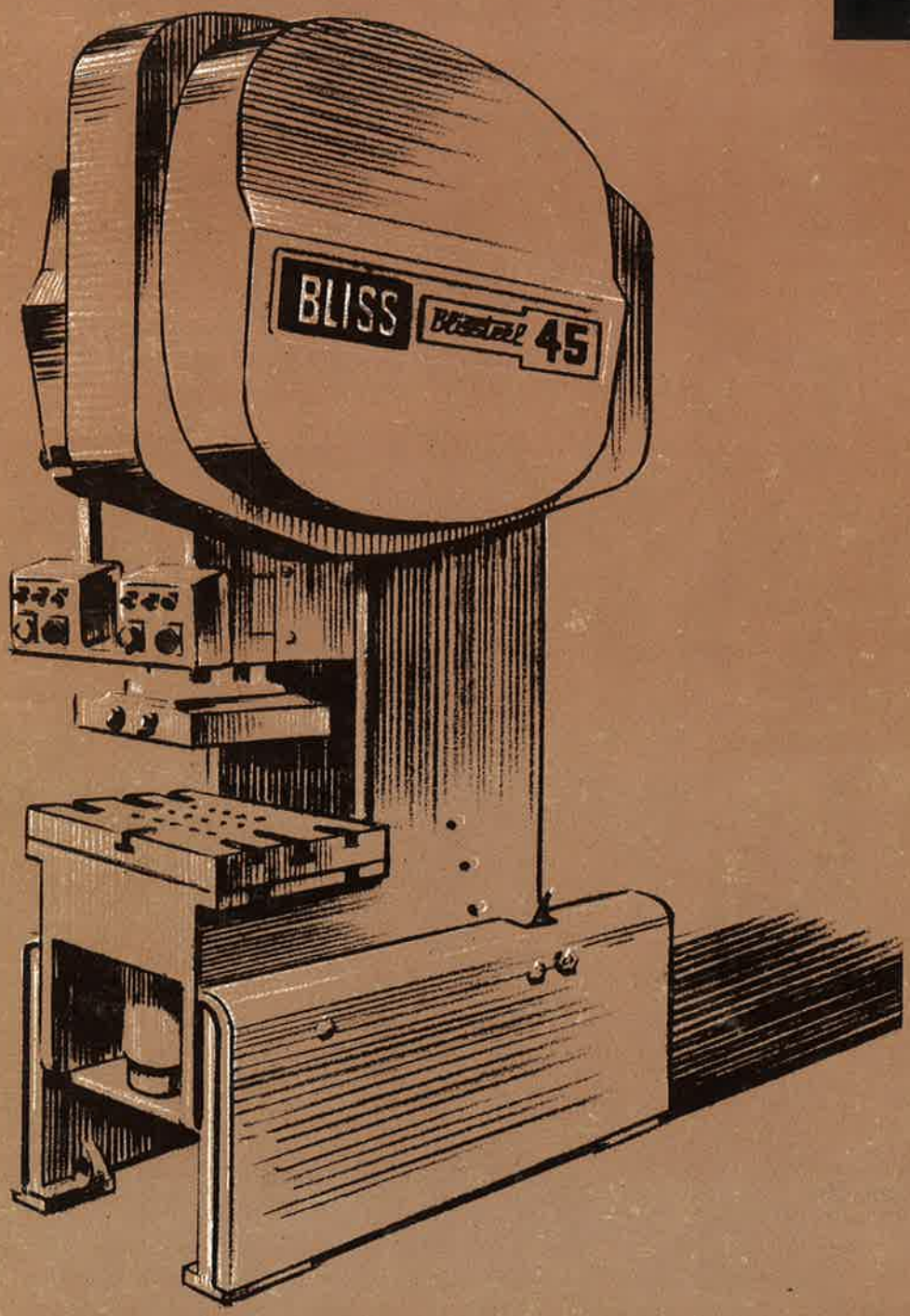
BLISS

Blissteel SERIES



WELDED FRAME INCLINABLE PRESSES

*Trademark of the E. W. Bliss Company

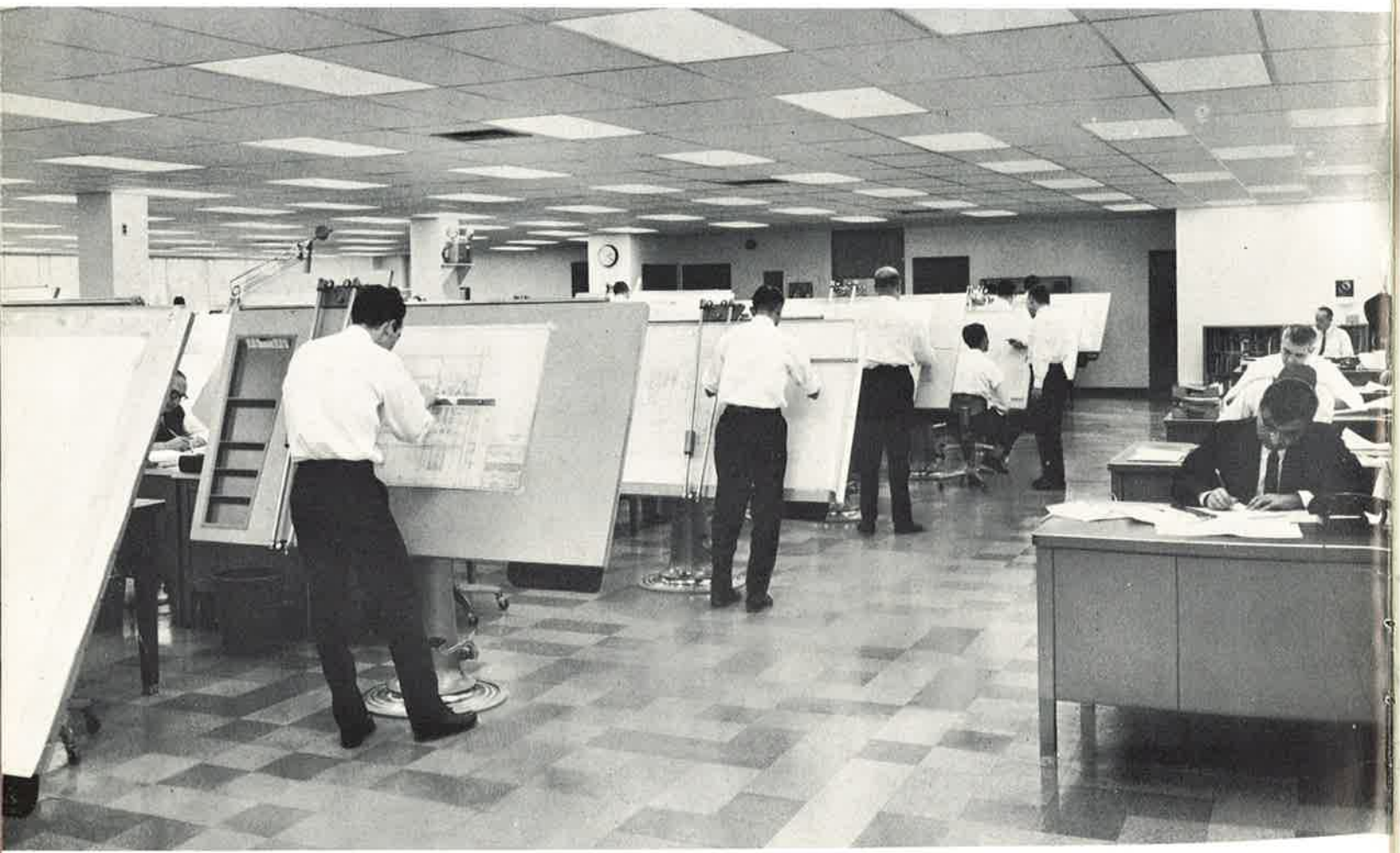
CATALOG NO. 1

BLISS SETS THE STANDARD OF

It starts with an engineering concept...

In point of time, Bliss' press building experience outdates all others. Even more important, this experience has gone hand in hand with *sustained* leadership.

Since 1857, Bliss has pointed the way in improved press design, better materials of construction, and refinement of manufacturing techniques. To a significant degree, Bliss' present engineering capability is an extension of its historical position of leadership in the industry.

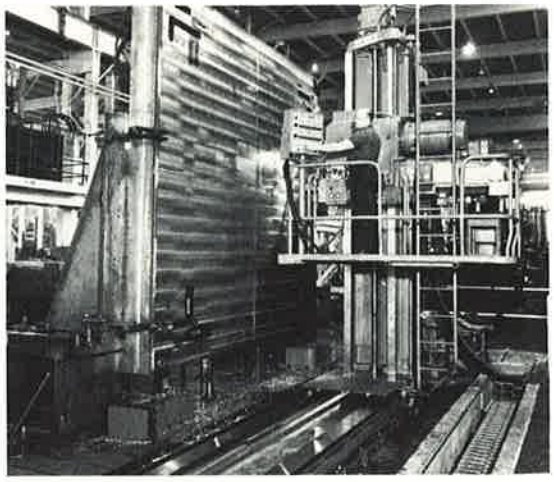


VALUE

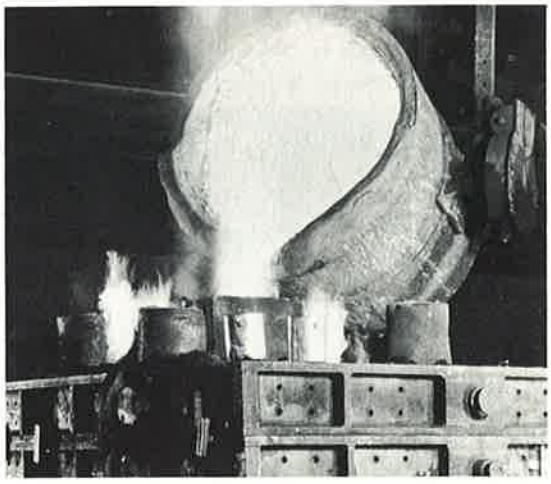
...it is shaped in the world's largest press building facilities

Facilities are the muscle of leadership. It has long been a Bliss policy to invest heavily in the physical plant necessary to sustain a "can do" rather than a "make do" philosophy. Result is the largest and most versatile press building capability in the world.

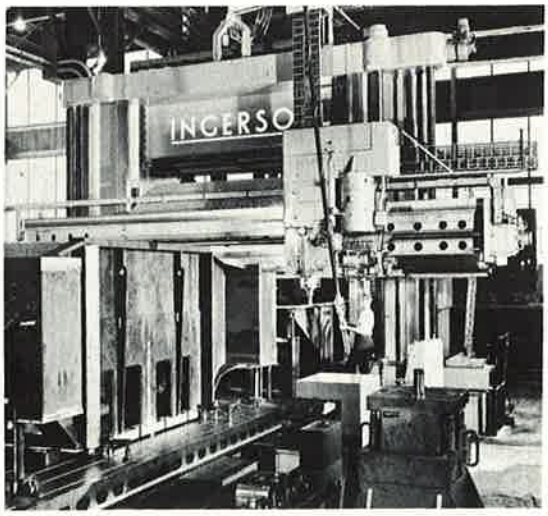
Tape-controlled drilling machine typifies the constant upgrading of production facilities at Bliss plants.



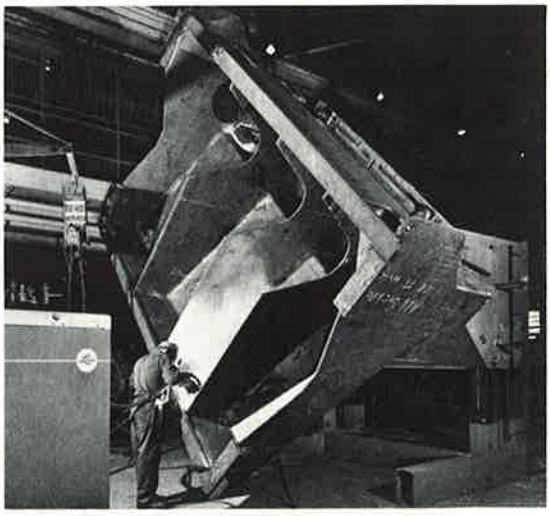
Castings continue to occupy an important place in smaller press construction. Bliss' Meehanite foundry produces the highest quality of cast iron.



This 14 foot planer mill is part of a program designed to maintain peak efficiency while increasing production.



The Press Division has welding positioners with capacities to 120,000 pounds and crane capacities to 150 tons.



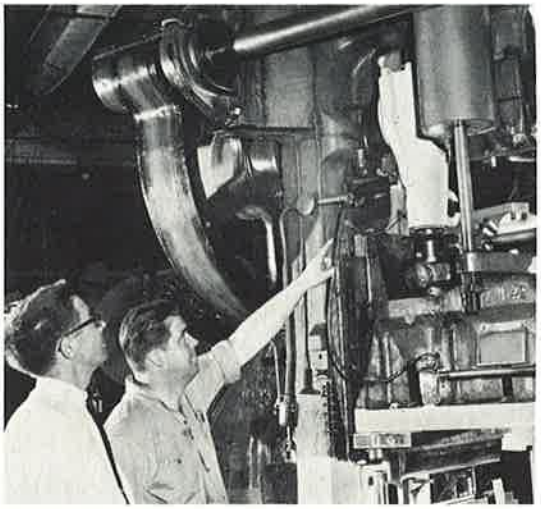
BLISS SETS THE STANDARD OF

...maintained by an unequalled service organization...

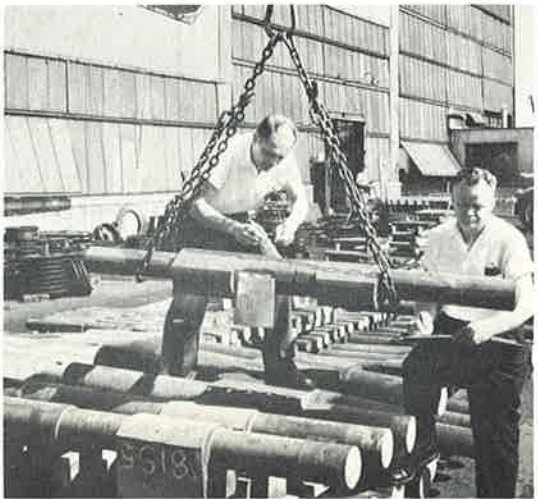
Inventive design and reliable construction are the prerequisites of value in presses. Service—concerned with the continuing performance of Bliss equipment in customers' plants—gives depth to the total picture of value.

A substantial part of our large manufacturing capacity is devoted to maintaining a stock of replacement parts. Thus users of smaller standard Bliss presses are frequently only air-hours away from critical replacements. A well-staffed and mobile field service department assures Bliss customers of expert assistance throughout the free world. Above all, a determination to make every Bliss press a testimonial to Bliss value guarantees the customer continued satisfaction during the long service life of his Bliss equipment.

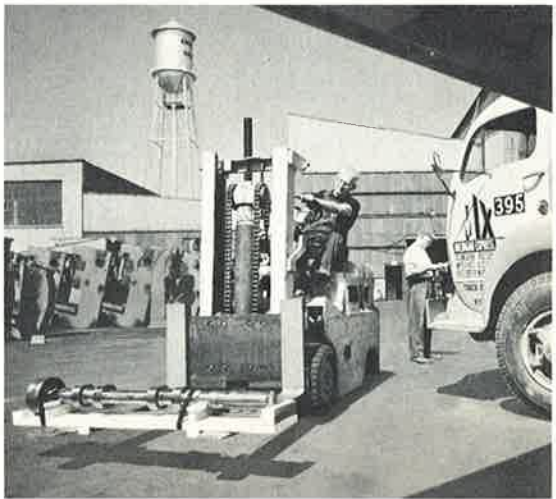
This 20-year-old Bliss Double Crank Press has a cracked crankshaft. A call to the local Bliss office results in immediate check of parts warehouse. The crankshaft—a special—is not in stock.



Outdoor stockpile of rough forged crankshafts yields a suitable blank.



Four and a half days later the newly machined crankshaft is installed and the press back in operation.



VALUE

...and assured by an exacting quality control program

Bliss' Quality Control Program is a three-part operation: pre-production laboratory analysis of materials and processing techniques; in-process precision testing; and final inspection including factory assembly and run-in prior to shipment.

Pre-production QC is handled by laboratory personnel under the supervision of metallurgists and welding engineers. It determines proper materials, processing procedures, and surface treatments.

In-process QC combines physical checks with non-destructive examination, such as x-ray, Zyglo, and Magnaflux.

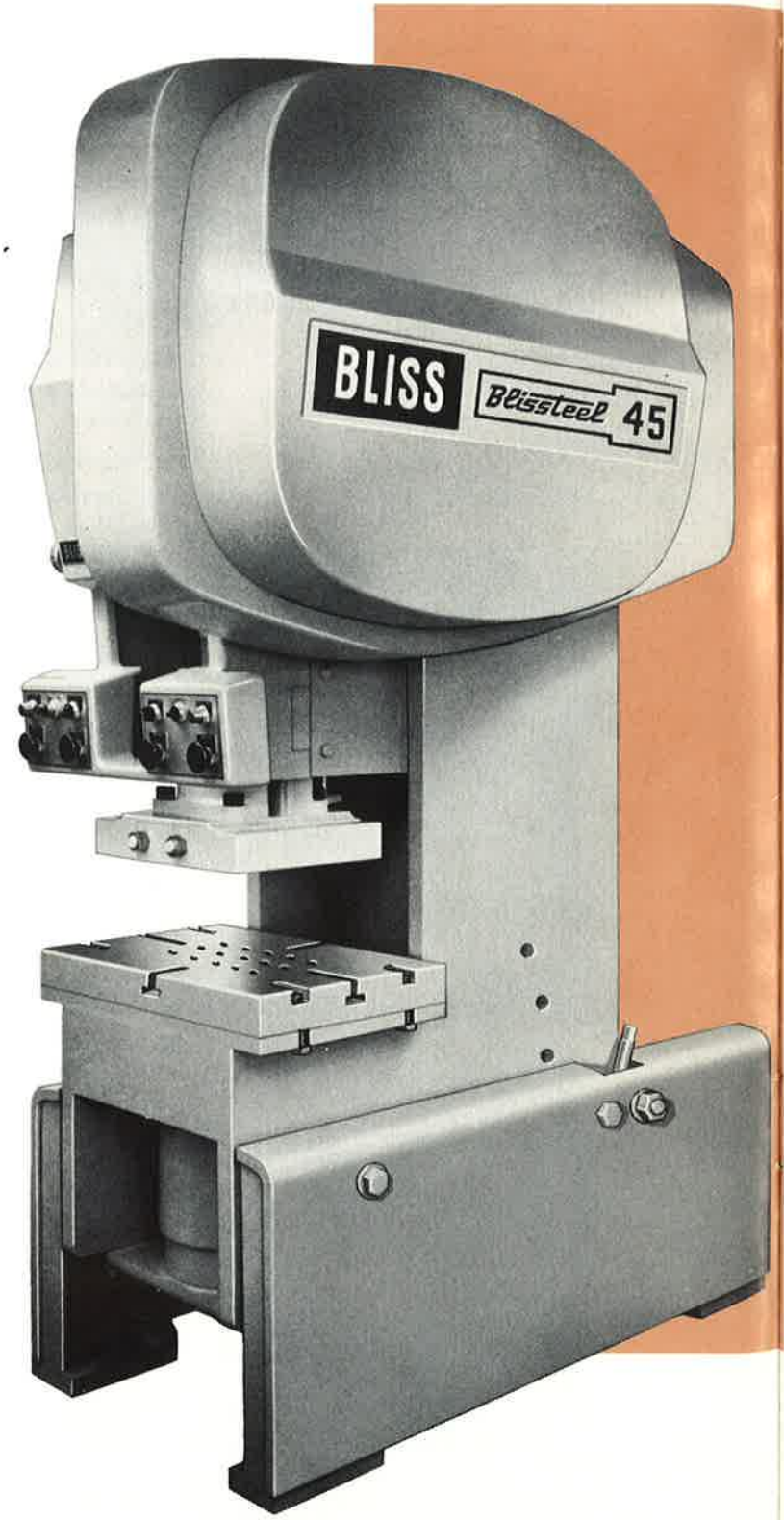
Quality Engineering examines rejects to assure that proper manufacturing techniques are employed to preclude recurrences. Process capability studies are regularly performed to assure continued high quality of manufacturing operations.

