



# **PRODUCT** GUIDE

# SYNCHRONIC WASTEGATE



**SYNCHRONIC WASTEGATE** is a fundamentally new design that incorporates our **patented actuator technology** to give you more tunability than you thought was possible with a wastegate. You can produce a minimum of 6 different boost pressures on the same spring, without a boost controller. Synchronic WG is the only wastegate on the market that eliminates the diaphragm, gives you the ability to control flow and has up to 15 built-in boost settings.

- **No Diaphragm**
- **Adjustable Valve Pre-Load**
- **15 Built-In Boost Settings**
- **Integrated Exhaust Manifold Seal**
- **Advanced Engineered Materials**
- **Integrated Flow Control**

*Patented Synchronic actuator geometry means no diaphragms to fail and boost control frequencies from 30 to 60 Hz*



*4 ports connect to different surface areas allowing you to adjust boost without buying a boost controller*

**SYNCHRONIC** 



**Synchronic Wastegate WG001** is our smallest frame universal wastegate with a 40 mm valve and 2-bolt mounting flange that is a bolt-on replacement to many wastegates on the market today. With each retail kit, you get 4-25 psi of boost in a box.

| Part No. | Description                                          |  |
|----------|------------------------------------------------------|--|
| 04012    | Synchronic Wastegate 40MM No Flanges - Silver        |  |
| 04011    | Synchronic Wastegate 40MM No Flanges - Black         |  |
| 04022    | Synchronic Wastegate 40MM Including Flanges - Silver |  |
| 04021    | Synchronic Wastegate 40MM Including Flanges - Black  |  |



**Synchronic Wastegate WG002** is our large frame universal wastegate with a 50 mm valve and v-band mounting flange that is a bolt-on replacement to the popular 44 mm wastegates on the market today. With each retail kit, you get 4-25 psi of boost in a box.

| Part No. | Description                                          |  |
|----------|------------------------------------------------------|--|
| 04032    | Synchronic Wastegate 50MM No Flanges - Silver        |  |
| 04031    | Synchronic Wastegate 50MM No Flanges - Black         |  |
| 04042    | Synchronic Wastegate 50MM Including Flanges - Silver |  |
| 04041    | Synchronic Wastegate 50MM Including Flanges -Black   |  |



| Part No. | Description                                                 |
|----------|-------------------------------------------------------------|
| 04600    | Synchronic WG 40MM Weld-On Flanges                          |
| 04601    | Synchronic WG 40MM Copper Flange Seal                       |
| 04602    | Synchronic WG 40MM Outlet Weld Flange                       |
| 04603    | Synchronic WG 40MM Inlet Weld Flange                        |
| 04604    | Synchronic WG 50MM V-Band Kit Includes 2 Flanges & 2 Clamps |
| 04605    | Synchronic WG 50MM Copper Flange Seal                       |
| 04606    | Synchronic WG 50MM V-Band Clamps (2 pcs)                    |
| 04607    | Synchronic WG 50MM Weld-On Flanges (2 pcs)                  |
| 04608    | Synchronic WG 40MM Valve Seat (Small Inner Diameter)        |
| 04609    | Synchronic WG 40MM Valve Seat (Large Inner Diameter)        |
| 04610    | Synchronic WG 50MM Valve Seat (Small Inner Diameter)        |
| 04611    | Synchronic WG 50MM Valve Seat (Large Inner Diameter)        |



# SYNCHRONIC **BLOW-OFF VALVE**



**SYNCHRONIC BOV** is a fast-acting design that functions as a blow-off, diverter/bypass and even a pop-off valve. The patented (6,863,260) design eliminates the diaphragm with a multi-tier piston actuator that equalizes the force required to open the valve at any boost pressure.

This design is intended to significantly reduce or eliminate compressor surge and eliminates leaking by seating the valve more as boost pressure increases. Each assembly is pressure tested to 100 psi prior to leaving the factory. Interchangeable inlet and discharge flanges allow us to offer various adapters and kits available for many popular applications.



