MASTER PT

FORTIS MXD

MASTER EXTREME DUTY

Standard Installation Manual

Installation Manual for MASTER® Power Transmission FORTIS MXD Shaft Mount Reducer

Revised Nov. 2025

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THOROUGHLY READ THIS MANUAL BEFORE INSTALLATION OR OPERATION.

WARNING: Because of the possible danger to person(s) or property which may result from improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the Engineering information specified in the catalog. Proper installation, operation and maintenance procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided and are neither provided by Master Power Transmission nor are the responsibility of Master Power Transmission. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all the equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a failsafe device must be an integral part of the driven equipment beyond the speed reducer output shaft.

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Rev. 11/25

06/25

Product Description

The MASTER® Power Transmission FORTIS MXD reducer is a helical parallel shaft mount gearbox designed for direct installation onto the machine drive shaft.

Specific Product Information

Every FORTIS gearbox will have a specific size number:

i.e., MXD0525

The letters associate what configuration the gearbox is:

- MXD – Standard Shaft Mount
- MXD…SCD – Screw Conveyor Reducer

The first set of numbers refers to the size of the unit, 01-10.

The second set of numbers refers to the nominal ratio of the unit:

- 09 – 9:1
- 15 – 15:1
- 25 – 25:1

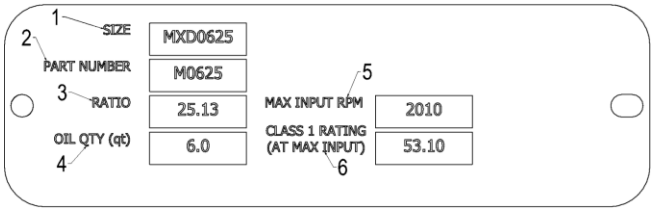


Figure 1: Data plate

Data Plate

1. Size: Refers to specific information about the unit, i.e., housing size, ratio, and configuration.
2. Part Number: ID number relating the unit to spare parts and service information.
3. Ratio: Exact ratio of the unit.
4. Oil Level: Maximum oil capacity.
5. Max Input RPM: Maximum input shaft RPM.
6. Class 1 Rating: Maximum input horsepower at the maximum RPM for Class 1 Duty ratings.

See Figure 1 for a sample data plate.

Configurations

There are two standard configurations for installation:

1. MXD Standard – Direct installation onto the machine shaft using factory-supplied hollow shaft and tapered bushing kits (sold separately) or shaft collar for straight-bore applications.
2. MXDSC Screw Conveyor – Using factory supplied CEMA adaptors and solid shaft for direct installation onto screw conveyor systems. For more information, see our dedicated MXDSC installation manual.

Installation

Before installation of your MASTER® Power Transmission FORTIS MXD Reducer, please follow all local and federal regulations for safety.

****Risk of Property Damage, Personal Injury, or Death: Incorrect Installation****

Improper installation of the MASTER® PT FORTIS MXD Reducer can result in severe consequences, including property damage, personal injury, or even death. To ensure the safety of all individuals involved and the integrity of the equipment, adhere strictly to the installation guidelines provided in the user manual.

Consequences of Incorrect Installation

1. Property Damage: Incorrect installation may lead to equipment malfunction, causing damage to the FORTIS MXD Reducer and surrounding machinery.
2. Personal Injury: Inadequate installation poses a serious risk of injury to individuals in the vicinity during operation.
3. Fatalities: The most severe consequence of incorrect installation is the potential for loss of life.

Hazard Level	Warning
⚠ Danger:	Situation which, if not avoided, will result in a severe injury or death
⚠ Warning:	Situation which, if not avoided, could result in a severe injury or death
⚠ Caution:	Risk of equipment damage or deficient performance, but not personal injury

Prioritize Safety

1. Professional Assistance: If in doubt or lacking expertise, seek professional assistance from qualified technicians or contact MASTER® PT support.
2. Regular Inspections: Periodically inspect the installation to ensure its ongoing integrity and make any necessary adjustments promptly.
3. No Unauthorized Modifications: Do not make any unauthorized modifications to the FORTIS MXD Reducer, as this can compromise its safety and performance. Any unauthorized modifications will render the warranty null and void and MASTER® PT will not be liable for repairs or damages sustained.

By strictly adhering to the installation guidelines and prioritizing safety measures, you contribute to a secure working environment, prevent potential hazards, and ensure the longevity of the equipment.

For further clarification or assistance, contact MASTER® PT customer support immediately.

The products in this manual are not designed for use in potentially explosive atmospheres and lack EX-approval. Under no circumstances should they be used in areas classified as potentially explosive. Deviating from this directive poses serious safety risks. For applications in such environments, seek products that are specifically certified.

Essential PPE — including but not limited to, hard hats, safety goggles, protective gloves, steel-toe shoes, and lifelines (for fall protection) — is required during operations. We strongly recommend the use of lifting equipment for the manipulation of gearboxes and other heavy components.

Installation Hazards

ALWAYS Lock Out/Tag Out all power sources prior to installation.

Utilize protective equipment when handling gearboxes, as the nature of their application may involve the accumulation of materials propelled by the driven machine. These materials have the potential to pose biological or chemical hazards.

During operation, gearboxes, electric motors, and power transmission components may reach elevated temperatures, posing a risk of skin burns. Allow adequate time for the system to cool before inspecting the drive package. When checking the oil level, be cautious of potential pressure build-up in the gearbox interior. To release excess pressure and prevent oil spills caused by ventilation plug failure or obstruction, carefully remove the level plug. Always have a spill containment kit ready during inspections to mitigate environmental contamination risks.

