

# Motorized Torque-Arm II (MTA9—MTA12) Reliability Kit (Position C only) Instruction Manual

These instructions must be read thoroughly before installation or operation. This instruction manual was accurate at the time of printing. Please see [dodgeindustrial.com](http://dodgeindustrial.com) for updated instruction manuals.

**WARNING:** To ensure the drive is not unexpectedly started, turn off and lock-out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

**NOTE:** This kit should only be used when mounting a Motorized Torque-Arm horizontally in position-C.

**WARNING:** All products over 55 lbs (25 kg) are noted on the shipping package. Proper lifting practices are required for these products.

## INTRODUCTION

The Motorized Torque-Arm (MTA) Reliability Kit is an accessory designed to improve asset reliability, simplify maintenance, and provide the user with an enhanced ability to understand the health of their installed asset. The kit is currently available for standard position-C mounting of the gearbox. Figure 1 shows all reliability kit main components, plus additional standard accessories that can be used along with the reliability kit. The Level 1 Kit includes an E-Z drain, oil sampling pitot tube, extended oil sight tube, Hydra-Lock breather, open and closed bushing covers, and all hardware/piping components to provide a closed-loop system of operation.

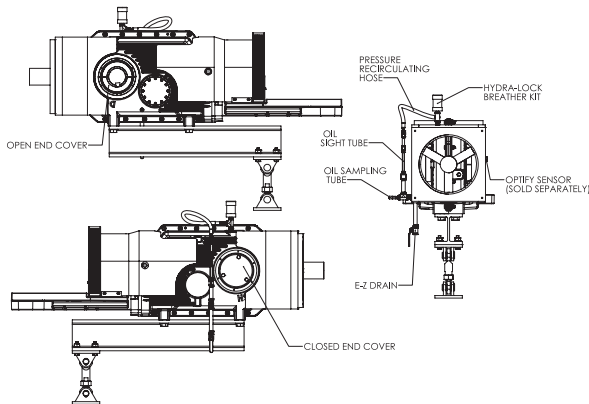


Figure 1 - Reliability kit components

**WARNING:** Because of the possible danger to person(s) or property from accidents which may result from the 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, maintenance and operation 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 Dodge® nor are the responsibility of Dodge. 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 equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a holding device must be an integral part of the driven equipment beyond the speed reducer output shaft.

## INSTALLATION SCHEMATICS

For installation schematics, go to the back of this manual and review drawings as listed in Table 1.

Table 1 – List of installation schematics

Size	Drawing	Page
MTA9	M9RELIAKITS	3
MTA10	M10RELIAKITS	4
MTA12	M12RELIAKITS	5

- Use pipe joint compound on all threaded connections that do not already have sealant on them.
- Tools required for installation: a combination of allen wrenches, pipe wrenches, crescent wrenches, and/or channel lock pliers to remove plugs and install pipe fitting from the kit. Tighten all connections so that they are oil tight.
- Care must be taken when installing the brass sight tube and hose. Overtightening the fittings on the sight tube can cause damage.
- If the MTA is already in service, the oil must be drained prior to installing the reliability kit components.

## E-Z DRAIN INSTALLATION

The kit contains fittings to extend the E-Z drain to the lowest point of the gearbox. The drain is designed to be installed like shown in the drawings at the back of this manual. See Figure 2 for general assembly steps regarding the E-Z drain for MTA gearboxes. The magnetic drain plug will need to be reused at the end of the drain valve.



Figure 2 - Drain configuration

## INSTALLING OIL SAMPLING PITOT TUBE COMPONENTS

A precut pitot tube and a 1/4 inch NPT adapter are provided as well as additional pipe fittings to mount all items to the gearbox. For MTA sizes 9—12, the pitot tube and applicable piping components will be installed from the lower-side oil plug hole from the factory alongside the fittings for the E-Z drain. This installation is ideal for gearbox speeds greater than 15 rpm. For slower-speed applications, please contact Dodge Engineering. See Figure 3 for the assembly steps regarding the pitot tube and 1/4 inch NPT adapter. The reliability kit includes a sampling port adapter that

