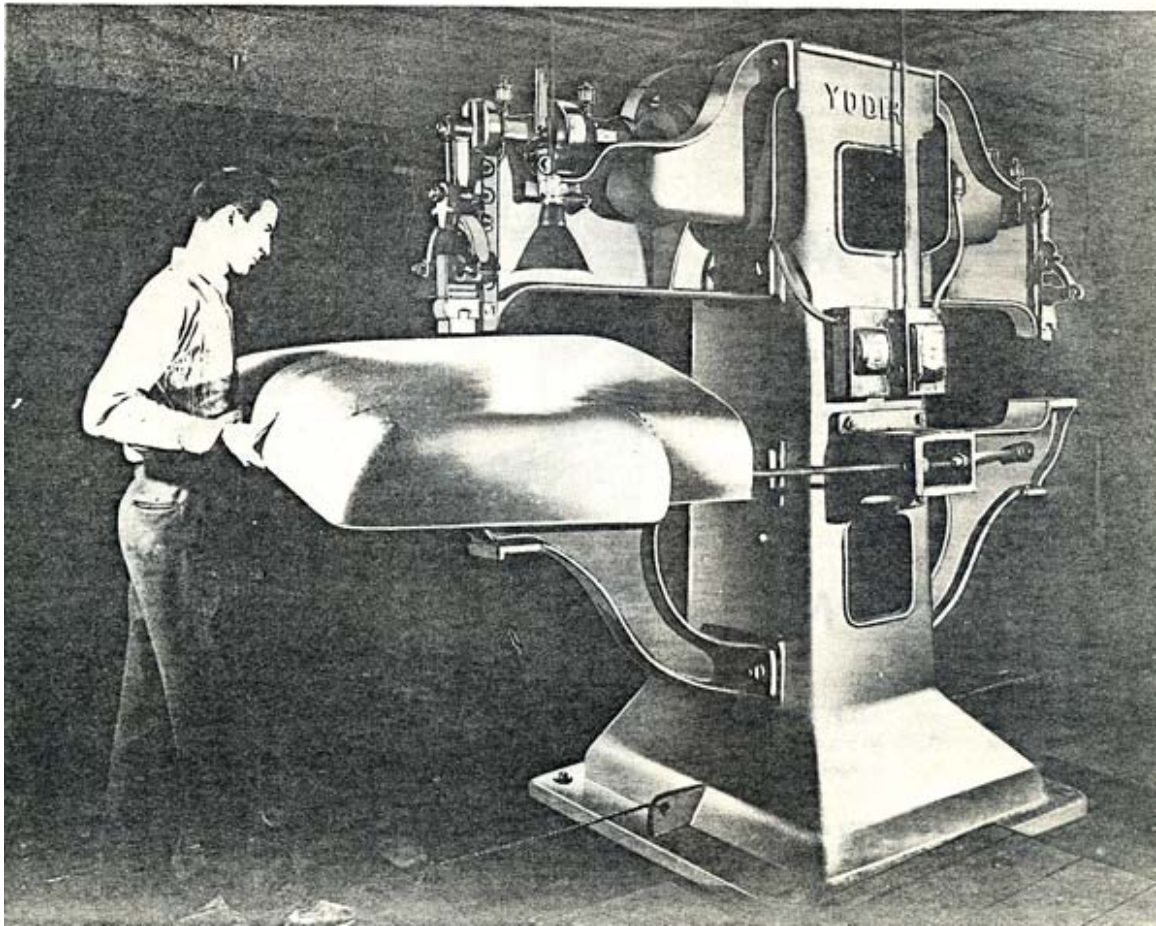




SPECIAL HIGH-PRODUCTION METAL FORMING MACHINERY

MODELS K-90-M AND LK-90-M

POWER HAMMERS



YODER K-90-M AND LK-90-M POWER HAMMERS



Smooth Running

Effortless speed is the characteristic of the habitual winner. It "looks and is easy" to a top performer.



Power

Just plain tough and rugged with a steady drive that keeps things moving.



Versatility

When "it is from one job to another," this machine is a "must". In addition, the upward limits of its high quality-quantity production is entirely satisfactory.



