

FM120/150/180 FINISHING MOWER



Operator's Manual

MechMaxx

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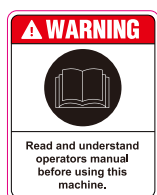
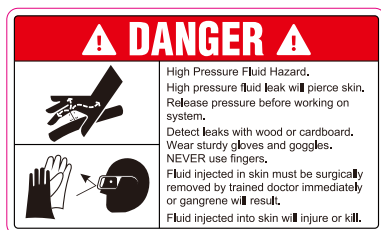
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SPECIFICATIONS

Model	FM120	FM150	FM180
Power Required	18-50 HP		
Working Width	48 in	60 in	72 in
Blade Ground Clearance	0.4 in-4.5 in		
Max. Cutting Diameter	0.75 in		
Blade Thickness	0.24 in		
Deck Thickness	0.16 in		
Number Of Blades	3		
Drive Type	Belt drive		
Number Of Belts	3		
Top Link Type	Flotation Style		
PTO Shaft RPM	540 RPM		
Driveline Shaft Length	T5-LF-39 With Shear Bolt; 39 - 54in	T5-LF-47 With Shear Bolt; 47-57 in	
Spline End	1.375in z6		
3-Point Hitch	CAT 1		
Gearbox Oil Type	85W-90		
Dimensions (L x W x H)	49x48x33 in	65x 48 x 33in	75 x 48 x 33 in
Weight (N.W./G.W.)	370/454lbs	406/503lbs	437/538lbs

SAFETY SIGNS

The rating plate on your machine may show symbols. These represent important information about the product or instructions on its use.



INFORMATION

SAFETY INSTRUCTIONS

Do not attempt to operate the mower until you have read the operator's manual and all the safety signs on the mower.

NOTE: The words Danger, Warning or Caution on the safety signs indicate a hazard or unsafe practice, which could result in injury or death if proper precautions are not taken.

Do not attempt any unauthorized modifications to the mower as this could affect the function or the safety of the mower.

OPERATING SAFETY

1. Keep all safety signs clean and legible at all times. Replace damaged or missing safety signs.
2. Ensure all shields are in place and in good condition before operating.
3. Ensure everyone is clear of the area before operating.
4. Never start or operate the mower except from the operator's station on the power unit.
5. Do not permit riders.
6. Stop engine, set brake, remove key and wait for all moving parts to stop before servicing, adjusting, repairing and unplugging.
7. Never operate over 540 rpm PTO speed.
8. Inspect and clean the cutting area before cutting.
9. Never operate the mower in the raised position.
10. Do not wear loose fitting clothing during operation.
11. Keep hands, feet, clothing and hair away from moving parts.
12. Keep all bystanders away from the unit when it is operating.
13. Check to see that all controls are in neutral before starting the tractor.

TRANSPORT SAFETY

1. Do not transport on a public road without a slow-moving vehicle sign and flashers on the tractor.
2. Never have the mower in operation during transport.
3. Travel speed with a raised mower should be slow enough to maintain stability of the tractor.

SERVICE AND MAINTENANCE SAFETY

1. Stop engine, set brake, remove key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
2. Block up before working beneath unit.
3. Replace all shields removed during servicing before operating.
4. Use heavy leather gloves to handle sharp blades. The safety signs used on the mower must be in well condition and be read clearly.

Replace safety sign immediately if it become damaged, torn, or illegible.

OPERATING INSTRUCTIONS

The Finish Mower is designed to be used on a tractor with a standard category 1

three-point hitch. Using excessive power will shorten the life of the drive train components.

CONNECTING TO TRACTOR

Park the mower and tractor on a level dry area free of debris and foreign objects.

1. Slowly back the tractor up to the mower.
2. Adjust the three-point arms to align with the mower lift pins.
3. Stop the tractor, set the parking brake and remove the ignition key before mounting.
4. With the engine on the tractor shut off, attach the PTO shaft. Both ends of the PTO have a standard 6-spline end with a spring-loaded locking collar.

Turn the round collar at the ends of the PTO clockwise to slide onto the spline shafts. Always check to see that both ends of the PTO shaft are securely attached every time the mower is used. This should always be done with the tractor engine shut off. Attach the safety chains supplied with the PTO shaft, allowing sufficient slack for the driveline during turns and operation.

NOTE: At least one third of the telescoping length of the PTO should overlap when the mower is in operation.

5. Attach the top link on the tractor to the link pin assembled in the upper lift pin bracket. Adjust the turnbuckle on the tractor top link so that the upper lift bracket hangs straight down with the tractor and mower both on level ground.