Proper waste disposal of used oil is imperative to mitigate environmental impact. Follow local regulations and guidelines for the safe disposal of oil, ensuring compliance with environmental standards. Implement eco-friendly methods such as recycling or using authorized disposal facilities to prevent contamination and promote sustainable practices. Prioritize adherence to established protocols to safeguard the environment from potential harm associated with improper oil disposal.

Do not send the gearbox or drive package to MASTER® PT if it has been exposed to nuclear radiation. In such cases, contact local environmental authorities to ensure proper disposal procedures are followed for the exposed components.

Installation Instructions

1. Carefully read and understand the installation manual before initiating the installation process.
2. Follow each step meticulously, paying attention to details such as torque specifications, alignment procedures, and mounting instructions.
3. Ensure that the installation is carried out by qualified and trained personnel with expertise in power transmission equipment.

During transportation and storage, it is crucial to inspect the package for damages upon delivery. Refrain from manipulating it if it has a broken pallet and adhere to internal safety policies to address such situations. In case of any discrepancies, file a claim with the shipping company or distributor. If the package is intact, cross-verify its contents with the packing list to identify and document any missing parts. To extract the product from the package, remove straps or bolts securing it to the box or pallet.

Lifting

When applicable, use the provided lifting bracket to lift the reducer. If lifting the full drive package, use a sling around the motor mount. Prioritize safety by thoroughly inspecting lifting equipment and accessories before each use. Cease any lifting action immediately if any issues are detected and ensure resolution before proceeding. Confirm that the crane's lifting capacity is sufficient for the safe movement of the complete drive package or components, taking into account the operational height required for installation. Only authorized personnel are permitted to operate the lifting equipment. Caution against over-dimensioned lifting equipment, as it poses a risk of injury.

Output Shaft Install

Determine the installation position of the reducer. There are six primary installation orientations with unique plug locations; see Figure 13 for installation orientations. Each FORTIS MXD has 7 oil ports. 5 ports are for solid housing plugs, with the remaining 2 for a vent plug and level plug. Generally, the vent, or breather, plug is always installed in the top-most hole. Locations are approximate and will differ based on housing size. All plugs are the same dimensions for a given reducer size.

For positions outside of the standard six listed in Figure 12, please contact the engineering team at MASTER® PT for proper plug locations, modification instructions, and oil volumes.

Driven Shaft Length

The minimum driven shaft length is the sum of the W and A dimensions. You can find dimensions W and A in Table 1. Those dimensions apply for a horizontal or vertical installation.

Remember that the driven shaft must extend through the full reducer bore shaft length (the W dimension). Additionally, to install and remove the bushing fasteners, a minimum A dimension is required between reducer and the driven shaft support bearing. See Figure 2 for details.

Check that your driven shaft complies with the minimum length (W+A) for the reducer installation.

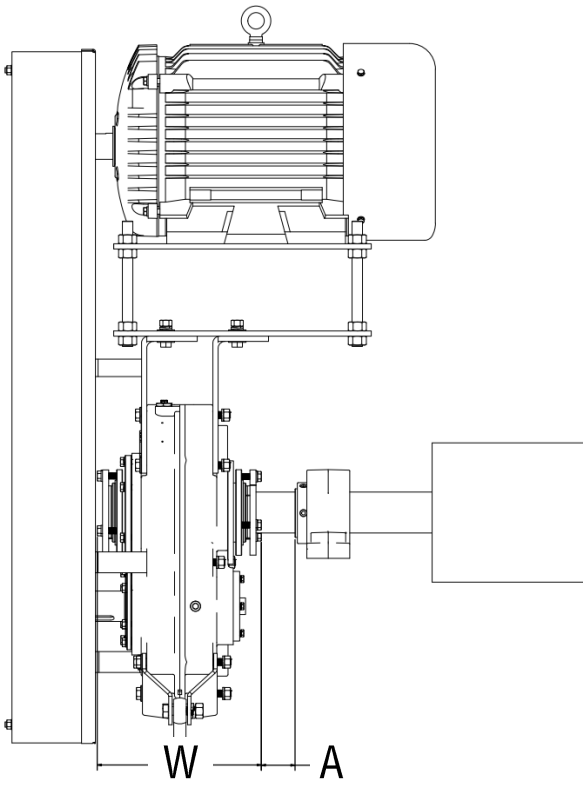


Figure 2: Driven shaft minimum lengths

Reducer	Dim. W: Dual Taper Bushing	Dim. W: Straight Bore	Dim. A
MXD01	7.2	*	1.3
MXD02	7.5	5.9	1.3
MXD03	9.7	7.7	1.6
MXD04	10.5	8.3	1.9
MXD05	11.0	8.7	1.9
MXD06	12.0	9.7	1.9
MXD07	13.6	10.8	2.2
MXD08	14.4	*	2.5
MXD09	14.5	*	2.6
MXD10	15.6	*	2.6

Table 1: Driven shaft dimensions

* Please contact engineering for straight-bore dimensions for sizes 1, 8, 9, and 10.

Tapered Bushing Installation

The Bushing Kits consist of two identical bushings, installation hardware, and the shaft key.

1. Measure and establish the A dimension (refer to Table 1) on the driven shaft using a tape measure or caliper. Subsequently, insert an initial taper bushing onto the driven shaft, ensuring the flange end is inserted first and maintaining the specified A dimension.
2. Rotate the driven shaft to position the keyway at the top. Align the bushing keyway with the shaft keyway. Use a caliper to verify that the key orientation corresponds with the keyway dimensions and then insert the key into the aligned keyways of both the bushing and the shaft. Incorrect key installation may result in vibrations and premature failure of the bushing, seals, and bearings.
3. Rotate the driven shaft to align the driven shaft key with the reducer hub keyway. Mount the reducer on the driven shaft.
4. Install the bushing screws and washers onto the initial bushing, rotating the reducer bushing backing plate if necessary. Gently tighten the screws until hand-tight. Verify dimension A and adjust the assembly as needed to maintain the specified A dimension.
5. Install the second bushing on the opposite side of the reducer, ensuring to align the bushing keyway with the key. Install the bushing screws and washers. Gently tighten each screw on both bushings to the torque specification in Table 2. Ensure that the key extends through both bushing keyways and adjust as necessary.

