Motor System

for Satellite Receiver

EN User manual
DE Bedienungsanleitung
PL Instrukcja obsługi
RU Руководство пользователя

Model ID: MH1 6/2010 jp

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Contents

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1. Safety precautions

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CAUTION:

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to "dangerous voltage" and to prevent from a risk of electric shock.

Warning:

To reduce the risk of electric shock, don't open the cabinet. Refer servicing to qualified personnel only.

The exclamation point within an equilateral triangle is intended to alert the user to important operating and maintenance (servicing).

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WARNING: Do not use this STB where contact with or immersion in water is a possibility. Do not use near flower vase, washbowls, kitchen sinks, laundry tubs, swimming pools, etc.

WARNING: Do not put the candle or lamp stand on the cabinet; otherwise, there is the danger of fire.

WARNING: The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the unit. If you are not sure of the type of power supply (for example, 120 or 230 V) to your home, consult your local dealer or local power company.

WARNING: This product install diodes. Do not open the cabinet or touch any parts in the inner mechanism. Consult your local dealer for technical service if the opening is required.

Note: To ensure proper use of this product, please read this User manual carefully and retain for further reference.

Note: This product install diodes. Do not open the cabinet to avoid the unit direct exposure to radiation.

Unit Cleaning: After the unit power is turned off, you can clean the cabinet, panel and remote control with a soft cloth lightly moistened with a mild detergent solution.

Attachments: Never add any attachments and/or equipment without the manufacturer consent; as such additions may result in the risk of fire, electric shock, or other personal injury.

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Locating: Slots and openings in the cabinet are provided for ventilation to protect it from overheating. Do not block these openings or allow them to be blocked by placing the STB on a bed, sofa, or other similar surface, nor should it be placed over a radiator or heat register.

Power-Cord Protection: Place the power-supply cord out of the way, where it will not be walked on. Please take special attentions to cords at plugs, convenience receptacles, and the point where they exit from the unit.

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Object and Liquid Entry: Never put objects of any kind into this STB through openings, as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill any liquid on the STB.

Note: Moisture may be formed on the lens In the following conditions:

when the unit is suddenly moved from a cold environment or an air-condition room to a warm place.

immediately after a heater has been turned on.

in a steamy or very humid room.

If the moisture forms inside the unit, it may not operate properly. To correct this problem, turn on the power and wait about two hours for the moisture to evaporate.

Parts Replacement: When the unit parts need to be replaced, user should make sure the service technician use the replacement parts specified by the manufacturer or having the same characteristics as the original part. Unauthorized replacement may put the unit In the risk of fire, electric shock or other hazards.

Safety Check: After all the maintenances and repairs are done, user is required to request the service technician to conduct the overall safety check to ensure the machine is In the proper condition.

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2. Environment protection

Attention!

Your product Is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a separate collection system for these products.

Information on Disposal for Users (private households) in the European Union

Used electrical and electronic equipment must be treated separately and In accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment.

Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge*. In some countries* your local retailer may also take back your old product free of charge if you purchase a similar new one. *) Please contact your local authority for further details.

If your used electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements.

By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

Information on Disposal for Business Users

In the European Union

If the product is used for business purposes and you want to discard It:

Please contact your dealer who will inform you about the take-back of the product. You might be charged for the costs arising from take-back and recycling Small products (and small amounts) might be taken back by your local collection facilities,

In other Countries outside the EU

If you wish to discard of this product, please contact your local authorities and ask for the correct method of disposal.

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3. Features

- Compatible with DiSEqC 1.2/1.3 Receivers
- East/West Hardware Limits
- One Coaxial Cable for Controlling
- Indicating LED for Easy Trouble Shooting
- Manual button for easy installation
- SMT Processed PCB
- Compact, Powerful and Quiet
- For Dish up to 1,2m
- Go to X function

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4. Operating notes

- Only a specialist can guarantee a correct internal mechanical installation.
- The motor must not be mounted upside-down
- For mounting, all screws and nuts contained in the kit must be used. The absence of one screw or nut may cause instability or the fall off the equipment.
- The motor has been tested for resistance in wind conditions. However, care must be taken in choosing the supporting pole and its anchorage, If possible, installation should be carried out in a place sheltered from wind (flat rooftops are never advisable).
- The use of dishes with larger diameter than that indicated in the specifications for each motor is strictly prohibited.
- The motor, being a mechanical rotating instrument, must be installed out of reach of people.
- The motor must not be used for purposes other than those indicated by us.
- The motor has been designed to be supplied by a sat receiver or by our positioner. Any other type of supply is strictly prohibited and may cause damage or serious injury.
- Some receivers have anti-disturbance system linked to the body of the conector F. This may provoke a slight electric shock not dangerous for the user. In particular conditions (e.g. on a roof or on staircase) it may cause falls or injuries. Each time the motor is handled the receiver must be disconnected from the outlet.

