

Uhing Lineartriebe[®]
Uhing Linear Drives[®]



Rollringgetriebe
Rolling Ring Drives



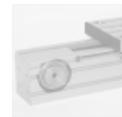
Führungssystem
Guide System



Wälzmutter
Linear Drive Nut



Zahnriemenantriebe
Timing Belt Drive



Klemm- und Spannelemente
Clamping Systems



Verlegesysteme
Winding Systems



Joachim Uhing GmbH & Co. KG - the originator of the Rolling Ring Principle - successful since 1950. Our worldwide network of agencies guarantees a reliable service on the spot.

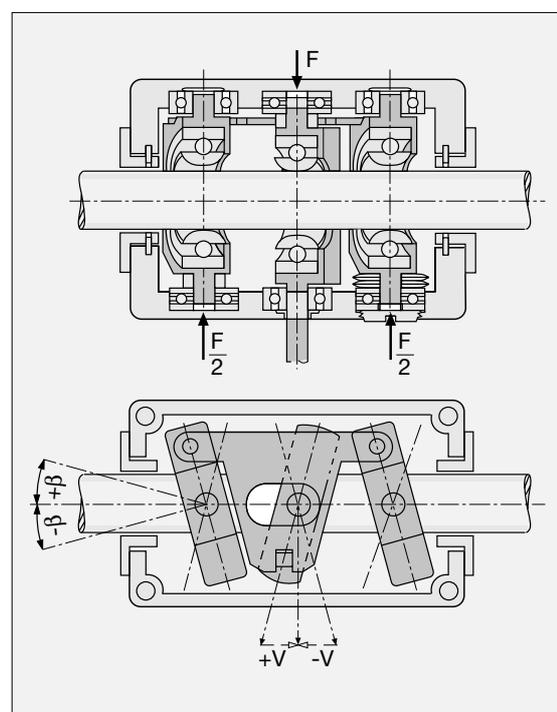
More about us at: www.uhing.com

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The Uhing Rolling Ring Principle

Rolling Ring Drives are non positive drives which convert the constant rotation of a plain round shaft into reciprocating motion. They operate like nuts on a threaded bar, however the pitch both left-hand and right-hand is capable of fine adjustment or can be set at zero.

This effect is achieved by using ball bearing based Rolling Rings which are designed to pivot about the shaft, their specially crowned running surfaces being pressed against the shaft as it rotates.



Applicational areas

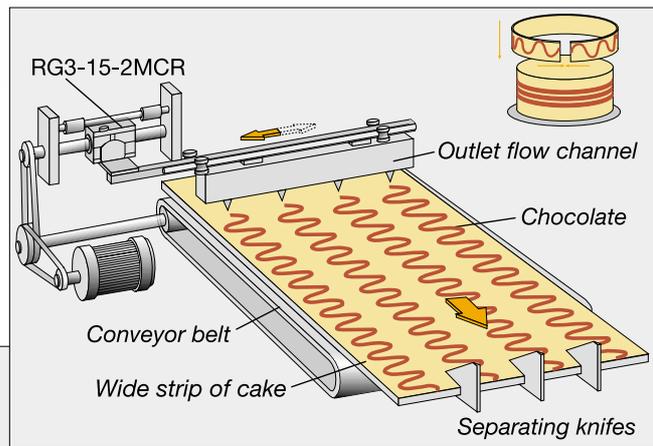
Range of application for Rolling Ring Drives

- Winding
- Drives
- Surface treatment
- Measuring and testing
- Materials handling
- Packaging
- Converting
- Tyre manufacture
- Feeds
- Positioning drives
- Power amplifiers (servo functions)
- Traverse drives for speeds up to 4,2 m/sec.
- Drives for synchronous cutting machines
- Sequential feed drives
- Special machines

Operational areas

Industrial Area	Function														
	Coating	Feeding	Manipulating	Measuring/testing	Opening/closing	Positioning	Cleaning	Cutting/parting	Spraying	Sequencing	Linking	Packing	Spreading	Winding	Mixing
Automation						●				●	●				
Automobile	●	●	●												
Baking machinery								●					●		
Wire + Cable industry				●										●	
Flat glass/mirrors	●								●						
Braiding machinery														●	
Foil								●						●	
Hollow glass ware									●						
Varnishing	●								●						
Food industry							●	●	●			●	●		
Paper/cardboard	●			●				●							
Tyres				●				●						●	
Steel				●										●	
Textile									●				●	●	
Packaging	●				●	●				●	●	●		●	
Pharmacy															●

