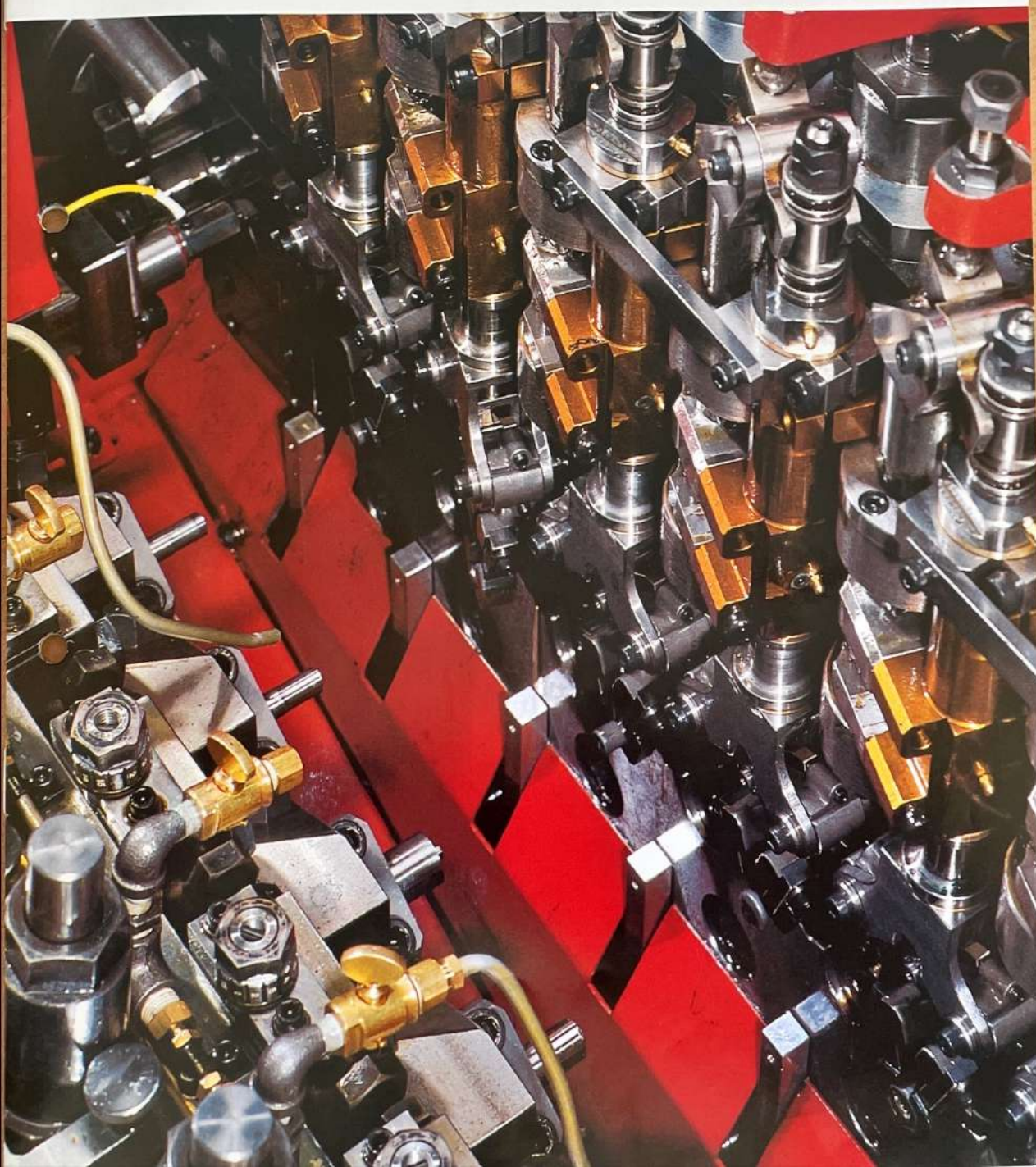
NEW PART FORMERS
AF series

ASAHI SUNAC



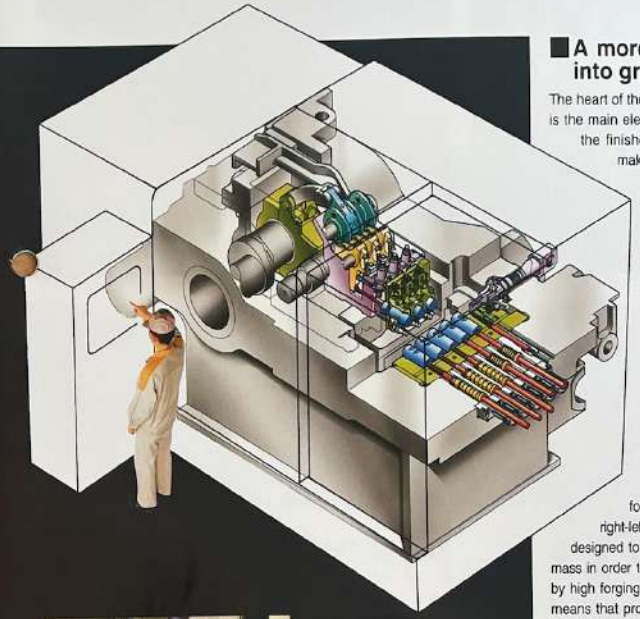
You need a rigid former to produce a precision blank.

The Cold Forming Process

Incorporating years of accumulated forming technology, Asahi Sunac cold formers can now produce bolt blanks and more complex components from wire coil at speeds without any material wastage. This is the kind of advanced forging technology that allows you to reduce material consumption and make your prices more competitive.

The Asahi Sunac AF part formers incorporate many new and advanced features that increase the precision of the workpieces you produce while giving you the capability to take on a wider range of blank types than ever before. At the same time, the AF machines have become surprisingly easy to operate.

Designed to produce the more complex "value added" workpieces that can increase your bottom line, the AF part formers also create a more people-friendly factory environment that meets "next generation" cold forming requirements.



A more rigid frame translates into greater blank precision.

The heart of the part former is the frame. Frame rigidity is the main element which determines the precision of the finished blank. We've combined our header making experience with extensive computer-aided development work to design a frame that flexes less than 0.1mm under maximum forging loads. No other company can boast of this achievement. This level of frame rigidity provides many benefits which include more precisely formed head shapes, more uniform thin wall sections, and extended tooling life.

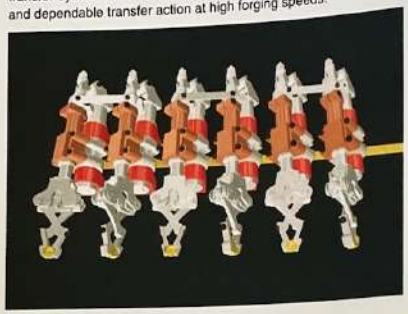