FIELD USE PREPARATION

1. Park the machine on hard level ground with the mower slightly raised.
2. Adjust the sway blocks or chains on the tractor so the mower is centered between the rear wheels.
3. Adjust the three-point arms to level the mower side to side.
4. Adjust the turnbuckle on the top of the three-point hitch arms to level the mower front and back.
5. Adjust the cutting height using the wheel spacers on the wheel yokes. The spacers should be set at the same height on all four wheels.
6. Check the oil level in the gearbox and add as required.
7. Grease spindle assembly, wheel bearings, wheel pivots and the PTO shaft.
8. Check tightness of belts, bolts and other hardware.
9. Check blades to see if they are damaged. Sharpen or replace blades if necessary. Check that blade bolts are tight.
10. Clear the working area of foreign objects and check that all bystanders are standing clear before starting.
11. Start the tractor with the mower resting on the ground on all four wheels.
12. Slowly engage the PTO and bring the PTO speed up to 540 rpm for cutting.

FIELD OPERATION

1. The mower works best on dry grass. Slower cutting speed and occasional cleaning may be required on damp or wet grass.
2. The PTO must run at the full 540 rpm for a good cut. Slower speeds or double cutting could be required for very high grass.
3. Use a higher blade setting for rough areas to prevent scalping of the surface.
4. Always cut counterclockwise so grass clippings are thrown on the grass already cut. This saves power and wear on the blades.
5. Sharpen blades if grass tears instead of cutting cleanly.
6. Slow down when cutting corners. Turning too sharply on corners can leave a small strip of grass uncut.

DISCONNECTING FROM TRACTOR

1. Park on a firm level area and clean the mower.
2. Lower the mower until the load is off the hitch arms.
3. Disconnect the hitch arms and the PTO shaft.
4. Cover the mower for storage to prevent rust.

MAINTENANCE

1. GEARBOX: The gearbox should be filled with SAE 90 oil to the bottom of level plug . Check the mower before using and at regular intervals (approx. every 40 hours). See that this oil level is maintained.
2. GREASE: Grease wheel yokes, wheel bushing and PTO u-joints approximately every 8 hours. Before using the mower for the first time, grease wheel bushings until you can see the grease squeezed out at the ends of the wheel hub. Lubricate the telescoping PTO tube and the quick release collars on the ends of the shaft about every 20 hours. Clean all grease fittings before injecting grease and immediately replace any damaged or missing grease fittings. When using the safety chains supplied with the PTO shaft, the shield bearings must be kept lubricated.
3. SHIELDING: Always keep all shielding in place and repair or replace if damaged.
4. BLADES: When replacing or grinding blades, all three blades must be replaced or reground at the same time to maintain the proper balance in the cutting unit. Block up the mower securely before attempting to remove the blades. Use heavy leather gloves to handle the blades. Be sure to tighten center bolt and lock washer securely when replacing blades.

Always replace the lock washer with an extra heavy duty supplied with the spindle

5. BELTS: Remove the belt guards to check belt tightness. The center of the belt span should deflect about 10mm with nominal pressure. If the belts slip or are too loose, the bolts holding the gearbox must be loosened.

Use the threaded tightener rod on the gearbox mount to tighten the belts. Lock the rod in place and retighten the gearbox bolts when the belts are properly tightened. Replace belt guards. Changing belts follows the same procedure as given in the preceding paragraph, except you will have to loosen the belts further to remove them.

NOTE: Belts should always be replaced in matched sets.

ASSEMBLY

Packing Description

Remove any loose parts or packaging from the crate. Check goods without damage and omission.