*Patented Synchronic actuator means no diaphragms to fail and response times in 25 milliseconds or less*

**synchronic**



*Dynamic seals and billet valving mean sealing of 100+ psi of boost*



| Part No. | Description                                                                   |
|----------|-------------------------------------------------------------------------------|
| 02012    | Universal SB BOV Silver/Black w/ ss Weld-On Flange & 1.25" Recirc Fitting     |
| 02022    | Universal SB BOV Silver/Black w/ Al Weld-On Flange & 1.25" Recirc Fitting     |
| 02032    | Universal SB BOV Silver/Black Without Flanges                                 |
| 02042    | Universal SB BOV Silver/Black With 1.25" Recirculation Fitting Only           |
| 02011    | Universal SB BOV Black/Black With ss Weld-On Flange With 1.25" Recirc Fitting |
| 02021    | Universal SB BOV Black/Black With Al Weld-On Flange W/ 1.25" Recirc Fitting   |



02061



02053



| Part No. | Description                                                            |
|----------|------------------------------------------------------------------------|
| 02053    | Synchronic SB BOV Kit w/ Powder Coated Black Pipe For BMW 135i & 335i  |
| 02062    | Synchronic SB Twin BOV Kit For Nissan GTR R35                          |
| 02072    | Synchronic SB BOV Kit For Mitsubishi Evolution 7, 8, 9, & X            |
| 02082    | Synchronic SB BOV Kit For 08+ WRX                                      |
| 02092    | Synchronic SB BOV Kit Mazdaspeed 3, 6, & Cx7                           |
| 02102    | Synchronic SB BOV Kit For Hyundai Genesis 2.0T                         |
| 02111    | 1/8th NPT Back Cap Upgrade Kit For 1st Gen Synchronic SB BOV           |
| 02061    | Synchronic Twin Black SB BOV Kit For Nissan GTR R35                    |
| 02101    | Synchronic Black SB BOV Kit For Hyundai Genesis 2.0T                   |
| 02121    | Synchronic SB BOV Kit To Replace Tial-Style BOVs                       |
| 02131    | Synchronic SB BOV Kit To Replace HKS ssq-Style BOVs                    |
| 02141    | Synchronic SB BOV Kit To Replace Greddy-Style BOVs                     |
| 02151    | Synchronic SB BOV Kit For Mitsubishi Eclipse Gst/Gsx and Evo 5 & 6     |
| 02161    | Synchronic Single SB BOV Kit For Nissan Skyline GTS (R32, R33 And R34) |

# SYNCHRONIC **DIVERTER VALVE**

**SYNCHRONIC DIVERTER VALVE** is the first compact DV/BOV that uses the patented Synchronic actuation technology. It eliminates the use of diaphragms with a piston actuator that doesn't require frequent re-lubrication. It has also been designed to hold 100 psi of boost, yet fast acting enough to eliminate compressor surge. It can be used as either a pull-type or push-type DV/BOV, and will work directly with all Synchronic BOV adapters, for an easy installation.

- *Compact design with no diaphragm*
- *Interchangeable with all adapter flanges*
- *Install as Pull or Push type valve*
- *Pressure tested to 100 psi not to leak boost*
- *Impossibly fast actuation*



*Patented Synchronic actuator  
means no diaphragms to fail  
and response times in  
25 milliseconds or less*

*Dynamic seals and billet  
valving mean sealing of  
60+ psi of boost*



| Part No. | Description                                                 |
|----------|-------------------------------------------------------------|
| 03011    | Universal Synchronic Diverter Valve With Clamps, No Flanges |



