Typical Specifications

Operating temperature range

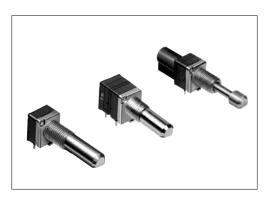
9.5mm width potentiometer ideal for



 $-20 \mbox{\ensuremath{\mbox{$^\circ$}}}$ to $+70 \mbox{\ensuremath{\mbox{$^\circ$}}}$ to $+85 \mbox{\ensuremath{\mbox{$^\circ$}}}$ (Vehicle-compatible)



various types of control



Items Specifications Total resistance tolerance ±20% Maximum operating voltage 50V AC, 10V DC $300^{\circ}\pm5^{\circ}$ (For shaft movable type, $300^{\circ}+10^{\circ}$) Total rotational angle Rotational torque 2 to 25mN·m Operating life 15,000 cycles

Product Line

Single-shaft without switch type

Number of resistor	Mounting	Shaft		Center	Total resistance	Resistance	Minimum ord	er unit (pcs.)	Products No.	Drawing																
elements	direction	type	Lı (mm)	detent	(k Ω)	taper	Japan	Export	T TOUGE (S NO.	No.																
				Without	10	15A			RK097111080J																	
			15	Without	20	1B			RK0971110909																	
			15	With	10	15A			RK0971110D7F																	
				Without	50	1B				RK097111020N																
Single-unit		Flat			Without	10	15A			RK097111080R	1															
			20	With	10	1B			RK0971110D88																	
					50	16			RK09711100F8																	
	Horizontal type		Flat	25	Without	10	15A		1,600	RK097111091M																
				Flat	25	Without	10		(B type)	(B type)	RK0971110D57															
																				15		50	18		2,400 (A type)	RK09712100AV
Dual-unit for tone									20	With	20	1B	800	1,600	RK0971210Z2M											
			25				(B type)	(B type)	RK0971210097																	
			15			15A	1,200	2,400	RK09712200MC	2																
Dual-unit for vol.			15	Without	10	3B	(A type)	(A type)	RK09712200MY																	
				vvitillut		15A			RK09712200HA																	
			20	20			3B	800 (B type)	1,600 (B type)	RK097122008T																
					20	15A	- (2 (,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		RK09712200MT																	

Notes

- 1. Other varieties are also available. Refer to "Other Specifications" (P.316, 317).
- 2. For automotive use, please contact us with detailed specifications.



Product Line

Single-shaft with rotary switch type

Number of	Mounting	Shaft	Length of the	Center	Total resistance	Resistance	Minimum ord	er unit (pcs.)	Products No.	Drawing													
resistor elements	direction	type	shaft L ₁ (mm)	detent	(k Ω)	taper	Japan	Export	Floudets No.	No.													
	Horizontal Flat			15		20				RK0971111Z0P													
Single-unit			15		50	15A			RK0971111Z32	3													
Sii igie-ui iit		i i i i i i i i i i i i i i i i i i i	20	Without			700	1,400	RK09711110AL														
			riac	T luc	riut	riat	riat	1100	T IGC		1.00	ride	riac	T luc	i iat	20	Without	10	1B	(C type)	(C type)	RK09711110EL	
Dual-unit for vol.																							
				20		20	JB			RK0971221Z11													

Single-shaft push-on push-off (1.5mm travel) switch type

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft L1 (mm)	Center detent	Total resistance (k Ω)	Resistance taper	Minimum ord Japan	er unit (pcs.) Export	Products No.	Drawing No.
Single-unit			25		10	15A	700	1,400	RK097111202P	5
Sirigle-uriit	Horizontal type	Flat	25	Without	10	1B	(C type)	(C type)	RK097111202Q	5
Dual-unit for vol.			20		50	3B	600 (D type)	1,200 (D type)	RK097122200G	6

Single-shaft momentary push (0.5mm travel) switch type

Number of	Mounting	Shaft	Length of the	Center	Total resistance	Resistance	e Minimum order unit (pcs.)		Products No.	Drawing
resistor elements	direction	type	shaft L1 (mm)	detent	(k Ω)	taper	Japan	Export	1 1000013 110.	No.
Single-unit			15	With		3B			RK0971114D0B	7
Dual-unit for tone	Horizontal type	Flat	20	Without	10	1B	700 (C type)	1,400 (C type)	RK0971214Z06	8
Dual-unit for vol.			20	without		15A			RK0971224Z01	

Single-shaft momentary push (1.5mm travel) switch type

Number of	Mounting	Shaft	Length of the		Total resistance		Minimum ord	er unit (pcs.)	Products No.	Drawing
resistor elements	direction	type	shaft L1 (mm)	detent	(k Ω)	taper	Japan	Export		No.
Single-unit	Horizontal type	Flat	20	Without	10	1B	700 (C type)	1,400 (C type)	RK0971114Z07	9

Notes

- 1. Other varieties are also available. Refer to "Other Specifications" (P.316, 317).
- 2. For automotive use, please contact us with detailed specifications.

Packing Specifications

Tray

Minimum order unit type	Number of pa	ckages (pcs.)	Export package
Williman order drift type	1 case /Japan	1 case /export packing	measurements (mm)
A type	1,200	2,400	463×375×185
B type	800	1,600	540×373×207
C type	700	1,400	540×373×181
D type	600	1,200	540×373×225

Refer to P.316 for other specifications.

Refer to P.318 for switch specifications.

Refer to P.318 for attached parts.

Refer to P.320 for ordering products not listed.

Refer to P.343 for soldering conditions.

Product Line

Single-shaft with push-lock mechanism type

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft L ₁ (mm)	Center detent	Total resistance (k Ω)	Resistance taper	Minimum ord Japan	er unit (pcs.) Export	Products No.	Drawing No.
					10 1B	1B			RK097111T065	
				Without	100	15A			RK097111TZ17	
Single-unit					100		700 (C type)	1,400 (C type)	RK097111T064	10
	Horizontal Flat	Elot	25	05	10	1B			RK097111TD2M	
		20	With	100	ID ID			RK097111TD44		
Dual-unit for tone					10				RK097121TD57	
Dual-unit for vol					10	15A	600 (D type)	1,200 (D type)	RK097122T017	11
				Without	50	3B			RK097122TZ0A	

Single-shaft with push-lock switch type

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft L1 (mm)	Center detent	Total resistance (k Ω)	Resistance taper	Minimum ord Japan	er unit (pcs.) Export	Products No.	Drawing No.
Single-unit	Horizontal type	Flat	25	Without	5	1B	700 (C type)	1,400 (C type)	RK097111U00S	12

Dual-shaft, dual-unit without switch type

Number of resistor elements	Mounting direction	Shaft	Shaft type	Length of the shaft L ₁ L ₂ (mm)	Center detent	Total resistance (k Ω)	Resistance taper	Minimum ord Japan	er unit (pcs.) Export	Products No.	Drawing No.
Dual-unit (Single-shaft, Single-unit)	Horizontal type	The outer shaft	Slotted	15	- Without	10	15A		BK00722	DV00722100EC	
		The inner shaft	Flat	25				700	1,400	RK097221005C	13
		The outer shaft	Siorrea	15			15C	(C type)	(C type)	RK097221004C	10
		The inner shaft	Flat	25						NKU91221004C	

Notes

- 1. Other varieties are also available. Refer to "Other Specifications" (P.316, 317).
- 2. For automotive use, please contact us with detailed specifications.

Packing Specifications

Tray

Minimum order unit type	Number of pa	ckages (pcs.)	Export package
Willimiditi Order drift type	1 case /Japan	1 case /export packing	measurements (mm)
A type	1,200	2,400	463×375×185
B type	800	1,600	540×373×207
C type	700	1,400	540×373×181
D type	600	1,200	540×373×225

Refer to P.316 for other specifications.
Refer to P.318 for switch specifications.
Refer to P.318 for attached parts.
Refer to P.320 for ordering products not listed.
Refer to P.343 for soldering conditions.



Dir	nensions		Unit:mm
No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
1	Single-shaft, single-unit RK0971110	L ₁ 15 20 25 L _B 5 7 10 ℓ 7 12 12 7.05 L ₁ ℓ	5 Mounting surface 3-ø1 hole
2	Single-shaft, dual-unit RK0971210 (For tone) RK0971220 (For vol.)	L ₁ 15 20 25 L _B 5 7 10 ℓ 7 12 12 9.55 L _a ℓ M7×0.75 Shaft shown in full CCW position	2.5 5 Mounting surface 6-ø1 hole
3	Single-shaft, single-unit with rotary switch RK0971111-5R1211	L ₁ 15 20 L _B 5 7 ℓ 7 12 13.3 L ₁ 13.3 L ₂ 13.3 L ₃ 13.3 L ₄ 13.3 L ₅ 13.3 L ₇ 13.3 Shaft shown in full CCW position	6.25 5 Mounting surface 5-ø1 hole
4	Single-shaft, dual-unit with rotary switch RK0971221-5R1211 (For vol.)	L ₁ 15 20 L _B 5 7 L 7 12 15.8 L ₀ 4 Switch R2R1 0.8 M7X0.75 Shaft shown in full CCW position	6.25 5 Mounting surface 8-ø1 hole

Dimensions Unit:mm PC board mounting hole dimensions Photo No. Style (Viewed from mounting side) Single-shaft, single-unit L_1 25 with push-on push-off switch RK0971112-5R2412 10 Lв l 12 Switch travel Mounting surface 5 7-ø1 hole Switch R1 0.8 Shaft shown in full CCW position Single-shaft, dual-unit 20 with push-on push-off switch Lв 7 RK0971222-5R2412 (For vol.) 0. 10 Switch travel 6 10-ø1 hole Switch R2R1 0.8 Single-shaft, single-unit with momentary push switch travel 0.5mm RK0971114-5R4211 Switch travel Mounting 7 5-ø1 hole Shaft shown in full CCW position Single-shaft, dual-unit with momentary push switch travel 0.5mm RK0971214-5R4211 (For tone) RK0971224-5R4211 (For vol.) 8 Switch R2R1 0.8 √M7×0.75

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
9	Single-shaft, single-unit with momentary push switch travel 1.5mm RK0971114-5R4611	Switch travel Switch R1 0.8 Switch travel Switch R1 0.8 Shaft shown in full CCW position	5 5 Mounting surface 5-91 hole
10	Single-shaft, single-unit with push-lock mechanism RK097111T	20.75 Total travel 10 8 4.5 9 Lock travel 9,5 9 10 10 10 10 10 10 10 10 10	Mounting surface 3-ø1 hole
11	Single-shaft, dual-unit with push-lock mechanism RK097121T (For tone) RK097122T (For vol.)	23.25 Total travel Lock travel 10 8 9 Lock travel 9 10 9 10 10 10 10 10 10 10	2.5 5 Mounting surface
12	Single-shaft, single-unit with push-lock switch RK097111U-5R2522	22.05 25 Total travel 10 8 9 ock travel 9 9 9 9 9 9 9 9 9 9 9 9 9	A CCBB Shaft side A CCBB Shaft side Relased Locked
13	Dual-shaft, dual-unit RK0972210	12.05 25 99.5 99.5 99.5 99.5 99.5 99.5 99.5	5 5 Mounting surface surface 6-ø1 hole

Dimensions

9mm Size Metal Shaft Multi-ganged Type / Other Specifications

In addition to the products listed, we can accommodate the follow specifications.

■ Total Resistance Variety

Total resistance (kΩ)	5	10	20	50	100
-----------------------	---	----	----	----	-----

Resistance Taper

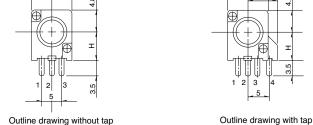
The die taries Taper									
Resistance taper	15A	1B	ЗВ	15C					

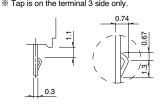
Notes

Can be fitted with center-taps.

Dimensions of Terminal

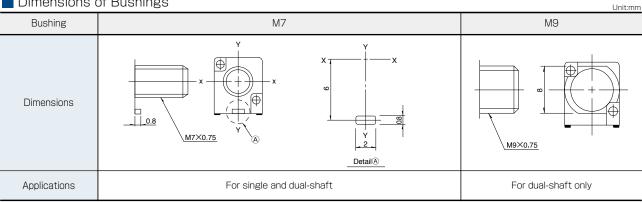
Unit:mm 9.5 Mounting height (H): 6.5mm (10mm and12.5mm also available upon request.) * For single-unit type with tap is only available with H=6.5mm. Tap is on the terminal 3 side only.





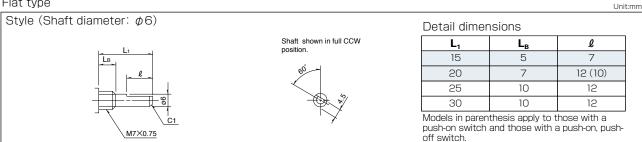
Detail of 2 terminal belong part

■ Dimensions of Bushings



Single-shaft Dimension

Flat type



Note

Marked are specifications recommended by Alps Alpine.

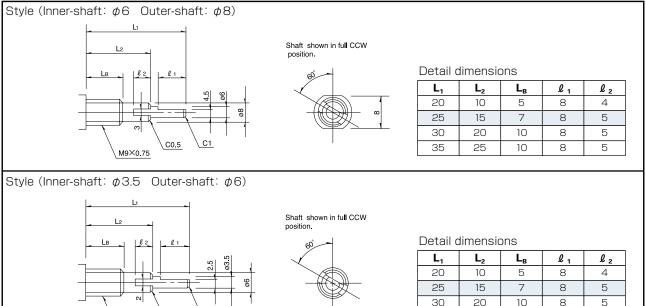
9mm Size Metal Shaft Multi-ganged Type / Other Specifications

In addition to the products listed, we can accommodate the follow specifications.

■ Dimension of Dual-shaft Type

Flat type for inner shaft, slotted type for outer shaft

Unit:mm



35

25

10

8

5

Mounting pitch

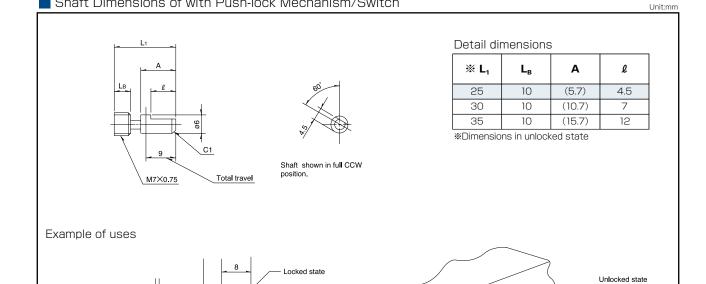
min.10mm

Locked state

Applications Both switchless and rotary switch models are available.

■ Shaft Dimensions of with Push-lock Mechanism/Switch

M7×0.75



Note

Marked are specifications recommended by Alps Alpine.

Front panel

Push-on push-off Rotary switch Momentary push switch Push-lock switch Switch type 5R4611 5R2412 5R1211 5R4211 5R2522 Double pole and double throw Single pole and single Single pole and single Contact arrangement Single pole and single throw throw throw $0.5^{+0.7}_{-0.3}$ mm Travel 50° max. 1.5±0.5mm 1.5±0.5mm 8±0.5mm Changeover force 50mN·m max. 12±8N $4^{+4}_{-2}\,\mathrm{N}$ 5±2N 8N max. Operating life 20,000 cycles 10,000 cycles 10,000 cycles under load 3A 16V DC (10mA 16V DC min. ratings) 0.5A 12V DC (10mA 12V DC min. ratings) Rating 0.3A 12V DC Contact $100m\Omega$ max. for initial period, $200m\Omega$ max. after operating life. resistance Electrical performance Insulation $100M\Omega$ min. 250V DC resistance

9mm Size Metal Shaft Multi-ganged Type / Switch Specifications

9mm Size Metal Shaft Multi-ganged Type / Attached Parts

300V AC for 1 minute

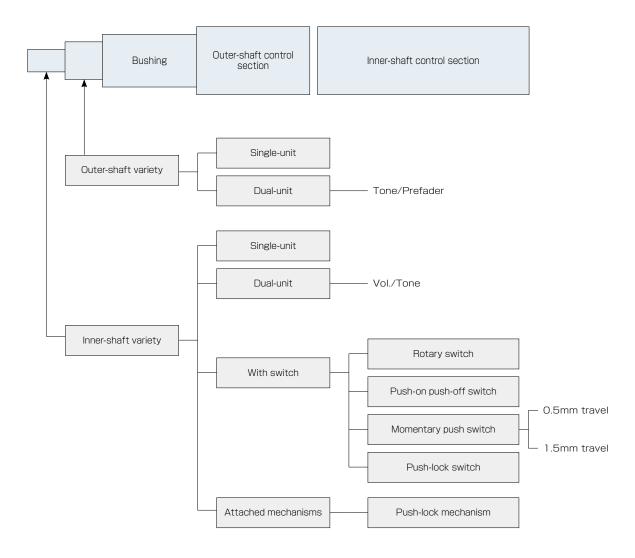
The following parts are included with the product.

Voltage

proof

	Nut			Washer	
B×0.75				A B B	0.5
Bearing screw	Dimension		Bearing screw	Dime	ension
diameter	А	В	diameter	А	В
	11	M7	M7	φ12	φ7.2
M7					+

9mm Size Metal Shaft Multi-ganged Type / Configuration Chart



Note

The single-shaft type product lineups are the same as those in the inner-shaft variety.

tentiometers

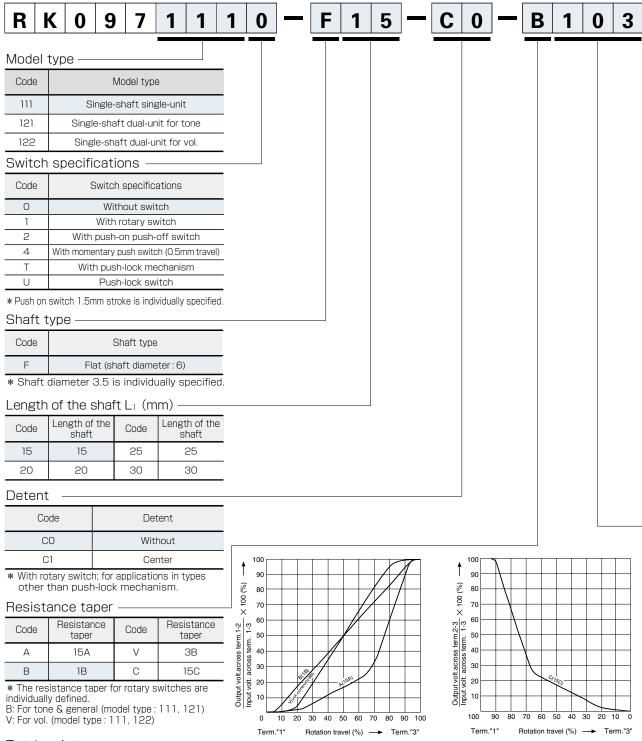
Potentiometers

Metal Shaft

Shaft

Operating

Sample Part Number



Total resistance -

Code	Total resistance (k Ω)	Code	全抵抗値(kΩ)
502	5	503	50
103	10	104	100
203	20	_	_

Notes

- 1. Marked are specifications recommended by Alps Alpine.
- 2. The above specification is only applicable to the one-shaft single-unit model and dual-unit ganged model.

Metal Shaft Potentiometers

List of Varieties

	Type		9m	m size		1 1 mm size	
Corioc		RK	09L	RK0971	RK0972	RK119	
	Series		Single-shaft		Dual-shaft	Single-shaft	
Number of	f resistor elements		Single/dual		Dual	Single	
Photo						4	
Term	inal mounting	Horizontal	Vertical	Horiz	rontal	Vertical	
Fixing m	ethod of bushing		S	crew		Guide	
Operating	temperature range	-10°C to	o +70℃	−20°C t −40°C to +85°C (o +70°C Vehicle-compatible)	-40℃ to +85℃	
Ор	perating life			15,000 cycles			
Available f	for automotive use	_	_	0	0	0	
Life cy	cle (availability)	2	* 2	★ 2	* 2	2	
	Total resistance (k Ω)		10, 20), 50, 100		10	
	Resistance taper		15A, 18	3, 3B, 15C		1B	
	Rated Power		0.05W				
Electrical performance	Residual resistance		R≦10kΩ 50Ω max.				
	Maximum attenuation (Volume control)	5kΩ≦R< 10 10kΩ≦R< 50 50kΩ≦R		5kΩ≦R< 10 10kΩ≦R< 50 50kΩ≦R<100 100kΩ≦R	_		
	Gang error applicable to Dual-unit parts for audio volume control purposes		_				
	Insulation resistance						
	Voltage proof		300V AC for 1minute				
	Center-taps	With	nout	Withou	t / With	Without	
	Detent		Withou	ut, Center		Without	
Mechanical	Stopper strength	0.51	0.5N·m		0.5N·m (With push-lock mechanism: 0.4N·m)		
performance	Push-pull strength	80N	max.				
	Vibration						
S	haft style	in the 3 direction of X, Y and Z and for 2 hours respectively Inner-shaft flat type Outer-shaft slotted type				Flat type	
Ter	Terminal style Insertion				Reflow		
Atta	ached switch	-	_	Rotary switch Push-on push-off switch Push-on switch Push-lock switch	_	Push-on switch	
	Page	30	06	3	321		

Notes

- $\hbox{1. For the switch attached, the single-shaft or inner shaft of the dual-shaft type can be chosen.}\\$
- 2. The operating temperature range for automotive applications can be raised upon request. Please contact us for details.
- 3. O Indicates applicability to some products in the series.



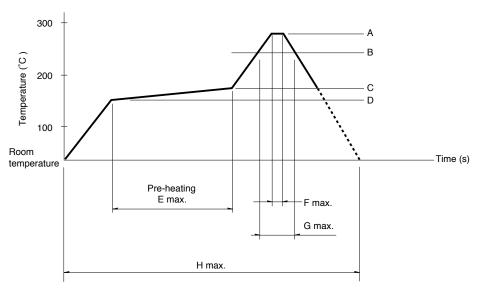
Series		Tip temperature	Soldering time	No. of solders	
RK09L, RK097		350°C max.	3s max.	1 time	
RK203		300°C max.	3s max.	1 time	
RK119		350±10℃	3 ⁺¹ s	1 time	
RK271		350°C max.	5s max.	1 time	
RK501		350±10℃	5 ⁺¹ ₀ s	1 time	
RK163		350°C max.	5s max.	1 time	
DK160	Potentiometer terminal	300°C max.	3s max.	1 time	
RK168	Motor terminal	350°C max.	2s max.	1 time	

■ Reference for Dip Soldering

	Prehe	eating	Dip so	No. of solders	
Series 			Soldering temperature		
RK09L, RK097, RK203	100°C max.	2 min. max.	260±5℃	5±1s	2 time max.
RK501	120±10℃	2 min. max.	260±5℃	5±1s	2 time

■ Example of Reflow Soldering Condition

Temperature profile



Series	А	В	С	D	Е	F	G	Н	No. of reflows
RK119	260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max.

Notes

- 1. When using an infrared reflow oven, solder may sometimes not be applied. Be sure to use a hot air reflow oven or at type that uses infrared rays in combination with hot air.
- 2. The temperatures given above are the maximum temperatures at the terminals of the potentiometer when employing a hot air reflow method. The temperature of the PC board and the surface temperature of the potentiometer may vary greatly depending on the PC board material, its size and thickness. Ensure that the surface temperature of the potentiometer does not rise to 250°C or greater.
- 3. Conditions vary to some extent depending on the type of reflow bath used. Be sure to give due consideration to this prior to use.

otentiometer

Shaft

Insulated Shaft

Operating

Shaft Type

Type

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ALPS:

RK0971110D7Z RK097111080R RK09711100F8 RK09712200HA RK097122008T RK097122200G

RK097111TZ17 RK097111TD44 RK097221005C RK0971110D7F RK0971111Z32 RK0971210097 RK09712100AV

RK0971210Z2M RK09712200MT RK0971221Z11 RK097122TZ0A RK097221004C RK0971110F25C1B103

RK0971110909 RK097111T065 RK097111TD2M RK0971114Z07 RK097111T064 RK097122T017 RK097121TD57

RK097111091M RK0971214Z06 RK0971110D88 RK0971111Z0P RK0971221Z05 RK097111020N

RK09711110AL RK0971114D0B RK097111080J RK09711110EL RK097111202P RK097111202Q RK09712200MY

RK0971110D57 RK09712200MC RK0971224Z01 RK097111050B RK0971110-F25-31-B103 RK0971110-F25-31-B203 RK0971111UZ0D RK0971111-F30-CO-B103 RK0971111Z05 RK0972210C1F RK0971221-F15-C0-A503