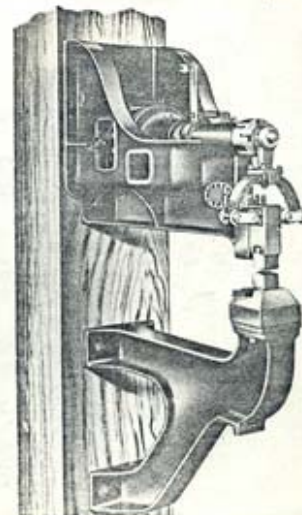
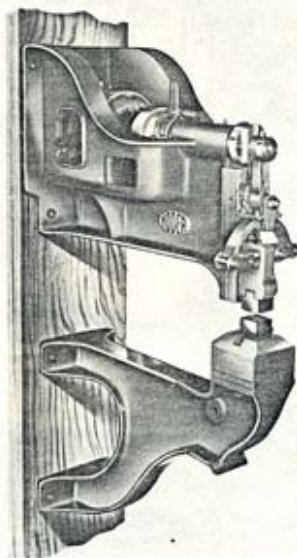
K-90-M

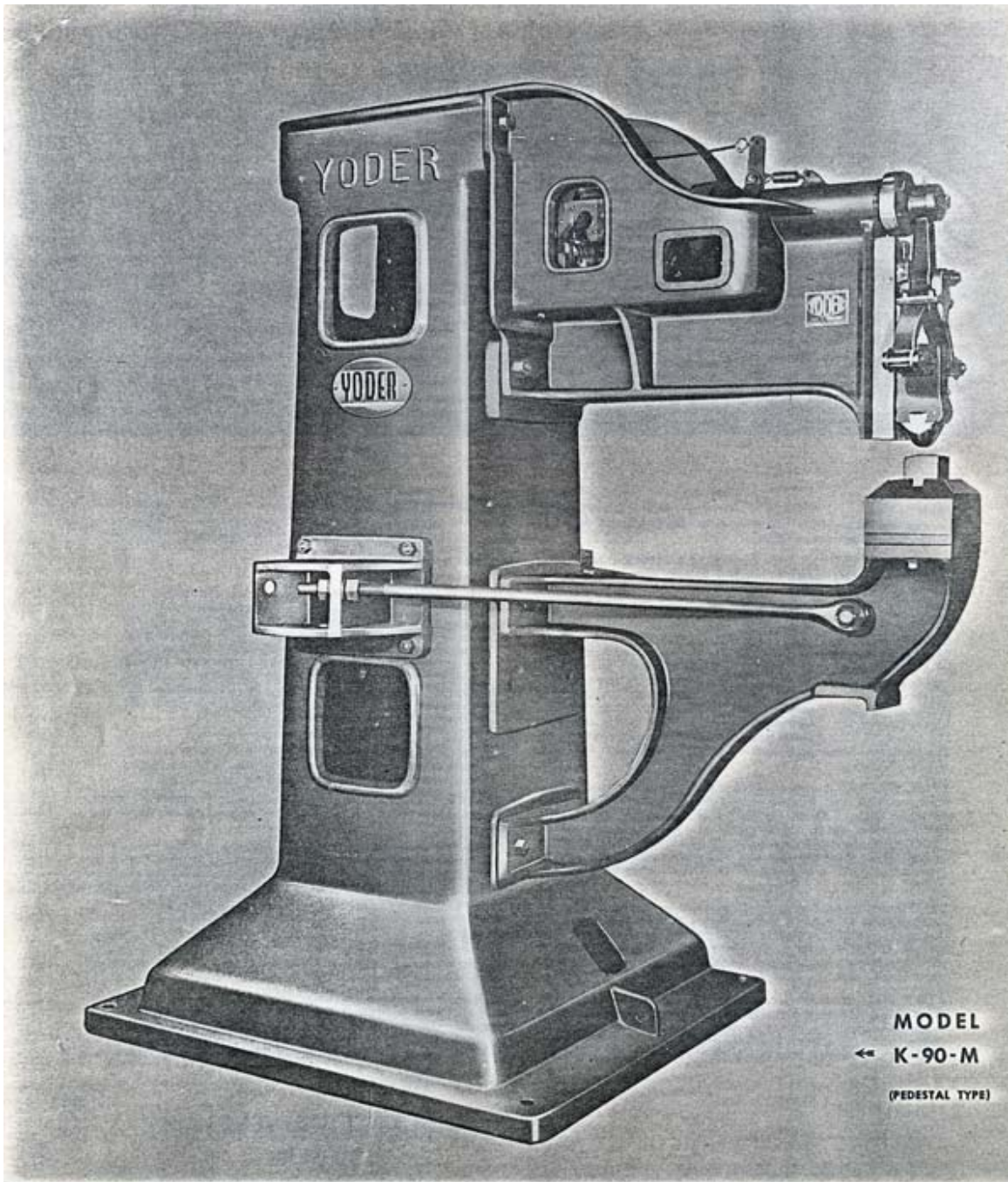
Throat Depth	40"
Throat Height	26"
Motor	3 H.P. 1200 R.P.M.
Rated Blow	125 pounds
Die Size	Approx. 3" sq.
Weight:	
Head (less motor)	1,500 pounds
Pedestal	3,900 pounds

