



# Nozzle Selection Guide

## for Multi-Pro Sprayers and Workman Vehicles

Model No. All Models

### Selection Guide

## Using the Nozzle Selection Tables

**Note:** The Unit Definitions and Conversions table is located on

**Note:** Toro recommends a vehicle speed of 3 to 5 MPH (5 to 9 km/h) and a nozzle pressure of 30-50 psi (2.0-3.5 Bar) while spraying.

The nozzle selection tables show application rates using specific nozzles while the vehicle travels at a various speeds.

The tables show nozzle application rates in US Gallons per Acre, US Gallons per 1,000 ft<sup>2</sup> and Liters per Hectare. Each table is organized by nozzle and each nozzle has a range of pressures and vehicle speeds listed.

See the nozzle selection tables in the following section to ensure that your spray nozzles have the capacity necessary to achieve the desired application rate.

- The table can be used to select the correct nozzle.

Find the desired application rate within the appropriate table at the preferred vehicle speed and pressure, then select the nozzle that is listed in the left columns.

### Example:

The desired application rate is 24 GPA for the material to be sprayed. The preferred vehicle speed is 5 MPH. The desired pressure range is 30-50 psi.

Find the desired speed column at the top of the table. Follow that column down until you see your desired rate within the 30-50 psi pressure range.

As listed in the table, the nozzle with Toro part number 95-9222 has an application rate of 23.8 GPA when the vehicle speed is 5 MPH and pressure would be 40 psi.

- The table can be used to verify that a spray nozzle has the capacity necessary to achieve the application rate selected.

Find the nozzle in the left columns of the appropriate table, then look for application rate within that section by varying vehicle speed and/or pressure.

### Example:

The yellow nozzle with Toro part number 95-9221 is the only nozzle available and the material to be sprayed has an application rate of 20 GPA.

If vehicle speed is slowed to 3.5 MPH and pressure is raised to 60 psi one can achieve an application rate of 20.4 GPA with the yellow nozzle.

## Selecting a Nozzle

### GPA or US Gallons per 1000 ft<sup>2</sup>

- Determine the desired application rate from the manufacturer's labeling.  
\_\_\_\_\_ Gallons per acre or per 1000 ft<sup>2</sup>
- Determine the vehicle speed to apply the material.  
\_\_\_\_\_ MPH
- Verify that the nozzle spacing is 20 inches.
- Determine the Gallons per Minute using either the appropriate Nozzle Selection Table or GPM formula located at the end of this guide.

- \_\_\_\_\_ GPM
- Select nozzle size based on GPM.
- Once the nozzle is installed, spray water for initial test/calibration. Please refer to the Calibrating the Spray Pro™ Monitor section in the Operator's Manual. Use the Application Rate Switch to increase or decrease the application rate.

## Liters per Hectare

1. Determine the desired application rate from the manufacturer's labeling.  
\_\_\_\_\_ Liters per Hectare
2. Determine the vehicle speed to apply the material.  
\_\_\_\_\_ KmPH
3. Verify that the nozzle spacing is 50 centimeters.
4. Determine the Liters per Hectare using either the appropriate Nozzle Selection Tables or Liters per Hectare formulas located at the end of this guide.  
\_\_\_\_\_ Liters per Hectare
5. Select nozzle size based on Liters per Hectare.
6. Once the nozzle is installed, spray water for initial test/calibration. Please refer to the Calibrating the Spray Pro Monitor section in the Operator's Manual. Use the Application Rate Switch to increase or decrease the application rate.

PROTOTYPE

# Nozzle Selection Tables

**Important:** All application rates have been calculated using a nozzle spacing set up by the manufacturer (20 inches or 50 cm). If the nozzle spacing is changed, these application rates will no longer apply.

## Standard Booms

### US Gallons per Acre Application Rates - Standard Booms

| Toro Part Number | Nozzle Number - Color Code | Pressure (psi) | Capacity 1 Nozzle (GPM) | US Gallons per Acre at 20 Inch Spacings |       |             |       |         |       |            |       |
|------------------|----------------------------|----------------|-------------------------|-----------------------------------------|-------|-------------|-------|---------|-------|------------|-------|
|                  |                            |                |                         | First Gear                              |       | Second Gear |       |         |       | Third Gear |       |
|                  |                            |                |                         | 2.5 MPH                                 | 3 MPH | 3.5 MPH     | 4 MPH | 4.5 MPH | 5 MPH | 5.5 MPH    | 6 MPH |
| 95-9221          | 1/4TTJ02 - VS Yellow       | 25             | 0.16                    | 19.0                                    | 15.8  | 13.6        | 11.9  | 10.6    | 9.5   | 8.6        | 7.9   |
|                  |                            | 30             | 0.17                    | 20.2                                    | 16.8  | 14.4        | 12.6  | 11.2    | 10.1  | 9.2        | 8.4   |
|                  |                            | 40             | 0.20                    | 23.8                                    | 19.8  | 17.0        | 14.9  | 13.2    | 11.9  | 10.8       | 9.9   |
|                  |                            | 50             | 0.22                    | 26.1                                    | 21.8  | 18.7        | 16.3  | 14.5    | 13.1  | 11.9       | 10.9  |
|                  |                            | 60             | 0.24                    | 28.5                                    | 23.8  | 20.4        | 17.8  | 15.8    | 14.3  | 13.0       | 11.9  |
|                  |                            | 75             | 0.27                    | 32.1                                    | 26.7  | 22.9        | 20.0  | 17.8    | 16.0  | 14.6       | 13.4  |
| 95-9222          | 1/4TTJ04 - VS Red          | 25             | 0.32                    | 38.0                                    | 31.7  | 27.2        | 23.8  | 21.1    | 19.0  | 17.3       | 15.8  |
|                  |                            | 30             | 0.35                    | 41.6                                    | 34.7  | 29.7        | 26.0  | 23.1    | 20.8  | 18.9       | 17.3  |
|                  |                            | 40             | 0.40                    | 47.5                                    | 39.6  | 33.9        | 29.7  | 26.4    | 23.8  | 21.6       | 19.8  |
|                  |                            | 50             | 0.45                    | 53.5                                    | 44.6  | 38.2        | 33.4  | 29.7    | 26.7  | 24.3       | 22.3  |
|                  |                            | 60             | 0.49                    | 58.2                                    | 48.5  | 41.6        | 36.4  | 32.3    | 29.1  | 26.5       | 24.3  |
|                  |                            | 75             | 0.55                    | 65.3                                    | 54.5  | 46.7        | 40.8  | 36.3    | 32.7  | 29.7       | 27.2  |
| 95-9223          | 1/4TTJ05 - VS Brown        | 25             | 0.40                    | 47.5                                    | 39.6  | 33.9        | 29.7  | 26.4    | 23.8  | 21.6       | 19.8  |
|                  |                            | 30             | 0.43                    | 51.1                                    | 42.6  | 36.5        | 31.9  | 28.4    | 25.5  | 23.2       | 21.3  |
|                  |                            | 40             | 0.50                    | 59.4                                    | 49.5  | 42.4        | 37.1  | 33.0    | 29.7  | 27.0       | 24.8  |
|                  |                            | 50             | 0.56                    | 66.5                                    | 55.4  | 47.5        | 41.6  | 37.0    | 33.3  | 30.2       | 27.7  |
|                  |                            | 60             | 0.61                    | 72.5                                    | 60.4  | 51.8        | 45.3  | 40.3    | 36.2  | 32.9       | 30.2  |
|                  |                            | 75             | 0.68                    | 80.8                                    | 67.3  | 57.7        | 50.5  | 44.9    | 40.4  | 36.7       | 33.7  |
| 95-9224          | 1/4TTJ06 - VS Gray         | 25             | 0.47                    | 55.8                                    | 46.5  | 39.9        | 34.9  | 31.0    | 27.9  | 25.4       | 23.3  |
|                  |                            | 30             | 0.52                    | 61.8                                    | 51.5  | 44.1        | 38.6  | 34.3    | 30.9  | 28.1       | 25.7  |
|                  |                            | 40             | 0.60                    | 71.3                                    | 59.4  | 50.9        | 44.6  | 39.6    | 35.6  | 32.4       | 29.7  |
|                  |                            | 50             | 0.67                    | 79.6                                    | 66.3  | 56.9        | 49.7  | 44.2    | 39.8  | 36.2       | 33.2  |
|                  |                            | 60             | 0.73                    | 86.7                                    | 72.3  | 61.9        | 54.2  | 48.2    | 43.4  | 39.4       | 36.1  |
|                  |                            | 75             | 0.82                    | 97.4                                    | 81.2  | 69.6        | 60.9  | 54.1    | 48.7  | 44.3       | 40.6  |
| 95-9225          | 1/4TTJ08 - VS White        | 25             | 0.63                    | 74.8                                    | 62.4  | 53.5        | 46.8  | 41.6    | 37.4  | 34.0       | 31.2  |
|                  |                            | 30             | 0.69                    | 82.0                                    | 68.3  | 58.6        | 51.2  | 45.5    | 41.0  | 37.3       | 34.2  |
|                  |                            | 40             | 0.80                    | 95.0                                    | 79.2  | 67.9        | 59.4  | 52.8    | 47.5  | 43.2       | 39.6  |
|                  |                            | 50             | 0.89                    | 105.7                                   | 88.1  | 75.5        | 66.1  | 58.7    | 52.9  | 48.1       | 44.1  |
|                  |                            | 60             | 0.98                    | 116.4                                   | 97.0  | 83.2        | 72.8  | 64.7    | 58.2  | 52.9       | 48.5  |
|                  |                            | 75             | 1.10                    | 130.7                                   | 108.9 | 93.3        | 81.7  | 72.6    | 65.3  | 59.4       | 54.5  |

