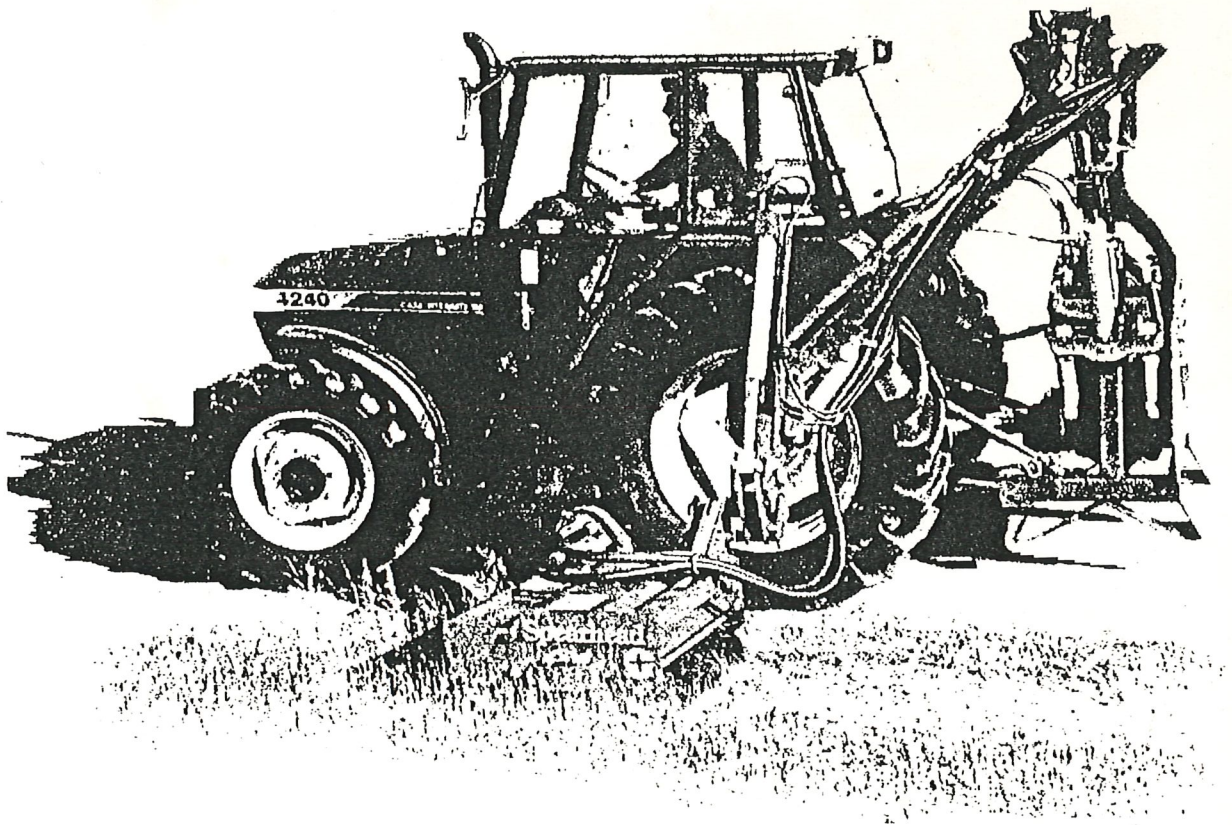


# TWIGA-5

## reach mower



Spearhead

Operator's manual & parts lists



# Spearhead

**TWIGA-5**

**Operator's manual  
& parts lists**  
*(including Twiga-5LR)*

*Second edition*

## Important

The purchaser should ensure that this manual is handed to the operator before using the machine for the first time and should be satisfied that the operator fully understands the contents of this manual before being allowed to proceed. If the machine is resold the Operators Manual must be given to the new owner.

Fill in the details below, you will find it useful to refer to when ordering spare parts.

Serial No. \_\_\_\_\_

Date of Delivery \_\_\_\_\_

Dealer's Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone No. \_\_\_\_\_

### **Spearhead Machinery Limited**

Pershore Trading Estate, Pershore,  
Worcestershire WR10 2DD

Tel: 01386 556748 Fax: 01386 561398

 **Safety**

- Never operate the machine with other people present, as it is possible for debris, including stones, to be discharged from the front and rear of the flail head.
- Always ensure all cab safety guards are in place and all tractor windows closed.
- Never allow an inexperienced person to operate the machine without supervision.
- Never allow children to play on or around the machine at any time.
- Never attempt any maintenance or adjustment without first disengaging the p.t.o., lowering the head to the ground, stopping the tractor engine and applying the tractor parking brake.
- Before leaving the tractor cab always ensure that the flail head is firmly on the ground, no weight is on the machine's hydraulics and the rotor has stopped spinning.
- Never stop the engine with the p.t.o. engaged.
- Always check that all guards are properly fitted, check there are no damaged or loose parts. Particular attention should be given to the flails to ensure they are not damaged, cracked or missing.
- Never operate with flails missing.
- Always inspect work area for wire, steel posts, large stones and other dangerous materials and remove before starting work.
- Never attempt to use the machine for any purpose other than that it was designed for.
- Ensure that all warning labels are always visible and that they are not damaged, defaced or missing.
- Never transport with the p.t.o. engaged.



## Contents

<b>Introduction</b> .....	1
<b>Tractor requirements</b> .....	1
<b>Operators guard</b> .....	2
<b>Oil requirements</b> .....	2
<b>Attaching to tractor</b> .....	3
<b>Running up</b> .....	6
<b>Removing from tractor</b> .....	7
<b>Operation</b> .....	7
Cavitation .....	
<b>Variable Forward Reach</b> .....	8
<b>Machine controls</b> .....	9
<b>Joystick controls</b> .....	9
Main arm up and down .....	10
Dipper arm in and out .....	10
Head control .....	10
Base plate up and down .....	11
Variable forward reach .....	11
Rotor on/off .....	11
<b>Cable controls</b> .....	12
Main arm up and down .....	13
Dipper arm in and out .....	13
Head control .....	13
Base plate up and down .....	14
Variable forward reach .....	14
Rotor on/off .....	14
Engaging head drive .....	15
Disengaging head drive .....	15
Moving into transport position .....	15
Transport to work position .....	16
Sliding head .....	17
Flail head .....	18
Cutting sequence .....	19
Hedge cutting .....	20
Verge mowing .....	21
Tractor forward speed .....	22
Head float .....	22
Wire trap .....	22
High voltage cables .....	23

<b>Servicing and maintenance</b> .....	24
Gearbox,...Greasing,...P.T.O.,...Oil supply,...	
Filtration,...Cables,...Flail head,...	
Hydraulic hoses...Pins & bushes	
<b>Storage</b> .....	28
<b>Service check list</b> .....	29
<b>Parts lists</b>	
Main frame .....	30
Tank assembly .....	32
Standard Twiga-5 main arm .....	34
Twiga-5LR main arm .....	36
Dipper arm .....	38
Variable Forward Reach dipper arm .....	40
Variable Forward Reach arm .....	42
Head .....	44
Mesh guard panel .....	47
Gearbox assembly .....	48
P.t.o. shaft .....	50
Single pump and relief valve .....	52
Main relief valve for twin pump .....	54
Twin pump .....	56
Control valve – U.C.S. cable .....	58
U.C.S. hydraulic proportional control .....	60
4/5-bank spool and 5/6-lever .....	62
Joystick/cable .....	64
Joystick .....	66
5/6 lever control .....	68
Cables .....	70
Diverter Standard/Twiga-5LR .....	72
Diverter, Variable forward reach .....	74
Motion control valve .....	76
Overcentre valve .....	78
Break-back valve .....	80
Filter/feedback .....	82
Cylinders .....	84
Variable forward reach cylinder .....	88
Decals .....	90
Head float .....	96
Angle float/system guard .....	98
Axle mount .....	100

#### **EC Certificate**



## Introduction

The Twiga-5 is a very robust high capacity reach mower that is easy to operate and maintain. To ensure trouble-free operation this manual should be carefully studied.

The term Left and Right hand applies to the machine when coupled to the tractor and viewed from the rear, this also applies to the tractor.

## Tractor requirements

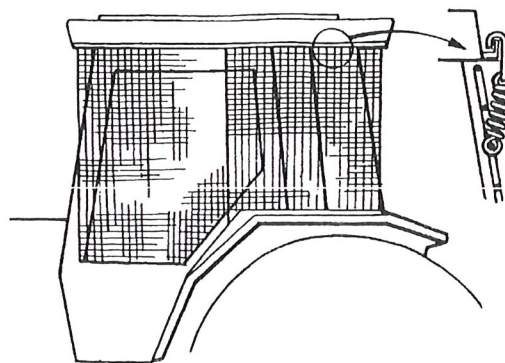
- Spearhead strongly recommend 60–100hp tractor with a substantial rear linkage.
- Minimum tractor weight including ballast must be 3500kg
- Linkage category 2.
- P.t.o. must be independent live drive to enable continuous p.t.o. drive even when tractor clutch is pressed down.
- Before hitching ensure position control is selected. Do not attempt to hitch in draft control.
- Set wheel width as wide as possible.
- Ballast weight is to be fitted within tractor manufacturer's recommended requirements.
- Chains and stabilisers must be in good working order to hold the machine firmly.

## Operators guard

Use only tractors with safety glass windows, if windows are not laminated safety glass, polycarbonate glazing must be fitted between operator and cab meshing.

Shape mesh to cover all windows that the driver will look through to view flail head in any operating position.

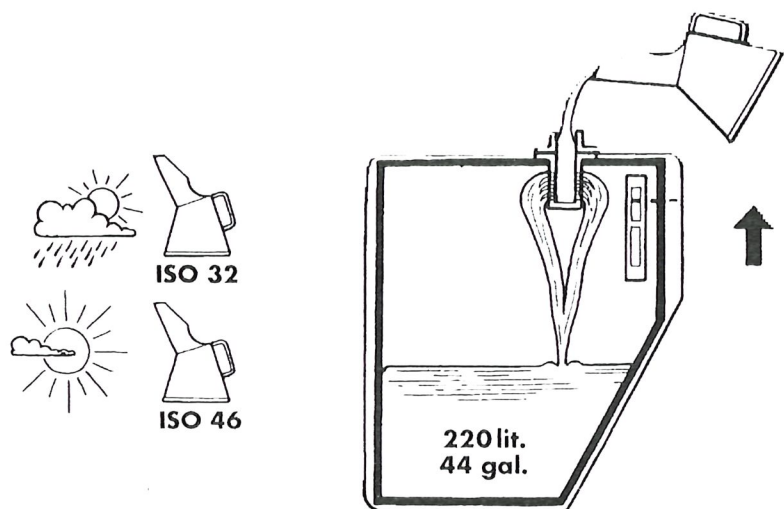
Meshing can be retained by springs and clips supplied, but it is the operators responsibility to ensure guarding is firmly in place.



## Oil requirements

Fill the tank to 25mm below top of sight gauge with approximately 220 litres of B.P, Energol HLP-HM46 or equivalent oil. Do not over fill.

Check gearbox oil level is to centre level plug, replenish with E.P. 90.

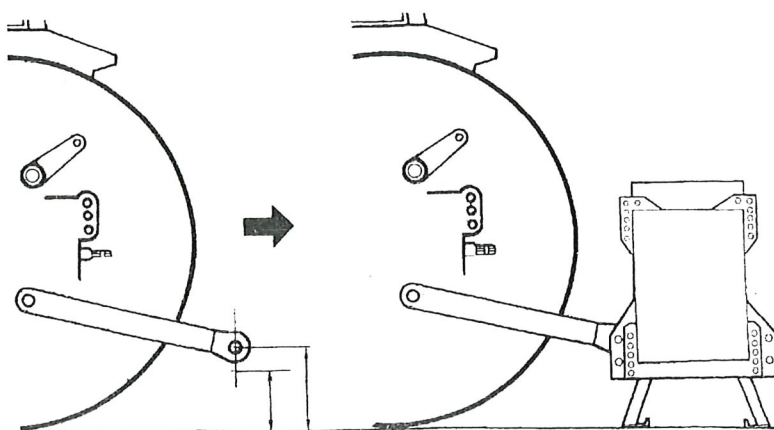


## Attaching to Tractor

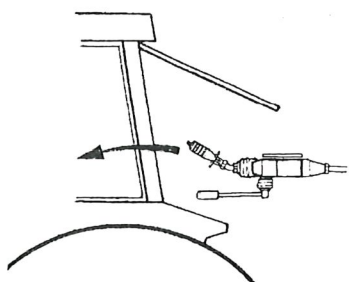
Warning – It is most important the operator fully understands the procedure for attaching/unattaching the reach mower to/from the tractor. The following text must be fully understood before attempting to attach the machine. If there is any doubt please contact your supplying dealer or Spearhead Service Department. Failure to follow the correct procedure to attach/unattach the machine could result in personal injury or machine damage. Any resulting damage to a machine is not covered by warranty



Always be sure to select a level firm surface, such as concrete before attaching to the tractor.



### 1 Reverse tractor and attach lower link arms



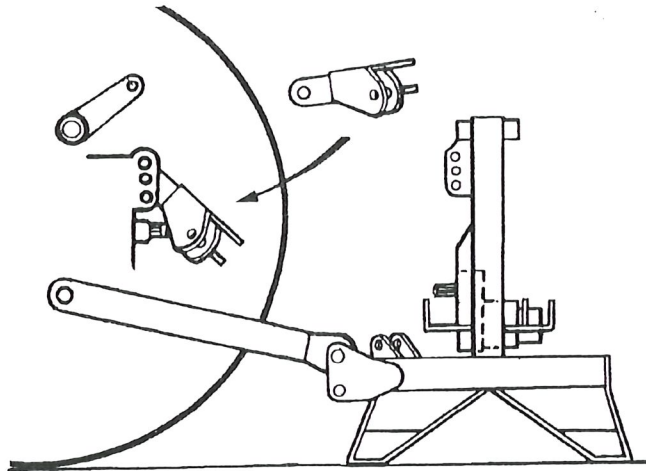
### 2 Fit control unit to cab

Spearhead strongly recommend mounting the control unit to the seat in place of the arm rest to the head side of the tractor. Modification and additional bracket will possibly need to be fabricated. Consult your local dealer for advice.

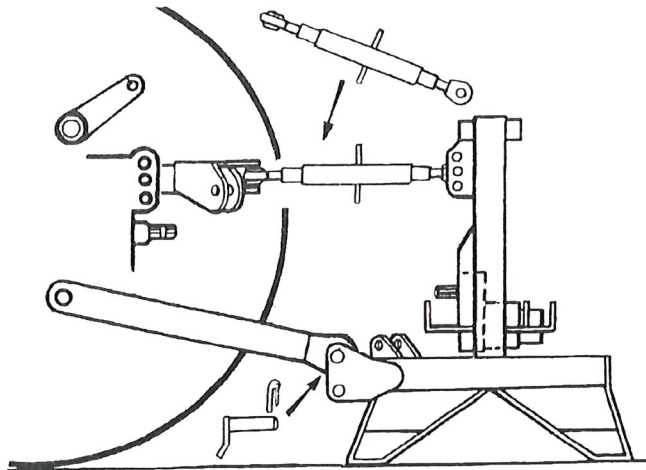
An electronic 12 volt supply cable will be needed from a fused source which is controlled by the tractor's ignition key.



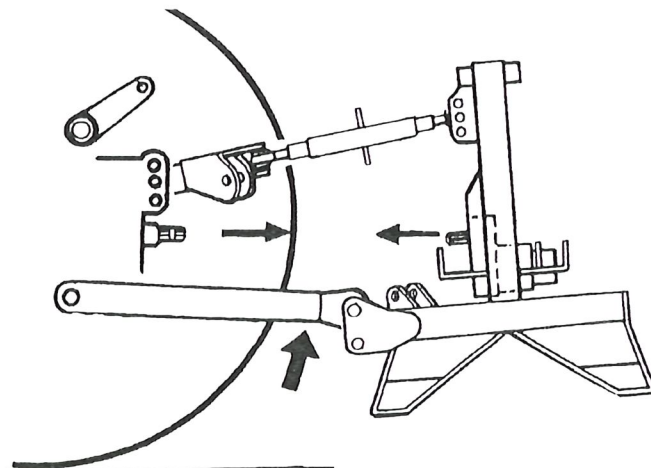
**3 Fit stabiliser yoke to tractor top link bracket.**



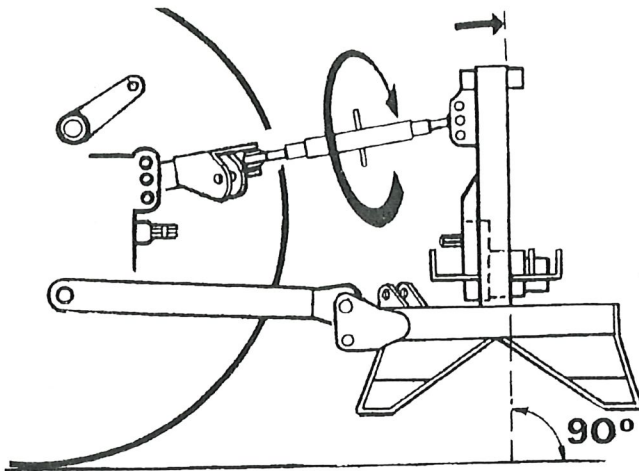
**4 Offer up top link to machine and stabiliser bracket.**



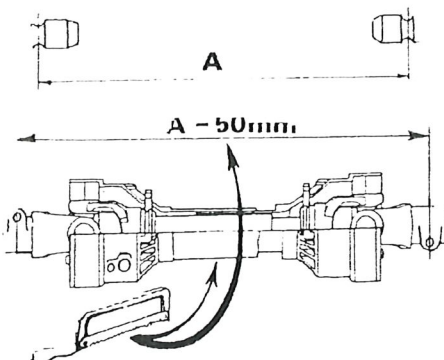
**5 Lift the machine up on the tractor hydraulics until both p. t. o. stub shafts are in line.**



6 Lengthen top link until the main frame is vertical.

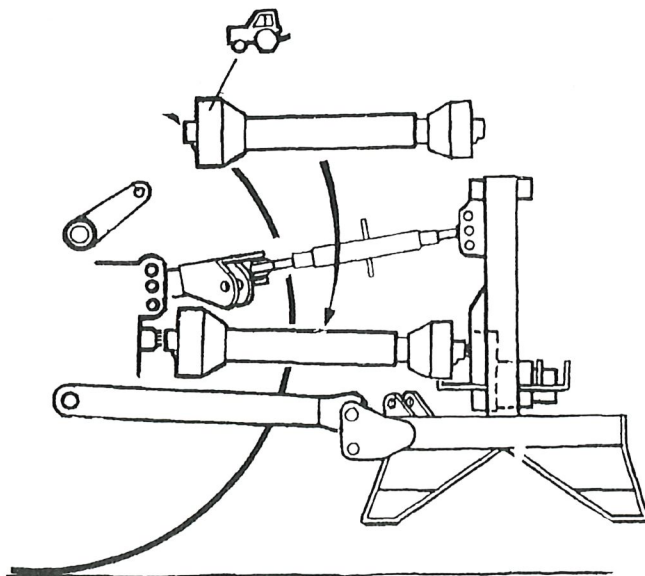


7 Fit p.t.o. shaft connecting tractor out-put shaft to the machine input shaft.



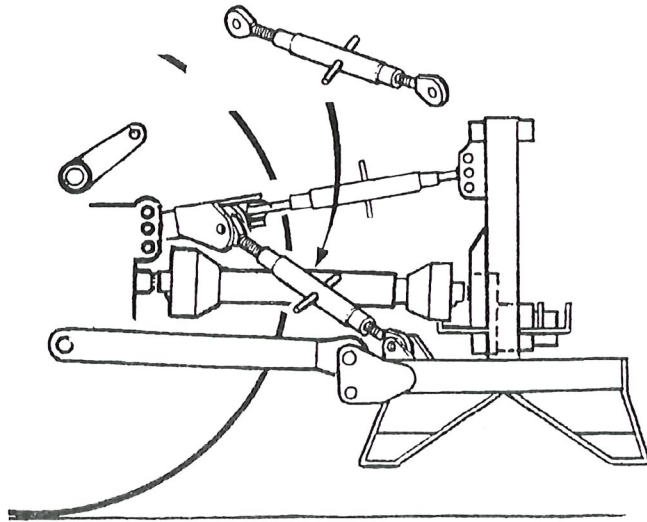
WARNING

Always stop the engine and ensure the p.t.o. drive is disengaged before fitting the p.t.o.



## 6 Finally fit the two adjustable stabilising link bars making sure the machine is level from left to right.

Before attempting to fit the stabilising link bars be sure the head is fully lowered on to the ground. Once the stabilising bars are correctly fitted lower the tractor hydraulics allowing all the weight off the machine to be carried on the stabilising bars.



**WARNING**– Never attempt to raise the tractor linkage once the stabiliser link bars are fitted. Always lower the tractor linkage and allow all the weight to be carried by stabilizer frame. Failure to observe this warning will result in bending the stabiliser frame.



**WARNING** – When operating the tractors or machine's controls do so only when seated in the tractor cab. Do not allow anyone to stand on or amongst linkage for any reason during these operations

## Running up

Engage p.t.o. into 540r.p.m. and run machine at half revs allowing oil to circulate for about 5 minutes before operating arms.

Re-check oil level, – check against oil leaks.

Operate the arms through the full amount of travel, check all movements are functioning correctly.

Place flail head to ground in a safe position and with tractor revs low, select 'start' position for the flail motor.

Once rotor is settled, slowly increase revs of p.t.o. to 450 and run for a further 5 minutes. Slowly reduce revs and then disengage p.t.o..

Check all hoses for kinks, pinching, chafing and leaks.

Re-check oil level.

**WARNING** The rotor will take a long time to stop. Never leave the cab until p.t.o. is disengaged, engine stopped and rotor has stopped spinning.



## Removing from tractor

Select a level firm site such as a concrete surface.

Lower the head on to the ground and slightly raise the tractors lower linkage to take the weight off the stabiliser bars.

Remove the stabiliser bars.

Lower the machine securely on to stands.

Stop the engine, ensure all weight is off the tractor and machine hydraulics by operating the levers in all directions.

Remove the top link, lower link pins, p.t.o. shaft and control unit from the cab.

Slowly drive the tractor away.

## Operation

**Care and attention.** Adhere to the following points.

### Cavitation

Cavitation (suction of air) is the main reason for pump and motor failure.

### To avoid cavitation:

**Never run out of oil.**

**Never run a cold machine straight up to speed.**

**Never increase and decrease engine speed quickly.**

**Never stop or start rotor at high engine speed.**



**PLEASE READ**

**Never transport with p. t. o. in gear.**

**Never operate at 1000 r. p. m. p. t. o.**

**Regularly check condition of suction line pipe.**

**Check pump fittings to be tight.**

**If any strange noise occurs from the hydraulics, stop immediately and investigate.**

Remember pump and motor warranty is limited to replacement due to faulty materials or manufacturer. Cavitation is very easily detected on pump inspection.

**Warranty will not be considered if fault is due to misuse.**

Never drive the tractor with arm out stretched (except when cutting). When moving at work always first retract arms. Transport with care. Metal fatigue is always caused by careless transportation. If ground is uneven or bumpy **slow** down.

**PLEASE READ**



Read operator's manual and be fully familiar with all operational and safety procedures.

Practice in open space without rotor running until familiar with controls. **Take care working the head close to the tractor as it may be possible to strike the tractor.**



**WARNING** – Never operate at above the recommended p.t.o. speed of 540 rpm. Failure to heed this warning will result in severe damage i.e. reduced belt and pulley life; greatly increased oil temperature; risk of rotor going out of balance, as well as reduced machine life and cause expensive repairs.



**WARNING** – Incorrect belt tension and pulley alignment will considerably shorten the life of the belts. Never attempt to engage/disengage the rotor drive at high p.t.o. speeds. Never attempt to operate the machine above the recommended p.t.o. speed of 540 rpm. Failure to start rotor at a low p.t.o. speed or to operate at the correct speed will result in severe belt or rotor damage.

## **Base plate**

The base plate gives extra travel to the cutting head i.e. with the rams fully retracted – extra down reach; fully extended – a more compact transport position.



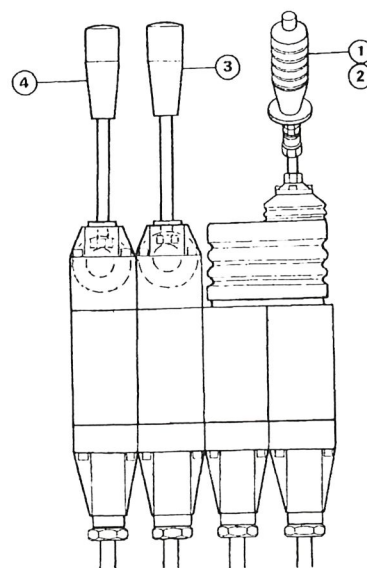
However **never attempt** to operate the machine with the base plate fully raised as this will not allow the hydraulic break-back to operate which could cause severe damage to the dipper arm and/or break-back ram. It is important to be aware that the oil discharged from the hydraulic break-back is transferred to the base plate rams. This in turn slightly raises the main arm, hence the importance for the need for there always to be travel in hand on the base plate rams.

## Variable forward reach

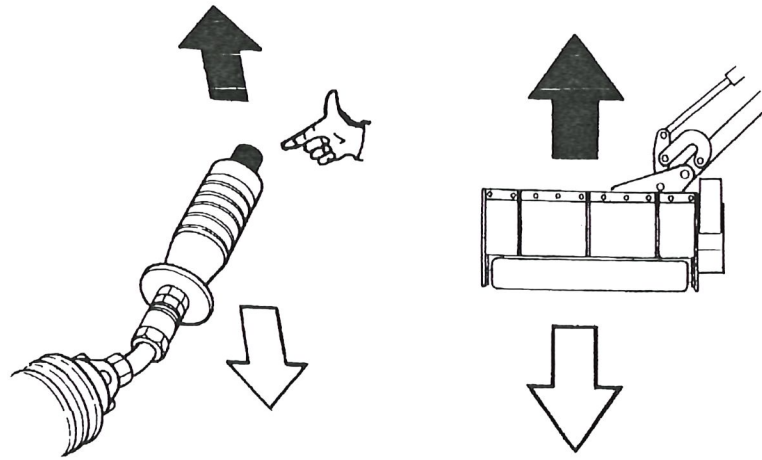
This useful feature provides extra visibility particularly when topping a hedge, or verge mowing. Before operating the arm, ensure the head is one metre off the ground and at least two metres away from the tractor. To operate the arm with the joystick controls first press the button at the end of the hand piece and then push the lever forward. This will push the head forward. Likewise with the button pressed and the lever gently pulled back, the head will retract backwards. When operating the cutting head close to the tractor extreme care must be taken to avoid contact with the cab. **Never attempt** transport position without first fully retracting the variable forward reach arm.