Final inspection gives specific meaning to Bliss' motto: "The Standard of Value." In this ultimate test, each press is factory assembled and verified by Quality Control that the unit conforms both to customer's specifications and to Bliss' own exacting standards of manufacture and performance.

Material deflection test—one of many metallurgical analyses.

Ultrasonic inspection—one of several non-destructive test techniques.

BLISS 22-110 TONS



A CHALLENGE TO OBSOLESCENCE

A primary objective of every new product development by the Bliss Press Division is that it shall surpass any comparable equipment available. These new BLISSTEEL* Welded Frame Inclinable Presses exemplify achievement of this objective in two ways. First, they offer as standard equipment several major features usually furnished on inclinable presses as extras—for example, six-point gibbing, flanged slide, air friction clutch and independent brake, roller bearing-mounted flywheel, full eccentric drive, barrel-type slide adjustment and replaceable bronze ball-seat connection, and fully automatic recirculating oil lube system. Second, not only does the BLISSTEEL design incorporate the most modern features in the industry, but it also makes full provision for the addition of dozens of accessories—quickly and inexpensively in the customer's plant. Thus can the long service life of these rugged machines be employed to full advantage by one owner, through progressive modernization, paid for out of the machine's own productivity.

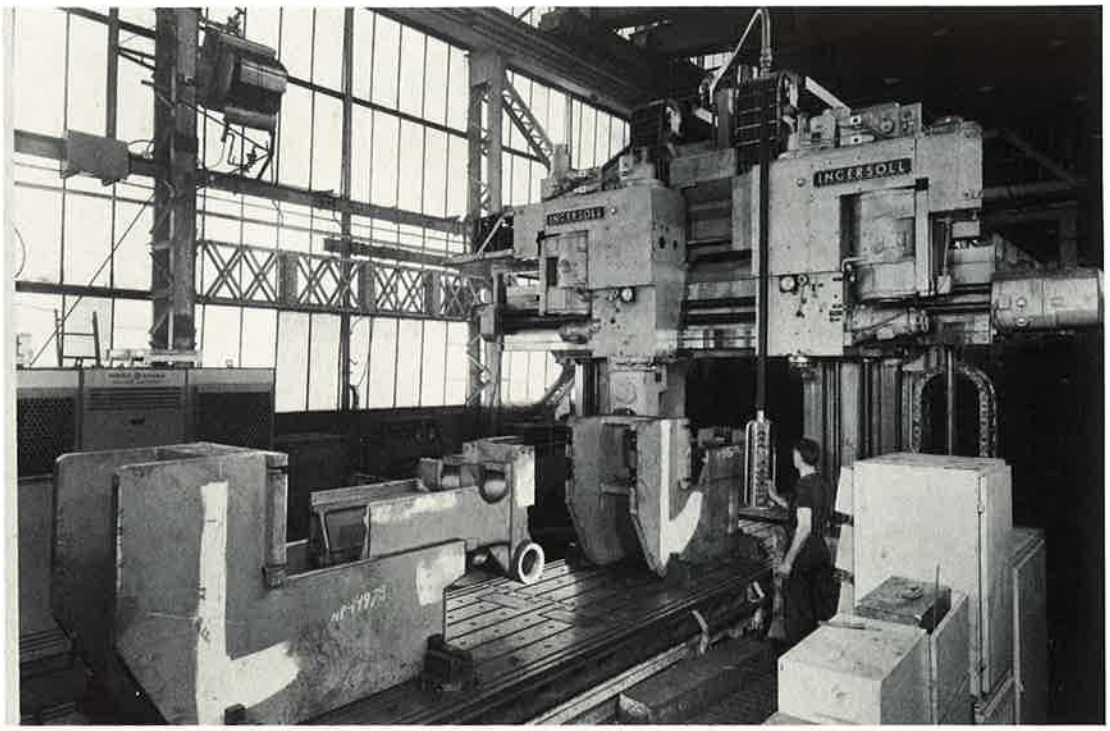
Here you will find described a *new class* of welded frame inclinable presses...modern as today...fully modernizable for tomorrow.

**Trademark of the E. W. Bliss Company*

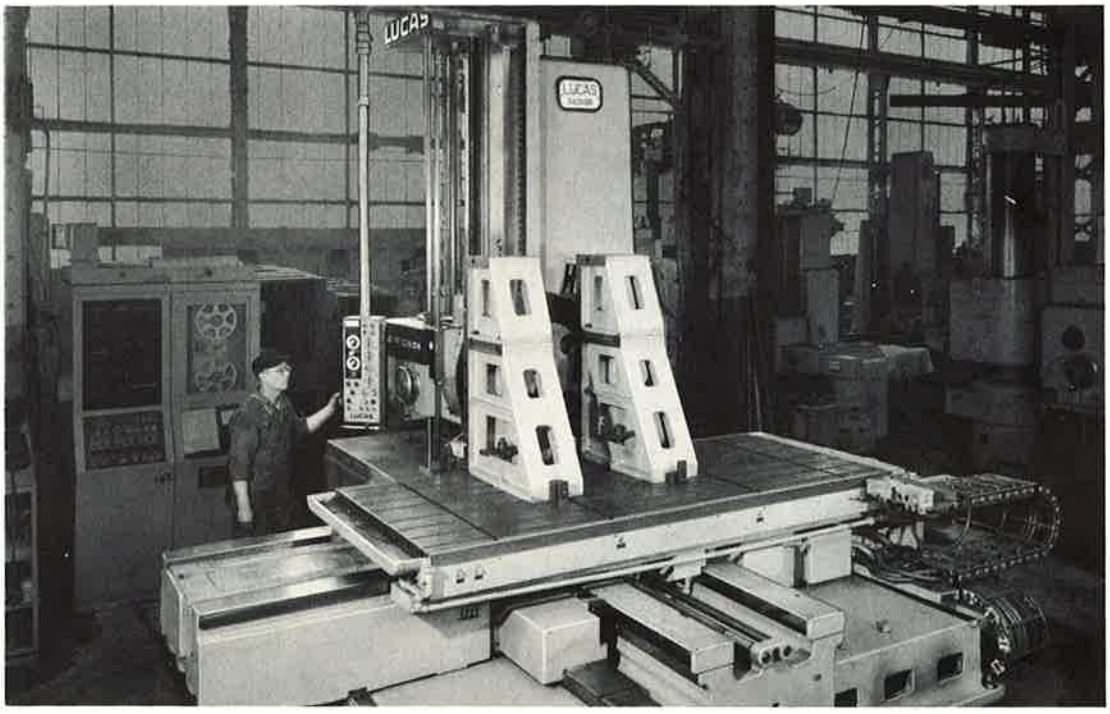
CONTENTS

BLISS

BLISS Blissteel INCLINABLE PRESSES WELDED FRAMES



Production machinery, like this numerically-controlled planer mill...



...and four-axis boring mill, also numerically-controlled, speed production of the new presses

ENGINEERED STYLING—BASIC, MODULAR, MODERN

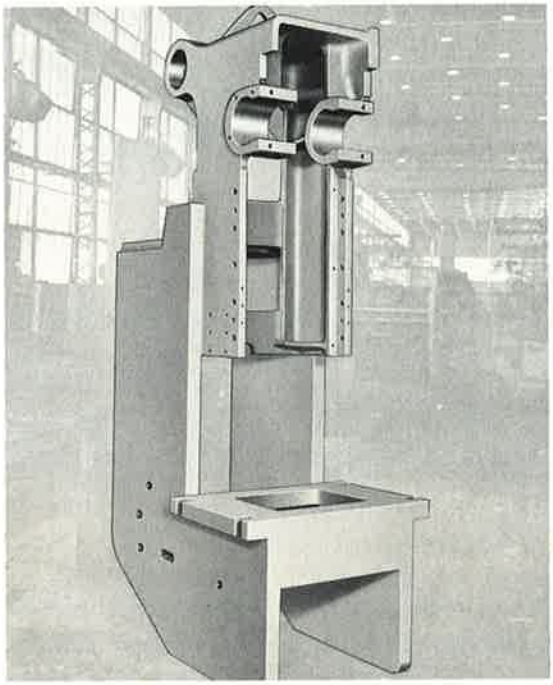
Even at first look, BLISSTEEL presses are different. Their sleek, clean lines are a product of a leading engineering stylist who, working within the guidelines set down by Bliss engineers, reduced the welded pressform to its near ultimate simplicity. This simplicity, in turn, aided in providing for a wide range of optional features and accessories as integral parts of the press, rather than as awkward appendages. Dimensionally, design of the new press frames was guided by JIC standards where applicable. Full advantage was taken of the welded sections to house and protect accessories, piping, wiring, and controls. In the engineering of detail, every effort was made to achieve true parts interchangeability and to minimize the costly "fitting out" so characteristic of heavy machinery assembly. Inherently versatile, and typical of the best use of welding techniques, this basic frame design withstood the effects of numerous engineering changes to emerge with its original profile essentially unaltered.

BLISSTEEL frames are fabricated from steel plate, stress relieved, and precision machined by the latest methods to exacting tolerances. The structure is free of protruding ribs and stiffener plates. Yet, despite its trim appearance, the frame design provides for a guaranteed maximum deflection of 0.0018 inch per inch of throat depth and, on special order, can be furnished with guaranteed deflection of 0.0015 inch.

Because it is symmetrical about the vertical center line, either right or left hand drive can be used without alterations to the frame. The motor mount area will accommodate single or variable speed motors and a backshaft for geared drives can readily be applied with only modest additions to the basic frame.

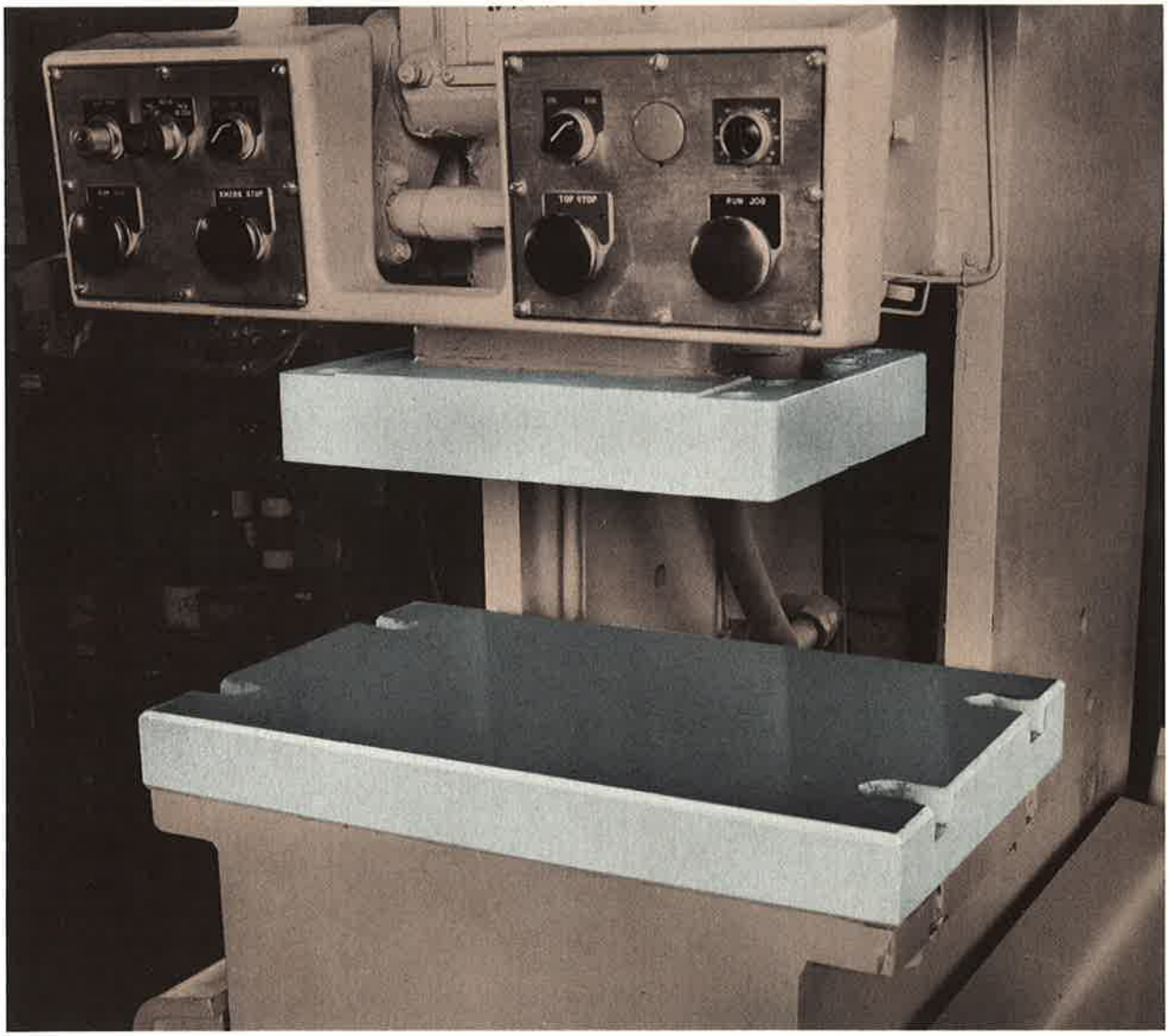
SIMPLICITY PLUS VERSATILITY

An integral lifting ring is a part of all standard BLISSTEEL presses for handling by overhead crane. Modular design of the head section of the frame enables an extraordinarily wide choice of shutheights other than those within the standard range at small additional cost for special positioning. Necessary drilling of upright and leg sections is furnished on the standard unit to accommodate an optional inclining mechanism which is fully enclosed within the leg of the machine. Frames of all standard geared units are regularly machined to accept cushions, whether or not they are ordered with the original equipment. Provision is also made on all standard units for an in-built air counterbalance for the slide.



Basic frame accommodates geared or non-geared, right or left hand drive

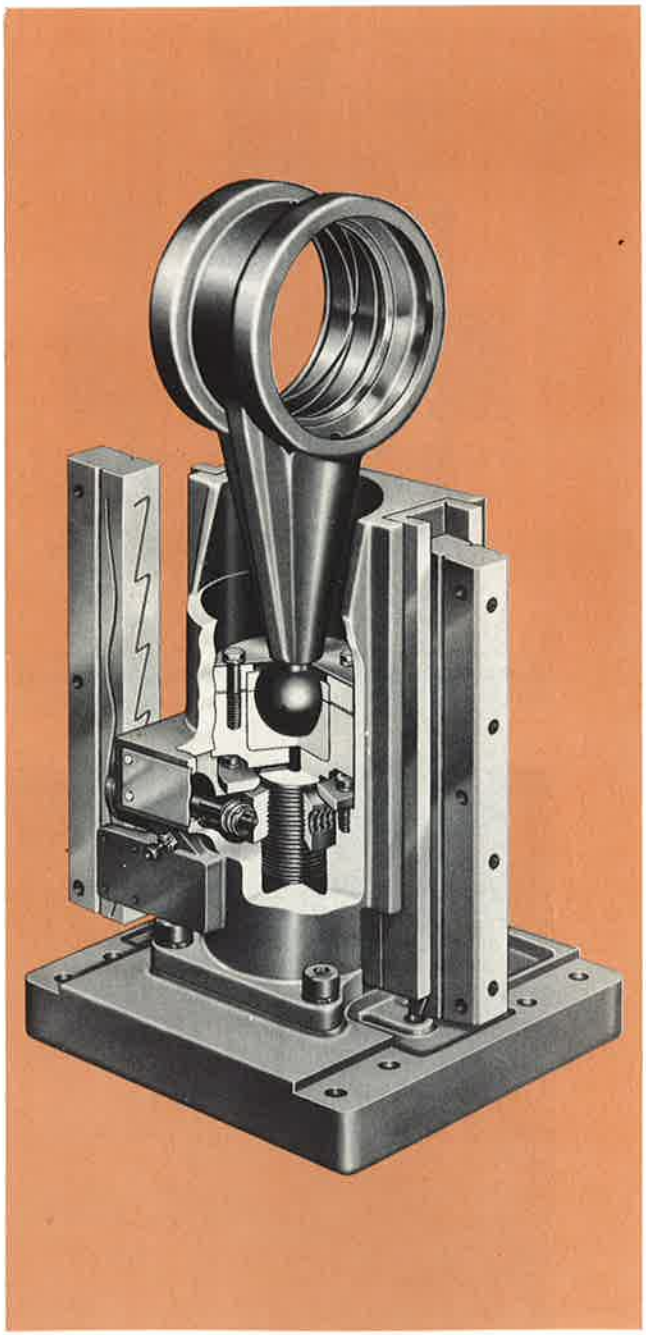
BLISS Blissteel INCLINABLE PRESSES
BEDS & BOLSTERS



Area dimensions of plain flanged slide and bolster are to JIC standards

Standard BLISSTEEL Presses are furnished with a plain steel bolster of JIC dimensions. Special machining, including JIC configurations, is available as an extra. Beds and bolsters are furnished ready to receive UCO-type cushions which are simply bolted into the drilled and tapped holes provided in the frames of all geared presses. Suitable clearance is designed between pin-plate and bolster to prevent banging at high speed operation with a cushion.

SLIDES, CONNECTIONS & GIBS



Outstanding features of standard unit include flanged slide, barrel-type adjustment, and U-shaped six point gibbing

A STUDY IN VERSATILITY

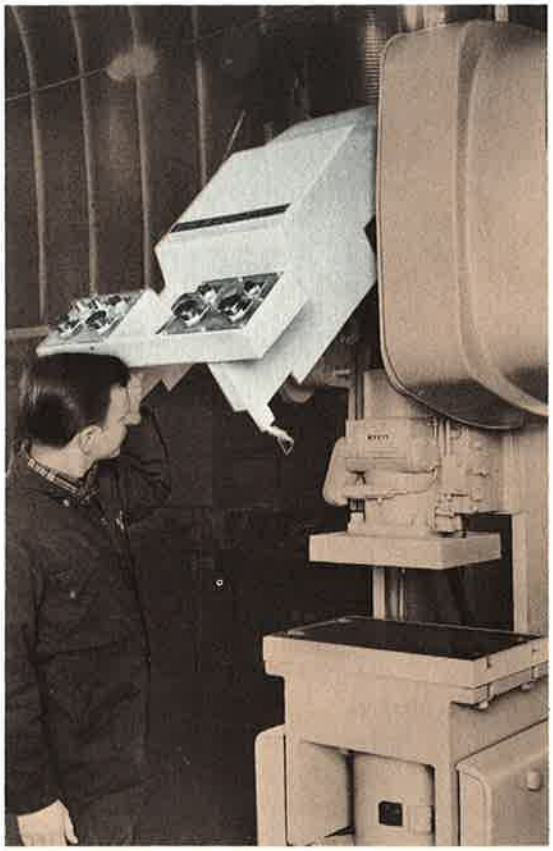
No part of the cast Meehanite slide is a wear part. All wear surfaces are replaceable.

Barrel adjustment with replaceable bronze ball-joint seat and positive slide adjustment lock are standard on all units. Power slide adjustment by means of a built in air motor is available as an option on all sizes and can be added to the standard unit at any time. The standard automatic recirculating lube oil system serves all friction points. The slide incorporates a special means of collecting the oil and returning it to the sump. Fibre glass guards substantially reduce the decible noise level.

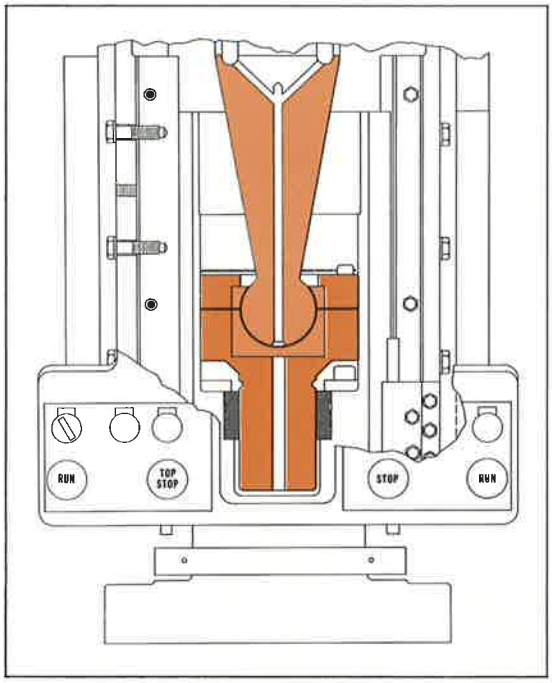
The cast slide construction accommodates a variety of bolted-on parts to provide a wide choice of slide face dimensions and detail. The standard press is furnished with a plain flanged slide with JIC stem hole diameter and JIC corner mounting holes. Interchangeable slide flanges are available as extras in four basic configurations: JIC standard, clamping cap design, quick die-change design, and hydraulic overload design. Extra plain flanges with JIC stem hole identical to the flange on the standard unit are available.

