

UP Ultrapharma[®]



Torque Knob

Why using a Torque tool?

Over-compression is the biggest problem experienced in this industry. Most of the elastomer gaskets are already destroyed even before they are being used. Think about the life expectancy of a gasket that is over-compressed.

Each rubber has certain mechanical, thermal and chemical properties that we can rely on when we choose to use it. As long as we use the rubber within its boundaries the rubber will perform as expected. Once we exceed one of these properties the rubber will basically fail. High temperature as well as wrong chemical exposure will destroy a gasket. The same will happen when we over-compress a gasket. The mechanical structure within the rubber represented by Tear Strength and Tensile Strength will fail. The internal structure of the rubber will break down, resulting in lower temperature resistance, weaker chemical resistance and eventually parts of the rubber will break off and end up in your system.

Why does man over-compress?

- We don't know!
- People think the gasket might leak, therefore they turn the wing nut that bit extra
- Users were told to turn the wing nut as far as they could
- The manufacturer has not provided sufficient information

All is true. We tested several rubbers and PTFE gaskets and learned that many of them can be sealed with a much lower torque than expected. Below a table of results.

Gas. Material	Rec. Torque Nm	Pressure @ 20°C	SIP @ 135°C	Pressure after SIP 20°C	Cycles
EPDM	1,5 - 2 Nm	30 Bar	2,2 Bar (2h)	30 Bar	1
SILICONE	1,5- 2 Nm	30 Bar	2,2 Bar (2h)	30 Bar	1
FKM	1,5 - 2 Nm	30 Bar	2,2 Bar (2h)	30 Bar	1
TRI-BOND	2 Nm	30 Bar	2,2 Bar (2h)	20 Bar	1
PTFE ENVELOPE	3 Nm	25 Bar	2,2 Bar (2h)	6 Bar	1
PTFE SOLID	3 Nm	30 Bar	2,2 Bar (2h)	10 Bar	1
STEAM-FLON	4 Nm	8 Bar	2,2 Bar (2h)	8 Bar	1

The Torque-Knob prevents over-compression because of its preset (and calibrated) torque limit.

The Torque-Knob is an easy tool to use. With two sockets to choose from the Torque Knob fits all Wing-Nuts. It can even be used for MHP clamps. Depending on the gasket material you can chose the specific torque in Nm. Place the knob and socket over the wing nut. Turn it clockwise, once it "clicks" you have reached the desired torque with a precision of 4%. PTFE type gaskets require to "settle" this means that they need to be re-torqued after the first and sometimes second sterilization cycle. Re-torqueing is always done at the same torque level, not higher.



Materials

The outer part is made of anodized aluminum with hardened steel spring. The inner part and shaft are made of hardened steel. The connection is a 1/4" square.

Available sizes

UP-TN-1,5NM	Torque Knob for Elastomers 1,5 Nm, without Socket, BLUE Plate
UP-TN-2,0NM	Torque Knob for Tri-Bond 2,0 Nm, without Socket, BLUE Plate
UP-TN-2,5NM	Torque Knob for Tri-Bond 2,5 Nm, without Socket, BLUE Plate
UP-TN-3,0NM	Torque Knob for PTFE & PTFE-envelop 3,0 Nm, without Socket, RED Plate
UP-TN-4,0NM	Torque Knob for Steam-Flon 4,0 Nm, without Socket, RED Plate

Available extensions

Unfortunately we are not living in a perfect world,
you need some helpful extensions to reach in corners
or difficult areas.

Part numbers

UP-TN-SOCKET
UP-TN-SOCKET-AC
UP-TN-SWIVEL-0.25
UP-TN-EXT-0.25-55MM
UP-TN-EXT-0.25-97MM
UP-TN-EXT-0.25-150MM
UP-TN-EXT-0.25-405MM



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