| Part No. | Description                                                                         |
|----------|-------------------------------------------------------------------------------------|
| 03021    | Synchronic DV Kit For Mazdaspeed 3, 6 & Cx7 With Hardware                           |
| 03031    | Synchronic DV Kit With 1" Hose End Adapters                                         |
| 03041    | Synchronic DV Kit USDM Subaru WRX (02 To 07) And Sti (04+) With TMIC                |
| 03051    | Synchronic DV Kit For Mitsubishi Evolution 7, 8, 9 & X (Gsr & Mr)                   |
| 03061    | Synchronic DV Kit For Custom Fabrication With Al Weld-On & 1.25" Recirc             |
| 03071    | Synchronic DV Kit With Stainless Steel Weld-On & 1.25" Recirc                       |
| 03081    | Synchronic DV Only Kit For 2011+ Nissan Juke 1.6T                                   |
| 03091    | Synchronic DV Replacement Kit For Bosch 1 Inch Bypass/Diverter Valve                |
| 03101    | Synchronic DV Kit For Tial BOV Direct Replacement                                   |
| 03111    | Synchronic DV Kit For Hks ssqv Replacement                                          |
| 03121    | Synchronic DV Kit For Greddy BOV Replacement                                        |
| 03131    | Synchronic DV & Charge Pipe Kit For 2011+ Nissan Juke 1.6L Turbo                    |
| 03141    | Synchronic DV Kit W/ Pipe For Hyundai Genesis Coupe 2.0T                            |
| 03151    | Synchronic Twin DV Kit For 2009+ Nissan GTR R35                                     |
| 03161    | Synchronic DV Kit For Ford Focus Rs & Renault Clio (1" Fittings)                    |
| 03171    | Synchronic Dual DV Kit For Audi 2.7T Bi Turbo (1" Fittings)                         |
| 03181    | Synchronic Dual DV Kit For Nissan GTR R32, R33 And R34 Twin Turbo                   |
| 03191    | Synchronic DV Kit For 1999-2001 Subaru Wrx/Sti & 2008+ Subaru Wrx (TMIC)            |
| 03201    | Synchronic Dual DV Kit For Porsche 911, 996 And Cayenne Tt (1" Fittings)            |
| 03211    | Synchronic DV Kit 95-99 Eclipse Gst/Gsx, Talon Tsi & Evo 5/6 (1.25" Fitting)        |
| 03221    | Synchronic Single DV Kit For Nissan Gts R32, R33 And R34 W/ Single Turbo            |
| 03236    | DV Color Top Replacement Kit Blue Includes Hardware                                 |
| 03235    | DV Color Top Replacement Kit Red Includes Hardware                                  |
| 03232    | DV Color Top Replacement Kit Silver Includes Hardware                               |
| 03237    | DV Color Top Replacement Kit Orange Includes Hardware                               |
| 03233    | DV Color Top Replacement Kit Raw Al Includes Hardware                               |
| 03602    | Subaru 04+ Sti Oe TMIC Inlet Base Flange For DV Use Only                            |
| 03603    | Subaru 04+ Sti TMIC Discharge Recirc Adapter Flange For DV Use Only w/ Single Turbo |

## TURBO INTAKE

| Part No. | Description                                                                 |
|----------|-----------------------------------------------------------------------------|
| 05012    | Nissan GTR R35 Cold-Air Intake Kit In Polished Aluminum (My 2009 To 2011)   |
| 05600    | Nissan GTR R35 Turbo Intake MAF Sensor Calibrated Inserts                   |
| 05023    | Genesis Coupe 2.0T Turbo Intake W/Filter And Hardware                       |
| 05013    | Nissan GTR R35 Cold-Air Intake Kit In Powder Coated Black (My 2009 To 2011) |

## ADAPTERS AND ACCESSORIES

| Part No.                                                                            | Description                                                                          | Part No.                                                                            | Description                                                                                 |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|    | 02600 Aluminum Weld-On Flange For SB and DV T6-6061                                  |    | 02607 1" Adapters For Synchronic BOV Use Only (2 Pcs Kit)                                   |
|    | 02601 Stainless Steel Weld-On Flange For SB And DV                                   |    | 02608 1.25" Inlet Or Discharge Hose Adapter For SB And DV                                   |
|   | 02602 Greddy Style Adapter Flange For Bolt-On Conversion To SB And DV                |   | 02609 1" Inlet Or Discharge Flange (Black) For SB & DV                                      |
|  | 02603 HKS ssqv Adapter Flange For Bolt-On Conversion To SB And DV                    |  | 02610 1" Discharge Flange (Silver) For Synchronic SB BOV Use Only                           |
|  | 02604 Anti-Stall Valve Kit For SB Use Only                                           |  | 02611 1.25" Discharge Flange (Silver) For Synchronic SB BOV Use Only                        |
|  | 02605 Tial BOV Adapter Flange For Bolt-On Conversion To SB And DV                    |  | 03602 Subaru 04+ Sti Oe TMIC Inlet Base Flange For DV Use Only                              |
|  | 02606 Mitsu/Mazdaspeed/Nissan GTR Adapter Flange For Bolt-On Conversion To SB And DV |  | 03603 Subaru 04+ Sti TMIC Discharge Recirc Adapter Flange For DV Use Only with Single Turbo |

# BOOST CONNECT

If you are in the market for high quality, high temperature resistant hoses and fittings, keep these two important lessons in mind: ***If the color of the hose is NOT white, then it is NOT high-temp hose. If the fittings are NOT all metal construction, then they are NOT high-temp fittings.***

- Pneumatic fittings eliminate the need for hose clamps or zip ties to secure lines
- All threaded Pneumatic Fittings are 1/8th NPT
- All hoses (High Temp and Low Temp) are Standard 6mm OD
- Locking Hose connections that eliminates zip tied silicone hose

| HIGH TEMP:                                                                                                                                                                                                                                           | MEDIUM TO LOW TEMP:                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• All metal nickel-plated pneumatic brass fittings</li> <li>• PTFE hose designed to withstand high temperatures</li> <li>• PTFE specs: -292°F to 500°F at 100 psi, withstands cryogenic to 700°F +</li> </ul> | <ul style="list-style-type: none"> <li>• Pneumatic polypropylene fittings</li> <li>• Polyurethane hose for medium to low temperature applications</li> <li>• Polyurethane specs: 20°F to 140°F at 100 psi, withstands -58°F to 212°F</li> </ul> |

*High*

*Low*

| Part No. | Description                           |
|----------|---------------------------------------|
| 08600    | 3 Meters High Temp Hose White (500F)  |
| 08601    | 50 Meters High Temp Hose White (500F) |
| 08602    | 3 Meters Low Temp Hose Black (140F)   |
| 08603    | 3 Meters Low Temp Hose Blue (140F)    |
| 08604    | 3 Meters Low Temp Hose Red (140F)     |
| 08605    | 50 Meters Low Temp Hose Black (140F)  |
| 08606    | 50 Meters Low Temp Hose Blue (140F)   |
| 08607    | 50 Meters Low Temp Hose Red (140F)    |

| Part No. | Description                                                           |
|----------|-----------------------------------------------------------------------|
| 08010    | Low/High Temp Boost Connect Kit With Black And White Hose (140F+500F) |
| 08011    | Low/High Temp Boost Connect Kit With Blue And White Hose (140F+500F)  |
| 08012    | Low/High Temp Boost Connect Kit With Red And White Hose (140F+500F)   |
| 08013    | High Temp Boost Connect Kit (500F)                                    |

| Part No. | Description                                           |
|----------|-------------------------------------------------------|
| 08022    | Low/Med Temp Boost Connect Kit With Black Hose (140F) |
| 08023    | Low/Med Temp Boost Connect Kit With Blue Hose (140F)  |
| 08024    | Low/Med Temp Boost Connect Kit With Red Hose (140F)   |



## EXHAUST SYSTEMS

Synapse has developed these limited edition exhaust systems in the course of our development activities. These designs are hand crafted to our unique specifications. By utilizing a philosophy that each combustion event is like a packet traveling in the system, we are able to minimize flow restrictions and optimize overall system performance.



| Part No. | Description                                                                   |
|----------|-------------------------------------------------------------------------------|
| 06011    | Nissan GTR R35 Race Only Cat Back Exhaust (Made To Order Only)                |
| 06021    | Nissan GTR R35 Cat Back Exhaust V2 With Resonators (Made To Order Only)       |
| 06031    | Nissan GTR R35 Downpipes For Race Use Only (Made To Order Only)               |
| 06041    | Nissan GTR R35 Midpipe For Race Use Only (Made To Order Only)                 |
| 06051    | Nissan GTR R35 Midpipe 2X High Flow Catalytic Converters (Made To Order Only) |

## MISSING LINK

**Missing Link®** is an innovative valve that is applied when turbo/supercharging normally aspirated engines. It works by blocking boost pressure from the factory ECU (computer). Once in boost, the valve closes off all pressure to the engine's MAP sensor and then uses the principle of Diffusion to equalize the MAP to ambient barometric pressure in order to simulate a wide open throttle condition.

- Eliminates Boost Related Check Engine Lights
- Enforces a Smooth Vacuum-to-Boost Transition
- Eliminates In-Cabin Gas Vapor Characteristic of Bleed Valves
- Allows for Infinitely Adjustable Boost Pressures without Valve Adjustment
- Superior to Voltage Limiters
- Protects MAP Sensor From Boost Pressure
- Automatic Compensation for Changes in Altitude and Barometric Pressure
- Filtered Air Intake for Near Stock Idle Quality and Longevity
- Eliminates Cluster of Fish Tank Check Valves



| Part No. | Description                                                                  |
|----------|------------------------------------------------------------------------------|
| 01019    | Missing Link 001 Rev C, MAP Sensor Check Valve, B18,B16,D16,F22,H22,F20      |
| 01029    | Missing Link 002 Rev C, Universal MAP Sensor Check Valve, Hose Connection    |
| 01039    | Missing Link 003 Rev C, MAP Sensor Check Valve, Without Air Temp Sensor 420A |
| 01049    | Missing Link 004 Rev C, MAP Sensor Check Valve, K20,D17,S2K F22              |
| 01059    | Missing Link 006 Rev C, MAP Sensor Check Valve, W/ Air Temp 420A             |

## INTERCOOLER PIPING KIT

To compliment our popular BOV program, we are offering a full line of intercooler piping kits. Each application-specific kit has been meticulously engineered to be a **direct bolt-on installation, that does not require any cutting or modification**. This means that each kit can be installed by an experienced installer in a relatively short amount of time (about 4 hours).

These kits will maximize charge velocity and will reduce unnecessary bend radii for optimum performance. All of our pipes are 100% CNC mandrel bent and made in the USA. We also include high quality 3 Ply Reinforced Silicone Hose Couplers, Stainless Steel T-Bolt Clamps, a Synchronic BOV/DV, all necessary mounting hardware and installation instructions. Each application is designed to maintain the proper recirculation of the Diverter Valve for maximum performance and daily drivability. Some kits are designed to work directly with the OEM airbox for a stealth appearance.

| Part No. | Description                                                                      |
|----------|----------------------------------------------------------------------------------|
| 07020    | Mitsu Evo 8-9 IC Pipe Kit No DV/BOV In Black For Use With Oem Battery            |
| 07040    | Mitsu Evo 8-9 IC Pipe Kit No DV/BOV In Black For Use W/ Race (Sm) Bat.           |
| 07060    | Mitsu Evo X IC Pipe Kit No DV/BOV, W/ Intake In Powder Coated Black              |
| 07071    | Synapse Engineering FMIC Kit For 07 - 09 (1St Gen) Mazdaspeed 3 With Sil/Blk BOV |
| 07090    | Nissan GTR R35 IC Piping Kit No DV/BOV In Powder Coated Black                    |
| 07100    | Mitsu Evo 8-9 IC Pipe Kit No DV/BOV In Black For Use W/ Oe Bat. (Speeddensity)   |
| 07120    | Mitsu Evo 8-9 IC Pipe Kit No SB/DV Black For Race (Sm) Bat. (Speeddensity)       |
| 07140    | Mitsu Evo X IC Pipe Kit No SB/DV In Powder Coated Black (Speed Density)          |



## SINGLE CHARGE PIPES WITH COUPLERS

| Part No. | Description                                             |
|----------|---------------------------------------------------------|
| 07162    | Mitsubishi Evo 8-9 LICP Kit In Polished Aluminum        |
| 07163    | Mitsubishi Evo 8-9 LICP Kit In Powder Coated Black      |
| 07172    | Mitsubishi Evo X UICP Kit In Polished Aluminum          |
| 07173    | Mitsubishi Evo X UICP In Powder Coated Black            |
| 07183    | Charge Pipe (Only) Kit For 2011+ Nissan Juke 1.6L Turbo |



 **SYNAPSE**  
ENGINEERING