

USMOWER

OPERATOR'S MANUAL

EX60HDR

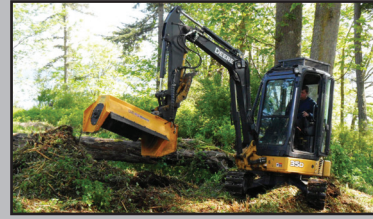
**EXCAVATOR MOUNTED
ROTARY MOWER**



11949 WESTAR LN
BURLINGTON, WA 98233
360.757.7555

WWW.USMOWER.COM

Creating Mowing Solutions



US MOWER ROTARY AND FLAIL MOWERS FOR EXCAVATOR AND SKID STEERS ARE USED BY COMMERCIAL MOWERS FOR INDUSTRIAL MOWING APPLICATIONS INCLUDING LAND CLEARING, PIPELINE MAINTENANCE, DITCH MAINTENANCE AND GENERAL HERBICIDE FREE VEGETATION MANAGEMENT. WE OFFER ROTARY MOWERS AND FLAIL MOWERS FOR BOTH SKID STEERS AND EXCAVATORS AS WELL AS COMPLETE TRACTOR INTEGRATED MOWERS FOR CASE, JOHN DEERE, NEW HOLLAND, CHALLENGER AND MCCORMICK. US MOWER EQUIPMENT IS MANUFACTURED TO HAVE A LONG, PRODUCTIVE SERVICE LIFE. MANY CONTRACT MOWERS HAVE REPORTED 5,000 OR MORE HOURS OF WORKING TIME ON THEIR MOWING EQUIPMENT. THE VERY FIRST FLAIL MOWER BUILT IN 1999 IS STILL IN USE TODAY.

ALL US MOWER FLAIL MOWERS AND ROTARY MOWERS ARE DESIGNED AND MANUFACTURED IN BURLINGTON, WA. FROM IDEA TO FINISHED PROJECT, IT ALL HAPPENS RIGHT HERE IN OUR USA FACTORY. EACH DESIGN FEATURE, MATERIAL AND COMPONENT IS CAREFULLY SELECTED TO PROVIDE THE BEST PERFORMANCE AND VALUE TO OUR CUSTOMER. WE KNOW THAT A FLAIL OR ROTARY MOWER IS A BIG INVESTMENT TO OUR CUSTOMER, SO WE MAKE IT FROM HIGH STRENGTH STEEL, DOM TUBING, AND OTHER HIGH QUALITY MATERIALS AND COMPONENTS. WE ALSO SERVICE AND STOCK EACH COMPONENT TO BUILD THE MOWERS AND OUR CUSTOMERS CAN PURCHASE THEM DIRECT FROM US MOWER OR ONE OF OUR FANTASTIC DEALERS LOCATED THROUGHOUT THE USA AND CANADA. BECAUSE WE ARE A FABRICATING MANUFACTURER, WE CAN ALSO MAKE CUSTOM MOUNTS, A VARIETY OF OPTIONS AND SPECIAL REQUESTS.



360.757.7555

TABLE OF CONTENTS

4-5	SAFETY
6	OPERATORS RESPONSIBILITY
7	ROTARY MOWER OPERATION
8-9	ROTARY MOWER MAINTENANCE
10-13	ROTARY MOWER PARTS
14	TORQUE SPECS
15	US MOWER WARRANTY

SAFETY

THE OPERATOR OF ROTARY MOWERS ON EXCAVATORS MUST BE AWARE THAT THE MOWER CAN BE LIFTED TO A HEIGHT WHERE THE PLANE OF THE ROTOR INTERSECTS WITH THE MACHINE OPERATOR. THIS CAN BE A DANGEROUS SITUATION SINCE THE ROTOR CAN THROW OFF MATERIAL JAMMED INTO IT AT ANYTIME AND IN ANY DIRECTION.

DANGER

NEVER LET THE PLANE OF THE BLADE INTERSECT WITH THE OPERATOR !!

- **STUDY OPERATOR'S MANUALS AND SAFETY DECALS FOR EXCAVATOR AND MOWER THOROUGHLY TO PREVENT MISUSE, ABUSE AND ACCIDENTS.**
- **DO NOT ALLOW CHILDREN ON OR NEAR IMPLEMENT OR EXCAVATOR. DO NOT ALLOW RIDERS ON EXCAVATOR OR IMPLEMENT. FALLING OFF MAY CAUSE SERIOUS INJURY OR DEATH BY BEING RUN OVER BY EXCAVATOR OR MOWER. KEEP CHILDREN AND PET AWAY!**
- **OPERATE WITH ROPS AND FASTENED SEAT BELT TO PREVENT INJURY AND POSSIBLE CRUSHING DEATH FROM FALLING OFF OR OVERTURN.**
- **WEAR HARD HAT, SAFETY GLASSES AND SAFETY SHOES FOR PERSONAL PROTECTION.**
- **MAKE CERTAIN THAT SMV SIGN, WARNING LIGHTS AND REFLECTORS ARE CLEARLY VISIBLE.**
- **BLOCK UP OR SUPPORT CUTTER SECURELY BEFORE PUTTING HANDS OR FEET UNDER OR WORKING UNDERNEATH LIFTED COMPONENTS TO PREVENT CRUSHING INJURY OR DEATH FROM SUDDEN, INADVERTENT DROPPING. MAKE CERTAIN AREA IS CLEAR BEFORE LOWERING.**
- **BEFORE DISMOUNTING, SECURE IMPLEMENT IN TRANSPORT POSITION OR LOWER TO GROUND. NEVER MOUNT OR DISMOUNT A MOVING VEHICLE TO PREVENT CRUSHING INJURY OR DEATH.**

FAILING TO FOLLOW SAFETY MESSAGES AND OPERATING INSTRUCTIONS CAN CAUSE SERIOUS BODILY INJURY OR EVEN DEATH TO OPERATOR AND OTHERS IN THE AREA. YOUR MOWER IS A POWERFUL INDUSTRIAL MACHINE WITH SUBSTANTIAL CAPACITY TO CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR EVEN DEATH WHEN USED IMPROPERLY OR WITHOUT PROPER SAFETY EQUIPMENT.

BEFORE YOU START!!

READ THE SAFETY MESSAGES ON THE IMPLEMENT AND IN YOUR MANUAL. US MOWER HAS DESIGNED THIS IMPLEMENT TO BE USED WITH ALL ITS SAFETY EQUIPMENT PROPERLY ATTACHED TO MINIMIZE THE CHANCE OF INJURY IN THE EVENT OF AN ACCIDENT. THERE IS NO SUBSTITUTE FOR AN INFORMED, CAUTIOUS, SAFE-MINDED OPERATOR WHO RECOGNIZES POTENTIAL HAZARDS AND FOLLOWS GOOD SAFETY PRACTICES.

