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# FE4 Falcon Electric 4-ft Covered Walking Sprayer



## Assembly, Parts and Operator's Manual

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# Safety

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Many people die or suffer serious injury in job related accidents every year due to carelessness. Know your machinery and be aware of potential hazards. Put safety first in all your operations.

Review all instructions and procedures outlined in this manual annually. Every operator must familiarize himself with the operating instructions of the sprayer.

## Operational Safety

Shut down sprayer and power unit and wait for all parts to stop before adjusting, cleaning, or lubricating the power unit or sprayer.

Before spraying a field familiarize yourself with any rocks, debris, trees, ditches or gullies that may be potentially dangerous. Plan the spraying route to avoid these hazards.

Spray only chemicals that unit was designed for, (ie turf application). Do not use products for which unit was not designed, (ie PAINT, sealants, cleaning fluids, dust inhibitors, ice surfaces).

## Minimize Chemical Drift

The **Falcon** sprayer was designed in a wind tunnel to control air flow around and behind the sprayer minimizing drift to allow safer spraying in windy conditions.

Drift can blow off a field after it has been sprayed, especially in high winds. Reasonable caution should be taken in order to spray effectively and safely.

**For maximum drift control, keep curtain in contact with the ground to ensure a seal to it. Drift control of the Falcon is less effective when the wind blows the curtain off the crop canopy breaking the seal between the curtain and the crop.**

# General Spraying Information

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## Application Tips

Always use clean filtered water in the sprayer tank.

Your **Falcon** Drift Containment Spray System (DCSS) comes standard with stainless steel insert tips. Please contact your manufacturer or see the application rate table in this manual for various sizes of tips available for your machine.

Check the flow rate from all nozzles using the capacity calibration technique; see the Calibration section for tables and instructions. Use clean filtered water for all calibration testing. Adjust the sprayer pressure to get the proper flow rate. The flow meters are not accurate enough in absolute terms to be used as a flow meter. In relative terms they are very accurate.

|  |
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| <b>Caution:</b> Conventional tips are rated at 40 psi (3 bar), for example a 8004 tip at 40 psi (3 bar) delivers 0.4 US gal/min (1.5 litres/min) . Only conventional 80° tips are recommended for the <b>Falcon FE</b> series. Wider angle tips (110°) have a wider pattern than 80° and will hit the curtain at the ends of the boom and are not recommended. |
|--|

## Nozzles

Despite being the most important component for accurate uniform spraying application, nozzles are often neglected and abused.

Nozzle flow rate depends on effective orifice size and pressure. Spray tip manufacturers have supplied tables of nozzle application rates at various pressures, for the best results it is recommended that you follow these guidelines.

The rule of thumb is that as you increase the pressure to your unit the average droplet size decreases. Normally with conventional open boom sprayers large droplets are used to control drift but large droplets can roll off plants without sticking. With the **Falcon** covered spray system you will be able spray with smaller droplets, increase coverage and not worry about drift.

The spray patterns must overlap for even coverage but should not interfere with one another. Nozzles are set at a 10° angle so that one edge of its pattern will be just behind the edge of its adjacent spray pattern, evading interference with each other.

**Caution:** When spraying next to a flower bed, do not spray over the turf edge as the spray will go under the curtain and onto the flowers

## Diaphragm Check Valve Nozzle Bodies

Diaphragm check valves close at approximately 15 psi (1 bar) to prevent excessive dripping. Should the cap on the valve loosen or the check valve diaphragm become misaligned, the body may leak. Stop the leak by, tightening the check valve cap or remove the cap and inspect the seal for damage or improper assembly.

To check for defective check valves when the spraying stop control has been actuated, the volume that drips from each nozzle should not exceed 2ml timed over a 5 minute period. The measuring is to start 8 seconds after the flow to the spray boom is shut off.

Nozzle caps are attached by engaging the cap and turning clockwise about a third of a turn. Self-aligning caps have a slot to align the tips. Ensure that the tips fit down into the slotted hole before installing caps on the diaphragm nozzle body assembly with the tip screens.

Non-aligning caps are also available for special tips.

## Calibration

As a tip wears recalibration may be required. Collect the output from each nozzle for 60 seconds, using an accurate measuring cup. Use clear water for all testing. Record the output from each nozzle. Replace nozzles that are more than 5% above or below the average reading, or has a visibly distorted pattern.

