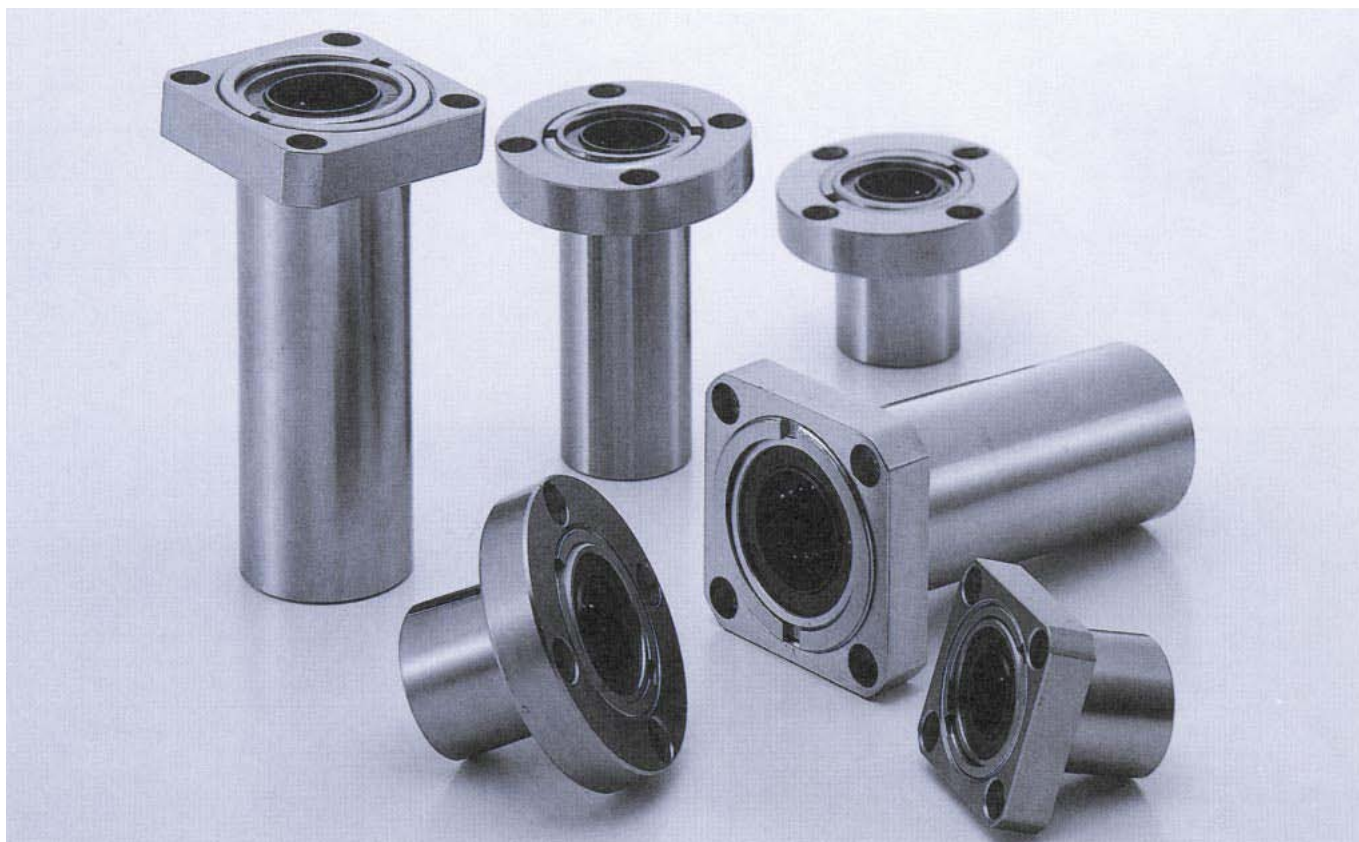




## ■ TSK Self-Aligning Flange Type FTSB・KTSB Series



Able to eliminate the costly mounting surface machining and hole boring to achieve precise linear alignment!

