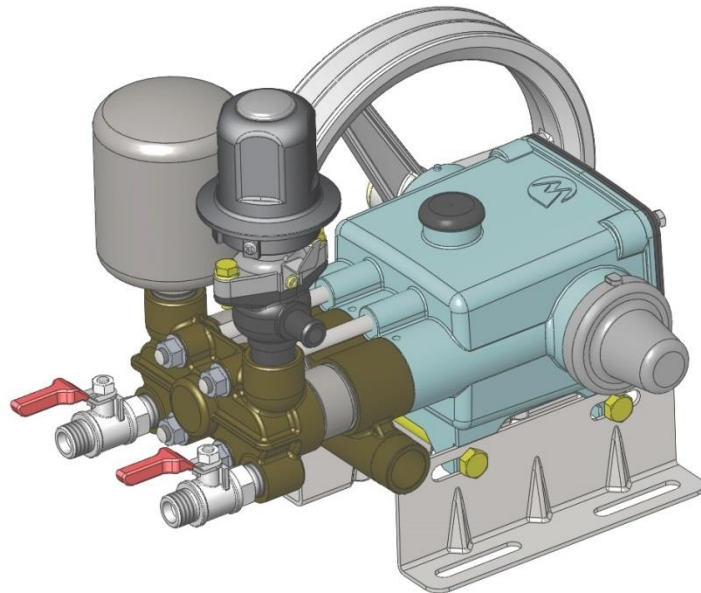




# OWNER'S / OPERATOR'S MANUAL

**Power Sprayer**

**MS40V**



Thank you very much for purchasing this product.

**Read this Operator's Manual carefully to ensure correct use of this product.**

Be sure to read "Important Safety Instruction" before using this product.

Always keep this Instruction manual for reference.

**Caution** This machine has been shipped without oil in the pump crankcase. Be sure to fill engine oil before starting it for the first time.



## Introduction

Thank you very much for purchasing a Maruyama product. This Operator's Manual explains the correct handling of the product and how you can easily inspect and maintenance, so that you can carry out your work safely and comfortably using this product.

Do not operate this product until you read this instruction manual for operation, inspection and maintenance instructions.




Save this manual for constant reference over the long life of this product. Please note that this product and this manual are subject to change for the purpose of product improvements and consequent revisions required.

If you have any questions or comments on this product, please contact your Maruyama dealer near you.


- Save the Operator's Manual for future reference.
- If the Operator's Manual is lost, purchase a new copy from your Maruyama dealer.
- Never modify this product because doing so may create unsafe conditions which may be harmful or dangerous.

### ■ Precautions

The following signal words and meanings are intended to explain the levels of risk associated with this product.

-  **Danger** --- If not avoided, will result in death or serious injury.
-  **Warning** --- If not avoided, could result in death or serious injury.
-  **Caution** --- If not avoided, may result in minor or moderate injury.
- Caution** --- If not avoided, may result in property damage.

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# 1. ⚠ Important Safety Instruction

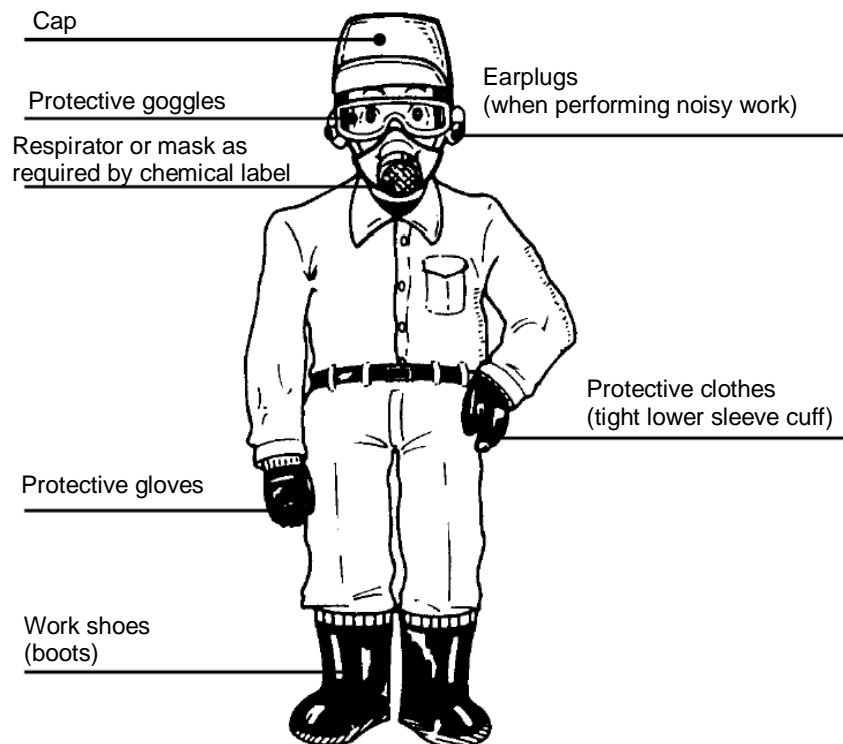
## (1) Overview

Be sure to read all instructions carefully before using the product, so you will operate the unit correctly and safely.

Precautions that should be heeded to ensure work safety are listed below. Other important precautions are mentioned throughout the main text, accompanied by ⚠ **Danger**, ⚠ **Warning**, ⚠ **Caution** and **Caution** symbols as deemed appropriate.

## (2) Items to check before operation

- Wear clothes and personal gear appropriate for work and fitting your body.



- Inspect and maintain your protective gear regularly to make sure they function properly, and use the protective gear correctly.
- If you must work in a noisy environment, wear an ear muffler or earplugs.
- Keep people away from the work area.

### ⚠ **Warning**

Check, maintain all safety equipment so that they will function as intended.

### (3) Precautions for use (Chemical)

#### ■ Handling of Agrichemicals

##### **Warning**

- **Consult the chemical manufacturer's label and MSDS for all required safety equipment, application instruction, first aid instruction and other precautions and safety warnings.**
  - **Follow all chemical manufacturer's label and MSDS instruction. If you have any questions, contact the chemical manufacturer for advice prior to use of chemicals.**
- Do not prepare on the machine or in the tank in advance of transportation. The spill conditioner may result in environmental contamination.
  - Do not store or transport the chemicals along with any drink or food. When transporting, be careful not to break the container.
  - Make a spraying plan. Prepare the chemicals not to leave any remainder.
  - Put the remaining chemical in a fully closed container or bag that lets anyone identify the content. Isolate from any other materials and store the container or bag so that any unauthorized person cannot take it. Never store the chemical in a container for drinks or food.
  - Dispose the empty bag, can, and bottle according to the instruction manual of the chemical or to the instruction by the local government.

##### **Caution**

**Do not use strong acid, strong alkali, chemical solvents, or hot water. This may cause damage to your sprayer or spray pump.**

### (4) Precautions on Use (Preparation for Operation)

- When transporting sprayer on a truck, take the proper action so that the machine will not fall.
- When loading/unloading a heavy material, do not take an unreasonable stance nor perform one-man operation.
- Check for loosened bolts/nuts on each part.
- Keep the covers for rotary parts on their proper places.
- Do not start the engine near combustible materials or at a poorly ventilated or narrow location.
- Do not operate indoors.

### (5) Precautions on Use (During Operation)

- Avoid fatigue by taking proper breaks.
- Pay attention to the clothes, field conditions, and direction of wind to avoid exposure to agrichemicals and environmental contamination. The direction in which agrichemicals flow may be dangerous.
- Refuel after the engine cools down. Do not smoke while refueling. Avoid static discharge when refueling. Tighten the fuel tank cap and remove any spilled fuel completely.
- During operation, do not allow any unauthorized person to come into the work area being sprayed.
- Do not direct the spray nozzle toward any person.
- Before any break, rinse your mouth out and wash your hands and face with soap and water.
- If you feel ill while or during spraying, seek medical attention immediately.

