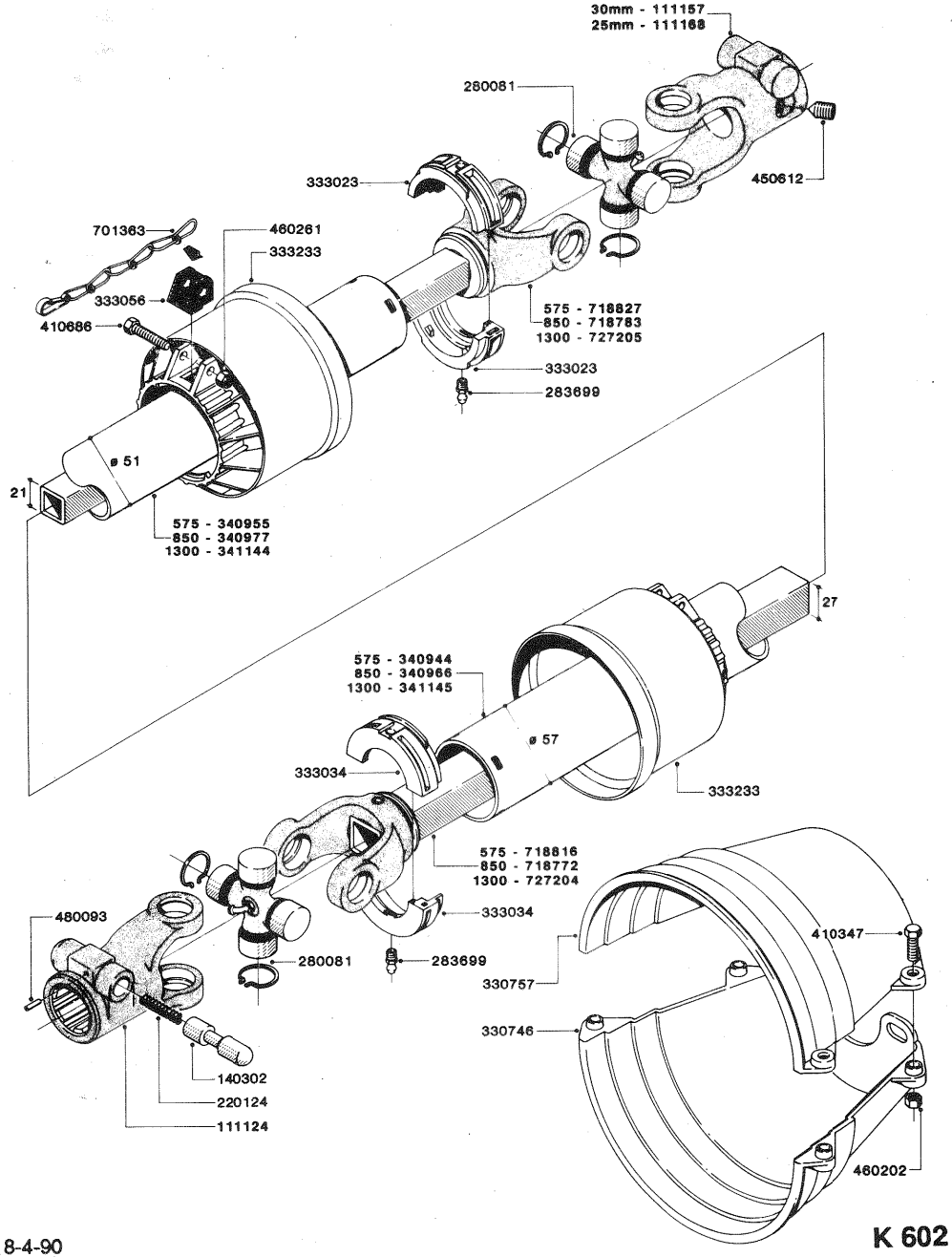


K 602

18-4-90

Contents

LY

Instruction book

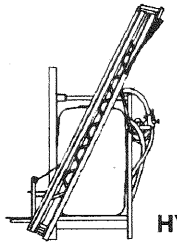
674985-GB-93/10

We congratulate you for choosing a HARDI plant protection product. The reliability and efficiency of this product depend on your care. The first step is to carefully **read and pay attention** to this instruction book. It contains essential information for the efficient use and long life of this quality product.

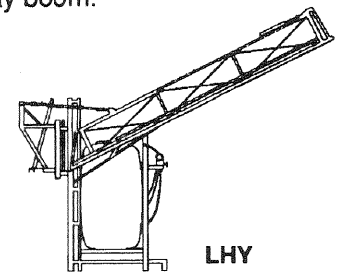
As the instruction book covers all LY models, please pay attention to the paragraphs dealing with precisely your model. This book is to be read in conjunction with the Spray Technique book.

Description

HARDI LY models consist of a pump, frame with tank of 600, 800, 1000 or 1200 l capacity, **BK** or **EC** operating unit, self-cleaning filter and transmission shaft. The **HYB** models are equipped with a 12 or 15 m hydraulic spray boom. The **LHY** models are equipped with a 12, 15, 16, 18, 20 or 21 m hydraulic spray boom.



HYB



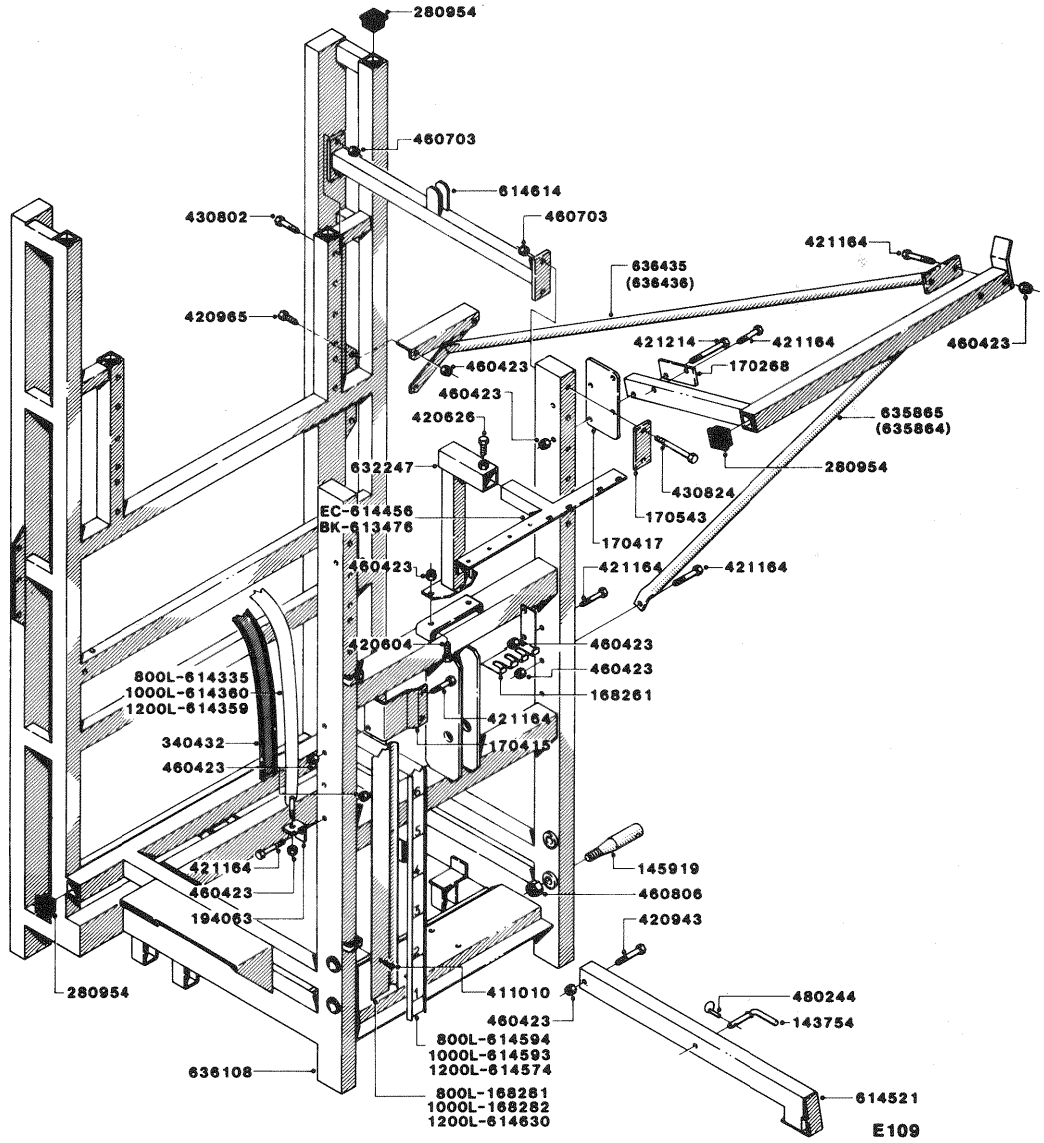
LHY

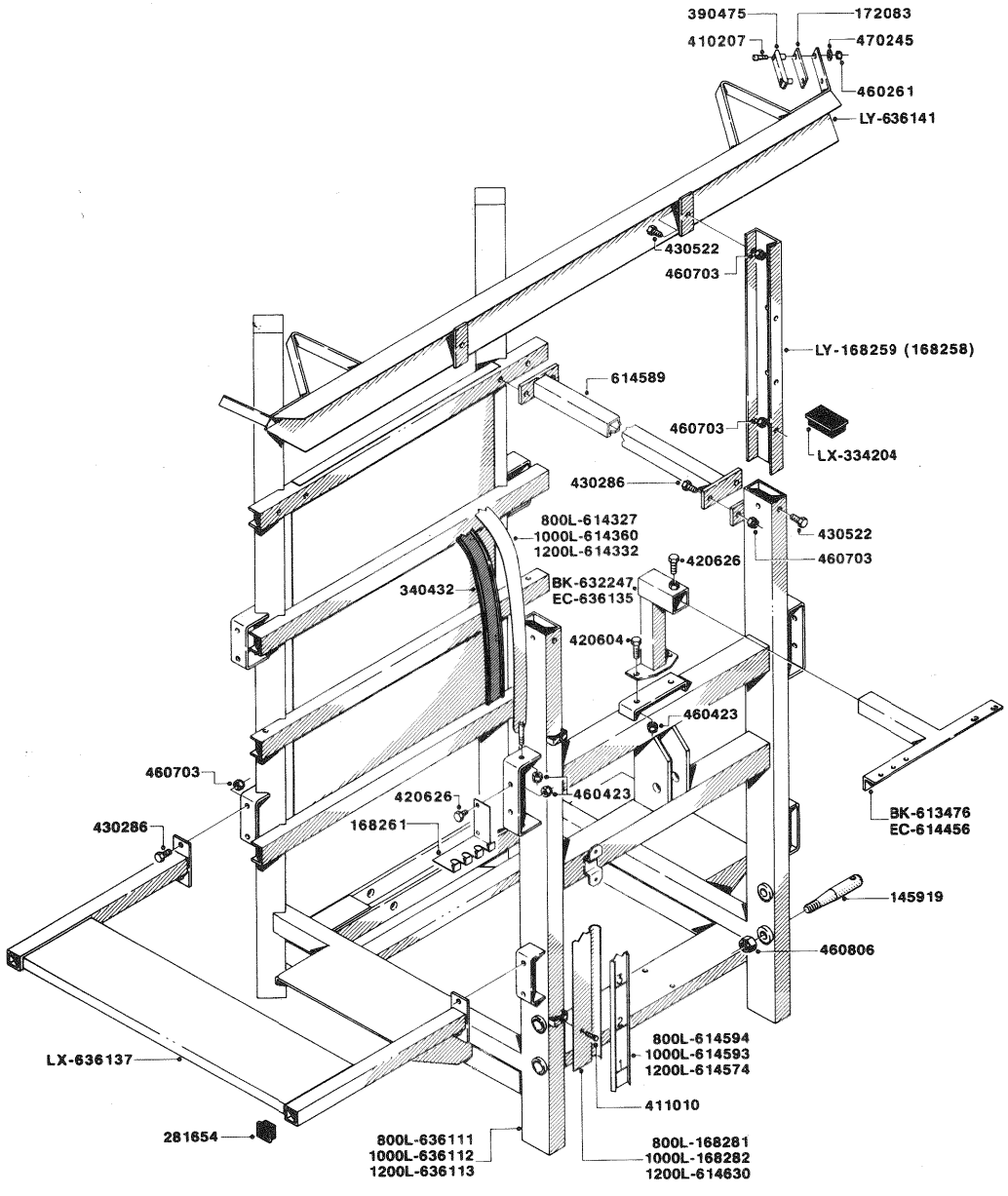
The design of the diaphragm pump is simple, with easily accessible diaphragms and valves that ensures liquid does not contact the vital parts of the pump.

The tank, made of impact-proof and chemical resistant polyethylene, has a purposeful design with no sharp corners, for easy cleaning.

The **BK** 180 K operating unit consists of; pressure agitator, safety valve, on/off valve, pressure filter with pressure gauge, distribution valves with pressure equalization and HARDI-MATIC.

The **EC** (electric control) operating unit consists of: on/off valve, pressure regulating valve with built-in HARDI-MATIC, pressure gauge, distribution valves with pressure equalization.





E107 6-1-92 LX/LY 800/1000/1200 (87)

HARDI-MATIC ensures a constant volume per hectare of the liquid at varying speed in the same gear. The number of revolutions on the P.T.O. must be kept between 300-600 r/min.

With the self-cleaning filter the impurities that exist in the spray liquid will by-pass the filter and be recirculated back to the tank via the return flow.

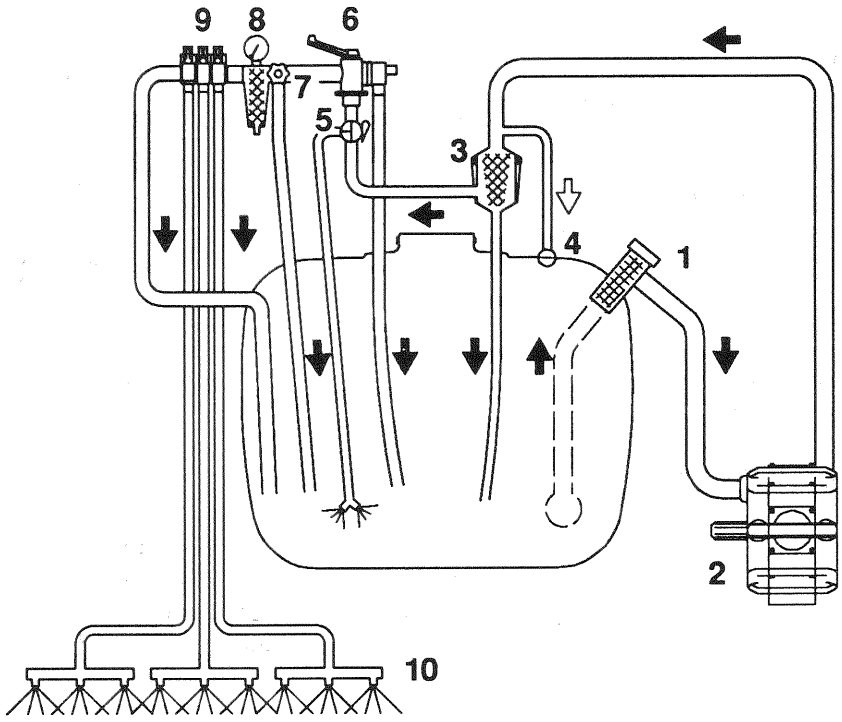
The **HYB** spray boom is equipped with 3 hydraulic rams. The **LHY** spray boom is equipped with 5 hydraulic rams. The folding/unfolding and elevating/lowering function is very easy, as all the functions of the boom are hydraulically operated. The frame and boom are connected by a trapeze suspension which reduces the swing of the boom when driving on uneven ground. Furthermore there is a foot board or a ladder in the centre part of the boom. This ensures an easy access for the filling of sprays, cleaning of the tank, etc.

Identification plates

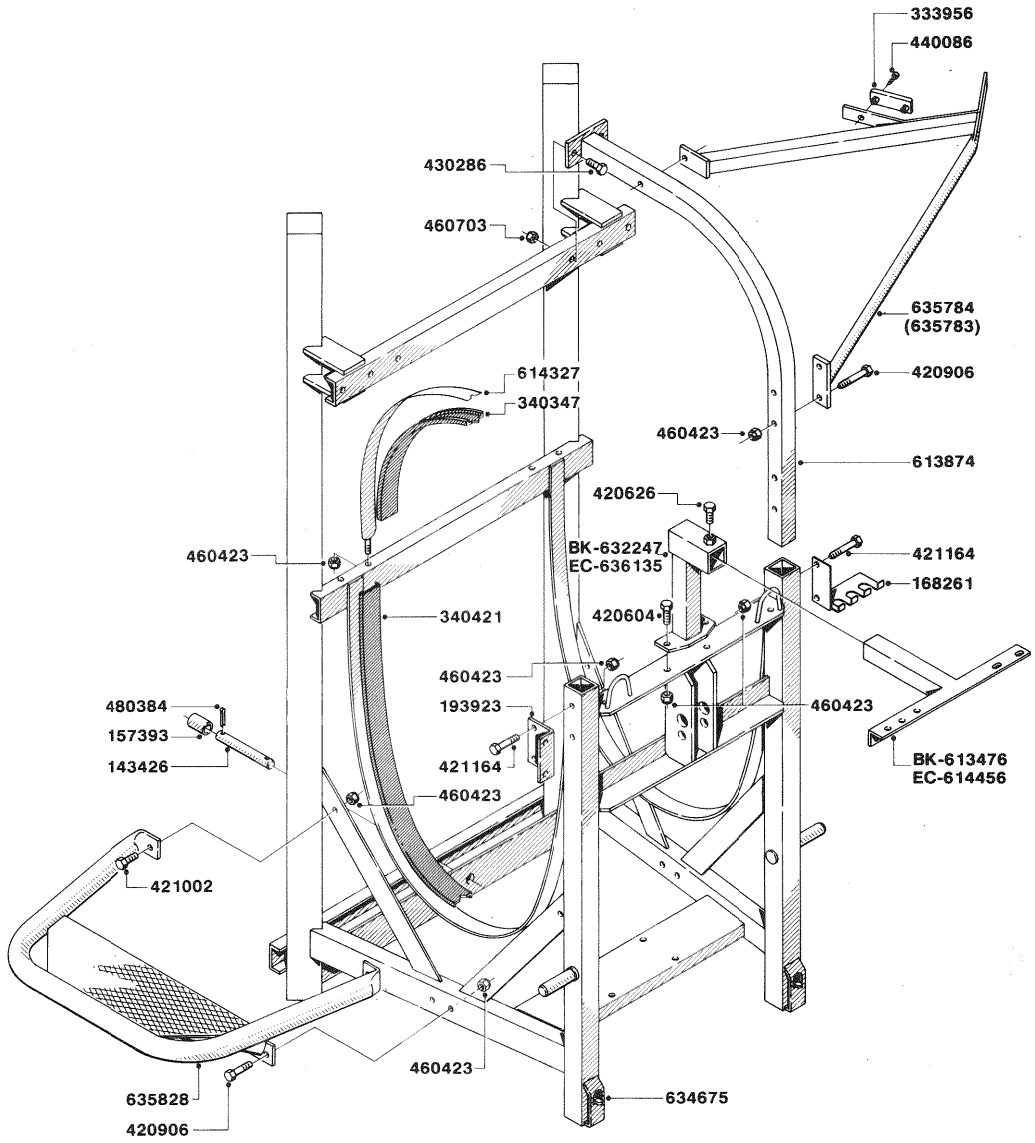
An identification plate fitted on the frame is to indicate model, year of production, serial number and country of origin. Boom centre frame, and inner/outer sections also have identification plates indicating boom type and part no. of steel parts. If ordering spare parts, inform your dealer of these to ensure correct model and version is described.

