

Chapter 9

PRESSURE JERKIN HOSE ASSEMBLIES

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Introduction

1. The pressure jerkin hose assemblies are used in conjunction with protective pressure clothing in high altitude flight. They are lengths of oxygen hose attached to the clothing to make the connection from the main oxygen supply to the oxygen mask tube and to the pressure clothing, and all incorporate a pressure jerkin chest connector (Valve, Jerkin Mk. 4). The other fittings in the assembly are similar to those used on the oxygen mask assemblies and vary to suit the systems installed in the aircraft.

2. All the assemblies are fitted with a Mk. 7 bayonet socket for coupling to the oxygen plug connector Mk. 7 on the oxygen mask tube.

3. The assemblies are of lengths within the range 21 - 23 in., but it is permissible to shorten the hose on the initial fitting to suit the individual wearer. All the assemblies utilise $\frac{3}{4}$ in. anti-kink hose.

DESCRIPTION

Pressure jerkin hose assembly Mk. 2 (fig. 1)

4. The pressure jerkin hose assembly Mk. 2 (Ref. No. 6D/2072) is used with ejection seats to which the fighter type P.E.C. (anti-g connection) is fitted. It comprises the personal component (man portion) of the P.E.C. with a length of hose connected to a Valve, jerkin Mk. 4 and another short length of hose connecting this to a bayonet union socket. A mic-tel connector assembly is strapped to the hose with Lassovic tape.

5. The hose is connected to the main oxygen on the P.E.C. personal component. The oxygen connection has a transverse steel pin to push open the oxygen supply valve in the seat component of the P.E.C. when the two components are mated. The emergency oxygen supply is fed into the main oxygen hose through the seat component of the P.E.C. and an inward relief

and excess pressure valve (Type RV51) mounted on the ejection seat.

6. Two screwed bushes are provided on the P.E.C. The first is adapted to connect with the A.V.S. connector Mk. 1 or the A.V.S. hose assembly Mk. 3 on the end of the hose from the A.V.S. and the second with the Mk. 1 anti-g suit connector on the end of the anti-g suit hose. Both connectors are provided with knurled clamping rings to engage the screwed bushes on the P.E.C. when the wearer is dressing before flight. Each connector incorporates means for opening the valves to the A.V.S. and anti-g service supplies when the parts of the P.E.C. are mated.

7. The mic-tel connector is a length of tinsel cord type cable connected to the P.E.C. contact assembly at one end and to the socket Type 626 at the other. The cable is anchored to the P.E.C. by a pair of cable cleats.

Pressure jerkin hose assembly Mk. 3 (fig. 2)

8. The pressure jerkin hose assembly Mk. 3 (Ref. No. 6D/2168) is used on pilot ejection seats to which the bomber type P.E.C. (no anti-g connection) is fitted. The assembly incorporates a special Y-piece connector for the connection of the anti-g suit, which, in this application, is not used in the anti-g capacity but as a pressure garment to supplement the pressure jerkin. It is inflated from the oxygen system in an emergency. The remaining components of the assembly are a Valve, jerkin Mk. 4, a bayonet union socket Mk. 7 and a mic-tel connector assembly strapped to the oxygen hose with Lassovic tape.

9. The hose is connected to the main oxygen connection on the P.E.C. personal component. The oxygen connection has a transverse steel pin to push open the oxygen supply valve in the seat component of the P.E.C. when the components are mated. The emergency oxygen supply is fed through the main oxygen hose in this type of P.E.C. through an inward relief and excess pressure valve (Type RV51) mounted on the ejection seat.

10. A screwed bush is provided on the P.E.C. adapted to connect with the A.V.S. hose assembly Mk. 1 on the end of the hose from the A.V.S. It is provided with a knurled clamping ring to engage

the screwed bush on the P.E.C. during dressing. It also incorporates means for operating the valve to the A.V.S. supply when the parts of the P.E.C. are mated.

11. The mic-tel connector is a length of tinsel cord type cable connected to the P.E.C. contact assembly at one end and to the socket Type 626 at the other. The cable is anchored to the oxygen hose by strips of Lassovic tape.

