

Operator's Safety and Service Manual

Concrete Saw



MSM

MCS-1

JCS/JCST

KL



www.discount-equipment.com



It is the OWNER'S RESPONSABILITY to communicate information on the SAFE USE and OPERATION of this machine to the operators.

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1. SERIAL NUMBER LOCATION

The model/serial number decal is located on the shroud assembly (black).

(Write model number)



(Write serial number)


The unit's year of manufacture can be determined by the serial number. Contact your nearest sales branch or  for more information.

This Unit warranty is stated in this Operational and Safety manual on page 16. Failure to return warranty registration card renders the warranty null and void.

An engine owner's manual is also attached to every unit. Engine parts may order from any authorized dealer. Refer to the engine owner's manual to learn about specifications and part identification.


2. PARTS ORDERING PROCEDURE:

 Parts are available worldwide and must be ordered through your local distributor. If you can't locate the  distributor in your area refer to page 17 of this manual to locate the nearest branch and contact numbers for assistance.

 Saws are intended for use in several applications. They are powered by four stroke gas engines or electric motors and are available in different sizes and manufacturers.

This Operation manual contains only standard parts. Variations of these parts as well as other special parts are not included. Contact your local  distributor for assistance in identifying parts not included in this manual.

ALWAYS HAVE READY:

1. Model and serial number of machine when ordering  parts.
2. Model and serial number of engine when ordering engine parts.
3. Item part number(S), description, and quantity.
4. Company name, address, zip code, and purchase order number.
5. Preferred method of shipping.

REMEMBER – You own the best. If repairs are needed, use only purchased parts from authorized  distributors.

3. ASSEMBLING INSTRUCTIONS

UNPACKING FROM DOBLE STACK

1. Remove the saw and all components from its shipping crate. You will see:
 - Preassembled Saw with no Blade, unless diamond blade was purchased separately and asked to be installed before shipping.
 - If asked, you will find saws in double stack and handles attached separately.

Note: All installation hardware must be inserted into its respective location on the saw, see parts explosion for more details.

2. If saw is shipped double stack, using appropriated equipment, hold the upper saw from the frame, unbolt the upper saw from the supports, and bring the saw to the ground and then proceed to bring the lower saw to the ground, using the same appropriated equipment.



Warning: failure to use proper lifting equipment could cause saw to fall and cause serious injury.

3. If saw is shipped regular, using appropriated equipment, bring the saw to the ground from its shipping pallet.
4. Unbolt the handle control assembly, flip it over into the walk behind style, and proceed to bolt again and torque to 60 ft.-lbs.
5. Bring the saw up using the crank lift and lock at the desired position and lock handle.

ARBOR OR ENGINE SHEAVE INSTALLATION/REMOVAL

1. Standard sheaves on this saw are of the QD design. To remove sheave, remove belt guard and remove belts.
2. 3 remove (3) hex head cap screw from (position A) sheave bushing.
3. Install (3) caps screw in tapped holes in (position B) sheave bushing.
4. Tighten tree caps screw alternately and equally until sheaves loosens from bushing.
5. Loosen set screw over keyway in bushing and remove sheave/bushing.
6. Wipe all parts clean before assembly. A light coat of grease can be applied to engine shaft or arbor shaft. Do not place lubricants on tapered bore of sheaves, tapered hub of Q.D. bushing or bolt threads.

7. To install sheaves, line up drilled holes in bushing with tapped holes in sheaves and install cap screw.
8. Align bushing on arbor shaft with bushing on engine shaft and tighten set screw over keyway.
9. Tighten (3) cap screw alternately and equally to 10 ft. lbs. of torque and inspect alignment.
10. Verify sheave alignment with a straight edge to reaches between the two sheaves. The sheaves should be aligned with each other to within 1/32".
11. Readjust sheave on arbor shaft as required to achieve alignment of writhing 1/32".
12. When sheaves are aligned properly, install and pretension belts.

