The VIPROS-255·2510K hydraulic turret punch press is an advanced design combining the latest developments in machine, hydraulic punching, and CNC control technologies. The machine is a specialist in high speed production of short run sheet metal parts, especially those that incorporate forming, allowing many parts to be completed in a single setup.

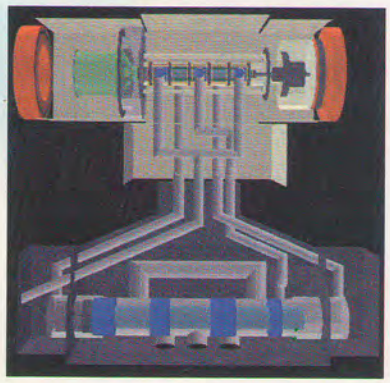
High speed punching

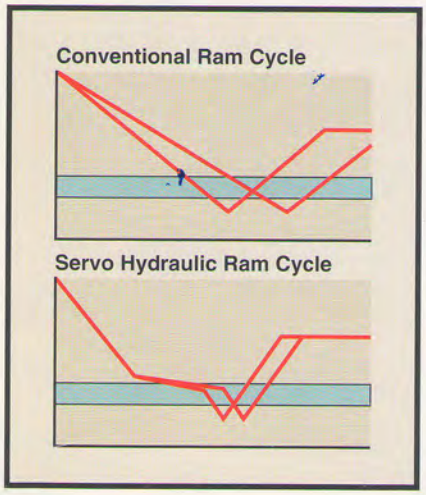
High speed punching with a hydraulic servo system that dramatically increases ram speed and eliminates unnecessary ram motion.

Linear servo valve

Patent pending Application No.27967-1993

Coupled with 2-pressure 2-flow control, the use of the newly developed linear servo valve has made a fast high-low pressure change possible within one stroke, lengthening oil life and greatly saving power consumption as a result.





Low noise level

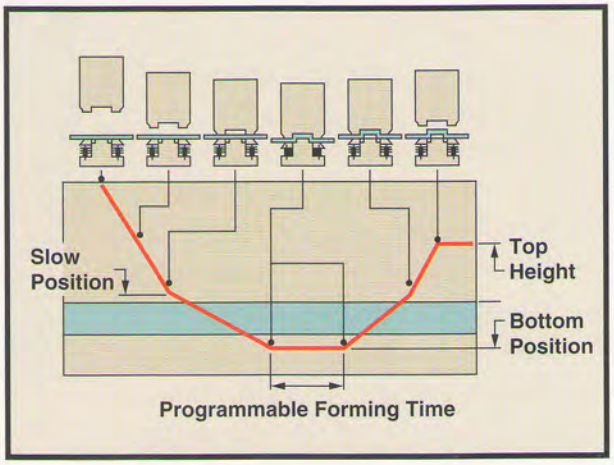
VIPROS has the unique ability to control the position, and speed of the ram throughout the punching cycle. Slowing the ram down as it approaches the material reduces impact noise and part distortion. Ejecting the slug in a controlled fashion also reduces "break-away" noise. The servo controlled hydraulic ram reduces punching noise, making it much quieter that mechanical punch presses. And, unlike less sophisticated hydraulic machines, VIPROS only slows down the part of the cycle that effects low noise, and all approach, break-through and retract moves are made at top speed. The PHNC's has the ability to "learn" the optimum punch force required for each hole in each material type. A three position timer allows the machine to control noise levels at various times of the day or night.

