

**DISTRIBUTION  
DEVICE**

# OPERATION AND MAINTENANCE INSTRUCTION



**atomizzatori e impolveratori**

*Dear Customer, thank you very much!*

*We want to congratulate with you, for having chosen a distribution device for **cima**<sup>®</sup> sprayer.*

*Your choice shows the wisdom of the well-informed Purchaser, aware of the fact, that the required features of quality, technique and reliability must be satisfied at the right price!*

*Our continuous engagement in R&D and in testing our machines allows us to realize products able to offer the best performances, a high reliability and a great easiness of use at the same time !*

*Our first goal, is to get our Customers happy for having met us!*

# SPRAYHEADS FOR SPRAYER

## OPERATION AND MAINTENANCE INSTRUCTIONS

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## ADDITIONAL RECORD AND VARIANTS

REVISION	DESCRIPTION
00	First Edition, July 2003
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## 1.1 - PUBLICATION IDENTIFICATION

The "OPERATION AND MAINTENANCE INSTRUCTIONS" manual is an integrative part of the sprayers. It is identified by a Publication No. located on the frontispiece, and through which the document can be identified, traced and/or subsequently referred to.

The information elements contained herein are updated as at the date of publication. C.I.M.A. S.p.A. reserves the right to modify its machines without notice, with the purpose of applying technical enhancements, and it declines all responsibility for possible omissions from the publication.

## 1.2 - ATTACHED PUBLICATIONS

— Spare parts catalogue.

## 1.3 - PURPOSE OF PUBLICATION

All indications contained in this manual are aimed at the user of the sprayer.

The duration of the sprayhead and its operation, the operator's safety and the respect for the environment are dependent upon scrupulous observance of the stated norms.

Before making use of the sprayer, the user must read, understand and abide by all regulations listed in this manual.

## 1.4 - REFERENCE TO SPECIFICATIONS

— UNI EN 907 - 1997 and to all the documents in it quoted.

## 1.5 - USE OF THE MANUAL

Read every part of this manual, paying attention to the **WARNING** and **DANGER** indications both on the text and on the machine or on components.

All operations suggested by the manual will have to be followed with the utmost care and only after having understood the negative consequences of improper usage.

The following "**symbols**" are used within the text in order to highlight and visually identify the importance of the various types of information:



Indicates important additional information



Non observance can result in permanent damage to the sprayer or sprayhead.



Highlights possibly dangerous situations to people.

The manual, with relevant attachments and possible integrating issues, must be kept with the utmost care and must always be complete, integer and legible in every part. Should it be mislaid it is imperative to immediately request a duplicate from C.I.M.A. S.p.A. Should the decal originally applied on the sprayhead be mislaid, damaged or become incomprehensible, they should be promptly replaced.



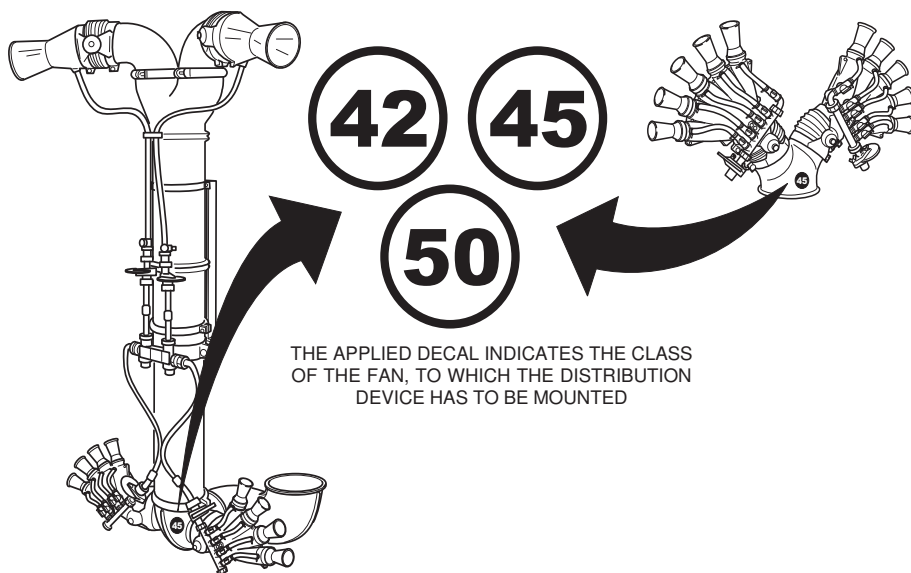
- The manual must always be kept for the sprayer's whole operational life.
- Any modification received must be permanently inserted in this publication.
- The manual must be ceded with the sprayer should this be sold.

**2****GENERAL INFORMATION****2****2.1 - IDENTIFICATION**

The Sprayheads realized for the sprayers 42, 45 and 50 have the same coupling diameter to the fan outlet mouth or to the connecting elbow. In order to differentiate the Sprayhead, according with the class of the sprayer on which it has to be used, on the same one a decal is applied, indicating the class of the fan on which the distribution device can be mounted.



The use of sprayheads belonging to a class different from the sprayer's one, negatively affects the delivery efficiency, by diminishing the treatment performance.

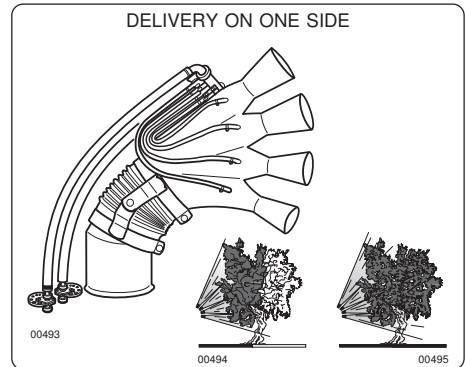
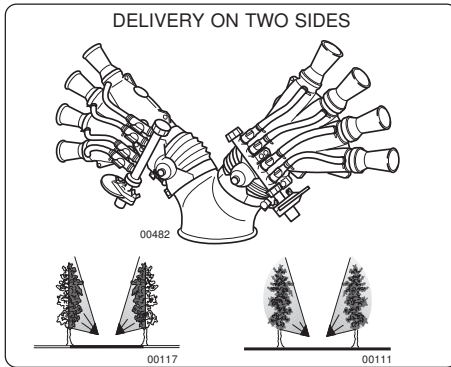


## 2.2 - CLASSIFICATION

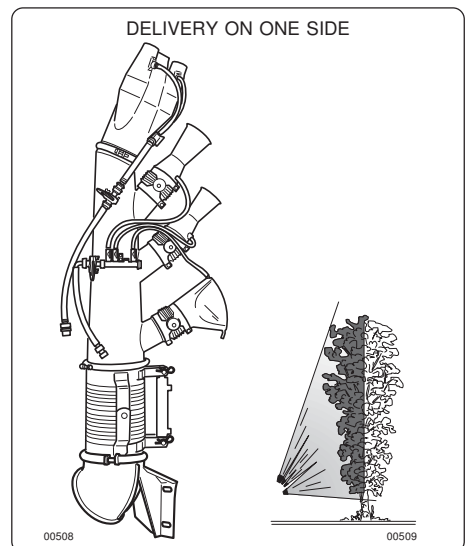
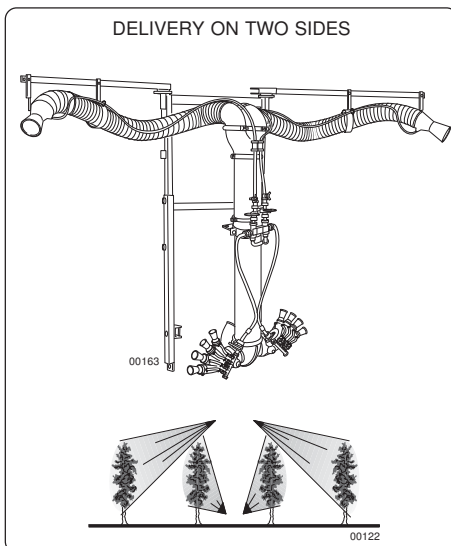
The distribution devices (sprayheads) are classified, according with the complexity of the device itself and on the basis of the type of outlet device used. The sprayheads are therefore divided into two categories, the simple sprayheads' and the combined sprayheads' ones. The combined sprayheads are characterized by the simultaneous use of outlet devices of different types, employed in order to obtain a covering really answering to the requirements of the culture to be treated, and, in case of particularly large cultures, by the use of suitable support frames.

Both those sprayheads' types, the simple and the combined ones, can be oriented in such a way to optimize the required covering.

### Simple Sprayheads



### Combined Sprayheads



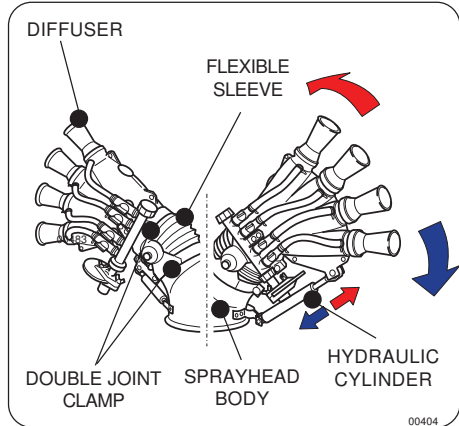
The outlets to be used can be subdivided into the following types:

- hands (with the relevant diffusers);
- cannons;
- fishtails.

### 2.2.1 - Hands

The "hands" consist of a central body, to which 2 up to 5 diffusers are applied.

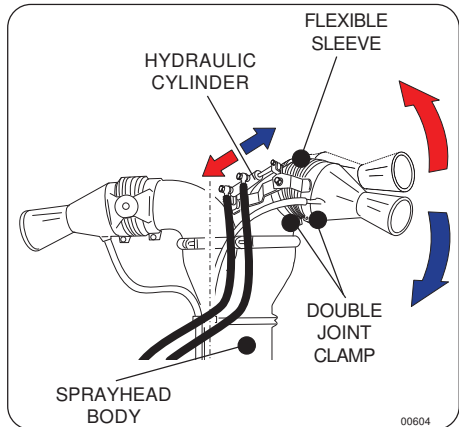
The hands are connected to the sprayhead body through a flexible sleeve and a double joint clamp. Upon request, a hydraulic cylinder for remote-controlling the sprayhead orientation can be applied to the central body.



### 2.2.2 - Cannons jet

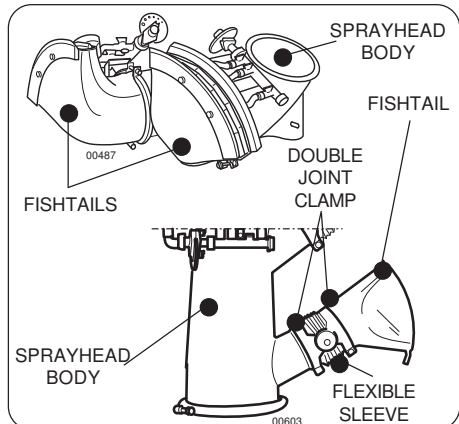
The "cannons jet" consist of a single body, which is directly fixed to the sprayhead body.

They are connected with the sprayhead body through a flexible sleeve and a double joint clamp which allows the proper orientation. Upon request, a hydraulic cylinder for remote-controlling the sprayhead orientation can be applied to the central body.



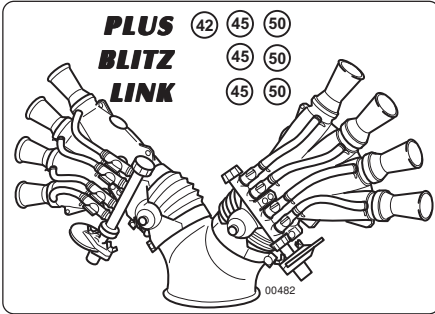
### 2.2.3 - Fishtails

The "fishtails" are either directly fixed to the sprayhead body or they are connected to it through a flexible sleeve and the relevant double joint clamp. They are realized according to different sizes, on the basis of the sprayhead and the machine on which they must be used.

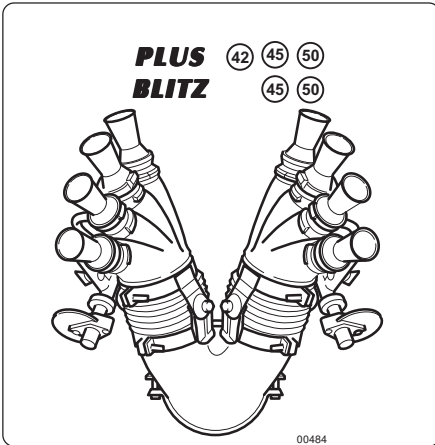


The following figures illustrate the most commonly sold distribution devices, which can be used with the **C.I.M.A. low volume sprayers**. Other models are available, or are realized upon a specific request, in order to meet special requirements; in order to get the necessary information about them, please directly contact **C.I.M.A. S.p.A.** – Sales Dpt.

