

[®]
WESTWARD



Grease Hose Reel Oil Hose Reel

Model 48UJ75 and 48UJ76

®
WESTWARD

**PLEASE READ AND SAVE
THESE INSTRUCTIONS.**

**READ CAREFULLY
BEFORE ATTEMPTING
TO ASSEMBLE, INSTALL,
OPERATE OR MAINTAIN THE
PRODUCT DESCRIBED.**

**PROTECT YOURSELF AND
OTHERS BY OBSERVING ALL
SAFETY INFORMATION. FAILURE
TO COMPLY WITH INSTRUCTIONS
COULD RESULT IN PERSONAL
INJURY AND/OR PROPERTY DAMAGE!
RETAIN INSTRUCTIONS FOR FUTURE
REFERENCE.**

**PLEASE REFER TO BACK COVER
FOR INFORMATION REGARDING
WESTWARD'S WARRANTY AND OTHER
IMPORTANT INFORMATION.**

Model #: _____

Serial #: _____

Purch. Date: _____

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Version 04/ 2016*

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BEFORE YOU BEGIN



Tools needed:

- 3mm Spanner
- 12mm Spanner
- 10mm Spanner
- 15mm spanner
- Philip Screw Driver

Protection equipment (PPE) requirements:

- Goggles, Safety Gloves, Safety Helmet, and Safety Boots

Pack Includes

- 1 Grease hose reel (Only in 48UJ75)
- 1 Grease control gun (Only in 48UJ75)
- Oil control gun (Only in 48UJ76)
- Oil hose reel (Only in 48UJ76)
- Oil Meter (Only in 48UJ76)



- See General Safety Instructions on page 2, and Cautions and Warnings as shown.



GENERAL SAFETY INSTRUCTIONS



WARNING

Hose reel may contain high pressure. They must not be pointed at any person or animal

SPECIFICATIONS

Description	Grease (48UJ75)	Oil (48UJ76)
Max Pressure	5800 PSI	2000 PSI
Inlet/Outlet Threads	1/4"	1/2"
Hose ID	1/4"	1/2"
Hose OD	5/8"	7/8"
Hose Length	15m	15m

SPECIFICATIONS FOR METER (ONLY IN 48UJ76)

Description	
Meter Type	Digital
Mechanism	Oval Gear
Inlet / Outlet Position	In-Line
Inlet / Outlet	1/2" NPT (F)
Flow Rate	1 to 30 LPM (0.3 to 8 GPM)
Accuracy	+/- 0.50%
Repeatability	+/- 0.30%
Max. Working Pressure	1000 PSI (70 BAR)
Pressure Loss	10 PSI (0.7 BAR)
Working Temperature range	-10°C to 60°C (14°F to 140°F)
Max. Resettable Batch Total	99,999 units
Max. Non Resettable Totalizer	9,99,999 units
Least Count / Resolution	0.001 units
Max. Viscosity of Media	5000 cSt

ASSEMBLY INSTRUCTIONS

Operation Steps

Image

Change the position of roller plate assembly

When mounting the hose reel on a ceiling or a wall it might be required to change the position of the roller plate assembly according to operator's need

- 1 Open the three screws on each side of the roller plate assembly using a 13mm spanner.



- 2 Turn the face of the plate in upward direction. In this case only two of the bolts on each side are required to hold the plate assembly.



Adjusting the stopper

Stopper is used to increase the length of the hose that remains outside the roller plate assembly when the hose is mounted at a height, on a ceiling or at a particular distance from the work station.

- 1 Loosen the two screws present on the stopper using phillips type screw driver.



- 2 Slide the stopper over the hose depending on the length required to be out.
- 3 Tighten both the screws.



ASSEMBLY INSTRUCTIONS (CONTINUED)

Operation Steps

Image

Connect the hose

- 1 Connect the open end of the hose coming from the pump to the inlet of the hose reel.



Inlet Swivel used in different Hose reels

Wall mounting or ceiling mounting

The eye-hole makes hose reel mounting a one man's operation. To mount

- 1 Screw a 10mm bolt on a wall or ceiling and hang the hose reel using the eye hole.



- 2 Screw the rest of the bolts through the other holes on the base plate.

