

200

300

400

500

600



KOMATSUTM
HIGH PERFORMANCE SHOULD NOT BE OPTIONAL[®]



G-Series

Komatsu G-Series Straight Side Power Presses



We take our heritage seriously.

While the history of the Komatsu press division stretches back over 75 years, the true strength of Komatsu press technology comes from a background of engineering triumphs in diverse fields. Lessons learned in Komatsu's networks throughout the world, including our heavy equipment division and Komatsu Electronics Corporation, have continued to shape the durability and innovation of every Komatsu press.

Komatsu
Earthmover



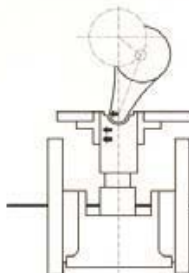
1924 **The Komatsu Press Division is born of rock and mud.** The current Komatsu hydraulic clutch/brake unit is a direct descendant of the same technology that has powered our 240 ton earth movers for the last 80 years. In the mining fields, there is no convenient time or place for periodic maintenance stops. Building on this philosophy, the Komatsu press division applied this technology to create machines designed to work every shift, day after day and year after year with nothing more than a simple hydraulic oil change. The low maintenance mantra was created.



The Komatsu Low Maintenance
Clutch / Brake System

1954 **Komatsu perfects its proprietary Plunger Guide System.** Komatsu has proven time after time that a plunger guide system produces 30 percent longer die life and improved part quality. Remove the gibs from a Komatsu press and the slide is still rock steady. The plunger guide eliminates virtually all lateral movement, allowing tighter gib tolerances and

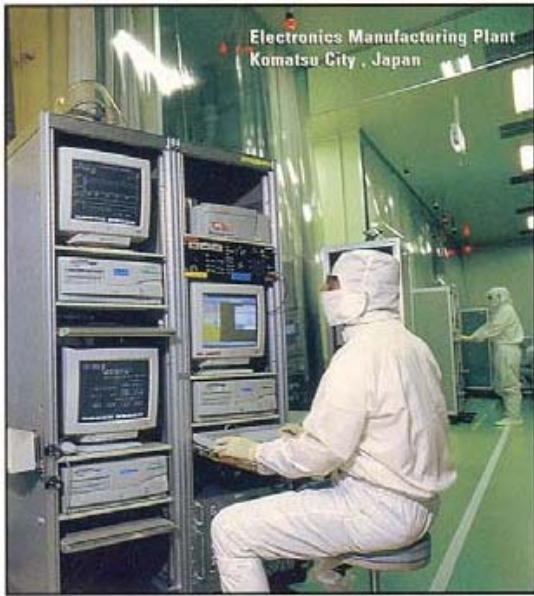
precision slide movement. Now that other manufacturers are following suit, it's no surprise to us. Our 40 years of experience with plunger guides has definitely provided the benchmark for our time-tested design.



The Komatsu High Performance
Plunger Guide System

1964 **Komatsu Press Division wins Deming Prize for engineering excellence.** It wouldn't take long before the rest of the world acknowledged the intuitive features of Komatsu press design. With the Deming Prize in 1964, Komatsu became the first Japanese press manufacturer to win this coveted engineering award.





Electronics Manufacturing Plant
Komatsu City, Japan

1982 Komatsu designs its first proprietary electronic control unit – the System Integrated Terminal®. As far back as 1982, Komatsu realized the advantage of designing an electronic press control interface that could take full advantage of the superior engineering technology in a Komatsu press. Through its relationship with the Komatsu Electronics Corporation, the Komatsu press division was able to design SIT - a control unit capable of withstanding 10G shock loads common to the press room environment.

1994 Komatsu receives the ISO Certification. With the Komatsu Press Division supplying press equipment to shops the world over, it was important for Komatsu to adopt the ISO certification both for safety and peace of mind for its customers. From this point on, every Komatsu press closely follows the universal worldwide standards for press safety and regulatory compliance.

2000 Komatsu forges ahead with its newest generation of advanced electronic press control - SIT II®. Incorporating all the latest thinking in press control unit design, SIT II is designed with user-friendly controls, a plain language display and intuitive features. SIT II controls allow press operators to shorten set-up times from hours to minutes, increasing productivity and profits. With SIT II, Komatsu has raised the bar in the new millennium, forcing other manufacturers to re-evaluate press control design and its dramatic effect on productivity.



SIT II Input
Control Panel



Main Press Manufacturing Plant
Komatsu City, Japan

The G-Series Straight Side Press: Designed for Superior Reliability, Consistency and Versatility.

