



COUPLINGS FOR COOLING TOWERS

TYPE CTR

Features

- **PROVEN DESIGN:** The design is based on the Disc-O-Flex Series coupling, that has been proven in countless rotating drive applications around the world.
- **LONGER SPAN:** High critical whirling speed - thus no intermediate bearing necessary, even at lengths of up to 6 m. Bigger lengths on request.
- **NO LUBRICATION:** The RATHI -Type CTR coupling is a non-lubricated flexible coupling which is not subjected to wear or relative movement of the components.
- **HOMOKINETIC:** The drive shafts are homokinetic and free of the usual occurring reaction forces of a cardan shaft.
- **NO EXPLOSION RISK:** The use in areas subject to explosion risk is possible.
- **SECURED BONDING:** Load transmission of the composite shafts is ensured by a specially designed, high secure bonding, which has proved its worth for many years application in ship propulsions and wind turbines.
- **NON CORROSIVE, THERMAL & ELECTRICAL INSULATION:** Corrosion resistant to cooling tower environment and temperature up to 150°C (300°F). Provides in-built thermal & electrical insulation.
- **LONG LIFE:** When run within its rated conditions the coupling is designed for infinite life, giving users the confidence to run un-spared machinery for longer periods.
- **IMPROVED MACHINERY RELIABILITY:** Low weight, easy assembly, free from backlash, independent of the rotating direction. Low restoring forces under misalignment and high power/weight ratios minimise the imposed loads on critical machinery components such as bearings and seals, allowing running periods between planned shutdowns to be increased.
- **VERTICAL DRIVE APPLICATIONS:** Because the spacer is very light in weight, the coupling may be used on other applications mounted vertically without excessive loading on the membranes. In many cases there will be no need for an additional modification to carry the suspended mass of the coupling.

Why?

Rathi Composite Floating Shaft Coupling

Parameters	Rathi Composite Coupling (CTR)	Traditional Metal Spacer Coupling
Spacer Diameter	Smaller	Bigger
Weight	80% less	More
Coupling Inertia	Low	High
Torsional Stiffness	Low	High
Corrosion Proof	Yes	No
Thermal Insulation	Yes	No
Electrical Insulation	Yes	No
Intermediate Bearing	Not Required	Required
Equipment for Handling, Installation, Maintenance	Not Required	Required
Starting Power	Low	High
Starting Impact Load	No	Yes
Typical Vibration on bearings (peak to peak)	< 30 microns	About 60 microns
Typical Life of Coupling	More than 10 Years	About 3~5 Years
Cost	Initial - More Operating - Less	Initial - Less Operating - Very High