Multifunction intelligent NCT series
with hydraulic ram positioning system

VIPROS 255·2510K

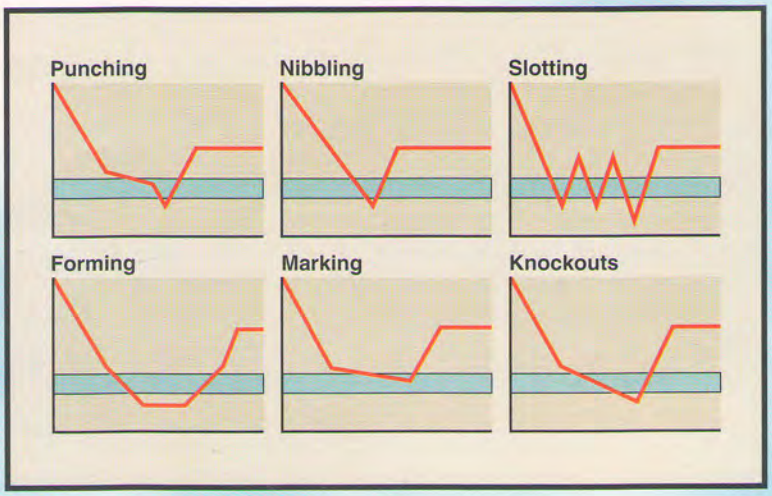
High quality forming

The PHNC can be programmed to produce superior quality forms with ease. This is achieved by using the appropriate dwell at the bottom of the stroke. When forming in stainless steel for example, it can dwell or "hold" the material for the proper amount of time to achieve the highest quality of the form. Electronic shimming significantly shortens the setup time of forming, marking and other specialty tools.

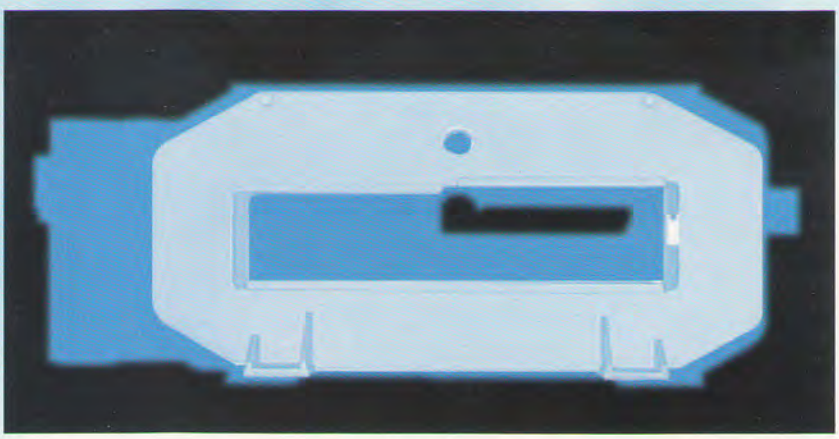


Multiple ram cycle patterns

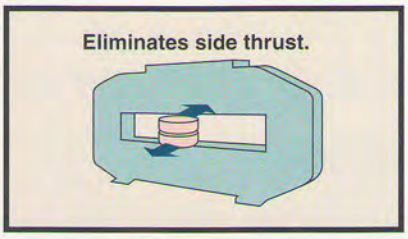
Servo controlled hydraulic ram machines can provide significant manufacturing advantages. Multiple ram cycle patterns simplify ram programming and provide material thickness compensation for a range of different tool styles. A single ram cycle is not sufficient because different data points are required for different processes. With multiple cycles, the servo controlled hydraulic ram can adjust the stroke for all tools when a new material thickness is specified in the part program.

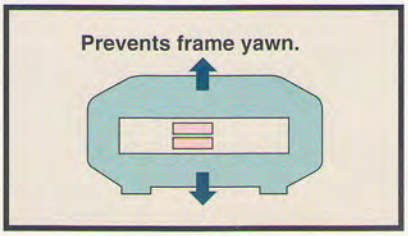


Bridge frame



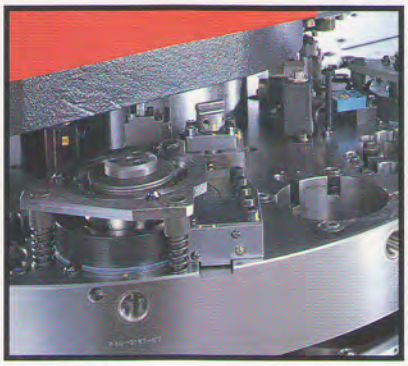
Amada has pioneered the bridge frame design. The single piece side frames are welded into box sections creating a structure that is inherently stable. The completed frame is cycled in a large scale heat chamber to relieve and stresses introduced by the welding process, and then shot blasted to remove any oxide.The bridge frame design ensure that any deflection due to punching forces does not effect the parallelism of the tool and die, a significant disadvantage of 'C'and'J' frame designs. The welded box section construction of the frame eliminates side thrust factors when punching with an off center load, a condition that is common in operations such as nibbling, slotting and forming non-symmetrical shapes. Eliminating yaw and side thrust eliminates tooling misalignment, extending tool and machine service life.





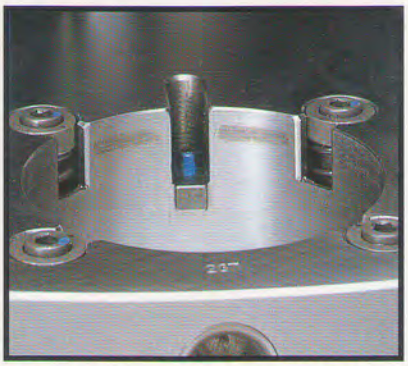
Turret

The turret is casting, a material that is formulated with exceptionally high physical properties including impact strength and resistance to shock,wear, heat and corrosion.The 95mm thick turret fully guides Amada's legendary long body tooling, ensuring tool and die alignment. Effectively guiding tools significantly reduces tool wear, minimizing maintenance and increasing tool life. Turret bores are laser hardened to provide a long trouble free life.



Auto-index

The auto-index system features two 1-1/4" stations and one 2" station, controlled by basic NC commands which can be rotated 360° in 0.01" increments. The system enables the processing of complex shaped parts with the minimum number of tools.

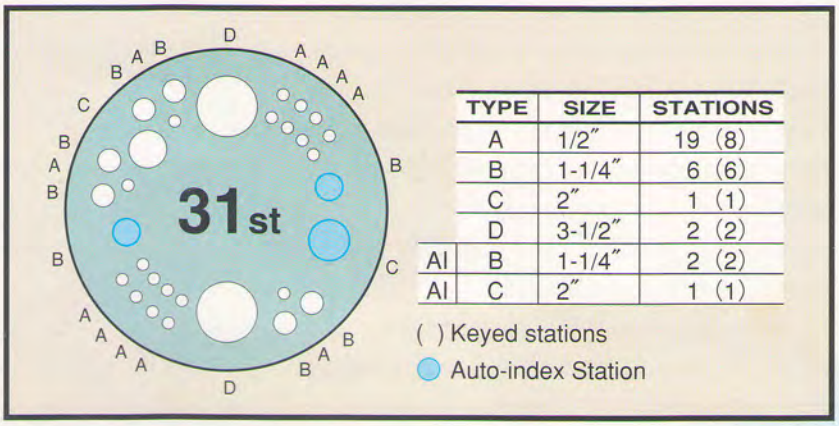


Laser hardened turret disk

Amada has utilized the latest laser hardening techniques for its turret disks to give extended tool life and reduced tool guide wear.

2tracks, 31-Station

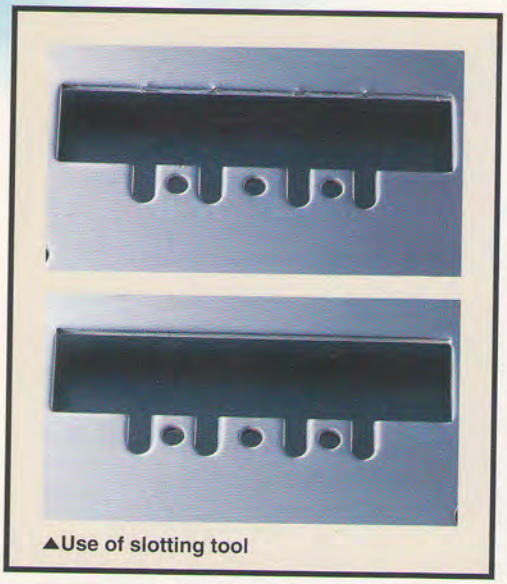
The adoption of a 2-track mechanism where tools are arranged in inner and outer track and the striker moves back and forth at a speed of 0.5 second has realized the installation of 31 stations. This is the largest number of tools for this class of punching presses. The specifications allow the reduction in tool setup time and can satisfy future system upgrading.