Precision inner and outer blank diameters, even with uneven forging loads.

A high degree of vertical and horizontal frame rigidity has been achieved through strategic placement of metal where forging loads are greatest in the fore-aft and right-left axes. The crankshaft has been carefully designed to accept forging loads throughout its entire mass in order to reduce the off-center stresses generated by high forging pressures coming from one station. This means that processes which use a highly loaded single station, such as hole piercing and large diameter head forming, can be run without any fear of your specs falling off.

Flexibility

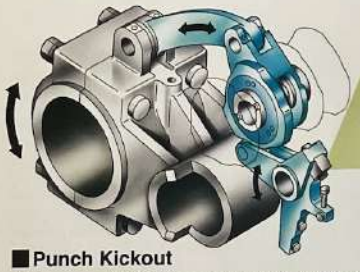
■Universal Transfer (pat. pend.)

To provide you with more flexibility, our universal transfer cassette can be changed over from straight pass to turn-and-pass operation through a fast and simple one-touch operation. The lightweight transfer system has been specifically designed to provide a stable and dependable transfer action at high forging speeds.



■Straight Transfer

The lightweight straight transfer system used by the AF par formers offers dependable high-speed operation as well as easy setup.

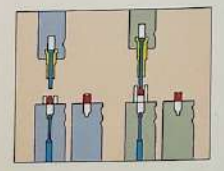


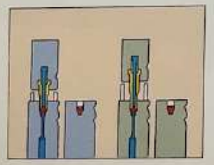
■Punch Kickout

1. A more powerful PKO system has been developed to accommodate a wider range of more complex blank forms.
2. The PKO stroke is adjustable in three ranges for use with a wider range of tooling designs.

■Turn-and-Pass Grip Position Adjustment

The universal transfer chuck can be set up to grip the blank at the optimum position for the turnaround pass. This results in a highly dependable transfer action as well as extended tooling life.