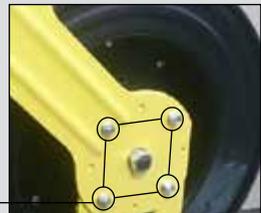
Note. Make sure all the bolts are tight enough to hold the hose reel in its position.

Changing the Guide Arm position

- a. Unscrew all the four guide arm screws.
- b. Change the position of the guide as per requirement by aligning the holes on the guide arm.

Changing the guide arm position

- 1 Unscrew all the four guide arm screws
- 2 Change the position of the guide as per requirement by aligning the holes on the guide arm.



Four guide arm screws

ASSEMBLY INSTRUCTIONS (CONTINUED)

Operation Steps

Image

Connection of the grease control gun (only in 48UJ75)

1 Connect the outer end of the hose on the reel with the Z-swivel on the grease control nozzle.

2 Now connect the open end of the Z-swivel with the hose reel.

Note: Use thread sealant like Teflon tape to make the connection leak proof.

Connection of the oil control gun with oil hose reel (only in 48UJ76)

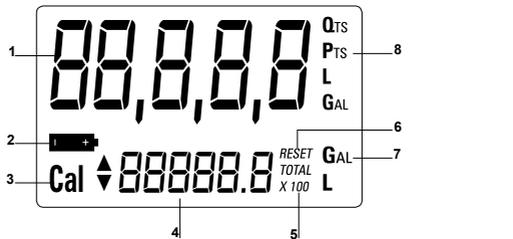
1 Connect the oil control gun with the oil hose reel

Note: use thread sealant like teflon tape to make the connection leak proof.

OPERATION INSTRUCTIONS OF OIL METER (ONLY IN 48UJ76)

A Major components

LCD Display: Includes three numerical Totals and other keys as given below:



1 **Resettable Batch Total (5 figures with moving comma):** indicates volume dispensed after RESET button was last pressed.

2 Indication of battery charge.

3 Indication of calibration mode.

4 **Batch Totalizer (6 figures with moving comma in multiple of 10 or 100):** indicates two types of Total:

- Non-Resettable General Total (TOTAL)
- Resettable total (Reset TOTAL)

5 Indication of total multiplication factor (x10 or x100).

6 Indication of type of total, (TOTAL / Reset TOTAL).



ASSEMBLY INSTRUCTIONS (CONTINUED)

7 Indication of unit of measurement of Totalizer:

L=Litres

Gal=Gallons

8 Indication of unit of measurement of Resettable Batch Total:

Qts=Quarts

Pts=Pints

L=Litres

Gal=Gallons

User buttons: The meter features two buttons (RESET and CAL) which individually perform two main functions and together, other secondary functions.

RESET key: is used to reset the Batch Total and Reset Total

CAL key: is used to enter calibration mode

Combination of RESET + CAL keys: is used to change the unit of measurement

Measurement chamber: It has a threaded inlet and outlet. It contains two oval gears which turn when media passes through them with sufficient pressure. This action generates electrical pulses which are processed by a microprocessor and the result is displayed on the registers of the LCD.

Battery housing: The meter is powered by two standard type 1.5 V batteries (size 1N). The battery housing is closed by a threaded watertight cap that can be easily removed for quick battery change.

LCD Display

Reset Button

Measurement Chamber

Calibration Button

Battery Housing



ASSEMBLY INSTRUCTIONS (CONTINUED)

What is standby ?

When the media is not flowing through the meter, the display shows only the word TOTAL on the batch register. This mode is called STAND BY and majority of adjustments are carried out in this mode.



B. Measurement units configuration

The METER comes with a menu through which the user can select the main measurement unit, Quarts (Qts), Pints (Pts), Litres (Lit), Gallons (Gal); The combination of the unit of measurement is predefined according to the following table:

User buttons: The meter features two buttons (RESET and CAL) which individually perform two main functions and together, other secondary functions.

RESET key: is used to reset the Batch Total and Reset Total

CAL key: is used to enter calibration mode

Combination of RESET + CAL keys: is used to change the unit of measurement

Measurement chamber: It has a threaded inlet and outlet. It contains two oval gears which turn when media passes through them with sufficient pressure. This action generates electrical pulses which are processed by a microprocessor and the result is displayed on the registers of the LCD.

