Quality Control file

December 11, 1969

TO: W. J. Sheehan

FROM: S. M. Lillis

SUBJECT: OPTO - Mechanism, Inc.

RE: Co-Ordinate Inspection Machines
(Trav-A-Dial D. V. M.)

We had an opportunity on November 26, 1969 to see the referenced inspection machine check out the center-to-center locations of dowel holes and combustion chamber openings on a Buick 3855 VCM gasket. It did an excellent job in the capable hands of Leo Dymitro and George Leninger.

We recommend that Quality Control be authorized to purchase the machine with the vertical and horizontal D.V.M.'s.

A unit such as this will increase the accuracy, establish positive capabilities and speed up the inspection of vital dimensions that heretofore have been difficult and time consuming.

We can see the following uses and advantages, which will aid in dimensional control of gaskets:

A. Checking integrity of new tool samples

B. Checking actual tools, dies and fixtures for conformance to Tool Design prints.

C. Checking integrity of "during run" gaskets

D. Checking integrity of "last piece" gasket

E. Checking gaskets for customer inspection reports

F. "On-the-spot" checking of gaskets in the presence of a surveillance team

G. Checking critical dimensions on certain sample gaskets

H. Checking "after-operation" tested gaskets from:
   1. Customer engine
   2. VICTOR engine.

The unit is loaded with all kinds of plus values. VICTOR will take a giant step up, in the eyes of our Customer Inspection groups, when they see or even learn that we are so equipped.

S. M. Lillis
Chief Engineer

Enclosure
lrs
CC: Leo Dymitro

TO SPEED INSPECTIONS AND SAVE COSTS

MECHANISMS
CO-ORDINATE INSPECTION MACHINES

for fast, accurate mechanical or optical inspection of casting, forgings, machined parts, templates, layouts, printed circuits, art work, or any three dimensional shape.

Accuracy ±.001 on X, Y and Z axes (direct reading).

Completely mobile, exceptionally versatile inspection machines priced far below competitive equipment of comparable precision.

Full measuring range of 18"x24"x8" (probe set-up) and 18"x24"x2" (optical set-up)—open end construction allows increase of 24" length to job needs.

Greatly reduces inspection time, and eliminates the necessity of surface plate set-up and equipment.

Compact and portable—Measures 37" x 42". May be bench mounted or mounted on our mobile work table.

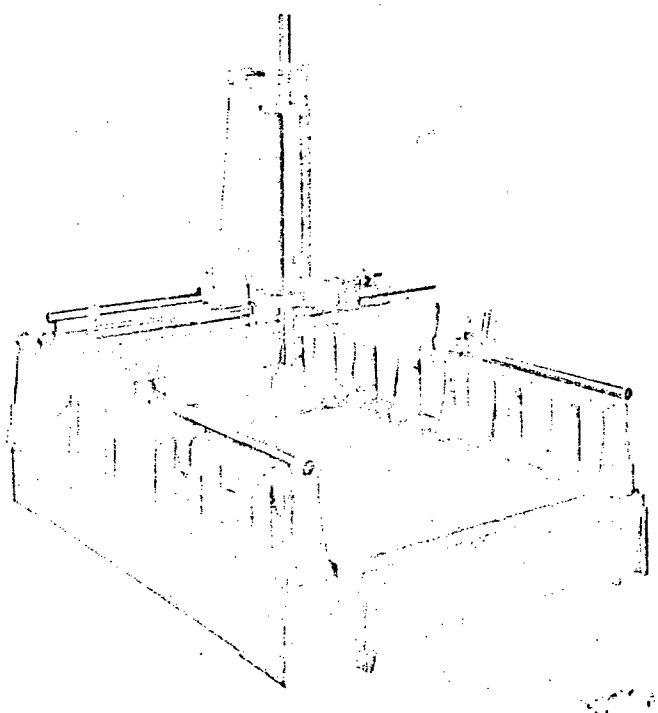
Stability—Designed of strong cast construction. All wear points are hardened and ground steel. Repeatability over long use assured.

