

Build it, move it! Live your dreams!

The 3rd generation KHR series - evolved for all users

Simple Assembly

Assembly just takes a couple of days and a screwdriver!



Stable bipedal walking

High rigidity, high accuracy and high power servos to used as the joints to enable human-like walking. Stability is not affected even when equipped with various sensors or options.



KHR-3HV Ver.2

KHR-3HV Ver.2 No.03070

* 17 KRS-2552RHV ICS servo motors * Dual USB adapter HS

- Lightweight aluminum alloy frame (alumite finished) - Reinforced resin molded servo arm

- S-02 Bathtub sole - RCB-4HV control board

- ROBO power cell HV D-type 10.8V - 800mAh nickel-hydrate battery

- MX-201 100V AC dedicated fast-charge recharger - Manuals + software CD-ROM

- Resin parts, screws and other parts.

Simple control

Almost all programming can be done easily with a mouse. Equipped with a full range of functions such as the "teaching function" that enables programming from poses, and also comes equipped with a large range of sample motions.



Simple kit contents

This kit features the minimum required parts to ensure the best possible price.

Expandability

The broad range of options supports a wide range of ideas, enabling you to enjoy adding your own programming and functions. Continue customizing your KHR series long after purchase.

KRS Series

Reliability polished in the real world

Through the realization of top-end functionality from the earliest bipedal robots, KONDO has won the trust of a great many robot builders. Carrying the pride of our brand on its shoulders, the KRS series features servos which are indispensable in the enhancement and development of the lineup.

Achieving excellent evaluation in speed, power and durability, our products appear most often in bipedal robot events in Japan. In addition to command control via serial communication and a wide range of settings to suit the usage location and objectives, our products are also equipped with safety functions using temperature and current limiters, providing strong support to owners.

KRS Servo : Feature

<Reliable Japanese Production>

All products are manufactured in Japan to ensure the high quality you deserve.

<Removable Cables>

Replaceable cables make it easy to change cable lengths

<Extensive Lineup>

Can be selected to match the conditions of use

<Wide Range of Options>

The wide range of optional parts ensures usability in a broad range of settings.

<Change servo attributes freely using ICS>

Enjoy complete control of servos using the control board, and change servo settings via your PC.

4000 series

Speed Type

KRS-4033HV ICS

No.03028 6set No.03029

- Torque:30.6kg-cm
- Speed:0.12sec/60°
- Weight:61.4g
- Size:43×32×32.5mm
- Aluminum Gear



Hi-Speed Type

KRS-4032HV ICS

No.03041 6set No.03042

- Torque:19.8kg-cm
- Speed:0.08sec/60°
- Weight:60.2g
- Size:43×32×32.5mm
- Aluminum Gear

Torque Type

KRS-4034HV ICS

No.03030 6set No.03031

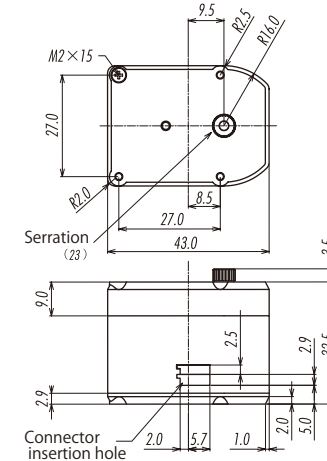
- Torque:41.7kg-cm
- Speed:0.17sec/60°
- Weight:61.2g
- Size:43×32×32.5mm
- Aluminum Gear

Light Type

KRS-4031HV ICS

No.03048 6set No.03049

- Torque:13.0kg-cm
- Speed:0.16sec/60°
- Weight:55.2g
- Size:43×32×32.5mm
- Aluminum Gear



6000 series

KRS-6003RHV ICS

No.03083 6set No.03084 18set No.03085

- Torque:67.0kg-cm
- Speed:0.22sec/60°
- Weight:103g
- Size:51×32×39.5mm
- Aluminum Gear + Stainless Gear



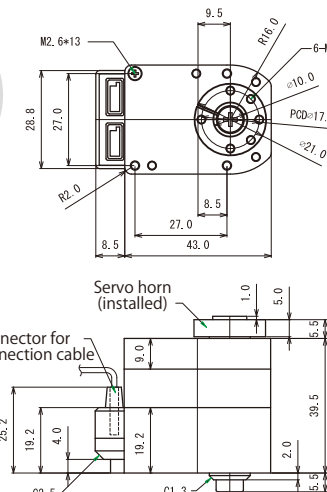
KRS-6003HV ICS

No.03010 6set No.03011 18set No.03012

- Torque:67kg-cm
- Speed:0.22sec/60°
- Weight:100.8g
- Size:51×32×39.5mm
- Aluminum Gear



Bottom case set for double servo
Pack of one: No.02029
Pack of six: No.02030
●Bottom case for the KRS-600 series.
Double servo for increased torque! Simple connection set contains all necessary parts.



