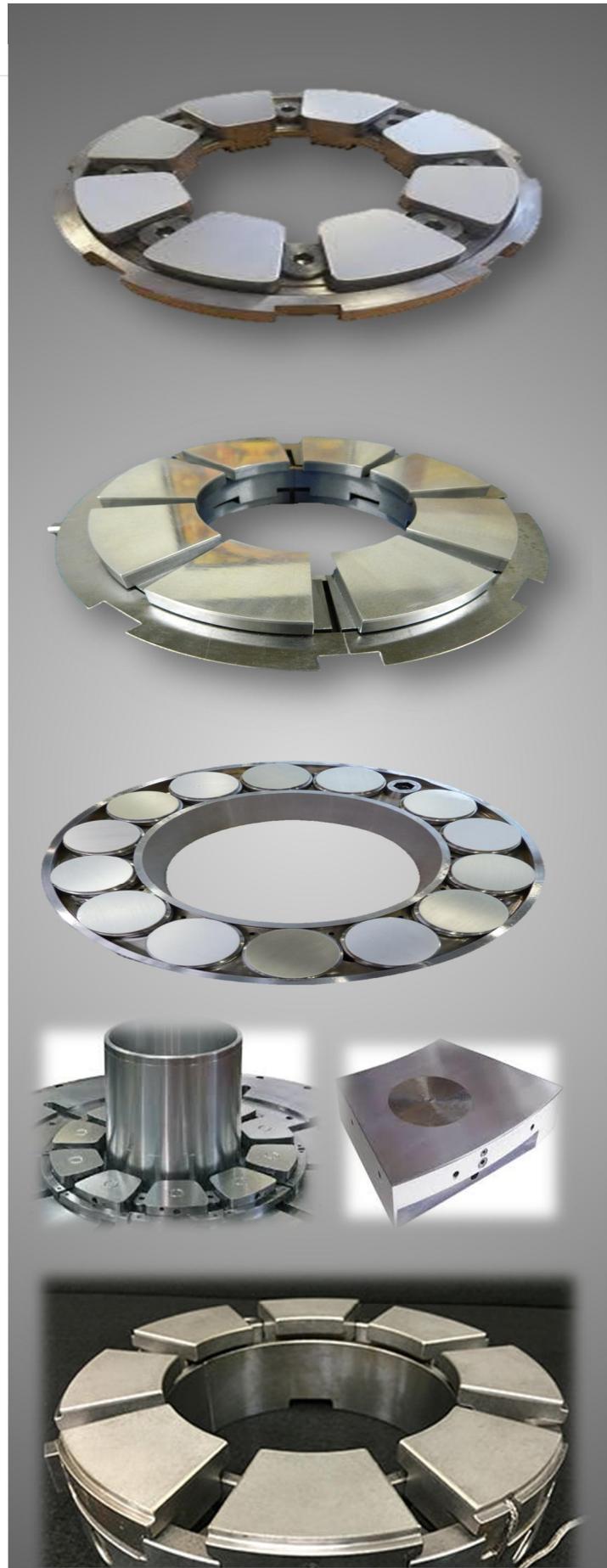


THRUST PAD THRUST BEARINGS SOLUTION FOR ROTODYNAMIC MACHINES (BABBITT /WHITE METAL BEARING)



- NEW SUPPLY
- REFURBISHMENT
- CUSTOMIZATION

Do you want beneficial technologies being shaped by your requirements?

Whether in the areas of Heavy Industry, Process Plant, Customized Machinery Components or Reverse Engineering you will have the chance to fulfil your proper requirements with proper satisfaction and a hand hold support.

Welcome to SUNTECH ENGINEERING CORPORATION.

SUNTECH ENGINEERING CORPORATION is dealing with wide range of Thrust Bearing Assembly / Thrust Babbitted PAD with Identical Reverse Engineering and Customized developments.

