# FITTING ASSEMBLY GUIDELINES

Understanding the proper preparation and assembly of high pressure fittings and components is critical to the safe operation and longevity of your tools and equipment.

## **TAPERED PIPE THREADS**

Tapered pipe threads (NPT) seal by contact of threads. A paste type anti-seize compound such as Parker Thread-Mate<sup>™</sup> along with thread sealing tape works most effectively with NPT threads.

- Use anti-seize compound on male thread, then 2–3 wraps of Teflon® tape (if larger than 3/4 NPT, use 3–4 wraps).
- Prepared fittings should engage about 2 turns by hand and at least 5–6 turns before reaching the recommended torque. Failure to reach minimum engagement usually indicates poorly formed or damaged threads.

Thread Size	Recommended Torque	
1/16 NPT	4-5 Nm	3-4 ft-lb
1/8 NPT	20-23 Nm	15-17 ft-lb
1/4 NPT	24-29 Nm	18-21 ft-lb
3/8 NPT	27–34 Nm	20-25 ft-lb
1/2 NPT	54-61 Nm	40-45 ft-lb
3/4 NPT	88-102 Nm	65-75 ft-lb
1 NPT	129-163 Nm	95-120 ft-lb
1-1/4 NPT	176-203 Nm	130-150 ft-lb

## **BSPP THREADS**

British Standard Parallel Pipe threads (BSPP) seal with the use of a bonded or metal seal that is crushed between the male and female thread at either the face or the shoulder, they do not seal on the threads. A paste type anti-seize compound such as Swagelok Blue Goop® works most effectively with BSPP threads.

- Use anti-seize compound on male thread.
- Prepared fittings should engage fully by hand.

Thread Size	Recommended Torque	
1/8 BSPP	20-22 Nm	15-16 ft-lb
1/4 BSPP	30-35 Nm	22-26 ft-lb
3/8 BSPP	40-50 Nm	30-37 ft-lb
1/2 BSPP	55-65 Nm	41-50 ft-lb
3/4 BSPP	90–100 Nm	66-74 ft-lb
1 BSPP	135-160 Nm	100-118 ft-lb
1-1/4 BSPP	200–230 Nm	150-170 ft-lb

## **METRIC THREADS**

Metric threads with cone seal (M36, M24, M7) seal with the use of an angled male and female conical surface, they do not seal on the threads. A paste type anti-seize compound such as Swagelok Blue Goop® works most effectively with metric cone seal threads.

- Use anti-seize compound on male thread.
- Prepared fittings should engage fully by hand.

Thread Size	Recommended Torque	
M7	18-20 Nm	13-15 ft-lb
M24	90–105 Nm	66-77 ft-lb
M36	190-220 Nm	140-162 ft-lb

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### **TYPE M SWIVEL**

Type M swivel nut threads (TM12, AF 060-XX, AF 061-XX, AF 062-XX, AF 063-XX) seal with the use of an angled male and female cone, they do not seal on the threads. Designed for fast, simple connections of waterblast hoses and waterblast equipment. A paste type anti-seize compound such as Swagelok Blue Goop® works most effectively with metric cone seal threads.

- Use anti-seize compound on male thread.
- Prepared fittings should engage fully by hand.

Thread Size	Recommended Torque	
9/16	46-52 Nm	34-38 ft-lb
3/4	75-81 Nm	55-60 ft-lb
7/8	102–109 Nm	75-80 ft-lb
1	122–135 Nm	90-100 ft-lb
1-5/16	176–203 Nm	130-150 ft-lb

## **SAPPHIRE NOZZLES**

Sapphire Nozzle threads (OS4, OS6, OS7) seal with the use of an angled male and female seat, they do not seal on the threads. A paste type antiseize compound such as Swagelok Blue Goop® works most effectively with seat seal threads.

- Use anti-seize compound on male thread.
- Prepared fittings should engage fully by hand.

Thread Size	Recommended Torque	
1/4-28 OS4	6-7.5 Nm	4.5-5.5 ft-lb
3/8-24 OS6	19–22 Nm	14-16 ft-lb
7/16-20 OS7	34-37 Nm	25-27 ft-lb

## **SAPPHIRE/M3 NOZZLES**

Sapphire and M3 Nozzle threads (OS2, OD3M) seal with the use of a thread sealing compound. Loctite® 680 is applied to the male thread. This type of thread needs to have a curing time of 24 hours before water pressure is applied.

- Use thread sealing compound on male thread.
- Prepared fittings should engage fully by hand.

Thread Size	Recommended Torque	
M3 Drilled Nozzle	6-7.5 Nm	4.5-5.5 ft-lb
6-40 UNF Sapphire Nozzle	19–22 Nm	14-16 ft-lb

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