

Revision A (2020-03-01)

# INSTRUCTION MANUAL

## Operation Instructions **Turbo Woodworking Lathe**

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**Model: T-60S**





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## **Letter of Appreciation**

**Dear Woodworker:**

Thank you for your purchase of the T-60S Wood Lathe and welcome to the woodworking family of Harvey Industries.

We understand that you have a choice when purchasing machines and we appreciate the confidence you have in our products. Every product sold by Harvey Industries has been carefully designed, engineered and crafted from a woodworker's perspective. Today, we offer high-performance machines with innovative solutions that meet the needs of woodworkers and their ever-evolving craft.

We appreciate your business and thank you again for becoming a part of the Harvey Industries family.

## Limited Warranty

New woodworking machines sold by Harvey Industries carry a one-year warranty from the date of shipping. Harvey Industries guarantees that all new machines sold are free of manufacturers' defective workmanship, parts and materials. For any parts determined by Harvey Industries Co., Ltd. to be a manufacturer's defect, we will repair or replace at no charge. We require the defective item/part be returned to Harvey Industries. In the event the item/part is determined to be damaged due to lack of maintenance, cleaning or misuse/abuse, the customer will be responsible for the cost to replace the item/part, plus all related shipping charges. This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, lack of or inadequate dust collection, misuse/abuse or damage caused where repair or alterations have been made or attempted by others. Harvey Industries Co., Ltd is not responsible for additional tools or modifications sold or performed (other than from/by Harvey Industries Co., Ltd.) on any Harvey Industries Co., Ltd. woodworking machine. Warranty may be voided upon the addition of such noted tools and/or modifications, determined on a case-by-case basis.

Normal user alignment, adjustment, tuning and machine settings are not covered by this warranty. It is the responsibility of the user to understand basic woodworking machinery settings and procedures and to properly maintain the equipment in accordance with the standards provided by the manufacturer.

Parts, under warranty, are shipped at Harvey Industries Co., Ltd cost either by common carrier, UPS Ground service or similar method. Technical support to install replacement parts is primarily provided by phone, fax or email. The labor required to install replacement parts is the responsibility of the user.

Harvey Industries is not responsible for damage or loss caused by the Freight Company or other circumstances not in our control.

Only new machines sold to the original owner are covered by this warranty.

**Warning** -- no portion of these materials may be reproduced without written approval from Harvey Industries Co., Ltd.

## General Safety Rules

Please operate the lathe with awareness of the potential for injury. If you have any doubts about safety, please contact your local dealer before using.

**Warning! Failure to follow the listed rules may result in serious personal injury.**

### **TO ENSURE SAFE USE, READ THIS MANUAL BEFORE OPERATING THE TOOL.**

- ALWAYS USE A FULL-FACE SHIELD. A full-face shield will protect your eyes and face.
- KEEP THE WORK AREA CLEAN and have good lighting.
- WEAR PROPER APPAREL. Do not wear loose fitting clothing, gloves, neckties, rings, bracelets or other jewelry, which may get caught in moving parts. Non-slip footwear is also recommended. Secure long hair.
- DISCONNECT THE MACHINE from the power supply before servicing and changing accessories.
- NEVER LEAVE THE MACHINE RUNNING UNATTENDED. Do not leave the lathe unless it is turned "OFF" and completely stopped.
- USE THE RIGHT TOOL. Do not use a tool or attachment to do a job for which it was not intended or designed.
- TIGHTEN ALL CLAMP HANDLES on the headstock, tailstock, and the tool rest before operating the lathe.
- Before turning a large wood piece, it is advisable to reduce the excess before mounting the stock to the lathe. When turning a large wood piece, the turner should not stand in line with the workpiece in order to avoid being struck by a wood piece ejected by an imbalance.
- Hold the tool handle firmly to avoid the rebound.

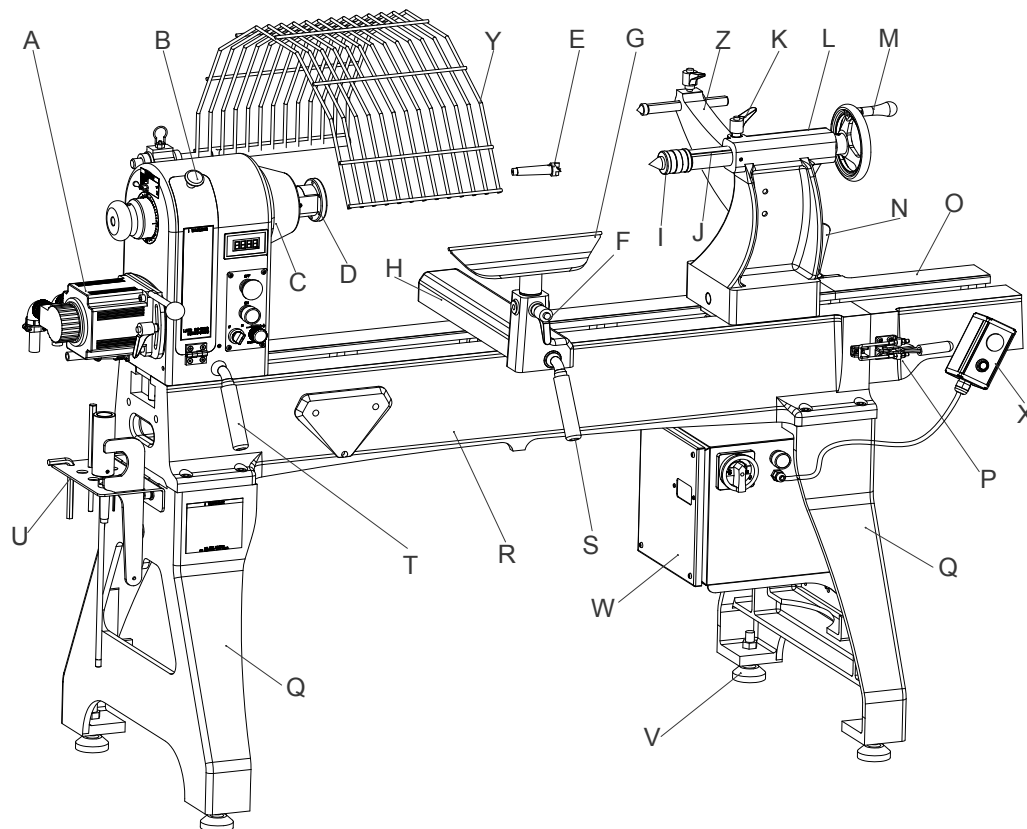
## Introduction

Turbo lathes are designed and built to satisfy the most imaginative fantasies of woodworkers. With outstanding new features, superior performances and so many user-friendly considerations, Turbo lathes make turning an unprecedented experience.

## Features

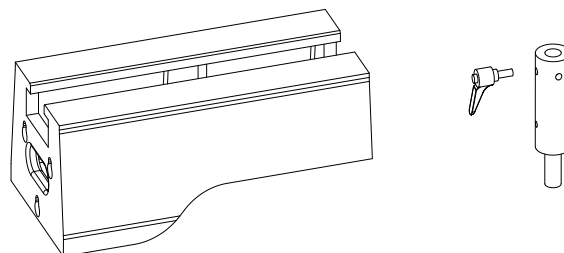
- > High grade cast iron structure for headstock beds and stands to secure maximum stability
- > All beds are precisely ground to a mirror like surface for smooth operation
- > Driven by an advanced YFD variable speed motor with variable speeds 60-3500 RPM
- > Digital wide-angle speed readout with blue backlight
- > Extraordinarily high torque at low speeds for ease of working on large work pieces
- > Oversized alloy spindle supported by three precision bearings
- > Easy belt changing without removing spindle
- > Sliding headstock for easy outboard turning
- > Unique "Swing-away" Extension Bed System (SEB) for easy tailstock storage
- > Heavy duty banjo with easy maneuvering and secure locking handle
- > Cast steel chrome trimmed tool rest
- > End mounts for mounting the extension bed for longer center distance
- > Side mounts for mounting the extension bed for back turning
- > Lower end mounts for mounting the extension bed for outboard turning set up
- > Extension bed mounts on both ends of the bed
- > Built-in spindle lock and index

## Features Identification



- |                          |                                 |
|--------------------------|---------------------------------|
| A: Motor                 | N: Tailstock Lock Lever         |
| B: Belt Access Door      | O: 12" Swing Away Extension Bed |
| C: Headstock             | P: Bed Lock Assembly            |
| D: Face Plate            | Q: Leg                          |
| E: Spur Center           | R: Bed                          |
| F: Tool Rest Lock Handle | S: Tool Rest Base Lock Lever    |
| G: Tool Support          | T: Headstock Lock Lever         |
| H: Tool Rest Base        | U: Tool Kits                    |
| I: Live Center           | V: Leveler                      |
| J: Tailstock Quill       | W: Electrical Box               |
| K: Quill Lock Handle     | X: Control Switch               |
| L: Tailstock             | Y: Spindle Guard                |
| M: Tailstock Hand Wheel  | Z: Rear Support Bracket         |

## Optional Accessories



20 " Extension Bed High Tool Rest



## Specifications

Market		North American	European	Asian
Basic Specification	Maximum Swing Over Bed	24" (610mm)	610mm	610mm
	Distance Between Centers	48" (1220mm)	1220mm	1220mm
	Max. Swing Over Tool Slide	20" (500mm)	500mm	500mm
	Spindle Speeds:	High Range	200-3500 rpm	200-3500 rpm
		Low Range	60-1000 rpm	60-1000 rpm
	Floor to Spindle Center Height (NO Leveler)	44"(1115mm)	1115mm	1115mm
	Headstock Travel	Full Length	Full Length	Full Length
	Max. Outboard Turning Swing	36" (910mm)	910mm	910mm
Spindle	Taper	MT#2	MT#2	MT#2
	Thread	1-1/4"x8 TPI UNS	M33x3.5mm	1-1/4"x8 TPI UNS
	Through Hole Dia.	5/8" (15.8mm)	15.8mm	15.8mm
	Spindle Indexing	48 Positions	48 Positions	48 Positions
	Spindle Bearings	Front 2, Rear 1	Front 2, Rear 1	Front 2, Rear 1
Tail Stock	Tail Stock Quill Taper	MT#2	MT#2	MT#2
	Through Hole Dia.	3/8" (10mm)	10mm	10mm
	Tail Stock Travel	4-1/2" (115mm)	115mm	115mm
Accessories	Tool Rest Width	14" (360mm)	360mm	360mm
	Face Plate Dia.	3" (75mm)	75mm	75mm
	Spur Center Taper	MT#2	MT#2	MT#2
	Dead Center Taper	MT#2	MT#2	MT#2
Motor	Type	AC Servo Motor	AC Servo Motor	AC Servo Motor
	Power	2HP(1.5kW)	1.5kW	1.5kW
	Voltage	200-230VAC	200-230VAC	200-230VAC
	Phase	Single Phase	Single Phase	Single Phase
	Frequency	50/60Hz	50/60Hz	50/60Hz
Product Dimensions	Weight	726lbs(330kg)	330kg	330kg
	Length/Width/Height	90×25-5/8×57-1/2" (2285×650×1460mm)	2285×650×1460mm	2285×650×1460mm
	Footprint	55-1/8×25-5/8" (1400×650mm)	1400×650mm	1400×650mm

## Power Supply

**Warning:** For your own safety, have all electrical installations performed under the supervision of a qualified electrician.