2500 series

KHR-3HV
Standard assembly servo
KRS-2552R HV ICS



KRS-2552R HV ICS

No.03067 10set No.03068

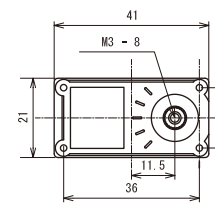
- Torque:14.0kg-cm
- Speed:0.14sec/60°
- Weight:41.5g
- Size:41×21×30.5mm
- Metal Gear



KRS-2572HV ICS

No.03087 6set No.03088

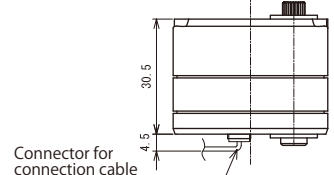
- Torque:25.0kg-cm
- Speed:0.13sec/60°
- Weight:47.7g
- Size:41×21×30.5mm
- Metal Gear



KRS-2542HV ICS

No.03057 10set No.03058

- Torque:11kg-cm
- Speed:0.12sec/60°
- Weight:30.5g
- Size:41×21×30.5mm
- Plastic Gear



B3M Series

Outstanding product quality and performance provide stability and reassurance

Brushless servo motors equipped with non-contact magnetic encoders

Combination of brushless motors and non-contact magnetic encoders provides unparalleled durability.

RS-485 compliant communication is adopted for even greater reliability.

When designing the B3M-SB-1040-A, the first model of the B3M series, our aim was to realize the ideal of maintaining powerful, elaborate motion over long periods of time. The pride of the KONDO brand, this product is crammed with an abundance of our know-how and experience. Providing outstanding performance in a broad range of fields, the B3M series draws out an entirely new scope of possibility.



B3M-SB-1040-A

No.03072 5set No.03073

<Highly Reliable, Long Life Brushless Motor>

By omitting the brush & commutator, the motor is no longer restricted by contact resistance and wear, enabling enhanced performance to be maintained over long periods.

<High Precision 12-bit Magnetic Encoder>

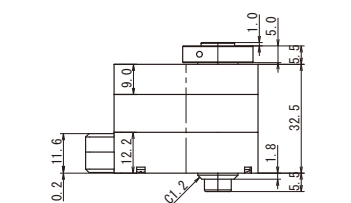
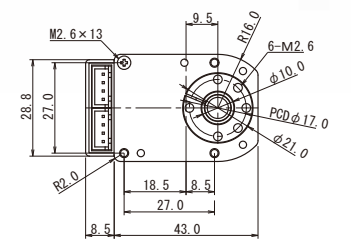
Prolonged life is achieved because there is no contact section. Furthermore, the 12-bit resolution promises minute control through a minimum resolution of just 0.088° (0-4095).

<Reliable RS-485 Standards>

Differential signals ensure resistance to noise, and 3Mbps communication speed is possible. A maximum of 255 units can be connected via the Daisy Chain serial protocol (theoretical value).

<Simple Construction through Reduced Commands>

Servos can be controlled with just six types of command. Memory mapped IO is used to enable practical level control simply with reading and writing data to the memory.



[Specs]

●Nominal voltage: 12V ●Maximum torque: 4.1Nm (42kgf/cm) ●Maximum continuous torque: 2.5Nm ●No load speed: 45rpm (0.22 [s/60s]) ●Reduction ratio: 362.88:1 ●Operating voltage: 6V - 12V with stable power supply ●Standby current: 80mA ●Operating environment temperature: 0 - 40 °C ●Weight: 88g ●Dimensions: 32 x 32 x 51mm ●Maximum operating angle: ± 320 degrees (+ 32.767 degrees) in potion control mode ●Control resolution: 12 bit/ 1 round (0 - 4095) ●Operating method: Position control, speed control

[Communication & Parameter Specifications]

●Communication interface: RS-485 ●Communication protocol: HDX asynchronous communication, data length 8 bit/start 1 bit/stop 1 bit/no parity ●Main parameters: Approx. 60 types including ID number, various control items, various gains for PID control, etc. ●No. of fixed IDs: 0 - 254 (255 reserved for broadcast ID) ●Communication speed: Max 3Mbps, standard 1.5Mbps (guard time approx. 200us)

B3M series optional accessory products



**RS485USB
Serial conversion adapter**
No.02133
●Serial conversion adapter for connecting the B3M to a PC or microcomputer board.



**Connector set for XH cable
(contains 30)**
No.02134
●Connector set for adapting to B3M connectors. Recommended for self-made cables.



400mm XH connection cable
No.02144
●B3M series compatible connection cable. Twist pair cable specs for good noise resistance.



Set of 4 servo cables (3m)
No.02135
●Set of XH connection cables. Can be cut to the required length.



Type A hub for XH connectors
No.02136
●Hub for B3M compatible XH connectors. Equipped with 5 hub terminals and power switch.



**Aluminum free horn with bearings
(for B3M/KRS6000 series)**
No.02137 6set No.02138
●Free horn for attaching to the bottom case of the B3M series and KRS-6000 series. Equipped with bearing for smooth dual-axis support.Aluminum construction for high precision and durability. *Bearing unit is same as KRS-6000.