BK

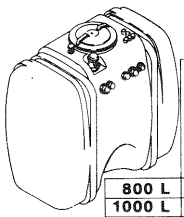
Operation diagram BK



1. Suction filter
2. Pump
3. Self-cleaning filter
4. Safety valve
5. Pressure agitator
6. On/off with safety valve
7. HARDI-MATIC
8. Pressure filter with pressure gauge
9. Distribution valve with pressure equalization
10. Sprayer boom



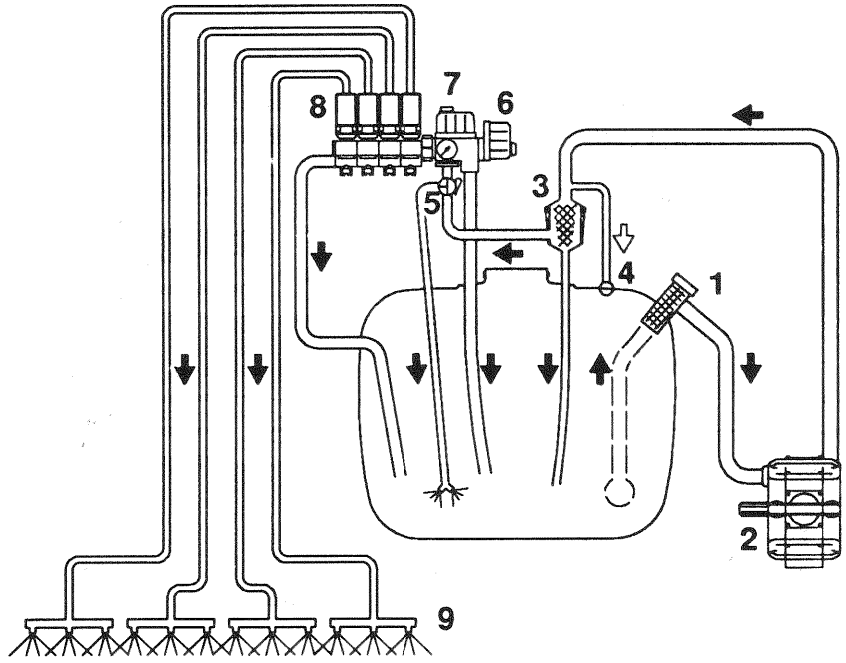
LX/LY 600 1-8-87 E10



	FØR, BEFORE, AVANT, VOR, ANTES 1.8.88	EFTER, AFTER, APRES, NACH, DESPUES 1.8.88
800 L	725987	725920
1000 L	725984	725921
1200 L	725605	725922

E 11 3-10-88

Operation diagram EC

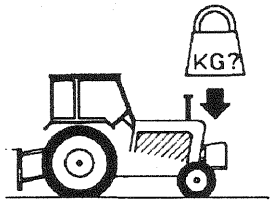


1. Suction filter
2. Pump
3. Self-cleaning filter
4. Safety valve
5. Pressure agitator
6. Pressure regulating valve with HARDI-MATIC
7. On/off valve with pressure gauge
8. Distribution valve with pressure equalization
9. Sprayer boom

EC

Connecting the sprayer

The sprayer is designed for three point suspension and is equipped with 28 mm pivots (category II). 22 mm (catagory I) pivots are fitted on the LY 600.

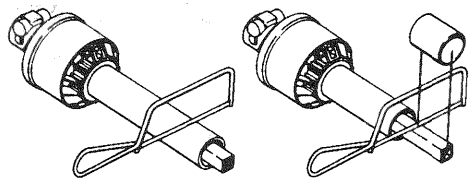


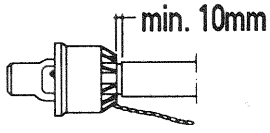
WARNING: Note the weight of the sprayer.
Generally it is recommended to:

1. Add ballast to front of tractor
2. Increase tyre pressure (see tractor instruction book)
3. Travel at slower speeds when driving with a full tank. (The tractor braking effect will be reduced)
4. Be careful when filling / lifting the sprayer for the first time.

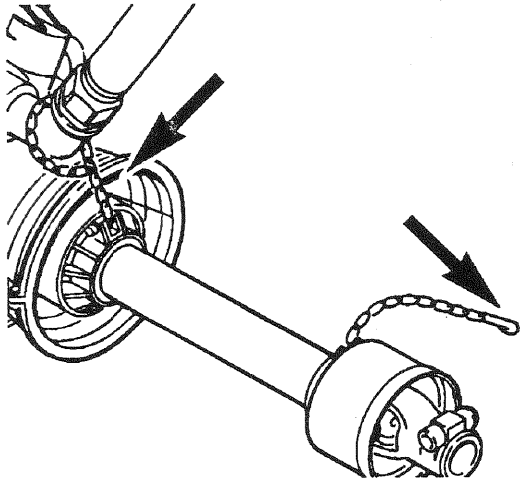
Transmission shaft

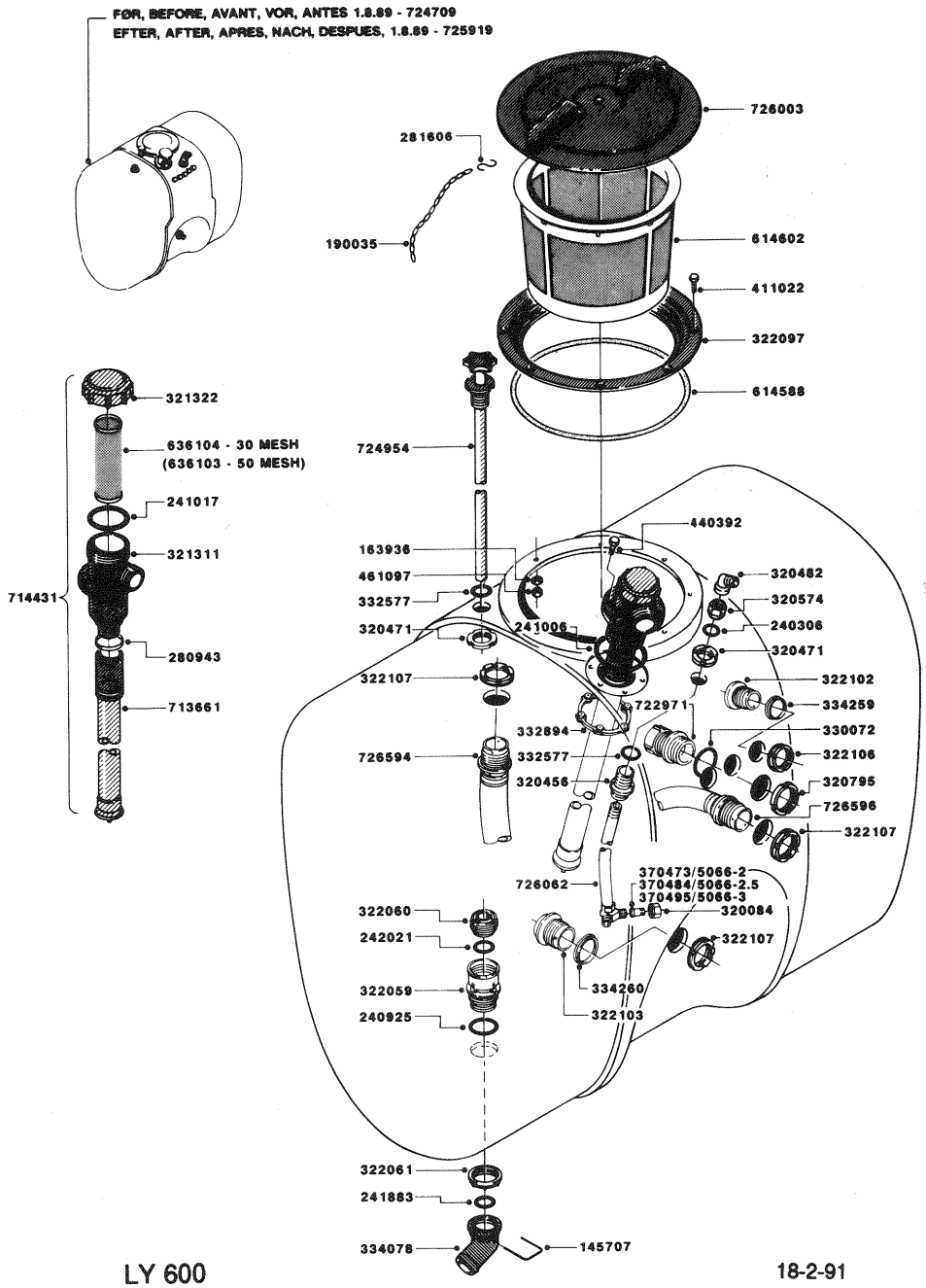
When connecting the sprayer to the tractor the length of the transmission shaft should be checked and if necessary shortened. There should be at least **10mm** free play between the male and female parts.



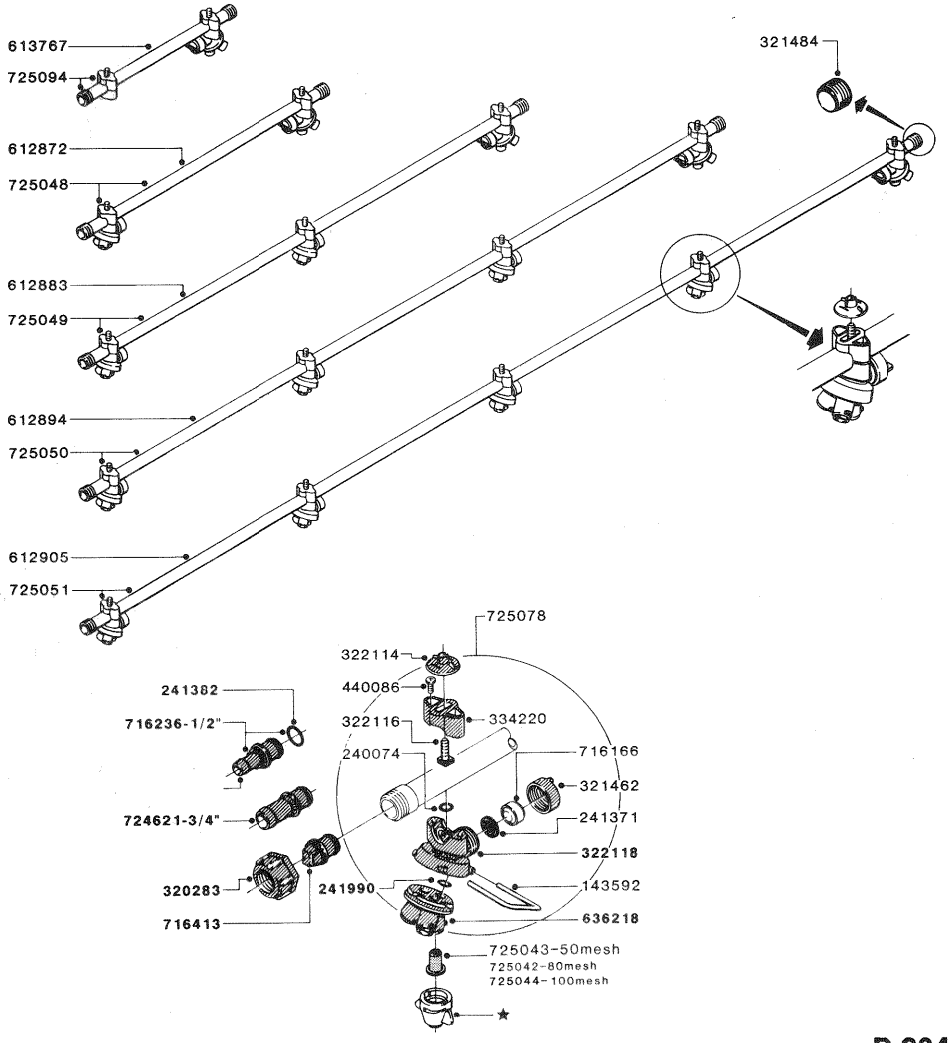


It is important for the personal safety of the operator that the transmission shaft is intact. The protection guards must cover the whole shaft. This includes the universal cross covers at each end of the shaft. The chains are connected so that the protection guards do not rotate with the shaft.





LY 600 18-2-91 **E8**

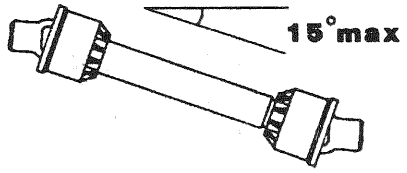


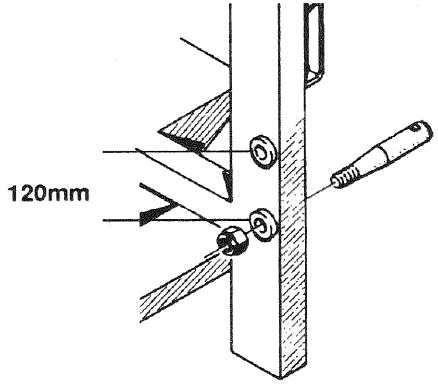
2-9-92

D 904

★		FARVE	COLOUR	COULEUR	FARBE	COLOR
371469	S4110-08	VIOLET	VIOLET	VIOLET	VIOLETT	VIOLETA
371470	S4110-10	BRUN	BROWN	BRUN	BRAUN	MARRON
371471	S4110-12	GUL	YELLOW	JAUNE	GELB	AMARILLO
371472	S4110-14	ORANGE	ORANGE	ORANGE	ORANGE	ANARANJADO
371473	S4110-16	RØD	RED	ROUGE	ROT	ROJO
371474	S4110-18	HVID	WHITE	BLANC	WEISS	BLANCO
371475	S4110-20	GRØN	GREEN	VERT	GRÜN	VERDE
371476	S4110-24	TURKIS	TURQUOISE BLUE	BLEU TURQUOISE	TÜRKIS	AZUL TURQUI
371477	S4110-30	BLÅ	BLUE	BLEU	BLAU	AZUL
371478	S4110-36	GRÅ	GREY	GRIS	GRAU	GRIS
371479	S4110-44	ELFENBEN	IVORY	IVOIRE	ELFENBEIN	MARFIL

To ensure long life of the transmission shaft, try to avoid working angles greater than 15°.





On the models 800, 1000 and 1200 l the pivots can be lowered 120 mm.

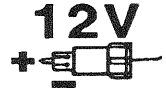
Hydraulics

Hydraulic connections need one single outlet for the lift function of the spray boom and one double outlet for the folding function. Note that the hydraulic system requires an oil capacity of approx. 3 litres and a min. pressure of 130 bar.

Control box for EC-operating unit

The control box for EC-operating unit is fitted at a convinient place in the tractor cabin. The control box has 4 screw holes in the back cover. Mount it on a flat surface.

Power requirement is 12 V DC. Note polarity.
Brown pos.(+), Blue neg.(-).



Use the HARDI Electric distrubution box (No. 817925) if the tractor has a doubtful power supply.

Rear lights (if fitted)

Connect plug for rear lights to the tractors 7-poled socket and check that rear lights, stop lights and turning indicators work properly before driving anywhere.

Roadworthyness

When driving on public roads and other areas where the highway code applies, or areas where there are special rules and regulations for marking and lights on implements, you should observe these and equip implements accordingly.

Operating instructions

Operating of the boom

BEFORE UNFOLDING THE BOOM IT IS IMPORTANT TO CONNECT THE TRACTOR TO PREVENT OVERBALANCING THE SPRAYER, AND LIFT THE BOOM OFF THE BRACKETS WHICH HOLD IT IN THE TRANSPORT POSITION.

WARNING

TESTING OF THE HYDRAULIC SYSTEM SHOULD BE DONE INITAL CAUTIOUSLY; THERE MAY BE AIR IN THE SYSTEM AND THIS MAY CAUSE VIOLENT MOVEMENTS OF THE BOOM.

THE BOOM IS MANOEUVERED USING THE CONTROL LEVER OF THE TRACTOR. UNFOLD AND FOLD ONLY WHEN THE TRACTOR IS NOT MOVING.

