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## (RTS) Radio Technology SOMFY<sup>™</sup> The New Generation of a Proven Concept

The SOMFY LT RTS (Radio Technology Somfy<sup>™</sup>) motor line combines the quality characteristics of the previous tubular motors which have proven themselves a million times over, with innovative design and optimal technical features. The reliability, sturdy construction and maintenance free aspects of SOMFY motors have remained the same. The new Radio (RTS) concept offers you significantly easier motor selection, simple installation, plug-in wire connections and remote limit switch adjustments.

The advanced design and technical innovations contribute to reducing installation time and costs which are important to both you and your customers.



Minimum Labor Required: New Motor Mounting featuring motor bracket with spring and capability of 6 different installation positions



Minimum "Side" Space Requirement: only 23mm



Plugs Directly into a Standard Wall Receptacle



Convenience of remote limit adjustment set via the hand held transmitter (for Altus RTS)

Electronic Limit Switch and RTS Receiver



## SOMFY LT RTS Motors at a Glance

- 1. The Right Motor Solution for Every Job, Due to a Wide Range of Models
  - Expanded product line in terms of lifting capacity and operating speed
  - First manual override motor with built-in radio technology "CMO RTS".
- 2. Quick and Easy Installation
  - Reduced number of mechanical accessories
  - Can be installed in 6 different positions
  - Minimum side space requirement (23mm)
  - Motor and drive are attached with a simple click connection (no screws required)
- 3. Convenience for the End User
  - Features quiet operation due to the use of advanced product components

- 5. Easy Limit Switch Setting
  - Limits are set via remote radio transmitter
- 6. All SOMFY Motors are UL and CSA Recognized
  - SOMFY UL Recognized motors can be found in the following file numbers: E60495, E60888, E63714



Clip-on Drive Wheel

Silent Gearbox

Brake

Asynchronous, Highly Reliable, Maintenance Free Motor

## 4. Simple Electrical Connection

- New UL approved 5-15P Nema plug-in motor cable simplifies electrical connections
- Plugs into a standard electrical receptacle and eliminates the need for an electrician
- Motor cable length can be customized to meet your installation requirements



Innovative: Drive is attached with a simple click on connection.

# SOMFY<sub>®</sub>

### Altus RTS

With RTS (Radio Technology Somfy<sup>™</sup>), installation and user operation has been simplified and the overall performance of motorized window coverings, projection screens, awnings and rolling shutters have been enhanced. Designed with all of the great features of SOMFY's popular LT motors, the Altus RTS motor shares one important distinction... A radio remote control receiver is built into the motor providing the user with remote control capabilities without added wiring.

With the Altus RTS motor the end user can have wireless control over any motorized window covering via a radio remote control transmitter or a Decora RTS wireless wall switch within a range of up to 90 feet in open space and up to 65 feet through two concrete walls. The RTS motor can be parallel wired which eliminates the need to connect switches and to access a control device. It also eliminates long wire runs which are often time consuming and expensive.





bandwidth that is less susceptible to interference (433.42 MHz). The RTS system also features 16 million rolling codes to provide for maximum security.

The Altus RTS motor features a user programmable

intermediate stop position and operates on a narrow

The Telis RTS transmitters and Decora RTS wireless wall switches enable a user to program individual, group and master control to optimize operational convenience and to customize the system to meet virtually any design requirement.

DECORA RTS 4 WIRELESS WALL SWITCH

The Altus RTS motor is compatible with the RTS sun and wind sensors to provide a measure of protection when used with retractable awnings.



NOTE: Refer to page 67 of this catalog for limit setting instructions.



## **Technical Specifications**

LV 25 Rang	ge - Sing	le Sha	aft Drive						
MOTOR TYPE	NOMI TORC		SPEED		TRICAL TING	WEIG	GHT	LIFT	ETICAL TING CITY*
	in. Ib.	Nm	rpm	Volt	Ampere	lb.	kg.	lb.	kg.
LV 25-B44 LV 25-B64	3.52 5.28	0.4 0.6	40 35	24DC 24DC	450mA 500mA	.322 .322	.145 .145	*	*

## LW 25 Range - Double Shaft Drive

MOTOR TYPE	NOMIN TORQI		SPEED		CTRICAL ATING	WEIG	GHT	LIFT	ETICAL TING CITY*
	in. Ib.	Nm	rpm	Volt	Ampere	lb.	kg.	lb.	kg.
LW 25-B44 LW 25-B83	3.52 7.04	0.4 0.8	40 30	24DC 24DC	450mA 650mA	.432 .432	.195 .195	*	*

## LT 28 Range

MOTOR TYPE	NOMII TORQ		SPEED		TRICAL TING	WEIC	GHT	THEOR LIFT CAPA	ING
	in. Ib.	Nm	rpm	Volt	Ampere	lb.	kg.	lb.	kg.
LT28 A LT28 AF LT28 B	6.16 6.16 6.16	.7 .7 .7	34 34 34	12VDC 12VDC 24VDC	750mA 750mA 380mA	.6 .6 .6	.27 .27 .27	8.8 8.8 8.8	4 4 4

\* See chart on page 22 for Product Applications/ Lifting Specifications



# The SOMFY AC Motor Range

## Motor Names

It is easy to understand these names as they follow the logical order of increasing torque and have a letter indicating the application (speed).

Conversion Factor: 1 Nm = 8.8 in. lbs.



## \* Important information which must be understood before using the following technical specifications.

SOMFY motors are not designed for continuous operation. They are equipped with a built-in thermal overload protector which limits their operation to intermittent use only... in accordance with Underwriter Laboratories, Inc. and Canadian Standards Association specifications. Maximum running time is approximately 5 minutes depending upon operating conditions. Although SOMFY motors are designed for indoor and outdoor use, they must be protected from direct weather elements such as: rain, sleet, etc...

Theoretical Lifting Capacity does not take into account any systems losses and should be used only as a reference. For the definition of "Theoretical Lifting Capacity" please refer to page 13. The actual lifting capacity of the particular motor depends on other factors such as tube diameter used and its length, selection of motor accessories (brackets, end caps, etc...), and mounting method used. Please consult SOMFY Systems for assistance with determining the actual lifting capacity of SOMFY motors in your particular application.

## **Technical Specifications**

## LS40 Range - Round Head Progressive Limit Switch Unit

	5			0								
MOTOR TYPE (4mm Allen Screw Lim	NOMI TOR( iit)		SPEED			CTRICAL ATING		LIMIT SWITCH CAPACITY	WEIG	GHT	THEORI LIFT CAPA	ING
	in. Ib.	Nm	rpm	Volt	Hz	Ampere	Watt	# Rotations	lb.	kg.	lb.	kg.
404R2	35	4	16	120	60	0.8	85	40	2.11	0.95	44.0	20
409R2	79	9	16	120	60	1.2	135	40	2.38	1.08	100.0	45
404S2	35	4	36	120	60	0.9	100	40	1.92	0.95	44.0	20
401F2	11	1.3	64	120	60	.85	75	40	2.10	0.95	14.0	6.4
412R2	105	12	8	120	60	1.2	135	40	2.38	1.08	132	60

\* Theoretical lifting capacity given on a 40mm (1.57") tube. Length and tube deflection will determine its load capacity.

#### LT50 Range - Rapid Push Button Limits

The LT50 range offers up to a 50Nm (440 in. lb.) model and a range of 14-38 rpm for all standard models, and 14 or 20 rpm for CMO versions.

MOTOR TYPE	NOMI TORC		SPEED			CTRICAL ATING		LIMIT SWITCH CAPACITY	WEIC	GHT	THEOR LIFT CAPA	ING
	in. Ib.	Nm	rpm	Volt	Hz	Ampere	Watt	# Rotations	lb.	kg.	lb.	kg.
504S2	35	4	38	120	60	0.7	80	46	3.8	1.72	35	16
504S2RH	35	4	38	120	60	0.7	80	46	3.8	1.72	35	16
505F2RH	44	5	64	120	60	1.25	145	46	4.4	2	44	20
506S2	53	6	38	120	60	0.95	110	46	4.1	1.87	53	24
506S2RH	53	6	38	120	60	0.95	110	46	4.1	1.87	53	24
510S2	88	10	38	120	60	1.3	150	46	4.41	2	88	40
510S2RH	88	10	38	120	60	1.3	150	46	4.41	2	88	40
510R2	88	10	14	120	60	0.7	80	46	3.8	1.72	88	40

\* Please refer to Definition of Theoretical Lifting Capacity on page 13.



## LT50 Range - Rapid Push Button Limits (Cont'd)

The LT50 range offers up to a 50Nm (440 in. lb.) model and a range of 14-38 rpm for all standard models, and 14 or 20 rpm for CMO versions.

MOTOR TYPE	NOMI TORC	=	SPEED			CTRICAL ATING		LIMIT SWITCH CAPACITY	WEIG	GHT	THEORETICAL LIFTING CAPACITY*		
	in. Ib.	Nm	rpm	Volt	Hz	Ampere	Watt	# Rotations	lb.	kg.	lb.	kg.	
515S2	132	15	38	120	60	1.8	210	46	5.62	2.55	132	60	
515S2RH 515A2	132 132	15 15	38 20	120 120	60 60	1.8 1.1	210 130	46 46	5.62 4.3	2.55 1.95	132 132	60 60	
520R2	176	20	14	120	60	1.1	130	46	4.3	1.95	176	80	
525A2 525A2 CMO	220 220	25 25	20 20	120 120	60 60	1.6 1.6	180 180	46 34	4.74 7.14	2.15 3.24	220 220	100 100	
530R2	264	30	14	120	60	1.5	170	46	4.74	2.15	264	120	
530R2 CMO	264	30	14	120	60	1.5	170	34	7.14	3.24	264	120	
535A2	308	35	20	120	60	2.1	250	46	5.62	2.55	308	140	
535A2 CMO	308	35	20	120	60	2.1	250	34	7.69	3.49	308	140	
540R2	352	40	14	120	60	1.8	210	46	5.62	2.55	352	160	
540R2 CMO	352	40	14	120	60	1.8	210	34	7.69	3.49	352	160	
550R2	440	50	14	120	60	2.1	250	46	5.62	2.55	440	200	
550R2 CMO	440	50	14	120	60	2.1	250	34	7.69	3.49	440	200	

SLT (for Cassette Awnings) - Star Head Rapid Push Button Limits

MOTOR TYPE	NOMI TOR		SPEED			CTRICAL ATING		LIMIT SWITCH CAPACITY	WEI	GHT	THEORETICAL LIFTING CAPACITY*		
	in. Ib.	Nm	rpm	Volt	Hz	Ampere	Watt	# Rotations	lb.	kg.	lb.	kg.	
525A2 SLTL	220	25	20	120	60	1.6	180	46	5.5	2.5	220	100	
525A2 SLTR	220	25	20	120	60	1.6	180	46	5.5	2.5	220	100	
535A2 SLTL	308	35	20	120	60	2.1	250	46	6.4	2.9	308	140	
535A2 SLTR	308	35	20	120	60	2.1	250	46	6.4	2.9	308	140	
660R2 SLTL	530	60	14	120	60	2.5	285	35	9.7	4.4	424	192	
660R2 SLTR	530	60	14	120	60	2.5	285	35	9.7	4.4	424	192	

L=Left Mount R=Right Mount

### ILT - Electronic Limit Switch

MOTOR TYPE	NOM TOR		SPEED			CTRICAL ATING		LIMIT SWITCH CAPACITY	WEI	GHT	LIFT	ETICAL FING CITY*
	in. Ib.	Nm	rpm	Volt	Hz	Ampere	Watt	# Rotations	lb.	kg.	lb.	kg.
506S2 ILT 506S2 ILTRH 515S2 ILT 515S2 ILTRH 535A2 ILT 535A2 ILTRH	52 52 132 132 308 308	6 6 15 15 35 35	38 38 38 38 20 20	120 120 120 120 120 120	60 60 60 60 60	.95 .95 1.8 1.8 2.1 2.1	110 110 210 210 250 250	300 300 300 300 300 300	4.6 4.6 6.1 6.1 6.1 6.1	2.07 2.07 2.77 2.77 2.77 2.77	52 52 132 132 308 308	23.6 23.6 60 60 140 140

\* Please refer to Definition of Theoretical Lifting Capacity on page 13.



## LT50 Altus RTS Range - Star Head Electronic Limit Switch

MOTOR TYPE		iinal Que	SPEED			CTRICAL ATING		LIMIT SWITCH CAPACITY	WEIC	GHT	THEORI LIFT CAPA	ING
	in. Ib.	Nm	rpm	Volt	Hz	Ampere	Watt	# Rotations	lb.	kg.	lb.	kg.
** 506S2 ALTUS RTS ** 510S2 ALTUS RTS 525A2 ALTUS RTS 530R2 ALTUS RTS 535A2 ALTUS RTS 540R2 ALTUS RTS 550R2 ALTUS RTS ** - Also availabl LT50 OREA	88 220 264 308 352 440 e in an			120 120 120 120 120 120 120	60 60 60 60 60 60	1.1 1.3 1.6 1.5 2.1 1.8 2.1	125 150 180 170 240 210 240	250 250 250 250 250 250 250	4.58 4.40 4.73 4.73 6.10 5.61 5.61	2.08 2.0 2.15 2.15 2.77 2.55 2.55	53 88 220 264 308 352 440	24 40 100 120 140 160 200
MOTOR TYPE	NON	AINAL RQUE	SPEED		ELE	CTRICAL ATING		LIMIT SWITCH CAPACITY	WEI	GHT	LIFT	ETICAL TNG CITY*
	in. Ib.	Nm	rpm	Volt	Hz	Ampere	Watt	# Rotations	lb.	kg.	lb.	kg.
535A2 OREA RTS 550R2 OREA RTS		35 50	20 14	120 120	60 60	2.1 2.1	240 240	250 250	6.1 5.6	2.77 2.55	308 440	140 200
LT50 RTS CI	NO R	ange	- Rapid	Pusl	h Bu	tton Lin	nits					

MOTOR TYPE	NOMI TOR(		SPEED			CTRICAL ATING		LIMIT SWITCH CAPACITY	WEI	GHT	LIFT	ETICAL TING CITY*
	in. Ib.	Nm	rpm	Volt	Hz	Ampere	Watt	# Rotations	lb.	kg.	lb.	kg.
525A2 RTS CMO	220	25	20	120	60	1.6	180	34	7.6	3.45	220	100
530R2 RTS CMO	264	30	14	120	60	1.5	170	34	7.12	3.24	264	120
535A2 RTS CMO	308	35	20	120	60	2.1	250	34	8.06	3.66	308	140
540R2 RTS CMO	352	40	14	120	60	1.8	210	34	7.72	3.51	352	160
550R2 RTS CMO	440	50	14	120	60	2.1	250	34	7.79	3.54	440	200

## LT60 Range - Rapid Push Button Limits

The LT60 range offers up to a 100Nm (880 in. lb.) model, and 14 rpm for all models.

MOTOR TYPE	NOMI TOR(		SPEED			CTRICAL ATING		LIMIT SWITCH CAPACITY	WEIG	GHT	THEORI LIFT CAPA	ING
	in. Ib.	Nm	rpm	Volt	Hz	Ampere	Watt	# Rotations	lb.	kg.	lb.	kg.
660R2 660R2 CMO 680R2 680R2 CMO 6100R2	530 530 700 700 880	60 60 80 80 100	14 14 14 14 14	120 120 120 120 120	60 60 60 60	2.5 2.5 3.4 3.4 3.8	285 285 390 390 430	35 34 35 34 35	8.9 11.4 9.5 12.0 10.3	4.05 5.19 4.30 5.45 4.70	424 424 560 560 700	191 191 255 255 317
6100R2 CMO	880	100	14	120	60	3.8	430	34	13.3	6.03	700	317

\* Please refer to Definition of Theoretical Lifting Capacity on page 13.



## Dimensions

SOMFY LV25/LW25/LT25 /LT28 DC MOTORS







## Dimensions

SOMFY LS40/LT50/LT60 /FTS/SLT





NOTE: Dimensions in millimeters are more accurate. X dimension refers to the length of the motor tube and drive assembly. Y dimension refers to the distance for mounting the pop rivets.



## Dimensions SOMFY LT50/LT60 CMO, LT50 RH, LT50 ILT RH and LT50 ILT

## LT50 CMO

MOTOR TYPE	X in. / mm	Y in. / mm
525A2 CMO	23.39/594	22.80/579
530R2 CMO	23.39/594	22.80/579
535A2 CMO	26.14/664	25.55/649
540R2 CMO	26.14/664	25.55/649
550R2 CMO	26.14/664	25.55/649

## LT60 CMO

MOTOR TYPE	X in. / mm	Y in. / mm
660R2 CMO	25.4/646	24.8/630
680R2 CMO	26.8/681	26.2/665
6100R2 CMO	26.8/681	26.2/665

#### NOTE 1:

LT50 Tube Diameter = 1.85"/47 mm LT60 Tube Diameter = 2.36"/60 mm





 $^{st}$  NOTE: Refer to page 10 (LT50 Dimensions) for the standard ILT starhead dimensions.

NOTE: Dimensions in millimeters are more accurate. X dimension refers to the length of the motor tube and drive assembly. Y dimension refers to the distance for mounting the pop rivets.



## Dimensions SOMFY LT50 ALTUS RTS, LT50 OREA RTS and LT50 RTS CMO



NOTE: Dimensions in millimeters are more accurate. X dimension refers to the length of the motor tube and drive assembly. Y dimension refers to the distance for mounting the pop rivets.



The Concept of Torque

Whatever the application, a specific torque (lifting capacity) will be required to motorize the operation. The speed at which the application will then operate depends on the designated speed (RPM) of the motor.

Therefore, the main criteria for motor selection is torque. The following selector charts are based on the torques each of the motors will produce for various applications under different parameters.

Torque is literally described as the "rotary force within a mechanism". More technically: the product of a force and its perpendicular distance from a point about which it causes rotation or torsion.

#### Torque = Load x Radius

Example: A 1 pound weight hanging from a rope turning around a 1 inch radius roller tube tends to rotate the tube as indicated by the arrow. (see figure 1). This weight generates a torque equal to 1in. Ib. By definition: if the same weight is hanging on a 2 inch radius, the torque applied to the tube is equivalent to 2 in. Ibs. (see figure 2). Therefore, the torque generated by the same weight doubles when the tube radius doubles. There is a direct relation between torque and roller tube radius as shown in figures 1 & 2.



## Definition of Theoretical Lifting Capacity

The theoretical lifting capacity is an indicator of the torque capability of the motor. However, the actual load values will differ depending on many factors including tube diameter, tube length, material, friction and type of accessories used. Under no circumstances shall the maximum load including all accessories (including the tube) in the system (between the 2 motor brackets) exceed the maximum load rating of system's individual components.

For all LS40 motors the theoretical lifting capacity is given on a 40 mm (1.57") tube. Length and tube deflection will determine its load capacity.

For all LT50 motors theoretical lifting capacity is given on a 2" tube. Length and tube's deflection will determine its load capacity.

For all LT60 motors theoretical lifting capacity is given on a 2.5" tube. Length and tube's deflection will determine its load capacity.

Please contact SOMFY Systems, Inc. with questions pertaining to maximum load requirements.



