KANAI

STEEL FLANGE RINGS
STEEL RING TRAVELLERS

FOR SHORT STAPLE SPINNINGS

Kanai Juyo Kogyo Co.,Ltd.

Surface Treatment of Travellers

New Falcon (NFC)

Special heat treatment and surface treatment which has been improved in life,especially on the high speed spinning condition and compact yarn.
The service life is to be greatly prolonged from that of conventional treatment at high speed spinning.

特殊な熱処理と表面処理の適用により、寿命延長と高速性を実現したトラベラで、特に高速紡出及びコンパクト糸の紡出において従来品より大幅な寿命延長が得られます。

New Mega (NMG)

Special compound layer which has excellent lubricating function given to the surface by special surface treatment and this is very effective for quick break-in, reducing yarn-breakage and extending service life even in high speed spinning.

特殊表面処理方法により潤滑性に富む化合物層を表面に形成させたことによりリングとのなじみが向上し、高速紡出の条件でも糸切れの減少とトラベラ寿命の延長が得られます。

Toughmat (TM) / Hi-Ni

Wear resistance has been improved due to the additional special alloy element to high carbon steel and also because of the material used in unifrom in quality.
Provided with special nickel plating which decreases traveller burn and will improve break-in of traveller.

高炭素鋼に特殊合金元素を添加した高純度の新素材を用い、独自の熱処理により耐摩耗性を更に向上させ、特殊なニッケルメッキをほどこしたトラベラです。

Kanai's Traveller Recommendation

Fiber	Yarn Count	Application Traveller	Flange Size(mm) 2.5	3.2	4.0
Cotton 100%	~Ne 20	TM PK/hf		△	○
		TM BZ/hf		△	○
		NFC ZS/hf		○	
	Ne 20~Ne 40	NFC ZS/hf		○	
		NFC MS/hf		○	
	Ne 40~	NFC MS/hf		○	
		NFC ESY/hf		○	
		NFC OSS/hf	○		
		NFC ESS/hf	○		
Polyester/Cotton	~Ne 20	TM Z/hf		△	○
		TM BZ/hf		△	○
		NFC ZS/hf		○	
	Ne 20~	NFC ZS/hf		○	
		NFC MS/hf		○	
Polyester 100%	~Ne 20	TM Z/hf		△	○
		TM BZ/hf		△	○
		NFC ZS/hf		○	
	Ne 20~	NFC ZS/hf		○	
		NFC MS/hf		○	
Polyester/Rayon	~Ne 30	Hi-Ni O		△	○
	Ne 30~	NFC ZS/hf		○	
		NFC MS/hf		○	
Rayon 100%	~Ne 30	Hi-Ni O		△	○
		NFC ZS/hf		○	
	Ne 30~	NFC MSR/hf		○	
		NFC MS/hf		○	
Acrylic 100%	~Ne 20	Hi-Ni OH		△	○
	Ne 20~	Hi-Ni OYH		○	
Core Yarn	Ne 20~	TR-M/hf (Riora Flange)		○*	
		NFC MS/hf		○	
Dyed Synthetics	Ne 30~	NFC MSR/hf		○	

Remarks ○=Good, △=mainly used on No.2 Flange Rings, ○*=Suitable for Riora Flange RR-M type.

Kanai Travellers

Flange Size	Traveller Type	Shape	Cross Section		Number Min	Number Max	Grade	Remarks
No.1 (3.2mm)	MS/hf		hf		20/0	No.15	TM/NFC	*
	MS/hf-W		hf-W		8/0	No.5		*
	MSR/hf		hf		20/0	No.15	NFC	
	OS		F		25/0	No.20	Hi-Ni	
	OSY		F		15/0	No.5	TM/NFC	*
			R		24/0	16/0	TM/NFC	*
	OSY/hf		hf		18/0	No.2	TM/NFC	*
	OYH		H		5/0	No.10	Hi-Ni	
	OY		F		7/0	No.10	Hi-Ni	
	OY/hf-N		hf-N		7/0	No.8	TM	
	Super OS		Super		10/0	No.8	Hi-Ni	
	YS-2		F		18/0	No.5	TM	
	YS-2/hf		hf		18/0	No.5	TM/NFC	*
	YS-2/hf-W		hf-W		6/0	No.5	NFC	

Rmarkes : "*" marked traveller available with NMG grade.

