

MOTORTECH High Performance Spark Plugs



General Information

MHP-Plugs

MOTORTECH HIGH PERFORMANCE SPARK PLUGS

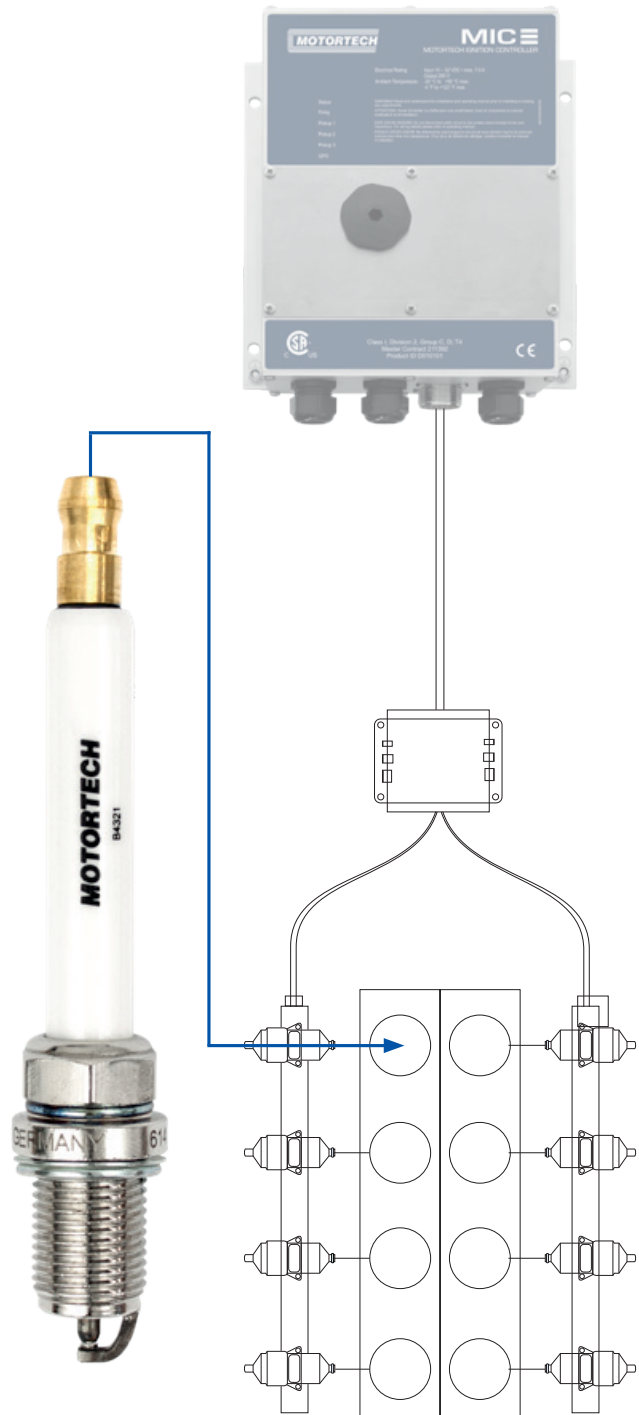
MOTORTECH High Performance Spark Plugs

The expansion of MOTORTECH's state-of-the-art ignition controllers is driven by the latest developments of modern spark ignited gas engines. The operation of these high performance engines with advanced compression rates and very efficient lean-burn combustion systems require much higher voltages to allow a perfect and effective combustion.

MHP spark plugs are designed to meet the requirements, both of modern and common engine developments and reliably deliver highest voltages and thus a strong spark down into the combustion chamber. The J-type electrode design with IRIDIUM alloy discs on center and ground electrode provides reliable combustion and increased spark plug life and helps to reduce service costs due less spark plug changes.

General Features

- Hot lock technology ensures increased spark plug durability even in high compression engines
- J-type electrode design for enhanced combustion
- Supplies even highest voltages of modern ignition systems like MOTORTECH's MIC series
- Long design insulators for best flashover protection
- Advanced spark erosion resistance
- Suppression of electromagnetic interference (EMI)
- Less spark plug changes reduce operation costs
- Available with different thread sizes and reaches

