

TORQUE & FORCE ENCLOSURE METER

OPERATOR'S HANDBOOK (PART NO. 34144)
ISSUE 2
MODEL NOS. 60071 & 60096

TORQUE AND FORCE MONITORING ENCLOSURE METER

INTRODUCTION

The enclosure meter instrument is for monitoring the torques and forces required to remove and replace the tops of many kinds of enclosures including screw tops, click lids and combinations of both.

Used in conjunction with the Norbar electronic transducer system (ETS) it is able to display and record the torques and loads required to open and close most small and medium size container tops.

If torque and load are to be monitored together, two ETS units will be required, one monitoring load, one torque. If only torque or load are to be monitored, only one ETS unit will be required.

Both clockwise and anti-clockwise torques and compression and tension loads can be monitored.

Analog signals of torque and load can be transmitted to an X/Y or Y/T chart recorder for graphical presentation, or to a computer for data analysis. If the ETS is fitted with an RS-232-C serial data output option, peak torques and loads can be transmitted to printer or a computer.

PRINCIPLE OF OPERATION

The container to be tested is clamped between four adjustable rubber sleeved pillars on the top of the enclosure meter. The ETS units are tared to read zero and set to required mode, track, memory or first peak memory. (See ETS operator's handbook for detailed operating and setting instructions of ETS). The container cap may then be pushed, pulled and twisted as required. All forces will be monitored by the ETS units.

For 'line up arrows and push' type containers, a special adaptor is provided. This requires removing the four pillars and attaching the two part adaptor; one part to the side pillar and the other part to one of the two slides. The bottle is then turned upside down with the arrows aligned and pulled against the adaptor.

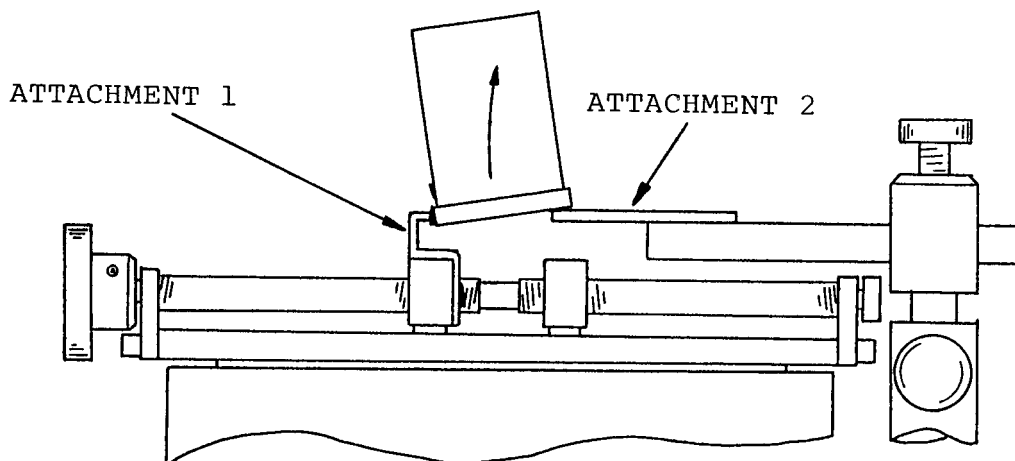
SPECIFICATION

Torque range for 60071:	0.5 N.m to 5 N.m.
Torque range for 60096:	5 lbf. in to 50 lbf. in.
Load range for 60071:	25 N to 250 N.
Load range for 60096:	5 lbf. to 50 lb.
Torque and Load Transducer Accuracy:	± 0.1% of full scale.
Maximum clamp diameter:	190 mm.
Weight:	10.02 kg
Overall Diameter:	265 mm.
Height:	218 mm.

OPERATING INSTRUCTIONS

1. Connect the transducer lead between one ETS and the torque transducer plug on the enclosure meter. Plug the torque transducer amplifier module into this ETS back panel. Switch ETS on. Units of N.m, lbf. ft. or lbf. in. may be selected as required on this ETS.
2. Plug the flying lead from the load cell into the second ETS and plug the load transducer amplifier module into the ETS back panel. Switch ETS on and select N.m/load. Units of measurement are displayed as stated on the enclosure meter, i.e. N.m or lbf.
3. Allow the ETS units to warm up for 2 minutes.
4. Connect up any chart recorders, printers, etc. as required and switch on.
5. For containers with screw or pull/push type lids, clamp container between the 4 rubber sleeved pins.

For 'line up arrow and push off' type containers, remove the 4 pins and fit the 2 part attachment as below. The container must be tested upside down.



6. Tare the ETS units (and chart recorders if connected) for zero. The transducer zero adjustment is a trim pot on the transducer amplifier module. (Use trim tool provided to adjust).
7. Set the ETS units to required mode, track, memory or memory auto reset as required.

The enclosure meter is now ready for use.

NOTE: Refer to the ETS operator's handbook for further details on operating and setting the ETS units, transducers and transducer amplifiers.