- STUDY OPERATOR'S MANUALS AND SAFETY DECALS FOR EXCAVATOR AND CUTTER THOROUGHLY TO PREVENT MISUSE, ABUSE AND ACCIDENTS.
- DO NOT ALLOW RIDERS ON EXCAVATOR OR IMPLEMENT. FALLING OFF MAY CAUSE SERIOUS INJURY OR DEATH BY BEING RUN OVER BY EXCAVATOR OR CUTTER. KEEP CHILDREN AWAY!
- OPERATE WITH ROPS AND FASTENED SEAT BELT TO PREVENT INJURY AND POSSIBLE CRUSHING DEATH FROM FALLING OFF OR EXCAVATOR OVERTURN.
- WEAR HARD HAT AND SAFETY GLASSES FOR PERSONAL PROTECTION.
- MAKE CERTAIN THAT SMV SIGN, WARNING LIGHTS AND REFLECTORS ARE CLEARLY VISABLE.
- BLOCK UP OR SUPPORT CUTTER SECURELY BEFORE PUTTING HANDS OR FEET UNDER OR WORKING UNDERNEATH LIFTED COMPONENTS TO PREVENT CRUSHING INJURY OR DEATH FROM SUDDEN, INADVERTENT DROPPING. MAKE CERTAIN AREA IS CLEAR BEFORE LOWERING.
- FOLLOW LOCAL TRAFFIC CODES. SLOW DOWN AT NIGHT, IN TURNS, AND ON HILLSIDES.
- BEFORE DISMOUNTING, SECURE IMPLEMENT IN TRANSPORT POSITION OR LOWER TO GROUND. DISENGAGE INTERLOCK, TURN OFF MACHINE. NEVER MOUNT OR DISMOUNT A MOVING VEHICLE TO PREVENT CRUSHING INJURY OR DEATH.

THERE ARE OBVIOUS AND HIDDEN POTENTIAL HAZARDS INVOLVED IN THE OPERATION OF THIS BOOM MOWER. SERIOUS INJURY OR DEATH MAY OCCUR UNLESS CARE IS TAKEN TO INSURE THE SAFETY OF BOTH THE OPERATOR AND OTHER PERSONS IN THE AREA. THE FOLLOWING IS A LIST OF SOME SAFEGUARDS WHICH SHOULD BE FOLLOWED.

- THE OPERATOR AND SUPPORT PERSONNEL SHOULD WEAR SAFETY GLASSES AND HARD HATS TO PROTECT THEM AGAINST ITEMS THROWN BY THE MACHINE.
- OPERATE THE MOWER ONLY WITH AN EXCAVATOR EQUIPPED WITH AN APPROVED ROLL-OVER-PROTECTION SYSTEM (ROPS). WEAR APPROVED SEAT BELTS WHILE RUNNING THE EXCAVATOR.
- BEFORE LEAVING THE EXCAVATOR SEAT, TURN THE ENGINE OFF, AND WAIT FOR ALL MOVING PARTS TO STOP. NEVER MOUNT OR DISMOUNT A MOVING EXCAVATOR. OPERATE THE CONTROLS FROM THE EXCAVATOR SEAT ONLY.
- STOP MOWING IF CARS OR PEOPLE ARE WITHIN 100 YARDS! MOWERS ARE CAPABLE OF THROWING OBJECTS FOR GREAT DISTANCES AND INFLECTING SERIOUS INJURY. **WATCH YOUR SAFETY ZONE!!**
- KEEP THE BOOM AND MOWER HEAD AT LEAST 10 FEET FROM ELECTRIC LINES AND PIPE LINES TO PREVENT ACCIDENTAL CONTACT.

- REMOVE OBJECTS WHICH CAN BECOME ENTANGLED IN THE OPERATING PARTS OF THE MOWER HEAD SUCH AS WIRE, CABLE, ROPE, CHAIN, ETC. FROM THE CUTTING AREA. THESE ITEMS COULD THEN SWING OUTSIDE THE HOUSING AT GREATER VELOCITIES THAN THE BLADES, CREATING AN EXTREMELY DANGEROUS CONDITION.
- NEVER ATTEMPT TO LIFT, PULL, OR PUSH OTHER OBJECTS WITH THE BOOM OR MOWER HEAD.
- NEVER WALK OR WORK UNDER ANY RAISED BOOM OR MOWER HEAD. ALWAYS LOWER THE BOOM AND MOWER HEAD FLAT ON THE GROUND OR SUPPORT ON SAFETY STANDS. SERIOUS BODILY INJURY OR DEATH COULD OCCUR IF THE BOOM OR MOWER HEAD SHOULD FALL.
- THE BOOM AND MOWER HEAD CHANGE THE BALANCE OF THE MACHINE IN TRANSPORT. BE ESPECIALLY CAREFUL WHEN TRANSPORTING ON SLOPES. NEVER TURN UPHILL IN TRANSPORT EXCEPT AT SLOW SPEED AND A LOW RATE OF TURN. NEVER TRANSPORT OR OPERATE THIS MACHINE ON STEEP SLOPES (15% OR MORE).
- FOR ROTARY MOWERS, POLYCARBONATE (LEXAN) PROTECTION MUST BE ADDED TO EXCAVATOR WINDOWS FOR OPERATOR SAFETY. ADDITIONAL SHIELDING OF THE BATTERY BOX IS RECOMMENDED.
- INSPECT THE ENTIRE MACHINE THROUGHOUT THE DAY AND BEFORE USING. LOOK FOR LOOSE BOLTS, WORN OR BROKEN PARTS, PINCHED HYDRAULIC HOSES, AND LEAKY OR LOOSE FITTINGS. SERIOUS INJURY MAY OCCUR FROM NOT MAINTAINING THIS MACHINE IN GOOD WORKING ORDER.
- ALWAYS MAINTAIN THE SAFETY DECALS IN GOOD READABLE CONDITION. IF THE DECALS BECOME DAMAGED OR UNREADABLE, REORDER THEM IMMEDIATELY.
- PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS. WE RECOMMEND THAT YOU WEAR HEARING PROTECTION ON A FULL-TIME BASIS IF THE NOISE IN THE OPERATOR'S POSITION EXCEEDS 80DB. NOISE OVER 85DB ON A LONG-TERM BASIS CAN CAUSE SEVERE HEARING LOSS. NOISE OVER 90DB NEXT TO THE OPERATOR OVER A LONG TERM BASIS MAY CAUSE PERMANENT, TOTAL HEARING LOSS. NOTE: HEARING LOSS FROM LOUD NOISE IS CUMULATIVE OVER A LIFETIME WITHOUT HOPE OF NATURAL RECOVERY.
- ESCAPING FLUID UNDER PRESSURE CAN PENETRATE THE SKIN CAUSING SERIOUS INJURY. RELIEVE PRESSURE BEFORE UNHOOKING HYDRAULIC OR OTHER LINES. TIGHTEN ALL CONNECTIONS BEFORE APPLYING PRESSURE. KEEP HANDS AND BODY AWAY FROM PIN HOLES AND NOZZLES WHICH EJECT FLUIDS UNDER HIGH PRESSURE. USE A PIECE OF CARDBOARD TO SEARCH FOR LEAKS. IF ANY FLUID IS INJECTED INTO THE SKIN, IT MUST BE SURGICALLY REMOVED WITHIN A FEW HOURS BY A DOCTOR FAMILIAR WITH THIS TYPE OF INJURY. CALL DOCTOR IMMEDIATELY.
- WHEN WORKING IN CONGESTED AREAS AND OR AREAS WITH POOR SIGHT DISTANCE FOR PEOPLE, VEHICLE TRAFFIC, OR HOUSES POSITION FRONT FEEDER GATE IN CLOSED POSITION.
- THE OPERATOR OF ROTARY MOWERS MUST BE AWARE THAT THE MOWER CAN BE POSITIONED SO THAT THE PLANE OF THE ROTOR INTERSECTS WITH THE MACHINE OPERATOR. THIS CAN BE A DANGEROUS SITUATION SINCE THE ROTOR CAN THROW OFF MATERIAL JAMMED INTO IT AT ANYTIME AND IN ANY DIRECTION.
- EXTREME CARE SHOULD BE TAKEN WHEN OPERATING NEAR LOOSE OBJECTS SUCH AS GRAVEL, ROCKS OR GENERAL DEBRIS. THESE OBJECTS SHOULD BE REMOVED OR AVOIDED TO PREVENT INJURY FROM THROWN OBJECTS. NOTE: WHERE THERE ARE GRASS AND WEEDS HIGH ENOUGH TO HIDE DEBRIS THAT COULD BE STRUCK BY THE BLADES, THE AREA SHOULD BE INSPECTED. MOW CLEARED AREA AT AN INTERMEDIATE HEIGHT, INSPECT CLOSELY FOR REMAINING DEBRIS AND REMOVE. MOW AGAIN AT DESIRED FINAL HEIGHT.

