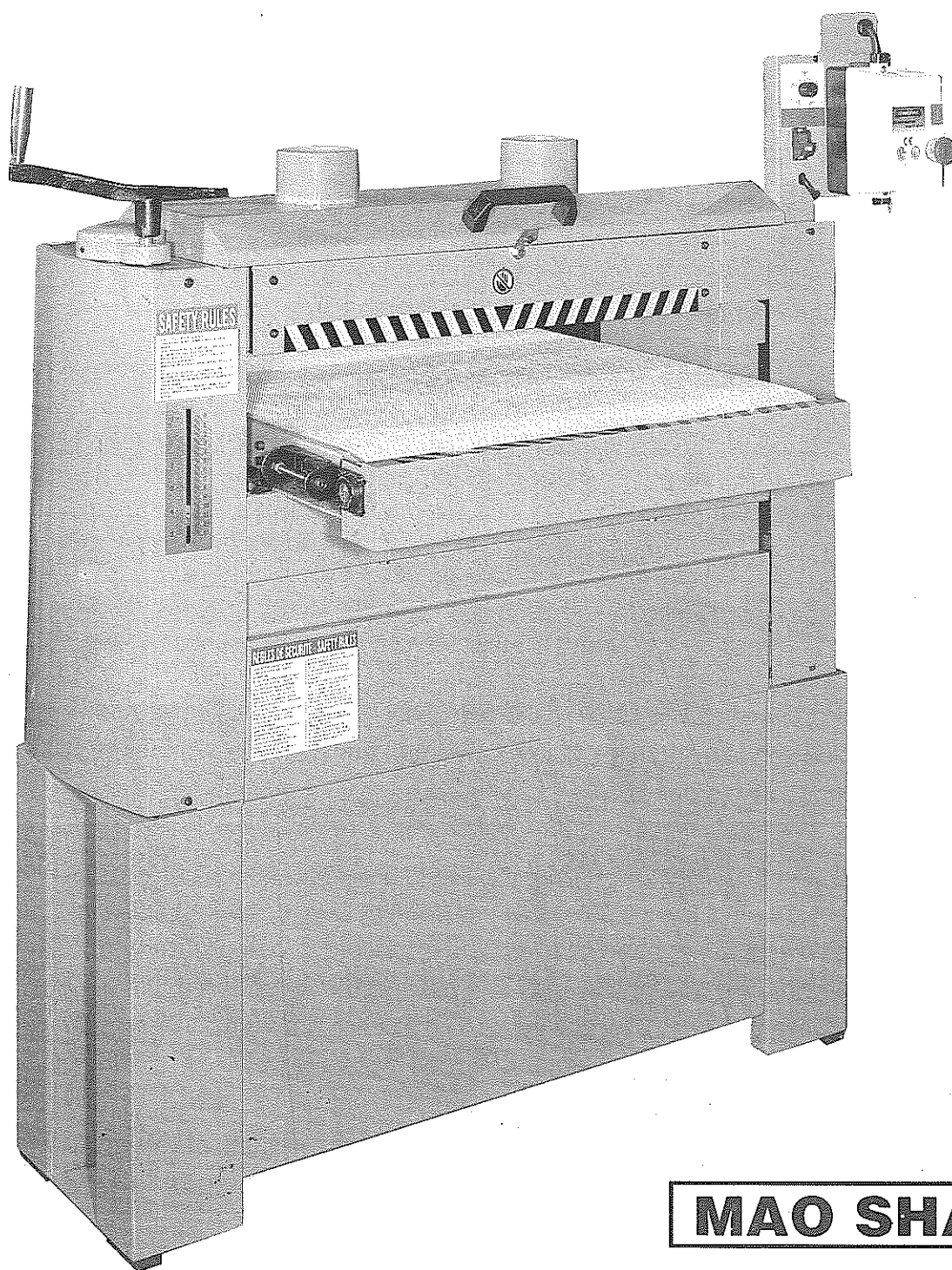


MS-25 DRUM SANDER

OPERATION MANUAL AND PARTS LIST



MAO SHAN

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PREFACE

Thank you for choosing this Drum Sander. We are pleased to offer you our best machinery and service, and trust that you will find our machinery economical, productive and easy to operate.

This manual covers the proper operation, safety and maintenance of the machine. It is important that this manual be read in its entirety before operating the machine. Although the machine has been checked and inspected in compliance with relevant safety regulations, the machine's safety and best performance are dependent on proper maintenance and operation. Hazards that arise due to improper operation and maintenance are solely the responsibility of the operator.

We thank you again for your choice, and for your careful reading of this manual.

GENERAL SAFETY RULES FOR WOODWORKING MACHINERY

There is a certain amount of hazard involved with the use of woodworking machinery. Using the machine with the respect and caution demanded as far as safety precautions are concerned will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, severe personal injury to the operator can occur.