Tapered Bushing Removal

Follow these instructions to remove the tapered bushings from the Fortis MXD reducer.

1. Gently loosen and remove the 3x screws and washers from the tapered bushing.
2. Thread two of the screws into the threaded holes on the tapered bushing. Alternately tighten the two screws to put pressure on the bushing backing plate until the tapered bushing comes loose.

Reducer	Fastener Size	Torque (ft-lbs)
MXD01	5/16"-18 x 0.875	15
MXD02	5/16"-18 x 1	15
MXD03	3/8"-16 x 1.25	26
MXD04	3/8"-16 x 1.5	26
MXD05	7/16"-14 x 1.5	42
MXD06	7/16"-14 x 1.5	42
MXD07	1/2"-13 x 1.75	54
MXD08	1/2"-13 x 2	54
MXD09	5/8"-11 x 2	75
MXD10	5/8"-11 x 1.75	75

Table 2: Bushing kit bolt torques

Straight-Bore Shaft Installation

FORTIS MXD is available with a straight-bore output hub for sizes 2-7 and standard shaft diameters. Please contact MASTER® PT engineering for other sizes or custom shaft diameters.

1. Rotate the driven shaft to align the keyway with the reducer output keyway. Use a caliper to verify that the key orientation corresponds with the keyway dimensions and then insert the key into the shaft keyway. Incorrect key installation may result in vibrations and premature failure of the bushing, seals, and bearings. Use a small piece of tape over the key on the end of the shaft to hold the key in place.
2. Mount the reducer onto the driven shaft and then remove the piece of tape.
3. Install the shaft collar onto the output hub on the front (input shaft side) of the reducer. Install the provided 3x set screws and torque them to the appropriate specification in Table 3.
4. Repeat step 3 for the shaft collar on the opposite side of the reducer.

Reducer Sizes	Set Screw	Torque (ft-lbs)
2-4	3/8"-16	24
5-6	1/2"-13	50
7	5/8"-11	76

Table 3: Straight-bore set screw torques

Torque Arm Kit

The Torque Arm Kit consists of a fulcrum with associated hardware, a turnbuckle for length adjustment, and a bracket with associated hardware. The bracket is attached to the FORTIS MXD housing, and the fulcrum is attached to a fixed mounting point on a structure capable of safely supporting the torque arm load. See Figure 4 for a description of torque arm kit hardware.

The torque arm mounting bracket can be installed on any of the two bolts along the bottom of the reducer housing. See Figures 5-8 below for examples of acceptable mounting positions.

The torque arm is designed to work in tension. If your application will press the Torque Arm into compression, please contact MASTER® PT Engineering.

Torque Arm Installation

1. Choose the installation side for torque arm, considering the location of the Torque Arm fulcrum anchor. If the Torque Arm serves as a belt tensioner, position it at 90° to the center line between the input and output shafts.
2. Remove the chosen reducer housing bolts, position the torque arm bracket on the reducer housing, and then reinstall the bolts, tightening them only until hand-tight.
3. Find the reducer-side rod end; this is the rod end with the larger hole diameter. Assemble the fastener stack-up for the reducer-side bracket, referring to Figure 3 and ensuring that the bushing is inserted into the rod end head. Torque the reducer side stack-up to the appropriate specification in Table 6.
4. Re-tighten the reducer housing bolts, consulting Table 5 for the required torque values.
4. Assemble the turnbuckle and fulcrum-side rod end so that they are connected as in Figure 4 below.
5. Anchor the torque arm fulcrum on a flat and rigid surface. See Table 4 for fulcrum bolt sizes; consult a structural engineer to determine appropriate bolt torques.
6. Insert the fulcrum-side rod end bolt and tighten with the provided lock washer and nut. Torque the fulcrum-side rod end bolt to the appropriate specification in Table 6.

Reducer Sizes	Suggested Fulcrum Mount Bolt Size
1	5/16"
2-3	3/8"
4-5	1/2"
6-7	5/8"
8-10	3/4"