|         |                                    |    |      |       |       |       |       |       |       |       |       |
|---------|------------------------------------|----|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 95-9188 | 1/4TTJ10<br>- VS<br>Light<br>Blue  | 25 | 0.79 | 93.9  | 78.2  | 67.0  | 58.7  | 52.1  | 46.9  | 42.7  | 39.1  |
|         |                                    | 30 | 0.87 | 103.4 | 86.1  | 73.8  | 64.6  | 57.4  | 51.7  | 47.0  | 43.1  |
|         |                                    | 40 | 1.00 | 118.8 | 99.0  | 84.9  | 74.3  | 66.0  | 59.4  | 54.0  | 49.5  |
|         |                                    | 50 | 1.12 | 133.1 | 110.9 | 95.0  | 83.2  | 73.9  | 66.5  | 60.5  | 55.4  |
|         |                                    | 60 | 1.22 | 144.9 | 120.8 | 103.5 | 90.6  | 80.5  | 72.5  | 65.9  | 60.4  |
|         |                                    | 75 | 1.37 | 162.8 | 135.6 | 116.3 | 101.7 | 90.4  | 81.4  | 74.0  | 67.8  |
| 95-9226 | 1/4TTJ15<br>- VS<br>Light<br>Green | 25 | 1.19 | 141.4 | 117.8 | 101.0 | 88.4  | 78.5  | 70.7  | 64.3  | 58.9  |
|         |                                    | 30 | 1.30 | 154.4 | 128.7 | 110.3 | 96.5  | 85.8  | 77.2  | 70.2  | 64.4  |
|         |                                    | 40 | 1.50 | 178.2 | 148.5 | 127.3 | 111.4 | 99.0  | 89.1  | 81.0  | 74.3  |
|         |                                    | 50 | 1.68 | 199.6 | 166.3 | 142.6 | 124.7 | 110.9 | 99.8  | 90.7  | 83.2  |
|         |                                    | 60 | 1.84 | 218.6 | 182.2 | 156.1 | 136.6 | 121.4 | 109.3 | 99.4  | 91.1  |
|         |                                    | 75 | 2.05 | 243.5 | 203.0 | 174.0 | 152.2 | 135.3 | 121.8 | 110.7 | 101.5 |

*Italicized gear ranges are applicable to Multi-Pro 1200 and 1250 Sprayers only.  
Speeds cited above can be achieved in low range on Workman 200 Spray Systems.*

PROTOTYPE

## US Gallons per 1000 ft² Application Rates - Standard Booms

| Toro Part Number | Nozzle Number - Color Code | Pressure (psi) | Capacity 1 Nozzle (GPM) | US Gallons per 1000 ft² at 20 Inch Spacings |       |             |       |         |       |            |       |
|------------------|----------------------------|----------------|-------------------------|---------------------------------------------|-------|-------------|-------|---------|-------|------------|-------|
|                  |                            |                |                         | First Gear                                  |       | Second Gear |       |         |       | Third Gear |       |
|                  |                            |                |                         | 2.5 MPH                                     | 3 MPH | 3.5 MPH     | 4 MPH | 4.5 MPH | 5 MPH | 5.5 MPH    | 6 MPH |
| 95 9221          | 1/4TTJ02 - VS Yellow       | 25             | 0.16                    | 0.44                                        | 0.36  | 0.31        | 0.27  | 0.24    | 0.22  | 0.20       | 0.18  |
|                  |                            | 30             | 0.17                    | 0.46                                        | 0.39  | 0.33        | 0.29  | 0.26    | 0.23  | 0.21       | 0.19  |
|                  |                            | 40             | 0.20                    | 0.54                                        | 0.45  | 0.39        | 0.34  | 0.30    | 0.27  | 0.25       | 0.23  |
|                  |                            | 50             | 0.22                    | 0.60                                        | 0.50  | 0.43        | 0.37  | 0.33    | 0.30  | 0.27       | 0.25  |
|                  |                            | 60             | 0.24                    | 0.65                                        | 0.54  | 0.47        | 0.41  | 0.36    | 0.33  | 0.30       | 0.27  |
|                  |                            | 75             | 0.27                    | 0.73                                        | 0.61  | 0.52        | 0.46  | 0.41    | 0.37  | 0.33       | 0.31  |
| 95 9222          | 1/4TTJ04 - VS Red          | 25             | 0.32                    | 0.87                                        | 0.73  | 0.62        | 0.54  | 0.48    | 0.44  | 0.40       | 0.36  |
|                  |                            | 30             | 0.35                    | 0.95                                        | 0.79  | 0.68        | 0.60  | 0.53    | 0.48  | 0.43       | 0.40  |
|                  |                            | 40             | 0.40                    | 1.09                                        | 0.91  | 0.78        | 0.68  | 0.60    | 0.54  | 0.49       | 0.45  |
|                  |                            | 50             | 0.45                    | 1.22                                        | 1.02  | 0.87        | 0.77  | 0.68    | 0.61  | 0.56       | 0.51  |
|                  |                            | 60             | 0.49                    | 1.33                                        | 1.11  | 0.95        | 0.83  | 0.74    | 0.67  | 0.61       | 0.56  |
|                  |                            | 75             | 0.55                    | 1.50                                        | 1.25  | 1.07        | 0.94  | 0.83    | 0.75  | 0.68       | 0.62  |
| 95 9223          | 1/4TTJ05 - VS Brown        | 25             | 0.40                    | 1.09                                        | 0.91  | 0.78        | 0.68  | 0.60    | 0.54  | 0.49       | 0.45  |
|                  |                            | 30             | 0.43                    | 1.17                                        | 0.97  | 0.84        | 0.73  | 0.65    | 0.58  | 0.53       | 0.49  |
|                  |                            | 40             | 0.50                    | 1.36                                        | 1.13  | 0.97        | 0.85  | 0.76    | 0.68  | 0.62       | 0.57  |
|                  |                            | 50             | 0.56                    | 1.52                                        | 1.27  | 1.09        | 0.95  | 0.85    | 0.76  | 0.69       | 0.63  |
|                  |                            | 60             | 0.61                    | 1.66                                        | 1.38  | 1.19        | 1.04  | 0.92    | 0.83  | 0.75       | 0.69  |
|                  |                            | 75             | 0.68                    | 1.85                                        | 1.54  | 1.32        | 1.16  | 1.03    | 0.92  | 0.84       | 0.77  |
| 95 9224          | 1/4TTJ06 - VS Gray         | 25             | 0.47                    | 1.28                                        | 1.07  | 0.91        | 0.80  | 0.71    | 0.64  | 0.58       | 0.53  |
|                  |                            | 30             | 0.52                    | 1.41                                        | 1.18  | 1.01        | 0.88  | 0.79    | 0.71  | 0.64       | 0.59  |
|                  |                            | 40             | 0.60                    | 1.63                                        | 1.36  | 1.17        | 1.02  | 0.91    | 0.82  | 0.74       | 0.68  |
|                  |                            | 50             | 0.67                    | 1.82                                        | 1.52  | 1.30        | 1.14  | 1.01    | 0.91  | 0.83       | 0.76  |
|                  |                            | 60             | 0.73                    | 1.99                                        | 1.65  | 1.42        | 1.24  | 1.10    | 0.99  | 0.90       | 0.83  |
|                  |                            | 75             | 0.82                    | 2.23                                        | 1.86  | 1.59        | 1.39  | 1.24    | 1.12  | 1.01       | 0.93  |
| 95 9225          | 1/4TTJ08 - VS White        | 25             | 0.63                    | 1.71                                        | 1.43  | 1.22        | 1.07  | 0.95    | 0.86  | 0.78       | 0.71  |
|                  |                            | 30             | 0.69                    | 1.88                                        | 1.56  | 1.34        | 1.17  | 1.04    | 0.94  | 0.85       | 0.78  |
|                  |                            | 40             | 0.80                    | 2.18                                        | 1.81  | 1.55        | 1.36  | 1.21    | 1.09  | 0.99       | 0.91  |
|                  |                            | 50             | 0.89                    | 2.42                                        | 2.02  | 1.73        | 1.51  | 1.34    | 1.21  | 1.10       | 1.01  |
|                  |                            | 60             | 0.98                    | 2.67                                        | 2.22  | 1.90        | 1.67  | 1.48    | 1.33  | 1.21       | 1.11  |
|                  |                            | 75             | 1.10                    | 2.99                                        | 2.49  | 2.14        | 1.87  | 1.66    | 1.50  | 1.36       | 1.25  |
| 95 9188          | 1/4TTJ10 - VS Light Blue   | 25             | 0.79                    | 2.15                                        | 1.79  | 1.53        | 1.34  | 1.19    | 1.07  | 0.98       | 0.90  |
|                  |                            | 30             | 0.87                    | 2.37                                        | 1.97  | 1.69        | 1.48  | 1.31    | 1.18  | 1.08       | 0.99  |
|                  |                            | 40             | 1.00                    | 2.72                                        | 2.27  | 1.94        | 1.70  | 1.51    | 1.36  | 1.24       | 1.13  |
|                  |                            | 50             | 1.12                    | 3.05                                        | 2.54  | 2.18        | 1.90  | 1.69    | 1.52  | 1.38       | 1.27  |
|                  |                            | 60             | 1.22                    | 3.32                                        | 2.77  | 2.37        | 2.07  | 1.84    | 1.66  | 1.51       | 1.38  |
|                  |                            | 75             | 1.37                    | 3.73                                        | 3.11  | 2.66        | 2.33  | 2.07    | 1.86  | 1.69       | 1.55  |