### (6) Precautions on Setup

##### **Warning**

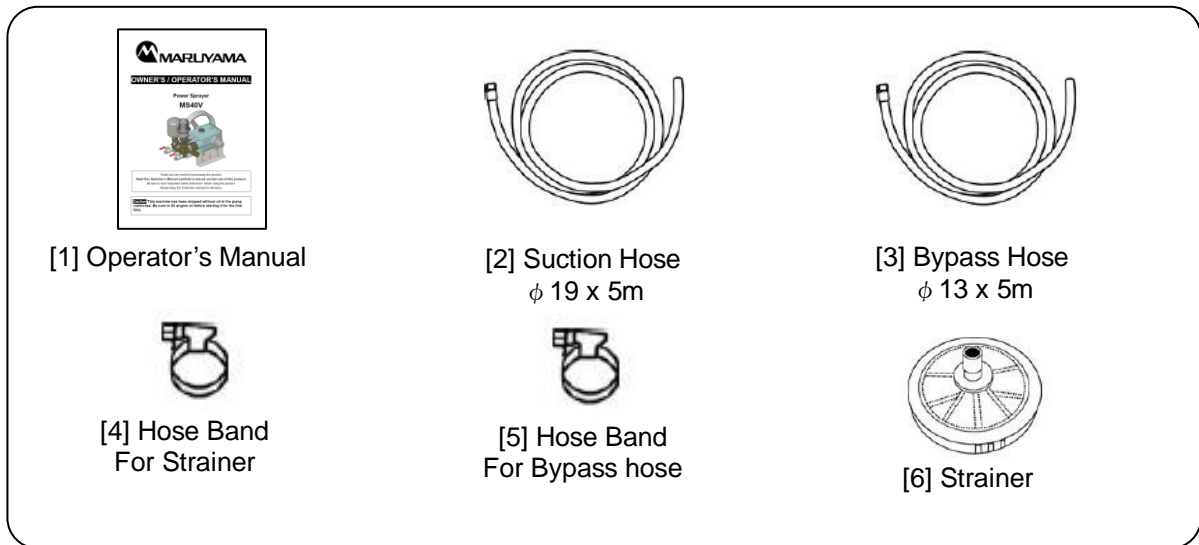
- **When driving this product using a V pulley and V belt, be sure to attach a cover over the rotary part so that it cannot be easily touched during check. (Keep the covers being attached for operation)**
- **Be sure to stop this machine before check or adjustment.**

- To fasten this machine, use bolts with proper sizes and strength. Install the machine securely.
- Choose pulleys and engine speeds within the range of specification.
- Use the size of the V pulley shaft hole or key groove matching the shaft.
- Do not use any shaky V pulley hole or key groove because accidents may be caused by detrimental vibration.
- The shaft end must slightly retract from the pulley surface. Tighten the bolt accurately via the washer. Use the V pulley set screw as necessary.
- The V belt must not be too tight or too loose. If it is too tight, the engine or pump bearings may be damaged. If it is too loose, belt damages or slip-away may be caused.

