ZERO-MAX

Adjustable Speed Drives

How The Zero-Max® Drive Works

A Zero-Max Drive is a mechanical adjustable speed drive. Five sizes provide constant torque of 1.36 Nm to 22.6 Nm pounds throughout the speed range. The speed range is infinitely variable from 0 to 1/4 of the input speed under full rated load. This is generally stated as 0-400 RPM assuming an input of 1800 RPM.

For lower speed/higher torque applications, some Zero-Max Drives are available with right angle gearheads. Some Zero-Max Drives may be purchased with standard electric motors or they may be connected to any rotating power source up to 2000 RPM. Speed adjustments are easily made by moving a lever control through an arc or turning the handwheel of a screw type control. In either case, precise speed control settings are possible.

Over 1 million Zero-Max Drives have been put to work in a wide variety of applications. They are available from distributors in all major markets throughout the world.

Features	Benefits
Compact	Easy to handle/compact
Simple to install	No special wiring/training
Simple operation	Repeatable & easy to operate with lever or screw control
Use anywhere on machine	Accepts input to 2,000 RPM. Ideal as a secondary drive
Constant torque	Delivers constant torque throughout the speed range
4:1 speed reduction	Often usable without additional speed reduction
Change speed anytime	Speed set-ups are made quickly and easily
Change speed frequently	Permits slow or fast, small or large speed changes
Change speed continuously	Ideal for dancer applications/constant speed changes
Leave at one setting	No daily speed cycling
Accurate speed holding	No “wear-in” period/constant speed operation
Accepts any input	World’s most versatile, economical secondary drive
Goes to zero output	Ideal for use as a clutch
Shaft/control/motor options	Versatile
Infinitely adjustable	0-400 RPM speed range with 1800 RPM input

Match the Zero-Max® Drive to These Components

To achieve the exact performance characteristics you desire, Zero-Max provides the following matching components:

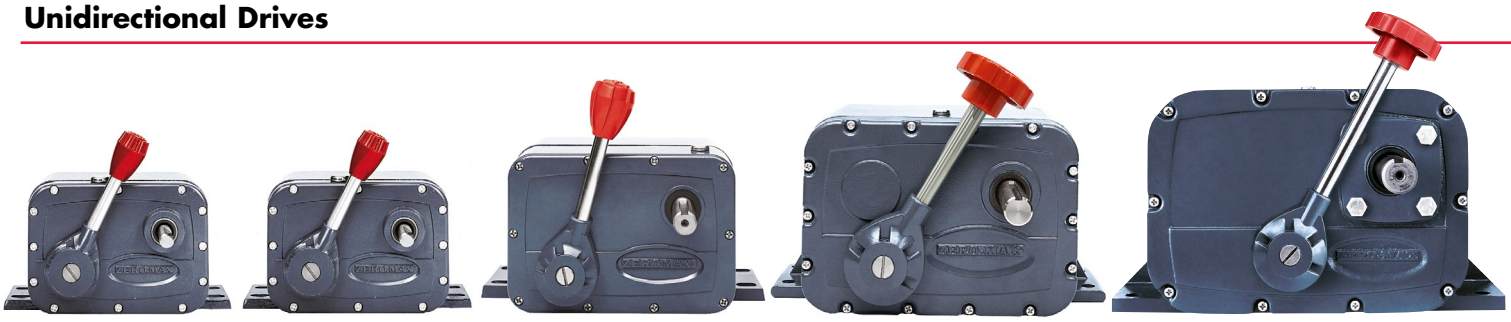
For Model E and JK Drives, a right angle gearhead and selection of motors are available.

For models Y, QX and ZX Drives, C-Flange adapters are available for connecting customer supplied motors to the drive you have selected.

Lever control is standard on all drives. Optional controls include: screw control, extended screw control, extended lever control, extended control shaft, microdial control, plus flatted and drilled control levers.

Direction of output rotation must be specified and is independent of input direction. Model numbers ending in "1" are CCW output, "2" are CW output and "3" are reversible.

Unidirectional Drives



E Models
1, 2, 41 or 42
Torque Rating 1.4 Nm
Speed Range 0-400.
Normal Input 0,18-0,24 kW

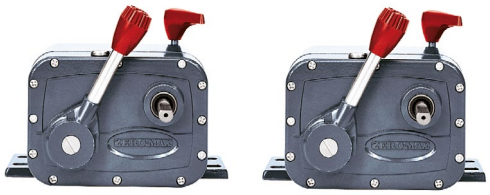
JK Models
1, 2, 41 or 42
Torque Rating 2.8 Nm
Speed Range 0-400.
Normal Input 0.18-0.24 kW

Y Models
1, 2, 41, or 42
Torque Rating 6.8Nm
Speed Range 0-400.
Normal Input 0.37 kW

QX Models
1, 2, 41 or 42
Torque Rating 11.3 Nm
Speed Range 0-400.
Normal Input 0.55 kW

ZX Models
1, 2, 41 or 42
Torque Rating 22.6 Nm
Speed Range 0-400.
Normal Input 1.10 kW

Reversible Drives



E Model 3
Torque Rating 1.4 Nm
Speed Range 400-0-400.
Normal Input 0.18-0.24 kW

JK Model 3
Torque Rating 2.8 Nm
Speed Range 400-0-400.
Normal Input 0.18-0.24 kW

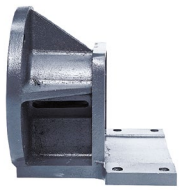
Gearhead

Right angle gearheads available for E and JK Models.
Right Angle – 4 Models
W1 4:1 W2 10:1
W3 20:1 W4 40:1

Motors

Many popular voltage, Hz, phase and enclosures are available for use with drive.
E Models 1, 2, 3/
JK Models 1, 2 and 3

C-Face Adapters



MODEL CFY
Includes coupling for 56 frame motor.

MODEL CFQ
Includes coupling for 56 frame motor.

MODEL CFZ
Includes coupling for 56 frame motor.

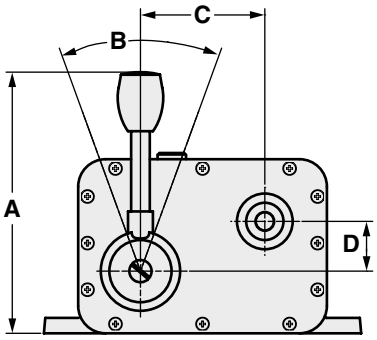
All C-Face Adapters will accept 56, 143T and 145T frame motors.