Six point gibbing is used on all sizes, employing a new, very long-wearing material of 60 Rockwell hardness. These gibs are precision ground and set at the factory against shims. No field alignment or adjustment is necessary. At long intervals, compensation for slight wear in the bearing surfaces can be made by inserting additional shim material as positive stops.

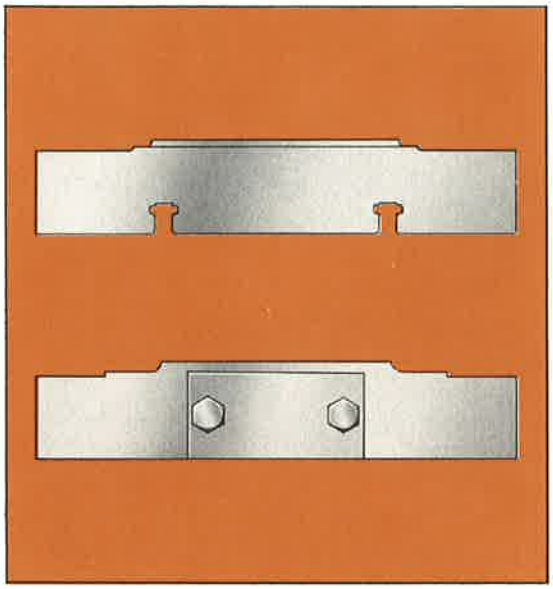
Full provision is made in machining the slide for addition of an optional digital readout shut-height indicator. Slides are machined for knock-outs of either bar- or cam-type which are available as optional kits. Provision is also made on all models for the slide to accept the actuator arm of an air-counterbalance which is furnished as standard on 75 and 110 ton units, and as optional equipment on the smaller sizes. Rocker arm design enables a single counterbalance cylinder to deliver thrust near the centerline of the slide. Provision is made on all slides for attaching standard operator safety gear.



Hinged fiberglass cover houses control buttons, gives easy access to slide and connection, reduces noise

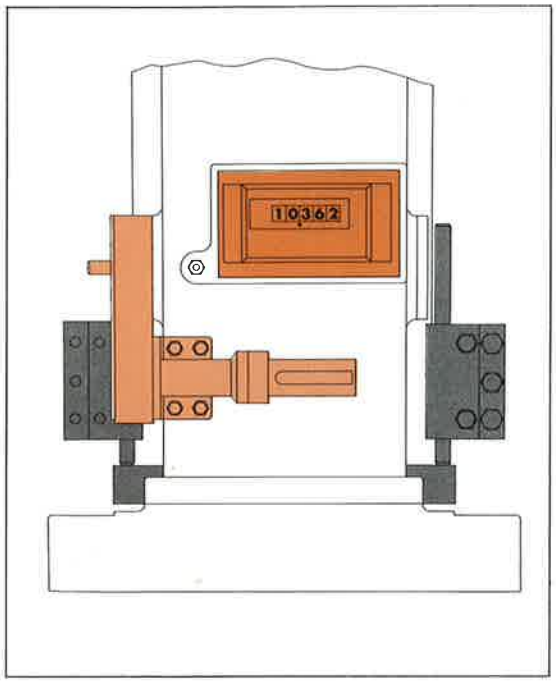


Standard slide features ball-type connection and replaceable bronze ball seat

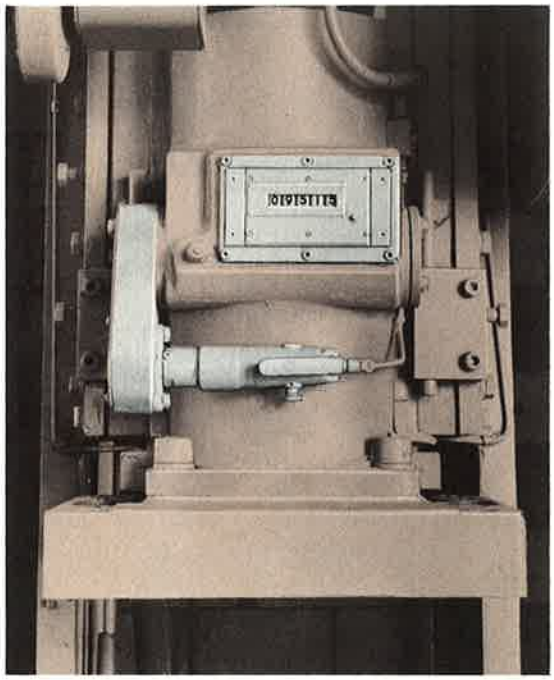


Slide flange details alterable to any of four configurations

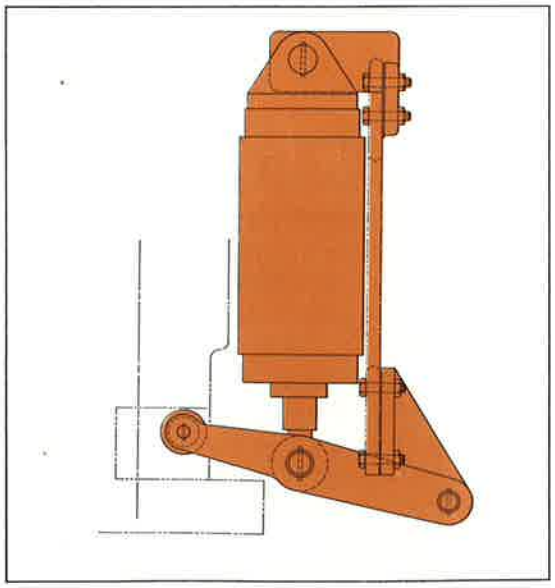
GIBS



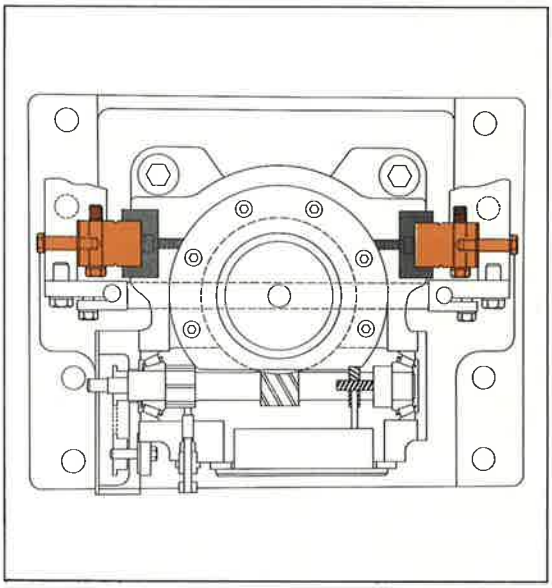
Optional air motor slide adjustment and digital readout of slide position...



...available on all models

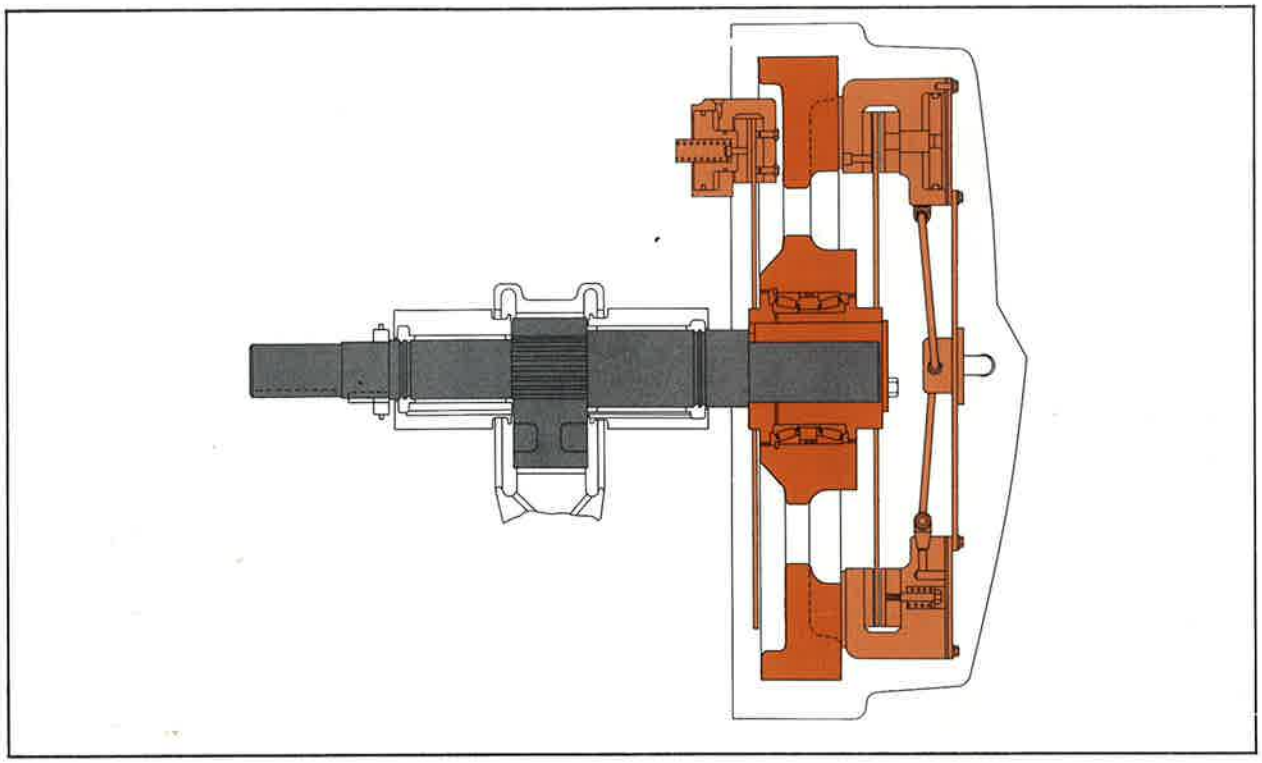


Single inbuilt slide air counterbalance applies thrust near centerline of slide



"U"-type, gibbing provides accurate guidance at six points of contact

BLISS Blissteel INCLINABLE PRESSES
DRIVES

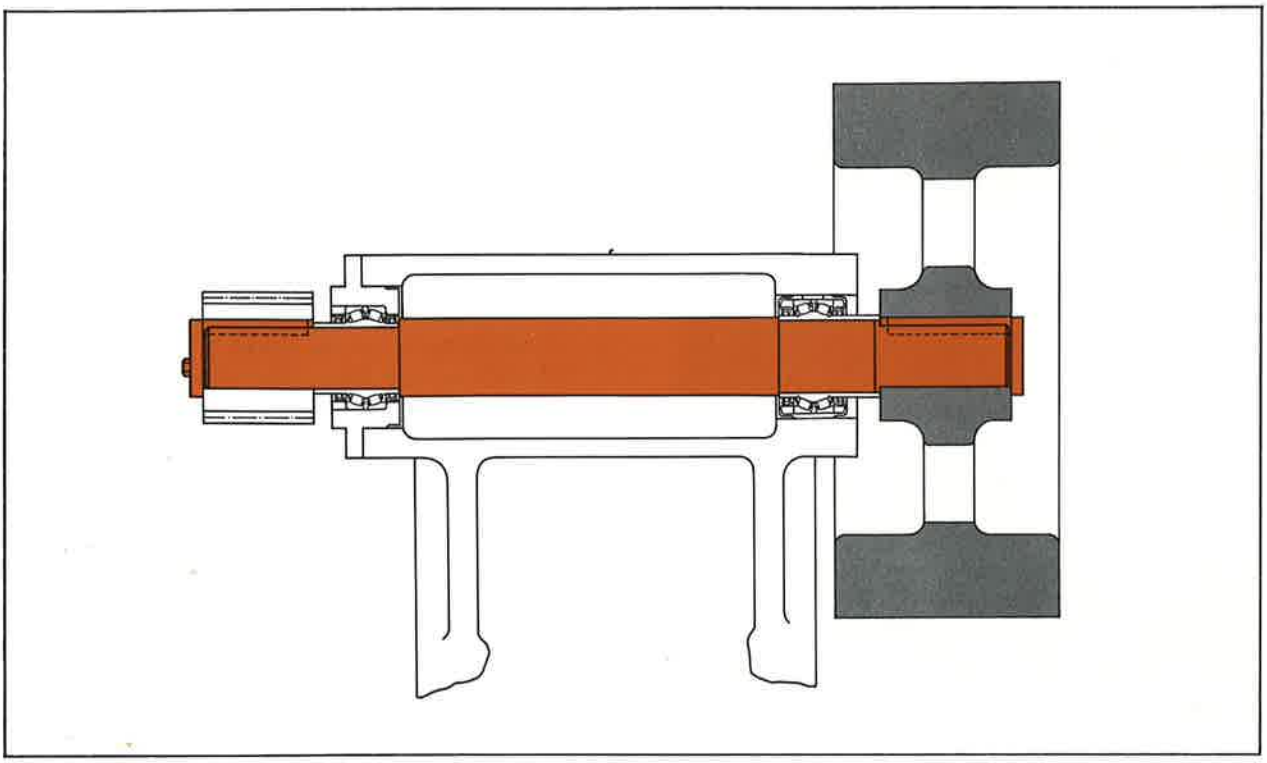


Unique design of full eccentric permits changing stroke on same shaft. Modular friction segments adjust clutch torque to suit

JOB-MATCHED TO PRESENT AND FUTURE NEEDS

Drives on all BLISSTEEL Presses are of a new, full eccentric type. Their unique two-piece, splined design permits change in length of stroke by changing the eccentric element without replacing the rest of the shaft. Depending on size, these options in length of stroke are: ½, ¾, 1, 1½, 2, 2½, 3, 3½, 4, 5, 6, 7, 8, 9, and 10 inches. Shafts are machined and ground from heat-treated steel. Aluminum sleeves are used on main and connection bearings; pre-adjusted and lubricated tapered roller bearings are used in flywheel and/or gear. An extension is provided on standard shafts for power takeoff for driving feeds or other accessories. Counterweighting of shafts is available where operating conditions require.

Drive motors are mounted at the same location on both geared and non-geared presses and for fixed or variable speed drives. All sizes above 35-ton are available in either geared or non-geared models. Right or left hand drive may be specified without extra cost. A substantial range of speeds other than standard is available by means of simple sheave change. Beyond those speeds, others of a higher or lower order are obtainable with variable speed drive arrangements and a high-speed rotary limit switch. Lubrication, bearings, and clutch of the standard presses lend themselves well to increased production rates without modification of the basic units. Gears running in oil and herringbone gearing are available options.



Symmetrical design accepts right or left hand drive

GEARED AND NON-GEARED PRESSES

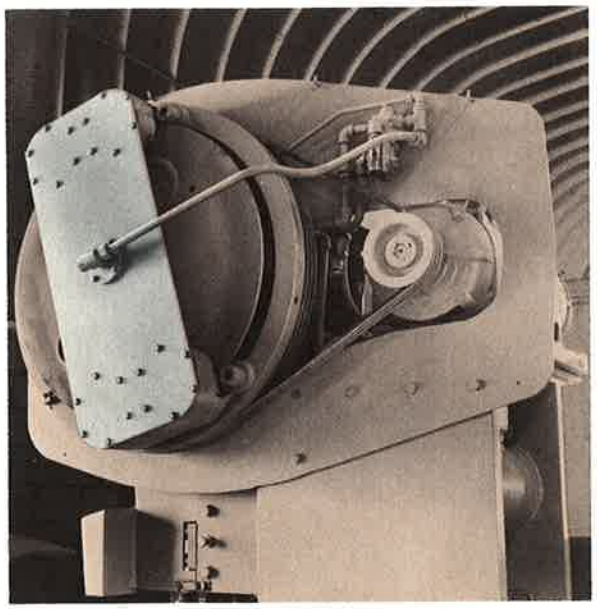
When deliberating on the choice of geared vs. non-geared machines, it is well to keep in mind some basic principles of energy transmission in presses. The non-geared press is best suited to fast, light work in which the major part of the flywheel energy is expended during a small part of the press stroke. Examples are light and medium blanking, piercing, and very shallow stamping and drawing work. In this type of drive, the flywheel is mounted on, and rotates at the same speed as, the crankshaft. When flywheel energy is delivered throughout a greater portion of the working stroke, as in drawing and forming operations, it is necessary to develop greater flywheel energy by means of increased flywheel speed. This is accomplished by gearing the drive, which also reduces the strokes per minute in keeping with the slower slide velocities allowable for drawing and forming.

Another means of increasing the versatility of a given inclinable press is afforded by variable speed drive devices. These are available for BLISSTEEL PRESSES without modification to the basic machines. They consist of either a mechanical or electrical means for varying the output RPM of the drive, thus enabling the same press to perform with optimum efficiency throughout a range of speeds. This capability is especially desirable for diverse operations using high speed presses with automatic feeds.

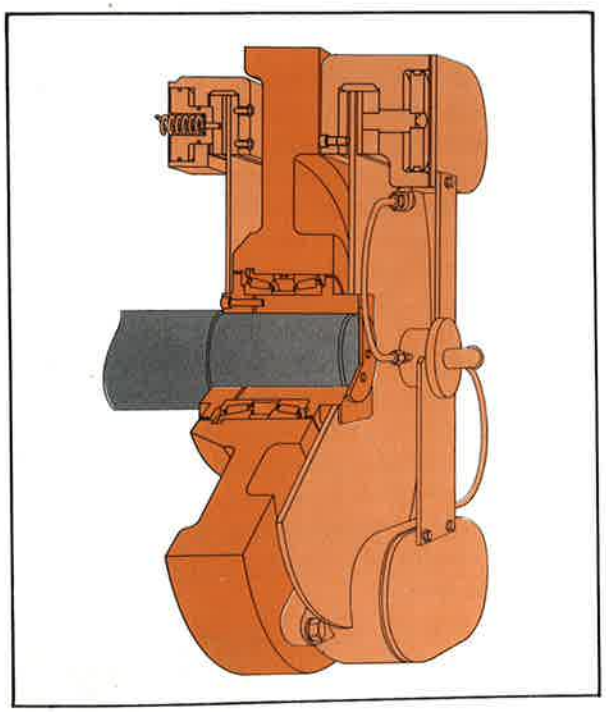
An adjustable stroke device, available as an option, provides still greater versatility for the BLISSTEEL design.

BLISS

BLISS Blissteel INCLINABLE PRESSES CLUTCHES & BRAKES



Adjustable torque of modular clutch is adaptable to a wide range of strokes, speeds, drives



Interchangeable friction segments simplify adjusting clutch torque capacity.

NEW ADJUSTABLE TORQUE DESIGN

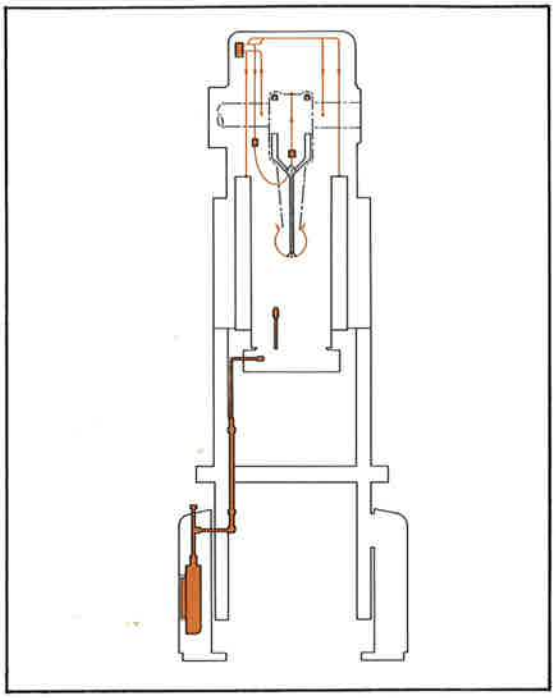
A new Bliss low-inertia type of air friction clutch and independent disc brake were developed specially for the BLISSTEEL machines. They are standard on all units. Clutch and brake are located on the main shaft of both geared and non-geared presses. The brake is spring-set and is automatically applied in the event of air failure. Republic Manufacturing air manifolds are used on the standard machines for pneumatic controls. A dual clutch and brake valve can be furnished as optional equipment. The standard air clutch is furnished without unsticker but full provision for adding this feature is made in the basic unit.