- Ideal for progressive, transfer and manual die applications
- Full tie-rod construction with hydraulic tie rod nuts for superior rigidity
- Single and double gear reduction to suit various applications
- Superior frame rigidity characteristics
- Superior off-center load characteristics
- Increased bearing area for slide guidance
- Faster stopping times with real-time display per stroke
- Higher production rates in single stroke mode
- Improved and consistent part quality
- Increased die life

A Higher Level of Standard Equipment for Increased Performance.

- Massive heavy-duty fabricated design
- Single piece fabricated slide with reinforced plate construction
- Bolster thickness exceeds JIC standards
- Wide windows for transfer and progressive die applications
- Precision plunger guide design
- Precision oil lubricated gibs with controlled oil flow bronze liners
- Hardened and ground helical gears with splined connections
- Motorized slide adjustment from operator panel
- Hydraulic slide lock mechanism
- Pneumatic air counter balance
- Variable speed main motor
- High torque hydraulic clutch and brake
- Automatic flywheel brake
- Quick responding, dependable hydraulic overload protection
- Free standing electrical console with operators control station
- T-stand for easy set-up and operation
- 100 job memory
- Die safety block with electrical 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 our competitors' presses). That's why every Komatsu G-Series press comes with a One Year Unconditional Warranty on anything that rolls, slides or moves – parts and labor. 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.



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Center Drive Design

Provides high torsional rigidity and superior strength

Full Tie Rod Construction

Cross-sectional area of sideframes exceeds many tie-rod designs

Bolster and Slide Machining

JIC Standard "T" Slots
JIC Standard pin holes in bolster

T-Stand

Push-buttons necessary for press operation

G-Series

Komatsu G-Series Straight Side Power Presses



Standard Features

Heavy-Duty Welded Steel Construction

Engineered Quality. The Komatsu G-Series two-point straight side press utilizes full tie rod construction with hydraulic tie rod nuts to assure the highest level of rigidity and guaranteed performance.

The cross sectional areas of the columns combined with the large tie-rod diameters assure superior strength necessary for consistent part quality. The massive welded bed maintains total bed deflection within 0.0015"/ft under full load. Komatsu utilizes its welding and frame design technologies to engineer the fabricated slide as a true box-type design with reinforced plate construction providing minimal deflection and consistent precise parallelism to the bolster under varying load conditions.

Wide-Set Points. The relationship linking the distance between the slide connection points and the varying workload in the die is basic to part quality and tool life. Too large a point distance cannot withstand concentrated or "off-center" loads, whereas too close of a spacing can induce additional slide tilt and stress on the main shaft. The connection point spacing on the Komatsu G-Series is designed to provide optimum spacing of the connection points to assure top-quality progressive and transfer die operations; the best balance for both conditions.

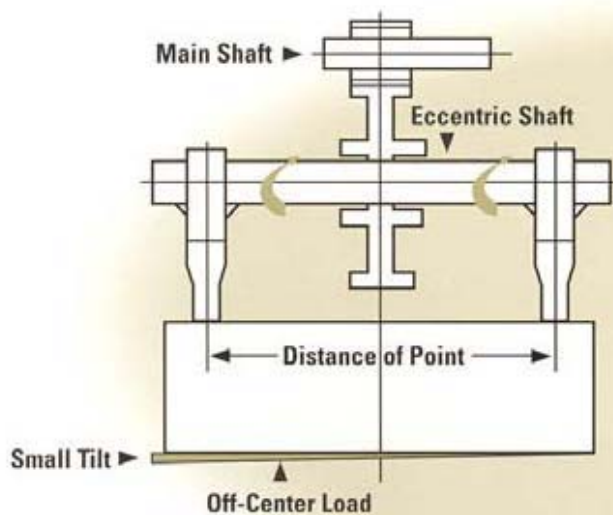


Rigidity. The height of the bed and slide is greater than other presses providing optimal vertical stiffness against the die workloads. The bolster thickness also exceeds typical industry standards for higher rigidity. The crown is doweled to the columns for optimum alignment and minimal clearances compared to standard keyed construction. Along with oversized point

