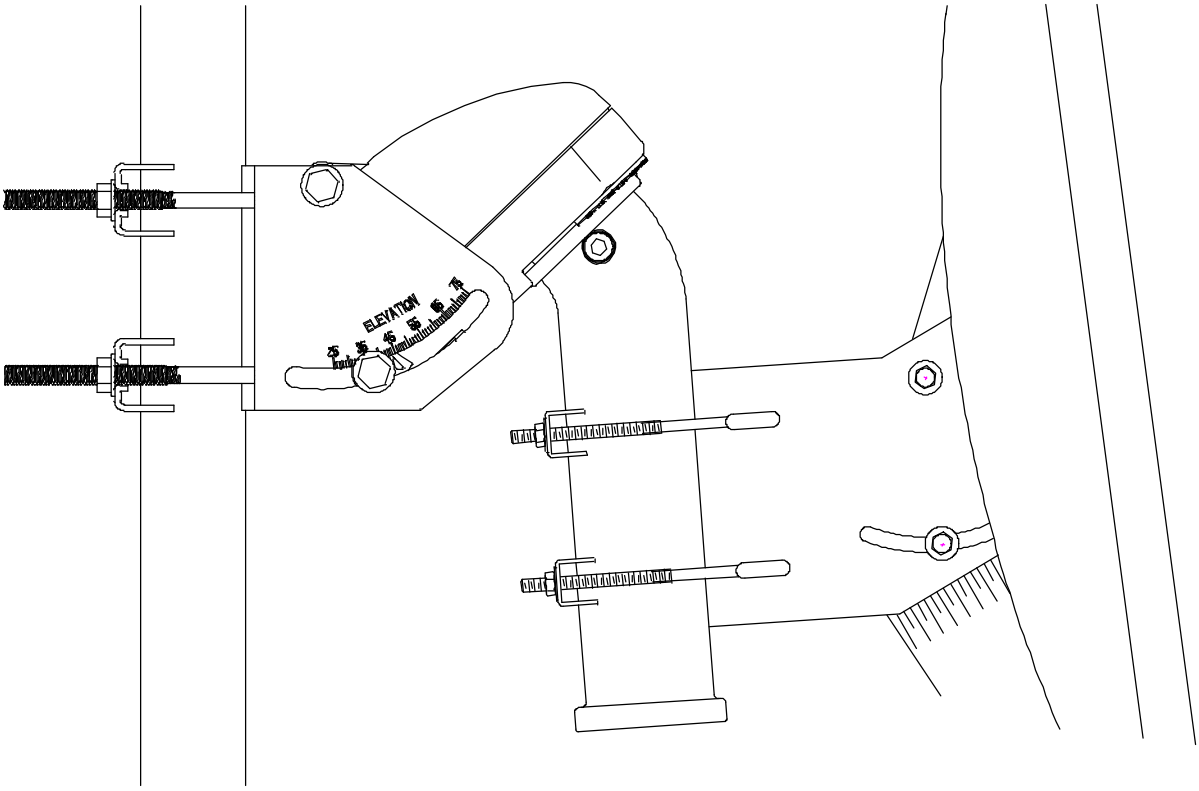
DiSEqC 1.2 Motorized H-H Motor

GEOSATpro GS120

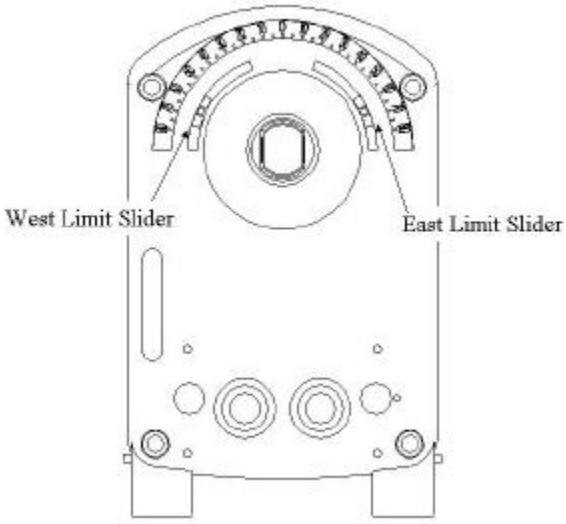


Compatible with DiSEqC 1.2 & USALS Receivers
Adjustable Hardware Limiters for 140 Degree Coverage
Goto X Preprogrammed for North American Satellites
LED Indicator for Power and DiSEqC Verification
Manual Button for Quick Installation
Interchangeable 40mm Post
Rated for Disk Size up to 1.2M
Compact,Powerful and Quiet

