

630-980-1133 diequa.com



Metal Bellows

- Elastomer Insert
- Torque Limiters

• Line Shafts

Precision Couplings

WHO WE ARE

DIEQUA CORPORATION OFFERING A PERFECT PRECISION COUPLING

THE COMPANY

DieQua Corporation is a manufacturer and supplier of a wide range of motion control and power transmission drive components. Our focus has always been to provide products that offer superior value, the highest quality, the most unique designs, and the most reliable performance. DieQua continues to develop innovative products to meet the changing technological needs of the industries and customers we serve.

THE PROCESS

DieQua has an enormous product offering. Making a proper selection, or even knowing what is possible can be daunting. Our staff is specifically trained to first listen, and then ask questions, to gain a thorough understanding of your specific and unique application. Then, we help you navigate to the specific product, or even a special design, that will meet or exceed your needs. It is through our consultative approach that we are most helpful to our customers in finding the best design solution.

THE PRODUCT

DieQua has created a precision coupling offering to include Bellow couplings, Precision Elastomer couplings, Line Shaft couplings and Torque Limiters. These products offer a perfect range of precision, torsional stiffness, torque capacity, and protection from misalignment. These couplings are a perfect adjunct to the many gearbox, gearmotor, and mechanical components technologies we offer to the market.

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TORSIONALLY STIFF **METAL BELLOWS COUPLINGS** 4.5 - 500 Nm

MODEL	FEATURES	
BC	 with clamping hub from 15 - 500 Nm easy to mount available in multiple lengths low moment of inertia 	
BCS	 with split clamping hub from 15 - 500 Nm radial mounting possible easy to install onto pre-aligned shafts low moment of inertia 	
BCE	 economy class with clamping hub from 4.5 - 500 Nm easy to mount optional self-opening clamp system low moment of inertia 	
BCC	 compact design with clamping hub from 15 - 500 Nm for space restricted installations light weight low moment of inertia easy to mount 	
BCB	 with clamping hub and blind mate connection from 15 - 500 Nm backlash free with two piece design easy installation and removal available as separate components 	





BACKLASH FREE ELASTOMER INSERT COUPLINGS 2 - 660 Nm

MODEL		FEATURES	
EC	8 13/1	 with clamping hub from 6 - 660 Nm high concentricity backlash free easy mounting 	
ECC	to at	with compact clamping hub from 2 - 660 Nm • compact design • low moment of inertia • easy mounting	
ECS	F.F.	 with split clamping hub from 4 - 660 Nm for lateral installation allows for pre-aligned shafts easy mounting 	
ECX		with intermediate spacer from 2 - 660 Nm high lateral misalignment easy to mount vibration damping 	

GENERAL INFORMATION DIEQUA ELASTOMER INSERT COUPLINGS

AXES OF MISALIGNMENT



FUNCTION

The equalizing element of the EC coupling is the elastomer insert. It transmits torque without backlash or vibration. The elastomer insert defines the characteristics of the entire drive system.

Backlash is eliminated by the press fit of the elastomer into the hubs. Through variation of the Shore hardness of the elastomer insert, the coupling system can be optimized for the ideal torsional characteristics.

SIZES 2 - 450



Shore hardness 98 Sh A Shore hardness 64 Sh D Shore hardness 80 Sh A Shore hardness 65 Sh D Shore hardness 64 Sh D

DESCRIPTION OF THE ELASTOMER INSERTS

Туре	Shore hardness	Color	Material	Relative damping (Ψ)	Temperature range	Features
А	98 Sh A	blue	TPU	0.4 - 0.5	-30°C to +100°C	high damping
В	64 Sh D	green	TPU	0.3 - 0.45	-30°C to +120°C	high torsional stiffness
С	80 Sh A	yellow	TPU	0.3 - 0.4	-30°C to +100°C	very high damping
D*	65 Sh D	black	TPU	0.3 - 0.45	-10°C to + 70°C	electrically conductive
E	64 Sh D	beige	Hytrel	0.3 - 0.45	-50°C to +150°C	temperature resistant

* The electrical conductivity of the elastomer material is to prevent the electrostatic charging of the elastomer coupling system, to reduce the risk of sparking in operation. ATEX technical data is available upon request.

The values of the relative damping were determined at 10 Hz and +20° C.





BACKLASH FREE **TORQUE LIMITERS** 1 - 650 Nm

MODEL

FEATURES





with clamping hubs and elastomer coupling for direct drives from 1 - 500 Nm

- easy to mount
- ▶ vibration damping
- compensation for shaft misalignment
- adjustable torque settings



BACKLASH FREE **TORQUE LIMITERS** 10 - 700 Nm

MODEL

FEATURES





GENERAL INFORMATION TORQUE LIMITERS

AVAILABLE FUNCTION SYSTEMS



SINGLE POSITION - W

Standard Version

- after the overload condition has been removed the clutch will automatically re-engage precisely at its original orientation.
- maintains synchronous shaft positioning.
- ▶ switch plate moves at disengagement to signal overload.
- > patented preload for zero backlash; suitable for high precision drives.



MULTI-POSITION 60° - D

- ▶ after the overload condition has been removed the clutch will automatically re-engage at one of multiple angular intervals, standard is every 60°.
- ▶ immediate availability of the machine after overload disengagement.
- switch plate moves at disengagement to signal overload.
- ▶ optional re-engagement intervals of 30, 45, 90, 120°.
- > patented preload for zero backlash; suitable for high precision drives.