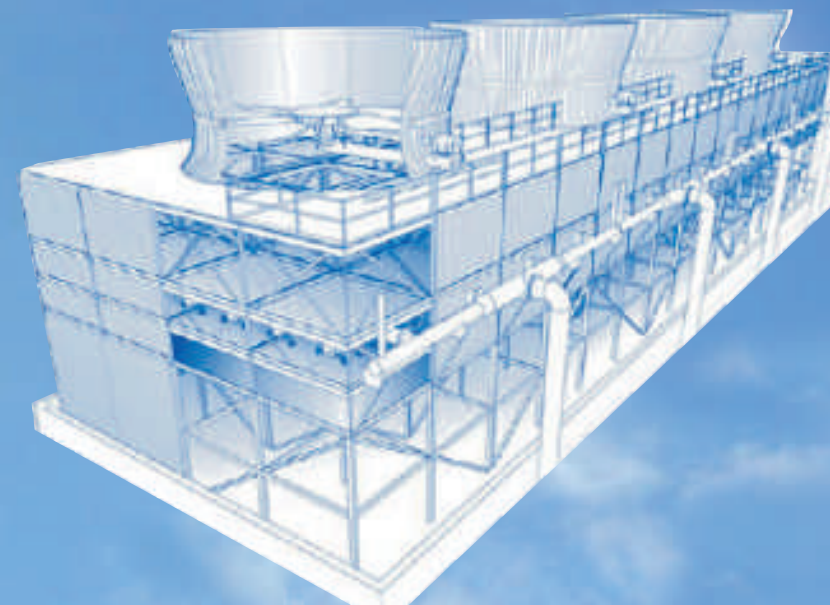
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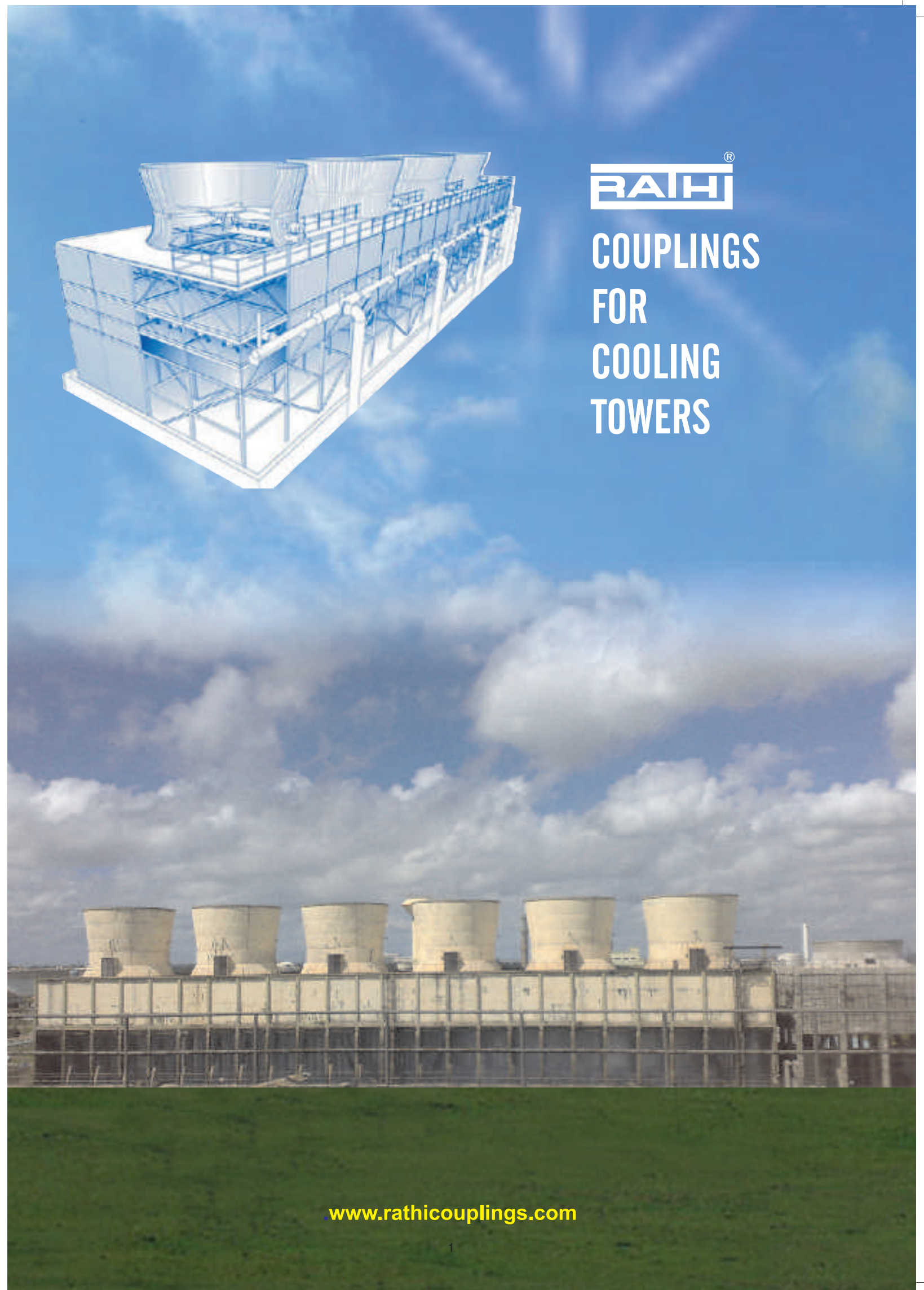
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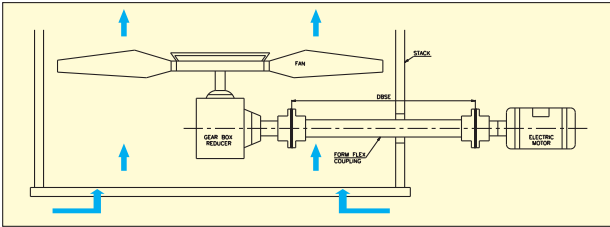
RATHI's name is well known in industrial power transmission industry for mechanical products.

