



HYDE MOTOR WORKS

The Original Roots Supercharger Project for BMW's

HMW V4 M.O.A.B. KIT INSTALLATION GUIDE

The HMW M.O.A.B. stands for “Mother of All Brackets”, also shortened to V4 or simply MOAB. It was conceived in 2019 as a budget all-rounder supercharger setup for the 4-cylinder BMW M4x based engines, such as the M42 and M44, which are found commonly in the 316 and 318Ti coupes and sedans as well as the Z3 roadsters. This setup supports 4 different superchargers such as the AMR500, SC14, the Eaton M45 and the M62. The V4 M.O.A.B kit is the largest supercharger kit produced, using the SC14 with a capacity of 1430cc.

The following guide is a complimentary add-on to our installation videos found on the Hyde Motor Works YouTube Channel, containing general information and key notes for the installation. The video links are also included in the guide for your convenience. .

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Disclaimer: If you intend to use or install this setup, please use all safety precautions and check with your local laws and regulations. We take no liability for unforeseen issues such as, but not limited to the damage of your or anyone else's health and property or unlawful acts committed from application, usage or production of our products in both private or public domain. We are not affiliated with BMW, Eaton, Ogura Clutch, Toyota or any other name or brand. All mentioned products and logos are registered trademarks and property of their official owners. In addition to the aforementioned disclaimer, by using any Hyde Motor Works parts and services or knowledge gained through reading this guide, you also agree to our terms of use and policies which can be found on our website.

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V4 M.O.A.B Installation Guide

Common Parts

These are parts that are commonly used in all V4 Brackets kits:

1. *Dummy Throttle Body(s): One dummy throttle body and the other for relocation, both use 2.5" piping. For the M45/M62, Eaton setups require 1 only. **These parts are included.***
2. *Top Radiator Hose: We include a 40mm coolant hose temperature gauge adapter that can be used to modify your top radiator hose. Should you not use a water temp probe, you can block that port off.*
3. *MAF Couplers: Required silicone coupler adapter for the MAF sensor. It is a 1x 2.75" to 2.5" silicone hose coupler for the MAF, and needed especially if using the OEM throttle body rubber air intake boot.*
4. *Battery Relocation: For the M45/M62, the battery may need to be relocated from the engine bay to the trunk or the other side. This is not always required.*
5. *Catch Can & PCV Delete / Crank Case Ventilation: The factory crank case ventilation must be deleted or use a check valve in between, so no boost goes in the valve cover/crank case and its able to vent fumes.*
6. *Accessories such as Wideband AFR, Rising Rate Fuel Pressure Regulator, Pod Air Filter + Basic Aluminum Piping (Intercooler Piping) and Silicone Couplers: SC14 & Eaton MOABS will require fine tuning and larger injectors. For OBD I (M42) the Ostrich II is a nice piggy back for tuning.*

BMW M42/M44 Supercharger Kit - V4 Preproduction (Part 2)

Video Link: <https://www.youtube.com/watch?v=LZSvdHg8ZaI>

V4 M.O.A.B Installation Guide

MOAB AMR500

Part	#	Description
M7X50mm	2x	To mount AMR500 to V4 Bracket
M8X80mm	1x	To bolt top support bracket through 62mm spacer tube
M10x35mm	1x	To bolt idler pulley to bracket
M8x90mm	2x	2x longer Alternator Mounting Bolts (OEM is M8x75)
M6x35mm Nuts, Bolts, Washers	6x	For throttle body relocation

General Notes:

- AMR 500 Intake and Outlet Ports: 2x 2.5"
- **Belt used:** 6PK2255 - 6PK2260
- Idler Pulley: BMW INA Part # 11281748131 (1x)

Installation main notes:

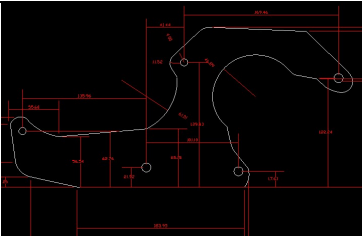
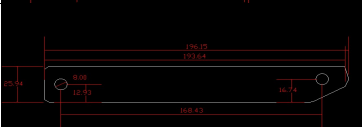
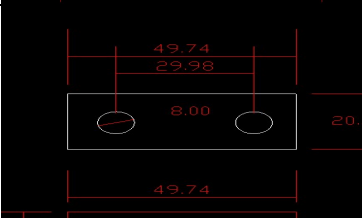
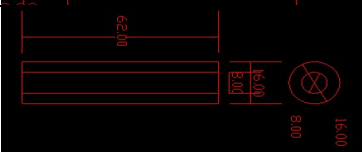
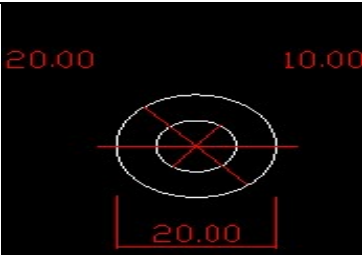
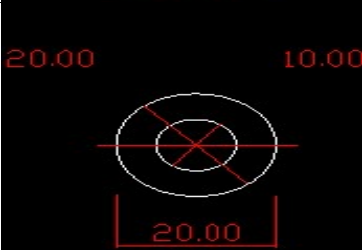
- The 10mm main bracket bolts on to the two alternator bolts:
note that there are 2x 3mm spacers that must be used between the main bracket and the alternator.
- There is a 1x 5mm top support bracket that uses the same bolt hole to bolt on to the top AMR500 mount point. The other side will mount to the provided 62mm tube spacer, which is used to bolt the top support to the manifold. The 10mm (or 2x5mm) thick rectangular M8 threaded engine lift add-on bracket is used for this step.
- The idler pulley is installed using the spacers provided, which are 20mm in diameter with a 10mm hole.

Supercharging the M44 - HMW MOAB | AMR500 Installation (Part 3)

Video Link: <https://www.youtube.com/watch?v=FogIEupjpBk>

V4 M.O.A.B Installation Guide

Brackets Guide (MOAB AMR500)

Part #	Name	Picture	NOTE
1.	Main Bracket 1x per set		10mm thick Ensure Laser Engraved Ensure its Flat Not Warped 1x per kit
2.	Top Support Bracket 1x per set		5mm thick ensure laser engraved ensure it's flat, not warped 1x per kt
3.	Engine Support Extender Bracket 1x per set		10mm thick 2 holes. ONE hole is tapped M8 x 1.2 thread one hole is NOT tapped (8mm hole only) 1x per kit
4	Spacer Long Pipe 1x per set		length 62mm (height) OD 16mm (width) ID 8mm (inner hole) 1x per kit,
5	Main Bracket Spacers		3mm thick OD 20mm (width) ID 10mm (inner hole) sits between alternator and main bracket to give it some space. 2x per kit
6	Idler Spacers		5mm thick used to add idler pulley to the main bracket. 3x per kit

V4 M.O.A.B Installation Guide

Brackets Guide (MOAB AMR500)

Part #	Name	Picture	NOTE
1.	Manifold 1 (AMR500)		5mm thick plate 50mm ID/2" welded on pipe 1x per set (don't include with SCI4 kit)
2.	Manifold 2 (AMR500)		5mm thick plate 50mm OD/2" welded on pipe 1x per set (don't include with SCI4 kit)
3.	Manifold 3 Throttle body M44 / M42		5mm thick plate 63mm OD/2.5" welded on pipe used to relocate throttle bodies on M42 and M44 motors with the AMR500 and SCI4 MOAB setups 2x per set include with all MOAB V3 kits)

V4 M.O.A.B Installation Guide

MOAB SC14

Part	#	Description
M10X50mm	6x	3x to mount 10mm front main bottom bracket to the 10mm front top bracket, be sure to use the 15mm rectangular 3 holed spacer (or 3x 5mm) in between 2x to mount the SC14 supercharger to the front top bracket
M10x65mm	1x	To mount idler pulley with 45mm (5x9) 20mm OD /10mm ID spacers
M8X100mm	1x	to bolt top support bracket through 79mm spacer tube
M10x 35mm LH	1x	reverse thread/left hand bolt M10x1.5 pitch 35mm long, for second tensioner pulley
M8x40	3x	3x longer bolts to add second power steering pulley on top of the OEM pulley.
M8 x 90	2x	2x longer alternator mounting bolts (OEM is M8x75)
M6x35mm Nuts, Bolts, Washers	6x	for throttle body relocation

General Notes:

- SC14 Inlet & Outlet Ports: 2.5" (2x)
- **Belt Used:** 6PK1055 ~ 6PK1065 for stock SC14 pulley. If using HMW 80mm pulley, you will require to use a 6PK1020~6PK1030 sized belt
- Idler Pulley: BMW INA Part # 11281748131 (2x) – One for the tensioner, the other as an idler/warp pulley

LARGEST SUPERCHARGER ON E36 318Ti | Installing SC14 V4 M.O.A.B (Part 4)

Video Link: <https://www.youtube.com/watch?v=q47E18EHkak>

V4 M.O.A.B Installation Guide

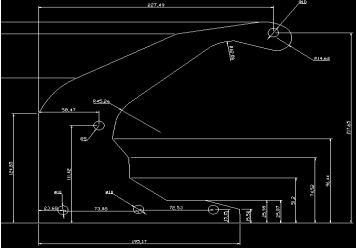
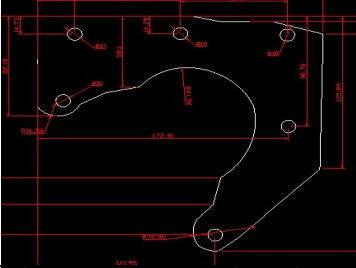
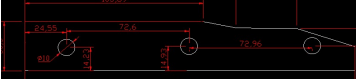
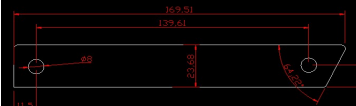
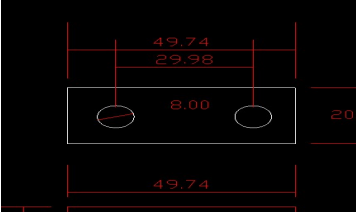
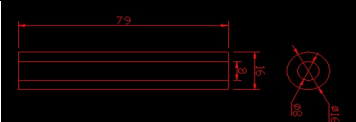


MOAB SC14

Installation main notes:

- The SC14 supercharger will have three bearing housing equalizer ports which need to be either connected together or blocked off. The side / top nipple of the SC14 supercharger may need to be removed or cut off for some clearance.
- On some 318ti or coupes & sedans you will need to relocate the power steering reservoir slightly to the front. This can be done by removing the bracket and turning it upside down, then mounting it again. This will move the reservoir more towards the front/radiator and give clearance required for the belt drive.
- The 10mm main bracket bolts on to the two alternator bolts. Note: there are 2x 3mm spacers that must be used between the main bracket and the alternator.
- There is 1x 5mm top support bracket that uses the same bolt hole that bolts to the bottom of the SC14 mount point, while the other side will mount to the provided 79mm tube spacer, used to bolt the top support to the manifold. This can be done by using the 10mm (or 2x5mm) thick rectangular M8 threaded engine lift add-on bracket and a M8x100 bolt.
- The idler pulley is installed using the spacers provided (5mm x 9 or 45mm). These are 20mm in diameter with 10mm hole.
- The tensioner requires a longer M10x35mm reverse / left hand threaded bolt, that tightens anti clock wise and loosens clock wise.
- You will require a secondary power steering pulley that sits on top of the existing one. There are 3 longer bolts (M8x40) that are used to bolt the two pulleys together. The pulley on top is used for driving the SC14. When tightening the bolts, and you are using the aluminum pulley, please be careful to not over torqueing it and bending it. You may use a 20-22mm spacer in between, depending on the add-on pulley, being it aluminum or composite.

V4 M.O.A.B Installation Guide

Brackets Guide (MOAB SC14)

Part #	Name	Picture	NOTE
1.	Main Top Bracket 1x per set		10mm thick ensure laser engraved ensure it's flat, not warped 1x per kit
2.	Main Bottom Bracket 1x per set		10mm thick ensure its flat ,not warped top 3 holes tapped M10 - 1.5 threaded 1x per kit
3.	Middle Spacer Bracket 15mm or 5mm x 3pcs.		5mm thick (x3 = 15mm tTotal) ensure its flat, not warped 3x per kit
4.	Top Support Bracket 1x per set		5mm thick ensure laser engraved 1x per kit
5.	Engine Support Extender Bracket 1x per set		10mm thick 2 holes. ONE hole is tapped M8 x 1.2 thread One hole is NOT tapped (8mm hole only) 1x per kit
6.	Spacer Long Pipe 1x per set		length 79mm height) OD 16mm (width) ID 8mm (inner hole) 1x per kit
7.	Main Bracket Spacers		3mm thick OD 20mm (width) ID 10mm (inner hole) sits between alternator & main b racket to give it space. 2x per kit
8.	Idler Pulley Spacers		5mm thick (x9 = 45mm total) used to add idler pulley to the main bracket. 9x per kit