LK-90-M

Throat Depth	36"
Throat Height	16 $\frac{1}{4}$ "
Motor	2 H.P. 1200 R.P.M.
Rated Blow	60 pounds
Die Size	Approx. 2 $\frac{1}{4}$ " sq.
Weight:	
Head (less motor)	900 pounds
Pedestal	3,900 pounds

The K-90-M and LK-90-M Power Hammers are built for bending, forming or planishing light gage shapes of sheet metal. They have numerous applications and are extensively used in the aircraft industry where perfect balance in a hammer is desirable. The perfect balance of this hammer is a feature that insures a long life, smooth running and stability—vibration being reduced to the lowest possible degree. The Yoder Power Hammers can be furnished with a specially cast pedestal or can be attached to any well braced post in your shop. Here are illustrations of the two types.





MODEL
← K-90-M
(PEDESTAL TYPE)

FOR THE *Special Forming* OF SHEET METAL PARTS IN LIMITED QUANTITIES



Specifications

K-90-M and LK-90-M POWER HAMMERS



FRAME—The upper frame is of cast steel, rigidly braced, supporting the entire drive assembly as a unit so that it may be bolted to any convenient post.

DRIVE ASSEMBLY—The drive consists of a 1200 R.P.M. A.C., open, ball bearing motor through a friction cone clutch—connected to the main drive shaft. A crank disc mounted on the end of the drive shaft actuates the connecting rod; thus reciprocating the upper die block.

CLUTCH—The clutch is of the friction cone type, the drive-half being keyed directly to the motor shaft. The driven half, faced with a bi-metallic alloy material slides on the main drive shaft, and is engaged and disengaged through linkage by the operator depressing or releasing a conveniently located foot treadle. The driven half, upon disengagement, touches a stationary bronze block; thus braking the rotating motion and instantly stopping the hammer. This feature gives the operator greater control of the machine. The bronze braking block is adjustable for wear by insertion of shims.

DRIVE SHAFT—The drive shaft of high strength steel accurately machined and heat treated for maximum strength is mounted on heavy duty Timken tapered roller bearings, supported in bores provided in the main frame. An Alemite fitting which enters upon a generous grease pocket, cast in the frame, provides lubrication to these bearings and a labyrinth seal in the bearing retainers prevents grease leakage or dust entering from outside sources.

The Timken tapered roller bearing mounting of the main drive shaft absorbs all radial and axial thrust loads imposed upon it due to the constant operation of the friction clutch. This feature greatly reduces wear on reciprocating parts, which was prevalent with bronze bushed hammers, by maintaining permanent alignment at all times.

CRANK DISC—A crank disc, securely fastened to the end of the drive shaft, contains a machined dovetailed slot in which is mounted a crank pin to transpose the motion from rotating to reciprocating. The crank pin is adjustably mounted so that the stroke of the hammer may be varied at the will of the operator.

CONNECTING ROD—The connecting rod is of high strength semi-steel, the upper or driven end being roller bearing mounted. This bearing, the race of which fits over the crank pin, is of cylindrical roller type and is provided with an Alemite pressure fitting as well as the required grease and dust seals.

