TOSO

Motorized Curtain Track

Powerful

Powerful 4P Type

Powerful 4P
Powerful 4P-HM

Powerful 3L Type

Powerful 3L
Powerful 3L-HM
Powerful 3L-HL

- Powerful series are a standard motorized system for basic TOSO functional tracks.
- Combined with other parts, Powerful offers a wide variety of fitting solutions.

Powerful

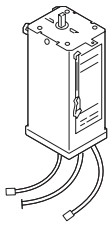
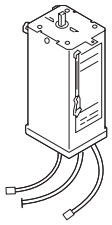
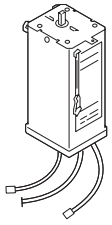
Powerful's Unique Features

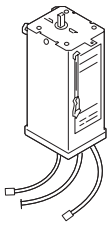
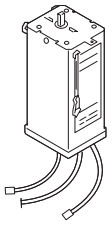
Curtain track motors designed for wide applications.

Ranging from light to heavy duty, a combination of a Powerful and an appropriate track can cover almost all draperies.

Optional parts are available for many types of needs: from curved and skylight windows to slope ones.

Powerful Series

Product Name	Product Code
Powerful 3L  *Power cord length 0.6 m (24") (W 80 mm x H 170 mm x D 70 mm) (W 3.2" × H 6.7" × D 2.8")	00510060
Powerful 3L-HM  *Power cord length 0.6 m (24") (W 80 mm x H 170 mm x D 70 mm) (W 3.2" × H 6.7" × D 2.8")	00510233
Powerful 3L-HL  *Power cord length 0.6 m (24") (W 80 mm x H 170 mm x D 70 mm) (W 3.2" × H 6.7" × D 2.8")	00510286

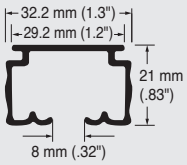
Product Name	Product Code
Powerful 4P  *Power cord length 0.6 m (24") (W 80 mm x H 170 mm x D 70 mm) (W 3.2" × H 6.7" × D 2.8")	00510208
Powerful 4P-HM  *Power cord length 0.6 m (24") (W 80 mm x H 170 mm x D 70 mm) (W 3.2" × H 6.7" × D 2.8")	00510232

Motor Specifications

Item			Powerful 3L series						Powerful 4P series			
			Powerful 3L 220 V		Powerful 3L-HM 220 V		Powerful 3L-HL 220 V		Powerful 4P 220 V		Powerful 4P-HM 220 V	
Rated power voltage		VAC	220		220		220		220		220	
Rated power frequency		Hz	50	60	50	60	50	60	50	60	50	60
Rated power current		A	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Power consumption		W	85	85	85	85	85	85	85	85	85	85
Operating voltage		VAC	Same as power source		Same as power source		Same as power source		Same as power source		Same as power source	
Operating current		A										
Time rating		min.	5		5		5		5		5	
Overheat protection operating temperature		˚C	120 ± 5		120 ± 5		120 ± 5		120 ± 5		120 ± 5	
Internal electric circuit			Built-in Inter rock circuit		Built-in Inter rock circuit		Built-in Inter rock circuit		Auto keep circuit, built-in Inter rock circuit		Auto keep circuit, built-in Inter rock circuit	
Operating switch spec.			Locker switch		Locker switch		Locker switch		3-button momentary contact switch Open: A contact Stop: B contact Close: A contact		3-button momentary contact switch Open: A contact Stop: B contact Close: A contact	
Weight of main unit		kg (lb)	1.8 (4.0)		1.8 (4.0)		1.8 (4.0)		1.8 (4.0)		1.8 (4.0)	
Operating time	Supertrac Rail	sec./m	5	4	9	7	18	14	5	4	9	7
	Theatrack Rail		3	2.5	5	4	10	8	3	2.5	5	4
Maximum curtain weight	Supertrac Rail	kg (lb)	80 (176)		Sloping / Weight		80 (176)		80 (176)		Sloping / Weight	
					0˚	80 (176)					0˚	80 (176)
					15˚	16 (35)					15˚	16 (35)
					20˚	13 (29)					20˚	13 (29)
					30˚	10 (22)					30˚	10 (22)
					45˚	8 (18)					45˚	8 (18)
	Theatrack Rail		80 (176)		100 (221)		120 (265)		80 (176)		100 (221)	
Maximum rail length	Supertrac Rail	m (in)	20 (787)		10 (394)		10 (394)		20 (787)		10 (394)	
	Theatrack Rail		20 (787)		20 (787)		10 (394)		20 (787)		20 (787)	

*Maximum curtain weight is for a two-way draw.