RATHI is recognized leading manufacture of couplings for pump industry. Our Elastomeric - Jaw couplings, Pin bush couplings, Sleeve Flex couplings, Tyre Flex couplings are available in various close coupled and spacer combinations for a broad power range.

RATHI offers maintenance free grid & gear type couplings in various configurations for higher horsepower needs.

RATHI has a wide variety of couplings for Cooling Tower applications.

INDUCED DRAFT COOLING TOWERS



Induced Draft cooling tower drive systems are usually designed with a motor, gearbox, and fan located at the top of the cooling tower.

The atmosphere inside the tower is hot and humid. Placing a motor inside the tower under these conditions can quickly deteriorate its performance. Using a RATHI floating shaft coupling, the motor is located on the outside of the stack and away from the corrosive airflow. It spans the gap between motor and gearbox reducer shaft through various coupling designs to meet your cooling tower application.

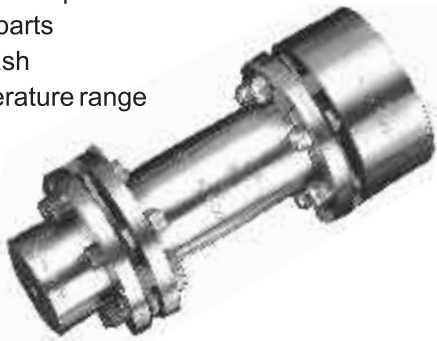
DISC-O-FLEX COUPLINGS:

The reason to use RATHI disc couplings starts with our superior design. RATHI disc coupling exclusive design reduces stress levels in flex discs and increases misalignment capabilities to ensure longer life in installations.

Our all metal disc type couplings allow you the option of close coupled or spacer type applications with many options for corrosion resistance. For more details refer our catalogue of Disc-O-Flex Series and Rathit Turboflex Series Couplings.

Features of High Strength Stainless Steel Flex Disc:

- High torsional stiffness
- No lubrication required
- No moving parts
- Zero backlash
- Wide temperature range



COMPOSITE FLOATING SHAFT COUPLING:

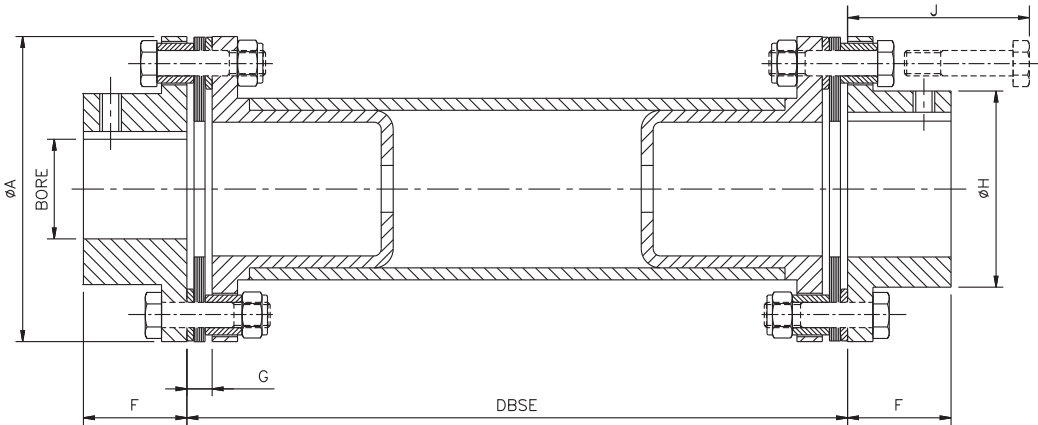
Our coupling lines are industry proven and used throughout the world. RATHI Disc type couplings attached to any of our composite tubes create a superior designed floating shaft couplings.

