# STINGRAY MACHINE PISTOL

**CONSTRUCTION PLANS** 

# .32 / .380 / 9mm PAK



The following compact DIY machine pistol is suitable for chambering in a wide variety of standard as well as improvised small caliber pistol cartridges. A key feature included in this design is the use of a 'stepped' bolt and chamber set-up resulting in greatly enhanced reliability of feeding allowing for the use of unmodified as well as modified 8mm and 9mm PAK blank ammunition. Standard sizes of steel box tubing and bar stock are used in the construction of the weapon's main components including the receiver, bolt and magazine while a length of barrel taken from an air gun may also be utilized in conjunction with homemade .22 or .177 ammunition.



For legal purposes the demonstration model shown was built as a non-firing dummy replica. Its dummy barrel is permanently blocked and destroyed with its dummy bolt containing no provisions for a firing pin.

The information contained herein is presented purely for academic study purposes only.



Blocked dummy barrel present on non-firing demonstration model

## **Construction of main components**

The upper receiver is constructed from 30mm square steel box section with a 2mm wall thickness. The openings for the ejection port and magazine are marked and removed by 'chain drilling' a series of holes before being cut out using a rotery tool fitted with a reinforced cutting disc. Alternatively a hammer + screwdriver can be used to knock each piece out afterwhich a hand file may be used to the same effect.



The trigger housing is fabricated from 3mm thick steel plate and is welded permanently to the upper receiver. A mounting bracket allows an AR15 pistol grip (either original or airsoft) to be bolted in place.





The bolt is constructed from two lengths of square box section sleeved together with an inner bolt piece made from a length of 16mm (5/8") diameter steel bar.





The inner bolt piece is drilled in its center using a 10mm bit before being levelled flat using another bit having had its tip cut off using an angle grinder. To form the ejector slot, a series of holes are drilled along one side of the bar using a 4mm bit and then slotted using an angle grinder.



Assembled dummy bolt with no firing pin.

## Homemade ammunition

### 5.5 x 21mm PAK

If conventional factory made ammunition is unavailable an alternative round can be produced by combining a 9mm PAK blank round with a solid airgun pellet inserted into the plastic mouth of the case. A length of rifled .22 airgun barrel may be utilised in conjuction. In this case the stepped-down bolt design greatly assists in the smooth feeding of such unconventional rounds. These blanks are thick walled and durable thus lend themselves to being re-loaded & re-primmed multiple times. They can also be made hotter through loading of extra powder and combining with various types of high-velocity zinc-alloy pellets.



A length of .22 air gun barrel is chambered using a 9.5mm dia drill bit, 18mm deep. A second drill bit is modified by grinding off its tip and is used to finish the flat profile of the chamber. A cartridge should protrude 3mm when chambered.



## Homemade ammunition: Method 2

An alternative method involves drilling the primer pocket of a 9mm cartridge to accept a Hilti or Ramset power charge used in nail guns. These provide a readily available and reliable ignition source and are available in various sizes and power levels. If this method is used the firing pin must be placed off-center in order to reliably strike the rim of the cartridge. Loctite should be applied to keep the power charge securely in place afterwhich additional powder may be loaded.



# Tools:



8" Bench Mount Drill Press, 5 Speed

\$54.98 from 5+ stores

Bench-top · 8 inch · 5 speed · With Depth Stop Professional accessories include a built-in worklight and tilt table.



4-1/2 - Inch Angle Grinder \$19.99 from 3 stores 7.5 Amp, 11,000 rpm motor designed for fast material removal



# 1.1 Amp Rotary Tool Kit \$13.98



230-Volt Arc Welder Kit **\$64.99** from 10+ stores **\*\*\*\*** 4 product reviews 230V Single Phase Arc Welder



## Materials:

30mm x 30mm x 2mm mild steel square box section 25mm x 25mm x 2mm mild steel square box section 20mm x 20mm x 2mm mild steel square box section 40mm x 20mm x 2mm mild steel rectangular box section 30mm x 15mm x 2mm rectangular box section 30mm OD (2.5mm wall) steel round tube 3mm thick mild steel plate 1mm thick steel sheet 16mm (5/8") diameter steel bar stock Bolts: M5 to M10 Compression spring, 19mm OD, 1.6mm wire, 4.5" long Spring steel music wire (20 gauge) Length of .22 air gun barrel M16 / M4 pistol grip (Original or Airsoft)



30mm x 30mm (2mm thick wall) mild steel square box section.

256mm long.



2 inches





Modify a 1/2" long m6 bolt into a blade profile. Screw tightly into the ejector hole until aligned with slot in bolt. Apply loctite to fully secure.