Applicable Range

<table>
<tr><td colspan="3">Type of curtain track</td><td colspan="5">Supertrac
 
</td></tr>
<tr><td colspan="3" rowspan="2">Installation pattern</td><td>Straight</td><td colspan="2">Curve</td><td colspan="2">Slope window</td></tr>
<tr><td>Master roller M
Rail overlap M
M
Motor recessed in ceiling
Hung from a pipe M</td><td colspan="2">(Min. 300 mmR/11.8"R)
Single curve M
(Min. 300 mmR/11.8"R)
Two curves M
(Natural: 450 mmR/18",
800 mmR/32"R ore more)
(White: 1500 mmR/59"R ore more)
Overall curve half M</td><td colspan="2">Sloping M
(Max. sloping: 45º)</td></tr>
<tr><td colspan="3" rowspan="2">Power transmission type</td><td rowspan="2">Wire type</td><td colspan="2">Wire type</td><td colspan="2" rowspan="2">Wire type</td></tr>
<tr><td>Single curve</td><td>Two curves/
Overall curve half</td></tr>
<tr><td rowspan="2">Powerful 3L
Powerful 4P</td><td>Maximum curtain weight</td><td>kg (lb)</td><td>80 (176)</td><td>50 (110)</td><td>30 (66)</td><td colspan="2">——</td></tr>
<tr><td>Maximum rail length</td><td>m (in)</td><td>20 (787)</td><td>10 (394)</td><td>10 (394)</td><td colspan="2">——</td></tr>
<tr><td rowspan="2">Powerful 3L-HM</td><td>Maximum curtain weight</td><td>kg (lb)</td><td>80 (176)</td><td>70 (154)</td><td>50 (110)</td><td colspan="2">Sloping angle: 15º | 20º | 30º | 45º
Weight: 16 (35) | 13 (29) | 10 (22) | 8 (18)</td></tr>
<tr><td>Maximum rail length</td><td>m (in)</td><td>10 (394)</td><td>10 (394)</td><td>10 (394)</td><td colspan="2">10 (394)</td></tr>
<tr><td rowspan="2">Powerful 4P-HM</td><td>Maximum curtain weight</td><td>kg (lb)</td><td>80 (176)</td><td>70 (154)</td><td>50 (110)</td><td colspan="2">Sloping angle: 15º | 20º | 30º | 45º
Weight: 16 (35) | 13 (29) | 10 (22) | 8 (18)</td></tr>
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<tr><td rowspan="2">Powerful 3L-HL</td><td>Maximum curtain weight</td><td>kg (lb)</td><td>80 (176)</td><td>70 (154)</td><td>50 (110)</td><td colspan="2">——</td></tr>
<tr><td>Maximum rail length</td><td>m (in)</td><td>10 (394)</td><td>10 (394)</td><td>10 (394)</td><td colspan="2">——</td></tr>
</table>

*Maximum curtain weight is for a two-way draw. Maximum curtain weight for the slope window is a one-way draw.

<table>
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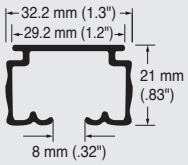
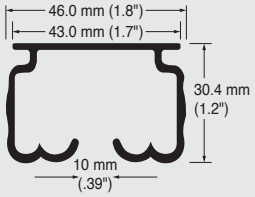
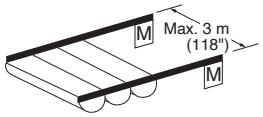
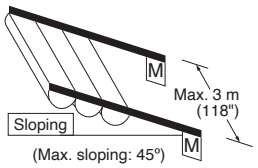
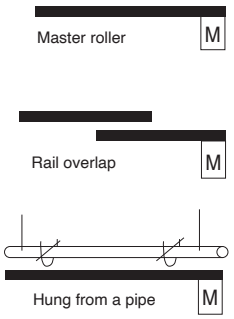
 
</td><td colspan="2">Theatrac
 
</td></tr>
<tr><td colspan="3" rowspan="2">Installation pattern</td><td>Skylight</td><td>Slope skylight</td><td>Straight</td></tr>
<tr><td> 
</td><td> 
</td><td> 
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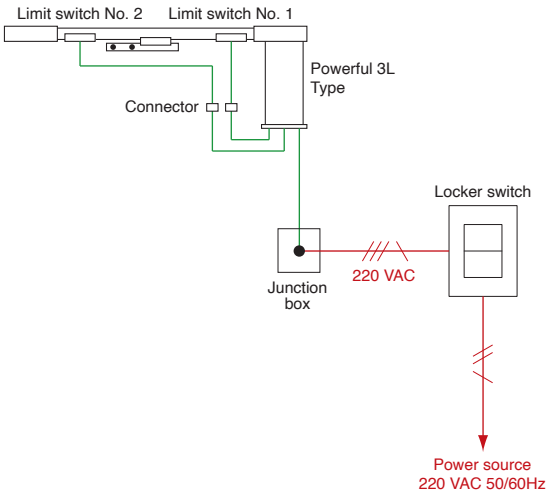
<tr><td rowspan="2">Powerful 3L
Powerful 4P</td><td>Maximum curtain weight</td><td>kg (lb)</td><td>——</td><td>——</td><td>80 (176)</td></tr>
<tr><td>Maximum rail length</td><td>m (in)</td><td>——</td><td>——</td><td>20 (787)</td></tr>
<tr><td rowspan="2">Powerful 3L-HM</td><td>Maximum curtain weight</td><td>kg (lb)</td><td>55 (121)</td><td>——</td><td>100 (221)</td></tr>
<tr><td>Maximum rail length</td><td>m (in)</td><td>10 (394)</td><td>——</td><td>20 (787)</td></tr>
<tr><td rowspan="2">Powerful 4P-HM</td><td>Maximum curtain weight</td><td>kg (lb)</td><td>55 (121)</td><td>Sloping angle: 15° / 20° / 30° / 45°
Weight: 34 (75) / 15 (33) / 9 (20) / 7 (15)</td><td>100 (221)</td></tr>
<tr><td>Maximum rail length</td><td>m (in)</td><td>10 (394)</td><td>10 (394)</td><td>20 (787)</td></tr>
<tr><td rowspan="2">Powerful 3L-HL</td><td>Maximum curtain weight</td><td>kg (lb)</td><td>——</td><td>——</td><td>120 (265)</td></tr>
<tr><td>Maximum rail length</td><td>m (in)</td><td>——</td><td>——</td><td>10 (394)</td></tr>
</table>