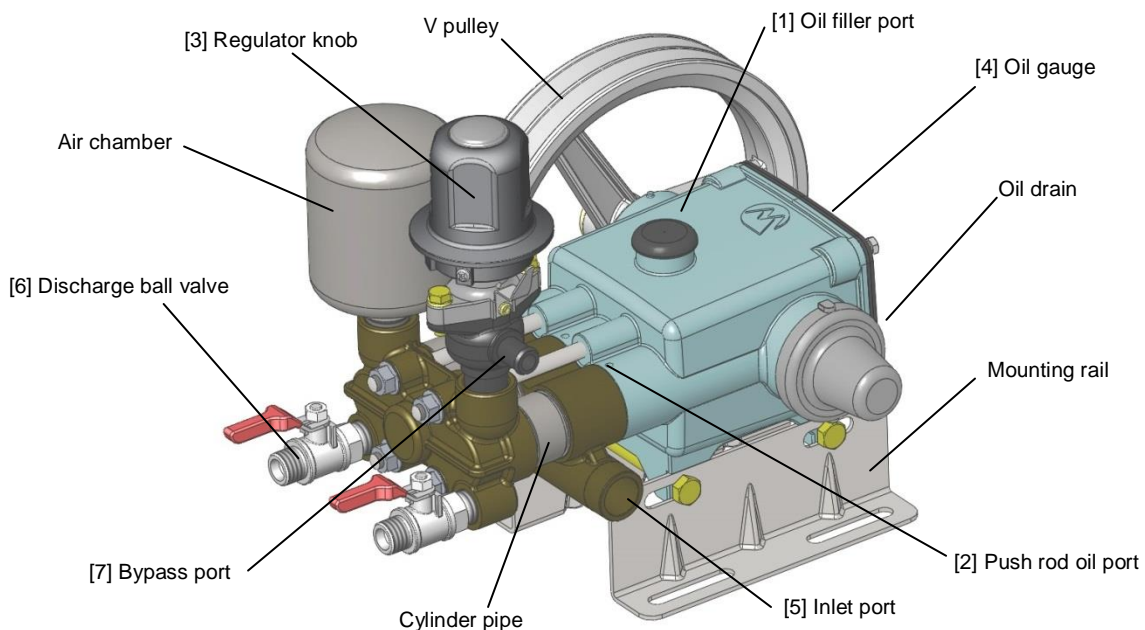
## 2. Name and Function of Each Part

### ■ Checking the standard accessories

Inspect the product carefully to make sure no breakage or damage occurred during shipping. Do not discard the packing material until you have carefully inspected and satisfactorily operated the product. If any parts are damaged or missing, immediately contact your Maruyama dealer.



### ■ Name of each part



### ■ Function of each part

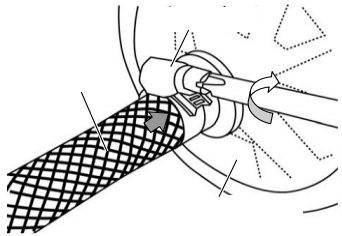
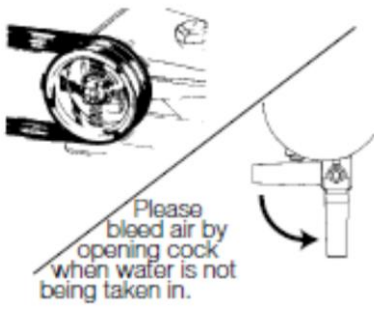
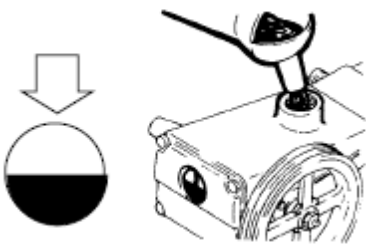
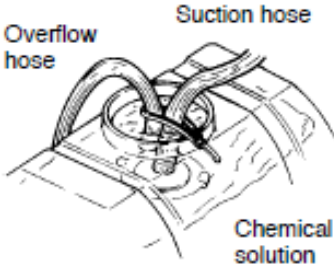
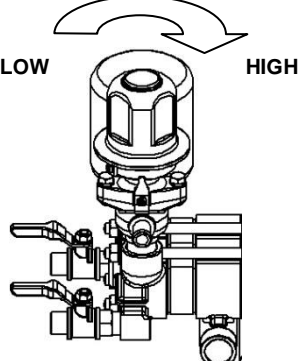

