

UNIT CONVERSIONS & FORMULAS

Measurement	Conversion	Example
Length	1 in. = 25.4 mm	12 in. x 25.4 = 304.8 mm
	1 in. = .0254 m	120 in. x .0254 = 3.05 m
	1 ft. = .3048 m	12 ft. x .3048 = 3.68 m
	1 mm = .0394 in.	100 mm x .0394 = 3.94 in.
	1 m = 39.37 in.	10 m x 39.37 = 393.7 in.
	1 m = 3.281 ft.	10 m x 3.281 = 32.81 ft.
Volume	1 gal = 3.785 l	10 gal x 3.785 = 37.85 l
	1 liter = .2642 gal	100 liters x 26.42 = 26.42 gal
Weight	1 lb. = .454 kg	10 lbs. x .454 = 4.54 kg
	1 kg = 2.205 lbs.	10 kg x 2.205 = 22.05 lbs.
Pressure	1 psi = .06895 bar	40,000 psi x .06895 = 2,758 bar
	1 bar = 14.503 psi	2,758 bar x 14.503 = 40,000 psi
Flow	1 gpm = 3.785 lpm	30 gpm x 3.785 = 113.55 lpm
	1 lpm = .2642 gpm	100 lpm x .264 = 26.42 gpm
Force	1 lb. = 4.448 N	100 lbs. x 4.448 = 444.8 N
	1 N = .2248 lbs.	900 N x .2248 = 202.32 lbs.
Torque	1 lb.-ft. = 1.3567 N-m	100 lb.-ft. x 1.3567 = 135.67 N-m
	1 N-m = .737 lb.-ft.	100 N-m x .737 = 73.7 lb.-ft.
Power	1 hp = .7457 kW	50 hp x .7457 = 37.29 kW
	1 kW = 1.341 hp	50 kW x 1.341 = 67.05 hp

Formula	English Units	Metric Units
Power Requirements*	hp = gpm x psi / 1550	kW = lpm x bar / 540

*Formulas assume 90% mechanical efficiency

TECHNICAL

40,000 PSI

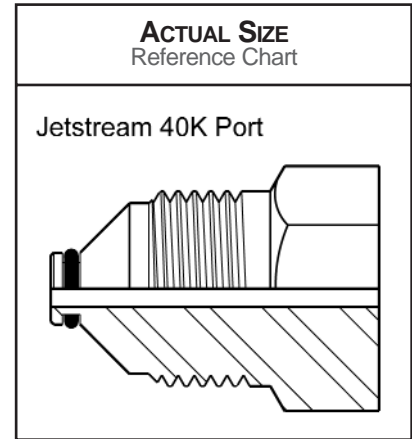
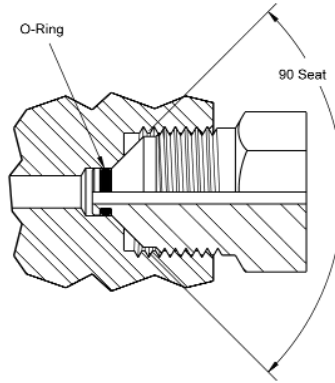
CONNECTION TYPES

Several connection types are available for use with Jetstream 40,000 psi products. The purpose of this section is to allow users to identify the connections needed and provide information on the features and proper use of each.