*Maximum curtain weight is for a two-way draw. Maximum curtain weight for the skylight is a one-way draw.

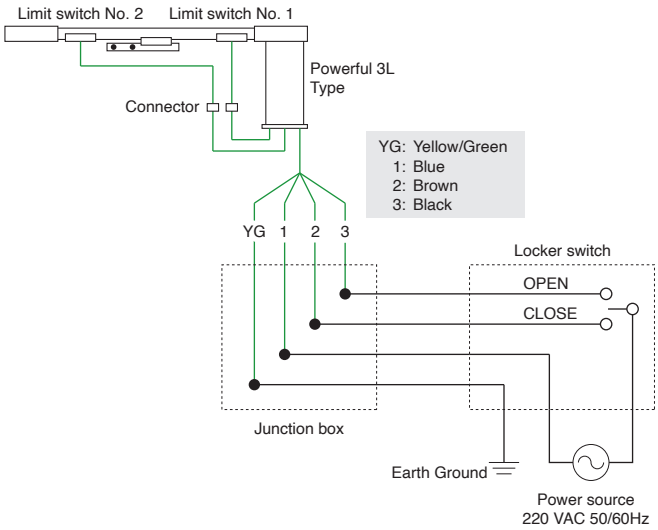
Basic Wiring and Connecting Diagram (Powerful 3L Type)