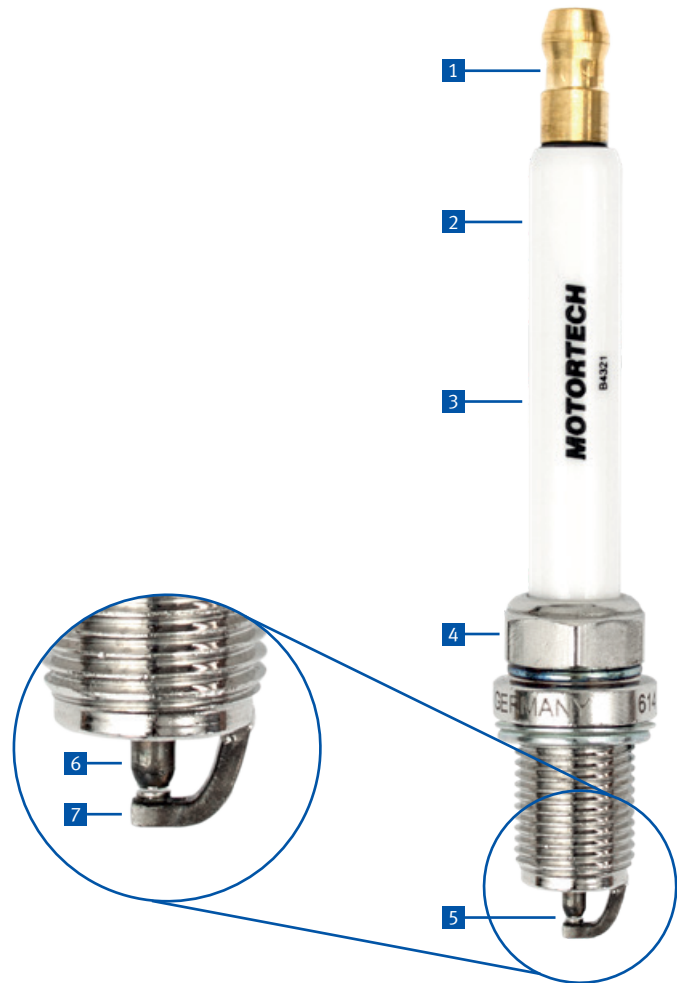


General Information



Key Design Features

- 1 Removable threaded brass SAE terminal
- 2 Long aluminum oxide ceramic insulator offers best flashover protection, especially in combination with PolyMot™ spark plug leads and extensions
- 3 Integrated stress resistant monolithic resistor suppresses electromagnetic interference (EMI)
- 4 Unified hex size reduces amount of required service tools for installation
- 5 J-type electrode design and use of higher erosion resistance materials ensure better combustion particularly on lean burn gas engines and longest service life
- 6 Copper cored center electrode with laser welded IRIDIUM alloy disc
- 7 Copper cored ground electrode with laser welded IRIDIUM alloy disc

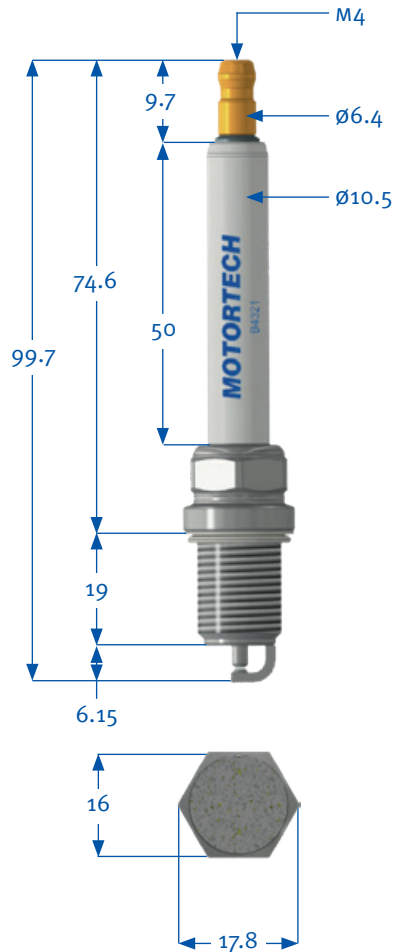


Spark Plug Types

| Thread Size | Type | Thread Reach | Hex Size | Electrode Design |
|-------------|-------|---------------------|---------------------|------------------|
| M14x1.25 | B4321 | 0.750 in. (19.0 mm) | 5/8 in. (16.0 mm) | J-type (Ir/Ir) |
| M18x1.5 | B8124 | 0.500 in. (12.7 mm) | 13/16 in. (20.8 mm) | J-type (Ir/Ir) |
| | B8324 | 0.750 in. (19.0 mm) | | |
| | B8524 | 1.000 in. (25.4 mm) | | |
| M22x1.5 | B2224 | 0.600 in. (15.0 mm) | 13/16 in. (20.8 mm) | J-type (Ir/Ir) |
| | B2324 | 0.750 in. (19.0 mm) | | |
| | B2424 | 0.875 in. (22.2 mm) | | |
| 7/8-18 UNS | B7224 | 0.600 in. (15.0 mm) | 13/16 in. (20.8 mm) | J-type (Ir/Ir) |
| | B7324 | 0.750 in. (19.0 mm) | | |
| | B7424 | 0.875 in. (22.2 mm) | | |