|         |                                    |    |      |      |      |      |      |      |      |      |      |
|---------|------------------------------------|----|------|------|------|------|------|------|------|------|------|
| 95 9226 | 1/4TTJ15<br>- VS<br>Light<br>Green | 25 | 1.19 | 3.24 | 2.70 | 2.31 | 2.02 | 1.80 | 1.62 | 1.47 | 1.35 |
|         |                                    | 30 | 1.30 | 3.54 | 2.95 | 2.53 | 2.21 | 1.96 | 1.77 | 1.61 | 1.47 |
|         |                                    | 40 | 1.50 | 4.08 | 3.40 | 2.91 | 2.55 | 2.27 | 2.04 | 1.85 | 1.70 |
|         |                                    | 50 | 1.68 | 4.57 | 3.81 | 3.26 | 2.86 | 2.54 | 2.28 | 2.08 | 1.90 |
|         |                                    | 60 | 1.84 | 5.00 | 4.17 | 3.57 | 3.13 | 2.78 | 2.50 | 2.27 | 2.09 |
|         |                                    | 75 | 2.05 | 5.58 | 4.65 | 3.98 | 3.49 | 3.10 | 2.79 | 2.53 | 2.32 |

*Italicized gear ranges are applicable to Multi-Pro 1200 and 1250 Sprayers only.*

*Speeds cited above can be achieved in low range on Workman 200 Spray Systems.*

PROTOTYPE

## Liters per Hectare Application Rates - Standard Booms

| Toro Part Number | Nozzle Number - Color Code | Pressure (Bar) | Capacity 1 Nozzle (LPM) | Liters per Hectare at 50 Centimeter Spacings |          |             |          |          |          |            |          |
|------------------|----------------------------|----------------|-------------------------|----------------------------------------------|----------|-------------|----------|----------|----------|------------|----------|
|                  |                            |                |                         | First Gear                                   |          | Second Gear |          |          |          | Third Gear |          |
|                  |                            |                |                         | 4.0 KmPH                                     | 4.8 KmPH | 5.6 KmPH    | 6.4 KmPH | 7.2 KmPH | 8.0 KmPH | 8.8 KmPH   | 9.7 KmPH |
| 95 9221          | 1/4TTJ02 - VS Yellow       | 1.72           | 0.61                    | 183                                          | 153      | 131         | 114      | 102      | 92       | 83         | 75       |
|                  |                            | 2.06           | 0.64                    | 192                                          | 160      | 137         | 120      | 107      | 96       | 87         | 79       |
|                  |                            | 2.76           | 0.76                    | 228                                          | 190      | 163         | 143      | 127      | 114      | 104        | 94       |
|                  |                            | 3.45           | 0.83                    | 249                                          | 208      | 178         | 156      | 138      | 125      | 113        | 103      |
|                  |                            | 4.13           | 0.91                    | 273                                          | 228      | 195         | 171      | 152      | 137      | 124        | 113      |
|                  |                            | 5.17           | 1.02                    | 306                                          | 255      | 219         | 191      | 170      | 153      | 139        | 126      |
| 95 9222          | 1/4TTJ04 - VS Red          | 1.72           | 1.21                    | 363                                          | 303      | 259         | 227      | 202      | 182      | 165        | 150      |
|                  |                            | 2.06           | 1.32                    | 396                                          | 330      | 283         | 248      | 220      | 198      | 180        | 163      |
|                  |                            | 2.76           | 1.51                    | 453                                          | 378      | 324         | 283      | 252      | 227      | 206        | 187      |
|                  |                            | 3.45           | 1.70                    | 510                                          | 425      | 364         | 319      | 283      | 255      | 232        | 210      |
|                  |                            | 4.13           | 1.85                    | 555                                          | 463      | 396         | 347      | 308      | 278      | 252        | 229      |
|                  |                            | 5.17           | 2.08                    | 624                                          | 520      | 446         | 390      | 347      | 312      | 284        | 257      |
| 95 9223          | 1/4TTJ05 - VS Brown        | 1.72           | 1.51                    | 453                                          | 378      | 324         | 283      | 252      | 227      | 206        | 187      |
|                  |                            | 2.06           | 1.63                    | 489                                          | 408      | 349         | 306      | 272      | 245      | 222        | 202      |
|                  |                            | 2.76           | 1.89                    | 567                                          | 473      | 405         | 354      | 315      | 284      | 258        | 234      |
|                  |                            | 3.45           | 2.12                    | 636                                          | 530      | 454         | 398      | 353      | 318      | 289        | 262      |
|                  |                            | 4.13           | 2.31                    | 693                                          | 578      | 495         | 433      | 385      | 347      | 315        | 286      |
|                  |                            | 5.17           | 2.57                    | 771                                          | 643      | 551         | 482      | 428      | 386      | 350        | 318      |
| 95 9224          | 1/4TTJ06 - VS Gray         | 1.72           | 1.78                    | 534                                          | 445      | 381         | 334      | 297      | 267      | 243        | 220      |
|                  |                            | 2.06           | 1.97                    | 591                                          | 493      | 422         | 369      | 328      | 296      | 269        | 244      |
|                  |                            | 2.76           | 2.27                    | 681                                          | 568      | 486         | 426      | 378      | 341      | 310        | 281      |
|                  |                            | 3.45           | 2.54                    | 762                                          | 635      | 544         | 476      | 423      | 381      | 346        | 314      |
|                  |                            | 4.13           | 2.76                    | 828                                          | 690      | 591         | 518      | 460      | 414      | 376        | 341      |
|                  |                            | 5.17           | 3.10                    | 930                                          | 775      | 664         | 581      | 517      | 465      | 423        | 384      |
| 95 9225          | 1/4TTJ08 - VS White        | 1.72           | 2.38                    | 714                                          | 595      | 510         | 446      | 397      | 357      | 325        | 294      |
|                  |                            | 2.06           | 2.61                    | 783                                          | 653      | 559         | 489      | 435      | 392      | 356        | 323      |
|                  |                            | 2.76           | 3.03                    | 909                                          | 758      | 649         | 568      | 505      | 455      | 413        | 375      |
|                  |                            | 3.45           | 3.34                    | 1001                                         | 834      | 715         | 626      | 556      | 501      | 455        | 413      |
|                  |                            | 4.13           | 3.71                    | 1113                                         | 928      | 795         | 696      | 618      | 557      | 506        | 459      |
|                  |                            | 5.17           | 4.16                    | 1248                                         | 1040     | 891         | 780      | 693      | 624      | 567        | 515      |
| 95 9188          | 1/4TTJ10 - VS Light Blue   | 1.72           | 2.99                    | 897                                          | 748      | 641         | 561      | 498      | 449      | 408        | 370      |
|                  |                            | 2.06           | 3.29                    | 987                                          | 823      | 705         | 617      | 548      | 494      | 449        | 407      |
|                  |                            | 2.76           | 3.79                    | 1137                                         | 948      | 812         | 711      | 632      | 569      | 517        | 469      |
|                  |                            | 3.45           | 4.24                    | 1272                                         | 1060     | 909         | 795      | 707      | 636      | 578        | 525      |
|                  |                            | 4.13           | 4.62                    | 1386                                         | 1155     | 990         | 866      | 770      | 693      | 630        | 572      |
|                  |                            | 5.17           | 5.19                    | 1557                                         | 1298     | 1112        | 973      | 865      | 779      | 708        | 642      |

|         |                                    |      |      |      |      |      |      |      |      |      |     |
|---------|------------------------------------|------|------|------|------|------|------|------|------|------|-----|
| 95 9226 | 1/4TTJ15<br>- VS<br>Light<br>Green | 1.72 | 4.50 | 1350 | 1125 | 964  | 844  | 750  | 675  | 614  | 557 |
|         |                                    | 2.06 | 4.92 | 1476 | 1230 | 1054 | 923  | 820  | 738  | 671  | 609 |
|         |                                    | 2.76 | 5.68 | 1704 | 1420 | 1217 | 1065 | 947  | 852  | 775  | 703 |
|         |                                    | 3.45 | 6.36 | 1908 | 1590 | 1363 | 1193 | 1060 | 954  | 867  | 787 |
|         |                                    | 4.13 | 6.96 | 2088 | 1740 | 1491 | 1305 | 1160 | 1044 | 949  | 861 |
|         |                                    | 5.17 | 7.76 | 2328 | 1940 | 1663 | 1455 | 1293 | 1164 | 1058 | 960 |