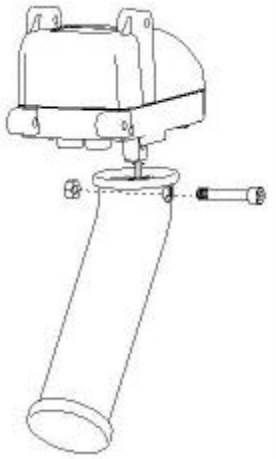
ADJUSTING HARDWARE LIMITS & INSTALLING POST

The factory preset hardware limits are from 70° East to 70° West of True South. If smaller azimuth range is required, adjust the hardware limits before assembling the motor.

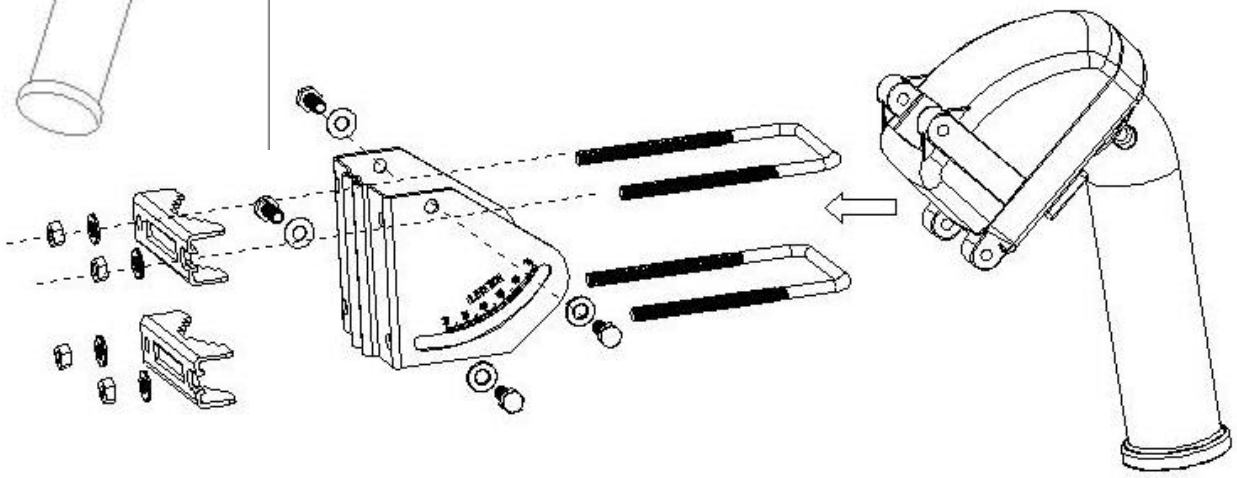
1. Always drive the motor to 0 position before adjusting the hardware limits.
2. Disassemble the Post from the Motor.
3. Lift the azimuth scale to reveal the Limit Sliders. Loosen the screw on the Limit Slider. Do not loosen the screw thoroughly; otherwise, the Slider will drop into the motor.
4. Adjust the Limit Slider to the desired angle (20~70° East or West) .
5. Tighten the screws.
6. Reassemble the Motor Tube onto the Motor.
7. Drive the motor East and West via the Manual Button or the receiver to make sure the hardware limits are correctly set.



ASSEMBLE THE MOTOR



1. Assemble the Elevation Bracket and U- Bolt Post Mount .
2. Make sure the mounting pole is perfectly plumb and level before installing the motor. This is critical for the dish to accurately track multiple satellites.
3. Attach the H-H Motor Mount onto the Mounting Pole.