Single Operation

Basic Wiring Diagram

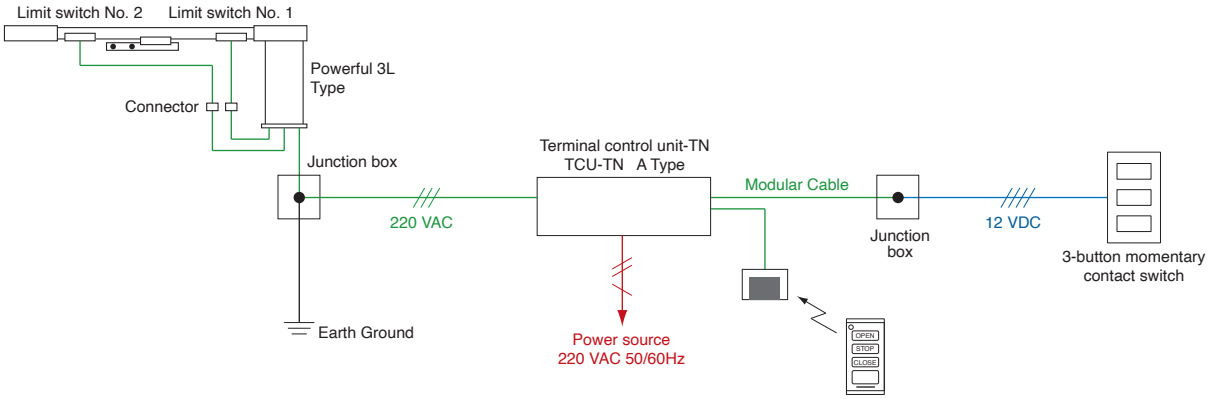


Basic Connecting Diagram

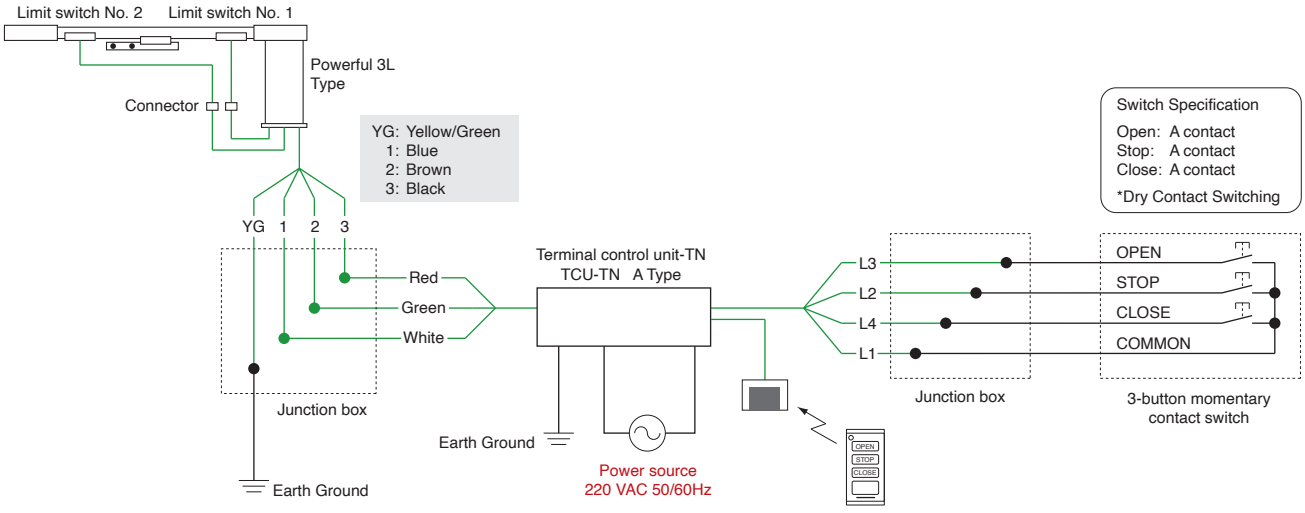


IR Remote Operation

Basic Wiring Diagram

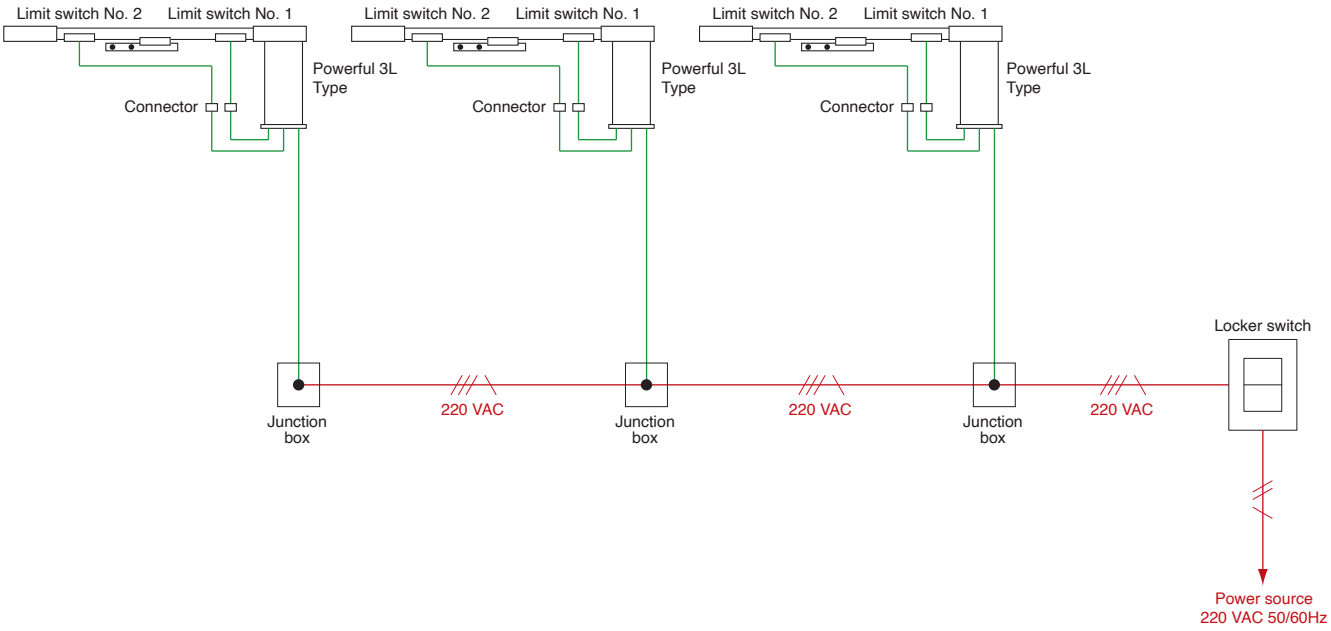


Basic Connecting Diagram

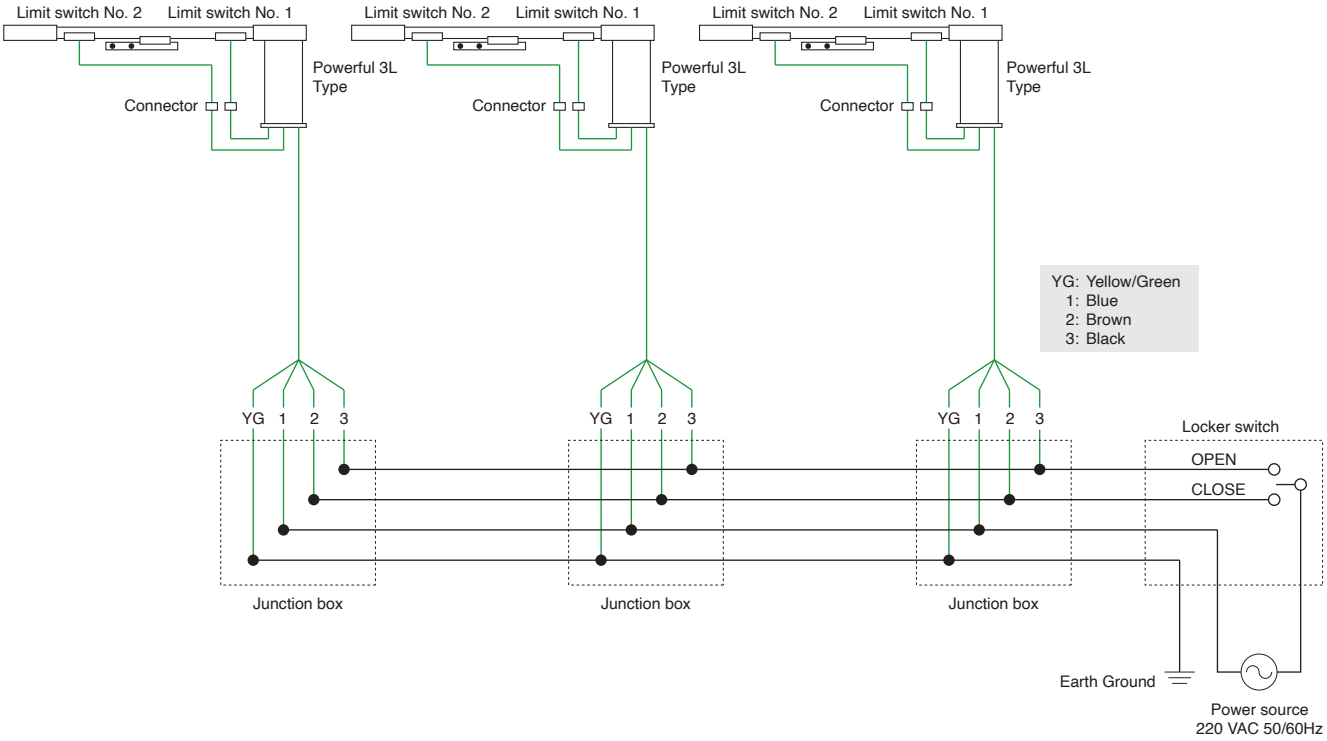


