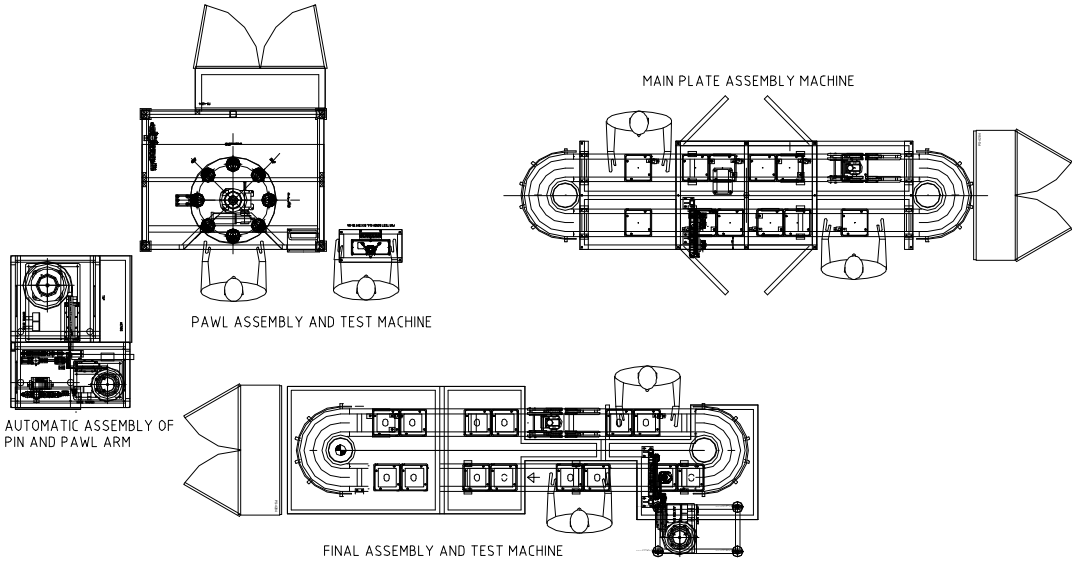
Pallet Assembly System

for pressed metal parts



This engineering project covered the supply of a suite of special assembly machines for an industrial automation cell. The automated production line consisted of four machines to automatically assemble and function test an automotive seat recliner mechanism.

The first fully automatic machine uses vibratory feeding of parts plus pick and place mechanisms to assemble 2 metal parts together. The 2 parts are pneumatically pressed together with a simple automatic load monitoring facility.

The second machine was based on a rotary indexing carousel turntable. The machine was semi-automatic in operation with an operator loading the metal pressings to be assembled into a fixture nest and then unloading the completed assembly. A parts verification or poka yoke test was carried out on one station and an automatic spin riveting operation on another station. Automatic load and position monitoring was used during the spin riveting operation. The completed sub assembly was function tested.

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The third and fourth machines were both pallet based assembly machines using a twin track flexlink conveyor system.

The third machine was semi automatic in operation with manual work stations and automatic stations combined. The machine had automatic press rivet and plunge rivet operations. The production machine also included an automated greasing station.

The fourth machine again used an automatic pallet transfer concept and included automated rivet assembly stations, function testing with automatic setting of the part to the correct position for delivery, plus an automatic print and apply labelling station.

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