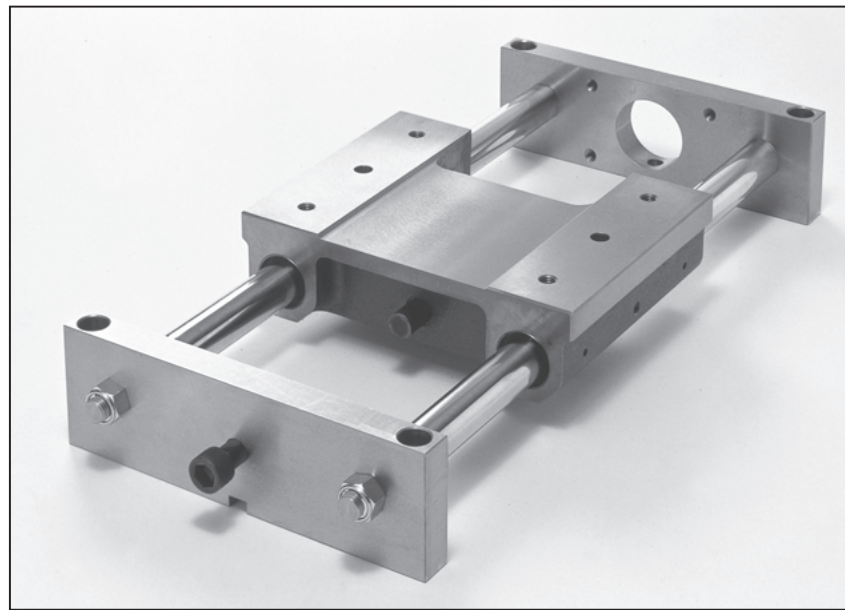


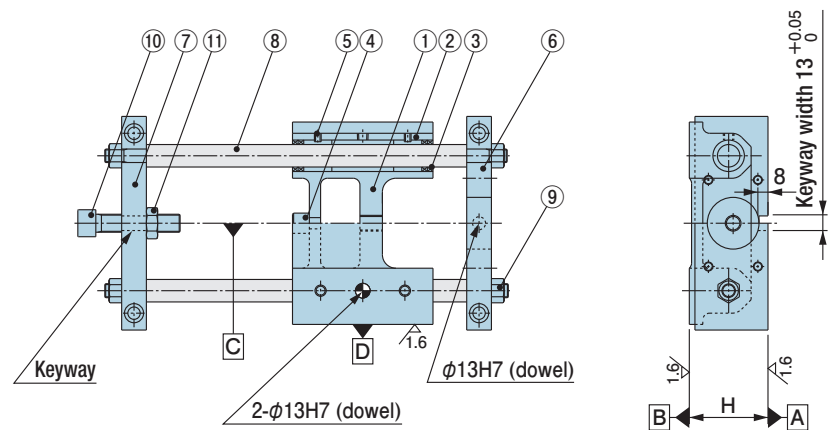
Oiles Slide Shifter BTU Type

BTU



RoHS2 ELV

Component Parts · Accuracy



Component Parts

No.	Name	Material	Qty
①	Shift table	FC250	1
②	Guide bushing	Oiles metal	4
③	Dust seal	NBR	4
④	Stopper	S45C quenched	1
⑤	Bushing fixing screw	—	4
⑥	Shaft holder A	SS400	1
⑦	Shaft holder B	SS400	1
⑧	Guide shaft	S45C+hard chrome-plated	2
⑨	Shaft fixing nut	U nut	4
⑩	Adjust bolt	S45C	1
⑪	Adjust lock nut	Plated nut	1

Accuracy

(Unit: mm)

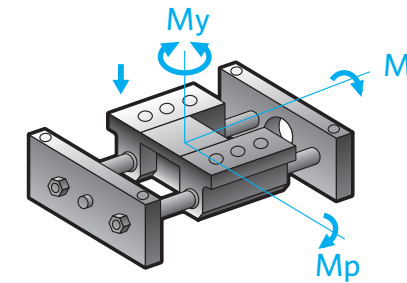
Items	Accuracy
Running parallelism of side B with respect to side A	0.05 or less/m (upright)
Running parallelism of side D with respect to side C	0.05 or less/m (upright)
Tolerance of H dimension	0 -0.1

※ Datum surface for height direction is side A.
 ※ Datum surface for axial direction is side C and dowel hole or keyway may be used as datum.