# Application Rate Table, 12" spacing

| Rogers<br>Part #     | Tip<br>Number                      | Liquid<br>Press<br>psi | Capacity<br>1 nozzle<br>gpm | U. S. GALLONS PER ACRE |       |       |       |       | U. S. GALLONS PER 1000 SQ. FT. |      |      |      |      | Press<br>bars |
|----------------------|------------------------------------|------------------------|-----------------------------|------------------------|-------|-------|-------|-------|--------------------------------|------|------|------|------|---------------|
|                      |                                    |                        |                             | 2.5                    | 3     | 4     | 5     | 7     | 2.5                            | 3    | 4    | 5    | 7    |               |
|                      |                                    |                        |                             | mph                    | mph   | mph   | mph   | mph   | mph                            | mph  | mph  | mph  | mph  |               |
| 05872                | 800067SS<br>(200 mesh)             | 30                     | 0.058                       | 11.5                   | 9.6   | 7.2   | 5.7   | 4.1   | 0.26                           | 0.22 | 0.16 | 0.13 | 0.09 | 2.07          |
|                      |                                    | 40                     | 0.067                       | 13.3                   | 11.1  | 8.3   | 6.6   | 4.7   | 0.30                           | 0.25 | 0.19 | 0.15 | 0.11 | 2.76          |
|                      |                                    | 50                     | 0.075                       | 14.8                   | 12.4  | 9.3   | 7.4   | 5.3   | 0.34                           | 0.28 | 0.21 | 0.17 | 0.12 | 3.45          |
|                      |                                    | 60                     | 0.082                       | 16.2                   | 13.5  | 10.2  | 8.1   | 5.8   | 0.37                           | 0.31 | 0.23 | 0.19 | 0.13 | 4.14          |
| 01369                | 8001VS<br>(100 mesh)               | 30                     | 0.087                       | 17.1                   | 14.3  | 10.7  | 8.6   | 6.1   | 0.39                           | 0.33 | 0.25 | 0.20 | 0.14 | 2.07          |
|                      |                                    | 40                     | 0.100                       | 19.8                   | 16.5  | 12.4  | 9.9   | 7.1   | 0.45                           | 0.38 | 0.28 | 0.23 | 0.16 | 2.76          |
|                      |                                    | 50                     | 0.112                       | 22.1                   | 18.4  | 13.8  | 11.1  | 7.9   | 0.51                           | 0.42 | 0.32 | 0.25 | 0.18 | 3.45          |
|                      |                                    | 60                     | 0.122                       | 24.2                   | 20.2  | 15.2  | 12.1  | 8.7   | 0.56                           | 0.46 | 0.35 | 0.28 | 0.20 | 4.14          |
| 00827<br>or<br>13351 | 80015VS<br>API-80015<br>(100 mesh) | 30                     | 0.130                       | 25.7                   | 21.4  | 16.1  | 12.9  | 9.2   | 0.59                           | 0.49 | 0.37 | 0.29 | 0.21 | 2.07          |
|                      |                                    | 40                     | 0.150                       | 29.7                   | 24.8  | 18.6  | 14.9  | 10.6  | 0.68                           | 0.57 | 0.43 | 0.34 | 0.24 | 2.76          |
|                      |                                    | 50                     | 0.168                       | 33.2                   | 27.7  | 20.8  | 16.6  | 11.9  | 0.76                           | 0.63 | 0.48 | 0.38 | 0.27 | 3.45          |
|                      |                                    | 60                     | 0.184                       | 36.4                   | 30.3  | 22.7  | 18.2  | 13.0  | 0.83                           | 0.69 | 0.52 | 0.42 | 0.30 | 4.14          |
| 05876<br>or<br>12422 | 8002VS<br>API-8002<br>(50 mesh)    | 30                     | 0.173                       | 34.3                   | 28.6  | 21.4  | 17.1  | 12.2  | 0.79                           | 0.65 | 0.49 | 0.39 | 0.28 | 2.07          |
|                      |                                    | 40                     | 0.200                       | 39.6                   | 33.0  | 24.8  | 19.8  | 14.1  | 0.91                           | 0.76 | 0.57 | 0.45 | 0.32 | 2.76          |
|                      |                                    | 50                     | 0.224                       | 44.3                   | 36.9  | 27.7  | 22.1  | 15.8  | 1.01                           | 0.84 | 0.63 | 0.51 | 0.36 | 3.45          |
|                      |                                    | 60                     | 0.245                       | 48.5                   | 40.4  | 30.3  | 24.2  | 17.3  | 1.11                           | 0.93 | 0.69 | 0.56 | 0.40 | 4.14          |
| 05877<br>or<br>13352 | 8003VS<br>API-8003<br>(50 mesh)    | 30                     | 0.260                       | 51.4                   | 42.9  | 32.2  | 25.7  | 18.4  | 1.18                           | 0.98 | 0.74 | 0.59 | 0.42 | 2.07          |
|                      |                                    | 40                     | 0.300                       | 59.4                   | 49.5  | 37.1  | 29.7  | 21.2  | 1.36                           | 1.13 | 0.85 | 0.68 | 0.49 | 2.76          |
|                      |                                    | 50                     | 0.335                       | 66.4                   | 55.3  | 41.5  | 33.2  | 23.7  | 1.52                           | 1.27 | 0.95 | 0.76 | 0.54 | 3.45          |
|                      |                                    | 60                     | 0.367                       | 72.7                   | 60.6  | 45.5  | 36.4  | 26.0  | 1.67                           | 1.39 | 1.04 | 0.83 | 0.59 | 4.14          |
| 05878<br>or<br>12423 | 8004VS<br>API-8004<br>(50 mesh)    | 30                     | 0.346                       | 68.6                   | 57.2  | 42.9  | 34.3  | 24.5  | 1.57                           | 1.31 | 0.98 | 0.79 | 0.56 | 2.07          |
|                      |                                    | 40                     | 0.400                       | 79.2                   | 66.0  | 49.5  | 39.6  | 28.3  | 1.81                           | 1.51 | 1.13 | 0.91 | 0.65 | 2.76          |
|                      |                                    | 50                     | 0.447                       | 88.5                   | 73.8  | 55.3  | 44.3  | 31.6  | 2.03                           | 1.69 | 1.27 | 1.01 | 0.72 | 3.45          |
|                      |                                    | 60                     | 0.490                       | 97.0                   | 80.8  | 60.6  | 48.5  | 34.6  | 2.22                           | 1.85 | 1.39 | 1.11 | 0.79 | 4.14          |
| 05879<br>or<br>12424 | 8005VS<br>API-8005<br>(50 mesh)    | 30                     | 0.433                       | 85.7                   | 71.4  | 53.6  | 42.9  | 30.6  | 1.96                           | 1.64 | 1.23 | 0.98 | 0.70 | 2.07          |
|                      |                                    | 40                     | 0.500                       | 99.0                   | 82.5  | 61.9  | 49.5  | 35.4  | 2.27                           | 1.89 | 1.42 | 1.13 | 0.81 | 2.76          |
|                      |                                    | 50                     | 0.559                       | 110.7                  | 92.2  | 69.2  | 55.3  | 39.5  | 2.53                           | 2.11 | 1.58 | 1.27 | 0.91 | 3.45          |
|                      |                                    | 60                     | 0.612                       | 121.2                  | 101.0 | 75.8  | 60.6  | 43.3  | 2.78                           | 2.31 | 1.74 | 1.39 | 0.99 | 4.14          |
| 05880<br>or<br>12425 | 8006VS<br>API-8006<br>(50 mesh)    | 30                     | 0.520                       | 102.9                  | 85.7  | 64.3  | 51.4  | 36.7  | 2.36                           | 1.96 | 1.47 | 1.18 | 0.84 | 2.07          |
|                      |                                    | 40                     | 0.600                       | 118.8                  | 99.0  | 74.3  | 59.4  | 42.4  | 2.72                           | 2.27 | 1.70 | 1.36 | 0.97 | 2.76          |
|                      |                                    | 50                     | 0.671                       | 132.8                  | 110.7 | 83.0  | 66.4  | 47.4  | 3.04                           | 2.53 | 1.90 | 1.52 | 1.09 | 3.45          |
|                      |                                    | 60                     | 0.735                       | 145.5                  | 121.2 | 90.9  | 72.7  | 52.0  | 3.33                           | 2.78 | 2.08 | 1.67 | 1.19 | 4.14          |
| 05881                | 8008VS<br>(50 mesh)                | 30                     | 0.693                       | 137.2                  | 114.3 | 85.7  | 68.6  | 49.0  | 3.14                           | 2.62 | 1.96 | 1.57 | 1.12 | 2.07          |
|                      |                                    | 40                     | 0.800                       | 158.4                  | 132.0 | 99.0  | 79.2  | 56.6  | 3.63                           | 3.02 | 2.27 | 1.81 | 1.30 | 2.76          |
|                      |                                    | 50                     | 0.894                       | 177.1                  | 147.6 | 110.7 | 88.5  | 63.2  | 4.05                           | 3.38 | 2.53 | 2.03 | 1.45 | 3.45          |
|                      |                                    | 60                     | 0.980                       | 194.0                  | 161.7 | 121.2 | 97.0  | 69.3  | 4.44                           | 3.70 | 2.78 | 2.22 | 1.59 | 4.14          |
| 13674                | MR8010<br>(50 mesh)                | 30                     | 0.866                       | 171.5                  | 142.9 | 107.2 | 85.7  | 61.2  | 3.93                           | 3.27 | 2.45 | 1.96 | 1.40 | 2.07          |
|                      |                                    | 40                     | 1.000                       | 198.0                  | 165.0 | 123.8 | 99.0  | 70.7  | 4.53                           | 3.78 | 2.83 | 2.27 | 1.62 | 2.76          |
|                      |                                    | 50                     | 1.118                       | 221.4                  | 184.5 | 138.4 | 110.7 | 79.1  | 5.07                           | 4.22 | 3.17 | 2.53 | 1.81 | 3.45          |
|                      |                                    | 60                     | 1.225                       | 242.5                  | 202.1 | 151.6 | 121.2 | 86.6  | 5.55                           | 4.63 | 3.47 | 2.78 | 1.98 | 4.14          |
| 14010                | MR8015<br>(50 mesh)                | 30                     | 1.299                       | 257.2                  | 214.3 | 160.8 | 128.6 | 91.9  | 5.89                           | 4.91 | 3.68 | 2.94 | 2.10 | 2.07          |
|                      |                                    | 40                     | 1.500                       | 297.0                  | 247.5 | 185.6 | 148.5 | 106.1 | 6.80                           | 5.67 | 4.25 | 3.40 | 2.43 | 2.76          |
|                      |                                    | 50                     | 1.677                       | 332.1                  | 276.7 | 207.5 | 166.0 | 118.6 | 7.60                           | 6.34 | 4.75 | 3.80 | 2.72 | 3.45          |
|                      |                                    | 60                     | 1.837                       | 363.7                  | 303.1 | 227.3 | 181.9 | 129.9 | 8.33                           | 6.94 | 5.21 | 4.16 | 2.97 | 4.14          |
| 14195                | MR8020<br>(50 mesh)                | 30                     | 1.732                       | 342.9                  | 285.8 | 214.3 | 171.5 | 122.5 | 7.85                           | 6.54 | 4.91 | 3.93 | 2.80 | 2.07          |
|                      |                                    | 40                     | 2.000                       | 396.0                  | 330.0 | 247.5 | 198.0 | 141.4 | 9.07                           | 7.56 | 5.67 | 4.53 | 3.24 | 2.76          |
|                      |                                    | 50                     | 2.236                       | 442.7                  | 369.0 | 276.7 | 221.4 | 158.1 | 10.14                          | 8.45 | 6.34 | 5.07 | 3.62 | 3.45          |
|                      |                                    | 60                     | 2.449                       | 485.0                  | 404.2 | 303.1 | 242.5 | 173.2 | 11.10                          | 9.25 | 6.94 | 5.55 | 3.97 | 4.14          |

