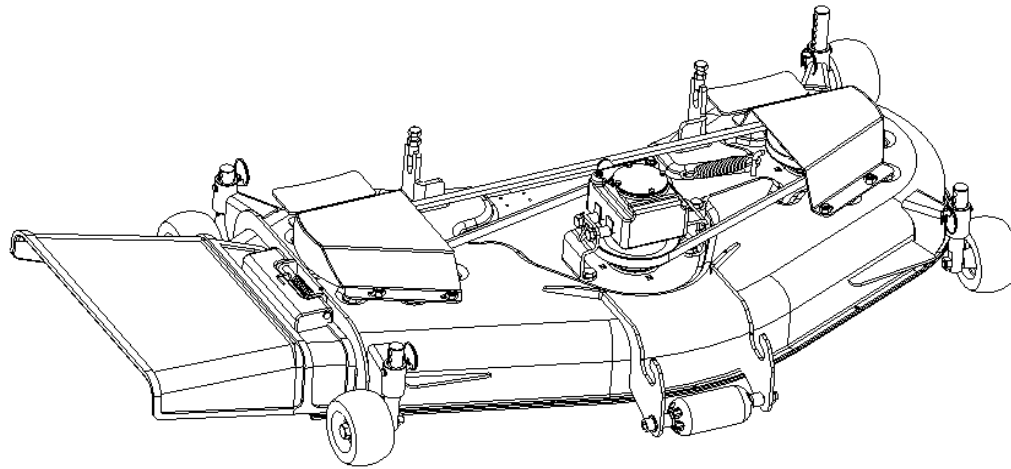


MODEL MID MOWER MID MOWER 48, 54" MOWER AND MOUNTING

INCLUDES OPERATOR'S MANUAL
INSTALLATION INSTRUCTIONS AND PARTS CATALOG

MODEL NAME : MM48, MM54



TYM TONGYANG MOOLSAN CO.,LTD.

CONTENTS

PREFACE -----	3
SAFE OPERATION -----	4
- THE TRACTOR	
- THE MOWER	
- GENERAL OPERATION	
- SLOPE OPERATION	
- TRANSPORTATION	
MAINTENANCE -----	14
DECALS -----	16
SPECIFICATION -----	20
LUBRICATIONS -----	22
INSTALLATIONS	
- SETTING MOWER -----	23
- LINK -----	24
- MOWER ADJUSTMENT -----	26
- CUTTING HEIGHT -----	27
METRIC FASTENER(ISO)TORQUE CHART -----	29
REPLACEMENT -----	30
- BLADE, BELT AND GEAR BOX	
PART ILLUSTRATIONS -----	33

PREFACE

This manual is an integral part of the mower.

All operators must read the manual before operating the mower and must have access to this manual at any time.

The purpose of this manual is to provide information for the safe and correct use of the mower and the owner and or any operator of the mower must read this manual before operating the machine.

Every effort is made in this manual and verbally by selling Dealers to ensure the safe operation of this mower. However as the actual operation is outside the control of TYM its Distributors or their Dealers, no liability of any kind is accepted for any injury or damage caused by incorrect operation of this mower.

Assistance in using this manual.

For any assistance in the use of this manual or issues not dealt with in this manual please contact your selling Dealer. If additional copies of the manual are needed they can be purchased from your selling Dealer.

For copies in a foreign language please ask your Dealer to make inquiry about the availability of a particular language

Machine Use

This machine is designed solely for use in customary lawn mowing operations. Use in any other way is considered as contrary to the intended use.

The manufacturer accepts no liability for damage or injury resulting from this misuse, and these risks must be borne solely by the user. Compliance with and strict adherence to the conditions of operation, service and repair as specified by the manufacturer also constitute essential elements for the intended use.

This machine should be operated, serviced and repaired only by persons familiar with all its particular characteristics and acquainted with the relevant safety rules (accident prevention). The accident prevention regulations, all other generally recognized regulations on safety and occupational medicine and the road traffic regulations must be observed at all times.

Setting fuel delivery beyond published factory specifications or otherwise overpowering will result in loss of warranty protection for this machine.

Any arbitrary modifications carried out on this machine will relieve the manufacturer of all liability for any resulting damage or injury.

THE TRACTOR

1. Read, understand and follow all instructions in the manual and on the machine before starting.
Failure to do so could result in serious injury or death and equipment damage.
Keep this manual in a safe place for future and regular reference and ordering service parts.
2. Read and understand all Safety Precautions in the Tractor Operator's Manual.
3. Allow only responsible operators familiar with the instructions to operate the machine.
Know the controls and how to stop tractor engine and mower quickly in an emergency.
4. Tractor must be equipped with Rollover Protective System(ROPS) and seat belt for all mower operations
foldable ROPS systems locked in the up position at all times when operating the mower.
Falling off or overturning a tractor can result in death from being run over or crushed.
5. Always wear seat belt on Rollover protective System(ROPS)equipped tractors.
Do not wear a seat belt if the tractor Rollover Protective System(ROPS) has been removed.
6. Wear personal protective equipment(PPE), such as, but not limited to, protection for eyes, ears, lungs,
head, hair, hands and feet when operating, servicing, or repairing the equipment.
Avoid wearing loose clothing or jewelry that may catch and entangle in moving parts.
7. Stop tractor engine, place in neutral, engage parking brake, lower mower deck
to ground, stop the all moving parts, remove ignition key to prevent unauthorized person
from starting tractor before servicing, repairing, or making adjustments to the equipment.
8. Never leave the tractor with the mower blades rotating, with the tractor in motion, or the engine running.
9. Use fender hand holds and steps when mounting and dismounting tractor to prevent falls.
Keep steps and Operator's platform clean and free of debris.

10. All tractor three point hitch components and hardware must be tightened to proper specifications to avoid damage to tractor or mower prior to operation. Please review tractor Operator's Manual or consult your local dealer for proper torque and tightening specifications of tractor three point hitch components.
11. Move and turn tractor at low speeds. Avoid erratic operation and excessive speed.
12. Keep the tractor in gear when traveling down hill.
13. Do not mow near drop-offs, ditches, or embankments. The tractor could suddenly overturn if a wheel travels over the edge of a ditch, or if an edge caves in.
14. Add wheel ballast for stability when operating on slopes. Pay extreme care when operating on slopes to maintain stability.
15. Do not allow anyone but the operator on the tractor or mower.
16. Pay extreme caution when loading or unloading the tractor and mower from a trailer or truck

THE MOWER

1. Do not operate the mower unless it is rigidly attached to the tractor. Failure to do so could result in serious injury or death and equipment damage.
2. Make sure the locking spring on the shaft slides freely and make sure the balls are seated firmly in the groove of the PTO shaft.
3. Keep all shields and guards securely in place.
4. Never operate the mower with the discharge deflector in the raised position.
5. Stop tractor and mower immediately upon striking a foreign object. Exit tractor in proper technique and procedure. Inspect and repair any damage before continuing mowing.
6. Stop tractor in proper procedure and wait until the mower blades stop completely. before unclogging discharge chute, adjustments, or removing any grass or debris from mower deck.
7. Make sure all hardware is properly tightened before operating the tractor and mower. See torque chart specifications in this manual as well as the tractor manual. If none are available, contact your dealer for proper values.
8. Never adjust cutting height while tractor engine or mower is running.
9. Make sure all Safety Decals are attached, clean, and free of debris so they are readable. Replace if damaged or worn.
10. Wear gloves when installing belt. Be careful to prevent fingers from being caught between belt and pulleys.
11. Be careful when installing or removing belt from spring loaded idler. Springs store energy when extended and if released suddenly, can cause injury.

GENERAL OPERATION

1. Know your controls. Read this operator's manual and the manual provided with your tractor. Learn how to stop the tractor, the engine, and the mower quickly in an emergency.
2. Watch overhead clearances carefully before driving under power lines, bridges, tree branches, or when exiting or entering buildings. These situations may allow the operator to be struck or pulled from the tractor, which could result in serious injury or death.
3. Do not put hands or feet under the mower deck or near rotating parts.
4. Always wear safety glasses with side shields or safety goggles during operation.
5. Clear the area to be mowed of objects such as rocks, toys, wire, etc. which could be struck and thrown by the mower blades.
A thrown object by the mower could travel in any direction and cause injury to the operator or a bystander. To help avoid injury, keep bystanders, children, and pets at least 75 feet from mower while in operation. Stop the mowing operation if anyone enters the area.
6. Watch for hidden hazards in the area being cut during operation.
7. Disengage the mower before shifting tractor into reverse and backing up. Always look down and behind before and while backing.
8. Stop the mower blades when crossing gravel driveways, walks or roadways.
9. Watch for traffic when operating near or crossing roadways.
10. Never directly discharge towards people, pets or property.
11. To avoid injury from thrown debris, never operate the mower when it is raised in the transport position.

12. Never allow riders on tractor.
13. Operate only daylight or with good artificial light.
14. Do not attempt to mow through unusually tall, dry grass or piles of dry leaves. Debris may build up on the mower deck or contact the tractor exhaust causing a potential fire hazard

SLOPE OPERATION

WARNING - Slopes are a major factor leading to loss of control and tip over accidents, which can result in severe injury or death. All slopes require extra caution. If slopes are greater than 15 degrees, do not operate the mower on that area otherwise serious injury or death could result.

1. Add wheel ballast for stability when operating on slopes. Pay extreme care when operating on slopes to maintain stability.
2. Use extreme caution and reduce ground speed on slopes.
3. Do not stop, start, otherwise change directions suddenly on slopes. If the tractor tires lose traction, stop mower and proceed slowly straight down the slope.
4. To prevent loss of control and overturning the tractor and mower, always mow up and down slopes, never across.
5. Do not operate or transport on steep slopes.
6. Do not mow on wet grass. Reduced traction could cause sliding on slopes.
7. Keep the tractor in gear when traveling down hill.

TRANSPORTATION

1. Always engage lift lockouts before transporting the mower.
2. Never allow riders on tractor.
3. Always use accessory lights and devices when transporting on a road or highway to warn operators of other vehicles. Check your local government regulations.