TYPE	SIZE	STATIONS
A	1/2"	19 (8)
B	1-1/4"	6 (6)
C	2"	1 (1)
D	3-1/2"	2 (2)
Al B	1-1/4"	2 (2)
Al C	2"	1 (1)

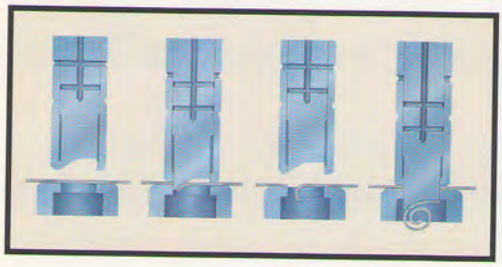
( ) Keyed stations

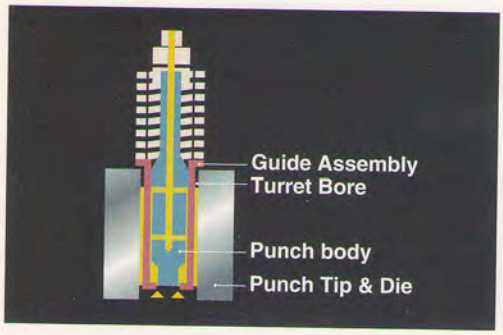
Auto-index Station


▲Use of slotting tool

Slotting

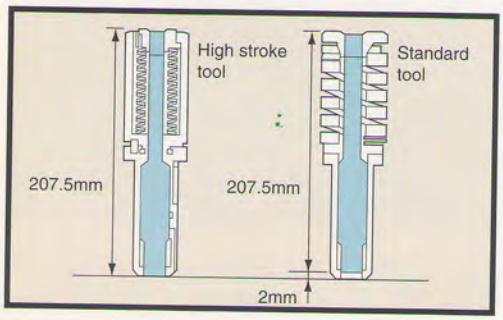
Just-in-Time response to the need for quality production is a major advantage of the VIPROS series NCT. Punching which leaves no tool overlap points is now available through PHNC ram stroke control and a special slotting tool. The removal of tool overlap points traditionally requires a secondary manual operation. Using the slotting tool, material is removed as a continuous length, eliminating tool overlap points. The resulting high quality edge is perfect for computer, food service, paper handling and other high visibility products.





Air blow / oil mist tooling

During punching by conventional methods, slivers are generated, scratching the product or sticking to the tool. VIPROS, however, incorporates an air blow, oil mist. The oil mist lubricates guides, turret bores and punch bodies. It also cool them, eliminating the sticking problem. As a result, galling is minimized and slivers prevented. At the same time, tool life is extended. With automatic tool lubrication, a machine is rarely down for tool sharpening or replacement.



High stroke tool(Optional)

Patent pending:Application No.99145-1993

Designed to punch on a stroke 2mm shorter than that of the conventional tool, this tool ensures high-efficiency punching work.

NEW-Auto dead zone selector for each tool size (STD)

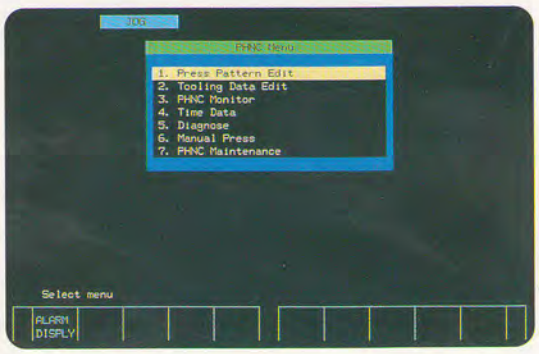
VIPROS series is designed to allow the clamps to pass through between the upper and lower turrets, in order to minimized the portion that cannot be punched (dead zone). The clamps, however, may be punched if punching is done when the clamps come under the punch. To ensure that the work clamps are not punched, the override detection device monitors the clamp positions, and if the clamps move into a critical zone, the machine will automatically stop. In addition, the VIPROS-255 features a mechanism to detect the dead zone for each individual tool size. If the clamps are located under the punch, the sensor automatically detects it, thereby completely eliminating the possible damage to the tool and clamps as the tool will never punch the clamps even if the override button is pressed. Once the override is turned to the "OFF" position, it is not required to ascertain the override from the first work sheet.