Run a speed test in the area to be sprayed. The sprayer must be up to speed before starting the test run. To determine the speed mark off a distance as found on one of the tables. Push the sprayer over this distance carefully noting and recording the time to cover the distance. The speed traveled can be found for the specific distance and time to travel using the tables below.

After the nozzles have been individually checked and matched, the sprayer should be calibrated to determine the correct speed for the desired application volume. To get area covered multiply the width (FE3 – 3ft(.91m), FE4 – 4ft(1.22m), FE6 – 6ft(1.83m)) x distance.

**Table 3:** Time in Seconds to Travel Distance of:

|     | 10   | 25   | 50   | 100  | 200   |
|-----|------|------|------|------|-------|
| mph | (ft) | (ft) | (ft) | (ft) | (ft)  |
| 1   | 6.8  | 17.0 | 34.1 | 68.2 | 136.0 |
| 1.5 | 4.5  | 11.4 | 22.7 | 45.5 | 90.9  |
| 2   | 3.4  | 8.5  | 17.0 | 34.1 | 68.2  |
| 2.5 | 2.7  | 6.8  | 13.6 | 27.3 | 54.5  |
| 3   | 2.3  | 5.7  | 11.4 | 22.7 | 45.5  |
| 4   | 1.7  | 4.3  | 8.5  | 17.0 | 34.1  |
| 5   | 1.4  | 3.4  | 6.8  | 13.6 | 27.3  |
| 6   | 1.1  | 2.8  | 5.7  | 11.4 | 22.7  |

**Table 4:** Time in Seconds to Travel a Distance of:

|      | 10   | 25   | 50    | 100   | 200   |
|------|------|------|-------|-------|-------|
| Km/h | (m)  | (m)  | (m)   | (m)   | (m)   |
| 1    | 36.0 | 90.0 | 180.0 | 360.0 | 720.0 |
| 1.5  | 24.0 | 60.0 | 120.0 | 240.0 | 480.0 |
| 2    | 18.0 | 45.0 | 90.0  | 180.0 | 360.0 |
| 2.5  | 14.4 | 36.0 | 72.0  | 144.0 | 288.0 |
| 3    | 12.0 | 30.0 | 60.0  | 120.0 | 240.0 |
| 4    | 9.0  | 22.5 | 45.0  | 90.0  | 180.0 |
| 5    | 7.2  | 18.0 | 36.0  | 72.0  | 144.0 |
| 6    | 6.0  | 15.0 | 30.0  | 60.0  | 120.0 |

**Note:** Tip pressure is usually less than the pressure at the pump. Losses occur in valves, hoses, etc. Always check the flow by the above calibration method.

## General Maintenance

### Cleaning

Sprayers need to be cleaned to prevent corrosion and cross contamination of chemicals. Trace amounts of one chemical can react with another or carry over to the next spraying and cause crop damage, especially with pesticides. Long exposures with even small amounts of some chemicals can damage sprayer components either by corrosion or gum deposits. If you spray crops that are very susceptible to injury from the last chemical used (ie vegetables, turf, and ornamentals) clean the unit especially well.

Always try to end the day with an empty tank; avoid contamination of water supplies and injury to plants or animals. Do not make puddles that might be accessible to children, pets, farm animals, or wildlife. Flush with clean water preferably after each day's operation. If you plan to use the same material over several days most chemicals may be kept in the tank overnight, labels on the chemical usually indicates which may not. Rinse the outside of the sprayer. Surfactants combined with chemicals, when they are compatible, will provide some cleaning action in the sprayer.

Some chemical combinations (especially if oil is used) may produce a putty type paste (buttering out) in the sprayer tank and components; flushing with water after each load may prevent an accumulation. If water alone does not dissolve and remove the buildup, add solvent, kerosene, or other low flammable solvent; allow paste to dissolve, then agitate and flush. Next, flush with detergent and finally with clean water. Check with your chemical agent.

Whenever pesticides are changed, or before sprayer storage, clean sprayers thoroughly with a cleaning solution. The solution used depends on the chemical to be removed from the sprayer. Check the chemical label for cleaning instructions.

First flush with water, then add the cleaning solution to the tank and thoroughly agitate before flushing. Always flush with clean water to remove the cleaning solution. Remove nozzle tips and screens; clean them in a strong detergent solution or kerosene, using a soft brush such as an old toothbrush. Never use a metal probe to clean the orifice of a spray tip!

Follow the same safety precautions during cleaning as for applications. Use a respirator, rubber gloves, or other protective gear as may be directed by label instructions.

If a nozzle becomes blocked, turn the sprayer off. Note that the spray lines could still be pressurized therefore prior to removing the cap on the nozzle body, proper safety equipment should be worn, (ie gloves, eye protection, etc).

## Sunshine

Many plastic sprayer parts are degraded by ultra violet light, especially the nozzle flow indicators. Store the sprayer in the shade to extend the length of service.

## Winterizing

After the sprayer is thoroughly cleaned, put 2-5 gallons (7-19 litres) of rust inhibitor or antifreeze in the tank prior to the final flushing to help prevent corrosion. As the water is pumped from the sprayer, the antifreeze will leave a protective coating on the inside of the tank, pump, and plumbing. Remove nozzle tips, screens and no-drip valves (if used) and store them in a can of light oil such as diesel fuel or kerosene to prevent corrosion. Close nozzle openings with tape to prevent dirt, insects, mice, or other contaminants from entering.

During the final cleaning, completely check the sprayer. Look at the hoses, clamps, connections, nozzle tips, and screens for needed replacements. Store the sprayer in a reasonably clean and dry building.

## Assembly

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There is more than one way to successfully assemble your **Falcon** sprayer. Following the outlined steps will help to ensure a simple, trouble free assembly. All assembly references to left and right are referring to the sprayer left and right when facing the rear of the sprayer. Two people are required to remove sprayer from carton, or for any general lifting of the equipment (ie lifting into transport).

### Front Wheel Installation

- ⇒ See General Assembly drawing for layout.
- ⇒ Locate four, (4) holes on the front of the sprayer, two, (2) to each side of the Windfoil logo.
- ⇒ Bolt the front wheel mount to these holes.
- ⇒ Slide front castor fork through castor bushing and insert cotter pins to secure.
- ⇒ Grease castor prior to use if required.
- ⇒ Install all three poly wheels.

