

Options for Spray gun connections to Air or Nitrogen in a facility

There are a total of six (Six) different connection configurations that are possible to connect our Spray gun at a facility. When looking to connect to a facility supply it is necessary to determine what will be the source of the gas (Air or Nitrogen).

The department using the spray gun should not be utilizing sources within the facility that are being connected to patient outlets. While you will not directly know where the source of the gas is being supplied, it is a good question to ask to help insure your facility is not violating standards in place to protect their patients.

Different supply source configurations.

Instrument Air:

There are three ways to connect to an Instrument Air source.

- The hose for the Spray gun should be fitted with a DISS (Diameter Index Safety System) fitting. This is a connection that is specific to a gas type and cannot be interchanged and connected to a different gas or vacuum source. The Air DISS fitting should be color coded Yellow (for Air) where it is threaded to the female fitting at the wall or outlet of a regulator and the other end is a ¼" barb fitting where our hose connects and is attached with a hose clamp or equivalent.
- The first way to connect our gun to the air source is from a wall connection located within the department. The connection will have a female DISS fitting and from there we can connect directly to the wall connection with our hose connection. The customer will be provided 55psi of air from the wall and the only method of controlling the pressure is through the trigger on the spray gun. For the customer to be able to accurately control the pressure being discharged a regulator should be utilized. This will allow them to set a pressure and when the gun trigger is fully depressed, the pressure set is delivered. Many instrument IFU's have a maximum permissible pressure that can be used on their instrumentation before damage can occur.
- The second and third methods both connect a regulator to a tank. There are two different tank connection options and both require the use of a pressure regulator. The main difference between the two options is how the regulator connects to the tank.
 - The first connects over a rectangular head on the tank and is pin indexed for the regulator assembly to be attached.
 - The second type is a DISS fitting nut that mates with the female DISS connection on the tank.
- For both of the tank options, there are two gauges, the first is the pressure in the tank (2000psi - 2600psi) and the second gauge is the output pressure that the customer can adjust and regulate. The discharge fitting on the regulator is the same fitting found on a wall connection so the standard fitting discussed earlier that the hose end connects to.

Nitrogen:

There are also three ways to connect to a Nitrogen Gas source.

- The hose for the Spray gun should be fitted with a Nitrogen DISS (Diameter Index Safety System) fitting. This is a connection that is specific to a gas type and cannot be interchanged and connected to a different gas or vacuum source. The Nitrogen DISS fitting should be color coded Black (for Nitrogen) where it is threaded to the female fitting at outlet of a regulator and the other end is a ¼" barb fitting where our hose connects and is attached with a hose clamp or equivalent.
- The first way to connect our gun to the Nitrogen source is from a wall connection located within the department. The connection will have a female DISS fitting. A nitrogen regulator will be needed as the pressure provided from a hospital supplied connection will need regulated to allow the customer to accurately control the pressure being discharged. This will allow them to set a pressure and when the gun trigger is fully depressed, the set pressure is delivered. Many instrument IFU's have a maximum permissible pressure that can be used on their instrumentation before damage can occur.
- The second and third methods both connect a regulator to a tank. There are two different tank connection options and both require the use of a pressure regulator. The main difference between the two options is how the regulator connects to the tank.
 - The first connects over a rectangular head on the tank and is pin indexed for the regulator assembly to be attached.
 - The second type is a DISS fitting nut that mates with the female DISS connection on the tank.
- For both of the tank options, there are two gauges, the first is the pressure in the tank (200psi – 2600psi) and the second gauge is the output pressure that the customer can adjust and regulate. The discharge fitting on the regulator is the same fitting found on a wall connection so the standard fitting discussed earlier that the hose end connects to can be attached to the female connection at the outlet of the regulator.

The last page of this document contains links to the catalog and specific pages from WT Farley, a vendor where the DISS Fitting and Regulators can be purchased. While it is not Healthmark's responsibility to provide this solution, the information can be shared with the customer if their Biomed or Facilities department is unable or unwilling to assist. This is not the only vendor that provides these products. Please feel free to utilize any other source and vendor to provide the solutions needed.

There are many sources and regulations that can impact what and how medical gasses are used within a facility. These suggestions are the most common but are by no means exhaustive. It is important that the facility take the time to make sure they research follow their own local regulations.

