

Secure

your Outboard Motor!



OML

Outboard Motor Loc Ltd.



MOTOR LOC™

Introduction

This booklet is divided into two sections. The first section is a general overview of the requirements for, and types of, Outboard Motor /Engine security locks. The response by the author's company in product design is considered in the second section. The products have been developed for, and with the input from, the engine manufacturers, dealers and security test centres throughout Europe.

What is a good lock? A good lock consists of three elements:

(1) The lock mechanism fired by turning a key should be substantial and manufactured by one of the companies stated below

Assa Abloy	Finland/Sweden
Abus or Alko	Germany
IFAM	Spain
Squires	UK

Most of these companies produce CEN6 top rated padlocks, the technology of which has been transferred to radial lock mechanisms that are drill and screwdriver attack proof.

(2) The material used in the lock structure should be 316 Marine Grade Stainless Steel. Any other material will either corrode or rot especially coated steels!

(3) Designs are in section two.

So spend that little extra and buy a properly made lock that is easy to fit and gives you **PEACE of MIND**.

Outboard Motor Loc's aim is to provide you with a reliable and effective deterrent that will last a lifetime.

Mechanical Security for Outboard Engines

The data from members of the EEC and the Far East shows that outboard motor theft is continuing to be the most destructive manmade threat to both leisure and commercial boats. To combat this increasing trend, a number of companies have designed solutions that fall into three main categories. The locks should be purpose made which is the usual requirement for most insurance companies.

SLOT LOCKS

These are lengths of tube of either square or round section that have a slot cut into them. They are designed to fit over the clamping screw toggles once the engine is secured to its fastening surface. The cheaper versions have one size that fit all locks. As clamping screws vary in diameter from 8-16mm it can be assumed that a 16mm slot on a 8mm screw thread is very loose and can be levered unless spacers or padding is provided. The advantage of the slot lock is that it can be quickly and easily fitted and removed needing the minimum of knowledge. Its disadvantage is that additional protection is required to safeguard attacks against the exposed threaded portion of the clamping screw. Further it may be used as a surface face to lever the engine off using the top of the transom as the other fulcrum.

BOLT or NUT LOCKS

These devices are usually built around a small shell like cartridge, the bottom of which has a hole in it and acts as a washer in the common bolt, nut and washer assembly. The top of the shell has a specially designed locking cap. Some preferred models are made of marine grade stainless steel that is either machined or cast. The lock is attached on the inside of the transom by one of the hexagonal bolts supplied in the engine rigging kit. The nut used, must be a STIFF/NYLOC type, otherwise the lock can be used to undo the assembly. This type of lock can be successfully used on most motors of 8hp and above and is the most cost effective and secure of the three types of designs. A few tools are required to fit the shell of the lock and cut the rigging bolt to the correct length, so this is best carried out by your engine dealer as part of the engine delivery service.

Protection against attack

Thread guard in the position of a clamp lock

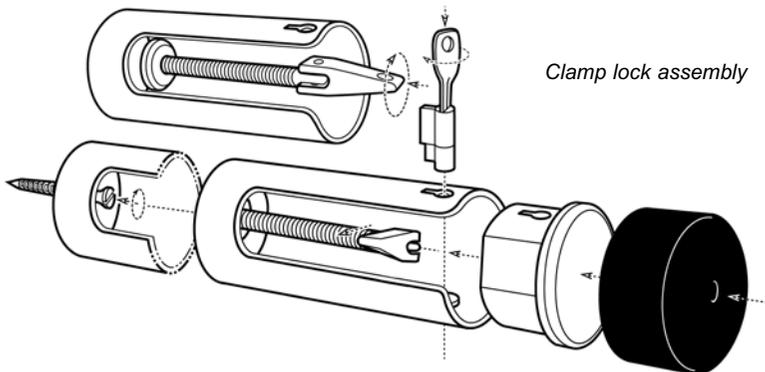


CLAMP LOCKS

The clamp lock was created to eliminate attacks to the one or both sides of the clamping assembly. They are usually considerably larger and more agricultural in their construction and hence cost nearly twice as much as the other designs. Shape wise they mostly resemble rectangles or squares.

Recently their popularity has increased because a number of engine manufacturers have increased their toggle size resulting in the fact that some slot locks no longer are large enough in cross section area to accommodate the toggles, hence useless.

All the designs necessitate that part of the lock remains fixed to the transom. This could result in it going missing if the owner does not remove it with the engine. As these locks are substantial structures the only area where additional protection can be achieved is if the bolt/screw that is provided to fix the body to the transom is made of 6mm diameter material and be captive as an integral part of the transom.