*Italicized gear ranges are applicable to Multi-Pro 1200 and 1250 Sprayers only.*

*Speeds cited above can be achieved in low range on Workman 200 Spray Systems.*

PROTOTYPE

# Covered Booms

## US Gallons per Acre Application Rates - Covered Booms

| Toro Part Number                                                                           | Nozzle Number - Color Code    | Pressure (psi) | Capacity 1 Nozzle (GPM) | US Gallons per Acre at 20 Inch Spacings |       |             |       |         |       |            |       |
|--------------------------------------------------------------------------------------------|-------------------------------|----------------|-------------------------|-----------------------------------------|-------|-------------|-------|---------|-------|------------|-------|
|                                                                                            |                               |                |                         | First Gear                              |       | Second Gear |       |         |       | Third Gear |       |
|                                                                                            |                               |                |                         | 2.5 MPH                                 | 3 MPH | 3.5 MPH     | 4 MPH | 4.5 MPH | 5 MPH | 5.5 MPH    | 6 MPH |
| 117-5834                                                                                   | XRC 11004 - VS 110° Red       | 20             | 0.28                    | 33.3                                    | 27.7  | 23.8        | 20.8  | 18.5    | 16.6  | 15.1       | 13.9  |
|                                                                                            |                               | 30             | 0.35                    | 41.6                                    | 34.7  | 29.7        | 26.0  | 23.1    | 20.8  | 18.9       | 17.3  |
|                                                                                            |                               | 40             | 0.40                    | 47.5                                    | 39.6  | 33.9        | 29.7  | 26.4    | 23.8  | 21.6       | 19.8  |
|                                                                                            |                               | 50             | 0.45                    | 53.5                                    | 44.6  | 38.2        | 33.4  | 29.7    | 26.7  | 24.3       | 22.3  |
|                                                                                            |                               | 60             | 0.49                    | 58.2                                    | 48.5  | 41.6        | 36.4  | 32.3    | 29.1  | 26.5       | 24.3  |
| 117-5835                                                                                   | XRC 11005 - VS 110° Brown     | 20             | 0.35                    | 41.6                                    | 34.7  | 29.7        | 26.0  | 23.1    | 20.8  | 18.9       | 17.3  |
|                                                                                            |                               | 30             | 0.43                    | 51.1                                    | 42.6  | 36.5        | 31.9  | 28.4    | 25.5  | 23.2       | 21.3  |
|                                                                                            |                               | 40             | 0.50                    | 59.4                                    | 49.5  | 42.4        | 37.1  | 33.0    | 29.7  | 27.0       | 24.8  |
|                                                                                            |                               | 50             | 0.56                    | 66.5                                    | 55.4  | 47.5        | 41.6  | 37.0    | 33.3  | 30.2       | 27.7  |
|                                                                                            |                               | 60             | 0.61                    | 72.5                                    | 60.4  | 51.8        | 45.3  | 40.3    | 36.2  | 32.9       | 30.2  |
| 117-5836                                                                                   | XRC 11006 - VP 110° Gray      | 20             | 0.42                    | 49.9                                    | 41.6  | 35.6        | 31.2  | 27.7    | 24.9  | 22.7       | 20.8  |
|                                                                                            |                               | 30             | 0.52                    | 61.8                                    | 51.5  | 44.1        | 38.6  | 34.3    | 30.9  | 28.1       | 25.7  |
|                                                                                            |                               | 40             | 0.60                    | 71.3                                    | 59.4  | 50.9        | 44.6  | 39.6    | 35.6  | 32.4       | 29.7  |
|                                                                                            |                               | 50             | 0.67                    | 79.6                                    | 66.3  | 56.9        | 49.7  | 44.2    | 39.8  | 36.2       | 33.2  |
|                                                                                            |                               | 60             | 0.73                    | 86.7                                    | 72.3  | 61.9        | 54.2  | 48.2    | 43.4  | 39.4       | 36.1  |
| 117-5837                                                                                   | XRC 11008 - VP 110° White     | 20             | 0.57                    | 67.7                                    | 56.4  | 48.4        | 42.3  | 37.6    | 33.9  | 30.8       | 28.2  |
|                                                                                            |                               | 30             | 0.69                    | 82.0                                    | 68.3  | 58.6        | 51.2  | 45.5    | 41.0  | 37.3       | 34.2  |
|                                                                                            |                               | 40             | 0.80                    | 95.0                                    | 79.2  | 67.9        | 59.4  | 52.8    | 47.5  | 43.2       | 39.6  |
|                                                                                            |                               | 50             | 0.89                    | 105.7                                   | 88.1  | 75.5        | 66.1  | 58.7    | 52.9  | 48.1       | 44.1  |
|                                                                                            |                               | 60             | 0.98                    | 116.4                                   | 97.0  | 83.2        | 72.8  | 64.7    | 58.2  | 52.9       | 48.5  |
| 117-5838                                                                                   | XRC 11010 - VP 110° Lt. Blue  | 20             | 0.71                    | 84.3                                    | 70.3  | 60.2        | 52.7  | 46.9    | 42.2  | 38.3       | 35.1  |
|                                                                                            |                               | 30             | 0.87                    | 103.4                                   | 86.1  | 73.8        | 64.6  | 57.4    | 51.7  | 47.0       | 43.1  |
|                                                                                            |                               | 40             | 1.00                    | 118.8                                   | 99.0  | 84.9        | 74.3  | 66.0    | 59.4  | 54.0       | 49.5  |
|                                                                                            |                               | 50             | 1.12                    | 133.1                                   | 110.9 | 95.0        | 83.2  | 73.9    | 66.5  | 60.5       | 55.4  |
|                                                                                            |                               | 60             | 1.22                    | 144.9                                   | 120.8 | 103.5       | 90.6  | 80.5    | 72.5  | 65.9       | 60.4  |
| 117-5839                                                                                   | XRC 11015 - VP 110° Lt. Green | 20             | 1.06                    | 125.9                                   | 104.9 | 89.9        | 78.7  | 70.0    | 63.0  | 57.2       | 52.5  |
|                                                                                            |                               | 30             | 1.30                    | 154.4                                   | 128.7 | 110.3       | 96.5  | 85.8    | 77.2  | 70.2       | 64.4  |
|                                                                                            |                               | 40             | 1.50                    | 178.2                                   | 148.5 | 127.3       | 111.4 | 99.0    | 89.1  | 81.0       | 74.3  |
|                                                                                            |                               | 50             | 1.68                    | 199.6                                   | 166.3 | 142.6       | 124.7 | 110.9   | 99.8  | 90.7       | 83.2  |
|                                                                                            |                               | 60             | 1.84                    | 218.6                                   | 182.2 | 156.1       | 136.6 | 121.4   | 109.3 | 99.4       | 91.1  |
| Note: Lower pressures produce larger droplets and help reduce mist under the covered boom. |                               |                |                         |                                         |       |             |       |         |       |            |       |

*Italicized gear ranges are applicable to Multi-Pro 1200 and 1250 Sprayers only.  
Speeds cited above can be achieved in low range on Workman 200 Spray Systems.*