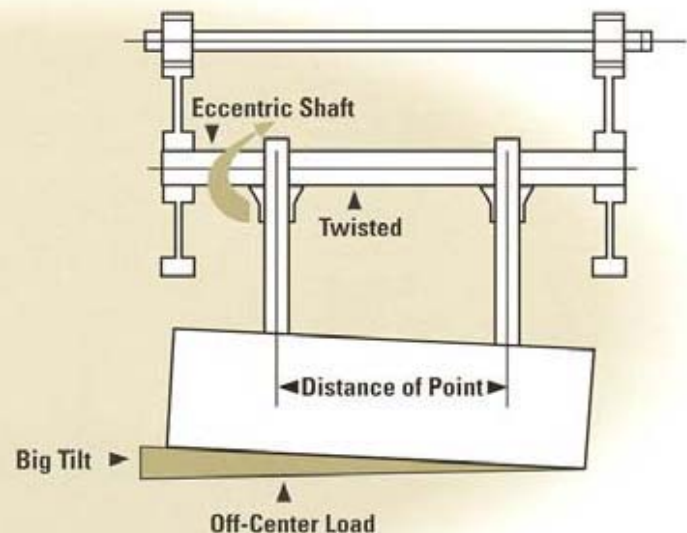
connections, the Komatsu design ensures uncompromising accuracy and part consistency stroke after stroke.



Large Window Openings. Wide windows permit wider material to be used for coil-fed, progressive or transfer applications. This inherent versatility removes the limits of material width and allows your press to be more productive.



**Komatsu G-Series
Optimum Connection Point Spacing**



**Typical Straight Side
Connection Point Spacing**

2 Drive and Gearing

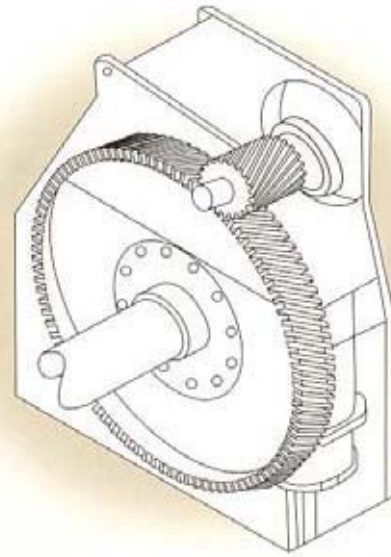
Higher torque for maximum power transfer. The Komatsu G-series incorporates a unique center drive design delivering superior performance and maximum power transfer under the most severe workloads. Unlike typical end-drive designs, the Komatsu center drive design provides equal spacing to both connection points. This optimal balanced condition results in superior handling of off-center loads, minimal torsional twist on the main shaft and equal torque at both connection points. Eccentric shafts are employed due to their high torsional rigidity and low deflection characteristics compared to conventional crankshafts.



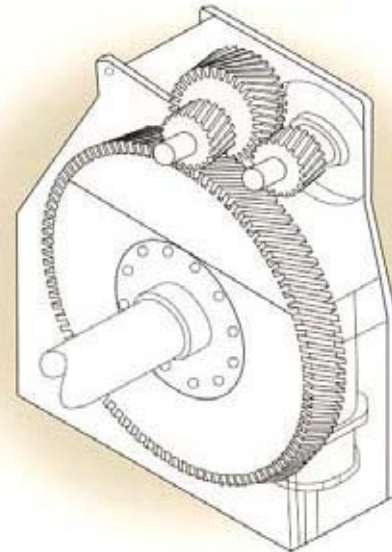
Splined Connections. The eccentric shafts are connected to the main gear by a spline. A standard in Komatsu G-Series presses, hardened and ground helical gears with splined connections provide the most efficient and consistent power transfer utilizing balanced precision contact points. Splines eliminate the rolling and slipping inherent to less costly keyed or taper locked connections.

Configurations. There are three standard drive and gear configurations to suit various applications.

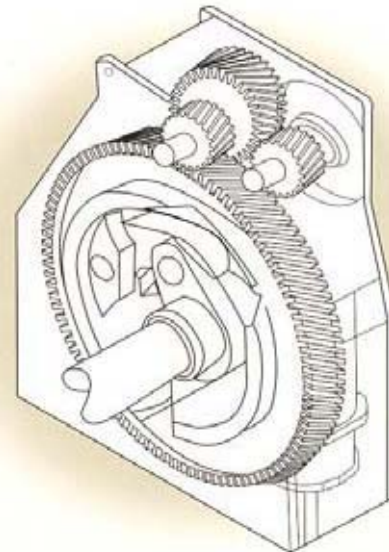
- A Eccentric Motion/Single Gear Reduction.** Provides a smooth slide motion velocity throughout the stroke with higher SPM range for typical progressive die applications of blanking and shallow forming.
- B Eccentric Motion/Double Gear Reduction.** Provides a smooth slide motion velocity throughout the stroke while providing increased torque necessary for heavier forming, blanking and drawing applications.
- C Link Motion/Double Gear Reduction.** Provides up to 50% more torque in the work cycle while reducing the “touch speed” near the bottom of the stroke. Reduced slide velocity in the work cycle provides 2 critical benefits: reduced snap through shock for longer tool life along with better part quality and more stability critical in certain forming and drawing applications.



