MMR25

Instruction Manual for

Operation & Maintenance

IB International

www.ibinternational.com.au

Ph: 07 3348 8300

Contents

Introduction

Thank you for purchasing a Mini Micro Rain MMR25 travelling sprinkler system. Please read this manual carefully before operation in order to become familiar with all components and their function. Safety is the main priority and failure to follow these instructions may cause serious injury. IB International Pty Ltd is not responsible for machine failure or personal injury if these procedures and operation instructions are not followed.

⚠ Caution ⚠

- **Do not operate your Micro Rain Irrigator without a serious overview of this manual**
- **Keep children and unauthorized people away from Irrigator.**
- **Never allow children access to use the Irrigator**

- **Use caution when disconnecting couplings**

When the traveller shut-off valve activates, the supply hose remains pressurized at the end of the run. First, relieve the pressure with the relief valve, then disconnect the supply hose.

- **Use caution with the sprinkler heads**

Pressurized water from the sprinkler head could cause serious damage to people or objects.

- **Use caution during transport**

Irrigators are not made for public transit. Do not exceed 7mph on flat roads, or 2 mph on steep inclines.

- **Never service the Irrigator when it is in operation**

Before servicing, stop the Irrigator and disconnect the supply line. All safety guards and shields must be in place while operating the Irrigator.