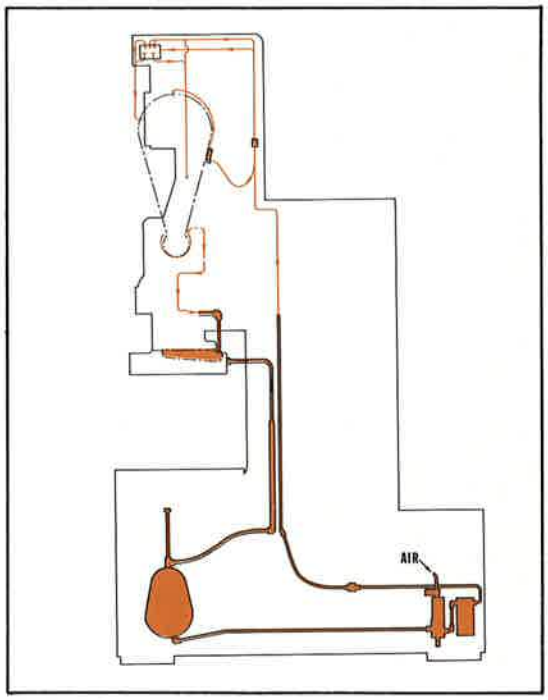
Design of the clutch is such that its torque capacity can be increased or decreased by the removal or addition of friction elements without otherwise altering the clutch assembly. This feature enables maintaining full rated capacity at any stroke length within the broad range of options available without varying clutch air pressure. By keeping to uniform, recommended air pressure, a large degree of overload protection is always afforded by the clutch. Because clutch friction elements are identical for all sizes of presses in the BLISSTEEL line, a minimum inventory of this part is required in shops with several machines.

The new clutch and brake are also remarkable for ease of access and simplicity of maintenance. No adjustment is necessary during the life of the linings.

Both units incorporate large discs for long service life and rapid heat dissipation.

LUBRICATION

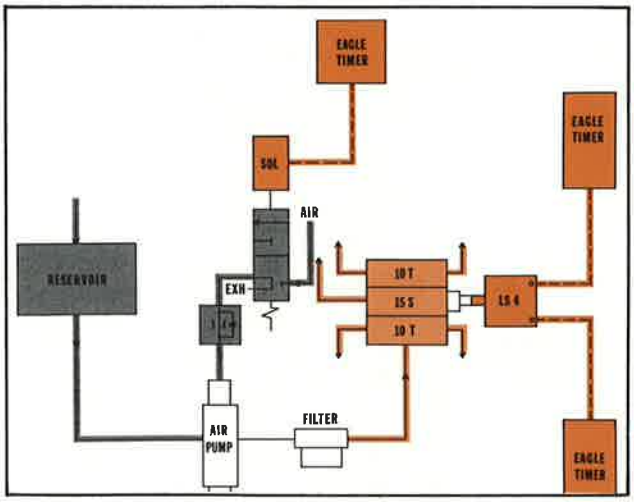




Automatic, recirculating oil system is standard feature

The new BLISS automatic recirculating oil system is provided as a standard feature on all models. Designed especially for this new line, the system is modular in construction and will accommodate a wide range of operating speeds without modification.

This system employs a solenoid-actuated air pump, filter, and a lube monitor device (available as an option) which monitors the operation of the metering block. If the lube system fails, the press will stop at top of stroke and indicate lube fault on operator's panel. Oil is dispensed through a positive-displacement metering block to five points of lubrication at bearings, connection, and gibs; it is then gathered in a return system to the sump. The reservoir is contained within one leg of the press; it has a visible sight gauge for checking the oil level.



Modular design accepts simple, effective monitor as option

BLISS

BLISS Blissteel INCLINABLE PRESSES CONTROLS

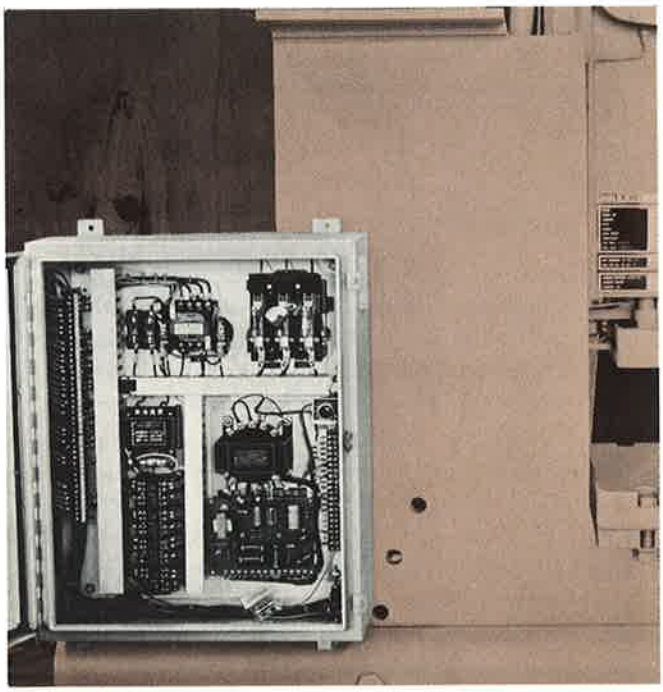
CUSTOMIZED FUNCTIONS FROM "BUILDING BLOCK" MODULES

Control systems for BLISSTEEL Presses are highly adaptable to individual requirements through the use of "building block" function modules in conjunction with one of two basic controls—one for presses with feeds and one for hand-fed machines. Standardization of a wide variety of control sub-systems, combined with extensive computerization of control engineering, has simplified the once arduous task of designing and estimating controls to suit specific conditions of operation.

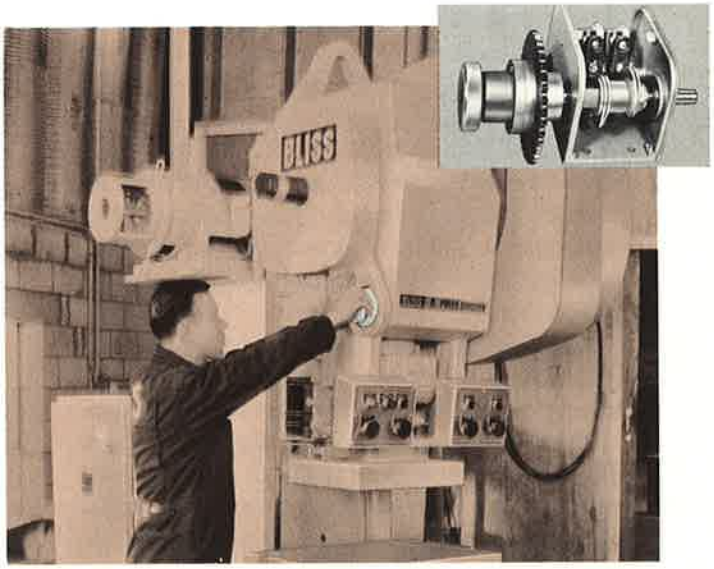
Bliss engineering can now handle any desired combination of control functions and any degree of automation on a routine basis. Due to the complexity of control options available, we suggest that you discuss them with a Bliss Sales Engineer in terms of your own applications and future plans.

All control segments employ quick hookup techniques for fast assembly and are housed in fully enclosed, yet readily accessible cabinets with liberal space for later additions or modifications.

Not the least of Bliss' accomplishments in the field of control engineering is ease of maintenance. Presses built April, 1967 and after have electricals that conform fully to the new NMTBA industry standards of that date.

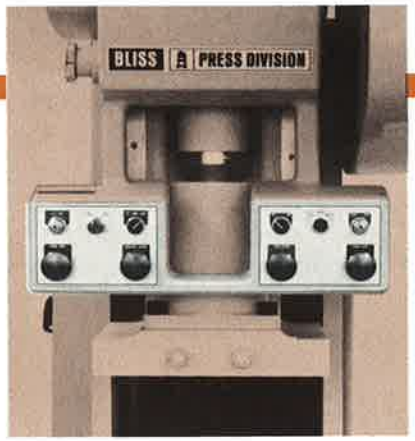


Generous cabinetry enables expansion of control functions

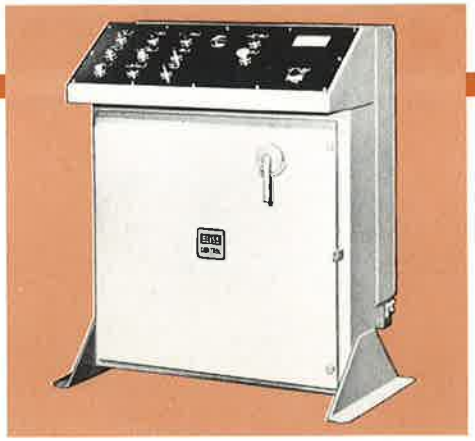


Conveniently located two-cam top-stop limit switch is standard. A limit switch adjustment is regularly supplied with all variable speed drive machines. Four- and six-cam units are available.

CONTROL ARRANGEMENTS



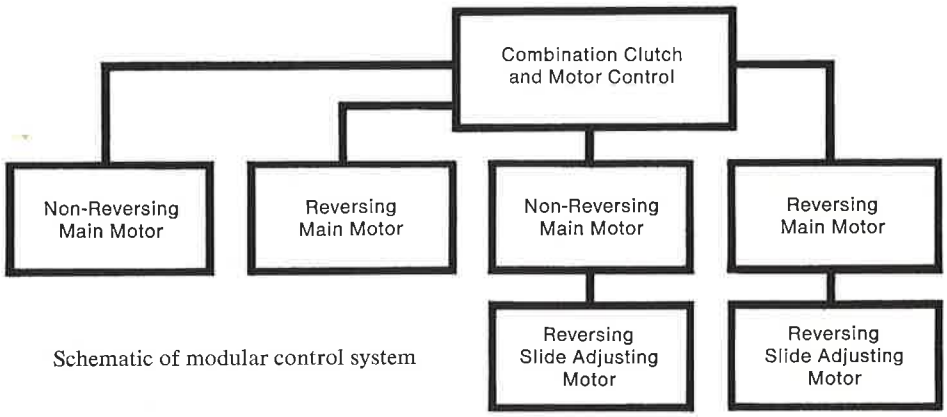
On the press



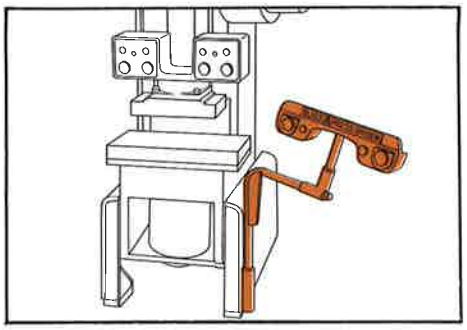
Floof console

Pedestal consolette

The main control cabinet is located on the left rear leg of the press. All operator's control buttons are housed in a fiber glass shroud on the front of the press. In addition to these standard controls, a variety of options is available. They include a separate console for electrical equipment and/or terminal control buttons; combination pedestal and press-mounted controls; a swivel run button station either as an auxiliary or an alternate to the press-mounted buttons; and separate, color-coded continuous and single-trip foot switches. Other options include top-stop adjustment and an hydraulic overload device with monitoring and signaling features.



Schematic of modular control system

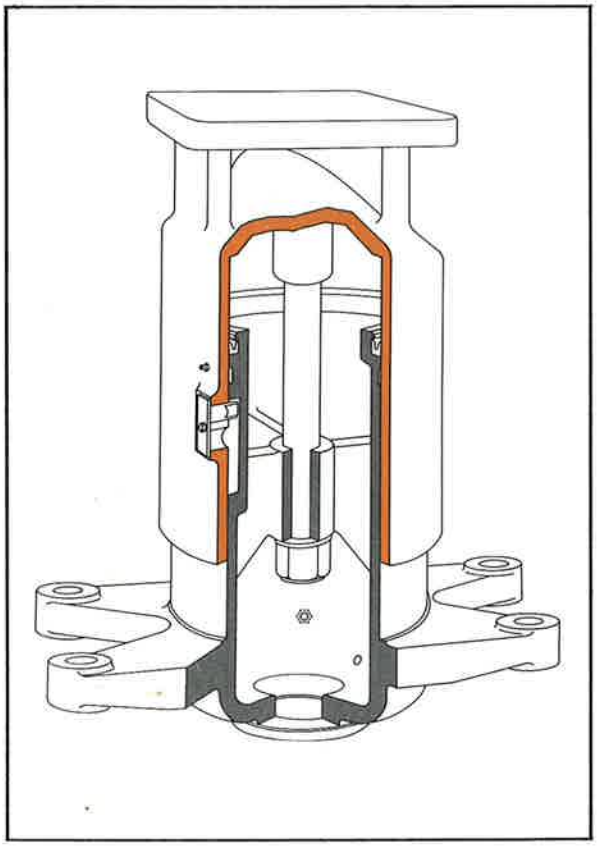


Auxiliary swivel run-button station

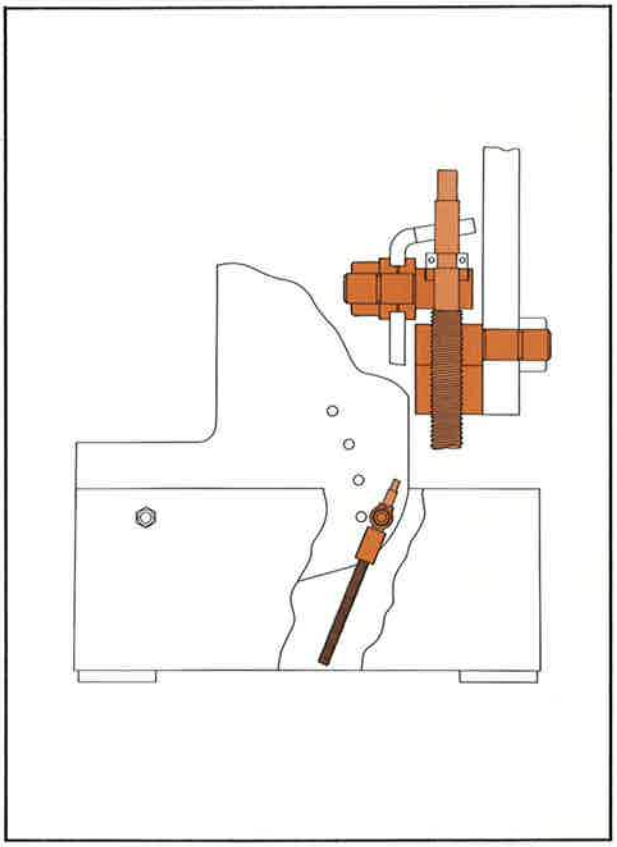
Color-coded, electrically interlocked foot switches for single-trip or continuous operation

BLISS

BLISS Blissteel INCLINABLE PRESSES
OPTIONAL ACCESSORIES



"UCO"-type inverted cushion excludes dirt and debris

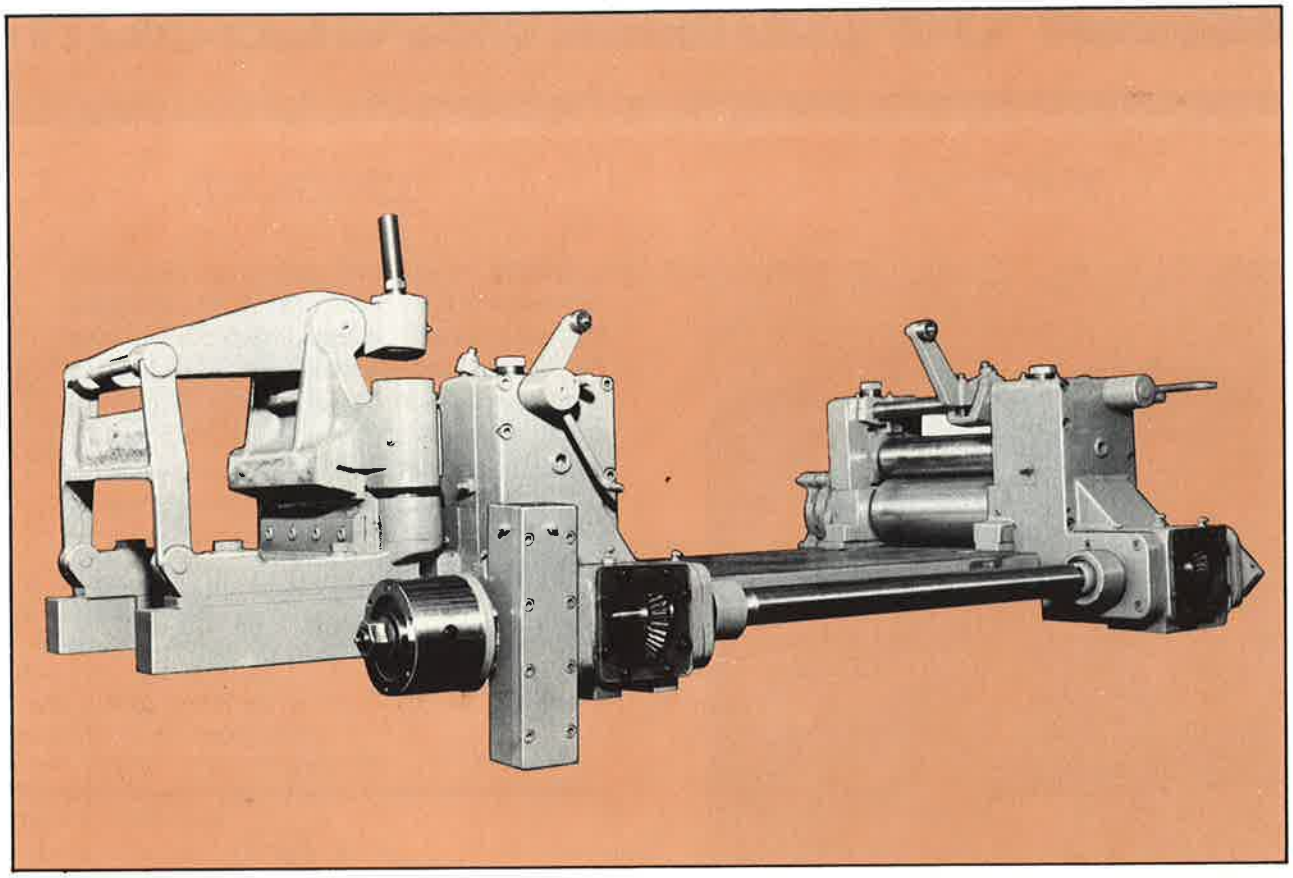


Inclining mechanism completely housed in leg of press

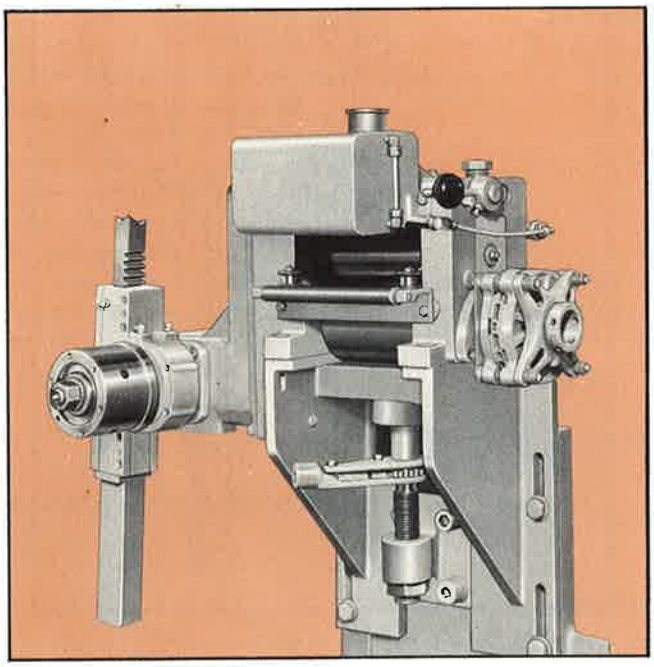
DESIGNED FOR YOUR NEXT MODERNIZATION PROGRAM

Die cushions, extensively used on geared inclinable presses, are fully provided for in machining frames of the standard geared units. They can be added at any time in the customer's shop, using drilled and tapped holes provided for the purpose. Cushions for these presses are the "UCO" type, inverted to prevent entry of dirt and foreign matter into the cushion internals. Cushions are pre-lubricated with a silicone lubricant and can be relubricated via standard Zerk fittings. The standard cushions are furnished with slug chutes to facilitate scrap disposal to the rear of the press.