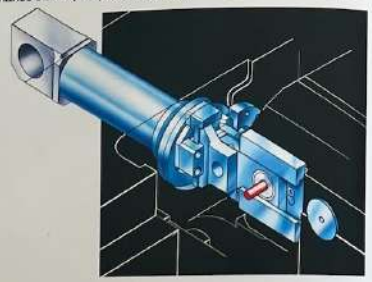




Precision

■Fine Cutting System (Option) (pat. pend.)

Variations in cutoff weights are kept to an absolute minimum. The AF uses a precision high-speed cutoff system with a zero-tolerance quill that provides a tighter wire grip. You get perfect cutoff faces that enhance blank quality and precision.

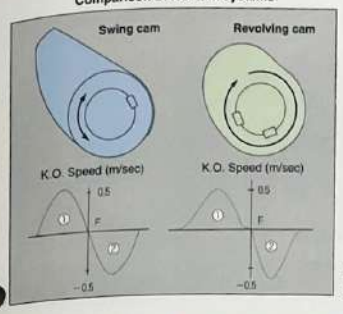


High-Speed

■Advantages of the Revolving Kickout Cam

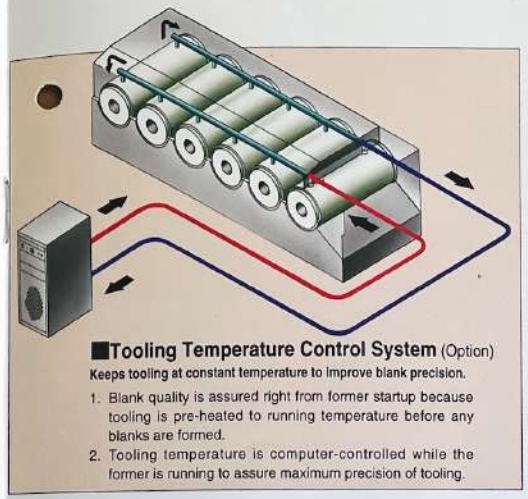
1. Tooling life is extended because the chances of forging loads being applied to the KO lever and pin are eliminated.
2. Vibration and noise are reduced, and the dynamic precision of the cam follower is greatly improved at high speeds.
3. Transfer timing is easier to set up for a short blank pass.

Comparison of KO cam systems



■Assist Saver Transfer System (Option) (pat. pend.)

1. Provides reliable high-speed transfer for short blanks and those having step cross sections.
2. Simplifies tooling design, and allows certain tooling to be used for different jobs.
3. The former sets up faster and easier because finger open and close timing remains constant regardless of workpiece or tooling.



■Tooling Temperature Control System (Option)

Keeps tooling at constant temperature to improve blank precision.

1. Blank quality is assured right from former startup because tooling is pre-heated to running temperature before any blanks are formed.
2. Tooling temperature is computer-controlled while the former is running to assure maximum precision of tooling.

■PD Sensor Quality Control (Option)

The PD Sensor provides a quality control function by continuously monitoring punch position in 1-micron increments. Punch damage, double hits, dropped blanks and other problems will activate the PD Sensor and trigger an error condition that prevents the former from producing defective blanks.

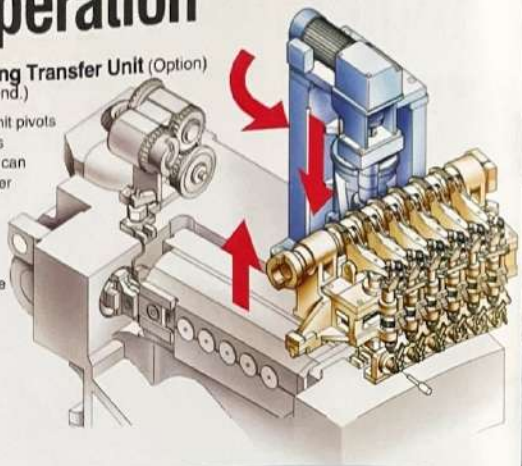
Easy Setup & Operation

■Blank Delivery Conveyor (Option)

Final transfer chuck places the finished blank on the conveyor for off-machine delivery.

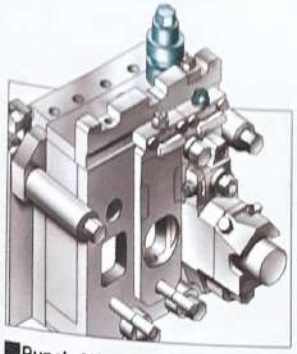
■Pivoting Transfer Unit (Option) (pat. pend.)