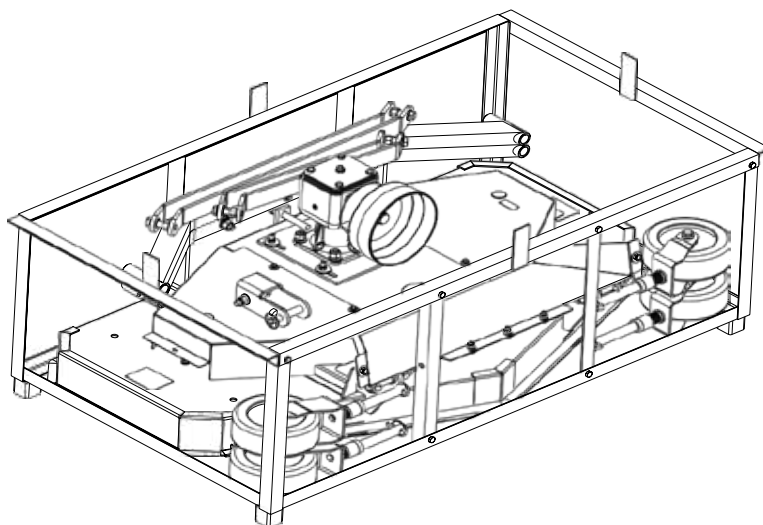


FIGURE 1: Your New Mower as It Is Shipped to You

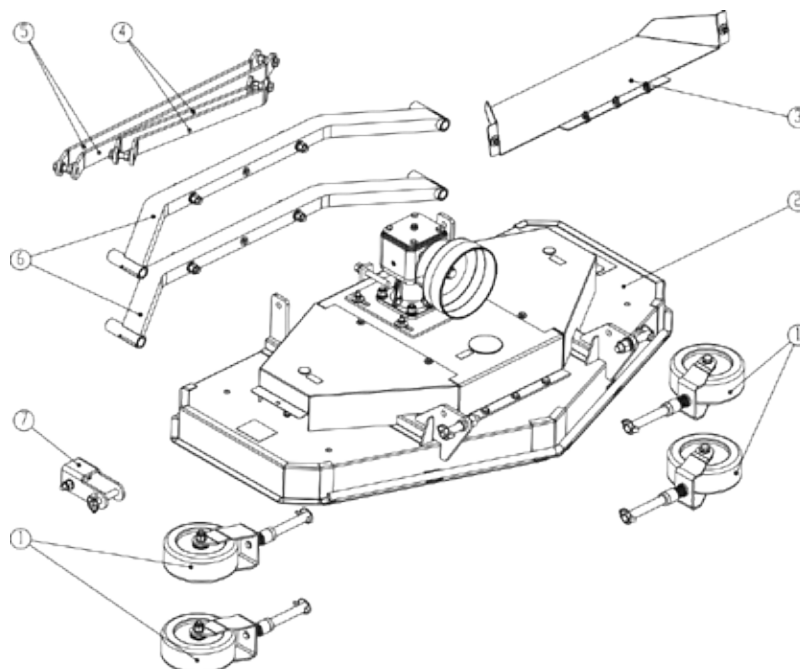


FIGURE 2: The Mower and Accessories In The Crate

Packing List

The detailed packing list as the following table 1.

KEY	DESCRIPTION	QTY	Package Form
(1)	Wheel Bracket Assembly	1	Bubble Film
(2)	Mower Deck Body	1	None
(3)	Discharge Guide and Fittings	1	Bubble Film
(4)	Short Pivot Bar and Fittings	2	Bubble Film
(5)	Long Pivot Bar and Fittings	2	Bubble Film
(6)	Wheel Frame and Fittings	2	Bubble Film
(7)	Upper Lift Bracket and Fittings	1	Bubble Film

TABLE 1: Packing List

The detailed description of wheel bracket assembly

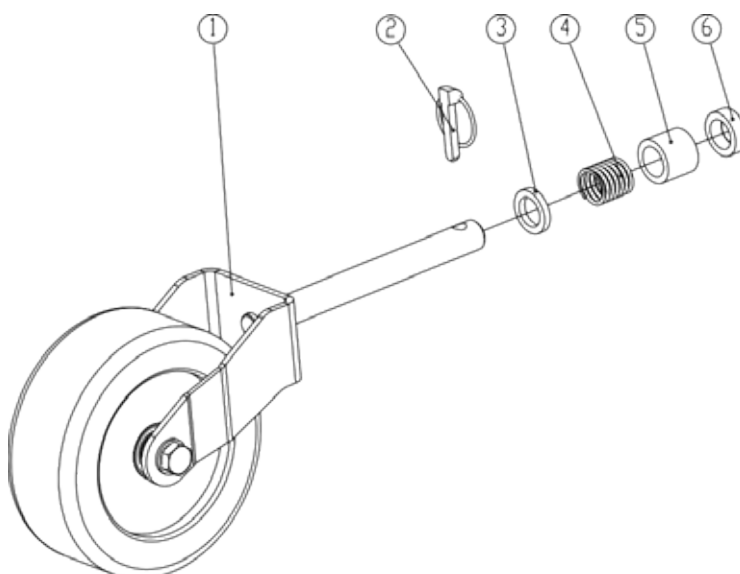


FIGURE 3: Wheel Bracket Assembly

KEY	DESCRIPTION	QTY
(1)	Wheel Bracket Sub-Assembly	1
(2)	Safety Lock Pin	1
(3)	Spacer H=6	1
(4)	Damping Spring	1
(5)	Spacer H=32	1
(6)	Spacer H=12	1