M14x1.25

B4321

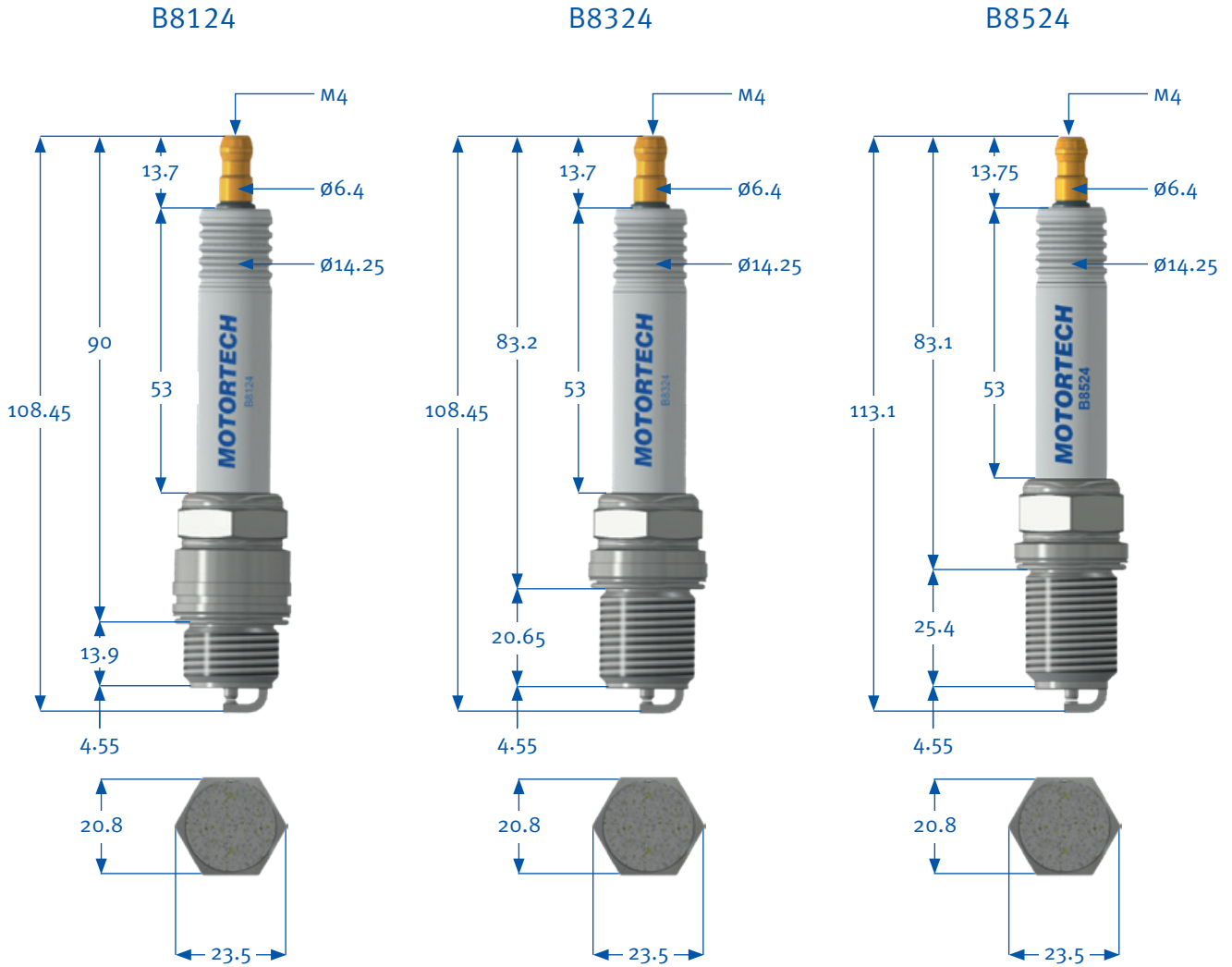


Dimensions in mm

| Type | Thread Size | Thread Reach | Electrode Design | Alloy Center / Ground Electrode | Hex Size | Electrode Gap | Tightening Torque ¹⁾ |
|-------|-------------|----------------------|------------------|---------------------------------|--------------------|----------------------|---------------------------------|
| B4321 | M14x1.25 | 0.750 in. 19.0 mm | J-type | Ir/Ir | 5/8 in. 16.0 mm | 0.010 in. 0.25 mm | 25 lb-ft 35 Nm |

¹⁾ For cast iron cylinder heads. Please observe the tightening torques rendered by each engine manufacturer.

M18x1.5

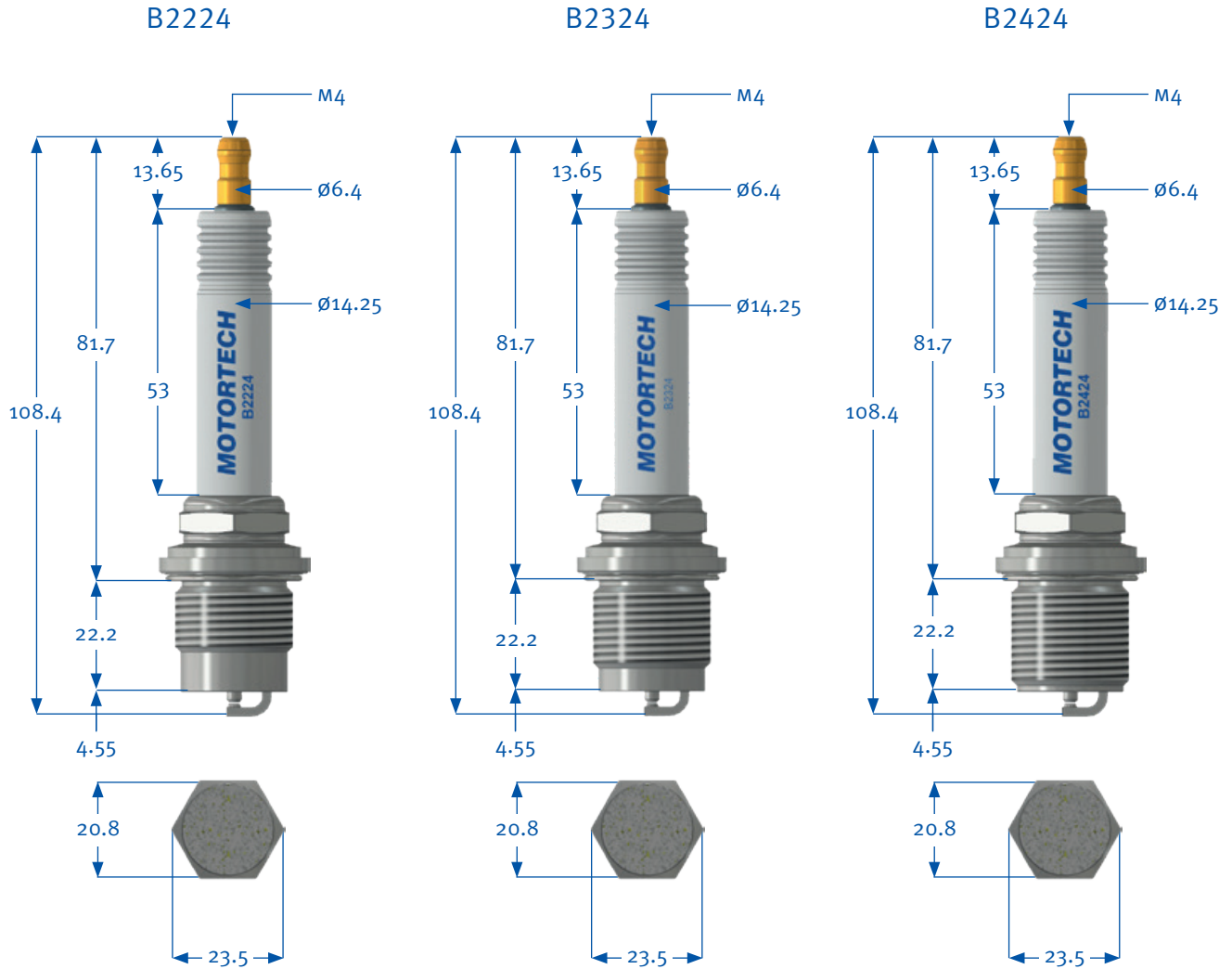


Dimensions in mm










| Type | Thread Size | Thread Reach | Electrode Design | Alloy Center / Ground Electrode | Hex Size | Electrode Gap | Tightening Torque ¹⁾ |
|-------|-------------|----------------------|------------------|---------------------------------|----------------------|----------------------|---------------------------------|
| B8124 | M18x1.5 | 0.500 in. 12.7 mm | | Ir/Ir | 13/16 in. 20.8 mm | 0.010 in. 0.25 mm | 36 lb-ft 50 Nm |
| B8324 | M18x1.5 | 0.750 in. 19.0 mm | | Ir/Ir | 13/16 in. 20.8 mm | 0.010 in. 0.25 mm | 36 lb-ft 50 Nm |
| B8524 | M18x1.5 | 1.000 in. 25.4 mm | | Ir/Ir | 13/16 in. 20.8 mm | 0.010 in. 0.25 mm | 36 lb-ft 50 Nm |

¹⁾ For cast iron cylinder heads. Please observe the tightening torques rendered by each engine manufacturer.

M22x1.5



Dimensions in mm

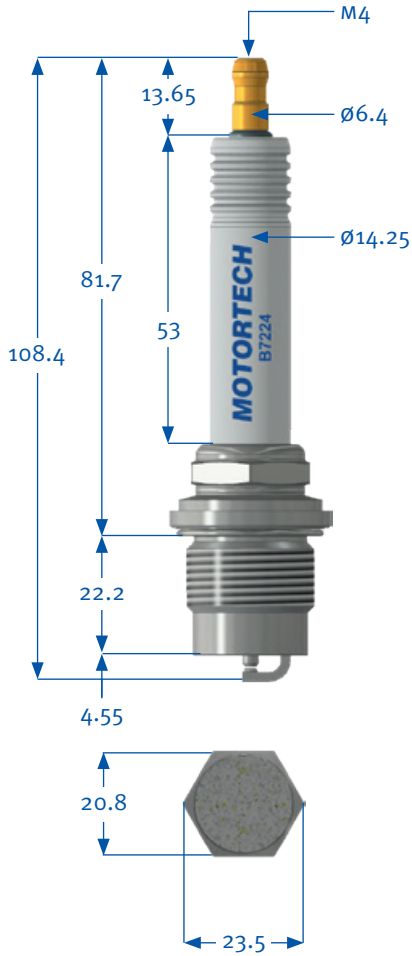
| Type | Thread Size | Thread Reach | Electrode Design | Alloy Center / Ground Electrode | Hex Size | Electrode Gap | Tightening Torque ¹⁾ |
|-------|-------------|----------------------|---|---------------------------------|---|--|---------------------------------|
| B2224 | M22x1.5 | 0.600 in. 15.0 mm |  | Ir/Ir |  13/16 in. 20.8 mm |  0.010 in. 0.25 mm | 51 lb-ft, 70 Nm |
| B2324 | M22x1.5 | 0.750 in. 19.0 mm |  | Ir/Ir |  13/16 in. 20.8 mm |  0.010 in. 0.25 mm | 51 lb-ft, 70 Nm |
| B2424 | M22x1.5 | 0.875 in. 22.2 mm |  | Ir/Ir |  13/16 in. 20.8 mm |  0.010 in. 0.25 mm | 51 lb-ft, 70 Nm |

¹⁾ For cast iron cylinder heads. Please observe the tightening torques rendered by each engine manufacturer.

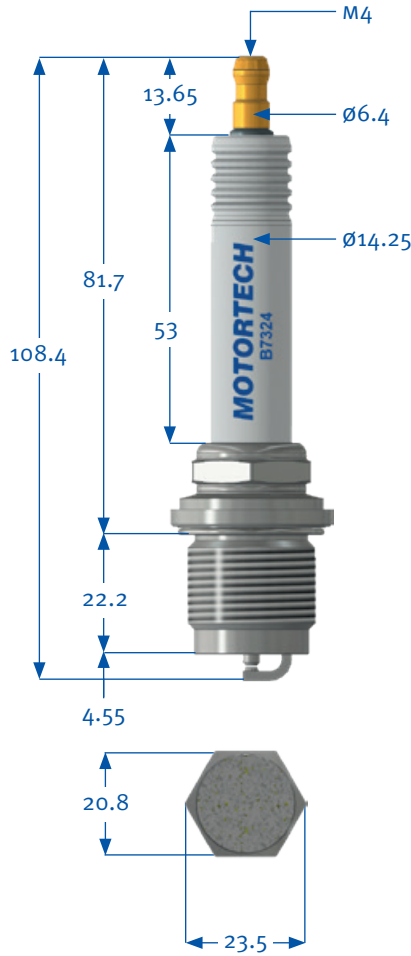
7/8-18 UNS



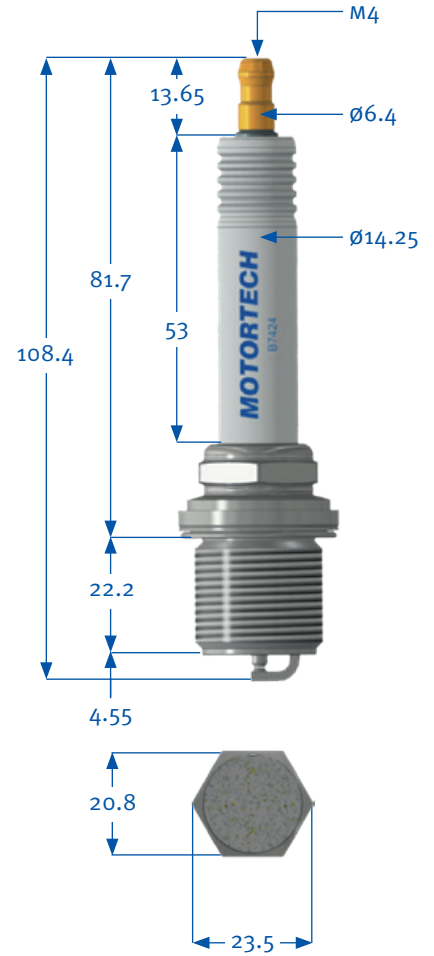
B7224



B7324



B7424



Dimensions in mm

| Type | Thread Size | Thread Reach | Electrode Design | Alloy Center / Ground Electrode | Hex Size | Electrode Gap | Tightening Torque ¹⁾ |
|-------|-------------|----------------------|------------------|---------------------------------|--------------------------|--------------------------|---------------------------------|
| B7224 | 7/8-18 UNS | 0.600 in. 15.0 mm | | Ir/Ir | 13/16 in. 20.8 mm | 0.010 in. 0.25 mm | 51 lb-ft 70 Nm |
| B7324 | 7/8-18 UNS | 0.750 in. 19.0 mm | | Ir/Ir | 13/16 in. 20.8 mm | 0.010 in. 0.25 mm | 51 lb-ft 70 Nm |
| B7424 | 7/8-18 UNS | 0.875 in. 22.2 mm | | Ir/Ir | 13/16 in. 20.8 mm | 0.010 in. 0.25 mm | 51 lb-ft 70 Nm |

¹⁾ For cast iron cylinder heads. Please observe the tightening torques rendered by each engine manufacturer.

Cross References

| ALTRONIC® | | MOTORTECH | NOTE |
|-----------|--|-----------|--------|
| J1463DP | | B4321 | 1)/(2) |
| L1843B | | B8124 | 1) |
| L1843IP | | B8124 | 1) |
| L1863B | | B8324 | 1) |
| L1863DP | | B8324 | 1) |
| L1863IP | | B8324 | 1) |
| L2252B | | B7224 | 1) |
| L2252DP | | B7224 | 1) |
| L2252IP | | B7224 | 1) |
| L2272B | | B7424 | 1) |
| L2282B | | B7424 | 1) |
| L2282IP | | B7424 | 1) |

| BERU® | | MOTORTECH | NOTE |
|------------------|--------|-----------|--------|
| 14-3 CPU | Z102 | B4321 | 1)/(2) |
| 14FR-4DIU | Z212 | B4321 | 2) |
| 14FR-4DIU02 | Z328 | B4321 | 2) |
| 14FR-4DIU3 | Z290 | B4321 | 2) |
| 14FR-4DPUO | Z189 | B4321 | 2) |
| 14GZ6-77-2 | Z244 | B4321 | |
| 14GZ-LL | | B4321 | 1)/(2) |
| 14GZ-LL2 | | B4321 | 1)/(2) |
| 14GZ-LL-FR | | B4321 | 2) |
| 14R-3CPU | Z163 | B4321 | 1)/(2) |
| 14R-4CDP | Z147 | B4321 | 1)/(2) |
| 14R-4CDP | Z191 | B4321 | 1)/(2) |
| 14R-4CIU | Z187 | B4321 | 1)/(2) |
| 14R-4CIU2 | Z215 | B4321 | 1)/(2) |
| 14R-4CIU2 | Z276 | B4321 | 1)/(2) |
| 14R-4DIU2 | Z258 | B4321 | 1)/(2) |
| 14R-4DIU2 | Z259 | B4321 | 1)/(2) |
| 14R-4DIU3 | Z281 | B4321 | 1)/(2) |
| 18GZ20 | Z178 | B8324 | 1) |
| 18GZ22 | Z182 | B8124 | 1) |
| 18GZ4-77 | Z179 | B8324 | 1) |
| 18GZ5-77-2 | Z201 | B8324 | |
| 18GZ6-77-2 | Z202 | B8324 | 1) |
| 18GZ7 | Z168 | B8324 | 1) |
| 7/8GZ11 | Z180 | B7324 | 1) |
| 7/8GZ9 | Z181 | B7224 | 1) |
| Blue Ignition | Z350SB | B8324 | 1) |
| Green Ignition | Z352SB | B8324 | 1) |
| Super Green Ign. | Z353SB | B8324 | 1) |

| BG® | MOTORTECH | NOTE |
|---------|-----------|------|
| RB105-1 | B7224 | 1) |
| RB114-1 | B7424 | 1) |
| RB212-1 | B7224 | 1) |
| RB485-1 | B8124 | 1) |
| RB777-1 | B8324 | 1) |
| RB777-2 | B8324 | 1) |
| RB778-1 | B8324 | 1) |
| RB778-2 | B8324 | 1) |

| BOSCH® | MOTORTECH | NOTE |
|--------|-----------|--------|
| 7302 | B8324 | 1) |
| 7303 | B8124 | 1) |
| 7305 | B8324 | 1) |
| 7306 | B8324 | 1) |
| 7307 | B8324 | |
| 7308 | B8324 | |
| 7311 | B4321 | 1)/(2) |
| 7313 | B4321 | 1)/(2) |
| 7315 | B4321 | 1)/(2) |
| 7321 | B4321 | 2) |
| 7322 | B4321 | 2) |

| CATERPILLAR® | MOTORTECH | NOTE |
|--------------|-----------|--------|
| 194-8518 | B8324 | 1) |
| 243-4291 | B8324 | 1) |
| 2N2839 | B4321 | 1)/(2) |
| 306-6663 | B8324 | 1) |

| CHAMPION® | MOTORTECH | NOTE |
|-----------|-----------|------|
| B86N | B8324 | 1) |
| C95F | B7224 | 1) |
| D14N | B8124 | 1) |
| D78Y | B8124 | 1) |
| D89D | B8124 | 1) |
| FB77WPCC | B8324 | 1) |
| KB75N | B8324 | 1) |
| KB77WPCC | B8324 | 1) |
| M82N | B8124 | 1) |
| RB75N | B8324 | 1) |

¹⁾ Due to divergent hex sizes, use of suitable spark plug socket is necessary for installation of MHP-Plug.

²⁾ MHP-Plug requires use of special spark plug lead due to longer ceramic insulator.

Cross References



| CHAMPION® | MOTORTECH | NOTE |
|-----------|-----------|--------|
| RB75PP | B8324 | 1) |
| RB75WPCC | B8324 | |
| RB76N | B8324 | 1) |
| RB76PP | B8324 | 1) |
| RB77CC | B8324 | 1) |
| RB77N | B8324 | 1) |
| RB77WPCC | B8324 | 1) |
| RC78PYP | B4321 | 2) |
| RC78PYP15 | B4321 | 2) |
| RC78PYP17 | B4321 | 2) |
| RC78PYP21 | B4321 | 2) |
| RC78PYP25 | B4321 | 2) |
| RC78WP | B4321 | 2) |
| RC78WYP11 | B4321 | 2) |
| RC78WYP15 | B4321 | 2) |
| RC78YCC15 | B4321 | 2) |
| RM77N | B8124 | 1) |
| RM77PP | B8124 | 1) |
| RM79F | B8124 | 1) |
| RM82WPCC | B8124 | 1) |
| RM85G | B8124 | 1) |
| RN79G | B4321 | 1)/(2) |
| RN79G1 | B4321 | 1)/(2) |
| RN79PYP17 | B4321 | 1)/(2) |
| RN79PYP25 | B4321 | 1)/(2) |
| RW77N | B7424 | 1) |
| RW77PP | B7424 | 1) |
| RW78N | B7324 | 1) |
| RW80N | B7224 | 1) |
| RW80PP | B7224 | 1) |
| RW82P | B7224 | 1) |
| RW83F | B7224 | 1) |
| W10 | B7224 | 1) |
| W14 | B7224 | 1) |
| W16Y | B7224 | 1) |
| W18 | B7324 | 1) |
| W20 | B7224 | 1) |
| W77N | B7424 | 1) |
| W80N | B7224 | 1) |
| W85N | B7224 | 1) |
| W89D | B7224 | 1) |
| W95D | B7224 | 1) |

| DENSO® | MOTORTECH | NOTE |
|--------|-----------|--------|
| GE3-1 | B4321 | 1)/(2) |
| GE3-5 | B4321 | 1)/(2) |
| GI3-1 | B8324 | 1) |
| GI3-3 | B8324 | 1) |
| GI3-5 | B8324 | 1) |
| GK3-1 | B4321 | 2) |
| GK3-5 | B4321 | 2) |
| GL3-1 | B8324 | |
| GL3-3 | B8324 | |
| GL3-5 | B8324 | |
| GT3-1 | B8124 | 1) |

| GATEWAY® | MOTORTECH | NOTE |
|----------|-----------|------|
| 1175112 | B8324 | 1) |
| 1176112 | B8324 | 1) |
| 1177012 | B8324 | 1) |
| 1177512 | B8324 | 1) |
| 1177812 | B8324 | 1) |
| 2178315 | B4321 | 2) |
| 2178317 | B4321 | 2) |
| 2178321 | B4321 | 2) |
| 3014115 | B8124 | 1) |
| 7177115 | B8124 | |
| 7177315 | B8124 | |
| 8179215 | B4321 | 2) |
| 8179515 | B4321 | 2) |
| 9018025 | B7324 | 1) |
| 9077112 | B7424 | 1) |
| 9077115 | B7424 | 1) |
| 9080113 | B7224 | 1) |
| 9080120 | B7224 | 1) |
| 9085113 | B7224 | 1) |
| 9085120 | B7224 | 1) |
| 9089525 | B7224 | 1) |
| 9177112 | B7424 | 1) |
| 9177115 | B7424 | 1) |

1) Due to divergent hex sizes, use of suitable spark plug socket is necessary for installation of MHP-Plug.

2) MHP-Plug requires use of special spark plug lead due to longer ceramic insulator.