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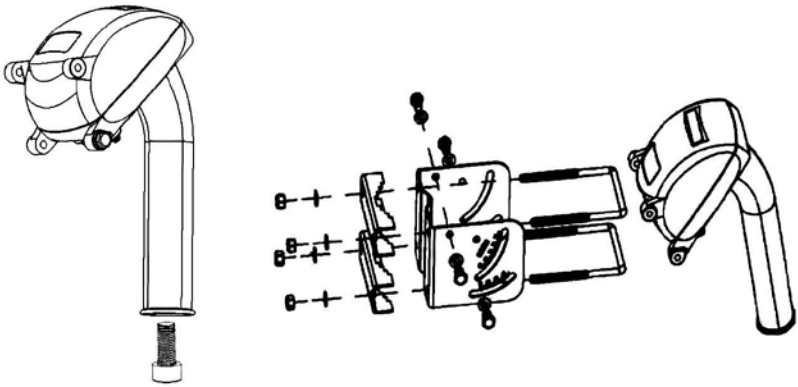
5. Installation

5.1. Assemble the motor

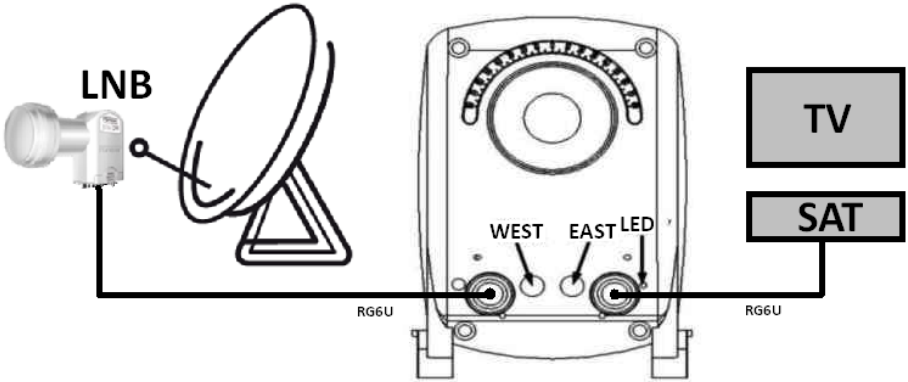
- Assemble the motor as the following figures



- Make sure the mounting pole is exactly vertical before installation
- Fix the motor onto the mounting pole
- Fix the dish onto the motor. The clamps should be mounted at center of motor's tube. Pole, motor and LNB must be mounted in line.

5.2. Cable connections

Connect motor using coaxial cable (RG-6/U recommended) like on picture below:



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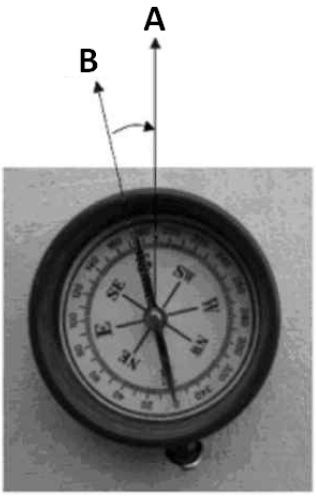
LED indicators on the bottom of motor describes device status:

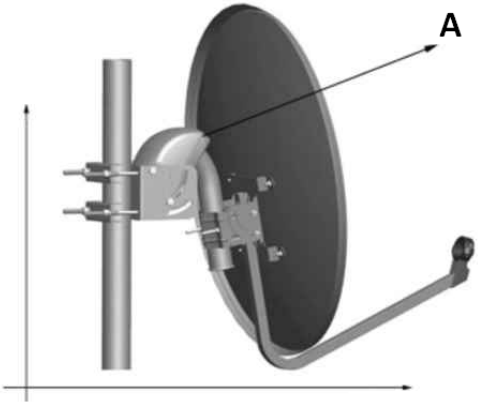
Color	Status	Indication
Green	On	Power on, stand by mode
Orange	Blink	Receiving DiSEqC 1.2/1.3 commands / reset mode
Orange	On	Error – overcurrent or reach hardware limit.

