

Series

2023

Planetary roller screw

PRODUCT CATALOG



Technical Information Index

Product Concept	2
● Comparison between planetary screw and ball screw	
● Application of planetary screw	
● Application examples	
Planetary screw type	3-4
Selection table	5
Accuracy-Efficiency	6
Geometry	7
Preload force	8
Preload force examples	9
Average velocity and axial load.....	10
Rated life	11
Stiffness	12
Rotational speed	13
Driving torque	14-15
Calculation example	16-17
lubrication	18-19
Disposal recommendations.....	20
Screw parameters	
RV Series	22-39
HRV Series	40-45
RVI Series	46-51
RVR Series	52-57
RVD Series	58-63
BU Bearing	64-68

Planetary ball screws convert rotational motion into linear motion, utilizing a threaded roller between the screw shaft and the nut as the transmission unit.

The increased number of contact points in planetary ball screws allows for higher load-carrying capacity.

The Sairis product series includes non-circulating types (RV and HRV series), reverse types (RVI series), differential planetary screws (RVD series), and circulating planetary screws (RVR series).

We also offer bearing units to accommodate various types of planetary ball screws.

■ Comparison between planetary screw and ball screw

The main difference between a planetary ball screw and a ball screw is the utilization of a threaded roller as the load transmission element instead of ball bearings. The primary advantages are the presence of a higher number of contact points and the design of the thread angle, enabling it to carry loads equivalent to those of a larger-diameter ball screw.

Load and Life

Compared to ball screws, planetary ball screws offer higher static and dynamic load capacities. This is accomplished by employing threaded rollers instead of ball bearings, which disperses the load across a larger number of contact points.



Speed and Acceleration

Planetary roller screws can provide higher rotational speeds and larger acceleration compared to ball screws. The RV series of planetary roller screws, which employ a non-circulating design, can achieve mechanical performance up to twice the speed of ball screws and acceleration up to 3g.

Lead and Pitch

The lead of a planetary screw can be designed to be smaller than that of a ball screw. The lead (linear motion per revolution) of a planetary screw can be made extremely small. Due to the constraints of multiple threaded rollers, the RV series with smaller diameters can achieve a lead of 1mm. The pitch is defined as the lead divided by the number of screw heads. The RVR circulating planetary screw is a single or double-headed screw, so the pitch is equivalent to the lead or half of the lead. The RVD differential screw can achieve leads ranging from 10 micrometers to hundreds of micrometers. The lead of the screw can also be specified as a fractional value, allowing for more flexible direct drive matching with customer requirements. This is an advantage compared to ball screws. The selection and implementation of the lead do not require any geometric changes to the screw and nut. In contrast, the minimum lead of a ball screw is limited by the size of the steel balls that can match the thread. A smaller lead for a ball screw means smaller balls and relatively smaller load capacity.

Stiffness and Strength

The large number of contact points and the geometric structure of these contact points give planetary ball screws greater stiffness and shock resistance compared to ball screws.

■ Advantages of planetary roller screws

- High axial load capacity
- Long service life
- Zero backlash
- High strength
- The highest lead accuracy can reach $6\mu\text{m}/300\text{mm}$.
- High reliability
- High efficiency
- Customization for customers
- High acceleration and deceleration.
- High rotational speed (RV series)
- Large diameter, small lead (RVR series offers a lead of 0.25mm)
- Material: Standard bearing steel or stainless steel
- Differential lead (RVD series offers a lead of 0.02mm)

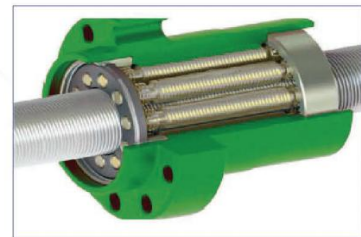
■ Applications

- Machine tools
- Measuring instruments
- Robots
- Telescopes
- Printing machinery
- Aerospace industry (airplanes, helicopters, drones)
- Aerospace (rockets, satellites, launchers, spacecraft)
- Military industry (tanks, missiles, etc.)
- Biochemical industry
- Petroleum industry
- Semiconductor
- Injection molding machines
- Laser equipment
- Optical instruments
- Valve control
- Presses
- Bending machines
- Automotive manufacturing
- Nuclear industry
- Continuous casting machines
- Medical industry
- Electric cylinders

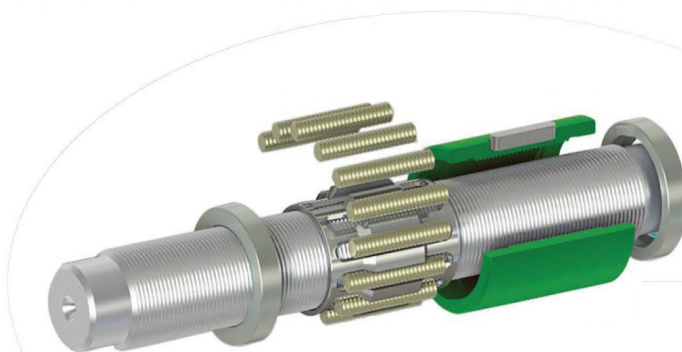
Types of planetary screws



The **RV planetary roller screw** is a design that offers high precision and large load capacity. It is a non-circulating type planetary roller design that provides highly stable driving torque. The roller screw is widely used in applications with heavy loads, high speeds, and high accelerations. It offers higher reliability and longer lifespan in a compact size. The special gears on the rollers and nut ensure that the roller screw maintains excellent motion characteristics even under the most adverse conditions.

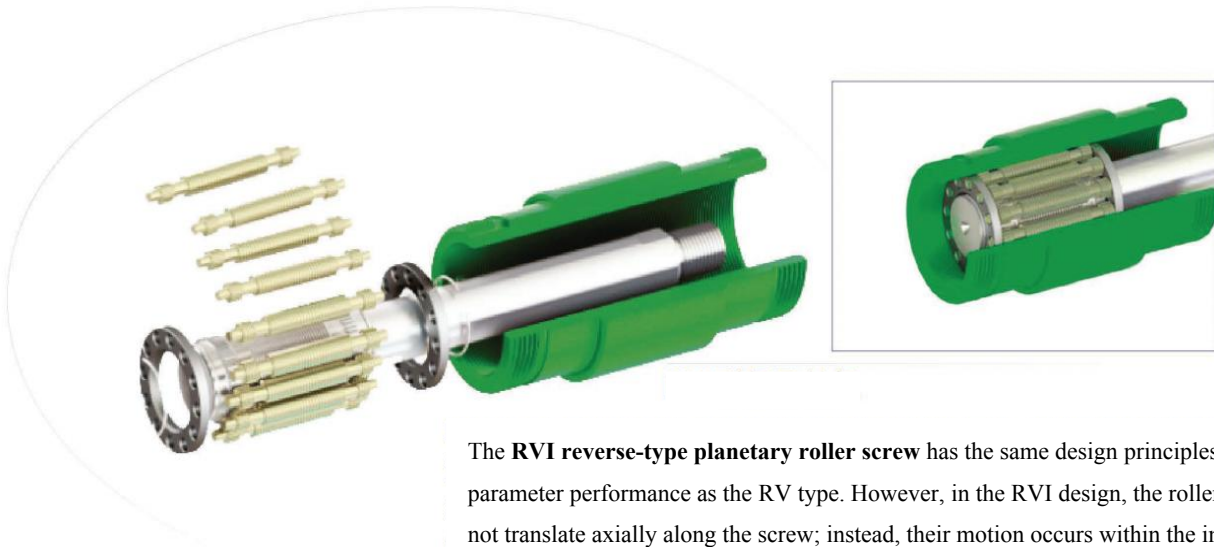


The **HRV planetary roller screw** is an enhanced design based on the RV type, developed to meet higher load and lifespan requirements in applications. The design is optimized based on the RV type, incorporating additional contact points and improved thread design. The nut length is longer compared to the standard RV size. The HRV series is designed for larger diameters and loads, and therefore, it is not suitable for preloaded nuts or internal preload (zero backlash). It can only provide standard backlash or reduced backlash.



The **RVR planetary roller screw** is a design with circulating rollers, where the rollers are guided in a cage, and their motion is controlled by a set of cams. This design combines extremely high positioning accuracy, resolution, and stiffness while ensuring high load capacity. This design is suitable for high-precision applications with medium to low speeds.

Types of planetary screws



The **RVI reverse-type planetary roller screw** has the same design principles and parameter performance as the RV type. However, in the RVI design, the rollers do not translate axially along the screw; instead, their motion occurs within the internal thread of the nut.

This design concept follows specific design rules to achieve higher rated loads with smaller leads, thereby reducing the driving torque. The more compact size enables direct guidance.

The gear design between the rollers and the screw shaft allows for smoother and more stable synchronous rotational motion.



The **RVD series planetary roller screw** is an ideal solution for high-precision positioning applications. Its special design allows for a lead as small as 0.05mm or even 0.02mm, meeting the requirements of extremely high precision. Due to the specialized equipment and high manufacturing precision required for producing RVD screws, the achievable stroke length for this type of planetary screw is relatively shorter. This ensures the highest quality standards are maintained.

Planetary screw model identification and marking:

Planetary Roller Screw Assembly		RV	2	1	0	/	30.	5.	R	3.	350/230	-6YY-
Model	RV: Planetary roller screw HRV: Enhanced planetary roller screw Circulating planetary roller screw Reverse-type planetary roller screw Differential planetary roller screw											
Nut Type:	1: Single Nut 2: Preload Nut 3: Double Nut 4: Internal Preload Nut											
Nut Form	1: Cylindrical nut 6: Single-side flange nut 7: Intermediate flange nut 8: Non-standard nut											
Seal	0-with oil wiper ,1-without oil wiper											
Main screw diameter (mm)												
Main screw lead P (mm)												
Thread direction	R: right-handed L: left-handed B: left-handed + right-handed											
Screw accuracy:	C1: 6μm/300mm C3: 12μm/300mm C5: 23μm/300mm C7: 50μm/300mm											
Thread length	The total length of screw rod (mm)											

*For details on the definition of thread accuracy, see page 6 of ISO3408-3.

Accuracy level

The classification and definition of tolerance grades for planetary screws are determined according to ISO 3408-3, with the determining factor being the lead error V_{300p} opc within a 300mm thread length.

The relative tolerance levels are:

Tolerance class	V_{300p}
C1	6 $\mu\text{m}/300\text{ mm}$
C3	12 $\mu\text{m}/300\text{ mm}$
C5	23 $\mu\text{m}/300\text{ mm}$

The standard precision grades of planetary screws are C1, C3, and C5. Higher precision grades can be produced as non-standard as required.

ISO 3408-3 :Lead accuracy annotation

P	→ Nominal lead
e_0	→ The difference between demand lead and nominal lead
V_{300p}	→ The error between actual lead and nominal lead when exceeding 300mm
e_p	→ The difference between the actual lead and the nominal lead exceeds the effective stroke L
V_{up}	→ Stroke variable exceeding effective stroke L
$V_{2\pi p}$	→ Travel variables bevond each revolution
L_u	→ Valid itinerary

Lead Error

The lead error E_p is related to the effective stroke L_u , and the calculation formula is as follows:

$$e_p = 2 \cdot \frac{L_u}{1000} \cdot V_{300p}$$

The lead error e_0 of a planetary screw is shown in the diagram on the right, along with the torque curve for G1 and G3 accuracy grades.

The lead measurement is performed using a CMM (Coordinate Measuring Machine) testing device. The graph on the right shows the E_p accuracy error level in micrometers (μm).

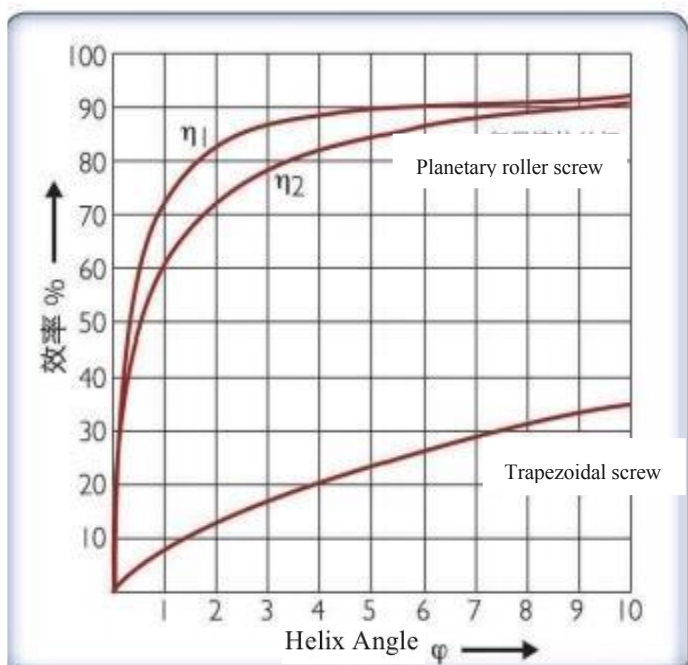
L		E_p μm Accuracy error level		
From	to	G1	G3	G5
	315 mm	6	12	23
315 mm	400 mm	7	13	25
400 mm	500 mm	8	15	27
500 mm	630 mm	9	16	30
630 mm	800 mm	10	18	35
800 mm	1000 mm	11	21	40
1000 mm	1250 mm	13	24	46
1250 mm	1600 mm	15	29	54
1600 mm	2000 mm			65
2000 mm	2500 mm			77
				93

Efficiency

The power efficiency of a planetary screw depends on its efficiency, which is manifested in the dissipative heat power at various contact interfaces. This efficiency is crucial for calculating motor torque, and it fundamentally depends on the threaded geometry of the components, which generates sliding surfaces. Factors such as lubrication, speed, load level, surface roughness, etc., also affect the efficiency. There are two efficiencies for planetary screws in operation:

*forward efficiency (η_1) corresponds to the mechanical efficiency of converting rotational motion into linear motion,

*while reverse efficiency (η_2) corresponds to the mechanical efficiency of converting linear motion into rotational motion.



The SERIES planetary roller screw can achieve high mechanical efficiency, as shown in the graph depicting efficiency ratios (η) and η_2 varying with different helix angles. The efficiency of a trapezoidal thread screw is shown in the graph for comparison. However, unlike friction screws, planetary screws cannot self-lock.

Nut Classification

Nut shape and geometric dimensions

A single nut has low axial clearance, and this type of nut can be machined to achieve zero clearance or even have a certain preloading force.

A preloaded nut applies preloading force by clamping two half nuts together within the housing.

A single-side flange preloaded nut separates the two parts using an isolation ring. The principle of a double nut is similar to that of a preloaded nut. Typically, cylindrical nuts and intermediate flange nuts are preloaded using pressure, while single-side flange nuts are preloaded using tension.



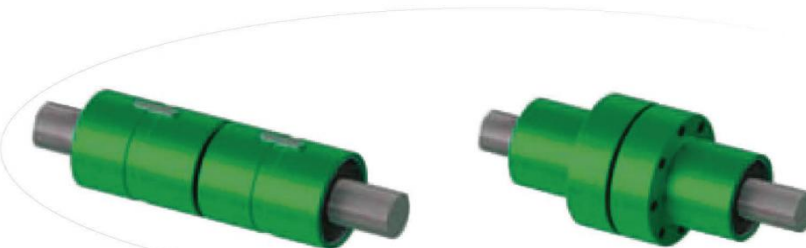
Single Nut

- *Integral nut with clearance
- *Can provide a wiper



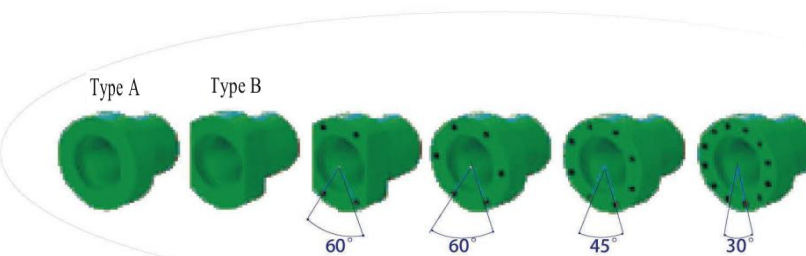
Preloaded Nut

- *The nut is divided into two half nuts
- *Preloaded, no clearance
- *Same size as a single nut but with reduced load capacity
- *Can provide a wiper



Double Nut

- *Consists of two single nuts, preloaded, no clearance
- Same load capacity as a single nut
- *Length is twice that of a single nut
- *Can provide a wiper

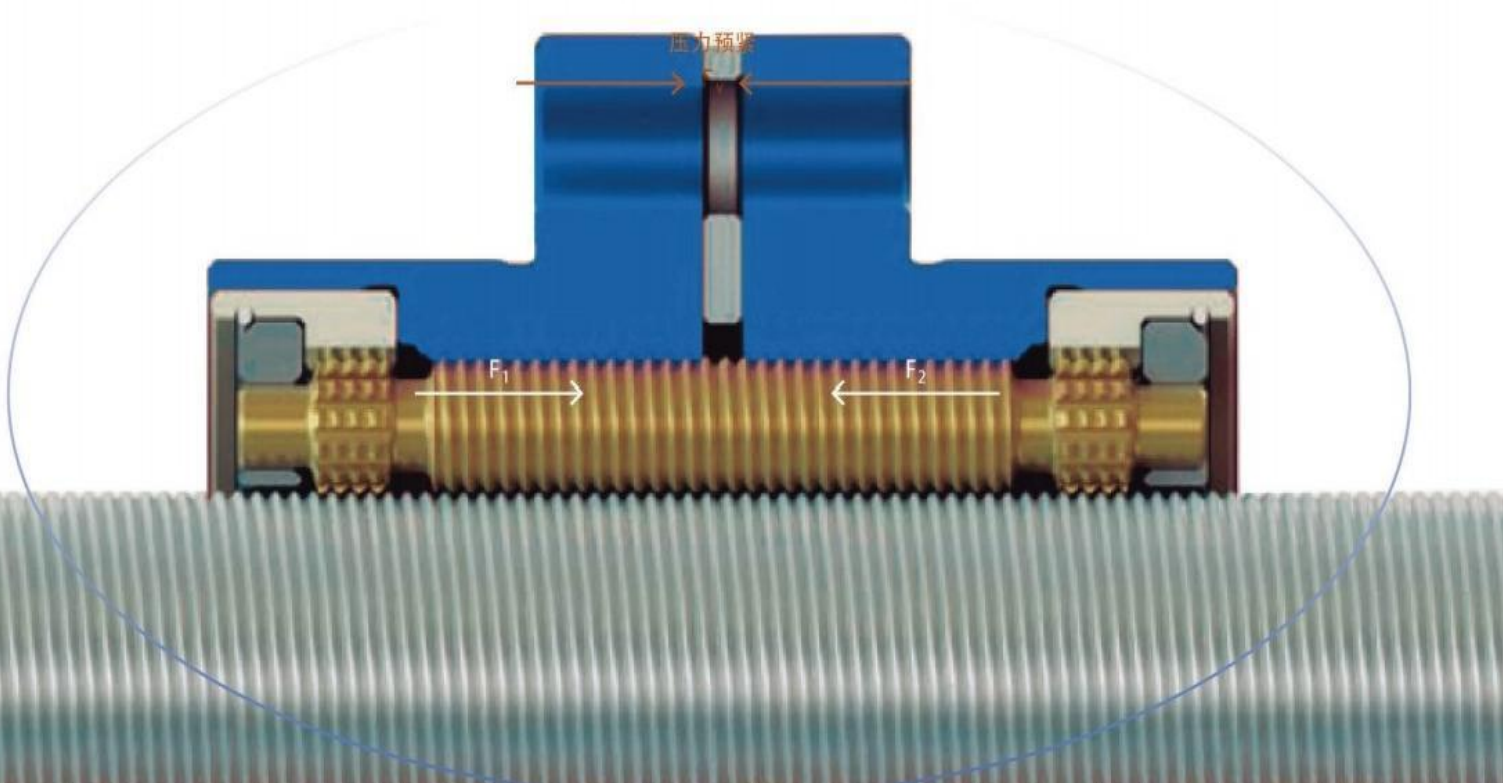


Flange Form

Examples of commonly used flange forms

*The shape of the nut can be specially designed according to customer needs

Preload Force



Preloaded nuts are utilized to eliminate clearance and enhance stiffness.

The preloading force should be meticulously calculated to achieve the highest level of stiffness while ensuring efficiency and longevity.

(See picture above)

When considering preloaded nuts, it is important to consider the corresponding average load in the preloading level F_v to avoid the occurrence of additional preload forces when the screw is subjected to external loads ($F_1 \dots F_n$).

This can give rise to several new individual load forces ($F_{v1} \dots F_{vn}$).

If a zero-clearance state is required throughout the entire motion load process, the preload force F_v must be selected based on the maximum load F_{max} .

The formula is as follows:

$$F_v = \frac{F_{max}}{2,83} [N]$$

If the planetary screw only needs to maintain a zero-clearance state under specific loads, the preload force F_v should be selected based on the corresponding specific load F_v .

$$F_v = \frac{F_n}{2,83} [N]$$

The final load will be determined by the size of the preload force F_v

The preloaded nut system increases the load on the nut by half and releases the load by preloading another half of the nut.

The resulting load can be calculated by the following formula:

Loading force of half nut:

$$\begin{aligned} F_{nv(1)} &= F_v + 0,65 \cdot F_n [N] \text{ si } F_n < 2,83 \cdot F_v [N] \\ F_{nv(1)} &= F_n [N] \text{ si } F_n \geq 2,83 \cdot F_v [N] \end{aligned}$$

Deloaded half nut :

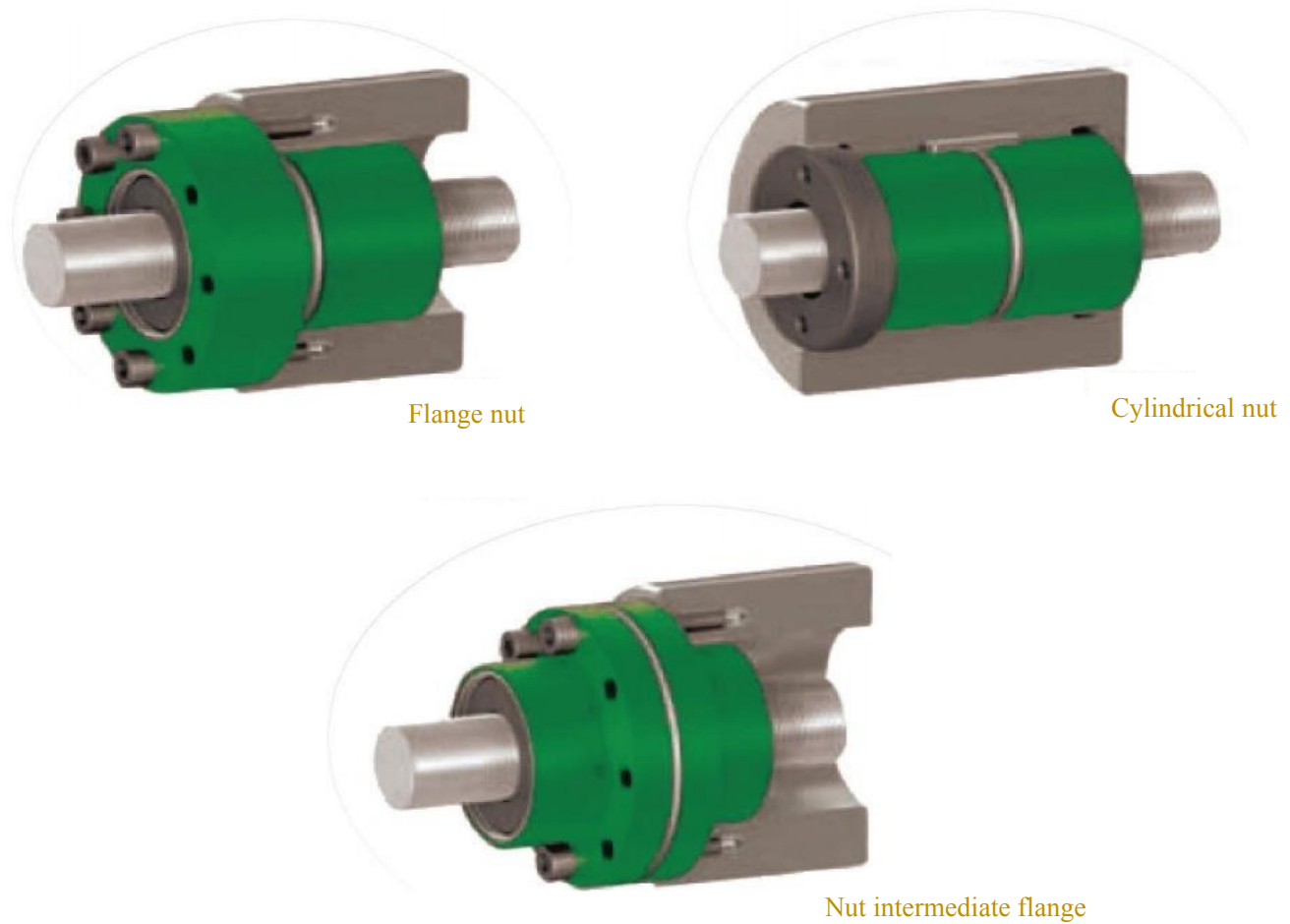
$$\begin{aligned} F_{nv(2)} &= F_v - 0,35 \cdot F_n [N] \text{ si } F_n < 2,83 \cdot F_v [N] \\ F_{nv(2)} &= 0 [N] \text{ si } F_n \geq 2,83 \cdot F_v [N] \end{aligned}$$

The corresponding recommended preload force (preload nut or single nut) can be found in the product parameter table of this catalog.

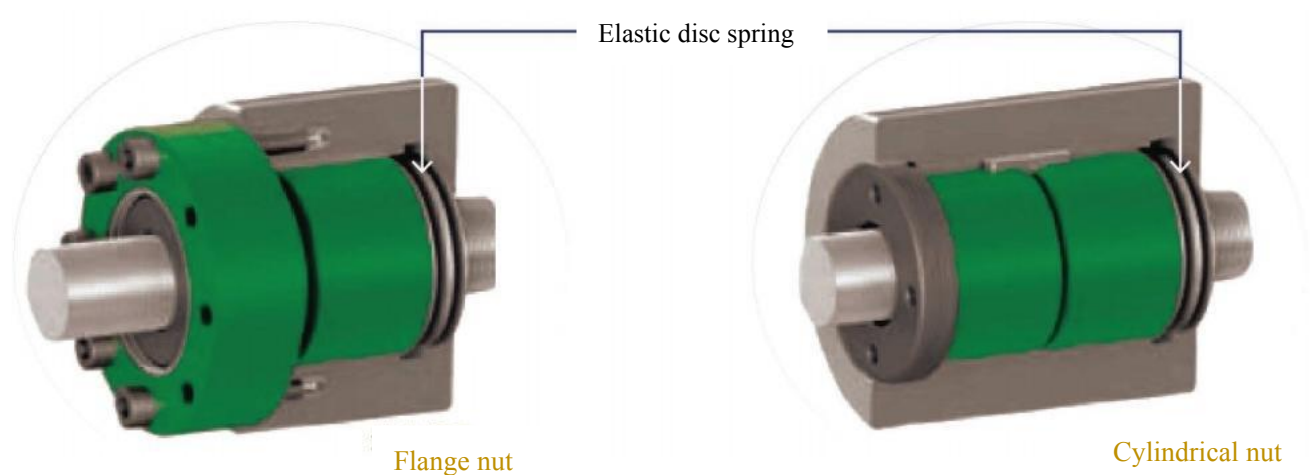
$F_1 \dots F_n$	[N] :Separate Load
F_v	[N] :Preload force
F_{nv}	[N] :Individual load and load generated by the preload force.
F_{ma}	[N] :Considering the weighted balanced load with preload force.

