



M1429
INSTRUCTION MANUAL
for
REMOVAL AND INSTALLATION
of
BLOCK AND SLEEVE
ASSEMBLIES
for
LAYRUB COUPLINGS



**AMENDMENT RECORD
M1429**

Amendment Number	Issue	Date	Signature
-	01	February 2004	-

INTRODUCTION

Layrub couplings have been used in the power transmission industry for over 60 years.

Industrial uses are wide and varied. They included Railways, Trams, Buses, Marine Propulsion, Auxiliary Drives, Earth Moving Equipment, Aero Industry, Steel Works, Oil Refineries, Mining, Automotive, Offshore Exploration, Engine Testing, Cooling Towers, Power Generation and Cement Works.

They provide a connection between a driving and driven machine, which absorbs shock loads, reduces noise, operates in hostile environments, can accept high levels of misalignment and is very cost effective.

For engine drive applications they provide damping and are particularly suitable for the control of torsional vibration.

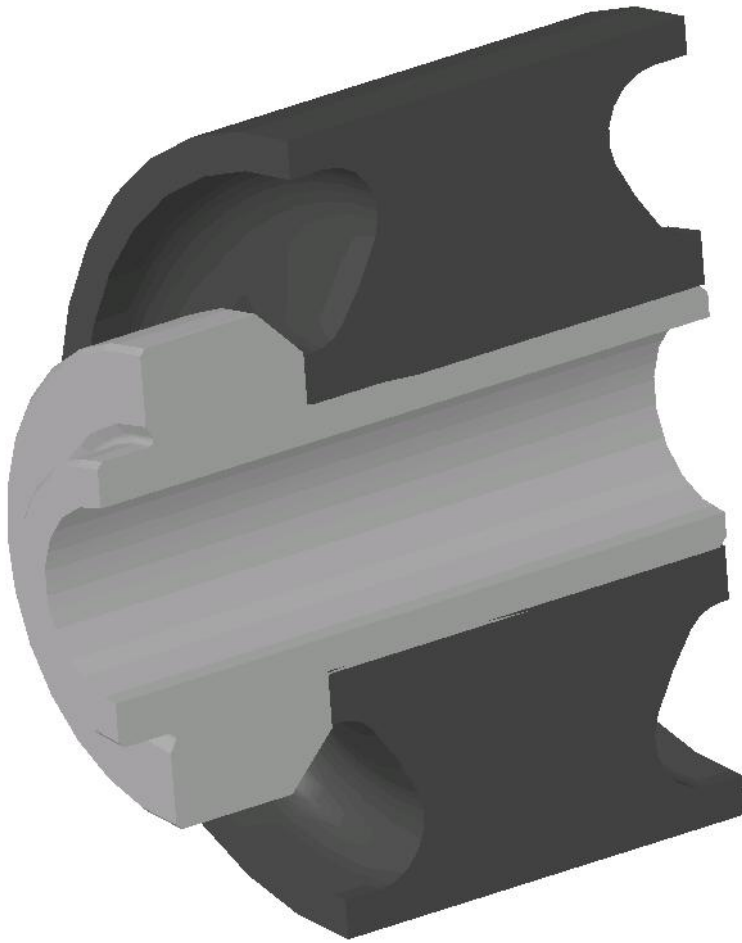
LAYRUB PRINCIPLE (THE LAYRUB BLOCK)

The bore of the resilient block is reinforced by a high tensile steel wire screen formed from wire cloth wound tightly round a mandrel and secured by cold soldering. The screen is located in the mould and vulcanised under pressure causing the rubber to penetrate the wire screen and form a secure bond. The canvas bonded to the outside diameter of the resilient block is to preserve dimensional stability only.

The composition of the rubber is of special mix having low heat build up characteristics to cater with the rapid deformations encountered in service.

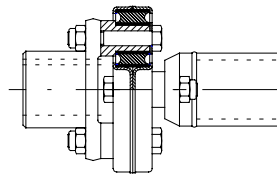
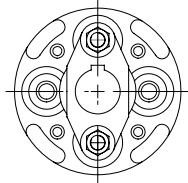
For attachment to suitable driving flanges, steel sleeves are pressed into the screen of the resilient block. The sleeves are shouldered, with spigots to suit mating counterbores in the flange, and the whole being finally clamped by a bolt and nut.

