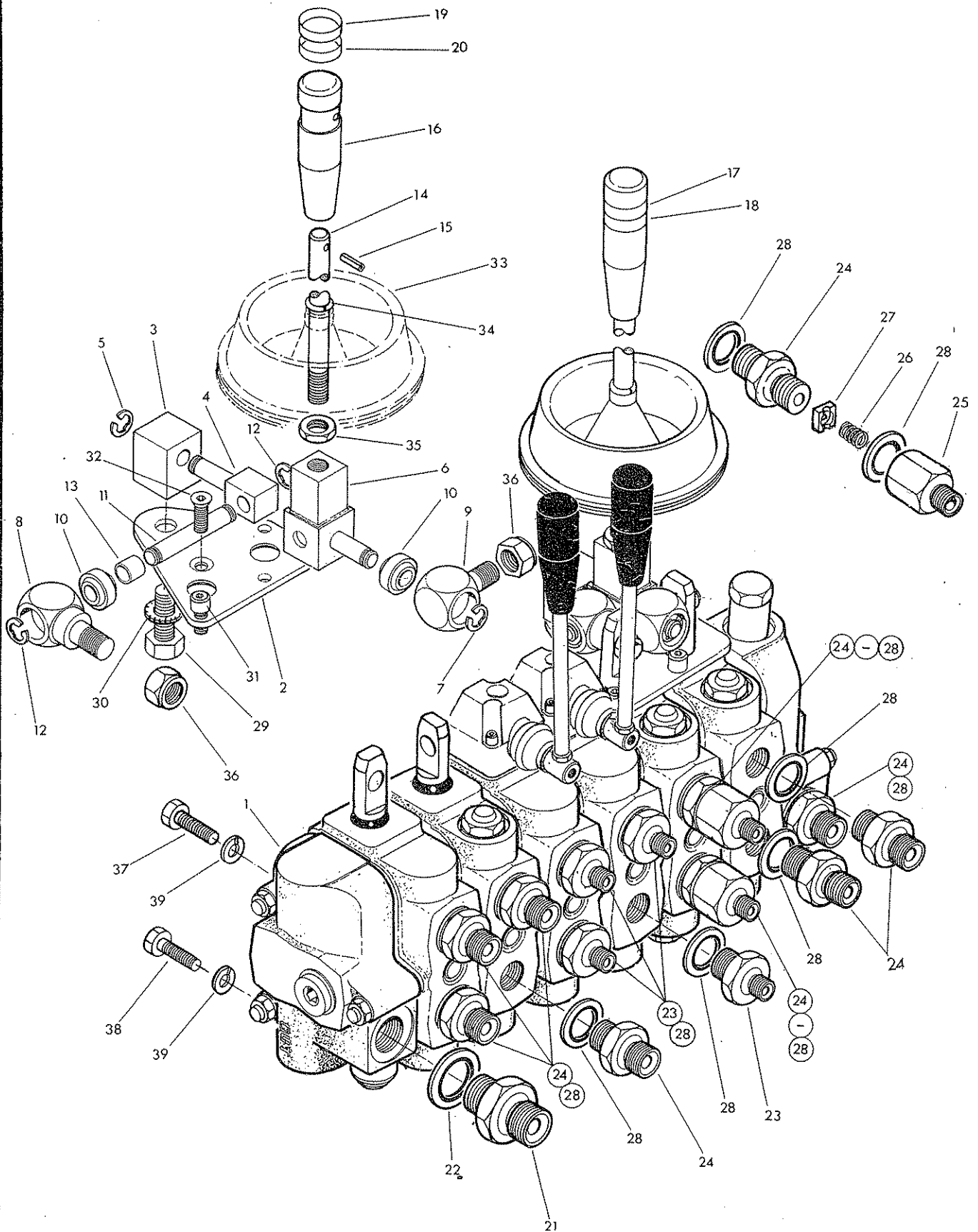
CONTROL VALVE ASSY.



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Ref	Part No.	Qty	Description
	81-28-286		CONTROL VALVE ASSEMBLY
1	81-28-285		.Basic valve (see page 33 )
2	71-20-330	2	.Dual control base plate
3	71-20-134	2	.Pivot block
4	71-20-133	2	.Spade c/w circlip
5	71-20-125	1	..Circlip
6	71-20-129	2	.Handle clevis c/w circlip
7	71-20-125	1	..Circlip
8	71-20-127	2	.Bearing carrier - long
9	71-20-128	2	.Bearing carrier - short
10	71-20-126	4	.Spherical bearing
11	71-20-131	2	.Pivot pin c/w circlips
12	71-20-125	2	..Circlip
13	71-20-132	2	.Spacer
14	71-20-135	2	.Lever c/w spring dowel
15	04-20-812	1	..Spring dowel 1/8" dia x 3/4" long
16	81-14-053	2	.Lever knob
17	81-14-060	1	.Ring - yellow
18	81-14-063	1	.Ring - black
19	81-14-061	1	.Ring - green
20	81-14-062	1	.Ring - red
21	85-81-110	1	.Union 1/2" BSP-MM
22	86-50-104	1	.Bonded seal 1/2" BSP
23	85-81-145	4	.Union 3/8BSP - 1/4 BSP MM
24	85-81-209	7	.Union 3/8 BSP-MM
25	85-81-214	2	.Restrictor body
26	81-16-011	2	.Restrictor spring
27	81-23-041	2	.Restrictor disc - red
28	86-50-103	15	.Bonded seal 3/8 BSP
29	03-11-053	2	.Setscrew 3/8"UNF x 5/8" long
30	91-00-305	2	.Spring washer $\emptyset$ 10
31	93-43-022	6	.Capscrew - socket headed M5 x 12
32	93-53-022	2	.Setscrew c/sunk socket headed M5 x 12
33	81-14-028	2	.Lever boot
34	04-05-108	2	. Retaining ring.
35	91-13-005	2	.Locknut M10
36	91-43-004	2	.Self locking nut M8
37	93-13-044	2	.Setscrew M8 x 20 - upper
38	93-13-034	1	.Setscrew M8 x 16 - lower
39	91-00-204	3	.Spring washer $\emptyset$ 8

Model.

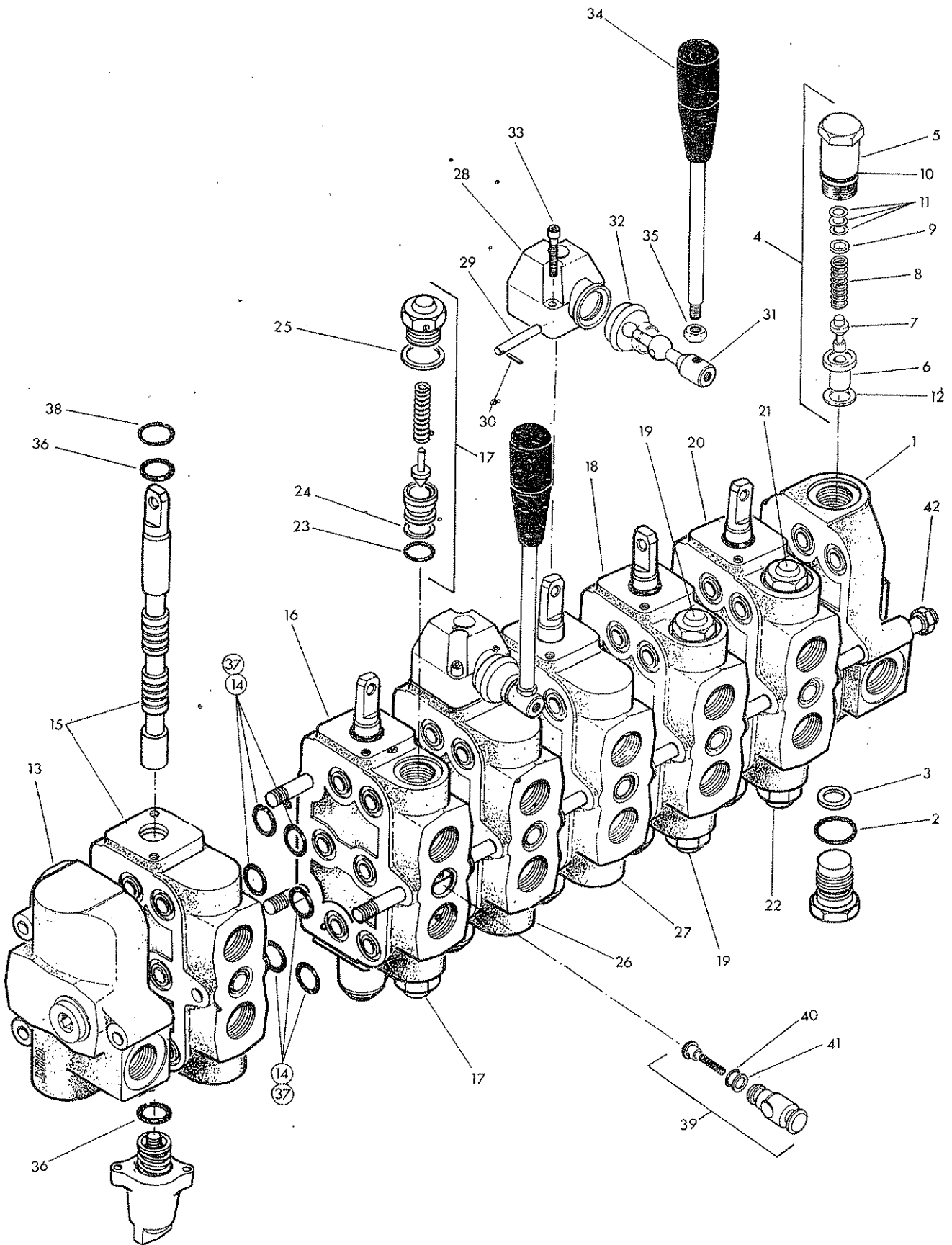
CONTROL VALVE (Basic)



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Ref	Part No.	Qty	Description
	81-28-285		BASIC VALVE C/W LEG HANDLES compr:-
1	81-28-045	1	.Inlet section c/w relief valve & 'O' ring etc.
2	86-00-113	1	.. 'O' ring.
3	81-30-017	1	..Copper sealing washer
4	81-30-023	1	..Main relief valve 2000PSI (140bar) compr:
5	81-30-045	1	...Relief valve body
6	81-30-016	1	...Relief valve seat housing
7	81-30-015	1	...Relief valve needle
8	81-30-011	1	...Relief valve spring
9	81-30-044	1	...Washer
10	86-00-113	1	... 'O' ring
11	81-30-043	As reqd	...Shim
12	81-30-017	1	...Copper sealing washer
13	81-28-025	1	.Outlet connection c/w 'O' rings
14	86-00-503	6	.. 'O' ring
15	81-28-047	1	.Service section - Bucket
16	81-28-040	1	.Service section- Reach c/w service relief valves.
17	81-28-022	2	..Service relief valve 3000PSI (210 bar)
18	81-28-048	1	.Service section - Slew c/w service relief valve
19	81-28-022	2	..Service relief valve 3000PSI ( 210 bar)
20	81-28-037	1	.Service section. Lift c/w service relief valves.
21	81-28-038	1	..Service relief valve 2300 PSI (160 bar)
22	81-28-039	1	..Service relief valve 2500PSI (175 bar)

Items 23 to 25 inclusive are common to all service relief valves.