Table 4: Fulcrum mount bolt sizes

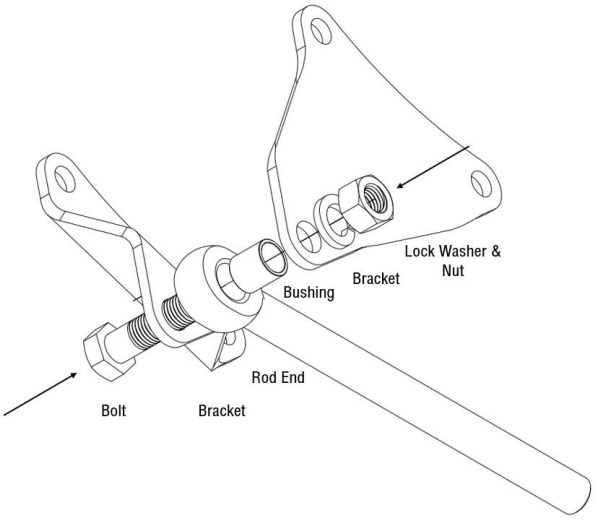
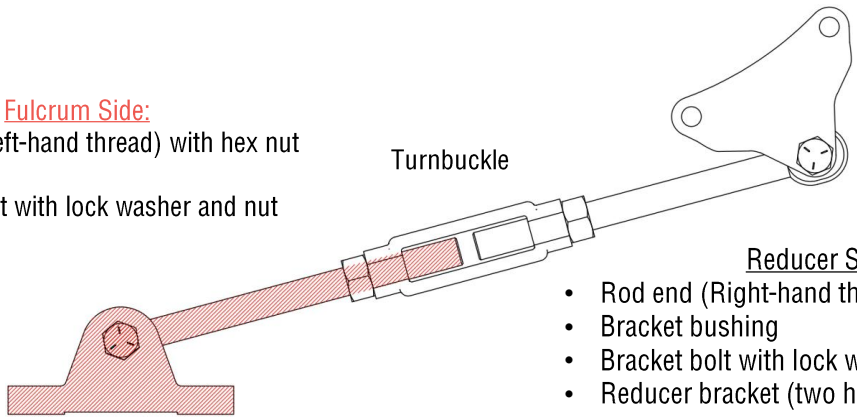


Figure 3: Torque arm kit reducer-side stack-up



Fulcrum Side:

- Rod end (Left-hand thread) with hex nut
- Fulcrum
- Fulcrum bolt with lock washer and nut

Reducer Side:

- Rod end (Right-hand thread) with hex nut
- Bracket bushing
- Bracket bolt with lock washer and nut
- Reducer bracket (two halves)

Figure 4: Torque arm kit contents

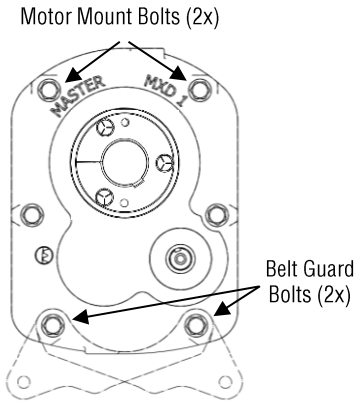


Figure 5: Acceptable bracket mounting positions, Size 1

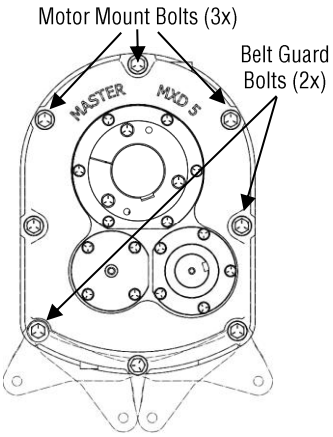


Figure 6: Acceptable bracket mounting positions, Sizes 2-7

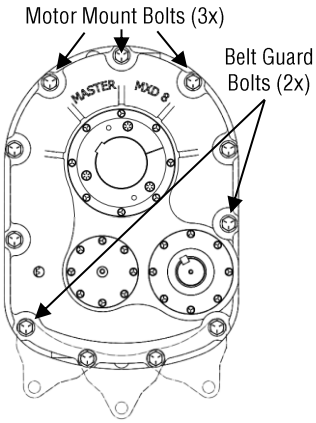


Figure 7: Acceptable bracket mounting positions, Sizes 8-9

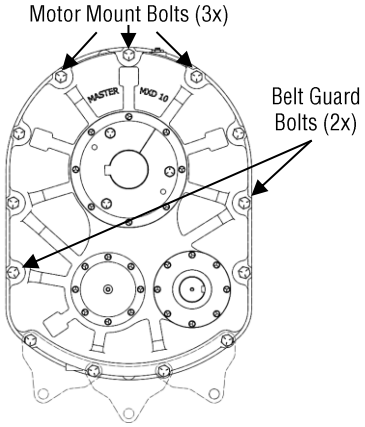


Figure 8: Acceptable bracket mounting positions, Size 10

Reducer	Fastener Size	Torque (ft-lbs)
MXD01	3/8"-16 x 4.5	31
MXD02	3/8"-16 x 4.5	31
MXD03	7/16"-14 x 5.5	49
MXD04	7/16"-14 x 6.5	49
MXD05	1/2"-13 x 6.0	75
MXD06	1/2"-13 x 6.5	75
MXD07	3/4"-10 x 7.0	150
MXD08	3/4"-10 x 8.0	150
MXD09	3/4"-10 x 8.0	150
MXD10	3/4"-10 x 8.5	150

Table 5: Reducer housing bolt torques

	Bracket (reducer-side)		Fulcrum	
Reducer	Bracket Bolt	Torque (ft-lbs)	Fulcrum Bolt	Torque (ft-lbs)
MXD01	3/8"-16	31	1/2"-13	75
MXD02	7/16"-14	49	5/8"-11	150
MXD03	7/16"-14	49	5/8"-11	
MXD04	1/2"-13	75	5/8"-11	
MXD05	1/2"-13	75	5/8"-11	
MXD06	1/2"-13	75	5/8"-11	
MXD07	5/8"-11	150	5/8"-11	
MXD08	1"-8		1"-8	
MXD09	1"-8		1"-8	
MXD10	1"-8		1"-8	

Table 6: Torque arm kit bolt sizes and torques

Motor Mount Kit

Fortis MXD motor mounts are tailored for standard shaft mount units, specifically designed for compatibility with NEMA standard foot-mounted motors. The motor mounts come predrilled to accommodate NEMA standards, providing a sturdy base that is adjustable with four bolts for convenient belt tensioning. Standard motor mounts cover frame sizes from 56 to 365T, with options for 404T-445T in sizes 9 and 10. Longer reducer housing replacement bolts for the mount brackets are supplied if necessary.

