

ROLL FORCE MEASUREMENT LOAD CELLS

GASKET LOAD CELLS

- ◆ Highly accurate under uneven loading conditions. The location is between the nut and the housing.
- ◆ Conditions favorable at the top of the mill.
- ◆ For roughing mills or plate mills with high impact loading.
- ◆ Easily and economically retrofitted into existing mills.

SLAB LOAD CELLS

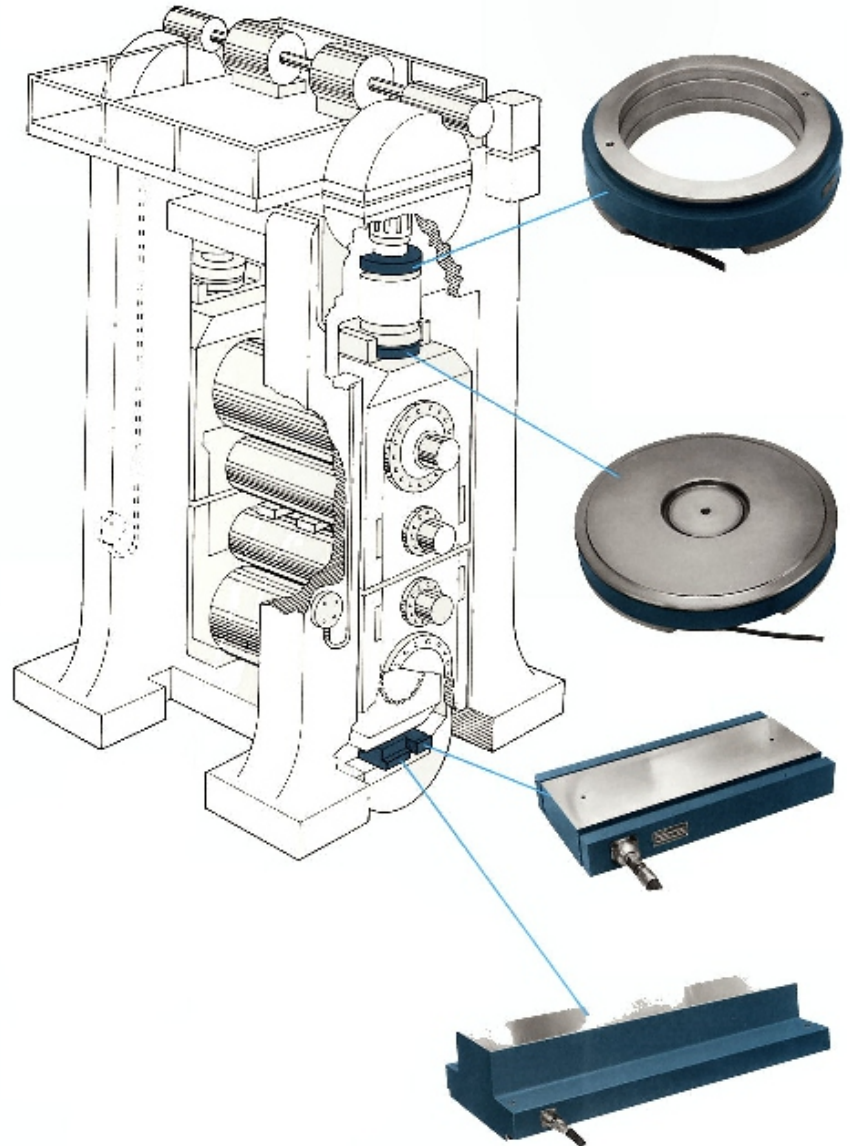
- ◆ Length matching that of rocker block ensures load distribution.
- ◆ Can economically update existing rectangular-shaped cell installations.

DISC LOAD CELLS

- ◆ Insensitive to uneven loading.
- ◆ Dry locations require less maintenance.
- ◆ Ambient conditions are favorable at the top of the mill.
- ◆ Can economically update existing disk-shaped cell installations.

T-BLOCK LOAD CELLS

- ◆ Narrow load cell is specially designed to fit beneath rocker block at bottom of mill.
- ◆ Provides integration of line load from rocker block with no need for line distribution plates.
- ◆ Protected against mill fluids and scale found in this location.
- ◆ Will tolerate bending of mill housing without error.



