

# MINSTER

## FX2 Series



300–600 mT Capacity



A Minster-built machine is an asset investment backed by skilled aftermarket service technicians all around the world. Beginning with the raw material in our foundry—to the custom engineering and creation of each machine—you're gaining more than an asset, you're gaining a team of experts ready to meet your exact needs.

## MINSTER P2X Series

- 4 Low Inertia Drive  
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- 5 Robust Design  
Precision Built
- 6 Equipped with Fieldhawk  
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- 9 Production Management Control (PMC)
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## FX2 SERVO FEATURES

### Low Inertia Drive

Faster Response and  
Higher Efficiency

Engineered to enable higher acceleration and deceleration rates, Nidec Minster's low inertia drive creates a faster response through each press stroke. Lower torque requirements also result in higher efficiency forming.

#### Higher Productivity

Faster response results in significantly higher production rates while running complex modes including pendulum, rapid restrike and multi-hit.

#### Reduced Stopping Angle

Increased variability; operational capability to run longer feed lengths/angles at higher production rates.

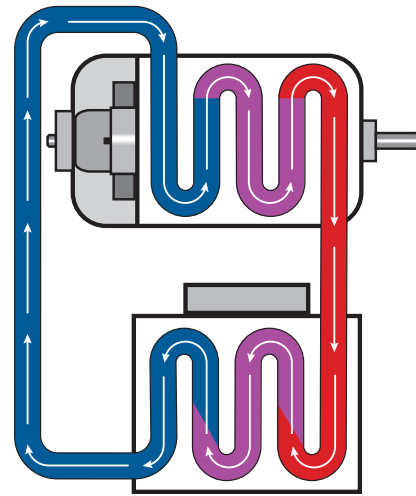
#### Higher Efficiency

Comparable speed profiles operated with lower inertia systems significantly reduce power requirements.

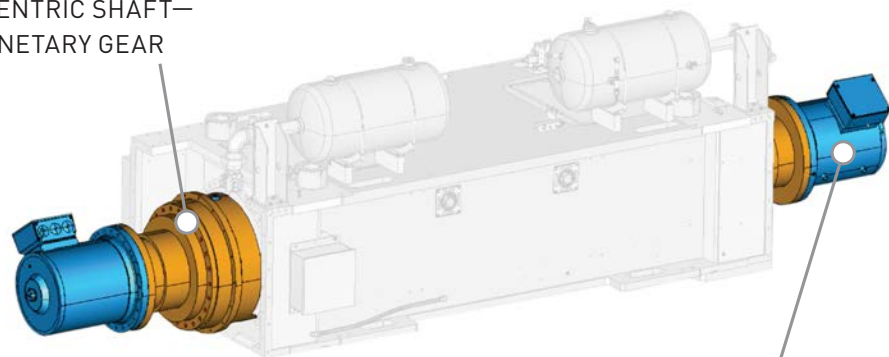
### Liquid Cooling Technology

Higher power density and cooler  
operating temperatures

Nidec Minster's leading Servo technology consistently provides more usable power than comparable air cooled motors, in addition to maintaining thermal stability and cooler operating temperature. These combined features lead to a longer component life and an overall cleaner operating environment.



LOW INERTIA  
ECCENTRIC SHAFT—  
PLANETARY GEAR



HIGH TORQUE  
SIEMENS SERVO MOTOR

### Robust Design

Withstand the increased forces  
of the new high tensile materials

Nidec Minster presses are built to stand the test of time. Our design configurations are:

- Built from forged high-strength alloy steel drive train components.
- Rated to full press tonnage and carries optional 20% reverse load ratings.