ADDITIONAL PROTECTIVE MEASURES FOR SLOT LOCKS

Slot locks by their very design offer a thief a lever point for a crowbar between the lock and the transom to lift off the motor. To overcome this a dormer drill can be used to countersink the washer area on the transom to a depth of 5mm. An alternative is to get a 4mm thick steel plate made that picks up on the clamping washers and cut two large holes in it, then bolt or screw the plate to the transom.

Another attack point is the exposed clamping screw threads between the lock inner face and the transom. If one measures the exposed thread when the engine is in-situ and tight against the transom. Then unlock and cut a clearance stainless steel tube to a slightly smaller length than 'the measured length', remove the washer, fit the tube, then repeat the process to secure the engine.

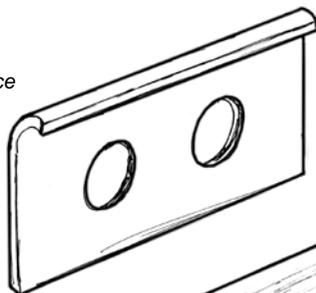
Dormer drilled recess



Commercial Kit One for small engines

IDEAS FOR TRANSOM PLATES

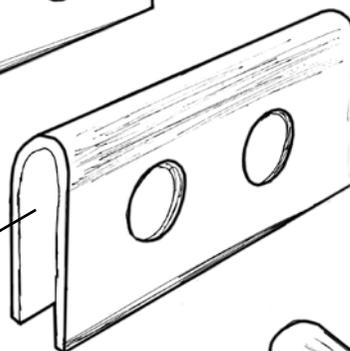
Fits on inside face of the transom



Holes are clearance for clamping washers

Plate thickness 5mm

Transom



Minimum wall thickness 3mm

SS loose tube to cover the exposed thread of the clamping screws



IDEAS FOR BOLT LOCK INSTALLATION IMPROVEMENTS

Most manufacturers rigging kits are supplied with hexagonal headed bolts. Some have stiff nuts and previously stated bolt/nut locks must be secured with a stiff or nyloc nut. Further, it is desirable to protect the exposed bolt head on the outside of the transom as these can be ground off by modern tools. It is suggested that other types of bolts be used as once the hexagonal head has been ground away, the attacker has simply to punch the shaft of the bolt through its hole with the lock still attached to the other end.

The deterrent is to use a coach bolt, step bolt or countersunk bolt.

Typical stepped bolt



Recently it has been reported that well organised gangs are starting to attack the bolt locks with parallel sides by using jemmy tubing techniques. This results in the shearing of the manufacturers rigging bolt. Two ideas to improve existing locks would be either to weld a large washer just below the top of the lock housing or alternatively weld a tri-angular shaped web to one side of the housing. These modifications would prevent tubes being placed over the lock. Other solutions are firstly to increase the base area of the bolt lock shell by welding a large washer to it, so that far more leverage will be required for the base to penetrate the surrounding structure.

The alternative to this additional engineering is to make a lock shell with sloping sides like OML's VOLCANO to be marketed in 2006.



VOLCANO shell in-situ

COMMERCIAL SOLUTIONS

The types of engines that benefit from the solution described below are those that are too small to bolt initially to the transom. A situation exists where hire boat companies generally use engines of 4-6hp on their rowing boats or pleasure boats. Some of these boats have electric motors that do not use conventional clamping styles that mate readily with current slot locks.

The method suggested is to weld a plate across both clamping brackets.

This forms the basis for a coach, step or countersunk bolt to be fitted.

On the nut end of the bolt there is either a substantial 50mm diameter washer of 5mm thickness with a standard nut tightened and welded,

or a BOLT LOCK. The other area of attack is the bolt that attaches the clamping bracket to the engine. Its nut end can either be welded or a small bolt/nut lock can be used to deter attack. The problem with welding is that the manufactures warranty will probably be broken, but hey, this is minimal compared with engine theft!



TRANSOM REINFORCEMENT

Much has been written about how good or bad various locks are. Little if nothing has been suggested for transom protection. A few instances have occurred where transoms have been chain sawed, or the rubber structure of inflatable dinghy has been cut with a shape knife for the removal of the outboard mounted there upon. The author prefers a clandestine approach by the boatbuilder. During moulding/laminating they should insert strands of piano wire across the transom to form a grid. Once finished the boatbuilder should ensue a notice is placed on the transom 'Armed Transom' to cover any liability.

Another solution that is more common is to bend a 'U' channel made of 3mm stainless steel plate and place it across the top of the transom. Ensure that it is bolted and the bolts are countersunk and welded.



