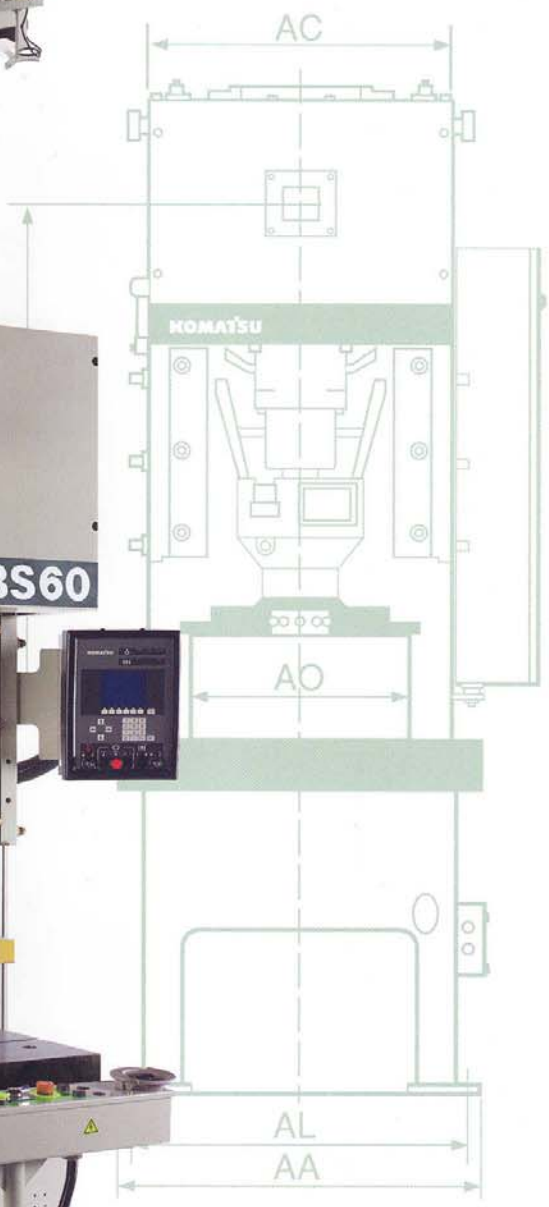
35 45 60

KOMATSU

HIGH PERFORMANCE SHOULD NOT BE OPTIONAL



Komatsu: A Heritage of Innovation

Technological innovations that increase capacity, productivity and performance have been the hallmarks of Komatsu Press Division since its inception more than 75 years ago. Over the years, Komatsu has demonstrated a commitment to respond to customer demands and originate technologies and systems to meet the needs of a global marketplace. Today, Komatsu continues to build on its tradition of engineering excellence to create equipment that satisfies the complex demands of a competitive, highly technical and complex metal stamping industry.

1924 **Komatsu leverages its technologically-innovative capabilities** for heavy equipment in the mining industry to create the Komatsu Press Division and introduces its first low-maintenance stamping press, featuring the durable clutch-brake unit.

1954 **Komatsu perfects its proprietary plunger guide system, which** produces 30 percent longer die life and improved part quality. The plunger guide eliminates virtually all lateral movement, allowing tighter gib tolerances and precision slide movement. This technology quickly becomes an industry standard.

1964 **Komatsu Press Division wins the Deming Prize for engineering** excellence, the first Japanese press manufacturer to receive this coveted engineering award. This acknowledgment strengthens Komatsu Press Division's position as worldwide industry leader.

1972 **Komatsu's Super-series of single point gap frame presses** brings product standardization to the industry with standard models, features and specifications for added value and performance.

1982 **In response to needs in the U.S. auto manufacturing market,** Komatsu develops fully-automatic transfer presses that deliver high-productivity features, such as fully-automated die change and the first servo-controlled transfer feeder.

1994 **High-strength, low-alloy carbon steel and other high-strength** metals replace traditional metals in production of common stamped parts. Realizing the limitations of traditional flywheel-driven powered presses in forming these materials, Komatsu launches a comprehensive development process to bring modern CNC servo technology into the stamping arena. Komatsu engineers build on years of experience in servo drive systems.

