A Nidec Group Company

MINSTER®

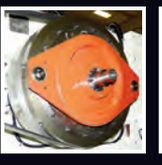
All for dreams

BULLETIN 185

KYORI

ANEX SERIES

15-150 TONS CAPACITY



ANEX Series Presses

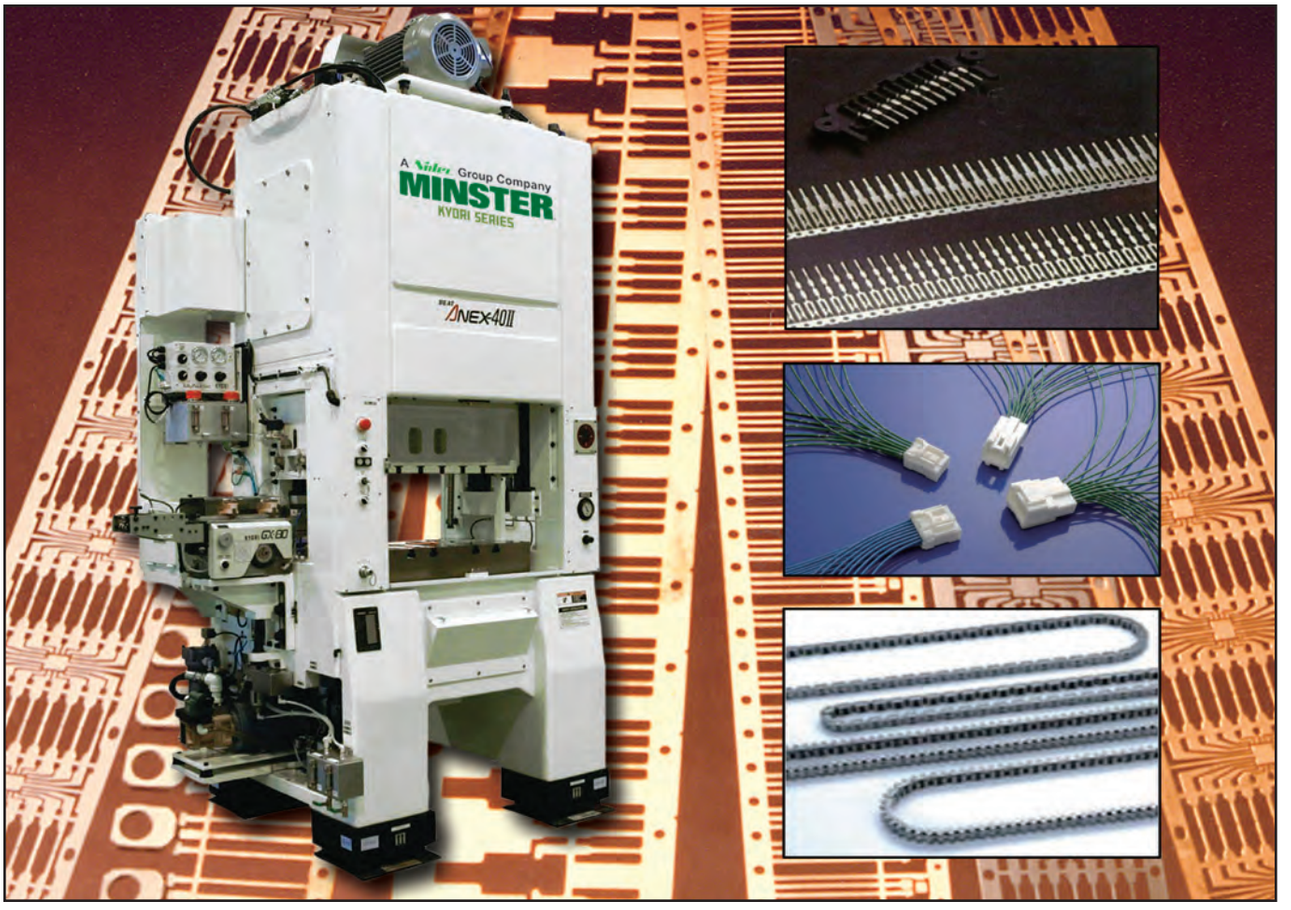
TECHNOLOGICALLY ADVANCED TO PROVIDE
GREATER FLEXIBILITY AND INCREASED PRODUCTION

INTRO

With more than thirty years of expertise in Link-Motion Press technology, Kyori's Knuckle Link Presses have earned the reputation for high precision, high performance and ease of operation from users all around the world.

Kyori ANEX presses provide consistent accuracy and precision for automated high speed blanking and bending operations. The ANEX-30IIH is capable of speeds up to 1400 SPM with a 16mm stroke length making it one of the fastest machines of its type in this tonnage range.

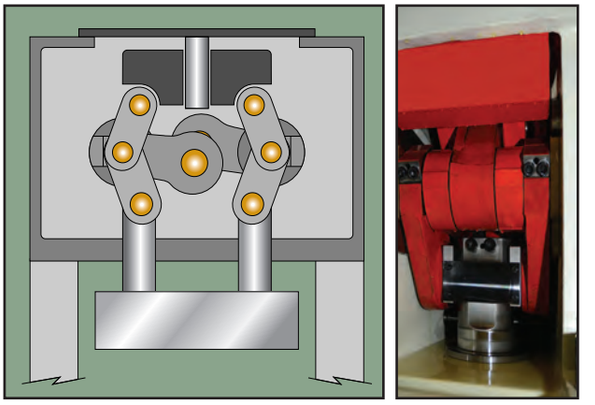
With the standard Knuckle Link design and Link Motion, the ANEX allows for slower, more consistent slide velocity through the work angle and reduced heat generation in the die, resulting in improved part quality and longer tool life.



ANEX
STANDARD FEATURES

SYMMETRICAL LINK DESIGN

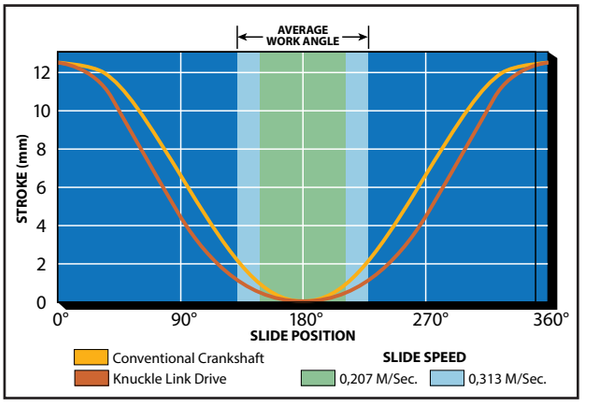
The Knuckle Link Design of the ANEX Series presses eliminates thermal displacement resulting in precise bottom-dead-center repeatability. In addition, the design contributes to greater durability, longer die life and reduced noise and vibration. The uncomplicated design of the ANEX Series knuckle link structure has many advantages over competitors' machines as described below.



Link Design

• Link Slide Motion

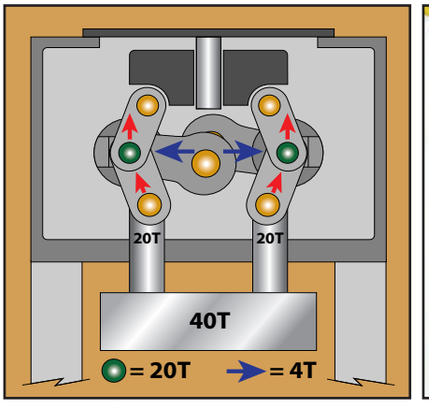
The Link Slide Motion allows for more time on the bottom of the stroke for better part forming and reduced impact of snap-thru forces which extends press and die life. The time between re-sharpening of the dies in an ANEX Series press is more than 25% greater than that of a conventional crank press.



Slide Motion

• Transmission of Force

In ANEX Series presses, stamping forces are distributed at the link connection with the majority of the force being transferred to the slide. The force from both link connections (red arrows) will be distributed evenly between them and will not be transferred to the crankshaft bearings (blue arrows). Also, any deflection of the horizontal connection rod will have practically no effect on the vertical motion.