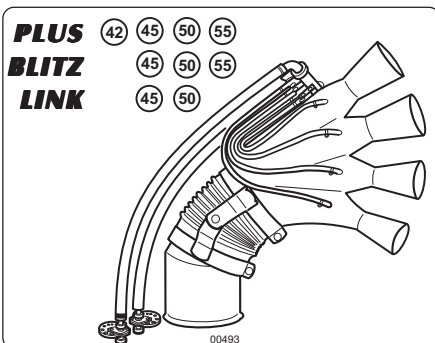
**4+4 SPRAYHEAD**



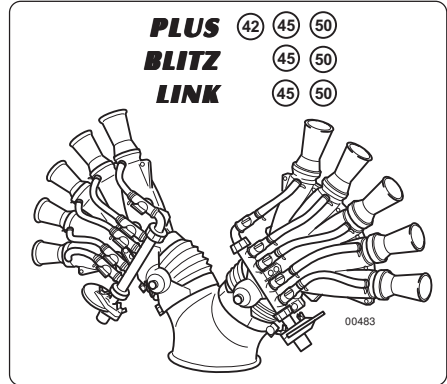
**STRASBURGO SPRAYHEAD**



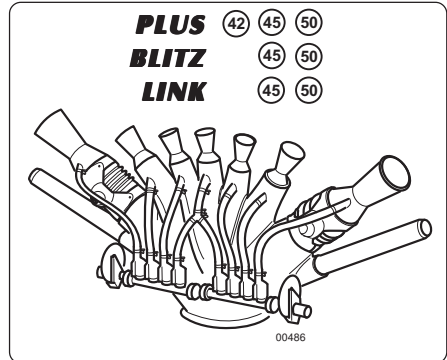
**OLIVE SPRAYHEAD**



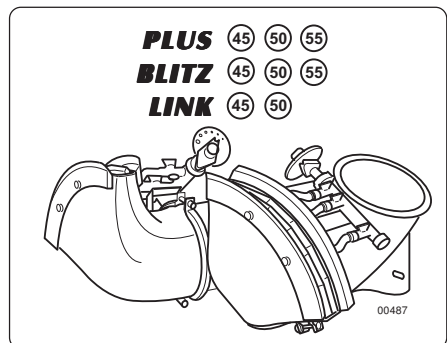
**5+5 SPRAYHEAD**



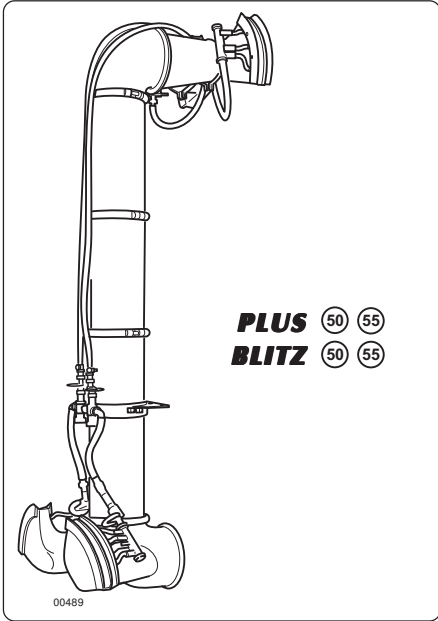
**TENDONE SPRAYHEAD**



**2 FISHTAILS SPRAYHEAD**

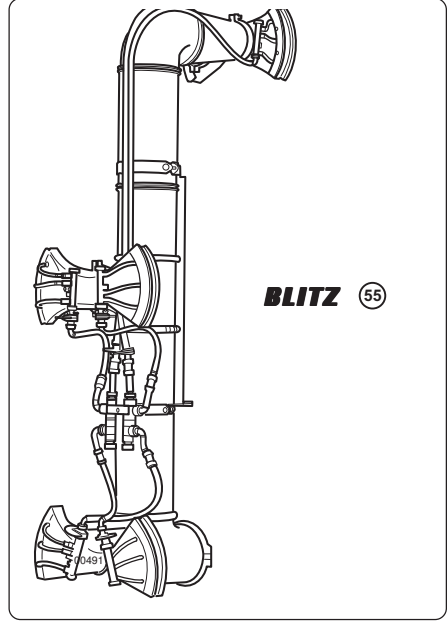


**4 FISHTAILS SPRAYHEAD**



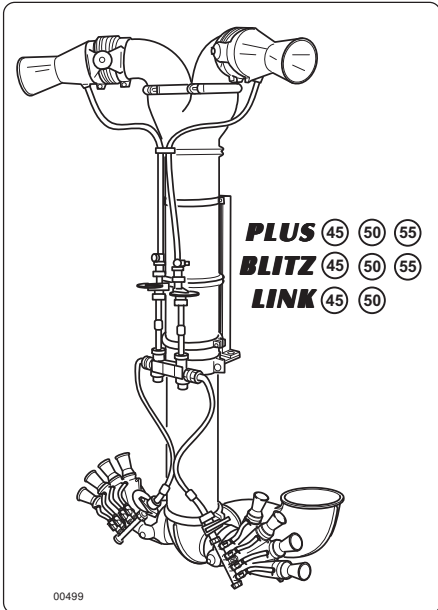
**PLUS** (50) (55)  
**BLITZ** (50) (55)

**6 FISHTAILS SPRAYHEAD**



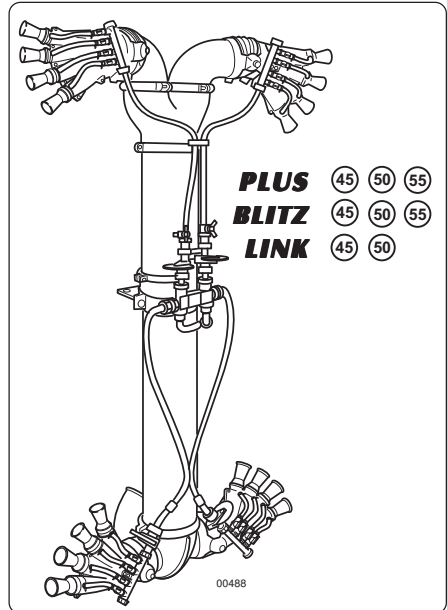
**BLITZ** (55)

**TC. 2M 2C**



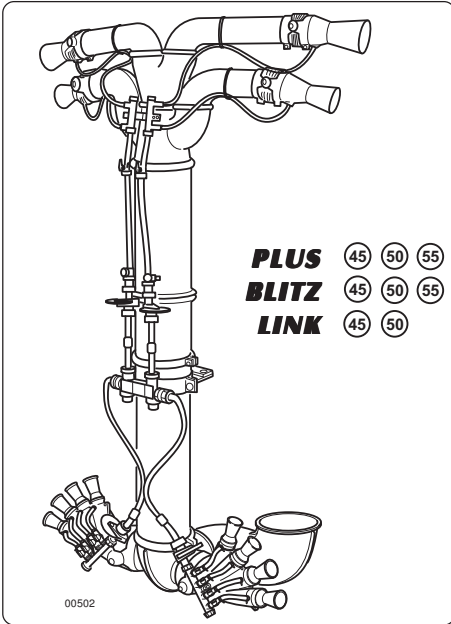
**PLUS** (45) (50) (55)  
**BLITZ** (45) (50) (55)  
**LINK** (45) (50)