OPERATOR'S RESPONSIBILITY

PRIOR TO OPERATING A MOWER, REGARDLESS OF TIME OF DAY PERFORM A "WALK THROUGH" OF IMPLEMENT

DAILY MAINTENANCE AND "WALK THROUGH" SHOULD BE PERFORMED 3 TIMES A DAY.

DAILY MAINTENANCE AND "WALK THROUGH" SHOULD BE PERFORMED 3 TIMES A DAY.

DURING A "WALK THROUGH" YOU ARE LOOKING FOR THE FOLLOWING ITEMS:

- LOOSE, WORN OR MISSING BOLTS.
- BROKEN OR MISSING BOOM AND/OR HYDRAULIC CYLINDER PINS
- FATIGUE CRACKED BOOM SECTIONS.
- FATIGUE CRACKS IN MOWER HEAD.
- HYDRAULIC OIL LEVEL .
- HYDRAULIC OIL LEAKS.
- PINCHED OR WORN HYDRAULIC HOSES.
- HYDRAULIC HARD LINE CIRCUITS PROPERLY FASTENED.
- SPINDLE PRE-LOAD CHECK FOR BAR OR DISC ON ROTARY HEAD.
- BLADE OR BLADE BOLT FOR WEAR.
- BLADE BOLT NUTS SECURED/ROLL PINS INSTALLED?

CHECK CONDITION OF:

- BLADES
- FRONT AND REAR DISCHARGE SHIELDS
- BLADE BAR, DISC OR PAN
- FLAIL SHAFT
- MISSING OR BROKEN FLAIL KNIVES.
- SKID SHOES

MECHANICAL FAILURES CAN LEAD TO SERIOUS ACCIDENTS. NEVER TAKE FOR GRANTED THAT SOMEONE ELSE HAS INSPECTED YOUR MACHINE. ALWAYS PERFORM YOUR DAILY "WALK THROUGH" FOR MAXIMUM SAFETY AND PERFORMANCE OF THIS IMPLEMENT.

TECH TIP: THIS LIST IS A MINIMUM! ALWAYS BE LOOKING FOR POSSIBLE SOURCES OF FAILURE. LISTEN WHILE OPERATING. IF YOU HEAR SOUNDS THAT AREN'T NORMAL FOR THE IMPLEMENT STOP, SHUT THE MACHINE DOWN AND EXECUTE A THROUGH WALK THROUGH. IF AT ANY TIME YOU FIND ONE OF THESE PROBLEMS LISTED OR ANY OTHER PROBLEM THAT COULD LEAD TO A SOURCE OF FAILURE, DO NOT OPERATE MACHINE UNTIL PROPER REPAIR HAS BEEN MADE.

INDUSTRIAL MOWERS BY NATURE ARE DANGEROUS. DO NOT OPERATE THIS EQUIPMENT WHEN THERE IS EVIDENCE OF A FAILURE OR SOON TO BE FAILURE. REMEMBER THE ULTIMATE RESPONSIBILITY IS ON THE OPERATOR.

MID DAY GREASING AND SECOND "WALK THROUGH"

TECH TIP: FOR BEST RESULTS GREASING AT MID DAY ALLOWS TIME FOR PINS AND GREASE TO WARM. GREASING WHEN MACHINE AND GREASE ARE COLD WILL TYPICALLY GIVE LESS EFFECTIVE RESULTS.

AT MID DAY GREASING PERFORM THE SECOND "WALK THROUGH" OF THE DAY. LOOKING FOR AND PHYSICALLY CHECKING THE SAME ITEMS AS YOUR INITIAL "WALK THROUGH".

GREASING: ALL PIN LOCATIONS THAT HAVE BUSHINGS REQUIRE DAILY (EVERY 8 HOURS OF OPERATION) GREASING. ONE TO THREE PUMPS PER DAY PER GREASE FITTING (PER PIN).

EXCEPTION: SPINDLE HOUSING ON ROTARY MOWERS REQUIRE 12-15 PUMPS PER DAY MORE OR LESS AT EVERY 8 HOUR INTERVAL OR UNTIL GREASE ESCAPES FROM RELIEF PORT WHEN SPINDLE IS HOT. NLGI#0 LITHIUM IS RECOMMENDED FOR SPINDLE LUBE ONLY.

FINAL "WALK THROUGH"

THE FINAL WALK THROUGH IS VITAL TO A GOOD MAINTENANCE PROGRAM. THIS WALK THROUGH GIVES THE OPERATOR THE OPPORTUNITY TO DETECT ANY SOURCE OF FAILURE GIVING THE MECHANICS TIME TO REPAIR OR ORDER REPLACEMENT PARTS.

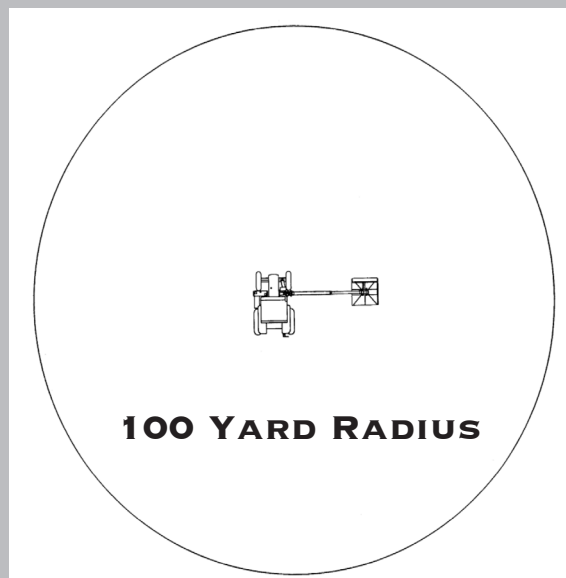
ROTARY MOWERS ARE A VERY EFFICIENT CUTTERS, BUT CARELESS USE CAN EASILY LEAD TO PROPERTY DAMAGE, INJURY OR EVEN DEATH. THE BLADE BAR, BLADES AND BLADE BOLTS ON US MOWER ROTARY MOWERS WEIGH APPROXIMATELY 170 LBS. THE BLADE TIP VELOCITY IS ABOUT 350 FT. PER SECOND. THE SPEED AND WEIGHT GIVES THESE MOWERS THE ABILITY TO ACCELERATE ROCKS AND DEBRIS INTO DANGEROUS PROJECTILES. WHEN USING ROTARY MOWERS, THOUGHT SHOULD ALWAYS BE GIVEN TO WHERE A PROJECTILE FROM THE DECK MIGHT GO. ALWAYS MAINTAIN A 100-YARD SAFETY ZONE. KEEP THIS ZONE FREE OF PEOPLE, VEHICLES AND ANYTHING YOU DO NOT WANT HARMED. IF SOMETHING OR SOMEONE IS IN THE 100-YARD DANGER ZONE, SHUT DOWN IMMEDIATELY. DO NOT TAKE UNNECESSARY RISKS.

