



Owners Manual

M4 Manual Underpinner



Use Only Genuine:
Framers Corner Universal Wedges

Our Wedges are 10.3mm Wide
Available in Softwood and Hardwood Types

Always Use Glued Side Up

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M4 Technical Specification

Moulding Width (Using Rebate Clamp)	0-70mm
Moulding Width (Without Clamp)	0-110mm
Moulding Height	0-100mm
Pin Placement from Back Corner	0-120mm
Wedge Sizes	5mm to 15mm
Weight	55kg
Rating	Trade
Manufacturers Warranty	1 year

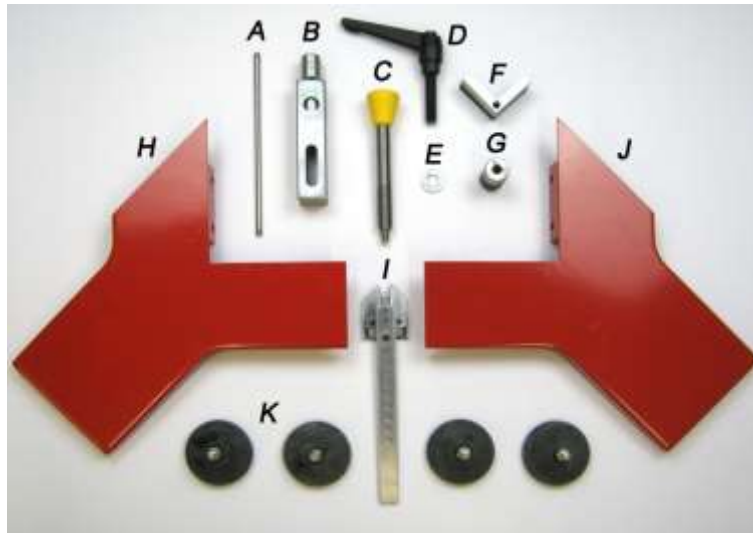
GENERAL SAFETY RULES

WARNING: Do not attempt to operate the machine until you have read thoroughly and understood completely all instructions, rules, etc. contained in this manual. Failure to comply may result in accidents involving serious personal injury. Keep this owner's manual and review frequently for continuous safe operation.

1. Know your machine. For your own safety, read the owner's manual carefully. Learn its application and limitations, as well as specific potential hazards pertinent to this machine.
2. Keep guards in place and in working order. If a guard must be removed for maintenance or cleaning, make sure it is properly replaced before using the machine again.
3. Remove adjusting keys and spanners. Form a habit of checking to see that the keys and adjusting spanners are removed from the machine before operating it.
4. Keep your work area clean. Cluttered areas and workbenches increase the chance of an accident.
5. Do not use in dangerous environments. Do not use power tools in damp or wet locations, or expose them to rain. Keep work areas well illuminated.
6. Keep children away. All visitors should be kept a safe distance from the work area.
7. Use the right tools. Do not force the machine or attachments to do a job for which they are not designed.
8. Wear proper apparel. Avoid loose clothing, gloves, ties, rings, bracelets, and jewellery which could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
9. Always use safety glasses. Normal spectacles only have impact resistant lenses. They are not safety glasses.
10. Do not over-reach. Keep proper footing and balance at all times.
11. Maintain machine in good condition. Keep machine clean for best and safest performance. Follow instructions for lubrication and maintenance.
12. Do not use any tools while under the effects of drugs, alcohol or medication

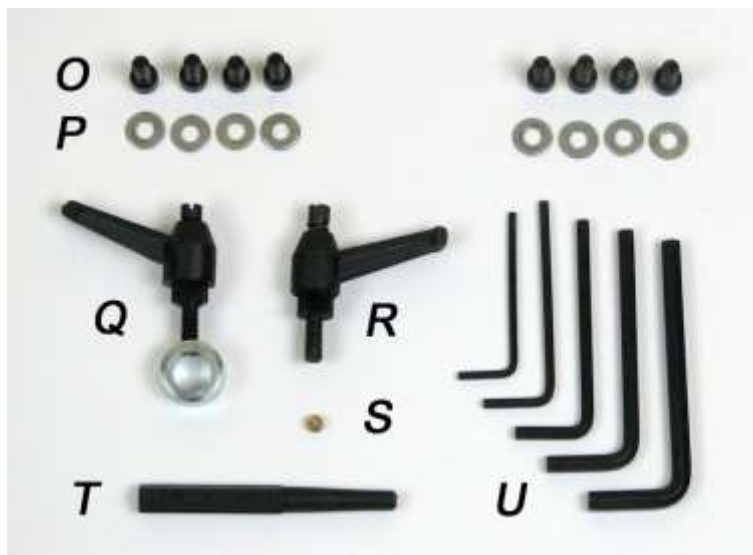
Unpacking The Underpinner

Check the contents have arrived safely and all components are present according to the list below.



