

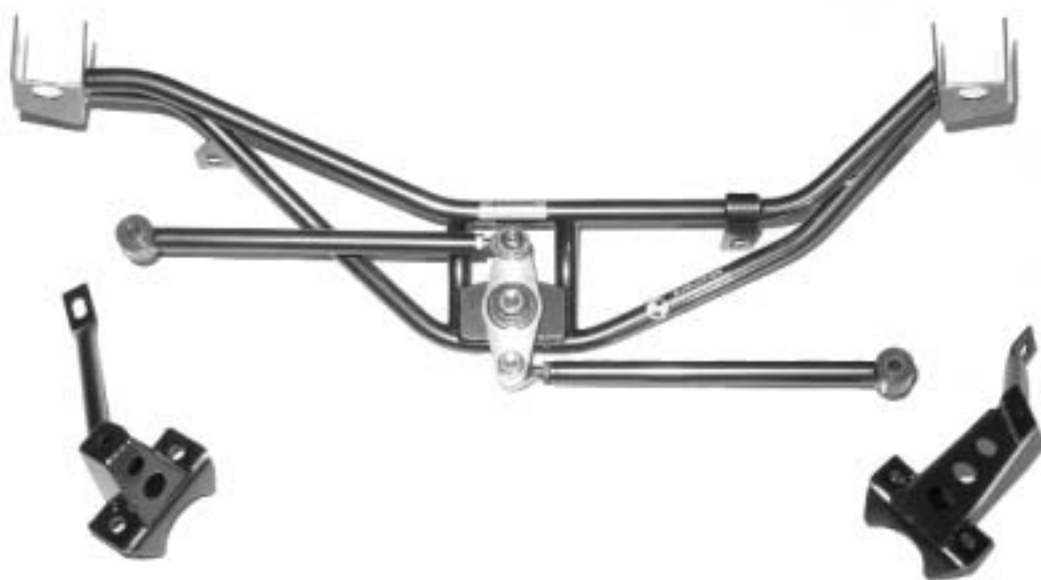


# EVOLUTION MOTORSPORT INCORPORATED

www.evolutionmsport.com

## Owner's Manual

### MUSTANG WATTS LINK SYSTEM



Questions or Concerns? Email us at: [tech@evolutionmsport.com](mailto:tech@evolutionmsport.com)

**PLEASE READ AND SAVE THIS OWNER'S MANUAL FOR FUTURE REFERENCE**

PN: EVM900103A\* - Mustang Watts Link System, (1984 - 2003)

\*All Link, LCA and Assembly options are detailed in this Owner's Manual. This Owner's Manual is applicable to the following Assemblies: EVM900103ASPB, EVM900103ASPW, EVM900103ASBB, EVM900103ASBW, EVM900103AOPB, EVM900103AOPW, EVM900103AOBB, EVM900103AOBW



**WARNING:** PLEASE READ THIS OWNER'S MANUAL, AND THE EVOLUTION MOTORSPORT PRODUCT PURCHASE AGREEMENT IN THEIR ENTIRETY BEFORE INSTALLING EVOLUTION MOTORSPORT INCORPORATED PRODUCTS. BY INSTALLING EVOLUTION MOTORSPORT PRODUCTS, YOU AGREE TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS CONTAINED WITHIN THESE DOCUMENTS. DO NOT OPERATE VEHICLES EQUIPPED WITH THIS PRODUCT ON PUBLIC ROADS. IMPROPER INSTALLATION MAY RESULT IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.





IT IS IMPORTANT THAT THIS OWNER'S MANUAL BE READ AND UNDERSTOOD COMPLETELY BEFORE INSTALLATION OF THE EVOLUTION MUSTANG WATTS LINK SYSTEM IS ATTEMPTED.

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## HAZARD DEFINITIONS



In order to help reduce the risk of personal injury, and prevent possible damage to others, your vehicle and its equipment, we have highlighted potential hazards with a safety alert symbol and an associated hazard warning. In some cases the hazard statement is explicit, in other cases it may simply contain the ANSI defined signal word: **DANGER**, **WARNING** or **CAUTION**. For your better understanding, the signal words with safety alert symbols are defined below.



**DANGER:** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

In addition to the aforementioned signal words, we may use the safety alert symbol with the word **IMPORTANT**. This is not an ANSI defined signal word and is not directly related to a hazard; however, it will provide information that will help promote a safe work environment.



**IMPORTANT:** Indicates information that is important for successful application and understanding of the product or product installation.



**WARNING: Improper installation may result in property damage, personal injury or death!**



## PRODUCT DISCLAIMER OF WARRANTY

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Products offered by Evolution Motorsport are intended for track or "off-highway" competitive or performance use only, and are therefore sold "as is" without any warranty whatsoever. Implied warranties, including warranties of merchantability or fitness for any particular application, are excluded. It is the Purchaser's responsibility to determine the suitability of Evolution Motorsport Products for their application. Evolution Motorsport hereby disclaim and exclude any and all warranties for the Products offered herein pursuant to section 2316 of the Uniform Commercial Code. The entire risk as related to quality and performance of Evolution Motorsport Products is with the Purchaser. Should such Products prove defective following their Purchase, the Purchaser and NOT Evolution Motorsport, assumes the entire cost of all necessary servicing or repair. The Purchaser and NOT Evolution Motorsport Incorporated, assumes any and all risks arising out of or in connection with the use of Evolution Motorsport Products, including, without limitation, the risks of death, paralysis or any bodily injury, disability and/or loss or property damage wheresoever and howsoever caused including but not limited to, defects, normal wear or negligence, lack of maintenance, accident, abnormal operation, or improper installation or service, collision between a vehicle and another vehicle, person or stationary object, skidding, overturning, sudden stops, braking or acceleration, any "Act of God", fire or explosion; or the negligent or deliberate act of another person. **THERE IS NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, MADE REGARDING THE SAFETY OF EVOLUTION MOTORSPORT PRODUCTS. THE ENTIRE RISK AS TO THE QUALITY OR PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER.**

## LEGAL/OEM WARRANTY IMPLICATIONS

Because U.S., Canadian, state or provincial laws and regulation may prohibit removal or modification of components that were installed by the Original Equipment Manufacturer's (OEM's) to meet emission requirements or to comply with motor vehicle safety regulations applicable to vehicles manufactured for use on public roads, vehicles equipped with Evolution Motorsport Products are not to be operated on public roads, and offers such Products for track or "off-highway" competitive or performance use only. **EVOLUTION MOTORSPORT PRODUCTS ARE INTENDED FOR "OFF-HIGHWAY" APPLICATION ONLY.** Installation on a vehicle intended for use on public roads may violate U.S., Canadian, state or provincial laws and regulations including those relating to emission requirements and motor vehicle safety standards. In California certain Products may legally be used on a racing vehicle which will never be operated on public roads. In addition, installation of Evolution Motorsport Products may adversely affect the warranty coverage on the Purchaser's vehicle. Other local, state, provincial, territorial, or international laws may apply to the use of these Products. Please check your local laws before Purchasing Evolution Motorsport Products.

Evolution Motorsport makes no representation as to the legality of any Products in various states or provinces except where noted. The Purchaser accepts all responsibility for the final use of Evolution Motorsport Products and shall hold Evolution Motorsport harmless in any legal proceeding arising from the use of such Products. Adherence to federal, state and local laws is the sole responsibility of the Purchaser. Evolution Motorsport assumes no responsibility for any voided OEM warranties.

## INSTALLATION DISCLAIMER

The installation instructions provided for Evolution Motorsport Products are furnished solely as a matter of convenience to the Purchaser and should be regarded merely as suggestions to an otherwise proficient and experienced automobile technician. Disassembly and assembly of automobiles can be dangerous and should always be conducted in accordance with procedures set forth in the OEM service manuals or their Society of Automotive Engineers (SAE) equivalent. Furthermore, performance of Products may be affected by the manner in which the Products are used, serviced or installed. Purchasers of such products must rely on their own judgment as to the suitable use, service and installation of such Products.

Proper installation and safe use of Evolution Motorsport Products is the sole responsibility of the Purchaser. As part of the consideration for purchasing any Product of Evolution Motorsport, the Purchaser takes a such Product as "as is" and subject to all the provisions of this disclaimer and limitation of damages.

Purchaser agrees to indemnify and hold Evolution Motorsport harmless from any claim, action or demand arising out of, or incident to, the installation or use of Products purchased from Evolution Motorsport by any Purchaser.

 **WARNING: Improper installation may result in property damage, personal injury or death!** 

**Thank you for purchasing Evolution Motorsport products**, and welcome to the Evolution Motorsport team. Evolution Motorsport is a company made up of degreed engineers by trade, who are also performance vehicle enthusiasts. We have over four decades of combined engineering experience, three decades of which are automotive related. We have dedicated ourselves to giving our customers the finest engineered, designed, packaged and manufactured suspension and chassis components in the industry.

Evolution Motorsport products are engineered to enhance a vehicle's performance, for ease of installation, aesthetics and reliability. Our attention to detail and design philosophy ensure our customers un-paralleled satisfaction from the initial installation through years of performance driving. Our products are proudly made in the USA.

As a service to our customers, we provide this Owner's Manual. It is important that you read this manual thoroughly for information regarding the proper assembly, installation and maintenance of your Evolution Motorsport products. If at any time you have questions about Evolution Motorsport products or their installation, be sure to contact our Customer Service department.

If you have access to the internet, please visit us at <http://www.evolutionmsport.com>. The Evolution Motorsport website features extensive information about Evolution Motorsport products, updates to product literature, technical tips and bulletins, retail pricing and more.

 **IT IS IMPORTANT THAT THIS OWNER'S MANUAL BE READ AND UNDERSTOOD COMPLETELY BEFORE INSTALLATION OF EVOLUTION MOTORSPORT PRODUCTS IS ATTEMPTED.**

## IMPORTANT SAFETY CONSIDERATIONS

Evolution Motorsport would like to remind our customers that the disassembly and assembly of automobiles can be dangerous and should always be conducted in accordance with procedures set forth in the OEM service manuals or their Society of Automotive Engineers (SAE) equivalent. With this in mind, we urge our customers to exercise due care and be aware of their surroundings when installing our products. Please review the warnings below, before attempting product installation.



**WARNING:** THIS PRODUCT IS FOR TRACK OR "OFF-HIGHWAY" COMPETITIVE OR PERFORMANCE USE ONLY. DO **NOT** OPERATE VEHICLES EQUIPPED WITH THIS PRODUCT ON PUBLIC ROADS.



**BURN HAZARD.** ENGINE AND EXHAUST COMPONENTS MAY BE HOT. DO **NOT** TOUCH. ALLOW TO COOL BEFORE SERVICING OR INSTALLING EVOLUTION MOTORSPORT PRODUCTS.



**RISK OF INJURY.** CONTACT WITH AUTOMOTIVE FLUIDS AND FUELS CAN CAUSE SKIN IRRITATIONS AND BLINDNESS. **EYE PROTECTION REQUIRED.**



**RISK OF EYE INJURY.** FLYING DEBRIS CAN CAUSE EYE INJURY. **EYE PROTECTION REQUIRED.**



**EXPLOSION AND FIRE HAZARDS.** DO **NOT** WELD, SOLDER OR USE A TORCH NEAR FLUID LINES OR FLAMMABLE MATERIALS. ALWAYS HAVE A CERTIFIED FIRE EXTINGUISHER PRESENT WHEN WELDING.



**IMPORTANT:** READ AND UNDERSTAND EVOLUTION MOTORSPORT PRODUCT OWNER'S MANUAL AND ALL OTHER SAFETY INSTRUCTIONS BEFORE INSTALLING OR SERVICING EVOLUTION MOTORSPORT PRODUCTS.




**CRUSH AND PINCH POINT HAZARDS.** REFER TO VEHICLE OWNER'S OR SERVICE MANUALS FOR PROPER JACKING AND DISASSEMBLY PROCEDURES. FAILURE TO DO SO CAN CAUSE SEVERE INJURY OR DEATH.