1. Read the operation manual before operating this machine.
2. The machine should be disconnected from the power source before performing maintenance or adjustments to the internal mechanisms, or when making repairs.
3. Before leaving the machine, make sure the work area is clean.
4. Check timber for loose knots, nails, or other items which may cause a hazard or affect the machine's performance.
5. Keep all guards in place and in working order.
6. Do not force the machine. It will do the job better and be safer working at the rate for which it was designed.
7. All children and visitors should be kept a safe distance from the working area.
8. The operator should keep proper footing and balance at all times.
9. Do not operate the machine while under the influence of drugs, alcohol, or any other medication.
10. Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the sanding drum.
11. Never leave the machine until it comes to a complete stop, and never leave the machine running unattended.
12. The employer is responsible for selecting competent and qualified employees.
13. Safety shoes should be worn to provide protection against rolling objects, falling objects, and sharp edges in the workplace.
14. Eye protection should be worn and such devices should be carefully selected, fitted and used. Compulsory wearing of glasses with impact resistant lenses and side shields is a good safety policy.
15. Wear hearing protection when operating the machine.
16. Do not wear rings, necklaces or jewelry around moving machinery.

GENERAL SAFETY RULES FOR WOODWORKING MACHINERY

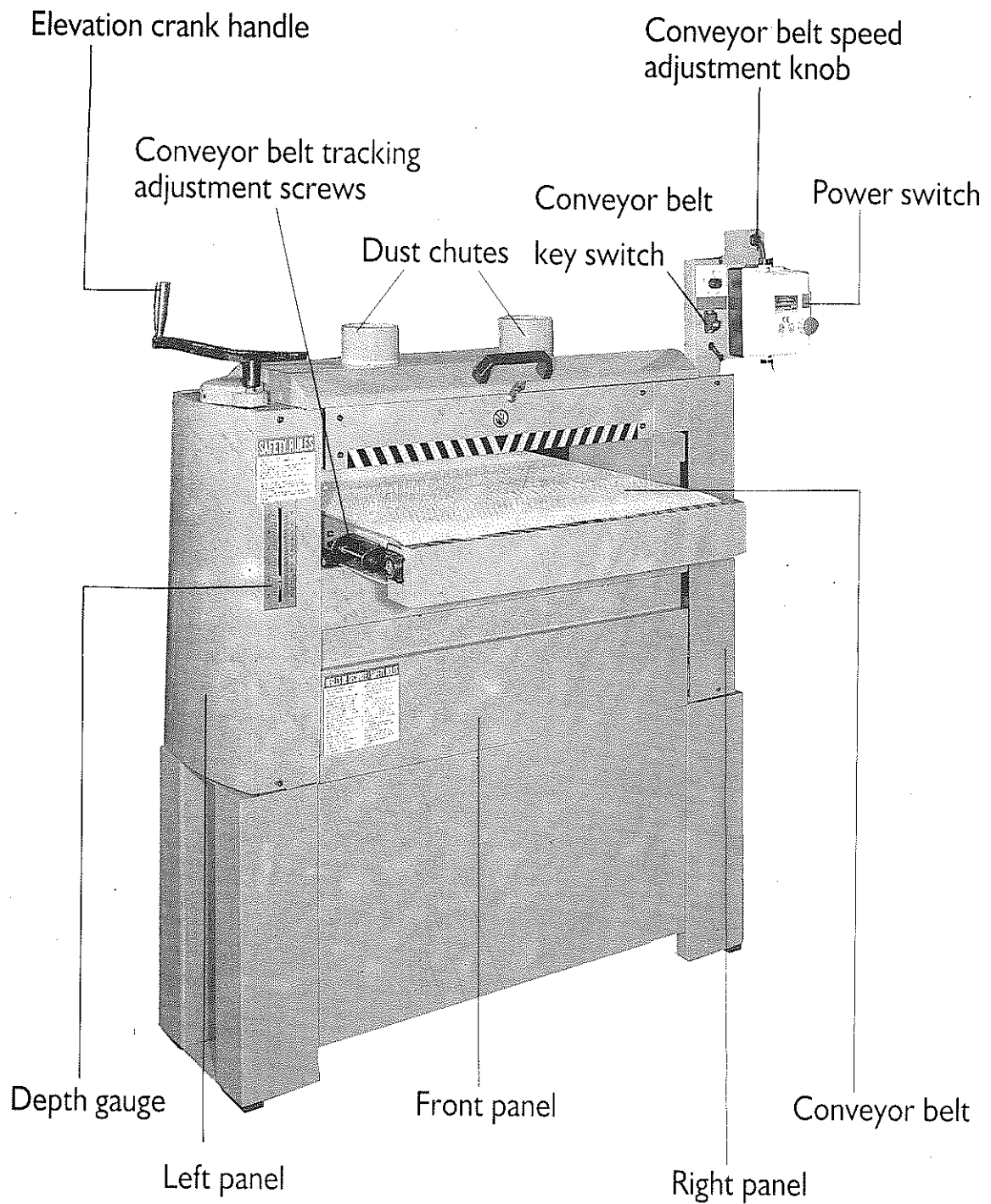
17. Do not wear loose fitting clothes. Clothing should be comfortable, but long sleeves, neckties, etc. should not be worn.
18. Do not wear gloves or other hand covering articles around moving machinery.
19. Cover long hair with a hair net or cap.
20. Protective guards and shields must be in place at all times unless they must be removed for specific service or maintenance. They should be immediately replaced when service or maintenance is completed.
21. Make sure that operator clearly knows how to stop the machine before starting work.
22. Never clean or remove chips while the machine is running.
23. Do not alter or remove guards and warning labels.
24. Keep the immediate area clean. Do not allow the floor to become slippery, or covered with dust or obstacles. Dust that accumulates in the work area is a hazard that can cause you to fall or slip against the machine or its controls.