**TC. 2M 2M**

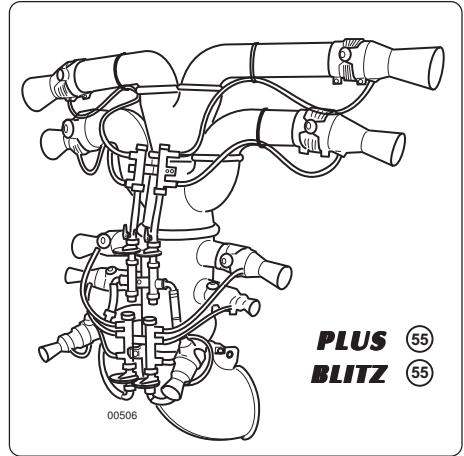


**PLUS** (45) (50) (55)  
**BLITZ** (45) (50) (55)  
**LINK** (45) (50)

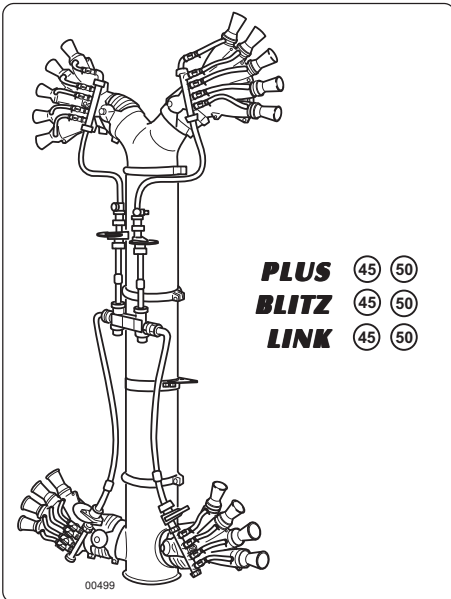
**TC. 2M 4C**



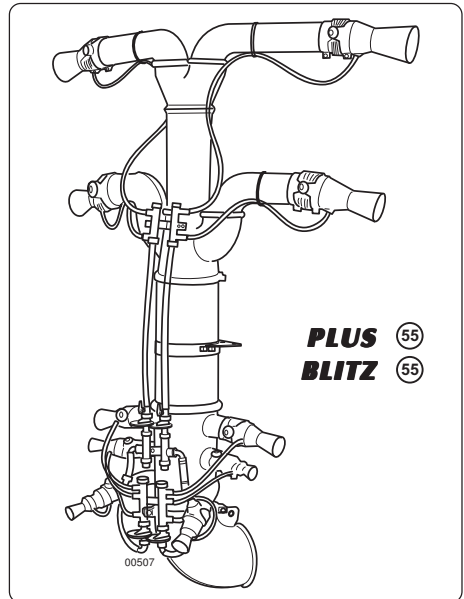
**POTATOES SPRAYHEAD**



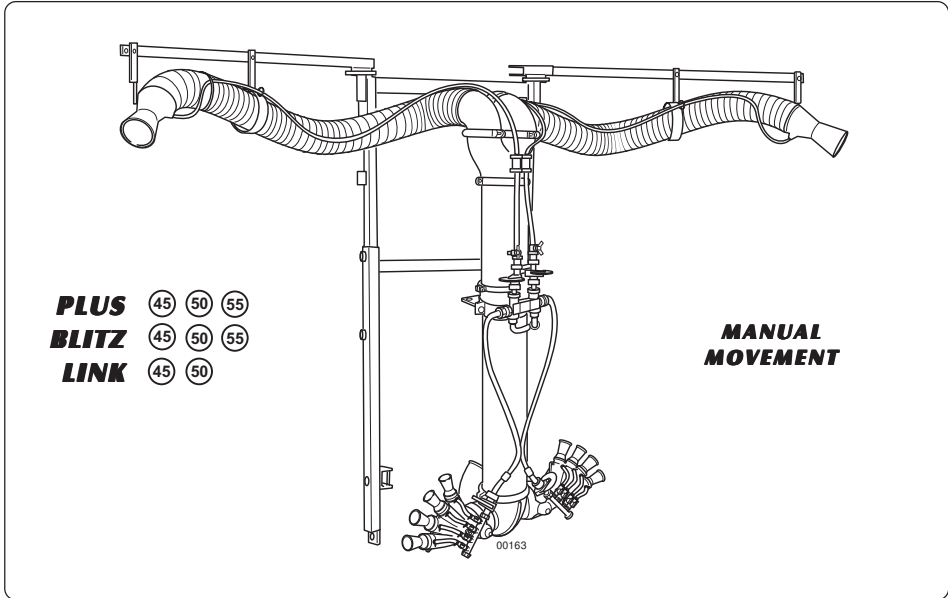
**CAFFÈ SPRAYHEAD**



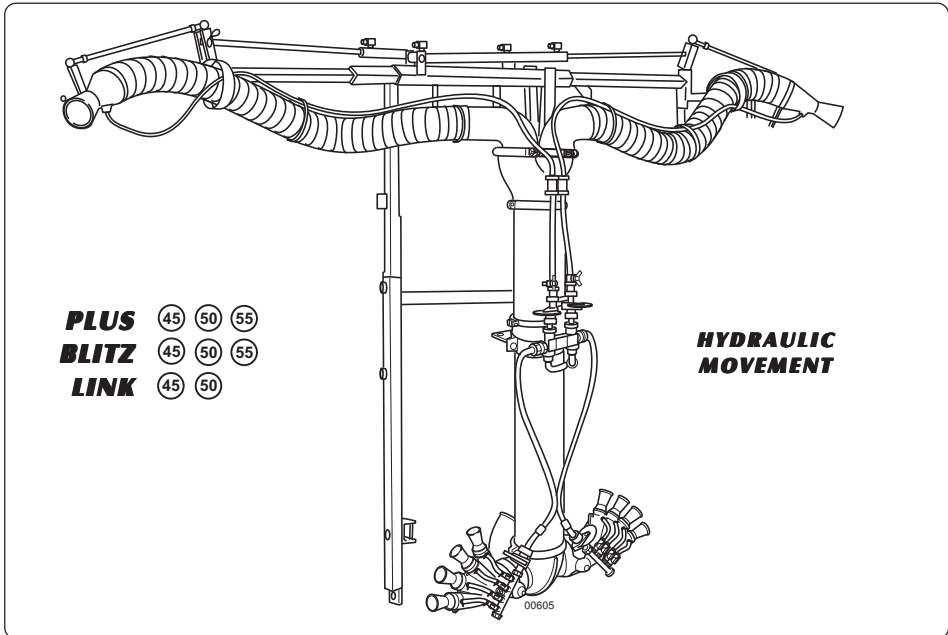
**TOMATO SPRAYHEAD**



**TCF. 2M 2C**

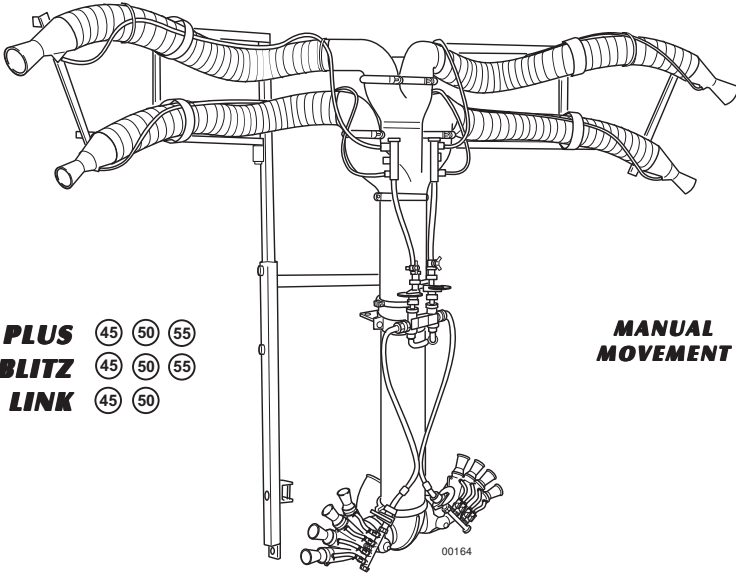


**TCL. 2M 2C**

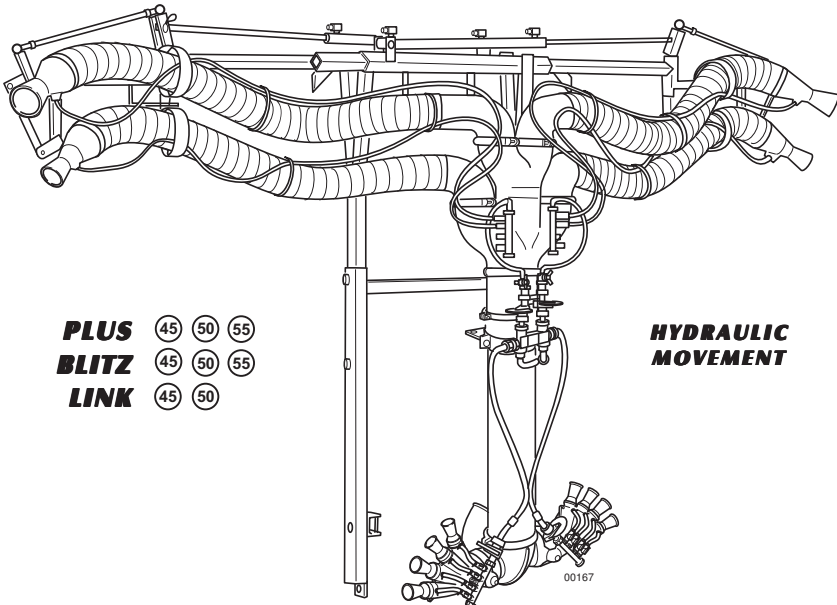




**TCF. 2M 4C**

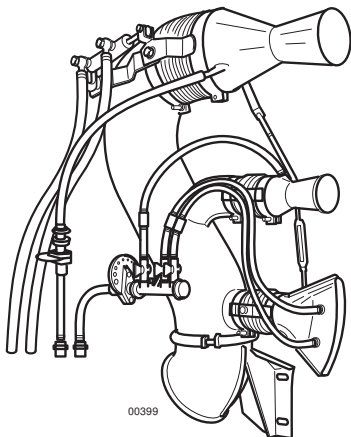


**TCL. 2M 4C**



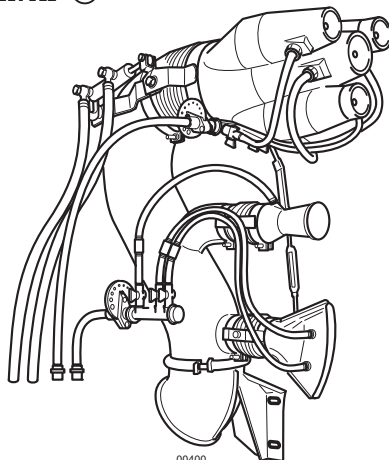
**TOBACCO CANNON JET**

**PLUS** (42) (45)  
**BLITZ** (45)  
**LINK** (45)



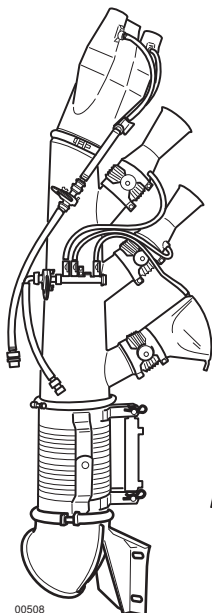
00399

**PLUS** (50) (55)  
**BLITZ** (50) (55)  
**LINK** (50)



00400

**VERTICAL CANNON JET**



00508

**PLUS** (55)  
**BLITZ** (55)

**COMPLETE BODY KIT  
 2 HANDS WITH 2 NOZZLES EACH**

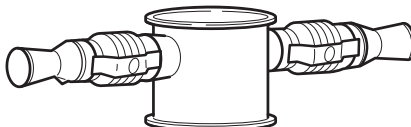
**PLUS** (42) (45) (50) (55)  
**BLITZ** (45) (50) (55)  
**LINK** (45) (50)



00174

**COMPLETE BODY KIT  
 WITH 2 NOZZLES**

**PLUS** (42) (45) (50) (55)  
**BLITZ** (45) (50) (55)  
**LINK** (45) (50)



00643

## 2.3 - IDENTIFICATION

In the table, the Sprayheads' identification codes are reported, associated with the model on which they can be mounted.

Description	Model	Part/Number	Weight (kg)
<b>4+4 SPRAYHEAD</b> 4+4 nozzles	P42-Plus 42	T.4+4.42.01	5
	P45-Plus/Blitz/Link 45	T.4+4.45.01	5
	Plus/Blitz/Link 50	T.4+4.50.01	5
<b>5+5 SPRAYHEAD</b> 5+5 nozzles	P42-Plus 42	T.5+5.42.01	5
	P45-Plus/Blitz/Link 45	T.5+5.45.01	5
	Plus/Blitz/Link 50	T.5+5.50.01	5
<b>Hydraulic orientation for nozzles</b> T.4+4 T.5+5	Plus/Link	DIFF.1.2M.01	
	Blitz	DIFF.1.2M.02	
<b>STRASBURGO SPRAYHEAD</b> 4+4 nozzles	P42-Plus 42	T.ST4.42P.01	8
	P45-Plus 45	T.ST4.45P.01	8
	Plus 50	T.ST4.50P.01	8
	Blitz 45	T.ST4.45T.01	5
	Blitz 50	T.ST4.50T.01	5
<b>TENDONE SPRAYHEAD</b> 7 nozzles	P42-Plus 42	T.TND.42.01	8
	P45-Plus/Blitz/Link 45	T.TND.45.01	8
	Plus/Blitz/Link 50	T.TND.50.01	8
<b>2 FISHTAIL SPRAYHEAD</b>			
<b>3 sectors - narrow</b>	P45-Plus/Link 45	T.2V3S.45P.02	12
<b>4 sectors</b>	Plus/Link 50	T.2V4.50P.01	14
<b>3 sectors - wide</b>	Plus/Link 50	T.2V3L.50P.02	13
<b>8 sectors</b>	Plus 55-S-E	T.2V8.55P.01	28
<b>3 sectors - wide</b>	Plus 55-S-E	T.2V3L.55P.02	26
<b>3 sectors - narrow</b>	Blitz 45	T.2V3S.45T.02	9
<b>4 sectors</b>	Blitz 50	T.2V4.50T.01	11
<b>3 sectors - wide</b>	Blitz 50	T.2V3L.50T.02	9
<b>3 sectors - wide</b>	Blitz 55-S-E 600-800-1000	T.2V3L.55T.02	10
<b>4 sectors</b>	Blitz 50 lt.1500 Blitz 55	T.2V4.55T.01	13
<b>8 sectors</b>	Blitz 55-S-E	T.2V8.55T.01	13
<b>4 FISHTAIL SPRAYHEAD</b> 2 fishtails each side	Plus 50	T.4V.50P.02	
	Plus 55-S-E	T.4V.55P.02	75
	Blitz 50	T.4V.50T.10.02	
	Blitz 55-S-E	T.4V.55T.02	80
<b>6 FISHTAIL SPRAYHEAD</b> 3 fishtails each side	Blitz 55-S-E lt.1000	T.6V.55T.02	62
	Blitz 55-S-E lt.1500- 2000	T.6V.55TE.02	60

Description	Model	Part/Number	Weight (kg)
<b>TC. 2M 2M</b> 2 hands with 4 nozzles each side	P45-Plus 45	TC.2M2M.45P.01	30
	Plus 50	TC.2M2M.50P.01	31
	Plus 55-S-E	TC.2M2M.55P.01	61
	Blitz 45	TC.2M2M.45T.01	25
	Link 45	TC.2M2M.45S.01	23
	Blitz 50	TC.2M2M.50T.01	26
	Link 50	TC.2M2M.50S.01	30
<b>TC. 2M 2C</b> 2 lower hands with 4 nozzles each and 2 upper cannons	P45-Plus 45	TC.2M2C.45P.01	30
	Plus 50	TC.2M2C.50P.01	27
	Plus 55-S-E	TC.2M2C.55P.01	63
	Blitz 45	TC.2M2C.45T.01	30
	Link 45	TC.2M2C.45S.01	25
	Blitz 50	TC.2M2C.50T.01	30
	Link 50	TC.2M2C.50S.01	32,5
<b>Hydraulic orientation for upper nozzles TC. 2M 2M TC. 2M 2C</b>	Plus/Link	DIFF.1.2C.TC.01	
	Blitz	DIFF.1.2C.TC.02	
<b>TC. 2M 4C</b> 2 lower hands with 4 nozzles each 4 upper cannons	Plus 45	TC.2M4C.45P.01	40
	Plus 50	TC.2M4C.50P.01	35
	Plus 55-S-E	TC.2M4C.55P.01	65
	Blitz 45	TC.2M4C.45T.01	36
	Link 45	TC.2M4C.45S.01	
	Blitz 50	TC.2M4C.50T.01	36,5
	Link 50	TC.2M4C.50S.01	31
<b>Hydraulic orientation for upper nozzles TC. 2M 4C</b>	Plus/Link	DIFF.1.4C.TC.01	
	Blitz	DIFF.1.4C.TC.02	
<b>Coffee sprayhead</b> 2 lower hands with 4 nozzles each 2 upper hands with 5 nozzles each	P45-Plus/Link 45	T.CA.45P.01	30
	Plus/Link 50	T.CA.50P.01	30
	Blitz 45	T.CA.45T.01	
	Blitz 50	T.CA.50T.01	

Description	Model	Part/Number	Weight (kg)
<b>TCF. 2M 2C</b> 2 hands with 4 nozzles each 2 flexible cannons	Plus 45	TCF.2M2C.45P02	120
	Plus 50	TCF.2M2C.50P02	
	Plus 55-S-E	TCF.2M2C.55P02	
	Blitz 45	TCF.2M2C.45T02	85
	Link 45	TCF.2M2C.45S02	
	Blitz 50	TCF.2M2C.50T02	86
	Link 50	TCF.2M2C.50S02	
	Blitz 55-S-E	TCF.2M2C.55T02	
<b>TCF. 2M 4C</b> 2 hands with 4 nozzles each 4 flexible cannons	Plus 45	TCF.2M4C.45P02	105
	Plus 50	TCF.2M4C.50P02	110
	Plus 55-S-E	TCF.2M4C.55P02	
	Blitz 45	TCF.2M4C.45T02	
	Link 45	TCF.2M4C.45S02	
	Blitz 50	TCF.2M4C.50T02	80,7
	Link 50	TCF.2M4C.50S02	
	Blitz 55-S-E	TCF.2M4C.55T02	120
<b>Hydraulic arms enclosure kit</b>	Testate TCF a 2 e 4 cannoni	K.2.TCF.01	8
<b>TCI 2M 4C</b> 2 hands with 4 lower nozzles 4 upper cannons  hydraulic movement for the adjustment of the width, vertical orientation of the cannons, opening and closing of the external sections	Plus 45	TCI.2M4C.45P11	
	Plus 50	TCI.2M4C.50P11	
	Plus 55-S-E	TCI.2M4C.55P11	
	Blitz 45	TCI.2M4C.45T11	
	Link 45	TCI.2M4C.45S11	
	Blitz 50	TCI.2M4C.50T11	120
	Link 50	TCI.2M4C.50S11	122
	Blitz 55-S-E	TCI.2M4C.55T11	
<b>Complete body kit with 2 nozzles</b>	Tutti 45/50	K.2D.175.01	
	Tutti 55	K.2D.250.01	
<b>Complete body kit 2 hands with 2 nozzles each</b>	Tutti 45/50	K.2M2D.175.01	3,15
	Tutti 55	K.2M2D.250.01	
<b>Olive sprayhead without elbow</b>	P42-Plus 42	T.OL.000.42.01	9
	Plus/Blitz/Link 45	T.OL.000.45.01	9,25
	Plus/Blitz/Link 50	T.OL.000.50.01	10
	Plus/Blitz 55-S-E	T.OL.000.55.01	15
<b>Olive sprayhead with 45° elbow</b>	P42-Plus 42	T.OL.045.42.01	13
	P45-Plus/Link 45	T.OL.045.45.01	13
	Plus/Link 50	T.OL.045.50.01	15
	Plus 55-S-E	T.OL.045.55.01	23

Description	Model	Part/Number	Weight (kg)
<b>Olive sprayhead with 180° elbow 250 mm diameter</b>	Plus 55-S-E	T.OL.180.55.01	28
<b>Olive sprayhead with 600 mm extension length 175mm diameter</b>	Blitz 45	T.OL.P06.45.01	17
	Blitz 50	T.OL.P06.50.01	
<b>Olive sprayhead with 90° elbow and 500 mm extension length 250mm diameter</b>	Blitz 55-S-E	T.OL.P05.55.01	
<b>Tobacco cannon jet without elbow with hydraulic piston</b>	P42-Plus 42	T.GC.00.42P.02	17
	P45-Plus/Link 45	T.GC.00.45P.02	19
	Plus/link 50 Diffusore Multiplo	T.GC.00.50P.02	19
	Plus 55-S-E Diffusore Multiplo	T.GC.00.55P.01	
	Blitz 45	T.GC.00.45T.02	
	Blitz 50 Diffusore Multiplo	T.GC.00.50T.02	
	Blitz 55-S-E Diffusore Multiplo	T.GC.00.55T.01	
<b>Tobacco cannon jet with 45° elbow and hydraulic piston</b>	P42-Plus 42	T.GC.045.42.02	22
	P45-Pls/Link 45	T.GC.045.45.02	23
	Plus/Link 50	T.GC.045.50.02	23
	Plus 55-S-E Diffusore Multiplo	T.GC.045.55.01	30
<b>Tobacco cannon jet with 180° elbow 250 mm diameter and hydraulic piston</b>	Plus 55-S-E Diffusore Multiplo	T.GC.180.55.01	35
<b>Tobacco cannon jet with 600 mm extension length 175 mm diameter and hydraulic piston</b>	Blitz 45	T.GC.P06.45.02	30
	Blitz 50 Diffusore Multiplo	T.GC.P06.50.02	
<b>Tobacco cannon jet with 90° elbow 500 mm extension length 250 mm diameter and hydraulic piston</b>	Blitz 55-S-E Diffusore Multiplo	T.GC.P05.55.01	35
<b>Flexible cannon</b>	P42-Plus 42	T.GCF.42.01	
	P45-Plus/Blitz 45	T.GCF.45.01	
	Plus/Blitz 50	T.GCF.50.01	

