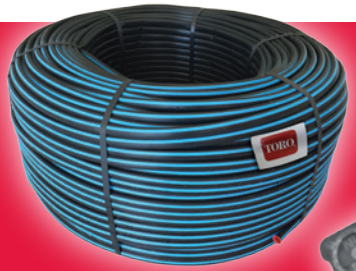

TORO®
DRIPLINE FOR
PERMANENT CROPS
NEPTUNE PC
NEPTUNE HW

NEPTUNE PC

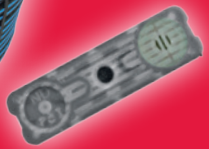
The **NEPTUNE PC** dripline is available in two versions, **ANTI-SIPHON** and **NO-DRAIN**, with an integrated pressure-compensating dripper.
The **pressure-compensating mechanism** of the dripper guarantees a constant flow rate across all the lines, regardless of the system operating pressure or the altimetric trend of the land.
The **great emission uniformity** optimises the crop results; each plant receives the same amount of water, nutrients and fertilizers.
Suitable for irrigating orchards, vineyards, olive groves and crops under glass. Since it maintains the same irrigation capacity, it can also be used on large surfaces with extended layouts. Moreover, the possibility of choosing the spacing and the range of drippers allows for a wide range of applications and considerable design flexibility.

ADVANTAGES

Neptune PC dripper is easy and fast to install. The hose is made with a material that makes it highly resistant to degradation, thus increasing the durability and improving the performance



NO DRAIN NEPTUNE PC
DRIPLINE



RANGE

- Diameter 16 mm
  – thickness 0.9 - 1.0 - 1.1 mm;
- Diameter 20 mm
  – thickness 0.9 - 1.0 - 1.2 mm;
- Spacing from 20 to 100 cm;
- Grouped spacing (optional);
- Drippers 1.2 - 1.6 - 2.4 - 3.8 l/h (between 0.5 and 3.5 bar)

NEPTUNE PC

of the dripline. The dripper inside the pipe is protected against impacts, frictions and degradation resulting from changes in temperature and UV radiation.

The **pressure-compensating system** increases the length of the layouts and allows for significant emission uniformity on the entire irrigation sector, both between drippers of the same line and drippers of different lines.

Every Toro product features high **resistance to clogging**. Moreover, thanks to the silicone membrane of its dripper, Neptune PC can be used for fertigation with any chemical product used in agriculture.

VERSIONS AVAILABLE IN ALL DIAMETERS, THICKNESS AND FLOW RATE:

- **ANTI-SIPHON** to prevent outside impurities from entering;
- **NO DRAIN** to open and close all drippers simultaneously (with opening pressure at 0.45 bar and closing pressure at 0.20 bar).

DIAMETER AND THICKNESS AVAILABLE:

– Ø 16 mm, thickness 0.9 - 1.0 - 1.1 mm;
– Ø 20 mm, thickness 0.9 - 1.0 - 1.2 mm.

DRIPPER FLOW RATE FOR BOTH ANTI-SIPHON AND NO DRAIN VERSIONS:

– 1.2 - 1.6 - 2.4 - 3.8 l/h
(Pressure compensating range 0.5-3.5 bar).

The ANTI-SYPHON system prevents impurities from entering the dripper, therefore it can also be installed underground, maintaining both its irrigation characteristics and its multi-year duration.

The NO DRAIN system is designed to be installed in irrigation systems that need short and frequent irrigation cycles.
Thanks to its low-pressure closing system, the dripper prevents leaks, thus ensuring perfect irrigation uniformity, and keeps the system pressurised, thus ensuring time, water and energy saving.

NEPTUNE PC

Nominal diameter	Inner diameter I.D.	Wall thickness	Outer diameter O.D.	Max pressure	Coil length	Reel dimensions (Ø X h)
16	13.8 mm	0.9 mm	15.6 mm	3.5 bar	450 m	80 cm x 30 cm
		1.0 mm	15.8 mm	3.5 bar	450 m	
		1.1 mm	16.0 mm	3.5 bar	450 m	
20	17.6 mm	0.9 mm	19.4 mm	3.0 bar	300 m	
		1.0 mm	19.6 mm	3.3 bar	300 m	
		1.2 mm	20.0 mm	3.5 bar	300 m	

Diameter 16 mm

Land slope 0%

Code	Dripper flow rate (l/h) between 0.5 and 3.5 bar	Flow rate per metre (l/h/m) between 0.5 and 3.5 bar	Dripper spacing (cm)	Maximum lengths in metres				
				@ 1.0 bar	@ 1.5 bar	@ 2.0 bar	@ 3.0 bar	@ 3.5 bar
PPx16xx4038	3.8	9.5	40	66	84	97	115	123
PPx16xx6038		6.3	60	89	113	131	157	167
PPx16xx8038		4.8	80	109	140	161	193	206
PPx16xx10038		3.8	100	127	163	189	226	241
PPx16xx4024	2.4	6.0	40	88	113	130	155	166
PPx16xx6024		4.0	60	119	152	176	211	224
PPx16xx8024		3.0	80	146	187	216	259	276
PPx16xx10024		2.4	100	171	219	253	303	323
PPx16xx4016	1.6	4.0	40	115	147	169	203	216
PPx16xx6016		2.7	60	155	198	229	274	292
PPx16xx8016		2.0	80	190	243	281	337	360
PPx16xx10016		1.6	100	222	284	329	396	421
PPx16xx4012	1.2	3.0	40	126	161	185	221	236
PPx16xx6012		2.0	60	177	226	261	312	333
PPx16xx8012		1.5	80	222	285	329	394	420
PPx16xx10012		1.2	100	265	339	392	470	501

Diameter 20 mm

Land slope 0%

Code	Dripper flow rate (l/h) between 0.5 and 3.5 bar	Flow rate per metre (l/h/m) between 0.5 and 3.5 bar	Dripper spacing (cm)	Maximum lengths in metres				
				@ 1.0 bar	@ 1.5 bar	@ 2.0 bar	@ 3.0 bar	@ 3.5 bar
PPx20xx4038	3.8	9.5	40	97	123	142	170	181
PPx20xx6038		6.3	60	132	168	194	232	247
PPx20xx8038		4.8	80	163	208	240	287	306
PPx20xx10038		3.8	100	191	244	282	338	360
PPx20xx4024	2.4	6.0	40	130	166	191	228	243
PPx20xx6024		4.0	60	177	226	261	312	332
PPx20xx8024		3.0	80	219	280	323	386	412
PPx20xx10024		2.4	100	256	328	379	454	484
PPx20xx4016	1.6	4.0	40	169	216	249	298	317
PPx20xx6016		2.7	60	230	294	339	407	433
PPx20xx8016		2.0	80	284	365	419	503	536
PPx20xx10016		1.6	100	332	426	492	591	630
PPx20xx4012	1.2	3.0	40	210	267	309	368	392
PPx20xx6012		2.0	60	285	364	420	502	535
PPx20xx8012		1.5	80	351	450	518	620	661
PPx20xx10012		1.2	100	411	526	607	728	776

When determining the maximum line length, the maximum inflow pressure must match the one indicated in the table above. Filtration required 150 mesh.

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NEPTUNE HW

NEPTUNE HW is the heavy wall dripline with flat dripper designed for irrigating multi-year and seasonal crops.
The turbulent flow dripper with its wide steps gives the Neptune HW high resistance to clogging. The use of top-quality polymers ensures high durability and resistance to possible mechanical damage.
Neptune HW has been designed and manufactured according to the highest quality standards and is an affordable investment while ensuring top performance.

THE RANGE

The five flat drippers, the various diameters, thicknesses, and spacing allow Neptune HW to have a wide and complete range of configurations:

Diameter 16 mm (I.D. 13.8 mm)
Wall thickness 35 mil (0.9 mm),
39 mil (1.0 mm) and 43 mil (1.1 mm)

Diameter 20 mm (I.D. 17.6 mm)
Wall thickness 35 mil (0.9 mm),
39 mil (1.0 mm) and 47 mil (1.2 mm)

NEPTUNE HW
DRIPLINE

RANGE

- Diameter 16 mm
  – thickness 0.9 - 1.0 - 1.1 mm;
- Diameter 20 mm
  – thickness 0.9 - 1.0 - 1.2 mm;
- Spacing from 20 to 100 cm;
- Grouped spacing (optional);
- Drippers 0.8 - 1.3 - 1.5 - 2.4 - 3.8 l/h @ 1 bar

NEPTUNE HW

Main characteristics

The dripper in the Neptune HW dripline ensures durability and excellent performance even in the most adverse conditions.

