

## -Features of Ball Slide Unit

1. As high precision balls run between the track set on the fixed part and that on the moving part, with each track consisting of paralleled, two linear shafts, the friction is very low, and the movement is truly light and smooth.
2. As the base and the table are made of light aluminum, the parts can move quickly for the speedy operation.
3. As balls are held in plastic retainers, and contacting area between balls and tracks is very small with no slip caused, the unit can operate lightly without any lubrication.
4. As balls and shafts are made of stainless steel, and anodic oxidation coatings are formed on the surfaces of aluminum of the base and table, anti-corrosion is effectively potent.
5. As setscrews for adjusting clearance are set in the side of the table, proper preload can be applied to the movement of the table.
6. As the unit can operate without any lubrication, and also it has effective anti-corrosion, the maintenance is not troublesome and the operation is free from causing pollution.

The damage originated by overrunning of the table beyond the tracks is not expected, for the overrunning is prevented by the stopping mechanism set inside the device.
7. As tapped holes for setting screws are located on the table and base, it is easy to set them on other machines from upward without dismantling the unit.

■omenclature of Ball Slide Unit (example)


Load Rating \& Running Life
The running life of TSK ball slide unit can be calculated by using the following formula:

$$
\begin{aligned}
& \mathrm{L}=\left(\frac{\mathrm{C} \cdot \mathrm{f}_{\mathrm{t}}}{\mathrm{f}_{s} \cdot \mathrm{f}_{\mathrm{p}} \cdot \mathrm{P}}\right)^{3} \times 50 \mathrm{~km} \quad \mathrm{~L}=\text { Rated Running Life }(\mathrm{km}) \\
& \text { C=Basic Dynamic Load Rating (N) } \\
& \mathrm{P}=\text { Working } \operatorname{Load}(\mathrm{N}) \\
& \mathrm{f}_{\mathrm{i}}=\text { Working Temperature Factor } \\
& \mathrm{r}_{\mathrm{s}}=\text { Shock \& Vibration Factor } \\
& \mathrm{f}_{\mathrm{p}}=\text { Load Factor }
\end{aligned}
$$

When the stroke length and the frequency are constant, the life span is obtained according to the following equation:

$$
\begin{array}{ll}
\mathrm{L}_{\mathrm{h}}=\left(\frac{\mathrm{L} \cdot 10^{6}}{2 \cdot \ell_{s} \cdot \mathrm{n} \cdot 60}\right) \quad \begin{array}{l}
\mathrm{L}=\text { Running Life Hours }(\mathrm{hr}) \\
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\\
\mathrm{n}=\text { Rated Running Lifeke Length }(\mathrm{mm}) \\
\mathrm{n}
\end{array}=\text { Reciprocal Numbers per Minute }
\end{array}
$$

The same basic loads from above, below or the sides. This value is somewhat lower, however, for loads from an oblique $45^{\circ}$ angle direction.

## ■Structure


$\square$ TSK Ball Slide Unit TBS Series


TBS

| Type | Code \# | ST | H | w | L | PW | PL | M× 深 | wB | нв | $\mathrm{DB} \times \mathrm{DC} \times \mathrm{HC}$ | PB | Basic Load Rating |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  | ( ${ }_{\text {c }}$ | ( C ) |
| TBS | 827 | 13 | 8 | 14.2 | 28.6 | 5.5 | 16 | M2×2.8 | 6.2 | 4.8 | $2.2 \times 4 \times 1.6$ | 19 | 29 | 58 |
|  | 852 | 25 |  |  | 53.6 |  | 41 |  |  |  |  | 35 | 49 | 117 |
|  | 877 | 50 |  |  | 78.6 |  | 66 |  |  |  |  | 60 | 58 | 166 |
|  | 1027 | 13 | 10 | 19 | 28.6 | 8.5 | 16 | M $3 \times 3.5$ | 9.6 | 6 | $3.3 \times 6 \times 3$ | 19 | 49 | 88 |
|  | 1052 | 25 |  |  | 53.6 |  | 41 |  |  |  |  | 35 | 68 | 166 |
|  | 1077 | 50 |  |  | 78.6 |  | 66 |  |  |  |  | 60 | 88 | 254 |
|  | 1340 | 15 | 13 | 25 | 42.4 | 11 | 30 | M $3 \times 4.5$ | 12.2 | 8 | $3.3 \times 6 \times 3.3$ | 30 | 117 | 246 |
|  | 1365 | 25 |  |  | 67.4 |  | 55 |  |  |  |  | 55 | 166 | 441 |
|  | 1390 | 50 |  |  | 92.4 |  | 80 |  |  |  |  | 80 | 196 | 568 |
|  | 2050 | 25 | 20 | 44 | 54.2 | 20 | 35 | M5 $\times 7$ | 22.3 | 12 | $5.3 \times 9 \times 5.3$ | 35 | 205 | 421 |
|  | 2080 | 50 |  |  | 84.2 |  | 65 |  |  |  |  | 65 | 254 | 598 |
|  | 20100 | 75 |  |  | 104.2 |  | 85 |  |  |  |  | 85 | 303 | 764 |
|  | 25100 | 50 | 25 | 66 | 105.6 | 35 | 75 | M5 $\times 7.8$ | 38 | 16 | $5.3 \times 9 \times 5.3$ | 75 | 460 | 1127 |
|  | 25125 | 75 |  |  | 130.6 |  | 100 |  |  |  |  | 100 | 499 | 1274 |
|  | 25150 | 100 |  |  | 156.5 |  | 125 |  |  |  |  | 125 | 578 | 1558 |

[^0]Basic Static Load Rating is the value in the case of load put on the middle when the center of the table comes above that of base.


[^0]:    As Basic Dynamic Load Rating is the basis for calculating the running life time, it is recommended, if smooth and high precision motion is necessary, to use the

