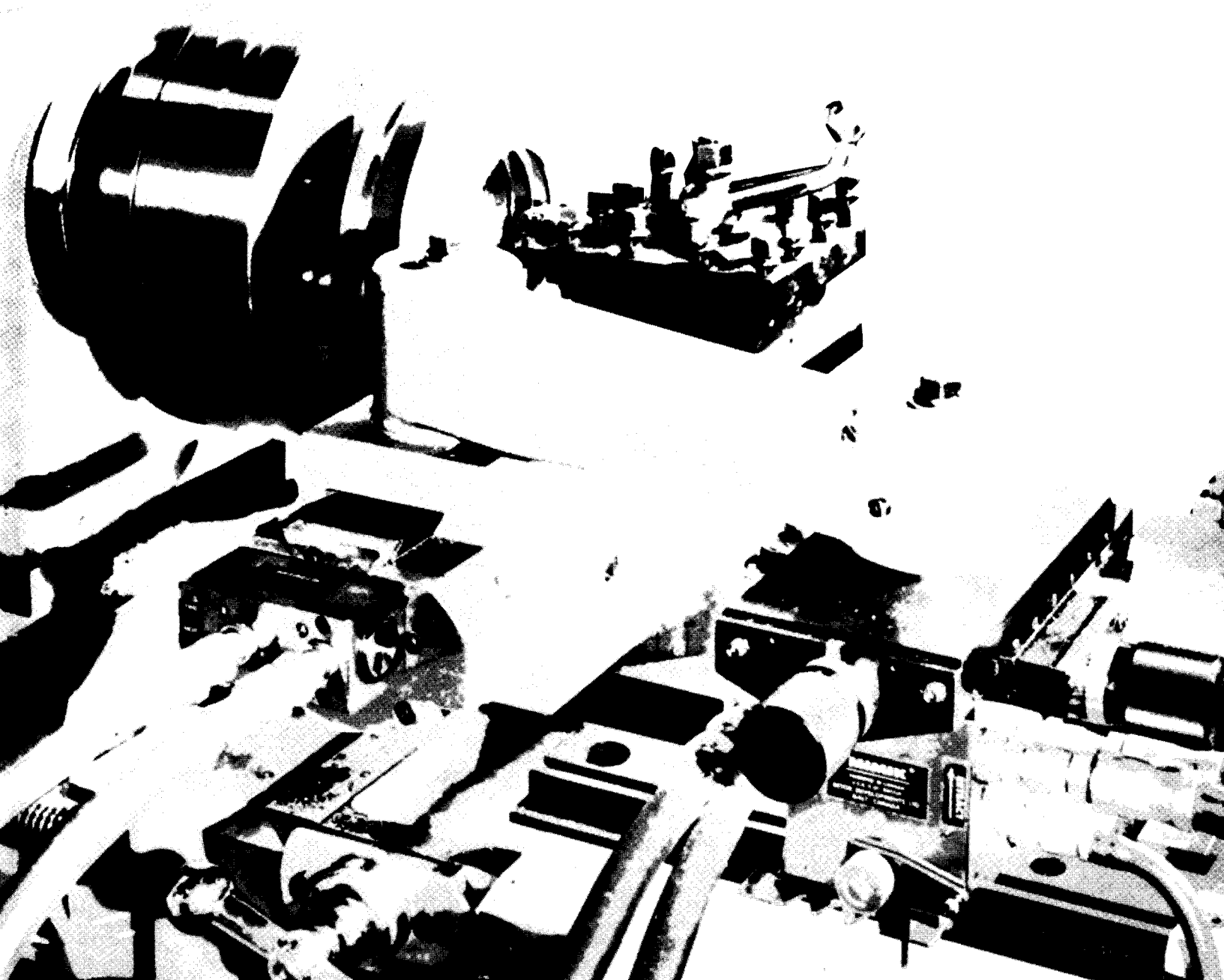
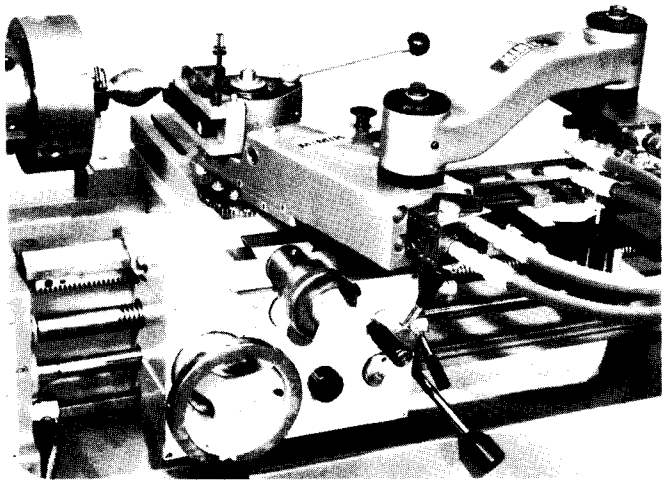
MIMIK