Pressure jerkin hose assembly Mk. 4 (fig. 3)

12. The pressure jerkin hose assembly Mk. 4 (Ref. No. 6D/2172) is used by members of the crew occupying the static seats and whose duties necessitate the change of stations in flight. It is a high altitude assembly incorporating a Valve, jerkin Mk. 4 and has an MSC3 type P.E.C. personal component (man portion) which can be connected with the corresponding portion on the static seat or with the MSC5 or MSC105-001 wander lead connector when the wearer is out of the seat.

13. A combined anti-g suit and emergency oxygen connector is introduced to permit connection of the emergency oxygen supply tube from the oxygen bottle (normally carried in the parachute pack) and from the anti-g suit, which, in this application, is not used in the anti-g capacity but as a pressure garment to supplement the pressure jerkin. Connection to the anti-g suit is by means of an anti-g suit connector Mk. 2.

14. The assembly terminates in a bayonet socket Mk. 7 and a socket Type 626 on the end of the mic-tel assembly.

15. The personal component of the P.E.C. has a pistol-grip type handle and the main oxygen connection is through a projecting stem containing a valve which opens on mating the parts of the P.E.C. The A.V.S. socket at the front of the P.E.C. is designed to receive an A.V.S. hose assembly Mk. 2 on the end of the A.V.S. connector hose, when the wearer is dressing. The valve, which opens on mating the parts of the P.E.C. is contained in this connector.

16. The electrical connector assembly fits into a slot at the back of the P.E.C. and is held in position by two countersunk screws; the cable is anchored to the hose with Lassovic tape.

Pressure jerkin hose assembly Mk. 5 (fig. 4)

17. The pressure jerkin hose assembly Mk. 5 (Ref. No. 6D/2215) is a high altitude assembly used with the fighter type P.E.C. on pilot ejection seats installed in naval aircraft. It is similar to the pressure jerkin hose assembly Mk. 2 comprising the personal component (man portion) of the P.E.C. with a length of hose connected to a Valve, jerkin Mk. 4 and another short length of hose connecting this to the bayonet union socket Mk. 7. A mic-tel connector is strapped to the hose with Lassovic tape.

18. This assembly differs from the Mk. 2 in the A.V.S. connector on the P.E.C. This is a special valve chamber containing the A.V.S. valve which opens when the parts of the P.E.C. are mated. The chamber incorporates a collet type connector socket to mate with the corresponding adapter (A.V.S. connector Mk. 2) on the end of the A.V.S. hose assembly on the suit. The valve chamber has a spring-loaded knurled cap with bayonet-fitting type slots in the sides. On insertion of the suit adapter the cap is pressed down against the spring, clamping the collet around the adapter to ensure a water-tight joint. It is then locked by twisting the cap into the bayonet slots.

19. The anti-g connector bush on the P.E.C. is identical with that on the Mk. 2 assembly and receives an anti-g suit connector Mk. 1 on the end of the anti-g suit hose. Both anti-g and A.V.S. suit connections are made to the P.E.C. during dressing.

20. The mic-tel connector is a length of tinsel cord type cable connected to the P.E.C. contact assembly at one end and to the socket Type 626 at the other. The cable is anchored to the oxygen hose by strips of Lassovic tape.

Pressure jerkin hose assembly Mk. 6 (fig. 5)

21. The pressure jerkin hose assembly Mk. 6 (Ref. No. 6D/2228) is used in pilot ejection seats to which the fighter type P.E.C. (with anti-g connection) is fitted. This assembly is similar to the Mk. 3 and incorporates a special Y-piece connector for the connection to the anti-g suit when used as a pressure garment

only. Although a fighter type P.E.C. is used on this assembly, it is, in fact, used on bomber aircraft fitted with fighter type P.E.C. on the ejection seats. Therefore, although an anti-g bush is provided on the P.E.C., it is never connected. The remaining components of the assembly are a Valve, jerkin Mk. 4, a socket bayonet union Mk. 7 and a mic-tel connector assembly strapped to the oxygen hose with Lassovic tape.

22. The hose is connected to the main oxygen connection on the P.E.C. personal component. The oxygen connection has a transverse steel pin to push open the oxygen supply valve in the seat component of the P.E.C. when the parts are mated. The emergency oxygen supply is fed into the main oxygen hose in this type of P.E.C. through an inward relief and excess pressure valve (Type RV51) mounted on the ejection seat.

23. Two screwed bushes are provided on the P.E.C. One of these is adapted to connect the A.V.S. connector Mk. 1 or A.V.S. hose assembly Mk. 3 on the end of the hose from the A.V.S. An anti-g suit connector bush is provided on the P.E.C., but it is never used with this assembly. The A.V.S. connector or hose assembly is provided with a knurled clamping ring to engage the screwed bush on the P.E.C. when the wearer dresses, and it incorporates means for opening the valve to the A.V.S. supply when the parts of the P.E.C. are mated.

24. When the anti-g suit is being used as a pressure garment, a Mk. 2 anti-g suit connector is required to connect to the bayonet socket Y-piece on the hose.

25. The mic-tel connector is a length of tinsel cord type cable connected to the P.E.C. contact assembly at one end and to the socket Type 626 at the other. The cable is anchored to the oxygen hose by strips of Lassovic tape.

Pressure jerkin hose assembly Mk. 7 (fig. 6)

26. The pressure jerkin hose assembly Mk. 7 (Ref. No. 6D/2569) is used by members of the crew occupying the static seats and whose duties require them to change stations in flight.

It is a high altitude assembly similar to the Mk. 4 but with a combined anti-g suit and emergency oxygen connector to suit the demand emergency oxygen regulator carried in the parachute pack. In all other respects it is similar to the Mk. 4, consisting of a Valve, jerkin Mk. 4 and an MSC3 type P.E.C. personal component (man portion) which can be connected with the corresponding portion on the static seat or with the MSC5 or MSC105-001 wander lead connector when out of the seat.

27. The anti-g connector combined with the demand emergency oxygen shut-off valve is designed to receive the anti-g connector Mk. 2 fitted to the anti-g suit when used as a pressure garment.

28. The assembly terminates in a socket bayonet union Mk. 7 and a socket Type 626 on the end of the mic-tel assembly.

29. The personal component of the P.E.C. has a pistol-grip type handle and the main oxygen connection is through a projecting stem containing a valve which opens on mating the two halves of the P.E.C. The A.V.S. socket at the front of the P.E.C. is designed to receive an A.V.S. hose assembly Mk. 2 on the end of the A.V.S. connector hose. The valve, which opens on mating the parts of the P.E.C., is contained in this connector.

30. The electrical assembly fits into a slot at the back of the P.E.C. and is held in position by two countersunk screws; the cable is anchored to the hose with Lassovic tape.

Pressure jerkin hose assembly Mk. 9 (fig. 7)

31. The pressure jerkin hose assembly Mk. 9 (Ref. No. 6D/2834) is used by members of the crew occupying pneumatically assisted seats. It is a high altitude assembly used with the M.L. quick-release oxygen connector for coupling directly to an oxygen supply wander lead in the aircraft which enables the crew members to sit in the seat or leave it without disconnection. It comprises a Valve, jerkin Mk. 4 and a combined anti-g/demand emergency oxygen shut-off valve assembly similar to that used on the Mk. 7 assembly, with the mic-tel cable assembly strapped to the oxygen hose with Lassovic tape and terminating in a socket Type 626 at one end

and a plug Type 671 at the other. The main oxygen connection is the usual socket bayonet union Mk. 7.

SERVICING

32. Permissible repair of the pressure jerkin hose assemblies includes:—

- (1) Renewal of the oxygen hose if damaged.
- (2) Renewal of the mic-tel connector assembly.
- (3) Renewal of the sealing rings around the orifices on the under face of the fighter and bomber type P.E.C.s.

No attempt may be made to remedy any fault developing in a fitting such as a valve assembly. The complete component must be removed and a replacement fitted.

Renewing the oxygen hose

33. (1) Remove the Lassovic tape from the hose assembly, releasing the mic-tel connector.
- (2) Draw the damaged piece of hose off the spigots of the fittings to which it is connected.
- (3) Cut a new length of $\frac{3}{4}$ in. anti-kink hose and re-attach to the fittings. To ease assembly Silicone grease MS33 (Ref. No. 34B/9100519) may be used on the FITTINGS ONLY – NOT on the hose.
- (4) When connecting to the fittings the distance from the end of the hose to the wall or stop of the fitting must not exceed $\frac{3}{16}$ in.
- (5) Re-attach the mic-tel cable assembly to the hose, using Lassovic tape.

