ISGEC

PRESSES

MECHANICAL • HYDRAULIC • SERVO

# Tandem Line Mechanical Presses

## MAT Series

315T - 2000T


Safeties conform to:
CE (EN-16092 : 2018)
OSHA 1910.217
CSA-Z142
NR-12

ISO 9001:2015
ISO 14001:2015
OHSAS 18001 :2007

## Presses for Tandem Stamping Operation

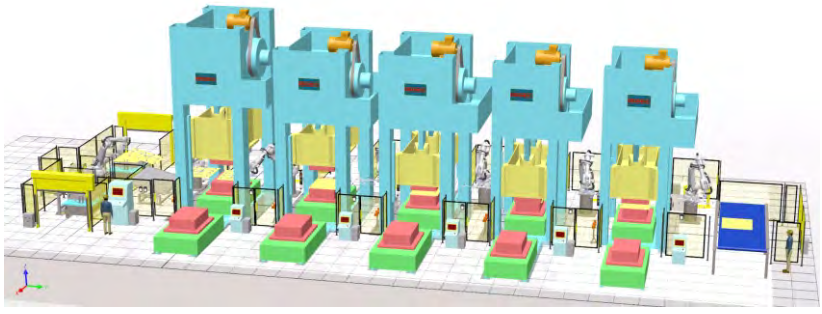
**Side Moving Bolsters • Longer Stroke Length • Inter Press Transfer Automation**

# ISGEC MAT Series

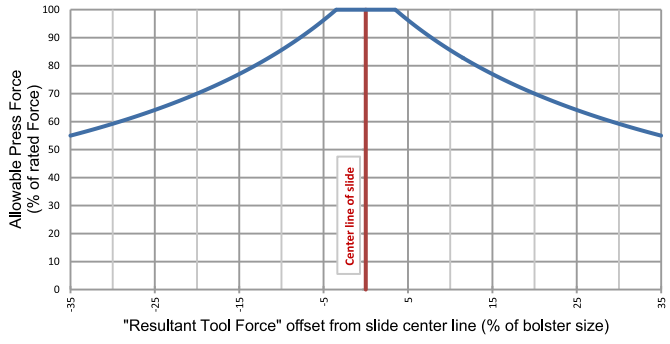
## Tandem Operations & Inter Press Transfer

Presses with 'Long Stroke Length' and 'Open Uprights' for movement of Moving Bolsters on sides, are compatible for interfacing with Inter-Press Automation equipment for higher productivity requirements in Tandem Pressing operations :

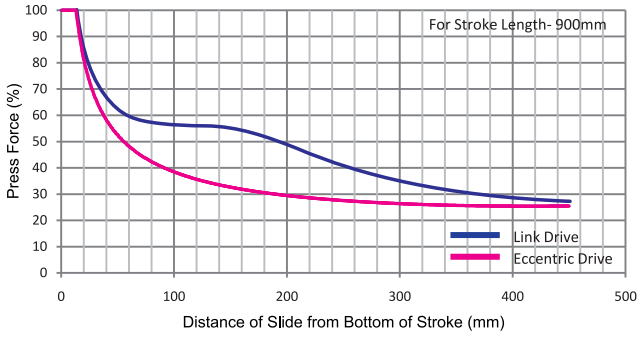
- De-Stacker.
- Washer / Lubricator.
- Loading & Unloading Automation by Robotics, Pick & Place Devices, Swing type High Speed Transfer or Cross Bar Transfer Systems.
- End of the Line Conveyor.



Permissible eccentric load (Mechanical Press)