### Handle Attachment

- ⇒ Place the handle in position so that the tube is on the outside of the mounting plates.
- ⇒ Bolt handle into place.
- ⇒ Plug in pump wire harness

### Hose & Tank

- ⇒ Thread one end of hose (1/2"FNPT) into bottom fitting on tank (if required). Insert other end into input on pump (left side), slide lock down to clamp into place.
- ⇒ Set tank on brackets, studs in tank should line up with holes on brackets. Secure with 1/4" nylock nuts.

### Last Check

- ⇒ Recheck all assembled parts for completeness and secure connections.
- ⇒ Locate the grease nipple on the front caster wheel and grease it.
- ⇒ Your sprayer is now ready for a wet test, to ensure complete operation.

## Operation

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Stainless Steel insert tips are supplied with the **Falcon FE series**; it can also use ceramic, brass or plastic insert tips that give an actual 80° spray pattern.

With the unit fully assembled, attach the battery clips to the battery on the front of the unit. (be sure that the toggle switch on the handle bar is off, pump should not run once clips are on battery). (NOTE: red clip is for positive post on battery). With liquid in the tank, loosen the pressure regulator fully, ie loosen lock nut on regulator and turn top knob on pressure regulator counter clockwise. Next turn unit on by flipping the switch on the handle bar, slowly tighten pressure regulator (turn clockwise) until pressure on gauge rises to 40 psi (3 bar). (NOTE: to obtain optimum pattern, you should always try and operate your spray nozzles as close to 40 psi (3bar) as possible). Due to losses in the system you might want to run your system at 42-43 psi, this should give you close to 40 psi at the tip. (NOTE: Be careful not to run the pump on an empty tank, this could cause a vapour lock in the system. To fix the problem, make sure there is something in the tank, remove the output supply hose on the pump and start the system, take precautions as your chemical will start coming through the pump, once the liquid starts flowing shut the system off, reconnect the line and continue spraying). Watch each of the balls in the flow indicator as you spray, they should all raise to an equal level. If they are not equal the lower ball(s) indicated tips that are plugged or partially plugged. Check and clean the appropriate tip(s). If the balls are right at the top, the flow rate is too high for them. Replace them with the required balls for the tips (see the flow monitor page).

Test the unit using clear water on a firm surface such as asphalt or concrete before using spray solution. This will illustrate the effectiveness of the individual spray patterns.

Note: As this is a self contained sprayer with a small tank and does not have a separate fresh water tank, it is recommended that when filling and working with chemicals a fresh water supply is always kept in close proximity for safety reasons.

## Battery

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A 12 volt battery is not supplied with the sprayer. The recommended battery is a sealed, deep cycle battery with bolt on connections, but any small utility battery will work. Recommended battery dimensions are approximately 8" long x 5" wide x 6" high.

## Maintenance

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Cleaning and flushing with clear water after using.

Do not leave water in the unit at freezing temperatures. When storing the sprayer at freezing temperatures, run some windshield washer antifreeze through to prevent ice damage in the plastic parts.

Avoid storage of your sprayer in direct sunlight for prolonged periods. Certain plastic parts on the **Falcon FE** are not UV resistant.

Keep the unit covered or stored indoors.

## Approximate Weight of Units

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| MODEL | Weight Dry<br>lbs | Weight Dry<br>kg | Wt w/5usg<br>tank full (lbs) | Wt w/5usg<br>tank full (kg) | Wt w/10usg<br>tank full (lbs) | Wt w/10usg<br>tank full (kg) |
|-------|-------------------|------------------|------------------------------|-----------------------------|-------------------------------|------------------------------|
| FE3   | 57.6              | 26.1             | 99.3                         | 45                          | 141                           | 63.9                         |
| FE4   | 63.4              | 28.8             | 105.1                        | 47.7                        | 146.8                         | 66.6                         |
| FE6   | 71.4              | 32.4             | 113.1                        | 51.3                        | 154.8                         | 70.2                         |

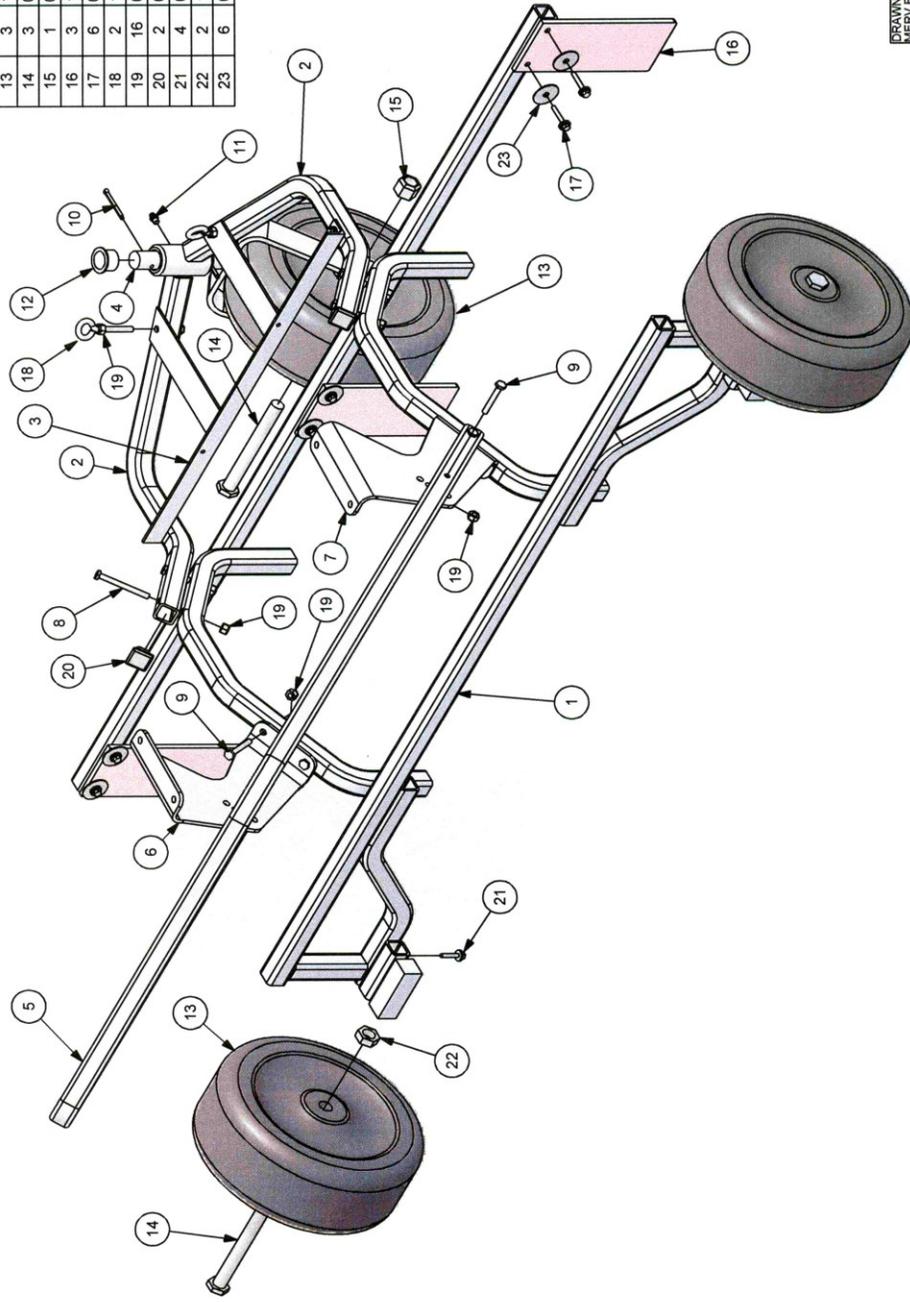
## Drawings and Replacement Parts

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See the following pages for a parts breakdown and accessories for your unit.

