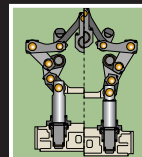




KYORI

VX SERIES

40 & 80 TONS CAPACITY



VX Series Presses

TECHNOLOGICALLY ADVANCED TO PROVIDE
GREATER FLEXIBILITY AND INCREASED PRODUCTION

VX

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 VX presses are variable stroke machines based on the ANEX series press with the addition of a unique variable stroke mechanism. Stroke changes are easily accomplished by changing the variable stroke link. In addition, VX

presses are revolutionary in that they maintain bottom-dead-center repeatability throughout the entire stroke range due to the simplicity of the adjustment mechanism.

With the standard Knuckle Link design and Link Motion, the VX 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.



STANDARD FEATURES

SYMMETRICAL LINK DESIGN

The Knuckle Link Design of the VX 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 VX Series knuckle link structure has many advantages over competitors' machines as described below.

• Link Slide Motion

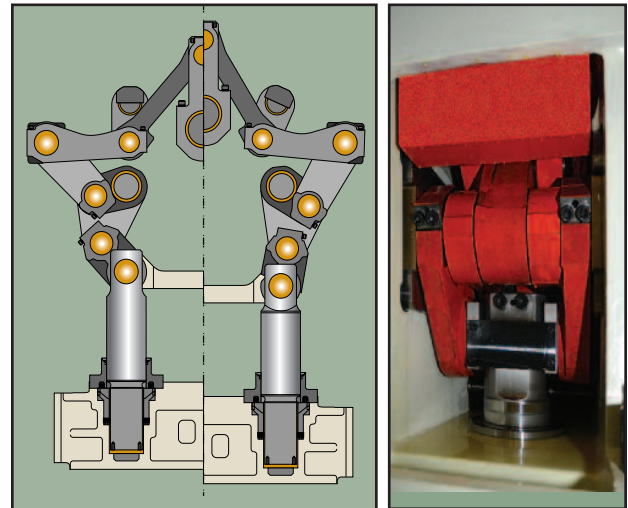
The Link Slide Motion allows for more time on the bottom of the stroke for better part forming and reduced impact of snap-thru forces which extends press and die life. The time between re-sharpening of the dies in an VX Series press is more than 25% greater than that of a conventional crank press.

• Transmission of Force

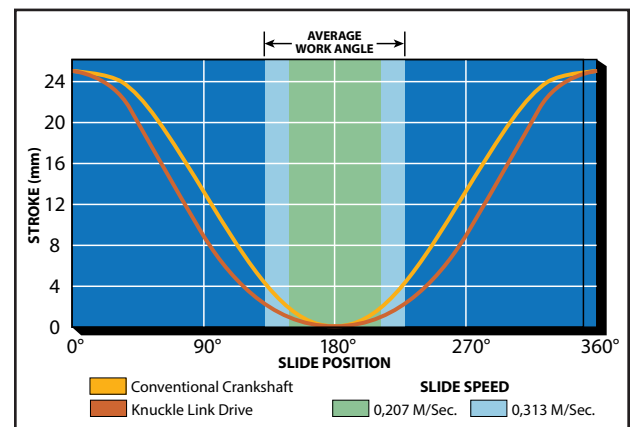
In VX Series presses, stamping forces are distributed at the link connection with the majority of the force being transferred to the slide. The force from both link connections will be distributed evenly between them and will not be transferred to the crankshaft bearings. Also, any deflection of the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

