

# Production of Leather Vehicle Seating

## Manual Die Presses vs. Digital Cutting Technology

Leather will account for **25%** of all automotive seating materials until at least 2025, according to IHS Markit projections<sup>1</sup>.

The percentage of leather vehicle seat sets cut digitally will **progressively increase** as suppliers undergo digital transformation.



Currently approximately **75%** of leather used for automotive applications is cut using manual die presses.

Digitalized leather cutting is **faster, more cost-efficient and reliable** than manual die presses.

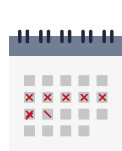
### MANUAL DIE PRESS METHOD

### DIGITAL LEATHER CUTTING SOLUTIONS

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#### WEEKS

Vehicle program changeovers require weeks of retooling, at substantial cost.



#### HOURS

Electronic seating design files can be changed in hours to start new programs, at no extra cost.

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#### UP TO 100 DIFFERENT DIE CAVITIES

Depending on the seating design, a single vehicle can require up to 100 different die cavities.

#### 1 DIGITAL CUTTING SOLUTION

A single digital leather-cutting machine can cut leather for any vehicle design.

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#### MONTHS

Up to 3 months are required to accommodate program changeovers.

#### MINUTES

A few minutes are all it takes to effect a changeover using digital cutting technology.

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#### 1.5-2 TONS OF DIE CAVITIES

On average, die press operators handle 1.5-2 tons of die cavities per day.

#### NO DIE CAVITIES

Digital leather cutting involves no heavy lifting, lowering the risk of occupational injury.

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#### COST VARIABILITY

10% of total vehicle development costs are attributable to development of physical seating prototypes, which cost \$12,000 on average<sup>2</sup>.

#### OPTIMIZED COST-TO-VALUE

Digital processes make it possible to adopt a design-for-manufacturing approach and iterate designs before investing in physical prototypes.

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#### 1 MONTH OF TRAINING

At least 30 days of training are needed to achieve new hire proficiency. Fluctuating yield performance makes it challenging to optimize nesting strategy for changeovers and new programs.

#### IMMEDIATE IMPLEMENTATION

Instant implementation of optimized nesting strategy is possible for any vehicle program when manufacturing engineering teams can assess digital cutting room data and analytics.

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#### DIE CUTTING WITH UP TO 4MM BUFFER

Using die presses, a minimum of 3mm to 4mm of buffer is required to ensure cut part quality, increasing material consumption.

#### ZERO-BUFFER CUTTING

Digital cutting technology's unmatched precision substantially lowers material consumption and overall cost per seat set.

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#### PAPER-BASED REPORTING

Manual data entry generates a considerable number of tasks with little or no added value.

#### SEAMLESS REPORTING

Real-time information on plant operations is available at your fingertips when you connect your MES and ERP to the cutting room.