**Caution:** If the factory installed plug does not fit the outlet, before making any changes, please seek assistance from a qualified electrician to ensure that the electrical supply meets local standards.

**Warning:** The machine must be connected with three phase and five wire power supply, otherwise there may be no speed display on the screen.

**Voltage:** 220V/240V **Frequency:** 50/60Hz **Phase:** Single Phase **Current:** 10.3A

## Assembling and Adjustment

**Warning:** The lathe must be powered off during assembly, adjustment or maintenance.

### Base

A level concrete floor is the best location for the lathe. The lathe should be located in a dry area. Keep the electrical box and motor away from direct sunshine. Plenty of space around the lathe is needed for operation and maintenance.

### Unpacking

Report any damage to your shipping agent or dealer immediately as soon as the unit has been checked for shipping damage.

Check the shipping crate with the following parts list to make sure all parts are intact. If there are any missing parts please report it immediately to your dealer. Read this manual thoroughly for assembly, maintenance, operation and safety instructions.

### Packing Contents

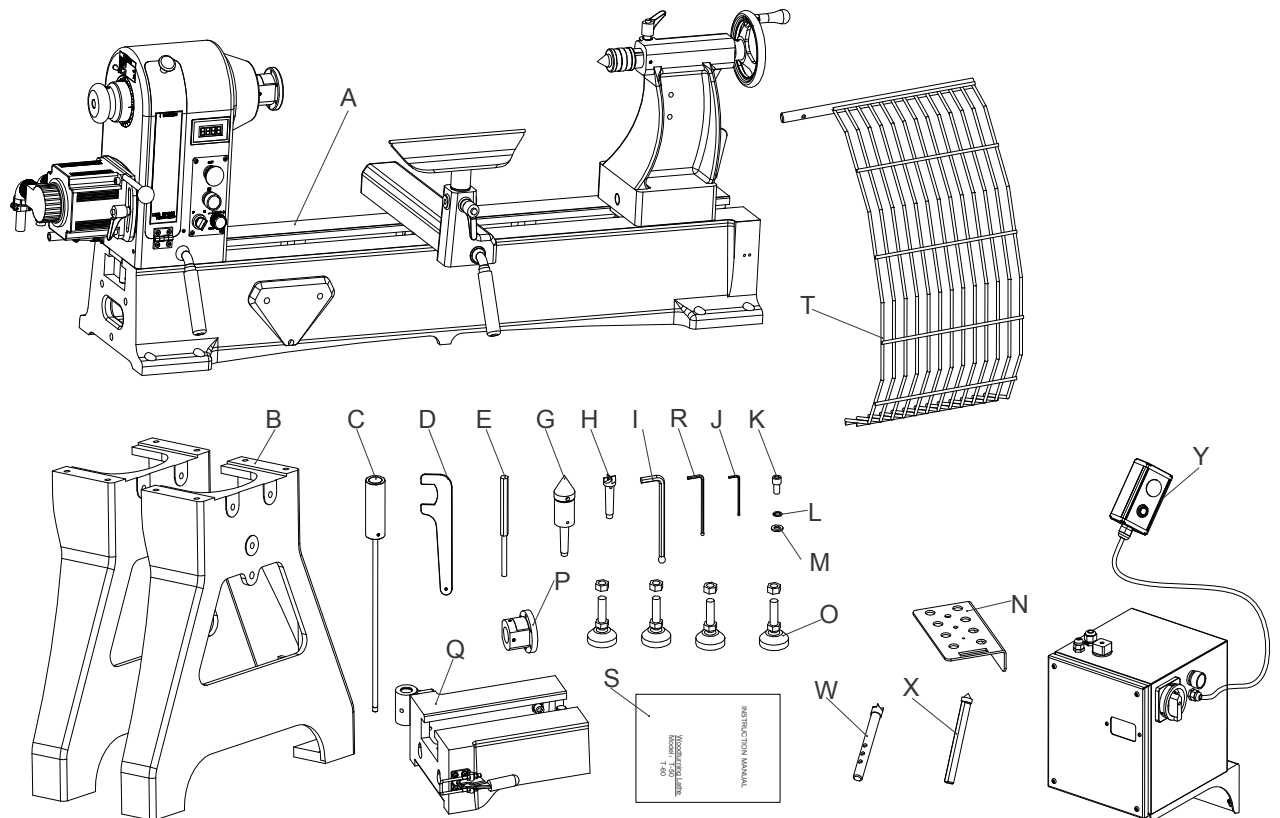


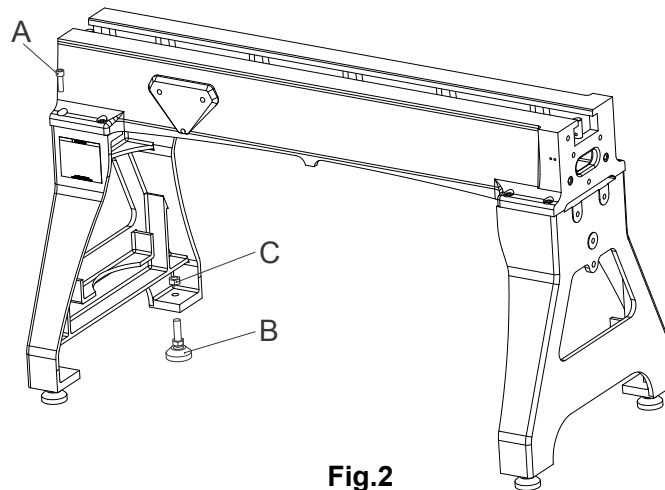
Fig. 1

A	Lathe bed with Headstock, Tailstock, Tool Rest Base (Banjo), Tool Rest	M	12mm Flat Washer x 2
B	Leg Assemblies x 2	N	Tool Kits x 1
C	Knock Out Rod x 1	O	Levelers x 4
D	Face Plate Wrench x 1	P	3" Face Plate x 1
E	Locating Rod x 1	Q	12" Swing away Extension Bed x 1
G	Live Center x 1	R	4mm Hex Wrench x
H	Spur Center x 1	S	Operation Manual x 1
I	10mm Hex Wrench x 1	T	Spindle Guard
J	3mm Hex Wrench x	W	Profiling Center
K	M12×20 Bolt x 2	X	Profiling Cente
L	12mm Spring Washer x 2	Y	Mobile Switch

## Legs Installation

(Refer to Fig. 2)

1. Lift the lathe off the pallet by using a hoist or forklift. Place it on a table or workbench with sufficient clearance which allows for the support legs to be attached from underneath.
2. Attach the legs to the bed with 12mm hex head screws (A). Then firmly tighten the screws.
3. After firmly securing the legs to the lathe, carefully lower the lathe onto the floor.
4. Install four leveling feet (B), and tighten four nuts(C) against the legs. (These can be adjusted later.) Make sure that the lathe does not rock.

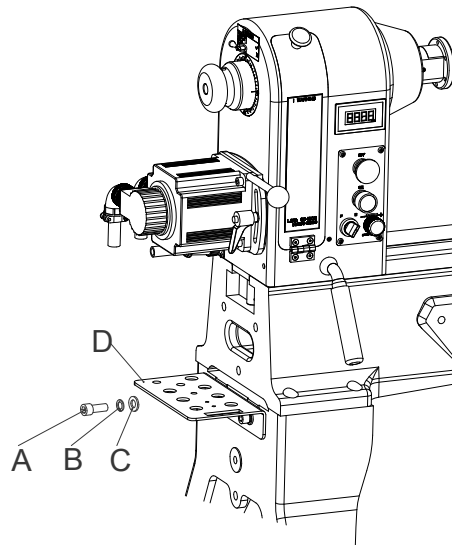


**Fig.2**

## Tool Storage Bracket

(Refer to Fig. 3)

The tool storage bracket (D) can be mounted to the left end of the lathe. Use two 12mm head cap screws (A) with flat (C) and spring washers (B) to secure it to the lathe.

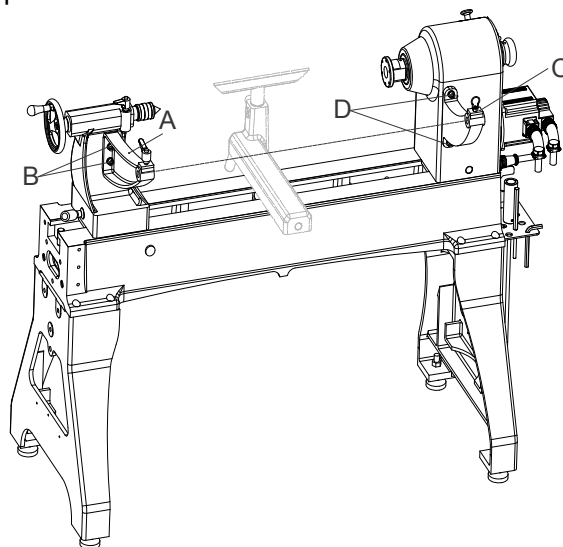


**Fig.3**

## Comparator Brackets

(Refer to Fig.4)

Mount the front comparator bracket (C) to the back of the headstock with two M12 socket head cap screws (D). This bracket can be also used for mounting the spindle shield. Mount the rear comparator bracket (A) to the back of the tailstock. The bracket has a slot so it can be aligned with the front comparator bracket. Use two M12 head cap screws (B) to secure the rear comparator bracket to the tailstock.