BLADE INSTALLATION/REMOVAL



IF BLADE GUARD IS TO BE REMOVED TO SERICE BLADE, ITMUST BE REPLACED BEFORE RUNNING SAW. NEVER RUN SAW WITHOUT BLADE GUARDINSTALLED

1. Turn lift/lower crank to raise saw. Lock crank in place with locking handle.
2. Disconnect Spark plug wire.
3. Remove arbor bolt, lock washer, and outside blade collar with pin.
4. Clean and inspect arbor, lade, collars and bolts
5. Verify inside blade collar is fully engaged on arbor and key is positioned properly. **NOTE: MSC-1 uses 4" diameters collars.**
6. Mount blade over shoulder of outside collar. Pin must engage 3/8" diameter hole in blade. Many diamonds blades will have directional arrow on blade.
7. Re-Install outside blade collar and blade onto arbor shaft with 1" diameter shoulder and 3/8" pin engaging inside collar. Install bolt and torque at 60 ft. lbs.
8. Be sure that blade is installed to rotate in correct direction and that the saw is set up for required RPM.
9. Wet cutting diamonds blades must be used with water. Turn water on BEFORE STARTING CUTTING.



4. SAFETY PRECAUTIONS



READ AND STUDY THE FOLLOWING SAFETY INFORMATION BEFORE ATTEMPTING TO OPERATE THIS EQUIPMENT. IN ADDITION, ENSURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.

WARNING - LETHAL EXHAUST GAS!

An internal combustion engine discharges carbon monoxide, which is a poisonous and odorless invisible gas. Death or serious illness may result if inhaled. Operate only in an area with good ventilation, **NEVER IN A CONFINED AREA!**

WARNING - DANGEROUS FUELS!

Use extreme caution when storing, handling and using fuels - they are highly volatile and explosive in the vapor state. Do not add fuel while engine is running. Stop and cool the engine before adding fuel.

DO NOT SMOKE WHEN REFUELING!

SAFETY GUARDS

It is the owner's responsibility to ensure **ALL GUARDS AND SHIELDS** are in place and in working order.

IGNITION SYSTEMS

Breakerless magneto and batteries ignition systems **CAN CAUSE SEVERE ELECTRICAL SHOCKS**, avoid contact with these components or their wiring.

SAFE DRESS

DO NOT WEAR loose clothing, rings, wristwatches, etc., near machinery.

NOISE PROTECTION

Wear O.S.H.A. specified hearing protection devices.

FOOT PROTECTION

Wear O.S.H.A. specified steel tip safety shoes.

HEAD PROTECTION

Wear O.S.H.A. specified safety helmets.

EYE PROTECTION

Wear O.S.H.A. specified eyes shields, safety glasses, and sweat bands.


DUST PROTECTION

Wear O.S.H.A. specified dust mask or respirator.

OPERATOR

Keep children and bystanders off and away from the equipment. Only trained Operators who fully understand its safety operation must use this equipment.

OPERATOR

For details on safety rules and regulations in the United States, contact your local Occupational Safety and Health Administration (O.S.H.A.) office. Equipment operated in other countries must be operated and serviced in accordance and compliance with any and all safety requirements of such country. The publication of these safety precautions is done for your information does not by the publication of these precautions, imply or in any way represent that these are the sum of all dangers present near equipment. If you are operating a  unit it is your responsibility to insure that such operation is in full accordance with all applicable safety requirements and codes. All requirements of the United


States Federal Occupational Safety and Health Administration Act must be met when operated in areas that are under the jurisdiction of that United States Department.

 **IMPORTANT NOTICE** 

The "SAFETY ALERT SYMBOL" is used to call attention to items or operations that may be dangerous to those operating or working with this equipment. These symbols can be found throughout the manual and on the unit itself. Please read these warnings and cautions carefully.

5. SAFETY NOTICE & DECALS

READ SAFETY DECALS CAREFULLY

Carefully read and follow all safety decals. Keep them in good conditions. If they become aged, replace as required. If repainting, **REPLACE ALL** decals. Decals are available from your authorized  Distributors. Decals are not shown to scale.