Operating of the trapeze

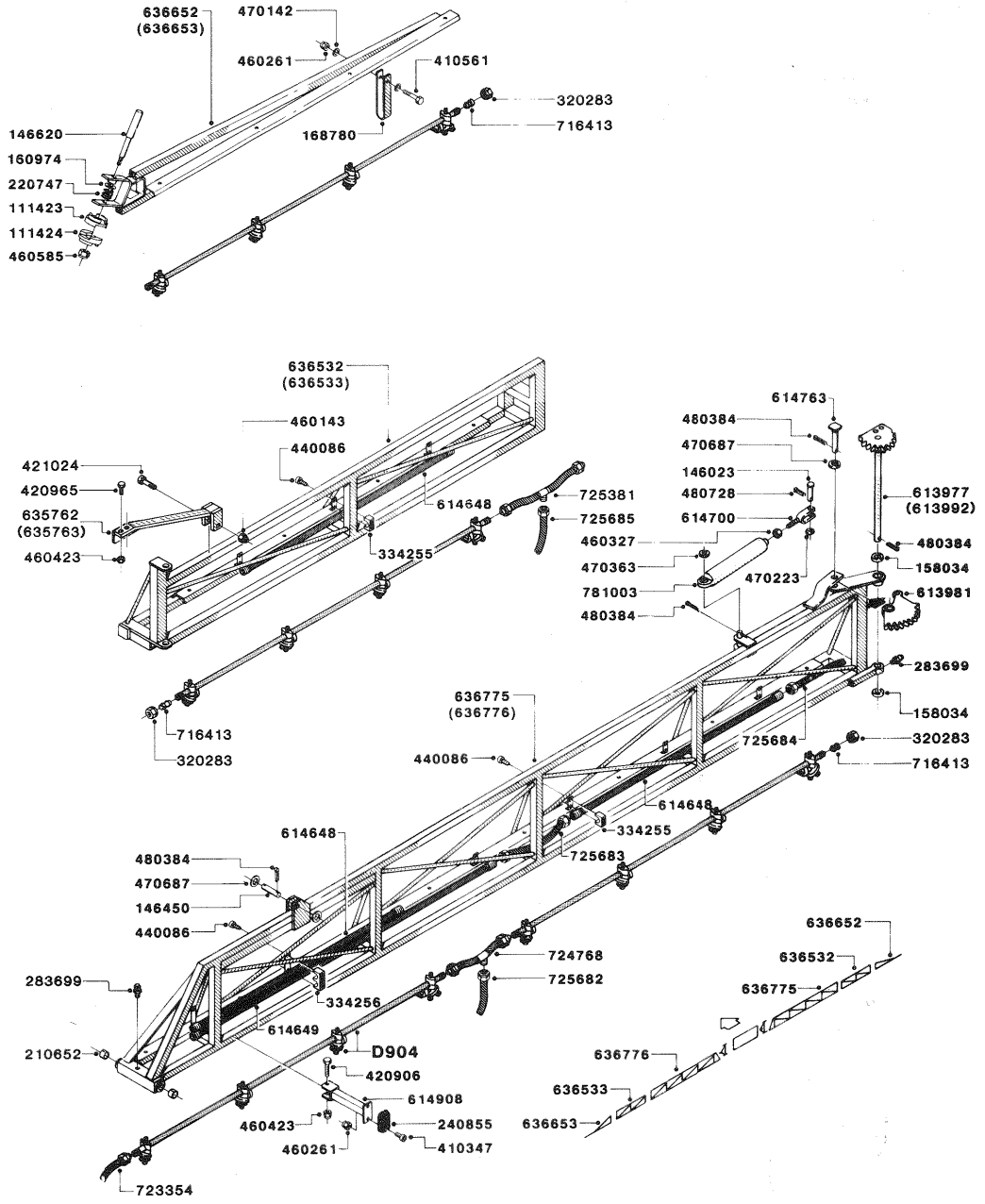
The trapeze suspension of the boom has to be correctly adjusted and regularly lubricated, if it is going to operate satisfactorily.

The primary function of the suspension is to protect the boom against vibrations and shocks and to keep it in a uniform height above the target.

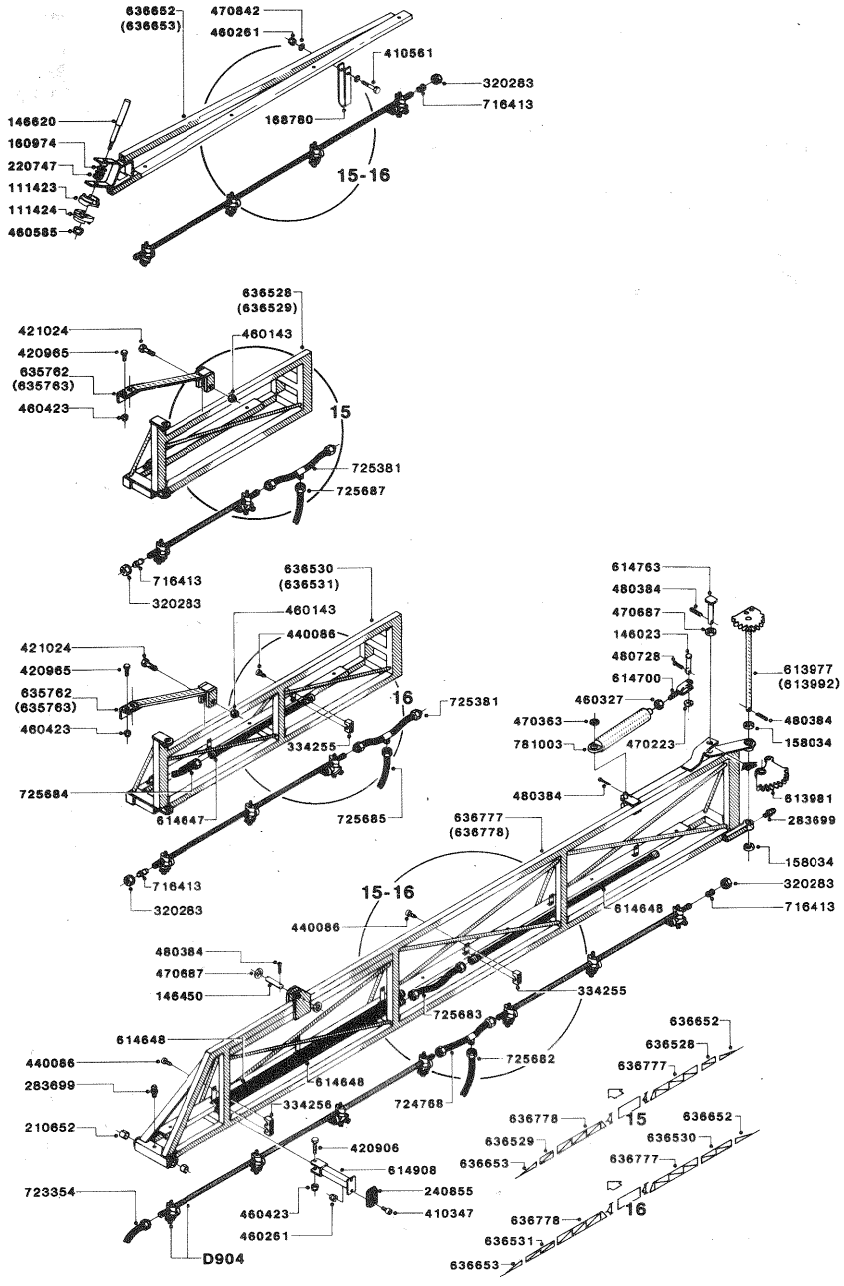
HYB

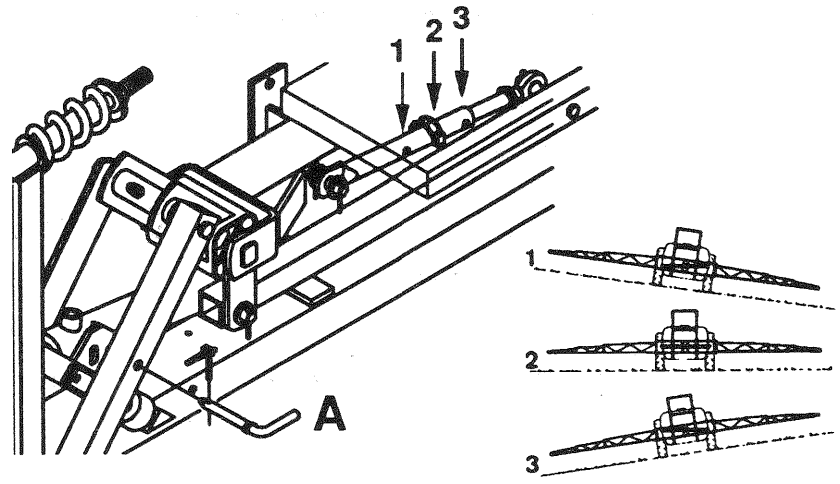
Trapeze on HYB

During normal operation in the field the lock pin **A** is removed.
When driving on slopes the boom can be slanted in order to keep the trapeze effect. At delivery the boom is locked in pos. **2** which is used when driving on horizontal grounds. Hydraulic slanting equipment can be supplied as optional extra.



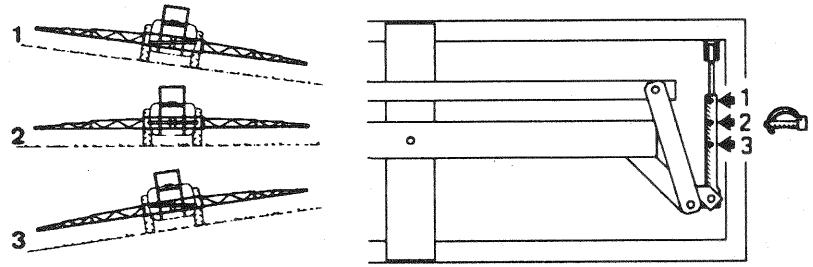
LHY/LHZ 18m 6-1-92 **D302**





Trapeze on LHY

The function of the trapeze depends on the tension of the friction blocks. See section on Re-adjustment of the boom.



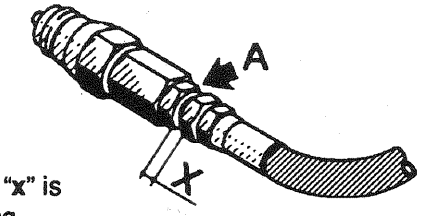
When driving on slopes the boom can be slanted in order to keep the trapeze effect. At delivery the boom is locked in pos. 2 which is used when driving on horizontal grounds. Hydraulic slanting equipment can be supplied as optional extra.

HYB

LHY

Speed regulation of the hydraulic movements

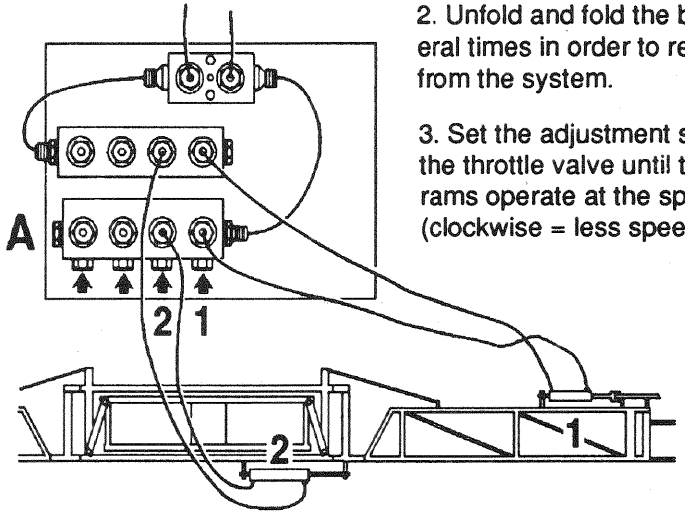
HYB boom



On the return hydraulic hose, there is a valve for regulation of the speed of the ram. It is important to adjust the valve so that the boom operates smoothly.
Nut **A** is loosened, and the distance "**x**" is adjusted by turning the snap coupling.

LHY boom

1. Adjust the screws (⬆) of the throttle valve **A**. They are screwed the whole way in clockwise, and then 1½ turn back. The system is now basically adjusted.



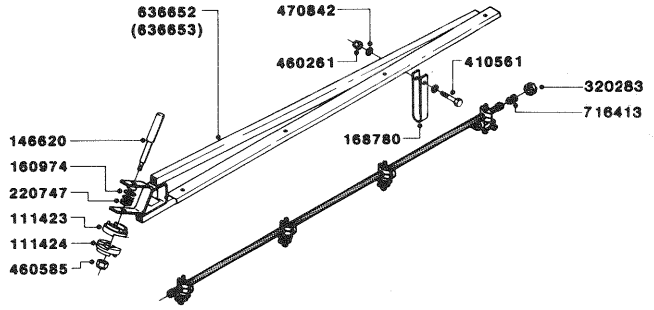
2. Unfold and fold the boom several times in order to remove air from the system.

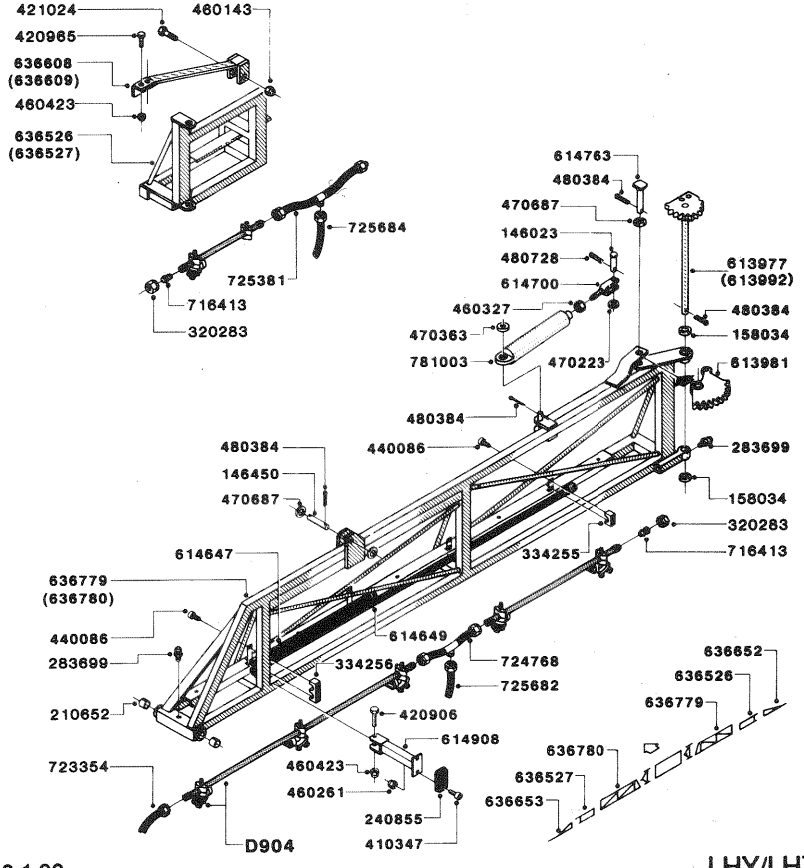
3. Set the adjustment screws on the throttle valve until the individual rams operate at the speed wanted (clockwise = less speed).

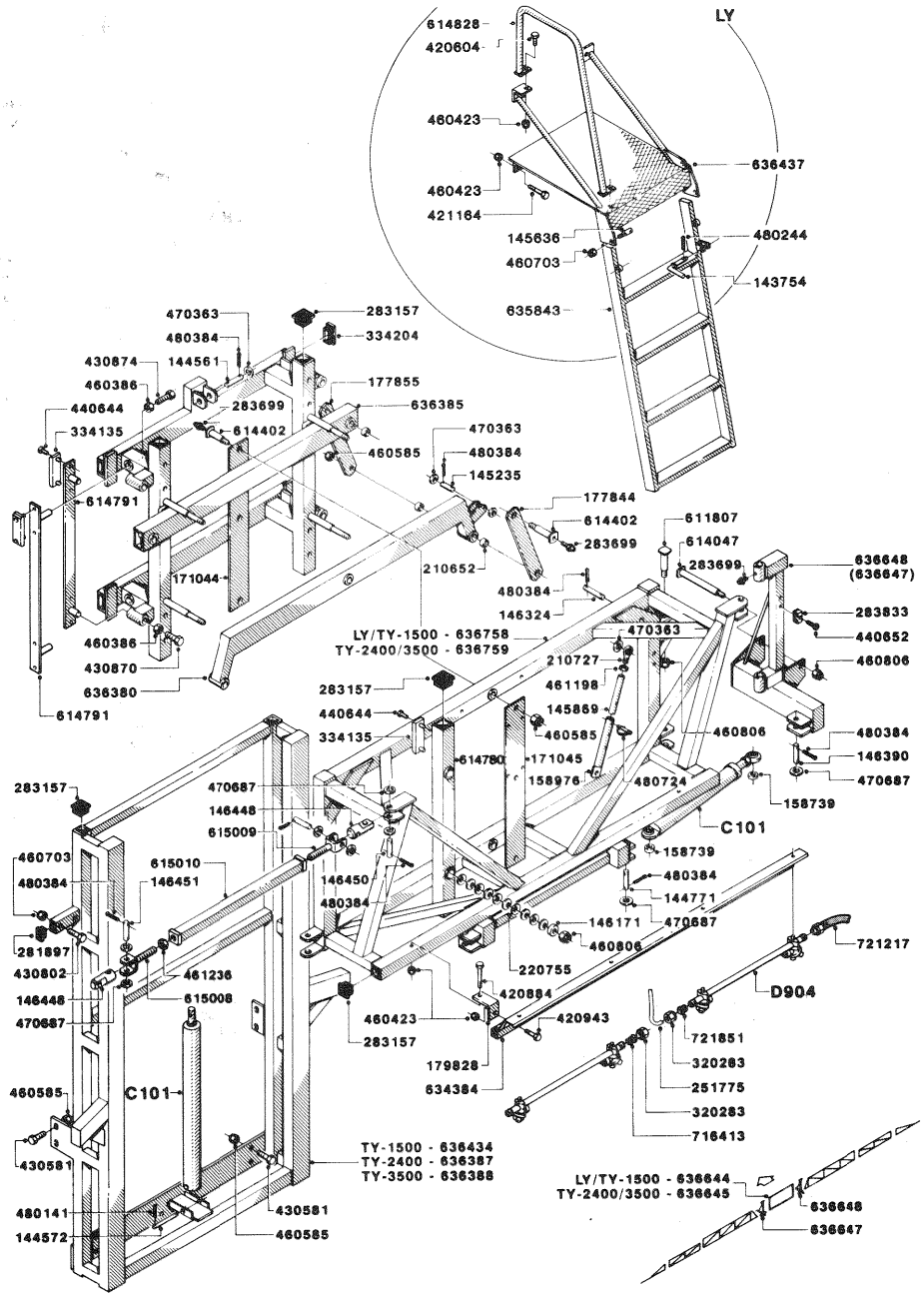
Self-cleaning filter

Operating diagram

1. From pump
2. To safety valve (operating pressure is 12 bar)
3. Double filter screen







LHY boom lift (91) 6-1-92 **D208**

4. Guide cone
5. To operating unit
6. Replaceable restrictor
7. Return to tank
8. Nut

Choice of restrictor

It is important to have a large flow through the filter. This is achieved by choosing the restrictor size in relation to the liquid consumption of the spray boom.