Large Parts

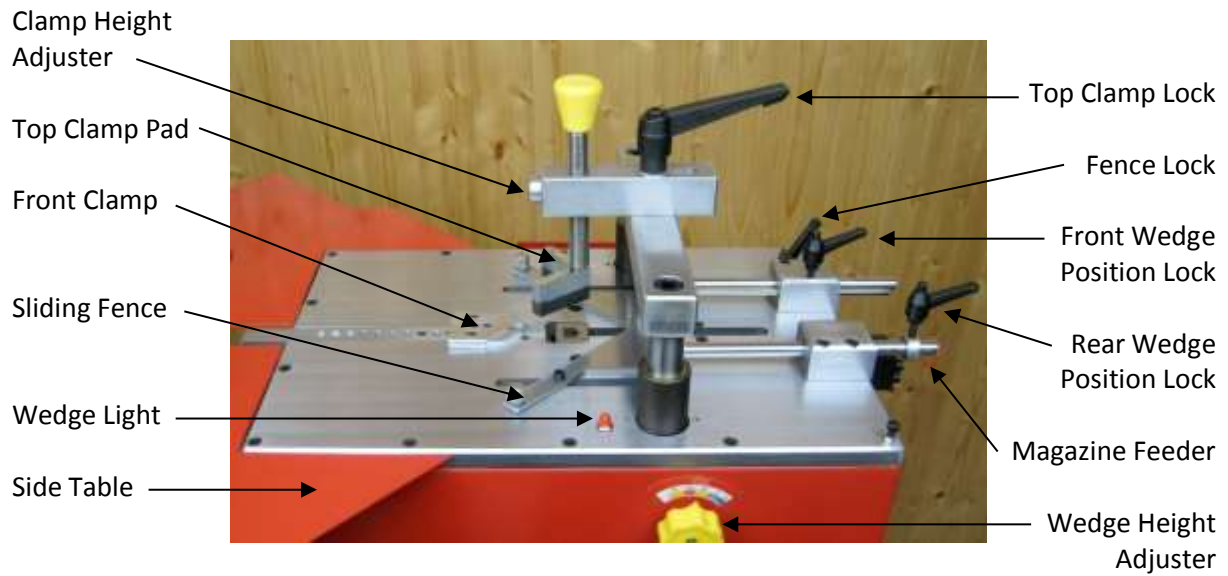
- | | |
|-------------------|--------------------|
| A) Front Stop Bar | G) Round Pad |
| B) Clamp Adjuster | H) Left Table |
| C) Vertical Bar | I) Front Clamp |
| D) Handle | J) Right Table |
| E) Washer | K) Rubber Feet x 4 |
| F) L Shaped Pad | |



Small Parts

- | | |
|----------------------|--------------------|
| O) Cap Head Bolt x 8 | S) Brass Nipple |
| P) Washer x8 | T) Magnetic Tool |
| Q) Locking Collar | U) Set of Hex Keys |
| R) Locking Handle | |

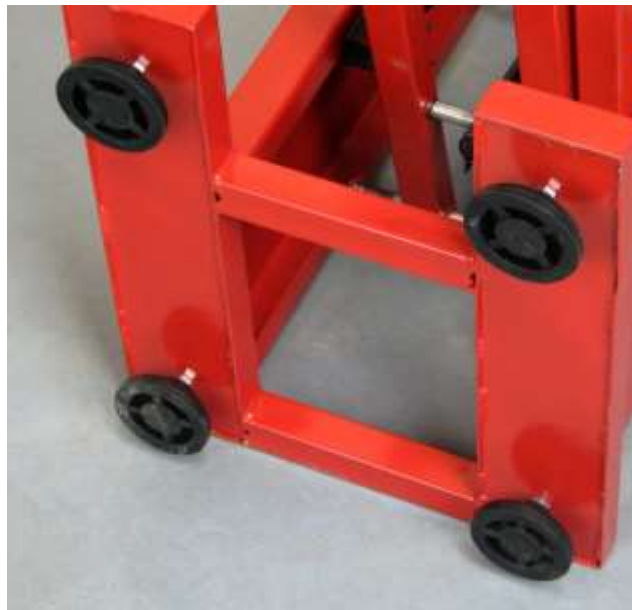
MAIN FEATURES OF THE M4 UNDERPINNER



ASSEMBLY INSTRUCTIONS

1) Fit the Rubber Feet

Screw 4 feet (K) into threaded holes in the base of the stand. The feet are adjustable in height. Use a 13mm spanner to tighten the locking nut, once the machine has been stood upright and levelled.

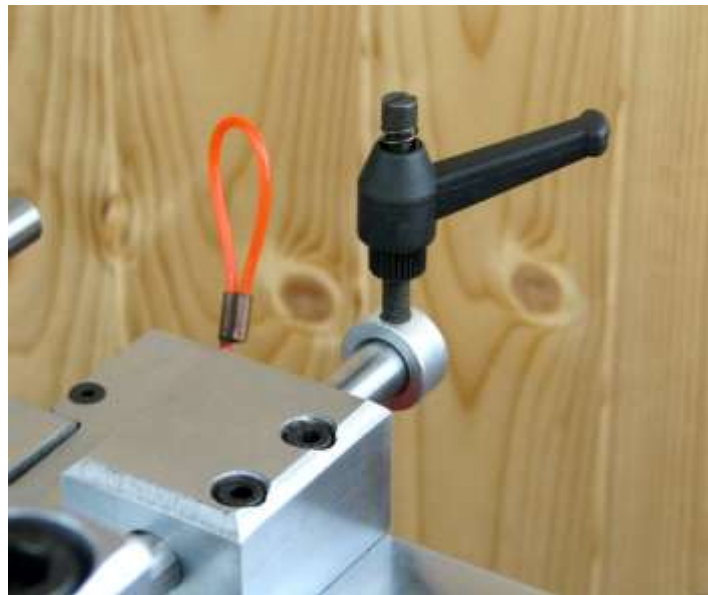


2) Assemble the Fence

Unlock two cap head bolts using the Hex key supplied. Slide the fence forward until the two round guide bars are flush with the front of the fence bracket.



Fit the Handle and Locking Collar (Q) over the right hand fence bar.



Insert the Front Stop Bar (A) into the hole in the fence block.



Place the Brass Nipple (S) into the threaded hole in the fence block.



Screw in the Locking Handle (R).



3) Assemble the Top Clamp

Fit the Clamp Adjuster (B) onto the bridge and secure in place with Washer (E) and Handle (D).



Push the adjusting button inwards and insert the vertical bar from above (C).
Screw the L Shaped Pad (F) on to the end of the vertical bar.



4) Assemble the Front Clamp

Position the Front Clamp (L) so that one of the round holes aligns over the Clamp Pusher.



5) Assemble the Side Tables

Use 8 Cap Head Bolts (O) and Washers (P) to fit the 2 Side Tables (H&J).
Use a straight edge to set the level of the tables flush with the main table.



6) Fit the Accessory Tray

Undo the two cap head bolts located on the left hand side of the machine and use them to secure the Accessory Tray.



Store the service tools and spare wedges here.

7) Remove the Footpedal Locking Clamp

For safety during transport the main pedal is locked down. Undo the handle and slide the Locking Clamp upwards, allowing the pedal to move up at the same time.



The Locking clamp can also be used to lock the footpedal half way down, This reduces the amount of travel required to insert a wedge and is speeds up the pinning operation when working with small mouldings.



OPERATING INSTRUCTIONS

1) Set the Fence

The fence will slide smoothly forward and back. This allows wedges to be inserted into any position on the moulding.

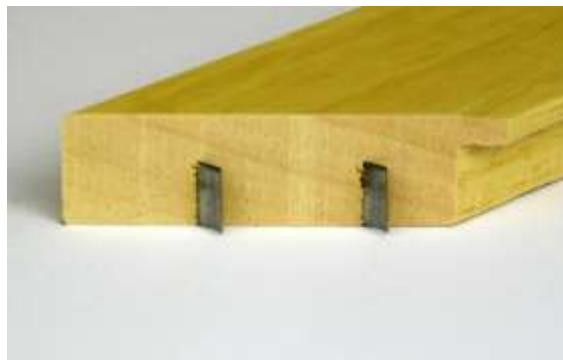
The fence is fitted with a limit stop to set the front wedge position and a limit stop to set the rear wedge position.



When inserting only one wedge into a corner, the position should be central.



When inserting 2 or more wedges into a corner the first position should be 1/4 distance from the front edge. The last position should be 1/3rd distance from the back edge.



There is also a lock to hold the current position of the fence. This is used when 'stacking' wedges. Stacking is the process of inserting multiple wedges in the same position. The second, and subsequent wedges, will drive the first wedge deeper creating a stack. Using this method 2 x 10mm high wedges will become a 20mm high wedge. Always use the fence lock when stacking.



3) Select the Appropriate Sized Wedge

The M4 can use wedge (V-nail) sizes - 5mm, 7mm, 10mm, 12mm and 15mm.