23	86-00-107	1	... 'O' ring
24	86-09-107	1	...Back up ring
25	81-30-086	1	...Copper sealing washer
26	81-28-049	2	.Service section assy - leg c/w handle
27	81-28-047	1	..Service section leg
	81-30-065	1	..Lever pivot box compr:-
28	81-30-107	1	...Lever pivot box.
29	81-30-009	1	...Lever pivot spindle
30	81-30-021	1	...Spring dowel
31	81-30-019	1	...Lever
32	81-30-016	1	...Weather gaiter
33	92-43-072	2	..Capscrew socket headed M5 x 35
34	81-30-116	1	..Handle & knob c/w locknut
35	91-13-004	1	...Locknut m8

Items 36 and 37 are common to all service sections.

36	86-00-112	2	...Spool 'O' ring
37	86-00-503	6	...Inter section 'O' ring

Item 38 is common to Bucket, Lift, Reach and slew service section.

38	86-00-504	1	..Wiper 'O' ring
39	81-28-023	6	.Check valve c/w rings
40	86-00-501	1	.. 'O' ring
41	86-09-501	1	..Back up ring
42	81-28-050	1	.Valve tie rod kit c/w nuts.

86-99-184

SEAL KIT

Model.

INDEPENDENT HYDRAULICS  
for B6200, B7200 & B7100 HST

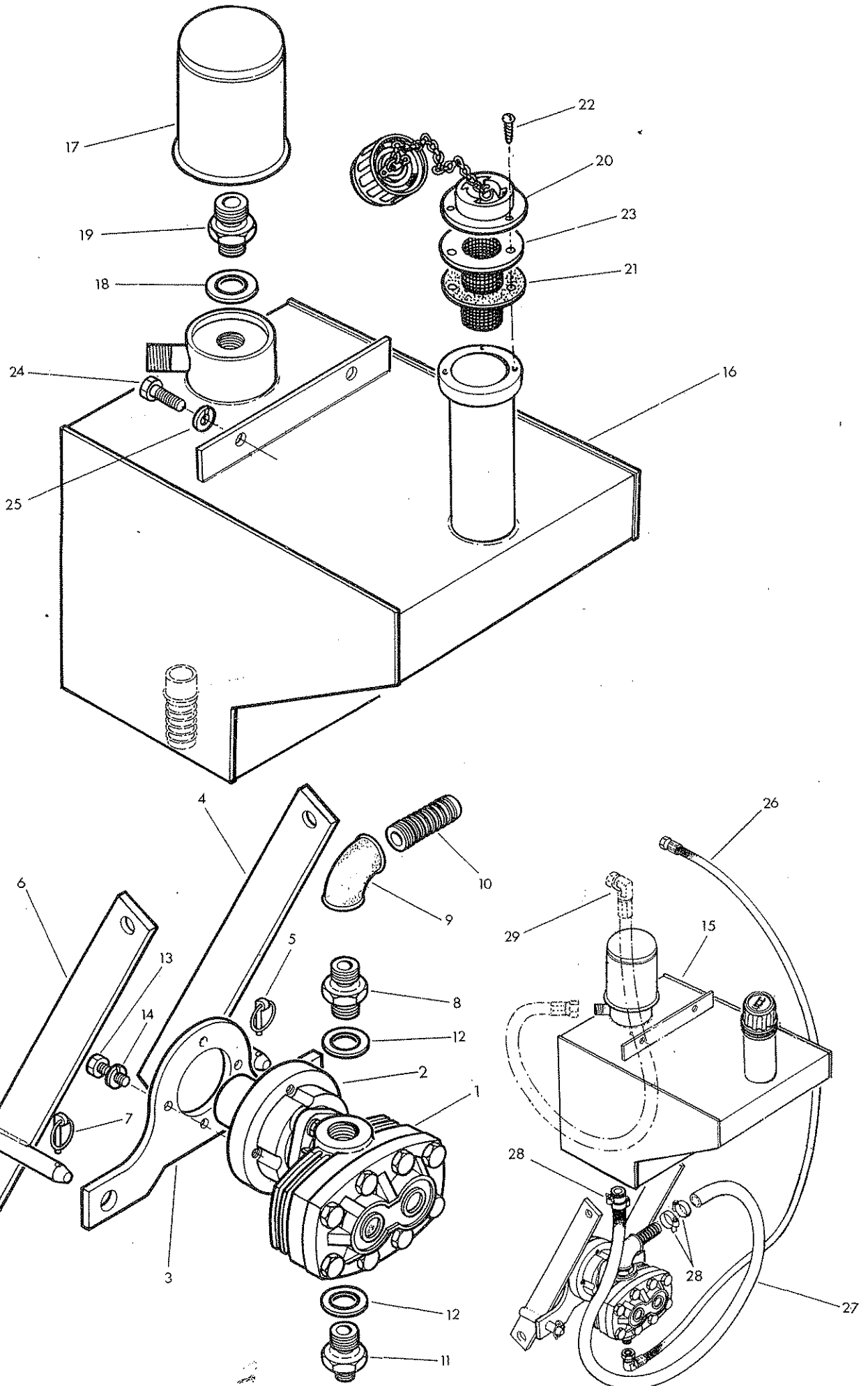


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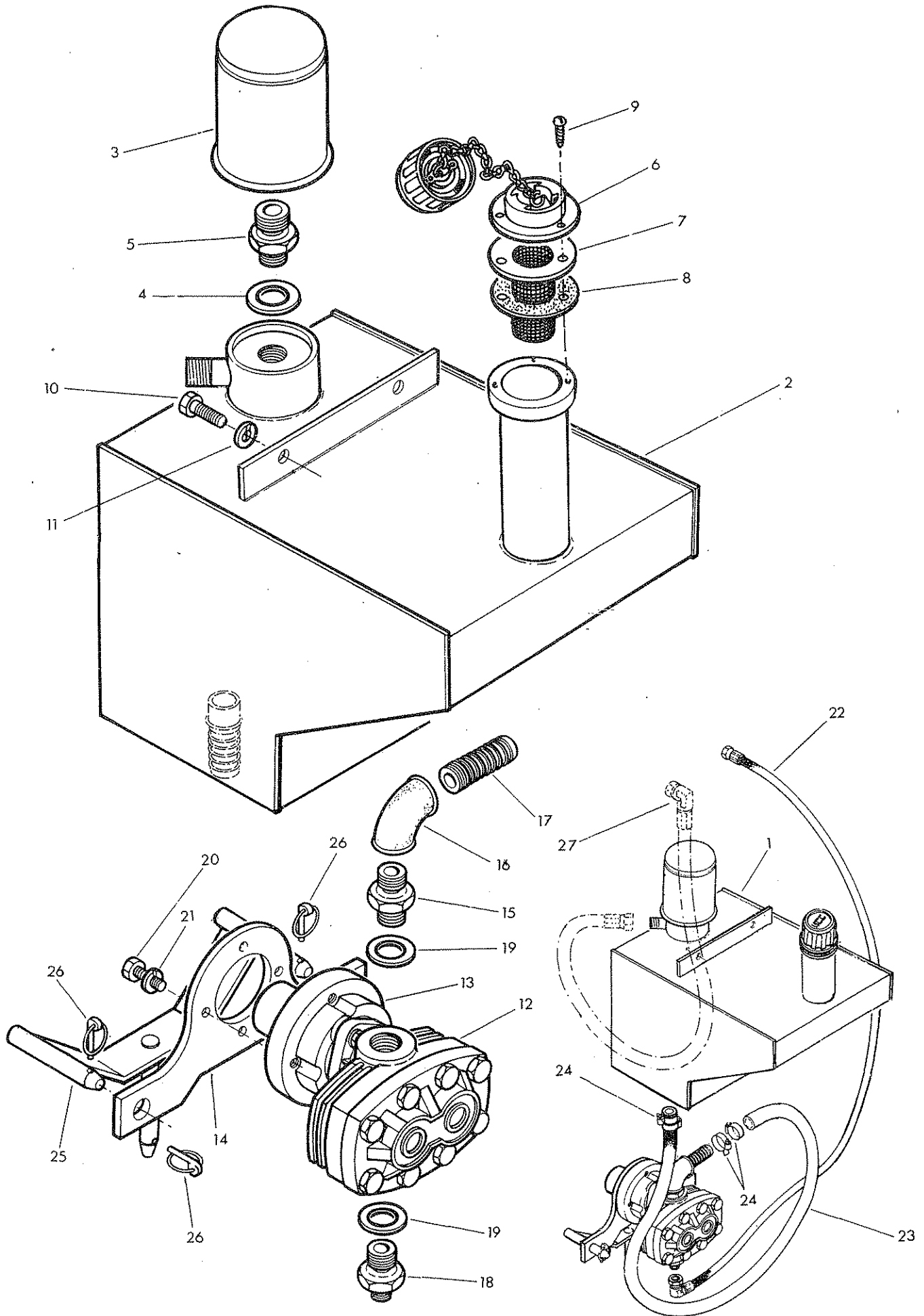
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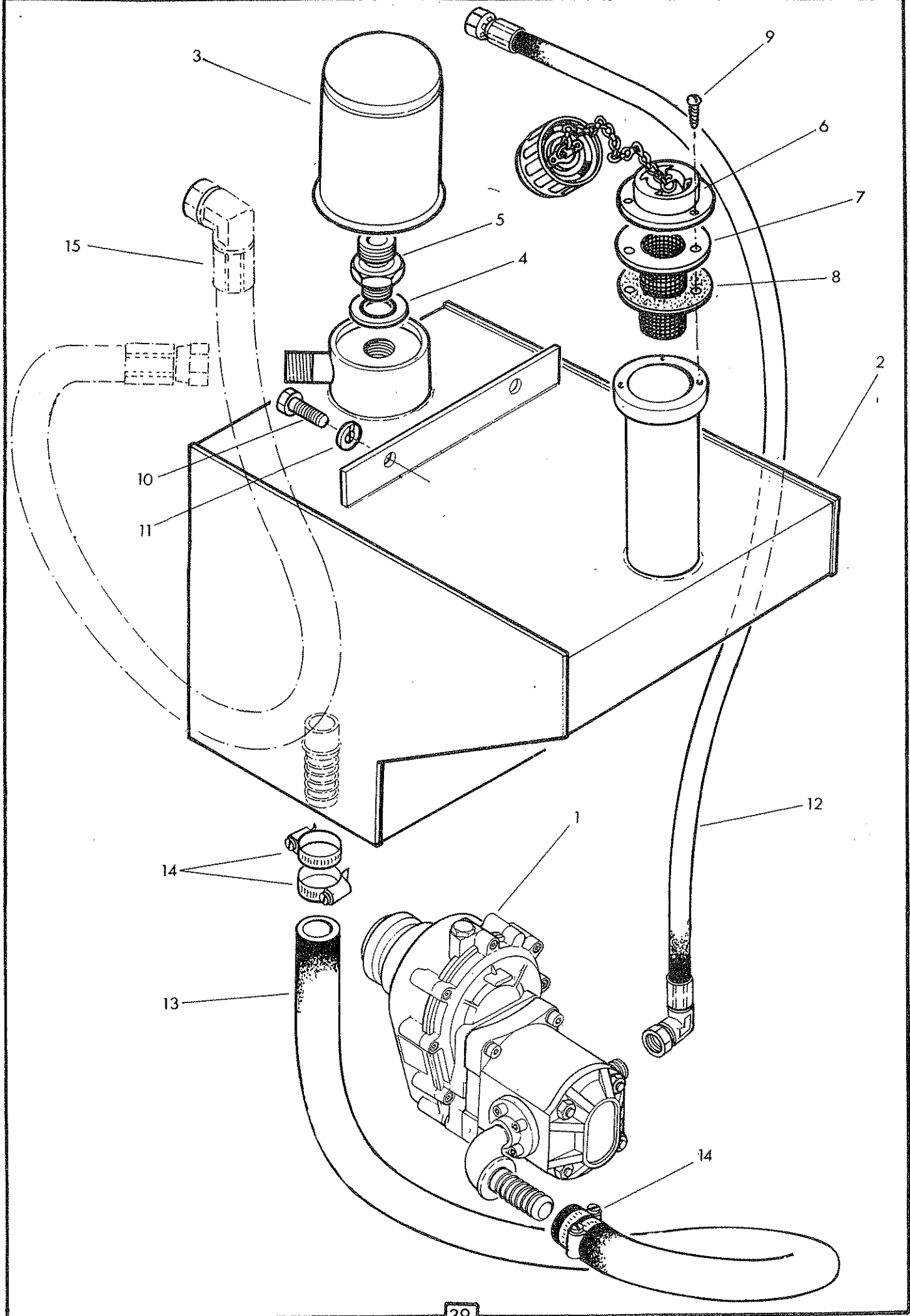
Ref	Part No.	Qty	Description
	71-20-296		INDEPENDENT HYDRAULIC KIT FOR KM190 WHEN FITTED TO B6200,B7200 & B7100HST TRACTORS
	80-13-381		.Pump and mounting assembly compr:-
	80-13-380		..Pump and drive assy.
1	82-01-662	1	...Pump
2	80-13-382	1	...Drive coupler
3	71-20-106	1	..Pump mounting plate
4	71-20-108	1	..Pump mounting strap R.Hand c/w linch pin.
5	04-31-217	1	...Linch pin
6	71-20-107	1	..Pump mounting strap L.Hand c/w linch pin
7	04-31-217	1	...Linch pin
8	85-81-136	1	..Union 3/4 BSP M-M
9	85-81-055	1	..Elbow 3/4 BSF F-F
10	80-05-037	1	..Low pressure connection.
11	85-81-131	1	..Union 3/4 BSP 3/8BSP M-M
12	86-50-106	2	..Bonded seal 3/4 BSP
13	93-13-055	4	..Setscrew M10 x 25
14	91-00-205	4	..Spring washer Ø 10
15	71-20-299	1	.Tank assembly compr:-
16	71-20-297	1	..Tank
17	84-01-045	1	..Filter
18	86-50-104	1	..Bonded seal 1/2" BSP
19	85-81-174	1	..Union 1/2"BSP - 1" UNF MM
	84-01-014	1	..Filler/Breather
20	84-01-015	1	...Filler cap and neck
21	84-01-017	1	...Gasket
22	03-00-082	3	...Screw self tapping 3/16"dia x 1/2"lg
23	84-01-016	1	...Strainer basket.
24	93-13-045	2	..Setscrew M10 x 20
25	91-00-205	2	..Spring washer Ø 10
26	85-31-223	1	.Hose 3/8BSP 90 deg.F-SF x 59"lg-supply
27	85-00-836	1	.Hose 1" bore x 36 long - suction
28	09-04-106	4	.Hose clip - 1" bore hose.
	86-99-200		SEAL KIT
29	85-33-044	1	.Hose 1/2"BSP 90deg.F-SF x 36"long return (ref only) Existing hose - short section of return on tractor supply model.