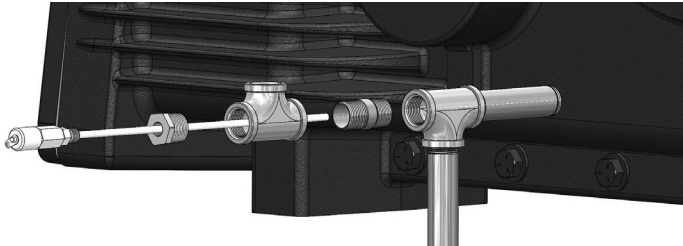


Figure 3 - Oil sampling pitot tube component configuration

can be added to an existing sampling vacuum pump tubing. Oil sampling collection supplies are not included. When taking a sample, this port adapter screws onto the end of the pitot tube. Pitot tube and sampling port adapter are manufactured by Trico Corporation and collection supplies can be ordered directly with them.

## INSTALLING OIL SIGHT TUBE COMPONENTS

The reliability kit comes with an oil sight tube for visual status of oil level as well as a reclaim hose for any excess oil that may be displaced due to pressure build up internal to the gearbox during operation. During installation, use caution not to overtighten the brass sight tube. Orientate the sight tube where the window will be the most visible from a distance. The pipe fittings leading to the sight tube will need to be installed vertically where it is level and will show an accurate reading. Note that MTA12 will require a different pipe fitting schematic due to the size of the gearbox. The pipe fittings, oil sight tube, and hose will be installed where the previous installation step left off as seen in Figure 4.



Figure 4 - Oil sight tube components configuration

## INSTALLING RECLAIM HOSE AND BREATHER COMPONENTS

The reliability kit contains a reclaim hose for any excess oil that may be displaced due to pressure build-up internal to the gearbox during operation. This hose connects the sight tube and components to the breather components. The breather provided with the kit is a Hydra-Lock, a desiccant breather that

provides maximum protection from humidity and contaminants. Note, if wanting to use the highest plug-hole location (where the breather is typically installed from the factory) to fill the gearbox with oil, then oil will need to be added at this time before the hose and breather components are installed. The plug location for position-C mounting can be used for oil fill if desired. Fill the gearbox with the appropriate amount of oil. Refer to the Motorized Torque-Arm gearbox manual or catalog for approximate oil volumes. Verify there are no leaks. For the position-C breather assembly, refer to Figure 5.

If not already done, remove the breather (and pipe bushing, if included) from the highest hole of the gearbox. The opposite hose end is then connected to the end of the breather components that are installed leading from this breather hole location as seen in Figure 5. The breather components may need to be adjusted with some angle so the hose can properly be connected. These components may need to be further adjusted once additional accessories are installed for clearance.

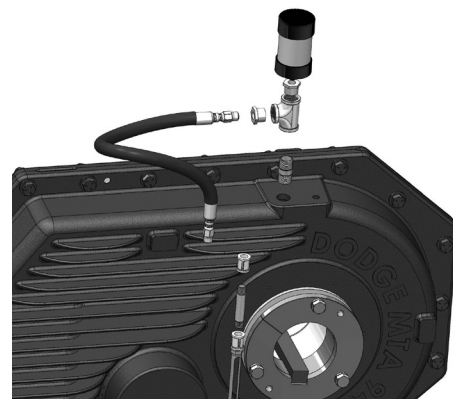


Figure 5 - Reclaim hose and breather components configuration

## BUSHING COVERS

Bushing covers provide a safety solution for bushing components and customer driven shaft on both sides of the gearbox. MTA gearboxes are supplied pre-drilled and tapped from the factory for the bushing covers so basic hand tools can be used for installation. Both open and closed bushing covers can be installed on the gearbox after it has been mounted on the driven shaft. The open, inboard facing cover can be used as they are or can be combined with the shaft guard extension for full protection from the gearbox to the mounted bearing. The closed cover will give further protection to the gearbox from the outboard shaft and bushing components. These bushing covers will come with the reliability kit. Figure 6 shows an example of bushing cover installation. For more information on these bushing covers, inboard shaft guards, and installation steps, refer to the Torque-Arm family bushing covers and shaft guard manual.

