

GDL Product line overview



Characteristic	Unit	Description
Full profile wipers		Rollershoes and cassette are provided with snap-on full profile wipers. The snap-on full profile wipers are easily replaceable with available wipers kits.
Acceleration and deceleration	m/s ² (ft/sec ²)	40 m/s ² maximum (131 ft/s ² maximum)
Guide installation		Possible in any position.
Drag adjustment set screw		Cassettes can be adjusted at the factory or by the customer.
		Rollershoes can be set-up by the customer to incorporate the drag adjustment set screw feature. The drag adjustment set screw components are supplied with each pair of rollershoes.
Standard lubrication		Lifetime lubrication with standard grease-packed roller bearings.
Speed	m/s (ft/s)	Up to 10 m/s (or up to 33 ft/s)
Materials for high performance or standard versions / corrosion resistant		Rail: Aluminum alloy
		Guideways: Hardened high alloy spring steel
		Cassettes / rollershoes / top plates: Aluminum alloy
		Rollers: Bearing steel / Stainless steel bearing steel
Bearing types		Steel axial needle, Specials on request (ex: anti-magnetic, grease free, high dynamics) - consult factory
Operating temperature	C (F)	-10° to 80°C (+14 to 176°F) temperature range
Specials available		Custom length cassettes and rollershoes for 100 piece lots minimum.
		Keyed butt-jointed rail sections up to 4000mm.
		Solid continuous length rails between 4000.
		Offset or non-standard "L11" dimensions on opposite ends of cut rails.
		Integrated metal scraper with standard full profile wiper currently available.
		Rail underside blind mounting holes.

Descriptions of the various GDL series available:

High Performance Series:

(Sizes FDC12HP-... thru FDC45HP-...)

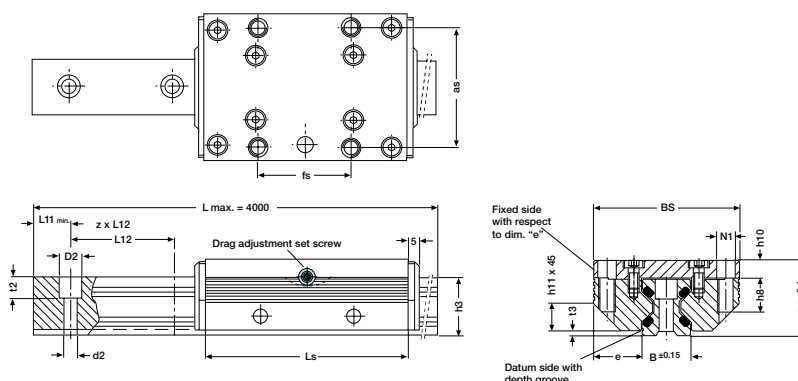
The High Performance series is the basis for GDL's development, which is used in the majority of applications. High Performance guides consist of 8 axial needle roller bearings, running on precision polished and hardened alloy spring steel guideways. These guide bearings are grease packed and shielded, while offering the highest load and moment rating capacities within the GDL product line.

Standard Performance Series:

(Sizes FDC12SP-... thru FDC45SP-...)

The Standard Performance series is intended for minor loads and moments for particularly economical guidance solutions. Standard Performance guides consist of 8 radial ball roller bearings, running on precision polished and hardened alloy spring steel guideways. These guide bearings are grease packed and sealed, while offering the lowest load and moment ratings available within the GDL product line, with the exception of the Grease-Free and the Anti-Friction / Corrosion Resistant series. Standard Performance series is the second most commonly used GDL guides for various applications and also provides excellent running behavior.

Cassette with double sided rail



Dimensions for both standard FDC version guides

Size	Length Ls	B	BS	h3	h9	as	d2	D2	e	fs	h8	h10	h11	L11 min.	L12	t2	t3	N1
12	64	12.0	37	14.7	19	30	3.4	6	12.50	25	8	4.0	6	10	40	5.5	1.4	M4
15	78	15.5	47	18.7	24	38	4.5	8	15.75	30	10	5.0	8	10	60	6.0	2.0	M5
20	92	21.0	63	22.6	30	53	5.5	10	21.00	40	12	7.0	11	10	60	7.0	2.0	M6
25	98	23.0	70	27.0	36	57	6.6	11	23.50	45	16	8.5	13	10	60	10.0	2.5	M8
35	135	32.0	100	37.0	48	82	9.0	15	34.00	62	20	10.5	20	12	80	11.5	3.5	M10
45	165	45.0	120	46.0	60	100	11.0	18	37.50	80	24	13.5	22	16	105	14.5	4.0	M12