SAFETY IS NO ACCIDENT——MAINTAIN A 100 YARD RADIUS SAFETY ZONE

SAFETY TIPS:

- MOVE THE CUTTER DECK IMMEDIATELY IF THE PLANE OF A ROTATING BLADE INTERSECTS PEOPLE OR PROPERTY. DEBRIS LODGED IN THE BAR MIGHT COME LOOSE AND EXIT THE SHROUD IN ANY DIRECTION.
- DO NOT EXIT THE CAB UNTIL THE ROTOR HAS STOPPED.
- DO NOT OPERATE THE MOWER OVER GRAVEL OR LOOSE DEBRIS, AS THIS MATERIAL CAN EASILY BE VACUUMED INTO THE BLADES. LOOK OUT FOR ROPE, CABLE OR CHAINS.
- IF ENTANGLEMENT OCCURS, IMMEDIATELY HIT THE MOWER CONTROL SWITCH ON THE ARM-REST FOR SHUT DOWN. CLEAR ENTANGLEMENT BEFORE CONTINUING.
- KEEP THE BOOM AND DECK CLEAR OF ELECTRICAL POWER LINES.
- BE CAREFUL WHEN THE MOWER IS ON SLOPES, MOWER MOUNTED MACHINES ARE VULNERABLE TO OVERTURNING.
- USE A RADIO EQUIPPED FLAGGER WHEN MOWING IN AREAS WHERE FORWARD SIGHT LINE IS BLOCKED BY A CURVE OR OBSTRUCTION AND TRAFFIC MAY APPEAR. INSTALL GUARDS THAT MEET THE ISO 8084 STANDARD TO PROTECT OPERATOR.

SAFETY ZONE



SAFETY ZONE

**ALLOW ALL VEHICLES TO PASS THROUGH TO OPERATING
“SAFETY ZONE” BEFORE CONTINUING CUTTING.**

OPERATOR AWARENESS IS KEY TO THE SAFETY OF THIS MACHINE. NEVER OPERATE OR CONTINUE TO OPERATE THIS MACHINE WHEN THERE IS A PERSON OR MOVING VEHICLE WITHIN 100 YARDS OF THE CUTTING OPERATION. IF A PERSON IS WITHIN (100 YARD RADIUS) SHUT THE MACHINE DOWN UNTIL THE PERSON HAS BEEN ADVISED OF DANGER AND HAS VACATED INTO THE “SAFETY ZONE “ AREA.

SPINDLE HOUSING MAINTENANCE

OTHER THAN KEEPING THE BEARINGS WELL GREASED, THE SINGLE MOST IMPORTANT FACTOR TO LONGEVITY OF THE SPINDLE ASSEMBLY IS BEARING PRE-LOAD. BEARING PRE-LOAD MUST BE MAINTAINED. PRE-LOAD IS PROVIDED BY THE SPINDLE NUT AT THE TOP OF THE SPINDLE. THE TORQUE ON THIS NUT SHOULD BE CLOSE TO 40 FT. LBS. PRE-LOAD MAY NEED ADJUSTMENT AFTER SEVERAL HARD GROUND STRIKES. A HELICOPTER LIKE NOISE, WHEN THE PLANE OF THE DECK IS CHANGED, IS A CLEAR INDICATION OF THE NEED FOR PRE-LOAD ADJUSTMENT. IF IN DOUBT, MANUALLY EXAMINE PRE-LOAD.

SET DECK IN A VERTICAL POSITION AND GRIP EDGES OF THE BLADE BAR WHILE ALTERNATELY PULLING HARD ON ONE SIDE AND PUSHING HARD ON THE OTHER. IF ANY PLAY CAN BE DETECTED PRE-LOAD ADJUSTMENT IS NEEDED.

ASSEMBLING THE SPINDLE HOUSING (USE HEAT TO REMOVE SPINDLE NUT)

IF THE SPINDLE HOUSING ASSEMBLY MUST BE REASSEMBLED THE FOLLOWING STEPS CAN HELP ENSURE THE PERFORMANCE AND LONGEVITY OF THE UNIT:

1. CLEAN THE HOUSING AND SPINDLE, REMOVING ALL METAL CHIPS, PAINT, DIRT, USED GREASE AND OTHER CONTAMINANTS.
2. PLACE THE SPINDLE HOUSING MOTOR SIDE UP INSERT SMALL CUP AND FLIP OVER, INSERT LARGE RACE. BE CERTAIN RACES ARE COMPLETELY BEDDED.
3. PACK LARGE BEARING WITH NLGI#0 LITHIUM GREASE AND INSERT. CLEAN OFF EXCESS GREASE AFTER INSERTING.
4. INSERT SPACER WITH WIDEST LIP FACING UP, APPLY RETAINING COMPOUND TO INNER BEARING WHERE SPINDLE GOES. THEN INSERT SPINDLE SEAL WITH SOLID FACE OUTWARD.
5. PRESS CLEANED SPINDLE DOWN INTO SPINDLE HOUSING.
6. FLIP HOUSING OVER AND FILL CAVITY WITH GREASE.
7. GREASE AND PRESS IN SMALL BEARING. USE RETAINING COMPOUND ON INNER SURFACE.
8. APPLY LOCKTITE 243 TO SET SCREWS AND SCREW INTO SPINDLE NUT.
9. APPLY LOCKTITE 262 TO THREADS AND HAND THREAD SPINDLE NUT ONTO SPINDLE. (NUT IS LEFT HAND THREAD AND ONLY GOES ON ONE WAY. IF IT DOESN'T THREAD ON, FLIP OVER AND HAND THREAD ON AGAIN). FOLLOW ADJUSTING PRE-LOAD INSTRUCTIONS BELOW

ADJUSTING PRE-LOAD

1. ADJUST THE TWO LOCK SCREWS ON THE NUT SO THAT THE NUT WILL HAVE SOME DRAG WHEN TURNED ON THE SPINDLE.
2. APPLY RED LOCKTITE TO SPINDLE NUT, TIGHTEN TO 40 FT. LBS., THEN TURN THE SPINDLE 3-4 TURNS.
3. BACK OFF NUT 1/4 TURN. TIGHTEN TO 35 FT. LBS.
4. TAP THE TOP OF SPINDLE NUT AROUND IT'S PERIMETER WITH SMALL HAMMER TO SET THE SPINDLE NUT THREADS. TIGHTEN LOCK SCREWS. TAP AGAIN. DO THIS UNTIL THE LOCK SCREWS WILL NOT TIGHTEN FURTHER.
5. TOP OFF WITH GREASE.
6. APPLY O RING TO MOTOR END OF SPINDLE HOUSING.
7. BE SURE TO APPLY RED LOCKTITE TO MOTOR HOUSING BOLTS.
8. WITH THE MOTOR IN PLACE, PUMP GREASE INTO THE ASSEMBLY THROUGH THE GREASE WHIP UNTIL THE HOUSING IS FILLED. INCLUDING GREASE USED FOR ASSEMBLY, THE ASSEMBLY SHOULD TAKE 3 TUBES OF GREASE. US MOWER RECOMMENDS HIGH QUALITY NLGI#0 LITHIUM BASE. (CALCIUM BASE GREASE IS USEFUL FOR VERY WET CONDITIONS.)