SPECIFICATIONS

MODEL	MS-25
Drum Length	25"
Max. thickness of workpiece	5"
Min. thickness of workpiece	1/4"
Sanding drum speed	1600RPM
Conveyor belt speed	6" ~ 31 FPM
Sanding drum motor	3 HP
Feed drive motor	1/8 HP (DC)
Sanding drum diameter	5"
Net weight	180 kgs
Gross weight	210 kgs
Machine dimensions	45" x 28" x 52"
Packing dimensions	47.1 cuft

■ The above specifications are not binding. Mao Shan reserves the right to amend any specifications or design characteristics without prior notice.

MACHINE LEGEND

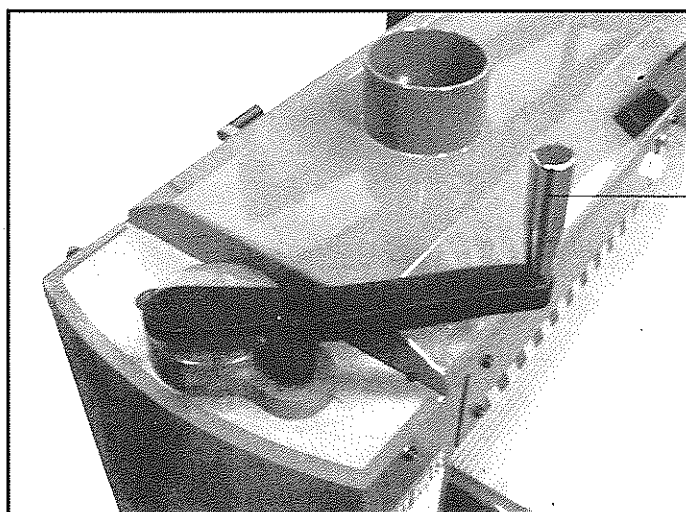


UNPACKING AND ASSEMBLY

Remove the sander and all parts from the container, and check to ensure that all parts are present as indicated. If any parts are damaged or missing, contact your distributor immediately.

Move the sander to the worksite with a forklift or lifting hook. Make sure that the equipment used for transportation of the sander is of adequate capacity.

Mount the table elevation crank handle as shown in figure. Align the slots on the shaft and crank handle, and use the pin supplied to fasten the crank handle to the shaft.



Crank Handle

ELECTRICAL CONNECTIONS

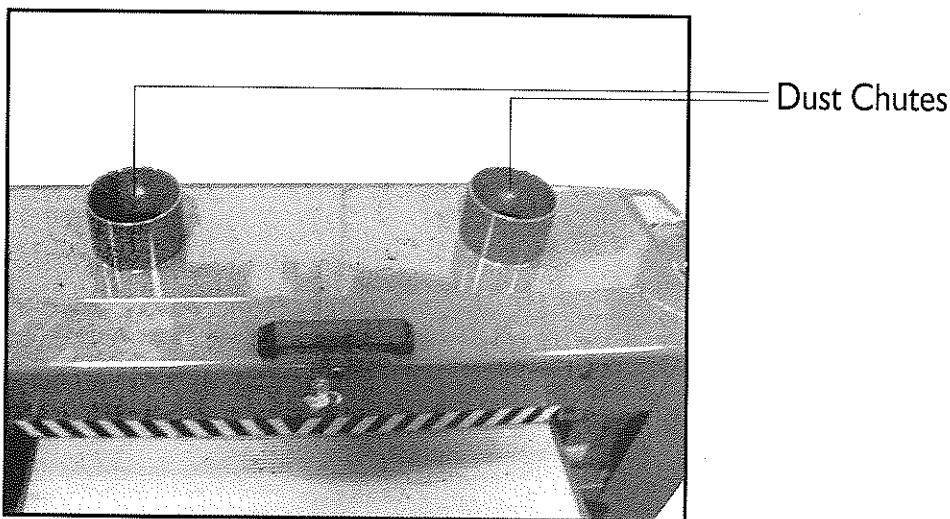
This Sander is rated for voltage and amperage appropriate to the area where it is sold. Confirm that the electrical specifications match your setup before use. Proper grounding is essential. Failure to properly ground the machine may result in electrical shock and injury to the operator or other personnel. If the machine is to be used with other electrical configurations, all connections must be made by qualified service personnel, and the setup must comply with local codes and ordinances. Use of an extension cord is not recommended. If an extension cord must be used, it must be of adequate size and capacity to support the amperage and distance between the machine and the power source.

