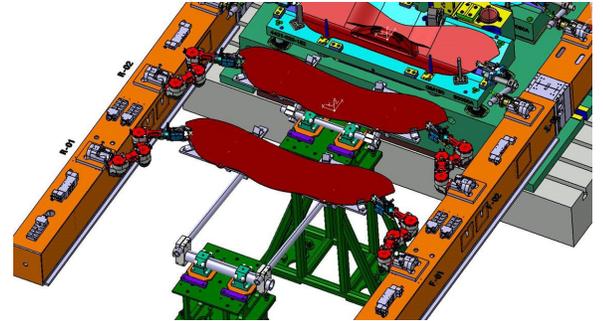


# Adaptive Transforming Tooling: Press Load

## Conventional Tooling vs. Norgren's Transforming Tooling

- > Eliminates the need for manual tool changes and adjustments
- > Removes the need for lock-out tag-out procedures and potential safety concerns
- > Faster die changeover times, while removing issues associated with ergonomics and manual labor



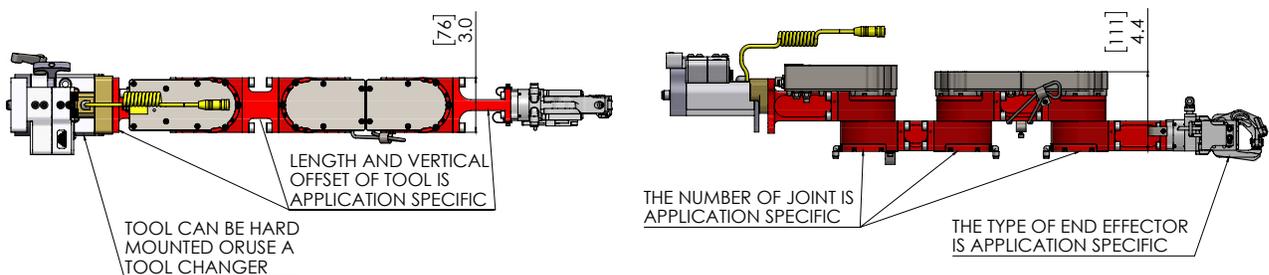
Transforming Tooling Press Load (Shown)

### Product Highlights

Arm Weight (1 arm, 3 joints)	Application Specific, 6.8 kg (15 lbs) as shown
System Weight	Application Specific, 27 kg (60 lbs) as shown
Number Arms	Application Specific, 4-8 typical as shown
Joints	Application Specific, 3-5 joints per arm typical as shown
Dynamic Arm rating (locked)	200 Nm (150 ft lb)
Dynamic Arm rating (unlocked)	30 Nm (20 ft lb)
Maximum Arm Reach	Variable to application needs (limited by dynamic rating)
Safety	Clutch slips at 30 Nm (20 ft lb) when un-locked
Position sensing	Application Specific, absolute positioning technology joint to joint as shown
Life Span	15 years, 50,000 Changes
Cell/Automation Communication to TT, power	Ethernet IP, 24V <10 amp Typ
HMI	Industrial Tablet, Pendant, PLC, PC

\*All highlight metrics can be customized and are based on the standard 4-arm application. Contact [NASInsideSales@imi-precision.com](mailto:NASInsideSales@imi-precision.com) or your Key Account Manager to discuss customization options.

### Technical Dimensions



### Applications

- > Stamping (automotive, white goods)

All dimensions (in/mm) are for reference only

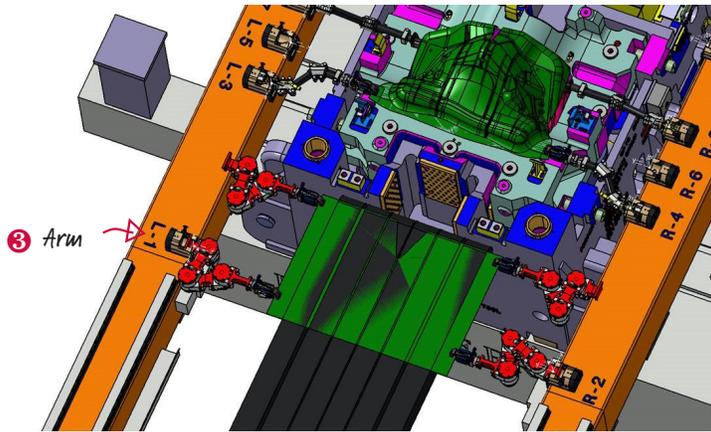
**Note:** For links to join joints and form a Transforming Tooling system, please contact your Key Account Manager or [NASInsideSales@imi-precision.com](mailto:NASInsideSales@imi-precision.com) to configure a system ideal for your application.

# Adaptive Transforming Tooling Communication

1 Supervisor & Safety Cabinet with PLC Connection



2 Automation Bar



3 Arm

4 Motion Plan



5 HMI

## Communication & HMI Highlights

<b>Cell/Automation PLC Communication to TT Supervisor</b>	Ethernet IP – communicates what job, when to change, health of the TT
<b>Supervisor</b>	Stores the jobs with specific motion plans
<b>Number of Jobs</b>	1000's of motion plans – positions
<b>Power</b>	24V <10 amp Type
<b>Arm Communication</b>	Supervisor to Arm joints via can bus
<b>Health Status</b>	Arm position monitoring, Arm status, Vacuum status
<b>Job Change Time</b>	<1 minute
<b>Motion Plan</b>	Offline process which defines individual arm movement timing and position based on system needs. Stored in the Supervisor
<b>HMI</b>	User friendly intuitive control for Jobs, adjustment, trouble shooting. Wireless, PC, PLC
<b>Operating Software</b>	Java
<b>Repair</b>	Replaced components are recognized by the Supervisor and configure automatically – no need to home or calibrate replaced hard-ware
<b>Hardware</b>	Industrial Tablet (Wireless), Pendant, PLC, PC
<b>Status Screen</b>	Provides status. Cell PLC provides the commands for what job, when to change
<b>Adjustment</b>	Provides the ability to adjust position of arms and ability to save
<b>Health</b>	Provides information on the health of the system. Supports Industry 4.0 – tracking, trends, predictive maintenance

## Warning

Improper selection, misuse, age or malfunction of components used in systems can cause failure in various modes. The system designer is warned to consider the failure modes of all component parts and to provide adequate safeguards to prevent personal injury or damage to equipment or property in the event of such failure modes. System designers and end users are cautioned to consult instruction sheets and specifications available from the factory. The system designer/end user is responsible for verifying that all requirements for the application are met.

Proposition 65: These products may contain chemicals known to the state of California to cause cancer, or birth defects, or other reproductive harm.

## Warranty

The products described herein are warranted subject to seller's Standard Terms and Condition of Sale, available at seller's website.