



NEPTUNE®

FLAT EMITTER DRIPLINE

From seasonal row crops, to more permanent subsurface applications, Neptune's broad product offering fits many grower's needs. The exceptional durability of the tubing materials makes installation and retrieval easier and extends the useful life of Neptune. The molded emitter in the flat emitter dripline resists plugging, offering greater durability even in the most demanding settings. With a wide variety of available flow rates and wall thicknesses, Neptune has the perfect product for your application.

FEATURES & BENEFITS

Highly Resistant to Plugging: Molded emitters stand up to challenging water & organic fertilizers

Ultra High Strength & Durability: Strength and flexibility make for easy installation & removal, saving on time and labor, and significantly reducing chances of damage

Blue Stripe of Toro Quality: Install blue stripe up for proper outlet placement

Precision Performance: Excellent $C_v \leq 3\%$

Available Flow Rates (gph): Nominal 0.16, 0.25, 0.30, 0.47, & 0.75

Available Wall Thicknesses (mil): 6, 8, 10, 13, 15, 18 & 24

Available Internal Diameters: 5/8" & 7/8"

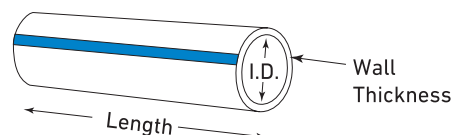
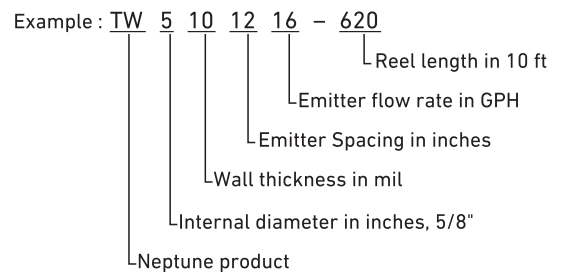
Compatible with all Toro Pro Loc™ tape fittings