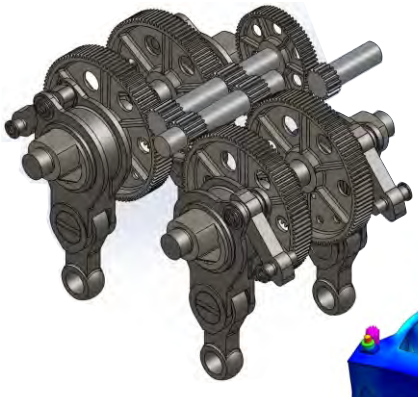

## Efficient Drawing with Link Drive Motion

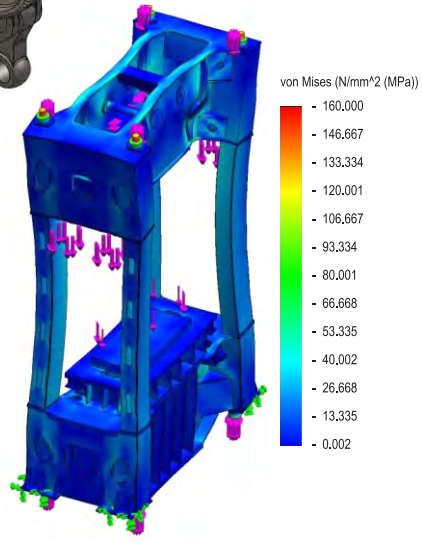



- Link Drive mechanism permits to work at low and constant speed during draw zone and at higher speed during idle (return) zone to improve quality of parts with higher productivity.
- In draw operations required on Head Press, Link Drive is particularly beneficial to reduce rejections & noise besides enhancing Die life.
- In Isgec design of Link Drive Mechanism in-line configuration of links at BDC enables smooth continuous motion under load with low acceleration.


## Longer Stroke Facilitates Automation

- Drive mechanism ensures zero side thrust to achieve stability and long life with least maintenance of drive members.
- In such a drive, even in longer stroke length, plunger guiding is not required. Its advantage is, it avoids adverse affect of worn-out Plunger Guides under eccentric loading which cannot be compensated by any means.
- Precision Machined Gear Train of drive mechanism conforming to International Standards, produced on in house World Class Gear Hobbing & grinding machines, enable a smooth torque transmission.





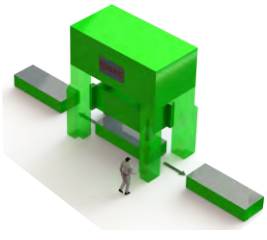

## Accurate Stamping from High Rigidity

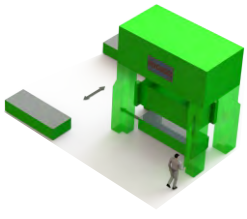
- Finite Element Analysis (FEA) software is adopted to verify fatigue life of Press Structure and to enable required maximised rigidity.
- Structure is fabricated from tested Steel Plates and thermally stress relieved.
- Enhanced Die life from low deflection of bolster.

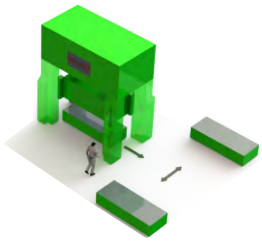
*COVER PICTURE : 12-10-8-8-6 High Speed Robotic Tandem Press Line supplied to an Automotive OEM in Vietnam.*

## Quick Die Change System

- Electrically driven Moving Bolsters with alternative options of direction of movement for Quick Die Change and higher productivity.
- Die Centering Slots on Bolster Plate for quick die location in the Center of the Press.
- T-Slots, Cushion Pin Layout as per JIS, JIC & DIN depending upon user's requirement.
- Automatic or Semi Automatic Die Change feature available as option.
- On demand “Automatic” or “Hydraulically operated, Manually positioned” Die clamps provided.



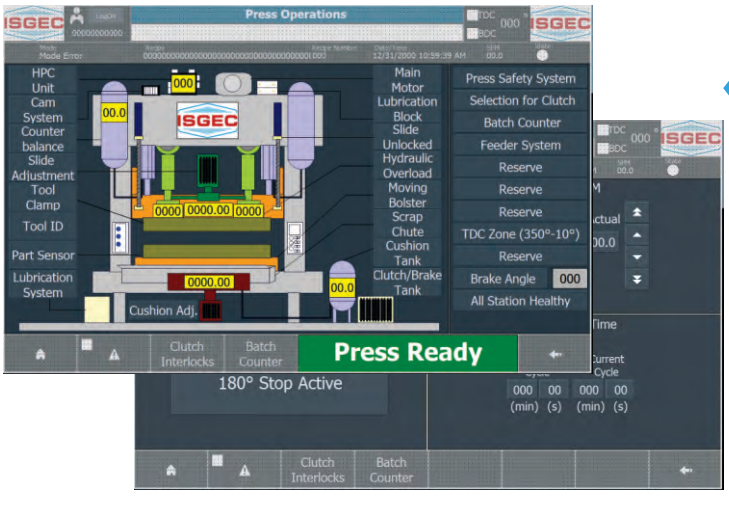






## Sustained High Precision

- Precisely machined Eight (8) Face power adjusted Slide guiding keep the Slide fully guided, at all points of stroke and slide adjustment, for sustained accuracy & ease of maintenance.
- Widely spaced suspension points and extra-long gibs enables high eccentric load bearing capability.
- Press Geometrical accuracies (Parallelism, Perpendicularity & Flatness) confirming to JIS 6402 B Grade-I / DIN Standard for Eccentric Gear Drive Presses.