Buttons on the bottom of motor enables manual moving of dish – WEST and EAST.

5.3. Preliminary antenna pointing

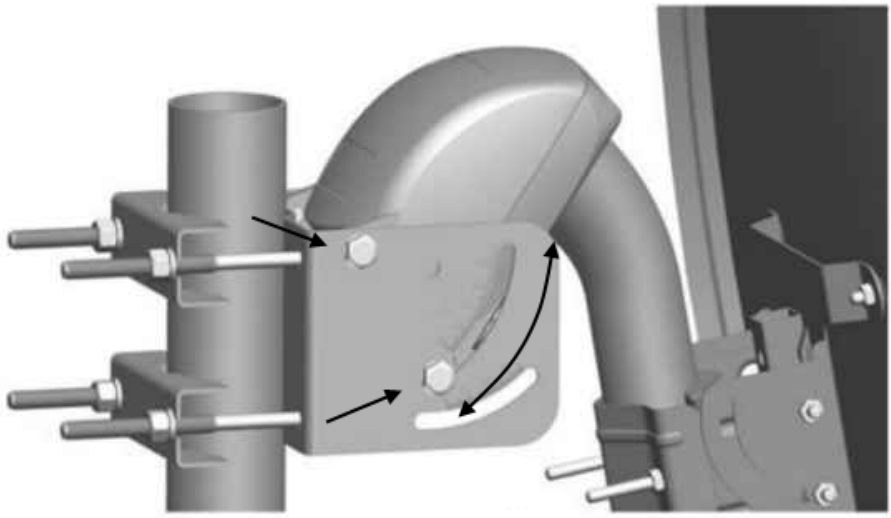
Rotate motor with antenna locked together on pole. Turn it to true south direction. To get the true south, use a compas to determine the magnetic south. Magnetic south direction is approximated true south direction because of deviation between (see A and B below). Depending on location, deviation can be about +/- 10°





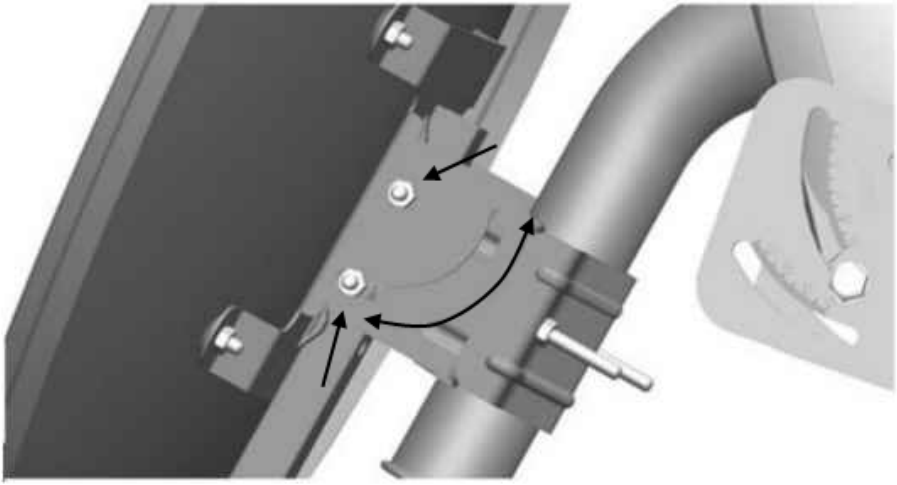
5.4. Setting elevation angle of the motor.

Adjust the motor elevation angle (depend of local latitude) via inclinometer or the elevation/latitude scale on both sides of the motor. You can find approximate angle on **table of angles**. Adjustment components are showed on picture below:



5.5. Setting declination angle of the dish

On the antenna holder, You can adjust dish bracket angle. You can find approximate angle on **table of angles**. Adjustment components are showed on picture below (antenna bracket can be different, depending on used dish set):



5.6. Checking and final adjusting

Rotate antenna to west / east using buttons on bottom of motor or by receiver to test signal from few satellites. If there's no signal or signal is very weak, You should try to adjust azimuth, elevation or declination angle.

