

# ***CONSTANT PRESSURE CLAMPS***



***MAINTAINS CONSTANT STEADY PRESSURE  
360° AROUND THE CONNECTION***



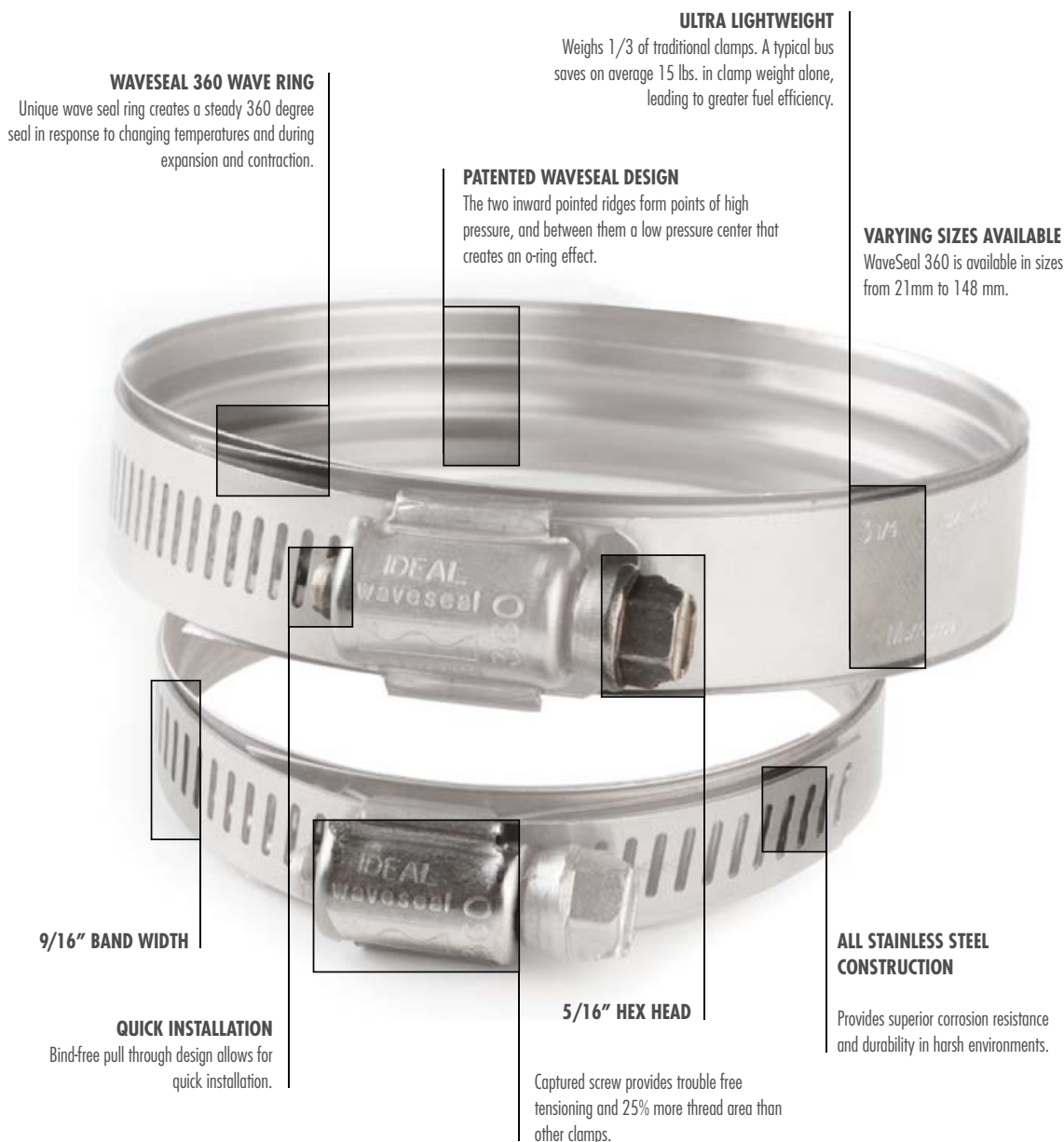
# CONSTANT PRESSURE

## Did you know hoses can leak when there is a wide variation in underhood temperatures?

Thermal expansion and contraction loosens hose clamps over time. When leaks happen, it is usually something critical.

The WaveSeal 360™ hybrid smart clamp solves this problem. Now you can purchase a hose clamp that's smart enough to adjust to the changing underhood environment. It's a whole new way to think about connections because the WaveSeal 360™:

- Utilizes a patented wave ring technology that self adjusts automatically as thermal cycling occurs
- Expands or contracts as the sealed joint changes, maintaining a constant, steady pressure 360 degrees around the connection
- Produces a sealing o-ring effect that prevents leakage
- Is much lighter, smarter and more compact than T-bolt and Belleville clamps
- All stainless steel construction



## Discover the Holding Power of the WaveSeal 360™

Thermal cycling, cold flow and temperature fluctuations are among the main reasons leaks occur. The uniquely engineered W-shaped profile of the WaveSeal 360™ hybrid smart clamp secures hose connections and prevents the unwanted flow of fluids and air. Through its patented smart hybrid technology, the clamp seals in a steady 360-degree pattern in response to pressure and temperature changes. With its compact design and lower profile, you get the optimal heavy-duty constant tension clamp without all the bulk.

# SSURE CLAMPS

## How the WaveSeal 360™ Beats T-Bolt & Belleville Clamps

The WaveSeal 360™ Clamp was designed in response to the leakage attributed to thermal cycling, plus today's challenging lighter weight and space constraints.



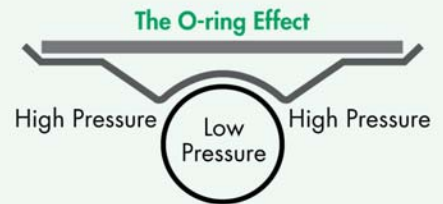
### Integrated Two-piece Design

The WaveSeal 360™ is comprised of two main parts, the clamp assembly and the wave ring

- The wave ring is high quality stainless steel and inside the clamp
- Specifically tempered, thin gauge steel reacts to temperatures
- Becomes a smart clamp on the hose, expanding or contracting with temperatures
- The clamp rides on this ring so pressure is more evenly distributed around the hose

### Tested Tough

Recent leak pressure tests show that the WaveSeal 360™ clamp performed better in thermal cycling than typical constant tension clamps, Belleville spring or spring loaded T-bolt styles. Further testing revealed WaveSeal 360™ performs even better over time when compared to other leading brands in the same category.



### Seals Tight, Seals Right

The wave ring cross section resembles a W. When torqued under the clamp, the two points of high pressure surround the low point in between. This creates a powerful low pressure area much like an o-ring, which holds the hose securely and uniformly, maintaining a steady 360° seal.

### Ultra Lightweight and Compact

The WaveSeal 360's™ lightweight design can literally shave pounds of vehicle weight while its low profile fits in tight spaces.

**WaveSeal 360™ Clamps are engineered to last longer, and perform better than old-school clamps in the most demanding applications.**

#### Passenger Car Cooling and Forced Induction Systems

Higher underhood temperatures associated with lower emissions lead to stress on cooling systems and turbos under pressure. Spring and worm gear clamps can leak under pressure.

#### Heavy Duty Cooling and Forced Induction Systems

This extended life, high vibration and thermal cycling prone environment makes turbo, radiator, heater and other cooling system hoses loosen more often with old-school clamps.

#### Off Highway Applications

Constant vibration and destructive shock peaking cause stress on traditional clamps.

#### Industrial and Hardware Applications

Corrosive environments, extreme temperatures and high vibration combine to cause traditional clamps to fail.

#### Extreme Climate Applications

Harsh environmental conditions require additional security for a hose connection, and old-style clamps fail regularly. Vehicles used in arctic or desert environments are more than transport, they're a lifeline.

#### Racing Applications

Experimental and high performance engines maximize performance... along with high heat and vibration under the cowl. The clamps should be just as high-tech.





# PART NUMBERS

P/N	SIZE	MIN-MAX Diameter (mm)	MIN-MAX Diameter (inch)
30280	0016	21 to 33	13/16 to 1-19/64
30281	0019	27 to 35	1-1/16 to 1-3/8
30282	0020	26 to 40	1 to 1-9/16
30283	0022	29 to 43	1-1/8 to 1-11/16
30284	0024	30 to 46	1-3/16 to 1-13/16
30285	0028	34 to 52	1-5/16 to 2-1/16
30286	0032	39 to 59	1-9/16 to 2-5/16
30287	0034	41 to 62	1-5/8 to 2-7/16
30288	0036	43 to 65	1-11/16 to 2-9/16
30289	0040	46 to 71	1-13/16 to 2-13/16
30290	0044	52 to 78	2-1/16 to 3-1/16
30291	0048	56 to 84	2-3/16 to 3-5/16
30292	0052	60 to 91	2-3/8 to 3-9/16
30293	0056	64 to 97	2-1/2 to 3-13/16
30294	0060	68 to 103	2-11/16 to 4-1/16
30295	0064	71 to 110	2-13/16 to 4-5/16
30296	0072	81 to 122	3-3/16 to 4-13/16
30297	0080	90 to 135	3-9/16 to 5-5/16
30298	0088	97 to 148	3-13/16 to 5-13/16

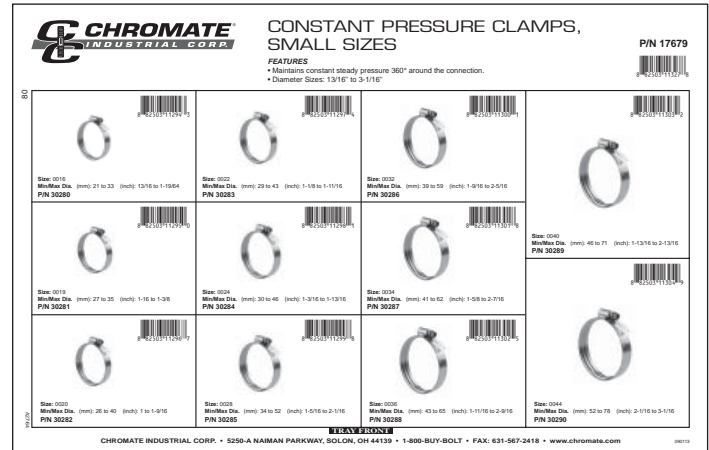


U.S. Patent No. 7,178,204 B2

# TRAY ASSORTMENTS

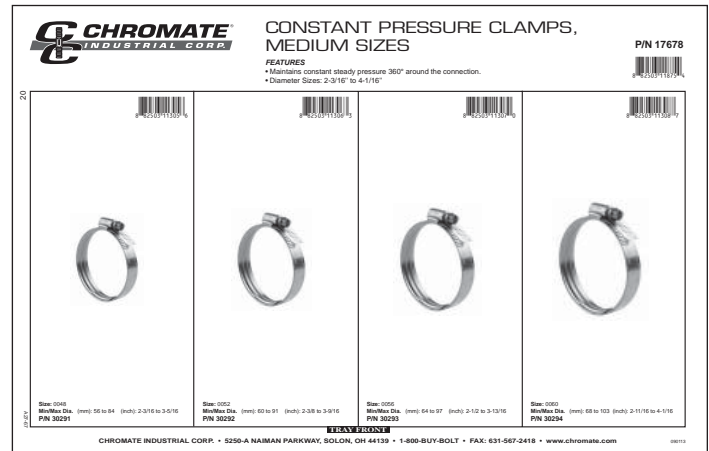
Small Sizes – P/N 17679

13/16" to 3-1/16"



Medium Sizes – P/N 17678

2-3/16" to 4-1/16"



Large Sizes – P/N 17677

2-13/16" to 5-13/16"



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