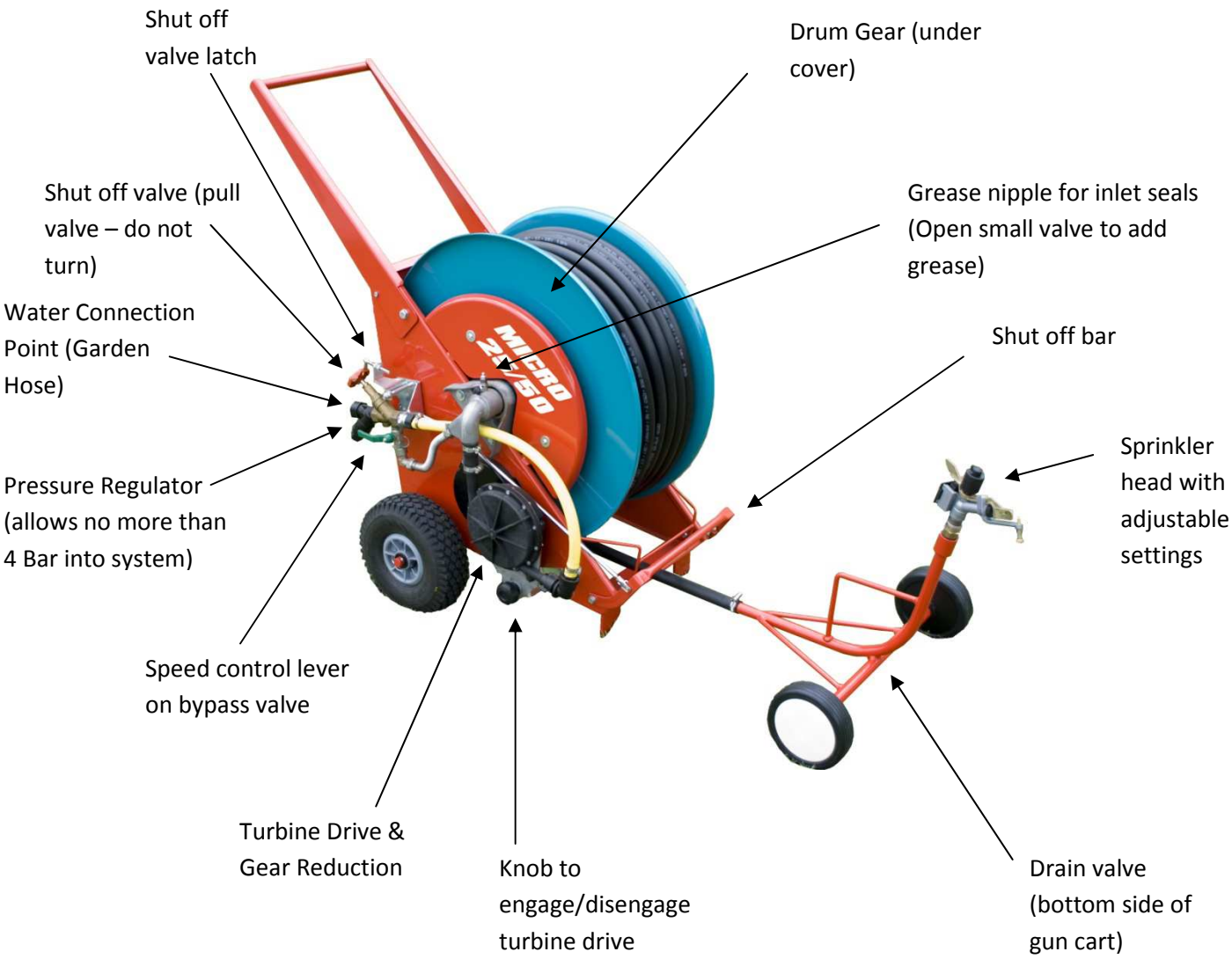
- **Beware of power lines**

Irrigation water should never contact power lines or any other power source. Never let any part of the Irrigator or any irrigation pipe get in contact with power source.

Identification Data

The identification plate includes the model and serial number for your machine.

Machine Controls & Components

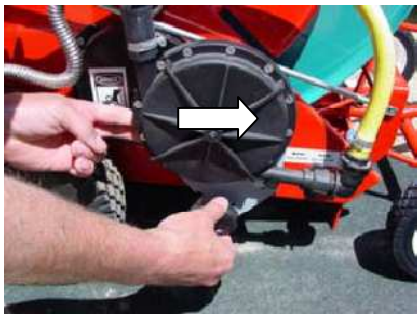


Conditions For Machine Operation

The MMR25 is designed for clean water suitable for irrigation. The machine is not designed for water that includes large pieces of debris or slurry/wastewater conditions.

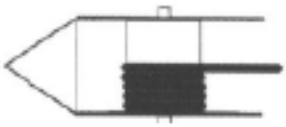
Start Up Procedure/Operation

1) Push the machine to the desired location. Position the machine with the sprinkler cart facing the direction to be irrigated. Insure that the machine is sitting level in order for the tube to wrap properly.



2) Loosen the black turbine lock knob as shown at the bottom of the image to the left by turning counter-clockwise. Now the turbine drive assembly and bracket will slide towards the sprinkler cart (as shown by white arrow) to disengage the turbine drive gears. Re-tighten the knob to hold the turbine drive gear away from the drum gear. Drum will now spin freely allowing sprinkler cart to be pulled out.

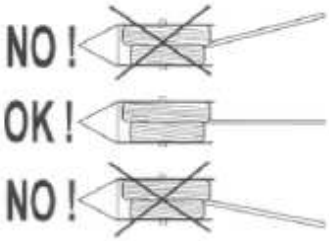
3) Sprinkler cart may now be pulled out by hand.
IMPORTANT: Pull the sprinkler cart out in a straight line from the machine to allow the tube to wrap back onto the drum straight. Never make sharp turns with the polyethylene hose and always leave one or two wraps on the drum to keep from pulling the tube off of the drum.



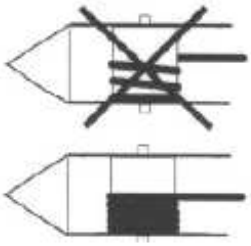
Keep remaining wraps tight!!

4) Proceed back to the drum and tighten the few loose coils that are left on the drum by hand. This will ensure that the coils start wrapping in the correct manner when the drum starts turning.

****IMPORTANT: ALWAYS PULL CART OUT STRAIGHT AND TIGHTEN LOOSE WRAPS BEFORE START UP!**



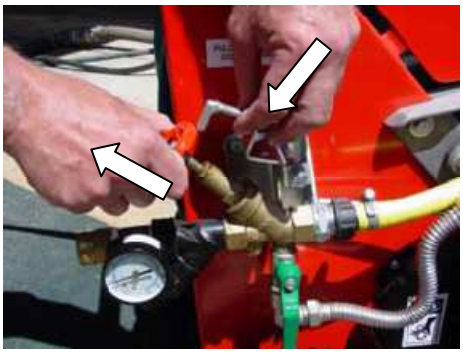
Always Pull Tube Out Straight!



Keep Wraps Tight!

