



Unfinished TSP X chassis stock assembled and in component parts.

This is getting personal

The TSP X chassis system

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In recent years the popularity of modular chassis-style rifles has been ever-growing. For many they offer the next progression of firearms development as traditional timber stocking has transitioned to modern synthetic polymers and now composite alloy chassis. For others the appeal of modularity and the ability to adjust, adapt and personalise their rifle has been the driver of demand. For some they just look cool.

From an industry standpoint in the world's largest firearms market, the US, the concept of the 'Barbie' or 'Lego' gun has been long-standing as it was realised consumers love the ability to effectively 'build up' a rifle to their own specifications. Likewise, it was apparent that creating DIY modular platforms which allowed such personalisation without trade gunsmithing as such, wasn't only desired but very profitable as it promoted sales of multiple bolt-on options and accessories.

For rifles, no better examples of this are evident in the US than the Ruger 10/22 and ever-popular MSR platforms (Modern Sporting Rifle, AR15 variants). Arguably

the Ruger 10/22 was the first and earliest to exploit this concept. Even in pre-1996 Australia when this handy little .22 self-loader was very popular, there was an absolute plethora of parts and accessories available to jazz up your 10/22, from handle and mag release extensions to muzzle brakes, ventilated hand guards, various stocking options and so on.

By nature of design self-loading firearms are modular and well suited to the concept, bolt-action firearms not so. The advent of the chassis rifle changes that as although built around a conventional 'bolt action' barreled action, it allows much more flexibility in modification than traditional stocking options.

In a rather unassuming factory unit in Sydney's south western suburbs, you might be surprised to learn an Australian small business has been making significant inroads in the manufacturing of such chassis systems for bolt-action rifles. Readers may be familiar with the Howa APC or Australian Precision Chassis rifle, marketed and sold in the US by Legacy Sports and in Australia by Outdoor Sporting Agencies.

Enjoying great success, the Howa APC rifle is in effect a Howa barreled action mated to a modular chassis made here in Australia by Southern Cross Small Arms as the OEM (Original Equipment Manufacturer) for Legacy/OSA. Although primarily sold as a complete rifle, the Howa APC is a truly modular design in that it uses an AR-style buffer tube and pistol grip allowing for fitment of any standardised MSR stocks and grips as well as having a tubular M-Lok compatible fore-end for accessory fitment. OSA also have the complete standalone APC stock catalogued for those wishing to upgrade their existing Howa rifles as well as a version inletted for the Lithgow Arms LA102.

I recently gave my go-to farm rifle, an older Howa 1500 in .223, a new lease of life by dropping the barreled action into a Howa APC chassis, a relatively easy process of unscrewing the two action screws, removing the stock, triggerguard and magazine housing then setting the old stock aside and reassembling the rest back into the APC. You can use the standard bottom metal though in my >

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An APC chassis-stocked Lithgow LA102.



Transformation from raw billet to finished prior to coating the main components - stock, inlet and fore-end.



TSP X chassis components at various stages of completion.

case I'd already converted to a detectable 10-round magazine with a Howa magazine conversion kit.

Expanding on the range and complementing the APC, Southern Cross Small Arms have just introduced a brand new chassis of their own design which will also be distributed by OSA. The TSP X is significantly different to the APC and importantly will be available for a greater range of donor barrelled actions. Starting with three variants at launch, the TSP X will be available for Tikka T3, Howa 1500 and Lithgow LA102 and I understand a Remington 700 version is also in the wings.

Keen to find out more about the TSP X chassis system I had the chance to visit Southern Cross Small Arms to learn about the product and its manufacture first-hand. Like the APC the TSP X is a modular, component-based design, but in this case more a proprietary system than relying on standard MSR components (no AR-type buffer tube or stock for instance). Each component is precision engineered in-house and supplied as a kit to be assembled by the owner.

There are three main components in the stock, fore-end and chassis inlet which combine with the grip/magazine and

forward magazine sub-assemblies to build the main skeleton. Other minor components such as the kick pad, cheek riser, bolts etc are also provided.

Each component starts life as a billet of aircraft-grade 6061 T-6 aluminum which is mounted on the tombstone of a multi-axis CNC machining centre to begin the series of operations required to complete each unit. Southern Cross Small Arms has multiple state-of-the-art CNC machining centres specifically set up to complete each of the required steps.