TYPE K-90-M

In the type K-90-M Hammer the lower end of the connecting rod is fastened by a bronze bushed pin to a cross-head or upper slideblock which in turn is rigidly secured to the leaf spring by means of "U" shaped bolts and clevis construction. This cross-head feature which is exclusive in this type hammer, transmits vertical reciprocating motion only to the leaf spring and upper die block—no angular thrust loads are imposed upon the die block—all these being taken by the cross-head and absorbed on the machined slide plate ways.

TYPE LK-90-M

In the type LK-90-M Hammer the lower end of the connecting rod is rigidly fastened by means of "U" shaped bolts and clevis construction to the leaf spring.

SPRING—A four leaf spring, so designed as to absorb all shock and vibration transmits reciprocating motion of the upper die block through means of "Belatta" belting.

SLIDE PLATE—The cross head and upper die block travel in dovetailed ways machined in a special alloy iron slide plate that is in turn bolted and doweled to the face of the main frame. The dovetail groove is provided with an adjustable bronze plate that insures proper clearance at all times. An Alemite fitting in the slide plate permits lubrication of the bearing surfaces.

UPPER DIE BLOCK—The upper die block made of extra heavy cast steel is reinforced at the dovetailed groove that holds the die; thus insuring against breakage at the point where the die is secured by taper key.

LOWER DIE BLOCK—The lower die block, or anvil, massive in size and built separate from the lower frame, is securely bolted thereto—the joint allowing it to be raised or lowered by adding or removing shims. A leather cushion provided under the lower die block absorbs a portion of the shock imposed thereon.

YODER MARKETING DEPARTMENT

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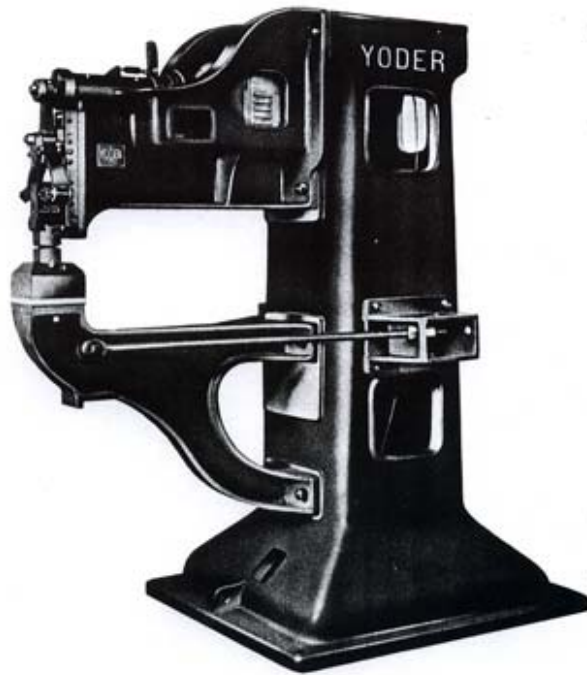
THE YODER COMPANY • 5500 WALWORTH AVE. • CLEVELAND, OHIO, U. S. A.



YODER POWER HAMMERS

For Forming Sheet Metal Parts in Limited Quantities

These hammers are designed for bending, forming or planishing light gage sheet metal shapes. They have numerous applications and are extensively used in the aircraft industry, where perfect balance in a hammer is desirable. This feature also insures long life, smooth running and stability, vibration being reduced to a minimum. The Yoder Power Hammers are furnished in two sizes, with or without cast pedestal, the latter for mounting to a post.



MACHINE NUMBER	K-90-M	LK-90-M
Throat Depth	40"	36"
Throat Height	26"	16 $\frac{1}{4}$ "
Motor	3 hp.—1200 rpm.	2 hp.—1200 rpm.
Rated Blow	125 lbs.	60 lbs.
Die Size (Approx.)	3" sq.	2 $\frac{1}{4}$ " sq.
Weight:		
Head (less motor)	1500 lbs.	900 lbs.
Pedestal	3900 lbs.	3900 lbs.

THE YODER COMPANY

5500 Walworth Ave. · Cleveland, Ohio 44102 U. S. A.

Specifications

YODER POWER HAMMERS

FRAME—The upper frame is of cast steel, rigidly braced, supporting the entire drive assembly as a unit so that it may be bolted to any convenient post.