4. Be sure the slow moving vehicle(SMV) emblem is visible to the rear. If the SMV sign is worn, faded, or damage, replace immediately.
5. Use caution and reduce speed when transporting under adverse conditions, turning, or on inclines.
6. Do not operate PTO during transport.

OPERATION

WARNING - Make sure Deflector Chute is installed and correctly functioning to prevent injury. Never operate mower with chute removed or raised out of operating position.

WARNING - To avoid injury never direct the discharge of material towards bystanders or allow anyone near the machine while in operation.

CAUTION - To avoid injury and damage, re-torque all fastening hardware, including blades end spindle retaining hardware after the first hour of operation.

Safe operation of the tractor and mower is the responsibility of the operator.

Operator must be familiar with tractor and mower controls and how they function, and all safety precautions before starting operation.

The mower is designed as a finish cut mower.

Do not allow anyone but the operator on the tractor or mower. Never allow riders on tractor.

The deck cutting height is set by positioning the Clevis pin at the rear three-point Hitch area and allowing the Clevis pin to rest on the draw bar. Refer to "Cutting height. Adjustment" section of this manual for proper adjustment.

The anti-scalp wheels on each side of the mower deck can serve as a guide for mowing.

When mowing, position the mower deck such that the anti-scalp wheel overlaps the edge of the grass previously cut.

This will assure full mower cut coverage.

Mowing should be performed with the tractor engine operating at the recommended RPM.

Do not mow at high ground speed. Operating at recommended RPM will insure proper blade speed for effective cutting and discharge of grass from the deck.

For best results, it is recommended that the first two passes around the area to be mowed has the discharge chute directed towards the center. After the first two passes have been completed, reverse direction to have the discharge chute pointed outward. This will give a better appearance to the lawn.

Blade sharpness will affect the appearance of the area cut. Dull or damaged blades will cause the grass to appear torn, rather than cut cleanly.

Do not cut the grass too short. Short grass will promote weed growth and yellows in dry weather. Allow grass to grow longer in hot, dry conditions. The additional length reduces heat build-up, preserves needed moisture and protects the grass from heat damage.

Mow often, Do not allow the grass to get too tall. Mowing areas with tall grass may require primary cutting at the maximum height. After completing the mowing operation at the maximum height, the area can be recut with the mower set at the desired height.

OPERATION

WARNING - Make sure Deflector Chute is installed and correctly functioning to prevent injury. Never operate mower with chute removed or raised out of operating position.

WARNING - To avoid injury never direct the discharge of material towards bystanders or allow anyone near the machine while in operation.

CAUTION - To avoid injury and damage, re-torque all fastening hardware, including blades end spindle retaining hardware after the first hour of operation.

At certain times of the year and under some conditions, the mower may leave streaks of uncut grass. The general cause is tall grass and weeds. With this type of condition, it may be necessary to make a second pass over the cut area to get an even cut.

Cutting off too much at one time shocks the plant's growth system and weakens the grass plants. A good guideline to follow is the 1/3 rule: cut no more than one third of the grass height, and never more than 1 inch at a time.

Mow when the grass is 3 to 4 inches tall.

The time of day and condition of the grass will affect the results you obtain when mowing. Mow at the time of day when the grass is cool and dry. Late afternoon or early evening will provide the most ideal conditions. Do not mow when the grass is wet or heavy with dew. Wet grass can build up on the underside of the deck, creating an imbalance through the blades and spindles, causing possible damage to the mower deck belt. Wet grass also leaves unsightly clumps on the lawn.

Should the mower deck become plugged, raise deck, shut off engine, set parking brake, and lock the deck in the transport position.

Clean the underside of the mower deck using a scraper.

Operate the mower only in daylight or with good artificial light.

MAINTENANCE

1. Protect your eyes- Wear Safety Glasses.
2. Never run the tractor and mower inside a closed area. Engine exhaust fumes can be lethal.
3. Always engage lift lockouts before servicing the mower.
4. Before performing any service work, make sure hoists, floor jacks, and jack stands are in good working order and properly rated to support the tractor and mower.
5. Do not work under the tractor or mower unless they are secured by a hoist and jack stands. Never place any body part underneath equipment or between moveable parts even after tractor has been turned off. Hydraulic system leak downs, hydraulic system failures, mechanical failures, or control lever movement can cause mower and tractor components to drop or rotate unexpectedly and cause serious injury or death.
6. Avoid injury, do not adjust, service, clean, or unclog the mower when the tractor engine is running.
7. Frequently check the mower blades. They must be sharp and free of nicks, cracks and securely fastened.
8. Do not handle mower blades with bare hands. Wear leather gloves or wrap blades in the area Where they will be handled. Improper handling may result in serious injury.
9. Your dealer can supply genuine replacement blades. Non-genuine blades may not meet original equipment specifications and may be dangerous if installed.
10. To reduce fire hazard, keep the tractor and mower free of grass, leaves, or other debris build up. Debris may build up on the mower deck or contact the tractor exhaust causing a potential fire hazard.
11. Never alter safety devices. Check their proper operation regularly. Use all guards as instructed in this manual.
12. It is not recommended to use a pressure washer to clean the mower assembly. High pressure water may cause damage to spindles, pulleys, belts, or bearings, shortening life and reducing serviceability.

MAINTENANCE

1. FILLING DIAGRAM AND SERVICE INTERVALS

Filling diagram shows the maintenances required and the intervals.

Follow this checking schedule according to each indices to the satisfactory operation of the machine

No.	Check Point	New	After first 10hrs	Every 50hrs	Every 150hrs	Every year	Every start of work	Every end of work	Reference page
1	Gear box oil leakage check	○	○	○	○	○	○	○	
2	Gear box oil check		○	○	○	○	○		
3	Gear box oil change				◎	○			
4	Gear box oil seal change					○			At Breakage
5	whether blades are tightened up or not	○	○	○	○	○	○	○	
6	Blade wear check			○	○	○	○	○	
7	Blade balance and appearance check	○	○	○	○	○	○	○	
8	All hardware check	○		○	○	○	○		
9	whether all pins are in place or not	○		○	○	○	○	○	
10	Greasing check								
	◆ Pulley holder	○	○	○	○	○	○		
	◆ Belt tension pulley	○	○	○	○	○	○		
	◆ Belt tension arm	○	○	○	○	○	○		
	◆ Rear link shafts	○	○	○	○	○	○		
	◆ Universal Joint	○	○	○	○	○	○		
11	Front and rear wheel wear check				○	○	○		
12	Front roller wear check				○	○	○		

IMPORTANT

◆ The schedule indicated by "◎" must be done after first 50 hours previously.

SAFETY DECALS

The safety of the operator was the prime consideration on the design of the mower. Proper shielding, convenient controls, simple adjustments and other safety features have been built into this implement. The following decals are located on the mower deck. Keep decals clean and replace them immediately if they are missing or damaged. contact your dealer for replacements.



