

Ball Screw Assembly with front lube unit

Characteristic features

Equipped with Rexroth's functionally reliable, series-made front lube unit, a Ball Screw Assembly can attain an exceptionally long travel life without relubrication. Thanks to intensive development work and thorough testing under realistic conditions, the use of front lube units combined with prelubricated nuts enables you to achieve lifelong, optimal lubrication of Rexroth precision Ball Screw Assemblies.

From its built-in oil reservoir, the front lube unit delivers the precise amount of oil required to replenish the used amounts of oil in the soap matrix of the grease. The oil is applied directly to the raceway of the ball screws via the low-friction point-contact zone of the open-pored foam. This optimized delivery minimizes lubricant consumption and allows you to achieve lifelong lubrication.

Ecologically sound

The front lube unit ideally combines eco-friendliness with cost-efficiency. It minimizes oil consumption and keeps the surroundings clean. This helps to conserve resources.

Further highlights

- Delivered with the Ball Screw Assembly ready-mounted.
- Attaches to one side of the nut, thus saving space.
- Can be used in all mounting positions, both in horizontal and vertical installations.
- Available for almost all nut types with diameters 20 to 40
- Easy to integrate in constructions by attaching it either on the flange side or on the opposite side of the single-start nuts.
- When attached to both sides, it also meets the lubrication needs of high-capacity two-start nuts (FED-E-B).
- Can be used in all normal ambient conditions, except in wet or dusty environments.



Lubrication concept

This logo indicates that the Rexroth Ball Screw Assembly with prelubed nut and front lube unit are lubed for life.

Note: The front lube unit is not suitable for use with driven nuts.

Lifelong lubrication

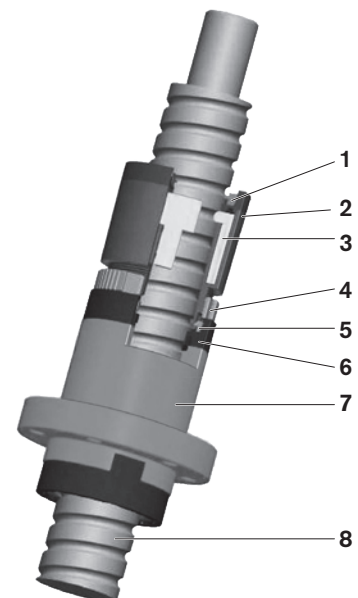
The effective life of the Rexroth front lube unit matches the service life curve of the Ball Screw Assembly. When operated within the recommended load limits, a Ball Screw Assembly equipped with a Front Lube Unit will require no relubrication, thanks to the optimal delivery of lubricant. Based on our extensive tests, the lubrication performance of the front lube unit can now be reliably predicted for the first time. With a Front Lube Unit from Rexroth, a Ball Screw Assembly can run trouble-free for **five years** or **300 million revolutions** without any relubrication.