Battery housing: The meter is powered by two standard type 1.5 V batteries (size 1N). The battery housing is closed by a threaded watertight cap that can be easily removed for quick battery change.

Reference No	Unit of Measurement Batch Total	Unit of Measurement Total Register
1	Litres (L)	Litres (L)
2	Gallon (Gal)	Gallon (Gal)
3	Quarts (Qts)	Gallon (Gal)
4	Pints (Pts)	Gallon (Gal)



ASSEMBLY INSTRUCTIONS (CONTINUED)

Sequence of setting the unit of measurement

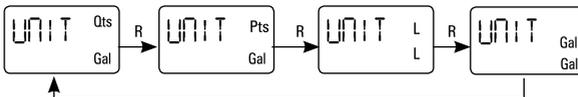
- 1 Wait for the METER to go to standby



- 2 Press the CAL and RESET keys together. Keep these pressed until the word "UNIT" appears on the screen together with the unit of measurement set at that time (in this example Quarts / Gallon)



- 3 Press RESET key to scroll among the four combinations of units of measurement as shown:



- 4 By pressing the CAL key at length, the new settings will be stored, the METER will pass through the start cycle and will then be ready to dispense in the set units.

No new calibration is required after changing the unit of measurement.



ASSEMBLY INSTRUCTIONS (CONTINUED)**C Normal dispensing mode**

- 1 While the media is flowing through the meter, Batch Total and Reset Total are displayed at the same time.



A few seconds after dispensing has ended, on the lower register, the display switches from Reset Total to General Total: the word RESET above the word TOTAL disappears, and the Reset Total is replaced by the General Total.



This situation, where only “TOTAL” is displayed, is called **STANDBY mode**. It remains stable until the user operates the meter again.

D Resetting the batch total

- 1 While in standby (i.e. when the display shows TOTAL), press the RESET button.
- 2 During reset, the display screen first of all shows all the lit-up digits and then all the switched off digits.
- 3 At the end of the process, a display page is first of all shown with the reset batch and the Reset TOTAL.
- 4 After a few moments, the Reset TOTAL is replaced by TOTAL

E Resetting the reset total

The Reset Total can be reset by pressing the RESET key at length while the display screen shows Reset TOTAL. The steps to be taken are:

- 1 Wait until the display shows Total only (standby mode)
- 2 Press the RESET key quickly.
- 3 The meter starts to reset the Batch Total.
- 4 While the display page showing the Reset Total is displayed, press the Reset key again for at least 1 second.
- 5 The display screen again shows all the segments of the display followed by all the switched-off segments and finally shows the display page where the new Reset Total is shown.



ASSEMBLY INSTRUCTIONS (CONTINUED)

- The display screen again shows all the segments of the display followed by all the switched-off segments and finally shows the display page where the new Reset Total is shown.

F Calibration

In standby mode, press the CAL key at length to see the current calibration factor.

- Factory K Factor: Factory-set default factor.**
It is equal to 1 (indicated as 1,000).
- User K Factor: Customized calibration factor, meaning modified by calibration.**

The meter has been calibrated at the factory under the following operating conditions:

- Fluid motor oil type** : 10W40
- Temperature** : 20°C (68°F)
- Flow rate** : 5-25 litres/min

Calibration is needed to make the meter suitable for actual conditions.

IMPORTANT

The METER features a non-volatile memory that keeps the data concerning calibration and total dispensed quantity stored for an indefinite time, even in the case of a long power break.

G Calibration procedures

- In-Field Calibration, performed by means of a dispensing operation
- Direct Calibration, performed by directly calculating the calibration factor.

By pressing CAL key while the meter is in standby, the display page appears showing the current calibration factor used.

Two cases can occur:

CASE 1

If no calibration has ever been performed, or the factory setting has been restored after previous calibrations, the following display page will appear:



The word “Fact” abbreviation for “factory” shows that the factory calibration factor is being used.

ASSEMBLY INSTRUCTIONS (CONTINUED)**CASE 2**

If, on the other hand, calibrations have been made by the user, the display page will appear showing the currently used calibration factor (in our example 0,998).



The word "user" indicates that a calibration factor, set by the user is being used.

To confirm the choice of calibration factor, quickly press CAL while "User" or "Fact" are displayed.