Part NO : 9400-500-001-0

Located on RH and LH Belt Shields



Part NO : 9400-500-002-0

Located on Deck



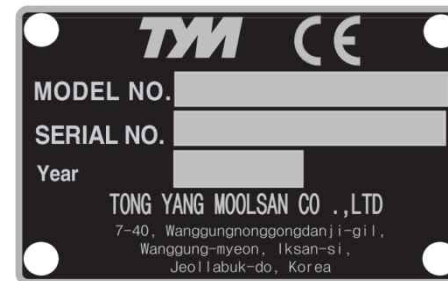
Part NO : 9400-500-007-0

Located on Front of Deck



Part NO : 9400-500-005-0

Located on Side Cover



Part NO : 9400-500-006-0

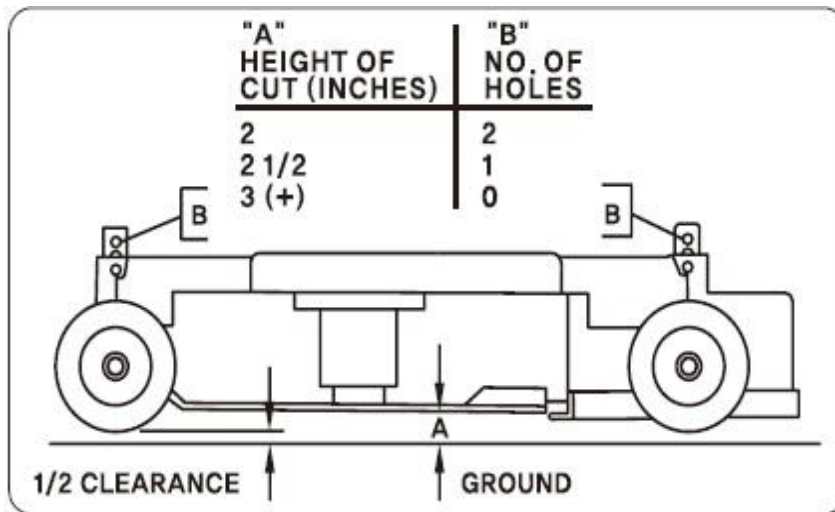
Located on Deck

INFORMATIONAL DECALS

MM48

Part NO : 9380-500-008-0

Located on Deck



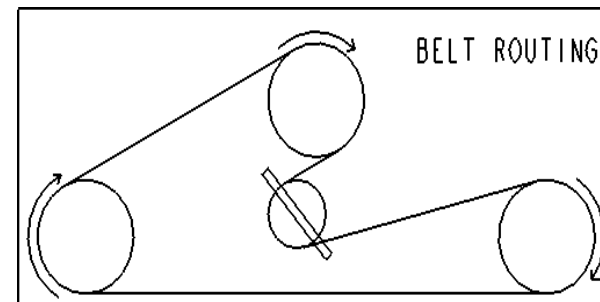
Part NO : 9400-500-004-0

Located on Right of Deck

MM54

Part NO : 9390-500-008-0

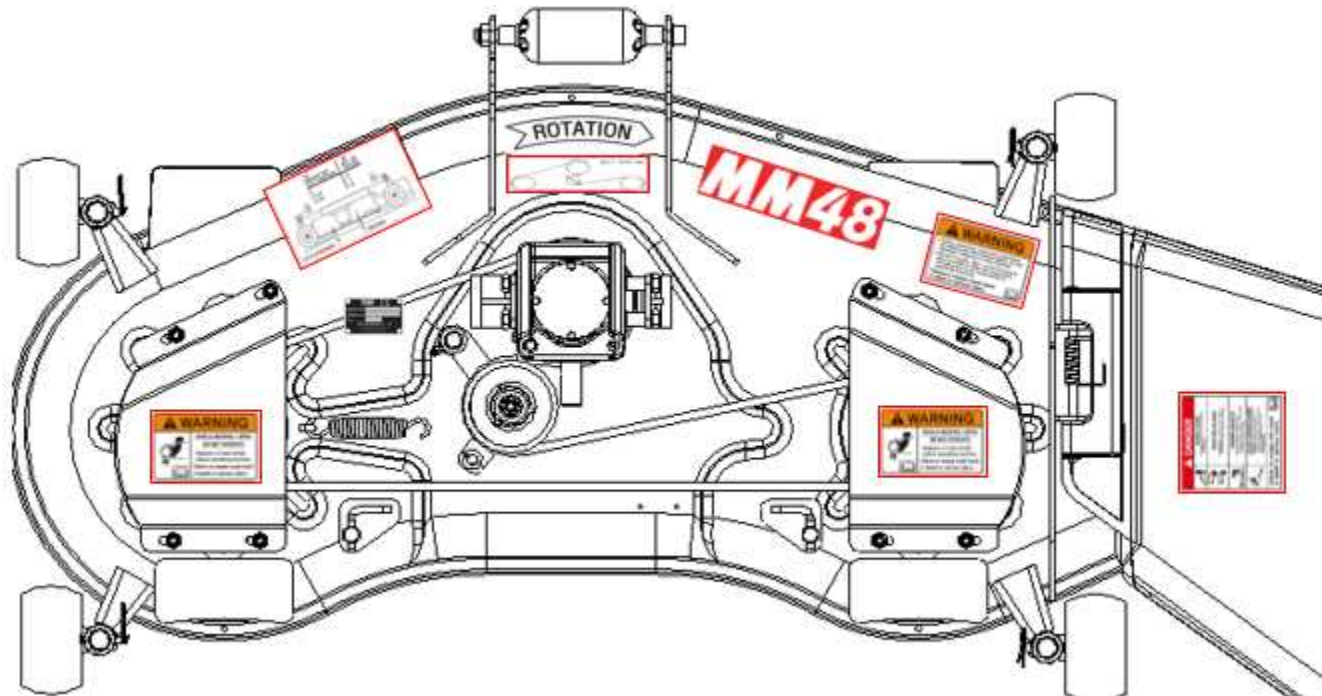
Located on Deck Side (LH)



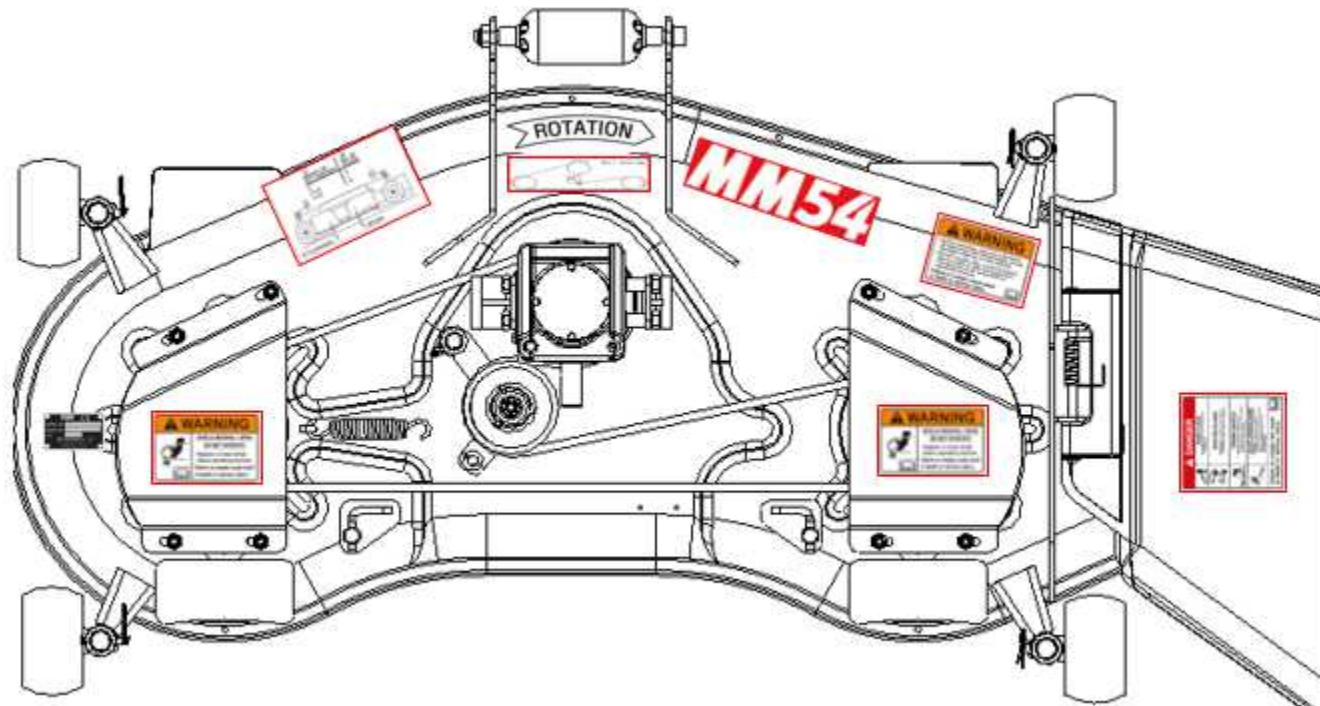
Part NO : 9380-500-003-0

Located on Front of Deck

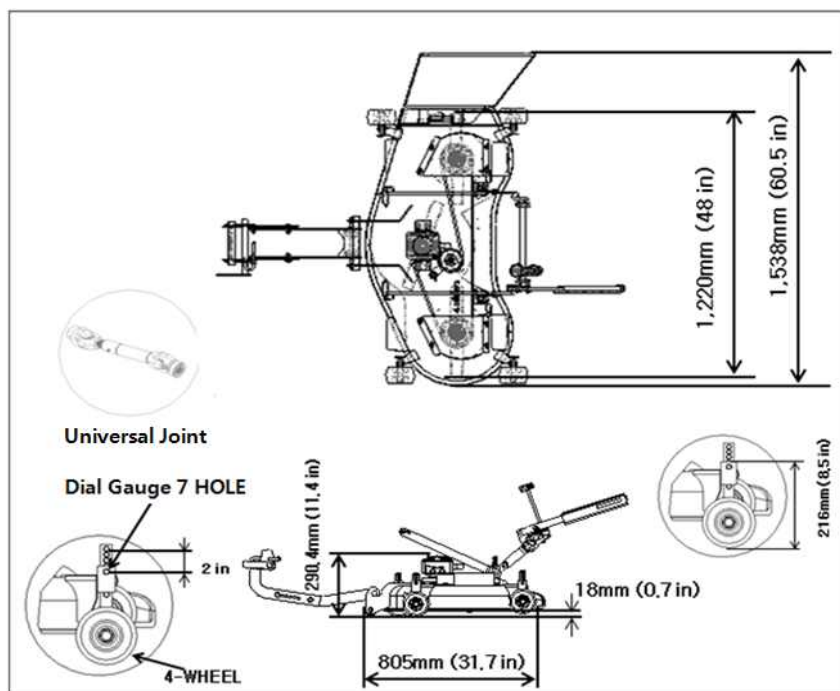
INFORMATIONAL DECALS (48")



INFORMATIONAL DECALS (54")

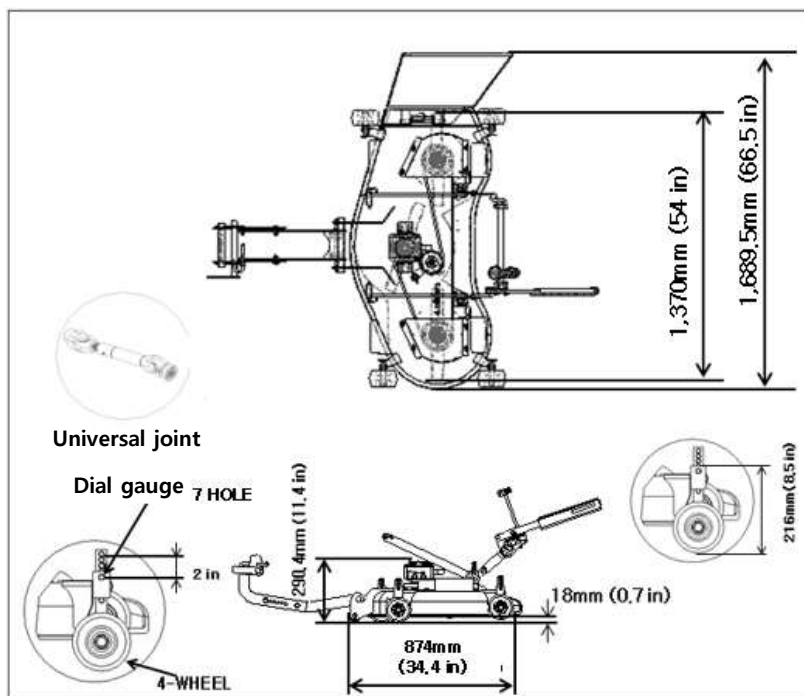


MID MOWER SPECIFICATION (48")



MODEL	MM48	
TYPE	Side Discharge	
Mounting Method	Parallel Linkage	
Dimensions	Length (in)	31.7
	Width (in)	60.5
	Height (in)	11.4
Working Width (in)	48	
Cutting Height (in)	1~4	
Transport Height (in)	5.6	
Lift Linkage Type	Lower Link Lift	
Adjustment of Increment	Dial Gauge	
Wheel Height	Hole	7 EA
	Gab between Hole (in)	0.5
	Total Gab(in)	3
Applicable Tractor	T194, T224	
Number of Blades	3 EA	
Blade tip Velocity (fpm)	13,048	
Blade Length (in)	16.5	
HP rating	18~20	
Deck Thickness (in)	0.13	
Weight (lb)	176	
Universal Joint	Ø21.6X420L	
Wheel	4 EA	
Assistant Wheel	1 EA	
Belt	V-Belt	
Color	Super RED	

MID MOWER SPECIFICATION (54")



MODEL		MM54
TYPE		Side Discharge
Mounting Method		Parallel Linkage
Dimensions	Length (in)	34.4
	Width (in)	66.5
	Height (in)	11.4
Working Width (in)		54
Cutting Height (in)		1~4
Transport Height (in)		5.6
Lift Linkage Type		Lower Link Lift
Adjustment of Increment		Dial Gauge
Wheel Height	Hole	7 EA
	Gab between Hole (in)	0.5
	Total Gab(in)	3
Applicable Tractor		T194, T224
Number of Blades		3 EA
Blade tip Velocity (fpm)		14,601
Blade Length (in)		18.5
HP rating		18~20
Deck Thickness (in)		0.13
Weight (lb)		186
Universal Joint		Ø21.6X470L
Wheel		4 EA
Assistant Wheel		1 EA
Belt		V-Belt
Color		Super RED

LUBRICATION

NOTICE: It is not recommended to use a pressure washer to clean the mower assembly. High pressure water may cause damage to spindles, pulleys, belts, or bearings shortening life and reducing serviceability.