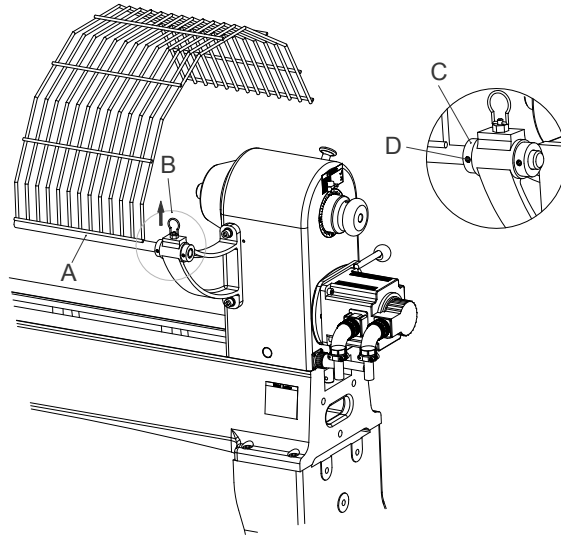


**Fig. 4**

## Spindle Shield

(Refer to Fig. 5)

1. Lift up the spring pin (B) and insert the support rod (A) into the bracket hole. Release the spring pin, slide the rod and you will feel that the spring pin snaps into position.
2. Install the outer collar (C) and tighten the set screw (D).

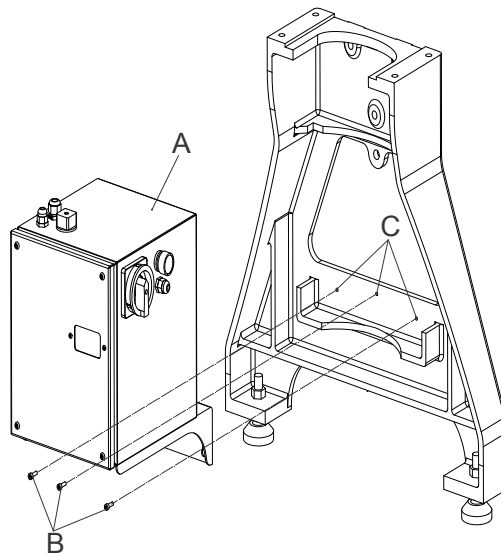


**Fig. 5**

## Installation of Electrical Box

(Refer to Fig. 6)

Electrical box A is installed to position C of leg with three hexagon socket head screws M5x16

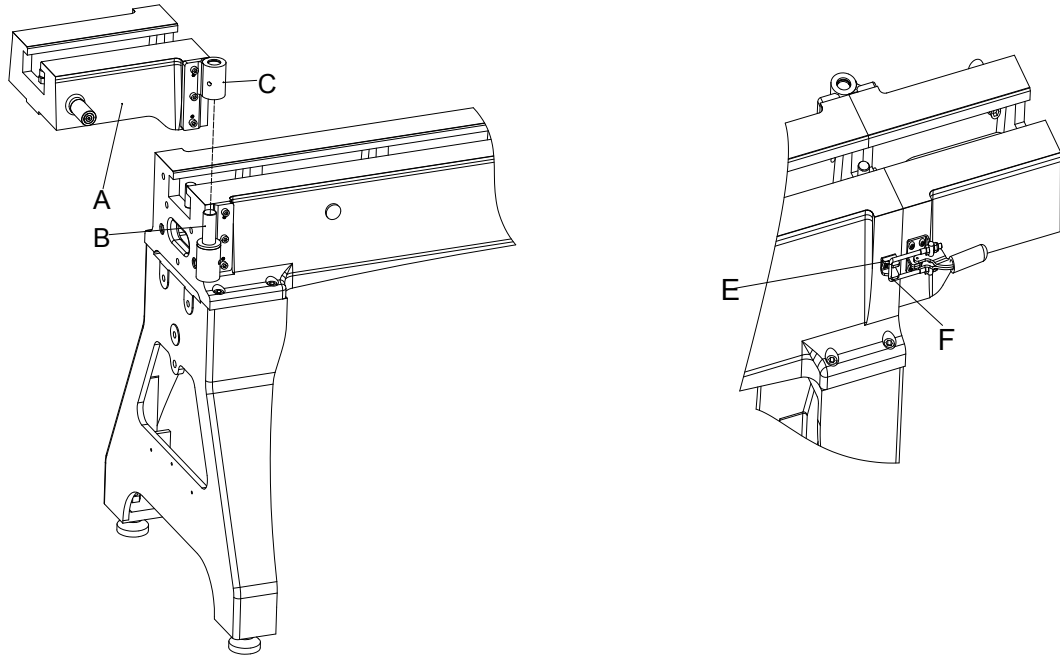


**Fig. 6**

## 12" Swing Away Extension Bed

(Refer to Fig. 7)

To mount the 12" Swing Away Extension Bed (A), you need to attach the hinge (C) to the hinge axis(B).



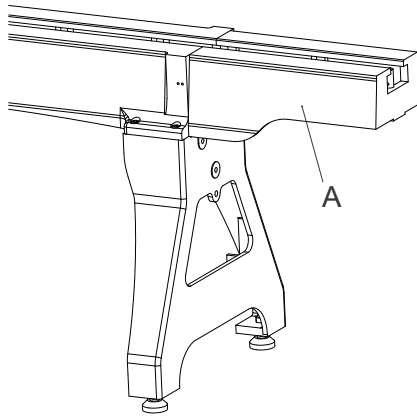
**Fig. 7**

## 20" Extension Bed (Optional)

Refer to Fig.8 -Fig.10

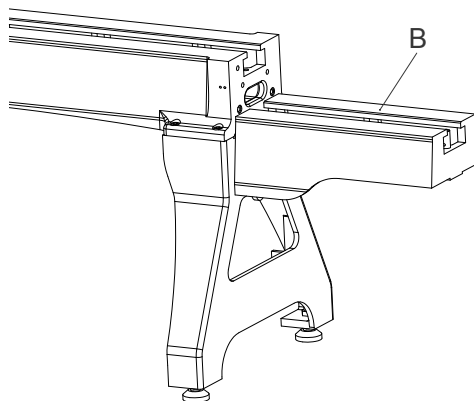
The optional 20" extension bed can be mounted on the lathe in three locations:

A: Right end of bed (as shown in Fig. 7) for up to 56" center distance.



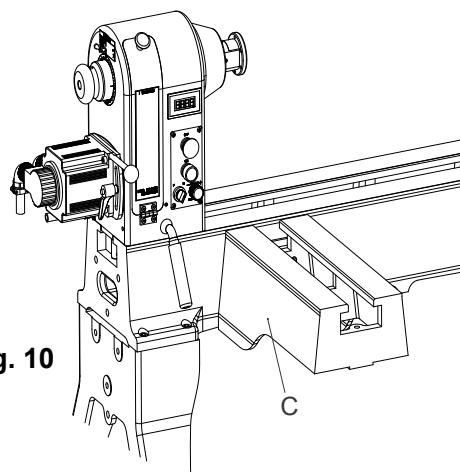
**Fig. 8**

B: Right leg (as shown in Fig.8) for outboard turning.



**Fig.9**

C: Front bed (as shown in Fig.9) for convenient operation.



**Fig. 10**

## Operation

### Notice:

The lathe must be powered off during assembly, adjustment or maintenance.

Please start the lathe by using the lowest speed!

## Control Panel

Refer to Fig. 11

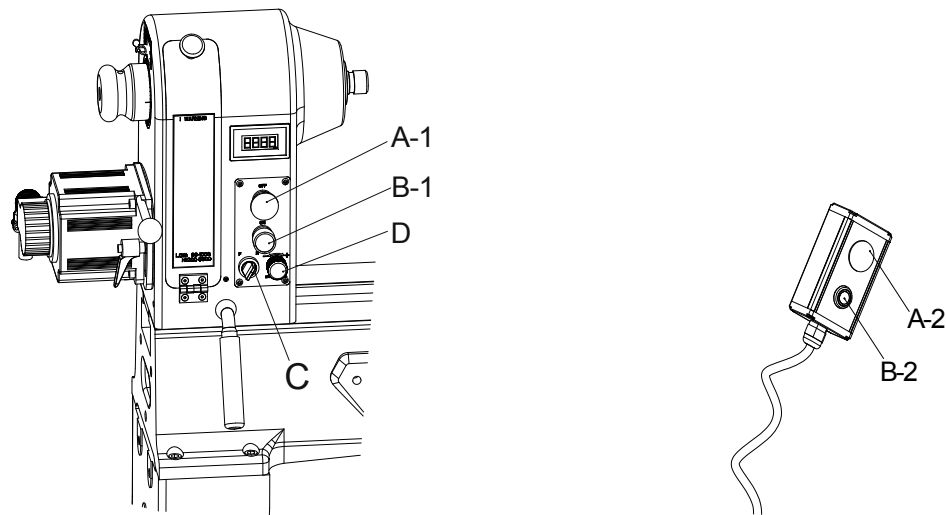


Fig.11

**1. Stop Button ---Button A-1、A-2:**

**2. Start Button ---Button B-1、B-2:**

**3. Positions Switch ---Gear Switch C:**

“F”: forward; “R”: reverse;

**4.Speed Adjustment Knob ---D:**

Change the spindle speed by turning this knob.

**Note:** If a sudden power failure occurs, the spindle will not re-start automatically when the power is restored. Turn the Switch C to “O”, then press the button B to reset, and then turn Switch C to F (forward) or R (reverse).