Kanai Travellers for Compact Spinning

Fiber	Yarn Count	Max RPM	Rocommendation Type A	Rocommendation Type B
Cotton Compact	~ Ne 30	bellow 19,999rpm	NFC ESY/hf	NFC MS/hf
		over 20,000rpm	NFC ESZ/hf	NFC ESY/hf
	Ne 30 ~ Ne 40	bellow 19,999rpm	NFC ESZ/hf	NFC ESY/hf
		over 20,000rpm	NFC ESR/hf	NFC ESZ/hf
	Ne 40 ~ Ne 80	bellow 19,999rpm	NFC ESZ/hf	NFC ESY/hf
		over 20,000rpm	NFC ESR/hf	NFC EST/hf
	Ne 80 ~	bellow 19,999rpm	NFC ESR/hf	NFC ESZ/hf
		over 20,000rpm	NFC ESR/hf	NFC EST/hf

Type B Travellers will be tried to solve start up breaks if happen by Type A travellers.
All Compact Tracveller is used on No.1 Flange.

Flange Size	Traveller Type	Shape	Cross Section		Number Min	Number Max	Grade	Remarks
No.1 (3.2mm)	ZS/hf		hf		14/0	No.12	TM/NFC	
	ZSB/hf		hf		14/0	No.3	TM	
	ZSC/hf		hf		14/0	No.10	TM/NFC	*
No.1/2 (2.5mm)	ESS/hf		hf		30/0	11/0	NFC	
	OSS		F		15/0	No.2	Hi-Ni	
			R		30/0	16/0	Hi-Ni	
	OSS/hf		hf		30/0	1/0	TM/NFC	
No.2 (4.0mm)	BZ/hf		hf		No.3	No.30	TM	
	PK/hf		hf		5/0	No.15	TM	
	Z/hf		hf		5/0	No.14	TM	
	O		F		8/0	40	Hi-Ni	
	OH		H		8/0	No.20	Hi-Ni	
	Super O		Super		5/0	No.15	Hi-Ni	
	YZ/hf		hf		No.5	No.30	TM	
Above (4.4mm)	GR		N		No.1	No.40	Hi-Ni	

Rmarkes : "*" marked traveller available with NMG grade.

Flange Size	Traveller Type	Shape	Cross Section		Number Min	Number Max	Grade	Remarks
No.1 (3.2mm)	ESY/hf		hf		24/0	No.5	NFC	
	ESZ/hf		hf		26/0	No.2	NFC	
	EST/hf		hf		20/0	8/0	NFC	
	ESR/hf		hf		26/0	5/0	NFC	

Rmarkes : "*" marked traveller available with NMG grade.

Comparative Chart of Traveller Weights

Traveller Number	KANAI "TM"	KANAI "NFC"	Braecker	R+F	A.B.Carter
15	276	272	265	250	265
14	260	253	250	236	250
13	240	233	224	224	224
12	220	214	200	200	200
11	199	194	180	180	180
10	175	169	160	160	160
9	154	149	140	140	140
8	136	130	125	125	125
7	122	117	112	112	112
6	109	104	100	106	100
5	95	91	95	95	95
4.5	91	88	-	-	-
4	88	84	90	85	90
3.5	85	81	-	-	-
3	81	78	80	80	80
2.5	78	75	-	-	-
2	74	71	71	71	71
1.5	68	65	-	63	-
1	62	58	63	60	63
0.5	58	55	-	-	-

* Weight = mg

Traveller Number	KANAI "TM"	KANAI "NFC"	Braecker	R+F	A.B.Carter
1/0	55	52	56	50	56
1.5/0	51	49	-	-	-
2/0	48	45	50	45	50
2.5/0	45	42	-	-	-
3/0	42	39	45	40	45
3.5/0	39.8	37.3	-	-	-
4/0	38.3	35.6	40	35.5	40
4.5/0	36.5	34.0	-	-	-
5/0	35.1	32.4	35.5	31.5	35.5
5.5/0	33.2	30.8	-	-	-
6/0	32.2	29.2	31.5	30	31.5
6.5/0	30.7	28.4	-	-	-
7/0	30.2	27.5	28	26.5	28
7.5/0	28.8	26.7	0	-	-
8/0	28.5	25.9	25	23.6	25
9/0	26.8	24.3	23.5	22.4	23.6
10/0	25.0	22.7	22.4	20	22.4
11/0	23.2	21.1	20	19	20
12/0	21.6	19.4	18	18	18
13/0	20.0	17.8	17	16	17
14/0	17.8	16.2	16	15	16
15/0	16.9	14.9	15	14	15
16/0	15.7	13.9	14	13.2	14
17/0	14.8	13.0	13.2	11.8	13.2
18/0	13.9	12.3	12.5	11.2	12.5
19/0	13.2	11.7	11.2	10	11.2
20/0	12.4	11.0	10	9	10
21/0	11.8	10.4	-	8.5	-
22/0	11.0	9.7	9	8	9
23/0	10.4	9.1	-	7.5	-
24/0	9.6	8.4	8	7.1	8

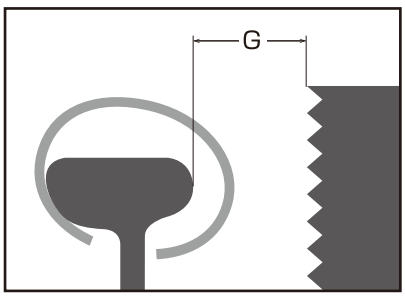
* Weight = mg

Traveller Clearer Gauges

Flange Size	No.1													
Traveller Type	MS/hf	MSR/hf	ESY/hf	ESZ/hf	EST/hf	ESR/hf	OSY/hf	OSY	YS-2/hf	YS-2	OS	ZS/hf	ZSB/hf	ZSC/hf
11~20	2.6	-	-	-	-	-	-	-	-	-	2.9	2.8	-	-
6~10	2.6	-	-	-	-	-	-	-	-	-	2.5	2.6	-	2.6
1~5	2.3	2.1	2.1	-	-	-	1.9	2.0	2.1	2.4	2.4	2.2	2.1	2.2
1/0~5/0	1.9	1.9	1.8	1.8	-	1.6	1.4	1.6	1.8	1.8	2.1	1.6	1.6	1.7
6/0~10/0	1.7	1.8	1.7	1.7	1.5	1.5	1.3	1.5	1.7	1.7	1.9	1.5	1.5	1.5
11/0~15/0	1.4	1.6	1.7	1.7	1.4	1.4	1.2	1.4	1.5	1.5	1.7	1.4	1.3	1.4
16/0~20/0	1.4	-	1.7	1.7	1.3	1.3	1.2	1.4	1.3	1.3	1.5	-	-	-
21/0~25/0	-	-	-	1.7	-	1.3	-	1.3	-	-	1.3	-	-	-
26/0~30/0	-	-	-	1.7	-	-	-	-	-	-	1.1	-	-	-

Flange Size	No.1				No.1/2			No.2					
Traveller Type	OY	OYH	OY/hf-N	PK/hf	ESS/hf	OSS/hf	OSS	BZ/hf	PK/hf	Z/hf	O	OH	YZ/hf
21~30	-	-	-	-	-	-	-	3.8	-	-	4.1	-	3.5
16~20	-	-	-	-	-	-	-	3.5	-	-	3.8	5.0	3.4
11~15	-	-	-	3.8	-	-	-	3.2	2.5	-	3.3	4.7	3.2
6~10	3.0	3.7	3.2	3.4	-	-	-	3.0	2.3	-	3.0	4.0	2.8
1~5	2.8	3.3	2.8	2.8	-	-	2.2	2.7	2.1	1.8	2.5	3.2	2.3
1/0~5/0	2.7	3.0	2.6	2.7	-	1.9	2.0	-	2.0	1.6	2.0	2.5	-
6/0~10/0	2.6	-	2.5	2.6	-	1.7	1.8	-	1.9		1.8	2.2	-
11/0~15/0	2.5	-	-	-	1.6	1.5	1.7	-	-	-	-	-	-
16/0~20/0	-	-	-	-	1.6	1.4	1.6	-	-	-	-	-	-
21/0~25/0	-	-	-	-	1.6	1.3	1.6	-	-	-	-	-	-
26/0~30/0	-	-	-	-	1.6	1.3	1.5	-	-	-	-	-	-

■ Sticking of fly waste is the more as in spinning of coarse yarn and short fibre, and causes the yarn brekage to increase.Adjustment shall be performed carefully with the gauge.



G=Gauge (mm)

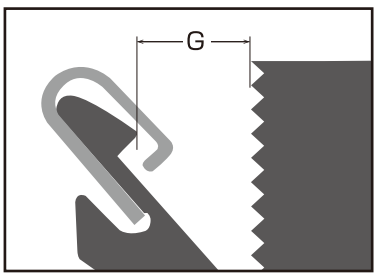
Riora Traveller

Manufacturing Range

kanai No.	ISO No.	TR-S/hf	TR-M/hf	TR-M/R	TR-LN/hf	TR-L/R	Equivalent Number of MS/hf	Equivalent Number of SBA
10	10	○					22/0	
12	12.5	○					19/0	
14	14	○					16/0	
16	16	○		○			14/0	
18	18	○	○	○			13/0	36
20	20	○	○	○			12/0	35.5
22	22.4	○	○	○			10/0	35
25	25	○	○	○			8.5/0	34
28	28	○	○	○			7/0	33.5
30	30	○	○	○			6/0	
32	31.5	○	○	○			5/0	33
34	34	○	○	○			4.5/0	32
36	35.5	○	○	○			4/0	31.5
38	38	○	○	○				
40	40	○	○	○		○	3/0	30.5
45	45	○	○	○		○	2/0	30
50	50		○	○		○	1/0	29
56	56		○	○		○	0.5	28
60	60		○	○		○		
63	63		○	○	○	○	1.5	27
67	67		○	○	○	○		
71	71		○	○	○	○	2	26
75.5	75.5		○	○	○	○		
80	80		○	○	○	○	3.5	25.5
85	85		○	○	○	○		
90	90		○	○	○	○	5	24.5
100	100		○	○	○	○	6	24
112	112		○	○	○	○	6.5	23
125	125		○		○	○	8	22.5
133	133		○		○			
140	140		○		○		9	21.5
160	160		○		○		10	20.5
180	180				○		11	20
200	200				○		12	19
224	224				○		13	18.5
250	250				○		14	18
280	280				○		16	17
315	315				○		18	16
355	355				○		21	15

Clearer Gauges

Flange Type	RR-S	RR-M		RR-L	
Traveller Type	TR-S/hf	TR-M/hf	TR-M/R	TR-LN/hf	TR-L/R
10~22	1.5	1.6	1.8		
25~50	1.6	1.8	1.8		2.3
56~133		2.0	2.0	2.5	2.5
140~180		2.2		2.8	2.8
200~280				3.0	3.0
315~355				3.5	3.5



G=Gauge (mm)

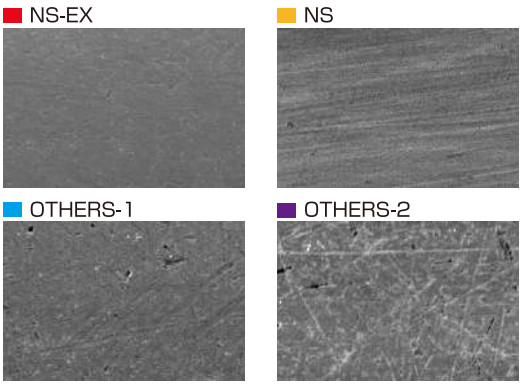
NANOSPIN-EX Progress with the “EX” Quality

Features

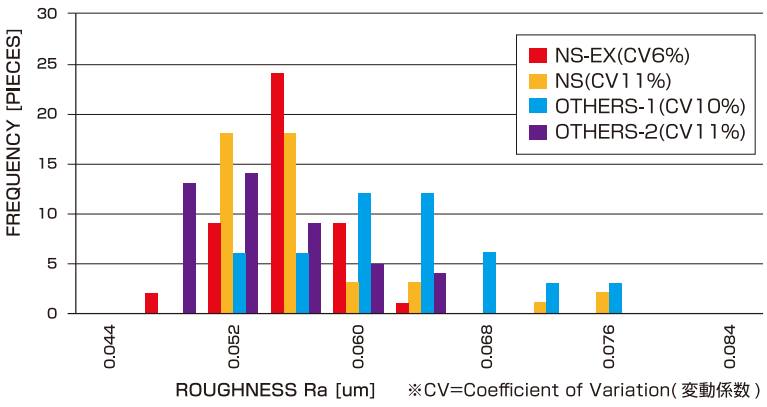
- From the result of a long term research on coating technologies as well as realization of manufacturing processes here in Japan, "NANOSPIN" has been reborn as "NANOSPIN-EX" which enables premium quality.
- “NANOSPIN-EX“ shows uniform surface condition maintaining High Wear Resistance which is the feature of Coated Rings compared with conventional rings.
- The surface structure “EX”-tremely enhanced for uniformity by “NANO”-meter size level enables vastly improvement on Coefficient of Variation (CV%) in ring surface Ra value compared with conventional rings and it enables a stable machine operation from the period of Running-In stage.

- コーティングリングに関する長年の研究結果と、高品質を実現する生産体制によりナノスピンリングはナノスピン-EXリングへと生まれ変わりました。
- ナノスピン-EXリングはコーティングリングの特徴である高い耐摩耗性を維持しつつ、 従来品より均一な表面状態に仕上げました。
- 進化したナノメートル(1/100,000mm)サイズの均一なリング表面構造により、リング表面粗さの変動は従来品から大幅に減少し、慣らし運転時期から安定した紡出性能が期待できます。

SURFACE CONDITION By Electron Microscope(×500)



SURFACE ROUGHNESS



※CV=Coefficient of Variation(変動係数)

Type&Selection

Flange Type	Flange Size	Application Process	Application of Yarn Count (Ne) 0 20 40 60 80 100
KM	No.1/2 (2.5mm)	Fine Count	
KS2	No.1 (3.2mm)	Medium & Coarse Count	
KW	No.2 (4.0mm)	Coarse Count	

RIORA RING Take RIORA, Get High Productivity.

Special Flange Shape

■ ANGLE OF INCLINATION & CURVATURE / 傾斜フランジ

- By applying the best angle of inclination and curvature to the ring flange, better flexibility and stability of traveller can be obtained.
- 特殊な傾斜フランジの採用により、トラベラ走行のより良い自在性と安定をもたらします。

Features

■ Excellent high speed and starting-up / 優れた高速性となじみ性

- Approx. 20% increase of production can be attained compared with normal T-shape flange. Espcially for the spinning speed of over 20,000 rpm and synthetics (Acrylic, Polyester), its perfomance is evaluated.
- Ｔ型フランジリングと比較し、最大 20%の増産が可能です。
  特に 20,000rpm 以上や、合繊紡（アクリル、ポリエステル）において高い評価が得られています。

■ Improvement of yarn quality / 糸品質の向上

- Max. 50% (F-INDEX, Shikibo), 10%(USTER) of decrease of yarn fluff have been confirmed.
- 最大 50%（F-INDEX,Shikibo), 10%(USTER) の糸毛羽（特に長い毛羽）の減少が確認されています。

■ Extension of life for Ring and Traveller / トラベラ・リングの寿命延長

- Approx.1.5 times longer life can be expected.
- 1.5 倍以上の寿命延長が期待できます。コアヤーン等の過酷な条件においても高い評価が得られています。

Type&Selection

Flange Type	Flange Shape	Traveller Type	Application Process	Application of Yarn Count (Ne) 0 20 40 60 80 100
RR-S		TR-S/hf	Fine Count	
RR-M		TR-M/R TR-M/hf	Medium & Coarse Count	
RR-L		TR-L/R TR-L/hf	Coarse Count	

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