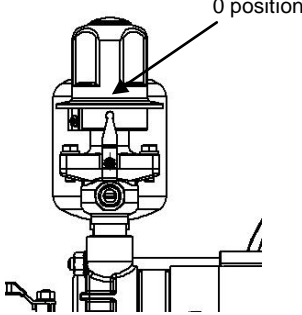
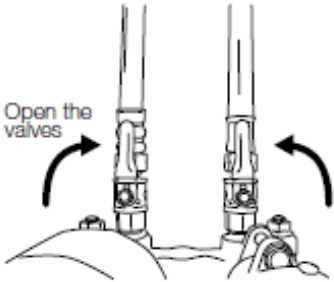
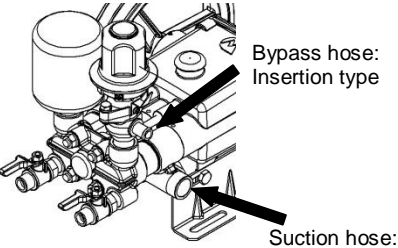
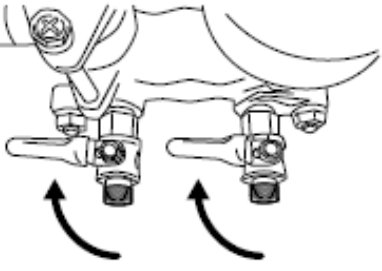
- [1] Oil filler port: Before starting operation, open this lid and be sure to refill the gasoline engine oil (SAE 10W-30 or equivalent).
- [2] Pushrod oil port: Before starting, refill about 3 to 5 drops of oil (SAE 10W-30 or equivalent).
- [3] Regulator knob: Dial for pressure adjustment.


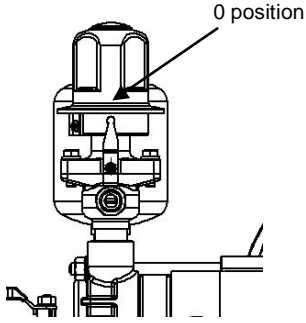
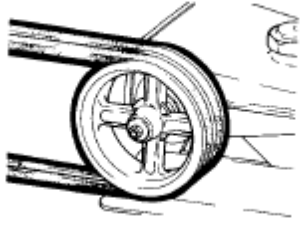


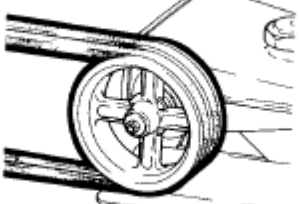
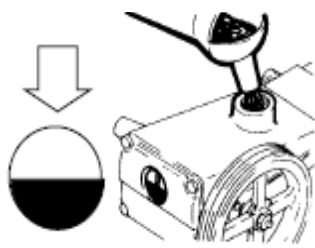

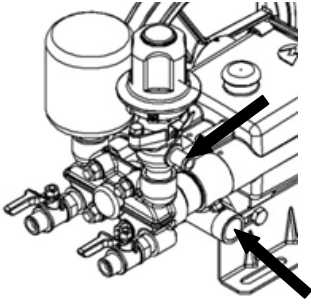
### ⚠ Caution

● Do not adjust the pressure as it has been adjusted at the factory. It may cause breakdown.

- [4] Oil gauge: The level of pump lubrication oil is checked here.
- [5] Water inlet port: Water is suctioned from here. Connect the suction hose.
- [6] Discharge port: Pressurized water is taken out from this port. Connect the spray hose.
- [7] Bypass port: Bypass flow is discharged from this port. Connect the bypass hose.

### 3. Operational procedures

<p><b>Preparatory inspection</b> ~ <b>Spraying</b></p>	<p><b>4 Attaching the strainer</b> Insert the suction hose all the way into the male hose thread and secure the hose with the hose band.</p> 	<p><b>8 Starting</b></p>  <p>Please bleed air by opening cock when water is not being taken in.</p>
<p><b>1 Lubricating oil</b> Fill oil up to the center level of the oil gauge.</p> 	<p><b>5 Insert the hoses to tank</b></p>  <p>Overflow hose      Suction hose Chemical solution</p>	<p><b>9 Pressure adjustment</b></p>  <p>LOW      HIGH</p>
<p><b>2 Oiling</b> Feed a few drops of oil into the 3 holes of the crankcase.</p> 	<p><b>6 Adjust the pressure regulator to zero position.</b></p>  <p>0 position</p>	<p><b>10 Spraying</b></p>  <p>Open the valves</p>
<p><b>3 Installing the hoses</b> Tie the bypass hose with band supplied. Screw the suction hose to the inlet port.</p>  <p>Bypass hose: Insertion type Suction hose: Screwed type</p>	<p><b>7 Close the valves</b></p> 	