WARNING

All electrical connections must be done by qualified service personnel!
Failure to comply may result in serious injury and/or damage to the machine!

ATTACHING A DUST COLLECTOR

The machine is provided with two 4-inch dust chutes. Use ring clamps to attach dust collection hoses to the chutes.



WARNING

Do not operate this machine without a dust collector attached and running.

MOUNTING AND REPLACING SANDING BELTS

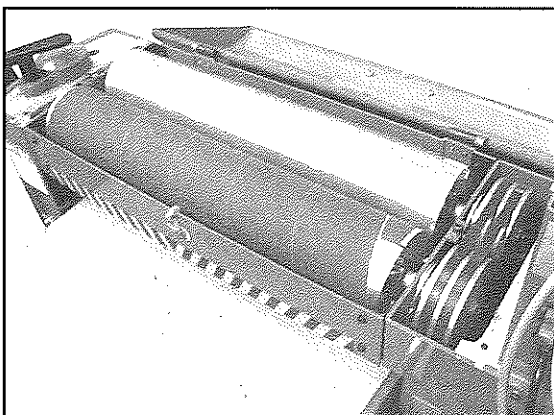
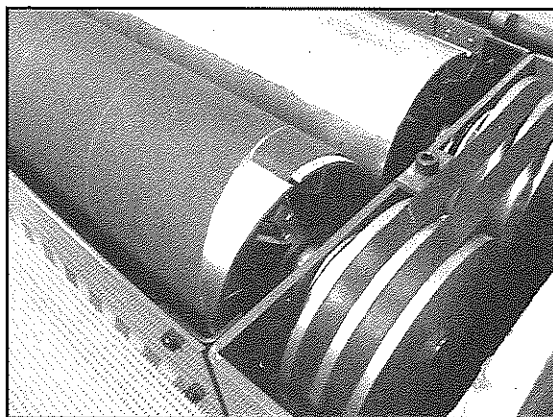
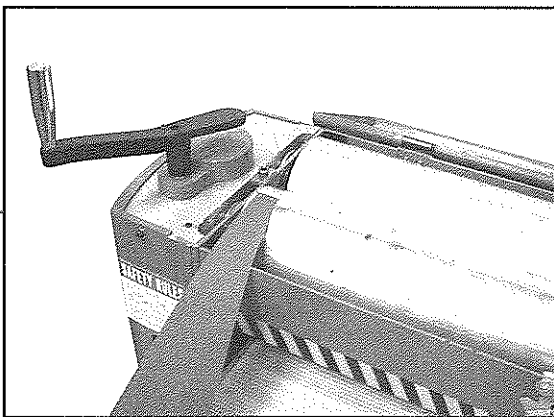
Removing the Sanding Belt

Lift the upper guard and tilt it to the rear, in order to access the sanding drums. The sanding belts are fixed at either end of the drums by spring loaded clamps. To remove the sanding belt, push the right clamp forward and pull the tab of the sanding belt out of the right drum slot. Unwind the sanding belt from the drum, and push the clamp forward at the left side of the drum to remove the sanding belt tab from the left drum slot.

Mounting a New Sanding Belt

Insert the tab of the belt on the left end of the drum, and push the left clamp forward so that the tab will slide under the clamp. Releasing the clamp will lock belt tab into place. Roll the sanding belt onto the drum, keeping the edges snug. Tuck the tab at the right end of the sanding belt into the slot at the other end of the drum, pushing the clamp forward so that the tab will slide in. The clamps are spring loaded, and will hold the belt increasingly tightly as the drum revolves. Replace and mount sanding belts on both sanding drums by this method.

The rear sanding drum should be fitted with a finer sanding paper than the front drum, allowing for coarse and fine sanding to be accomplished in one pass.

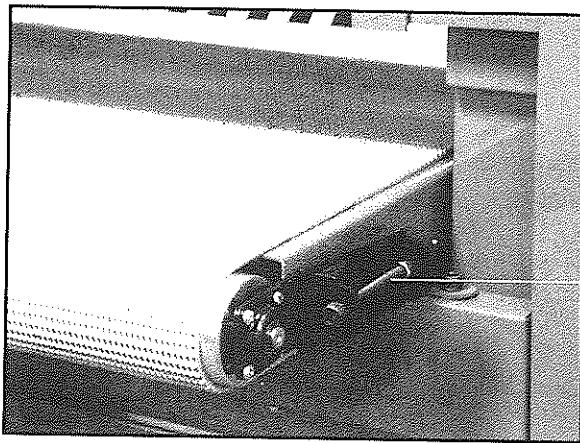


CAUTION!