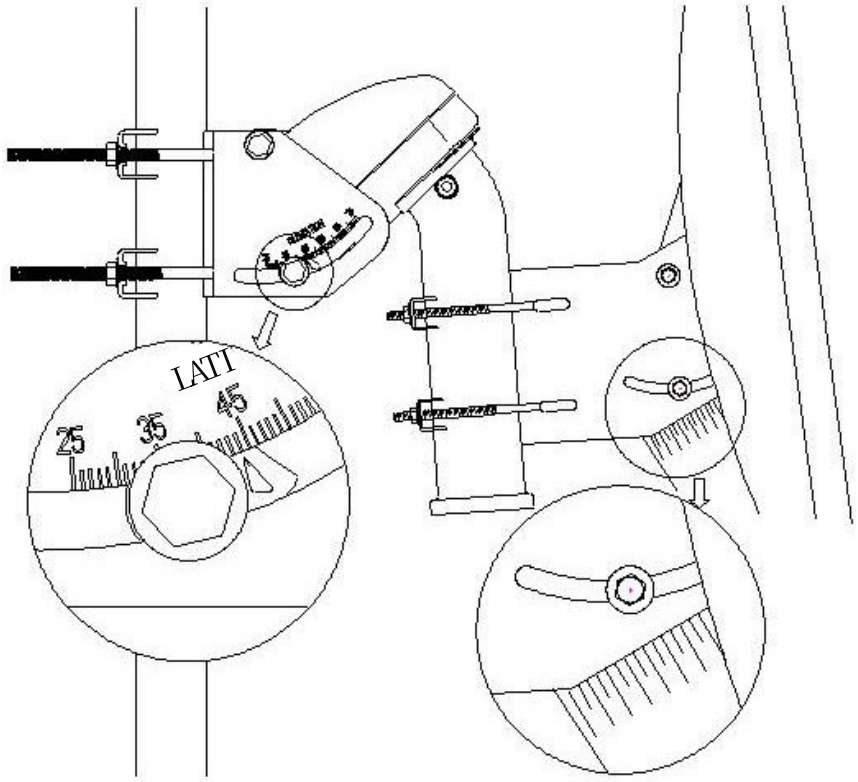


INSTALLING THE MOTOR

1. **Aiming TRUE SOUTH**
   Attach the Dish to the Motor Post. Align the dish with the 0 Position. Many dishes have a through bolt on the Post Clamp that will align and secure the dish to the motor tube.

2. Rotate the Motor Mount on the Mounting Pole toward **TRUE SOUTH**. True South can be calculated by adding or subtracting the installation location's magnetic deviation to the compass reading. Magnetic deviation charts are available at: http://www.geosatpro.com or http://www.ngdc.noaa.gov/seg/WMM/

3. Connect the Motor to the receiver via coaxial cable. The Green LED will light to indicate that the motor is receiving power from the receiver.



Motor Angle Setting Disk Angle Setting

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II. Quick Installation (A receiver with Goto X Function or USALS compatible):

1. **Set the Angle of the motor:**
   Set the Motor Angle Scale to match the installation location Latitude.
2. **Mount the Dish:**
   Find the Dish Angle Settings on Page 6 of this manual.
   Set the Dish Angle using the elevation scale on the antenna dish.

3. Drive the motor to the position for a favorite satellite:

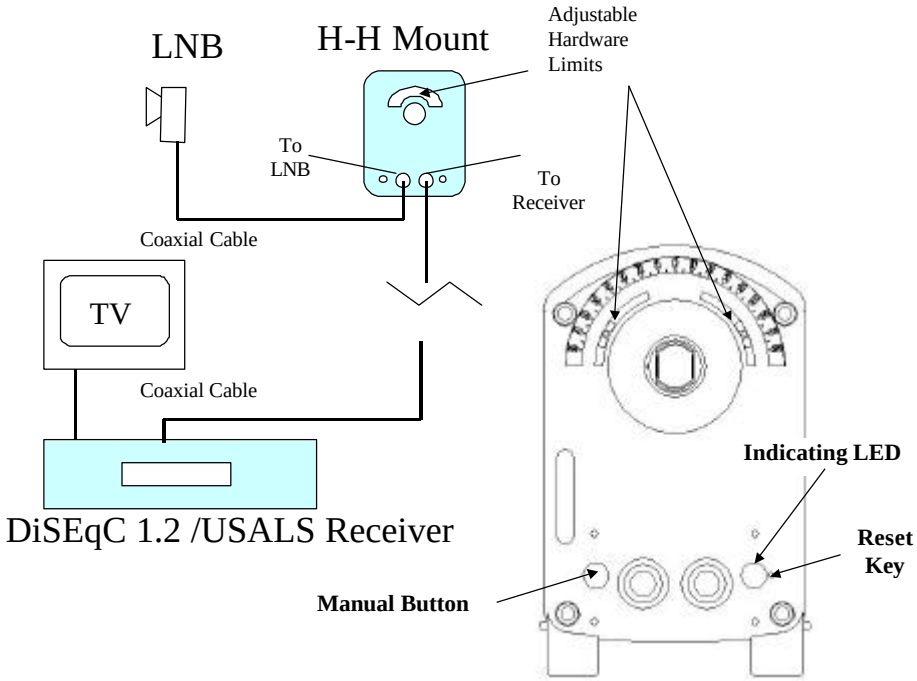
Set the receiver to Goto X or USALS function, input the longitude and select satellite, the receiver will calculate and drive the motor to right angle automatically.