◀ Re-connecting a hose

34. When a hose has been removed or has pulled off, it may be re-connected under the following conditions:—

- (1) The hose remains serviceable in all respects.

- (2) The length used for the original connection is cut off.
- (3) After having been shortened, the hose remains long enough for its original purpose. ►

Renewing the mic-tel cable assembly

35. Faulty mic-tel cable assemblies on the MSC3 type P.E.C.s and the M.L. quick-release connector require total renewal, including the electrical contact assembly. On the fighter and bomber type P.E.C. a new assembly, comprising the socket Type 626 and cable only, may be used to reconnect to the existing electrical contact on the P.E.C.

36. The procedure is:—

- (1) Remove the Lassovic tape from the oxygen hose assembly and release the cable.
- (2) If the assembly to be renewed is on a fighter or bomber type P.E.C. unscrew the gland nut and withdraw the thrust washer, tapered ferrule and other washers. If the assembly is on the MSC3 type P.E.C. take out the two screws attaching the electrical contact assembly to the P.E.C. and remove the cable and contact assembly complete.

- (3) On fighter and bomber types: remove four 4 B.A. countersunk screws and take off the cap to expose the electrical connections. Examine the soldered connections for broken or poor contacts and repair as necessary (see note).
- (4) To fit a new assembly to the bomber or fighter types remove the existing connections. Thread the gland nut, ferrule, washers and cap on the end of the replacement assembly in the correct order.
- (5) Solder the cores of the new cable to the P.E.C. connector pins.

Note . . .

The cable cores are of the tinsel cord type, requiring special soldering technique by a skilled electrical tradesman.

- (6) If the assembly is of the MSC3 type attach a new connector assembly, using the screws removed in operation (2). On both types of assembly strap the cable to the oxygen hose with Lassovic tape in the appropriate places.