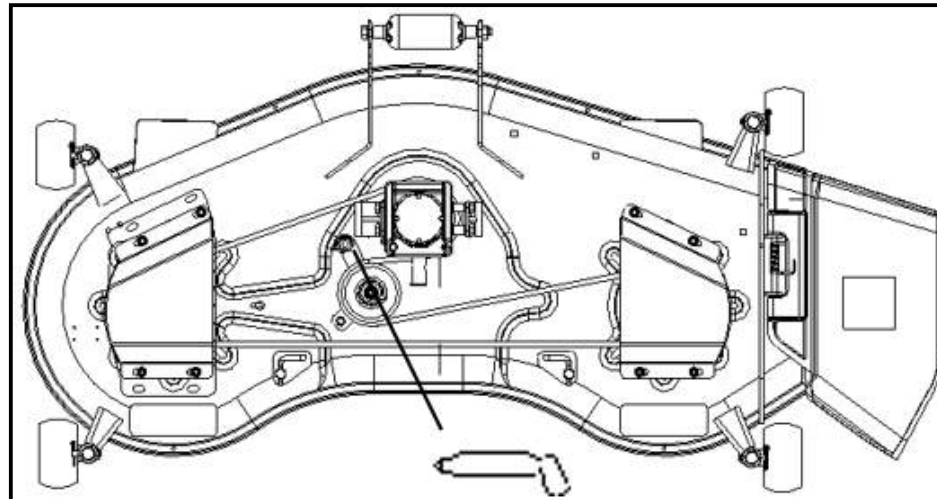
Life of the mower depends upon the maintenance given. Proper lubrication is very important. Always lubricate the deck and lift components before operation.

Always wipe the fittings to be lubricated with a clean cloth before greasing. Dirt injected into the fitting will cause damage to the machined parts.

Use SAE Multi-purpose lithium base grease on all lubrication locations shown below. Remember to wipe away excess grease, which has built up around parts.

Lubricate grease fittings after every 50 hours of operation.

Miscellaneous working parts not provided with lubrication fittings should be oiled daily with a good grade of lubricating oil.



SETTING MOWERS

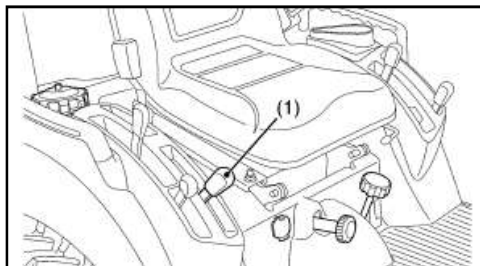
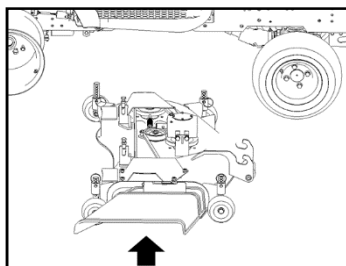


CAUTION

- Park the tractor on a firm, flat and level surface, set the parking brake, stop the engine and remove the key.

1. Start the engine and the hydraulic lever rearward to raise the mower rear link to the highest position.
2. Stop the engine and remove the key.
3. Push the mower under the tractor from right side or ride the tractor and cross over the mower.

(1) Hydraulic Control Lever

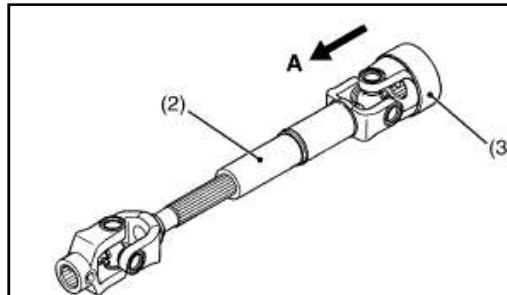
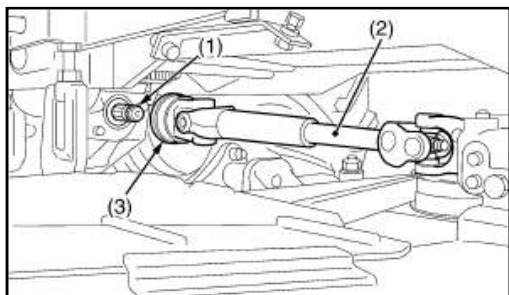


Universal Joint

1. Pull back the coupler (3) of the universal joint (2).
2. Push the universal joint (2) onto the mid-PTO shaft (1), until the coupler locks.
3. Slide the universal joint back and forward to make sure the universal joint is locked securely.

■ IMPORTANT

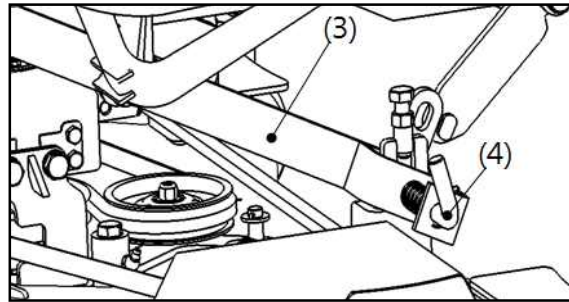
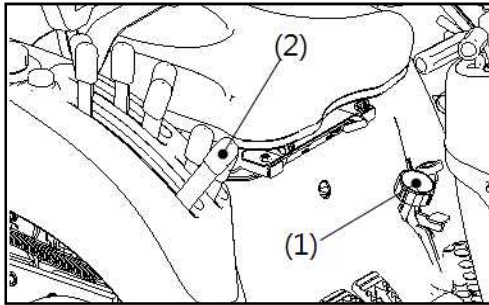
- Finally, tug on the universal joint to make sure it is locked on the PTO shaft.



Rear Link

1. Set the cutting height control dial (1) to zero inch position.
2. Operate the tractor's hydraulic control lever (2) forward to lower the mower rear links (3).
Attach the rear link (3) to the mower with the L-pins (4).

(1) Cutting Height Control Dial (3) Rear Link
(2) Hydraulic Control Lever (4) L-pin



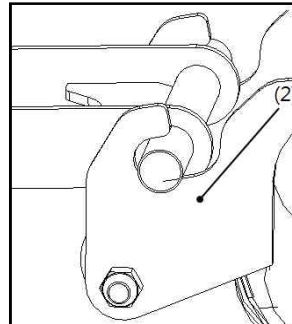
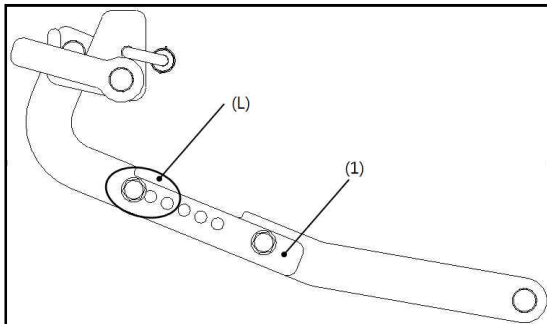
Front Link

1. Hook the front link (1) to the front bracket groove (2) as shown in the figure.

(Reference)

Make sure the position (L) of the front link (1) is 1st or 2nd hole.

(1) Front Link (2) Front Bracket Groove



Mounting Front Link

1. Position the front lever to the front link bracket.
2. Pull and lock the U pin. Then lower the front lever.
3. Hook the front link to the lever fulcrum, and lift the front lever.
4. Release the U pin to lock the front lever.

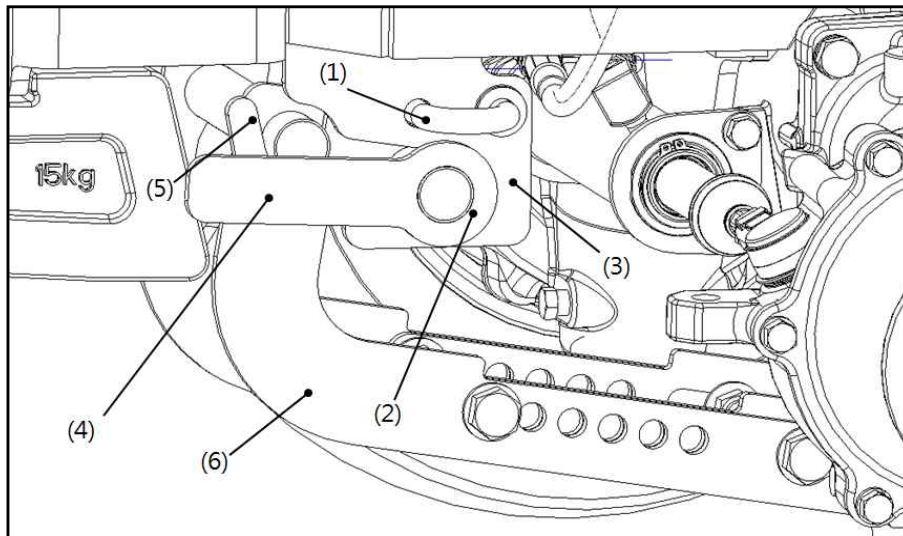
■ NOTE

- When hooking the front link to the lever fulcrum, normal position of the lever fulcrum groove is open to downward.

