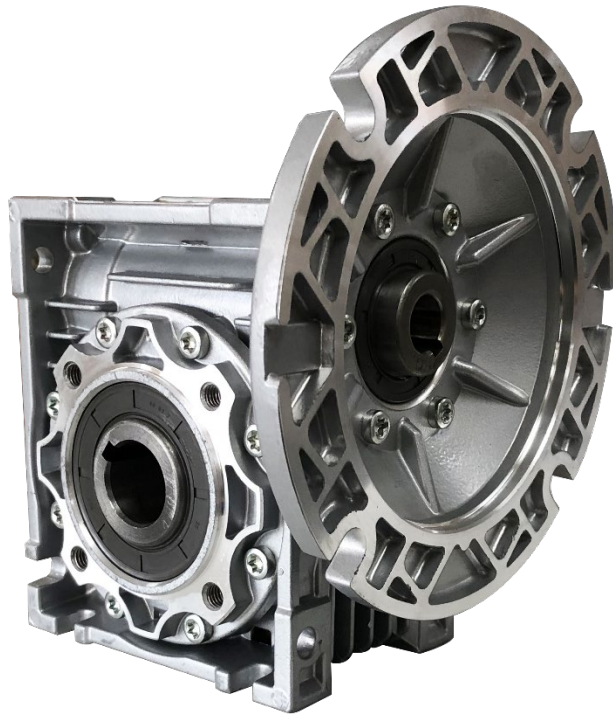




INSTALLATION AND MAINTENANCE MANUAL



Max Motion MMR SERIES ALUMINUM WORM GEAR SPEED REDUCERS

MEP Inc

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Thank you for choosing Max Motion MMR Series aluminum series worm gear speed reducer! These speed reducers, made of high-quality aluminum alloy, light in weight, non-rusting, low in noise. Are widely used in many industries. With more than 25 years of experience in the power transmission arena, we offer high quality, low maintenance speed reduction solutions for your toughest applications. Before using this product, please read this entire installation and maintenance manual through completely. We sincerely hope you enjoy and receive years of trouble-free service from this purchase. If you have any questions whatsoever, please do not hesitate to contact MEP Inc at the numbers shown on the bottom of this page.



Installation Notes

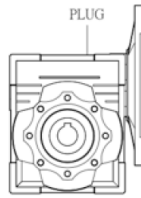
During the installation of the MMR aluminum worm gear speed reduction unit, please note the following recommendations:

1. Check the correct direction of rotation of the reduction unit output shaft before fitting the unit to the machine.
2. Before mounting the prime mover device, please check the reducer's axial diameter, aperture, key and key slot, to be sure their dimensions are in alignment and have not been damaged in shipment. Avoid assembling the reducer to the prime mover in a manner that is either too tight or too loose.
3. The mounting on the machine must be stable and secure to avoid any vibration. Excessive vibration will damage the reducer. Self-locking adhesives should be used on the bolts and joining surfaces of the machine frame to prevent the gearbox from working loose.
4. Drives such as sprocket wheels and gears must be fitted close to bearing in order to reduce bending stress of the hanging shaft. Maximum overhung load, shown in pounds, are listed for each size reducer in the Max Motion catalog.
5. Before mounting, clean and lubricate all mating surfaces. While assembling motor to the reducer, it is recommended that a light coat of grease be added to the worm shaft input hole and keyway, to ease shaft installation and removal, and to avoid rusting when the unit is used for a long period of time between servicing.
6. The speed reducer must be structurally supported when the reducer is directly coupled to a motor whose weight is larger than the recommended motor frame size for the reducer.
7. The MMR series aluminum worm gear boxes do not require the oil to be changed unless a defective condition is noticed during the operation. If during normal operation, heat is noticed that exceeds 80°C or any abnormal noise is detected, the user should shut down the machine and resolve the problem. Once the problem is solved, it is recommended that the oil be replaced with new oil before returning the gearbox to service.
8. MMR reducers are considered maintenance free units and do not require the installation of the provided breather. If the breather is desired to be installed by the user, please note the breather should only be used in mounting position B3 for all box sizes and B8 for box size 50/63/75/90.