Make sure the machine is disconnected from the power source before mounting the sanding belt.

ADJUSTING THE CONVEYOR BELT TENSION & TRACKING

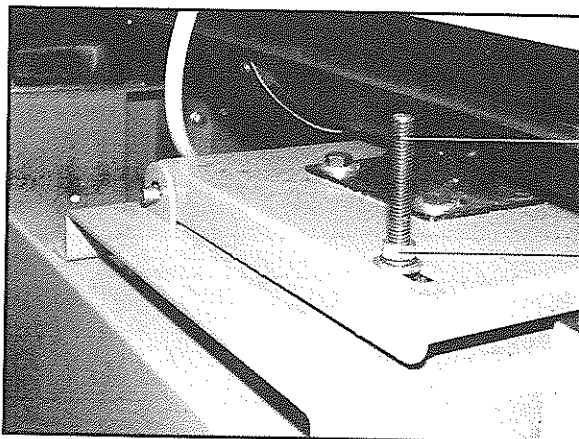
If the conveyor belt runs to the right or left during operation, or the conveyor belt tension is too loose or too tight, adjust it by turning the adjustment nuts on either side of the conveyor table. The conveyor belt should run at the center of the conveyor table, and should be tensioned so that there is good traction during stock feeding.



Conveyor Adjustment Bolts

ADJUSTING THE SANDING DRUM DRIVE BELTS

Both drums are driven by two belts and powered by the main motor. If the belts become too loose, remove the right end guard, and front guard, and adjust the position of the motor (height) by turning the M12 nuts on the height adjustment bolts (See figure).



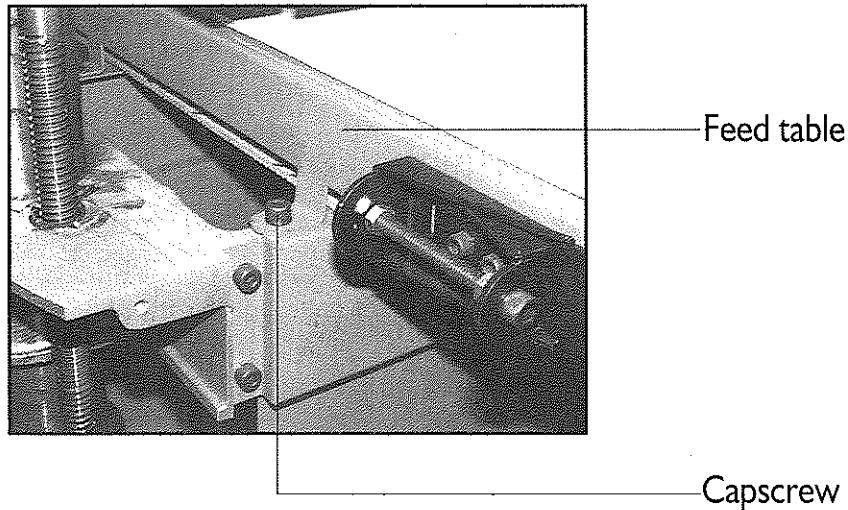
Height Adjustment Bolts

M12 nuts

If the motor becomes damaged and needs to be replaced, remove the bolts on the bottom of the motor base plate, and remove the entire motor assembly.

