

advanced FLOW engineering

Instruction Manual P/N: 77-46316

Make: **BMW** Model: **320i/ix/GT/328i/ix/GT/420i/ix/428i/ix (F3X)** Year: **2012-2016** Engine: **L4-2.0L (t) N20**

Make: **BMW** Model: **125i/ix/128i/ix/228i/ix (F2X)** Year: **2014-2016** Engine: **L4-2.0L (t) N20**

Make: **BMW** Model: **528i/ix/Li/Lix (F1X)** Year: **2014-2016** Engine: **L4-2.0L (t) N20**

Make: **BMW** Model: **X1 28i/ix/X3 28i/ix/X4 28ix (E84/F2X)** Year: **2014-2016** Engine: **L4-2.0L (t) N20**

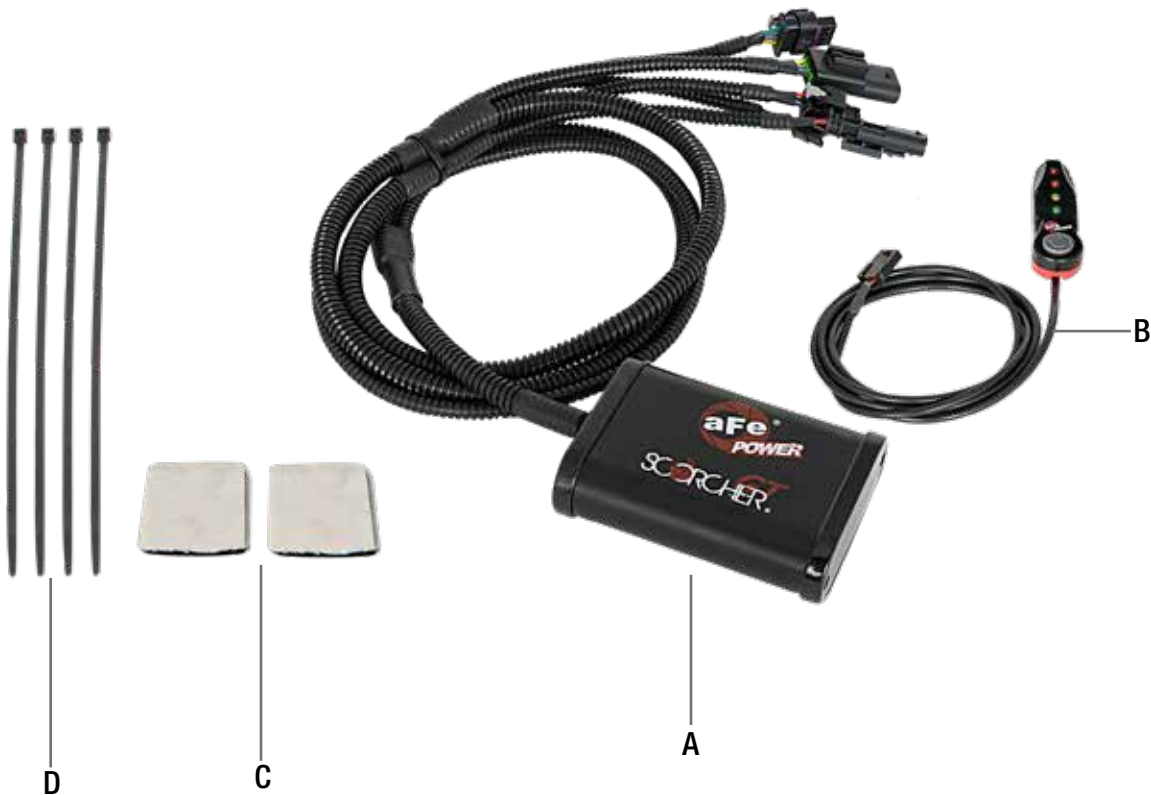
Make: **BMW** Model: **Z4 28i (E89)** Year: **2014-2016** Engine: **L4-2.0L (t) N20**