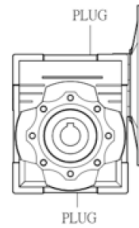
For size: 30/40

STANDARD



For size: 50/63/75/90

STANDARD



Operational Notes

1. Before using, please check carefully whether the reducer model, distance size, ratio, input connecting method, output shaft structure, input and output shaft direction and revolving direction are properly fitted and sized correctly for the application. Ensure unit is properly aligned with the driven device and all bolts are properly tightened. If using a drive to over speed the motor, the input speed of the worm shaft should not exceed 1800 revolutions per minute (RPM).
2. Before starting up the machine, please check the reducer for the correct level of the lubricant by opening the plug and checking the fill level.
3. Avoid shock loading the reducer unit. The load should be added step by step when using the machine to improve reducer life. Reducer units will last longer if sized to run below full load capacity. Running a reducer at its full load capacity may reduce useful product life.
4. Whenever possible, protect the speed reducer against outdoor weather conditions (i.e. solar heat) and inclement weather by using guards or shields. Ensure the connected motor cools correctly by assuring good passage of air from the fan side across the motor.
5. In the case of ambient temperatures $<-5^{\circ}\text{C}$ or $>+40^{\circ}\text{C}$, please consult MEP engineering for required de-rating factors or other available factory installed product enhancements.
6. MEP Max Motion MMR Series style aluminum worm gear boxes are sized for a 1.0 mechanical service factor when operated at 1750 RPM. Consult the MEP catalog for a complete listing of mechanical ratings and available output torque ratings.

Operating Temperature

1. The operating temperature depends on a number of factors such as the type of power transmission, the type and quantity of lubricant, the characteristics and structure of the gearbox, the speed and power applied to the gearbox and the environment in which the gearbox is operating.
2. With worm gearboxes, the acceptable operating temperature range can be up to 50 degrees Celsius more than the ambient temperature because of the compactness and lower quantity of oil contained in modern gearboxes.

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3. With a standard worm gearbox, the maximum allowable inside temperature is 90 degrees Celsius. Higher temperature could damage the oil seals.
4. It is not unusual for the unit to run slightly hotter than normal during the break-in period of the gearbox (i.e. the first 200 hours of service).
5. After the first 200 hours of service, the temperature should remain fairly constant as the gearbox runs at normal speed. At this stage of operation, excess changes in operating temperature may indicate a problem with the installation of the gearbox.

Routine Maintenance

1. Periodically check the outer surfaces of the MMR aluminum speed reducer for debris. Remove surface debris to make sure all air passages are clean, which in turn helps keep the unit running cool.
2. Regularly check the unit for oil leaks. Replace leaky oil seals or the entire unit as necessary.
3. Periodically verify the unit has the correct quantity of lubricant.

Extended Storage

1. Do not store outdoors in areas exposed to weather or with excessive humidity.
2. For storage periods longer than 60 days, all machined surfaces such as flanges and shafts must be protected with a suitable anti-oxidation product.
3. In the case of long periods of storage (4-6 months), units should be completely filled with oil. Before operation, restore the oil fill quantity to the proper level and type of oil (see **Lubrication** section of this document). Additionally, the output shaft should be rotated frequently during extended storage or the oil seal may become dry and potentially dry rot. If this is the case, please change rubber seal before operation as it may stick to the shaft in operation. Over extended periods of idle time, the seal may lose its proper elasticity and should be replaced. Contact MEP for available spare parts.

Lubrication

The MMR series aluminum worm gear speed reducers are supplied complete with a Mobil synthetic oil lubricant suitable in oil level for a B3 mounting position. It is not necessary to change the oil in these gearboxes after the initial break-in period. MMR series units are