Stamping Forces

• Accurate Slide Guiding

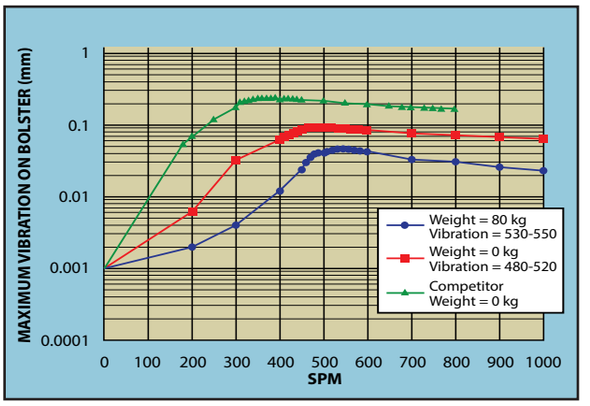
Kyori ANEX presses use 8-point needle bearings for slide guiding as opposed to competitors' post guiding systems. Needle bearings are able to withstand a much larger load and the long guide ways resist off-center loading. The positioning of the guides make them easy to maintain.

Needle Bearings

STANDARD FEATURES

• Dynamic Balancer

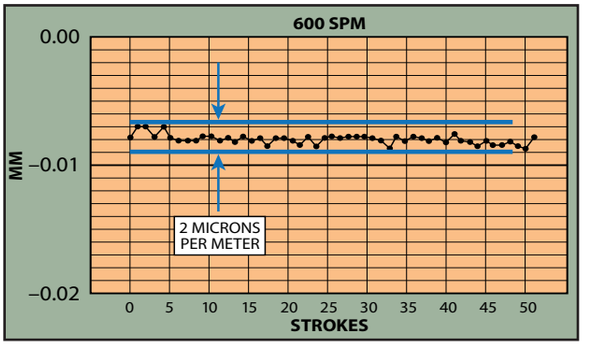
The Dynamic Balancer feature allows the press to be operated at full speed with minimal inertial effect. The balancer weight reciprocates as the slide moves downward resulting in perfect balance vertically and horizontally with minimal vibration.



Dynamic Balancing

• Minimal Shutheight Variation

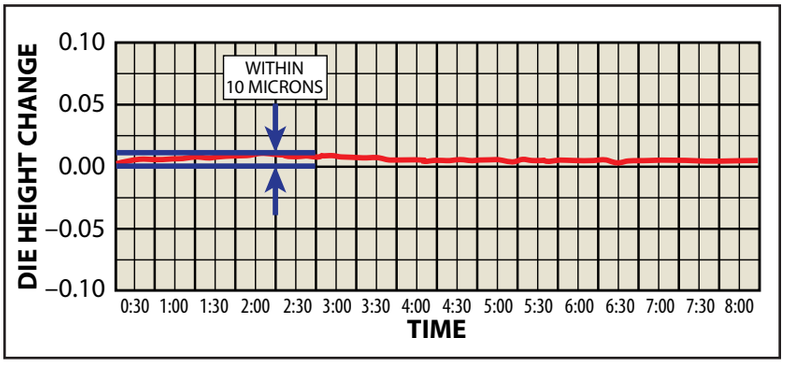
The ANEX link mechanism is constructed with greater mass than a conventional crank mechanism contributing to greater rigidity and strength. This combination of dynamic balancer and greater mass results in minimal dynamic displacement and shutheight variation producing greater bottom-dead-center repeatability.



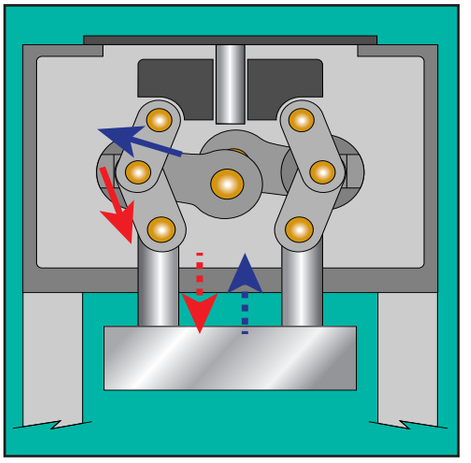
Shutheight Variation (Representative Data)

• Heat Generation and Thermal Cancellation

The design of the ANEX link mechanism allows for smaller bearings, thus producing less heat without sacrificing rigidity or causing overheating of the bearings. As the links heat up, one causes the shutheight to open while the other causes it to close, cancelling the thermal displacement. The result is greater accuracy and BDC repeatability.



