

RTF™ Radial Tubular Forming Tool



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Volant RTF™ tools are designed for both crimping and swaging operations. These tools use a hydraulic actuated piston and collet system to induce a radial compressive load that reduces the diameter of tubular product to create either a crimp or an end swage. Collet sets are designed for optimal performance and are specific to the size and application.

The tool is solid and robust, yet incorporates a simple architecture that makes it portable and easy to handle, ideal for use in the field or in a shop environment. For applications that may require a tight crimp or swage tolerance, a fine adjustment mechanism enables precise control of the final crimp or swage diameter.



Casing Bore Gauge



Crimping Applications

Utilizing the Volant RTF crimp technology to attach accessories to casing and liner is a preferred securing method due to its reliability. Securing casing accessories, such as centralizers, stop collars and wear bands to the string is required in applications where the string will be rotated downhole. These applications include Casing while Drilling (CwD) and reaming jobs as well as casing running scenarios where there is a need to rotate the string to break downhole friction.

The RTF Tool features hydraulically driven collets that plastically form the accessory onto the casing. When the tool is activated, the size specific collets squeeze the accessory onto the casing, applying enough radial force to plastically reduce the accessory and elastically reduce the casing at the same time. When the tool is released, the higher yield strength casing springs back more than the lower yield strength accessory, creating an interference fit. The crimped connection develops its torque and load capacity as a function of the friction coefficient between the accessory and the casing as well as the grip force provided by the interference fit. When properly completed, only a few inches of crimped length is needed to provide the torque and sliding resistance required for the various downhole applications.

Swaging Applications

The Volant RTF Tool can be easily adapted for use in the swaging process to pre-form the end of a tubular product in preparation for threading or other post swaging operations. By utilizing custom profiled collets, the swaging function is carefully controlled to ensure the process produces dimensionally correct pin end profiles. The ability to adjust the position of the tapered bell relative to the collets allows the operator to achieve the desired swage diameter on the pipe end. The design of the tool lends itself to perform swage operations without needing to hold or apply force to the tubular product to prevent it from moving, allowing it to easily integrate into any operation.

The RTF tool can be adapted for a multitude of purposes, making use of a variety of collet accessories. It is available in three Base Tool sizes: 7.0", 9.63" and 13.38".

Tool Model		RTF-7.0	RTF-9.63	RTF-13.38
Base Tool Characteristics		2.38" - 7" Crimp 7.63" Swage	2.38" - 10.75" Crimp 10.75" Swage	2.38" - 13.38" Crimp 13.63" Swage
Housing OD	in (mm)	12.5 (320)	16.5 (420)	20.9 (535)
Overall Length ²	in (mm)	14.0 (360)	16.9 (430)	18.7 (475)
Base Tool Weight	lbs (kg)	200 (91)	400 (182)	500 (227)
Diametrical Stroke	in (mm)	0.375 (9.55)	0.375 (9.55)	0.414 (10.55)
Max. Radial Force ¹	lbf (kN)	1,900,000 (8,400)	2,500,000 (11,100)	1,400,000 (6,200)
Piston Bore Dia.	in (mm)	8.0 (205)	11.0 (280)	13.8 (355)
Max. Press. Cap.	psi (MPa)	10,000 (68.9)	10,000 (68.9)	5,000 (34.4)

¹ For details on radial force requirements for crimping or swaging contact Volant Customer Support at +1 780.784.7098

² Overall Length is shown for a base tool equipped with the most common bell specific to each RTF model



Give us a problem. Or just drop us a line if you want to know more.

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