## Ease of Operation & Interface

- Programmable Logic Controller with user friendly Operator Interface has operator Screens. HMI (Human Machine Interface) screens with Diagnostic features developed by constant improvements through feedback from Press users.
- On demand interfacing hardware for reliable interface with Automation.
- Remote online diagnosis feature provided on demand.
- Complete Project Management including Interface with Automation & Dies provided.

## Quality Components

| | | | |
|---|---|---|---|
| • Clutch & Brake | : Ortlinghaus, OMPI, Goizper | • Cam Limit Switches | : Balluff, Kamco |
| • Electrical Drives | : Siemens, Allen Bradley, Mitsubishi | • Main Bearings | : SKF, FAG, INA, Timken |
| • Pneumatic Components | : SMC, Festo, Norgen, Legris | • PLC Controls | : Siemens, Allen Bradley, Mitsubishi |
| • Dual Solenoid Safety Valve | : Ortlinghaus, Ross, Herion, Toyooki | • Safety Relays | : Pilz, Safety PLC |
| • Lubrication | : Cenlub, Woerner, Trabon | • Main Motor | : Siemens/ABB, Havells |

** Other makes can also be used on specific demand*

# Technical Specifications

## TWO POINT SUSPENSION ECCENTRIC DRIVE MECHANICAL PRESS: MAT - 2E

| Model No. | | MAT-2E-315 | MAT-2E-400 | MAT-2E-500 | MAT-2E-630 | MAT-2E-800 | MAT-2E-1000 | MAT-2E-1250 | MAT-2E-1600 |
|---|---|---|---|---|---|---|---|---|---|
| Maximum capacity | kN | 3150 | 4000 | 5000 | 6300 | 8000 | 10000 | 12500 | 16000 |
| Rated Distance | mm | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Strokes Per Minute (Variable) | SPM | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 |
| Strokes Per Minute (Intermittent) | SPM | 8/12 | 8/12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Available Work Energy Per Stroke at Intermittent Stroke | kJ | 95 | 120 | 150 | 200 | 240 | 300 | 380 | 480 |
| Stroke Length (fixed) | mm | 600 / 800 | 600 / 800 | 600 / 800 | 600 / 800 | 600 / 800 | 800 | 800 | 800 |
| Shut Height (SDAU) | mm | 800 / 1100 | 800 / 1100 | 800 / 1100 | 800 / 1100 | 800 / 1100 | 1100 / 1400 | 1100 / 1400 | 1100 / 1400 |
| Slide Adjustment (Motorised) | mm | 200 / 300 | 300 / 400 | 300 / 400 | 300 / 400 | 400 | 400 | 400 | 400 |
| Slide & Bolster Face - LR X FB (Alt-1) | mm | 2500 x 1600 | 2500 x 1600 | 2800 x 1600 | 2800 x 1600 | 3100 x 1600 | 3100 x 1900 | 3400 x 1900 | 3700 x 1900 |
| Slide & Bolster Face - LR X FB (Alt-2) | mm | 2800 x 1600 | 2800 x 1600 | 3100 x 1600 | 3100 x 1600 | 3400 x 1600 | 3400 x 1900 | 3700 x 1900 | 4000 x 1900 |
| Slide & Bolster Face - LR X FB (Alt-3) | mm | 3100 x 1600 | 3100 x 1600 | 3400 x 1600 | 3400 x 1600 | 3700 x 1600 | 3700 x 1900 | 4000 x 1900 | 4300 x 1900 |
| Main Motor Power | kW | 37 | 45 | 55 | 75 | 90 | 110 | 132 | 160 |
| Die Cushion Capacity* | kN | 500 | 630 | 800 | 1000 | 1200 | 1600 | 2000 | 2500 |
| Die Cushion Stroke* | mm | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| Die Cushion Pad Size (Alt-1) | mm | 2050 x 1150 | 2050 x 1150 | 2350 x 1150 | 2350 x 1150 | 2650 x 1150 | 2650 x 1450 | 2950 x 1450 | 3250 x 1450 |
| Die Cushion Pad Size (Alt-2) | mm | 2350 x 1150 | 2350 x 1150 | 2650 x 1150 | 2650 x 1150 | 2950 x 1150 | 2950 x 1450 | 3250 x 1450 | 3250 x 1450 |
| Die Cushion Pad Size (Alt-3) | mm | 2650 x 1150 | 2650 x 1150 | 2950 x 1150 | 2950 x 1150 | 3250 x 1150 | 3250 x 1450 | 3250 x 1450 | 3250 x 1450 |