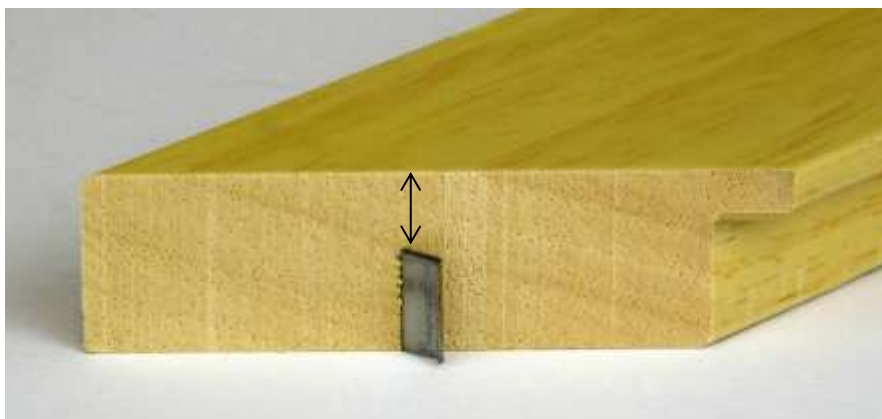
Please Note:

Use only **Genuine Framers Corner Universal** wedges 10.3mm Width, supplied in glued strips.

The warranty will be void if the wrong type Wedges are use.



There must be a minimum of 2mm between the top of the inserted wedge and the face of the moulding.

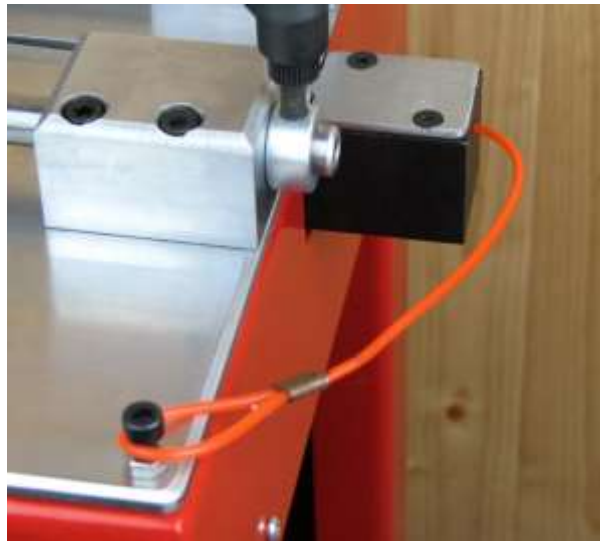


4) Load the Magazine

Adjust the wedge selector on the right hand side of the underpinner to match the size of the wedge being used.



Pull back the nylon cord and hook the looped end over the anchor bolt.

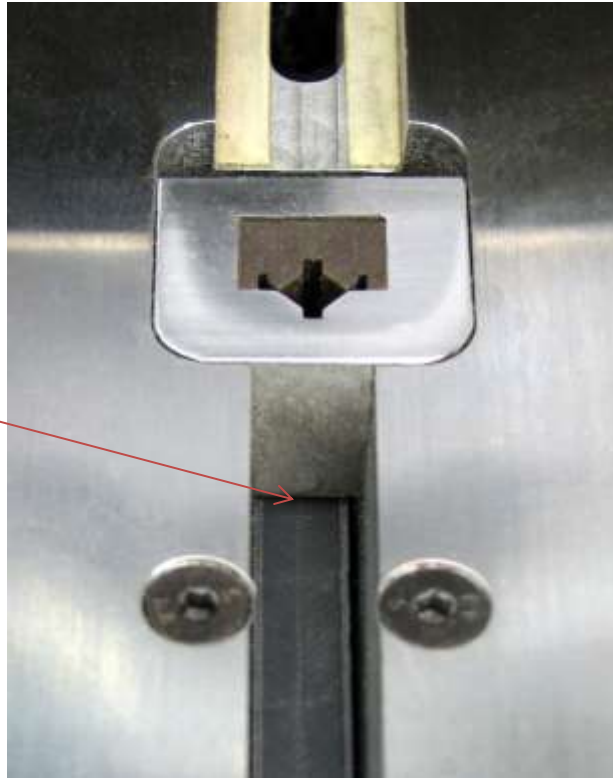


Insert a strip of wedges, sharpened side upwards.
When using genuine Framers Corner Wedges: **Insert Glued Side Up**



Unhook the nylon cord and gently let the spring push the strip of wedges into the magazine. Use visual observation to confirm that the wedges slide under the cap with a gap of no more than 0.5mm.

No More Than 0.5mm



To remove wedges from the magazine, reverse the procedure. Use the Magnetic Tool (T) to pull the partly used strip of wedges, out of the magazine.