• Accurate Slide Guiding

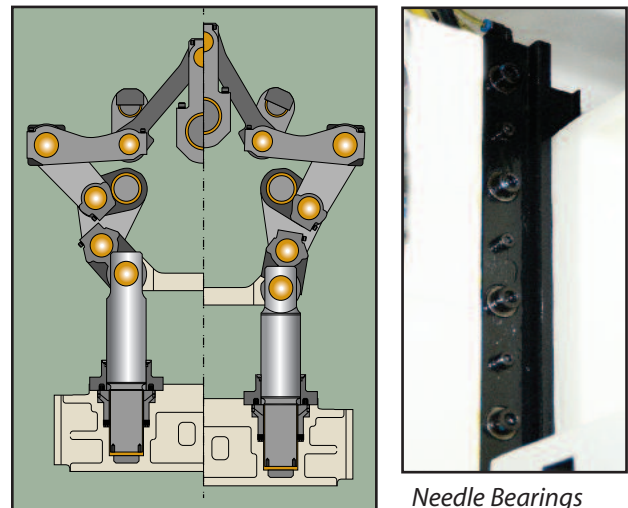
Kyori VX presses use 8-point needle bearings for slide guiding as opposed to competitors' post guiding systems. Needle bearings are able to withstand a much larger load and the long guide ways resist off-center loading. The positioning of the guides make them easy to maintain.



Link Design



Slide Motion



Needle Bearings

003

STANDARD FEATURES

• Dynamic Balancer

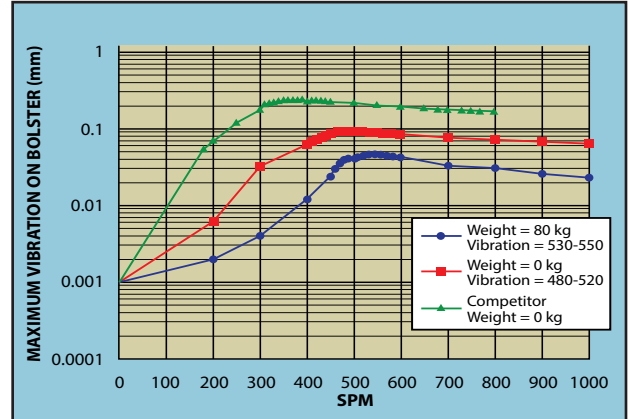
The Dynamic Balancer feature allows the press to be operated at full speed with minimal inertial effect. The balancer weight reciprocates as the slide moves downward resulting in perfect balance vertically and horizontally with minimal vibration.

• Minimal Shutheight Variation

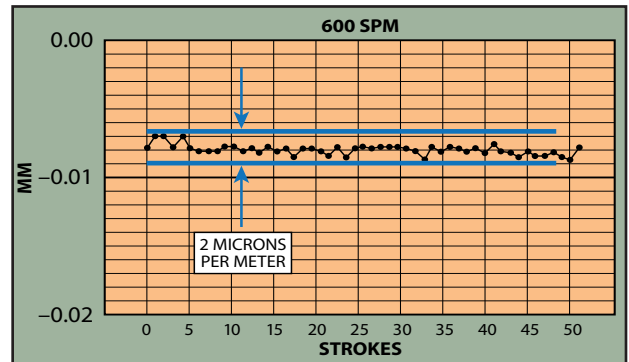
The VX link mechanism is constructed with greater mass than a conventional crank mechanism contributing to greater rigidity and strength. This combination of dynamic balancer and greater mass results in minimal dynamic displacement and shutheight variation producing greater bottom-dead-center repeatability.

• Heat Generation and Thermal Cancellation

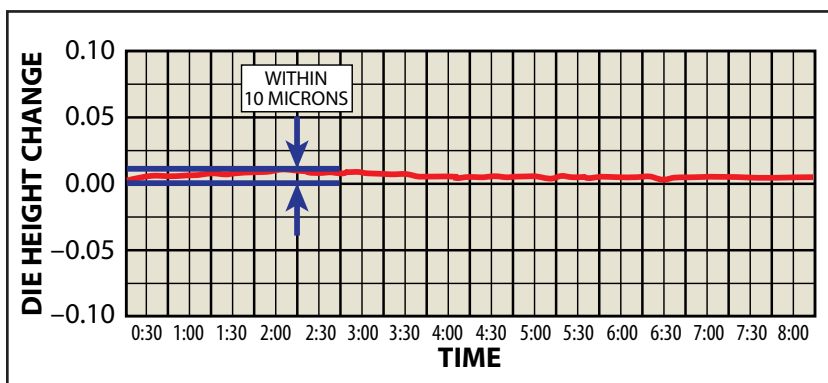
The design of the VX link mechanism allows for smaller bearings, thus producing less heat without sacrificing rigidity or causing overheating of the bearings. As the links heat up, one causes the shutheight to open while the other causes it to close, cancelling the thermal displacement. The result is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