TABLE 2: Wheel Bracket Assembly List

The detailed description of discharge guide and fittings

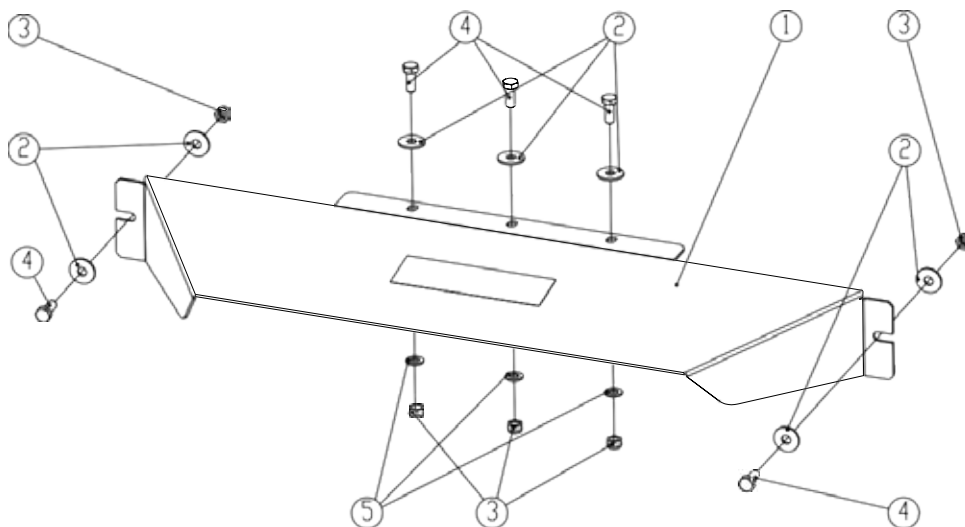


FIGURE 4: Discharge Guide and Fittings

KEY	DESCRIPTION	QTY
(1)	Discharge Guide Plate	1
(2)	Large Plain Washer 10	7
(3)	Locknut M10	5
(4)	Bolt M10x25	5
(5)	Plain Washer 10	3

TABLE 3: Discharge guide and Fittings List

The detailed description of short pivot bar and fittings

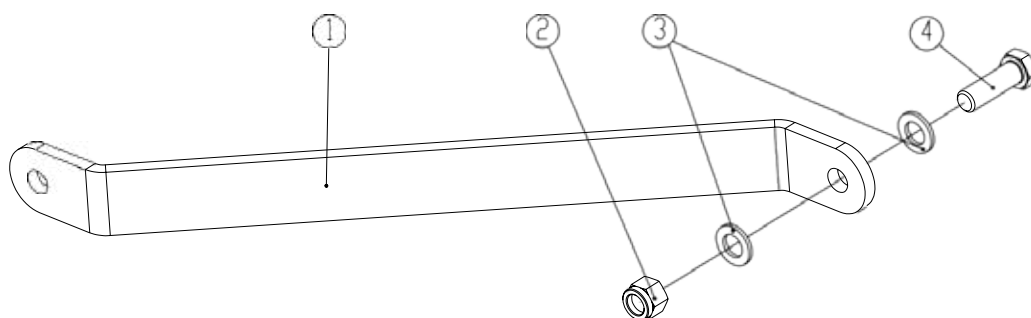


FIGURE 5: Short Pivot Bar and Fittings

KEY	DESCRIPTION	QTY
(1)	Short Pivot Bar	1
(2)	Locknut M16	1
(3)	Plain Washer 16	2
(4)	Bolt M16x50	1

TABLE 4: Short Pivot Bar and Fittings List

The detailed description of long pivot bar and fittings

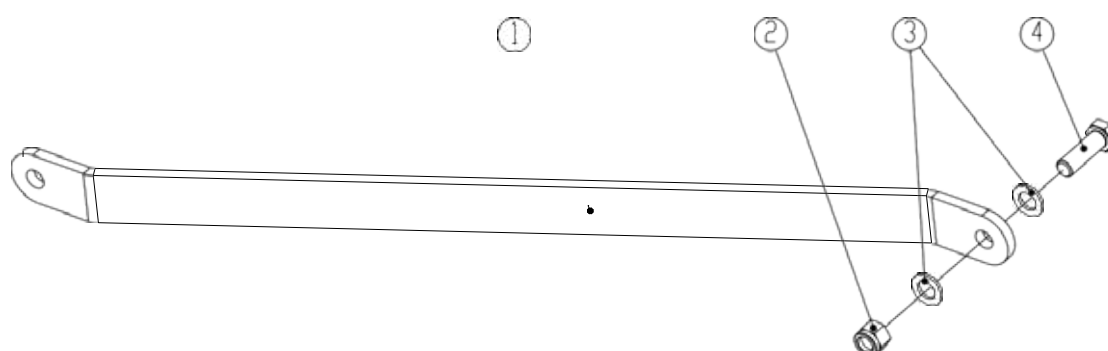


FIGURE 6: Long Pivot Bar and Fittings

KEY	DESCRIPTION	QTY
(1)	Long Pivot Bar	1
(2)	Locknut M16	2
(3)	Plain Washer 16	2
(4)	Bolt M16x50	1