Please note: The Motor Mount Kit is **NOT** provided with the anchor bolts for the motor. MASTER® PT only supplies the anchor bolts when supplying the entire drive package assembly.

Motor Mount Installation: Sizes 1-7

1. Remove the motor mount bolts on the reducer (see Figures 5-8) and position the mount brackets on the reducer. If provided, use the larger housing bolts in the motor mount kit to secure the mount brackets; otherwise, reinstall the original housing bolts. Loose install only — do not torque the bolts at this stage.
2. Install the bottom plate with the provided bolts, washers, and nuts, tightening the bolts just enough to secure the assembly in place. Install the fastener stack-up with the following order: bolt → flat washer → plate → flat washer → lock washer → nut. Adjust the bottom plate slot position to match the expected shaft stick-out of the motor.
3. Take all four leveling studs and install one nut on each, positioning the nut at 2.5 times the height of the leveling nut from the stud edge. Install the four studs in the bottom plate, ensuring the shortest stud extension from the nut is on the reducer side.
4. Install one nut on the top of the bottom plate to secure it in place and then firmly tighten the two nuts. Repeat this process for all four studs.
5. From belt selection details, estimate the required center distance from the motor shaft to the reducer input shaft, subtracting the motor shaft height above the motor feet. Add adjusting nuts to the top end of each stud, positioning them at a height that matches the required center distance.
6. Place the motor plate on top of the assembly and tighten nuts on the top of the motor plate to secure the motor plate in place. Ensure the motor plate is kept level.
7. Torque the reducer housing bolts to the specification provided in Table 5 above.
8. Install motor, sheaves, and belt. Position the reducer sheave as close as possible to the reducer to minimize overhung load. For safety, keep slight lifting pressure on the motor through step 9.
9. Adjust the adjusting nuts and bottom plate as needed to tension the belt and align the motor. Firmly tighten all leveling stud nuts and the bottom plate bolts.

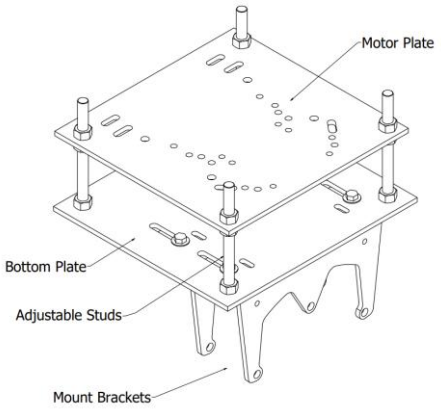


Figure 9: Motor mount, sizes 1-7

Motor Mount Installation: Sizes 8-10

1. Remove the motor mount bolts on the reducer (see Figures 5-8) and position the mount brackets. If provided, use the larger housing bolts in the motor mount kit to secure the mount brackets; otherwise, reinstall the original housing bolts. Loose install only — do not torque the bolts at this stage.
2. Take all four leveling studs and install one nut on each, positioning the nut at 2.5 times the height of the leveling nut from the stud edge. Install the studs in the bottom plate with the shortest stud extension on the reducer side. Install one nut on the top of the bottom plate to secure it in place and then tighten the two nuts. Repeat this process for all four studs.
3. From belt selection details, estimate the required center distance from the motor shaft to the reducer input shaft. Subtract the motor shaft height above the motor feet and subtract 4 inches more from this estimate; then, add adjusting nuts to the top end of each leveling stud to match this height.
4. Position the bottom plate over the mount brackets, supported by the adjusting nuts. Ensure the bottom plate is kept level. Then, add an additional nut on top of the bottom plate on each leveling stud and slightly tighten the nuts to secure the bottom plate assembly over the mount brackets.
5. Position the front and rear motor rails to match the expected shaft stick-out of the motor. Use the provided hex head screws with flat washers, lock washers, and nuts to loose install the front and rear motor rails. Install the fastener stack-up with the following order: bolt → flat washer → rail → flat washer → lock washer → nut.
6. Torque the reducer housing bolts to the specification provided in Table 5 above.
7. Install motor, sheaves, and belt. Position the reducer sheave as close as possible to the reducer to minimize overhung load. For safety, keep slight lifting pressure on the motor through step 8.
8. Adjust the adjusting nuts and motor rails as needed to tension the belt and align the motor. Firmly tighten all leveling stud nuts and motor rail bolts.

FORTIS Belt Guard

FORTIS Belt Guard Kits are comprised of 1 back cover, 1 front cover, and all appropriate hardware.

Belt Guard Installation

1. Remove the belt guard bolts on the reducer (see figures 5-8 above) and loose install the lower belt guard brackets. See Figure 12 for an illustration of belt guard bracket positions.
2. Mount the top belt guard brackets onto the motor mount bracket. Torque all bracket screws. Additionally, torque the reducer housing bolts from step 1, referring to Table 5 above for housing bolt torque values.
3. Install the belt guard front cover.

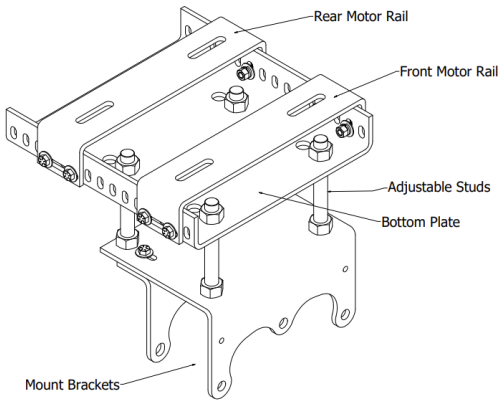


Figure 10: Motor mount, sizes 8-10

Oil and Lubrication

IMPORTANT: All MASTER® FORTIS MXD units are shipped without oil. It is imperative to properly fill your FORTIS MXD unit with the appropriate volume of oil up to the appropriate level plug. MASTER® PT recommends using a high-grade, petroleum-based mineral gear oil with rust and oxidation inhibiting properties for most applications. **Do not use extreme pressure (EP) lubricants with your FORTIS MXD unit if a backstop is installed, as EP lubricants interfere with backstop sprag operation.**

Refer to Tables 9-11 for important selection information about oil viscosity. Selecting an appropriate oil viscosity for the ambient temperature is important for gear life and performance. For applications with extreme temperature variation, please contact MASTER® PT engineering for oil selection assistance.