1998 **Komatsu introduces the world's first standard hybrid AC servo** press. Brilliantly combining the toggle link drive of forging press models with that of modern and efficient AC servo drive systems, the new "Free Motion" of the slide motion path brings together the productivity of a mechanical press with the motion control of a hydraulic press.

2001 **Komatsu demonstrates continued engineering excellence with a** series of single-point servo presses in standard models ranging from 35 to 200 metric tons as well as standard models in two-point and four-point straightside frames up to 2,500 tons—offering size and capacity that no one else can deliver. As a result of the worldwide acceptance of Komatsu AC servo presses, the company further expands its servo technology division.

2004 **Komatsu produces the world's first modular, servo-controlled,** multi-slide transfer press rated at 4,200 metric tons. The press features independent slide motion control for each of the seven slides.

2005 **Komatsu creates its Automation Technology Division to develop** new peripheral automation devices that enhance the technology and productivity advances of its AC servo presses. The division quickly brings new linear motor-controlled transfer feeders, high-speed tandem-line loader/unloader (H*TL) and fully programmable AC servo die cushion automation to market, making Komatsu the first to offer a fully-integrated AC servo technology system in support of customer needs.

2005 **Komatsu delivers its 1,000th AC servo press to the global market,** proof of the worldwide acceptance for the company's innovative technologies and products.

The OBS Gap Frame Press:
Designed for Superior Reliability and Consistency.

- Ideal for progressive or manual die operations
- Superior deflection characteristics
- Superior off-center load characteristics
- Increased bearing slide guiding area
- Faster stopping times with actual digital display
- Higher production rates in single stroke mode
- Higher counter balance capacity
- Improved part quality
- Increased die life

A Higher Level of Standard Equipment for Increased Performance

- Heavy plate, rigid frame construction
- U.S. standard bolster and slide machining
- Pneumatic counterbalance
- Single-piece, heavy duty cast steel slide
- Precision plunger guide design
- Push-button controlled, motorized slide adjustment
- Eccentric shaft main drive
- Precision oil-lubricated long 6-point gibs
- Hardened and ground helical gears
- High-efficiency AC inverter drive
- High-torque wet clutch and brake
- Quick-responding, dependable hydraulic overload protector
- Shock resistant, pendant-mounted control
- T-stand for easy set-up and operation
- 10 Job memory
- Safety block with interlock

The Komatsu Warranty

When a press is designed as a system, it should be expected to perform as a system without routine tear downs for wear items (the conventional "weak link" in other presses.) It's as simple as 1-2-3... Every Komatsu OBS press comes with a full 1-Year parts and labor warranty on everything that moves or glows—and an extended 2-Year parts warranty, and a 3-Year frame warranty! Unlike other manufacturers, there is no hourly limit—your press is guaranteed to perform 3 shifts a day, 7 days a week, 365 days a year. With Komatsu systems engineering it's possible to extract the full potential from your press, and the full revenue potential from every job.

Eccentric Shaft Main Drive

Provides high torsional rigidity and superior strength

Hydraulic Overload

Reliable and quick-responding (protection of press)

Single Piece Cast Steel Slide

No adapter plate required

Bolster and Slide Machining

U.S. Standard "T" Slots and pin holes in bolster

Prepared for Mechanical Knockout

T-Stand

All switches and push-bu necessary for ordinary p operation, including slide adjustment

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OBS

Komatsu OBS Series Gap Power Presses

Standard Features

1 Frame and Bolster

Engineered quality. While most gap presses are associated with a greater level of deflection, the Komatsu series breaks the stereotype by maintaining the lowest deflection available. No matter what size of job you spec with a Komatsu, there is no compromise to the characteristics of the frame or the accessibility to the bed area.

The highly rigid frame, slide and bolster combine to hold all deflection characteristics to a minimum, setting the new industry standard.