**KEEP CHILDREN AWAY.** ALL VISITORS SHOULD BE KEPT A SAFE DISTANCE AWAY FROM WORK AREA WHILE INSTALLING OR SERVICING EVOLUTION MOTORSPORT PRODUCTS.



**CAUTION:** DO **NOT** WEAR RINGS, WATCHES OR LOOSE CLOTHING WHILE INSTALLING OR SERVICING EVOLUTION MOTORSPORT PRODUCTS.

 **WARNING: Improper installation may result in property damage, personal injury or death!** 



**As with all of Evolution Motorsport Products, we recommend that our Products be installed by trained professionals. If you are attempting to install any of our Products yourself, refer to your vehicle owner's and/or service manuals for proper vehicle jacking and disassembly procedures, and for proper safety instructions/precautions. Read and understand this Owner's Manual completely before Product installation is attempted.**

As with all Evolution Motorsport products, we recommend that our products be installed by trained professionals. Regardless of whether or not you or a trained professional are installing Evolution Motorsport products, proper preparation will allow for a trouble free installation. To properly prepare for the installation of Evolution Motorsport products, please review and complete the following items.

- ✚ Read the Evolution Motorsport Product Purchase Agreement in its entirety. A copy of this is included with the product(s). If you have access to the internet, you can visit <http://www.evolutionmsport.com>, to view the most recent version.
- ✚ Read and understand this Owner's manual and all other safety instructions.
- ✚ Familiarize yourself with your vehicle's Owner's and/or Service manuals for proper vehicle jacking and disassembly procedures, and for proper safety instructions and precautions. We recommend you have copies of these manuals available for reference during the installation of Evolution Motorsport products.
- ✚ Examine products for any manufacturing defects or evidence of physical damage. If there is evidence of defects or damage, please refer to the Product Returns section, for our return policy.
- ✚ Examine product packaging for contents. Refer to the Component Parts List for comparison. If any components are missing, please contact Evolution Motorsport's Customer Service Department for replacement.
- ✚ All Evolution Motorsport Products are serialized for tracking and quality control purposes. Please document all product serial numbers before installing products. Refer to the section of this manual entitled Product Information.
- ✚ Review the "Tools Required for Installation" and make sure these tools are available during installation.
- ✚ Be aware of the time estimates for product installation. Keep in mind these are only estimates, make sure you have enough time allotted for the installation.
- ✚ Make sure your work area is clean and clear of obstacles. Cluttered areas invite accidents.

After reviewing these pre-installation items, you should be ready to install your Evolution Motorsport Products. If at any time you have questions about Evolution Motorsport products or their installation, be sure to contact our Customer Service department.



**IMPORTANT:** READ AND UNDERSTAND EVOLUTION MOTORSPORT PRODUCT OWNER'S MANUAL AND ALL OTHER SAFETY INSTRUCTIONS BEFORE INSTALLING OR SERVICING EVOLUTION MOTORSPORT PRODUCTS.



**KEEP CHILDREN AWAY.** ALL VISITORS SHOULD BE KEPT A SAFE DISTANCE AWAY FROM WORK AREA WHILE INSTALLING OR SERVICING EVOLUTION MOTORSPORT PRODUCTS.



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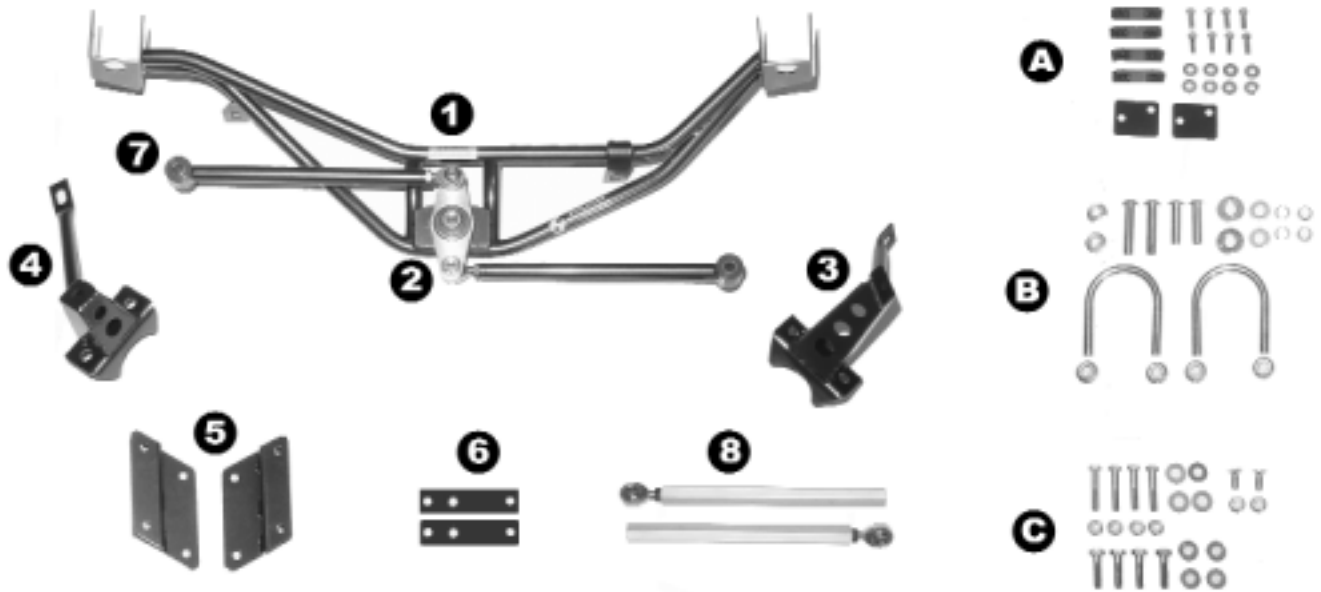
**As with all of Evolution Motorsport Products, we recommend that our Products be installed by trained professionals. If you are attempting to install any of our Products yourself, refer to your vehicle owner's and/or service manuals for proper vehicle jacking and disassembly procedures, and for proper safety instructions/precautions. Read and understand this Owner's Manual completely before Product installation is attempted.**

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## INSTALLATION PREPARATION

### Component Parts, Tools Required and Fasteners



### Component Parts and Tools Required\*

Item	Part Number	Description	Tools Required
<b>1</b>	<b>EVM900103</b>	<b>Mustang Watts Cradle Assembly</b>	<b>Hand Drill</b> <b>1/8" &amp; 3/8" Drill Bits</b> <b>Standard &amp; Metric Box/Open Wrench Set</b> <b>Standard &amp; Metric Socket Set</b> <b>Floor Jack</b> <b>2 Jack Stands</b> <b>6" Level</b> <b>Tire Chocks</b> <b>Allen Head Wrenches/Sockets</b> <b>C-Clamps, Vice grips</b>
<b>2</b>	<b>EVM900101</b>	<b>Mustang Center Crank Assembly</b>	
<b>3</b>	<b>EVM900102D</b>	<b>Axle Tower Assembly (Driver)</b>	
<b>4</b>	<b>EVM900102P</b>	<b>Axle Tower Assembly (Passenger)</b>	
<b>5</b>	<b>EVM900107(DIP)</b>	<b>Stabilizer Bar Relocators</b>	
<b>6</b>	<b>EVM200123</b>	<b>Stabilizer Bar Adapter Plates</b>	
<b>7</b>	<b>EVM300104SHP</b>	<b>Steel Link Rod End/Poly</b>	
<b>8</b>	<b>EVM300104AHH</b>	<b>Aluminum Link Rod End/Rod End</b>	

### Fasteners\*

#### A - Watts Cradle Fasteners

- (8) 5/16"-18x1" UNC Hex Head Cap Screws, Grade 8
- (8) 5/16"-18 UNC Extruded U-Nut
- (8) 5/16" O.D 7/8" USS Standard "W", Grade 8 Washer
- (4) Tapping Plate, (2) Shim

#### C - Stabilizer Bar Relocator Fasteners

- (4) 3/8"-24x2" UNF Hex Head Cap Screws, Grade 8
- (6) 3/8"-24 UNF Top Lock Flange Nut, Grade 8
- (4) 3/8" O.D. 1" USS Standard "W", Grade 8 Washer
- (2) 3/8"-24x1" UNF Flat Countersunk Head Cap Screw
- (4) M10-1.5x40 Hex Head Cap Screws, Grade 10.9

#### B - Axle Tower/Link Attachment Fasteners

- (2) 1/2"-20x2 1/2" UNF Button Head Cap Screw
- (2) 1/2"-20x2" UNF Button Head Cap Screw
- (2) 1/2"-20 UNF 2 3/4" Tube Diameter U-Bolt
- (6) 1/2"-20 UNF Top Lock Flange Nut, Grade 8
- (2) 1/2" O.D 1 3/8" USS Standard "W", Grade 8 Washer**
- (2) 1/2" O.D 1 1/16" SAE Narrow, Grade 8 Washer**
- (2) 3/4" ODx1/2" ID x 1/8" Rod End Spacer
- (2) 3/4" ODx1/2" ID x 1/4" Tapered Rod End Spacer

\* Note: Items in **BOLD** are standard and/or required on all Mustang Watts Link Systems. Items in *ITALICS* vary by application.

**WARNING: Improper installation may result in property damage, personal injury or death!**



**IMPORTANT:** BEFORE INSTALLING THE MUSTANG WATTS LINK SYSTEM, BE SURE TO RECORD YOUR SERIAL NUMBERS IN THE PRODUCT INFORMATION SECTION. AFTER INSTALLATION SERIAL NUMBERS MAY NOT BE VISIBLE.

## MUSTANG WATTS LINK SYSTEM ESTIMATED INSTALLATION TIME: 4 Hr. 30 Min.

Thank you for choosing Evolution Motorsport products. As with all of our products, we recommend that our Mustang Watts Link System be installed by trained professionals.

These installation instructions will detail the installation steps required to successfully install the Mustang Watts Link System. The Watts Link System can be bolted on or welded on. Furthermore, various link and lower control arm options are available. These instructions will cover all possible configurations. For the most part, the installation of the various configurations are similar; however, detailed information will be highlighted when differences exist. Please follow these instructions closely and be aware of your configuration beforehand. The general installation process is as follows:

1. Support and stabilize the vehicle for the Mustang Watts Link System installation.
2. Prepare the Vehicle and fit the Watts Cradle for installation.
3. Install the Watts Cradle.
4. Fit the Axle Towers and prepare for installation.
5. Install the Links and Axle Towers.
6. Adjust the Links.
7. Relocate rear stabilizer bar.
8. Complete the Installation.

Remember, if at any time you have any questions about the installation of your Watts Link System, be sure to contact us. Please review the **Important Safety Considerations** section before beginning installation. Good luck with your installation.

## 1.0 Support and Stabilize the Vehicle for the Mustang Watts Link System Installation



**BURN HAZARD. RISK OF EYE INJURY. CRUSH AND PINCH POINT HAZARDS.** REFER TO THE **IMPORTANT SAFETY CONSIDERATIONS** SECTION FOR HAZARD DETAILS. **EYE PROTECTION REQUIRED.**

The first step in the installation of the Watts Link System is to support and verify the stability of the vehicle. Make sure the vehicle has had time to cool down before beginning installation. **If vehicle has been running, let engine cool down for approximately 1 - 2 hours prior to installation.**

- 1.1 **Make sure that the vehicle is on level ground.**
- 1.2 **Block both front wheels to prevent vehicle from rolling.**
- 1.3 **Place the jack under the rear differential and raise the rear of the vehicle to maximize working clearance for the Watts Link installation. (Approximately 16" from floor to bottom of differential).**
- 1.4 **Place jack stands as close to the differential as possible as shown in Figure 1.0.**
- 1.5 **Lower vehicle onto jack stands. Push vehicle side to side to make sure vehicle is stable.**
- 1.6 **Place a level on the axle tube and verify that vehicle is level; if not, shim one of the jack stands and check for stability. (Figure 1.0).**



Figure 1.0 - Support and Level Vehicle.



