MATEX
CONTROL CHEMICAL

FLUID INJECTOR

The easy way to manage your drilling fluids.

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VIDEO LINKS

FLUID INJECTOR UNBOXING: https://youtu.be/qcbUeddGxOU

FLUID INJECTOR TUTORIAL I: https://youtu.be/s7I2CYNZUUg

FLUID INJECTOR TUTORIAL II: https://youtu.be/5lIIeNchmbk

CHECK LIST OF THE ITEMS INCLUDED

1. Air Hose (red)
2. Output Fluid Hose with check valve (black)
3. Matex Fluid Injection Unit (top plate)
4. Matex Fluid Injector Mounting Base
5. Pail
6. Bucket Opener
7. Installation Kit. ***The installation kit is sold separately. For warranty purposes this kit is required. A similar kit including an in-line air lubricant may also do the job if properly assembled.***

1. Air Hose (red)

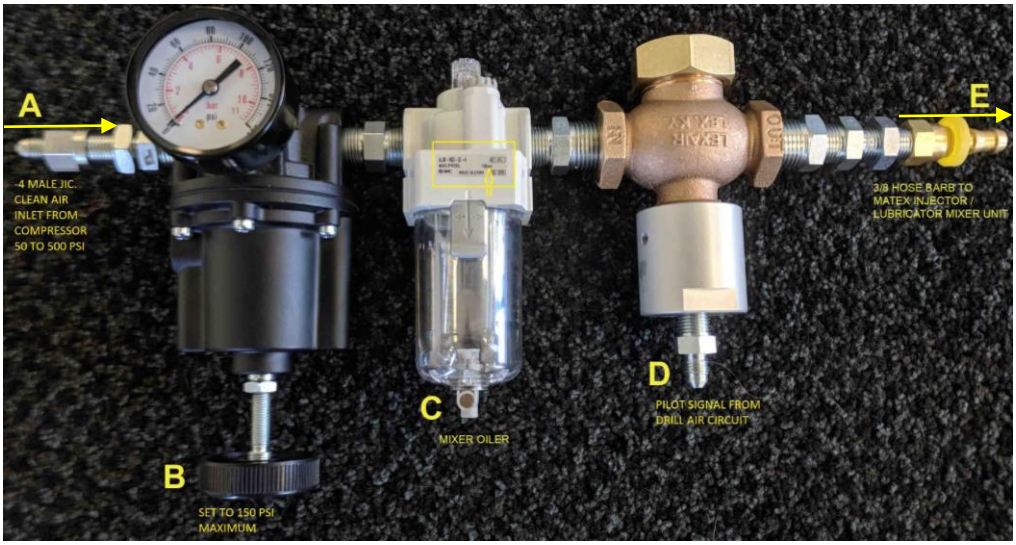
2. Output Fluid Hose with Unit check valve (black)

3. Matex Fluid Injection

4. Mounting Base

5. Pail

6. Bucket Opener



7. Installation Kit

MATEX INSTALLATION KIT

1. Mixer Oiler Assembly (1 unit)
2. Mounting Brackets (2 units)
3. Various Plumbing Fittings (2 bags)
4. Air Hoses (2 units)

The purpose of this Installation Kit is to use a standard air line lubricant to:

- Ensure clean air is supplied to the Fluid Injector.
- Keep the air motor and all internal moving parts lubricated at all times, preventing rust.

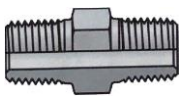
Lubricant can be sourced locally

THE WARRANTY OF THE FLUID INJECTOR IS VOID IF INSTALLATION KIT IS NOT INSTALLED!

PLUMBING FITTINGS INCLUDED IN THE BAGS

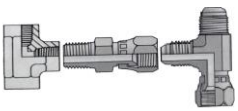
PLUMBING ADAPTERS: NPT NIPPLES

(x2) 1/4" MNPT x 1/4" MNPT
(x2) 3/8" MNPT x 3/8" MNPT
(x2) 1/2" MNPT x 1/2" MNPT
(x2) 3/4" MNPT x 3/4" MNPT
(x2) 1" MNPT x 1" MNPT