5) Set the Front Clamp

The front clamp grips the moulding by the rebate. The clamp holds the moulding securely even when moving from one wedge position to another. Place a piece of the moulding to be used against the fence. Press and hold down the right hand footpedal. The clamp pusher will travel backwards. Fit the clamp over the clamp pusher, in such a way that tip of the clamp is within 15mm of the moulding.



Release the foot pedal and the clamp will move forward, gripping the moulding. The tip of the clamp is designed to allow for slight variations in the moulding width.

6) Choose the Appropriate Rubber Pad

The pinner is supplied with 2 rubber pads. For flat moulding the round pad is generally better. For profiled moulding with varying heights the L shaped pad is generally better.



7) Set the Top Clamp

It is important to set the height of the top clamp correctly. Place the moulding to be used against the fence. Set the gap between the lowest point of the moulding and the underside of the rubber pad to 20mm. To adjust the height, press the round button forward to release the vertical bar. Slide the clamp up or down as required. Release the clamp adjusting button.



8) Insert the Wedge

With all the above settings made:

- Push the fence into the back position
- Press down and hold the right hand pedal
- Place 2 mitred pieces against the fence
- Release the right hand pedal
- Visually check the joint is tight
- Press the left hand pedal firmly all the way down until the light comes on.



- Release the left hand pedal

If a second wedge is to be inserted:

Slide the fence and moulding to the next wedge position and use the left hand footpedal again. Do not press the right hand pedal until all of the wedges required have been inserted into the corner.

During the cycle the top clamp will travel down and contact the moulding - then the driver will push one wedge into the underside of the moulding.

Please note:

It is recommended that a suitable glue is always used when making a frame. Apply a small amount of glue to one of the mitred ends before loading into the pinner. The glue will give the frame strength and ensure it lasts for many years.

ROUTINE MAINTENANCE

1) Cleaning

Clean any excess glue from around the wedge exit point.

Clean the top of the table using a silicone spray or similar product to allow the fence to slide smoothly.

2) Clearing a blockage

Occasionally, a wedge may get jammed in the magazine. It may be possible to pull the wedges out by hand. If it is firmly stuck, possibly half in and half out, it is highly likely that the driver will also be stuck in the raised position.



To clear a blockage; remove the cap, using a spanner. Once removed, the driver should drop back down and the jammed wedge can easily be removed.

When refitting the cap, ensure the top is flush with the surface of the surrounding table.

3) Replacing the Driver

The driver is the part which takes the most wear and will, one day, need replacing.

- ii) Remove the Cap.
- iii) Undo the hex bolt which secures the bottom of the driver to the driver holder.
- iv) Push the driver up through the main table and remove it from the top.

When fitting the new driver ensure the V shape lip is uppermost, with the point of the V towards the back of the machine.

Before tightening the hex nut, ensure the driver is firmly pressed against the bottom of the holder.

M4 Trouble Shooting Guide

Fault	Cause	Remedy
Wedges are too wide to load into the magazine	Wrong type of wedges	Only Universal type 10.3mm wedges can be used
	Faulty wedges	Check with wedge supplier
No wedge is inserted into the moulding	The wedge magazine is empty	Reload the magazine
	Wedge feeder spring is not engaged	Release the nylon cord, check the push spring is moving freely
	Wedge is jammed in cap	Clear the blockage (see page 15)
Fence does not slide	Build up of dirt	Lubricate the two sliding fence bars (part no. M4#11-23)
Top clamp is marking the moulding	Wrong pressure pad fitted	Change to alternate shape pad
	Pressure pad is worn or damaged	Replace pad
Bad joint - Open joint	Bad mitre	Check mitring machine
	Moulding moving during pinning	Ensure the base of the moulding is flat
		Move the wedge position away from the back edge
Moulding is moving during pinning	Cap not flush with table	Remove cap and refit it (see page 15)
	Extension tables not flush with table	Reset the tables
	Top clamp not set correctly	Set gap between moulding and pressure pad to not more than 20mm
	Front clamp not set correctly	Set gap between moulding and clamp to not more than 15mm
Wedges jam in cap	Wrong wedge size selected	Adjust the wedge magazine so the gap between top of wedge and underside of Cap
	Wedges loaded incorrectly	Ensure wedges are loaded sharpened side up (Glue side up)
	Excess build up of glue	Remove the cap and clean the mechanism
	The driver is damaged	Replace the driver
Wedges not fully inserted into moulding - Light does not illuminate	Pedal stroke incomplete	Press pedal until the light illuminated
	Top clamp set too high	Set gap between moulding and pressure pad to not more than 20mm
Wedges not fully inserted into moulding - Light does illuminate	Microswitch actuating screw requires adjustment, Part No. M4#11-57	Loosen locking nut on screw, adjust so that indicator lights when wedge driver is flush with the top surface of the table
Wedges being driven in too deep	Driver limiter not set correctly	Reset the adjusting screws
Attempt at stacking fails	Fence is moving during cycle	Lock the fence when stacking (see page 10)
Stacking wedges break through side of moulding	Stack is too high	Use less or smaller size wedges
	Wedge position too close to edge	Move the wedge position away from the edge
	Wavy grain wood (particularly hardwood)	The wood species is not suitable for stacking
Wedge deforms when inserted	Hardwood	Use specific hardwood wedges
Driver does not return after cycle	Driver has come out of holder	Refit the driver into the holder (see page 15)
Top clamp does not return to start position	Top clamp not set correctly	Set gap between moulding and pressure pad to not more than 20mm
Wedge inserted light does not illuminate	Battery Flat	Replace Battery - access from front, under the table at rear

M4 Parts List

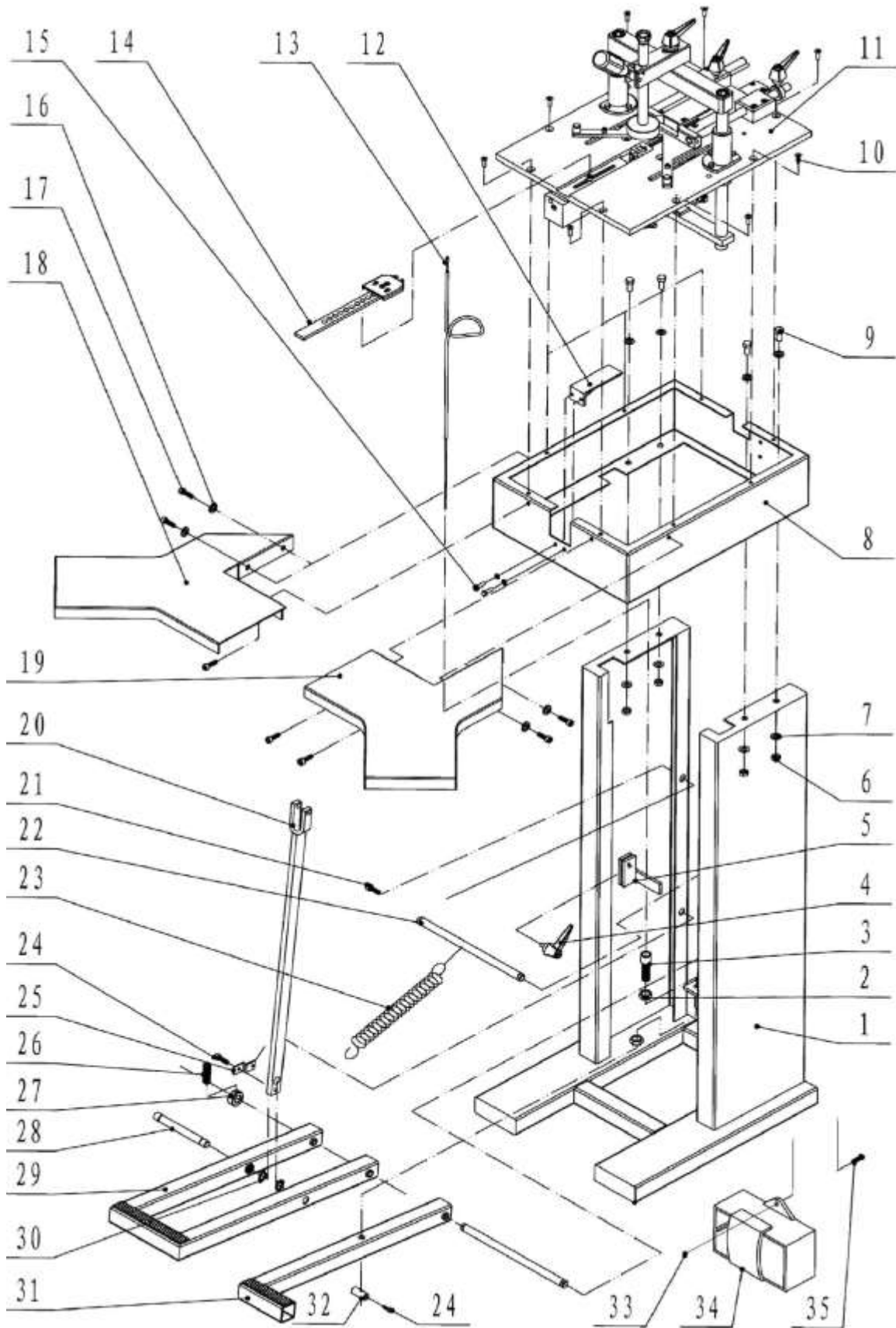
Parts List For Drawing 1

Part No.	Description	Part No.	Description
M4#01	Floorstand	M4#02	Washer
M4#03	Stop Screw	M4#04	Adjustable Handle for Pedal Stop
M4#05	Foot Pedal Stop	M4#06	M8 Nut
M4#07	M5 Countersunk Screw	M4#08	Main Body
M4#09	M8 Hexagon Bolt	M4#10	M5 Countersunk Screw
M4#11	Table	M4#12	Clamp Support Arm
M4#13	Cable And Outer Casing	M4#14	Front Clamp Assembly
M4#15	M5 Screw and Washer	M4#16	M6 Washer
M4#17	M6 Screw	M4#18	Left Hand Extension Table
M4#19	Right Hand Extension Table	M4#20	Long Link
M4#21	M8 Screw	M4#22	Foot Pedal Pivot / Spring Bar
M4#23	Foot Pedal Spring	M4#24	M4 Screw
M4#25	Bottom Spring Bracket	M4#26	M6 Grub Screw
M4#27	Collar	M4#28	Foot Pedal Long Link Bar
M4#29	Main Foot Pedal	M4#30	M8 Screws
M4#31	Clamp Foot Pedal	M4#32	Cable Clamp
M4#33	Nut	M4#34	Battery Box
M4#35	Screw		

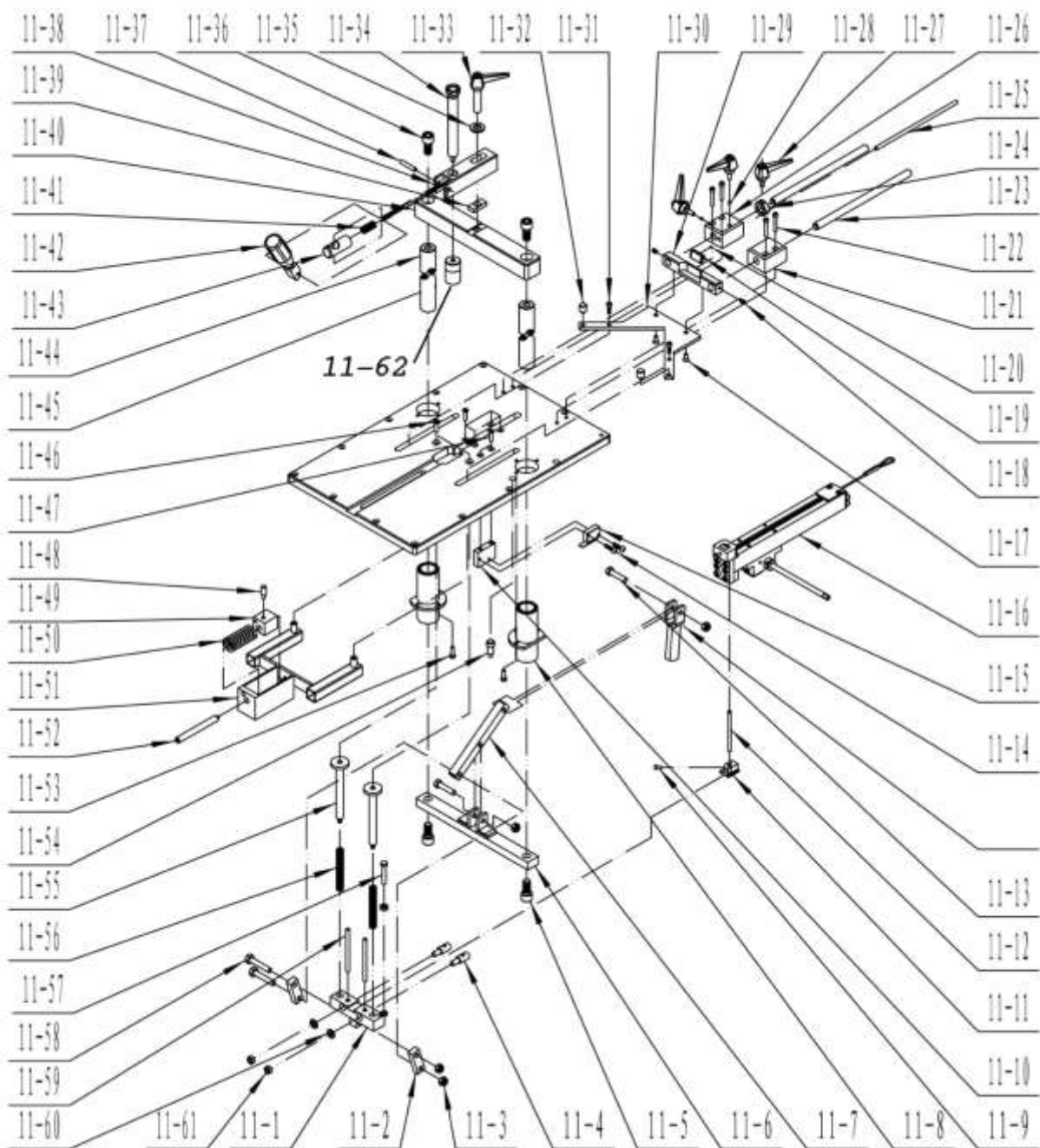
Parts List For Drawing 2

M4#11-01	Driver Push Plate	M4#11-02	Pusher Connecting Links
M4#11-03	M8 Nut	M4#11-04	Locking Spindles
M4#11-05	M12 Washers	M4#11-06	M12 Socket Head Screw
M4#11-07	Fulcrum Link	M4#11-08	Bearing Housing
M4#11-09	M4 Grub Screw	M4#11-10	Light Switch Bracket
M4#11-11	Driver Holder	M4#11-12	Driver
M4#11-13	M8 Screw	M4#11-14	M5 Socket Head Screw
M4#11-15	Light Switch	M4#11-16	Magazine Assembly
M4#11-17	M6 Countersunk Screw	M4#11-18	M5 Grub Screw
M4#11-19	Mirror Plate	M4#11-20	Left Hand Fence Block
M4#11-21	Right Hand Fence Block	M4#11-22	M6 Socket Head Screw
M4#11-23	Fence bar	M4#11-24	Stop Collar
M4#11-25	Fence Stop Bar		
M4#11-27	M6 Adjustable Handle	M4#11-28	Brass Cushion
M4#11-29	Fence Bracket	M4#11-30	Fence Plate
M4#11-31	M6 Socket Head Screw	M4#11-32	Fence Knob
M4#11-33	M8 Adjustable Handle	M4#11-34	Top Pressure Screw
M4#11-35	M8 Washer	M4#11-36	M10 Socket Head screws
M4#11-37	Pin 6mm diameter x 30mm	M4#11-38	Top Pressure Arm
M4#11-39	Key	M4#11-40	Top Pressure Bridge
M4#11-41	Spring	M4#11-42	
M4#11-43	Thumb Button Clamp	M4#11-44	Vertical Threaded Bar
M4#11-45	Bearing	M4#11-46	Countersunk Screw
M4#11-47	Countersunk Screw	M4#11-48	M5 Grub Screw
M4#11-49	Clamp Block	M4#11-50	Spring
M4#11-51	Horizontal Clamp Bracket	M4#11-52	Front Clamp Guide Bar
M4#11-53	Socket Head screw M6	M4#11-54	M8 Countersunk Screws
M4#11-55	Pusher Guide Rods	M4#11-56	Springs
M4#11-57	Light Operating Screw	M4#11-58	M8 Socket Head Screw
M4#11-59	Driver Stop Bar	M4#11-60	M6 Washer
M4#11-61	M6 Nut	M4#11-62	25mm Round Pad
M4#11-63	L Shaped Pad		

M4 Parts Drawing 1



M4 Parts Drawing 2



Parts List For Drawing 3

M4#11-16.01	Pin	M4#11-16.02	Change Shaft
M4#11-16.03	Spacer	M4#11-16.04	Securing Screw
M4#11-16.05	Right Hand Housing	M4#11-16.06	Pinion
M4#11-16.07	Rack	M4#11-16.08	Magazine Cord
M4#11-16.09	Right Hand Magazine Side	M4#11-16.10	Nut
M4#11-16.11	Spring Support	M4#11-16.12	End Plate
M4#11-16.13	Socket Head Screw	M4#11-16.14	Socket Head Screw
M4#11-16.15	Countersunk Screw	M4#11-16.16	Top Plate
M4#11-16.17	Left Hand Magazine Side	M4#11-16.18	Rack
M4#11-16.19	Spring Cover	M4#11-16.20	Countersunk Screw
M4#11-16.21	Countersunk Screw	M4#11-16.22	Wedge Pusher
M4#11-16.23	Driver Support	M4#11-16.24	Nosepiece
M4#11-16.25	Socket Head Screw	M4#11-16.26	Socket Head Screw
M4#11-16.27	Socket Head Screw	M4#11-16.28	Left Hand Housing
M4#11-16.29	Drive Pin	M4#11-16.30	End Spring
M4#11-16.31	Socket Head Screw	M4#11-16.32	Pin And Ball
M4#11-16.33	Wedge Height Selector	M4#11-16.34	Setting Screw
M4#11-16.35	Cap	M4#11-16.36	M5 Grubscrew

M4 Parts Drawing 3