<p><b>Stopping operation and maintenance</b></p>	<p><b>14 Continue to run the sprayer for one minute after raising the strainer.</b></p> 	<p><b>17 Adjust the pressure regulator to zero position.</b></p> 
<p><b>11 Stop spraying</b></p> 	<p><b>⚠ Caution</b> Running the sprayer for more than one minute without presence of liquid may cause severe pump damage.</p>  <p>Bypass hose</p>	<p><b>Protection from freezing.</b></p> <p>Water should be completely drained during winter storage to prevent freezing.</p> <p>The operation is performed according to items from 11 to 18 in the operation procedure.</p>
<p><b>12 Wash up with the clean water after spraying.</b></p> 	<p><b>15 Stop operation</b></p> 	<p><b>Replacement of Crankcase oil.</b></p> <p>Replace at 50 hours operation after initial operation.</p> 
<p><b>13 Running the power sprayer.</b></p> 	<p><b>16 Detach the suction hose and bypass hose.</b></p> 	



## 4. Troubleshooting

### Caution

- Contact your Maruyama dealer for overhaul.
- If you are experiencing a problem that is not listed in this chart or you are still experiencing the problem although you have checked all the possible cause listed, contact your Maruyama dealer.



### Warning

Do not remove the cap on the top of the pressure control valve grip and adjust the screw. A pressure higher than specified may occur, the machine may be damaged, and personal injury may occur. Therefore, never take this action.

### ■ Pump problems

Condition	Cause	Countermeasure
No suction or low suction	V belt slip	Adjust/replace
	Strainer clogged with dust/dirt	Clean
	Suction hose damaged/bent	Replace
	Faulty or detached gasket of suction hose	Repair/replace
	Too high suction head	Decrease depth
	Piston packing damaged	Replace
	O-ring damaged	Replace
	Seal packing damaged	Replace
Low operation pressure.	Pressure regulator damaged	Replace
	Excessive nozzle spraying volume	Replace with a proper nozzle
	Worn nozzle	Replace
	Strainer clogged with dust/dirt	Clean
Spray hose vibration	Air chamber filled with water	Open suction line to allow air in.
	Pressure regulator damaged	Replace

## 5. Specifications

Model	MS40V
Length X Width X Height (mm)	343X234X291
Dry Weight (kg)	6.6
Maximum rotating speed (min <sup>-1</sup> )	1250
Maximum pressure (MPa)	3.5
Suction capacity (L/min)	40
Required power (kW)	3.1
Spray valve size	G3/8
Type of lubricant	SAE10W-30
Lubricant capacity (L)	0.36
V-pulley size (mm)	191(A-2)
Operator's Manual	P/N 132855
Suction hose(mm)	φ 19X5000
Suction strainer	40 mesh
Bypass hose (mm)	φ 13X5000

- The specifications are subject to change without notice for the purpose of improvement.

## 6. Customer Service

### **Warning**

**Do not modify the machine as it may create dangerous situations. Any misuse, abuse, alteration or improper installation or operations which are specified by the instruction manual will void the guarantee.**

### ■ Customer Service

- If any problem is found during the startup inspection or while the machine is in use, refer to the troubleshooting tables and take an appropriate action. If you don't know what to do, contact your Maruyama dealer.
- Provide the following information to the dealer:
  - Model name
  - Pump serial number
  - Description of failureExplain in detail what happened.
- So that it can be used safely, this product must be operated correctly and serviced periodically. Have your machine inspected and serviced at least once a year by your Maruyama dealer. This servicing is chargeable.

# Notes

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If you have any questions or inquiries regarding this product, consult first your MARUYAMA dealer.

So that we can accurately assess the situation, have the following information ready when you contact the dealer regarding your product:

- [1] Model name
- [2] Pump serial number
- [3] Date of purchase



**MARUYAMA MFG. CO., LTD.**

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