**WARNING:** Improper installation may result in property damage, personal injury or death!



# 8 MUSTANG WATTS LINK SYSTEM INSTALLATION

## 2.0 Prepare the Vehicle and Fit the Watts Cradle for Installation

With the vehicle properly supported, the next step is to prepare the vehicle for the Watts Cradle installation. This preparation involves removing the rear shocks, rear stabilizer bar and dropping the exhaust. Additionally, the Watts Cradle will be fit for final assembly. The Watts Cradle can be bolted on or welded on. Preparation of the vehicle for a Bolt-On versus a Weld-On configuration is slightly different. Please be sure to follow the correct procedure for your application.

- 2.1 Remove the rear wheels.
- 2.2 Remove the rear shocks. Begin by removing the upper shock mount, then remove the lower shock mount from the rear axle as shown in Figure 2.0.
- 2.3 Remove the rear stabilizer bar.
- 2.4 Drop the exhaust by removing the rear exhaust hangers from body (Figure 2.1), then disconnect the exhaust at the H/X pipe (Figure 2.2) and allow the tailpipes to drop. (Not required on vehicles equipped with side exhaust).

After the rear shocks and stabilizer bar are removed and the exhaust is disconnected, the fuel tank needs to be supported. Supporting



Figure 2.0 - Remove rear lower shock mount from axle..

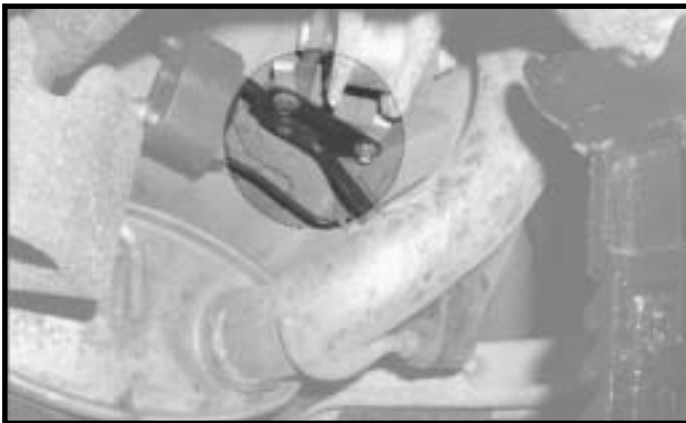


Figure 2.1 - Remove exhaust hangers from body.

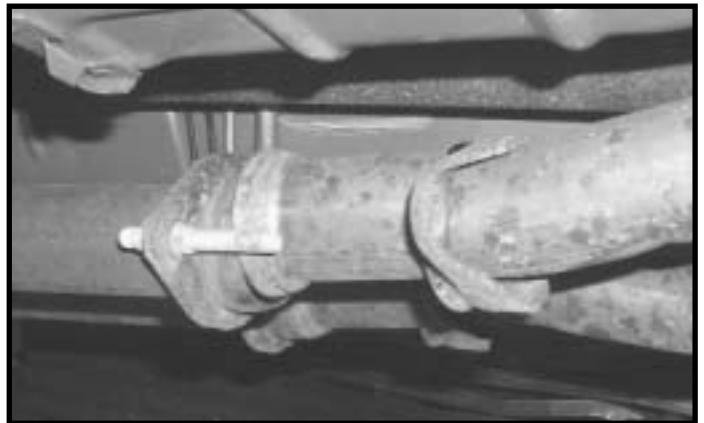


Figure 2.2 - Disconnect exhaust at H/X Pipe.

the fuel tank will allow for the safe removal of the fuel tank straps. Make sure the fuel tank has a minimal amount of fuel in it to minimize the weight.

- 2.5 Place a floor jack under the center of the fuel tank. To better support the fuel tank, place a piece of wood onto the floor jack (Figure 2.3), and raise the jack until it makes contact with the fuel tank. With the fuel tank supported, remove the (2) fuel tank strap bolts and allow the fuel tank straps to hang down.



**CAUTION:** Do NOT move or adjust the floor jack until the Watts Link System installation is complete.



Figure 2.3 - Support fuel tank.

**WARNING:** Improper installation may result in property damage, personal injury or death!

## 2.0 Prepare the Vehicle and Fit the Watts Cradle for Installation (continued)

With the fuel tank straps removed, the Watts Cradle can be fit for final assembly. Please be aware that the Watts Cradle has attachment points on the rear frame rails and at the fuel tank strap mounting locations. It is mandatory that these mounting surfaces be flat. Additionally, the Watts Cradle comes pre-assembled with the Center Crank and Links assembled. For ease of installation, the Links are secured to the Watts Cradle with tie straps. Make sure to leave the tie straps in place until you are instructed to remove them.

**⚠ IMPORTANT:** Before fitting the Watts Cradle, take note of the fact that fuel line routings vary between model years and, in general, the Mustang has liberal tolerances. With these items in mind, you may encounter the following issues:

- ✂ Some models have a fuel vapor line attached to the inboard vertical surface of the rear frame rail (passenger side). The Watts Cradle assembly cannot be mounted with this vapor line attached to the rail. You will need to remove the vapor line attaching screw, and drill out the screw hole using a 3/8" drill bit. Drilling this hole is required to "clean-up" the inside surface of the frame rail for the tapping plates. Once the final Watts Cradle assembly is completed, the vapor line can be secured to the cradle tubes with the supplied tie strap.
- ✂ When positioning the Watts Cradle on the vehicle fore/aft, the Watts Cradle fuel tank brackets may "hit" the weld flange of the fuel tank. This interference can prevent the proper positioning of the Watts Cradle. If there is interference, simply lower the fuel tank to allow for clearance of the Watts Cradle fuel tank brackets.
- ✂ When positioning the Watts Cradle on the vehicle, make sure that all fuel lines are routed above the Watts Cradle assembly. A typical installation will have all fuel lines from the fuel tank routed between the bottom of the fuel tank and the top of the Watts Cradle assembly.

**2.6** Make sure that the mounting surfaces that the fuel tank straps are fastened to (Figure 2.4) and the surfaces around the rear frame rail access holes (Figure 2.5) are flat. If not, use a hammer to flatten these surfaces before installing the Watts Cradle.

**2.7** With the Watts Cradle attachment points prepared, orient the Watts Cradle assembly in the vehicle, such that, the crank is facing toward the front of the vehicle and is perpendicular to the ground (Figure 2.6).



Figure 2.4 - Fuel tank strap mounting locations.



Figure 2.5 - Frame rail access hole.



Figure 2.6 - Orient Watts Cradle assembly.

**⚠ WARNING: Improper installation may result in property damage, personal injury or death! ⚠**

# 10 MUSTANG WATTS LINK SYSTEM INSTALLATION

## 2.0 Prepare the Vehicle and Fit the Watts Cradle for Installation (continued)

2.8 Raise the Watts Cradle Assembly towards the rear frame rails, such that, the holes in the bottom of the Watts Cradle frame brackets align with the access holes in the bottom of the rear frame rails (Figure 2.7). Additionally, make sure that the Watts Cradle fuel tank brackets align with the fuel tank strap mounting holes.

2.9 With the Watts Cradle in place, attach the Watts Cradle to the body using the fuel tank strap bolts that were removed earlier and snug them (Figure 2.8). Do not worry about re-assembling the the fuel tank straps at this time; this is only an interim step.

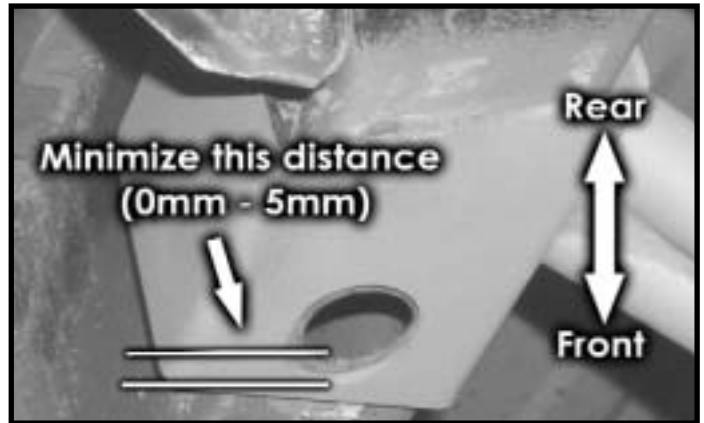


Figure 2.7 - Align Watts with rear frame rail access holes .

2.10 Push the Watts Cradle as far rearward as possible, while still allowing for full access to the rear frame access holes. Your goal is to minimize the distance between the Watts Cradle frame bracket holes and the rear frame access holes, as shown in Figure 2.7. (For reference, this distance should be between 0mm - 5mm). Make sure that the distance is the same on both the passenger and driver sides of the vehicle. This will insure that the Watts Cradle will be installed square with the vehicle.

2.11 With the fuel tank strap bolts snugged, clamp the Watts Cradle frame brackets to the bottom of the frame rails as shown in Figure 2.9. Verify that the reference dimensions (from the previous step) on the passenger and driver sides are still equal. If the Watts Cradle assembly has shifted, make any necessary adjustments.



Figure 2.8 - Watts Cradle fuel tank strap bolts

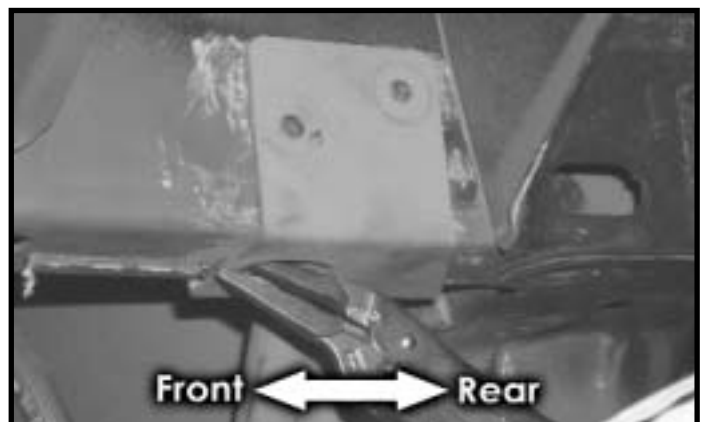


Figure 2.9 - Clamp Watts Cradle frame brackets.

At this point, the Watts Cradle is in position, and needs to be marked to allow for final installation. The next Section will detail the procedures for finalizing the Watts Cradle installation.

## 3.0 Watts Cradle Installation

With the Watts Cradle fit in place the next step is to finalize the installation of the Watts Cradle before moving on to the Axle Towers. You will begin by marking the location of the Watts Cradle for final preparation, then complete the installation. If you are bolting the Watts Link System on proceed to Section 3a.1. If you are welding the Watts Link System on proceed to Section 3b.1.

**WARNING: Improper installation may result in property damage, personal injury or death!**

## 3.0 Watts Cradle Installation (continued)

### Section 3a - Bolt-On Installation

- 3a.1** With the Watts Cradle clamped in place (Section 2.11), mark the mounting hole locations for the Watts Cradle. There are a total of 8 holes: 2 on the outside of the frame rail and 2 on the inside of the frame rail, for both the passenger and driver side frame rails. Marking these holes can be accomplished by simply tracing the holes in the Watts Cradle frame brackets (Figure 3a.0).
- 3a.2** After the hole locations are marked, remove the Watts Link Cradle Assembly.
- 3a.3** With the Watts Cradle removed, it's time to drill out the (8) mounting holes you marked earlier. Use a 3/8" drill bit to create the holes (Figure 3a.1).