Ref	Part No.	Qty	Description
	71-20-319		INDEPENDENT HYDRAULIC KIT FOR KM 190 WHEN FITTED TO B8200 & B8200 HST TRACTORS
1	71-20-299	1	.Tank assembly compr:-
2	71-20-297	1	..Tank
3	84-01-045	1	..Filter
4	86-50-104	1	..Bonded seal 1/2" BSP
5	85-81-175	1	..Union 1/2" BSP - 1" UNF MM
	84-01-014	1	..Filler/breather
6	84-01-015	1	...Filler cap & neck
7	84-01-016	1	...Strainer basket
8	84-01-017	1	...Gasket
9	03-00-082	3	...Screw - self tapping 3/16 dia x 1/2 lg.
10	93-13-045	2	..Setscrew M10 x 20
11	91-00-205	2	..Spring washer $\emptyset$ 10
	80-13-380	1	..Pump and drive assembly
12	82-01-662	1	...Pump
13	80-13-382	1	...Drive coupler
14	71-20-106	1	.Pump mounting plate
15	85-81-136	1	.Union 3/4 BSP M-M
16 *	85-81-055	1	.Elbow 3/4 BSP F-F
17	80-05-037	1	.Low pressure connection.
18	85-81-131	1	.Union 3/4 BSP - 3/8 BSP MM
19	86-50-106	2	.Bonded seal 3/4 BSP
20	93-13-055	4	.Setscrew M10 x 25
21	91-00-205	4	.Spring washer $\emptyset$ 10
22	85-31-223	1	.Hose 3/8 BSP 90deg F-SF x 59" long-supply
23	85-00-836	1	.Hose 1" bore x 36" long-suction
24	09-04-106	4	.Hose clip 1" bore hose
25	71-20-151	1	.Pump carrier pin c/w linch pin
26	04-31-217	3	..Linch pin
27	85-12-044	1	Hose 1/2" BSP SF-90deg.F x 36" long return (ref only.) Existing short section of return hoses on tractor supply models.
	86-99-200		SEAL KIT FOR PUMP

\* Assembly Note.

Elbow assembled with P.T.F.E. tape or 'Permabond Al21'



Ref	Part No.	Qty	Description
	71-20-318		INDEPENDENT HYDRAULIC FOR KMS 180 and KM 190 WHEN FITTED TO L275 TRACTOR
1	80-13-335	1	.Brevini gearbox/Cassappa pump assy (see page 41 )
	71-20-299	1	..Tank assembly compr:-
2	71-20-297	1	..Tank
3	84-01-045	1	..Filter
4	86-50-104	1	..Bonded seal 1/2" BSP
5	85-81-175	1	..Union 1/2" BSP - 1" UNF M-M
	84-01-014	1	..Filler breather
6	84-01-015	1	...Filler cap and neck
7	84-01-016	1	...Strainer basket
8	84-01-017	1	...Gasket
9	03-00-082	3	...Screw-self tapping 3/16 dia x 1/2" long
10	93-13-045	2	..Setscrew M10 x 20
11	91-00-205	2	..Spring washer 0 10
12	85-31-223	1	.Hose 3/8 BSP 90deg F-SF x 59" long-supply
13	85-00-836	1	.Hose 1" bore x 36" long - suction
14	09-04-106	4	.Hose clip - 1" bore hose.
15	85-33-044	1	Hose 1/2" BSP SF-90deg.F x 36" long-return (ref only) Existing short section of return hoses on tractor supply models.
	86-99-176		SEAL KIT FOR PUMP