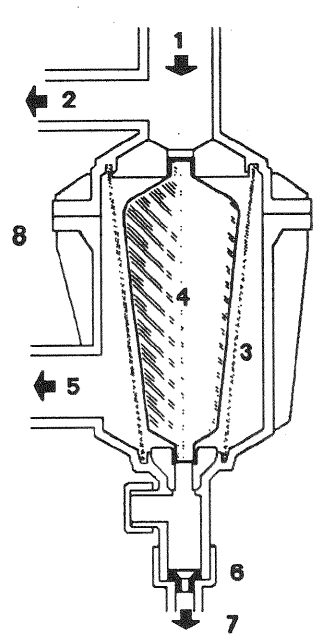
4 restrictors are supplied. Use the green one (largest orifice first).

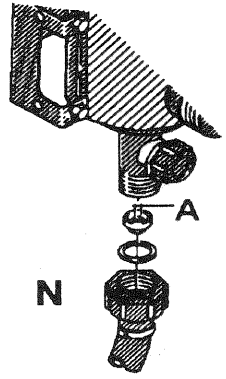
The hose **N** is demounted at the self-cleaning filter, the restrictor is put in the hose and the hose is mounted again.

If the required working pressure cannot be obtained, the restrictor is too large. Choose a smaller restrictor. Start with a black one, then a white and finally a red one.

When cleaning the filter remove hose **N** and the hose at the safety valve, and check there are no residues.

Standard filter size is 80 mesh. Sizes of 50 and 100 mesh are available and can be changed by opening the filter top. Check the O-rings before reassembling the filter and replace if damaged.





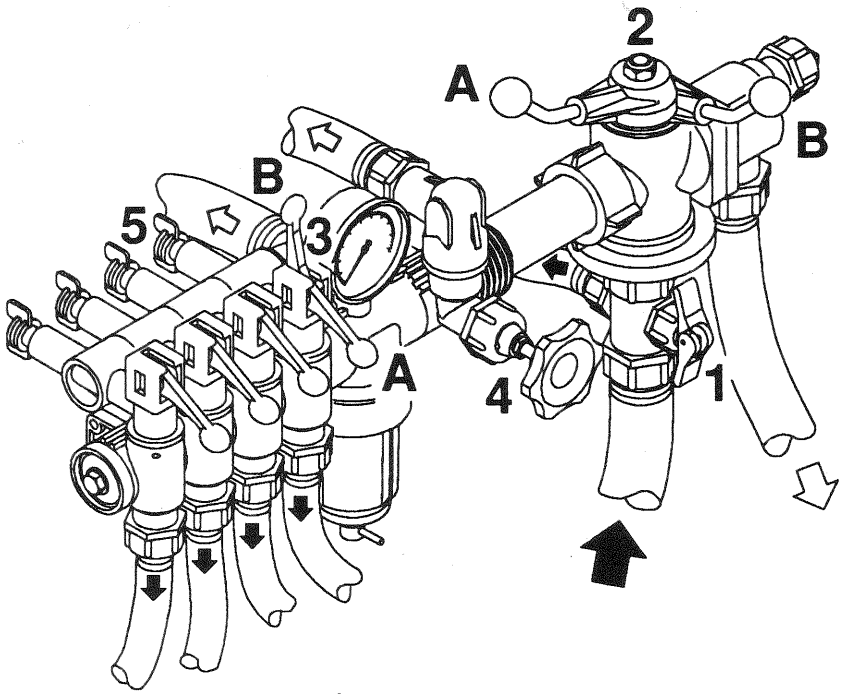
Pulsation Damper (if mounted)

The air pressure in the pulsation damper is preset at the factory to 2 bar, to cover spray working pressures between 3 and 15 bar. When using spray pressures outside this range, the air pressure should be adjusted as shown in the diagram.The diagram is also embossed on the damper.

bar	bar
1.5 - 3	0 - 1
3 - 15	1 - 3

BK

Adjustment of the BK controls



1. Open or close lever **1** depending on whether pressure agitation is required. (Remember pressure agitation takes 5% to10% of pump output).

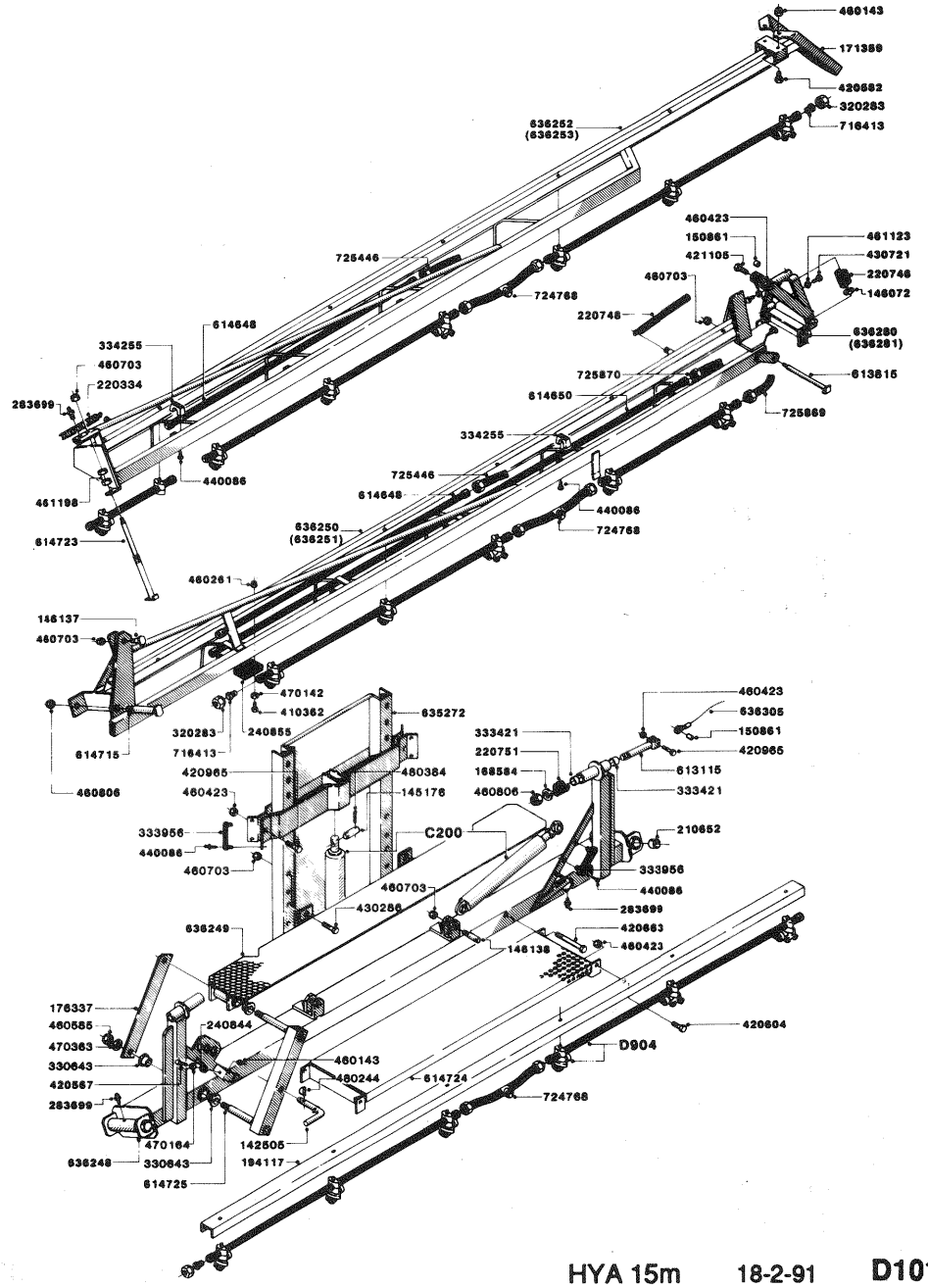
2. Turn on/off handle **2** to spraying position **A**.

3. Set all hand levers **3** on the distribution valve to spraying position **A**.

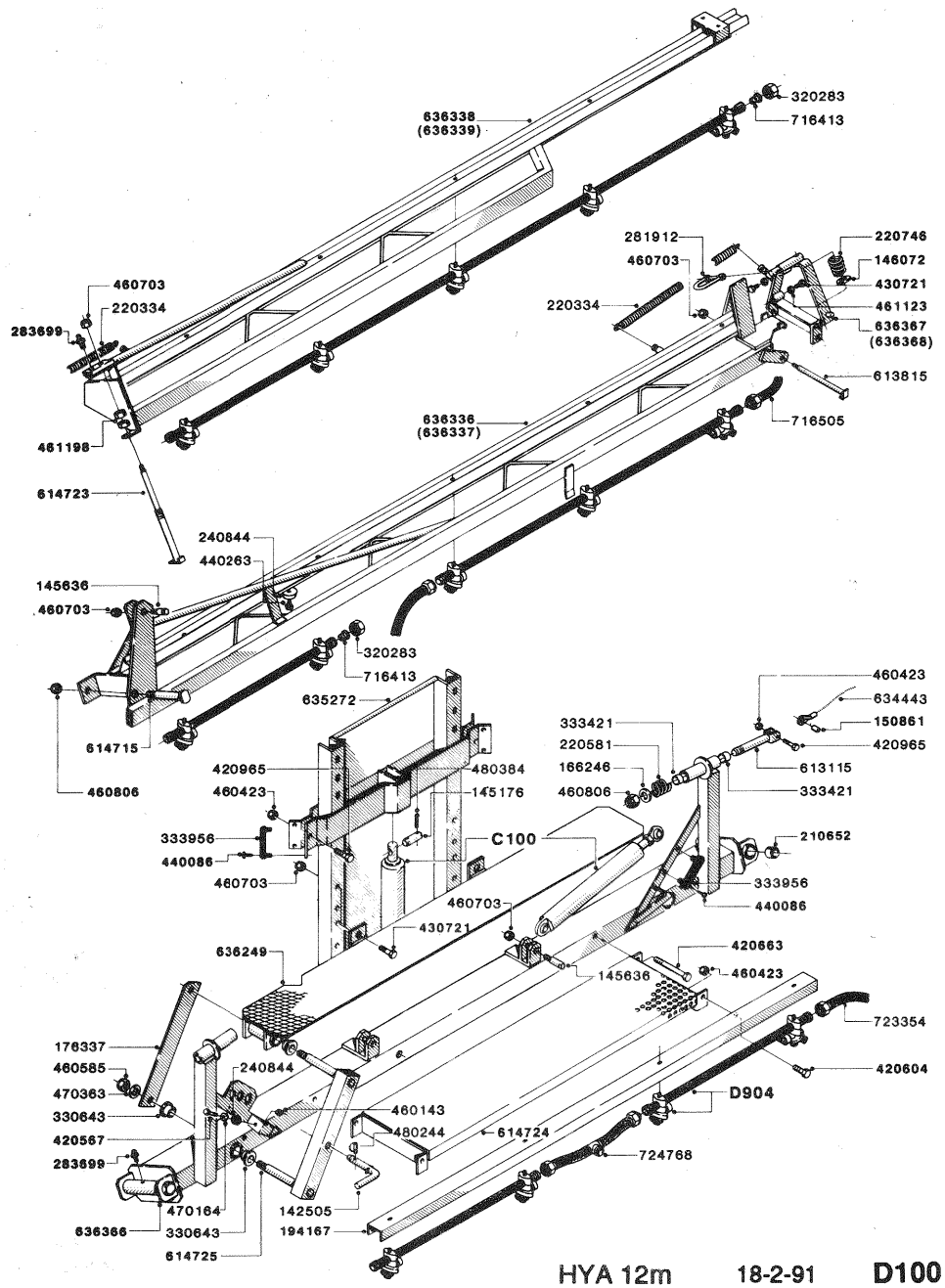
4. Turn the HARDI-MATIC valve **4** anti-clockwise to its extreme position.

5. Put the tractor in neutral and adjust the P.T.O. thereby the number of revolutions of the pump corresponding to the intended travelling speed. Remember the number of revolutions on the P.T.O. must be kept between 300-600 r/min.

Adjust the HARDI-MATIC valve **4** so that the pressure gauge indicates the recommended pressure.



HYA 15m 18-2-91 **D101**



HYA 12m 18-2-91 **D100**

ADJUST THE DISTRIBUTION PRESSURE EQUALIZATION IN SECTIONS AS FOLLOWS:

6. Place the first lever **3** on the distribution valve in position **B** (off position).

7. Turn the adjusting screw **5** until the pressure gauge again shows the same pressure.

8. Adjust the other sections of the distribution valve in the same way.

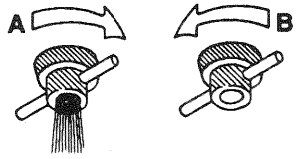
NB: HEREAFTER ADJUSTMENT OF PRESSURE EQUALIZATION WILL ONLY BE NEEDED IF YOU CHANGE TO NOZZLES WITH OTHER CAPACITIES.

9. Operating the control unit while driving:
In order to close the entire boom turn the on/off handle **2** to position **B**. This takes the pressure off the pump. The whole capacity of the pump will then return to the tank through the return system, and the diaphragm anti-drip valves ensure instantaneous closing of all nozzles. In order to close part of the boom, turn lever **3** of the distribution valve to position **B** (off position) for the part or parts to be closed. The pressure equalization ensures that the pressure does not rise in the sections which are to remain open.

Pressure filter drain valve

The operating unit has an in-built pressure filter. It is not necessary to dismantle the filter to clean it. When cleaning the sprayer (clean water circulating in the tank), open the drain valve to flush the filter;

To open: **A**
To close: **B**



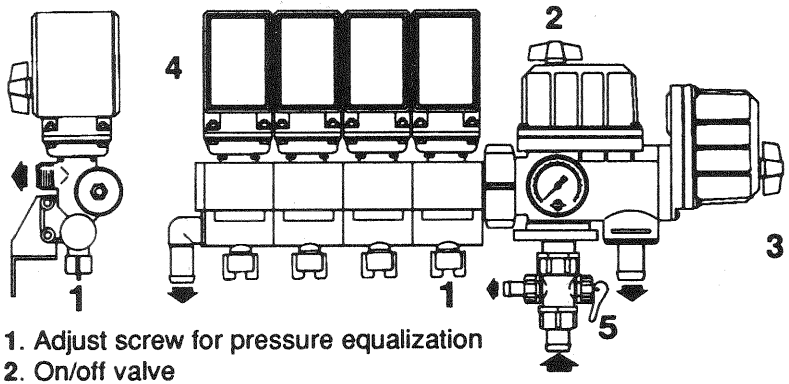
BK

BK

EC

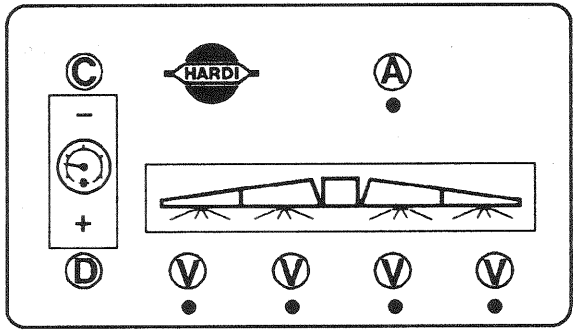
Adjustment of the EC controls

EC operating unit



1. Adjust screw for pressure equalization
2. On/off valve
3. Pressure regulating valve
4. Distribution valve
5. Pressure agitation valve