## Speed Range Adjustment

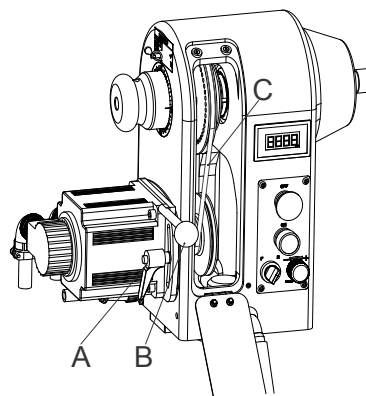
(Refer to Fig. 12)

The lathe is designed having two speed ranges: Low Range: 60-1000 rpm and High Range: 2000-3500 rpm.

In each range, the speed can be changed variably by the electronic variable speed controller.

**Follow the steps below to change the speed range:**

1. Disconnect the lathe from the power supply;
2. Open the Headstock Guard which is held by a strong magnetic pad;
3. Loosen the Motor Locking Handle “A”, pull up the Motor Mount Handle to release the belt tension;
4. Position the belt on the desired speed range pulleys;
5. Turn the spindle hand wheel by hand, ensuring that the belt rotates smoothly and is engaged with both the motor pulley and the spindle pulley;
6. Tighten the belt by pushing down the motor mount handle, then tighten the motor locking handle “A”. Close the Headstock Guard.



**Fig. 12**

**Note:** The best belt tension is determined by pressing the belt with one finger. The belt should deflect about  $\frac{1}{4}$ "- $\frac{1}{2}$ " (about 6-12mm).

## Recommended Turning Speed Table

**Notice: Please start the lathe by using the lowest speed!**

Wood Piece Dia.	Rough Turning	Normal Turning	Sanding
< 50mm	1600rpm	3500rpm	3500rpm
50-100mm	800rpm	1600rpm	2500rpm
100-150mm	500rpm	1100rpm	1700rpm
150-200mm	400rpm	800rpm	1250rpm
200-250mm	300rpm	700rpm	1000rpm
250-300mm	250rpm	550rpm	900rpm
300-400mm	200rpm	450rpm	680rpm
400-500mm	150rpm	350rpm	550rpm
500-600mm	100rpm	280rpm	400rpm
≥ 600mm	80rpm	200rpm	300rpm

## Tool Rest Base (Banjo)

The Banjo is designed with a cam-lock system which can slide along the bed freely when unlocked. Loosen the locking handle and move the Banjo to the desired place. Lock the lever firmly after adjustment.

## Tool Rest

The 14" tool support is provided with your lathe as standard equipment. It is designed to allow the adjustment for height and angle. Loosen the locking lever to raise or lower the tool rest and angle it to the work. Tighten the handle before operating the Lathe. The locking lever can be inserted into one of three holes on the tool rest base.

## Headstock and Tailstock

Both the headstock and tailstock can slide along the bed. Loosen the locking lever and move the Headstock or Tailstock to a desired place. Tighten the lever firmly after adjustment.

**CAUTION:** Always Unplug the lathe from the power source before adjusting the headstock.

## Spur Centers Installation/Removing

(Refer to Fig. 13)

1. Unplug the lathe from the power source.
2. Make sure the taper of the center and the spindle tapered hole are clean and free of debris. Then push the center into the spindle tapered hole for installation.
3. To remove the center, insert the knockout rod into the back hole in the end of spindle and tap the center end out.

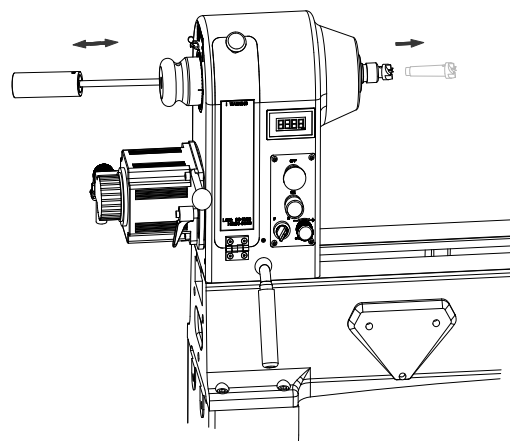


Fig .13

## Face Plate Installation and Removing

(Refer to Fig. 14)

1. Unplug the lathe from the power source.
2. Mount the face plate to the work piece.
3. Install the face plate onto the spindle thread and turn it clockwise.
4. Insert the lock rod (A) into the hand wheel hole. Hold the rod and tighten the face plate with the face plate wrench (B).
5. Tighten the set screw on the face plate when you work with the lathe in reverse rotation.
6. Reverse these directions to dismount the Face Plate.

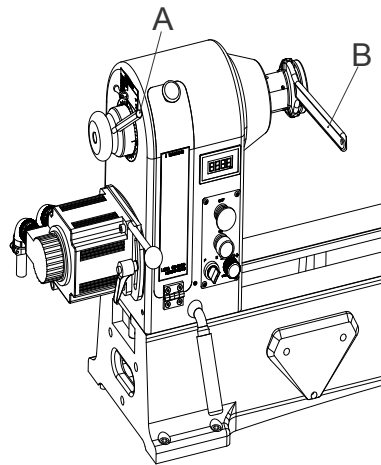


Fig .14

## Tailstock Quill

Loosen the Tailstock Quill Locking Handle, rotate the Tailstock Hand Wheel to the desired Tailstock Quill position, and then tighten the Tailstock Quill Locking Handle.

## Live Centers Installation/Removing

1. Make sure the taper of the center and the quill hole are clean and free of debris. Push the center into the quill hole.
2. To remove the center from the tailstock, loosen the tailstock quill locking lever and move the quill out by turning the quill hand wheel until the quill end is almost inside the tailstock, then the center can be taken out by hand.

## **General Maintenance**

### **Daily:**

Wipe off the dust from the lathe with a soft bench brush.

Apply a coat of wax on the Spindle, Tailstock Quill and bed.

### **Monthly:**

Check the belt tension.

Check the belt for wear and tear and change the worn and torn belt.

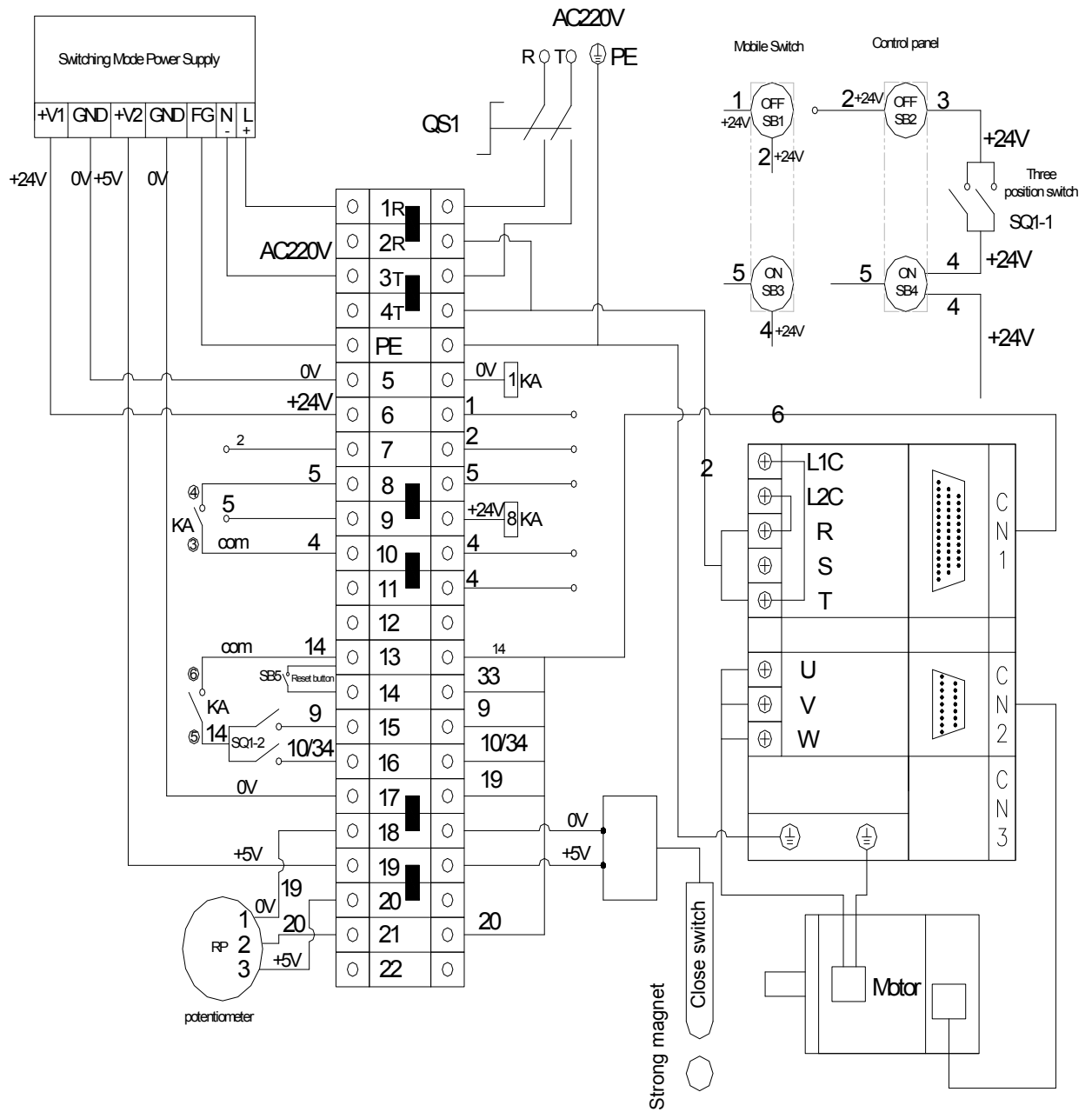
Clean the dust from the belt.

Check the stability of the lathe base.