Preloaded nut example

Rigid washer for preloaded nut.



Elastic disc spring preloaded nut.



Calibration can be made easier by using elastic preload, however this preload can become asymmetrical due to changes in direction of external loads (whether via spring washers or not). Please ask SERIES for more details.

Preload force achieved by increasing roller size.

The size and load are consistent with the single nut parameters, and the preload force is corrected by the roller size and set at the factory.

Average velocity and weighted average load



For variable speed and variable load applications, the lifetime calculation should be based on the average values of n_m and F_m . For variable speed and constant load applications, the calculation is based on speed n and average speed n_m using the following formula:

$$n_m = \frac{q_1 \cdot n_1 + q_2 \cdot n_2 + \dots}{100} [\text{min}^{-1}]$$



The average load is actually the equivalent cubic average load. For variable load with constant speed applications, the average load F_m is calculated using the following formula:

$$F_m = \sqrt[3]{F_1^3 \cdot \frac{q_1}{100} + F_2^3 \cdot \frac{q_2}{100} + \dots} [N]$$

For variable load and variable speed applications, the formula for calculating the average load F_m is as follows:

$$F_m = \sqrt[3]{F_1^3 \cdot \frac{q_1}{100} \cdot \frac{n_1}{n_m} + F_2^3 \cdot \frac{q_2}{100} \cdot \frac{n_2}{n_m} + \dots} [N]$$



For applications where the load varies linearly while the speed remains constant, the average load F_m is calculated using the following formula:

$$F_m = \frac{F_{min} + 2 \cdot F_{max}}{3} [N]$$

n_m	[min ⁻¹] :Average speed
n_1 - n_n	[min ⁻¹] :Speed of each section
q_1 - q_n	[%] Time percentage
F_m	[N] :Load average
F , F_1 ... F_n , F_{min} , F_{max}	[N] :Actual load

Rated life

The rated life of a planetary screw, denoted as L_{10} or L_h closely aligns with the life achieved by the rolling fatigue failure model and is evaluated with a 90% reliability. If a higher level of reliability is required, the rated life L_{10} or L_h should be adjusted based on the reliability factor f_r on the right.

$$\begin{aligned} L_n &= L_{10} \cdot f_r && \text{Number of revolutions} \\ L_{hn} &= L_h \cdot f_r && \text{Hour} \end{aligned}$$

Reliability %	f_r
90	1
95	0,62
96	0,53
97	0,44
98	0,33
99	0,21

Calculation of rated life for a single nut (with clearance and internal interference preload)

The rated life of a single nut is calculated according to the following formula:

$$L_{10} = \left(\frac{C}{F_m} \right)^3 \cdot 10^6 \quad \text{Number of revolutions}$$

or

$$L_h = \frac{L_{10}}{n_m \cdot 60} \quad \text{Hour}$$

Set desired life, calculate the formula for the dynamic load required to meet the desired life:

$$C_a = F_m \cdot \sqrt[3]{\frac{L_{10}}{10^6}} \quad [\text{N}]$$

Calculated based on the working hour life L_n , it can be calculated based on the life of the planetary screw and the ratio of the usage rate of the planetary screw in the equipment:

$$L_{hN} = \frac{L_h}{f_N} \quad \text{Hour}$$

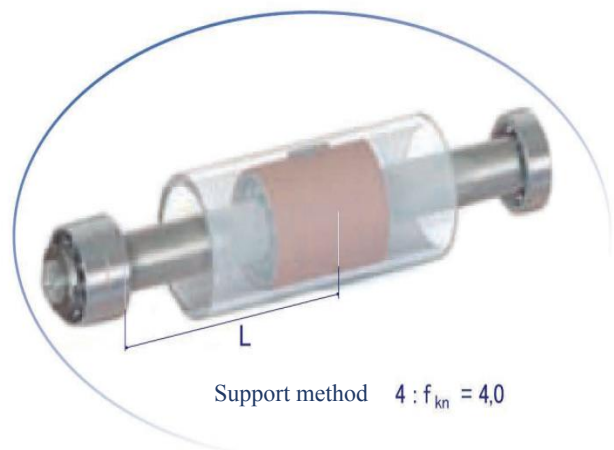
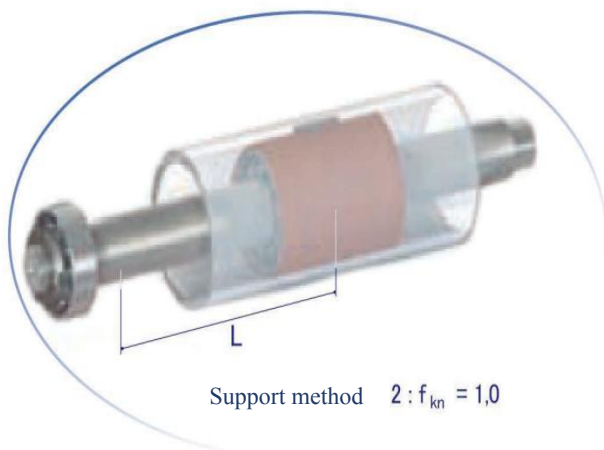
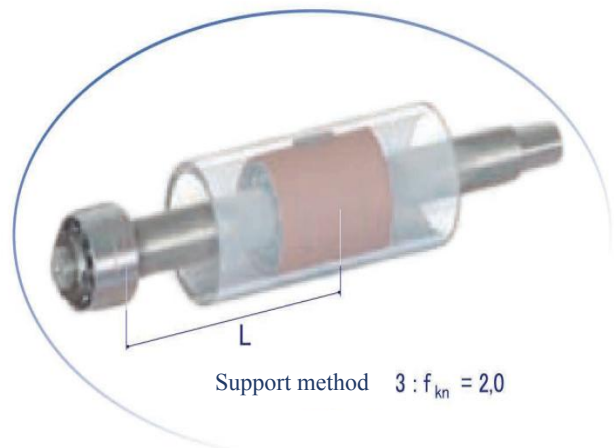
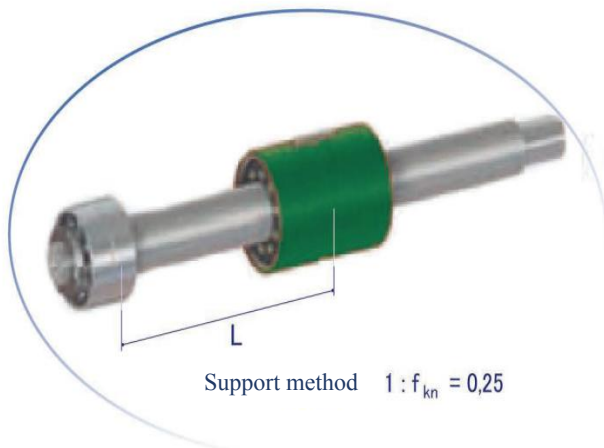
Preload nut life calculation

For the calculation of a preloaded nut, it is necessary to first calculate the dynamic load C_a and the average axial load F_{ma} (including preloading) corresponding to the life of each half nut. The overall life of the preloaded nut, L_{10} , is based on two life values: $L_{10(1)}$ and $L_{10(2)}$ (number of revolutions).

$$\begin{aligned} L_{10(1)} &= \left(\frac{C}{F_{ma(1)}} \right)^3 \cdot 10^6 \quad \text{Number of revolutions} \\ L_{10(2)} &= \left(\frac{C}{F_{ma(2)}} \right)^3 \cdot 10^6 \quad \text{Number of revolutions} \\ L_{10} &= \left(L_{10(1)}^{-10/9} + L_{10(2)}^{-10/9} \right)^{-9/10} \quad \text{Number of revolutions} \end{aligned}$$

L_n	[Number of revolutions] ; Corrected life	$C_a[N]$	Rated dynamic load
L_{hn}	[Hour] ; Corrected life	$F_m[N]$	Average load (with clearance but nut)
L_{10}	[Number of revolutions] ; Rated life	$F_{ma} [N]$	Average load (preload nut)
L_h	[Hour] ; Rated life	$N_m[\text{min}^{-1}]$	Average speed
L_{hn}	[Hour] ; Actual working life	$f_N[-]$	Usage coefficient of screw in equipment
f_r	[-] ; Reliability%		

Stiffness calculation



Planetary screw stiffness

The combined stiffness C of a planetary roller screw consists of the following individual stiffnesses:

C_{me} Nut stiffness	C_t Bearing steel grade
C_{sp} Screw stiffness	C_u Support structure stiffness

Allowable compressive yield strength F_{knzu}

The allowable compressive yield strength is calculated according to the following formula:

$$F_{knzu} = 0,8 \cdot 101,6 \cdot f_{kn} \cdot \frac{d_0^4}{L^2} \quad [\text{kN}]$$

The value 0.8 corresponds to the required safety factor.

Screw stiffness C_s

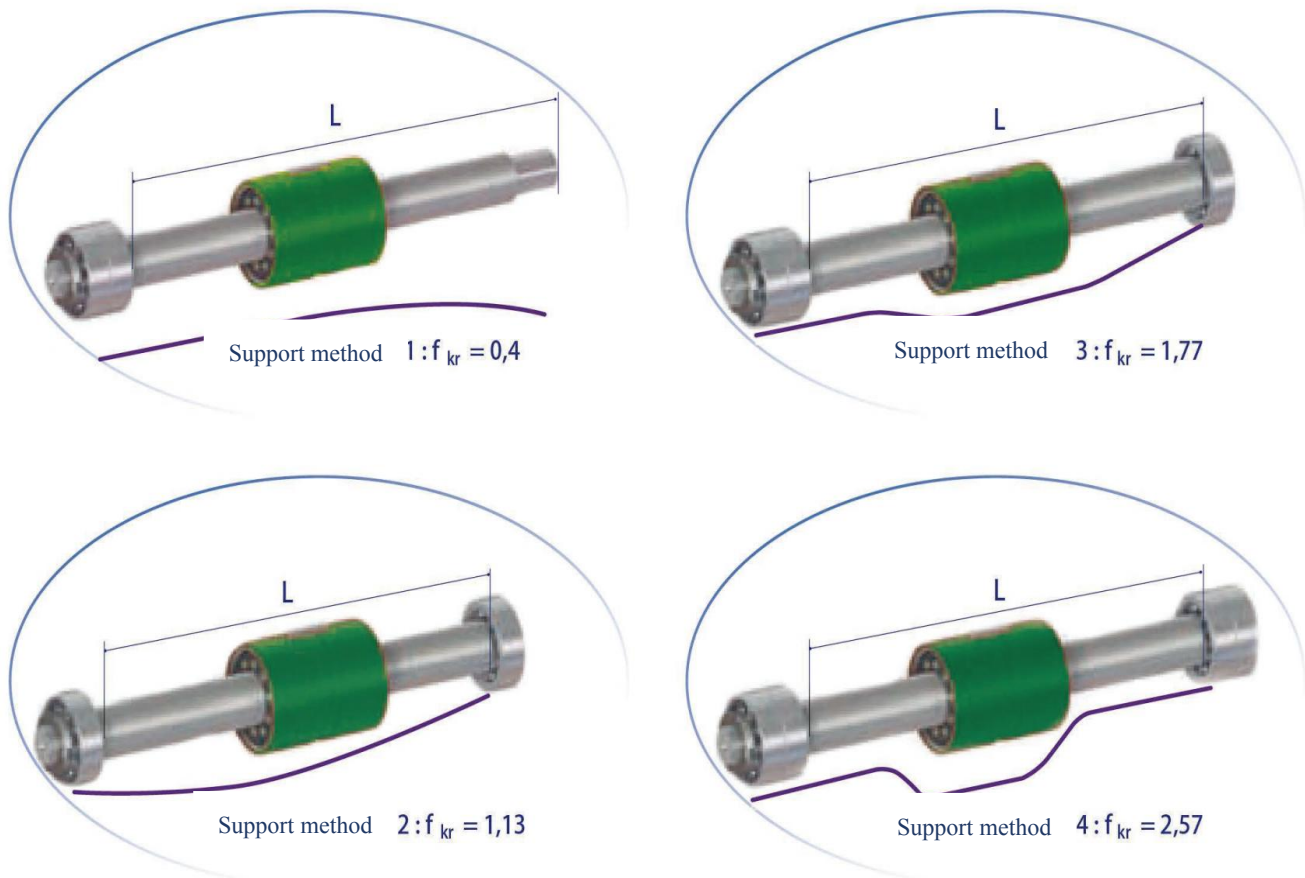
The screw stiffness C_s is calculated based on the following simplified formula:

$$C_s = 164 \cdot \frac{d_0^2}{L} \quad [\text{N}/\mu\text{m}]$$

F_v [N] ; Preload force
 F_n [N] ; Axial load
 C_{me} [N/ μm]; Nut stiffness
 C_s [N/ μm]; Screw stiffness
 f [N²/3/ μm] ; Stiffness coefficient

f_m [-]; Stiffness coefficient
 L [mm]; Screw free length
 d_0 [mm]; Screw nominal diameter
 F_{knzu} [N]; Allowable buckling force
 f [-] ; Support configuration correction factor

Rotation check



Allowable speed and axial load

Due to internal structural limitations imposed by the screw nut, the maximum allowable speed of a planetary screw is equal to the maximum permissible speed (also known as the critical speed). The minimum speed between n and n_{kr} is the recommended maximum speed.

RV : $d_0 \cdot n \leq 160'000$
 RVR : $d_0 \cdot n \leq 32'000$
 RVI : $d_0 \cdot n \leq 160'000$
 RVD : $d_0 \cdot n \leq 100'000$

The critical speed n_{gr} corresponds to the axial load $F = 0$

The critical speed corresponds to the first natural bending frequency and is primarily determined by the limit conditions, but it may also be influenced by the axial load, resulting in some strength variations. When a reasonable support configuration is chosen at the end of the screw, the maximum speed does not affect the desired speed. The bearing installation can provide an installation correction factor f_{kn} for the screw shaft, calculated based on the assumption that the planetary screw nut has no guiding device and assuming that the support is located at the end of the screw shaft with sufficient radial stiffness.

$$n_{gr} = 108 \cdot 10^6 \cdot d_0 \cdot \frac{1}{L^2} \quad [\text{min}^{-1}]$$

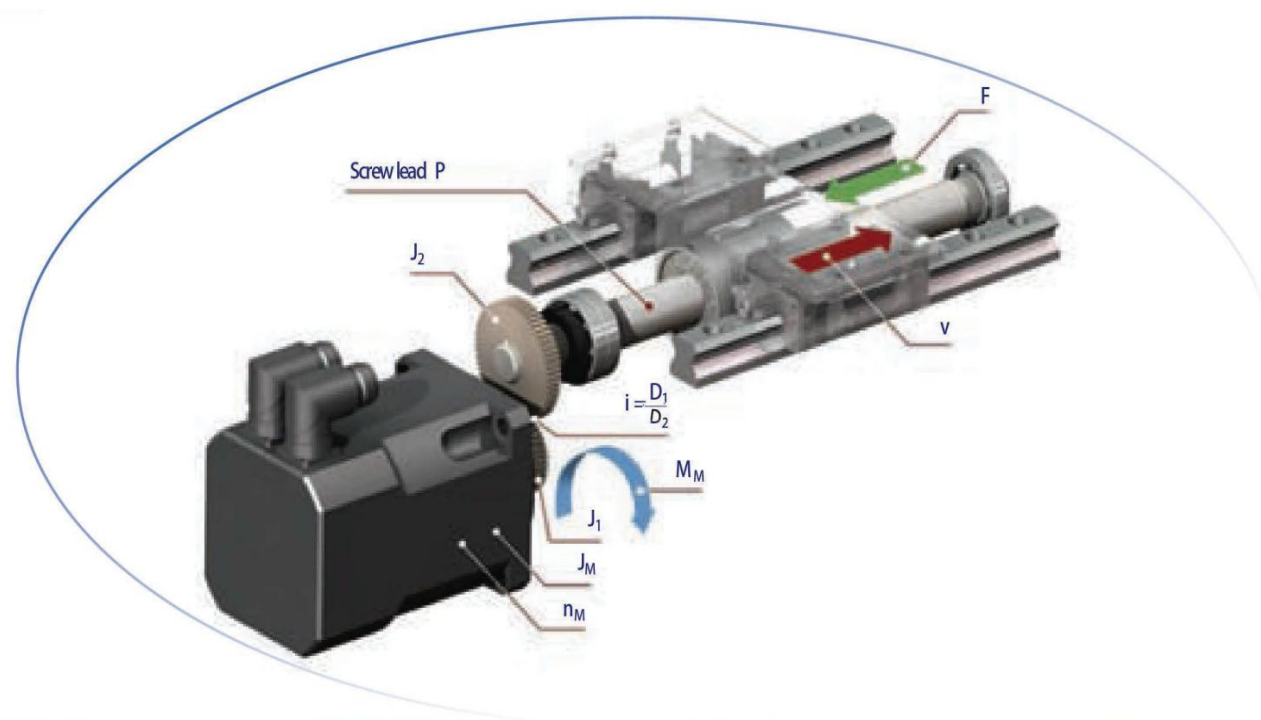
Allowable critical speed based on the support configuration:

$$n_{kzul} = 0,8 \cdot n_{gr} \cdot f_{kr} \quad [\text{min}^{-1}]$$

n [min-1] : Spinning speed
 n_{kr} [min-1] : Critical rotation speed
 n_{kzul} [min-1]: Allowable limit speed
 L [mm]: Screw free length

d_0 [mm]: Screw nominal diameter
 f_{kr} [-]: Support method correction coefficient
 0, 8 [-]: Safety factor

Drive torque calculation



Driving Torque

All motor ratings can be calculated according to the following formula.

Note: The no-load torque M_v of the preload nut must be taken into account in the calculation (based on the preload force E).

No-load torque of single nut with backlash: $M_v = 0 \text{ [Nm]}$

Motor constant speed drive torque M_m

No-load torque: $M_v = \frac{F_v \cdot P \cdot i \cdot c}{2000 \cdot \pi} \text{ [Nm]}$

Forward rotation torque (lift load torque): $M_{L1} = \frac{P \cdot i \cdot F}{2000 \cdot \pi \cdot \eta_1} \text{ [Nm]}$

Reverse torque (lowering load torque)

Feed force F must consider the friction of the guide rail corresponding to the braking torque:

$$M_{L2} = \frac{P \cdot i \cdot F \cdot \eta_2}{2000 \cdot \pi} \text{ [Nm]}$$

Motor drive torque

In reduced load mode the motor is in negative torque mode and the motor must match the brake:

$$M_M = (M_v + M_{L1,2} + M_q \cdot i) \text{ [Nm]}$$

Motor drive power: $P_M = \frac{M_M \cdot n_M}{9.55} \text{ [W]}$

d	[mm]	Outer diameter of lead screw
do	[mm]	Nominal diameter of lead screw
dbl	[mm]	Screw shaft aperture
d2	[mm]	Root diameter of lead screw
p	[mm]	Lead of lead screw
L	[mm]	Screw length
M _T	[Kg]	Mobile load quality
D1	[mm]	Drive wheel diameter
D2	[mm]	Driven wheel diameter
i	[-]	Reduction ratio
f	[N]	Give thrust

F _v [N]	:Preload force
F _a [N]	:Acceleration thrust
M _v [Nm]	No-load torque
M _{L1} [Nm]	Constant speed forward (upward) load torque
M _{L2} [Nm]	Constant speed reverse (descent) load torque
M _m [Nm]	Motor drive torque
M _{L1} [Nm]	Load acceleration torque
M _b [Nm]	Acceleration torque
M _{ma} [Nm]	Motor acceleration drive torque
M _R [Nm]	Friction torque of screw bearing

Motor drive torque M_{wa} during acceleration

The approximate value of the screw's rotational inertia J can be calculated by the following formula. If you need accurate parameters, please contact SERIES.

Load torque: $M_{La} = \frac{P \cdot i \cdot (F + F_f)}{2000 \cdot \pi \cdot \eta_1} \quad [\text{Nm}]$

Load moving inertia: $J_t = m_t \cdot \left(\frac{P}{2 \cdot \pi} \right)^2 \cdot 10^4 \quad [\text{kgm}^2]$

Lead screw inertia (rotation): $J_0 = 7.66 \cdot L \cdot (d_0^4 d_0^4) \cdot 10^{-13} \quad [\text{kgm}^2]$

Total rotational inertia: $J = J_0 + J_t + J^2 (J_0 + J_t + J_0) \quad [\text{kgm}^2]$

Motor speed: $n_M = \frac{v \cdot 60 \cdot 10^3}{P \cdot i} \quad [\text{Min}^{-1}]$

Acceleration torque $M_B=f(n_M)$: $M_B = \frac{n_M \cdot J}{9.55 \cdot t_B \cdot \eta} \quad [\text{Nm}]$

Acceleration torque $M_B=f(s_B)$: $M_B = \frac{4 \cdot \pi \cdot s_B \cdot J}{P \cdot i \cdot t_B^2 \cdot \eta} \quad [\text{Nm}]$

Acceleration time $t_B=f(n_M)$: $t_B = \frac{n_M \cdot J}{9.55 \cdot M_B \cdot \eta} \quad [\text{s}]$

Acceleration time $t_B=f(s_B)$: $t_B = \sqrt{\frac{4 \cdot \pi \cdot s_B \cdot J}{P \cdot i \cdot M_B \cdot \eta}} \quad [\text{s}]$

Rotation speed after reaching acceleration: $n_M = \frac{120 \cdot s_B}{P \cdot i \cdot t_B} \quad [\text{Min}^{-1}]$

Acceleration process stroke: $s_B = \frac{n_M \cdot t_B \cdot P \cdot i}{120} \quad [\text{mm}]$

Motor drive torque: $M_{M1} = (M_v + M_{La} + M_B \cdot i + M_0) \quad [\text{Nm}]$

Motor driving power: $P_{M1} = \frac{M_{M1} \cdot n_M}{9.55} \quad [\text{W}]$

J_m [kgm²] : Motor rotational inertia
 J_r [kgm²] : Screw rotational inertia
 J_t [kgm²] : Load horizontal movement rotational inertia
 J [kgm²] : Rotational inertia
 J_1 [kgm²] : Driving wheel rotational inertia
 J_2 [kgm²] : Moment of inertia of driven wheel
 P_m [W] : Constant speed motor drive power
 P_{ma} [W] : Acceleration motor drive power
 s_B [mm] : Acceleration path
 t_B [s] : acceleration time

V [m/s] : linear speed
 n_M [min⁻¹] : Motor speed
 η [-] : gear transmission efficiency
 η_1 [-] : Transmission efficiency of planetary roller screw rising 71=0,71...0,89
 η_2 [-] : Transmission efficiency of planetary roller screw reduction 72=0,61...0,85
 C [-] : Preload friction coefficient $C=0.1...0.5$

(Efficiency of planetary roller screw η_1+7z refer to page 6 of the sample)

Calculation example

Planetary roller screw RV20x5

Nut type: Preload nut

Nominal screw diameter: $d_o=20$ mm

Screw lead: $P=5$ mm

Installation position: horizontally

Load direction: bidirectional

Fast mode: One-way, opposite to the workload

No.	Operating Mode	Time Percentage $q[\%]$	Spinning Speed n [min ⁻¹]	Axial F_i [N]
1	Extreme negative number	$q_1=5$	$n_1=15$	$F_1=8300$
2	Roughing	$q_2=40$	$n_2=110$	$F_2=4500$
3	Finishing	$q_3=50$	$n_3=70$	$F_3=4200$
4	Fast forward	$q_4=5$	$n_4=1700$	$F_4=1150$

Average Speed

$$n_{\text{avg}} = \frac{5}{100} \cdot 15 + \frac{40}{100} \cdot 110 + \frac{50}{100} \cdot 70 + \frac{5}{100} \cdot 1700 = 165 \text{ min}^{-1}$$

Preload

The preload force defines the working mode according to the finishing feed ($F_3=4200$ N)

$$F_p = \frac{4200}{2.85} = 1484 \text{ N}$$

Load of half nut 1

The load of half nut 1 in working modes 1, 2, and 3. Since $F_1, F_2, F_3 \geq 2.83F$:

$$F_{1N} = F_1 \text{ et ainsi } F_{2N} = 8300 \text{ N} \\ F_{3N} = 4500 \text{ N} \\ F_{3N} = 4200 \text{ N}$$

Load of half nut 1 in operating mode 4 Since $F_4=1150\text{N} < 2.83F$:

$$F_{4N} = 1484 \cdot 0.35 \cdot 1150 = 1082 \text{ N}$$

Load of half nut 2

In operating mode 4, half nut 2 is loaded. In operating modes 1, 2, and 3, half nut 2 is not loaded

$$F_{1N} = F_{2N} = F_{3N} = 0$$

Since $F_4 < 2.83F$:

$$F_{4N} = 1484 + 0.65 \cdot 1150 = 2232 \text{ N}$$

Weighted average load

$$F_{\text{moy}(1)} = \sqrt[3]{8300^3 \cdot \frac{15}{165} + 4500^3 \cdot \frac{110}{165} + 4200^3 \cdot \frac{70}{165} + 1082^3 \cdot \frac{5}{165}} = 3511 \text{ N}$$

$$F_{\text{moy}(2)} = \sqrt[3]{2232^3 \cdot \frac{1700}{165} + 0^3 \cdot \frac{5}{165}} = 1789 \text{ N}$$

Life

Rated dynamic load $C_a=23400$ N

Half nut 1

$$L_{10(1)} = \left(\frac{23400}{3511} \right)^3 \cdot 10^6 = 296 \cdot 10^6 \text{ RPM}$$

Half nut 2

$$L_{10(2)} = \left(\frac{23400}{1789} \right)^3 \cdot 10^6 = 2237 \cdot 10^6 \text{ RPM}$$

Total life

Hour life (equipment utilization coefficient $f_u=0.6$)

$$L_{10} = [(296 \cdot 10^5)^{-10/9} + (2237 \cdot 10^5)^{-10/9}]^{-9/10}$$
$$L_{10} = 270 \cdot 10^6 \text{ RPM}$$

$$L_{MN} = \frac{270 \cdot 10^6}{165 \cdot 0,6 \cdot 60} = 45\,450 \text{ h}$$

Planetary roller screw stiffness

The length of the screw between the fixed end of the bearing and the nut $L=1000\text{mm}$

Screw pitch diameter $d_o=20$

$$C_s = 164 \cdot \frac{20^3}{1000} = 66 \text{ N}/\mu\text{m}$$

Bearing stiffness

$$C_1 = 850 \text{ N}/\mu\text{m} \quad \text{Reference bearing samples}$$

Driving torque

Driving torque M_m is calculated based on the actual peak load $F_1 = 8300 \text{ N}$,
when the ball screw is directly driven by the motor ($i=1$):

Empty load torque: $M_e = \frac{1484 \cdot 5 \cdot 1 \cdot 0,43}{2000 \cdot \pi} = 0,5 \text{ Nm}$

Load torque: $M_{L1} = \frac{5 \cdot 1 \cdot 8300}{2000 \cdot \pi \cdot 0,87} = 7,6 \text{ Nm}$

Bearing friction torque: $M_R = 0,2 \text{ Nm (admitted)}$

Constant speed peak driving torque: $M_{dmax} = 0,5 + 7,6 + 0,2 = 8,3 \text{ Nm}$

When operating in high-speed mode, the maximum driving power is achieved

Load torque: $M_{L4} = \frac{5 \cdot 1 \cdot 1150}{2000 \cdot \pi \cdot 0,87} = 1,05 \text{ Nm}$

Constant speed peak driving power: $P_{dmax} = \frac{(1,05 + 0,5 + 0,2) \cdot 1700}{9,55} = 312 \text{ W}$

Lubrication maintenance

The lubrication method of a planetary roller screw is generally similar to that of gears and bearings, and can be selected as oil lubrication or grease lubrication based on the actual application conditions. Unless specified otherwise, Sairis products are factory-standard with grease lubrication. We can also recommend a more suitable lubrication method based on the customer's actual working environment requirements.