Simultaneous Operation

Basic Wiring Diagram



Basic Connecting Diagram

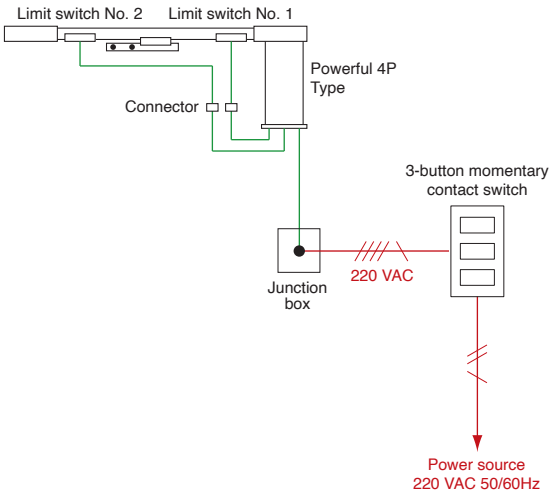


Explanatory notes: Power supply, Low voltage control line, Main body attachment or TOSO standard

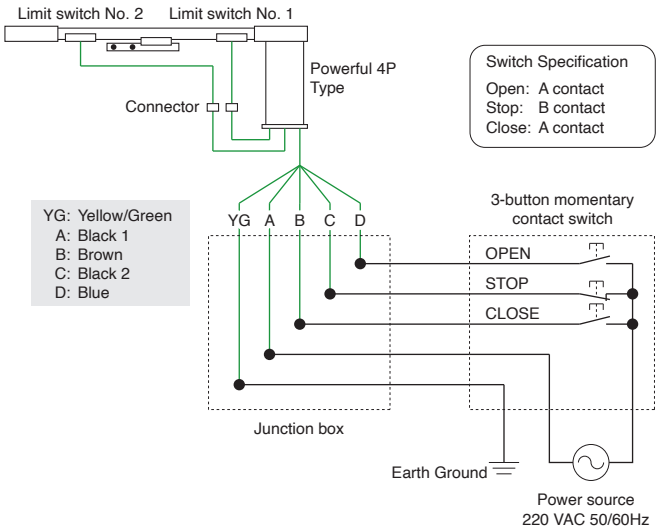
Basic Wiring and Connecting Diagram (Powerful 4P Type)