Thermal Cancellation (Representative Data)



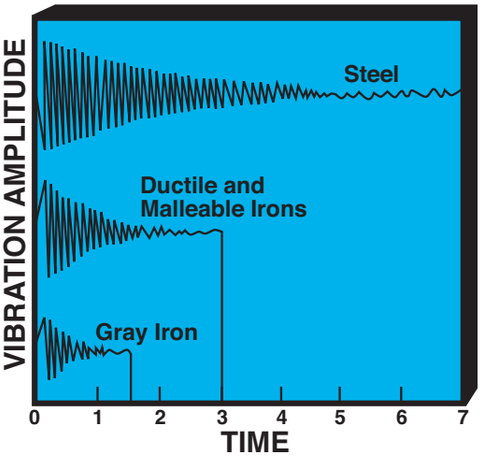
ANEX

STANDARD FEATURES

• Cast Iron Frame Construction

The ANEX frame is of class 40 grade cast iron. This construction provides the compressive strength and vibration dampening characteristics that provide greater die life and part accuracy.

Iron has 2.5 to 4.5 times the dampening capability of steel. Therefore, the ANEX utilizes castings where applicable in its beds, crowns and uprights to dampen vibration and noise created in high vibration and snap-thru applications.



• Combination Air Friction Clutch and Brake Unit

This single unit, combination, single disc clutch and brake has one moving member engaging the clutch by air pressure or applying the brake by spring pressure. Movement from full brake to complete engagement is approximately 1.59 mm assuring quick, controlled stopping at any speed increasing die life and parts production. Engagement on 360° friction surfaces remains constant throughout the stroke eliminating backlash after stamping and on the upstroke.

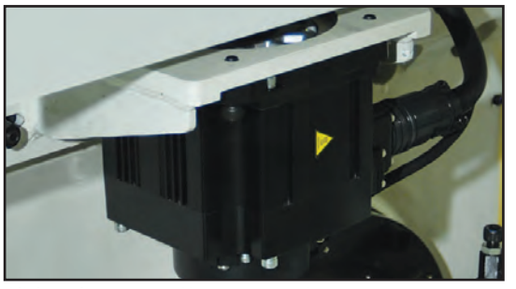
Clutch

• Reduced Noise

The reduction of noise is inherent in the construction of the knuckle link mechanism used in Kyori ANEX Series presses. The strong shock absorbing bearing structure contributes to the production of less high frequency noise

• Sticking

The knuckle link mechanism never reaches a 180° condition which eliminates the possibility of the press becoming "stuck" on the bottom of the stroke. To eliminate a die jam, motor can be reversed and micro inched out of the trouble.



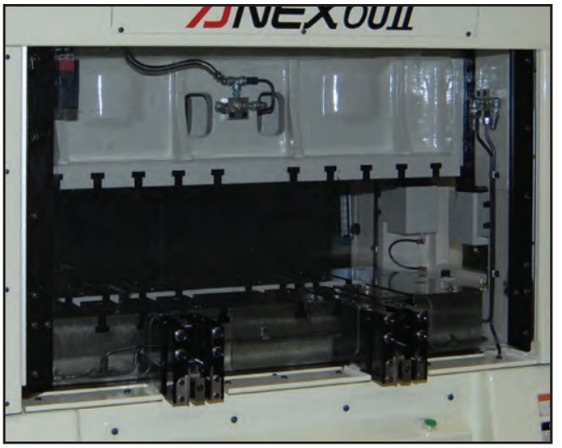
Slide Adjustment (Servo Motor)

• Motorized Slide Adjustment

The Slide Adjustment on the ANEX press is driven by a servo motor and the exact shutheight is displayed on the press console and the repeatability is within 0.01 mm.

005

STANDARD FEATURES



Die Doors

Operator Controls

Large Touch Panel

• Continuous Press Lubrication

The ANEX incorporates a pressurized recirculating oil lubrication system which supplies a continuous flow of filtered oil under pressure to all bearing surfaces ensuring reliable operation.

