



**OPRYSKIWACZ
PLESAKOWY**

**KNAPSACK
SPRAYER**

**РАНЦЕВЫЙ
ОПРЫСКИВАТЕЛЬ**

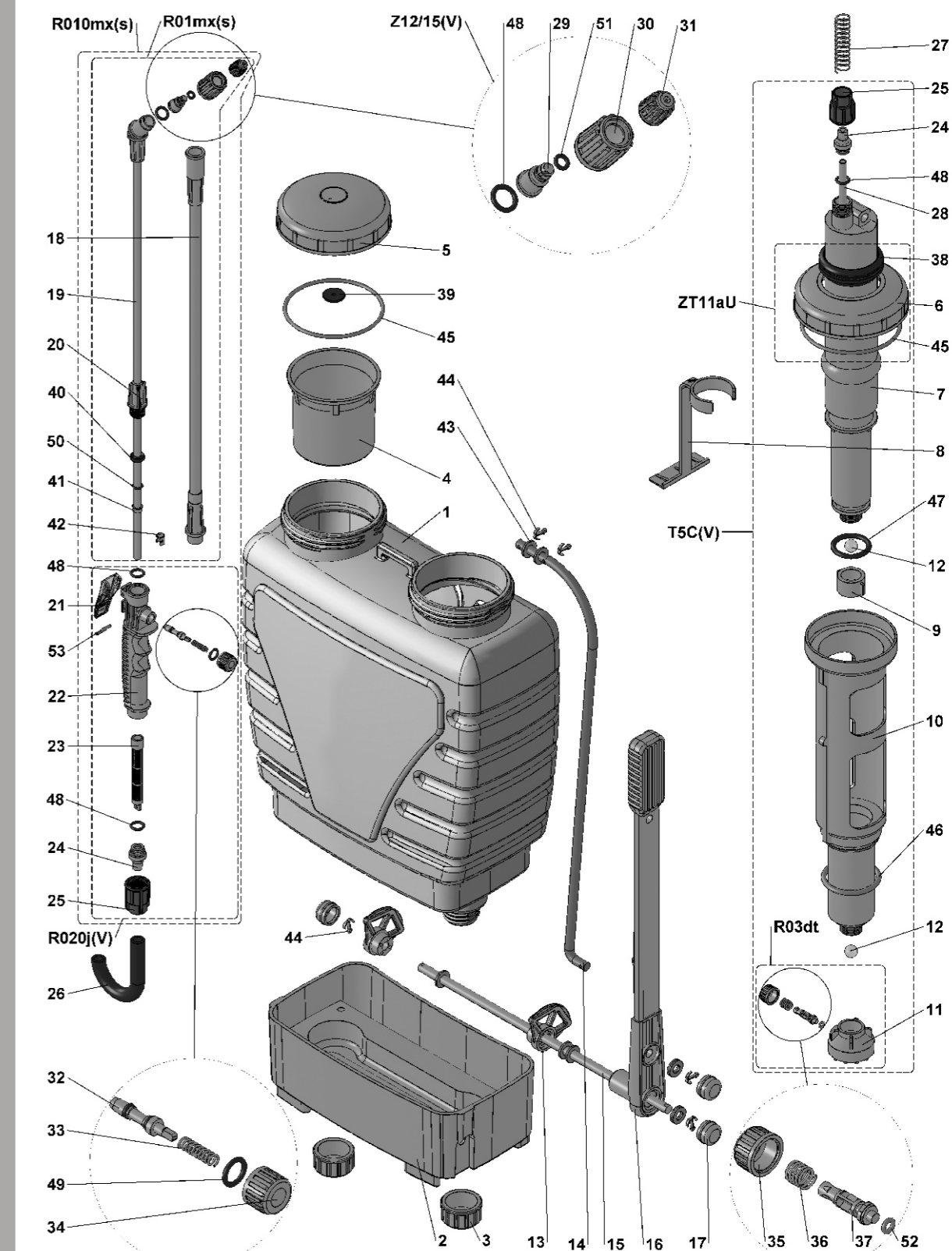
INSTRUKCJA OBSŁUGI

OWNER MANUAL • ИНСТРУКЦИЯ ПО ЭКСПЛУАТАЦИИ

TITAN 12, 16, 20

041/PL,GB,RUS/2010/A

	Lanca teleskopowa z rączką <i>Telescopic lance with handle / Телескоп. штанга с рукояткой</i>	R010mx (s)
	Lanca teleskopowa bez rączki <i>Telescopic lance without handle / Телескоп. штанга без рукоятки</i>	R01mx (s)
	Zestaw końcówka lancy z MR1,5 <i>Lance tip with nozzle MR1.5 / Наконечник для штанги с MR1,5</i>	Z12/15 (V)
	Nakrętka pompy uzbrojona <i>Pump nut with seal / Гайка насоса армированная</i>	ZT11aU
	Pompa kompletna <i>Complete pump / Комплектный насос</i>	T5C (V)
	Zawór bezpieczeństwa <i>Safety valve / Предохранительный клапан</i>	R03dt
	Rączka lancy zintegrowana z zaworem dozującym kpl. <i>Feeding valve integrated with handle / Копл. рукоятка штанги интегрированная с дозирующим клапаном</i>	R020j (V)
1	Zbiornik Titan / Container Titan / Бачок Titan	RP10 (B) (C)
2	Podstawa zbiornika / Container base / Основа бачка	RP24
3	Nakrętka podstawy / Container base's cap / Гайка основы	RP41
4	Lejek z filtrem / Funnel with sieve / Воронка с фильтром	RP22
5	Nakrętka zbiornika / Container cap / Крышка бачка	RP11
6	Nakrętka pompy / Pump nut / Крышка насоса	RP11a
7	Pompa produkcyjna / Pump / Производственный насос	ZT4
8	Mieszacz / Mixer / Смеситель	RP17
9	Nakrętka kulki / Ball cap / Гайка шарикового клапана	RP18
10	Kosz pompy – połówka / Pump basket (half) / Стеллаж насоса	RP12
11	Nakrętka filtra / Filter nut / Гайка фильтра	RP20
12	Kulka szklana / Glass ball / Стекланный шариковый клапан	M75g
13	Uchwyt paska / Carry belt's handle / Крепление ремня	RP19
14	Cięgno dźwigni / Lever tie / Тяж рычага	M201
15	Walek dźwigni / Lever bolster / Стержень рычага	M204