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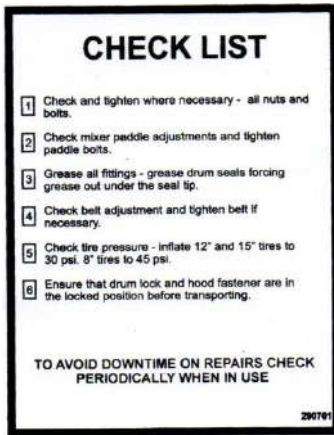
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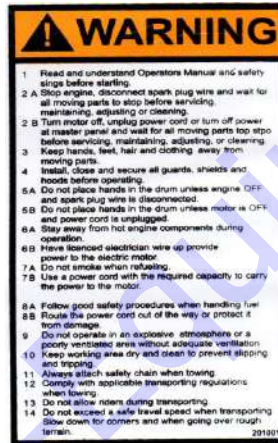
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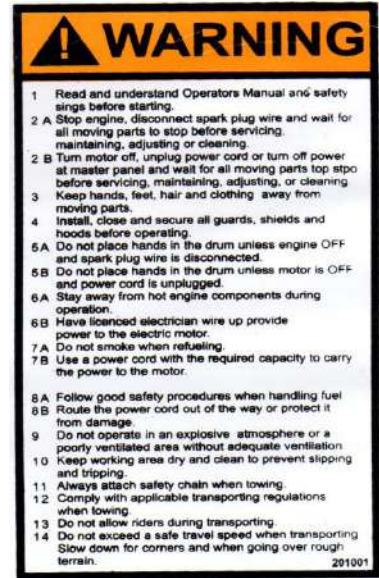
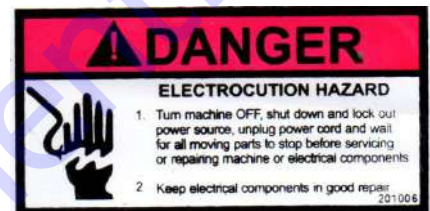


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6. BEFORE OPERATING

REMEMBER! It is the owner's responsibility to communicate information on the safe use and proper operation of this unit to the operators.

Before operating, review SAFETY PRECAUTIONS listed on page 6 of this manual.

- + Familiarize yourself with the operation of the unit and confirm that all controls function properly BEFORE starting engine.
- + Locate the killing switch and assure you know how to STOP the unit.
- + Make sure hands, feet, and clothing are at a safe distance from any moveable parts prior to starting.
- + Shrouds and guards are provided to protect the operator or structures in close proximity to rotating hot engine parts. It is the **RESPONSABILITY OF THE OPERATOR** to see that they are properly in place. **NEVER** operate this equipment without a guard. The flip half of the guard may be raised only when cutting curb/wall.
- + OIL LEVEL - Check the oil level in the engine. For more information see "Lubrication" under the engine "Owner's Manual" the "Maintenance" section of this manual. All saws come without oil running an engine without lubrication may damage the engine.
- + AIR CLEANER - Check to ensure elements are in good condition and properly installed.
- + Review every decal with the OPERATOR.
- + FUEL SUPPLY - Engines on Saw equipment require an automotive grade of clean, fresh, unleaded or regular gasoline. All saws come without gasoline and oil.
- + FUEL FILTER - Check to ensure element is in good condition... Replace if it is clogged or damaged.
- + LUBRICATION POINTS – Grease wheels (4), arbor shaft bearings (2) daily.
- + POSITION – The only operating position for this saw is between the handle bars at the rear of the saw. If the operator must leave this position the engine must be shut down.
- + SPECTATORS – Keep all personnel/spectators away from saw while cutting. Spinning diamonds blades can throw segments; abrasives blades can crack.

7. STARTING ENGINE

IMPORTANT
Engine warranty is void if the engine is run without oil.

GAS ENGINE

1. With the saw engine level in the ground check oil level and add oil and fuel as required.
2. Pull the stop switch on the unit to its "Out" position.
3. Prior to starting engine, make sure saw is raised using the manual crank lift and its lock so the diamond blade is in an "IDLE" POSITION.
4. Make sure the saw high avoid that's the diamond blade has no contact with any ground surface so the engine is idle and lock the crank with the locking handle.
5. Move the engine throttle control to the "FAST" position.
6. Choke the engine if necessary. (You may not need to choke a warm engine)



BEFORE STARTING ENGINE MAKE SURE ALL GUARDS ARE IN PLACE.

7. Pull the starter string.
8. After the engine starts, move the choke lever to the open position, move the throttle level to the "IDLE" position and let the engine warm-up for one or two minutes.