• Main Motor

The inverter-type main drive motor on the ANEX Series of presses is variable speed drive providing greater flexibility and higher performance throughout the full speed range, resulting in lower cost to the user.

• Die Doors

These standard safety features include pneumatically controlled doors with up and down motion on the front of the press and cabinet style doors on the rear.

• User Friendly Operator Controls with 10.4" (265mm) Touch Panel

Touch Panel Includes:

- Speed Meter
- Electronic 9-Digit Total Counter
- Electronic 9-Digit Preset Counter
- Die Height Adjustment Meter
- Electronic 7-Digit Hour Meter
- Main Motor Function
- Tool Parameter Storage Up to 99 Tools
- Periodic Maintenance Announcements
- Fault History
- Automatic Control of Heater/Chiller Unit

• Micro Inching (Reverse Optional)

Kyori ANEX users can enjoy the feature of full tonnage micro-inching of the press to assist with die set-up and troubleshooting.

Micro Inching Control

006

ANEX

STANDARD FEATURES

• Quick Access Feature

In conjunction with the Die Height Adjustment feature, this function enables easy access to the die allowing the user to raise the slide a specified amount (30-80mm) to thread material, inspect the die or release material. The slide is returned to the exact shutheight position and parallelism that it maintained prior to using quick access.

• Electronic Stroke Position Indicator

Brightly lit and easily seen, the stroke position indicator displays the exact crank angle.

• Stock Lube Reservoir

A stock lubrication tank complete with a solenoid valve is standard equipment on ANEX presses.

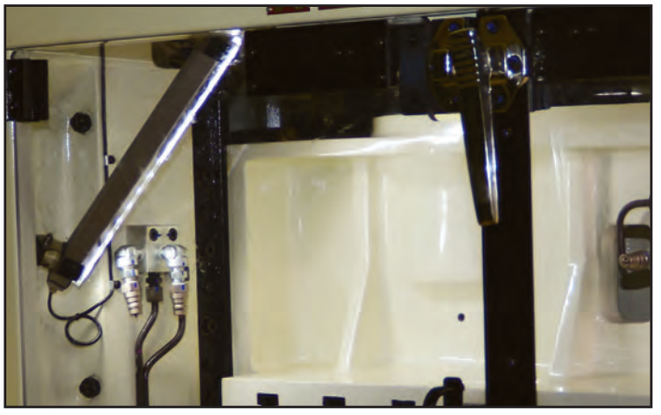
• Shock Mounts

Isolation/leveling mounts are included as standard equipment on Kyori ANEX Series presses.

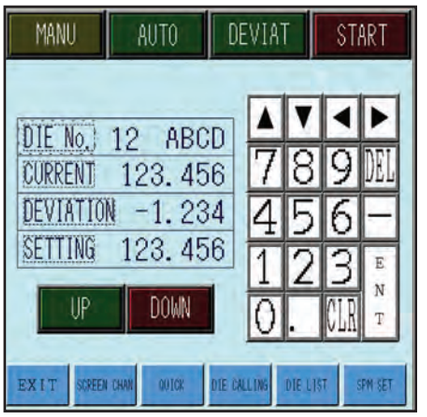
• Material End of Stock, Mis-Feeding, Over-Tension (Short Loop) Stop Connectors