Spacing between drippers
from
20/25/30/40/50/60/70/75/80/90/100 cm

Special spacing on request

Grouped spacing
(optional)

5 different drippers

0.67 l/h @ 0.7 bar (0.8 l/h @ 1 bar)
1.08 l/h @ 0.7 bar (1.3 l/h @ 1 bar)
1.30 l/h @ 0.7 bar (1.5 l/h @ 1 bar)
1.99 l/h @ 0.7 bar (2.4 l/h @ 1 bar)
3.16 l/h @ 0.7 bar (3.8 l/h @ 1 bar)

Neptune HW has the following characteristics:

- High resistance to accidental blows and/or impacts allowing for quick and easy installation (shorter laying times, lower labour costs and less risk of damaging the product);
- High resistance to clogging, thanks to the turbulent flow dripper featuring wide steps and optimised for multi-year applications;
  - Outlet hole made using precision mechanical technology;
- Excellent CV (Coefficient of Variation);
- Blue stripe for easy identification;
- Extrusion process with simultaneous insertion of the dripper to guarantee uniform dimensions and mechanical characteristics (no welding, no seams).
- Product ID code engraved on the hose;

TORO®

NEPTUNE HW

Nominal diameter	Inner diameter I.D.	Wall thickness		Outer diameter O.D.	Min pressure	Max pressure	Coil length
16	13.8 mm	35 mil	0.9 mm	15.6 mm	0.41 bar	3.5 bar	450 m
		39 mil	1.0 mm	15.8 mm	0.41 bar	3.5 bar	450 m
		43 mil	1.1 mm	16.0 mm	0.41 bar	4.0 bar	450 m
20	17.6 mm	35 mil	0.9 mm	19.4 mm	0.41 bar	3.0 bar	300 m
		39 mil	1.0 mm	19.6 mm	0.41 bar	3.3 bar	300 m
		47 mil	1.2 mm	20.0 mm	0.41 bar	4.0 bar	300 m

Diameter 16 mm

Land slope 0% Distribution uniformity (EU): 90%

Code	Dripper flow rate (l/h)		Flow rate per metre (l/h)		Spacing (cm)	Maximum lengths (m)
	@ 0.7 bar	@ 1.0 bar	@ 0.7 bar	@ 1.0 bar		@ 1.0 bar
PTW16xx2532-yy	3.16	3.80	12.64	15.20	25	46
PTW16xx3032-yy			10.53	12.67	30	52
PTW16xx4032-yy			7.90	9.50	40	63
PTW16xx5032-yy			6.32	7.60	50	73
PTW16xx6032-yy			5.27	6.33	60	83
PTW16xx2520-yy	1.99	2.40	7.96	9.60	25	66
PTW16xx3020-yy			6.63	8.00	30	75
PTW16xx4020-yy			4.98	6.00	40	91
PTW16xx5020-yy			3.98	4.80	50	105
PTW16xx6020-yy			3.32	4.00	60	119
PTW16xx2514-yy	1.30	1.50	5.20	6.00	25	83
PTW16xx3014-yy			4.33	5.00	30	94
PTW16xx4014-yy			3.25	3.75	40	114
PTW16xx5014-yy			2.60	3.00	50	132
PTW16xx6014-yy			2.17	2.50	60	149
PTW16xx2511-yy	1.08	1.30	4.32	5.20	25	98
PTW16xx3011-yy			3.60	4.33	30	111
PTW16xx4011-yy			2.70	3.25	40	135
PTW16xx5011-yy			2.16	2.60	50	156
PTW16xx6011-yy			1.80	2.17	60	176
PTW16xx2506-yy	0.67	0.80	2.68	3.20	25	143
PTW16xx3006-yy			2.23	2.67	30	162
PTW16xx4006-yy			1.68	2.00	40	197
PTW16xx5006-yy			1.34	1.60	50	228
PTW16xx6006-yy			1.12	1.33	60	257