## Joystick controls

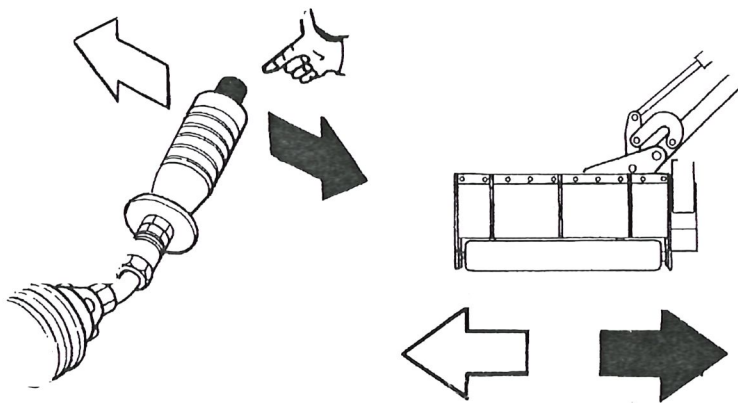
- 1 Arm control
- 2 Head control (Button pressed)
- 3 Base plate control
- 4 Rotor on/off



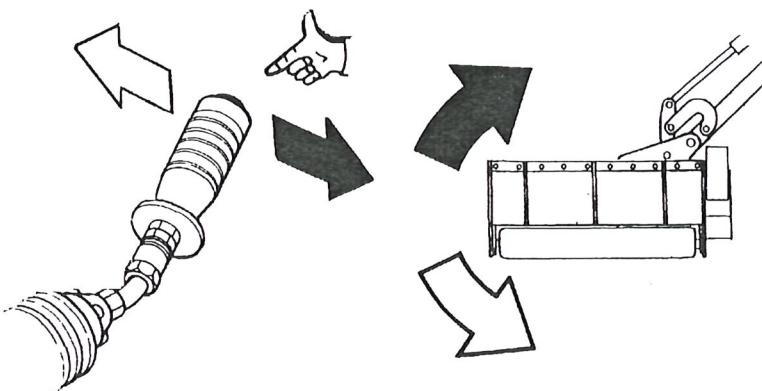
**Main arm up and down**



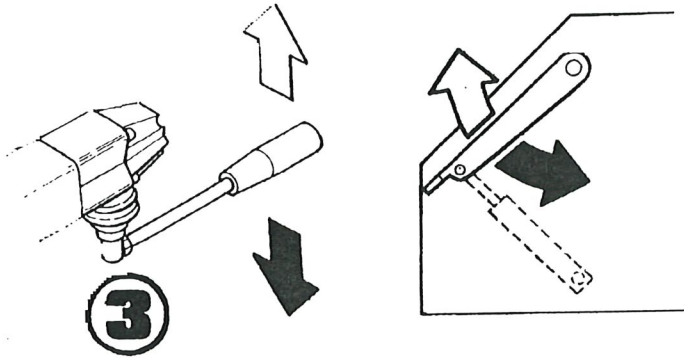
**Dipper arm out and in**



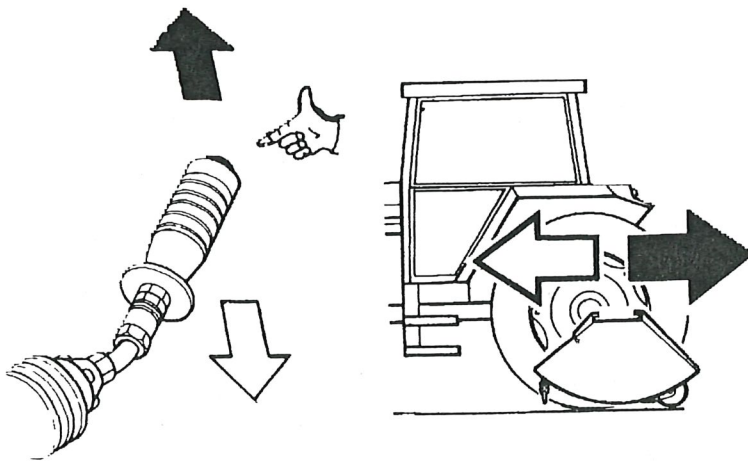
**Head control (button pressed)**



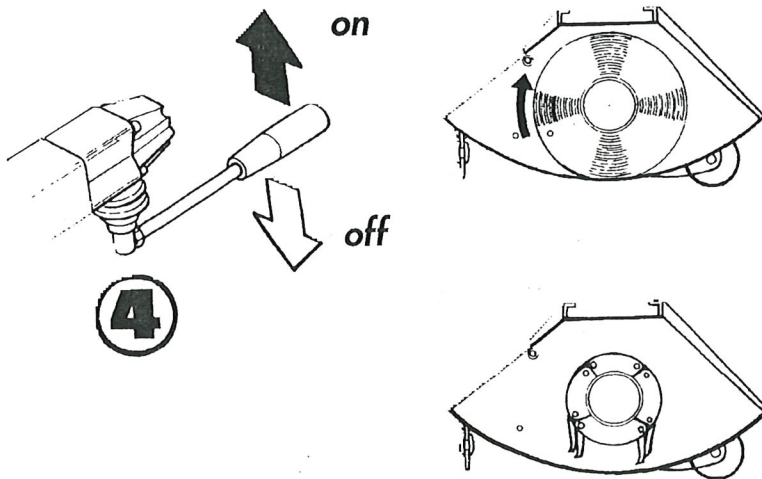
**Base plate up and down**



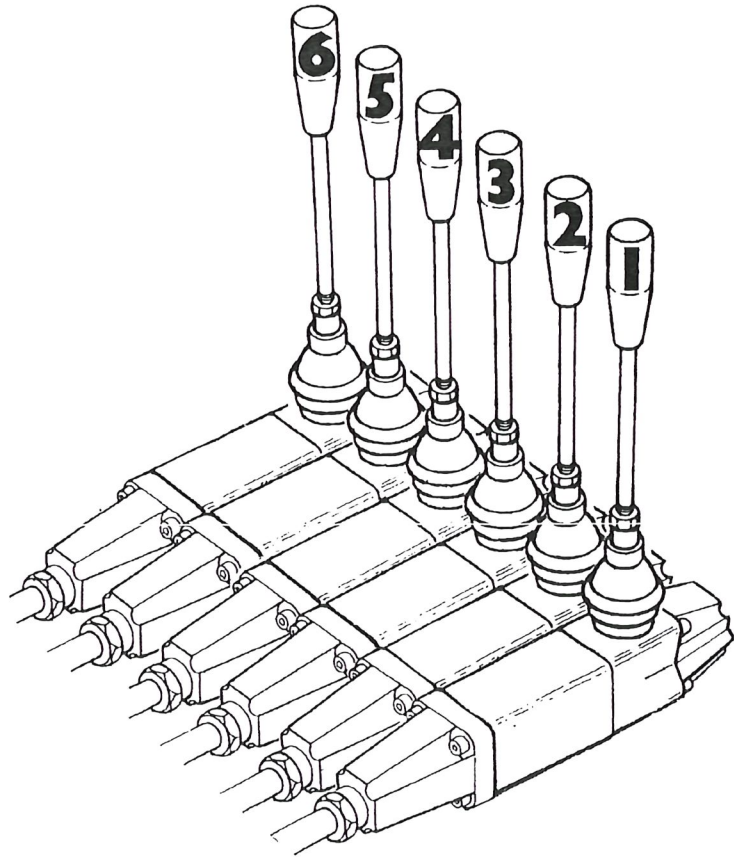
**Forward reach (button pressed)**



**Rotor on/off**

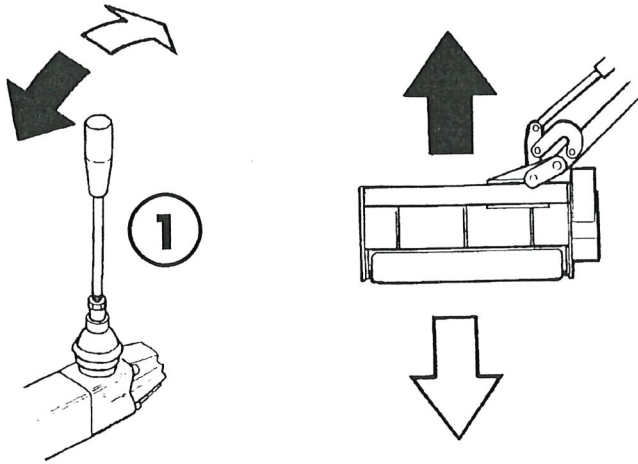


## Machine Cable controls

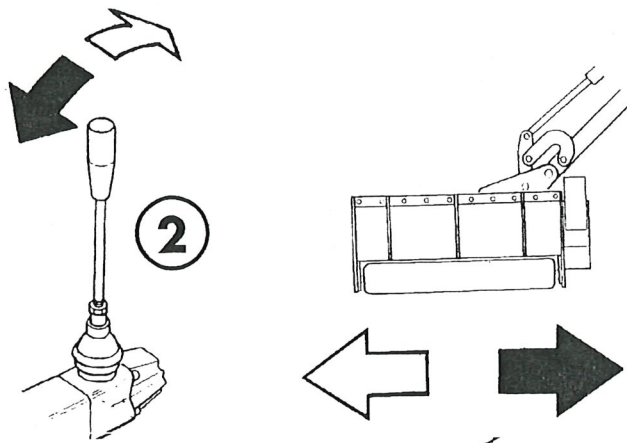


- 1 Main arm up and down
- 2 Dipper arm out and in
- 3 Head control
- 4 Base plate up and down
- 5 Forward reach and return (optional)
- 6 Rotor on/off,

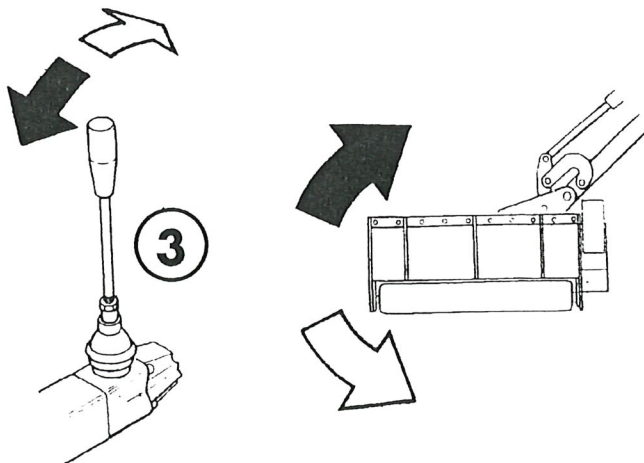
**Main arm up and down**



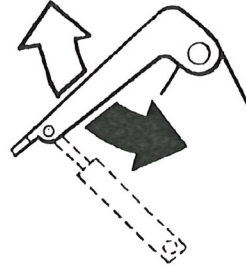
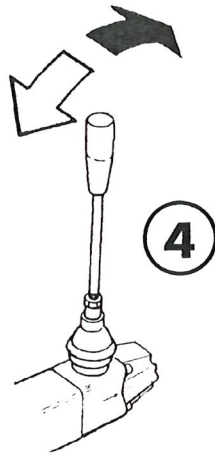
**Dipper arm in and out**



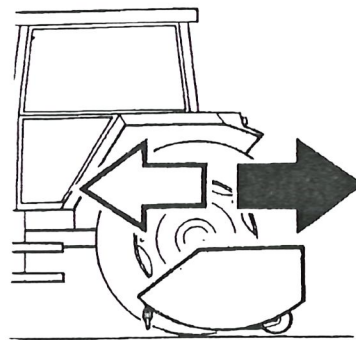
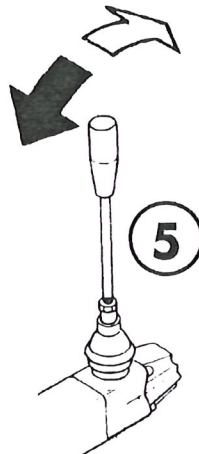
**Head control**



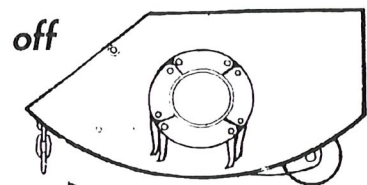
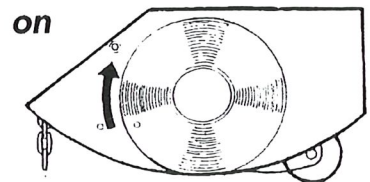
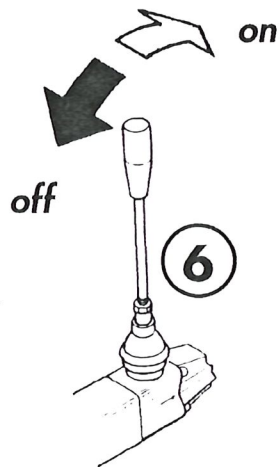
**Base plate up and down**



**Forward reach**



**Rotor on/off**



### Engaging head drive

- Select 540r.p.m. p.t.o. and run with low engine revs.
- With flail head in safe position move Rotor control lever (page 11 or 14) to 'on'.
- After 10 seconds slowly increase engine revs to obtain correct p.t.o. speed, 540r.p.m..
- Never attempt to start rotor while under load.
- **Cold start** – it is important not to run at full speed with cold oil. Run at half speed for 5 minutes to allow oil to warm up.

### Disengage head drive

- Position head in safe position i.e. horizontally at ground level.
- Slowly decrease engine revs to a fast idle.
- Move Rotor control lever (page 11 or 14) to 'off'.
- Never increase or decrease p.t.o. speed rapidly, this could seriously damage pumps and motor.

### Moving into transport position

**1 Disengage head motor drive. Position base plate at half travel.**

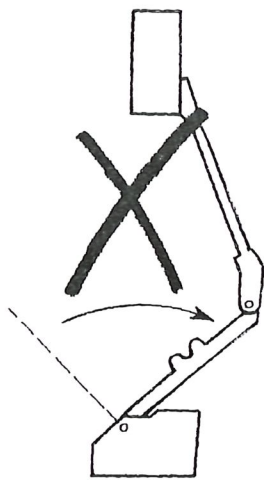
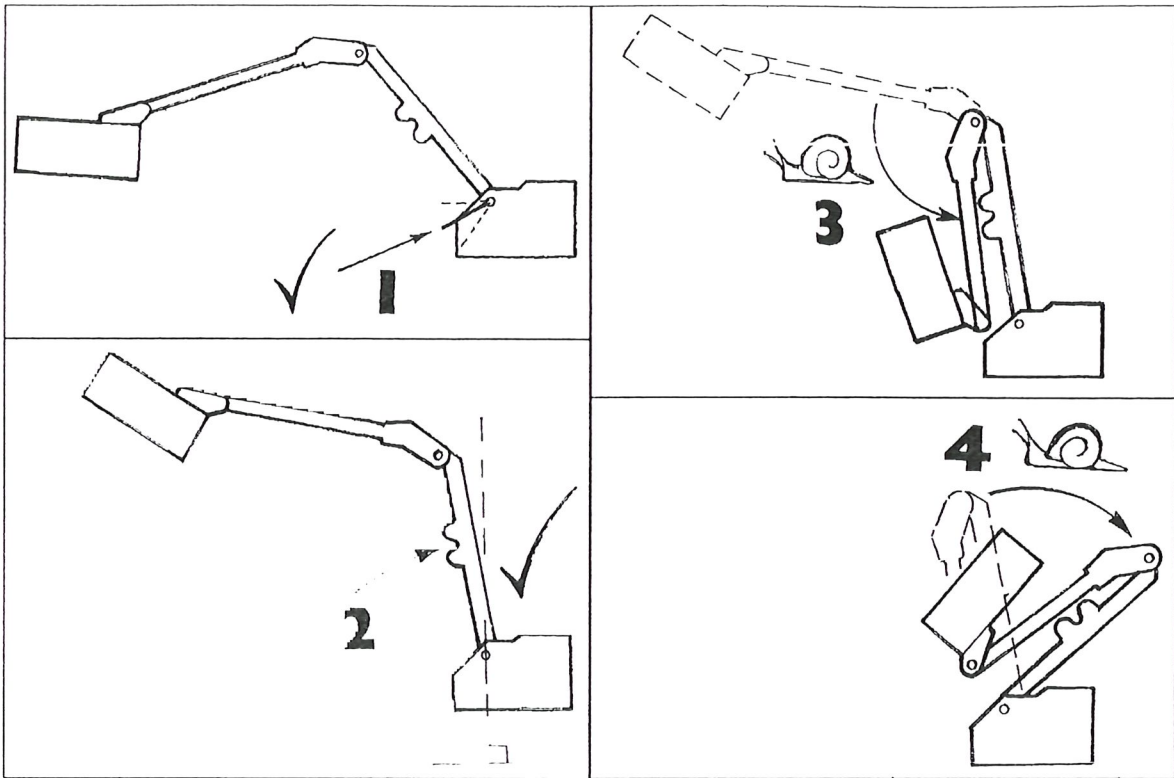
**2 Set main arm a few degrees before vertical**

**3 Slowly operate dipper arm towards stop on main arm until fully closed**

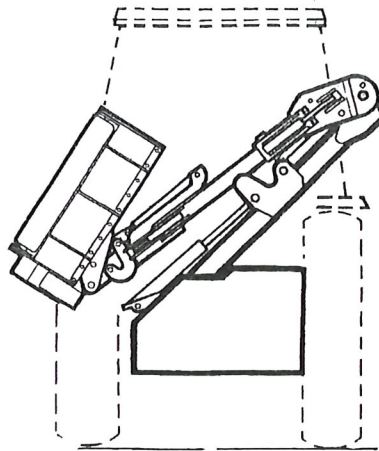
**4 Fully raise base plate, main arm, and slowly close head ram.**

- Finally disengage p.t.o. drive.

When in transit the p.t.o. must be fully disengaged. always check lights are in good working order.



To avoid severely damaging the dipper arm, never fully close main arm and drop dipper arm quickly.



Transport position

**WARNING** Never transport with p.t.o. still in gear. This will very quickly increase oil temperature and cause oil to froth. Oil overheating and air in oil are the two main reasons for pump and motor failure.

**Transport to work position**

- Ensure motor valve lever is off, engage p.t.o. at 540r.p.m..



- Position head 45° to the dipper arm
- Position base plate at halfway position
- Lower main lift ram only until main arm is vertical
- Extend head outward
- Position head till horizontal, just above ground level.

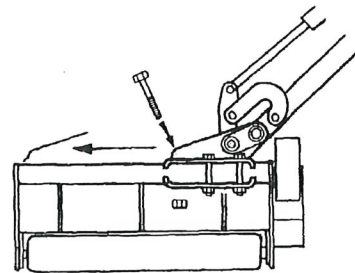
### Sliding head

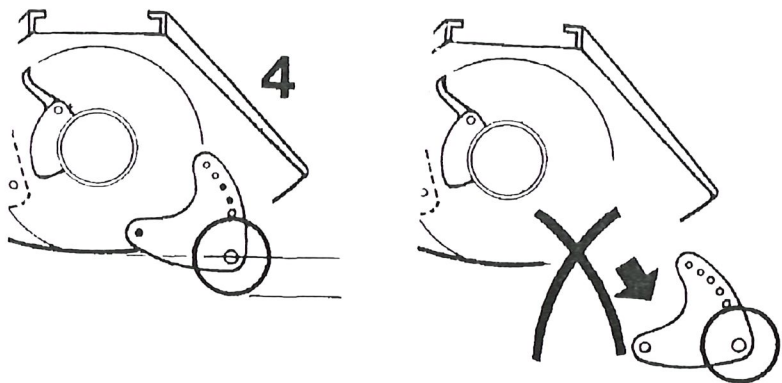
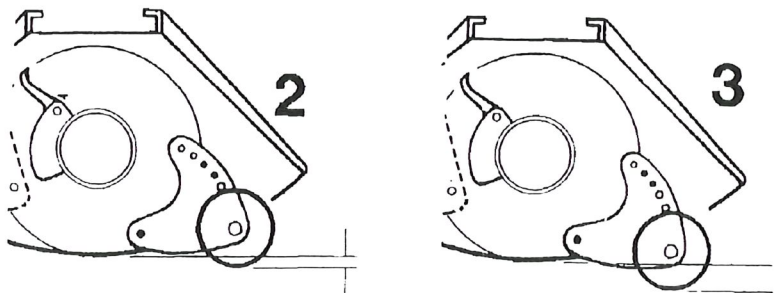
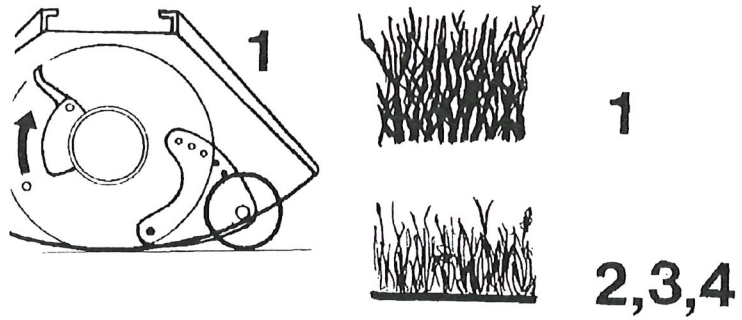
The head mounting bracket is retained by six bolts, once the bolts are removed the head may be altered in relation to the pivoting bracket.

With the head mounting bracket is in a central position it will maximise head control by putting less strain on the hydraulic crowd ram. Central mounting is particularly recommended when verge mowing, specially if angle float is to be used properly.

When the head is slid furthest away from the tractor, it has the advantage of maximising both reach and head revolving angle – up to 240°, although head control may be less sensitive.

The standard dual purpose head has another advantage of being able to mount the bracket in front or behind the dipper arm. In front, this will give a more forward position, however with the bracket mount behind the arm, it will allow for a fully compact transport position without the increased risk of hitting the cab when in the forward position.



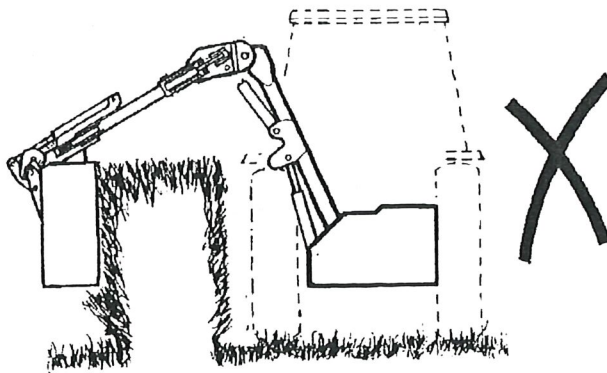
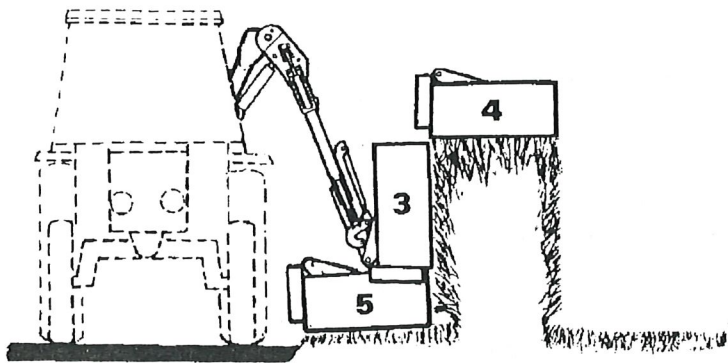
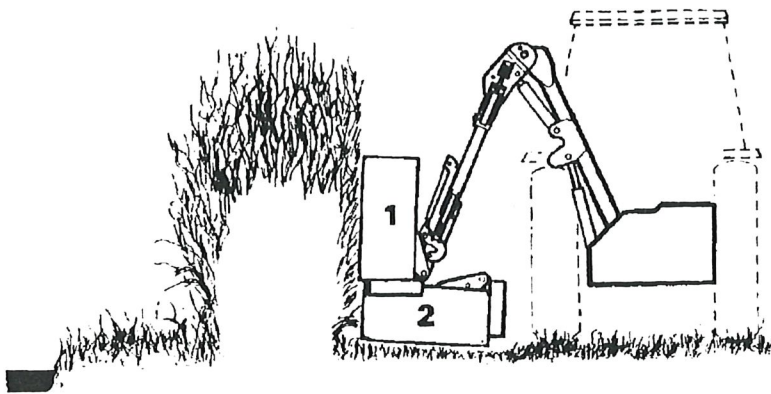


**Flail head**

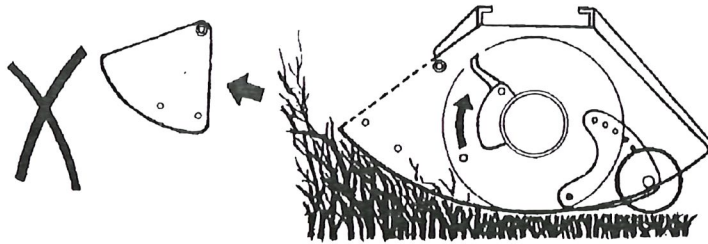
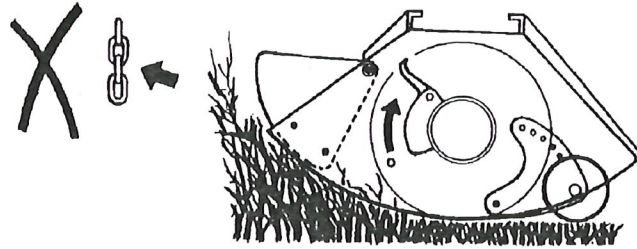
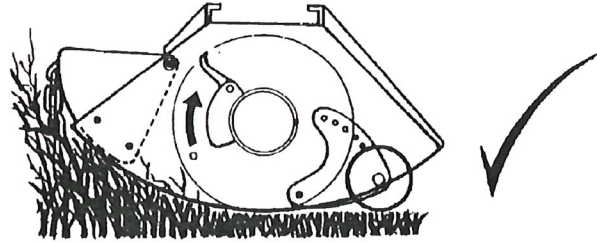
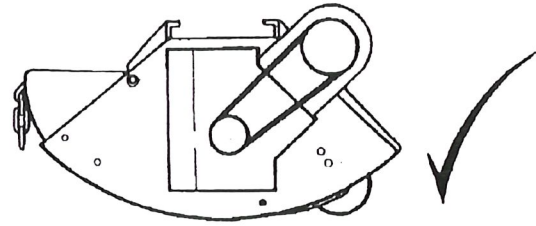
Roller must be set to suit the type of mowing conditions, i.e. Hedge cutting as position **1** or verge mowing as positions **2, 3, or 4**.



**WARNING** – Never attempt to operate the machine without the rear roller correctly fitted. The rear roller is an integral part of the machine giving the necessary support and stability to the head. Failure to adhere to this warning may result in metal fatigue and damage to rotor.

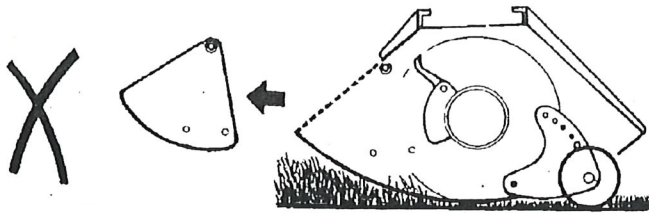
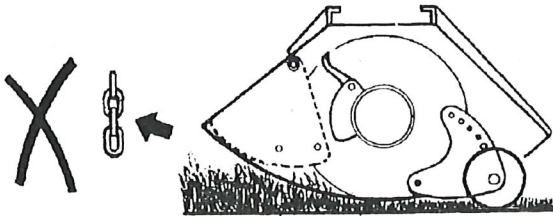
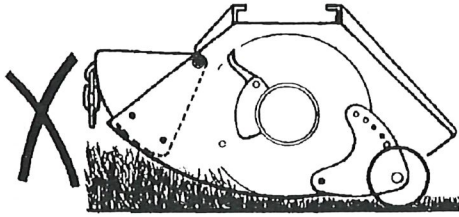
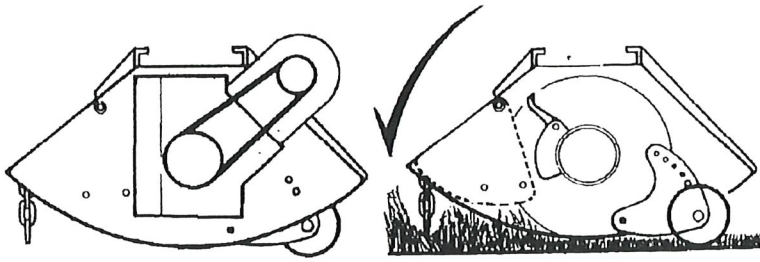


**Cutting sequence**



### Hedge cutting

- Rear roller must be fully raised. (page 18)
- Rotor speed 3000r.p.m. – smaller pulley on rotor shaft.  
Front hood raised position to allow a better bite' at the more ridged growth.
- Never operate with chains or hood missing.

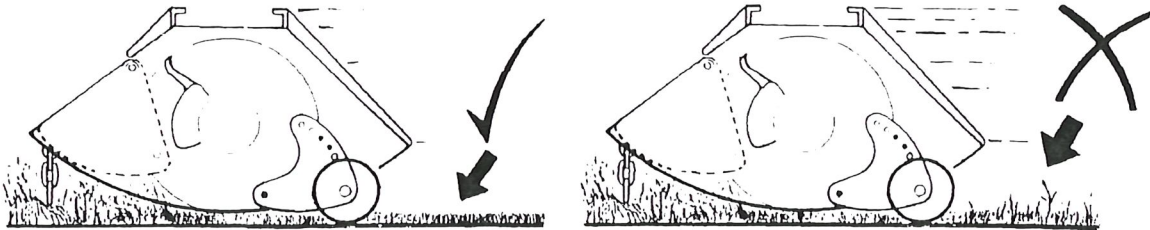


### Verge mowing

- Rear roller must be in lowered position (page 18 )
- Never remove rear roller
- Rotor speed reduced to 2400r.p.m. –larger pulley on rotor shaft.
- Front hood in lowered position, reduced risk of flying debris and generates better suction.
- Never operate with chains or hood missing.

### Tractor forward speed

A too high forward speed will impair the finish, leaving it looking ragged, a slower forward speed increases the standard of the finish.



### Head float

This is only to be used in verge mowing set up, which will reduce weight on rear roller allowing head to move easily, following the ground contours.

To select head float first lower cutting head to the ground, disengage p.t.o. and stop tractor engine. Directly under gearbox base plate is situated the float on/off tap. Turn tap in line for 'on' float. Main Lift control lever should be operated to take a proportion of the flail head weight off the rear roller. This is important, as too little weight on the rear roller will leave uncut area's of grass, while with too much weight on the roller it will cause scalping in places and increase flail wear and damage.

It is important to achieve the correct weight transfer with the base plate remaining in central position. Adjust Base-plate control lever to re-align base plate.

As the head is pushed further out more weight will be applied to the accumulators causing the base plate to drop, reset with control lever. It is important to have the base plate in the central position allowing sufficient travel in either direction.

### Wire trap

- This is located under the front hood. It must not be interfered with in any way.

- Any wire must be removed immediately
- Select Rotor control lever to 'off' and wait until rotor stops spinning. Lower rotor to ground, dis-engaged p.t.o. and stop engine before leaving cab.