MODEL NO. 530-133 BASIC MACHINE
(Illustrated with Probe Accessory)

Accessories Optional

To Modify 530-133 for Optical Inspection:
Add 530-129 10x Optical Comparator Assembly
Add 530-148 Upper Base Plate
Add 530-152 Upper Base Plate with Bank Bar

Work Area:	Model No. 530-133 Working area of 18"x24"x8". Open end construction permits 18"x8"x any desired length. Zero can be reset at any point to allow measurements in any quadrant of the X, Y and Z axes.
Accuracy:	±.001 on X, Y and Z axes.
Overall Size:	44" high x 30" wide x 43" long.
Crate Size:	35" x 54" x 48".
Weight:	400 lbs. approx.
Shipping Weight:	550 lbs. approx.
Basic Machine:	Model No. 530-133
Optional Accessories:	No. 530-130D, Z Axis Inspection Probe No. 530-134, Z Axis Probe Travel Reader *No. 530-129, 10x Optical Comparator Assembly No. 530-148, Upper Base Plate No. 530-152, Upper Base Plate with Bank Bar No. 530-131 Series, Interchangeable Probe Tips No. 530-104, Rolling Work Table *Also available 20x



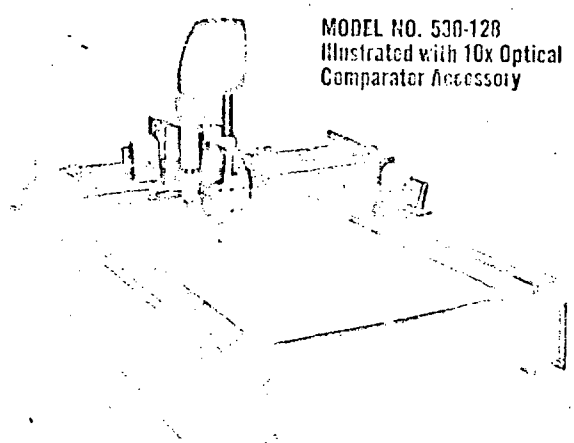
MODEL NO. 530-133
Illustrated with Smooth Action Probe Accessory

MECHANISMS INC.
PIONEERS HILL, PLAINVIEW, L.I., N.Y. 11803 ■ (516) 433-8100 TWX: 510-221-1882

TWO-AXIS INSPECTION AT LOW COST

MECHANISMS
CO-ORDINATE INSPECTION MACHINES

for rapid, economical checking of flat pieces 2" or less in height...with smooth probe action over full travel.



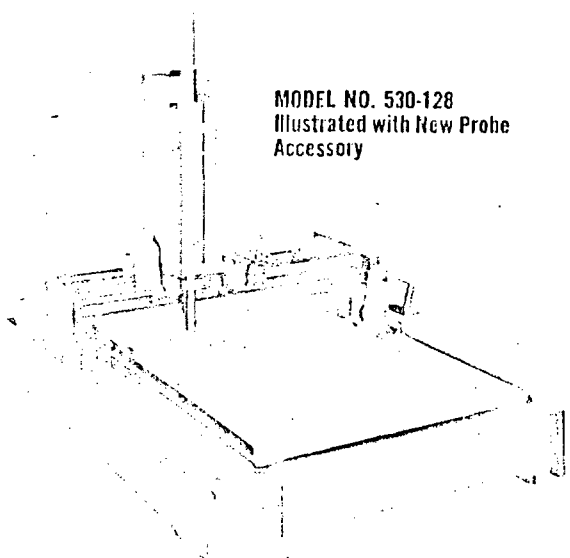
MODEL NO. 530-128
Illustrated with 10x Optical
Comparator Accessory

- Direct reading dials display carriage movement through full travel to .001 inch.
- Accuracy ± .001 on X, Y and Z axes.
- Full measuring range of 18" x 23" x 2" for both probe and optical comparator set-ups. Open end construction allows increase of 23" length to job needs.
- Check more inspection points at least 50% quicker than conventional means.
- Provide mobile, highly versatile inspection systems to accommodate every shop budget.
- Increases quality control output and lowers cost.
- Machines are only 34" x 43" and conserve work space. Completely portable, no complex wiring or delicate electronic adjustments.
- Fully engineered and heavy duty constructed for long trouble-free usage.