If motor set receives signal of central satellites very well, but during rotating to left or right, signal from another satellites is weaker, even not available at all, (or in reverse situation) it probably means that elevation to declination angles proportion is wrong. Then additional adjusting is needed – try to reduce elevation and increase declination angle to (or reversed).

6. Quick installation (receiver with Goto X function recommended):

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- Attach the antenna dish to the motor. Make sure it is at the center of the mounting tube. Rotate the motor together with the antenna toward TRUE SOUTH.
- Set the elevation and declination angles.

6.1. Driving the motor to reference satellite position

According to your longitude and the position of the wanted satellite, drive the motor to the right position. For example, an user in Berlin (longitude is 13.3°E) wants to aim the HELLAS SAT2 (39.0°E). Just drive the motor to 25.7°E (39.0 – 13.3) via the manual button.

If the receiver has Go to X function, just input the longitude and wanted satellite, the receiver can calculate and drive the motor to right angle automatically.

6.2. Precision tuning

If needed, rotate slightly the whole unit around the pole to find the strongest signal from the wanted satellite. Finally tighten every mechanical connections. The installation is finished.

7. Using DiSEqC 1.2

The DiSEqC motor is designed for DiSEqC 1.2 receiver. The commands of the receivers might be different, but similar. Please refer to the manual of the DiSEqC receiver.

- Go east/west: Rotates the antenna to east/west.
- Fine tune east/west: Rotates the antenna east/west for one step.
- Store nn: Store satellites position nn (01~60).
- Goto nn: Rotates motor to satellite position nn (01~60).
- Goto reference: Rotates the motor to 0° as a reference point.
- Re-synchronize / Shift:

To work with motor in DiSEqC 1.2 mode:

- Rotate the motor to a position by Goto command.
- Rotate the motor east/west to a better position.
- Send Re-synchronize commands to the motor. The original position will be shifted to the new position. All the other satellite position are also changed.

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8. Using Goto X function

- See your receiver manual and select the type of installation In Goto X mode.
- Fill In the empty space in the receiver's menu with the Latitude and Longitude values. When the values have been correctly received, the receiver drive the motor to the calculated position.
- Rotate the locked together antenna and motor slightly clockwise or anticlockwise until you find an image on the TV-screen connected to the receiver or the signal and quality, and then tighten the fixing screws.

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9. Hardware reset

9.1. Reset by receiver

- Execute the command: Go to reference (Go to 0)
- Then, the receiver rewrites the satellite table to initial one and corrects the "0"

9.2. Reset by DiSEqC motor

- Cut off the Power by disconnecting the coaxial cable.
- Press and hold both EAST/WEST buttons and reconnect the coaxial cable at the same time.
- LED blinks for 6 seconds and the LED turned green, then loosen both EAST/WEST buttons.

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10.Troubleshooting

Symptoms	Check points
The manual button don't work.	– Connect the motor to the receiver via coaxial cable first and make sure the receiver power is on.
The mount doesn't work.	– Ensure all cables and power are connected well. – Check whether the dish is too heavy.
The mount stops at some positions and can't go farther.	– Disable the software limits and move the motor again. – Make sure the mount or antenna are not interfered with any other item.
The mount runs intermittently.	– Make sure the antenna is not too heavy or too large. – Check if the cable quality is good enough. Try a better RG-6U cable. – Check whether the output power of the receiver is higher than 350mA.
The motor runs sometimes fast and sometimes slowly.	– The speed of the mount varies with receiver output voltage (13⁄18V DC)
All satellite positions are not correct.	– Correct this problem via the "Goto 0" function, the mount will go to 0 degree as a reference point. OR – Goto a satellite position via receiver. Wait for about 30 seconds until the motor stops. – Drive the antenna east or west until the reception of this satellite is clear. – Use "Recalculate/Shift" function to correct position.