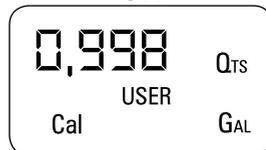
After the restart cycle, the meter uses the calibration factor that has just been confirmed.

In-field calibration sequence

- 1 Wait until the METER comes in standby (Display shows TOTAL).



- 2 Press CAL key for more than 2 seconds. The METER enters calibration mode and shows "CAL". The words "FACT" and "USER" indicate which factor (factory or user) is currently in use

**OR**



ASSEMBLY INSTRUCTIONS (CONTINUED)

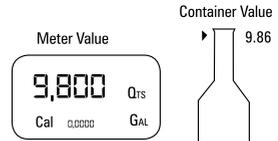
- 3 Press RESET key for more than 2 seconds. The METER shows “CAL” and the Batch Total at zero. The meter is ready to perform in-field calibration.



- 4 **DISPENSING INTO SAMPLE CONTAINER**
Without pressing any key, start dispensing into the sample container.



While dispensing, do not try to reach a particular reading of the container. Instead make short top-ups in the final stage of dispensing.



- 5 Press RESET key once. The METER detects that the calibration dispensing is finished. To calibrate the METER, the value indicated by the Batch total (example 9.800) must be forced to the Container value marked on the graduated sample container. An arrow (up/down) appears which indicates the direction in which the value can be changed via steps 6 & 7.



- 6 Press RESET key once. The arrow changes direction. The operation can be repeated to alternate the direction of the arrow.

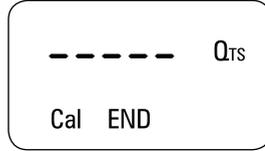


- 7 The meter value changes in the direction indicated by the arrow
- One unit for every short press of CAL key.
 - Continually if the CAL key is kept pressed.



ASSEMBLY INSTRUCTIONS (CONTINUED)

- 8 Press RESET key for more than 2 seconds .
The METER is informed that the calibration procedure is finished.
The meter calculates the new USER K FACTOR factor for a few seconds.



- 9 The new USER K FACTOR is shown for a few seconds, after which the restart cycle is repeated.



- 10 The METER comes back to standby mode.



Direct calibration sequence

If normal METER operation shows a mean percentage error E, (obtainable on the basis of several performed dispensing operations), this can be corrected by applying a correction to the current calibration factor as shown below :

$$\text{New cal. Factor} = \text{Old Cal Factor} \times \left\{ \frac{100 - (E)}{100} \right\}$$

Example:

- Error percentage found E% = - 0.3 %
CURRENT calibration factor = 1.000
New USER K FACTOR = 1.000 * [(100 - (- 0.3))/100]
= 1.000 * [(100 + 0.3)/100]
= 1.003

1. Wait until the METER comes in Standby (Display shows TOTAL).





ASSEMBLY INSTRUCTIONS (CONTINUED)

- 2 Press CAL key for more than 2 seconds.
The METER enters calibration mode and shows "CAL". The words "Fact" and "USER" indicate which factor (factory or user) is currently in use.



- 3 Press RESET key for more than 2 seconds.
The METER shows "CAL" and the Batch total at zero. The user can perform in-field calibration now.



- 4 Press RESET key for more than 2 seconds.
"Direct" appears together with the Current calibration factor.
In the bottom left part of the display, an arrow appears (upwards or downwards) defining the direction (increase or decrease) of the reading.



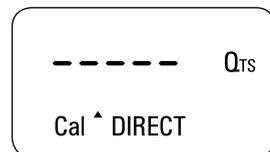
- 5 By pressing RESET key the user can change the direction of the arrow.



- 6 By pressing CAL key, the Meter value changes in the direction indicated by the arrow, one unit for every short press of CAL key . continually if the CAL key is kept pressed. The speed increase rises by keeping the key pressed.



- 7 Press RESET key for more than 2 seconds.
The METER detects that the desired reading has been set and the calibration procedure is finished.



ASSEMBLY INSTRUCTIONS (CONTINUED)

- 8 At the end of the calculation, the new USER K FACTOR is shown for a few seconds.



- 9 The restart cycle is repeated to finally achieve standby mode.





