DISTANCE BETWEEN SPOTTING PULLEYS

To determine the distance between spotting pulleys for an overhead spotting rig (ceiling attachment), use the formula below which was borrowed from the United States Gymnastics Safety Manual.

It is recommended that overhead spotting pulleys be positioned a certain distance apart to achieve a 35° angle of the spotting ropes when attached to the diver.

To determine this distance: (THIS IS ONLY A RECOMMENDATION!)

1) Measure the height from the take-off surface to the ceiling attachment point and then subtract 3.5 feet (approximate waist height).
2) Multiply this sum by 0.70
3) Take the product derived in Number 2 and multiply this figure by 2 (for the second attachment point).
4) Take the product derived in Number 3 and add 1.5 feet (approximate horizontal distance across diver's waist).
5) This sum will reveal the horizontal distance needed between two ceiling clamps to achieve the desired 35° angle of pull in the ropes.

For example, if a hypothetical pool deck has a ceiling height of 25 feet, then the horizontal distance needed between the two ceiling clamps to achieve the desired 35° angle of pull in the ropes would be 31.6 feet.

25' – 3.5' = 21.5' x 0.70 = 15.05 x 2 = 30.10 + 1.5' = 31.6'

Your Ceiling Height	Pulley Distance Apart
20'	25'
25'	32'
30'	39'
35'	46'
40'	53'
45'	60'
50'	67'
55'	74'
60'	81'

NOTE: This 35° angle may have to be sacrificed due to ceiling height and location. For example, with a ceiling height of 17 feet, the beam clamps would have to be approximately 22 feet apart to hold a 35°. In some pools, this would be impractical***. We have seen many facilities with high ceilings where the pulley distance apart is half of what is listed on the chart above. Overhead spotting at these facilities is no problem.***