JETSTREAM 40K PORT

Product Description

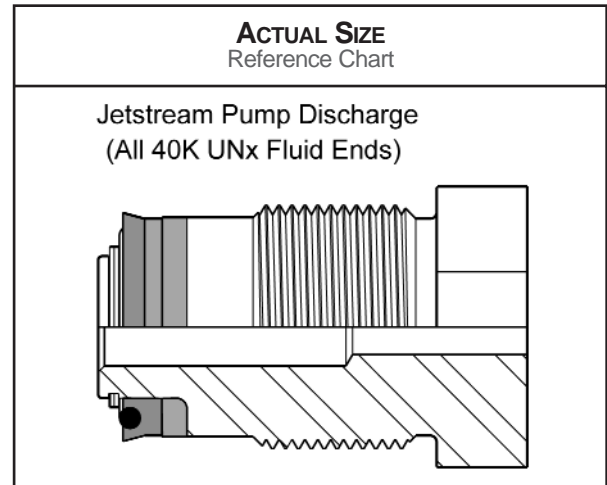
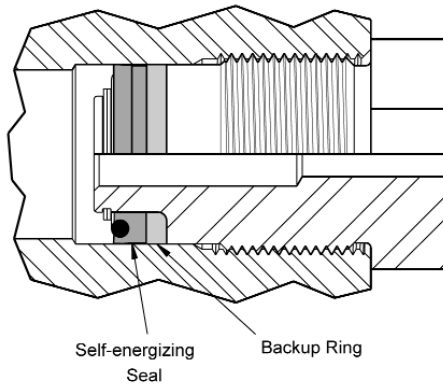
- Specially designed to prevent leakage and wear frequently associated with standard metal-to-metal seals by incorporating an o-ring with a metal-to-metal cone and seat backup
- Repairing leaks requires only o-ring replacement, as opposed to standard high pressure connections which often require re-coning, or component replacement
- Utilized in most Jetstream 40,000 psi products



Connection Thread	Recommended Torque	
	ft-lbs	N-m
1" - 12UNF	75	102

Note: Always apply thread lubricant (anti-seize) to male threads before assembling Jetstream 40K Port connections. See Fittings, Page E-1, for thread lubricants available from Jetstream.

JETSTREAM 40K PUMP DISCHARGE



Product Description

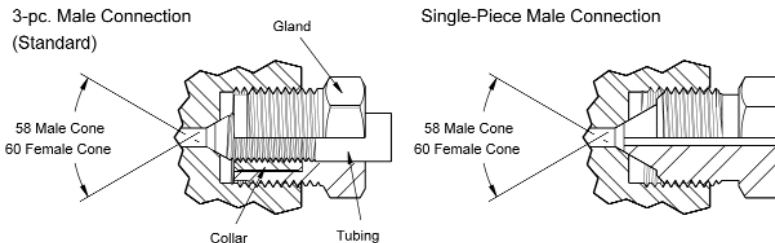
- Specially designed for use in all Jetstream 40,000 psi UNx manifold discharge ports
- No metal-to-metal seals which can wear and require manifold replacement

Note: Always apply thread lubricant (anti-seize) to male threads before assembling Jetstream 40K Pump Discharge connections to prevent galling of threads. See Fittings, Page E-1, for available thread lubricants.

Connection Thread	Recommended Torque	
	ft-lbs	N-m
1" - 12UNF	75	102

CONNECTION TYPES

HIGH PRESSURE (HP)



Product Description

- Widely regarded as the industry standard connection for pressures from 30,000 to 60,000 psi (2,069 to 4,138 bar)
- Rated working pressure is dependent upon inner diameter bore size of tubing used. See HP Lance connection specs for rated working pressure of high pressure tubing
- Connections exist in two different forms:
 1. Used to connect high pressure tubing with a conical male seat and left-handed threads to a female port using a gland nut and left-hand threaded collar.
 2. For many high pressure male fittings, the geometry of the gland, collar, and tubing is combined into one component that connects directly to a high pressure female port (Single-Piece Style).
- Suitable for repetitive connection/disconnection

Size	Connection Thread	Common Name	Tubing Thread* Left-Hand	Recommended Torque	
				ft-lbs	N-m
1/4" HP	9/16" - 18UNF	HP4	1/4" - 28UNF	25	34
3/8" HP	3/4" - 16UNF	HP6	3/8" - 24UNF	50	68
9/16" HP	1 1/8" - 12UNF	HP9	9/16" - 18UNF	75	102

* For three-piece connection styles only.

Connection Instructions

1. 3-pc. Male Connection Style only – Liberally apply anti-seize to male tubing threads to prevent thread galling.
2. 3-pc. Male Connection Style only – Slide gland nut over tubing and thread collar (left-hand threaded) onto tubing until it is past the first one or two full threads of the tubing.
3. Both styles – Liberally apply anti-seize to male connection threads and male cone.
4. Both Styles – Install male connection into female port and tighten according to torque specification in chart above.

Note: Always apply thread lubricant (anti-seize) to male threads before assembling High Pressure connections to prevent galling of threads.

