

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

FILLING INSTRUCTIONS FOR  
NITROGEN BOTTLE

Headquarters, Department of the Army, Washington, D. C.  
1 June 2001

**DISTRIBUTION STATEMENT A:** Approved for public release; distribution is unlimited.

**REPORTING OF ERRORS**

You can improve this TB. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Aviation and Missile Command, ATTN: AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. You may also submit your recommended changes by E-Mail directly to 2028@redstone.army.mil. A reply will be furnished directly to you.

**WARNING**

Double hearing protection required at the control panel when diesel engine is running.

**1. Bottle Inspection.**

- a. Check bottle and valve for any visible damage.
- b. Check bottle pressure rating stamp.
- c. Check hydrostatic test date stamp (within last 5 years).

**NOTE**

A star following the date indicates 10-year test interval.

**CAUTION**

Bottle must have some residual pressure remaining to refill or it will have to be evacuated by a compressed gas service.

**2. Filling Bottle.**

- a. Ensure on board storage bottles are filled to 4,400 psi.
- b. Attach magnetic thermometer to bottle, item 19.
- c. Select bottle filling fitting (item 2) and attach to high-pressure hose.
- d. Five minutes after attaching the thermometer read the ambient bottle temperature and refer to the Temperature Reference Table for maximum fill pressure allowed.

**WARNING**

Do not exceed allowable pressure limits as stated the Temperature Reference Table.

- e. Loosely attach filling fitting, item 2 to bottle valve.
- f. Open gang receiver valve (v4 or v6) reference TO 35D29-7-6-1/TM 1-3655-230-12, WP 005, Figure 1.
- g. Slightly open high-pressure regulator valve on the gang.
- h. Purge the fill hose with nitrogen.
- i. While purging fill hose, tighten the fitting at bottle.
- j. Open bottle valve.

**NOTE**

If gang receiver pressure gauge (p18 or p19), (reference TO 35D29-7-6-1/TM 1-3655-230-12, WP 005, Figure 1), in use, equalizes with the bottle being filled (p17), close v4 or v6 and open the other receiver valve.

- k. Open high pressure regulator valve (PVR2, Figure 1, WP 005).
- l. Slowly fill bottle to required pressure or chart pressure.
- m. Close gang high pressure regulator valve.
- n. Close bottle valve.

**WARNING**

Fill hose will contain trapped pressure equal to the filled bottle.

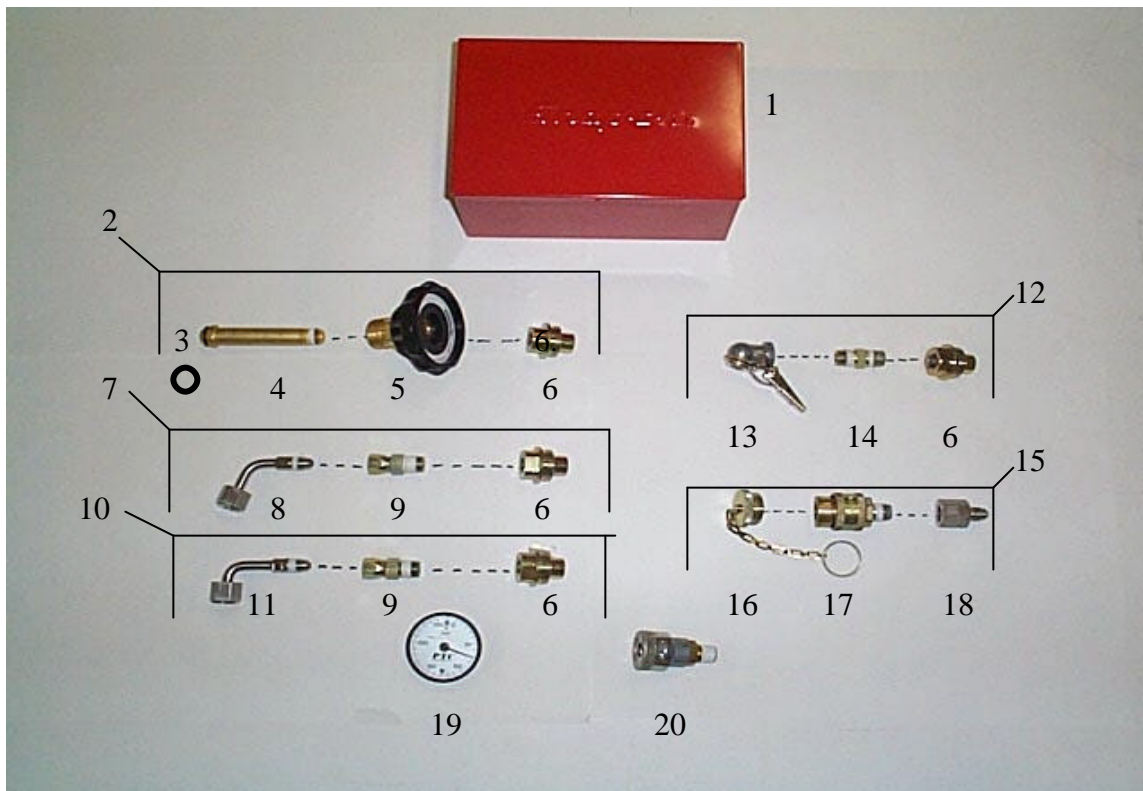
- o. Loosen fill fitting at bottle and slowly bleed trapped pressure from fill hose.
- p. Disconnect fill fitting from bottle and remove from hose.
- q. Reel fill hose on hose reel.
- r. Remove magnetic thermometer from bottle.

