



# FORCE DIAL™

FDK/FDN FORCE GAGE

- TENSION & COMPRESSION
- CAPACITIES: 1 TO 60 lbf
- DUAL GRADUATIONS
- PEAK FORCE HOLD
- ACCURACY:

± 2 GRAD THRU 5 lbf/2500 gf  
 ± 1 GRAD OVER 5 lbf/2500 gf

The Wagner Force Dial™ FDK/FDN features dual graduations for tension and compression:

MODEL	CAPACITY/GRADUATION	ACCURACY*
FDK 2	2 lbf x .02 lbf 1000 gf x 10 gf	± 2
FDK 5	5 lbf x .05 lbf 2500 gf x 25 gf	± 2
FDK 10	10 lbf x .1 lbf 5 kgf x 50 gf	± 1
FDK 20	20 lbf x .25 lbf 10 kgf x 100 gf	± 1
FDK 30	30 lbf x .25 lbf 14 kgf x 100 gf	± 1
FDK 40	40 lbf x .5 lbf 20 kgf x 200 gf	± 1
FDK 60	60 lbf x .5 lbf 30 kgf x 250 gf	± 1
FDK 32	32 ozf x 1/4 ozf 1000 gf x 10 gf	± 2
FDK 80	5 lbf x 1 ozf 2500 gf x 25 gf	± 2
FDK 160	10 lbf x 2 ozf 5 kgf x 50 gf	± 1
FDN 10	10 N x .1 N 1000 gf x 10 gf	± 2
FDN 20	20 N x .25 N 2500 gf x 25 gf	± 2
FDN 50	50 N x .5 N 5 kgf x 50 gf	± 1
FDN 100	100 N x 1 N 10 kgf x 100 gf	± 1
FDN 200	200 N x 2 N 20 kgf x 200 gf	± 1
FDN 300	300 N x 2.5 N 30 kgf x 250 gf	± 1

\*Accuracy is expressed in graduations.

Note: The "f" suffix indicates units of force. All models feature a peak force hold button. Standard accessories include three attachments, manual and carry case. Mounting arrangements are provided for attachment of optional handles and test stand use.

## OPERATION

- Prior to using the FDK/FDN, the accuracy should be verified with test weights - see "ACCURACY VERIFICATION".
- Before daily use, exercise the plunger in and out for 10 seconds to ensure the mechanism is free to function.
- Forces must be applied to the load shaft and hook axially - straight in and out.
- The active force measurement range of the FDK/FDN begins at 10% of full scale. There is no "zero" on the dial since having the pointer return to zero has no significance in calibration or accuracy.
- The peak or maximum force applied during the test is retained by the pointer unless the peak hold button has been held down during the test. Pressing the button returns the pointer to the rest position.
- Testing must be performed with the peak hold active; i.e., peak hold button NOT pressed down.
- Lubrication of the FDK/FDN is not recommended since oil will accumulate dust resulting in increased friction and decreased accuracy.

## ACCURACY VERIFICATION

- Prior to use, the FDK/FDN accuracy should be verified by testing with weights.
- The FDK/FDN is calibrated in the vertical position to the stated accuracy.
- The FDK/FDN accuracy is ±2 graduations for capacities through 2500 grams and ±1 graduation over 2500 grams.
- Periodical testing of accuracy should be performed with a test weight suspended on the hook. One weight equal to the most used range of force or 1/2 capacity is applied.
- Do not attempt to adjust the FDK/FDN if found to be inaccurate. The FDK/FDN is sealed; any attempt to adjust it may damage the gage. Contact Wagner Instruments for instructions.
- The FDK/FDN is calibrated with the peak hold active, i.e., peak hold button NOT pressed. When verifying calibration with test weights, do NOT hold the button down.

## MOUNTING

- The FDK/FDN may be hand-held or mounted on the Wagner FTK 100 Test Stand, providing greater accuracy through positive control of the test.
- The FDK/FDN is mounted on the FTK 100 Test Stand with three #6 (.138" / 3.5 mm) sheet metal screws. Three dimples on the rear of the housing provide starting points for the screw. Penetration should be limited to 3/8" (10 mm).