## Trouble Shooting

Trouble	Probable Cause	Remedy
Lathe won't start.	No incoming power.	Check power supply, lead connections
	Problem with driver.	Contact Harvey Technical Service.
Motor fails to develop full power.	Undersized wires in power supply system.	Increase supply wire size.
	Faulty driver.	Contact Harvey Technical Service.
	Worn motor.	Replace motor.
Motor or spindle stalls or will not start.	Excessive cut.	Reduce depth of cut.
	Improper belt adjustment, or worn or broken belt.	Adjust or replace belt as needed.
	Worn spindle bearings.	Replace bearings.
	Worn motor.	Replace motor.
Excessive vibration.	Workpiece warped, out of round, has major flaw, or was improperly prepared for turning.	Correct problem by planing or sawing workpiece, or discard entirely and use new workpiece.
	Worn spindle bearings.	Replace spindle bearings.
	Worn drive belt.	Replace drive belt.
	Motor mount lock handle is loose.	Tighten lock handle.
	Lathe on uneven surface.	Adjust leveling feet.
Lathe runs at one speed only.	Driver is not programmed properly, or is defective, or there is loose wiring.	Contact Harvey Technical Service to help identify problem.
Tools tend to grab or dig in.	Dull tools.	Keep tools sharp.
	Tool support set too low.	Reposition tool support height.
	Tool support set too far from workpiece.	Reposition tool support closer to workpiece.
	Improper tool being used.	Use correct tool for operation.
Tailstock moves when applying pressure.	Cam lock nut needs adjusting.	Tighten cam lock nut.
	Lathe bed and tailstock mating surfaces are greasy or oily.	Remove tailstock and clean surfaces with a cleaner/degreaser. Re-apply light coat of oil to Lathe bed surface.

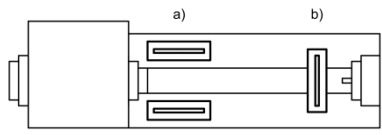
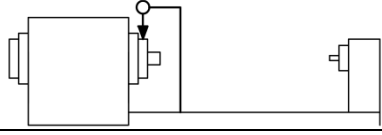
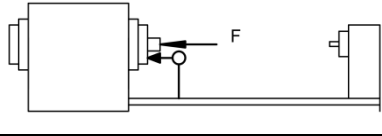
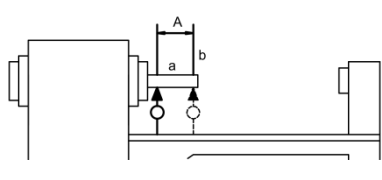
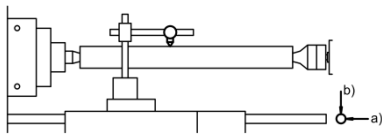
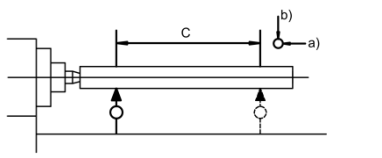
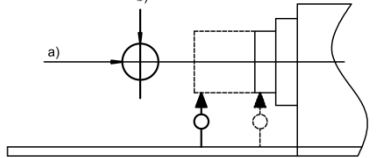
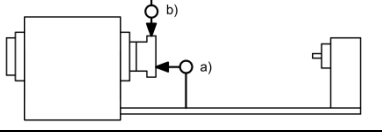
# Wiring Diagram



# INSPECTION STANDARDS

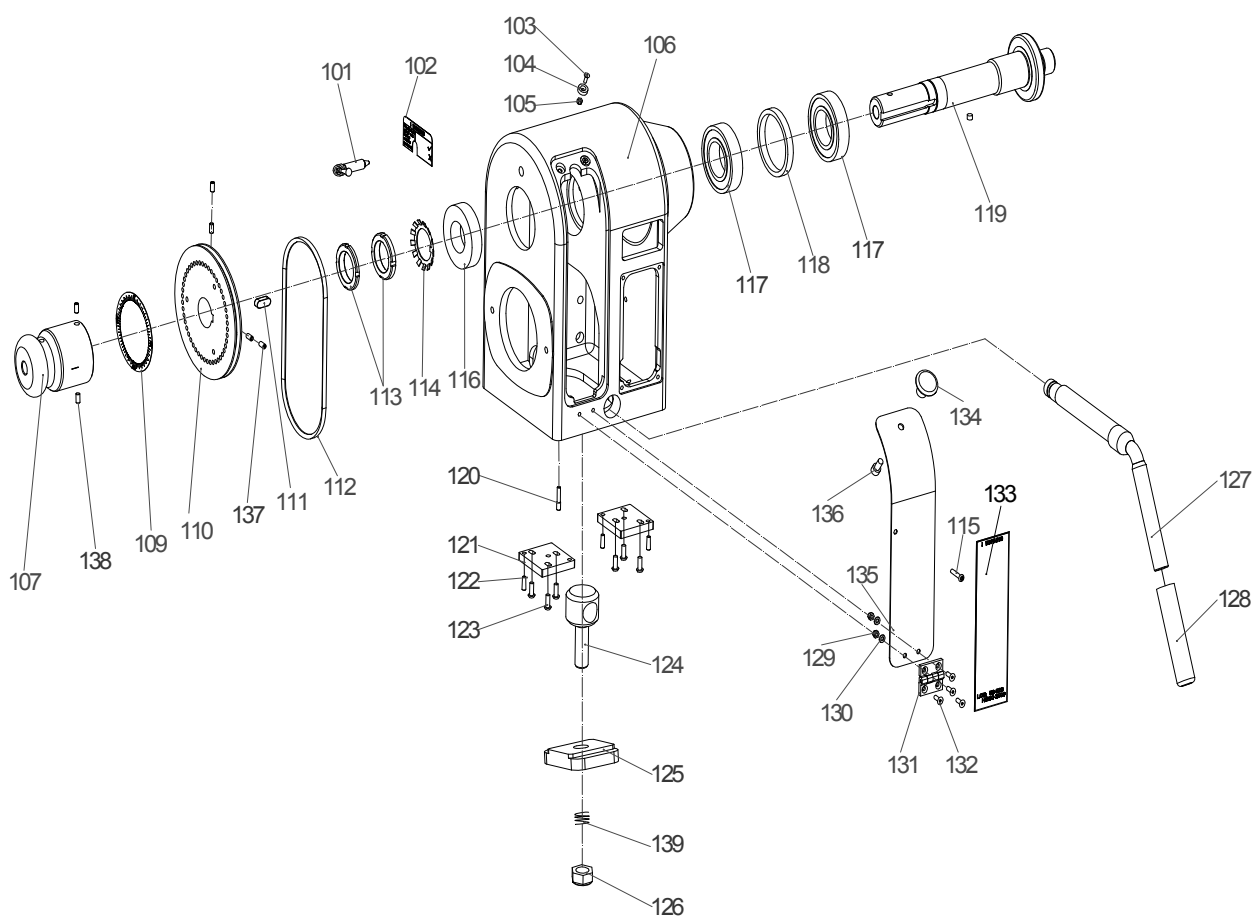
(Wood Lathe)

This machine is inspected in the factory and meets the following precision standards.

Index	Diagram	Inspection Item	Standard (mm)
1		Bed a: Straightness b: Parallelism	0.08/800
			0.02
2		Spindle radial runout.	0.01
		Spindle end-face runout.	0.01
		a: Spindle inner taper runout. b: Spindle near thread test rod runout. c: Spindle away from thread test rod runout.	0.01
			0.015
3		a: Horizontal direction b: Vertical direction	0.10/400
			0.10/400
4		a: Horizontal direction b: Vertical direction	0.03/150
			0.06/150
5		a: Horizontal direction b: Vertical direction	0.03/100
			0.04/100
6		Face plate a: End-face runout b: Radial runout	0.06
			0.10

## Exploded View and Parts List

### Headstock Assembly



#### REF# DESCRIPTION

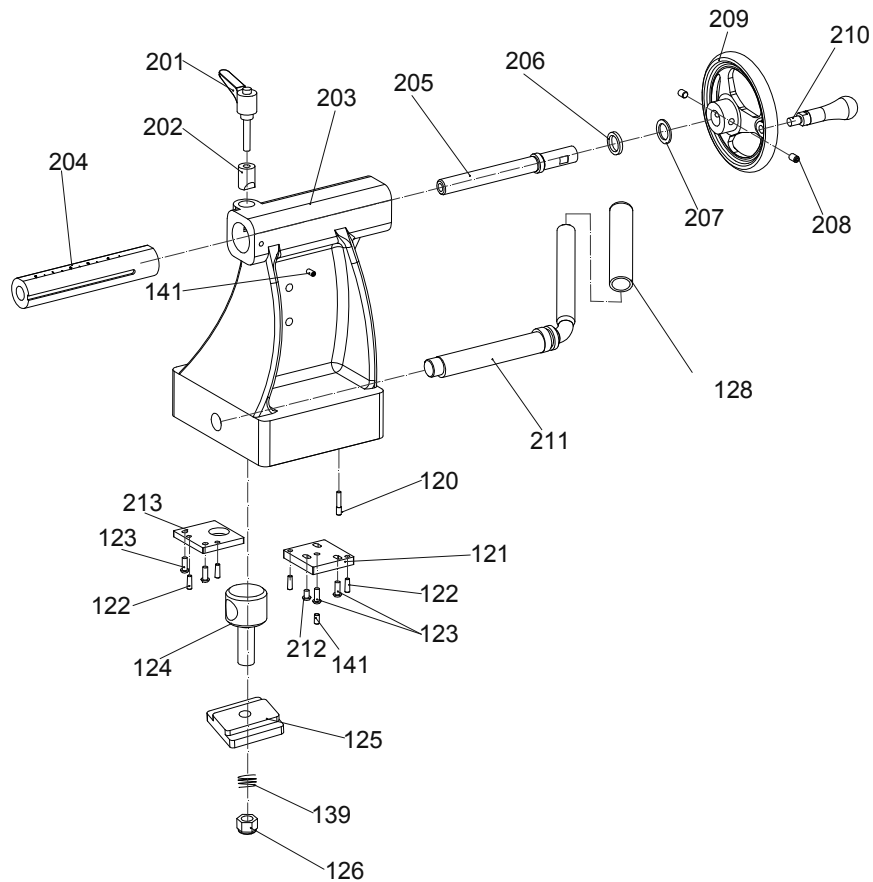
101	Position Pin
102	Position Pin Label
103	Hex Socket Cap screw M4×12
104	Magnet
105	Hex Nut M4
106	Headstock Casting
107	Spindle Hand-wheel
109	Degree Indicator
110	Pulley
111	Flat Key 10×25
112	Motor Belt For T-60S 7M750
113	Lock Nut
114	Gasket
115	Cap screw
116	Ball Bearing 6208/P6-2RZ
117	Ball Bearing 6209/P6-2RZ
118	Separate Ring
119	Spindle
120	Position Pin M6-φ 5