PLUMBING ADAPTERS: IN-LINE TEE ASSEMBLY

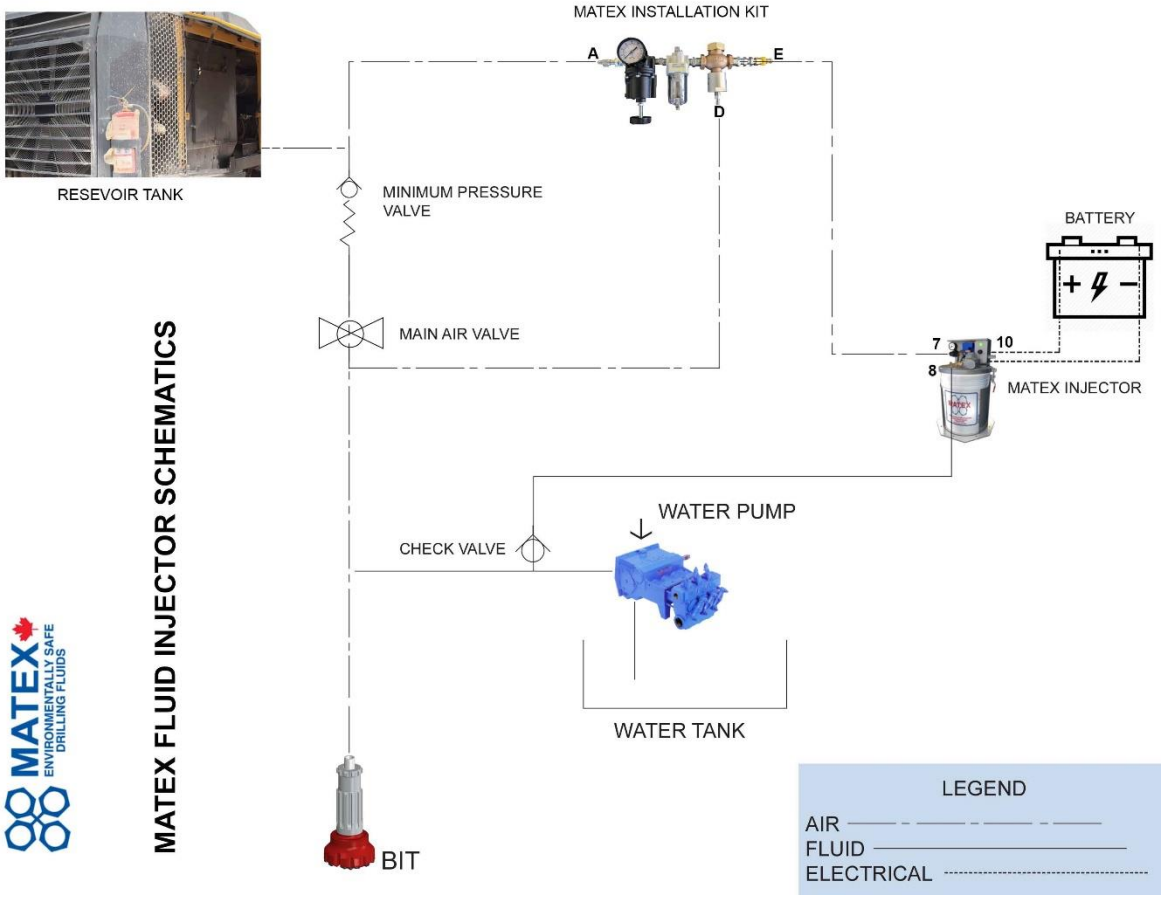
(x2) ¼" Setup as per sketch
(x2) 3/8" Setup as per sketch
(x2) ½" Setup as per sketch
(x2) ¾" Setup as per sketch
(x2) 1" Setup as per sketch

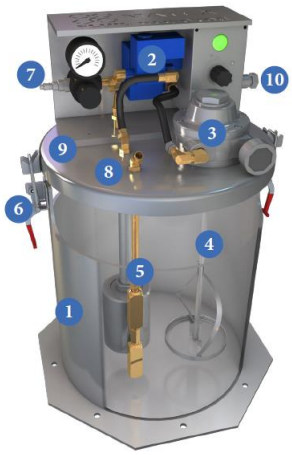


PLUMBING ADAPTERS: NPT REDUCER BUSHINGS

(x2) 3/8" MNPT x 1/4" FNPT
(x2) 1/2" MNPT x 3/8" FNPT
(x2) 1/2" MNPT x 1/4" FNPT
(x2) 3/4" MNPT x 1/2" FNPT
(x2) 3/4" MNPT x 3/8" FNPT
(x2) 3/4" MNPT x 1/4" FNPT
(x2) 1" MNPT x 3/4" FNPT
(x2) 1" MNPT x 1/2" FNPT
(x2) 1" MNPT x 3/8" FNPT
(x2) 1" MNPT x 1/4" FNPT