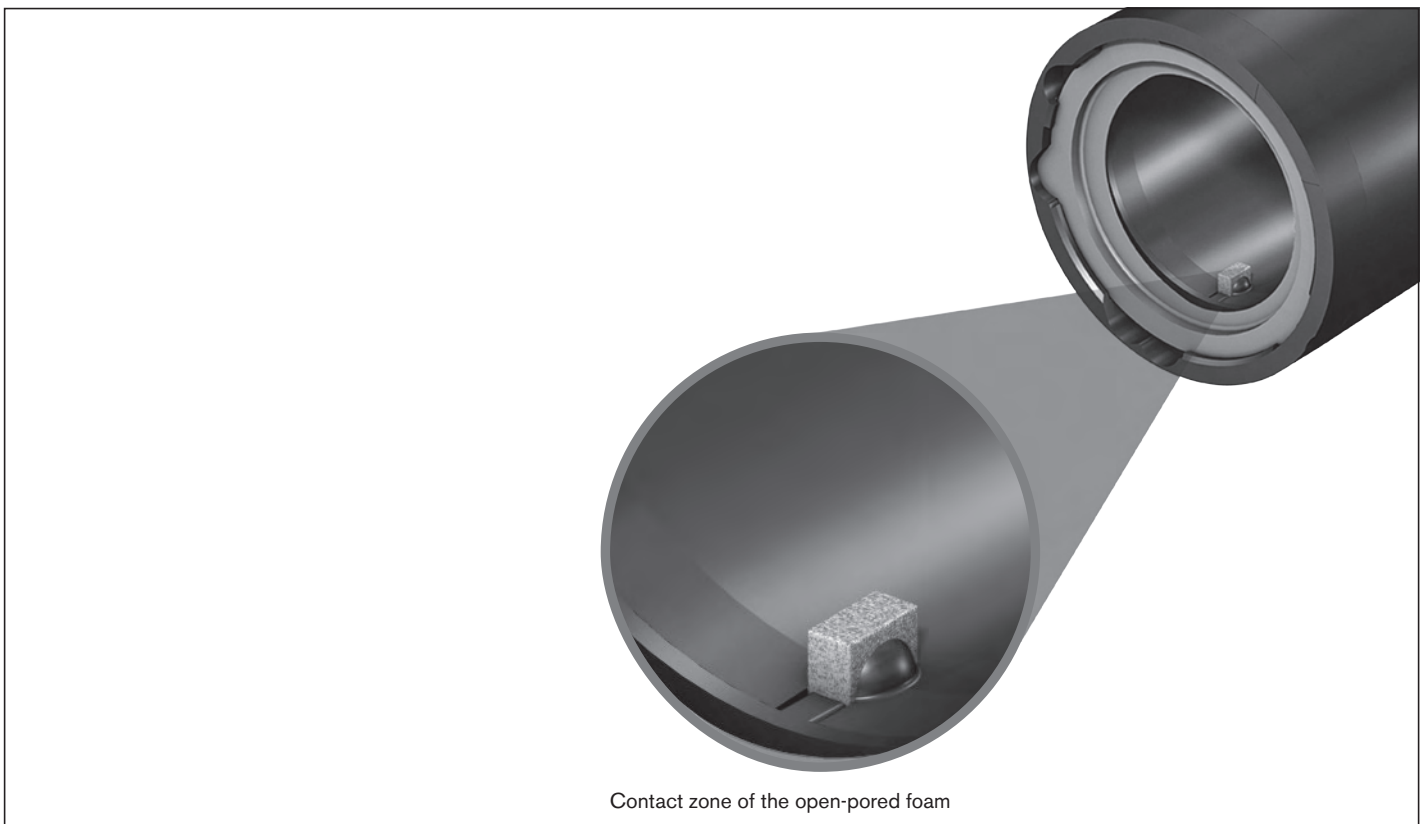
Structural design of front lube units

- 1 Seal
- 2 Housing and cover
 - Material: special plastic
- 3 Open-pored foam
- 4 Housing nut
- 5 Intermediate ring
- 6 Recirculation cap
- 7 Ball nut
- 8 Ball screw

Notes

When selecting the size for the stroke, consider the dimensions of the VSE.
When setting up a system, do not allow the VSE to collide with a stop or other components.





Ball Nut with Front Lube Unit

Front lube unit

The front lube unit (VSE) has been designed for the long-term, maintenance-free operation of the Ball Screw Assembly. It is attached to the nut and delivers lube oil continuously to the rolling elements.

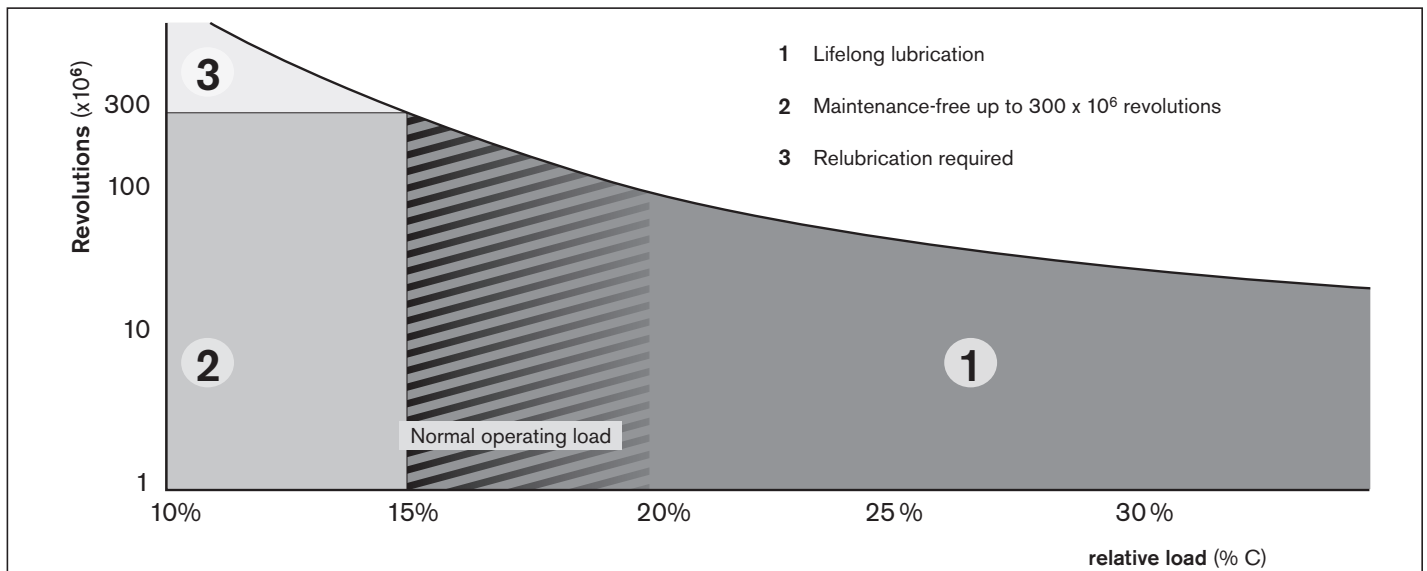
For travel up to 300 million revolutions without relubrication.

The front lube unit can be combined with the following nut types:

- FSZ-E-S
- FSZ-E-B
- FEM-E-S
- FEM-E-C
- FEM-E-D
- SEM-E-S
- SEM-E-C
- FED-E-B
- FDM-E-S
- FDM-E-C
- FEM-E-D



Lifelong lubrication



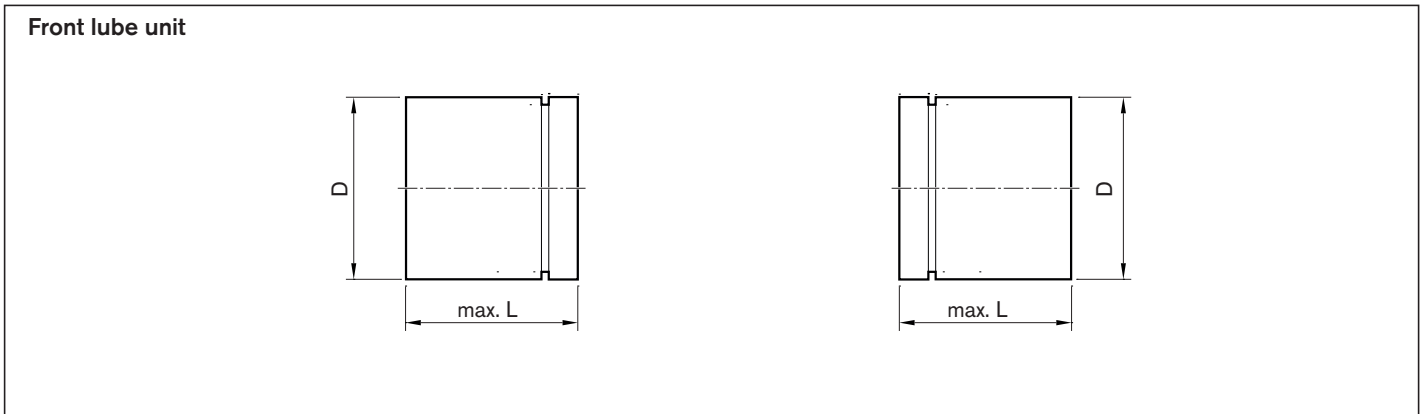
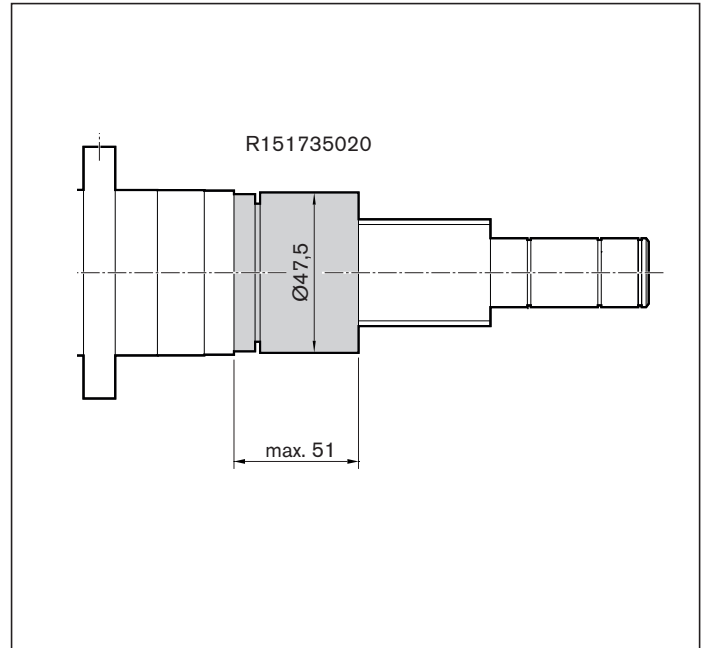
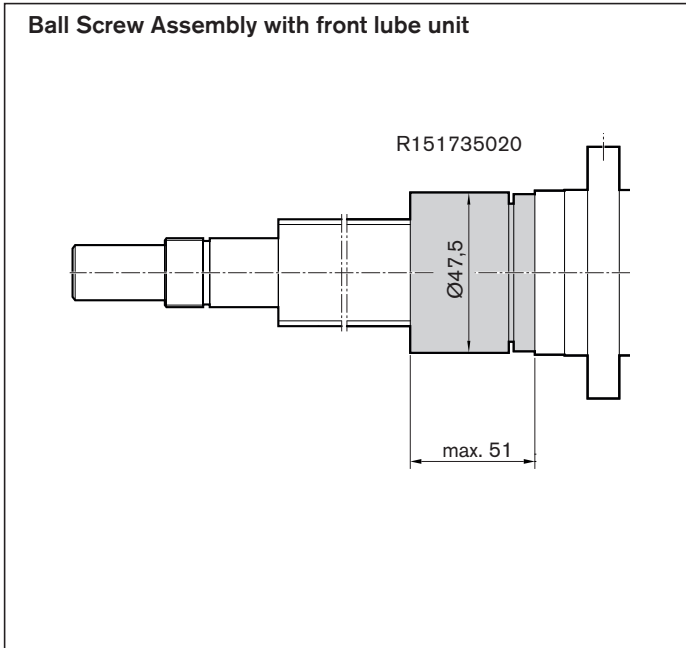
Results confirmed by our extensive tests:

- 1** For axial loads of 15-35% of the dynamic load rating C, the ball nut will be lubed for life.
- 2** For axial loads of < 15% of the dynamic load rating C, the Ball Screw Assembly will require no maintenance for up to 300 million revolutions.
- 3** After 300 million revolutions, the ball nut should be relubricated as usual. The front lube unit does not have to be removed from the nut.

Lead (mm)	Travel s with Front Lube Units ¹⁾ (km)
5	1,500
10	3,000
20	6,000
32	9,600
40	12,000

1) max. load up to 0.15C

Technical data



Note: The front lube unit is delivered ready-mounted to the Ball Screw Assembly. Only installation by the manufacturer is permitted.

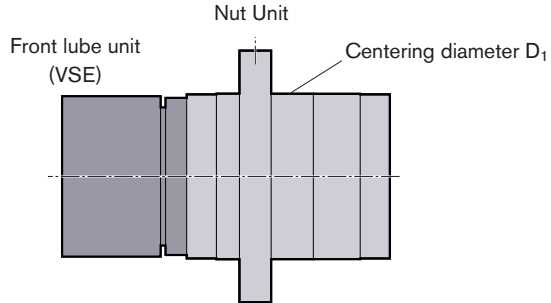
Size of VSE d ₀ x P	Part number	(mm)		Weight (kg)	
		D	L	m	
20 x 5 R	R151715000	32.60	51.00	0,021	
20 x 20 R					
25 x 5 R	R151725010	37.50	51.00	0,027	
25 x 10 R					
25 x 25 R					
32 x 5 R	R151735020	47.50	51.00	0,042	
32 x 10 R					
32 x 20 R					
32 x 32 R					
40 x 5 R	R151745030	55.50	53.00	0,055	
40 x 10 R	R151745040	62.30	51.00	0,070	
40 x 20 R					
40 x 40 R					

Ball Nut with Front Lube Unit

Ordering example for front lube unit with illustration of mounting orientation

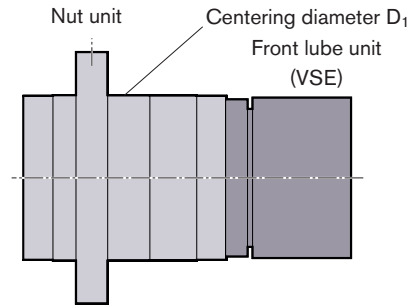
BASA | 32 x 10R x 3.969 | **FSZ-E-S - 5** | 00 | 1 | 3 | T7 | R | 81K203 | 31K200 | 1000 | 0 | 2

Front lube unit on left, nut with initial greasing



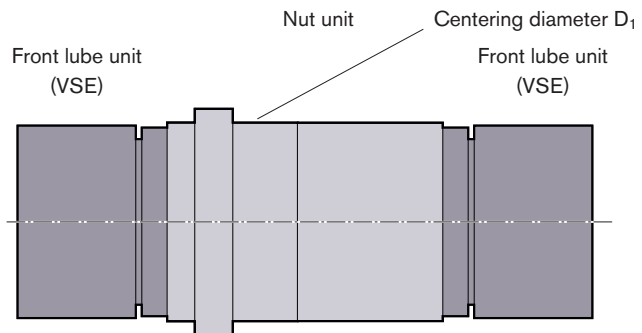
BASA | 32 x 10R x 3.969 | **FSZ-E-S - 5** | 00 | 1 | 3 | T7 | R | 81K203 | 31K200 | 1000 | 0 | 3

Front lube unit on right, nut with initial greasing



BASA | 40 x 20R x 6 | **FED-E-B - 8** | 00 | 1 | 3 | T7 | R | 81K250 | 31K300 | 1000 | 0 | 4

Front lube unit on two sides, nut with initial greasing



Mounting orientation of
the front lube unit on nut types

Nut type	Mounting orientation
FSZ-E-B	2, 3
FSZ-E-S	2, 3
FEM-E-S	2, 3
FEM-E-C	2, 3
FEM-E-D	2, 3
SEM-E-S	2, 3
SEM-E-C	2, 3
FED-E-B	4
FDM-E-S	2, 3
FDM-E-C	2, 3
FEM-E-D	2, 3