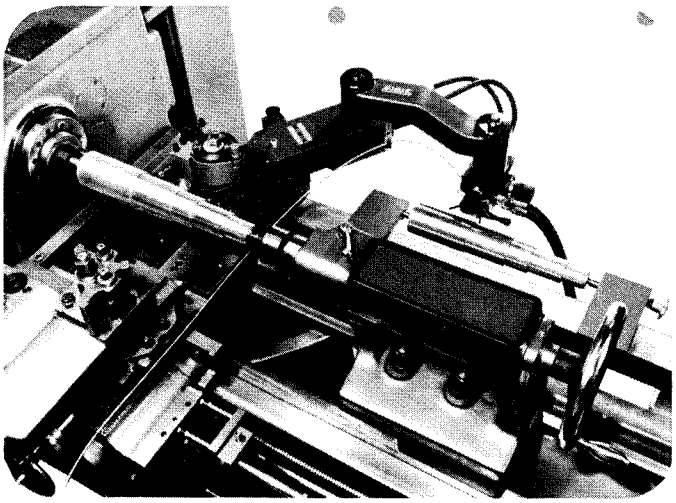
INDUSTRIES INC.

UT tracer

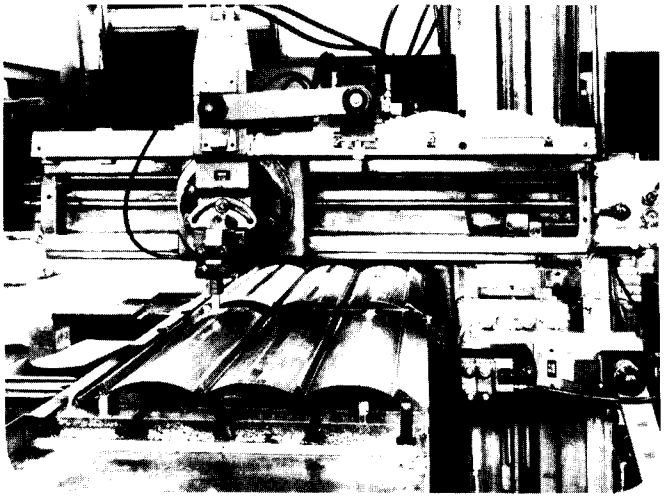




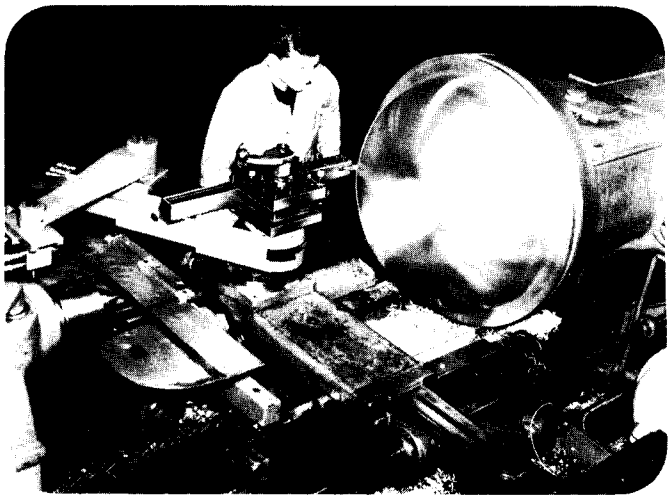
UT 3.5 FRONT MOUNTED



UT 4.5 REAR MOUNTED ON A 19" LATHE



2 UT-6 TRACERS ON ROCKFORD PLANER



UT-11 FRONT MOUNTED ON LARGE LATHE

If you have a part or a run of parts that takes more than four hours to produce, you should investigate the advantages of a tracer.

You save money with a tracer control. It's as simple as that. For a low initial investment you increase the capability of your machine and get a fast return on your investment — often the entire amount within 12 months. And if you were to compare the monthly cost of leasing a tracer with typical monthly savings on production and labor, you would find the savings to be almost double the costs.

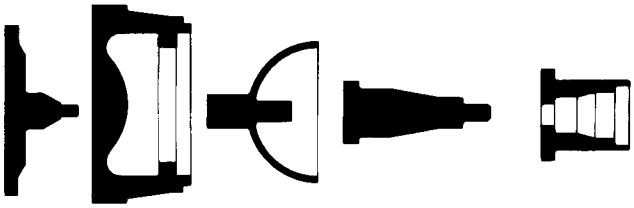
There are many ways to save. Tracer control decreases the number of operations and the skill level of labor required to run your machine. You reduce setup times. And most important, because non-cutting time is reduced, you get faster floor-to-floor times than conventional methods. With accurate piece-part repeatability.