INSTALLATION SCHEMATICS / DIAGRAM





1. MOUNTING BASE PLATE
2. AIR REGULATOR/SOLENOID/TIMER ASSEMBLY
3. AIR MOTOR
4. MIXER
5. PUMP ASSEMBLY
6. SECURE CLAMP
7. AIR INLET
8. FLUID DISCHARGE
9. TOP PLATE
10. POWER SUPPLY

SET UP & INSTALLATION INSTRUCTIONS

1. Before connecting the power and air supply, confirm the mixing paddle rotates by hand
2. Mount the Fluid Injector Base in an accessible place
3. Place new pail of Matex product in the Fluid Injector Mounting Base
4. Lock Mixer Unit down with secure clamps
5. Connect the power supply, and confirm 12 or 24 volt DC (red to positive & black to negative)
6. With the air supply not connected, confirm unit turns on (with a Blue Light)
7. Turn off unit (No light on)
8. Install Matex Installation Kit in an accessible place (Brackets included)
9. Connect clean Air Supply from the receiver tank to the "clean air inlet" (figure "A") of the Matex Installation Kit. (50 - 500 PSI). ***Use included Fittings & black JIC Hose*
10. Connect "Pilot Signal" (figure "C") on the Matex Installation Kit to the bit air line (intersection "F"). ***Use included Fittings & black JIC Hose*
11. Connect the red hose (figure "D") of the Matex Installation Kit to the Matex Fluid Injector unit (Air Inlet # 7). ***Use included Fittings & red Hose*
12. Set regulator (figure "B") on the Matex Installation Kit to 100-150 PSI
13. Set regulator on the Matex Fluid Injector unit to 30-60 PSI. This only regulates the speed on the mixer. (Lower PSI equals a slower mixer)
14. **PRIME THE PUMP (FILL THE PUMP WITH FLUID)**
15. Set the Matex Fluid Injector unit controller to 8 litres per hour setting, until the discharge hose is full. This may take 5-30 minutes, depending on fluid viscosity. Once the hose is full, connect to discharge side of the water line immediately after the water pump as this allows for maximum time for the fluid to mix with water. ***Use included Fittings*
16. Set dial for desired liters per hour injection rate
17. Turn the Matex Fluid Injector unit Control On (Blue light on) **NOTE: Mixer will start**
18. Once mixing is complete (30 seconds), the pump will start to cycle
19. Matex Fluid Injector unit is now ready to use

The Injector pump has a 4 - 1 multiplier. Therefore, 150 PSI input equals 600 PSI output

IMPORTANT NOT TO SET PUMP DOWN ON AN UNCLEAN SURFACE AS IT WILL PICK UP DIRT AND DEBRIS, AND VOID ANY WARRANTY

TROUBLE SHOOTING GUIDE

MIXER DOES NOT TURN

Disconnect the power, and air line input

Confirm the mixer will turn by hand

If mixer is seized, replace the air motor

1. If mixer turns freely
    a. Confirm the correct power is being used 12 or 24 volt DC (red to positive & black to negative)
    b. Confirm correct air supply is being used (50 – 150 PSI from the Matex Installation Kit)
    c. Check the controller ON/OFF Switch
    d. Disconnect the airline (black hose) from the mixing motor (figure #3)
    e. Then turn on unit (blue light should be on). Air should be coming out of the hose you disconnected (black hose)
    f. If not, then check the regulator settings (figure #2. Standard is 30-60 PSI)
    g. NOTE: mixer only runs for 30 seconds when first turns on
    h. If there is no air, press and hold the button on the top of the large blue solenoid valve (figure #2). This bypasses the electric controller
    i. If still there is no air, the controller or solenoid valve has failed (figure #2)