Construction

Cooling towers have an external electric motor which is connected to the bevel gear - located at the centre of the cooling tower - by long drive shafts.

It is common practice to produce such connecting shafts from composite tubes (either glass or carbonfibre) and to connect them by torsionally stiff, but flexible elements using a double cardanic system between the motor and gear shafts.

Composite shafts are high-strength, lightweight torque tubes for long span drive shafts. These tubes are filament wound carbon or glass fiber construction which are over-cured under precision controlled conditions for consistent quality. All composites shafts include our exclusive barrier layer wound into the structure of each shaft providing UV protection and giving the shaft it's unique, smooth appearance, plus protection for the working structure of the shaft from damage during handling and installation.



TYPE - CTR - COMPOSITE FLOATING SHAFT COUPLINGS

Coupling Size	Coupling Product Code	kW per			Rated Torque (N-m)	Std. Hub		Large Hub		Dimensions in mm				Maximum DBSE-mm		
		100 rpm	1000 rpm	1500 rpm		Max. Bore	H	Max. Bore	H	A	F	G	J	1000 rpm	1500 rpm	1800 rpm
CTR-4520	CTR-4520 G2	2.6	26	39	248	41	61	54	80	104	34	9	82	2108	1955	1778
	CTR-4520 R2													2108	2108	2108
CTR-4525	CTR-4525 G2	4.49	44.9	67.4	429	51	71	60	95	126	41	11	96	2108	1955	1778
	CTR-4525 R2													2108	2108	2108
CTR-4530	CTR-4530 R3	8.2	82	123	783	60	84	73	108	143	48	12	108	3251	2844	2590
	CTR-4530 B3													3251	3225	2946
CTR-4535	CTR-4535 R4													3708	3276	2997
	CTR-4535 B4													3708	3708	3403
	CTR-4535 R6	13.4	134	201	1280	73	105	95	133	168	57	14	110	4546	3937	3606
	CTR-4535 B6													4546	4445	4064
	CTR-4535 R8													4978	4851	4445
	CTR-4535 B8													4978	5257	4826
CTR-4540	CTR-4540 R4	21.6	216	324	2063	83	118	102	153	194	64	15	124	3708	3276	2997
	CTR-4540 B4													3708	3708	3403
CTR-6558	CTR-6558 R6													4546	3937	3606
	CTR-6558 B6													4546	4445	4064
	CTR-6558 X6													4622	4597	4191
	CTR-6558 R8	40.2	402	603	3839	108	158	-	-	229	70	14	121	4978	4851	4445
	CTR-6558 B8													4978	5257	4826
	CTR-6558 R10													5994	5689	5232
	CTR-6558 B10													5994	5842	5334

NOTE:
Special DBSE Couplings available on request.
For vertical installation contact RATHI.

MATERIAL OF CONSTRUCTION

PART NAME	MATERIAL
HUB	STAINLESS STEEL
SPACER	COMPOSITE TUBE
DISC ELEMENT	STAINLESS STEEL
COUPLING HARDWARE	STAINLESS STEEL

NOMENCLATURE

Example : CTR - 4520 G2

DIGIT	DESCRIPTION
CTR	Rathi Cooling Tower Coupling Series
4	No. of Bolts
520	Coupling Size
G	Composite Tube Type G - Glass R - 50/50 Carbon / Glass Hybrid B - Standard Carbon X - High Modulus Carbon
2	Tube Diameter in inches