## Trigger housing side plates

Template:





Drill holes using a 5mm bit

2 inches

## Magazine well & catch

40mm x 20mm x 2mm steel rectangular section, 52mm long



Weld or braze catch strip in place

#### Magazine catch strip

55mm length of steel strip (cut from a strip of handsaw blade)



2 inches

## Magazine

Made from a 7" length of 30mm x 15mm x 1.5mm steel rectangular section



Alternatively adapt the design to accept a commercially available .32 ACP, .380 ACP or 9mm PAK magazine.

2 inches

## Magazine spring

Make a forming mandrel from a 20" length of 25mm wide, 8mm thick bar. Drill a 4mm hole at one end to allow the wire to be tied in place. The spring is formed by tightly winding a length of 20 gauge spring steel music wire leaving a distance of 15mm between each coil. Once complete a pair of pliers is used to form the roughly wound coils into the correct rectangular shape. The finished spring should be around 12" in length.



# Sights

#### 25mm x 25mm steel box section

#### Front sight





25mm

2 inches



# Trigger & sear

#### Cut from 10mm thick mild steel plate



Templates:



Spring pocket: Drill using an 8mm dia bit, 3mm deep

#### Inner bolt piece



135mm length of 15mm (5/8") dia bright mild steel round bar stock

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- Drill the center with a 10mm drill bit until 3mm deep. Level the hole flat using a 10mm drill bit having had its tip removed using an angle grinder.
- Bevel the rim inwards slightly using a 16mm+ drill bit and sand smooth.
- Drill center with a 3mm bit, 10mm deep.
- The firing pin consists of an 11mm long length of 3mm dia drill bit shank epoxied in place and protruding 1mm (tip rounded).



Cut 55mm long slot, 5mm deep slot along one side of the bolt body. This can be achieved using a combination of drilling and grinding using a 1mm slitting disc.

#### Bolt body

Front



Consists of a length of 20mm x 20mm x 2mm box section sleeved into a length of
25mm x 25mm x 2mm. Weld together.



3.5"



40mm

# **Bolt (Assembled)**

Right side:



Bottom:



Front:



2 inches

#### Barrel collar

The barrel collar is made using a 2" length of 25mm (1") diameter round steel tubing with a 2.5mm wall thickness. The barrel is inserted halfway leaving the remaining 1" to serve as a feed path which the front end of the bolt protrudes into. Using this highly reliable set-up allows even empty cases to be fed and ejected.





- Drill through a 3" length of 3/4" steel bar stock using an 8.5mm drill bit.
- Ream the bore to size using an 8.8mm Valve Guide Reamer.
- The barrel can be rifled by pushing a 'rifling button' through or left smoothbore.
- Chamber using a 9.8mm drill bit by drilling to a depth of 15mm (Until cartridge protrudes 3mm from chamber).
- Ream the chamber to a final depth of 18mm using another 9.8mm bit. having been modified by removing its tip using an angle grinder.
- Bevel chamber entrance using a taper cutting tool or large dia bit + polish smooth.

For .32 ACP, drill the bore using a 7.5mm bit and chamber to a depth of 14mm or until cartridge protrudes 3mm, using a modified 8.5mm bit.

Alternatively suitable seamless steel tubing may be sourced close to the sizes below:

.380 ACP: 15mm OD, 3mm thick wall sleeved with 19mm OD, 2mm thick wall

.32 ACP: 14mm OD, 3.25mm thick wall sleeved with 19mm OD, 2.5mm thick wall

The last 1/2" can be threaded using a 16mm die to accept a silencer

**Recoil spring** 

3/8" OD, 1.6mm wire, 4.5" long.

Back plug (cut from 25mm square tube)



Retaining bolt M8 bolt, 35mm long



Drill an 8mm dia hole through both receiver and back plug to allow insertion of the retaining bolt. A groove can be cut using a rotery tool around the bottom end of the bolt allowing a small rubber washer to be slid over to secure. To improve asthetics, the corners of the bolt head can be rounded off by spinning the bolt in a drill press + holding against a file.

# Folding stock





## Silencer

The body of the silencer is constructed from a 10" long section of 35mm dia steel tube with an M16 'flange nut' welded to one end. As the flange section of the nut will be slightly oversized it must be screwed onto a length of M16 studding while secured using two nuts and reduced in diameter using a bench grinder until it is a push fit inside the silencer tube. To ensure correct alignment with the barrel, two flange nuts are screwed onto the same length of studding positioned at each end while one nut is welded in place.





## Baffles

A simple and effective method of constructing baffles is to weld two washers either side of a short length of perforated steel tube over which stainless steel wire mesh is tightly wrapped. Once fully wrapped to the height of the washers the wire mesh is then silver soldered at the last fold to permanently secure in place.