# FE4 Frame Assembly

| Parts List |     |   |
|------------|-----|---|
| ITEM       | QTY | PART# DESCRIPTION                       |
| 1          | 1   | 14274 FRAME LP4                         |
| 2          | 1   | 14028 CASTOR MOUNT ASSEMBLY             |
| 3          | 1   | 14216 BATTERY SUPPORT                   |
| 4          | 1   | 01599 CASTOR WHEEL, LP                  |
| 5          | 1   | 14184 HANDLE ASSBY, SQR                 |
| 6          | 1   | 07134L TANK MOUNT WALKER LEFT           |
| 7          | 1   | 07134R TANK MOUNT WALKER RIGHT          |
| 8          | 4   | 00966 BOLT, 1/4NCx2.5, PLD              |
| 9          | 8   | 05409 BOLT, 1/4NCx1.75, PLD             |
| 10         | 2   | 00965 PIN STL COTTER 3/16"x1-1/2"       |
| 11         | 1   | 00972 FTG. STL GREASE NIPPLE, 1/4NF     |
| 12         | 2   | 14212 BUSHING IG 1.0x.875x.75" W/FLANGE |
| 13         | 3   | 13178 WHEEL, PLASTIC, 21/32 BORE        |
| 14         | 3   | 05459 BOLT, 5/8"x5.5", PLD              |
| 15         | 1   | 01051 NUT, NYLOCK, 5/8NC, PLD           |
| 16         | 3   | 14261 CURTAIN SUPPORT LP FRONT          |
| 17         | 6   | 01156 SCREW TEK #12x1-1/4               |
| 18         | 2   | 12684 EYEBOLT 1/4-20X3/8"               |
| 19         | 16  | 00968 NUT, NYLOCK 1/4" PLD              |
| 20         | 2   | 01056 PLUG, 1" SQ. PLASTIC              |
| 21         | 4   | 01151 SCREW TEK #12x1                   |
| 22         | 2   | 13709 NUT, JAM 5/8NC, PLD               |
| 23         | 6   | 09754 WASHER, 1/4" FENDER               |



|           |                      |
|-----------|----------------------|
| DRAWN:    | ROGERS SPRAYERS INC. |
| DATE:     |                      |
| LOCATION: |                      |
| REVISION# |                      |
| TITLE     | WE & FE4 FRAME       |
| DWG NO    |                      |
| SCALE     |                      |
| MATERIAL  |                      |
| SIZE      | A                    |

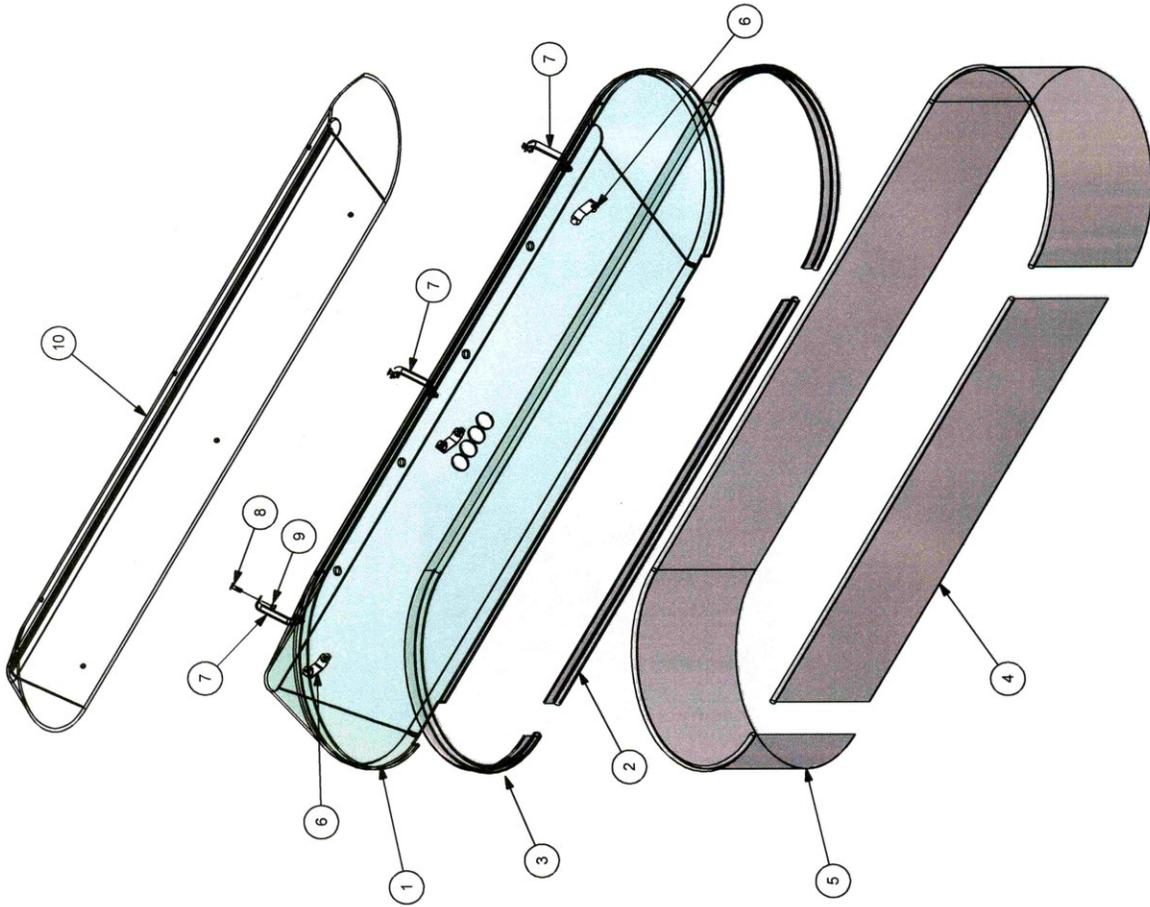
# Shroud Assembly

| Parts List |     |                              |
|------------|-----|------------------------------|
| ITEM       | QTY | DESCRIPTION                  |
| 1          | 1   | SHROUD LP FE & FG4           |
| 2          | 1   | FLEXISHIELD HANGER, 44.625"  |
| 3          | 1   | FLEXISHIELD HANGER, 111"     |
| 4          | 1   | FLEXISHIELD 9.625" x 44.625" |
| 5          | 1   | FLEXISHIELD 9.625" x 111"    |
| 6          | 3   | STANDOFF, BACK (SHORT)       |
| 7          | 3   | STANDOFF, FRONT (LONG)       |
| 8          | 12  | BOLT, 1/4NCx3/4, PLD         |
| 9          | 12  | NUT, NYLOCK 1/4" PLD         |
| 10         | 1   | AIRFOIL, 68"                 |

**TO ATTACH SHROUD TO FRAME AND EXTRUSION USE:**

| QTY | PART# | DESCRIPTION            |
|-----|-------|------------------------|
| 9   | 01156 | SCREW TEK #12x1-1/4"   |
| 8   | 01152 | SCREWMACH. #10-24x3/4" |
| 8   | 01153 | NUT, NYLOCK #10 PLD    |
| 4   | 05804 | RIVET POP              |