5) Re-engage the turbine assembly by loosening the black knob again and sliding the turbine bracket back into place as shown by white arrow, so that the drive gears mesh. Tighten the black lock knob again to hold the turbine in place.

IMPORTANT: Before proceeding, try turning the drum by hand to make sure it is locked in gear. It should be locked and will not turn.



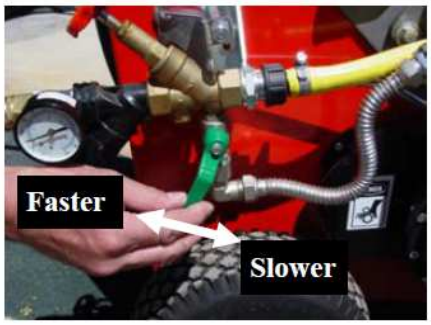
6) Open shut off valve by pulling the valve handle and latching into the open position by swinging the valve latch down and into position to hold valve open as shown. **IMPORTANT: PULL VALVE, DO NOT TURN! NOTE: DO NOT PULL VALVE OPEN UNDER PRESSURE. OPENING UNDER PRESSURE WILL DAMAGE VALVE!**

VALVE SHOWN IN OPEN, LATCHED POSITION

7) Attach supply hose provided to the inlet of the machine and lock into place as shown

IMPORTANT: MAKE SURE SUPPLY HOSE IS CLEAN AND FREE OF FOREIGN OBJECTS THAT WOULD PLUG THE TURBINE SYSTEM OR SHUT OFF VALVE!

8) Turn on the water source to the MMR25. The sprinkler equipped with the MMR25 can be set to water a full circle pattern or any part of a circle. It is generally recommended to water a three-quarter circle pattern behind the cart, away from the direction of travel. The MMR25 is equipped with a pressure regulator at the inlet to maintain system pressure at no more than 60 psi.



9) Adjust the speed of cart retraction by moving the bypass lever or speed control lever in the directions shown by the arrow. Closing this valve will increase the retraction speed and opening the bypass valve will slow down the retraction speed.

10) Once the speed is set, the MMR25 will automatically roll the tube on the drum and stop at the end of the run utilizing the shut off valve.

IMPORTANT: Your MMR25 Irrigator operates between 12-40 Litres per minute. This is regulated by changing the sprinkler nozzle to match your water source's capability. The smallest nozzle is installed in the sprinkler from the factory. If you have a good water source with adequate pressure, it is possible to increase to a larger nozzle size if needed. Consult your application chart and servicing dealer for more information.

Troubleshooting

1. PROBLEM: NO WATER AT THE SPRINKLER

SOLUTION:
1. Make sure shut off valve is open.
2. Potential blockage – clean inlet screen/sprinkler nozzle.
3. Potential blockage – check/clean turbine & By-Pass.

2. PROBLEM: MACHINE WILL NOT ROLL UP

SOLUTION:
1. Make sure turbine is in the engaged or run position as shown in start up steps.
2. Turbine bypass valve (speed control valve) is opened too far. Close valve to increase speed.
3. Not enough pressure to initiate turbine drive.
4. Debris in inlet filter screen not allowing flow into the machine.
5. Potential blockage see problem 1.

3. PROBLEM: MACHINE STOPPED DURING RETRACTION

SOLUTION:
1. Water flow stopped or was lowered during retraction, causing the turbine to stall. Simply turn the bypass valve closed to start retraction once again and adjust speed as needed.

Winterization

MMR 25

1. Disconnect Supply Hose.

2. Open and leave shut off valve in run position as shown by the white arrow.

3. Speed control valve must be positioned as shown in the highlighted circle at the right. It is also recommended to disconnect the flex bypass line at the location indicated by the blue arrow.

4. Disconnect yellow entry hose on the bottom of turbine as shown by red arrow.

5. Drain guncart by removing plug located on the underneath side of the cart. This is indicated by the black arrow in photo.

Guncart drain location on MMR 25 and MMR 32

Maintenance Schedule

Inlet seals: Grease inlet seals every 100 hours
Drum gear: Grease drum gear every 100 hours.
Turbine Seals: Replace turbine seals every 500 hours or once a season. Consult your dealer for information.

Performance Chart

IB International Pty Ltd HARD HOSE PERFORMANCE CHART

Mar-12

MODEL : MMR 25 / 50 mt.