DRIVE ASSEMBLY—The drive consists of a 1200 R.P.M. A.C., open, ball bearing motor through a friction cone clutch—connected to the main drive shaft. A crank disc mounted on the end of the drive shaft actuates the connecting rod; thus reciprocating the upper die block.

CLUTCH—The clutch is of the friction cone type, the drive-half being keyed directly to the motor shaft. The driven half, faced with a bi-metallic alloy material slides on the main drive shaft, and is engaged and disengaged through linkage by the operator depressing or releasing a conveniently located foot treadle. The driven half, upon disengagement, touches a stationary bronze block; thus braking the rotating motion and instantly stopping the hammer. The bronze braking block is adjustable for wear by insertion of shims.

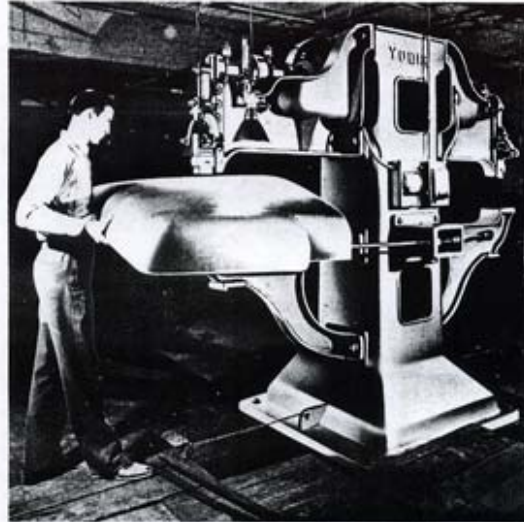
DRIVE SHAFT—The drive shaft of high strength steel accurately machined and heat treated for maximum strength is mounted on heavy duty Timken tapered roller bearings. An Alemite fitting, provides lubrication to these bearings and a labyrinth seal in the bearing retainers prevents grease leakage or dust entering from outside sources. The Timken tapered roller bearing mounting of the main drive shaft absorbs all radial and axial thrust loads imposed upon it due to the constant operation of the friction clutch. This feature greatly reduces wear on reciprocating parts.

CRANK DISC—A crank disc, securely fastened to the end of the drive shaft, has a machined dovetailed slot in which is mounted a crank pin to transpose the motion from rotating to reciprocating. The crank pin is adjustably mounted so that the stroke of the hammer may be varied at the will of the operator.

CONNECTING ROD—The connecting rod is of high strength semi-steel, the upper or driven end being roller bearing mounted. This bearing, the race of which fits over the crank pin, is of cylindrical roller type and is provided with an Alemite pressure fitting as well as the required grease and dust seals.

NO. K-90-M

In the type K-90-M Hammer the lower end of the connecting rod is fastened by a bronze bushed pin to a cross-head or upper slideblock which in turn is rigidly secured to the leaf spring by means of "U" shaped bolts and clevis construction. This cross-head feature which is exclusive in this type hammer, transmits



Two Hammers may be mounted on single Pedestal.

vertical reciprocating motion only to the leaf spring and upper die block—no angular thrust loads are imposed upon the die block—all these being taken by the cross-head and absorbed on the machined slide plate ways.

NO. LK-90-M

In the type LK-90-M Hammer the lower end of the connecting rod is rigidly fastened by means of "U" shaped bolts and clevis construction to the leaf spring.

SPRING—A four leaf spring, so designed as to absorb all shock and vibration transmits reciprocating motion of the upper die block through means of "Belatta" belting.

SLIDE PLATE—The cross head and upper die block travel in dovetailed ways machined in a special alloy iron slide plate which is bolted and doweled to the face of the main frame. The dovetail groove is provided with an adjustable bronze plate insuring proper clearance at all times. An Alemite fitting in the slide plate permits lubrication of the bearing surfaces.

UPPER DIE BLOCK—Upper die block made of extra heavy cast steel and reinforced at the dovetailed groove which holds the die. This insures against breakage at the point where the die is secured by taper key.

LOWER DIE BLOCK—The lower die block, is securely bolted to the lower frame—the joint allowing it to be raised or lowered by adding or removing shims. A leather cushion provided under the lower die block absorbs a part of the shock imposed thereon.