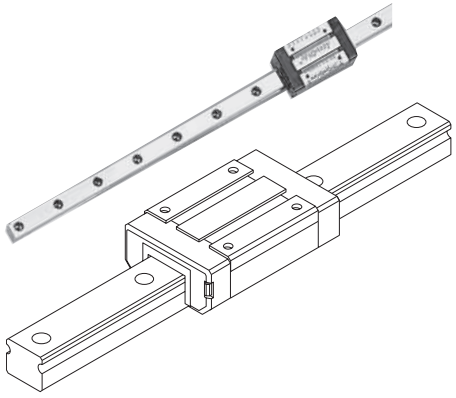
AccuMini Linear Ball Guides

Ultra compact, high roll moment capacity



Thomson AccuMini Linear Ball Guides offer:

- A.ball.control.design.for.smooth,.quiet,.low.friction.at.high.speeds
- A.full.length.integral.wiper.which.protects.important.bearing.from.contaminants…effective.system.life.is.maximized
- A.Gothic.design,.which.provides.high.roll.moment.capacity…a.requirement.for.stand-alone.applications
- A.resistant,.engineered.polymer.retainer.which.reduces.system.inertia.noise

Part Number Description and Specification

AccuMini Assembly

1 AD 10 AA A H LXXXX Y= (See Note 1 Below) -XXX

- **# of Carriages Per Rail**
- **AccuMini Assembly**
- **Size:** 10,.15,.20
- **Length**
- **Options**
  - **-A** Armoloy.Plating
  - **-LDS** Low.Drag.Seal
  - **-Mxx** Special.Option
- **Style** / **Description**: AA. Standard
- **Preload Designation** / **Description**:
  - . A. Clearance
  - . B. Approx..0.03.C
- **Accuracy Class**: H.=.High.. P.=.Precision

AccuMini Carriage Only

CD 10 AA A H -XXX

- **AccuMini Carriage**
- **Size:** 10,.15,.20
- **Options**
  - **-A** Armoloy.Plating
  - **-LDS** Low.Drag.Seal
  - **-Mxx** Special.Option
- **Style** / **Description**: AA. Standard
- **Preload Designation** / **Description**:
  - . A. Clearance
  - . B. Approx..0.03.C
- **Accuracy Class**: H.=.High.. P.=.Precision

AccuMini Rail Only

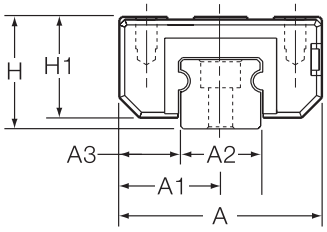
RD 10 H LXXXX Y= (See Note 1 Below)

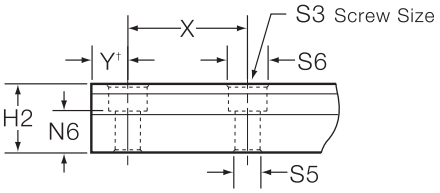
- **AccuMini Rail**
- **Size:** 10,.15,.20
- **Length**
- **Accuracy Class**: H.=.High. P.=.Precision