## US Gallons per 1000 ft<sup>2</sup> Application Rates - Covered Booms

| Toro Part Number                                                                           | Nozzle Number<br>- Color Code | Pressure (psi) | Capacity 1 Nozzle (GPM) | US Gallons per 1000 ft² at 20 Inch Spacings |       |             |       |         |       |            |       |
|--------------------------------------------------------------------------------------------|-------------------------------|----------------|-------------------------|---------------------------------------------|-------|-------------|-------|---------|-------|------------|-------|
|                                                                                            |                               |                |                         | First Gear                                  |       | Second Gear |       |         |       | Third Gear |       |
|                                                                                            |                               |                |                         | 2.5 MPH                                     | 3 MPH | 3.5 MPH     | 4 MPH | 4.5 MPH | 5 MPH | 5.5 MPH    | 6 MPH |
| 117-5834                                                                                   | XRC 11004 - VS 110° Red       | 20             | 0.28                    | 0.76                                        | 0.63  | 0.54        | 0.48  | 0.42    | 0.38  | 0.35       | 0.32  |
|                                                                                            |                               | 30             | 0.35                    | 0.95                                        | 0.79  | 0.68        | 0.60  | 0.53    | 0.48  | 0.43       | 0.40  |
|                                                                                            |                               | 40             | 0.40                    | 1.09                                        | 0.91  | 0.78        | 0.68  | 0.60    | 0.54  | 0.49       | 0.45  |
|                                                                                            |                               | 50             | 0.45                    | 1.22                                        | 1.02  | 0.87        | 0.77  | 0.68    | 0.61  | 0.56       | 0.51  |
|                                                                                            |                               | 60             | 0.49                    | 1.33                                        | 1.11  | 0.95        | 0.83  | 0.74    | 0.67  | 0.61       | 0.56  |
| 117-5835                                                                                   | XRC 11005 - VS 110° Brown     | 20             | 0.35                    | 0.95                                        | 0.79  | 0.68        | 0.60  | 0.53    | 0.48  | 0.43       | 0.40  |
|                                                                                            |                               | 30             | 0.43                    | 1.17                                        | 0.97  | 0.84        | 0.73  | 0.65    | 0.58  | 0.53       | 0.49  |
|                                                                                            |                               | 40             | 0.50                    | 1.36                                        | 1.13  | 0.97        | 0.85  | 0.76    | 0.68  | 0.62       | 0.57  |
|                                                                                            |                               | 50             | 0.56                    | 1.52                                        | 1.27  | 1.09        | 0.95  | 0.85    | 0.76  | 0.69       | 0.63  |
|                                                                                            |                               | 60             | 0.61                    | 1.66                                        | 1.38  | 1.19        | 1.04  | 0.92    | 0.83  | 0.75       | 0.69  |
| 117-5836                                                                                   | XRC 11006 - VP 110° Gray      | 20             | 0.42                    | 1.14                                        | 0.95  | 0.82        | 0.71  | 0.63    | 0.57  | 0.52       | 0.48  |
|                                                                                            |                               | 30             | 0.52                    | 1.41                                        | 1.18  | 1.01        | 0.88  | 0.79    | 0.71  | 0.64       | 0.59  |
|                                                                                            |                               | 40             | 0.60                    | 1.63                                        | 1.36  | 1.17        | 1.02  | 0.91    | 0.82  | 0.74       | 0.68  |
|                                                                                            |                               | 50             | 0.67                    | 1.82                                        | 1.52  | 1.30        | 1.14  | 1.01    | 0.91  | 0.83       | 0.76  |
|                                                                                            |                               | 60             | 0.73                    | 1.99                                        | 1.65  | 1.42        | 1.24  | 1.10    | 0.99  | 0.90       | 0.83  |
| 117-5837                                                                                   | XRC 11008 - VP 110° White     | 20             | 0.57                    | 1.55                                        | 1.29  | 1.11        | 0.97  | 0.86    | 0.78  | 0.70       | 0.65  |
|                                                                                            |                               | 30             | 0.69                    | 1.88                                        | 1.56  | 1.34        | 1.17  | 1.04    | 0.94  | 0.85       | 0.78  |
|                                                                                            |                               | 40             | 0.80                    | 2.18                                        | 1.81  | 1.55        | 1.36  | 1.21    | 1.09  | 0.99       | 0.91  |
|                                                                                            |                               | 50             | 0.89                    | 2.42                                        | 2.02  | 1.73        | 1.51  | 1.34    | 1.21  | 1.10       | 1.01  |
|                                                                                            |                               | 60             | 0.98                    | 2.67                                        | 2.22  | 1.90        | 1.67  | 1.48    | 1.33  | 1.21       | 1.11  |
| 117-5838                                                                                   | XRC 11010 - VP 110° Lt. Blue  | 20             | 0.71                    | 1.93                                        | 1.61  | 1.38        | 1.21  | 1.07    | 0.97  | 0.88       | 0.80  |
|                                                                                            |                               | 30             | 0.87                    | 2.37                                        | 1.97  | 1.69        | 1.48  | 1.31    | 1.18  | 1.08       | 0.99  |
|                                                                                            |                               | 40             | 1.00                    | 2.72                                        | 2.27  | 1.94        | 1.70  | 1.51    | 1.36  | 1.24       | 1.13  |
|                                                                                            |                               | 50             | 1.12                    | 3.05                                        | 2.54  | 2.18        | 1.90  | 1.69    | 1.52  | 1.38       | 1.27  |
|                                                                                            |                               | 60             | 1.22                    | 3.32                                        | 2.77  | 2.37        | 2.07  | 1.84    | 1.66  | 1.51       | 1.38  |
| 117-5839                                                                                   | XRC 11015 - VP 110° Lt. Green | 20             | 1.06                    | 2.88                                        | 2.40  | 2.06        | 1.80  | 1.60    | 1.44  | 1.31       | 1.20  |
|                                                                                            |                               | 30             | 1.30                    | 3.54                                        | 2.95  | 2.53        | 2.21  | 1.96    | 1.77  | 1.61       | 1.47  |
|                                                                                            |                               | 40             | 1.50                    | 4.08                                        | 3.40  | 2.91        | 2.55  | 2.27    | 2.04  | 1.85       | 1.70  |
|                                                                                            |                               | 50             | 1.68                    | 4.57                                        | 3.81  | 3.26        | 2.86  | 2.54    | 2.28  | 2.08       | 1.90  |
|                                                                                            |                               | 60             | 1.84                    | 5.00                                        | 4.17  | 3.57        | 3.13  | 2.78    | 2.50  | 2.27       | 2.09  |
| Note: Lower pressures produce larger droplets and help reduce mist under the covered boom. |                               |                |                         |                                             |       |             |       |         |       |            |       |

*Italicized gear ranges are applicable to Multi-Pro 1200 and 1250 Sprayers only.  
Speeds cited above can be achieved in low range on Workman 200 Spray Systems.*

## Liters per Hectare Application Rates - Covered Booms

| Toro Part Number                                                                           | Nozzle Number<br>- Color Code | Pressure (Bar) | Capacity 1 Nozzle (LPM) | Liters per Hectare at 50 Centimeter Spacings |          |             |          |          |          |            |          |
|--------------------------------------------------------------------------------------------|-------------------------------|----------------|-------------------------|----------------------------------------------|----------|-------------|----------|----------|----------|------------|----------|
|                                                                                            |                               |                |                         | First Gear                                   |          | Second Gear |          |          |          | Third Gear |          |
|                                                                                            |                               |                |                         | 4.0 KmPH                                     | 4.8 KmPH | 5.6 KmPH    | 6.4 KmPH | 7.2 KmPH | 8.0 KmPH | 8.8 KmPH   | 9.7 KmPH |
| 117-5834                                                                                   | XRC 11004 - VS 110° Red       | 1.38           | 1.06                    | 318                                          | 265      | 227         | 199      | 177      | 159      | 145        | 131      |
|                                                                                            |                               | 2.07           | 1.32                    | 396                                          | 330      | 283         | 248      | 220      | 198      | 180        | 163      |
|                                                                                            |                               | 2.76           | 1.51                    | 453                                          | 378      | 324         | 283      | 252      | 227      | 206        | 187      |
|                                                                                            |                               | 3.45           | 1.70                    | 510                                          | 425      | 364         | 319      | 283      | 255      | 232        | 210      |
|                                                                                            |                               | 4.14           | 1.85                    | 555                                          | 463      | 396         | 347      | 308      | 278      | 252        | 229      |
| 117-5835                                                                                   | XRC 11005 - VS 110° Brown     | 1.38           | 1.32                    | 396                                          | 330      | 283         | 248      | 220      | 198      | 180        | 163      |
|                                                                                            |                               | 2.07           | 1.63                    | 489                                          | 408      | 349         | 306      | 272      | 245      | 222        | 202      |
|                                                                                            |                               | 2.76           | 1.89                    | 567                                          | 473      | 405         | 354      | 315      | 284      | 258        | 234      |
|                                                                                            |                               | 3.45           | 2.12                    | 636                                          | 530      | 454         | 398      | 353      | 318      | 289        | 262      |
|                                                                                            |                               | 4.14           | 2.31                    | 693                                          | 578      | 495         | 433      | 385      | 347      | 315        | 286      |
| 117-5836                                                                                   | XRC 11006 - VP 110° Gray      | 1.38           | 1.59                    | 477                                          | 398      | 341         | 298      | 265      | 239      | 217        | 197      |
|                                                                                            |                               | 2.07           | 1.97                    | 591                                          | 493      | 422         | 369      | 328      | 296      | 269        | 244      |
|                                                                                            |                               | 2.76           | 2.27                    | 681                                          | 568      | 486         | 426      | 378      | 341      | 310        | 281      |
|                                                                                            |                               | 3.45           | 2.54                    | 762                                          | 635      | 544         | 476      | 423      | 381      | 346        | 314      |
|                                                                                            |                               | 4.14           | 2.76                    | 828                                          | 690      | 591         | 518      | 460      | 414      | 376        | 341      |
| 117-5837                                                                                   | XRC 11008 - VP 110° White     | 1.38           | 2.16                    | 648                                          | 540      | 463         | 405      | 360      | 324      | 295        | 267      |
|                                                                                            |                               | 2.07           | 2.61                    | 783                                          | 653      | 559         | 489      | 435      | 392      | 356        | 323      |
|                                                                                            |                               | 2.76           | 3.03                    | 909                                          | 758      | 649         | 568      | 505      | 455      | 413        | 375      |
|                                                                                            |                               | 3.45           | 3.37                    | 1011                                         | 843      | 722         | 632      | 562      | 506      | 460        | 417      |
|                                                                                            |                               | 4.14           | 3.71                    | 1113                                         | 928      | 795         | 696      | 618      | 557      | 506        | 459      |
| 117-5838                                                                                   | XRC 11010 - VP 110° Lt. Blue  | 1.38           | 2.69                    | 807                                          | 673      | 576         | 504      | 448      | 404      | 367        | 333      |
|                                                                                            |                               | 2.07           | 3.29                    | 987                                          | 823      | 705         | 617      | 548      | 494      | 449        | 407      |
|                                                                                            |                               | 2.76           | 3.79                    | 1137                                         | 948      | 812         | 711      | 632      | 569      | 517        | 469      |
|                                                                                            |                               | 3.45           | 4.24                    | 1272                                         | 1060     | 909         | 795      | 707      | 636      | 578        | 525      |
|                                                                                            |                               | 4.14           | 4.62                    | 1386                                         | 1155     | 990         | 866      | 770      | 693      | 630        | 572      |
| 117-5839                                                                                   | XRC 11015 - VP 110° Lt. Green | 1.38           | 4.01                    | 1203                                         | 1003     | 859         | 752      | 668      | 602      | 547        | 496      |
|                                                                                            |                               | 2.07           | 4.92                    | 1476                                         | 1230     | 1054        | 923      | 820      | 738      | 671        | 609      |
|                                                                                            |                               | 2.76           | 5.68                    | 1704                                         | 1420     | 1217        | 1065     | 947      | 852      | 775        | 703      |
|                                                                                            |                               | 3.45           | 6.36                    | 1908                                         | 1590     | 1363        | 1193     | 1060     | 954      | 867        | 787      |
|                                                                                            |                               | 4.14           | 6.96                    | 2088                                         | 1740     | 1491        | 1305     | 1160     | 1044     | 949        | 861      |
| Note: Lower pressures produce larger droplets and help reduce mist under the covered boom. |                               |                |                         |                                              |          |             |          |          |          |            |          |