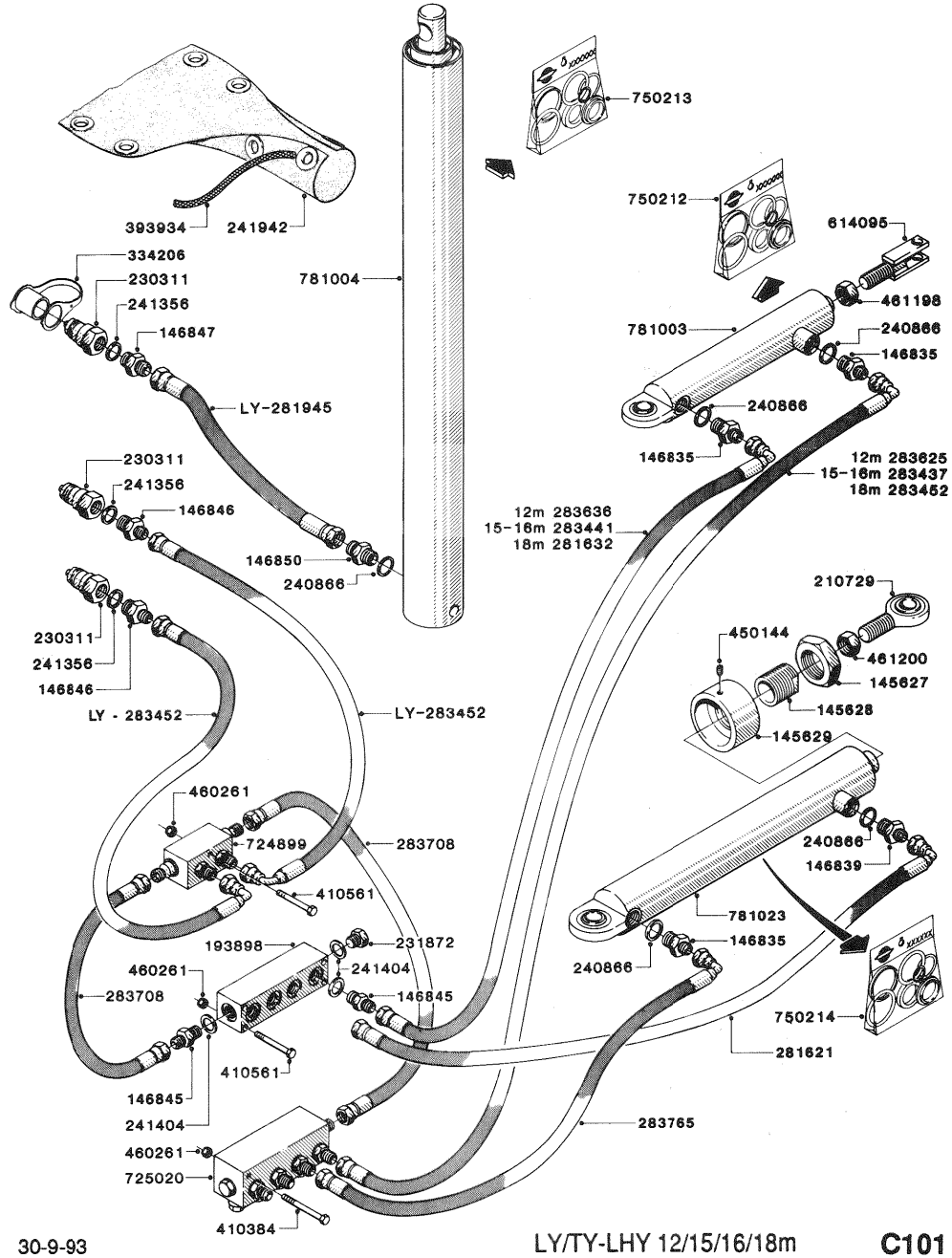
EC Remote control box



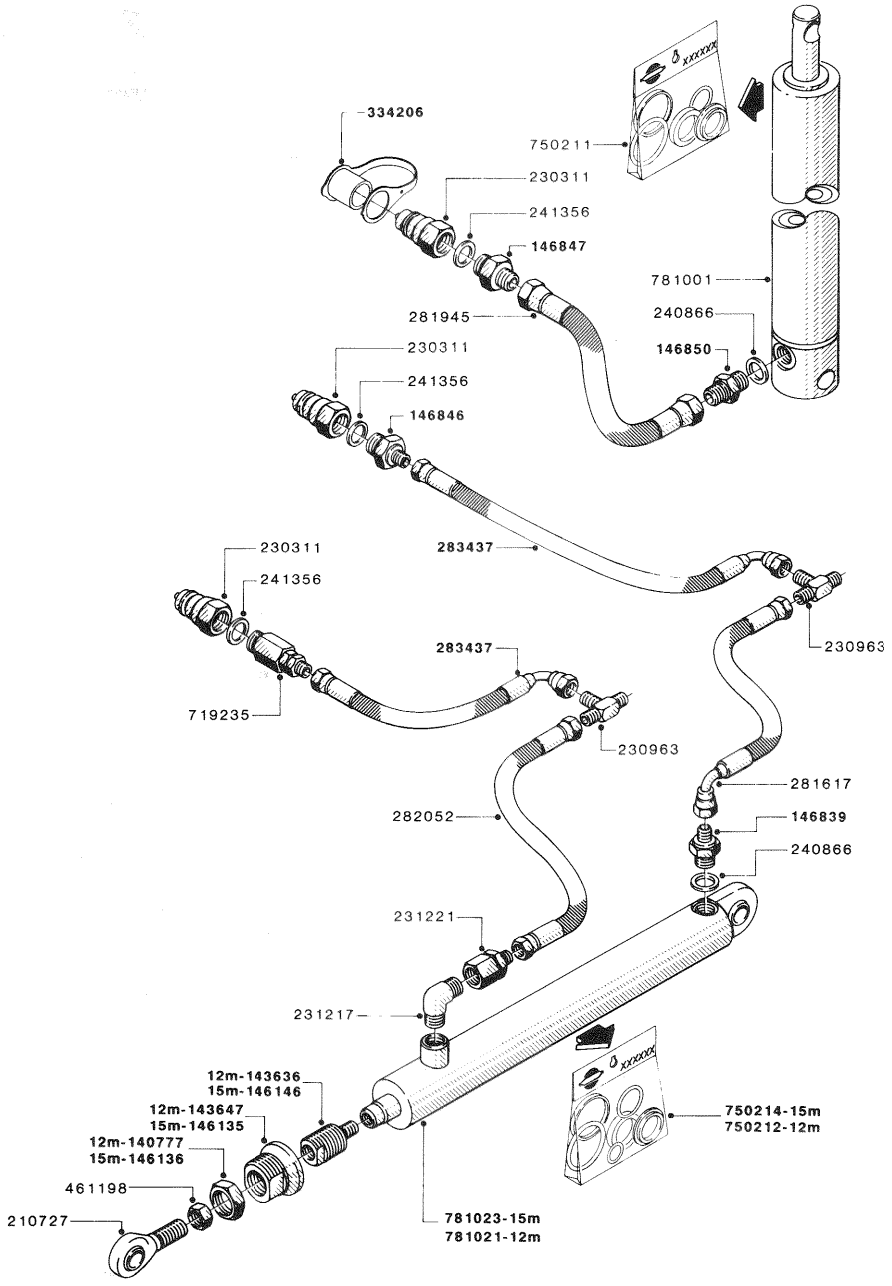
A. Operating switch for on-off valve
V. Operating switch for distribution valves
C. Pressure regulation switch (to lower)
D. Pressure regulation switch (to raise)

1. Choose the correct nozzle. See "Spray Technique" book. Turn Triplet-nozzle bodies to choosen nozzle. Make sure all nozzles are the same type and capacity.

2. Open or close lever **5** depending on whether pressure agitation is required. (Remember pressure agitation takes 5% to 10% of pump output).



30-9-93 LY/TY-LHY 12/15/16/18m **C101**



LY-HYA 12/15m 30-9-93 **C100**

3. On-off switch **A** is activated against green.

4. All distribution valves switch **V** are activated against green.

5. Pressure regulation switch **C** is activated to emergency handle **3**, stop rotate (minimum pressure).

6. Put the tractor in neutral and adjust the P.T.O. and thereby the number of revolutions of the pump corresponding to the intended travelling speed. Remember the number of revolutions on the P.T.O. must be kept between 300-600 r/min.

7. Pressure regulation switch **D** is activated till the recommended pressure is shown on the pressure gauge.

ADJUSTMENT OF PRESSURE EQUALIZATION:

8. Close the first distribution valve switch **V**.

9. Turn the adjusting screw **1** until the pressure gauge again shows the same pressure.

10. Adjust the other sections of the distribution valve in the same way.

NB: HEREAFTER ADJUSTMENT OF PRESSURE EQUALIZATION WILL ONLY BE NEEDED IF YOU CHANGE TO NOZZLES WITH OTHER CAPACITIES.

11. Operating the control unit while driving:
In order to close the entire boom activate on-off switch **A** to aff position. This returns the pump outputs to the tank through the return system. The diaphragm anti-drip valves ensure instantaneous closing of all nozzles.
In order to close one or more sections of the boom switch the relevant distribution valve **V** to off position. The pressure equalization ensures that the pressure does not rise in the sections which are to remain open.

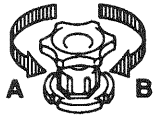
In case of power failure it is still possible to activate all functions of the operating unit. To operate manually, disconnect the multi plug first.

When the sprayer is put aside, the control box and the multiplug must be protected against moisture and dirt. A plastic bag may be used to protect the multi plug.

EC

Operating the drain valve on the tank LY 600

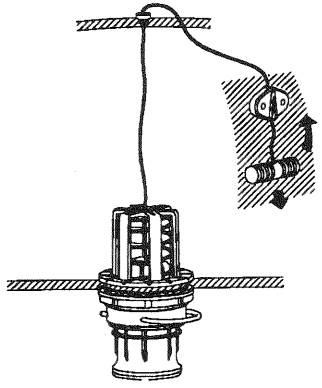
To open: **A**
To close: **B**

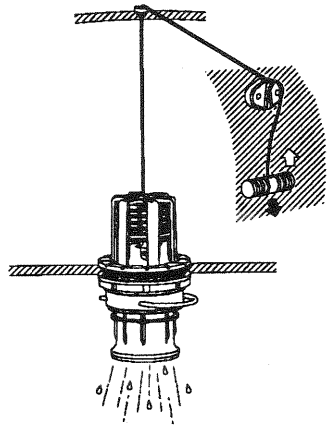


Operation of the tank drain valve

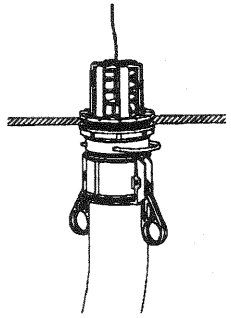
Pull the string at left hand side of the tank to open the drain valve. The valve is spring-loaded, but can be kept open by pulling the string out- and upwards in the V-shaped slit.

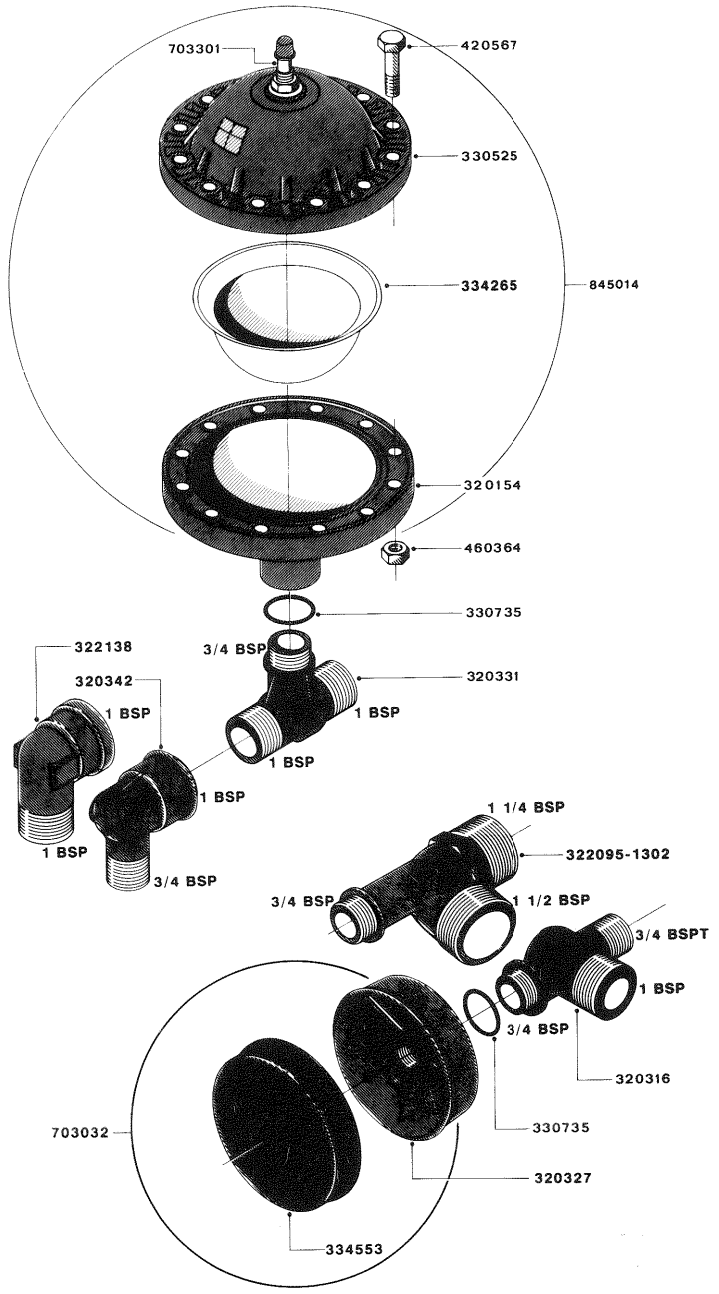
To release and close the drain valve again, pull the string down-wards and the valve will close automatically.





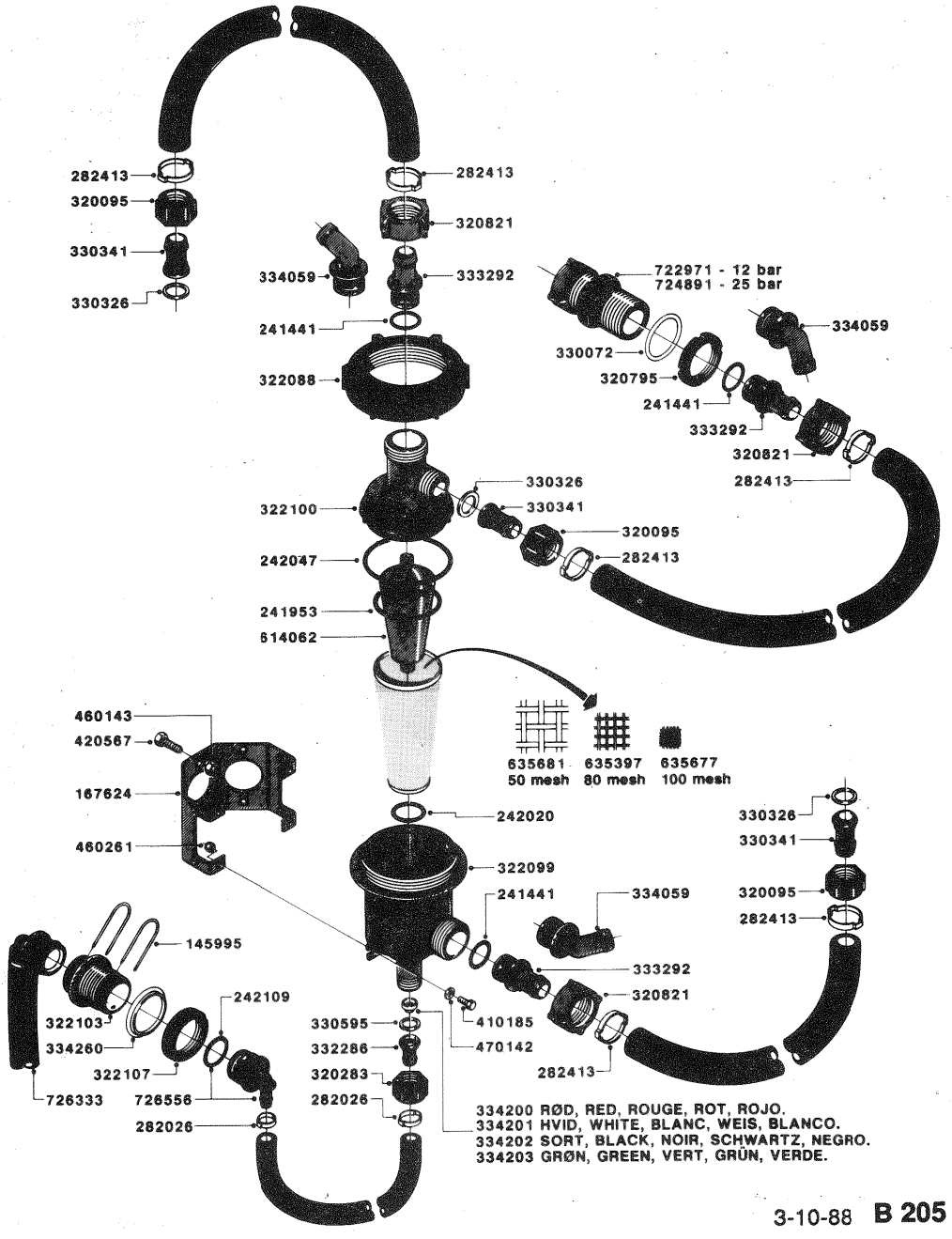
If draining residues, e.g. liquid fertilizers into a reservoir, a snap-coupler with hose can rapidly be connected to the drain valve, and the liquid safely drained.





Dampers HJ73

30-9-93 **B300**



3-10-88 **B 205**

Spray Technique - see separate book.

Maintenance

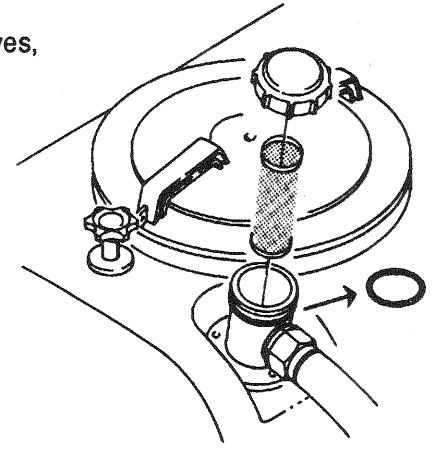
In order to derive full benefit from the sprayer for many years the following few but important rules should be kept:

Cleaning the Sprayer - see separate book.

Filters

Clean filters ensure

- Sprayer components such as valves, diaphragms and operating unit are not hindered or damaged during operation.
- Nozzle blockages do not occur whilst spraying.
- Long life of pump. A blocked suction filter will result in pump cavitation.



The main filter protecting sprayer components is the suction filter at the top of the tank. Check it regularly.

Ensure the O-ring on filter housing is in good condition and lubricated.

The BK operating unit has an in-built pressure filter. See section on Pressure filter drain valve.

Lubrication

Recommended lubrication is shown in following tables. Use ball bearing grease (lithium grease No. 2).

NB: If the sprayers are cleaned with a high pressure cleaner or fertilizer has been used, we recommend lubrication of all sections.