■ IMPORTANT

- Check that the front lever is locked securely with the L pin.

- | | |
|------------------------|--------------------------|
| (1) U pin | (4) Front Lever |
| (2) Lever Fulcrum | (5) Lever Fulcrum Groove |
| (3) Front Link Bracket | (6) Front Link |



MOWER ADJUSTMENT



CAUTION

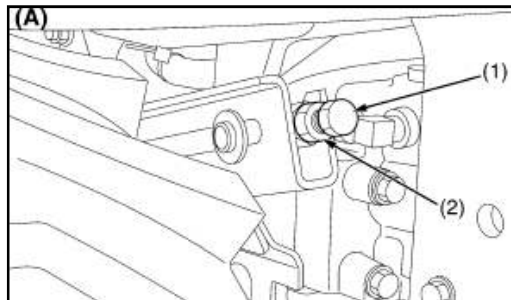
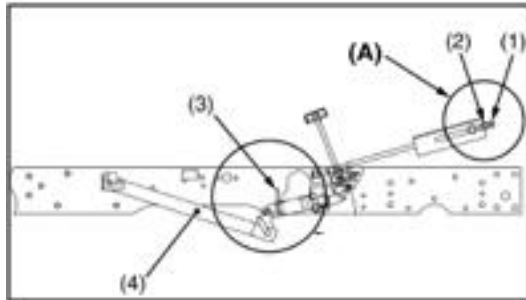
- Park the tractor on a firm, flat and level surface and set the parking brake.
- Stop the engine, remove the key, and allow the blades to stop before making adjustments.
- Wear heavy gloves or wrap end of blade with a rag when you handle blades.
- Before starting the engine, set the PTO clutch lever to off position and range gear shift lever to the neutral position.

Adjusting Mower Link

1. Tire pressure must be correct.
2. Move the hydraulic control lever rearward to raise the mower to the highest position.
3. Stop the engine and remove the key.

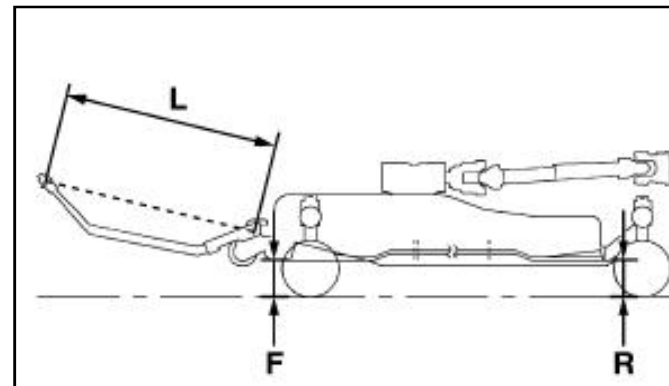
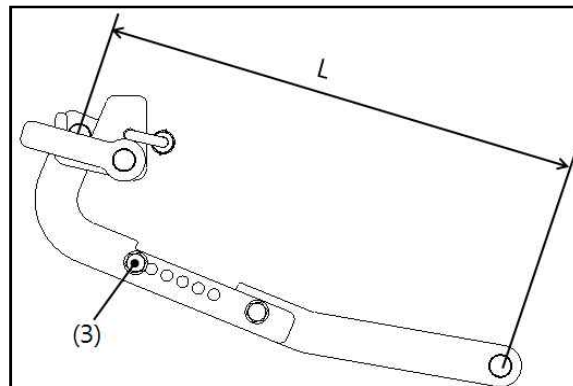
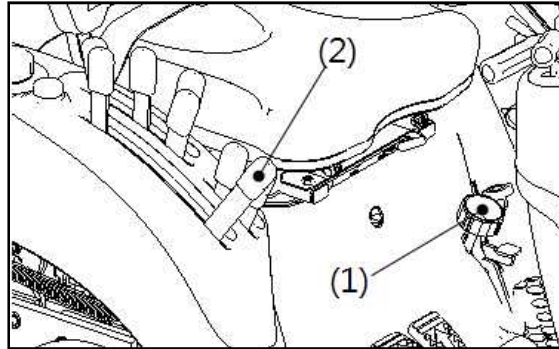
- (1) Bolt
- (2) Lock Nut
- (3) Stopper
- (4) Rear Link

(A) Adjustment Point



Adjusting Front and Rear Cutting Height

1. Tire pressure must be correct.
2. Make sure the level of the mower blades is adjusted as shown below. Then tighten the lock nuts securely.
3. Turn the cutting height control dial to "2.0" and the anti-scalp roller's height to keep clearance between rollers and ground from 6 to 13 mm (0.25 to 0.5 in.).
4. Turn right blade by hand parallel to direction of travel.
5. Adjust (L) of front links with lock nuts so that A is 0 to 5 mm (0 to 0.2 in.) $A = (R)-(F)$.
6. If the difference between front tip and rear tip of blade is not within the factory specification, adjust the length L of front link with bolt (3). The height of rear blade tip R should be bigger than the front

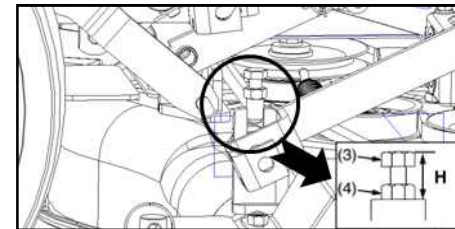
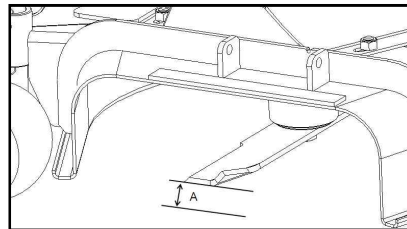
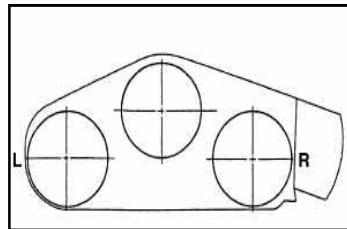
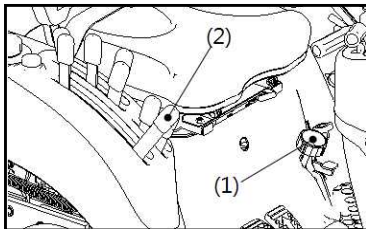


Adjusting Left and Right Cutting Height

1. Tire pressure must be correct.
2. Operate the hydraulic control lever (2) rearward to raise the mower deck to the highest position.
3. Stop the engine and remove the key.
4. Turn the cutting height control dial to the desired height.
5. Set the anti-scalp roller's height to keep clearance between rollers and ground from 6 to 13 mm (0.2 to 0.5 in.).
6. Lower the mower deck by moving the hydraulic control lever forward.
7. Turn left blade by hand parallel to tractor axle and turn right blade parallel to axle to measure from the outside blade tip at L and R to the level surface.
8. The difference between measurement should be less than 3 mm (0.12in.).
9. If the difference between measurement is more than 3 mm (0.12 in.), loosen the lock nut of the left side.
10. Adjust the cutting height fine turning bolts so that the difference between measurement L and R is less than 3 mm (0.12 in.). Then lock the nut.

Clearance (L) between stopper and rear link	Factory spec.	0 to 0.5 mm 0 to 0.01 in.
---	---------------	------------------------------

- | | |
|--------------------------------------|--------------------------------------|
| (1) Cutting Height Control Dial | L : Left Blade Measurement Position |
| (2) Hydraulic Control Lever | R : Right Blade Measurement Position |
| (3) Cutting Height Fine Turning Bolt | A : Blade Height (4) Lock Nut |



METRIC FASTENER(ISO) TORQUE CHART

Note : Use these torques. Unless special torques are specified. Values are for UNF thread fastener, plated or un-plated as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, moly-disulphide or other extreme pressure lubricant is used.												
ISO Class No.	8.8				10.9				12.9			
Bolt head identification (see note 1)												
Bolt size	LB FT		NM		LB FT		NM		LB FT		NM	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
M4	2	3	3	4	3	4	4	5	Because of the low ductility of these fasteners, the torque range is to be determined individually for each application. As a general rule, the torque ranges specified for grade 10.9 fasteners can be used satisfactorily on 12.9 fasteners *M14 is not a preferred Size.			
M5	5	6	6.5	8	7	8	9.5	11				
M6	8	9	10.5	12	11	13	15	17.5				
M8	19	23	26	31	27	32	37	43				
M10	38	45	52	61	54	64	73	87				
M12	66	79	90	75	93	112	125	150				
*M14	106	127	144	172	149	179	200	245				
M16	160	200	217	271	230	280	310	380				
M20	320	380	434	515	450	540	610	730				
M24	500	600	675	815	780	940	1050	1275				
M30	920	1100	1250	1500	1470	1770	2000	2400				
M36	1600	1950	2175	2600	2580	3090	3500	4200				

REPLACMET

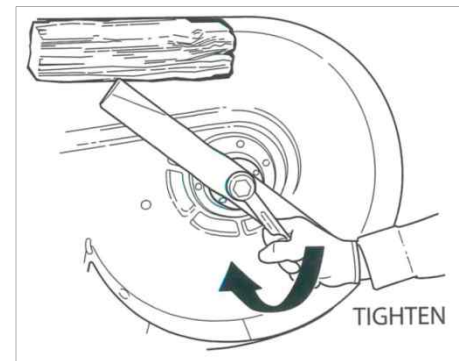
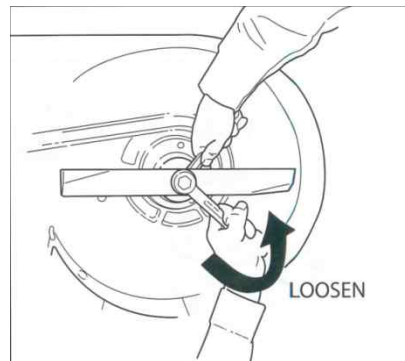
DANGER Avoid Injury - A worn or damaged blade can break, and a piece of the mower blade could be thrown into the operator's or bystander's area, resulting in serious injury or death

1. BLADE REMOVAL

Warning - Do not work under a raised mower deck unless it is securely supported by a hoist or jack stands.