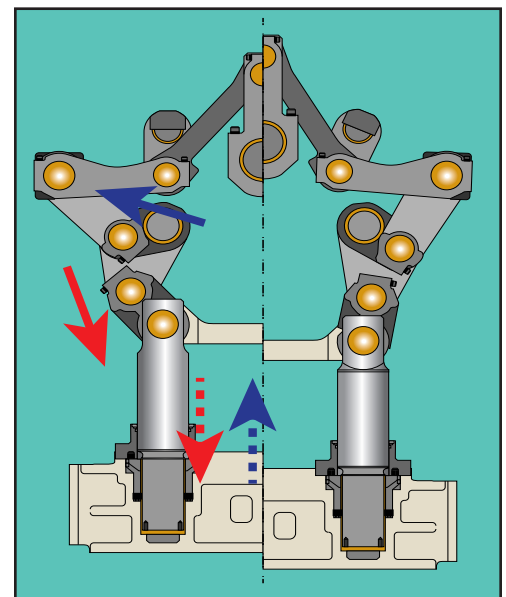
Dynamic Balancing



Shutheight Variation (Representative Data)



Thermal Cancellation (Representative Data)



STANDARD FEATURES

• Cast Iron Frame Construction

The VX 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 VX 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.

• Reduced Noise

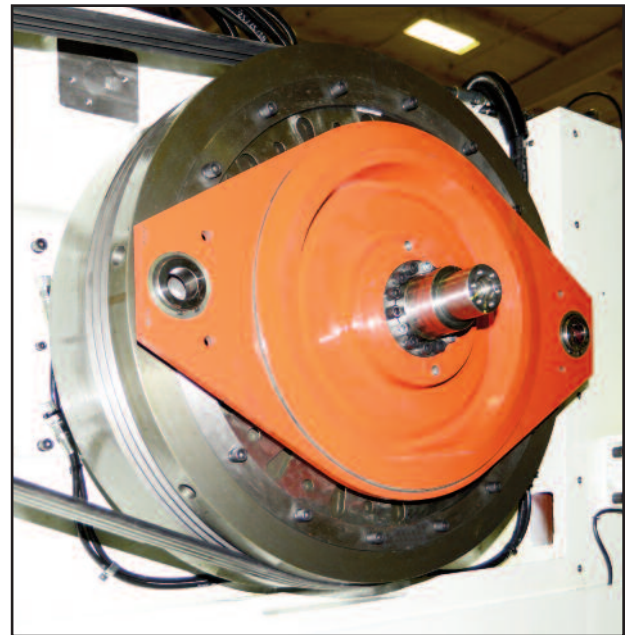
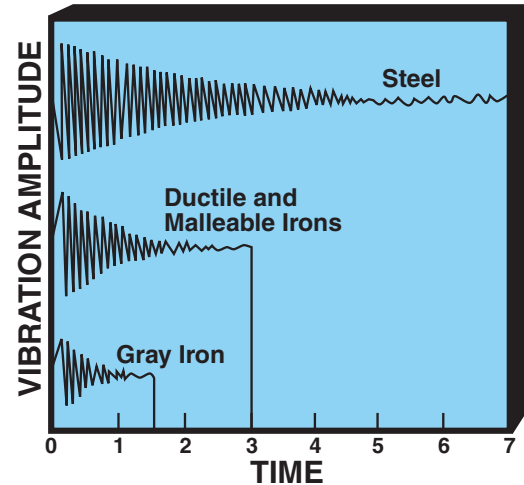
The reduction of noise is inherent in the construction of the knuckle link mechanism used in Kyori VX Series presses. The strong shock absorbing bearing structure contributes to the production of less high frequency noise

• Sticking

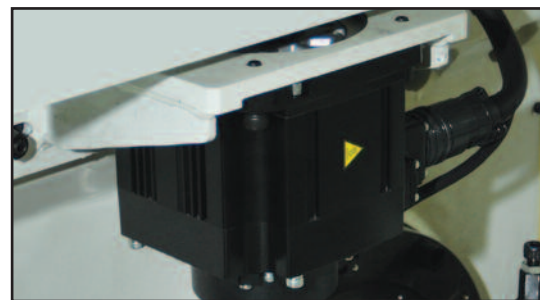
The knuckle link mechanism never reaches a 180° condition which eliminates the possibility of the press becoming "stuck" on the bottom of the stroke. To eliminate a die jam, motor can be reversed and micro inched out of the trouble.

