

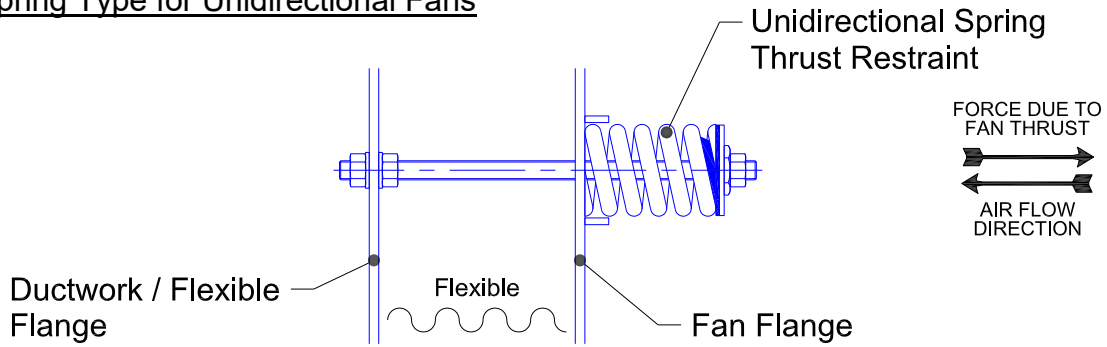
TECHNICAL DATA SHEET DS 091

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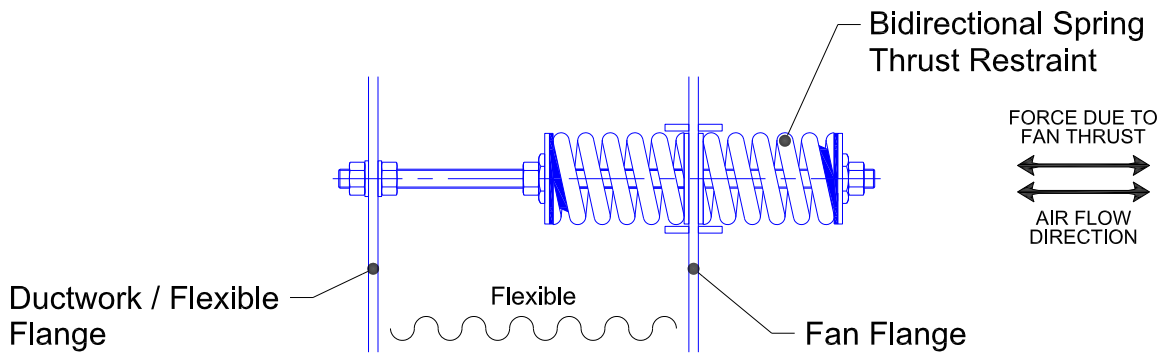
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APPROVED	G.E.K.

TITLE.	Installation Instructions for Fan Thrust Restraints
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Single Spring Type for Unidirectional Fans



Double Spring Type for Bidirectional Fans



Thrust restraints should be used to control the movement of the fan when subjected to high airflow forces. Two typical installations using thrust restraints are shown in Figures 1 & 2.

