What is claimed is:

1. An apparatus for use with a workpiece having a surface within a cavity in the workpiece, comprising:

a tubular body configured for insertion longitudinally inward of the cavity beside the inner surface of the workpiece, including a peripheral wall bounding a laser beam delivery channel, with an aperture reaching outward from the laser beam delivery channel through the peripheral wall; and

an optical device located in the laser beam delivery channel and configured to direct a laser beam outward through the aperture;

wherein the peripheral wall has thickness and has internal surfaces defining a water delivery channel that is located within the thickness of the peripheral wall, the water delivery channel reaching through the peripheral wall longitudinally to the aperture and configured to convey a stream of overlay water to the aperture.

2. An apparatus as defined in claim 1 wherein the tubular body has an air-water outlet~~,~~ and defines an air-water return channel communicating the aperture with the air-water outlet separately from the laser delivery channel.

3. An apparatus as defined in claim 2 wherein the air-water outlet is located at an outer end portion of the tubular body.

4. An apparatus as defined in claim 2 further comprising a coupling configured to connect an optical fiber with the laser beam delivery channel, to connect a pneumatic line with the laser beam delivery channel, and to connect a hydraulic line with the water delivery channel.

5. An apparatus as defined in claim 1 wherein the optical device is spaced longitudinally from the aperture.

6. An apparatus for use with a workpiece having a surface within a cavity in the workpiece, comprising:

a laser beam delivery device configured for insertion in the cavity beside the inner surface of the workpiece, including a peripheral wall bounding a laser beam delivery channel, with an aperture reaching outward from the laser beam delivery channel through the peripheral wall;

an optical device located in the laser beam delivery channel and configured to direct a laser beam outward through the aperture; and

a support apparatus configured to engage the workpiece in an installed position in which the support apparatus is releasably attached to the workpiece and supports the laser beam delivery device in the cavity.

7. An apparatus as defined in claim 6 wherein the support apparatus is configured to insert the laser beam delivery device into the cavity.

8. An apparatus as defined in claim 6 wherein the support apparatus is configured to move the laser beam delivery device within the cavity.

9. An apparatus as defined in claim 8 wherein the support apparatus is configured to rotate the laser beam delivery device within the cavity.

10. An apparatus as defined in claim 8 wherein the support apparatus is configured to vary the depth of the laser beam delivery device within the cavity.

11. An apparatus as defined in claim ~~8~~ 6 wherein the support apparatus includes a compressible element configured to conform to a contour of the outer surface of the workpiece when the support apparatus is in the installed position.

12. An apparatus as defined in claim 6 wherein the support apparatus includes means for retaining the support apparatus in the installed position under the force of vacuum pressure.

13. An apparatus as defined in claim 6 wherein the support apparatus includes a housing defining closed boundaries of a vacuum chamber having an open side and is configured for the outer surface of the workpiece to close the open side of the vacuum chamber when the support apparatus is in the installed position.

14. An apparatus as defined claim 6 wherein the support apparatus is configured for coupling the laser beam delivery device with an optical fiber reaching from the ~~mounting structure~~ support apparatus to a laser source.

15. An apparatus as defined in claim 6 wherein the support apparatus is configured for coupling the laser beam delivery device with a source of overlay water.

16. An apparatus as defined in claim 6 further comprising a laser beam amplifier on the support apparatus.

17. An apparatus for use with a workpiece having an outer surface with an opening and an inner surface defining a cavity reaching inward from the opening, comprising:

a laser beam delivery device configured for insertion inward of the cavity beside the inner surface of the workpiece, including a peripheral wall bounding a laser beam delivery channel, with an aperture reaching outward from the laser beam delivery channel through the peripheral wall;

an optical device located in the laser beam delivery channel and configured to direct a laser beam outward through the aperture; and

a support apparatus configured to engage the workpiece in an installed position in which the support apparatus supports the laser beam delivery device inside the cavity, wherein the

support apparatus includes a motorized drive interconnected with the laser beam delivery device to move the laser beam delivery device within the cavity;

a laser beam source remote from the support apparatus; and

an optical fiber interconnecting the support apparatus with the laser beam source.

18. An apparatus as defined in claim 17 wherein the support apparatus incudes a laser beam amplifier.

19. An apparatus as defined in claim 17 wherein the support apparatus includes a compressible element configured to conform to a contour of the outer surface of the workpiece when the support apparatus is in the installed position.

20. An apparatus as defined in claim 17 wherein the support apparatus includes a housing defining closed boundaries of a vacuum chamber having an open side, and is configured for the outer surface of the workpiece to close the open side of the vacuum chamber when the support apparatus is in the installed position.