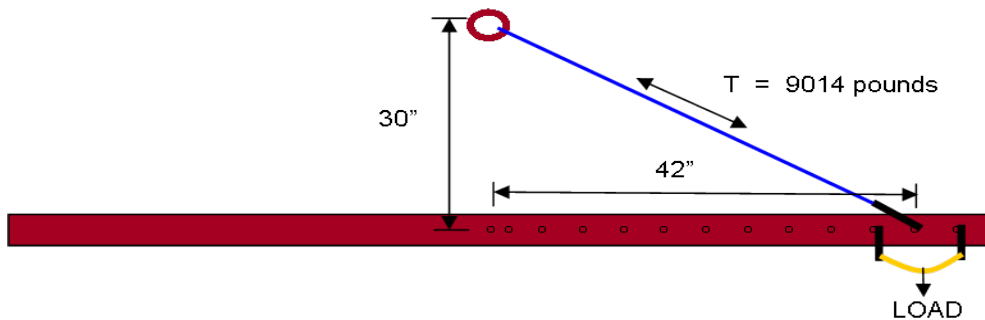


XXL Bar with a Wire or Rope Bridle

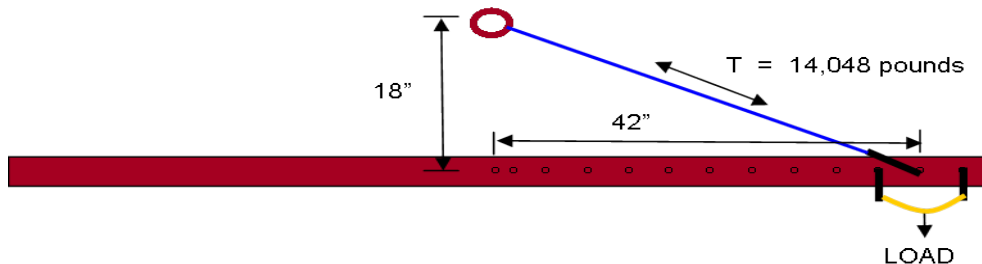
The Häst XXL bar, when shipped as a total support system, is rigged with a rope bridle whose length and suggested configuration represents what we feel gives a good compromise between stability, strength, and overall space above the bar. In the diagram below these dimension are 30" from the center of the bar to the upper lift point and the shackle is placed in the second hole from the end which is 42" from the center. When loaded with a 10,000 pound symmetrical load, the tension T in each leg of the bridle is equal to 9014 pounds. This is within the safety load limits for the shackles (10,000 pounds working load limit) and the 4 strands of rescue rope (breaking strength greater than 20,000 pounds). It also matches the working load rating of the upper round ring at 18,000 pounds.

Stability of the system is maintained because the load below does not extend further than the upper shackle pin. The top diagram is the recommended configuration. Below are examples of what should be avoided as these practices could either overload the system components or cause instability to the system.

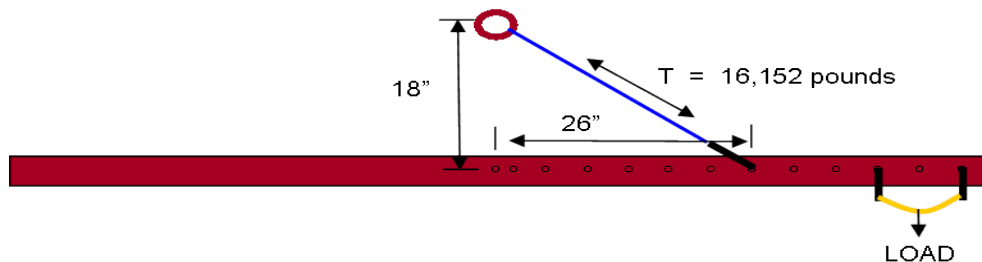
XXL System As Shipped
(only one side is illustrated)



Let's consider the scenario where one simply wants to lower the upper red ring closer to the bar to reduce head height. If the ring is lowered by 12" for a height of 18" above the center of the bar, the tension in T now becomes 14,048, pounds, exceeding the load ratings of the shackle.



If the configuration is changed in an attempt to increase the angle of the bridle with the thought that this might lower the loading, that premise is refuted because the load is now OUTSIDE the upper shackle and if there is a sufficient asymmetrical load, the system could become unstable. In addition, this change in lift point will increase the vertical component at the upper shackle and the new tension in the rope bridle will become 16,152 pounds, far exceeding the load ratings for the system.



These calculations illustrate that the upper bridle should be configured per recommendations. The load below may be positioned closer to the center for smaller animals, but should NEVER be further from the center than the upper shackle pin.