TROUBLESHOOTING (ONLY IN 48UJ75)

Symptom	Possible Cause(s)	Corrective Action
Pump is working but media does not dispense from hose reel	Pump pressure might be low	Increase the air pressure supplied to the pump

TROUBLESHOOTING (ONLY IN 48UJ76)

Symptom	Possible Cause(s)	Corrective Action
LCD: Indication is dull	Battery low	Replace battery (see maintenance - changing the battery)

Not enough measurement precision	<ol style="list-style-type: none"> Wrong K FACTOR The meter works out of flow rate nominal range 	<ol style="list-style-type: none"> Adjust the calibration factor (see calibration procedures) Re-enter at flow rate nominal range
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Reduced or zero flow rate	Gears blocked	Clean the measurement chamber (refer maintenance)
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Indication error 1 flashing	The data in the electronic board memory have been damaged	Not repairable
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Indication error 2 temporary	Temporary error during data reading (possible at battery change)	The board will restart automatically to restore correct working
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The meter does not count, but the flow rate is correct	<ol style="list-style-type: none"> Incorrect installation of gears after cleaning Possible electronic board problems 	<ol style="list-style-type: none"> Refit the gears correctly as shown in maintenance-cleaning of the measurement chamber Contact your dealer
--	--	--

Oil leakage	Loose connection	Check all the threaded connection and use PTFE tape to make them leak proof
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Little or no discharge	Blocked or soiled inlet filter	Clean the filter
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	Blocked hose	Remove the hose and then operate the trigger if there is appropriate discharge then hose is blocked. Now clean the hose or change it.
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MAINTENANCE

The meter has been designed to require a minimum amount of maintenance.

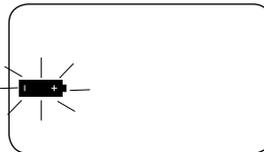
The only maintenance jobs required are:

- **Battery change:** Necessary when the batteries have run down
- **Cleaning the measurement chamber:** Due to the presence of solid particles following bad filtering.

Changing the battery

The METER features two low-battery alarm levels

- 1 When the battery charge falls below the first level on the LCD, the fixed battery symbol appears. In this condition, the METER continues to operate correctly, but the fixed icon warns the user that it is time to change the batteries.
- 2 If first alarm is ignored without changing the batteries, the second battery alarm will prevent operation. In this condition the battery icon starts to flash and is the only one to remain visible on the LCD.



Battery replacement procedure

- Press RESET to update all the totals.
- Unscrew the battery plug (8).
- Remove the old batteries.
- Place the new batteries in the same position as the old ones, making sure the positive pole is positioned as indicated on the cover .
- Re-tighten the battery plug, making sure the conical spring (9) & O-ring (7) is correctly positioned.
- The METER will switch on automatically and normal operation can be resumed. The old calibration will stay same as before..

Cleaning of the measurement chamber

The measurement chamber can be cleaned without removing the meter from the lines.

**MAINTENANCE (ONLY IN 48UJ76)****▲ WARNING**

Always make sure the liquid has been drained from the meter and the line pressure is released before cleaning. To clean the chamber, proceed as follows. (Refer to the parts indicated in the parts illustration):

- *Loosen and remove the four cover retention screws (15).*
- *Remove the cover (14) and the seal (13).*
- *Remove the oval gears (11) & (12).*
- *Clean wherever necessary. For this operation, use a brush or pointed object such as a small screwdriver.*
- *Be careful not to damage the body or the gears.*

PARTS ILLUSTRATION FOR GREASE HOSE REEL (48UJ75)