HIGH TEMPERATURE LOAD CELLS

- ◆ KELK / ABB / equivalent load cells

ROLLMASTER SLAB LOAD CELLS

MODEL AMS 141V

DIMENSIONS :

Nominal Load
(MN)

0.63
0.80
1.00
1.25
1.60
2.00
2.50
3.10
4.00
5.00
6.30
8.00
10.0
12.5
14.0
16.0
18.0
20.0
22.0
25.0
28.0
31.0
35.0
40.0

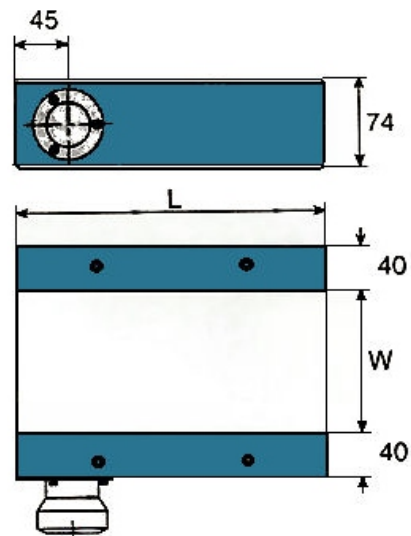
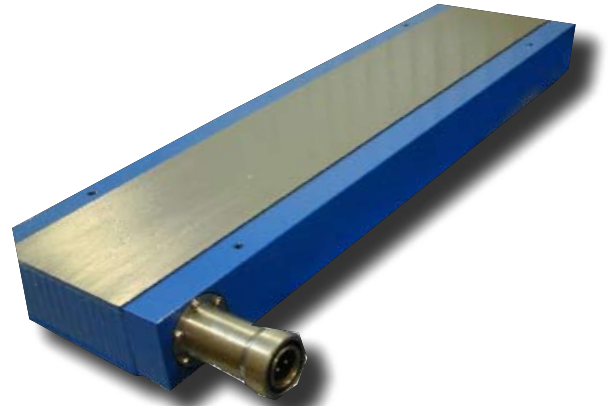
Various Length (L) mm

120	140	720	1140
150	450	750	
180	480	780	
210	510	810	
240	540	840	
270	570	870	
300	600	900	
330	630	960	
360	660	1020	
390	690	1080	

Various Width (W) mm

70	280	460
100	310	490
130	340	520
160	370	
190	400	
220	430	
250		

- Determine the load for which the load cell is to be used & choose from the table the next higher value in the standard range



63 - 4000 Tonne Range
(Strain Gauge)

Specifications

Capacity : Up to 4000 Tonnes

Bridge Resistance : 120 ohms min.

Sensitivity : 1.0 to 1.8 mV/V

Linearity : Within +/- 0.5% of full scale

Operating Temperature : 0°C to 150°C

Hysteresis : Less than 0.3% of full scale

Compression : 0.1% of load cell height at rated load

ROLLMASTER SLAB LOAD CELLS

MODEL AMS 141V

DESCRIPTION :

- ◆ AMSTEL Slab Load Cells are strain gauge based used to measure the roll force in rolling mills under harsh environments condition.
- ◆ The shape and the construction of the RollMaster load cells make them highly suited for the metals rolling mills where they are engineered and fitted for measurement and control of roll forces for automatic gage control.

FEATURES :

- ◆ Machined and manufactured from a single high strength stainless steel 17-4 PH forging.
- ◆ Mechanically interchangeable with ABB/KELK.
- ◆ Hermetically sealed, welded construction, filled with a high performance gel potting for long term performance and protection.
- ◆ Excellent linearity and low hysteresis.
- ◆ Durable construction with accuracy over a wide range of temperatures.
- ◆ All load cells are standard with a 20 meter teflon cable. Additional cable lengths are available for no additional cost to customer.
- ◆ All cables are fitted with steel reinforced oil resistant hydraulic hose assemblies.

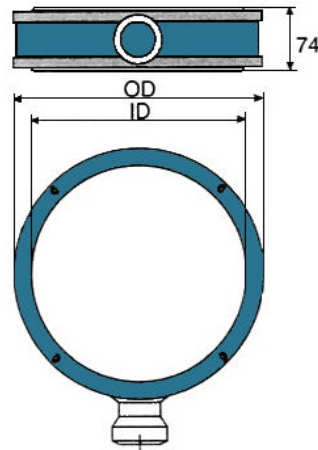
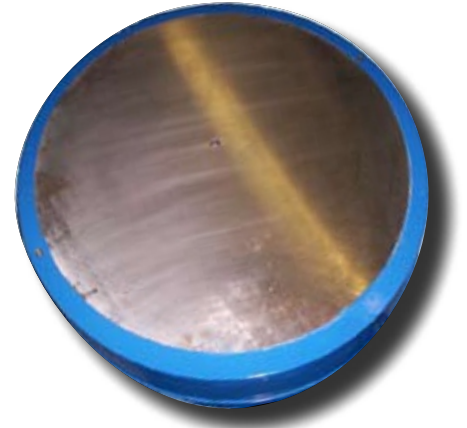
SPECIFICATIONS :