### Precision Built

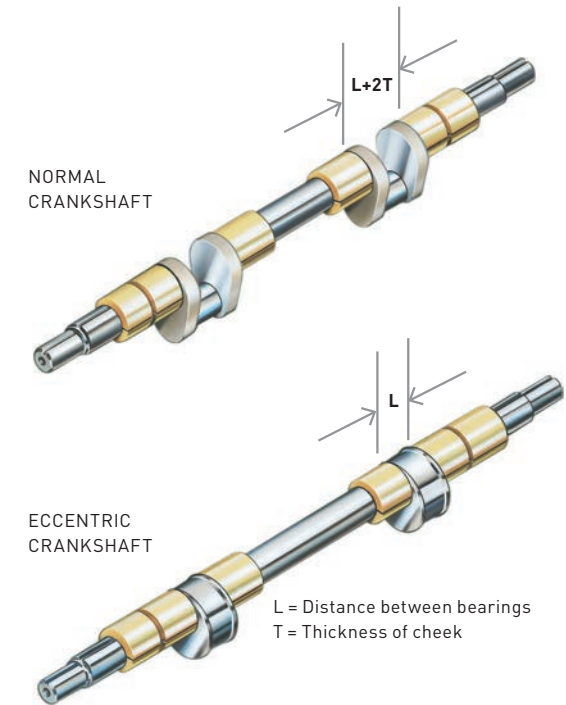
Match your exact needs

With extremely tight tolerances in the crown bearings, 8-point bronze gibs, and rapid and exact shutheight, your Minster press will be built with the highest precision.

#### Eccentric Shaft Design

Drive your ability for end-result accuracy with our Eccentric Shaft Design. This unparalleled approach creates:

- Superior dynamic parallelism and BDC accuracy.
- Minimized backlash for consistent accuracy in pendulum mode.



### Equipped with Fieldhawk

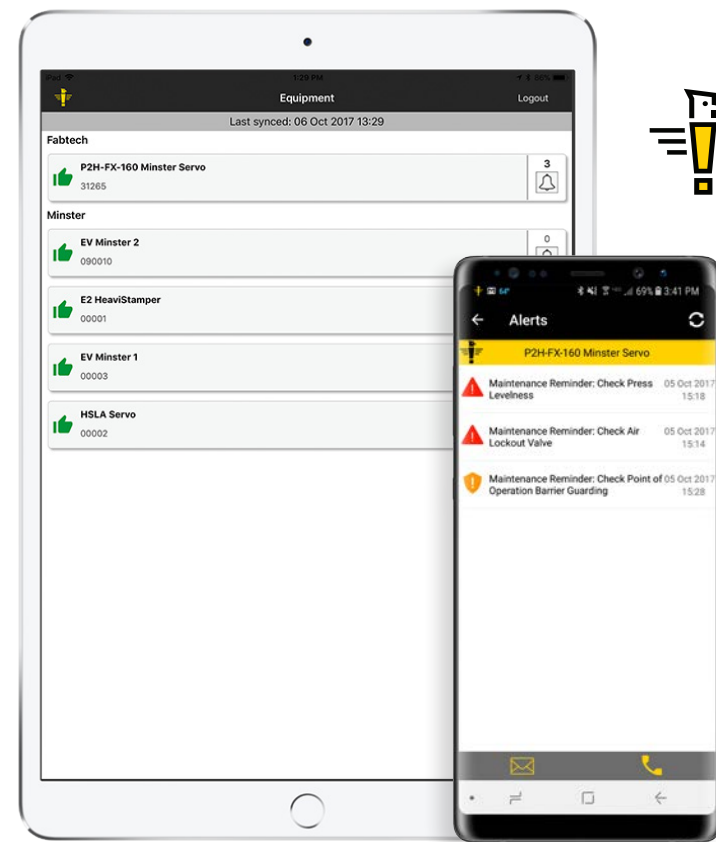
An app to watch over your Nidec press room equipment

#### Instantly know your Press line Status

Receive real-time updates for: press status, operating condition, production data, and more. Helps you maintain control and stay productive!

