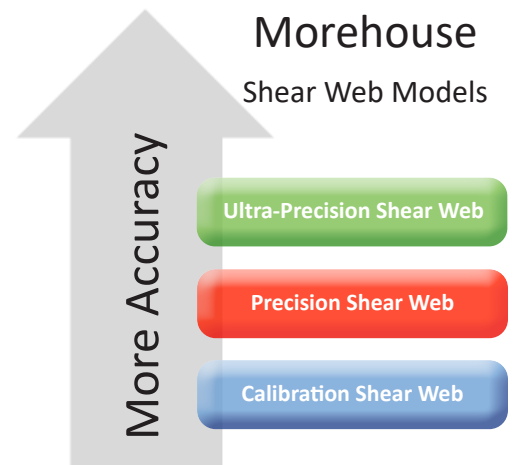




Morehouse offers three grades of high accuracy shear web load cells with varying design and performance characteristics for use wherever a high level of confidence is required. High accuracy load cell systems will use fewer load cells than most competing systems, lowering calibration costs, reducing cycle time, and requiring fewer setups.

High Accuracy Shear-Web Load Cells

- » Capacities from 300 – 120K lbf, or equivalent kgf/Newton.
- » Compression and/or tension modes.
- » Accredited calibration, ASTM E74 or ISO 376 available.
- » Calibration by deadweight primary standards for capacities up to 120K lbf (534 kN). This is required for ASTM E74 Class AA & ISO 376 Class 00 calibrations.
- » Load cell indicators, adapters, and accessories available.
- » Custom-cut system cases available for storage and secure shipping.



Morehouse
Shear Web Models

Ultra-Precision Shear Web

Precision Shear Web

Calibration Shear Web

Ultra-Precision Load Cell

- » ASTM E74 Lower Limit Factor (LLF) better than 0.005 % of capacity
- » ASTM E74 Class AA lower limit typically around 10 % of capacity when used only in a single direction ^{1,2,3,6}
- » ASTM E74 Class A lower limit around 2 % of capacity when used only in a single direction ^{1,2,4,6}
- » ISO 376 Class 00
- » Calibrated using deadweight primary standards for ASTM E74 Class AA & ISO 376 Class 00
- » Shear-web design available in capacities from 100 – 120K lbf



Precision Load Cell

- » ASTM E74 Lower Limit Factor (LLF) better than 0.01 % of capacity
- » ASTM E74 Class A lower limit typically around 4 % of capacity when used only in a single direction ^{1,2,4,7}
- » ISO 376 Class 0.5 or better
- » Direct reading calibration accuracy typically around 0.05 % of capacity ⁵
- » Single or multi-column design load cells also available in capacities 120K – 2M lbf



Calibration Load Cell

- » ASTM E74 Lower Limit Factor (LLF) better than 0.02 % of capacity
- » ASTM E74 Class A lower limit typically around 8 % of capacity when used only in a single direction ^{1,2,4,8}
- » ISO 376 Class 1 or better
- » Direct reading calibration accuracy typically around 0.1 % of capacity ⁵
- » Single or multi-column design load cells also available in capacities 120K – 2M lbf



Notes:

1. ISO Class is for Case C only. Case D varies by capacity.
2. When calibrated in mV/V or with a high precision indicator such as Morehouse 4215, HADI, or DSC-USB.
3. Lower Limit is defined by ASTM E74 as the smallest force at which an instrument can be used.
4. ASTM E74 defines Class AA Lower Limit as 2000 x LLF.
5. ASTM E74 defines the Class A Lower Limit as 400 x LLF.
6. When the directions are combined, there may be a reduction in the loading range. The reduction varies by capacity, and the Class A and AA verified range of forces could double.
7. When the directions are combined, there may be a reduction in the loading range. The reduction varies by capacity, and the verified range of forces could increase to 20 % of capacity.
8. When the directions are combined, there may be a reduction in the loading range. The reduction varies by capacity, and the verified range of forces could increase to 40 % of capacity.



