

Delta 7925 (9.5 ft)

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DELTA

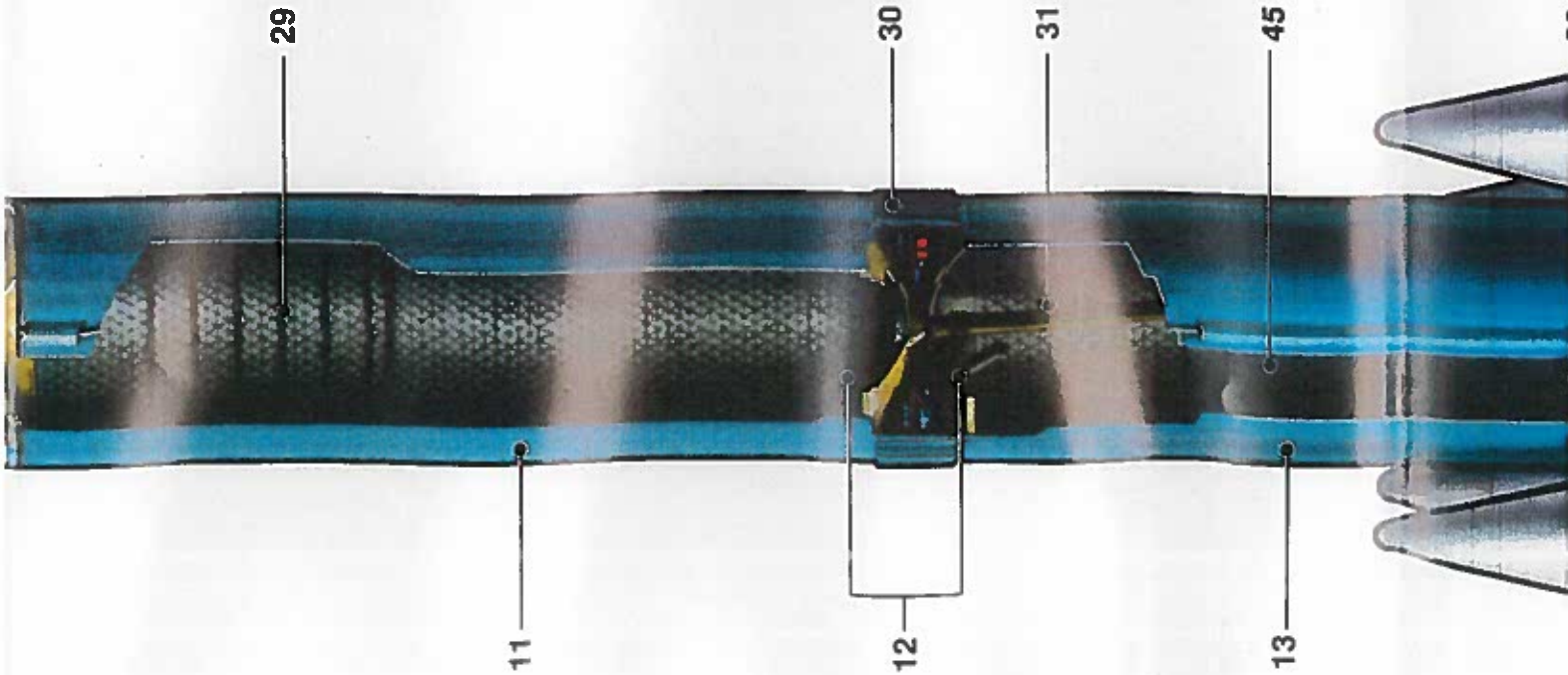
LAUNCH VEHICLE

PUTTING THE WORLD INTO SPACE

Delta II Expendable Launch Vehicle

The Delta II launch vehicle comes in a range of configurations to meet the launch services needs of military, government, and commercial customers. The two- and three-stage vehicles offer a choice of 2.9- and 3-m (9.5 and 10 ft) diameter fairings and three, four, or nine solid motor configurations. The standard vehicle configuration uses a Rocketdyne RS-27A engine with a 12:1 expansion ratio and nine Alliant lightweight, graphite-epoxy motor (GEM) strap-on solid rocket motors (SSRMs). The RS-27A employs a turbine/turbopump and a regeneratively cooled thrust chamber and nozzle, which are hydraulically gimbaled to control pitch and yaw. The SSRMs augment the first-stage performance, with six igniting at liftoff and the remaining three igniting in flight after burnout of the first six.

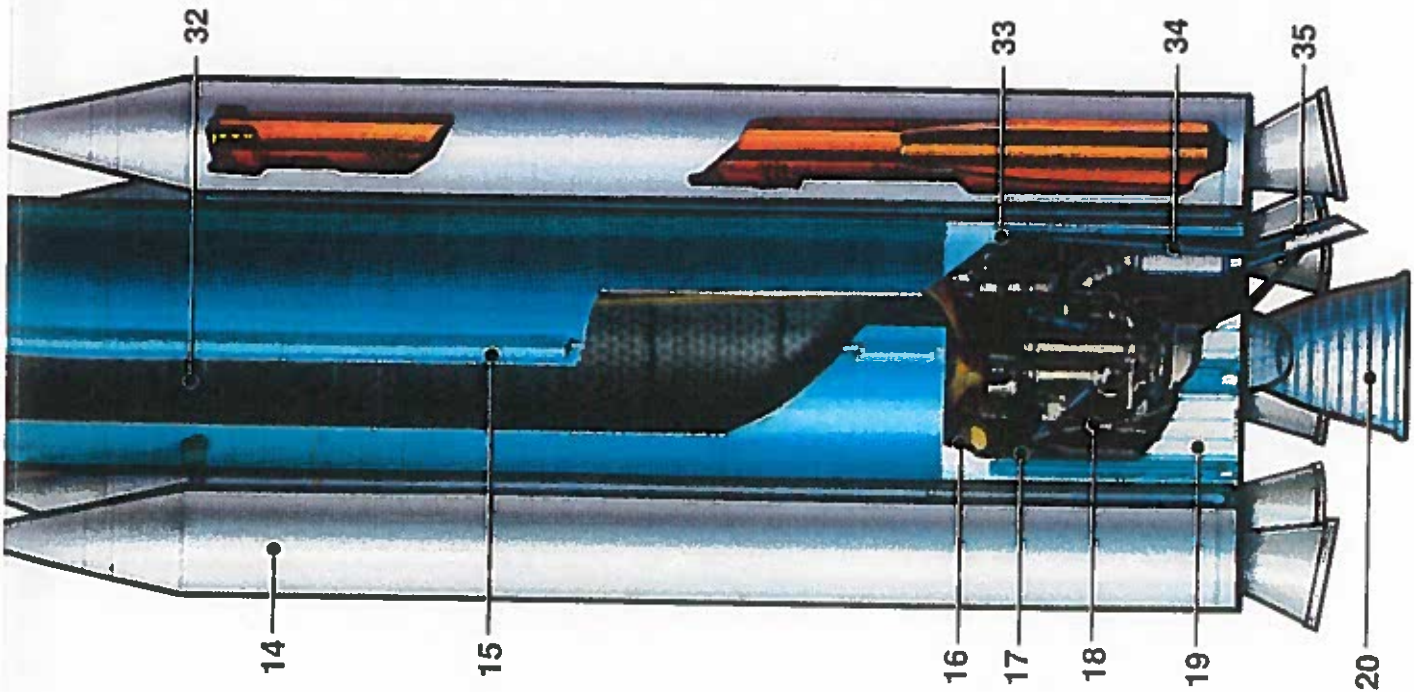
The Aerojet AJ10-118K engine powers the second stage and includes fuel and oxidizer tanks. A redundant attitude control system (RACS) using nitrogen gas controls roll as well as pitch, yaw, and roll during unpowered flight. A third stage, if used, usually contains a Thiokol Corporation STAR 48B solid rocket motor (SRM), a payload attach fitting (PAF) with a nutation control system (NCS), and a spin table containing small rockets for spin-up of the third stage and spacecraft. Fairing options include a 2.9-m (9.5 ft) diameter fairing (bisector) as well as a 3-m (10 ft) diameter (bisector) version. Each can be used on either two- or three-stage missions. The fairings incorporate interior acoustic absorption blankets as well as contamination-free separation joints. The redundant inertial flight control assembly (RIFCA) avionics system uses ring laser gyros and accelerometers to provide redundant three-axis attitude and velocity data.



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The Delta II is capable of launching more than 1860 kg (4120 lb) to geostationary transfer orbit (GTO) and 5139 kg (11,330 lb) into low Earth orbit (LEO).

Delta II	
1. Fairing (10-ft Diameter)	23. Oxidizer Pressurization and Vent Tubing
1a. Fairing (9.5-ft Diameter)	24. Oxidizer Tank
2. Acoustic Blanket	25. Insulation Blanket
3. Payload Attach Fitting	26. Nitrogen Sphere
4. Second-Stage Guidance Section	27. Second-Stage Engine, (Aerojet AJ10-118K)
5. Support Truss	28. Fuel Tank Vent and Relief Valve
6. Miniskirt Structure Assembly	29. Baffle Installation (9 Places) Fuel Tank
7. Second-Stage Separation Springs	30. Center Body Section (Equipment Installation)
8. Attitude Control System Gas Jets	31. Fuel Transfer Tube
9. Helium Sphere	32. Frame Installation
10. Interstage	33. Engine Section
11. Fuel Tank	34. Fuel Fill Duct
12. Float Switches	35. Turbine Exhaust Duct Extension
13. Liquid Oxygen Tank	36. Payload Attach Fitting
14. Graphite Epoxy Motor (Alliant)	37. Acoustic Blanket
15. Wire Tunnel	38. Thiokol STAR 48B Solid Rocket Motor
16. Nitrogen Sphere	39. Spin Rockets
17. Hydraulic Reservoir Unit	40. Spacecraft (Typical)
18. Liquid Oxygen Fill Duct	41. Nutation Control System (NCS)
19. Boattail Section	42. Telemetry Antenna
20. First-Stage Engine (Rocketdyne RS-27A)	43. Spin Table
21. Spacecraft	44. Spin Table Support
22. Fuel Tank	45. Baffle Installation (11 Places) Liquid Oxygen Tank



Delta 7920 (10 ft)

The Boeing Company
 5301 Bolsa Avenue, Huntington Beach, California 92647 - 2099

