Tuffman Pressure Meter
TPI 635 / 645 / 655

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Introduction
Congratulations!
Thank you for purchasing TPI brand products. This meter is easy to use and is built to last. It is backed by a 3 year limited warranty. Please remember to return your product warranty registration card.

Product Description
The TPI 600 Tuffman series is a hand held range Of pressure meters and can be summarized as follows.

TPI 635 5 PSI pressure range

TPI 645 30 PSI pressure range

TPI655 100 PSI pressure range

All of these models are dual input differential pressure meters with 7 selectable scales to choose from: mbar, kPa, PSI, inHg. mmHg,inH20, and mH20.

Safety Considerations

WARNING: Please follow the manufacture's test procedure whenever possible. Make sure the pressure to be measured is not outside the range of the TPI 635/645/655 meter.

General Guidelines

<u>ALWAYS</u>

• Test the pressure meter before use to ensure it is operating properly

• Ensure that the connecting hose you are using is free from kinks or splits

• Double check all connections before testing

<u>NEVER</u>

• Connect the instrument to an unknown pressure source if the source is twice the working pressure of the instrument the sensor will be damaged and may cause injury to the user

• Tamper with the instrument or attempt to modify it in any way. Otherwise accident and injury may occur and the warranty be comes void.

Technical Data

Controls TPI 635/645/655

ON	Switches instrument "ON" for use
OFF	Switches instrument "OFF" after use
ZERO	Automatically "zero's" the instrument
=	Smoothing function to stabilize rapidly changing readings
MAX/MIN	Enables user to recall & display both the maximum and minimum pressure recorded since the function was selected. Press button once to activate, twice to read minimum and three times to read the maximum. To cancel the function press and the hold the "MAXIMIN" button
HOLD	Maintains the reading on the LCD display
UNITS	Selects 7 units of measure kPa, PSI, inHg, mmHg, inH20, mH 20, mbar

Features & Benefils

Auto ranging-   Provides high resolution & accuracy at low pressures where it is needed

Auto Power Off-   Powers off after 30 minutes to conserve battery life.

Trim Mode-   Smoothing function to stabilize erratic readings. It displays the average value of 4 values previously measured.

Zero function-   Provides immediate push-button zeroing for Speed and accuracy.

Record Max/Min-   Enables long term testing of pressure systems for leaks

Hold-   Enables the user to freeze the display reading, when working in cramped working conditions, when the display is not visible.

Units-   Change the display value in anyone of the following engineering units. kPa, PSI, inHg, mmHg, inH20, mH20 and mbar.

Pressure Conversion Table

	Atmos	mbar	inHg	inH20	PSI	mmHg	mH20	kPa
Atmos	1	9.86923×10^{-4}	3.34207×10^{-2}	2.45832×10^{-3}	6.8046×10^{-2}	1.31579×10^{-3}	9.67841×10^{-3}	9.86923×10^{-3}
mbar	1013.25	1	33.8638	2.49089	68.9476	1.33322	98.0665	10
inHg	29.9213	2.95301×10^{-2}	1	7.35561×10^{-2}	2.036	3.937×10^{-2}	2.89591	0.295301
in H20	406.8	0.401463	13.5951	1	27.68	0.534	39.3701	4.01463
PSI	14.6959	1.45038×10^{-2}	0.491153	3.61273×10^{-2}	1	1.934×10^{-2}	1.42233	0.145038
mmHg	760	0.750064	25.4	1.86833	51.715	1	73.5561	7.50064
mH20	10.3323	1.01972×10^{-2}	0.345315	2.54×10^{-2}	0.70307	1.35951×10^{-2}	1	0.101972
kPa	101.325	0.1	3.38638	0.249089	6.89476	0.133322	9.80665	1

Step by Step Procedures

- Press the "ON" key and the LCD display will be activated if it does not read 0.00 proceed as follows
- Press the "zero" key and the display should read zero. if not repeat until it does
- Connect pressure meter to installation or equipment to be tested using appropriate hose connection in accordance with the manufactures instructions
- The pressure reading will appear on the display. To activate the backlight in poor light conditions press the "ON' key at any time
- If the reading is erratic or changing activate the smoothing unction by pressing the" =" key
- To freeze a reading in awkward or cramped working spaces press the "Hold" key
- To record maximum & minimum pressures when establishing pressure decay or carrying out gas line soundness testing press the "MAXIMIN" key
- To convert the displayed pressure reading to another engineering unit depress the "Unit" key anytime and scroll through to the desired units of pressure.

Accessories & Specifications

Standard Accessories	Part No.
9V ALKALINE battery	A009A
Replacement tubing t/4" 00 x 28"(L)	A601

Optional Accessories	Part No.
Replacement tubing 1/4' 00 x 28" T Fitting	A605
Large Zippered Case	A904
9V lithium battery	U9VL

Features Model	635	645	655
Range	5 PSI	30 PSI	100 PSI
Accuracy	±0.2'% of full scale +3 digits		
Over Pressure	14.5 psi (1000 mbar)	58.0 psi (4000 mbar)	145 psi (10 bar)
Power Supply	9V		
Relative Humidity	0% to 80% (a· to + 40°C)		
Operating Temp.	32° to 104°F (D' to +40°C)		
Storage Temp.	14° to 122°F (-10"10 + 50'C)		
Auto Power Off	After 30 minutes		
Trim Mode	Yes		
Zero Adjust	Yes Push Button		
Data Hold	Yes		
Record	Yes Max/Min		

Maintenance
Battery Replacement

The 635/645/655 will display a iBATi symb 01 when the internal 9V battery needs replacement. Replace battery as follows:

1. Ensure instrument is switched off
2. Loosen the cross head screw on the battery compartment cover
3. Remove battery compartment cover
4. Remove old battery
5. Replace with new battery 9V NEDA 1604 or equivalent
6. Reassemble the instrument in reverse order from above
7. RE-fit the cross head screw being sure not to over tighten

Cleaning

Use a mild detergent and a slightly damp cloth to clean the surfaces of the instrument.

Trouble Shooting Guide

Problem	Probable Cause
Unit does not zero	Zero button has not been operated
Unit still does not zero	If reading is greater than 0.05 and constantly fluctuation return to local service centre
iBati appears on the display	Replace battery immediately 9V NEDA 15050cequivalent

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EC Declaration 01 Conformity

This is to certify that model 634/645/655 conform to the protection requirements of the council directive 89/336/EEC, in the approximation of laws of the member states relating to Electromagnetic compatibility by application of the following standards

EN50081-1 1992 Emissions Standard

EN50082-1 1992 Immunity Standard

To ensure conformity with these standards, this instrument must be operated in accordance with the instructions and specifications given in this manual.

Warranty Statement
3 Year Limited Warranty

This TPI product is warranted to the purchaser against defect in materials and workmanship for 3 years from the date of purchase.

Covered by TPI: Repair parts and labour; or replacement of the product at the option of TPI. Normal transportation charges to the purchaser are also covered.

Not covered by TPI: Damage to the product which are the result of abuse, improper use or maintenance are not covered. Any other expense, consequential damages, incidental expenses including damages to property is not covered. Transportation expense to the company are not covered.

To obtain warranty performance: include with the product your name, address, phone number, written description of the problem and proof of purchase date. Carefully package and return to the address printed below.

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