A Eccentric Motion / Single Gear Reduction



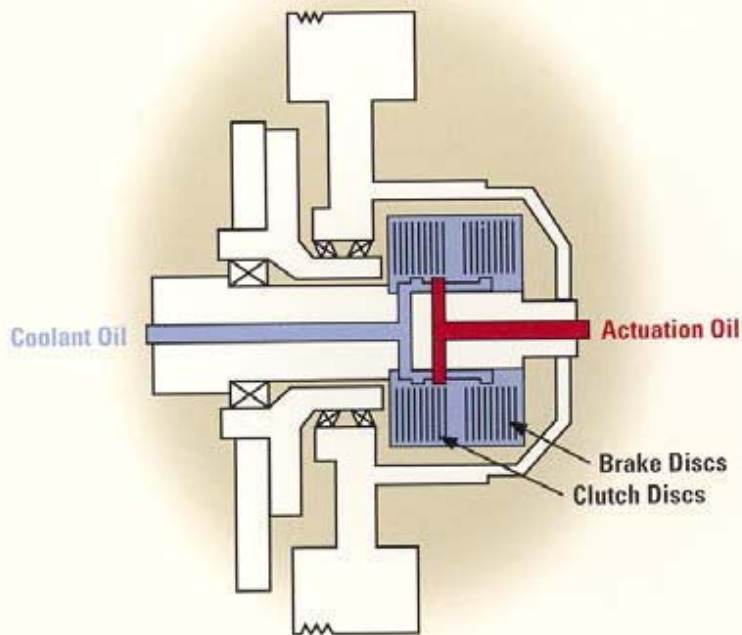
B Eccentric Motion / Double Gear Reduction