5pcs Servos for KHR-3HV Conversion set Ver.2
No.03069
●Replace dummy servos with this extension pack to enable movements such as hip twisting, opening and closing of legs and twisting arms that are possible with the 22-axis extended specs!
[Set Contents] ●KRS-2552RHV x 5 ●ZH connection cable A (ZH to ZH) 50mm, 200mm, 300mm sizes ●ZH cable B (ZH to servo connector), 350mm, 550mm sizes ●Manual CD, etc.

Leg Frame set type B for KHR-3HV
No.03032

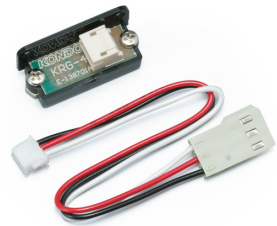
●This frame set provides a vastly increased range of movement for the KHR-3HV hip joint.
[Set Contents] ●Frame set ●ZH connection cable A (ZH to ZH) 200mm x 2 ●ZH connection cable B (ZH to servo connector) 300mm x 2, 500mm x 2 ●Screws ●Manual CD



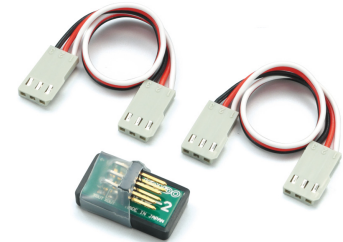
Leg Strengthening Unit Servo(2 pcs) for KHR-3HV
No.03089

They are 2 sets which are optimum to the exchange the leg section servo of the KHR-3HV.
It is necessary to exchange the leg sections to convert the servos to high power.
●KRS-2572HV x 2

KHR-3HV Special Option Parts



KRG-4 Gyro Sensor No.03003
●This sensor detects the posture of the robot during walking and provides automatic correction to ensure more stable walking. Two sensors are required to detect forwards/backwards and sideways motion.
●Weight: 1.4g ●Dimensions: 22.0 x 9.0 x 9.0mm
●Current consumption: Approx. 2mA ●Power voltage: 3 - 5V2mA



RAS-2C Acceleration sensor No.03045
●2-axis acceleration sensor ●Sensor automatically detects whether the robot is facing up or down when it is getting up.
●Small, lightweight design: 22 x 13 x 11mm, 2.0g



KRC-4GP No.03074
The KRC-4GP adapter enables operation of the robot using a compatible game controller. Bands are set automatically which means there is no need to manage bands using crystals.
●Accessories: ZH connection cable B (ZH to servo connector), 100mm x 1, two-way cable II x 1 ●Compatible models: RCB-4HV, RCB-3HV, RCB-3J. The KRI-3 is also required for use with the RCB-4HV model. [Important] Wireless control is not available using just the KRC-4GP. It must be used together with a compatible game controller.



KCB-4WL No.03078
●Wireless LAN control board for robots equipped with Lantronix® PremierWaveEN. In addition to providing communication with the RCB-4HV control board on the KHR-3HV or the RCH-3HV control board on the KHR-2HV/1HV, you can also enable UART communication with existing microcomputer boards by incorporating additional programming.



Black parts set for KHR-3HV
No.02101
Grey resin parts used on the KHR-3HV are now also available in black. Simple swap the parts to add a new sense of style to your KHR-3HV!

Birth of the KHR-1

2004

The KHR-1 realized a price that made the dream of owning a humanoid robot a reality. In addition to the outstanding performance, ease of assembly and easy handling, the full range of support offered online ensured the KHR-1 launch was nothing short of revolutionary.



KHR-2HV Released

Awarded the Ministry of Economy, Trade and Industry Robot of the Year Award!

2006

The KHR-2HV featured many improvements from the KHR-1 series in addition to achieving a further reduction in cost, and became a familiar name in the hobby robot world. The power was increased to 9 - 12V from the conventional 6V, drawing in even more fans than its predecessor.



KHR-1HV Released

2007

All of our know-how acquired through the KHR-2HV was poured into this high-voltage KHR-1 mode. Additionally, the 17 axis (17 servo) joint construction of the KHR-1 and KHR-2HV was increased to a 19-axis construction. This improvement increased the freedom of movement, further extending the possibilities of the hobby robot.



KHR-3HV Released

2009

This newest type combines our experience gained from the KHR-1, KHR-2HV and KHR-1HV models with cutting-edge technology. It comprises a newly designed frame and all servos upgraded to all-level metal gear servos, providing new levels of powerful movement, position retention strength and durability. Equipped with a wide range of sensors and optional parts available as for conventional models enables even further evolution of this superb robot.



KMR-M6 Released

2011

The MKR-M6 contains all of the know-how from our KHR series humanoid robots in this new concept multi-legged robot. Its outstanding stability demonstrates superb walking ability even over rough terrain. A creative link mechanism is incorporated for legs enabling complex movements that are commonly inconceivable for legs that have two servos. This model provides a whole new realm of possibilities for hobby robots.



KONDO
Humanoid Robots Catalog 2014

www.kondo-robot.com