Warning - Avoid injury when handling blades as they are sharp, wear leather gloves or protective wrap the blades.

Remove the blades using a wrench to loosen bolt securing the blade. A block of wood must be placed between the deck housing and the blade to assist in removal of the bolt.



2. BLADE INSTALLATION

When reinstalling the blade note orientation, the "wing" must be pointing upward the top of the deck

3. BELT REPLACEMENT

The mower deck belts should be replaced every 200 hours of mower operation, or anytime the belts shows sign of wear, cracking, or other damage.

Remove hardware securing the Left/Right Hand Belt cover to the deck.

Caution - The Idler Arm with Idler Pulley are under spring tension. To prevent possible injury, use caution when handling the Idler Arm assembly.

Place a "Breaker Bar" in the square hole provided in the Idler Arm. Carefully push the Idler Arm towards the left hand side, away from discharge opening to relieve tension from the belt. Slip the belt off of the Right hand Spindle Pulley, then carefully release the Idler Arm.

Remove the belt from the Center Spindle Pulley.

Remove the belt from the first fixed Idler Pulley.

Remove the belt from the Left Hand Spindle Pulley.

Remove the belt from the Idler Arm Pulley. Remove the belt from the Gear Box Pulley.

Remove the belt from the Second Idler Pulley.

Remove the belt from the deck and discard.

4. BELT REPLACEMENT

Route the "backside" of the belt around the fixed Idler Pulley near Gear Box.

Route belt around Gear Box Pulley

Route the belt around the Idler Arm Pulley. The "backside" of the belt will be marking contact with the Arm Pulley.

Route belt around the Left Hand Spindle Pulley.

Route the "backside" of the belt around the fixed Idler Pulley near Center Spindle.

Route belt around the Center Spindle Pulley.

Make certain the belt is properly engaged in each pulley, then place a " Breaker Bar" in the square hole provided in the Idler Arm. Carefully push the Idler Arm towards the left hand side, away from discharge opening the relieve tension. Slip the belt over the Right Hand Spindle Pulley, then carefully release the Idler Arm. Reinstall Right Hand and Left Hand Belt covers to the deck

5. GEAR BOX

Caution - Prior to operation, make sure the gear box contains the correct amount of oil

If under filled or overfilled, damage to the gear box or personnel injury may result.

The lubricant level should be checked each 24 hours of operation. After the first initial 50 hours of operation, drain the oil and refill to the proper level, Thereafter, oil changes should take place after every 250 hours of operation.

Removed plug located on side of gear box located on the side opposite of the fixed Idler Pulley

Correct oil level is to the center line of the drive shaft

PART ILLUSTRATIONS

GENERAL INFORMATION

Illustrations

The individual parts in their normal relationship to each other. Reference numbers are used in the Illustrations. These numbers correspond to those in the "Number" column and are followed by the quantity required and description.

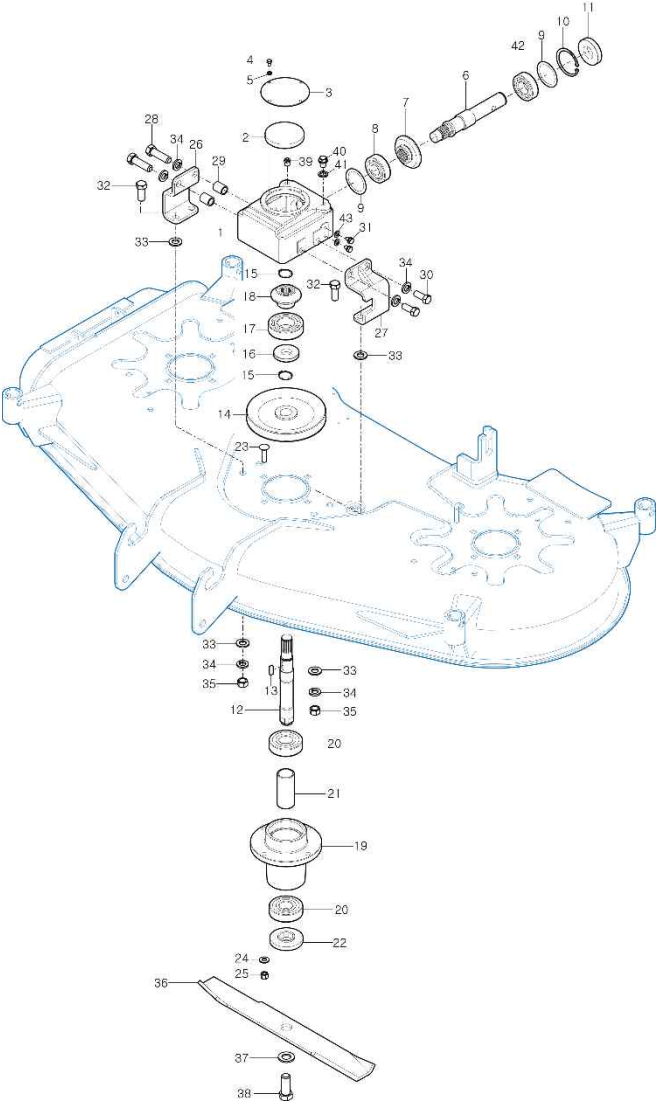
Directional Reference

"Right hand" and "left hand" sides are determined by standing at the rear of the unit and facing in the direction of forward travel.

Part Order

Orders must give the complete description, correct part number, the total amount required, the product model, all the necessary serial numbers, the method of shipment and the shipping address.

MOWER DECK SERVICE PARTS



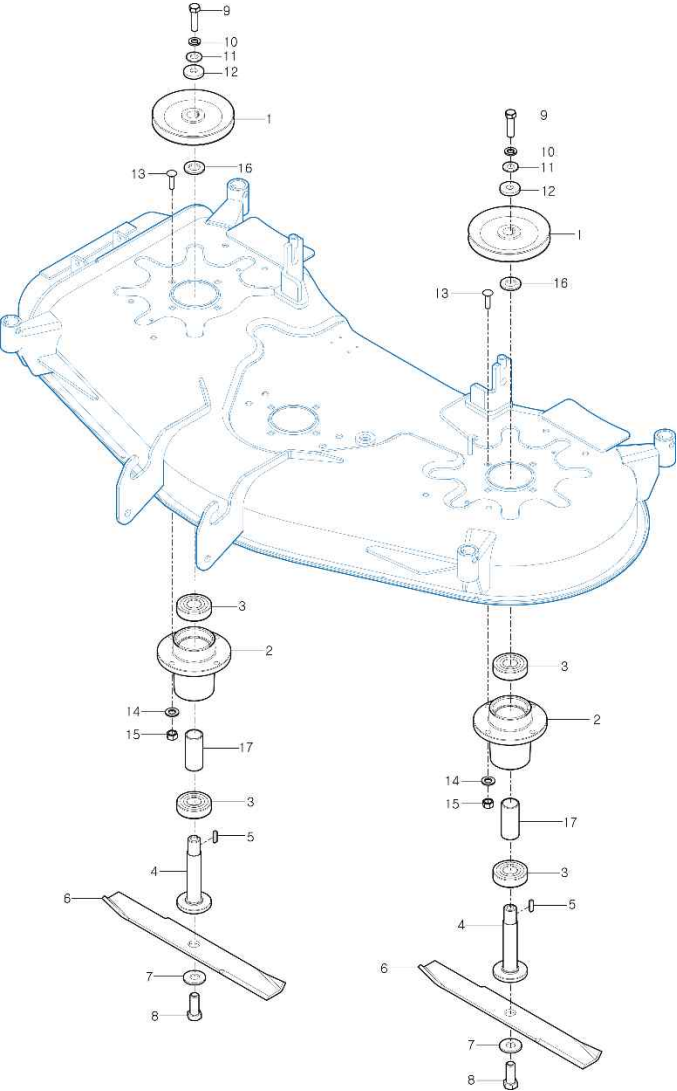
MOWER KIT SERVICE PARTS BREAKDOWN (48, 54")

KEY NO.	PART NO.	DESCRIPSTION	SPEC.	QTY.	EFFECTIVE DATE	REMARKS
001	001	93802001100	GEAR CASE	1		
001	002	14254330180	CAP, 72	1		
001	003	93802001800GB	CAP, PLATE	1		
001	004	V2004605008	BOLT, HEX	M5x8	4	
001	005	V4011600050	WASHER, SPRING	M5	4	
001	006	93802001400	SHAFT, IN		1	
001	007	93802001200	SP BEVEL GEAR, 19T	19T	1	
001	008	V6001106304	BEARING, BALL	6304	1	
001	009	93802001900	SHIM		0~2	
001	010	V7051400520	C-RING, HOLE	52	1	
001	011	V7441255210	SEAL, OIL/D	D255210	1	
001	012	93802001500	SHAFT, OUT		1	
001	013	93802001600	KEY 5x5x20	5x5x20	1	
001	014	94002000100	BLADE PULLEY		1	
001	015	V7041400220	C-RING, SHAFT	22	2	
001	016	V7441204707	SEAL, OIL/D	D20477	1	
001	017	V6001162032	BEARING, BALL	62/32	1	
001	018	93802001300	SP BEVEL GEAR, 16T	16T	1	
001	019	94002000320	HOUSING		1	
001	020	V6001506305	BEARING, BALL	6305	2	
001	021	94002000330	BUSH, HOUSING		1	
001	022	93802001700	COLLAR, BLADE		1	
001	023	94002000151	CARRIAGE BOLT	M10x35	4	
001	024	V4111600100	WASHER, PLAIN	M10	4	

MOWER KIT SERVICE PARTS BREAKDOWN (48, 54")