**WARNING** Wire is extremely dangerous and must be avoided at all times. Inspect work area before commencing, removing all loose wire and clearly marking fixed wire.

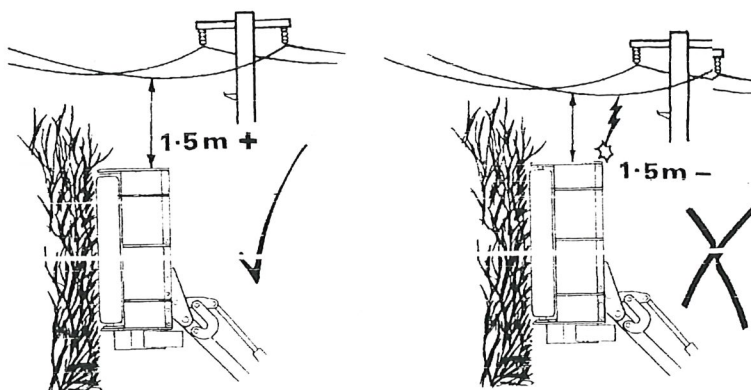


### Important

Never attempt to operate the machine while going backwards. It will immediately damage the arms and possibly the flail head. If variable forward reach is fitted, reversing the machine when in work will bend the adjusting tie-bar. Remember, before selecting reverse gear always lift the flail head out of work and retract the arms towards the tractor.

### High voltage cables

**WARNING** Always be very aware of overhead cables. Between poles wires can be well within reach of the machine. If in any doubt of the danger, consult your local electricity company regarding a safe procedure for work



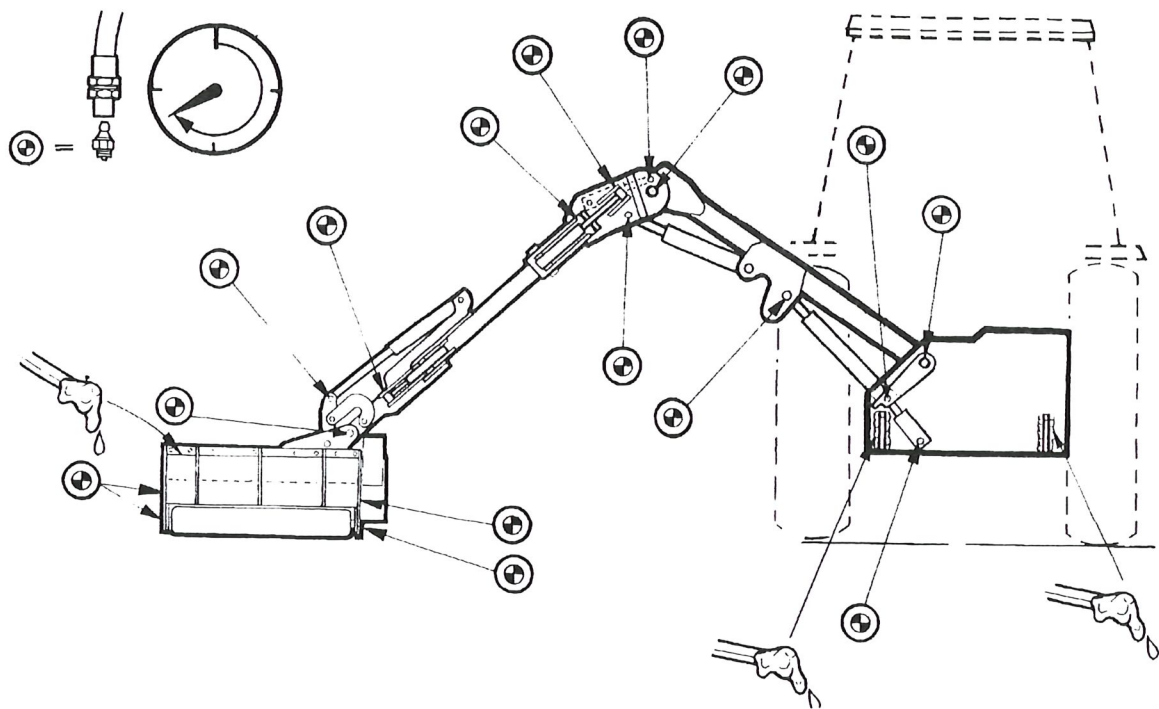
## Servicing and maintenance

### Gearbox

- Before first use check gearbox oil level, thereafter check every 8 hours.
- After the first 50 hours drain and replace the gearbox oil, thereafter annually. Replace with EP90.
- Regularly inspect gearbox seals.
- Check gearbox and pump bolts are fully tightened.

### Greasing

Daily grease all points shown below.



### P.t.o.

- Dismantle, clean the input drive shaft sliding surfaces and re-grease, failure to do this will result in serious damage to the gearbox.



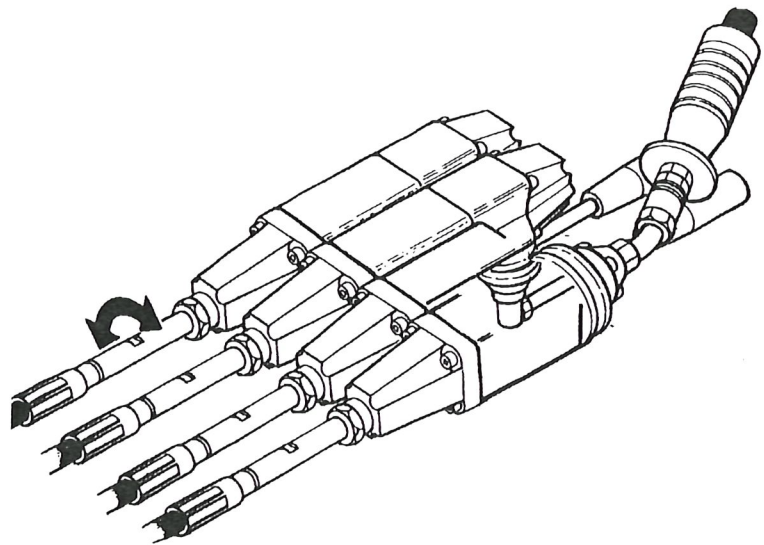
### Oil supply

- It is a good practice to constantly keep an eye on the tank level gauge, (this can be seen from the tractor seat) as a pipe burst could empty the tank within minutes.
- A pump or motor, starved of oil will be damaged beyond repair.
- Daily before starting up check oil level in reservoir.
- Replace oil if signs of contamination occur (the oil will look white in colour)
- Contamination can be reduced by:
  - Thoroughly cleaning around reservoir cap before removing
  - Using clean container when replenishing the system.
  - Regularly servicing the filtration system.
  - Never allow oil level to lower

### Filtration maintenance

The machine is protected by two suction strainers and a low pressure full flow return line filter.

- 1 The two suction filters are permanently fixed in the reservoir tank. Should symptoms of pump cavitation or spongy operation occur the tank must be drained, the tank and suction filters thoroughly cleaned and dried before refilling with clean oil.
- 2 The filter element should be replaced after the first 50 hours and thereafter at 350 hour intervals, or when green indicator turns to red. It is most important to replace filter within these intervals because once blocked oil will by-pass filter element unfiltered.



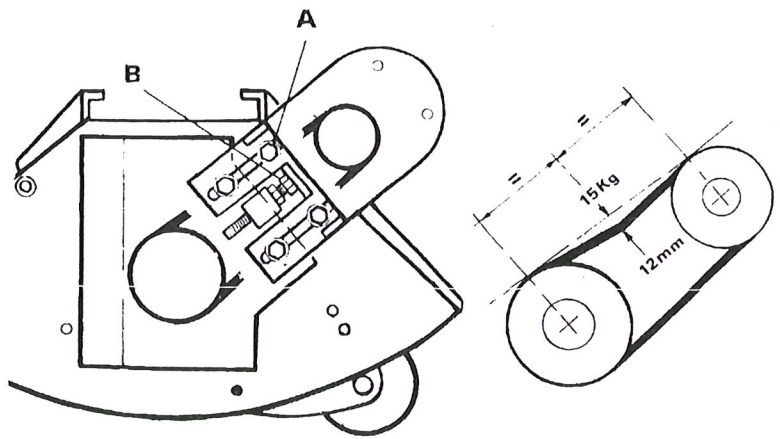
**Cables**

- Care should be taken during installation and operation to ensure the cables are not trapped or kinked.
- Correctly adjusted cables will position the lever with equal amount of travel in either direction from neutral.
- Do not over grease cables, one pump once a year is sufficient. Any more grease will cause the spools to 'hydraulic' and lock up.

**Flail head (daily)**

- Check the condition of drive belt ensuring they are aligned and properly tensioned to avoid any unnecessary belt wear.

**Tensioning Drive belts**  
 Slacken A (4 bolts 19mm socket spanner) lengthen B until correct belt tension is obtained. Tighten locknut and the 4 motor plate bolts.



- It is imperative that the grub screws are checked to be tight on the bearing and taper locks. (Once bedded in Loctite may prove useful).
- Check there is no wrapping of string, plastic, grass or other debris on rotor shaft and rear roller bearing.
- Check the condition of flails and ensure all retaining bolts are tight. When flails are replaced care must be taken to maintain balance of rotor shaft.
- Flail retaining bolt and nut torque setting is 100lbs/ft.
- Never operate with any flails missing. This will cause severe vibration and lead to rapid bearing wear and quickly cause the head to crack.
- Blunt flails leave an untidy finish and absorb excessive power, when re-sharpening always wear protective clothing and goggles.
- When flails are showing severe wear, damage or cracking, they must be replaced immediately. Never attempt to weld the flails this will make them very brittle this extremely dangerous. Do not take risks with the cutting flails, if in doubt replace.
- When replacing flails always replace belts, nuts, washers and bushes for new.
- Regularly check all rotor bearing bolts and hydraulic motor retaining bolts are tight.

### **Hydraulic hoses**

- Carefully check condition of all hoses during routine service paying particular attention to chafed outer casing. Securing wrap with waterproof adhesive tape to stop the metal braid from rusting.
- Hoses with damaged metal braid should be replaced.
- When replacing hoses quote number stamped on fitting at one end. Spearhead hydraulic system works at very high pressure, when replacing hoses use only genuine hoses, a burst hose could be very dangerous.

- When replacing hoses use two spanners to slacken and tighten to avoid twisting fittings.
- Avoid twisting hoses. At main access points to top and bottom of main arm, liberally apply grease to avoid chafing.
- Hose warranty is limited to replacement of hoses due to faulty materials or manufacture. Warranty will not be considered on hoses damaged by chafing, abrasion, cuts or pinching while in work, or to damaged threads due to over tightening.

### **Pins and bushes**

All main pivot points and hydraulic rams are furnished with replaceable bushes. If there are any signs of wear, these must be replaced. All bushes are available from Spearhead Service Department

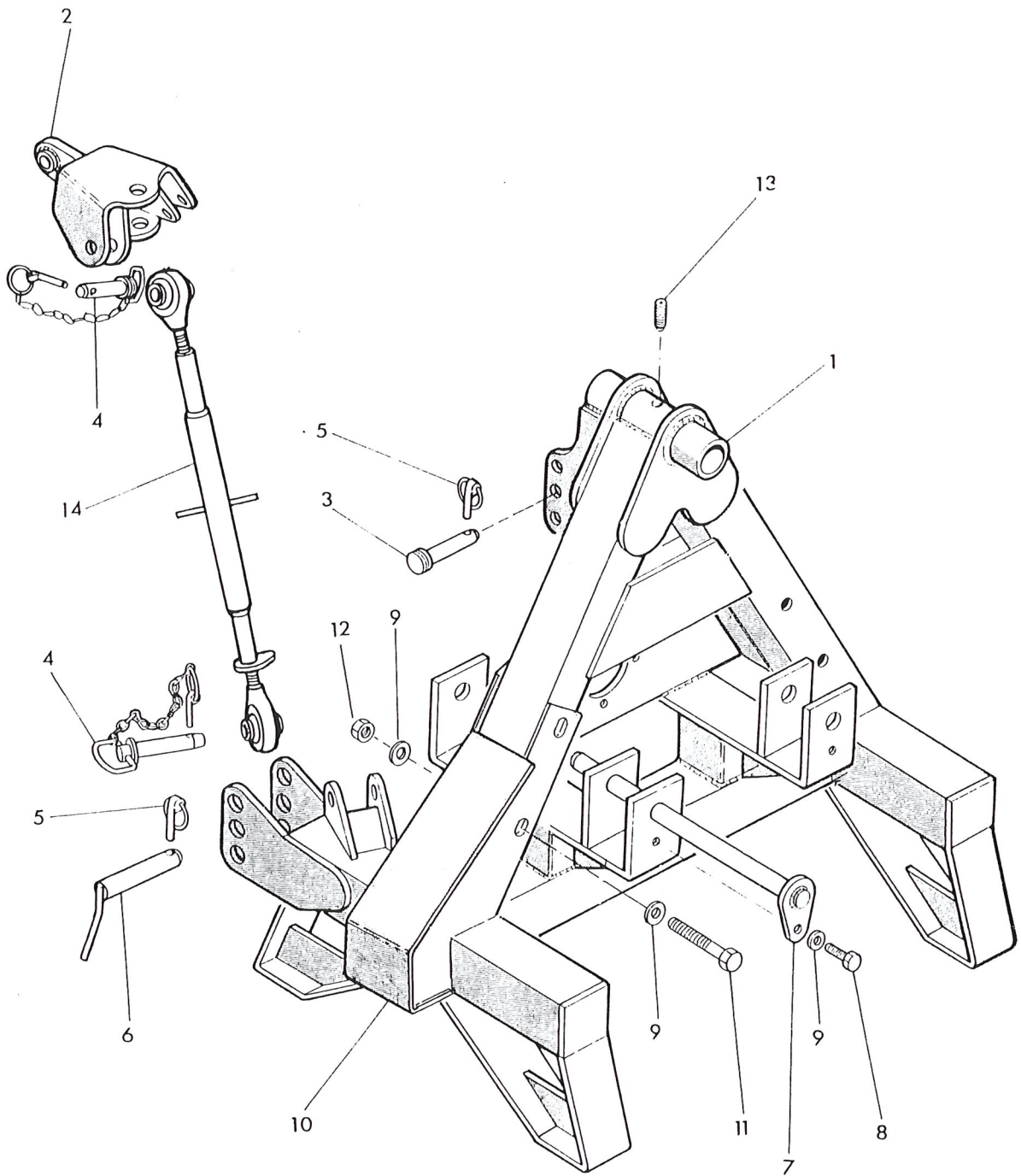
**Remember regular maintenance will greatly increase the life of the machine.**

### **Storage**

Before storing away, thoroughly wash the machine removing all traces of grass and dirt. Great care must be taken when washing, do not use high pressure hoses, do not hold the water jet close to the paintwork. Do not use steam cleaners and be sure to remove all detergents to avoid any discolouring or damage to paint. Grease all grease points until fresh grease shows. Slacken rotor drive belts. It is important where possible to store undercover to protect against rain and sunlight. Always ensure a firm level surface. Control levers must be wrapped in plastic sheeting and taped over to keep dry.

Remember the Twiga-5 is a well engineered machine that with care and attention, will give many years trouble free service. So as not to invalidate the warranty and to avoid problems, use only genuine parts and make sure the machine is not driven at a speed in excess of 540r.p.m. at the p.t.o..

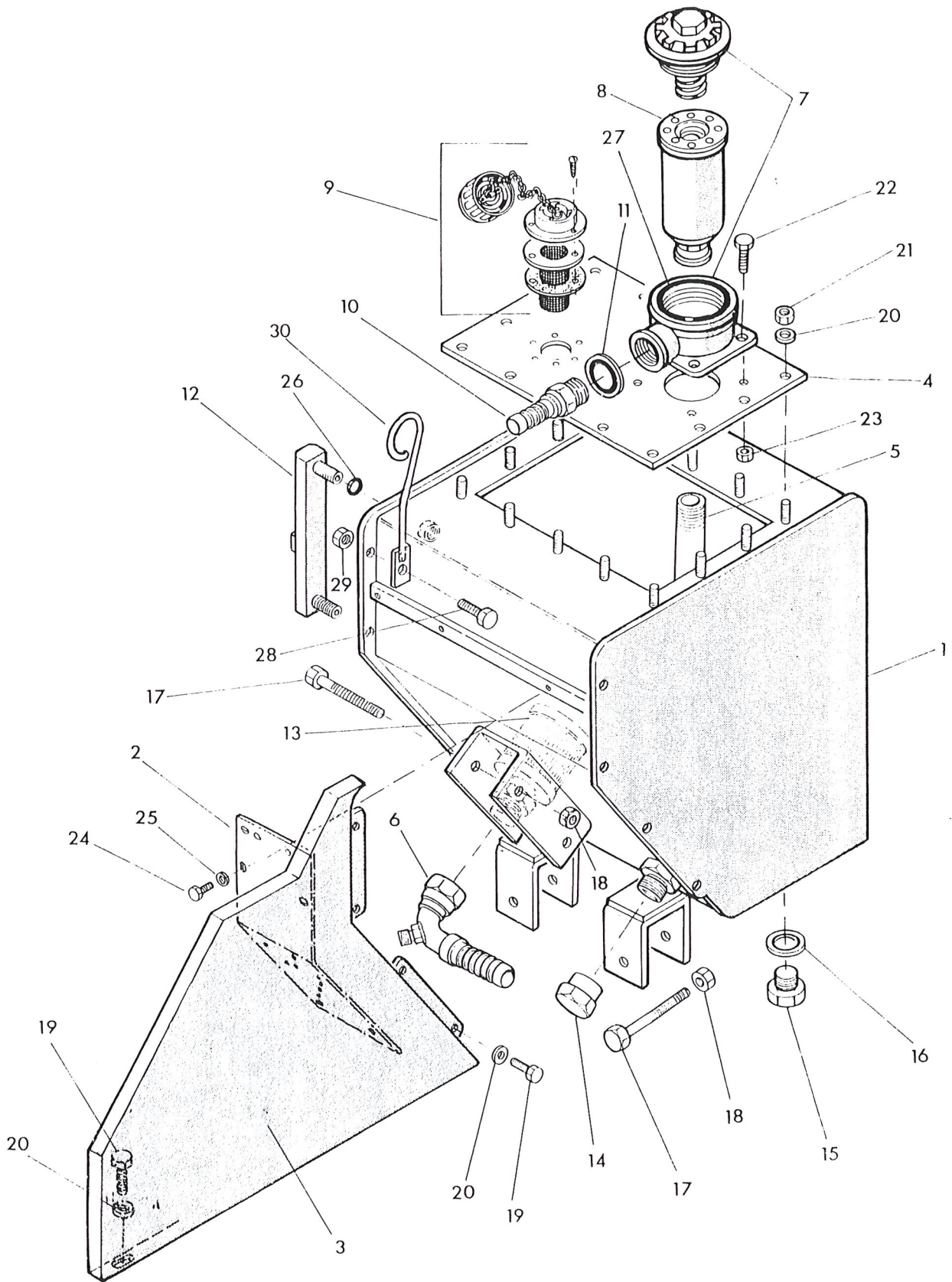
<b>Servicing checklist</b> <i>(see relevant sections for full details)</i>	
<b>Regularly</b>	<p>Gearbox: Inspect seals, check bolts for tightness (p.24).</p> <p>Pump: check bolts for tightness (p.24).</p> <p>Flail head: check condition of drive belts, check bearing and taper lock grub screws for tightness, check condition of flails, check retaining bolts for tightness, check rotor bearing bolts for tightness (p.27).</p> <p>Hoses: check condition of hoses especially for chafing (p.27)</p> <p>Pins and bushes (p.28)</p>
<b>Every 8 hours</b>	<p>Check gearbox oil level (p.24)</p> <p>Grease p.t.o. shaft (p. 24)</p>
<b>Daily</b>	<p>Grease all points as shown in diagram p.24</p> <p>Check oil level in reservoir (p.25)</p>
<b>Every 350 hours</b>	<p>Replace return line filter element (p.25)</p>
<b>Every year</b>	<p>Drain and replace gearbox oil with EP90 (p.24)</p> <p>Grease cable (p.26)</p>



**Parts list – Main frame**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	1777160	Main frame
2	1777164	Top link stabiliser bracket
3	6310203	Top link pin
4	6310215	Pin with handle
5	6310206	Lynch pin
6	6310208	Lower link pin
7	1777173	Pear pin
8	2770420	Bolt
9	2770436	Flat washer
10	1777179	Skid plate (optional TWIGA-5 LR only)
11	2770410	Bolt
12	2770417	Nylock nut
13	2770556	Grub screw
14	6310191	Adjustable stabiliser rod

SPEARHEAD TWIGA-5 PARTS LIST

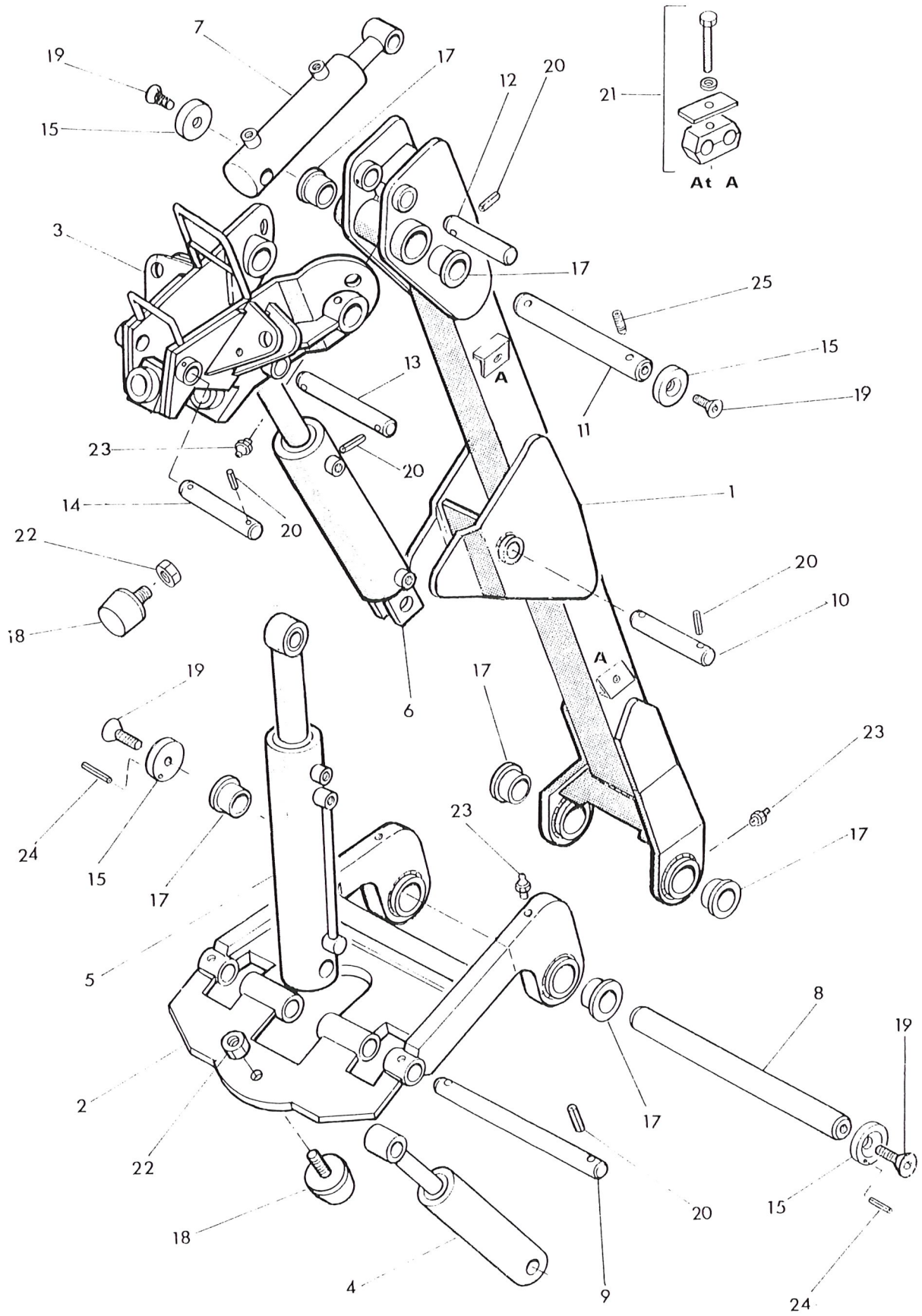




## Parts list – Tank

Fig. Ref	Part number	Item description
1	1777161	Tank
2	1777159	Valve panel
3	1777162	Pear panel, left-hand
	1777163	Rear panel, right-hand
4	1777103A	Tank lid (pre 1996 machines)
	1777103	Tank lid (post 1996 machines)
5	1777136	Filter extension pipe (pre 1996 machines)
	3710112	Filter extension hose (post 1996 machines)
	3861012	Hose clip (post 1996 machines)
6	3761001A	Suction elbow
7	3900051A	Filter housing (pre 1996 machines)
	3900051	Filter housing (post 1996 machines)
8	3900056	Filter cartridge (pre 1996 machines)
	3900060	Filter element (post 1996 machines)
	3900043	Filter bowl (post 1996 machines)
9	3900050	Tank filler
10	3761002	Hose insert
11	3260075	Bonded seal
12	3900054	Tank level gauge 5"
	3900044	Tank level gauge 10"
13	3900053	Suction strainer
14	3490001	Cap
15	3460106	Plug
16	3260073	Bonded seal
17	2770410	Bolt
18	2770417	Nylock nut
19	2770444	Set screw
20	2770434	Flat washer
21	2770438	Nut
22	2770396	Bolt
23	2770412	Nylock nut
24	2770431	Bolt
25	2770432	Washer
26	3261010	'O' ring sight gauge 10"
	3361005	'O' ring sight gauge 5"
27	3361011	'O' ring filter cap U
	3361006	'O' ring filter cap M
28	2770484	Bolt
29	2770417	Nylock nut
30	1777155	Hose support bracket

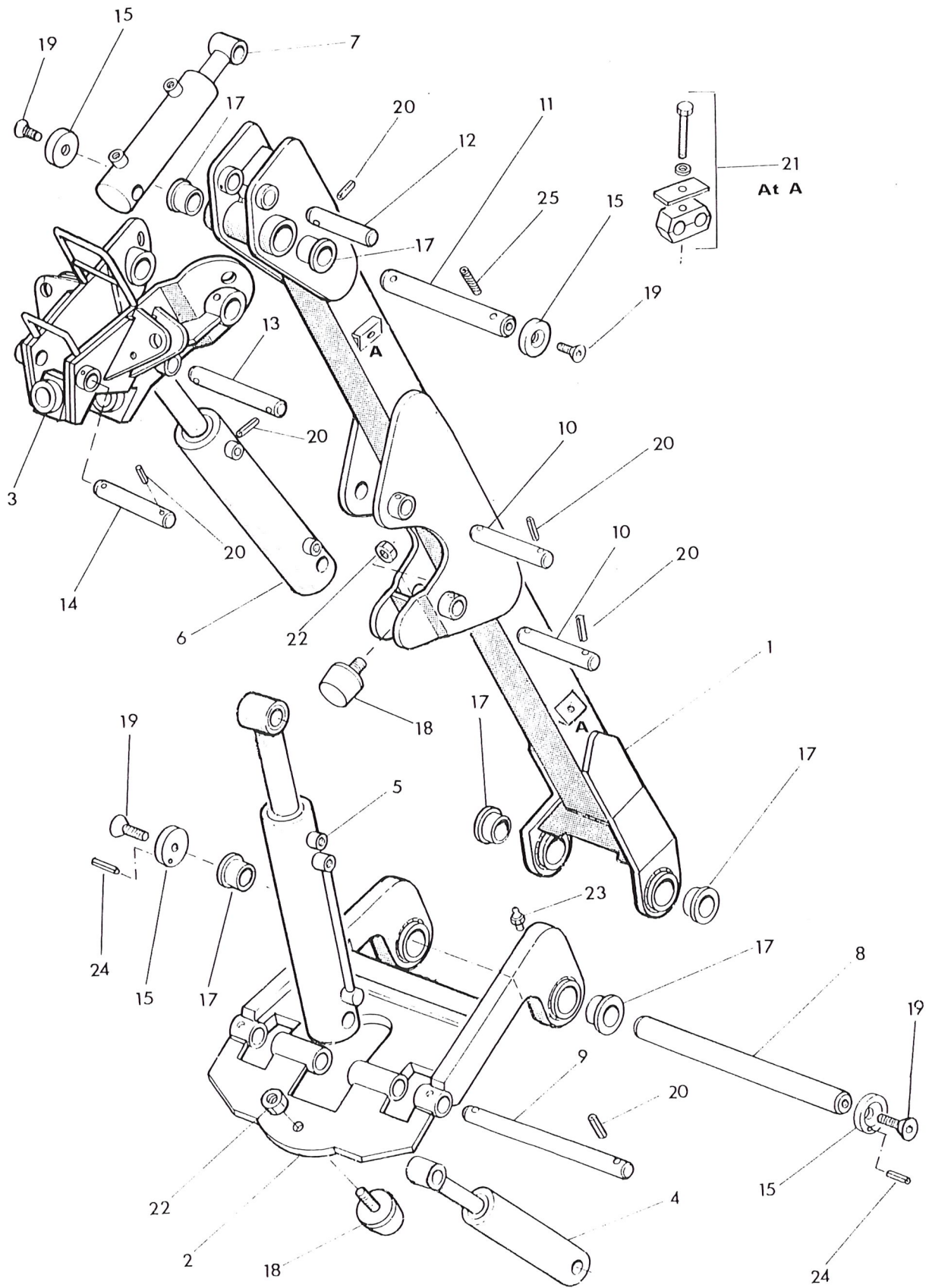
SPEARHEAD TWIGA-5 PARTS LIST



**Parts list – Main arm**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	1777166	Main arm (standard machine)
2	1777165	Base plate
3	1777112	Knuckle assembly
4	3580642	Base plate ram
5	3580640	Main ram
6	3580647	Dipper ram
7	3580645	Slave ram
8	1777275	Main arm bottom pin
9	1777216	Main ram base pin
10	1777276	Main ram rod pin
11	1777211	Main arm top pin
12	1777220	Slave ram rod pin
13	1777217	Dipper ram rod pin
14	1777221	Slave ram base pin
15	1777207	Pin retaining washer
16		
17	4600128	Bush
18	8770644	Rubber cushion block
19	2770398	Counter sunk screw
20	2770514	Roll pin
21	3850108	Double pipe clamp
22	2770447	Nylock nut
23	2770467	Grease nipple
24	2770528	Roll pin
25	2770555	Grub screw