Nozzle SIZE	Nozzle Pressure	Sprinkler RADIUS	WETTED WIDTH MAX	IRRIGATOR INLET PRESSURE	FLOW RATE	Travel speed of the Irrigator 30 M / HR	20 M / HR	10 M / HR
						mm = Application rate per irrigated run		
mm	bar	mets	mt	bar	Lt / Min	mm	mm	mm
4	1.5	11.0	22	2.2	12	1.1	1.7	3.3
	2.0	12.0	24	2.7	14	1.2	1.8	3.5
	3.0	13.0	26	3.7	17	1.3	2.0	3.9
5	1.5	12.0	24	2.3	20	1.7	2.5	5.0
	2.0	13.0	26	2.8	22	1.7	2.6	5.1
	3.0	14.0	28	3.8	27	1.9	2.9	5.8
6	2.0	14.0	28	3.0	32	2.3	3.5	6.9
	3.0	15.0	30	4.0	39	2.6	3.9	7.8

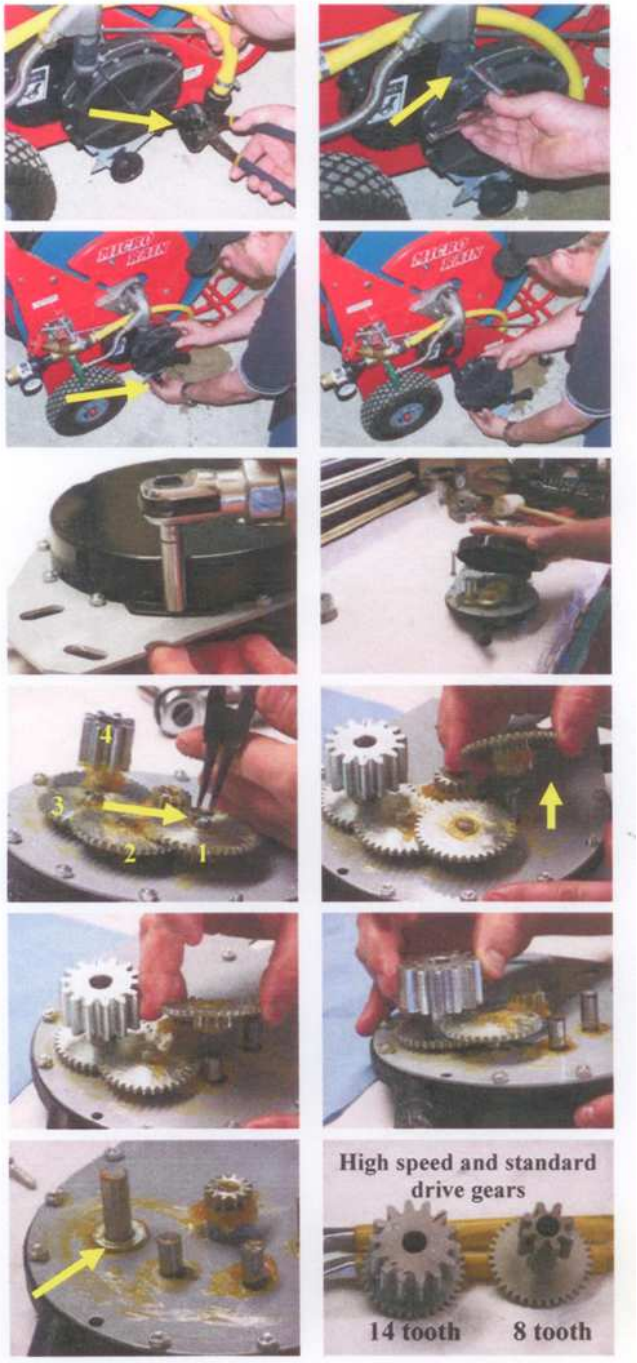
MODEL : MMR 32 / 70 mt.

