Chapter 6

HIGH-TENSION IGNITION CABLES

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Introduction

1. The cables described in this chapter are those used for high-tension leads in ignition systems for gas turbine or ignition engines. The main distinction between these and the low-tension cables lies in the greater strength of the insulating covering.

DESCRIPTION

2. The range of high-tension cables available is listed in Table 1, which includes details of construction. All are single-core cables.

Uniplugcotton, No. 2

3. Uniplugcotton, No. 2, consists of a stranded stainless steel conductor, with insulation of vulcanised rubber and an outer lacquered cotton braiding to give good oil, ozone, and heat-resisting properties. It is used in ignition systems for piston engines, at temperatures up to 120 deg. C.

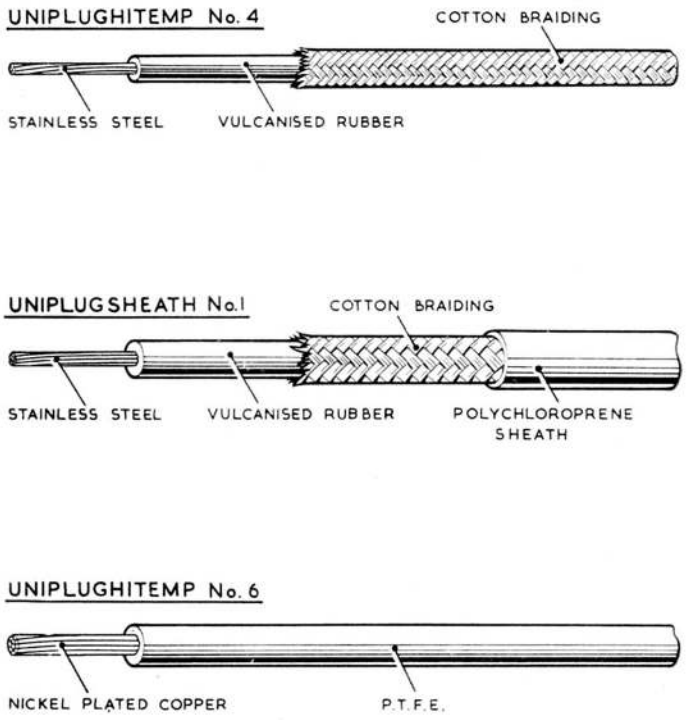

Fig. 1. Typical H.T. ignition cables

(A.L.67, June 56)

Uniplugmet, No. 1

4. Uniplugmet, No. 1 has a stranded tinned copper conductor, with insulation of vulcanised rubber. The insulation is lapped with oil-resisting varnished cambric tape, and has an outer layer of tinned phosphor-bronze braiding. It is used in ignition systems for piston engines, at temperatures up to 120 deg. C.

TABLE 1

Range of high-tension ignition cables

Cable	Stores Ref.	Overall dia. (in.) (max.)	Resistance (ohms per 1000 yd.)	Size of conductor (No. of wires/in.)
Uniplugcotton, No. 2	5E/1971	0·270	530	19/0·012
Uniplugmet, No. 1	5E/758	0·375	12·2	19/0·012
Uniplughitemp, No. 3	5E/3131	0·270	6·53	37/0·012
Uniplughitemp, No. 4	5E/3132	0·270	530	19/0·012
Uniplughitemp, No. 5	5E/3133	0·215	1440	7/0·012
Uniplughitemp, No. 6	5E/3203	0·175	6·35	37/0·012
Uniplugsheath, No. 1	5E/3749	0·215	1440	7/0·012
Uniplugsheath, No. 2	5E/3750	0·285	530	19/0·012

Uniplughitemp

5. Uniplughitemp is in four types, No. 3, 4, 5, and 6. No. 3 has a stranded, tinned copper conductor, with a layer of ozone-resisting material immediately over the conductor. The insulation consists of a layer of vulcanised rubber, with an outer lacquered cotton or glass braiding coloured red. This cable is used in high-energy ignition systems for gas turbine engines, at temperatures up to 140 deg. C.

6. Uniplughitemp, No. 4 (7 mm.) and No. 5 (5 mm.), are similar in construction to No. 3, but with a stranded stainless steel conductor. They are used in ignition systems for piston engines, also in certain gas turbine engines having an H.T. booster coil in the ignition system at temperatures up to 140 deg. C.

7. Uniplughitemp, No. 6 has a stranded, nickel-plated copper conductor, with insulation of natural-coloured P.T.F.E. This cable is used in high-energy ignition systems, and is suitable for use at temperatures between 140 and 220 deg. C.

Uniplugsheath

8. Uniplugsheath, No. 1 (5 mm.) and No. 2 (7 mm.) have a stranded stainless steel conductor, with a layer of ozone-resisting material immediately over the conductor. The insulation consists of a layer of vulcanised rubber, with an outer waterproofed braiding of cotton or glass, the whole covered by a sheath of black polychloroprene compound. This cable is used in ignition systems for piston engines, at temperatures up to 120 deg. C (No. 1) and 140 deg. C. (No. 2).

SERVICING

9. Every cable must be examined periodically throughout its entire length. If any part is damaged or shows signs of deterioration of the insulation, the complete cable must be renewed. No joint is permissible in any cable.

10. Deterioration of the insulation may be caused by prolonged exposure or by the action of deleterious substances such as oil and damage may be caused by accidental stresses or by chafing at the fixing points or other points of contact with adjacent parts. Such points should therefore be examined and any looseness of the cleats should be rectified.