Operating pressure between 6-30 PSI, depending on ID & wall thickness

120 mesh filtration required



PART NUMBERING SYSTEM



Note: Install Neptune with blue stripe up

Available in 6, 8, 10, 13, 15, 18 and 24 mil

| Emitter Flow Part Number | Outlet Spacing | | Individual Emitter Flow Rate | | | | | Q-100 | | | | |
|--------------------------|----------------|----|------------------------------|----------|------------|-----------|---------|--------------|----------|---------------|-----------|---------|
| | | | gph | | lph | | | gpm / 100 ft | | lph / 1 meter | | |
| | in | cm | @ 8 PSI | @ 10 PSI | @ 0.55 bar | @ 0.7 bar | @ 1 bar | @ 8 PSI | @ 10 PSI | @ 0.55 bar | @ 0.7 bar | @ 1 bar |
| 0.16 GPH @ 8 PSI | | | | | | | | | | | | |
| TWXxx0816 | 8" | 20 | 0.16 | 0.18 | 0.60 | 0.67 | 0.80 | 0.40 | 0.44 | 2.94 | 3.30 | 3.94 |
| TWXxx1216 | 12" | 30 | 0.16 | 0.18 | 0.60 | 0.67 | 0.80 | 0.26 | 0.29 | 1.96 | 2.20 | 2.62 |
| TWXxx1416 | 14" | 35 | 0.16 | 0.18 | 0.60 | 0.67 | 0.80 | 0.23 | 0.25 | 1.68 | 1.88 | 2.25 |
| TWXxx1616 | 16" | 40 | 0.16 | 0.18 | 0.60 | 0.67 | 0.80 | 0.20 | 0.22 | 1.47 | 1.65 | 1.97 |
| TWXxx1816 | 18" | 45 | 0.16 | 0.18 | 0.60 | 0.67 | 0.80 | 0.18 | 0.20 | 1.31 | 1.47 | 1.75 |
| TWXxx2016 | 20" | 50 | 0.16 | 0.18 | 0.60 | 0.67 | 0.80 | 0.16 | 0.18 | 1.18 | 1.32 | 1.57 |
| TWXxx2416 | 24" | 60 | 0.16 | 0.18 | 0.60 | 0.67 | 0.80 | 0.13 | 0.15 | 0.98 | 1.10 | 1.31 |
| 0.25 GPH @ 8 PSI | | | | | | | | | | | | |
| TWXxx0825 | 8" | 20 | 0.25 | 0.29 | 0.95 | 1.08 | 1.30 | 0.64 | 0.71 | 4.66 | 5.31 | 6.40 |
| TWXxx1225 | 12" | 30 | 0.25 | 0.29 | 0.95 | 1.08 | 1.30 | 0.42 | 0.47 | 3.10 | 3.54 | 4.27 |
| TWXxx1425 | 14" | 35 | 0.25 | 0.29 | 0.95 | 1.08 | 1.30 | 0.36 | 0.41 | 2.66 | 3.03 | 3.66 |
| TWXxx1625 | 16" | 40 | 0.25 | 0.29 | 0.95 | 1.08 | 1.30 | 0.32 | 0.36 | 2.33 | 2.65 | 3.20 |
| TWXxx1825 | 18" | 45 | 0.25 | 0.29 | 0.95 | 1.08 | 1.30 | 0.28 | 0.32 | 2.07 | 2.36 | 2.84 |
| TWXxx2025 | 20" | 50 | 0.25 | 0.29 | 0.95 | 1.08 | 1.30 | 0.25 | 0.28 | 1.86 | 2.12 | 2.56 |
| TWXxx2425 | 24" | 60 | 0.25 | 0.29 | 0.95 | 1.08 | 1.30 | 0.21 | 0.24 | 1.55 | 1.77 | 2.13 |