TABLE 5: Long Pivot Bar and Fittings List

The detailed description of Wheel Frame and fittings

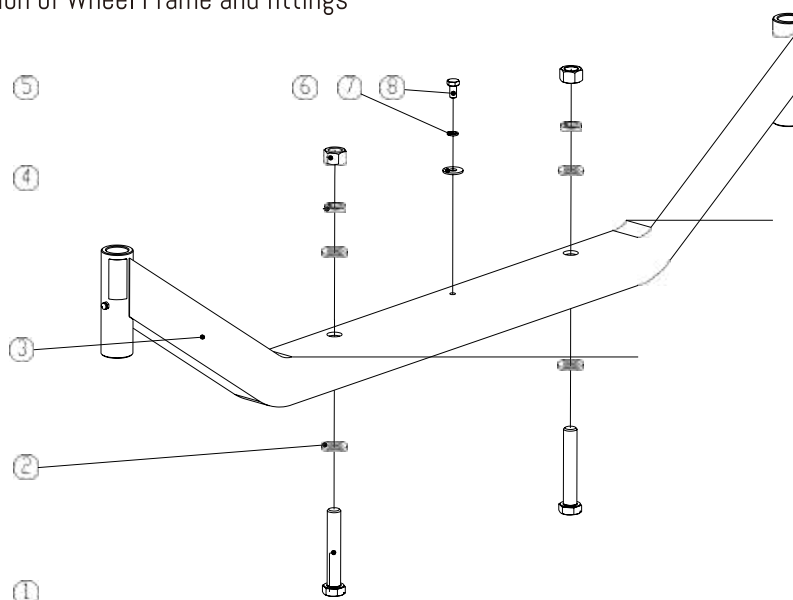


FIGURE 7: Wheel Frame and Fittings

KEY	DESCRIPTION	QTY
(1)	Bolt M16x95	2
(2)	Plain Washer 16	4
(3)	Wheel Frame	1
(4)	Spring Washer 16	2
(5)	Nut M16	2
(6)	Large Plain Washer 8	1
(7)	Spring Washer 8	1
(8)	Bolt M8x16	1

TABLE 6: Wheel Frame and Fittings List

The detailed description of Upper Lift Bracket and fittings

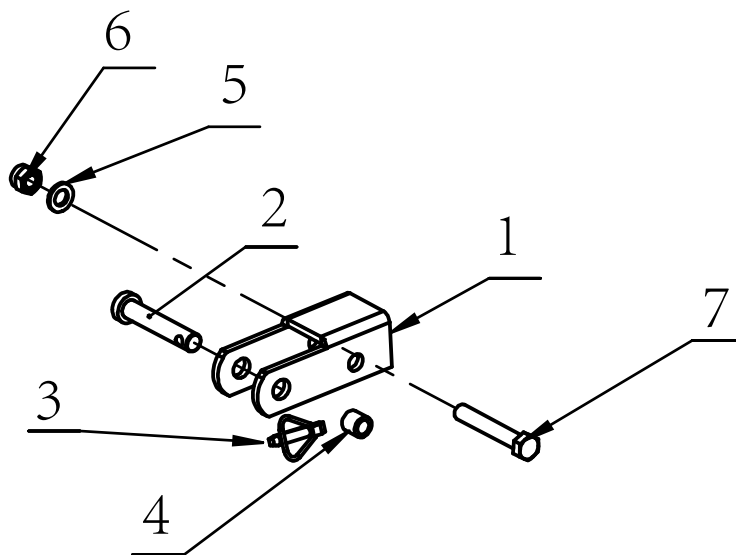


FIGURE 8: Upper Lift Bracket and Fittings

KEY	DESCRIPTION	QTY
(1)	Upper Lift Bracket	1
(2)	Upper Hitch Pin	1
(3)	Safety Lock Pin	1
(4)	Bushing	1
(5)	Plain Washer 16	1
(6)	Locknut M16	1
(7)	Bolt M16x110	1

TABLE 7: Upper Lift Bracket and Fittings List

Installation Wizard

The installation wizard will guide you to finish the final assembly of your new mower easily.

Required Tools:

- 1/2" Drive Ratchet Wrench with 13mm, 16mm, 24mm sockets
- Wrenches: 17mm, 19mm, 22mm, 24mm
- Heavy Duty Shears or Tin Snips (for crate banding, if applicable)
- Safety Goggles and Gloves

Torque Application

Torque Values Chart for Common Bolt Sizes		
Bolt Size (Metric)	Bolt Head Identification Class 8.8	
Metric	N.M	Ft-lb
M8x16	26	19
M16x50, M16x95	225	165
Torque tolerance +0%, -15% of torquing values. Unless otherwise specified use torque values listed above.		

Installation

Cut all zip ties and disassemble shipping crate.

Step1: Installing Long, Short Pivot Bar, Upper Lift bracket and Fittings

Remove the packaging of long, short pivot bar, upper lift bracket and fittings. Assemble all above parts on the mower deck body.

Parts: 2pcs of long pivot bars, 2pcs of short pivot bars, 1pcs of upper lifting bracket.