Optimal operation relies on maintaining the correct oil level through monthly inspections during inactivity. When inspecting the oil level, ensure the oil is cool and air is settled before removing the level plug. Add oil to the appropriate level plug if the oil level is low. Refer to Table 7 for estimated oil volumes; the level plug should be used to verify that the final oil level is correct.

CAUTION: Overfilling can lead to overheating, while insufficient oil may cause gear failure. Regularly monitor oil levels to prevent equipment damage or bodily injury. Adherence to this caution is crucial.

After an initial operational span of approximately two weeks, it is recommended to execute an oil change. If preferred, the option to filter and recycle the used oil is available. After the initial break-in phase and considering standard industrial operating conditions, the lubricant renewal frequency should be set at 2500 operational hours.

During each oil change, undertake drainage, kerosene flushing, magnetic drain plug cleaning, and replenishment to the specified level with a fresh lubricating agent.

Under severe operating conditions, it is advisable to change the oil every 30 to 90 days, adjusting the frequency based on the severity of the conditions.

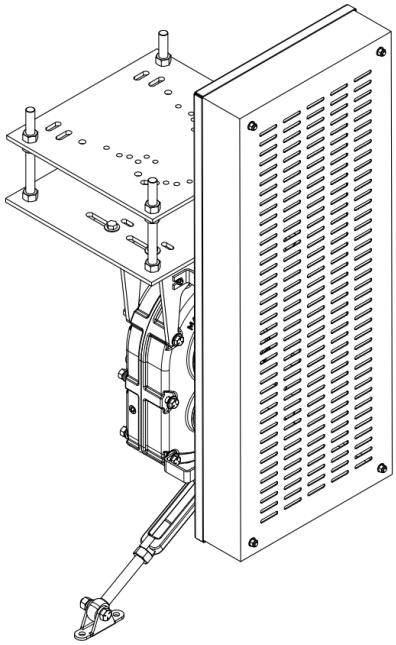


Figure 11: Reducer with motor mount and belt guard

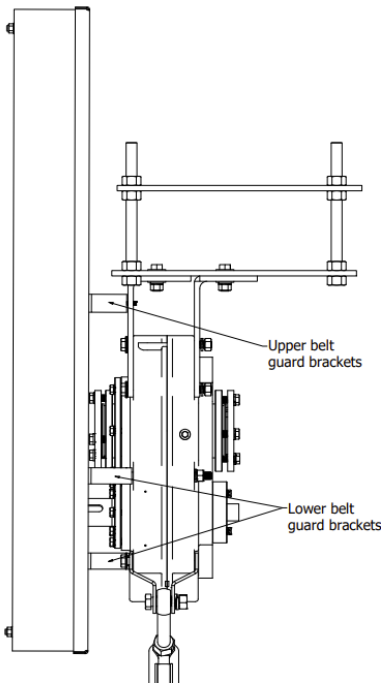
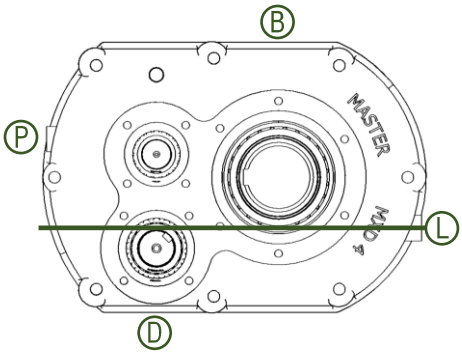
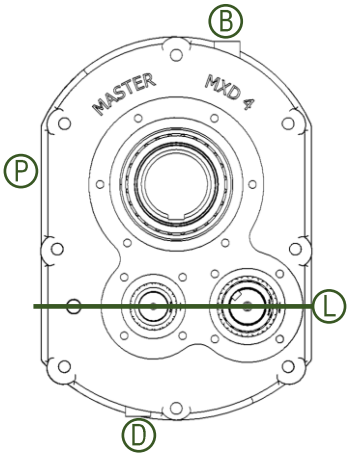


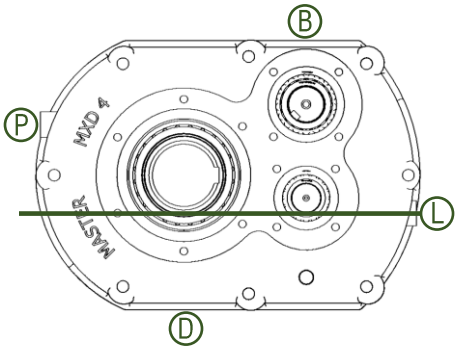
Figure 12: Belt guard mounting positions