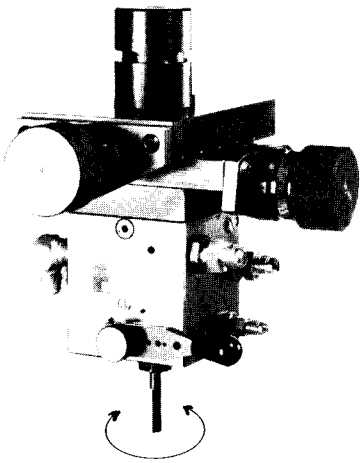
Added benefits come from reduced tool and parts inventories. The continuous path of the tracer operation increases the capability of the tool, thus reducing the need for a large tool inventory. Because it becomes economical with a tracer control to make short to medium runs, you will reduce your parts inventory as well.

Mimik means tracing.

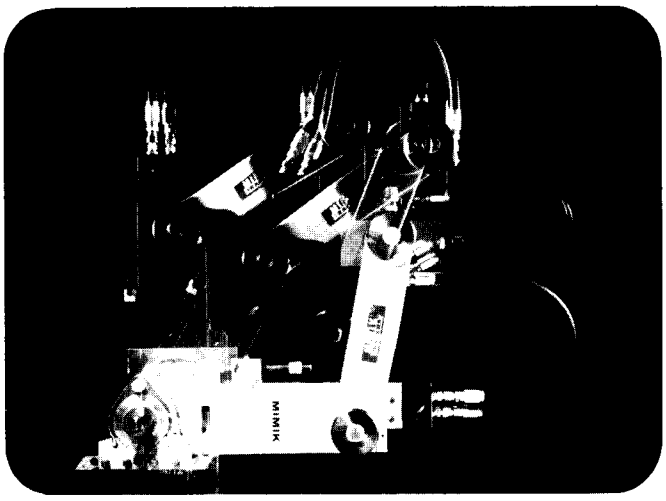
Mimik originated the universal tracer (UT). There are more Mimik UT's in use today than any other universal tracer on the market. Cost savings have been so substantial that during the last two decades many of our users have bought additional units. This customer confidence has been helped along by such Mimik advantages as:

- application engineering assistance in choosing the right tracer.
- models to suit all makes and sizes of lathes.
- installation and operator instruction by qualified service people.
- availability of replacement parts.