C Link Motion / Double Reduction Gearing

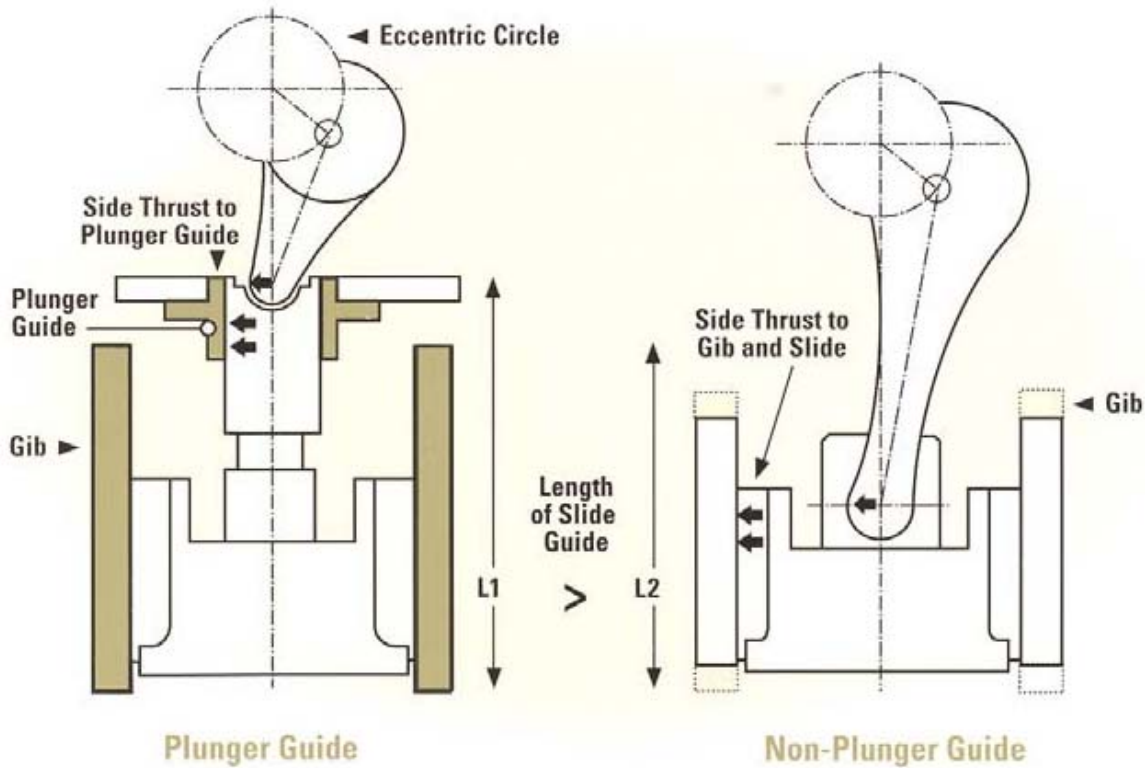
3 Hydraulic Clutch and Brake

Better cooling for productivity and reliability. The multiple disc hydraulic clutch and brake provides the highest single stroke rates and fastest stopping times in all modes of operation. Through decades of field experience in heavy construction equipment, Komatsu employs a patented oil flow pattern to force oil out quicker from between the discs. (See image below) Circulating oil throughout the unit and forcibly cooling it through a radiator on the crown does additional cooling. (See image at right) Conventional air friction clutches or air-cooled clutch and brake units cannot dissipate the normal heat build up inherent in press operation fast enough to offer the higher stroke rate required in auto-sgl or robotic applications. Additionally, the Komatsu design includes a quill mounted fly wheel with the drive shaft supported on oversized taper bearings for increased bearing area and increased heat dissipation.



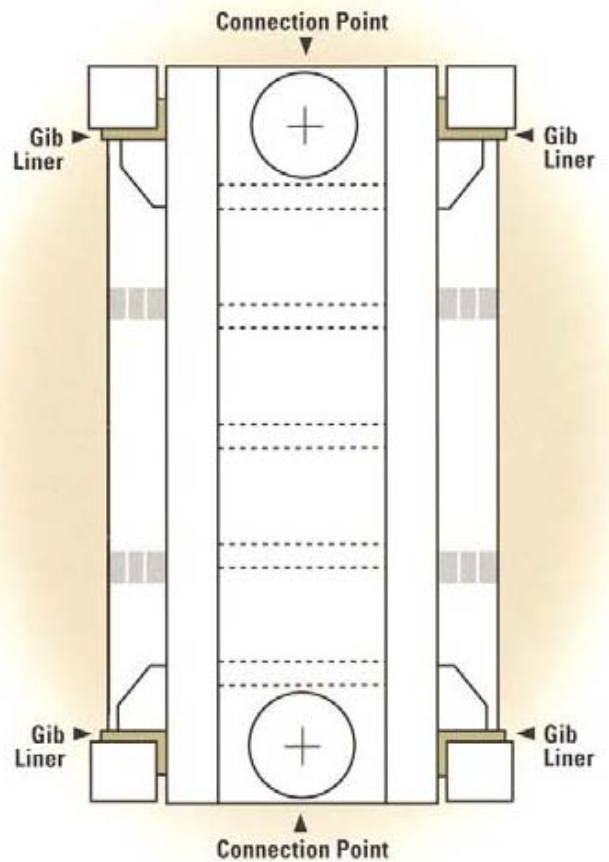
Lubrication and filtration for hassle-free maintenance. The oil for the clutch and brake, drive train and slide gibs are circulated through a 10 micron filter to catch any solid contaminants. The only maintenance required for this closed system is annual fluid changes.

Komatsu Clutch Plate

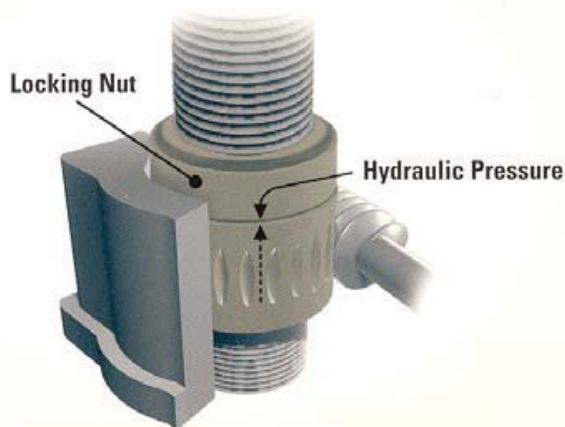


4 Plunger Guide System

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 employs full length housing gibs guaranteeing the slide gibs always maintain contact through the stroke. (See top view depicted at the right) The 8-point gib system employs forced oil lubrication rather than grease for optimum close gib tolerance settings. This combination of plunger guide and oil lubrication provides gib life 200 times longer than non-plunger guided systems. Together, the plunger guide and gib surface area of the Komatsu G-Series add up to 4-5 times the guiding surface area. Less routine gib maintenance, less die wear and higher part accuracy are the positive end result, which can translate into improved profits for you.