• Air Outlet

• Work Lights

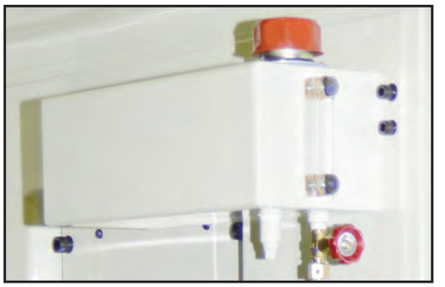


Work Lights

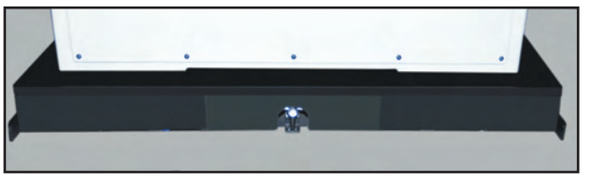


Die Height Adjustment

Stroke Position Indicator

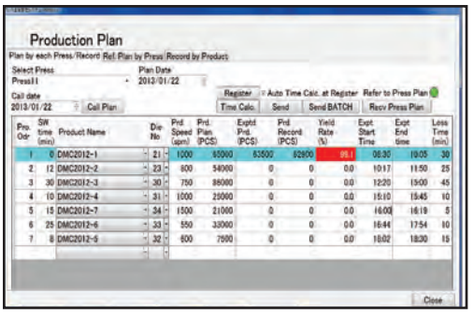


Stock Lube Tank



Shock Mounts

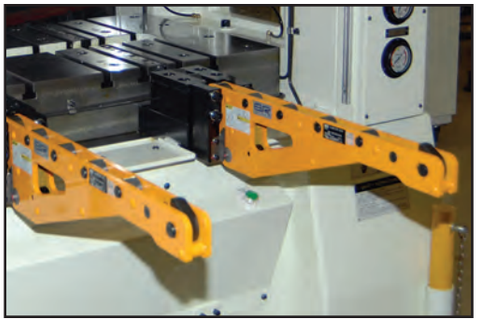
OPTIONAL FEATURES



Production Management Screen

Load Monitor Screen

Oil Heater/Chiller Unit



Die Lift Rails

• Production Management System

This ANEX option allows the user to monitor the real time production status of the press from a remote location, such as an office.

Some of the system's functions include:
- Creation of a Production Schedule w/ Ordering Capabilities
- Real Time Production Monitoring w/ Report Generating Capabilities
- Production Result with Report Generating Capabilities
- Historical Recording of Variations from Standard
- Die Management with Maintenance Record
- Reminders for Periodic Maintence
- Easy Recall of Die Parameters

• Load Monitor

This system monitors the load on the die via sensors in the press uprights and will stop the press in the event of a misfeed, unplanned shutheight variation or die overload.

• Oil Heater/Chiller

To insure accurate bottom-dead-center repeatability, the ANEX pressses are equipped with lubricant heater/chiller. The unit can be programmed to heat and circulate the oil prior to operation. Once the press is in production mode, the oil is circulated through the chiller to maintain the proper temperature. The temperature is achieved automatically determined by the press SPM.

• Die Height Detector (4-Channel)

• Air Ejector With DC Solenoid Valve

• Material Holding Cylinder (For Feed Threading)

• Die Clamps (Upper & Lower)

• Die Lift Rails (2 Front, 2 Rear)

• 2-Piece Die Table (Consoles)

KYORI

GX SERIES HIGH PRECISION FEEDS

The GX Series Feed is designed to feed materials for ultra-precision and high-speed press stamping applications. It is especially suitable for parts such as narrow pitch connectors, micro electonic parts and semiconductor lead frames.

- Feed length is adjustable with a manual handle and digital display at a resolution of 0.01mm and feed length can be adjusted "on the fly."
- The open-front gripper design allows for easy material threading and the material thickness is easily changed with the turn of two dials.
- No lubrication contamination due to location of material passline.
- The gripper is designed to hold thin plates or plated materials vertically eliminating damage so parts are in optimum condition for secondary machining.
- The gripper is easily replaceable to facilitate the shape of the material to be stamped.

FEED MODEL		GX-40	GX-80	GX-120
Feed Length	mm	0 - 40	0 - 80	0 - 100
Stock Width	mm	8 - 80	8 - 80	8 - 120
Stock Thickness	mm	MAX. 2.0	MAX. 2.0	MAX. 2.0
Install Location		L or R	L or R	L or R
Feed Direction		L-R / R-L	L-R / R-L	L-R / R-L
Feed Angle (Standard)	Deg.	165°	165°	165°
Feed Angle (Optional)	Deg.	150°/120°	150°/120°	150°/120°
Pilot Release	mm	0.2	0.5	0.7
Grip Margin	mm	0.1	0.1	0.1
Release Angle	Deg.	60°	60°	60°
Grip Width	mm	50	50	80
Center Groove Width	mm	6	6	6
Air Pressure	MPa	0.44	0.44	0.49