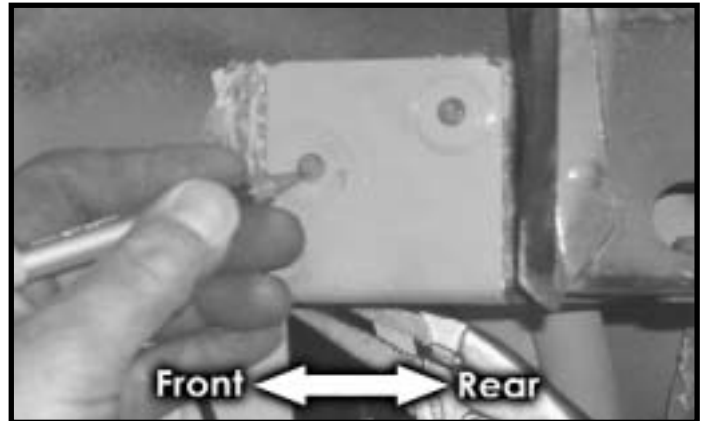


Figure 3a.0 - Mark mounting hole locations.

**NOTE:** Drilling the holes in the frame rails is one of the more difficult steps. We suggest that you first center punch, then pilot drill each of the 8 holes with a 1/8" drill bit. The pilot holes should be made on each side of the frame rail, for a total of 4 holes in each frame rail. With the pilot holes drilled you can then drill the final holes with a 3/8" drill bit. When drilling the final holes, we suggest that you drill the holes from one side of the frame rail; namely, the outer side of the frame rail.

When drilling the final holes, drill through the outer frame rail until it breaks through. After it breaks through, position the drill, such that, the drill bit seats on the pilot hole drilled on the inner side of the frame rail. Once the drill bit is seated, drill through the inner frame rail to complete the holes. This procedure will need to be repeated a total of four times to create the 8 installation holes.

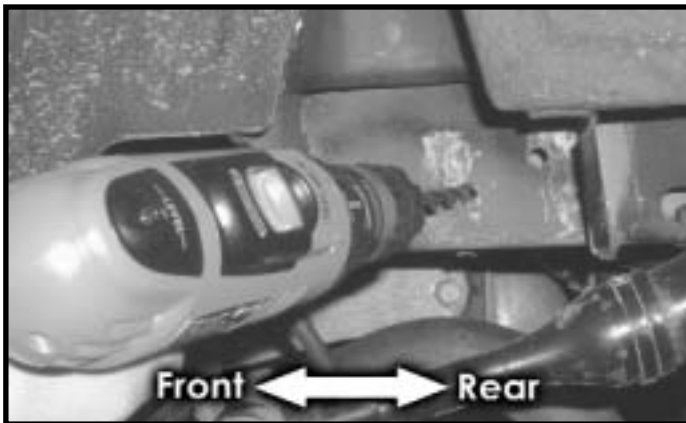


Figure 3a.1 - Drill out mounting holes.



Figure 3a.2 - Sandwich Watts Cradle tabs.

- 3a.4** After the holes have been drilled in the frame rails, reposition the Watts Cradle in the vehicle. Loosely assemble the Watts Cradle into vehicle by rotating the fuel tank straps back into position and snugging the (2) bolts. The Watts Cradle tabs should be sandwiched between the fuel tank straps and the body of the vehicle as shown in Figure 3a.2.
- 3a.5** With the Watts Cradle loosely assembled in the vehicle, inspect for gaps between the vertical faces of the Watts Cradle frame brackets and the vehicle frame rails. Be sure to check both passenger and driver sides. Install supplied shims (one per rail) between frame bracket(s) and frame rail(s) if necessary (Figure 3a.3, Next page).

**WARNING:** Improper installation may result in property damage, personal injury or death!

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## 3.0 Watts Cradle Installation (continued)

**NOTE:** If you are installing any shims, be sure to align the holes in the shims with the holes in the Watts Cradle frame brackets.

With the Watts Cradle in place, you will need to verify that the holes drilled in the frame rails line up with the holes in the Watts Cradle frame brackets. If the alignment is correct, you can proceed onto step 3a.6 and begin installing the tapping plates. Otherwise you will need to modify the holes as necessary. In addition, due to powdercoat build-up, the holes in the Watts Cradle frame brackets may need to be enlarged slightly, to allow for fastener clearance. This can be accomplished with a file.

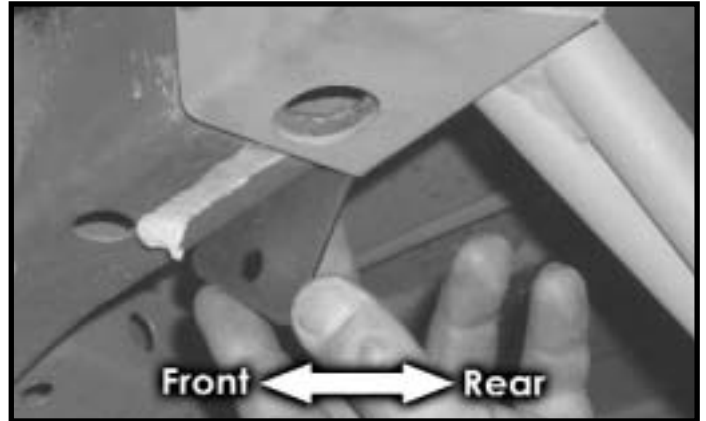


Figure 3a.3 - Install shims.

**3a.6** Insert a tapping plate through the rear frame access hole with your finger (Figure 3a.4), such that, the flat surface of the tapping plate interfaces with the inner surface of the frame rail (Figure 3a.5). With the tapping plate in place, install the fasteners one at a time [5/16" bolts, 5/16" washers]. Repeat this process until all (4) tapping plates have been loosely assembled.

**NOTE:** As with drilling the holes, this can be a tricky task, but its not too bad. We suggest installing the lower fastener first, to secure the tapping plate in the frame rail. Once the tapping plate is loose assembled, simply rotate the top of the tapping plate into position with your finger and assemble the upper fastener. A telescoping magnet may be helpful for this step.



Figure 3a.4 - Insert tapping plate.

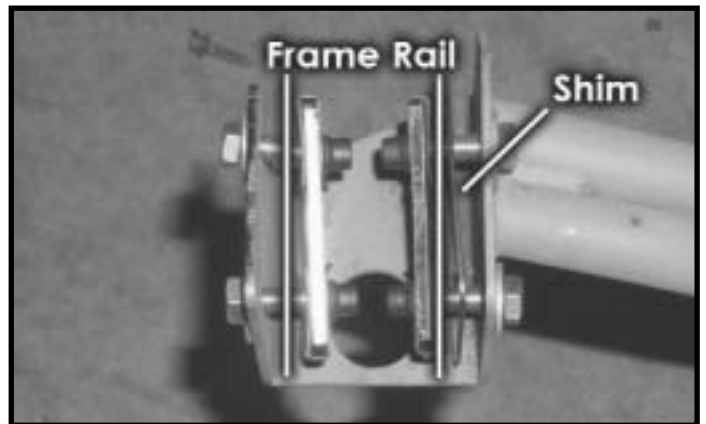


Figure 3a.5 - Tapping plate orientation.

To finalize the Watts Cradle installation, you will need to final torque and secure the 8 frame rail bracket fasteners with locktite. However, prior to the addition of locktite onto the frame bolts, insure that all 8 frame bolts are tightened. It is important that all the frame rail fasteners are tight at this point. Once all 8 fasteners are tight, you will need to install locktite on the bolts. We recommend using blue locktite. Since locktite will set up in about 15 minutes, we recommend removing 1 bolt at a time. See steps below.

**3a.7** With the Watts Cradle in place and all the fasteners loosely assembled, begin "snugging" the 8 frame rail bracket fasteners, then torque to 30 lb-ft (Figure 3a.6). Once all the fasteners are tight, you can then begin to apply locktite to the the fasteners one at a time.

**3a.8** Remove a bolt, and make sure the tapping plate that you previously installed inside the frame rail has not moved out of position. If it does, reinstall the bolt, and re-secure all the bolts. If the tapping plate has not moved, liberally coat the bolt with locktite and reinstall into the frame rail bracket and torque to 30 lb-ft. Repeat this procedure for all 8 bolts.

**WARNING:** Improper installation may result in property damage, personal injury or death!

## 3.0 Watts Cradle Installation (continued)

- 3a.9** With the locktite applied and the frame rail bracket fasteners properly torqued, you can torque the fuel tank attachment bolts to OEM specifications. See Figure 3a.2.

The Bolt-On, Watts Cradle installation is now complete. You can lower the floor jack that is supporting the fuel tank and remove it from underneath the vehicle. Proceed to Section 4.0 to install the Axle Towers.

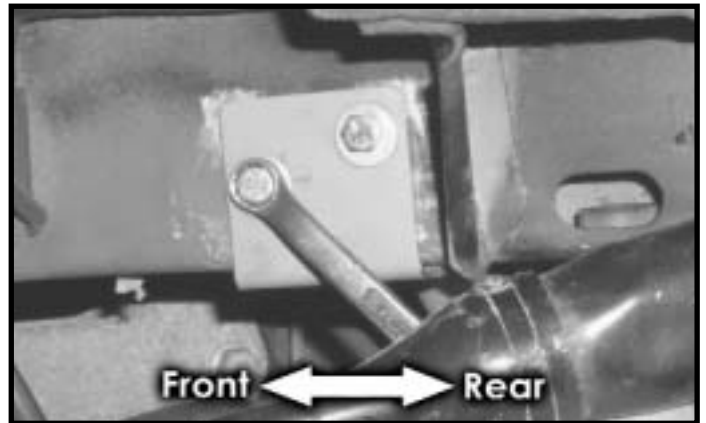


Figure 3a.6 - Frame rail bracket fasteners.

### Section 3b - Weld-On Installation



**BURN HAZARD. RISK OF EYE INJURY. EXPLOSION AND FIRE HAZARDS.** REFER TO THE IMPORTANT SAFETY CONSIDERATIONS SECTION FOR HAZARD DETAILS. **EYE PROTECTION REQUIRED.**

Your Evolution Motorsport Watts Link System was designed and engineered as a robust Bolt-On system that will provide you with years of trouble free operation. Since there are those who prefer to weld components onto their vehicles, we also designed our Watts Link System to be easily welded onto a vehicle.

Welding components onto a vehicle makes them "permanent", thus making removal of the system difficult, should the need ever arise. For this reason, Evolution Motorsport does not recommend welding the Watts Link System onto your vehicle. Since there are those who prefer Weld-On systems, we have included Weld-On instructions. **Any welding of the Watts Cradle to the body, or the Axle Tower to the axle should be performed by a professional.** If you are going to weld on your system, please review the following precautions:



**DANGER:** EXERCISE EXTREME CAUTION WHEN WELDING. PLUG ANY OPEN FUEL OR VAPOR LINES AND COVER THEM WITH A WELDING TARP. COVER ANY BRAKE LINES WITH A WELDING TARP. FUEL VAPORS AND AUTOMOTIVE FLUIDS CAN CREATE **FIRE AND/OR EXPLOSION HAZARDS.** ALWAYS HAVE A CERTIFIED FIRE EXTINGUISHER PRESENT WHEN WELDING.

When opting for the Weld-On installation, the Watts Cradle and Axle Towers are the items that can be welded on. This section will cover the Watts Cradle, while Section 4.0 will cover the Axle Towers. Do **NOT** do any final welding until the complete Watts Link System is installed. All welding of the Watts Cradle in this section, as well as, the Axle Towers in Section 4.0 should initially be minimal and allow for adjustment if necessary. Once the Watts Link System is installed and adjusted properly, final welding details will be provided.

- 3b.1** Disconnect battery cables.
- 3b.2** With the Watts Cradle clamped in place, trace the outline of the Watts Cradle Frame brackets, as well as the holes in the frame brackets (Figure 3b.0). You will use this as a guide to prepare the frame rails for welding. Remember to mark the inside, outside and bottom of both rear frame rails.
- 3b.3** After the Watts Cradle Frame Bracket locations are marked, remove the Watts Link Cradle Assembly.