Service Range

Allowable Load, Allowable Moment

■ N {kgf} / N · m {kg · m}



※ The standard bend amount is 0.1 mm. It may be increased according to the allowable accuracy.

Part No.	Allowable load N {kgf}	Allowable moment N · m {kgf · m}			Load by stroke when the bend amount is 0.1 mm N {kgf}						
		Mp	Mr	My	50	100	150	200	250	300	350
BTU20	5,880 { 600}	190 { 19}	190 { 19}	180 { 18}	3,680 { 375}	2,160 { 220}	1,370 { 140}	932 { 95}	650 { 66}	—	—
BTU25	8,820 { 900}	330 { 34}	330 { 34}	330 { 34}	6,570 { 670}	4,020 { 410}	2,650 { 270}	1,860 { 190}	1,320 { 135}	—	—
BTU30	14,100 { 1,400}	700 { 72}	700 { 72}	670 { 68}	8,380 { 855}	5,490 { 590}	3,820 { 390}	2,750 { 280}	2,060 { 210}	1,570 { 160}	—
BTU40	23,500 { 2,400}	1,470 { 150}	1,470 { 150}	1,180 { 120}	16,800 { 1,710}	11,700 { 1,190}	8,430 { 860}	6,330 { 645}	4,850 { 495}	3,820 { 390}	2,990 { 305}

Allowable Velocity

Lubrication conditions	Allowable velocity
Dry (Greasing for initial mounting)	0.5m/s {30m/min}
Apply lubrication every 10 km of sliding	1.0m/s {60m/min}

※ Greasing is needed if the stroke is 1 meter or more or the allowable wear amount is small.

Seal Friction Fs

Part No.	BTU20	BTU25	BTU30	BTU40
Fs	9.8N {1.0kgf}	11.8N {1.2kgf}	11.8N {1.2kgf}	14.7N {1.5kgf}

Product Identification for Ordering

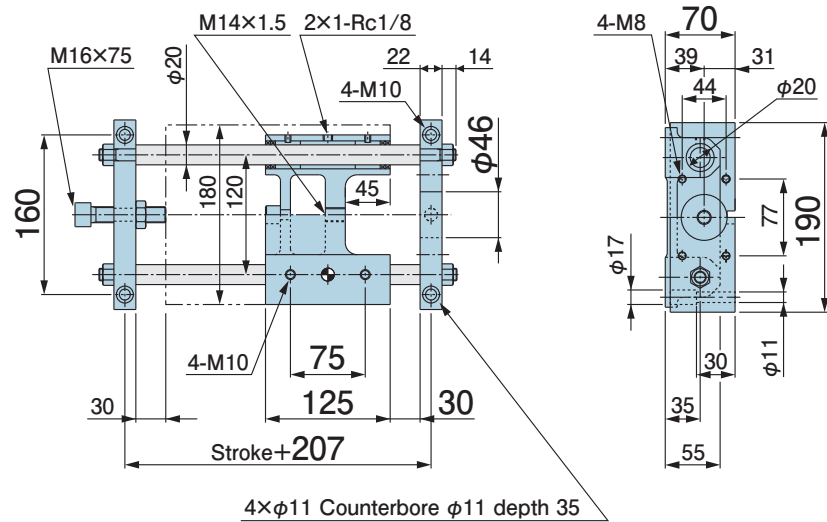
BTU Shaft diameter - Stroke
Part No.

(e.g.) Shaft diameter is 20mm,
stroke is 200mm with air cylinder.

BTU20-200-AC

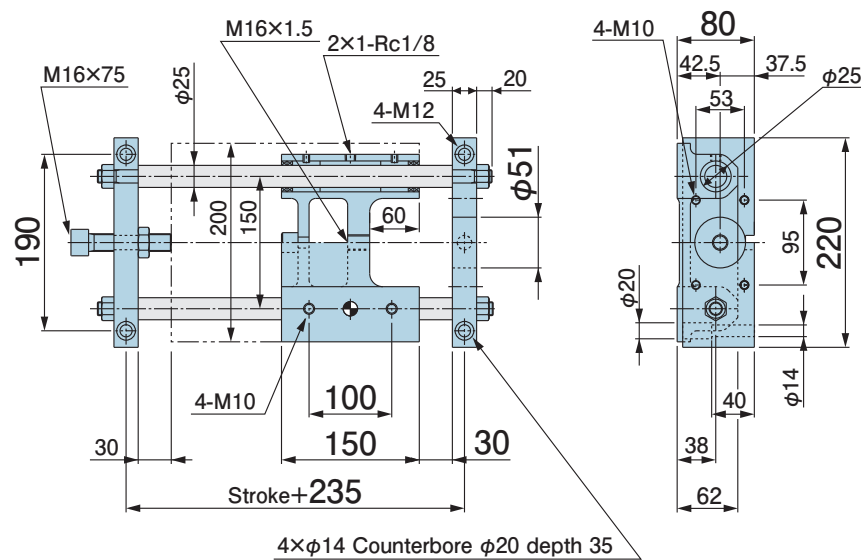
Dimension Table

■ **BTU20** Applicable cylinder: Tube I.D. of $\phi 40$



Part No.	Stroke S
BTU20-50	50
BTU20-100	100
BTU20-150	150
BTU20-200	200
BTU20-250	250

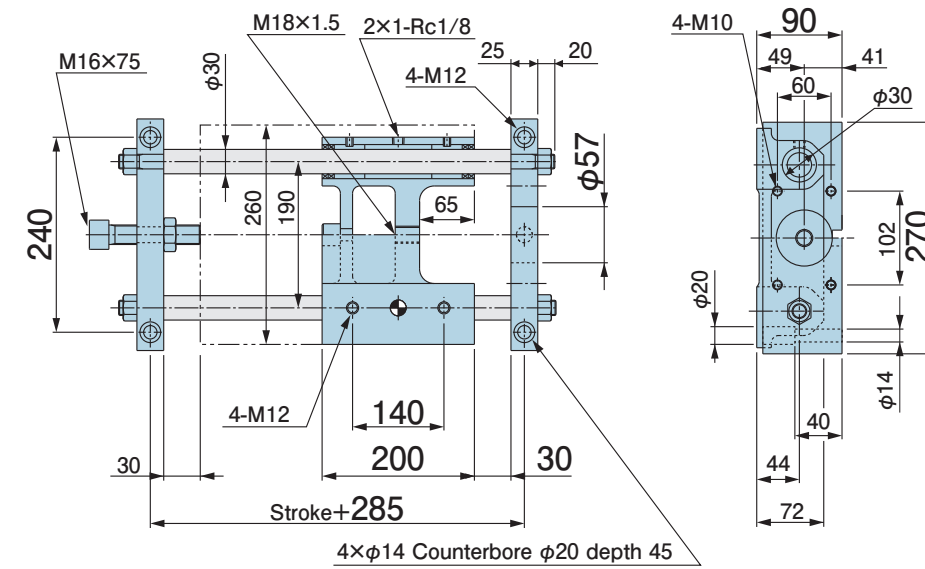
■ **BTU25** Applicable cylinder: Tube I.D. of $\phi 50$



Part No.	Stroke S
BTU25-50	50
BTU25-100	100
BTU25-150	150
BTU25-200	200
BTU25-250	250

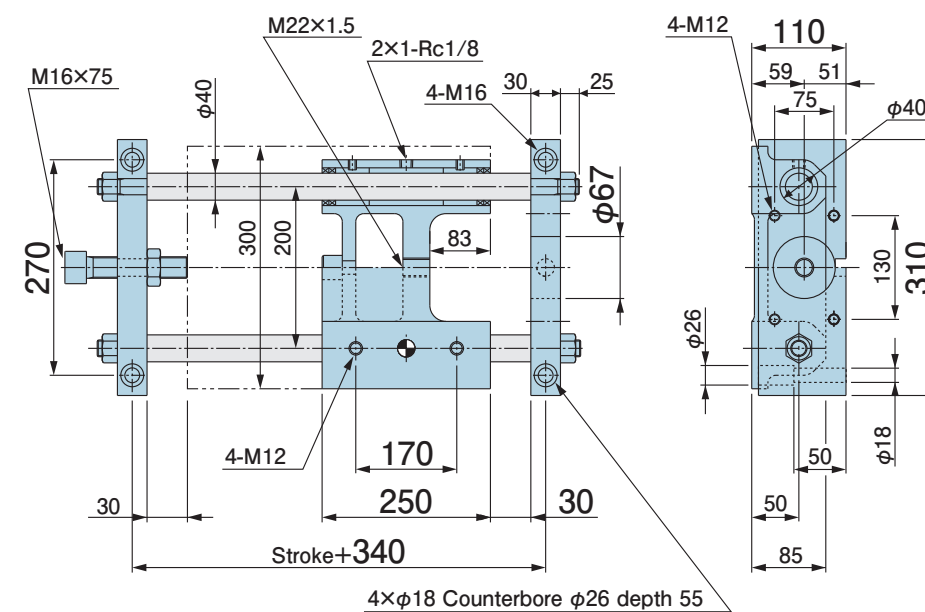
Dimension Table

■ **BTU30** Applicable cylinder: Tube I.D. of $\phi 63$



Part No.	Stroke S
BTU30-50	50
BTU30-100	100
BTU30-150	150
BTU30-200	200
BTU30-250	250
BTU30-300	300

■ **BTU40** Applicable cylinder: Tube I.D. of $\phi 80$



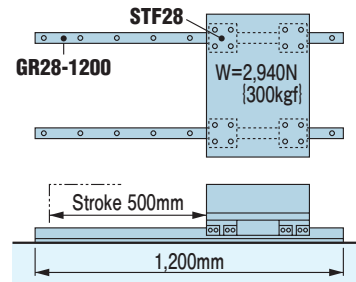
Part No.	Stroke S
BTU40-50	50
BTU40-100	100
BTU40-150	150
BTU40-200	200
BTU40-250	250
BTU40-300	300
BTU40-350	350

Durability Test Data / To Prevent Malfunctioning

Durability Test Data

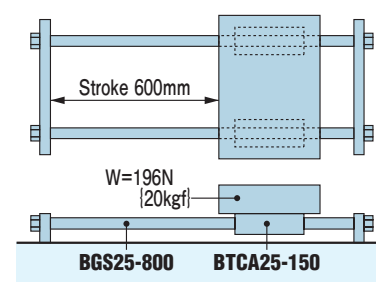
S Type

<Testing conditions>	<Result>
Type: STF28 four shift tables GR28-1200 dual-axis	Wear amount on liner: 0.025mm on rail: 0.005mm
Load: 2,940N {300kgf}	Coefficient of friction: 0.08~0.14
Velocity: 0.33m/s {20m/min}	Temperature of friction: 32~42°C
Stroke: 500mm	
Sliding distance: 1,000km	



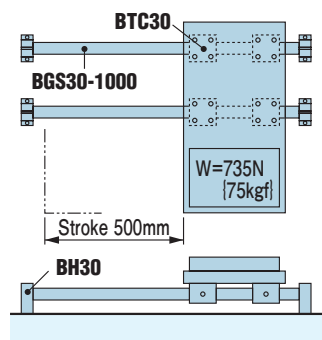
BA Type

<Testing conditions>	<Result>
Type: BTCA25-150 one shift table BGS25-800 dual-axis	Wear amount on bushing: 0.055mm on shaft: 0.008mm
Load: 196N {20kgf}	Coefficient of friction: 0.20~0.28
Velocity: 0.50m/s {30m/min}	
Stroke: 600mm	
Sliding distance: 1,000km	



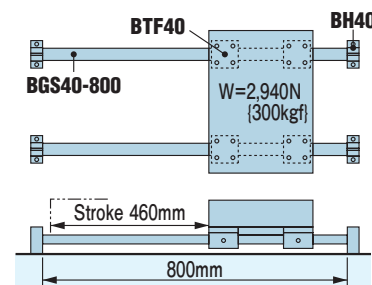
BC Type

<Testing conditions>	<Result>
Type: BTC30 four shift tables BGS30-1000 dual-axis	Wear amount on bushing: 0.032mm on shaft: 0.006mm
Load: 735N {75kgf}	Coefficient of friction: 0.12~0.30
Moment: 323N·m {33kgf·m}	
Velocity: 0.25m/s {15m/min}	
Stroke: 500mm	
Sliding distance: 300km (300000 cycles)	



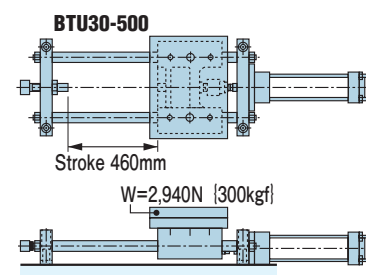
BF Type

<Testing conditions>	<Result>
Type: BTF40 four shift tables BGS40-800 dual-axis	Wear amount on bushing: 0.035mm on shaft: 0.008mm
Load: 2,940N {300kgf}	Coefficient of friction: 0.10~0.25
Velocity: 0.42m/s {25m/min}	Temperature of friction: 42~85°C
Stroke: 460mm	
Sliding distance: 1,000km	



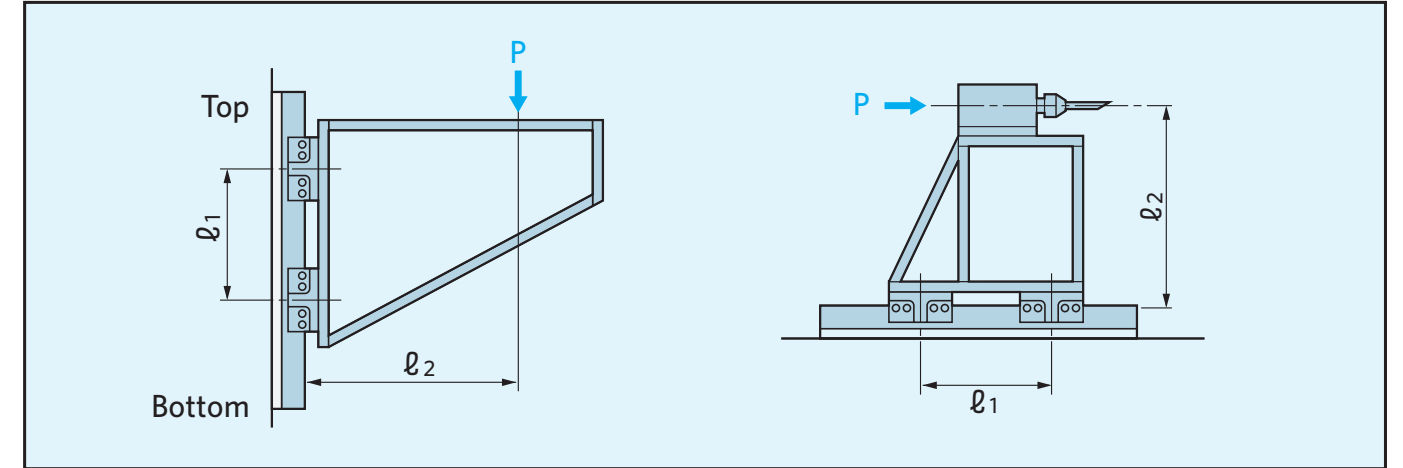
BTU Type

<Testing conditions>	<Result>
Type: BTU30-500	Wear amount on bushing: 0.023mm on shaft: 0.012mm
Load: 2,940N {300kgf}	Coefficient of friction: 0.16~0.20
Velocity: 0.42m/s {25m/min}	
Stroke: 460mm	
Sliding distance: 730 (800000 cycles)	



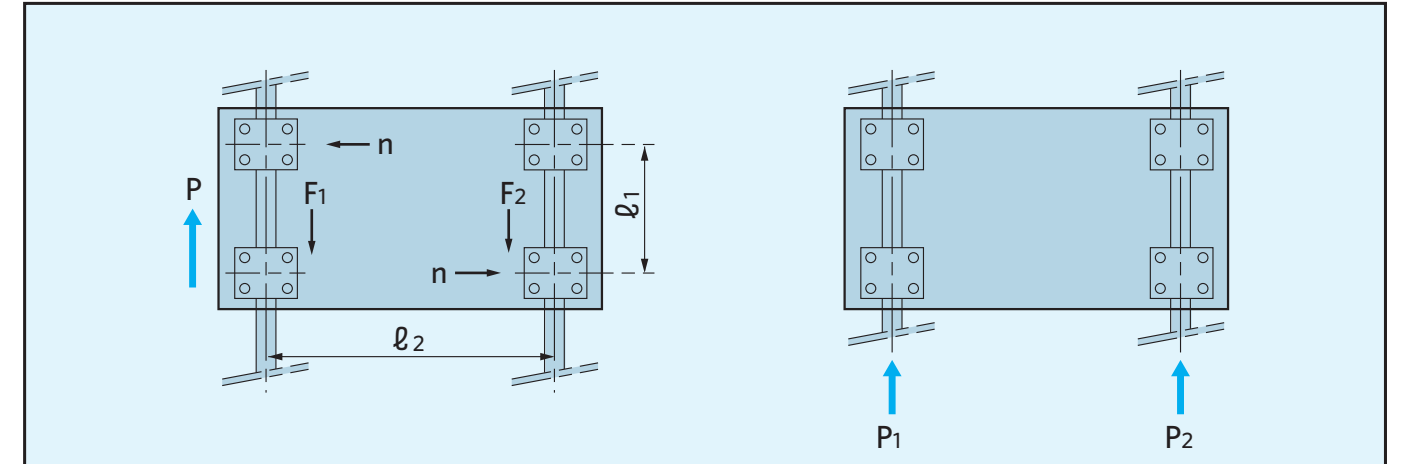
To Prevent Malfunctioning

- If the point of the drive source is apart from the shift tables



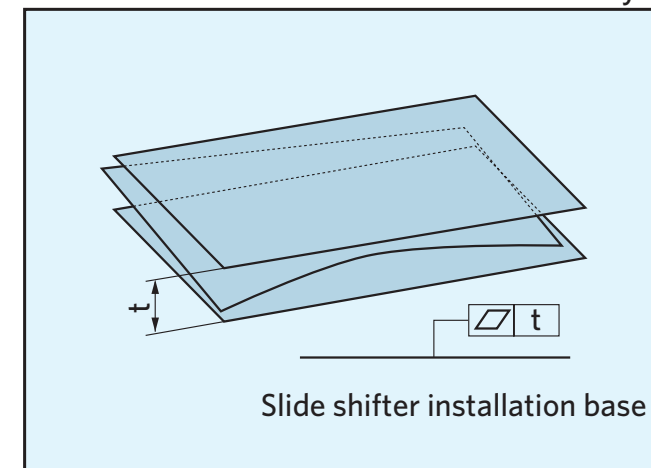
If the position of drive source P is apart from the rail surface by l_2 , of l_2/l_1 exceeds 1.67 when the coefficient of friction μ is 0.3, resulting in malfunctioning. Take the allowable moment load into consideration and reduce l_2/l_1 below 1.5.

- If the shift table installation position is apart or the point of the drive source is apart

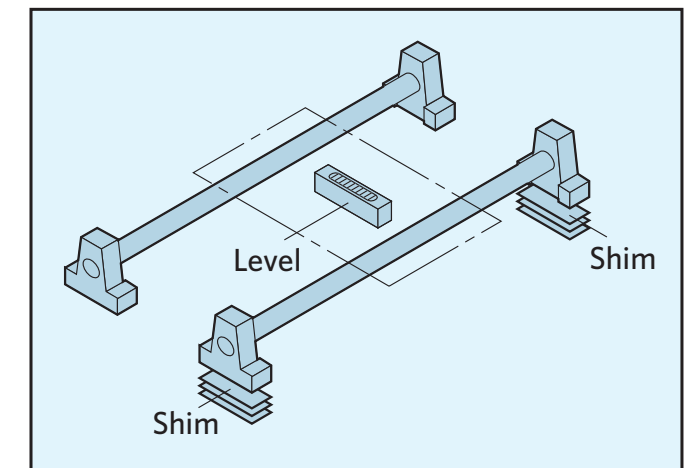


If the l_2/l_1 ratio of dual-axis parallel rails is large, the couple of the drive source P and resistance F_1 and F_2 becomes large and the slide shifter works improperly. Reduce l_2/l_1 below 3. As the point of the drive source becomes apart from the center, the condition becomes worse. Synchronize the drive source with P_1 and P_2 if l_2/l_1 is inevitably larger than 3 for reasons of the structure.

- If the installation base has low accuracy



Do not select the S type if the parallelism t exceeds 0.3.



Select the B type if the parallelism t exceeds 0.3. Insert shims under the shaft holders to adjust them. After adjustment, check the parallelism with a level, straight edge, clearance gauge, etc.