009

SPECIFICATIONS



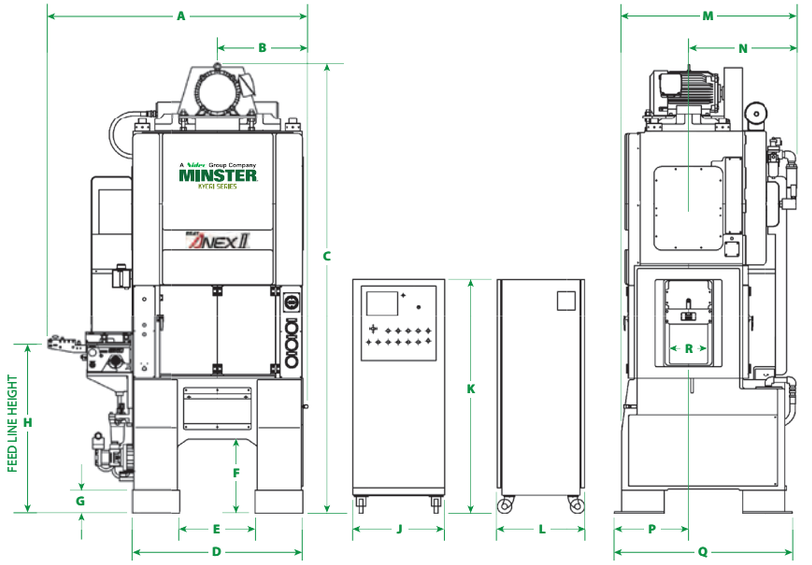

PRESS MODEL		ANEX-15H	ANEX-30II	ANEX-40II	ANEX-40IIW
Tons Capacity	kN	150	300	400	400
Stroke Length	mm	10	20/25/32	20/25/30/32	20/25/32/40
Strokes Per Minute	SPM	200-1800 (2000)	200-1200/1050/900	180-1000/900/850/850	180-850/800/700/700
Shutheight	mm	220	240	240	240/240/240/235
Shutheight Adjust.	mm	30	40	50	50/50/50/45
Slide Area	mm	500 x 260	600 x 300	750 x 340	950 x 450
Bolster Area	mm	500 x 360	600 x 400	750 x 500	950 x 600
Bolster Thickness	mm	80	90	120	120
Bed Opening	mm	350 x 50	400 x 100	560 x 120	790 x 120
Bolster Opening	mm	250 x 40	350 x 60	500 x 100	700 x 100
Main Motor	kw	15	11	15	18.5