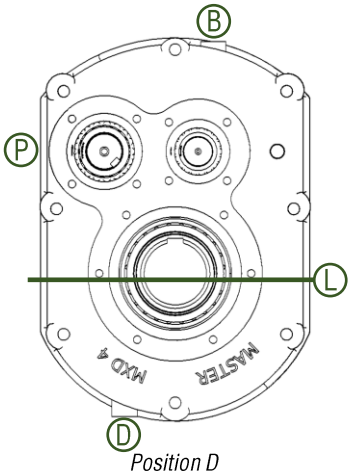
Position A



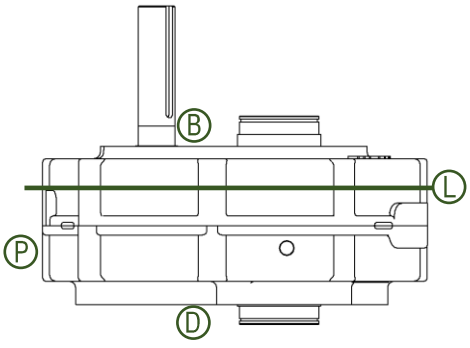
Position B



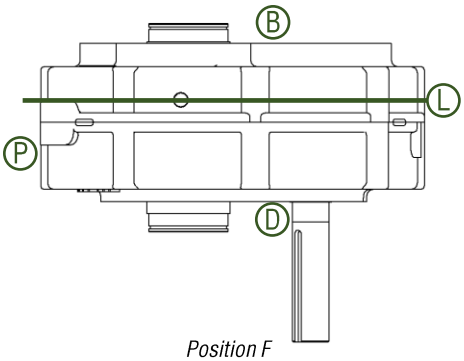
Position C



Position D



Position E



Position F

Figure 13: Mounting orientations

	Oil Fill Volume to Level Plug (L) in Ounces					
Reducer	**Pos. A**	**Pos. B**	**Pos. C**	**Pos. D**	**Pos. E**	**Pos. F**
MXD01	13	11	13	13	35	8
MXD02	16	16	19	22	42	13
MXD03	32	32	35	35	86	19
MXD04	42	48	54	48	122	54
MXD05	67	83	64	74	189	54
MXD06	112	122	96	99	342	71
MXD07	214	189	218	240	544	160
MXD08	262	250	182	266	678	230
MXD09	406	342	237	371	909	298
MXD10	608	400	723	582	1223	413

Table 7: Oil fill volumes

Long Term Storage

If you are planning on storing your FORTIS MXD gearbox for longer than 90 days, follow these instructions to ensure proper storage:

1. Carefully disconnect unit.
2. With the unit disconnected and in a safe working location, drain the oil from the gearbox slowly by removing the drain plug. Collect and dispose of the oil in accordance with local and federal regulations.
3. Replace the drain plug and fill the unit with an industrial grade VCI oil to the level specified in Table 8.
4. Inspect the reducer housing for any unpainted areas. Cover any exposed metal areas including threads, bores, shafts, and keyways with a rust inhibitor.
5. If storing as a complete assembly package with motor, measure the static insulation resistance with a megohmmeter. Record the value and follow the motor manual for additional long term storage requirements.
6. Seal the unit airtight by replacing the vent plug with a solid plug, keeping the vent plug for later installation.
7. If the reducer will be stored outdoors, or in a damp or unheated indoor area, cover the entire reducer with rust preventative. Seal the unit with a moisture proof container or polyethylene bag with desiccant. Protect the enclosure from direct sunlight.

Reducer	Quantity of VCI Oil (oz / ml)
MXD01	1 / 30
MXD02	1/ 30
MXD03	1 / 30
MXD04	1 / 30
MXD05	1 / 30
MXD06	2 / 59
MXD07	2 / 59
MXD08	3 / 89
MXD09	4 / 118
MXD10	6 / 177

Table 8: Long term storage oil fill volumes

Lubricant Grade Conversion		
ISO	AGMA	SAE Gear
150	4	90
220	5	110
320	6	140

Table 9: Oil viscosity rating conversions

		Reducer Size									
Ambient Temp.	Output RPM	MXD01	MXD02	MXD03	MXD04	MXD05	MXD06	MXD07	MXD08	MXD09	MXD10
15°F - 60°F	1 - 40	220	220	220	220	220	220	220	220	220	220
	40 - 100						150	150	150	150	150
	100 - 125					150					
	125 - 150				150						
	150 - 200			150							
	200 - 300										
	300 - 400										

Table 10: Oil viscosity guidelines, 15°F - 60°F

		Reducer Size									
Ambient Temp.	Output RPM	MXD01	MXD02	MXD03	MXD04	MXD05	MXD06	MXD07	MXD08	MXD09	MXD10
60°F - 125°F	1 - 40	320	320	320	320	320	320	320	320	320	320
	40 - 100						220	220	220	220	220
	100 - 125					220					
	125 - 150				220						
	150 - 200			220							
	200 - 300										
	300 - 400										

