



Lakshmi

LRT



ONE STOP SOURCE FOR

TOTAL TRAVELLER SOLUTIONS

- INTERNATIONAL PRESENCE
- CUSTOMISED SOLUTIONS
- STATE OF ART R&D
- HIGHEST QUALITY
- TOTAL RANGE

LAKSHMI RING TRAVELLERS (COIMBATORE) PRIVATE LIMITED

TECHNICAL PRESENTATION OF RING TRAVELLERS

INTRODUCTION

- As a break through in spinning Technology, Mr. Leonardo Da Vinci designed his first spinning wheel in the year 1480.
- In 1840, Mr. Jenks developed the Ring Traveller System for ring spinning.

RING TRAVELLER AND ITS IMPORTANCE

- Ring Traveller encircles on the raceway of the Ring.
- It travels a distance of more than 30,000 kms on its average life span of 250 to 350 working hours. The heat generated during running reaches upto 300°C.
- It plays a major role in the performance of Ring Frame and quality of the yarn spun.

GENERAL REQUIREMENT OF A TRAVELLER

- Generate as less heat as possible.
- Quickly distribute the generated heat from the area where it develops over the whole volume of traveller.
- Transfer the heat rapidly to the ring and the air.
- Be elastic. So that traveller will not break during insertion.
- Exhibit wear resistance.

FUNCTION & GENERAL SELECTION OF TRAVELLERS

Functions of a ring traveller

- To provide Twist to the yarn.
- To provide yarn tension (spinning Tension).
- To wind the yarn on the Bobbin.

Selection of Traveller Weight

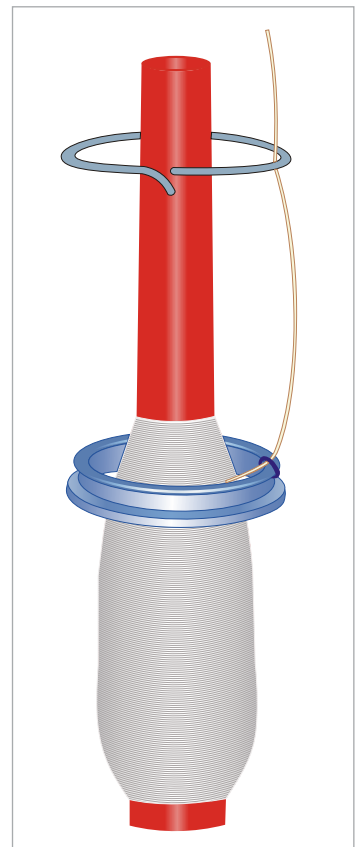
Traveller weight influences the yarn tension which determines the stability of balloon. Staple balloon helps us to reduce the yarn breaks and interns increases the productivity. The parameters influencing the selection of traveller weight are,

- The yarn count.
- Material Processed.
- Spinning Geometry.
- Speed.
- Traveller form.

Selection of the right Traveller

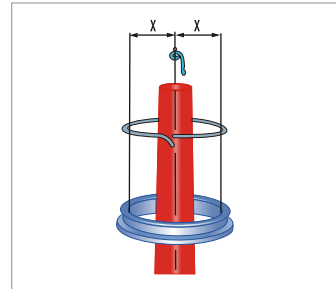
It is determined by

- Yarn Count.
- Ring flange.
- Type of ring.
- Life of ring.
- Material.
- Spindle speed.

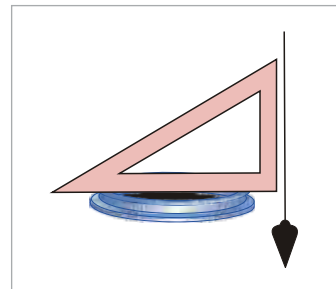


PREREQUISITES FOR SMOOTH AND STABLE RUNNING

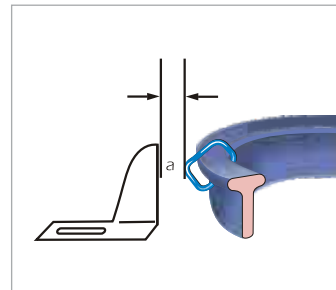
Faultless condition of support and guide of the ring rail as well as a steady & smooth transverse motion.
Concentric position of the ring and spindle as well as anti ballooning ring and yarn guide.



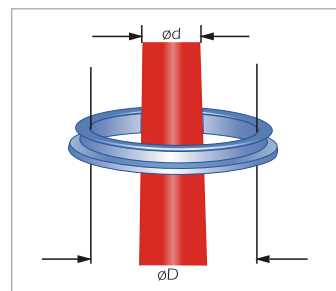
Spindle rotation without vibration and correct concentricity of bobbin tube.
Ring with exact roundness and firm seating in horizontal position.



Correct setting of the Traveller clearer.
Space "a" should be 0.2 to 0.3 mm



Favourable ratio of Ring diameter to Tube diameter.
Recommended ratio : $D : d = 2 : 1$
Ring diameter : D
Tube diameter : d
Faultless condition of ring race way.



SPINNING GEOMETRY WITH RESPECT TO RING AND TRAVELLER

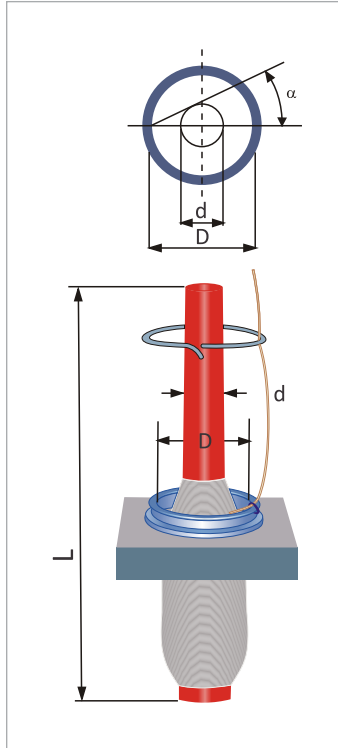
Ratio of ring diameter **D**
to tube diameter **d**

Ideal Ratio 2:1

The ring traveller, together with the yarn as a pull element, is set into motion on the ring by the rotation of the spindle.

If the direction of pull deviates too much from the running direction of the Traveller (alpha less than 30), the tension load will be too high.

The pulling tension can be reduced by adapting the ring or tube diameter (alpha greater than 30), during the winding up on the tube (after doffing, resp. At the top of the conical part of the bobbin).



Ratio of tube length to
ring diameter

Ideal Ratio 5:1

The tube length determines (with the yarn guide) the maximum balloon length. This is an important factor for the performance of a ring spinning machine.

The shorter the balloon, higher Traveller speeds can be achieved.

In practical use, the ideal ratio of tube length to ring diameter has been shown to be between 4.5:1 and 5:1.

RECOMMENDED TUBE MEASUREMENTS

Tube $\varnothing$ (mm) d					Ring $\varnothing$ (mm) D	Tube Length (mm) L					
16	17	18	19	20	36	170	175	180	185	190	195
17	18	19	20	21	38	180	185	190	195	200	205
18	19	20	21	22	40	190	195	200	205	210	215
19	20	21	22	23	42	200	205	210	215	220	225
20	21	22	23	24	45	210	215	220	225	230	235
22	23	24	25	26	48	230	235	240	245	250	255
23	24	25	26	27	51	240	245	250	255	260	265

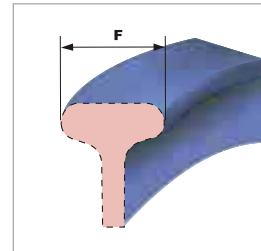
Ideal Range

Unfavourable Range

THE PRINCIPAL SHAPES OF FLANGE RINGS

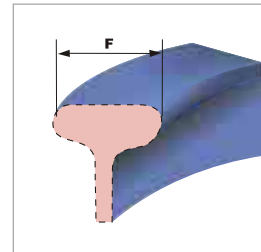
Low Crown / Normal (Symmetrical)

- Reduced crown portion when compared with conventional rings.
- Flange width is equally distributed towards inner & outer side.



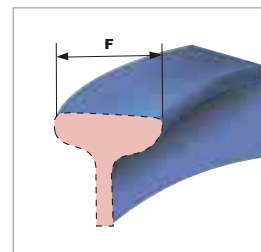
Antiwedge (Assymmetrical)

- Enlarged towards inside to get more area of contact.



CR Antiwedge (Assymmetrical)

- In addition to antiwedge, CR antiwedge will have inclination towards inner side to get extra clearance for yarn passage.



Flange Width

Flange ½ = 2.6mm

Flange 1 = 3.2mm

Flange 2 = 4.0mm

RUNNING-IN OF RINGS

Why is it required?

To improve the initial running properties of the ring by smoothening the raceway.

Which is the preferable count & Material ?

40s and Cotton.

What is the procedure to be followed ?

As per the ring manufacturer's recommendation.

Guidelines for Running-in

- End Breaks should be as low as possible.
- Count & Traveller type should not be changed.
- If the mill is doing running-in with very fine or very coarse counts or synthetics it will take longer time.

Short Running -in

We recommend 4 to 5 changes once every 24 hours. Number of changes will depend on the Ring condition / mill condition.

While increasing the speeds, the Traveller changes to be given in steps of minimum possible speed (200 to 500 rpm) daily.

We recommend short running in when :

- We change from one count pattern to another ie, from finer to coarser or coarser to finer counts.
- We change from one Traveller type to another.
- We change from one brand to another.
- We change from one wire section to another.

SURFACE TREATMENTS

SAPPHIRE PLUS



Special Diffusion Treated Traveller

- Quicker settling time for the traveller.
- Possibilities of going for higher speeds.
- Can be used for running-in.

RUBY



Improved surface finish for optimum friction

- Reduced friction values.
- Less burnout helps less wear.
- Smoother surface finish helps for excellent gliding property.

MAXIMA



Special hardening process for better grain structure

- Excellent heat dissipation.
- Good surface finish helps for better gliding.
- Better wear resistance.

EXPRESS PLUS



Unique surface texture with fine grain size

- Quick settling.
- Better lubrication property.
- Less heat generation.
- Excellent life.

FLANGE 1

FLANGE 2

LOW CROWN / NORMAL RING PROFILE

CR/ANTIWEDGE RING PROFILE

		U1 CL	Compact Spinning	U1 CL	
		U1 EL	Compact Spinning	U1 EL	
		U1 FL	Compact Spinning	U1 FL	
		U1 LEL	Compact Spinning	U1 LEL	
		L1	51s Ne & Finer	EL1	
		U1 UEL	Compact Spinning	U1 UEL	
		U1 LW	Compact Spinning	U1 LW	
		U1 UL	51s Ne & Finer	U1 UL	
		U1 LL	51s Ne & Finer	U1 LL	
		U1 ML	20s - 50s Ne	U1 ML	
		U1 UM	20s - 50s Ne	U1 UM	
		U1 EM	20s - 50s Ne	U1 EM	
		M1	20s - 50s Ne	EM1	
		U1 US	20s - 50s Ne	U1 US	
		U1 HM	20s - 50s Ne	U1 HM	
		P1	24s Ne & Coarser	EP1	
		U1 C1	24s Ne & Coarser	U1 C1	
		U1 CS	12s Ne & Coarser	U1 CS	
		C1 SH	30s Ne & Coarser	C1 SH	
			51s Ne & Finer	EL2	
		U2 UM	20s - 50s Ne	U2 UM	
		M2	20s - 50s Ne	EM2	
		H2	20s Ne & Coarser	EH2	
		P2	20s Ne & Coarser	EP2	
		U2 CS	20s Ne & Coarser	U2 CS	
		C2	20s Ne & Coarser	C2	

UDR (HWO) for Cotton, Synthetic fibres and blends

C2 Traveller are supplied in only Flat cross section

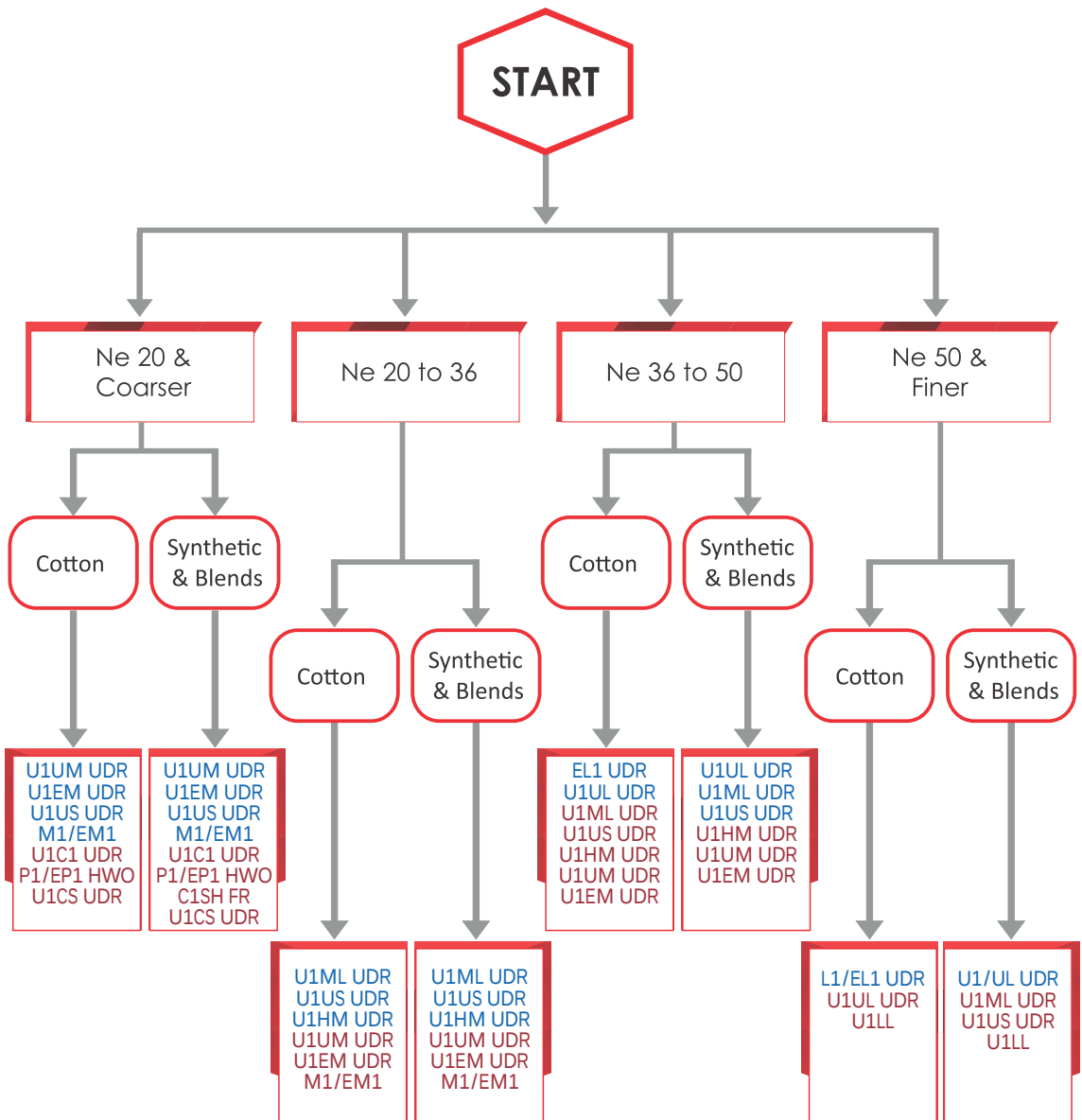
HO (DR) for Synthetic fibres and blends

FR for Acrylic and blends (H2, EH2 & C1SH type Travellers are available in FR)

U1 LL available in only Round Cross section

** These are our standard recommendations. For Detailed recommendation please refer page no. 10,11,12 & 13.

TRAVELLER SELECTION GUIDE NON COMPACT PROCESS, FLANGE 1 RINGS

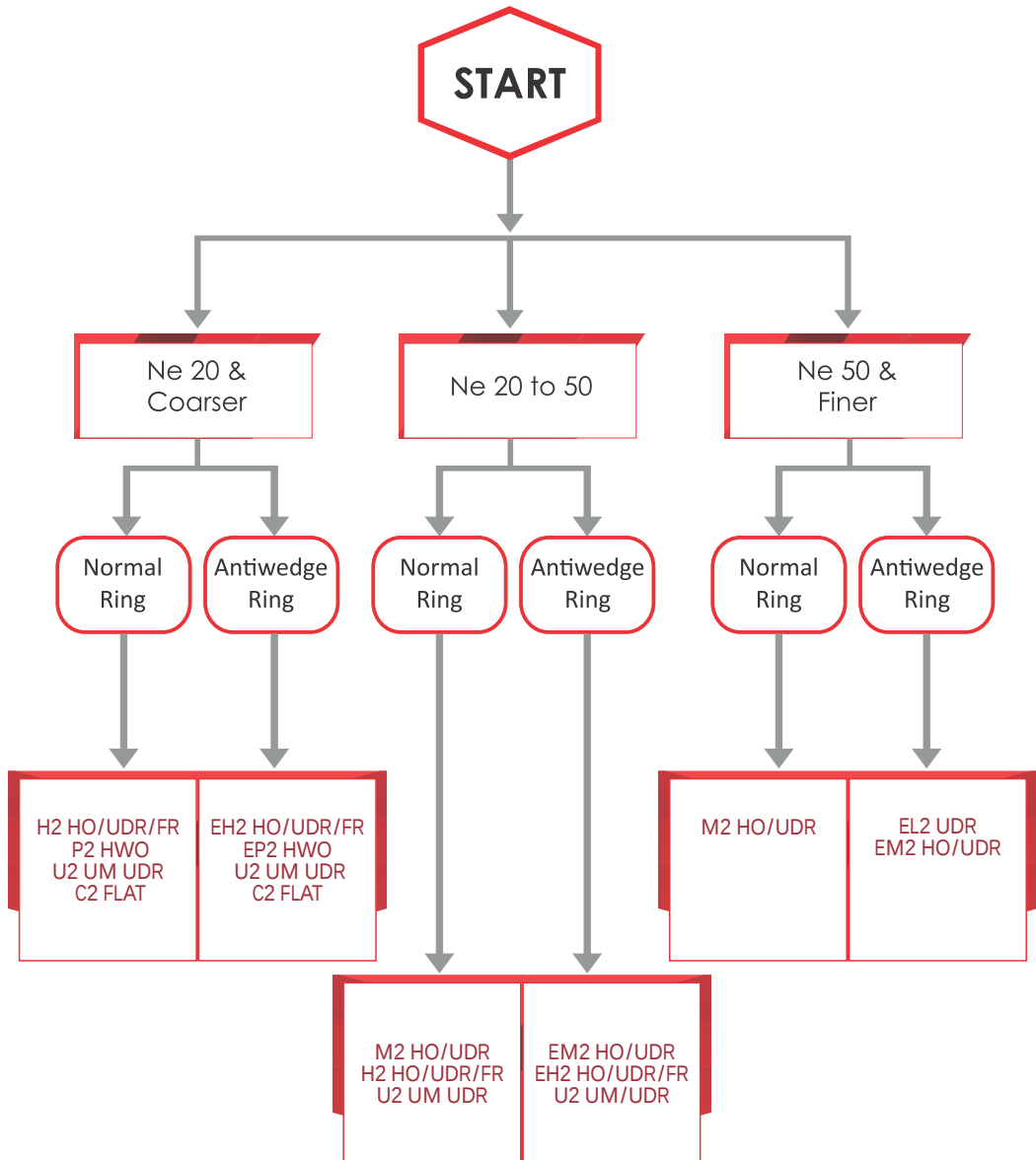


For high speed

Normal condition

Note: P1 / M1 / L1 for Normal rings, EP1 / EM1 / EL1 for Antiwedge rings, U1 / C1 for both Normal and Antiwedge rings

TRAVELLER SELECTION GUIDE NON COMPACT PROCESS, FLANGE 2 RINGS



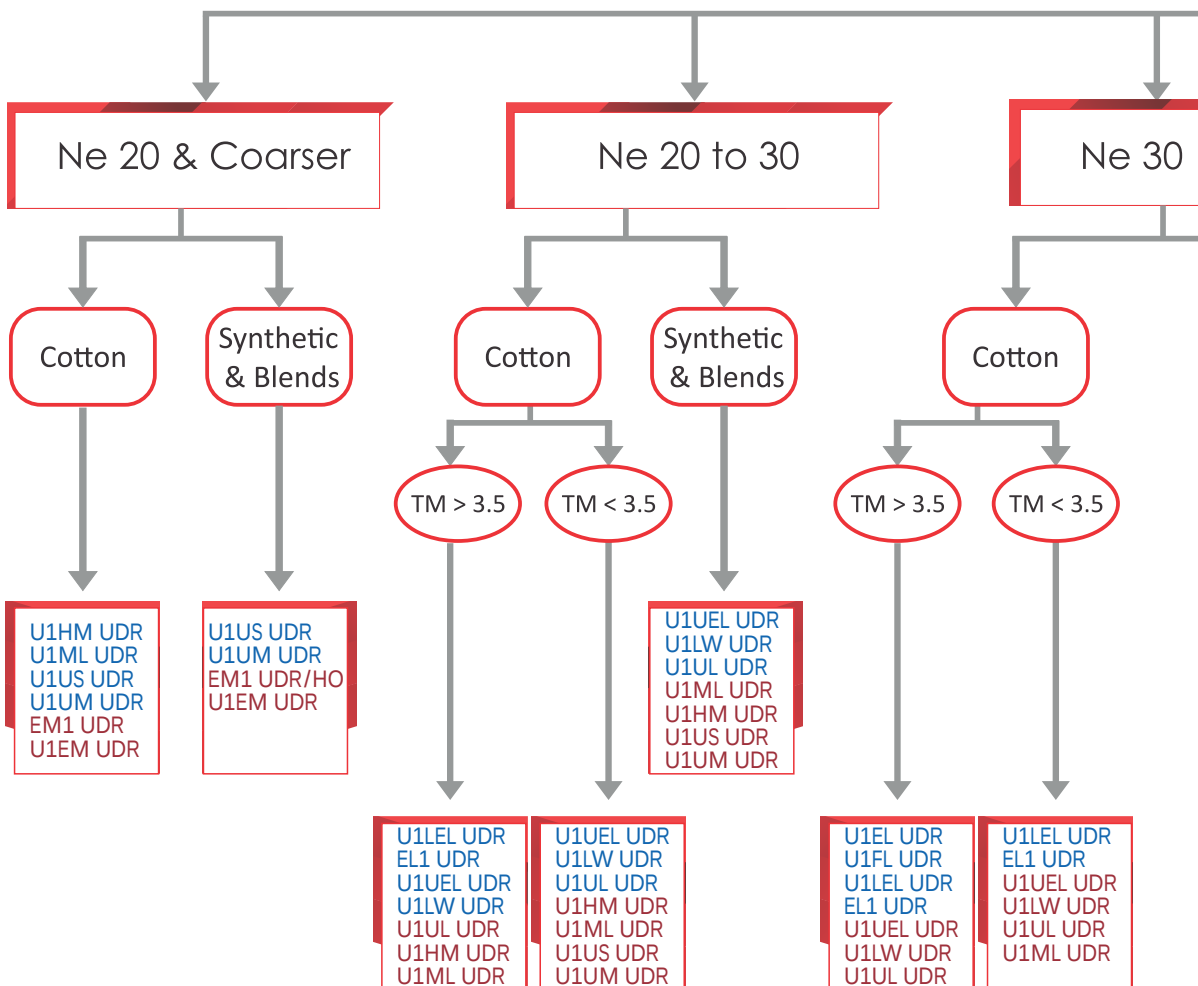
UDR (HWO) for Cotton, Synthetic fibres and blends

HO (DR) for Synthetic fibres and blends

FR for Acrylic and blends (H2, EH2 & C1SH type Travellers are available in FR)

C2 Traveller are supplied in only flat cross section

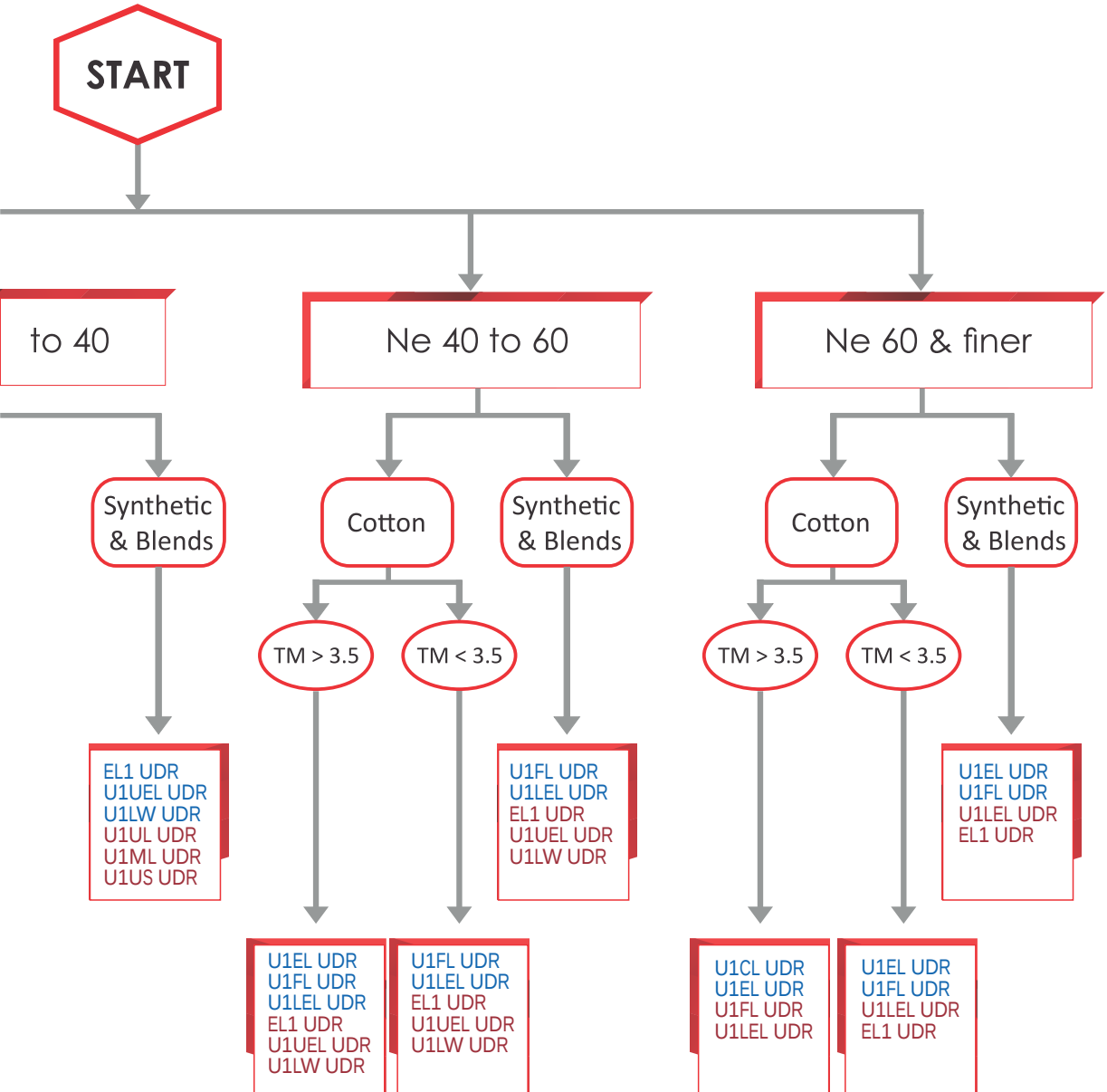
TRAVELLER SELECTION GUIDE - COMPACT PROCESS



For high speed

Normal condition

*TM = Twist Multiplier



TROUBLE SHOOTING

PROBLEM	CAUSES	REMEDIES
Poor Ring Traveller Life	• Improper matching • Poor Ring condition	• Correct Traveller Selection • Good Ring Condition
Less Yarn Elongation	• Heavier Ring Travellers	• Lighter Ring Travellers
More Yarn Hairiness	• Low Bow Height Traveller • Improper Temperature, Air humidity • Lighter Traveller	• High Bow Height Traveller • Correct RH & Temperature • Heavier Travellers
Unable to increase the spindle speed	• Improper Spinning Geometry • Poor Ring/Lappet centering • Spindle tube vibration • Improper selection of travellers	• Proper lift W.R.T count • The ratio between ring diameter 5:1 ring dia to tube length • 2d+5 of tube dia for lappet setting • Correct centering of Ring/lappet • Vibration free spindle/tube • Proper combination of Ring Travellers
Fluff Accumulation	• Improper traveller clearer setting • High Room Temperature • Poor RH% • Poor Housekeeping	• Setting should be 0.2 to 0.3 mm Traveller (operating position) • Optimum Room Temperature • Better RH% • Housekeeping should be proper
Pushed up neps	• Less Yarn clearance • Higher wear- out • Traveller clearer setting	• High clearance Traveller finish/profile • Use best Traveller combination/finish/profile • Clearer setting to be adjusted

TRAVELLER WEIGHT COMPARISON TABLE*

Traveller weight per 1000 Travellers in gram

Traveller No.	Lakshmi/ Bracker	Kanai	R&F	Traveller No.	Lakshmi/ Bracker	Kanai	R&F
28/0	6.3	6.7	5	4	90	89	85
26/0	7.1	8.1	6	5	95	95	95
24/0	8	9.5	7.1	6	100	109	106
22/0	9	10.9	8	7	112	122	112
20/0	10	12.3	9	8	125	136	125
19/0	11.2	13.0	10	9	140	154	140
18/0	12.5	13.7	11.2	10	160	175	160
17/0	13.2	14.5	12.5	11	180	204	180
16/0	14	15.4	13.2	12	200	224	200
15/0	15	16.6	14	13	224	244	224
14/0	16	18.3	15	14	250	264	236
13/0	17	20.0	16	15	265	283	250
12/0	18	21.6	18	16	280	300	265
11/0	20	23.4	19	17	300	311	280
10/0	22.4	24.8	20	18	315	324	300
9/0	23.6	26.8	22.4	19	335	335	315
8/0	25	28.5	23.6	20	355	355	325
7/0	28	30.2	26.5	21		364	335
6/0	31.5	32.2	30	22	375	378	355
5/0	35.5	35.1	31.5	23		391	375
4/0	40	38.3	35.5	24	400	404	385
3/0	45	42.2	40	25		418	
2/0	50	48.3	45	26	425	431	415
1/0	56	54.5	50	27		444	425
1	63	62.2	60	28	450	457	450
2	71	74	71	29		472	460
3	80	81	80	30	475	485	475

* Subject to change based on Manufacturer recommendation

* Weight Chart for our U1 US UR Profile, Contact LRT

TRAVELLER SELECTION FOR COTTON

Count NE	Traveller Number	FLANGE 1		FLANGE 2	
		Normal	CR/ AW	Normal	CR/ AW
8	10 - 14	U1 CS/P1/U1 UM/U1 US	U1 CS/EP1/U1 UM/U1 US	*C2/H2/P2	*C2/EH2/EP2
12	6 - 9	U1 C1/P1/U1 UM/U1 US	U1 C1/EP1/U1 UM/U1 US	*C2/H2/P2	*C2/EH2/EP2
18	2 - 6	U1 C1/P1/U1 HM/U1 UM/U1 US	U1 C1/EP1/U1 HM/U1 UM/U1 US	*C2/H2/P2	*C2/EH2/EP2
20	2/0 - 3	M1/P1/U1 UM/U1 EM/U1 C1/U1 US/U1 HM	EM1/EP1/U1 UM/U1 EM/U1 C1/U1 US/U1 HM	H2/P2/U2 UM	EH2/EP2/U2 UM
24	3/0 - 2	M1/P1/U1 UM/U1 EM/U1 C1/U1 US/U1 HM	EM1/EP1/U1 UM/U1 EM/U1 C1/U1 US/U1 HM	M2/H2/U2 UM	EM2/EH2/U2 UM
30	5/0 - 1/0	M1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM	EM1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM	M2/U2 UM	EM2/U2 UM
34	6/0 - 2/0	M1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM	EM1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM	M2	EM2/EL2
40	9/0 - 5/0	M1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM/U1 UL	EM1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM/U1 UL/EL1	M2	EM2/EL2
45	11/0 - 8/0	M1/U1 UM/U1 ML/U1 US/U1 HM/U1 UL	EM1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM/U1 UL/EL1	—	—
55	13/0 - 9/0	M1/U1 UM/U1 EM/U1 ML/U1 US/U1 UL/U1 LL	EM1/U1 UM/U1 EM/U1 ML/U1 US/U1 UL/EL1 / U1 LL	—	—
60	14/0 - 10/0	L1/U1 UL / U1 LL	EL1/U1 UL / U1 LL	—	—
70	16/0 - 12/0	L1/U1 UL / U1 LL	EL1/U1 UL / U1 LL	—	—
80	18/0 - 14/0	L1/U1 UL / U1 LL	EL1/U1 UL / U1 LL	—	—
90	20/0 - 16/0	L1/U1 UL / U1 LL	EL1/U1 UL / U1 LL	—	—
100	22/0 - 18/0	L1/U1 UL / U1 LL	EL1/U1 UL / U1 LL	—	—
120	26/0 - 22/0	L1/U1 UL / U1 LL	EL1/U1 UL / U1 LL	—	—

TRAVELLER SELECTION FOR SYNTHETICS

Count NE	Traveller Number	FLANGE 1		FLANGE 2	
		Normal	CR/ AW	Normal	CR/ AW
8	12 - 16	U1 CS/P1/U1 UM/U1 US	U1 CS/EP1/U1 UM/U1 US	*C2/H2/P2	*C2/EH2/EP2
12	8 - 11	U1 C1/ P1/U1 UM/U1 US	U1 C1/EP1/U1 UM/U1 US	*C2/H2/P2	*C2/EH2/EP2
18	5 - 8	M1/P1/U1 UM/U1 C1/U1 US/U1 HM	EM1/EP1/U1 UM/U1 C1/U1 US/U1 HM	*C2/H2/P2	*C2/EH2/EP2
20	4 - 7	M1/P1/U1 UM/U1 C1/U1 US/U1 HM	EM1/EP1/U1 UM/U1 C1/U1 US/U1 HM	H2/P2/U2 UM	EH2/EP2/U2 UM
24	1 - 4	M1/P1/U1 UM/U1 EM/U1 C1/U1 US/U1 HM	EM1/EP1/U1 UM/U1 EM/U1 C1/U1 US/U1 HM	M2/H2/U2 UM	EM2/EH2/U2 UM
30	2/0 - 2	M1/U1 UM/U1 EM/U1 ML/U1 C1/U1 US/U1 HM	EM1/U1 UM/U1 EM/U1 ML/U1 C1/U1 US/U1 HM	M2/U2 UM	EM2/U2 UM
34	3/0 - 1	M1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM	EM1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM	M2	EM2
40	7/0 - 3/0	M1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM/U1 UL	EM1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM/U1 UL	M2	EM2
45	9/0 - 6/0	M1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM/U1 UL	EM1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM/U1 UL	M2	EM2
55	11/0 - 7/0	M1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM/U1 UL	EM1/U1 UM/U1 EM/U1 ML/U1 US/U1 HM/U1 UL	—	—
60	12/0 - 8/0	M1/U1 UM/U1 EM/U1 ML/U1 UL / U1 LL	EL1/U1 UM/U1 EM/U1 ML/U1 UL / U1 LL	—	—
70	14/0 - 10/0	L1/U1 UL/U1 ML / U1 LL	EL1/U1 ML/U1 UL / U1 LL	—	—
80	16/0 - 12/0	L1/U1 UL / U1 LL	EL1/U1 UL / U1 LL	—	—

*HO(DR) for Synthetic fibres and blends. *UDR(HWO) for Cotton, Synthetic and blends

*C2 Traveller are supplied in only Flat cross section

*U1 LL available in only Round Cross section

You may select the Traveller number/ type as per your mill conditions. For assistance, please contact LRT

NOTE : Guidelines for Traveller selection are specified based on our experience

LRT STROBOSCOPE

KEY FEATURES

- Super portable - battery-powered, pocket sized.
- Extremely Rugged.
- No Protruding parts and hence no chance of damage to them.
- Lightweight (only 300 grams).
- Easy to handle.
- Brighter than any comparable hand held inspection lighting.
- Recharges completely in 3-4 hours.
- Up to 49,999 flashes/min.



APPLICATIONS

LRT Stroboscope can be used in Textile Industry for

- Analyzing Ring and traveller combination.
- Inspecting the Traveller tilting, Traveller loading Balloon formation.
- Observing Hairiness on running packages.
- Finding out belt slippage which causes twist variation.
- Analyzing the twist variation in Doubling and twisting machines.
- Observing the weft insertion in weaving machines.
- Measuring the speed of Motor, shafts, gears & pulleys.
- Visual inspection of moving and rotating parts.

SPECIFICATION

Size: (147.24 X 89.0 X 25.0) mm

Power: 6 Watts MA, 0.6 Amps Max

1. Keypad, LRT Stroboscope
2. Enclosure W/ Screws
3. Programmed Assy, Control/Power Led Board
4. Lens, LRT Stroboscope
5. Screw, Pan HD
Phil #4-20x1/4 Plastite Ststl (x5)
6. Battery Assy, LRT Stroboscope
7. Label, Universal Warning, Model, P/N, S/N



LRT QUICKFIX

LRT QUICKFIX is a versatile Ring Traveller inserting tool.
It is very light weight and easy to use.

LRT Quickfix Advantage

- Quicker & Easier insertion of Traveller.
- No Traveller deformation.
- Reduced danger of damage to Ring surface.
- Lower ends down rate.
- Reduced idling time for machines.
- Complete elimination of Traveller losses.



Part numbers in Red indicates equivalent parts for C72
Part numbers in Blue indicates parts for C73
Other parts are common for C71, C72, & C73

		RING FLANGE	FOR TRAVELLER TYPE
20/0 - 8	C 71	ONE	L1, M1, P1, EL1, EM1, EP1, U1
10/0 - 26	C 72	TWO	M2, H2, P2, U2, EL2, EH2, EP2
9/0 - 18/0	C 73	HALF	U1 CL UDR & U1/2 TYPES*

*Only U1 CL UDR in one Flange can be used in C73

LRT QUICKFIX schedule of types

LRT Extract

- 100% Collection of Travellers without spilling on the floor.
- No damage to the Ring surface.
- Quick removal of Travellers.
- No strain for fingers.



LRT EXTRACT TYPES

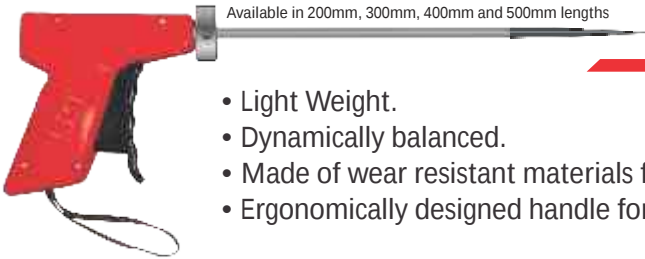
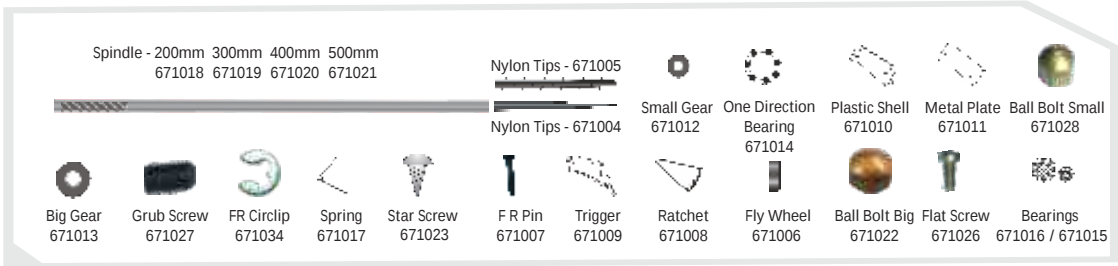
MODEL	CODE	APPLICATION RANGE
ECR	690100	No.1 - 10
EMR	690101	No.1/0 - 10/0
EFR	690102	No.10/0 - Finer



Available in 200mm, 300mm, 400mm and 500mm lengths

FLUFF REMOVER - FR 1

- Light Weight and handy
- Dynamically balanced.
- Increased RPM.
- Ergonomically designed handle for easy handling.
- Made of wear resistant materials for longer life.



Available in 200mm, 300mm, 400mm and 500mm lengths

FLUFF REMOVER - FR 2

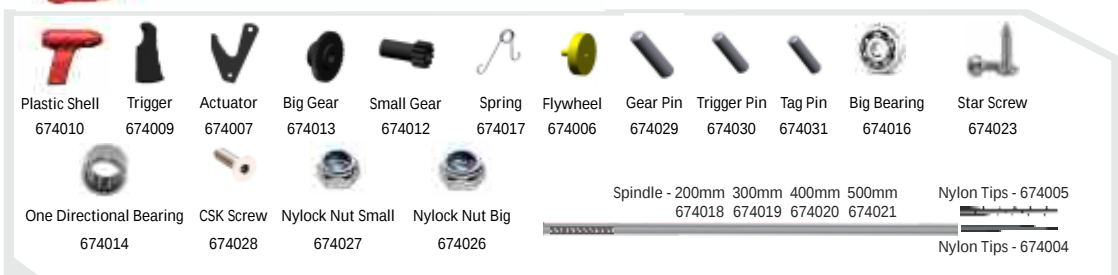
- Light Weight.
- Dynamically balanced.
- Made of wear resistant materials for longer life.
- Ergonomically designed handle for easy handling.



Available in 200mm, 300mm, 400mm and 500mm lengths

FLUFF REMOVER - FR 3

- Robust and sturdy tool
- User friendly
- Large heavy duty metallic gears for longer life
- Increased spindle RPM & Longer rotation time



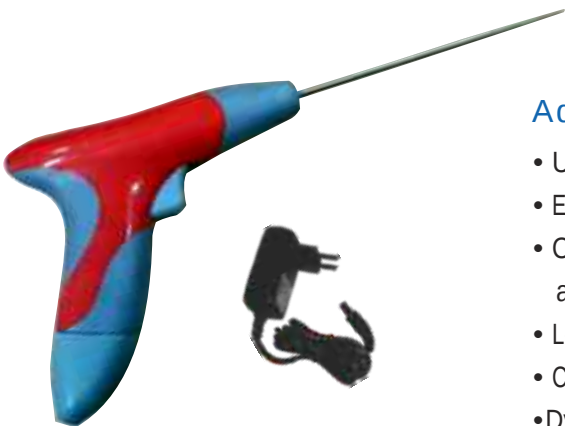


Available in 150mm & 300mm Spindle lengths

LRT ELECTROCLEAN - EC1

Advantage of LRT ELECTRO CLEAN-EC1

- Light weight and handy - user friendly and well accepted by the end users.
- Dynamically balanced and direct drive from motor - no frequent break down.
- No gears and springs - free from maintenance and noise.
- Economical and made of wear resistance material for longer life.
- Enhanced battery life.



Available in 200mm & 300mm Spindle lengths

LRT ELECTROCLEAN - EC2

Advantage of LRT ELECTRO CLEAN-EC2

- User friendly ergonomic design.
- Easily replaceable rechargeable batteries
- One set of battery can be charged while another one can be used for operation.
- Long battery life
- Charge indication available in the tool.
- Dynamically balanced and direct drive from motor.



LRT ELECTROCLEAN - EC3



Available in 200,300,400 & 500mm Spindle lengths

Advantage of LRT ELECTRO CLEAN-EC3

- Robust & Rugged tool
- Higher battery capacity leading to Longer battery life
- Higher torque & Spindle RPM
- Ergonomically designed for easy handling

							
EC3 HANDLE SET 677010	BACK COVER 677020	NOZZLE COVER 677021	SILICON TUBE 677005	MOTOR CLAMP 677011	NOZZLE WASHER 677022		
							
GRUB SCREW 677025	BEARING 677003	CIRCLIP 677004	PHILLIPS PH ST SCREW 677013	RMC CONNECTOR 677026	EC3 MOTOR 677008	EC3 BATTERY 677009	SWITCH 677001
				 200mm 300mm 400mm 500 mm 677014 677015 677016 677017			
ANTI - VIBRANT PAD 677023	TOP RUBBER PAD 677024	MICRO PLUG 677002	EC3 CHARGER 677012				

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