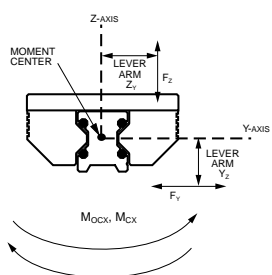
Dimensions (mm)

Dimensions for both underside mounting hole FDC version guides (Ref. ordering instructions)

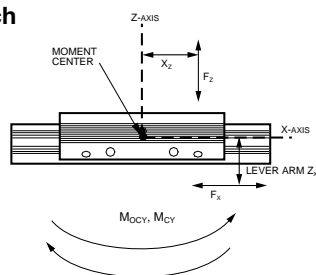
Size	Length Ls	B	BS	h3	h9	as	d2	D2	e	fs	h8	h10	h11	L11 min.	L12	t2	t3	N1
12	64	12.0	37	14.7	19	30	3.4	6	12.50	29	8	4.0	6	10	40	5.5	1.4	M4
15	78	15.5	47	18.7	24	38	4.5	8	15.75	34	10	5.0	8	10	60	6.0	2.0	M5
20	92	21.0	63	22.6	30	53	5.5	10	21.00	40	12	7.0	11	10	60	7.0	2.0	M6
25	98	23.0	70	27.0	36	57	6.6	11	23.50	45	16	8.5	13	10	60	10.0	2.5	M8
35	135	32.0	100	37.0	48	82	9.0	15	34.00	62	20	10.5	20	12	80	11.5	3.5	M10
45	165	45.0	120	46.0	60	100	11.0	18	37.50	90	24	13.5	22	16	105	14.5	4.0	M12

Dimensions (mm)

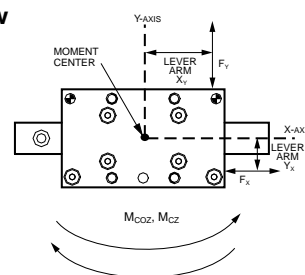
Roll



Pitch



Yaw



Load & moment rating capacities (for cassettes on double sided rail)

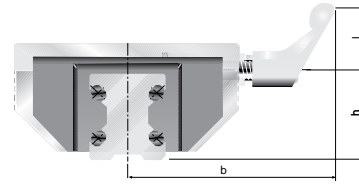
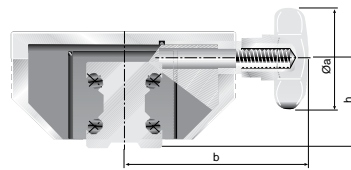
Dynamic load rating C (N)	Static load rating Co (N)	Static moment rating capacities:			Dynamic moment rating capacities:			Cassette weight (kg)	Rail weight (kg)	Cassette series
		Roll Mocx (Nm)	Pitch Mocy (Nm)	Yaw Mocz (Nm)	Roll Mcx (Nm)	Pitch Mcy (Nm)	Yaw Mcz (Nm)			
High performance series										
2800	3000	27	43	43	25	40	40	0.1	0.4	FDC12HP-...
4200	3400	37	58	58	45	72	72	0.3	0.8	FDC15HP-...
5400	5400	76	111	111	76	111	111	0.4	0.9	FDC20HP-...
9000	10100	158	222	222	142	198	198	0.6	1.8	FDC25HP-...
12500	18000	423	559	559	294	388	388	1.5	3.2	FDC35HP-...
21200	25900	827	983	983	678	806	806	2.9	5.5	FDC45HP-...

GDL Aluminum roller guides

High performance cassettes with lock device



Special cassette types



The locking cassette with star grip handle can be stopped at any desired location on the rail. The clamping device does not exert forces on the rail guideways.

The clamping device is used in fixtures which are movable manually, clamping and stop ledgers, feeding of tools and work pieces. Also available with L-ratchet handle.

Star grip handle dimensions

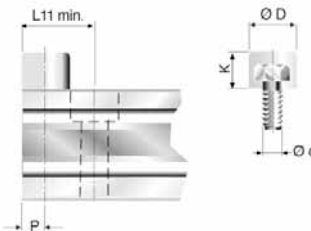
Size	Øa	b	h	Clamp force	Part numbers star grip knob
12	N/A				
15	25	41	19.0	200	FDC15HP-00020000
20	25	49	23.0	250	FDC20HP-00020000
25	32	56	28.0	250	FDC25HP-00020000
35	50	83	38.5	350	FDC35HP-00020000
45	63	101	48.0	750	FDC45HP-00020000

Dimensions (mm), Force (N) with normal manual tightening.

L-ratchet handle dimensions

Size	l	b	h	Clamp force	Part numbers L-ratchet handle
12	N/A				
15	45	59.5	19.0	200	FDC15HP-00010000
20	45	67.5	23.0	250	FDC20HP-00010000
25	45	71	28.0	250	FDC25HP-00010000
35	63	96	38.5	350	FDC35HP-00010000
45	78	116	48.0	750	FDC45HP-00010000

End of stroke stop screws



The stop screws are screwed into threads (option) on the guide rails. The end of stroke stopping energy is reduced by a rubber cap. With guide rails where the L11 is less than the standard minimum, we offset the mounting hole by half of its diameter.

Note: Customer must drill and tap the holes for the stop screws.

Size	Ød	ØD	K	L11 min.	P	Order number
12	M5	12	8	15.0	6.0	63504A
15	M5	12	8	16.0	6.0	63504A
20	M5	12	8	17.0	6.0	63504A
25	M6	15	10	20.5	7.5	63505A
35	M8	19	13	26.5	9.5	63506A
45	M10	24	16	33.0	12.0	63507A

Dimensions (mm)

GDL accessories

Rail mounting screw covers



Material: Wear resistant plastic, resistant to oil and aging.

Mounting: Put a plastic plate on top and pound in uniformly. Remove residual burrs with a soft brush or fingernail.

Note: Use respective order numbers for ordering separately or include in rail part number.

Size	Cylindrical screw DIN912	Ø D	Order number
12	M3	6	87752A
15	M4	8	87753A
20	M5	10	87754A
25	M6	11	87755A
35	M8	15	87756A
45	M10	18	87757A

Dimensions (mm)

GDL Aluminum roller guides

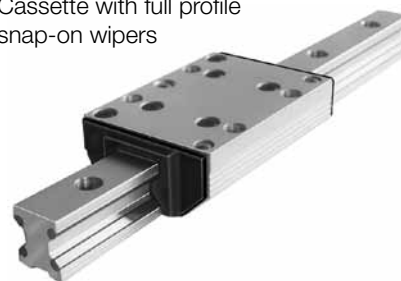
Version with wipers

Integrated into an additional cover, a felt wiper is saturated with oil. Although dependent on the degree of contaminants, these wipers last for

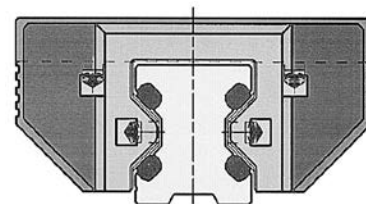
some 6000km, after which the felt wipers can either be washed or replaced.

For optimal cassette rolling performance, all holes in the guide rails should be filled with the plastic rail mounting screw covers.

Cassette with full profile snap-on wipers



Full profile snap-on wiper



Order numbers for replacement wiper kits

FDC series and size	Respective order number
12	84457B
15	84480B
20	84481B
25	84482B
35	84483B
45	84484B

*wiper kits are sold in pairs

NOTE: Use respective order numbers for ordering separately as replacements, or specify in cassette part number.

GDL's keyed butt-jointed rail option

GUIDELINE rails can be precisely fastened together using a factory offered keyed butt-joint option for continuous rail lengths, as shown in Figures 1 & 2.

Two rail sections are clamped together with mating round bar stock pieces that seat tangent to both rail section guideways on each side of the rail. While the rail sections are clamped together, a keyway slot is machined in the top and bottom sides of the rail, across the butt-joint. Screw holes are then drilled through the rail inside the keyway slot, so the opposing keyways can be drawn together tightly with screws. The round bar stock clamp is then removed, providing a rigid and well aligned keyed butt-joint.

The keyed butt-joint option provides optimum alignment of all guideways from one rail section to the next. This allows for optimum "smooth" guidance of the cassette bearings, while crossing rail butt-joints.

The keyed butt-jointed rail option is currently available in the FDR version 25, 35, & 45 mm rail sizes. For a keyed butt-joint on rail sizes 25, 35 or 45 mm, specify P/N:# GDL-BJK

Consult factory for other size possibilities.

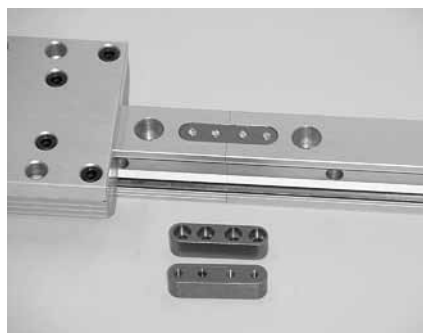


Figure 1

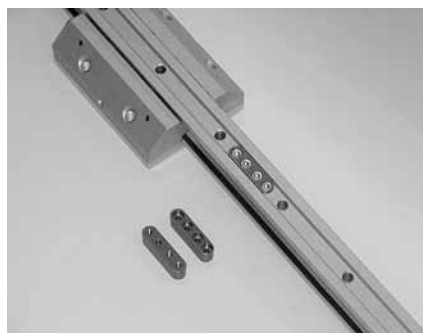


Figure 2

GDL coupled with structural aluminum extrusion material and OSP-E actuator

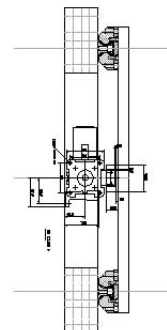


Figure 3

GDL linear guides couple well with various structural aluminum extrusions and Parker-Origa OSP-P and OSP-E actuators. Mounting can be easily accomplished using standard fasteners and mounting brackets. See Figure 3 above.

Ordering Information / Part Numbering System for GDL Rails

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
F	D	R	1	2	H	0	0	0	0	0	0	-	0	0	0	0	0
Series FD Double sided rail guide* (standard)		Rail Size 1 2* 1 5* 2 0* 2 5* 3 5* 4 5*		Guideway Material H High performance alloy steel* (standard) S Stainless steel		Coatings 0 Anodized aluminum* (standard) Z Custom (consult factory)		"L11" Dimension 00 Equal on both sides* (standard) ?? Actual dimension (mm)**		Mounting Holes 0 Topside thru hole* (standard) 1 Underside blind thread Z Custom (consult factory)		Long Rail Joining Option 0 None* (standard) 1 Keyed butt joint (size 25-45 only) 2 Unkeyed butt joint		Screw Covers 0 None* (standard) 1 Yes*		Length (mm) - 0 0 0 0 0	
								** As measured from left side while viewing the depth groove line.				Note: Quantity supplied to cover all rail holes.				Note: Maximum length is 4 meters on Size 12.	

*Stocked Item

Ordering Information / Part Numbering System for GDL Cassettes

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
F	D	C	1	2	H	P	-	0	0	0	0	0	0	0	0		
Series FD Double sided rail cassette* (standard)		Cassette C Standard		Rail Size 1 2* 1 5* 2 0* 2 5* 3 5* 4 5*		Bearing Options HP Axial needle - high performance alloy steel* (standard) SP Single row radial ball - standard performance - alloy steel* (standard) ZZ Factory** (consult factory)		Grease 0 High performance* (standard) Z Custom (consult factory)		Lubrication Options 0 None* (standard) Z Custom (consult factory)**		Mounting Holes 0 Topside threaded thru* (standard) 1 Underside hole thru (unthreaded) 2 Underside hole thru (threaded)		Adjustment 0 None* (standard) 1 Adjusted to specific rail*		Cassette Length 0 Normal length* (standard) Z Custom (consult factory)**	
										Coatings 0 Anodized and standard hardware* (standard) 1 Anodized and stainless steel hardware* Z Custom (consult factory)		Locking Mechanism 0 None* (standard) 1 "L" ratchet handle* 2 Star grip handle*		Wiper Options 0 With felt wipers* (standard) 1 Without* 2 With felt wipers and scrapers*		* Locking mechanism only available on FD Series size 15 thru 45 with Axial Needle Bearing - High Performance - Alloy Steel.	

*Stocked Item
 **Minimum Order Quantity Required

B
 Rodless Cylinders
 Actuator Products

OSP-P
 Series

P1X
 Series

P1Z
 Series

GDL
 Series