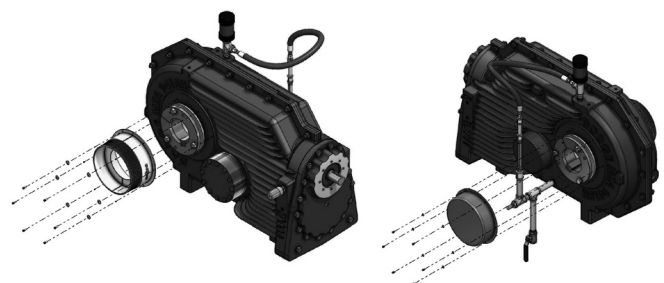
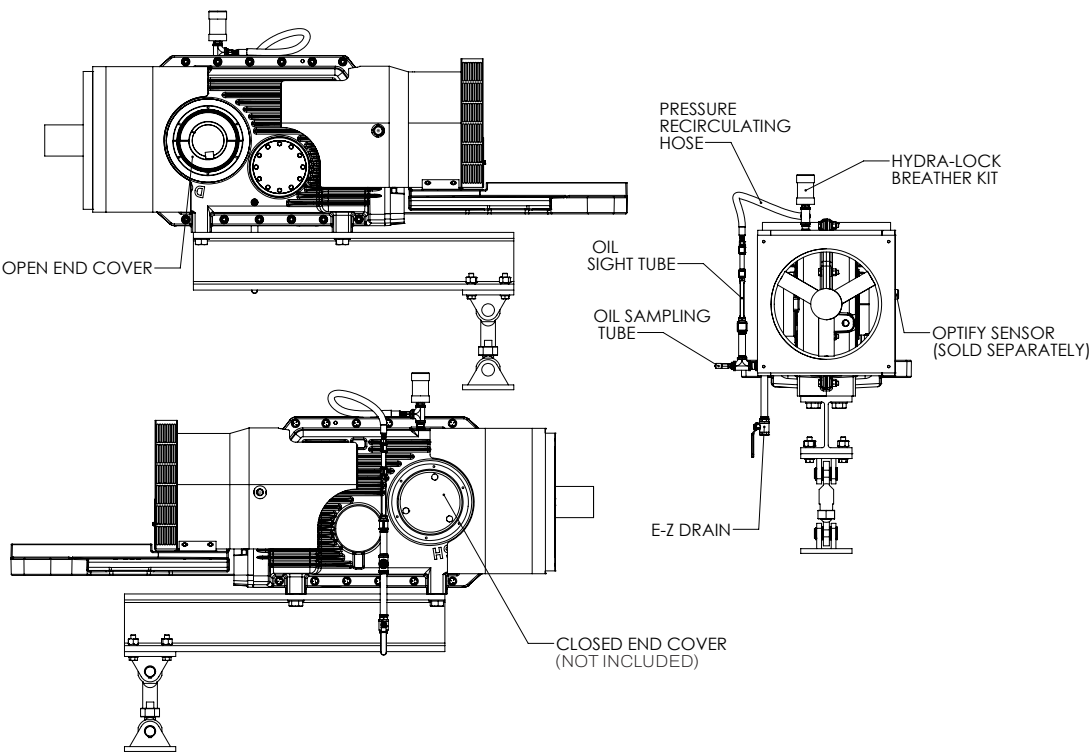


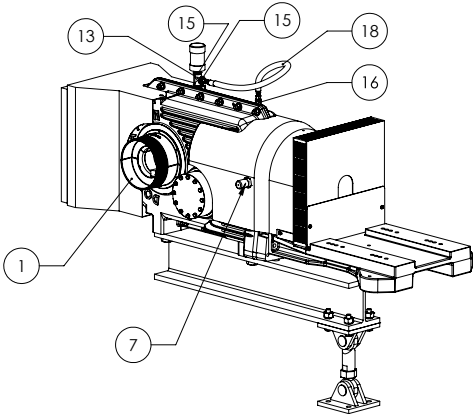
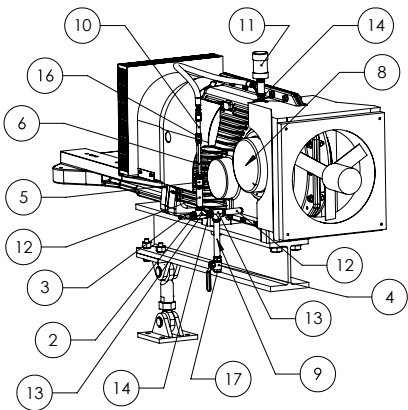
Figure 6 - Open and closed bushing cover installation example

