

LANGLEY RESEARCH CENTER

FACILITY LOCATION Hampton, Virginia 23665
FACILITY NUMBER 1275
FACILITY NAME Chemical Kinetic Shock Tube
FUNCTIONAL NAME Chemical Kinetic Shock Tube
TECHNOLOGICAL AREAS High-temperature chemical kinetics research, pollution research

INITIAL COST	\$ 75 K	YR. BUILT	1966	STATUS CODE	Active
ACCUM. COST	\$ 100 K	NASA B.O.D.	1966	OWNER CODE	NASA
LIFE EXPECT.	Indef.			OPER. CODE	NASA

CONTRACTOR NAME
(if contr. oper.)

POTENTIAL

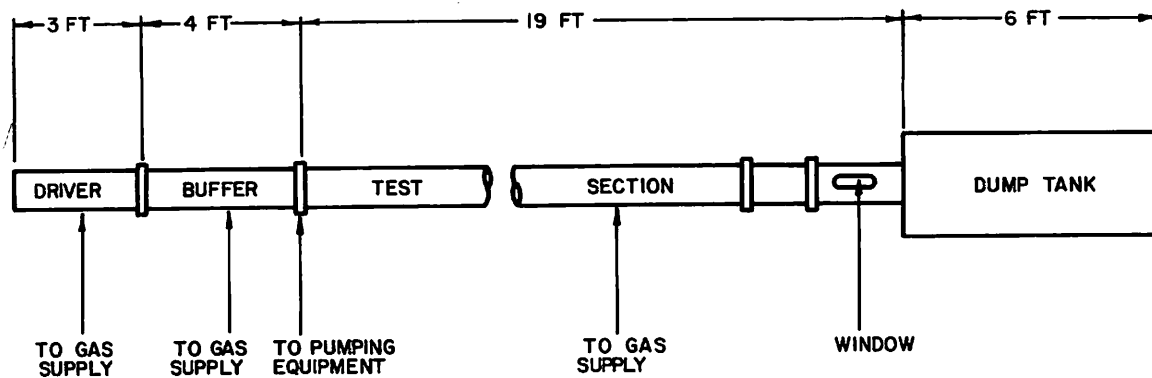
PLANS

OTHER INFO SOURCES

COGNIZANT ORG. Space Systems Division
COMPONENT

LOCAL CONTACT FOR Chief, Research Facilities Engineering Division, Code 56.000; (804)
FURTHER INFO 827-3171

January 1974



DESCRIPTION

This shock tube is used for high-temperature chemical kinetic studies of gas phase reactions. The tube is constructed of stainless steel and has a 3.5-in. inside diameter. The tube is composed of a 19-ft-long test section, a 4-ft-long buffer section, and a 3-ft-long driver section. The test medium is usually argon with a small percentage of the reactant gas mixture. The driver and buffer gases are helium or helium-nitrogen mixtures. The shock tube is capable of producing temperatures up to about 4000°K with the incident shock in argon and pressures up to about 45 psi. Test conditions can be varied by using diaphragms of different thicknesses or different initial test gas pressures, and by varying the molecular weight of the driver and buffer gases.