POS. ◯— 7 Position on sprayer

Oil

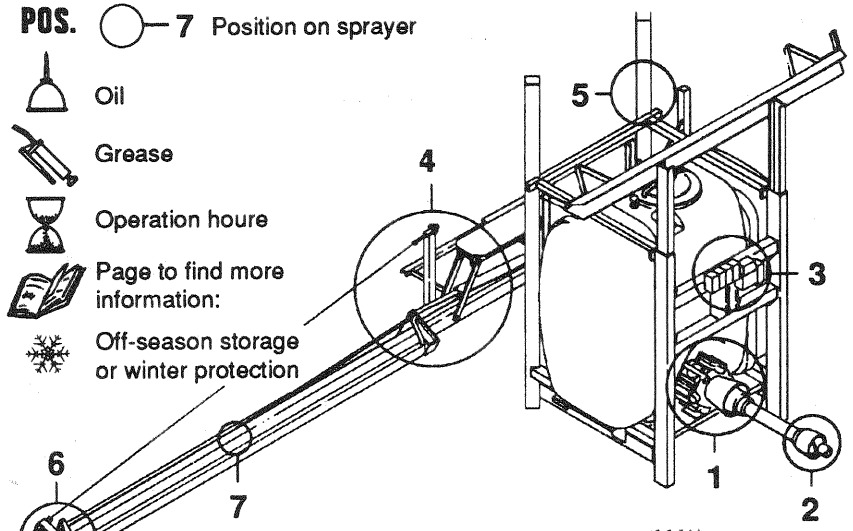
Grease

Operation houre

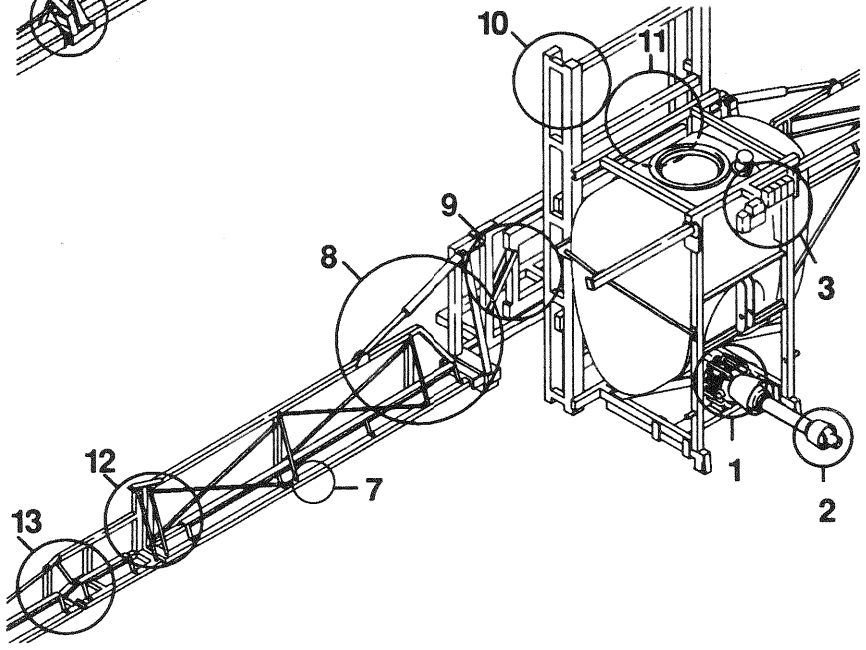
Page to find more information:

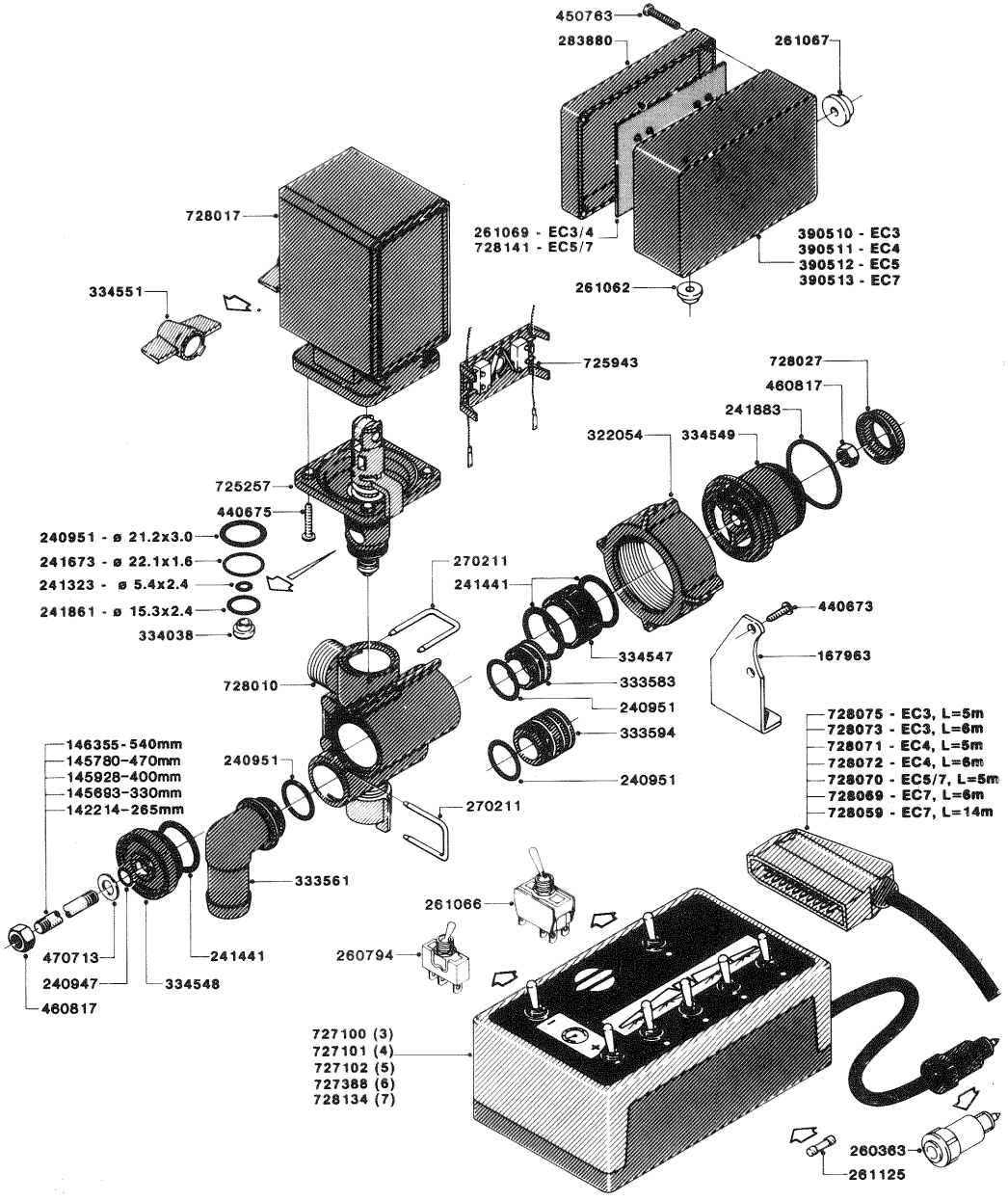
Off-season storage or winter protection

HYB

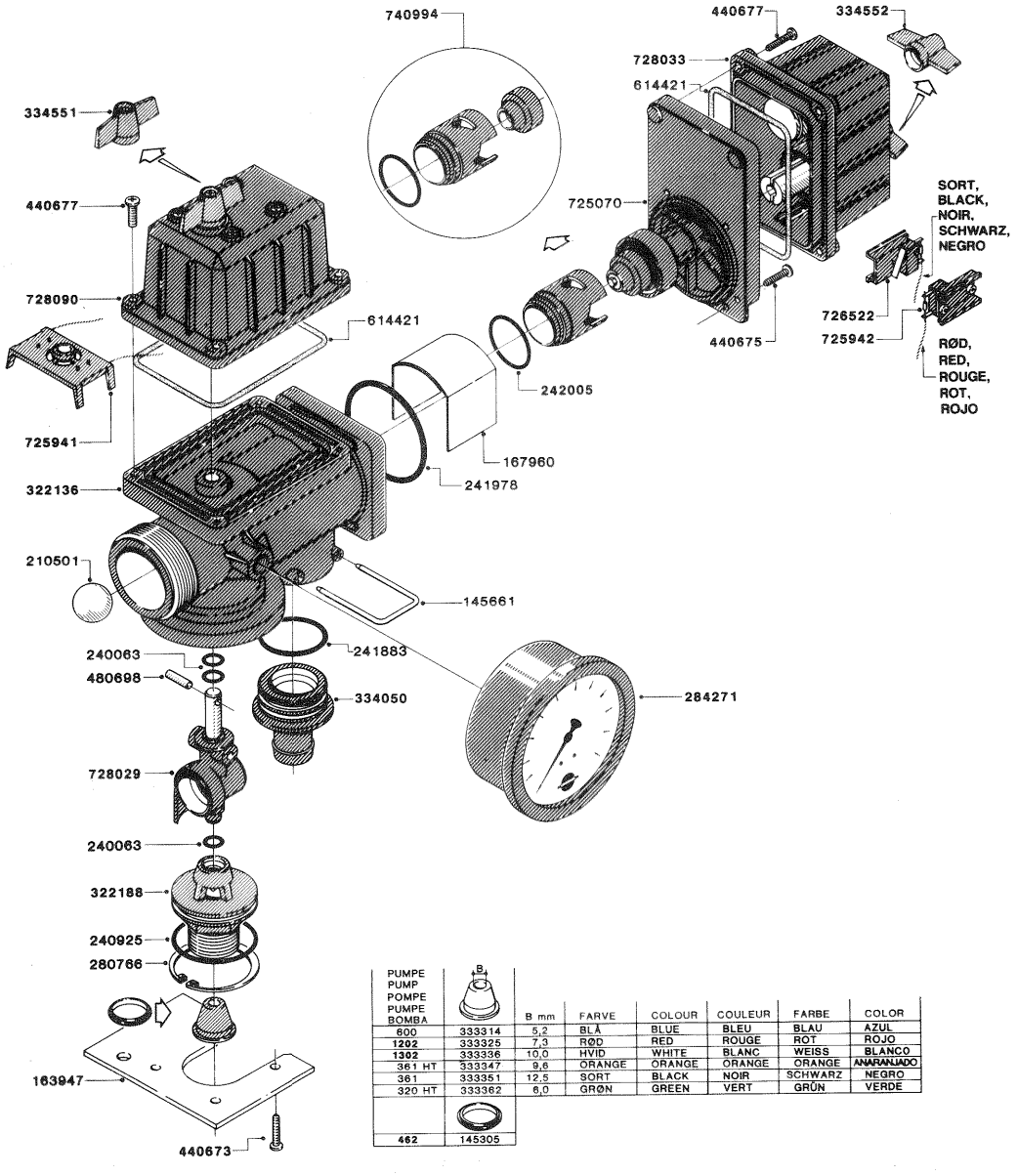


LHY



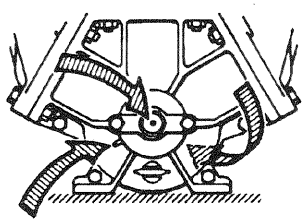
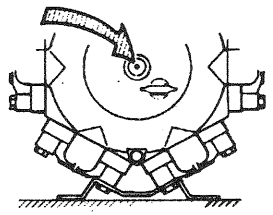
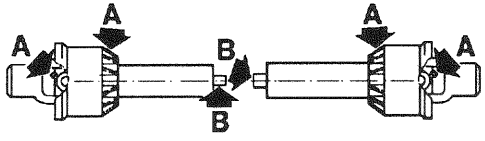
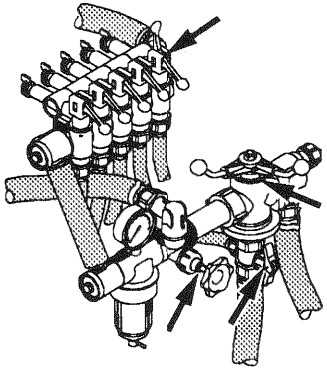
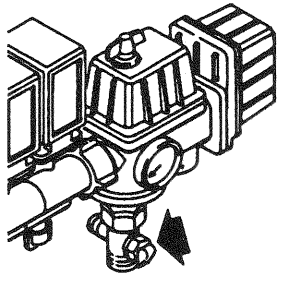
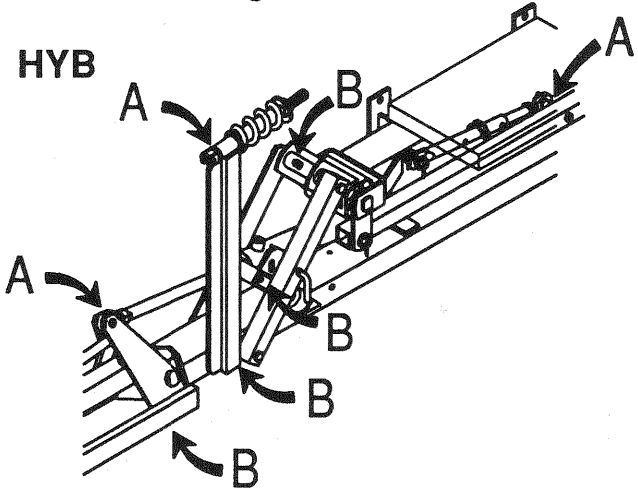


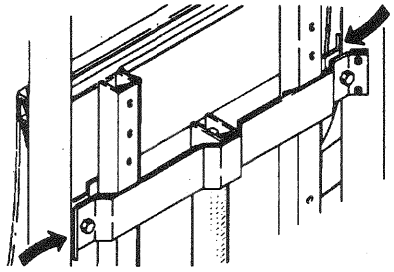
Unit EC (92) 2-9-92 **B105**



PUMPE PUMP POMPE PUMPE BOMBA	B	B mm	FARVE	COLOUR	COULEUR	FARBE	COLOR
600	333314	5,2	BLÅ	BLUE	BLEU	BLAU	AZUL
1202	333325	7,3	RØD	RED	ROUGE	ROT	ROJO
1302	333336	10,0	HVID	WHITE	BLANC	WEISS	BLANCO
361 HT	333347	9,6	ORANGE	ORANGE	ORANGE	ORANGE	ANARANJADO
361	333351	12,5	SORT	BLACK	NOIR	SCHWARZ	NEGRO
320 HT	333362	6,0	GRØN	GREEN	VERT	GRÜN	VERDE
462	145305						

Unit EC (92) 2-9-92 **B104**

POS.					
1		X	40	 	28
2 A B		X X	12 40		6
3	X		20	 	12 14 29 35
4 A B	X	X	40 40		8 22 23

POS.					
				HYB 	23
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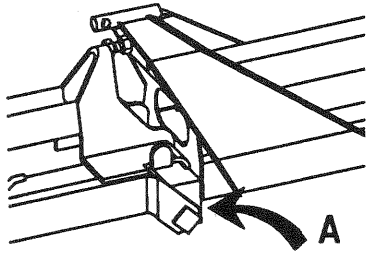
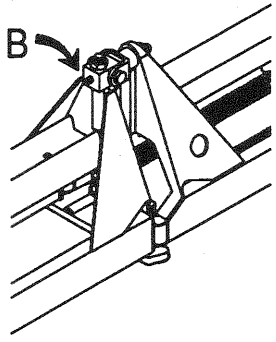
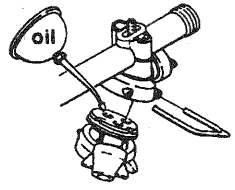
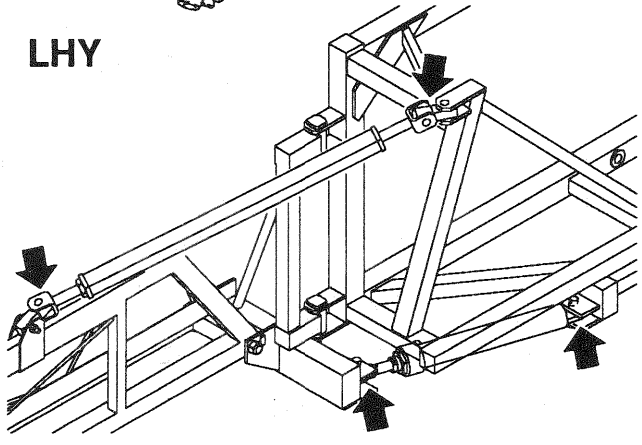
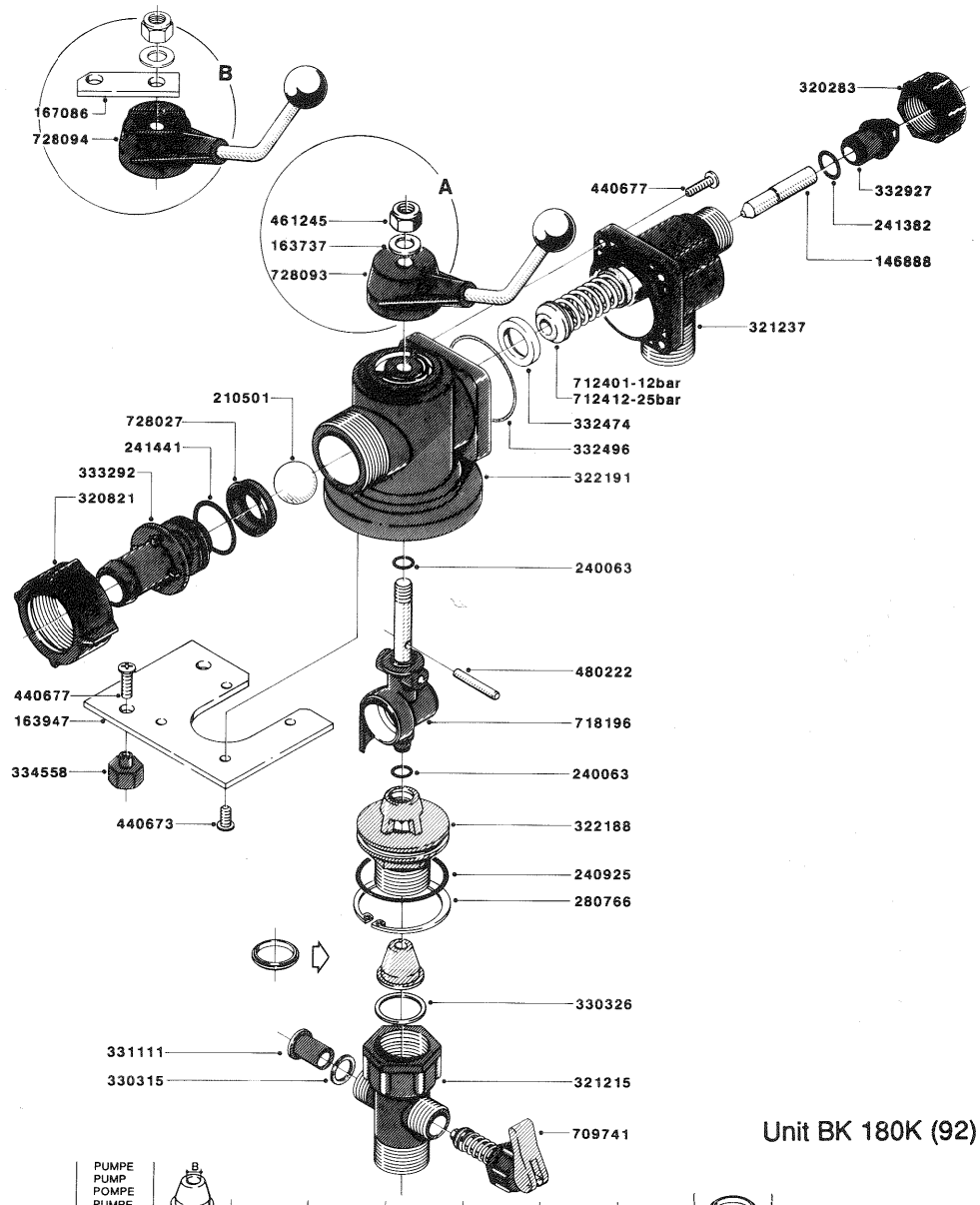
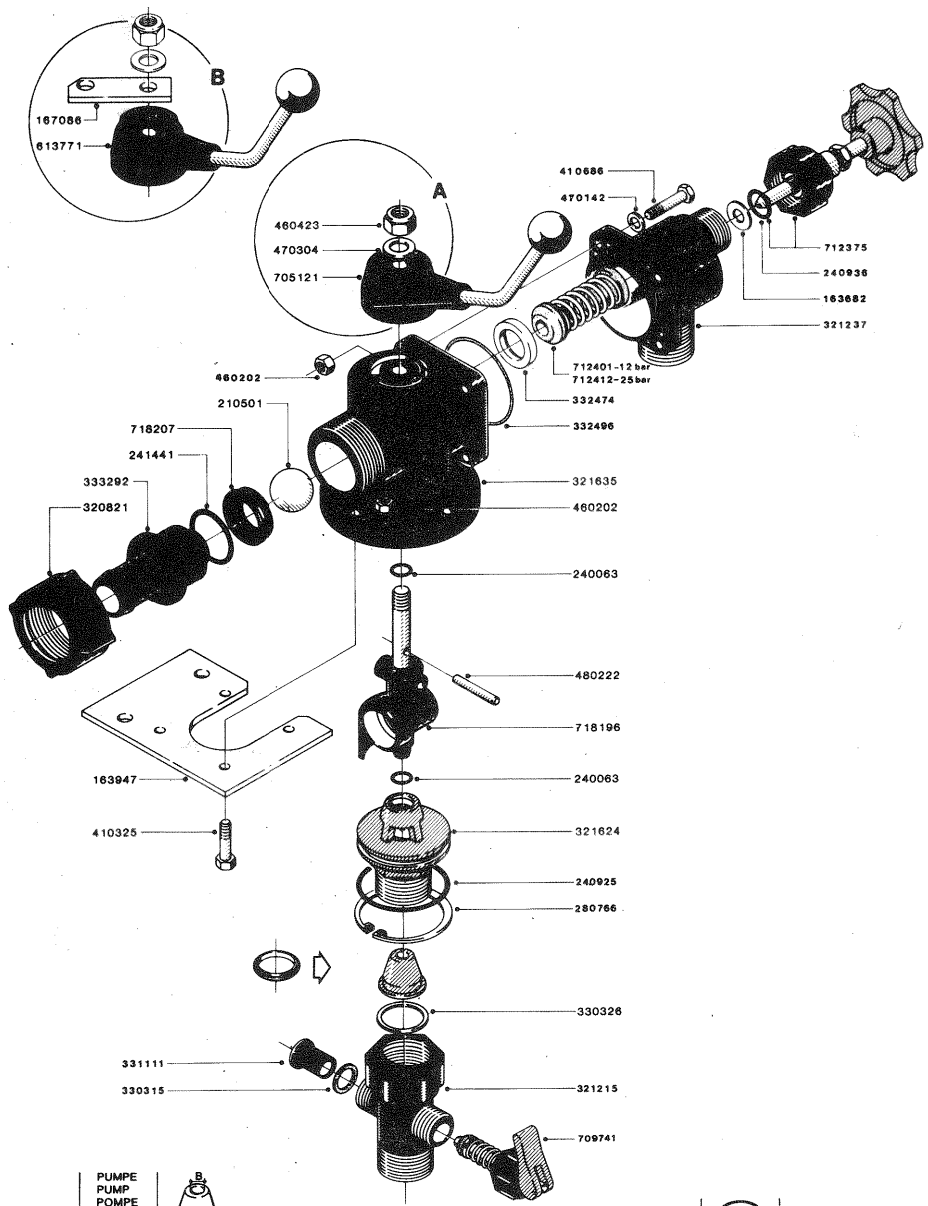
				HYB  	23
6					
A	X		40		
B		X	40		
					