M9RELIKITS



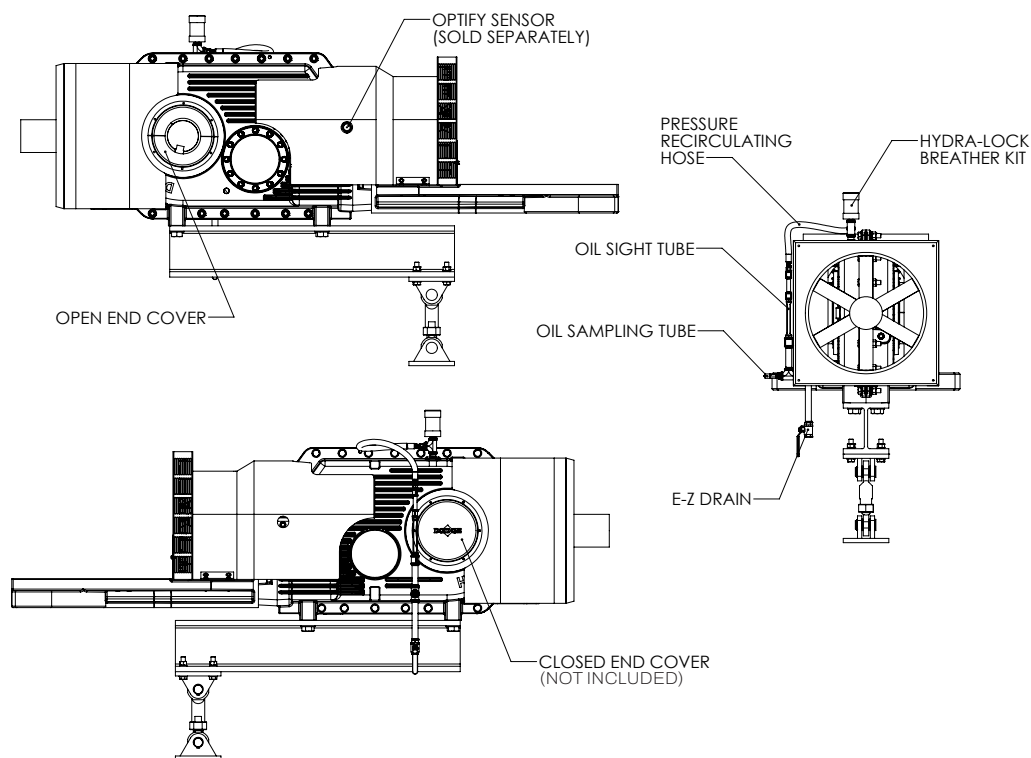
Item number	Part number	Description	Qty
1	020553	TA9 guard adapter	1
2	034600008AC	3/4" to 1/4" NPT adapter	1
3	453303-12	Pitot tube (12" long)	1
4	095967	3/4" NPT ball valve	1
5	034630005AC	3/4" NPT pipe coupling	1
6	967052	Oil sight tube	1
7	750000	OPTIFY Sensor (sold separately)	1
8	909142	TA9 ABS closed cover kit (sold separately)	1

Item number	Part number	Description	Qty
9	034530064EC	3/4" NPT x 8" pipe nipple	1
10	034530024CC	3/4" NPT x 3" pipe nipple	1
11	964363	Hydra-Lock breather	1
12	034530040EC	3/4" NPT x 5" pipe nipple	2
13	034720005AC	3/4" NPT tee	3
14	034530016EC	3/4" NPT x 2" pipe nipple	2
15	034600009AC	3/4" to x 3/8" NPT adapter	2
16	034630003AC	3/4" NPT pipe coupling	2
17	430064	3/4" NPT plug	1
18	454631-30	Hose assembly	1



