



Reliance[®]

Precision Mechatronics



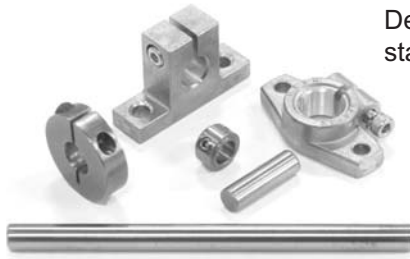
**Standard and Customised
Components and Assemblies**

A complete source for precise motion control

Gear Clamps, Shafts and Accessories

Accessories

Designed to interface with the standard Reliance range.



Linear Motion Shafting

Standard 3mm to 25mm diameter
Hollow 10mm to 25mm diameter



Ground Shafts

Stainless steel, precision ground
2mm to 12mm diameter



Shaft Support and Locks

Shaft lock 10mm to 25mm
Shaft support 10mm to 25mm



Clamps and Collars

From 2mm to 12mm bore to suit
gears and shafts

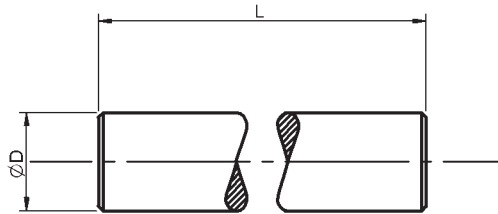
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All dimensions in mm
 Materials: Bearing steel SUJ2,
 Stainless steel 440C
 Straightness: L/D (μm)
 Surface finish: 0.4 μm
 Hardness: 58-63HRc

Associated Products
 Bearings: [page 12-2](#)
 Shaft support: [page 11-6](#)
 Shaft lock: [page 11-7](#)



Part number selection table

Basic Part Number		Outside Dia Tolerance		Available Lengths L											
		Max	Min	100	200	300	400	500	600	800	1000	1200	1500	2000	
Example Part No.- RS-3-400															
RS-3	3	-0.009	-0.017	•#	•#	•#	•#								
RS-4	4			•#	•#	•#	•#								
RS-5	5			•#	•#	•#	•#								
RS-6	6			•#	•#	•#	•#	•#	•#	•#	•#	•#			
RS-8	8	-0.010	-0.019	•#	•#	•#	•#	•#	•#	•#	•#				
RS-10	10			•#	•#	•#	•#	•#	•#	•#	•#	•#	#	•#	
RS-12	12			•	•#	•#	•#	•#	•#	•#	•#	•#	#	•#	
RS-13	13			•	•#	•#	•#	•#	•#	•#	•#	•#	#	•#	
RS-16	16			•	•#	•#	•#	•#	•#	•#	•#	•#	#	•#	•#
RS-20	20					•	•#	•#	•#	•#	•#	•#	#	•#	•#
RS-25	25	-0.020		•	•#	•#	•#	•#	•#	•#	#	•#	•#		

- SUJ2 bearing steel
- # SUS440C stainless steel

- Standard material = SUJ2 bearing steel, for stainless steel, add **-SS** to the part number eg **RS-3-400-SS**

Non-standard options, please contact our sales team

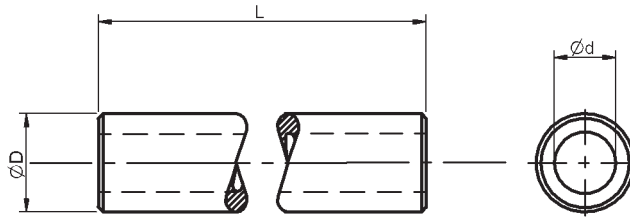
- Ultra precision (straightness 0.5 L/D) on both SUJ2 and 440C shafts. Add **-P** to part number
- Reduced clearance shafts manufactured to h6 tolerance. Add **-H6** to part number
- Custom end machining available to order
- Non-standard lengths available

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Associated Products
 Bearings: [page 12-2](#)
 Shaft support: [page 11-6](#)
 Shaft lock: [page 11-7](#)

All dimensions in mm
 Material: Bearing steel SUJ2
 Straightness: L/D (μm)
 Surface finish: 0.4 μm
 Hardness: 58-63HRC