SLOWLY LOWER BLADE INTO CUT

IT IS RECOMMENDED THAT SAW CUTS BE MADE BY 2" TO 3" INCREMENTS AT A TIME. GREATER DEPTHS OF CUT DAMAGE BLADE

9. To stop the engine, make sure to let the engine idle before stopping by using the crank lift handle to raise the saw height.
10. Push in the engine stop switch on the saw.
11. Close the fuel valve.

ELECTRIC MOTOR

1. Plug the motor into a suitable power source.
2. Move the switch on the motor to the "ON" position.
3. It is recommended to let the motor idle before running and stopping by using the crank lift handle to raise the saw height.



STOP THE ENGINE OR ELECTRIC MOTOR BEFORE:

- ✚ Adding fuel.
- ✚ Leaving equipment unattended for any amount of time.
- ✚ Making any repairs or adjustments to the unit.
- ✚ Lifting/Transportation.

8. OPERATION INSTRUCTIONS

OPERATING

1. After turning engine/motor "ON".
2. Lower saw blade until it just touches the pavement by turning the manual lift crank clockwise.
3. From this point, each $\frac{1}{4}$ turn of the lift/lower crank equals $\frac{1}{4}$ " depth of cut.
4. Down the saw cutter guide.
5. Slowly push saw forward to desired cutting area.
6. Cut only in straight line.



DO NOT OPERATE THE UNIT WITH THE BLADE GUARD OPEN/DISATTACHED!



IF ADDITIONAL CUTS ARE TO BE MADE, TURN WATER VALVE “OFF”, TURN ENGINE “OFF” AND MOVE SAW TO NEXT CUTTING AREA.

10. SERVICE INSTRUCTIONS

- ✚ Never service or lubricate the unit engine while running.
- ✚ After servicing the unit, restore and fasten all guards, shields, and covers to their original positions.
- ✚ Never drain oil into the ground, into open streams, or down sewage drains.

WHEN LIFTING/LOWERING A SAW ALWAYS:

1. Leave lift/lower crank handle in locked position.
2. Stop the engine or electric motor.
3. REMOVE ALL BLADES (leave blade arbor, guards in place)
4. Lift the cutting guide to avoid any contact with the head.
5. Secure any other hardware on the saw.
6. Make sure you use appropriated lifting equipment rated to lift the saw. Have in mind the saw weight.
7. Do not position yourself where you could possibly be pinched / caught between saw and some other obstacle.

TOWING

1. Move saw on the jobsite by hand pushing. Do not tow the saw with another vehicle. The saw may be damage if towed.

CUTTING

1. Must know what you are sawing, before making any cuts. Be aware of all utilities i.e. gas/pipe lines, electricity, etc. take necessary precautions to prevent injury /death.

STORING

1. Drain fuel tank.
2. Remove blade, collar, and arbor nuts from both ends of arbor.
3. Clean arbor shaft, threats, blade collars and arbor nuts. Coat parts with grease.
4. Lube all bearings
5. Empty water system to avoid corrosion
6. Clean all moving parts with WD-40 lubricant.
7. Lower saw completely.
8. Cover saw for protection.

ENGINE

See engine owner's manual maintenance schedule.

ARBOR SET UP

1. Set each belt-arbor tension for 1/4" deflection with a 6 lbs. load in middle of belt span. Over tension or under tensioning belts will cause premature belt failure.
 - To adjust belt tension, loosen hex nut or belt tension bolt (two places).
 - To increase belt tension, turn tension bolts clockwise.
 - To decrease belt tension, turn tension bolts counter clockwise.After adjusting belts, make sure engine mount is level to saw frame. Secure position of tension bolts by tightening hex nut (two places).
2. When replacing arbor shaft or pillow block bearings, always adjust bearings so arbor shaft runs PARALLEL to rear axle. Torque bearings bolts to 60 ft. lbs.



**CLEAN AND INSPECT BLADE COLLARS EACH TIME BLADE IS INSTALLED.
REPLACE DAMAGED PARTS. TO REPLACE BLADE PIN, USE ARBOR PRESS
DO NOT USE A HAMMER.**

LUBRICATION

1. Grease wheels (4), arbor shaft bearings (2) daily. Use high quality gun grease.
2. Check water system for cleaning. 2 to 5 gallons per minute is required to for wet cutting. Use 3/4" ID hose to feed water to saw.