#### REF# DESCRIPTION

121	Position Block
122	Taper Pin
123	Round Head screw
124	Lock Shaft
125	Clamp Block
126	Lock Nut M20
127	Lock Handle
128	Rubber Sleeve φ 21.5×120×53
129	Hex Nut M5
130	Flat Washer 5
131	Hinge
132	Hex Socket Cap screw M5×16
133	Speed Step Indicator
134	Button
135	24" Cover
136	Cap Screw M5×16
137	Set Screw M6×6
138	Screw Pin M8-φ6×20
139	Spring M14×25.8×12×4

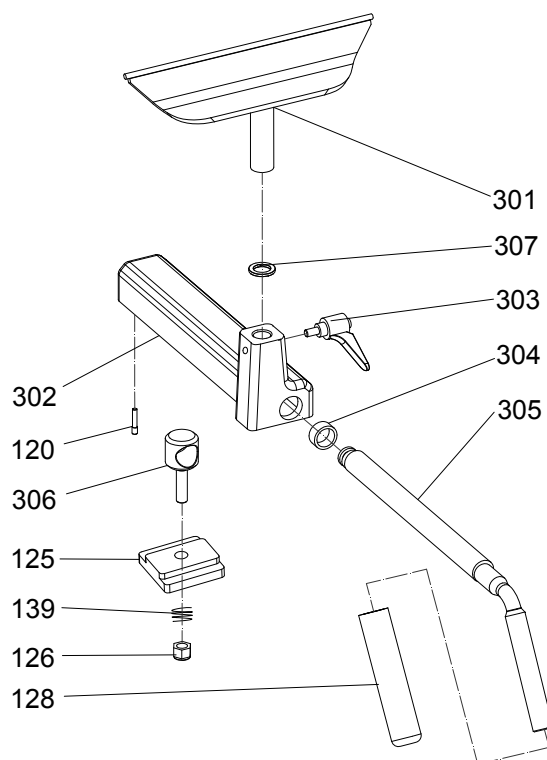


## Tailstock Assembly



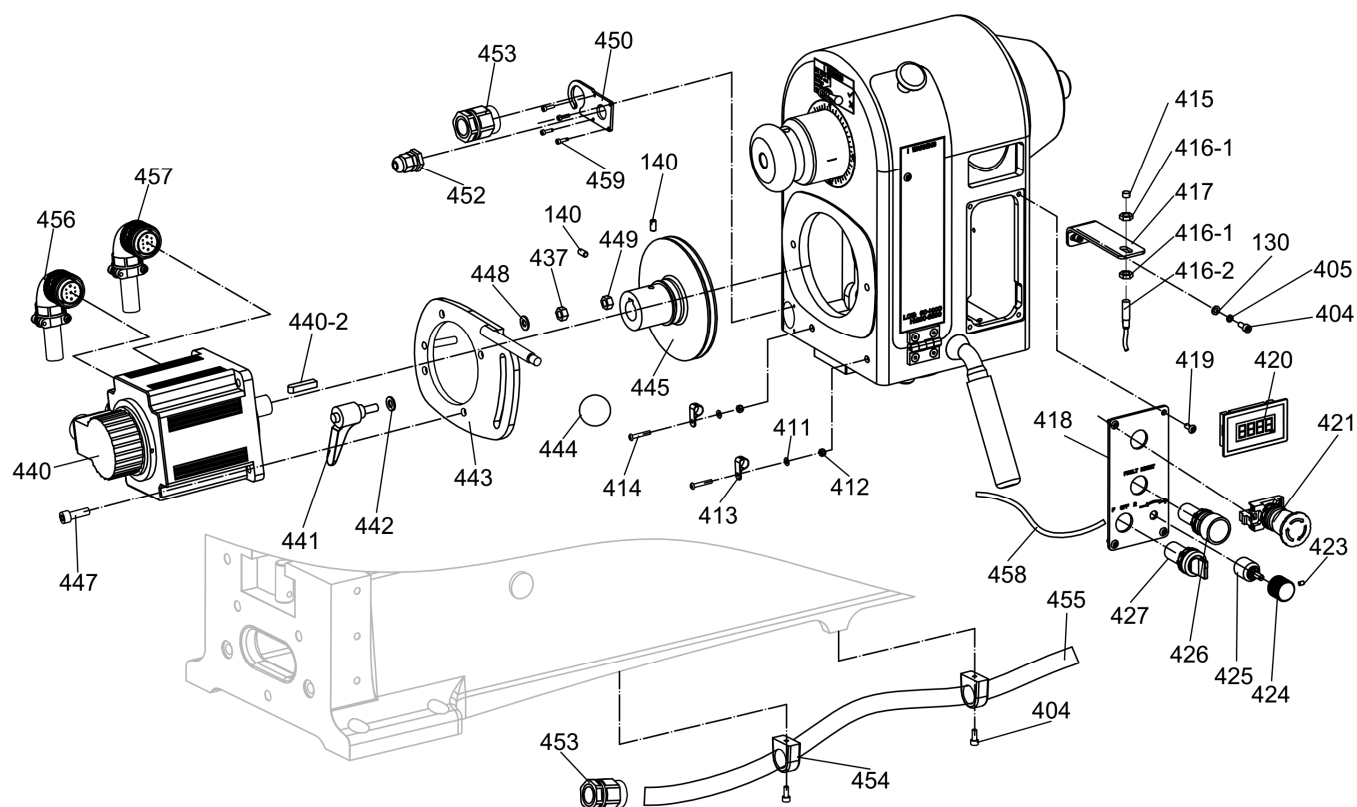
REF#	DESCRIPTION	REF#	DESCRIPTION
201	Adjusting Handle M10×45	213	Position Block
202	Lock Block	120	Position Pin M6- $\phi$ 5
203	Tailstock	121	Position Block
204	Sleeve	122	Taper Pin
205	Lead Screw	123	Round Head screw
206	Position Ring	124	Lock Shaft
207	Washer	125	Clamp Block
208	Set Screw M8×10	126	Lock Nut M20
209	Hand Wheel	128	Rubber Sleeve $\phi$ 21.5×120× $\phi$ 3
210	Handle	139	Spring M14×25.8×12×4
211	Lock Handle	141	Set Screw M6×10
212	Cap Screw M6×12		

## Tool Rest Assembly



REF#	DESCRIPTION	REF#	DESCRIPTION
301	Tool Rest	307	Tool Rest Copper Washe
302	Tool-Post Base	120	Position Pin M6- $\phi$ 5
303	Adjusting Handle M10×25	125	Clamp Block
304	Brass Sleeve	126	Lock Nut M20
305	Lock Handle	128	Rubber Sleeve $\phi$ 21.5×120× $\phi$ 3
306	Lock Shaft	139	Spring M14×25.8×12×4

## Motor Assembly



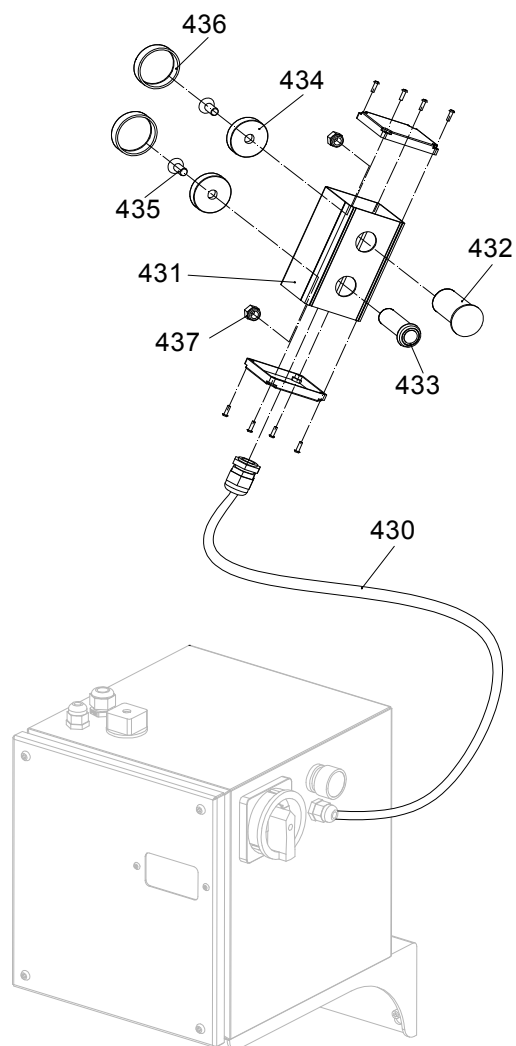
### REF# DESCRIPTION

404	Cap Screw M5×12
405	Spring Washer 5
411	Flat Washer 4
412	Hex Lock Nut M4
413	R Cable Clamp
414	Hex Socket Cap Screw M4x25
415	Magnet
416	Switch
417	Switch Bracket
418	Cover
419	Cap screw M5×12
420	Speed DRO
421	Stop button
423	Set Screw M4×6
424	Speed Adjusting Button
425	Speed Controller
426	Switch CP1-10L-10
427	Three-position Switch
440	Motor
441	Adjusting Handle M10×20

### REF# DESCRIPTION

442	Flat Washer 10
443	Motor Flange
444	Handle Ball M10×32
445	Pulley
446	Hex Lock Nut M8
447	Cap Screw M8X20
448	Flat Washer 8
449	Hex Nut M8
450	Joint Fixed Seat
451	Aviation Plug
452	Strain Relief Bushing PG9
453	Connector
454	Fixed Seat
455	Bushing
456	Encoder line
457	Motor Wire
458	Control line
459	Cap Screw M3×12
130	Flat Washer 5
140	Set Screw M6×12