*Italicized gear ranges are applicable to Multi-Pro 1200 and 1250 Sprayers only.  
Speeds cited above can be achieved in low range on Workman 200 Spray Systems.*

# Covered Walking Booms

## US Gallons per Acre Application Rates - Covered Walking Booms

| Toro Part Number | Nozzle Number - Color Code    | Pressure (psi)* | Capacity 1 Nozzle (GPM) | US Gallons per Acre at 20 Inch Spacings |         |         |         |         |         |  |
|------------------|-------------------------------|-----------------|-------------------------|-----------------------------------------|---------|---------|---------|---------|---------|--|
|                  |                               |                 |                         | Walking Speed                           |         |         |         |         |         |  |
|                  |                               |                 |                         | 1.0 MPH                                 | 1.5 MPH | 2.0 MPH | 2.5 MPH | 3.0 MPH | 3.5 MPH |  |
| 117-5834         | XRC 11004 - VS 110° Red       | 15              | 0.32                    | 95.0                                    | 63.4    | 47.5    | 38.0    | 31.7    | 27.2    |  |
|                  |                               | 20              | 0.35                    | 104.0                                   | 69.3    | 52.0    | 41.6    | 34.7    | 29.7    |  |
|                  |                               | 25              | 0.40                    | 118.8                                   | 79.2    | 59.4    | 47.5    | 39.6    | 33.9    |  |
|                  |                               | 30              | 0.45                    | 133.7                                   | 89.1    | 66.8    | 53.5    | 44.6    | 38.2    |  |
|                  |                               | 35              | 0.49                    | 145.5                                   | 97.0    | 72.8    | 58.2    | 48.5    | 41.6    |  |
|                  |                               | 40              | 0.55                    | 163.4                                   | 108.9   | 81.7    | 65.3    | 54.5    | 46.7    |  |
| 117-5835         | XRC 11005 - VS 110° Brown     | 15              | 0.40                    | 118.8                                   | 79.2    | 59.4    | 47.5    | 39.6    | 33.9    |  |
|                  |                               | 20              | 0.43                    | 127.7                                   | 85.1    | 63.9    | 51.1    | 42.6    | 36.5    |  |
|                  |                               | 25              | 0.50                    | 148.5                                   | 99.0    | 74.3    | 59.4    | 49.5    | 42.4    |  |
|                  |                               | 30              | 0.56                    | 166.3                                   | 110.9   | 83.2    | 66.5    | 55.4    | 47.5    |  |
|                  |                               | 35              | 0.61                    | 181.2                                   | 120.8   | 90.6    | 72.5    | 60.4    | 51.8    |  |
|                  |                               | 40              | 0.68                    | 202.0                                   | 134.6   | 101.0   | 80.8    | 67.3    | 57.7    |  |
| 117-5836         | XRC 11006 - VP 110° Gray      | 15              | 0.47                    | 139.6                                   | 93.1    | 69.8    | 55.8    | 46.5    | 39.9    |  |
|                  |                               | 20              | 0.52                    | 154.4                                   | 103.0   | 77.2    | 61.8    | 51.5    | 44.1    |  |
|                  |                               | 25              | 0.60                    | 178.2                                   | 118.8   | 89.1    | 71.3    | 59.4    | 50.9    |  |
|                  |                               | 30              | 0.67                    | 199.0                                   | 132.7   | 99.5    | 79.6    | 66.3    | 56.9    |  |
|                  |                               | 35              | 0.73                    | 216.8                                   | 144.5   | 108.4   | 86.7    | 72.3    | 61.9    |  |
|                  |                               | 40              | 0.82                    | 243.5                                   | 162.4   | 121.8   | 97.4    | 81.2    | 69.6    |  |
| 117-5837         | XRC 11008 - VP 110° White     | 15              | 0.63                    | 187.1                                   | 124.7   | 93.6    | 74.8    | 62.4    | 53.5    |  |
|                  |                               | 20              | 0.69                    | 204.9                                   | 136.6   | 102.5   | 82.0    | 68.3    | 58.6    |  |
|                  |                               | 25              | 0.80                    | 237.6                                   | 158.4   | 118.8   | 95.0    | 79.2    | 67.9    |  |
|                  |                               | 30              | 0.89                    | 264.3                                   | 176.2   | 132.2   | 105.7   | 88.1    | 75.5    |  |
|                  |                               | 35              | 0.98                    | 291.1                                   | 194.0   | 145.5   | 116.4   | 97.0    | 83.2    |  |
|                  |                               | 40              | 1.10                    | 326.7                                   | 217.8   | 163.4   | 130.7   | 108.9   | 93.3    |  |
| 117-5838         | XRC 11010 - VP 110° Lt. Blue  | 15              | 0.79                    | 234.6                                   | 156.4   | 117.3   | 93.9    | 78.2    | 67.0    |  |
|                  |                               | 20              | 0.87                    | 258.4                                   | 172.3   | 129.2   | 103.4   | 86.1    | 73.8    |  |
|                  |                               | 25              | 1.00                    | 297.0                                   | 198.0   | 148.5   | 118.8   | 99.0    | 84.9    |  |
|                  |                               | 30              | 1.12                    | 332.6                                   | 221.8   | 166.3   | 133.1   | 110.9   | 95.0    |  |
|                  |                               | 35              | 1.22                    | 362.3                                   | 241.6   | 181.2   | 144.9   | 120.8   | 103.5   |  |
|                  |                               | 40              | 1.37                    | 406.9                                   | 271.3   | 203.4   | 162.8   | 135.6   | 116.3   |  |
| 117-5839         | XRC 11015 - VP 110° Lt. Green | 15              | 1.19                    | 353.4                                   | 235.6   | 176.7   | 141.4   | 117.8   | 101.0   |  |
|                  |                               | 20              | 1.30                    | 386.1                                   | 257.4   | 193.1   | 154.4   | 128.7   | 110.3   |  |
|                  |                               | 25              | 1.50                    | 445.5                                   | 297.0   | 222.8   | 178.2   | 148.5   | 127.3   |  |
|                  |                               | 30              | 1.68                    | 499.0                                   | 332.6   | 249.5   | 199.6   | 166.3   | 142.6   |  |
|                  |                               | 35              | 1.84                    | 546.5                                   | 364.3   | 273.2   | 218.6   | 182.2   | 156.1   |  |

|                                                                         |  |    |      |       |       |       |       |       |       |  |
|-------------------------------------------------------------------------|--|----|------|-------|-------|-------|-------|-------|-------|--|
|                                                                         |  | 40 | 2.05 | 608.9 | 405.9 | 304.4 | 243.5 | 203.0 | 174.0 |  |
| *This is the pressure at the nozzle. System pressure may be set higher. |  |    |      |       |       |       |       |       |       |  |

