

## Lear Corporation examples to be used as a guide in determining the acceptability or unacceptability of tooling costs.

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<b>ACQUISITION COST</b> (One-time only)	<b>Tooling and Related Cost Items</b>	
	<b>Acceptable</b>	<b>Not Acceptable</b>
<b>Design Services-Tooling</b> – Acceptable when not included in piece price (overhead) and must not include product or capital equipment/facility engineering design costs.	X	
<b>Freight</b> – Generally limited to initial normal expenses required to obtain the tooling being constructed. The freight cost of additional trips to certify, tryout, or adjust tooling is not reimbursed. Must not include freight costs for new or refurbished capital equipment, even though Lear tooling may be mounted to such equipment prior to shipment.	X	
<b>Interest Carrying Costs</b> should be included in the supplier's overhead. In exceptional cases, they are acceptable on a Tooling Order only when tooling is purchased on an installment basis by means of periodic payments over an extended period of time and is approved by Lear in advance. (This does not include situations where tooling cost is amortized in piece price.)		X
<b>Launch Costs</b> should be included in a supplier's overhead. They are not acceptable on a Tooling Order. The cost of a manufacturing learning curve is not considered a tooling expense.		X
<b>Installation Costs, Set Up Costs, and Adaptation Costs of Tooling</b> are generally acceptable. These expenses are acceptable for the initial installation only and usually for subcontracted tooling only. These expenses, if attributed to Lear authorized engineering changes, are acceptable. Costs associated with these items must be incremental to costs recovered in the piece price overhead rate and must be fully documented based on the hours for each function performed. A general percentage mark-up applied to the subsupplier's tooling invoice will not be allowed. These expenses must not include the cost of adapting machinery or equipment or conveyors or rearranging factory layouts which may only be recovered in piece price.	X	
<b>One-Time Costs</b> Associated with Tooling Acquisition Documented design, development, tryout, and minor adjustment costs to provide tooling to produce a part that has engineering approval (PPAP approval). These are costs directly related to the tooling only up to the point of the buyer's historical point of acceptance, which may be a Date associated with PPAP, functional approval, continuous build, depending on historical acceptance criteria for the commodity. Costs associated with these items must be incremental to costs recovered in the piece price overhead rate and must be fully documented based on the hours for each function performed. A general percentage mark-up, applied to a subsupplier's tooling invoice, will not be allowed. (Normal tool follow-up is considered to be a part of the supplier's overhead costs).	X	

<b>DIES</b>	<b>Tooling and Related Cost Items</b>	
	<b>Acceptable</b>	<b>Not Acceptable</b>
<b>Air Cylinders</b> (Unless Integral Part of Die)		X
<b>Automation</b> (Unless Integral Part of Die)		X
<b>Binder Development</b> – Binder development used in developing the prototype tooling should be paid for on a Purchase Order for Tooling. See Prototype tooling funding above.	X	
<b>Bolster Plates</b>		X
<b>Designs Directly Related to Dies and Details</b>	X	
<b>Die Models</b> – Die models are not acceptable except under these conditions: - No CAD data is available and model would be the “Master”. - Lear engineering requests one, with prior approval from purchasing and cost is charged to the engineering budget, not the special tools program budgets (including sight models).		X
<b>Die Risers</b> – (Unless Integral Part of Die)		X
<b>Dies</b> – Coining; Cold Forming; Compacting (for powdered metal parts before sintering); Extrusion; Forging; Progressive; Sizing (for powdered metal parts before sintering); Stamping; Straightening; Transfer	X	
<b>Painting of Dies</b> (To Lear Standards)	X	
<b>Prototype Parts for Tooling Aids</b> (Only when used to make production tools)	X	
<b>Try Out of Sheet Stock</b> – Production Material Used for Tryout	X	