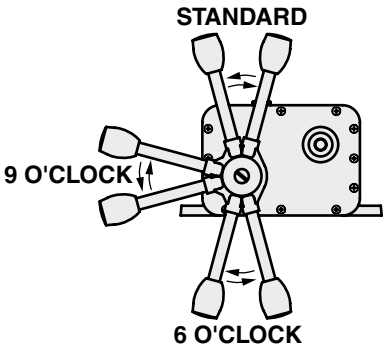
New Zero-Max Configurable 3D CAD Downloads.
www.zero-max.com

Standard Lever Type Control

The lever control can be removed from its customary 12 o'clock position and moved to a 6 or 9 o'clock position on E and JK Models and to any position on Y, QX and ZX Models that will not interfere with the casebody or shaft. Flatted and drilled, as well as extended levers, are available for easy attachment to any kind of remote control, or for use on tension control applications.

Standard Lever

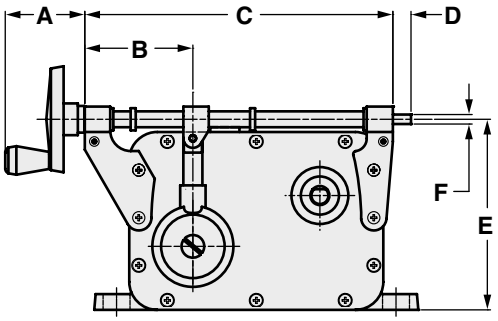


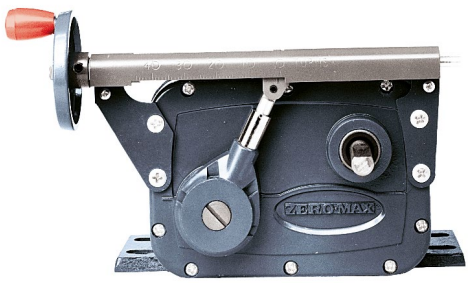


Drive Model	Lever Control Dimensions				Lever Torque	
	A	B	C	D	Running, no load)	(Not running, full load)
	(mm)	Degrees °	(mm)	(mm)	(Nm)	(Nm)
E	133.4	52	63.5	25.4	0.8	2.2
JK	133.4	52	63.5	25.4	0.8	4.0
Y	171.5	52	82.6	42.7	1.7	7.5
QX	209.6	54	90.2	48.3	4.0	10.0
ZX	254.0	63	77.7	61.0	5.6	18.0

Optional Screw Type Control

All Zero-Max Drives are available with screw control. Screw controls give very precise control of speed and many kinds of remote control attachments are easily made. They are positive and easy to calibrate. Kits are available for adding screw control to drives in the field. The hand-wheel can be mounted on either end of the screw.



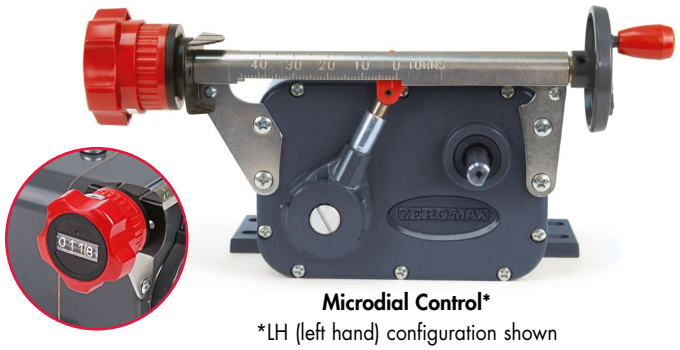


Screw Control

Drive Model	Screw Control Dimensions						Number of Screw Turns	Screw Torque
	A	B	C	D	E	F		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(Nm)
E_SC	38.1	53.9	153.9	9.4	95.3	4.6	38	0.2
JK_SC	38.1	53.9	153.9	9.4	95.3	4.6	38	0.2
Y_SC	38.1	57.2	188.5	11.2	116.3	4.6	50	0.35
QX_SC	53.9	72.9	223.8	9.4	149.1	6.4	68	0.45
ZX_SC	53.9	155.5	312.7	12.7	189.0	7.9	91	0.45

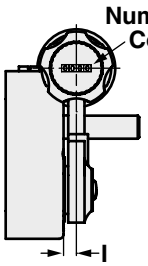
Optional Microdial Type Control

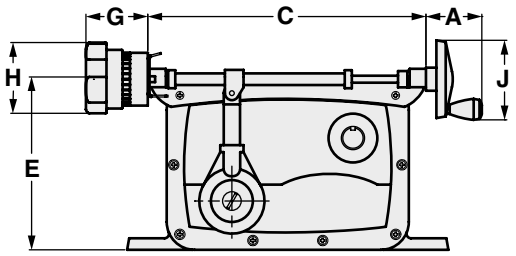
Drive models E, JK, and Y are available with Microdial control. The Microdial is an enhanced Screw control that will provide the user with a numerical value that will correspond to a given speed setting. For added flexibility, these units can be ordered with the Microdial counter on either end of the control. The Microdial is ideal for applications that require the speed setting to be adjusted often and need a high level of repeatability. Kits are available for adding the Microdial control to drives in the field.



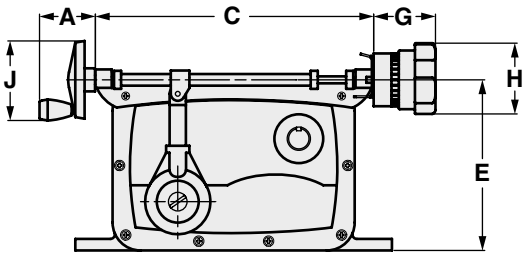
Microdial Control*

*LH (left hand) configuration shown





Type MD-LH



Type MD-RH

Microdial Dimensions								Numerical Counter Range
Drive Model	A (mm)	C (mm)	E (mm)	G (mm)	H (mm)	I (mm)	J (mm)	
E__MD-__	38,1	155.5	95.3	42.2	50.0	6.35	54.4	0-76
JK__MD-__	38,1	155.5	95.3	42.2	50.0	6.35	54.4	0-76
Y__MD-__	38,1	188.5	116.3	42.2	50.0	6.35	54.6	0-100

Drive Operating Characteristics

Input Speed should not exceed 2,000 RPM. There is no minimum, but as input speeds approach zero, slight variations in the angular velocity of the output may become noticeable. In connection with a pulley or sprocket, it is much better to use higher input speeds and take as much reduction as possible from the output shaft to maximize precise speed control. Direction of the input does not affect direction of output but does affect the speed range and performance of the Zero-Max Drive. The recommended input rotation direction in relation to output is given on page 6. If output speeds are substantially in excess of rated speeds or if the drive is noisy or vibrating at top speed, the non-preferred direction input is probably being used. Try reversing the motor so the input is in the other direction.