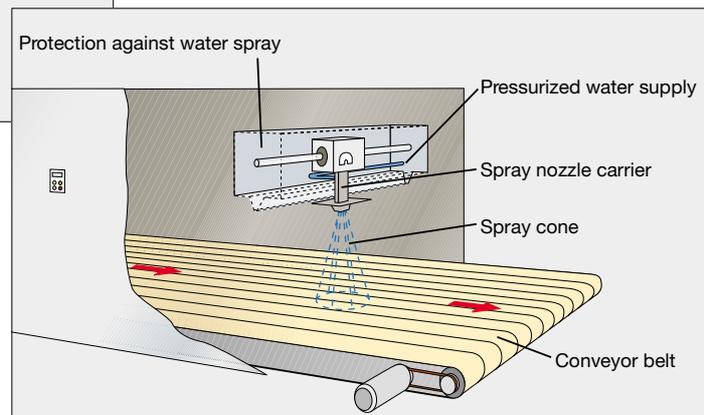
Applicational areas



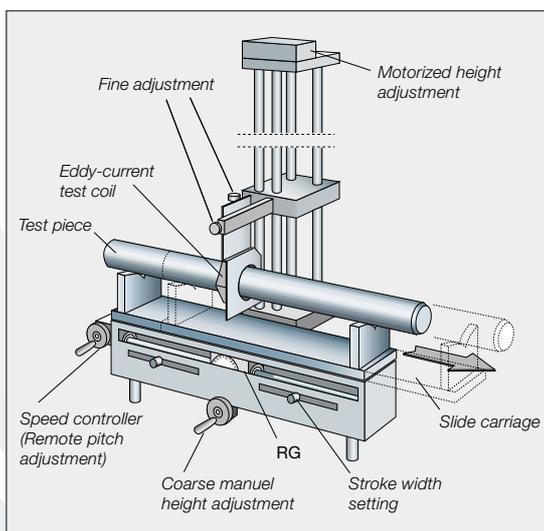
Production of tarts



Reversal depending on counterforce

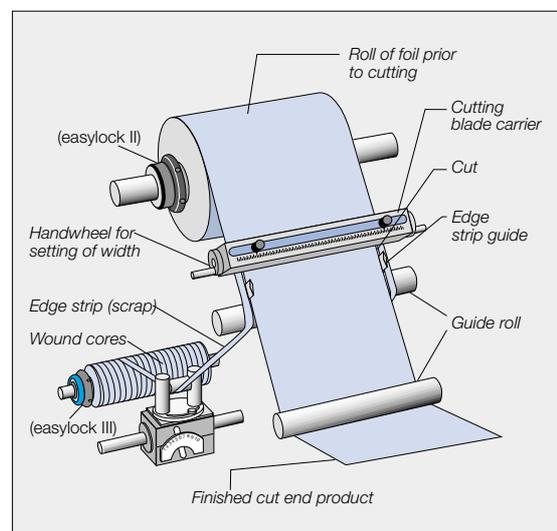


Cleaning with pressured water for conveyor belt



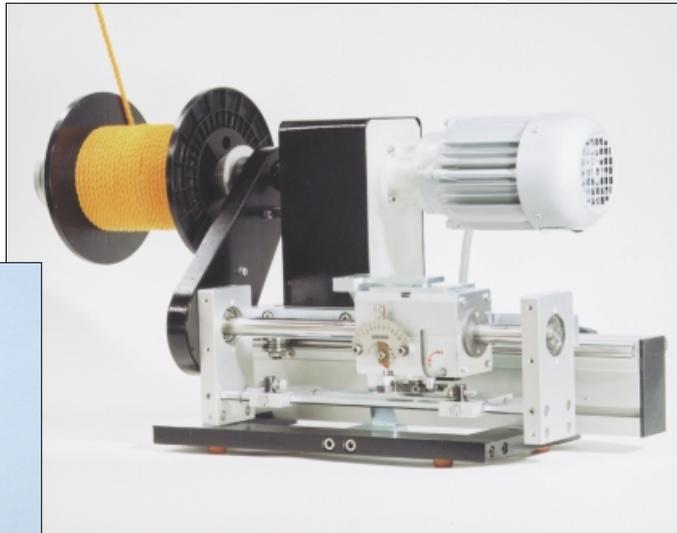
Eddy-current test slide

Converting-cut to final dimension

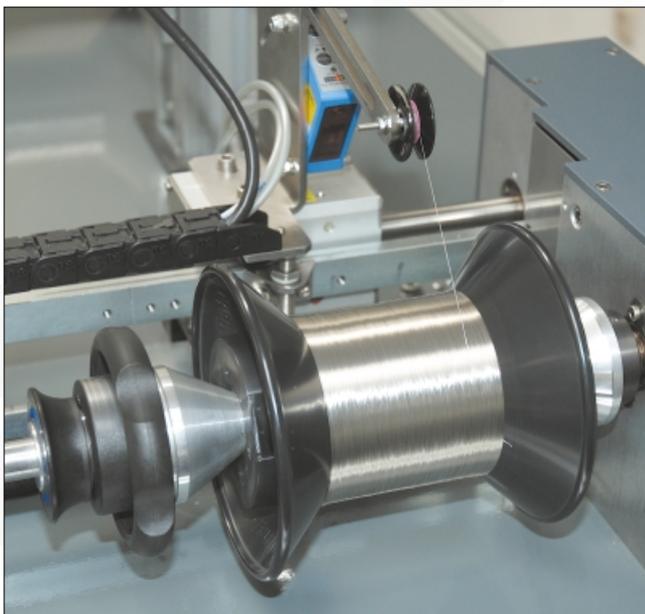
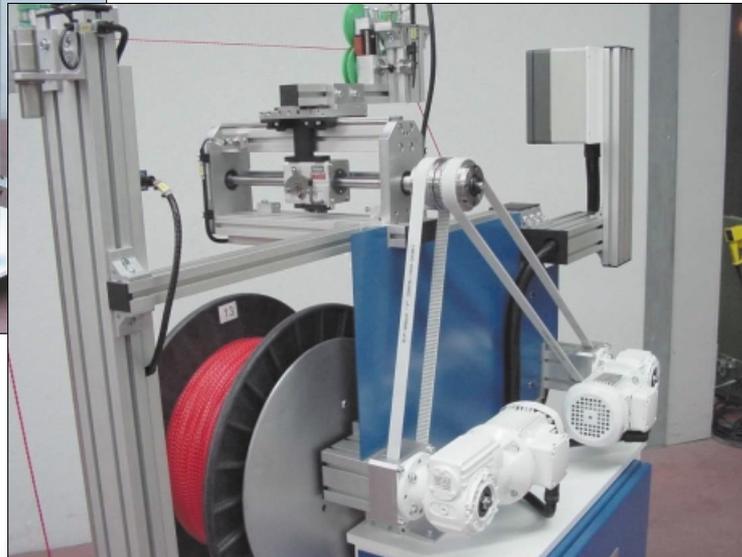


Applicational areas

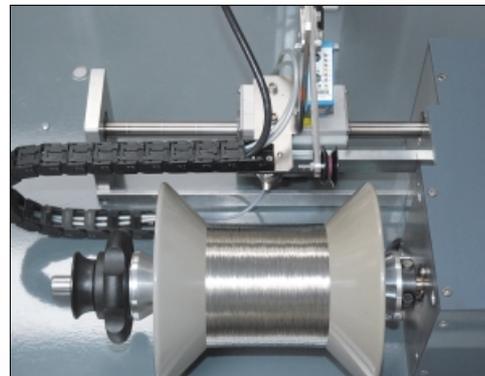
Winder „Moving Spool“-type



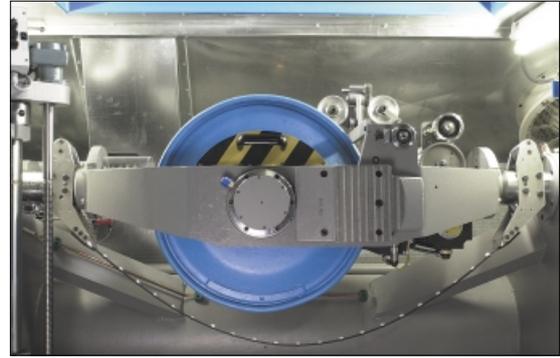
double winder



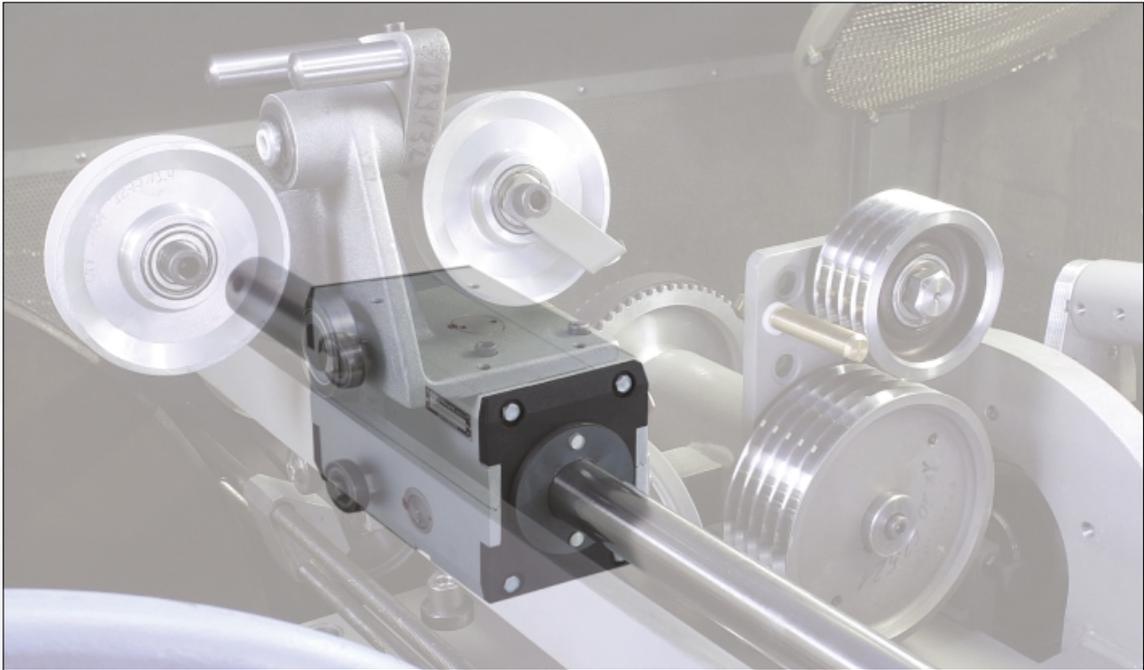
Non-contact flange
detecting system with
laser sensor FA



Applicational areas



Buncher



Application at -30° C
in the Antarctic

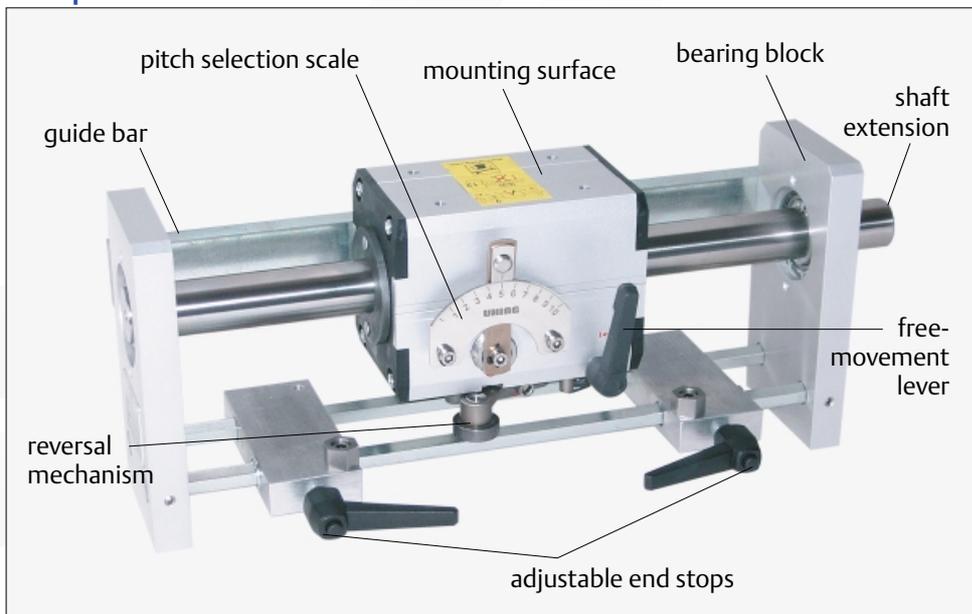


Find your suitable rolling ring drive

Shaft diameter d(mm)	Max. side thrust F_{RG} (N)	Speed max. v^* (m/sec)	Types	Page
15	30	0,30	KI3-15-6 MCR	16
15	90	0,30	RGK3-15-0	14
15	110	0,30	RG3-15-2MCRF	8
15	220	0,30	RG4-15-2MCRF	8
20	130	0,30	RGK3-20-1	14
20	160	0,30	RG3-20-2MCRF	8
20	320	0,30	RG4-20-2MCRF	8
22	130	0,30	RGK3-22-1	14
22	160	0,30	RG3-22-2MCRF	8
22	320	0,30	RG4-22-2MCRF	8
30	260	0,40	RG3-30-2MCRF	10
30	520	0,40	RG4-30-2MCRF	10
40	420	0,40	RG3-40-2MCRF	10
40	840	0,40	RG4-40-2MCRF	10
50	700	0,25	RG3-50-OMCR	12
50	1400	0,25	RG4-50-OMCR	12
60	1000	0,25	RG3-60-OMCR	12
60	2000	0,25	RG4-60-OMCR	12
80	1800	0,25	RG3-80-OMCR	12
80	3600	0,25	RG4-80-OMCR	12