PUMP DOES NOT PUMP

1. Confirm the correct power is being used 12 or 24 volt DC (red to positive & black to negative)
2. Confirm correct air supply is being used (50 – 150 PSI from the Matex Installation Kit)
3. Confirm the Matex Fluid Injector unit is OFF (blue light off)
4. Disconnect the output fluid hose (black) from figure #8
5. Disconnect the airline port hose from figure #2 (small solenoid valve to pump)
6. Disconnect airline (black hose) going to mixing motor from figure #2 (large solenoid valve to mixer)
7. Turn on controller
    a. The large solenoid valve will blow air for 30 seconds (mixing motor function)
    b. Next, the small solenoid valve will start to blow air
    c. Turn the control knob to 8 litres per hour or at maximum
    d. If air from the blue solenoid valve is cycling (on and off), the controller is operating normally
    e. If there is no air supplied, check your lines and compressor air source

AIR IS CYCLING (ON AND OFF) BUT PUMP IS NOT WORKING

1. Check and clean, or replace check valves (figure #5) next to the pump in the pail
2. Reconnect the air line (small black hose) going from the small solenoid valve (figure #2) to the pump
3. Do no connect the small black airline hose to the mixing motor (figure #3)
4. Go thru the priming steps (found in the setup and installation)
5. Check the power source. The voltage must be 12-36 volts DC
6. Confirm the ON/OFF light with no air supply
7. Check input air pressure (50-150 PSI MAX)
8. To Prime the pump (fill the pump with fluid), turn the Matex Fluid Injector unit controller to 8 litres per hour setting
9. Turn the Matex Fluid Injector unit Control On (with a Blue light on)
    a. NOTE: Mixer will start
10. Once mixing is complete (30 seconds), the pump will start to cycle
11. Priming may take 5-30 minutes, depending on fluid viscosity

IF THE PUMP IS STILL NOT PUMPING

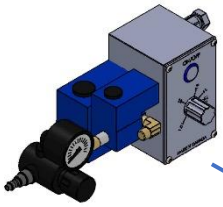
1. Disconnect the pump body and disassemble. Clean everything, replace O-rings, check valves and clean the copper tube
2. Reassemble the pump (video available, check links on first page)
3. Confirm direction of check valves
4. To Prime the pump (fill the pump with fluid), turn the Matex Fluid Injector unit controller to 8 litres per hour setting
5. Turn the Matex Fluid Injector unit Control On (with a Blue light on)
6. NOTE: Mixer will start
7. Once mixing is complete (30 seconds), the pump will start to cycle
8. Priming may take 5-30 minutes, depending on fluid viscosity
9. Connect small airline hose (black) to the mixer on figure #3
10. Connect Output Fluid Hose with check valve (black) to figure #8
11. If pump still does not pump, please contact your supplier

FOR FURTHER INFORMATION CALL:

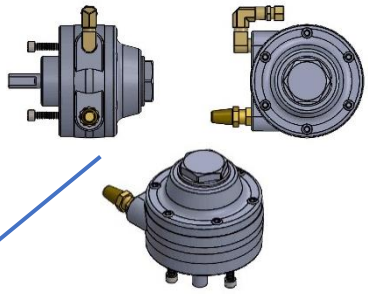
For further information please call your local distributor or Matex Control Chemical 7016 – 30 St. SE, Calgary, Alberta CANADA, T2C 1N9 Ph (403) 720-7044 - Toll Free 1-800-267-6840
Fax (403) 720-4951 -Email: ryan@controlchemical.com -Website: www.matexdrillingfluids.ca

PARTS BREAKDOWN

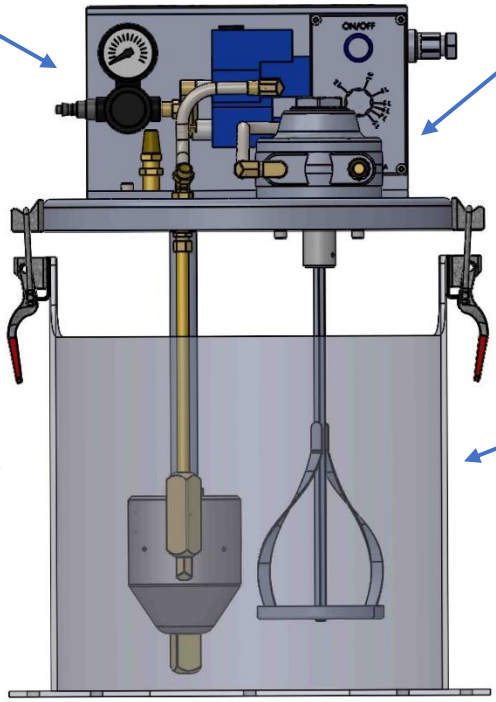
Air Regulator – Solenoid - Timer Assembly
Item No 20-4721