# Motor Selection Guide For Retractable Awning Systems

B Number o C Length of		1 Pair (2 arms) 20 ft. (6 m)	2 Pair (4 arms) 33 ft. (10 m)	3 Pair (6 arms) 50 ft. (15 m)	4 Pair (8 arms) 66 ft. (20 m)	5 Pair (10 arms) 82 ft. (25 m)	6 Pair (12 arms) 100 ft. (30 m)
A	D						
Projection of Arms	Roller Tube O.D. Sizes						
<b>F</b> (1)	2.5" (63)	525	5A2	535A2	550R2	660R2	
5 ft. (1.5 m)	3.0" (78)	535	5A2	550R2	660R2	1	680R2
(1.5 11)	3.5" (89)	535A2	550R2	660R2		680R2	
( E <del>()</del>	2.5" (63)	525A2	535A2	540R2	660R2	680R2	6100R2
6.5 ft. (2.0 m)	3.0" (78)	535A2	540R2	550R2	660R2	680R2	
(2.0 m)	3.5" (89)	540R2	550R2	660R2	680	)R2	
8 ft.	2.5" (63)	535A2	550R2		660R2	6100R2	
(2.4 m)	3.0" (78)	550R2		660R2	680	DR2	
(,	3.5" (89)	550R2	660R2	68	0R2		-
				1		1	
9 ft.	2.5" (63)	540R2	550R2	660R2	680R2		
(2.7 m)	3.0" (78)	550R2	660R2	680R2	6100R2		
()	3.5" (89)	550R2	660R2	680R2	6100R2		
						ז   	
10 ft.	2.5" (63)	540R2	550R2	680R2	2	1	
(3.0 m)	3.0" (78)	550R2	680	)R2	6100R2		
· · ·	3.5" (89)	660R2	680R2	6100R2			
					i <b>-</b>		
13.5 ft.	2.5" (63)	550R2	680R2	6100R2		<b></b>	
(4.0 m)	3.0" (78)	680R2	6100R2			Above chart	is approximate.
						For more spe refer to facto	ecific information,
16.5 ft.	2.5" (63)	550R2	680R2				·
(5.0 m)	3.0" (78)	680R2	6100R2				

NOTE: The <u>Selection Guidelines</u> pertaining to the CMO RTS and Altus RTS motors are the same as above.

This chart can be used to select the most suitable type of motor for your lateral arm awning system. Important: The lateral arms referred to here are the standard aluminum type with built-in tension springs. When considering arms made of steel and/or using other types of spring mechanisms, please request additional information.

- 1. Locate the projection of your lateral arm on the above chart at point (A); e.g. 5 ft., 6 ft., 8 ft., etc.
- 2. Determine which roller tube diameter (D) is being used in your installation.

- 3. Locate the number of arms (B) and the length of your installation (C).
- 4. Read the correct motor from the chart at the intersection of your selections.

NOTE:

Because this chart must take into consideration lateral arms being manufactured by many different companies, it is only approximate. The relationship between the number of arms and the length of the awning is only a guide and will vary slightly from manufacturer to manufacturer.



Motor Selection Guide

For Rolling Shutters

To select a motor in this guide you need to know the following:

- 1. Type of slat: Height and Thickness
- 2. Total weight of shutter
- 3. Diameter of the tube

Height of Housing

Height



#### Type of Slat:

It is important to consider the height and thickness of the slats before choosing an operator, since these variables affect the weight per square foot of a rolling shutter. In the next four pages you will find four types of slats. Choose the one that most closely corresponds to the slat that you intend to use.

### Total Weight of Shutter



surface

#### Important Note:

The choice of a motor also depends on the type of installation.

- If you use one motor for two or more shutters add 15% for each additional shutter to derive the total weight.
- Examples: 2 shutters/one motor = + 15% to the total weight 3 shutters/one motor = + 30% to the total weight
- If the roller tube is too far from the tracks, add 15% to the total weight

#### Diameter of Tube:

The lifting capacity of an operator decreases when the tube diameter increases. Therefore, it is necessary to choose the smallest tube while considering the load capacity of the tube and the optimum roll-up diameter of the slats.



width

After choosing the roller tube and the chart corresponding to your type of slat (see pages 17-20), select the operator according to the weight and the total height of the shutter (the safety factor is included in these charts).



### TORQUE REQUIREMENT DIAGRAM

#### Torque



A. The initial torque required to start lifting the slats is small. However, it increases rapidly. This results from the motor lifting the load of the slats away from the bottom of the application.

B. All slats are hanging free. The torque may slightly decrease while the slats are rolling up, since the tube radius has not yet increased.

C. The maximum torque required is arrived at when the slats are lifted up about one third of the way from the bottom of the application.

D. The torque decreases progressively and reaches a minimum when the shutter is fully rolled up.



After choosing the roller tube and the page corresponding to your type of slat, select the operator according to the weight and the total height of the shutter (A safety factor is included in these charts).

#### TYPE OF SLAT: HEIGHT 1.44" TO 1.50" (36/38 mm) THICKNESS .340" TO .355" (9 mm)

HEI	GHT:	0 TO 5	FT.																			
	kg.	9	18	27	36	45	55	64	1 73	3 8	2 9	91	100	109	118	8 12	27 <i>^</i>	36	145	155	16	4 173
TYPE OF	lb.	20	40	60	80	100	) 120	14	0 16	0 18	0 2	00	220	240	26	0 28	30 3	800	320	340	36	380
TUBE	nuh	սիսորո	nhuul	mhui	hinfin	հուի	mpunlin	վուղի	mhun	nuhuu	milm	ı finnlı	mhuut	mļm	iliiiili	mhuu	hudui	վորի	mhm	hinh	սհոսի	mhini
OCTA. 40	<mark>404</mark> F	2 409F	2																			
ROUND 2.5" (63.5)		510R2		52	0R2		530F	R2		540R	2	5	50R2		6	60R2		68	80R2		6100	R2
OCTA. 60 Round 70		510R2		520	R2		530R2		54	0R2		550F	R2		660R	2		680R	2		<mark>6100</mark> F	2
OCTA. 70 Round 75		510R2		520	R2		530R2		540	R2	ļį	550R2	2	6	660R2	2	6	80R2	2	6	100R2	2
ROUND 3.5" (89)		510R2		520R	2	53	80R2	5	40R2		550R	2		66	0R2		680F	2	6	100F	2	

HEIC	GHT:	5 FT. T	O LI	ESS T	HAN 8	B FT.																
	kg.	9	18	27	36	45	55	64	73	3 82	2	91	100	109	11	8 12	27 1	36	145	155	164	173
TYPE OF TUBE	<b>Ib.</b>   1111 11	<b>20</b> 11 111 11	<b>40</b> 11 1111	<b>60</b> 1111 1111	<b>80</b> 	<b>100</b>	120	<b>140</b> 			-	200 	<b>220</b>	<b>240</b> 		-		<b>:00</b> 1 111111	320	<b>340</b>	<b>360</b>	380 
OCTA. 40	404R2	2 409R2																				
ROUND 2.5" (63.5)	5	10R2		520R2		530R2	2	540	R2	55	0R2		660	R2			680	R2			6100R	2
OCTA. 60 Round 70	5	10R2	5	20R2	5	30R2		540R2	2	550	R2		660R2	2			680R2	2		6	100R2	
OCTA. 70 Round 75	5	10R2	5	20R2		530R2		540R2	2	550F	2	6	60R2			6	80R2			61	00R2	
ROUND 3.5" (89)	5	10R2	52	20R2	53	0R2	54	0R2	5	50R2		660	R2			680R	2 			6100	R2	

HEI	GHT: 8	8 FT. 1	ГО 11	.5 F	т.															
	kg.	9	18	27	36	45	55	64 7	73 8	32 9	91	100	109	118	127	136	145	155	164	173
TYPE OF	lb.	20	40	60	80 1	00 1	20	140 1	60 1	80 2	00	220	240	260	280	300	320	340	360	380
TUBE	l untu	nfunfu	սիստև	m m	<u>վոտիսվո</u> ւ	վումու	փոսն	mhunhun	huluu	hunn	վումո	սիսսի	տիստի	m[nn]	uu luu	հալու	hinihini	hinfin	որովո	nhuu
OCTA. 40	404R2	409R2																		
ROUND 2.5" (63.5)	<mark>5</mark>	10R2	520	R2	530R2	54	10R2	550	R2	660	R2		680	R2			6100F	R2		
OCTA. 60 Round 70	5	10R2	520	R2	530R2	54	0R2	550F	R2	660R2	2		680R	2		(	6100R	2		
OCTA. 70 Round 75	<mark>5</mark>	10R2	520	R2	530R2	54	0R2	550F	2	660R2	2		680R2	2		6	100R2			
ROUND 3.5" (89)	5	10R2	520F	2	530R2	540	<b>R</b> 2	550R2	66	60R2		68	30R2			6100	R2			



## TYPE OF SLAT: HEIGHT 1.58" TO 1.65" (40/42 mm) THICKNESS .340" TO .355" (9 mm)

HEIC	GHT:	0 ТО	5 FT																
	kg.	9	18	27	36	45 5	55	64 7	38	2 9	91	100	109 1	18 1	27 13	36 14	5 155	5 164	17:
TYPE OF TUBE	lb.	20	40	60	80	100 1	20 1	40 10	60 18	30 20	00 2	220	240 2	60 2	80 30	00 32	0 340	360	38
IUBE	l uuli	m[nn]	шШ	duu uu	hunhur	ժողողողող	hunn	i linn linn	huluu	huduu	huih	Innin	ոիստիս	(milini	uuluu	mulum	սոհոսի	uduu uu	huu
ROUND 2.5" (63.5)		510R	2	52	0R2	530	DR2		540R2		55	0R2	660R	2 6	80R2		6100	R2	
OCTA. 60 Round 70		510R2	2	520	R2	530F	2	54	0R2		550R:	2 (	660R2	68	DR2	6	100R2		
OCTA. 70 Round 75		510R2	2	520	R2	530R	2	540	R2	55	0R2	66	0R2	680F	R2	610	0R2		
ROUND 3.5" (89)		510R2		520R	2	530R2		540R2		550R2		660R2	E F	80R2		5100R2			

kg.         9         18         27         36         45         55         64         73         82         91         100         109         118         127         136         145         155           TYPE OF         lb.         20         40         60         80         100         120         140         160         180         200         220         240         260         280         300         320         340	164 173 360 380
	360 380
	nu[nuluu]
ROUND         510R2         520R2         530R2         540R2         550R2         660R2         680R2         61	00R2
OCTA. 60 Round 70         510R2         520R2         530R2         540R2         550R2         660R2         680R2         610	)R2
OCTA. 70         510R2         520R2         530R2         540R2         550R2         660R2         680R2         610	)R2
ROUND         510R2         520R2         530R2         540R2         550R2         660R2         680R2         6100F	2

HEI	GHT:	8 FT.	TO 11	l.5 F	Т.														
	kg.	9	18	27	36	45	55	64 7	'3 E	82 91	100	109	118	127	136	145	155	164	173
TYPE OF	lb.	20	40	60	80	100	120	140 1	60 1	80 20	220	240	260	280	300	320	340	360	380
TUBE	Innh	ախուհ	mhuul	nn In	վոսիսոր	սիստի	п пп	հավասհա	huuluu	huiput	ահուր	nhunhu	հարով	nn nn	հովոս	hinfind	uuluu	հոսիոս	huu
ROUND 2.5" (63.5)	5	10R2	520	R2	530R2	54	0R2	550R	2	660R2		680	R2		61	00R2		]	
OCTA. 60 Round 70	<mark>5</mark>	10R2	520	R2	530R2	54	0R2	550R2	2	660R2		680F	R2		61	00R2			
OCTA. 70 Round 75	5	10R2	520	R2	530R2	54	OR2	550R2	2 6	60R2		680R	2		610	0R2			
ROUND 3.5" (89)	51	0R2	520F	R2	530R2	540	२२	550R2	660	R2	6	80R2		6	6100R2	2			



## TYPE OF SLAT: HEIGHT 1.986" TO 2.10" (50/53 mm) THICKNESS .55" (14 mm)

20 4	18 27 40 60 1	36 45 80 100	) 120 	0 140			91 200	100 220	109 240	118 260	127 280	136 300	145 320	155 340	164 360	
		doorfoorboorfo				duulu		-	-		1					380 
							duu uu 	duu juu	hin	hin hind	uu uu	hindini	hini	hintin	hintin	hind
10R2	520R2	2 530F	22	540P2												
				040NZ		550R2										
10R2	520R2	530R	2	540R2	5	50R2										
10R2	520R2	530R2	2	540R2	55	50R2	I									
0R2	520R2	530R2	54	40R2	550F	R2										
1	0R2	0R2 520R2	0R2 520R2 530R2	0R2 520R2 530R2	0R2 520R2 530R2 540R2	0R2 520R2 530R2 540R2 55	0R2 520R2 530R2 540R2 550R2									

HEI	GHT:	5 FT.	TO LE	ESS	THAN 8	3 FT.													
	kg.	9	18	27	36	45 5	5 64	73	82	91	100	109	118	127	136	145	155	164	173
TYPE OF	lb.	20	40	60	80	100 1	20 140	160	180	200	220	240	260	280	300	320	340	360	380
TUBE	ի սոհ	m[mi]	ալիուն	шĮш	սիսպիստի	m[milm	hunhunhu	հովու	duuluu	hinhi	որովուղ	hinfind	hinthi	հարո	հաիտ	հաիտ	hindun	hindun	hui
ROUND 2.5" (63.5)	51	0R2	520F	2	530R2	540R	2 550R	2	660R2		68	0R2		6	100R2				
OCTA. 60 Round 70	51	0R2	520R	2	530R2	540R2	2 550R	2 (	660R2		680	)R2		61	00R2				
OCTA. 70 Round 75	51	0R2	520R	2	530R2	540R2	550R2	2 6	60R2		680	R2		61	100R2				
ROUND 3.5" (89)	51	0R2	520R	2	530R2	540R2	550R2	66	OR2		680	R2		610	0R2				

HEI	GHT:	8 F1	Γ. ΤΟ 1 <sup>′</sup>	1.5 FT															
	kg.	9	18	27	36	45	55	64 7	3 82	2 91	100	109	118	127	136	145	155	164	173
TYPE OF	lb.	20	40	60	80	100	120	140 16	60 18	0 200	220	240	260	280	300	320	340	360	380
TUBE	սոհ	m m	duu[uu]	nu[nu]	luu lu	nhini	hinfunlu	սիստիսով	mini	nuluulu	duu]ui	duuluu	hinihini	hini hi	duu luu	huuluu	hinhin	huu uu	huu
ROUND	ı																		
2.5" (63.5)	51	0R2	520R2	530	R2	540R2	550R2	660R	2	680R2	2	61	00R2						
OCTA. 60 Round 70	51	0R2	520R2	530	R2	540R2	550R2	660R2	2	680R2	2	61	00R2						
OCTA. 70 Round 75	51	0R2	520R2	530	R2	540R2	550R2	660R2	2	680R2	2	61	00R2						
ROUND 3.5" (89)	51	0R2	520R2	530F	2 5	540R2	550R2	660R2		680R2		610	00R2						
- ()	I													_					



## TYPE OF SLAT: HEIGHT 2.125" TO 2.20" (54/56 mm) THICKNESS .55" (14 mm)

HEIGHT: 0 to 5 FT.																					
	kg.	9	18	27	36 4	15	55 6	64	73	82	91	100	109	11	8 12	27	136	145	155	164	173
TYPE OF TUBE	lb.	20	40	60		00		1 1	160	180	200	220	240	26			300	320	340	360	38
	111111														11111111	1111111					
OCTA. 60 Round 70	Ę	510R2		520R2	530	R2	540R	2	550	R2											
DCTA. 70 Round 75	5	10R2	5	20R2	530	<b>R</b> 2	540R	2	550R	2											
ROUND 3.5" (89)	5	10R2	52	20R2	530R2		540R2	5	50R2												

HEI	GHT:	5 FT.	TO LES	S THAN	8 FT.												
	kg.	9	18 2	27 36	45 5	5 64	73 8	2 91	100	109	118	127	136	145	155	164	173
TYPE OF	lb.	20	40 6	80 80	100 12	20 140	160 18	30 200	) 220	240	260	280	300	320	340	360	380
TUBE	l IIII	ստիստի	ախոհող	huupuu huu	hinfinitini	mhm m	hinfinitini	uuluu i	ահոսիոսհ	un h	nhunhun	hudhud	nuluu	hinhin	վոսիոս	hinhin	huu
OCTA, 60			50000									10000					
Round 70		510R2	520R2	530R2	540R2	2 550R2	2 660R2	<u> </u>	680R2		6	100R2					
OCTA. 70 Round 75	5	510R2	520R2	530R2	540R2	550R2	2 660R2		680R2		6	100R2					
ROUND 3.5" (89)	5	10R2	520R2	530R2	540R2	550R2	660R2		580R2		61	00R2					
3.5 (89)			1														

HEIG	GHT:	8 F1	T. TO 11	.5 FT.														
	kg.	9	18	27	36 45	5 55	64 7	3 82	91	100	109	118	127	136	145	155	164	173
TYPE OF	lb.	20	40	60	80 10	0 120	140 16	60 180	200	220	240	260	280	300	320	340	360	380
TUBE	և սոհ	шļш	հավոսի	mhudu	duuluul	առիսոիսոր	m[milim]	առախո	վուվորի	ավա	hind	mlun	huu]uu	hudun	hinihini	huu]uu	hun]uu	duu
OCTA. 60 Round 70	51	0R2	520R2	530R2	2 540R	2 550R2	660R2	6	80R2		6100	R2						
OCTA. 70 Round 75	51	0R2	520R2	530R2	2 540R	2 550R2	660R2	6	80R2		6100	R2						
ROUND	51	0R2	520R2	530R2	540R2	550R2	660R2	68	0R2		6100	32						
3.5" (89)				000112														



Motor Selection Guide For Window Coverings (Roll-up Applications)

### **LT28 MOTOR SELECTION CHART**



### **LS40 MOTOR SELECTION CHART**



LI 5	LISU AND LISU RIS MOTOR SELECTION CHART																	
	kg.	9		18	27	7	;	36	4	5	5	5	6	4	7	3	8	2
TYPE OF	lb.	20		40	60	C	;	80	10	0	12	20	14	10	16	0	18	30
TUBE	mhm	nuluulu	որոփ	ահավոոհ	$\mathbf{m}[\mathbf{m}]\mathbf{m}[\mathbf{m}]$	uuluu	huilin	duuluu	huuhuu	nnhun	milim	huduu	huluu	milim	mhm	uuluu	huluu	minn
ROUND 2.0" (51)		504S2		506S2	51	0S2			515S	2		(	OTHEF	R LT50	RANO	GE MC	TORS	
ROUND 2.5" (63.5)	5	04S2	506	S2 5 <sup>4</sup>	10S2		5158	S2			C	THER	LT50	RANG	E MO	ORS		
ROUND 3.0" (76)	504	4S2 5	506S2	510S2	5	515S2				(	OTHE	R LT50	RAN	GE MC	TORS			
ROUND 3.5" (89)	504	S2 506	S2 5	10S2	515S2					OTHER	LT50	RAN	GE MO	TORS				







Motor Selection Guide For Interior Window Coverings

#### PLEATED, CELLULAR AND ROMAN

Motor Type	Output Drive (Hexagonal Shaft)	Maximum area for Pleated Shades Sq. Ft.	Maximum area for Cellular Shades Sq. Ft.	Roman Shades Lbs.	Maximum height with 1.4 mm cord	Speed (RPM)
LV 25-B44	Single	60 Sq. Ft.	53 Sq. Ft.	4.25 Lbs.	11.5 Ft.	40
LV 25-B64	Single	90 Sq. Ft.	75 Sq. Ft.	7.5 Lbs.	11.5 Ft.	35
LW 25-B44	Double	60 Sq. Ft.	53 Sq. Ft.	4.25 Lbs.	11.5 Ft.	40
LW 25-B83	Double	120 Sq. Ft.	105 Sq. Ft.	8.5 Lbs.	11.5 Ft.	30

Specifications based on motors used with (CTS). They are approximate and may vary depending on product application, fabric etc.