Parts: 4 pcs Bolt M16x50, 9 pcs Plain Washer M16, 5 pcs Locknut M16, 1 pc Bolt M16x110, 1pcs Bushing.

Tighten locknut completely.

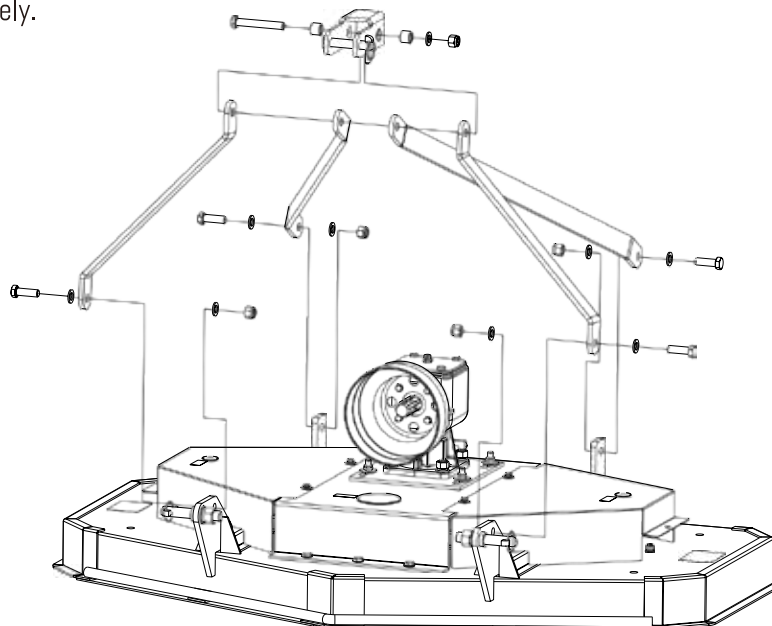


FIGURE 9: Installing Long, Short Pivot Bar, Upper Lift Bracket and Fittings

Step2: Installing Wheel Frame and Fittings

Remove the packaging of wheel frame and fittings. Assemble 2pcs of wheel frames on the mower deck body.

Parts: 4 pcs Bolt M16x95, 8 pcs Plain Washer M16, 4 pcs Spring Washer M16, 4 pcs Nut M16, 2 pcs Bolt M8x16, 2 pcs Plain Washer M8, 2 pcs Large Plain Washer M8.

Tighten nuts and bolts to the specified torque



Raise the mower deck body to ensure that the wheel frame can be installed with enough height.

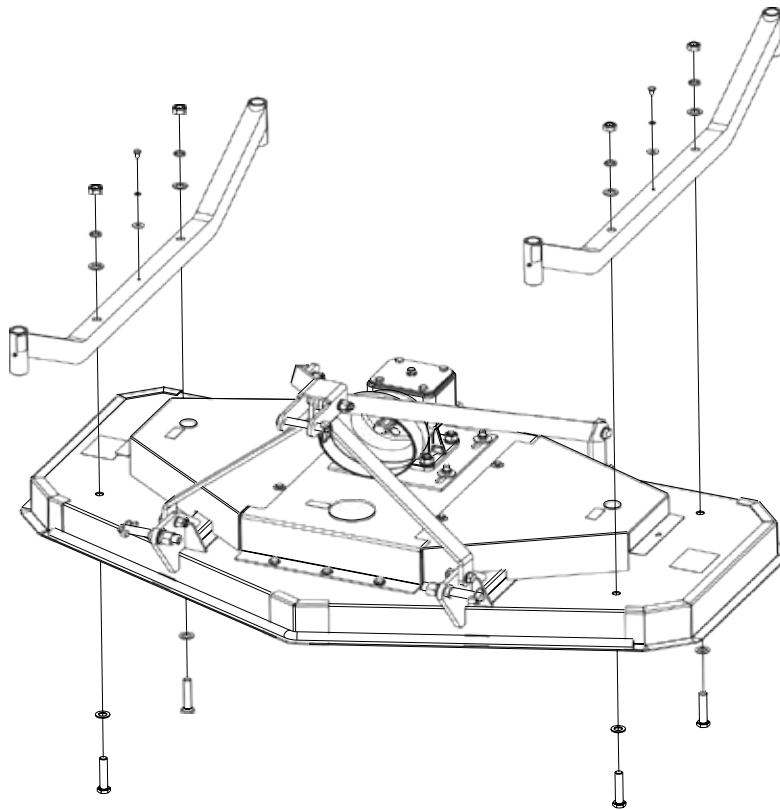


FIGURE 10: Installing Wheel Frame and Fittings

Step3: Installing wheel bracket assembly and Fittings

Remove the packaging of wheel bracket assembly and fittings. Assemble the wheel bracket assemblies onto the wheel frames using the desired combination of spacers.