Part number selection table

Example Part No.- RPS-10-500									
Basic Part Number	Outside Dia ØD	Outside Dia Tolerance		Inside Dia Ød	Available Lengths L				
		Max	Min		500	700	1000	1200	1500
RPS-10	10	-0.010	-0.019	4	•	•	•	•	•
RPS-12	12			6	•	•	•	•	•
RPS-13	13			7	•	•	•	•	•
RPS-16	16		10	•	•	•	•	•	
RPS-20	20		14	•	•	•	•	•	
RPS-25	25	-0.020	16	•	•	•	•	•	

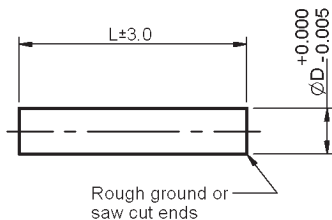
Non-standard options, please contact our sales team

- Ultra precision (straightness 0.5 L/D). Add **-P** to part number
- Reduced clearance shafts manufactured to h6 tolerance. Add **-H6** to part number
- Custom end machining available to order
- Non-standard lengths available

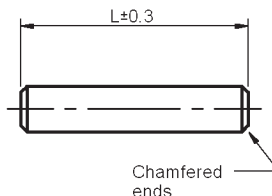
All dimensions in mm
 General tolerances $\pm 0.13\text{mm}$
 Material: Stainless steel 300 series
 Straightness: 0.0003mm/mm
 Surface finish: $0.25\mu\text{m}$

Associated Products
 Shaft collars: [page 11-5](#)
 Bearings: [page 12-2](#)
 Couplings: [page 8-1](#)

Cut to Length



Machined to Length



Part number selection table - Cut to length

Basic Part Number	Diameter ØD	Length L	Basic Part Number	Diameter ØD	Length L
SM1-3-	2.993	600	SM1-6A-	6.000	600
SM1-3A-	3.000		SM1-8-	7.993	
SM1-4-	3.993		SM1-8A-	8.000	
SM1-4A-	4.000		SM1-10-	9.993	1,000
SM1-5-	4.993		SM1-10A-	10.000	
SM1-5A-	5.000		SM1-12-	11.993	
SM1-6-	5.993		SM1-12A-	12.000	

To complete the part number add length details to part number eg **SM1-8-600**

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Part number selection table - Machined to length

Basic Part Number	Diameter ØD	Available Lengths					
		Length L	Length Code	Length L	Length Code	Length L	Length Code
		25	-25	70	-70	115	-115
SM2-3	2.993	30	-30	75	-75	120	-120
SM2-4	3.993	35	-35	80	-80	125	-125
SM2-5	4.993	40	-40	85	-85	150	-150
SM2-6	5.993	45	-45	90	-90	175	-175
SM2-8	7.993	50	-50	95	-95	200	-200
SM2-10	9.993	55	-55	100	-100	225	-225
SM2-12	11.993	60	-60	105	-105	250	-250
		65	-65	110	-110	275	-275

To complete the part number add length details to part number eg **SM2-8-250**

Non-standard options, please contact our sales team

- Standard shaft end modifications, similar to those on leadscrews, are available. See [page 7-27](#)
- Imperial sizes

Shaft Retaining Collars



Associated Products

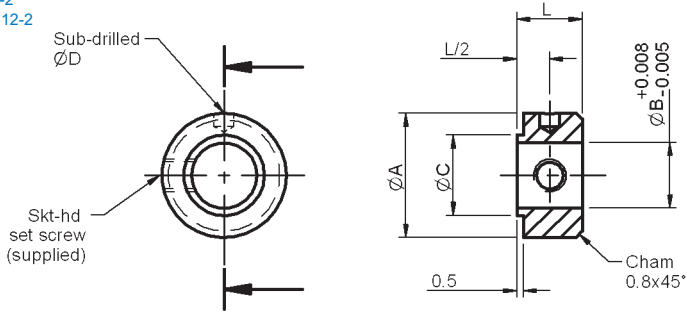
Hubless gears: [page 4-48](#)

Hubless brass gears: [page 4-86](#)

Shafts: [page 11-2](#)

Bearings: [page 12-2](#)

All dimensions in mm
General tolerances $\pm 0.13\text{mm}$
Material: Stainless steel