Model	:	AMS 141V SLAB LOAD CELLS
Capacity Range	:	Up to 4,000 tonnes
Bridge Resistance	:	120 ohms minimum
Excitation Voltage	:	15 VDC or VAC maximum
Sensitivity	:	1.0 to 1.8 mV/V
Response Time	:	Less than 0.1 ms
Linearity	:	Within +/- 0.5% of full scale output
Hysteresis	:	Less than 0.3% of full scale output
Repeatability	:	Within 0.1% of full scale at rated load
Thermal Zero Shift	:	+/- 0.005% of full scale output / per °C (Temperature change over the compensated range of 20 to 150 °C)
Load Limits	:	300% of rated load without zero shift 500% of rated load without change in characteristics 700% of rated load without mechanical damage
Operating Temperature Range	:	0 to 150 °C
Storing Temperature Range	:	-40 to 180°C
Compression	:	0.1% of height at rated load
Combined Error	:	+/- 0.1% of full scale at rated load.

ROLLMASTER DISC LOAD CELLS (MODEL AMS 141C)

DIMENSIONS :

Nominal Load (MN)	ID (mm)	OD (mm)	Max Cable Length (m)
1.6	150	210	25
2.5	180	240	24
3.1	210	270	23
4.0	240	290	22
5.0	270	320	21
6.3	300	350	20
8.0	330	380	19
10	360	410	18
12.5	390	440	17
14	420	470	16
16	450	500	16
18	480	530	15
20	510	560	15
22	540	590	14
25	570	620	13
28	600	650	12
31	630	710	11
35	660	740	10
40	720	800	8



160 - 4000 tonne range
(Strain Gauge)

- Determine the load for which the load cell is to be used & choose from the table the next higher value in the standard range.

Specifications

Capacity : Up to 4000 Tonnes Bridge Resistance : 120 ohms min. Sensitivity : 1.0 to 1.8 mv/V
 Linearity : Within +/- 0.5% of full scale Operating Temp. : 0 - 150°C
 Hysteresis : Less than 0.3% of full scale Compression : 0.1% of load cell height at rated load
 Combined Error : +/- 0.1% of full scale at rated load.

ROLLMASTER DISC LOAD CELLS

MODEL AMS 141C

DESCRIPTION :

- ◆ AMSTEL Disc Load Cells are strain gage based used to measure the roll force in rolling mills under harsh environments condition.
- ◆ The shape and the construction of the RollMaster load cells make them highly suited for the metals rolling mills where they are engineered and fitted for measurement and control of roll forces for automatic gage control.

FEATURES :

- ◆ Machined and manufactured from a single high strength stainless steel 17-4 PH forging.
- ◆ Mechanically interchangeable with ABB/KELK.
- ◆ Hermetically sealed, welded construction, filed with a high performance gel potting for long term performance and protection.
- ◆ Excellent linearity and low hysteresis.
- ◆ Durable construction with accuracy over a wide range of temperatures.
- ◆ All load cells are standard with a 20 meter teflon cable. Additional cable lengths are available for no additional cost to customer.
- ◆ All cables are fitted with steel reinforced oil resistant hydraulic hose assemblies.

SPECIFICATIONS :

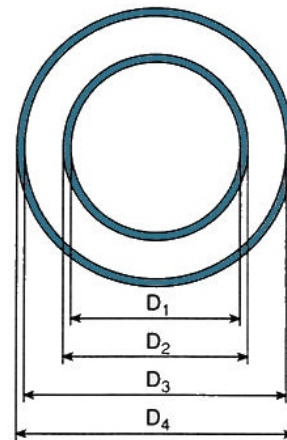
Model	:	AMS 141C DISC LOAD CELLS
Capacity Range	:	Up to 4,000 tonnes
Bridge Resistance	:	120 ohms minimum
Excitation Voltage	:	15 VDC or VAC maximum
Sensitivity	:	1.0 to 1.8 mV/V
Response Time	:	Less than 0.1 ms
Linearity	:	Within +/- 0.5% of full scale output
Hysteresis	:	Less than 0.3% of full scale output
Repeatability	:	Within 0.1% of full scale at rated load
Thermal Zero Shift	:	+/- 0.005% of full scale output / per °C (Temperature change over the compensated range of 20 to 150 °C)
Load Limits	:	300% of rated load without zero shift 500% of rated load without change in characteristics 700% of rated load without mechanical damage
Operating Temperature Range	:	0 to 150 °C
Storing Temperature Range	:	-40 to 180°C
Compression	:	0.1% of height at rated load
Combined Error	:	+/- 0.1% of full scale at rated load.