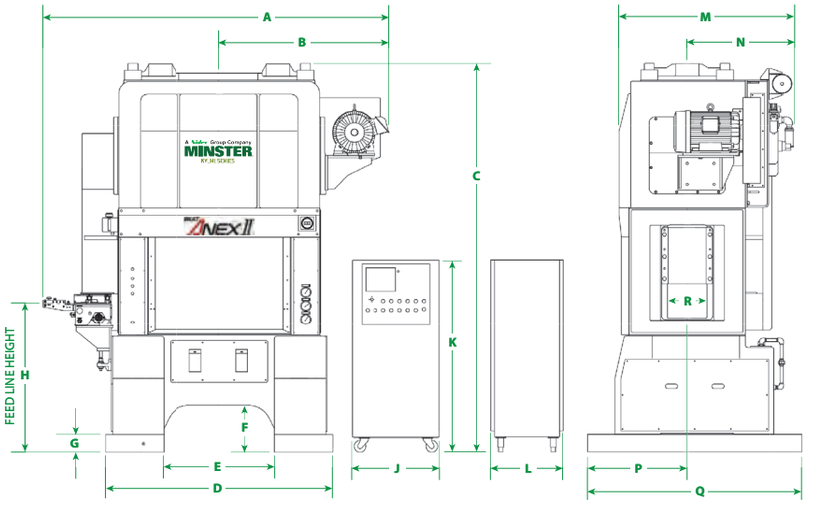




PRESS MODEL		ANEX-60II	ANEX-60II W	ANEX-80II	ANEX-80W	ANEX-125
Tons Capacity	kN	600	600	800	800	1250
Stroke Length	mm	20/25/32	25/32/40/45/50	20/25/32/36	25/32	25/36
Strokes Per Minute	SPM	100-750/750/650	100-700/600/450/400/350	120-700/600/550/500	120-500/450	100-400/350
Shutheight	mm	300	340/340/335/325/320	320	320	350
Shutheight Adjust.	mm	80	80/80/75/65/60	80	80	80
Slide Area	mm	1030 x 500	1280 x 500	1080 x 580	1380 x 580	1480 x 600
Bolster Area	mm	1100 x 600	1350 x 600	1200 x 800	1500 x 800	1600 x 900
Bolster Thickness	mm	140	140	160	160	180
Bed Opening	mm	840 x 120	1050 x 120	900 x 160	1200 x 160	1300 x 160
Bolster Opening	mm	780 x 80	1000 x 80	860 x 120	1160 x 120	1260 x 120
Main Motor	kw	22	22	30	30	37

ANEX **DIMENSIONS**





DIM.	ANEX-15H	ANEX-30II	ANEX-40II	ANEX-40IIW	ANEX-60II	ANEX-60IIW	ANEX-80II	ANEX-80W	ANEX-125
A	1510 mm	1780 mm	1850 mm	2050 mm	2840 mm	3090 mm	3000 mm	3280 mm	3520 mm
B	570 mm	610 mm	645 mm	745 mm	1420 mm	1545 mm	1470 mm	1620 mm	1670 mm
C	2820 mm	3075 mm	3180 mm	3185 mm	3080 mm	3170 mm	3380 mm	3380 mm	4070 mm
D	990 mm	1160 mm	1200 mm	1530 mm	1900 mm	2150 mm	1960 mm	2260 mm	2580 mm
E	420 mm	520 mm	530 mm	790 mm	900 mm	1150 mm	960 mm	1260 mm	1320 mm
F	554 mm	530 mm	521 mm	521 mm	550 mm	550 mm	400 mm	400 mm	515 mm
G	164 mm	160 mm	161 mm	161 mm	150 mm	150 mm	150 mm	150 mm	200 mm
H	~1074 mm	~1120 mm	~1191 mm	~1191 mm	~1240 mm	~1240 mm	~1280 mm	~1280 mm	~1630 MM
J	750 mm	650 mm	650 mm	650 mm	750 mm	750 mm	750 mm	850 mm	850 mm
K	1650 mm	1650 mm	1650 mm	1650 mm	1650 mm	1650 mm	1650 mm	1650 mm	1650 mm
L	620 mm	620 mm	620 mm	620 mm	620 mm	620 mm	620 mm	620 mm	620 mm
M	1240 mm	1315 mm	1300 mm	1330 mm	1490 mm	1490 mm	1555 mm	1560 mm	1730 mm
N	720 mm	780 mm	830 mm	830 mm	945 mm	945 mm	970 mm	970 mm	1050 mm
P	450 mm	535 mm	520 mm	530 mm	705 mm	705 mm	855 mm	820 mm	825 mm
Q	1060 mm	1210 mm	1250 mm	1270 mm	1540 mm	1540 mm	1840 mm	1840 mm	1780 mm
R	140 mm	160 mm	200 mm	200 mm	230 mm	230 mm	280 mm	280 mm	360 mm

Nidec Minster, Minster, OH
Telephone: (491) 628-2331

Nidec Shimpo, Kyoto, Japan
Telephone: +81-75-958-3606

Minster GmbH, Halblech, Germany
Telephone: (49) 8368 9134 0

Minster China, Ningbo, China
Telephone: +86 574 8630-8020

Before You Invest in New Material Forming Technology, You're Invited to Visit Our Manufacturing, Training, Research, Parts and Service Facilities to See How "Minster Quality" is Built Into All of Our Products and Services.

A Nidec Group Company
MINSTER®

A Century of Heritage Pressed Into a Lifetime of Quality

240 WEST FIFTH STREET • MINSTER, OHIO 45865-0120 U.S.A. • PHONE: (419) 628-2331 • FAX: 419-628-3517

www.minster.com

Minster Has Sales and Service Offices Located Throughout the World
Contact Minster Direct For The Name of Your Global Representative

100PP913