V4 M.O.A.B Installation Guide

MOAB M45 & M62

Part	#	Description
M8X20mm	4x	3x to mount 10mm front main bottom bracket to the V4 MOAB Eaton base bracket's bottom L bracket portion. 1x used to attach rear support bracket to rear of base bracket.
M8x40mm	4x	to mount M45 or M62 supercharger to the base bracket using spacers.
M10x 60mm LH	1x	reverse thread/left hand bolt M10x1.5 Pitch 60mm long, for second tensioner pulley.
M8x50	3x	3x longer bolts to add second power steering pulley with spacer on top of OEM Pulley.
M8 x 90	2x	2x longer alternator mounting bolts (OEM is M8x75)
M6x35mm Nuts, Bolts, Washers	6x	for throttle body relocation

General notes:

- M45 Inlet Outlet Port: 2.5" (1x)
- M62 Inlet & Outlet Port: 2.5" (2x Pcs)
- **Belt Used:** 6PK1045 ~ 6PK1150
- V4 Mini Manifold replaced intake manifold
- Idler Pulley: BMW INA Part # 11281748131 (1x) Installed on top of OEM tensioner with spacers. Can also use a offset M52/M50 tensioner pulley to add more tension to the belt

Installation main notes:

- This is a simple 2 plate design with rear support. The 10mm main front bracket bolts on to the two alternator bolts.
- The main base bracket is bolted using the bottom L bracket onto the main front bracket.
- The rear support bracket is bolted to the M44 manifolds bottom side bolt hole, and then to the bottom of the main base bracket
- The M44 Manifold must be used and have the top portion of the runners/plenum removed and use the mini manifold block in its place.
- The Eaton superchargers themselves require spacers between the four mounting points between the supercharger and the main mounting plate, for the M45 this is typically 30mm or 5mm x6 pcs per side (24 pcs in total) and for the M62 this is about 35mm or 5mmx 7 pcs per side (28 pcs in total)
- The M45 inlet and outlet is once single piece, while the M62 has and separate inlet and outlet (2 different pieces). Both the M45 and M62 will use 2.5" tubing/piping.
- The power steering drive pulley requires a secondary pulley and a spacer of 34mm in between the OEM pulley and secondary pulley. This is achieved using the 3 holes circular spacers. (3x 10mm + 2x 2mm).
- There is only one dummy throttle body that is required and is included on the M45/M62 MOAB kits.
- On the M44/M42 tTensioners, the stock M44 bolt is around 23mm long (using newer pulley). To add the second pulley to the OEM tensioner pulley, the inside of the idler pulley 15mm (3x 5mm) is used., The space between both pullies is 21mm (4x5mm + a washer). Then use the reverse thread bolt M10 - 1.5 x 60mm LH (left hand). One can also use an offset M52/M50 tensioner pulley to add more tension to the belt.

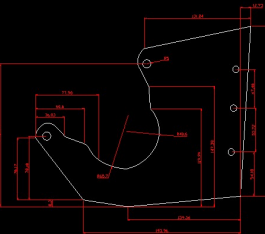
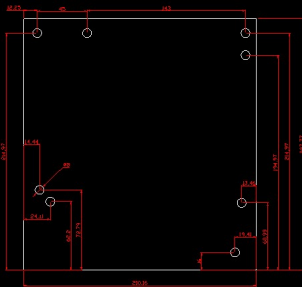
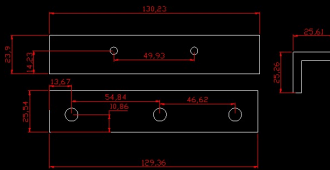
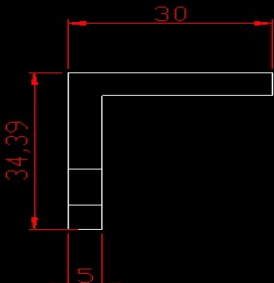
V4 M.O.A.B Installation Guide