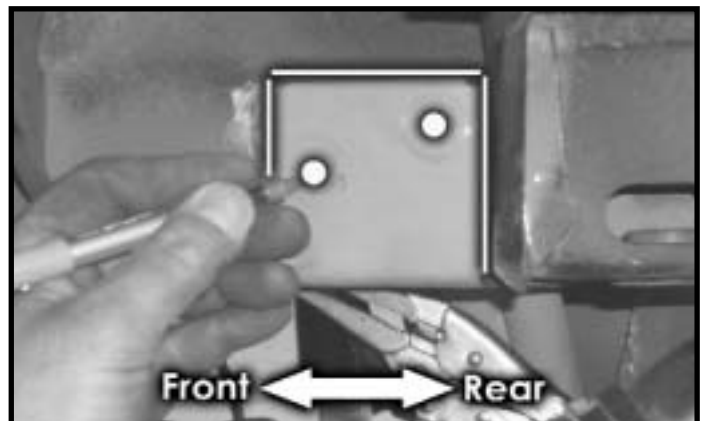


Figure 3b.0 - Trace frame bracket contours.

**WARNING:** Improper installation may result in property damage, personal injury or death!

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## 3.0 Watts Cradle Installation (continued)

- 3b.4** With the Watts Cradle removed, you need to prepare the surfaces for welding. Sand or grind all the surfaces you marked on the vehicle, as well as, the perimeter of the Watts Cradle Frame brackets, as necessary.
- 3b.5** After all the surfaces have been prepared, reposition the Watts Cradle in the vehicle. Loosely assemble the Watts Cradle into the vehicle by rotating the fuel tank straps back into position and snugging the (2) bolts. The Watts Cradle fuel tank brackets should be sandwiched between the fuel tank straps and the body of the vehicle as shown in Figure 3a.2.
- 3b.6** Push the Watts Cradle as far rearward as possible, while still allowing for full access to the rear frame access holes. Your goal is to minimize the distance between the Watts Cradle frame bracket holes and the rear frame access holes, as shown in Step 2.10, Figure 2.7 (For reference, this distance should be between 0mm - 5mm). Make sure that the distance is the same on both the passenger and driver sides of the vehicle. This will insure that the Watts Cradle will be installed square with the vehicle.
- 3b.7** With the fuel tank strap bolts snugged, clamp the Watts Cradle frame brackets to the frame rails as shown in Figure 3b.1. Verify that the reference dimensions (from the previous step) on the passenger and driver sides are still equal. If the Watts Cradle assembly has shifted, make any necessary adjustments.
- 3b.8** With the Watts Cradle clamped in place and the fuel tank fasteners loosely assembled, it's time to tack weld the Watts Cradle to the frame rails. Refer to Figure 3b.2 for the placement of the tack welds.

**NOTE:** Figure 3b.2 is representative of the driver and passenger frame rails. A total of 12 tack welds will be placed in this step. Three tack welds on the inner and outer surfaces of both frame rails. Remember, all welds will be finalized as the last step in the installation of the Watts Link System.

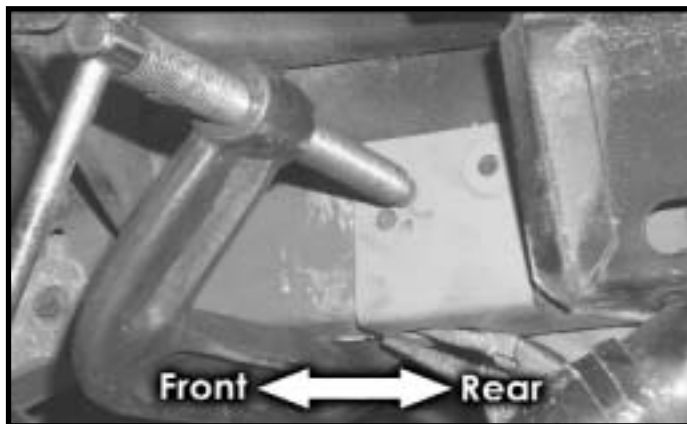


Figure 3b.1 - Clamp frame bracket.

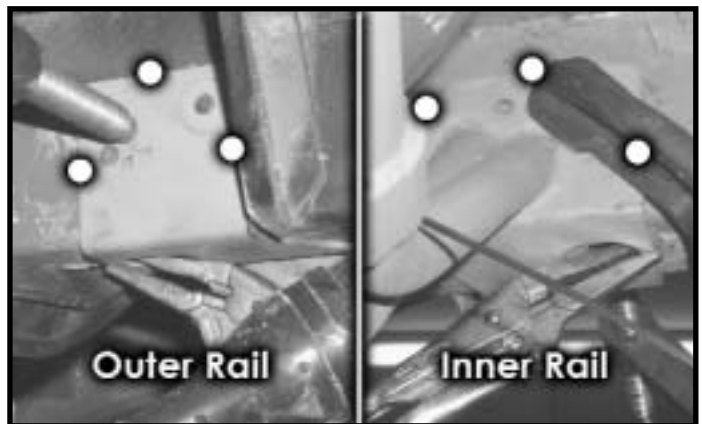


Figure 3b.2- Tack weld placement.

The preliminary, Weld-On Watts Cradle installation is now complete. You can lower the floor jack that is supporting the fuel tank and remove it from underneath the vehicle. Proceed to Section 4.0 to install the Axle Towers.

## 4.0 Fit Axle Towers and Prepare for Installation

With the Watts Cradle in place, the next step is to loose assemble the Axle Towers, which allow for the Link attachments to the Center Crank of the Watts Cradle. This step will involve the initial installation of the Axle Towers. Final Axle Tower installation and Link attachment/adjustment will be detailed in Section 5.0.

The Axle Towers can be bolted on or welded on. Proceed to Step 4.1 to prepare for the Axle Tower installation. Once Steps 4.1 - 4.3 are complete, proceed to Section 4a.4 If you are bolting the Axle Towers on; proceed to Section 4b.4, If you are welding the Axle Towers on.

**WARNING:** Improper installation may result in property damage, personal injury or death!

## 4.0 Fit Axle Towers and Prepare for Installation (continued)

- 4.1 Before installing the Axle Towers, you will need to loose assemble the rear shocks by their upper shock attachments. Do not install the lower shock attachments yet.
- 4.2 Cut the tie straps holding the Links to the Watts Cradle assembly, and allow the Links to hang down.
- 4.3 Secure the exhaust system back into position. This will allow adequate clearance to install the Axle Towers. Begin re-installing the exhaust system by first securing the rear exhaust hangers to the body (Figure 2.1). Then reconnect the exhaust system to the H/X pipe (Figure 2.2). Install the nuts onto the studs, but do not tighten yet. This can be done once the Watts Link System installation is complete.

With the Axle Tower preparation complete, proceed to Section 4a.4 If you are bolting the Axle Towers on. If you are welding the Axle Towers on proceed to Section 4b.4.

### Section 4a - Bolt-On Installation

- 4a.4 Prepare to assemble the Axle Towers to the rear axle, by gathering the supplied hardware [1/2" U-bolts and 1/2"-20 nuts] and placing the Axle Towers on the appropriate sides of the vehicle. The tall Axle Tower is installed on the drivers side, while the short Axle Tower is installed on the passenger side.

**NOTE:** Some vehicles may require rerouting/modification of brake tubes for Axle Tower mounting clearance. **THE AXLE TOWER ASSEMBLY SHOULD NOT CONTACT ANY BRAKE TUBES. MAKE SURE THAT YOU DO NOT TRAP THE BRAKE TUBES WITH EITHER THE AXLE TOWER OR THE U-BOLT.**

**NOTE:** Prior to installing the U-bolts onto the axle tubes, wrap the bolt threads with electrical tape to protect them from damage. Once the U-bolts are installed onto the axle tubes, remove the electrical tape.



Figure 4a.0 - Assemble driver side Axle Tower.

- 4a.5 To install the driver side Axle Tower (tall one), place the Axle Tower on the rear axle tube, such that, the square opening at the tapered end of the tower is facing the ground and the strut rod is pointing toward the rear shock lower attachment. With the Axle Tower oriented correctly, loose assemble the Axle Tower to the rear axle tube with the supplied U-bolt.

- 4a.6 Now that the Axle Tower is loose assembled to the rear axle, slide the Axle Tower along the axle tube until the hole in the strut rod aligns with the shock mounting hole on the lower control arm bracket on the axle (See Figure 2.0, Figure 4a.0).



Figure 4a.1 - Assemble passenger side Axle Tower.

- 4a.7 Loose assemble lower shock attachment, making sure to sandwich the Axle Tower strut rod between the bracket on the axle and the shock bracket (Figure 4a.0).

- 4a.8 With the Axle Tower in place, snug the U-bolt and lower shock attachment.

- 4a.9 To install the passenger side Axle Tower (short one), repeat Steps 4a.5 to 4a.8 and refer to Figure 4a.1. Proceed to Section 5.0.

**WARNING:** Improper installation may result in property damage, personal injury or death!

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## 4.0 Fit Axle Towers and Prepare for Installation (Continued)

### Section 4b - Weld-On Installation

When opting for the Weld-On installation, the Axle Towers can be welded to the rear axle tube (U-bolts are not supplied); however, Evolution Motorsport does not recommend welding the Axle Towers onto the rear axle tube. Welding on the rear axle tube may distort the axle tube, which could lead to premature axle seal and bearing failure.

If you are welding the towers onto the rear axle, we recommend that the axle lubricant be drained from the rear axle, and the tubes cleared of any lubricant. Furthermore, after welding is completed, you should have a competent drivetrain specialist/shop check the axle for straightness. As stated above, any distortion of the axle tubes can cause premature axle seal and bearing failure.

Although Evolution Motorsport does not recommend welding on the towers, we have included Weld-On instructions for those who prefer welding. This Section will detail the preparation of the Axle Towers for installation. No welding will be performed in this section. Once the Watts Link System is installed and adjusted properly, final welding details will be provided.

If you originally purchased the Mustang Watts Link System as a "Weld-On" system and have decided to bolt the Axle Towers on, you will need to contact Evolution Motorsport for the required U-Bolts and fasteners. With the proper fasteners, refer to Section 4a for the installation of the "Bolt-On" Axle Towers.

- 4b.4 Prepare to assemble the Axle Towers to the rear axle, by placing the Axle Towers on the appropriate sides of the vehicle. The tall Axle Tower is installed on the drivers side, while the short Axle Tower is installed on the passenger side.**

**NOTE:** Some vehicles may require rerouting/modification of brake tubes for Axle Tower mounting clearance. **THE AXLE TOWER ASSEMBLY SHOULD NOT CONTACT ANY BRAKE TUBES. MAKE SURE THAT YOU DO NOT TRAP THE BRAKE TUBES WITH THE AXLE TOWER.**

- 4b.5 To install the driver side Axle Tower (tall one), place the Axle Tower on the rear axle tube, such that, the square opening at the tapered end of the tower is facing the ground and the strut rod is pointing toward the rear shock attachment.**
- 4b.6 With the Axle Tower oriented correctly to the rear axle, slide the Axle Tower along the axle tube until the hole in the strut rod aligns with the shock mounting hole on the lower control arm bracket on the axle (See Figure 2.0, Figure 4b.0).**
- 4b.7 To insure weld integrity, trace the outline of the Axle Towers where they interface with the rear axle tube. You will use this as a guide to prepare the rear axle tube for welding.**
- 4b.8 After the Axle Tower location is marked, remove the Axle Tower and prepare the surfaces for welding. Sand or grind all the surfaces you marked on the vehicle, as well as, the perimeter of the Axle Tower interface areas, as necessary.**



Figure 4b.0 - Assemble driver side Axle Tower.



Figure 4b.1 - Assemble passenger side Axle Tower.

**WARNING: Improper installation may result in property damage, personal injury or death!**

## 4.0 Fit Axle Towers and Prepare for Installation (Continued)

- 4b.9 After all the surfaces have been prepared, loose assemble lower shock attachment, making sure to sandwich the Axle Tower strut rod between the bracket on the axle and the shock bracket and clamp the Axle Tower onto the rear axle tube. (Figure 4b.0, previous page).
- 4b.10 With the Axle Tower clamped in place, snug lower shock attachment.
- 4b.11 To install the passenger side Axle Tower (short one), repeat Steps 4b.5 to 4b.10 and refer to Figure 4b.1(previous page). Proceed to Section 5.0.