Combine spacers of different heights to achieve the desired mowing height.

Parts: 4pcs of wheel bracket assemblies. Use the Lynch Pin (or Safety Lock Pin) to secure the wheel bracket at the selected height.



Make sure all wheel height adjustments are the same, otherwise it will lead to uneven mowing.

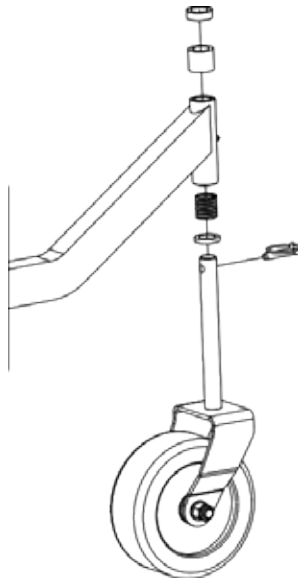


FIGURE 11: Installing wheel Bracket and Fittings

Step4: Installing discharge guide and Fittings

Remove the packaging of discharge guide and fittings.

Assemble discharge guide on mower deck body using included fittings.

Parts: 4 pcs Bolt M10x25, 3 pcs Plain Washer M10, 7 pcs Large Plain Washer M10, 5 pcs Locknut M10.

Tighten all locknuts and bolts securely.

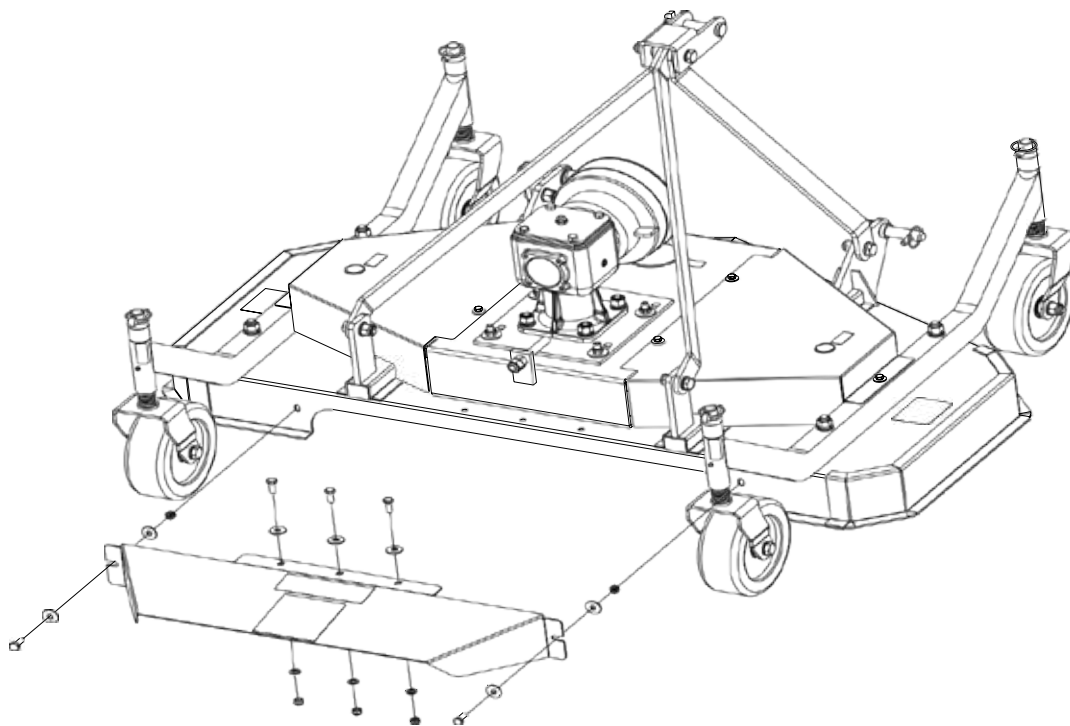
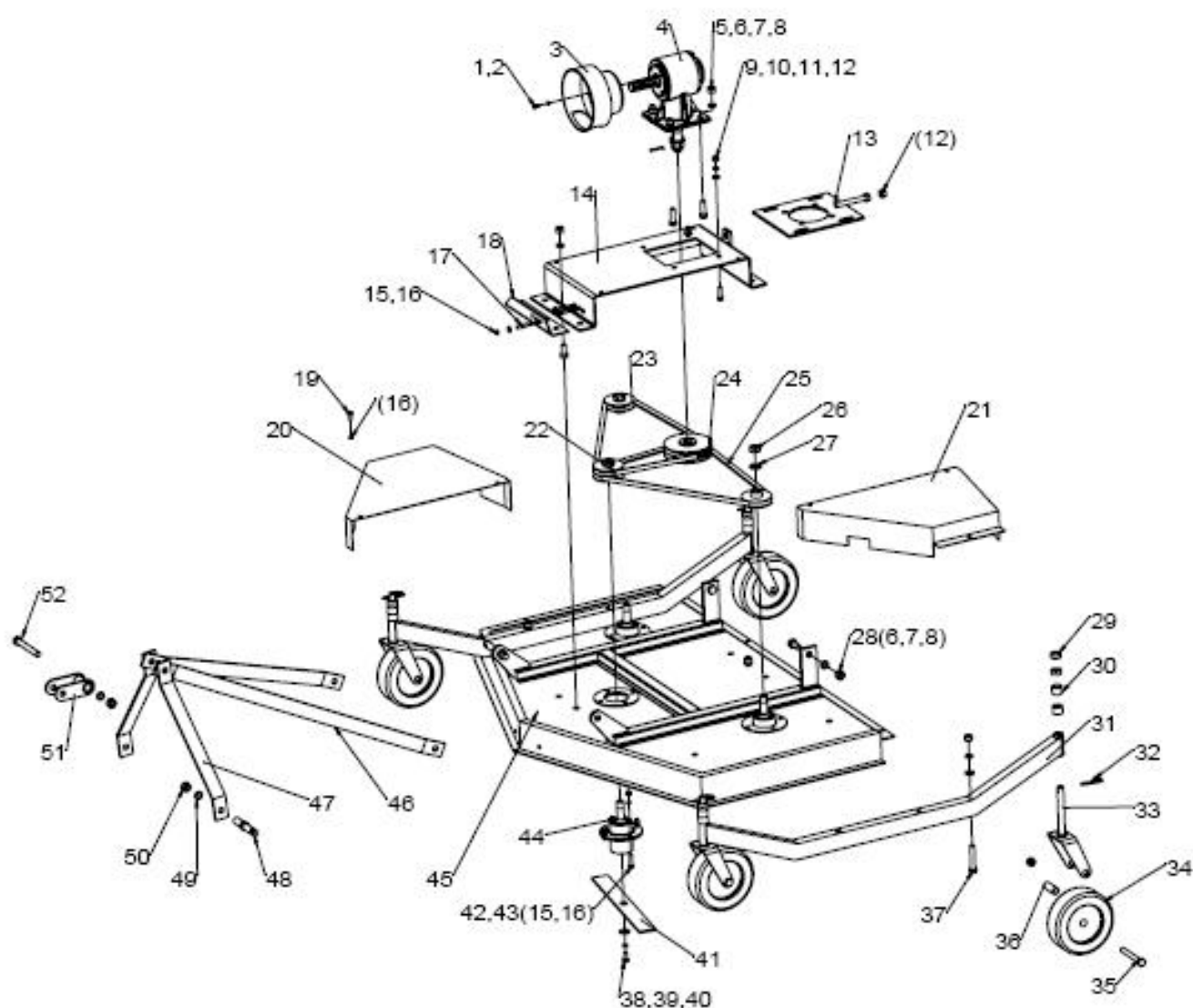