KEY NO.	PART NO.	DESCRIPSTION	SPEC.	QTY.	EFFECTIVE DATE	REMARKS
001	025	85402003130	NYLON NUT, M10	M10	4	
001	026	93802007100GB	PLATE COMP, GEAR BOX		1	
001	027	93802007200GB	BRACKET COMP, GEAR BOX		1	
001	028	V2003612045	BOLT, HEX	M12x45	2	
001	029	93802007300	COLLAR, GEAR BOX		2	
001	030	V2003612025	BOLT, HEX	M12x25	2	
001	031	V2003606010	BOLT, HEX	M6x10	2	
001	032	V2004612030	BOLT, HEX	M12x30	4	
001	033	V4111600120	WASHER, PLAIN	M12	8	
001	034	V4011600120	WASHER, SPRING	M12	8	
001	035	V3013600120	NUT, HEX/2	M12	4	
001	036	93802000080	BLADE , 48"		1	MM48
001	036	93902000080	BLADE , 54"		1	MM54
001	037	94002000260	BLADE WASHER		1	
001	038	V2034616035	BOLT, HEX FINE	M16x35	1	
001	039	93802000100	PLUG, DRAIN		1	
001	040	84200033800	PLUG (FLANGE BOLT)		1	
001	041	93802000150	WASHER, OIL PLUG	M8	2	
001	042	V6001106205	BEARING, BALL	6205	1	
001	043	V4011600060	WASHER, SPRING	M6	2	

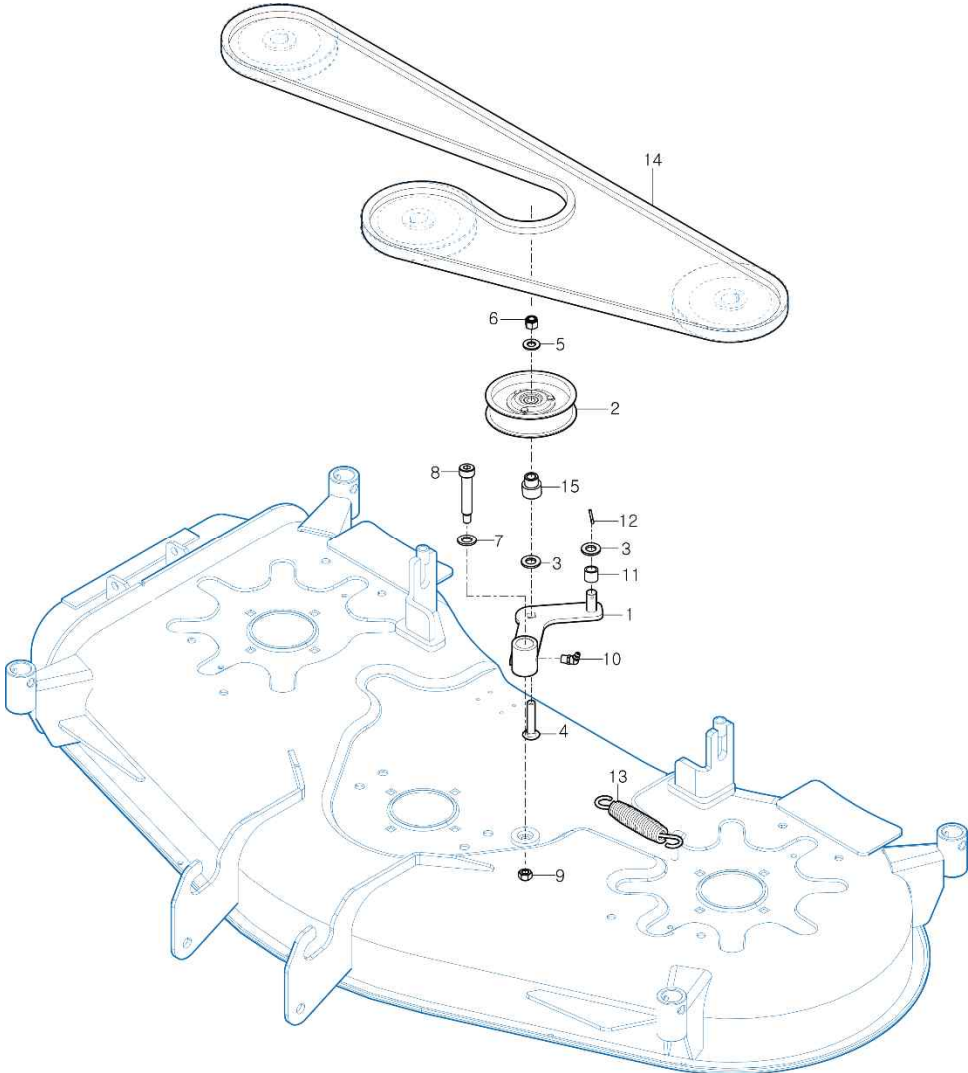
MOWER DECK SERVICE PARTS



MOWER KIT SERVICE PARTS BREAKDOWN (48, 54")

KEY NO.	PART NO.	DESCRIPSTION	SPEC.	QTY.	EFFECTIVE DATE	REMARKS
002	001	94002000100	BLADE PULLEY	2		
002	002	94002000320	HOUSING	2		
002	003	V6001506305	BEARING, BALL	4	6305	
002	004	94002000310	SHAFT	2		
002	005	94002000240	KEY, 5x5x23	2	5x5x23	
002	006	93802000080	BLADE , 48"	2		MM48
002	006	93902000080	BLADE , 54"	2		MM54
002	007	94002000260	BLADE WASHER	2		
002	008	V2034616035	BOLT, HEX FINE	2	M16x35	
002	009	V2034612040	BOLT, HEX FINE	2	M12x40	
002	010	V4011600120	WASHER, SPRING	2	M12	
002	011	V4111600120	WASHER, PLAIN	2	M12	
002	012	94002000210	WASHER, ϕ 36x6.0T	2		
002	013	94002000151	CARRIAGE BOLT	8	M10x35	
002	014	V4111600100	WASHER, PLAIN	8	M10	
002	015	85402003130	NYLON NUT, M10	8	M10	
002	016	94002000800	COLLAR, PULLEY	2		
002	017	94002000330	HOUSING, BUSH	2		