Model. |

PUMP & GEARBOX  
Optional extra

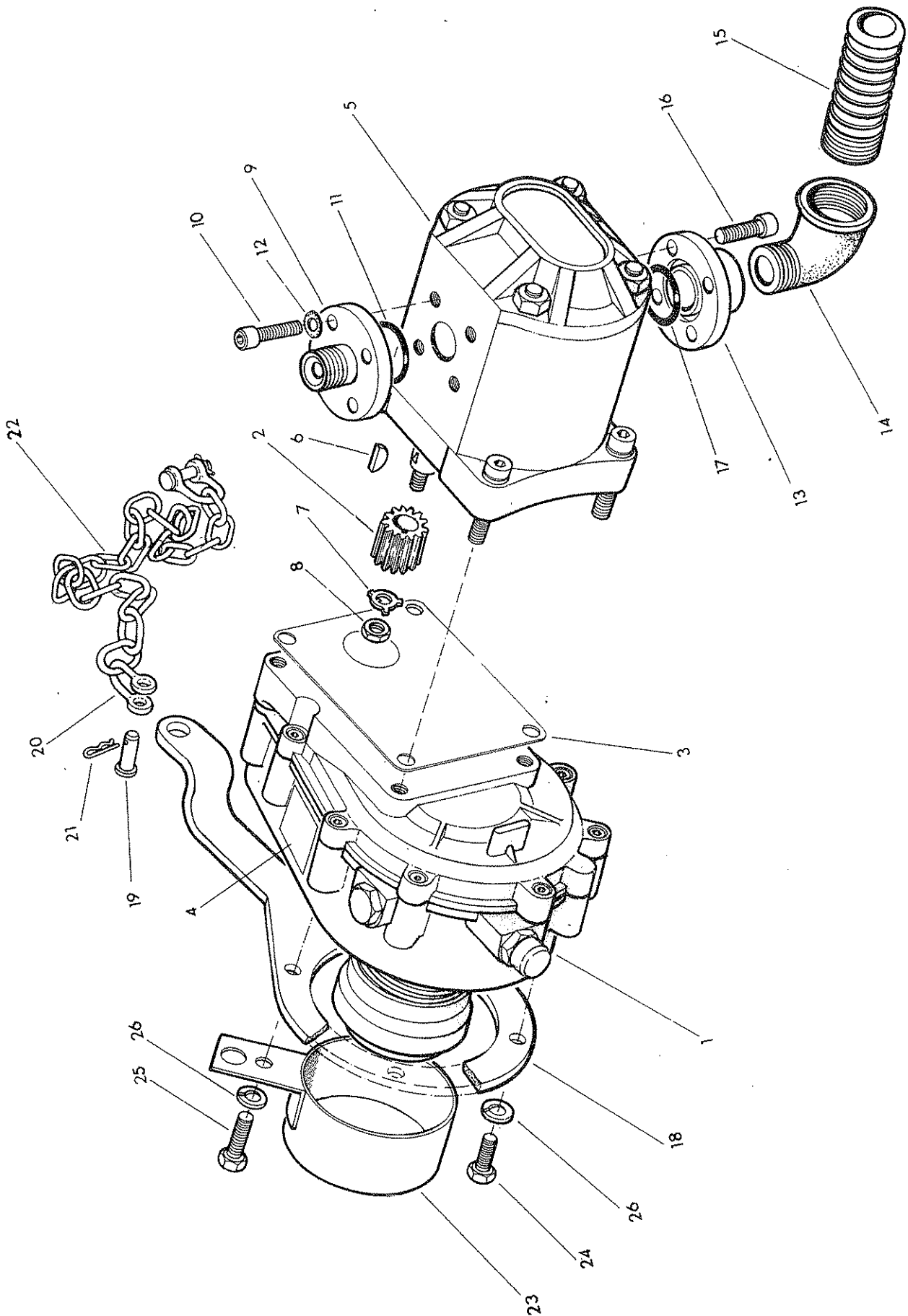


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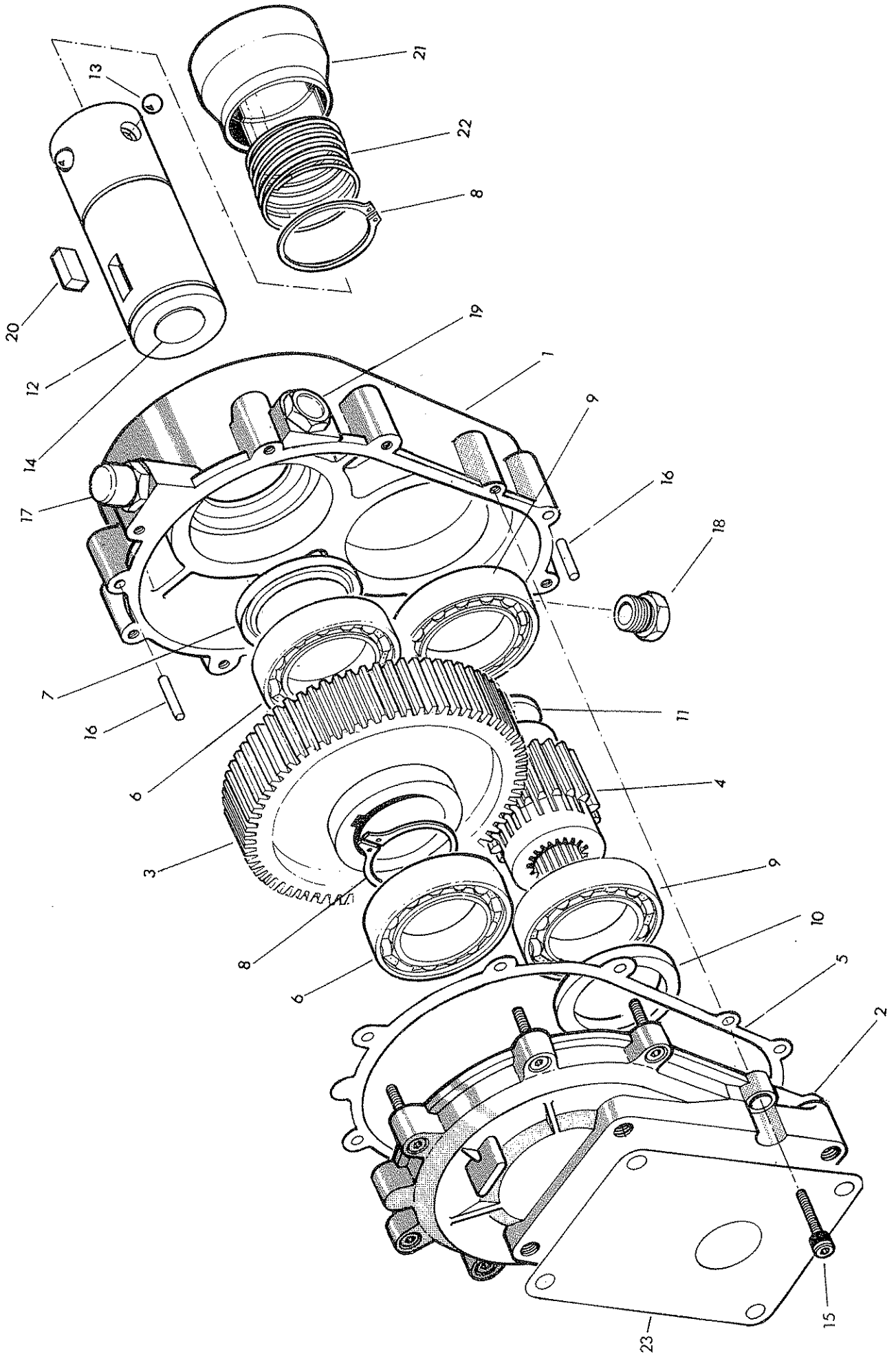
Ref	Part No.	Qty	Description
	80-13-335	1	BREVINI GEARBOX/CASAPPA PUMP ASSEMBLY
	80-13-324	1	.Gearbox c/w coupling, gasket etc.
1	80-13-325	1	.Gearbox (see page 43 )
2	82-01-131	1	..Pump drive coupling
3	82-01-132	1	..Gasket pump face
4	80-13-052	1	..Instruction label
	82-01-656	1	. Pump assembly comprising:-
5	82-01-455	1	..Pump c/w key, washer and nut
6	82-01-133	1	...Woodruff key
7	82-01-134	1	...Tab washer
8	82-01-135	1	...Special hexagon thin nut M12 x 1.5pitch
9	80-05-043	1	..Pressure connection c/w screws, 'O' ring and washer
10	93-43-044	4	...Capscrew M8 x 20
11	86-00-405	1	...'O' ring
12	01-00-302	4	...Shakeproof washer
	80-05-044	1	..Suction connection assembly
13	80-05-036	1	...Connection base
14	85-81-168	1	...Elbow 3/4" BSP Female- 1/2"BSP Male
15	80-05-037	1	...Low pressure connection
16	93-43-044	4	...Capscrew M8 x 20
17	86-00-405	1	...'O' ring
	80-05-034	1	.Torque arm c/w chain & shackle etc.
18	80-05-033	1	..Torque arm
	60-00-087	2	..Shackle assembly comprising:-
19	60-00-089	1	...Shackle pin
20	60-00-088	1	...Shackle
21	04-31-105	1	...Spring cotter
22	09-02-230	1	..Chain
23	80-13-268	1	.P.T.O. guard
24	93-13-055	3	.Setscrew M10 x 25
25	93-13-065	1	.Setscrew M10 x 30
26	91-00-205	4	.Spring washer $\emptyset$ 10

Model.  
GEARBOX BF2/B  
Optional extra



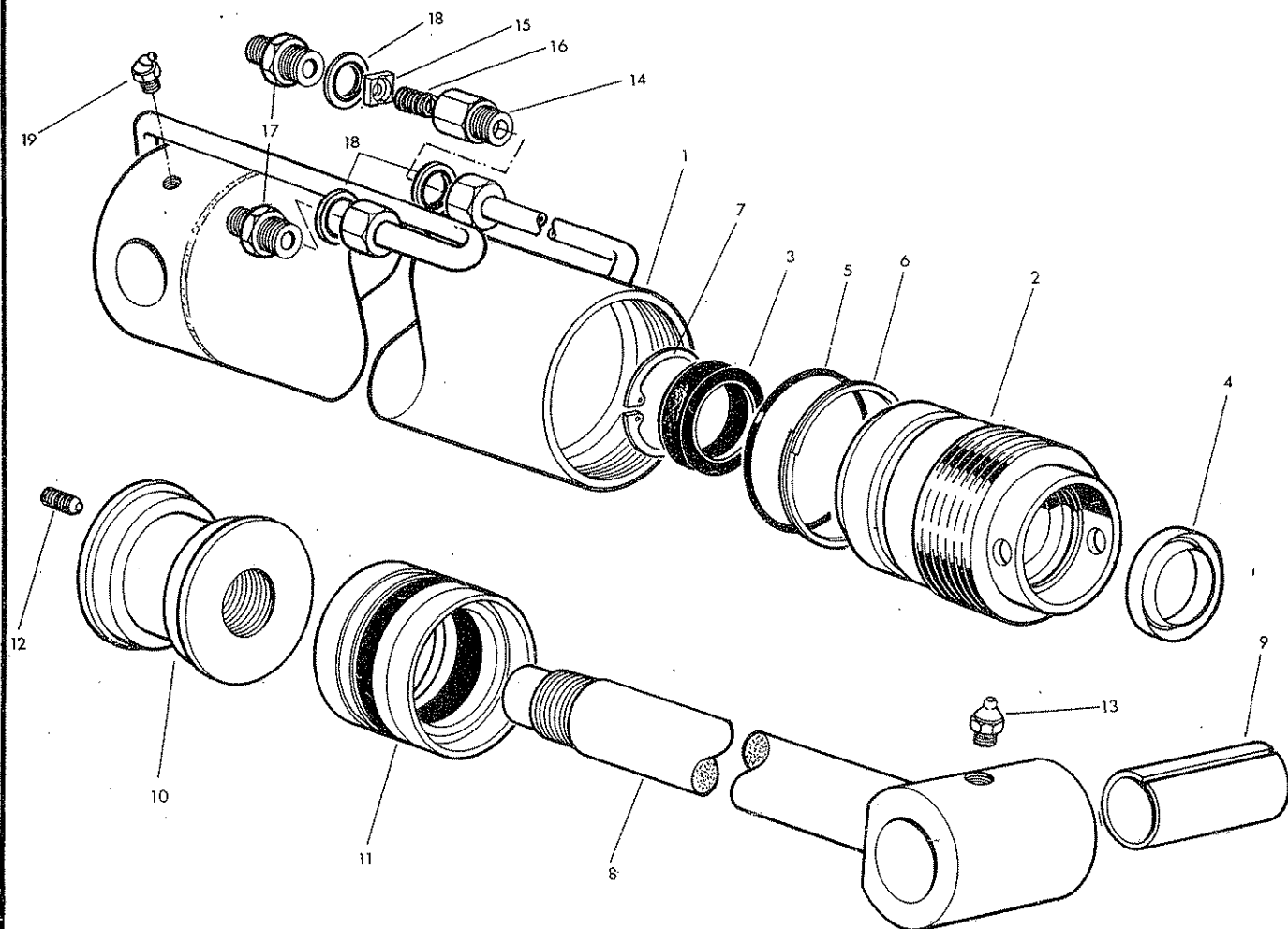
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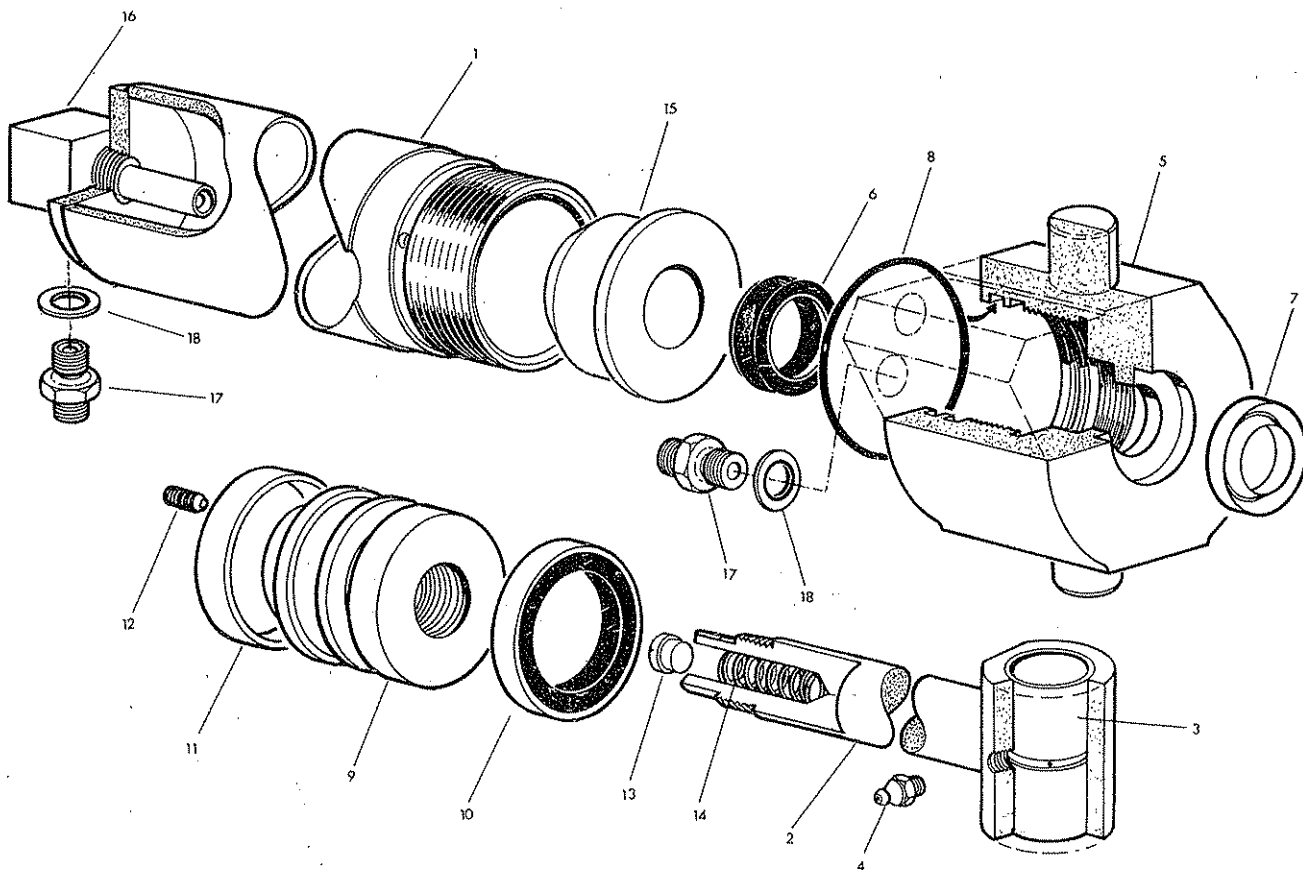