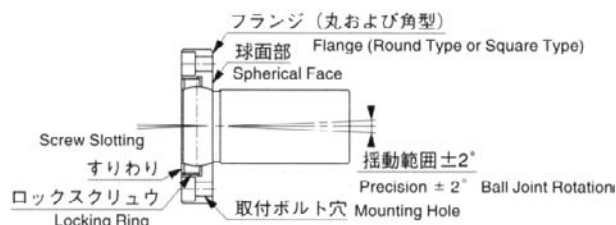
Unlike standard flange type series, which require machining the right-angle mounting surface to the mounting hole, TSK's Adjustable Linear Bearings Series (patent pending) solve the problem of costly mounting surface machining. After running a shaft, the bearing achieves precise linear alignment by the support structure of the spherical socket fixed on the outer bearing case.

### ▶ リニアボールベアリングの取付穴やフランジ取付面の高精度の加工はもう必要ありません！

従来のフランジ型の場合、取付面を取付穴に対し直角に加工しなければなりませんでしたが、「TSK 球面フランジ付リニアボールベアリング（特許出願中）」は、外筒が球面部によってフランジに支持される構造になっており、シャフトを通してからシャフトに合わせて球面部を小体するだけで、自動的に調整され完璧なアライメントを実現、取付面の直角加工という問題を解決しました。

### ▶ 構造

リニアボールベアリング外筒の一端に球面部が形成されており、これをフランジと筒状のロックスクリュウの各々に形成された対向する球面で挟みつけて支持します。ロックスクリュウのすりわりを締め付け固定します。尚、球面部の接触角は $10^{\circ} \sim 13^{\circ}$ （タンジェントの値で $0.18 \sim 0.23$ ）で摩擦角より小さくロックスクリュウの締め付けにより固定できます。



### Construction:

A spherical socket is mounted to one end of bearing outer case. The contact face between flange and locking ring is fixed by tightening the threaded locking ring. Moreover, the contact angle of  $10^{\circ} \sim 13^{\circ}$  ( $0.18 \sim 0.23$  in tangent) is smaller than the friction angle and can be firmly mounted by tightening the thread locking ring.



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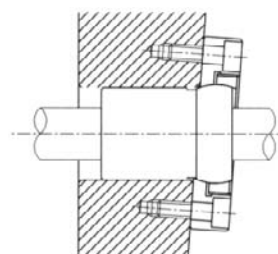
## Features:

1. Easy mounting without the need of ensuring a precise right angle of mounting flange surface and shaft reduces machining cost by eliminating precise machining of the mounting surface.
2. Tightening the threaded locking ring while assembling after positioning a shaft allows the bearing outer case to be fitted more precisely and solidly. Thereby, eliminating extra design and assembling time which permits cost reduction.
3. The flange can be easily removed and mounted in the opposite direction with the result of which there is no trouble in fixing the spherical face the bearing outer case can be mounted either over or under the mounting surface.
4. The spherical face and its mounting structure are compact designs so that the flange size is only a little larger than the standard flange type series. When using the self-aligning square flange type bearing, the pitch between mounting holes can be made narrower than the standard round flange bearing.

## ▶ 使用例

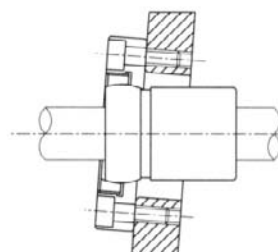
### 使用例1

シャフトの取付位置を高精度に加工された取付穴で決める場合は、従来のフランジ型の場合、フランジ取付面が取付穴に対し、正しく直角に加工されていることが必要でしたが、「TSK 球面フランジ付リニアボールベアリング」ですと20°以内の傾きは吸収できますので、フランジ取付面を高精度加工する必要はありません。



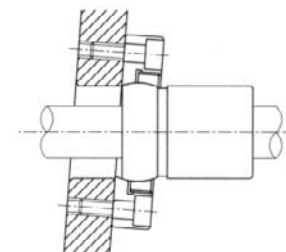
### 使用例2

シャフトの位置を組立てて精度出しする場合は、外筒挿入部は所謂「バカ穴」としておき、組立に際してフランジを仮止めして、シャフトの位置を調整した後、フランジを締め付け次いで球面部をロックすれば、容易に高精度の位置決めができます。



### 使用例3

使用例2と同様の場合、取付部に外筒を挿入せず逆向きに取り付けることも可能です。外筒の面はフランジ面より突出しないよう設計されていますので、シャフトを通す穴だけ加工して頂ければ十分です。



## Examples of Self-Aligning Flange Type Bearing Advantages:

### Example1.

Where fixed flange bearings require precise machining of a mounting face, TSK's Adjustable Linear Bearing Series do not by accommodating mounting angle of up to 20°.

The need for extra mounting surface processing to ensure a precise right angle is completely eliminated.

### Example2.

Where shaft positioning requires precise assembling, the TSK adjustable series permit a mounting hole to be a "loose hole". While assembling, the flange can be tentatively fixed. Afterwards, precise shaft alignment can be easily achieved by fixing a flange and tightening the threaded locking ring.

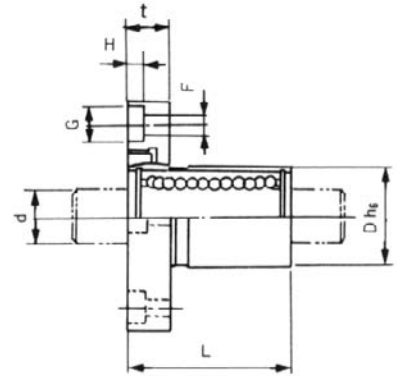
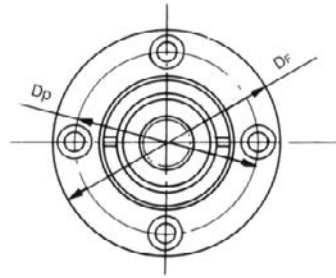
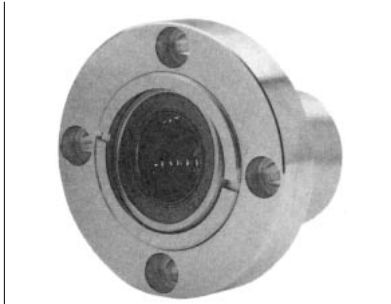
### Example3.

In the case of Example 2, the flange can be mounted in the opposite direction without the outer case set in the mounting hole. Then, what is required is only to machine the hole that accommodates a shaft because the bearing outer case does not overrun that of flange bore.



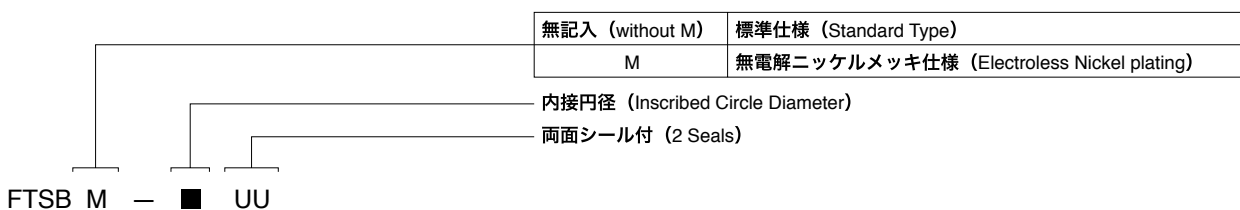
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## TSK Self-Aligning Round Flange Type FTSB Series



軸径 (mm)	型 式	主 要 寸 法 (mm)									偏 心 (MAX) ( $\mu\text{m}$ )	基本定格荷重	
		d	D	L	DF	t	Dp	F	G	H		C k9f	C0 k9
10	FTSB-10UU	10	19	30	43	8	34.5	3.4	6.5	3.3	12	38	56
12	FTSB-12UU	12	21	31	48	9	39	4.5	7.5	4.3		42	61
13	FTSB-13UU	13	23	33	48	9.5	39	4.5	7.5	4.3		52	79
16	FTSB-16UU	16	28	38	54	11	44	4.5	7.5	4.3		79	120
20	FTSB-20UU	20	32	43	62	12	51	5.5	9	5.3	15	88	140
25	FTSB-25UU	25	40	59	74	13	62	5.5	9	5.3		100	160
30	FTSB-30UU	30	45	65	82	14	67	6.6	11	6.5		160	280
35	FTSB-35UU	35	52	70	96	15	81	6.6	11	6.5	20	170	320
40	FTSB-40UU	40	60	80	108	16	90	9	14	8.5		220	410
50	FTSB-50UU	50	80	102	134	20	115	9	14	8.5		390	810

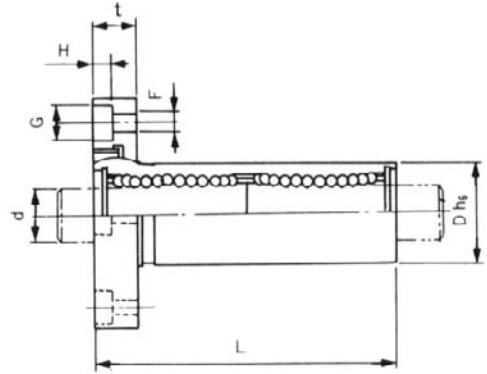
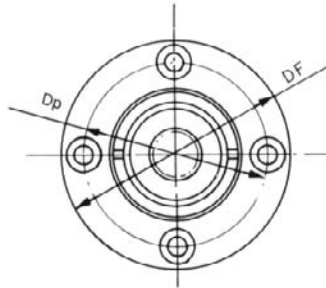
### ● 呼び型番 (Code Name)





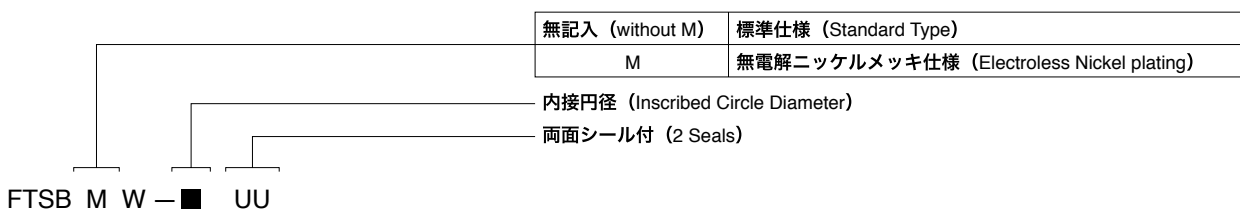
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## ■ TSK Self-Aligning Round Flange Double Type FTSB Series



軸径 (mm)	型 式	主 要 寸 法 (mm)									偏 心 (MAX) ( $\mu\text{m}$ )	基本定格荷重	
		d	D	L	DF	t	Dp	F	G	H		C k9f	C0 k9
10	FTSBW-10UU	10	19	56	43	8	34.5	3.4	6.5	3.3	15	60	112
12	FTSBW-12UU	12	21	58	48	9	39	4.5	7.5	4.3		67	122
13	FTSBW-13UU	13	23	62	48	9.5	39	4.5	7.5	4.3		83	160
16	FTSBW-16UU	16	28	70	54	11	44	4.5	7.5	4.3		125	240
20	FTSBW-20UU	20	32	80	62	12	51	5.5	9	5.3	20	143	280
25	FTSBW-25UU	25	40	112	74	13	62	5.5	9	5.3		159	320
30	FTSBW-30UU	30	45	123	82	14	67	6.6	11	6.5		254	560
35	FTSBW-35UU	35	52	135	96	15	81	6.6	11	6.5	25	270	640
40	FTSBW-40UU	40	60	154	108	16	90	9	14	8.5		350	820
50	FTSBW-50UU	50	80	193	134	20	115	9	14	8.5		620	1,620

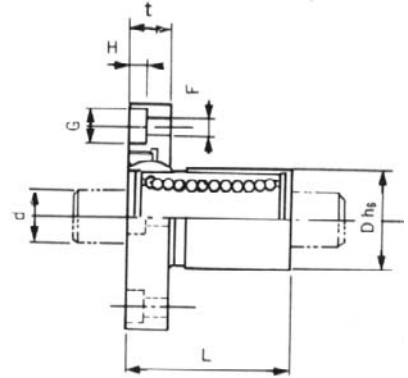
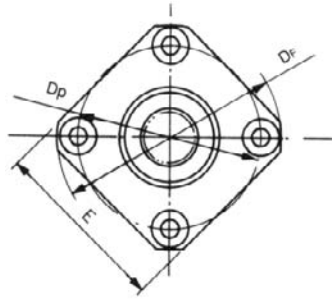
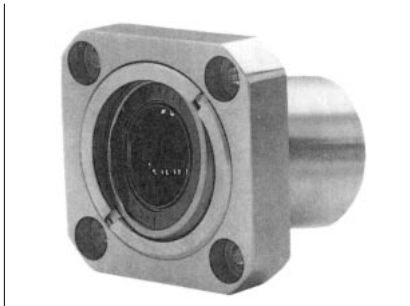
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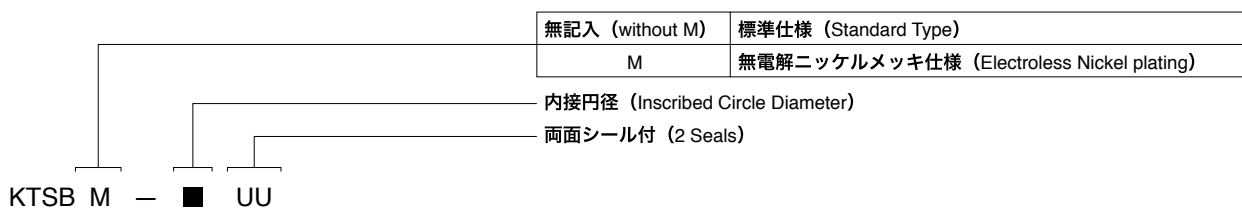
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## ■ TSK Self-Aligning Square Flange Type KTSB Series



軸径 (mm)	型 式	主 要 寸 法 (mm)										偏 心 (MAX) ( $\mu$ m)	基本定格荷重	
		d	D	L	DF	E	t	Dp	F	G	H		C k9f	C0 k9
10	KTSB-10UU	10	19	30	43	34	8	34.5	3.4	6.5	3.3	12	38	56
12	KTSB-12UU	12	21	31	48	37	9	39	4.5	7.5	4.3		42	61
13	KTSB-13UU	13	23	33	48	37	9.5	39	4.5	7.5	4.3		52	79
16	KTSB-16UU	16	28	38	54	42	11	44	4.5	7.5	4.3		79	120
20	KTSB-20UU	20	32	43	62	50	12	51	5.5	9	5.3	15	88	140
25	KTSB-25UU	25	40	59	74	58	13	62	5.5	9	5.3		100	160
30	KTSB-30UU	30	45	65	82	64	14	67	6.6	11	6.5		160	280
35	KTSB-35UU	35	52	70	96	75	15	81	6.6	11	6.5	20	170	320
40	KTSB-40UU	40	60	80	108	85	16	90	9	14	8.5		220	410
50	KTSB-50UU	50	80	102	134	106	20	115	9	14	8.5		390	810

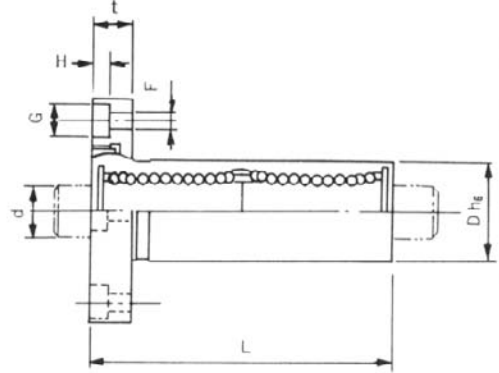
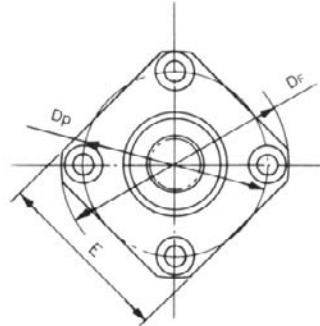
### ● 呼び型番 (Code Name)





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## ■ TSK Self-Aligning Square Flange Double Type KTSBW Series



軸径 (mm)	型 式	主 要 寸 法 (mm)										偏 心 (MAX) ( $\mu$ m)	基本定格荷重	
		d	D	L	DF	E	t	Dp	F	G	H		C k9f	C0 k9
10	KTSBW-10UU	10	19	56	43	34	8	34.5	3.4	6.5	3.3	15	60	112
12	KTSBW-12UU	12	21	58	48	37	9	39	4.5	7.5	4.3		67	122
13	KTSBW-13UU	13	23	62	48	37	9.5	39	4.5	7.5	4.3		83	160
16	KTSBW-16UU	16	28	70	54	42	11	44	4.5	7.5	4.3		125	240
20	KTSBW-20UU	20	32	80	62	50	12	51	5.5	9	5.3	20	143	280
25	KTSBW-25UU	25	40	112	74	58	13	62	5.5	9	5.3		159	320
30	KTSBW-30UU	30	45	123	82	64	14	67	6.6	11	6.5		254	560
35	KTSBW-35UU	35	52	135	96	75	15	81	6.6	11	6.5	25	270	640
40	KTSBW-40UU	40	60	154	108	85	16	90	9	14	8.5		350	820
50	KTSBW-50UU	50	80	193	134	106	20	115	9	14	8.5		620	1,620

### ● 呼び型番 (Code Name)