## TWO POINT SUSPENSION LINK DRIVE MECHANICAL PRESS: MAT - 2L

| Model No. | | MAT-2L-315 | MAT-2L-400 | MAT-2L-500 | MAT-2L-630 | MAT-2L-800 | MAT-2L-1000 | MAT-2L-1250 | MAT-2L-1600 |
|---|---|---|---|---|---|---|---|---|---|
| Maximum capacity | kN | 3150 | 4000 | 5000 | 6300 | 8000 | 10000 | 12500 | 16000 |
| Rated Distance | mm | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Strokes Per Minute (Variable) | SPM | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 |
| Strokes Per Minute (Intermittent) | SPM | 8/12 | 8/12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Available Work Energy Per Stroke at Intermittent Stroke | kJ | 95 | 120 | 160 | 220 | 270 | 320 | 400 | 550 |
| Stroke Length (fixed) | mm | 600 / 700 | 600 / 700 | 600 / 800 | 900 | 900 | 900 | 900 | 900 |
| Shut Height (SDAU) | mm | 800 / 1100 | 800 / 1100 | 800 / 1100 | 800 / 1100 | 800 / 1100 | 1100 / 1400 | 1100 / 1400 | 1100 / 1400 |
| Slide Adjustment (Motorised) | mm | 200 / 300 | 300 / 400 | 300 / 400 | 300 / 400 | 400 | 400 | 400 | 400 |
| Slide & Bolster Face - LR X FB (Alt-1) | mm | 2500 x 1600 | 2500 x 1600 | 2800 x 1600 | 2800 x 1600 | 3100 x 1600 | 3100 x 1900 | 3100 x 1900 | 3100 x 1900 |
| Slide & Bolster Face - LR X FB (Alt-2) | mm | 2800 x 1600 | 2800 x 1600 | 3100 x 1600 | 3100 x 1600 | 3400 x 1600 | 3400 x 1900 | 3400 x 1900 | 3400 x 1900 |
| Slide & Bolster Face - LR X FB (Alt-3) | mm | 3100 x 1600 | 3100 x 1600 | 3400 x 1600 | 3400 x 1600 | 3700 x 1600 | 3700 x 1900 | 3700 x 1900 | 3700 x 1900 |
| Main Motor Power | kW | 37 | 45 | 55 | 75 | 90 | 110 | 132 | 200 |
| Die Cushion Capacity* | kN | 500 | 630 | 800 | 1000 | 1200 | 1600 | 2000 | 2500 |
| Die Cushion Stroke* | mm | 180 / 220 | 180 / 220 | 180 / 250 | 280 | 280 | 280 | 280 | 280 |
| Die Cushion Pad Size (Alt-1) | mm | 2050 x 1150 | 2050 x 1150 | 2350 x 1150 | 2350 x 1150 | 2650 x 1150 | 2650 x 1450 | 2650 x 1450 | 2650 x 1450 |
| Die Cushion Pad Size (Alt-2) | mm | 2350 x 1150 | 2350 x 1150 | 2650 x 1150 | 2650 x 1150 | 2950 x 1150 | 2950 x 1450 | 2950 x 1450 | 2950 x 1450 |
| Die Cushion Pad Size (Alt-3) | mm | 2650 x 1150 | 2650 x 1150 | 2950 x 1150 | 2950 x 1150 | 3250 x 1150 | 3250 x 1450 | 3250 x 1450 | 3250 x 1450 |

*Machines are manufactured as per SI Units.*
*Customised Solutions can be offered on Demand.*
** Optional Features*