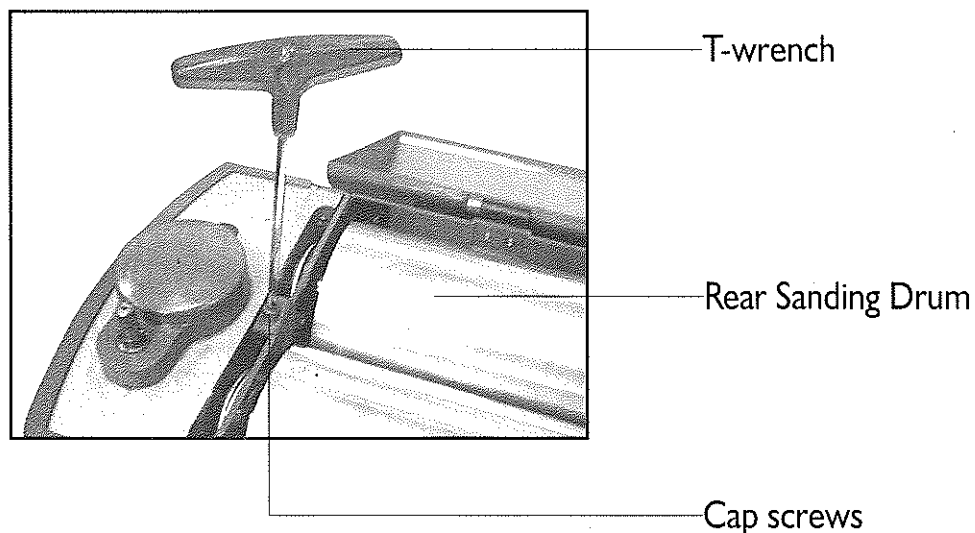
REPLACING THE CONVEYOR BELT

If the conveyor belt becomes too worn, the stock will not be fed effectively. To replace the conveyor belt, remove the guards at both ends of the sander, and remove the four fix screws at the bottom of the feed table assembly. The feed table can then be removed for so the feed belt can be replaced. (see figure)



ADJUSTING THE PARALLELISM OF THE SANDING DRUM

The front sanding drum is factory-set, and needs no further adjustment. The rear sanding drum parallelism can be adjusted by the cap screws on either end of the sanding drum. Use a T-wrench to adjust the position of the rear sanding drum until it is parallel with the front drum.



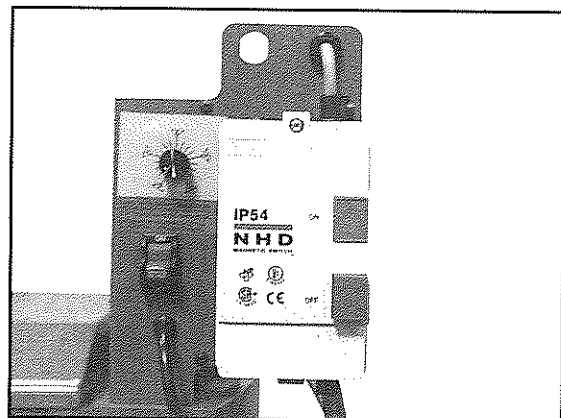
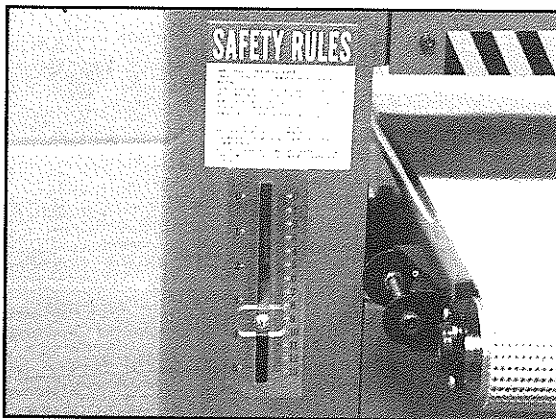
SANDING OPERATIONS

Start the dust collector before turning on the sander.

To start the machine, press the green 'ON' button on the control box. Turn the key switch to start the conveyor belt running. Turn the conveyor speed adjustment knob to the desired stock feed speed. To stop the machine, press the red 'OFF' button on the control box.

Use the crank handle to set the sanding height to the desired thickness. If the thickness is not known, place the workpiece to be sanded on the table, under the sanding drums, and raise the conveyor table until the sanding drums come in contact with the workpiece. The thickness can be read on the depth gauge located on the front left of the machine. When feeding the workpiece, place it at the center of the conveyor belt. There is a centering gauge on the infeed side of the machine frame that indicates the center of the conveyor belt.

The maximum workpiece thickness acceptable for this machine is 5". The minimum workpiece thickness is 1/4". Do not attempt to sand workpieces outside of these specifications.



LUBRICATION AND MAINTENANCE

NOTE

Before performing any maintenance or lubrication, disconnect the machine from

1. The table height adjustment screw shafts located at either end of the machine must be well lubricated with grease.
2. Make sure all nuts and screws are tight before sanding. Check that the sanding belts are mounted properly, and have not become loose or torn.
3. Do not allow excessive dust to accumulate on or in the machine.

TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE
Sanding belt clogs too quickly	<ol style="list-style-type: none">1. Sanding belt grit too fine.2. Too much material being removed in one pass.3. Dirty workpiece surface.4. Insufficient dust suction.5. Workpiece contains too much moisture.
Rounding occurs at edges of workpiece.	Too much material being removed in one pass.
Uneven thickness of right and left sides of workpiece after sanding.	<ol style="list-style-type: none">1. Sanding drum is not parallel to the table.2. Uneven wear on sanding belt.
Stock slips on conveyor belt.	<ol style="list-style-type: none">1. Too much material being removed in one pass.2. Sanding belt is too fine.
Shiny spots on sanded workpiece.	<ol style="list-style-type: none">1. Conveyor belt is too smooth.2. Conveyor belt tension is insufficient.3. Excessive dust accumulated on conveyor belt surface.
Marks on sanded surface of workpiece.	<ol style="list-style-type: none">1. Sanding belt too worn.2. Sanding height set incorrectly.3. Sanding belt damaged.
Conveyor belt does not run smoothly, or stops.	Insufficient conveyor belt tension.