| 0.30 GPH @ 8 PSI | | | | | | | | | | | | |
| TWXxx0830 | 8" | 20 | 0.30 | 0.34 | 1.14 | 1.27 | 1.56 | 0.75 | 0.85 | 5.59 | 6.24 | 7.68 |
| TWXxx1230 | 12" | 30 | 0.30 | 0.34 | 1.14 | 1.27 | 1.56 | 0.50 | 0.57 | 3.73 | 4.16 | 5.12 |
| TWXxx1430 | 14" | 35 | 0.30 | 0.34 | 1.14 | 1.27 | 1.56 | 0.43 | 0.49 | 3.19 | 3.57 | 4.39 |
| TWXxx1630 | 16" | 40 | 0.30 | 0.34 | 1.14 | 1.27 | 1.56 | 0.38 | 0.43 | 2.79 | 3.12 | 3.84 |
| TWXxx1830 | 18" | 45 | 0.30 | 0.34 | 1.14 | 1.27 | 1.56 | 0.33 | 0.38 | 2.48 | 2.77 | 3.41 |
| TWXxx2030 | 20" | 50 | 0.30 | 0.34 | 1.14 | 1.27 | 1.56 | 0.30 | 0.34 | 2.24 | 2.50 | 3.07 |
| TWXxx2430 | 24" | 60 | 0.30 | 0.34 | 1.14 | 1.27 | 1.56 | 0.25 | 0.28 | 1.86 | 2.08 | 2.56 |
| 0.47 GPH @ 8 PSI | | | | | | | | | | | | |
| TWXxx0847 | 8" | 20 | 0.47 | 0.53 | 1.78 | 1.99 | 2.40 | 1.17 | 1.31 | 8.76 | 9.78 | 11.81 |
| TWXxx1247 | 12" | 30 | 0.47 | 0.53 | 1.78 | 1.99 | 2.40 | 0.78 | 0.87 | 5.84 | 6.52 | 7.87 |
| TWXxx1447 | 14" | 35 | 0.47 | 0.53 | 1.78 | 1.99 | 2.40 | 0.67 | 0.75 | 5.00 | 5.59 | 6.75 |
| TWXxx1647 | 16" | 40 | 0.47 | 0.53 | 1.78 | 1.99 | 2.40 | 0.59 | 0.66 | 4.38 | 4.89 | 5.91 |
| TWXxx1847 | 18" | 45 | 0.47 | 0.53 | 1.78 | 1.99 | 2.40 | 0.52 | 0.58 | 3.89 | 4.35 | 5.25 |
| TWXxx2047 | 20" | 50 | 0.47 | 0.53 | 1.78 | 1.99 | 2.40 | 0.47 | 0.52 | 3.50 | 3.91 | 4.72 |
| TWXxx2447 | 24" | 60 | 0.47 | 0.53 | 1.78 | 1.99 | 2.40 | 0.39 | 0.44 | 2.92 | 3.26 | 3.94 |
| 0.75 GPH @ 8 PSI | | | | | | | | | | | | |
| TWXxx0875 | 8" | 20 | 0.75 | 0.84 | 2.83 | 3.16 | 3.80 | 1.87 | 2.09 | 13.92 | 15.56 | 18.70 |
| TWXxx1275 | 12" | 30 | 0.75 | 0.84 | 2.83 | 3.16 | 3.80 | 1.24 | 1.39 | 9.28 | 10.37 | 12.47 |
| TWXxx1475 | 14" | 35 | 0.75 | 0.84 | 2.83 | 3.16 | 3.80 | 1.07 | 1.19 | 7.95 | 8.89 | 10.69 |
| TWXxx1675 | 16" | 40 | 0.75 | 0.84 | 2.83 | 3.16 | 3.80 | 0.93 | 1.04 | 6.96 | 7.78 | 9.35 |
| TWXxx1875 | 18" | 45 | 0.75 | 0.84 | 2.83 | 3.16 | 3.80 | 0.83 | 0.93 | 6.18 | 6.91 | 8.31 |
| TWXxx2075 | 20" | 50 | 0.75 | 0.84 | 2.83 | 3.16 | 3.80 | 0.75 | 0.83 | 5.57 | 6.22 | 7.48 |
| TWXxx2475 | 24" | 60 | 0.75 | 0.84 | 2.83 | 3.16 | 3.80 | 0.62 | 0.70 | 4.64 | 5.19 | 6.23 |