GETTING STARTED

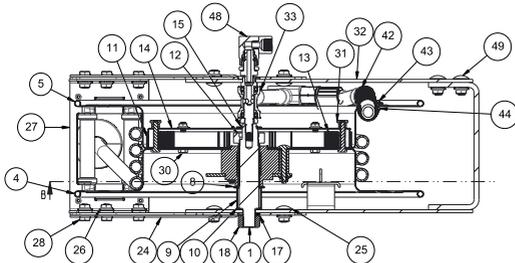
SAFETY /
SPECIFICATIONS

ASSEMBLY /
INSTALLATION

OPERATION

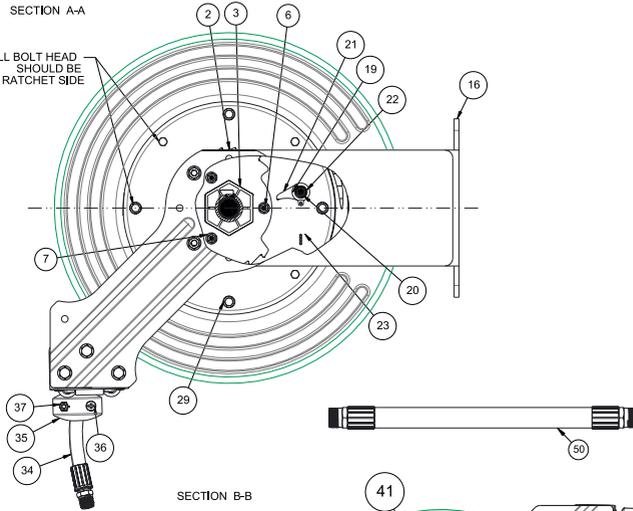
TROUBLESHOOTING

MAINTENANCE /
REPAIR

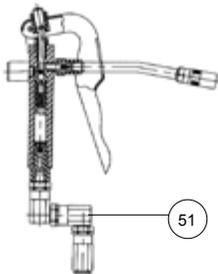


SECTION A-A

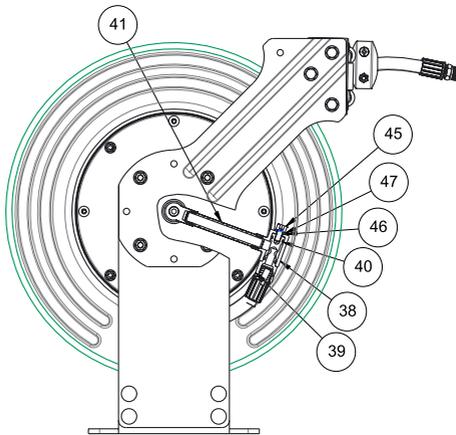
ALL BOLT HEAD
SHOULD BE
RATCHET SIDE



SECTION B-B



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PART LIST FOR GREASE HOSE REEL (48UJ75)

S. NO	Parts Description	Qty.
1	Shaft	1
2	Ratchet Plate	1
3	Holder (Ratchet Plate)	1
4	Sheave (Right)	1
5	Sheave (Left)	1
6	Square Neck Bolt	3
7	Plange Nut	7
8	Steel Washer	1
9	Spacer	1
10	Steel Washer	2
11	Cover (Coil Spring)	1
12	Coil Spring Guide	1
13	Coil Spring (Power spring)	1
14	Cover (Coil Spring)	1
15	External Circlip	1
16	Base Assy.	1
17	Spring Washer	2
18	Nut	1
19	Flange Bolt	1
20	Bush	1
21	Latch	1
22	Flange Nut	1
23	Extension spring	1
24	Side Bracket	2
25	Square neck Bolt	8
26	Flange nut	18
27	Roller Plate Assy.	1
28	Flange Bolt	6
29	Steel Washer	4
30	Bolt	8
31	Nut (Spring Cover)	4
32	Leg (Left)	1
33	Swivel Assy.	1
34	Hose Assy.	1
35	Hose Stopper	2
36	Screw	2
37	Lock Nut	2
38	Hose Connector	1
39	Hose Adaptor	1



PART LIST (CONTINUED)

S. NO	Parts Description	Qty.
40	O-ring	2
41	Pipe	1
42	Hose Clip	2
43	Screw	2
44	Hex Dorned Nut	2
45	Allen Bolt	1
46	Steel Washer	1
47	Spring Washer	1
48	Inlet Swivel Assy.	1
49	Square Neck Bolt	4
50	Inlet Hose Assy.	1
51	Grease Nozzle	1