Output Speed is infinitely adjustable from 0 to 1/4th of the input speed. It is possible to keep or repeat the speeds with an accuracy of 1% or <1% for the range from 10%-100%. Below the 10% it´s not with an accuracy of 1% for a constant input speed and output load. The actual output speed is load-sensitive.

Zero-Max Drives

Models vary in their ability to give absolute zero under light loads. All models go to zero output speed under full rated load. Output Torque ratings listed for various models are constant throughout the speed range and assume an input speed of 1800 RPM. The drives are designed for continuous duty running at one speed, a variety of speeds or continuous speed cycling. Additional output torque may be gained by lowering input speed. In general, the torque rating of all models may be increased 25% if the input speed is 900 RPM or lower.

Temperature

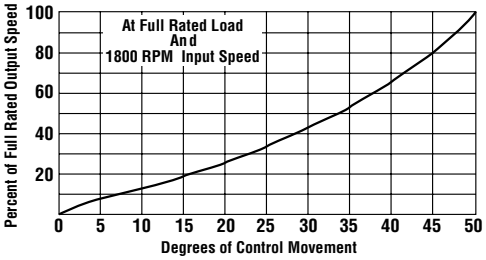
A rise of 40° C above ambient may be expected in the drive assuming input speed of 1800 RPM. This temperature will generate surface heat too hot for continued skin contact. This does not indicate a malfunction nor does it affect the performance of the drive. The drives are built to withstand high operating temperatures but they should never exceed 90° C.

Model	Overhung Load Pounds*		Thrust Load Pounds
	Output (N)	Input (N)	(N)
E & JK	89	53	111
Y	178	133	333
QX	222	178	444
ZX	1779	444	1779
W	1779	–	2224

* Note: At mid-point of Input and Output Shafts

Control Linearity

Movement of the Zero-Max speed control lever or rotation of the screw control produces a change in output speed that is non-linear. A typical speed-control curve of a Zero-Max Drive under full rated load is shown in the chart below.



1. **Start By Determining The Torque Required To Start And Run Your Machine.** This may be the most important step in selecting the best drive model for your application. All Zero-Max Drives are rated for constant torque and variable horsepower throughout the speed range. Be sure to consider the type of machine and apply the proper service factor.

2. **Determine Speed Range Required For Your Machine Processes.** The Zero-Max Drive speed range of 0-400 RPM is given assuming an input speed of 1800 RPM and full load on the output shaft. The selection of input speed and direction of input will have an effect on the final output speed. Lower input speeds reduce the speed range proportionately.

   Running the input in the non-preferred direction substantially increases the speed range but may result in higher operating temperature. For best results, run the Zero-Max in the preferred direction and match the speed range to your machine requirement. In connection with a pulley or sprocket, take as much reduction as possible from the output shaft to the load to provide adequate torque and to maximize the accuracy of speed control.

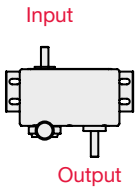
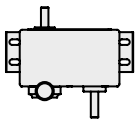
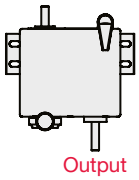
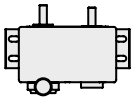
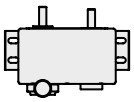
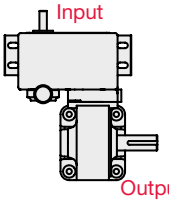
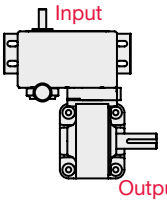
3. **Determine Output Shaft Rotation.** This is done by looking directly at the end of the output shaft. Model numbers ending in "1" are CCW output, "2" are CW output and "3" are reversible. Use of the Zero-Max right angle gearhead does not change the direction of rotation of the final output shaft.

4. **Select The Proper Method Of Providing Input Speed To The Zero-Max Drive.** If the Zero-Max Drive is being used as a secondary drive unit, input is best provided by a timing belt drive. Other common methods include shaft couplings, chain and sprocket drive, V-belt, and flat belt drives which are less desirable because of the potential for excessive overhung loading on the shaft.

   In any case, care should be taken to mount pulleys, sprockets etc. as close to the Zero-Max Drive case as possible to minimize overhung loads on the shafts. If a Zero-Max motor is to be used, select the standard motor from the chart on page 12.

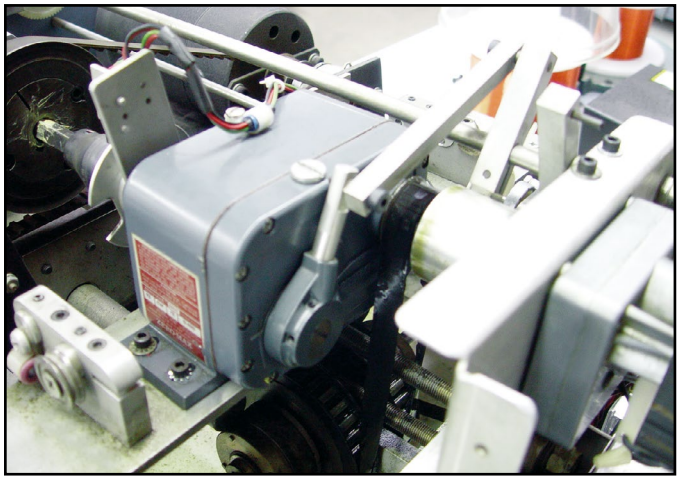
5. **Determine The Type Of Control Best Suited To Your Application.** Lever control is supplied as standard with all models of Zero-Max Drives. Other controls are available as discussed on page 3 and 4. The lever control is best suited for applications requiring rapid and frequent speed changes. The screw control is best suited for precise settings and speed repeating.