Full provision is made on all standard models for an inclining mechanism which can be added at any time as a kit. The unit can be operated either manually or with a pneumatic power wrench. This device is completely contained within the right leg of the press, with only the drive head exposed.



Bliss double-roll feed



Bliss single-roll feed

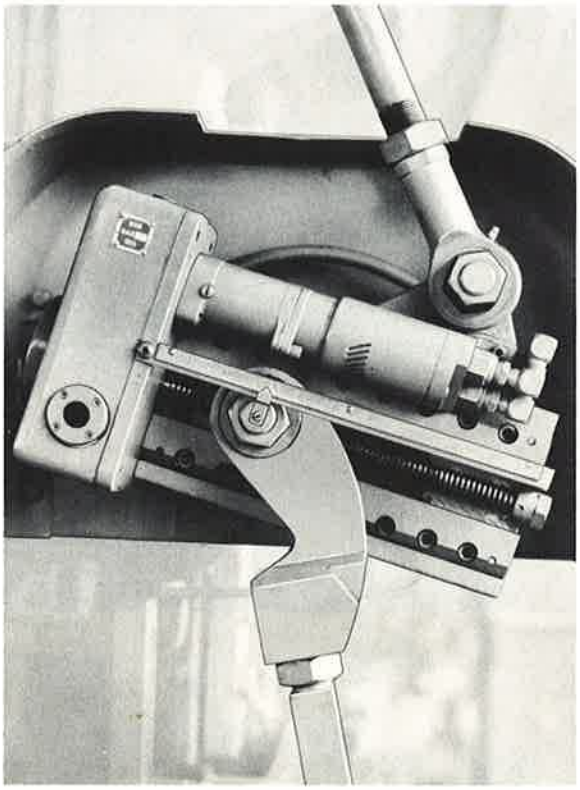
ROLL FEEDS

A full line of Bliss single and double roll feeds is offered as optional accessory equipment for BLISSTEEL Presses. Design of the standard presses is such that feeds can be added in the field and driven from the shaft extension provided for this purpose. Feeds are available with either fixed or adjustable feed height and with right or left hand drive.

Other optional stock-handling accessories include scrap cutters, end-of-stock detectors, buckle detectors, stock oilers (drip and spray types), stock guides, starting gages, roll releases, run-in devices, water- or fan-cooled feed brakes, and anti-back-up devices.

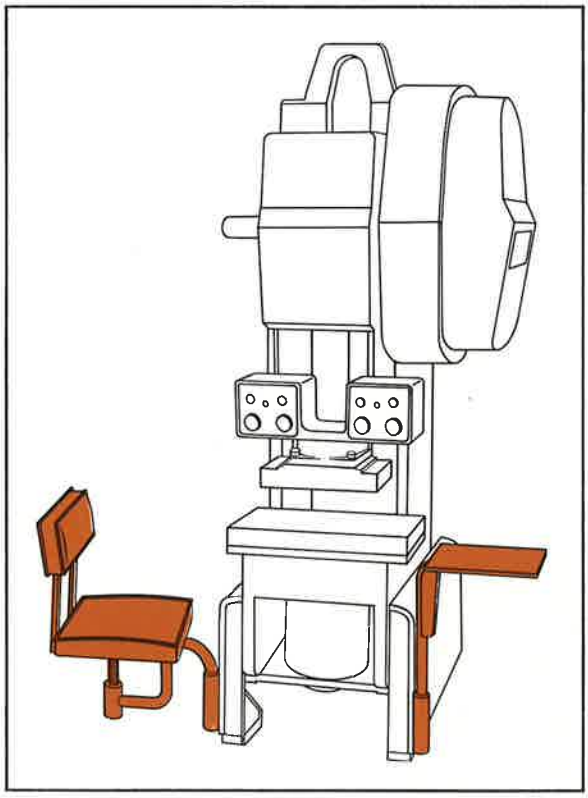
BLISS

BLISS Blissteel INCLINABLE PRESSES
OPTIONAL ACCESSORIES



Powered-in-motion feed length adjustment

Tedious manual feed settings are completely eliminated by the new Bliss power-in-motion feed adjustment. The device offers a new dimension in speed and economy with die setting time cut substantially. A direct readout scale provides instant approximate initial setting; then fine adjustments as small as .001″ are made while the press and feed are operating. Controls can be located on the press, at a remote station, or on a walk-around cable.



Among the many miscellaneous attachments available for the basic presses are a contour-styled, adjustable operator's seat and a removable, swingout utility table.

STANDARD & OPTIONAL EQUIPMENT

STANDARD

OPTIONAL

FRAME, BED, & BOLSTER

BLISSTEEL welded frame.
Geared presses machined for cushions.
Lifting lug on top of press.
Provision for inclining mechanism.
Plain steel bolster.

Special high frame (above 6" max. variable).
Inclining mechanism.
JIC bolster machining.
"UCO" cushions.
Die lights.
Cam-operated blow-off valve.

SLIDE & CONNECTION

Interchangeable slide flange.
Barrel adjustment, bronze ball joint seat.
Positive slide adjustment lock.
Six point gibbing, factory set.
Provision for knockout (crossbar).
JIC stem hole and corner mounting holes in plain flanged slide.
Counterbalance on slide, 75 and 110 ton; provision for counterbalance on smaller sizes.

Various slide flange options.
Power slide adjustment.
Readout shutheight indicator.
Knockout kits – bar or cam.
Adjustable top-stop limit switch.
Counterbalance 22 through 60 ton sizes
Stroke lengths other than standard.
Adjustable stroke device.
Timed inching device.
Receptacle for detector outlet.
Production counter.

CLUTCH & DRIVE

BLISS air friction disc clutch without unsticker.
Spring set independent disc brake.
Heat treated eccentric drive shaft.
Aluminum sleeve on main and connection bearings.
Tapered roller bearings in flywheel and/or gear.
Provision for operator's safety gear attachment.
Feed shaft extension.
Guards on flywheel, gear, clutch, V-belts, motor sheave, limit switch drive and connections.
Republic air manifolds for pneumatic controls.

Unsticker.
Speeds other than standard.
Variable drives.
High speed limit switch for speeds in 225-700 SPM range.
Dual clutch valve.
Herringbone gears.
Flywheel brake (manual or interlocked).
Swivel run button station.
Single trip foot switch (blue).
Continuous foot switch (red).
Counterweighting of shaft.

LUBRICATION

BLISS automatic recirculating oil system.

Monitor for lube operation.
Oil tight gear guards for gears running in oil.

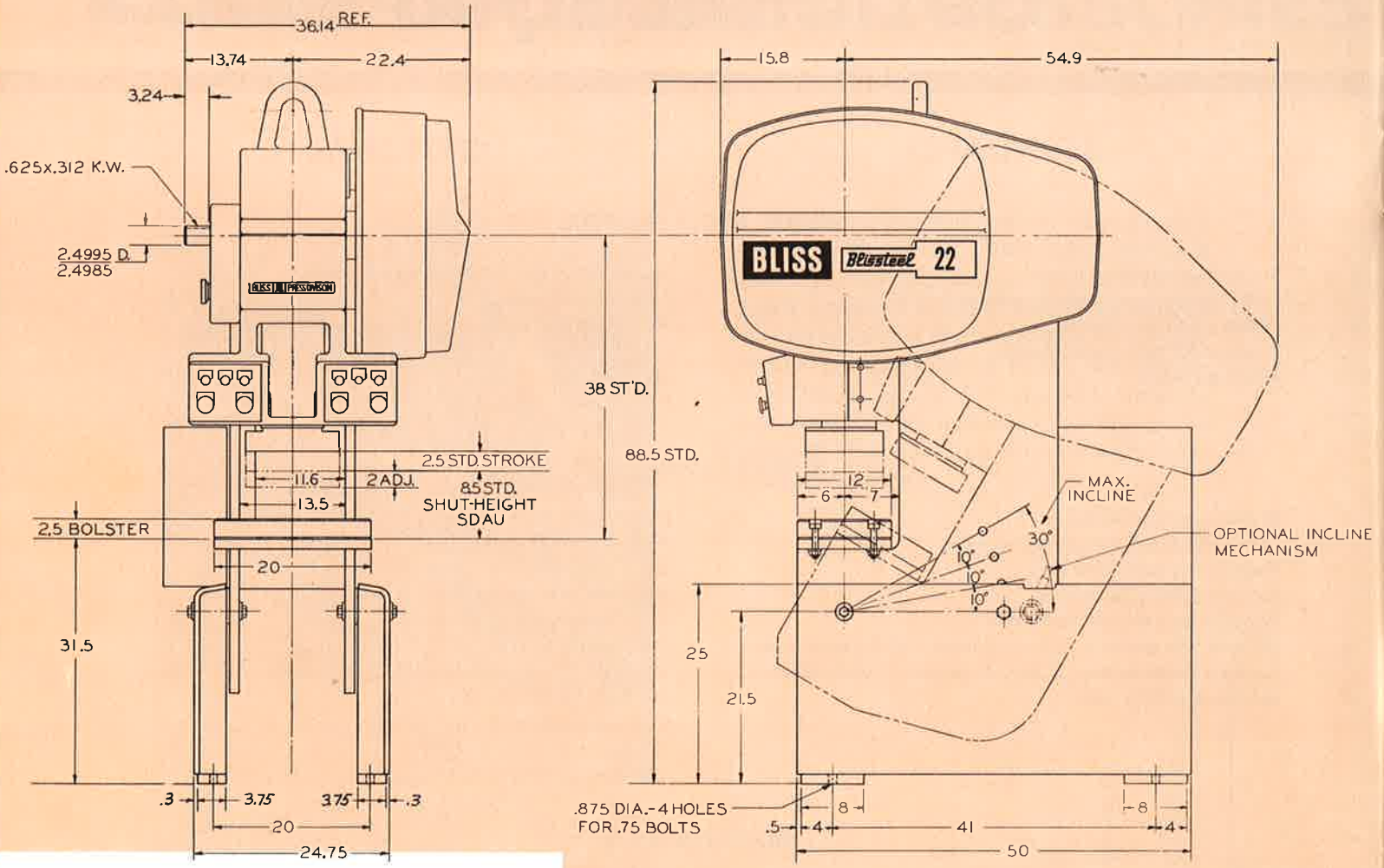
MISCELLANEOUS

Paint: Bliss sandalwood.
Selected wrenches and tools.

Special paint colors and finishes.
Complete set of wrenches and tools.
Adjustable operator's seat.
Removable utility table.
Console for electrical components.
Feed devices.

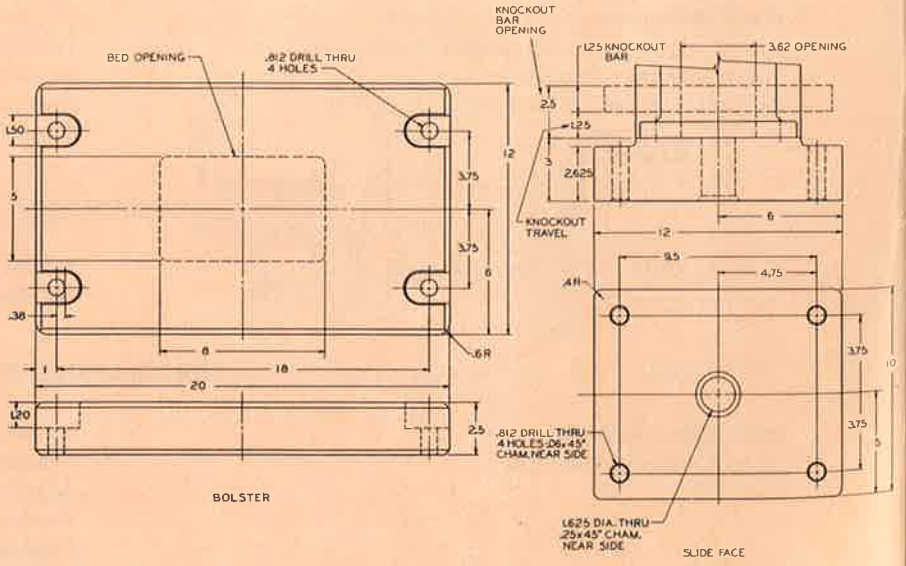
BLISS

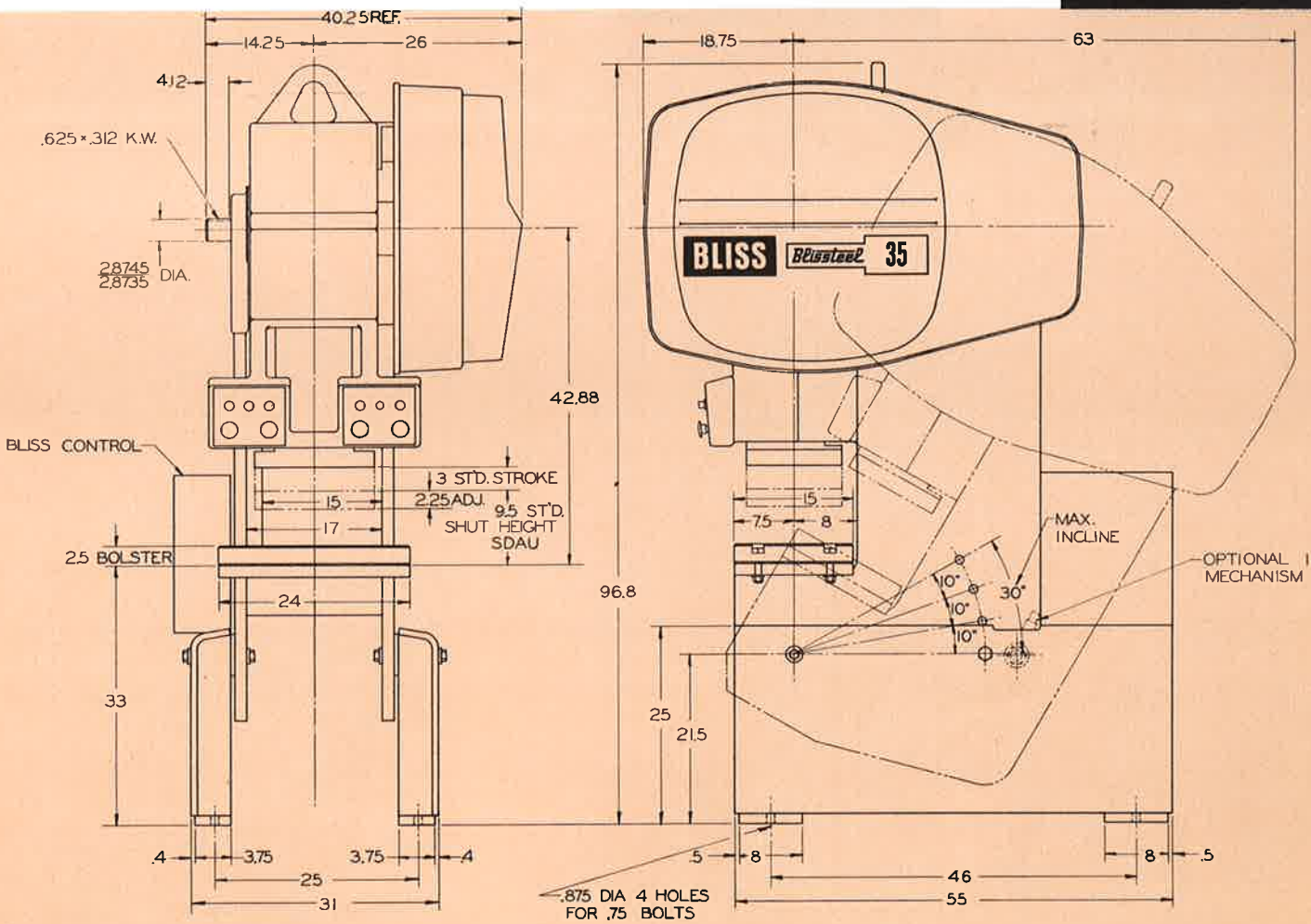
Blissteel 22

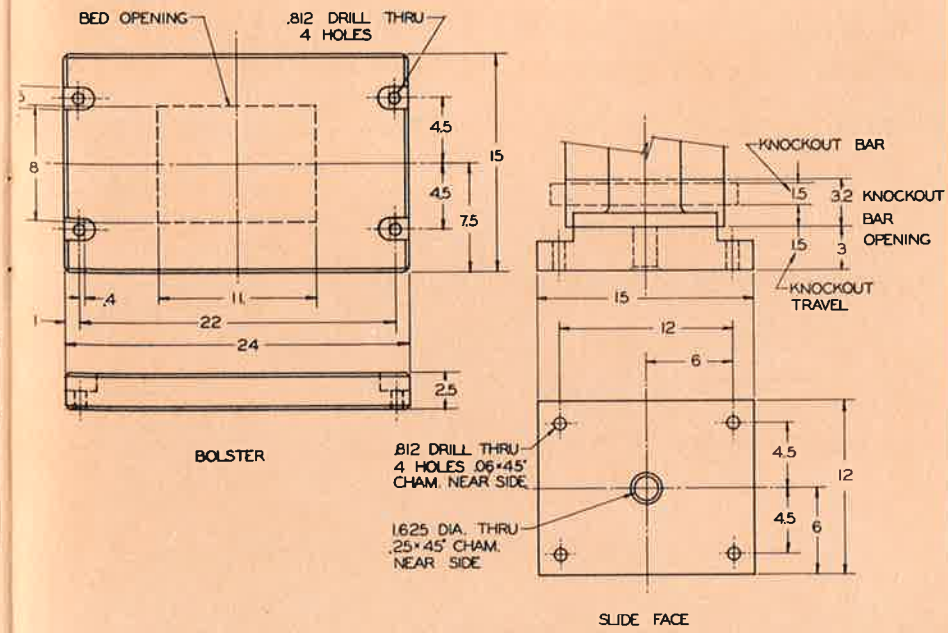


SPECIFICATIONS

Capacity		22 Ton @ 1/32" Above Bottom
Diameter of Main Bearing	ins.	2.75
of Standard Eccentric	ins.	8
Stroke — Standard to Maximum	ins.	2.5 — 4
Shut Height — SDAU — Standard Stroke		
Standard Frame	ins.	8.5
High Frame	ins.	To 6 Add'l.
Bolster Area x Thickness	ins.	20 x 12 x 2.5
Slide Area	ins.	12 x 10
Slide Adjustment	ins.	2
Bed Opening	ins.	8 x 5
Depth of Throat	ins.	7
Opening in Back (to clear)	ins.	11
Strokes per Minute		
Standard	spm.	150
Maximum (Standard Stroke)	spm.	290
Motor HP and RPM		2 — 1200