## 5.0 Link Adjustment and Axle Tower Installations

With the Axle Towers in place, the next step is to assemble the Links to the Axle Towers. There are two different Link options to be considered; the Standard Links and the Optional Links. The Standard Watts Link System contains a pair 1020 DOM mild steel links which have a polyurethane bushing on one end of each Link and a 3 piece teflon lined spherical rod end on the other end of each Link. The Optional Watts Link System contains a pair 6061-T6 aluminum Links which have 3 piece teflon lined spherical rod ends on each end of each Link (one LH thread, one RH thread).

If you are using the Standard Links proceed to Section 5a.1 If you are using the Optional Links proceed to Section 5b.1.

### Section 5a - Standard Link Installation

- 5a.1 Prior to attaching the Links to the Axle Towers, the Link length must be preset to approximately 14". To do this, measure from the centerline of the spherical rod end bolt (at the Watts Crank) to the centerline of the urethane bushing sleeve. Loosen the jam nut and turn the spherical rod end either clockwise or counter clockwise until the center to center dimension is approximately 14". Once the link lengths measure 14", snug the jam nuts (Figure 5a.0)
- 5a.2 With the Center Crank oriented vertically, rotate driver side Link, such that, the hole in the Axle Tower and the hole for the inner sleeve of the bushing align. If there is a mis-alignment, attempt to reposition the Axle Tower, otherwise adjust the rod end at the Crank.
- 5a.3 With the holes aligned, attach and snug the Link to the Axle Tower with the supplied hardware [1/2"-20 x 2 1/2" button-head cap screw, 1 3/8" O.D. washer, 1/2"-20 nut]. When installing the Link refer to Figure 5a.1, and note the assembly order to be the following: Cap Screw - Washer - Link - Axle Tower - Nut. With the link installed, tighten the jam nut.
- 5a.4 To install the passenger side Link, repeat Steps 5a.1 to 5a.3.
- 5a.5 With both Links installed, verify that the rod ends at the Center Crank are parallel to their mating surfaces. This will help optimize bearing articulation. See Figure 5b.2 (next page). Proceed to the "Adjust Links" section at bottom of the next page.



Figure 5a.0 -Preset Standard Link.



Figure 5a.1 - Standard Link attachment.

**WARNING: Improper installation may result in property damage, personal injury or death!**

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## 5.0 Link Adjustment and Axle Tower Installations

### Section 5b - Optional Link Installation

**5b.1** Prior to attaching the links to the towers, the link length must be preset to approximately 14". To do this, measure from the centerline of the spherical rod end bolt (at the Watts Crank) to the centerline of the spherical rod end that will attach to the tower. Loosen the both rod end jam nuts and turn either the Link or the rod ends clockwise or counter clockwise until the center to center dimension is approximately 14". As you are adjusting this length, make sure that each rod end has an equal number of threads exposed. Once the link lengths are preset, snug the jam nuts. (Figure 5b.0)



Figure 5b.0 - Preset Optional Links.

**5b.2** With the Center Crank oriented vertically, rotate driver side Link, such that, the hole in the Axle Tower and the hole in the rod end align. If there is a mis-alignment, attempt to reposition the Axle Tower, otherwise adjust the rod ends, as in the Step 5b.1, make sure that are an equal number threads exposed on each rod end.

**5b.3** With the holes aligned, attach and snug the Link to the Axle Tower with the supplied hardware [1/2"-20 x 2" button-head cap screw, (2) 1 1/16" O.D. washer, 1/8" spacer, 1/4" tapered spacer, 1/2"-20 nut]. When installing the Link refer to Figure 5b.1, and note the assembly order to be the following: Cap Screw - Washer - 1/8" Spacer - Link - 1/4" Tapered Spacer - Washer - Axle Tower - Nut. With the link installed, tighten the jam nuts.

**5b.4** To install the passenger side Link, repeat Steps 5a.1 to 5a.3.

**5b.5** With both Links installed, verify that the rod ends at the Center Crank and Axle Towers are parallel to their mating surfaces. This will help optimize bearing articulation. See Figure 5b.2. Proceed to the "Adjust Links" section at the bottom of this page.



Figure 5b.1 - Optional Link attachment.

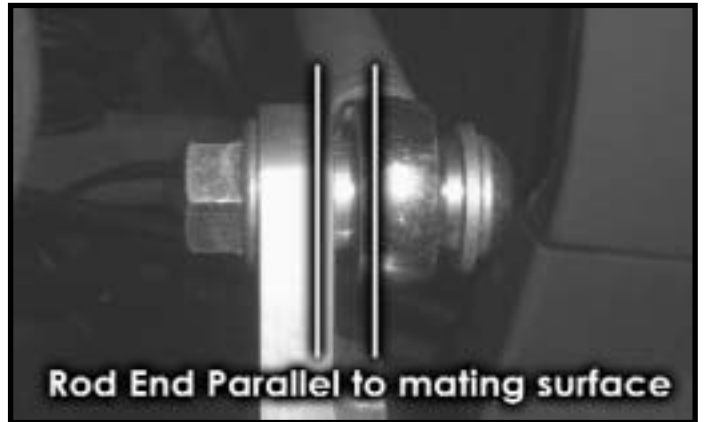


Figure 5b.2 - Rod end orientation.

### Adjust Links

Once the Links are installed, they will need to be adjusted according to your vehicle's rear ride height. Depending on the rear ride height of your vehicle, the Links could be parallel to one another, point upward away from the Center Crank attachment or point downward away from the Center Crank attachment. The installed Axle Towers should provide a general start point for the adjustment of the Links.

**WARNING: Improper installation may result in property damage, personal injury or death!**

## 5.0 Link Adjustment and Axle Tower Installations (Continued)

**NOTE:** The Link adjustment outlined below will be accomplished by rotating the Axle Towers about the rear axle tube. Depending on the ride height of the vehicle, a slight adjustment to the length of the Links may be required, as well. Remember, the Center Crank **MUST** remain oriented vertically while adjusting the links. Furthermore, the driver and passenger side links **MUST** be of equal length (approximately 14").

**5.6** With the Center Crank oriented vertically, measure the height of the driver side Link at the Axle Tower (Figure 5.0). Record the height measurement in Table 5.0.

**NOTE:** All measurements are measured from ground to the centerline location of the Link attachment at the Axle Tower (Figure 5.0).

**5.7** With the Center Crank oriented vertically, measure the height of the passenger side Link at the Axle Tower (Figure 5.0). Record the height measurement in Table 5.0.

**5.8** Subtract the height of the driver Link from the height of the passenger Link and record in Table 5.0.

**5.9** For proper Link adjustment, the difference between the Link heights as calculated in Table 5.0 **MUST** be approximately 4 1/2", otherwise:

If the **Difference is greater than 4 1/2"** rotate the Axle Towers toward each other (Driver - Up, Passenger - Down).

If the **Difference is less than 4 1/2"** rotate the Axle Towers away from each other (Driver - Down, Passenger - Up).

**5.10** Check Link measurements and repeat until the difference is 4 1/2".

**5.11** With the links properly adjusted, secure the Axle Towers to prevent rotation.



Figure 5.0 - Measure Link attachments.

Passenger	Driver	Difference
<input type="text"/>	<input type="text"/>	<input type="text"/>

Table 5.0 - Link attachment measurements.

With the Axle Towers secured and the Links installed and adjusted, your configuration should roughly match one of the configurations illustrated in Figure 5.1. Proceed to Section 6.0 to finalize the Watts Cradle, Axle Tower and Link installations.

**NOTE:** The configurations illustrated in Figure 5.1 are viewed from the rear of the vehicle looking forward. In Figure 5.1, D denotes driver side and P denotes passenger side.

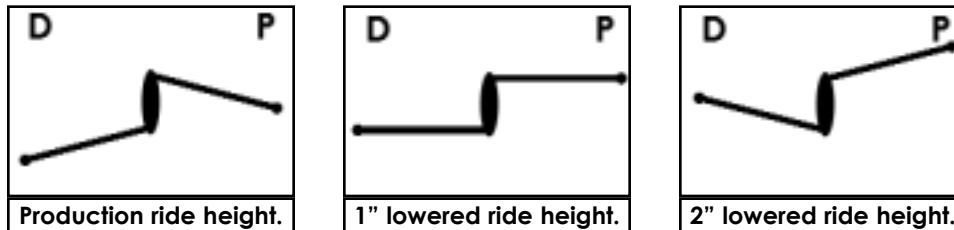


Figure 5.1 - Possible link configurations.

**WARNING:** Improper installation may result in property damage, personal injury or death!

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### 6.0 Finalize Watts Cradle, Axle Tower and Link Installations.

At this point, the Watts Link System is essentially installed; however, it needs to be finalized. In this Section you will perform the necessary steps to finalize the Watts Cradle, Axle Tower and Link installations. If you are bolting the Watts Link System on proceed to Section 6a.1. If you are welding the Watts Link System on proceed to Section 6b.1.

#### Section 6a - Bolt-On Installation

- 6a.1 The final installation of the Watts Cradle was performed in Section 3a.9; however, we suggest that you verify the torque on the Center Crank attachment. The torque should be approximately 125 ft-lbs.
- 6a.2 To finalize the Axle Tower installations, torque the nuts on each of the U-bolts to 75 ft-lbs. Be sure to tighten the U-bolts evenly. Next, to finalize the shock installation, torque the upper and lower shock attachments to OEM specifications.
- 6a.3 With the Watts Cradle and Axle Towers installed you need to finalize the Link installation. Torque the Link attachment at each Axle Tower to 75 ft-lbs. Verify that the Link attachments at the Crank are 75 ft-lbs, as well. Verify jam nuts on rod ends are tight.

The Bolt-On Watts Link System is now complete. Proceed to Section 7.0 to relocate the rear stabilizer bar. See Figures 6.0 and 6.1 for final installation photos.

#### Section 6b - Weld-On Installation

- 6b.1 To finalize the Watts Cradle installation, you need to seam weld the complete perimeter of both Watts Cradle Frame Brackets to the rear frame rails. With that complete, puddle weld the (8) holes on the vertical surfaces of the Watts Cradle Frame Brackets.
- 6b.2 Torque the fuel tank attachment bolts to OEM specifications.
- 6b.3 We suggest that you verify the torque on the Center Crank attachment. The torque should be approximately 125 ft-lbs.
- 6b.4 To finalize the Axle Tower installations, seam weld the interface between the the Axle Towers and the rear axle tube. Be sure to seam weld on both sides of each Axle Tower. Next, to finalize the shock installation, torque the upper and lower shock attachments to OEM specifications.
- 6b.5 With the Watts Cradle and Axle Towers installed you need to finalize the Link installation. Torque the Link attachment at each Axle Tower to 75 ft-lbs. Verify that the Link attachments at the Crank are 75 ft-lbs, as well. Verify jam nuts on rod ends are tight.

The Weld-On Watts Link System is now complete. Proceed to Section 7.0 to relocate the rear stabilizer bar. See Figures 6.0 and 6.1 for final installation photos.



Figure 6.0 - Final installation Driver side.



Figure 6.1 - Final installation Passenger side.

**WARNING: Improper installation may result in property damage, personal injury or death!**

## 7.0 Relocate Rear Stabilizer Bar

With the Watts Cradle, Axle Towers and Links installed and adjusted, the final step is to install the rear stabilizer bar relocater brackets. These brackets, relocate the production stabilizer bar down and forward on the vehicle to maximize the Watts Center Crank clearance to the stabilizer bar. There are two different configurations for this; one for production lower control arms (LCA) and one for boxed/tubular LCAs. Make sure you are aware of your vehicles LCA configuration before you proceed. If you are using the production LCAs, proceed to Section 7a.1. If you are using boxed/tubular LCAs, proceed to Section 7b.1.