PARTS LIST
MS-25

PART NO.	REFERENCE NO.	DESCRIPTION	QTY
MS25-1	2090001	DRUM	2
MS25-2	20703010	PULL CLAMP BRACKET	2
MS25-3	20703010B	PULL CLAMP	2
MS25-4	20703010A	SPRING	2
MS25-5	20703014A	SPRING	2
MS25-6	20703014	FIXED CLAMP BRACKET	2
MS25-7	20703014B	FIXED CLAMP	2
MS25-8	20703014C	SPRING	2
MS25-9	S0040300	FLAT CROSS HED SCREW	2
MS25-10	S0110300	NUT 3/16-24UNC	7
MS25-11	20702026	RIGHT CLAMP	3
MS25-12	20702027	LEFT CLAMP	3
MS25-13	20900069	MICROMETRIC ADJUSTMENT SPRING	6
MS25-14	S0030580M	CROSS ROUND HEAD SCREW	6
MS25-15	S0120500M	NYLON NUT M5x0.8	12
MS25-16	20900002	CLAMP BLOCK	2
MS25-17	20900003	RIGHT BEARING HOUSING	1
MS25-18	20900004	LEFT BEARING HOUSING	1
MS25-19	20900005	RIGHT MICROMETRIC ADJUSTMENT BEARING CAP	1
MS25-20	20900006	LEFT MICROMETRIC ADJUSTMENT BEARING CAP	1
MS25-21	20900007	MICROMETRIC ADJUSTMENT SCREW	2
MS25-22	S05ETW06	E6 CIRCLIP	8
MS25-23	20703002	BEARING CAP	6
MS25-24	C1206205	BEARING 6205	4
MS25-25	S0060510	WING SCREW	8
MS25-26	S0210500C	FLAT WASHER	26
MS25-27	S0230506	SPRING WASHER	49
MS25-28	S0120500	NUT 3/16-24UNC	31
MS25-29	20900008	DRIVEN ROLLER	2
MS25-30	S0310623	FLAT WAHSER	2
MS25-31	S0020512L	HEX HEAD SCREW	2
MS25-32	20900009	ANGLE PLATE	4
MS25-33	20900010	STOPPER	1
MS25-34	20900011	DUST HOOD FIX PLATE	1
MS25-35	20702019	COVER HINGE	2
MS25-36	20900012	DUST GUARD	1
MS25-37	20703016	DUST HOOD HANDLE	1
MS25-38	S0010502	HEX SOCKET HEAD SCREW	18

PARTS LIST

MS-25

PART NO.	REFERENCE NO.	DESCRIPTION	QTY
MS25-39	20900070	UPPER BUCKLE	1
MS25-40	20900071	LOWER BUCKLE	1
MS25-41	20900068	PAD SS41	2
MS25-42	S0030405	CROSS ROUND HEAD SCREW 1/4"-20UNC	25
MS25-43	S0210401	FLAT WASHER	40
MS25-44	S0110400	NUT	13
MS25-45	20900013	PULLEY GUARD	1
MS25-46	S0010409	HEX SOCKET HEAD SCREW	4
MS25-47	S0230400	SPRING WASHER	22
MS25-48	20900014	UPPER BRACKET	2
MS25-49	20900015	SLIDE	2
MS25-50	20900016	LOWER BRACKET	2
MS25-51	20900017	POST	2
MS25-52	20900018	SCREW	2
MS25-53	20900019	SCREW BUSHING	2
MS25-54	S0520080	S80 CIRCLIP	4
MS25-55	S0050500	SET SCREW	16
MS25-56	S0050406	SET SCREW	5
MS25-57	20900020	SCREW HOLDER	2
MS25-58	20900021	BRONZE COLLAR	2
MS25-59	20900022	BEVEL GEAR	4
MS25-60	S0010616M	HEX SOCKET HEAD SCREW	4
MS25-61	S0010303	HEX SOCKET HEAD SCREW	8
MS25-62	20900023	GEAR SHAFT BUSHING	2
MS25-63	20900024	POSITIONING COLLAR	2
MS25-64	20900025	GEAR TRANSMISSION SHAFT	1
MS25-65	20900067	STAND	4
MS25-66	20900026	LEFT POST COVER	1
MS25-67	20900027	RIGHT POST COVER	1
MS25-68	S0040307	FLAT CROSS HEAD SCREW	8
MS25-69	20900028	BRONZE COLLAR, COVER	2
MS25-70	S0520015	S15 CIRCLIP	2
MS25-71	S0310420	PIN 4x20	1
MS25-72	20900029	HANDLE	1
MS25-73	10105056a	HANDLE KNOB	1
MS25-74	20900030	SWITCH MOUNTING PLATE	1
MS25-75	W2092301	MAGNETIC SWITCH	1
MS25-76	S0030318	ROUND CROSS HEAD SCREW	4