GETTING STARTED

SAFETY /
SPECIFICATIONS

ASSEMBLY /
INSTALLATION

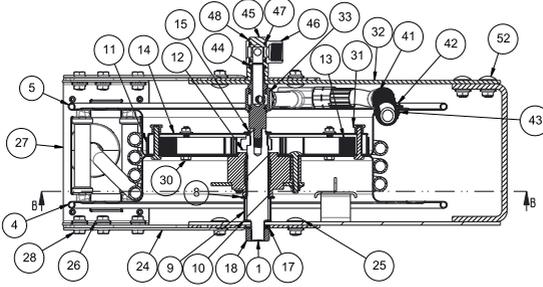
OPERATION

TROUBLESHOOTING

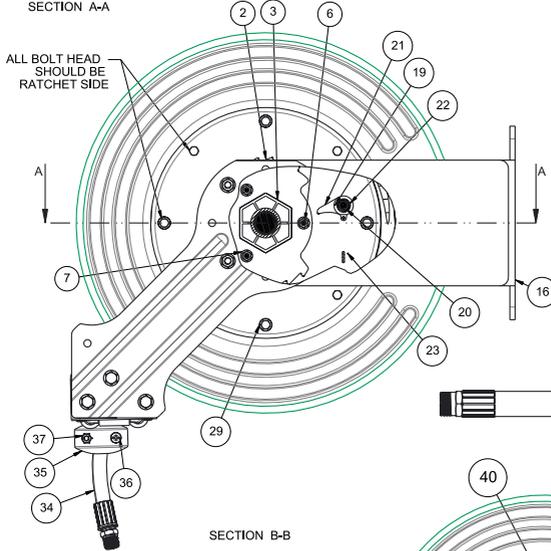
MAINTENANCE /
REPAIR



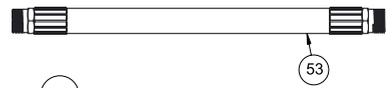
PARTS ILLUSTRATION FOR OIL HOSE REEL (48UJ76)



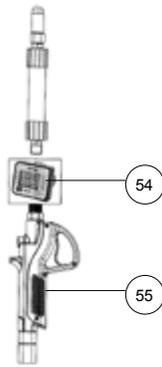
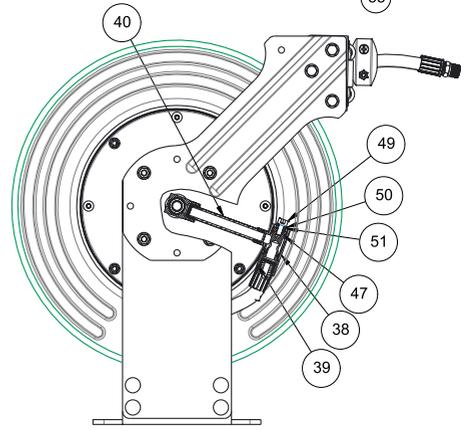
SECTION A-A



SECTION B-B



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PART LIST FOR OIL HOSE REEL (48UJ76)

S. NO	Parts Description	Qty.
1	Shaft	1
2	Ratchet Plate	1
3	Holder (Ratchet Plate)	1
4	Sheave (Right)	1
5	Sheave (Left)	1
6	Square Neck Bolt	3
7	Plange Nut	7
8	Steel Washer	1
9	Spacer	1
10	Steel Washer	2
11	Cover (Coil Spring)	1
12	Coil Spring Guide	1
13	Coil Spring (Power spring)	1
14	Cover (Coil Spring)	1
15	External Circlip	1
16	Base Assy.	1
17	Spring Washer	1
18	Nut	1
19	Flange Bolt	1
20	Bush	1
21	Latch	1
22	Flange Nut	1
23	Extension spring	1
24	Side Bracket	2
25	Square Neck Bolt	8
26	Flange Nut	18
27	Roller Plate Assy.	1
28	Flange Bolt	6
29	Steel Washer	4
30	Bolt	8
31	Nut (Spring Cover)	4
32	Leg (Left)	1
33	Swivel Assy.	1
34	Hose Assy.	1
35	Hose Stopper	2
36	Screw	2
37	Lock Nut	2
38	Hose Connector	1
39	Hose Adaptor	1