7	X		❄		
				LHY 	
8	X		40		25



Unit BK 180K (92)

PUMPE PUMP POMPE PUMPE BOMBA	B	B mm	FARVE	COLOUR	COULEUR	FARBE	COLOR	
600	333314	5,2	BLÅ	BLUE	BLEU	BLAU	AZUL	
1202	333325	7,3	RØD	RED	ROUGE	ROT	ROJO	
1302	333336	10,0	HVID	WHITE	BLANC	WEISS	BLANCO	
361 HT	333347	9,6	ORANGE	ORANGE	ORANGE	ORANGE	ANARANJADO	
361	333351	12,5	SORT	BLACK	NOIR	SCHWARZ	NEGRO	
320 HT	333362	6	GRØN	GREEN	VERT	GRÜN	VERDE	
462								145305

30-9-93 **B9**

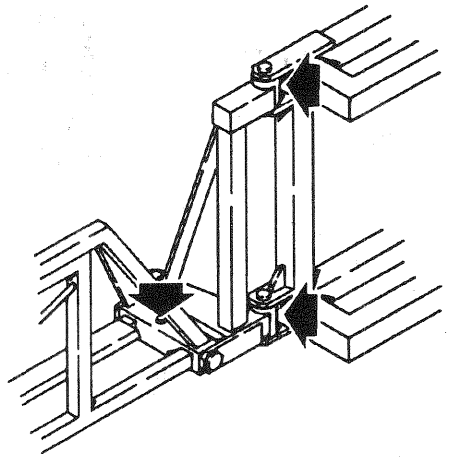


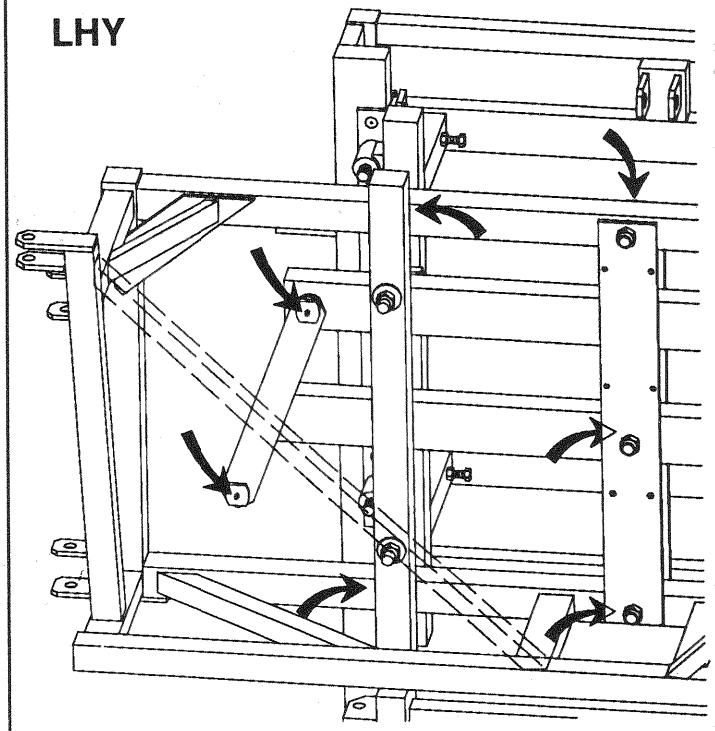
PUMPE PUMP POMPE PUMPE BOMBA	B	B mm	FARVE	COLOUR	COULEUR	FARBE	COLOR	
600	333314	5,2	BLÅ	BLUE	BLEU	BLAU	AZUL	
1202	333325	7,3	RØD	RED	ROUGE	ROT	ROJO	
1302	333336	10,0	HVID	WHITE	BLANC	WEISS	BLANCO	
361 HT	333347	9,6	ORANGE	ORANGE	ORANGE	ORANGE	ANARANJADO	
361	333351	12,5	SORT	BLACK	NOIR	SCHWARZ	NEGRO	
320 HT	333362	6	GRØN	GREEN	VERT	GRÜN	VERDE	
462								145305

Unit BK 180K

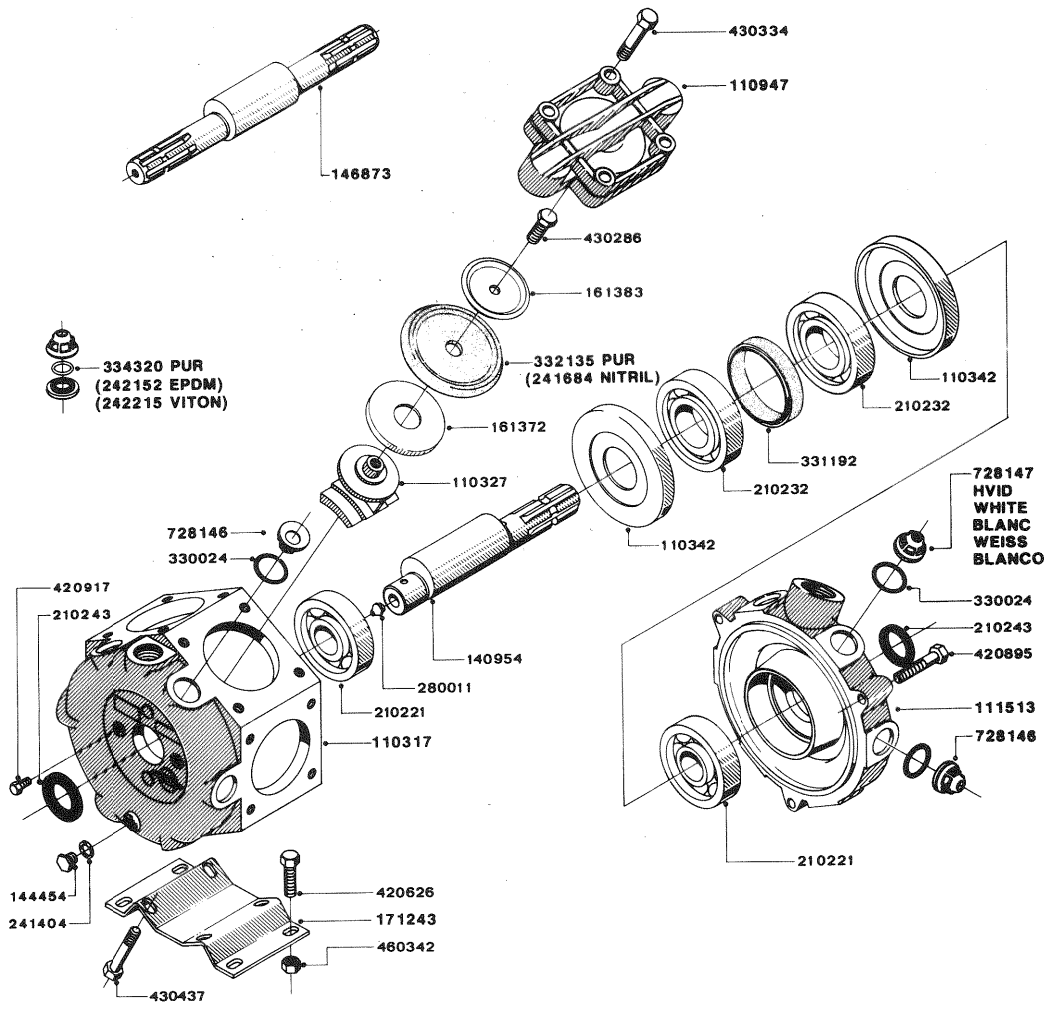
18-2-91 **B7**

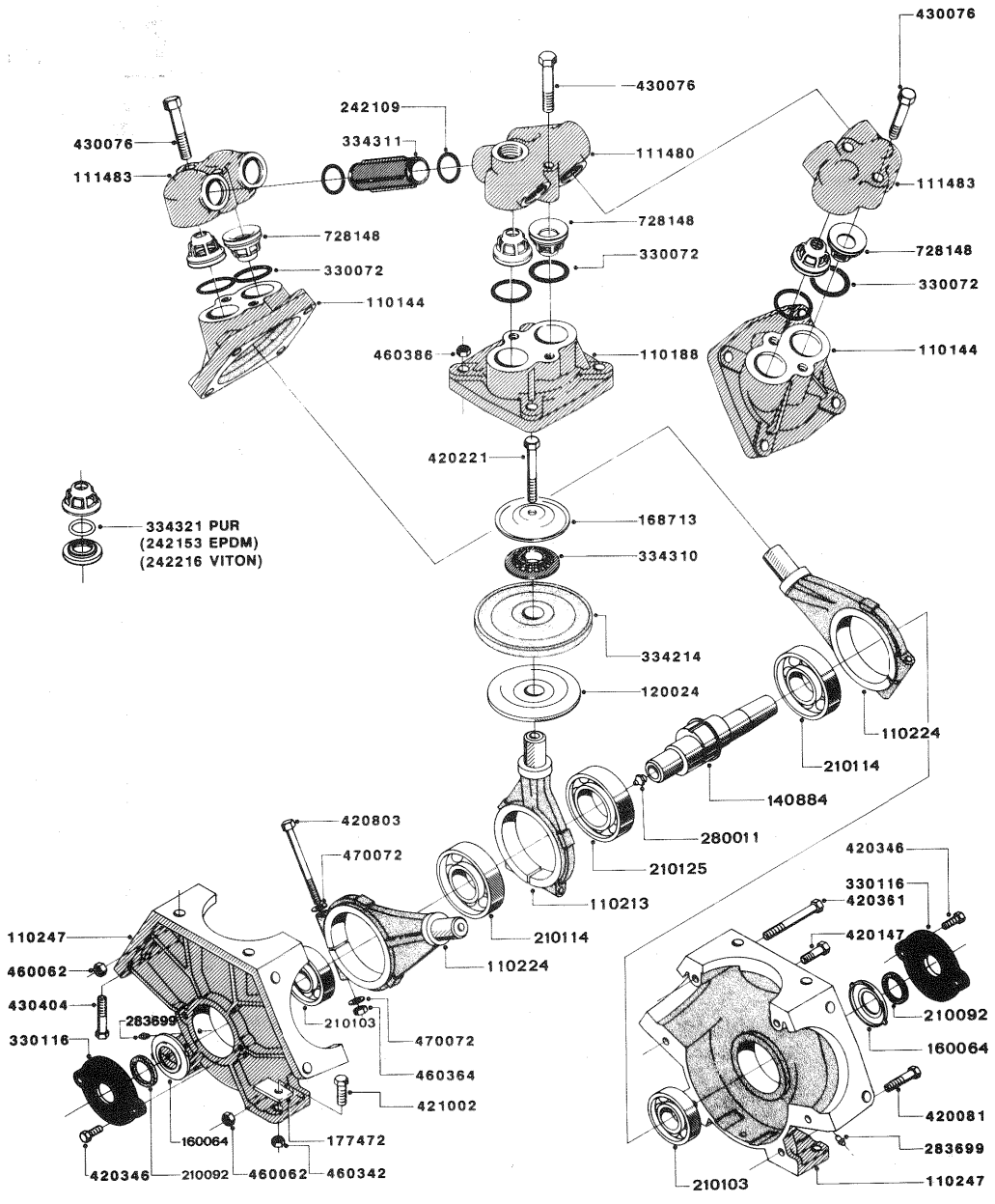
POS.					
8		X	40	LHY	25
9		X	40	LHY	27





POS.					
9				LHY	9
A	X		40		
B		X	40		
10		X	40	LHY	27
11		X	❄		
12				LHY	28
A	X		40		
B		X	40		
13		X	40	LHY	





1302/foot 4-1-93 **A12**

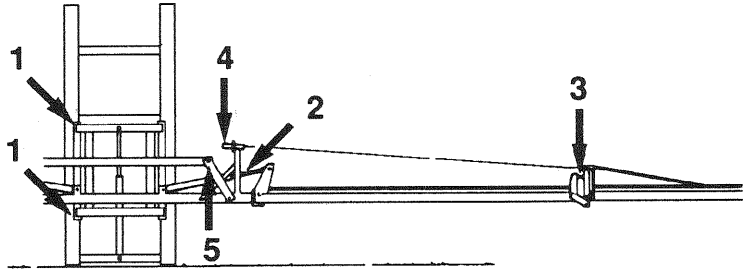
Re-adjustment of the boom

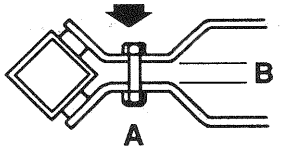
After having used the sprayer for some days the boom should be adjusted according to the following instructions:

When adjusting the boom and the trapeze the spray boom must be in the working position and the trapeze set in unlocked position. Tractor and sprayer must be on level ground. Lubricate all moving parts before making any adjustments. See section on Lubrication.

WARNING
NOBODY MUST STAND UNDER THE BOOM WHILST ADJUSTMENT IS TAKING PLACE.

Re-adjustment of the HYB-boom

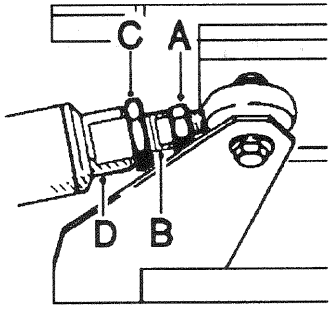




1. Boom lift

The boom lift should be adjusted so the boom can freely move up and down when the lift ram is operated. Adjust both sides. Adjust **A** so gap **B** is equal at all 4 points.

NB: Adjustment of hydraulic ram is done without pressure in the hydraulic system.



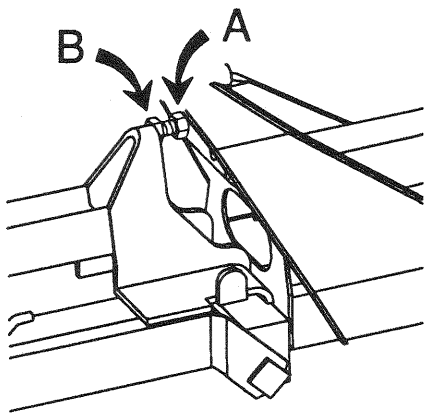
2.Horizontal adjustment of middle part

Loosen lock nut **A** and turn piston rod **B** until the middle part of the boom is horizontal. Then retighten lock nut **A**.

Adjustment of transport position

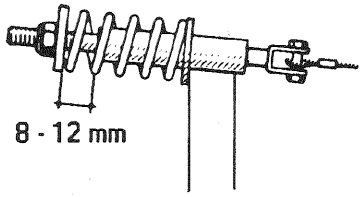
Fold boom and lower carefully onto the transport bracket. Loosen nut **C** and turn **D** until the boom is correctly placed in the transport bracket. Then retighten the nut.

HYB



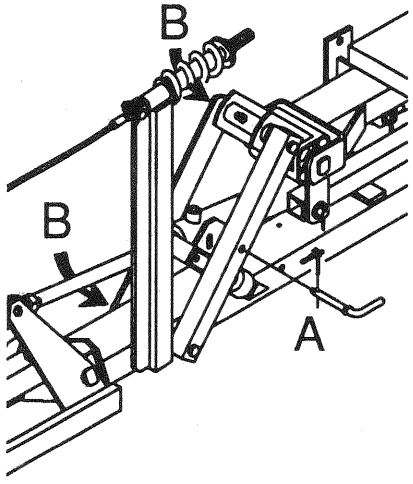
3. Horizontal adjustment of outer section.