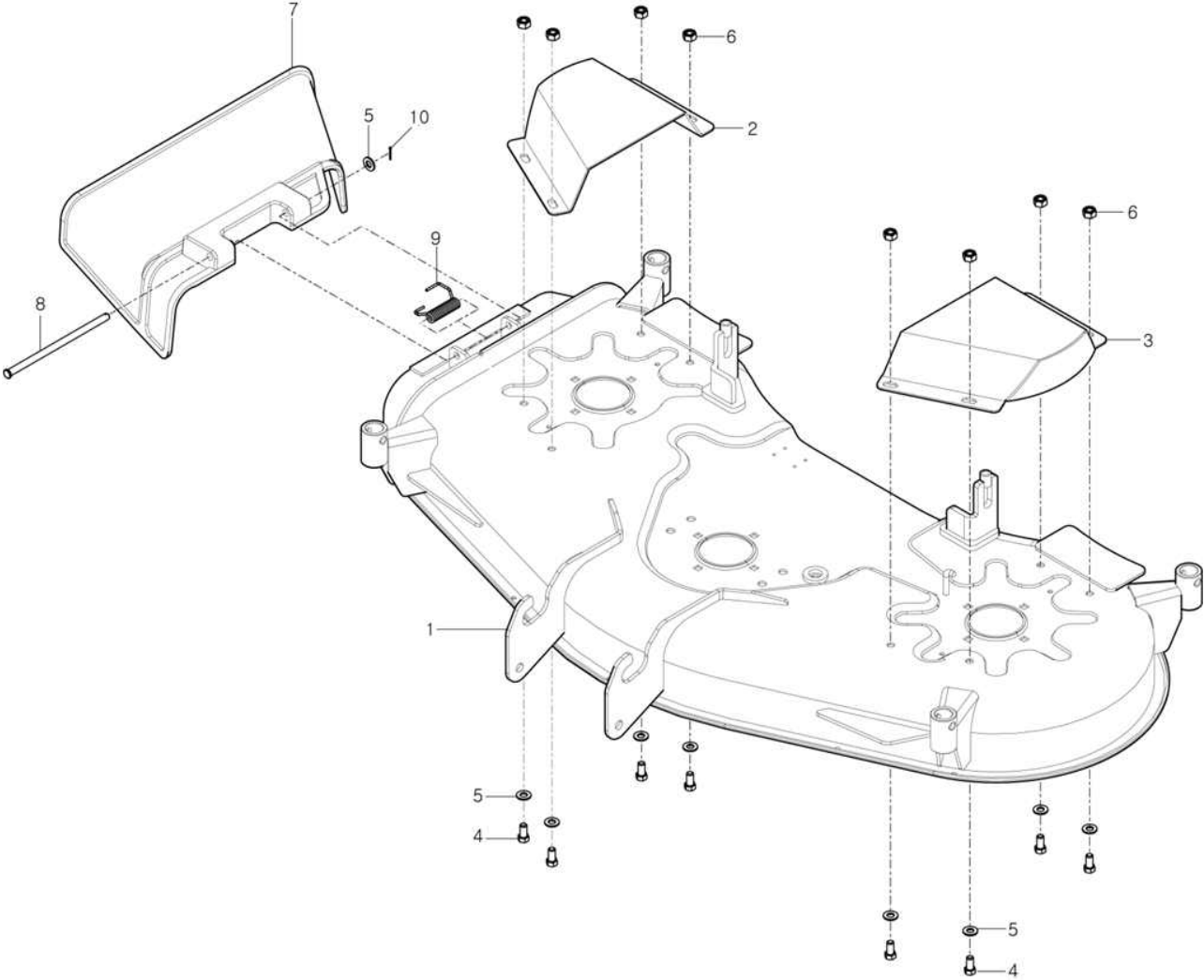
MOWER DECK SERVICE PARTS



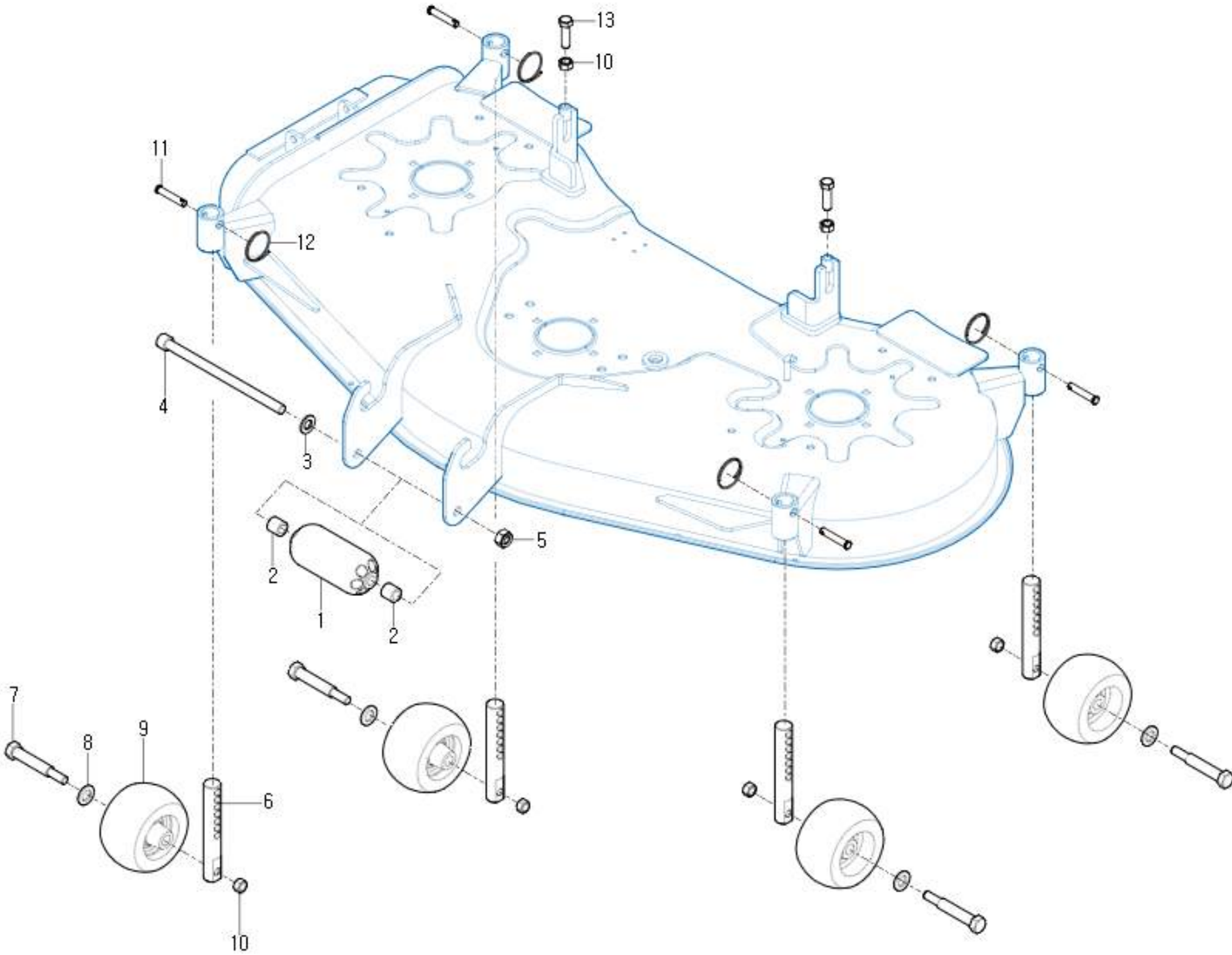
MOWER KIT SERVICE PARTS BREAKDOWN (48, 54")

KEY NO.	PART NO.	DESCRIPSTION	SPEC.	QTY.	EFFECTIVE DATE	REMARKS
003	001	93802006101GB	ARM COMP	1		
003	002	94002000400	TENSION PULLEY ASS'Y	1		
003	003	V4111600120	WASHER, PLAIN	M12	2	
003	004	94002000171	CARRIAGE BOLT	M10X60	1	
003	005	V4111600100	WASHER, PLAIN	M10	1	
003	006	85402003130	NYLON NUT , M10	M10	1	MM48
003	007	V4111600160	WASHER, PLAIN	M16	1	MM54
003	008	94002000120	STRIPPER BOLT		1	
003	009	84200001200	NYLON NUT	M12	1	
003	010	V7612000000	NIPPLE, GREASE/A-PT	A-PT1/8	1	
003	011	93802006400	COLLAR		1	
003	012	V5001930020	SPLIT PIN	3x20	1	
003	013	93802000500	TENSION SPRING ASS'Y		1	
003	014	93802000050	V-BELT , 48"	LB-103	1	MM48
003	014	93902000050	V-BELT , 54"	LB-110	1	MM54
003	015	94002000420	SHAFT, TENSION PULLEY		1	

MOWER DECK SERVICE PARTS



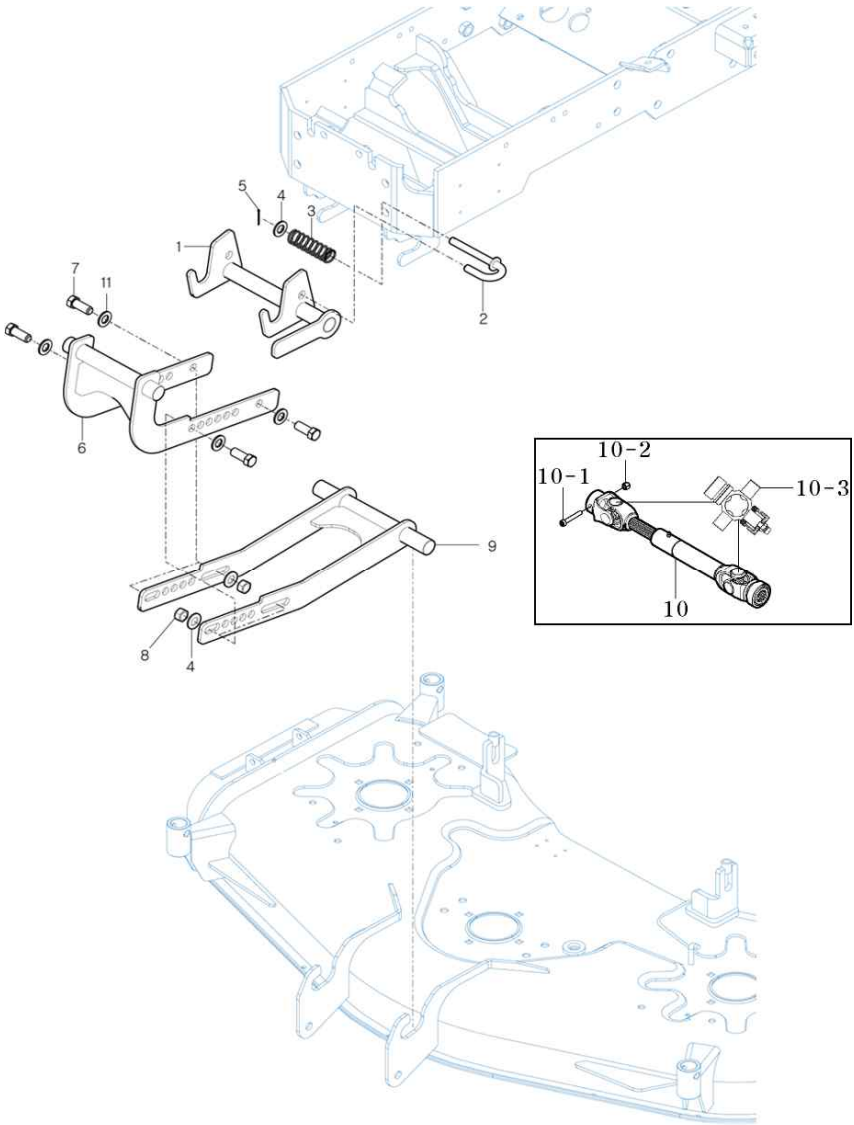
MOWER DECK SERVICE PARTS



MOWER KIT SERVICE PARTS BREAKDOWN (48, 54")

KEY NO.	PART NO.	DESCRIPSTION	SPEC.	QTY.	EFFECTIVE DATE	REMARKS
005	001	94002000011	FRONT WHEEL	1		
005	002	94002000030	COLLAR , FRONT WHEEL	2		
005	003	V4111600140	WASHER , PLAIN	M14	1	
005	004	94002000130	WRENCH BOLT	M14X230	1	
005	005	86402000140	NYLON NUT , M14	M14	1	
005	006	94002000060	SHAFT , WHEEL		4	
005	007	94002000220	M16 BOLT	M16	4	
005	008	V4111600160	WASHER , PLAIN	M16	4	
005	009	94002000070	WHEEL		4	
005	010	V3013600120	NUT , HEX/2	M12	2	
005	011	94002000110	PIN		4	
005	012	16735240060	SPRING 45		4	
005	013	W2004612045	BOLT , HEX	M12X45	2	

MOWER DECK SERVICE PARTS



MOWER KIT SERVICE PARTS BREAKDOWN (48, 54")

KEY NO.	PART NO.	DESCRIPTION	SPEC.	QTY.	EFFECTIVE DATE	REMARKS
006	001	93801006300GB	LOCK COMP	1		
006	002	94001006600	PIN COMP	1		
006	003	36714930020	SPRING , HC113	1		
006	004	V4011600140	WASHER , SPRING	M14	4	
006	005	V5001920025	SPLIT PIN	2X25	1	
006	006	93801006400GB	MOVING COMP A		1	
006	007	V2004614035	BOLT , HEX	M14X35	4	
006	008	V3013600140	NUT , HEX/2	M14	4	
006	009	93801006501GB	MOVING COMP B		1	
006	010	93801009990	UNIVERSAL JOINT ASS'Y		1	
006	010-1	V2205408050	BOLT , HEX-SOCKET	M8X50	1	
006	010-2	84200000230	NYLON NUT	M8	1	
006	010-3	94001009100	BEARING KIT		2	
006	011	V4111600140	WASHER , PLAIN	M14	5	

MM48, MM54

OPERATOR'S MANUAL FOR MID MOWER

CODE NO.

9380-800-100-1

Printed on Aug. 2018

4th EDITION

TYM TONGYANG MOOLSAN CO., LTD.

7-40, Wanggunnonggongdanji-gil,

Wanggun-myeon, Iksan-si, Jeollabuk-do , Korea

TEL : 82-063-830-2000