Nozzle SIZE	Nozzle Pressure	Sprinkler RADIUS	WETTED WIDTH MAX	IRRIGATOR INLET PRESSURE	FLOW RATE	Travel speed of the Irrigator 30 M / HR	20 M / HR	10 M / HR
						mm = Application rate per irrigated run		
mm	bar	mets	mt	bar	Lt / Min	mm	mm	mm
6	2.0	14.5	29	3.0	32	2.2	3.3	6.6
	3.0	16.5	33	4.2	39	2.4	3.6	7.1
	4.0	17.5	35	5.3	45	2.6	3.9	7.7
7	2.0	15.0	30	3.3	42	2.8	4.2	8.4
	3.0	17.0	34	4.6	52	3.1	4.6	9.2
	4.0	18.5	37	5.8	60	3.2	4.9	9.7
8	2.0	17.0	34	3.9	57	3.4	5.1	10.1
	3.0	19.0	38	5.0	69	3.6	5.5	10.9
	4.0	20.5	41	6.0	80	3.9	5.9	11.7

N.B. These tables are merely indicative because they have been worked out through a mathematical formula and according to average working conditions .
Consequently IB International decline any responsibilities deriving from their application .

MMR25 Maintenance

Standard/High Speed Gear Change



1. Remove main water feed hose to the turbine by disconnecting the compression fitting as show in the left image. Loosen the clamp on the upper turbine connection hose as shown in the right image.

2. Remove turbine engage/disengage knob and set aside as shown in the left image. Turbine may now be removed for service. Once lower compression fitting has been disconnected and upper connection hose clamp is loose, turbine is free and is easily removed by hand.

3. Remove gear reduction shroud and expose gear set as shown in images to the left.

4. MMR25 gear reduction features a stacked gear set combination. The Drive gear is the bottom gear to be removed. To remove the gear set, the snap ring holding the top gear must be removed as shown in the left image. This gear may be removed as shown in the right image. You may want to number the gears as they are removed so that you can replace them in the correct order.

5. Continue removing gear set as shown in left images until you have all gears removed from the plate. You are now ready to change out the bottom gear which determines standards speed vs. High speed and repeat the process in reverse order to reset the gear stack.

6. Bare plate should look like the image to the left.

   Important: The washer shown at the left by the arrow is an important component for gear spacing. Be sure that the washer is replaced in this position if a seal replacement is performed or a drive gear change is performed.

Turbine Seal Replacement

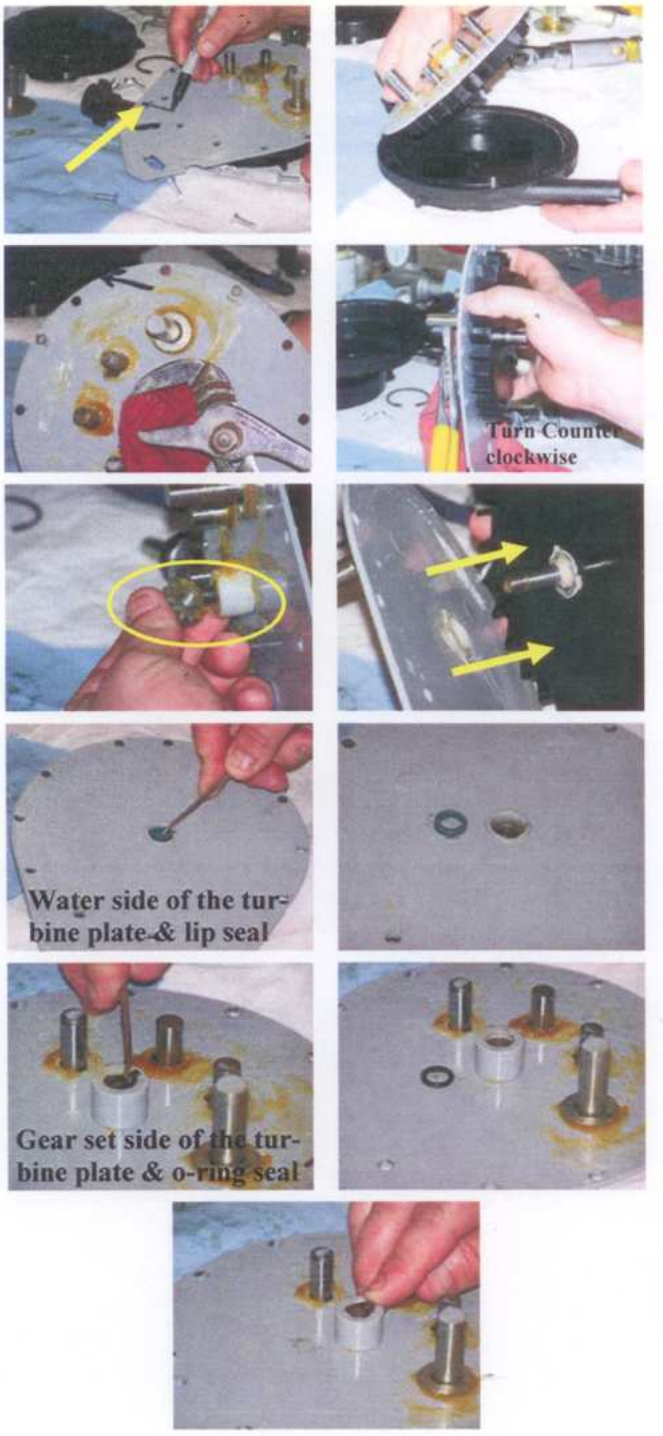
Important: Review and perform steps 1-7 on the previous page. Turbine and gear set must be removed to begin turbine seal replacement below.