FIGURE 12: Installing Discharge Guide and Fittings

FM120/FM150/FM180 FINISHING MOWER PARTS



PARTS LIST

REF	DESCRIPTION
1	Bolt M8x16
2	Lock washer 8
3	Cover
4	Gearbox Assembly
5	Bolt M16X50
6	Plain washer 16
7	Lock washer 16
8	Nut M16
9	Bolt M12x40
10	Plain washer 12
11	Lock washer 12
12	Nut M12
13	Gearbox base plate
14	Gearbox mounting
15	Nut M10
16	Plain washer 10
17	Grease hose A/B
18	Hose mounting
19	Bolt M10x20
20	FM150/FM120/FM180 Right cover
21	FM150/FM120/FM180 Left cover
22	Double sheave pulley
23	Single sheave pulley
24	Drive pulley
25	FM150/FM120/FM180 Belt
26	Narrow nut M24x2
27	Lock washer 24
28	Bolt M16X45
29	Short spacer

REF	DESCRIPTION
30	Long spacer
31	FM150/120/180 Axle beam weldment
32	Lock pin 12
33	Yoke weldment
34	Wheel assembly
35	Bolt M16X100
36	Bushing
37	Bolt M16X90
38	Bolt M14X25L
39	Plain washer 14
40	Lock washer 14
41	FM150/FM120/FM180 blade
42	Bolt M10X35
43	Lock washer 10
44	Spindle assembly
45	FM150 Deck weldment
	FM120 Deck weldment
	FM180 Deck weldment
46	FM150 Long pivot bar
	FM120 Long pivot bar
	FM180 Long pivot bar
47	FM150 Short pivot bar
	FM120 Short pivot bar
	FM180 Short pivot bar
48	Lift pin
49	Lock washer 22
50	Nut M22x1.5
51	Upper lift bracket
52	Bolt M16x140

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