

Customer Value through Innovation



# Torro Worm Drive Hose Clamps

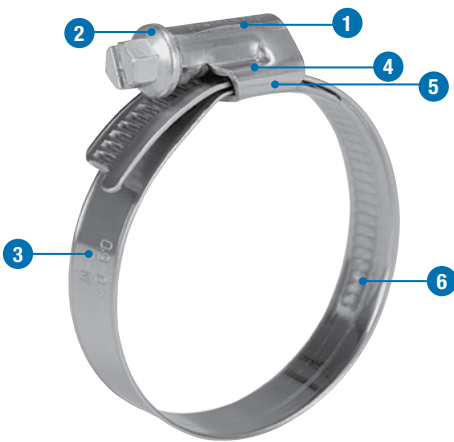
*German-made quality & reliability*



## Torro Worm Drive Hose Clamps

NormaClamp® Torro® multi-range hose clamps are ideally suited to applications with high mechanical loads. The continuous development these clamps undergo ensures they remain the benchmark within modern clamp construction.

The key feature of a NormaClamp® Torro® product is its asymmetrical construction - an instant sign that it is a genuine Torro®. The asymmetric housing prevents the clamp from tilting on the pipe and ensures an optimal seal.



Features	
1. Asymmetric Housing	Even distribution of forces and safe assembly.
2. Screw Support	Ease of assembly due to the safe guidance of the emerging band end.
3. Specification Stamp	Quick reference to material grade and clamping range.
4. Asymmetric Extension	Prevents the housing from tilting over when tightening the clamp.
5. Short Housing Saddle	Even contact pressure. Improved efficiency.
6. Smooth or Stamped inside of band	Optimal hose protection.

### Advantages at a glance

- Multi-range hose clamp.
- No chromium(VI) used for coating purposes.
- Clamping ranges in acc. with DIN 3017: 8-16 mm to 140-160 mm.
- Larger diameters available on request.

### Applications

- Joining cooling water lines.
- Depressurised and pressurised fuel lines and ventilation systems.
- Oil lines.
- Joining lines in sanitary applications.
- Joining lines in machine building applications.
- Lines in the household appliance industry.
- Hose lines in the commercial vehicle industries.

### Materials

CODE	MATERIAL
W1*	All parts coated steel
W2	Band & housing: Stainless Steel AISI 430 Screw: coated steel
W3	All parts made entirely from Stainless Steel (430)
W4	All parts made entirely from stainless steel (304)
W5	All parts made entirely from stainless steel (316)

\* No chromium(VI) used for the coating on the closure components

CODE	CORROSION RESISTANCE IN SALT SPRAY TESTING
W1	Min. 144 h
W2	Min. 72 h
W3	Min. 200 h*
W4	Min. 400 h
W5	Min. 1000 h

\*Max 10% base metal corrosion permissible

TT = Tightening Torque      FRT = Free Running Torque      TT = Testing Torque      BD = Break Torque

TORRO 7.5 W2-W3										
Diameter	8-12	10-16	12-18	12-22	16-27	20-32	25-40	30-45	35-50	40-60
TT	max 1.5	max 1.5	max 1.5	max 1.5	max 1.5					
FRT max										
TT	2	2	2	2	2					
BD min	2.25	2.25	2.25	2.25	2.25					

TORRO 9 W1										
Diameter	8-12	10-16	12-18	12-22	16-27	20-32	25-40	30-45	35-50	40-60
TT	2.5 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5
FRT max	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
TT	3.3	4	4	4	4	4	4	4	4	4
BD min	4	4.5	4.5	4.5	4.5	4.5	6	6	6	6

Diameter	50-70	60-80	70-90	80-100	90-110	100-120	110-130	120-140	130-150	140-160
TT	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5
FRT max	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
TT	4	4	4	4	4	4	4	4	4	4
BD min	6	6	6	6	6	6	6	6	6	6

TORRO 9 W2										
Diameter	8-12	8-16	12-18	12-22	16-27	20-32	25-40	30-45	35-50	40-60
TT		2 +0.5		3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5
FRT max		0.7		0.7	0.7	0.7	0.7	0.7	0.7	0.7
TT		2.6		4	4	4	4	4	4	4
BD min		4		4.5	4.5	4.5	4.5	4.5	4.5	4.5

Diameter	50-70	60-80	70-90	80-100	90-110	100-120	110-130	120-140	130-150	140-160
TT	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5
FRT max	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
TT	4	4	4	4	4	4	4	4	4	4
BD min	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5

