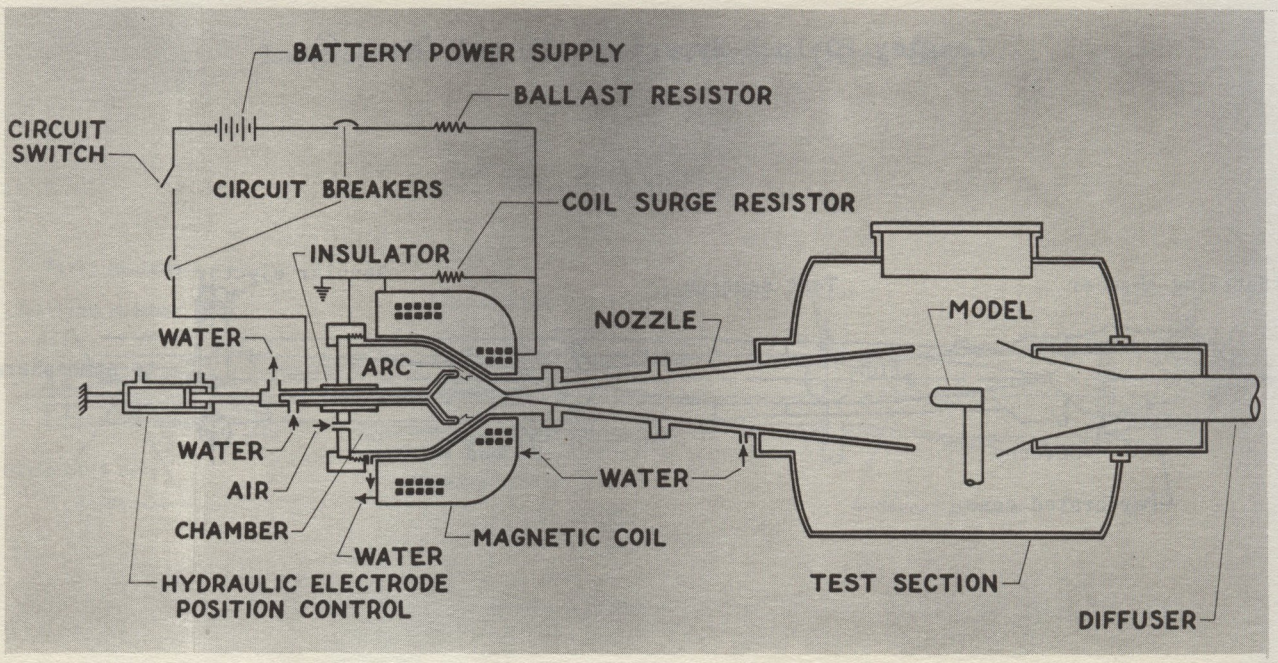
LANGLEY 20-INCH HYPERSONIC ARC-HEATED TUNNEL



L-1488

The Langley 20-inch hypersonic arc-heated tunnel is located in Building 1275 and is under the direction of the Applied Materials and Physics Division. This tunnel is used for tests of reentry materials. Test media are air and nitrogen, heated by means of an electric arc. Model mounting consists of model insertion equipment. Test conditions can be varied by preselecting values of arc power, total pressure, throat diameter, and nozzle length. Operating conditions used to determine three typical test points are as follows:

Arc power, MW	1.8	1.95	2.06
Stagnation pressure, psia	76	157	389
Mach number	6 or 10	6 or 10	6 or 10
Total enthalpy, Btu/lb	4672	2750	1602

Models up to 2 inches in diameter can be accommodated for the low Mach number test section (M = 6), and models up to 4 inches in diameter can be tested with the use of the high Mach number nozzle (M = 10). Running time with low Mach number nozzles is 180 seconds and running time with high Mach number nozzles is 60 seconds.