

Force

100cm² Nominal Diameter Hydraulic Load Cell



SERIES **4000**

100CM² NOMINAL DIAMETER HYDRAULIC LOAD CELL

NOSHOK 4000 Series Hydraulic Load Cells are engineered to provide superior performance in level measurement, rope and belt tension and torque measurement, bearing support forces on lifting equipment and other compression force measurement applications.

A high quality NOSHOK pressuring measuring instrument is directly mounted to the load cell for precise measurement indication – choose from an all stainless steel, dry or liquid filled 400/500 Series pressure gauge, the proven 901 Series Gauge with stainless steel housing, brass internals and liquid fill, or our 100, 200 or 615 Series Transducers for highly accurate electronic measurement.

The NOSHOK 4000 Series Load Cell operates without an external power supply when using a pressure gauge for indication. Various output signals are available in transducer models that are CE compliant.

FEATURES

- Ranges from 230 lbs.-force to 500,000 lbs.-force
- Accuracy levels ranging from $\pm 0.125\%$ Full scale (B.F.S.L.) to $\pm 1.5\%$ Full scale, depending on the measuring instrument.
- Flexible, rigid or capillary tubing connections available to combine versatility & strength to meet demanding application requirements
- Galvanized & chrome plated steel housing with high grade stainless steel piston provides exceptional corrosion resistance & durability

APPLICATIONS

- Weight and level measurement: Content indication based on weight measurement for vertical and horizontal tanks and bulk containers
- Measurement of bearing and support forces for bridges, supporting framework and lifting gear
- Load measurement under railroad tracks
- Monitoring contents of bunkers & silos

SPECIFICATIONS

Nominal Diameter	ND100
Load Cell Housing	Galvanized and chrome plated steel
Piston	100cm ² High grade stainless steel
Max Piston Stroke	0.03" (0.8mm)
Diaphragm	Rubber
Connecting Line	Rigid right angle tube, zinc plated and chromated steel Standard Lengths: 1m, 2m, 3m, 4m, 6m Maximum: 16m Flexible tubing with 7mm diameter spiral steel jacket Flexible tubing with 7mm diameter spiral steel jacket and polyethylene jacket Capillary restrictor Bend with glands on the load cell
Mounting	Threaded borings in base of case – STD Square flange fastening - Optional
Gauge Fill Fluid	Glycerine Others Available Upon Request
Load Cell Fill	Glycerine and water
Accessories	Ball and socket Round form load plate
Operating Temp.	-13°F to 194°F (-25°C to 90°C)
Ambient Temp.	-13°F to 194°F (-25°C to 90°C)

ORDERING INFORMATION				
SERIES	4100	Standard Design		
MEASURING RANGE	45F	45 tons-force (short ton)	75F	75 tons-force (short ton)
	110F	110 tons-force (short ton)		
MEASURING INSTRUMENT	40-400	4 Inch Pressure Gauge	100	100 Series Transducer
	60-400	6 Inch Pressure Gauge	200	200 Series Transducer
			615	615 Series Transducer
<i>Other piston diameters and ranges available on special request</i>				

OPTIONS for LOAD CELL WITH PRESSURE GAUGE			
GAUGE FILL FLUID	0 None	1 Glycerine	2 Silicone
GAUGE OPTIONS	0 None	1 Maximum Indicating Pointer <i>(Panel Mounting Features Available for Remote Installation - Consult Factory)</i>	2 Set Pointer

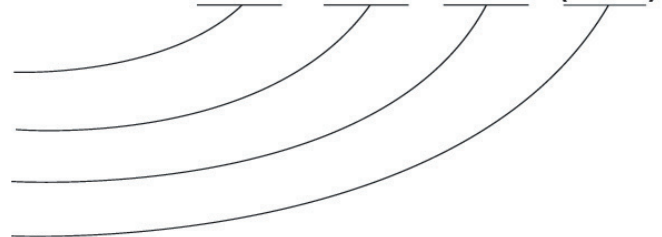
OPTIONS for LOAD CELL WITH PRESSURE TRANSDUCER			
ACCURACY	1 ±0.50% Full Scale (B.F.S.L.) - STD on 100/200 Series Transducers 2 ±0.25% Full Scale (STD on 615) - Optional on 100/200 Series Transducers 3 ±0.125% Full Scale - Option for 615 Series Transducer		
OUTPUT SIGNAL	1 4 mA to 20 mA, 2-wire 2 0 Vdc to 5 Vdc, 3-wire	3 1 Vdc to 5 Vdc, 3-wire 4 1 Vdc to 6 Vdc, 3-wire	5 0 Vdc to 10 Vdc, 3-wire 6 1 Vdc to 11 Vdc, 3-wire
ELECTRICAL CONNECTION	1 36" cable attached to option 7 or 8 3 6-Pin Bendix 6 1/2" NPT conduit with 36" cable 7 Mini-Hirschmann (DIN 43650C)	8 Hirschmann (DIN 43650A) 14 Hirschmann type with 1/2" NPT female conduit 25 M12 X 1 4-pin 1800 Attachable Loop Powered Indicator (w/615 Transducer Only)	

