



TRAILED
BOOM SPRAYER
(2000 lt.)

USER GUIDE



ATTENTION



**DO NOT
OPERATE THE MACHINES
BEFORE READING THIS MANUEL!**

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WARNING SIGNS & MEANINGS



CAUTION

This sign warns that the operations described could cause damage to machine, if they are not carried out correctly.



READ MANUAL FIRST

Read the “Operating and Maintenance Manual” carefully before first start and keep the manual nearest.



WARNING

This sign warns that the operations described could cause serious lesions or long term health risks, if they are not carried out correctly.



KEEP CHILDREN AWAY

This symbol expresses to keep the children away against any risk.



DANGER

This sign warns that the operations described could cause serious lesions, death or long term health risks, if they are not carried out correctly.



DO NOT STAND NEAR THE MACHINE WHILE IT IS WORKING

This symbol expresses not to stand near the machine while it is working to avoid any injury.

1. CONDITIONS OF USAGE

- This machine has been designed to be a sprayer and in compliance with what specified in the machine description and safety warnings of this instruction manual.
- Any other use is not allowed. Our company is not responsible for the damages caused by the not prescribed operation. The user is fully responsible
- Correct usage means that the operator works regarding the service and maintenance conditions specified by the manufacturer.
- Only people familiar with this sprayer and well aware of its risks can use, repair and maintain it.
- All the conditions regarding the safety and prevention of accidents must be taken into consideration and satisfied.
- This sprayer is designed to be used if all safety measurements, specified in the manual, are taken.
- The manufacturer is not responsible for damages caused by non-authorized changes made on this machine.
- The misuse and mistakes of the operator may cause a serious injury or damage to himself and other living beings.

2. SAFETY INSTRUCTIONS

- Read this manual carefully and completely before operating the machine. Get familiar with how to control and stop your machine.
- People under 18 should not operate the sprayer.
- The operator should keep distance with people as well as equipments.
- Take care to your hand and legs while working with the machine.
- For your safety always use original spare parts.
- When you mount the machine to the tractor, make sure that the safety pins for the connection with the tractor are mounted well.
- The transmission shaft between P.T.O shaft of tractor and shaft of the pump is to be parallel to the ground. The operating angle mustn't be more than 20°.
- Use appropriate clothing, shoes, gloves and mask while using the machine.
- Do not exceed 540 rpm for the pump.
- If any part or control does not work properly, stop the machine and check if need replace with new parts. Check hoses and connections regularly.
- Do not leave the machine unattended while in operation.
- Any injuries caused by using incorrect or fake parts are not accepted as warranty.
- Do not omit any part of the machine.
- Do not operate your machine while the tank is empty.
- Do not exceed maximum operating pressure of the pump.
- Do not operate the pump without oil.
- Release regulator valve (By Pass Status) before first start or stopping the machine.
- Do not spray pressurized liquid to people or animals.
- There is pressure in the air container of the pump even not in operation. (3-5 bar) If service needed for the pump, release this pressure first and then dismantle air container.
- Do not remove the safety valve on the pump. Do not re-adjust it. This valve opens and makes the fluid flow to the tank if the pressure exceeds 20% of the pump maximum operating pressure.

2. SAFETY INSTRUCTIONS

- Contact authorized service centre for all kind of repair and adjustment except cleaning. The user is responsible for all the damages caused by other applications.
- Wash thoroughly your tank after every usage and run the pump with clean water for a few seconds.
- While cleaning the tank take necessary safety measurements as described by chemical manufacturer.
- Prevent using chemicals which can damage plastic part of your machine.
- Keep suction filter always clean.
- Do not remove the shaft covers of the pump and transmission.
- Read the manual card on the shaft.
- This machine is used as a sprayer in compliance with the definitions and safety instructions stated in this manual otherwise the sole responsibility of any damage belong to the user.

3. PHYSICAL LIFE

- The operation life of the machine is 10 years.

4. OPERATION OF THE MACHINE

It is very important to choose the suitable machine to be used in the plant protection performed against the diseases in the agricultural sector. Otherwise, productivity will be low or never. We entertain our costumers proposal and their suggestions for produce and improve our machines.

In order to importance in the plant protection performed against the diseases in the agricultural sector, there is a need for select perfect machine.

We supply 400 L. - 600 L. - 800 L. Mounted Type Field Sprayer and 800 L. Mounted Type Super Field Sprayer to our costumers.