Once precision machining is complete, components are processed through what



Differences may be subtle but important in the chassis inlet between models - Tikka T3 Inlet (top) and Howa 1500.



The TSP X stock has an adjustable comb for height and yaw.



The TSP X fore-end has two QD cups for sling mounting and M-Lok slots on three sides.



Selection of TSP X Chassis rifles at the Southern Cross Small Arms factory.

appears to be the world's biggest case tumbler before being anodised, components inspected along the way for quality control and tolerances kept to a tight standard. From a manufacturing standpoint the design is quite ingenious in that one main component, the chassis inlet, is what dictates which rifle variant the chassis will ultimately be for with all other components interchangeable.

Components are bolted together using hi-tensile hex head bolts with the main three recess lugged for added strength and precise alignment to a gapless precision. Besides the bolt heads only a fine line indicates the location of each joint. The basic profile of the stock is rather conventional, albeit of a pistol grip design featuring a 'fixed' but adjustable stock and a non-shrouded barrel/fore-end.

The grip/magazine assembly uses a standard A2-style pistol grip which comes supplied and as such can be swapped out for any MSR compatible grip such as by Magpul or similar manufacturers should you wish to further customise. The same sub-assembly incorporates the triggerguard and a large, fully ambidextrous magazine release.

The magazine release sits inside the triggerguard at the front of the bow and is

easy to operate by simply extending your trigger finger. The system uses standard AI pattern magazines for all variants, with original Accuracy International magazines recommended. I'd note, contrary to popular belief, there is variance between different manufactures of AI pattern magazines so fit and function can likewise vary, hence the recommendation.

The buttstock is skeletonised in a triangular pattern which is strengthened by two vertical braces that double as columns for the adjustable cheek riser struts, two small screw levers providing the locking for these adjustment struts. The cheek riser itself is polymer, mounted to a machined alloy block that contains the struts, the cheek rest section attached to the riser block with hex bolts again and allowing for about 5mm of left/right or 14 degree of yaw adjustment for the cheek rest.

Two small rubber O-rings, one on each strut, provide an effective zero stop for the riser, simply slide the O-rings down the struts when fully extended then push down the cheek rest to the desired position. The O-rings will run along the struts with friction fixing them in the set position and with the cheek rest removed for cleaning the O-rings mark the position at return.

Machined clear through the heel



TSP X grip adapters during one stage of the CNC machining process.

This is getting personal



An operator checks progress at one of the CNC machining stations.



Sharp edges are removed in what looks like the world's biggest case tumbler - note 10-round Al magazine on top for scale.



Daniel's old Howa .223 farm rifle reborn in a Howa APC chassis (top) and sneak peek at a TSP X chassis build detailed next month.

of the buttstock is a QD attachment point for operation on both left and right sides, the butt itself finished with a thick rubber kick pad generously packed with spacers for length of pull adjustment. The fore-end features M-Lok anchor slots for compatible accessories with five slots on all three surfaces at 90, 180 and 270 degrees. There are also two reinforced QD cups, one at the fore-end tip and one to the rear of the fore-end just forward of the magazine well, bringing sling attachment points to a total of four prior to using any of the available M-Lok slots.

The TSP X system provides a very solid bedding platform where the action recoil lug is clamped into position during installation.

The method for this varies slightly between the Howa action with its fixed recoil lug and the Tikka or Lithgow with their floating recoil lugs systems. Of course, being aluminum, the chassis/stock system is also totally inert and remains impervious to climatic conditions.

The Southern Cross Small Arms TSP X chassis system looks a well-featured chassis stock design that's both ergonomically functional and visually pleasing. Not only that, at a recommended RRP of \$795 it represents good value too. More info and dealer list at scsa-au.com or osaaustralia.com.au.

• Next month we'll use a TSP X chassis in our 'how-to' chassis rifle build. ●

TSP X Chassis system specifications

Available for:	Howa 1500, Tikka T3 and Lithgow LA102 short action rifles, with long action and other rifle variants in development
Material:	6061 T-6 aluminum billet
Finish:	Durable black anodized coating
Bedding:	Free floating with unique recoil lug clamp design
Weight:	1.97kg (4.1lb)
LOP:	25mm/1" of adjustment
Cheek rest:	28mm/1.1" vertical and 14° yaw adjustment
Forend:	M-Lok compatible, five slots at 90°, 180° and 270°
Sling attachment:	QD sling cups in four positions
Magazine:	Al with ambidextrous release