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11.Elevation and declination angle table

Your Site Latitude	Elevation angle	Declination angle
0	90	0
1	89	0,178
2	88	0,355
3	87	0,533
4	86	0,71
5	85	0,887
6	84	1,063
7	83	1,239
8	82	1,415
9	81	1,589
10	80	1,763
11	79	1,936
12	78	2,108
13	77	2,279
14	76	2,449
15	75	2,618
16	74	2,786
17	73	2,952
18	72	3,117
19	71	3,28
20	70	3,442
21	69	3,603
22	68	3,761
23	67	3,918
24	66	4,073
25	65	4,226
26	64	4,377
27	63	4,526
28	62	4,674
29	61	4,819
30	60	4,961
31	59	5,102
32	58	5,241
33	57	5,377

Your Site Latitude	Elevation angle	Declination angle
34	56	5,51
35	55	5,641
36	54	5,77
37	53	5,897
38	52	5,966
39	51	6,142
40	50	6,26
41	49	6,376
42	48	6,489
43	47	6,6
44	46	6,708
45	45	6,813
46	44	6,799
47	43	7,015
48	42	7,112
49	41	7,205
50	40	7,296
51	39	7,385
52	38	7,47
53	37	7,552
54	36	7,632
56	34	7,782
58	32	7,792
60	30	8,047
62	28	8,162
64	26	8,265
66	24	8,357
68	22	8,437
70	20	8,505
72	18	8,562
74	16	8,608
76	14	8,643
78	12	8,666
80	10	8,678

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12.Satellites longitude table

Longitude	Satellite name
90.0°E	Yamal 201
80.0°E	Express AM2
75.0°E	ABS 1
70.5°E	Eutelsat W5
68.5°E	Intelsat 7
	Intelsat 10
62.0°E	Intelsat 902
60.0°E	Intelsat 904
57.0°E	NSS 12
53.0°E	Express AM22
45.0°E	Intelsat 12
42.0°E	Türksat 2A
	Türksat 3A
40.0°E	Express AM1
39.0°E	Hellas Sat 2
36.0°E	Eutelsat W4
	Eutelsat W7
33.0°E	Eurobird 3
	Intelsat 802
31.5°E	Astra 2C
28.2°E	Eurobird 1
	Astra 2A
	Astra 2B
	Astra 2D
26.0°E	Badr 4
	Badr 6
25.5°E	Eurobird 2
23.5°E	Astra 1E
	Astra 1G
	Astra 3A
21.6°E	Eutelsat W6
19.2°E	Astra 1H
	Astra 1KR

Longitude	Satellite name
19.2°E	Astra 1L
	Astra 1M
15.8°E	Eutelsat Sesat 1
	Eurobird 16
	Eutelsat W2M
13.0°E	Hot Bird 6
	Hot Bird 8
	Hot Bird 9
10.0°E	Eutelsat W2A
9.0°E	Eurobird 9A
7.0°E	Eutelsat W3A
4.8°E	Sirius 4
0.8°W	Thor 3
	Thor 5
	Thor 6
	Intelsat 10-02
4.0°W	Amos 2
	Amos 3
5.0°W	Atlantic Bird 3
7.0°W	Nilesat 101
	Nilesat 102
	Atlantic Bird 4A
8.0°W	Telecom 2D (incl. 3.7°)
	Atlantic Bird 2
11.0°W	Express AM44
12.5°W	Atlantic Bird 1
15.0°W	Telstar 12
18.0°W	Intelsat 901
22.0°W	NSS 7
24.5°W	Intelsat 905
27.5°W	Intelsat 907
30.0°W	Hispasat 1C
	Hispasat 1D

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13.Technical specification

Protocol:	DiSEqC 1.3
Compatible Receiver:	DiSEqC 1.2/1.3 Receiver
Antenna Size:	120 cm max.
Speed:	1.9° / sec (at 13V) ; 2.5° / sec (at 18V)
Azimuth Angle:	75° East ~ 75° West (150°)
Elevation Angle:	10~90°
Tube for antenna:	ø45 x 160L mm
Diameter of stand – mast:	ø35-65mm
Input voltage:	13/18 VDC
Output voltage:	13/18 VDC (according to input)
Power Consumption:	40 mA (standby)
	200mA (normal)
	350mA (max.)
Satellite Positions:	60 positions
Goto 0 position function:	Yes (Go to 0°)
Recalculation function:	Yes
Goto X function:	Yes
Manual East/West Buttons:	Yes (Build-in on the bottom of the Mount)
Indicating LED:	Yes (2 colours)

Weight and dimensions are not absolutely exact values.

Specifications are subject to change (by manufacturer) without notice.