Table 11: Oil viscosity guidelines, 60°F - 125°F

Bushing Kits

Reducer Size	Part Number	Bore Size	Shaft Keyway Requirement
1	TB11716	1-7/16 (max.)	3/8 x3/16 x 6 7/16
	TB1138	1-3/8	5/16 x 5/32 x 6 7/16
	TB11516	1-5/16	5/16 x 5/32 x 6 7/16
	TB1114	1-1/4	1/4 x 1/8 x 6 7/16
	TB11316	1-3/16	1/4 x 1/8 x 6 7/16
	TB1118	1-1/8	1/4 x 1/8 x 6 7/16
	TB11	1	1/4 x 1/8 x 6 7/16
2	TB211516	1-15/16 (max.)	1/2 x 1/4 x 6 11/16
	TB2134	1-3/4	3/8 x 3/16 x 6 11/16
	TB211116	1-11/16	3/8 x 3/16 x 6 11/16
	TB2158	1-5/8	3/8 x 3/16 x 6 11/16
	TB2112	1-1/2	3/8 x 3/16 x 6 11/16
	TB21716	1-7/16	3/8 x 3/16 x 6 11/16
	TB2138	1-3/8	5/16 x 5/32 x 6 11/16
	TB21516	1-5/16	5/16 x 5/32 x 6 11/16
	TB2114	1-1/4	1/4 x 1/8 x 6 11/16
	TB21316	1-3/16	1/4 x 1/8 x 6 11/16
	TB2118	1-1/8	1/4 x 1/8 x 6 11/16
3	TB32316	2-3/16 (max.)	1/2 x 1/4 x 8 1/16
	TB32	2	1/2 x 1/4 x 8 1/16
	TB311516	1-15/16	1/2 x 1/4 x 8 1/16
	TB3178	1-7/8	1/2 x 1/4 x 8 1/16
	TB3134	1-3/4	3/8 x 3/16 x 8 1/16
	TB311116	1-11/16	3/8 x 3/16 x 8 1/16
	TB3158	1-5/8	3/8 x 3/16 x 8 1/16
	TB3112	1-1/2	3/8 x 3/16 x 8 1/16
	TB31716	1-7/16	3/8 x 3/16 x 8 1/16
	TB3138	1-3/8	5/16 x 5/32 x 8 1/16
	TB31516	1-5/16	5/16 x 5/32 x 8 1/16
4	TB42716	2-7/16 (max.)	5/8 x 5/16 x 9 1/32
	TB4214	2-1/4	1/2 x 1/4 x 9 1/32
	TB42316	2-3/16	1/2 x 1/4 x 9 1/32
	TB4218	2-1/8	1/2 x 1/4 x 9 1/32
	TB42	2	1/2 x 1/4 x 9 1/32
	TB411516	1-15/16	1/2 x 1/4 x 9 1/32
	TB4134	1-3/4	3/8 x 3/16 x 9 1/32
	TB411116	1-11/16	3/8 x 3/16 x 9 1/32
	TB4112	1-1/2	3/8 x 3/16 x 9 1/32
	TB41716	1-7/16	3/8 x 3/16 x 9 1/32
5	TB521516	2-15/16 (max)	3/4 x 3/8 x 9 3/8
	TB521116	2-11/16	5/8 x 5/16 x 9 3/8
	TB5212	2-1/2	5/8 x 5/16 x 9 3/8
	TB52716	2-7/16	5/8 x 5/16 x 9 3/8
	TB5214	2-1/4	1/2 x 1/4 x 9 3/8
	TB52316	2-3/16	1/2 x 1/4 x 9 3/8
	TB52	2	1/2 x 1/4 x 9 3/8
	TB511516	1-15/16	1/2 x 1/4 x 9 3/8
	TB5178	1-7/8	1/2 x 1/4 x 9 3/8

Bushing Kits (cont.)

Reducer Size	Part Number	Bore Size	Shaft Keyway Requirement
6	TB63716	3-7/16 (max)	7/8 x 7/16 x 10 11/16
	TB63	3	3/4 x 3/8 x 10 11/16
	TB621516	2-15/16	3/4 x 3/8 x 10 11/16
	TB6278	2-7/8	3/4 x 3/8 x 10 11/16
	TB621116	2-11/16	5/8 x 5/16 x 10 11/16
	TB6212	2-1/2	5/8 x 5/16 x 10 11/16
	TB62716	2-7/16	5/8 x 5/16 x 10 11/16
	TB6214	2-1/4	1/2 x 1/4 x 10 11/16
	TB62316	2-3/16	1/2 x 1/4 x 10 11/16
7	TB731516	3-15/16 (max.)	1 x 1/2 x 11 27/32
	TB73716	3-7/16	7/8 x 7/16 x 11 27/32
	TB73316	3-3/16	3/4 x 3/8 x 11 27/32
	TB73	3	3/4 x 3/8 x 11 27/32
	TB721516	2-15/16	3/4 x 3/8 x 11 27/32
	TB721116	2-11/16	5/8 x 5/16 x 11 27/32
	TB72716	2-7/16	5/8 x 5/16 x 11 27/32
8	TB84716	4-7/16 (max)	1 x 1/2 x 13 1/16
	TB84316	4-3/16	1 x 1/2 x 13 1/16
	TB831516	3-15/16	1 x 1/2 x 13 1/16
	TB83716	3-7/16	7/8 x 7/16 13 1/16
	TB821516	2-15/16	3/4 x 3/8 x 13 1/16
9	TB941516	4-15/16 (max)	1 1/4 x 5/8 x 12 15/16
	TB94716	4-7/16	1 x 1/2 x 12 15/16
	TB931516	3-15/16	1 x 1/2 x 12 15/16
	TB93716	3-7/16	7/8 x 7/16 x 12 15/16
10	TB105716	5-7/16 (max)	1 1/4 x 5/8 x 14 1/16
	TB1041516	4-15/16	1 1/4 x 5/8 x 14 1/16
	TB104716	4-7/16	1 x 1/2 x 14 1/16
	TB1031516	3-15/16	1 x 1/2 x 14 1/16

Motor Mounts

Reducer Size	Motor Mount Part Number
1	MM1
2	MM2
3	MM3
4	MM4
5	MM5
6	MM6
7	MM7
8	MM8
9	MM9 (213T-365T)
	*
10	MM10 (254T-365T)
	MM10LHP (404T-445T)

Belt Guards

Reducer Size	Belt Guard Part Number
1	BG1
2	BG2
3	BG3
4	BG4
5	BG5
6	BG6
7	BG7
8	BG8
9	BG9
10	BG10

* Please contact engineering for MXD Size 9 motor mounts above NEMA 365T.