#### Receive Service and Maintenance Alerts

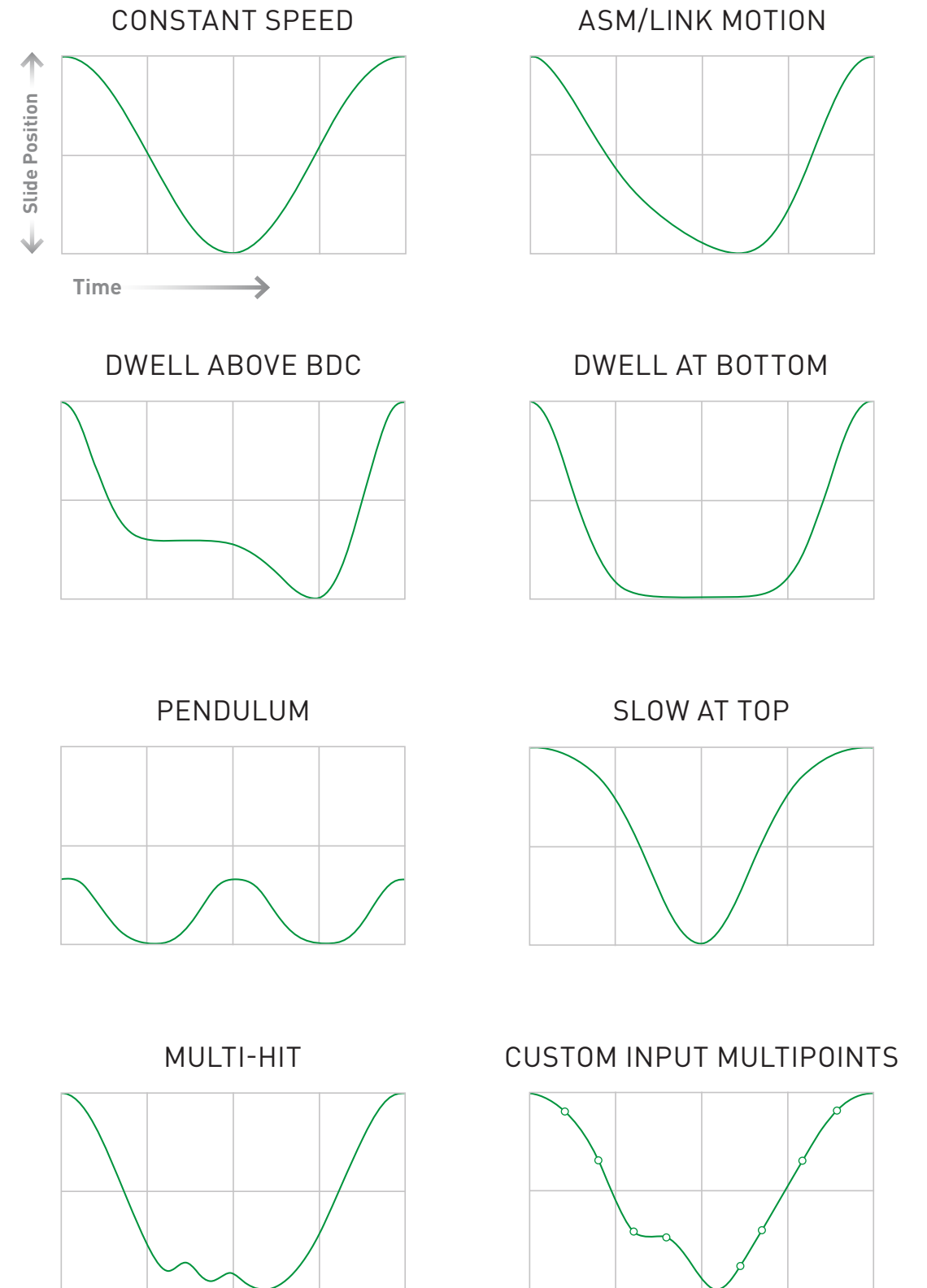
Delivered to your mobile device from the Minster Production Management Control (PMC) press control panel inform you of upcoming service intervals required, allows you to proactively schedule genuine Minster parts and service to reduce downtime.



### Motion Profiles

Flexibility to program your optimum production solution

The operator-friendly HMI provides the ability to quickly chose from any of these highly customizable slide motion profiles (at right) to improve productivity, part quality and tool life.





### **Production Management Control (PMC)**

Features for convenient planning and maintenance

This full featured press control was designed and integrated by Minster and incorporates all press functions including:

- Full machine diagnostics detailing all press and feed line faults.
- Multiple selectable languages.
- Open architecture which allows for greater convenience in planning and maintenance.
- PLC and color touch screen technology; all press and feed line functions can be monitored for efficient diagnosis of production line faults.

Available popular options include: die protection, load monitoring as well as automatic shutheight and counterbalance controls.



### **Siemens Full Energy Management System**

Based upon Siemens global power grid technology, the system manages and maintains the critical power requirements entirely within the system. This results in the highest efficiency at the lowest overall operating costs.