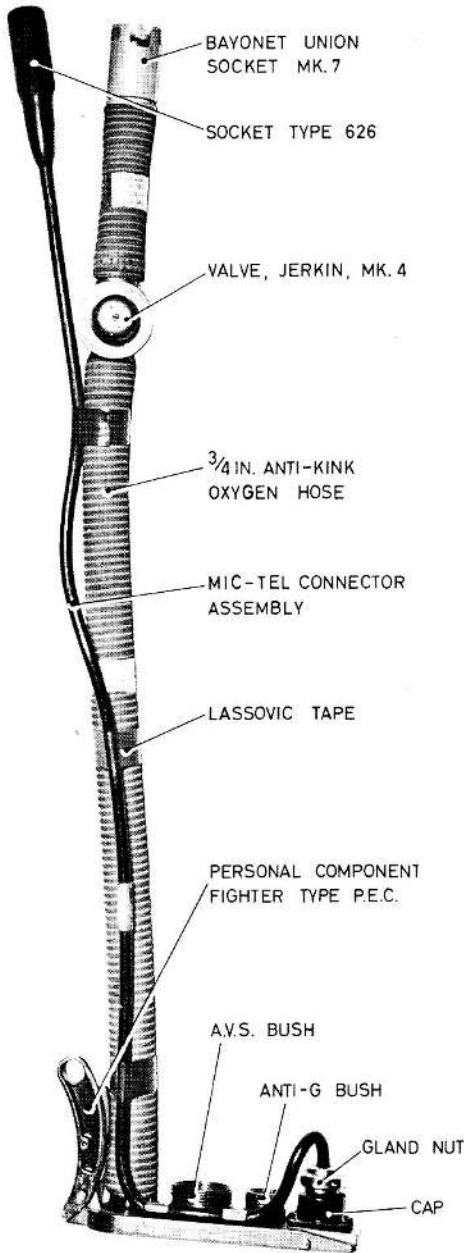


Fig. 1. Pressure jerkin hose assembly Mk. 2

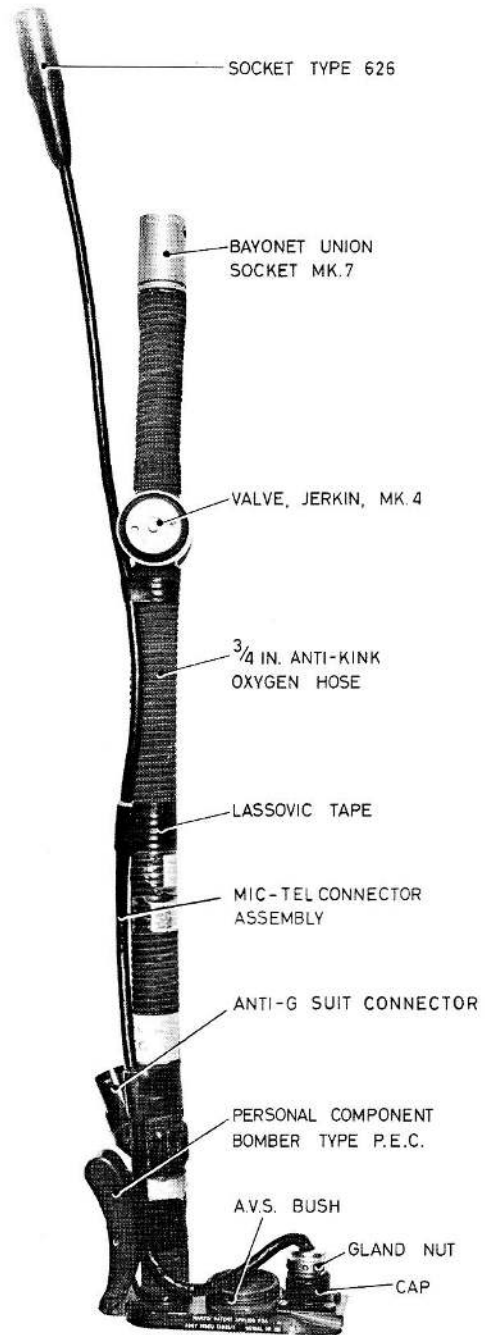


Fig. 2. Pressure jerkin hose assembly Mk. 3

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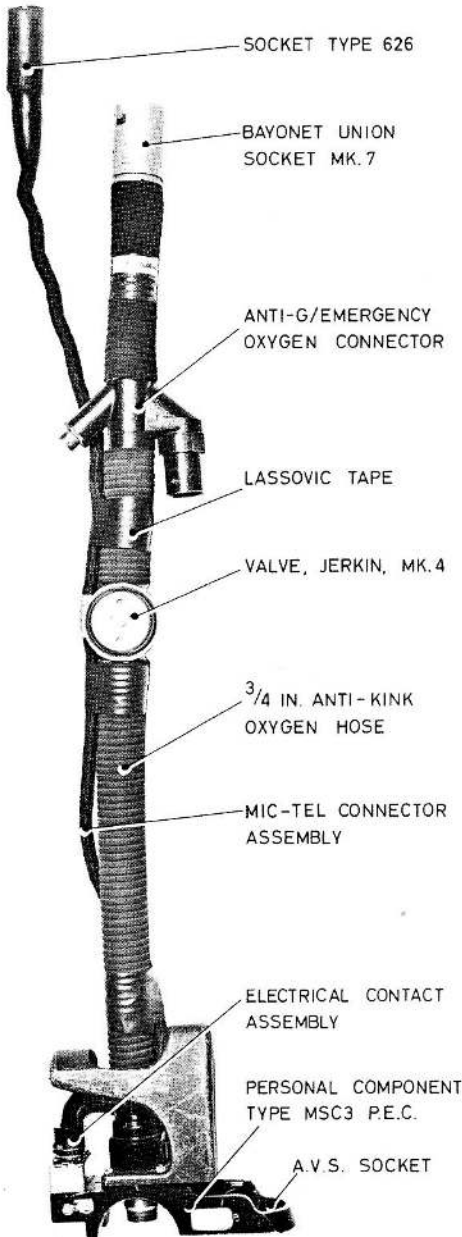