Link to WT Farley Web Page:

<http://www.wtfarley.com/>

Link to WT Farley Inc Catalog:

<http://www.journalgraphicsdigitalpublications.com/epubs/W%20T%20FARLEY%20INC/WTFarleyCatalog-2015/#?page=0>

Link to **Air** Regulators:

<http://www.journalgraphicsdigitalpublications.com/epubs/W%20T%20FARLEY%20INC/WTFarleyCatalog-2015/#?page=16>

Link to **Nitrogen** Regulators:


<http://www.journalgraphicsdigitalpublications.com/epubs/W%20T%20FARLEY%20INC/WTFarleyCatalog-2015/#?page=18>

Link to Couplers and Quick Connects (For both Air and Nitrogen)

<http://www.journalgraphicsdigitalpublications.com/epubs/W%20T%20FARLEY%20INC/WTFarleyCatalog-2015/#?page=30>

Link to DISS Male and Female Fittings:

<http://www.journalgraphicsdigitalpublications.com/epubs/W%20T%20FARLEY%20INC/WTFarleyCatalog-2015/#?page=32>

		Oxygen	MF-0118	\$8.00
		Air	MF-0218	\$11.50
		Vacuum	MF-0318	\$11.50
	Hand Tight with 1/4 Hose Barb (DISS)	Nitrous Oxide	MF-0418	\$12.50
		Nitrogen	MF-0518	\$15.00
		WAGD / Evac	MF-0618	\$28.50
		Carbon Dioxide	MF-504287	\$24.00

Cylinder Sizes, volumes and pressures for common gasses:

Gas	Cyl. Size	Cylinder Dimensions	Cyl. Pressure (psig)	Standard Volume (14.7 psia, 70 F)			Approx. Wt. Gas (lb-oz)	CGA Connection
				Gal.	Ft.3	Liters		
Oxygen (O2)	B	3-3/16" x 13"	2015	55	7.4	210	0-9.8	870 Pin-Indexed
	D	4-3/16" x 16-3/4"	2015	112	15	424	1-3.9	
	E	4-3/16" x 26-1/2"	2015	186	24.9	704	2-1.0	
	M	7" x 43"	2217	935	125	3540	10-6.2	540
	M	7" x 43"	2492	1055	141	3993	11-11.5	
	G	9" x 51"	2217	1878	251	7108	20-13.8	
	H	9" x 51"	2492	2110	282	7986	23-7.8	
Nitrous Oxide (N2O)	J	9-1/4" x 55"	2640	2521	337	9543	27-14.5	910 Pin-Indexed
	B	3-3/16" x 13"	745 @ 70°F	98	13.1	370	1-7.8	
	D	4-3/16" x 16-3/4"	745 @ 70°F	248	33.2	940	3-12.8	
	E	4-3/16" x 26-1/2"	745 @ 70°F	420	56.1	1590	6-6.8	326
	M	7" x 43"	745 @ 70°F	2155	288	8156	32-15.5	
	G	9" x 51"	745 @ 70°F	3726	498	14103	57-0.0	
	H	9" x 51"	745 @ 70°F	4242	567	16057	64-14.6	
Medical Breathing Air (Air)	J	9-1/4" x 55"	745 @ 70°F	4900	655	18550	74-15.7	950 Pin-Indexed
	D	4-3/16" x 16-3/4"	2015	105	14	398	1-0.8	
	E	4-3/16" x 26-1/2"	2015	175	12.4	662	1-12.0	
	M	7" x 43"	2217	875	117	3313	8-12.2	346
	M	7" x 43"	2492	973	130	3682	9-11.8	
	G	9" x 51"	2217	1743	233	6599	17-7.2	
	H	9" x 51"	2492	1945	260	7363	19-7.6	
Nitrogen (N2)	J	9-1/4" x 55"	2640	2319	310	8778	23-3.5	960 Pin-Indexed
	D	4-3/16" x 16-3/4"	2015	103	13.7	391	1-0.0	
	E	4-3/16" x 26-1/2"	2015	172	23	651	1-10.7	
	M	7" x 43"	2217	860	115	3257	8-5.4	580
	M	7" x 43"	2492	958	128	3625	9-4.5	
	G	9" x 51"	2217	1721	230	6514	16-10.8	
	H	9" x 51"	2492	1908	255	7222	18-7.8	
Carbon Dioxide (CO2)	J	9-1/4" x 55"	2640	2274	304	8609	22-0.5	940 Pin-Indexed
	B	3-3/16" x 13"	838 @ 70°F	98	13.1	370	1-8.0	
	D	4-3/16" x 16-3/4"	838 @ 70°F	248	33.2	940	3-12.6	
	E	4-3/16" x 26-1/2"	838 @ 70°F	420	56.1	1590	6-6.7	320
	M	7" x 43"	838 @ 70°F	2155	288	8156	33-0.0	
	G	9" x 51"	838 @ 70°F	3726	498	14103	56-15.8	
	H	9" x 51"	838 @ 70°F	4249	568	16086	64-15.8	
Helium (He)	J	9-1/4" x 55"	838 @ 70°F	4908	656	18578	75-1.1	930 Pin-Indexed
	D	4-3/16" x 16-3/4"	2015	98	13.2	374	0-2.2	
	E	4-3/16" x 26-1/2"	2015	165	22	623	0-3.6	
	M	7" x 43"	2217	823	110	3115	1-2.1	580
	M	7" x 43"	2492	913	122	3455	1-4.1	
	G	9" x 51"	2217	1638	219	6202	2-4.1	
	H	9" x 51"	2492	1825	244	6910	2-8.2	
	J	9-1/4" x 55"	2640	2177	291	8241	3-0.0	