

# Morehouse

## DEAD WEIGHT FORCE MACHINES



Of all the devices and machines designed to measure mechanical forces none has ever equaled the positive and unflinching 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 (pictured left) , 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 (pictured right) to 120,000 LBF, or the approximate equivalent in KGF or N.

### GENERAL SPECIFICATIONS CAPACITIES AVAILABLE:

MODEL L: 500 LBF, 250 kg, and 2,500 N 1,000 LBF, 500 KGF, and 5,000 N

MODEL MH: 2,000 LBF – 120,000 LBF and the approximate equivalent in KGF & N.

Pictured above: Model L 1,000 LBF capacity  
Insert shows a load cell being calibrated in compression mode.

Special capacities within the weight limitations and special weight complements are available.

### 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 .002% Certified traceable to the National Institute of Standards and Technology.

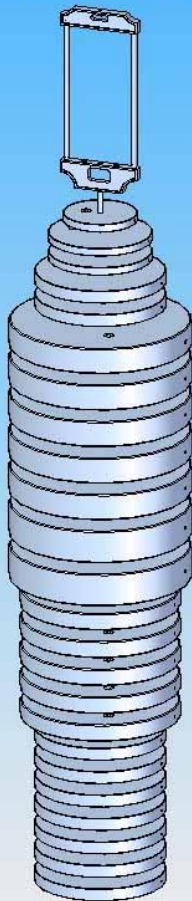


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Pictured Below: A Computer rendering of a 25,000 LBF Model MH Dead Weight Machine weight Stack with yoke



### 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 .002% of their nominal weight. The accuracy of the weights can be certified traceable to the National Institute of Standards and Technology.

### OPERATION

On The Model L machine, the yoke assembly is lowered on to the instrument being calibrated. The levers that actuate the weight support mechanisms are turned which removes the supports from the weights and applies the weights to the yoke assembly weight rod and consequently, to the instrument being calibrated.

On the Model MH Machine (pictured above right: A Morehouse 120,000 LBF Model MH Machine with a column type load cell being calibrated in Tension), the yoke assembly is lowered pneumatically by the operator pushing a selector switch, or controlled via a computer. The stainless steel weights are then applied by either pushing a series of selector switches, or having a computer activate the appropriate switches to apply the desired force. (pictured right: A Morehouse Model MH Machine with a S-beam load cell being calibrated in Tension)

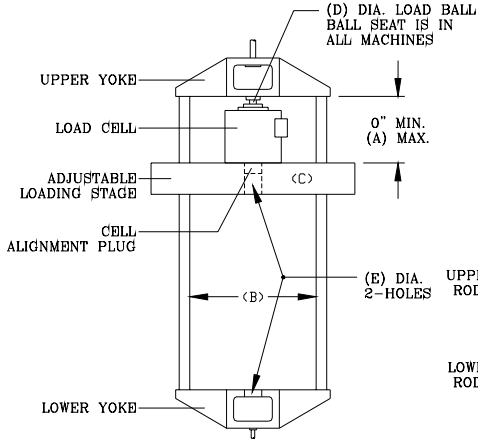


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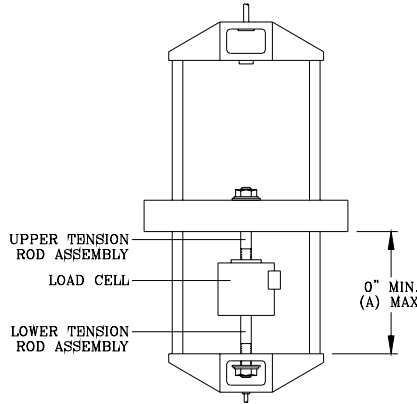
## MODEL MH GENERAL INFORMATION

### 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.



TYPICAL COMPRESSION SET-UP  
(ACCESSORIES NOT INCLUDED)



TYPICAL TENSION SET-UP  
(ACCESSORIES NOT INCLUDED)

MACHINE CAP. IN LBF.	DIMENSIONS IN INCHES				
	(A)	(B)	(C)	(D)	(E)
100 LBF.	10	4.5	1.5	.38	.375
1,000 LBF.	18	8	1.8	.44	.75
2,000 LBF.	19.5	10	3.0	.44	.75
5,000 LBF.	21.5	14.5	4.0	.44	1.00
10,000 LBF.	24.5	14.5	3.0	.44	1.00
20,000 LBF.	21.5	12.6	4.0	.44	1.00
30,000 LBF.	29.5	14.7	6.0	.44	1.00
50,000 LBF.	23	14.7	4.0	.63	1.50
100,000 LBF.	36	20	6.0	.88	1.50
120,000 LBF.	36	20	6.0	.88	1.50

### STANDARD WEIGHT COMPLEMENTS

100	1,000	2,000	5,000	10,000
Yoke - 2.5 LB 1 - 2.5 LB 7 - 5 LB 6 - 10 LB	Yoke - 10 LB 2 - 10 LB 1 - 20 LB 9 - 50 LB 5 - 100 LB	Yoke - 20 LB 9 - 20 LB 9 - 100 LB	Yoke - 50 LB 9 - 50 LB 9 - 500 LB	Yoke - 100 LB 9 - 100 LB 9 - 1000 LB
20,000	30,000	50,000	100,000	120,000
Yoke - 100 LB 4 - 100 LB 2 - 100 LB 8 - 1000 LB 5 - 2000 LB	Yoke - 200 LB 2 - 100 LB 8 - 200 LB 14 - 2000 LB	Yoke - 1000 LB 4 - 1000 LB 5 - 2000 LB 5 - 3000 LB 5 - 4000 LB	Yoke - 1000 LB 1 - 1000 LB 4 - 2000 LB 5 - 4000 LB 5 - 6000 LB 5 - 8000 LB	Yoke - 2000 LB 4 - 2000 LB 6 - 4000 LB 10 - 8000 LB

### APPROXIMATE DIMENSIONS FOR STANDARD CAPACITIES

	100	1,000	2,000	5,000	10,000
HEIGHT	70	82	92	150	150
BASE	18" x 18"	22" x 18"	24" SQ	32" SQ	37" SQ
WEIGHT	700	2100	3,400	7,700	14,000
	20,000	30,000	50,000	100,000	120,000
HEIGHT	180	204	210	280	280
BASE	43" SQ	57" SQ	60" SQ	110" SQ	110" SQ
WEIGHT	33,000	41,500	64,000	125,000	145,000

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