THE LAYRUB BLOCK

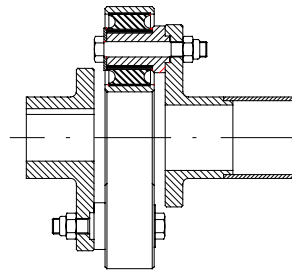
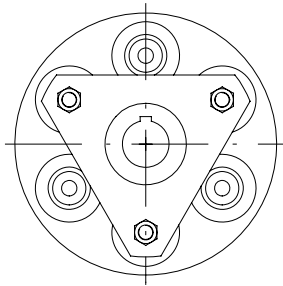


TYPE OF LAYRUB COUPLINGS

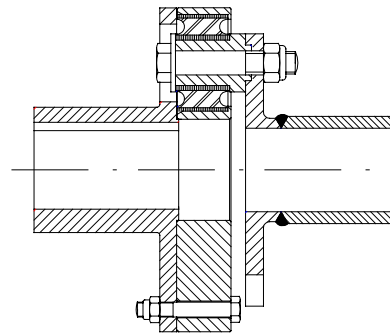
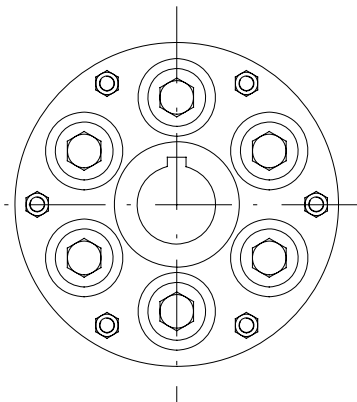
The Layrub coupling is produced in various types and sizes, each type being specially designed to fulfil a particular combination of operating conditions, all the couplings have resilient blocks exactly as previously described.



TWO - FOUR SERIES



THREE - SIX SERIES



SIX - SIX SERIES

INSPECTION

At planned maintenance or shutdown, a routine inspection of the Layrub coupling should be made. Check for signs of bolt slackness and cracks on the rubber surface of the resilient block.

The difference between cracks and creases may at first prove a little difficult to distinguish but a coupling can be condemned prematurely because of a wrong assumption.

The resilient block is fitted into the housing bore under compression and the added torque load further compresses the drive side of the block. In time, the profile of the rubber creases similar to a fold in the human skin. A crack on the other hand penetrates the body of the rubber and may after further development cause damage to the coupling. With a suspected crack therefore use a blunt tool (e.g. small screwdriver) to probe the area and ascertain the extent of the flaw. Cracks which penetrate below the surface of the rubber indicate that the coupling should be replaced. Examine the bonding of the screen to the rubber and if failure at this point is apparent, new block and sleeves should be fitted.

High operating temperatures may cause the rubber profile to develop numerous hairline cracks giving a crazy surface. This is of no consequence unless the rubber surface has become hard and brittle, in which case the rubbers should be renewed.

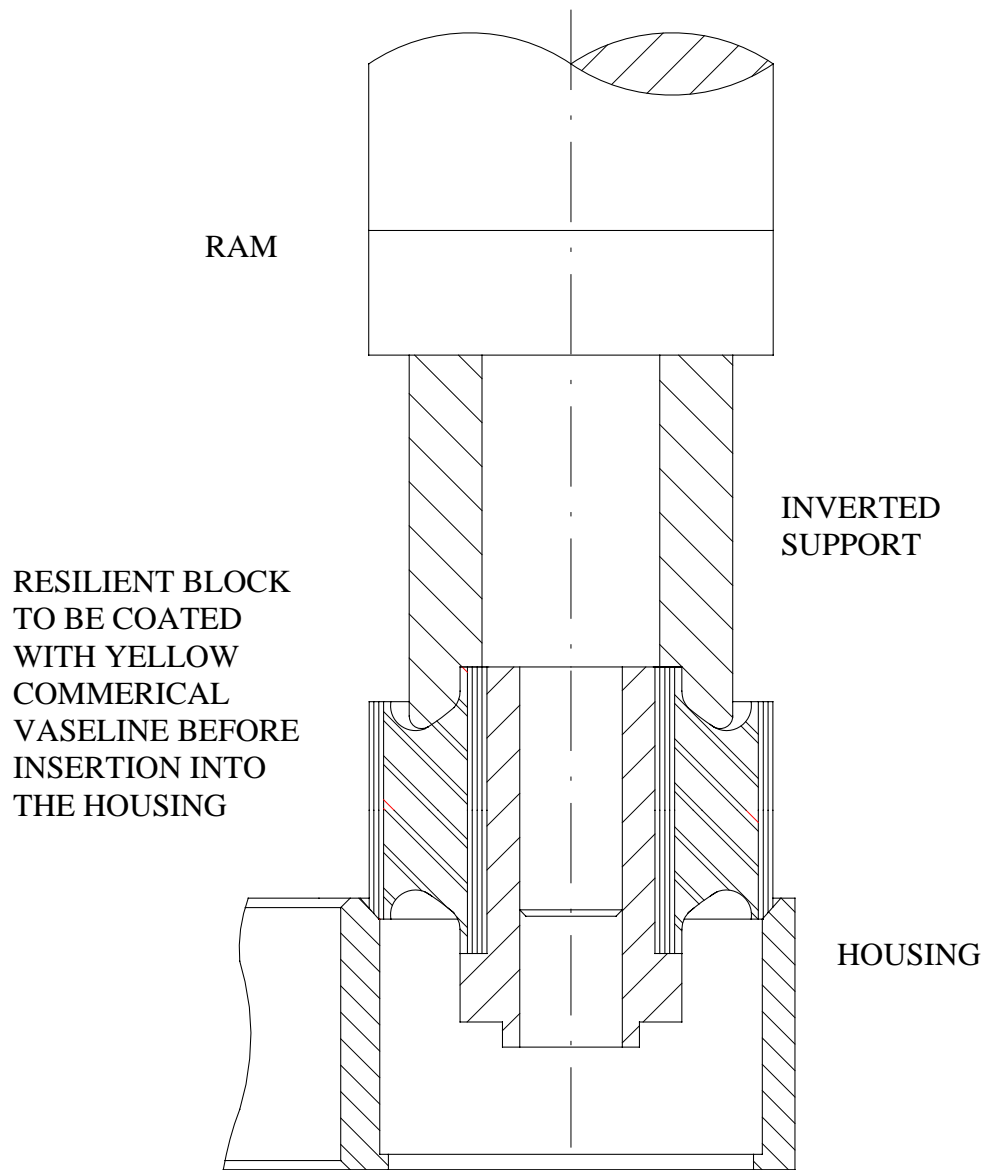
Examination of a coupling on the bench is best carried out by inserting a bar into the sleeve and levering the block slightly off centre to work the profile of the rubber.

REPLACEMENT OF BLOCK AND SLEEVE ASSEMBLIES

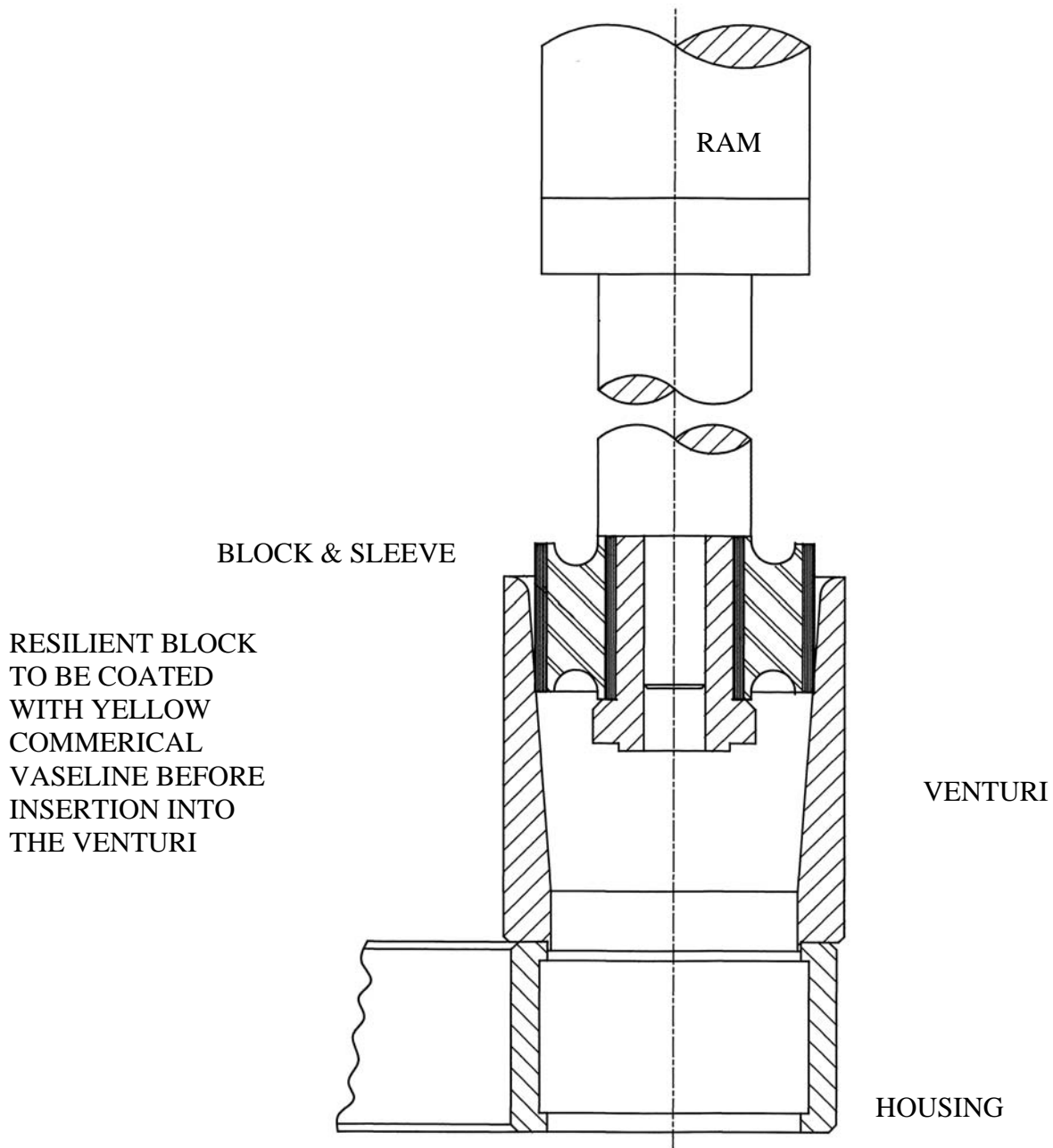
An exchange repair service operates in Great Britain and in some overseas territories but where such a scheme is impracticable, the servicing procedure for Layrub couplings is as follows:-

1. Remove the damaged block and sleeve assemblies from the housing by hand or hydraulic press.
2. Ensure that the housings pockets are thoroughly clean and free from all burrs.
3. Locate the new block and sleeve as shown in the assembly drawing (sheets 5 & 6) and coat the outer diameter with a liberal quantity of commercial vaseline.

Assembly of Resilient Block and Sleeve Unit Into an Open Pocket Housing



Assembly of Resilient Block and Sleeve Unit Into a Closed Pocket Housing



NOTE

ON NO ACCOUNT SHOULD GREASE BE USED AS A MEANS OF LUBRICATION.

4. Ensure that the housing is square to the ram of the press and check that the block and sleeve assembly is square in the housing pocket.
5. Insert block and sleeve assemblies into the housing pockets.
6. After assembly check the squareness of the sleeve relative to the pocket. All sleeve faces should be in line and parallel to each other.

The couplings can be installed immediately after servicing, using the assembly methods already outlined.

MAINTENANCE

1. Every 6 months (or planned maintenance)

Carry out visual inspection of rubber blocks checking for signs of fatigue.

NOTE

Providing that good alignment is maintained then the rubber blocks will last for an indefinite period of time.

On no account should attempts be made to replace individual rubber blocks. If the blocks fail then they must be replaced as a complete set of block and sleeve assemblies.

TROUBLESHOOTING

VIBRATION.

Check condition of rubbers.

Check alignment.

Check concentricity of companion flanges and engine mounting.

Check holding down bolts on gearbox and engine mounting.

NOISE

Check guard rubbing
Check condition of rubbers

RUBBER BLOCK FAILURE

Check alignment

SPARES

Use only Layrub Block and Sleeves available from:

Twiflex Ltd
104 The Green
Twickenham
Middlesex TW2 5AQ
England
Tel: +44 20 8894 1161