SPECIFICATIONS & DIMENSIONS **FX2 HIGH PERFORMANCE** (Dimensions In Inches)

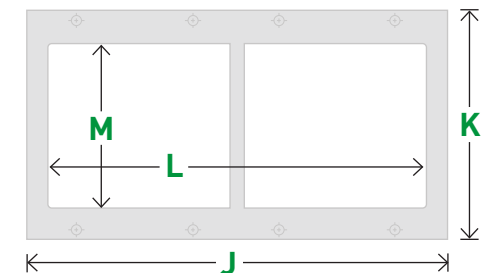
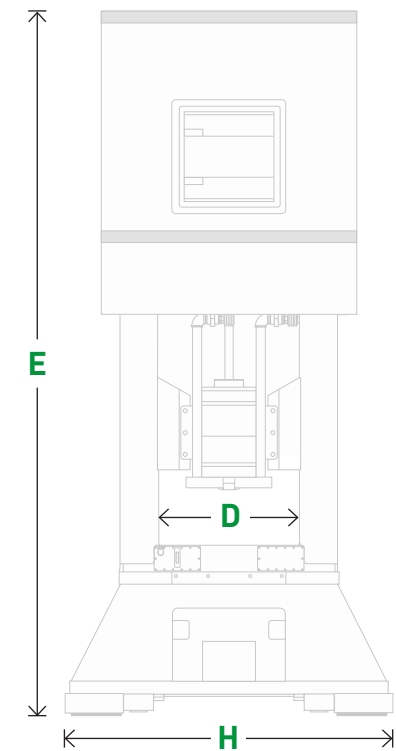
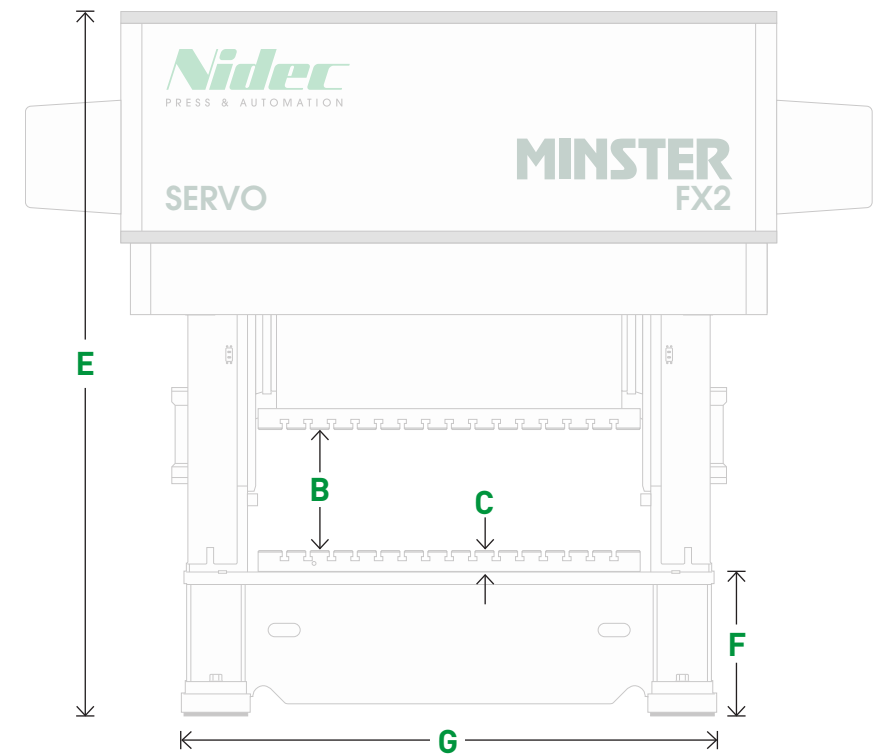
| PRESS SIZE     |  | FX2-300  |          |          | FX2-400     |             |             | FX2-600   |           |          |           |
|----------------|--|----------|----------|----------|-------------|-------------|-------------|-----------|-----------|----------|-----------|
|                | <b>Tons Capacity<sup>1</sup></b>                         | 330      |          |          | 440         |             |             | 660       |           |          |           |
|                | <b>Shutheight Adjustment (Std.)</b>                      | 6        |          |          | 6           |             |             | 10        |           |          |           |
| <b>B</b>       | <b>Shutheight on Bolster (S.D.A.U.) (Std.)</b>           | 24-44    |          |          | 24-44       |             |             | 24-44     |           |          |           |
| <b>C</b>       | <b>Bolster Plate Thickness</b>                           | 6        |          |          | 6           |             |             | 7         |           |          |           |
| <b>D</b>       | <b>Upright Opening<sup>2</sup></b>                       | 33       |          |          | 48          |             |             | 53        |           |          |           |
| <b>E</b>       | <b>Approximate Overall Height (Std.)<sup>3</sup></b>     | 198-229  |          |          | 234-260     |             |             | 248-278   |           |          |           |
| WIDTH OF PRESS |  | 72       | 96       | 120      | 96          | 120         | 144         | 96        | 120       | 144      | 168       |
|                | <b>Approximate Weight – Press Only (lbs)<sup>4</sup></b> | 106,000  | 118,000  | 128,000  | 175,000     | 190,000     | 205,000     | 250,000   | 272,000   | 294,000  | 316,000   |
| <b>J x K</b>   | <b>Area of Slide Bed &amp; Bolster (R-L x F-B)</b>       | 72 x 48  | 96 x 48  | 120 x 48 | 96 x 60     | 120 x 60    | 144 x 60    | 96 x 60   | 120 x 60  | 144 x 60 | 168 x 60  |
| <b>L x M</b>   | <b>Opening in Bed – Maximum (R-L x F-B)</b>              | 66 x 24  | 90 x 24  | 112 x 24 | 90 x 24     | 114 x 24    | 138 x 24    | 90 x 26   | 114 x 26  | 138 x 26 | 162 x 26  |
| <b>F</b>       | <b>Floor to Top of Bed</b>                               | 34       |          |          | 46          |             |             | 46        |           |          |           |
| <b>G x H</b>   | <b>Overall Floor Space (R-L x F-B)</b>                   | 114 x 82 | 138 x 82 | 162 x 82 | 144.5 x 116 | 168.5 x 116 | 192.5 x 116 | 151 x 120 | 175 x 120 | 199 x 20 | 223 x 120 |