PRODUCTS

- Thrust Bearing Assembly
- Thrust and Guide Pads
- Tilting & RD Pads for Journal and Thrust Bearings
- Bearing Accessories

SCOPE OF WORK

- Analysis , Design & Manufacturing of Babbitt/White Metal Bearings
- Manufacturing of Babbitt Coated Bearings as per Customer Drawings, Design & Sample.
- Reverse Engineering , Re-Design and Customization
- Refurbishment of Babbitt Bearings and Engineering Support.
- Solution on DIN. Standard Bearings.



OIL FILM INSTABILITY

In a condition of low load and high surface speed in a cylindrical bearing, there can set in a self-sustaining motion of shaft centre around the bearing centre at approximately half the synchronous speed. In this condition, an instability of shaft motion sets in causing first of all break in oil film, surface to surface contact and severe shaft vibration leading to the destruction of the bearing.

Fig. 2 gives a preliminary guide to prediction of instability. While the subject is discussed here to draw the attention of the machine designer at the time of selecting the bearing, to this aspect, it is best to leave the final decision to the bearing designers EDP calculation and recommendations.

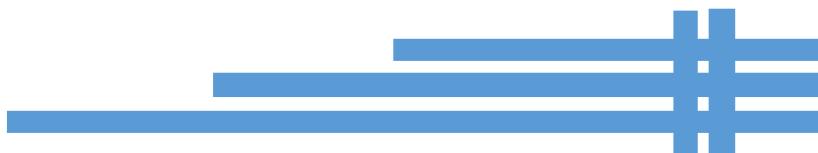
OIL FILM LIMIT

In a hydrodynamic bearing, the shaft and the bearing white metal are always separated by a minimum layer of oil which prevents a severe wear, overheating and ultimately destruction of the bearing. The minimum oil film thickness is important in this respect. Fig. 1 indicates an appropriate relationship between the surface roughness of the shaft and minimum oil film thickness to prevent a metallic contact. It is assumed that the surface finish of the bearing white metal is of same order after running in.

TILTING PAD THRUST BEARINGS & RD PADS.

- Able to safely carry the highest axial loads at high speeds in turbomachinery
- Best able to accommodate misalignment or deflection in supporting structure
- Able to include special features, materials and instrumentation

SUNTECH Tilting Pad Thrust Bearings are designed to withstand with high axial loads from rotating shafts collar surface with rapidly minimization of power loss, while simplifying installation and maintenance. SUNTECH make thrust bearing assembly is suitable for a range of shaft diameter and the maximum loads for the various bearing types range from 0.5 to 500 tonne. Bearings of larger size and load capacity can be made to special order. Each bearing consists of a series of pads supported in a carrier ring; each pad is free to tilt so as to create a self-sustaining hydrodynamic film. The carrier ring may be in one piece or in halves, and there are various location of pad to pad locking arrangement.



CARRIER RINGS

The carrier rings may be either in one piece or two to permit assembly around the shaft without removing the thrust collar. An anti-rotation stop pin (or key) is fitted either on the back of the carrier ring or on the edge. Depending on the design of the housing, slots can be provided at the back of the carrier ring to facilitate oil flow to the flooded bearing.

PADS

The thrust pad profile is designed to minimise power loss while maintaining load carrying capacity. In its standard form the pad is made of steel faced with tin based white Metal, while pivoting each pad in the centre makes the bearing suitable for rotation in either direction. Thrust pads with alternative facing and backing materials as well as offset pivots can be supplied for special applications.

MATERIALS

Standard pads are steel backed and lined with tin-based White Metal or Babbitt Metal to specification IS25 Gr.90 , ASTM B23 Grade 2 etc. In fact, "SUNTECH Engineering Corporation" controls the lead content to a lower level than required by these specifications in order to achieve improved performance of thermal cycling.

INTERCHANGEABILITY

This modular range is designed for optimum compactness and flexibility. As such, it can match or improve upon the space envelope required for any similar bearing product. It can therefore retrofit or be made completely interchangeable with other equalized bearing types. It can also be customised in terms of external dimensions.

ANTI-ROTATION

The Thrust Bearings will normally supplied with the standard anti-rotation pin position which is optimal from the bearing design point of view. In case the machine casing cannot accommodate the corresponding slot in this position, an alternative anti-rotation pin position will be provide.