Description	Model	Part/Number	Weight (kg)
<b>Vertical cannon jet</b> without elbow with hydraulic piston	Plus/Blitz 55-S-E	T.GCV.000.01	
<b>Vertical cannon jet</b> 45° elbow – 250 mm diameter and hydraulic piston	Plus 55-S-E	T.GCV.045.01	
<b>Vertical cannon jet</b> 90° elbow -800 mm extension length 250 mm diameter and hydraulic piston	Blitz 55-S-E	T.GCV.P08.01	57
<b>Potatoes sprayhead</b> 90° elbow – 250 mm diameter	Blitz 55-S-E	T.PT.55T.02	
<b>Potatoes sprayhead</b> 180° elbow – 250 mm diameter	Plus 55-S-E	T.PT.55P.02	
<b>Tomato sprayhead</b> 90° elbow- 250 mm diameter	Blitz 55-S-E	T.PM.55T.02	60
<b>Tomato sprayhead</b> 180° elbow – 250 mm diameter	Plus 55-S-E	T.PM.55P.02	69

TABT\_006.BG

## Airbooms for 3-point mounted sprayers



00414

Description	Model	Part/Number	Weight (kg)
<b>5 meters lenght manual boom</b> 8 outlets with 2 nozzles each	P42 Plus 45	BM.08.2.02	
<b>7 meters lenght manual boom</b> 10 outlets with 2 nozzles each	P45 Plus 45/50	BM.10.2.02	107
<b>12 meters lenght airboom</b> 18 outlets with 2 nozzles each Section closing, hydraulic control for adjustment of the height and the section level.	Plus 50	B18.2.66.50.02	
	Plus 55-S-E	B18.2.66.55.02	

TABT\_006.BG

## Wrap-a-round sprayheads (see specific publications)

Description		Model	Part/Number	Weight (kg)
<b>Wrap-a-round</b> 12 hands 3 nozzles each	stretta	Blitz 55-E lt.1000	TS5.12M.55T01	
	larga	Blitz 55-E lt.1500/2000	TS5.12M.55TG03	
<b>Wrap-a-round</b> 8 hands 4 hands 4 nozzles each 4 hands 3 nozzles each	stretta	Blitz 55-S-E lt.1000	TS5.8M.55T01	
	larga	Blitz 55-S-E lt.1500/2000	TS5.8M.55TG02	
<b>Wrap-a-round</b> 6hands 4 nozzles each	stretta	Blitz 55-S-E lt.1000	TS5.6M.55T01	386
<b>Wrap-a-round</b> 4 hands 4 nozzles each 4 little cannons 18/120	stretta	Blitz 55-S-E lt.1000	TS5.4M4C.55T01	
	larga	Blitz 55-S-E lt.1500/2000	TS5.4M4C.55TG0 2	
<b>Wrap-a-round</b> 6 hands 4 nozzles each 6 little cannons 14/120	stretta	Blitz 55-S-E lt.1000	TS5.6M6C.55T01	
	larga	Blitz 55-S-E lt.1500/2000	TS5.6M6C.55TG0 2	

TAB1\_007\_GB



## 2.4 - CUSTOMER SERVICE

C.I.M.A. S.p.A. is at complete disposal of its customers for every type of intervention. The names and addresses of its customer service network, both in Italy and abroad, can be obtained by contacting:

**C.I.M.A. S.p.A. - 27040 Montù Beccaria - Loc. Molino Quaroni (PV) - ITALY**  
tel. 0385-246636 - fax 0385-246637  
calling from abroad +39-0385-246636 - fax +39-0385-246637  
e.mail [tecnic@cimaitalia.com](mailto:tecnic@cimaitalia.com)

## 2.5 - SAFETY WARNINGS

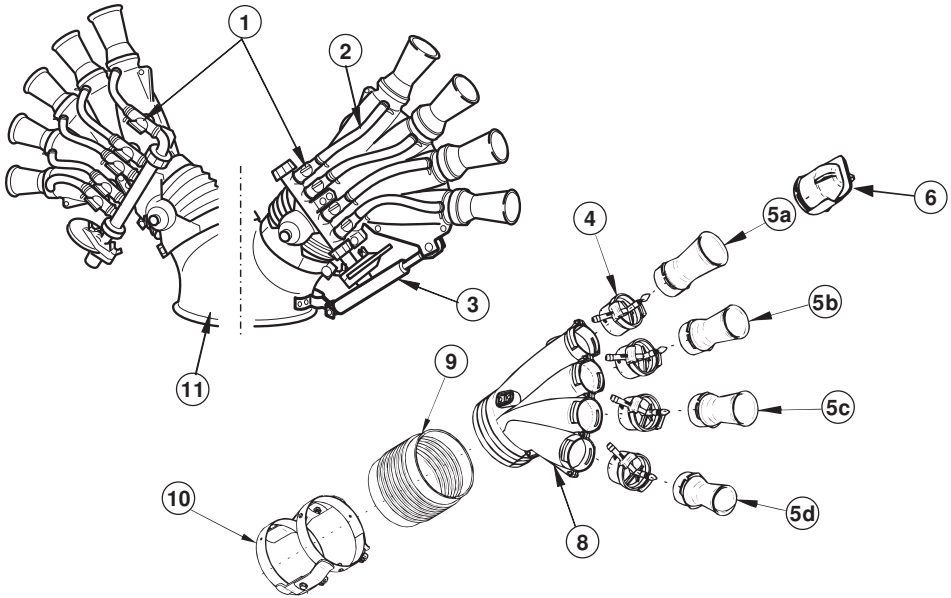


**IT IS ABSOLUTELY NECESSARY TO CAREFULLY OBSERVE BOTH THE INDICATIONS SUPPLIED IN THIS MANUAL AND THE SAFETY RULES CONTAINED IN THE SPRAYER OPERATION AND MAINTENANCE INSTRUCTIONS MANUAL.**

- stop the tractor engine and remove the ignition key from the control panel before to mount the distribution device.
- before use, check that the distribution device was correctly mounted to the sprayer and secured to it.

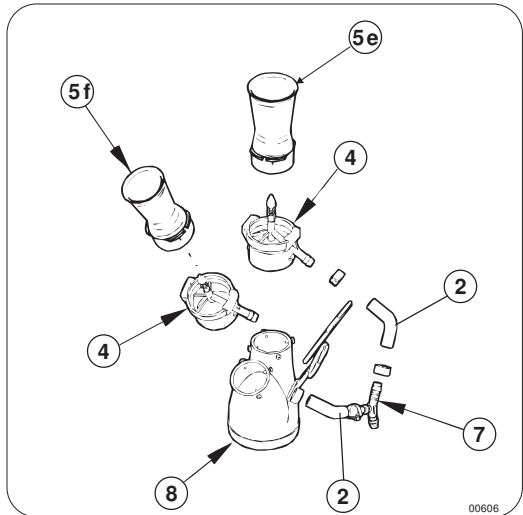
**3 DISTRIBUTION DEVICES' COMPONENTS 3**

**3.1 - HANDS**



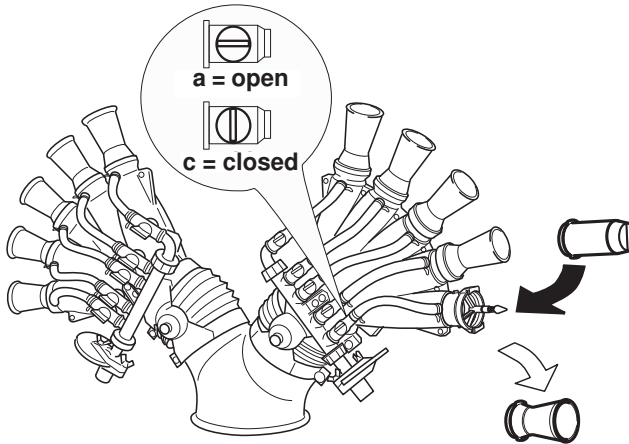
**LEGEND**

- 1. DELIVERY CLOSING COCK
- 2. DIFFUSERS FEEDING TUBE
- 3. HYDRAULIC CYLINDER
- 4. FAST COUPLING TUBE-CARRIER FITTING WITH OLIVE STOPPER
- 5. DIFFUSER
- 6. AIR FLOW CLOSING CAP (upon request)
- 7. Y JOINT
- 8. DIFFUSER-CARRIER SIDE BODY
- 9. FLEXIBLE SLEEVE
- 10. DOUBLE JOINT CLAMP
- 11. SPRAYHEAD BODY



### (1) DELIVERY CLOSING COCK

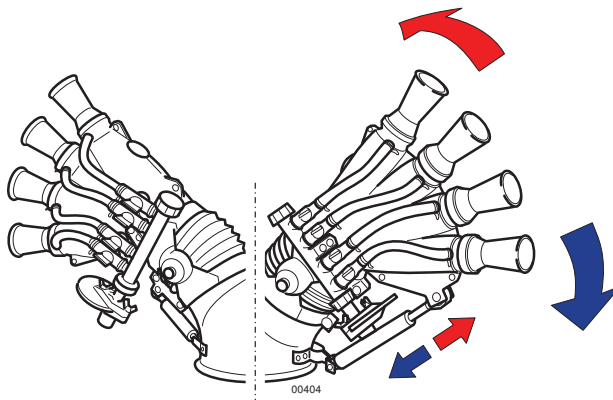
It either opens or closes the delivery of the liquid into the diffuser. The cock is open, when the control wing is positioned towards the outlet flow of the liquid. It is closed, when the wing is 90° rotated. In order to stop also the air flow when the cock is closed, the diffuser has to be replaced with the cap (4), to be supplied upon request.



00190

### (3) HYDRAULIC ORIENTATION

The hands' diffuser-carrier side body can be equipped, either as a standard supply or as an option, with a hydraulic kit to be coupled to the power outlets of the tractor, through which the sprayhead vertical orientation movements can be remotely controlled in a separate way either on the right side or on the left one.



00404

00403

## (5) DIFFUSERS

The single diffuser is characterized by a couple of numbers: the first one indicates the area expressed in cm<sup>2</sup> of the contracted section of the same one, while the second one is the diameter expressed in mm of the outlet section. The diffusers are replaceable and interchangeable the one with the other only on the same side body, in such a way to keep the total section unchanged.

**EXECUTION FOR THE DIFFUSERS' REMOVAL AND MOUNTING:** rotate the diffuser 90° in order to remove it. Introduce into the seat the new one and rotate it: a click will assure that the operation was carried out correctly.

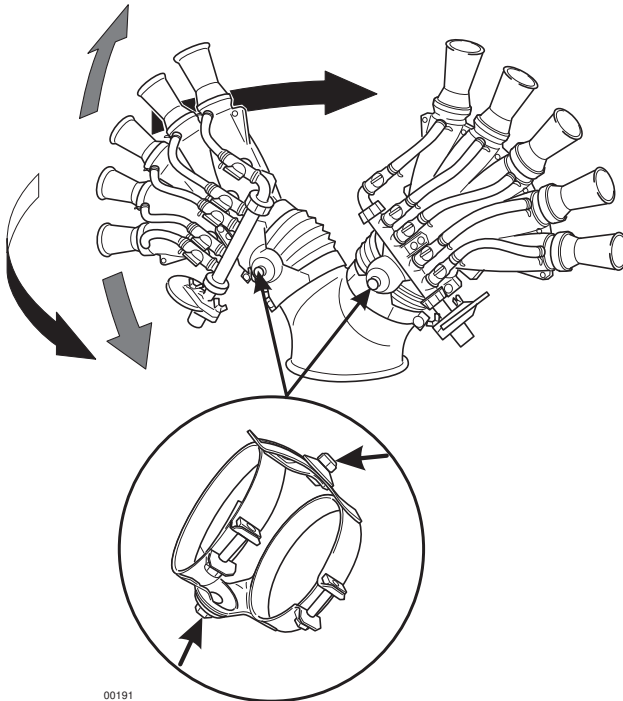
**The diffusers have different outlet sections and are chosen according with the type of sprayer on which the sprayhead is employed (see point 5.1).**

## (6) AIR FLOW CLOSING CAP (upon request)

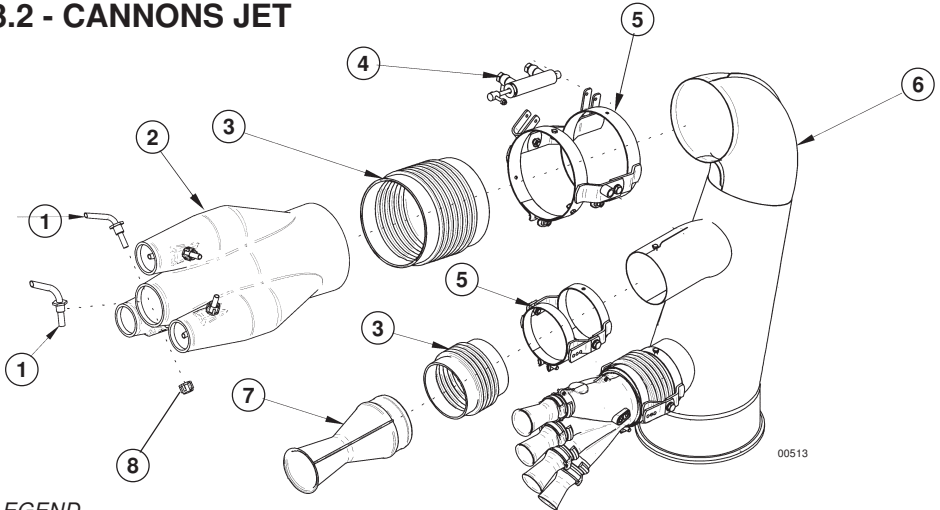
The cap is mounted in place of the diffuser on which the delivery of the liquid is closed by acting on the diffuser cock.

## (10) DOUBLE JOINT CLAMP

By acting on the 2 external nuts, it is possible to either rotate upwards and downwards or to move backwards the diffuser-carrier side bodies.