Diameter 20 mm

Land slope 0% Distribution uniformity (EU): 90%

Code	Dripper flow rate (l/h)		Flow rate per metre (l/h)		Spacing (cm)	Maximum lengths (m)
	@ 0.7 bar	@ 1.0 bar	@ 0.7 bar	@ 1.0 bar		@ 1.0 bar
PTW20xx2532-yy	3.16	3.80	12.64	15.20	25	69
PTW20xx3032-yy			10.53	12.67	30	78
PTW20xx4032-yy			7.90	9.50	40	96
PTW20xx5032-yy			6.32	7.60	50	111
PTW20xx6032-yy			5.27	6.33	60	126
PTW20xx2520-yy	1.99	2.40	7.96	9.60	25	99
PTW20xx3020-yy			6.63	8.00	30	112
PTW20xx4020-yy			4.98	6.00	40	137
PTW20xx5020-yy			3.98	4.80	50	159
PTW20xx6020-yy			3.32	4.00	60	180
PTW20xx2514-yy	1.30	1.50	5.20	6.00	25	124
PTW20xx3014-yy			4.33	5.00	30	141
PTW20xx4014-yy			3.25	3.75	40	172
PTW20xx5014-yy			2.60	3.00	50	200
PTW20xx6014-yy			2.17	2.50	60	226
PTW20xx2511-yy	1.08	1.30	4.32	5.20	25	147
PTW20xx3011-yy			3.60	4.33	30	165
PTW20xx4011-yy			2.70	3.25	40	204
PTW20xx5011-yy			2.16	2.60	50	237
PTW20xx6011-yy			1.80	2.17	60	267
PTW20xx2506-yy	0.67	0.80	2.68	3.20	25	214
PTW20xx3006-yy			2.23	2.67	30	243
PTW20xx4006-yy			1.68	2.00	40	296
PTW20xx5006-yy			1.34	1.60	50	345
PTW20xx6006-yy			1.12	1.33	60	389

WOODLAND DRIPLINE

NEPTUNE PC
AND NEPTUNE HW BROWN

The new dripline ideal for hedges, flowerbeds and gardens in general
Lengths from 25 m, 50 m, 100 m and 450 m.

CHARACTERISTICS

Diameter 16 mm, spacing 33 cm
- Drippers:
  - For Neptune PC 2.4 lph
  - For Neptune HW 2.0 lph

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IT-QNEPPC-E
V3.1/F20

TORO 17MM DRIP IN® BROWN SURFACE DRIPLINE

With higher water costs in our future, it makes more sense than ever to use inline tubing in suitable landscape applications. Drip In PC is both an effective and economical choice for at-grade installations and now comes in an industry-standard 17mm size.

FEATURES & BENEFITS

New 17MM Size

Works with most standard-size barb fittings, making it compatible with most other dripline and hose for easy retrofits and expansions.

Fully Pressure-compensating from 15 – 60 psi

The pressure-compensating design makes it ideal for slopes, high wind areas and areas with limited water supply or low pressure.

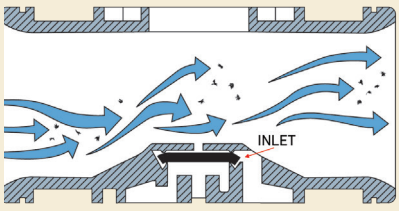
High Uniformity

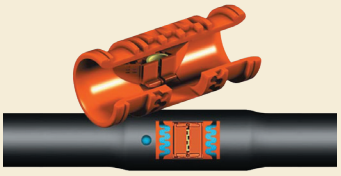
Proven, dependable pressure-compensating Drip In emitters deliver uniform, precise emitter discharge rates with exceptionally low variability.

Keeps Water Off Hardscapes

Preventing unsightly water stains.

Effluent Options Available





New Laser Etching

Easy-to-identify product information right on the tubing, and holds up better over time in the field compared to inkjet printing.

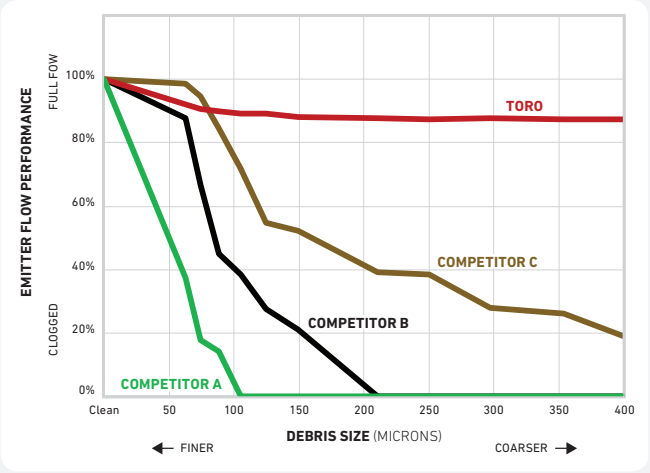
Highly Clog Resistant

Unique, raised internal filtration design deflects debris upward and away from the emitter's inlet. Because the inlet is also raised, sediment won't collect at the inlet while the system is off.