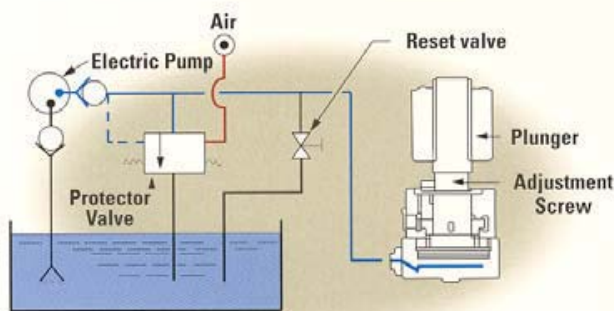


8-Point Gibs (top view)



5 Slide Adjustment with Hydraulic Slide Lock

Consistent quality without die adjustments. Motorized slide adjustment with electrical upper and lower limit travel protection is employed in all Komatsu presses. The die height indicator is calibrated in 0.001" and is digitally displayed on the operator control panel. Rather than relying on the mechanical brake of the slide adjust motor to maintain the selected die height, the Komatsu G-Series incorporates an automatic hydraulic locking device. Using hydraulic pressure, this locking nut clamps the adjustment screw in two directions removing all clearances and eliminating the movement of the screw caused from normal snap through forces. (See diagram above) This design assures consistent part quality eliminating the need for periodic die height adjustments.



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 quickly even if jamming occurs.

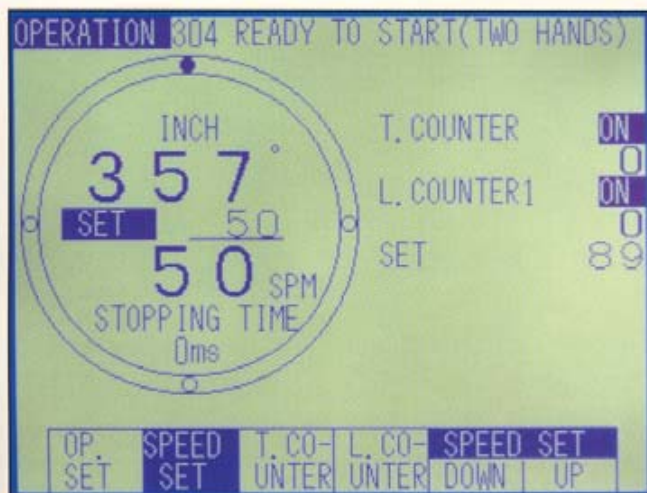
7 System Integrated Terminal

Advanced electronics technology provides user-friendly operation and outstanding reliability. The 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 G-Series press, the press control unit incorporates all the latest thinking in press control unit design.

- 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 fault messages.
- The press control unit has the ability to integrate with other press room equipment, such as coil feeds and material handling equipment
- Operator "T-stand" control interface houses all switches and push-buttons required for ordinary press set-up and operation, including a key switch and up/down adjust push buttons for slide adjustment.
- Die Data Recording function can store and retrieve data for 100 dies. This digital display shows "stored" press speed, actual press speed, crank angle, cam and fault detection angle as well as production performance.
- Alpha-numeric entry of die name and memo data for easy cataloging and referencing.



Optional Features



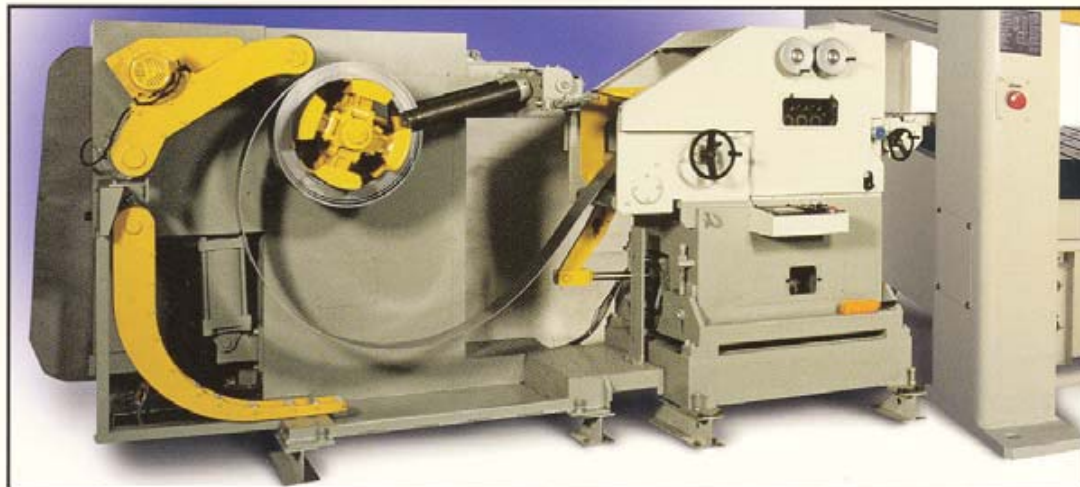
- Digital total counters
 - 1-Production, re-settable
 - 1-Lot (pre-set), re-settable
- 4-Electronic rotary cams
- 1-Pneumatic air ejector with cam
- Mode selections:
 - Off, Inch, Single Stroke, Continuous
- Optional modes:
 - Automatic Single Stroke and
 - Automatic Continuous
 - (other modes are available)