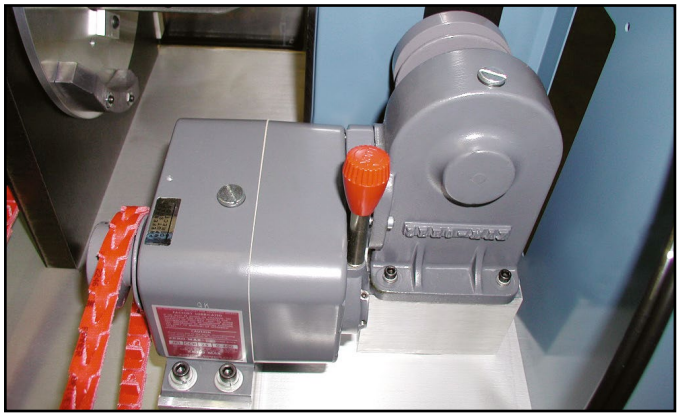
Serie	Shaft Options Available	Output Torque	Recommended Input
		Nm	kW
E & JK	1, 2, 3, 41, 42	1.4	0.18
Y	1, 2, 3, 41, 42	2.8	0.24
QX	1, 2, 41, 42	6.8	0.37
ZX	1, 2, 41, 42	11.3	0.55
W	1, 2, 41, 42	22.6	1.1

Type	*Note: Shaft rotations are always referenced by viewing the end of that shaft*	Output Rotation	Preferred Input Rotation
E1, JK1, Y1, QX1, ZX1		CCW	CW
E2, JK2, Y2, QX2, ZX2		CW	CCW
E3, JK3		BOTH	CCW
E41, JK41, Y41, QX41, ZX41		CCW	CCW
E42, JK42, Y42, QX42, ZX42		CW	CW
E1-W_ , JK1-W_		CCW	CW
E2-W_ , JK2-W_		CW	CCW

Service Factors		
Type of Load	**Type of Duty**	
	8-10 hrs./day	**24 hrs./day**
Uniform	1.0	1.5
Moderate Shock	1.5	2.0
Heavy Shock	2.0	3.0
Reversing Service	2.0	3.0

Types of Applications	Running Torque Multiplier
General machines with ball or roller bearings	1.2-1.3
General machines with sleeve bearings	1.3-1.6
Conveyors and machines with excessive sliding friction	1.6-2.5
Machines that have “high” load spots in their cycle like printing, * punch presses and machines with cams /crank-operation.	2.5-6.0

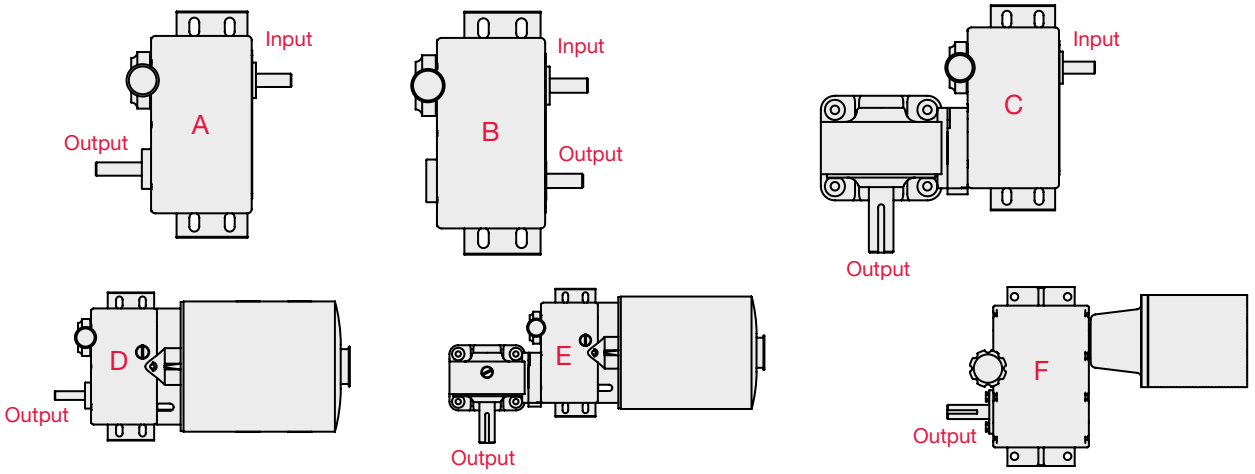




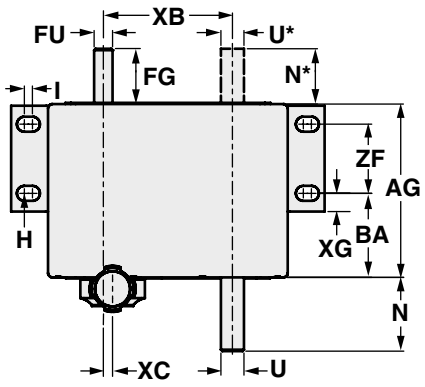
Standard Zero-Max Drives -- Order By Complete Model Number.