# Technical Specifications

## FOUR POINT SUSPENSION ECCENTRIC DRIVE MECHANICAL PRESS: MAT - 4E

| Model No. | | MAT-4E-400 | MAT-4E-500 | MAT-4E-630 | MAT-4E-800 | MAT-4E-1000 | MAT-4E-1250 | MAT-4E-1600 | MAT-4E-2000 | MAT-4E-2500 |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum capacity | kN | 4000 | 5000 | 6300 | 8000 | 10000 | 12500 | 16000 | 20000 | 25000 |
| Rated Distance | mm | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Strokes Per Minute (Variable) | SPM | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 |
| Strokes Per Minute (Intermittent) | SPM | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Available Work Energy Per Stroke at Intermittent Stroke | kJ | 120 | 150 | 200 | 240 | 300 | 380 | 480 | 600 | 750 |
| Stroke Length (fixed) | mm | 600 \| 800 | 600 \| 800 | 600 \| 800 | 800 | 800 | 800 | 800 | 800 | 800 |
| Shut Height (SDAU) | mm | 800 \| 1100 | 800 \| 1100 | 800 \| 1100 | 800 \| 1100 | 1100 \| 1400 | 1100 \| 1400 | 1100 \| 1400 | 1100 \| 1400 | 1100 \| 1400 |
| Slide Adjustment (Motorised) | mm | 300 \| 400 | 300 \| 400 | 300 \| 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Slide & Bolster Face - LR X FB (Alt-1) | mm | 2800 x 1900 | 3100 x 1900 | 3100 x 1900 | 3100 x 1900 | 3400 x 2200 | 3400 x 2200 | 3700 x 2200 | 4000 x 2500 | 4300 x 2500 |
| Slide & Bolster Face - LR X FB (Alt-2) | mm | 3100 x 1900 | 3400 x 1900 | 3400 x 2200 | 3700 x 2200 | 3700 x 2200 | 4000 x 2500 | 4000 x 2500 | 4300 x 2500 | 4600 x 2500 |
| Slide & Bolster Face - LR X FB (Alt-3) | mm | 3700 x 2200 | 3700 x 2200 | 4000 x 2500 | 4000 x 2500 | 4000 x 2500 | 4300 x 2500 | 4600 x 2500 | 4600 x 2500 | 4900 x 2500 |
| Main Motor Power | kW | 45 | 55 | 75 | 90 | 110 | 132 | 160 | 200 | 250 |
| Die Cushion Capacity* | kN | 630 | 800 | 1000 | 1200 | 1600 | 2000 | 2500 | 3200 | 4000 |
| Die Cushion Stroke* | mm | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| Die Cushion Pad Size (Alt-1) | mm | 2350 x 1450 | 2650 x 1450 | 2650 x 1450 | 2650 x 1450 | 2950 x 1750 | 2950 x 1750 | 3250 x 1750 | 3250 x 1750 | 3250 x 1750 |
| Die Cushion Pad Size (Alt-2) | mm | 2650 x 1450 | 2950 x 1450 | 2950 x 1750 | 2950 x 1750 | 3250 x 1750 | 3250 x 1750 | 3250 x 1750 | 3250 x 1750 | 3850 x 1750 |
| Die Cushion Pad Size (Alt-3) | mm | 2950 x 1750 | 2950 x 1750 | 3250 x 1750 | 3250 x 1750 | 3250 x 1750 | 3550 x 1750 | 3850 x 1750 | 3850 x 1750 | 3850 x 1750 |