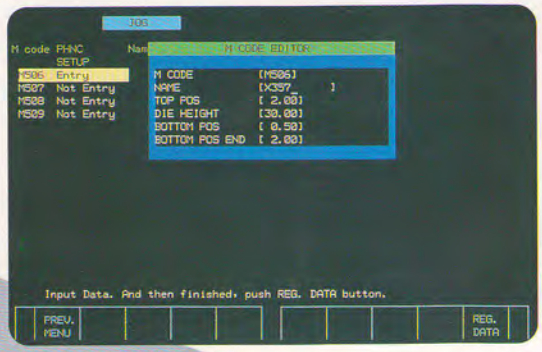
CNC controller FANUC18PC+Power Hydraulic Numerical Control

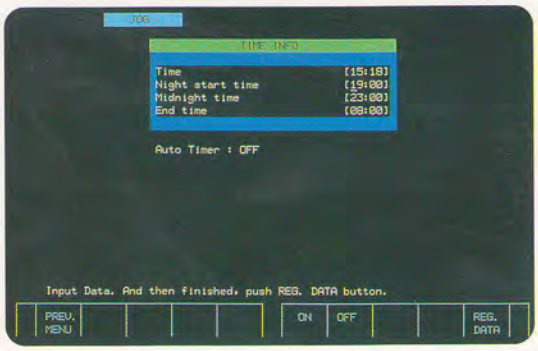
The Fanuc 18PC is a multi-axis CNC system used to control the table motion (X,Y), turret rotation (T), and Auto-Index rotation (C) as well as other appropriate functions. The built in operator interface is mounted close to the turret for efficient operation. All PHNC functions are accessed through CNC screens. Several modes of data input are available:

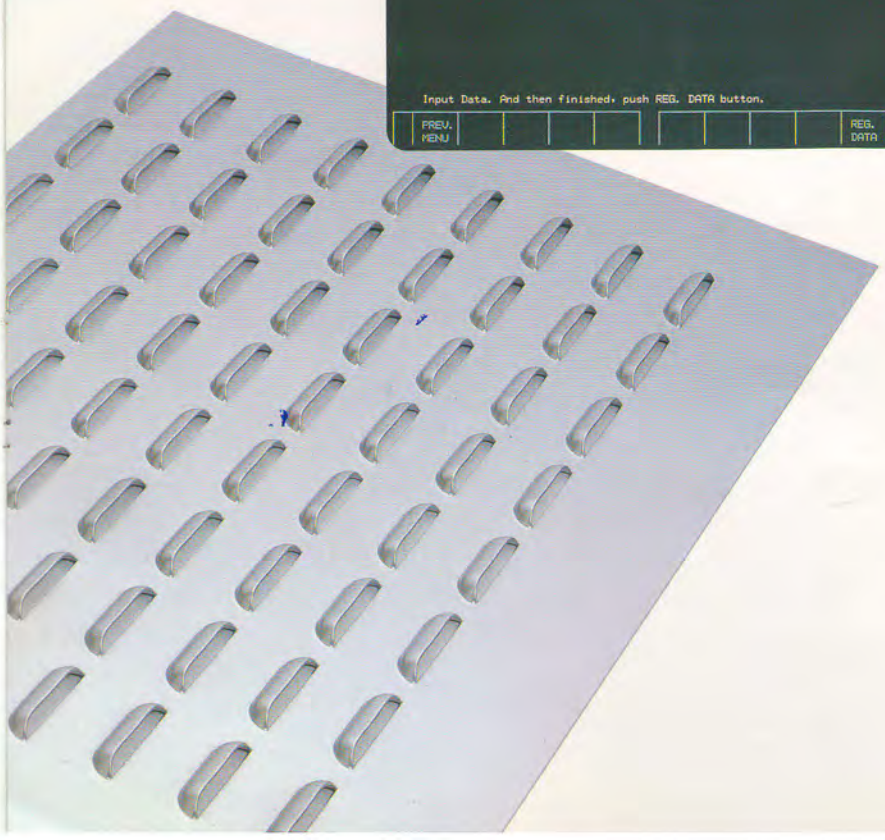
- Full character keyboard (manual data input).
- Direct Numerical Control (DNC) from an optional off-line host computer with compatible RS232C.
- PC compatible floppy disk driver.