### 7a - Production Lower Control Arms

- 7a.1** Prepare to install the Production Stabilizer Bar Relocator Brackets (PSBRs), by placing the PSBRs on the appropriate sides of the vehicle (Figure 7a.0).
- 7a.2** To install the driver side PSBR, insert the PSBR into the channel of the LCA with the flat vertical face towards outside of vehicle. If properly oriented, the lower profile of the PSBR will be pointing towards the front of the vehicle (Figure 7a.1).
- 7a.3** With the PSBR inserted into the LCA, line up the holes in the LCA with the holes in the PSBR and install the supplied fasteners [(2) 3/8"-24 x 2 hex head cap screw, (2) 3/8"-24 nut, (2) 1" O.D. washer]. When assembling, the assembly order will be: Cap Screw - Washer - LCA - PSBR - LCA - Nut. Torque fasteners to 40 ft-lbs.
- 7a.4** To install the passenger side PSBR, repeat Steps 7a.1 to 7a.3.
- 7a.5** With both PSBRs installed, remove the (4) U-nuts from production stabilizer bar and reinstall them in the reverse position on the stabilizer bar (Figure 7a.2).
- 7a.6** After U-nuts have been reinstalled on the stabilizer bar, install the stabilizer bar on the outside of the PSBRs and torque fasteners to OEM specifications (Figure 7a.3).



Figure 7a.0 - Stabilizer Relocator Brackets.

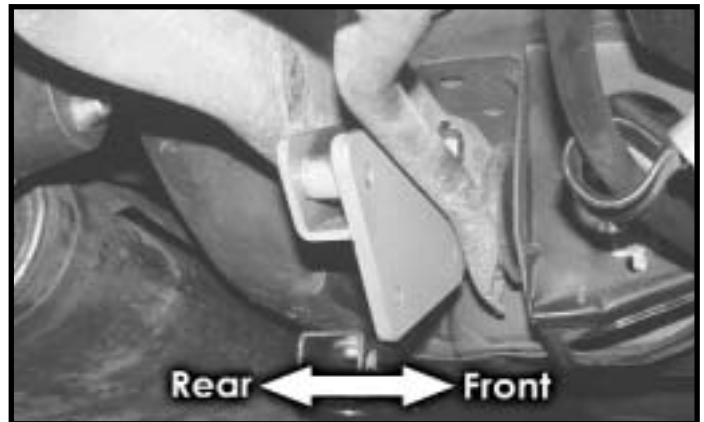


Figure 7a.1 - Insert PSBR into LCA.

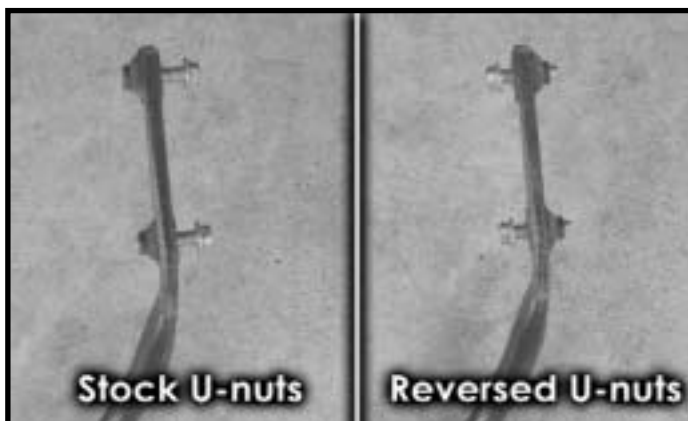


Figure 7a.2 - Reverse stabilizer bar U-nuts.

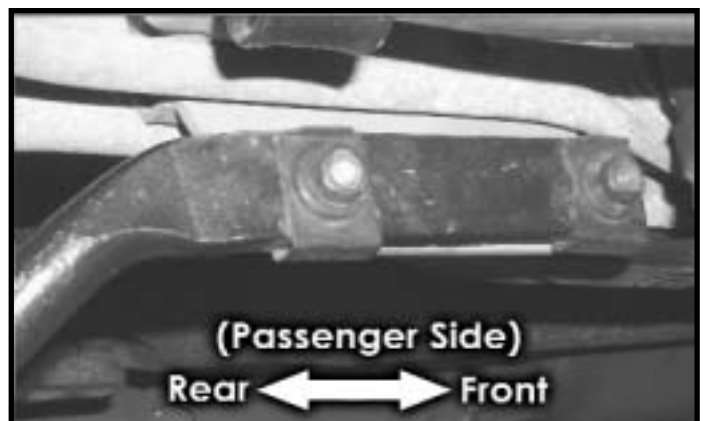


Figure 7a.3 - Reinstall stabilizer bar.

**WARNING:** Improper installation may result in property damage, personal injury or death!

## 22 MUSTANG WATTS LINK SYSTEM INSTALLATION

### 7.0 Relocate Rear Stabilizer Bar (continued)

#### 7b - Boxed/Tubular Lower Control Arms

If you have aftermarket boxed/tubular lower control arms (LCAs) you will use this section as a general guide. With the variety of aftermarket LCAs available it is difficult to specifically define a set of installation instructions. The general idea of the Stabilizer Bar Relocator is move the rear stabilizer bar down (2") and forward (1 1/4") in the vehicle. Depending on the LCAs you are using, you may need to install the Boxed/Tubular Stabilizer Bar Relocator (BSBR) on the inner side of the LCA, the outer side of the LCA or simply use the BSBR as a template to drill out your existing LCA.

**NOTE:** Before you make any modifications to your LCA's, you will need to make a couple of measurements which will help you to determine if the BSBR is required.

**7b.1** To install the driver side Boxed Stabilizer Bar Relocator (BSBR), begin by marking a line at the centerline of the LCA directly above the stabilizer mounting plate as shown in Figure 7b.0. From this line, measure down 2" along the centerline of the stabilizer bar front mounting hole. Mark this point.

**7b.2** Next, position the BSBR onto the LCA with the counter sunk hole centered on the point you just marked, as shown in Figure 7b.1. Hold the BSBR at this point and rotate the rear of the BSBR until the top surface of the BSBR is parallel with the bottom of the box section of the LCA. (The centerline of the BSBR rear hole should be 2" below the line marked along the centerline of the LCA as shown in Figure 7b.0.)

**NOTE:** If your LCA stabilizer mounting plate extends out to the ends of the BSBR, your LCA will **not** require the BSBR, but you will need to use the BSBR as a template for drilling the holes for relocating the stabilizer bar.

**7b.3** With the BSBR positioned onto the LCA (from Section 7b.2), mark the LCA stabilizer mounting plate at the locations where the BSBR holes are obstructed by the LCA stabilizer mounting plate.

**7b.4** After the hole location(s) are marked, remove the BSBR and drill out the hole(s). Use a 3/8" drill bit to create the hole(s).

**NOTE:** When drilling the hole(s), we suggest that you first center punch, then pilot drill the hole with a 1/8" drill bit. With the pilot hole drilled you can then drill the final hole(s) with a 3/8" drill bit.

**7b.5** To install the passenger side BSBR, repeat Steps 7b.1 to 7b.4.

If the design of your LCAs do not require the use of the BSBRs, review the note before Section 7b.9, then proceed to **Section 7b.9**. Otherwise, since there are numerous types of Boxed LCAs available on the market, the BSBR's may mount on either the inboard side or outboard side of the LCA stabilizer mounting plate. You will need to determine which installation best suits your LCA's. You will select the proper location of the BSBR's based on the best fit of the rear stabilizer bar.

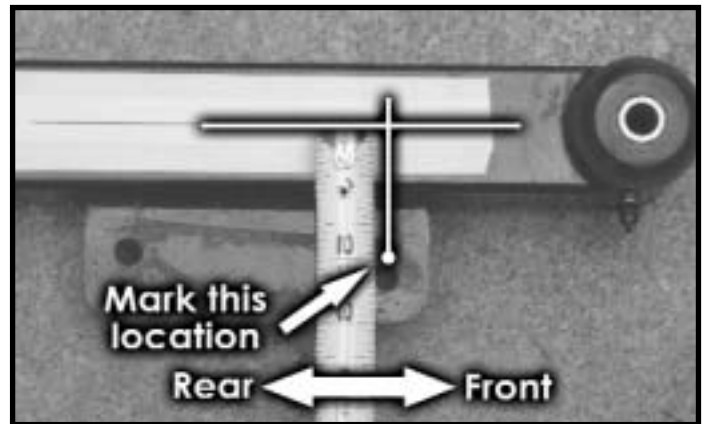


Figure 7b.0 - Measure LCA stabilizer bar holes.

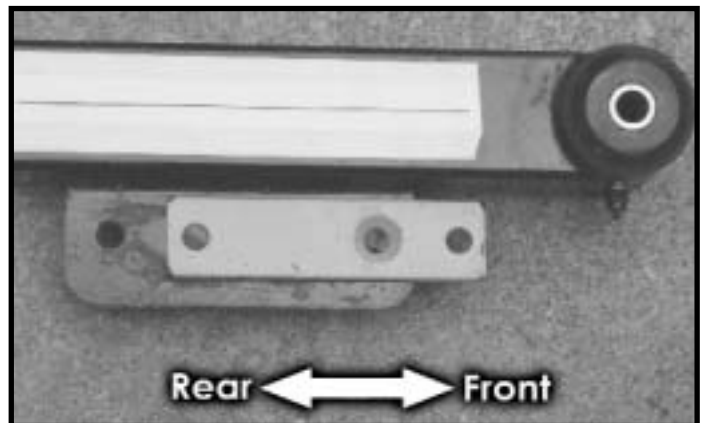


Figure 7b.1 - Orient the BSBR parallel to the LCA.

**WARNING:** Improper installation may result in property damage, personal injury or death!

## 7.0 Relocate Rear Stabilizer Bar (Continued)

### 7b - Boxed/Tubular Lower Control Arms (Continued)

**7b.6** To determine which side of the LCAs to attach the BSBRs to, assemble (snug) each of the BSBRs on the inside of the LCA mounting plates with the supplied hardware [3/8"-24x1"countersunk cap screw, 3/8"-24 nut]. With the BSBRs snugged, position rear stabilizer bar (with the (4) stabilizer bar U-nuts removed) as if you were reinstalling it. If the fit is acceptable proceed to Step 7b.7; otherwise, remove the BSBRs and repeat this Step, but attach the BSBRs to the outside of the LCA mounting plates. With the best fit determined, proceed to Step 7b.7.

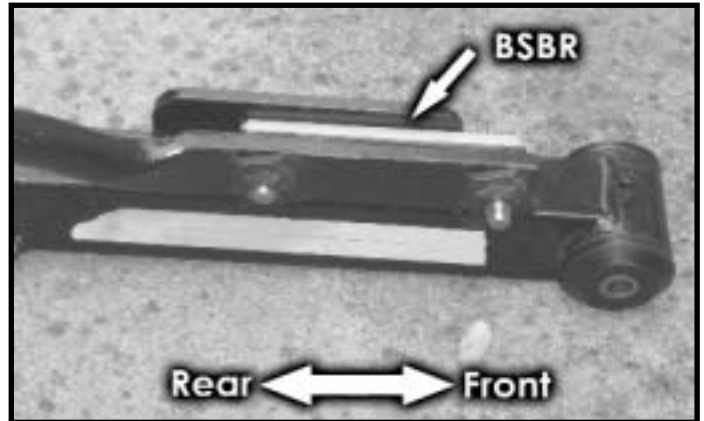


Figure 7b.2 - Reinstall stabilizer bar.

**7b.7** With the BSBRs in the proper location,

torque the (2) countersunk mounting nuts to 30 ft-lbs. Make sure all holes in the BSBR are aligned with the holes in the LCA mounting plate.

**7b.8** With both BSBRs installed, reinstall the (4) U-nuts on production stabilizer bar. If the BSBR is installed on the outside of the LCA refer to Figure 7a.2 and orient the U-nuts as shown in the "Reversed U-nuts" configuration. If the BSBR is installed on the inside of the LCA refer to Figure 7a.2 and orient the U-nuts as shown in the "Stock U-nuts" configuration.