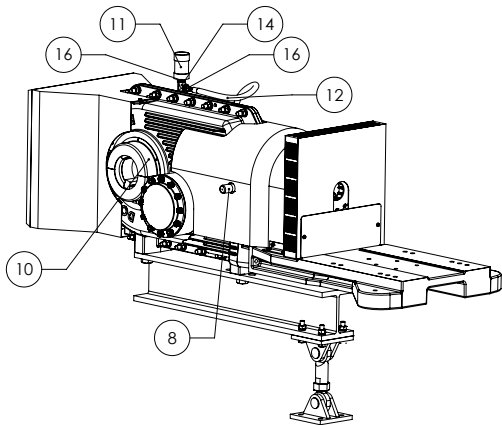
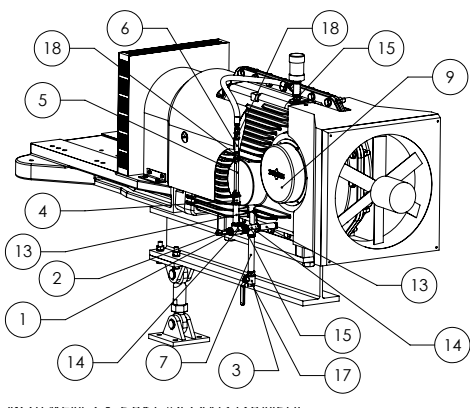
- Notes:
- 1. Item 3 and part number 455003 (sampling port adapter) comes from Trico. Sample collection supplies not provided.
  - 2. Items 1,7, and 8 are sold separately.

M10RELIKITS



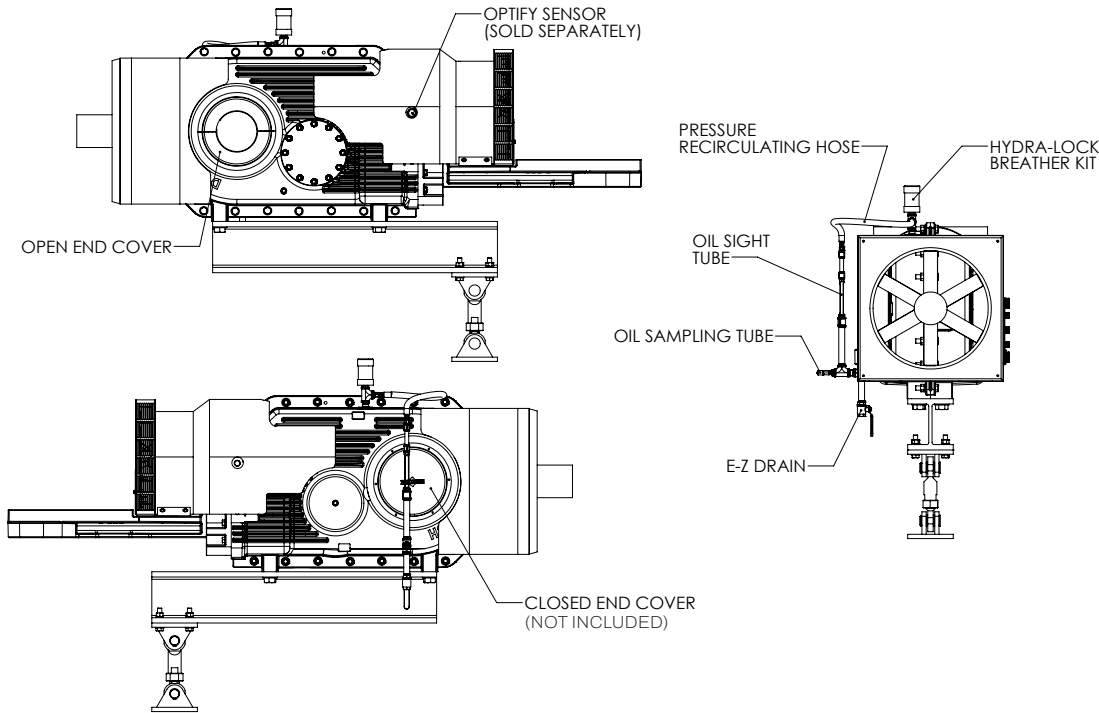
Item number	Part number	Description	Qty
1	034600008AC	3/4" to 1/4" NPT adapter	1
2	453303-12	Pitot tube (12" long)	1
3	095967	3/4" NPT ball valve	1
4	034630005AC	3/4" NPT pipe coupling	1
5	967052	Oil sight tube	1
6	034530024CC	3/8" NPT x 3" pipe nipple	1
7	034530064EC	3/4" NPT x 8" pipe nipple	
8	750000	OPTIFY Sensor (sold separately)	1
9	910142	TA10507 ABS closed cover kit (sold separately)	1