SPEARHEAD TWIGA-5 PARTS LIST



## Parts list - Twiga-5LR main arm

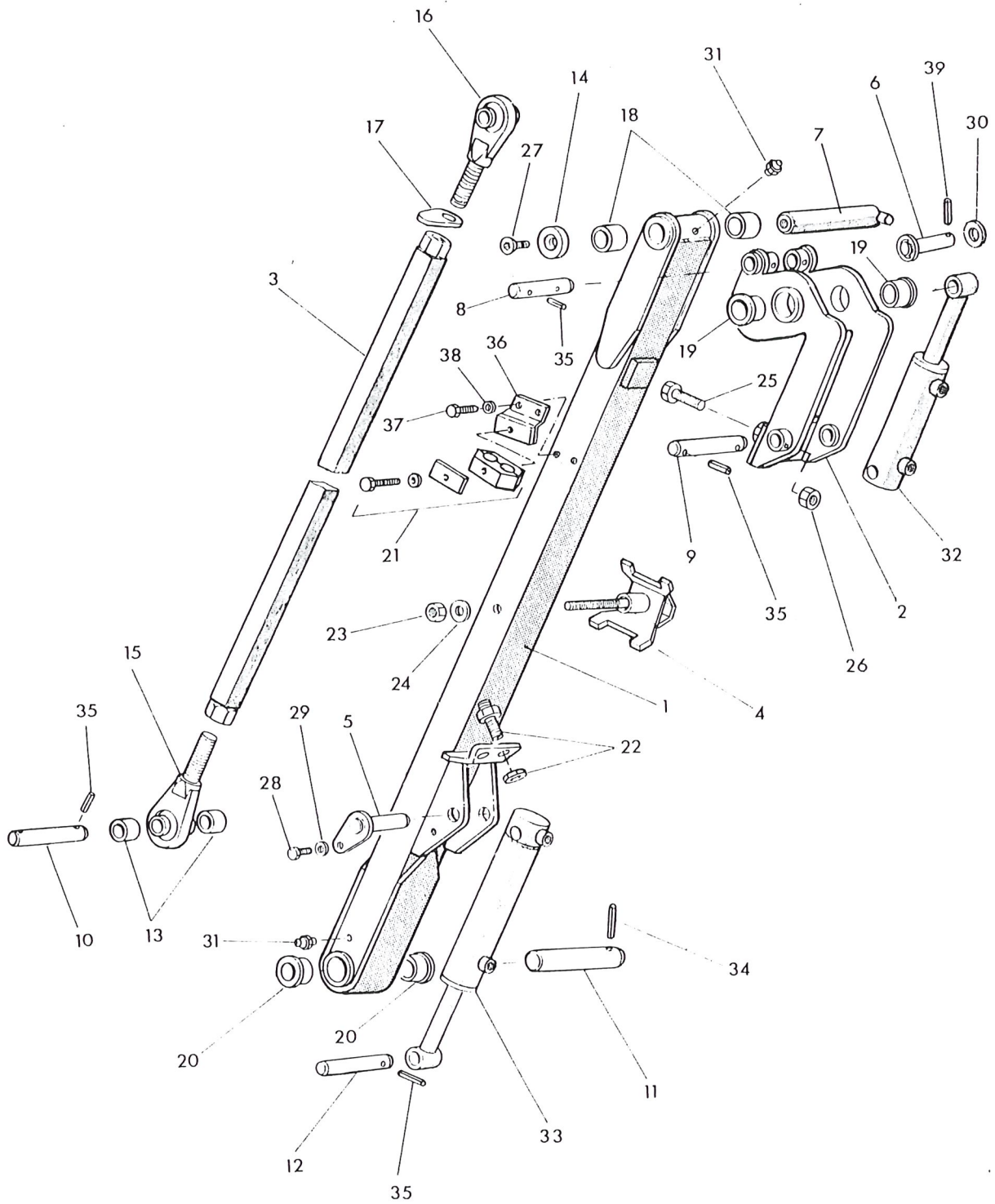
Fig. Ref	Part number	Item description
1	1777166L	Main arm
2	1777165	Base plate
3	1777112	Knuckle assembly
4	3580642	Base plate ram
5	3580640	Main ram
6	3580641	Dipper ram
7	3580645	Slave ram
8	1777275	Main arm bottom pin
9	1777216	Main ram base pin
10	1777276	Main ram rod pin
11	1777211	Main arm top pin
12	1777220	SLP ram rod pin
13	1777217	Dipper ram rod pin
14	1777221	Slave ram base pin
15	1777207	Pin retaining washer
16		
17	4600128	Bush
18	8770644	Rubber cushion block
19	2770398	Counter sunk screw
20	2770514	Roll pin
21	3850108	Double pipe clamp
22	2770447	Nylock nut
23	2770467	Grease nipple
24	2770528	Roll pin
25	2770555	Grub screw



## Parts list – Twiga-5/Twiga-5LR arm

Fig. Ref	Part number	Item description
1	1777167	Standard dipper arm
	1777167/L	Long reach dipper arm
2	1777168	Head mount bracket
3	1777169	Head mount plate
4	1777171	Dipper/crowd pin assembly (360/370)
5	1777172	Pear plate retainer
6	1777117R	Curved link, right-hand
7	1777117L	Curved link, left-hand
8	1777069	Bulkhead bracket
9	1777116	Head crowd link
10	1777150	Washer pin
11	1777212	Dipper arm – top pin
12	1777208	Pin retaining washer
13	1777277	Break-back ram – base pin
14	1777278	Head-ram base pin
15	1777226	Crowd link pin
16	1777209	Pin retaining washer
17	4600127	Bush
18	3580643	Break-back ram
19	3580644	Head crowd ram
20	3460115	Bulk-head union
21	3850108	Double hose clamp
22	1777041	Hose camp support bracket
23	2770398	Counter-sunk bolt
24	2770398	Counter sunk bolt
25	2770487	Bolt
26	2770436	Flat washer
27	2770417	Nylock nut
28	2770467	Grease nipple
29	2770516	Roll pin
30	2770531	Roll pin
31	2770514	Roll pin
32	2770431	Bolt
33	2770432	Flat washer
	2770355	'U' bolt
	2770417	Nylock nut

SPEARHEAD TWIGA-5 PARTS LIST

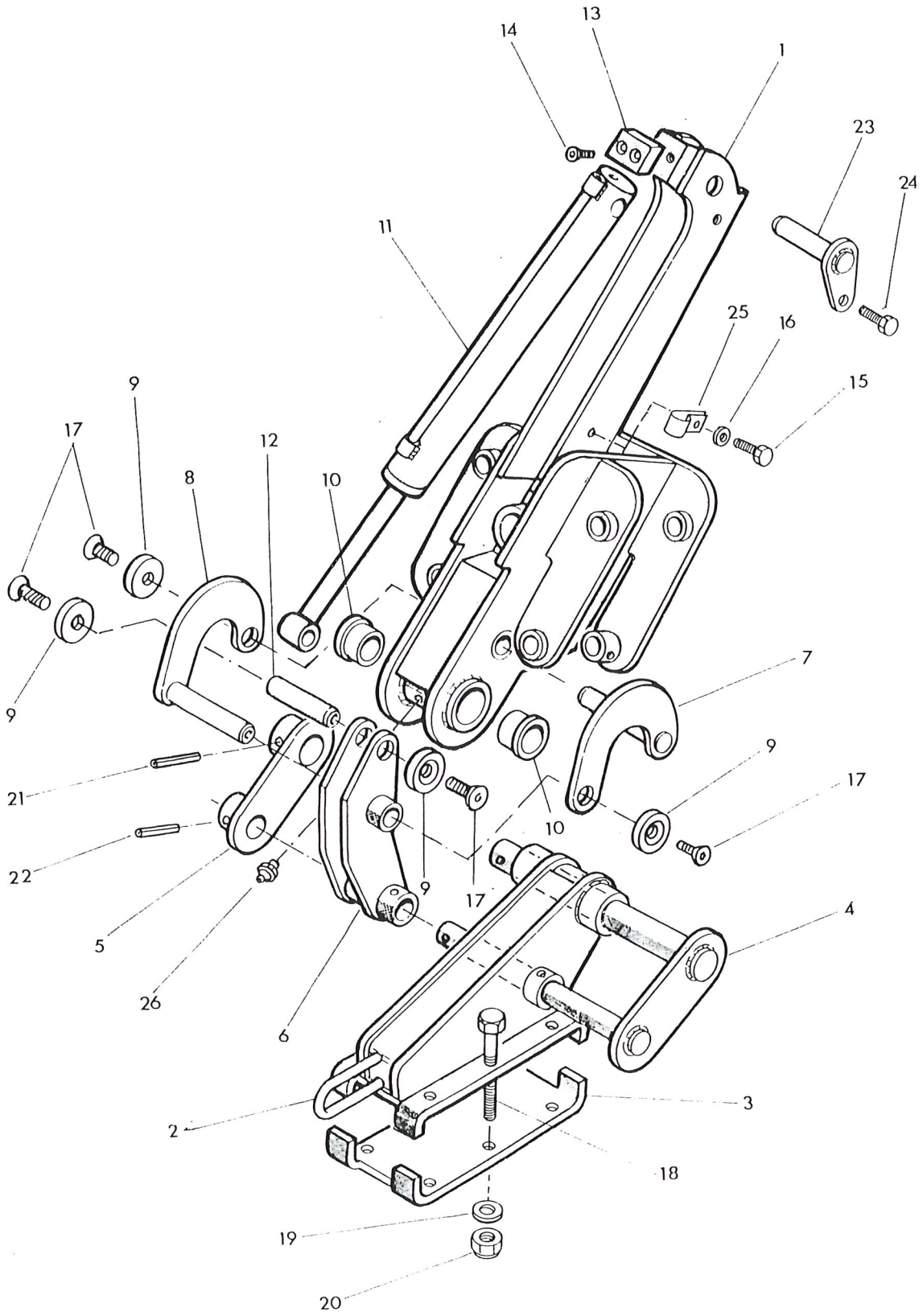




## Parts list – Variable forward reach dipper arm

Fig. Ref	Part number	Item description
1	1777114	Dipper arm, Variable forward reach (pre 1996 machines)
	1777178	Dipper arm, Variable forward reach, (standard machine)
	1777178L	Dipper arm, Variable forward reach, (Twiga-5LR)
2	1777113	Break-back plate assembly
3	1777135	Tie-bar, 1403mm (pre 1996 machines))
	1777177	Tie-bar, 1169mm (standard machines))
	1777177L	Tie bar, 1600mm, (Twiga-5LR)
4	1777137	Bump plate
5	1777152	Pear pin
6	1777150	Washer pin
7	1777212	Dipper arm top pin
8	1777222	Tie-bar top pin
9	1777227	Brake back ram base pin
10	1777223	Tie bar bottom pin
11	1777213	Dipper arm bottom pin
12	1777224	Variable forward reach ram rod pin
13	1777228	Spacer
14	1777208	Pin retaining washer
15	6770638	Link end, left-hand
16	6770631	Link end, right-hand
17	6310216	Locking collar
18	4600125	Sleeve
19	4600126	Bush
20	4600127	Bush
21	3850108	Double pipe clamp
22	3460115	Bulkhead union
23	2770447	Nylock nut
24	2770454	Flat washer
25	2770551	Set screw
26	2770460	Nut
27	2770398	Counter sunk screw
28	2770484	Bolt
29	2770436	Flat washer
30	2770552	Flat washer
31	2770467	Grease nipple
32	3580643	Break-back ram
33	3580646	Variable Forward Reach ram
34	2770479	Roll pin
35	2770514	Roll pin
36	1777041	Hose clamp support bracket
37	2770431	Set screw
38	2770432	Flat washer
39	2770475	Roll pin

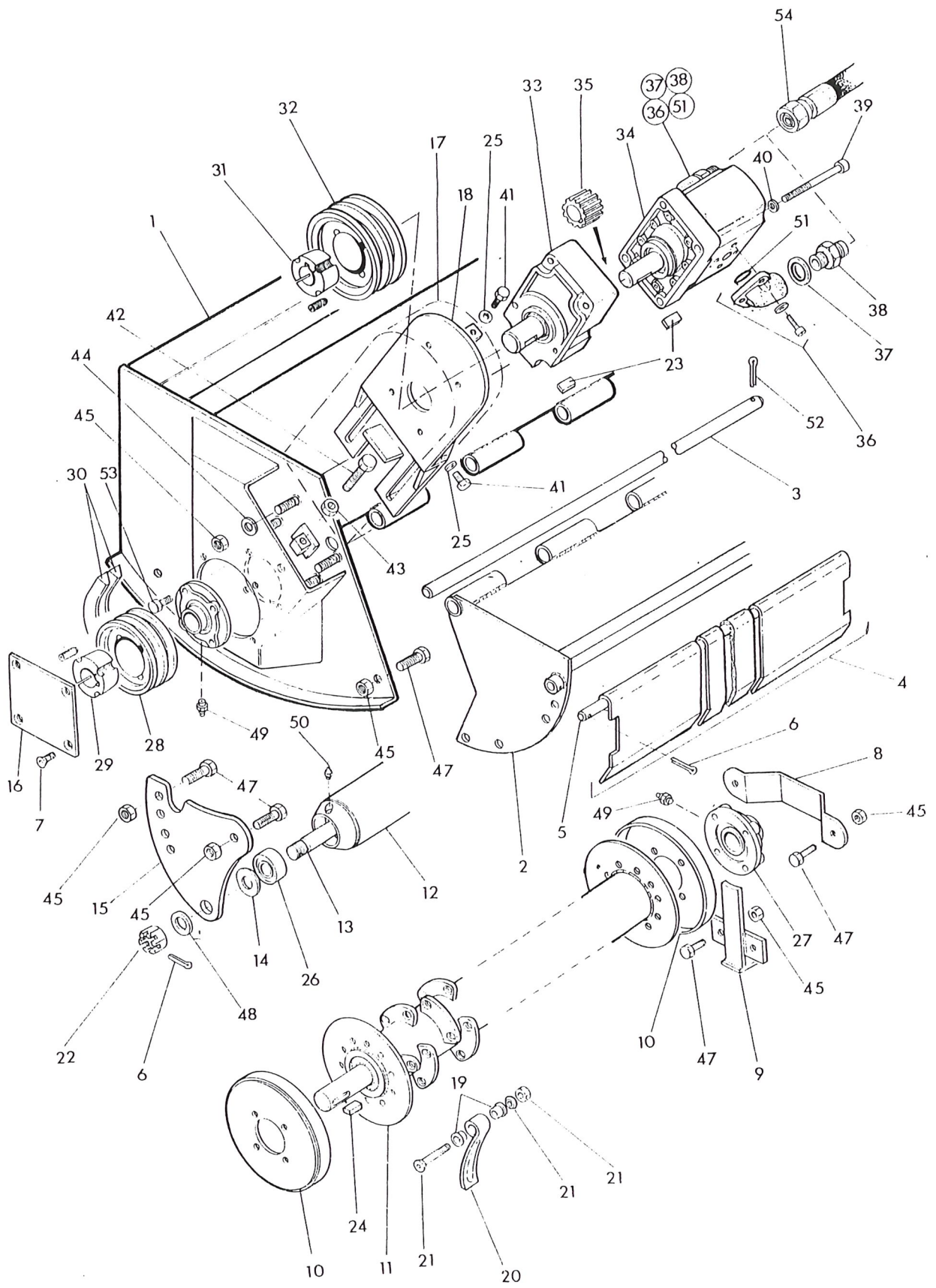
SPEARHEAD TWIGA-5 PARTS LIST



**Parts list – Variable Forward Reach arm**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	1777115	Variable Forward Reach arm
2	1777168	Head mount bracket
3	1777169	Head mount plate
4	1777171	Dipper crowd pin assembly (360mm)
	1777171A	Dipper crown pin assembly (370mm)
5	1777172	Pear plate retainer
6	1777116	Head link bracket
7	1777117L	Curved link, left-hand
8	1777117R	Curved link, right-hand
9	1777209	Pin retaining washer
10	4600127	Bush
11	3580644	Head crowd ram
12	1777226	Head crowd pin
13	8770643	Bump stop
14	2770422	Counter-sunk bolt
15	2770418	Bolt
16	2770434	Flat washer
17	2770398	Counter-sunk bolt
18	2770487	Bolt
19	2770436	Flat washer
20	2770417	Nylock nut
21	2770516	Roll pin
22	2770531	Roll pin
23	1777152	Pear pin
24	2770484	Bolt
25	3850103	Hose clip
26	2770467	Grease nipple

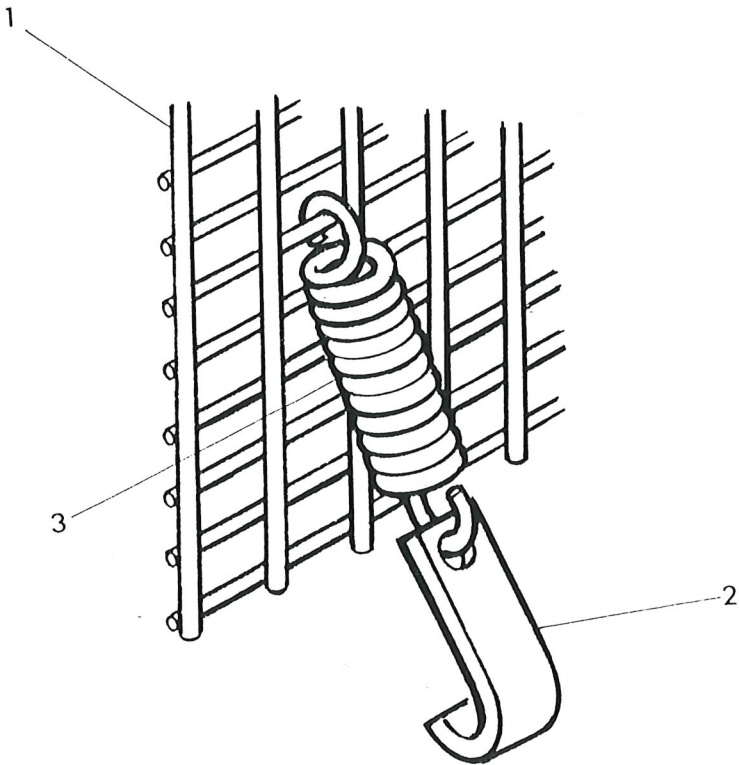
SPEARHEAD TWIGA-5 PARTS LIST



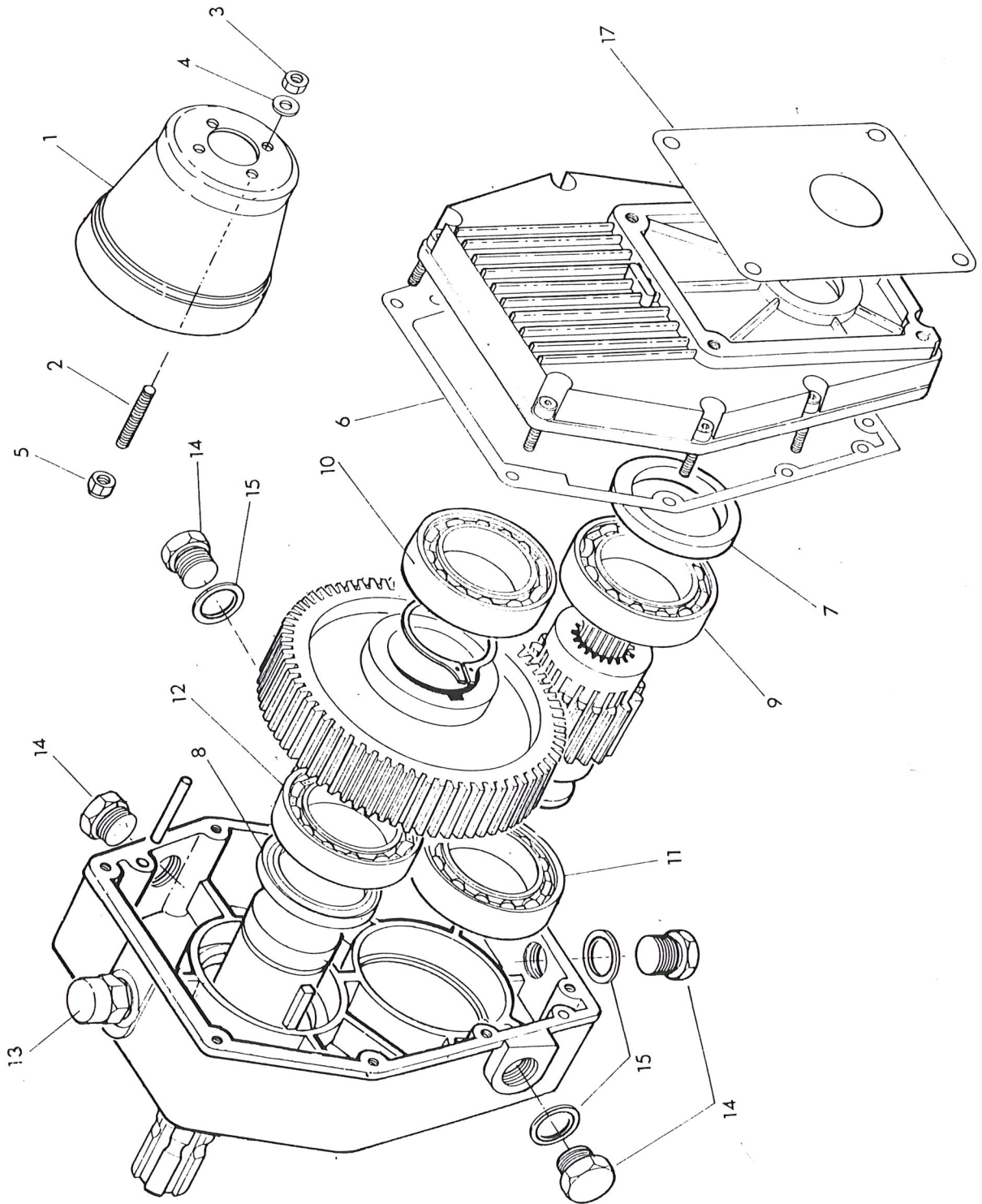
Parts list – Head		
Fig. Ref	Part number	Item description
1	1777180	Head shell 1.2m, left-hand
	1777181	Head shell 1.2m, right-hand
	1777182	Head shell 1.5m, left-hand
	1777183	Head shell 1.5m, right-hand
2	1777188	Front hood 1.2m
	1777190	Front hood 1.5m
3	1777189	Hood hinge bar 1.2m
	1777191	Hood hinge bar 1.5m
4	1777192	Flap set 1.2m
	1777193	Flap set 1.5m
5	1777194	Flap retaining bar 1.2m
	1777195	Flap retaining bar 1.5m
6	2770512	Split pin
7	2770554	Counter-sunk screw
8	1777122	Bearing protection plate
9	1777197	Skid infill
10	1771510	Rotor shield
11	1777184	Rotor 1.2m, c/w flails
	1777143	Rotor 1.5m, c/w flails
12	1777186	Rear roller, 1.2m x 100mm
	1777125	Rear roller, 1.2m x 150mm
	1777146	Rear roller, 1.5m x 150mm
13	1777285	Roller shaft 1.2m x 100mm
	1777230	Roller shaft 1.2m x 150mm
	1777289	Roller shaft 1.5m x 150mm
14	1777287	Hub cover 100mm roller
	1777231	Hub cover 150mm roller
15	1777196	Roller plate, 100mm roller
	1777126	Roller plate, 150mm roller
16	1777131	Pulley inspection plate
17	1777121	Pulley guard
18	1777120	Motor plate
19	7770711	Flail bush
20	7770699	Hedger flail
21	2770329	Counter bolt/washer/nut pack (x10)
	2770333	Flail bolt
22	2777505	Castle nut 100mm roller
	2777501	Castle nut 150mm roller
23	4772228	Key
24	4772230	Key
25	2770434	Flat washer

Parts list – Head		
Fig. Ref	Part number	Item description
26	4771621	Bearing 100mm roller
	4771604	Bearing 150mm roller
27	4770858	Rotor bearing
28	4770863	Pulley – 160
29	4770847	Taper lock 50mm
30	4770827	Belt
31	4770875	Taper lock 24mm
32	4770825	Pulley – 150
33	3151012	Pulley support
34	3151009	Motor
	3151009K	Motor seal kit
35	3151011	Drive coupling
36	3151008	Port elbow
37	3260074	Bonded seal
38	3360092	Adaptor
39	2770482	Cap bolt
40	2770469	Spring washer
41	2770418	Bolt
42	2770474	Set screw
43	2770536	Full nut
44	2770436	Flat washer
45	2770417	Nylock nut
46		
47	2770535	Bolt
48	2770464	Flat washer 100mm roller
	2770470	flat washer 150mm roller
49	2770459	Grease nipple 45°
50	2770467	Grease nipple st
51	3261001	'O' ring
52	2770513	Split pin
53	2770397	Bolt
54	3760062	Rotor pressure hose
	3760063	Rotor return hose
N1	3870600	Protective sleeve (per metre)
N1	1777185	Side inspection plate

Parts list - Mesh guard panel		
Fig. Ref	Part number	Item description
1	1777140	Mesh guard panel
2	1777141	Mesh guard fastener
3	6310209	Mesh guard spring



SPEARHEAD TWIGA-5 PARTS LIST

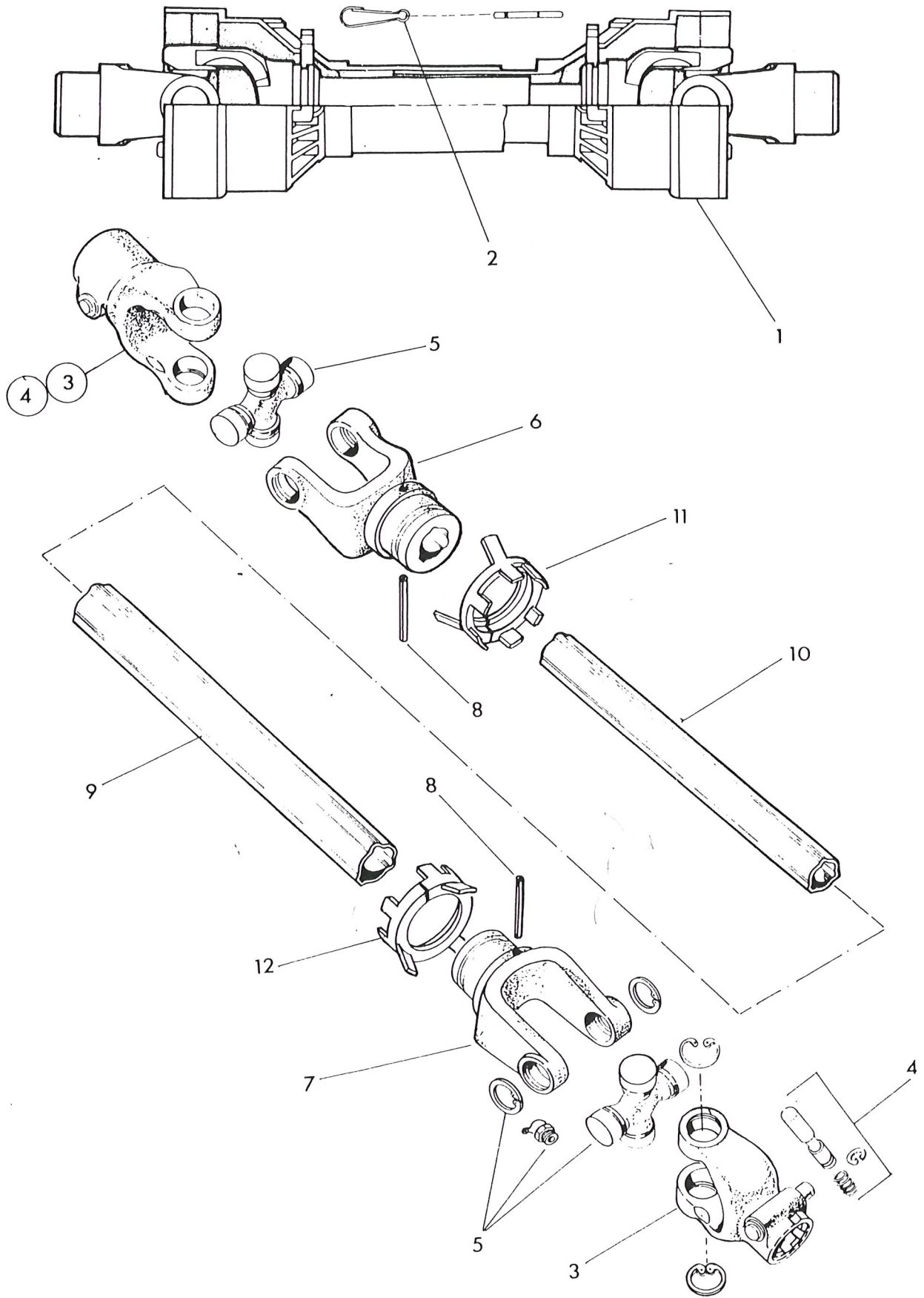




**Parts list – Gearbox**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
	3151020	Gearbox assembly
1	5770104	Cone
2	2772290	Stud
3	2770417	Nut
4	2770436	Flat washer
5	2770536	Nylock nut
6	5771600	Gasket
7	5771601	Oil seal
8	5771602	Oil seal
9	5771603	Bearing
10	5771604	Bearing
11	5771605	Bearing
12	5771606	Bearing
13	5771607	Breather
14	5771608	Plug
15	5771609	Washer
16	5771610	Sight gauge
17	3151019	Gasket