MOAB M45 & M62

- On the M44/M42 tensioners, the stock M44 bolt is around 23mm long (using newer pulley). To add the second pulley on the OEM tensioner pulley, the inside of the idler pulley 15mm (3x 5mm) is used. The space between both pulleys is 21mm (4x5mm + a washer). Then use the reverse thread bolt M10 - 1.5 x 60mm LH (left hand). One can also use an offset M52/M50 tensioner pulley to add more tension to the belt.
- On some 318ti or Coupes & Sedans you will need to relocate the power steering reservoir slightly to the front. This can be done by removing the bracket and turning it upside down, then mounting it again. This will move the reservoir more towards the front/radiator and give clearance required for the belt drive.
- The bonnet / hood of the car will require to be raised at the hinged (rear) some 30-50mm to gain clearance for the supercharger. Alternatively the hood must be cut and a low profile muscle car hood must be used.

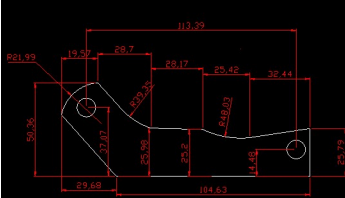
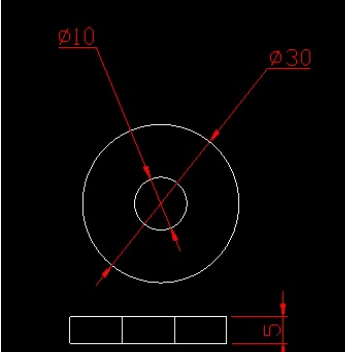
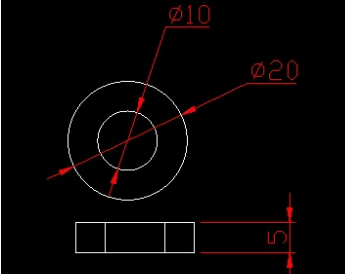
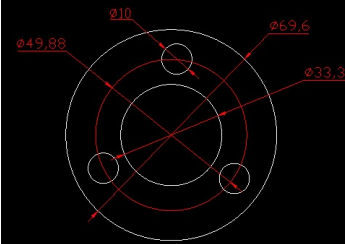
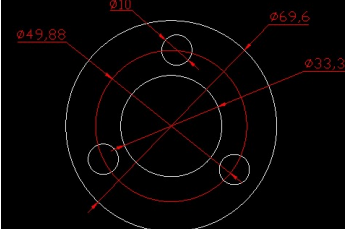
V4 M.O.A.B Installation Guide

Brackets Guide (MOAB M45 & M62)

Part #	Name	Picture	NOTE
1.	Main M45/M62 Front Bracket		10mm thick ensure laser engraved ensure it's flat, not warped 1x per kit
2.	Main Base Bracket		5mm thick ensure laser engraved ensure it's flat, not warped 1x per kit
3.	Front Welding Bracket		5mm thick welds under the main base bracket's front side. 1x per kit
4	Rear Welding Bracket		5mm thick welds under the main brackets rear middle. 1x per kit

V4 M.O.A.B Installation Guide

Brackets Guide (MOAB M45 & M62)

5	Rear Bottom Support Bracket		5mm thick Bolts to the #4 Side Welding Bracket and Attaches to the Intake Manifolds Lower Bolt 2x per kit
6	Tensioner Pulley Spacer		5mm thick 30mm OD 10mm ID used to add space between the stock tensioner pulley and secondary pulley. 4x per kit (20mm total spacer)
7.	M45/M62 Standoff Spacers Sits Between the M45/M65 and Base Bracket.		5mm thick 10mm ID, 20mm OD sits between the M45/M65 and base bracket. M45 requires 30mm each of 4 legs. (So, 6 pcs x 5mm each leg) and a total of 24x 5mm spacers). M62 requires 35mm each of 4 legs (So 28x 5mm) 30x per kit
8.	Power Steering Pulley Spacer		10mm thick used to add the secondary SC drive pulley to the stock PS pulley. total space required is 34mm. So 3x 10mm + 2 x 2mm from part # 9 3 X per kit
9.	Power Steering Pulley Spacer 2		2mm thick used to add the secondary SC drive pulley to the stock PS pulley. total space required is 34mm. So 2x 2mm + 3x 10mm from part # 8 2 X per kit