

MOREHOUSE

The Morehouse hydraulic jack is specially designed and manufactured to have the lowest possible leak rate for generating forces when calibrating load cell systems and other types of load measuring systems. In operation, the force generated by the jack is passed through a proving ring, or other type of force calibrator, to the load measuring system to be calibrated. It is the same jack used in the Morehouse Universal Calibrating Machine now in use in hundreds of government and industrial standards laboratories.

The pump of the jack is a precision laboratory dead weight type tester pump containing a dual volume piston. The pump delivers a large volume of hydraulic fluid per stroke to rapidly advance the piston of the ram until higher pressures are encountered and pumping becomes difficult. At this point, a valve rod can be pushed in and the pump will deliver a smaller volume of fluid per stroke, thus making pumping easier. In addition, the pump has a vernier screw piston for application of forces in extremely minute increments. The screw piston also permits the maintenance of the force over a relatively long period of time by slowly turning it to offset creep of the entire system.

The cylinder of the ram is carefully ground and honed, and then hard chrome plated. The hard chrome plating protects the cylinder walls from undue wear and corrosion that would ultimately cause excess leak rates. Low friction packing is used throughout the jack to insure a smooth advance of the piston when pressure is applied.

On jacks having capacities greater than 300,000 lbs. and on jack systems that incorporate hydraulic rams where the total volume of the cylinders exceeds the reservoir volume of the standard pump, a special pump having the same features of the standard pump but a larger reservoir volume is supplied.

Standard jacks for either compression loading or tension loading is available in a "package" consisting of a hydraulic ram, a pump, and 5' of hydraulic hose with quick disconnect couplings at the ram end.

The "package" jacks have proven satisfactory for many single calibration set-ups. However, because of great variations in some single and many multiple calibration set-ups, the jacks can be assembled on a component basis to meet individual requirements. The following outline drawings show typical schematics.

Quite often a pressure gauge to determine when a specific load is being approached is desirable. Such a gauge calibrated to indicate the approximate loads can be supplied at an extra cost if it is ordered with the jack. If the gauge is ordered after the jack has been shipped, it can be installed and calibrated by the user.