Part number selection table

Part Number	Bore ØB	Length L	Outer Dia ØA	Shoulder Dia ØC	Sub-drill ØD	Set Screw Supplied
CSM-2	2.0	5.0	7.0	3.0	0.75	SS-M1.6-2.5
CSM-3	3.0	5.0	8.0	4.1	0.75	SS-M2-2
CSM-4	4.0	5.0	8.0	5.3	1.00	SS-M2-2
CSM-5	5.0	6.0	10.0	6.7	1.20	SS-M3-3
CSM-6	6.0	6.0	10.0	7.9	1.50	SS-M3-3
CSM-8	8.0	6.0	12.0	10.2	1.80	SS-M4-4
CSM-10	10.0	10.0	19.0	12.3	3.00	SS-M5-4
CSM-12	12.0	11.0	25.0	15.2	3.00	SS-M6-6

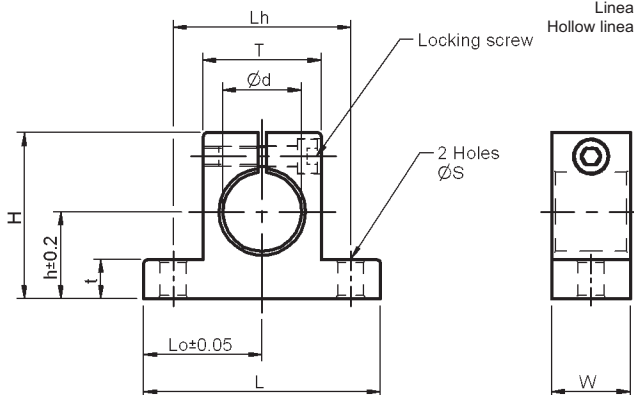
Non-standard options, please contact our sales team



All dimensions in mm
 General tolerances $\pm 0.13\text{mm}$
 Material: Die cast aluminium

Associated Products

Linear motion shafting: [page 11-2](#)
 Hollow linear motion shafting: [page 11-3](#)
 Shaft lock: [page 11-7](#)



Part number selection table

Part Number	Dimensions								
	Shaft Dia Ød	Centre Height h	Height H	t	Overall Length L	L_o	Mounting Hole Centres L_h	Width W	T
RSHA-6	6	10	20	5	30	15	22	8	12
RSHA-8	8	12	23	5	36	18	26	10	16
RSHA-10	10	16	29	6	40	20	30	14	18
RSHA-12	12	16	30	6	42	21	32	14	20
RSHA-13	13	17	32	6	42	21	32	14	20
RSHA-16	16	20	37	8	48	24	38	16	25
RSHA-20	20	22	42	10	60	30	45	20	30
RSHA-25	25	28	53	12	70	35	56	24	38

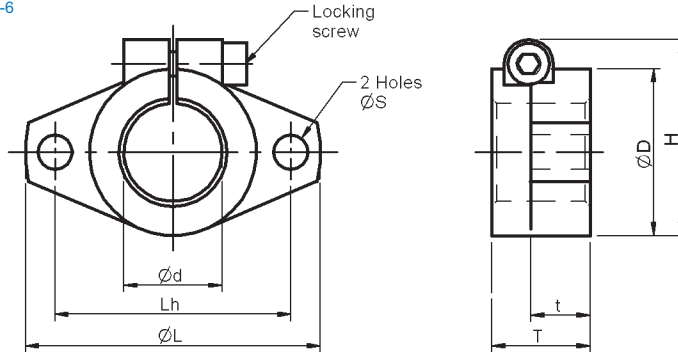
Technical specification

Part Number	Specification			
	Mounting Hole ØS	Locking Screw	Maximum Tightening Torque (Nm)	Weight (Kg)
RSHA-6	4.5	M3	0.29	0.008
RSHA-8	4.5	M3	0.29	0.014
RSHA-10	5.5	M4	0.29	0.020
RSHA-12A	5.5	M4	0.29	0.022
RSHA-13	5.5	M4	0.29	0.022
RSHA-16	5.5	M4	0.49	0.040
RSHA-20	6.6	M5	0.49	0.070
RSHA-25	6.6	M6	0.98	0.120

Associated Products

Linear motion shafting: [page 11-2](#)
 Hollow linear motion shafting: [page 11-3](#)
 Shaft support: [page 11-6](#)

All dimensions in mm
 General tolerances $\pm 0.13\text{mm}$
 Material: Die cast aluminium



Part number selection table

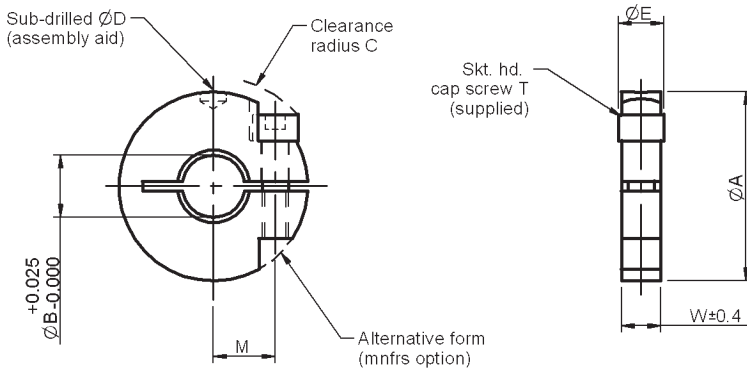
Part Number	Dimensions						
	Shaft Dia $\varnothing d$	Outside Dia $\varnothing D$	Height H	Overall Length L	Mounting Hole Centres L _h	Width T	t
RSFA-10	10	18	22	36	28	10	5
RSFA-12	12	22	26	43	36	13	6
RSFA-13	13	22	26	43	36	13	6
RSFA-16	16	28	31	50	40	16	7
RSFA-20	20	34	37	60	48	20	8
RSFA-25	25	40	42	70	56	25	10

Technical specification

Part Number	Specification			
	Mounting Hole $\varnothing S$	Locking Screw	Maximum Tightening Torque (Nm)	Weight (Kg)
RSFA-10	4	M3	0.29	0.010
RSFA-12	5	M3	0.29	0.016
RSFA-13	5	M3	0.29	0.014
RSFA-16	6	M4	0.49	0.026
RSFA-20	7	M5	0.49	0.046
RSFA-25	7	M5	0.98	0.072

All dimensions in mm
 General tolerances $\pm 0.13\text{mm}$
 Material: Stainless steel

Associated Products
 Clamp hub gears: from [page 4-32](#)
 Anti-backlash gears: from [page 4-18](#)



Part number selection table

Part Number	To Suit Gear of Bore Dia	Bore $\varnothing B$	Outer Dia $\varnothing A$	Width W	Head Dia $\varnothing E$ (max)	Clearance Radius C	Screw Supplied T	Screw Offset M	Sub-drill $\varnothing D$
CGM1-2	2	3.6	16.0	4.0	3.8#	8.7	M2	5.3	1.5
CGM1-3	3	4.6							
CGM1-4	4	5.6	22.0	5.0	5.5	12.8	M3	7.5	3.0
CGM1-5	5	6.6							
CGM1-6	6	7.6							
CGM1-8	8	9.6	29.0	6.0	7.0	17.1	M4	9.5	4.0
CGM1-10	10	11.6							
CGM1-12	12	13.6	32.0	7.0	18.0	11.0			

socket head on these components is narrower than the clamp

Non-standard options, please contact our sales team

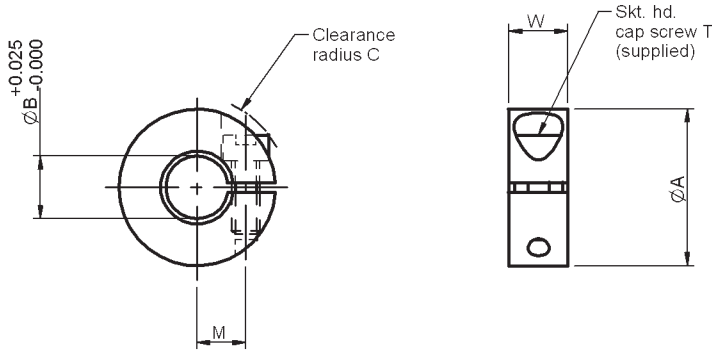
- Imperial bores



Associated Products

Clamp hub gears: from [page 4-32](#)
 Anti-backlash gears: from [page 4-18](#)
 Anti-backlash pinions: [page 4-3](#)

All dimensions in mm
 General tolerances $\pm 0.13\text{mm}$
 Material: Aluminium alloy L168



Part number selection table

Part Number	To Suit Gear of Bore Dia	Bore ØB	Outer Dia ØA	Width W	Clearance Radius C	Screw Supplied T	Screw Offset M
CGAM-2A	2	3.6	12.0	5.0	7.2	M2	3.5
CGAM-3A	3	4.6	13.0		7.8		4.0
CGAM-4A	4	5.6	17.0	7.0	10.0	M3	5.0
CGAM-5A	5	6.6	18.0		10.6		5.5
CGAM-6A	6	7.6	19.0		11.3		6.2
CGAM-8A	8	9.6	24.0	9.0	13.8	M4	7.5
CGAM-10A	10	11.6	26.0		14.8		8.5
CGAM-12A	12	13.6	28.0		16.2		9.8

Non-standard options, please contact our sales team

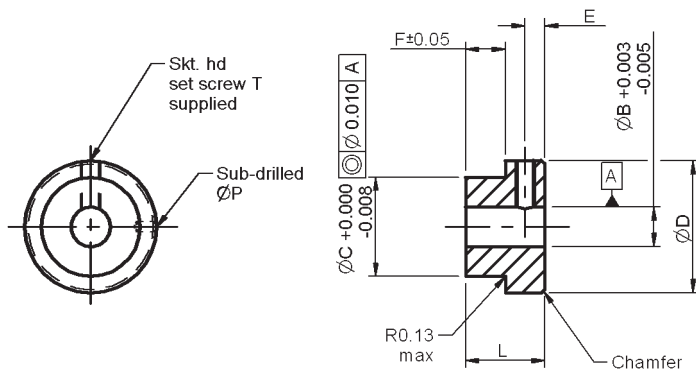
- Imperial bores



Gear and Dial Hubs Pin Type

All dimensions in mm
General tolerances $\pm 0.13\text{mm}$
Material: Stainless steel

Associated Products
Hubless gears: [page 4-48](#)
Hubless brass gears: [page 4-86](#)



Part number selection table - Dial hubs

Part Number	Bore ØB	Face F	Length L	Outer Diameter ØD	Mount Diameter ØC	Sub-drill ØP	Distance E	Set Screw Supplied T
PHMD-1	3.0		7.2			0.75		SS-M2-2
PHMD-3	4.0	1.57	7.2	11.0	9.52	1.00	2.8	SS-M2-2
PHMD-5	6.0		8.0			1.50		SS-M3-3

Part number selection table - Gear hubs

Part Number	Bore ØB	Face F	Length L	Outer Diameter ØD	Mount Diameter ØC	Sub-drill ØP	Distance E	Set Screw Supplied T
PHM1-1	3.0	3.0	9.0	12.0	10.0	0.75	3.0	SS-M2-2
PHM1-2		6.0	12.0					
PHM1-3	4.0	3.0	9.0	12.0	10.0	1.00	3.0	SS-M2-2
PHM1-4		6.0	12.0					
PHM1-5	6.0	3.0	9.0	20.0	15.0	1.50	3.0	SS-M3-3
PHM1-6		6.0	12.0					
PHM1-7	8.0	3.0	12.0	20.0	15.0	1.80	4.5	SS-M4-4
PHM1-8		6.0	15.0					
PHM1-9	10.0	6.0	18.0	30.0	25.0	3.00	6.0	SS-M5-5
PHM1-10		8.0	20.0					
PHM1-11		10.0	22.0					

- Gears, sprockets or dials assembled on request
- Recommended assembly procedure: Notch and stake in 4 equi-spaced positions and/or use adhesive (Loctite grade 326)

Non-standard options, please contact our sales team

- Imperial bores available
- Special hubs for Delrin gears

Gear and Dial Hubs Clamp Type

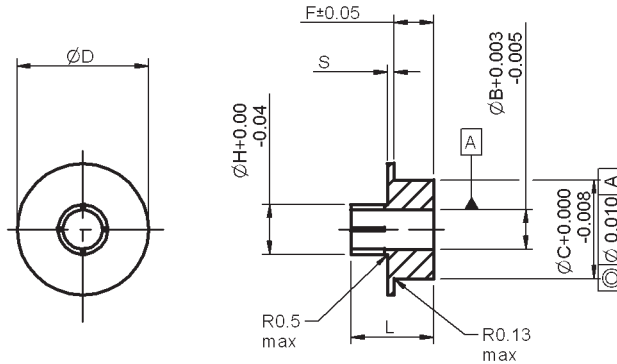


Associated Products

Hubless gears: [page 4-48](#)

Hubless brass gears: [page 4-86](#)

All dimensions in mm
General tolerances $\pm 0.13\text{mm}$
Material: Stainless steel



Part number selection table - Dial hubs

Part Number	Bore $\varnothing B$	Face F	Length L	Outer Diameter $\varnothing D$	Mount Diameter $\varnothing C$	Hub Diameter $\varnothing H$	Shoulder S	To Suit Clamp
CHMD-1	3.0			12.0		4.6		CGM1-3
CHMD-3	4.0	1.57	8.7	12.0	9.52	5.6	1.0	CGM1-4
CHMD-5	6.0			20.0		7.6		CGM1-6

Part number selection table - Gear hubs

Part Number	Bore $\varnothing B$	Face F	Length L	Outer Diameter $\varnothing D$	Mount Diameter $\varnothing C$	Hub Diameter $\varnothing H$	Shoulder S	To Suit Clamp
CHM1-1	3.0	3.0	8.5	12.0	10.0	4.6	1.0	CGM1-3
CHM1-2		6.0	11.5					
CHM1-3	4.0	3.0	9.5	12.0	10.0	5.6	1.0	CGM1-4
CHM1-4		6.0	12.5					
CHM1-5	6.0	3.0	9.5	20.0	15.0	7.6	1.0	CGM1-6
CHM1-6		6.0	12.5					
PHM1-7	8.0	3.0	11.0	20.0	15.0	9.6	1.5	CGM1-8
PHM1-8		6.0	14.0					
PHM1-9	10.0	6.0	14.0	30.0	25.0	11.6	1.5	CGM1-10
PHM1-10		8.0	16.0					
PHM1-11		10.0	18.0					

- Gears, sprockets or dials assembled on request
- Recommended assembly procedure: Notch and stake in 4 equi-spaced positions and/or use adhesive (Loctite grade 326)

Non-standard options, please contact our sales team

- Imperial bores available
- Special hubs for Delrin gears



In addition to these conditions of sale, our standard Conditions of Sale also apply. A copy of these is available on request and from our website www.rpmechatronics.co.uk/en/help

Minimum order charge - Orders are subject to a minimum order charge of £25.00 unless they have been placed on our website at www.rpmechatronics.co.uk

Carriage and packing - Additional charges are made for carriage and packing.

Payment - Payment terms are 30 days. New customers are requested to complete an application form for a credit account. Customers who do not have a credit account with Reliance are requested to supply cheque with order. In addition, orders may be paid for by Visa and Mastercard.

Telephone orders - An order number must be quoted by customers and a written confirmatory order, clearly marked "CONFIRMATION", sent within 7 days. We reserve the right to supply parts against a telephone order. All telephone orders are accepted subject to these conditions of sale and those detailed on the acknowledgement of order. An acknowledgement will normally be sent by Reliance on receipt of order and goods will be supplied in accordance with the order acknowledgement.

Certificates of Conformance - Reliance's quality management system is certified to AS9100 and ISO 9001. A Certificate of Conformance can be supplied at an additional charge of £10.00 per delivery. Alternatively, a Certificate with full material traceability can be supplied at a charge of £20.00 per delivery.

Confirmation - All orders, other than telephone orders with a value of less than £500 and orders placed through our website, are subject to acceptance in writing by Reliance Precision Mechatronics.

Order amendments - Order amendments are subject to our approval and a charge will be made for reasonable compensation for any costs incurred.

Returns - Unused items may, solely at our discretion, be accepted for credit within 90 days of delivery. Any parts so accepted will be subject to a 20% service charge for re-inspection and handling. No credit can be allowed after the above period, or for any used or modified part, or for parts manufactured to a customer's specification.

Additional charges - Reliance reserves the right to charge for all additional expenses and taxes incurred over and above published prices (including without limitation duty, VAT, exchange rate fluctuations etc.)

Alterations - As a result of continuous product development, Reliance reserves the right to alter prices and other details without prior notice and to change dimensions where this does not affect the function of the item.

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