(Dimensions in metric)

| PRESS SIZE     |  | FX2-300     |             |             | FX2-400     |             |             | FX2-600     |             |             |             |
|----------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                | <b>Tons Capacity<sup>1</sup></b>                         | 2935 kN     |             |             | 3915 kN     |             |             | 5880 kN     |             |             |             |
|                | <b>Shutheight Adjustment (Standard)</b>                  | 150         |             |             | 150         |             |             | 225         |             |             |             |
| <b>B</b>       | <b>Shutheight on Bolster (S.D.A.U.) (Standard)</b>       | 610-1120    |             |             | 610-1120    |             |             | 610-1120    |             |             |             |
| <b>C</b>       | <b>Bolster Plate Thickness</b>                           | 150         |             |             | 150         |             |             | 180         |             |             |             |
| <b>D</b>       | <b>Upright Opening<sup>2</sup></b>                       | 840         |             |             | 1220        |             |             | 1345        |             |             |             |
| <b>E</b>       | <b>Approximate Overall Height (Standard)<sup>3</sup></b> | 5030-5813   |             |             | 5945-6605   |             |             | 6300-7060   |             |             |             |
| WIDTH OF PRESS |  | 1830        | 2440        | 3050        | 2440        | 3050        | 3660        | 2440        | 3050        | 3660        | 4265        |
|                | <b>Approximate Weight – Press Only (kgs)<sup>4</sup></b> | 48,100      | 53,600      | 58,100      | 79,500      | 86,400      | 93,200      | 113,400     | 123,400     | 133,400     | 143,300     |
| <b>J x K</b>   | <b>Area of Slide Bed &amp; Bolster (R-L x F-B)</b>       | 1830 x 1220 | 2440 x 1220 | 3050 x 1220 | 2440 x 1525 | 3050 x 1525 | 3660 x 1525 | 2440 x 1525 | 3050 x 1525 | 3660 x 1525 | 4265 x 1525 |
| <b>L x M</b>   | <b>Opening in Bed – Maximum (R-L x F-B)</b>              | 1675 x 610  | 2285 x 610  | 2845 x 610  | 2285 x 610  | 2895 x 610  | 3050 x 610  | 2285 x 660  | 2895 x 660  | 3050 x 660  | 4115 x 660  |
| <b>F</b>       | <b>Floor to Top of Bed</b>                               | 865         |             |             | 1170        |             |             | 1170        |             |             |             |
| <b>G x H</b>   | <b>Overall Floor Space (R-L x F-B)</b>                   | 2895 x 2080 | 3505 x 2080 | 4115 x 2080 | 3670 x 2945 | 4280 x 2945 | 4890 x 2945 | 3835 x 3050 | 4445 x 3050 | 5055 x 3050 | 5665 x 3050 |

1. For full tonnage high in stroke, consult Minster
2. Consult Minster for upright openings other than standard
3. Overall height may be reduced on some presses if headroom problems exists (Special drive mounting can be supplied at extra cost.)
4. All weights listed are based on having standard stroke and shutheight and do not include electrical controls, drive motor or auxiliary equipment.