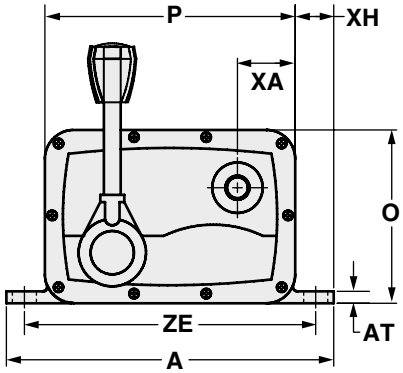
Torque Rating (Nm)	Speed Range w/ 1800 RPM input	Shaft Arrangement	Model Number – without Motor Output Shaft Rotation			Netto Weight (kg)	Shaft Arrangement	Model Number – with Motor or C-Flange Adapter Output Shaft Rotation			Netto Weight (kg)
			CCW	CW	Reverse			CCW	CW	Reverse	
1.4	0-400	A	E1	E2	–	1.814	D	E1-M3	E2-M3	–	8.165
	400-0-400	A	–	–	E3	2.268	D	–	–	E3-M3	8.618
	0-400	B	E41	E42	–	1.814	–	–	–	–	–
2.8	0-400	A	JK1	JK2	–	2.722	D	JK1-M3	JK2-M3	–	9.072
	400-0-400	A	–	–	JK3	2.722	D	–	–	JK3-M3	9.072
	0-400	B	JK41	JK42	–	2.722	–	–	–	–	–
3.95	0-100	C	E1-W1	E2-W1	–	4.082	E	E1-W1-M3	E2-W1-M3	–	10.433
	100-0-100	C	–	–	E3-W1	4.536	E	–	–	E3-W1-M3	10.886
6.78	0-400	A	Y1	Y2	–	4.536	F	Y1-CFY	Y2-CFY	–	7.257
	0-400	B	Y41	Y42	–	4.536	–	–	–	–	–
8.47	0-100	C	JK1-W1	JK2-W1	–	4.989	E	JK1-W1-M3	JK2-W1-M3	–	11.34
	10-0-100	C	–	–	JK3-W1	4.989	E	–	–	JK3-W1-M3	11.34
10.17	0-40	C	E1-W2	E2-W2	–	4.082	E	E1-W2-M3	E2-W2-M3	–	10.433
	40-0-40	C	–	–	E3-W2	4.536	E	–	–	E3-W2-M3	10.886
11.3	0-400	A	QX1	QX2	–	9.525	F	QX1-CFQ	QX2-CFQ	–	11.793
	0-400	B	QX41	QX42	–	9.525	–	–	–	–	–
17.51	0-20	C	E1-W3	E2-W3	–	4.082	E	E1-W1-M3	E2-W3-M3	–	10.433
	20-0-20	C	–	–	E3-W3	4.536	E	–	–	E3-W3-M3	10.886
21.47	0-40	C	JK1-W2	JK2-W2	–	4.989	E	JK1-W2-M3	JK2-W2-M3	–	11.34
	40-0-40	C	–	–	JK3-W2	4.989	E	–	–	JK3-W2-M3	11.34
22.6	0-400	A	ZX1	ZX2	–	14.515	F	ZX1-CFX	ZX2-CFZ	–	16.783
	0-400	B	ZX41	ZX42	–	14.515	–	–	–	–	–
27.12	0-10	C	E1-W4	E2-W4	–	4.082	E	E1-W4-M3	E2-W4-M3	–	10.433
	10-0-10	C	–	–	E3-W4	4.536	E	–	–	E3-W4-M3	10.886
33.9	0-20	C	JK1-W3	JK2-W3	–	4.989	E	JK1-W3-M3	JK2-W3-M3	–	11.34
	20-0-20	C	–	–	JK3-W3	4.989	E	–	–	JK3-W3-M3	11.34
33.9	0-10	C	JK1-W4	JK2-W4	–	4.989	E	JK1-W4-M3	JK2-W4-M3	–	11.34
	10-0-10	C	–	–	JK3-W4	4.989	E	–	–	JK3-W4-M3	11.34

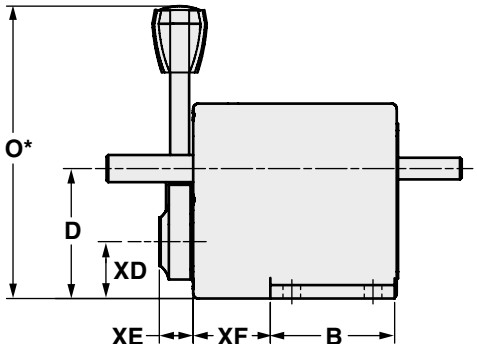
Standard Shaft Arrangements



Standard Drives Models E, JK, Y, QX and ZX Dimensions

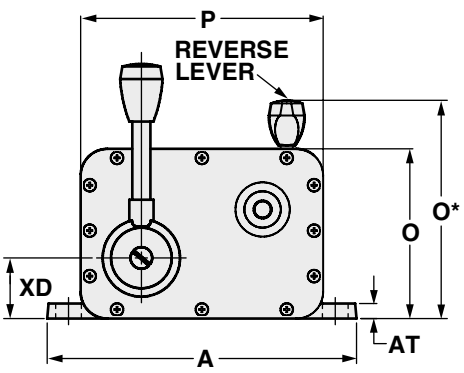


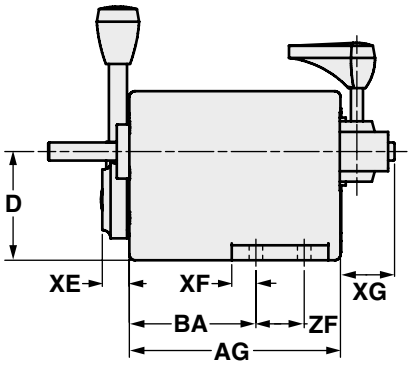


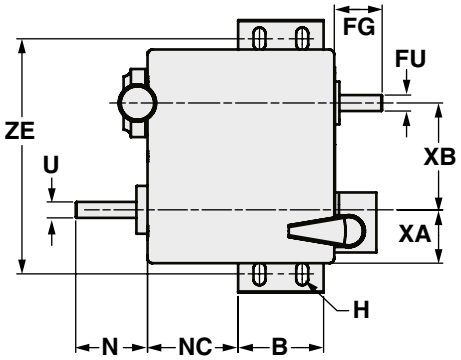


	E 1&2	E 41&42	JK 1&2	JK 41&42	Y 1&2	Y 41&42	QX 1&2	QX 41&42	ZX 1&2	ZX 41&42
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
A	161.8	161.8	161.8	161.8	217.4	217.4	260.4	260.4	320.6	320.6
AG	72.1	72.1	101.1	101.1	120.1	120.1	173.0	173.0	171.5	171.5
AT	7.9	7.9	7.9	7.9	8.1	8.1	9.7	9.7	12.7	12.7
B	50.8	50.8	50.8	50.8	73.4	73.4	76.2	76.2	120.7	120.7
BA	31.0	31.0	59.4	59.4	58.7	58.7	61.2	61.2	38.1	38.1
D	57.2	57.2	57.2	57.2	77.2	77.2	88.9	88.9	114.3	114.3
FG	28.5	28.5	28.5	28.5	38.1	38.1	50.8	50.8	50.8	50.8
FU	9.53	9.53	9.53	9.53	12.7	12.7	15.88	15.88	22.23	22.23
H (slots)	ø7.1	ø7.1	ø7.1	ø7.1	ø10.2	ø10.2	ø10.2	ø10.2	ø13.4	ø13.4
I	6.4	6.4	6.4	6.4	5.6	5.6	2.5	2.5	–	–
N	39.6	–	39.6	–	50.8	–	76.2	–	82.6	–
N*	–	28.5	–	28.5	–	50.8	–	72.9	–	82.6
O	88.9	88.9	88.9	88.9	116.1	116.1	139.7	139.7	177.8	177.8
O*	133.4	133.4	133.4	133.4	171.5	171.5	209.6	209.6	254.0	254.0
P	127.0	127.0	127.0	127.0	166.6	166.6	203.2	203.2	254.0	254.0
U	9.53	–	9.53	–	15.88	–	19.05	–	25.40	–
U*	–	9.53	–	9.53	–	15.88	–	19.05	–	25.40
XA	31.8	31.8	31.8	31.8	38.9	38.9	50.8	50.8	63.5	63.5
XB	63.5	63.5	63.5	63.5	88.9	88.9	101.6	101.6	127	127
XC	–	–	–	–	6.4	6.4	11.4	11.4	49.3	49.3
XD	31.8	31.8	31.8	31.8	34.5	34.5	40.6	40.6	53.1	53.1
XE	14.2	14.2	14.2	14.2	19.1	19.1	23.1	23.1	25.4	25.4
XF	18.3	18.3	46.7	46.7	46.0	46.0	48.0	48.0	25.4	25.4
XG	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
XH	17.5	17.5	17.5	17.5	25.4	25.4	28.7	28.7	33.3	33.3
ZE	139.7	139.7	139.7	139.7	190.5	190.5	235.0	235.0	285.8	285.8
ZF	25.4	25.4	25.4	25.4	47.8	47.8	50.8	50.8	95.3	95.3