X - denotes 5 for 5/8" diameter, 7 for 7/8" diameter

xx - denotes mil thickness

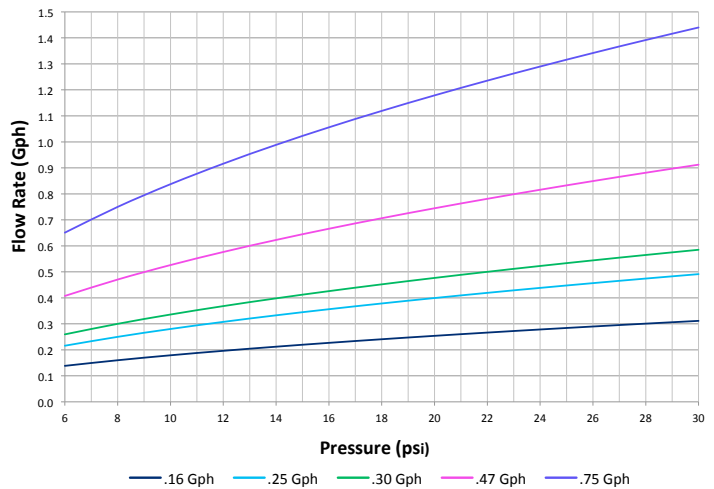
Nominal flow per emitter at 8 PSI

FLOW RATES

| Internal Diameter | Wall Thickness (Mil, .000") | Operating Pressure | | | | Emitter Spacing In Inches | Reel Lengths | |
|-------------------------|-----------------------------|--------------------|------|------|------|---------------------------|--------------|--------|
| | | PSI | | Bar | | | Feet | Meters |
| | | Min | Max | Min | Max | | | |
| 5/8" (0.635 in) (16 mm) | 6 | 6 | 12 | 0.41 | 0.83 | 8" | 7,400 | 2,256 |
| | | | | | | 12" - 23" | 9,400 | 2,865 |
| | | | | | | 24"+ | 10,000 | 3,048 |
| | 8 | 6 | 16 | 0.41 | 1.03 | 8" | 6,400 | 1,950 |
| | | | | | | 12"+ | 7,500 | 2,286 |
| | | | | | | 12"+ | 6,200 | 1,890 |
| | 10 | 6 | 20 | 0.41 | 1.38 | 8" | 5,600 | 1,707 |
| | | | | | | 12"+ | 4,300 | 1,311 |
| | | | | | | 12"+ | 4,700 | 1,433 |
| | 13 | 6 | 25 | 0.41 | 1.72 | 8" | 3,900 | 1,189 |
| | | | | | | 12"+ | 4,200 | 1,280 |
| | | | | | | 12"+ | 2,000 | 610 |
| 15 | 6 | 30 | 0.41 | 2.07 | 8" | 2,900 | 884 | |
| | | | | | 12"+ | 3,100 | 945 | |
| | | | | | 12"+ | 2,000 | 610 | |
| 18 | 6 | 30 | 0.41 | 2.07 | 8" | 2,900 | 884 | |
| | | | | | 12"+ | 3,100 | 945 | |
| | | | | | 12"+ | 2,000 | 610 | |
| 24 | 6 | 30 | 0.41 | 2.07 | 8" | 2,000 | 610 | |
| | | | | | 12"+ | 2,000 | 610 | |
| | | | | | 12"+ | 2,000 | 610 | |
| 7/8" (0.880 in) (22 mm) | 6 | 6 | 10 | 0.41 | 0.69 | 8" | 5,300 | 1,615 |
| | | | | | | 12" | 6,600 | 2,012 |
| | | | | | | 14"+ | 7,380 | 2,249 |
| | 8 | 6 | 12 | 0.41 | 0.83 | 8" | 4,400 | 1,341 |
| | | | | | | 12"+ | 5,200 | 1,585 |
| | | | | | | 12"+ | 4,200 | 1,280 |
| | 10 | 6 | 15 | 0.41 | 1.03 | 8" | 4,200 | 1,280 |
| | | | | | | 12"+ | 4,900 | 1,494 |
| | | | | | | 12"+ | 3,500 | 1,067 |
| | 13 | 6 | 20 | 0.41 | 1.38 | 8" | 3,500 | 1,067 |
| | | | | | | 12"+ | 4,000 | 1,220 |
| | | | | | | 12"+ | 2,400 | 732 |
| 15 | 6 | 25 | 0.41 | 1.72 | 8" | 2,400 | 732 | |
| | | | | | 12"+ | 2,700 | 823 | |
| | | | | | 12"+ | 1,900 | 579 | |
| 18 | 6 | 30 | 0.41 | 2.07 | 8" | 1,900 | 579 | |
| | | | | | 12"+ | 2,100 | 640 | |
| | | | | | 12"+ | 1,300 | 396 | |
| 24 | 6 | 30 | 0.41 | 2.07 | 8" | 1,300 | 396 | |
| | | | | | 12"+ | 1,400 | 427 | |
| | | | | | 12"+ | 1,400 | 427 | |

| Flow rate nominal GPH at 8 PSI | Coefficient of Variation (Cv) | Barb loss factor (Kd) for 3/4" tubing | Barb loss factor (Kd) for 1/2" tubing | Emitter Exponent | K Value | Filtration |
|--------------------------------|-------------------------------|---------------------------------------|---------------------------------------|------------------|---------|------------|
| 0.16 | ≤ 3% | .10 | .05 | 0.50 | 0.0561 | 120 mesh |
| 0.25 | ≤ 3% | .10 | .05 | 0.51 | 0.0864 | 120 mesh |
| 0.30 | ≤ 3% | .10 | .05 | 0.51 | 0.1050 | 120 mesh |
| 0.47 | ≤ 3% | .10 | .05 | 0.50 | 0.1660 | 120 mesh |
| 0.75 | ≤ 3% | .10 | .05 | 0.49 | 0.2687 | 120 mesh |

Neptune Emitter Flow vs. Pressure



SPECIFICATIONS



© 2016 The Toro Company.
 Micro-Irrigation Business
 1588 N. Marshall Avenue | El Cajon, CA 92020-1523, USA
 Tel: +1 (800) 333-8125 or +1 (619) 562-2950
 Fax: +1 (800) 892-1822 or +1 (619) 258-9973
 toro.com | driptips.toro.com