See Fittings, Page E-1, for available thread lubricants.

ACTUAL SIZE
Reference Chart

**High Pressure (HP)
(Single Piece Style)**

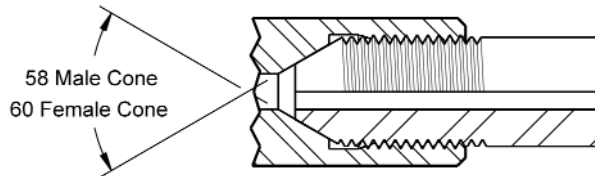
**High Pressure (HP)
(Gland, Collar & Tubing)**

TECHNICAL

40,000 PSI

CONNECTION TYPES

HIGH PRESSURE LANCE (HP LANCE)



Product Description

- This connection has the same geometry and threads as a standard high pressure tubing connection with the exception that right-hand threaded tubes are available
- Male tubing is inserted directly into a female connection without the use of a gland and collar
- Used in tube cleaning operations where standard connections are too large in diameter

Size	Connection Thread	Recommended Torque	
		ft-lbs	N-m
1/4" HP Lance LH	1/4"-28UNF-LH	15	20
1/4" HP Lance RH	1/4"-28UNF-RH		
3/8" HP Lance LH	3/8"-24UNF-LH	20	27
3/8" HP Lance RH	3/8"-24UNF-RH		
9/16" HP Lance LH	9/16"-18UNF-LH	25	34
9/16" HP Lance RH	9/16"-18UNF-RH		

ACTUAL SIZE
Reference Chart

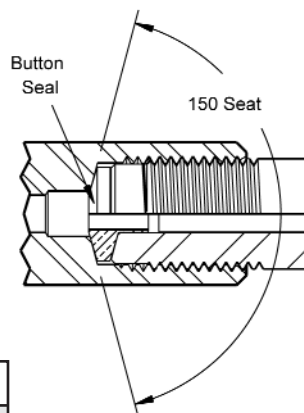
High Pressure Lance
Left Hand Threads
"HP Lance LH"

High Pressure Lance
Right Hand Threads
"HP Lance RH"

BUTTON SEAL

Product Description

- Utilizes an inexpensive button-style seal which absorbs abuse and wear, preventing damage to the seating surfaces of more costly components
- Used in the SP-40 Tornado Gun, Multi-Mode Valve, and in some automated lancing systems



ACTUAL SIZE
Reference Chart

9/16" Button Seal

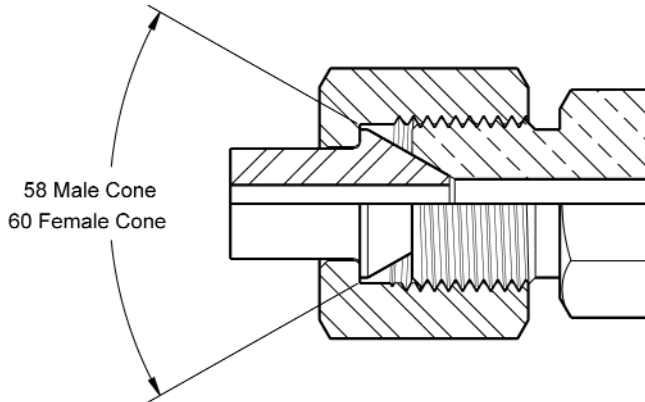
Connection Thread	Recommended Torque	
	ft-lbs	N-m
9/16"-18UNF	40	54

TECHNICAL

40,000 PSI

CONNECTION TYPES

TYPE "M"



Product Description

- Designed for fast, simple connection of waterblast hoses and lances
- Male conical seat protected from damage by the hose swivel nut
- Unlike high pressure connections, the seating surfaces do not rotate against each other when connections are made, resulting in a more reliable, longer lasting connection

Size	Common Name	Connection Thread	Recommended Torque	
			ft-lbs	N-m
9/16" Type "M"	M9	9/16" - 18UNF	30	41
7/8" Type "M"	M14	7/8" - 14UNF	60	81
1 1/8" Type "M"	M18	1-1/8" - 12UNF	90	163

