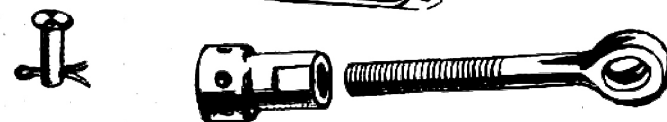


THE "AVRO" PATENT BARRELLESS TURN- BUCKLES.

This turnbuckle, patented and produced by Messrs. A. V. Roe and Co., Ltd., and sold by the Aircraft Supplies Co., is at the present time being manufactured in two sizes.

It has already been approved by the Aeronautical Inspection Department for use for internal bracing in place of other strainers or turnbuckles, where the strength is not less than that required. As will be seen from the table, two strengths of turnbuckles are at present being made, Marks C and D, with a breaking load of 1,216 lbs., and Marks E and F, which fail at 1,950 lbs.

The supplies at the present time of Admiralty, A.G.S., and Binet types of turnbuckles are, as manufacturers know, not nearly equal to the demand, while considerable difficulty is being experienced at the present time particularly in regard

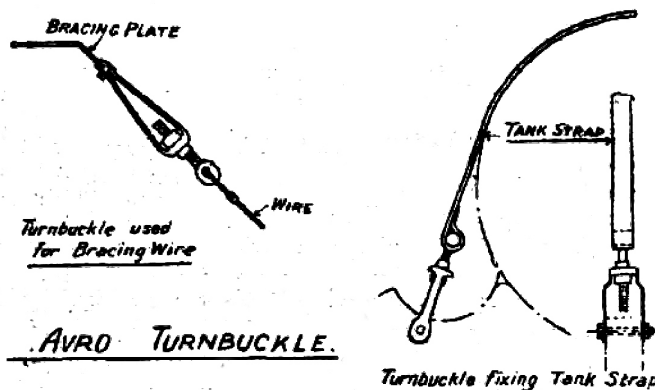


Above, one of the double-eye Avro turnbuckles complete, and below, one of the fork and eye turnbuckles disassembled.

to supplies of the R.A.F. turnbuckles, and more especially perhaps A.G.S. 140. It may be mentioned that the Avro Barrelless Turnbuckle comes out at one-third the price of the Admiralty and R.A.F. types, and is almost equivalent to the price of the Binet type strainers.

A number of novel and ingenious features are incorporated in the Avro Turnbuckle, the following being particularly worthy of note:

There is only one threaded shank and no internal threaded barrel. Hence this turnbuckle can be manufactured in approximately half the time of the standard type.



Two special applications of the Avro barrelless turnbuckle.

No Delta metal and no steel bar to R.A.F. specification 1 D. are employed in its construction, and since these materials are both very difficult to obtain at the present time, again the manufacture of this turnbuckle is facilitated, while the elimination of the materials mentioned enables considerable reduction in the cost.

All eye-end bodies are ferruled as shown, while those of the forked end type are supplied complete with pins and split pins, ready for direct attachment to the bracing lugs.

In operation this turnbuckle is extremely simple. Adjustment is effected by rotating the nut, which is provided with small flats to take an adjustable spanner or key. A special Avro key is supplied free of charge with every consignment of turnbuckles. Locking is effected by a locking wire being passed through two of the small holes in the nut and around one limb of the body stamping, with which the two free ends are twisted together. If desired the wire may be led up through the eye of the bolt, but in practice this has not been found essential.

The Avro barrelless turnbuckle is the lightest turnbuckle extant, yet while fulfilling the ordinary functions is applicable to many special circumstances. By reason of the body being in the form of a stamping, it may be distorted in numerous ways to suit special purposes, and can be applied for the fixing of the tank strap to a box form body stiffener. In this case a special "T" bolt takes the place of the eye-bolt, while it should be noted that a special long shank bolt can be supplied to adapt these turnbuckles for the adjustment of control cables.

The Avro barrelless turnbuckle has been submitted to exhaustive tests, and while being approved for use on "Avro" machines is also approved by the A.I.D. for internal bracing and other uses, but for which, for the time being, they should be submitted to the A.I.D. in the usual way before being employed.

At the present time quantities of these turnbuckles are being supplied, and the manufacturers are, with the co-operation of other firms, using every endeavour to increase the output as much as possible.

Reference.	Equivalents.			Size.	Diameter of Pinhole.	Breaking Load.
	Admiralty type.	R.A.F. type.	Binet type.			
C.	A.G.S. 252	A.G.S. 140	m.m. 4 x 44	4 m.m. B.C.E.	in. $\frac{3}{8}$	1,216
D.	A.G.S. 252	A.G.S. 140	4 x 44	4 m.m. A.B.C.	$\frac{3}{8}$	1,216
E.	Nil	A.G.S. 141 and 142	5 x 30	5 m.m. B.C.E.	$\frac{3}{16}$	1,950
F.	Nil	A.G.S. 141 and 142	5 x 30	5 m.m. A.B.C.	$\frac{3}{16}$	1,950

A.B.C. = fork and eye.

B.C.E. = double eye.

The prices of these turnbuckles may be obtained on application to the Aircraft Supplies Co., Ltd., 17, John Street, Theobalds Road, W.C., who have been appointed by Messrs. A. V. Roe and Co. as the sole selling agents.

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