PRE-LOAD CAN BE LOST OVER TIME OR FROM HARD STRIKES WITH THE BLADE BAR. TO CHECK PRE-LOAD, STAND THE MOWER DECK ON EDGE, GRASP ONE END OF THE BLADE BAR AND ROCK IT TOWARDS AND AWAY FROM THE MOWER DECK. IF YOU CAN FEEL THE BAR MOVE, THE PRE-LOAD SHOULD BE RESET. THE SPINDLE HOUSING SHOULD BE GREASED EVERY 8 HOURS OF MOWING: MORE OFTEN IN SEVERE CONDITIONS (I.E. UNDER WATER, VERY DUSTY OR SANDY CONDITIONS).

BLADE BAR ASSEMBLY

INSPECT BLADE BAR AND BOLTS DAILY FOR EXCESSIVE WEAR, CRACKS AND TIGHTNESS.

TO LOOSEN BLADE BOLTS, FOLLOW THESE INSTRUCTIONS:

1. LOCK BAR OR DISC INTO A SOLID POSITION BY PLACING A PIECE OF WOOD BETWEEN THE ROTOR AND THE ROTOR GUARD.
2. DRIVE OUT ROLL PIN IN CASTLE NUT WITH 1/4" ROUND PUNCH.
3. REMOVE BLADE BOLT NUT WITH 1 13/16" SOCKET OR BOX WRENCH.
4. WITH BLADE HANGING IN RELAXED POSITION, STRIKE BLADE WITH HAMMER UNTIL BOLT COMES LOOSE IN ITS HOLE. REMOVE BOLT AND BLADE FROM ROTOR.

BLADES SHOULD ALWAYS BE REPLACED IN PAIRS. BLADES OF DIFFERENT WEIGHTS CAN CAUSE SERIOUS IMBALANCE AND DAMAGE TO THE MACHINE AND PERSONNEL. WHEN REPLACING BLADES, CHECK THE CONDITION OF THE BLADE BOLTS AND NUTS.

REPLACE BOLT IF IT SHOWS SIGNIFICANT WEAR OR DAMAGE OR HAS THE SLIGHTEST INDICATION OF A CRACK. ROTARY MOWERS TAKE AND DELIVER A TERRIFIC BEATING. SHOCK AND VIBRATION LEVELS ARE VERY HIGH SO BOLTS LOOSEN. IT IS IMPORTANT TO CHECK FOR LOOSE OR MISSING BOLTS AT LEAST ONCE A DAY AND TWICE IF CUTTING HAS BEEN PARTICULARLY TOUGH. BLADE BOLTS ARE DESIGNED TO BE USED TWICE IF WEAR IS NOT ADVANCED. SIMPLY ROTATE THE BOLT 90 DEGREES AND RETIGHTEN. THE SQUARE SHOULDERS ON THE BOLT ARE INTENDED FOR JUST THIS PURPOSE.

ALWAYS USE NEW NUTS WITH NEW BLADE BOLTS.

APPLY ANTI-SEIZE COMPOUND TO THE BOLT THREADS AND TIGHTEN TO 75 FT. LBS. MAX.

INSTALL NEW ROLL PIN.

BLADES ARE TWO SIDED AND CAN BE TURNED OVER IF ONLY WORN ON ONE SIDE, BUT DO NOT REUSE IF BENT. ALWAYS REPLACE BLADES WHEN THEY ARE EXCESSIVELY BENT, DEFORMED, OR OUT OF BALANCE.