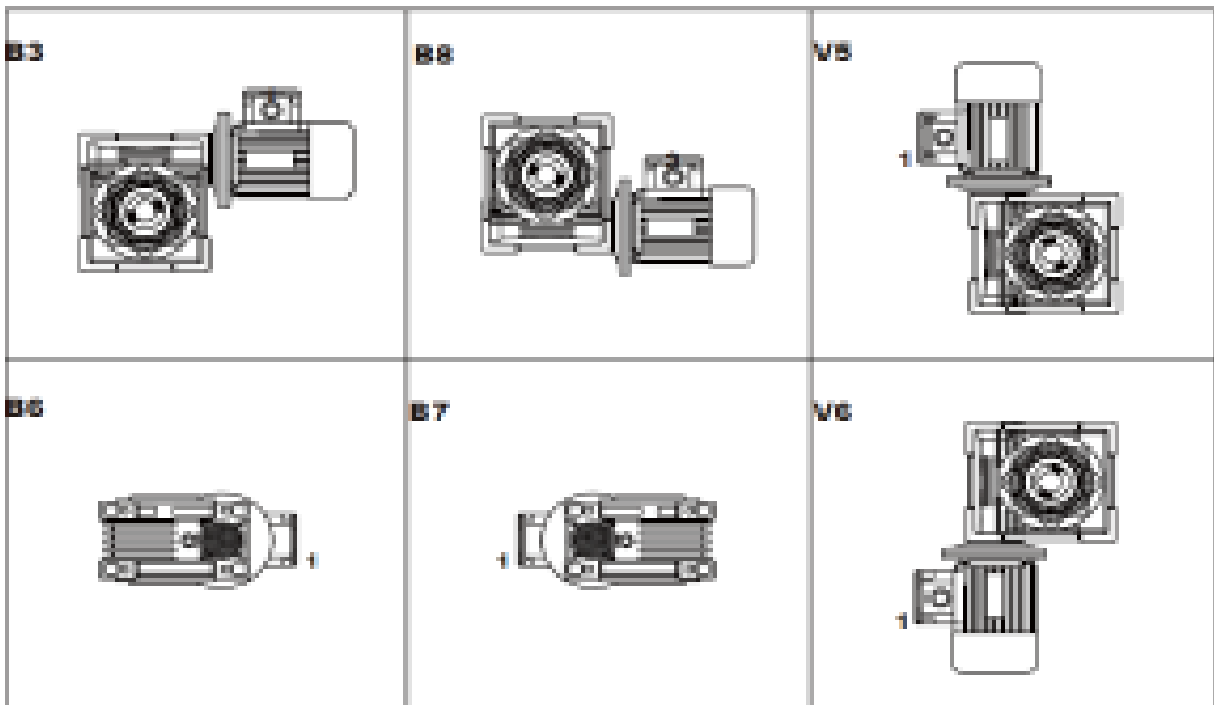


considered maintenance free. Please see the table below for the recommended quantity of lubricant for the various mounting positions. Some mounting positions will require the addition of oil and some positions will require less oil and require that oil be removed. The various **Mounting positions** and recommended oil lubrication levels are outlined below:

Choice of lubrication

Q. ty of oil in litres												Synthetic oil	Mineral oil	
MMR	025	030	040	050	063	075	090	110	130	ISO	VG32	VG320	VG320	
B3										Used in China	GuangYan lubrica tion	WA460		
B8								3	4.5		Used in Abroad	IP	TELIUM VSF	MELLANA OIL 220
B6-B7	0.02	0.04	0.08	0.15	0.3	0.55	1	2.2	3.3			SHELL	TIVELA OIL SC320	OMALA OIL 220
V5								2.5	3.5			AGIP	BLASIA S320	BLASIA 220
								3	4.5			MOBIL	GLYGOYLE 30	MOBILGEAR 220
										CASTROL		ALPHASYN PG 320	ALPHA MAX 220	

Mounting position





Limited Warranty

MEP Inc Warranties its Products To Be Free From Defects In Materials Or Workmanship To The Original Purchaser For A Period Of One (1) Year From The Date Of Purchase. For This Warranty To Be Effective, This Product Must Be Installed, Used and Maintained By The Original Purchaser In Accordance With Good Industry Standards. The Warranty Does Not Cover Normal Wear, Tear and Erosion From Use, Mis-use, Abuse Or Corrosion.

In The Event Of Failure, It Shall Be The Responsibility Of The Original Purchaser To Notify The Company Either In Writing Or By Telephone To Make Arrangements For The Correction Of The Problem. The Purchaser Shall Be Responsible For Transportation Charges Connected With The Return, Exchange Or Repair Of Parts. Returns Found Defective upon Inspection by Our Warranty Department or Authorized Warranty Service Agent Will Be Replaced Free Of Charge.

The Company Shall Not Be Liable For Any Labor Cost Connected With The Replacement Of The Equipment, The Replacement Of The Parts Or Adjustments To The Equipment By The Purchaser Or Their Contractor Without The Company's Prior Written Approval.