4. Aim the Satellite:

While tuned to an active Transponder Frequency,Rotate the motor unit on the mounting pole to find the strongest quality signal from the choosen satellite and peak for Quality Signal, Adjust the Dish Angle to peak for Quality Signal.

Tighten all hardware and the installation is finished.

CABLE CONNECTION



Connect the Motor via the coaxial cable (RG-6/U is recommended) as the following diagram.

MANUAL BUTTON

Drive the Motor East / West via the Manual Button (do not use in USALS mode).

1. West: Press **once** and hold.
2. East: Press **twice** within 0.5 second and hold.
3. West Fine-tune: Press **Once** and release immediately for one step West.
4. East Fine-tune: Press **Twice** and then release the button for one step East.

INDICATING LED

The LED on the bottom of the Motor can show the following information

Color	Status	Indication
Green	On	Power On; Standby Mode
Orange	Blink	Receiving DiSEqC 1.2 Commands / Reset Mode
Orange	On	Error Message: Over Current / Reach Hardware Limits …

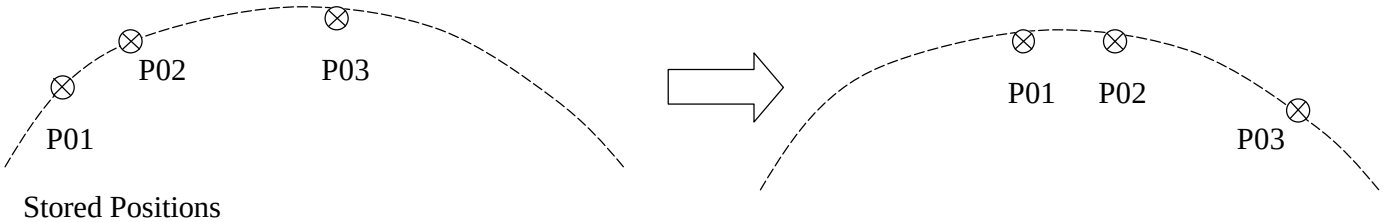
HARDWARE RESET

1. Make sure the power from the receiver is turn-on. The indicating LED lights on.
2. Drive the motor to 0° via the manual button.
3. Probe the RESET button behind the bottom of the motor via a thin rod for 2 seconds. The LED blinks in Orange Color. The reset process is OK while the LED is green. The preset Satellite Table will be re-install and the current position will be set as 0°. Please cut off the power for the motor first before any operation.

DiSEqC 1.2 OPERATION

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

1. Go East / West: Drive the dish to East / West.
2. Fine Tune East / West: Drive the dish East / West for one step.
3. Store nn: Store Satellites Position nn (01~60).
4. Goto nn: Drive Motor to Satellite Position nn (01~60).
5. East / West Limits: Set software East / West limits.
6. Limit Off: Disable the software limits.
7. Goto 0°: Drive the Motor to 0° as a reference point.
8. Re-synchronize / Shift:
   a) Drive the motor to a position by Goto command. For example, **P03**.
   b) Drive the motor East / West to a better position.
   c) Send Re-synchronize commands to the motor. The **P03** will be shifted to the new position. All the other Satellite positions are also changed.
   d) If step a) is skipped, the P01 will be shifted to the new position.



Stored Positions

9. Goto X Function or USALS:
   e) This function only works with receivers which have goto x function.
   f) It can drive the motor to exact x.x° East or West relative to the 0 position of the motor. (For example, 15.2° East on the bottom of the motor.)
   g) Just input the longitude, some receivers can drive the antenna to focus on the right Satellites automatically after locating and peaking the first satellite.

