Origin

Our Technologies Realize Your Dreams

Torque limiter V type

RoHS Compliant

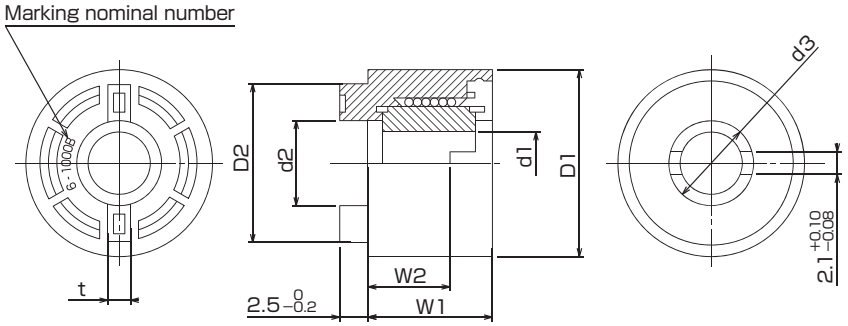
Torque limiters are also called slipping clutches, and are a mechanical component that is mainly used in the paper feed mechanisms of office equipment such as printers and photocopiers.
V-type torque limiters have a structure with a coil spring press fitted onto the outer circumference surface of an inner ring that uses the friction force between the two components to limit the torque transmitted from the input side (drive side) to the output side (follower side).

01 Specifications for the Standard Models

Naming and auxiliary symbols

Collective name	Bore	Nominal torque	Type
Torque limiter V type	**6–**	**500**	**B**
OTLV type	• **6**=Bore ϕ6 • **8**=Bore ϕ8	Example • **500**=500 gf·cm (49.0 mN·m) • **4000**=4000 gf·cm (392 mN·m)	Indicates a type of Torque limiter. • **B**=B type • **C**=C type

Dimensions



Unit=mm

Nominal Number	Dimension								Allowable rotation speed (rpm.)
						Joint prat			
	Bore $d1^{+0.10}_{+0.02}$	Outside dia D1 ±0.4	Width W1	Slot position W2	Bore of Shield $d3^{+0.20}_{0}$	Bore $d2^{+0.20}_{0}$	Outside dia $D2^{0}_{-0.2}$	Width $t^{0}_{-0.1}$	
OTLV6-□□□□B	6	18	12	8	8.4	8.2	15	2.5	400
OTLV8-□□□□B	8	20	12	8	10.4	8.2	15	2.5	400
OTLV6-□□□□C	6	20	15.5	11.5	8.4	8.2	17	4	50
OTLV8-□□□□C	8	22	15.5	11.5	10.4	8.2	17	4	50

Note) ·The four squares shown above indicate a nominal torque value for the torque limiter in the unit of gf·cm.
·Three digits may be possible when a nominal torque value is 88.2mN·m(900gf·cm) or less.

Torque ranges by type B and C

Type	Unit	Torque setting range (Standard specifications)	Standard torque value
Type B (ϕ6 or ϕ8 bore)	N·m	9.81 to 98.1 mN·m	9.81 mN·m Steps
	gf·cm	100 to 1000 gf·cm	100 gf·cm Steps
Type C (ϕ6 or ϕ8 bore)	N·m	98.1 to 392 mN·m	49.0 mN·m Steps
	gf·cm	1000 to 4000 gf·cm	500 gf·cm Steps

Note) ·Please consult us if your applications are outside of the range specified in the above table.

02 Features

1. Slips in both rotating directions
   Used for turning in both directions (clockwise and counter-clockwise).
2. Compact size and light weight
   In the case of OTLV-6B, the outer diameter is 18mm and the weight is 7.1g, which is 18% reduction from the previous model of OTLC-6B.
3. Wide torque setting range
   A standard setting torque of from 9.8 to 392 mN·m (100 to 4000gf·cm) can be supported.
   Please consult us if you require other torque volumes.
4. Used under the wide range of environmental conditions.
   Operation condition : 0℃ to +60℃, 90%RH
5. Easy to fit
   Use the straight pin or dedicated spring pin as recommended by our company to prevent rotation.
   If you are using the straight pin, it does not need to be press fitted into the axle (shaft). (It can be free fitted.)
   The slot in the inner ring prevents the pin from falling out.

03 Weight

Type		Weight(g)
Type B	φ6 bore	6.3 to 7.1
	φ8 bore	7.6 to 8.5
Type C	φ6 bore	11.3 to 13.0
	φ8 bore	13.6 to 15.2

04 Reliability

Nominal torque value		Controlled torque range on shipment	Torque fluctuation range upto 1.0×10^6
N·m	Less than 29.4 mN·m	Within ±10% of nominal torque value	Within ±15% of nominal torque value
gf·cm	Less than 300 gf·cm		
N·m	More than 29.4 mN·m	Within ±5% of nominal torque value	Within ±10% of nominal torque value
gf·cm	More than 300 gf·cm		

Note) ·Torque fluctuation range upto 1.0×10^6 rotations can only be applied when it is used within allowable speed and in ambient temperature.
· Please consult us if the total rotation exceeds 1.0×10^6 or operation temperature is lower or higher.

05 Operation Environment

Operation environment head	Operation environment
Temperature	0 to 60 ℃
Humidity	90%RH or less

Note) ·Please consult us if you use this product in the operation environment other than above.
·Since the operation environment described here is based on our experiences and testing data, it may not be applied to the products in same way under different circumstances.
For this reason, we do not guarantee that the content of this catalogue will apply to your operation condition exactly in the same way.
Please make final decision at one of your company premises before using this product.

06 Adaptable shaft

Items	Specifications of the adaptable shaft
Outer diameter	OTLV6 Bore $\phi 6\,{}^{-0.01}_{-0.03}$ OTLV8 Bore $\phi 8\,{}^{-0.01}_{-0.03}$
Material	Use steel such as SUM, SUS and SUJ-2.

07 Mounting the shaft

For the parallel pin, be sure to use one of the commercial item shown in the table below.

Bore for OTLV	Recommended Parallel Pin
$\phi 6$	Parallel pin Nominal diameter : $\phi 2$ Length : 8 mm
$\phi 8$	Parallel pin Nominal diameter : $\phi 2$ Length : 10 mm

Note) ·The above recommended pins are common for both B and C types.

When using the spring pin, be sure to use it in the dimensions shown below.

Bore for OTLV	Special Spring Pin
$\phi 6$	Special Spring pin Outer dia. : $\phi 2\,{}^{-0.1}_{-0.2}$ Length : $8.2\,{}^{0}_{-0.2}$
$\phi 8$	Special Spring pin Outer dia. : $\phi 2\,{}^{-0.1}_{-0.2}$ Length : $10.2\,{}^{0}_{-0.2}$

Note) ·The above recommended pins are common for both B and C types.
·If it is difficult to satisfy the tolerances of the length, please consult us for supplying one.

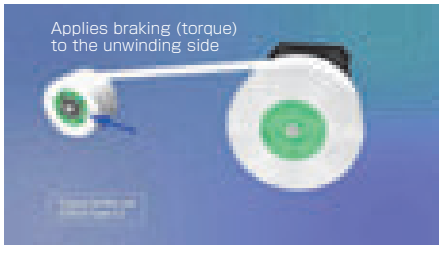
08 Cautions

Cares must be taken when mounting the Torque limiter since the torque may vary when unbalanced loads are applied in the radial and/or axial direction.

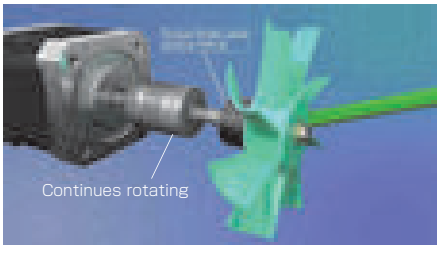
09 Before placing an order

When you place an order of Origin torque limiters, please fill the form,
"Torque Limiter Spec Check List " attached separately.

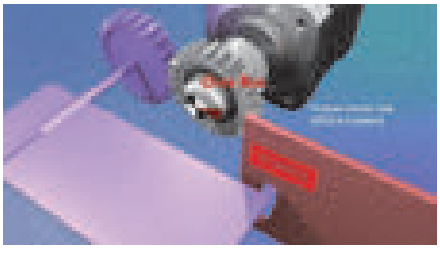
10 Example applications



⊙Maintaining tension



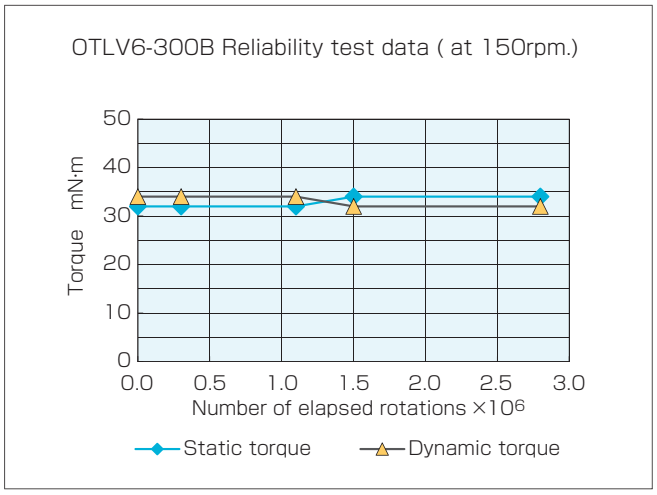
⊙Motor protection (safety mechanism)

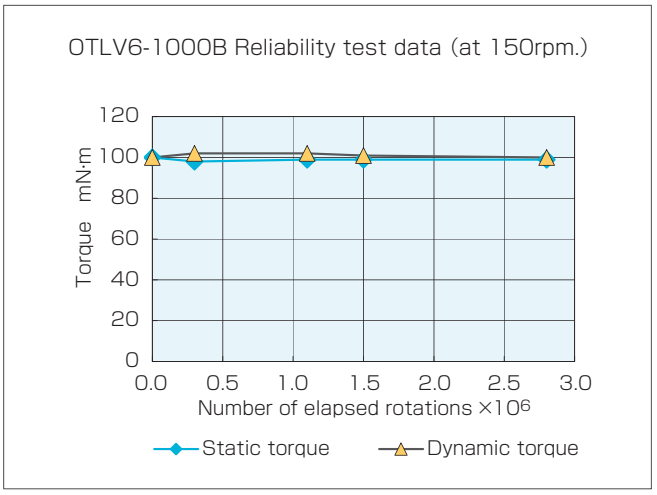


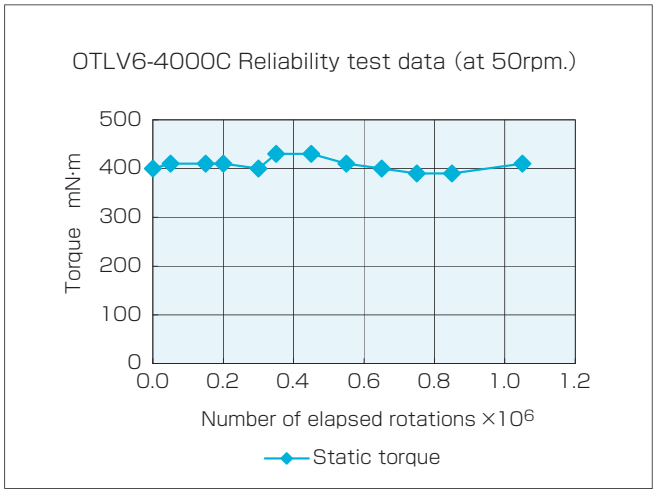
⊙Positioning (overrun)

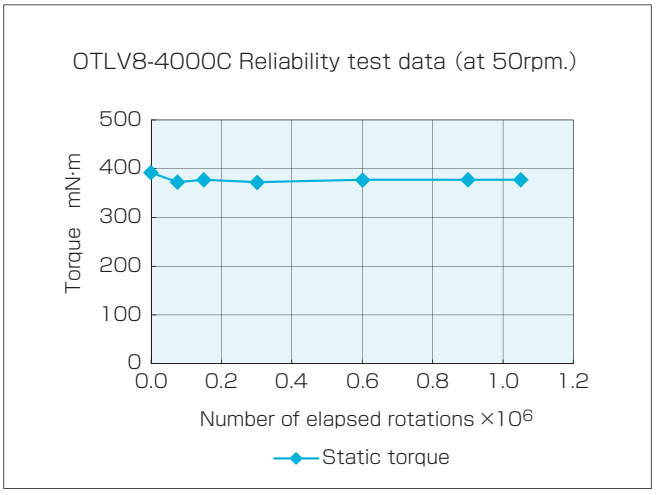
11 Reference Data

Reliability test data



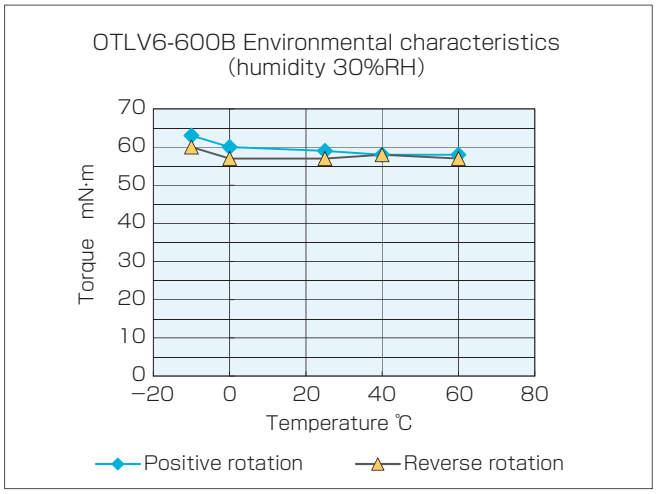


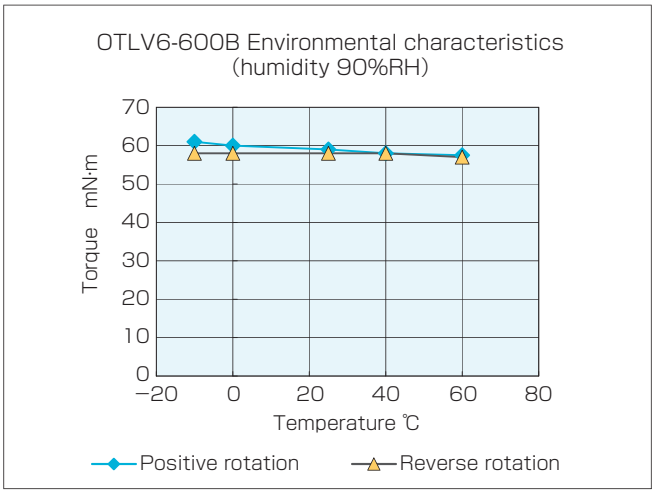




Note) ·Unbalanced or extra loads are not applied to the radial or axial direction during this tolerance test.

Environmental characteristics





Note) ·The humidity at −10℃ or 0℃ differs from that displayed.

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http://www.origin.co.jp/eng

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Safety Warning	The data presented in this catalog are for general application purposes. Do not use this product in such a way that may be harmful to people or exceed its performance.
Safety Precaution	To avoid accidents and/or failures as well as to ensure safety , do not use this product exceeding the specifications noted in this catalog and ignoring the precautions.

*Specifications are subject to change without a notice for future development.

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