## REPAIR/REBUILT PROGRAM

FDK/FDN Force Gages are repaired at Wagner in the "Repair/Rebuilt Program". An FDK/FDN returned for repair is evaluated for rebuilding. If accepted, the FDK/FDN will be replaced with a rebuilt FDK/FDN. Rebuilt FDK/FDN are only available for those returned for repair. They are not available for purchase without return of a defective FDK/FDN.

### Return For Service

- Request a Repair Order Form (RO) by calling 800-345-4188.
- Upon receipt of the RO, follow the instructions, and send the FDK/FDN with a copy of the RO to the indicated address.

## CERTIFICATION

FDK/FDN Force Gages are calibrated at the factory, but do not have NIST Certification.

### NIST Certification

- Optional for new or rebuilt FDK/FDN.

### NIST Re-Certification

- An FDK/FDN returned for re-certification will be issued a NIST Certificate if found to be within tolerance.
- If an FDK/FDN returned for re-certification is found out-of-tolerance, a rebuilt FDK/FDN with NIST Certificate will be offered.



FDK shown with optional handles.



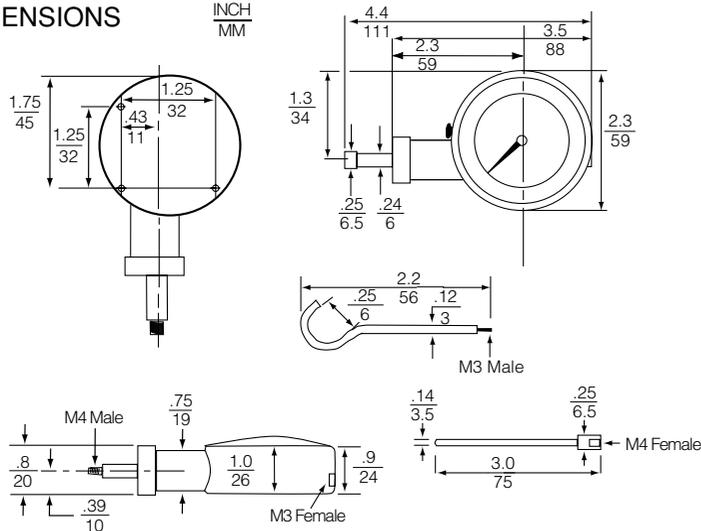
FDK shown in case with standard accessories.



FDK mounted on Wagner FTK Test Stand.

## FDK DIMENSIONS

INCH  
MM



### Warranty and Limitation of Liability

Wagner Instruments expressly warrants to its buyer for one year from the date of purchase that the goods sold shall be free from defects in workmanship and materials under normal conditions. Wagner Instruments will, at its option, replace, repair, or refund in full, the purchase price of the instrument or any part thereof which in our opinion is defective, provided the instrument has not been subjected to tampering, abuse or exposed to highly corrosive conditions. An instrument that has been improperly used cannot be considered under this warranty. We make no warranties, expressed or implied, including, without limitation, any warranties of fitness or merchantability, except as expressly set forth above. We shall not be liable for any anticipated or lost profits, incidental damages, consequential damages, costs, time charges, or other losses in connection with the instrument or replacement parts thereof. If a manufacturing defect is found, we will replace or repair the instrument or any defective part thereof without charge; however, our obligation hereunder does not include the cost of transportation which must be borne by the customer. We assume no responsibility for damage in transit, and any claims for such damage should be presented to the carrier by the purchaser. In addition, we may, at our option, take back the defective instrument and refund, in full settlement, the purchase price thereof.



**FORCE DIAL™ FDK/FDN SERIES Push Pull Force Gauge**

**OPERATION MANUAL  
IMPORTANT INSTRUCTIONS  
READ BEFORE USING GAGE**



**WAGNER INSTRUMENTS**  
P.O.B. 1217 GREENWICH CT 06836 USA  
TEL: (800) 345-4188 or (203) 698-9681  
FAX: (800) 443-4149 or (203) 698-9696  
[www.wagnerinstruments.com](http://www.wagnerinstruments.com)