MODEL NO. 530-128 BASIC MACHINE

Accessories Optional

(Illustrations show Basic Machine with 10x Optical Comparator and Probe Accessories)



MODEL NO. 530-128
Illustrated with New Probe
Accessory

Work Area:	18"x23"x2" for "flat" type inspection work. Open end construction permits 18"x2"x any desired length. Jig and fixed can be made at any [illegible]
Accuracy:	.001 on X, Y and Z axes
Overall Size:	35" high x 34" wide x 43" long
Crate Size:	42" x 51" x 48"
Weight:	350 lbs. approx.
Shipping Weight:	550 lbs. approx.
Basic Machine:	Model No. 530-128
Optional Accessories:	*No. 530-129, 10x Optical Comparator Assembly No. 530-130D, Z Axis Inspection Probe No. 530-133, Z Axis Probe Travel Reader No. 530-131 Series, Interchangeable Probe Tips No. 530-103, Rolling Work Table

*Also available 20x

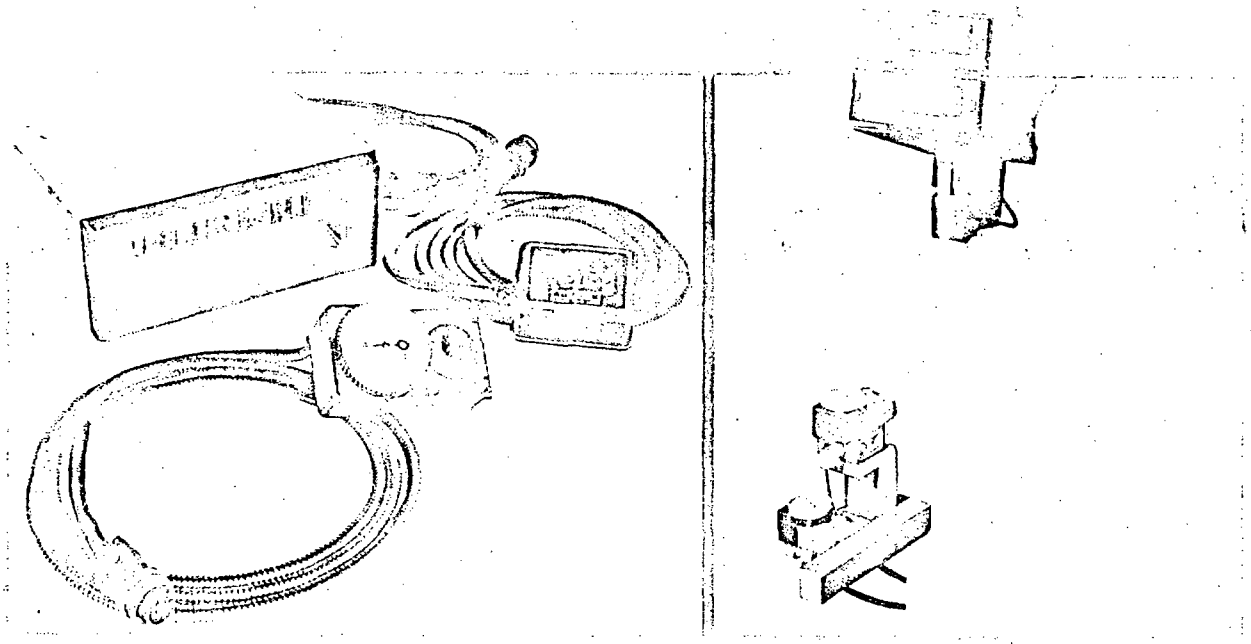
VPD-91-0002724

We reserve the right to improve, change, or modify the construction of OPTOmechanisms' 530 Series Machines or their attachments at any time thereof. We does not incur any obligation to make like changes on OPTOmechanisms' 530 Series Machines or their attachments previously sold.

[illegible] PRECISION
[illegible] MENT, INC.
[illegible] George St.
MT. PROSPECT, ILL. 60056
312 - 255-2450

ENGINEERING SPECIFICATIONS

T.E.D.D.



The T.E.D.D. concept is a complete digital read-out system readily adaptable to all present machine tools.

It is a combination of advanced electro-mechanical transducers and integrated micro-circuits that provide a measuring system of superior performance.

The three basic elements of the system are the **DIGITAL TRAV-A-DIAL (D-TAD)**, the **DISPLAY CABINET**, and the **REMOTE CONTROL UNIT** with armored interconnecting cables.