CONNECTION TYPE FROM LOAD CELL TO PRESSURE MEASURING INSTRUMENT			
CONNECTING LINE: 1m, 2m, 3m, 4m, 6m Maximum: 16m	1 Rigid Right Angle 2 Rigid Angled Tube 3 Capillary Tubing (1m)	4 Flexible Tubing with 7mm spiral steel jacket (2m) 6 Flexible Tubing with spiral steel jacket and polyethylene jacket (1m)	
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.			

EXAMPLE

Load Cell Series 4000 standard load cell
Measuring Range 75 tons-force (short tons)
Measuring Instrument 615 Series transducer
Options (XXX - X) Choose from options listed below,
 from appropriate table, to complete order selection

4100 - 75F - 615 - (XXX-X)

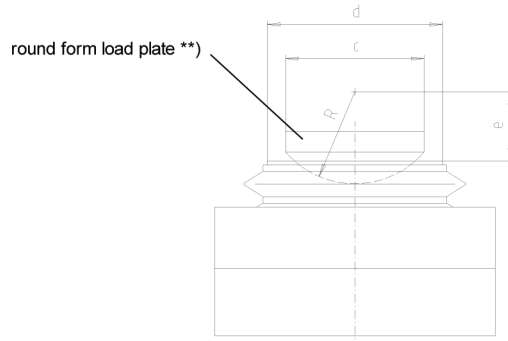
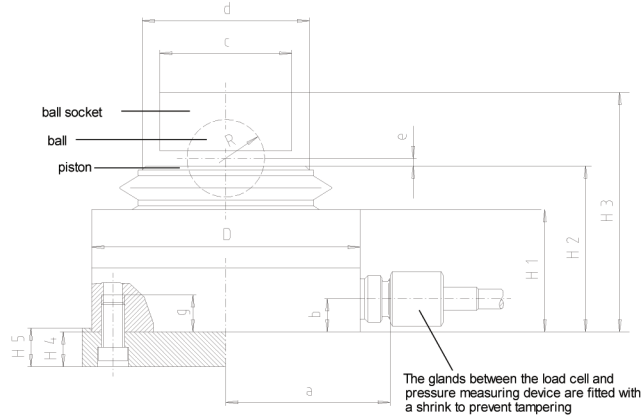


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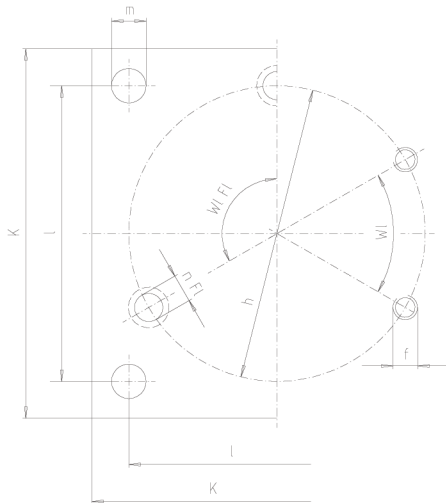
Installation example

A: Load cell



- *) ball and ball socket for diameters 10 and 40
- **) round form load plate for diameters 100 and 250

B: Flange fastening

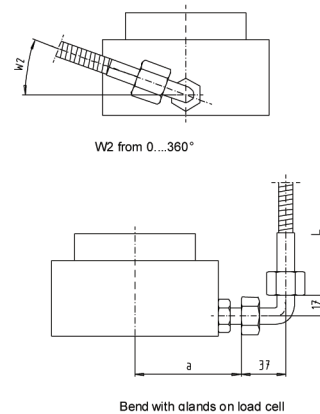
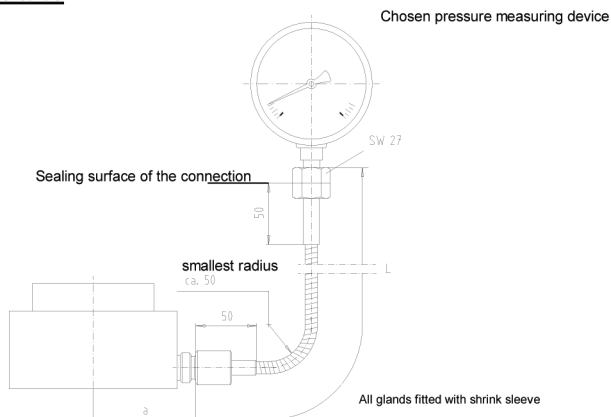


Position of the boring in the flange | Position of the threaded boring in the base of the casing

Table of dimensions

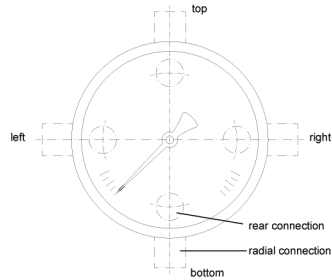
Dim.	Load cell - size			
	10	40	100	250
a	57	82	109	144
b	16	17	17	17
c	35 ø	68 ø	76 ø	118 ø
d	45 ø	90 ø	128 ø	198 ø
D	88 ø	138 ø	192 ø	262 ø
R	10	20	45	70
e	2,5	4	33,5	49
f	M 8	M 10	M 12	M 12
g	17	19	17	23
h	70 ø	120 ø	165 ø	238 ø
n	6	8	6	12
H 1	56	63	72	77
H 2	79	85,5	98,5	104,5
H 3	99	123,5	117,8	130,8
W 1	60°	45°	60°	30°
H 4	16	18	18	23
H 5	18	20	20	25
L	105	150	200	270
l	80	120	160	220
m	14 ø	14 ø	14 ø	18 ø
n fl.	3	4	6	6
Wl. fl.	120°	90°	60°	60°

C: Flexible tube

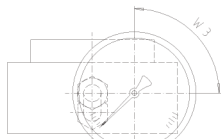


Installation example

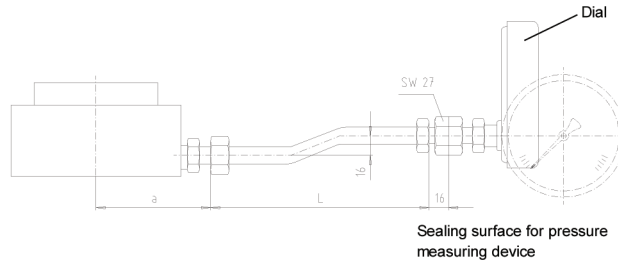
D. Rigid tube with pressure gauge as measuring device



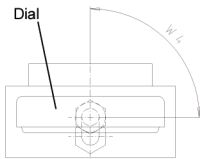
a) Rigid tube with angled bend



Pressure gauge, rear connection
W3 from 0...360°

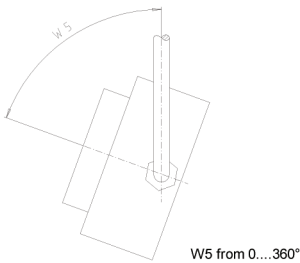


L as desired 100...250 mm

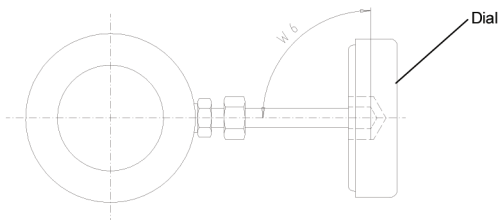


Pressure gauge, radial connection
W4 from 0...360°

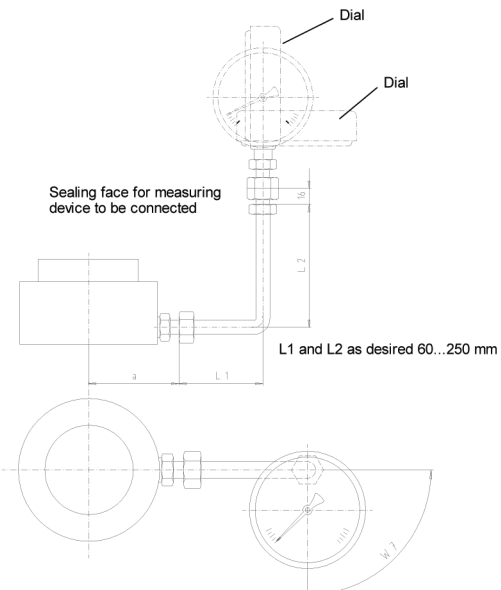
b) Rigid angled tube



W5 from 0...360°



Pressure gauge, radial connection, W6 from 0...360°



L1 and L2 as desired 60...250 mm

Pressure gauge, rear connection, W7 from 0...360°