LUBRICATION

These thrust bearings will normally be supplied with the 'Directed Lubrication' system of lubrication since, even at relatively low sliding speeds, benefits such as the avoidance of shaft oil seals make this an obvious preference. However, there may be occasions when flooded lubrication is more appropriate, and this option is available. For a proper explanation of the differences between flooded and 'Directed Lubrication' it is requested to contact with "SUNTECH Engineering Corporation"

SUNTECH 'Directed Lubrication'

- Effectively reduced power loss often over 45.5% at average and higher speeds
- Controlled oil flows at high speeds, lower bearing surface temperatures which increased oil film thickness
- Savings in overall costing and higher plant efficiency.
- Simpler installation & customized product (Pad to Pad unique Locking arrangement.)

POWER LOSS AND OIL FLOW

The power loss in a bearing results from the combination of viscous shear in the oil film and (in flooded bearings) of turbulence in the oil caused by the rotation of the shaft in an oil filed housing. This power loss appears as heat, and this must be removed from the bearing by the flow of lubricant. Computer programs exist to give accurate estimates of power loss and the oil flow required.

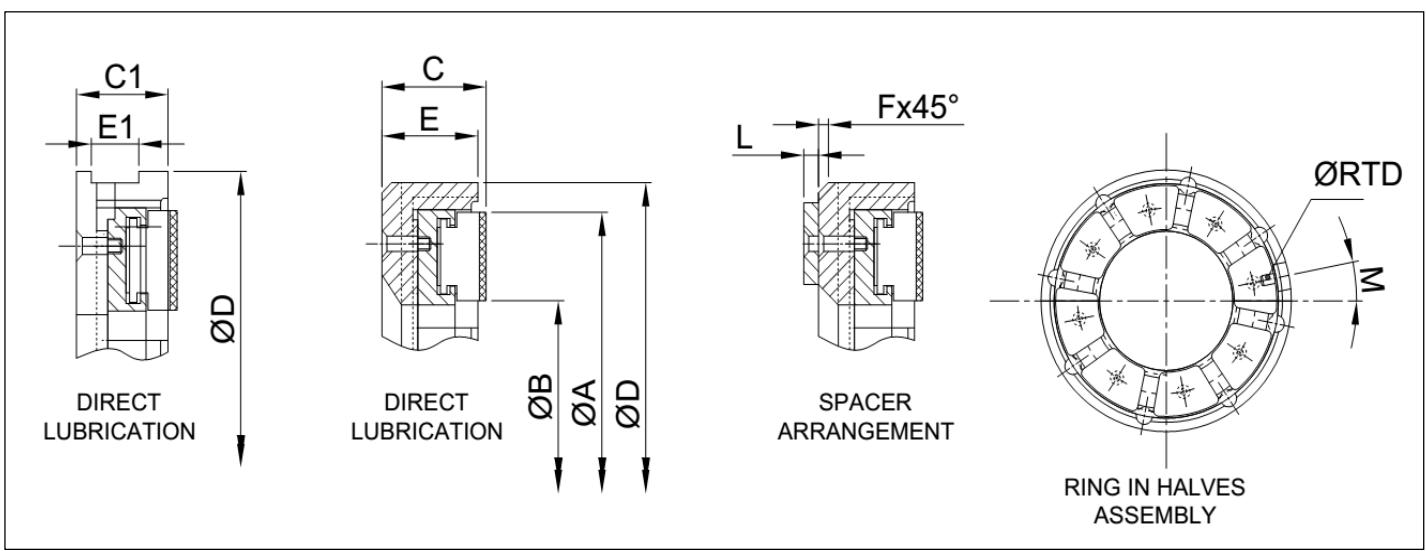
ALTERNATIVE MATERIALS

A common alternative to steel backed pads is a Copper Chrome (Cu/Cr) backing to reduce surface temperatures and increase load capacity at higher speeds. Lining materials such as lead bronzes are also available to meet special requirements.

** For detailed Catalogue of Thrust Bearings and accessories please contact to "SUNTECH Engineering Corporation" sales team.



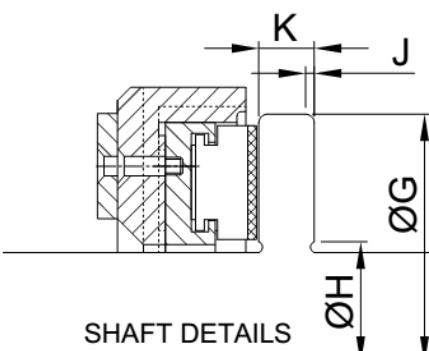
SERIES 6 THRUST PAD ASSEMBLY MAXIMUM SHAFT OD 160mm, MAXIMUM LOAD 43 TON



Size	Thrust Pad		Carrier Ring Dimension					Collar Size				
	O-Dia	I-Dia	Thick		O-Dia	Housing Bore			O-Dia	I-Dia	Rad	Thick
	A	B	C	C1	D		E	F	G	H	J	K
S667	59	25	15.85	18.05	71.27	71.27	13	4	62	23	0.4	11
S679	71	29	17.43	19.63	82.43	82.34	13	5	74	27	0.4	13
S694	84	35	19.02	21.22	98.22	98.22	14	5	88	32	0.4	16
S6103	92	38	20.61	23.9	107.74	107.74	15	6	95	36	0.4	17
S6112	100	41	22.19	25.49	115.68	115.68	17	6	105	38	0.4	19
S6123	110	44.5	29.77	27.07	126.75	126.75	17	6	113	43	0.8	21
S6134	119	49	25.36	28.66	139.15	139.15	19	6	122	46	0.8	22
S6146	130	54	26.95	30.25	147.39	147.39	20	6	134	51	0.8	25
S6159	143	58.5	28.54	31.84	164.85	164.85	21	7	146	56	0.8	27
S6174	155	64	31.71	35.01	179.14	179.14	22	7	159	61	0.8	30
S6190	168	70	34.88	38.89	193.39	193.39	25	8	171	67	0.8	32
S6207	184	76	38.06	42.04	209.26	209.26	27	10	189	72	0.8	35
S6225	200	82.5	41.22	45.22	228.31	228.31	30	10	203	79	0.8	38
S6246	219	91	44.39	48.39	247.36	247.36	32	11	224	87	0.8	43
S6269	240	98.5	47.57	51.57	266.38	266.38	33	11	243	97	0.8	48
S6293	261	108	50.74	54.74	291.78	291.78	35	11	265	104	0.8	53
S6320	286	117	57.09	61.09	317.15	317.15	40	13	289	116	0.8	56
S6348	310	128	60.27	64.27	342.55	342.9	41	13	315	124	0.8	64
S6380	340	140	66.61	73.61	371.13	371.48	46	14	343	138	0.8	67
S6415	369	153	72.96	79.96	406.01	406.4	51	16	375	149	0.8	76
S6453	403	167	79.31	86.31	440.94	441.33	56	16	410	162	1.5	79
S6494	439	182	85.66	95.36	482.21	482.6	59	17	447	177	1.5	92
S6538	478	198	91.93	101.63	523.44	523.88	64	19	486	194	1.5	95

SERIES 6 THRUST PAD ASSEMBLY MAXIMUM SHAFT OD 160mm, MAXIMUM LOAD 43 TON

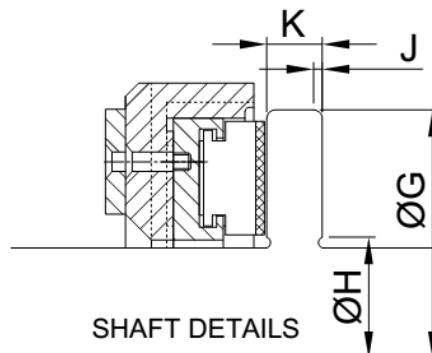
- ✓ Bi directional performance
- ✓ Optimised Colling method
- ✓ Installation & maintenance
- ✓ Efficient sealing system
- ✓ Corrosion resistant materials
- ✓ Advanced leading edge grove technology



Spacer Thickness		M (RTD Position)	Thrust Surface (mm ²)	Allow. Spec Load	Total Axial Clearance
L (MIN)	L(W/M ALLOW)			Mpa.	mm
3.2	4.8	22.5	1715	2.65	0.2
3.2	4.8	22.5	2425	2.9	0.25
3.2	4.8	22.5	3445	3.2	0.25
4.8	6.4	22.5	4095	3.3	0.3
4.8	6.4	22.5	4895	3.4	0.3
4.8	6.4	22.5	5795	3.45	0.3
4.8	6.4	22.5	6895	3.5	0.35
4.8	6.4	22.5	8245	3.6	0.35
4.8	6.4	22.5	9795	3.6	0.35
4.8	6.4	22.5	11695	3.65	0.4
6.4	8.7	22.5	13895	3.7	0.4
6.4	8.7	22.5	16595	3.7	0.4
6.4	8.7	22.5	19695	3.75	0.5
6.4	8.7	22.5	23495	3.8	0.5
6.4	8.7	22.5	27995	3.8	0.5
6.4	8.7	22.5	33195	3.85	0.5
6.4	8.7	22.5	39695	3.85	0.6
6.4	8.7	22.5	46995	3.9	0.6
9.5	12.7	22.5	56195	3.9	0.6
9.5	12.7	22.5	66695	3.9	0.6
9.5	12.7	22.5	79295	3.9	0.7
12.7	15.9	22.5	94395	3.9	0.7
12.7	15.9	22.5	111495	3.9	0.7

SERIES 8 THRUST PAD ASSEMBLY MAXIMUM SHAFT OD 275mm, MAXIMUM LOAD 58.3 TON

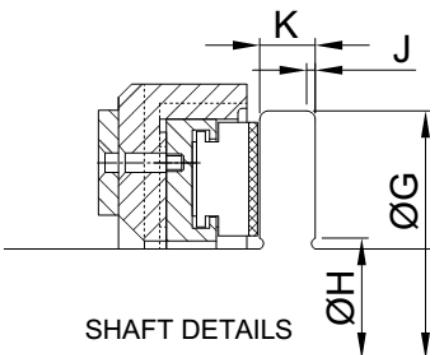
- ✓ Bi directional performance
- ✓ Optimised Colling method
- ✓ Installation & maintenance
- ✓ Efficient sealing system
- ✓ Corrosion resistant materials
- ✓ Advanced leading edge grove technology



Spacer Thickness		M (RTD Position)	Thrust Surface (mm ²)	Allow. Spec Load	Total Axial Clearance
L (MIN)	L(W/M ALLOW)				
3.2	4.8	22.5	1130	2.1	0.2
3.2	4.8	22.5	1605	2.4	0.2
3.2	4.8	22.5	2350	2.65	0.2
3.2	4.8	22.5	3240	2.9	0.25
3.2	4.8	22.5	4600	2.2	0.25
4.8	6.4	22.5	5490	3.3	0.3
4.8	6.4	22.5	6490	3.4	0.3
4.8	6.4	22.5	7740	3.45	0.3
4.8	6.4	22.5	9240	3.5	0.35
4.8	6.4	22.5	10990	3.6	0.35
4.8	6.4	22.5	13090	3.6	0.35
4.8	6.4	22.5	15490	3.65	0.4
6.4	8.7	22.5	18590	3.7	0.4
6.4	8.7	22.5	22090	3.7	0.4
6.4	8.7	22.5	26290	3.8	0.5
6.4	8.7	22.5	31290	3.8	0.5
6.4	8.7	22.5	37290	3.85	0.5
9.5	12.7	22.5	44290	3.85	0.5
9.5	12.7	22.5	52890	3.9	0.6
9.5	12.7	22.5	62690	3.9	0.6
9.5	12.7	22.5	74790	3.9	0.6
9.5	12.7	22.5	88990	3.9	0.6
12.7	15.9	22.5	105790	3.9	0.7
12.7	15.9	22.5	125990	3.9	0.7
12.7	15.9	22.5	149490	3.9	0.7

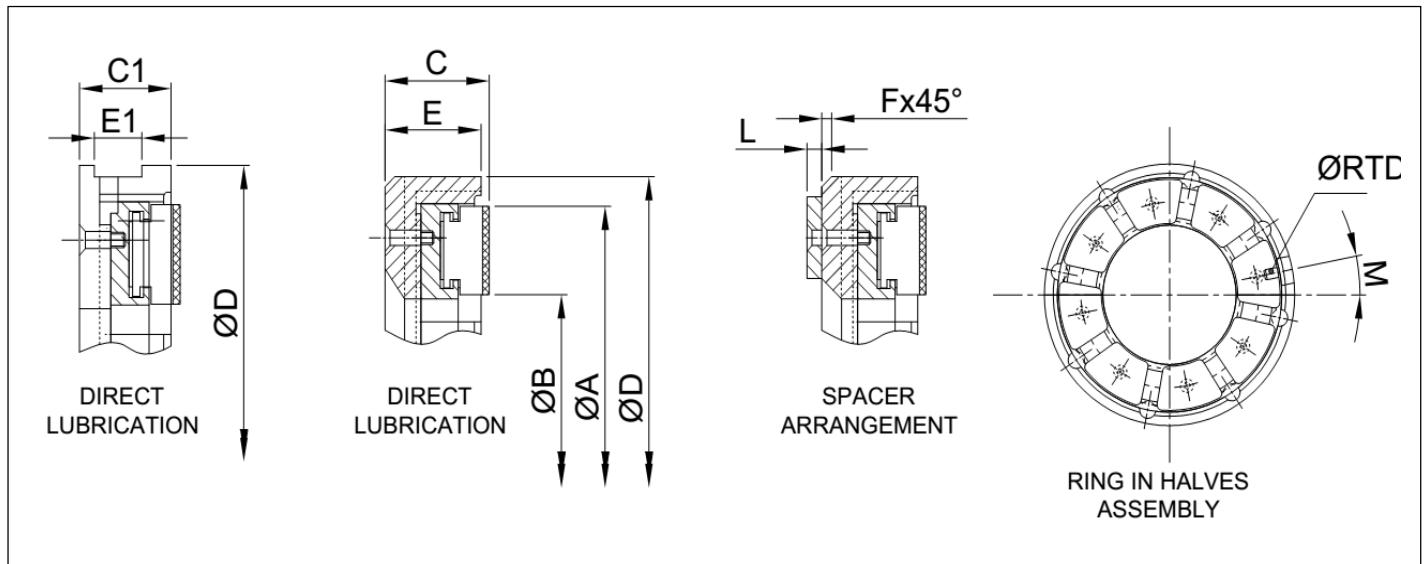
SERIES 11 THRUST PAD ASSEMBLY MAXIMUM SHAFT OD 460mm, MAXIMUM LOAD 80 TON

- ✓ Bi directional performance
- ✓ Optimised Colling method
- ✓ Installation & maintenance
- ✓ Efficient sealing system
- ✓ Corrosion resistant materials
- ✓ Advanced leading edge grove technology



Spacer Thickness		M (RTD Position)	Thrust Surface (mm ²)	Allow. Spec Load Mpa.	Total Axial Clearance
L (MIN)	L(W/M ALLOW)				mm
3.2	4.8	32.5	1570	2.1	0.2
3.2	4.8	32.5	2215	2.4	0.2
3.2	4.8	32.5	3155	2.65	0.2
3.2	4.8	32.5	4455	2.9	0.25
4.8	6.4	32.5	6295	3.2	0.25
4.8	6.4	32.5	7545	3.3	0.3
4.8	6.4	32.5	8945	3.4	0.3
4.8	6.4	32.5	10595	3.45	0.3
4.8	6.4	32.5	12695	3.5	0.35
6.4	8.7	32.5	15095	3.6	0.35
6.4	8.7	32.5	17895	3.6	0.35
6.4	8.7	32.5	21295	3.65	0.4
6.4	8.7	32.5	25495	3.7	0.4
6.4	8.7	32.5	30395	3.7	0.4
9.5	12.7	32.5	36095	3.75	0.5
9.5	12.7	32.5	42995	3.8	0.5
9.5	12.7	32.5	51395	3.8	0.5
9.5	12.7	32.5	60895	3.85	0.5
9.5	12.7	32.5	72895	3.85	0.6
9.5	12.7	32.5	86495	3.9	0.6
9.5	12.7	32.5	102495	3.9	0.6
9.5	12.7	32.5	121995	3.9	0.6
12.7	15.9	32.5	145995	3.9	0.7
12.7	15.9	32.5	171995	3.9	0.7
12.7	15.9	32.5	204995	3.9	0.7

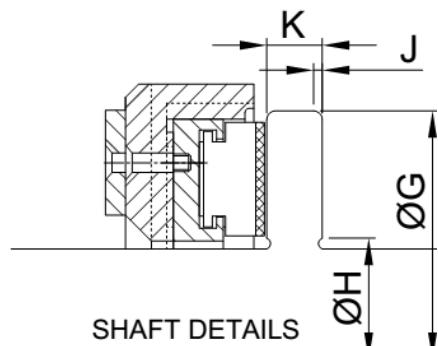
SERIES 14 THRUST PAD ASSEMBLY MAXIMUM SHAFT OD 400mm, MAXIMUM LOAD 43 TON



Size	Thrust Pad		Carrier Ring Dimension						Collar Size			
	O-Dia	I-Dia	Thick		O-Dia	Housing Bore			O-Dia	I-Dia	Rad	Thick
	A	B	C	C1	D		E	F	G	H	J	K
S1447	82.5	58.5	12.67	-	95.04	95.25	10	3	84	57	0.4	7
S1556	98.5	70	14.26	16.46	110.92	111.13	12	3	100	68	0.4	9
S1467	117	82.5	15.85	18.05	129.94	130.18	13	4	121	81	0.8	10
S1479	138	98.5	19.02	22.32	152.16	152.4	15	5	141	95	0.8	13
S1494	165	117	20.61	29.9	183.87	184.15	16	5	168	114	0.8	16
S14103	181	129	22.19	25.49	199.75	200.03	17	5	184	125	0.8	17
S14112	197	140	23.71	27.07	218.8	219.08	19	6	200	137	0.8	19
S14123	214	152	25.36	28.65	237.85	238.13	19	6	217	149	0.8	21
S14134	235	165	26.95	30.95	260.03	260.35	21	6	238	164	0.8	22
S14146	257	181	28.54	32.54	282.26	282.58	22	6	260	179	0.8	24
S14159	279	197	31.71	35.71	307.66	307.98	24	6	283	195	0.8	27
S14174	305	216	34.89	38.89	333.03	333.38	25	8	308	213	0.8	30
S14190	332	235	38.06	42.04	361.6	361.95	29	10	335	232	0.8	32
S14207	362	257	41.22	48.22	393.35	393.7	30	11	365	254	0.8	35
S14225	394	279	44.39	51.39	425.07	425.45	33	11	400	273	1.5	38
S14246	432	305	47.57	54.57	463.17	463.55	35	13	438	302	1.5	43
S14269	470	333	50.74	57.74	501.22	501.65	37	13	476	327	1.5	48
S14293	514	365	53.92	60.92	545.66	564.1	40	13	521	359	1.5	51
S14320	558	396	60.27	67.26	596.47	596.9 [*] 0	43	14	565	391	1.5	54
S14348	610	432	66.61	73.61	647.21	647.7	48	16	616	425	1.5	60

SERIES 14 THRUST PAD ASSEMBLY MAXIMUM SHAFT OD 400mm, MAXIMUM LOAD 43 TON

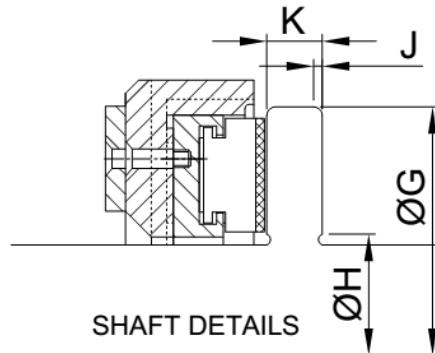
- ✓ Bi directional performance
- ✓ Optimised Colling method
- ✓ Installation & maintenance
- ✓ Efficient sealing system
- ✓ Corrosion resistant materials
- ✓ Advanced leading edge grove technology



Spacer Thickness		M (RTD Position)	Thrust Surface (mm ²)	Allow. Spec Load		Total Axial Clearance
L (MIN)	L(W/M ALLOW)			Mpa.	mm	
3.2	4.8	22.5	2005	2.1	0.2	
3.2	4.8	22.5	2835	2.4	0.2	
3.2	4.8	22.5	4015	2.65	0.2	
4.8	6.4	22.5	5695	2.9	0.25	
4.8	6.4	22.5	8045	3.2	0.25	
4.8	6.4	22.5	9545	3.3	0.3	
4.8	6.4	22.5	11395	3.4	0.3	
4.8	6.4	22.5	13495	3.45	0.3	
6.4	8.7	22.5	16095	3.5	0.35	
6.4	8.7	22.5	19195	3.6	0.35	
6.4	8.7	22.5	22895	3.6	0.35	
6.4	8.7	22.5	27295	3.65	0.4	
6.4	8.7	22.5	32495	3.7	0.4	
9.5	12.7	22.5	38695	3.7	0.4	
9.5	12.7	22.5	45995	3.75	0.5	
9.5	12.7	22.5	54795	3.8	0.5	
9.5	12.7	22.5	64995	3.8	0.5	
9.5	12.7	22.5	77395	3.85	0.5	
9.5	12.7	22.5	92295	3.85	0.6	
9.5	12.7	22.5	109495	3.9	0.6	

SERIES 18 THRUST PAD ASSEMBLY MAXIMUM SHAFT OD 420mm, MAXIMUM LOAD 32 TON

- ✓ Bi directional performance
- ✓ Optimised Colling method
- ✓ Installation & maintenance
- ✓ Efficient sealing system
- ✓ Corrosion resistant materials
- ✓ Advanced leading edge grove technology



Spacer Thickness	M (RTD Position)	Thrust Surface (mm ²)	Allow. Spec Load	Total Axial Clearance
			Mpa.	mm
L (MIN)	L(W/M ALLOW)			
3.2	4.8	22.5	2.1	0.2
3.2	4.8	22.5	2.4	0.2
3.2	4.8	22.5	2.65	0.2
4.8	6.4	22.5	2.9	0.25
4.8	6.4	22.5	3.2	0.25
4.8	6.4	22.5	3.3	0.3
6.4	8.7	22.5	3.4	0.3
6.4	8.7	22.5	3.45	0.3
6.4	8.7	22.5	3.5	0.35
6.4	8.7	22.5	3.6	0.35
6.4	8.7	22.5	3.6	0.35
6.4	8.7	22.5	3.65	0.4
9.5	12.7	22.5	3.7	0.4
9.5	12.7	22.5	3.7	0.4
9.5	12.7	22.5	3.75	0.5
9.5	12.7	22.5	3.8	0.5
9.5	12.7	22.5	3.8	0.5

THRUST BEARING PURCHASE INPUT DATA SHEET.

Suntech.ecorp@gmail.com

For additional contact information, Contact SUNTECH ENGINEERING CORPORATION.

Please confirm bearing selection and give estimated operating data for the following:

Name: _____

Company: _____

Contact E-mail: _____

Project Ref: _____

Date: _____

1. General

application: _____

2. Thrust Load

Normal : _____

Max continuous: _____

Minimum load : _____

At instant of start up: _____

Max. momentary: _____

3. Lubricant

type: _____

or ISO viscosity grade: _____

temperature at bearing inlet: _____

pressure at bearing inlet: _____

4. Shaft Speed

normal : _____

max continuous : _____

over speed : _____

bi- or uni-directional : _____

SUNTECH ENGINEERING CORPORATION

(AN ISO 9001 : 2015 CERTIFIED COMPANY)

Office Address: 157C, Lenin Sarani, 4th Floor Kolkata 13.

Work Address: Icchapur, Kamardanga, Howrah 711104.

Contact: 7278849399/9831207030

Mail ID: suntech.ecorp@gmail.com