### 3.2 - CANNONS JET

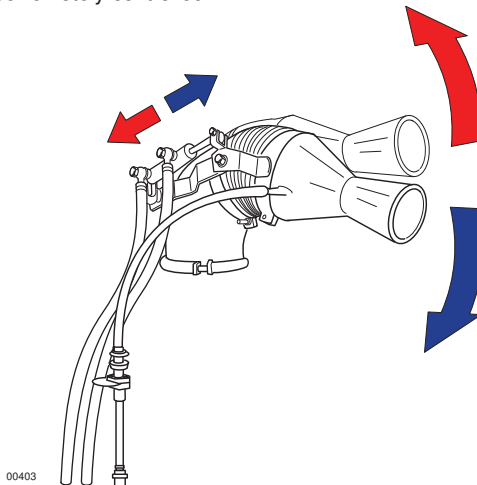


**LEGEND**

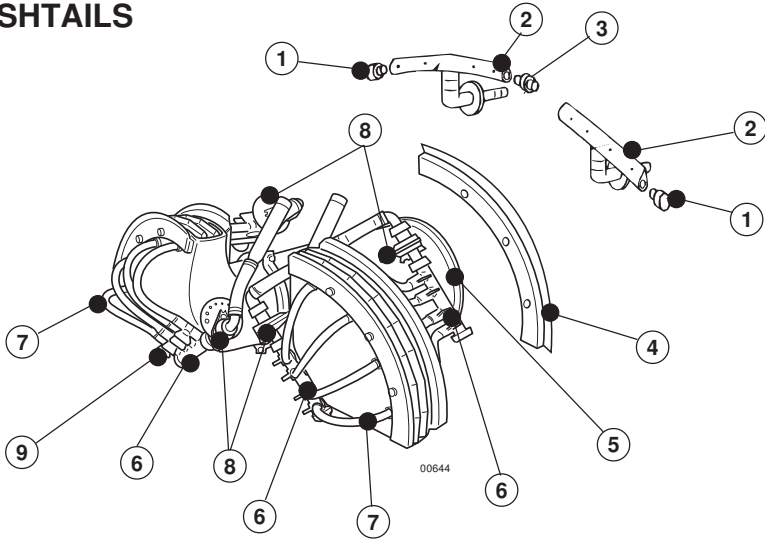
- |                            |                                      |
|----------------------------|--------------------------------------|
| 1. DIFFUSERS' FEEDING TUBE | 5. DOUBLE JOINT CLAMP                |
| 2. MULTIPLE CANNON BODY    | 6. PRAYHEAD BODY / AIR DELIVERY DUCT |
| 3. FLEXIBLE SLEEVE         | 7. CANNON DIFFUSER                   |
| 4. HYDRAULIC CILINDER      | 8. FEEDING TUBE FASTENING RING NUT   |

### (4) HYDRAULIC ORIENTATION

The sprayhead with cannons can be equipped, as a standard supply or as an option, with a hydraulic kit to be coupled to the power outlets of the tractor, through which the sprayhead vertical orientation movements can be remotely controlled.



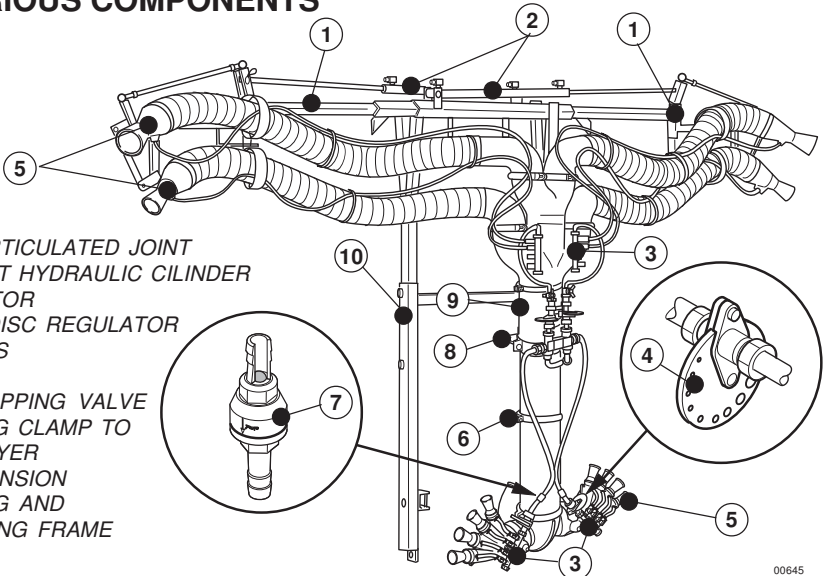
### 3.3 - FISHTAILS



**LEGEND**

- |                                 |                           |
|---------------------------------|---------------------------|
| 1. CLOSING CAP                  | 6. DISTRIBUTOR            |
| 2. FISHTAIL FEEDING SECTOR TUBE | 7. DIFFUSERS FEEDING TUBE |
| 3. CONNECTING PIPE FITTING      | 8. ROTARY DISC REGULATOR  |
| 4. FISHTAIL GUARD               | 9. DELIVERY STOP COCK     |
| 5. SPRAYHEAD BODY               |                           |

### 3.4 - VARIOUS COMPONENTS

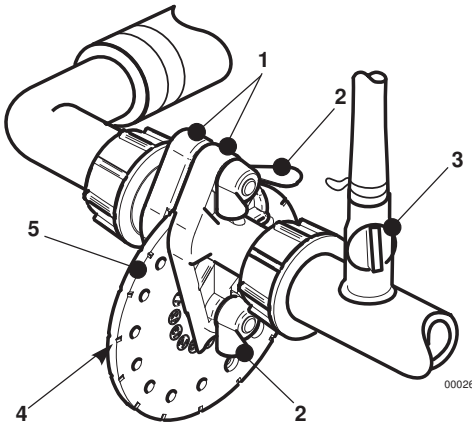


**LEGEND**

1. FRAME ARTICULATED JOINT
2. MOVEMENT HYDRAULIC CILINDER
3. DISTRIBUTOR
4. ROTARY DISC REGULATOR
5. DIFFUSERS
6. COLLAR
7. DROP-STOPPING VALVE
8. FASTENING CLAMP TO THE SPRAYER
9. PIPE EXTENSION
10. FASTENING AND SUPPORTING FRAME

## (4) CALIBRATION DISC

Two flanges (1), kept in position by two throttle nuts (2) lock the disc (5) with calibrated holes, numbered from 1 to 15. **A slot (4) machined on the edge allows to exactly position the hole to be used.** Its number has to appear in the semicircular seat of the flange. The disc rotation is obtained by loosening for a few rounds the throttle nuts. When the operation is over, carefully tighten the nuts back. In order to determine the capacity, strictly follow the indications supplied in the publication "The low volume – Instructions for regulating the sprayer".



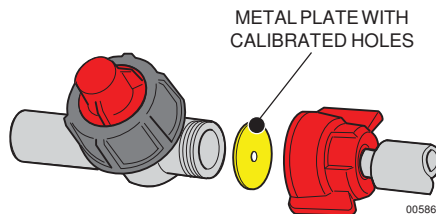
### LEGEND

1. LOCKING FLANGES
2. THROTTLE NUT
3. DELIVERY STOPPING COCK
4. POSITIONING SLOT
5. ROTATING DISC WITH CALIBRATED HOLES

In some special cases, the delivery of the capacities required for the treatment is realized by the regulator directly mounted on the drop-stopping valve of the sprayhead feeding tube and consists of a metal pin provided with a calibrated hole.

In those cases, the sprayhead is supplied complete with a set of plates, with holes having a different diameter, for every regulator.

Usually, the plates mounted on the unit supply are the most suitable for the sprayhead use.



The diameter of the metal plate calibrated hole is indicated on the plate itself.

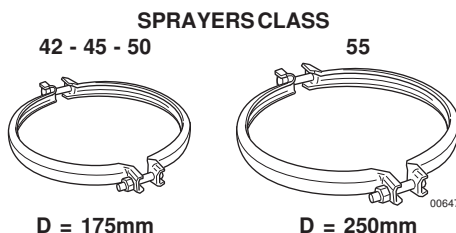
In the following table, the correspondences between the **position** of the rotary disc regulator and the **diameter** of the metal plate to be used for regulating the sprayer are reported.

CALIBRATED DISC POSITION	PLATE DIAMETER
2	1
3	1,2
4	1,5
5	1,5
6	1,8
7	2

TABSPL\_001

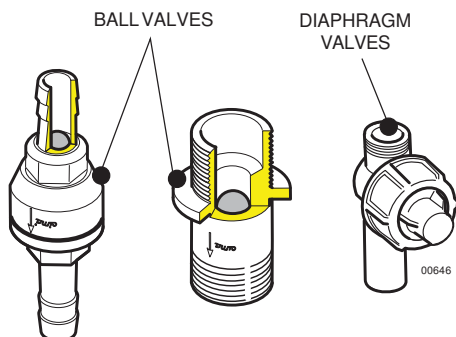
## (6) COUPLING COLLARS

The coupling collars are the connecting device of the stiff tubes composing the sprayhead: connecting elbows, extensions, “Y” joints, etc. All the stiff tubes are equipped at their ends with a coupling lip, allowing to fix the collar and so assuring the perfect union and the required stiffness and etching between the different parts.



## (7) DROP-STOPPING VALVES

In order to avoid unwished droppings of mixture, when the sprayer is stopped and the mixture contained inside the tubes would tend, for gravity, to reach the lowest parts of the hydraulic circuit, on the heads are mounted specially purposed valves, which impede the reflux of the liquid by absence of pressure inside the circuit itself. The valves used are of different types and materials, they are of the ball-type and of the diaphragm one, used according with the different features of the sprayhead on which they are mounted, and assure the complete absence of losses and droppings, in the full observance of the antipollution rules in force.



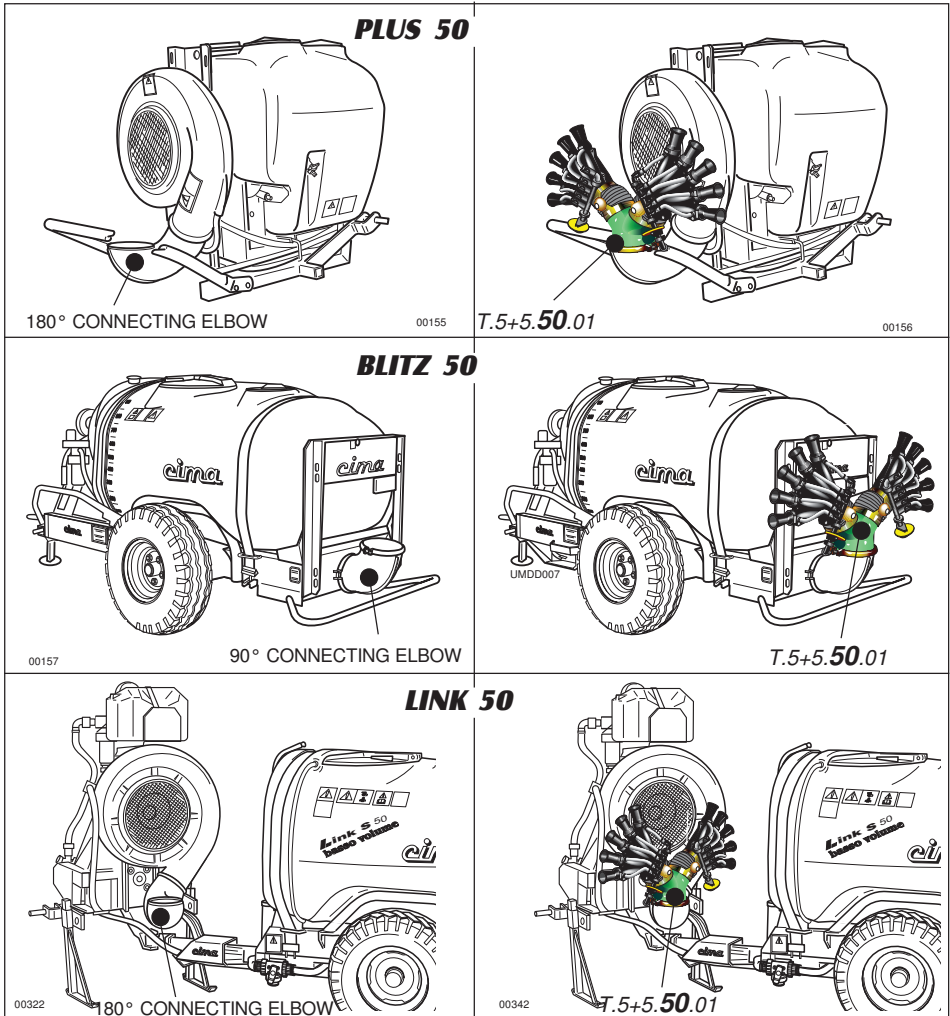
## (9) EXTENSIONS

In order to assure the necessary adjustments in height of the sprayheads, several extension tubes of different lengths are available (see Paragraph 4.2).

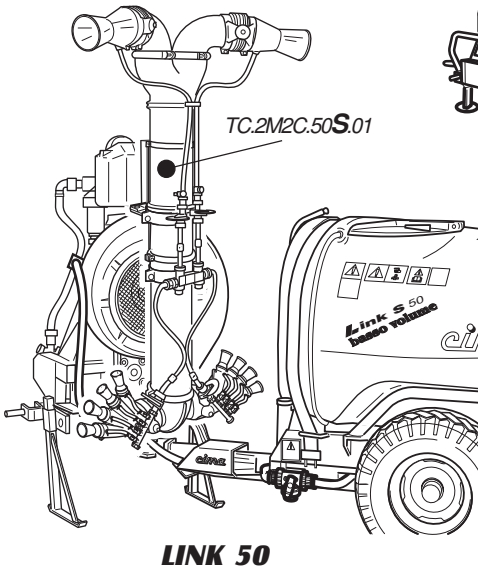
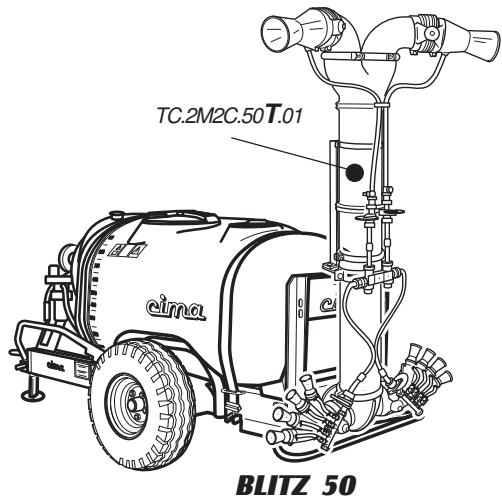
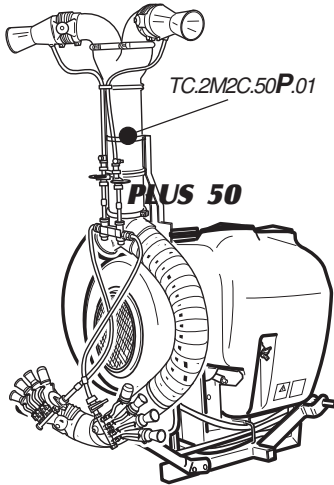


4.1 - MOUNTING

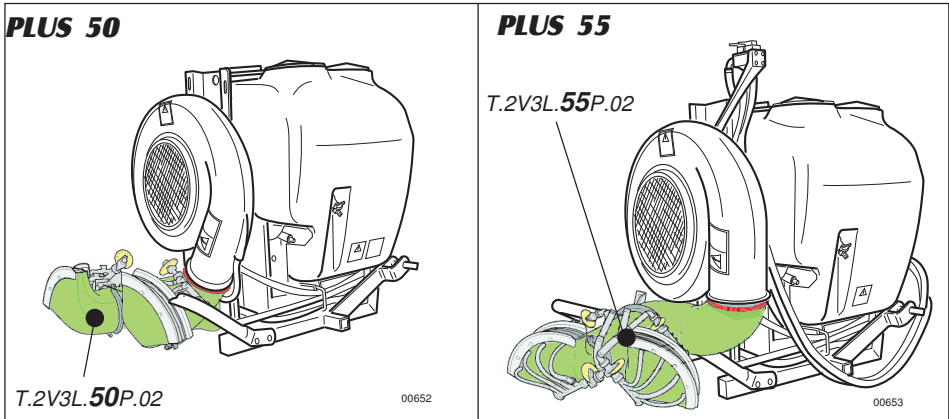
All the types of sprayheads can be installed on the machines, either directly applied to the fan outlet mouth, or connected to the same one through connecting elbows or extension tubes, in order to obtain the most suitable position to the type of culture to be treated. The sprayers, according to their type or class, are supplied either complete with the connecting elbows or without them. In the same way, the sprayheads are supplied, if necessary, complete with the connecting elbow. In the example reported in the table, the same sprayhead can be mounted on different machines, provided that they belong to the same class.