Transfer unit pivots 90-degrees where you can adjust finger open and close timing from a comfortable position.



■PC Monitor (Option)(pat. pend.)

The PC Monitor provides a convenient digital readout of punch position in 5-micron increments. This results in a fast and simple punch alignment operation that's extremely accurate.



■Punch Alignment System (Option)

Punch alignment system utilizes incremental scales that let you separately verify punch position in 0.02mm increments on the vertical, horizontal, and fore-aft axes.

Leading Edge Technology That Gives You the Advantage

Advantage 1

Automatic former setup functions significantly reduce the operator's workload.

Advantage 2

Extensive data management functions provide for more efficient process control.

Advantage 3

Reduces the chances of operational errors and saves valuable time by increasing overall operating efficiency.

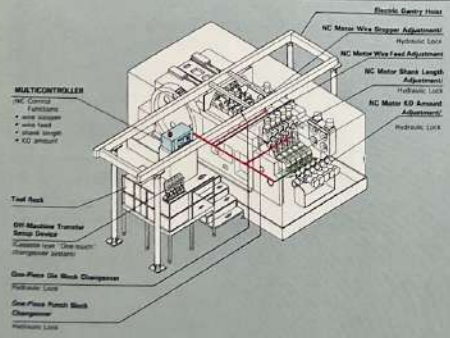
Advantage 4

Increases your competitive strength by reducing blank costs.

Computerized Former Control System

Multicontroller

An automated cold forging management system that helps you set up the former and keep track of small lot production.



Former Setup


1) Workpiece list display


2) Former setup position display


3) Memo function for changeover data


4) Graphic timing display

Functions


5) Tool life management data


6) Current forging status display


7) Forging load display


8) Shutdown cause display

Process Data Management Functions


Production management menu lets you call up various data items relating to already run processes.

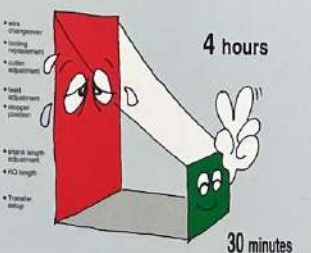

1) Analysis display shows past error conditions in graph form.
2) Graphs can be printed out for easy reference.


All data held in the Multicontroller can also be stored on a floppy disc.


1) Work analysis display shows job progress in bar graph form.
2) Current production yield data can be printed out for easy reference.


Work analysis display can also be called up as a Pareto graph.

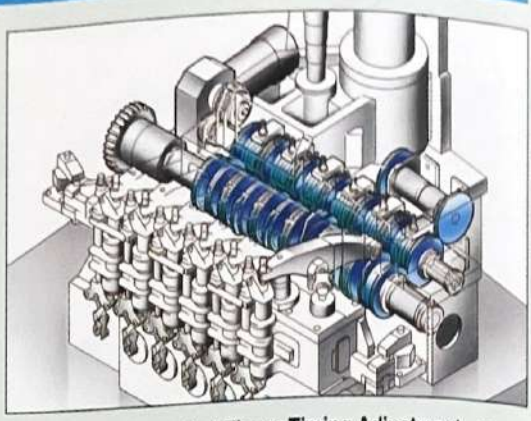
Multicontroller-driven automatic setup functions reduce job changeover time.



Functions that simplify and speed up changeover.

■Automatic Hydraulic Cutter Clamp

A hydraulic clamp connects the cutter to the cutoff drive lever to eliminate the cutoff tooling alignment operation and reduce changeover time.



■Computer Controlled Finger Timing Adjustment (Option)

Provides completely automatic adjustment of chuck finger open and close timing. Positioning computer and Multicontroller allow feed, kickout, and shank length adjustment to be executed simultaneously to further reduce changeover time and simplify former operation.

■Moniputer (Option)

The Moniputer continually monitors the forging loads being generated at each station to provide a peak load display on the Multicontroller screen. Loads which surpass limit values will cause the Multicontroller to shut down the former immediately to prevent defective blanks and tooling damage.

■Other Automated Systems (Option)

The Multicontroller automates former setup by allowing you to run many adjustment operations automatically with the press of a button. We also offer an automatic tool change robot and automatic wire coil changer which can give you an even higher level of automation.

■QTC Off-Machine Transfer Setup Jig (Option)

Simplifies transfer setup by allowing each transfer cassette to be aligned off the machine on the workbench.

ASAHI SUNAC

ADVANCED FORGING AUTOMATION SYSTEMS

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