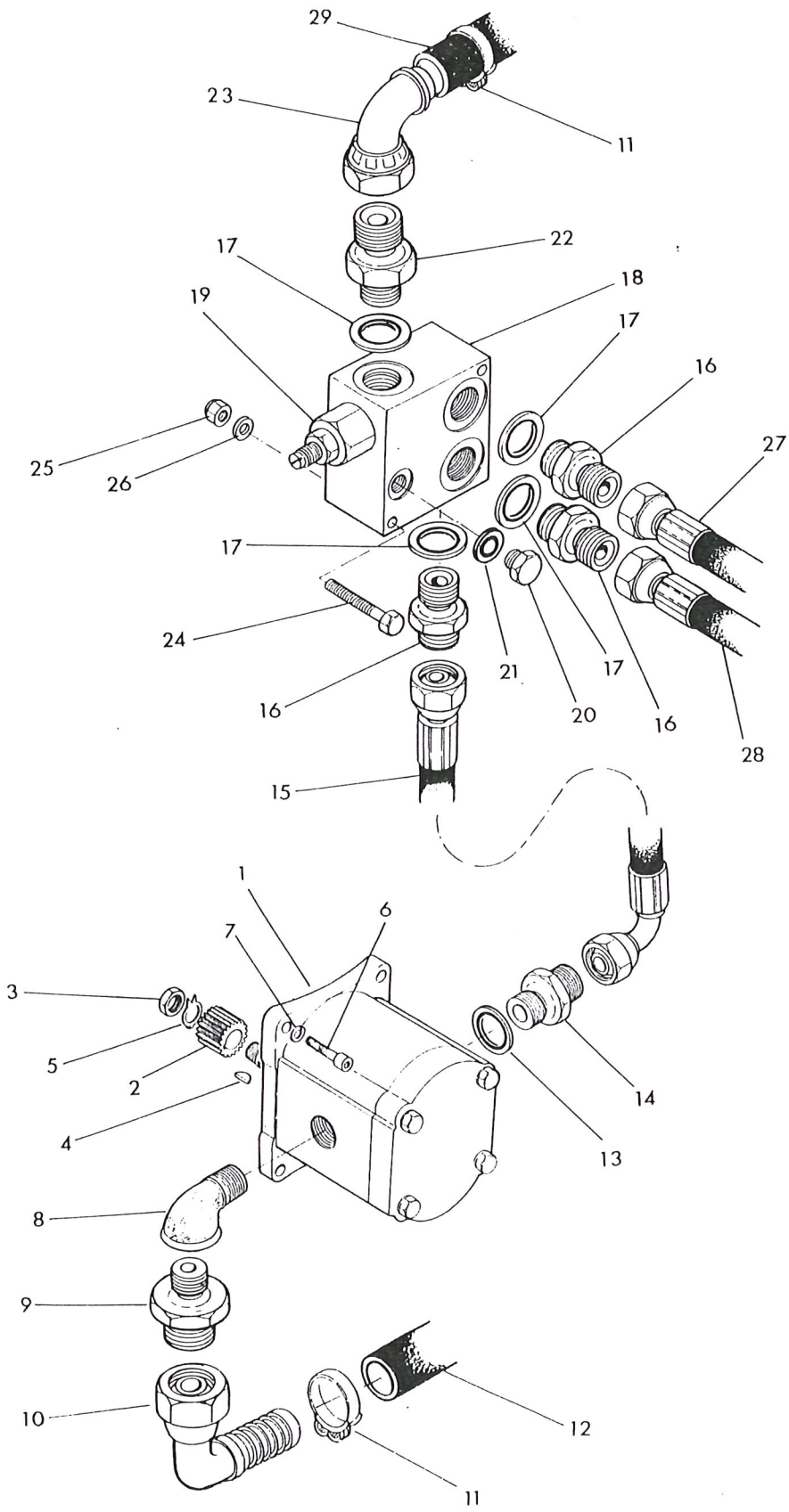
SPEARHEAD TWIGA-5 PARTS LIST



**Parts list - P.t.o. shaft**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	5770083	Complete p.t.o. shaft
	5772262	Complete guard
2	5771020	Retaining chain
3	5772240	Quick release yoke, 6-spline
	5772241	Quick release yoke, 21-spline
4	5771023	Release button
5	5772242	Cross journal assembly
6	5772244	Inner tube yoke
7	5772254	Outer tube yoke
8	2770479	Roll pin
9	5772248	Outer profile tube
10	5772250	Inner profile tube
11	5772238	Inner bearing guard
12	5772239	Outer bearing guard

SPEARHEAD TWIGA-5 PARTS LIST



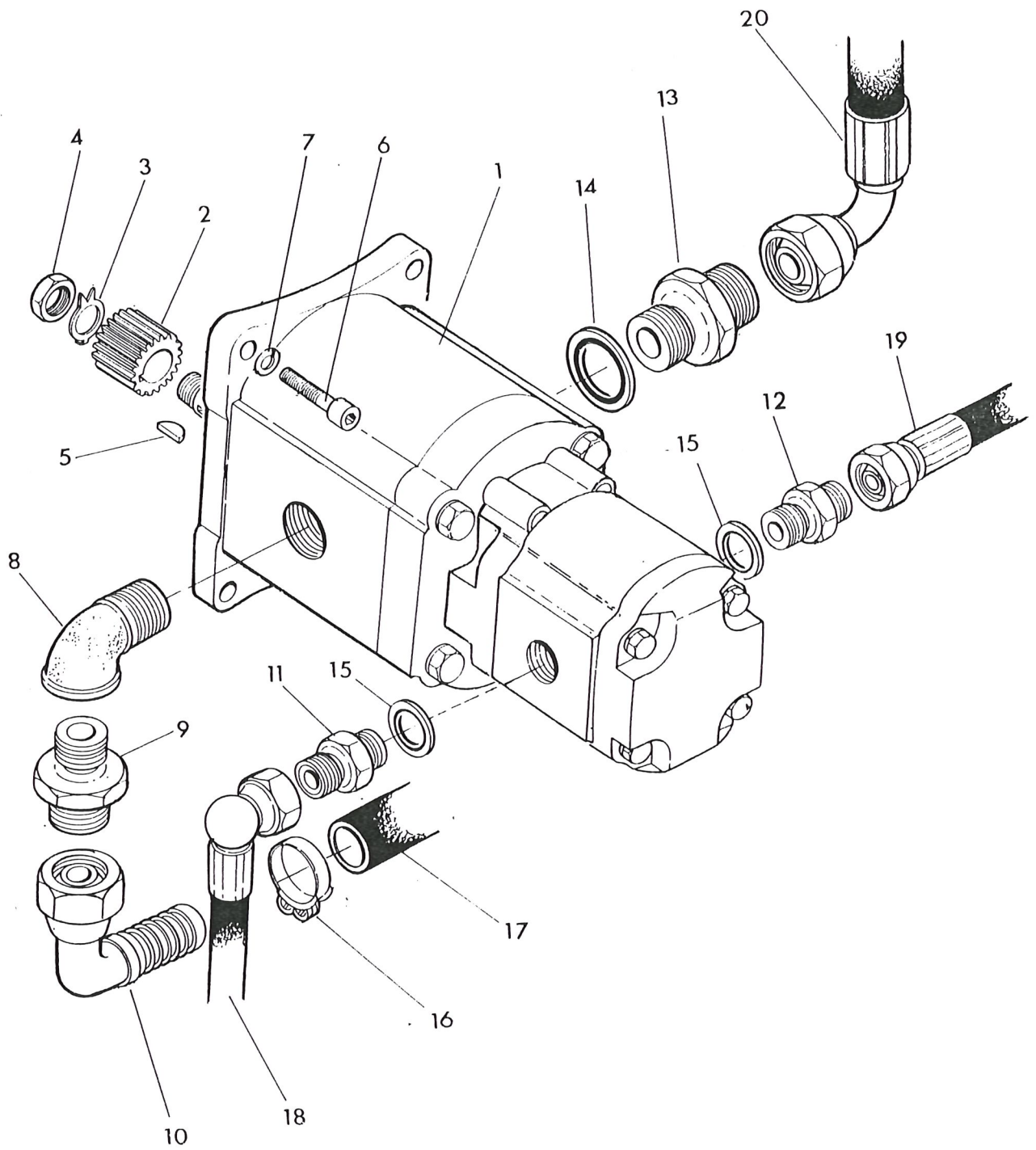
**Parts list – Single pump and relief valve**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	3151022	Hydraulic pump
	3151022K	Hydraulic pump
2	3151011	Hub coupling
3	2770350	Nut
4	4772226	Woodruff key
5	2770457	Spring washer
6	2772284	Cap bolt
7	2770469	Spring washer
8	3490000	Elbow
9	3360094	Adaptor
10	3761001	90° Hose insert
11	3861012	Hose clip
12	3710112	Suction hose
13	3260074	Bonded seal
14	3360092	Adaptor
15	3760124	Pressure hose
16	3360092	Adaptor
17	3260074	Bonded seal
18	3910197	Main relief valve
19	3910196	Relief valve cartridge
20	3460110	Plug
21	3260071	Bonded seal
22	3360092	Adaptor
23	3761004	90° hose insert
24	2770411	Bolt
25	2770412	Nylock nut
26	2770434	Flat washer
27	3760196	Return hose – 1W
28	3760195	Pressure hose – 2W
29	3710114	Return hose – P/M



## Parts list – Main relief valve for twin pump

Fig. Ref	Part number	Item description
1	3600101	Motor control / relief valve
2	3600080	Relief valve cartridge
3	3610081	Spool detent kit
4	3260073	Bonded seal
5	3360091	Adaptor
6	3360101	Adaptor
7	3360102	Adaptor
8	3761004	90° hose insert
9	3460107	Elbow
10	3460101	Tee
11	3360081	Adaptor
12	3760195	Motor pressure hose 2W, (Standard. arm)
	3760131	Motor pressure hose 2W, (Twiga-5LR. arm)
	3760119	Motor pressure hose V.F.R. (pre 1996 machines)
	3760198	Motor pressure hose V.F.R. (post 1996 machines)
	3760131	Motor pressure hose V.F.R. (Twiga-5LR)
13	3760196	Motor return hose 1W, (Standard arm)
	3760132	Motor return hose 1W, LR arm
	3760120	Motor return hose 1W, V.F.R (pre 1996 machines)
	3760199	Motor return hose 1W, V.F.R (post 1996 machines)
	3760132	Motor return hose 1W, V.F.R (Twiga-5LR)
14	3710114	Return hose, (per metre)
15	3861014	Hose clip
16	2772284	Cap bolt
17	2770434	Flat washer
18	2770412	Nylock nut
19	3760122	Return hose assembly – 3/5-bank spool
	3760224	Return hose assembly – 4-bank spool
	3760222	Return hose assembly – 3-bank spool, 6-lever

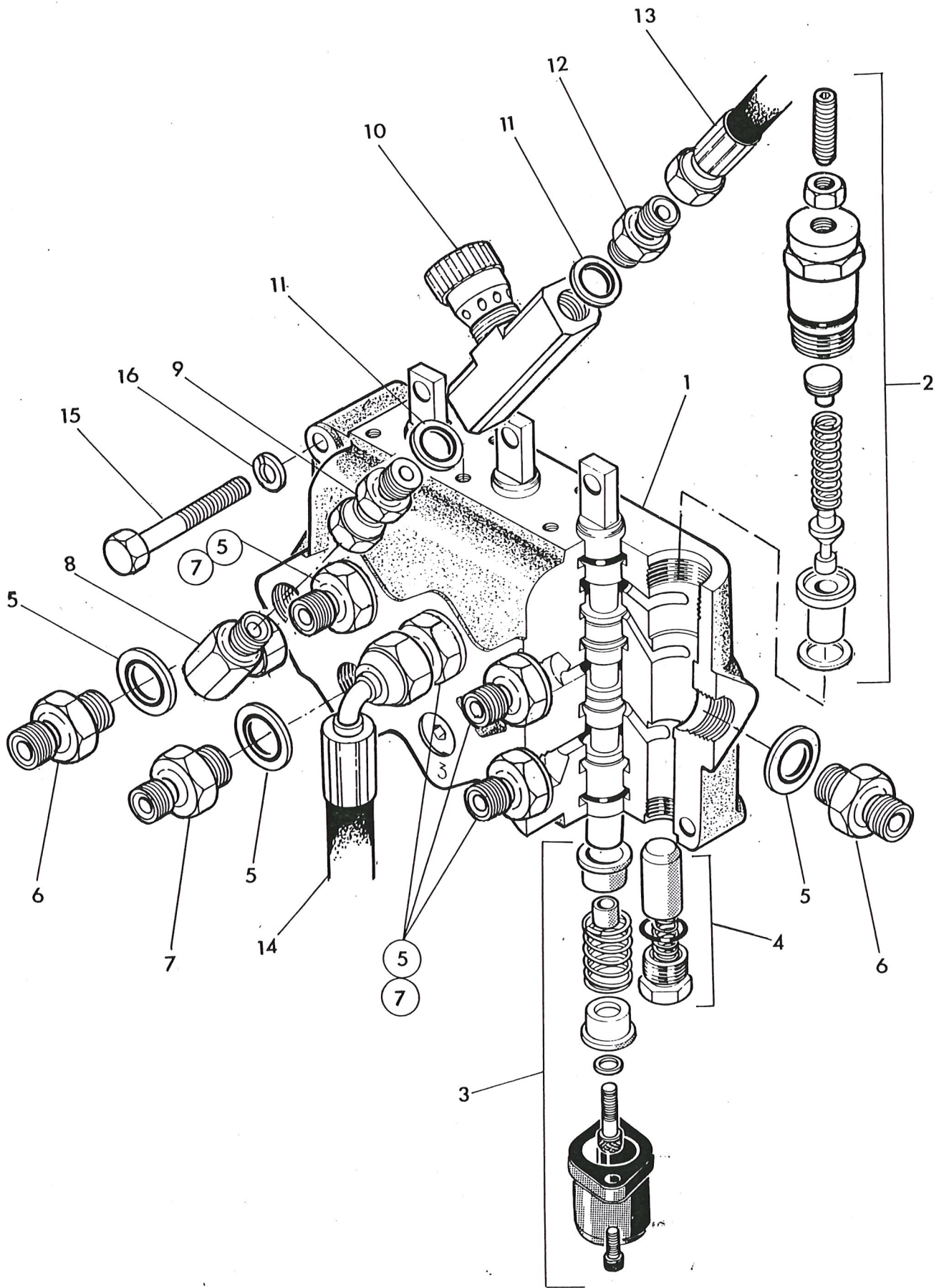




## Parts list – Twin pump

Fig. Ref	Part number	Item description
1	3151021	Twin pump
	3151021K	Twin pump seal kit
2	3151011	Hub coupling
3	2770457	Spring washer
4	2770350	Nut
5	4772226	Key
6	2772284	Cap bolt
7	2770469	Spring washer
8	3490000	Elbow
9	3360094	Adaptor
10	3761001	90° Hose insert
11	3360089	Adaptor
12	3360088	Adaptor
13	3360092	Adaptor
14	3260074	Bonded seal
15	3260072	Bonded seal
16	3861012	Hose clip
17	3710112	Suction hose (per metre)
18	3760123	Suction hose assembly
19	3760121	Hose assembly, 3-bank spool, pressure
	3760220	Hose assembly 4/5-bank spool pressure
20	3760124	Hose assembly – motor control, left-hand
	3760175	Hose assembly motor control, right-hand

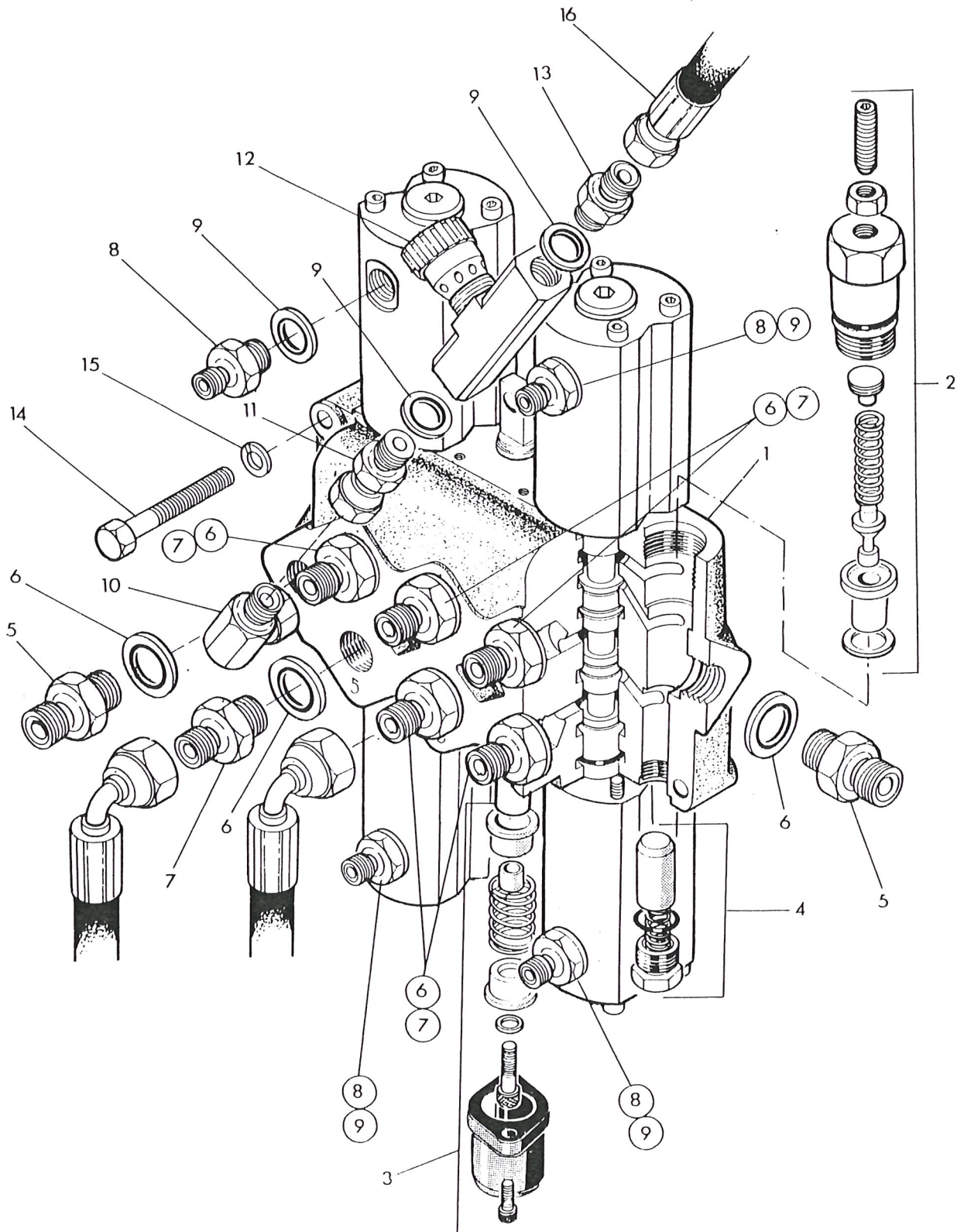
SPEARHEAD TWIGA-5 PARTS LIST



**Parts list – Control valve and U.C.S. cable**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	3600100	3-bank spool cable
2	3600093	Relief valve cartridge
3	3610000	Spring kit
4	3610002	Valve kit
5	3260071	Bonded seal
6	3360086	Adaptor
7	3360083	Adaptor
8	3460107	Elbow
9	3360081	Adaptor
10	3900055	Adjustable restrictor
11	3260070	Bonded seal
12	3360080	Adaptor
13	3760104	Hose, (standard/Twiga-5LR).
	3760103	Hose (Variable Forward Reach)
14	3760114	Hose
15	2770430	Bolt
16	2770433	Spring washer

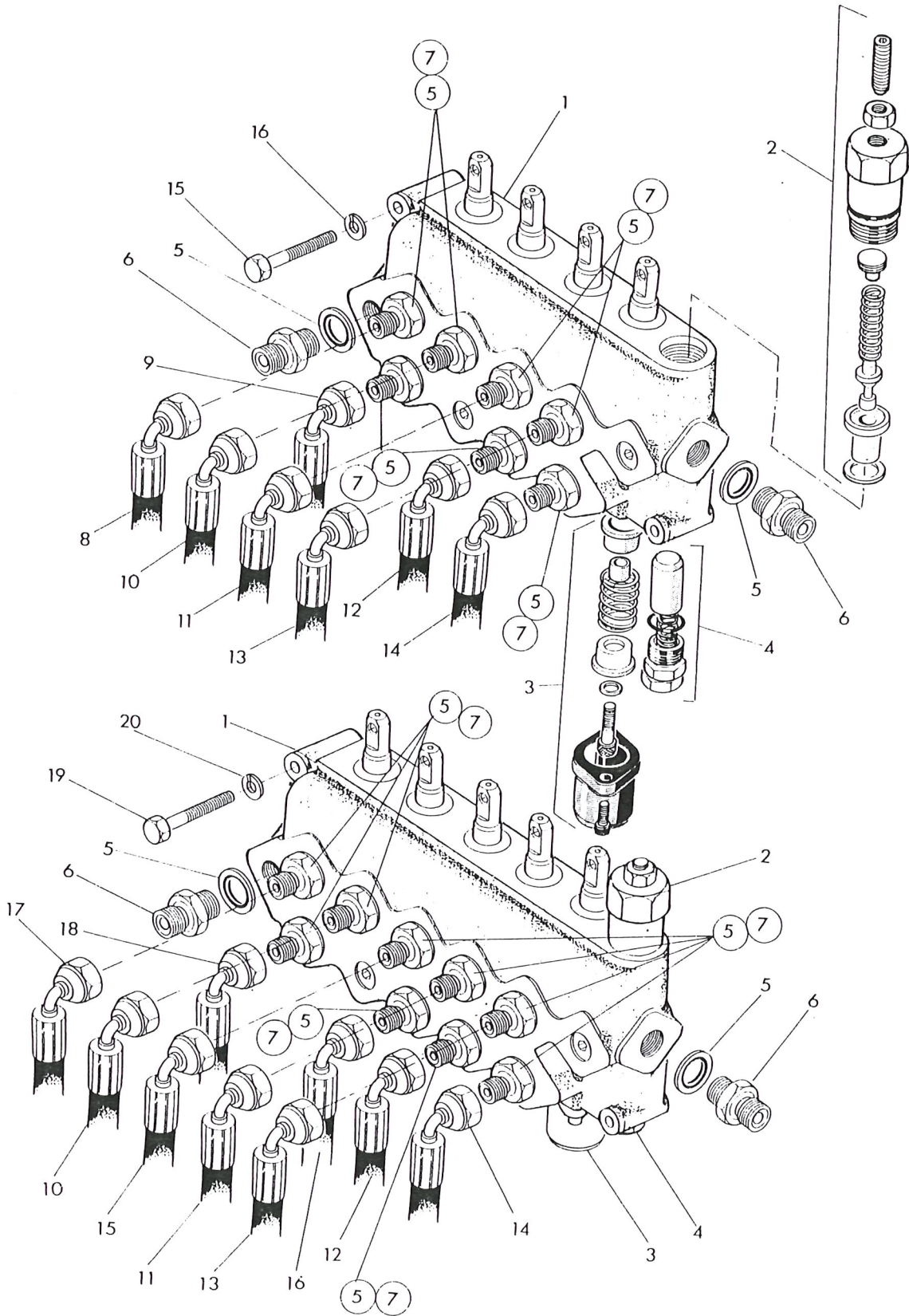
SPEARHEAD TWIGA-5 PARTS LIST



**Parts list – Hydraulic proportional control**

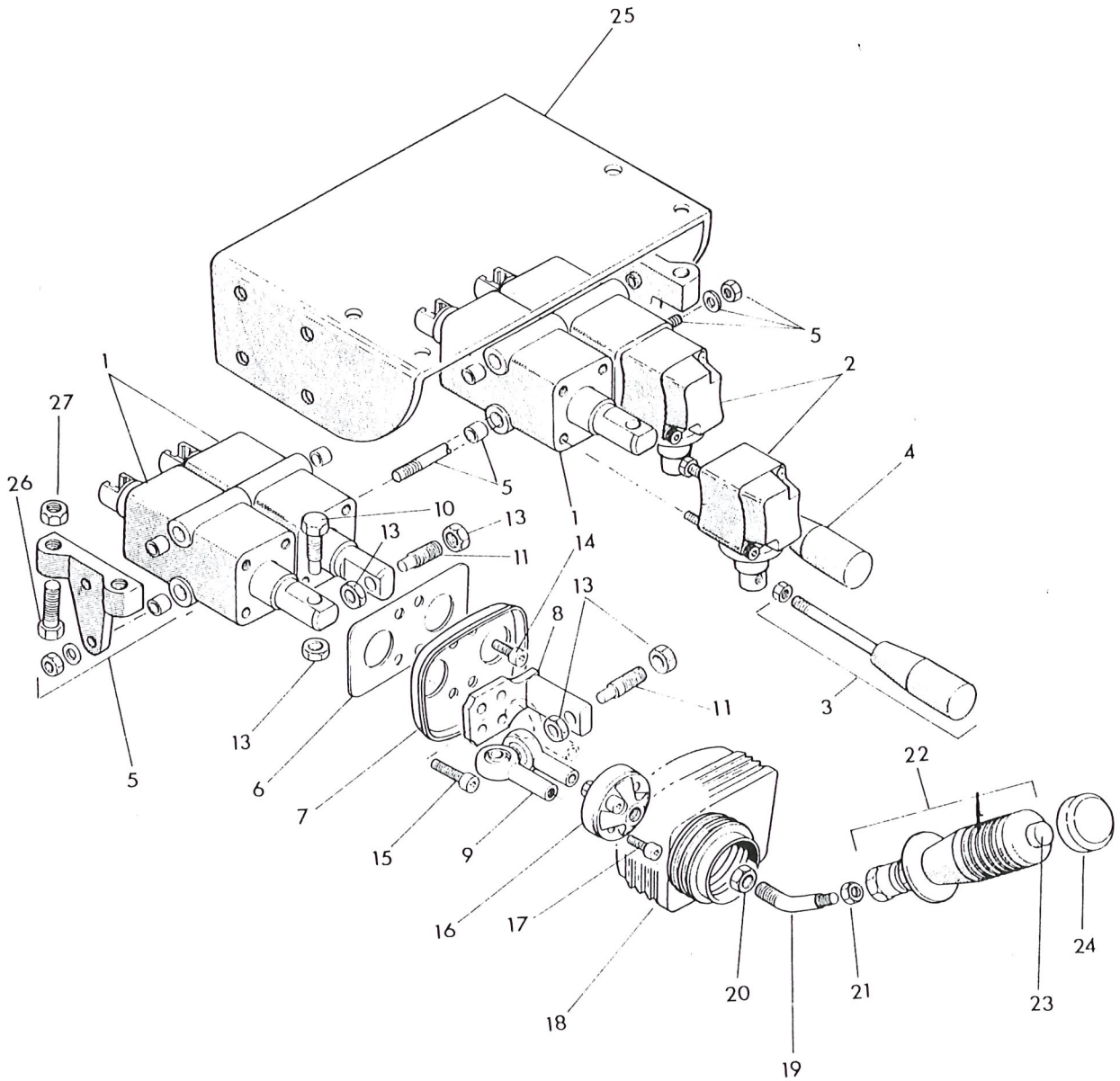
<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	3910254	3-bank spool, hydraulic proportional control
2	3600093	Relief valve cartridge
3	3610000	Spring kit
4	3610002	Valve kit
5	3360086	Adaptor
6	3260071	Bonded seal
7	3360083	Adaptor
8	3250150	Adaptor
9	3260070	Bonded seal
10	3460107	Elbow
11	3360081	Adaptor
12	3900055	Adjustable restrictor
13	3360080	Adaptor
14	2770430	Bolt
15	2770433	Spring washer
16	3760104	Hose, (standard/Twiga-5LR)
	3760103	Hose, (Variable Forward Reach)
NI	3600088	Solenoid – electric base plate
NI	3600086	Coil – Electric base plate