FULL DISENGAGEMENT - F

- ▶ spring snaps over center, eliminating residual force on the ball-detent system.
- complete separation at overload, allowing shafts to spin freely until they are stopped.
- ▶ switch plate moves at disengagement to signal overload.
- coupling requires manual re-engagement at multiple available intervals (60 degrees standard; alternate engagement intervals on request).
- ▶ well suited for higher speed applications.

Note: Coupling can be disengaged manually. Contact DieQua for details.

angle of free rotation



LOAD HOLDING / LOAD BLOCKING - G

- ▶ overload detection device.
- only limited free rotation after overload disengagement, beyond which the clutch remains engaged and will continue to drive.
- re-engages automatically when reversed back into original disengagement position.
- ▶ switch plate moves at disengagement to signal overload.
- useful in lift systems and other applications where the load must be supported after a brief torque release.



BACKLASH FREE, TORSIONALLY STIFF LINE SHAFTS 10 - 660 Nm

MODEL		FEATURES
LB	J. J.	 with clamping hub from 10 - 500 Nm installation and removal possible without disturbing other machine components standard lengths range from 110 to 6000mm no intermediate support bearings required
LBS		 with split clamping hub from 10 - 500 Nm complete coupling system mounts laterally for very easy installation and removal standard lengths range from 100 to 6000mm no intermediate support bearings required
LE	3	 with split clamping hub from 12.5 - 660 Nm standard lengths range from 95 to 4000mm no intermediate support bearings required complete coupling system mounts laterally for very easy installation and removal



DIEQUA COUPLINGS PRE-SELECTION CHART

DieQua Couplings Pre-Selection Guide														
F		Toi Ra (N	Torque Range (Nm)		erall ngth nm)	Shaft Diameter (mm)		Fit Length (mm)		Zero Backlash	Torsionally Stiff	Damping	Low Monment of Inertia	Easy to Install
Туре	Model	Min	Max	Min	Max	Min	Max	Min	Max					
Bellows	BC	10	500	59	169	8	60	22	51	Х	x		x	х
	BCS	15	500	59	146	8	60	22	51	Х	x		x	х
	BCE	4.5	500	40	114	6	62	13	42.5	Х	x		х	x
	BCC	15	500	48	100	8	75	16.5	34	Х	x		х	х
	BCB	15	500	60	149	8	60	22	51	Х	x		х	x
lastomers	EC	6	660	66	126	8	60	25	50	Х		х		х
	ECC	2	660	26	94	4	60	8	34	Х		x		x
	ECS	4	660	53	126	6	60	20	50	Х		X		х
	ECX	2	660	26	86	15	60	N/A	N/A	Х		x		х
	TH	5	650	40	84	8	56	19	41	x		x	x	
ŝrs	ТНК	5	650	34	71.5	8	58	27	59	х			x	
-imite	ТВ	5	500	75	177	10	60	22	51	Х			x	х
due	TE	9	1350	50	164	4	60	14	51	Х		х		
Tor	TA	10	700	45	72	12	60	15	24	Х				х
	TAE	60	1350	85	135	12	60	20	34	Х		х		x
Line Shafts	LB	10	500	110	6000	5	60	16	50	Х	х			х
	LBS	10	500	100	6000	5	60	16	50	Х	х			X
	LE	12.5	1350	95	4000	5	60	20	65	X		X	x	

Please refer to the Full DieQua Couplings catalog for proper selection and sizing. If you have any questions please contact Diequa's Engineering support team and we would be happy to assist.

SOLUTIONS DEVELOPED FOR THE FOLLOWING INDUSTRIES, MANY MORE TO COME:

- Packaging
- Printing
- Machine Tool
- Robotics
- Material Handling & Automation
- Linear Actuators
- Medical Robots
- Medical Equipment
- Laboratory Technology
- Aircraft Construction
- Aviation
- Space Travel
- Pump Drive Technology
- Filtration Pumps
- Hydraulics
- Drive Technology
- Automatic Door Systems
- Freight Transportation
- Linear Drive Steel Industry
- Helicopter
- Cranes
- Landing Gear

- Power Supply
- Lock Drives
- Marine Propulsion
- Wind Power
- Solar Power
- Hydroelectric Power
- Tunneling Machines
- Conveyor Equipment
- Shredder Units



The DieQua Advantage

DieQua Corporation has been a manufacturer and supplier of precision motion control components since 1980. We offer the widest range of servo gearhead and speed reducing solutions available from a single source. Featuring right angle and inline designs with multiple backlash precision levels, the largest number of ratios, and several mounting and output options, we have the drive that meets your needs.

Sales

DieQua has established a network of sales associates and high tech distributors, supported by our inside sales team, to provide personal service to our valued customers.





Customer Service

DieQua is dedicated to being your most valuable supplier. From technical support to on-time delivery, you can count on DieQua to be a reliable extension of your design team.

Engineering

DieQua has several decades of combined experience specifying rotary motion control components. This assures the proper identification and selection for your unique requirements.

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Manufacturing

DieQua manufactures or assembles the majority of the products we provide. This adds valuable flexibility to provide reliable and cost effective on-time delivery of your production orders.

Warehousing

DieQua maintains an extensive inventory of common gearheads and servo motor connection components to provide quick delivery of prototypes, small orders and spare parts.





Special Designs

DieQua offers component dimension modifications or complete special designs. These capabilities compliment our philosophy of offering the best possible solution available.



Motion Components and Engineering Services

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