Ref	Part No.	Qty	Description
	80-13-325		GEARBOX (BREVINI BF2/B)
1	80-13-074	1	.Gearbox casing
2	80-13-073	1	.Gearbox lid
3	80-13-078	1	.Gear
4	80-13-072	1	.Pinion
5	80-13-053	1	.Gasket
6	06-00-048	2	.Bearing
7	86-29-134	1	.Seal
8	04-01-250	2	.External circlip $\emptyset$ 50
9	06-00-051	2	.Bearing
10	86-29-142	1	.Seal
11	80-13-077	1	.Expansion plug $\emptyset$ 28
12	80-13-075	1	.Shaft
13	09-05-116	3	.Steel ball 1/2"dia.
14	80-13-067	1	.Expansion plug $\emptyset$ 37
15	93-43-053	8	.Capscrew M6 x 25
16	80-13-076	2	.Dowel $\emptyset$ 5 x 28
17	80-13-068	1	.Breather plug
18	80-13-070	1	.Drain plug
19	80-13-069	1	.Oil level plug
20	80-13-079	1	.Key 12 x 8 x 20
21	80-13-030	1	.Ball retainer
22	80-13-032	1	.Ball retaining spring
23	82-01-132	1	Gasket - Pump face ref. only.



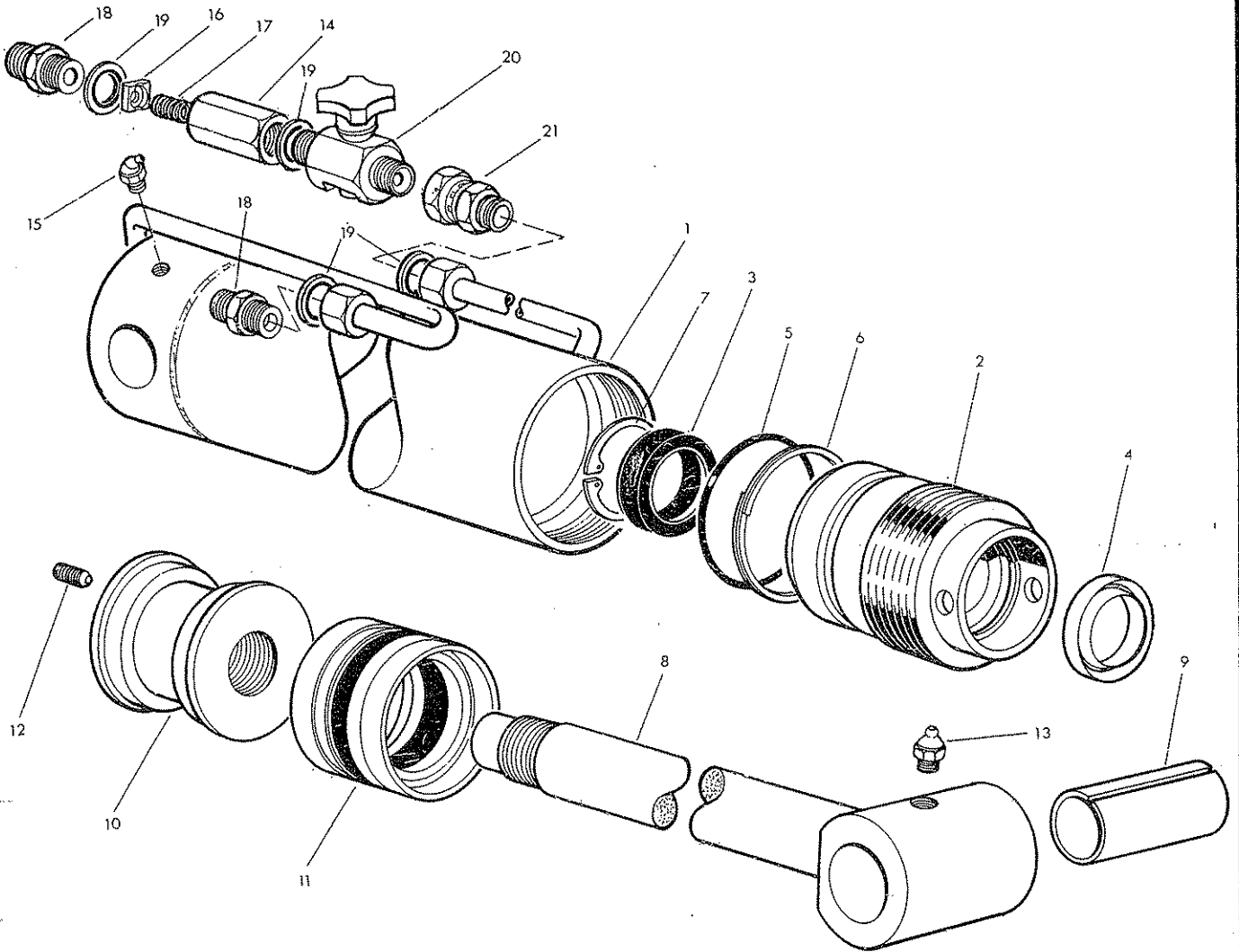
Ref	Part No.	Qty	Description
	71-20-285		LEG RAM ASSEMBLY
1	71-20-287	1	.Ram barrel
2	71-36-312	1	.Gland housing c/w seals etc.
3	86-29-148	1	..Gland seal
4	86-29-149	1	..Piston rod wiper seal
5	86-00-306	1	..'0' ring
6	86-09-306	1	..Anti extrusion ring.
7	04-16-240	1	..Internal circlip
8	71-36-062	1	.Piston rod c/w bush
9	71-05-050	1	..Bush
10	71-36-063	1	.Piston c/w seal and grub screw
11	86-36-001	1	..Piston seal
12	93-63-033	1	..Grub screw M6 x 16 socket headed
13	09-01-121	1	.Greaser 1/8BSP straight
14	85-81-208	1	.Restrictor adaptor
15	81-23-045	1	.Restrictor disc - white
16	81-16-011	1	.Restrictor spring
17	85-81-145	2	.Union 3/8BSP 1/4BSP MM
18	86-50-103	3	.Bonded seal 3/8BSP
19	09-01-125	1	.Greaser 1/8 BSP 45deg.angular
	86-99-190		SEAL KIT



Ref	Part No.	Qty	Description
	71-20-282		SLEW RAM ASSEMBLY
1	71-20-032	1	.Cylinder c/w base tube
2	71-20-034	1	.Piston rod c/w bush & greaser
3	71-20-035	1	..Bush
4	09-01-121	1	..Greaser 1/8 BSP straight
5	71-20-283	1	.Trunnion c/w seals
6	86-29-148	1	..Gland seal
7	86-29-149	1	..Wiper ring
8	86-00-311	1	..'O' ring
9 *	71-20-039	1	.Piston c/w seals & screw
10	86-29-156	1	.. Piston seal
11	86-29-157	1	..Guide ring
12	93-63-033	1	..Grub screw - socket headed M6 x 12
13	71-20-036	1	.Cushion disc
14	81-30-111	1	.Cushion spring
15	71-20-037	1	.Head bush
16 *	71-20-152	1	.Cushion tube elbow
17	80-02-177	3	.Union 1/4 BSP M-M
18	86-50-102	3	.Bonded seal
	86-99-199		SEAL KIT

## \* Assembly Note.

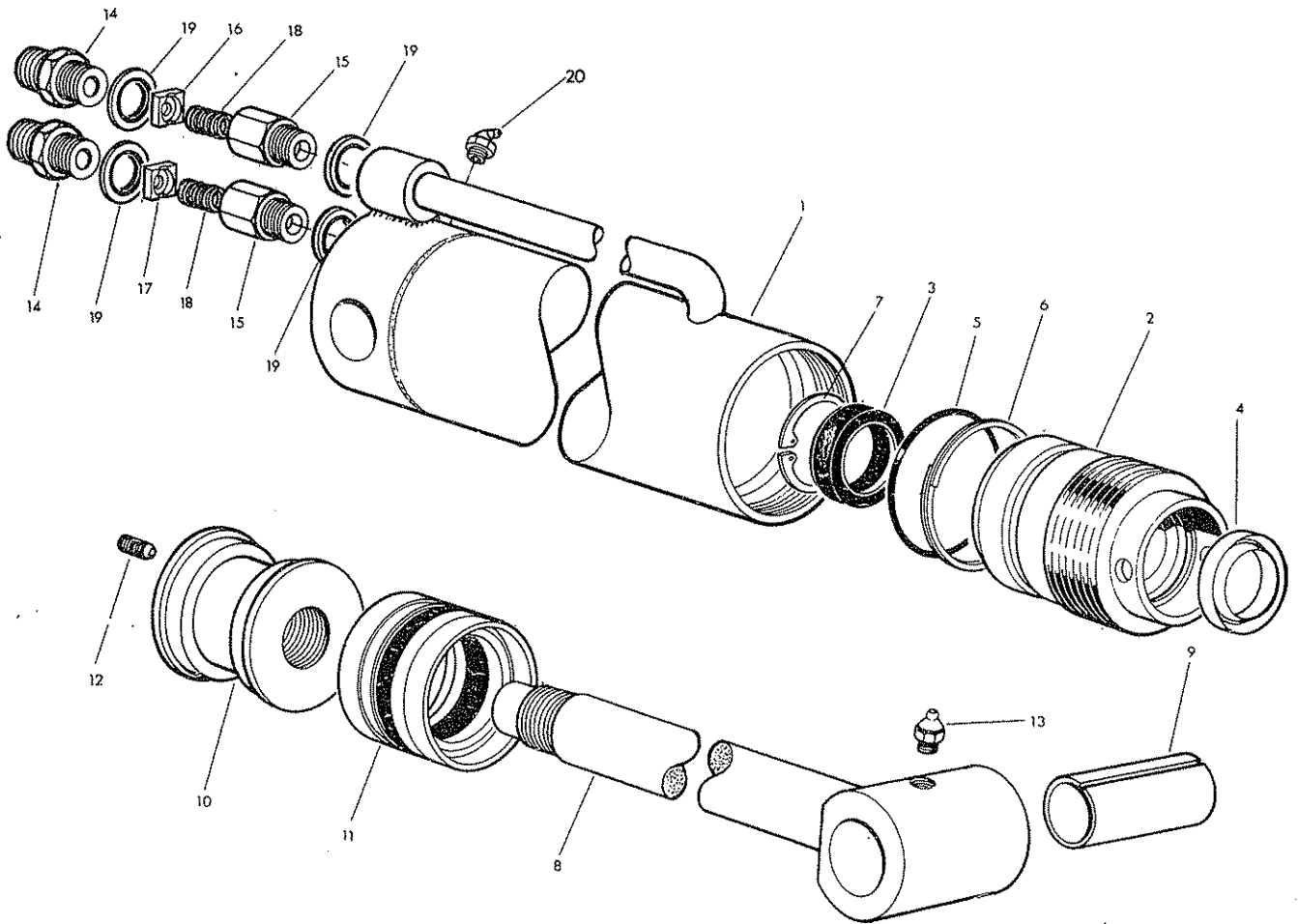
Piston is assembled onto the rod and the cushion tube elbow into the cylinder base using P.T.F.E. jointing tape or Permabond A121