SPEARHEAD TWIGA-5 PARTS LIST



## Parts list – 4/5-bank spool

Fig. Ref	Part number	Item description
1	3600103	4-bank spool block – 5-lever
	3600094	3-bank spool block
	3600092	2-bank spool block
	3600104	5-spool block (Twiga-5)
	3600090	Carry over connector
2	3600093	Relief valve cartridge
3	3610000	Spring nut
4	3610002	Valve kit
5	3260071	Bonded seal
6	3360086	Adaptor
7	3360083	Adaptor
8	3760226	Hose, head base – 5-lever
9	3760225	Hose, head rod – 5-lever
10	3760219	Hose, base plate – 5-lever
	3760218	Hose, base plate – 6-lever
11	3760213	Hose, dipper base – 5/6-lever
12	3760212	Hose, dipper rod – 5/6-lever
13	3760211	Hose, main rod – 5/6-lever
14	3760210	Hose, main base – 5/6-lever
15	3760215	Hose, head base – 6-lever
16	3760214	Hose, hose rod – 6-lever
17	3760217	Hose, Variable Forward Reach – 6-lever
18	3760216	Hose, Variable Forward Reach – 6-lever
19	2770430	Bolt
20	2770433	Spring washer
NI	3360098	1mm 3/8 – 1/4 restrictor
NI	3460117	2mm 3/8 – 1/4 restrictor

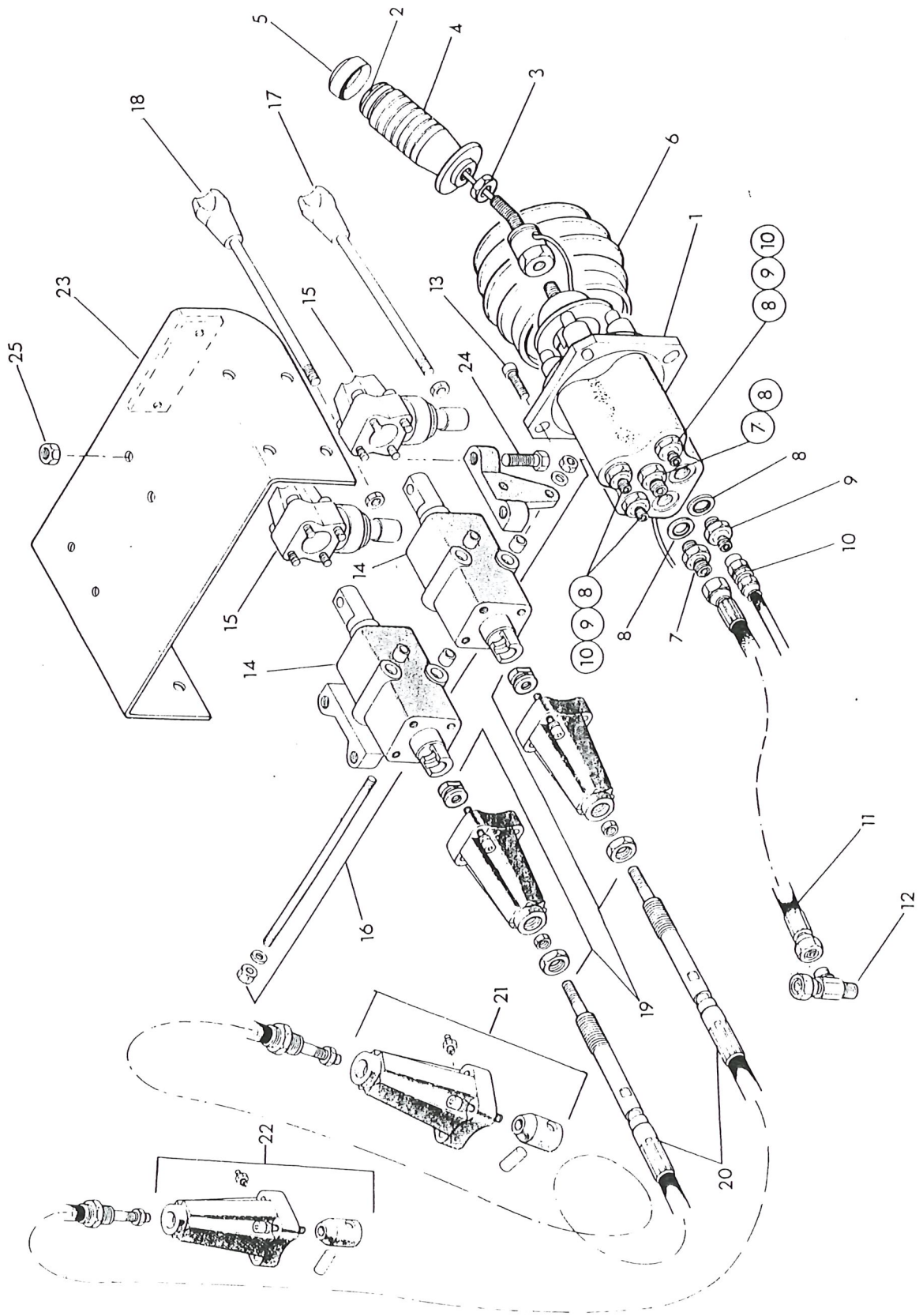




## Parts list – Joystick / cable

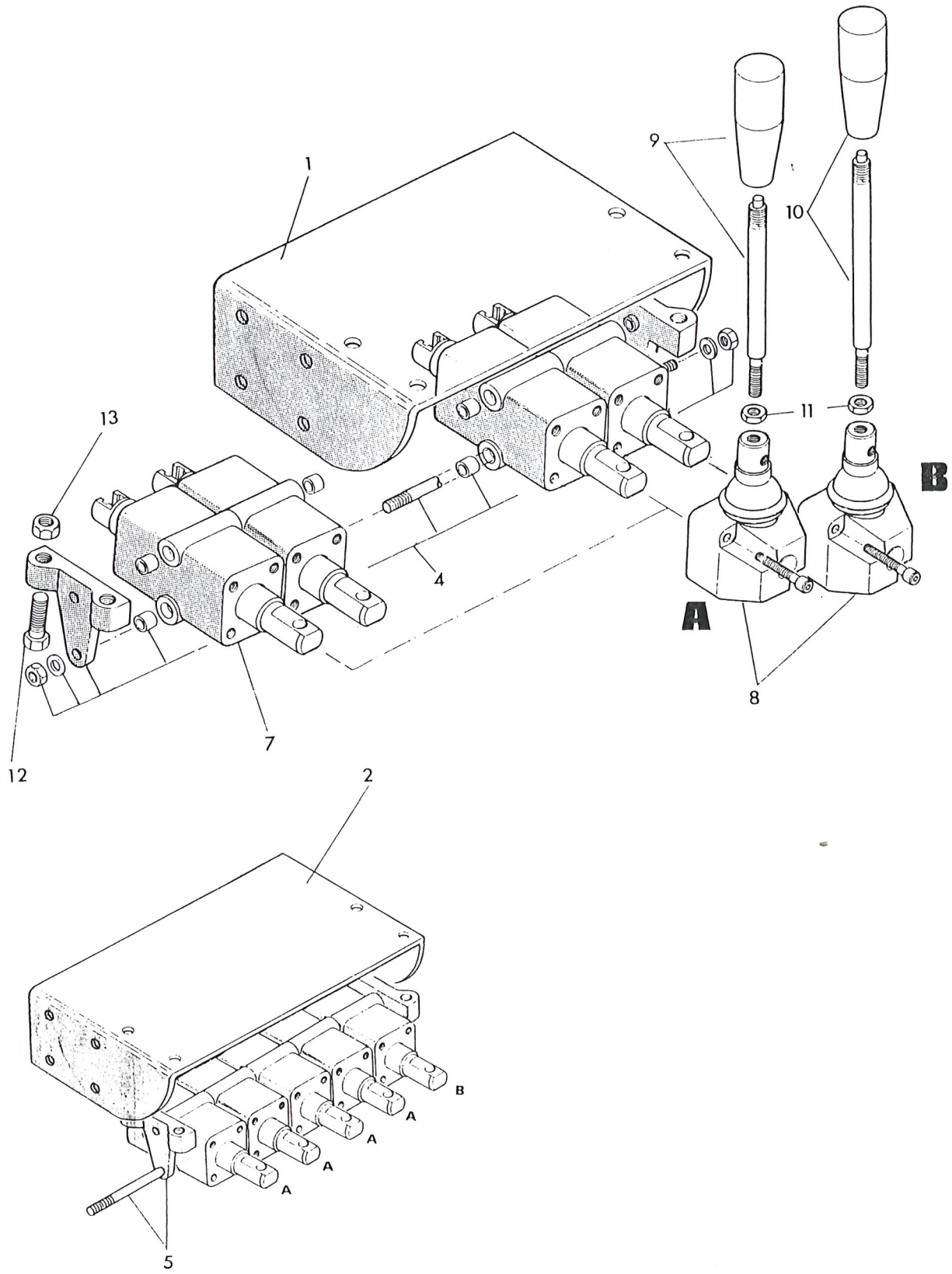
Fig. Ref	Part number	Item description
1	3910205	Remote – single
2	3910218	Pivot assembly
3	3910219	Lever, yellow
4	3910220	Lever, red
5	3910244	Leg/stud kit
6	3910260	Gasket
7	3910261	Back plate
8	3910262	Fulcrum
9	3910263	Ball joint
10	3910264	Shouldered bolt
11	3910265	Shouldered stud
13	2770438	Nut
14	2770540	Cap bolt
15	2770371	Cap bolt
16	3910266	Pivot plate
17	2770543	Cap bolt
18	3910267	Gaiter
19	1777199	Cranked stud
20	2770438	Nut
21	2770536	Nut
22	3910208	Hand grip micro switch assembly
23	3910268	Micro-switch
24	3910300	Rubber cap
25	1777134	Control bracket
26	2770368	Button screw
27	2770416	Nylock nut
NI	8400103	2-way rocker switch
NI	8400108	Rubber switch cover

SPEARHEAD TWIGA-5 PARTS LIST



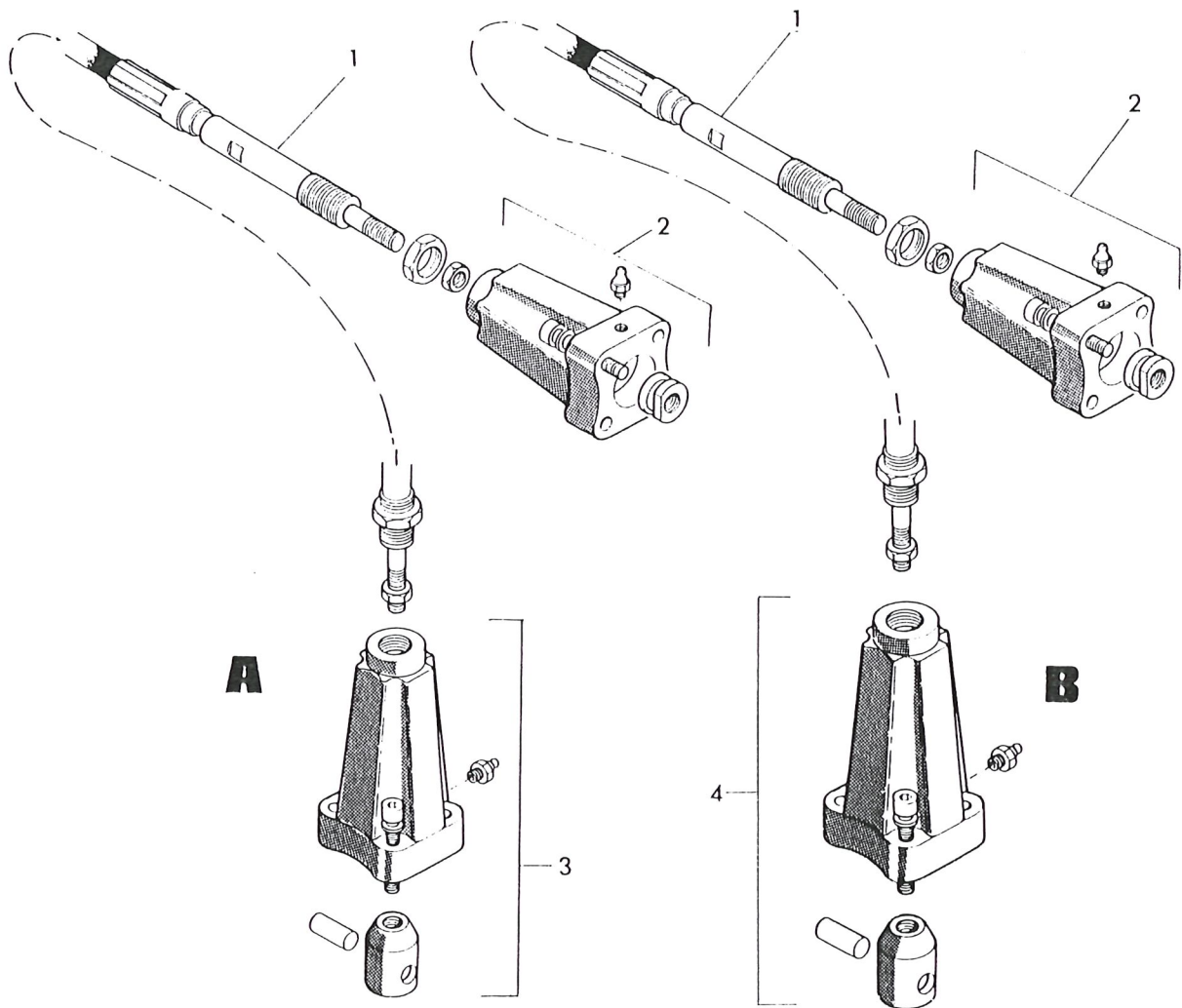
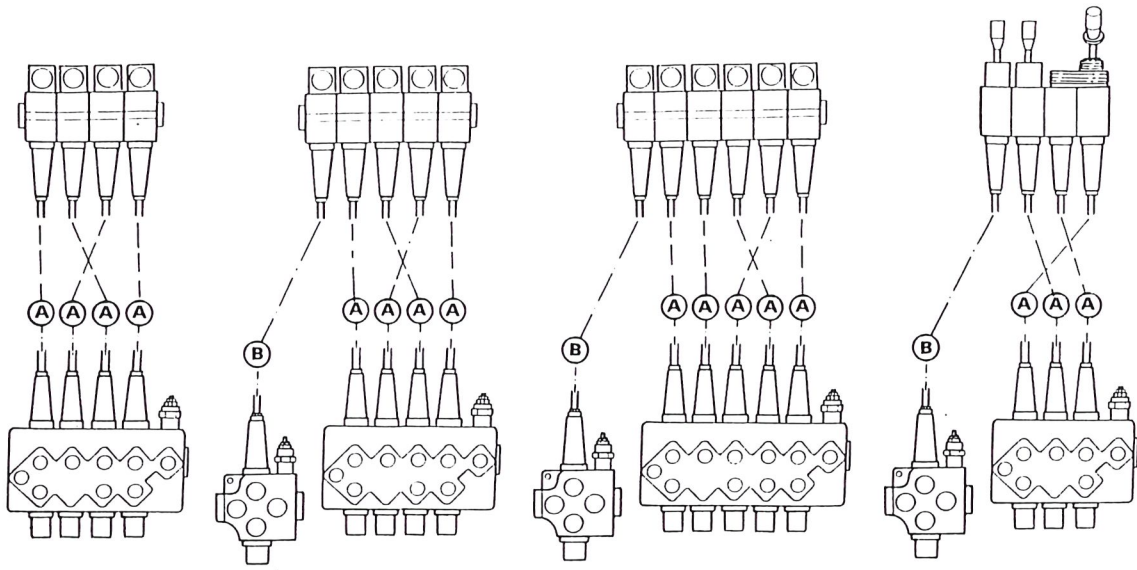
## Parts list – Joystick

Fig. Ref	Part number	Item description
1	3910250	Joystick assembly
	3910250K	Joystick assembly seal kit
2	3910268	Micro switch
3	2770536	Nut
4	3910208	Joystick + micro -switch assembly
5	3910300	Rubber cap
6	3910270	Rubber gaiter
7	3360080	Adaptor
8	3260070	Bonded seal
9	3250150	Adaptor
10	3760155	Hose assembly x 3000mm Standard
	3760157	Hose assembly x 3270mm standard
	3760156	Hose extension x 500mm
	3760158	Hose extension x 1000mm
11	3760160	Hose assembly joystick feed – standard
	3760161	Hose assembly joystick return standard
	3760164	Hose extension x 500mm
	3760165	Hose extension x 100mm
12	3460100	Tee
13	2770371	Cap screw
14	3910211	Remote – single
	3910212	remote – 2 lever
15	3910217	Pivot assembly No.5
	3910218	Pivot assembly No.10
16	3910243	Stud/leg kit
17	3910219	Lever yellow knob
18	3910220	Lever red knob
19	3910202	Cable support – remote No.5
	3910204	Cable support – remote No.10
20	3910232	3.0m remote cable
	3910231	3.5m remote cable
	3910233	4m remote cable
21	3910201	Cable support – 3 spool bank valve
22	3910200	cable support – motor control valve
23	1777134/H	Control bracket
24	2770356	button head screw
25	2770416	Nylock nut
NI	8400105	3-way rocker switch
NI	8400103	2-way rocker switch
NI	8400108	Rubber switch cover



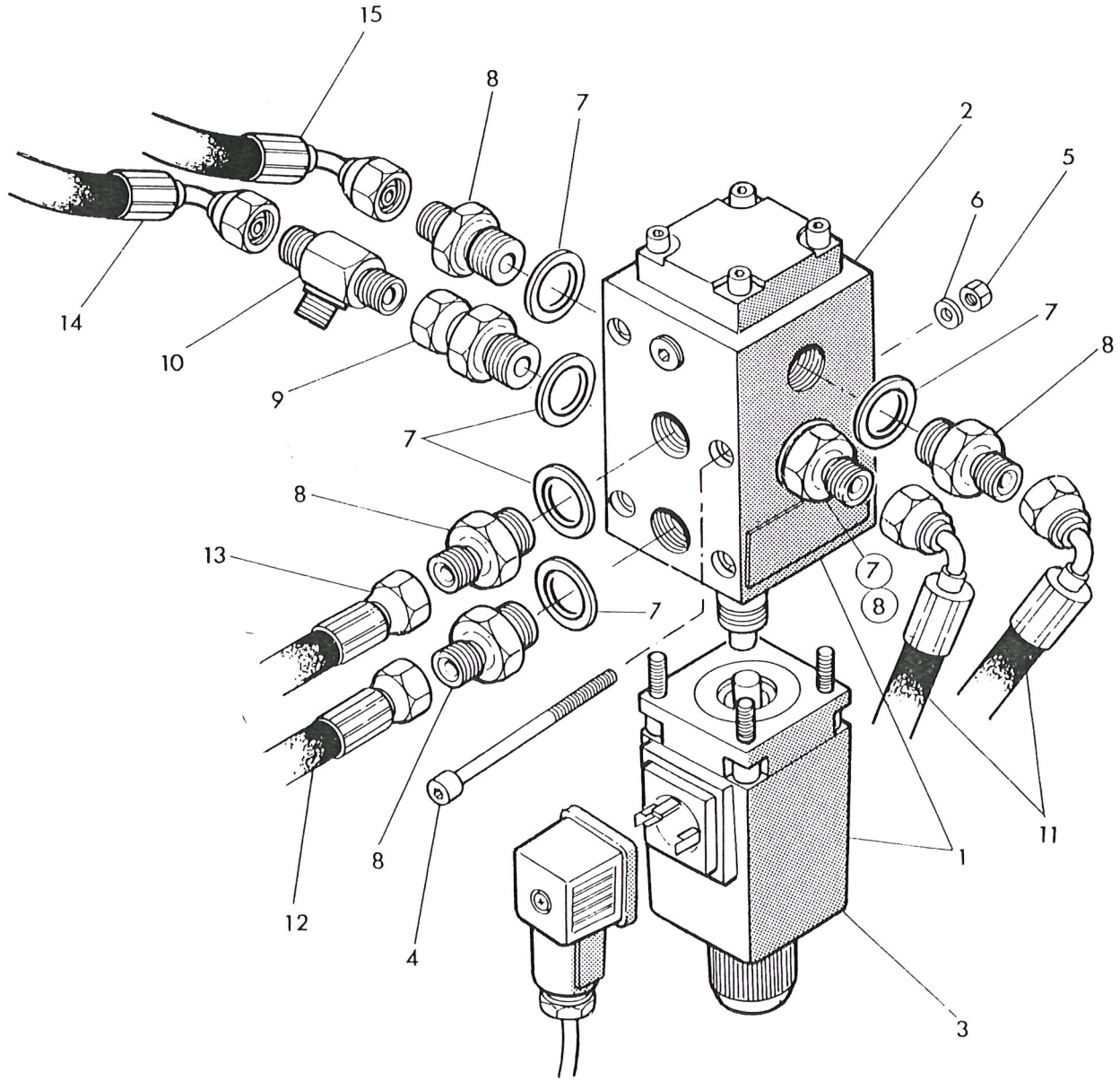
**Parts list – 5/6 Lever control**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	1777059	Control panel, 3-bank, 6-lever bracket
2	1777134	Control panel, 5-bank, 5-lever bracket
3		
4	3910242	Stud/leg kit, 3-bank
5	3910245	Stud/leg kit, 5-bank
6		
7	3910211	Remote single
	3910213	Remote, monoblock 3-bank
	3910212	Remote, monoblock 2-bank
8	3910217	Pivot assembly
9	3910223	Lever, black knob
10	3910220	Lever, red knob
11	2770438	Nut
12	2770356	Button-head screw
13	2770416	Nylock nut



**Parts list - Cables**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	3910230	2.5m remote cable
	3910232	3.0m remote cable
	3910231	3.5m remote cable
	3910233	4.0m remote cable
2	3910202	Cable support, remote
3	3910201	Cable support, spool bank
4	3910200	Cable support, motor control

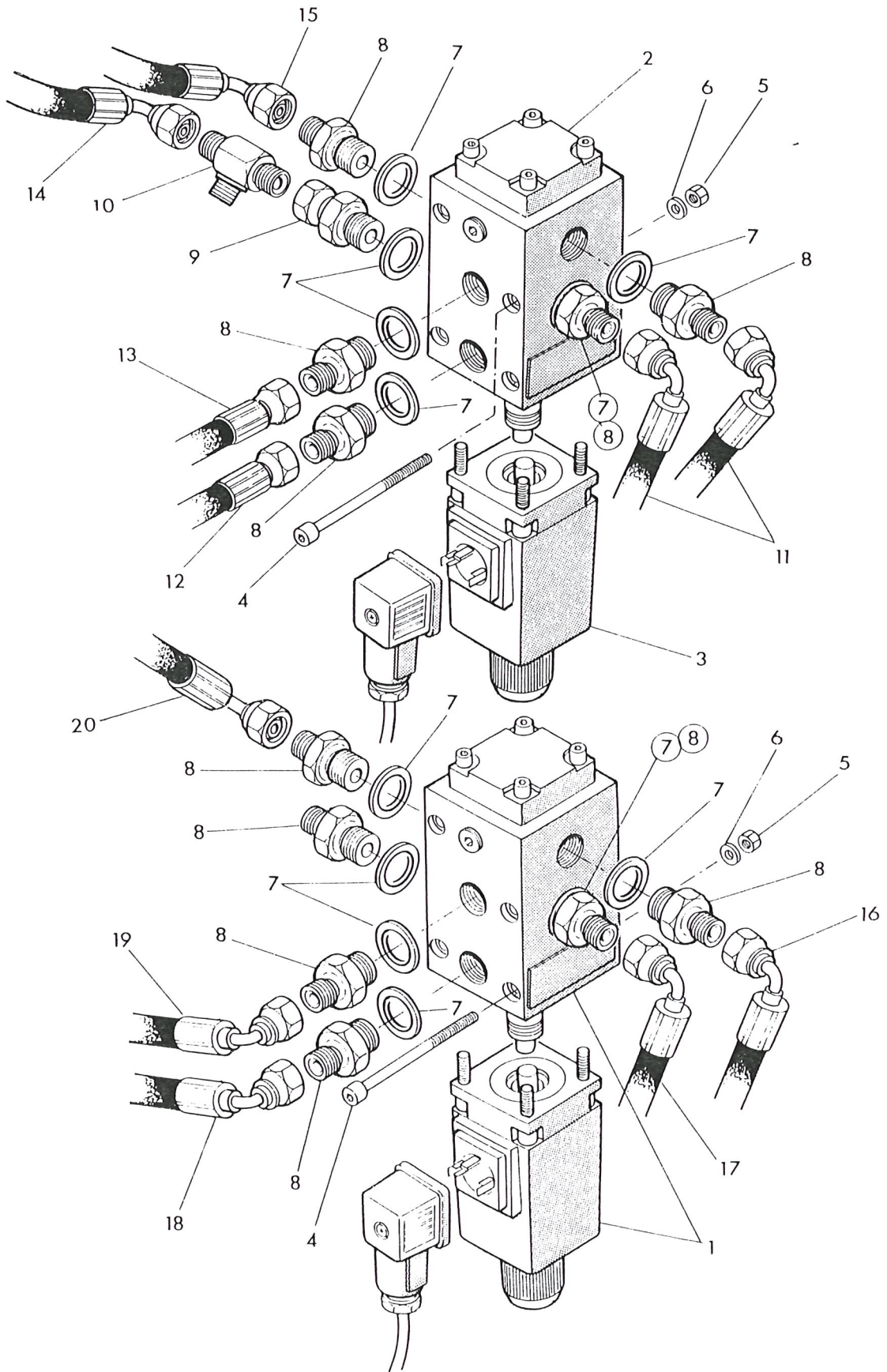




**Parts list – Diverter (standard/Twiga-5LR arm)**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	3600110	Electric diverter valve
2	3600084	Spool block diverter valve
3	3600085	Solenoid diverter valve
4	2770392	Cap bolt
5	2770394	Nylock nut
6	2770391	Flat washer
7	3260071	Bonded seal
8	3360083	Adaptor
9	3360084	Adaptor
10	3460100	Tee
11	3760097	Hose assembly
12	3760085	Hose assembly
13	3760098	Hose assembly
14	3760095	Hose assembly
15	3760086	Hose assembly