Reverse Drives Models E3 and JK3 Dimensions

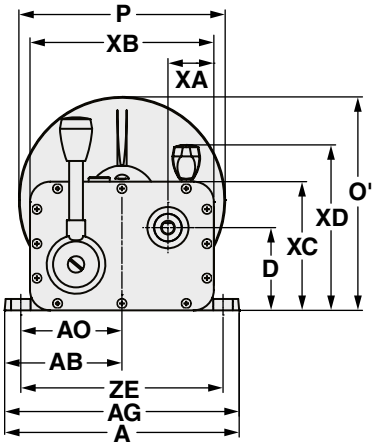


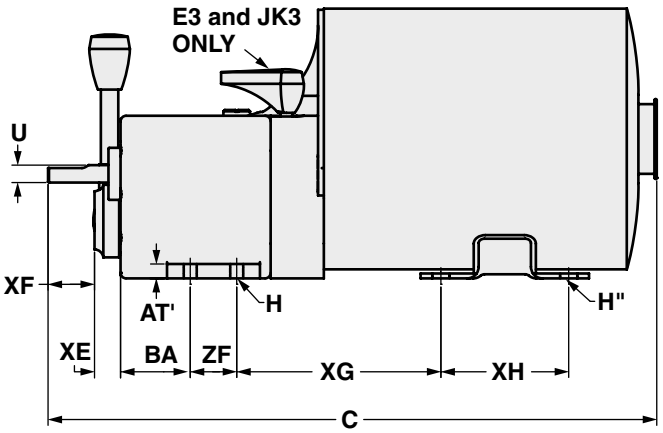




	A	B	D	H (slots)	N	O	O*	P	U	AG	AT	BA	FG	FU	XA	XB	NC	XD	XE	XF	XG	ZE	ZF
	(mm)	(mm)	(mm)	ø	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
E3	161.8	50.8	57.2	7.1	39.6	88.9	114.3	127.0	9.53	82.0	7.9	40.4	28.5	9.53	31.8	63.5	25.4	31.8	14.2	12.7	25.4	139.7	25.4
JK3	161.8	50.8	57.2	7.1	42.7	88.9	114.3	127.0	9.53	111.0	7.9	68.8	28.5	9.53	31.8	63.5	53.9	31.8	14.2	12.7	25.4	139.7	25.4

Motorized Drives Models E and JK Dimensions





	A	D	H (slots)	H" (slots)*	P	U	AE	AO	AT	BA	XA	XB	XC	XD	XE	XF	XH	ZE	ZF
	(mm)	(mm)	ø	ø	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
E1 & E2	161.8	57.15	7.1	8.6	142.8	9.53	80.8	69.9	7.9	31.0	31.8	127.0	88.9	114.3	14.2	25.4	69.9	139.7	25.4
E3	161.8	57.15	7.1	8.6	142.8	9.53	80.8	69.9	7.9	40.4	31.8	127.0	88.9	114.3	14.2	25.4	69.9	139.7	25.4
JK1 & JK2	161.8	57.15	7.1	8.6	142.8	9.53	80.8	69.9	7.9	59.4	31.8	127.0	88.9	114.3	14.2	25.4	69.9	139.7	25.4
JK3	161.8	57.15	7.1	8.6	142.8	9.53	80.8	69.9	7.9	68.8	31.8	127.0	88.9	114.3	14.2	25.4	69.9	139.7	25.4

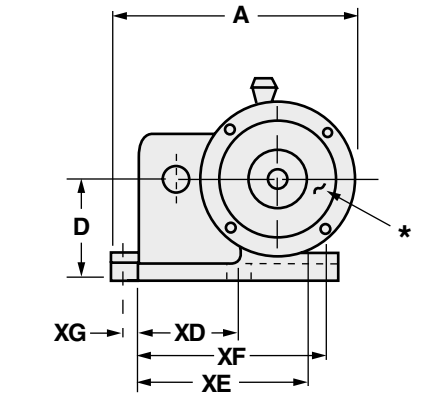
* Motor slots are centered 108 mm apart.

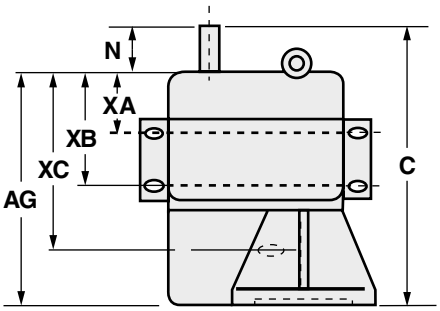
Zero-Max Motor	Used With	ENCL	Power (kW)	Voltage (V)	Hz	Phase	C Dimensions				XG	O'
							w/ E1 & E2	w/ E3	w/ JK1 & JK2	w/ JK3		
M3	E or JK	DP	0.24	115	60	1	328.9	339.1	357.9	367.5	111.0	147.6
M9		DP	0.24	230	60	1	328.9	339.1	357.9	367.5	111.0	147.6
M42L*		DP	0.24	230 / 460	60	3	382.8	393.2	411.5	420.9	112.3	147.6
M5		TEFC	0.18	115	60	1	357.1	365.3	385.6	394.5	111.0	162.3
M45		TEFC	0.18	230 / 460	60	3	357.1	365.3	385.6	394.5	111.0	162.3

* M42L (long) has replaced M42 motor.