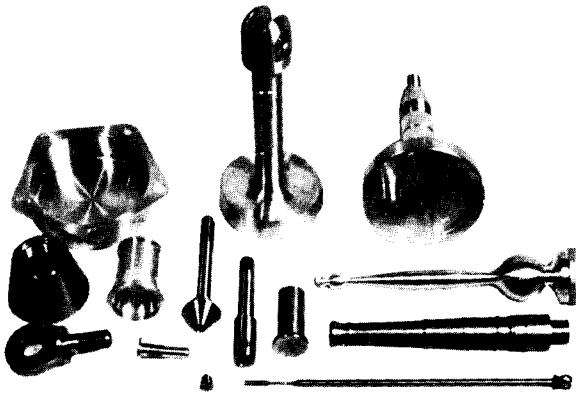




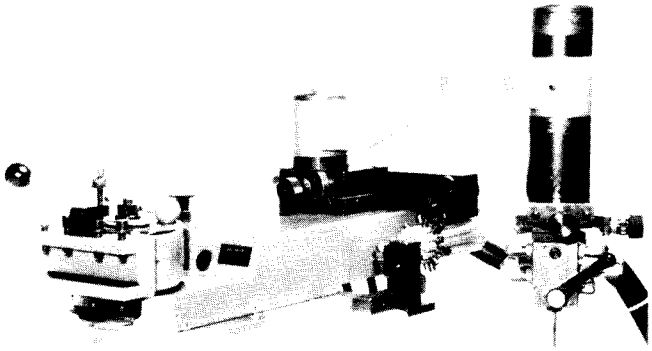
TRACER VALVE WITH ADJUSTMENT SLIDES



UNIVERSAL PIVOTING VALVE ARM



TYPICAL WORKPIECES FOR TRACING



UT-P TRACER

A Mimik UT means versatility.

Mimik universal tracers are specified for a wide range of applications — from simple stepped shafts to complex internal contours.

A UT gives you

- exceptional accuracy.
- easy setups on a wide range of jobs.
- simplified operator controls.
- adaptability to such diverse machines as turret lathes, engine lathes, planers.

And these extra benefits:

- for operator convenience it is the preferred type of tracer for front mounting.
- it can be positioned at any cutting angle.

Best of all, our rugged design ensures that when properly applied to a machine, the UT will not restrict the machine's cutting capabilities.

Mimik UT - for varied work pieces.

If your work resembles any of these above, and it now takes more than four hours to run, call or write your nearest Mimik representative today. He can show you how a Mimik tracer will save you money.

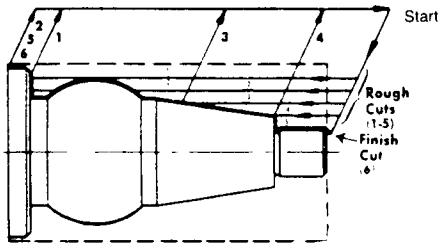
Optional extras.