Stroke/Speed Ratings Refer to Pages 12-14



## STROKE SPEED MATRIX

## FX2-300

| STROKE LENGTH                |        | 250 mm (9.84 in)   |      |    | 300 mm (11.81 in) |      |    | 350 mm (13.78 in) |      |    |
|------------------------------|--------|--|------|----|-------------------|------|----|-------------------|------|----|
| Cont. Speed (Reduced Rating) | SPM    | 37   | 57   | 77 | 37                | 51   | 70 | 37                | 46   | 57 |
| SERVO POWER INFEED (MOTORS)  |        | STANDARD POWER 80 kW (2 x #81)   |      |    |                   |      |    |                   |      |    |
| Rated Distance Off Bottom    | mm     | 12,7   | 6,6  |    | 12,7              | 6,8  |    | 10,7              | 7,0  |    |
|                              | in     | 0.50   | 0.26 |    | 0.50              | 0.27 |    | 0.42              | 0.28 |    |
| Standard Forming Profile     | SPM    | 33   | 49   |    | 33                | 44   |    | 33                | 40   |    |
| Pendulum 150 mm (5.91 in)    | SPM    | 44   | 61   |    | 48                | 62   |    | 52                | 61   |    |
| Pendulum 125 mm (4.92 in)    | SPM    | 47   | 66   |    | 52                | 67   |    | 57                | 66   |    |
| Pendulum 100 mm (3.94 in)    | SPM    | 52   | 72   |    | 56                | 72   |    | 60                | 71   |    |
| Pendulum 85 mm (3.35 in)     | SPM    | 54   | 76   |    | 58                | 76   |    | n/a               | n/a  |    |
| Energy                       | kJ     | 116 @ 20 SPM / 77 @ 30 SPM / 58 @ 40 SPM / 46 @ 50 SPM / 39 @ 60 SPM     |      |    |                   |      |    |                   |      |    |
|                              | in-Ton | 513 @ 20 SPM / 321 @ 30 SPM / 257 @ 40 SPM / 205 @ 50 SPM / 171 @ 60 SPM |      |    |                   |      |    |                   |      |    |
| SERVO POWER INFEED (MOTORS)  |        | HIGH POWER 120 kW (2 x #83)  |      |    |                   |      |    |                   |      |    |
| Rated Distance Off Bottom    | mm     | 12,7   | 7,2  |    | 12,7              | 7,1  |    | 12,7              | 9,1  |    |
|                              | in     | 0.50   | 0.28 |    | 0.50              | 0.28 |    | 0.50              | 0.36 |    |
| Standard Forming Profile     | SPM    | 49   | 63   |    | 44                | 59   |    | 40                | 49   |    |
| Pendulum 150 mm (5.91 in)    | SPM    | 62   | 75   |    | 64                | 77   |    | 62                | 73   |    |
| Pendulum 125 mm (4.92 in)    | SPM    | 66   | 81   |    | 68                | 84   |    | 67                | 77   |    |
| Pendulum 100 mm (3.94 in)    | SPM    | 72   | 88   |    | 73                | 91   |    | 72                | 84   |    |
| Pendulum 85 mm (3.35 in)     | SPM    | 76   | 93   |    | 77                | 95   |    | n/a               | n/a  |    |
| Energy                       | kJ     | 198 @ 20 SPM / 132 @ 30 SPM / 99 @ 40 SPM / 79 @ 50 SPM / 66 @ 60 SPM    |      |    |                   |      |    |                   |      |    |
|                              | in-Ton | 874 @ 20 SPM / 583 @ 30 SPM / 437 @ 40 SPM / 350 @ 50 SPM / 292 @ 60 SPM |      |    |                   |      |    |                   |      |    |