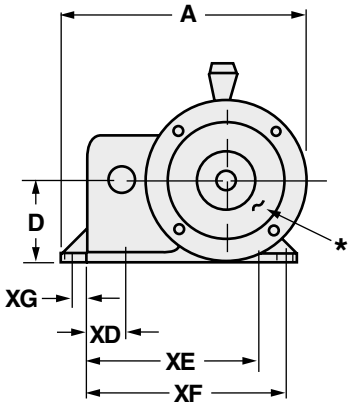
Drives with C-Flange Adapters Models Y, QX and ZX Dimensions

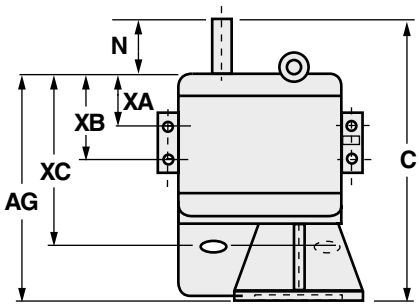
Model Y



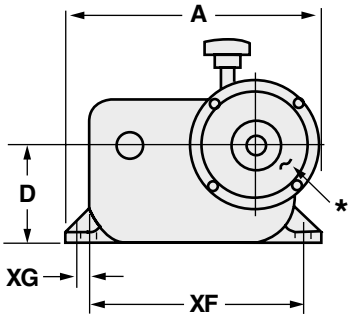


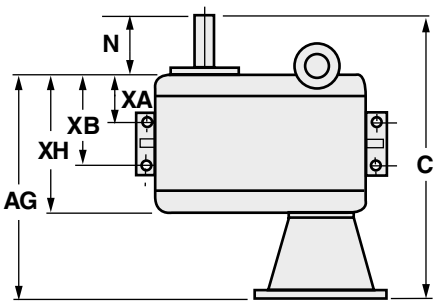
Model QX





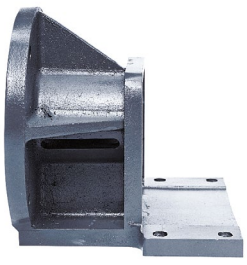
Model ZX





	A	C	D	N	AG	XA	XB	XC	XD	XE	XF	XG
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
Y	236.5	263.4	88.9	50.8	212.6	57.9	105.4	158.0	82.6	165.1	177.8	12.7
QX	263.4	354.8	88.9	76.2	281.9	60.7	112.0	212.6	41.4	180.9	219.2	16.0
ZX	307.9	358.7	114.3	82.6	276.4	38.1	133.4	–	–	–	269.8	15.8

* Accepts 56, 143T and 145T frame, C-face motor.



CFY

CFQ

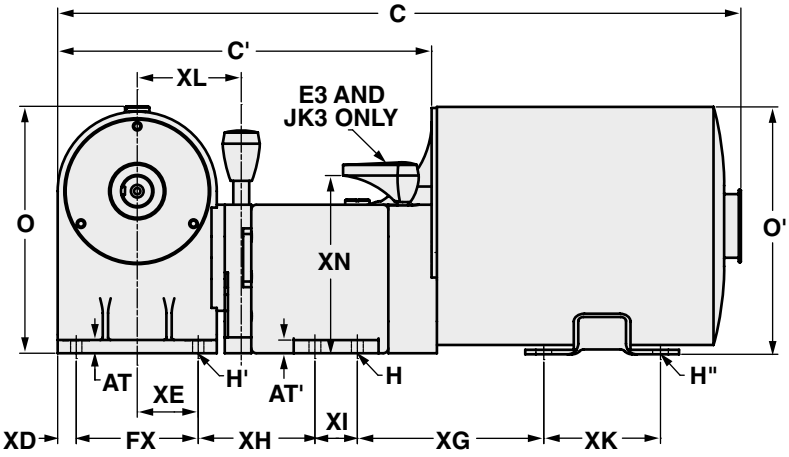
CFZ

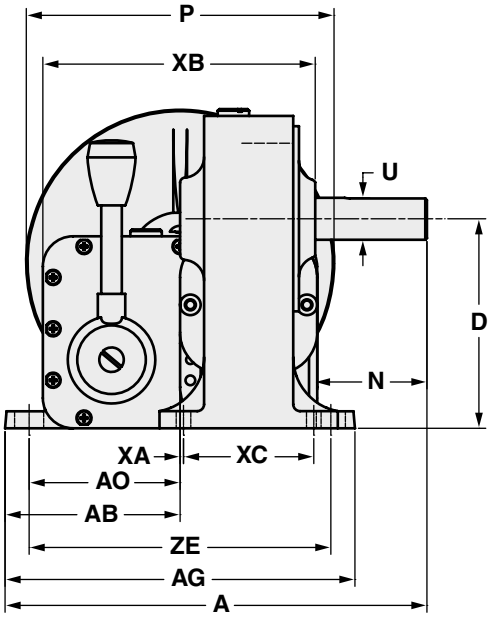
Standard Drives with Right Angle Gearhead Dimensions

	Right Angle Gearheads (W)			
	E1 & E2	E3	JK1 & JK2	JK3
	(mm)	(mm)	(mm)	(mm)
A	195.1	195.1	195.1	195.1
C'	216.7	226.1	245.1	254.5
D	96.8	96.8	96.8	96.8
H (slots)	ø 7.1	ø 7.1	ø 7.1	ø 7.1
H'	ø 6.6	ø 6.6	ø 6.6	ø 6.6
H" (slots)*	ø 8.6	ø 8.6	ø 8.6	ø 8.6
N	50.8	50.8	50.8	50.8
O	148.3	148.3	148.3	148.3
P	142.8	142.8	142.8	142.8
U	19.05	19.05	19.05	19.05
AB	80.8	80.8	80.8	80.8
AG	161.8	161.8	161.8	161.8
AO	69.9	69.9	69.9	69.9
AT	8.9	8.9	8.9	8.9
AT´	7.9	7.9	7.9	7.9
XA	1.5	1.5	1.5	1.5
XB	127.0	127.0	127.0	127.0
XC	60.5	60.5	60.5	60.5
XD	10.9	10.9	10.9	10.9
XE	36.3	36.3	36.3	36.3
XF	72.9	72.9	72.9	72.9
XH	61.7	72.1	91.2	99.8
XI	25.4	25.4	25.4	25.4
XK	69.9	69.9	69.9	69.9
XL	61.7	61.7	61.7	61.7
XN	–	114.3	–	114.3
ZE	139.7	139.7	139.7	139.7

* Motor slots are centered 108 mm apart

E and JK Drives with Right Angle Gearheads (W) Dimensions with Motor





Shaft and Keyway Details		
Model	Output	Input
E & JK	Flat 1.588 mm deep x 28.58 mm	Flat 1.588 mm deep x 19.05 mm
Y	Keyway 4.76 mm x 41.28 mm	Flat 1.588 mm deep x 25.4 mm
QX	Keyway 4.76 mm x 63.5 mm	Keyway 4.76 mm x 38.1 mm
ZX	Keyway 6.35 mm x 53.98 mm	Keyway 4.76 mm x 31.75 mm
W	Keyway 4.76 mm x 31.75 mm	Hollow Shaft

Specifications are subject to change. When dimensions are critical, detailed drawings should be obtained from Zero-Max.