Technical Specifications

Specifications	Model - Capacity (lbf / kN)					
	Ultra-Precision		Precision		Calibration	
	300-2K / 1-10	5K-200K / 25-900	300-2K / 1-10	5K-200K / 25-900	300-2K / 1-10	5K-100K / 25-500
Accuracy						
Static Error Band, % R.O.	±0.02	± 0.03	± 0.02	± 0.03	± 0.04	± 0.05
Non-Linearity, % R.O.	±0.02	± 0.03	± 0.03	± 0.03	± 0.04	± 0.05
Hysteresis, % R.O.	± 0.02	± 0.04	± 0.02	± 0.04	± 0.03	± 0.05
Non-Repeatability, % R.O.	± 0.005	± 0.005	± 0.01	± 0.01	± 0.01	± 0.01
Creep, % Rdg / 20 Min.	± 0.015	± 0.015	± 0.03	± 0.03	± 0.03	± 0.03
Off-Center Load Sensitivity, %/in	±0.05	± 0.05	±0.10	± 0.10	± 0.25	± 0.25
Side Load Sensitivity, %	± 0.05	± 0.05	±0.10	±0.10	± 0.25	± 0.25
Zero Balance, % R.O.	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0
Temperature						
Range, Compensated, °F	+15 to +115	+15 to +115	+15 to +115	+15 to +115	+15 to +115	+15 to +115
Range, Operating, °F	-65 to +200	-65 to +200	-65 to +200	-65 to +200	-65 to +200	-65 to +200
Sensitivity Effect, % Rdg / 100°F	0.08	0.08	0.08	0.08	0.08	0.08
Zero Effect, % R.O. / 100°F	0.08	0.08	0.08	0.08	0.08	0.08
Electrical						
Recommended Excitation, VDC	10	10	10	10	10	10
Input Resistance, Ω	350 +40/-3.5	350 +40/-3.5	350 +40/-3.5	350 +40/-3.5	350 +40/-3.5	350 +40/-3.5
Output Resistance, Ω	350 ± 3.5	350 ± 3.5	350 ± 3.5	350 ± 3.5	350 ± 3.5	350 ± 3.5
Sensitivity (R.O.), mV/V, Nominal	2	4	2	4	2	4
Insulation Bridge/Case, MegΩ	5000 @50 VDC	5000 @50 VDC	5000 @50 VDC	5000 @50 VDC	5000 @50 VDC	5000 @50 VDC
Mechanical						
Safe Overload, % R.O.	150	150	150	150	150	150
Flexure Material	Aluminum	Steel	Aluminum	Steel	Aluminum	Steel

Specification	Load Cell Capacity					
	300-2K / 1-10	5K-10K / 20-50	25K-50K / 100-250	60K / 300	100K / 500	200K / 900
Weight, lbs	3.8	8.0	23.5	26.0	58.0	171.0



Load Cell Part Numbers

Ultra-Precision Load Cell

Capacity (lbf)	300	500	1,000	2,000	5,000	10,000	25,000	50,000	60,000	100,000	200,000
Capacity (kN)	1	2.5	5	10	25	50	100	250	300	500	900
Part No.	UPC-300	UPC-500	UPC-1K	UPC-2K	UPC-5K	UPC-10K	UPC-25K	UPC-50K	UPC-60K	UPC-100K	UPC-200K

Precision Load Cell

Capacity (lbf)	300	500	1,000	2,000	5,000	10,000	25,000	50,000	60,000	100,000	200,000
Capacity (kN)	1	2.5	5	10	25	50	100	250	300	500	900
Part No.	PC-300	PC-500	PC-1K	PC-2K	PC-5K	PC-10K	PC-25K	PC-50K	PC-60K	PC-100K	PC-200K

Calibration Load Cell

Capacity (lbf)	300	500	1,000	2,000	5,000	10,000	25,000	50,000	60,000	100,000	200,000
Capacity (kN)	1	2.5	5	10	25	50	100	250	300	500	900
Part No.	C-300	C-500	C-1K	C-2K	C-5K	C-10K	C-25K	C-50K	C-60K	C-100K	C-200K

Load cells for other capacities are available. Contact Morehouse for more information.