Temperature Reference Table

Stamped Service Pressure	1800	2015	2265	2400	Stamped Service Pressure
Filling Status	Standard Service Pressure	Standard Service Pressure	Standard Service Pressure	Standard Service Pressure	Filling Status
Temp. F	NITROGEN FILLING PRESSURE PSIG				Temp. F
0	1493	1664	1862	1968	0
2	1502	1674	1873	1980	2
4	1511	1684	1885	1992	4
6	1520	1695	1896	2005	6
8	1529	1705	1908	2017	8
10	1537	1715	1920	2030	10
12	1546	1725	1931	2042	12
14	1555	1735	1943	2055	14
16	1564	1745	1954	2067	16
18	1573	1755	1966	2079	18
20	1581	1765	1977	2092	20
22	1590	1775	1989	2104	22
24	1599	1785	2001	2116	24
26	1608	1795	2012	2129	26
28	1616	1805	2024	2141	28
30	1625	1815	2035	2154	30
32	1634	1825	2047	2166	32
34	1643	1835	2058	2178	34
36	1652	1845	2070	2191	36
38	1660	1855	2081	2203	38
40	1669	1865	2093	2215	40
42	1678	1875	2104	2228	42
44	1687	1885	2116	2240	44
46	1695	1895	2127	2252	46
48	1704	1905	2139	2265	48
50	1713	1915	2150	2277	50
52	1721	1925	2162	2289	52
54	1730	1935	2173	2302	54
56	1739	1945	2185	2314	56
58	1748	1955	2196	2326	58
60	1756	1965	2208	2339	60
62	1765	1975	2219	2351	62
64	1771	1985	2231	2363	64