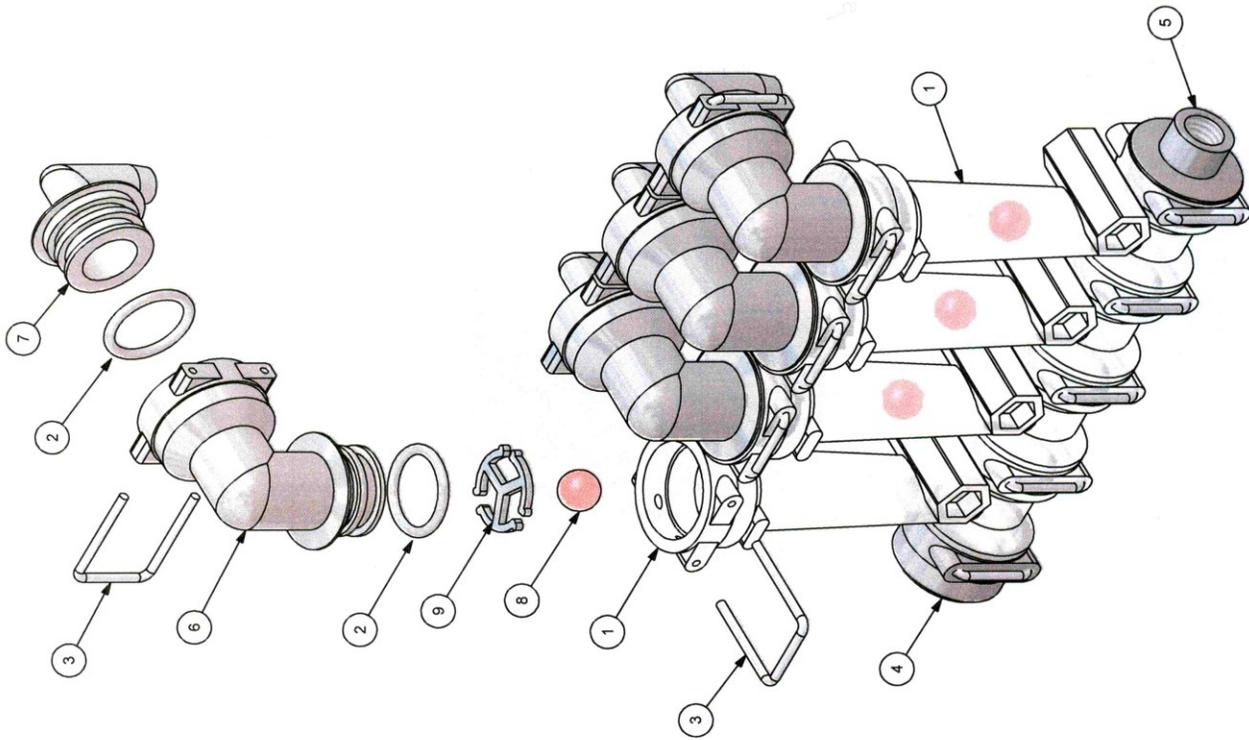
| DECALS: |        |                      |
|---------|--------|----------------------|
| 2       | 01396  | DECAL, WINDFOIL LOGO |
| 1       | 01397J | DECAL, FALCON        |



|            |               |                               |
|------------|---------------|-------------------------------|
| DRAWN:     | MERV BILINSKI | ROGERS SPRAYERS INC.          |
| DATE:      | 7/25/2005     | TITLE                         |
| LOCATION:  | ST. LOUIS, MO | SHROUD ASSEMBLY FE & FG4      |
| REVISION # | 1             | DWG. No. Shroud Assembly FE & |
| SCALE:     | FG4           | MATERIAL                      |
| BEST FIT   | A             | SIZE                          |

# Flow Monitor Assembly (Part# 12729)

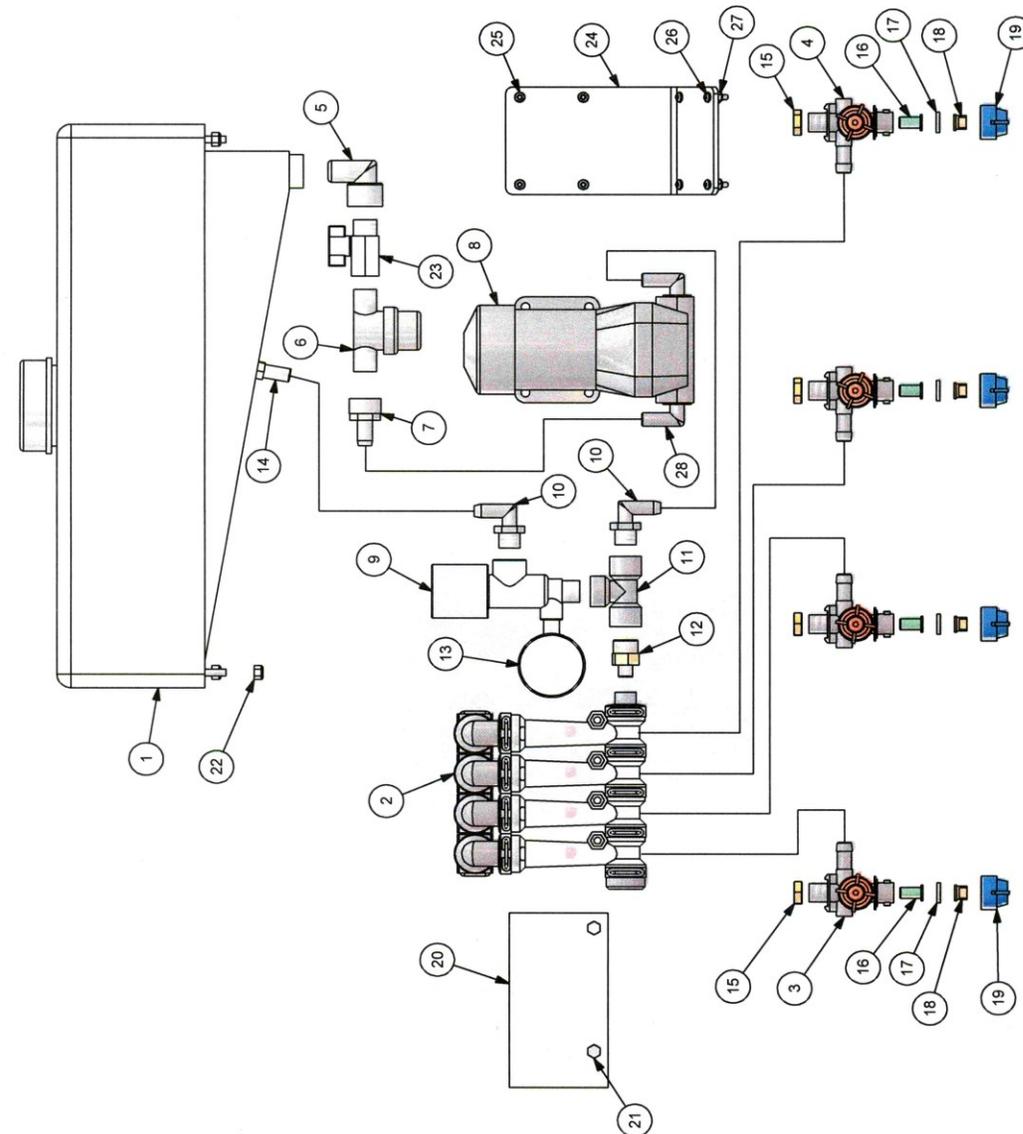
| Parts List |     |       |                               |
|------------|-----|-------|-------------------------------|
| ITEM       | QTY | PART# | DESCRIPTION                   |
| 1          | 4   | 00889 | FLOWMONITOR ORC BODY          |
| 2          | 13  | 11984 | O-RING ORC                    |
| 3          | 13  | 11976 | ORC CLIP                      |
| 4          | 1   | 00909 | FTG POLY ORC CAP              |
| 5          | 1   | 12727 | FTG POLY ADPT MORC x 1/4FNPT  |
| 6          | 4   | 01115 | FTG POLY ELB ST.MORC x FORC   |
| 7          | 4   | 00906 | FTG POLY ELB MORC x 1/2HB     |
| 8          | 4   | 11990 | BALL FI CELCON 0.09-0.3 USGPM |
| 9          | 4   | 11989 | ORC BALL RETAINER             |



|                      |  |                           |  |
|----------------------|--|---------------------------|--|
| DRAWN: MERV BILINSKI |  | ROGERS SPRAYERS INC.      |  |
| DATE:                |  | TITLE                     |  |
| DESIGNED: PLUMBER    |  | FLOWINDICATOR 4 COL ELEC. |  |
| REVISION#            |  | DWG NO                    |  |
| 12729                |  | 12729                     |  |
| SCALE                |  | MATERIAL                  |  |
| 1:2                  |  | A                         |  |