ROLLMASTER GASKET LOAD CELLS

MODEL AMS 141R

DIMENSIONS :

Nominal Load (MN)	D1 (mm)	D2 (mm)	D3 (mm)	D4 (mm)	Max Cable Length (m)
2	100	130	200	240	75
2.5	100	130	210	250	72
3.1	200	230	300	340	69
4	225	285	380	410	63
5	255	285	380	410	63
6.3	285	315	420	450	60
8.0	320	350	470	500	57
10	355	385	525	555	18
11.2	375	405	550	580	17
12.5	400	530	590	620	17
14	420	450	620	650	16
16	450	480	660	690	16
18	480	510	700	730	15
20	505	535	735	765	15
22.4	535	565	775	805	14
25	565	595	820	850	13
28	595	625	865	895	12



- Determine the load for which the load cell is to be used & choose from the table the next higher value in the standard range. We can customize load cells if a standard load cell is not suitable for a particular application.

Specifications

Capacity :	Up to 4000 Tonnes	Bridge Resistance : 120 ohms min.	Sensitivity : 1.0 to 1.8 mV/V
Linearity :	Within +/- 0.5% of full scale	Operating Temp. : 0 - 150°C	
Hysteresis :	Less than 0.3% of full scale	Compression : 0.1% of cell height at rated load	
Combined Error :	+/- 0.1% of full scale at rated load.		

ROLLMASTER GASKET LOAD CELLS

MODEL AMS 141R

DESCRIPTION :

- ◆ AMSTEL GASKET Load cells are strain gage based load cells used to measure the roll force in rolling mills under harsh environments.
- ◆ The shape and the high quality construction of the Roll Master load cells make them highly suited for the metal rolling mills where they are engineered and fitted for measurement and control of roll forces for automatic gage control.
- ◆ In this application, the cells are mounted between the nut and the mill housing and do not require removal during back-up roll change. They can also be fitted between the thrust bearing and the top back-up roll.

FEATURES :

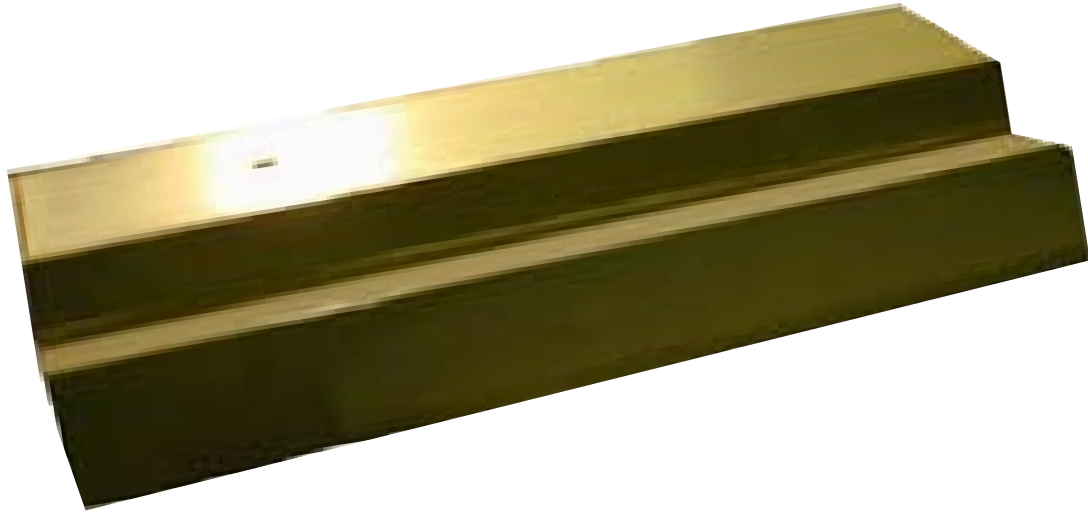
- ◆ Machined and manufactured from a single high strength stainless steel 17-4 PH forging.
- ◆ Mechanically interchangeable with ABB/KELK.
- ◆ Hermetically sealed, welded construction, filled with a high performance gel potting for long term performance and protection.
- ◆ Excellent linearity and low hysteresis.
- ◆ Durable construction with accuracy over a wide range of temperatures.
- ◆ All load cells are standard with a 20 meter teflon cable. Additional cable lengths are available for no additional cost to customer.
- ◆ All cables are fitted with steel reinforced oil resistant hydraulic hose assemblies.