• Motorized Slide Adjustment

The Slide Adjustment on the VX 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.

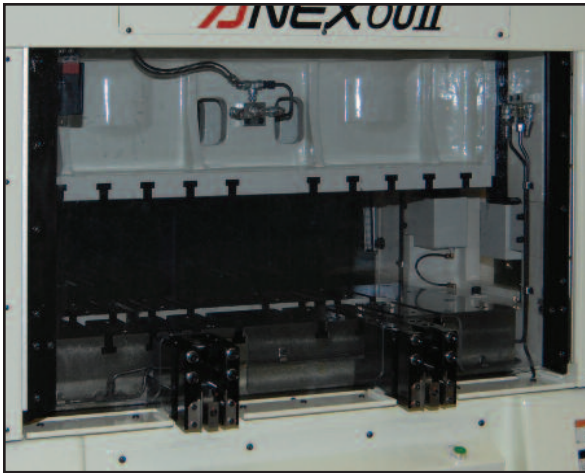


Clutch



Slide Adjustment (Servo Motor)

STANDARD FEATURES



Die Doors



Operator Controls



Large Touch Panel

• Continuous Press Lubrication

The VX 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 VX 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 7.5" (190mm) 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 VX users can enjoy the feature of full tonnage micro-inching of the press to assist with die set-up and troubleshooting.



Micro Inching Control

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 VX presses.