<b>ELECTRICAL WIRE HARNESSSES:</b> Components, Assembly, and Testing	<b>Tooling and Related Cost Items</b>	
	<b>Acceptable</b>	<b>Not Acceptable</b>
<b>Dies and Details</b> required for components unique to Lear	X	
<b>Fixtures</b> – Verification, Push Test, Grease, Continuity Fixture Blocks, only when required and unique to a Lear component.	X	
<b>Gages</b> (where design and drawings are Lear approved	X	
<b>Grease Application Equipment</b>		X
<b>Injection Molds</b> required for components unique to Lear	X	
<b>“Nesting” Fixtures</b> , which hold components during (Automated/Manual) Assembly operations and material handling tooling unique to Lear requirements.	X	
<b>Test Equipment</b> – Continuity Analyzers, TSK Boards, Indicators/Meters, Verification Type Equipment, etc.		X
<b>Hardware</b> <ul style="list-style-type: none"> <li>- Instruments (shelf bought)</li> <li>- Computers (inc. Monitor &amp; Keyboard)</li> <li>- Cabinets</li> <li>- Cables</li> <li>- Automatic Stampers <ul style="list-style-type: none"> <li>▪ Shelf bought</li> <li>▪ Custom mounting hardware</li> </ul> </li> </ul>	X	X X X X X
<b>Software</b> <ul style="list-style-type: none"> <li>- Operating System</li> <li>- Application Software</li> <li>- Test Code (specific to module under test)</li> </ul>	X	X X
<b>Test Chambers</b> <ul style="list-style-type: none"> <li>- Burn –In</li> <li>- Refrigeration</li> <li>- Environmental</li> <li>- Additional Requirements <ul style="list-style-type: none"> <li>▪ Racks</li> <li>▪ Rack Fixtures</li> </ul> </li> </ul>	X	X X X X
<b>Wire Harness Assembly Boards/Checker Test Boards</b> <ul style="list-style-type: none"> <li>- Currently in North America ( only when unique to Lear assemblies)</li> <li>- Europe</li> </ul>		X
<b>Wire Twist Units</b> – Mastic Pad units, Shrink Tubing units, conveyors, ovens, etc.		X

	<b>Tooling and Related Cost Items</b>	
	<b>Acceptable</b>	<b>Not Acceptable</b>
<b>GAGES/GAUGES</b> – Specific gage tooling items are generally acceptable when special and unique to a specific part, model, or product and not acceptable when a standard shelf type item. Must not include computer terminals, keyboards, printers, “Smart” Columns, or electronic readouts.		
<b>Bases or Holding Tables</b>		X
<b>Certification</b> – Acceptable cost when required and incurred by a third party to confirm the accuracy of gages prior to use by the production supplier.	X	
<b>Checking Fixtures</b>	X	
<b>Final Inspection Gages</b>	X	
<b>In-Process Gages</b> – Unless specified by Lear		X
<b>Master</b> – Used to set/check dial, air, and electrical/electronic adjustable gages.	X	
<b>Templates</b>	X	
<b>Test Fixtures</b> – Acceptable when designed and built to achieve compliance with Engineering Specification (ES) performance requirements and unique to a specific part, model, or product.	X	

<b>MACHINING</b> – Specific machining tooling items are generally acceptable when special and unique to a specific part, model, or product and not acceptable when a standard shelf type item. Must not include computer terminals, keyboards, printers, “Smart” Columns, or electronic readouts.	<b>Tooling and Related Cost Items</b>	
	<b>Acceptable</b>	<b>Not Acceptable</b>
<b>Air Cylinders</b> – Unless integral with machining fixtures		X
<b>Arbors</b> , Special Part Holding	X	
<b>Broach Cutters</b> – Only first complement	X	
<b>Broach Holders:</b> - Main - Sub	X	X
<b>Bushing Plates</b>	X	
<b>Cams</b> – Unique	X	
<b>Chucks</b> – Except for special applications and then for special clamping portion only (jaws, collets, etc.)		X
<b>Cutter Bodies</b> – Special design required by part configuration		X
<b>Design</b> – Fixture design only. Excludes facility engineering design due to integration of fixtures into specific line operations at supplier location.	X	
<b>Fixtures</b> – All Special Types	X	
<b>Forming Tools</b> – Only first complement	X	
<b>Gangmasters</b> – Camshaft Contour	X	
<b>Grinding Wheel</b> – Unless Lear part configuration requires special design.		X
<b>Heat Treatment Shielding</b>	X	
<b>Hydraulic and Pneumatic Items</b> – Unless such items are an integral part of special tooling.		X
<b>Jigs</b> (when unique to Lear)	X	
<b>Kellering Aids</b>		X
<b>Machine Details</b> – Unique Bases, Feeds, etc. (Generic)		X
<b>Models</b> are not acceptable except under these conditions: - No CAD Data is available and model would be the the “Master” - Lear engineering requests one, with prior approval from purchasing and cost is charged to the engineering budget, not the special tools program budgets (including sight models).		X
<b>Motors</b>		X
<b>Patterns</b>	X	
<b>Prototype Parts for Tooling Aids</b>	X	
<b>Rack</b> – Plating, unless unique design for Lear product		X