Motor Type	Output Drive	Maximum area for Pleated Shades Sq. Ft.	Maximum area for Cellular Shades Sq. Ft.	Roman Shades Lbs.	Maximum height with 1.4 mm cord	Speed (RPM)
LT28	Tubular	120 Sq. Ft.	105 Sq. Ft.	8.8 Lbs.	13 Ft.	34
LS40*	Tubular	>120 Sq. Ft.	>105 Sq. Ft.	21 Lbs.	18 Ft.	36
LT50**	Tubular	>120 Sq. Ft.	>105 Sq. Ft.	42 Lbs.	19.8 Ft.	38

Specifications based on motors used with (CTS). They are approximate and may vary depending on product application, fabric etc.

\* LS40 Based on use of 404S2

\*\* LT50 Based on use of 510S2

#### HORIZONTAL BLINDS

Motor Type	Output Drive (Hexagonal Shaft)	Maximum area for 25 mm Aluminum blinds ( Sq. Ft.)	Maximum area for 50 mm Wood blinds ( Sq. Ft.)	Maximum height with Ø 1.4 mm cord ( Ft.)	Speed (RPM)
LV 25-B44	Single	22 Sq. Ft.	NA	11.5 Ft.	40
LV 25-B64	Single	44 Sq. Ft.	NA	11.5 Ft.	35
LV 25-B44	Double	22 Sq. Ft.	NA	11.5 Ft.	40
LV 25-B83	Double	54 Sq. Ft.	27 Sq. Ft.	11.5 Ft.	30

Specifications based on motors used with (CTS). They are approximate and may vary depending on product application.

Motor Type	Output Drive	Maximum area for 25 mm Aluminum blinds ( Sq. Ft.)	Maximum area for 50 mm Wood blinds ( Sq. Ft.)	Maximum height with Ø 1.4 mm cord (Ft.)	Speed (RPM)
LS40*	Tubular	75 Sq. Ft.	75 Sq. Ft.	13 Ft.	16
LT50**	Tubular	75 Sq. Ft.	120 Sq. Ft.	19.8 Ft.	14

Specifications based on motors used with (CTS). They are approximate and may vary depending on product application.

\* LS40 Based on use of 409R2

\*\* LT50 Based on use of 510R2

**SOMFY** Special Application Motors

## **ILT Motor**

The ILT motor features an on board microprocessor and uses a digital shaft encoder to track the position of the motor. Limits are set using the ILT switch itself, virtually eliminating the need to access the motor when adjusting the limits. A low voltage modular cable links the motor to the switch, and a separate 3-conductor (L-N-G) cable supplies power to the motor.

On-board control and electronic limits are combined to provide these additional features:

- \* Low voltage control from a switch, infrared transmitter, home automation or network controls
- \* Individual or group control from a switch or IR sensor without additional components
- \* One user defined intermediate stop from a switch or remote



**SOMFY** Special Application Motors

#### FTS - Fabric Tension System

The FTS is a specialized system designed for the solar protection market where horizontal or inclined type shading is required. This system was designed for fabric and shading material. SOMFY has tested the FTS Control for rolling shutters and does not recommend it.

The system consists of two specific motors, an electronic control unit and a switch. One motor is inserted into the fabric roll-up tube and is referred to as the fabric motor. The other is inserted into the strap take-up tube and is called the strap motor. While not every application will have a load bar and straps as below, these references will help reduce confusion during installation.

The electronic control unit operates each motor independently and maintains a desirable dynamic (moving) tension as well as final tension in the system, eliminating fabric sag while the fabric is both moving and standing. Adjustment to both dynamic and final tension can be made through the electronic control.

Never Leave the dynamic and final tension at 0. This setting is only used during initial FTS installation. It is strongly recommended that both the dynamic and final tension be set to a minimum value of 5.

All mechanical accessories of the FTS System and the mounting method must be capable of withstanding the tension and forces exerted by the motors.

For the 525A2 FTS motor, the entire FTS system must be able to withstand a minimum of 250 Lbs. of force. This value was obtained based on both the fabric tube and strap tube having a <u>diameter of 2.5"</u>.

For the 655A2 FTS motor, the entire FTS system must be able to withstand a minimum of 500 Lbs. of force. This value was based on both the fabric tube and strap tube having a <u>diameter of 3.5"</u>.

NOTE: The SOMFY FTS System is a specialized system and should not be installed without proper training from a SOMFY technician.



For a quick reference guide to our installations, refer to page 26 and 27 of this catalog. The complete instructions are available on our website at www.somfysystems.com under the Technical Documentation section.

#### SLT and OREA RTS Motors

#### SLT

The SLT Range is made exclusively for cassette awnings. What separates the SLT from a standard LT is the onboard control which detects when a cassette is almost closed and reduces the torque of the motor for the last few inches of travel. Then when the headrail meets the cassette, the on-board control shuts the motor off. The combination of digital control plus a reduced-torque closing provides the maximum protection against fabric stretch. For more information, turn to page 66.

#### OREA RTS

The new radio version of the SLT motor is the OREA RTS. This motor can be mounted on the left or right side of the cassette awning and is compatible with the RTS sensors. It features an integrated radio receiver with remote limit setting and a remote user programmable intermediate stop.



FTS Motor Selection Guide





Installation Instructions

### A. INSTALLATION PROCEDURE

Using the SOMFY FTS selector chart (located on page 25 of this catalog or our website) select the appropriate sized motors. Operators should then be fit into their respective tubes in accordance with standard installation instructions, using the correct crown and drive. All mechanical accessories of the system and the mounting method must be capable of withstanding the tension and forces exerted by the motors (please refer to page 24 for these values).

Before proceeding, press in both limits on each motor, and leave the buttons locked in the "in" position.

#### Rotation Directions

The illustrations at right represent a view of the motors (Fabric and Strap Motor) looking at the head with the push buttons at the 12 o'clock position. The concept illustrated here applies for all LT FTS configurations. The white push button always corresponds to the black motor wire and the yellow push button always corresponds to the red motor wire. Only the "Winding Direction" and "Tension Direction" designation change depending on

whether the fabric or straps are winding on the motor tube "Winding Direction" or unwinding from the tube "Tension Direction". It is crucial that you identify the proper motor configuration of your installation in the chart on the following page and use the wiring chart below it to later connect to the appropriate terminals of the FTS control.

Fig. 1

Winding

Direction

The motorized tubes should be mounted onto their respective brackets. The locking stop ring included with each operator MUST be used with the motor end bracket. Ensure that the motorized tubes are parallel and fabric is rolled up. Attach Straps to the strap tube . Connect the Tester cable to the motor leads as shown in the table to the right, and in fig. 2 below. The winding direction will have the power switched, and the tension direction is not used.

FABRIC MOTOR	Tester Cable	STRAP MOTOR
Fabric Winding	Black	(not connected)
Gray	Gray	Gray
Green	Green	Green
White	White	White
(not connected)	Red	Strap Winding

Winding

Direction

Tension

Direction

#### Setting the Limits for the first time

Both limits must be set on each motor. Use the Limit Setting chart below to determine the order in which the limits are set for a given motor and fabric orientation.

1. Unwind the fabric using the tester cable (fig. 2). When the desired position is reached, set the strap tube limit by pressing and releasing the PRIMARY limit (1) on the strap motor tube. Then press and release the SECONDARY limit (2) on the fabric motor.

2. Using the tester cable, wind the fabric around the fabric tube (fig. 3). When the desired position is reached, press and release the PRIMARY limit (3) on the fabric motor tube. Then press and release the SECONDARY limit (4) on the strap motor.

3. Before connecting the motors to the controller, run the system (using the tester cable) in both directions to verify that the system works correctly.

NOTE: If any limits need to be readjusted, be sure to re-set both the primary and secondary limits for the system in the correct order as described above.

#### Limit Setting Order According to Motor Configuration Fig. 2













# Tension Direction

DIRECTION OF FABRIC



#### **B. INSTALLATION CONFIGURATIONS**

Below are the Four Motor Configurations that are possible with the FTS System: The different configurations each require a unique instruction for wiring and limit setting.

#### Wiring Identification

The tables below the illustrations describe the wiring scheme with FTS control terminal identification based on the motor and fabric orientation above it.

NOTE: The illustration on top is configured exactly the same as the one below it, only flipped over to visually illustrate the fabric rolling above or below the tube.



#### C. FINAL CONNECTIONS

All wiring must conform to NEC (National Electrical Code) and local codes.

Before connecting the operators to the electronic control, set the tension adjustment potentiometers to "0" and ensure that all the dip switches are in the "off" position.

Referring to charts above, connect the motors and switch to the electronic control as shown in the diagram to the right.

Check that the system operates correctly with respect to the switch directions. Make sure the limits have been properly set. At this point, there may be some fabric sag - this is normal.

To finish the installation, set both the dynamic and final tension adjustment potentiometers to a minimum value of 5. This will remove all the fabric sag in the system and ensure proper operation of the FTS installation.





# **SOMFY** DC Motor Mechanical Accessories DC LT28 BRACKETS AND END CAPS

Dimensions (mm)	Cat. Number	Description
	6180353	Angle Brackets w/Teflon Bushings - 4 screws and anchors included - Ø 4 mm idler bushing included
	6180354	Angle Brackets w/Plastic Caps - Compatible with 6090315 idler end cap - Pin Ø 4 mm
$ \begin{array}{c}                                     $	6180356	Standard Brackets
	6090315	End Cap For Tube 28 x 0.7 mm, 29 x 1.15 mm and 29 x 2.0 mm - Pin Ø 4 mm
Ø 39 Ø 0 Ø 0 Ø 0 Ø 0 Ø 0 Ø 0 Ø 0 Ø 0 Ø 0 Ø 0	6061298	Flush Mount Bracket for LT28A and LT28B Motor



# DC Motor Mechanical Accessories

Headrail Adaptors for LV and LW Motors

Dimensions (mm)	Cat. Number	Description
0	6050009	Headrail Adaptor for 25 x 25 mm/Celebrity/Best Buy
0	6050008	Headrail Adaptor for Fbr. 25 x 25 mm
Ø	6050007	Headrail Adaptor for SoftLine®
Ø	6050006	Headrail Adaptor for MidiMatic <sup>®</sup>
Ø	6050005	Headrail Adaptor for Classic Supreme®
Ø	6050004	Headrail Adaptor for Verosol Europe/Mexico
D	6050010	Headrail Adaptor for VersaRail/Easy Up/Activator/EasyGlide®
D	6050650	Headrail Adaptor for EasyRise <sup>®</sup> (New Version/Old Version)
	6050600	Headrail Adaptor for GutterRail/Low Profile 2" Headrail
	6050602	Headrail Adaptor for SureClose <sup>®</sup> Headrail
D	6050013	Headrail Adaptor for LightLines®



# **SOMFY** DC Motor Mechanical Accessories

Dimensions (mm)	Cat. Number	Description
	6050003	Shaft Adaptor for 5 mm Hexagonal
Ê	6051003	Long Shaft Adaptor for 5 mm Hexagonal
	6050002	Shaft Adaptor for 5 mm Square
	6050001	Shaft Adaptor for 6 mm Hexagonal
	6051001	Long Shaft Adaptor for 6 mm Hexagonal
SOMEY	6050000	Adjustable Mechanical Stop (AMS)
00	6050666	Wall Mount Brackets for RDS/RTS Control
	6050403	Ladder Braid Crimps



# **SOMFY** DC Motor Mechanical Accessories

Dimensions (mm)	Cat. Number	Description
	6050026	29 mm Round Tube (Max. 16 ft.)
	6050029	NEW 29 mm Tube w/"Grooved" Surface (Max. 20 ft.)
	6180029	NEW CTS29 w/New Molded Cradle Assembly Kit
	6070029	NEW Molded LT28 Motor/Idler Brackets
	6050129	NEW 45 x 51 mm Extruded Aluminum White Headrail (Max. 20 ft.)
Contraction of the second seco	6080029	NEW Headrail Mounting Brackets
le l	6050290	NEW Headrail Side Caps
	6090315	End Cap for 29 mm Tube
	6050411	Decorative Tape Adaptors for (1") Cotton Tape
	6050412	Decorative Tape Adaptors for (1.5") Cotton Tape
	6050406 6050505	5 mm Hex Shaft for CTS (16 Ft. Maximum Length) 6 mm Hex Shaft for CTS (6 Ft. Sections)
	6050400	Stop Collar Ring for 5 mm Hex Shaft
	6050401	Stop Collar Ring for 6 mm Hex Shaft



# **SOMFY** DC Motor Cord Take-Up Systems (CTS)

Dimensions (mm)	Cat. Number	Description
	6180367	29 mm Cone and Ring (Kit)
	6180029	CTS 29 mm for SOMFY 46 x 51 mm Headrail
	6180389	CTS 25 (Kit) for Standard 1" x 1" Headrail (5 mm Hex Shaft)
	6180393	CTS 25 (Kit) for Standard 1" x 1" Headrail (5 mm Sq Shaft)
	6180395	CTS 25 (Kit) for Standard 1" x 1" Headrail (6 mm Hex Shaft)
	6180396	CTS 25 (Kit) for Classic Supreme <sup>®</sup> Headrail (5 mm Hex Shaft)
	6180394	CTS 25 (Kit) for Classic Supreme <sup>®</sup> Headrail (6 mm Hex Shaft)
	6180397	CTS 25 (Kit) for VersaRail/Easy-Up/EasyGlide <sup>®</sup> (5 mm Hex Shaft)
	6180398	CTS 25 (Kit) for VersaRail/Easy-Up/EasyGlide <sup>®</sup> (6 mm Hex Shaft)
	6180407	CTS 25 (Kit) for LightLines <sup>®</sup> (5 mm Hex Shaft)
	6180408	CTS 25 (Kit) for LightLines <sup>®</sup> (6 mm Hex Shaft)
	6180404	CTS 25 (Kit) for GutterRail/Low Profile 2" Headrail (5 mm Hex Shaft)
	6180405	CTS 25 (Kit) for GutterRail/Low Profile 2" Headrail (6 mm Hex Shaft)
	6180600	CTS 25 (Kit) for EasyRise <sup>®</sup> (New Version) Headrail (5 mm Hex Shaft)
	6180601	CTS 25 (Kit) for EasyRise <sup>®</sup> (New Version) Headrail (6 mm Hex Shaft)
	6180497	CTS 25 (Kit) Short Cones for VersaRail Headrail (5 mm Hex Shaft)
	6180498	CTS 25 (Kit) Short Cones for VersaRail Headrail (6 mm Hex Shaft)



# **SOMFY** LS40 Mechanical Accessories

Dimensions (mm)	Cat. Number	Description
	6061308	LS40 to LT50 Adaptor Kit - Allows the use of LT50 crowns and drives with LS40 motors - Black composite - Maximum motor torque - 13 Nm - Maximum system load - 56 Kg (123 Lbs.)
	6070418	LS40 "LO" Bracket with a Square Stud - Motor mounting screws included - 10 mm square stud - Zinc plated steel - Maximum motor torque - 13 Nm - Maximum system load - See note below
	6070521	LS40 and LT50 RH "LO" Bracket with Round Hole - Two motor mounting screws included - Zinc plated steel - Maximum motor torque - 20 Nm - 2 holes for 1/4-20 screws on 48 mm diameter - Maximum system load - 70Kg (154 Lbs.) - Replaces SOMFY Cat. No. 6070419
18 10.4 0 38	6070427	LS40 Motor Bracket - Compatible with Rollease <sup>™</sup> Bracket - Stainless steel - Maximum motor torque - 4 Nm - Maximum system load - See note below
	6070429	LS40 to LT50 Mounting Conversion Bracket - Black composite - Allows LS40 motors to be used with LT motor brackets - Maximum motor torque - 9Nm - 2 screws included - Maximum system load - 56 Kg. (123 Lbs.)
	6090307	<ul> <li>40 mm Diameter Adjustable End Cap</li> <li>12 mm dia. shaft (Zinc plated steel)</li> <li>Cast aluminum with set screwset screw must use lock-tight to prevent screw from vibrating free.</li> <li>Kit containing (6090310, 6090195). These parts are available separately.</li> <li>Maximum system load - See note below</li> </ul>

Note: Maximum system load will vary depending on application. SOMFY recommends testing of component in actual application to determine its suitability.



# LS40 Mechanical Accessories

Dimensions (mm)	Cat. Number	Description
	6090185 6090186	40 x 0.6 mm Octagonal Tube End Cap - 8 mm dia. shaft - White composite - Maximum system load - See note below 40 x 1.1 mm Octagonal Tube End Cap - Same as above but modified to fit 40 x 1.1 mm tube
	6080040	<ul> <li>LS40 Idler Bracket (for 8 mm shaft)</li> <li>Decorative white composite</li> <li>Maximum motor torque - 4Nm (removable parts must be screwed together, see enclosed instructions).</li> <li>Maximum system load - 17 Kg. (38 Lbs.)(must be screwed together)</li> <li>Compatible with motor bracket Cat. #6070040</li> </ul>
	6070040	<ul> <li>LS40 Radial Square Motor Bracket</li> <li>Decorative white composite</li> <li>Maximum motor torque - 4Nm (removable parts must be screwed together, see enclosed instructions)</li> <li>Maximum system load - 17 Kg. (38 Lbs.)(must be screwed together)</li> <li>Compatible with idler bracket 6080040</li> </ul>
Ø 50 Pull String 50 20	6050040	<ul> <li>LS40 Intermediate Bracket</li> <li>Decorative white composite</li> <li>Maximum motor torque - 4Nm (removable parts must be screwed together, see enclosed instructions).</li> <li>Maximum system load - 17 Kg. (38 Lbs.)(must be screwed together)</li> <li>Any LS40 drive wheel may be used to adapt to any tube profile</li> <li>Pull string used to disengage intermediate connection</li> </ul>
	6090040	LS40 Idler End Cap with 8 mm Diameter Pin - Decorative white composite - Maximum motor torque - 13Nm - Any LS40 drive wheel may be used to adapt to any tube profile - Maximum system load - See note below
	6180391	CTS 40 Kit for GutterRail 2" x 2 1/4" Headrail

Note: Maximum system load will vary depending on application. SOMFY recommends testing of component in actual application to determine its suitability.



# LS40 Mechanical Accessories

Dimensions (mm)	Cat. Number	Description
	6050521	40 mm Octagonal Tube (Sold in 20 ft. lengths)
2-5	6050408 6050409 6050410	2″ Slat Clips for Wood Blinds (White) 2″ Slat Clips for Wood Blinds (Ivory) 2″ Slat Clips for Wood Blinds (Brown)
	6050089	40 mm Fabric Clip
29	6080251	LS40 Motor/Idler Bracket for 2″ x 2 1/4″ GutterRail Headrail - requires 2 screws (4000555 not included)



# **SOMFY** LS40 Mechanical Accessories

## Crowns and Drives

Dimensions (mm)		Cat. Number	Description
		6061287	LS40 Crown for 40 x 0.8 mm Octagonal Tube
		6061289	LS40 40 mm Octagonal Set
		6061286	LS40 Drive for 40 x 0.8 mm Octagonal Tube
	$\bigcirc$	6061285	LS40 Crown for (40 x 1.5 mm) Tube
		6061288	LS40 40 mm Round Set
		6061284	LS40 Drive for (40 x 1.5 mm) Tube
	$\bigcirc$	6061310	LS40 Crown for (40 x 1.0 mm) Tube
		6061309	LS40 Drive for (40 x 1.0 mm) Tube




### Motor Brackets

Dimensions (mm)	Cat. Number	Description
	6070003	LT50 Motor Angle Bracket - Zinc-plated steel 807 in. diameter through hole - Maximum motor torque - 40 Nm - Compatible with 9080239 idler end bearing support - Maximum system load - See note below
	6070082	Universal LT50 Motor Bracket (LS Style) for 10 mm Square Stud - Zinc-plated steel - Maximum motor torque - 25 Nm - Horizontally and vertically adjustable - Maximum system load - 57 Kg. (126 Lbs.) - Replaces SOMFY Cat. No. 6070081
	6070138	"U" Shape LS Style Motor Bracket for 10 mm Square Stud - Maximum motor torque - 25 Nm - Zinc-plated steel - Maximum system load - See note below - Replaces SOMFY Cat. No. 6070137
11 $40$ $30$ $30$ $00$ $00$ $11$ $40$ $25$ $240$ $125$	6070182	Heavy Duty Angle Plate - For ceiling and wall installation in combination with Cat. No. 6070503 - Black oxide finish - Compatible with brackets 6070503,6080026 and 6080116 - Maximum motor torque - 100 Nm - Maximum system load - See note below
48 48 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6070238	LT50 Round Anti-Vibration Motor Bracket - Zinc plated steel with a 10 mm molded square stud insert surrounded by rubber - Compatible with matching idler end Cat. #6080206 - Can be mounted on 6070526 - Maximum motor torque - 20Nm - Can reduce sound levels by 4-5 dB - Maximum system load - See note below
	6070256	<ul> <li>Motor Bracket LT60 FTS</li> <li>Zinc plated steel, gauge 3 (0.24 in.)</li> <li>Recommended for use with LT FTS 60 (Fabric Tension System)</li> <li>Maximum motor torque - 100 Nm</li> <li>Includes universal bracket with spring ring that must be used</li> <li>Maximum system load - 200 kg. (441 Lbs.)</li> <li>Spring must be replaced with a locking spring ring 4350027 to obtain full torque and load capability.</li> </ul>



### Motor Brackets

Dimensions (mm)	Cat. Number	Description
	6070284	<ul> <li>LT50 Angle Plate with Elongated Holes Allowing Adjustment</li> <li>Zinc plated steel</li> <li>Compatible with idler end bearing support Cat. No. 9080239 and intermediate bearing support Cat. No. 6050438</li> <li>Maximum motor torque - 50 Nm</li> <li>Maximum system load - 69 Kg. (152 Lbs.)</li> <li>Replaces SOMFY Cat. No. 6070283</li> </ul>
	6070446	<ul> <li>LT50/60 Motor Bracket with 1/2" Conduit Connector</li> <li>Four mounting holes provided</li> <li>Lateral space requirement for installation: 28 mm</li> <li>Zinc plated steel</li> <li>Must be used with either spring ring Cat. No. 4350026, or locking spring ring Cat. No. 4350027 (not included)</li> <li>Maximum motor torque - 85 Nm or 100 Nm when locking spring ring Cat. #4350027 is used.</li> </ul>
	6070499	Universal Bracket with Spring Ring - Assembled to accept Inch Series threaded screws 1/4 - 20, 5/16 - 18 (nuts molded into bracket)
Spring ring needs to be	6070501	<ul> <li>Universal Bracket with Spring Ring - Zamak Material</li> <li>2 holes for M6 hex or 1/4 - 20 flat head screw on 48 mm diameter</li> <li>2 holes for M8 hex screw on 60 mm diameter</li> <li>2 countersunk holes for M8 screw on 60 mm diameter</li> <li>Lateral space requirement for installation: 27 mm</li> <li>Maximum motor torque - 85 Nm or 100 Nm when used with locking spring ring Cat. No. 4350027, and 5/16 - 18 or M8 bolts without molded nuts</li> <li>Maximum system load - 200 Kg. (441 Lbs.) when used with locking spring ring Cat. #4350027</li> </ul>
replaced with locking spring ring Cat. #4350027 to obtain maximum torque and load capability	6070502	With M8 and M6 nuts molded in bracket - Same as above - Maximum system load 200 Kg. (441 Lbs.)
0 67 0 67 17.5	6070500	<ul> <li>Weld-on Bracket Without Spring Ring</li> <li>Steel bracket without surface treatment</li> <li>For welding to mounting plates of all kinds. Lateral space requirement for installation: 23 mm + thickness of mounting plate</li> <li>Must be used with spring ring Cat. No. 4350026 or locking spring ring Cat. No. 4350027 (not included)</li> <li>Maximum motor torque - 85 Nm or 100 Nm depending on spring ring and quality of weld</li> <li>Maximum system load - 200 Kg. (441 Lbs.) when used with locking spring Cat. #4350027</li> </ul>



### Motor Brackets

Dimensions (mm)	Cat. Number	Description
50 70 37.5 34 60 60	6070504	<ul> <li>Heavy Duty Angle Plate with Universal Motor Bracket</li> <li>With two M8 screws and nuts included</li> <li>Angle plate (zinc-plated steel)</li> <li>Three adjustment positions possible</li> <li>Maximum motor torque - 85 Nm or 100 Nm when used with locking spring ring Cat. #4350027</li> <li>Maximum system load - 130 Kg. (287 Lbs.) or 200 Kg. (441 Lbs.) when used with locking spring ring Cat. #4350027</li> <li>Heavy Duty Angle Plate</li> <li>Same as above but without the universal motor bracket</li> </ul>
	6070507	Motor Bracket With Spring Ring (120 mm x 120 mm) - Four mounting holes provided - Zinc-plated steel - Lateral space requirement for installation: 28 mm - Maximum motor torque - 85 Nm - Maximum system load - See note below
	6070510	Motor Bracket With Spring Ring (100 mm x 100 mm) - Four mounting holes provided with a through hole in the center of the bracket - Zinc-plated steel - Lateral space requirement for installation: 28 mm - Maximum motor torque - 85 Nm - Maximum system load - See note below





### Motor Brackets

Dimensions (mm)	Cat. Number	Description
99	6070511	<ul> <li>LT50/60 Radial Motor Bracket</li> <li>Maximum motor torque 80 Nm</li> <li>Zinc plated steel</li> <li>Allows for easy removal of LT motor without removing entire bracket. It disassembles in 2 pieces with one part remaining attached to structure</li> <li>Maximum system load - See note below</li> </ul>
80 60 000000000000000000000000000000000	6070513	LT50 Universal Motor Bracket - Maximum motor torque - 50 Nm - Zinc plated steel - Maximum system load - 115 Kg. (254 Lbs.)
80 60	6070509	LT50 Adjustable Universal Motor Bracket - Zinc plated steel - Without molded nuts - Maximum motor torque - 50 Nm - Maximum system load - 115 Kg. (254 Lbs.) - Replaces SOMFY Cat. No. 6070514
	6070515 6070516	Retrofit Brackets - Zinc plated steel - yellow - LO LT motor bracket with a 10 mm stud. Vertical pin hole - Mounting screws Cat. No. 4000551 not included - Maximum motor torque - 25 Nm for new LT applications - 35 Nm for replacing LS motor with LT motor - Maximum system load - 70 Kg. (154 Lbs.) Same as above, except pin hole is horizontal
2 x M8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6070517	"LO" LT50 Motor Bracket - Comes with two 5 mm motor mounting screws - Maximum motor torque 50 Nm - Zinc plated steel - Maximum system load - See note below



### Motor Brackets

Dimensions (mm)	Cat. Number	Description
	6070518	Adjustable Motor Bracket with Spring Ring - Zinc-plated steel - Horizontally and Vertically adjustable - Lateral space requirement for installation: 27 mm - Maximum motor torque 50 Nm - Maximum system load - See note below
dia. 110 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6070519	<ul> <li>LT50 HA Motor Bracket</li> <li>Allows flush mounting of the motor head against the mounting surface</li> <li>Zinc plated steel</li> <li>Maximum motor torque - 50 Nm</li> <li>Maximum system load - See note below</li> </ul>
	6070522 6070523	LT RH Motor Bracket - Pin hole is vertical - Zinc plated steel - 10 mm square stud - Maximum motor torque - 25 Nm - Mounting Screws Cat. No 4000555 included - Maximum system load - 70 Kg. (154 Lbs.) Same as above except pin hole is horizontal
	6070524	LT60 Retrofit Bracket with Spring Ring - Zinc plated steel - Maximum motor torque - 80 Nm - Allows retrofitting new LT60 motor into old 600s brackets - Maximum system load - See note below
0 67 17.5 17.5	6070525	LT Motor Bracket with a Square 16 x 16 mm Stud - Zinc plated steel - Maximum motor torque - 80 Nm - Required spring ring Cat. No. 4350026 not included - Maximum system load - See note below



### Motor Brackets

Dimensions (mm)	Cat. Number	Description
	6070526	LT50 Angle Bracket - For ceiling and wall installation - Zinc plated steel - Horizontally and vertically adjustable - Maximum motor torque - 50Nm - Maximum system load - See note below - Replaces SOMFY Cat. No. 6070193
68 68 0 0 0 0 0 0 0 0 0 0 0 0 0	6070188	CTS50 Motor Mounting Bracket (Cord Take-Up System) - Zinc plated steel - Attaches directly to LT50 motor head (48 mm on center) - Adaptable for Nichibei headrail (70 x 70) - Maximum motor torque - 10Nm - Maximum system load - See note below





### **Idler Brackets**

Dimensions (mm)	Cat. Number	Description
	6080189	CTS50 Motor Idler Bracket (Cord Take-Up System) - Zinc plated - 10 mm square shaft with ball bearings - Adaptable for Nichibei headrail(70 x 70) - Maximum motor torque - 10Nm - Maximum system load - See note below
80 60 95 68 55 0 10, 12	6080254 6080255	LT Idler End Bracket (inside diameter 10 mm) - Zinc plated steel - 10 mm ID Nylon ball bearing - Compatible with motor bracket 6070082 and 6070513 - Maximum motor torque - 50 Nm - Maximum system load 130 Kg. (287 Lbs.) - Replaces Somfy Cat. No. 6080048 Same as above but with a 12 mm ID Nylon Ball Bearing - Replaces Somfy Cat. No. 6080228
	6080105	Idler Bracket 10 mm Ball Bearing and Holder Kit
	6080138 6080241	Nylon Ball Bearing with 10 mm ID Nylon Ball Bearing with 12 mm ID
3 Through Holes Ø 4.4	6080149	Ball Bearing Holder - Used with Cat. No. 6080138 or 6080241 ball bearings - Zinc plated steel - Maximum motor torque - 50 Nm - Maximum system load - up to 130 Kg. (287 Lbs.)
	6080116	Heavy Duty Idler Bracket - Used with end cap having stationary 16 mm diameter shaft (example Cat. No. 6090256) - Cotter pin holding end cap's shaft included - Zinc plated steel - Maximum motor torque - 100 Nm - Maximum system load - See note below
Ø 10 mm Ø 60	6080206	LT50 Round Anti-Vibration Idler Bracket - Zinc plated steel with a 10 mm round insert surrounded by rubber - Compatible with matching motor bracket Cat. #6070238 - Can be mounted on 6070526 - Maximum motor torque - 20Nm - Can reduce sound levels by 4-5 dB - maximum system load - See note below
80 60 22 0 0 48	6080218	LT50 Idler Bracket with 14 mm ID Bearing - Zinc plated steel - Adjustable bearing location - Maximum motor torque - 50 Nm - Maximum system load - See note below - Replaces SOMFY Cat. No. 6080217



### **Idler Brackets**

Dimensions (mm)	Cat. Number	Description
48	9080239 6080239 6050438	Idler End Bearing Support for 14 mm Diameter Shaft - Two threaded mounting holes for M5 screws - Sintered Brass in a zinc plated steel plate - Mounting hardware included - Compatible with shaft (Cat. No.6090207) and brackets (6070003 and 6070283) - Maximum motor torque 50 Nm - Maximum system load - See note below Same as above but hardware not included Idler End Bearing Support for 16 mm Dia. Shaft (no hardware)
	6080250	Idler End 12 mm Nylon Ball Bearing with Holder - Cast aluminum - Compatible with (bracket Cat. No. 6070506) - Maximum motor torque: - FTS range - 25 Nm - LT range - 100 Nm - Maximum system load - 130 Kg. (287 Lbs.)





### Idler Brackets

Dimensions (mm)	Cat. Number	Description
	6080262	White Dress Cover for Idler Brackets 6080254, 6080255 and motor brackets 6070082, 6070513 - White composite - Replaces SOMFY Cat. No. 6080252
	6080256	<ul> <li>Heavy Duty Idler Bracket with Idler End Cap Holder</li> <li>Two screws and cotter pin included</li> <li>Zinc plated steel, gauge 3(0.2391 in.)</li> <li>Used with end cap having stationary 16 mm diameter shaft</li> <li>Maximum motor torque when properly installed with cotter pin: <ul> <li>FTS range - 55 Nm</li> <li>LT range - 100 Nm</li> </ul> </li> <li>Maximum system load - 200 Kg. (441 Lbs.)</li> </ul>
	6080257	Idler End Cap Holder - Zinc plated steel - Compatible with bracket (Cat. No. 6070506) - Used with end cap having stationary 16 mm diameter shaft - Maximum motor torque when properly installed with cotter pin: - FTS range - 55 Nm - LT range - 100 Nm - Maximum system load - 200 Kg. (441 Lbs.) - Open end of the "U" must face up
	6080528	"U" Shaped Idler Bracket - Zinc plated steel - Idler bearing securing screw included - Maximum motor torque - 40Nm - Maximum system load - 115 Kg. (254 Lbs.)
Ø 12	6080529	Idler Bearing (for Ø 12mm Shaft) - Nylon - Maximum motor torque - 40Nm - Compatible with #6080528 - Maximum system load - 115 Kg. (254 Lbs.)



### Intermediate Brackets

Dimensions (mm)	Cat. Number	Description
	6050256	Heavy Duty LT Intermediate Support Bracket - Will adapt to any tube profile using tube matching LT drives - The 4 drives are not included and must be specified separately - Maximum motor torque: FTS range - 55 Nm, LT range - 100 Nm - Heavy gauge 3(0.24 in.), zinc plated steel - Extruded aluminum shaft with heavy duty roller bearing - Maximum system load - See note below
	6050269	Light Duty LT50 Intermediate Support Bracket for a 2" Tube - Maximum torque - 50 Nm - Zinc plated steel - Adjustable ball bearing location - 2 adjustable cast aluminum drives included along a steel shaft - Maximum system load - See note below
	6050347	LT50 Intermediate Bracket with 16 mm ID Bearing - Zinc plated steel - Cat. No. 6050438 16 mm bearing plate also sold separately - Cat. No. 6090252 square shaft also sold separately - Maximum motor torque: FTS range - 25Nm, LT50 range - 50Nm - Maximum system load - 69 Kg. (152 Lbs.)
72	6050360 6050371	LT50 Adjustable Intermediate Support Bracket for a 2" Tube - Zinc plated steel bracket - Cast aluminum drives, with set screw - set screw must use lock tight to prevent screw from vibrating free - Maximum motor torque: FTS range - 25Nm, LT50 range - 50Nm - Maximum system load - 69 Kg. (152 Lbs.) LT50 Adjustable Intermediate Support Bracket for a 2.5" Tube
	6050530	LT Intermediate Bracket for 2" Tube Only - Zinc plated steel bracket - Composite end caps - Maximum motor torque - 15 Nm - Requires properly notched 2" tube for transfer of torque - Recommended tube used included with 2" LT drives - Maximum system load - 69 Kg. (152 Lbs.) - Compatible with LT brackets 6070082,6080254, and 6080255
	6180451 6180452	LT50 Flexible Intermediate Bracket Kit for 2" Tube - Maximum angle up to 30° - Maximum effective motor torque - 7 Nm - Zinc plated steel bracket - Cast aluminum drives and flexible coiled steel shaft - Maximum system load - 28 Kg. (60 Lbs.) - Same as above except for maximum angle up to 45°



### End Caps

Dimensions (mm)	Cat. Number	Description
	6090005	Die Cast End Cap - For tube diameter 2" (50mm) - Shaft Diameter 0.39" (10mm) - Maximum motor torque - 50Nm - Maximum system load - See note below
	6090285	Same as Above but with 12 mm Shaft
	6090016	2" Anti-Vibration End Cap - For tube diameter 2" (50 x 1.5 mm, 50 x 1.6 mm) - Shaft Diameter 0.39" (10 mm) - Zinc plated steel parts with molded rubber - Maximum system load - See note below
	6090027 6090072	Molded Composite End Cap - For tube diameter 2.5" (63 mm) - Shaft Diameter 0.59" (15 mm) - Maximum motor torque - 40 Nm - Maximum system load - See note below - For tube diameter 2.0" (50 mm) - Shaft diameter 0.40" (10 mm) - Maximum motor torque - 50 Nm - Maximum system load - See note below
	6090162	2" Tube Idler End Cap without Shaft - Cast aluminum with set screw
	6090173	2.5" Tube Idler End Cap without Shaft - Cast aluminum with set screw
NOTE: Set screw must use Lock-tight to prevent screw from vibrating free.	6090184	2.75″ Tube Idler End Cap without Shaft - Cast aluminum with set screw
-	6090094	2" Tube Adjustable End Cap with 12 mm Diameter Shaft - Kit containing (6090162, 6090195) - Cast aluminum with set screw
	6090139	2" Tube Adjustable End Cap with 14 mm Diameter Shaft - Kit containing (6090162, 6090207) - Cast aluminum with set screw
	6090106	2.5" Tube Adjustable End Cap with 12 mm Diameter Shaft - Kit containing (6090173, 6090195) - Cast aluminum with set screw
NOTE: Set screw must use Lock-tight to prevent screw from vibrating free.	6090140	2.5" Tube Adjustable End Cap with 14 mm Diameter Shaft - Kit containing (6090173, 6090207) - Cast aluminum with set screw
For maximum system load of these parts - See note below	6090151	2.75" Tube Adjustable End Cap with 14 mm Diameter Shaft - Kit containing (6090184, 6090207) - Cast aluminum with set screw



### End Caps

Dimensions (mm)	Cat. Number	Description
	6090195	13 mm Square Drive Shaft with 12 mm Diameter Shaft - Zinc plated steel shaft
Q	6090207	13 mm Square Drive Shaft with 14 mm Diameter Shaft
213	6090256	Heavy Duty End Cap with 16 mm Diameter Shaft - Adaptable to any tube profile using matching LT drives - To be used with Idler bracket accepting stationary shaft Cat. No. 6080257 - Extruded aluminum shaft with heavy duty ball bearings - Maximum motor torque: - FTS range - 55 Nm - LT range - 100 Nm - Maximum system load - 200 Kg. (441 Lbs.)
	6090318	Roller Tube End Cap with 12mm Hole - For tube 50 x 1.5mm - Black composite with ball bearing - Maximum system load - See note below
Approx. 138	6090323	Universal End Cap for 2" Tube with 10 mm Collapsible Shaft - Requires notched 2" tube and 2" drive (Cat. No. 6061351) held in place with retaining clip included - Black composite - Maximum motor torque: - With awning - 50 Nm - With FTS - 25 Nm - Maximum system load - 40 Kg. (88 Lbs.)
Compresses to 12mm Retaining Clip #4210017 attaches here	6090324	<ul> <li>Same as above but with 12 mm shaft</li> <li>Both end caps are adaptable to other tube profiles using LT50 motor crowns and drives. SOMFY recommends using these end caps in conjunction with the LT drive.</li> <li>Same torque &amp; load rating as above.</li> </ul>
	6090325	Same as above but with 14 mm Shaft
	6090190	Idler End Cap for CTS 50 Tube - Maximum system load - See note below - Used with Cat. No. 6080189



### Miscellaneous

Dimensions (mm)	Cat. Number	Description
	4000551 (each)	LT50 Motor Mounting Screws- Flat Head, Self Tapping Tri lobe 5mm Dia. (13mm Deep) - Used with brackets Cat. No. 6070515 and 6070516 When using screws or brackets other than by SOMFY, please contact our sales department for complete motor mounting specifications.
	4000555 4000556	LT50 RH Motor Mounting Screws - Flat Head, Self Tapping Tri lobe 4mm Dia. ( 9mm Deep) ILT RH Motor Mounting Screws - Flat Head, Self Tapping Tri Lobe 5mm Dia. (12mm Deep)
	4350002	Cotter Pin - 3.5mm x 45mm
	4350026	Spring Ring - Used with Brackets and Motors rated up to 80 Nm maximum - Stainless steel spring type
	4350027	<ul> <li>Locking Spring Ring</li> <li>Must be used with all brackets in combination with the 6100R2 motor or installations where flexing of the tube is abnormally high</li> <li>Used with brackets and motors rated up to 100 Nm</li> <li>Spring type stainless steel</li> <li>Locking screw must be secured to prevent the motor from disengaging from the universal bracket</li> </ul>
Cs	4350028	Pull-off Tool for Spring Ring - Black finished steel
	4350029	Cord Setting Tool - Permits setting of the UP and Down positions when there is limited access to the motor's limit switch buttons - Instructions included
	4350030	Spring Ring with Loop - Used with Brackets and Motors rated up to 80 Nm maximum - Allows for easy hand removal from the bracket - Spring type stainless steel
	4350031	Limit Switch Button Extensions - Consists of 2 white and 2 yellow extensions



### Miscellaneous

Dimensions (mm)	Cat. Number	Description
	4350032	LT50 Stop Wheel - Screws into the motor output shaft to prevent drive from coming off shaft - Instructions included - Black composite stop
	4350036	LT60 Stop Wheel - Same as above but with a screw adaptable to the LT60 operators
	6020086	Tester Cable - 4 Wire - Allows for easy setting of the LT motor limit switches before
	6020087	connecting the motor to the controlling device FTS Tester Cable - 5 Wire - Same as above, but for the FTS (Fabric Tension System)
	6180500	CTS 50 Kit
	6050185	Headrail for CTS 50
	6050186	Headrail Cover for CTS 50
Laad daa	6050184	Finished Side Caps for CTS 50 Headrail
	6080183	Headrail Mounting Brackets
Ø 1.5 mm	6050090	Fabric Fastening Clip for 2" (50 mm) O.D. Tube - Made out of spring steel
	6050102	Fabric Fastener for 2.5" (63 mm) O.D. Tube



### Cables and Miscellaneous

Dimensions (mm)	Cat. Number	Description
	6020500 6020501 6020502 6020505	<u>Standard Motor Cables Without Plug (4 wire)</u> LT Motor Cable - 6 Ft. LT Motor Cable - 12 Ft. LT Motor Cable - 24 Ft. LT Motor Cable - 6 Ft. long with waterproof plug
	6020543 6020540 6020541 6020544 6020542	LT RTS and ILT Motor Cables Without Plug (3 wire) LT Motor Cable - 3 Ft. LT Motor Cable - 6 Ft. LT Motor Cable - 12 Ft. LT Motor Cable - 18 Ft. LT Motor Cable - 24 Ft.
	6020546 6020547 6020548 6020570 6020549	LT RTS and ILT Motor Cables With Plug Plug-in Cable with 5-15P NEMA Plug - 3 Ft. Plug-in Cable with 5-15P NEMA Plug - 6 Ft. Plug-in Cable with 5-15P NEMA Plug - 12 Ft. Plug-in Cable with 5-15P NEMA Plug - 18 Ft. Plug-in Cable with 5-15P NEMA Plug - 24 Ft.
Ø 109 (Ø 130 for 6050326)	6050337 6050326	50 x 1.5 mm (approx. 2") Tube Cord Take-up Reel - Material - Cast aluminum alloy - Shipped unassembled in 4 pieces - Adjustable tape width 63 x 1.5 mm (approx. 2.5") Tube Cord Take-up Reel
	6050517 6050519	2" Tube Take-up Reel (outside dia. 89mm) - Material ABS - Maximum tape width - 9 mm 40mm tube take-up reel (outside dia. 66mm)
	6061301 6061302	Anti-Blocking System (ABS) ABS Wheel - Left Rotation - Maximum motor torque - 30 Nm ABS Wheel - Right Rotation - Maximum motor torque - 30 Nm The input of the ABS wheel fits the LT50 motor shaft. The output shaft will accept any of the LT50 drive wheels. Drive retaining washer is included. In the up direction, 30 Nm can be lifted. If an obstacle is detected in the down direction then the motor will spin freely and not damage the product. A momentary switch or Somfy controls having 3 min. time out are required.
	6061303 6061305	Same as above but with greater torque threshold which is required to activate the ABS - CMO ABS left rotation - maximum motor torque - 30 Nm - CMO ABS right rotation - maximum motor torque - 30 Nm

### Crowns and Drives

Tube Profiles	Cat. Number	Description
	6061350 6061351	Basic Motor Crown 2.0" Round LT50 Drive (50mm x 1.5mm) - Soft clip 2.0" Round LT50 Drive (50mm x 1.5mm) - Hard clip
	6061414 6061352 6061316 6061317	2.5" Round LT50 Crown 2.5" Round LT50 Set "Hard Clip" 2.5" Round LT Drive (63 mm x 1.5 mm) - Soft clip 2.5" Round LT Drive (63 mm x 1.5 mm) - Hard clip
	6060158 6060181 6061353 6061400 6061354 6061318	2.75" Round LT50 Crown 2.75" Round LT60 Crown 2.75" Round LT50 Set 2.75" Round LT60 Set 2.75" Round LT Drive (70 mm x 1.5 mm) - Soft clip 2.75" Round LT Drive (70 mm x 1.5 mm) - Hard clip
	6061385 6061415 6061355 6061386 6061356	50mm Octagonal LT50 Crown 60mm Octagonal LT50 Crown 60mm Octagonal LT50 Set 50mm Octagonal LT Drive 60mm Octagonal LT Drive
	9060271 6061357 6061322	70 mm Octagonal LT50 Crown 70 mm Octagonal LT50 Set 70 mm Octagonal LT Drive
	6060306 9060271 6061331	70mm Octagonal LT60 Crown 70mm Octagonal LT50 Crown 70mm Octagonal Aluminum LT50/60 Drive Wheel Kit
	6060306 6061401 6061322	70 mm Octagonal LT60 Crown 70 mm Octagonal LT60 Set 70 mm Octagonal LT Drive



### Crowns and Drives

Tube Profiles		Cat. Number	Description
	T	6060653	I65 LT50 Crown
	SI SI	6061366	I65 LT50 Set
		6061365	I65 LT50 Drive
		6060428	DS 70 LT50 Crown (3 mm offset)
$\left( \begin{array}{c} \mathbf{v} \end{array} \right)$		6061360	DS 70 LT50 Set (3 mm offset)
	S.S.	6061361 6060370	DS 70 LT Drive (0.8 -1 mm wall thickness) (3 mm offset) DS 70 LT Drive (1.2 -1.5 mm wall thickness) (3 mm offset)
	C	6060585	DS 74 LT50 Crown
	1000 C	6061362	DS 74 LT50 Set
	<u> I</u>	6061363	DS 74 LT Drive
	$\bigcirc$	6060619 6060473	DS 78 LT50 Crown DS 78 LT60 Crown
$\left( \begin{array}{c} \bullet \\ \bullet \end{array} \right)$		6061364	DS 78 LT50 Set
		6061325	DS 78 LT Drive
		6060855 + 6061414	DS 78/R LT50 Crown (4.4 mm offset)
$\left(\begin{array}{c} 0\\ \end{array}\right)$		6060855	DS 78/R LT60 Crown (4.4 mm offset)
	E)	6061324	DS 78/R LT Drive (4.4 mm offset)
	$\bigcirc$	6061126 + 6061414	DS 78/D LT50 Crown (2.5 mm offset)
( )	<u></u>	6061126	DS 78/D LT60 Crown (2.5 mm offset)
		6061326	DS 78/D LT Drive (2.5 mm offset)
A	$\bigcirc$	6061238 6061216	DS 85 LT50 Crown DS 85 LT60 Crown
(  )	ser an	5001210	
	Ś	6061327	DS 85 LT Drive
K TT X	O	6061368	SM 65 LT50 Crown - 3 Grooves
		6061369	SM 65 LT Drive



### Crowns and Drives

Tube Profiles	Cat. Number	Description
500	6061375	AMA71 LT50 Crown
	6061374	AMA71 LT50 Drive
	6060394	P72 LT60 Crown (4 mm offset)
	9060338	P72 LT50 Crown Set (4 mm offset)
	6061358	P72 LT50 Set (4 mm offset)
	6061323	P72 LT Drive (4 mm offset)
	6061376	LT60 Drive (78 mm)
	6061377	LT60 Crown (78 mm)
	6061092	I85 LT60 Crown
	6061115	185 LT60 Set
	6061328	185 LT Drive
	6060563 6060530	3.5" Round LT50 Crown (81mm x 1mm) 3.5" Round LT60 Crown (89mm x 2mm)
	6061359	3.5" Round LT50 Set
	6061402 6061320	3.5" Round LT60 Set 3.5" Round LT Drive (89 mm x 2 mm)
	6061319	3.5" Round LT Drive (89 mm x 1 mm)
	6060877	4.0" Round LT60 Crown
()	6060934	4.0" Round LT60 Set
	6061321	4.0" Round LT Drive (102 mm x 2 mm)
	6061380	2" LT Drive for CTS 50 Tube
	0001380	



# SOMFY CMO Cables and **Mechanical Accessories**

Dimensions (mm)	Cat. Number	Description
	6020510 6020511 6020512 6020515	Standard LT CMO Motor Cable - 6 ft. Standard LT CMO Motor Cable - 12 ft. Standard LT CMO Motor Cable - 24 ft. Standard LT CMO Motor Cable - 6 ft. Long with Waterproof Plug
	6020550 6020551 6020554 6020552	LT RTS CMO Motor Cable - 6 ft. LT RTS CMO Motor Cable - 12 ft. LT RTS CMO Motor Cable - 18 ft. LT RTS CMO Motor Cable - 24 ft.
	6020557 6020558 6020560 6020559	LT RTS CMO Cable with 5-15P Right Angle NEMA Plug - 6 ft. LT RTS CMO Cable with 5-15P Right Angle NEMA Plug - 12 ft. LT RTS CMO Cable with 5-15P Right Angle NEMA Plug - 18 ft. LT RTS CMO Cable with 5-15P Right Angle NEMA Plug - 24 ft.
$ \begin{array}{c} 156 \\ 000 & 000 \\ 0000 & 000 \\ 0000 & 000 \\ 0000 & 000 \\ 0000 & 000 \\ 0000 & 000 \\ 00$	6110500	Standard LT and LT CMO Motor Mounting Plate - Allows for different orientation of the LT CMO motor head in 15° increments - Zinc plated steel - Maximum motor torque - 100 Nm - Maximum system load - See note below
	6110501	<ul> <li>CMO 100 x 100 mm LT Motor Mounting Bracket</li> <li>Fits most shutter end caps</li> <li>Allows for easy replacement of the BMOM/BMO motor utilizing existing mounting holes</li> <li>Zinc plated steel</li> <li>Maximum motor torque - 100 Nm</li> <li>Maximum system load - See note below</li> </ul>
	6250500	LT50 Manual Override Differential - The input of the differential accepts the LT50 motor shaft - The differential's output shaft can be adapted to any tube profile using the LT50 drive wheels - Maximum motor torque 40 Nm. Gain ratio 1:4 - Maximum system load - See note below
	6250505 6250506	LT50 Differential Torque Tube Connectors - For square link bars (16 x 1 mm) - Zinc plated steel - For round link bars (Dia. 16 x 1 mm)



## **CMO** Mechanical Accessories

Dimensions (mm)	Cat. Number	Description
	6250685	<ul> <li>CMO Motor Limit Setting Tool</li> <li>Allows setting the travel limits of the motor when the limit switch buttons are hard to access</li> <li>Zinc plated steel</li> </ul>
000000 000000 000000 000000 000000 00000	6250700	<ul> <li>CMO Round Awning Motor Bracket</li> <li>U.S. thread 1/4 - 20, 5/16 - 18 threads</li> <li>Delivered without motor mounting screws</li> <li>Black finished aluminum alloy</li> <li>Maximum motor torque - 100 Nm (must be used with 5/16 - 18 bolts at maximum torque)</li> <li>Maximum system load - See note below</li> </ul>
	6250701	<ul> <li>CMO ME Square Awning Motor Bracket</li> <li>U.S. thread 1/4 - 20, 5/16 - 18 threads</li> <li>Delivered with two motor mounting screws (3/16" Socket Head)</li> <li>Black finished aluminum alloy</li> <li>Maximum motor torque - 100 Nm (must be used with 5/16 - 18 bolts at maximum torque)</li> <li>Maximum system load - See note below</li> </ul>







## **CMO** Mechanical Accessories

Dimensions (mm)	Cat. Number	Description
	6250702	<ul> <li>CMO Motor Bracket</li> <li>Converts a CMO motor head to be compatible with standard LT brackets</li> <li>Allows the motor to be rotated in 60° increments</li> <li>Delivered with two motor mounting screws</li> <li>Black composite</li> <li>Maximum motor torque - 80 Nm</li> <li>Maximum system load - See note below</li> </ul>
• L	6250710	CMO Awning Eye with 2.36" (60 mm) Long 7 mm Hex Shaft
	6250711	CMO Awning Eye with 6.5" (165 mm) Long 7 mm Hex Shaft
	6250713	CMO Awning Eye with 4" (100 mm) Long 7 mm Hex Shaft
	6250712	LT CMO Awning Eye Compatible with Geiger Crank Handles - Length of the shaft is (100 mm) 4" - Stainless steel pin for eyepiece mounting to 7 mm Hex shaft - Stainless steel stop washer & socket head screw (also sold separately) - Zinc plated steel shaft
	4100122 4000104	<ul> <li>Stainless steel lock washer</li> <li>Stainless steel M4 socket head screw</li> </ul>
	6250715	CMO Extension Shafts - 7 mm Hex, 8.66" (220 mm) long - Zinc plated steel
	6250716	- 7 mm Hex, 13" (330 mm) long - Zinc plated steel
	6250717	Connecting Sleeves - 7 mm Hex to diameter 11.3 mm Zinc plated steel
000	6250718	<ul> <li>Zinc plated steel</li> <li>7 mm Hex to 8 mm Square</li> <li>Zinc plated steel</li> </ul>
	6250719	- 7 mm Hex to 7 mm Hex - Zinc plated steel
60° 26 666	6250720	CMO Extension Shaft with Universal Joint - Shaft 7 mm Hex, 12.4" (315 mm) long - zinc plated steel - Output of the universal joint is a 12 mm diameter hole - Universal joint - White powder coated steel - Color: white fixing plate - 60° outlet



# **SOMFY** CMO Mechanical Accessories

Dimensions (mm)	Cat. Number	Description
	6250721	CMO Extension Shaft with Awning Eye and Plate - Shaft 7 mm Hex, 10.25" (260 mm) long- Zinc plated steel - Color: white fixing plate with black awning eye - 60° outlet
	6250723	LT CMO 70 Degree, 4 Hole Plate SS Crank Handle Universal Joint - Compatible with 14 mm diameter bell type connectors - Material: Stainless steel and nickel plated zinc casting plate - 7 mm hex shaft: Steel, zinc plated
	6250724	LT CMO 90 Degree, 2 Hole Plate SS Crank Handle Universal Joint - Material: Stainless steel and nickel plated zinc casting plate
	6250725	LT CMO 90 Degree, 4 Hole Plate SS Crank Handle Universal Joint
	6250730	7 mm Hex to 7 mm Hex Universal Joint Adaptor
	6250731	7 mm Hex to 8 mm Square Universal Joint Adaptor
	6250732	7 mm Hex to 8 mm Square Double Universal Joint Adaptor



# LT50/60 and LT50/60 CMO Mechanical Accessory Kits

Product Kit	Cat. Number	Description of Parts	Quantity
U.S. 3/4 inch SS Hardware Kit	6180001 4000075 4200013 4200014	1/4 - 20 x 3/4 hex head SS 18-8 bolt 1/4 flat washer SS 18-8 1/4 split lock washer 18-8	2 2 2
U.S. 1 inch SS Hardware Kit	6180002 4000100 4200013 4200014	1/4 - 20 x 1 hex head SS 18-8 bolt 1/4 flat washer SS 18-8 1/4 split lock washer 18-8	2 2 2
U.S. 1.25 inch SS Hardware Kit	6180003 4000125 4200013 4200014	1/4 - 20 x 1.25 hex head SS 18-8 bolt 1/4 flat washer SS 18-8 1/4 split lock washer 18-8	2 2 2
Metric 20 mm SS Hardware Kit	6180005 4000461 4100121 4200015	M6 x 20 mm hex head cap screw SS Lock washer split M6 SS A2 M6 flat washer SS A2	2 2 2
Metric 25 mm SS Hardware Kit	6180006 4000462 4100121 4200015	M6 x 25 mm hex head cap screw SS Lock washer split M6 SS A2 M6 flat washer SS A2	2 2 2
Metric 30 mm SS Hardware Kit	6180007 4000454 4100121 4200015	M6 x 30 mm hex head cap screw SS Lock washer split M6 SS A2 M6 flat washer SS A2	2 2 2



## LT50/60 and LT50/60 CMO Mechanical Accessory Kits

Product Kit	Cat. Number	Description of Parts	Quantity
CMO Round Awning Override Kit	6180700 4000125 4000464 4100116 4200013 4200014 6250700 6250710 7000052	1/4 - 20 x 1.25 hex head SS18-8 bolt 1/4 - 20 x 7/8 socket head cap screw Nut hex 1/4 - 20 18-8 SS 1/4 flat washer SS 18-8 1/4 split lock washer 18-8 CMO awning bracket with US thread CMO awning override short shaft Plastic bag 5 x 6 x .04	2 2 4 2 1 1 1
CMO ME Square Awning Override Kit	6180701 4000075 4000125 4100116 4200013 4200014 6250701 6250710 7000052	1/4 - 20 x 3/4 hex head SS 18-8 bolt 1/4 - 20 x 1.25 hex head SS18-8 bolt Nut hex 1/4 - 20 18-8 SS 1/4 flat washer SS 18-8 1/4 split lock washer 18-8 CMO awning bracket with ME US thread CMO awning override short shaft Plastic bag 5 x 6 x .04	2 2 2 4 2 1 1 1
CMO Awning Kit without Awning Eye	9250700 4000125 4000464 4100116 4200013 4200014 6250700 7000052	1/4 - 20 x 1.25 hex head SS18-8 bolt 1/4 - 20 x 7/8 socket head cap screw Nut hex 1/4 - 20 18-8 SS 1/4 flat washer SS 18-8 1/4 split lock washer 18-8 CMO awning bracket with US thread Plastic bag 5 x 6 x .04	2 2 2 4 2 1 1
CMO ME Awning Kit without Awning Eye	9250701 4000075 4000125 4100116 4200013 4200014 6250701 7000052	1/4 - 20 x 3/4 hex head SS 18-8 bolt 1/4 - 20 x 1.25 hex head SS18-8 bolt Nut hex 1/4 - 20 18-8 SS 1/4 flat washer SS18-8 1/4 split lock washer 18-8 CMO ME awning bracket with US thread Plastic bag 5 x 6 x .04	2 2 2 4 2 1 1



# Installation Instructions

LT Range



Installation of the drive wheel to the motor shaft: Push the drive into the motor shaft until you hear a "click". Two clips lock the drive wheel into the motor shaft.

There are two types of LT drive wheels: Removable or "Soft Clip" type, and fixed or "Hard Clip" type.

The "Soft Clip" drives are available only for round tubes in 2", 2.5" and 2.75" diameters. The drive wheel can be removed by physically pulling it off the motor shaft. For the ease of identification all "Soft Clip" drives are brown.

The "Hard Clip" drives can only be removed from the shaft by pressing the two clips inward at the same time. The motor must be out of the tube in order to have access to the clips. These drives are black.

Installation in round tubes:

The drive must be riveted to the tube after the motor is inserted. See page 62 for required fastener size and quantity.

#### Installation in profiled tubes:

The drive doesn't need to be riveted to the tube because it is already in a positive lock position within the profiled tube.





# Installation Instructions LS40, LT50/60, LT50 RH



#### Determining the Tube Length (B):

Clear dimension (A)

- Space requirement for motor bracket (C)
- Space requirement for idler bracket (D)
- = Tube length (B)

The dimensions for the lateral space requirement for the motor brackets and idler brackets depends on the bracket design in each instance. They also include the space requirements for the motor head which are listed on pages 10-12.

#### Installation

- Attach motor brackets
- Provide opening for the motor cables
- Install the motor in the tube. Only push the motor into place. Never hit into place with a hammer!

#### **Profiled Tubes**

Push on the motor crown and drive wheel (which fit the prefinished tube) and slide motor inside the tube.

#### Round Tubes

Notch the tube on the motor side for the basic motor crown and push on the drive wheel. Now slide the motor into the tube in such a way that the raised key of the crown comes to rest in the cut notch.

		A	<u> </u>	
Notch:	LS40 Length =	= 8.5 mm	Width =	6 mm
	LT50	25 mm		4 mm
	LT60	35 mm		8 mm

Rivet or screw the drive wheel in place at four points at a distance R from the motor side.

Self Tapping screws:	4 pcs., 5 x 10mm
Blind rivets:	4 pcs., diameter 5mm, steel

NOTE: To ensure a safe installation, we recommend that the idler end cap be secured to the tube with 3 blind rivets. When using fasteners other than supplied by SOMFY, it is imperative that they are of steel SAE Grade 5 or higher. (8.8 for metric fasteners), accompanied with locking type washers.

NOTE: When selecting mechanical accessories the following specifications must be followed:

- Maximum motor torque rating of the components
- Static (dead) load of all system components supported by the motor head and mounting brackets must be within their capacity
- Effective motor torque is equal to the maximum motor torque less torque losses in the system due to friction, misalignment etc... For design purposes SOMFY recommends this value to be 70% of the maximum motor torque.



### Installation Instructions LS40, LT50/60, LT50 RH



#### Motor Cable Positioning

Depending on the application, the motor cable can pass through the center or side of the motor head. In the LT50/60 versions simply raise the yellow cover plate slightly, reposition the cable and then press the cover plate into place.

#### Mounting the Motorized Tube

#### LS40 and LT50 RH

The motor brackets for the LS40 and LT50 RH are screwed directly into the head of the motor as illustrated at left.

#### LT50/60

The motor brackets for the LT50/60 are equipped with a spring ring. This spring ring must be used and does not have to be removed for installation. You can press the motor axially into the motor bracket in any of 6 positions, so that the limit switch adjustment buttons are always easily accessible. When the motor engages the motor bracket, the spring ring makes a click sound. The spring ring keeps the motor head securely seated in the bracket for even torque distribution. For higher torque applications a locking spring ring with screw must be used in place of the standard spring ring.

#### Testing the Motor - Test Run 1

- Connect the motor tester cable (Cat. No. 6020086) to the motor cable, match the wire colors and connect to power.
- Remove yellow protective cap from limit switch adjustment buttons.
- Press both limit switch adjustment buttons in (they will automatically remain locked).
   When the limit switch adjustment buttons are pushed in, the motor has no stop position shut-off points. The number of revolutions is unlimited.

#### Attaching Rolling Shutter, Awning, Screen...

Now you can attach the interior, or exterior window treatment to the tube. Caution! Never drill in the vicinity of the motor, or use

screws that could penetrate the motor.

# Adjustment of Upper and Lower Positions for LT50/60 motors

- Both limit switch adjustment buttons have been depressed since Test Run 1.

#### Stop Position 1

- Bring end product into the desired stop position 1 (direction of rotation 1)
- Release the limit switch adjustment button that lies in the direction of rotation 1 by pressing it down again.
   Stop position 1 is now set.



# Installation Instructions LS40, LT50/60, LT50 RH





#### Position 2



#### LS40

Stop Position 1 Depending upon type of installation



#### Stop position 2

- Bring end product into stop position 2 (direction of rotation 2)
- Release the limit switch adjustment button that lies in the direction of rotation 2 by pressing it down again.
   Stop position is now set.

Always attach protective cap over limit switch adjustment buttons.

NOTE: It is important to note that SOMFY motors are weatherproof, but NOT WATERPROOF and therefore the motor head should not be exposed to direct rainfall.

#### Test Run 2

Allow the motor to run in both directions, until it shuts off in the stop positions. Because of the built-in thermal protection feature, the motor may shut off automatically after running without interruption for an extended period of time. Please wait until the motor has cooled off and is ready for operation again (approximately 10-15 minutes).

Changing a Set Stop Position...

- Press the limit switch adjustment button that lies in the direction of rotation.
- Bring the end product into the desired stop positon.
- Release the limit switch adjustment button by pressing it down again.

# Adjustment of Upper and Lower Positions for the LS40 Motor

- Connect the motor tester cable (Cat. No. 6020086) to the motor cable, match the wire colors and connect to power.
- Identify the UP recessed limit screw by finding the arrow on the motor head which points in the direction that retracts (rolls up) the system.
- Turn the power on to ensure that the switch is operating properly (UP-raises, DOWN-lowers). If not, turn the power off and simply reverse the black and red motor leads.
- Flip the tester cable switch in the UP direction. If the system stops before its UP limit, turn the UP screw to "+" until necessary. If the system does not stop at its UP limit, flip the tester cable switch off and turn the UP screw to "-". Repeat this until correct setting is achieved.

NOTE: 7 Turns of Hex Screws equals 1 turn of roller tube.

- Flip the tester cable switch in DOWN direction. If the system stops before its DOWN limit, turn the DOWN limit screw to "+". If not, flip the tester cable switch off and turn the DOWN limit screw to "-". Repeat this until correct setting is achieved.

NOTE: Recessed thumbscrews can accomodate a flat head screwdriver, SOMFY's Allen wrench or Flexible limit switch adjuster.



# LT50/60 CMO and LT50 RTS CMO

HOOD

### Programming and Limit Setting Instructions

For initial programming, provide power only to the motor being programmed. For awning installations, an awning hood is strongly recommended and a drip loop should be formed to prevent water from entering the head of the motor as shown in Fig. (1).

Follow the steps below to program the motor and set the limits.

1) Provide power to the motor.

Remove cap as shown in Fig. (2) and depress both limit switch buttons until they lock in the down position.

To assign the transmitter to communicate with the motor, push the UP and DOWN buttons on the transmitter simultaneously until the motor jogs briefly up and down then release. See Fig. (3).





2) Check the direction of operation.

The DOWN button should correspond with the down direction of the end product (for awnings DOWN extends the awning).

If the direction is wrong, press the STOP button on the transmitter as shown in Fig. (4) until the motor jogs. Check the direction again to make sure it is correct.

#### 3) Setting the UP and DOWN limits

Press the UP button of the transmitter until the end product reaches the required UP position, then stop it. Unlock the UP limit switch on the motor head by pressing and releasing it. The UP limit is now set. Repeat the above operation to set the DOWN limit.

4) Recording the settings on your transmitter Press the programming button on the back of the transmitter and release when the product jogs briefly UP and DOWN. The transmitter is now memorized into the motor. Note: On 4 channel transmitters, verify the desired channel selection before pressing the programming button.



Yellow Button



5) Setting the intermediate position

Upper Intermediate Position: Bring the product to its upper limit. Press the STOP and DOWN buttons simultaneously then release. When the product reaches the desired intermediate position, press the STOP button. Make adjustments if needed. Press the STOP button again until the motor jogs then release. Lower Intermediate Position: Bring the product to its lower limit. Press the STOP and UP buttons simultaneously then release. When the product reaches the desired intermediate position, press the STOP button. Make adjustments if needed. Press the STOP button again until the motor jogs then release.

6) Adding and deleting a transmitter or transmitter channel

To Add a transmitter/channel, press the programming button of an already recorded one until the motor jogs. Select the transmitter/channel to add and press the programming button until the motor jogs.

To Delete a transmitter/channel, press the programming button of an already recorded one until the motor jogs. Select the transmitter/channel to delete and press the programming button until it jogs.

Note: These instructions are for reference only. For more detailed instructions please refer to the installation instructions packaged with the motor or at www.somfysystems.com under "Technical Documentation".



# Installation Instructions

### ILT and SLT Motors



#### ILT Motor

- The "electronic limits" of SOMFY's ILT motors are set from the Decorator ILT switch. It controls and sets the limits of a single motor.

#### Setting the Limits

- Connect the ILT switch to the motor's modular cable.
- Set the dip switch (located on back of switch) with 1 ON and 2 OFF. Press and hold the DOWN arrow on the switch to move the window treatment to the desired lower limit. If the treatment moves in the opposite direction, release the DOWN button and depress the STOP button for 2 seconds. This will reverse the operation of the UP and DOWN buttons.
- Move the motor to the desired lower limit and return both dip switches to OFF. The lower limit is now set.
- Set the dip switch with 1 OFF and 2 ON. Move the window treatment to the desired upper limit by pressing and holding the UP button on the ILT switch. Return both dip switches to OFF. The upper limit is now set.
- To set an intermediate position, move the window treatment to the desired position and press the STOP button, holding it for at least 5 seconds. Afterwards, the window treatment will move to the intermediate position by simply pressing the STOP button while the motor is at rest.
- For operation of the ILT switch, please refer to ILT switch Instructions.

#### SLT Motor

- The SLT motor comes in two versions: Left Mount (blue and yellow buttons), and Right Mount (blue and white buttons). Please make sure that you have the correct version for your installation.

#### Setting The Limits

- The setting of the SLT motor limits is the same as the standard LT motor with one exception. The upper limit setting which is always controlled by the blue button must be set as follows:
- Press down the blue button until it locks in a down position.
- Using the SOMFY tester cable retract the awning to approximately 4 inches from closing.
- Release the blue limit switch adjustment button.
- The upper limit is now set.
- If the blue button does not correspond to the upper limit, then the wrong type of motor is being used.



## Altus RTS and Orea RTS Motor

Programming and Limit Setting Instructions

(Note: Orea RTS motor was designed for cassette awnings only)

# **Factory Mode**

In this mode the transmitter has not been assigned to communicate with the motor and the limits have not been set







1) To assign the transmitter to communicate with the motor's receiver, push the UP and DOWN buttons on the transmitter SIMULTANEOUSLY and release the buttons after the end product jogs briefly UP and DOWN indicating the transmitter can now operate the motor for programming. The motor will now operate in a momentary fashion.

2) Check direction of operation. The DOWN button must correspond to DOWN on the motor. In the case of an awning, It will open or extend the awning. If the direction is wrong, press the STOP button on the transmitter until the motor jogs briefly UP and DOWN (approx. 5 seconds) and then release. Verify that the direction has changed and now corresponds to the transmitters UP and DOWN buttons.

- 3) Adjust the end product to the up position. This is necessary to establish a reference starting point. Read the complete limit setting procedure before proceeding with setting the UP and DOWN limits.
- 4) Setting of the END LIMITS (always start at the upper reference point (UP limit). Note: an extension of 4" is required as a starting point for the Orea RTS (cassette awning motor) only.



- A. To set the DOWN limit, press the STOP and DOWN buttons for more than 2 seconds, until the product begins moving down (Fig. 1). Release the buttons once the product begins to move, and be prepared to stop it at its DOWN limit.
- B. Press the STOP button to stop the motor when it reaches the desired down position (Fig. 2). The DOWN limit is now set.

If necessary, adjust the correct down position using the UP and DOWN buttons. Remember at this point the motor moves for only as long as you keep your finger on the button (momentary operation).





- > 2 seconds
- C. To set the UP limit, press and hold the STOP and UP buttons for more than 2 seconds, until the product begins to move up (Fig. 3). Release the buttons once the product begins to move. It will stop at its upper limit automatically. Adjust if necessary using the UP or DOWN buttons.

NOTE: It is not necessary to adjust the UP limit on an OREA RTS motor since it is automatically set once the cassette awning is completely closed.

D. To confirm these limit positions, press and hold the STOP button for more than 2 seconds, until the application jogs briefly UP/DOWN (Fig. 4), indicating the limits have been memorized by the motor. The setting of the end limits is now complete.





Programming and Limit Setting Instructions

# **Notaller Mode**

In this mode the UP and DOWN limits have been set and can be readjusted if necessary as shown below.

1) Provide power to the motor. Press the UP, STOP or DOWN button (independently) on any RTS transmitter in order to take control of the motor. <u>Check that the motor is in INSTALLER MODE</u>. (Motor responds to transmitter in momentary fashion)

2) Recording the first Transmitter or Channel (On 4 channel transmitters, you should select the desired channel before pressing the programming button).





A. Press the programming button on the back of the RTS transmitter and release it when the endproduct jogs briefly UP/DOWN indicating that the transmitter has been memorized into the motor

3) Readjusting the UP or DOWN limit after the transmitter has been programmed.





- A. To readjust the down or awning extended limit, first bring the product all the way to its DOWN limit using the transmitter. The motor must reach the DOWN position on its own.
- B. After the motor has stopped, press the UP and DOWN buttons simultaneously for 5 seconds or more until the product jogs briefly UP/DOWN indicating that the motor is in the "END LIMIT <u>SETTING STATE</u>".



- C. Now adjust the product to its new DOWN limit keeping in mind that the motor will respond to the transmitter in a momentary fashion.
- D. Record the new DOWN limit by pressing the STOP button for 2 seconds or more until the product jogs briefly UP/DOWN indicating the change has been memorized in the motor.

The new DOWN limit has been recorded.

E. Repeat the same procedure for the UP or retracted limit, if necessary. OREA RTS motors automatically adjust their UP limit and never need to be readjusted.



### Altus RTS and Orea RTS Motor Programming and Limit Setting Instructions

# **User Mode**

In this mode the product is ready for operation by the end user.

One Intermediate Position (IP) can be programmed into the ALTUS/OREA RTS motor as shown below.

1) Recording the Intermediate Position (IP)



- A. Using the UP or DOWN button on your transmitter bring the product to the desired intermediate position and press STOP.
- B. Now press the STOP button again for 5 seconds or more until the end-product jogs briefly UP/DOWN indicating that the intermediate position has been memorized in the motor.
- USING THE INTERMEDIATE POSITION Manually: Press the intermediate button (STOP button) when the motor is not in motion.

Automatically: When the SOLIRIS RTS sensor reaches the set DAYLIGHT THRESHOLD, it gives a DOWN command. The end-product will move to the intermediate position only if the intermediate position has been programmed. Otherwise it will move to the DOWN limit.

TO DELETE THE INTERMEDIATE POSITION

Reach the intermediate position. Then press on the STOP button and hold it (approx. 5 sec.) until the end-product jogs briefly. The IP has been deleted.

2) Add or Delete a transmitter/channel in the memory of the ALTUS/OREA RTS motor. The procedure is the same whether you're adding or deleting a channel. If the transmitter/channel has not been previously memorized it will be added instead of deleted.

>2 Seconds Transmitter previously recorded

New Transmitter

Activate the motor memory by pressing the programming button of the transmitter/ channel already recorded in the motor's memory for more than 2 seconds.

Release it after the end-product jogs briefly UP/DOWN indicating that the motor is in PROGRAMMING STATE.

Select the transmitter/channel you wish to memorize in the motor. Press briefly on the programming button of the new RTS control you wish to assign or delete.

Release it after the end-product jogs briefly UP/DOWN indicating that the transmitter has been memorized or deleted in the ALTUS/OREA RTS motor.

Repeat this procedure for each additional transmitter/channel you wish to add or delete. It is not possible to delete the transmitter/channel used to enter the programming state.



# Altus RTS and Orea RTS Motor

Programming and Limit Setting Instructions

- 3) Resetting the motor's memory and recording a new transmitter when the only transmitter is lost.
- \*\*A. Perform a double power cut in the following sequence:
  - 1. Power-off 2 sec. minimum
  - 2. Power-on 5 to 15 seconds
  - 3. Power-off 2 sec. minimum

4. Power-on The end product moves for 5 seconds in one direction, to indicate that the double power cut has been recorded. The motor is in a PROGRAMMING STATE for 2 minutes.

- B. Recording a New Transmitter Press the programming button of the NEW RTS transmitter For 1 second max. Release it after the end-product jogs briefly UP/DOWN indicating that the transmitter has erased all previous transmitters and recorded the NEW one.
- C. Restoring Factory mode with a New Transmitter Press and HOLD the programming button of the NEW RTS transmitter for more than 7 seconds. The end-product will jog briefly UP/DOWN twice. Once after 1 second and again after 7 seconds. This indicates the ALTUS/OREA RTS motor has been completely cleared.



NEW TRANSMITTER

#### \*\*RESETTING MOTORS BACK TO USER MODE

WARNING: This type of power cut affects all the ALTUS RTS motors on the same power line. To avoid resetting of non-concerned motors, press briefly any button of their assigned transmitter/channel (UP, STOP, or DOWN). The non-concerned motors will return to USER MODE.

4) Back to the factory configuration (to completely reset the ALTUS RTS motor memory)

\*\*A.Perform a power cut in the following sequence:

- 1. Power-off 2 sec. minimum
- 2. Power-on 5 to 15 seconds
- 3. Power-off 2 sec. minimum
- 4. Power-on

STATE for 2 minutes.

The end product moves for 5 seconds in one >5 sec. direction, to indicate that the double power cut has been recorded. The motor is in PROGRAMMING

# **PREVIOUSLY RECORDED TRANSMITTER**





B. Restoring Factory Mode with a Previously Recorded Transmitter Press and HOLD the programming button of the NEW RTS transmitter for more than 7 seconds. The end-product will jog briefly UP/DOWN twice. Once after 1 second and again after 7 seconds. This indicates the ALTUS/OREA RTS motor has been completely cleared.



# **SOMFY** Operator Wiring Instructions





WARNING: Do not wire two or more LT operators to one single pole switch. This will cause the motors to malfunction.

Incorrect



#### LT MOTOR WIRING COLOR CODE

120V AC	CODE
BLACK	WHITE PUSH-BUTTON
RED	YELLOW PUSH-BUTTON
WHITE	(C) COMMON
GREEN	(G) GROUND

Note: Only RTS and ILT motors can be wired in parallel.

#### LT50 ALTUS RTS AND LT50 RTS CMO MOTOR WIRING COLOR CODE

120V AC	CODE
BLACK	(H) HOT
WHITE	(N) NEUTRAL
GREEN	(G) GROUND



## **Operator Wiring Considerations**



Because of the type of motor (Asynchronous with built-in capacitor) and the built-in limit switches, it is important to follow two important recommendations to assure proper operation of the motorized systems - SOMFY Operators are not universal motors.

		SYMBOLS	
M1	Microswitch	W2	Motor Winding
M2	Microswitch	TP	Thermal Protector
С	Capacitor	GND	Ground
W1	Motor Wiring		

The operator is connected to a 120V-60HZ power source through a single pole (or double pole), double throw, center off switch.

1. Do Not Wire SOMFY Operators in Parallel (Does not apply to RTS or ILT motors). Parallel Wiring Means: Several Operators are Wired to Only One Electrical Contact Per Direction of Rotation.

There will be constant feedback from one motor to another, so stopping points will not be stable and there is a risk of motor burn out.

#### Correct:

Correct wiring solution is to use a double pole, double throw, center off switch which would isolate both motors.

#### Incorrect:

Motor A stops at its limit in direction 2 before Motor B. Current in Motor B feeds back to motor A through capacitor C2 and microswitches M3 and M1. Both operators keep rotating in opposite directions at reduced power.

2. Do Not Control One SOMFY Operator from Several Locations Without Using Proper Controller.

#### Correct:

Possible problem: When switch (1) is turned on, the motor will begin running in direction 1. As it reaches its limit, the microswitch M1 will open. If, at the same moment in time switch (2) is turned on, the motor will operate in the opposite direction. This is why we recommend the use of momentary switches with the Multi-Switch Command (MSC).

#### Incorrect:

The microswitch M1 closes, shortcircuiting the capacitor which is loaded at its maximum voltage (180V). As a result the microswitch M1 is damaged.

Solution: Use relays to build priorities between controls sending opposite signals. Do not use a standard "light" switch as a motor control.

NOTE: SOMFY Control Systems are designed to comply with these two basic criteria and assure reliable operation of motorized systems. Non-compliance to these two basic principles voids the SOMFY warranty.



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6061289         LS40.40 mm Octagonal Set         36           6061298         9162132         Flush Moun Bracket for LT28A and LT28B Motors         28           6061301         9705415         ABS Wheel-Left Rotation         51           6061302         9705414         ABS Wheel-Left Rotation         51           6061303         9706033         CMO ABS Wheel-Left Rotation         51           6061306         9500333         LS40 Ot LT50 Adaptor Kit         33           6061316         9206041         2.5 Round LT Drive (63 mm x 1.5 mm) - Soft Clip         52           6061316         9206028         2.7 Fr Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061317         9206019         2.5 Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061320         9420303         3.5 Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061320         9420303         3.5 Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061320         9420304         4.0 Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061320         9420304         4.0 Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061320         9761001         DS 78 LT Drive         53           6061321         9761001				
6001298         9162132         Flush Mount Bracket for LT28A and LT28B Motors         28           6061301         9706414         ABS Wheel-Left Rotation         51           6061303         9706003         CMO ABS Wheel-Right Rotation         51           6061303         9706003         CMO ABS Wheel-Right Rotation         51           6061305         9706003         CMO ABS Wheel-Right Rotation         51           6061316         9705003         LS40 to L150 Adaptor Kit         33           6061316         97132142         LS40 Ortwort for (40 x 1.0 mm) Tube         36           6061317         9206019         2.5 Round LI Drive (63 mm x 1.5 mm) - Soft Clip         52           6061317         9206019         2.5 Round LI Drive (67 mm x 1.5 mm) - Hard Clip         52           6061321         9420303         3.5 Round LI Drive (70 mm x 1.5 mm) - Hard Clip         52           6061323         9761001         DS 78 LI Drive         53         60           6061324         9761001         DS 78 LI Drive         53         60           6061325         9761001         DS 78 LI Drive         53         60           6061324         9761003         DS 78 LI Drive         53         60           6061325         9761001 <td></td> <td></td> <td></td> <td></td>				
6661301         9705415         ABS Wheel-Right Rotation         51           6661303         9706003         CMO ABS Wheel-Right Rotation         51           6061305         9706004         CMO ABS Wheel-Right Rotation         51           6061305         9706004         CMO ABS Wheel-Right Rotation         51           6061307         9132142         LS40 Drive for (40 x 1.0 mm) Tube         36           6061316         9206041         2.5' Round LT Drive (63 mm x 1.5 mm) - Hard Clip         52           6061317         9206019         2.5' Round LT Drive (69 mm x 1.5 mm) - Hard Clip         52           6061318         9206028         2.5' Round LT Drive (99 mm x 2 mm)         54           6061320         9420303         3.5' Round LT Drive (99 mm x 2 mm)         54           6061321         9420303         3.5' Round LT Drive (99 mm x 2 mm)         54           6061323         976101         DS 78 LT Drive         53           6061324         9761001         DS 78 LT Drive         53           6061327         9761001         DS 78 LT Drive         53           6061327         9761001         DS 78 LT Drive         53           6061327         9761001         DS 78 LT Drive         53           6061330 <td></td> <td>9162132</td> <td></td> <td></td>		9162132		
6061302         9705414         ABS Wheel-Right Rotation         51           6061303         9706004         CMO ABS Wheel-Right Rotation         51           6061305         9706004         CMO ABS Wheel-Right Rotation         51           6061306         9500333         LS40 to L150 Adaptor Kit         33           6061316         9132142         LS40 Drive for (40 x 1.0 mm) Tube         36           6061316         9206041         2.5° Round LT Drive (63 mm x 1.5 mm) - Soft Clip         52           6061317         9206019         2.5° Round LT Drive (33 mm x 1.5 mm) - Hard Clip         52           6061318         9206028         2.5° Round LT Drive (07 mm x 1.5 mm) - Hard Clip         52           6061320         9420301         3.5° Round LT Drive (07 mm x 1.5 mm) - Hard Clip         52           6061321         9420303         3.5° Round LT Drive (102 mm x 2 mm)         54           6061322         9761002         70 mm Octagonal LT Drive         53           6061324         9761003         DS 78/R LT Drive         53           6061325         9761004         DS 78/R LT Drive         53           6061326         9761004         DS 78/R LT Drive         53           6061327         9761003         DS 85 LD Drive         54		9705415		
6661303         9706003         CMO ABS Wheel-left Rotation         51           6661305         9706004         CMO ABS Wheel-Right Rotation         51           6661308         9500333         LS40 to LT50 Adaptor Kit         33           6061306         9132142         LS40 Drive for (40 × 1.0 mm) Tube         36           6061316         9206041         2.5° Round LT Drive (63 mm x 1.5 mm) - Hard Clip         52           6061317         9206012         2.5° Round LT Drive (39 mm x 1.5 mm) - Hard Clip         52           6061318         9206028         2.75° Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061320         9420303         3.5° Round LT Drive (70 mm x 2 mm)         54           6061321         9761002         70 mm Octagonal LT Drive         52           6061322         976101         D5 78 LT Drive         53           6061323         976100         D5 78 LT Drive         53           6061324         976100         D5 78 LT Drive         53           6061329         976100         D5 78 LT Drive         53           6061324         976100         D5 78 LT Drive         52           6061335         9206088         2° Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52				
6061305         9706004         CMO ABS Wheel-Right Rolation         51           6061308         950033         LS40 to LT50 Adaptor Kit         33           6061310         9132142         LS40 Drive for (40 x 1.0 mm) Tube         36           6061316         9206011         2.5' Round LT Drive (53 mm x 1.5 mm) - Soft Clip         52           6061317         9206019         2.5' Round LT Drive (53 mm x 1.5 mm) - Hard Clip         52           6061318         9206023         3.5' Round LT Drive (69 mm x 1.5 mm) - Hard Clip         52           6061321         9420301         3.5' Round LT Drive (99 mm x 2 mm)         54           6061321         9420304         4.0' Round LT Drive (99 mm x 2 mm)         54           6061322         9761010         Drive         53         53           6061324         976100         DS 78/R LT Drive         53         53           6061325         976100         DS 78/R LT Drive         53         54           6061324         976100         DS 78/R LT Drive         53         56           6061325         9761001         DS 78/L Drive (50 mm x 1.5 mm) - Hard Clip         52         52           6061336         9206089         2'' Round LT50 Ver (50 mm x 1.5 mm) - Hard Clip         52         56				
6061308         9500333         LS40 to LT50 Adaptor Kit         33           6061309         9132142         LS40 Crown for (40 x 1.0 mm) Tube         36           6061316         9206041         2.5" Round LI Drive (63 mm x 1.5 mm) - Bard Clip         52           6061317         9206019         2.5" Round LI Drive (63 mm x 1.5 mm) - Hard Clip         52           6061317         9206028         2.75" Round LI Drive (63 mm x 1.5 mm) - Hard Clip         52           6061320         9420303         3.5" Round LI Drive (89 mm x 1 mm)         54           6061321         9420303         3.5" Round LI Drive (89 mm x 2 mm)         54           6061322         9761002         70 mm Cctagonal LI Drive         52           6061323         9761001         DS 78 LI Drive         53           6061324         9761000         DS 78 LI Drive         53           6061325         9761001         DS 78 LI Drive         53           6061326         9761004         DS 78 Cl LI Drive         53           6061327         9761003         DS 8 LI Drive         52           6061336         9206089         2" Round LITSO Vice (50 mm x 1.5 mm) - Hard Clip         52           6061351         9206026         2.75" Round LITSO Vice (50 mm x 1.5 mm) - Soft Clip			CMO ABS Wheel-Right Rotation	
6061309         9132142         LS40 Drive for (40 x 1.0 mm) Tube         36           6061310         9132143         LS40 Crown for (40 x 1.0 mm) Tube         36           6061316         9206014         2.5" Round LT Drive (63 mm x 1.5 mm) - Soft Clip         52           6061317         9206019         2.5" Round LT Drive (63 mm x 1.5 mm) - Hard Clip         52           6061319         9420301         3.5" Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061321         9420303         3.5" Round LT Drive (70 mm x 1.5 mm) - Hard Clip         54           6061321         9420304         4.0" Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061322         9761002         70 mm Octagonal LT Drive (89 mm x 2 mm)         54           6061323         9761001         DS 78 ILT Drive         53           6061324         9761004         DS 78/R LT Drive         53           6061325         9761001         DS 78 LT Drive         54           6061324         9761004         DS 78/D LT Drive         52           6061325         9761001         DS 78 LT Drive         54           6061326         9761004         DS 78/D LT Drive         52           6061351         9206026         2.75" Round LTS Drive (50 mm x 1.5 mm)				
6061310         9132143         LS40 Crown for (40 x 1.0 mm) Tube         36           6061316         9206041         2.5° Round LT Drive (63 mm x 1.5 mm) - Hard Clip         52           6061317         9206028         2.5° Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061319         9420303         3.5° Round LT Drive (89 mm x 1 mm)         54           6061320         9420303         3.5° Round LT Drive (89 mm x 2 mm)         54           6061321         9420304         4.0° Round LT Drive (102 mm x 2 mm)         54           6061322         9761002         70 mm Octagonal LT Drive (102 mm x 2 mm)         54           6061323         9761001         DS 78/R LT Drive         53           6061325         9761001         DS 78/R LT Drive         53           6061326         9761000         DS 78/R DT Drive         53           6061327         9761003         DS 8 ELT Drive         54           6061338         9420308         2° Round LT50 Drive (50 mm x 1.5 mm) - Hard Clip         52           6061359         9206089         2° Round LT50 Net         S4         52           6061351         9206089         2° Round LT50 Net         S6         52           6061352         2.75° Round LT50 Set         52 <td></td> <td></td> <td></td> <td></td>				
6061316         9206041         2.5" Round LT Drive (63 mm x 1.5 mm) - Soft Clip         52           6061317         9206028         2.75" Round LT Drive (70 mm x 1.5 mm) - Hard Clip         52           6061319         9420301         3.5" Round LT Drive (70 mm x 1.5 mm) - Hard Clip         54           6061320         9420303         3.5" Round LT Drive (89 mm x 2 mn)         54           6061321         9420304         4.0" Round LT Drive (89 mm x 2 mn)         54           6061322         9761005         D5 78/R LT Drive         53           6061324         9761005         D5 78/R LT Drive         53           6061325         9761004         D5 78/R LT Drive         53           6061326         9761004         DS 78/D LT Drive         53           6061327         9740004         DS 78/D LT Drive         53           6061328         9420300         I85 LT Drive         53           6061329         9260088         2" Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061351         9206088         2" Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061353         2.75" Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061354         9206026         2.75" Round LT50 Drive         53				
6061317         9206019         2.5' Round LT Drive (63 mm x 1.5 mm) - Hard Clip         52           6061318         9206028         2.75' Round LT Drive (89 mm x 1 mm)         54           6061320         9420303         3.5' Round LT Drive (89 mm x 2 mm)         54           6061321         9420304         4.0' Round LT Drive (102 mm x 2 mm)         54           6061322         9761002         70 mm Octagonal LT Drive (102 mm x 2 mm)         54           6061323         9761011         PT2 LT Drive (102 mm x 2 mm)         54           6061324         9761001         DS 78 LT Drive (102 mm x 2 mm)         53           6061325         9761001         DS 78 LT Drive         53           6061326         9761003         DS 85 LT Drive         53           6061327         9761003         DS 85 LT Drive         54           6061338         9740030         DS 85 LT Drive         54           6061351         70 mm Octagonal, Aluminum LT50/60 Drive Wheel Kit         52           6061352         2.75' Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061353         9206026         2.75' Round LT50 Drive (70 mm x 1.5 mm) - Soft Clip         52           6061354         9206026         2.75' Round LT50 Drive         52				
6061318         9206028         2.75* Round LT Drive (70 mm x 1 5 mm) - Hard Clip         52           6061319         9420301         3.5* Round LT Drive (89 mm x 2 mm)         54           6061321         9420303         3.5* Round LT Drive (89 mm x 2 mm)         54           6061322         9761002         70 mm Octagonal LT Drive         52           6061323         9761011         DS 78 LT Drive         53           6061324         9761001         DS 78 LT Drive         53           6061326         9761001         DS 78 LT Drive         53           6061327         9761004         DS 78 LT Drive         53           6061328         9761004         DS 78 DLT Drive         53           6061337         9761004         DS 78 LT Drive         54           6061338         9206089         2* Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061351         9206088         2* Round LT50 Set         52         52           6061352         9751001         G0 mm Octagonal LT50 Set         52         54           6061354         9206026         2.75* Round LT50 Set         52         54           6061355         70 nm Octagonal LT50 Set         52         54         52      <				
6661319         9420301         3.5° Round LT Drive (89 mm x 1mm)         54           6061320         9420303         3.5° Round LT Drive (89 mm x 2 mm)         54           6061321         9420304         4.0° Round LT Drive (102 mm x 2 mm)         54           6061322         9761002         70 mm Octagonal LT Drive         52           6061323         9761001         DS 78/LT Drive         53           6061325         9761001         DS 78/LT Drive         53           6061326         9761004         DS 78/LT Drive         53           6061327         9761003         DS 85 LT Drive         53           6061328         9420300         I85 LT Drive         53           6061321         70 mm Octagonal, Aluminum LT50/60 Drive Wheel Kit         52           6061351         9206089         2" Round LT50 Drive (50 mm x 1.5 mm) - Solt Clip         52           6061352         2.75° Round LT50 Drive (50 mm x 1.5 mm) - Solt Clip         52           6061353         9206026         2.75° Round LT50 Set         52           6061354         9206026         2.75° Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52         56           6061356         9751001         DS 70 LT50 Set <td></td> <td></td> <td></td> <td></td>				
6061320         9420303         3.5" Round LT Drive (89 mm x 2 mm)         54           6061321         9420304         4.0" Round LT Drive (102 mm x 2 mm)         54           6061323         9761011         P72 LT Drive         52           6061324         9761001         DS 78/R LT Drive         53           6061325         9761001         DS 78/R LT Drive         53           6061326         9761004         DS 78/D LT Drive         53           6061327         9761004         DS 78/D LT Drive         53           6061327         9761004         DS 78/D LT Drive         53           6061327         9761004         DS 78/D LT Drive         54           6061331         70 mm Octagonal, Aluminum LT50/60 Drive Wheel Kit         52           6061351         9206088         2" Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061352         2.75" Round LT50 Set         52         56           6061354         9206026         2.75" Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT50 Set         53           6061359         3.5" Round LT50 Set         53           6061364 <td></td> <td></td> <td></td> <td></td>				
6061321         9420304         4.0° Round LT Drive (102 mm x 2 mm)         54           6061322         9761002         70 mm Octagonal LT Drive         52           6061324         9761005         DS 78/R LT Drive         53           6061325         9761004         DS 78/R LT Drive         53           6061326         9761004         DS 78/R LT Drive         53           6061327         9761003         DS 85 LT Drive         53           6061328         9420300         I85 LT Drive         53           6061328         9420300         I85 LT Drive         54           6061331         70 mm Octagonal, Aluminum LT50/60 Drive Wheel Kit         52           6061351         9206088         2° Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061352         2.5° Round LT50 Set         Hard Clip         52           6061354         9206026         2.75° Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52         52           6061354         9751001         60 mm Octagonal LT50 Set         53           6061355         70 mm Cotagonal LT50 Set         53         53           6061364         9751005         DS 70 LT Drive (0.8 nt m wall thickness)				54
6661322         9761002         70 mm Octagonal LT Drive         52           6061323         976101         P72 LT Drive         53           6061325         9761001         DS 78/R LT Drive         53           6061325         9761001         DS 78/R LT Drive         53           6061326         9761004         DS 78/L T Drive         53           6061327         9761003         DS 85 LT Drive         53           6061327         9761003         DS 85 LT Drive         54           6061327         9761003         DS 85 LT Drive         54           6061328         9420300         185 LT Drive         50           6061351         9206089         2' Round LT50 Set Hard Clip         52           6061352         2.5* Round LT50 Set Hard Clip         52         52           6061354         9206026         2.75* Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52         52           6061354         9206026         2.75* Round LT50 Set         52           6061355         70 mm Octagonal LT50 Set         52         53           6061356         9751001         60 mm Octagonal LT50 Set         53           6061364         <				
6061323         9761011         P72 LT Drive         54           6061324         9761005         DS 78/L LT Drive         53           6061325         9761004         DS 78/D LT Drive         53           6061326         9761003         DS 78/D LT Drive         53           6061327         9761003         DS 78/D LT Drive         53           6061327         9761003         DS 78/D LT Drive         54           6061326         9206089         2' Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061351         9206089         2' Round LT50 Drive (50 mm x 1.5 mm) - Hard Clip         52           6061352         2.5' Round LT50 Set         52         52           6061354         9206026         2.75' Round LT50 Set         52           6061355         60 mm Octagonal LT Drive (70 mm x 1.5 mm) - Soft Clip         52           6061356         9751001         60 mm Octagonal LT Drive         53           6061356         9751001         60 mm Octagonal LT SO Set         53           6061361         9751005         DS 70 LT Drive (0.8 - 1 mm wall thickness)         53           6061362         DS 71 LT Drive         53         53           6061363         9751005         DS 70 LT Drive (0.				
6061324         9761005         DS 78/R LT Drive         53           6061325         9761004         DS 78/D LT Drive         53           6061327         9761003         DS 78/D LT Drive         53           6061327         9761003         DS 85 LT Drive         53           6061328         9420300         I85 LT Drive         54           6061328         9420300         I85 LT Drive         52           6061328         9420300         2" Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061351         9206088         2" Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061352         2.5" Round LT50 Set         52           6061354         9206026         2.75" Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT50 Set         53           6061360         DS 70 LT Drive (0.8 - 1mm wall thickness)         53           6061361         9751005         DS 74 LT50 Set         53           6061363         9751009         DS 74 LT50 Set         53           6061364         9751009         DS 74 LT50 Set         53           6061364         9751002 </td <td></td> <td></td> <td></td> <td></td>				
6061326         9761004         DS 78/D LT Drive         53           6061327         9761003         DS 85 LT Drive         53           6061328         9420300         I85 LT Drive         54           6061331         70 mm Octagonal, Aluminum LT50/60 Drive Wheel Kit         52           6061350         9206089         2* Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061351         9206088         2* Round LT50 Set (50 mm x 1.5 mm) - Hard Clip         52           6061354         9206026         2.75* Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT50 Set         52           6061357         70 mm Octagonal LT50 Set         54           6061358         P72 LT50 Set         54           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 - 1 mm wall thickness)         53           6061362         DS 74 LT50 Set         53         53           6061363         9751009         DS 74 LT50 Set         53           6061364         DS 78 LT50 Set         53         53           6061365         9751004         I65 LT50			DS 78/R LT Drive	53
6061327         9761003         DS 85 LT Drive         53           6061328         9420300         I85 LT Drive         54           6061331         70 mm Octagonal, Aluminum LT50/60 Drive Wheel Kit         52           6061351         9206089         2" Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061352         2.5" Round LT50 Set - Hard Clip         52           6061353         2.75" Round LT50 Set - Hard Clip         52           6061354         9206026         2.75" Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT50 Set         52           6061358         9751001         60 mm Octagonal LT50 Set         53           6061359         3.5" Round LT50 Set         54           6061359         3.5" Round LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061362         DS 74 LT50 Set         53         53           6061363         9751009         DS 74 LT Drive         53           6061364         DS 78 LT50 Set         53         53           6061365         971002         SM 65 LT50 Drive	6061325	9761001	DS 78 LT Drive	53
6061328         9420300         I85 LT Drive         54           6061331         70 mm Octagonal, Aluminum LT50/60 Drive Wheel Kit         52           6061350         9206089         2" Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061351         9206088         2" Round LT50 Set - Hard Clip         52           6061352         2.5" Round LT50 Set - Hard Clip         52           6061353         9206026         2.75" Round LT50 Set         52           6061354         9206026         2.75" Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT50 Set         52           6061358         P72 LT50 Set         54         54           6061359         3.5" Round LT50 Set         53           6061360         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061362         DS 74 LT50 Set         53         53           6061364         9751009         DS 74 LT50 Set         53           6061364         9751009         S74 LT50 Set         53           6061364         9707030 <td>6061326</td> <td>9761004</td> <td>DS 78/D LT Drive</td> <td>53</td>	6061326	9761004	DS 78/D LT Drive	53
6061331         70 mm Octagonal, Aluminum LT50/60 Drive Wheel Kit         52           6061350         9206089         2' Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061351         9206088         2' Round LT50 Set (50 mm x 1.5 mm) - Soft Clip         52           6061353         2.5' Round LT50 Set - Hard Clip         52           6061354         9206026         2.75' Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT50 Set         52           6061357         70 mm Octagonal LT50 Set         52           6061358         P72 LT50 Set         54           6061359         3.5' Round LT50 Set         53           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061363         9751009         DS 74 LT Drive         53           6061364         DS 78 UT50 Set         53         53           6061365         9751004         I65 LT50 Drive         53           6061364         DS 78 LT50 Set         53         54           6061365         9751002         SM 65 LT50 Crown - 3 grooves	6061327	9761003	DS 85 LT Drive	53
6061350         9206089         2" Round LT50 Drive (50 mm x 1.5 mm) - Soft Clip         52           6061351         9206088         2" Round LT50 Drive (50 mm x 1.5 mm) - Hard Clip         52           6061352         2.5" Round LT50 Set - Hard Clip         52           6061353         2.75" Round LT50 Set         52           6061354         9206026         2.75" Round LT50 Set         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT50 Set         52           6061357         70 mm Octagonal LT50 Set         52           6061358         P72 LT50 Set         54           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061364         9751009         DS 74 LT Drive         53           6061363         9751004         165 LT50 Set         53           6061364         9751002         SM 4 LT50 Set         53           6061364         9751004         165 LT50 Crown - 3 grooves         54           6061364         9707030         SM 65 LT50 Crown - 3 grooves         54           6061376         9761002         SM 65 LT50 C	6061328	9420300	185 LT Drive	54
6061351         9206088         2" Round LT50 Drive (50 mm x 1.5 mm) - Hard Clip         52           6061352         2.5" Round LT50 Set - Hard Clip         52           6061353         2.75" Round LT50 Set         52           6061354         9206026         2.75" Round LT Drive (70 mm x 1.5 mm) - Soft Clip         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT Drive (70 mm x 1.5 mm) - Soft Clip         52           6061357         70 mm Octagonal LT50 Set         52           6061358         P72 LT50 Set         54           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT50 Set         53           6061362         DS 74 LT50 Set         53           6061363         9751009         DS 74 LT Drive (0.8 -1 mm wall thickness)         53           6061364         9751009         DS 74 LT Drive         53           6061364         P07030         SM 65 LT50 Crown - 3 grooves         54           6061368         9707030         SM 65 LT50 Crown - 3 grooves         54           6061376         9761002         SM 65 LT50 Crown - 3 grooves         54           6061376         9704080	6061331		70 mm Octagonal, Aluminum LT50/60 Drive Wheel Kit	52
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6061353         2.75" Round LT50 Set         52           6061354         9206026         2.75" Round LT Drive (70 mm x 1.5 mm) - Soft Clip         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT Drive         52           6061356         9751001         60 mm Octagonal LT50 Set         52           6061357         70 mm Octagonal LT50 Set         54           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061362         DS 74 LT50 Set         53           6061363         9751009         DS 74 LT50 Set         53           6061364         DS 74 LT50 Set         53           6061363         9751009         DS 74 LT50 Set         53           6061364         DS 78 LT50 Set         53           6061365         9751004         165 LT50 Set         53           6061364         9707030         SM 65 LT Drive         53           6061368         9707030         SM 65 LT Drive         54           6061375         AMA71 LT50 Drive         54         54           6061376         9762012	6061351	9206088	2" Round LT50 Drive (50 mm x 1.5 mm) - Hard Clip	
6061354         9206026         2.75" Round LT Drive (70 mm x 1.5 mm) - Soft Clip         52           6061355         60 mm Octagonal LT50 Set         52           6061356         9751001         60 mm Octagonal LT50 Set         52           6061357         70 mm Octagonal LT50 Set         52           6061358         P72 LT50 Set         54           6061359         3.5" Round LT50 Set         53           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061363         9751009         DS 74 LT50 Set         53           6061364         DS 78 LT50 Set         53           6061363         9751009         DS 74 LT Drive         53           6061364         DS 78 LT50 Set         53           6061365         9751004         I65 LT50 Crown - 3 grooves         54           6061366         9707030         SM 65 LT50 Crown - 3 grooves         54           6061376         9762012         SM 65 LT Drive         54           6061376         9762012         LT60 Drive (78 mm Dia.)         54           6061376         9762012         LT60 Drive (78 mm Dia.)         54           60			2.5" Round LT50 Set - Hard Clip	
6061355       60 mm Octagonal LT50 Set       52         6061356       9751001       60 mm Octagonal LT Drive       52         6061357       70 mm Octagonal LT50 Set       52         6061358       P72 LT50 Set       54         6061369       3.5" Round LT50 Set       53         6061361       9751005       DS 70 LT50 Set       53         6061362       DS 70 LT Drive (0.8 -1 mm wall thickness)       53         6061363       9751009       DS 74 LT50 Set       53         6061363       9751009       DS 74 LT50 Set       53         6061364       DS 78 LT50 Set       53         6061365       9751009       DS 74 LT Drive       53         6061364       DS 78 LT50 Set       53         6061365       9751009       DS 78 LT50 Set       53         6061364       DS 78 LT50 Set       53         6061365       9751002       SM 65 LT50 Crown - 3 grooves       54         6061374       9910052       AMA71 LT50 Drive       54         6061376       9762012       LT60 Crown (78 mm Dia.)       54         6061376       9762012       LT60 Drive (78 mm Dia.)       54         6061377       9761012       LT60 Drive (78 mm Dia.) </td <td></td> <td></td> <td></td> <td></td>				
6061356         9751001         60 mm Octagonal LT Drive         52           6061357         70 mm Octagonal LT50 Set         52           6061358         P72 LT50 Set         54           6061359         3.5" Round LT50 Set         53           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061362         DS 74 LT50 Set         53           6061363         9751009         DS 74 LT Drive         53           6061364         DS 78 LT50 Set         53           6061365         9751004         165 LT50 Drive         53           6061366         If50 Set         53         53           6061366         If51 SD Set         53         53           6061366         If50 Set         53         53           6061368         9707030         SM 65 LT50 Crown - 3 grooves         54           6061374         9910052         SM 65 LT Drive         54           6061376         AMA71 LT50 Orive         54         54           6061377         9761012         LT60 Crown (78 mm Dia.)         54           6061377         9761012         LT60 Drive (75 S0 Tube <td></td> <td>9206026</td> <td></td> <td></td>		9206026		
6061357         70 mm Octagonal LT50 Set         52           6061358         P72 LT50 Set         54           6061359         3.5" Round LT50 Set         53           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061362         DS 74 LT50 Set         53           6061363         9751009         DS 74 LT Drive (0.8 -1 mm wall thickness)         53           6061364         DS 78 LT50 Set         53           6061365         9751009         DS 74 LT Drive         53           6061364         DS 78 LT50 Set         53           6061365         9751004         I65 LT50 Drive         53           6061366         I65 LT50 Crown - 3 grooves         54           6061368         9707030         SM 65 LT50 Crown - 3 grooves         54           6061374         9910052         AMA71 LT50 Drive         54           6061376         9762012         LT60 Crown (78 mm Dia.)         54           6061376         9705345         50 mm Octagonal LT50 Crown         52           6061385         9705345         50 mm Octagonal LT50 Crown         52           6061386         9705344				
6061358         P72 LT50 Set         54           6061359         3.5" Round LT50 Set         53           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061362         DS 74 LT50 Set         53           6061363         9751009         DS 74 LT Drive (0.8 -1 mm wall thickness)         53           6061364         DS 78 LT50 Set         53           6061365         9751004         I65 LT50 Set         53           6061366         I65 LT50 Set         53           6061366         I65 LT50 Crown - 3 grooves         54           6061374         9710052         SM 65 LT Drive         54           6061376         9762012         LT60 Crown (78 mm Dia.)         54           6061376         9704080         2" LT Drive for CTS 50 Tube         54           6061386         9705345         50 mm Octagonal LT50 Drive         54           6061386         9705344         50 mm Octagonal LT50 Drive         52           6061386         9705344         50 mm Octagonal LT50 Drive         52           6061386         9705344         50 mm Octagonal LT50 Drive         52           606140		9751001		
6061359         3.5" Round LT50 Set         54           6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061362         DS 74 LT50 Set         53           6061363         9751009         DS 74 LT Drive         53           6061364         DS 78 LT50 Set         53           6061364         DS 78 LT50 Set         53           6061365         9751004         I65 LT50 Drive         53           6061366         I65 LT50 Drive         53           6061364         9707030         SM 65 LT50 Crown - 3 grooves         54           6061374         9910052         AMA71 LT50 Drive         54           6061376         9762012         LT60 Crown (78 mm Dia.)         54           6061376         9704080         2" LT Drive for CTS 50 Tube         54           6061380         9704080         2" LT Drive for CTS 50 Tube         54           6061386         9705345         50 mm Octagonal LT50 Drive         52           6061386         9705344         50 mm Octagonal LT60 Set         52           6061400         2.75" Round LT60 Set         52           6061401         70 mm				
6061360         DS 70 LT50 Set         53           6061361         9751005         DS 70 LT Drive (0.8 -1 mm wall thickness)         53           6061362         DS 74 LT50 Set         53           6061363         9751009         DS 74 LT Drive         53           6061364         DS 78 LT50 Set         53           6061365         9751004         165 LT50 Drive         53           6061366         I65 LT50 Set         53           6061366         I65 LT50 Set         53           6061366         I65 LT50 Crown - 3 grooves         54           6061369         9751002         SM 65 LT Drive         54           6061374         9910052         AMA71 LT50 Drive         54           6061375         AMA71 LT50 Crown         54         54           6061376         9762012         LT60 Crown (78 mm Dia.)         54           6061376         9762012         LT60 Crown (78 mm Dia.)         54           6061380         9705345         50 mm Octagonal LT50 Crown         52           6061385         9705345         50 mm Octagonal LT50 Drive         52           6061386         9705344         50 mm Octagonal LT60 Set         52           6061400         2.75"				
6061361       9751005       DS 70 LT Drive (0.8 - 1 mm wall thickness)       53         6061362       DS 74 LT50 Set       53         6061363       9751009       DS 74 LT Drive       53         6061364       DS 78 LT50 Set       53         6061365       9751004       I65 LT50 Drive       53         6061366       I65 LT50 Set       53         6061368       9707030       SM 65 LT50 Crown - 3 grooves       54         6061374       9910052       SM 65 LT Drive       54         6061374       9910052       AMA71 LT50 Drive       54         6061376       9762012       LT60 Crown (78 mm Dia.)       54         6061377       9761012       LT60 Drive (78 mm Dia.)       54         6061380       9704080       2" LT Drive for CTS 50 Tube       54         6061385       9705345       50 mm Octagonal LT50 Crown       52         6061386       9705344       50 mm Octagonal LT50 Drive       52         6061386       9705344       50 mm Octagonal LT50 Drive       52         6061400       2.75" Round LT60 Set       52         6061401       70 mm Octagonal LT60 Set       52				
6061362       DS 74 LT50 Set       53         6061363       9751009       DS 74 LT Drive       53         6061364       DS 78 LT50 Set       53         6061365       9751004       I65 LT50 Drive       53         6061366       I65 LT50 Set       53         6061368       9707030       SM 65 LT50 Crown - 3 grooves       54         6061369       9751002       SM 65 LT Drive       54         6061374       9910052       AMA71 LT50 Drive       54         6061375       AMA71 LT50 Crown       54       54         6061376       9762012       LT60 Crown (78 mm Dia.)       54         6061380       9704080       2" LT Drive for CTS 50 Tube       54         6061385       9705345       50 mm Octagonal LT50 Drive       52         6061386       9705344       50 mm Octagonal LT60 Set       52         6061400       2.75" Round LT60 Set       52       52		0754005		
6061363       9751009       DS 74 LT Drive       53         6061364       DS 78 LT50 Set       53         6061365       9751004       I65 LT50 Drive       53         6061366       I65 LT50 Set       53         6061368       9707030       SM 65 LT50 Crown - 3 grooves       54         6061369       9751002       SM 65 LT Drive       54         6061374       9910052       AMA71 LT50 Drive       54         6061375       AMA71 LT50 Crown       54         6061376       9762012       LT60 Crown (78 mm Dia.)       54         6061377       9761012       LT60 Drive (78 mm Dia.)       54         6061380       9704080       2" LT Drive for CTS 50 Tube       54         6061385       9705345       50 mm Octagonal LT50 Drive       52         6061386       9705344       50 mm Octagonal LT60 Set       52         6061400       2.75" Round LT60 Set       52       52		9751005		
6061364       DS 78 LT50 Set       53         6061365       9751004       165 LT50 Drive       53         6061366       165 LT50 Set       53         6061368       9707030       SM 65 LT50 Crown - 3 grooves       54         6061369       9751002       SM 65 LT Drive       54         6061374       9910052       AMA71 LT50 Drive       54         6061375       AMA71 LT50 Crown       54         6061376       9762012       LT60 Crown (78 mm Dia.)       54         6061380       9704080       2" LT Drive for CTS 50 Tube       54         6061385       9705345       50 mm Octagonal LT50 Crown       52         6061386       9705344       50 mm Octagonal LT60 Set       52         6061400       2.75" Round LT60 Set       52		0751000		
6061365       9751004       I65 LT50 Drive       53         6061366       I65 LT50 Set       53         6061368       9707030       SM 65 LT50 Crown - 3 grooves       54         6061369       9751002       SM 65 LT Drive       54         6061374       9910052       AMA71 LT50 Drive       54         6061375       AMA71 LT50 Crown       54         6061376       9762012       LT60 Crown (78 mm Dia.)       54         6061377       9761012       LT60 Drive (78 mm Dia.)       54         6061380       9704080       2" LT Drive for CTS 50 Tube       54         6061385       9705345       50 mm Octagonal LT50 Drive       52         6061386       9705344       50 mm Octagonal LT60 Set       52         6061400       2.75" Round LT60 Set       52		9751009		
6061366       I65 LT50 Set       53         6061368       9707030       SM 65 LT50 Crown - 3 grooves       54         6061369       9751002       SM 65 LT Drive       54         6061374       9910052       AMA71 LT50 Drive       54         6061375       AMA71 LT50 Crown       54         6061376       9762012       LT60 Crown (78 mm Dia.)       54         6061377       9761012       LT60 Drive (78 mm Dia.)       54         6061380       9704080       2" LT Drive for CTS 50 Tube       54         6061385       9705345       50 mm Octagonal LT50 Crown       52         6061386       9705344       50 mm Octagonal LT50 Drive       52         6061400       2.75" Round LT60 Set       52         6061401       70 mm Octagonal LT60 Set       52		0751004		
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6061376       9762012       LT60 Crown (78 mm Dia.)       54         6061377       9761012       LT60 Drive (78 mm Dia.)       54         6061380       9704080       2" LT Drive for CTS 50 Tube       54         6061385       9705345       50 mm Octagonal LT50 Crown       52         6061386       9705344       50 mm Octagonal LT50 Drive       52         6061400       2.75" Round LT60 Set       52         6061401       70 mm Octagonal LT60 Set       52				
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6061380         9704080         2" LT Drive for CTS 50 Tube         54           6061385         9705345         50 mm Octagonal LT50 Crown         52           6061386         9705344         50 mm Octagonal LT50 Drive         52           6061400         2.75" Round LT60 Set         52           6061401         70 mm Octagonal LT60 Set         52				
6061385         9705345         50 mm Octagonal LT50 Crown         52           6061386         9705344         50 mm Octagonal LT50 Drive         52           6061400         2.75" Round LT60 Set         52           6061401         70 mm Octagonal LT60 Set         52				
6061386         9705344         50 mm Octagonal LT50 Drive         52           6061400         2.75" Round LT60 Set         52           6061401         70 mm Octagonal LT60 Set         52				
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