

# Weld Force Pancake Load Cell

Model WPK

MEASURE WELDING FORCE

FATIGUE RATED, VIBRATION PROOF

INTEGRATES WITH PRESS WELDERS

NIST TRACEABLE ACCURACY OF 0.25%



The weld quality of resistance spot welding depends largely on controlling your weld force. To reduce flash and ensure the proper nugget formation, it is critical that a minimum force (or pressure) is reached before current is fired and a maximum force is not exceeded during the weld. To minimize weld cycle time, weld as soon as the current force is reached and eliminate wasted squeeze cycles.

Retrofit your existing press welders or custom weld machines with a system that allows you to calibrate an accurate initial force level and monitor weld-tip force during every weld. Or design it into your new machines. The Model WPK Pancake Load Cell is easily mounted between the air cylinder and the mounting block and interfaced with a WM9000 WeldMeter.

Use the system to set the pressure regulator to provide an acceptable weld force. Then, preset a force limit to a value approximately 5% lower than this force and connect the relay output of the WeldMeter to your PLC or weld controller. The system will now monitor every weld and fire current precisely when the correct force is reached.

During the weld, it is important that the pressure does not continue to increase resulting in a cold weld or small nugget. Use the second programmable limit to detect high forces and signal the operator when the tip force exceeds your acceptable limit.

## Specifications

### Model WPK

Capacity .....	0-2000, 2500, 5000, 10,000 lbs.
Nominal Output Sensitivity .....	2 mV/V
Excitation Voltage .....	10 VDC
Electrical Connection .....	Bendix PTIH-106P or equivalent
Overall Accuracy .....	0.25% of full scale
Overload limit .....	200% of full scale
Mechanical .....	Fatigue rated, shock and vibration resistant
Operating Temperature Range .....	-65 to 250°F
Compensated Temperature Range .....	60 to 160°F
Load Connection .....	See reverse side, optional pull plate available
Housing .....	Stainless steel, all-welded construction hermetically sealed

## How To Order

Order Code: AW711 \_\_\_\_\_

### Capacity

2000 lbs.	DL
2500 lbs.	DM
5000 lbs.	DR
10,000 lbs.	DV

### Optional Pull Plate (with bolts)

2000 lbs. (1/2-20 UNF)	AW151
2500 lbs. (1/2-20 UNF)	AW151
5000 lbs. (1-14 UNF)	AW152
10,000 lbs. (1 1/2-12 UNF)	AW153

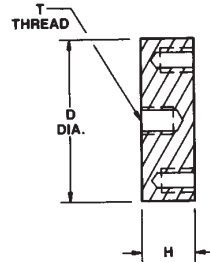
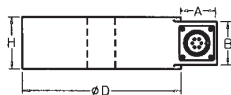
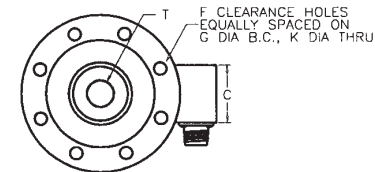
### Order Code

### Optional Cable Assembly

15' Cable with mating Bendix connector	AW993
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### Order Code

## Dimensions



Model WPK

Cap	D"	H"	F"	G"	K"	T	A"	B"	C"
2000	3.50	1.00	6	2.625	0.34	1/2-20	0.82	0.75	1.25
2500	3.50	1.00	6	2.625	0.34	1/2-20	0.82	0.75	1.25
5000	5.50	1.80	8	4.50	0.40	1-14	1.25	1.50	2.00
10,000	6.00	1.80	8	4.875	0.53	1 1/2-12	1/25	1.50	2.00

Pull Plate

Order Code	T"-thrd	D"-dia	H"	# bolts	Size	Depth
AW151	1/2-20	3.50	1.00	6	5/16-24	0.5
AW152	1-14	5.50	1.50	8	3/8-24	0.75
AW153	1 1/2-12	6.00	1.80	8	1/2-13	1.00

## Instrumentation

The WPK Load Cell is interfaced with a variety of Sensotec instruments to help monitor and control weld force. The family of WeldMeters range from a simple, single-channel instrument with dual limits, relay contacts, and analog outputs to single- and multi-channel microprocessor meters with digital inputs and outputs for multiple head applications.

The WeldMeter is easily programmed to set one or more force limits. One limit is used to trigger current firing after the preset achieved contact force is reached for every weld. This assures the minimum force is reached and minimizes the traditional squeeze time creating shorter weld cycles. Another limit is used to detect if a maximum preset force is exceeded during the weld which may lead to cold welds or incomplete nugget formation.

Finally, RS 232 or 485 serial outputs can provide data logging of peak forces achieved during every weld. This data can provide traceability for quality records or detect trends in force changes.

**SENSOTEC**®

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