Riley (Lifting Equipment) Ltd

SAFE USE OF BEAM CLAMPS

11.1 Beam Clamps provide a simple and portable means of attaching a hoist to a runway or lifting beam. They should not be used on any beam other than these designed, tested and marked as a runway beam (or lifting beam) with the exception that they may be used on a beam forming part of a structure where a specific design check for this purpose has been made.

SELECTION

11.2 Beam clamps are available in two basic designs, the clip on type (picture 1) and the more popular adjustable type (picture 2).

FIG 1

FIG 2

The main consideration when selecting the clamp is the required SWL, i.e. the load to be lifted plus the weight of the hoisting unit.

NOTE: If the clamp is to be used to suspend a shave block, the additional loading caused by the downward pull on the effort rope must be taken into consideration when determining the SWL requirement (refer to section 14)

11.3 The width and thickness of the beam flange must also be considered and may well led to the selection of a clamp in excess of the desired SWL to be compatible with the beam dimensions. The range and adjustability are indicated on the clamp's identification plate.

11.4 The majority of clamps are designed for 'in-line' use only, i.e. the line of force must be at right angles to the flange of the beam in which it is attached (see FIG 3). It is therefore important to ensure that for 'angled' applications, a clamp of suitable design is selected (see FIG 4).

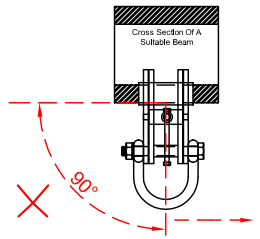

FIG 3

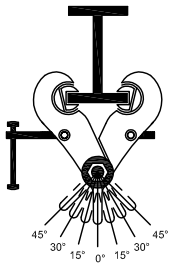

FIG 4

The tables below only apply to selected models of Riley's clamps. Stress calculations should be carried out by the user's engineering department for any/all support steelwork from which the clamp will be suspended. The following work load limits and derations have been established specifically for most "S" type clamps and only apply in overhead beam attachment, i.e. do NOT apply if clamps are to be used for lifting beams. (The side load clamp 'USC range' has been specifically designed for this purpose.)

REDUCTION IN WORKING LOAD LIMITS WHEN SIDE LOADS APPLIED				
ANGLE FROM VERTICAL	0°	0° to 15°	15° to 30°	30° to 45°
REDUCTION FACTOR	NIL	17%	34%	50%
MODELS	WLL	WLL	WLL	WLL
S2A, S2AX, S5A	3Ton	2.5Ton	2Ton	1.5Ton
S3	4Ton	3.3Ton	2.6Ton	2Ton
S3X, S3A, S6, S6A	5Ton	4.1Ton	3.3Ton	2.5Ton
S4	7Ton	5.8Ton	4.6Ton	3.5Ton
S4S	6Ton	5Ton	4Ton	3Ton
S4A, S11	10Ton	8.3Ton	6.6Ton	5Ton
S12, S14	15Ton	12.4Ton	10Ton	7.5Ton
S15, S16	20Ton	16.6Ton	13.2Ton	10Ton
S17, S18	25Ton	20.7Ton	16.5Ton	12.5Ton
S19, S20	30Ton	25Ton	19.8Ton	15Ton

WARNING

Clamp models S1, S2 & S5 are not suitable for any side loading as they are of a lightweight design.