Commercial kit two

easy to fit



fits
almost all
outboard
motors

Simple, straight forward & fitted in seconds. It couldn't be easier!

solid stainless steel 316



We only use the highest grade stainless steel.
Manufactured to close engineering tolerances

extremely robust and durable

Honda Lock

slot lock for the 2.3hp model

Model till 2006



community design
000218219-0002

Small Lock

Suitable for Honda 2.3hp (post 2006) and the Johnson/Suzuki 2.5hp outboard engines



Baltic

slot lock for most outboard engines
up to 5hp



community design
000218219-0001

MOTORLOC™

Atlantic

outboard slot lock for
engines 2-20hp



Leglock

for outdrives & outboard
engines 8-40 hp

Principally designed for the Mercruiser Alpha and Bravo outdrives, it can also be used as a cost-effective solution to lock 8-40hp engines in an outboard well or to the transom of a boat.

Bolt size: Ø8mm



Pacific

the original bolt lock design now improved

We have taken our popular original bolt lock design and upgraded it even further this year.

Bolt size up to 13mm.

Generally regarded as a world leader this lock is police and insurance approved.



community design
000257688-0001

Volcano

for transom-bolted engines 25-275hp

A brand new design regarded by OML as the pinnacle of its bolt lock developments.

The only bolt lock in the world that resists tube jamming.

Bolt size up to 13mm.

Patent pending.



Bolt Lock 44090

for transom-bolted engines 25-275hp

The cost-effective solution for engines of all sizes.

Formerly retailed as 'Med'

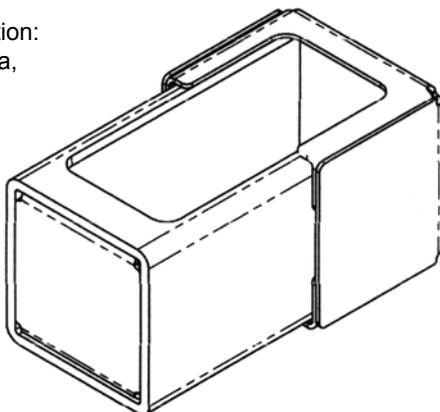
Bolt size: Ø10mm or Ø13mm



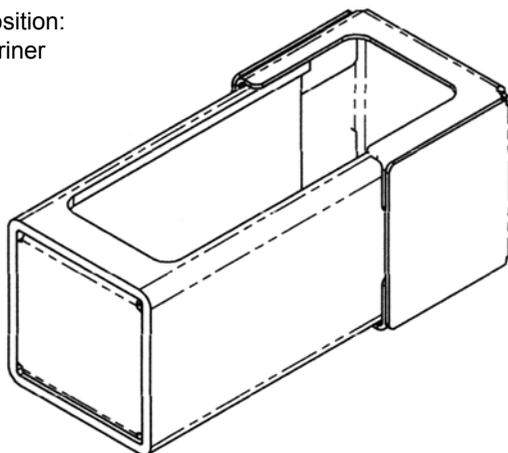
OML Clamp Lock

for engines 2.5-30hp

Short lock position:
Johnson, Honda,
Suzuki and
Yamaha



Long lock position:
Mercury, Mariner
and Tohatsu



Manufactured by Makefast Ltd

Commercial Kit 1

suitable for outboard engines 2-6hp

The kit consists of a 4mm aluminium plate welded to the existing bracket, a 10mm coach bolt and an adapted leg lock.



Commercial Kit 2

suitable for outboard engines 6-30hp

The kit consists of a 6mm stainless steel plate that is bolted to the existing brackets with four 6mm countersunk bolts. Supplied with a 12mm countersunk bolt and Nyloc stiff nut. It is suggested that if the 12mm bolt is welded that an ordinary hexagonal nut is used. Otherwise try OML's new Volcano.



OML Container Lock



This lock is designed to provide additional security by clamping the vertical door closing rods in the closed position. It is constructed of 6mm thick hardened stainless steel and uses an Abloy lock to secure it.s

(It is fully understood that the padlocked base can be attacked with a sledge hammer and that some gangs may have cutting equipment to penetrate or break the vertical bars.)

OML Product Matrix 2007

Assessment FOUR STROKE ENGINES

	HP Range	OML Clamp	Atlantic Slot 195	Atlantic Slot 230	Baltic Slot	SMALL Slot	Leg Lock Bolt	Med Lock Bolt	Pacific Lock Bolt	Volcano Bolt
EVINRUDE E-Tec	40-250							•	•	•
HONDA	2.3					•				
	5&6	•	•							
	8-30	•		•			•			
	40-225							•	•	•
MARINER & MERCURY	2.5-6				•					
	8-15	•								
	25-275							•	•	•
SUZUKI & JOHNSON	2.5					•				
	4-15	•	•							
	25-300							•	•	•
TOHATSU & NISSAN	2.5-6	•	•		•					
	8 & 9.8	•		•						
	15-30	•								
	40-115							•	•	•
YAMAHA & SELVA	2.5-6				•					
	8-15	•	•				•			
	25-225							•	•	•

MOTORLOC™

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