16	Dźwignia stalowa obtrzynięta / Steel lever / Рычаг	RP16
17	Zaślepka / Plug / Заглушка	RP21
18	Lanca obtrysk., fi 12 mm / Lance pipe., fi 12 mm / Штанга, fi 12 mm	R73nx50
19	Lanca obtrysk., fi 8 mm / Lance pipe., fi 8 mm / Штанга, fi 8 mm	R73mx60
20	Tulejka zaciskowa, fi 8 mm / Clasp faucet, fi 8 mm / Зажимная втулка, fi 8 mm	R103
21	Przycisk zaworu dozującego / Feeding valve trigger / Кнопка дозирующего клапана	R44
22	Rączka lancy zintegrowana z zaworem dozującym <i>Feeding valve integrated with handle / Рукоятка штанги интегрированная с дозирующим клапаном</i>	R02j
23	Filterek / Filter / Фильтр	R40
24	Końcówka węża, sztucerek / Hose end piston / Патрубок шланга	R81f
25	Nakrętka węża / Hose nut / Гайка шланга	R80f
26	Wąż / Hose / Шланг	T26C (V)
27	Sprężyna wzmacniająca do węża / Hose spring / Пружина укрепляющая шланг	R13t
28	Rurka zasysająca / Sucking pipe / Трубка засасывающая жидкость	M08_12
29	Rdzeń dyszy / Nozzle nucleus / Стержень форсунки	R114
30	Nakrętka dyszy / Nozzle nut / Гайка форсунки	R64
31	Nakrętka dyszy 1.5 do MR / Nozzle 1.5 nut for MR / Гайка форсунки 1.5 для MR	R115_1.5
32	Tłoczek z oringami / Piston with o-rings / Втулка с прокладками	R43a (V)
33	Sprężynka / Spring / Пружинка	R48a
34	Nakrętka bez otworu / Nut without hole / Гайка без отверстия	R50
35	Nakrętka M-16 / Nut M-16 / Гайка M-16	R26
36	Sprężynka / Spring / Пружинка	R13n
37	Zawór bezp. – uchwyt / Safety valve – handle / Втулка предохран. клапана	R100
38	Uszczelka pompy (wargowa) / Pump seal / Прокладка насоса	M81
39	Uszczelka wieczka / Container's cap seal / Прокладка крышки	M80
40	Pierścień zaciskowy / Clasp ring / Зажимное кольцо	R106
41	Tulejka teleskopu / Telescope ring faucet / Втулка телескоп. штанги	R109
42	Pierścień zapinka lancy / Lance ring clasp / Цепной замок штанги	R107
43	Podkładka / Pad / Подкладка	
44	Zawleczka / Cotter / Шплинт	