Cross References

| GATEWAY® | MOTORTECH | NOTE |
|----------|-----------|------|
| 9178112 | B7324 | 1) |
| 9180112 | B7224 | 1) |
| 9180115 | B7224 | 1) |

| GUASCOR® | MOTORTECH | NOTE |
|-----------|-----------|------|
| 76.64.291 | B8324 | 1) |
| 76.64.292 | B8324 | 1) |
| 76.64.375 | B8324 | 1) |

| MAN® | MOTORTECH | NOTE |
|---------------|-----------|--------|
| 51.25923-0016 | B4321 | 1)/(2) |
| 51.25923-0046 | B4321 | 1)/(2) |
| 51.25923-0050 | B4321 | 1)/(2) |
| 51.25923-0051 | B4321 | 1)/(2) |
| 51.25923-0052 | B4321 | 1)/(2) |
| 51.25923-0054 | B4321 | 1)/(2) |

| MWM®/DEUTZ® | MOTORTECH | NOTE |
|-------------|-----------|------|
| 0422 9132 | B4321 | |
| 0426 9126 | B4321 | |
| 1230 1188 | B8324 | |
| 1230 1248 | B8324 | |
| 1242 0290 | B8324 | |
| 1242 0480 | B8324 | |

| STITT® | MOTORTECH | NOTE |
|---------|-----------|--------|
| 807 | B8124 | 1) |
| 827 | B8124 | 1) |
| 407XL | B4321 | 2) |
| 8ME | B8124 | 1) |
| R107 | B7224 | 1) |
| R197 | B7224 | 1) |
| R407XL | B4321 | 1)/(2) |
| R707 | B7224 | 1) |
| R707 | B7424 | 1) |
| R717 | B7324 | 1) |
| R807 | B8124 | 1) |
| RL807LL | B8324 | 1) |

| WAUKESHA® | MOTORTECH | NOTE |
|-----------|-----------|------|
| 69919 | B8324 | 1) |
| 60999F | B8124 | 1) |
| 69919A | B8324 | 1) |
| 69919C | B8324 | 1) |
| 69919D | B8324 | 1) |

1) Due to divergent hex sizes, use of suitable spark plug socket is necessary for installation of MHP-Plug.

2) MHP-Plug requires use of special spark plug lead due to longer ceramic insulator.

Accessories for MHP-Plugs

Spark Plug Gap Setting Tool

The simple-to-use tool for setting the spark plug electrode gap is hand-operated and does not need to be additionally mounted on a work-bench. The optionally available accessory components allow a custom-configuration to most commonly used spark plug types in the industry. The perfect tool for a professional job on-site in a material-conserving manner.



- P/N 07.98.120-14** Basic kit for spark plugs with M14x1.25 thread
- P/N 07.98.120-18** Basic kit for spark plugs with M18x1.5 thread
- P/N 07.98.120-78** Basic kit for spark plugs with M22x1.5 and 7/8-18 thread
- P/N 07.98.122-A** Accessory kit for J-type spark plugs

Extended Barrel Spark Plug Sockets

Installing spark plugs can be a pain. The extended barrel spark plug socket (available up to 36 in. length) has strong magnets incorporated that hold the spark plug when being installed in a deep spark plug well.

- P/N 07.99.022-4-L** Magnetic spark plug sockets for 13/16 in. (20.8 mm) hex, 1/2 in. drive
- P/N 07.99.022-5-L** Magnetic spark plug sockets for 5/8 in. (16.0 mm) hex, 1/2 in. drive



Torque Wrench

When installing spark plugs, always ensure that you comply with the specifications defined by the spark plug or engine manufacturer. The torque wrench fits MOTORTECH magnetic spark plug sockets and ensures a “stress-free” installation for the spark plug in compliance with the manufacturer’s torque specifications.

- P/N 07.98.065** Torque wrench, 1/2 in. drive



Spark Plug Cleaning Kit

Deposits and residue form on the spark plug during operation. The MOTORTECH spark plug cleaning kit allows these to be easily and carefully removed in the electro-area and the thread during regular maintenance intervals.



- P/N 44.01.023** Spark plug cleaning kit

Spark Plug Gaskets

Spark plug gaskets just once provide an optimal seal between spark plug and seat. Spark plugs must be installed with a new gasket after every service in order to ensure the best possible seal in future operation.



- P/N 02.85.015-100** Spark plug gaskets for M14x1.25 thread, pack of 100 pcs.
- P/N 02.85.016-100** Spark plug gaskets for M18x1.5 thread, pack of 100 pcs.
- P/N 02.85.017-100** Spark plug gaskets for M22x1.5 and 7/8-18 thread, pack of 100 pcs.

Thread Lubricant

This lubricant is non-metallic and non-conductive. Guarantees easy spark plug removal and prevents thread damage. Also for use with seat & thread reconditioner.



- P/N 07.98.718** Thread lubricant, 4 oz/115 g

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