## FX2-400

| STROKE LENGTH                |        | 250 mm (9.84 in)  |      |    | 300 mm (11.81 in) |      |    | 350 mm (13.78 in) |      |    | 400 mm (15.75 in) |      |    |
|------------------------------|--------|---|------|----|-------------------|------|----|-------------------|------|----|-------------------|------|----|
| Cont. Speed (Reduced Rating) | SPM    | 46  | 57   | 77 | 37                | 57   | 77 | 37                | 51   | 70 | 37                | 46   | 64 |
| SERVO POWER INFEED (MOTORS)  |        | STANDARD POWER 120 kW (2 x #83)   |      |    |                   |      |    |                   |      |    |                   |      |    |
| Rated Distance Off Bottom    | mm     | 11,8  | 7,5  |    | 12,7              | 6,1  |    | 12,1              | 6,4  |    | 10,4              | 6,8  |    |
|                              | in     | 0.46  | 0.30 |    | 0.50              | 0.24 |    | 0.48              | 0.25 |    | 0.41              | 0.27 |    |
| Standard Forming Profile     | SPM    | 40  | 49   |    | 33                | 48   |    | 33                | 44   |    | 33                | 40   |    |
| Pendulum 200 mm (7.87 in)    | SPM    | 45  | 54   |    | 43                | 59   |    | 47                | 59   |    | 50                | 59   |    |
| Pendulum 150 mm (5.91 in)    | SPM    | 52  | 62   |    | 49                | 66   |    | 53                | 66   |    | 56                | 66   |    |
| Pendulum 100 mm (3.94 in)    | SPM    | 61  | 73   |    | 56                | 76   |    | 60                | 76   |    | n/a               | n/a  |    |
| Pendulum 85 mm (3.35 in)     | SPM    | 64  | 77   |    | 59                | 84   |    | n/a               | n/a  |    | n/a               | n/a  |    |
| Energy                       | kJ     | 198 @ 20 SPM / 132 @ 30 SPM / 99 @ 40 SPM / 79 @ 50 SPM / 66 @ 60 SPM     |      |    |                   |      |    |                   |      |    |                   |      |    |
|                              | in-Ton | 874 @ 20 SPM / 583 @ 30 SPM / 437 @ 40 SPM / 350 @ 50 SPM / 292 @ 60 SPM  |      |    |                   |      |    |                   |      |    |                   |      |    |
| SERVO POWER INFEED (MOTORS)  |        | HIGH POWER 160 kW (2 x #85)   |      |    |                   |      |    |                   |      |    |                   |      |    |
| Rated Distance Off Bottom    | mm     | 12,7  | 8,4  |    | 12,7              | 6,9  |    | 12,7              | 6,9  |    | 12,7              | 7,3  |    |
|                              | in     | 0.50  | 0.33 |    | 0.50              | 0.27 |    | 0.50              | 0.27 |    | 0.50              | 0.29 |    |
| Standard Forming Profile     | SPM    | 48  | 62   |    | 47                | 62   |    | 43                | 57   |    | 39                | 52   |    |
| Pendulum 200 mm (7.87 in)    | SPM    | 51  | 65   |    | 59                | 72   |    | 59                | 73   |    | 58                | 72   |    |
| Pendulum 150 mm (5.91 in)    | SPM    | 62  | 75   |    | 68                | 82   |    | 68                | 83   |    | 67                | 80   |    |
| Pendulum 100 mm (3.94 in)    | SPM    | 74  | 90   |    | 79                | 95   |    | 78                | 95   |    | n/a               | n/a  |    |
| Pendulum 85 mm (3.35 in)     | SPM    | 78  | 96   |    | 86                | 102  |    | n/a               | n/a  |    | n/a               | n/a  |    |
| Energy                       | kJ     | 267 @ 20 SPM / 178 @ 30 SPM / 133 @ 40 SPM / 107 @ 50 SPM / 89 @ 60 SPM   |      |    |                   |      |    |                   |      |    |                   |      |    |
|                              | in-Ton | 1180 @ 20 SPM / 787 @ 30 SPM / 590 @ 40 SPM / 472 @ 50 SPM / 393 @ 60 SPM |      |    |                   |      |    |                   |      |    |                   |      |    |