PROTOTYPE

# US Gallons per 1000 ft² Application Rates - Covered Walking Booms

| Toro Part Number                                                        | Nozzle Number - Color Code    | Pressure (psi)* | Capacity 1 Nozzle (GPM) | US Gallons per 1000 ft² at 20 Inch Spacings |         |         |         |         |         |  |
|-------------------------------------------------------------------------|-------------------------------|-----------------|-------------------------|---------------------------------------------|---------|---------|---------|---------|---------|--|
|                                                                         |                               |                 |                         | Walking Speed                               |         |         |         |         |         |  |
|                                                                         |                               |                 |                         | 1.0 MPH                                     | 1.5 MPH | 2.0 MPH | 2.5 MPH | 3.0 MPH | 3.5 MPH |  |
| 117-5834                                                                | XRC 11004 - VS 110° Red       | 15              | 0.32                    | 2.18                                        | 1.45    | 1.09    | 0.87    | 0.73    | 0.62    |  |
|                                                                         |                               | 20              | 0.35                    | 2.38                                        | 1.59    | 1.19    | 0.95    | 0.79    | 0.68    |  |
|                                                                         |                               | 25              | 0.40                    | 2.72                                        | 1.81    | 1.36    | 1.09    | 0.91    | 0.78    |  |
|                                                                         |                               | 30              | 0.45                    | 3.06                                        | 2.04    | 1.53    | 1.22    | 1.02    | 0.87    |  |
|                                                                         |                               | 35              | 0.49                    | 3.33                                        | 2.22    | 1.67    | 1.33    | 1.11    | 0.95    |  |
|                                                                         |                               | 40              | 0.55                    | 3.74                                        | 2.49    | 1.87    | 1.50    | 1.25    | 1.07    |  |
| 117-5835                                                                | XRC 11005 - VS 110° Brown     | 15              | 0.40                    | 2.72                                        | 1.81    | 1.36    | 1.09    | 0.91    | 0.78    |  |
|                                                                         |                               | 20              | 0.43                    | 2.92                                        | 1.95    | 1.46    | 1.17    | 0.97    | 0.84    |  |
|                                                                         |                               | 25              | 0.50                    | 3.40                                        | 2.27    | 1.70    | 1.36    | 1.13    | 0.97    |  |
|                                                                         |                               | 30              | 0.56                    | 3.81                                        | 2.54    | 1.90    | 1.52    | 1.27    | 1.09    |  |
|                                                                         |                               | 35              | 0.61                    | 4.15                                        | 2.77    | 2.07    | 1.66    | 1.38    | 1.19    |  |
|                                                                         |                               | 40              | 0.68                    | 4.62                                        | 3.08    | 2.31    | 1.85    | 1.54    | 1.32    |  |
| 117-5836                                                                | XRC 11006 - VP 110° Gray      | 15              | 0.47                    | 3.20                                        | 2.13    | 1.60    | 1.28    | 1.07    | 0.91    |  |
|                                                                         |                               | 20              | 0.52                    | 3.54                                        | 2.36    | 1.77    | 1.41    | 1.18    | 1.01    |  |
|                                                                         |                               | 25              | 0.60                    | 4.08                                        | 2.72    | 2.04    | 1.63    | 1.36    | 1.17    |  |
|                                                                         |                               | 30              | 0.67                    | 4.56                                        | 3.04    | 2.28    | 1.82    | 1.52    | 1.30    |  |
|                                                                         |                               | 35              | 0.73                    | 4.96                                        | 3.31    | 2.48    | 1.99    | 1.65    | 1.42    |  |
|                                                                         |                               | 40              | 0.82                    | 5.58                                        | 3.72    | 2.79    | 2.23    | 1.86    | 1.59    |  |
| 117-5837                                                                | XRC 11008 - VP 110° White     | 15              | 0.63                    | 4.28                                        | 2.86    | 2.14    | 1.71    | 1.43    | 1.22    |  |
|                                                                         |                               | 20              | 0.69                    | 4.69                                        | 3.13    | 2.35    | 1.88    | 1.56    | 1.34    |  |
|                                                                         |                               | 25              | 0.80                    | 5.44                                        | 3.63    | 2.72    | 2.18    | 1.81    | 1.55    |  |
|                                                                         |                               | 30              | 0.89                    | 6.05                                        | 4.03    | 3.03    | 2.42    | 2.02    | 1.73    |  |
|                                                                         |                               | 35              | 0.98                    | 6.66                                        | 4.44    | 3.33    | 2.67    | 2.22    | 1.90    |  |
|                                                                         |                               | 40              | 1.10                    | 7.48                                        | 4.99    | 3.74    | 2.99    | 2.49    | 2.14    |  |
| 117-5838                                                                | XRC 11010 - VP 110° Lt. Blue  | 15              | 0.79                    | 5.37                                        | 3.58    | 2.69    | 2.15    | 1.79    | 1.53    |  |
|                                                                         |                               | 20              | 0.87                    | 5.92                                        | 3.94    | 2.96    | 2.37    | 1.97    | 1.69    |  |
|                                                                         |                               | 25              | 1.00                    | 6.80                                        | 4.53    | 3.40    | 2.72    | 2.27    | 1.94    |  |
|                                                                         |                               | 30              | 1.12                    | 7.62                                        | 5.08    | 3.81    | 3.05    | 2.54    | 2.18    |  |
|                                                                         |                               | 35              | 1.22                    | 8.30                                        | 5.53    | 4.15    | 3.32    | 2.77    | 2.37    |  |
|                                                                         |                               | 40              | 1.37                    | 9.32                                        | 6.21    | 4.66    | 3.73    | 3.11    | 2.66    |  |
| 117-5839                                                                | XRC 11015 - VP 110° Lt. Green | 15              | 1.19                    | 8.09                                        | 5.39    | 4.05    | 3.24    | 2.70    | 2.31    |  |
|                                                                         |                               | 20              | 1.30                    | 8.84                                        | 5.89    | 4.42    | 3.54    | 2.95    | 2.53    |  |
|                                                                         |                               | 25              | 1.50                    | 10.20                                       | 6.80    | 5.10    | 4.08    | 3.40    | 2.91    |  |
|                                                                         |                               | 30              | 1.68                    | 11.42                                       | 7.62    | 5.71    | 4.57    | 3.81    | 3.26    |  |
|                                                                         |                               | 35              | 1.84                    | 12.51                                       | 8.34    | 6.26    | 5.00    | 4.17    | 3.57    |  |
|                                                                         |                               | 40              | 2.05                    | 13.94                                       | 9.29    | 6.97    | 5.58    | 4.65    | 3.98    |  |
| *This is the pressure at the nozzle. System pressure may be set higher. |                               |                 |                         |                                             |         |         |         |         |         |  |