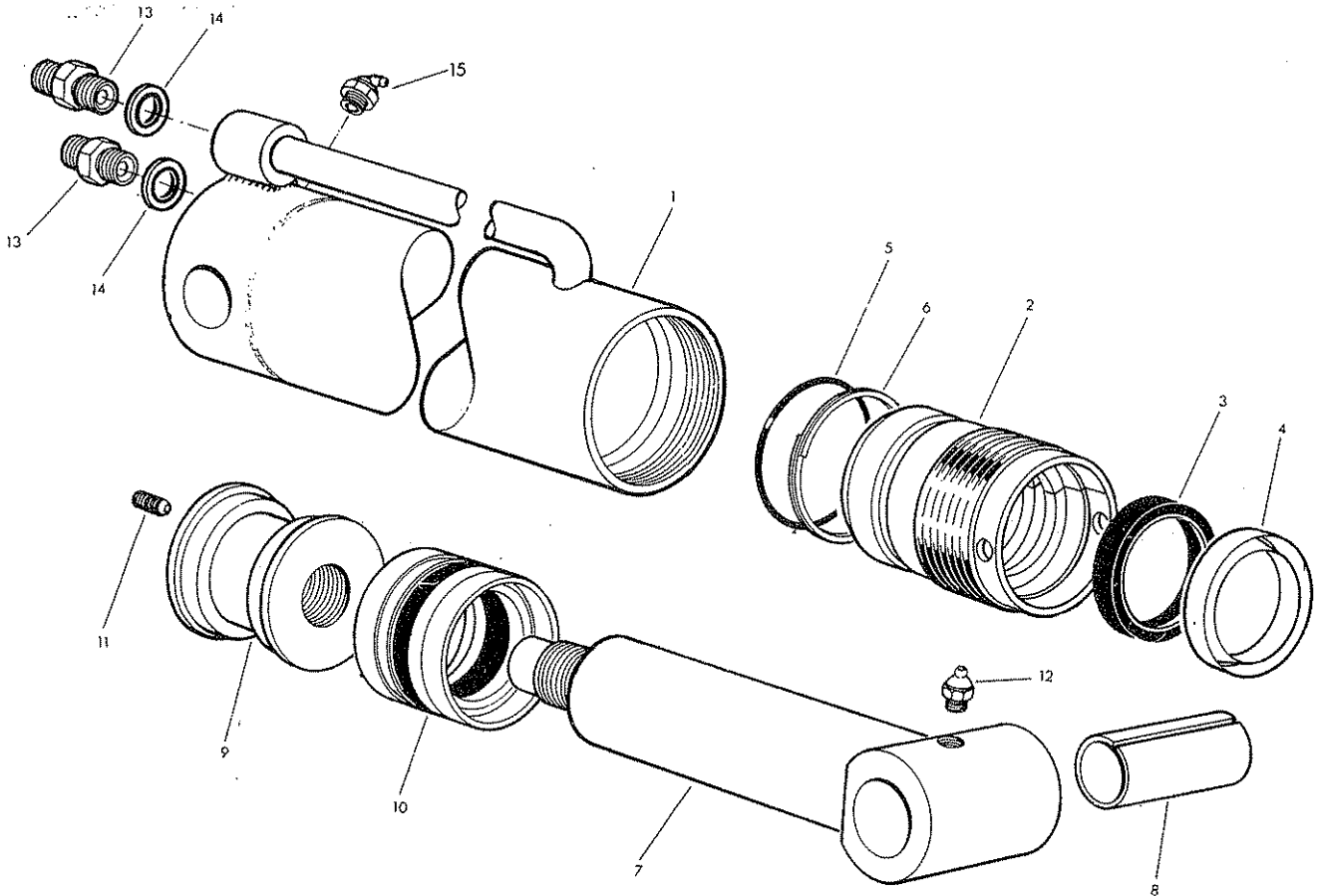
Ref	Part No.	Qty	Description
	71-20-286		LIFT RAM ASSEMBLY
1	71-20-288	1	.Ram barrel
2	71-36-312	1	.Gland housing c/w seals etc.
3	86-29-148	1	..Gland seal
4	86-29-149	1	..Piston rod wiper seal
5	86-00-306	1	..'0' ring
6	86-09-306	1	..Anti extrusion ring
7	04-16-240	1	..Internal circlip
8	71-20-027	1	.Piston rod c/w bush
9	71-05-050	1	..Bush
10	71-36-063	1	.Piston c/w seal and grub screw
11	86-36-001	1	..Piston seal
12	93-63-033	1	..Grub screw M6 x 16 socket headed
13	09-01-121	2	.Greaser 1/8 BSP straight
14	85-81-225	1	.Restrictor adaptor
15	09-01-125	1	.Greaser 1/8 BSP 45 deg. angular
16	81-23-043	1	.Restrictor disc - green
17	81-16-011	2	.Restrictor spring
18	85-81-209	2	.Union 3/8 BSP M-M
19	86-50-103	4	.Bonded seal 3/8 BSP
20	81-30-109	1	.Tap
21	85-81-178	1	.Swivel union 3/8 BSP

86-99-190

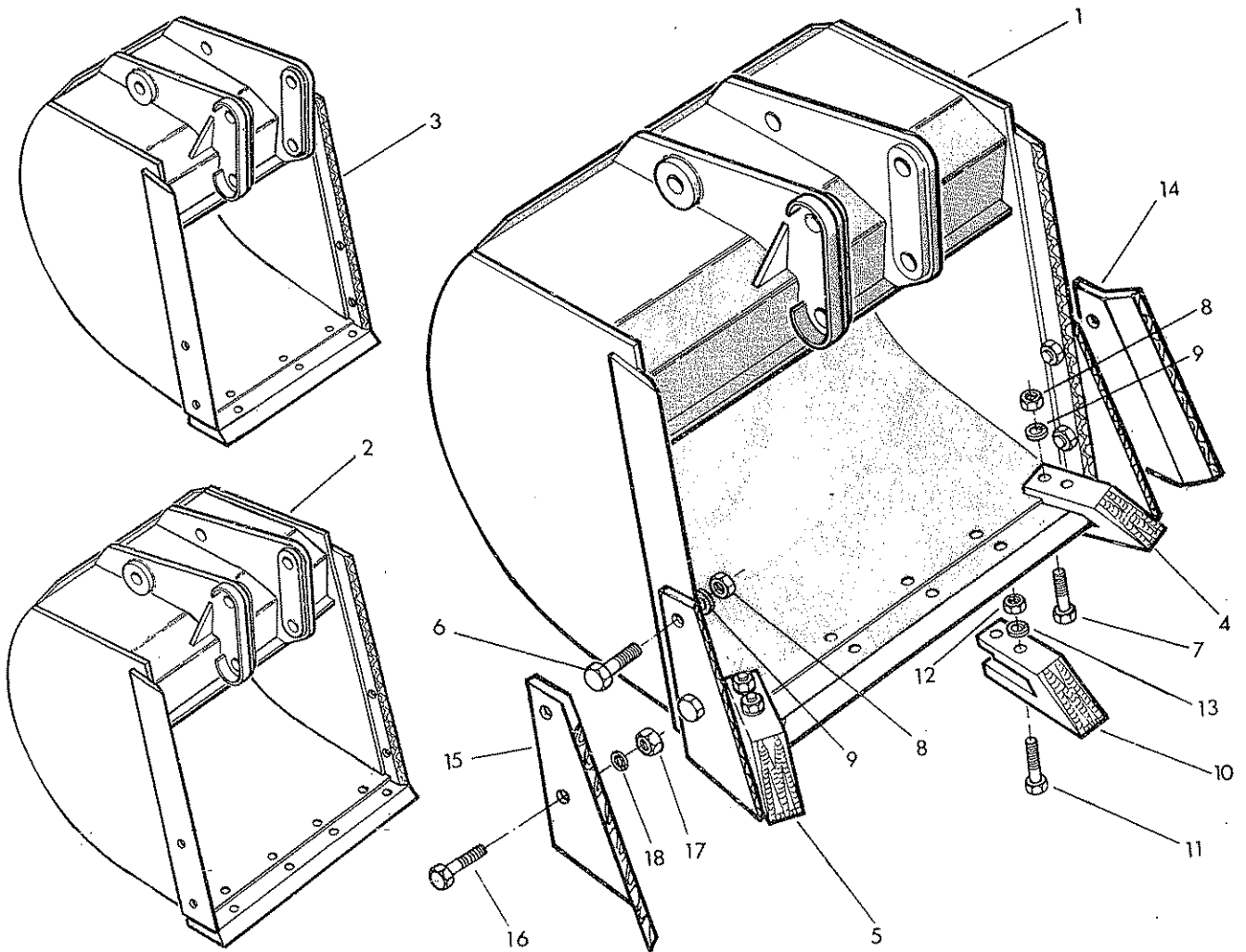
SEAL KIT



Ref	Part No.	Qty	Description
	71-20-279		REACH RAM ASSEMBLY
	71-20-280	1	.Ram comprising;-
1	71-20-281	1	..Ram barrel
2	71-36-312	1	..Gland housing c/w seals etc.
3	86-29-148	1	...Gland seal
4	86-29-149	1	...Piston rod wiper seal
5	86-00-306	1	... 'O' ring
6	86-09-306	1	...Anti extrusion ring.
7	04-16-240	1	...Internal circlip
8	71-36-062	1	..Piston rod c/w bush
9	71-05-050	1	...Bush
10	71-36-063	1	..Piston c/w seal and grub screw
11	86-36-001	1	...Piston seal
12	93-63-033	1	...Grub screw M6 x 16 socket head.
13	09-01-121	1	.Greaser 1/8BSP straight
14	85-81-209	2	.Union 3/8 BSP M-M
15	85-81-208	2	.Restrictor adaptor
16	81-23-043	1	.Restrictor disc
17	81-23-045	1	. Restrictor disc
18	81-16-011	2	.Restrictor spring
19	86-50-103	4	.Bonded seal 3/8 BSP
20	09-01-125	1	.Greaser 1/8 BSP angular 45 deg.
	86-99-190		. SEAL KIT



Ref	Part No.	Qty	Description
	71-20-278		BUCKET RAM ASSEMBLY
	71-20-320	1	.Ram basic comprising:-
1	71-20-281	1	..Ram barrel
2	71-20-321	1	..Gland housing c/w seals
3	86-29-158	1	...Gland seal
4	86-29-152	1	...Piston rod wiper seal
5	86-00-306	1	... 'O' ring
6	86-09-306	1	...Anti extrusion ring.
7	71-20-065	1	..Piston rod c/w bush
8	71-05-050	1	...Bush
9	71-36-063	1	..Piston c/w seal & grub screw
10	86-36-001	1	...Piston seal
11	93-63-033	1	...Grub screw M6 x 16 socket headed
12	09-01-121	1	..Greaser 1/8 BSP straight
13	85-81-209	2	.Union 3/8 BSP M-M
14	86-50-103	2	.Bonded seal 3/8 BSP
15	09-01-125	1	.Greaser 1/8 BSP angular 45 deg.
	86-99-198		SEAL KIT



Ref	Part No.	Quantity			Description
		13"	16"	22"	
1	71-20-500			1	EXCAVATING BUCKET ASSEMBLY 22"
	71-20-506				.Bucket
2	71-20-501			1	EXCAVATING BUCKET ASSEMBLY 16"
	71-20-507				.Bucket
3	71-20-502			1	EXCAVATING BUCKET ASSEMBLY 13"
	71-20-508				.Bucket

The remaining items are common to all excavating bucket assemblies.