## FX2-600

| STROKE LENGTH                |        | 350 mm (13.78 in)   |      |    | 400 mm (15.75 in) |      |    | 500 mm (19.69 in) |      |    |
|------------------------------|--------|---|------|----|-------------------|------|----|-------------------|------|----|
| Cont. Speed (Reduced Rating) | SPM    | 37  | 46   | 70 | 32                | 46   | 64 | 32                | 37   | 51 |
| SERVO POWER INFEED (MOTORS)  |        | STANDARD POWER 132 kW (2 x #85)   |      |    |                   |      |    |                   |      |    |
| Rated Distance Off Bottom    | mm     | 11,1  | 7,2  |    | 12,5              | 6,2  |    | 9,8               | 7,4  |    |
|                              | in     | 0.44  | 0.28 |    | 0.49              | 0.24 |    | 0.39              | 0.29 |    |
| Standard Forming Profile     | SPM    | 32  | 39   |    | 28                | 39   |    | 28                | 32   |    |
| Pendulum 250 mm (9.84 in)    | SPM    | 41  | 48   |    | 37                | 53   |    | 45                | 50   |    |
| Pendulum 200 mm (7.87 in)    | SPM    | 47  | 54   |    | 43                | 59   |    | 49                | 55   |    |
| Pendulum 150 mm (5.91 in)    | SPM    | 54  | 61   |    | 51                | 66   |    | 57                | 62   |    |
| Pendulum 100 mm (3.94 in)    | SPM    | 63  | 71   |    | n/a               | n/a  |    | n/a               | n/a  |    |
| Energy                       | kJ     | 186 @ 20 SPM / 131 @ 30 SPM / 98 @ 40 SPM / 78 @ 50 SPM / 65 @ 60 SPM                   |      |    |                   |      |    |                   |      |    |
|                              | in-Ton | 867 @ 20 SPM / 578 @ 30 SPM / 434 @ 40 SPM / 347 @ 50 SPM / 289 @ 60 SPM                |      |    |                   |      |    |                   |      |    |
| SERVO POWER INFEED (MOTORS)  |        | HIGH POWER 160 kW (2 x #87)   |      |    |                   |      |    |                   |      |    |
| Rated Distance Off Bottom    | mm     | 12,7  | 6,1  |    | 12,3              | 6,3  |    | 12,7              | 7,8  |    |
|                              | in     | 0.50  | 0.24 |    | 0.48              | 0.25 |    | 0.50              | 0.31 |    |
| Standard Forming Profile     | SPM    | 40  | 58   |    | 40                | 54   |    | 33                | 44   |    |
| Pendulum 250 mm (9.84 in)    | SPM    | 49  | 66   |    | 53                | 64   |    | 51                | 64   |    |
| Pendulum 200 mm (7.87 in)    | SPM    | 55  | 73   |    | 59                | 71   |    | 57                | 70   |    |
| Pendulum 150 mm (5.91 in)    | SPM    | 61  | 82   |    | 66                | 80   |    | 64                | 78   |    |
| Pendulum 100 mm (3.94 in)    | SPM    | 71  | 95   |    | n/a               | n/a  |    | n/a               | n/a  |    |
| Energy                       | kJ     | 224 @ 20 SPM / 150 @ 30 SPM / 112 @ 40 SPM / 90 @ 50 SPM / 75 @ 60 SPM / 64 @ 70 SPM    |      |    |                   |      |    |                   |      |    |
|                              | in-Ton | 992 @ 20 SPM / 662 @ 30 SPM / 496 @ 40 SPM / 397 @ 50 SPM / 331 @ 60 SPM / 284 @ 70 SPM |      |    |                   |      |    |                   |      |    |





By combining the expertise, experience and resources of industry leaders in the material forming market, Nidec Press and Automation has established a single source solution for machinery, services and technology.

The Nidec Press and Automation brand brings Minster, Arisa, Kyori and Vamco products to the market, allowing combined synergies to offer efficient, cost-effective and timely solutions and service to manufacturers looking for increased production and profits.

[nidec-pa.com](http://nidec-pa.com)

## MINSTER

With more than 120 years of manufacturing experience, Nidec Minster offers mid-range tonnage presses and related automation equipment with an unprecedented reputation for quality, durability and technology.

Headquartered in the US, Minster is located strategically around the globe. Whether it is equipment design, formation or installation our customers know they are our top priority.

[minster.com](http://minster.com)