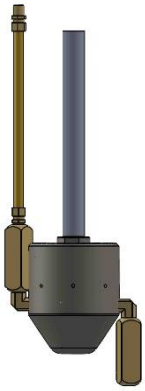
Air Motor
Item No 20-4217



FLUID INJECTOR ASSEMBLY
ITEM No 20-4400

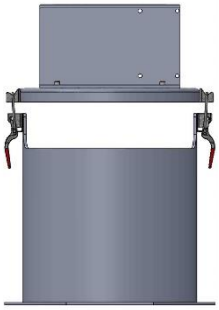


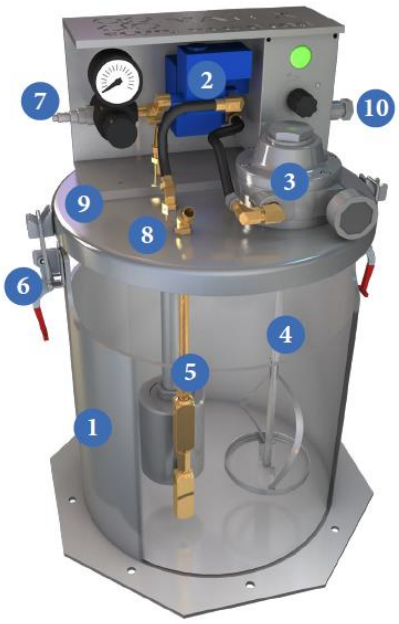
Pump Assembly
Item No 20-4398



Mixer
Item No 20-4368

Mounting Base Plate Assembly
Item No 20-4774





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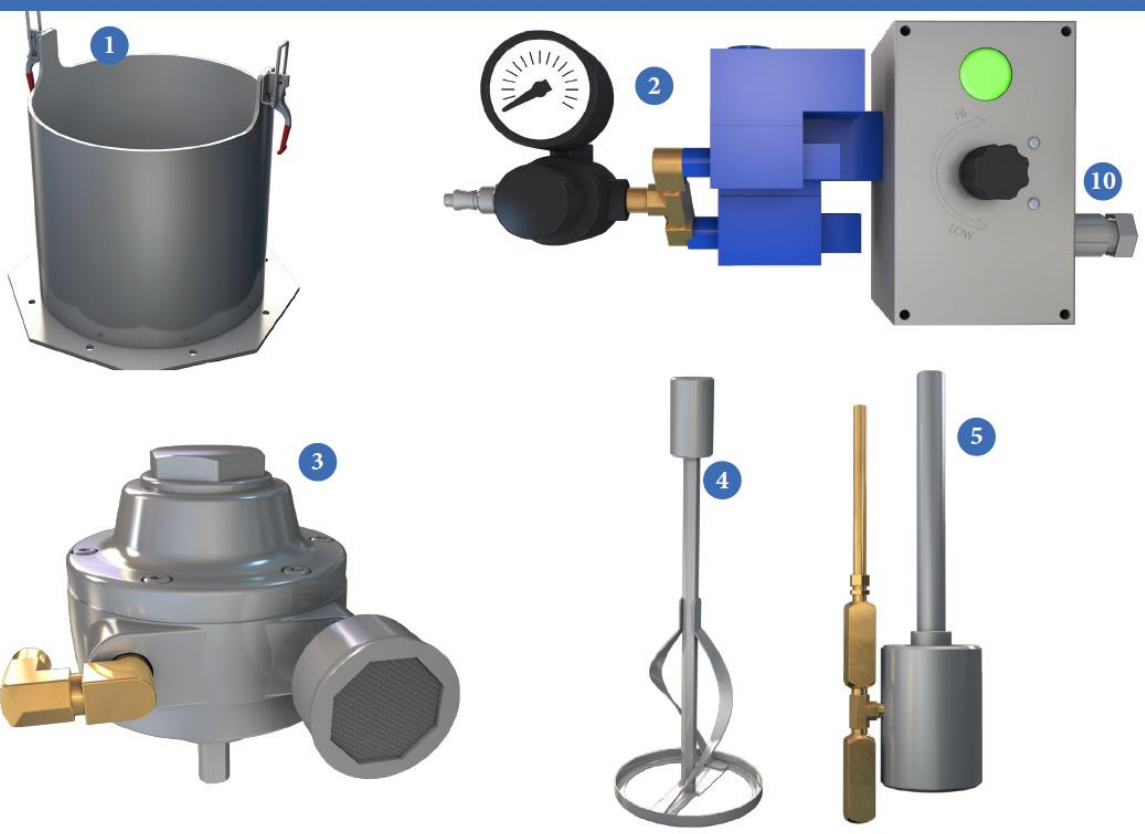