GETTING STARTED

SAFETY /
SPECIFICATIONS

ASSEMBLY /
INSTALLATION

OPERATION

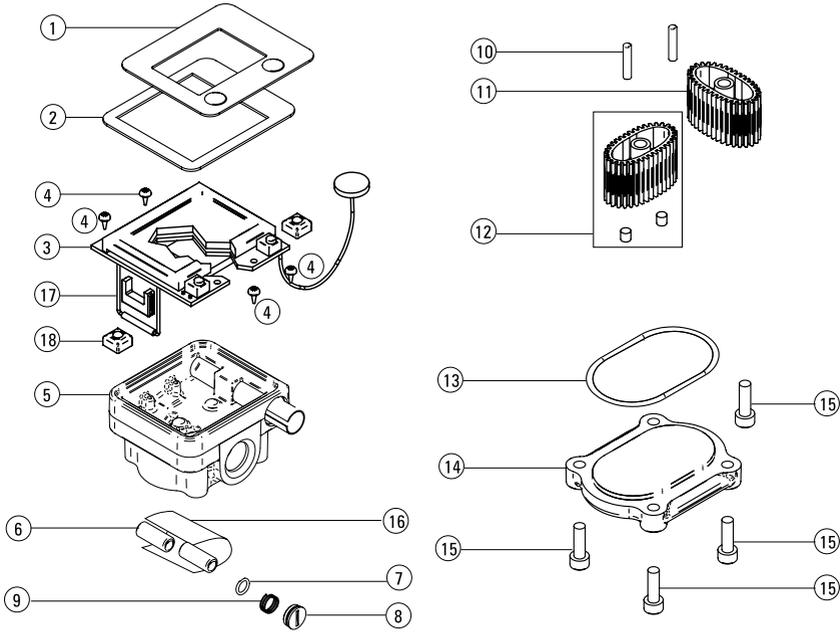
TROUBLESHOOTING

MAINTENANCE /
REPAIR



PART LIST (CONTINUED)

S. NO	Parts Description	Qty.
40	Pipe	1
41	Hose Clip	2
42	Screw	2
43	Hex Domed Nut	2
44	O-Ring	1
45	Inlet Adaptor	1
46	Adaptor	1
47	O-ring	4
48	External Circlip	1
49	Allen Bolt	1
50	Spring Washer	1
51	Steel Washer	1
52	Square Neck Bolt	4
53	Inlet Hose Assy.	1
54	Oil Meter	1
55	Oil Control Gun	1

PARTS ILLUSTRATION FOR OIL METER (ONLY IN 48UJ76)

GETTING STARTED

SAFETY /
SPECIFICATIONSASSEMBLY /
INSTALLATION

OPERATION

TROUBLESHOOTING

MAINTENANCE /
REPAIR

For Repair Parts, call 1-800-323-0620
24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list



PART LIST FOR OIL METER (ONLY IN 48UJ76)

S. NO	Parts Description	Qty.
1	Meter Label	1
2	Plastic Face	1
3	Electronic Board	1
4	Screw	4
5	Meter Housing	1
6	Battery 1.5V N size	2
7	O-Ring	1
8	Battery Plug	1
9	Conical Spring	1
10	Oval Gear Pivot	2
11	Oval Gear	1
12	Oval Gear with Magnet	1
13	Seal	1
14	Cover	1
15	Screw	4
16	Battery Protection	1
17	Spacer for Bulbs	1
18	Spacer for Key	2

WESTWARD ONE-YEAR LIMITED WARRANTY

WESTWARD ONE-YEAR LIMITED WARRANTY. All Westward® product models covered in this manual covered by this Limited Warranty are warranted by W.W. Grainger, Inc. ("Grainger") to the original user against defects in workmanship or materials under normal use for one year after date of purchase. If the Product is part of a set, only the portion that is defective is subject to this warranty. Any Product or part which is determined to be defective in material or workmanship and returned to an authorized service location, as Grainger or Grainger's designee designates, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced with a new or reconditioned product or part of equal utility or a full refund given, at Grainger's or Grainger's designee's option, at no charge. For limited warranty claim procedures, see "Warranty Service" below.

COVERED PRODUCTS. This Limited Warranty covers the product model(s) identified in this manual. This Limited Warranty does not cover normal wear and tear of Products or portions of them, or products or portions of them which are consumable in normal use. This warranty is void if there is evidence of misuse, mis-repair, mis-installation, abuse or alteration.

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Canada: www.westwardtools.ca

Mexico: Grainger.com.mx

Location not listed, contact: +1-888-361-8649 (or 1-800-GRAINGER)