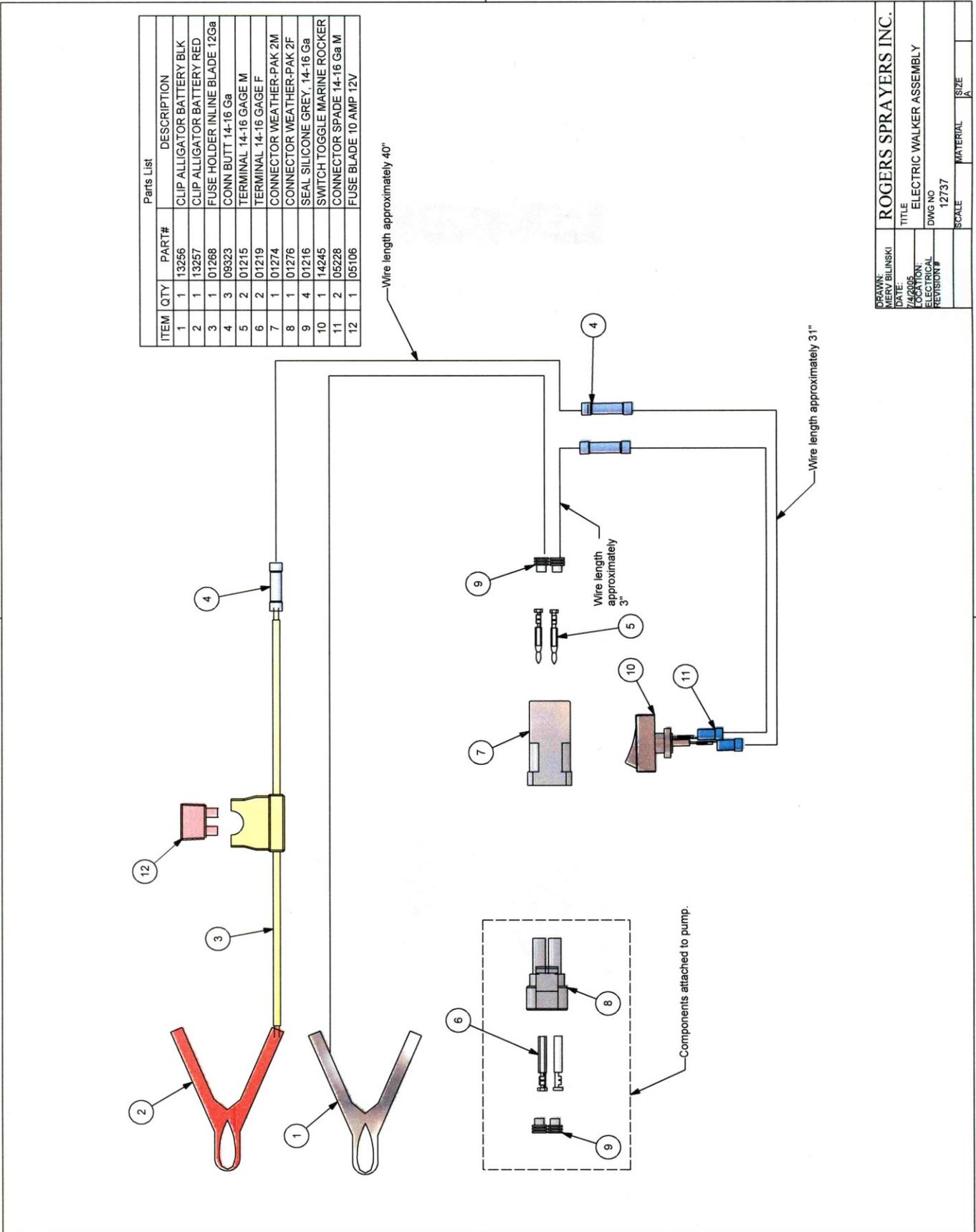
# Plumbing Assembly

| Parts List |     |       |                                  |
|------------|-----|-------|----------------------------------|
| ITEM       | QTY | PART# | DESCRIPTION                      |
| 1          | 1   | 01988 | TANK RECT. 5USG W/LID            |
| 2          | 1   | 12729 | FLOWMONITOR ASSY 4 COL. ELEC.    |
| 3          | 2   | 14281 | NOZZLE BODY TJ15R                |
| 4          | 2   | 14282 | NOZZLE BODY TJ15L                |
| 5          | 1   | 05766 | FTG POLY ELB ST. 1/2MNPTx1/2FNPT |
| 6          | 1   | 07103 | STRAINER LINE 1/2MNPT TAPPED     |
| 7          | 1   | 14269 | FTG POLY ADPT 1/2FNPT x 1/2HB    |
| 8          | 1   | 01280 | PUMP 12V 3.7 GPM MAX 45 PSI MAX  |
| 9          | 1   | 12818 | REGULATOR PRESSURE NYLON 1/2"    |
| 10         | 2   | 01235 | FTG POLY ELB 1/2MNPTx1/2HB       |
| 11         | 1   | 01084 | FTG POLY TEE 1/2NPT F/F/F        |
| 12         | 1   | 12931 | FTG BRASS NIPPLE 1/2x1/4MNPT     |
| 13         | 1   | 01281 | PRESSURE GAUGE                   |
| 14         | 1   | 01202 | FTG POLY ADPT 1/4MNPTx1/2HB      |
| 15         | 4   | 12362 | NUT BRASS, 11/16"                |
| 16         | 4   | 00829 | SCREEN, TIP 100 MESH             |
| 17         | 4   | 01521 | SEAL, WILGER CAP                 |
| 18         | 4   | 01369 | TIP 8001VS ORANGE                |
| 19         | 4   | 14288 | CAP T-LNB BLUE                   |
| 20         | 1   | 12046 | BACKING PLATE, 4 COLUMN          |
| 21         | 2   | 01070 | BOLT, 1/4NCx2, PLD               |
| 22         | 6   | 00988 | NUT, NYLOCK 1/4" PLD             |
| 23         | 1   | 14280 | VALVE BALL CHROME 1/2MNPTxFNPT   |
| 24         | 1   | 14296 | PUMP BRACKET, LP                 |
| 25         | 4   | 07157 | SCREW MACH. #10-24x1, TRUSS      |
| 26         | 4   | 01152 | SCREW MACH. #10-24x3/4, TRUSS    |
| 27         | 8   | 01153 | NUT, NYLOCK #10-24 PLD           |
| 28         | 2   | 12787 | FTG POLY ELB FLOJET X 1/2HB      |



|                             |               |
|-----------------------------|---------------|
| DRAWN:                      | MERV BILINSKI |
| DATE:                       | 8/29/2005     |
| LOCATION:                   | PLUMBING      |
| REVISION #:                 |               |
| SCALE:                      | PLUMBING      |
| MATERIAL:                   |               |
| SIZE:                       | A             |
| ROGERS SPRAYERS INC.        |               |
| TITLE: FE & WE4 PLUMBING TJ |               |
| DWG. NO: FE & WFE4 TJ       |               |
| SCALE: PLUMBING             |               |
| MATERIAL:                   |               |
| SIZE: A                     |               |