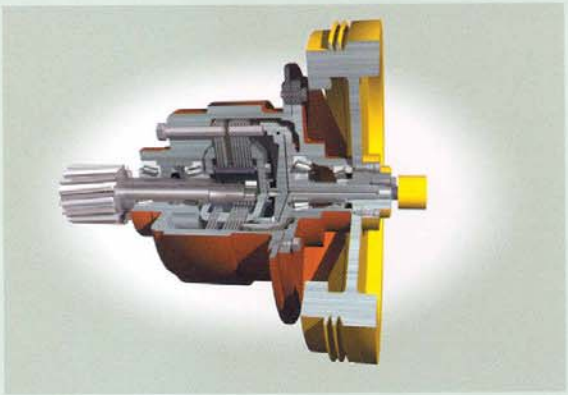
2 Main drive

Komatsu uses an eccentric shaft as the main drive shaft in this series of presses. Eccentric shafts assure minimal shaft deflection compared to traditional crankshaft designs.

Splines are used for all drive connections to assure smooth and even distribution of torque during operation. Isolated oil compartments provide continuous lubrication of major drive components and control thermal expansion of the frame.

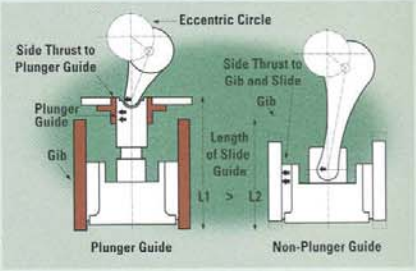
3 Clutch and Brake

Productivity and reliability. The wet, multiple disc clutch and brake provides higher single stroke operation rates throughput while providing quicker stopping time in all modes of operation. The unit is housed in a continuous-lube, separate oil bath from the main drive, providing superior heat dissipation capabilities. No maintenance operations are normally required, other than an annual fluid change.



4 Plunger Guide System

Designed for high precision and less die wear. Thrust load from eccentric motion is absorbed by the plunger guide system. The plunger guide is the primary guiding force, preventing side load on the gibs. A size-specific plunger guide is engineered for each different press model, providing maximum performance for each unit. Komatsu also employs full-length gibs that capture the entire length of the slide guide. Gib tolerances are set to Komatsu's tolerances of 0.0015" nom. per gib with oil (not grease) lubrication, allowing them to last up to 200 times longer than conventional gibs. Together, the plunger guide and gib surface area of the Komatsu OBS add up to 4-5 times the guiding surface area of our nearest competitors. Less routine gib maintenance, less die wear and higher part accuracy are the positive end result, which can translate into improved profits for you.

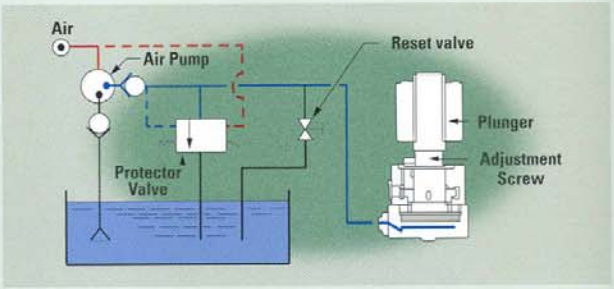


5 Heavy-duty slide construction

A heavy single-piece cast steel slide is used for increased rigidity. The slide construction is true box-type with narrow flanges and standard provisions for tooling attachment. A motorized slide adjustment with digital display is standard. The die height is displayed in metric units of 0.01mm for precise slide adjustment. The slide is guided primarily by the plunger guide mechanism along with full-length, six point gibs. The precision of the plunger guide and gibbing is a true advantage with tooling, allowing tight tolerances between the punch and die.

6 Hydraulic Overload Protector

Helps prevent damage to the press and dies. All Komatsu presses are equipped with a hydraulic overload protector, a standard feature that has been standard for decades helping to protect against damage to the press or die sets. If the rated load is exceeded, the press stops automatically. Since the hydraulic pressure can be released easily, operations can be resumed smoothly even if jamming occurs.