45	O-ring 100x3	R112
46	O-ring 50x5	R105
47	O-ring 35x5	R104 (V)
48	O-ring 11,3x2,4	R47c (V)
49	O-ring 10x2	R41
50	O-ring 8x2	R108 (V)
51	O-ring 5,3x2	R116 (V)
52	O-ring 3x2	R42 (V)
53	Pręt mosiężny, fi 3 mm / Brass bar, fi 3 mm / Латунный прут, fi 3 mm	M11

<p>pieczęć sprzedawcy i data stamp of the retailer and the date дата и печать продавца</p>				
	<p>opis wady description of the fault описание дефектов</p>			
<p>data naprawy date of the repair дата ремонта</p>				



**KARTA GWARANCYJNA
GUARANTEE CARD
ГАРАНТИЙНЫЙ ТАЛОН**

KNAPSACK SPRAYER

TITAN 12, 16, 20

Knapsack sprayer is intended for pest control treatments and spraying with fertilizers in hotbeds, greenhouses, on vegetable and flower plantations and on small fields.

1. TECHNICAL DATA

Model	Titan 12	Titan 16	Titan 20
Total capacity	14.00 l	18.30 l	22.00 l
Working capacity	12.00 l	16.00 l	20.00 l
Average liquid output	0.5 - 1.0 ltr/min		
Max working pressure	0.3 MPa (3 bar)		
Nett weight	4,00 kg	4,00 kg	4,20 kg
Dimensions	160 mm x 390 mm x 610 mm	180 mm x 410 mm x 610 mm	205 mm x 410 mm x 610 mm

2. KNAPSACK TITAN ELEMENTS

In each packing of the knapsack Titan the following elements can be found:

1. Complete container with a pump and a lever.
2. Hose with nuts, a sucking pipe and a feeding valve integrated with lance handle.
3. Telescopic lance with regulated nozzle MR 1,5 mm
4. A packet of additional spare parts, seals and silicone smear
5. User's manual with a guarantee card.

We also offer a version of the knapsack with Viton seals and the telescopic lance made from the stainless steel.

Company Marolex Sp. z o. o. reserves a right to make changes in the enclosed with the sprayer parts.

3. CONSTRUCTION AND OPERATION

The container is made from plastic. In its upper part there is a screwed inlet covered by a lid. In the inlet there is a sieve. In the bottom of the container there is installed a pivot of the pump lever. The lever is connected by a wire with the pump piston. To assemble the sprayers put the sucking pipe inside the pump and screw the hose on to the pump. On the other end of the hose screw on the lance to the handle.

After filling the container with liquid through a sieve and taking it on the back, the lance should be taken in the right hand, and the handle of the pump lever in the left hand. When moving the lever up and down the pump piston moves in sliding motion. When it moves up it sucks the liquid to the pump cylinder and when it moves down it pushes the liquid into the pressure header creating pressure in the pump.

4. MAINTENANCE RECOMMENDATIONS

1. It is not recommended to fill in the container over the working capacity.
2. The sprayer should be stored in a shaded place, in temperature above +4 degrees.
3. During work with Titan you must comply with safety and hygiene regulations and strictly follow instructions given on the package of applied chemicals.
4. After finishing work, the sprayer must be emptied and thoroughly rinsed with water. The filter inside the handle must be taken out and cleaned. When the sprayer is completely assembled, pump it up and blow the air through it.
5. The remains of the liquid left in the lance for winter may in the minus temperatures freeze, expand and damage the valve or handle.



Sprayer once used for spraying pesticides can not be used for any other purposes!


Caution!

When the pump lever gets blocked during the work, it means that the maximum pressure was reached and further pumping will result in opening the safety valve. If the nozzle does not work well in spite of the maximum pressure in the pump it can be caused by leaks through non-hermetic elements. In such case the hose nuts R80f at the pump and the handle should be checked if they are screwed on properly and there are no leaks.