## Liters per Hectare Application Rates - Covered Walking Booms

| Toro Part Number | Nozzle Number - Color Code    | Pressure (Bar)* | Capacity 1 Nozzle (LPM) | Liters per Hectare at 50 Centimeter Spacings |          |          |          |          |          |  |
|------------------|-------------------------------|-----------------|-------------------------|----------------------------------------------|----------|----------|----------|----------|----------|--|
|                  |                               |                 |                         | Walking Speed                                |          |          |          |          |          |  |
|                  |                               |                 |                         | 1.6 KmPH                                     | 2.4 KmPH | 3.2 KmPH | 4.0 KmPH | 4.8 KmPH | 5.6 KmPH |  |
| 117-5834         | XRC 11004 - VS 110° Red       | 1.04            | 1.21                    | 908                                          | 605      | 454      | 363      | 303      | 259      |  |
|                  |                               | 1.38            | 1.32                    | 990                                          | 660      | 495      | 396      | 330      | 283      |  |
|                  |                               | 1.73            | 1.51                    | 1133                                         | 755      | 566      | 453      | 378      | 324      |  |
|                  |                               | 2.07            | 1.70                    | 1275                                         | 850      | 638      | 510      | 425      | 364      |  |
|                  |                               | 2.42            | 1.85                    | 1388                                         | 925      | 694      | 555      | 463      | 396      |  |
|                  |                               | 2.76            | 2.08                    | 1560                                         | 1040     | 780      | 624      | 520      | 446      |  |
| 117-5835         | XRC 11005 - VS 110° Brown     | 1.04            | 1.51                    | 1133                                         | 755      | 566      | 453      | 378      | 324      |  |
|                  |                               | 1.38            | 1.63                    | 1223                                         | 815      | 611      | 489      | 408      | 349      |  |
|                  |                               | 1.73            | 1.89                    | 1418                                         | 945      | 709      | 567      | 473      | 405      |  |
|                  |                               | 2.07            | 2.12                    | 1590                                         | 1060     | 795      | 636      | 530      | 454      |  |
|                  |                               | 2.42            | 2.31                    | 1733                                         | 1155     | 866      | 693      | 578      | 495      |  |
|                  |                               | 2.76            | 2.57                    | 1928                                         | 1285     | 964      | 771      | 643      | 551      |  |
| 117-5836         | XRC 11006 - VP 110° Gray      | 1.04            | 1.78                    | 1335                                         | 890      | 668      | 534      | 445      | 381      |  |
|                  |                               | 1.38            | 1.97                    | 1478                                         | 985      | 739      | 591      | 493      | 422      |  |
|                  |                               | 1.73            | 2.27                    | 1703                                         | 1135     | 851      | 681      | 568      | 486      |  |
|                  |                               | 2.07            | 2.54                    | 1905                                         | 1270     | 953      | 762      | 635      | 544      |  |
|                  |                               | 2.42            | 2.76                    | 2070                                         | 1380     | 1035     | 828      | 690      | 591      |  |
|                  |                               | 2.76            | 3.10                    | 2325                                         | 1550     | 1163     | 930      | 775      | 664      |  |
| 117-5837         | XRC 11008 - VP 110° White     | 1.04            | 2.38                    | 1785                                         | 1190     | 893      | 714      | 595      | 510      |  |
|                  |                               | 1.38            | 2.61                    | 1958                                         | 1305     | 979      | 783      | 653      | 559      |  |
|                  |                               | 1.73            | 3.03                    | 2273                                         | 1515     | 1136     | 909      | 758      | 649      |  |
|                  |                               | 2.07            | 3.37                    | 2528                                         | 1685     | 1264     | 1011     | 843      | 722      |  |
|                  |                               | 2.42            | 3.71                    | 2783                                         | 1855     | 1391     | 1113     | 928      | 795      |  |
|                  |                               | 2.76            | 4.16                    | 3120                                         | 2080     | 1560     | 1248     | 1040     | 891      |  |
| 117-5838         | XRC 11010 - VP 110° Lt. Blue  | 1.04            | 2.99                    | 2243                                         | 1495     | 1121     | 897      | 748      | 641      |  |
|                  |                               | 1.38            | 3.29                    | 2468                                         | 1645     | 1234     | 987      | 823      | 705      |  |
|                  |                               | 1.73            | 3.79                    | 2843                                         | 1895     | 1421     | 1137     | 948      | 812      |  |
|                  |                               | 2.07            | 4.24                    | 3180                                         | 2120     | 1590     | 1272     | 1060     | 909      |  |
|                  |                               | 2.42            | 4.62                    | 3465                                         | 2310     | 1733     | 1386     | 1155     | 990      |  |
|                  |                               | 2.76            | 5.19                    | 3893                                         | 2595     | 1946     | 1557     | 1298     | 1112     |  |
| 117-5839         | XRC 11015 - VP 110° Lt. Green | 1.04            | 4.50                    | 3375                                         | 2250     | 1688     | 1350     | 1125     | 964      |  |
|                  |                               | 1.38            | 4.92                    | 3690                                         | 2460     | 1845     | 1476     | 1230     | 1054     |  |
|                  |                               | 1.73            | 5.68                    | 4260                                         | 2840     | 2130     | 1704     | 1420     | 1217     |  |
|                  |                               | 2.07            | 6.36                    | 4770                                         | 3180     | 2385     | 1908     | 1590     | 1363     |  |
|                  |                               | 2.42            | 6.96                    | 5220                                         | 3480     | 2610     | 2088     | 1740     | 1491     |  |
|                  |                               | 2.76            | 7.75                    | 5813                                         | 3875     | 2906     | 2325     | 1938     | 1661     |  |

\*This is the pressure at the nozzle. System pressure may be set higher.

# Calculating Application Rates

Use the following formulas to verify application rates or to determine new application rates. The formulas are divided by application rate units.

$$\text{US Gallons per Acre} = \frac{(5,940 \times \text{GPM per Nozzle})}{(\text{MPH} \times 20^*)}$$

$$\text{US Gallons per 1000 ft}^2 = \frac{(136 \times \text{GPM per Nozzle})}{(\text{MPH} \times 20^*)}$$

\* Toro nozzle spacing is 20 inches

$$\text{Speed (MPH)} = \frac{(\text{Distance (ft)} \times 60)}{(\text{Time (seconds)} \times 88)}$$

$$\text{Liters per Hectare} = \frac{(60,000 \times \text{Liters per minute})}{(\text{KmPH} \times 50^*)}$$

\* Toro nozzle spacing is 50 centimeters

$$\text{Speed (KmPH)} = \frac{(\text{Distance (m)} \times 36)}{(\text{Time (seconds)})}$$

|                                         |
|-----------------------------------------|
| US Gallons X 0.83267 = Imperial Gallons |
| US Gallons X 8.34 = Pounds (Water)      |

## Acre Conversions

|                                                  |
|--------------------------------------------------|
| 1 Acre = 43,560 ft <sup>2</sup>                  |
| 1 square meter = 10.764 ft <sup>2</sup>          |
| 1 hectare = 2.471 acres or 10,000 m <sup>2</sup> |

## Length Conversions

|                                             |
|---------------------------------------------|
| 1 millimeter (mm) = 0.039 in                |
| 1 centimeter (cm) = 0.393 in                |
| 1 meter (m) = 3.281 in                      |
| 1 kilometer (km) = 0.621 mile               |
| 1 inch = 25.4 millimeters; 2.54 centimeters |
| 1 mile = 1.609 kilometers                   |

## Pressure Conversions

|                   |
|-------------------|
| 1 psi = 0.069 Bar |
| 1 Bar = 14.5 psi  |

# Unit Definitions and Conversions

| Units                       | Definition                           |
|-----------------------------|--------------------------------------|
| GPM                         | US Gallons per minute                |
| L/min                       | Liters per minute                    |
| dL/min                      | Deciliters per minute                |
| psi                         | Pounds per square inch               |
| Bar                         | Bar                                  |
| GPA                         | US Gallons per acre                  |
| L/ha                        | Liters per hectare                   |
| mL/ha                       | Milliliters per hectare              |
| Gallons/1000ft <sup>2</sup> | US Gallons per 1,000 ft <sup>2</sup> |
| mm                          | Millimeter                           |
| cm                          | Centimeter                           |
| MPH                         | Miles per hour                       |
| km                          | Kilometer                            |
| KmPH                        | Kilometers per hour                  |

## Liquid Conversions

|                                 |
|---------------------------------|
| US Gallons X 128 = Fluid Ounces |
| US Gallons X 3.785 = Liters     |

# Calculating Nozzle Capacity

## Calculating in US Gallons per Acre or US Gallons per 1000 ft<sup>2</sup>

To calculate the nozzle capacity you need to know the following:

- The recommended application rate for material being used in US gallons per acre or per 1000 square feet.
- The preferred vehicle speed in miles per hour.
- The nozzle spacing along boom (20 inches).

With this information you can calculate the volume per minute (or flow rate) for each nozzle using the following formula.

### GPA Example:

$$\text{GPM per nozzle} = \frac{(\text{GPA} \times \text{MPH} \times 20^* \text{ Inches})}{5,940}$$

*\* Toro nozzle spacing is 20 inches*

### US Gallons per Acre Formula

Application Rate (AR)= 45 US Gallons per Acre  
Vehicle Speed (VS)= 4 MPH Nozzle Spacing (NS)= 20 inches

$$\frac{(\text{AR} \times \text{VS} \times \text{NS})}{5,940} = \frac{(45 \times 4 \times 20)}{5,940} = 0.61 \text{ GPM per nozzle}$$

With 0.61 GPM and recommended pressure of 30-50 psi select the gray nozzle with Toro part number 95-9224.

### U.S. Gallons per 1000 ft<sup>2</sup> Example:

$$\text{GPM per nozzle} = \frac{(\text{Gallons per 1000 ft}^2 \times \text{MPH} \times 20^* \text{ Inches})}{136}$$

*\* Toro nozzle spacing is 20 inches*

### U.S. Gallons per 1000 ft<sup>2</sup> Formula

Application Rate (AR)= 1 U.S. Gallons per 1000 ft<sup>2</sup>  
Vehicle Speed (VS)= 4 MPH Nozzle Spacing (NS)= 20 inches

$$\frac{(\text{AR} \times \text{VS} \times \text{NS})}{136} = \frac{(1 \times 4 \times 20)}{136} = 0.59 \text{ GPM per nozzle}$$

With 0.59 GPM and approximate pressure of 30-50 psi the nozzle with Toro part number 95-9224 would be selected.

## Calculating in Liters per Hectare

To calculate the nozzle capacity you need to know the following:

- The recommended application rate for material being used in liters per hectare.
- The preferred vehicle speed in kilometers per hour.
- The nozzle spacing along boom (50 centimeters).

With this information you can calculate the volume per minute (or flow rate) for each nozzle using the following formula.

### L/ha Example:

$$\text{Liters a Minute per nozzle} = \frac{(\text{Liters per ha} \times \text{KmPH} \times 50^* \text{ cm})}{60,000}$$

*\* Toro nozzle spacing is 50 centimeters*

### US Gallons per Acre Formula

Application Rate (AR)= 910 Liters per Hectare  
Vehicle Speed (VS)= 5 KmPH Nozzle Spacing (NS)= 50 centimeters

$$\frac{(\text{AR} \times \text{VS} \times \text{NS})}{60,000} = \frac{(910 \times 5 \times 50)}{60,000} = 3.79 \text{ Liters a minute per nozzle}$$

Use L/minute and Pressure to select an appropriate nozzle from nozzle selection tables in the following section.

With 3.79 L/minute and recommended pressure of 2.7 Bar the nozzle with Toro part number 95-9188 would be selected.

**Notes:**

*PROTOTYPE*

**Notes:**

*PROTOTYPE*



**Count on it.**

*PROTOTYPE*