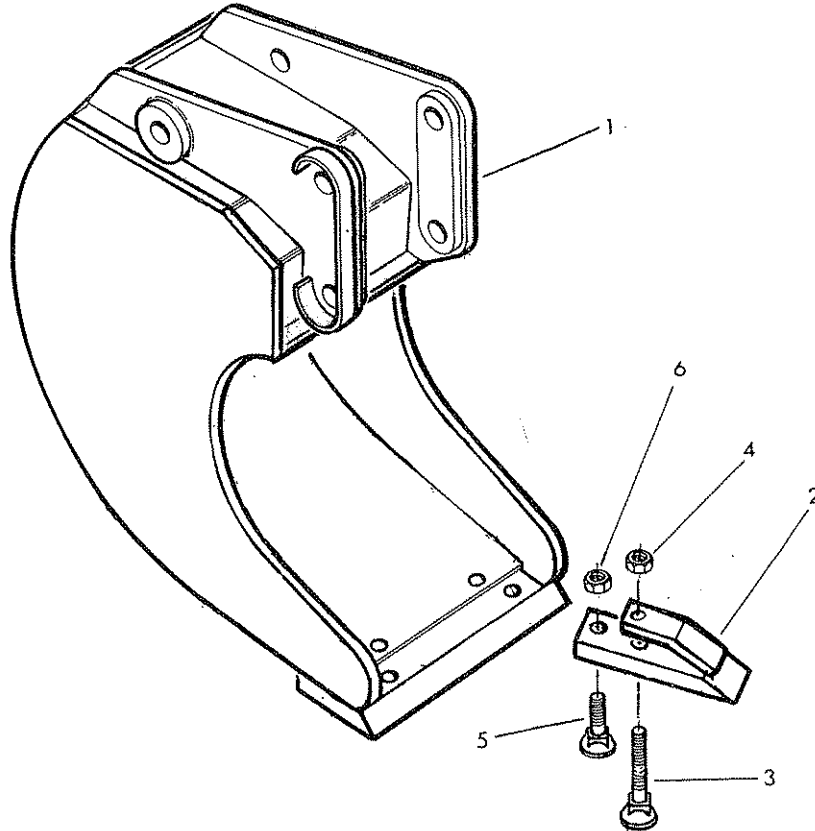
4	71-20-520	1	1	1	.Side tine L.Hand c/w nuts & bolts.
5	71-20-521	1	1	1	.Side tine R.Hand c/w nuts & bolts.

Items 6 to 9 inclusive are common to both side tine assemblies.

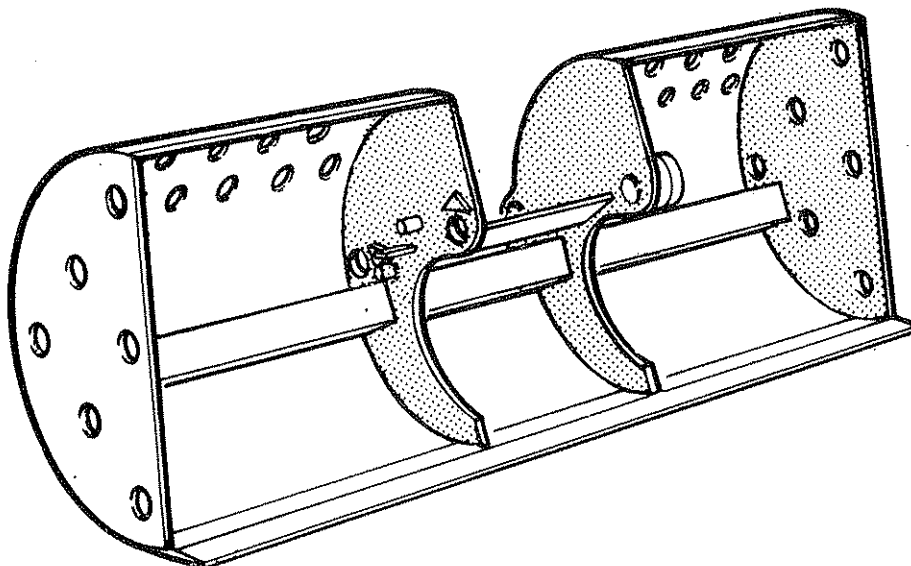
6	03-11-104	2	2	2	..Setscrew 7/16 UNF x 1 1/4 lg
7	02-11-144	2	2	2	..Bolt 7/16 UNF x 1 3/4 long
8	01-11-004	4	4	4	..Nut 7/16 UNF
9	01-00-204	4	4	4	..Spring washer 7/16"dia.
10	71-20-522	1	2	3	.Bucket tine c/w nuts & Bolts
11	02-11-144	2	2	2	..Bolt 7/16 UNF x 1 3/4 long
12	01-11-004	2	2	2	..Nut 7/16 UNF
13	01-00-204	2	2	2	..Spring washer

OPTIONAL EXTRA

14	71-20-208	1	1	1	Cheek plate L.Hand)c/w nuts,
15	71-20-209	1	1	1	Cheek plate R.Hand.)bolts & washers.
16	02-11-144	2	2	2	.Bolt 7/16 UNF x 1 3/4 long
17	01-11-004	2	2	2	.Nut 7/16 UNF
18	01-00-204	2	2	2	.Washer 7/16 dia.



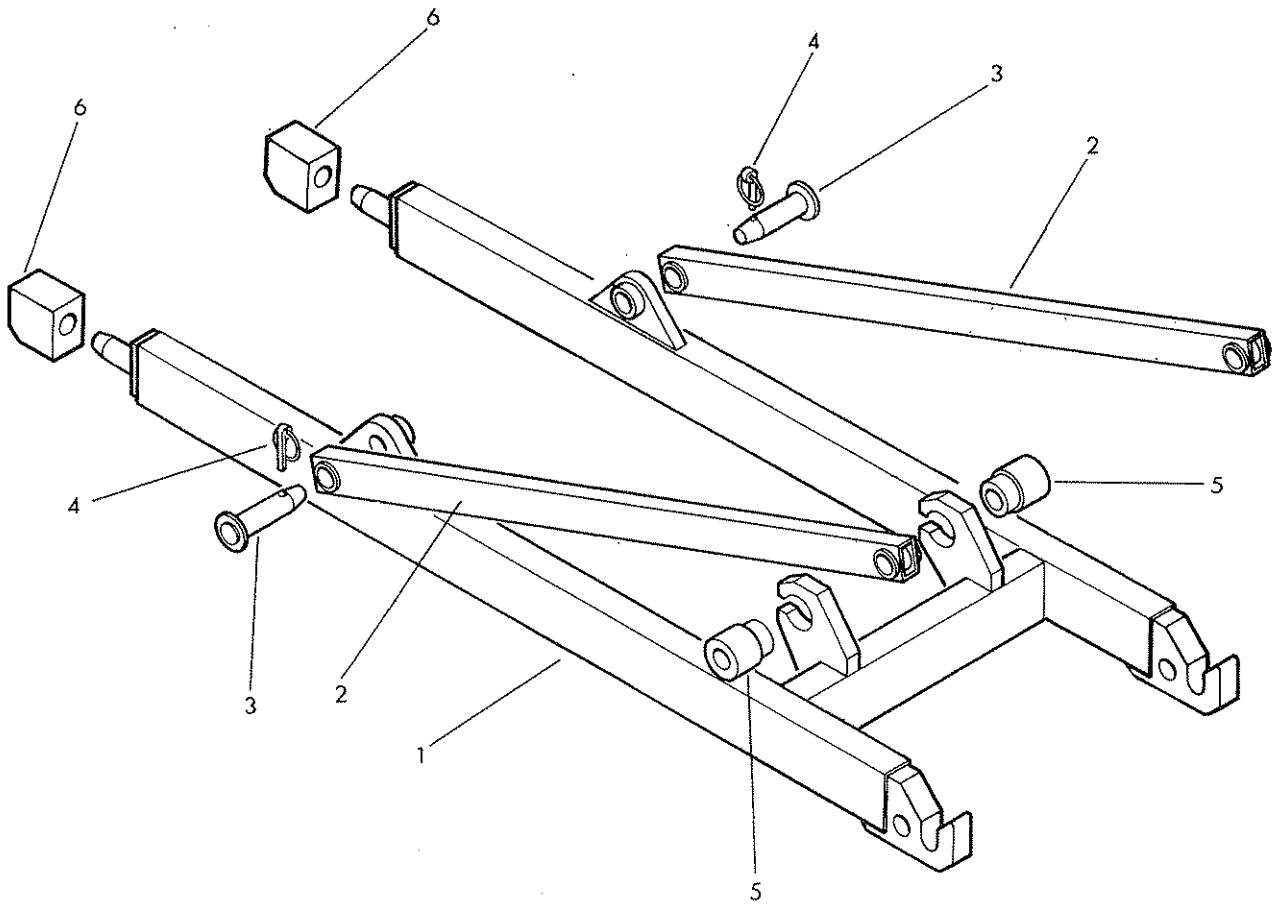
Ref	Part No.	Qty	Description
	71-20-503		TRENCHING BUCKET 8" ASSEMBLY
1	71-20-509	1	.Bucket
2	60-12-073	2	Bucket tine c/w nuts & bolts
3	60-12-074	1	.Tine bolt long c/w nut
4	01-12-004	1	..Nut 7/16" UNC
5	60-12-034	1	.Tine bolt short c/w nut
6	01-12-004	1	..Nut 7/16" UNC