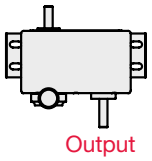
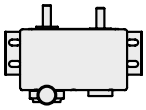
Motors*						
Motor*	Right Angle Gearheads (W)					
	C				XG	O'
	w/ E1 & E2	w/ E3	w/ JK1 & JK2	w/ JK3		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
M3 & M9	405.1	414.8	433.3	443.2	111.0	147.6
M42L**	458.5	468.1	487,2	496,8	112.3	147.6
M5	425.5	438.2	457.2	466.9	111.0	162.3
M45	425.5	438.2	457.2	466.9	111.0	162.3

* See page 12 for motor data.

** M42L (long) has replaced M42 motor.

Ordering Model Code

Model	
Code	Output Torque
E	1.40 Nm
JK	2.80 Nm
Y	6.80 Nm
QX	11.30 Nm
ZX	22.60 Nm

Configuration		
Code	Output Rotation	Shaft Configuration
1	Counter Clockwise	Input  Output
2	Clockwise	
3*	Both CCW and CW	
41	Counter Clockwise	Input Output 
42	Clockwise	

* Reversing drives are available in sizes E and JK only.

Control Options	
Code	Output Torque
Omit	Standard Control Lever
SC	Screw Control
MD-LH	Microdial (Left Hand Installation)
MD-RH	Microdial (Right Hand Installation)

• Note: Microdial controls not available on QX and ZX models as standard.

Right Angle Gear Reducer (Available for E and JK drives only)	
Code	Gear Ratio
Omit	None
W1	4 : 1
W2	10 : 1
W3	20 : 1
W4	40 : 1

Integrated Electric Motor (Available for E and JK drives only)				
Code	kW	Voltage	Phase	Enclosure
Omit	None			
M3	0.24	115 V	1	Drip Proof
M9	0.24	230 V	1	Drip Proof
M42L	0.24	230 V/460 V	3	Drip Proof
M5	0.18	115 V	1	Totally Enclosed Fan Cooled (TEFC)
M45	0.18	230 V/460 V	3	Totally Enclosed Fan Cooled (TEFC)

Example:

- Required output torque is 2.25 Nm.
- Output shaft rotation is clockwise.
- Input and output shaft arrangement to be on same side of housing.
- Screw control option is desired.
- Gear reduction is not required.
- Integrated motor is not required

Model Code is JK42SC

C-Face Adapters

Part Number	Description
CFY	Designed to mount a 56C frame motors to a Y drive
CFQ	Designed to mount a 56C frame motors to a QX drive
CFZ	Designed to mount a 56C frame motors to a ZX drive

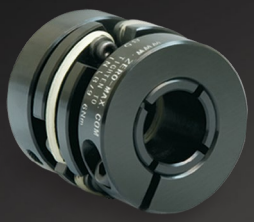

MODEL CFY


MODEL CFQ


MODEL CFZ

Note: All kits include the shaft coupling.

PRECISE. RELIABLE. ROBUST. AVAILABLE.



CD® Couplings (Composite Disc)

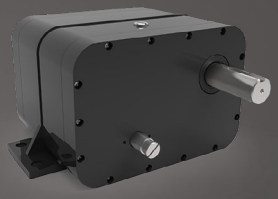
- Backlash-free torque transmission
- High torsional stiffness
- Nominal torque range from 20 Nm to 5333 Nm
- Bore diameter from ø6 mm to ø152 mm
- Speeds up to 15000 rpm
- High misalignment capacity
- RoHS compliant

Adjustable Speed Drives

- Five models in torque range from 1.4 Nm to 23 Nm
- Speed infinitely adjustable
- Input speed up to max. 2000 rpm
- 4 : 1 speed reduction
- Constant torque throughout the speed range
- Shaft arrangement freely selectable

Servoflex Couplings

- Aluminum or steel backlash-free clamping hubs
- Single and double cardanic versions
- High torsional stiffness
- Bore diameter from ø3 mm to ø115 mm
- Nominal torque from 0.25 Nm to 8000 Nm
- RoHS compliant



VRT™ Variable Ratio Transmission

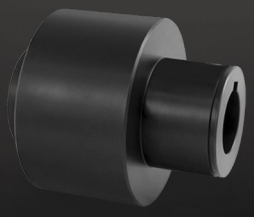
- Output torque up to 33.9 Nm (300 in-lbs)
- Output speed ratio ~ 0 to 0.25 : 1 of input speed
- Compact design
- Input speeds up to 300 rpm
- Easy handling, installation and operation

Roh'Lix® Linear Actuators

- Five sizes available from ø8 mm to ø50 mm
- Thrust forces adjustable up to 67 N to 889 N
- Split design ensures easy radial mounting
- Ball bearings are lubricated for life
- Built -in overload protection

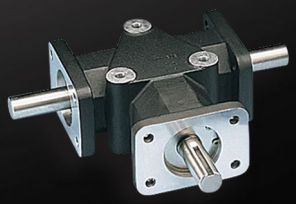
Overhung load adaptors (OHLA®)

- Protects against axial and radial loads
- Mounting standard for SAE A, B, C, D, E, F – other standards possible (Non-SAE)
- Double-lip shaft seals
- Units can be fully customised
- Protection against contamination of the hydraulic oil



Overload Safety Couplings

- Torque range from 0.3 Nm to 340 Nm
- Reliable overload protection
- Compensation of shaft misalign-ments
- Shaft coupling and hub-mount versions available



Crown Gear Drives

- Stainless steel shafts
- Transmission ratio 1 : 1 and 2 : 1
- Fully sealed bearings
- Smooth running properties and high efficiency
- IP65 rated versions with plated housings available

ZERO-MAX®

Zero-Max, Bauhofstraße 12, 63762 Großostheim, Deutschland
Tel.: +49 6026 999 61 11, Fax: +49 6026 999 61 61, info@zero-max.de

zero-max.de