Single Operation

Basic Wiring Diagram

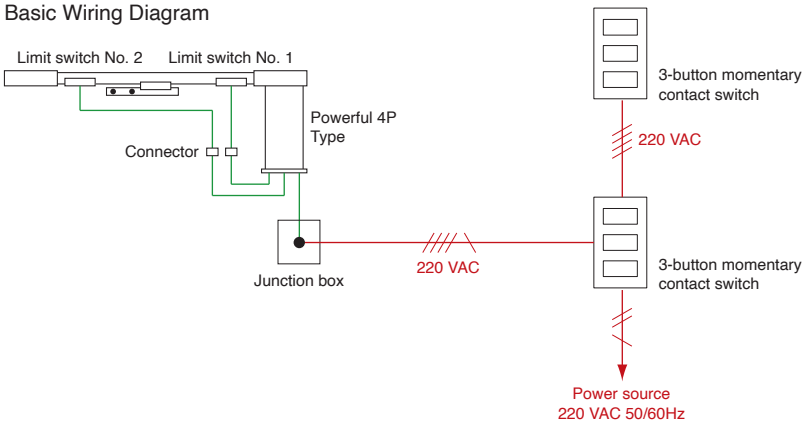


Basic Connecting Diagram

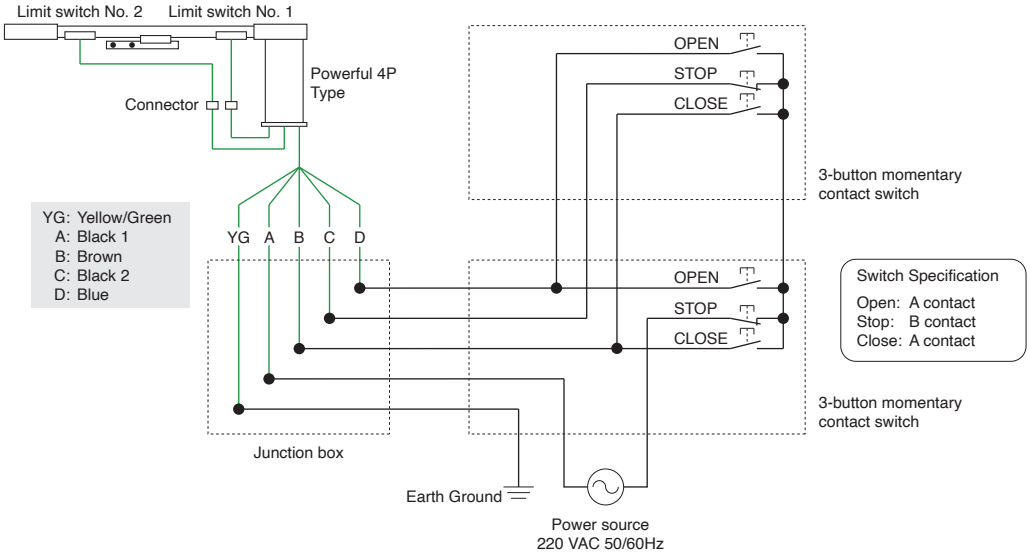


Operation from Two Locations

Basic Wiring Diagram

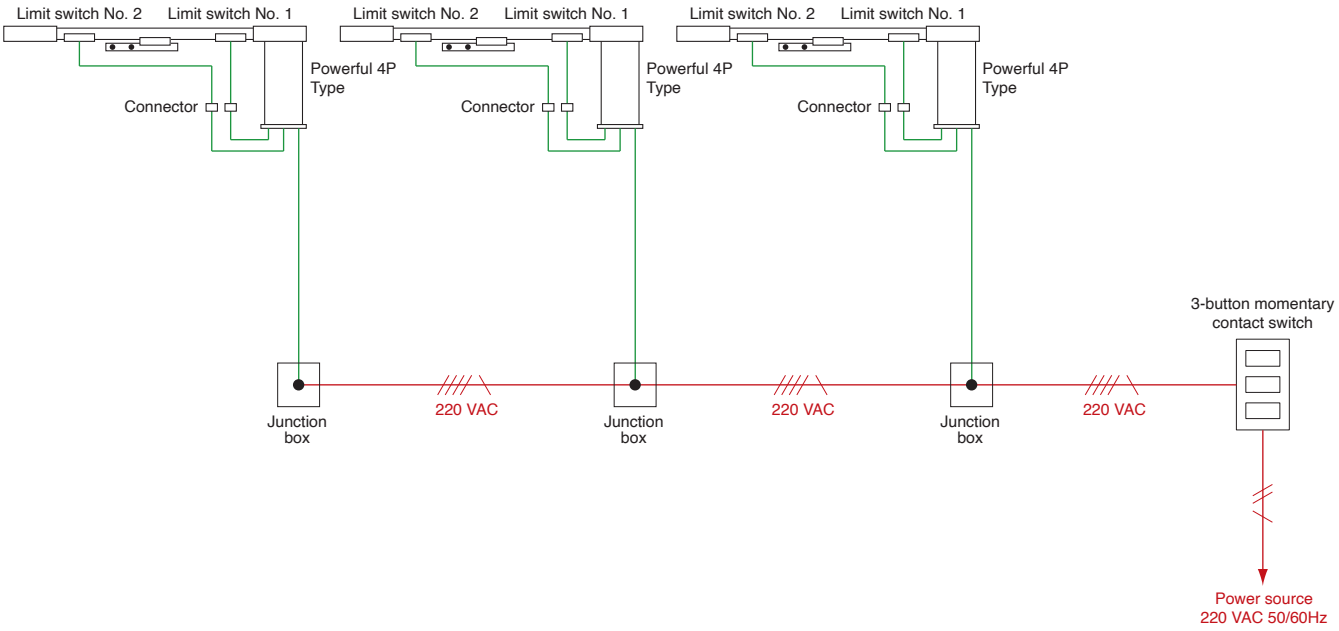


Basic Connecting Diagram

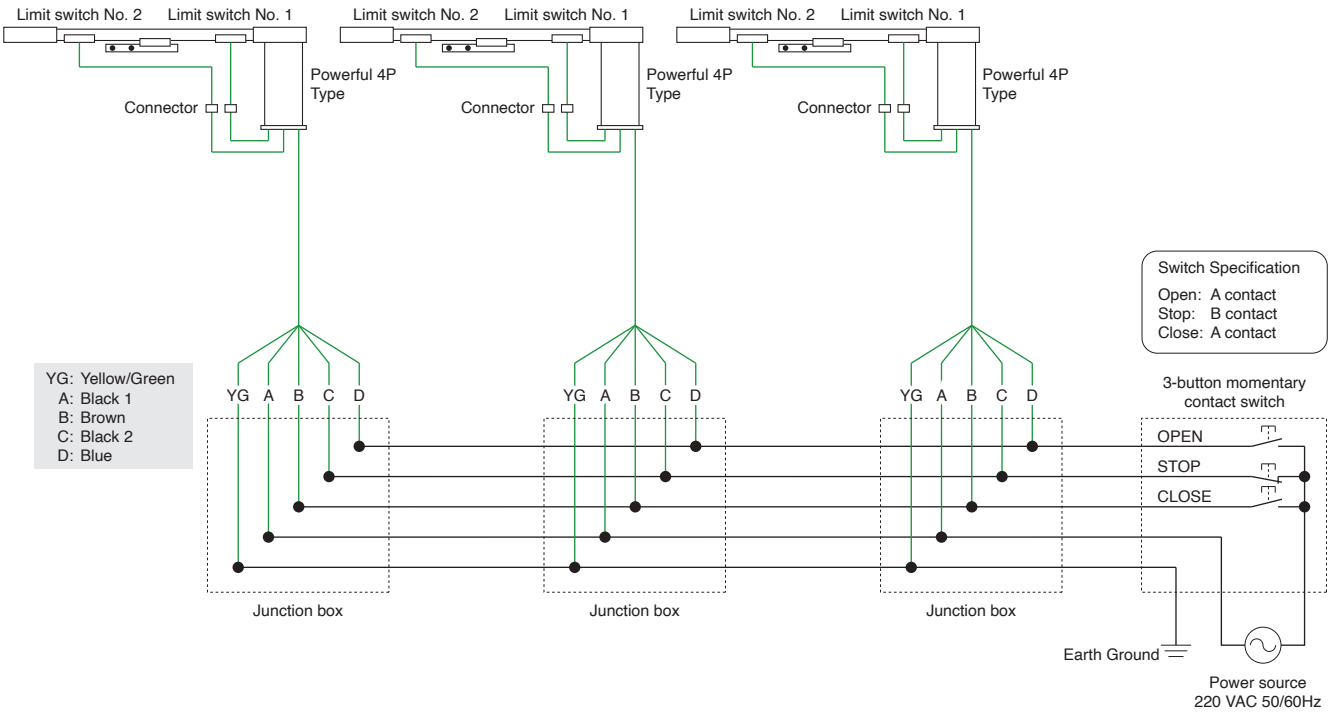


Simultaneous Operation

Basic Wiring Diagram



Basic Connecting Diagram



Explanatory notes: Power supply, Low voltage control line, Main body attachment or TOSO standard

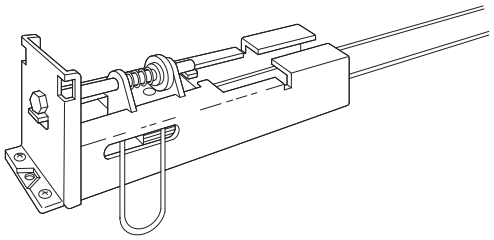
Method of Assembly

For trouble-free assembling, please follow the steps below.

When assembling tracks after fitting them on the site (e.g. when joining two tracks), be sure to install those two tracks after taking ① and Step ②.

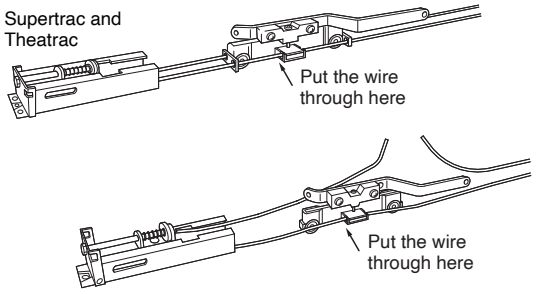
When viewed from room the side, the motor should come on the right.
Put the Limit Switch on the front (room) side of a track.

① Put the wire through the Adjuster.

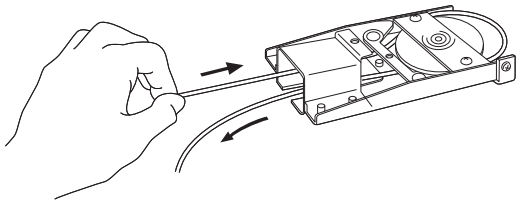


Wire length: (finished length + 300 mm/12") x 2

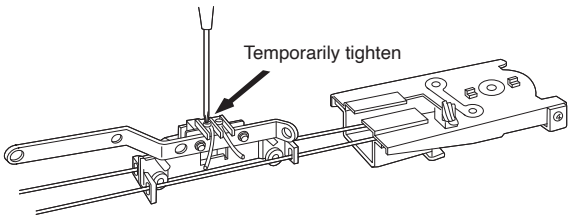
② Put the Master Roller Left on the front side wire and insert it into the track while leaving the wire loose. Then insert the Adjuster and fix it in place.



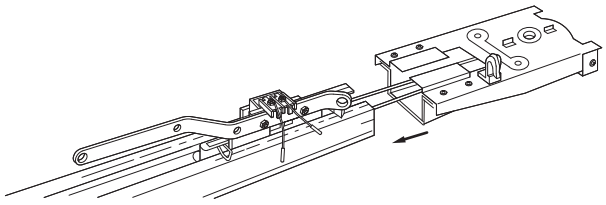
③ Put the wire through the Pulley Set.



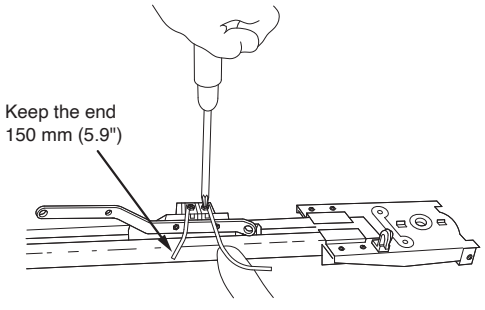
④ Put one end of the wire from the Adjuster and the other end from the Pulley Set on the Master Roller Right. Then, tighten the setscrew temporarily.



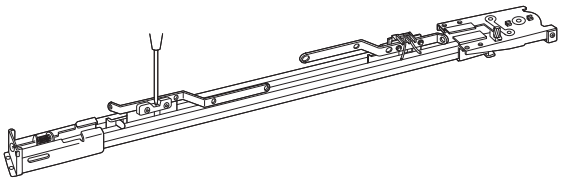
⑤ Insert the Master Roller Right in the track, and fix the Pulley Set.



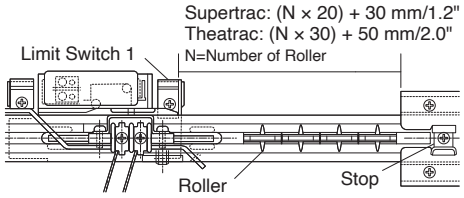
⑥ Loosen the setscrew on the right side of the Master Roller Right, and fix the wire between the plate and the body. Do the same with the setscrew on the left side.



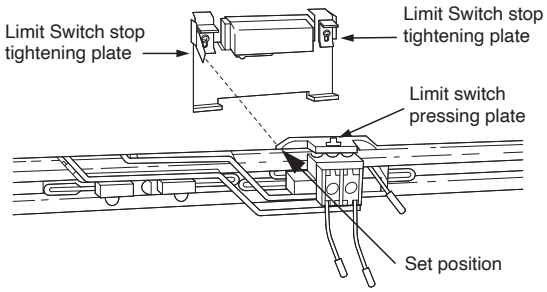
⑦ Move the Master Rollers–Right and Left–to both ends of the track and fix the setscrew of the Master Roller Left.



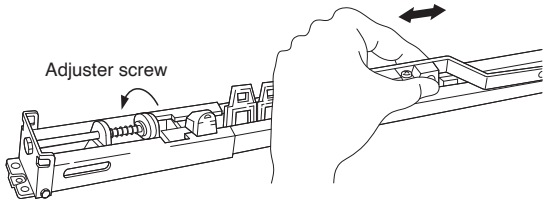
⑧ Insert the same number of rollers both to the left and to the right ends and fix the ends with the End Stop. Then, move the Master Roller Right from the edge of the Pulley Set to the place where a drapery stack-off comes. Set the Limit Switch 1 (OPEN–STOP) as shown in the diagram below.



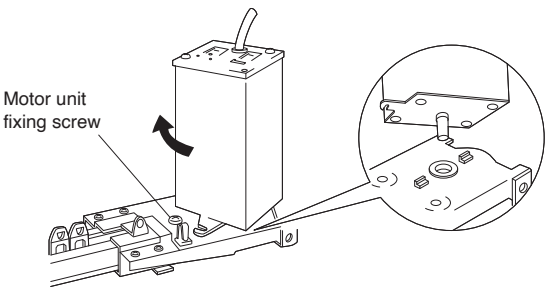
⑨ With the Master Roller Left and Right closed, set the Limit Switch 2 (CLOSE–STOP) on the set position.



⑩ Turn the adjuster screw in the direction of the arrow, and give tension.



⑪ Fix the Powerful body after fitting its shaft into a Pulley hole. And hook the chain of the motor to the Pulley Set.



⑫ Put the cord from the motor to the Limit Switch beneath the brackets.