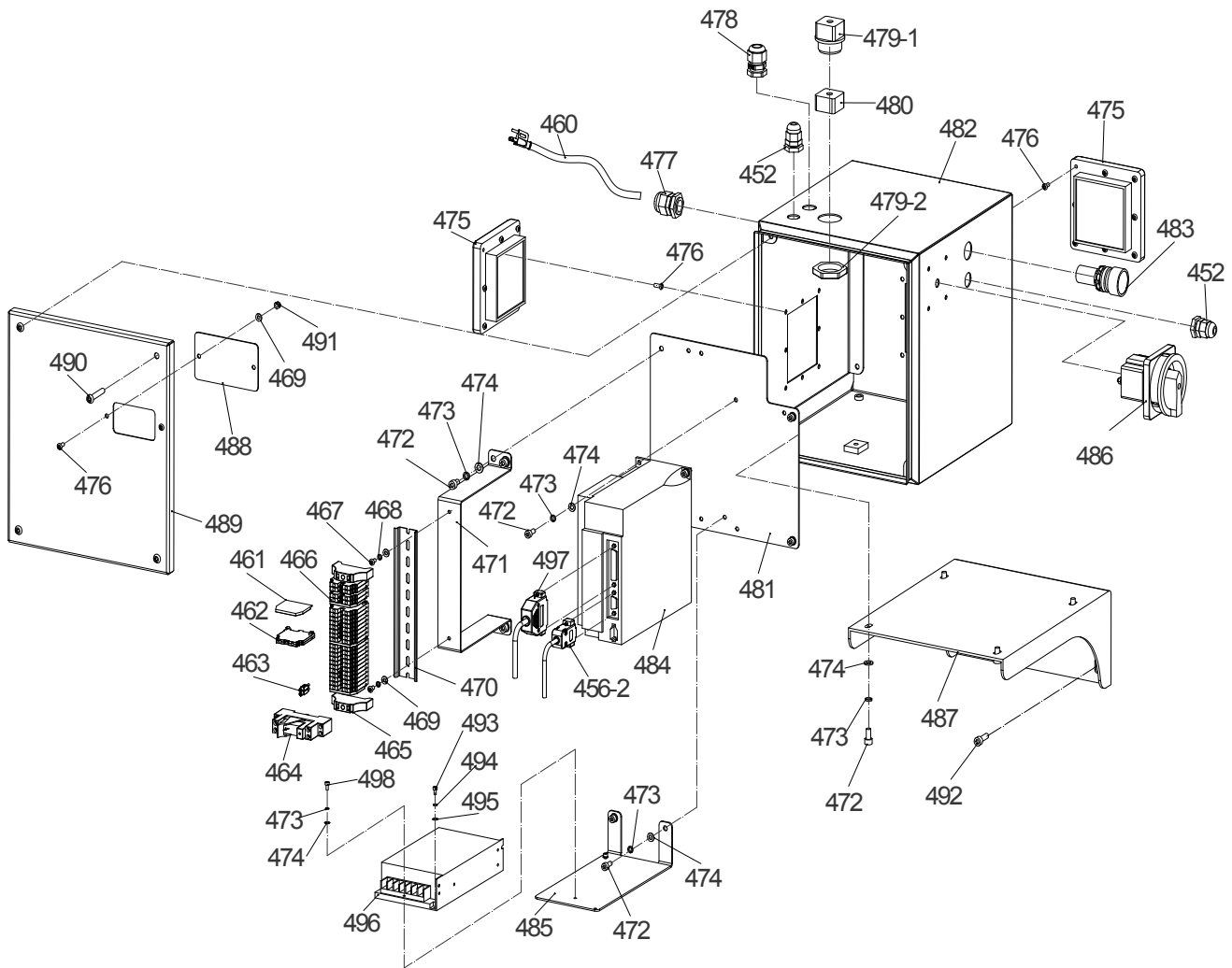
## Mobile Switch



REF#	DESCRIPTION
430	Helical line
431	Mobile Control Box
432	Stop Switch
433	Start Button

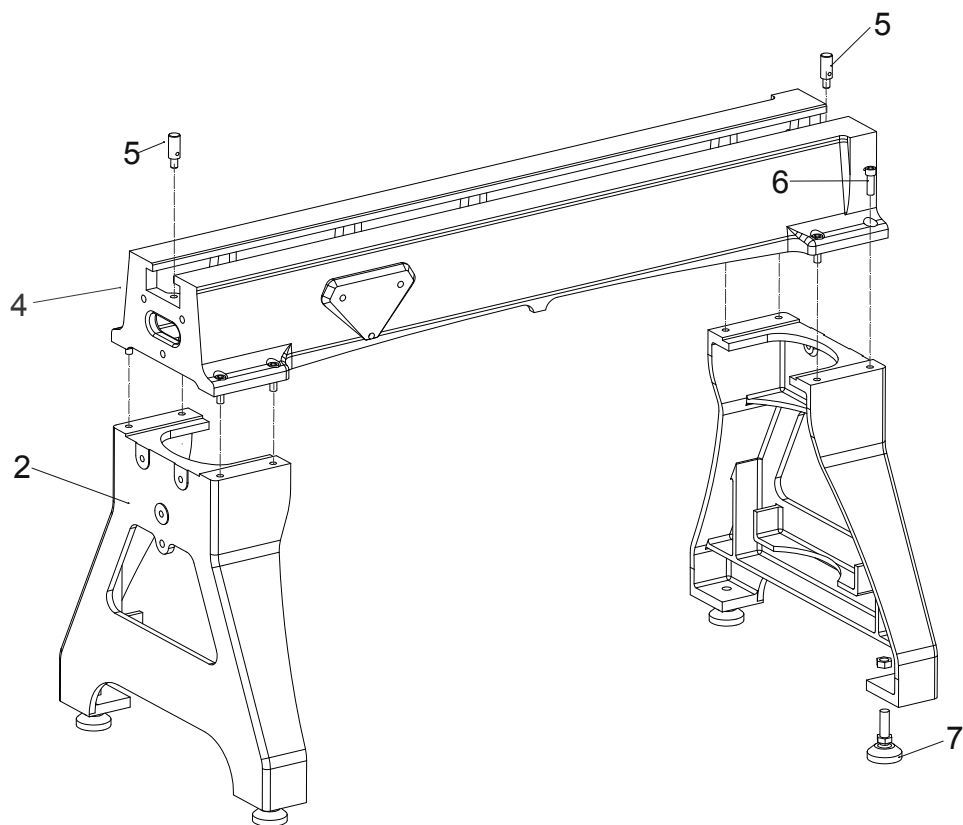
REF#	DESCRIPTION
434	Magnet
435	Hex Socket Cap screw M4×12
436	Rubber Sleeve
437	Lock Nut M8

## Electric Assembly



REF#	DESCRIPTION	REF#	DESCRIPTION
460	Input power cord	480	Cable lock KVT 32
461	Baffle	481	Backing Plate
462	A Partition	482	Electrical Box
463	Connector	483	Start Button
464	Relay	484	Driver ASD-B2-1521-B
465	Fixator	485	Plate
466	Terminal	486	Main Power Switch
467	Button Head Screw M4×8	487	Bottom of box
468	Spring Washer 4	488	Window
469	Flat Washer 4	489	Cover Plate
470	Card Slot	490	Button Head Screw M6×35
471	Bracket	491	Lock Nut M4
472	Cap Screw M5×12	492	Cap Screw M5×16
473	Spring Washer 5	493	Cap Screw M3×6
474	Flat Washer 5	494	Spring Washer 3
475	Cooling Window	495	Flat Washer 3
476	Button Head Screw M4×12	496	24 power supply
477	Strain Relief Bushing PG13.5	497	Encoder line
478	Strain Relief Bushing PG11	498	Cap Screw M5×8
479	Strain Relief Bushing PG9		

