Dead Weight Load Cell Calibrators Model L and Model MH

Morehouse

Model L 1,000 lbf capacity. Inset shows a load cell being calibrated in the compression mode.

Of all the devices and machines designed to measure mechanical forces none has ever equaled the positive and unfailing accuracy obtainable with dead weights.

Morehouse has two different models of Dead Weight Load Cell Calibrators available: The Model L and the Model MH.

The Model L is available only in capacities of 1,000 lbf or less – standard capacities being 500 lbf and 1,000 lbf, or the approximate equivalent in kilograms or Newtons: 250 and 500 kgf respectively, or 2,500 and 5,000 Newtons respectively.

The Model MH is available in larger capacities – standard capacities being 2,000 lbf, 5,000 lbf, 10,000 to 100,000 lbf, or the approximate equivalent in kilograms or Newtons.

CONSTRUCTION

Both models of the machine are designed to make full use of the accuracy of dead weights without any mechanical interference or machine losses. The yoke assembly on which the dead weights are suspended bears directly on the instrument being calibrated. There are no intervening levers or flexures between the weight complements of the machine and the instrument being calibrated to introduce ratio and beam deflection errors.

The loading stages on both models are adjustable to accept instruments of varying heights and to allow for tension as well as compression calibrations,

The weights supplied with both machines are machined from stainless steel and are adjusted to better than .003% of their nominal weight. The accuracy of the weights can be certified traceable to the National Institute of Standards and Technology.

GENERAL SPECIFICATIONS

CAPACITIES AVAILABLE:

MODEL L: 500 lbf, 250 kg, and 2,500 N
1,000 lbf, 5,000 kgf, and 5,000 N

MODEL MH: 2,000 lbf – 120,000 lbf and the approximate equivalent in kilograms and Newtons. Special capacities within the weight limitations and special weight complements are available in both models.

CALIBRATION MODE:

Tension and Compression on both models.

WEIGHTS:

Material: Stainless Steel

MODEL L: Weights are applied and removed through a system of manually Operated levers

MODEL MH: Weights are applied and removed pneumatically with air Controlled selector switches. Operating air pressure: 10 p.s.i.

ACCURACY:

All weights and yoke assembly are calibrated in force or mass to within .003%
Certified traceable to the National Institute of Standards and Technology.

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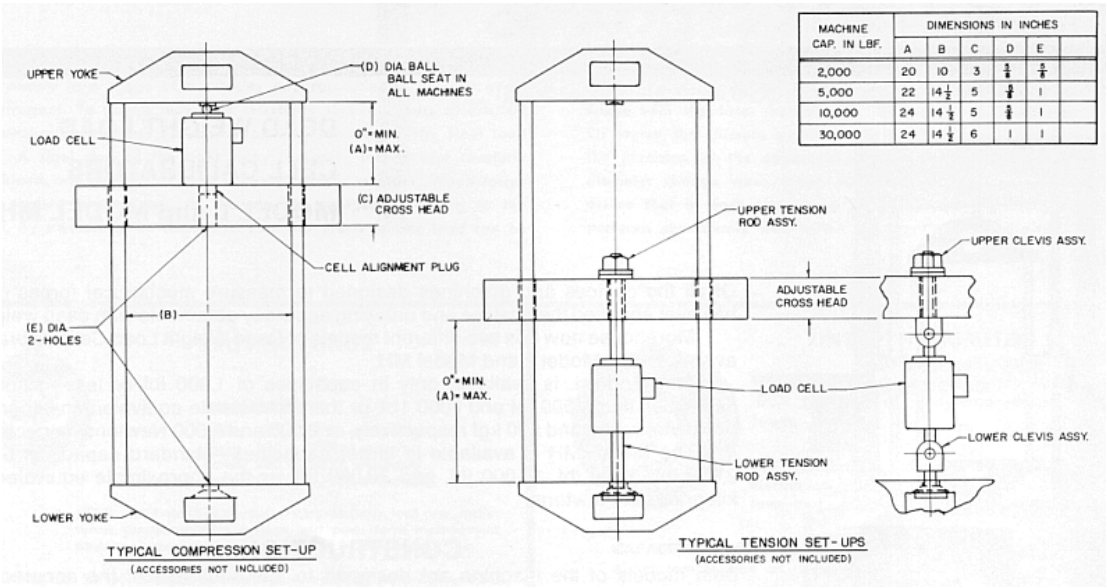
Dead Weight Load Cell Calibrators Model L and Model MH