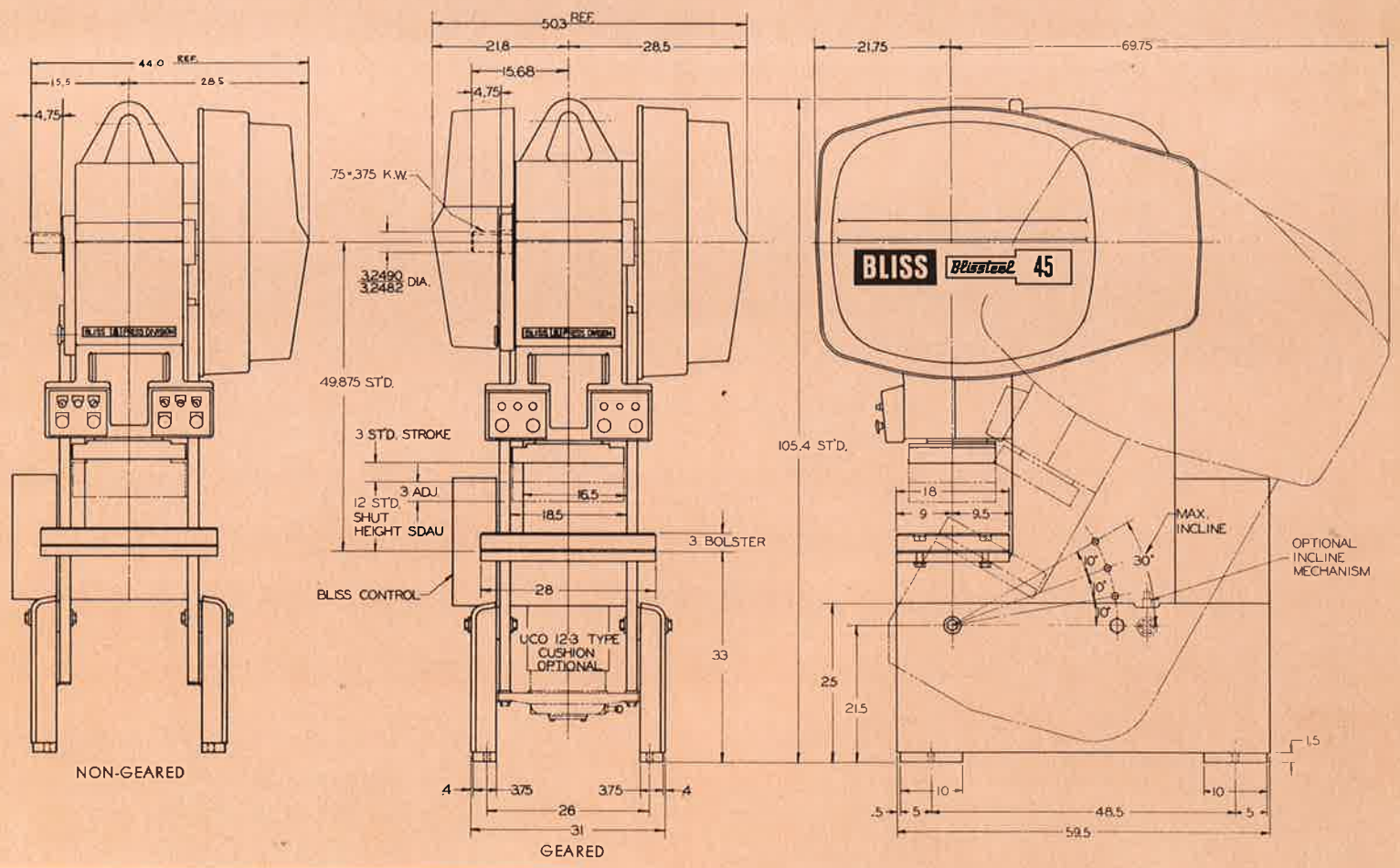




SPECIFICATIONS

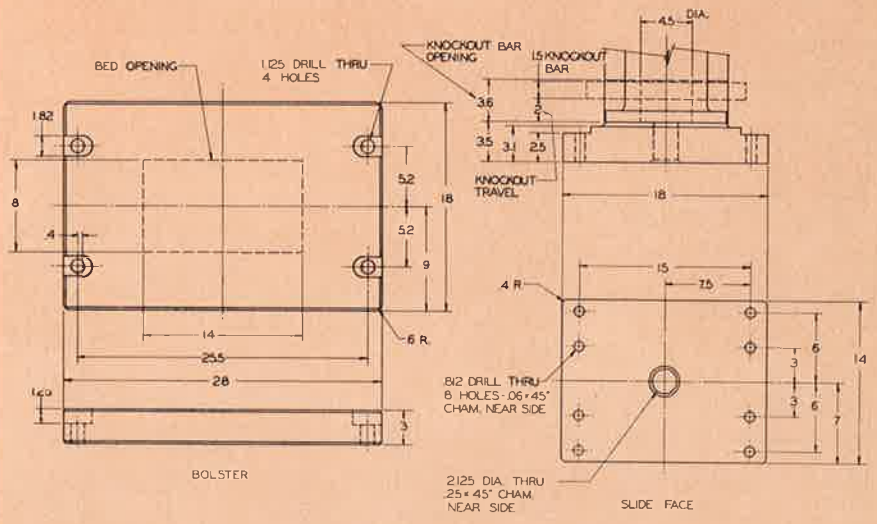
Capacity		35 Ton @ 1/32" Above Bottom
Diameter of Main Bearing	ins.	3
of Standard Eccentric	ins.	9
Stroke — Standard to Maximum	ins.	3-5
Shut Height — SDAU — Standard Stroke		
Standard Frame	ins.	9.5
High Frame	ins.	To 6 Add'l.
Bolster Area x Thickness	ins.	24 x 15 x 2.5
Slide Area	ins.	15 x 12
Slide Adjustment	ins.	2.25
Bed Opening	ins.	11 x 8
Depth of Throat	ins.	8
Opening in Back (to clear)	ins.	15
Strokes per Minute		
Standard	spm.	120
Maximum (Standard Stroke)	spm.	240
Motor HP and RPM		3 — 1200

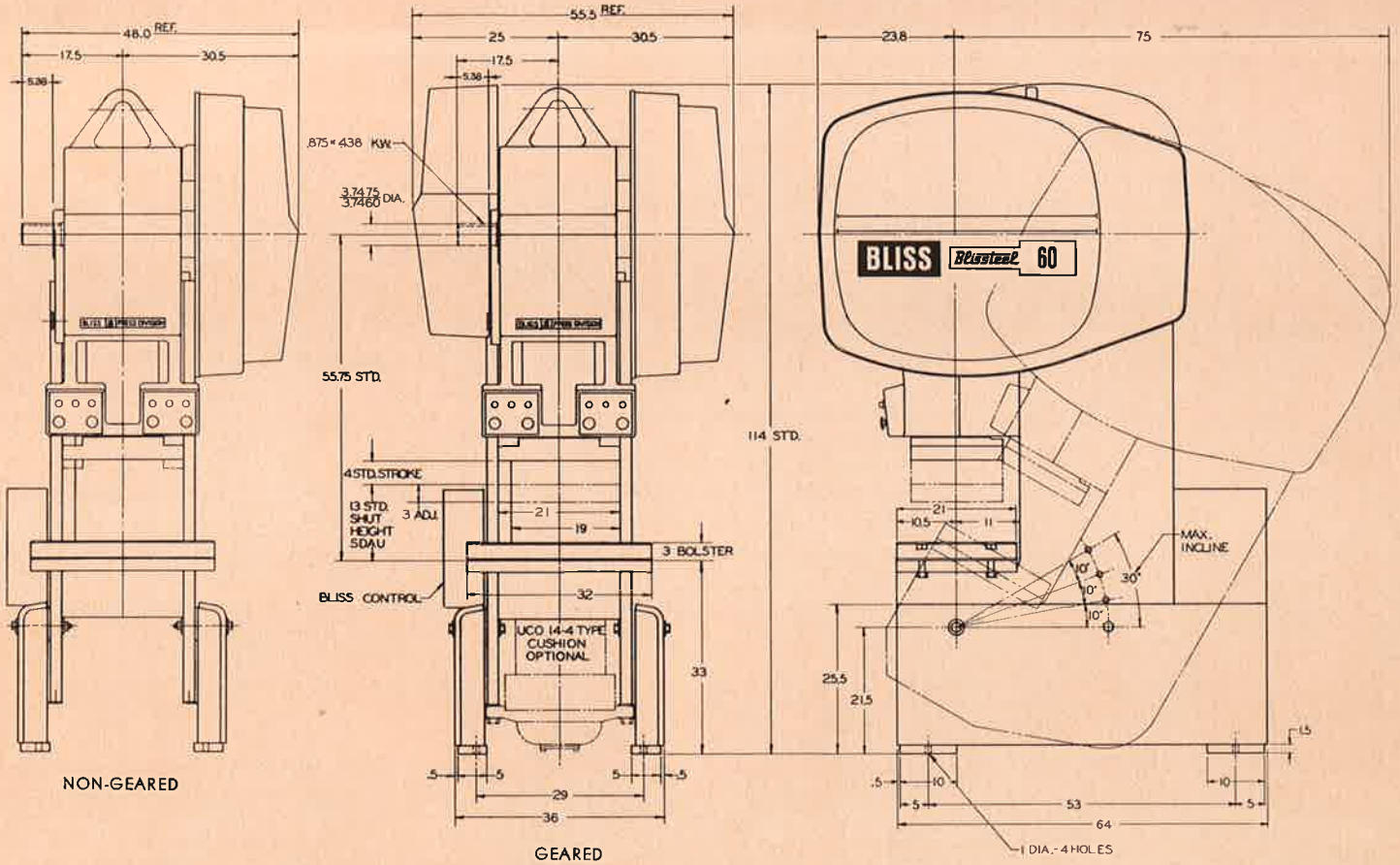
Blissteel 45

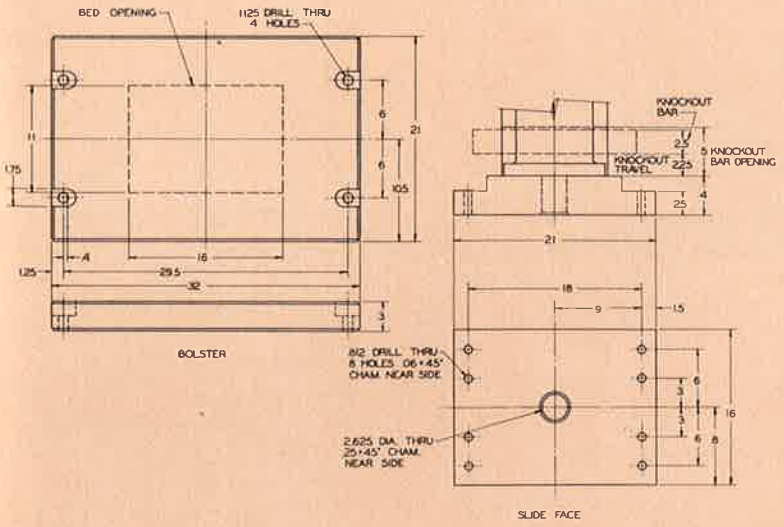


SPECIFICATIONS

Capacity	Tons	45
Rated distance from bottom (geared)	ins.	1/4
Rated distance from bottom (non-geared)	ins.	1/16
Diameter of Main Bearing	ins.	3.5
of Standard Eccentric	ins.	9
Stroke — Standard to Maximum	ins.	3-6
Shut Height — SDAU — Standard Stroke		
Standard Frame	ins.	12
High Frame	ins.	To 6 Add'l.
Bolster Area x Thickness	ins.	28 x 18 x 3
Slide Area	ins.	18 x 14
Slide Adjustment	ins.	3
Bed Opening	ins.	14 x 8
Depth of Throat	ins.	9.5
Opening in Back (to clear)	ins.	16.5
Strokes per Minute		
Non-geared		
Standard	spm.	110
Maximum (standard stroke)	spm.	220
Geared		
Standard	spm.	55
Maximum (any stroke)	spm.	110
Motor HP and RPM		
Non-geared		5 — 900
Geared		5 — 1800
Standard Cushion — Geared Press Only		UCO-12-3
Cushion capacity at 100 psi air pressure	Tons	5.6



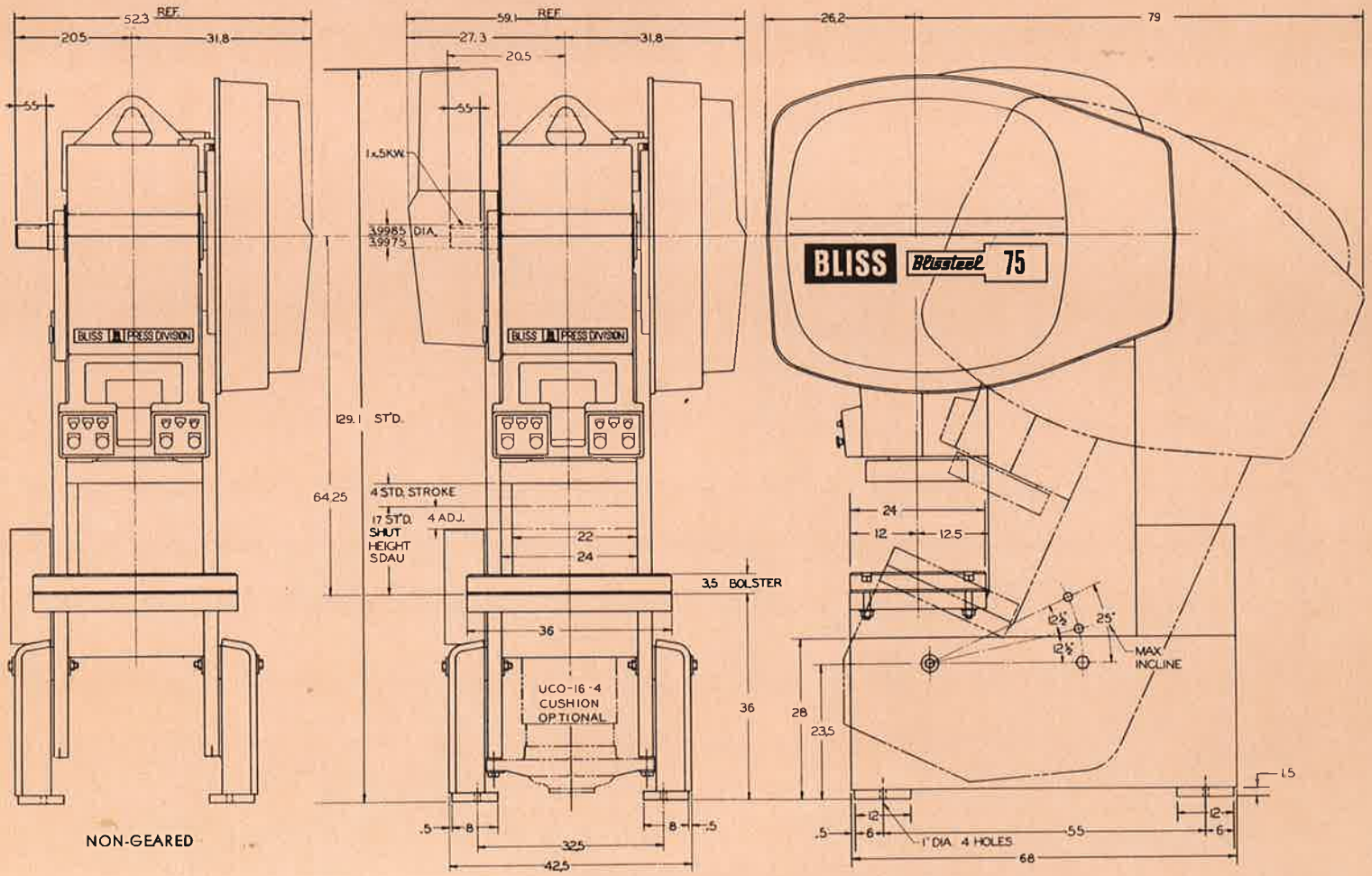




SPECIFICATIONS

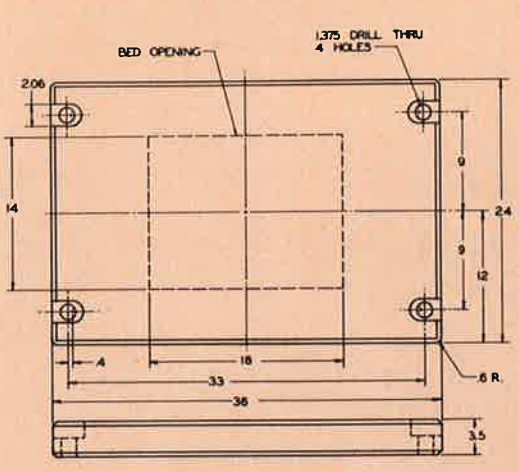
Capacity	Tons	60
Rated distance from bottom (geared)	ins.	1/4
Rated distance from bottom (non-geared)	ins.	1/16
Diameter of Main Bearing	ins.	4
of Standard Eccentric	ins.	10
Stroke — Standard to Maximum	ins.	4-7
Shut Height — SDAU — Standard Stroke		
Standard Frame	ins.	13
High Frame	ins.	To 6 Add'l.
Bolster Area x Thickness	ins.	32 x 21 x 3
Slide Area	ins.	21 x 16
Slide Adjustment	ins.	3
Bed Opening	ins.	16 x 11
Opening in Back (to clear)	ins.	19
Strokes per Minute		
Non-geared		
Standard	spm.	100
Maximum (Standard Stroke)	spm.	200
Geared		
Standard	spm.	50
Maximum (Standard Stroke)	spm.	100
Motor HP and RPM		
Non-geared		5 — 900
Geared		5 — 1800
Standard Cushion — Geared Press Only		UCO-14-4
Cushion capacity at 100 psi air pressure	Tons	7.7

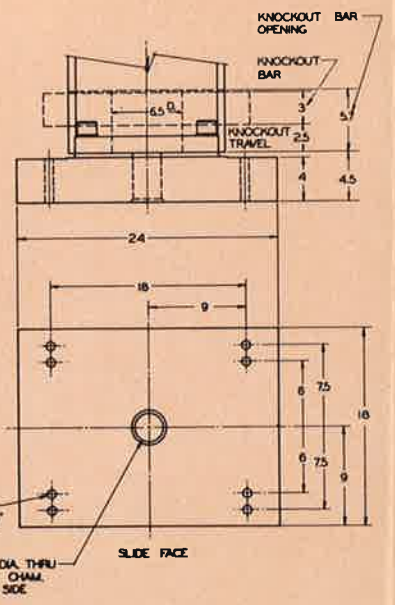
Blissteel 75

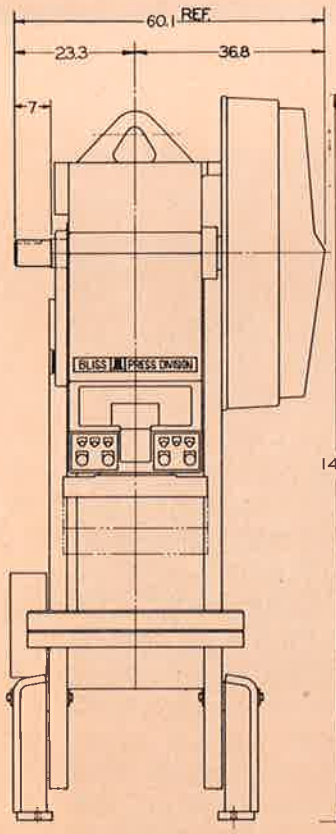


SPECIFICATIONS

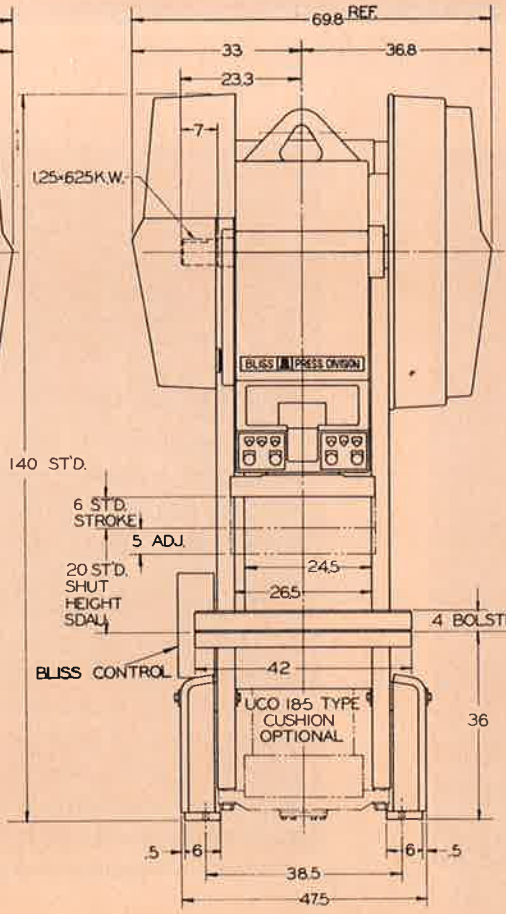
Capacity	tons	75
Rated Distance from bottom geared	ins.	1/4
Rated Distance from bottom non-geared	ins.	1/16
Diameter of Main Bearing	ins.	4.5
of Standard Eccentric	ins.	10
Stroke — Standard to Maximum	ins.	4–8
Shut Height — SDAU — Standard Stroke		
Standard Frame	ins.	17
High Frame	ins.	To 6 Addl.
Bolster Area x Thickness	ins.	36 x 24 x 3.5
Slide Area	ins.	24 x 18
Slide Adjustment	ins.	4
Bed Opening	ins.	18 x 14
Depth of Throat	ins.	12.5
Opening in Back (To Clear)	ins.	22
Strokes per Minute		
Non-geared		
Standard	spm.	100
Maximum (Standard Stroke)	spm.	200
Geared		
Standard	spm.	50
Maximum (Standard Stroke)	spm.	100
Motor HP and RPM		7.5 — 1800
Standard Cushion — Geared press only		UCO-16-4
Cushion Capacity at 100 psi air pressure	tons	10