## FOUR POINT SUSPENSION ECCENTRIC DRIVE MECHANICAL PRESS: MAT - 4L

| Model No. | | MAT-4L-400 | MAT-4L-500 | MAT-4L-630 | MAT-4L-800 | MAT-4L-1000 | MAT-4L-1250 | MAT-4L-1600 | MAT-4L-2000 | MAT-4L-2500 |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum capacity | kN | 4000 | 5000 | 6300 | 8000 | 10000 | 12500 | 16000 | 20000 | 25000 |
| Rated Distance | mm | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Strokes Per Minute (Variable) | SPM | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 | 12-24 |
| Strokes Per Minute (Intermittent) | SPM | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Available Work Energy Per Stroke at Intermittent Stroke | kJ | 140 | 180 | 220 | 280 | 360 | 450 | 560 | 750 | 920 |
| Stroke Length (fixed) | mm | 900 | 900 | 900 | 900 | 900 | 900 | 900 | 1000 | 1000 |
| Shut Height (SDAU) | mm | 800 \| 1100 | 800 \| 1100 | 800 \| 1100 | 800 \| 1100 | 1100 \| 1400 | 1100 \| 1400 | 1100 \| 1400 | 1100 \| 1400 | 1100 \| 1400 |
| Slide Adjustment (Motorised) | mm | 300 \| 400 | 300 \| 400 | 300 \| 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Slide & Bolster Face - LR X FB (Alt-1) | mm | 3400 x 2200 | 3400 x 2200 | 3400 x 2200 | 3400 x 2200 | 3400 x 2200 | 3400 x 2200 | 3700 x 2500 | 4000 x 2500 | 4300 x 2500 |
| Slide & Bolster Face - LR X FB (Alt-2) | mm | 3700 x 2200 | 3700 x 2200 | 3700 x 2200 | 3700 x 2200 | 3700 x 2200 | 4000 x 2500 | 4000 x 2500 | 4300 x 2500 | 4600 x 2500 |
| Slide & Bolster Face - LR X FB (Alt-3) | mm | - | - | 4000 x 2500 | 4000 x 2500 | 4000 x 2500 | 4300 x 2500 | 4600 x 2500 | 4600 x 2500 | 4900 x 2500 |
| Main Motor Power | kW | 55 | 75 | 75 | 90 | 132 | 160 | 200 | 250 | 315 |
| Die Cushion Capacity* | kN | 630 | 800 | 1000 | 1200 | 1600 | 2000 | 2500 | 3200 | 4000 |
| Die Cushion Stroke* | mm | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 300 | 300 |
| Die Cushion Pad Size (Alt-1) | mm | 2650 x 1750 | 2650 x 1750 | 2650 x 1750 | 2650 x 1450 | 2950 x 1750 | 2950 x 1750 | 3250 x 2050 | 3250 x 2050 | 3250 x 2050 |
| Die Cushion Pad Size (Alt-2) | mm | 2950 x 1750 | 2950 x 1750 | 2950 x 1750 | 2950 x 1750 | 3250 x 1750 | 3550 x 2050 | 3550 x 2050 | 3250 x 2050 | 3850 x 2050 |
| Die Cushion Pad Size (Alt-3) | mm | - | - | 3250 x 1750 | 3250 x 1750 | 3550 x 2050 | 3550 x 2050 | 3850 x 2050 | 3850 x 2050 | 3850 x 2050 |

*Machines are manufactured as per SI Units.*
*Customised Solutions can be offered on Demand.*
** Optional Features*

## Standard Accessories

- Programmable Logic Controller
- Dual Check Safety Electrical Circuit
- Production Counters (Total Batch/Shift)
- High Response Hydraulic Overload System
- Variable Speed through AC Inverter
- Motorised Slide Adjustment
- Centralised Re-circulating Automatic Oil Lubrication System
- User Friendly Touch Screen Interface
- Hydraulic Clutch & Brake
- Emergency Stop Buttons
- Moving Bolsters (Center to Left/Right Movement)
- LED Die Area lights
- Mechanical Safety Guard on sides
- Portable Two Hand Operator Stand
- Safety Blocks with Interlocks
- Digital Crank Angle Indicators (Display on HMI)
- Maintenance Platform & Ladder
- Photoelectric Guards on front and rear
- Main Motor Forward Reverse Facility
- Programmable Cam Switches

## Optional Accessories

- Die Clamps for Quick Die Change
- Die Cushion
- Die Cushion with Stroke Adjustment
- Die Cushion Pin Lifting in Moving Bolster
- Electronic Force Monitoring / Process Monitoring with Signature Analysis
- Anti Vibration Mounts
- Scrap Chute with Interlocked opening covers
- Noise & Dust Enclosure
- Wet/Pneumatic Clutch & Brake
- Compliance with CE/OSHA Safety Standards
- Robotic / High Speed Automation System
- Plunger Guiding
- Automatic Die Change System
- Slide Locking Device
- Temperature Monitoring System
- Moving Bolster with T-Track on selected models
- Die Automation Control
- Isgec Reach 4.0 enabled Smart Control

**We Supply & Integrate the Press Line with ABB, KUKA, Yaskawa, FANUC, Comau, Güdel, Linear, Norda or any Customer recommended make Transfer & Automation System**

## Wide Range of Presses

Tandem Press Lines • Transfer Press Lines • Progressive Die Press Lines • Blanking Press Lines • High-Speed Mechanical Presses
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*Some of the accessories / fitments shown in the reference photograph may not be part of Standard equipment supplied.*
*Isgec reserves the right to change specifications without prior notice.*
*Details given in this Brochure are indicative & may change.*


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