Oil lubrication

According to reference standard DIN 51517, Part 2, circulating oil lubrication with EP additives (compared to CL) will enhance the lubricant's resistance to aging and corrosion, making it particularly suitable for lubricating planetary roller screws. The determining factors for selecting the viscosity of the lubricating oil are speed, ambient temperature, and operating temperature.

The amount of lubricating oil required depends on the diameter of the screw, the number of rollers, and the heat dissipation capability. For small screws, the recommended oil quantity reference value is 1 cm³/h, while for large screws, the recommended oil quantity reference value is 30 cm³/h.

The shortest lubrication interval depends on the size of the load and the speed. For high loads, it is recommended to lubricate every 5 minutes. For low loads, the lubrication interval can range from 5 minutes to 1 hour. In cases of high loads and high speeds, it is recommended to use an automatic lubrication system.

For oil bath lubrication, it is important to ensure that the minimum amount of oil completely immerses the rolling elements. The quantity of oil and the interval for oil changes depend on the load and installation conditions.

Choosing the appropriate viscosity lubricating oil will create a thin oil film on the contact surface of the planetary roller screw, resulting in optimal performance.

The relationship between the working viscosity value (V_k) of the lubricating oil and the speed and diameter of the planetary roller screw is shown in Figure A. In a system free from external impurities contamination, selecting the appropriate lubricating oil viscosity value (V_k) ensures a good lubrication state for the planetary roller screw, leading to the expected operational lifespan.

The nominal viscosity value can be calculated based on the viscosity value V_k , taking into account the viscosity-temperature chart and the actual operating temperature. The nominal viscosity is the viscosity of the lubricating oil at 40°C, indicated by the viscosity grade ISO VG (DIN 51519) on the v-t graph.

In Figure a, the nominal diameter of the RV series planetary roller screw is shown. The RVR series of planetary roller screws may have slight differences in diameter. The required working viscosity value can be determined from the graph.

For intermediate viscosity values, we will consider selecting the viscosity value that is closest to it. We need to obtain the working temperature or estimate it to calculate the nominal viscosity of the lubricating oil. The actual working temperature can be directly measured from the nut after the system stabilizes. The appropriate lubricating oil can be selected based on the supplier's 40°C viscosity catalog. Typically, a working temperature of 30°C can also serve as a reference temperature for lubricating oil selection.

For example: Planetary ball screw : RV39x10
Average working speed : $n_m=1400\text{min}^{-1}$
Working temperature (estimated): $t=25^\circ\text{C}$

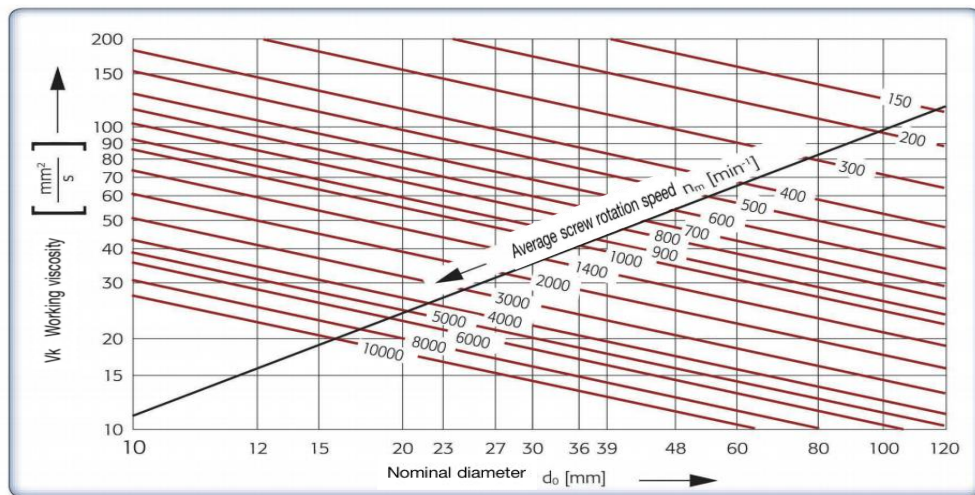
In Figure a, for a speed of $n_m = 1400 \text{ min}^{-1}$ and a nominal diameter of 39mm, we can determine the nominal viscosity V_k to be 33 mm²/s. In the v-t graph (Figure B), the line corresponding to a temperature of 25°C and a viscosity value of 34 mm²/s falls between ISO VG 15 and ISO VG 22. Therefore, we ultimately select VG22, a higher viscosity grade lubricating oil. Suitable lubricating oil grades such as CLP (DIN 51517) or HLP (DIN 51525) can also be chosen.

*If the working environment is difficult to define, we recommend using a lubricant with a viscosity of 150 cSt at 40°C.

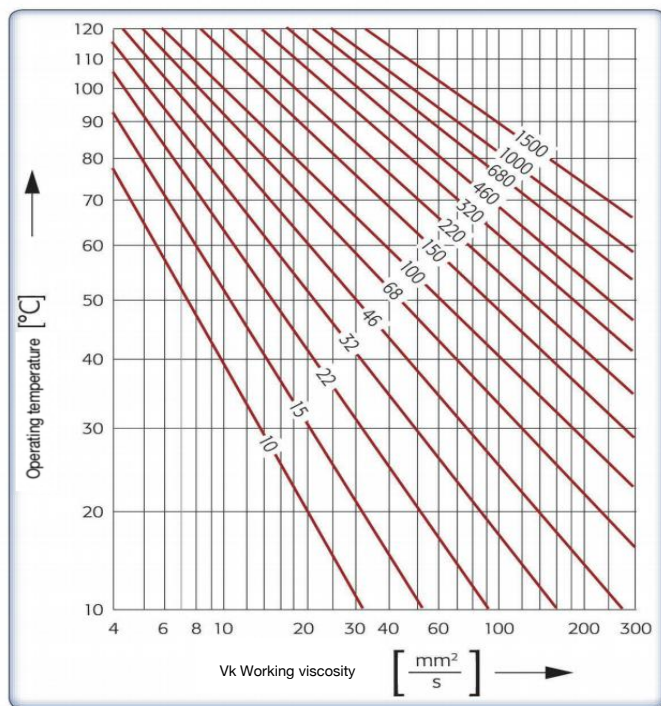
Grease lubrication

Lubrication for planetary screws is typically recommended using grease lubrication, preferably with lithium, barium, or calcium thickening agents. The selected grease should have a viscosity of at least 100-150 cSt at 40°C, NLGI grade 2, and contain specific additives.

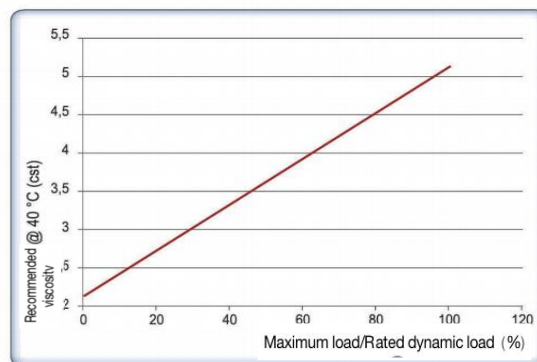
The lubrication interval depends on the installation, dimensions, and operating conditions of the screw. SERIES can provide recommendations for any type of application.



a



b



a'

Maintenance instructions

Screw disassembly

Try not to disassemble the nut and screw. If it must be disassembled, please use a disassembly sleeve to remove the outer diameter of the sleeve.

$$d2=d2^{-0.05}$$

d2=Root diameter of screw rod

Screw installation

When installing the planetary roller screw, you must pay attention to the following points:

1. Keep the screw and guide rail parallel.
2. Fix the mounting nut.
3. Rotate the nut throughout the screw stroke and check whether the nut operates easily.

Notice

RV series planetary roller screws are basically multi-head screws. If the screw nut is disassembled and assembled, The friction torque is different, please reassemble immediately until it is the same as the original value.

Transportation precautions

Please read the following transportation instructions carefully. In order to ensure the best operation and extraordinary life of the planetary roller screw, the following points must be strictly followed. If you have questions, please contact SERIES contact.

lubricating



If the planetary roller screw does not require special oil lubrication, it will be filled with grease before leaving the factory. Please do not remove grease without authorization. Only use grease of the same grade for relubrication.

Transportation



Handle the planetary roller screw carefully: Do not drop it and damage the screw.

Install



Do not disassemble the screw nut (unless using a disassembly sleeve), carefully install the planetary roller screw and keep it parallel to the guide rail, otherwise the planetary roller screw will be damaged.

Store

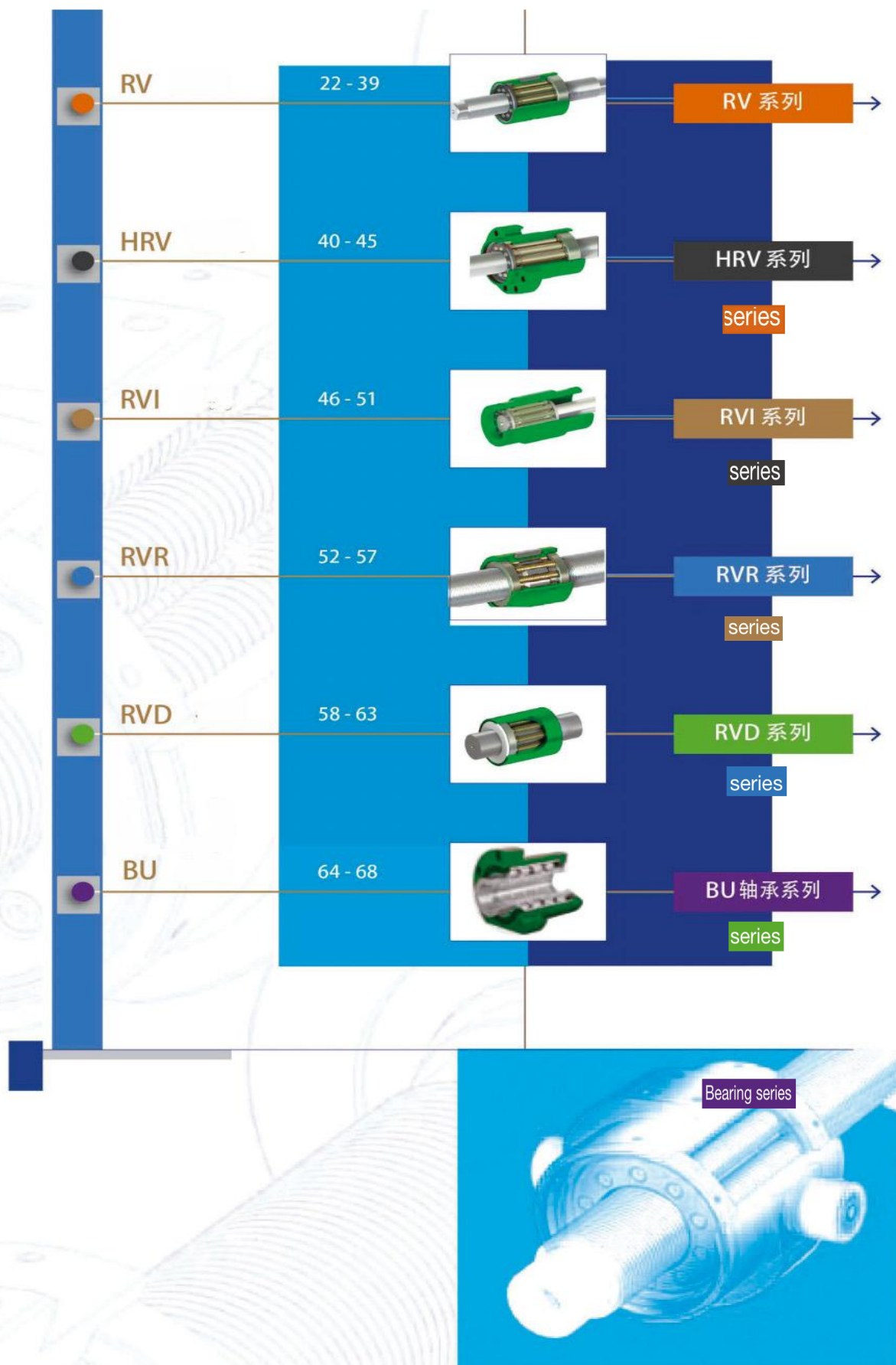


The original vacuum packaging may only be opened before installation.

Bending



Avoid subjecting the nut to side forces.



RV Series-Standard Product Chart

DIA (U)	TPI (N)	Lead (P)																								✓ N = 3 ■ N = 4 ■ N = 5 ■ N = 6
		1	2	3	4	5	6	8	10	12	15	18	20	24	25	30	35	36	40	42	50					
3.5	3	✓	✓																							
5	3	✓	✓	✓																						
7	4	✓	✓	✓	✓	✓																				
8	4	✓	✓	✓	✓	✓																				
10	4	✓																								
	5		✓	✓	✓	✓																				
12	4	✓																								
	5		✓	✓	✓	✓	✓	✓	✓																	
15	5		✓	✓	✓	✓	✓	✓	✓	✓																
18	5		✓	✓	✓	✓	✓	✓	✓	✓	✓															
20	5		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓														
21	5		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓													
23	5		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
25	6			✓			✓			✓			✓													
	5		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
27	5		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓											
30	5		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
36	6						✓			✓		✓	✓	✓	✓	✓	✓									
	5		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								
39	5		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
44	6						✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓						
48	6						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
	5						✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
51	5						✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
56	6							✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
60	6							✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	5						✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
64	6							✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
70	6							✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
75	5								✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
80	6									✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
87	5									✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
92	6										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
100	6											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	5											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
120	6												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	5												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	



RV 12x8

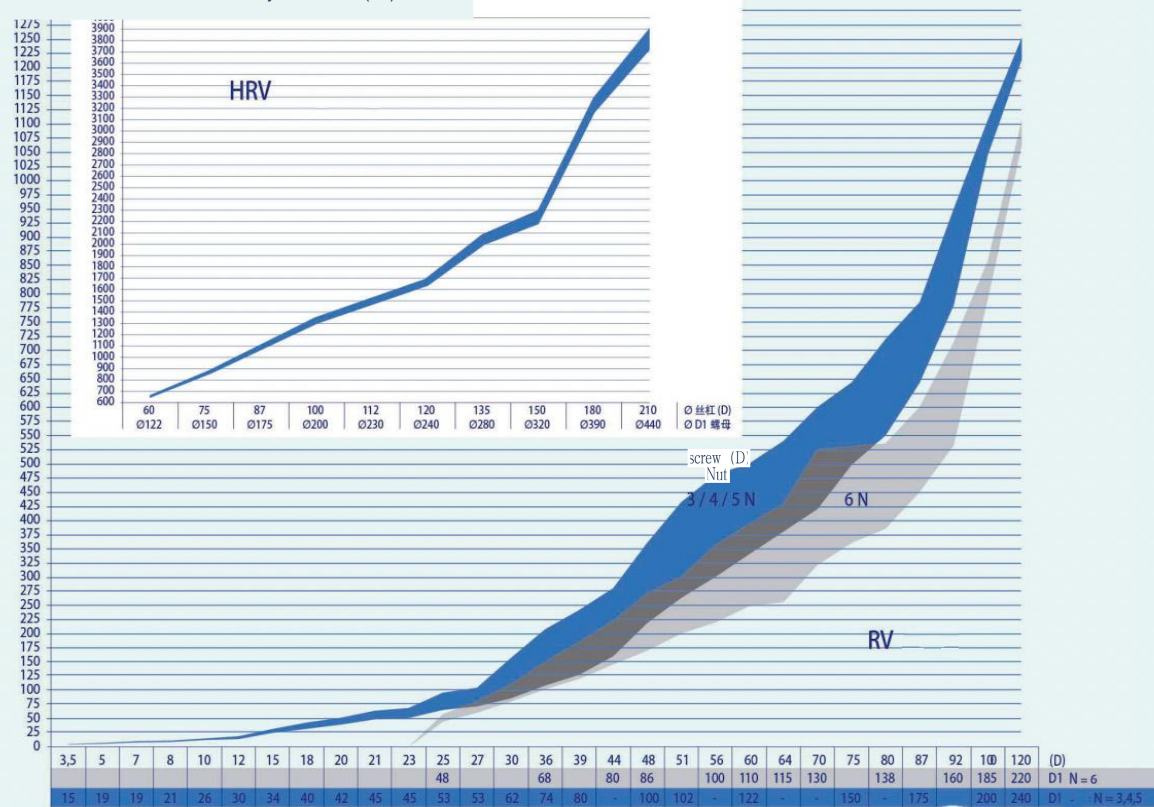


RV 30x30



RV 39x10

Standard RV and enhanced HRV dynamic load (Ca) curves



RV Series - Planetary Roller Screw

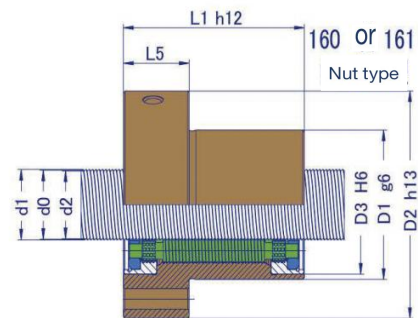
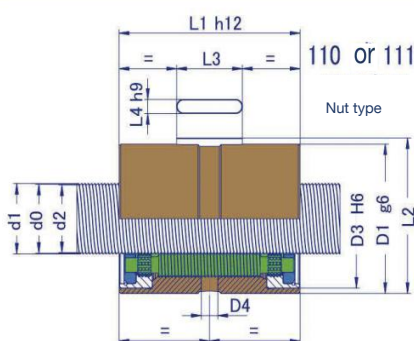
RV series



Size	Page count
RV 3,5 / 5 / 7 / 8 / 10 / 12 / 15	24 - 25
RV 18 / 20 / 21 / 23	26 - 27
RV 25 / 27 / 30	28 - 29
RV 36 / 39 / 44	30 - 31
RV 48 / 51 / 56	32 - 33
RV 60 / 64 / 70	34 - 35
RV 75 / 80 / 87 / 92	36 - 37
RV 100 / 120	38 - 39



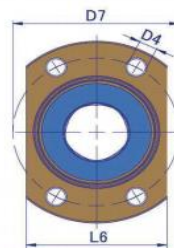
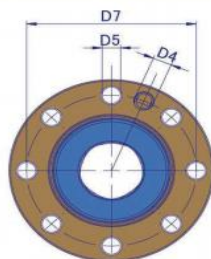
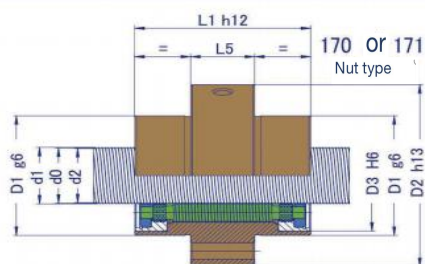
RV Series - Planetary Roller Screw



					Technical Parameters															Forward rotation efficiency		Inversion efficiency	
					Single nut				Double nut					Preload nut									
					[kN]	[kN]	[N/2/3µm]	Axial clearance*	[kN]	[kN]	[N/2/3µm]	[N]	[Nm]	[kN]	[kN]	[N/2/3µm]	[N]	[Nm]					
Model	D x P		N	Helix angle [°]	Ca	C0a	Fk		Ca	C0a	Fk	Fv	Mv	Ca	C0a	Fk	Fv	Mv					
RV	3,5 x	1	3	5,20	3,9	8,4	28,6	0,01	3,9	8,4	42,9	561	0,03	2,2	4,2	18,0	561	0,03	0,89	0,87			
		2		10,31	4,6	8,5	20,2	0,02	4,6	8,5	30,3	252	0,03	2,5	4,2	12,7	252	0,03	0,88	0,86			
RV	5 x	1	3	4,05	5,2	11,7	33,0	0,02	5,2	11,7	49,5	679	0,04	2,9	5,9	20,8	679	0,04	0,88	0,86			
		2		8,05	6,2	11,8	23,0	0,02	6,2	11,8	34,5	390	0,04	3,4	5,9	14,5	390	0,04	0,89	0,87			
		3		11,98	6,7	11,9	18,8	0,02	6,7	11,9	28,2	193	0,04	3,7	6,0	11,8	193	0,04	0,86	0,83			
RV	7 x	1	4	2,60	7,7	18,7	50,6	0,02	7,7	18,7	76,0	519	0,04	4,2	9,3	31,9	519	0,04	0,84	0,81			
		2		5,20	8,3	16,4	32,3	0,03	8,3	16,4	48,4	377	0,04	4,6	8,2	20,3	377	0,04	0,89	0,87			
		3		7,77	9,0	16,2	26,2	0,04	9,0	16,2	39,3	260	0,04	4,9	8,1	16,5	260	0,04	0,89	0,88			
		4		10,31	9,7	16,6	22,9	0,05	9,7	16,6	34,3	168	0,04	5,3	8,3	14,4	168	0,04	0,88	0,86			
RV	8 x	1	4	2,28	8,4	20,2	52,3	0,02	8,4	20,2	78,4	581	0,05	4,6	10,1	32,9	581	0,05	0,83	0,79			
		2		4,55	10,0	20,3	36,3	0,02	10,0	20,3	54,5	453	0,05	5,5	10,2	22,9	453	0,05	0,88	0,87			
		3		6,81	9,9	17,5	26,7	0,04	9,9	17,5	40,1	329	0,05	5,4	8,8	16,8	329	0,05	0,89	0,88			
		4		9,04	10,7	18,0	23,4	0,05	10,7	18,0	35,1	232	0,05	5,9	9,0	14,8	232	0,05	0,88	0,87			
RV	10 x	1	4	1,82	12,0	22,8	54,7	0,02	12,0	22,8	82,1	587	0,06	6,6	11,4	34,5	587	0,06	0,80	0,75			
		2		3,47	13,3	24,8	46,4	0,02	13,3	24,8	69,6	475	0,06	7,3	12,4	29,2	475	0,06	0,87	0,85			
		3	5	5,20	14,3	24,1	36,9	0,03	14,3	24,1	55,4	378	0,06	7,9	12,0	23,3	378	0,06	0,89	0,87			
		4		6,91	15,6	25,1	32,6	0,04	15,6	25,1	48,9	297	0,06	8,6	12,5	20,5	297	0,06	0,89	0,88			
RV	12 x	1	5	1,52	13,6	25,0	56,4	0,02	13,6	25,0	84,6	673	0,08	7,5	12,5	35,5	673	0,08	0,78	0,71			
		2		3,04	14,6	26,9	47,6	0,02	14,6	26,9	71,3	578	0,08	8,0	13,4	30,0	578	0,08	0,86	0,83			
		3		4,55	15,7	26,1	37,9	0,02	15,7	26,1	56,8	485	0,08	8,7	13,0	23,8	485	0,08	0,88	0,87			
		4		6,06	17,2	27,2	33,3	0,03	17,2	27,2	50,0	392	0,08	9,5	13,6	21,0	392	0,08	0,89	0,88			
		5		7,55	18,1	27,3	29,8	0,05	18,1	27,3	44,7	313	0,08	9,9	13,6	18,8	313	0,08	0,89	0,88			
		6		9,04	18,4	26,5	26,7	0,05	18,4	26,5	40,1	246	0,08	10,1	13,2	16,8	246	0,08	0,88	0,87			
		7		11,98	18,6	24,9	22,0	0,05	18,6	24,9	33,1	146	0,08	10,2	12,5	13,9	146	0,08	0,86	0,83			
		8																					
RV	15 x	2	5	2,43	24,6	55,4	66,7	0,02	24,6	55,4	100,1	617	0,10	13,6	27,7	42,0	617	0,10	0,84	0,80			
		3		3,64	25,5	50,5	50,9	0,02	25,5	50,5	76,3	540	0,10	14,0	25,3	32,0	540	0,10	0,87	0,85			
		4		4,85	26,8	49,5	43,3	0,03	26,8	49,5	64,9	466	0,10	14,8	24,7	27,3	466	0,10	0,88	0,87			
		5		6,06	28,9	51,5	39,4	0,04	28,9	51,5	59,1	394	0,10	15,9	25,7	24,8	394	0,10	0,89	0,88			
		6		7,26	29,9	51,0	35,8	0,05	29,9	51,0	53,7	330	0,10	16,5	25,5	22,5	330	0,10	0,89	0,88			
		8		9,63	31,4	50,1	30,6	0,05	31,4	50,1	45,9	223	0,10	17,3	25,1	19,3	223	0,10	0,88	0,86			

*Axis clearance can be reduced upon request.

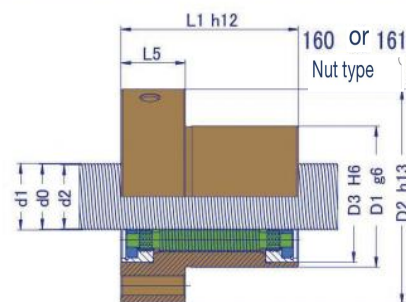
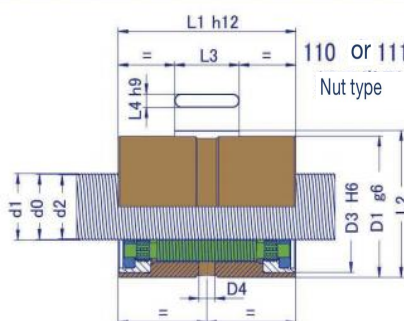
P : Lead (stroke per revolution)	N : Number of screw heads	Fk: Stiffness coefficient
D : Reference diameter	Ca: Dynamic load	Fv: Preload force
	C0a: Static load	Mv: Preload torque



Model	D x P		Screw			Nut													
			[mm]	[mm]	[mm]							No oil scraper	With oil scraper						
			Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4	Ø D5	Ø D7	L1	L2	L3	L4	L5	L6		
RV	3,5 x	1	3,61	3,5	3,34	15	35	13,5	/	/	4,8	25	28	38	16	10	2	13	17
		2	3,70		3,16														
RV	5 x	1	4,61	4,5	4,34	19	39	17	3	/	4,8	29	30	40	20,3	10	3	13	21
		2	4,71		4,17														
		3	4,78		3,97														
RV	7 x	1	7,09	7	6,88	19	41	17	3	/	4,8	31	31	41	20,3	10	3	13	21
		2	7,16		6,76														
		3	7,23		6,62														
		4	7,28		6,47														
RV	8 x	1	8,09	8	7,89	21	41	19	5	M5	4,8	31	31	41	22,3	10	3	13	23
		2	8,17		7,76														
		3	8,23		7,63														
		4	8,29		7,48														
RV	10 x	1	10,09	10	9,89	26	48	24	5	M5	4,8	36	31	41	25,3	10	3	13	26
		2	10,64		10,31														
		3	10,69	10,5	10,21	24	46	22	5	M5	4,8	36	31	41	25,3	10	3	13	26
		4	10,75		10,10														
RV	12 x	1	12,09	12	11,89	30	50	28	5	M5	4,8	40	31	41	31,3	10	3	13	32
		2	12,14		11,81														
		3	12,20		11,71														
		4	12,25		11,60														
		5	12,30		11,49														
		6	12,35		11,38														
		8	12,42		11,12														
RV	15 x	2	15,14	15	14,82	34	56	30	5	M6	5,8	45	40	50	35,7	14	4	18	36
		3	15,20		14,72														
		4	15,26		14,61														
		5	15,32		14,51														
		6	15,37		14,39														
		8	15,45		14,16														

P : Lead (stroke per revolution) d0 : Nominal diameter d1: Screw outer diameter
D : Reference diameter d2: Screw root diameter

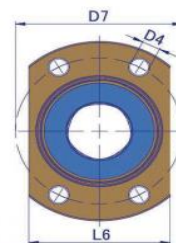
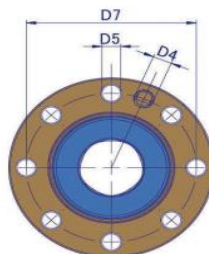
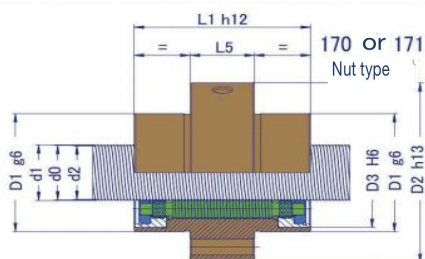
RV Series - Planetary Roller Screw



Model		Technical Parameters																
		Single nut							Double nut					Preload nut				
		D x P	N	Helix angle [°]	Ca [kN]	C0a [kN]	Fk [N2/3µm]	Axial clearance* [µm]	Ca [kN]	C0a [kN]	Fk [N2/3µm]	Fv [N]	Mv [Nm]	Ca [kN]	C0a [kN]	Fk [N2/3µm]	Fv [N]	Mv [Nm]
RV	18 x	2	5	2,03	31,7	75,8	76,5	0,02	31,7	75,8	114,7	803	0,15	17,5	37,9	48,2	803	0,15
		3		3,04	35,0	76,1	61,8	0,02	35,0	76,1	92,7	722	0,15	19,3	38,0	38,9	722	0,15
		4		4,05	37,5	76,3	53,2	0,02	37,5	76,3	79,8	645	0,15	20,6	38,1	33,5	645	0,15
		5		5,05	36,6	68,1	44,0	0,03	36,6	68,1	66,0	564	0,15	20,1	34,0	27,7	564	0,15
		6		6,06	38,7	69,7	40,6	0,04	38,7	69,7	61,0	490	0,15	21,3	34,9	25,6	490	0,15
		8		8,05	40,2	67,2	34,5	0,05	40,2	67,2	51,7	361	0,15	22,1	33,6	21,7	361	0,15
		10		10,03	42,7	69,1	31,2	0,05	42,7	69,1	46,8	260	0,15	23,5	34,5	19,6	260	0,15
RV	20 x	2	5	1,87	39,1	102,1	87,8	0,02	39,1	102,1	131,7	1002	0,20	21,5	51,1	55,3	1 002	0,20
		3		2,80	42,7	100,6	70,1	0,02	42,7	100,6	105,1	911	0,20	23,5	50,3	44,1	911	0,20
		4		3,74	45,7	100,8	60,4	0,02	45,7	100,8	90,6	821	0,20	25,2	50,4	38,1	821	0,20
		5		4,67	48,0	100,2	53,5	0,03	48,0	100,2	80,3	733	0,20	26,4	50,1	33,7	733	0,20
		6		5,59	47,2	92,1	46,0	0,04	47,2	92,1	69,0	645	0,20	26,0	46,0	29,0	645	0,20
		8		7,44	49,3	89,3	39,2	0,05	49,3	89,3	58,8	492	0,20	27,2	44,7	24,7	492	0,20
		10		9,27	51,2	88,1	34,7	0,05	51,2	88,1	52,1	364	0,20	28,2	44,1	21,9	364	0,20
RV	21 x	2	5	1,74	48,4	106,9	89,2	0,02	48,4	106,9	133,7	1175	0,25	26,7	53,4	56,2	1 175	0,25
		3		2,60	52,9	105,3	70,9	0,02	52,9	105,3	106,4	1082	0,25	29,1	52,6	44,7	1 082	0,25
		4		3,47	56,7	105,5	61,3	0,02	56,7	105,5	91,9	983	0,25	31,2	52,8	38,6	983	0,25
		5		4,33	59,4	104,8	54,2	0,03	59,4	104,8	81,3	886	0,25	32,7	52,4	34,2	886	0,25
		6		5,20	62,4	106,0	49,6	0,03	62,4	106,0	74,4	791	0,25	34,4	53,0	31,2	791	0,25
		8		6,91	61,2	93,5	39,7	0,04	61,2	93,5	59,6	619	0,25	33,7	46,7	25,0	619	0,25
		10		8,62	63,5	92,2	35,1	0,05	63,5	92,2	52,7	472	0,25	35,0	46,1	22,1	472	0,25
RV	23 x	2	5	1,62	50,8	111,4	90,4	0,02	50,8	111,4	135,6	1330	0,30	28,0	55,7	57,0	1 330	0,30
		3		2,43	55,5	109,7	71,8	0,02	55,5	109,7	107,7	1230	0,30	30,6	54,8	45,2	1 230	0,30
		4		3,24	59,5	109,9	62,1	0,02	59,5	109,9	93,1	1130	0,30	32,8	55,0	39,1	1 130	0,30
		5		4,05	62,4	109,2	54,9	0,03	62,4	109,2	82,4	1028	0,30	34,4	54,6	34,6	1 028	0,30
		6		4,85	65,5	110,5	50,2	0,03	65,5	110,5	75,3	928	0,30	36,1	55,3	31,6	928	0,30
		8		6,46	64,3	97,4	40,2	0,04	64,3	97,4	60,2	741	0,30	35,4	48,7	25,3	741	0,30
		10		8,05	66,8	96,1	35,6	0,05	66,8	96,1	53,4	580	0,30	36,8	48,1	22,4	580	0,30

*Axis clearance can be reduced upon request.

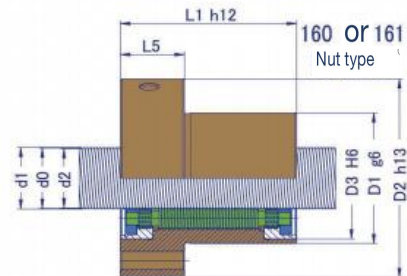
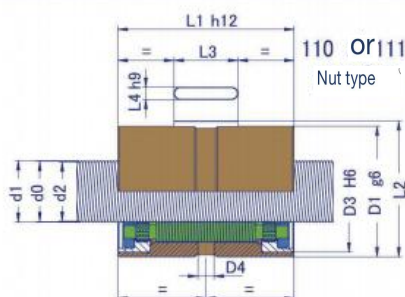
P : Lead (stroke per revolution) N : Number of screw heads Fk: Stiffness coefficient
 D : Reference diameter Ca: Dynamic load Fv: Preload force
 C0a: Static load Mv: Preload torque



Model			Screw			Nut															
			[mm]	[mm]	[mm]										No oil scraper	With oil scraper					
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
D x P			Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4		Ø D5	Ø D7	L1		L2	L3	L4	L5	L6		
RV	18 x	2	18,14	18	17,82	40	62	35	5	M6	5,8	51	48	58	41,7	18	4	18	42		
		3	18,21		17,72																
		4	18,27		17,62																
		5	18,33		17,52																
		6	18,38		17,41																
		8	18,48		17,18																
		10	18,56		16,94																
RV	20 x	2	19,64	19,5	19,32	42	64	39	5	M6	5,8	53	55	65	43,7	20	4	20	44		
		3	19,71		19,22																
		4	19,77		19,12																
		5	19,83		19,02																
		6	19,88		18,91																
		8	19,99		18,69																
		10	20,07		18,45																
RV	21 x	2	21,14	21	20,82	45	67	41	5	M6	5,8	56	55	65	47	20	5	18	47		
		3	21,21		20,72																
		4	21,27		20,62																
		5	21,33		20,52																
		6	21,39		20,42																
		8	21,49		20,20																
		10	21,59		19,97																
RV	23 x	2	22,64	22,5	22,32	45	68	42	5	M6	7,0	56	55	65	46,7	20	4	20	47		
		3	22,71		22,22																
		4	22,77		22,12																
		5	22,83		22,02																
		6	22,89		21,92																
		8	23,00		21,70																
		10	23,10		21,48																

P : Lead (stroke per revolution) d0 : Nominal diameter d1: Screw outer diameter
 D : Reference diameter d2: Screw root diameter

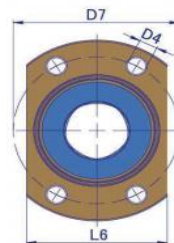
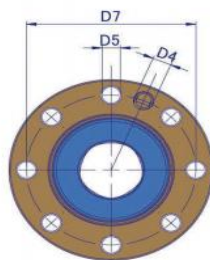
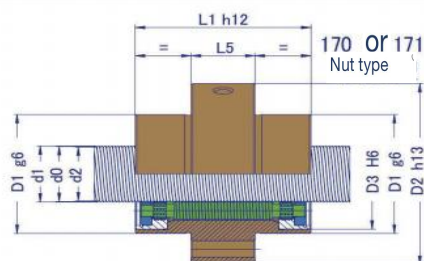
RV Series - Planetary Roller Screw



				Technical Parameters																	
Model			N	[°]	Single nut			Axial clearance*	Double nut					Preload nut					Forward rotation efficiency	Inversion efficiency	
	D x P				Ca	C0a	Fk		Ca	C0a	Fk	Fv	Mv	Ca	C0a	Fk	Fv	Mv			
RV	25 x	3	6	2,28	44,4	89,9	76,0	0,02	44,4	89,9	114,0	1366	0,35	24,5	44,9	47,9	1 366	0,35	0,83	0,79	
		6		4,55	49,0	81,8	49,9	0,03	49,0	81,8	74,8	1055	0,35	27,0	40,9	31,4	1 055	0,35	0,88	0,87	
		12		9,04	57,4	83,1	35,3	0,05	57,4	83,1	53,0	538	0,35	31,6	41,6	22,2	538	0,35	0,88	0,87	
		2	5	1,52	65,1	160,6	107,1	0,02	65,1	160,6	160,7	1465	0,35	35,9	80,3	67,5	1 465	0,35	0,78	0,71	
		4		3,04	77,0	161,2	74,1	0,02	77,0	161,2	111,2	1265	0,35	42,4	80,6	46,7	1 265	0,35	0,86	0,83	
		5		3,79	81,3	161,5	66,0	0,03	81,3	161,5	99,0	1160	0,35	44,8	80,8	41,6	1 160	0,35	0,87	0,85	
		6		4,55	84,2	159,6	59,6	0,03	84,2	159,6	89,4	1055	0,35	46,4	79,8	37,5	1 055	0,35	0,88	0,87	
		8		6,06	90,8	162,4	51,9	0,04	90,8	162,4	77,8	860	0,35	50,0	81,2	32,7	860	0,35	0,89	0,88	
		10		7,55	89,6	148,1	43,6	0,05	89,6	148,1	65,4	686	0,35	49,4	74,1	27,5	686	0,35	0,89	0,88	
		15		11,25	95,5	144,4	35,0	0,05	95,5	144,4	52,5	364	0,35	52,6	72,2	22,1	364	0,35	0,87	0,85	
RV	27 x	2	5	1,35	71,9	177,5	110,9	0,02	71,9	177,5	166,4	1508	0,40	39,6	88,8	69,9	1 508	0,40	0,76	0,68	
		4		2,70	85,1	178,2	76,6	0,02	85,1	178,2	114,9	1332	0,40	46,9	89,1	48,3	1 332	0,40	0,85	0,82	
		5		3,37	90,2	179,7	68,6	0,03	90,2	179,7	102,9	1238	0,40	49,7	89,9	43,2	1 238	0,40	0,86	0,84	
		6		4,05	93,8	178,9	62,1	0,03	93,8	178,9	93,1	1143	0,40	51,7	89,4	39,1	1 143	0,40	0,88	0,86	
		8		5,39	98,7	174,7	52,8	0,03	98,7	174,7	79,2	960	0,40	54,4	87,3	33,3	960	0,40	0,89	0,87	
		10		6,72	103,9	175,3	47,4	0,04	103,9	175,3	71,1	793	0,40	57,2	87,7	29,8	793	0,40	0,89	0,88	
		15		10,03	104,2	155,4	35,7	0,05	104,2	155,4	53,5	461	0,40	57,4	77,7	22,5	461	0,40	0,88	0,86	
		RV		30 x	2	5	1,22	85,7	223,6	123,1	0,02	85,7	223,6	184,6	1715	0,50	47,2	111,8	77,5	1 715	0,50
4	2,43		100,8		221,6		84,0	0,02	100,8	221,6	126,1	1540	0,50	55,5	110,8	52,9	1 540	0,50	0,84	0,80	
5	3,04		107,2		224,7		75,5	0,03	107,2	224,7	113,3	1446	0,50	59,0	112,3	47,6	1 446	0,50	0,86	0,83	
6	3,64		111,1		222,4		68,3	0,03	111,1	222,4	102,4	1350	0,50	61,2	111,2	43,0	1 350	0,50	0,87	0,85	
8	4,85		117,2		217,7		58,1	0,03	117,2	217,7	87,1	1160	0,50	64,6	108,9	36,6	1 160	0,50	0,88	0,87	
10	6,06		126,3		226,5		52,9	0,04	126,3	226,5	79,3	983	0,50	69,6	113,3	33,3	983	0,50	0,89	0,88	
15	9,04		127,3		201,5		39,9	0,05	127,3	201,5	59,8	615	0,50	70,1	100,7	25,1	615	0,50	0,88	0,87	
20	11,98		156,8		229,8		35,2	0,05	156,8	229,8	52,9	363	0,50	86,4	114,9	22,2	363	0,50	0,86	0,83	
25	14,86		166,2		238,7		32,1	0,05	166,2	238,7	48,1	206	0,50	91,6	119,3	20,2	206	0,50	0,81	0,77	
30	17,66		149,8		197,4		26,1	0,05	149,8	197,4	39,2	113	0,50	82,5	98,7	16,5	113	0,50	0,74	0,64	

*Axis clearance can be reduced upon request.

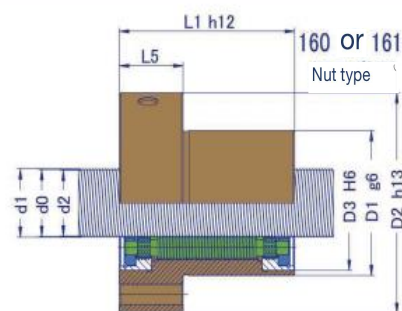
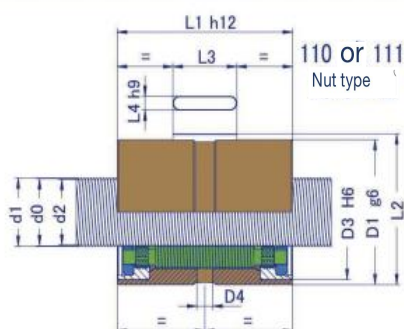
P : Lead (stroke per revolution) N : Number of screw heads Fk: Stiffness coefficient
D : Reference diameter Ca: Dynamic load Fv: Preload force
 C0a: Static load Mv: Preload torque



Model			Screw			Nut													
			[mm]	[mm]	[mm]							No oil scraper [mm]	With oil scraper [mm]						
						[mm]	[mm]	[mm]	[mm]	[mm]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
D x P			Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4		Ø D5	Ø D7	L1		L2	L3	L4	L5	L6
RV	25 x	3	24,17	24	23,77	48	71	44	5	M6	7,0	59	48	58	49,7	18	4	20	50
		6	24,33		23,52														
		12	24,57		22,95														
		2	24,14	24	23,82	53	84	48	5	M6	7,0	70	64	78	55,5	25	6	20	55
		4	24,27		23,63														
		5	24,34		23,53														
		6	24,40		23,42														
		8	24,51		23,21														
		10	24,61		22,99														
		15	24,81		22,38														
RV	27 x	2	27,14		27														
		4	27,28	26,63															
		5	27,34	26,53															
		6	27,40	26,43															
		8	27,52	26,22															
		10	27,62	26,00															
		15	27,84	25,41															
RV	30 x	2	30,14	30	29,82	62	92	58	5	M6	9,0	77	71	85	64,7	20	6	27	64
		4	30,28		29,63														
		5	30,34		29,53														
		6	30,41		29,43														
		8	30,52		29,23														
		10	30,63		29,01														
		15	30,87		28,44														
		20	31,05		27,81														
		25	31,19		27,14														
		30	31,27		26,41														

P : Lead (stroke per revolution) d0 : Nominal diameter d1 : Screw outer diameter
 D : Reference diameter d2 : Screw root diameter

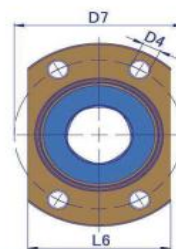
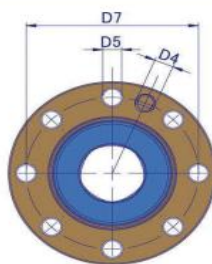
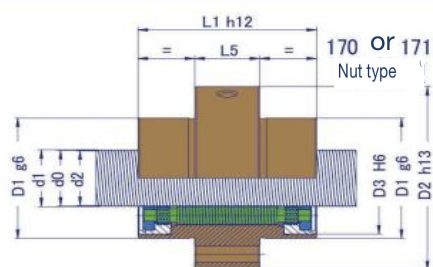
RV Series - Planetary Roller Screw



				Technical Parameters																	
Model				[°]	Single nut				Double nut					Preload nut					Forward rotation efficiency	Inversion efficiency	
	D x P	N	Helix angle		Ca	C0a	Fk	Axial clearance*	Ca	C0a	Fk	Fv	Mv	Ca	C0a	Fk	Fv	Mv			
RV	36 x	6	6	3,04	101,6	212,6	76,7	0,03	101,6	212,6	115,1	1 565	0,65	56,0	106,3	48,3	1 565	0,65	0,86	0,83	
		12		6,06	114,0	199,4	51,2	0,04	114,0	199,4	76,8	1 065	0,65	62,8	99,7	32,3	1 065	0,65	0,89	0,88	
		18		9,04	119,1	187,0	40,4	0,05	119,1	187,0	60,6	666	0,65	65,6	93,5	25,5	666	0,65	0,88	0,87	
		24		11,98	141,9	203,5	34,3	0,05	141,9	203,5	51,5	394	0,65	78,2	101,7	21,6	394	0,65	0,86	0,83	
		2	5	1,01	108,2	296,0	138,7	0,02	108,2	296,0	208,0	1 886	0,65	59,6	148,0	87,4	1 886	0,65	0,71	0,58	
		4		2,03	128,1	296,9	95,4	0,02	128,1	296,9	143,1	1 734	0,65	70,6	148,4	60,1	1 734	0,65	0,82	0,77	
		5		2,53	135,2	297,4	84,5	0,03	135,2	297,4	126,7	1 651	0,65	74,5	148,7	53,2	1 651	0,65	0,84	0,81	
		6		3,04	140,4	294,6	76,7	0,03	140,4	294,6	115,1	1 566	0,65	77,3	147,3	48,3	1 566	0,65	0,86	0,83	
		8		4,05	149,4	292,3	65,6	0,04	149,4	292,3	98,5	1 393	0,65	82,3	146,2	41,3	1 393	0,65	0,88	0,86	
		10		5,05	159,6	299,6	59,1	0,04	159,6	299,6	88,7	1 225	0,65	88,0	149,8	37,2	1 225	0,65	0,89	0,87	
		15		7,55	172,3	293,8	47,7	0,05	172,3	293,8	71,6	850	0,65	94,9	146,9	30,1	850	0,65	0,89	0,88	
		20		10,03	207,3	322,4	40,3	0,05	207,3	322,4	60,5	562	0,65	114,2	161,2	25,4	562	0,65	0,88	0,86	
RV	39 x	2	5	0,94	127,1	368,8	152,8	0,02	127,1	368,8	229,2	2 153	0,80	70,0	184,4	96,3	2 153	0,80	0,69	0,55	
		4		1,87	149,7	366,2	104,9	0,02	149,7	366,2	157,4	2 000	0,80	82,5	183,1	66,1	2 000	0,80	0,81	0,76	
		5		2,34	159,4	372,0	93,2	0,03	159,4	372,0	139,8	1 912	0,80	87,8	186,0	58,7	1 912	0,80	0,83	0,80	
		6		2,80	166,1	370,7	84,9	0,03	166,1	370,7	127,3	1 824	0,80	91,5	185,4	53,5	1 824	0,80	0,85	0,82	
		8		3,74	174,9	361,2	72,1	0,03	174,9	361,2	108,2	1 643	0,80	96,4	180,6	45,4	1 643	0,80	0,87	0,85	
		10		4,67	185,5	365,7	64,5	0,04	185,5	365,7	96,8	1 464	0,80	102,2	182,8	40,6	1 464	0,80	0,88	0,87	
		15		6,98	200,8	359,4	52,1	0,04	200,8	359,4	78,1	1 055	0,80	110,6	179,7	32,8	1 055	0,80	0,89	0,88	
		20		9,27	234,3	374,5	42,9	0,05	234,3	374,5	64,4	728	0,80	129,1	187,2	27,0	728	0,80	0,88	0,87	
		25		11,53	241,3	367,8	38,2	0,05	241,3	367,8	57,3	487	0,80	133,0	183,9	24,0	487	0,80	0,86	0,84	
RV	44 x	6	6	2,49	145,5	341,5	94,2	0,03	145,5	341,5	141,3	2 089	1,00	80,2	170,8	59,3	2 089	1,00	0,84	0,81	
		12		4,96	168,8	334,6	65,0	0,03	168,8	334,6	97,5	1 560	1,00	93,0	167,3	40,9	1 560	1,00	0,89	0,87	
		18		7,42	176,3	313,1	50,5	0,05	176,3	313,1	75,7	1 092	1,00	97,1	156,6	31,8	1 092	1,00	0,89	0,88	
		24		9,85	222,4	368,1	45,1	0,05	222,4	368,1	67,7	730	1,00	122,5	184,0	28,4	730	1,00	0,88	0,86	
		30		12,24	219,8	339,8	38,9	0,05	219,8	339,8	58,3	472	1,00	121,1	169,9	24,5	472	1,00	0,85	0,83	

*Axis clearance can be reduced upon request.

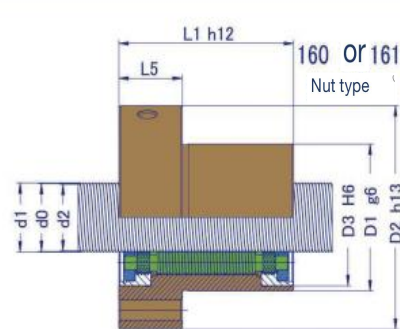
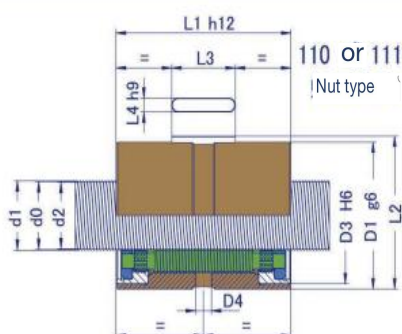
P : Lead (stroke per revolution) N : Number of screw heads Fk: Stiffness coefficient
D : Reference diameter Ca: Dynamic load Fv: Preload force
C0a: Static load Mv: Preload torque



			Screw			Nut													
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	No oil scraper	With oil scraper	[mm]	[mm]	[mm]	[mm]	[mm]	
Model	D x P		Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4		Ø D5	Ø D7	L1		L2	L3	L4	L5	L6
RV	36 x	6	36,34	36	35,53	68	102	62	5	M6	9,0	85	68	80	70,2	25	5	27	70
		12	36,63		35,01														
		18	36,86		34,43														
		24	37,04		33,80														
		2	36,14	36	35,82	74	110	68	5	M6	9,0	92	82	96	76,7	28	6	25	76
		4	36,28		35,63														
		5	36,35		35,54														
		6	36,41		35,44														
		8	36,53		35,24														
		10	36,65		35,03														
		15	36,91		34,48														
		20	37,12		33,88														
RV	39 x	2	39,14	39	38,82	80	116	72	5	M6	11,0	98	90	100	82,7	28	6	25	82
		4	39,28		38,63														
		5	39,35		38,54														
		6	39,41		38,44														
		8	39,54		38,24														
		10	39,66		38,04														
		15	39,92		37,49														
		20	40,15		36,91														
		25	40,34		36,29														
RV	44 x	6	44,35	44	43,54	80	118	73	5	M6	11,0	100	80	90	82,7	28	6	25	84
		12	44,65		43,03														
		18	44,90		42,47														
		24	45,11		41,87														
		30	45,28		41,23														

P : Lead (stroke per revolution) d0 : Nominal diameter d1: Screw outer diameter
 D : Reference diameter d2: Screw root diameter

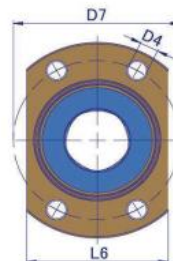
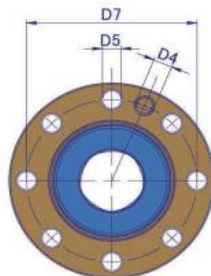
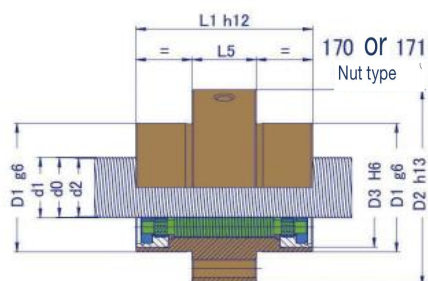
RV Series - Planetary Roller Screw



				Technical Parameters																	
Model			[°]	Single nut				Double nut					Preload nut					Forward rotation efficiency	Inversion efficiency		
	D x P	N		Helix angle	[kN]	[kN]	[N/2/3µm]	Axial clearance*	[kN]	[kN]	[N/2/3µm]	[N]	[Nm]	[kN]	[kN]	[N/2/3µm]	[N]			[Nm]	
RV	48 x	5	6	1,90	169,7	448,8	117,3	0,03	169,7	448,8	176,0	2 430	1,20	93,5	224,4	73,9	2 430	1,20	0,81	0,76	
		6		2,28	178,7	454,7	107,1	0,03	178,7	454,7	160,7	2 345	1,20	98,5	227,3	67,5	2 345	1,20	0,83	0,79	
		8		3,04	189,7	448,5	91,7	0,03	189,7	448,5	137,5	2 168	1,20	104,5	224,2	57,8	2 168	1,20	0,86	0,83	
		10		3,79	198,2	442,3	81,0	0,04	198,2	442,3	121,5	1 989	1,20	109,2	221,1	51,0	1 989	1,20	0,87	0,85	
		12		4,55	211,2	457,6	74,9	0,04	211,2	457,6	112,4	1 811	1,20	116,3	228,8	47,2	1 811	1,20	0,88	0,87	
		15		5,68	220,8	453,6	66,5	0,04	220,8	453,6	99,8	1 555	1,20	121,7	226,8	41,9	1 555	1,20	0,89	0,88	
		18		6,81	217,5	417,5	57,5	0,05	217,5	417,5	86,2	1 320	1,20	119,8	208,8	36,2	1 320	1,20	0,89	0,88	
		20		7,55	221,6	415,1	54,3	0,05	221,6	415,1	81,4	1 176	1,20	122,1	207,6	34,2	1 176	1,20	0,89	0,88	
	5	24	9,04	270,6	478,6	50,6	0,05	270,6	478,6	76,0	923	1,20	149,1	239,3	31,9	923	1,20	0,88	0,87		
		5	1,90	218,6	556,2	111,6	0,03	218,6	556,2	167,4	2 430	1,20	120,4	278,1	70,3	2 430	1,20	0,81	0,76		
		10	3,79	258,5	559,1	77,5	0,03	258,5	559,1	116,2	1 989	1,20	142,4	279,6	48,8	1 989	1,20	0,87	0,85		
		15	5,68	284,5	562,1	62,9	0,03	284,5	562,1	94,3	1 555	1,20	156,7	281,0	39,6	1 555	1,20	0,89	0,88		
		20	7,55	360,1	659,2	55,9	0,05	360,1	659,2	83,8	1 176	1,20	198,4	329,6	35,2	1 176	1,20	0,89	0,88		
		25	9,41	332,3	579,6	46,1	0,05	332,3	579,6	69,2	867	1,20	183,1	289,8	29,1	867	1,20	0,88	0,87		
30	11,25	340,6	605,2	43,1	0,05	340,6	605,2	64,7	625	1,20	187,6	302,6	27,2	625	1,20	0,87	0,85				
RV	51 x	5	5	1,79	263,0	725,9	126,3	0,03	263,0	725,9	189,4	2 695	1,40	144,9	362,9	79,6	2 695	1,40	0,80	0,75	
			10	3,57	308,0	717,3	86,9	0,03	308,0	717,3	130,3	2 241	1,40	169,7	358,7	54,7	2 241	1,40	0,87	0,85	
			15	5,35	339,0	720,4	70,3	0,04	339,0	720,4	105,5	1 788	1,40	186,8	360,2	44,3	1 788	1,40	0,89	0,87	
			20	7,12	425,8	844,0	62,6	0,05	425,8	844,0	93,9	1 383	1,40	234,6	422,0	39,4	1 383	1,40	0,89	0,88	
			25	8,87	432,0	861,1	56,5	0,05	432,0	861,1	84,8	1 044	1,40	238,0	430,5	35,6	1 044	1,40	0,89	0,87	
RV	56 x	6	6	1,95	219,5	584,9	119,0	0,03	219,5	584,9	178,5	2 763	1,60	120,9	292,5	75,0	2 763	1,60	0,81	0,77	
			12	3,90	256,1	575,9	82,2	0,03	256,1	575,9	123,4	2 243	1,60	141,1	288,0	51,8	2 243	1,60	0,87	0,86	
			18	5,84	277,9	566,9	66,2	0,04	277,9	566,9	99,4	1 737	1,60	153,1	283,5	41,7	1 737	1,60	0,89	0,88	
			24	7,77	339,4	631,2	56,7	0,05	339,4	631,2	85,1	1 300	1,60	187,0	315,6	35,7	1 300	1,60	0,89	0,88	
			30	9,68	355,7	648,1	51,4	0,05	355,7	648,1	77,1	946	1,60	195,9	324,0	32,4	946	1,60	0,88	0,86	
			36	11,56	332,0	584,9	44,7	0,05	332,0	584,9	67,0	674	1,60	182,9	292,5	28,2	674	1,60	0,86	0,84	

*Axis clearance can be reduced upon request.

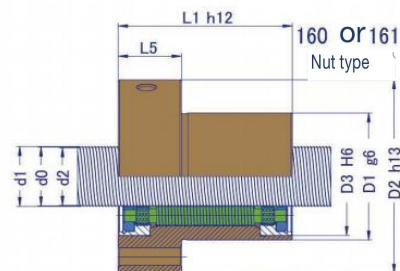
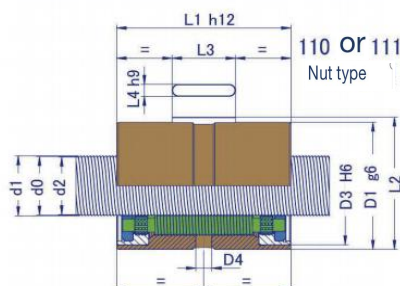
P : Lead (stroke per revolution) N : Number of screw heads Fk: Stiffness coefficient
D : Reference diameter Ca: Dynamic load Fv: Preload force
C0a: Static load Mv: Preload torque



Model			Screw			Nut													
			[mm]	[mm]	[mm]							No oil scraper	With oil scraper						
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
D x P			Ø d 1	Ø d0	Ø d2	Ø D 1	Ø D2	Ø D3	D4		Ø D5	Ø D7	L 1		L2	L3	L4	L5	L6
RV	48 x	5	48,29	48	47,62	86	122	80	7	M8 x 1	11,0	104	87	99	88,7	45	6	35	88
		6	48,35		47,54														
		8	48,46		47,38														
		10	48,56		47,21														
		12	48,66		47,04														
		15	48,79		46,77														
		18	48,92		46,49														
		20	49,00		46,30														
		24	49,14		45,90														
		5	48,35	48	47,54	100	150	94	7	M8 x 1	13,5	127	115	127	103	45	8	37	102
		10	48,67		47,05														
		15	48,96		46,53														
		20	49,21		45,97														
		25	49,43		45,38														
		30	49,62		44,76														
RV	51 x	5	51,35	51	50,54	102	147	94	7	M8 x 1	13,5	124	125	139	105	50	8	35	104
		10	51,68		50,06														
		15	51,97		49,54														
		20	52,23		48,99														
		25	52,45		48,40														
RV	56 x	6	56,35	56	55,54	100	150	93	7	M8 x 1	13,5	127	100	112	103	40	8	37	102
		12	56,67		55,05														
		18	56,95		54,52														
		24	57,19		53,95														
		30	57,40		53,35														
		36	57,58		52,72														

P : Lead (stroke per revolution) d0 : Nominal diameter d1: Screw outer diameter
D : Reference diameter d2: Screw root diameter

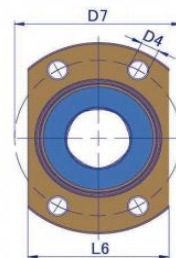
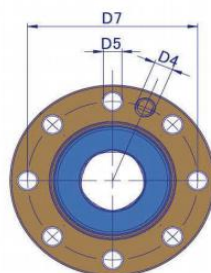
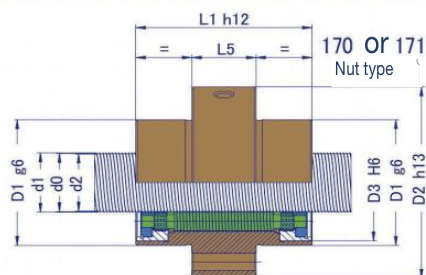
RV Series - Planetary Roller Screw



				Technical Parameters																		
Model				[°]	Single nut				Double nut					Preload nut					Forward rotation efficiency	Inversion efficiency		
	D x P	N	Helix angl		[kN]	[kN]	[N/2/3µm]	Axial clearance*	[kN]	[kN]	[N/2/3µm]	[N]	[Nm]	[kN]	[kN]	[N/2/3µm]	[N]	[Nm]				
RV	60 x	6	6	1,82	248,5	689,4	128,2	0,04	248,5	689,4	192,4	2 936	1,80	136,9	344,7	80,8	2 936	1,80	0,80	0,75		
		10		3,04	277,8	678,4	97,2	0,04	277,8	678,4	145,9	2 601	1,80	153,1	339,2	61,3	2 601	1,80	0,86	0,83		
		12		3,64	290,3	679,7	88,3	0,04	290,3	679,7	132,5	2 429	1,80	159,9	339,8	55,6	2 429	1,80	0,87	0,85		
		18		5,45	315,6	669,9	71,2	0,04	315,6	669,9	106,7	1 926	1,80	173,9	335,0	44,8	1 926	1,80	0,89	0,87		
		20		6,06	327,4	684,4	68,2	0,04	327,4	684,4	102,3	1 769	1,80	180,4	342,2	43,0	1 769	1,80	0,89	0,88		
		30	5	9,04	393,2	747,8	54,6	0,07	393,2	747,8	81,8	1 108	1,80	216,6	373,9	34,4	1 108	1,80	0,88	0,87		
		42		12,56	393,0	755,2	46,4	0,07	393,0	755,2	69,6	586	1,80	216,5	377,6	29,3	586	1,80	0,85	0,82		
		5		1,52	321,2	922,0	139,5	0,04	321,2	922,0	209,3	3014	1,80	177,0	461,0	87,9	3 014	1,80	0,78	0,71		
		10		3,04	380,1	925,8	96,5	0,04	380,1	925,8	144,8	2 601	1,80	209,4	462,9	60,8	2 601	1,80	0,86	0,83		
		15	5	4,55	415,0	915,9	77,5	0,04	415,0	915,9	116,3	2 173	1,80	228,6	458,0	48,9	2 173	1,80	0,88	0,87		
		20		6,06	500,4	1 057,1	68,4	0,04	500,4	1057,1	102,6	1 769	1,80	275,7	528,5	43,1	1 769	1,80	0,89	0,88		
		25		7,55	494,0	1 029,9	60,2	0,05	494,0	1029,9	90,3	1 412	1,80	272,2	515,0	37,9	1 412	1,80	0,89	0,88		
		30		9,04	495,5	1 034,1	55,1	0,07	495,5	1034,1	82,6	1 108	1,80	273,0	517,1	34,7	1 108	1,80	0,88	0,87		
		35		10,52	470,0	958,1	48,4	0,07	470,0	958,1	72,5	857	1,80	258,9	479,0	30,5	857	1,80	0,87	0,85		
RV	64 x	6	6	1,71	255,5	802,2	137,3	0,04	255,5	802,2	206,0	3 089	2,00	142,7	401,1	86,5	3 089	2,00	0,79	0,74		
		12		3,42	303,1	791,8	94,5	0,04	303,1	791,8	141,8	2 598	2,00	169,3	395,9	59,5	2 598	2,00	0,87	0,84		
		18		5,12	332,8	781,4	76,0	0,04	332,8	781,4	114,0	2 101	2,00	185,9	390,7	47,9	2 101	2,00	0,89	0,87		
		24		6,81	428,8	932,6	68,2	0,04	428,8	932,6	102,3	1 650	2,00	239,6	466,3	42,9	1 650	2,00	0,89	0,88		
		30		8,49	408,9	854,6	57,7	0,06	408,9	854,6	86,6	1 266	2,00	228,4	427,3	36,4	1 266	2,00	0,89	0,87		
		36		10,15	397,3	812,6	51,4	0,07	397,3	812,6	77,2	953	2,00	221,9	406,3	32,4	953	2,00	0,88	0,86		
RV	70 x	6	6	1,59	321,2	1 120,0	160,5	0,04	-	-	-	-	-	-	-	-	-	-	0,78	0,72		
		12		3,17	381,9	1 108,2	110,5	0,04	-	-	-	-	-	-	-	-	-	-	-	0,86	0,84	
		18		4,75	420,4	1 096,4	89,0	0,04	-	-	-	-	-	-	-	-	-	-	-	0,88	0,87	
		24		6,32	525,1	1 265,4	78,4	0,04	-	-	-	-	-	-	-	-	-	-	-	0,89	0,88	
		30		7,88	518,6	1 230,5	68,4	0,05	-	-	-	-	-	-	-	-	-	-	-	0,89	0,88	
		36		9,43	498,8	1 149,4	60,3	0,07	-	-	-	-	-	-	-	-	-	-	-	0,88	0,87	

*Axis clearance can be reduced upon request.

P :	Lead (stroke per revolution)	N :	Number of screw heads	Fk:	Stiffness coefficient
D :	Reference diameter	Ca:	Dynamic load	Fv:	Preload force
		C0a:	Static load	Mv:	Preload torque



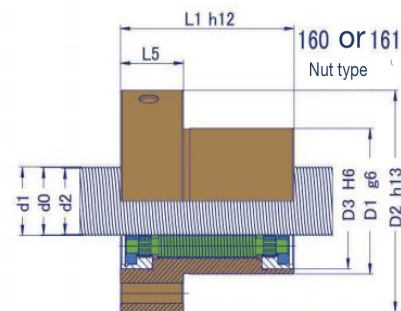
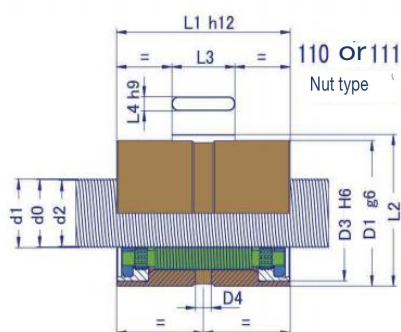
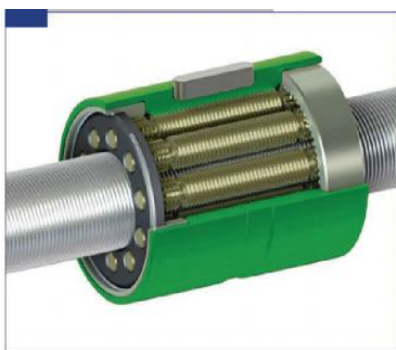
Model			Screw			Nut													
			[mm]	[mm]	[mm]							No oil scraper	With oil scraper						
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
D x P			Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4		Ø D5	Ø D7	L1		L2	L3	L4	L5	L6
RV	60 x	6	60,35	60	59,54	110	150	100	10,5	M8 x 1	13,5	130	106	124	113,2	40	8	30	112
		10	60,57		59,22														
		12	60,67		59,05														
		18	60,96		58,53														
		20	61,05		58,35														
		30	61,43		57,38														
		42	61,77		56,10														
		5	60,36	59,55	122	180	110	10,5	M8 x 1	17,5	150	140	152	125,7	45	10	40	124	
		10	60,69	59,07															
		15	60,99	58,56															
		20	61,26	58,02															
		25	61,51	57,46															
		30	61,74	56,88															
		35	61,93	56,26															
RV	64 x	6	64,35	64	63,54	115	180	106	7	M8 x 1	17,5	150	118	129	118	45	8	40	117
		12	64,68		63,06														
		18	64,97		62,54														
		24	65,23		61,99														
		30	65,46		61,41														
		36	65,66		60,80														
RV	70 x	6	69,36	69	68,55	130	172	115	9	M8 x 1	13,5	152	140	170	133,7	50	10	45	132
		12	69,68		68,06														
		18	69,98		67,55														
		24	70,25		67,01														
		30	70,48		66,43														
		36	70,70		65,84														

P : Lead (stroke per revolution)
D : Reference diameter

d0 : Nominal diameter
d2 : Screw root diameter

d1: Screw outer diameter

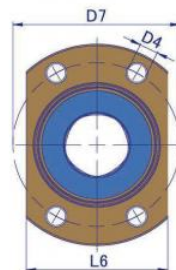
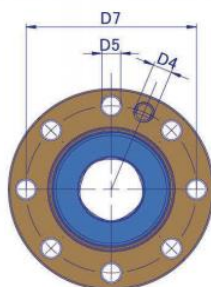
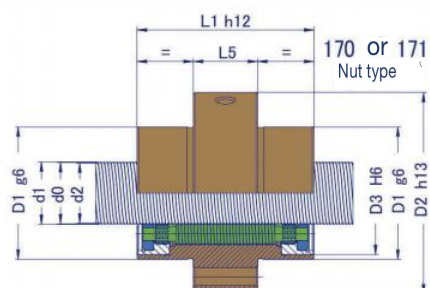
RV Series - Planetary Roller Screw



					Technical Parameters																
Model				[°]	Single nut				Double nut					Preload nut					Forward rotation efficiency	Inversion efficiency	
					[kN]	[kN]	[N2/3µm]	Axial clearance*	[kN]	[kN]	[N2/3µm]	[N]	[Nm]	[kN]	[kN]	[N2/3µm]	[N]	[Nm]			
	D x P	N	Helix angle	Ca	C0a	Fk		Ca	C0a	Fk	Fv	Mv	Ca	C0a	Fk	Fv	Mv				
RV	75 x	10	5	2.43	497,8	1 452,7	116,7	0,04	-	-	-	-	-	-	-	-	-	-	0,84	0,80	
		15		3,64	549,5	1 440,4	94,3	0,04	-	-	-	-	-	-	-	-	-	0,87	0,85		
		20		4,85	639,5	1 666,1	82,7	0,04	-	-	-	-	-	-	-	-	-	0,88	0,87		
		25		6,06	642,4	1 651,7	73,7	0,04	-	-	-	-	-	-	-	-	-	0,89	0,88		
		30		7,26	643,2	1 637,3	66,8	0,05	-	-	-	-	-	-	-	-	-	0,89	0,88		
RV	80 x	12	6	2.73	385,3	1 040,9	105,3	0,04	-	-	-	-	-	-	-	-	-	-	0,85	0,82	
		18		4,10	428,2	1 045,8	85,4	0,04	-	-	-	-	-	-	-	-	-	0,88	0,86		
		24		5,45	524,6	1 225,8	75,7	0,04	-	-	-	-	-	-	-	-	-	0,89	0,87		
		30		6,81	535,7	1 251,7	68,2	0,04	-	-	-	-	-	-	-	-	-	0,89	0,88		
		36		8,15	508,8	1 148,6	59,0	0,06	-	-	-	-	-	-	-	-	-	0,89	0,87		
RV	87 x	10	5	2.10	606,6	1 857,3	129,8	0,04	-	-	-	-	-	-	-	-	-	-	0,82	0,78	
		15		3,14	656,7	1 862,8	105,1	0,04	-	-	-	-	-	-	-	-	-	-	0,86	0,84	
		20		4,19	768,0	2 179,5	92,5	0,04	-	-	-	-	-	-	-	-	-	0,88	0,86		
		25		5,23	767,8	2 140,3	81,9	0,04	-	-	-	-	-	-	-	-	-	0,89	0,87		
		30		6,26	785,1	2 191,9	75,6	0,04	-	-	-	-	-	-	-	-	-	0,89	0,88		
RV	92 x	12	6	2.38	532,8	1 646,7	129,1	0,04	-	-	-	-	-	-	-	-	-	-	0,83	0,80	
		18		3,56	583,3	1 611,2	103,4	0,04	-	-	-	-	-	-	-	-	-	-	0,87	0,85	
		24		4,75	695,3	1 886,2	91,5	0,04	-	-	-	-	-	-	-	-	-	0,88	0,87		
		30		5,93	714,6	1 940,4	82,9	0,04	-	-	-	-	-	-	-	-	-	0,89	0,88		
		36		7,10	709,8	1 898,9	74,8	0,05	-	-	-	-	-	-	-	-	-	0,89	0,88		

*Axis clearance can be reduced upon request.

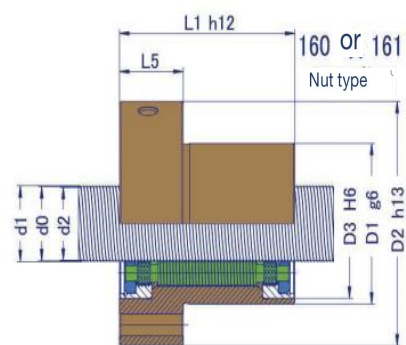
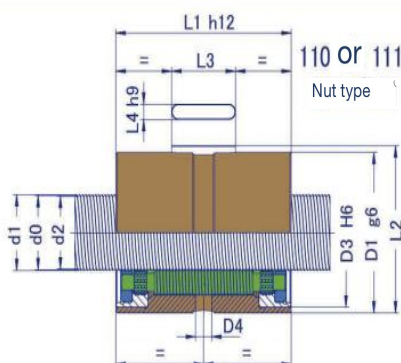
P : Lead (stroke per revolution) N : Number of screw heads Fk: Stiffness coefficient
 D : Reference diameter Ca: Dynamic load Fv: Preload force
 C0a: Static load Mv: Preload torque



			Screw			Nut													
			[mm]	[mm]	[mm]							No oil scraper	With oil scraper						
Model																			
	D x P		Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4		Ø D5	Ø D7	L1		L2	L3	L4	L5	L6
RV	75 x	10	75,70	75	74,08	150	210	140	10,5	M8 x 1	17,5	180	175	191	153	63	10	45	152
		15	76,01		73,58														
		20	76,31		73,07														
		25	76,58		72,53														
		30	76,83		71,97														
RV	80 x	12	80,69	80	79,07	138	180	130	10,5	M8 x 1	13,5	160	130	158	141,7	50	10	35	140
		18	81,00		78,57														
		24	81,28		78,04														
		30	81,53		77,48														
		36	81,77		76,91														
RV	87 x	10	87,70	87	86,08	175	235	162	10,5	M8 x 1	17,5	200	190	215	178	63	10	45	177
		15	88,03		85,60														
		20	88,33		85,09														
		25	88,62		84,57														
		30	88,89		84,03														
RV	92 x	12	92,70	92	91,08	160	220	146	10,5	M8 x 1	17,5	190	155	179	163	63	10	45	162
		18	93,01		90,58														
		24	93,30		90,06														
		30	93,58		89,53														
		36	93,83		88,97														

P : Lead (stroke per revolution) d0 : Nominal diameter d1: Screw outer diameter
 D : Reference diameter d2: Screw root diameter

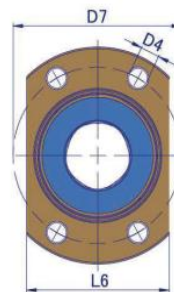
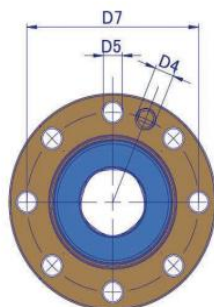
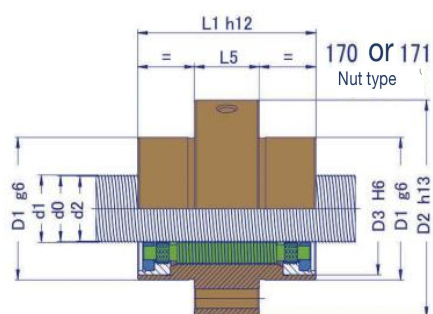
RV Series - Planetary Roller Screw



				Technical Parameters																	
Model	D x P		N	[°] Helix angle	Single nut				Double nut					Preload nut					Forward rotation efficiency	Inversion efficiency	
					[kN] Ca	[kN] C0a	[N2/3µm] Fk	Axial clearance*	[kN] Ca	[kN] C0a	[N2/3µm] Fk	[N] Fv	[Nm] Mv	[kN] Ca	[kN] C0a	[N2/3µm] Fk	[N] Fv	[Nm] Mv			
RV	100 x	12	6	2,19	790,2	2 649,7	153,2	0,05	-	-	-	-	-	-	-	-	-	-	0,82	0,79	
		18		3,28	843,7	2 603,3	123,0	0,05	-	-	-	-	-	-	-	-	-	-	0,86	0,84	
		24		4,37	858,2	2 610,2	106,0	0,05	-	-	-	-	-	-	-	-	-	-	0,88	0,86	
		30		5,45	857,8	2 563,9	94,0	0,05	-	-	-	-	-	-	-	-	-	-	0,89	0,87	
		15	5	2,76	1 044,9	3 598,6	135,4	0,05	-	-	-	-	-	-	-	-	-	-	-	0,85	0,82
		20		3,68	1 063,3	3 605,5	116,4	0,05	-	-	-	-	-	-	-	-	-	-	-	0,87	0,85
		25		4,60	1 077,2	3 612,3	103,8	0,05	-	-	-	-	-	-	-	-	-	-	-	0,88	0,87
		30		5,51	1 088,0	3 619,1	95,0	0,05	-	-	-	-	-	-	-	-	-	-	-	0,89	0,87
		35		6,42	1 106,7	3 679,6	88,6	0,05	-	-	-	-	-	-	-	-	-	-	-	0,89	0,88
RV	120 x	18	6	2,73	1 063,2	3 667,3	142,3	0,05	-	-	-	-	-	-	-	-	-	-	0,85	0,82	
		24		3,64	1 082,0	3 675,6	122,6	0,05	-	-	-	-	-	-	-	-	-	-	-	0,87	0,85
		30		4,55	1 090,3	3 652,0	108,8	0,05	-	-	-	-	-	-	-	-	-	-	-	0,88	0,87
		36		5,45	1 107,2	3 692,0	99,9	0,05	-	-	-	-	-	-	-	-	-	-	-	0,89	0,87
		15	5	2,28	1 181,9	4 248,4	143,1	0,05	-	-	-	-	-	-	-	-	-	-	-	0,83	0,79
		20		3,04	1 214,1	4 320,3	124,4	0,05	-	-	-	-	-	-	-	-	-	-	-	0,86	0,83
		25		3,79	1 214,0	4 234,2	109,5	0,05	-	-	-	-	-	-	-	-	-	-	-	0,87	0,85
		30		4,55	1 232,5	4 274,3	100,0	0,05	-	-	-	-	-	-	-	-	-	-	-	0,88	0,87
		35		5,30	1 220,6	4 157,0	91,4	0,05	-	-	-	-	-	-	-	-	-	-	-	0,89	0,87

*Axis clearance can be reduced upon request.

P : Lead (stroke per revolution) N : Number of screw heads Fk: Stiffness coefficient
 D : Reference diameter Ca: Dynamic load Fv: Preload force
 C0a: Static load Mv: Preload torque



			Screw			Nut													
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	No oil scraper	With oil scraper	[mm]	[mm]	[mm]	[mm]	[mm]	
Model	D x P		Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4		Ø D5	Ø D7	L1		L2	L3	L4	L5	L6
RV	100 x	12	100,70	100	99,08	185	260	172	10,5	M8 x 1	17,5	225	200	220	188	63	10	50	187
		18	101,02		98,59														
		24	101,32		98,08														
		30	101,60		97,55														
		15	101,04	99	97,61	200	275	186	15	M8 x 1	17,5	240	250	271	203	63	10	50	202
		20	101,35		97,11														
		25	101,65		96,60														
		30	101,93		96,07														
		35	102,19		95,52														
RV	120 x	18	121,03	120	118,60	220	260	200	15	M10 x 1	17,5	240	230	260	223	100	10	50	222
		24	121,35		118,11														
		30	121,64		117,59														
		36	121,92		117,06														
		15	121,05	120	118,62	240	300	220	15	M10 x 1	17,5	270	280	300	243	100	10	55	242
		20	121,37		118,13														
		25	121,68		117,63														
		30	121,98		117,12														
		35	122,26		116,59														

P : Lead (stroke per revolution)
D : Reference diameter

d0 : Nominal diameter
d2: Screw root diameter

d1: Screw outer diameter

HRV Series-Standard Product Chart

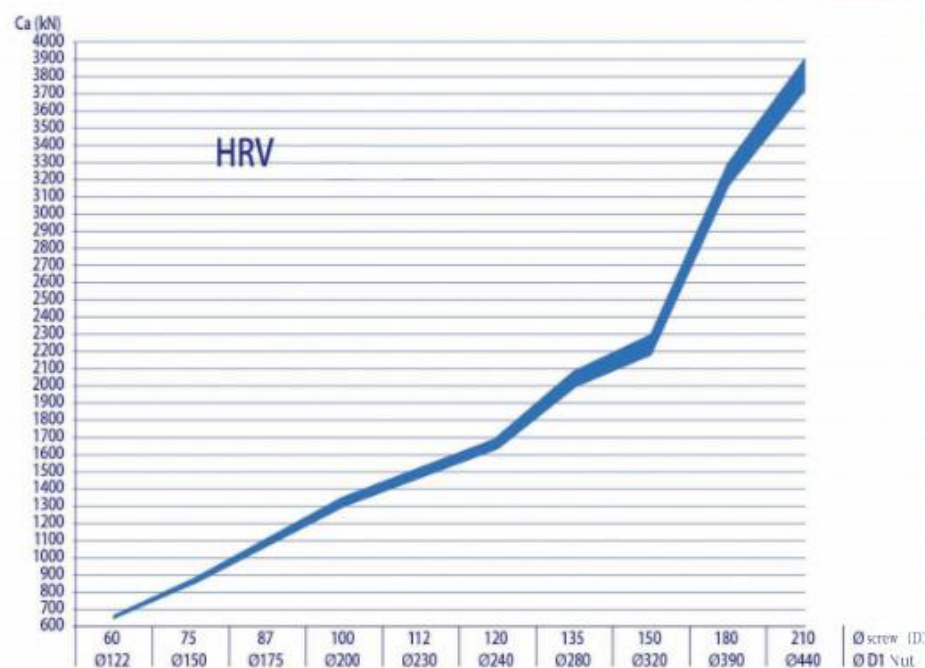
DIA (D)	TPI (N)	Lead (P)										
		15	18	20	24	25	30	35	36	40	42	50
60	5	✓		✓		✓	✓					
75	5	✓		✓		✓	✓					
87	5	✓		✓		✓	✓					
100	5	✓		✓		✓	✓	✓				
112	5	✓		✓		✓	✓	✓				
120	5	✓		✓		✓	✓	✓		✓		
135	5	✓		✓		✓	✓	✓		✓		✓
150	5	✓		✓		✓	✓	✓		✓		✓
180	5			✓			✓			✓		✓
210	5						✓			✓		✓



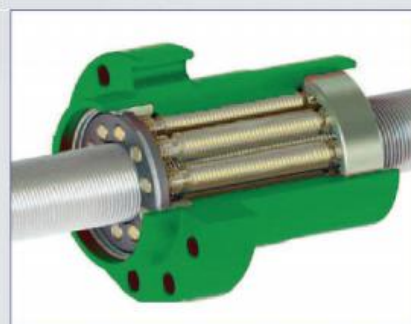
HRV 75 x 15

Standard size HRV dynamic load (Ca) curve chart

Standard size HRV dynamic load (Ca) curve chart



HRV Series High Load Planetary Roller Screw



HRV series

Size	Page count
HRV 60 / 75 / 87 / 100 / 112 / 120	42 - 43
HRV 135 / 150 / 180 / 210	44 - 45



HRV Series High Load Planetary Roller Screw



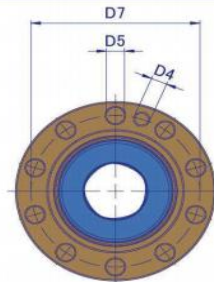
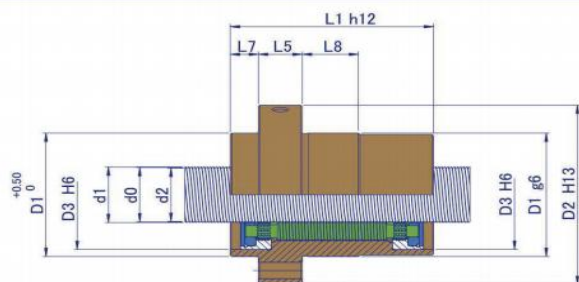
				Technical Parameters							
				Single nut							
Model			N	[°]	[kN]	[kN]	[N/3µm]	Axial clearance*	Forward rotation efficiency	Inversion efficiency	
	D x P										
HRV	60 x	15	5	4,55	654,9	1 512,4	88,9	0,04	0,88	0,87	
		20		6,06	655,8	1 498,0	76,4	0,04	0,89	0,88	
		25		7,55	665,2	1 522,3	68,9	0,04	0,89	0,88	
		30		9,04	650,9	1 469,2	62,0	0,04	0,88	0,87	
HRV	75 x	15	5	3,64	842,5	2 449,6	108,9	0,04	0,87	0,85	
		20		4,85	862,0	2 480,3	95,0	0,04	0,88	0,87	
		25		6,06	866,9	2 462,0	84,4	0,04	0,89	0,88	
		30		7,26	858,0	2 395,2	76,0	0,04	0,89	0,88	
HRV	87 x	15	5	3,14	1 074,0	3 531,7	127,9	0,04	0,86	0,84	
		20		4,19	1 087,0	3 510,3	110,2	0,04	0,88	0,86	
		25		5,23	1 106,3	3 545,9	99,1	0,04	0,89	0,87	
		30		6,26	1 099,7	3 467,5	89,1	0,04	0,89	0,88	
HRV	100 x	15	5	2,76	1 301,0	4 708,0	145,1	0,05	0,85	0,82	
		20		3,68	1 323,9	4 716,1	124,9	0,05	0,87	0,85	
		25		4,60	1 329,5	4 658,9	111,2	0,05	0,88	0,87	
		30		5,51	1 354,7	4 732,1	102,2	0,05	0,89	0,87	
		35		6,42	1 347,3	4 642,4	93,4	0,05	0,89	0,88	
HRV	112x	15	5	2,43	1 440,8	5 442,7	153,3	0,05	0,84	0,80	
		20		3,24	1 460,5	5 415,6	131,4	0,05	0,86	0,84	
		25		4,05	1 480,1	5 425,0	117,3	0,05	0,88	0,86	
		30		4,85	1 483,0	5 361,5	106,6	0,05	0,88	0,87	
		35		5,66	1 482,6	5 298,0	98,0	0,05	0,89	0,88	
HRV	120 x	15	5	2,28	1 598,9	6 370,3	164,3	0,05	0,83	0,79	
		20		3,04	1 634,0	6 419,5	141,6	0,05	0,86	0,83	
		25		3,79	1 656,2	6 429,5	126,3	0,05	0,87	0,85	
		30		4,55	1 648,2	6 283,1	114,1	0,05	0,88	0,87	
		35		5,30	1 668,7	6 332,0	106,0	0,05	0,89	0,87	
		40		6,06	1 673,8	6 302,8	98,7	0,05	0,89	0,88	

*Axis clearance can be reduced upon request.

P : Lead (stroke per revolution)
D : Reference diameter

N : Number of screw heads
Ca: Dynamic load

Fk: Stiffness coefficient
C0a: Static load



Model	Screw				Nut									
	D x P	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
		Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4	Ø D5	Ø D7	L1	L5	L7	L8
HRV	60 x	15	60,99	60	122	180	110	M8 x 1	17,5	150	171	30	20	40
		20	61,26											
		25	61,51											
		30	61,74											
HRV	75 x	15	76,01	75	150	210	140	M8 x 1	17,5	180	213	35	25	40
		20	76,31											
		25	76,58											
		30	76,83											
HRV	87 x	15	88,03	87	175	235	162	M8 x 1	17,5	200	245	40	25	40
		20	88,33											
		25	88,62											
		30	88,89											
HRV	100 x	15	100,04	99	200	245	186	M8 x 1	17,5	224	280	50	25	40
		20	100,35											
		25	100,65											
		30	100,93											
		35	101,19											
HRV	112x	15	113,55	112,50	230	285	210	M10 x 1	17,5	260	300	50	30	60
		20	113,86											
		25	114,17											
		30	114,46											
		35	114,74											
HRV	120 x	15	121,05	120	240	300	220	M10 x 1	17,5	270	346	55	40	60
		20	121,37											
		25	121,68											
		30	121,98											
		35	122,26											
		40	122,53											

P : Lead (stroke per revolution) d0 : Nominal diameter d1: Screw outer diameter
 D : Reference diameter d2: Screw root diameter

HRV Series High Load Planetary Roller Screw



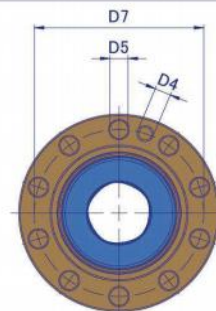
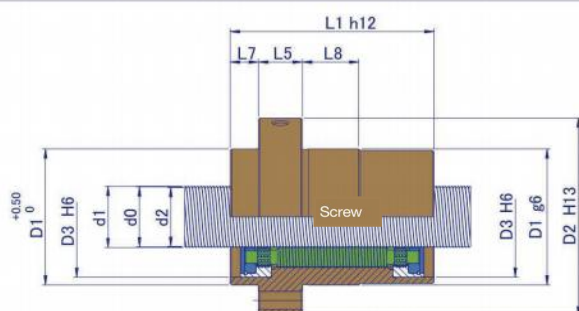
Model		Technical Parameters							
		Single nut							
D x P		N	[°]	[kN]	[kN]	[N2/3μm]	Axial clearance*	Forward rotation efficiency	反转效率
			Helix angle	Ca	C0a	Fk			
HRV	135 x	15	2.03	2 061,7	9 351,8	198,3	0,07	0,82	0,77
		20	2,70	1 968,1	8 494,9	160,4	0,07	0,85	0,82
		25	3,37	1 988,6	8 461,7	142,4	0,07	0,86	0,84
		30	4,05	2 030,1	8 605,9	130,8	0,07	0,88	0,86
		35	4,72	2 054,8	8 661,2	121,7	0,07	0,88	0,87
		40	5,39	2 049,7	8 539,1	112,9	0,07	0,89	0,87
		50	6,72	2 031,9	8 295,8	99,3	0,07	0,89	0,88
HRV	150 x	15	1,82	2 235,9	10 488,5	206,4	0,07	0,80	0,75
		20	2,43	2 155,4	9 675,9	168,8	0,07	0,84	0,80
		25	3,04	2 164,8	9 542,5	148,8	0,07	0,86	0,83
		30	3,64	2 181,9	9 506,5	135,2	0,07	0,87	0,85
		35	4,25	2 215,7	9 616,2	125,9	0,07	0,88	0,86
		40	4,85	2 218,4	9 531,5	117,3	0,07	0,88	0,87
		50	6,06	2 216,3	9 362,4	103,7	0,07	0,89	0,88
HRV	180 x	20	2,03	3 204,3	17 663,4	225,0	0,10	0,82	0,77
		30	3,04	3 101,2	16 220,8	171,8	0,10	0,86	0,83
		40	4,05	3 155,2	16 249,9	148,4	0,10	0,88	0,86
		50	5,05	3 195,3	16 278,8	133,0	0,10	0,89	0,87
HRV	210 x	30	2,60	3 893,4	22 704,7	202,0	0,10	0,84	0,81
		40	3,47	3 723,7	20 709,1	163,5	0,10	0,87	0,85
		50	4,33	3 773,0	20 743,4	146,3	0,10	0,88	0,86

*Axis clearance can be reduced upon request.

P : Lead (stroke per revolution)
D : Reference diameter

N : Number of screw heads
Ca: Dynamic load

Fk: Stiffness coefficient
C0a: Static load



Model		丝杠			Nut									
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
	D x P	Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4	Ø D5	Ø D7	L1	L5	L7	L8
HRV	135 x	15	136,06											
		20	136,38											
		25	136,70											
		30	137,00	135										
		35	137,30											
		40	137,58											
		50	138,10											
HRV	150 x	15	151,06											
		20	151,39											
		25	151,71											
		30	152,03	150										
		35	152,33											
		40	152,61											
		50	153,16											
HRV	180 x	20	181,41											
		30	182,06											
		40	182,67	180										
		50	183,25											
HRV	210 x	30	212,08											
		40	212,71	210										
		50	213,31											

P : Lead (stroke per revolution) d0 : Nominal diameter d1: Screw outer diameter
D : Reference diameter d2: Screw root diameter

RVI series standard product chart

DIA (D)	TPI (N)	Lead (P)															
		1	2	3	4	5	6	7	8	9	10	12	14	15	16		
10,5	3		✓														
12	3	✓	✓														
13,5	3	✓	✓														
15	3	✓	✓	✓													
18	3	✓	✓	✓													
21	3		✓	✓	✓												
24	3		✓	✓	✓	✓											
27	3		✓	✓	✓	✓											
28	4		✓	✓	✓	✓	✓										
30	3		✓	✓	✓	✓	✓										
36	4		✓	✓	✓	✓	✓	✓									
39	3			✓	✓	✓	✓	✓	✓								
44	4			✓	✓	✓	✓	✓	✓	✓							
48	3			✓	✓	✓	✓	✓	✓	✓	✓						
51	3			✓	✓	✓	✓	✓	✓	✓	✓	✓					
56	4				✓	✓	✓	✓	✓	✓	✓	✓	✓				
60	4				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
64	4				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
70	5						✓		✓		✓	✓	✓	✓	✓		
75	5						✓		✓		✓	✓	✓	✓	✓		
80	4						✓		✓		✓	✓	✓	✓	✓		✓



RVI 8 x 0.5



RVI 39 x 6

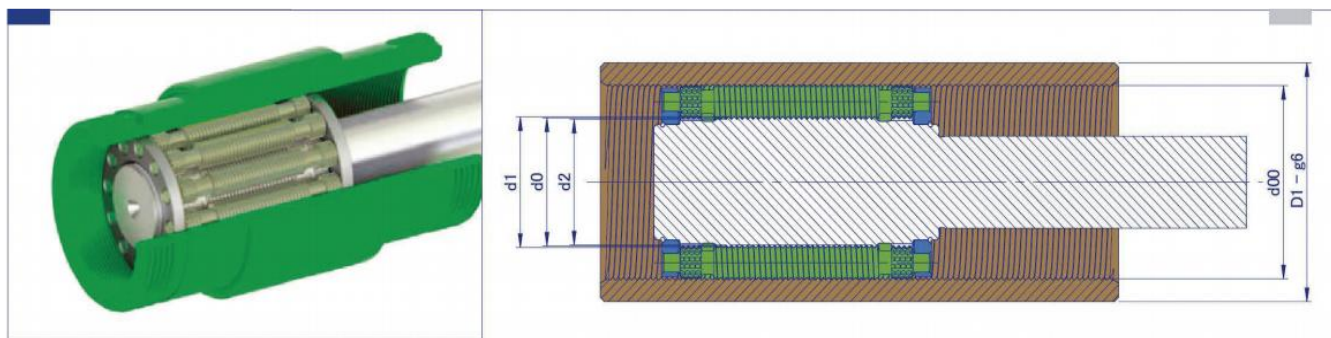
RVI series counter-rotating planetary roller screw



Size		Page count
	RVI 10,5 / 12 / 13,5 / 15 / 18 / 21 / 24 / 27 / 28	48
	RVI 30 / 36 / 39 / 44 / 48	49
	RVI 51 / 56 / 60	50
	RVI 64 / 70 / 75 / 80	51



RVI series counter-rotating planetary roller screw



					Technical Parameters						Screw			Nut	
Model				Helix angle [°]											
	D x P		N	螺旋升角	Ca	C0a	Fk	Axial clearance*	Forward rotation efficiency	Inversion efficiency	Ø d1	Ø d0	Ø d2	Ø d00	Ø D1
RVI	10,5 x	2,0	3	3,47	13,4	20,8	32,6	0,02	0,87	0,85	10,70	10,50	10,16	17,50	24
RVI	12 x	1,0	3	1,52	13,9	26,8	52,1	0,02	0,78	0,71	12,11	12,00	11,84	20	26
		2,0		3,04	16,5	27,1	36,5	0,02	0,86	0,83	12,20		11,66		
RVI	13,5 x	1,0	3	1,35	16,1	31,5	56,8	0,02	0,76	0,68	13,61	13,50	13,34	22,50	30
		2,0		2,70	17,9	28,9	37,2	0,02	0,85	0,82	13,71		13,17		
RVI	15 x	1,0	3	1,22	23,7	56,0	74,1	0,02	0,74	0,65	15,11	15,00	14,84	25	32
		2,0		2,43	27,7	55,2	51,0	0,02	0,84	0,80	15,21		14,67		
		3,0		3,64	29,1	51,5	39,4	0,03	0,87	0,85	15,29		14,48		
RVI	18 x	1,0	3	1,01	30,6	76,8	85,1	0,02	0,71	0,58	18,12	18,00	17,85	30	38
		2,0		2,03	36,2	77,2	59,0	0,02	0,82	0,77	18,22		17,68		
		3,0		3,04	39,1	74,9	46,9	0,03	0,86	0,83	18,30		17,49		
RVI	21 x	2,0	3	1,74	54,5	106,0	67,5	0,02	0,80	0,74	21,22	21,00	20,68	35	45
		3,0		2,60	59,6	104,8	54,2	0,03	0,84	0,81	21,31		20,50		
		4,0		3,47	63,3	103,7	46,5	0,03	0,87	0,85	21,39		20,31		
RVI	24 x	2,0	3	1,52	73,8	161,0	81,2	0,02	0,78	0,71	24,22	24,00	23,68	40	50
		3,0		2,28	81,4	161,5	66,0	0,03	0,83	0,79	24,32		23,51		
		4,0		3,04	87,3	162,0	56,8	0,03	0,86	0,83	24,40		23,32		
		5,0		3,79	92,1	162,5	50,9	0,03	0,87	0,85	24,48		23,13		
RVI	27 x	2,0	3	1,35	81,2	177,2	84,0	0,02	0,76	0,68	27,23	27,00	26,69	45	55
		3,0		2,03	90,3	179,7	68,6	0,03	0,82	0,77	27,33		26,52		
		4,0		2,70	94,8	174,3	58,0	0,03	0,85	0,82	27,41		26,33		
		5,0		3,37	100,0	174,8	51,8	0,03	0,86	0,84	27,49		26,14		
RVI	28 x	2,0	4	1,30	61,4	140,0	92,5	0,02	0,75	0,67	28,17	28,00	27,77	42	52
		3,0		1,95	67,8	140,5	75,0	0,02	0,81	0,77	28,25		27,65		
		4,0		2,60	71,7	137,8	63,9	0,03	0,84	0,81	28,33		27,52		
		5,0		3,25	72,5	129,8	54,5	0,03	0,86	0,84	28,39		27,38		
		6,0		3,90	76,3	131,6	50,0	0,03	0,87	0,86	28,46		27,24		

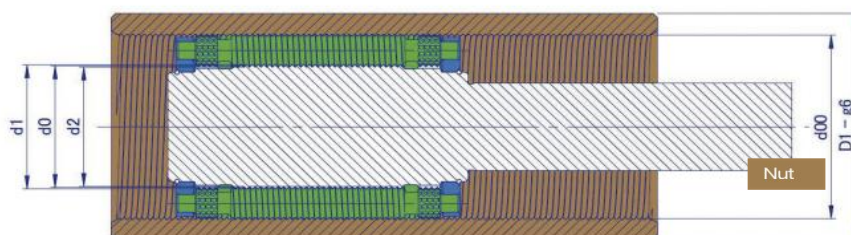
*Axis clearance can be reduced upon request.

P : Lead (stroke per revolution)
D : Reference diameter
d0 : Nominal diameter
d00 : Nut nominal diameter

N : Number of screw heads
Ca: Dynamic load
d1: Screw outer diameter
D1: Minimum outer diameter

Fk: Stiffness coefficient
C0a: Static load
d2: Screw root diameter

RVI series counter-rotating planetary roller screw



Model				Technical Parameters							Screw			螺母	
	D x P		N	Helix angle [°]	Ca [kN]	C0a [kN]	Fk [N2/3μm]	Axial clearance*	Forward rotation efficiency	Inversion efficiency	Ø d1 [mm]	Ø d0 [mm]	Ø d2 [mm]	Ø d00 [mm]	Ø D1 [mm]
				螺旋升角											
RVI	30 x	2	3	1,22	97,2	224,1	93,4	0,02	0,74	0,65	30,23	30	29,69	50	60
		3		1,82	107,3	224,7	75,5	0,03	0,80	0,75	30,33		29,52		
		4		2,43	113,6	220,8	64,3	0,03	0,84	0,80	30,42		29,34		
		5		3,04	119,2	219,2	57,0	0,03	0,86	0,83	30,50		29,15		
		6		3,64	126,9	226,5	52,9	0,04	0,87	0,85	30,58		28,96		
RVI	36 x	2	4	1,01	86,9	215,4	111,7	0,02	0,71	0,58	36,18	36	35,77	54	64
		3		1,52	95,4	214,0	89,3	0,02	0,78	0,71	36,26		35,65		
		4		2,03	101,8	212,6	76,7	0,03	0,82	0,77	36,34		35,53		
		5		2,53	106,2	209,2	67,7	0,03	0,84	0,81	36,41		35,40		
		6		3,04	111,0	209,8	61,7	0,03	0,86	0,83	36,48		35,26		
		7		3,54	117,8	218,1	58,0	0,03	0,87	0,85	36,54		35,13		
RVI	39 x	3	3	1,40	159,5	372,0	93,2	0,03	0,76	0,69	39,34	39	38,53	65	75
		4		1,87	170,3	369,9	80,3	0,03	0,81	0,76	39,44		38,36		
		5		2,34	178,9	367,8	71,2	0,03	0,83	0,80	39,53		38,18		
		6		2,80	186,1	365,7	64,5	0,04	0,85	0,82	39,62		38,00		
		7		3,27	194,1	369,4	59,8	0,04	0,86	0,84	39,69		37,80		
		8		3,74	201,4	373,1	56,3	0,04	0,87	0,85	39,77		37,61		
RVI	44 x	3	4	1,24	135,1	338,4	109,3	0,02	0,74	0,65	44,26	44	43,65	66	76
		4		1,66	145,6	341,5	94,2	0,03	0,79	0,73	44,34		43,53		
		5		2,07	153,1	339,8	83,7	0,03	0,82	0,78	44,42		43,41		
		6		2,49	157,9	333,2	75,3	0,03	0,84	0,81	44,49		43,28		
		7		2,90	166,8	343,6	70,6	0,03	0,85	0,83	44,56		43,15		
		8		3,31	169,2	334,6	65,0	0,04	0,86	0,84	44,63		43,01		
		9		3,73	171,8	328,0	60,6	0,04	0,87	0,85	44,69		42,87		
		10		4,15	174,3	321,4	56,1	0,05	0,88	0,86	44,75		42,74		
RVI	48 x	3	3	1,14	218,7	556,2	111,6	0,03	0,73	0,63	48,34	48	47,53	80	90
		4		1,52	234,6	557,2	95,4	0,03	0,78	0,71	48,45		47,37		
		5		1,90	246,8	554,6	85,0	0,03	0,81	0,76	48,55		47,20		
		6		2,28	259,0	559,1	77,5	0,04	0,83	0,79	48,64		47,02		
		7		2,66	262,4	538,7	70,1	0,04	0,84	0,82	48,73		46,84		
		8		3,04	277,7	561,1	66,7	0,04	0,86	0,83	48,81		46,65		
		9		3,42	285,7	562,1	62,9	0,05	0,87	0,84	48,88		46,45		
		10		3,79	286,0	541,7	58,6	0,05	0,87	0,85	48,95		46,25		

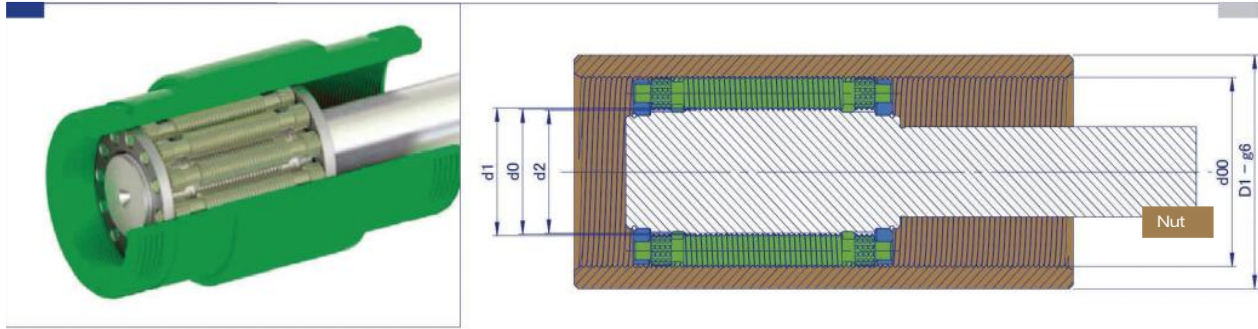
*Axis clearance can be reduced upon request.

P : Lead (stroke per revolution)
D : Reference diameter
d0 : Nominal diameter
d00 : Nut nominal diameter

N : Number of screw heads
Ca : Dynamic load
d1 : Screw outer diameter
D1 : Minimum outer diameter

Fk : Stiffness coefficient
C0a : Static load
d2 : Screw root diameter

RVI series counter-rotating planetary roller screw



Model				Technical Parameters						Screw			螺母	
			Helix angle	Technical Parameters										
	D x P	N	螺旋升角	Ca	C0a	Fk	Axial clearance*	Forward rotation efficiency	Inversion efficiency	Ø d1	Ø d0	Ø d2	Ø d00	Ø D1
RVI	51 x	3	1,07	263,1	725,9	126,3	0,03	0,72	0,60	51,35	51	50,54	85	99
		4	1,43	279,5	715,2	106,6	0,03	0,77	0,70	51,45		50,37		
		5	1,79	298,1	727,9	96,2	0,03	0,80	0,75	51,55		50,20		
		6	2,14	308,5	717,3	86,9	0,04	0,82	0,78	51,64		50,02		
		7	2,50	320,2	718,3	80,0	0,04	0,84	0,81	51,73		49,84		
		8	2,86	326,2	703,9	74,0	0,04	0,85	0,83	51,82		49,66		
		9	3,22	340,3	720,4	70,3	0,05	0,86	0,84	51,90		49,47		
		10	3,57	346,6	713,7	66,5	0,05	0,87	0,85	51,97		49,27		
RVI	56 x	4	1,30	219,6	584,9	119,0	0,03	0,75	0,67	56,35	56	55,54	84	98
		5	1,63	231,9	585,8	105,9	0,03	0,79	0,73	56,43		55,42		
		6	1,95	240,8	580,4	96,0	0,03	0,81	0,77	56,51		55,29		
		7	2,28	250,8	584,4	88,8	0,03	0,83	0,79	56,58		55,16		
		8	2,60	256,5	575,9	82,2	0,04	0,84	0,81	56,65		55,03		
		9	2,93	260,4	564,4	76,6	0,04	0,85	0,83	56,72		54,90		
		10	3,25	274,4	590,0	74,1	0,04	0,86	0,84	56,79		54,76		
		12	3,90	279,0	566,9	66,2	0,05	0,87	0,86	56,92		54,49		
RVI	60 x	4	1,22	248,6	689,4	128,2	0,03	0,74	0,65	60,35	60	59,54	90	108
		5	1,52	259,3	676,9	112,7	0,03	0,78	0,71	60,43		59,42		
		6	1,82	272,7	684,5	103,1	0,03	0,80	0,75	60,51		59,29		
		7	2,13	281,4	678,7	94,8	0,03	0,82	0,78	60,59		59,17		
		8	2,43	290,7	679,7	88,3	0,04	0,84	0,80	60,66		59,04		
		9	2,73	298,2	677,2	83,0	0,04	0,85	0,82	60,73		58,91		
		10	3,04	306,9	681,5	78,9	0,04	0,86	0,83	60,80		58,77		
		12	3,64	316,7	669,9	71,2	0,05	0,87	0,85	60,93		58,50		

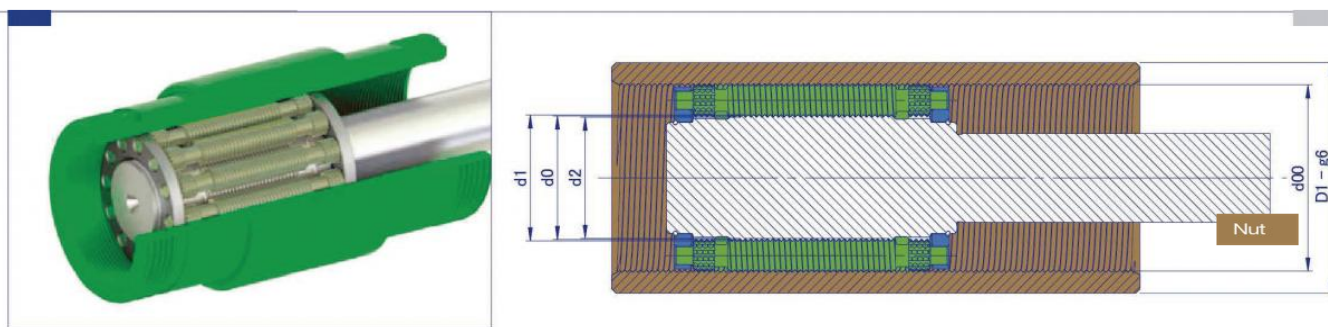
*Axis clearance can be reduced upon request.

P : Lead (stroke per revolution)
D : Reference diameter
d0 : Nominal diameter
d00 : Nut nominal diameter

N : Number of screw heads
Ca: Dynamic load
d1: Screw outer diameter
D1: Minimum outer diameter

Fk: Stiffness coefficient
C0a: Static load
d2: Screw root diameter

RVI series counter-rotating planetary roller screw



Model				Technical Parameters							Screw			螺母	
	D x P		N	[°]	[kN]	[kN]	[N2/3μm]				[mm]	[mm]	[mm]	[mm]	[mm]
				Helix angle	Ca	C0a	Fk	Axial clearance*	Forward rotation efficiency	Inversion efficiency	Ø d1	Ø d0	Ø d2	Ø d00	Ø D1
RVI	64 x	4	4	1,14	278,7	802,2	137,3	0,03	0,73	0,63	64,35	64	63,54	96	114
		5		1,42	291,9	792,4	120,9	0,03	0,77	0,69	64,43		63,42		
		6		1,71	306,0	797,0	110,1	0,03	0,79	0,74	64,51		63,30		
		7		1,99	319,5	805,1	102,2	0,04	0,81	0,77	64,59		63,17		
		8		2,28	326,4	791,8	94,5	0,04	0,83	0,79	64,66		63,04		
		9		2,56	337,8	799,9	89,3	0,04	0,84	0,81	64,74		62,91		
		10		2,85	340,6	779,5	83,5	0,04	0,85	0,83	64,81		62,78		
		12		3,42	355,9	781,4	76,0	0,05	0,87	0,84	64,94		62,51		
		14		3,98	377,8	811,8	71,7	0,05	0,88	0,86	65,06		62,23		
RVI	70 x	6	5	1,56	260,3	722,7	123,1	0,02	0,78	0,72	70,42	70	69,44	98	120
		8		2,08	276,2	712,1	105,2	0,03	0,82	0,78	70,54		69,25		
		10		2,60	291,6	713,8	93,8	0,04	0,84	0,81	70,66		69,04		
		12		3,12	308,0	727,8	86,1	0,04	0,86	0,84	70,78		68,83		
		14		3,64	317,9	723,3	79,2	0,04	0,87	0,85	70,89		68,62		
		15		3,90	317,2	702,6	75,4	0,05	0,87	0,86	70,94		68,51		
RVI	75 x	6	5	1,46	294,7	851,9	132,4	0,03	0,77	0,70	75,42	75	74,45	105	127
		8		1,94	314,6	847,1	113,5	0,03	0,81	0,77	75,55		74,25		
		10		2,43	330,5	842,3	100,7	0,04	0,84	0,80	75,67		74,05		
		12		2,92	343,7	837,5	91,5	0,04	0,85	0,83	75,78		73,84		
		14		3,40	358,5	845,9	84,7	0,04	0,87	0,84	75,90		73,63		
		15		3,64	360,0	830,3	81,0	0,05	0,87	0,85	75,95		73,52		
RVI	80 x	6	4	1,37	387,4	1 038,4	121,9	0,03	0,76	0,68	80,52	80	79,31	120	142
		8		1,82	415,6	1 040,9	105,3	0,04	0,80	0,75	80,68		79,06		
		10		2,28	443,2	1 060,8	94,5	0,04	0,83	0,79	80,83		78,81		
		12		2,73	458,6	1 045,8	85,4	0,05	0,85	0,82	80,97		78,54		
		14		3,19	476,0	1 048,3	78,9	0,05	0,86	0,84	81,11		78,27		
		16		3,64	559,4	1 225,8	75,7	0,05	0,87	0,85	81,24		78,00		

*Axis clearance can be reduced upon request.

P : Lead (stroke per revolution)
D : Reference diameter
d0 : Nominal diameter
d00 : Nut nominal diameter

N : Number of screw heads
Ca: Dynamic load
d1: Screw outer diameter
D1: Minimum outer diameter

Fk: Stiffness coefficient
C0a: Static load
d2: Screw root diameter

RVR series standard product chart

DIA (D)	Lead (P)						
	0,25	0,5	1	2	3	4	5
8	✓	✓	✓	✓			
10	✓	✓	✓	✓			
12	✓	✓	✓	✓			
16		✓	✓	✓			
20		✓	✓	✓			
25			✓	✓			
32			✓	✓		✓	
36			✓	✓			
40			✓	✓		✓	
50			✓	✓	✓	✓	
63				✓	✓	✓	
80				✓	✓	✓	
100					✓	✓	✓
125							✓



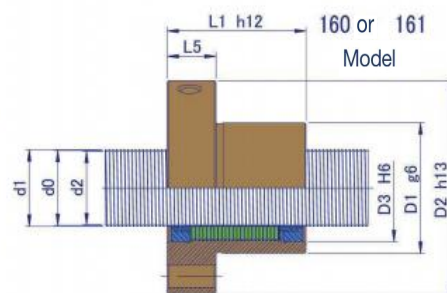
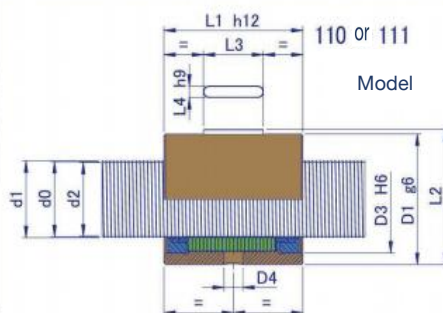
RVR series-Planetary roller screw-circulating type



Size	Page count
 RVR 8 / 10 / 12 / 16 / 20 / 25 / 32 / 36 / 40	54 - 55
 RVR 50 / 63 / 80 / 100 / 125	56 - 57



RVR series-Planetary roller screw-circulating type



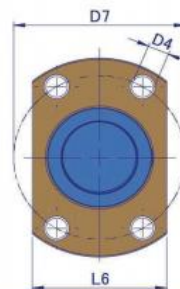
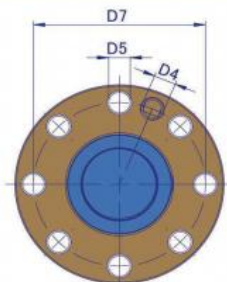
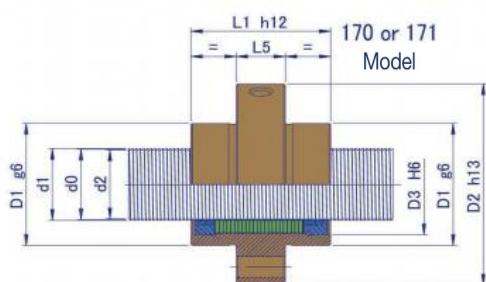
				Technical Parameters																	
Model				[°]	Single nut				Double nut					Preload nut					Forward rotation efficiency	Inversion efficiency	
	D x P	N	Helix angl		Ca	C0a	Fk	Axial clearance*	Ca	C0a	Fk	Fv	Mv	Ca	C0a	Fk	Fv	Mv			
RVR	8 x	0,25	1	0,58	7,3	14,3	40,5	0,02	7,3	14,3	60,8	820	0,06	4,2	7,1	25,5	820	0,06	0,58	0,29	
		0,5		1,17	8,7	13,5	27,4	0,02	8,7	13,5	41,1	790	0,06	5,0	6,8	17,3	790	0,06	0,73	0,63	
		1		2,39	11,8	14,3	18,9	0,03	11,8	14,3	28,3	730	0,06	6,8	7,2	11,9	730	0,06	0,83	0,80	
		2	2	4,77	11,8	14,3	18,9	0,03	11,8	14,3	28,3	550	0,06	6,8	7,2	11,9	550	0,06	0,88	0,87	
RVR	10 x	0,25	1	0,46	8,8	17,7	45,9	0,02	8,8	17,7	68,9	870	0,08	5,0	8,9	28,9	870	0,08	0,53	0,11	
		0,5		0,93	10,4	16,8	31,0	0,02	10,4	16,8	46,6	855	0,08	6,0	8,4	19,6	855	0,08	0,69	0,55	
		1		1,89	14,1	17,8	21,4	0,03	14,1	17,8	32,1	810	0,08	8,1	8,9	13,5	810	0,08	0,81	0,76	
		2	2	3,78	14,1	17,8	21,4	0,03	14,1	17,8	32,1	665	0,08	8,1	8,9	13,5	665	0,08	0,87	0,85	
RVR	12 x	0,25	1	0,38	10,1	21,2	51,0	0,02	10,1	21,2	76,5	910	0,10	5,8	10,6	32,1	910	0,10	0,51	0,02	
		0,5		0,77	11,9	20,1	34,5	0,02	11,9	20,1	51,7	895	0,10	6,8	10,0	21,7	895	0,10	0,65	0,46	
		1		1,57	16,1	21,3	23,8	0,03	16,1	21,3	35,6	860	0,10	9,3	10,6	15,0	860	0,10	0,78	0,72	
		2	2	3,13	16,1	21,3	23,8	0,03	16,1	21,3	35,6	740	0,10	9,3	10,6	15,0	740	0,10	0,86	0,84	
RVR	16 x	0,5	1	0,58	14,3	26,7	40,8	0,02	14,3	26,7	61,2	1020	0,15	8,2	13,3	25,7	1020	0,15	0,58	0,29	
		1		1,17	19,4	28,2	28,2	0,03	19,4	28,2	42,3	990	0,15	11,1	14,1	17,8	990	0,15	0,73	0,63	
		2	2	2,33	19,4	28,2	28,2	0,03	19,4	28,2	42,3	895	0,15	11,1	14,1	17,8	895	0,15	0,83	0,80	
RVR	20 x	0,5	1	0,46	19,5	45,5	53,6	0,02	19,5	45,5	80,5	1090	0,20	11,2	22,7	33,8	1090	0,20	0,53	0,11	
		1		0,93	27,1	49,7	37,5	0,03	27,1	49,7	56,3	1070	0,20	15,6	24,8	23,7	1070	0,20	0,69	0,55	
		2	2	1,86	27,1	49,7	37,5	0,03	27,1	49,7	56,3	995	0,20	15,6	24,8	23,7	995	0,20	0,80	0,76	
RVR	25 x	1	1	0,74	39,7	85,2	48,3	0,03	39,7	85,2	72,5	1295	0,30	22,8	42,6	30,4	1295	0,30	0,64	0,44	
		2	2	1,48	39,7	85,2	48,3	0,03	39,7	85,2	72,5	1228	0,30	22,8	42,6	30,4	1228	0,30	0,77	0,70	
RVR	32 x	1	1	0,58	60,8	148,9	61,0	0,03	60,8	148,9	91,6	1698	0,50	34,9	74,4	38,4	1698	0,50	0,58	0,29	
		2	2	1,15	60,8	148,9	61,0	0,03	60,8	148,9	91,6	1635	0,50	34,9	74,4	38,4	1635	0,50	0,73	0,63	
		4		2,33	73,5	144,7	42,6	0,03	73,5	144,7	63,9	1493	0,50	42,2	72,4	26,8	1493	0,50	0,83	0,80	
RVR	36 x	1	1	0,51	73,8	180,5	64,1	0,03	73,8	180,5	96,2	1815	0,60	42,4	90,2	40,4	1815	0,60	0,56	0,20	
		2		1,03	86,5	171,5	44,2	0,03	86,5	171,5	66,3	1775	0,60	49,7	85,7	27,9	1775	0,60	0,71	0,59	
RVR	40 x	1	1	0,46	79,8	206,9	69,5	0,03	79,8	206,9	104,3	1908	0,70	45,8	103,5	43,8	1908	0,70	0,53	0,11	
		2	2	0,92	79,8	206,9	69,5	0,03	79,8	206,9	104,3	1857	0,70	45,8	103,5	43,8	1857	0,70	0,69	0,54	
		4		1,86	97,3	199,0	47,7	0,03	97,3	199,0	71,5	1740	0,70	55,9	99,5	30,0	1740	0,70	0,80	0,76	

*Axis clearance can be reduced upon request.

P : Lead (stroke per revolution)
D : Reference diameter

N : Number of screw heads
Ca: Dynamic load
C0a: Static load

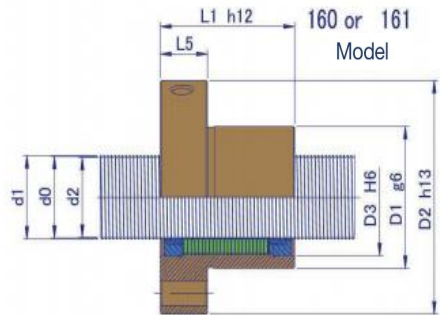
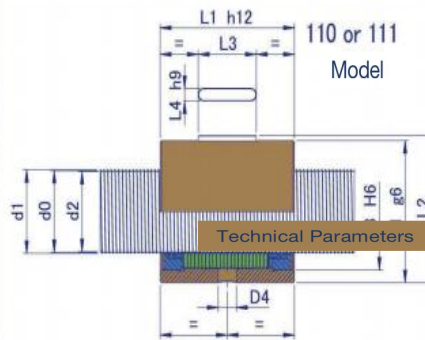
Fk: Stiffness coefficient
Fv: Preload force
Mv: Preload torque



Model			Screw			Nut															
																No oil scraper	With oil scraper				
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
	D x P		Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4		Ø D5	Ø D7	L1		L2	L3	L4	L5	L6		
RVR	8 x	0,25	8	7,91	7,80	20	43	17,0	5	M5	4,8	33	31	41	20,8	10	2	13	22		
		0,5		7,82	7,60																
		1		7,63	7,19																
		2		7,63	7,19																
RVR	10 x	0,25	10	9,91	9,80	22	43	18,5	5	M5	4,8	33	31	41	22,8	12	2	13	24		
		0,5		9,82	9,60																
		1		9,63	9,19																
		2		9,63	9,19																
RVR	12 x	0,25	12	11,91	11,80	24	46	20	5	M5	4,8	36	31	41	24,8	12	2	13	26		
		0,5		11,82	11,60																
		1		11,63	11,19																
		2		11,63	11,19																
RVR	16 x	0,5	16	15,82	15,60	29	51	25	5	M6	4,8	41	31	41	30,2	12	3	13	31		
		1		15,63	15,19																
		2		15,63	15,19																
RVR	20 x	0,5	20	19,82	19,60	34	58	28	5	M6	5,8	46	37	47	35,2	16	3	18	36		
		1		19,63	19,19																
		2		19,63	19,19																
RVR	25 x	1	25	24,63	24,19	42	68	36	5	M6	5,8	56	44	54	43,5	20	4	18	44		
		2		24,63	24,19																
RVR	32 x	1	32	31,63	31,19	53	83	46	5	M6	7,0	70	55	67	55,2	20	4	20	55		
		2		31,63	31,19																
		4		31,26	30,38																
RVR	36 x	1	36	35,63	35,19	61	90	53	5	M6	9,0	75	62	75	63,7	28	6	17	63		
		2		35,26	34,38																
RVR	40 x	1	40	39,63	39,19	70	104	58	5	M6	9,0	85	66	80	72,7	28	6	26	72		
		2		39,63	39,19																
		4		39,26	38,38																

P : Lead (stroke per revolution) d0 : Nominal diameter d1: Screw outer diameter
 D : Reference diameter d2: Screw root diameter

RVR series-Planetary roller screw-circulating type

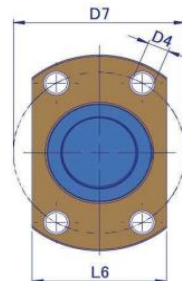
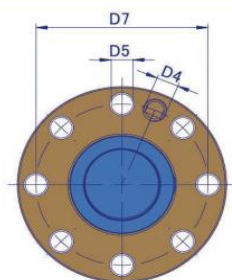
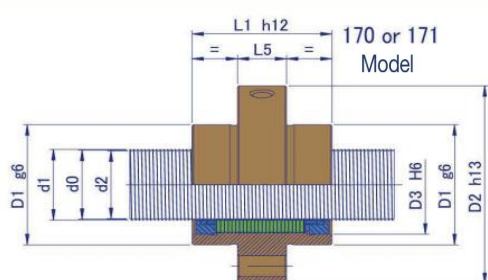


				技术参数																		
Model				[°]	Single nut				Double nut					Preload nut					Forward rotation efficiency	Inversion efficiency		
	D x P	N	Helix angle		Ca	C0a	Fk	Axial clearance*	Ca	C0a	Fk	Fv	Mv	Ca	C0a	Fk	Fv	Mv				
					[kN]	[kN]	[N2/3μm]		[kN]	[kN]	[N2/3μm]	[N]	[Nm]	[kN]	[kN]	[N2/3μm]	[N]	[Nm]				
RVR	50 x	1	1	0.37	134,1	410,4	93,6	0,03	134,1	410,4	140,3	1969	0,90	77,0	205,2	58,9	1969	0,90	0,52	0,06		
		2		0.73	139,9	424,4	94,6	0,03	134,1	410,4	140,3	1930	0,90	80,3	212,2	59,6	1930	0,90	0,64	0,44		
		3	2	1,11	160,0	429,0	76,9	0,03	160,0	429,0	115,4	1888	0,90	91,9	214,5	48,5	1888	0,90	0,72	0,62		
		4		1,48	168,2	407,6	64,7	0,03	168,2	407,6	97,1	1842	0,90	96,6	203,8	40,8	1842	0,90	0,77	0,70		
RVR	63 x	2	1	0.59	219,6	563,0	73,6	0,03	219,6	563,0	110,4	2068	1,20	126,1	281,5	46,3	2068	1,20	0,59	0,30		
		3		0.88	241,4	534,1	58,2	0,03	241,4	534,1	87,3	2043	1,20	138,7	267,0	36,7	2043	1,20	0,68	0,53		
		4	2	1,17	219,6	563,0	73,6	0,03	219,6	563,0	110,4	1990	1,20	126,1	281,5	46,3	1990	1,20	0,73	0,64		
RVR	80 x	2	1	0.46	374,6	1393,4	115,8	0,05	374,6	1393,4	173,7	/	/	215,2	696,7	73,0	/	/	0,53	0,11		
		3		0.69	414,2	1361,1	93,4	0,05	414,2	1361,1	140,0	/	/	237,9	680,5	58,8	/	/	0,63	0,40		
		4		0.93	440,6	1326,1	80,5	0,05	440,6	1326,1	120,7	/	/	253,0	663,1	50,7	/	/	0,69	0,55		
RVR	100 x	3	1	0.55	512,0	1576,5	93,8	0,05	512,0	1576,5	140,7	/	/	294,0	788,3	59,1	/	/	0,57	0,26		
		4		0.74	523,3	1548,0	80,4	0,05	523,3	1548,0	120,5	/	/	300,6	774,0	50,6	/	/	0,64	0,44		
		5		0.93	527,5	1519,6	71,3	0,05	527,5	1519,6	106,9	/	/	302,9	759,8	44,9	/	/	0,69	0,55		
RVR	125 x	5	1	0.74	986,0	3972,5	111,5	0,05	986,0	3972,5	167,2	/	/	566,3	1986,2	70,2	/	/	0,64	0,44		

P : Lead (stroke per revolution)
D : Reference diameter

N : Number of screw heads
Ca: Dynamic load
C0a: Static load

Fk: Stiffness coefficient
Fv: Preload force
Mv: Preload torque



Model	D x P		Screw			Nut													
			[mm]	[mm]	[mm]														
			Ø d1	Ø d0	Ø d2	Ø D1	Ø D2	Ø D3	D4	Ø D5	Ø D7	L1		L2	L3	L4	L5	L6	
RVR	50 x	1	50	49,63	49,19	82	124	74	8	M6	11,0	102	85	101	84,7	32	6	28	84
		2		49,63	49,19														
		3		49,45	48,79														
		4		49,26	48,38														
RVR	63 x	2	63	62,26	61,38	102	148	94	8	M8 x 1	13,5	127	110	124	104,7	40	6	32	104
		3		61,89	60,57														
		4		62,26	61,38														
RVR	80 x	2	80	79,26	78,38	140	198	115	10	M8 x 1	17,5	170	175	189	141,7	50	10	35	140
		3		78,89	77,57														
		4		78,52	76,76														
RVR	100 x	3	100	98,89	97,57	174	238	146	10	M8 x 1	17,5	210	180	196	173,7	56	12	40	172
		4		98,52	96,76														
		5		98,15	95,95														
RVR	125 x	5	125	123,15	120,95	220	310	188	15	M10 x 1	20,0	270	262	282	223	100	12	55	225

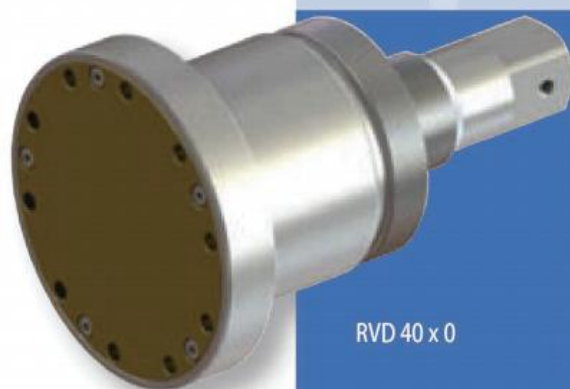
P : Lead (stroke per revolution) d0 : Nominal diameter d1: Screw outer diameter
D : Reference diameter d2: Screw root diameter



RVD 42 x 0.1



RVD 60 x 0.6

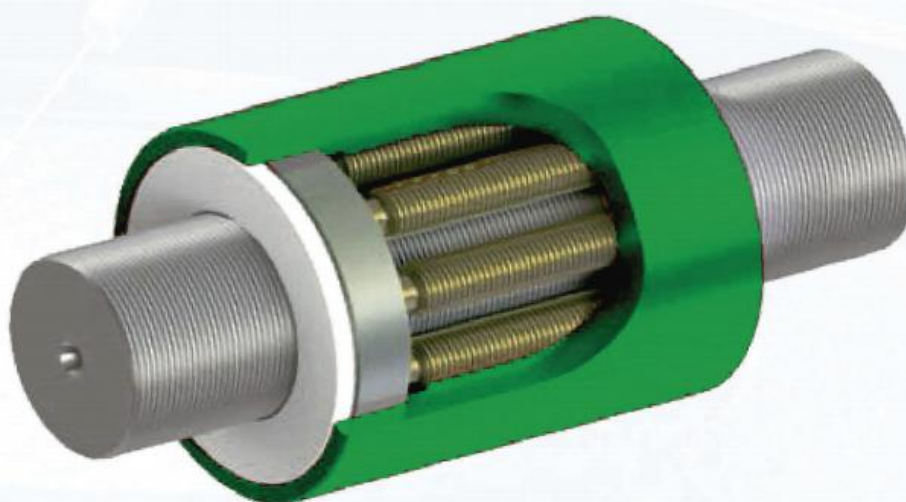


RVD 40 x 0

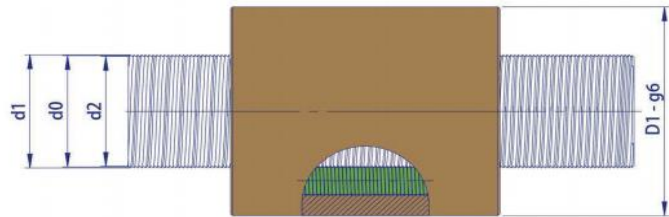
RVD Series - Differential Planetary Roller Screw



	Size	Page count
	RVD 12 / 15 / 18	60
	RVD 21/ 24 / 27	61
	RVD 30 / 33	62
	RVD 36 / 39	63



RVD Series - Differential Planetary Roller Screw



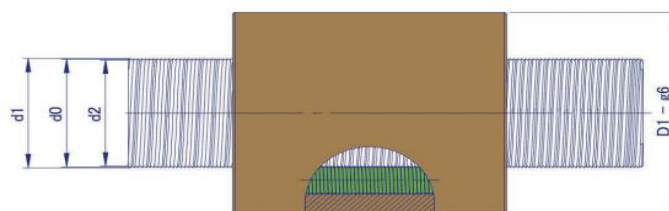
Model			Technical Parameters			Screw			Nut
			[kN]	[kN]	[N/3µm]	[mm]	[mm]	[mm]	[mm]
			D x P	Ca	C0a	Fk	Ø d1	Ø d0	Ø d2
RVD	12 x	0,05	9,0	11,1	27,4	12,14	12	11,82	26
		0,10	14,2	22,2	43,5	12,14		11,82	
		0,15	15,6	21,9	34,9	12,20		11,72	
		0,20	16,6	21,6	29,9	12,26		11,62	
		0,25	18,0	22,6	27,3	12,32		11,51	
		0,30	13,1	15,1	23,6	12,26		11,62	
		0,35	15,2	24,4	46,4	12,14		11,82	
		0,40	12,3	17,8	37,5	12,14		11,82	
		0,45	12,6	17,7	35,2	12,16		11,79	
		0,50	15,5	19,4	27,9	12,26		11,62	
RVD	15 x	0,05	12,2	16,3	32,2	15,14	15	14,82	32
		0,10	19,4	32,6	51,1	15,14		14,82	
		0,15	21,6	32,8	41,5	15,21		14,72	
		0,20	23,2	33,0	35,7	15,27		14,62	
		0,25	24,9	33,7	32,2	15,33		14,52	
		0,30	18,3	23,1	28,2	15,27		14,62	
		0,35	20,6	35,9	54,4	15,14		14,82	
		0,40	16,7	26,1	44,0	15,14		14,82	
		0,45	17,1	25,8	41,2	15,16		14,79	
		0,50	21,7	29,7	33,3	15,27		14,62	
RVD	18 x	0,05	18,7	30,1	42,4	18,14	18	17,82	36
		0,10	29,7	60,3	67,4	18,14		17,82	
		0,15	33,0	60,5	54,4	18,21		17,72	
		0,20	35,6	60,7	46,8	18,27		17,63	
		0,25	37,8	60,9	41,7	18,34		17,53	
		0,30	28,1	42,5	36,9	18,27		17,63	
		0,35	31,6	66,3	71,8	18,14		17,82	
		0,40	25,6	48,2	58,1	18,14		17,82	
		0,45	26,3	47,8	54,1	18,16		17,80	
		0,50	33,2	54,6	43,7	18,27		17,63	

P : Lead (stroke per revolution)
D : Reference diameter
C0a: Static load

d0 : Nominal diameter
d2: Screw root diameter
Fk: Stiffness coefficient

d1: Screw outer diameter
Ca: Dynamic load
D1: Minimum outer diameter

RVD Series - Differential Planetary Roller Screw



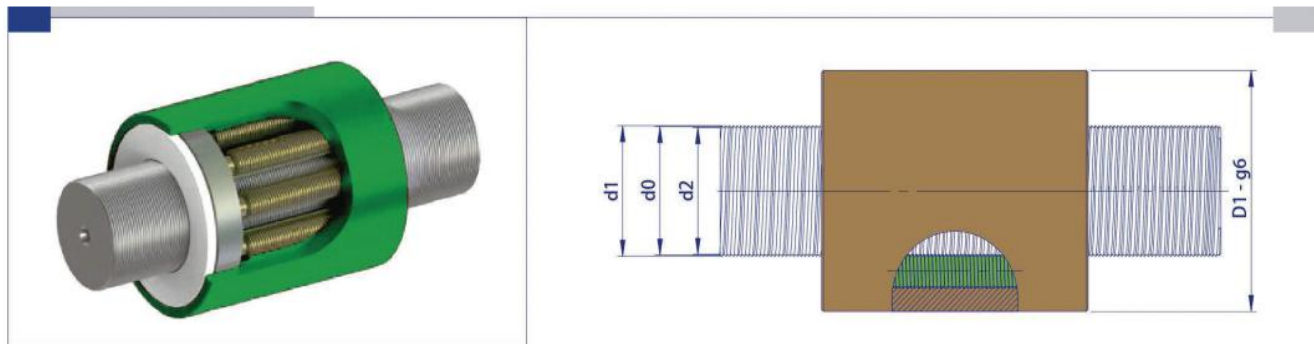
Model			Technical Parameters			Screw			Nut
			[N]	[N]	[N2/3µm]	[mm]	[mm]	[mm]	[mm]
D x P			Ca	C0a	Fk	Ø d1	Ø d0	Ø d2	Ø D 1
RVD	21 x	0,05	25,7	46,9	51,8	21,14	21	20,82	41
		0,10	40,8	93,7	82,2	21,14		20,82	
		0,15	45,1	93,1	65,7	21,21		20,73	
		0,20	48,4	92,5	56,5	21,28		20,63	
		0,25	52,2	95,3	50,9	21,34		20,53	
		0,30	38,2	64,8	44,6	21,28		20,63	
		0,35	43,4	103,1	87,6	21,14		20,82	
		0,40	35,1	75,0	70,9	21,14		20,82	
		0,45	36,0	74,4	66,2	21,16		20,80	
		0,50	45,1	83,3	52,7	21,28		20,63	
RVD	24 x	0,05	35,1	73,0	63,3	24,14	24	23,82	46
		0,10	55,7	146,0	100,5	24,14		23,82	
		0,15	61,5	144,3	80,0	24,21		23,73	
		0,20	66,9	146,6	69,5	24,28		23,63	
		0,25	70,9	146,8	61,9	24,34		23,53	
		0,30	52,8	102,6	54,8	24,28		23,63	
		0,35	59,4	160,6	107,1	24,14		23,82	
		0,40	48,0	116,8	86,6	24,14		23,82	
		0,45	49,1	115,3	80,8	24,16		23,80	
		0,50	62,4	131,9	64,8	24,28		23,63	
RVD	27 x	0,05	38,7	80,7	65,6	27,14	27	26,82	53
		0,10	61,5	161,4	104,1	27,14		26,82	
		0,15	68,4	161,7	83,8	27,21		26,73	
		0,20	73,8	162,0	71,9	27,28		26,63	
		0,25	78,6	163,4	64,4	27,35		26,54	
		0,30	58,2	113,4	56,7	27,28		26,63	
		0,35	65,5	177,5	110,9	27,14		26,82	
		0,40	53,0	129,1	89,7	27,14		26,82	
		0,45	54,8	129,8	84,6	27,16		26,80	
		0,50	68,8	145,8	67,0	27,28		26,63	

P : Lead (stroke per revolution)
D : Reference diameter
C0a: Static load

d0 : Nominal diameter
d2: Screw root diameter
Fk: Stiffness coefficient

d1: Screw outer diameter
Ca: Dynamic load
D1: Minimum outer diameter

RVD Series - Differential Planetary Roller Screw



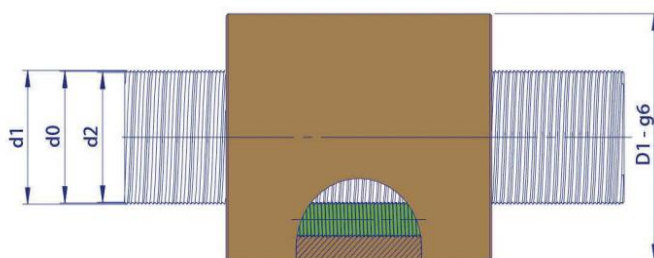
			Technical Parameters			Screw			Nut
			[kN]	[kN]	[N2/3µm]	[mm]	[mm]	[mm]	[mm]
Model	D x P		Ca	C0a	Fk	Ø d1	Ø d0	Ø d2	Ø D1
RVD	30 x	0,05	46,8	104,1	73,6	30,14	30	29,82	60
		0,10	74,3	208,2	116,8	30,14		29,82	
		0,15	82,7	208,5	94,0	30,21		29,73	
		0,20	88,5	206,4	79,8	30,28		29,64	
		0,25	94,9	210,4	71,9	30,35		29,54	
		0,30	69,8	144,5	62,9	30,28		29,64	
		0,35	79,1	229,0	124,5	30,14		29,82	
		0,40	64,0	166,5	100,7	30,14		29,82	
		0,45	66,0	166,6	94,3	30,16		29,80	
		0,50	82,5	185,7	74,4	30,28		29,64	
RVD	33 x	0,05	42,7	84,3	66,3	33,15	33	32,82	67
		0,10	67,8	168,6	105,2	33,15		32,82	
		0,15	75,8	170,2	84,9	33,22		32,73	
		0,20	80,7	166,8	71,7	33,28		32,64	
		0,25	86,7	171,0	64,5	33,35		32,54	
		0,30	63,6	116,8	56,5	33,28		32,64	
		0,35	72,2	185,4	112,1	33,15		32,82	
		0,40	58,4	134,9	90,7	33,15		32,82	
		0,45	60,1	134,4	84,9	33,16		32,80	
		0,50	75,2	150,1	66,8	33,28		32,64	

P : Lead (stroke per revolution)
D : Reference diameter
C0a: Static load

d0 : Nominal diameter
d2: Screw root diameter
Fk: Stiffness coefficient

d1: Screw outer diameter
Ca: Dynamic load
D1: Minimum outer diameter

RVD Series - Differential Planetary Roller Screw



RVD Series

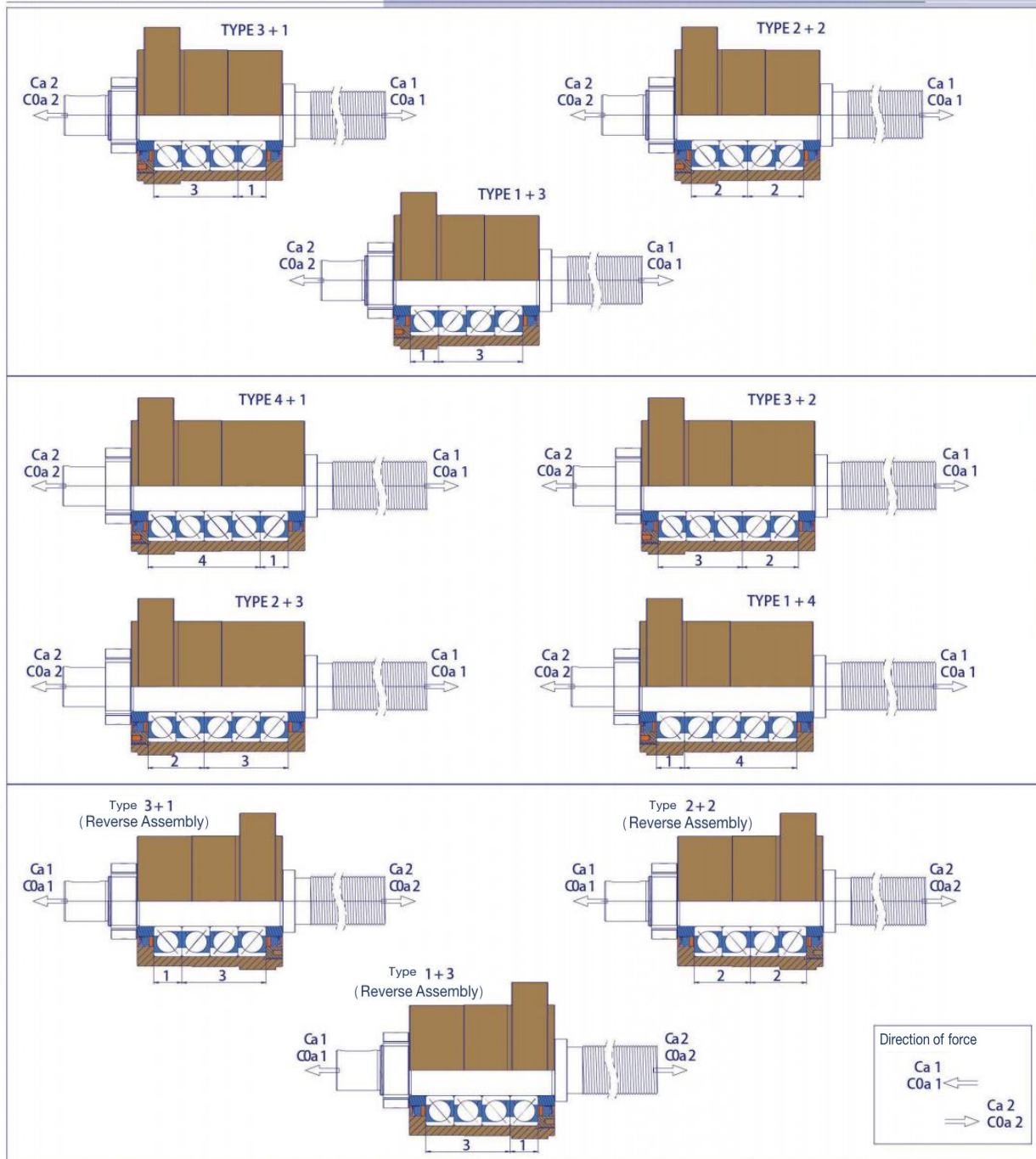
Model		Technical Parameters				Screw			Nut
		[kN]	[kN]	[N2/3μm]				[mm]	
		D x P	Ca	C0a	Fk	Ø d1	Ø d0	Ø d2	Ø D1
RVD	36 x	0,05	45,4	88,3	67,4	36,15	36	35,82	74
		0,10	72,0	176,6	107,1	36,15		35,82	
		0,15	80,5	178,3	86,4	36,22		35,73	
		0,20	85,7	174,7	73,1	36,29		35,64	
		0,25	92,1	179,2	65,5	36,35		35,54	
		0,30	67,6	122,3	57,7	36,29		35,64	
		0,35	76,7	194,2	114,1	36,15		35,82	
		0,40	62,1	141,2	92,3	36,15		35,82	
		0,45	63,9	140,8	86,5	36,16		35,80	
		0,50	79,9	157,3	68,2	36,29		35,64	
RVD	39 x	0,05	67,2	164,4	89,5	39,15	39	38,82	82
		0,10	106,7	328,9	142,1	39,15		38,82	
		0,15	118,1	326,2	113,4	39,22		38,73	
		0,20	127,4	326,6	97,5	39,29		38,64	
		0,25	136,0	330,2	86,4	39,35		38,54	
		0,30	100,5	228,6	76,9	39,29		38,64	
		0,35	113,7	361,8	151,4	39,15		38,82	
		0,40	92,0	263,1	122,5	39,15		38,82	
		0,45	94,3	260,7	114,6	39,16		38,80	
		0,50	118,8	293,9	90,9	39,29		38,64	

P : Lead (stroke per revolution)
D : Reference diameter
C0a: Static load

d0 : Nominal diameter
d2: Screw root diameter
Fk: Stiffness coefficient

d1: Screw outer diameter
Ca: Dynamic load
D1: Minimum outer diameter

Planetary Screw Bearing - Standard Type



Rated Fatigue Life of Bearings under Axial Load:

$$L_{10} = \left(\frac{C_a}{F_{ma}} \right)^3 \text{ RPM} \quad \text{and} \quad L_{10} = \frac{L_{10}}{n_m \cdot 60} [h]$$

The rated fatigue life of bearings:

All bearing units achieve optimal support state through preloading. When axial loads are applied in two different directions, the bearing unit life calculation depends on the equivalent average axial load, f_m (considering preloading force), and the equivalent dynamic load capacity of each set of bearings assembled in the same direction. Therefore, by utilizing two life values, $L_{10}(1)$ and $L_{10}(2)$ (in revolutions), we can calculate the overall bearing unit life.

$$L_{10(1)} = \left(\frac{C_{a1}}{F_{ma(1)}} \right)^3 \cdot 10^6 \text{ RPM} \quad L_{10(2)} = \left(\frac{C_{a2}}{F_{ma(2)}} \right)^3 \cdot 10^6 \text{ RPM} \quad L_{10} = \left(L_{10(1)}^{-10/9} + L_{10(2)}^{-10/9} \right)^{-9/10} \text{ RPM}$$

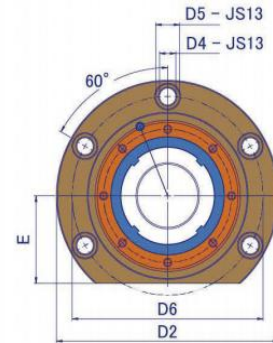
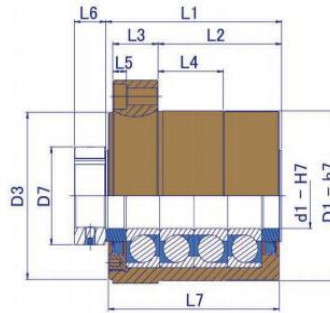
BU bearingPlanetary Screw Bearing



Model		Page count
●	BU 1 / 2 / 3 / 4 / 5 / 6 / 6L / 7 / 7L	66
●	BU 8 / 8L / 9 / 9XL	67
●	Shaft end size	68

BU bearing

BU bearingPlanetary Screw Bearing



Housing		Bearing arrangement	Size																Equivalent Rated Axial Load				
Model	n°		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[Nm]
			Model	Ø 11	Ø D 1	Ø D 2	Ø D 3	Ø D 4	Ø D 5	Ø D 6	Ø D 7	L 1	L 2	L 3	L 4	L 5	L 6	L 7	E	Load force*depends on the direction of the load			
BU	1	1 + 1	12	47	77	47	6,6	11	63	22	42	25	12	10	2	8	40	27	13,0	13,7	13,0	13,7	15
BU	2	1 + 1	17	60	92	57	6,6	11	76	28	46	32	12	15	2	10	44	32	24,9	27,7	24,9	27,7	22
BU	3	1 + 3	20	60	92	58	9	14	74	38	77	60	15	27	2	20	74	32	24,6	30,0	53,0	90,0	27
		2 + 2																	39,9	60,0	39,9	60,0	
		3 + 1																	53,0	90,0	24,6	30,0	
BU	4	1 + 3	25	80	122	74	11	17	100	45	89	68	19	33	3	20	86	44	49,1	60,8	106,0	182,3	38
		2 + 2																	79,8	121,5	79,8	121,5	
																			106,0	182,3	49,1	60,8	
BU	5	1 + 3	35	100	144	94	13	19	120	58	110	82	25	42	5	22	106	54	75,4	105,8	162,8	317,3	65
		2 + 2																	122,6	211,5	122,6	211,5	
		3 + 1																	162,8	317,3	75,4	105,8	
BU	6	1 + 3	50	130	177	128	13	19	152	75	140	98,5	36	52	11	25	136	67	131,6	192,3	283,9	576,9	110
		2 + 2																	213,8	384,6	213,8	384,6	
		3 + 1																	283,9	576,9	131,6	192,3	
	6L	1 + 4									167	125,5	163	131,6	192,3	347,2	769,2						
		2 + 3												213,8	384,6	283,9	576,9						
		3 + 2												283,9	576,9	213,8	384,6						
		4 + 1												347,2	769,2	131,6	192,3						
BU	7	1 + 3	65	170	230	164	17	25	198	105	180	133,5	41	50	11	32	175	87	193,0	315,4	416,4	946,2	200
		2 + 2																	313,5	630,8	313,5	630,8	
		3 + 1																	416,4	946,2	193,0	315,4	
	7L	1 + 4									213	166,5	208	193,0	315,4	509,3	1261,5						
		2 + 3												313,5	630,8	416,4	946,2						
		3 + 2												416,4	946,2	313,5	630,8						
		4 + 1												509,3	1261,5	193,0	315,4						

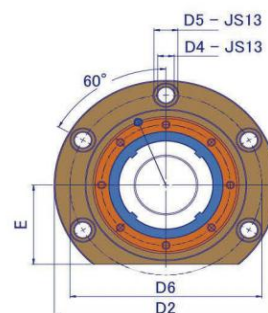
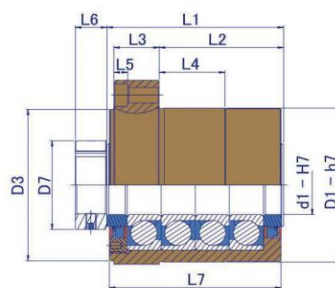
*Please refer to page 64 for the types of bearing arrangements.

Ca: Dynamic load

C0a: Static load

Mv: Torque for precision nut installation

BU bearingPlanetary Screw Bearing



Housing		Bearing arrangement	Size															Equivalent Rated Axial Load					
Model	n°		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[Nm]
			Model	Ø d1	Ø D1	Ø D2	Ø D3	Ø D4	Ø D5	Ø D6	Ø D7	L1	L2	L3	L4	L5	L6	L7	E	Load force*depends on the direction of the load			
BU	8	1 + 3	90	220	292	215	22	32	252	130	235	179	48	94	13	38	229	115	Ca 1	COa 1	Ca 2	COa 2	300
		2 + 2																	315,8	596,2	681,4	1 788,5	
		3 + 1									513,0	1 192,3					513,0		1 192,3				
	8L	1 + 4									315,8	596,2					833,4		2 384,6				
		2 + 3									513,0	1 192,3					681,4		1 788,5				
		3 + 2									681,4	1 788,5					513,0		1 192,3				
		4 + 1									833,4	2 384,6					315,8		596,2				
BU	9	1 + 3	100	250	330	240	25	38	285	140	253	195	50	109	14	38	245	130	375,4	757,7	810,1	2 273,1	400
		2 + 2																	609,9	1 515,4	609,9	1 515,4	
		3 + 1									810,1	2 273,1					375,4		757,7				
	9XL	1 + 5									375,4	757,7					1 158,3		3 788,5				
		2 + 4									609,9	1 515,4					990,8		3 030,8				
		3 + 3									810,1	2 273,1					810,1		2 273,1				
		4 + 2									990,8	3 030,8					609,9		1 515,4				
		5 + 1									1 158,3	3 788,5					375,4		757,7				

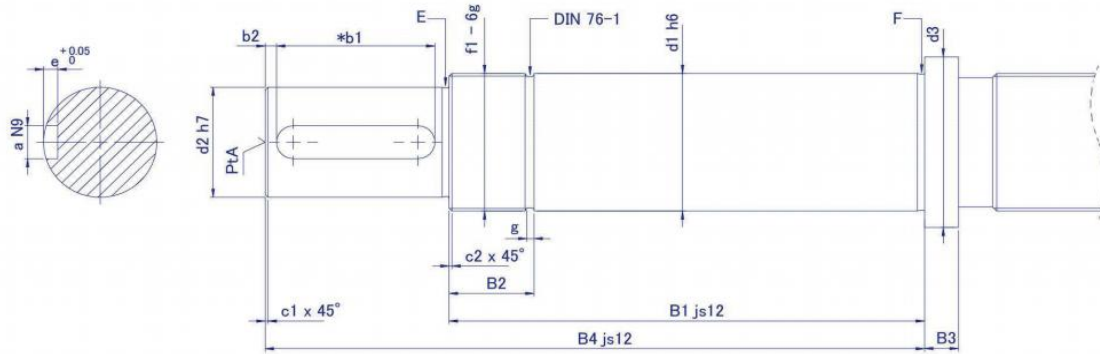
*Please refer to page 64 for the types of bearing arrangements.

Ca: Dynamic load

C0a: Static load

Mv: Torque for precision nut installation

BU bearingPlanetary Screw Bearing



Housing		Shaft end size																
Model	n°	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
		Ø d1	Ø d2	Ø d3	B1	B2	B3	B4	Ø f1	c1	c2	g	E	F	b1	b2	a	e
BU	1	12	10	17	51	10	5	71	M12 x 1	0,5	0,7	1,5	0,4 x 0,2	0,4 x 0,3	16	1,5	3	1,8
BU	2	17	15	23	66	21	5	96	M17 x 1	0,5	0,7	1,5	0,6 x 0,2	0,6 x 0,2	25	2	5	3
BU	3	20	17	27	98	22	7	138	M20 x 1	0,5	0,7	1,5	0,6 x 0,2	0,6 x 0,2	32	3	5	3
BU	4	25	20	34	111	24	7	156	M25 x 1,5	0,5	1	2,5	0,6 x 0,2	0,6 x 0,2	40	2,5	6	3,5
BU	5	35	30	45	134	26	10	189	M35 x 1,5	1	1	2,5	0,6 x 0,2	0,6 x 0,2	45	2,5	8	4
BU	6	50	40	62	168	30	12	233	M50 x 1,5	1	1	2,5	0,8 x 0,3	0,8 x 0,3	56	4	12	5
	6L				195			260										
BU	7	65	60	78	215	37	18	315	M65 x 2	1	1,5	4	1 x 0,4	1,6 x 0,3	90	3	18	7
	7L				248			348										
BU	8	90	85	108	275	43	25	395	M90 x 2	1	1,5	4	1,6 x 0,3	1,6 x 0,3	100	8	25	9
	8L				318			438										
BU	9	100	95	120	293	43	25	433	M100 x 2	1	1,5	4	1,6 x 0,3	1,6 x 0,3	125	7	25	9
	9XL				387			527										



*The tolerance grade follows the D standard according to ISO 6885-1.

Planetary screw application examples



Unit conversion table

Length			
mm	m	Inch	Foot
1	0,001	0,0394	0,0033
1000	1	39,37	3,28
25,4	0,0254	1	0,083
304,8	0,305	12	1

Area				
m ²	cm ²	mm ²	Square inches	Square feet
1	10000	1000000	1550	10,76
0,0001	1	100	0,155	0,0011
0,000001	0,01	1	0,00155	1,076E-05
0,0006	6,45	645,2	1	0,0069
0,0929	929,03	92903	144	1

volume							
m ³	dm ³ (square)	cm ³	mm ³	in ³	ft ³	gallon (US)	fl oz
1	1000	1000000	1000000000	61 023,74	35,31	264,17	33813,7
0,001	1	1000	1000000	61,02	0,035	0,264	33,81
0,000001	0,001	1	1000	0,06	3,53E-05	0,0003	0,034
0,000000001	0,000001	0,001	1	6,1E-05	3,53E-08	2,64E-07	3,38E-05
1,64E-05	0,0164	16,387	16 387	1	0,0006	0,0043	0,5541
0,0283	28,3	28 316	28 316 846	1 728	1	7,48	957,49
0,003785	3,785	3 785	3 785 441	231,001	0,13	1	127,99
2,96	0,0296	29,57	29 573,8	1,8	0,001	0,0078	1

Load				
N	kN	T	kgf	Lbf
1	0,001	0,0001	0,102	0,225
1000	1	0,102	101,97	224,8
9806,7	9,8067	1	1000	2 204,6
9,81	0,0098	0,001	1	2,205
4,45	0,0044	0,0005	0,45	1

Torque							
Nm	Ncm	Nmm	daN.m	daN.cm	kgf.cm	in.lbf	ft.lbf
1	100	1000	0,1	10	10,197	8,85	0,7376
0,01	1	10	0,001	0,1	0,102	0,0885	0,0074
0,001	0,1	1	0,0001	0,01	0,0102	0,0089	0,0007
10	1000	10000	1	100	101,9716	88,5	7,3756
0,1	10	100	0,01	1	1,0197	0,885	0,0738
0,098	9,807	98,07	0,0098	0,98	1	0,868	0,0723
0,113	11,29	112,985	0,0113	1,129	1,152	1	0,0833
1,3558	135,58	1 355,8	0,1356	13,56	13,83	12	1

Strength		
N/mm	N/μm	lbf/in x 1E6
1	1000	5,71
0,001	1	0,0057
0,1751	175,13	1

Linear speed								
m/s	mm/s	m/min	km/h	in/s	in/min	ft/s	ft/min	mph
1	1000	60	3,6	39,37	2 362,2	3,28	196,85	2,237
0,001	1	0,06	0,0036	0,039	2,36	0,0033	0,197	0,0022
0,016	16,66	1	0,06	0,66	39,37	0,0547	3,28	0,0373
0,2778	277,77	16,66	1	10,936	656,168	0,91	54,68	0,62
0,0254	25,4	1,52	0,09	1	60	0,08	5	0,0568
0,0004	0,42	0,025	0,0015	0,0167	1	0,0014	0,083	0,0009
0,305	304,8	18,23	1,097	12	720	1	60	0,68
0,00508	5,08	0,305	0,018	0,2	12	0,0167	1	0,011
0,447	447,04	26,82	1,6	17,6	1 055,997	1,466	87,99	1

Application selection table

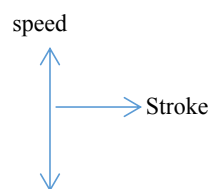
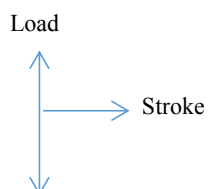
Application condition description

Usage amount:

Maximum static load:

Maximum dynamic load:

If possible, please provide a load curve:



Maximum linear motion speed

Stroke:

Screw length:

Main load:

☐ pressure

☐ pull

Rotation method:

☐ nut

☐ screw

Screw installation direction:

☐ vertical

☐ horizontal

Specific environment:

☐ Vibration

☐ Shock load

Life expectancy:

☐ Run loop:

☐ Overall time - years:

Working environment :

moisture/liquid/dust:

temperature range:

Dimensional limit requirements:

Nut/screw maximum diameter/length:

Connection size:

Motor torque:

Lubrication requirements:

Preload-axial clearance-accuracy level-strength:

Lead accuracy: ☐ G5 (23um/300mm) ☐ G3(12um/300mm) ☐ G1 (6um/300mm)

Machining tolerances (according to ISO 3408-3 standard): ☐ C5

☐ C3

☐ C1

Axial clearance : ☐ Standard

☐ No axial play

☐ Preload/stiffness

Nut type: ☐ Flange nut

☐ Cylindrical nut

☐ Double nut

☐ Non-standard nut

Screw fixing method:

fixed-free: ☐ XX—

Fixed-Support: ☐ XX— —X

Fixed-Fixed: ☐ XX— —XX

Support - support: ☐ X— — x

Other requirements and remarks or drawings:



Series

Series Motion Industry Co., Ltd

Tel&Whatsapp: +86-18655195022

E-mail:info@seriesmotionindustry.com

www.seriesmotionindustry.com

