

## Extender Tools

These tools can be used to tighten most of our knurled nuts in hard to reach places. See the application note on this page for knurl size and corresponding extender tool.

For precise tightening, the extender tools listed with 1/4" hex drives are designed to adapt to any torque wrench with a female 1/4" socket, such as the VHP-4000 Torque Driver on page 8. The tools featured on this page also include the FlushNut™ wrenches, used to tighten the FlushNuts found throughout this chapter and described in detail on page 31.



## Removal Tool

Use the LT-300 Removal Tool to detach LiteTouch® and Super Flangeless™ Ferrules from tubing. Simply slide the appropriate tool blade slot between the lock ring and the ferrule body. With a slight twist, the ring will pop off, releasing the ferrule from the tubing. *Please Note: This Removal Tool will not work with the LT-135 Ferrule System.*



## Wrenches

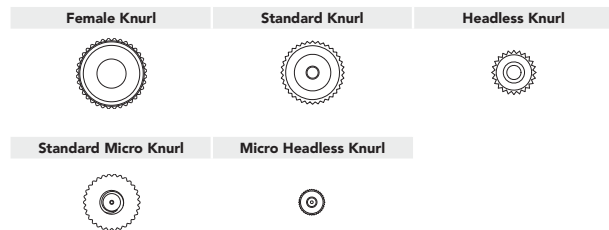
For your convenience, we offer wrenches in three standard sizes. You will need two A-304 wrenches to tighten most nuts into unions found on page 36 (for union 1593, you need one A-304 and one A-320 wrench).



The IDEX Wrench is slotted to fit over 1/16" and 1/8" OD tubing, and has 1/4" and 5/16" internal hex ends, to engage with the heads of the hex-head fittings most commonly used with Rheodyne® valves and the stainless steel fittings most listed on page 10.

### APPLICATION NOTE

The drawings represent actual size of the various knurled head designs of the Upchurch Scientific® nuts featured in this chapter. Select the appropriate extender tool for the knurl pattern of the nut you've selected.



Part No.	Description	Material	Qty.
<b>EXTENDER TOOLS</b>			
P-291	Extender Tool for Standard Head Nuts, with 1/4" Hex Drive	Aluminum	ea.
P-298	Extender Tool for Standard Head Nuts	Delrin®	ea.
P-299	Extender Tool for Standard Head Nuts	Aluminum	ea.
P-399	Extender Tool for Standard Head Nuts, Short	Aluminum	ea.
P-297	Extender Tool for Headless Nuts	Aluminum	ea.
P-292	Extender Tool for Headless Nuts, with 1/4" Hex Drive	Aluminum	ea.
P-277	Extender Tool for Standard Micro Nuts	Aluminum	ea.
N-290	Extender Tool for Micro Headless Nuts	Aluminum	ea.
P-278	Extender Tool for Female Nuts, with 1/4" Hex Drive	Aluminum	ea.
<b>MISCELLANEOUS TOOLS</b>			
A-304	Wrench, 1/4" x 5/16"	Steel	ea.
A-305	Wrench, 1/2" x 9/16"	Steel	ea.
A-320	Wrench, 3/8" x 7/16"	Steel	ea.
6810	IDEX Wrench, 1/4" x 5/16"	Steel	ea.
F-345	FlushNut Wrench for 10-32 Threaded Fittings	Steel/Plastic Handle	ea.
F-346	FlushNut Wrench for 1/4-28 Threaded Fittings	Steel/Plastic Handle	ea.
LT-300	Removal Tool for LiteTouch and Super Flangeless Ferrules	Steel/Plastic Handle	ea.