We are using high qualified imports pump and command system on our machines. The sprayer tanks and chassis are resistant against corrosion caused by the chemical and external effects, also They producing with selected optimum materials.

4.1 SYSTEM OF THE OPERATION

The sucked liquid by pump comes through the filter, after being filtered; liquid comes through pump by the suction hose. The highly pressurized liquid, coming from the pump reaches the regulator via the pump pressure hose. Some of the liquid regulated in the regulator flows through the suction hose into the tank and makes it possible for the chemicals in the tank to be mixed. Some of the fluid coming from the regulator comes through the sprayer hoses, to the boom and nozzles where they are atomized with high pressure and the spraying is done.

4. OPERATION OF THE MACHINE

4.2 FILTER SYSTEM

4.2.1. 2000 L. Trailed Type Field Sprayer's Filter System:

There is a 160 L. capacity check valve filter on the chassis. While the tank was filling, the suction hose closed through red limb which is on the filter than opened the way of loader. After the tank filled, the suction hose opened and closed the way of loader. If the filter need to clean, Closed to suction hose by red limb on the filter. Turn the cap of check valve to left and pull with filter key; Than pull the filter in the check valve after this, Clean the filter by turning and removing the cap of check valve. After finishing the cleaning assemble the filter and its cap on to the appropriate position, turn right by filter key and fix to the locked position. If the check valve is to be cleaned, prevent the flow so disappointed to be lost liquid.

4.3. CONTROL SYSTEM (REGULATOR)

4.3.1. 2000 L. Trailed Type Super Field Sprayer's Control System:

There is a import UCM 6 (6 ways), which is operating with screwed pressure regulatory. Adjust desired pressure by using the adjustment knob while reading it from the gauge and set it. You can adjust to bar level by adjustment knob, if it is turned right, bar level will rise and if it is turned left, bar level will be down. You can adjust to by-pass level or spraying level with the on/off lever on the regulator. UCM 6 has got 6 segment for spraying with 6 way. Adjustable one by one control nozzle on the boom with 6 way.

4.4. FILLING THE TANK

4.4.1. 2000 L. Trailed Type Field Sprayer:

Attach 6m suction hose to on filter's which is pass a check. Get to filling position from filter position. Plunge the filtered end of the suction hose to water source. Height difference should not be more than 6 meter for sucking. Keep the regulator main tap at off position (By-pass position). After to run the tractor's PTO Shaft, your tank will be filled within 10 -15 minutes.

4.5. SPRAYER BOOM

4.5.1. 2000 L. Trailed Type Super Field Sprayer:

Sprayer Boom produced by 50x50 and 40x40 square profile iron with another dimensions. The distance from the crop can be adjusted between 5 cm - 1 m. by hydraulic system without steps. Sprayer boom is composed of 5 fixed and pliable parts. Liquid control can be adjusted by each left boom part and right boom part. Balance system of boom can be adjusted by piston and springs where springs are on the left and right side of boom. The boom is equipped with ½" plastic tubes. We are using fan throw nozzles with clamps on sprayer. There are 25 nozzles on the boom. The distance between each nozzle is 50 cm. Nozzle's orifice dimension is 0,5x1,5 mm.

4. OPERATION OF THE MACHINE

4.6. SPRAY TABLE

STRAINER	HOW TO ORDER	bar	L./min.		SPEED Km./h				
					6	8	10	12	14
100 MESH	256.1805.7 11001 ORANGE	2,0	0,33	Liter / Hectare	66	50	40	33	28
		2,5	0,37		74	56	44	37	32
		3,0	0,40		80	60	48	40	34
		3,5	0,43		86	65	52	43	37
		4,0	0,46		92	69	55	46	39
100 MESH	256.1805.6 110015 GREEN	2,0	0,49		98	74	59	49	42
		2,5	0,55		110	83	66	55	47
		3,0	0,60		120	90	72	60	51
		3,5	0,65		130	98	78	65	56
		4,0	0,69		138	104	83	69	59
50 MESH	256.1805.1 11002 YELLOW	2,0	0,65		130	98	78	65	56
		2,5	0,73		146	110	88	73	63
		3,0	0,80		160	120	96	80	69
		3,5	0,86		172	129	103	86	74
		4,0	0,92		184	138	110	92	79
50 MESH	256.1805.2 11003 BLUE	2,0	0,98		196	147	118	98	84
		2,5	1,10		220	165	132	110	94
		3,0	1,20		240	180	144	120	103
		3,5	1,30		260	195	156	130	111
		4,0	1,39		278	209	167	139	119
50 MESH	256.1805.3 11004 RED	2,0	1,31		262	197	157	131	112
		2,5	1,46		292	219	175	146	125
		3,0	1,60		320	240	192	160	137
		3,5	1,73		346	260	208	173	148
		4,0	1,85		370	278	222	185	159
50 MESH	256.1805.8 11005 BROWN	2,0	1,63	326	245	196	163	140	
		2,5	1,83	366	275	220	183	157	
		3,0	2,00	400	300	240	200	171	
		3,5	2,16	432	314	259	216	185	
		4,0	2,31	462	347	277	231	198	
30 MESH	256.1805.9 11006 GRAY	2,0	1,96	392	294	235	196	168	
		2,5	2,20	440	330	264	220	189	
		3,0	2,40	480	360	288	240	206	
		3,5	2,60	520	390	312	260	223	
		2,0	2,80	560	420	336	280	240	
30 MESH	256.1805.4 11008 WHITE	2,0	2,61	522	392	313	261	224	
		2,5	2,92	584	438	350	292	250	
		3,0	3,20	640	480	384	320	274	
		3,5	3,46	692	519	415	346	297	
		4,0	3,70	740	555	444	370	317	
30 MESH	256.1805.10 11010 BLACK	2,0	3,27	653	490	392	327	280	
		2,5	3,65	730	548	438	365	312	
		3,0	4,00	800	600	480	400	342	
		3,5	4,32	864	648	518	432	370	
		4,0	4,62	924	693	554	462	396	

4. OPERATION OF THE MACHINE

4.7. NOZZLES

4.7.1. 2000 L. Trailed Type Super Field Sprayer:

We are using fan throw nozzles (Plastic T-Jet Nozzles) with clamps on sprayer. If spraying patterns of nozzles are distorted or there's leakage from nozzle caps, nozzles need to be service:

- Take off the red nozzle cap by turning it to left.
- Take the filter out and clean it if blocked. Meanwhile check the seal inside the cap if worn. In such case replace it.
- Place the filter inside filter body and tight the cap by turning it to right. Pay attention to tight it until its blocked.
- Unfasten check valve cap and check the spring and seal. If necessary replace. Clean inside and seal to prevent leaking and malfunctioning. After every usage we suggest to clean nozzles.

4.8. BEFORE STARTING TO USE MACHINERY

In order to be successful in the plant protection you have to follow the instructions below.

- Choose the appropriate chemical for your plant protection.
- Determine the time of spraying properly, considering the climate conditions.
- Prepare the chemical mixtures according to the instructions of the chemical producers.
- The effectiveness, life and operation without any defect of the machine depend on the proper maintenance and regular service. Do not neglect this issue.
- Read the introduction and operation manual of the pump carefully before running the machine.
- Check the pump oil level.

4.9. MOUNTING OF THE MACHINE TO THE TRACTOR

Our machines can be mounted on the tractor with 3 point linkage hydraulic systems.

To be able to mount your machine to the tractor; Bring the lifting levers of your tractor closer to the connection pins of your machine by making maneuvers. After getting out of the tractor, mount the safety pins by connecting the lifting rods at the right and left to the pins. Assemble the safety pins by connecting the tractor middle rod to one of the suitable 2 holes located on the chassis of the machine in such a way that the vertical position of the machine is enabled. Connect the shaft between the tractor P.T.O. shaft and the pump Shaft. The transmission shaft should be parallel to the ground. It must not make any angle larger than 20°. Do never remove the shaft protection. After mounting the shaft, connect the shaft chain on an appropriate place in such a way that the plastic cover is not rotated.

4. OPERATION OF THE MACHINE

4.10. STARTING OF THE OPERATION OF THE MACHINE

You have to attend the instructions below before starting to operate:

- Connect Filling Hose.
- Put 1-2 barrels of water to the tank.
- Plunge one of the tips of the suction hose into water channel.
- Run the tractor and transfer the rotation to the P.T.O. and filling the tank.
- After filling the tank, put out filling hose and The machine is ready for spraying.
- You can start spraying by opening the distribution taps on the regulator
- Adjust your desired value of working pressure by using the regulator knob.
- The maximum value of working pressure must be 8 atm during spraying with the boom.

5. MAINTENANCE

5.1. AFTER EVERY USAGE

Even after very short time of usage, all parts which in contact with chemical should be washed with clean water. Run the pump for 4-5 minutes with clean water and spray all water. Spray all water suitable area for not damage another plant.

5.2. LUBRICATION

Following parts on the machinery must be lubricated continuously.

Shaft: Before each usage and at the end of each 10 hours of usage, the spider gear must be lubricated until to see the used oil comes out from the shaft's joints.

5.3. TECHNICAL SPECIFICATIONS OF THE PUMP

We are using **Annovi Reverberi AR 503, AR 1064, BHA 150, and ZETA 70** pumps.

- User must obey the instructions of manuals.
- The liquid that will be used in the pump must be 100% clean.
- Moving parts of the pump must be protected from dust and oxidation.
- All parts in the pump must be periodic renewed.
- Solvent, thinner as Combustible things must not be used in the pump.

5. MAINTENANCE

- High fluid clean water must be used.
- 100% chemical solutions must not be used.
- Sea (salt) water must not be used.
- Water temperature must be over than 5°C and lower than 40°C.
- Varnish, paint refresher etc. must not be used.
- All parts must be checked before operation.
- The angle of pump's shaft and cardan's shaft must be proper.

TYPE OF PUMPS	NUMBER OF DIAPHRAGMS	DELIVERY		PRESSURE		POWER	RPM	WEIGHT	DIMENSIONS (mm)			SUCTION	OUTLET
		Lt./min.	gpm	Bar	psi	HP		Kg	L	H	W	mm	mm
AR 503	3	55	14,5	40	580	5,2	550	13	272	274	294	Ø 30	Ø 3/4" G (M)
AR 713	3	71	18,7	40	580	8,6	550	20	360	335	337	Ø 40	Ø 3/4" G (M)
AR 1064	4	105	27,7	50	725	13,1	550	22	421	381	337	Ø 40	Ø 3/4" G (M)
BHA 150	3	142,3	37,6	50	725	17,1	550	40	397	417	418	Ø 40	Ø 3/4" G (M)
ZETA 70	3	70,5	18,6	20	290	5,5	550	10	251	243	254	Ø 40	Ø 20

5.4. PUMP MAINTENANCE AND PERIODICAL MAINTENANCE TABLE OF THE PUMP

Change oil after 50 hours of first usage and regularly after 300-350 hours. Our recommends to use 20W-50 engine oil.

In order to prevent freezing of pump:

- Open the valve in front of the pump. Operate the pump during 1 minute and shoot out all water from inside of the pump.
- Shoot out all water inside of the machinery's filters, nozzles and collector pipes.

OPERATION	EACH 8 HOURS	EACH 50 HOURS	EACH 300 HOURS	END OF SEASON
Control of oil level and oil indicator	■			
Control of air tube pressure		■		
Control of pipes' connection		■		
Control and cleaning of absorbing filter	■			
Control of pump's connection bolts and nuts		■		
Control of diaphragms and others				0
Oil change			0 ⁽¹⁾	0 ⁽²⁾
Control of entrance and exhaust valves			0	
Control of pump's bolts and nuts				0

■
Personal Control

0
Expert Control

(1)
Change of part and oil

(2)
Change of diaphragm and oil on time

6. TROUBLESHOOTING

FAULT	FAULT REASON	SOLUTION
Pump does not absorb!	Regulator may be in wrong position. Filter position may not be in receiving position	Switch the regulator to absorbing position or the filter to receiving position.
Pump does not pressurize!	There may be a dirt in absorbing valve	Clean the absorbing valve and the filter.
Pressure is inconsistent!	Air tube may be empty or Pump absorbs air.	Load the tube with air and Check the absorber pipes.
There is water in oil!	Diaphragm may be blow out.	Change the diaphragm.
Pump does not suck water!	Filter is blocked.	Screw up suction hose clamps. Check suction elbow O-ring.
	Suction hose is hole.	
Monometer shaking!	Suction line getting air or air left in the pump.	Check suction line.
		Run the pump while taps open.
Liquid does not flow regularly!	Wrong air cap pressure.	Check and adjust.
Not or less chemical output from nozzle!	Blockage in nozzle or defected nozzle.	Clean or replace.
Leakage from hoses!	Loose connection or Seals are worn.	Replace or fix.



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