Simple Guidance. The press control unit 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, increased safety and longer operation life.

- Solid-state control with surface mount technology
- Cross-checking duplex circuits for clutch brake control are used on each stroke

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 status of circuits for all electronic systems and faults are detected instantly.



Electronic Load Monitor. 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

Pneumatic Die Cushions

Vibration Isolating Pad

Slide Knockout Bars (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 Equipment

Additional Electronic Rotary Cams

Air Ejector with Cam

Die Protection System

Quick Die Change Interface

Coil Line Interface

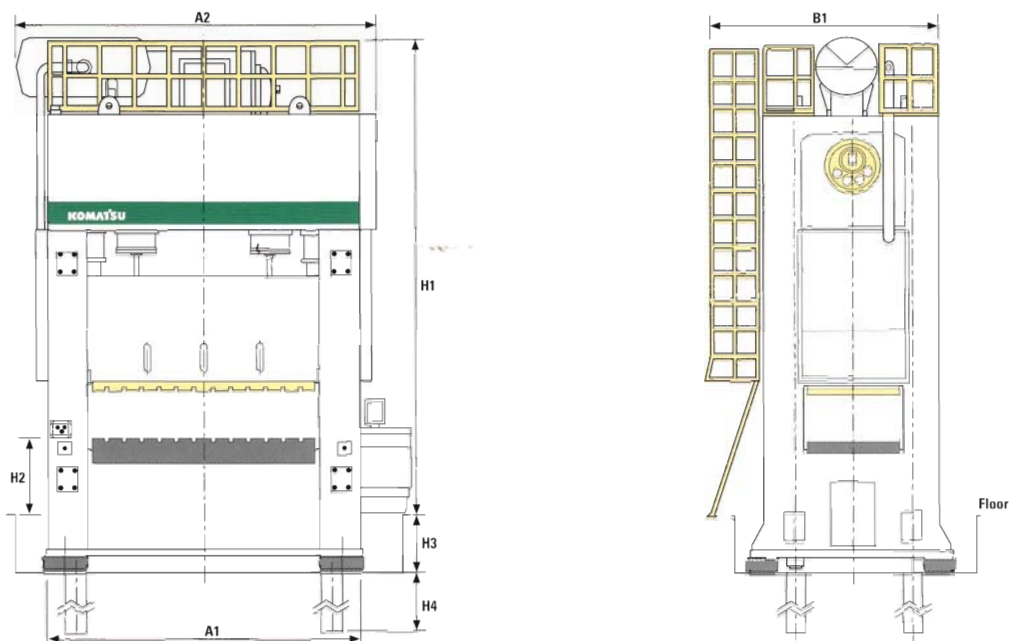
Graphic Load Monitor with Reverse Load

Warning - For protection of the operator, point-of-use guards should be used at all times. The G-Series press does not include front and rear barrier guards.

Note - Brake monitor and control reliability. This control, featuring a time based brake monitor meets the 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.