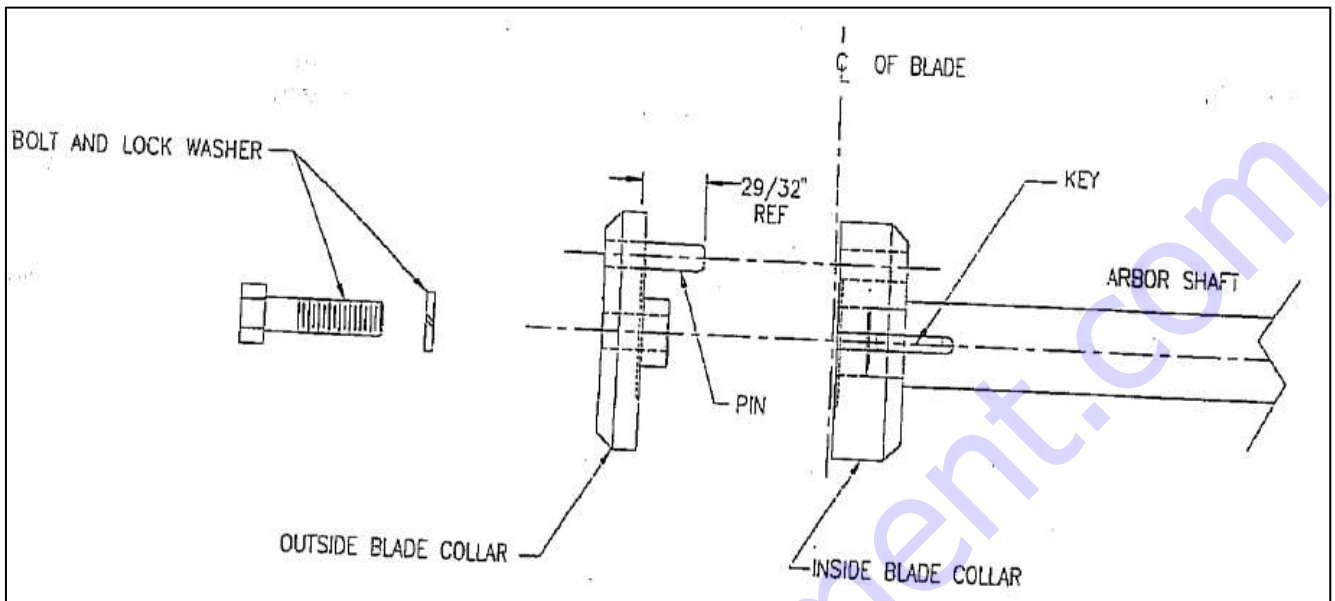
BLADE

1. Clean blade collars before installing new blade; inspect all blades before installing on saw. Ring test abrasive blades to make sure they are free from cracks; do not use abrasive blades that have been damaged i.e. missing blotters cracked or missing sections. Inspect diamonds blades to make sure they don't have missing segments or stress cracks.
2. Use only blades rates to operate arbor speed (3000 RPM). Use only proper size blade guards on your saw.

SAW ROCK INSTALLATION

1. Place saw on flat surface
2. Locate set screw/jam nut over right end of rear axle.
3. Loosen jam nut.

4. Turn set screw clockwise to remove saw rock on right front and left rear wheels.
5. Turn set screw counter clockwise to remove saw rock on left front and right rear wheels.
6. Hold set screw in desire position and tighten jam nut.



11. MAINTENANCE SCHEDULE

1. Check all hardware after the first 5 hours of use, the follow the maintenance schedule.
2. Re-torque the Blade and collar hardware after the first 25 hours of usage, and then follow the maintenance schedule.