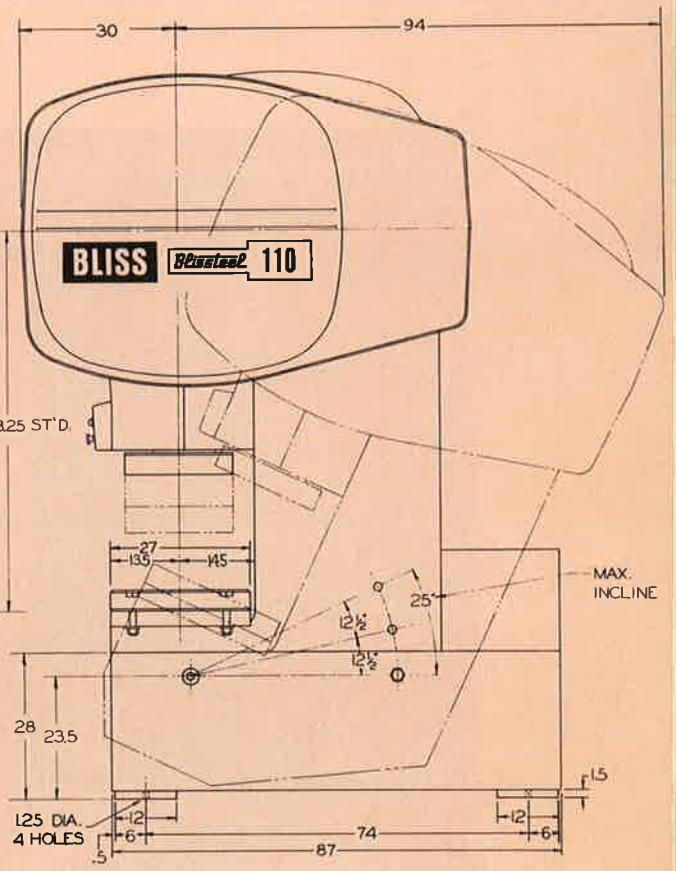


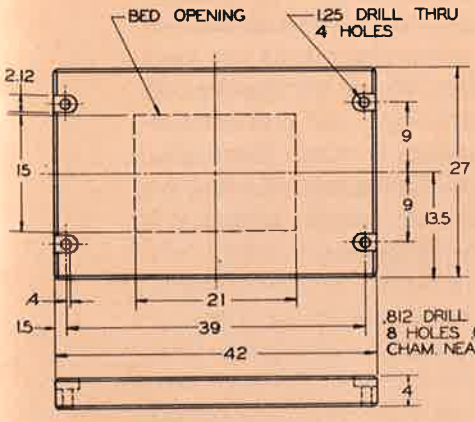


NON-GEARED

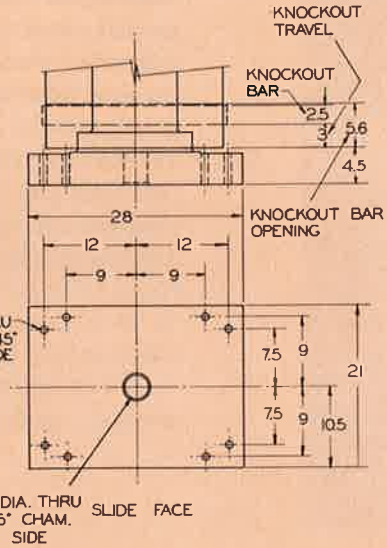


GEARED





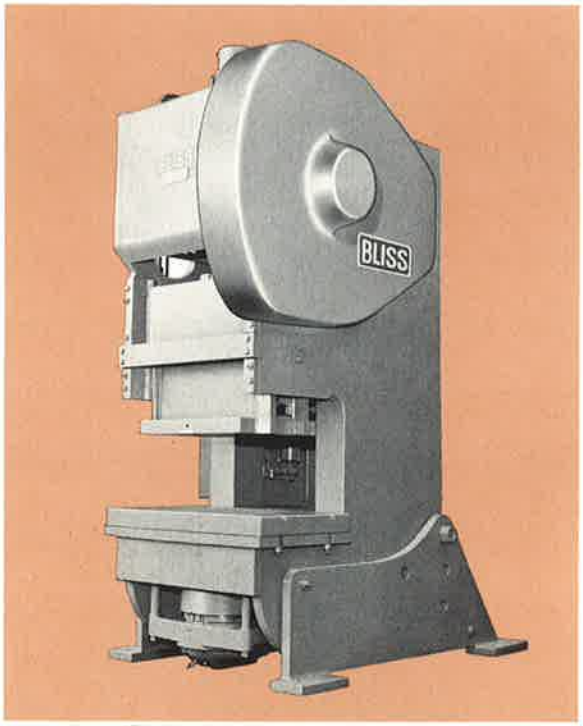
BOLSTER



SPECIFICATIONS

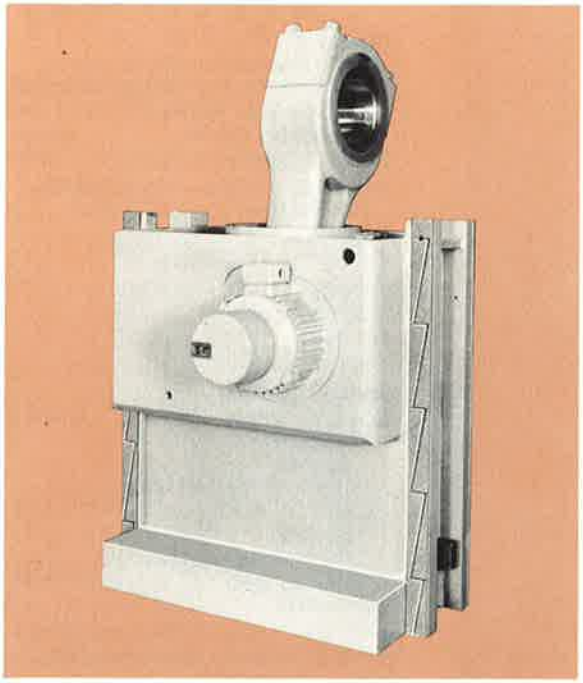
Capacity	Tons	110
Rated distance from bottom (geared)	ins.	1/4
Rated distance from bottom (non-geared)	ins.	1/16
Diameter of Main Bearing	ins.	5.5
of Standard Eccentric	ins.	13.5
Stroke — Standard to Maximum	ins.	6-10
Shut Height — SDAU — Standard Stroke		
Standard Frame	ins.	20
High Frame	ins.	To 6 Add'l.
Bolster Area x Thickness	ins.	42 x 27 x 4
Slide Area	ins.	28 x 21
Slide Adjustment	ins.	5
Bed Opening	ins.	21 x 15
Depth of Throat	ins.	14.5
Opening in Back (to clear)	ins.	24.5
Strokes per Minute		
Non-geared		
Standard	spm.	90
Maximum (standard stroke)	spm.	180
Geared		
Standard	spm.	45
Maximum (any stroke)	spm.	90
Motor HP and RPM		
Non-geared		10 — 900
Geared		10 — 1800
Standard Cushion — Geared Press Only		UCO-18-5
Cushion capacity at 100 psi air pressure	Tons	12.5

BLISS "C" SERIES INCLINABLE PRESSES—150, 200, 250 TONS
WELDED STEEL FRAME



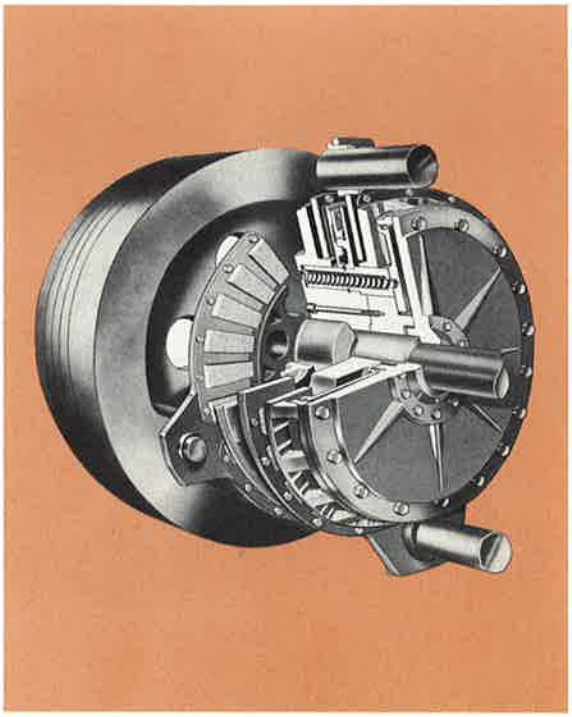
DESIGN FEATURES

With one exception, all these large "C" Series Presses are standard in geared drive only. The standard C-150 is available with either geared or non-geared drive. Type "CKU" clutch, crankshaft-mounted, is standard on the non-geared C-150 and is available on geared presses where the application dictates. All others are regularly equipped with the Type "AK" Clutch, driveshaft-mounted. Standard presses have automatic lubrication timed to the press cycle. A recirculating oil system is available as an option. Other options include complete lines of cushions, roll feeds, and feed accessories and an inclining mechanism with recommended power adjustment.



BARREL-TYPE SLIDE ADJUSTMENT

The barrel-type slide adjustment with wrist-pin connection is standard on the larger inclinables. Like the similar connections used on large straight side presses, these adjustments are equipped with electric motor and brake to handle the large slide masses involved. Removable, 45° front gibs and bronze liners on the slide are standard. Design is such that the slide face is entirely within the working area.

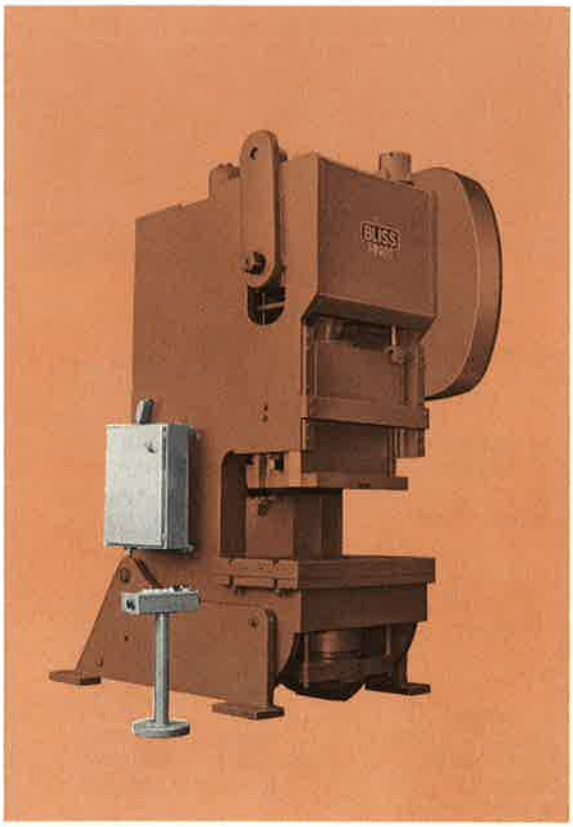


TYPE "AK" ADJUSTABLE DISC AIR FRICTION CLUTCH AND BRAKE

This clutch design owes its outstanding record to a number of service-proved features. Driving disc moves only a fraction of an inch between full engagement and full brake; the action is extremely fast. Since clutch and brake act as a single unit, overlapping engagement is impossible. Clutch and brake discs "float" in their mountings, aligning themselves automatically and eliminating the wear normally caused by lateral movement. Plates are arranged to create a centrifugal blower effect, directing cool air onto all hot surfaces. Clutch plates can be pulled and replaced without removing the clutch assembly from the shaft and without disassembling the press.

AIR COUNTERBALANCE

Provision of air cylinders to counterbalance the slides of these large inclinables is standard. Cylinders are located in diagonal corners.

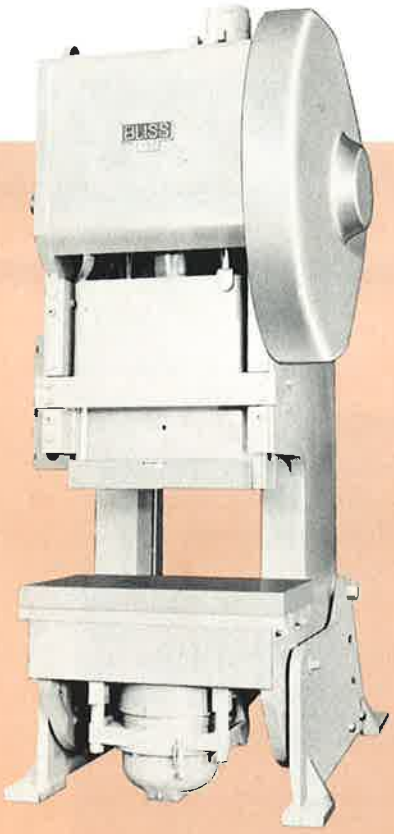


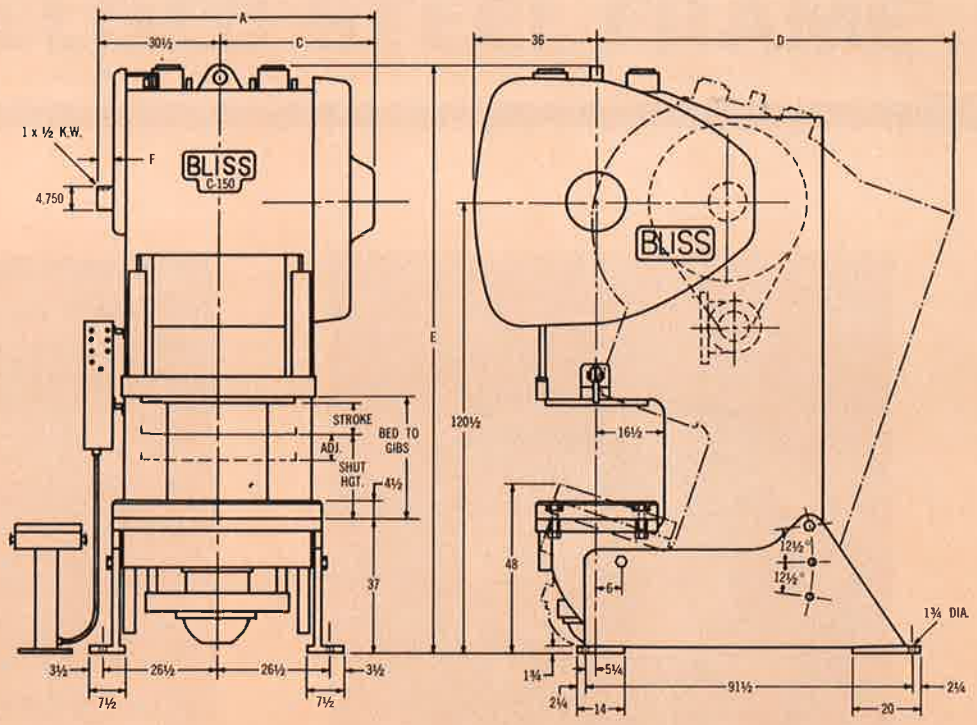
CONTROLS

Control functions and arrangement of terminal control hardware provide a wide range of options. Modular design of the control subassemblies permits tailoring a system to suit individual user requirements. Location of operator run-button station on a pedestal as shown is only one of several possible arrangements.

BLISS

C-150 150 TONS





SPECIFICATIONS

Rated Distance from Bottom		
Non-geared	ins.	1/16
Geared	ins.	¼
Crankshaft		
Diameter at main bearing	ins.	6½
Diameter at crankpin	ins.	9
Bed to Gibs	ins.	31½
Shutheight—Standard Body*		
4″ stroke	ins.	24
5″ stroke	ins.	23½
6″ stroke	ins.	23
7″ stroke	ins.	22½
8″ stroke (standard)	ins.	22**
9″ stroke	ins.	21
10″ stroke	ins.	20
11″ stroke	ins.	19
12″ stroke (maximum)	ins.	18
Optional Flanged Slide Area	ins.	included
Reduction to Shutheight	ins.	included
Strokes per Minute		
Non-geared press		
Standard		70
Maximum—(standard stroke)		90
Minimum—(for intermittent stroking only)		65
Geared Press		
Standard		37
Maximum—(any stroke)		40
Minimum—(for intermittent stroking only)		30
Bolster Area and Thickness	ins.	50 x 30 x 4½
Slide Area	ins.	34 x 24
Adjustment of Slide	ins.	4½
Stemhole in Slide dia. x depth	ins.	3⅜ x 3
Standard Cushion—Geared press only		UCC 18-16-4***
Cushion capacity at 100 psi air pressure	tons	22.5
Motor required	hp	15
Speed		
Non-geared press	rpm	900
Geared press	rpm	1800
Weight, non-geared press, approx.	lbs.	38,000
Weight, geared press, approx.	lbs.	41,000

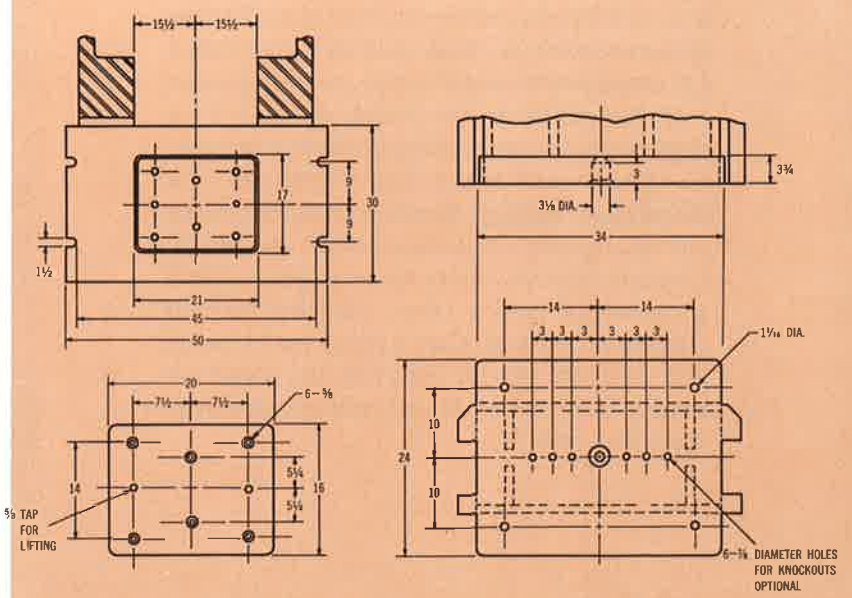
*Special frame available for bed to gibs up to 15″ over standard