<b>Spindle Heads</b> (excludes motors and drive mechanisms): - Single Fixed - Multiple Fixed (Only when unique design)	X	X
<b>Tooling Aids</b>		X
<b>Tooling Blocks</b> – Special Design	X	
<b>Tryout Costs</b> – Production material used for tryout (when not recovered through normal overhead allocations)	X	

<b>MOLDS AND PATTERNS</b>	<b>Tooling and Related Cost Items</b>	
	<b>Acceptable</b>	<b>Not Acceptable</b>
<b>Designs Directly Related to Molds and Patterns</b>	X	
<b>Development Plasters</b>	X	
<b>Kellering and Spotting Plasters</b>		X
<b>Molds – Castings</b>	X	
<b>Molds – For Rubber, Plastics, Nonferrous Metals, etc.</b>	X	
<b>Mold Models</b> are not acceptable except under these conditions: <ul style="list-style-type: none"> <li>- Styrofoam model/pattern required to assist in casting prototype kirksite tool.</li> <li>- No CAD Data is available and model would be the “Master”.</li> <li>- Lear engineering requests one, with prior approval from purchasing and cost is charged to the engineering budget, not the special tools program budgets (including sight models).</li> </ul>		X
<b>Patterns – Castings</b>	X	

OTHER	Tooling and Related Cost Items	
	Acceptable	Not Acceptable
<b>Back-up or Multiple Tooling</b> Normally there is no reason to have multiple tooling if the supplier has quoted accurately and Lear has provided realistic volumes. In exceptional cases, the supplier may advise Lear of the need for back-up or multiple tooling, which then becomes a matter for negotiation between the parties. Costs associated with back-up or multiple tooling must be separately identified and authorized on the Tooling Order.		X
<b>Balconies, Control Panels, Railings, Stairways, Surge Tanks, and Overhead Lifts</b>		X
<b>Compression Costs</b> – Incremental premium direct labor charges only to improve sample timing. (Must be identified and approved separately. They should also be separately identified as a line entry on the Purchase Order for Tooling).	X	
<b>Computer Equipment</b>		X
<b>Control Devices</b> - That regulate machine functions, line functions, and/or automated handling mechanism functions. - That regulate fixture only functions and must be integral part of tool	X	X
<b>Embossing Rolls</b> (Unique patterns/masks including unique engraving)	X	
<b>General and Special Purpose Automation Equipment</b>		X
<b>Load and Unload Fixtures, Transfer Fixtures, or Turnover Fixtures</b> – Not acceptable unless unique to a specific part, model, or product and required to perform another necessary operation, i.e., inspect, locate, position, etc.		X
<b>Masks for Custom IC's</b> (Integrated Circuits) These are acceptable tooling costs when they are for Lear's use only, are unique to a specific part, model, or product, and cannot be used for other customers' requirements.	X	
<b>Material Handling Equipment</b> – Load and Unload Equipment, Transfer Equipment, or Turnover Equipment, e.g., conveyors, hi-lows, AGV's		X
<b>Microprocessors</b> – Integrated circuits, chips, modules, etc.		X
<b>Microprocessor Controls</b> – commercially available programmable devices, e.g., PLC's, weld controllers		X
<b>Microprocessor Costs</b> related to production of: - Computer Equipment - Printer - Recording devices (Audio and/or Video) - Vision and Laser Equipment		X
<b>Painting Shields</b> – Only first complement	X	
<b>Partially Owned Tooling</b> – Acceptable only when unavoidable and only when it is not recovered through normal overhead allocations. Partially owned tooling is not a common occurrence and must have prior Purchasing approval to be eligible for reimbursement. Any Authenticated Tooling Order should indicate that this is not total tooling complement required to produce the component.		X
<b>Prototype Tooling</b> – Generally purchased along with prototype parts on a		X