	<i>Maintenance</i>	<i>Each use</i>	<i>Every 20 hours</i>	<i>Every 50 hours</i>	<i>Every 100 hours</i>	<i>Yearly</i>
Engine	Refer to engine operator/owner manual	X				X
Air Cleaner	Refer to engine operator/owner manual	X				X
Oil	Oil change		X			
Bearings	Grease Arbor Shaft Bearings	X				X
V-Belts	Check for excessive wear		X			X
Arbor	Recheck arbor-belt tension		X			
Hardware	Check and tighten 1,2		X	X		X
Wheels	Grease wheels and check wear	X				X

12. REPLACEMENTS

Parts

Tolerance or Replacement Cycle

Engine Components

- ✓ Refer to your engine manufacturer's Owner's Manual

V-Belts

- ✓ Replace if stretched to the point that the idler does not work properly. Replace the V-belts if they are cracked or torn.

Blades

- ✓ Replace if blade present any missing segments or stress cracks.

Arbor

- ✓ Replace arbor if: blade become loose or saw's blades break constantly.

Hardware

- ✓ Re-torque all bolts after the first eight hours of operation and check hardware every 25 hours. Replace any worn or damaged hardware as needed. Replacement hardware should be grade 5 and zinc plated.

Safety Decals

- ✓ Replace if they become aged, damaged or cannot be easily read.

13. TORQUE CHART

APROXIMATE TIGHTENING TORQUE

<u>SIZE</u>	<u>GRADE 2</u>	<u>GRADE 5</u>	<u>GRADE 8</u>
# 10-24	21 in-lbs	32 in-lbs	45 in-lbs
# 10-32	23 in-lbs	36 in-lbs	51 in-lbs
1/4-20	49 in-lbs	76 in-lbs	9 in-lbs
1/4-28	56 in-lbs	87 in-lbs	10 in-lbs
5/16-18	8 in-lbs	13 in-lbs	18 in-lbs
5/16-24	9 in-lbs	14 in-lbs	20 in-lbs
3/8-16	15 in-lbs	23 in-lbs	33 in-lbs
3/8-24	17 in-lbs	26 in-lbs	37 in-lbs
7/16-14	24 in-lbs	37 in-lbs	52 in-lbs
7/16-20	27 in-lbs	41 in-lbs	58 in-lbs
1/2-13	37 in-lbs	57 in-lbs	80 in-lbs
1/2-20	41 in-lbs	64 in-lbs	90 in-lbs
9/16-12	53 in-lbs	82 in-lbs	115 in-lbs
9/16-18	59 in-lbs	82 in-lbs	129 in-lbs
5/8-11	73 in-lbs	112 in-lbs	159 in-lbs
5/8-18	83 in-lbs	112 in-lbs	180 in-lbs
3/4-10	129 in-lbs	223 in-lbs	282 in-lbs
3/4-16	144 in-lbs	200 in-lbs	315 in-lbs
7/8-9	125 in-lbs	322 in-lbs	454 in-lbs
7/8-14	138 in-lbs	355 in-lbs	501 in-lbs

APROXIMATE TIGHTENING TORQUE

<u>SIZE</u>	<u>GRADE 2</u>	<u>GRADE 5</u>	<u>GRADE 8</u>
1-8	188 ft-lbs	483 ft-lbs	682 ft-lbs
1-12	205 ft-lbs	529 ft-lbs	746 ft-lbs
1-14	210 ft-lbs	541 ft-lbs	764 ft-lbs
1-1/8-7	266 ft-lbs	596 ft-lbs	966 ft-lbs
1-1/8-12	297 ft-lbs	668 ft-lbs	1083 ft-lbs
1-1/4-7	375 ft-lbs	840 ft-lbs	1363 ft-lbs
1-1/4-12	415 ft-lbs	930 ft-lbs	1509 ft-lbs
1-3/8-6	491 ft-lbs	1102 ft-lbs	1787 ft-lbs
1-3/8-12	559 ft-lbs	1254ft-lbs	2034 ft-lbs
1-1/2-6	652 ft-lbs	1462ft-lbs	2371 ft-lbs
1-1/2-12	734 ft-lbs	1645ft-lbs	2668 ft-lbs
M 6	3 ft-lbs	4 ft-lbs	7 ft-lbs
M 8	6 ft-lbs	10 ft-lbs	18 ft-lbs
M 10	10 ft-lbs	20 ft-lbs	30 ft-lbs

CONVERSIONS

- in - lbs x 0.083 = ft-lbs
- ft - lbs x 12 = in-lbs
- ft - lbs x 0.1383 = kg-m
- ft - lbs x 1.3558 = N-m