7 SIT II® - System Integrated Terminal

Advanced electronics technology provides user-friendly operation and outstanding reliability. The SIT II electronic press control unit is designed to provide the fastest, easiest, and most reliable control available for all press functions. Included as standard equipment on the Komatsu OBS press, SIT II incorporates all the latest thinking in press control unit design.

- All information necessary for press set-up, start-up, operation and diagnostics is available in one display, at the touch of a button.
- Language terminology and graphics are user-friendly, easily understood by the press operator in plain view in one central location on the digital display. Display also includes plain language description of fault messages.
- SIT II has the ability to integrate with current press room equipment, such as electronic coil feeds.
- Operator "T-stand" control interface houses all switches and push-buttons required for ordinary press set-up and operation, including a button for slide adjustment.
- Die Data Recording function can store and retrieve data for 10 dies, including cam and fault detection angle as well as production performance. Also includes digital display of "stored" press speed and actual press speed, plus crank angle.
- Alpha-numeric entry of die name and memo data for easy cataloging and referencing.

- Digital Total Counters
  1-production, re-settable
  1-lot (pre-set), re-settable
- 4 - Electronic rotary cams
- 1- Pneumatic air ejector with cam
- Mode Selections:(1) Off, (2) Inch, (3) Single Stroke, (4) Continuous
- Optional Modes:
  (1) Automatic Single Stroke,
  (2) Automatic Continuous

Simple guidance. SIT II displays operational procedure guidance for select press functions. Intuitive, user-friendly prompts guide press operators in a logical series of steps, for faster, more reliable press set up and operation.

Extensive use of electronics gives outstanding reliability.

- Solid-state control
- Integrated Circuits are used for all control circuits
- Cross-checking duplex circuits for clutch brake control are used on each stroke (patented)
- Increased safety, longer operation life and high reliability

Digital display for improved operation performance. Digital display of the crank angle and electronic angle detectors provide increased accuracy for press operations. Automatic operation setting and die set-up functions are easier and faster for press operators, with precise, reliable settings every time. To protect the integrity of all electronic systems and provide additional safety, monitor lamps indicate defects in circuits of all electronic systems, and faults are detected instantly.

Optional Features

Electronic Load Monitor (2-channel) Load monitors are available to continuously monitor loads in all press operations, including blanking, bending, drawing, etc. The monitor also detects die overloads and underloads during operation. In addition, balanced die load is achieved by measuring the off-center-load, thus extending press and die life.

Emergency Stop Receptacle

Die Cushions

Vibration Isolating Pad

Slide Knockout (mechanical)

Quick Die Change Equipment
Hydraulic die clamps available in either lever or cylinder type.
Hydraulic die lifters.
Mechanical draw out rails.
(note: re-machining of "T" slots may be required)

Presence-Sensing Safety Devices

Additional set of 4 Electronic Rotary Cams

Air Ejector with Cam

Adjustable Hydraulic Overload

Quick Die Change Interface

Coil Line Interface

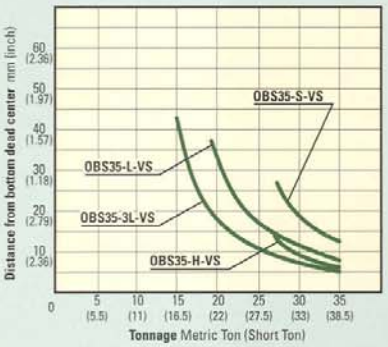
Graphic Load Monitor with Reverse Load

Warning—For protection of the operator, point of use guards should be used at all times. The OBS press does not include O.S.H.A. recommended point of protection guards.