Temperature Reference Table – Continued

Stamped Service Pressure	1800	2015	2265	2400	Stamped Service Pressure
Filling Status	Standard Service Pressure	Standard Service Pressure	Standard Service Pressure	Standard Service Pressure	Filling Status
Temp. F	NITROGEN FILLING PRESSURE PSIG				Temp. F
66	1783	1995	2242	2375	66
68	1791	2005	2254	2388	68
70	1800	2015	2265	2400	70
72	1809	2025	2276	2412	72
74	1817	2035	2288	2425	74
76	1826	2045	2299	2437	76
78	1835	2055	2311	2449	78
80	1844	2065	2322	2461	80
82	1852	2075	2334	2474	82
84	1861	2085	2345	2486	84
86	1870	2095	2357	2498	86
88	1878	2105	2368	2510	88
90	1887	2114	2379	2523	90
92	1896	2124	2391	2535	92
94	1904	2134	2402	2547	94
96	1913	2144	2414	2559	96
98	1922	2154	2425	2572	98
100	1930	2164	2436	2584	100
102	1939	2174	2448	2596	102
104	1948	2184	2459	2608	104
106	1956	2194	2471	2620	106
108	1965	2204	2482	2633	108
110	1974	2214	2493	2645	110
112	1982	2223	2505	2657	112
114	1991	2233	2516	2669	114
116	2000	2243	2528	2681	116
118	2008	2253	2539	2694	118
120	2017	2263	2550	2706	120
122	2026	2273	2562	2718	122
124	2034	2283	2573	2730	124
126	2043	2283	2584	2742	126
128	2052	2303	2596	2755	128
130	2060	2312	2607	2767	130



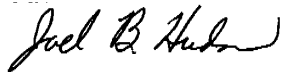
Item Number	Part Number	CAGE	Description	Units Per Assy	SMR Code
1.	KRA 111A	55719	ACCESSORY BOX	1	PAOZZ
2.	.BFA	81996	BOTTLE FILL ASSEMBLY	1	AOOOO
3.	.. 615-PT	0DBS2	O-RING, REPLACEMENT CGA 580	1	PAOZZ
4.	.. 615-3	0DBS2	NIPPLE, HAND TIGHT, CGA 580	1	PAOZZ
5.	.. 692-P	16116	NUT, HAND TIGHT, PLASTIC, CGA 580	1	PAOZZ
6.	.. 3010-2	97111	ADAPTER, QUICK DISCONNECT, MALE	1	PAOZZ
7.	.SVA-70	81996	70° SCHRADER VALVE ASSEMBLY	1	AOOOO
8.	.. HF300-70TF	13899	CHUCK ASSY, 70° (SCHRADER VALVE)	1	PAOZZ
9.	.. 6505-4-4	5E240	ADAPTER, 4 JIC FEMALE TO 4 NPT MALE	1	PAOZZ
6.	.. 3010-2	97111	ADAPTER, QUICK DISCONNECT, MALE	1	PAOZZ
10.	.SVA-90	81996	90° SCHRADER VALVE ASSEMBLY	1	AOOOO
11.	.. 7347114-30	98750	CHUCK ASSY, 90° (SCHRADER VALVE)	1	PAOZZ
9.	.. 6505-4-4	5E240	ADAPTER, 4 JIC FEMALE TO 4 NPT MALE	1	PAOZZ
6.	.. 3010-2	97111	ADAPTER, QUICK DISCONNECT, MALE	1	PAOZZ
12.	.ACA	81996	AIR CHUCK ASSEMBLY	1	AOOOO
13.	.. 986	94894	CHUCK, AIR 4 NPT WITH CLIP	1	PAOZZ
14.	.. 5404-4-4	5E240	ADAPTER 4 NPT MALE TO 4 NPT MALE	1	PAOZZ
6.	.. 3010-2	97111	ADAPTER, QUICK DISCONNECT, MALE	1	PAOZZ
15.	.FDQA	81996	FEMALE QUICK DISCONNECT ASSEMBLY	1	AOOOO
16.	.. 3005-2	97111	PLUG DUST, W RETAINER	2	PAOZZ
17.	.. 3050-2	97111	QUICK DISCONNECT, FEMALE	2	PAOZZ
18.	.. 2405-4-4S/S	5E240	ADAPTER, 4 FEMALE NPT TO 4 MALE JIC	2	PAOZZ
19.	.312F	96739	THERMOMETER, MAGNETIC	1	PAOZZ
20.	.0360-0319	88233	COUPLING HALF, QUICK DISCONNECT	1	PAOZZ

TB 1-3655-230-13

By Order of the Secretary of the Army:

Official:

ERIC K. SHINSEKI  
*General, United States Army*  
*Chief of Staff*



JOEL B. HUDSON  
*Administrative Assistant to the*  
*Secretary of the Army*  
0115501

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