**NOTE:** If your stabilizer bar is to be installed on the outside of the LCA stabilizer mounting plate, then the LCA stabilizer mounting plate may need to be modified to allow for the new stabilizer bar location. Either cut, mill, or grind material from the rearward portion of the LCA stabilizer mounting plate to allow the stabilizer bar to mount flush with the LCA mounting plate.

**7b.9** After the U-nuts have been reinstalled on the stabilizer bar, install the stabilizer bar on the BSBRs using the supplied fasteners [(2) M10-1.5x40 hex head cap screw, (2) 1" O.D. washer] and torque fasteners to OEM specifications (Figure 7b.2).

## 8.0 Completing the Installation

With the stabilizer bar re-installed you can now re-install the exhaust system, re-install the wheels and lower the vehicle.

**8.1** With the exhaust in place from Section 4.0, you can now tighten it. However, it is important to make sure the tailpipe outlets are properly positioned before tightening the H/X pipe fasteners. Rotate the exhaust system at the mufflers until the tailpipes are properly positioned. For vehicles equipped with tailpipe cut-outs in the bumper/fascia, make sure the tailpipes are centered in the cut-outs. Once the tailpipes are properly positioned, torque the H/X pipe fasteners to the OEM specifications.

**8.2** Reinstall the rear wheels and torque the nuts to the OEM specifications. Place the floor jack under the rear differential and raise the vehicle up enough to allow you to remove the jack stands from underneath the vehicle. After removing the jack stands, slowly lower the vehicle.

**8.3** Congratulations!!!! Your Watts Link System installation is now complete!!!!

**8.4** It is now time to take the vehicle to exhaust shop for the tail pipe modifications. A competent exhaust shop will be able to easily modify the tailpipes to clear the Watts System Cradle and Axle Towers. After the exhaust has been modified, test drive the vehicle and listen for any unusual noises. If you hear any metallic noises, immediately stop and inspect the vehicle to make sure there are no interference conditions. Correct as required.

**WARNING:** Improper installation may result in property damage, personal injury or death!



Figure A - Watts installed. View from driver/rear.



Figure B - Watts installed. View from passenger/rear.



Figure C - WattsCrank. View from driver side.



Figure D - Watts Installed. Side view from passenger side.



Figure E - Optional Links. View from driver side.



Figure F - Optional Links. View from passenger side.

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# MUSTANG WATTS LINK SYSTEM SPECIFICATIONS **25**

The Evolution Motorsport Subframe Mounted Watts Link System is our flagship product. Leveraging the proven design philosophy of a Watts Link, we were able to package the system in the tight confines of the Ford Mustang underbody. The Watts Link System mounts to the rear subframe, which allows for a lower rear roll center height (approximately 10.25" for a Mustang lowered 1" and 11.5" for a Stock ride height Mustang). The end result is a more tuneable and predictable vehicle on all road and track surfaces.

Benefits to the performance enthusiast include improved steering and cornering response, constant roll center height while cornering and reduced lateral compliance. Additionally, this product maintains OEM NVH levels (standard version) and can be installed on vehicles with rear exit exhaust (minor exhaust modifications are required).

**Weight:** 24 lbs. total (15 lbs. sprung weight, 9 lbs. unsprung weight).

**Construction:**

- ✂ 7/8" x 0.109" mild steel DOM tubing
- ✂ CNC Machining and Bending
- ✂ Laser Cut Sheetmetal
- ✂ TIG Welded

## PRODUCT INFORMATION RECORD

All Evolution Motorsport products and components are serialized for tracking and quality control purposes. The serial numbers are located on all major component parts, and can be identified by the Silver sticker with a bar code.

For your personal records, please record your serial numbers and related purchase data in the space provided below.

<b>Purchased From:</b> <input style="width: 90%;" type="text"/>	<b>Purchase Date:</b> <input style="width: 90%;" type="text"/>	
<b>Assembly:</b> <b>EVM900103A(xyz)*</b> <b>Mustang Watts Link System Assembly</b>		
Part Number	Description	Serial Number
<b>EVM900103</b>	<b>Mustang Watts Cradle Assembly</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM900101</b>	<b>Mustang Center Crank Assembly</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM900102D</b>	<b>Axle Tower Assembly (Driver)</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM900102P</b>	<b>Axle Tower Assembly (Passenger)</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM900107D</b>	<b>Stabilizer Bar Relocator (Driver)</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM900107P</b>	<b>Stabilizer Bar Relocator (Passenger)</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM200123</b>	<b>Stabilizer Bar Adapter Plate</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM200123</b>	<b>Stabilizer Bar Adapter Plate</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM300104SRP</b>	<b>Steel Link Rod End/Poly</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM300104SRP</b>	<b>Steel Link Rod End/Poly</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM300104ARR</b>	<b>Aluminum Link Rod End/Rod End</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>
<b>EVM300104ARR</b>	<b>Aluminum Link Rod End/Rod End</b>	<b>SN:</b> <input style="width: 80%;" type="text"/>

\* Varies according to Link (x), LCA (y) and Assembly options (z). X = S for standard links or O for optional. Y = P for Production LCAs or B for Boxed/Tubular LCAs. Z = B for Bolt-On Assembly or W for Weld-On Assembly.

It is suggested that you attach your sales receipt to this Owner's Manual, and that you save this Owner's Manual for future reference. Remember to pass on this Owner's Manual when transferring Evolution Motorsport products to another recipient. It is an integral part of the product.

**⚠ WARNING: Improper installation may result in property damage, personal injury or death! ⚠**

## 26 MUSTANG WATTS LINK SYSTEM MAINTENANCE

Evolution Motorsport products are precision engineered and designed for years of trouble free operation. To keep your Evolution Motorsport Watts Link System in top functional condition, and looking good for many years, we recommend the following routine care and maintenance.

After initial installation, please check all fasteners for proper torques (Table A) after the first 100 miles. If the Watts Link System was welded on, check the integrity of the welds for cracking after the first 100 miles. Subsequent fastener/weld checks should be made with your oil changes. If the Watts Link System has been subjected to severe environmental or driving conditions, the interval between checks may need to be shortened. If the Watts Link System is subjected to a competition environment, it should be inspected before and after every event.

In addition to checking the fasteners and/or welds, we recommend checking all product, safety and serial number decals for wear, damage and or loss. If any decals are damaged or missing please contact our Customer Service department for replacement.

Please review the care and maintenance procedures for the major components of your Mustang Watts Link System:

**Spherical Rod Ends:** Your Watts Link System is equipped with 3 piece teflon lined spherical rod ends. These rod ends will provide you with years of trouble free service. Rod ends should be inspected at the intervals identified above. Inspect the rod end housing for cracks or metal fatigue. Inspect the bearing for any cracks, looseness or play. Any cracks, looseness or play can affect the performance of your Watts Link System. Replace the rod end immediately. Replacement rod ends can be ordered directly from Evolution Motorsport. Clean rod ends with soap and water. Do not use any caustic cleaner such as brake clean, degreasers, or other petroleum based product as this could adversely affect the teflon liner of the rod end.

**Polyurethane Bushings:** Your Watts Link System may be equipped with polyurethane link bushings. These bushings will provide you with years of trouble free service. The bushings should be inspected at the intervals identified above. Check the bushings for any cracks/splits, looseness, or play. Any cracks/splits, looseness or play can affect the performance of your Watts Link System. Replace the bushing immediately. Replacement bushings can be ordered directly through Evolution Motorsport. Clean the bushings with soap and water. Do not use any caustic cleaner such as brake clean, degreasers, or other petroleum based product as this could adversely affect the polyurethane. Do not lubricate the bushings as will attract dust and dirt that will shorten the life of the bushing.

**Crank Assembly:** Your Watts Link System is equipped with an aluminum crank with a Delrin bearing. This bearing material will provide you with years of trouble free service. The bearing should be inspected at the intervals identified above. Check the bearing for any cracks, looseness, or play. Any cracks, looseness or play can affect the performance of your Watts Link System. Replace the bearing immediately. A replacement bearing can be ordered directly from Evolution Motorsport. Clean the bearing with soap and water. Do not use any caustic cleaner such as brake clean, degreasers, or other petroleum based product as this could adversely affect the Delrin bearing. Do not lubricate the bearing as will attract dust and dirt that will shorten the life of the bearing.

**Cradle/Tower/Links:** Your Watts Link Cradle, Axle Towers, Links, and Sway Bar Relocators should be inspected at the intervals identified above. Inspect all parts for any deformation or cracks. Inspect all welds. To keep your Watts Link System looking good for years to come, we recommend cleaning the your Watts Link System every time you wash your vehicle. Use mild soap such as "car wash" soap. Use a liquid wax to wax all powder coated and aluminum parts on a regular basis. Although your Watts Link System is powder coated, a harsh environment can cause corrosion. Inspect all parts for chips and touch up as required.

Description	Torque (ft-lbs)	Description	Torque (ft-lbs)
Center Crank to Cradle	125	Fuel Tank Attachment Bolts	OEM*
Link Attachment at Crank/Towers	75	Watts Cradle Frame Brackets	30
Axle Tower U-Bolts	75	Rear Stabilizer bar/Relocators	OEM*

\*OEM - Refer to your vehicle owners/shop manual for correct torque values.

Table A. Mustang Watts Link System Torque Table.

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Evolution Motorsport directs the Purchaser to fully examine each enclosed Product carefully, prior to installation. The sole warranty is that Products offered by Evolution Motorsport will be free from manufacturing defects at the time of delivery, and prior to installation. All claims for relief under this warranty must be made in writing or via email (returns@evolutionmsport.com) within seventy two (72) hours of receipt of the defective product(s). Returns must be made within thirty (30) days of receipt of merchandise. Evolution Motorsport maintains sole discretion to reject Products for return if it determines that the Product(s) show evidence of installation or modification.

All Products returned to Evolution Motorsport must be accompanied by a Return Authorization number (RA) and a copy of the original invoice to be considered for credit. Products returned without an RA and a copy of the original invoice will be refused. Unmodified Products judged by Evolution Motorsport to be defective will be repaired, replaced or have the purchase price refunded at the sole discretion of Evolution Motorsport. Evolution Motorsport will not refund any product shipping and handling charges.

Any non-defective Product returned to Evolution Motorsport for simple credit must be in salable condition and will be assessed a twenty percent (20%) restocking fee. Custom or special orders are not returnable or refundable. The Purchaser shall be responsible for and prepay all return freight and other shipping charges and shall assume all risk of loss or damage to Product while in transit to the return address of Evolution Motorsport. No returns will be accepted after forty five (45) days, without exception.

## EVOLUTION MOTORSPORT CUSTOMER SERVICE

**Congratulations on your purchase of Evolution Motorsport products.** We are very proud of our products and hope you are equally satisfied with their quality and performance. We carefully inspect each order shipped for accuracy of content and evidence of physical damage or defects prior to shipping. Additionally, we have made every effort to present the installation of our products in a straightforward and complete manner. If there are questions about installation or any missing, damaged or defective Products, please contact our Customer Service Department.

Evolution Motorsport wants to quickly resolve any concerns or questions you may have about our products, their use or their installation. Please call (215) 355 - 6391 to speak with our friendly and knowledgeable representatives who are on duty from 8am to 5pm EST, Monday through Friday. Representatives can answer any questions you have about Product specifications or installation. But remember, proper installation and safe use of Evolution Motorsport Products is the sole responsibility of the Purchaser. Evolution Motorsport's employees or representatives' oral or other written statements do not constitute warranties, shall not be relied upon by Purchaser, and are not a part of the contract for sale or this limited warranty. If a representative is unavailable, you can leave a message and your call will be returned promptly. We can also be reached on the internet at <http://www.evolutionmsport.com> or via email at [customer@evolutionmsport.com](mailto:customer@evolutionmsport.com).



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