

# MST

SERIES

ENGLISH

## MULTI-STATION PART FORMERS

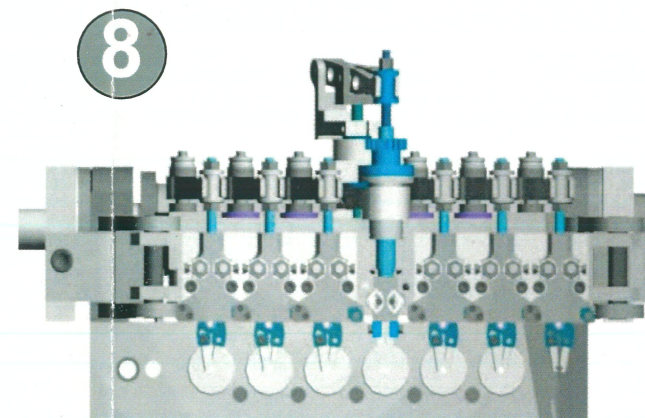
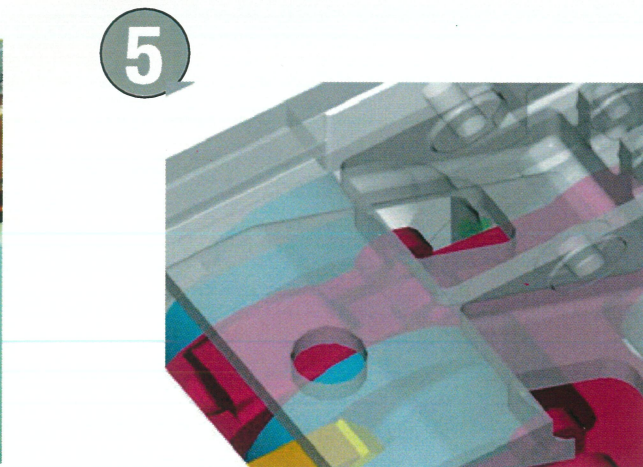
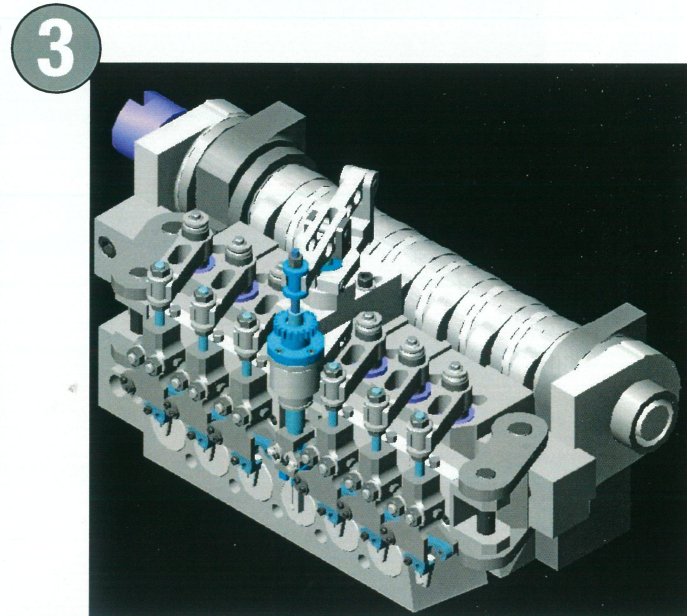
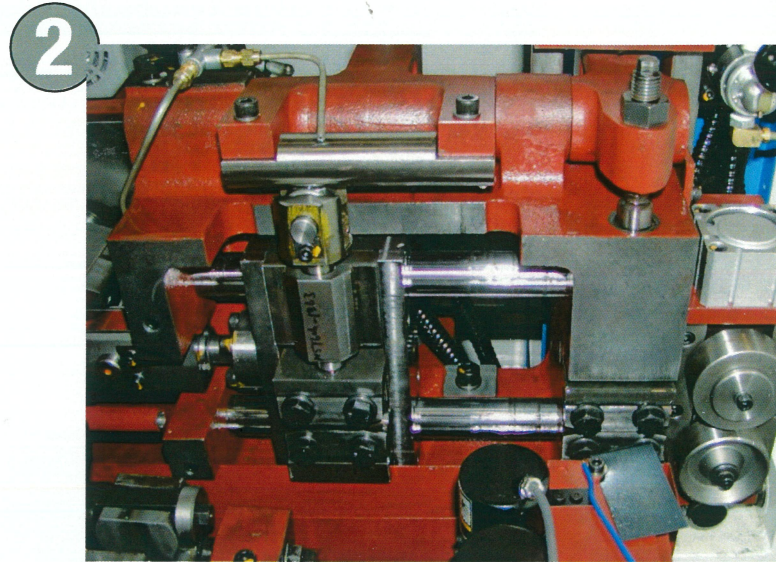
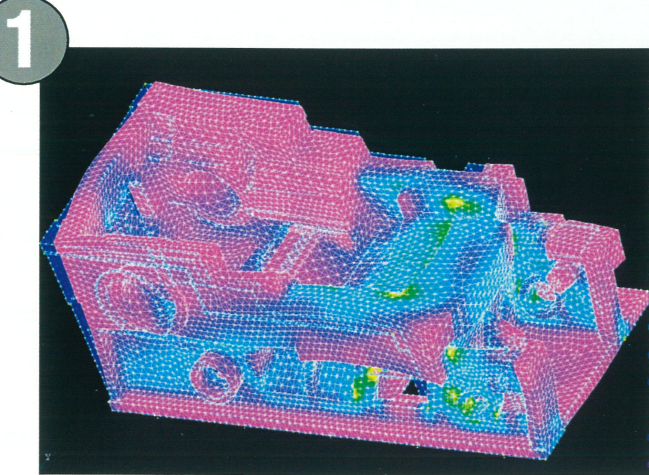


Nakashimada Engineering Works, Ltd.