If the problem with the nozzle still exists, the sucking pipe should be checked as it could fall out from the hose fitting R81f. To install the sucking pipe the following operations should be taken:

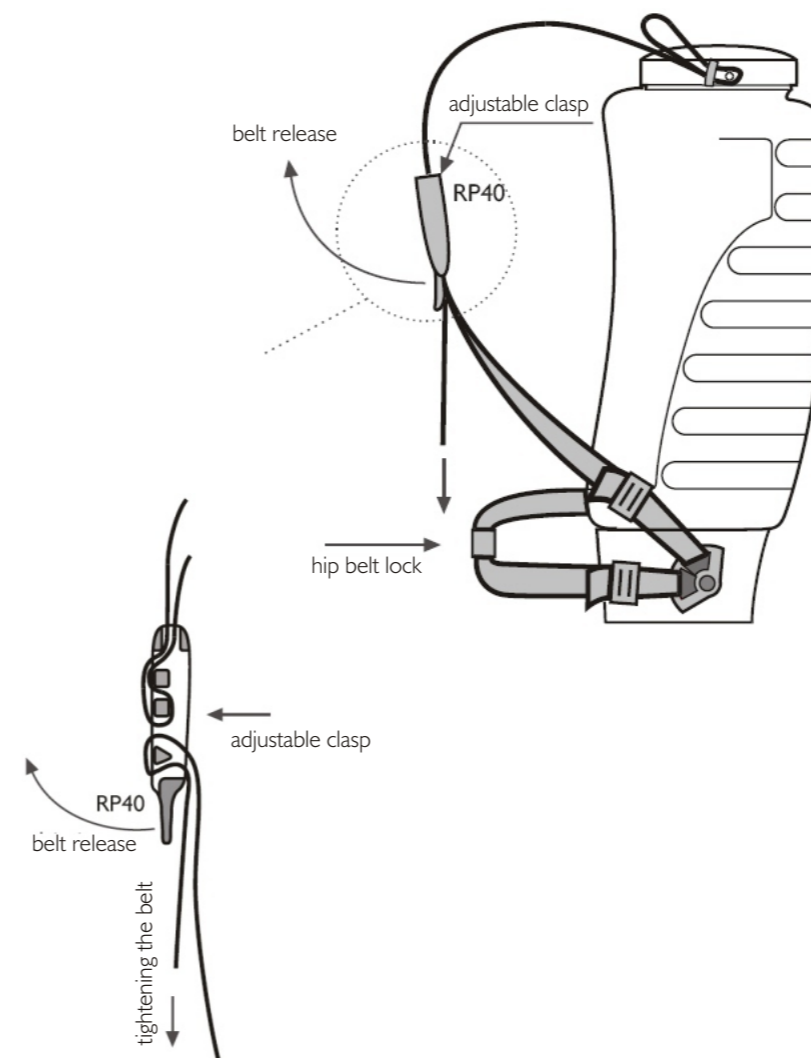
- empty the sprayer from any remaining liquid;
- release the pressure from the pump by pulling the safety valve out;
- unscrew the hose nut R80f at the pump;
- turn the container upside down so the sucking pipe will fall out from the container. Caution: be careful as the remains of the working liquid will flow out as well;
- put the sucking pipe in the hose fitting R81f then push the hose fitting into the hose, put the hose nut R80f on it and screw on to the pump.

5. WORK SAFETY RECOMMENDATIONS

1. Children, pregnant women, people taking medicines or other drugs restricting the concentration powers or drinking alcohol are forbidden to operate the sprayer.
2. For initial operation use clean water to test the sprayer first..
3. **When working with chemicals (also during liquid preparation and destroying the packages) it is necessary to wear protective clothing (rubber boots, gloves, a coat, a cap and a mask).**
4. It's forbidden to work with chemicals on an empty stomach and eat or drink during working. It's forbidden to drink alcohol one day before and one day after working with chemicals.
5. It's forbidden to pour the liquid remains to the open water reservoirs or biological sewage treatment plants. These notes apply also to the water after cleansing the container and other parts of the sprayer.
6. Expendable sprayer should be handed over for utilization.
7. In case of poisoning immediately contact the doctor.
8. People working using the sprayer should strictly comply to all the recommendations on the package of the spraying agents.
9. It's forbidden to work using leaky or disabled sprayer.
10. All the operations should be done after decompression of the sprayer.
11. Thoroughly wash the sprayer after each usage and especially before making its servicing.
12. It's forbidden to use the sprayer for other purposes than stipulated in the user's manual.
13. Store the sprayer clean and empty and especially during winter make sure that there are no liquid remains in the container or the lance.
14. **The only device for making the working pressure is a pump placed inside the container – it's forbidden to use any other devices for this purpose !!!** 
15. It's forbidden to spray with easy inflammable chemicals or substances which can cause an explosion eg. Petrol, solvents.
16. Changes in the sprayer or using it not according to its allocation can result in poisoning people or animals, polluting the environment, damaging the sprayer or accidents.
17. After finishing work, you should change your clothes (the protective clothes must be cleaned), wash your hands, face, mouth and throat, and clean your nose.
18. After finishing work, the remaining liquid should be diluted ten times using clean water and sprayed on the same area as before.
19. After finishing work, the sprayer must be emptied and thoroughly rinsed with water. Then it should be pumped empty and then the air blown through it after opening the valve R020j.
20. The user is fully responsible for the damages caused by not complying with these recommendations.
21. The sprayer must be stored empty and non-pressurized.
22. The sprayer should be stored in safe places, secured from unauthorized people, especially children.