TORRO 9 W3-W5										
Diameter	8-12	8-16	12-18	12-22	16-27	20-32	25-40	30-45	35-50	40-60
TT		2 +0.5		3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5
FRT max		0.7		0.7	0.7	0.7	0.7	0.7	0.7	0.7
TT		2.6		4	4	4	4	4	4	4
BD min		4		4.5	4.5	4.5	4.5	4.5	4.5	4.5

Diameter	50-70	60-80	70-90	80-100	90-110	100-120	110-130	120-140	130-150	140-160
TT	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5	3 +0.5
FRT max	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
TT	4	4	4	4	4	4	4	4	4	4
BD min	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5

TORRO 12 W1										
Diameter	8-12	10-16	12-18	12-22	16-27	20-32	25-40	30-45	35-50	40-60
TT					5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5
FRT max					1.2	1.2	1.2	1.2	1.2	1.2
TT					6.5	6.5	6.5	6.5	6.5	6.5
BD min					10	10	10	10	10	10

Diameter	50-70	60-80	70-90	80-100	90-110	100-120	110-130	120-140	130-150	140-160
TT	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5
FRT max	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
TT	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
BD min	10	10	10	10	10	10	10	10	10	10

TORRO 12 W2/W3										
Diameter	8-12	10-16	12-18	12-22	16-27	20-32	25-40	30-45	35-50	40-60
TT					5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5
LD max					1	1	1	1	1	1
TT					6.5	6.5	6.5	6.5	6.5	6.5
BD min					8.0	8.0	8.5	8.5	8.5	8.5

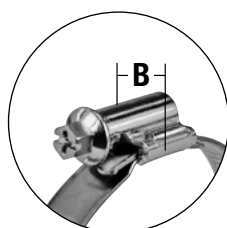
Diameter	50-70	60-80	70-90	80-100	90-110	100-120	110-130	120-140	130-150	140-160
TT	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5
FRT max	1	1	1	1	1	1	1	1	1	1
TT	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
BD min	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5

TORRO 12 W4/W5										
Diameter	8-12	10-16	12-18	12-22	16-27	20-32	25-40	30-45	35-50	40-60
TT					5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5
FRT max					1	1	1	1	1	1
TT					6.5	6.5	6.5	6.5	6.5	6.5
BD min					8	8	8.5	8.5	8.5	8.5

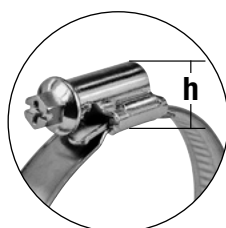
Diameter	50-70	60-80	70-90	80-100	90-110	100-120	110-130	120-140	130-150	140-160
TT	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5	5 +0.5
FRT max	1	1	1	1	1	1	1	1	1	1
TT	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
BD min	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5

NORMACLAMP® TORRO®							
WIDTH	DESIGNATION	CLAMPING RANGES		B	h	L	s
		IN mm	IN INCHES				
7.5	TORRO 8-12/7.5	8-12	5/16-1/2	11.5	9	17	0.6
	TORRO 10-16/7.5	10-16	3/8-5/8			17	0.6
9	TORRO 8-12/9	8-12	5/16-1/2	13.0	11.0	21.0	0.65
	TORRO 8-16/9 (10-16)	8-16	5/16-5/8			21.0	0.65
	TORRO 12-22/9	12-22	1/2-7/8			24.0	0.65
	TORRO 16-27/9	16-27	5/8-1 1/16			24.0	0.65
	TORRO 20-32/9	20-32	13/16-1 1/4			24.0	0.65
	TORRO 25-40/9	25-40	1-1 9/16			26.0	0.65
	TORRO 30-45/9	30-45	1 3/16-1 3/4			26.0	0.65
	TORRO 35-50/9 (32-50)	35-50	1 3/8-2			26.0	0.65
	TORRO 40-60/9	40-60	1 9/16-2 3/8			26.0	0.65
	TORRO 50-70/9	50-70	2-2 3/4			26.0	0.65
	TORRO 60-80/9	60-80	2 3/8-3 1/8			26.0	0.65
	TORRO 70-90/9	70-90	2 3/4-3 9/16			26.0	0.65
	TORRO 80-100/9	80-100	3 1/8-3 15/16			26.0	0.65
	TORRO 90-110/9	90-110	3 9/16-4 5/16			26.0	0.65
12	TORRO 16-27/12	16-27	5/8-1 1/16	14.6	12.5	30.0	0.8
	TORRO 20-32/12	20-32	13/16-1 1/4			30.0	0.8
	TORRO 23-35/12	23-35	15/16-1 3/8			30.0	0.8
	TORRO 25-40/12	25-40	1-1 9/16			30.0	0.8
	TORRO 30-45/12	30-45	1 3/16-1 3/4			30.0	0.8
	TORRO 35-50/12	35-50	1 3/8-2			30.0	0.8
	TORRO 40-60/12	40-60	1 9/16-2 3/8			30.0	0.8
	TORRO 50-70/12	50-70	2-2 3/4			30.0	0.8
	TORRO 60-80/12	60-80	2 3/8-3 1/8			30.0	0.8
	TORRO 70-90/12	70-90	2 3/4-3 9/16			36.0	0.8
	TORRO 80-100/12	80-100	3 1/8-3 15/16			36.0	0.8
	TORRO 90-110/12	90-110	3 9/16-4 5/16			36.0	0.8
	TORRO 100-120/12	100-120	3 15/16-4 3/4			36.0	0.8
	TORRO 110-130/12	110-130	4 5/16-5 1/8			36.0	0.8
	TORRO 120-140/12	120-140	4 3/4-5 1/2			36.0	0.8
	TORRO 130-150/12	130-150	5 1/8-5 15/16			36.0	0.8
TORRO 140-160/12	140-160	5 1/2-6 5/16	36.0	0.8			

