

9.2 E2 Self - lubricant



• Features:

• Cost savings:

The E2 series saves cost by eliminating piping joint systems, change and waste disposal, and by reducing oil purchases.

• Greatly extends the maintenance period:

The E2 series will supply proper lubrication for long periods of time extending the maintenance period.

• Easy maintenance:

The special construction of the E2 design requires no tools to replace the oil cartridge. There is no disassembly required when adding the E2 option.

• Ideal lubrication position:

The lubrication point is located inside the ball nut allowing for the lubrication to be firmly applied onto the ball tracks.

• Effortless and flexible installation:

The lubrication performs properly in every direction so there are no restrictions when installing the E2.

• Clean and environmentally friendly:

Prevents oil leakage, making the E2 the ideal solution for clean room environments.

• Interchangeable oil selection:

The replaceable oil cartridge can be refilled with any approved lubrication oil.

• Applications for special environments:

The lubrication oil can be combined with grease for better results, especially in dusty, dirty, or wet environments.

• Characteristic of lubrication oil:

The E2 self-lubrication cartridge is equipped with synthetic hydrocarbon based oil. The lubricate oil has a viscosity grade of ISO VG680.

The E2 is compatible with mineral, hydrocarbon, and ester based greases. The E2 can accept synthetic oils with stable characteristics. A high viscosity grade will work well in conditions where there are high and low temperatures.

The low fluid draft factor prevents excessive power consumption and deters against corrosion and rust.

A compatible lubricate oil with the same viscosity grade can also be used in the replaceable cartridge.

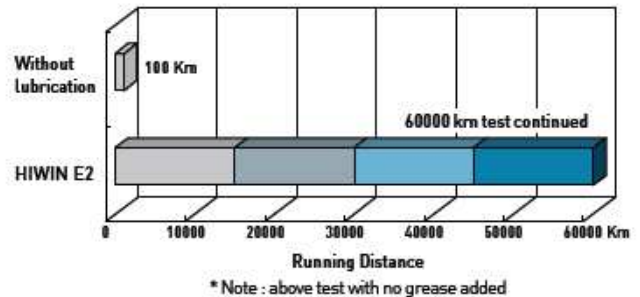
• Performance:

The E2 series will extend the maintenance period by supplying proper lubrication for long periods of time.

Test condition :

Specification	R40-40K2-F5C
Oil	Mobil SHC 636 (50C.C.)
Speed	3000 rpm
Stroke	1000mm

E2 Performance Test



• Lubricant oil characteristics:

The E2 self-lubricant cartridge is equipped with synthetic hydrocarbon based oil. The lubricant oil has a viscosity grade of ISO VG680.

- The E2 is compatible with mineral, hydrocarbon, and ester based greases.
- The E2 can accept synthetic oils with stable characteristics.
- A high viscosity grade will work well in conditions where there are high and low temperatures.
- The low fluid draft factor prevents excessive power consumption.
- Anti-corrosion and rust.
 - ◇ A compatible lubricate oil with the same viscosity grade can also be used in the replaceable cartridge.

• **Application:**

- Machine tools
- Industrial machinery : printing machine, paper-processing machine, automatic machine, textile machine, cutting and grinding machines, etc.
- Electronic machinery : robots, measuring equipment, X-Y tables, etc.
- Miscellaneous: medical equipment, factory automation equipment, etc.

• **Temperature range:**

The ideal E2 temperature range is from -10°C to 60 °C, please notify Hiwin engineers if the temperature requirement is out of this range.

• **Cost saving:**

The E2 series saves cost by eliminating piping joint systems, change and waste disposal, and by reducing oil purchases.

• **Specification number:**

Example: R40 - 20K3 - FSCE2 - 1200 - 1600 - 0.008



• **Specification:**

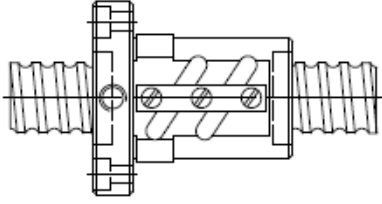
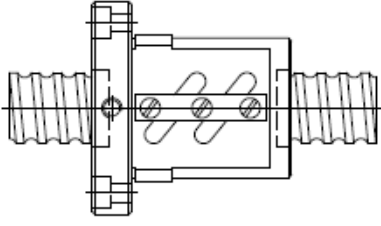
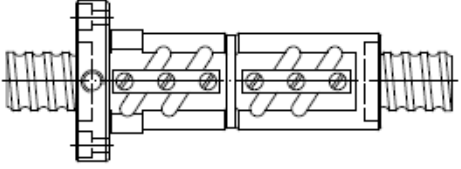
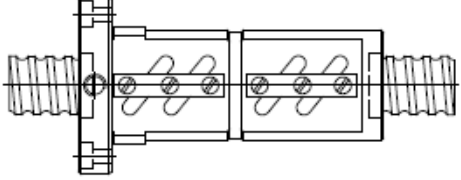
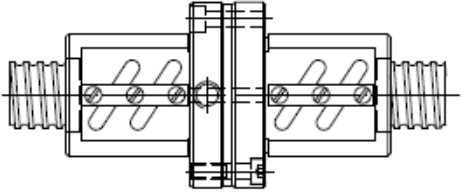
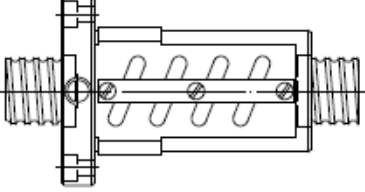
Nut type : FSV, FDV, FSW, FDW, PFDW, OFSW, Super S
Please contact HIWIN engineers with other specification needs.

In order to get the good lubrication efficiency; please notify HIWIN engineers of the ballscrew installation direction.

	Lubrication Piping System	Design and Installation of Lubricant Device	Cost of Oil Purchase	Change Cost	Waste Oil Disposal
Forced Lubrication	\$XXX	\$XXX	0.1c./min. x 480min./day x 280day/year x 5year x cost/c.c. = 67200c.c. cost/c.c. = \$XXX	3-5times/year x 5year x cost/time = 15-25cost/time = \$XXX	
HIWIN E2 Self-Lubricant	Cost of Oil Purchase 16-57c.c. x cost/c.c. = \$XXX				

Cost

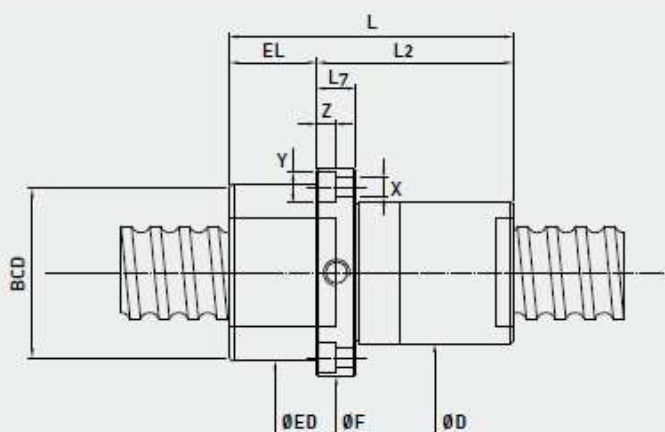
HIWIN E2 Precision Ground Ballscrews

General Type	
<p>FSV</p>  <p>Flange end, single nut, tube above nut diameter</p>	<p>FSW</p>  <p>Flange end, single nut, tube within nut diameter</p>
<p>FDV</p>  <p>Flange end, double nut, tube above nut diameter</p>	<p>FDW</p>  <p>Flange end, double nut, tube within nut diameter</p>
<p>PFDW</p>  <p>Flange to flange, double nut, tube within nut diameter</p>	<p>OFSW</p>  <p>Offset pitch preload, flange end, single nut, tube within nut diameter</p>

*Different design required by the drawing approval, please contact with HIWIN engineers for the other type listed above.
 (The specifications in this catalogue are subject to change without notification.)

Dimension table for E2

(Nut diameter is smaller than the oil cartridge)

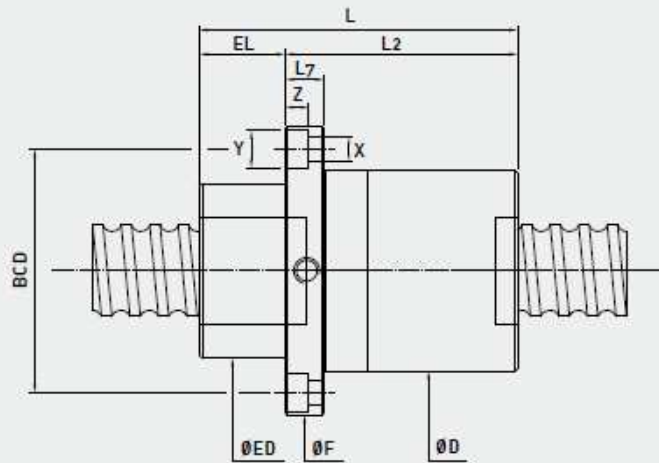


Please remove oil cartridge when installing the nut

Model	Specification			Nut Size								E2 Size		
	Nominal Dia.	Lead	Ball Dia.	D	L2	F	L7	BCD	X	Y	Z	EL	ED	L
20-10K3	20	10	3.175	36	47	62	12	47	6.6	11	6.5	40	49	87
20-20K2	20	20	3.175	36	56	62	12	47	6.6	11	6.5	40	49	96
25-10K3	25	10	3.175	40	50	66	12	51	6.6	11	6.5	40	49	90
25-25K2	25	25	3.175	40	69	66	12	51	6.6	11	6.5	40	49	109
25-12K4	25	12	3.969	45	67	69	12	54	6.6	11	6.5	40	49	107
32-5K4	32	5	3.175	48	38	77	12	59	9	14	8.5	40	62	78
32-8K5	32	8	3.969	50	59	83	12	65	9	14	8.5	40	62	99
32-10K5	32	10	3.969	50	73	83	12	65	9	14	8.5	40	62	113
32-20K3	32	20	3.969	50	87	83	12	65	9	14	8.5	40	62	127
32-32K2	32	32	3.969	50	87	83	12	65	9	14	8.5	40	62	127
32-10K5	32	10	4.763	56	79	89	14	71	9	14	8.5	40	62	119
32-12K5	32	12	4.763	56	88	89	14	71	9	14	8.5	40	62	128
32-10K5	32	10	6.35	62	77	95	18	77	9	14	8.5	36	81	113
32-12K5	32	12	6.35	62	87	95	18	77	9	14	8.5	36	81	123
32-16K4	32	16	6.35	62	92	95	18	77	9	14	8.5	36	81	128
32-20K3	32	20	6.35	62	87	95	18	77	9	14	8.5	36	81	123
36-8K5	36	8	4.763	59	64	92	14	74	9	14	8.5	36	81	100
36-10K5	36	10	6.35	66	80	99	18	81	9	14	8.5	36	81	116
36-12K5	36	12	6.35	66	87	99	18	81	9	14	8.5	36	81	123
36-16K5	36	16	6.35	66	109	99	18	81	9	14	8.5	36	81	145
36-20K4	36	20	6.35	61	108	94	18	76	9	14	8.5	36	81	144
36-36K2	36	36	6.35	61	95	94	18	76	9	14	8.5	36	81	131
38-8K5	38	8	4.763	61	64	94	14	76	9	14	8.5	36	81	100
38-16K5	38	16	6.35	63	108	96	18	78	9	14	8.5	36	81	144
38-20K4	38	20	6.35	63	108	96	18	78	9	14	8.5	36	81	144
38-25K4	38	25	6.35	63	127	96	18	78	9	14	8.5	36	81	162
38-40K2	38	40	6.35	63	103	96	18	78	9	14	8.5	36	81	137
40-8K5	40	8	4.763	63	64	96	14	78	9	14	8.5	36	81	100
40-10K5	40	10	6.35	70	83	103	18	85	9	14	8.5	36	81	119
40-12K5	40	12	6.35	70	86	103	18	85	9	14	8.5	36	81	122
40-16K5	40	16	6.35	70	108	103	18	85	9	14	8.5	36	81	144
40-20K4	40	20	6.35	70	110	103	18	85	9	14	8.5	36	81	146
40-25K4	40	25	6.35	65	127	98	18	80	9	14	8.5	36	81	163
40-40K2	40	40	6.35	65	101	98	18	80	9	14	8.5	36	81	137
45-10K5	45	10	6.35	75	78	115	18	93	11	17.5	11	36	92	114
45-12K5	45	12	6.35	75	89	115	18	93	11	17.5	11	36	92	125
45-16K5	45	16	6.35	75	108	115	18	93	11	17.5	11	36	92	144
45-20K4	45	20	6.35	75	108	115	18	93	11	17.5	11	36	92	144
45-25K4	45	25	6.35	70	129	110	18	88	11	17.5	11	36	92	165
45-40K3	45	40	6.35	70	145	110	18	88	11	17.5	11	36	92	181
50-10K5	50	10	6.35	82	80	122	18	100	11	17.5	11	36	92	116
50-12K5	50	12	6.35	82	90	122	18	100	11	17.5	11	36	92	126
50-16K5	50	16	6.35	82	109	122	18	100	11	17.5	11	36	92	145
50-20K4	50	20	6.35	82	106	122	18	100	11	17.5	11	36	92	142
50-25K4	50	25	6.35	75	129	115	18	93	11	17.5	11	36	92	165
50-30K4	50	30	6.35	75	147	115	18	93	11	17.5	11	36	92	183
50-40K3	50	40	6.35	75	145	115	18	93	11	17.5	11	36	92	181
50-30K2	50	30	7.144	82	92	122	18	100	11	17.5	11	36	92	128

Dimension table for E2

(Nut diameter is larger than the oil cartridge)



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	Nominal Dia.	Lead	Ball Dia.	D	L2	F	L7	BCD	X	Y	Z	EL	ED	L	
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20-20K2	20	20	3.175	51	56	76	12	62	6.6	11	6.5	40	49	96	
25-10K3	25	10	3.175	51	50	76	12	62	6.6	11	6.5	40	49	90	
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32-20K3	32	20	6.35	83	87	114	18	97	9	14	8.5	36	81	123	
36-8K5	36	8	4.763	83	64	114	14	97	9	14	8.5	36	81	100	
36-10K5	36	10	6.35	83	80	114	18	97	9	14	8.5	36	81	116	
36-12K5	36	12	6.35	83	87	114	18	97	9	14	8.5	36	81	123	
36-16K5	36	16	6.35	83	109	114	18	97	9	14	8.5	36	81	145	
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40-12K5	40	12	6.35	83	86	114	18	97	9	14	8.5	36	81	122	
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