Loosen lock nut **A** and turn screw **B** until the outer part of the boom is in horizontal and linear position. Then retighten lock nut **A**.



4. Wire

Adjustment of wire should be undertaken with unfolded boom.



5. Trapeze suspension

Remove bock pin **A**. Adjust boom tension **B** until the boom is not too tight nor too loose. Minor adjustment in the field may be necessary.

REMEMBER TO TIGHTEN ALL LOCK NUTS AGAIN AFTER ADJUSTMENT.

Power consumption and capacity

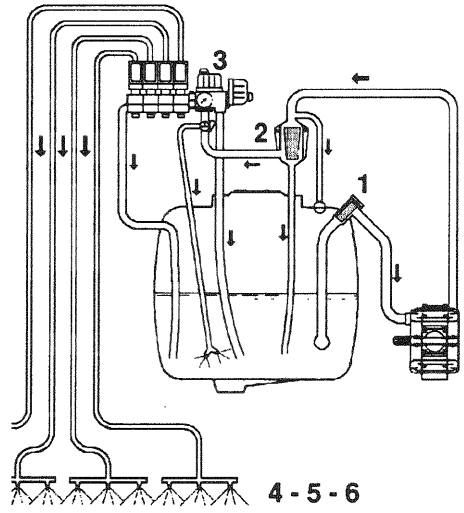
1302/9.0	r/min 300		400		500		540		600	
bar	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW
0	63	0.90	84	1.19	103	1.51	114	1.61	125	1.80
5	58	0.94	79	1.29	96	1.61	105	1.75	116	1.93
10	56	1.30	76	1.80	94	2.30	101	2.48	111	2.72
15	55	1.80	74	2.38	92	2.97	99	3.22	108	3.75

Rotation per min.	r/min	Capacity	l/min	Suction height	0.0 m
Power consumption	kW	Max. pressure	15bar	Weight	37.7 kg

361/9.5	r/min 300		400		500		540		600	
bar	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW
0	95	0.92	127	1.33	158	1.56	171	1.69	189	1.85
5	92	1.49	123	1.93	151	2.38	165	2.63	183	2.98
10	91	2.22	120	2.89	148	3.69	163	4.02	180	4.74
15	89	3.03	119	3.92	148	4.90	160	5.40	177	6.15

Rotation per min.	r/min	Capacity	l/min	Suction height	0.0 m
Power consumption	kW	Max. pressure	15bar	Weight	52.5 kg

Filters and nozzles



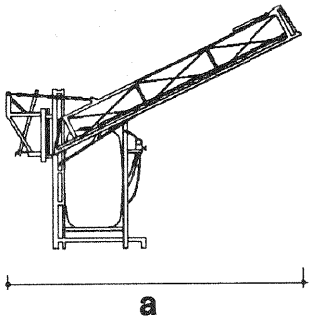
Pos.	Mesh/ colour	Description/ nozzle
1	30	Suction filter
2	80	Self-cleaning filter
3	50	Pressure filter (BK operating unit)
4	50 blue	Nozzle 4110-16
5	50 blue	Nozzle 4110-20
6	50 blue	Nozzle 4110-24

Technical specifications

Measure and weight

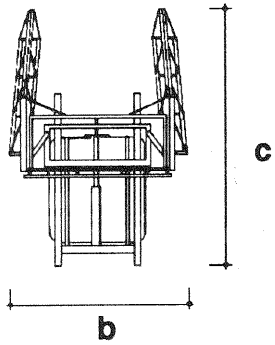
HYA models

Tank size l	Spraying width m	Pump model	Measure a x b x c cm	Weight kg
600	12	1302	160 x 232 x 251	425
800	12	1302	160 x 232 x 251	440
	12	361	160 x 232 x 251	457
	15	361	170 x 260 x 335	497
1000	12	1302	176 x 232 x 251	495
	12	361	176 x 232 x 251	512
	15	361	170 x 260 x 335	552
1200	12	361	185 x 232 x 251	532
	15	361	170 x 260 x 335	572

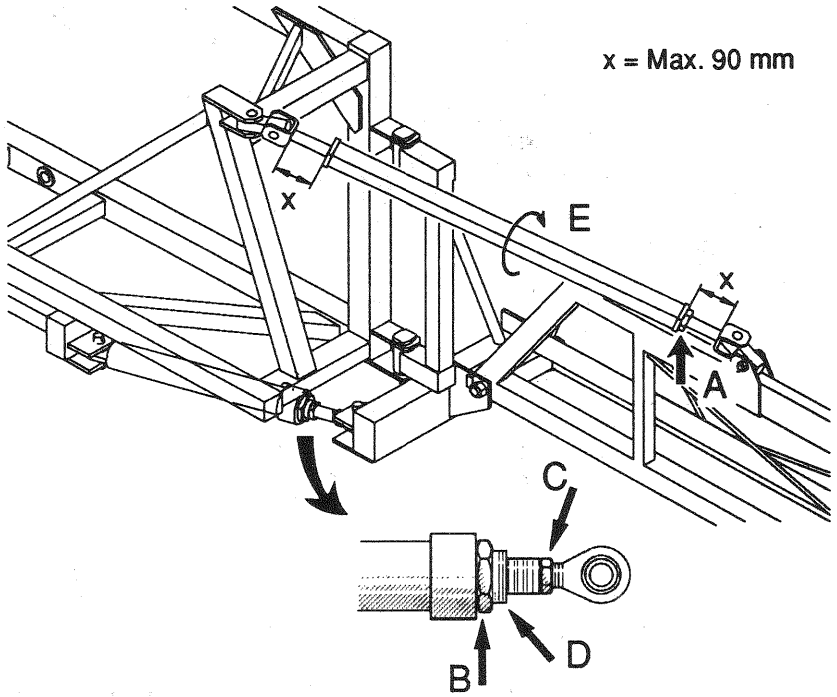


LHY models

Tank size l	Spraying width m	Pump model	Measure a x b x c cm	Weight kg
800	12	361	310 x 255 x 300	739
	15	361	410 x 255 x 330	759
	16	361	410 x 255 x 330	774
	18	361	430 x 255 x 350	824
1000	12	361	310 x 255 x 300	769
	15	361	410 x 255 x 330	789
	16	361	410 x 255 x 330	804
	18	361	430 x 255 x 350	854
	20	361	430 x 255 x 350	894
	21	361	430 x 255 x 350	904
1200	12	361	310 x 255 x 300	819
	15	361	140 x 255 x 330	839
	16	361	410 x 255 x 330	854
	18	361	430 x 255 x 350	904
	20	361	430 x 255 x 350	944
	21	361	430 x 255 x 350	954

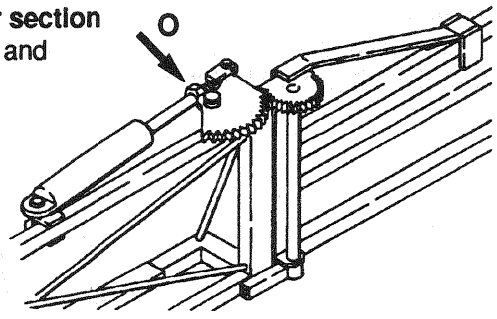


Re-adjustment of the LHY-boom
Horizontal adjustment



1. Fold out the boom.
   NB: Adjustment of hydraulic rams is done without pressure in the hydraulic system.
2. Loosen lock nuts **A**, **B** and **C**.
3. Adjust on the threaded bushing **D** which sets the bottom stop position of the ram.When the ram stop is screwed outwards, the boom will point forwards, and if the stop is screwed inwards, the boom will point backwards.The boom must be in alignment with the central section and may point a bit forwards.
4. Adjust on rod **E** until the boom is horizontal.
   Important! The fork bolt on each end of rod **E** must not exceed 90 mm as show.
5. When the boom is adjusted, tighten nut **B**.

Linear adjustment of outer section
To adjust, loosen lock nut **O** and turn cylinder rod.

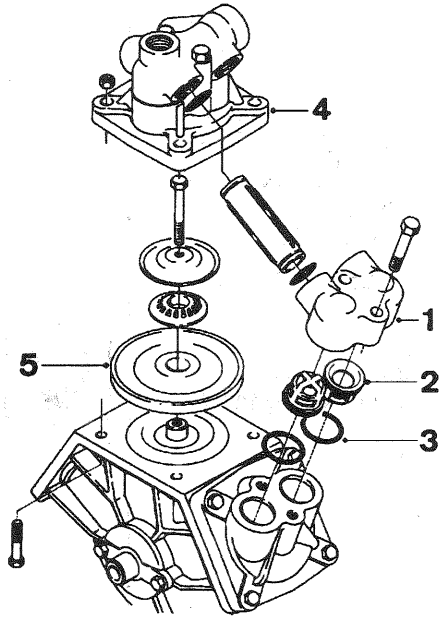


REMEMBER TO TIGHTEN ALL LOCK NUTS AGAIN AFTER ADJUSTMENT.

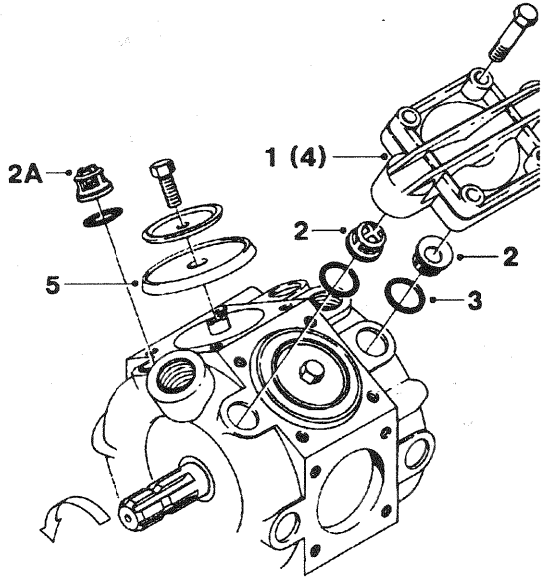
Changing of valves and diaphragms

Valves

Remove valve cover **1**. Before changing the valves **2** note the orientation of the valves so that they may be replaced correctly.
Important: Note valve with white flap **2A** is used on model 361.
It **has** to be placed in the valve opening shown.
It is recommended to use new gaskets **3** when changing or checking the valves.



Model 1302



Model 361

Fault	Probable cause	Control / remedy
Liquid system		
No spray from boom when turned on.	Air leak on suction.	Check if red suction lid/O-ring are sealing.
		Check suction tube and fittings.
		Check tightness of pump diaphragm and valve covers.
	Air in system.	Fill suction hose with water for initial prime.
	Suction/pressure filters clogged.	Clean filters.
		Check yellow suction pipe is not obstructed or placed too near the tank bottom.
Lack of pressure.	Incorrect assembly.	Agitation nozzles not fitted.
		Restrictor nozzle in self-cleaning filter not fitted.
		Safety valve spring for self-cleaning filter not tight.
		Too little distance between yellow suction pipe and tank bottom.
	Pump valves blocked or worn.	Check for obstructions and wear.
	Defect pressure gauge.	Check for dirt at inlet of gauge.
Pressure dropping.	Filters clogging.	Clean all filters. Fill with cleaner water.
		If using powders, make sure agitation is on.
	Nozzles worn.	Check flow rate and replace nozzles if it exceeds 10%.
	Tank is airtight.	Check vent is clear.
	Sucking air towards end of tank load.	Exessive agitation, turn off.
		Returns inside tank need relocation.

Operational problems

In cases where breakdowns have occurred the same factors always seem to come into play:

- Minor leaks on the suction side of the pump will reduce the pump capacity or stop the suction completely.
- A clogged suction filter will hinder or prevent suction so that the pump does not operate satisfactorily.
- Clogged up pressure filters will result in increasing pressure at the pressure gauge but lower pressure at the nozzles.
- Foreign bodies stuck in the pump valves with the result that these cannot close tightly against the valve seat. This reduces pump efficiency.
- Poorly reassembled pumps, especially diaphragm covers will allow the pump to suck air resulting in reduced or no capacity.
- Electrical and hydraulic components that are contaminated with dirt result in poor connections and rapid wear to the hydraulic system.

Therefore ALWAYS check:

1. Suction, self-cleaning, pressure and nozzle filters are clean.
2. Hoses for leaks and cracks, paying particular attention to suction hoses.
3. Gaskets and O-rings are present and in good condition.
4. Pressure gauge is in good working order. Correct dosage depends on it.
5. Operating unit functions properly. Use clean water to check.
6. Electrical and hydraulic components are maintained clean.

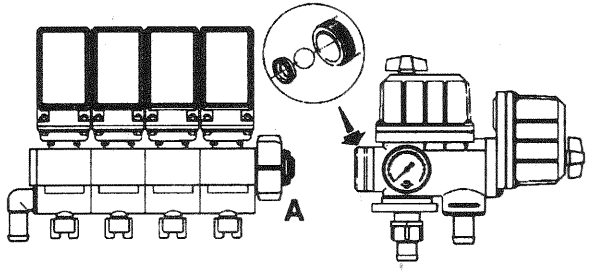
Diaphragms

Remove the diaphragm cover **4**. The diaphragm **5** may then be changed. If fluids have reached the crankcase, re-grease the pump thoroughly.

Changing of ball seat in operating unit BK & EC

If problems with on/off valve occurs (dripping nozzles when on/off valve is closed), the ball and ball seat should be checked.

Remove the 2 bolts fixing the on/off-pressure valve unit to the bracket, unscrew the union nut **A** and pull the on/off-pressure valve away from the distribution valves.



Check the ball for sharp edges and scratches and check the ball seat for cracks and wear - replace if necesary.

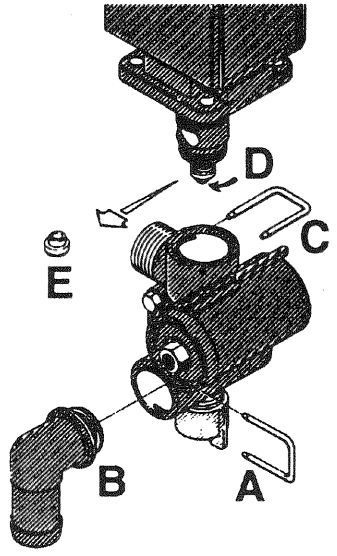
Check of valve cone in distribution valves EC

Periodically check the distribution valves for proper sealing.

Run the sprayer with clean water and open on/off and all distribution valves.

Remove the clip **A** and remove hose **B** for the constant pressure device. When the housing is drained, there should not flow liquid through the constant pressure device. If there is any leakage, the valve cone **E** must be changed.

Remove the clip **C**, and pull the EC-motor off the valve housing.
Then unscrew the screw **D** and replace the valve cone **E**. Reassemble in opposite sequence.

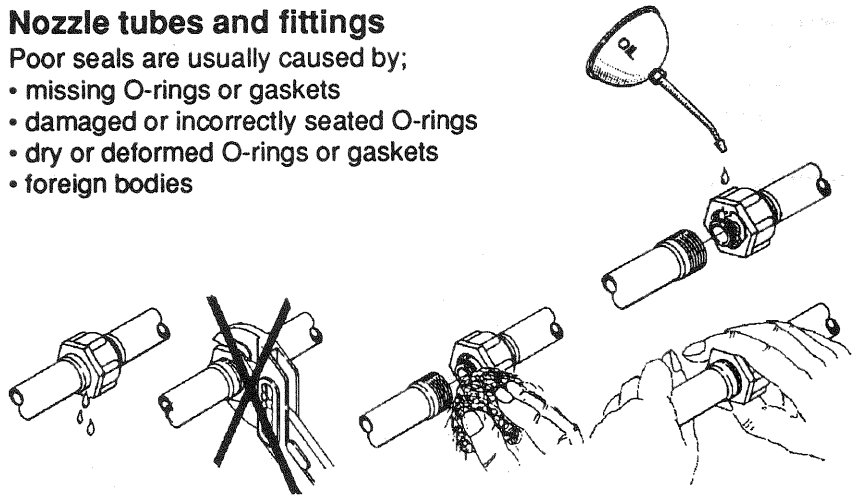


EC

Nozzle tubes and fittings

Poor seals are usually caused by;

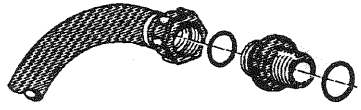
- missing O-rings or gaskets
- damaged or incorrectly seated O-rings
- dry or deformed O-rings or gaskets
- foreign bodies



Therefore, in case of leaks: **DO NOT** overtighten. Disassemble, check condition and position of O-ring or gasket, clean lubricate and reassemble.
For radial connections only hand tighten them.

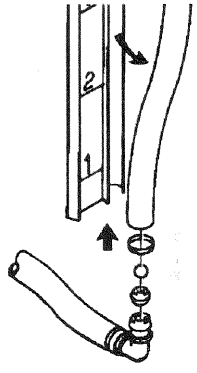
The O-ring to be lubricated **ALL THE WAY ROUND** before fitting on to the nozzle tube.

For axial connections, a little mechanical leverage may be used.



Level indicator

Depending on products used, it can become difficult to see the red sphere inside the level indicator tube. Note that the tube can be replaced when necessary.



Off-season storage

When the spraying season is over you should devote some extra time to the sprayer before it is stored.

Hoses

Check that none of the hoses are caught or have sharp bends.

A leaky hose can give an annoying delay in the middle of the spraying job. Therefore check all the hoses and change if there is any doubt about the durability.

Paint

Some chemicals are very hard on paints. It is therefore well advised to remove rust, if any, and then touch up the paint.

Tank

Check that no chemical residues are left from the last spraying. Chemical residues must not be left in the tank for a long time. It will reduce the life of the tank. See Spray Technique book - Cleaning the sprayer.

EC operating unit

When the sprayer is put away the control box and the multiplug must be protected against moisture and dirt. Possibly use a plastic bag.

Transmission shaft

Check that the transmission shaft fulfills its security purpose, e.g. that shields and protective tubes are intact.

Anti-freeze precaution

If the sprayer is not stored in a frost- proof place you should take the following precautions: Put at least 10 litres of 33% anti-freeze mixture in the tank and let the pump run a few minutes so that the entire system including spray hose are filled. Remove the glycerine filled pressure gauge and store it frost free in vertical position.
The anti-freeze solution also hinders the O-rings and gaskets from drying out.