SPECIFICATIONS :

Model	:	AMS 141R GASKET LOAD CELL
Capacity Range	:	Up to 4,000 tonnes
Bridge Resistance	:	120 ohms minimum
Excitation Voltage	:	15 VDC or VAC maximum
Sensitivity	:	1.0 to 1.8 mv/V
Response Time	:	Less than 0.1 ms
Linearity	:	Within +/- 0.5% of full scale output
Hysteresis	:	Less than 0.3% of full scale output
Repeatability	:	Within 0.1% of full scale at rated load
Thermal Zero Shift	:	+/- 0.005% of full scale output / per °C (Temperature change over the compensated range of 20 to 150 °C)
Load Limits	:	300% of rated load without zero shift 500% of rated load without change in characteristics 700% of rated load without mechanical damage
Operating Temperature Range	:	0 to 150 °C
Storing Temperature Range	:	-40 to 180°C
Compression	:	0.1% of height at rated load

ROLLMASTER T-BLOCK LOAD CELLS

MODEL AMS 141T



CAPACITIES IN TONNE

500	1400	2800
600	1600	3000
700	1800	3600
800	2000	4000
900	2200	
1000	2400	
1200	2600	

Specifications

Capacity :	Up to 4000 Tonnes	Bridge Resistance : 120 ohms min.	Sensitivity 1.0 to 1.8 mV/V
Linearity :	Within +/- 0.5% of full scale	Operating Temp. : 0 - 150°C	
Hysteresis :	Less than 0.3% of full scale	Compression : 0.1% of cell height at rated load	
Combined Error :	+/- 0.1% of full scale at rated load.		

ROLLMASTER T-BLOCK LOAD CELLS

MODEL AMS 141T

DESCRIPTION :

- ◆ AMSTEL T-BLOCK Load cells are strain gage based load cells used to measure the roll force in rolling mills under harsh environments.
- ◆ The shape and the high quality construction of the RollMaster Load cells make them highly suited for the metals rolling mills where they are engineered and fitted for measurement and control of roll forces for automatic gage control.
- ◆ In this application they are mounted under the bottom back-up roll to measure the force spread over a plate of hardened steel which is required.

FEATURES :

- ◆ Machined and manufactured from a single high strength stainless steel 17-4 PH forging.
- ◆ Mechanically interchangeable with ABB/KELK.
- ◆ Hermetically sealed, welded construction, filled with a high performance gel potting for long term performance and protection.
- ◆ Excellent linearity and low hysteresis.
- ◆ Durable construction with accuracy over a wide range of temperatures.
- ◆ All load cells are standard with a 20 meter teflon cable. Additional cable lengths are available for no additional cost to customer.
- ◆ All cables are fitted with steel reinforced oil resistant hydraulic hose assemblies.

SPECIFICATIONS :

Model	:	AMS 141T T-BLOCK LOAD CELL
Capacity Range	:	Up to 4,000 tonnes
Bridge Resistance	:	120 ohms minimum
Excitation Voltage	:	15 VDC or VAC maximum
Sensitivity	:	1.0 to 1.8 mV/V
Response Time	:	Less than 0.1 ms
Linearity	:	Within +/- 0.5% of full scale output
Hysteresis	:	Less than 0.3% of full scale output
Repeatability	:	Within 0.1% of full scale at rated load
Thermal Zero Shift	:	+/- 0.005% of full scale output / per °C (Temperature change over the compensated range of 20 to 150 °C)
Load Limits	:	300% of rated load without zero shift 500% of rated load without change in characteristics 700% of rated load without mechanical damage
Operating Temperature Range	:	0 to 150 °C
Storing Temperature Range	:	-40 to 180°C
Compression	:	0.1% of height at rated load
Combined Error	:	+/- 0.1% of full scale at rated load.