On the contrary, for other types of sprayheads (for example TC.2M.2C - 2 hands and 2 cannons), it isn't possible to realize the mounting on different sprayers, even not if they belong to the same class, as the head results to be specific for every series of sprayers: PLUS (P = Mounted sprayers), BLITZ (T = Trailer-mounted sprayers) and LINK (S = Joint-articulated sprayers).



Besides, the same type of head can't be used on sprayers belonging to different classes, not even if of the same type; in that case, it is necessary to use the specific head for that sprayer class/type.



The fixing of the head to the fan outlet mouth (or to the outlet mouth of the fan connecting tunnel, in case of sprayers belonging to the BLITZ series) is realized by means of the fixing collar. In order to better explain how the head fixing is realized, the procedure is illustrated in the following figures; operate in the same way, in order to fix the connecting elbows or the extension tubes.

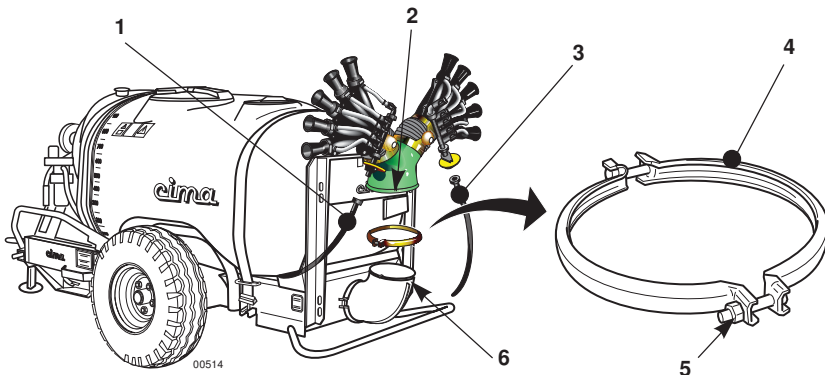
#### CONNECTION OF THE SPRAYHEAD TO THE FAN

- Remove the collar (4) from the outlet mouth (6) by unscrewing the nut (5) which locks it in position.
- Place the sprayhead coupling mouth (2) on the fan vertical mouth, by locking them by means of the collar which had been previously removed.



**The mounted sprayhead must have the distributors with the rotary disc regulators positioned back and towards the sprayer outside.**

- Connect the 2 feeding tubes (1) and (3) of the sprayer to the sprayhead rotary disc regulators.

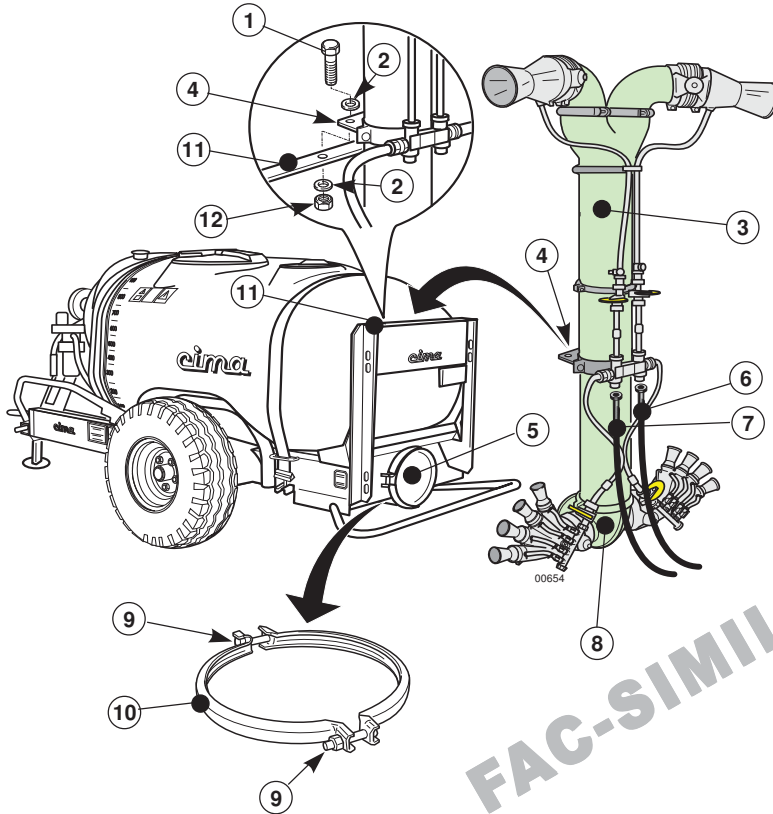


According with their dimension, their weight and their complexity, the sprayheads can be equipped with brackets, collars or, in the most complex cases, frames, for fixing the sprayhead to the sprayer. If necessary, the sprayhead is correlated with a mounting graphic card, enclosed to the "Spare parts catalogue".

## MOUNTING CARD

**T.2M.2C**

type TC.2M2C.50T.01



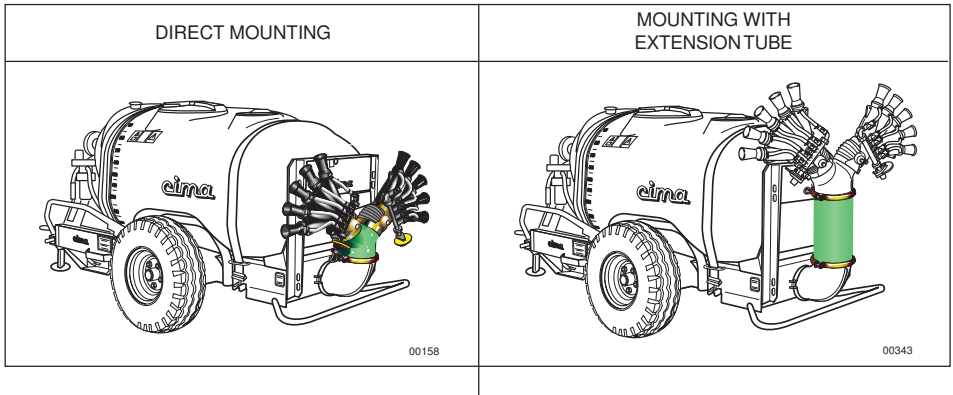
### Procedure:

1. Loosen the nuts (9) and remove the collar (10) from the outlet mouth (5) of the fan tunnel.
3. Position the sprayhead (3) and fix the bracket (4) to the sprayer frame (11) by means of the screws (1) with the relevant washers (2) and nuts (12).
3. Fix the connecting elbow (8) of the sprayhead to the outlet mouth (5) of the fan tunnel, locking it by means of the collar (10) which had been previously removed.
4. Connect the two sprayer tubes (6) and (7) with the sprayhead rotary disc regulators' union tees.

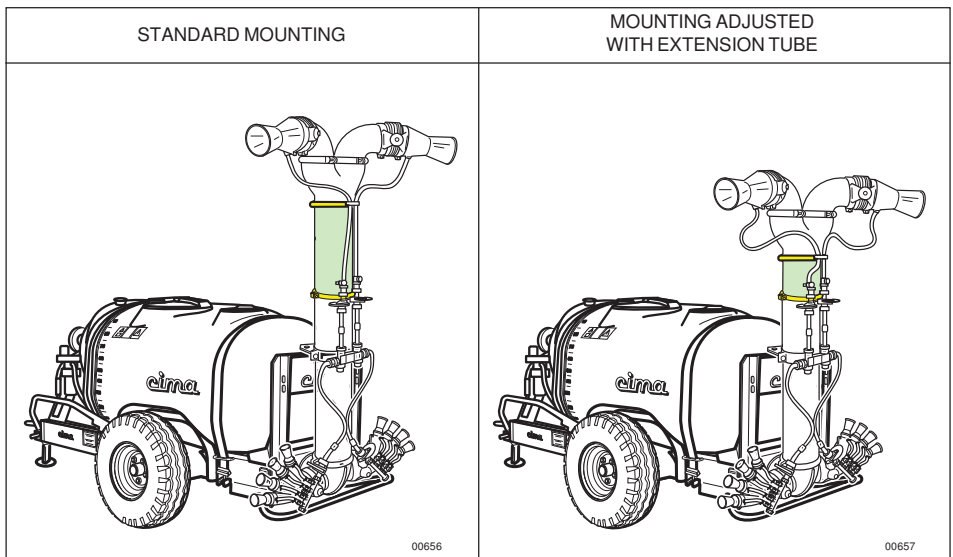
## 4.2 - HEIGHT ADJUSTMENT

It is possible to vary the mounting height of the distribution device by interposing between the same one and the standard elbow the especially purposed extensions available in different sizes. This type of adjustment can be realized on any type of sprayhead, according with the covering requirements of the culture structure to be treated.

### Simple sprayheads



### Combined sprayheads without supporting frame



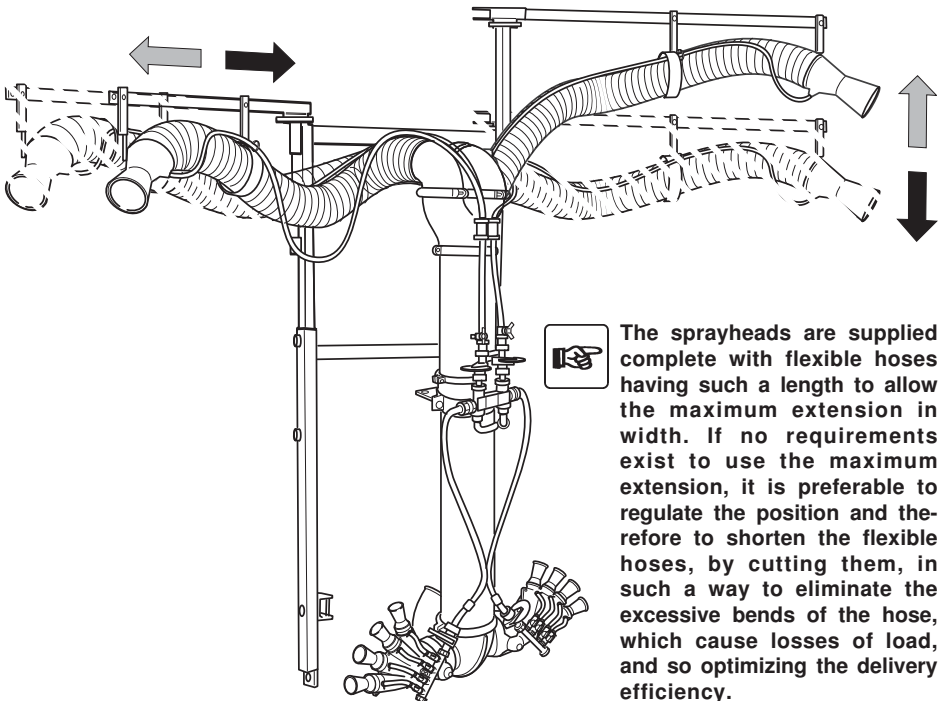
The following table reports the sizes of the available extensions for every type of machine.

Extensions $\varnothing 175$				Extensions $\varnothing 250$	
Extensions length	P PLUS 42	PLUS BLITZ LINK 45	PLUS BLITZ LINK 50	Extensions length	PLUS BLITZ 55
200 mm	SI	SI	SI	200 mm	-
300 mm	-	-	-	300 mm	SI
400 mm	SI	SI	SI	400 mm	-
500 mm	-	-	-	500 mm	SI
600 mm	SI	SI	SI	600 mm	-
800 mm	SI	SI	SI	800 mm	SI

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## Combined sprayheads with supporting frame

In the bigger sized sprayheads, the supporting frames are realized in such a way to allow an excursion of the diffusers both in height and in width.



The sprayheads are supplied complete with flexible hoses having such a length to allow the maximum extension in width. If no requirements exist to use the maximum extension, it is preferable to regulate the position and therefore to shorten the flexible hoses, by cutting them, in such a way to eliminate the excessive bends of the hose, which cause losses of load, and so optimizing the delivery efficiency.

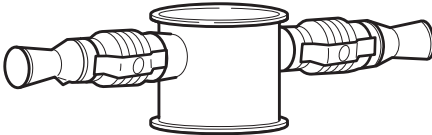
The guaranteed excursion in height by means of the simple frame adjustment is of approximately 20 ÷ 30 cm; should it be necessary to reach a higher height, it is anyway possible to use the extension tubes, like for the other sprayheads.