- Please read the entire instruction manual before proceeding.
- Ensure all components listed are present.
- If you are missing any of the components, call customer support at 951-493-7100.
- Ensure you have all necessary tools before proceeding.
- Do not attempt to work on your vehicle when the engine is hot.
- Disconnect the negative battery terminal before proceeding.
- Retain factory parts for future use.

| Label | Qty. | Description | Part Number |
|-------|------|-------------------|-------------|
| A | 1 | Module | R77-46316 |
| B | 1 | LED Switch | 05-70029 |
| C | 2 | Velcro (2 Inches) | 05-01244 |
| D | 4 | Cable Ties | 05-60167 |

Note: Legal in California for use on race vehicles only. The use of this device on vehicles used on public streets or highways is strictly prohibited in California and others states that have adopted California emission regulations.





SLEEP MODE

Figure A

Refer to Figure A for Step 1.

Step 1: Before installing your aFe module, you will have to place your vehicles ECU in sleep mode. In order to do this you will need to do the following:

- If the engine is cold, open the hood, close the doors lock the car and wait 30 seconds.
- If the engine is warm, open the hood, close the doors lock the car and wait 20 minutes.
- If the engine is warm and you can't wait 20 minutes, disconnect the battery.



Note: Do NOT open the doors or start the vehicle when one of the sensors is disconnected. This could create a check engine light.



Figure B

Refer to Figure B for Step 2.

Step 2: Locate the TMAP (1) and MAP sensors (2). The MAP sensor is located on top of the intake manifold under the engine cover, the TMAP sensor is located on the charge pipe, just before the throttle body.



Refer to Figure C for Steps 3-4.

Step 3: Remove the engine cover to gain access to the MAP sensor then disconnect the MAP sensor.

Step 4: Locate the MAP sensor jumper harness on the aFe module. This is the shortest harness with three wires on each connector. Plug the female connector of the module to the stock MAP sensor, then the male connector of the module female connector of the engine harness.



Note: Make sure connections are fully engaged. Usually, connectors make a snapping sound when fully engaged.



Figure D

Refer to Figures D for Steps 5-6.

Step 4: Locate and disconnect the TMAP sensor.

Step 5: Locate the TMAP sensor jumper harness on the aFe Module. This is the longer harness with four wires on each connector. Plug the male connector of the module to the stock TMAP sensor, then take the female connector of the module and connect to the male connector of the engine harness.



Figure E

Refer to Figure E for Steps 7-8.

Step 7: Carefully route the switch cable behind steering wheel cover.

Step 8: Mount the Switch where desired on an open, flat surface.

**Figure F****Refer to Figure F for Steps 9-11.**

Step 9: Remove the two 10mm nuts holding the foot trim panel.

Step 10: Route the switch cable through firewall and into the engine bay. Follow the main harness through the grommet into the firewall. Plug the end of the cable to the module.

Step 11: Re-install foot trim panel.



Refer to Figure G for Step 12.

Step 12: Mount the module in a safe location with adequate hood clearance, using the supplied Velcro strip. Then, secure the wires and module away from any extreme heat and moving parts, with the provided ties. Make sure all connections are secured and fully engaged.



Figure H

Refer to Figure G for Step 13.

Step 13: When turning on the vehicle, the switch will go through the light. It will stop at its last setting.

The LED on the switch represents the different level of power.

- Green LED: Stock
- Yellow LED: Sport
- Orange LED: Sport+
- Red LED: Race

Use the grey button to select the desired setting. Power adjustments can be done at any moment.

Thank you for choosing aFe POWER!



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OE Replacement Air Filter



P/N: 30-10225 (P5R)
31-10225 (PDS)

Momentum Intake System



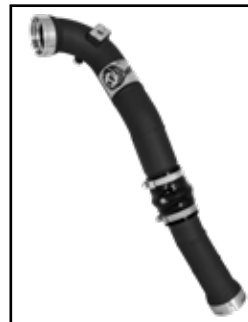
P/N: 54-82212 (P5R)
51-82212 (PDS)

Dynamic Air Scoop



P/N: 54-12218 (Black)
54-12218-L (Blue)
54-12218-R (Red)
54-12218-C (Carbon)

Intercooler Cold-Side Tube



P/N: 46-20229-B

Cat-Back Exhaust System



P/N: 49-36329-B (Blk Tip)
49-36329-P (Pol Tip)

Intercooler



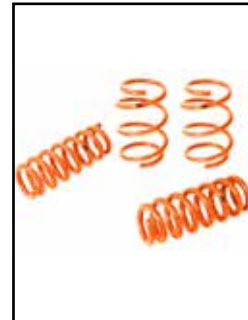
P/N: 46-20221

Cold Air Intake System



P/N: 51-12212 (PDS)
54-12212 (P5R)

Lowering Springs



P/N: 410-503005-N

Sprint Booster V3



P/N: 77-16302

Turbo Down-Pipe



P/N: 48-36303-HC (Street)
48-46303-HN (Race)

To purchase any of the items above, view airflow charts, dyno graphs, photos, and video please go to aFepower.com.

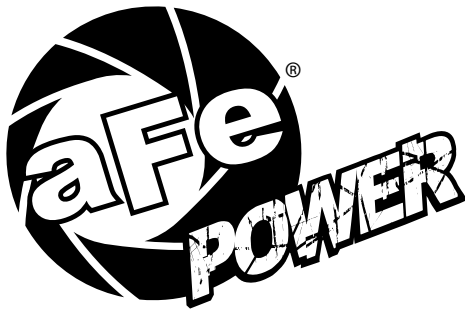
Warranty

General Terms:

- aFe warrants their products to be free from manufacturer's defects due to workmanship and material.
- This warranty applies only to the original purchaser of the product and is non-transferrable.
- Proof of purchase of the aFe product is required for all warranty claims.
- Warranty is valid provided aFe instructions for installation and/or cleaning were properly followed.
- Proper maintenance with regular inspections of product is required to insure warranty coverage.
- Damage due to improper installation, abuse, unauthorized repair or alteration is not warranted.
- Incidental or consequential damages or cost, including installation and removal of part, incurred due to failure of aFe product is not covered under this warranty.
- All warranty is limited to the repair and/or replacement of the aFe part. To request Return Goods Authorization ("RGA"), email RGA@afepower.com or call (951)493-7100. Upon receipt of the RGA, you must return the product to the address provided in the RGA, freight prepaid and accompanied with a dated proof of purchase and the RGA. Upon receipt of the defective product and upon verification of proof of purchase, aFe will either repair or replace the defective product within a reasonable time, not to exceed thirty days.

| Product Category | P/N Prefix | Warranty duration |
|----------------------------------|--------------------------------|--------------------------|
| Direct OE Replacement Filters | 10, 11, 30, 31, 71, 73 | Life of the vehicle |
| Racing Filters | 18 | 1 year |
| Universal | 21, 24, 72, TF | 2 years |
| Air Intake Systems | 50, 51, 54, 55, 75, TR, TA, TL | 2 years |
| Exhaust Systems | 49 | 2 years |
| Intercoolers & Intercooler Tubes | 46-2 | 2 years |
| Intake Manifolds | 46-1 | 2 years |
| Differential Cover | 46-7 | Life of the vehicle |
| Exhaust Manifolds | 46 | 2 years |
| Throttle Body Spacers | 46-3 | 2 years |
| Fluid Filters | 44 | 90 days |
| Pre-Filters | 28 | 2 years |
| Heavy Duty OE Replacement | 70 | 2 years |
| PowerSports OE Replacement | 81, 87 | 2 years |
| PowerSports Intake Systems | 85 | 2 years |
| Tuners | 77 | 1 year |

No other warranty expressed or implied applies nor is any person or advanced FLOW engineering authorized to assume any other warranty. Some States do not allow the exclusion or limitation of incidental or consequential damages or do not allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.



advanced FLOW engineering, inc.
252 Granite Street Corona, CA 92879
TEL: 951.493.7100 TECH: 951.493-7134
E-Mail: Tech@aFepower.com