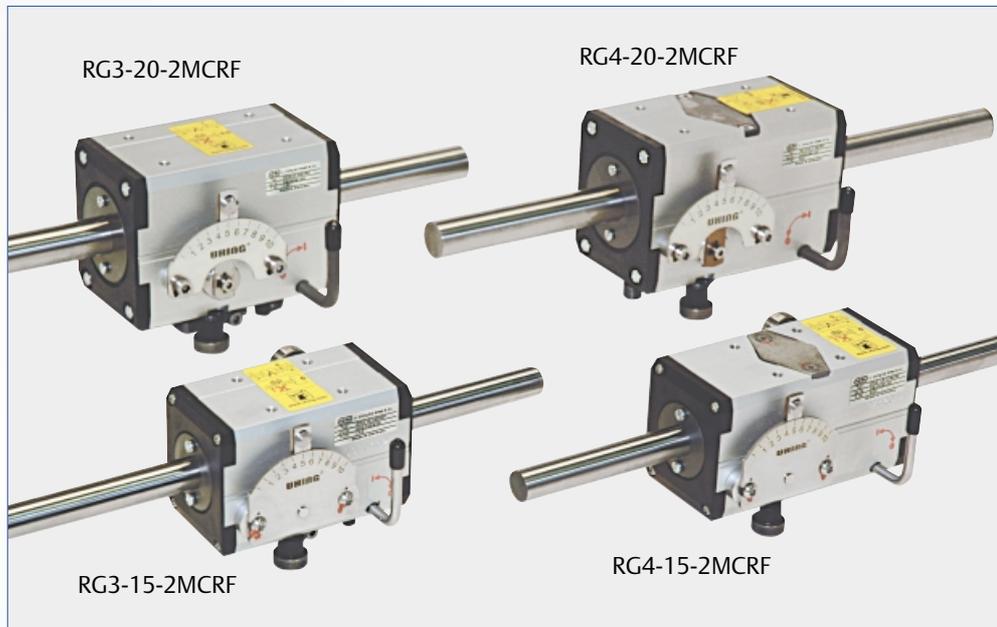
* = With standard instantaneous reserve

Example ARG 3-30-2 MCRF



Dimensions and technical details

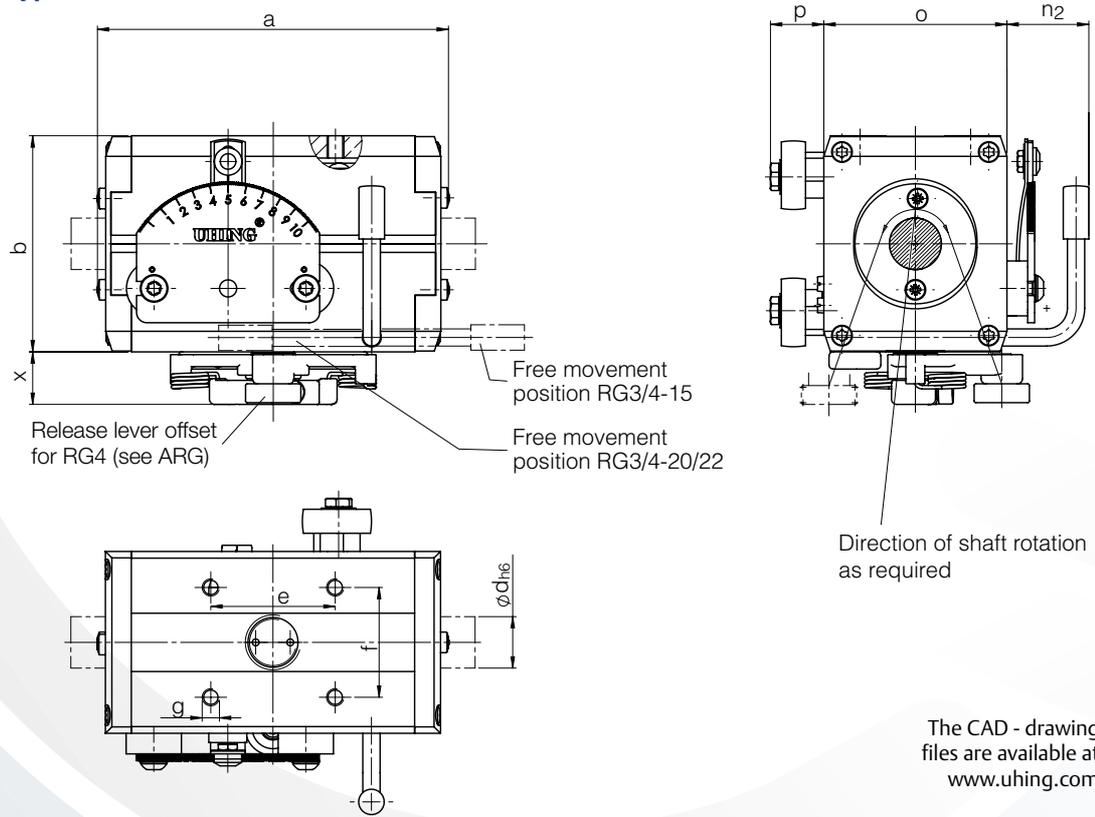
Uhing Rolling Ring Drive Types RG and ARG



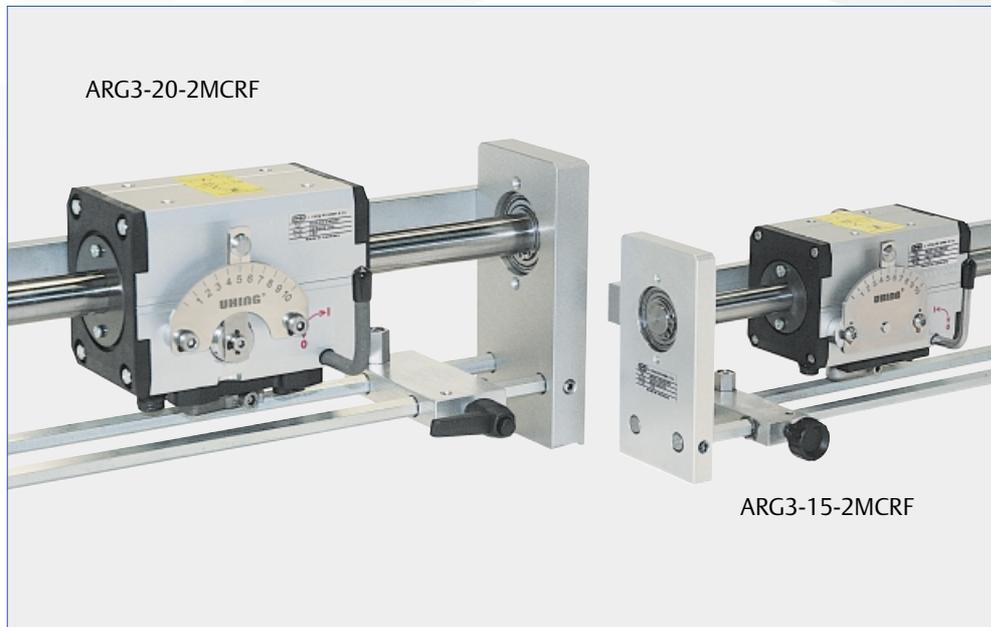
Dimensions for RG-Types (mm)

Types	Weight (kg)	a	b	Ødh6	e	f	g	n2	o	p	x
RG3-15-2MCRF	0,71	102	63	15	36	32	M5	24	53	16	15,5
RG4-15-2MCRF	0,86	121	"	"	"	"	"	"	"	"	"
RG3-20-2MCRF	1,33	124	84	20	70	40	M6	37,5	68	17,5	21
RG4-20-2MCRF	1,53	133	"	"	"	"	"	"	"	"	"
RG3-22-2MCRF	1,33	124	84	22	70	40	M6	37,5	68	17,5	21
RG4-22-2MCRF	1,53	133	"	"	"	"	"	"	"	"	"