**Check the maximum extension in height admitted by the frame BEFORE mounting the extension tube.**

According with the treatment covering requirements, the sprayheads' height can also be varied by using the extensions with diffusers (Body-2 diffusers' kit – 2 hands-2 diffusers' kit). This allows to increase the treatment vertical amplitude on the row inner sides, so optimizing the delivery, according with the culture to be treated.

**COMPLETE BODY KIT  
WITH 2 NOZZLES**

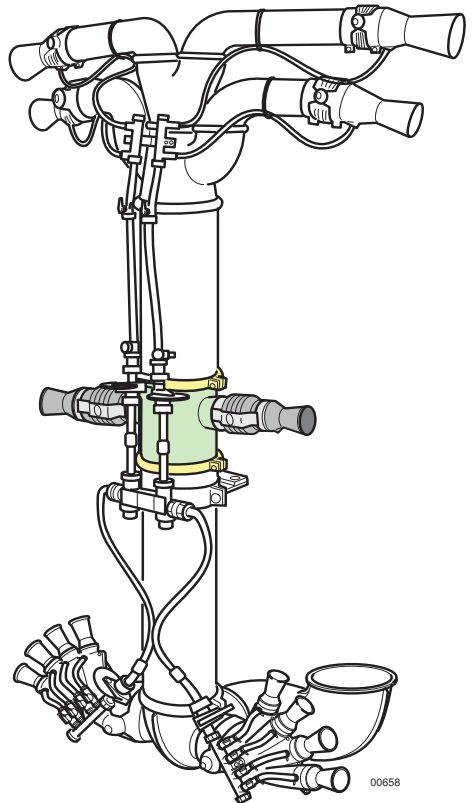


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**COMPLETE BODY KIT  
2 HANDS WITH 2 NOZZLES EACH**

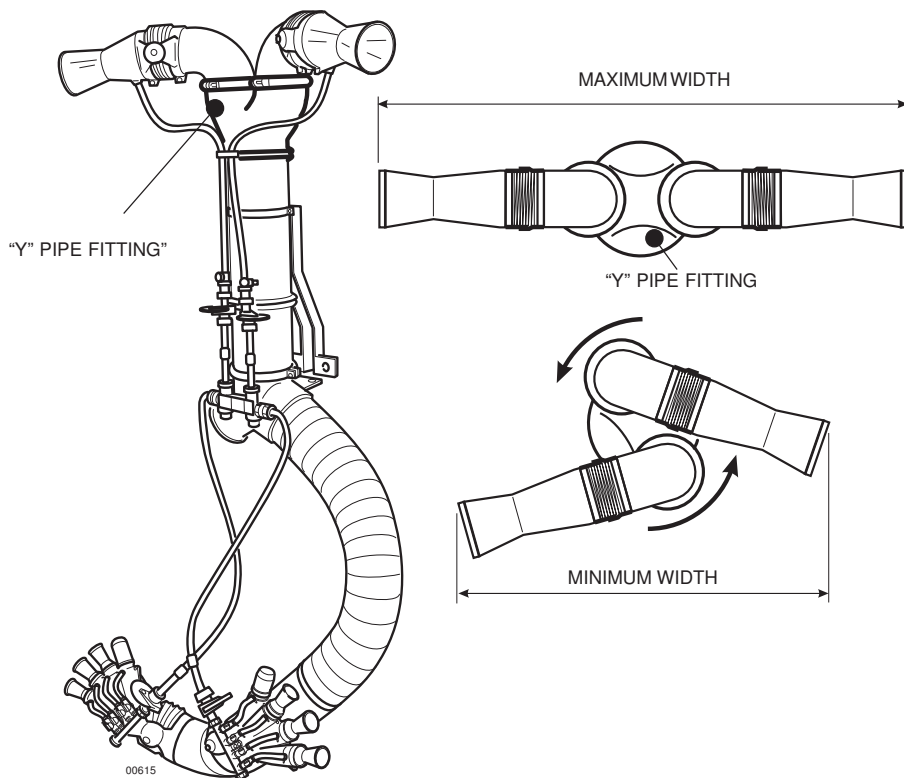


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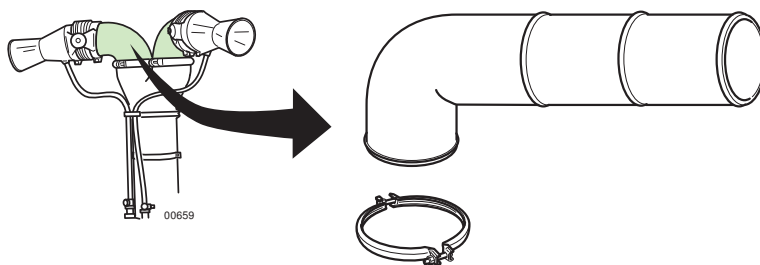


00658

Besides, it is possible to regulate the combined sprayheads' maximum width, by varying the orientation of the "Y" pipe fitting, connecting the main pipe with the diffusers. This solution can result to be especially useful when the rows are particularly narrow.



When, on the contrary, it would be necessary to increase the combined sprayheads' upper part width, in order to approach the upper diffusers to the external row, it is possible to use 90° extension elbows longer than the standard ones. The elbows are supplied in a single length version; anyway it is possible to shorten them by following the points foreseen for that operation, in order to reduce them to the wished length.





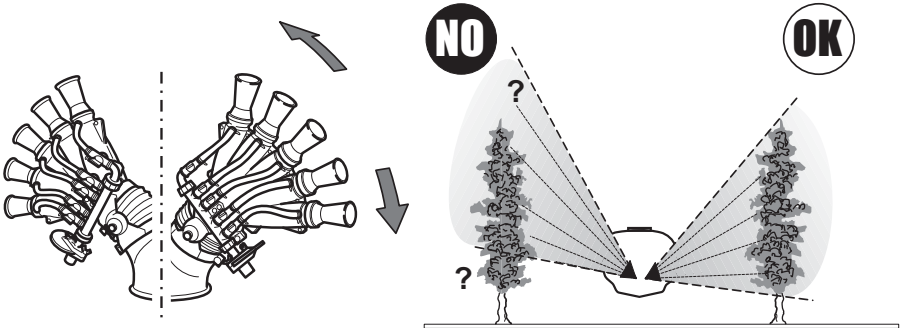
Before carrying out the treatment, the sprayhead has to be adjusted, in order to orient the sprayed jet on the target in the most efficacious way. The diffuser-carrier side bodies can be oriented both vertically, by rotating them upwards or downwards, and horizontally, by moving them backwards. It is sufficient to loosen the central nuts of the double joint clamps.

### 5.1 HANDS

#### VERTICAL ADJUSTMENT.

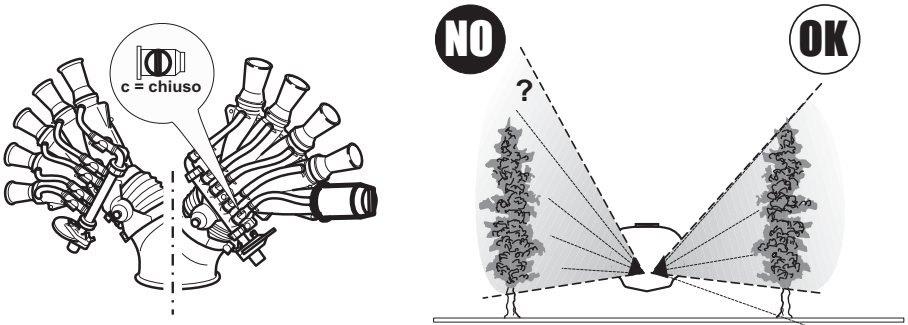
The air flow has to cover the whole surface to be treated, without missing the target.

- Vertically move the diffuser-carrier side bodies, in order to eliminate all mixture dispersion.



00608

- Eventually close the delivery of some diffusers and orient the sprayhead, if the covering angle would result to be too wide.



00609



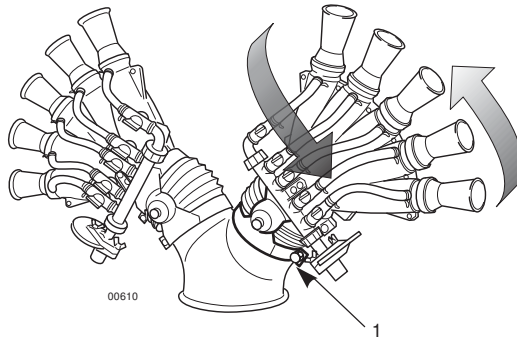
To close a diffuser, in order to avoid all mixture dispersion during the treatment, has to be considered as a particular condition to adopt, for example during the first treatments of the season, when the vegetal covering doesn't still reach its 100% potentiality.

If, on the contrary, the situation requires to constantly operate with one or more closed diffusers, it is better to replace the sprayhead in use with another model, having less diffusers, like for example a **4+4 SPRAYHEAD** instead than a **5+5 SPRAYHEAD**.

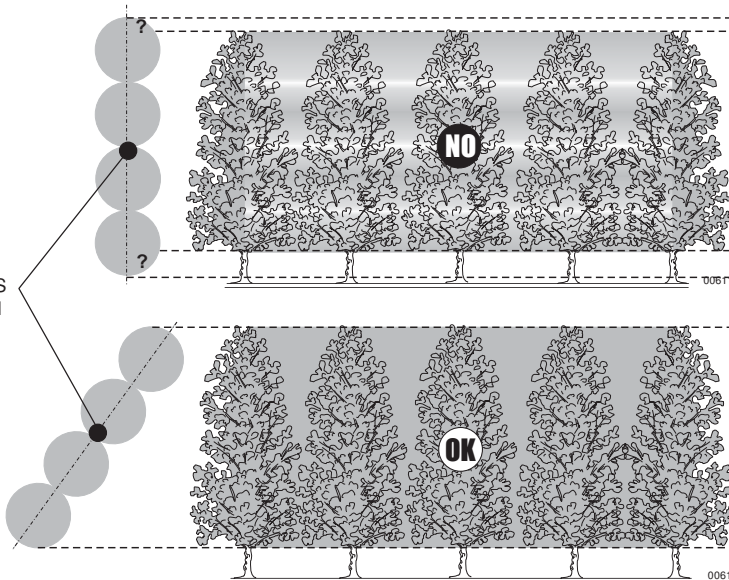


To operate with one or more closed nozzles reduces the mixture penetration into the vegetation, what consequently results in a treatment lower efficacy.

- If necessary, rotate the nut (1) fastening the double joint clamp and rotate the diffuser-carrier side body by inclining it. By doing that, the vertical covering angle gets reduced, and in the same time, the "stripes" effect of the row covering gets reduced.



DIFFUSERS' VERTICAL AXIS ORIENTATION



## HORIZONTAL ADJUSTMENT.

The air flow has to cover the whole surface to be treated, without missing the target.

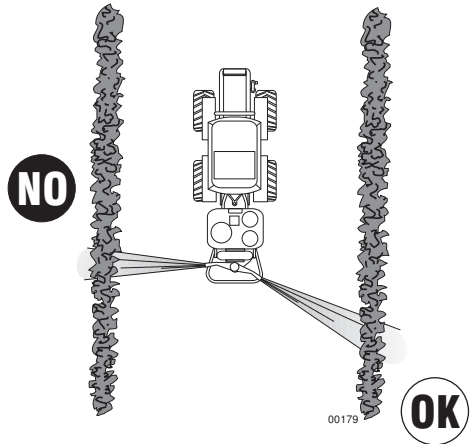
In order to better penetrate into the foliage, the air flow has to obliquely hit the culture rows.

- Position lightly backwards the diffuser-carrier side bodies (hands), in order to avoid to perpendicularly hit the culture.



**After having completed the sprayhead adjustment, carefully tighten the double joint clamps.**

In order to get an optimal covering, especially on rows being less distanced than 2 meters, the best solution is to combine the horizontal adjustment with the diffusers' vertical axis orientation.

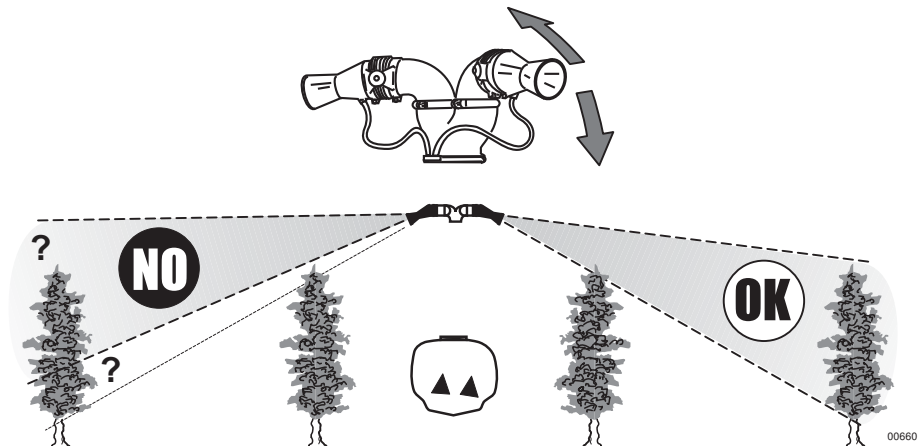


## 5.2 CANNONS JET

### VERTICAL ADJUSTMENT.

The air flow has to cover the whole surface to be treated, without missing the target.

- Vertically move the cannon diffusers, in order to eliminate all mixture dispersion; adjust the sprayhead in height, by using, if necessary, some extension tubes having a suitable length.