1.. Y=.Distance.from.end.of.rail.to.center.of.1st.mounting.hole

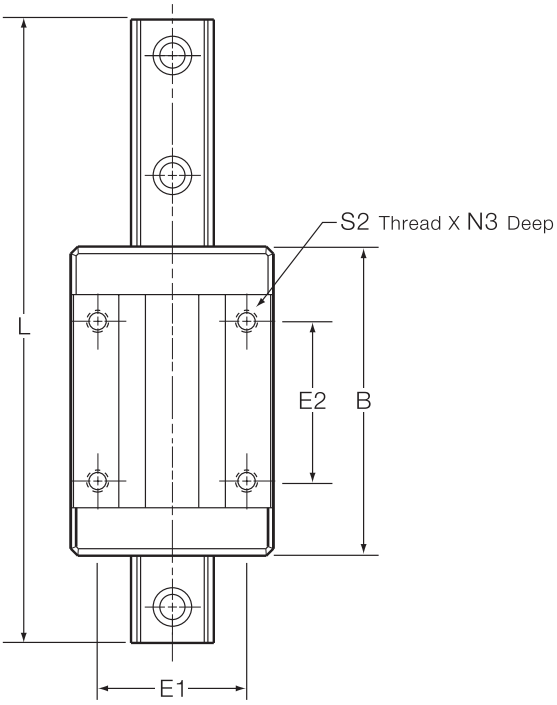
AccuMini

(Miniature Series)
Low Profile, Compact Design





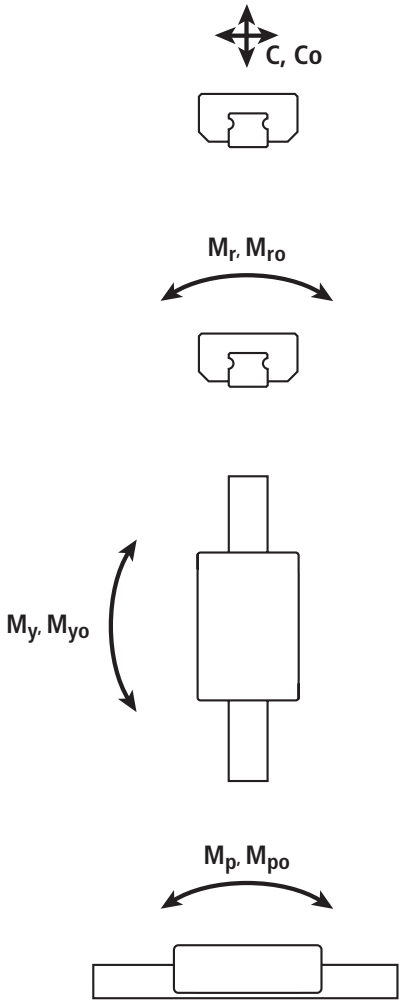
1.. "Y".dimension.will.be.equal.on.both.ends.unless.specified.by.customer.



NOTE:
The.AccuMini.linear.guide.series.carriages.do.not.have.retained.balls..Removing.the.carriage.from.the.rail.without.an.arbor.will.result.in.the.balls.falling.out.

AccuMini Linear Guide Series

(mm)														
Size	**A**	**A1**	**A2**	**A3**	**H**	**H1**	**H2**	**B**	**E1**	**E2**	**S2**	**S3**	**S5**	**S6**
10.	26.	13.	10.	8.	15.	13.	9.	40.	17.	20.	M2,5.	M2,5.	3	5,5
15.	38.	19.	15.	11,5.	21.	19.	13.	58.	28.	30.	M4.	M4.	4,5.	8
.20.	50.	25.	20.	15.	28.	25,6.	18.	76.	37.	40.	M5.	M5.	5,5.	9,5



Dynamic Load and Moment Ratings

C = Dynamic load rating
M_p = Dynamic pitch moment rating
M_r = Dynamic roll moment rating
M_y = Dynamic yaw moment rating

The dynamic load and moment ratings are based upon a 100 km travel life. In order to compare with bearings rated for 50 km, divide the dynamic capacity of the bearing rated for 50 km by 1.26.

Static Load and Moment Capacities

Co = Static load capacity
M_{po} = Static pitch moment capacity
M_{ro} = Static roll moment capacity
M_{yo} = Static yaw moment capacity

The static load and moment capacities are the maximum radial load and moment load that should be applied to the bearing while there is no relative motion between the carriage and rail.

Bearing Travel Life Comparison

$L = (C/F)^3 \times 100\,km$
where:
L = travel life, km
C = dynamic load rating, N
F = applied dynamic load, N

$C_{min} = F\left(\frac{L}{100}\right)^{1/3}$
where:
C_{min} = minimum required dynamic load rating, N
F = applied dynamic load, N
L = required travel life, km

Operating Parameters

Maximum Velocity = 3 m/s
Maximum Acceleration = 50 m/s²
Maximum Temperature = 80° C

AccuMini Series

(mm)					Load Rating	N (lbf)	Moment Rating		Nm (lbf-ft)		MASS Carriage	Rail
Size	N3	N6	X	L_{max}‡	C(@100 km)	C_o	M_p, M_y	M_{po}, M_{yo}	M_r	M_{ro}	kg	kg/m
10	4,5	5,5	25	1500	2820 (635)	5300 1,190	10 (7)	20 (15)	15 (11)	28 (21)	0,045	0,65
15	6	7,5	40	1500	6375 (1,430)	15200 (3,420)	35 (26)	66 (49)	51 (38)	96 (71)	0,141	1,42
20	8	9,5	60	3000	11870 (2,670)	23000 (5,170)	75 (55)	140 (105)	125 (92)	235 (175)z	0,345	2,55

‡. Maximum rail length in one section. Multiple sections can be butt jointed together for longer lengths.

Figure 1 - Dimensions H and A3

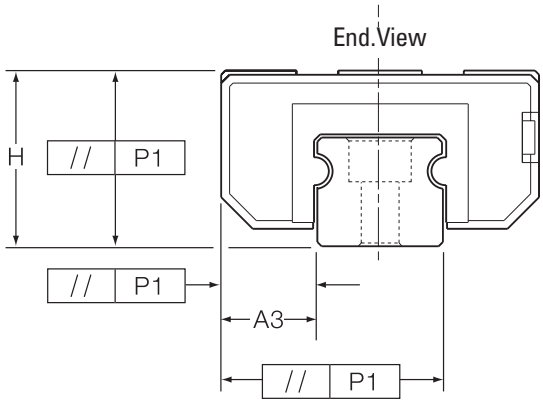


Figure 2 - Running Parallelism

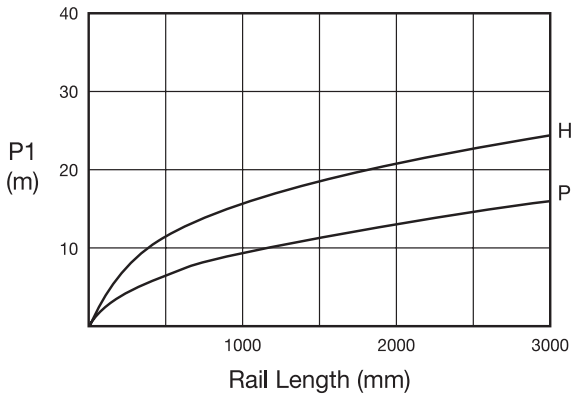


Table 1 - Tolerances (µm)

	Accuracy Classes	
	H High	**P Precision**
1..Dim..H.and.A3.(measured.. at.middle.of.carriage.at.any. point.along.rail)	±40.	±20.
2..Max.variation.in.dimensions. H.and.A3.measured.on.. multiple.carriages.mounted. on.the.same.rail.(measured. at.middle.of.carriage.at. same.position.on.rail)	15.	7.
3..Parallelism.. (applies.to.the.system).	. See.Figures.1.and.2	

Table 2 - Preload /Accuracy Combinations

Accuracy. Class.	Preload	
	Clearance. up.to. 10.µm.	Light approximately 0,03.C†
P.	—.	B
H.	A.	B

†. Where.C=Dynamic.Load.Rating

Table 3 - Calculations

To.determine.proper.carriage.size.:

$$C_{min} = F \bullet \left(\frac{L}{100}\right)^{1/3}$$

C_{min}.=.minimum.required.dynamic. load.capacity.of.carriage.(N)

F.=.equivalent.load.on.carriage.(N)

L.=.required.travel.life.(km)

To.determine.travel.life.:

$$L = \left(\frac{C}{F}\right)^{3} \bullet 100$$

L.=.normal.travel.life.(km)

C.=.rated.dynamic.load.capacity.. of.carriage.(N)

F.=.equivalent.load.on.carriage.(N)

Table 4 - Conversions

1 lb_f = 4,448.N

1 kg_f = 9,8.N

1 km = 39,370.inches

1 Nm = 0.7376.lb_f.-.ft

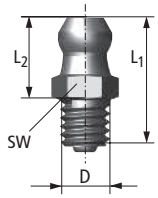
Operating Parameters

Maximum Velocity =.3.m/s

Maximum Acceleration =.50.m/s^2

Maximum Temperature = 80°.C

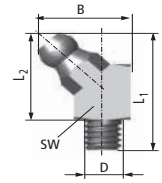
Lubrication Fittings



530LN
Hydraulic-type.lubricating.nipple,.
straight.
530BF6.=.2.5.mm/.530BF8.=.4mm

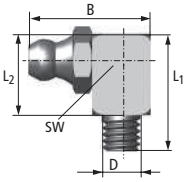
D	L_1	L_2	SW
. M6.	16.	10.5.	7.

*. Note:.1.pc.included.with.each.carriage



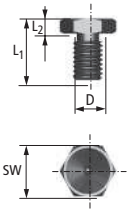
530LN45
Hydraulic-type.lubricating.nipple,.
45°.angle

D	L_1	L_2	B	SW
. M6.	21.	15.5.	15.	9



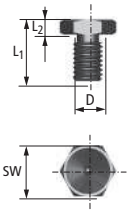
530LN90
Hydraulic-type.lubricating.nipple,.
90°.angle

D	L_1	L_2	B	SW
. M6.	18.	12.5.	19.	9



530LF3
Funnel.type.lubricating.nipple.M3

D	L_1	L_2	SW
. M3.	6.6.	1.6.	5.

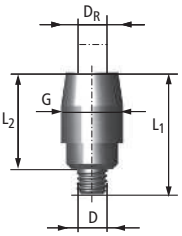


530LF6
Funnel.type.lubricating.nipple.M6

D	L_1	L_2	SW
. M6.	9.5.	3.	7

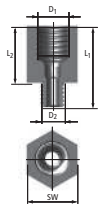
530LG.
Grease.gun.for.funnel.type.
lubricating.nipple.M3

L_1	L_1	$ØD_1$	$ØD_2$
. 210.	55.	34.	5.5



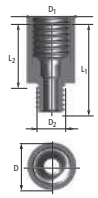
530LA3
Straight.screw-in.connection.M3
For.tubing.with.ext..diameter.D_R.=.3.mm

D	ØG	L_1	L_2
. M3.	6.	12.	9.5.



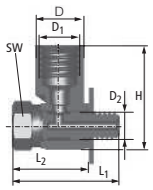
530LA... Adapter
Adapter.with.hexagon.insert.bit
For.tubing.with.ext..diameter.=.4.mm

PIN	D_1	D_2	L_1	L_2
530LA4.	G1/8.	M6.	20.	14
530LA5...	M8x1".	M6.	20.	14



530LA6
Adapter,.external.round
For.tubing.with.ext..diameter..=.4.mm

D_1	D_2	L_1	L_2	Ø
.M8X1".	M6.	20.	14.	10



530BF... Banjo Fittings
For.tubing.with.ext..diameter
530BF6=2.5.mm/530BF8.=4mm

P/N	D_1	D_2	L_1	L_2	H
. 530BF6.	M6x0.75.	M6.	22.	16.	18
. 530BF8.	M8x1.	M6.	22.	15.5.	22

530LGA... Grease Gun Extension
Grease.gun.extension,.for.lubricating.
530LF3.and.530LF6.funnel.type.
lubricating.nipples

P/N	L	D	Manu	Manu P/N
.530GLA1..3".		.	Lincoln.Industrial.	5803
.539GLA2..6".		.	Lincoln.Industrial.	5806

NOTES: