Excellence in
CARDAN SHAFT UNIVERSAL JOINTS

CARDAN SHAFT CENTRE

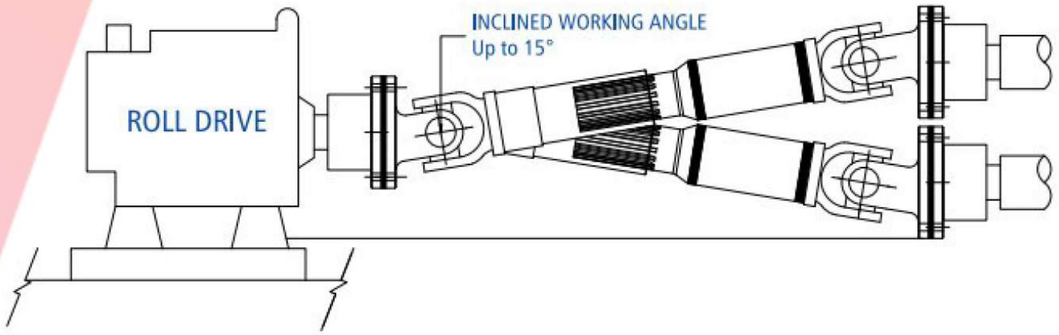
Engineering Meets Technology

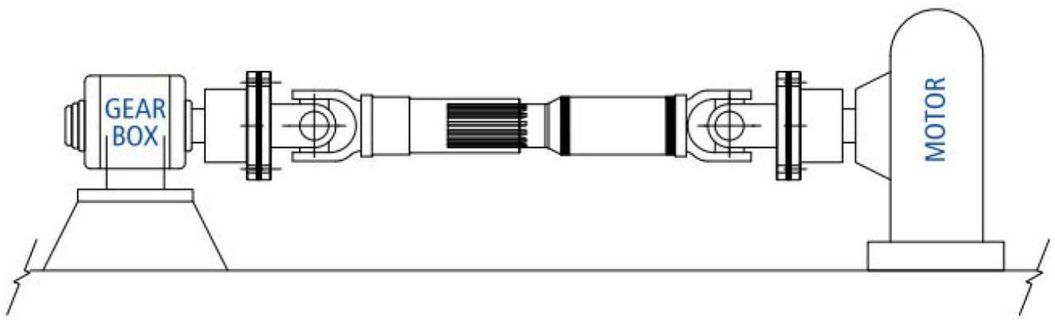
DRIVE SHAFTS FOR A SMOOTHER WAY AHEAD

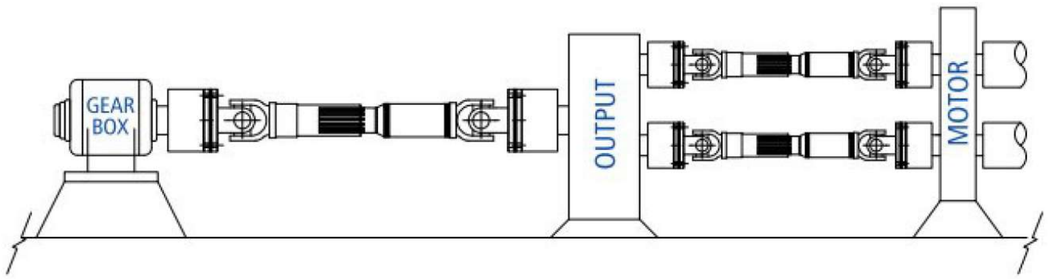
MAKE IN INDIA

Table of Contents

Conventional Cardan Shaft
Application layouts.







Diverse Industrial & Automotive Applications

Heavy Shock Load

Pulp & Paper Industry
Steel Rolling & Tube Mills,
Corrugated Box Mfg. Co.
Sewage Pumping Stations,
Conveyer Primary Drives,
Cement Industries
Tube Straitening Machines

Medium Shock Load

TMT - Manufacturers
Vibrating Screens
Self Loading Transit Mixer
DTH – Water Well Drilling Rigs
Road Construction Equip. Machinery
Auxiliary Drives
Transfer Trolley Roller Tables

Light Shock Load

PTO-Pump Drive Propeller Shafts
Printing & Packaging Industry
Textile Machinery
Rip Saw Wood Working machines
Balancing Machines
Diamond Wire Saw Machines
Farm Equipments & Tractor-Loaders

About us!

JP Cardan Shafts Center from **Kolkata** in **West Bengal** is located in the Eastern part of India and is primarily engaged in the design, development of precise and rugged manufacturing of Steel Forged Industrial Cardan Shafts since last 3 decades in India. Our enormous experience has awfully helped us to create propitious products and adapt designs for meeting the provisions to the ever challenging needs of our customers from varied industrial backgrounds.

Who we are!

We at "**JP Cardan Shafts Center**" comprise of a team of young and ethical entrepreneurs who are passionate about finding an antidote to some of the breakdown issues that a production house may encounter due to premature failure of Cardan Shafts leading to huge opportunity and down time losses, But at "**JP Cardan Shafts Center**" we pledge that we won't allow this to happen to you.

Our mission statement

We strive to work on our quintessential principle of providing our customers such products which are optimally designed to suit the precise application and objectives at an affordable price (it's not going to work if it is too expensive) And you bet, Everyone knows that for sure, But actually, attaining it is fun for us, As we love doing what we are doing!

To accomplish this, we austerely follow the golden rule and continuously work towards this self-embedded truth for survival in today's fiercely Competitive world - That is! - INNOVATE or EVAPORATE.

Emulating Customers Expectations

Citing adaption of new manufacturing techniques and mechanism is just in fact not the only reason for our company's instantaneous growth & development.

An ear for the customer:

At **JP Cardan Shafts Center**, we believe in establishing a strong and collaborative relationship with our customers. We go above and beyond to understand their specific needs, challenges, and aspirations. Our team is always open to listening to new ideas, suggestions, and feedback from both existing and potential customers. We actively encourage our customers to share their insights and experiences, as we believe that their input is invaluable in helping us improve our products, services, and overall customer experience.

Support for new ideas and advancement techniques:

We recognize that innovation is crucial for staying ahead in today's competitive market. That's why we are always on the lookout for new ideas and advancement techniques that can help us enhance our products and services. We actively collaborate with our customers to explore and develop innovative solutions that meet their evolving needs. Whether it's incorporating cutting-edge technologies or implementing process improvements, we are committed to staying at the forefront of innovation in our industry.

Resolving targets and promoting innovative ideas:

We understand that our customers have specific targets and goals that they want to achieve. Our team works closely with each customer to identify their unique requirements and develop customized solutions that align with their objectives. We believe in fostering a spirit of collaboration and open communication, where we can work together to resolve challenges and unlock new possibilities. By embracing innovative ideas and working in partnership with our customers, we aim to drive mutual success and growth.

Core focus on customer satisfaction:

Ultimately, our core focus is on delivering products and services that provide our customers with complete satisfaction and peace of mind. We strive to build long-term relationships based on trust, reliability, and exceptional customer service. Our team is dedicated to going the extra mile to ensure that our customers are delighted with their experience with JP Cardan Shafts Center. We believe that by consistently exceeding expectations, we can create a loyal customer base that will continue to choose us for their cardan shaft needs.

How Do I Select A Suitable Cardan Shaft ?

Understanding the Mechanism of Cardan Shafts and the Growth in its Application!

Cardan Shaft is defined as a motorized machine that can transmit torque between the driven and the driving torque or rotational motion from one shaft to another at fixed and varied angles of intersection on the shaft axis. They are principally categorized by their torque indicators when used as a single joint while operating at angles greater than 0° which may be non-uniform or uniform confiding to their necessary applications.

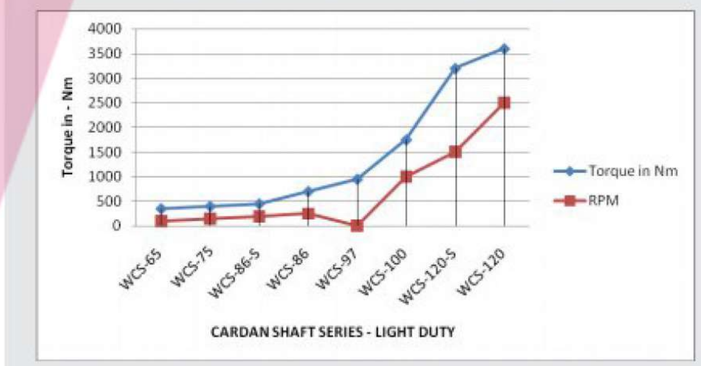
Though, it is conventionally known that the one of the most unique and prominent feature of a Cardan Shaft is not only of handling misalignment capabilities up to 15° or greater, which evidently is quite higher than the 6° potential of gear couplings and spindles, but, Also for applying it for high stress torque load applications and almost continuous operation in various mills today, is surely on the rise. As a consequence the requisitions for Cardan Shafts have increased significantly where high torque load transmission is mandatory.

We are presenting for you a relatively simplified and universally approved torque determining technique which has been employed over the years by many Drive Shaft Manufacturing Companies that have been perusing a similar procedure while nominating to authorize a technically and efficient design of Cardan Shaft which would best suit your requirements. On the Cardan Shaft selection, it is necessary to assure that the rotating speed which is in function of the working angle is not too much high.

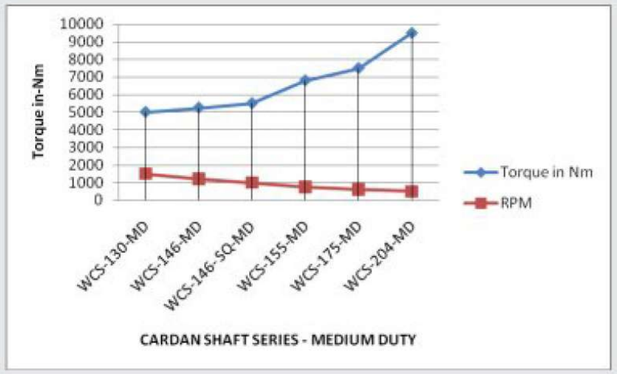
Torque Transmission in Nm = 7025 * (p) in motor-hp) / rpm x safety factor (where ever applicable)

CARDAN SHAFT - SERIES SELECTION CHART

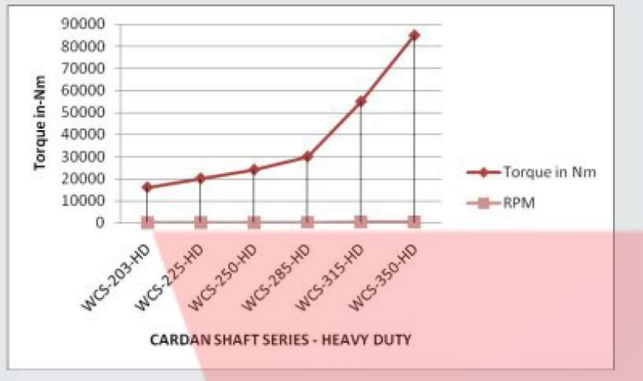
LIGHT DUTY



MEDIUM DUTY



HEAVY DUTY



Note: Although major elements for determining the Torque levels have been ensured, we would still recommend a discussion with our technical team us before the final selection of Cardan Shaft

Torque Calculation Technique

Suitable For The Paper & Pulp Mills Applications.

1. Basic Parameters required

   (A) mpm - meters per minute, (B) rd - Roll Dia in mm, (C) p -Motor-HP.

2. Determining the Circular Movement = (cm) of the Roll by using the following technique. cm = rd*π (3.1416)
3. Method for calculating the RPM = mpm/cm* 1000
4. Nominal Torque (Nm) Rating Calculation method : Nm = 7,025 x hp/rpm
5. Closed and Expansion Length Measurement Observations must be drawn from the actual working conditions.
6. Safety Factors to be considered where applicable.

Please refer the below illustration for a better understanding

Basic parameters observed and received are : mpm = 200 , Roll dia - 950.mm and the motor HP = 220

Step – 1 – Finding out the cm = circular dia = 950 x3.1416 = 2984.5

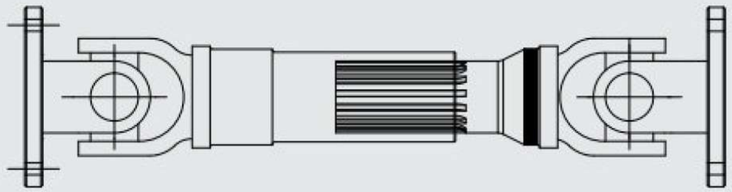
Step – 2 – Finding out the RPM = mpm / cm = 200 / 2984.5 x 1000 = 67

Step – 3 – Finding Nominal - Torque = 7025 x 220 / 67 = 23067 - Safety Factors may we considered where necessary.

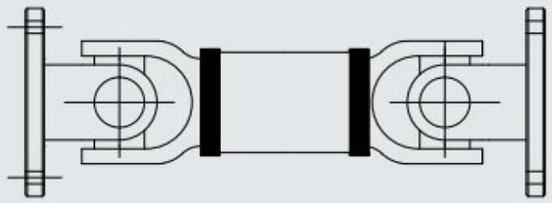
Note: Although major elements for determining the Torque levels have been ensured, we would still recommend a discussion with our technical team us before the final selection of Cardan Shaft

Varied Cardan Shaft Designs

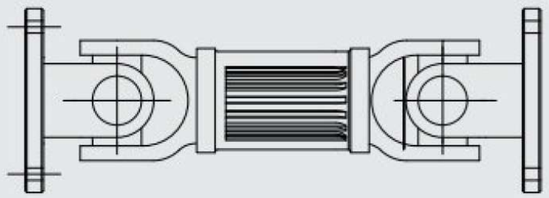
TYPE A
With
Length Expansion



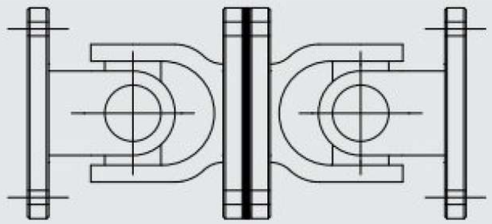
TYPE B
Without
Length Expansion



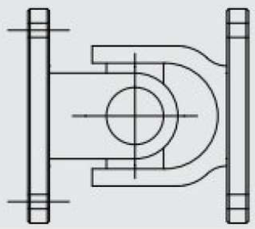
TYPE C
Without tube
Compact Series



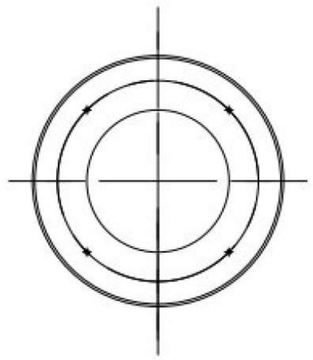
TYPE D
Double Flange
Yoke Assembly



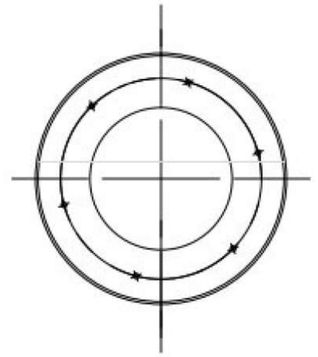
TYPE E
Single Flange
Yoke Assembly



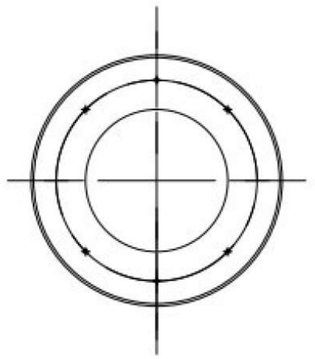
With Standard Flange Options



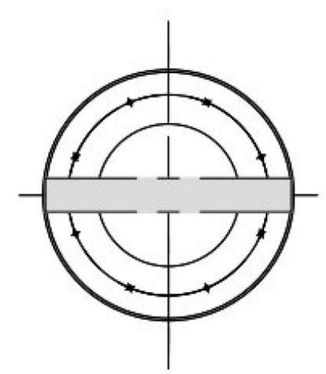
4 BOLT FLANGE



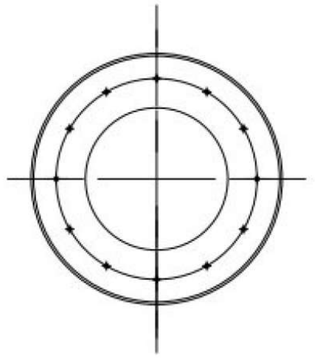
6 BOLT FLANGE



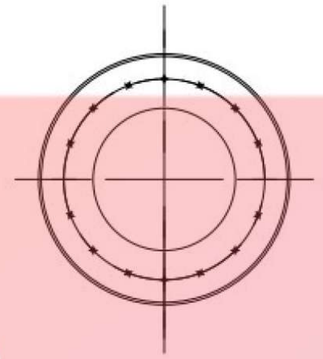
8 BOLT FLANGE



8 BOLT FLANGE DRIVE KEY



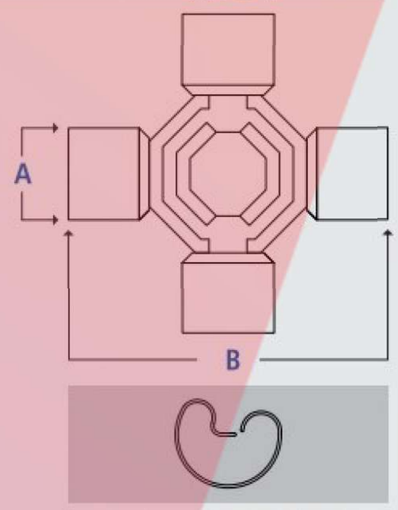
12 BOLT FLANGE



16 BOLT FLANGE

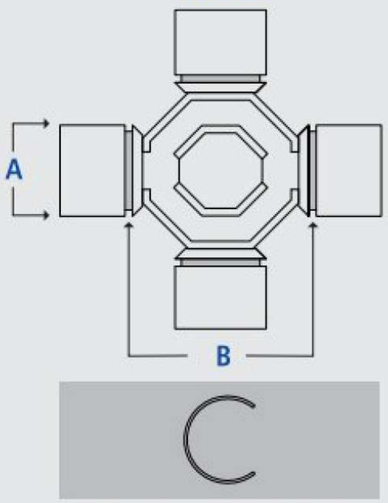
UNIVERSAL JOINT SERVICE KITS

TYPE 1



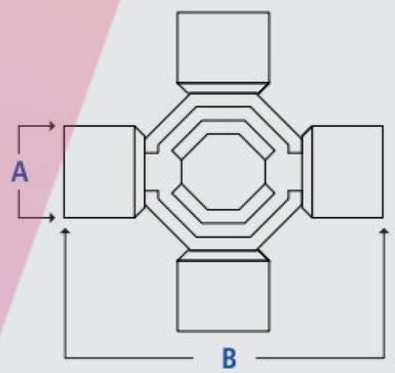
Outer Circlip Lock

TYPE 2



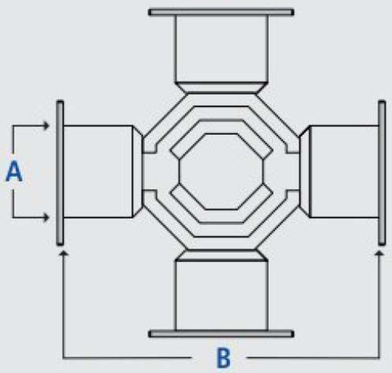
Inner Circlip Lock

TYPE 3



Outer Clamp Lock

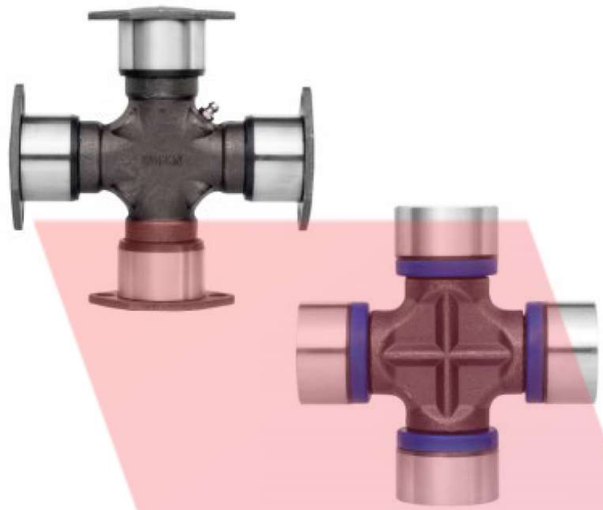
TYPE 4



Weld Plate Lock

TYPE	U.J.SERVICE KIT PART CODE	CUP-DIA A	LENGTH B
1	JPCSC-UJ-01	110.00	245.00
1	JPCSC-UJ-02	95.00	218.00
1	JPCSC-UJ-03	89.00	218.00
1	JPCSC-UJ-04	74.00	218.00
1	JPCSC-UJ-05	65.00	172.00
1	JPCSC-UJ-06	59.00	167.00
1	JPCSC-UJ-07	57.00	152.00
1	JPCSC-UJ-08	57.00	144.00
1	JPCSC-UJ-09	52.00	147.50
1	JPCSC-UJ-10	52.00	133.00
1	JPCSC-UJ-11	48.00	154.00
1	JPCSC-UJ-12	48.00	135.00
1	JPCSC-UJ-13	47.68	135.00
1	JPCSC-UJ-14	47.64	134.90
1	JPCSC-UJ-15	42.00	129.00
1	JPCSC-UJ-16	42.00	122.00
1	JPCSC-UJ-17	42.00	119.80
1	JPCSC-UJ-18	41.28	126.00
1	JPCSC-UJ-19	39.00	115.00
1	JPCSC-UJ-20	34.95	126.00
1	JPCSC-UJ-21	34.95	106.00
1	JPCSC-UJ-22	32.00	93.00
1	JPCSC-UJ-23	30.00	106.00

TYPE	U.J.SERVICE KIT PART CODE	CUP-DIA A	LENGTH B
1	JPCSC-UJ-24	30.00	92.90
1	JPCSC-UJ-25	30.00	81.80
1	JPCSC-UJ-26	27.00	81.80
1	JPCSC-UJ-27	27.00	78.00
1	JPCSC-UJ-28	23.00	61.80
1	JPCSC-UJ-29	22.00	55.00
2	JPCSC-UJ-30	46.00	69.00
2	JPCSC-UJ-31	38.00	57.00
2	JPCSC-UJ-32	23.80	35.25
3	JPCSC-UJ-33	74.00	220.00
3	JPCSC-UJ-34	74.00	244.00
3	JPCSC-UJ-35	83.00	280.00
4	JPCSC-UJ-36	59.00	167.00
4	JPCSC-UJ-37	49.00	155.00



CARDAN SHAFT - TORQUE RANGE:

Mt.350.Nm up to 4000.Nm

JPCSC-LD SERIES - LIGHT DUTY DESIGN

TYPE	Technical Specification	Units	JPCSC-LD 65	JPCSC-LD 75	JPCSC-LD 86-S	JPCSC-LD 86-R	JPCSC-LD 97	JPCSC-LD 100	JPCSC-120-LD SQ.	JPCSC-LD 120
A	SHORT DURATION TORQUE	Nm	350	400	450	700	950	1750	3200	3600
A	FLANGE BASE – OD	mm	65	75	SQUARE	86	96	100	SQUARE	120
A	FLANGE THICKNESS	mm	6	8	5,2	5,2	6,8	7	7,5	8
A	FLANGE SPIGOT – OD	mm	35	42	57	57	60	57	69.8	82
A	FLANGE SPIGOT HEIGHT	mm	1,5	1,5	1,6	1,6	1,6	2	1.6	1.6
A	C.L. OF JOINT TO FLANGE FACE	mm	50/65	60/75	40	35	42	50	50	60/80
A	NO. OF HOLES	no's	4	4	4	4	4	6	4	6 * 8
A	BOLT HOLE PCD	mm	52	62	69.8	69,8	79,3	84	95 / 100	101.5
A	DIAMETER OF BOLT HOLE	mm	5.2	6,2	8,2	8,2	9,8	8.5	11.2 / 12.2	10.6
A	ROTATING DIA	mm	70	75	70	76	95	102	122	120
A	JOURNAL CAP DIA	mm	22	22	22	23,6	27	30,81	30,106	38/46
A	TUBE DIA	mm	40	40	65	65	66	60	76	68 / 72
A	SLIP MOVEMENT	mm	100	80/120	100/150	40	40	50 / 100	50	45
A	OPERATING ANGLE	degree	20*	20*	20*	15*	20*	20*	18*	22*
A	MIN. LENGTH - Lz	mm	300	325	325/400	255	340/365	390	410	475
C	COMPACT DESIGN Min. - Lz	mm	220/250	250/275	250/280	180/230	215/280	265/320	320	310/360

Note: Although major elements for determining the Torque levels have been ensured, we would still recommend a discussion with our technical team us before the final selection of Cardan Shaft

CARDAN SHAFT - TORQUE RANGE:

Mt.5000.Nm up to 9500.Nm

JPCSC-MD SERIES - MEDIUM DUTY DESIGN

TYPE	Technical Specification	Units	JPCSC-MD R-130	JPCSC-MD R-146	JPCSC-MD SQR-146	JPCSC-MD R-155	JPCSC-MD R-175	JPCSC-MD R-204
A	SHORT DURATION TORQUE	Nm	5000	5250	5500	6800	7500	9500
A	FLANGE BASE - OD	mm	120/130	146	RECTANGULAR	155	175	204
A	FLANGE THICKNESS	mm	9	9,1	10,4	12,	10	10,2 / 14
A	FLANGE SPIGOT - OD	mm	82	95	95	90 / 100	168	196 / 198
A	FLANGE SPIGOT HEIGHT	mm	2	2	2	2	1,8	2
A	C.L. OF JOINT TO FLANGE FACE	mm	80	64 / 70	57 / 80	80 / 85	77 / 70	100 / 65
A	NO. OF HOLES	no's	6 * 8	4	4	6 * 8	8	8 * 12
A	BOLT HOLE PCD	mm	101,5 / 112	120	120	130	155,2	140 / 184
A	DIAMETER OF BOLT HOLE	mm	10,5	12,9	12,9	12,2	9,8 / 10.2	10,2 / 12,2
A	FLANGE ROTATING DIA	mm	135	150	150	150	180	210
A	JOURNAL CAP DIA	mm	46	39	35 / 41	35 / 41	41 / 47,64	49
A	SLIP MOVEMENT	mm	65	60	60	60 / 75	50	65 / 85
A	ANGULAR MOVEMENT	degree	30*	20	18* / 24*	18* / 20*	20*	18*
A	MIN. LENGTH - Lz	mm	625	485	465/500	550	600 / 575	640/590
C	COMPACT DESIGN LENGTH : Lz	mm	500 / 530	300 / 380	450 / 495	410 / 470	470 / 445	550 / 485

Note: Although major elements for determining the Torque levels have been ensured, we would still recommend a discussion with our technical team us before the final selection of Cardan Shaft

CARDAN SHAFT - TORQUE RANGE:

Mt.9500.Nm up to 85000.Nm

JPCSC-HD SERIES - HEAVY DUTY DESIGN

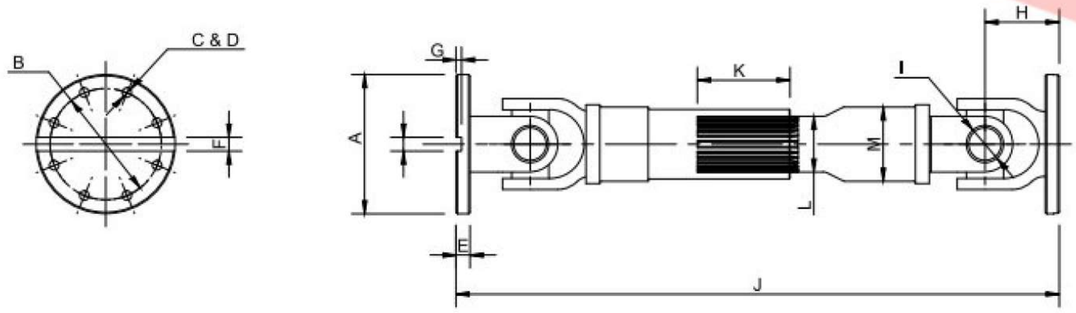
TYPE	Technical Specification	Units	JPCSC-203-HD	JPCSC-225-HD	JPCSC-250-HD	JPCSC-285-HD	JPCSC-315-HD	JPCSC-350-HD
A	SHORT DURATION TORQUE	Nm	16000	20000	24000	30000	55000	85000
A	FLANGE BASE - OD	mm	204	225	250	285	315	350
A	FLANGE THICKNESS	mm	12,2 / 14,5	14 / 18	18 / 20	25 / 28	28 / 30	32
A	FLANGE SPIGOT - OD	mm	PLAIN / 196	180	PLAIN	PLAIN	PLAIN	PLAIN
A	FLANGE SPIGOT - HEIGHT / DEPTH	mm	H-2	4	6	8	10	12
A	C.L. OF JOINT TO FLANGE FACE	mm	105	110	115	120	140	150
A	NO. OF HOLES	no's	8	8	8	8	8	12
A	BOLT HOLE PCD	mm	184	196	220	250	280	295
A	DIAMETER OF BOLT HOLE	mm	12,2 / 14,4	14,4 / 16,4	16,4 / 18,8	18,8 / 21	23 / 25	27 / 31
A	JOURNAL CAP DIA	mm	52 / 57	57 / 59	59 / 65	65 / 74	89 / 95	95 / 110
A	KEY-WAY	mm	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
A	KEY-WAY (WITDH x THICKNESS)	mm	12 * 6	20 * 20	25 * 25	25 * 25	30 * 30	3
A	TUBE - OUTER DIA	mm	101	112 / 120	116 / 124	124 / 130	155 / 175	175 / 190
A	SLIP MOVEMENT	mm	55	65	75	90	100	110
A	OPTIMAL ANGULAR MOVEMENT	degree	20*	18*	15*	14*	12*	12*
A	MIN. LENGTH AVAILABLE	mm	700	750	680 / 700	725 / 760	850 / 900	950 / 1000
B	MIN. LENGTH - Lz							
C	COMPACT DESIGN LENGTH : Lz	mm	525 / 560	580 / 620	620 / 680	680 / 750	750 / 820	820 / 950

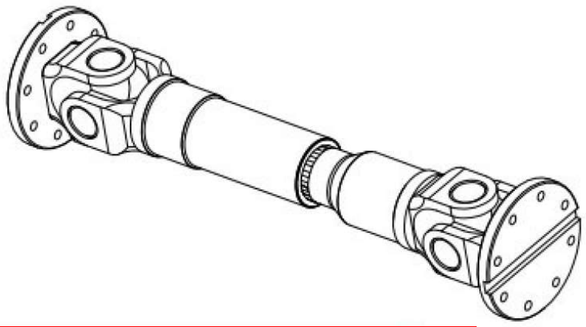
Note: Although major elements for determining the Torque levels have been ensured, we would still recommend a discussion with our technical team us before the final selection of Cardan Shaft

PROCUREMENT MADE EASY

CARDAN SHAFT DIMENSIONAL DETAILS

SR. NO.	DESCRIPTION	Flange Ø (mm)	PCD (mm)	Bolt Ø (mm)	No.of Holes	Flange Thickness (mm)	Keyway width (mm)	Keyway Depth (mm)	Length from Flange face to bearing cup Joint Center (mm)	U.J.Cross Bearing Cup Ø (mm)	Lz : Closed Length Face to Face (mm)	Le : Expanded Length Face to Face (mm)	Male Spline Shaft Ø (mm)	Pipe Ø (mm)	Torque (k-Nm)
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	R-08	.	.	.	.	.	.	.	.	.	.	.	.	.	.





Cardan Shaft with Keyway Slot

JP Cardan Shaft Center

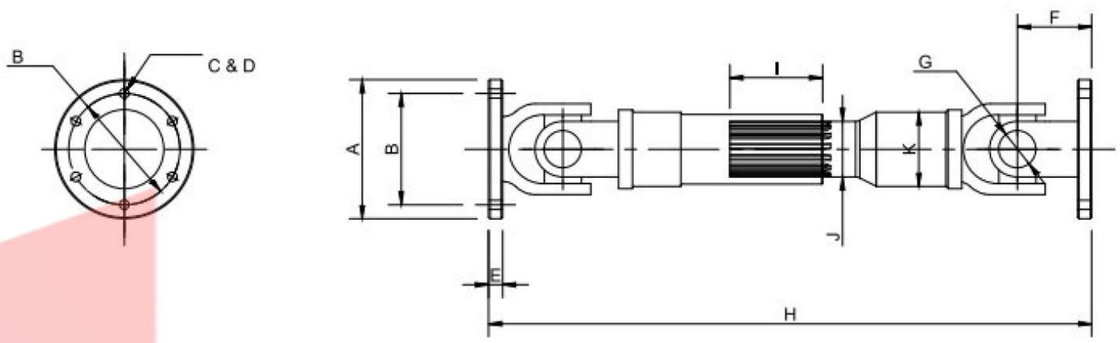
DRW / PART CODE.	AS APPLICABLE OR ATTAINED
JOINT DESIGN TYPE	TYPE 10- R 08
CUST. NAME.	FIRM NAME & CITY
CUST. DRW NO.	R 132456
APPLICATION	INDUSTRIAL APPLICATION
APPROVED BY.	RAHUL
DATE.	21.11.2019

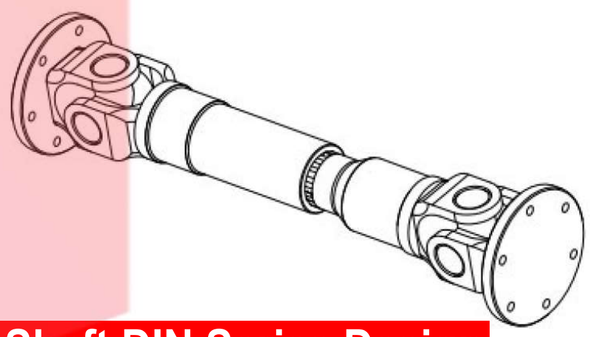
DRAWINGS ARE NOT TO SCALE

We are pleased to share illustrated drawings to ease your effo
sharing data for your existing or new requisitions for Cardan S
rt in sharing accurate dimensional information before
hafts.

CARDAN SHAFT DIMENSIONAL DETAILS

SR. NO.	DESCRIPTION	Flange Ø (mm)	PCD (mm)	Bolt Ø (mm)	No.of Holes	Flange Thickness (mm)	Length from Flange face to bearing cup Joint Center (mm)	U.J.Cross Bearing Cup Ø (mm)	Lz : Closed Length Face to Face (mm)	Le : Expanded Length Face to Face (mm)	Male Spline Shaft Ø (mm)	Pipe Ø (mm)	Torque (k-Nm)
		A	B	C	D	E	F	G	H	I	J	K	L
1	R-06	.	.	.	.	.	.	.	.	.	.	.	.





Cardan Shaft DIN Series Design

JP Cardan Shaft Center

DRW / PART CODE.	R-06 - DIN SERIES CARDAN SHAFT
JOINT DESIGN TYPE	TYPE 9- R 06
CUST. NAME.	NAME & CITY DETAILS
CUST. DRW NO.	AS APPLICABLE
APPLICATION	CUSTOMIZED DESIGN
APPROVED BY.	RAHUL
DATE.	21-11-2019

DRAWINGS ARE NOT TO SCALE

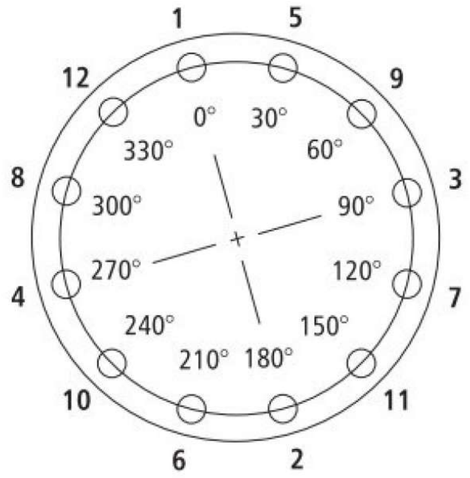
Installation Manual

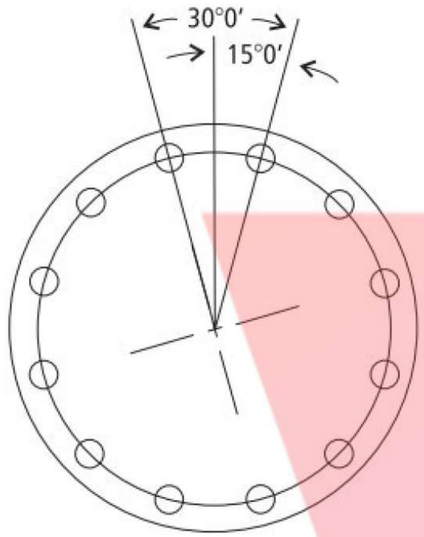
- Installing the Cardan Shafts requires skilled use of man power and we highly recommend that the responsible applicator should ideally be a skilled one. All traces of dirt, rust inhibitor and grease must be removed from the surface of the old flange to preserve the coefficient of friction which is vital for the torque transmission.
- Prior to the installation, it must be properly checked that they are assembled correctly which means that the ⟷ marking rays on the spline shaft and the spline hub must face each other at the same angle.
- The necessary bolting hardware used should be equal in length, strength and should be suitable as per the holes of the Spline Companion Hub, Also, please ensure that play between the Flange Hole and Bolts used to fasten the Cardan Shafts should be within the permissible limits.

Re-Lubricating Instructions

- The Cardan Shafts are normally provided with grease points, one on the Grease cup and the other one on the spline shaft.
- We highly recommend you to provide for a periodical lubrication both on the Bearing Caps and the Spline grooves, at an interval of 1-2 months , However, in case of Medium and Heavy Duty shafts, we recommend that the greasing process be carried out every 4-6 weeks for obtaining a longer life span of the universal joint cross bearings.
- Pumping of the grease on the bearings should ideally be carried out up to its emission from the bearings cap seals with a maximum pressure 15 bar. Further, after the greasing process is completed, excess grease must be wiped off from the bearing sides and it may attract dust from the environment.

Ideal Bolts Tightening Procedure





Reference Notes

Guidelines prior /post to placing a Purchase Order

Special technical requests must be stated clearly in your valued Purchase Order forms and approval for the same is mandatory from our end.

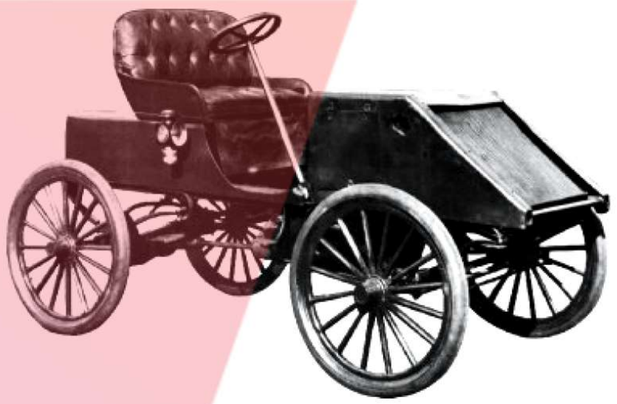
1. Reference drawing incase of the existing Cardan Shafts (if available) may be submitted along with your requirement.
2. Any specific or Preferred Packaging Details - Wooden / Corrugated Boxes / Poly Bags - etc. may be updated to us.
3. Color Preferences (If any) must be mentioned separately.
4. Request for Anti-corrosion coating in case required must be stated in your order.
5. Room Temperature and working area conditions may be mentioned for a better understanding of the requirement.
6. The Lead Time must be clearly stated in your order form, so that any kind of delay is avoided.
7. Lubrication procedures may be well understood for a obtaining mature life cycle of the product.
8. Reference for use of High Tensile Fasteners are recommended, however, it may be consulted incase required.
9. Mode of material transit may be stated precisely along with your preferred dispatch destination.
10. Billing Name & Address, GST No, Any particular correspondence address should be precisely indicated.
10. Any preferred mode of Courier services may be mentioned clearly.
11. Your company's E-Mailing addresses with mandatory cc-bcc address.
12. Name and contact details of the Technical & Commercially concerned persons may be shared for prompt communication.

ILLUSTRATION FOR SENDING US P.O

SR.NO	INDUSTRY Ref.	APPLICATION	PRODUCT CODE	DESIGN TYPE	MIN. LENGTH	MAX. LENGTH	TORQUE MAX. REQ.	P.O. QTY
1	PAPER & PULP MILL	COUCH ROLL	JPCSC-HD-250	A	1000	1100	25-K-Nm	20
2	TUBE MILLS	TM-1 – TM-2	JPCSC-HD-204	A	650	725	10-K-Nm	10
3	VIBRATING SCREEN	VB- MACHINE	JPCSC-HD-155	A	850	950	5-K-Nm	15
4	SEWAGE PUMPS	PUMP – NO- 1-6.	JPCSC-HD-165	A	1000	1075	15-K-Nm	6

A TRIBUTE TO THE INVENTION OF CARDAN SHAFTS

A Brief history



In 1676, Robert Hooke revisited Italian Cardano's idea and to make use of an instrument that would allow a them a safer way to study the sun .This unique instrument used a new type of joint that allowed a twisting motion in one shaft to be passed on to another, no matter how the two shafts were oriented. However, it took another 240 years for Clarence W. Spicer to come along and apply this idea to the automotive and industrial industries. Spicer received a patent for the universal joint in 1903 and demonstrated his new patent in a self-designed car, which did not have a troublesome chain & sprocket nor did it have chain and geared adaptions. However, the company eventually began the complete manufacturing in 1904. Since then, it has been innovation & development all the way from the automotive to the industrial sector as well.

Contact Us:

CARDAN SHAFT CENTRE

OUR GOODS FOR THIS SECTOR

ROLLING MILLS, PAPER MILLS, STEEL PLANTS, TUBE MILLS, CEMENT PLANTS, PLYWOOD FACTORY, TEA PLANT, GEAR BOX, VEHICLE

Jawtala Road, Sukanta Pally, New Town, Kolkata-700 157
Mobile : +91 7980807830, 8420822699, E-mail : j.pcardanshaftcentre79@gmail.com