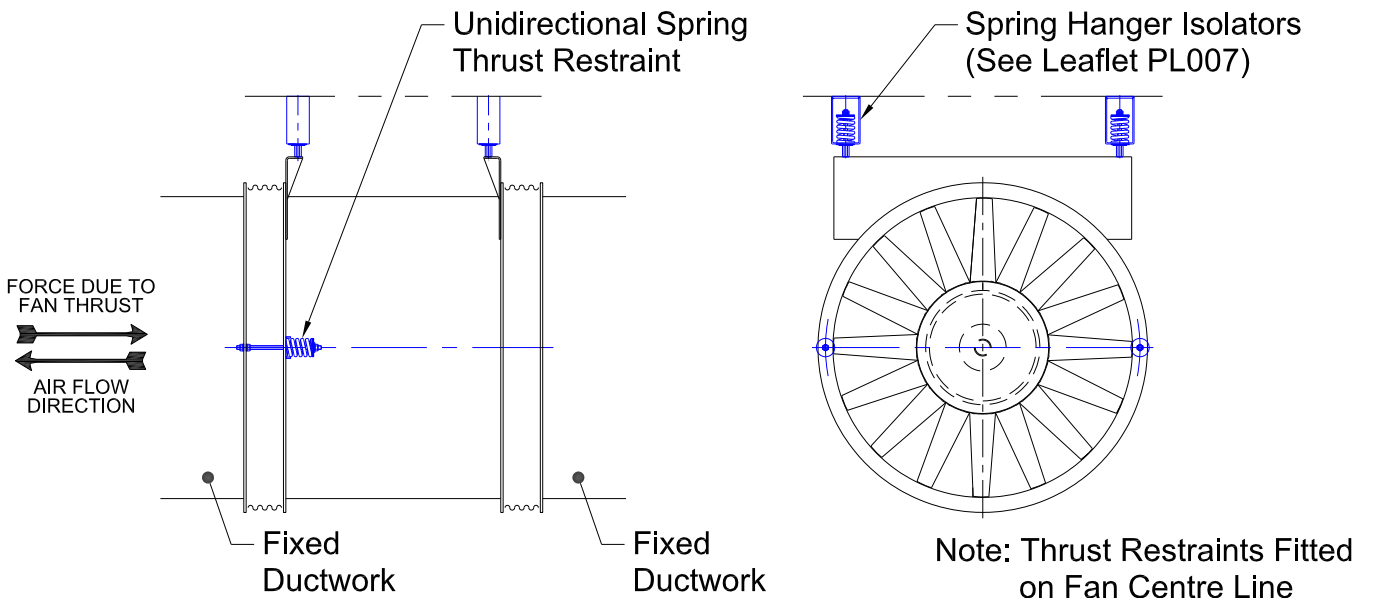


Figure 1 - Suspended unidirectional axial flow fan.

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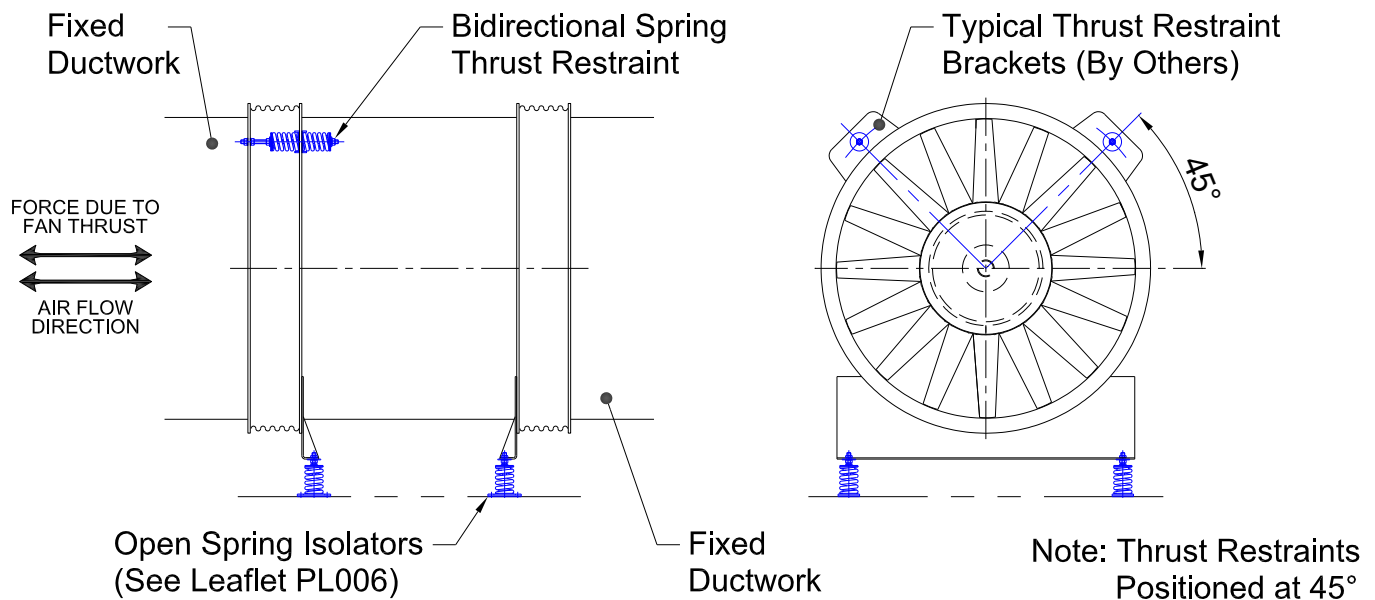


Figure 2 - Plantroom bidirectional axial flow fan.

Installation Procedure for Single Spring Units on Unidirectional Fans

- 1) The size and position of the thrust restraint and main isolation springs must be calculated and verified by Christie & Grey Ltd technical department.
- 2) The fan unit must be installed on its selected isolator units in accordance with Christie & Grey Ltd installation instruction data sheets as follows:-

Enclosed Spring Mountings	DS 026
Open Spring Mountings	DS 027
Spring Hangers	DS 029

- 3) Provision for the thrust restraint must be made within the existing adjoining ductwork and fan flange. Pins or steel tubes must be installed on the fan flange for the location of the spring as detailed in Figure 3.
- 4) The connecting ductwork must be correctly aligned with the fan flange by either shimming or adjustment of the isolator units. Note, this should be done on all isolators to ensure a level installation.
- 5) The standard M16 stud provided with the thrust restraint will be supplied to suit the flexible connection width 'X' and flange thicknesses and must be stipulated when ordering (see Figure 3).

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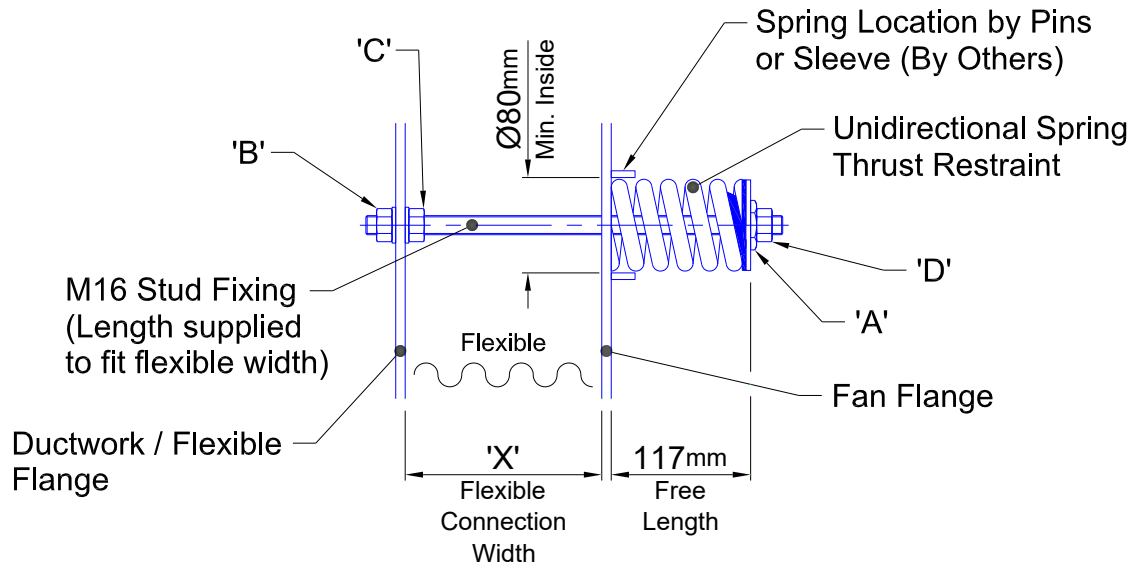


Figure 3

- 6) Once the adjoining flanges have been aligned, the stud can be passed through the opposing holes and the spring located within the pins or tube as shown in Figure 3.
- 7) The stud nuts A & B should then be adjusted to suit the flexible connection width 'X' as required. Once this has been achieved lock nuts C & D can be fully tightened. Note that no preload must be exerted on the spring by over tightening nuts A & B. Finger tight pressure on these nuts will provide the correct spring location.

Installation Procedure for Double Spring Units on Bidirectional Fans

- 8) Install the fan unit as per the unidirectional thrust unit, stages 1, 2, 3, 4 & 5.

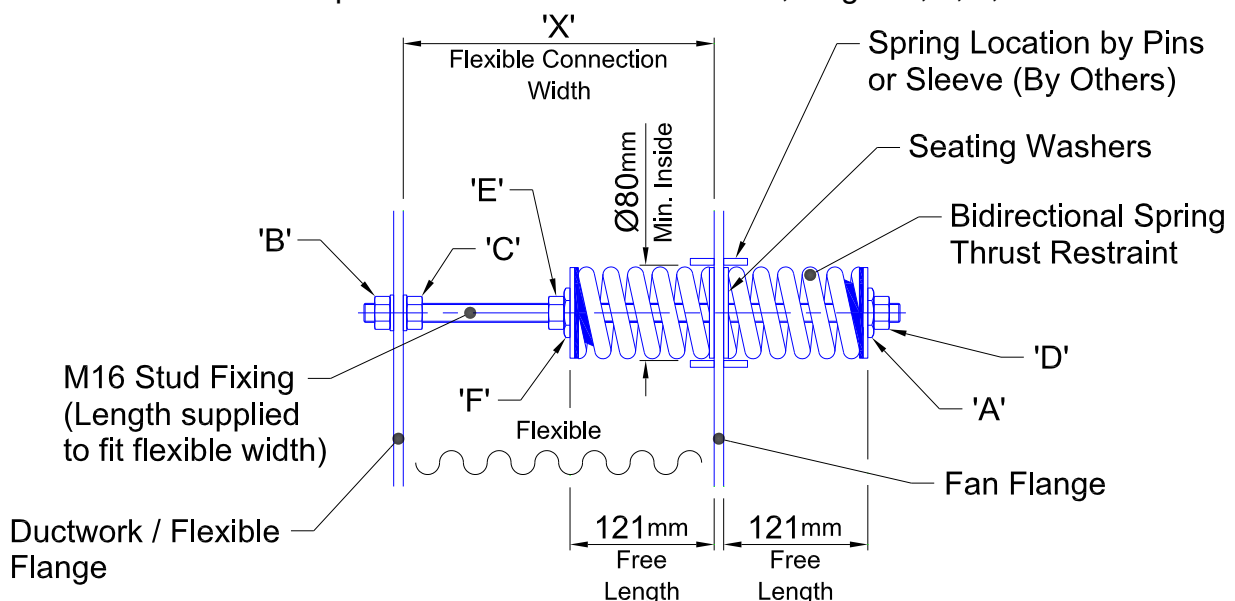


Figure 4

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- 9) Once the adjoining flanges have been aligned, the stud can be passed through the opposing location holes and the springs positioned either side of the fan flange as shown in Figure 4.
- 10) Nuts A, B & F should then be adjusted to suit the flexible connection width 'X' and ensure the thrust springs are correctly located on the fan flange (see Figure 4).
- 11) Once the correct flexible connection width 'X' has been attained, the springs should be preloaded to prevent loose components when either spring is under load during changes in airflow direction. This should be achieved by counter rotating nuts A & F in a clockwise direction until the spring dimension is as shown in Figure 5 (please note that the complete spring assemblies will rotate during this operation). This will apply a compressive preload to the springs and must be applied evenly.

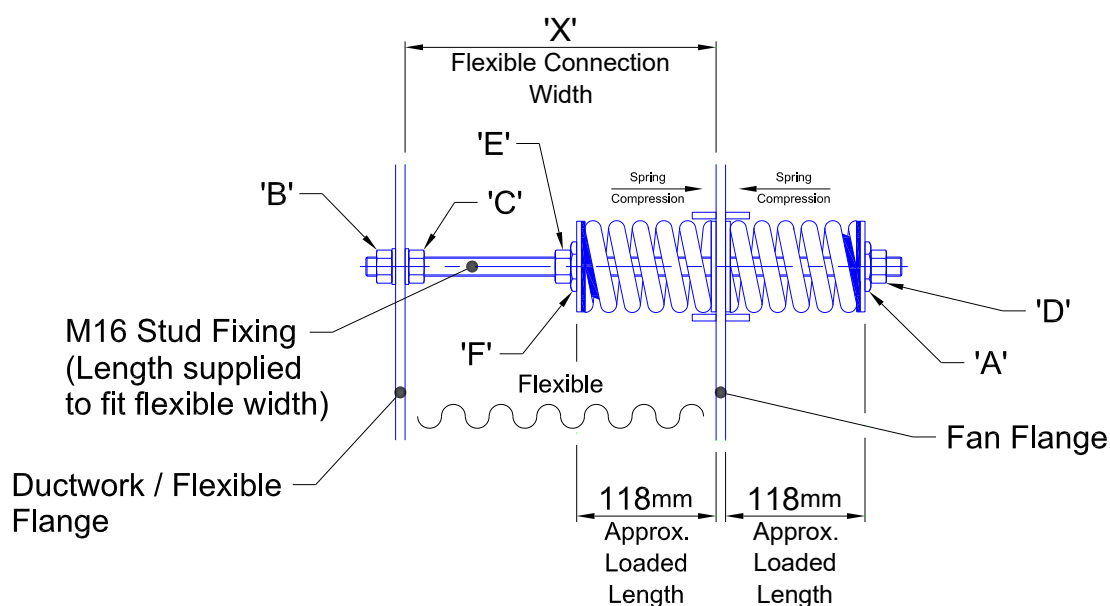


Figure 5

- 12) Once this has been achieved locknuts C, D & E can be fully tightened.

Please contact our Technical Department at the address below if you have any problems relating to installation, adjustment or selection.



Christie & Grey
SINCE 1914

Morley Road, Tonbridge, Kent TN9 1RA, England
Telephone : +44 (0) 1732 371100
E-mail : sales@christiegrey.com
web site: www.christiegrey.com