The Fanuc 18PC is a highly advanced control optimizing and enhancing the performance of your punching operations. It's equipped with a color monitor which displays conditions such as axis position, feed rate, program being executed, list of programs in memory, machine alarms, machine parameters, and machine diagnostics.









Programmable timers

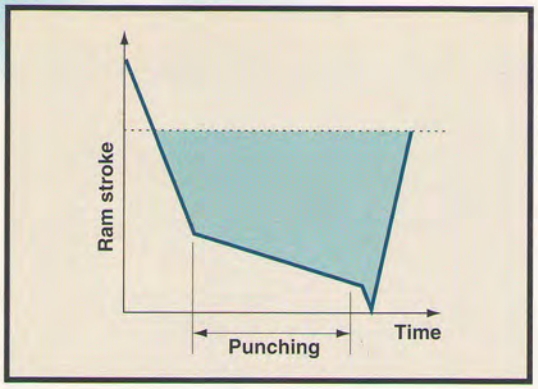
Programmable timers divide the work day into three distinctive time periods each with its own allowable noise limits,thus allowing for quiet punching operation during noise sensitive periods.

Learning mode

VIPROS learns the optimum punching speed and hydraulic pressure for each ram stroke though trial punching of the first sheet of a production run. This information is then used for the remaining production.

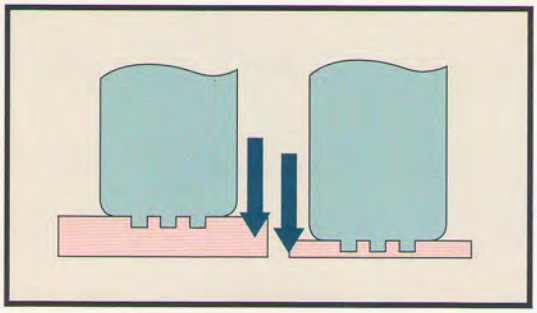
Multifunction intelligent NCT series
with hydraulic ram positioning system

VIPROS 255·2510K



Minimized noise and Vibration

VIPROS punching noise and vibration is greatly reduced by the precise control of ram speed, position, and hydraulic pressure by the PHNC.



Ram stroke length controlled by PHNC

In marking and forming operations, the specified punching depth and tool retract height is automatically controlled by the PHNC, eliminating the need to shim the punch for correct material penetration. The PHNC also automatically adjusts for material thickness. PHNC control of the hydraulic ram stroke significantly reduces setup time and increases productivity.

VIPROS-2510K punch 4'×8' full sheet without repositioning by 3-pneumatic material clamps for proper holding power to maintain highly accuracy on 4'×8'. AMADA VIPROS-2510K provide more highly efficiency and quality especialy for long size product and so on.

Standard accessories

- ●Pneumatic material clamps
- ●Stripping miss detector
- ●Pneumatic X-gauge block
- ●Auto repositioning device
- ●Floating type reposition-base
- ●Clamp punchout protection
- ●3 Auto-index device
- ●Auto dead zone selector for each tool size
- ●Air blow / oil mist device
- ●Tool alignment jig (1/2″ · 1-1/4″)

Options

The brush table, which gives VIPROS greatly enhanced acceleration and deceleration performance and ensures minimum back scratching of the sheet being punched, in addition to quiet sheet travel.

- ●Brush table
- ●Sub table
- ●Large tool alignment jig
- ●Punch assembling jig
- ●3.5″ FDD
- ●Mat switch interface
- ●Mat switch
- ●Programming software
- ●Designated color
- ●Tool alignment jig (2″ · 3-1/2″)
- ●Work chute 340×270mm (Only 2510K ball bearing table)
- ●Cooling unit
- ●Tooling selection
- ●High stroke tool
- ●Tapping tool M3 to M5