PARTS LIST

MS-25

PART NO.	REFERENCE NO.	DESCRIPTION	QTY
MS25-77	S0040308	FLAT HEAD SCREW	3
MS25-78	10401008	WIRE BUSHING	1
MS25-79	20900066	SWITCH REAR GUARD	1
MS25-80	20900031	MOTOR BASE	1
MS25-81	S0020501	HEX HEAD SCREW	8
MS25-82	20900032	MOTOR ADJUSTMENT PLATE	1
MS25-83	M0000000	MOTOR	1
MS25-84	20900033	DRIVE PULLEY	1
MS25-85	S0430640	KEY 6x40	3
MS25-86	20900034	BASE SHAFT	1
MS25-87	20900035	POSITIONING SHAFT	2
MS25-88	20900036	SCREW	2
MS25-89	20900037	FRONT COVER	1
MS25-90	20900038	REAR COVER	1
MS25-91	20900039	FRONT TABLE SUPPORT	1
MS25-92	20900040	REAR TABLE SUPPORT	1
MS25-93	S0010500	HEX SOCKET HEAD SCREW	20
MS25-94	20900041	SHIELD PLATE	2
MS25-95	S0020408	HEX HEAD SCREW	4
MS25-96	20900042	RIGHT COVER	1
MS25-97	20900043	LEFT COVER	1
MS25-98	20900044	GRADUATED SCALE	1
MS25-99	20900045	INDICATOR	4
MS25-100	20900046	SANDING BELT PLATEN	1
MS25-101	20900047	MICROMETRIC ADJUSTMENT BLOCK	2
MS25-102	20900048	MICROMETRIC ADJUSTMENT FIX BLOCK	2
MS25-103	20900049	BEARING CAP	4
MS25-104	20900050	SANDING BELT DRUM	1
MS25-105	20900051	POSITIONING PLATE	1
MS25-106	20900052	TRANSMISSION ROLLER	1
MS25-107	C1206202	BEARING 6202	4
MS25-108	S0120200	NYLON NUT	8
MS25-109	20900053	PAD	2
MS25-110	20900054	SHAFT JOINT	2
MS25-111	S0050404a	FIX SCREW	2
MS25-112	20900055	ELECTRIC CONTROL BOX	1
MS25-113	20701011	ELECTRICAL INSULATION BOARD	1
MS25-114	S0040510M	FLAT CROSS HEAD SCREW	2
MS25-115	W0000001	SAFETY SWITCH	1

PARTS LIST

MS-25

PART NO.	REFERENCE NO.	DESCRIPTION	QTY
MS25-116	S1017W-2	PLASTIC CLAMP	1
MS25-117	S1006R-3	PLASTIC CLAMP	1
MS25-118	M2090000	SPEED REDUCING MOTOR	1
MS25-119	20900065	PC BOARD	1
MS25-120	40501019	REGULATOR KNOB	1
MS25-121	40501018	PC BOARD FIX PLATE	1
MS25-122	2090056	BOTTOM COVER, ELECTRIC CONTROL BOX	1
MS25-123	S0030304	ROUND CROSS HEAD SCREW	18
MS25-124	S0010615M	HEX SOCKET HEAD SCREW	18
MS25-125	20900057	RIGHT AND LEFT STAND	2
MS25-126	20900058	FRONT SPACING PLATE	1
MS25-127	20900059	REAR SPACING PLATE	1
MS25-128	10401029	PAD	4
MS25-129	S0090512	ROUND HEAD SCREW	4
MS25-130	S0010503a	HEX SOCKET HEAD SCREW	2
MS25-131	20900060	PRESSURE SHAFT	3
MS25-132	20701006	BEARING	6
MS25-133	S0520028	S28 CIRCLIP	2
MS25-134	S0040410	FLAT CROSS HEAD SCREW	4
MS25-135	V0017500	V-BELT	2
MS25-136	20900061	CONVEYOR BELT	1
MS25-137	L000000M	MOTOR WIRE	1
MS25-138	L0000000	POWER WIRE	1
MS25-139	L2090001	SWITCH WIRE	2
MS25-140	L2090002	WIRE WITH TERMINALS	2
MS25-141	20900062	SANDING BELT P80	1
MS25-142	20900063	SANDING BELT P120	1
MS25-143	J2090001	WARNING LABEL	1
MS25-144	J2090002	WARNING LABEL	2
MS25-145	10101002	BUFFER	1
MS25-146	J2090003	WARNING LABEL	1
MS25-147	20900064	COVER	1
MS25-148	S0911012	OPEN END WRENCH 10/12MM	1
MS25-149	S0910104	HEX WRENCH 6MM	1
MS25-149A	S0910103	HEX WRENCH 5MM	1