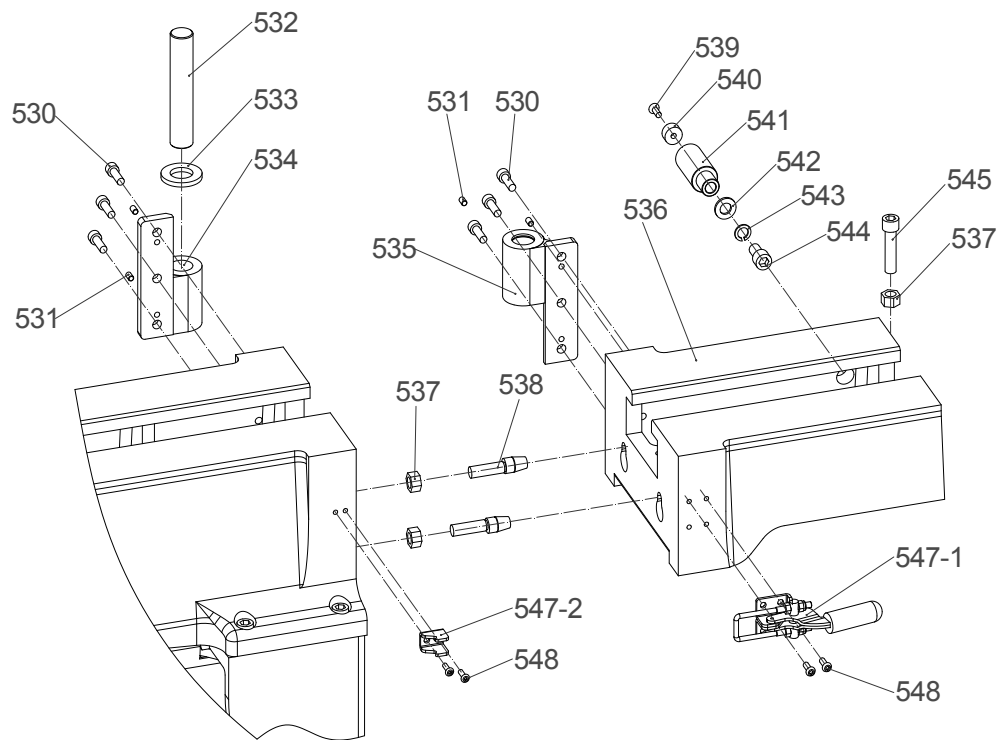
## Bed Assembly



REF#	DESCRIPTION
002	Stand
004	Bed
005	Position Pin

REF#	DESCRIPTION
006	Hex Socket Cap screw M12×35
007	Leveler M16×65

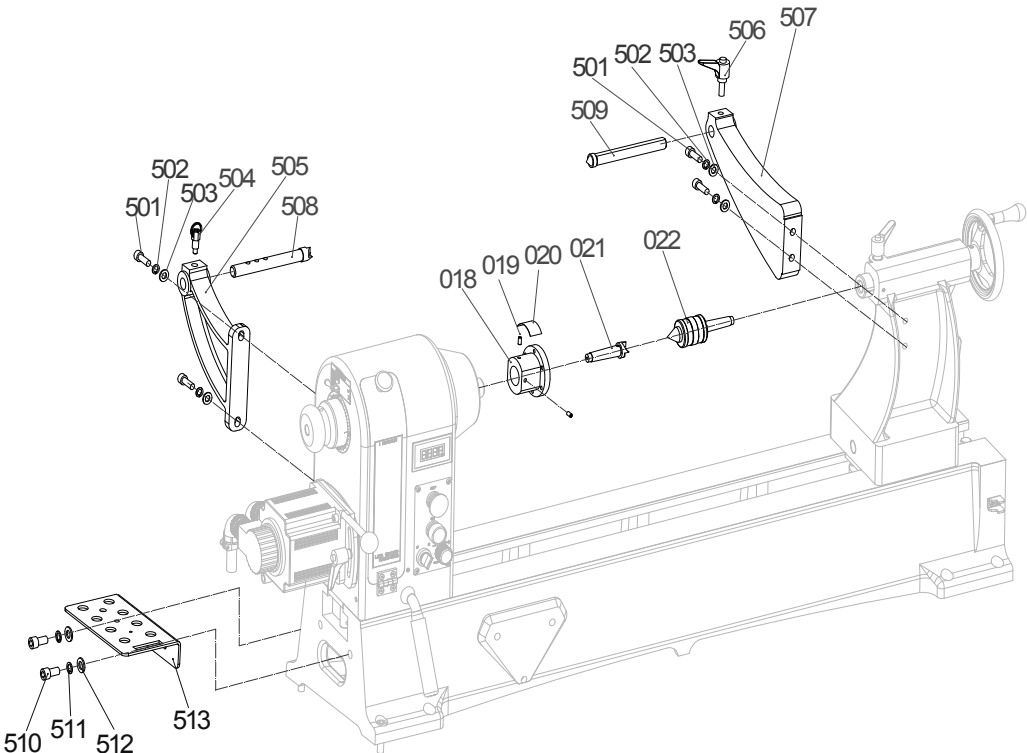
## Standard Annex Assembly



REF#	DESCRIPTION
530	Cap screw M8×25
531	Set Screw M6×10
532	Hinge Shaft
533	Brass Sleeve
534	Lower Hinge
535	Upper Hinge
536	Swing Extension Bed 12"
537	Hex Nut M12
538	Position Pin
539	Cap screw M6×16

REF#	DESCRIPTION
540	Magnet
541	Locating Shaft
542	Flat Washer 12
543	Spring Washer 12
544	Cap screw M12×20
545	Cap screw M12×50
546	Cap screw M12×40
547	Bed Lock Assy GTY-431SS
548	Cap screw M6×12

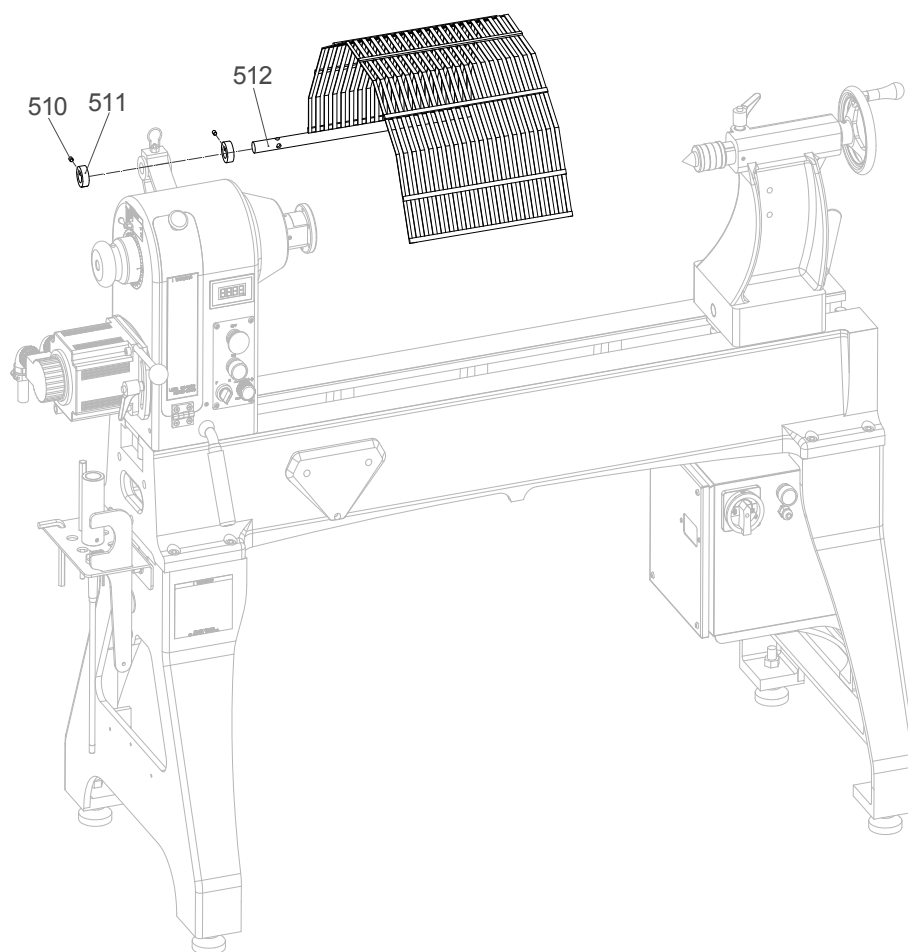
# Standard Annex Assembly



REF#	DESCRIPTION	REF#	DESCRIPTION
501	Cap Screw M10×30	510	Cap Screw M12×20
502	Spring Washer 10	511	Spring Washer 12
503	Flat Washer 10	512	Flat Washer 12
504	Position Pin M12-Ø 8	513	Tool Kits
505	Support Bracket	018	Face Plate
506	Adjusting Handle M10×25	019	Set Screw
507	Rear Support Bracket	020	Alert Label
508	Profiling Center	021	Dead Center
509	Profiling Center	022	Live Center



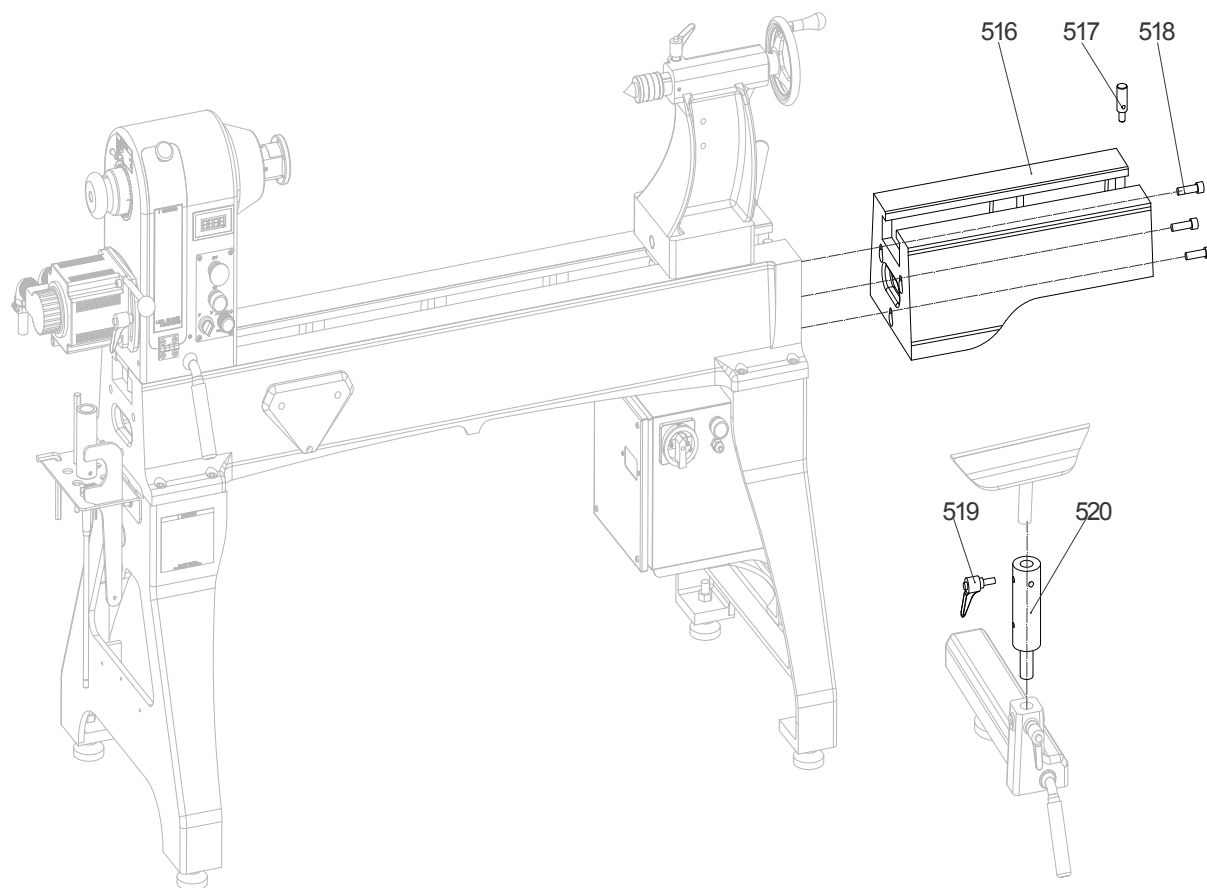
## Standard Annex Assembly



REF#	DESCRIPTION
510	Set Screw M6×8
511	Guard Position Ring

REF#	DESCRIPTION
512	Spindle Guard

## Optional accessories Assembly



REF#	DESCRIPTION
516	Extension Bed 20"
517	Position Pin
518	Hex Socket Cap screw M12×40

REF#	DESCRIPTION
519	Adjusting Handle M10×20
520	High Tool-rest Bar





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