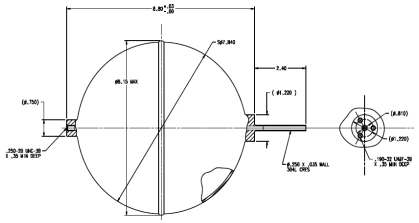
ALL-METAL

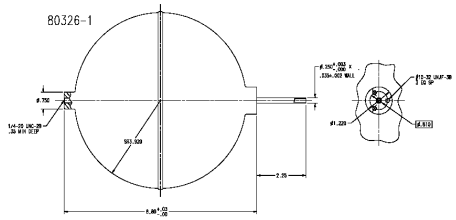
7.66-inch

PSI P/N	Year	Size & Mounting	Qty	Design Wt (lb)	Internal Volume (in^3)	MEOP,Proof, Burst Press. (psi)	Program	Tank Shell Material	Heritage/History/Usage
80326-1	1984	7.66" ∅ polar bosses		3.38	235	3600,5400,7200	VRM	STA 6Al-4V Ti	A .250 inch O.D. by .035 inch wall 304L CRES transition tube is butt welded to the boss for the pressurant inlet connection.
80499-1	2007	7.66" ∅ polar bosses	2	3.38	228	3600,5400,7200	PRISMA	STA 6Al-4V Ti	This is a spherical pressure vessel constructed of titanium. Mounting is accomplished on polar bosses.

80499-1



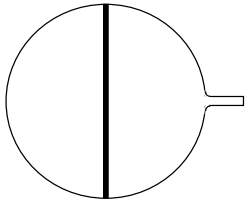
80326-1



9.44-inch

PSI P/N	Year	Size & Mounting	Qty	Design Wt (lb)	Internal Volume (in^3)	MEOP,Proof, Burst Press. (psi)	Program	Tank Shell Material	Heritage/History/Usage
80345-1	1987 thru 1995	9.44" ∅	23	7.40	400	4500,6700,10460	DMSP, TIROS	STA 6Al-4V Ti	'This tank is a 9-inch spherical pressure vessel constructed of 6Al-4V titanium. This vessel has an all welded construction exterior. This tank contains a port for pressurant outflow.

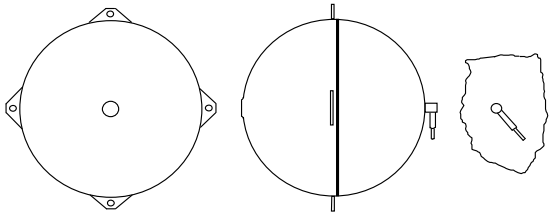
80345-1



16.5-inch

PSI P/N	Year	Size & Mounting	Qty	Design Wt (lb)	Internal Volume (in^3)	MEOP,Proof, Burst Press. (psi)	Program	Tank Shell Material	Heritage/History/Usage
80330-1	1985	16.5" ∅ , lugs	2	11.70	2315	338,507, -	COBE	STA 6Al-4V Ti	This is a 16.5-inch spherical pressure vessel constructed of 6Al-4V titanium. Mounting is accomplished by four (4) lugs parallel with and adjacent to the sphere mid-plane.

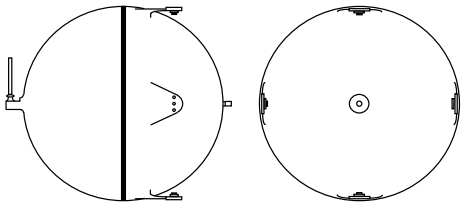
80330-1



23.16-inch

PSI P/N	Year	Size & Mounting	Qty	Design Wt (lb)	Internal Volume (in^3)	MEOP,Proof, Burst Press. (psi)	Program	Tank Shell Material	Heritage/History/Usage
80333-1	1985 thru 1988	23.16" ∅	9	76	6450	4060,4872,6090	EURECA, ASTRO	STA 6Al-4V Ti	Mounting is accomplished on four (4) lateral tabs parallel with & adjacent to the sphere mid-plane.

80333-1



13.2-inch XENON COPV

PSI P/N	Year	Size & Mounting	Qty	Design Wt (lb)	Internal Volume (in^3)	MEOP,Proof, Burst Press. (psi)	Program	Tank Shell Material	Heritage/History/Usage
80386-101	1995 thru 1999*	13.2" max ∅ x 29.6" long, polar bosses	30	14.0	1960	2500,3125,3750	HS 601 (Boeing)	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is a derivative of PSI P/N 80400-1 pressurant tank[9]. It is the first xenon tank flown on a commercial communication satellite. Its unusual shape is due to the limited space aboard the spacecraft. This tank was qualified by test. The development of this tank is detailed in the Reference 10 AIAA paper.
80412-1	1998*	13.2" ∅ x 26.8 long, polar bosses	5	15.4	3052	2176,2719,3264	ETS VIII (MELCO)	Annealed 6Al-4V Ti liner, T-1000 filament wrap	This tank is a derivative of 80386-101. This tank uses the liner manufacturing technology as the basis for the new 6AL-4V liner. The bosses are configured similar to the 80386-101 bosses, with the blind end fixed and the ported end free to expand axially during pressurization. This tank is still under development and will be qualified by test.
80386-201	1999*	13.2" max ∅ x 29.6" long, polar bosses	--	14.0	1960	2500,3125,3750	HS 601 (Boeing)	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is a "next generation" derivative of 80386-101. The tank is identical to 80386-101 except that the blind dome is made from a machined forging instead of a welded fitting/dome assembly. The forging is made form a forging die developed for 80412-1. This tank is qualified by similarity.

*In production

80386-101 80412-1 80386-201

16-inch COPV Pressurant Tank

PSI P/N	Year	Size & Mounting	Qty	Design Wt (lb)	Internal Volume (in^3)	MEOP,Proof, Burst Press. (psi)	Program	Tank Shell Material	Heritage/History/Usage
80374-1	1993	16” max ∅ x 26” long, polar bosses	-	22	4105	4500,5625,7500	S7000	CP-3 Ti & CP-70 Ti liner	This pressurant tank is constructed utilizing a CP titanium liner with end domes, polar mounting bosses, and overwrapped with an epoxy resin impregnated fiber. Mounting is provided by polar bosses located on the tank centerline.

16.6-inch COPV Pressurant Tank

PSI P/N	Year	Size & Mounting	Qty	Design Wt (lb)	Internal Volume (in^3)	MEOP,Proof, Burst Press. (psi)	Program	Tank Shell Material	Heritage/History/Usage
80400-1	1995 thru 2000*	16.6" ∅ x 26.1" long, polar bosses	27	14.0	4105	4500,5625,6750	A2100 (LM)	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is PSI's first COPV pressurant tank. It tank was qualified by test, including vibration and shock.
80402-1	1997 thru 1998	16.6" ∅ x 26.1" long, polar bosses	5	15.4	4105	4500,5625,6750	DRTS (IHI)	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is identical to 80400-1. A new part number was assigned for configuration control purposes only.
80445-1	2001	16.6" ∅ x 26.1" long, polar bosses	1	14	4105	4500,5625,6750	MESSEN-GER (Aerojet)	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is a derivative of 80446-1. The tank has two ports, one at each end. This tank was qualified by protoflight testing only.
80446-1	1999 to present	16.6" ∅ x 26.1" long, polar bosses	51	14.0	4105	4500,5625,6750	A2100 (LM), STAR2, SBIRS, AEHF, OPTUS, AMC14, JCSAT, GPSIII	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is a derivative of 80400-1. The heads are machined from forgings, eliminating two fitting-to-dome welds. This tank was qualified by delta qualification testing. There are several delta qualifications.
80459-1	2003	16.6" ∅ x 26.1" long, polar bosses	2	14	4105	4500,5625,6750	SELENE (IHI)	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is identical to 80446-1. A new part number was assigned for configuration control purposes only.
80492-1	2006	16.6" ∅ x 26.1" long, polar bosses	1	14.0	4105	4500,5625,6750	Chandrayaan-1 (India's moon program)	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is a derivative of 80446-1.

80402-1

16.7-inch COPV Pressurant Tank

PSI P/N	Year	Size & Mounting	Qty	Design Wt (lb)	Internal Volume (in^3)	MEOP,Proof, Burst Press. (psi)	Program	Tank Shell Material	Heritage/History/Usage
80436-1	2000 thru 2003	16.7" ∅ x 29.6" long, polar bosses	3	28.0	4967	4800,6000,7200	Astrolink, A2100 (LM)	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is a derivative of 80446-1. The heads are machined from forgings. This tank was qualified by qualification testing.
80458-1	2006	16.7" ∅ x 44.6" long, polar bosses	6	43.5	7928	2700,3375,4137	AEHF	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	The commercially pure titanium liner has a nominal .032" membrane thickness.
80465-1	2003 Thru 2007	16.7" ∅ x 29.6" long, polar bosses	4	28.0	4967	4800,6000,7200	WINDS (IHI)	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	This tank is identical to 80436-1. A new part number was assigned for configuration control purposes only.
80475-1	2004	16.7" ∅ x 34" long, polar bosses	7	50.7	5309	4496,6744,8996	VEGA	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	The tank is constructed of a CP Titanium center cylinder welded to two CP Titanium end domes and overwrapped with T1000 carbon fiber.
80496-1	2006 Thru 2008	16.7" ∅ x 29.6" long, polar bosses	6	28	4967	4800,6000,7200	DS2000, QZSS	CP-3 Ti & CP-70 Ti liner, T-1000 filament wrap	The tank is constructed of a CP Titanium center cylinder welded to two CP Titanium end domes and overwrapped with T1000 carbon fiber.