Fig. 3. Pressure jerkin hose assembly Mk. 4

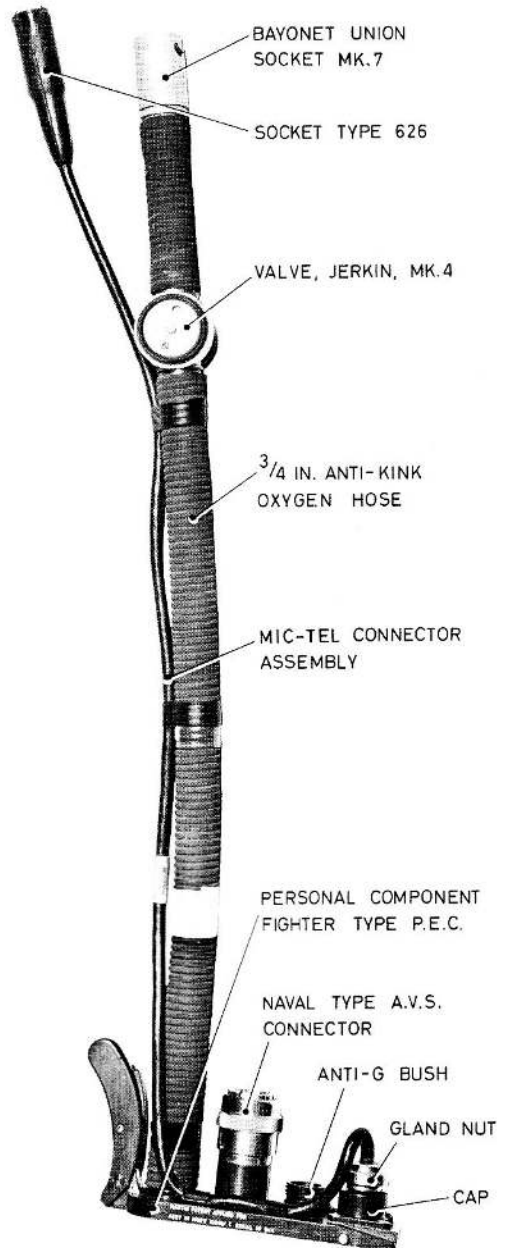


Fig. 4. Pressure jerkin hose assembly Mk. 5

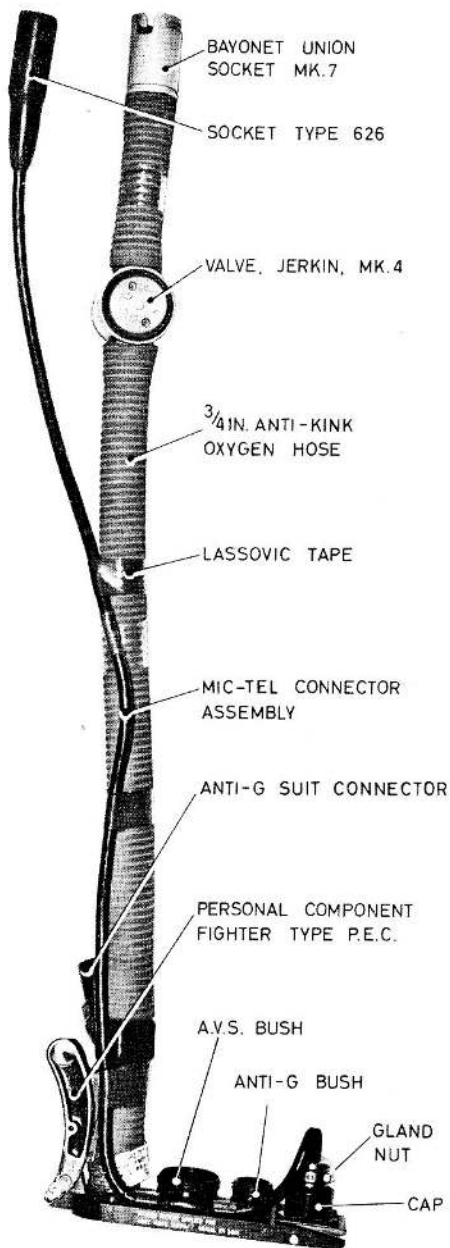


Fig. 5. Pressure jerkin hose assembly Mk. 6

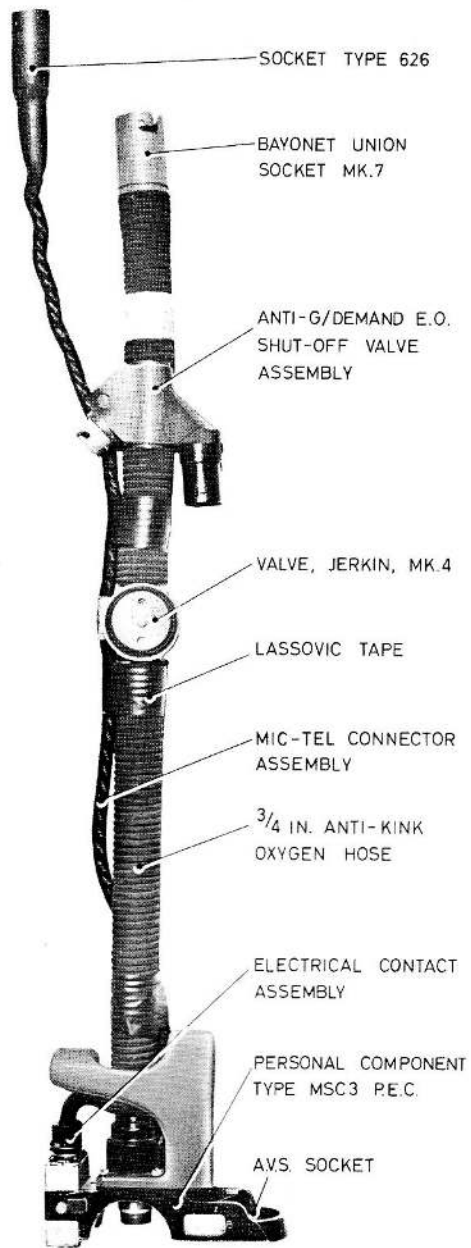