Dual Opposed Outlets

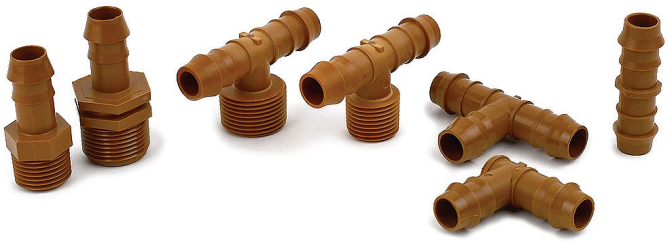
In above ground installations, dual opposing ports in every emitter assure that at least one outlet provides air relief, which prevents back-siphonage of contamination into the emitter.

PRODUCT HIGHLIGHT



All Toro® landscape dripline uses a large double-outlet cylindrical emitter, which is much more tolerant of debris compared to the other market leaders, most of whom use a compact single-outlet emitter. While filtration is always recommended for any drip irrigation installation, filters only protect the incoming water from the valve connection. In the event of a damaged line at any point from the filter on down, or any other possible point of entry into the system for debris, Toro outperforms the competition and consistently keeps on flowing.

**Test data collected in Toro's standardized 24-hour "grit test", used for qualifying all Toro low-flow Landscape and Agriculture products in an internal test lab.*



Use with T-EHW1554-010 or T-EHW1554-050 Blue Stripe tubing for 17mm, and all new i560 series barbed fittings or Tri-Loc series fittings!

NEW FITTING MODELS FOR 17MM DRIPLINE AND TUBING

Model	Description
i560-C	Coupling
i560-E	Elbow
i560-T	Tee
i560-M50	½" MPT Adapter
i560-M75	¾" MPT Adapter
i560-T-M50	½" MPT Adapter

LENGTH OF RUN CHART (FEET)

INLET PRESSURE (PSI)	EMITTER FLOW RATE (GPH)			
	0.58	0.58	0.92	0.92
	EMITTER SPACING (INCHES)			
	12 in.	18 in.	12 in.	18 in.
15	169	236	125	175
20	230	323	171	239
25	270	379	200	282
30	301	424	222	314
35	327	460	242	341
40	349	492	258	364
45	369	521	273	386
50	387	547	286	405
55	404	570	299	422
60	420	593	310	439

DRIP IN PC MODEL LIST

Model	Description
17MM BROWN PC DRIPLINE – 0.56" ID X 0.66" OD X 0.05" WALL	
PCB-212-010	0.58 gph, 12" emitter spacing, 100' coil
PCB-412-010	0.92 gph, 12" emitter spacing, 100' coil
PCB-218-010	0.58 gph, 18" emitter spacing, 100' coil
PCB-418-010	0.92 gph, 18" emitter spacing, 100' coil
PCB-212-025	0.58 gph, 12" emitter spacing, 250' coil
PCB-412-025	0.92 gph, 12" emitter spacing, 250' coil
PCB-218-025	0.58 gph, 18" emitter spacing, 250' coil
PCB-418-025	0.92 gph, 18" emitter spacing, 250' coil
PCB-212-050	0.58 gph, 12" emitter spacing, 500' coil
PCB-412-050	0.92 gph, 12" emitter spacing, 500' coil
PCB-218-050	0.58 gph, 18" emitter spacing, 500' coil
PCB-418-050	0.92 gph, 18" emitter spacing, 500' coil
17MM PURPLE PC DRIPLINE (EFFLUENT)	
PCB-212-025-E	0.58 gph, 12" emitter spacing, 250' coil, effluent
PCB-412-025-E	0.92 gph, 12" emitter spacing, 250' coil, effluent
PCB-218-025-E	0.58 gph, 18" emitter spacing, 250' coil, effluent
PCB-418-025-E	0.92 gph, 18" emitter spacing, 250' coil, effluent

Specifying Information – Drip In PC

PCB-XXX-XXX-X				
Tubing Type	*Emitter Flow*	*Emitter Spacing*	*Coil Length*	*Optional*
PCB	**X**	**XX**	**XXX**	**X**
PCB	2 – 0.58 gph 4 – 0.92 gph	12 – 12" 18 – 18"	100 – 100' 250 – 250' 500 – 500'	E - Effluent
Example: A 250' coil of pressure-compensating Drip In brown dripline with 12" emitter spacing and 0.58 gph emitter flow would be specified as **PCB-212-025**				

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P/N 20-1063-IRC