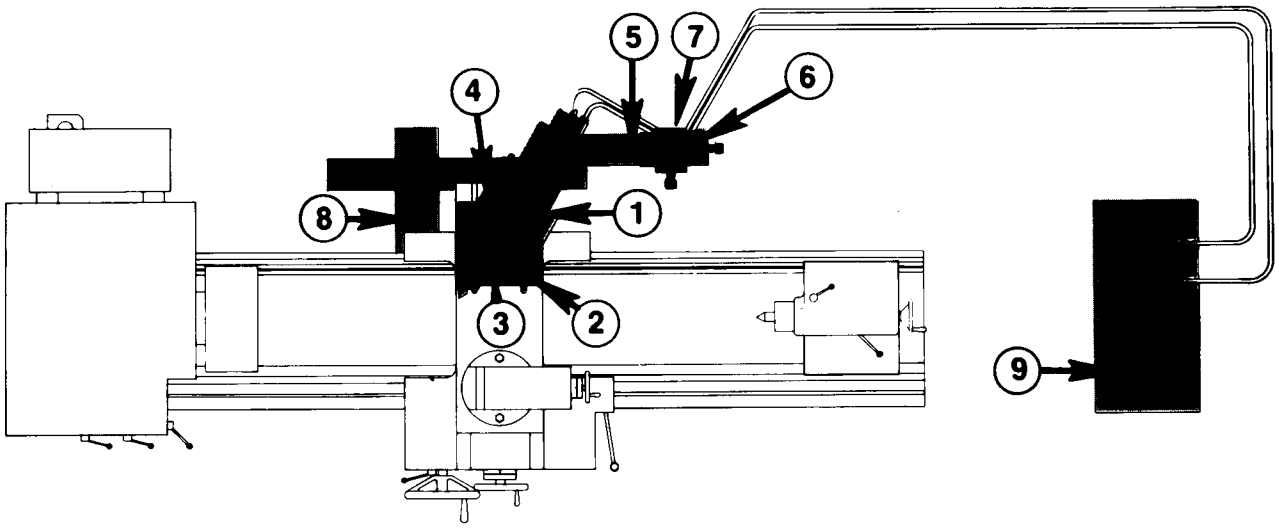
UT-P configuration for production runs with:

- 12 position self-indexing drum stop for multiple roughing cuts.
- finish cut attachment adjustable from 0-.050
- Automatic carriage recycling with hydraulic cylinder or motor.
- modulated feed control for steep opposing shoulders or spherical shapes.
- milling machine configuration for vertical milling machines.

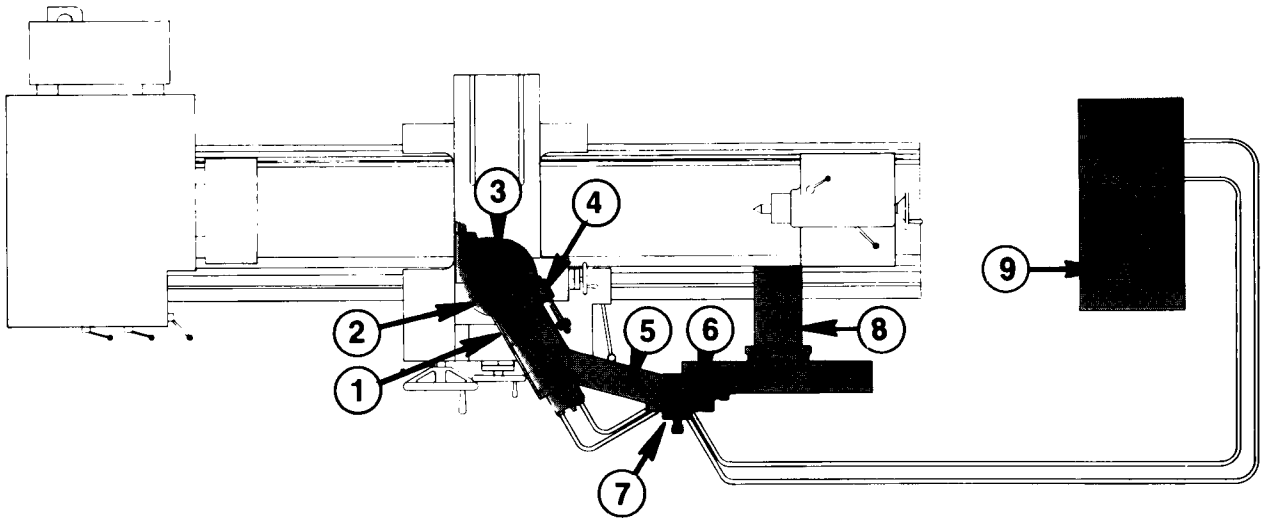
The illustration below shows a workpiece requiring 5 successive roughing cuts and a finish cut.

Pre-set stops on the indexing turret drum activate switches causing the UT-P tracer to either retract when contacting the template or to continue while following the template. A sixth pre-set finish cut completes the cycle.





1. TRACER SLIDE
2. MOUNTING ADAPTER
3. QUICK-CHANGE TOOLPOST
4. ADJUSTABLE RETRACT STOP
5. PIVOTING VALVE ARM
6. 2-AXIS ADJUSTMENT SLIDES
7. TRACER VALVE WITH UNIVERSAL STYLUS ACTION
8. TEMPLATE HOLDER
9. HYDRAULIC POWER UNIT



ROSEBROOK
TRACERS INC.

3105 North Cascade Avenue #106
Colorado Springs, Co 80907-5165
USA
Phone or Fax 719.632.8894
www.rosebrooktracer.com

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DESCRIPTIVE INFORMATION

MIMIK SERIES UT AND UT-P TRACERS

Description

Series UT tracers are self-contained slides which control toolpath to a master outline, either flat template or original part. A stylus follows the outline, with as little as 4 ozs. of force. Cutting force is generated through a powerful hydraulic servo system.

The UT Series is designed for maximum versatility of application and variety of work pieces, with fully pivoting slide, swiveling valve arms and Quick change toolholers.

When front mounted on lathe, all controls are close at hand. Set-up can be quickly made, and cutting is done according to conventional lathe practice. When rear mounted on a lathe with extended cross-slide, the front toolpost can be used for non-tracing functions such as part-off, grooving or threading. Whether front or rear mounted the UT Series can be left on the machine when not tracing. Many operators feel that the tracer saves them time when cutting conventionally.

UT Series are available in a wide range of sizes to suit lathes from 12" swing to 60" swing and beyond.

Capabilities

Series UT tracers excel in widely varying applications from simple stepped shafts to complex internal contours. They have the versatility needed for fast set-ups on any requirement - and the sensitive response that ensures accurate duplication of every contour.

The UT Series are sized from 2" to 11" in stroke, covering all lathe types. UT-P's are sized 3.5", 4.5" and 6" in stroke.

The UT can be applied to a wide range of machines such as:

- engine lathes
- turret lathes
- planers
- vertical mills
- special machines

Single point tooling is normally used, but grinding heads, belt sanders and burnishing tools have been successfully adapted to UT slides for special purposes.

Almost any part that can be turned can be traced with a UT. A few examples are:

— shafts	— test pieces	— lens mounts
— gear blanks	— piston heads	— nozzles
— ball valves	— valves	— mag. wheels
— molds	— couplings	— rail car axles

Many complex and delicate parts used in aerospace have been machined using MIMIK UT Tracers.

For the extra capability needed in opposed shoulder applications, the MIMIK UT can be upgraded to MFC (modulated feed control). MFC has the capability of 2-axis motor trace systems (180°A or 270°) with the additional ability to undercut faces without mode change. Thus a broach can be turned in one continuous cut and at a constant feed rate over the surface.

Features

ONLY A TRACER WITH THESE FEATURES WILL GIVE YOU BEST RESULTS FROM YOUR TOTAL MACHINE AND TRACER INVESTMENT.

HEAVY DUTY SLIDE - perhaps the most critical part of a tracer for long term consistent performance.

The width and rigidity of a tracer slide are more important than the stroke when sizing a tracer to a lathe, and MIMIK tracer slides are all designed to operate without strain at the full cutting capacity of the machine.

360° VALVE RESPONSE - The ability of a valve to respond **equally** well to pressure from any direction. This feature is essential to accurate tracing of steep opposing angles (approaching back-to-back shoulders) and such parts as ball valves.

4-WAY SERVO VALVE - This type of valve delivers full pump force to the power side of the piston. Three-way valves found on many competitive tracers require the use of much larger cylinders to deliver the same cutting force as MIMIK.

HYDRAULIC SUPPLY UNIT - Consists of motor, pump, and reservoir. This unit is properly sized to each MIMIK model and is available to suit all standard power supplies.

VALVE ARM - Positions the tracer valve at the template location under any job conditions. All MIMIK valve arms have been carefully engineered to dampen machine vibration which can cause poor finish.

QUICK CHANGE TOOLPOST - Allows the tool to be positioned at the proper angle to the work regardless of tracer slide angle. Vertical tool height adjustment is also provided.

ADJUSTABLE RETRACT STOP - In many cases, such as boring, it is necessary to limit the tracer slide retraction. This MIMIK feature saves time and reduces the possibility of scrapped workpieces. (UT-3.5/4.5/6 only)

2-AXIS ADJUSTMENT SLIDES - Provide precise set-up and accurate depth of cut increments on diameter and length. Zero setting dials are graduated in .0005" or .01 mm.

ROUND MASTER / TEMPLATE HOLDER -

a)Front-mounted units - universal bracket for mounting on front V-way, with 18" turning and facing rail. Provides a considerable range of adjustment for difficult set-ups.

b) Rear-mounted units - bracket clamps to 36" dovetail bar mounted on rear of bed. Equipped with 24" turning and facing rail. Longer template capacity and centers for round masters available at extra cost.

UT-P ONLY

REMOVEABLE 12-POSITION SELF-INDEXING TURRET DRUM STOP - for programming both roughing and finish cuts.

FINISH-CUT ATTACHMENT — a cylinder operated slide under the valve arm, adjustable from 0 to .050" and actuated by a switch moves the valve (and valve arm) a pre-determined amount for accurate finish cut.

Customer Services

Applications assistance is available to help you select the proper model to suit your requirements; MIMIK offers a wide range of models and sizes to suit virtually any machine or application.

You can purchase a MIMIK in either of two ways, as follows:

BASIC SYSTEM - for customers who are familiar with the system and are capable of adapting and installing, there is a price and delivery benefit to purchasing the basic UT. The tracer comes complete - only the adapters to interface the slide and the template holder with the machine are not provided.

FULLY CUSTOMIZED AND INSTALLED - measurements of the machine are processed by MIMIK's Engineering Dept. MIMIK provides all the adapters plus factory trained personnel to install the tracer on the machine and instruct operators.

Whether basic or fully installed, the system is covered by MIMIK's guarantee for one full year.

TRADE IN - Ask your local MIMIK agent about our trade-in program. (Sorry - we will only take MIMIKs in trade.)

CAN YOU JUSTIFY A TRACER

It is possible to calculate closely the time to trace a part - this is one of the benefits of tracing. If your part can be traced (your MIMIK Man can advise on this), calculate the number of cuts required to remove the metal, using full machine potential, -- Then select feeds and speeds required for each cut. -- Then apply this formula for each cut.

$$\frac{\text{* length of cut}}{\text{RPM x feed}} = \text{cutting time}$$

* Note: Length of cut is usually about 20% greater than length of contour due to tracer slide angle.

Now, as a conservative allowance for the manual elements which comprise non-cutting time, add from 50 to 100% of the above cutting time.

This total time can be compared to your present production time to obtain a justification for tracing.

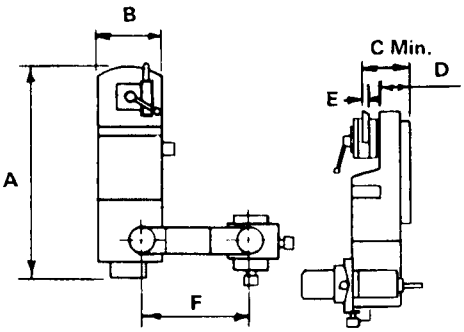
The following conditions will invariably add to the advantages of tracing:

1. Long set-up time due to multiple tooling.
2. Long tool preparation time due to radii and forms.
3. Tough material especially where form cuts are involved.
4. Close tolerances.

STANDARD SPECIFICATIONS (UT & UT-P)

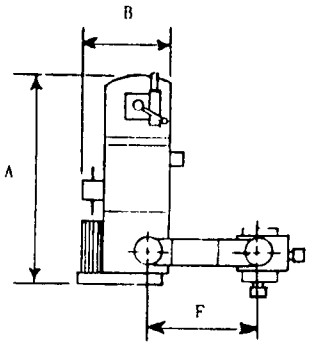
MODEL		2	3.5	4.5	6	7	9	11
TRACER SLIDE		UT ONLY	UT & UT-P	UT & UT-P	UT & UT-P	UT ONLY	UT ONLY	UT ONLY
STROKE	IN.	2	3.5	4.5	6	7	9	11
	MM	50	90	115	150	175	225	275
DIMENSION A	IN.	13.60	17.38	21.69	28.94	28.94	30.31	36.00
	MM	345	442	551	735	735	770	914
B	IN.	3.00	4.75	5.37	6.25	6.25	8.50	11.00
	MM	76	120	136	160	160	216	280
C (MIN.)	IN.	2.812	3.250	4.00	4.87	5	5.927	8.490
	MM	71	83	101	124	127	150	215
D	IN.	1.562	1.81	2.34	2.87	2.87	3.677	5.490
	MM	40	46	60	73	73	93	140
E	IN.	1/2	3/4	3/4	1	1	1 1/4	1 1/2
	MM	12	19	19	25	25	32	37
F	IN.	12.00	12.00	12.00	12.00	16.00	21.00	21.00
	MM	230	305	305	305	406	533	533
COMPLETE SYSTEM SHIPPING WEIGHT (Approx.)	LB.	210	250	280	330	350	850	1100
	KILO	95	115	128	150	160	390	500
HYDRAULIC UNIT MOTOR	HP.	1/2	1/2	1/2	1/2	1/2	2	2
PUMP CAPACITY	GPM.	1.5	1.5	1.5	1.5	1.5	8	8
TANK CAPACITY	GAL.	5	5	5	5	5	18	18
	LITRES	19	19	19	19	19	68	68
OPERATING PRESSURE	PSI	200	225	225	250	275	275	275
CUTTING FORCE DATA	LBS.	630	650	650	1120	1350	2870	3680
OPERATING THRUST	IN.	2	2	2	2.5	2.5	3.5	4
CYLINDER BORE	MM	51	51	51	64	64	90	102
LATHE DETAILS APPROX. LATHE SWING	IN	8-14	12-16	15-20	16-22	18-24	24 +	30 +
	MM	200-350	300-380	380-500	400-550	450-600	600 +	750 +
MINIMUM "H" DIMENSION (Based on dimentions E above)	IN.	3.187	3.625	4.500	5.625	5.875	6.937	9.750
	MM	81	92	115	143	149	175	250
* Spindle HP up to	HP.	5	12	15	20	20	25	40
TRACER VALVE	No.	10	10	10	15	15	15	15

NOTE: Dimension E may be varied within normal tooling limits.

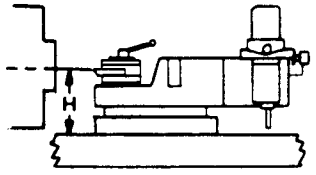


UT

UT & UT-P



UT-P



UT & UT-P

"H" dimension is height of lathe spindle centerline above cross-slide surface.