The **D-TAD** integrates the moving element (table, spindle, etc.) of any machine tool into the system with zero backlash. It senses machine position and direction of travel and relays this information as an amplified signal to the Display Cabinet. The D-TAD also provides a secondary dial face read-out with manual positioning, reset and memory knob.

The **DISPLAY CABINET** detects each .0005" increment of machine table displacement and converts this information into bright and legible numeric readings. This is done by translating the signal pulses received from the D-TAD into logic signals which set the digital indicator tubes to the accurate readings.

The **REMOTE CONTROL UNIT** places counting direction and zero reset control of the Display Cabinet readings at the operator's fingertips, regardless of the proximity of the D-TAD or Display Cabinet to the operator.

SWI

SOUTHWESTERN INDUSTRIES, INC.

5880 Centinela Avenue • Los Angeles, California 90045 • (213) 776-1125

Characteristics	Models ISIO B	Models ISIOB-1	Models ISIO C	Models ISIOC-1
Resolution Increments	Complementary & Bidirectional (.0005) (.0010) (.0005)		Complementary & Bidirectional (.99) (.00) (.01)	
Measuring Units	INCHES		MILLIMETERS	
Resolution	.0005 inches		.01 mm	
Display Tubes Plus Decimal	6	7	5	6
Memory Range	99.9995 in.	999.9995 in.	999,99 mm	9999,90 mm
Reset	to zero	to zero	to zero	to zero
Max. Slew Rate	6 inches/second		150 mm/second	
Ambient Temp.	up to 120°F continuous		up to 50°C	
Power	100 to 130 VAC, 50-60 Cycles, Single Phase, 25 Watts		100 to 130 VAC, 50-60 Cycles, Single Phase, 25 Watts	
Signal Cable Length	8 feet		2.4 meters	

D-TAD DUAL CHANNEL COUNTER

Display Cabinet:

Height	3.75 inches
Width	8.75 inches
Length	14.75 inches
Weight	8 3/4 pounds (includes power cord)

Control Unit:

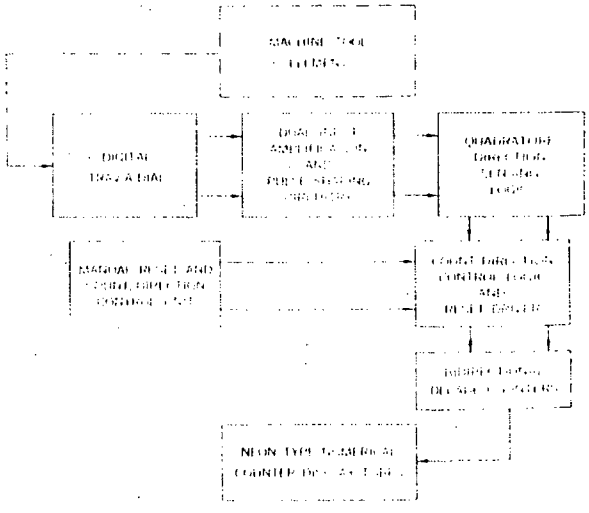
Length:	3 inches
Width:	2 1/4 inches
Height:	3 inches
Weight:	1 1/4 pounds (includes armored signal cables)

D-TAD:

Length:	4 inches
Width:	2 1/4 inches
Depth:	3 1/4 inches
Weight:	2 3/4 pounds (includes armored signal cable and mounting base)

Pulse Rate (each channel):	100 pulses per revolution of pointer hand
Waveform:	Square
Symmetry (either channel):	180° nominal
Quadrature (inter-channel):	90° nominal
Output Voltage Characteristics Peak:	4 VDC (through 470 ohms)
Output Voltage Characteristics Minimum:	0 to 0.3 VDC
Operating Voltage:	4 VDC ± 2%
Current Drain:	200 milliamperes nominal at 4 volts
Temperature Range:	50°F to 120°F

- Silicon integrated micro-logic elements.
- Neon type Numerical Read-out Tubes.
- Filtered and Regulated Power Source.
- Load Box Configured to Rack Mounting.
- When installed according to instructions the T.E.D.D. will measure accurately within .001 inch in any 6 inch increment of travel with no accumulative error and with ± 1 in resolution.
- Components derated for temperature and load to ensure long life.
- Quick, easy and accurate installation on all machine tools.
- Position sensing with zero backlash.



VPD-91-0002726

LITHO IN U.S.A. CDG 2502 10M 2/64