## HORIZONTAL ADJUSTMENT.

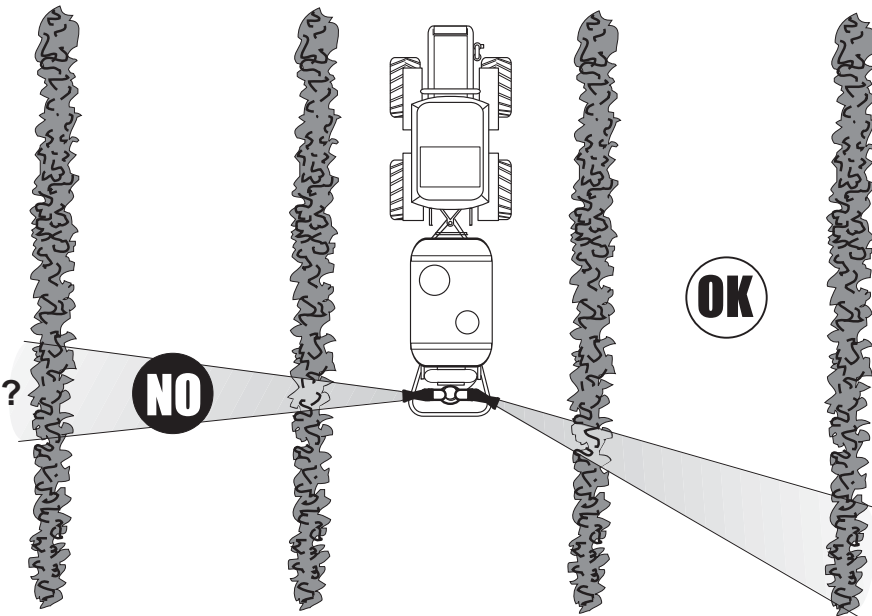
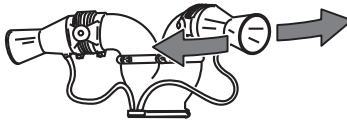
The air flow has to cover the whole surface to be treated, without missing the target.

In order to better penetrate into the foliage, the air flow has to obliquely hit the culture rows.

- Position lightly backwards the diffuser-carrier side bodies (cannons), in order to avoid to perpendicularly hit the culture.



After having completed the sprayhead adjustment, carefully tighten the double joint clamps.



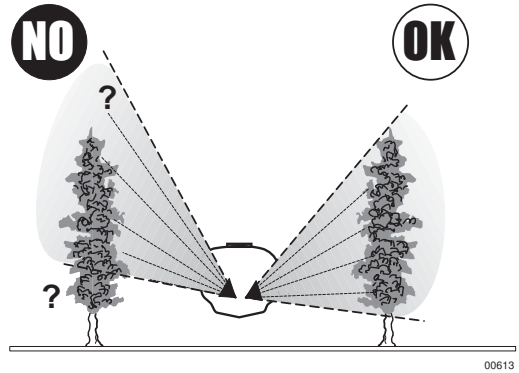
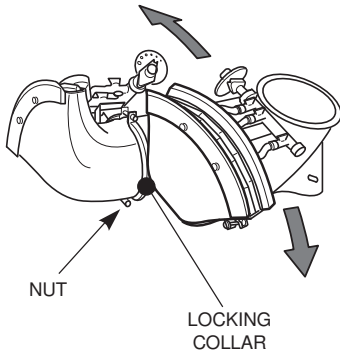
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## 5.3 FISHTAILS

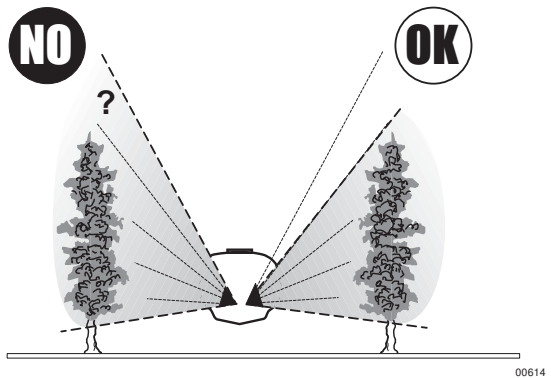
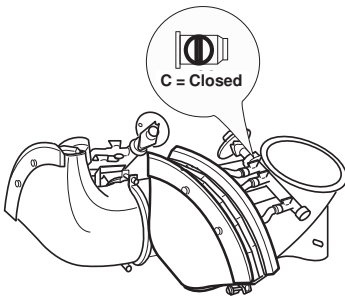
### VERTICAL ADJUSTMENT.

The air flow has to cover the whole surface to be treated, without missing the target.

- Loosen the nut of the collar locking the fishtail to the sprayhead body.
- Vertically move the fishtail, in order to eliminate all mixture dispersion.
- When the adjustment is completed, tighten the nut of the fishtail locking collar.



- Eventually close the delivery for some fishtail sectors, if the covering angle would result to be too wide.

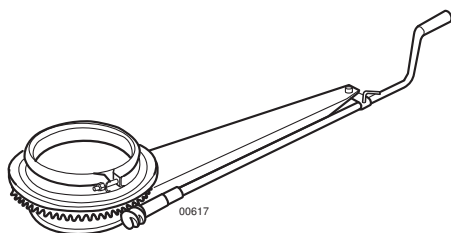


## 5.4 - MANUAL SWIVELLING DEVICE



In order to apply that fitting, the sprayer has to be equipped with a **VERTICAL** outlet mouth.

This fitting is used in order to modify the spraying direction. It can be exclusively used with distribution devices realized for delivering the mixture on one side.

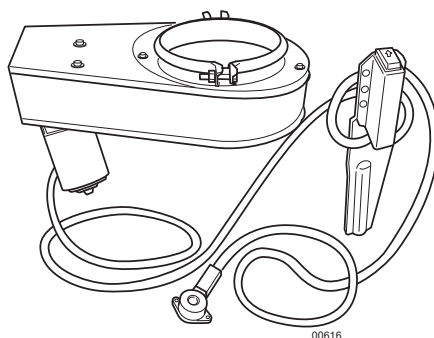


## 5.5 - ELECTRICAL SWIVELLING DEVICE



In order to apply that fitting, the sprayer has to be equipped with a **VERTICAL** outlet mouth.

This fitting is used in order to modify the spraying direction. It can be used as an alternative to the crank-operated revolving device, but exclusively with distribution devices realized for delivering the mixture on one side.



Every distribution device **is supplied with its specific deliveries' table**. Through that table it is possible to determine the sprayer working pressure and the correspondent position of the rotary disc regulator, according with the required delivery expressed in liters/hour.

<b>SPRAYHEADS 4+4 AND 5+5</b>			
<b>With 2 calibration disc in position:</b>	<b>Delivery (litres/hours) with PTO at 540 RPM</b>		
	<b>Operating pressure kg/cm<sup>2</sup></b>		
	<b>1,5</b>	<b>2</b>	<b>2,5</b>
<b>1</b>	67	81	86
<b>2</b>	107	119	129
<b>3</b>	119	141	155
<b>4</b>	167	186	198
<b>5</b>	219	241	262
<b>6</b>	243	271	293
<b>7</b>	371	409	438
<b>8</b>	438	484	519
<b>9</b>	547	605	655
<b>10</b>	643	719	769
<b>11</b>	852	930	1002
<b>12</b>	1218	1344	1471
<b>13</b>	1534	1788	1957
<b>14</b>	1746	2010	2285
<b>15, 4+4 Sprayhead</b>	2031	2412	2687
<b>15, 5+5 Sprayhead</b>	2243	2624	2941

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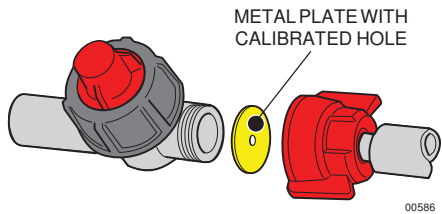
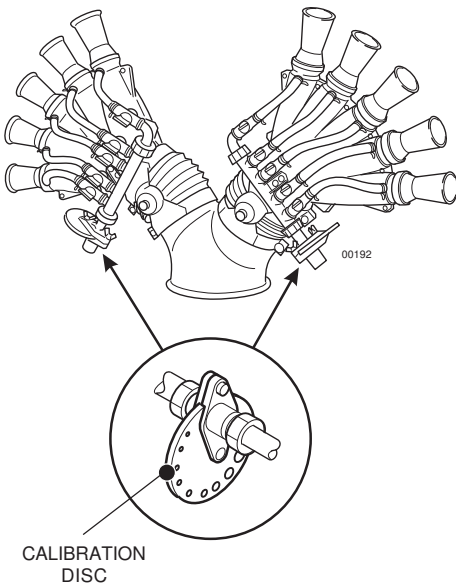
**ALL OPERATIONS HAVE TO BE CARRIED OUT WITH THE TRACTOR MOTOR SWITCHED OFF AND WITH THE IGNITION KEY REMOVED FROM THE CONTROL PANEL.  
NO SPECIFIC TYPE OF MAINTENANCE OPERATIONS IS FORESEEN.**

After every treatment, clean the hydraulic circuit, as indicated on the sprayer "Operation and Maintenance Instructions" manual. Use clean water in order to wash the tank inside, then let the sprayer operate, by spraying the liquid according with the law directives in force in the country where the unit is used: if necessary, repeat the operation.

The execution of that easy procedure allows to eliminate all mixture residuals from all the hydraulic circuits components, especially assuring the cleanness and the consequent efficiency of the calibrated holes of the rotary disc regulators and of the metal pins of the regulators directly mounted on the sprayhead feeding tube drop-stopping valve.



**On the machines equipped with unit-washing tank, every time that it is necessary to interrupt the treatment, it is possible to wash the hydraulic circuit, independently on the tank loading conditions, i.e., also when the tank is still containing some mixture, what allows to avoid any clogging and assures the perfect efficiency of the machine when the treatment is carried on.**





**A. FAULT: SPRAYING ACTION IS MISSING only on one sprayhead side.**

- 1st CAUSE The hole of the rotary disc regulator or of the metal pin is clogged.  
**REMEDY:** *clean the clogged hole.*



**Use exclusively water in order to clean the hole. DON'T USE EITHER SHARP OR METAL TOOLS.**

- 2nd CAUSE Cocks are closed.

**REMEDY:** *open the cocks.*

- 3rd CAUSE The distributor is clogged by chemical products' residuals.

**REMEDY:** *clean the distributor.*

- 4th CAUSE The sprayer hydraulic circuit is defective.

**REMEDY:** *consult the sprayer operation and maintenance instruction manual.*

**B. FAULT: SPRAYING ACTION IS MISSING from one diffuser only.**

- 1st CAUSE Cock is closed.

**REMEDY:** *open the cock.*

- 2nd CAUSE Cock is clogged.

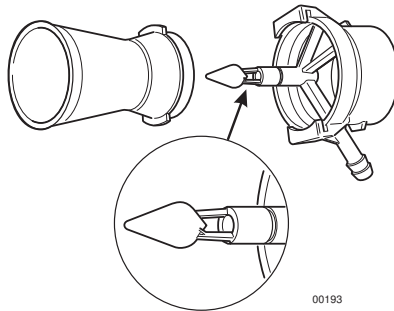
**REMEDY:** *clean the clogged cock.*

- 3rd CAUSE The rubber tube connecting the cock and the pipe union with fast coupling olive stopper is clogged.

**REMEDY:** *clean the clogged rubber tube.*

- 4th CAUSE The plastic tube with fast coupling olive stopper is clogged.

**REMEDY:** *clean the clogged plastic tube.*



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**C. FAULT: INTERMITTENT SPRAYING DELIVERY only on one sprayhead side.**

- 1st CAUSE Missed sealing of the hydraulic circuit connecting the rotary disc regulator with the distributor.

**REMEDY:** *check the correct tightening of the rotary disc regulator throttle screws, check the proper operation of the regulator "O-ring" seal, check the clamps, the sealing of the pipe fittings and the integrity of the pipes and seals.*

*Restore the full efficiency of the components and replace the parts which were possibly found defective.*

- 2nd CAUSE Missed sealing of the distributor cap.  
**REMEDY:** *tighten the distributor cap.*
- 3rd CAUSE Missed sealing of the sprayer hydraulic circuit.  
**REMEDY:** *consult the sprayer operation and maintenance instruction manual.*

**D. FAULT: INTERMITTENT SPRAYING DELIVERY  
from one diffuser only.**

- 1st CAUSE Slight cracking of cock-carrier fitting feeding the diffuser concerned.  
**REMEDY:** *replace the distributor.*
- 2nd CAUSE Slight cracking of the cock feeding the diffuser concerned.  
**REMEDY:** *replace the cock.*
- 3rd CAUSE Breakage of the cock "O-ring" inner seals.  
**REMEDY:** *replace the cock.*
- 4th CAUSE Breakage of the cock "O-ring" seal.  
**REMEDY:** *replace the cock "O-ring" seal.*
- 5th CAUSE Plastic tube with fast coupling olive stopper is either clogged or cracked.  
**REMEDY:** *clean or replace the fast coupling fitting.*
- 6th CAUSE Missed sealing of the feeling tube connecting the distributor with the diffuser.  
**REMEDY:** *check the efficacy of the clamp.*
- 7th CAUSE Slight cracking of the diffuser rubber feeding tube.  
**REMEDY:** *replace the tube.*

**E. FAULT: MISSING MOVEMENT OF THE HYDRAULIC HEAD**

- 1st CAUSE Missed sealing of the control hydraulic cylinders' connecting pipes.  
**REMEDY:** *check the tightening and the good condition of the sealing clamps, replacing them if necessary.*
- 2nd CAUSE The control hydraulic cylinders' connecting pipes are either disconnected or broken.  
**REMEDY:** *restore the pipes connection or replace the broken pipes.*
- 3rd CAUSE The control hydraulic cylinders are damaged.  
**REMEDY:** *replace the damaged hydraulic cylinders.*
- 4th CAUSE The tractor power hydraulic circuit is inefficient.  
**REMEDY:** *consult the "Operation and maintenance instruction" manual of the tractor.*



**THE OWNER AND/OR THE OPERATOR OF THE SPRAYER ARE NOT PERMITTED TO MODIFY THE STRUCTURE OR THE SPECIFIC OPERATION OF THE SPRAYER ITSELF. ANY REPAIRING INTERVENTION HAS TO BE CARRIED OUT EITHER AT THE DEALERS' OR AT THE C.I.M.A. S.p.A. AUTHORIZED WORKSHOPS, OTHERWISE ANY KIND OF WARRANTY IMMEDIATELY CEASES AND C.I.M.A. S.p.A. IS CLEARED OF ANY CONSEQUENT AND/OR IMPLIED RESPONSIBILITY.**

The machines are guaranteed for **12 months** from the delivery date. During this period, spare parts not subject to wear and tear and confirmed as defective will be replaced free of charge, not including of transport and labour expenses.

The warranty will be void:

- a. should repairs be carried out without the consent of the manufacturer or one of its sale points.
- b. should original spares not be used.
- c. should the machine be used for purposes other than those for which it was specifically designed and destined.
- d. should the instructions of this manual, together with those relating to the integrative parts that make it up, not be observed.







# Where we are



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