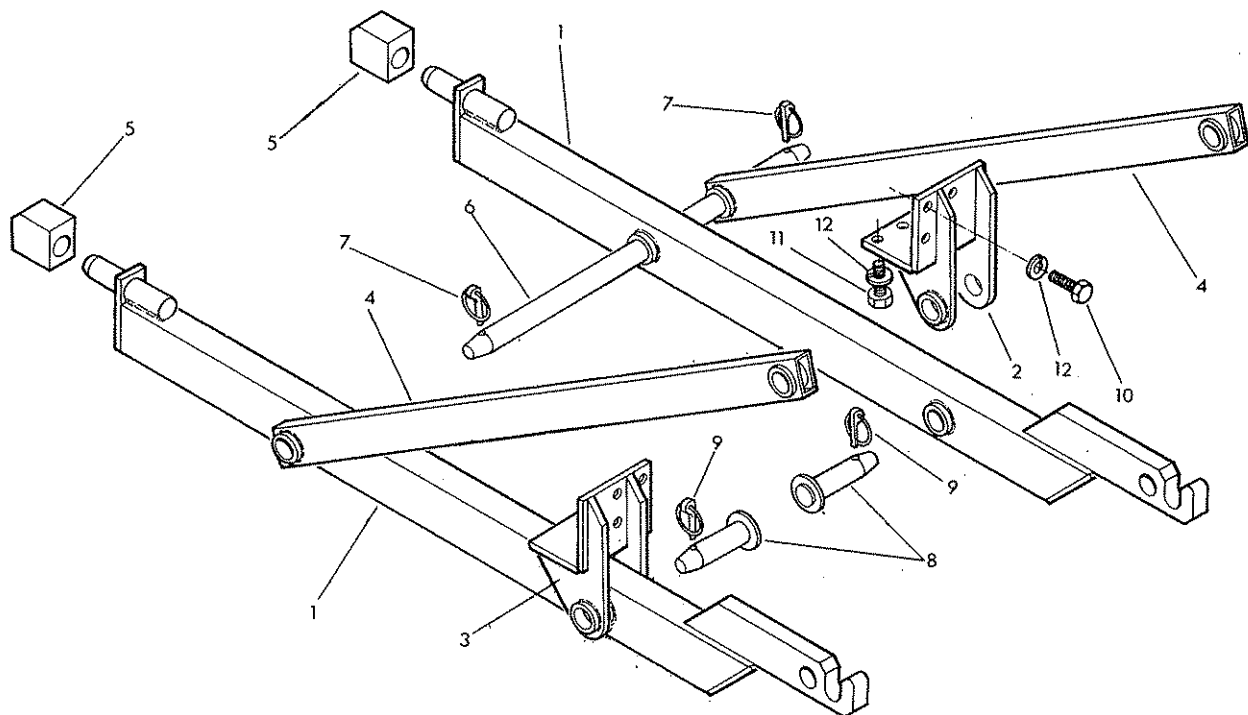
71-20-526

DITCH CLEANING BUCKET





Ref	Part No.	Qty	Description
	71-20-310		SUBFRAME KIT FOR B7100 HST TRACTOR
1	71-20-312	1	.Subframe
2	71-20-120	2	.Diagonal stay
3	71-18-112	2	.Stay pin c/w linch pin
4	04-31-217	1	..Linch pin
5	71-20-121	2	.Sleeve
6	71-20-054	2	.Anchor block



Ref	Part No.	Qty	Description
	71-20-305		SUBFRAME KIT TO FIT KM190 On B7200 TRACTOR
1	71-20-289	2	.Subframe beam
2	71-20-291	1	.Axle bracket R.Hand
3	71-20-292	1	.Axle bracket L.Hand
4	71-20-052	2	.Stay
5	71-20-054	2	.Anchor block
6	71-20-056	1	.Stay mounting pin c/w linch pin
7	04-31-217	2	..Linch pin
8	71-20-055	2	.Beam mounting pin c/w linch pin
9	04-31-217	1	..Linch pin
10	93-13-086	8	.Setscrew M12 x 40
11	93-13-066	4	.Setscrew M12 x 30
12	91-00-206	12	.Spring washer Ø 12

Model.

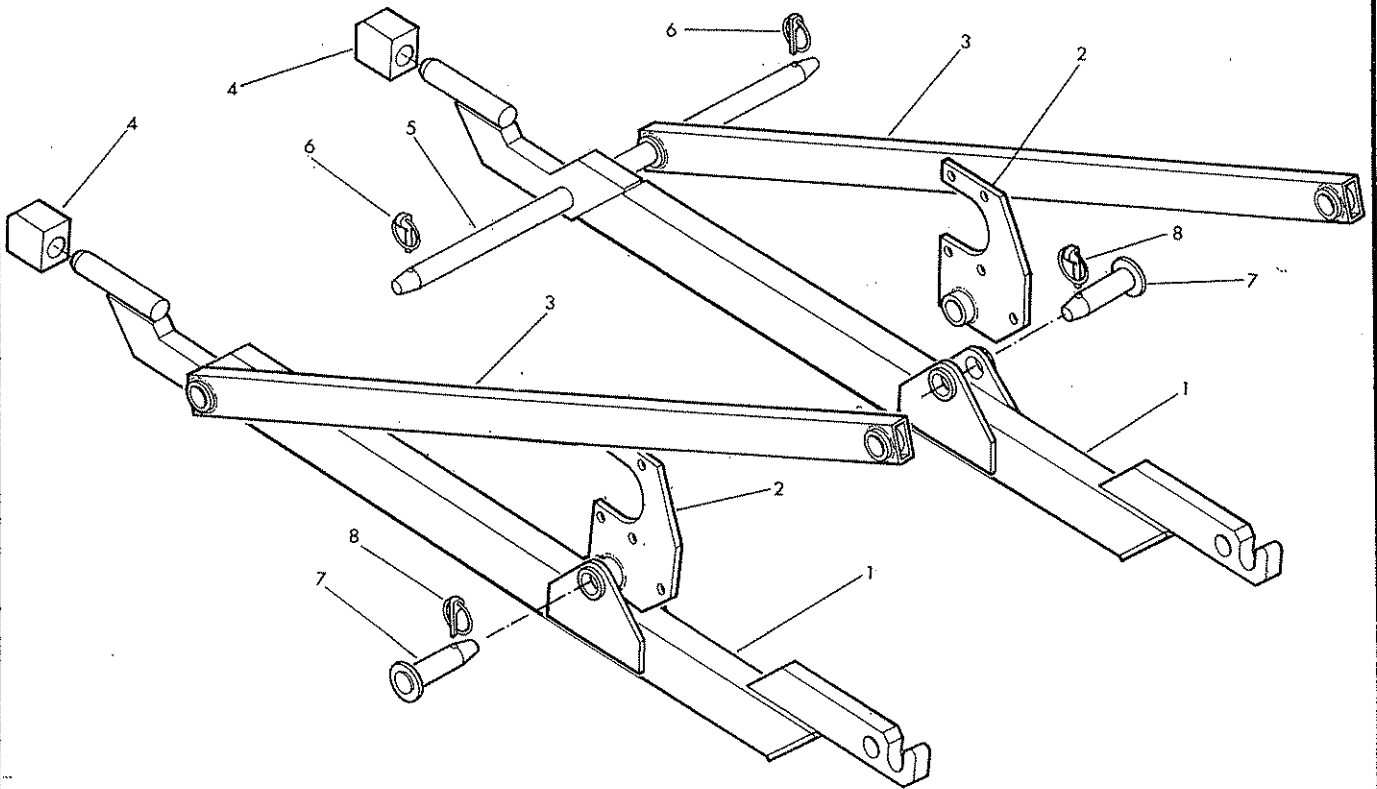
SUBFRAME (B8200/B8200HST)



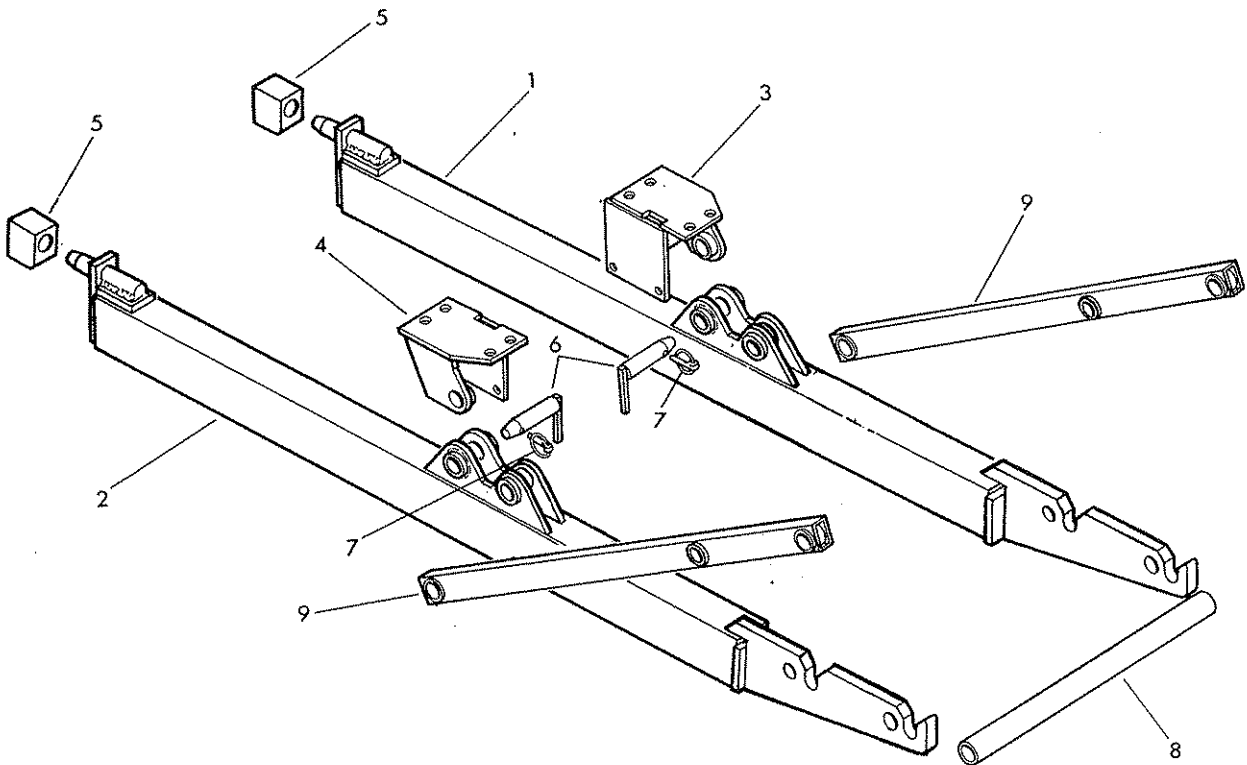
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Ref	Part No.	Qty	Description
	71-20-300		SUBFRAME KIT TO FIT KM190 on B8200 AND B8200 HST TRACTORS
1	71-20-290	2	.Subframe beam
2	71-20-058	2	.Axle bracket
3	71-20-053	2	.Stay
4	71-20-054	2	.Anchor block
5	71-20-057	1	.Stay mounting pin c/w linch pin
6	04-31-217	2	..Linch pin
7	71-18-112	2	.Beam mounting pin c/w linch pin
8	04-31-217	1	..Linch pin



Ref	Part No..	Qty	Description
	71-20-302		SUBFRAME KIT FOR L275 TRACTOR
1	71-20-303	1	.Subframe beam R. Hand
2	71-20-304	1	.Subframe beam L. Hand
3	71-20-139	1	.Axle bracket R. Hand
4	71-20-140	1	.Axle bracket L. Hand
5	71-20-054	2	.Anchor block
6	71-20-142	4	.Beam mounting pin c/w linch pin
7	04-31-217	1	..Linch pin
8	71-20-144	1	.Spacer tube (fitting jig only)
9	71-20-141	2	.Diagonal stay

Model.



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