RG-Types



The CAD - drawing files are available at www.uhing.com



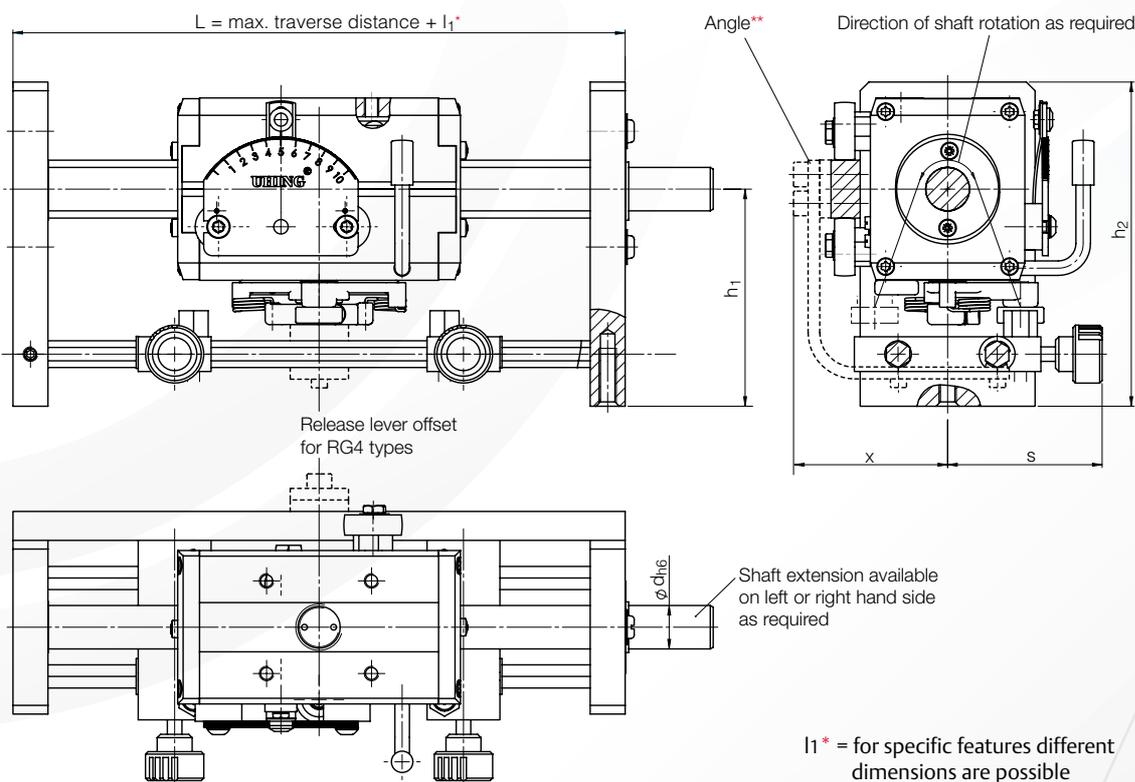
Dimensions and technical details

Uhing Rolling Ring Drive Types RG and ARG

Additional dimensions for ARG-Types (mm)

h1	h2	l1*	s	x	** Angle L ≥	Thrust FRG (N)	Technical details Idling torque drive Mo(Ncm)	max. pitch/ shaft rotation h(mm)
75	112	150	53	53	750	110	2,5	11,1
"	"	180	"	53	"	220	4,8	"
104	145	200	80	63	850	160	2,5	15,5
"	"	210	"	63	"	320	5,1	"
104	145	200	80	63	850	160	2,5	16,5
"	"	210	"	63	"	320	5,1	"

ARG-Types



Dimensions and technical details

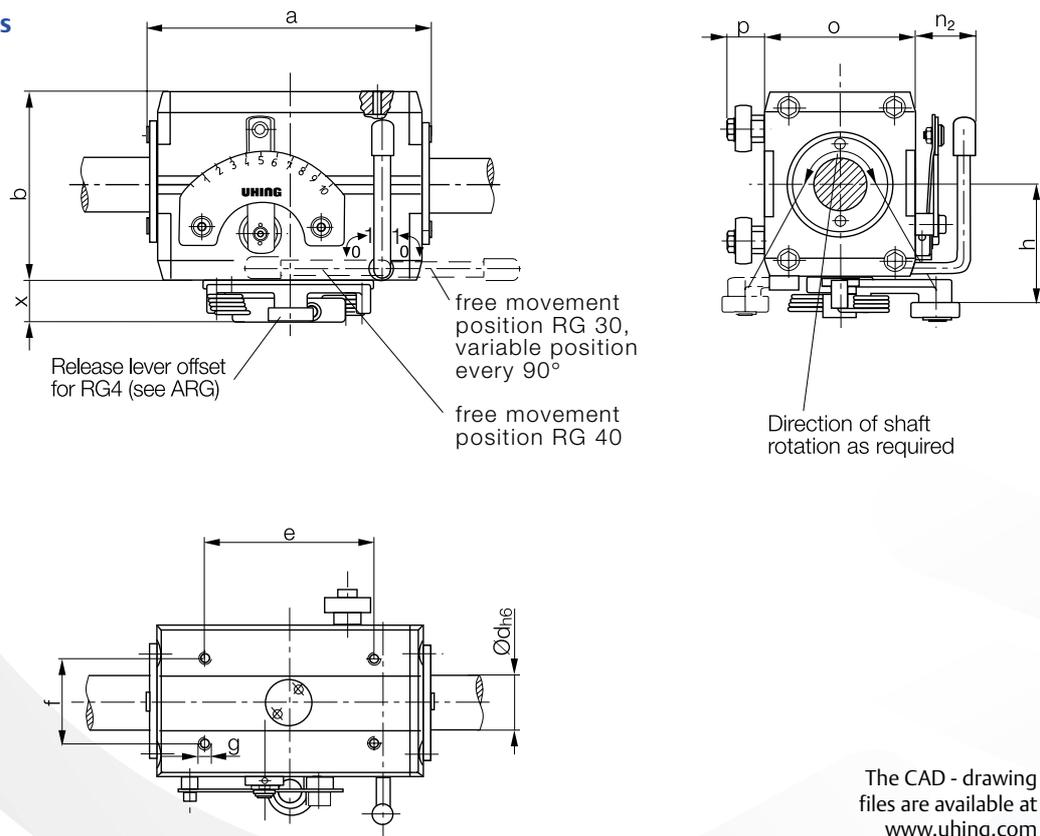
Uhing Rolling Ring Drive Types RG and ARG



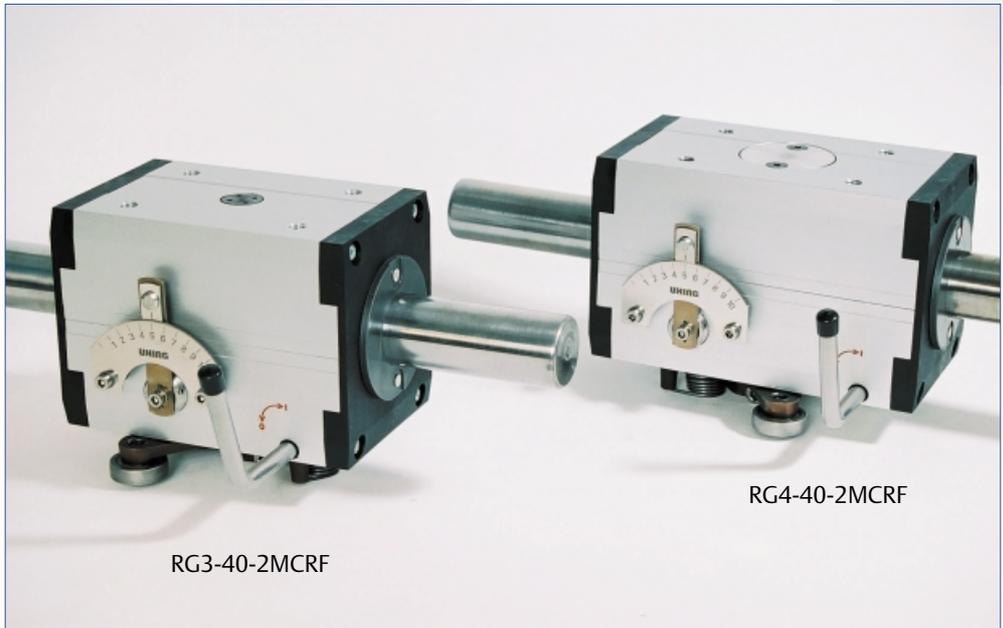
Dimensions for RG-Types (mm)

Types	Weight (kg)	a	a1	b	Ødh6	e	f	g	Øm1	n2	o	p	x
RG3-30-2MCRF	2,7	150	-	105	30	80	50	M6	-	42,5	86	18,5	23
RG4-30-2MCRF	3,2	180	-	"	"	"	"	"	-	-	"	"	"
RG3-40-2MCRF	4,4	182	4,5	128	40	100	68	M10	80	68	110	20	25,5
RG4-40-2MCRF	5,3	210	"	"	"	"	"	"	"	"	"	"	"

RG-Types



The CAD - drawing files are available at www.uhing.com



Dimensions and technical details

Uhing Rolling Ring Drive Types RG and ARG

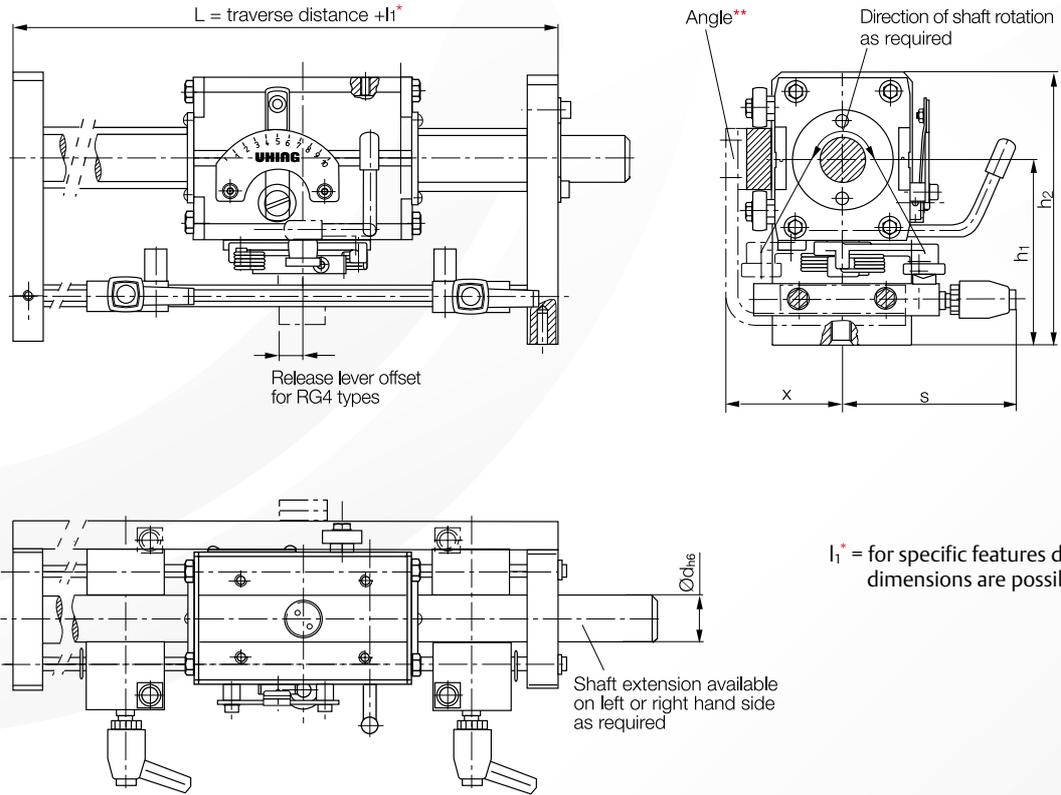
RG3-40-2MCRF

RG4-40-2MCRF

Additional dimensions for ARG-Typen (mm)

h1	h2	l1*	s	x	** Angle L ≥	Thrust FRG (N)	Technical details Idling torque drive M ₀ (Ncm)	max. pitch/shaft rotation h(mm)
120	175	240	107,5	75	940	260/400	8/10,2	24
"	"	280	"	"	"	520	12	24
150	220	320	126,5	104	1100	420	28	32
"	"	350	"	"	"	840	50	32

ARG-Types



*l₁** = for specific features different dimensions are possible

Dimensions and technical details

Uhing Rolling Ring Drive Types RG and ARG



RG3-60-OMCRF*

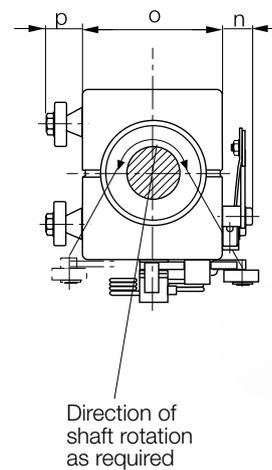
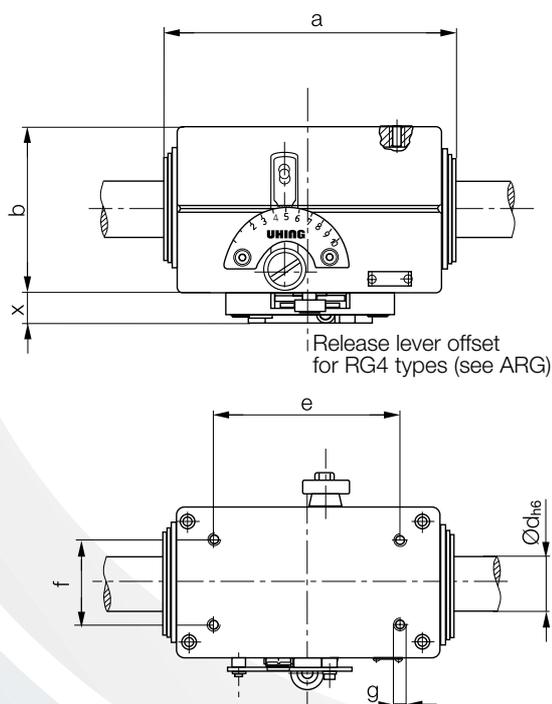
RG4-50-OMCRF*

*F = Special Feature

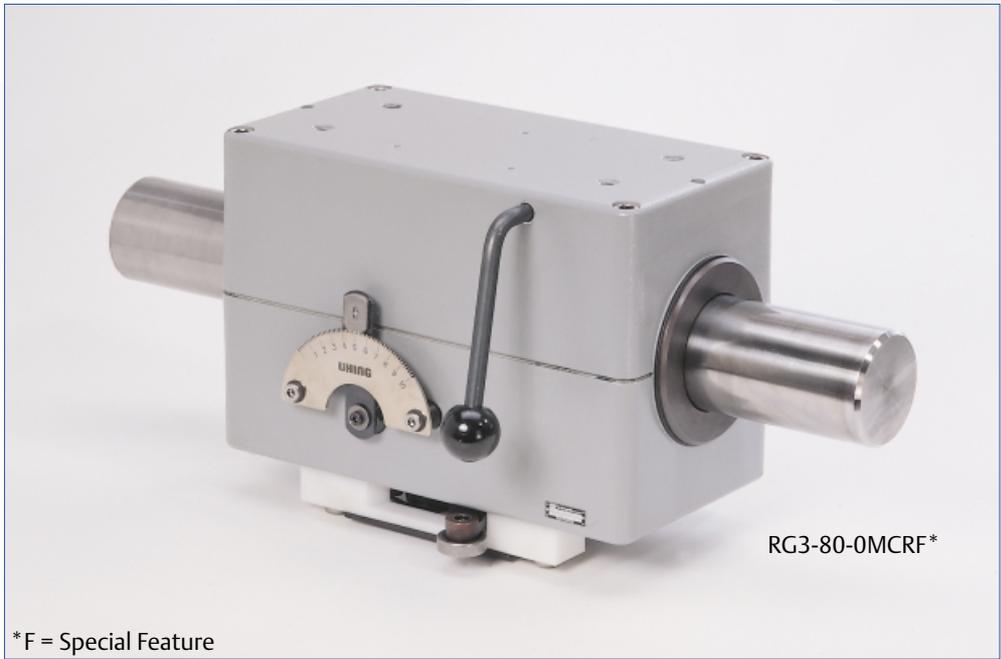
Dimensions for RG-Types (mm)

Types	Weight (kg)	a	b	Ødh6	e	f	g	n	o	p	x
RG3-50-OMCR	9,8	240	154	50	160	90	M12	23	132	35	25,5
RG4-50-OMCR	11,1	240	"	"	"	"	"	"	"	"	"
RG3-60-OMCR	17,0	297	190	60	120	80	M12	26	160	32	40
RG4-60-OMCR	19,6	297	"	"	"	"	"	"	"	"	"
RG3-80-OMCR	27,0	368	236	80	240	80	M12	23	188	41	40
RG4-80-OMCR	32,0	368	"	"	"	"	"	"	"	"	"

RG-Types



The CAD - drawing files are available at www.uhing.com



Dimensions and technical details

UHING
Rolling
Ring Drive
Types RG
and ARG

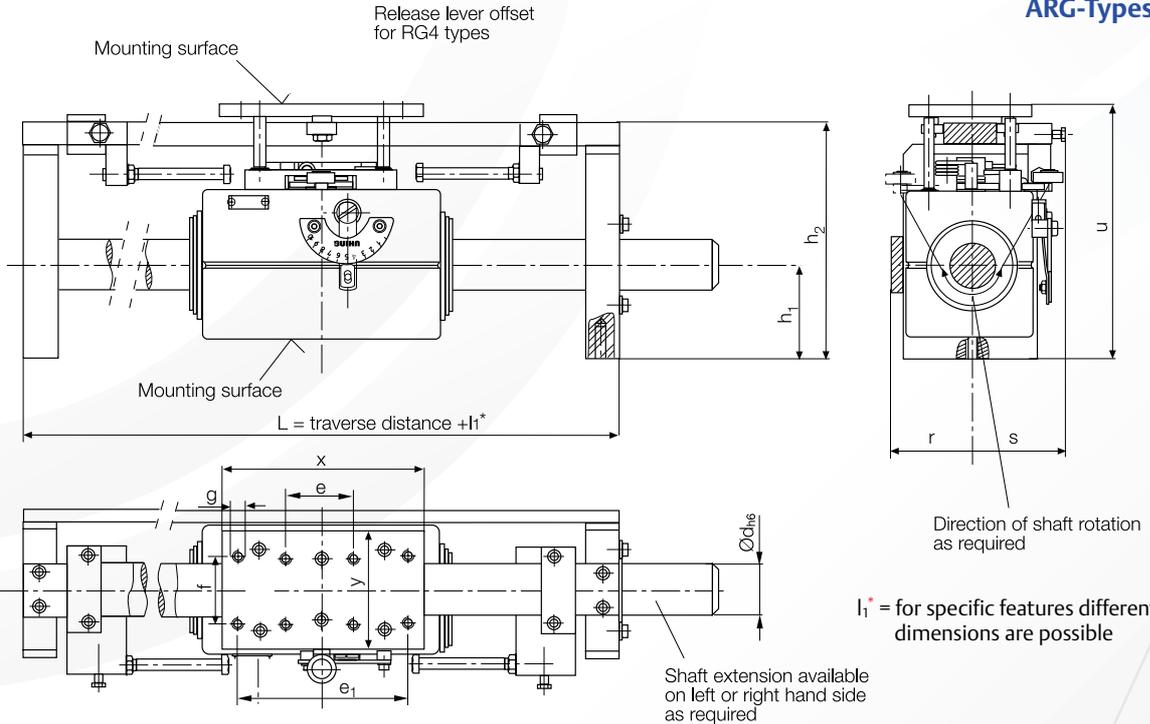
*F = Special Feature

Additional dimensions for ARG-Types (mm)

h_1	h_2	l_1^*	r	s	u	x	y	Heavy duty steady bar $L \geq$	Thrust FRG(N)	Technical details Idling torque drive $M_0(Ncm)$	max. pitch/ shaft rotation $h(mm)$
91	235	460	95	81	256	190	130	2000	700	70	40
"	250 ¹⁾	"	100 ¹⁾	"	271 ¹⁾	"	"	"	1400	120	"
140	330	580	115	138	352	300	180	3000	1000	90	48
"	340 ²⁾	"	"	"	362 ²⁾	"	"	"	2000	150	"
140	350	620	130	138	375	300	180	3600	1800	300	75
"	380 ³⁾	"	"	"	405 ³⁾	"	"	"	3600	350	"

1) with $L \geq 2000$, 2) with $L \geq 3000$, 3) with $L \geq 3600$

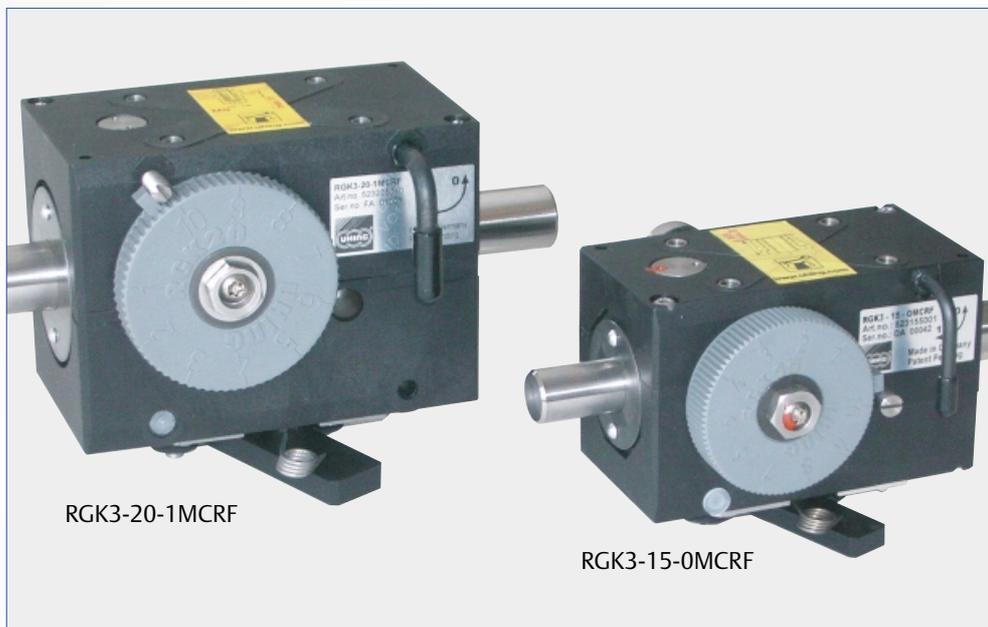
ARG-Types



l_1^* = for specific features different dimensions are possible

Dimensions and technical details

Uhing Rolling Ring Drive Types RGK and ARGK



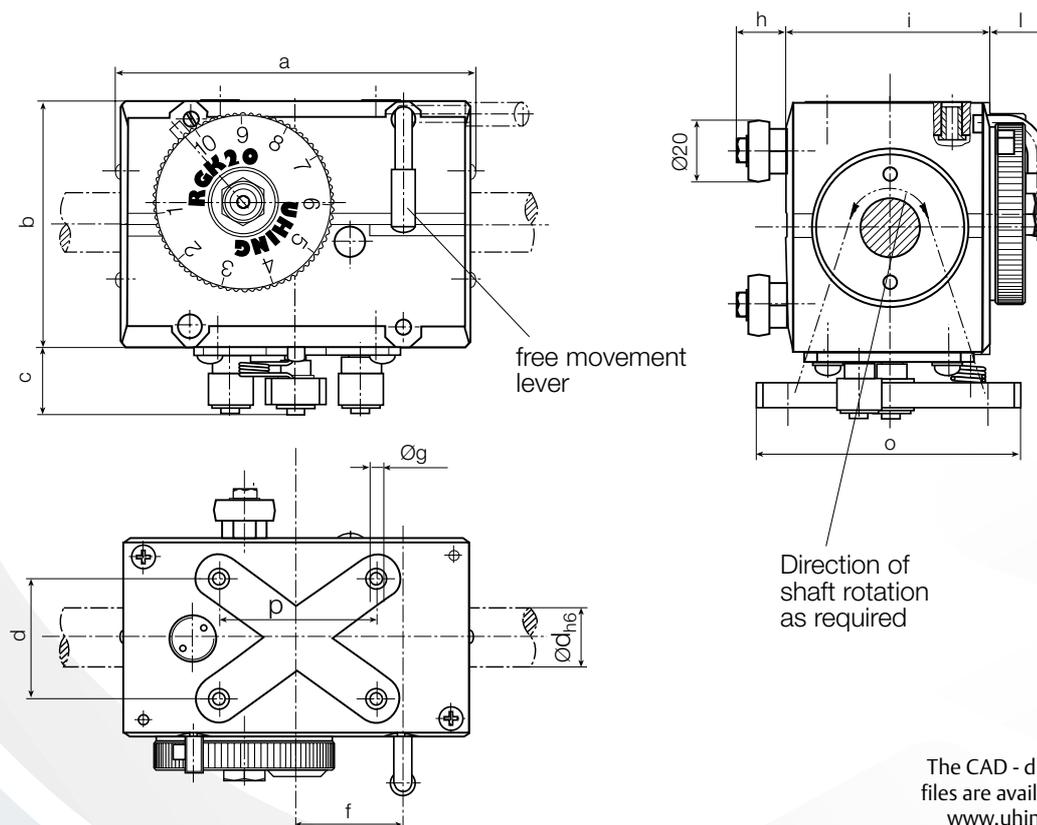
RGK3-20-1MCRF

RGK3-15-0MCRF

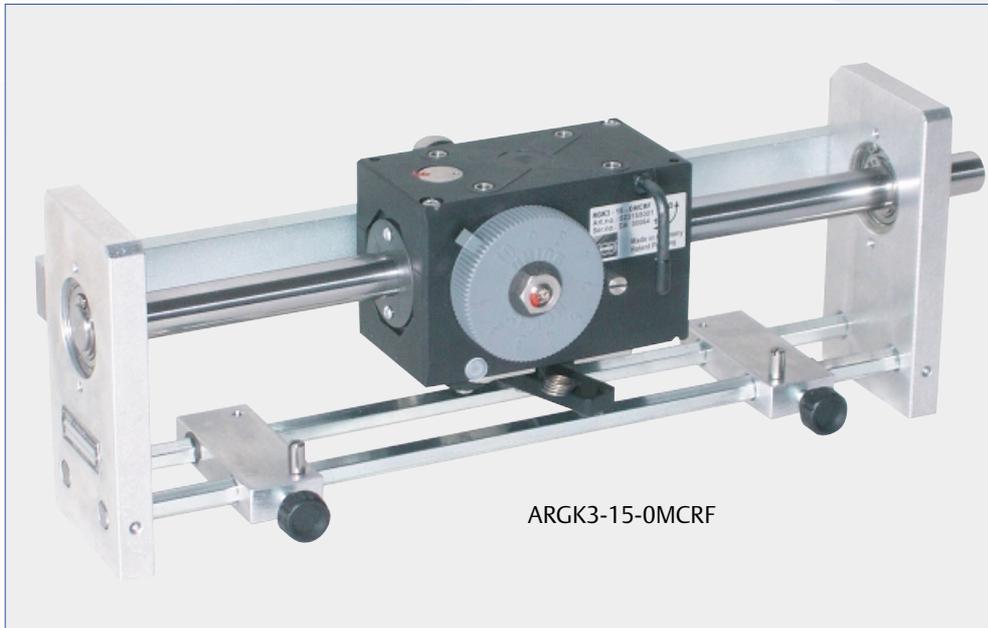
Dimensions for RGK-Types

Types	Weight (kg)	a	b	d	Ødh6	f	h	i	l	o	p	Øg
RGK3-15-0	0,53	100	63	34	15	30	17,3	53	15,8	70	46	M5
RGK3-20-1	0,90	120	86	42	20	36	17,5	68	20	90	54	M5
RGK3-22-1	0,90	120	86	42	22	36	17,5	68	20	90	54	M5

RGK-Types



The CAD - drawing files are available at www.uhing.com



Dimensions and technical details

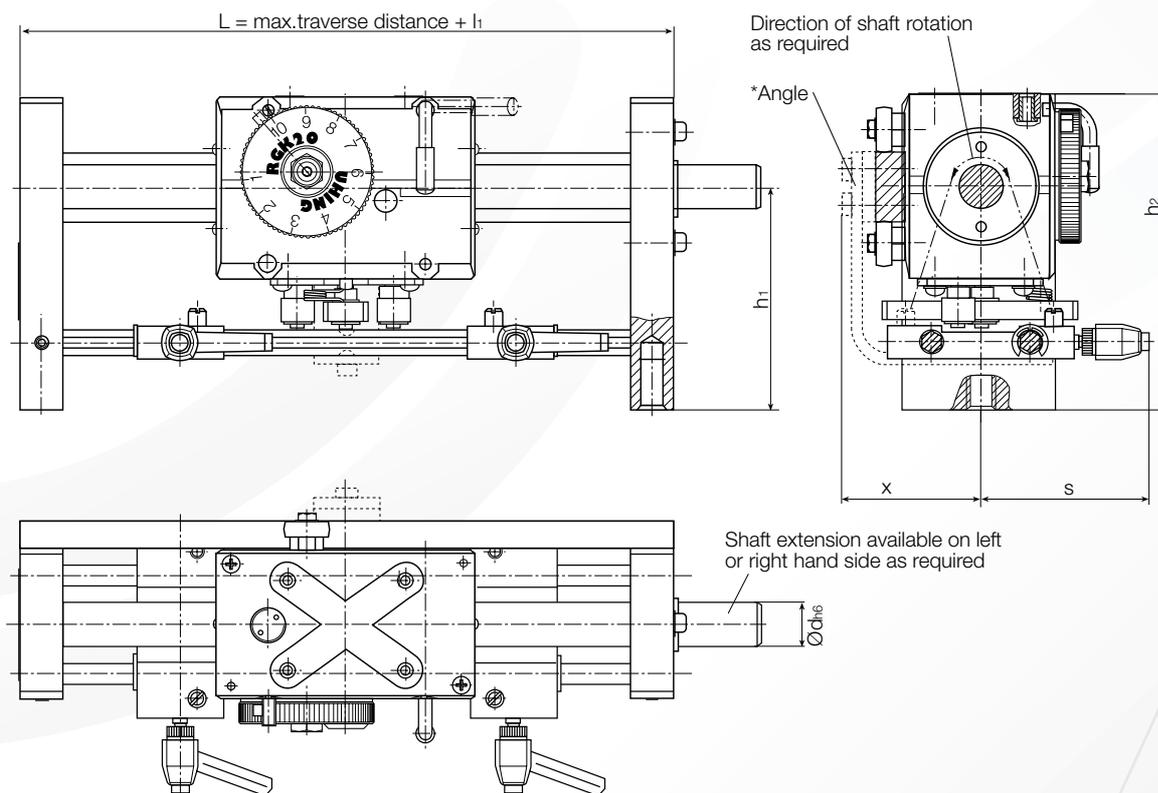
Uhing Rolling Ring Drive Types RGK and ARGK

ARGK3-15-0MCRF

Additional dimensions for ARGK-Types (mm)

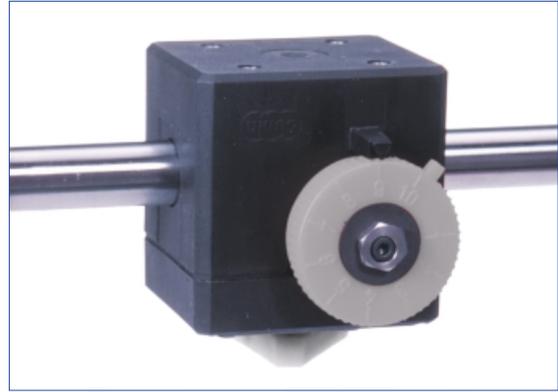
Additional dimensions for ARGK-Types (mm)						Technical details		
h1	h2	l1	s	x	*Angle L ≥	Thrust Frc(N)	Idling torque drive Mo(Ncm)	max. pitch/shaft rotation h(mm)
75	112	150	53	53	750	90	2,0	8
104	147	200	79	63	850	130	2,3	12
104	147	200	79	63	850	130	2,3	13

ARGK-Types



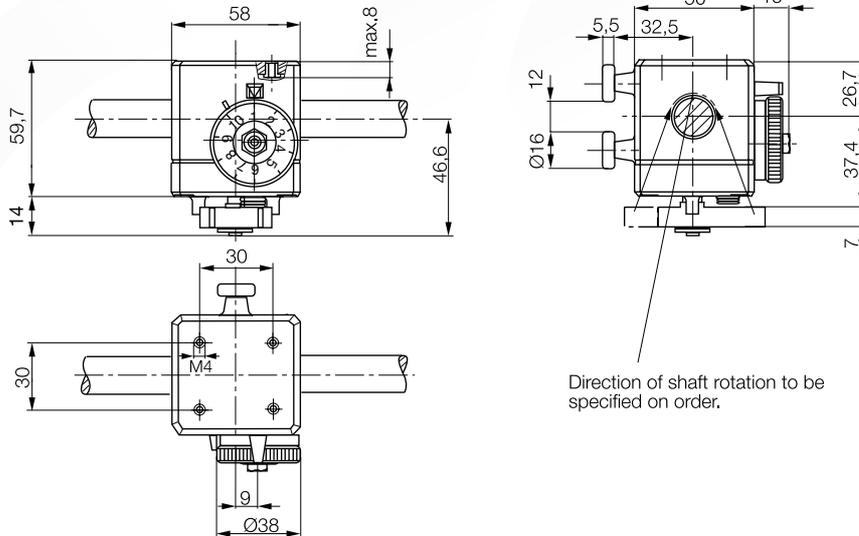
Dimensions and technical details

Uhing Rolling Ring Drive Types KI and AKI

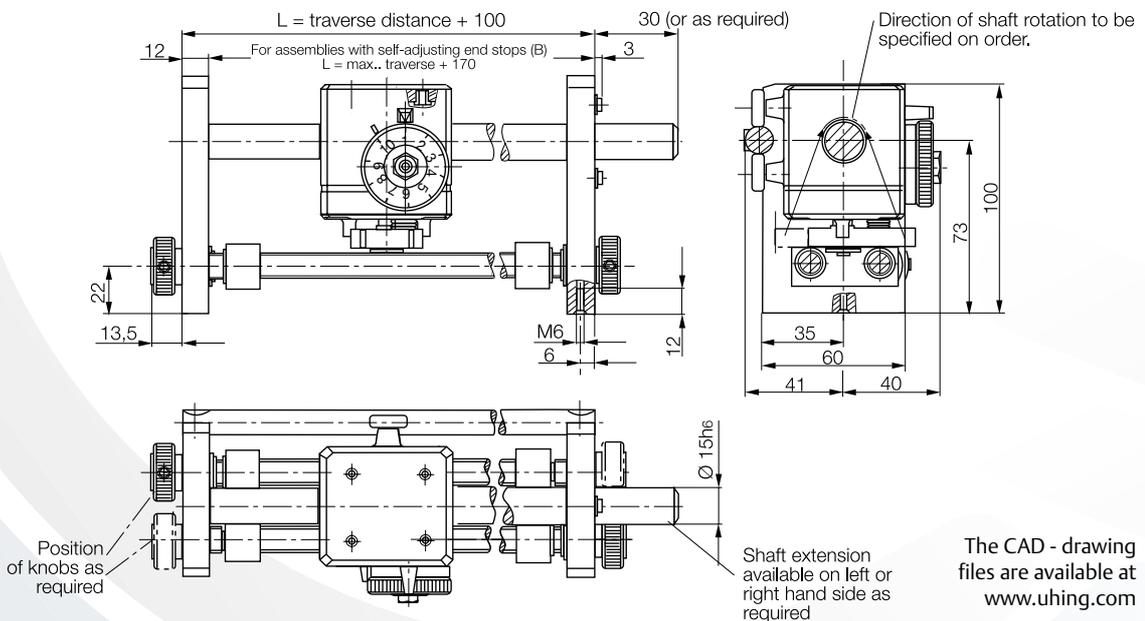


Dimensions	Weight (kg)	Max. side thrust FRG (N)	Drive torque M_0 (Ncm)	Max. pitch h (mm)
Type				
KI3-15-6 MCR	0,28	30	$6 \pm 0,5$	6

Type KI3-15-6MCR



Type AKI3-15-6MCRW



The CAD - drawing files are available at www.uhing.com

Product Survey and Ordering Information

Product Survey

Uhing Linear Drives®												
Product Group	Rolling Ring Drive										Kinemax	
Type Reference	RG page 8/10/12 ARG page 9/11/13							RGK p.14 ARGK p.15			KI page 16 AKI page 16	
Style Number of rolling rings	3 or 4							3			3	
Size Shaft diameter	15	20	22	30	40	50	60	80	15	20	22	15
Design Category	2	2	2	2	2	0	0	0	0	1	1	6
Direction of shaft rotation L = left R = right	L, R							RGK independent ARGK L, R			L, R	
Features	see page 18 - 19							s. page 18-19				
Customer Specific Features	see page 19							wipers			see page 19	
Pitch max. (mm)	11,4	15,9	17,2	26	33	41	49	76	8,5	12,2	13,3	6,2

Example of Ordering Specification

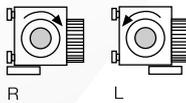
Type Reference	KI, AKI, RGK, ARGK, RG, ARG,											
Example	RG	3	-	30	-	2	M	C	R	F	X	
Type Reference	●											
Style		●										
Separator Symbol			●		●							
Size				●								
Design Category						●						
Features							●	●	●	●		
Customer Specific Features *												●

* X e.g. Adapter (twist-free coupling), intermediate support bracket, heavy duty steady bar, drive motor, wipers, special paint finish, additional anti-corrosion protection, double bearing support, special pitch, noise dampening, sequence control, etc.

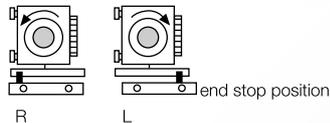
The following is further required:

Direction of shaft rotation
to the right = R
to the left = L

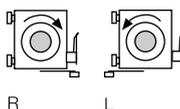
KI / AKI



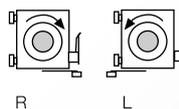
RGK / ARGK



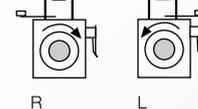
RG15 to RG80



ARG15 to ARG40



ARG50 to ARG80

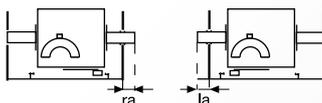


Shaft extension,
diameter and length (mm)

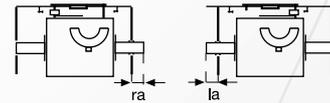
ra = extending beyond the righthand
bracket when looking at the pitch
selection scale

la = extending beyond the lefthand
bracket when looking at the pitch
selection scale

for ARG15 to ARG40



for ARG50 to ARG80

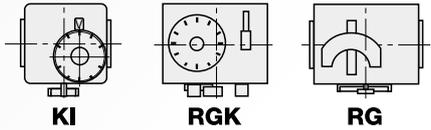


Features

Standard

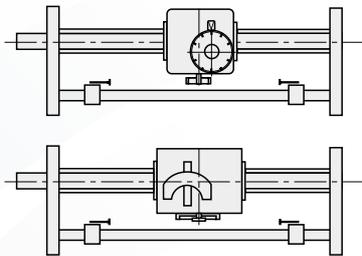
Rolling Ring Drives Types KI, RGK und RG

KI 3-15, RGK3-15/20
RG 3/4-15 to RG 3/4-80



Rolling Ring Drives Types AKI, ARGK und ARG

Rolling Ring Drive Units KI, RGK and RG with shaft, steady bars, end brackets and end stops



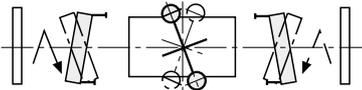
Additional

Attention: The dimensions and technical Details on the pages 8 to 16 are only valid for the features MCRF resp. MCR/MCR1. For different features ask for dimensional drawings.

Reversal

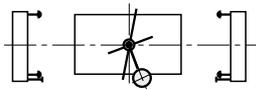
D *2 Two-way shaft rotation

Reversal mechanism suitable for either direction of shaft rotation. Push-rod not supplied.



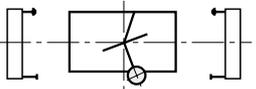
H *2 Control lever, double-sided

Provides reversal slowdown over short and adjustable slowdown length. Can be used to provide slowdown control both **before and after the reversal**.



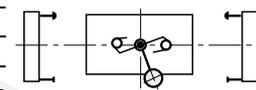
K *2 Control lever, single-sided

Reversal slowdown as H above but only providing slowdown **prior to the point of reversal**. For RG 15-2 / 20-2 / 22-2 / 30-2 this function is only possible by modifying H.



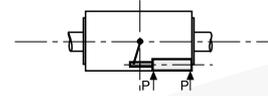
M Instantaneous reversal

Mechanical spring operated trigger action automatic reversal of the direction of travel. Minimum length of stroke = approx. 1x shaft diameter.



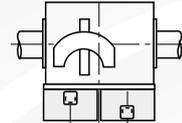
N *1 Pneumatic

The direction of travel is reversed by the action of a two-way pneumatic cylinder (operating pressure = 6 bar).



E *1 Electro-magnetic

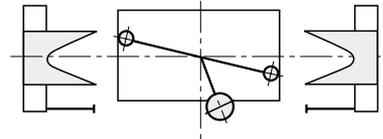
The direction of travel is reversed by switching two solenoids (24 V D.C.) one for each end of the traverse stroke. No minimum stroke length requirement.



Please Note: The solenoids are designed for 40% energizing. The permissible energizing period should not be exceeded. Due to the good cooling characteristic related to the fitting of the solenoids directly on the drive unit, the energization duration can be multiplied by a factor of 1,7 to give an effective value of 68%.

$$ED\% = \frac{\text{Time Period Switched On}}{\text{Time Period Switched On} + \text{Time Period Switched Off}} \times 100$$

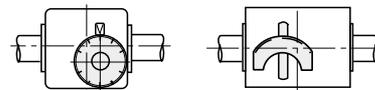
V *2 Reversal slowdown



Reversal slowdown for slowdown lengths in excess of 15 mm via cam and contact lever system.

Pitch setting

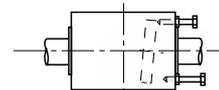
C Scale



Pitch setting via knob (KI/ RGK) or the engagement of a lever in a serrated scale (RG). Simultaneous setting of the same pitch in both directions of travel.

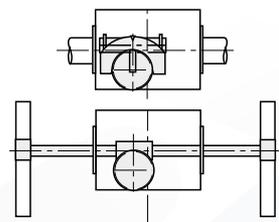
S *2 Set screws

Infinately variable pitch setting - separate settings for each direction.



Z *2 Worm drive

Simultaneous infinitely variable setting of the same pitch in each direction of travel. Types RG: Supplied without wormwheel drive shaft. If required an operation knob is available (X.) Types



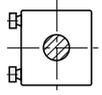
ARG: Supplied with worm drive shaft for remote adjustment from either end (to be specified). Also available with adjustment control (X).

Steady rollers

R

Rolls on rear of unit which (in conjunction with a rear steady bar) prevent the rotation of the unit on the shaft.

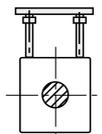
Standard with RG3/4-15 to RG3/4-80, ARG3-15 to ARG3/4-40 and RGK3-15/20/22 and ARGK3-15/20/22



R1

Rolls fitted to separate top mounting plate assembly, used in conjunction with a top steady bar to prevent the rotation of the unit on the shaft.

ARG 3/4-50 to ARG3/4-80.

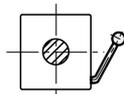


Free-Movement lever

F Mechanical

After operation of the free-movement lever, the unit can be pushed freely along the shaft.

Standard with RG3/4-15 to RG3/4-40 and RGK



P *2 Pneumatic

Side thrust of the unit is achieved pneumatically, free movement (pushing the unit freely along the shaft) by venting the membran cylinder. System also suitable for remote control.

Operating pressure = 6 bar

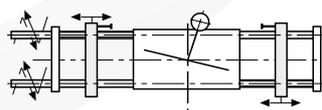
Please note: In vertical applications, before operating the free-movement lever please ensure that the load cannot fall in an uncontrolled manner. Injury can result!

Attention: All Rolling Ring Drive Units, especially if fitted with feature F or P are not allowed to be rigid connected to a separate load carrier.

Stroke width adjustment

B *2 Self-adjusting end stops

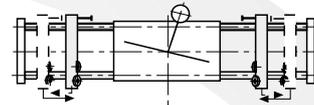
For continuously increasing or decreasing the traverse width during the winding operation. Only recommended with units having a free-movement lever (F). Please consult supplier if application is vertical.



W *2 Lead screw operated end stops

Remote lead screw adjustment of the traverse

width operated from one of the end bracket positions. Can also be supplied with a handwheel control or with a control motor drive (X).



Stopping on a rotating shaft and restarting

O *2 Stopping

The Rolling Ring Drive is brought to a standstill position on the rotating shaft by reducing the pitch to 0. Only available in combination with units having reversal type H, K and V. Restart via O1 or O2.

(For information concerning standstill times, please consult supplier)

O1 *2 Pneumatic restart

Restart activated by a single action pneumatic cylinder (operating pressure = 6 bar) which operate the reversal mechanism.

O2 *2 Electro-magnetic restart

Restart activated by solenoids (operating voltage 24 V D.C.) which operate the reversal mechanism.

*1

Reversal characteristics **E** and **N** can be further combined with reversal characteristics **H**, **K** and **V** and with stopping character (**O**). With such combination, an additional restart system (**O1**) or (**O2**) is not required as the restart can be activated by operation of the solenoid (**E**) or pneumatic cylinder (**N**).

*2

feature is not available for KI and RGK

Load carrier

LZ

Roller style load carrier designed to accommodate loads and twisting forces (dimensions upon request).

Customer specific special features

X

Adapter (twist-free coupling)
Intermediate support bracket
Heavy duty steady bar
Drive motor
Wipers

Special paint finish
Anti-corrosion protection
Double bearing support
Special pitch
Noise dampening
Sequence control
etc.

We reserve the right to make technical alterations.



Worldwide

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