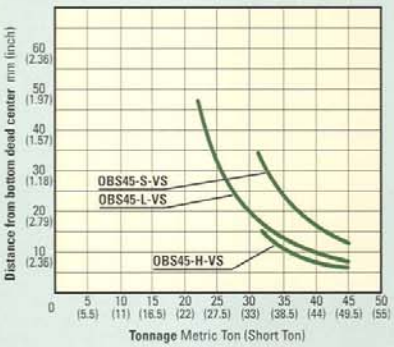
Note—Brake monitor and control reliability. This control meets the current requirements of O.S.H.A. Standards Section 1910.217 and ANSI B11.1.

Automation Complete turn-key Komatsu-designed press systems including coil lines, die carting and systems engineering tailored to your specific application.

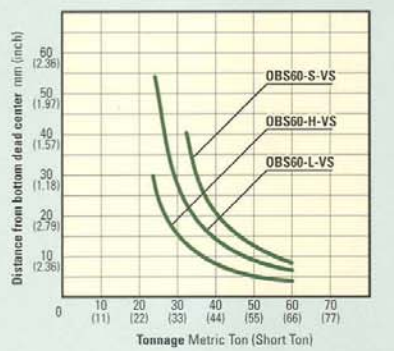
Capacity Curves



OBS 35

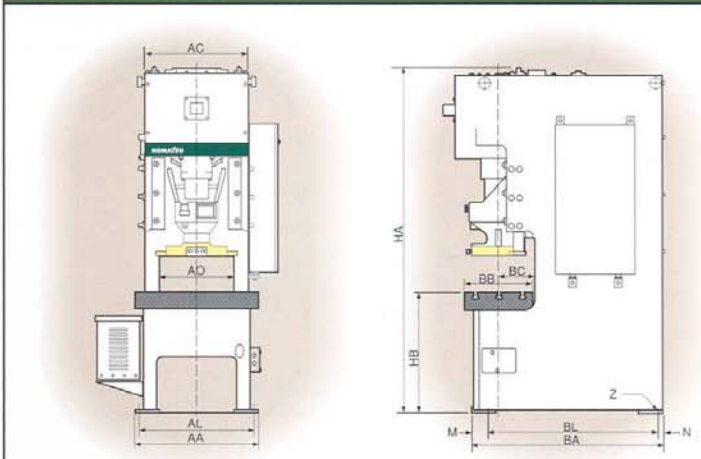


OBS 45



OBS 60

General View



Dimensions (All inches)

Model	OBS35			OBS45			OBS60		
Type	S	H	L	S	H	L	S	H	L
AA	29.9"			31.8"			37.8"		
AC	24.4"			26.3"			32.2"		
AL	27.5"			29.5"			35.4"		
AO	17.4"			19.1"			23.6"		
BA	47.3"			49.8"			54.3"		
BB	15.7"			17.7"			21.6"		
BC	8.2"			9.4"			11.2"		
BL	40.3"			44.2"			47.8"		
HA	83.4"			90.9"			105.7"		
HB	31.5"			31.5"			35.4"		
M	3.7"			4"			2.9"		
N	3.2"			1.5"			3.5"		
Z	ø2"			ø1.2"			ø1.2"		

Specifications (All inches)

Model		OBS35			OBS45			OBS60		
Type		S	H	L	S	H	L	S	H	L
Max. Capacity	short ton	38.5			49.5			66		
Limit of capacity	in.	0.47	0.24	0.30	0.43	0.26	0.28	0.30	0.2	0.22
Slide strokes	in.	3.1	1.6	4.3	3.9	2.0	5.5	4.7	3.5	6.3
Variable speed range	spm	60-120	120-240	60-120	50-100	100-200	50-100	42-85	75-150	42-85
Die height	in.	8.3		7.7	9.8		9.1	11.8		11.2
Slide adjustment	in.	2.2			2.4			2.8		
Slide dimensions (widthxdepth)	in.	13.8x11.8			15.7x13.8			19.7x15.7		
Diameter of shank hole	in.	ø2.0			ø2.0			ø2.0		
Bolster (widthxdepthxthickness)	in.	27.6x15.7x3.4			31.5x17.7x4.3			35.4x21.7x5.1		
Motor output	hp.	5			5			7.5		

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