SPECIFICATIONS

The Matex Fluid Injector is AIR operated and TIME activated. It is completely self-contained and easy to install. The Matex Fluid Injector can be used to inject a wide range of different products such as Tri-Lube, RDO-302 ES, Hole Control, Liquid polymers, Foam etc. **If injecting foam, a Matex soluble lubricant must be used to avoid rust that could be caused from the foam.**

The pump is designed to deliver a measured amount of product on each injection in order to ensure a proper mixture. The pump has been designed with only one moving part to ensure low maintenance.

The timer assembly is designed to operate with 12 or 24 volts DC. With the dial setting, you can measure the injection rate necessary to deliver the desired amount of product. Use the dial on the face of the timer for the ease of increasing or decreasing the amount of product necessary.

All parts are warrantied free of manufacturer's defects, for a period of one year of normal operation from initial start-up, provided only Matex products are used.
Pump is not warrantied if dirt and debris is found in the check valves or pump.
Note: The air mixing motor must be oiled by maintaining the oil level in the oiler in the Installation Kit. Unscrew the small cap on the top to fill the oiler. Release any water with valve on the bottom of the oiler cup. ** All air motors will rust with no oil**

The oil for the air mixing motor can be sourced from any local supplier of hand held air tools, worldwide.

ELECTRONIC TIMER:

The timer operates on 12/ 24 volt DC and draws less than 1 amp power. The timer control assembly can be removed by undoing the four Allen head bolts. The timer control assembly is NOT field repairable and must be returned if found faulty (video available, check links on first page).

WIRING:

12 or 24 volt DC
RED is POSITIVE
BLACK is NEGATIVE

SOLENOIDS:

The solenoids are located next to the timer and they operate on 12/ 24 volt DC. This allows the air to pass to the inlet side of the pump or mixing motor when activated by the timer.

REGULATOR – MIXER:

The regulator can be adjusted by pulling out on the black knob, turn clockwise to increase or counter clockwise to decrease. **The working pressure should be between 35 PSI and 80 PSI**.

****Avoid operating the mixer when the pail is empty or lower than the mixer, as mixer will then spin too fast and this could cause damage to the mixer paddle and mixer motor****

PUMP:

The injector pump has a working pressure of between 35 and 150 PSI. (35-500 PSI of clean air from the receiver tank to figure "A" of the Matex Installation Kit).
The pump is located under the face plate and can be removed when pail is empty. The pump pressure has a four to one multiplier. For example, 100 PSI in = 400 PSI out. The inlet side of the pump is connected to the outlet side of the timer. The discharge side of the pump is connected to the copper pipe joined to the underside of the face plate. **The discharge line should never be larger than a #6 hydraulic hose**, as this may cause slow fluid flow in the hose and an increase in potential contamination of the fluid.

MOUNTING BASE PLATE:

The mounting base plate is made of aluminum and should be fastened down to eliminate vibration.

DO NOT WELD ON BASE PLATE!

Place the pail in the base plate. Remove plastic lid from pail. Place face plate and pump assembly into the pail. Once the face plate is seated on the pail, fasten the face plate to the base plate to secure and seal the pail in place.

PUMP SPECIFICATIONS:

Air supply working pressure ..... 35 psi - 500 psi
Pump discharge pressure ..... 4 X 1 multiplier

TIMER SPECIFICATIONS:

Voltages ..... 12 or 24 volt DC
Pump volume ..... 1 to 8 Litres per hour

SHIPPING DIMENSIONS:

18"W x 18"L x 26.5"H
46cm x 46cm x 67cm

SHIPPING WEIGHT:

81lbs
37kgs