SEE DIAGRAM ON PAGE 12 FOR BLADE BAR EXPLODED VIEW

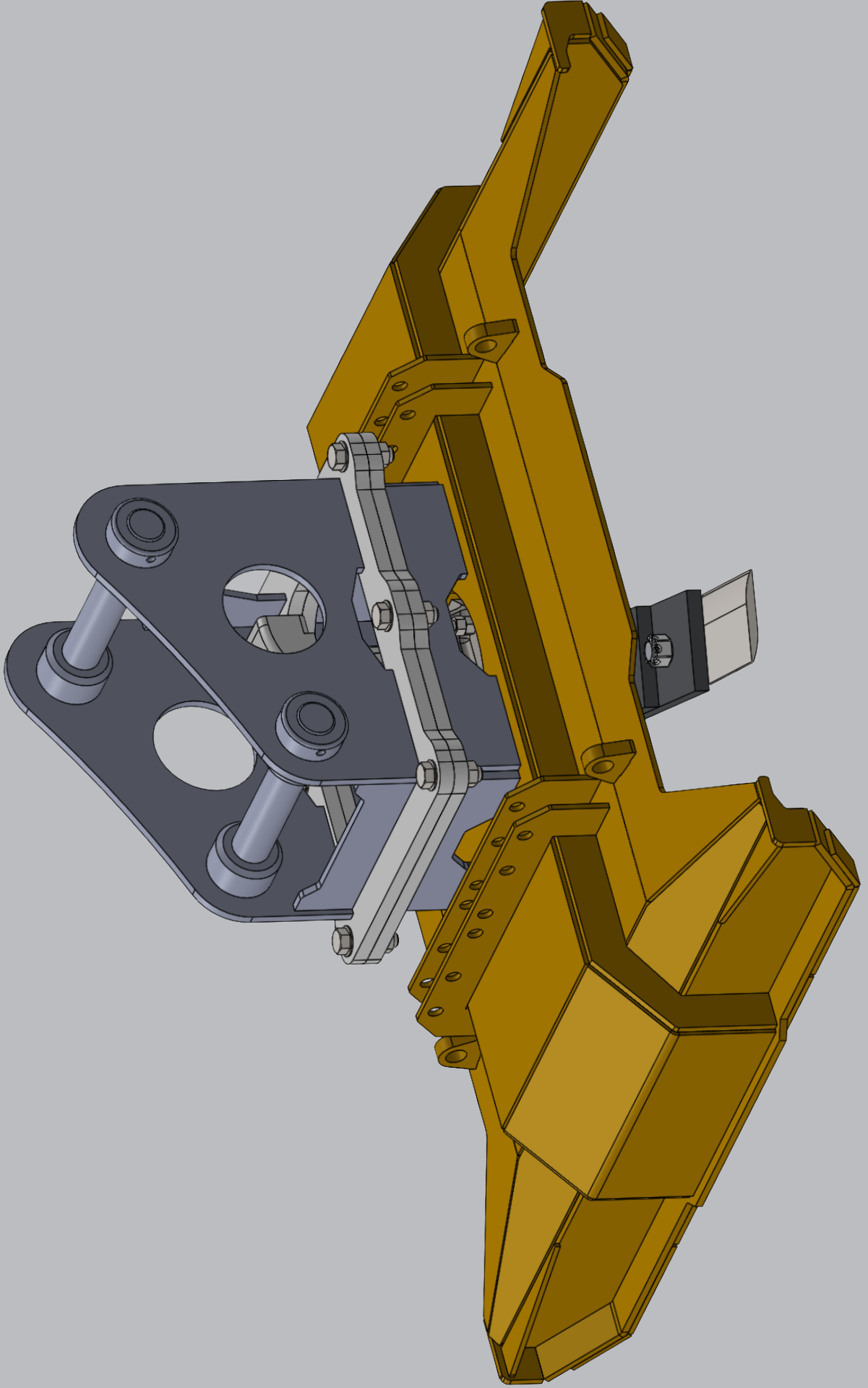
ROTARY BLADE KIT

PART #2564243

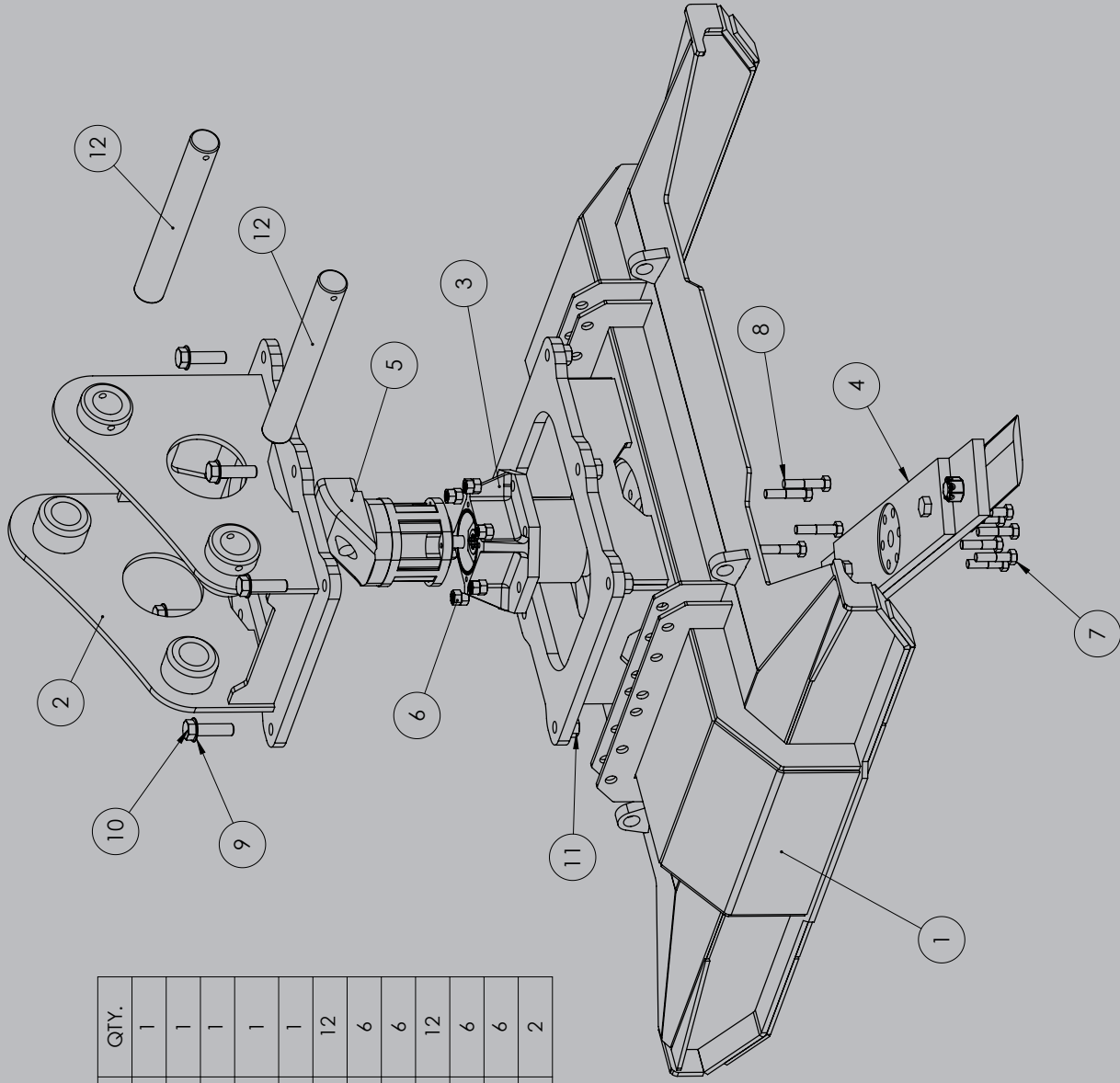
**(INCLUDES 2 BLADES, 2 ROTARY BLADE BOLTS,
2 SLOTTED NUT, 2 ROLL PIN)**

Rotary Mower Parts

EX60SHDR



COMPLETE ASSEMBLY

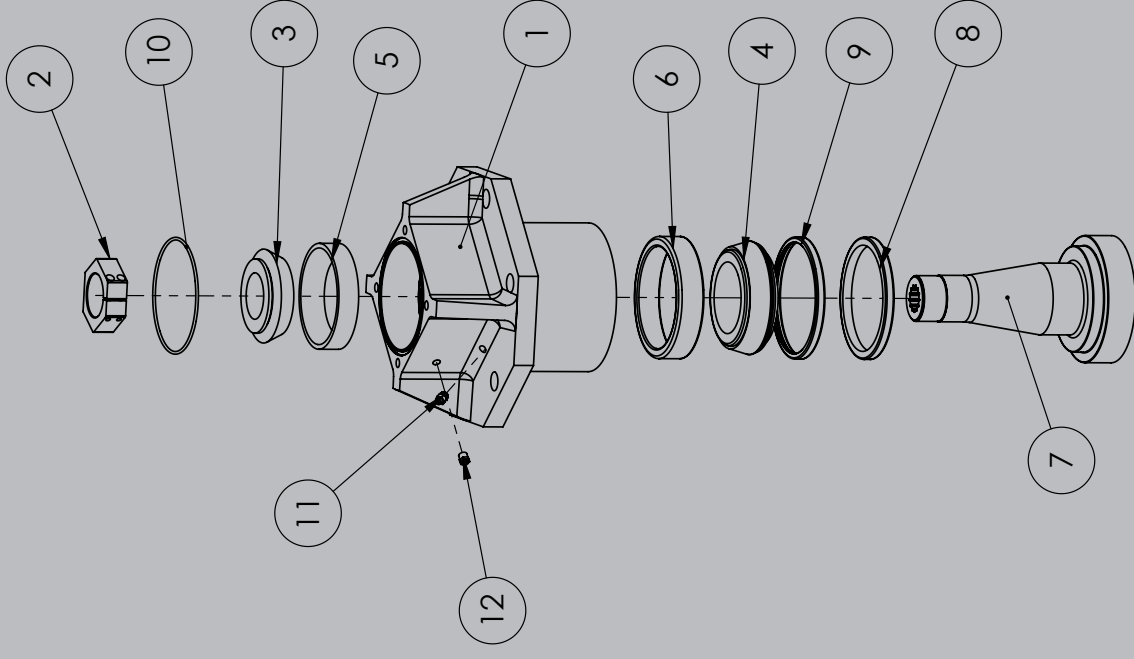


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	2564469	Super EX 60 RHMDG	1
2	2601254	KOBELCO SK140SR	1
3	2559479	Rotary Spindle Housing Assembly	1
4	60 BLADE BAR ASSEMBLY	60" BLADE BAR ASSEMBLY	1
5	piston Motor	90cc	1
6	2600239	3/4"-16 Top lock Nut	12
7	2560047	3/4"-16 x 3 Grade 8 Bolt	6
8	2558973	3/4"-16 x 3.5 Grade 8 Bolt	6
9	2561091	1" Flat Washer	12
10	2558518	1"-8 x 3" Grade 8 Bolt	6
11	2556400	1"-8 Top lock nut	6
12	2601263	65MM Pin	2