6. TECHNICAL INSTRUCTIONS

Schema – fastening of the belts and the clasp



NOZZLES. Liquid output at 0.35 Mpa

nozzle	colour	liquid output	nozzle type	3 nozzle kit Z09j3	5 nozzle kit Z09j5	7 nozzle kit Z09j7
MR1.0	green	~0,40 litre/min.	adjustable stream angle		✓	✓
MR1.5	green yellow	~0,60 litre/min.			✓	✓
MR2.0	red	~0,80 litre/min.				✓
MF2.110	yellow	~0,80 litre/min.	flatstream	✓	✓	✓
MF3.110	blue	~1,15 litre/min.		✓	✓	✓
MF4.110	red	~1,65 litre/min.		✓	✓	
MF4.45	red	~1,10 litre/min.	flatstream with metal insert			✓
MF5.30	gold-brown	~1,60 litre/min.				✓

The marked nozzles: MR1.0, MR1.5 are included with the sprayer Titan. The other nozzles can be purchased in kits at our distributors or in our e-shop: <http://sklep.marolex.pl>

7. ADAPTING THE KNAPSACK FOR THE LEFTHANDED USER

The sprayer in the version you bought is suitable for the righthanded user. However, the manufacturer designed the sprayer in such a way as to make it possible to adapt the device for the lefthanded user. It can be done by the user himself and these are the steps to follow:

- unpin the cotters (no. 44);
- draw the whole lever set (tie M201, lever RP16, roller M204) out of the container and pump base;
- unscrew two top nuts: container nut no. RP11 (with the sieve) and pump nut no. RP11a (with the whole pump set) and exchange their places;
- fix the lever set on the opposite side of the container and fasten it with the cotters.

8. GUARANTEE CONDITIONS AND REPAIRS

1. The guarantee period is 24 months from the date of purchase.
2. Sprayers with chemical remains will not be repaired.
3. Reclamation should be lodged to the seller of the sprayer.
4. The claims will be accepted after showing the defected part or giving the full description of the fault.
5. Number of repairs after which the seller can't refuse to exchange the sprayer for a new one (in case there are still defects) is 3.
6. Operations connected with exploitation of the sprayer and described in the manual are not treated as guarantee repairs.
7. The producer won't accept the claim if there were changes in pressure regulation or the storing, operating, maintaining of the product were not according to the manual.
8. Mechanical damages caused by the user can't be the subject to reclamation. The damaged parts can be exchanged but the costs are charged.
9. The guarantee repairs should be made using always the genuine Marolex parts.

9. MAINTENANCE AND SERVICE RECOMMENDATIONS

After finishing work, and cleaning the sprayer the following operations should be taken to ensure the longlasting operation:

1. Unscrew the hose from the handle, take out the filter R40, clean it at the running water and put back again.
2. Unscrew the nut R50 from the integrated handle, take out the feeding valve's piston with the spring, clean it, lubricate with the silicone smear and install it back.
3. Unscrew the nozzle nut R64, take out the nozzle, wash it and put back.
4. It is recommended to lubricate the seal of the pump piston R104. To do it, take out the pin (on the draft no.44), pull out the pump lever wire M201 from the pump, unscrew the pump nut RP11a, take out the pump, dismantle the mixer RP17, take out the pump from the pump basket and lubricate the seal. Assemble everything back again.

10. DISMANTLING AND UTILISATION

The damaged sprayer, not suitable for repair, should be utilised in such way as not to pollute the environment. Cleansed plastic elements should be recycled as well as the metal parts.

11. SAFETY SIGNS

lp.	sign	meaning	place
1.		tablet	on container
2.		Sign indicating possibility of unspecified danger.	on container
3.		Sign indicating that a users manual should be read before starting work.	on container
4.		Sign indicating danger of poisoning. Eating or drinking while using the device is forbidden.	on container

Manufacturer:

MAROLEX Sp. z o.o.
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05-092 Dziekanów Leśny
www.MAROLEX.pl

Distributor: