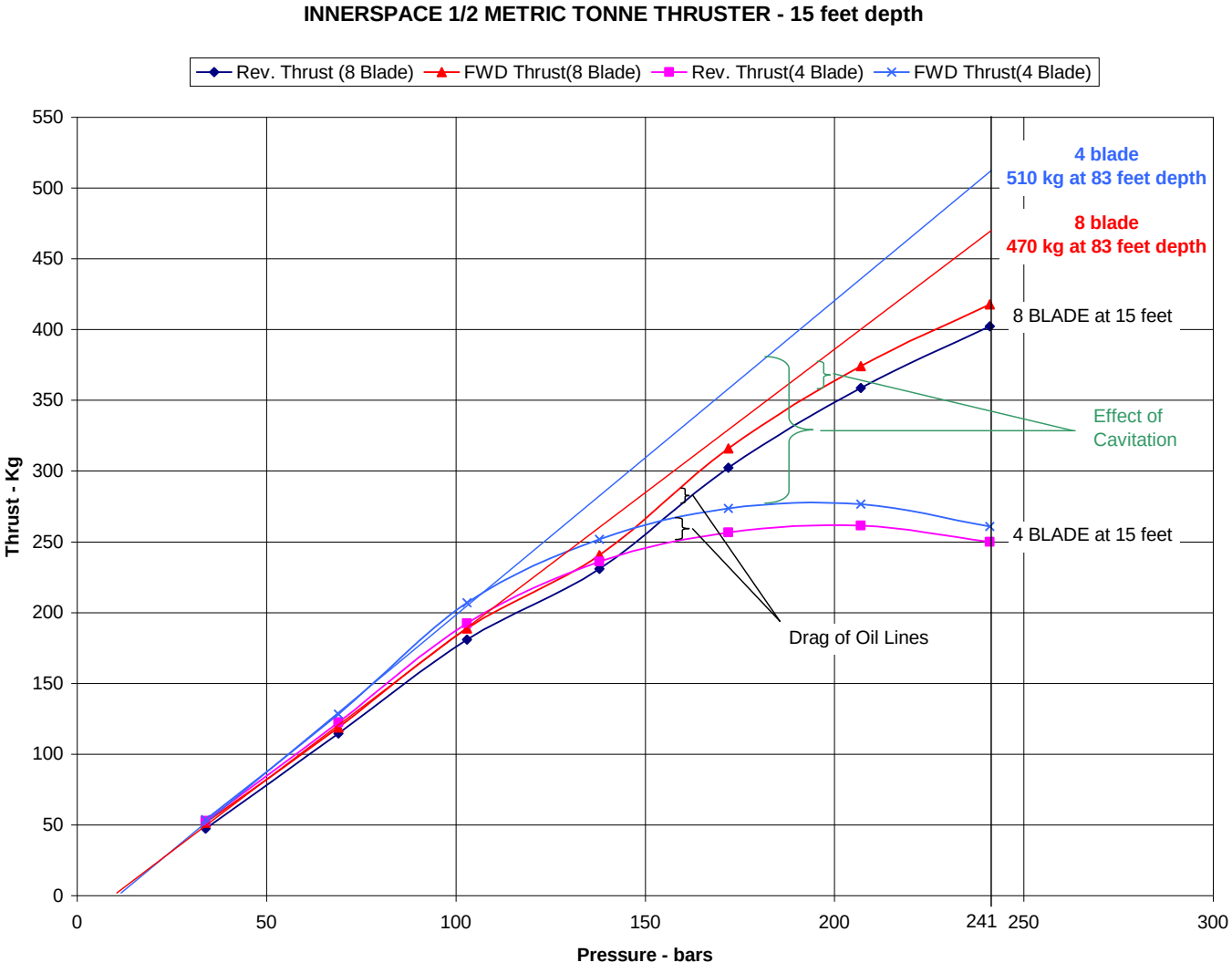
H17-8400 HYDRAULIC THRUSTER PERFORMANCE DATA

1,100 lbsf: 1/2 METRIC TONNE OF THRUST

This thruster, a screened unit rated at ½ metric tonne @ 3500psi, has been tested at Perry-Slingsby with Innerspace funding. Curves are shown in the chart below. Although the test depth of this thruster was only 15 feet, the minimum depth of non-cavitating performance can be estimated by extending the linear portion of the curves of thrust vs. pressure as straight lines from the point of 100 bar. The straight line extrapolation is conservative due to the increased efficiency of both the thruster and hydraulic motor with increasing Reynolds number (power). The depth required for non-cavitation for the 4 bladed prop in the chart is (33' + 15')241/100 = 116 ft abs. – 33' = 83 feet. Where 33 is the feet of sea water equivalent to one atmosphere pressure. A maximum thrust of approximately 275 Kg at 15 ft and 510 Kg at 83 ft is achieved with the 4 bladed prop. Similarly for the 8 blade prop the max thrust is 420 Kg at 15 ft and 470 Kg at 83 ft. Thus, there is a trade off between deep and shallow performance.



*** Patent numbers 4,726,183 , 5,275,535 and 6,152,793**

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