Item number	Part number	Description	Qty
10	910143	TA10507 ABS split end cover assembly	1
11	964363	Hydra-Lock breather	1
12	454631-30	Hose assembly	1
13	034530040EC	3/4" NPT x 5" pipe nipple	2
14	034720005AC	3/4" NPT tee	3
15	034530016EC	3/4" NPT x 2" pipe nipple	2
16	034600009AC	3/4" to 3/8" NPT adapter	2
17	430064	3/4" NPT plug	1
18	034630003AC	3/8" NPT pipe coupling	2



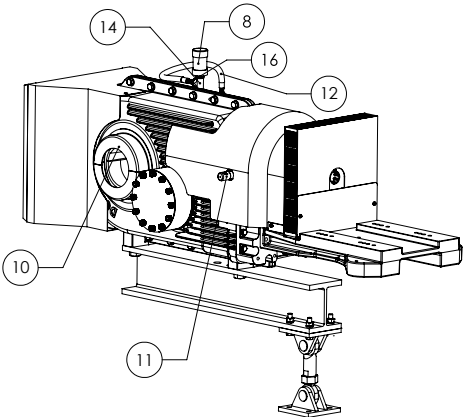
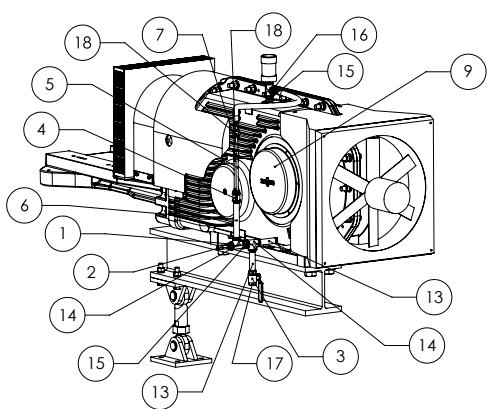
- Notes:
- 1. Item 2 and part number 455003 (sampling port adapter) comes from Trico. Sample collection supplies not provided.
  - 2. Items 8,9, and 10 are sold separately.

M12RELIKITS



Item number	Part number	Description	Qty
1	034600008AC	3/4" to 1/4" NPT adapter	1
2	453303-12	Pitot tube (12" long)	1
3	095967	3/4" NPT ball valve	1
4	034630005AC	3/4" NPT pipe coupling	1
5	967052	Oil sight tube	1
6	0345300364EC	3/84" NPT x 8" pipe nipple	1
7	034530024CC	3/8" NPT x 3" pipe nipple	1
8	964363	Hydra-Lock breather	1
9	912142	TA12608 ABS closed cover kit (sold separately)	1

Item number	Part number	Description	Qty
10	912143	TA12608 ABS split end cover assembly	1
11	750000	OPTIFY Sensor	1
12	454631-30	Hose assembly	1
13	034530040EC	3/4" NPT x 5" pipe nipple	2
14	034720005AC	3/4" NPT tee	3
15	034530016EC	3/4" NPT x 2" pipe nipple	2
16	034600009AC	3/4" to 3/8" NPT adapter	2
17	430064	3/4" NPT plug	1
18	034630003AC	3/8" NPT pipe coupling	2



Notes:

- Item 2 and part number 455003 (sampling port adapter) comes from Trico. Sample collection supplies not provided.
- Items 9,10, and 11 are sold separately.





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