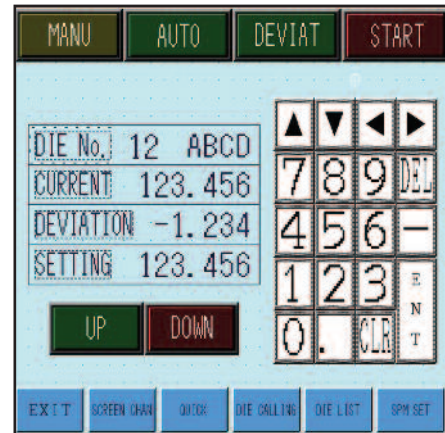
• Shock Mounts

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

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

• Air Outlet

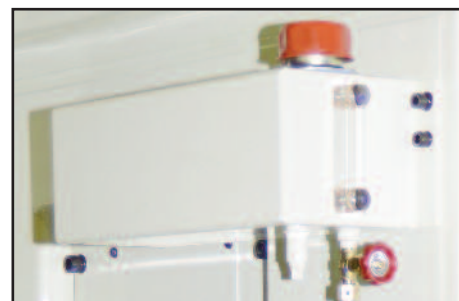
• Work Lights



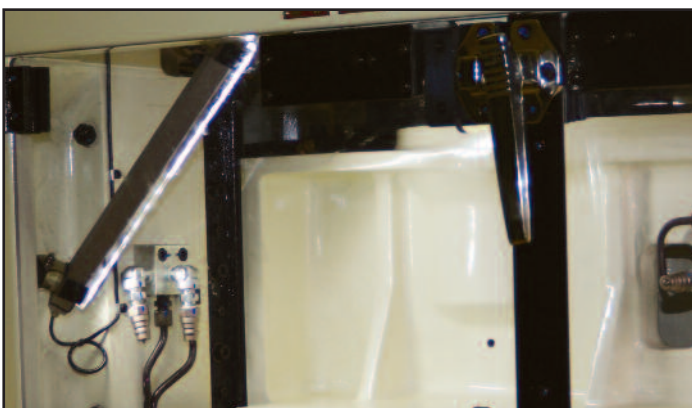
Die Height Adjustment



Stroke Position Indicator



Stock Lube Tank

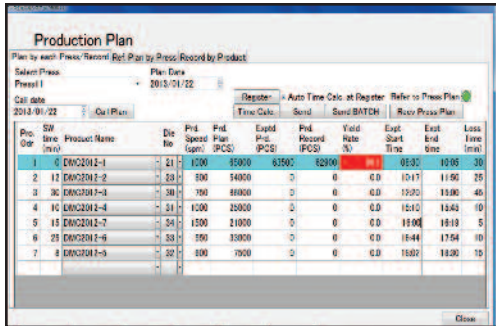


Work Lights



Shock Mounts

OPTIONAL FEATURES



Production Plan

Plan by each Press/Record Ref Plan by Press/Record by Product

Select Press: Plan Date: 2013/01/22

Print: Register Auto Time Calc. at Register Refer to Press Plan

Ctrl: Time Calc. Send Send BATCH Recv Press Plan

No.	SW	Product Name	Die No.	Pld. Speed	Pld. Plan	Expt. P-C	Yield Record	Yield Rate	Expt. Start Time	Expt. End Time	Loss Time
1	0	DW0201-1	51	1200	35000	0	0	0.0	09:50	10:05	30
2	12	DW0201-2	52	800	14000	0	0	0.0	10:17	11:00	35
3	30	DW0201-3	58	700	40000	0	0	0.0	10:20	11:00	45
4	10	DW0201-4	51	1200	35000	0	0	0.0	10:40	11:43	10
5	15	DW0201-7	54	1500	21000	0	0	0.0	10:00	10:19	5
6	25	DW0201-9	53	150	33000	0	0	0.0	10:44	11:54	10
7	8	DW0201-9	52	800	7000	0	0	0.0	10:02	10:30	10

Production Management Screen

• Production Management System

This VX 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 Maintenance
- 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.



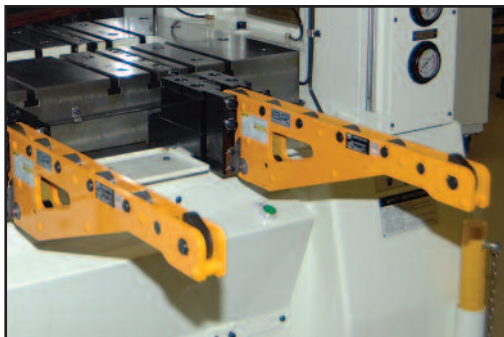
Load Monitor Screen



Oil Heater/Chiller Unit

• Oil Heater/Chiller

To insure accurate bottom-dead-center repeatability, the VX presses 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 Lift Rails

- 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)