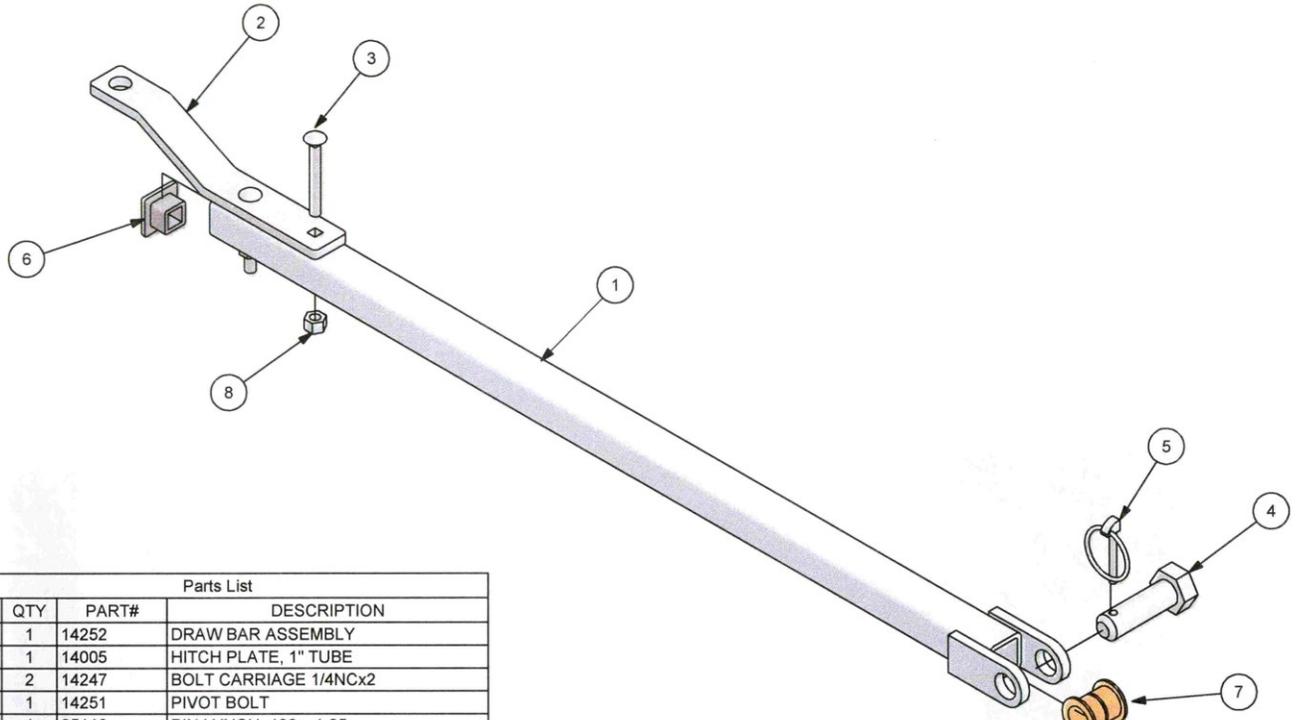
# Electrical Assembly (Part# 12737)



| Parts List |     |       |                               |
|------------|-----|-------|-------------------------------|
| ITEM       | QTY | PART# | DESCRIPTION                   |
| 1          | 1   | 13256 | CLIP ALLIGATOR BATTERY BLK    |
| 2          | 1   | 13257 | CLIP ALLIGATOR BATTERY RED    |
| 3          | 1   | 01268 | FUSE HOLDER INLINE BLADE 12Ga |
| 4          | 3   | 09323 | CONN BUTT 14-16 Ga            |
| 5          | 2   | 01215 | TERMINAL 14-16 GAGE M         |
| 6          | 2   | 01219 | TERMINAL 14-16 GAGE F         |
| 7          | 1   | 01274 | CONNECTOR WEATHER-PAK 2M      |
| 8          | 1   | 01276 | CONNECTOR WEATHER-PAK 2F      |
| 9          | 4   | 01216 | SEAL SILICONE GREY, 14-16 Ga  |
| 10         | 1   | 14245 | SWITCH TOGGLE MARINE ROCKER   |
| 11         | 2   | 05228 | CONNECTOR SPADE 14-16 Ga M    |
| 12         | 1   | 05106 | FUSE BLADE 10 AMP 12V         |

|                        |  |                                 |             |
|------------------------|--|---------------------------------|-------------|
| DRAWN: MERV BILINSKI   |  | ROGERS SPRAYERS INC.            |             |
| DATE: 12/20/01         |  | TITLE: ELECTRIC WALKER ASSEMBLY |             |
| DESIGN: MERV BILINSKI  |  | DWG NO: 12737                   |             |
| ELECTRICAL REVISION #: |  | SCALE:                          | MATERIAL: A |

# Optional F111 Tow Hitch Assembly



| Parts List |     |       |                                 |
|------------|-----|-------|---------------------------------|
| ITEM       | QTY | PART# | DESCRIPTION                     |
| 1          | 1   | 14252 | DRAW BAR ASSEMBLY               |
| 2          | 1   | 14005 | HITCH PLATE, 1" TUBE            |
| 3          | 2   | 14247 | BOLT CARRIAGE 1/4NCx2           |
| 4          | 1   | 14251 | PIVOT BOLT                      |
| 5          | 1   | 05116 | PIN LYNCH .180 x 1.25           |
| 6          | 1   | 01056 | PLUG, 1" SQ. PLASTIC            |
| 7          | 2   | 14127 | BUSHING, NYL, 3/4x5/8X1/2 W/FLG |
| 8          | 2   | 00968 | NUT, NYLOCK 1/4" PLD            |

Press bushings into castor fork on sprayer prior to inserting pin

**DECLARATION OF CONFORMITY**  
(According to ISO/IEC Guide 22 And EN 45014)

**We,** ROGERS SPRAYERS INC.  
813B 50-TH STREET EAST  
SASKATOON, SASKATCHEWAN. S7K 3Y5

**declare that the following product:**

SPRAY BOOM, MODELS WA5000, WA5000E, WA6000, WA6000E, WS5000,  
WS5000E, WS6000, WS6000E, FA5000, FA5000E, FA6000, FA6000E, FS5000,  
FS5000E, FS6000, FS6000E  
PEDESTRIAN BOOM MODELS WG3, WG4, WG6, FG3, FG4, FG6  
PEDESTRIAN SPRAYER MODELS WE3, WE4, WE6, FE3, FE4, FE6

**is in conformity with the provisions of the following European Directives:**

**Council Directive 98/37/EC; as amended by 98/79/EEC:**

**And the following standards:**

SS-EN 907

**Done at** SASKATOON, SASKATCHEWAN, CANADA **on** SEPTEMBER 25, 2006

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.....  
.....



## **ROGERS SPRAYERS INC.**

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Saskatoon, SK S7K 3Y5  
Canada

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Web: [www.rogerssprayers.com](http://www.rogerssprayers.com)