Rotary Mower Parts

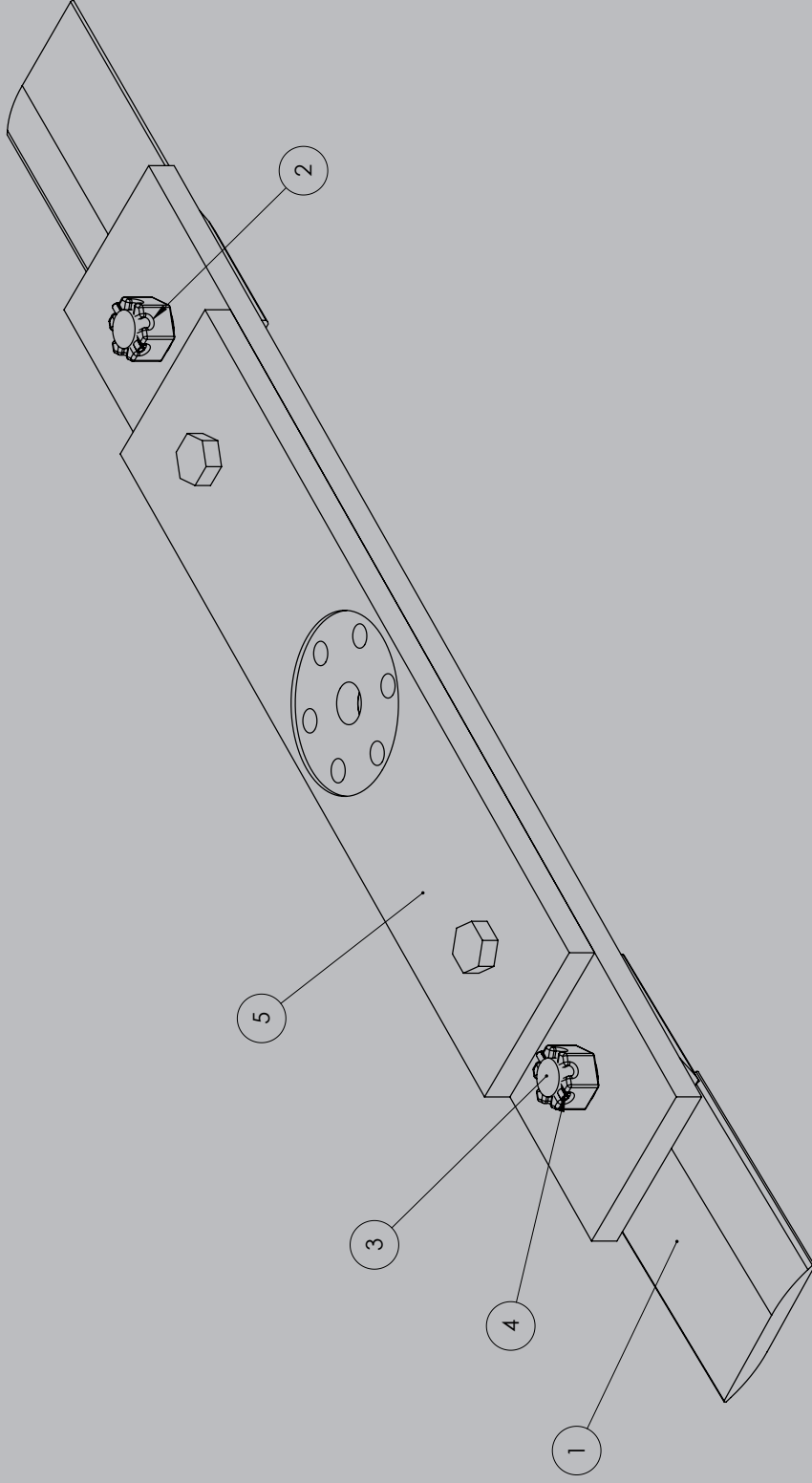
Rotary Mower Parts

SPINDLE HOUSING ASSEMBLY







ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	2556286	Rotary Spindle Housing	1
2	2559386	SN200 Spindle Nut - LH Thread	1
3	2556320	Rotary Spindle Upper Bearing	1
4	2556323	Rotary Spindle Lower Bearing	1
5	2556321	Rotary Spindle Upper Bearing Race	1
6	2556322	Rotary Spindle Lower Bearing Race	1
7	2561265	2010 Rotary Spindle	1
8	2556324	Spindle Seal	1
9	2558483	Rotary Seal Spacer	1
10	2558734	O-Ring	1
11	2556412	1/8 Pipe STR Zerk	1
12	2558654	5 PSI Poppet Valve	1

BLADE BAR ASSEMBLY



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	2556289	12lb Rotary Blade	2
2	2556604	Blade Bolt Nut BBN100	2
3	2556290	Blade Bolt BB100	2
4	2556294	1/4" x 2" Roll Pin	2
5	2557561	60" Blade Bar Weldment	1

BOLT TORQUE CHART

BOLT TORQUE CHART							
SIZE	 SAE GRADE 2		 SAE GRADE 5		 SAE GRADE 8		 L9
	ASSEMBLY TORQUE DRY	LUBRICATED	ASSEMBLY TORQUE DRY	LUBRICATED	ASSEMBLY TORQUE DRY	LUBRICATED	ASSEMBLY TORQUE LUBRICATED
1/4-20	66*	49*	8	75*	12	9	11
1/4-28	76*	56*	10	86*	14	10	13
5/16-18	11	8	17	13	20	18	21
5/16-24	12	9	19	14	25	20	23
3/8-16	20	15	30	23	45	30	33
3/8-24	23	17	35	25	50	35	38
7/16-14	30	24	50	35	70	55	60
7/16-20	35	25	55	40	80	60	65
1/2-13	50	35	75	55	110	80	95
1/2-20	55	40	90	65	120	90	105
9/16-12	65	50	110	80	150	110	140
9/16-18	75	55	120	90	170	130	150
5/8-11	90	70	150	110	220	170	185
5/8-18	100	80	180	130	240	180	205
3/4-10	160	120	260	200	380	280	290
3/4-16	180	140	300	220	420	320	355
7/8-9	190	140	400	300	600	460	505
7/8-14	210	155	440	320	660	500	585
1-8	220	160	580	440	900	680	775
1-14	240	170	640	480	1000	740	900
1 1/8-7	300	220	800	600	1280	960	1150
1 1/8-12	340	260	880	660	1440	1080	1325
1 1/4-7	420	320	1120	840	1820	1360	1600
1 1/4-12	460	360	1240	920	2000	1500	1750
1 3/8-6	560	420	1460	1100	2380	1780	—
1 3/8-12	640	460	1680	1260	2720	2040	—
1 1/2-6	740	560	1940	1460	3160	2360	3250
1 1/2-12	840	620	2200	1640	3560	2660	3650

ITEMS WITH * = INCH POUNDS
ALL OTHERS = FOOT POUNDS

"LUBRICATED"
INCLUDES LUBRICANTS, LUBRIZING PLATING, AND HARDENED WASHERS

HOSE END TORQUE CHART

RECOMMENDED HOSE END TORQUE VALUES FOR 37 DEGREE ANGLE STEEL HOSE END FITTINGS

DASH SIZE	NOMINAL SIZE (IN.)	TORQUE (IN LBS.)	VALUE* (FT. LBS.)
-4	1/4	140	12
-6	3/8	230	19
-8	1/2	450	38
-10	5/8	650	54
-12	3/4	900	75
-16	1	1200	100
-20	1 1/4	1600	133
-24	1 1/2	2000	167
-32	2	2800	233

* Straight threads do not always seal better when higher torque are used. Too much torque causes distortion and may lead to leakage

US MOWER FACTORY WARRANTY

USM WARRANTS ALL OF ITS MOWERS FOR A PERIOD OF 12 MONTHS.