General View



Dimensions inches

| Model | | E2G200 | | | E2G300 | | | | | | E2G400 | | | E2G500 | | E2G600 | | | |
|--------|----|--------|-------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------|--------|-------|--------|-------|-------|-------|
| | | N-S | N2-S | N3-S | N4-S2 | M-S2 | W-S2 | M-S3 | M-L | W-S3 | W-L | W-S3 | W-L2 | W2-L2 | W-L2 | W-L3 | W-L4 | W2-L3 | W2-L4 |
| Width | A1 | 96.9 | 108.6 | 120.4 | 122.8 | 136.6 | 160.2 | 136.6 | 136.6 | 160.2 | 160.2 | 165.0 | 165.0 | 187.0 | 168.9 | 168.9 | 172.8 | 194.9 | 194.9 |
| | A2 | — | — | — | 1.6 | 1.6 | 1.6 | 2.8 | 2.8 | 1.6 | 2.8 | 2.7 | 2.7 | 2.7 | 6.7 | 6.7 | 19.0 | 19.0 | 19.0 |
| Depth | B1 | 118.1 | 118.1 | 118.1 | 126.4 | 126.4 | 126.4 | 126.4 | 126.4 | 140.6 | 140.6 | 145.7 | 145.7 | 145.7 | 145.7 | 145.7 | 46.5 | 46.5 | 46.5 |
| Height | H1 | 205.5 | 205.5 | 205.5 | 226.4 | 226.4 | 226.4 | 229.5 | 245.7 | 226.4 | 245.7 | 255.7 | 275.8 | 279.7 | 271.5 | 275.4 | 296.6 | 292.7 | 296.6 |
| | H2 | 49.6 | 49.6 | 49.6 | 52.8 | 52.8 | 52.8 | 52.8 | 52.8 | 52.8 | 52.8 | 60.6 | 60.6 | 60.6 | 37.4 | 37.4 | 37.4 | 37.4 | 37.4 |
| | H3 | — | — | — | — | — | — | — | — | — | — | — | — | — | 37.8 | 37.8 | 39.4 | 39.4 | 39.4 |
| | H4 | — | — | — | — | 59.1 | 59.1 | 59.1 | 59.1 | 59.1 | 59.1 | 66.9 | 66.9 | 66.9 | 74.8 | 74.8 | 86.6 | 86.6 | 86.6 |

Specifications

| Model | | E2G200 | | | E2G300 | | | | | | E2G400 | | | E2G500 | | E2G600 | | | |
|------------------|----------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--------|-------|-------|--------|-------|--------|-------|-------|-------|
| | | N-S | N2-S | N3-S | N4-S2 | M-S2 | W-S2 | M-S3 | M-L | W-S3 | W-L | W-S3 | W-L2 | W2-L2 | W-L2 | W-L3 | W2-L3 | W-L4 | W2-L4 |
| Max. Capacity | U.S. ton | 220 | | | 330 | | | | | | 440 | | | 550 | | 660 | | | |
| Rating Point | in. | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.51 | 0.26 | 0.51 | 0.26 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| Stroke | in. | 3.9 | 3.9 | 3.9 | 7.9 | 7.9 | 7.9 | 10.2 | 14.2 | 10.2 | 14.2 | 10.2 | 16.1 | 16.1 | 16.1 | 19.7 | 19.7 | 23.6 | 23.6 |
| Variable Speed | s.p.m. | 60-150 | 60-150 | 60-150 | 40-100 | 40-100 | 40-100 | 30-65 | 20-40 | 30-65 | 20-40 | 30-65 | 20-40 | 20-40 | 20-40 | 15-30 | 15-30 | 11-23 | 11-23 |
| Shutheight | in. | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 32.3 | 20.1 | 32.3 | 22.0 | 36.2 | 36.2 | 37.4 | 37.4 | 37.4 | 37.4 | 37.4 |
| Slide Adjustment | in. | 3.94 | 3.94 | 3.94 | 6.30 | 6.30 | 6.30 | 6.30 | 10.24 | 6.30 | 10.24 | 6.30 | 12.20 | 12.20 | 13.78 | 13.78 | 13.78 | 13.78 | 13.78 |
| Slide - Width | in. | 61.0 | 72.8 | 84.6 | 84.0 | 98.4 | 122.0 | 98.4 | 98.4 | 122.0 | 122.0 | 122.0 | 122.0 | 144.1 | 122.0 | 122.0 | 144.1 | 122.0 | 144.1 |
| Slide - Depth | in. | 43.3 | 43.3 | 43.3 | 48.0 | 48.0 | 61.0 | 48.0 | 48.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 |
| Bolster - Width | in. | 61.0 | 72.8 | 84.6 | 84.0 | 98.4 | 122.0 | 98.4 | 98.4 | 122.0 | 122.0 | 122.0 | 122.0 | 144.1 | 122.0 | 122.0 | 144.1 | 122.0 | 144.1 |
| Bolster - Depth | in. | 43.3 | 43.3 | 43.3 | 49.2 | 49.2 | 61.0 | 49.2 | 49.2 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 |

Please consult Komatsu for additional dimensions and specifications of larger capacity presses.