prototype purchase order; acceptable when production tooling is purchased early enough in the program and is used to produce prototype and production parts with Lear's approval.		
<b>Rework</b> – Dies, Gages, Machining Tools, Welding and Assembly Fixtures, when caused by a Lear authorized engineering change. Any cost incurred due to a supplier initiated process change after PSW is considered the supplier's expense.	X	
<b>Rework – Supplier-Owned Machinery and Equipment</b> , including design and assembly, and the rework of electrical, pneumatic and hydraulic attachments.		X
<b>Robots</b> – All types including “Pick and Place” and reprogrammable robots.		X
<b>Robot Arm End Effectors</b> – Unacceptable unless unique to a specific Lear part, model or product.		X
<b>Safety Related Equipment</b> , e.g., shielding, fencing, guards		X
<b>Software Development</b> – (Unique) When custom software is required by Lear or is a normal part of the supplier's manufacturing or tool building technology, such as the development of CAM cutter tapes for use in computer controlled equipment, it is an acceptable cost. It must also be unique to a specific part, model, or product identified on the Tooling Order as Software Development.	X	
<b>Statistical Process Control (SPC) Equipment</b>		X
<b>Temporary Tooling</b> – Acceptable when required due to timing constraints resulting from late engineering changes or expedited program timing and containment in hard tooling is not feasible.	X	
<b>Test Equipment</b> (for “Test Fixtures” – refer to “Gages” Section): <ul style="list-style-type: none"> <li>- Computer Test Equipment</li> <li>- Environmental Chambers</li> <li>- Printer</li> <li>- Recording Devices (Audio and/or Video)</li> <li>- Vision and Laser and X-Ray Equipment</li> </ul>		X
<b>Tooling Aids</b>		X
<b>Vision Systems</b> (cameras, arms)		X

<b>WELDING AND ASSEMBLY FIXTURES</b>	<b>Tooling and Related Cost Items</b>	
	<b>Acceptable</b>	<b>Not Acceptable</b>
<b>Air Cylinders:</b> (Unless Integral Part of Fixture)		X
<b>Automated, “Turn Key” Welding and Assembly Equipment</b> (Some of the typical items in a welding and assembly system that are considered supplier owned equipment and not tooling are – railings, walkways, rails, control panels, and structural members).		X
<b>Automation</b> - Within fixtures - Other than within fixtures, e.g., overhead transfer lines, walking beams, material handling equipment, material transfer equipment	X	X
<b>“C” Frames, Pedestal Welders and Press Welders</b>		X
<b>Holding Fixtures – All Types</b>	X	
<b>Hydraulic and Pneumatic Items:</b> (Unless Integral Part of Fixture)		X
<b>Installation Costs –</b> Initial only, including cost of wiring assembly fixtures to control panels, mechanical knees, weld timers, etc., (It does not include installation cost for capital equipment, which is recovered through normal overhead allocations).	X	
<b>Machine bases,</b> machine feeds, safety items, and guarding		X
<b>Masking devices –</b> Only first complement	X	
<b>Mechanical Knees</b>		X
<b>Motors</b>		X
<b>Patterns –</b> Unless casting fixture components are required as an integral component of the fixture.		X
<b>Portable Welding Guns</b> of standard design		X
<b>Prototype Parts</b> for Tooling Aids	X	
<b>Spotting Models</b>		X
<b>Transformers and Cables</b>		X
<b>Tryout Expense –</b> Production material used for tryout	X	
<b>Weld Guns</b> (within special weld fixtures)	X	
<b>Transformer Guns</b>		X
<b>Weld Test Equipment</b>		X
<b>Weld Test Fixtures –</b> Acceptable only when designed and built to achieve compliance with Engineering Specs. (ES) performance requirements and unique to a specific part, model, or product.	X	
<b>Weld Timers</b>		X
<b>Welding and Assembly Fixtures –</b> All types	X	
<b>Plastic Welding</b>		

- Sonic Bonding - Horn	X	X
<b>RF Bonder Press</b> - Nest & Generator	X	X
<b>Vibration Press</b> - Nest	X	X
<b>Spin Welding</b> - Nest	X	X
<b>Hot Air Bonder Press</b> - Nest	X	X
<b>Hot Cold Upset Press</b> - Nest	X	X