TROUBLESHOOTING

Symptom	Check points
The Manual Button doesn' t work	1. Make sure the power of receiver is on and the indication LED on the bottom of the motor lights on. 2. Check every devices between receiver and motor.
The Manual Button can only drive the motor toward West	For East movement: Press the manual button twice within 1 second or shorter.
The Motor doesn' t work	1. Make sure all cables and power are well connected. The LED on the bottom is lit. 2. Make sure the motor is not blocked by the software limits. Try to use the manual button, which is only limited by hardware limits. 3. Check if the receiver supports DiSEqC 1.2 or USALS and the DiSEqC 1.2 or USALS option has been enabled.
The Motor stops at a certain position and can' t go further.	1. Disable the software limits and drive the motor again. 2. Check if movement is stopped by the hardware limit sliders. 3. Make sure the Motor / antenna is not hitting an object.
The Motor runs intermittedly	1. Make sure the antenna is not too heavy or too large. The maximum size is 1.2 m. 2. Check if the cable quality is good quality RG-6,Is cable length too long?Many receivers are unable to contorl over 150' 3. Check if the output power of the receiver is less than 350mA.
The Motor runs sometimes fast and sometimes slowly.	The speed of the motor is according to the output voltage (13 /18V) of the receiver. Vertical=13V=slow Horizontal=18V=fast
All satellite positions are not correct.	1. Goto One satellite position via receiver. Wait for about 30 seconds until the motor stops. 2. Drive the antenna East or West until the reception of this satellite is clear. 3. Use "Re-calculate" Function to correct position via receiver. Or Use Goto 0 position Function to go to 0 degree as a reference point.
The Motor stops immediately without moving.	This could be caused by ainternal damage to the motor. Please contact your vendor for repair.
The Motor doesn't make any movement, but clicks from inside of the motor can be heard	1. Check if the dish is too heavy. The maximum size of the antenna is 1.2 m. 2. The DC motor inside is damaged. Please contact your vendor for repair.

DISH ANGLE TABLE

Site Latitude	Dish Angle Setting
0	30.000
1	29.882
2	29.645
3	29.467
4	29.290
5	29.113
6	28.937
7	28.861
8	28.585
9	28.411
10	28.237
11	28.064
12	27.892
13	27.721
14	27.551
15	27.382
16	27.214
17	27.048
18	26.883
19	26.720
20	26.558
21	26.397
22	26.239
23	26.082
24	25.927
25	25.774
26	25.623
27	25.474
28	25.326
29	25.181
30	25.039
31	24.988
32	24.759
33	24.623

Site Latitude	Dish Angle Setting
34	24.490
35	24.359
36	24.230
37	24.103
38	24.034
39	23.858
40	23.740
41	23.624
42	23.511
43	23.400
44	23.292
45	23.287
46	23.201
47	22.985
48	22.888
49	22.795
50	22.704
51	22.615
52	22.530
53	22.448
54	22.368
56	22.218
58	22.208
60	21.953
62	21.838
64	21.735
66	21.643
68	21.563
70	21.495
72	21.438
74	21.392
76	21.357
78	21.334
80	21.322

SPECIFICATION

Protocol	:	DiSEqC 1.2 / USALS
Compatible Receiver	:	DiSEqC 1.2 / USALS Compatible Receiver
Antenna Size	:	120 cm +/4' + Rated
Speed	:	1.9° / sec (at 13V); 2.5° / sec (at 18V)
Azimuth Angle	:	75° East ~ 75° West (150° Max.) Adjustable
Elevation Angle	:	10~75°
Tube for Antenna	:	Ø 40x 160 mm (Optional 55mm)
Diameter of Stand-mast	:	Ø 35~65 mm
Input Voltage	:	13 / 18Vdc
Output Voltage	:	13 / 18Vdc (according to input)
Power Consumption	:	50 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 Button	:	Yes (East /West)
Indicating LED	:	Yes (2 Colors)
Limit Protection	:	1. Adjustable Hardware Limits 2. Programmable Software Limit 3. Current Limit
Positioning Sensor	:	High Resolution Hall Effect Sensor
Weight	:	3.1 Kg /6.8 lb (Net) / 3.5 Kg/7.7 lb (Gross)
Dimension	:	345mm/13.6" x 168mm/6.6" x 110 mm/4.3" (Gross)

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Preprogrammed Satellite Positions

No.	Satellite	Position
1	AMC 6	72°W
2	SBS 6	75°W
3	AMC5	79°W
4	AMC 9	85°W
5	AMC 3	87°W
6	Galaxy 11	91°W
7	IA 6	93°W
8	Galaxy 3C	95°W
9	IA 5	97°W
10	Galaxy 4R	99°W
11	AMC 4	101°W
12	AMC 1	103°W
13	AMC 2	105°W

No.	Satellite	Position
14	Echo 6/8	110°W
15	SatMex 5	116.8°W
16	Echo 7	119°W
17	IA 13	121°W
18	Galaxy 10R	123°W
19	Galaxy 13	127°W
20	Echo 1/2	148°W