THE WARRANTY SPECIFICALLY COVERS MANUFACTURING OR COMPONENT DEFECTS ONLY. DEFECTS OR DAMAGE CAUSED BY NON-US MOWER INSTALLERS OR OWNER/OPERATORS ARE NOT COVERED.

NORMAL WEAR PARTS ARE NOT COVERED BY THIS WARRANTY

EXCLUSIONS NOT COVERED BY WARRANTY:

- COMPONENTS SHOWING EVIDENCE OF OPERATIONAL MISUSE, ABUSE OR MODIFICATION.
- COMPONENTS SHOWING EVIDENCE OF MAINTENANCE NEGLECT INCLUDING, BUT NOT LIMITED TO:
 1. FAILURE TO FOLLOW THE LUBRICATION SCHEDULE
 2. FAILURE TO MAINTAIN PROPER HARDWARE BOLT TORQUE. INSPECT FREQUENTLY.
 3. FAILURE TO MAINTAIN PROPER BEARING PRE-LOAD.
 4. POOR QUALITY OIL, IMPROPER OIL LEVEL
 5. OIL FILTERS NOT REPLACED AS NEEDED, INAPPROPRIATE FILTER INSTALLED
- TECHNICIAN OR MECHANICS TRAVEL TIME
- MACHINE PICK-UP AND OR DELIVERY TO REPAIR FACILITY.
- COMPONENTS CLASSIFIED AS CONSUMABLES.
- HYDRAULIC HOSES NOT OF USM MANUFACTURE-NOTE: IF AN OTHERWISE WARRANTABLE HOSE IS REPLACED FROM OTHER SOURCES, A CREDIT WILL BE ISSUED WHICH WILL REPRESENT USM'S COST OF MANUFACTURING THAT HOSE AND SHIPPING BY UPS GROUND.
- BENT FLAIL SHAFTS OR SHAFT STUBS
- THE WARRANTY WILL BE CONSIDERED VOID IF CLOSED COMPONENTS ARE DISASSEMBLED PRIOR TO RETURN. CLOSED COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO: HYDRAULIC PUMPS, MOTORS, AND CYLINDERS.
- ALL REPLACEMENT COMPONENTS WILL BE SHIPPED TO CUSTOMER/DEALER VIA UPS GROUND. ALL REPLACEMENT COMPONENTS SHIPPED ARE INVOICED AS A MATTER OF COURSE. COMPONENTS THAT REQUIRE EVALUATION AT THE FACTORY MUST BE SHIPPED FREIGHT PREPAID. A CREDIT WILL BE ISSUED FOR THE REPLACEMENT COMPONENT AND FREIGHT WHEN IT IS DETERMINED THAT THE WARRANTY IS APPLICABLE. ALL WARRANTY WORK OR REPLACEMENT COMPONENTS MUST BE PRE-AUTHORIZED BY US MOWER. US MOWER IS NOT RESPONSIBLE FOR UNAUTHORIZED REPAIRS OR REPLACEMENTS. IF THERE ARE QUESTIONS REGARDING THE APPLICABILITY OF WARRANTY, A CALL TO USM IS RECOMMENDED BEFORE WORK PROCEEDS.

CREDIT FOR LABOR

LABOR CREDIT FOR A WARRANTABLE REPAIR WILL BE ISSUED ONLY FOR WORK DONE IN A SERVICE DEALER'S SHOP. NO LABOR CREDIT WILL BE ISSUED FOR WORK DONE IN THE FIELD (I.E., AT THE MACHINE SITE) EXCEPT BY SPECIFIC FACTORY AUTHORIZATION. TRAVEL TIME TO AND FROM MACHINE WILL NOT BE WARRANTED. ACTUAL WARRANTY COMPENSATION WILL BE BASED ON USM FLAT RATE MANUAL.

CREDIT WILL NOT BE ISSUED AND WARRANTY IS NOT VALID FOR ANY UNIT THAT IS NOT PAID WITHIN TERMS OF THE INVOICE INCLUDING THE SERIAL NUMBER FOR PURCHASED COMPONENT REGARDLESS OF THE END USER. WHOLESALER OR DEALER IS RESPONSIBLE FOR ALL COSTS OF WARRANTY REPAIRS UNLESS INVOICE IS WITHIN TERMS.

DAMAGE AND INJURY

USM LIABILITY IS SPECIFICALLY LIMITED TO THE REPLACEMENT OF COMPONENTS FOR ITS PRODUCTS IF A WARRANTABLE DEFECT IS DISCOVERED. COLLATERAL DAMAGE TO PROPERTY OR PERSONAL INJURY IS EXCLUSIVELY THE RESPONSIBILITY OF THE OWNER AND OR OPERATOR SINCE USM HAS NO CONTROL OVER THE CIRCUMSTANCES IN WHICH IT'S EQUIPMENT IS USED. LOST TIME OR EXPENSE WHICH MAY HAVE ACCRUED BECAUSE OF DEFECTS IS NOT COVERED.

EXPRESS WARRANTY

SELLER WARRANTS THAT:

THE GOODS TO BE SUPPLIED PURSUANT TO THIS AGREEMENT (PURCHASERS AGREEMENT TO BUY AND SELLER'S AGREEMENT TO SELL) ARE FIT AND SUFFICIENT FOR THE PURPOSE INTENDED.

THE GOODS ARE MERCHANTABLE, OF GOOD QUALITY AND FREE FROM DEFECTS WITHIN THE SELLER KNOWLEDGE, WHETHER PATENT OR LATENT, IN MATERIAL OR WORKMANSHIP.

THE SELLER HAS TITLE TO THE GOODS SUPPLIED IN THAT THE GOODS ARE FREE AND CLEAR OF ALL LIENS, ENCUMBRANCES AND SECURITY INTERESTS. ALL WARRANTIES MADE IN THIS AGREEMENT, TOGETHER WITH SERVICE WARRANTIES AND GUARANTEES SHALL RUN TO BUYER AND THE ORIGINAL CUSTOMER OF BUYER.

THERE ARE NO OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED

SHOULD YOU HAVE QUESTIONS REGARDING WARRANTY ISSUES OR EXPERIENCE ANY PROBLEMS, PLEASE CALL YOUR DEALER OR US MOWER AT 877.757.7555 OR E-MAIL US @ INFO@USMOWER.COM.

US MOWER



WWW.USMOWER.COM