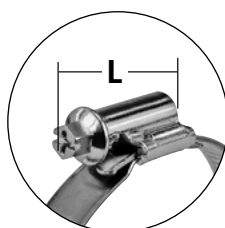
Additional diameters on request (up to 350 mm)



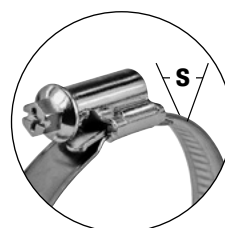
**B = overall width**  
Housing



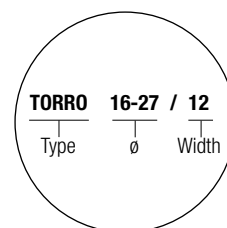
**h = overall height**  
Bolt & housing



**L = overall length**  
Bolt & housing



**s = band thickness**  
Clamp band



**Name structure**  
Clamp band

## Torro WF Worm Drive Hose Clamps - Constant Tension

This version of the Normaclamp® Torro® is equipped with a spring insert on the inside of the clamp band.

When tightening the screw the spring is loaded and stores sufficient clamping force to ensure a long-lasting automatic re-tensioning effect.

Thus the radial clamping force achieved will be sufficient even under extremely low temperatures.

Therefore, the Torro® is an optimal solution for applications under extreme temperature changes (e.g. charged air) or for the retention of hoses with a tendency of 'creeping' (hose relaxation).



### Advantages at a glance

- Automatic re-tensioning effect in the event of hose relaxation.
- Increased sealing reliability across a wide temperature range.

### Materials

CODE	MATERIAL
W3	All parts made entirely from Stainless Steel (430)

### Technical Data

NORMACLAMP® WF								
WIDTH	PART NUMBER	ITEM NUMBER	CLAMPING RANGES		B	h	L	s
			IN mm	IN INCHES				
9	12-20/9CT	01275000016	12-20	1/2 - 13/16	13.0	11.0	24.0	0.65
	16-25/9CT	01275000020	16-25	5/8 - 1			24.0	0.65
	20-32/9CT	01275000026	20-32	13/16 - 1 1/4			24.0	0.65
	25-40/9CT	01275000032	25-40	1 - 1 9/16			26.0	0.65
	30-45/9CT	01275001037	30-45	1 3/16 - 1 3/4			26.0	0.65
	32-50/9CT	01275000041	32-50	1 3/8 - 2			26.0	0.65
	40-60/9CT	01275000050	40-60	1 9/16 - 2 3/8			26.0	0.65
12	16-27/12CT	01375000021	16-27	5/8 - 1 1/16	14.6	12.5	30.0	0.8
	25-40/12CT	01375000032	25-40	1 - 1 9/16			30.0	0.8
	30-45/12CT	01375000037	30-45	1 3/16 - 1 3/4			30.0	0.8
	35-50/12CT	01375000043	35-50	1 3/8 - 2			30.0	0.8
	40-60/12CT	01375001050	40-60	1 9/16 - 2 3/8			30.0	0.8
	50-70/12CT	01375002060	50-70	2 - 2 3/4			30.0	0.8
	60-80/12CT	01375002070	60-80	2 3/8 - 3 1/8			30.0	0.8
	70-90/12CT	01375002080	70-90	2 3/4 - 3 9/16			36.0	0.8
	80-100/12CT	01375002090	80-100	3 1/8 - 3 15/16			36.0	0.8
	90-110/12CT	01375002100	90-110	3 9/16 - 4 5/16			36.0	0.8
	100-120/12CT	01378051110	100-120	3 15/16 - 4 3/4			36.0	0.8
	120-140/12CT	01378051130	120-140	4 3/4 - 5 1/2			36.0	0.8



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