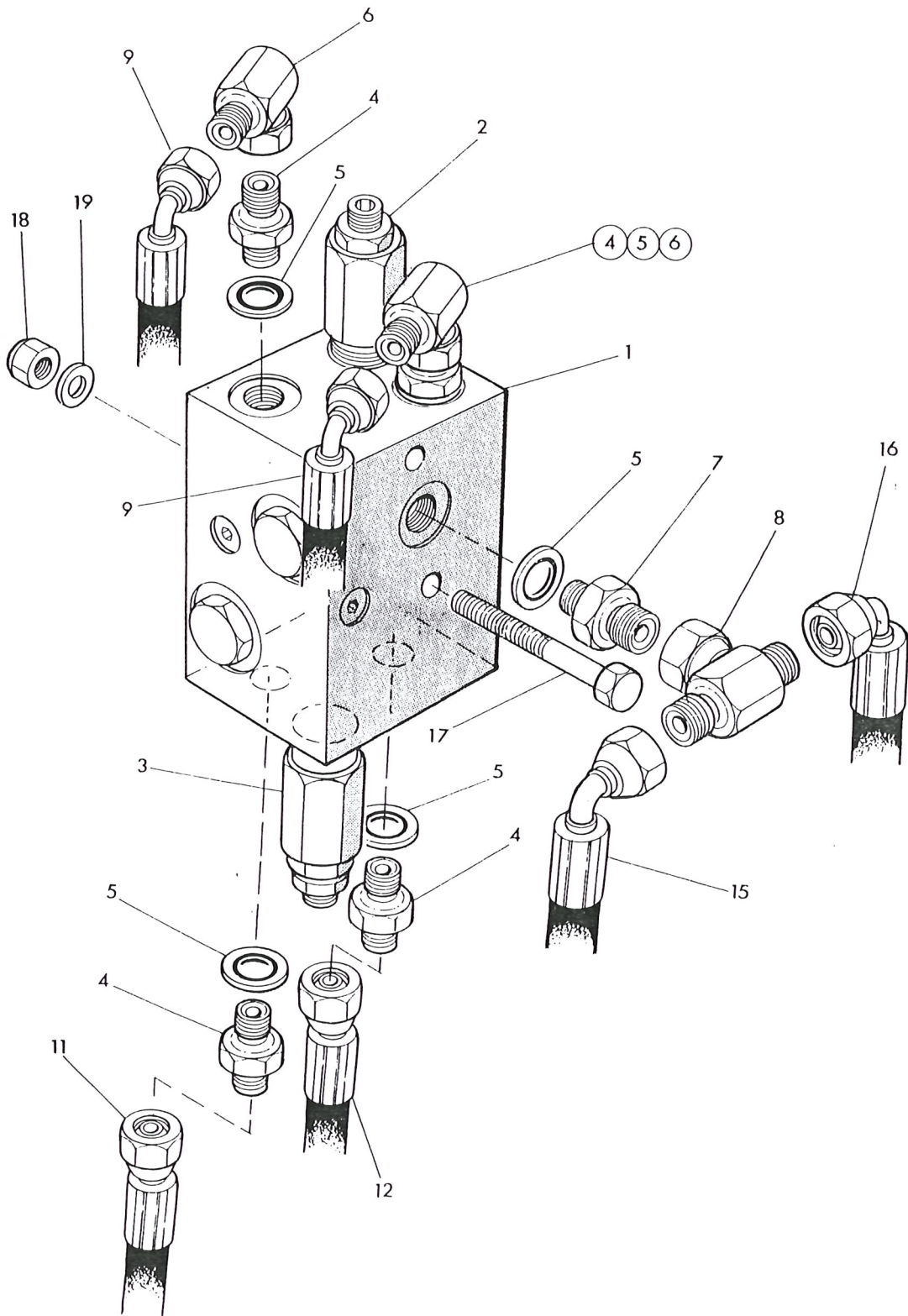
SPEARHEAD TWIGA-5 PARTS LIST



**Parts list – Diverter Variable Forward Reach**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	3600110	Electric diverter valve
2	3600084	Spool block
3	3600085	Solenoid
4	2770392	Cap bolt
5	2770394	Nut
6	2770391	Washer
7	3260071	Bonded seal
8	3360083	Adaptor
9	3360084	Adaptor
10	3460100	Tee
11	3760097	Hose assembly
12	3760085	Hose assembly
13	3760098	Hose assembly
14	3760090	Hose assembly
15	3760090	Hose assembly
16	3760093	Hose assembly
17	3760094	Hose assembly
18	3760114	Hose assembly
19	3760114	Hose assembly
20	3760033	Hose assembly

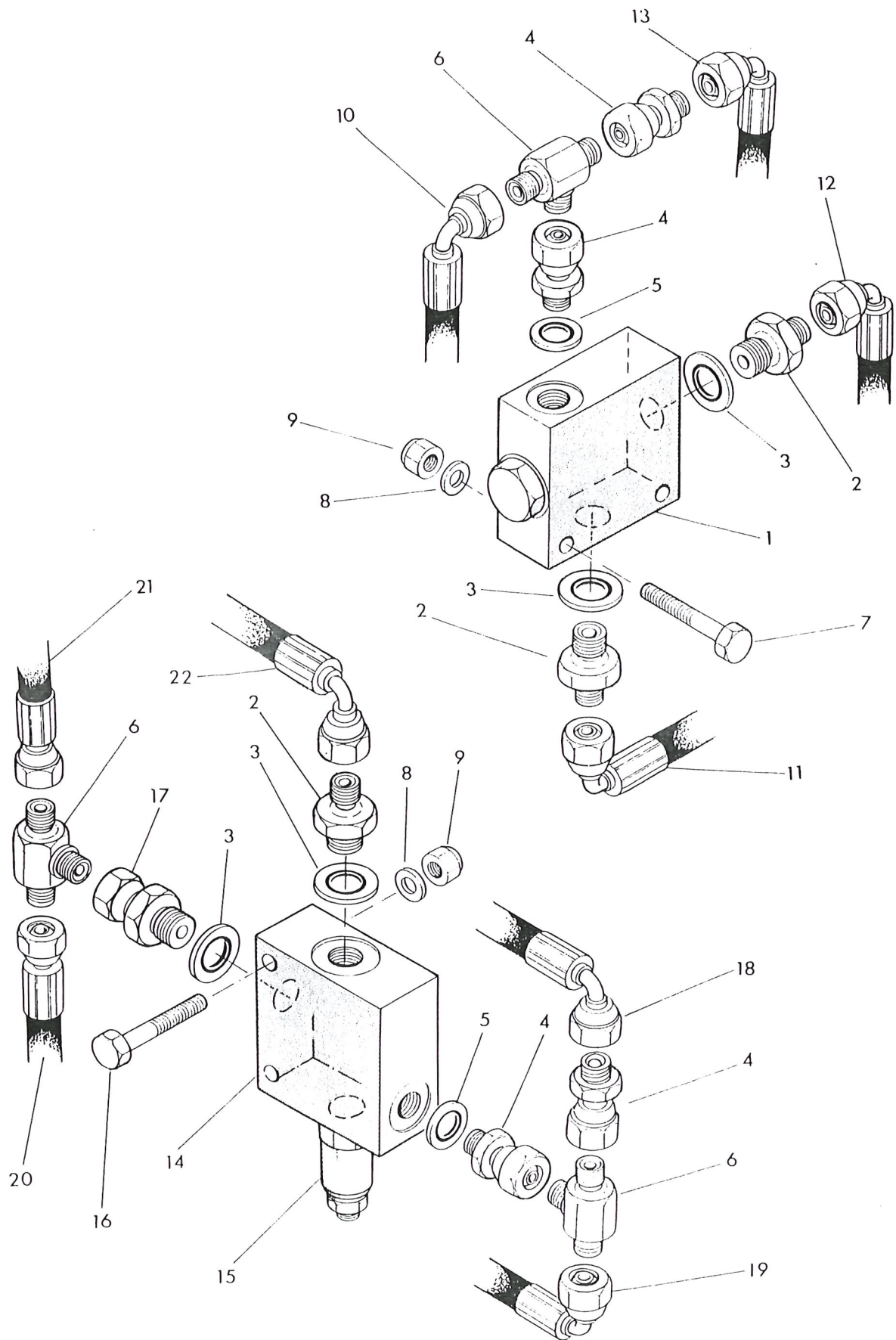
SPEARHEAD TWIGA-5 PARTS LIST



## Parts list – Motion control valve

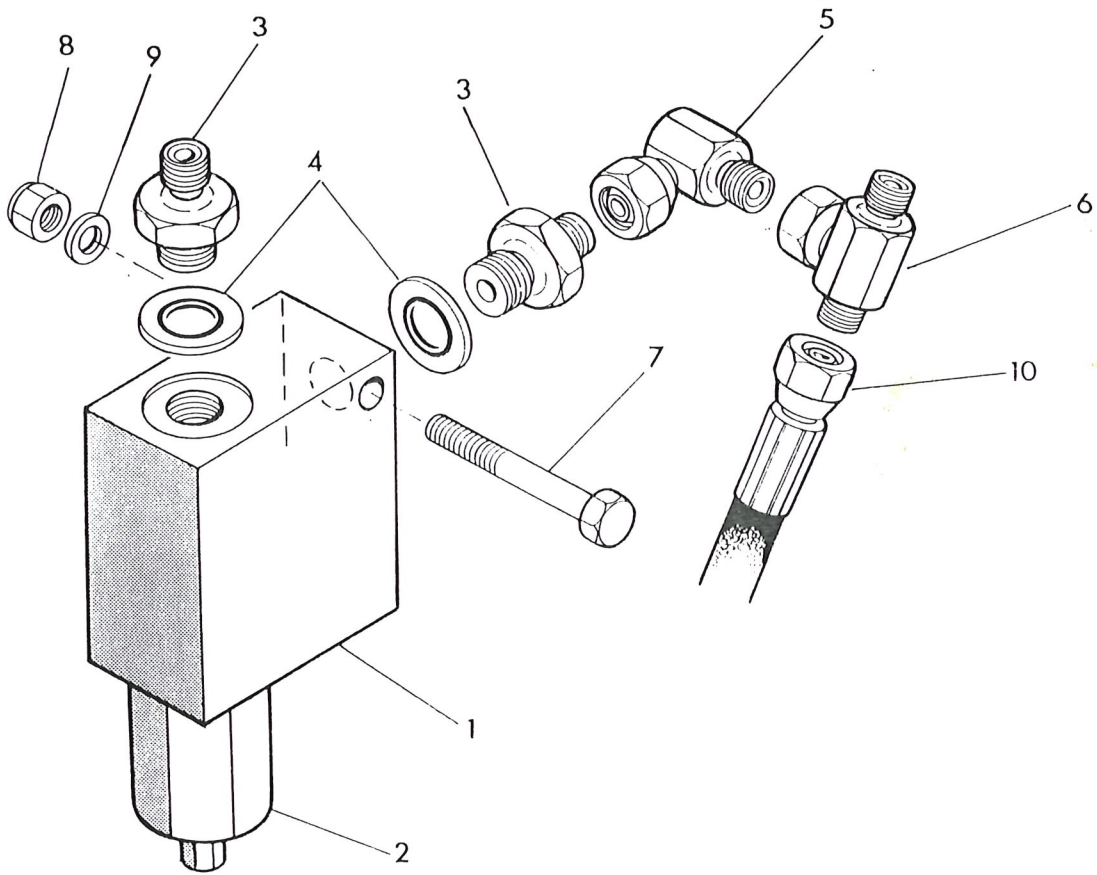
Fig. Ref	Part number	Item description
1	3600136	Motion control valve
2	3610005	Over-centre cartridge
3	3610007	Duel relief cartridge
4	3360080	Adaptor
5	3260070	Bonded seal
6	3460107	Elbow
7	3360080	Adaptor
8	3460101	Tee
9	3760089	Hose assembly, (standard/V.F.R.standard)
	3760129	Hose assembly (Twiga-5LR/V.F.R.Twiga-5LR)
11	3760097	Hose assembly
15	3760098	Hose assembly
16	3760161	Hose assembly (hydraulic proportional control)
17	2772289	Bolt
18	2770416	Nylock nut
19	2770432	Flat washer

SPEARHEAD TWIGA-5 PARTS LIST



## Parts list – Pilot check valve / over-centre valve

Fig. Ref	Part number	Item description
1	3600130	Pilot operate check valve assembly
	3610009	Cartridge, Pilot Operate Check Valve
2	3360083	Adaptor
3	3260071	Bonded seal
4	3360081	Adaptor
5	3260070	Bonded seal
6	3460100	Tee
7	2770490	Bolt
8	2770432	Flat washer
9	2770416	Nylock nut
10	3760203	Hose assembly (standard arm V.F.R.)
	3760186	Hose assembly (Twiga-5LR arm V.F.R.)
11	3760093	Hose assembly
12	3760204	Hose assembly, (standard arm V.F.R.)
	3760185	Hose assembly, (Twiga-5LR arm V.F.R.)
	3760094	Hose assembly
14	3600134	Over-centre valve assembly
15	3610011	Cartridge, Over-centre valve.
16	2770430	Bolt
17	3360084	Adaptor
18	3760098	Hose assembly
19	3760087	Hose assembly (standard arm)
	3760128	Hose assembly (Twiga-5LR arm)
20	3760091	Hose assembly
21	3760104	Hose assembly
22	3760088	Hose assembly (standard arm)
	3760127	Hose assembly (Twiga-5LR arm)
NI	3900055	Adjustable flow restricter

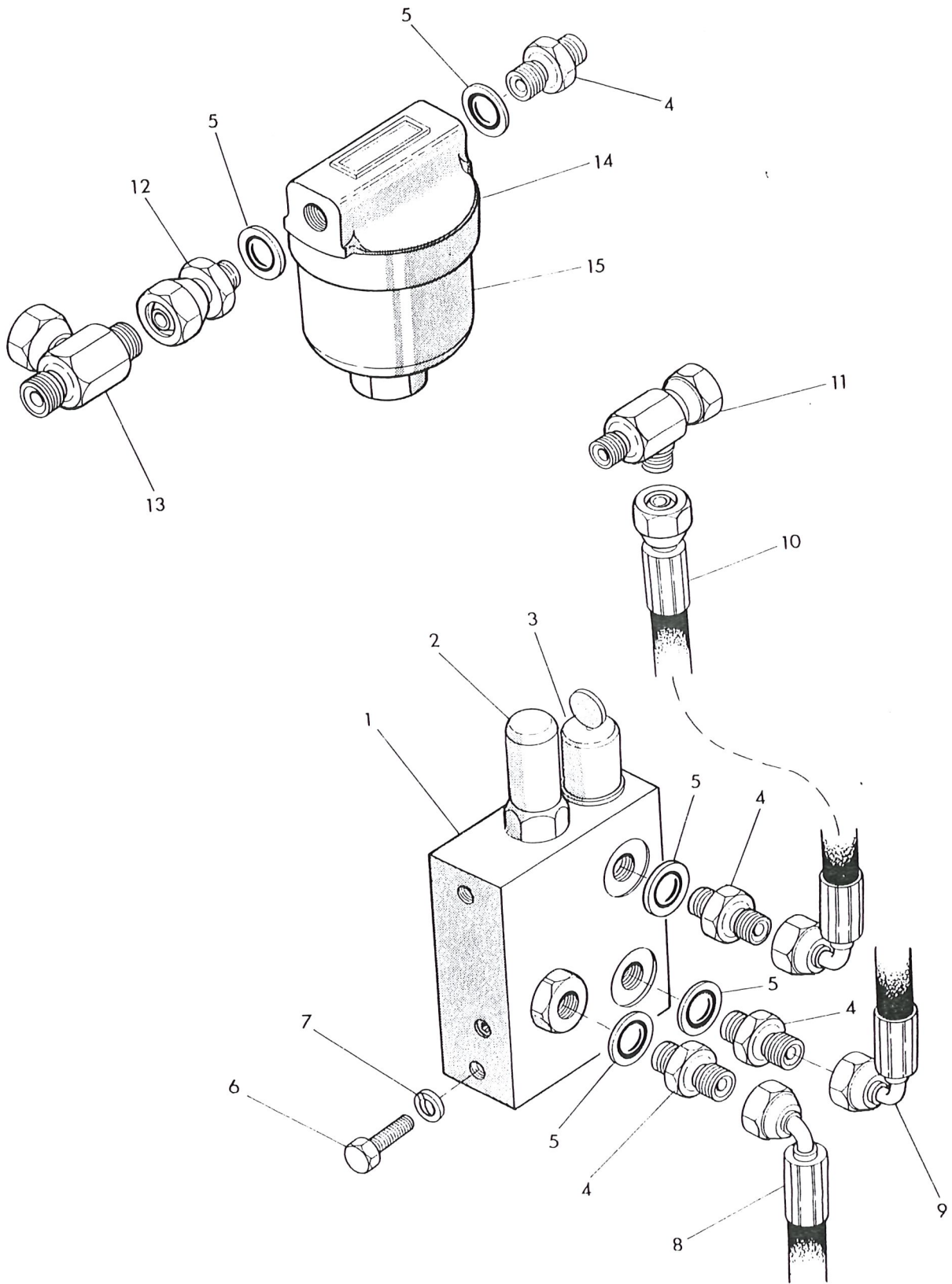




**Parts list - Break-back valve**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	3600111	Break-back valve
2	3610013	Cartridge break-back valve
3	3360083	Adaptor
4	3260071	Bonded seal
5	3460107	Elbow
6	3460101	Tee
7	2770430	Bolt
8	2770416	Nylock nut
9	2770432	Flat washer
10	3760108	Hose assembly

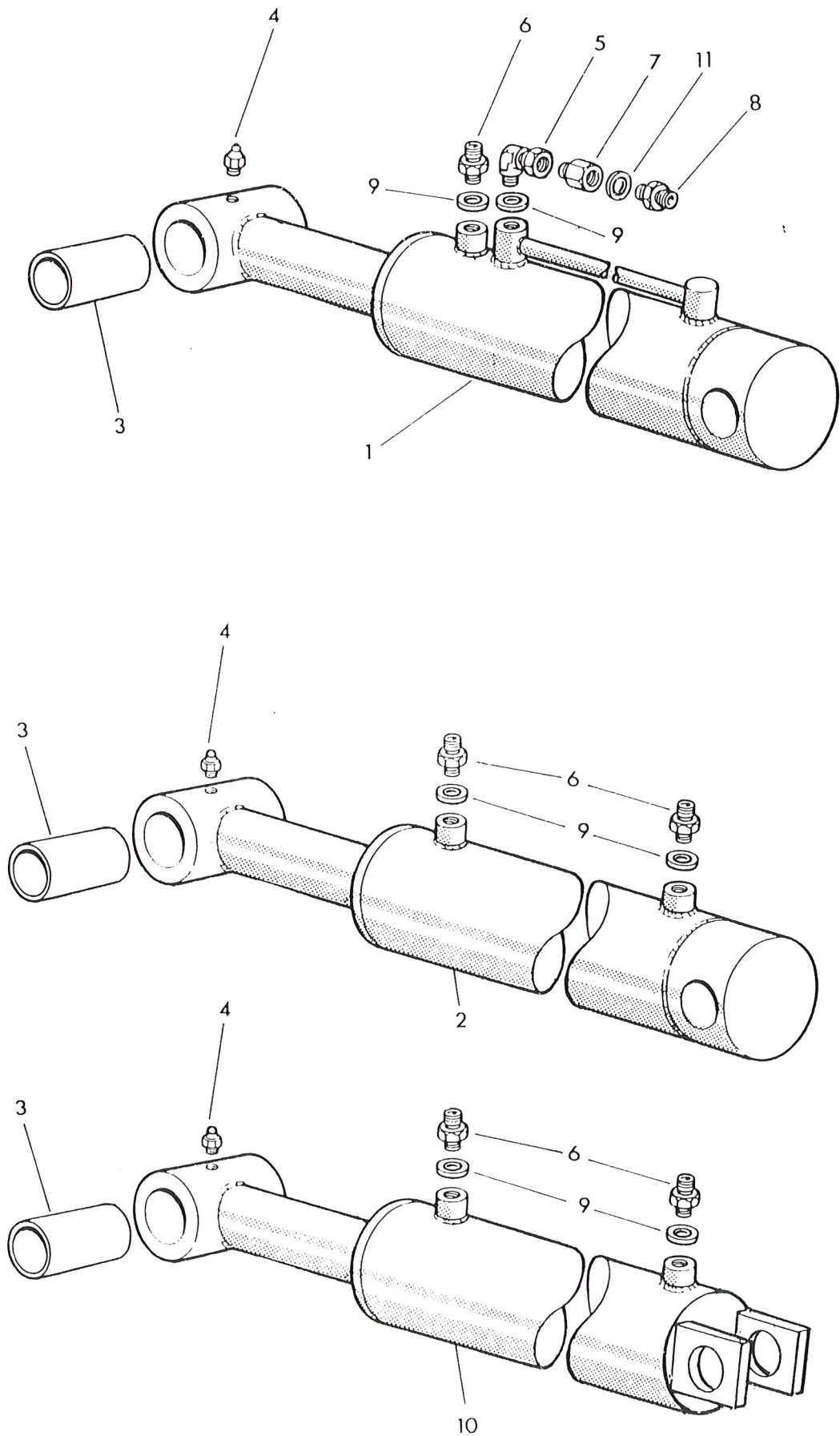
SPEARHEAD TWIGA-5 PARTS LIST



## Parts list – Filter/ Feeder Hydraulic proportional control

Fig. Ref	Part number	Item description
1	3910252	Feeder valve
2	3610020	Relief valve cartridge
3	3610022	Valve cartridge
4	3360080	Adaptor
5	3260070	Bonded seal
6	2770415	Bolt
7	2770433	Spring washer
8	3760162	Hose assembly
9	3760160	Hose assembly
10	3760163	Hose assembly
11	3460101	Tee
12	3360079	Adaptor
13	3460099	Tee
14	3900058	Filter assembly
15	3900059	Replacement element

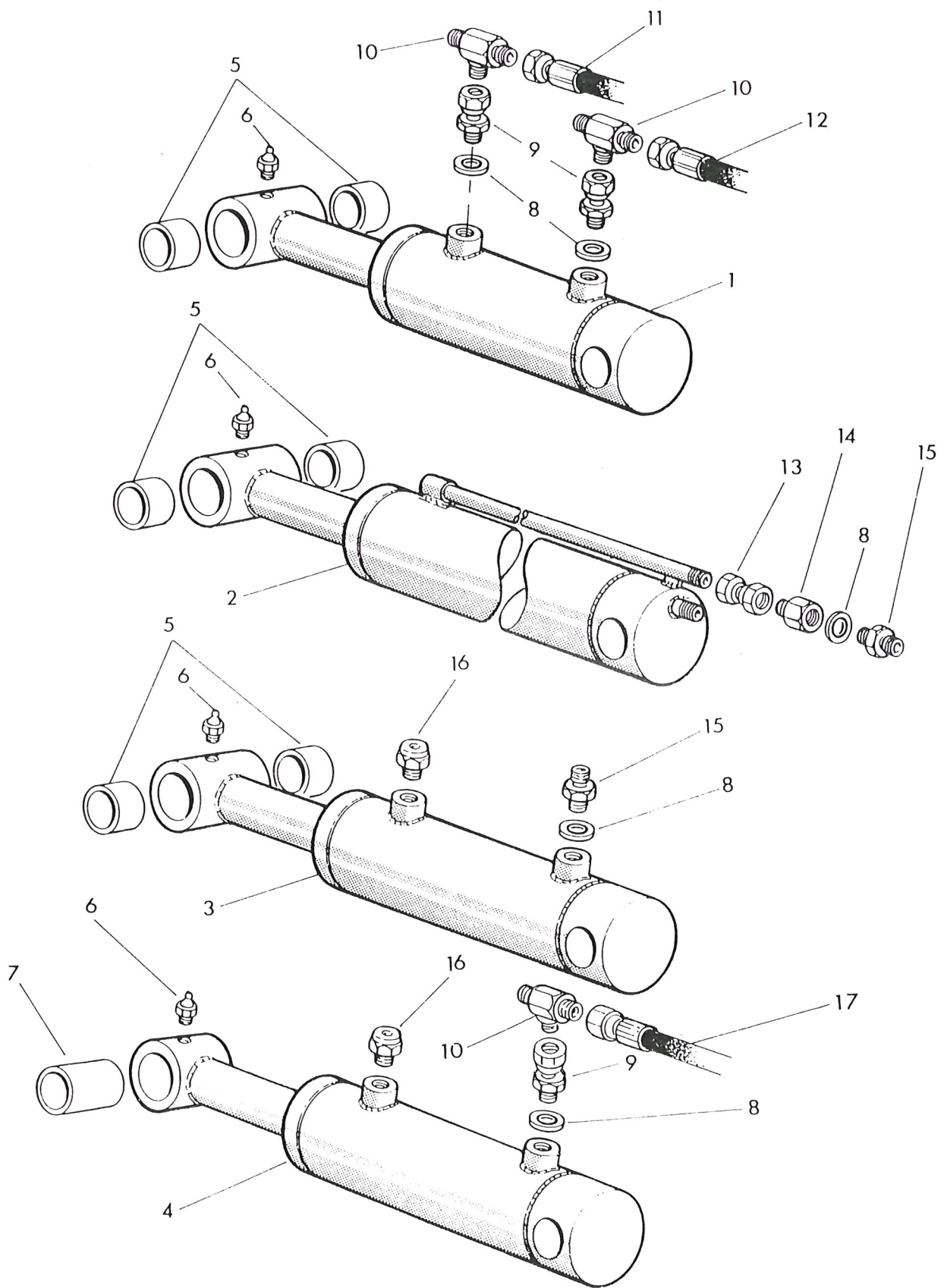
SPEARHEAD TWIGA-5 PARTS LIST



## Parts list - Cylinders

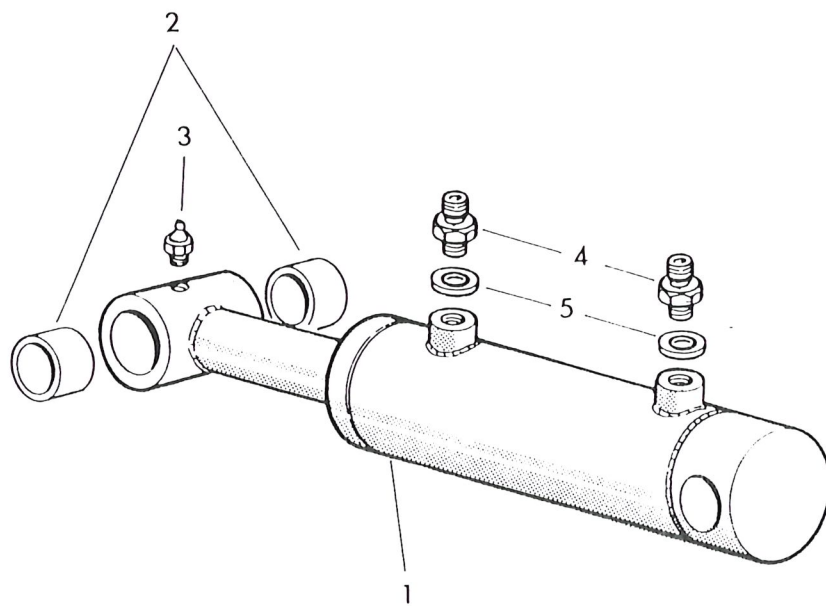
Fig. Ref	Part number	Item description
1	3580640	Main ram
	3570664	Main ram seal kit
2	3580641	Dipper ram, (Twiga-5LR arm)
	3570664	Dipper ram seal kit
3	4600410	Bush
4	2772300	Grease nipple
5	3460107	Elbow
6	3360080	Adaptor
7	3600113	1/4 Hose burst valve
	3600114	3/8 Hose burst valve
8	3360083	Adaptor
9	3260070	Bonded seal
10	3580647	Dipper ram standard arm
	3570664	Dipper ram seal kit
11	3260071	Bonded seal

SPEARHEAD TWIGA-5 PARTS LIST



## Parts list – Cylinders

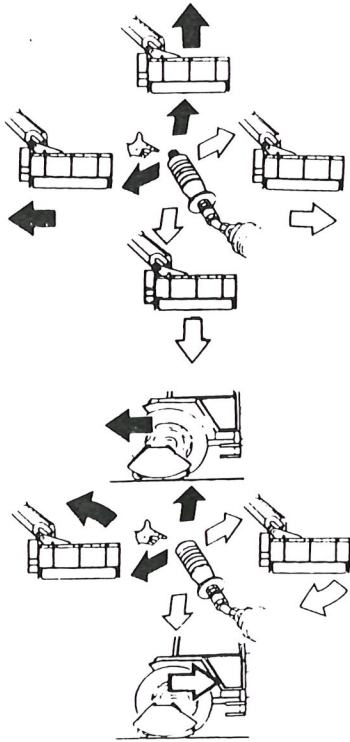
Fig. Ref	Part number	Item description
1	3580645	Slave ram
	3570665	Slave ram seal kit
2	3580644	Head ram
	3570665	Head ram seal kit
3	3580643	Break-back ram
	3570665	Break-back ram seal kit
4	3580642	Base plate ram
	3570665	Base plate ram seal kit
5	4600400	Bush
6	2772300	Grease nipple
7	4600410	Bush
8	3260070	Bonded seal
9	3360081	Adaptor
10	3460100	Tee
11	3760070	Hose assembly (standard arm)
	3760044	Hose assembly (standard V.F.R. pre 1996 machines)
	3760202	Hose assembly (standard arm V.F.R post 1996 machines)
	3760126	Hose assembly (Twiga-5LR arm)
	3760206	Hose assembly (Twiga-5LR arm V.F.R.)
	3760106	Hose assembly (standard arm)
12	3760043	Hose assembly (standard arm V.F.R. pre 1996 machines)
	3760201	Hose assembly (standard V.F.R post 1996 machines)
	3760125	Hose assembly (Twiga-5LR arm)
	3760205	Hose assembly (Twiga-5LR arm V.F.R.)
	3360082	Adaptor
13	3360082	Adaptor
14	3600113	Hose burst valve
15	3360080	Adaptor
16	3570660	Breather
17	3760115	Hose assembly (standard arm)



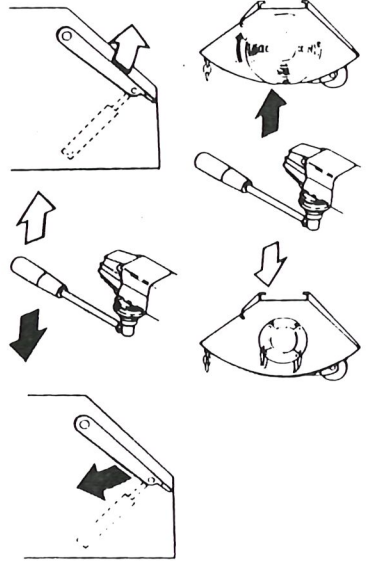


**Parts list – Variable Forward Reach Cylinder**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	3580646	Variable Forward Reach ram
	3570666	Variable Forward Reach ram seal kit
2	4600400	Bush
3	2772300	Grease nipple
4	3360080	Adaptor
5	3260070	Bonded seal



1



2

Recommended P.T.O.  
speed 540 r.p.m.