Fig. 6. Pressure jerkin hose assembly Mk. 7

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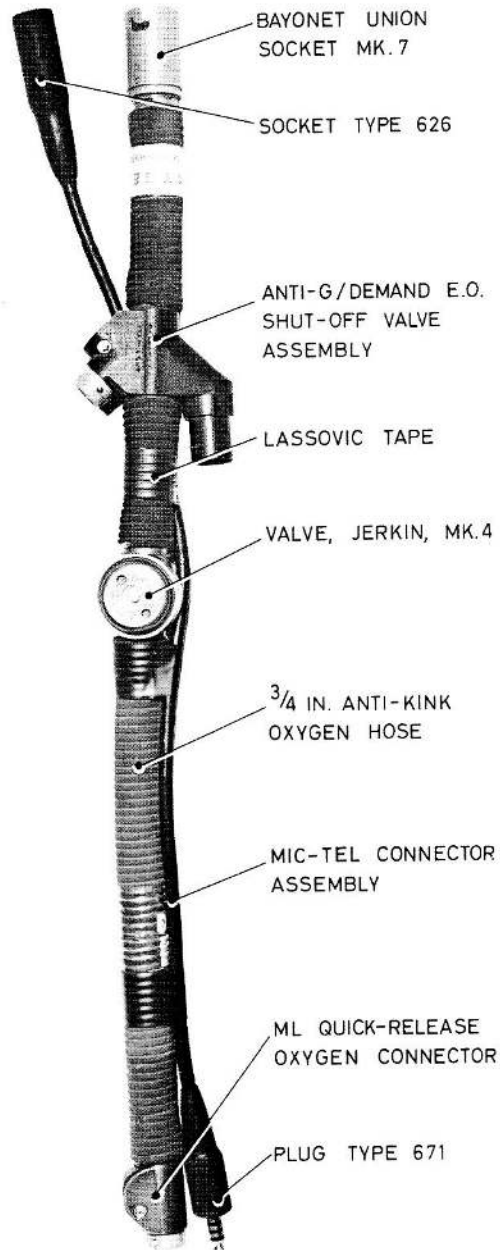


Fig. 7. Pressure jerkin hose assembly Mk. 9

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