**Standard shutheight

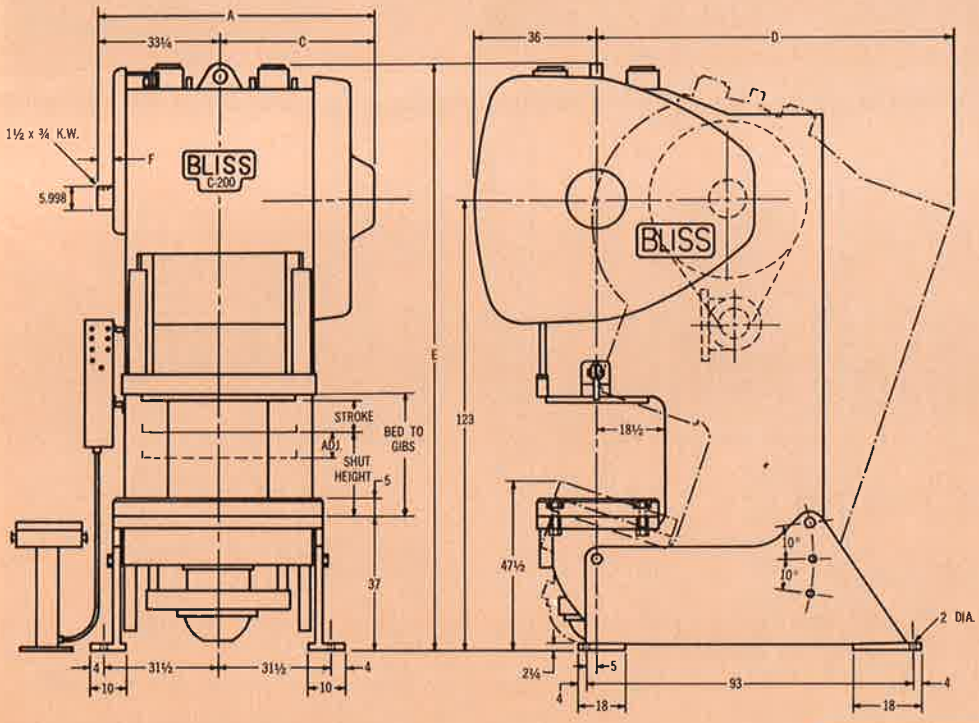
***Other strokes available at additional cost

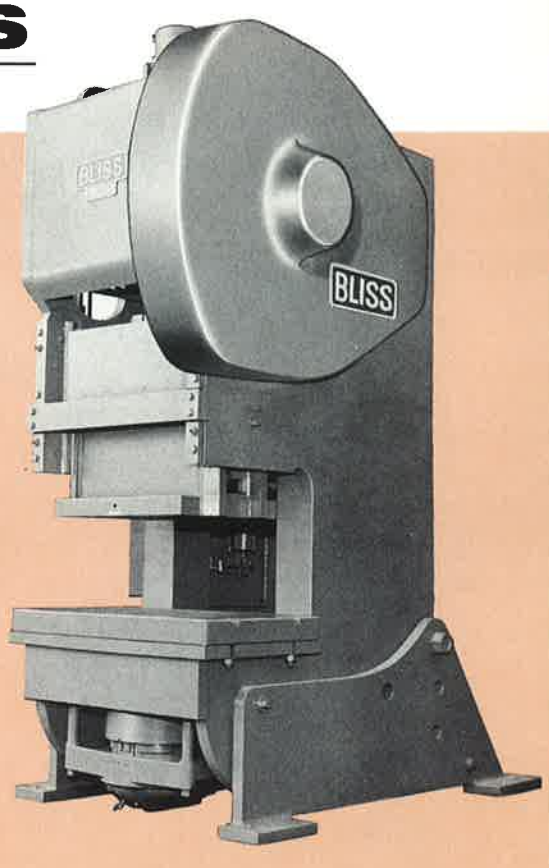
DIMENSIONS

DRIVE	CLUTCH	A	C	D	E	F
Non-Geared	CKU	78½	48	96	156½	5 5/16
Geared	AK	70	39½	102	154½	5 5/16
	CKU	84½	54	100	165½	5 5/16



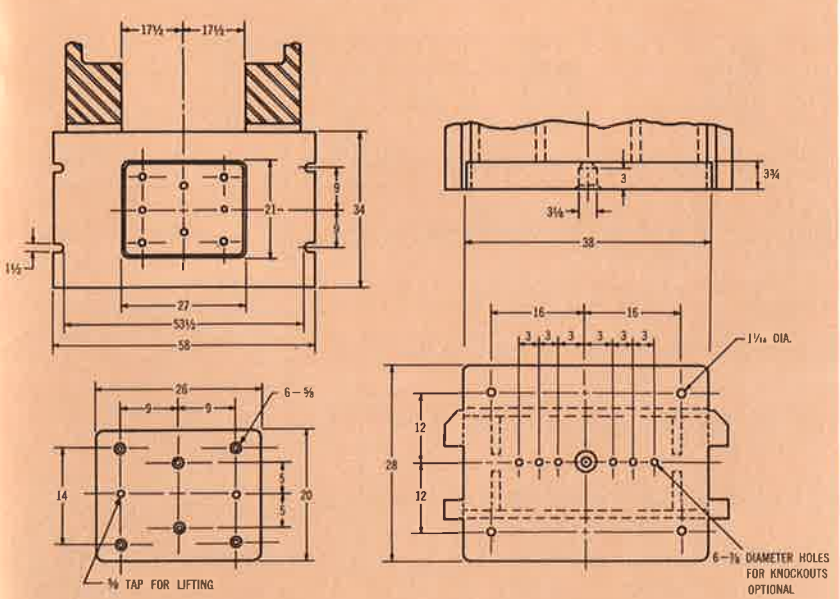
C-200 200 TONS





DIMENSIONS

DRIVE	CLUTCH	A	C	D	E	F
Geared	AK	77½	44¼	102	161¼	5¼
	CKU	92¾	59¼	100	166	5¼



SPECIFICATIONS

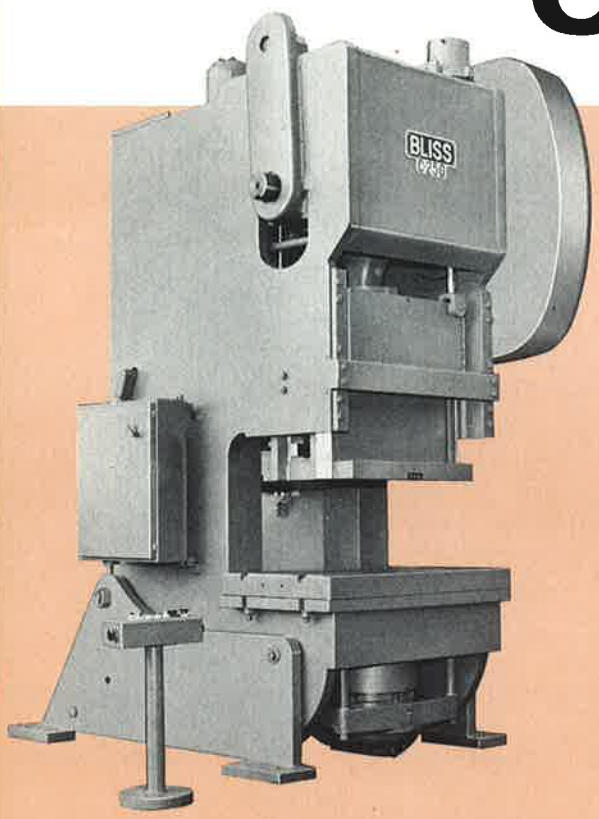
Rated Distance from Bottom	
Geared ..... ins.	¼
Crankshaft	
Diameter at main bearing ..... ins.	7
Diameter at crankpin ..... ins.	10½
Bed to Gibs ..... ins.	33½
Shutheight—Standard Body*	
4″ stroke ..... ins.	26
5″ stroke ..... ins.	25½
6″ stroke ..... ins.	25
7″ stroke ..... ins.	24½
8″ stroke (standard) ..... ins.	24**
9″ stroke ..... ins.	23
10″ stroke ..... ins.	22
11″ stroke ..... ins.	21
12″ stroke (maximum) ..... ins.	20
Optional Flanged Slide Area ..... ins.	included
Reduction to Shutheight ..... ins.	included
Strokes per Minute	
Geared Press	
Standard	35
Maximum—(any stroke)	38
Minimum—(for intermittent stroking only)	30
Bolster Area and Thickness ..... ins.	58 x 34 x 5
Slide Area ..... ins.	38 x 28
Adjustment of Slide ..... ins.	4½
Stemhole in Slide dia. x depth ..... ins.	3⅛ x 3
Standard Cushion—Geared press only	UCC 20-18-4***
Cushion capacity at 100 psi air pressure .tons	28.4
Motor required ..... hp	20
Speed	
Geared press ..... rpm	1800
Weight, geared press, approx.	
With air clutch ..... lbs.	55,000

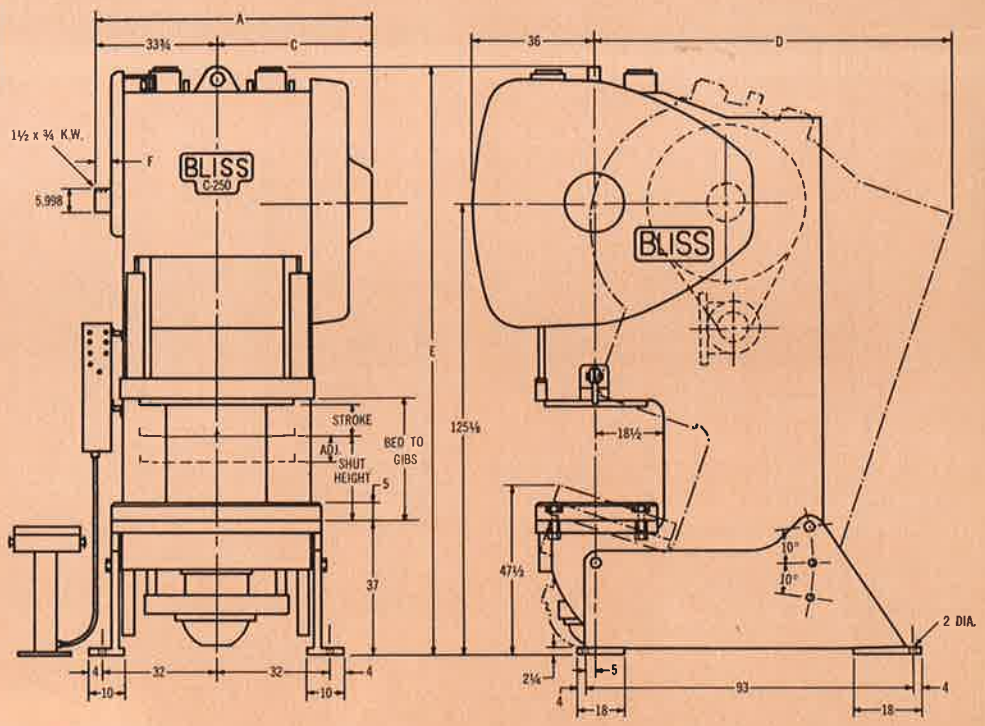
*Special frame available for bed to gibs up to 15″ over standard

**Standard shutheight

***Other strokes available at additional cost

C-250 250 TONS





SPECIFICATIONS

Rated Distance from Bottom Geared	ins.	¼
Crankshaft		
Diameter at main bearing	ins.	7½
Diameter at crankpin	ins.	11¼
Bed to Gibs	ins.	33½
Shutheight—Standard Body*		
4″ stroke	ins.	26
5″ stroke	ins.	25½
6″ stroke	ins.	25
7″ stroke	ins.	24½
8″ stroke (standard)	ins.	24**
9″ stroke	ins.	23
10″ stroke	ins.	22
11″ stroke	ins.	21
12″ stroke (maximum)	ins.	20
Optional Flanged Slide Area	ins.	included
Reduction to Shutheight	ins.	included
Strokes per Minute		
Geared Press		
Standard		35
Maximum—(any stroke)		38
Minimum—(for intermittent stroking only)		30
Bolster Area and Thickness	ins.	58 x 34 x 5
Slide Area	ins.	39 x 28
Adjustment of Slide	ins.	4½
Stemhole in Slide dia. x depth	ins.	3⅛ x 3
Standard Cushion—Geared press only		UCC 20-18-4***
Cushion capacity at 100 psi air pressure	tons	28.4
Motor required	hp	20
Speed		
Geared press	rpm	1800
Weight, geared press, approx.		
With air clutch	lbs.	58,000

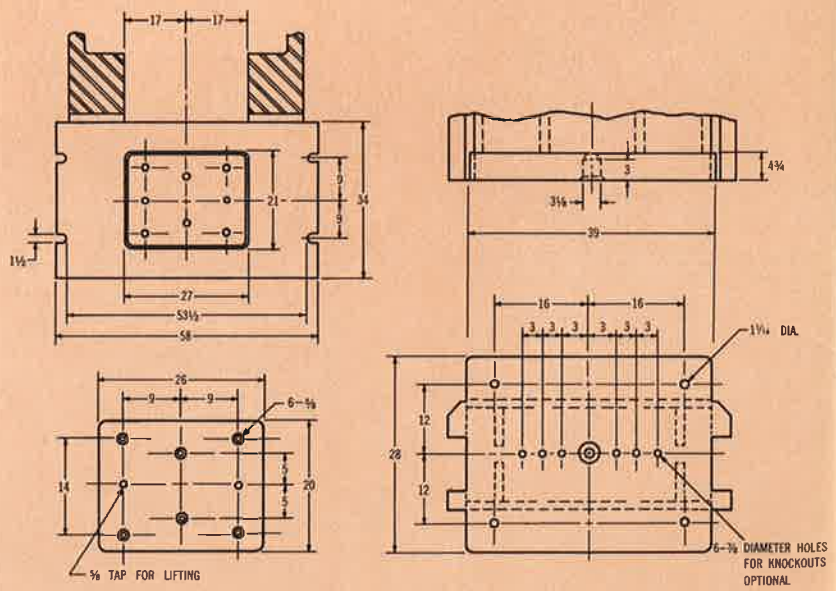
*Special frame available for bed to gibs up to 15″ over standard

**Standard shutheight

***Other strokes available at additional cost

DIMENSIONS

DRIVE	CLUTCH	A	C	D	E	F
Geared	AK	78¾	45	104	163	5¼
	CKU	93¼	59½	102	170	5¼



BLISS

STROKE AND SHUTHEIGHT TABLE

BLISSTEEL 22						Standard			
Stroke	½	¾	1	1½	2	2½	3	3½	4
Shutheight on Bed SDAU	10.50	10.38	10.25	10.00	9.75	8.50	8.25	8.00	7.75
Shutheight on Bolster SDAU	8.00	7.88	7.75	7.50	7.25	6.00	5.75	5.50	5.25

BLISSTEEL 35							Standard			
Stroke	½	¾	1	1½	2	2½	3	3½	4	5
Shutheight on Bed SDAU	11.75	11.62	11.50	11.25	11.00	9.75	9.50	9.25	9.00	7.50
Shutheight on Bolster SDAU	9.25	9.12	9.00	8.75	8.50	7.25	7.00	6.75	6.50	5.00

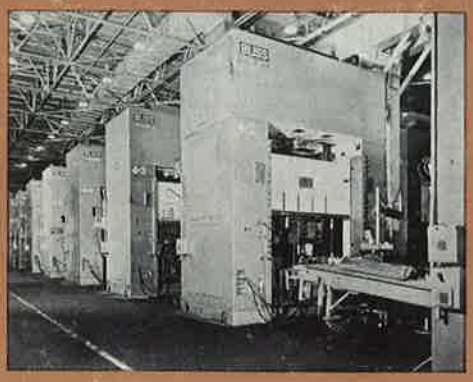
BLISSTEEL 45							Standard				
Stroke	½	¾	1	1½	2	2½	3	3½	4	5	6
Shutheight on Bed SDAU	14.25	14.13	14.00	13.75	13.50	12.25	12.00	11.75	11.50	10.00	9.50
Shutheight on Bolster SDAU	11.25	11.13	11.00	10.75	10.50	9.25	9.00	8.75	8.50	7.00	6.50

BLISSTEEL 60									Standard			
Stroke	½	¾	1	1½	2	2½	3	3½	4	5	6	7
Shutheight on Bed SDAU	15.75	15.62	15.50	15.25	15.00	13.75	13.50	13.25	13.00	11.50	11.00	9.50
Shutheight on Bolster SDAU	12.75	12.62	12.50	12.25	12.00	10.75	10.50	10.25	10.00	8.50	8.00	6.50

BLISSTEEL 75									Standard				
Stroke	½	¾	1	1½	2	2½	3	3½	4	5	6	7	8
Shutheight on Bed SDAU	19.75	19.62	19.50	19.25	19.00	17.75	17.50	17.25	17.00	15.50	15.00	13.50	13.00
Shutheight on Bolster SDAU	16.25	16.12	16.00	15.75	15.50	14.25	14.00	13.75	13.50	12.00	11.50	10.00	9.50

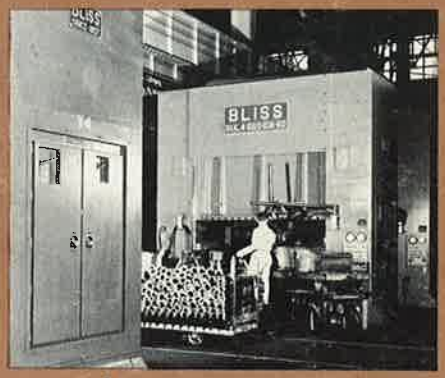
BLISSTEEL 110											Standard			
Stroke	½	¾	1	1½	2	2½	3	3½	4	5	6	7	8	10
Shutheight on Bed SDAU	24.75	24.62	24.50	24.25	24.00	22.75	22.50	22.25	22.00	20.50	20.00	18.50	18.00	16.00
Shutheight on Bolster SDAU	20.75	20.62	20.50	20.25	20.00	18.75	18.50	18.25	18.00	16.50	16.00	14.50	14.00	12.00

OTHER BLISS PRESSES

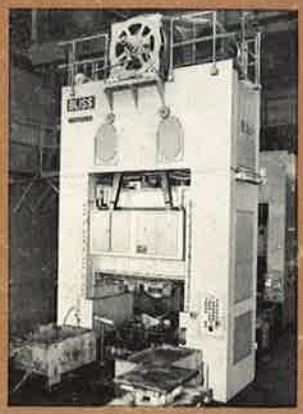


STRAIGHT SIDE ECCENTRIC PRESSES

HIGH PRODUCTION PRESSES

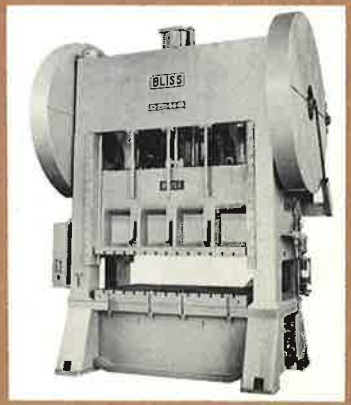


SINGLE AND MULTIPLE ACTION UNDER-DRIVEN PRESSES

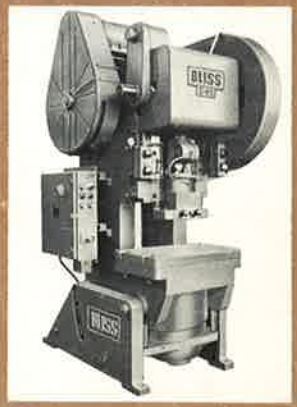


MULTIPLE ACTION TOP DRIVE PRESSES

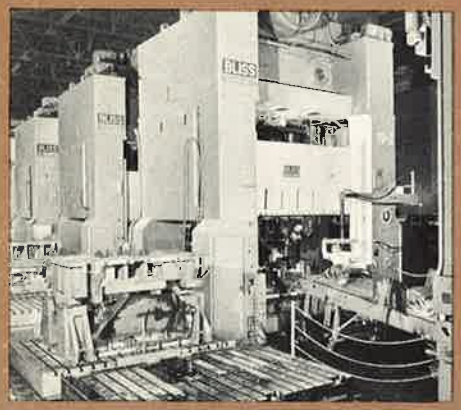
KNUCKLE JOINT PRESSES



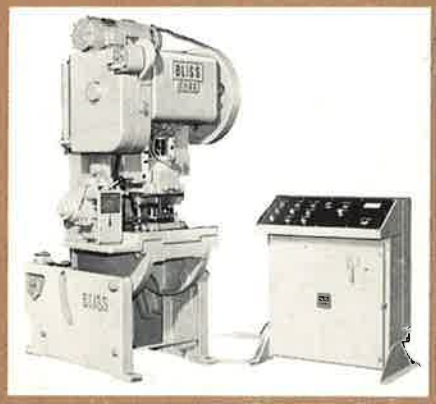
STRAIGHT SIDE CRANK-TYPE PRESSES



CAST FRAME INCLINABLE PRESSES



ROLLING BOLSTER PRESSES



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