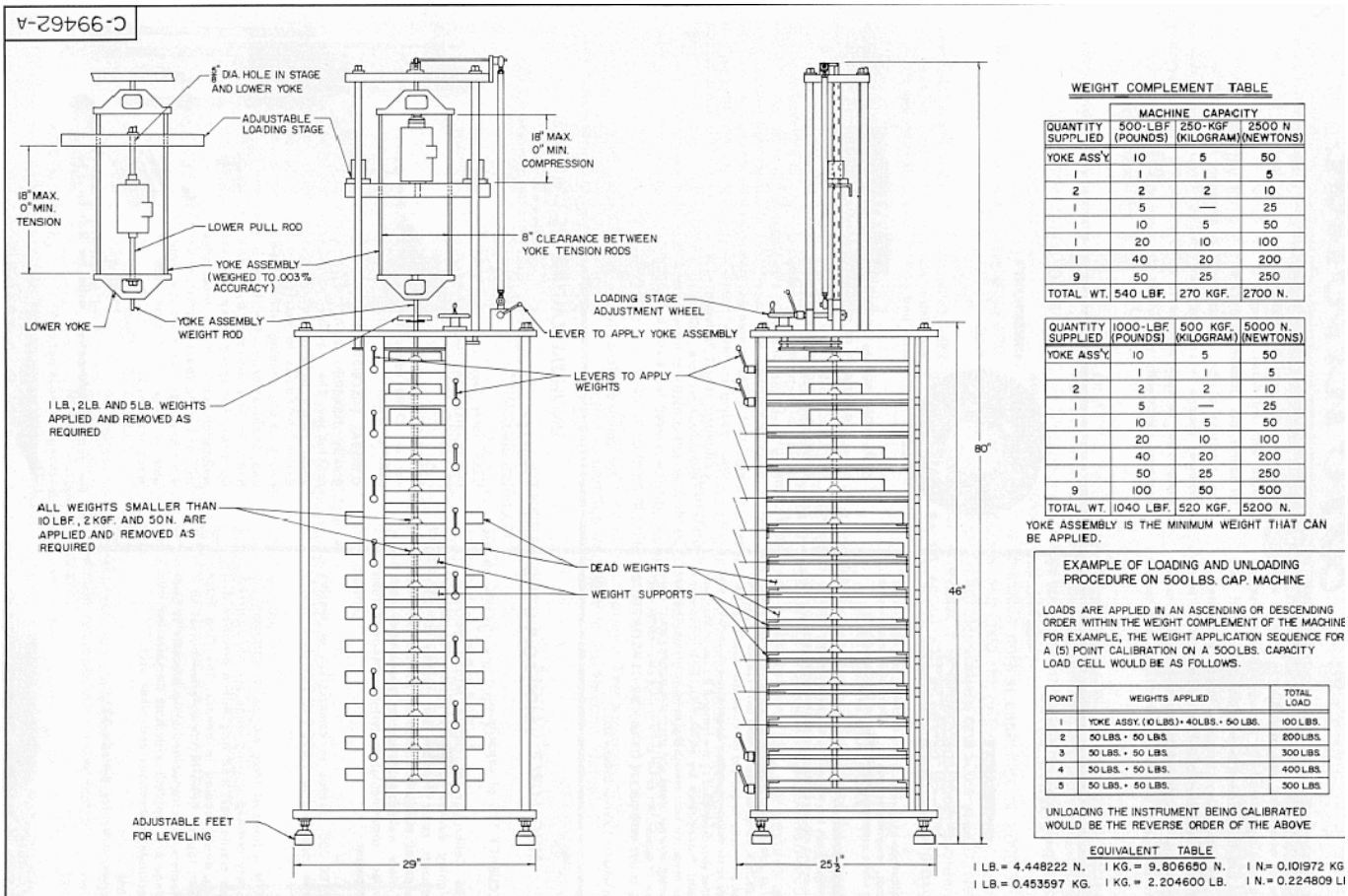
MODEL MH GENERAL INFORMATION



MACHINE CAP. IN LBF.	DIMENSIONS IN INCHES					
	A	B	C	D	E	
2,000	20	10	3	$\frac{3}{4}$	$\frac{5}{8}$	
5,000	22	$14\frac{1}{2}$	5	$\frac{3}{4}$	1	
10,000	24	$14\frac{1}{2}$	5	$\frac{3}{4}$	1	
30,000	24	$14\frac{1}{2}$	6	1	1	

STANDARD YOKE DIMENSIONS

The dimensions of the machine's yoke assembly may be varied to accommodate individual requirements with respect to overall dimensions of load cells or other instruments to be calibrated in both tension and compression.