GX SERIES HIGH PRECISION FEEDS

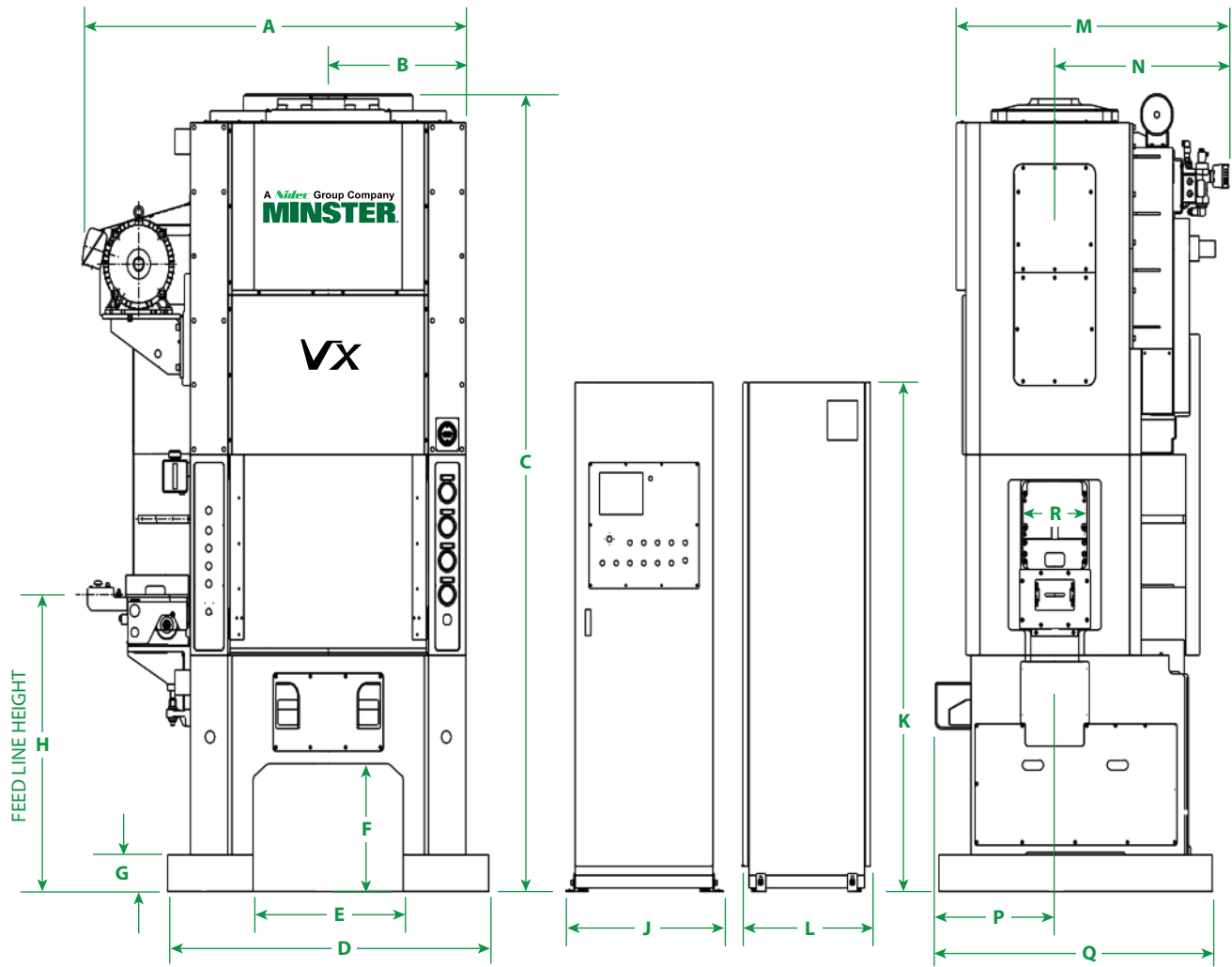


The GX Series Feed is designed to feed materials for ultra-precision and high-speed press stamping applications. It is especially suitable for parts such as narrow pitch connectors, micro electronic parts and semiconductor lead frames.

- 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

SPECIFICATIONS & DIMENSIONS



PRESS MODEL		VX-40W	VX-80W
Tons Capacity	kN	400	800
Stroke Length	mm	16/20/25/30/35/40/50	25/30/35/40/50/60/75
Strokes Per Minute	SPM	180-1000/800/600 500/400/350/260	120-650/550/470 400/330/270/200
Shutheight (Max.)	mm	300	380
Shutheight Adjust.	mm	50	80
Slide Area	mm	950 x 450	1380 x 580
Bolster Area	mm	950 x 600	1500 x 900
Bolster Thickness	mm	120	100
Bed Opening	mm	760 x 120	1200 x 250
Bolster Opening	mm	700 x 100	1160 x 210
Main Motor	kw	18.5	37

DIM.	VX-40W	VX-80W
A	2120 mm	2810 mm
B	840 mm	1130 mm
C	3170 mm	3850 mm
D	1630 mm	2260 mm
E	760 mm	1260 mm
F	505 mm	300 mm
G	145 mm	150 mm
H	~1175 mm	~1190 mm
J	800 mm	700 mm
K	2015 mm	2015 mm
L	650 mm	650 mm
M	1410 mm	1835 mm
N	890 mm	980 mm
P	610 mm	855 mm
Q	1410 mm	1840 mm
R	200 mm	380 mm

011



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 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**