# MST SERIES MULTI-STATION PART FORMERS

Nakashimada MST Series of multi-station Part Formers is developed to provide component makers with the ability to produce precision products of the highest quality. With over 20 years of evolutionary development, more than 100 MST Part Formers are currently being used by our clients to produce precision parts with high productivity. MST Part Formers have earned a special reputation for their work and boast an overwhelming share in the aircraft component industry.

The full range of MST Part Formers offers cutoff capabilities between 3 mm and 20 mm, from 3D3B to 7D7B configurations, and various shank length specifications to suit your specific needs.



## 1 Highly rigid structure developed using Finite Element Analysis

Advanced CAD techniques were applied in the development of the MST Part Formers. The result is extremely high rigidity and reduced vibration which allow for precision components to be formed. The MST machines also feature compact design, lighter weight, and greater energy efficiency.

## 2 Grip Feed for Precision Wire Feed

MST Part Formers use a proprietary grip feed system to provide precision wire feed that high-quality cold forged components depend on. The MST606, for example, feeds wire within tolerances as tight as 0.03mm even without stopper contact.

## 3 Arc Transfer

The arc transfer motion suits a wide variety of shank configurations with great precision. High-speed transfer of short blanks together with the use of Reversed Chuck allows the customer to form parts which are difficult to form by conventional method.

## 4 Swing-Around Die Set

MST Part Formers of 8 mm or above feature a hydraulically powered "swing-around" die block and transfer unit that rise and swing 90° up and around to face the operating platform. Tool changeover and fine adjustment of all parts have thus become dramatically easier. ※This feature may not be available depending on machine size and number of forming stations.

## 5 Double Connecting Rod & Crank Support Structure

MST machines of 6D6B or larger use a double connecting rod and crank support structure that eliminate variations in ram parallelism resulting from eccentric loads.

## 6 NCS III

MST Part Formers use the Numerical Control NCS III system as standard equipment. NCS III allows the machine operator to execute all setup adjustments from a touch panel offering up to 3000 adjustment points.

## 7 Pulse Dial

Ram can be moved back and forth by turning a small dial on the control panel. Useful and safe for critical timing adjustment and efficient operator-friendly setup. 6 mm machines come with a pendant style Pulse Dial for handheld operation.

## 8 Reversed Chuck Device (Option)

Blanks are rotated 180° as they are transferred by fingers to the next station. This makes forming possible on the opposite end of the blank. The changeover unit also makes the handling of the device simple and easy.

## Major Standard Features

### Wire Feed Auto ON/OFF Device

A switch on control panel to start or stop wire feed.

### End of Coil Detector

Limit switch placed between the main machine and the wire straightener, detects the end of wire coil and stops the machine automatically.

### Wire Short Feed Detector

When wire does not reach the sensor, machine stops immediately to avoid defects and mixing with good parts.

### Vertical Wire Straightener

Paring with horizontal straightener, it makes correction of wire more reliable for production. Roll positions can be also adjusted by adjuster.

### Variable Speed Drive (Inverter)

With the control by an inverter, speed of the main motor can easily be changed by simply turning a dial on the control panel.

### Timed PKO

Timing type PKO device that reliably holds the blank on the die side during the forging process. Knock-out timing is fixed according to the movement of the machine. Stroke can also be adjusted by changing the PKO cam.

### Preset Counter

An easy production management tool that counts the quantity of parts produced up to 6 digits. When total output reaches the preset amount, the machine stops automatically.

### Signal Tower

Error light mounted on top of the machine to inform that an anomaly had occurred and the machine had stopped.

### Air Clutch Brake

The pneumatic clutch not only provides positive torque transfer for jogging or continuous running of the ram, but also assures quick and positive braking action.

### Warning Light

Error indicator system warns of overloads, end of wire, short feed, low air pressure and other anomaly.

### Short Blank Support

Supports short blanks as they are kicked from the die to allow time for transfer finger pick up. Prevents blank drop.

### Parts Discharge Finger

Blank scarring is prevented by a special delivery chuck that picks up blanks from the last forging station and drops them into the discharge chute.

### NCS III

\*Please refer to inner page

### Reserved Chuck & Die Set

\*Please refer to inner page

### Pulse Dial

\*Please refer to inner page

### On-Timing Machine Stop

When anomaly occurs (such as out of material, oil pressure drop, etc.), machine can be stopped at a preset position (rear dead point of ram, etc.).

## Major Optional Accessories

Total Counter

Separate Lubrication with Tank

Stripper Device

Trimming Device

(including Slug Separator and  
DKO Relief)

Tubular Slug Separator

(Vacuum Type)

Dead Point Checker (DM Monitor)

Spare Finger Unit

Reversed Chuck Device

Oil Micro Separator

Finger Modular Alignment Jig

Die Cassette & Punch Cassette

Wire Reel for Carrier Base

Wire Cutter

Modular Jig for Changeover

Wire Power Loader

Standard and optional accessories vary depending on machine model.

Please contact our Sales Rep for details.



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