WEIGHT COMPLEMENT TABLE

QUANTITY SUPPLIED	MACHINE CAPACITY 500-LBF (POUNDS)	250-KGF (KILOGRAM)	2500 N (NEWTONS)
YOKE ASS'Y	10	5	50
1	1	1	5
2	2	2	10
1	5	—	25
1	10	5	50
1	20	10	100
1	40	20	200
9	50	25	250
TOTAL WT.	540 LBF.	270 KGF.	2700 N.

QUANTITY SUPPLIED	1000-LBF (POUNDS)	500 KGF. (KILOGRAM)	5000 N. (NEWTONS)
YOKE ASS'Y	10	5	50
1	1	1	5
2	2	2	10
1	5	—	25
1	10	5	50
1	20	10	100
1	40	20	200
1	50	25	250
9	100	50	500
TOTAL WT.	1040 LBF.	520 KGF.	5200 N.

YOKE ASSEMBLY IS THE MINIMUM WEIGHT THAT CAN BE APPLIED.

EXAMPLE OF LOADING AND UNLOADING PROCEDURE ON 500 LBS. CAP. MACHINE

LOADS ARE APPLIED IN AN ASCENDING OR DESCENDING ORDER WITHIN THE WEIGHT COMPLEMENT OF THE MACHINE FOR EXAMPLE, THE WEIGHT APPLICATION SEQUENCE FOR A (5) POINT CALIBRATION ON A 500 LBS. CAPACITY LOAD CELL WOULD BE AS FOLLOWS.

POINT	WEIGHTS APPLIED	TOTAL LOAD
1	YOKE ASSY. (10 LBS.) + 40 LBS. + 50 LBS.	100 LBS.
2	50 LBS. + 50 LBS.	200 LBS.
3	50 LBS. + 50 LBS.	300 LBS.
4	50 LBS. + 50 LBS.	400 LBS.
5	50 LBS. + 50 LBS.	500 LBS.

UNLOADING THE INSTRUMENT BEING CALIBRATED WOULD BE THE REVERSE ORDER OF THE ABOVE

EQUIVALENT TABLE

1 LB. = 4.448222 N. 1 KG. = 9.806650 N. 1 N. = 0.101972 KG
1 LB. = 0.453597 KG. 1 KG. = 2.204600 LB. 1 N. = 0.224809 LB

GENERAL SPECIFICATIONS

STANDARD CAPACITIES AVAILABLE: 500 LBF. OR 1,000 LBF., 250 KGF. OR 500 KGF., 2500 N. OR 5000 N.
ACCURACY: .003% (TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS)
HYSTERESIS ERROR: NONE
REPEATABILITY ERROR: NONE
WEIGHTS: STAINLESS STEEL
NET WEIGHT: 500 LBF. CAPACITY 720 LBS. (326 KGS.)
1,000 LBF. CAPACITY 1,220 LBS. (553 KGS.)

MATERIAL
REQUIRED PER UNIT
HEAT TREATMENT

NO.	DESCRIPTION OF CHANGE	DATE	BY
E			
D			
C			
B	REVISED (ADDED TABLES)	11-29-84	D.P.S.
A	REVISED WEIGHT COMPLEMENTS	3-25-77	J.I.B.

TOLERANCES ON: DECIMALS, FRACTIONS, ANGLES

LAYOUT
ASSEMBLY
DRAWN BY J.I.B.
CHECKED BY
SCALE
DATE 6-21-67

MOREHOUSE INSTRUMENT CO.
YORK, PA.
TITLE MODEL L DEAD WEIGHT MACHINE
REFERENCE
DWG. SIZE C
DRAWING NO. C-99462-A
SHEET OF