1. After performing steps 1-7 on the previous page, the turbine cover must now be removed. Loosen and remove all turbine cover screws from the perimeter of the housing. It is important to place a mark identifying the correct position of the housing in relation to the turbine plate as shown in the image to the left. This will ensure the alignment is correct when reassembling the two pieces.

2. Place something such as the shop towel in the left image over the small gear on the end of the turbine shaft for protection. With a pair of pliers bracing the small gear on one side and the turbine impeller in hand on the opposite side, the gear may be back off the threaded turbine shaft end by turning the impeller counter clockwise with your hand as shown.

3. Once the turbine shaft gear has been removed, the turbine impeller and shaft is free and may be removed from the turbine plate and set aside.

4. After the turbine impeller and shaft have been removed from the turbine plate, the small lip seal may be removed from the water side of the turbine plate. When replacing a new seal, make sure you note which way the old seal was installed upon removal. The lips of the seal should be pointing towards you as the seal is installed so that water does not go through the plate and into the gear train.



5. Turbine plate must now be turned over to the gear train side and remove the o-ring seal as shown in the left image.

6. Replace with new o-ring seal and be sure to place a small amount of grease or lubricant on the new seals so the turbine shaft can be re-installed easily. Repeat previous steps 3, 2, and 1 in reverse order to re-assemble turbine shaft, housing, and gear set.

Replacing Drum Inlet Seals

1. The MMR25 and MMR32 have different inlet fittings but the same seal set components. Inlet seals are housed in the cast aluminium inlet fitting as shown in left image. The components are listed in the right image showing each inlet fitting, 2 lip seals (orange), 1 oil seal (black), and a snap ring to hold the seals in place.

2. The inlet fitting is held in place by a single bolt through the inlet casting and into the side of the machine's frame. To remove the inlet elbow, loosen and remove the bolt shown in the left image. The inlet fitting may then be removed by hand as shown in right image.

3. Remove snap ring as first, as shown in left image. Black oil seal may then be removed, followed by the 2 orange lip seals next as shown in right image. Inlet housing may then be cleaned and all old grease removed for a clean, dirt free environment for the new seals.

4. Apply a small amount of new grease into the inlet fitting and work it around the insie wall of the fitting so that the seals will slide easily into place. **The two orange lip seals will be inserted first.** Begin with the first seal and push it into the seal pocket until it is firmly in place at the bottom.

   Important: The seal lip must face down and the smooth side of the seal will be facing towards you when installing.

5. The second orange lip seal may be inserted in the same manner as the previous step. Push the seal firmly into place. The black oil seal is the last seal to be inserted into the fitting.

Before inserting this seal, apply more lubricant or grease to the outside of the seal for ease of insertion as shown in right image.

6. With the seal lubricated and centred, use a seal punch and lightly tap the seal downward into place as shown in the right image. The top smooth face of the black oil seal should be sitting just under the snap ring groove when fully in place.

7. The last steps include installing the snap ring so that the seals are held in place as shown in left image. When finished installing the snap ring, take a liberal amount of grease and work it into the seal set to form a grease pack inside the inlet fitting. To re-install the inlet elbow onto the machine, reverse step 2 and secure the fitting into place.