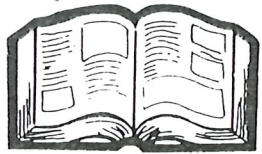
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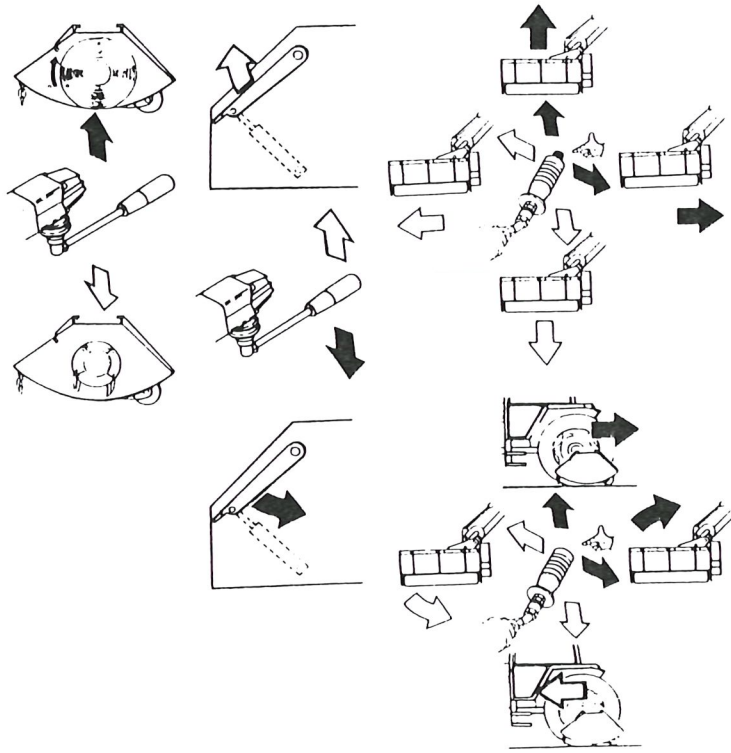
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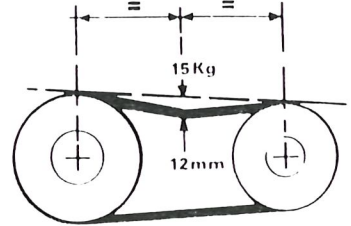


6



  
**DANGER**  
Rotating cutters under here.

7



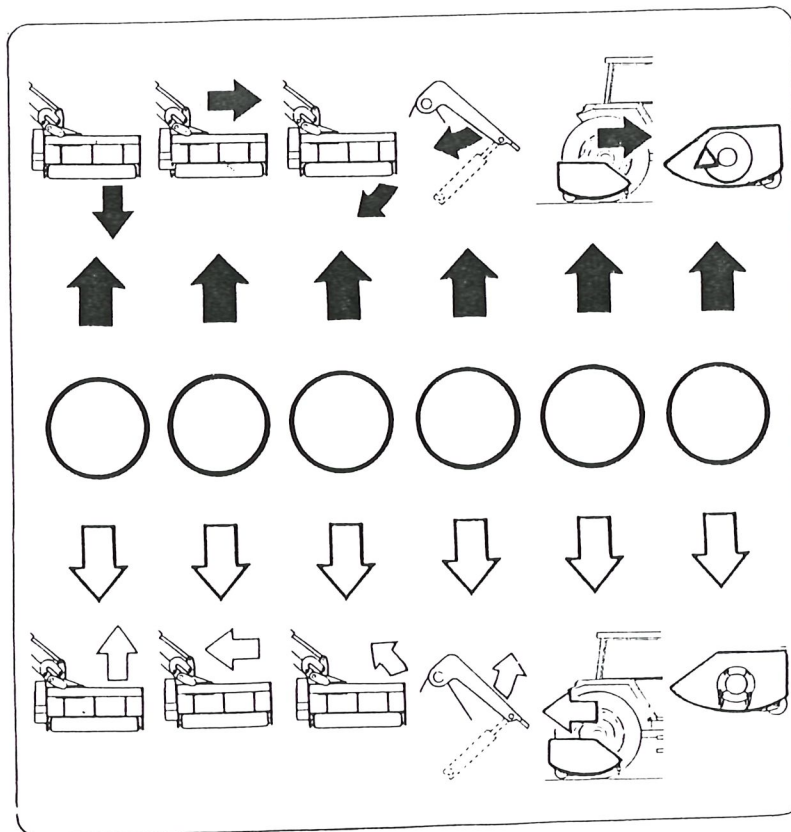
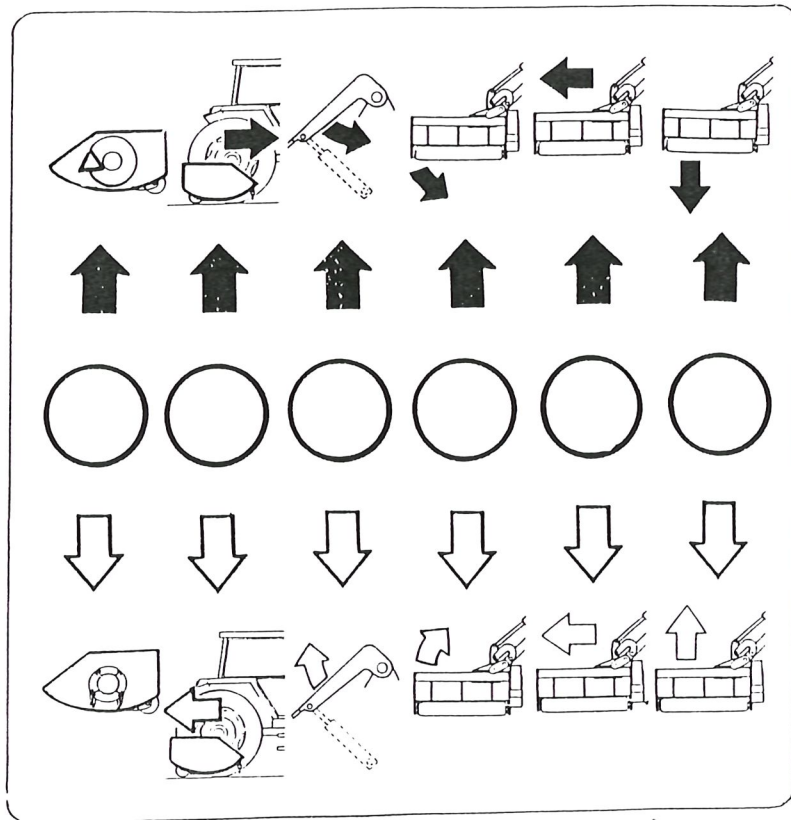
8

**Parts list – Decals**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	8770344	Right-hand control panel decal
2	8770343	Left-hand control panel decal
3	8770305	Recommended p.t.o. decal
4	8770322	Grease point decal
5	8770342	Sling decal decal
6	8770340	Read book decal
7	8770304	Danger decal
8	8770341	Belt tension decal

Decals may vary from parts lists due to constant changes in EC regulations.  
Please contact Spearhead Machinery if in doubt.

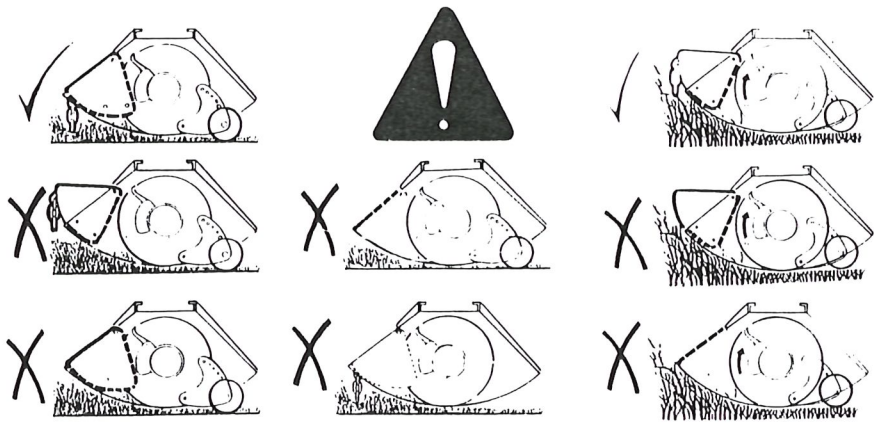
SPEARHEAD TWIGA-5 PARTS LIST



**Parts list – lever control decal**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	8770351	Left-hand control panel decal
2	8770352	Right-hand control panel decal

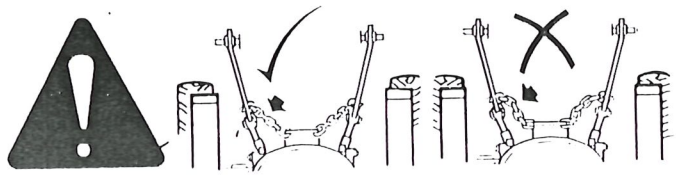
Decals may vary from parts lists due to constant changes in EC regulations.  
Please contact Spearhead Machinery if in doubt.



1



2



3

**KEEP BOLTS TIGHT**  
 Check bolt tightness after  
 1 hour, 4 hours, 10 hours and  
 thereafter daily.

4

**Spearhead  
 IMPORTANT**

**BEFORE USE.** Carefully study the Operators and Parts Manual. Check oil level and guards in position and that no cutters are damaged or missing. Check bolt tightness after 1 hour, 4 hours thereafter daily.

**OPERATION.** Always engage and disengage P.T.O. with engine at low revs. Do not exceed recommended P.T.O. speed. Only engage P.T.O. with the machine raised off the ground.

**SAFETY.** Never operate with guards missing. Do not allow people to stand or walk behind machine while in operation. Never attempt maintenance or adjustment without first disengaging the P.T.O. and stopping the engine. Be sure rotor has stopped spinning.

5

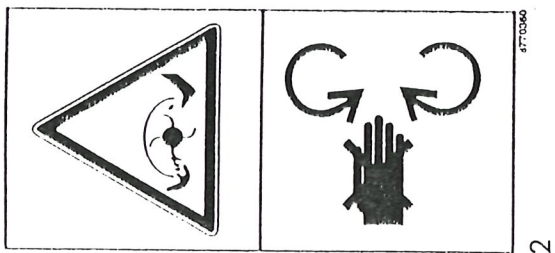
**540**

6

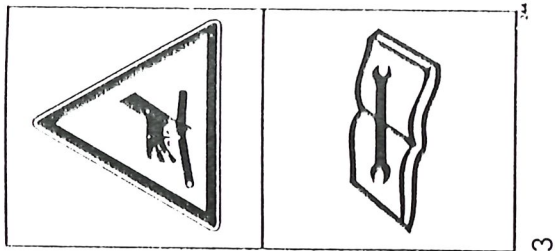
**Parts list – Decals**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	8770345	Head guarding decal
2	8770307	Manufactured in Great Britain decal
3	8770346	Check-chains decal
4	8770306	Keep bolts tight decal
5	8770308	Spearhead Important decal
6	8770347	540 rpm.Safety decal

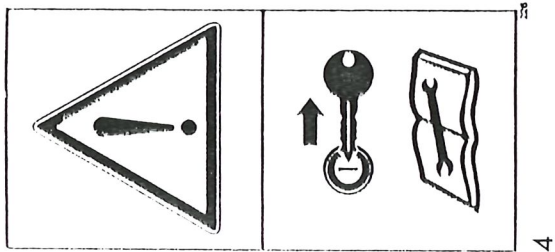
Decals may vary from parts lists due to constant changes in EC regulations.  
Please contact Spearhead Machinery if in doubt.



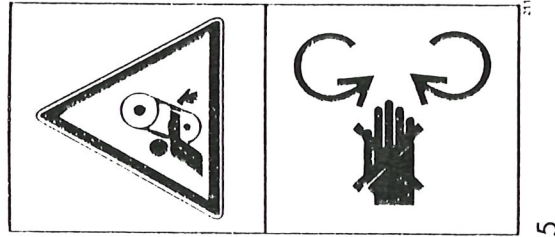
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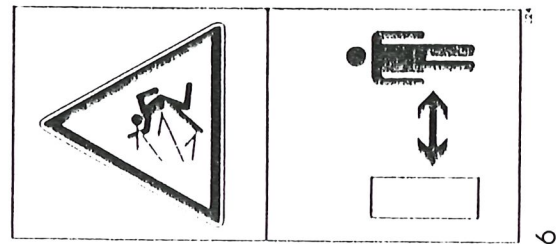
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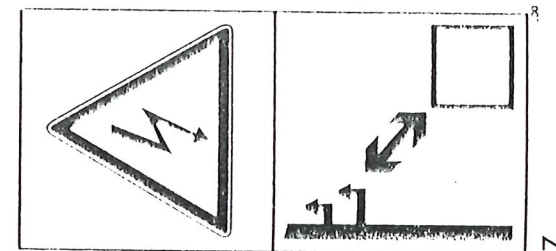
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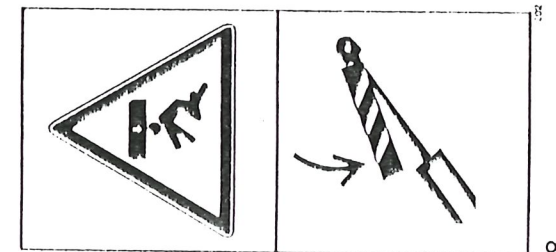
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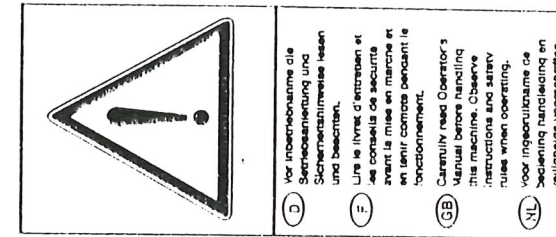
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9

(D) Vor Inbetriebnahme die Betriebsanleitung und Sicherheitsanweisungen lesen und beachten.  
 (F) Lire le livret d'instructions et les conseils de sécurité avant la mise en marche et en tant qu'opérateur pendant le fonctionnement.  
 (GB) Carefully read Operator's Manual before handling this machine. Observe instructions and safety rules when operating.  
 (NL) Voor ingebruikname de bediening handleiding en veiligheidsvoorschriften lezen en in acht nemen.

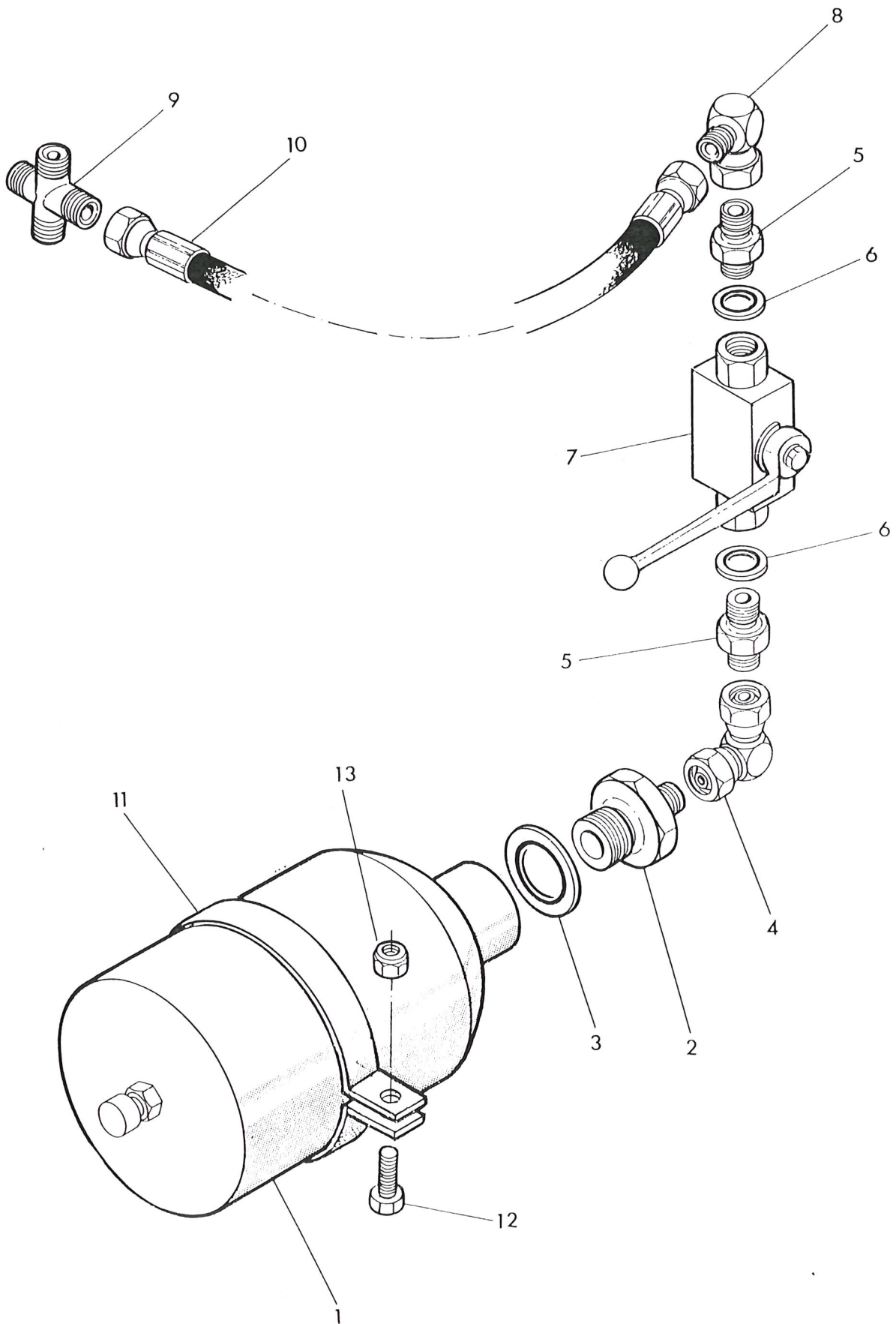


**Parts list – warning decals**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	8770322	Grease point
2	8770360	Stay clear of mower flails
3	8770362	Beware of escaping fluid
4	8770358	Shut off engine, remove key
5	8770356	Do not remove/open (guards)
6	8770357	Keep safe distance (when machine is running)
7	8770359	Beware of overhead electrical powerlines
8	8770355	Secure lifting hydraulic cylinder
9	8770363	Read operator's manual

Decals may vary from parts lists due to constant changes in EC regulations.  
Please contact spearhead Machinery if in doubt.

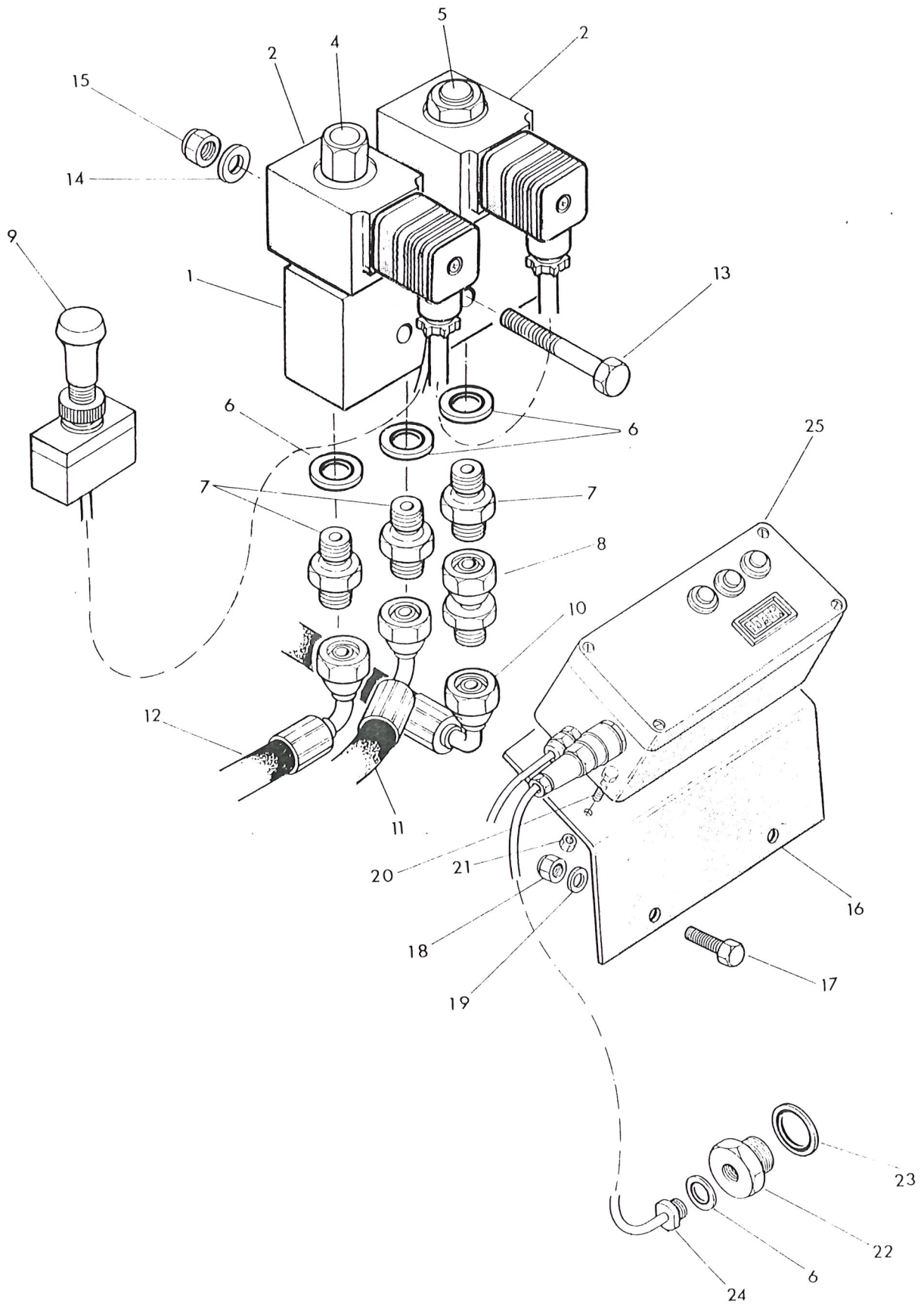
SPEARHEAD TWIGA-5 PARTS LIST



## Parts list - Head float

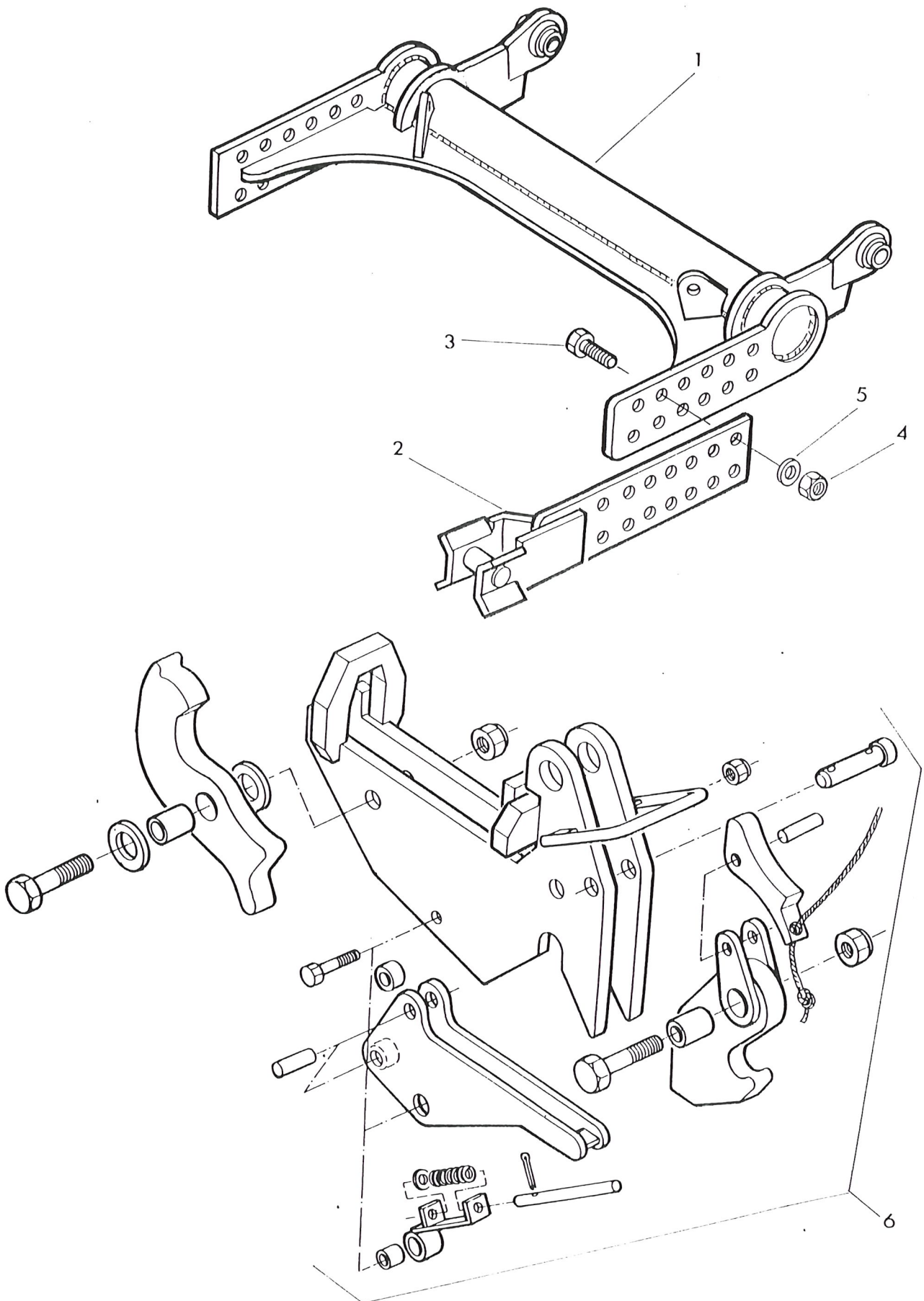
Fig. Ref	Part number	Item description
1	3900070	Accumulator (standard)
	3900071	Accumulator (optional HD)
2	3360085	Adaptor
3	3260073	Bonded seal
4	3360082	Elbow
5	3360080	Adaptor
6	3260070	Bonded seal
7	3600120	Ball valve
8	3460112	Elbow
9	3460102	Cross
10	3760190	Hose assembly
11	1777132A	Accumulator clamp bracket
12	2770421	Bolt
13	2770412	Nylock nut

SPEARHEAD TWIGA-5 PARTS LIST



## Parts list - Angle float

Fig. Ref	Part number	Item description
1	3600132	Angle float valve assembly
2	3610030	Solenoid
3		
4	3610032	Double poppet valve
5	3610034	Single poppet valve
6	3260070	Bonded seal
7	3360080	Adaptor
8	3360081	Adaptor
9	8400100	Switch
10	3760092	Hose assembly
11	3760115	Hose assembly
12	3760207	Hose assembly
13	2770485	Bolt
14	2771408	Flat washer
15	2770373	Nylock nut
16	1777040	Mounting bracket
17	2770402	Bolt
18	2770416	Nylock nut
19	2770432	Flat washer
20	2770250	Screw
21	2770251	Nylock nut
22	3460118	Adaptor
23	3260073	Bonded seal
24	3900002	Transducer inc. cable
25	3900000	System guard display assembly



**Parts list – Axle mount**

<b>Fig. Ref</b>	<b>Part number</b>	<b>Item description</b>
1	1777030	Axle mount subframe
2	1777032	Axle mount arm
3	2770550	Bolt
4	2770409	Nylock nut
5	2770517	Flat washer
6	OPTO200	Category 2 hitch assembly





# Servicing log

Date	Details

Date	Details

Date	Details

Date	Details

Date	Details

Date	Details

Date	Details

Date	Details



# Spearhead

**EC declaration of conformity,  
conforming to EEC directive  
89/392/EEC**

We, Spearhead Machinery Ltd, Pershore Trading Estate,  
Persnore, Worcestershire WR10 2DD declare under our  
sole responsibility that the

product \_\_\_\_\_  
product code \_\_\_\_\_  
serial no.& date \_\_\_\_\_  
type \_\_\_\_\_

Manufactured by the above company complies with the  
required provisions of the directive 89/392/EEC, and  
AMD 91/368/EEC, AMD 93/44/EEC, AMD 93/68/EEC  
and conforms with European norm. BSEN 292; Part 1:  
1991 safety of machinery – Terminology, methodology;  
Part 2; 1991 Safety of machinery – Technical  
specifications and other national standards associated  
with its design and constructions as listed in the  
Technical File.

Signed \_\_\_\_\_  
on behalf of Spearhead Machinery Ltd

Status \_\_\_\_\_

Date \_\_\_\_\_





