

Rototime Product Line

Tuff Gear Gearboxes • Powerlift Jacks • Flexxtrans™ Couplings

SERVO REDUCER



RT10



RT/RTT 18



TUFF-GEAR



BEVEL GEAR JACK



RTTH 25.4



All Stainless Steel Products

Elegance & Style



Rotary Timing/Control Products

The Rototime RTT series is a high quality, Low Backlash, Stainless Steel Spiral Bevel Cubic Gearbox. The gearbox is used for precision speed reduction, increase torque or to manipulate direction of shaft rotation. The sophisticated eletropolished (mirror finish) modular housing design allows several mounting options, such as motor flange, metric/inch Solid or Hollow shaft in any environment. The spiral bevel gears are heat treated and lapped for maximum strength, smooth rotation, and efficient tooth contact. The high axial ball bearings enable quiet operation with capacity to handle radial load. The double lip, UV protected oil seals insure environmental gear protection and no leak during pressure wash. The synthetic 460 oil enable safe operation of the gearbox. Available also with food safe oil!

Features

- Electropolished 304 or 316 Stainless Steel housing for clean look and sophistication
- Precision Crafted Spiral Bevel Gear is Heat Treated and Lapped for maximum strength and smooth rotation. Torque capacity up to 180Nm
- Double Lip, UV protected oil seal to prevent external contamination
- Modular, cubic housing design for mounting in any direction
- Metric or Inch shaft, or **Hollow Output Shaft**
- Motor Flange or shaft mount option
- Ratio reducer or increaser 1:1, 1.5, 1:2, 1:3
- Less than 7 Arcmin of backlash
- 98% efficiency

Elegance & Style

Applications

Packaging, printing, converting, food process, and general speed and torque control. The Stainless Steel design for food safety and clean environment.

RT 10 Hollow, through



Electro Polish



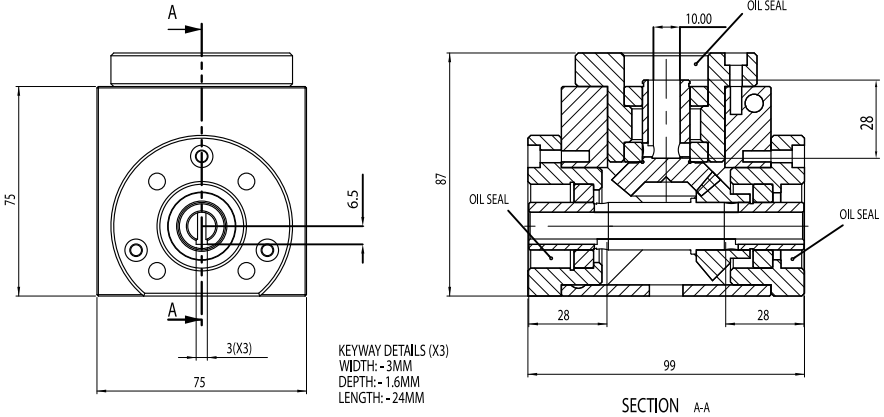
Spiral Bevel Mini-Gearbox

10mm Hollow or 14mm solid shaft

- 5, 12 Nm, 3 Arcmin
- Ratio 1:1, 1:2, 2:1
- 304 Stainless Steel (Electro-Polish)
- Heat treated and Lapped Gears (low noise and reduced backlash)
- Double Lip Oil Seal (wash-down)
- High Load Ball Bearing (Radial and Axial)
- 12 month warranty
- 3D Models available on request

Metric Hollow or Solid Shaft

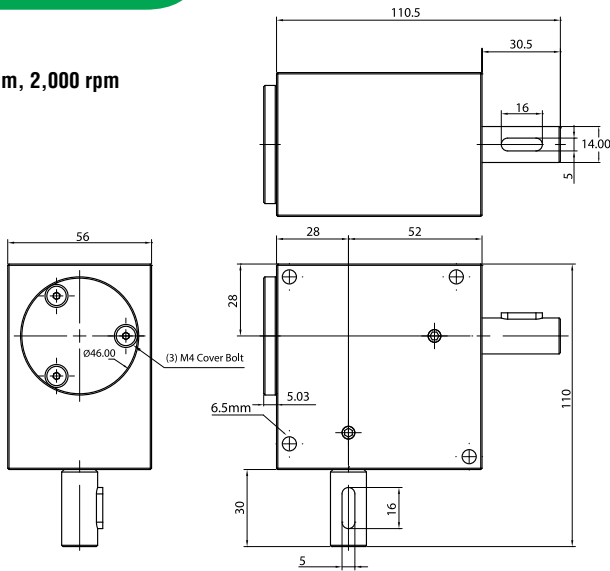
RT 10 Hollow, through



Torque 5 Nm, 2,000 rpm

RT 14 Solid Shaft

Torque 12 Nm, 2,000 rpm



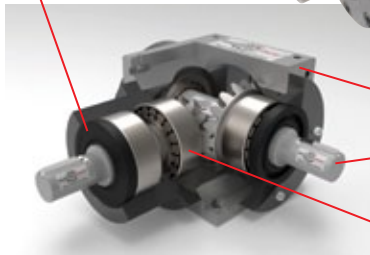
Model	Shaft Diameter mm (inches)	Torque Nm (@3000 rpm) Ratio 2/1	Backlash Arcmin	Radial Load N	Axial Load N	Inertia Kg.cm ²	Weight* Kg
RTH10/RTTH10	10 (0.39)	5/6	4	95	180	0.4/0.5	1.8
RT14/RTT14	14 (0.55)	12/14	5	120	250	0.4/0.45	3.0

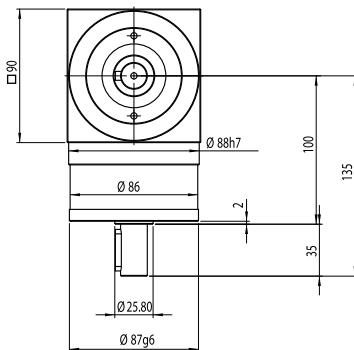
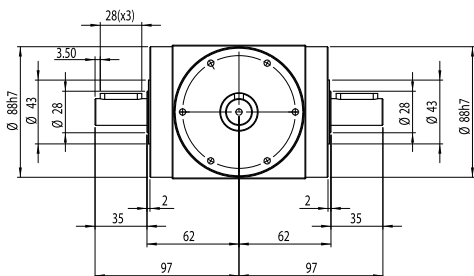
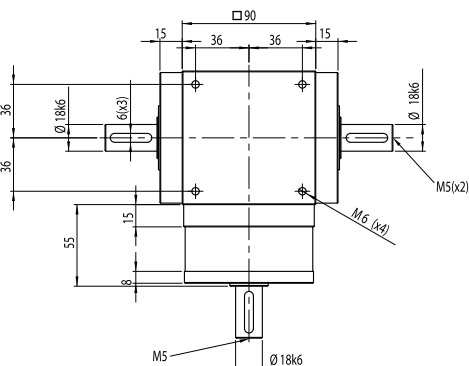
* Dry Weight

Additional reduction ratio made to order. Metric shaft units can be made with Inch shaft options.

**3-Shaft or Right-angle
(Inch shaft option)**

Viton Oil Seal


 304
Stainless
Steel

 Tapped Roller
Bearing


Note:
Ratio: 1~3
Spiral Gears: Hardened and Lapped Condition
Housing: Stainless Steel
Lubrication: Life time grease filled

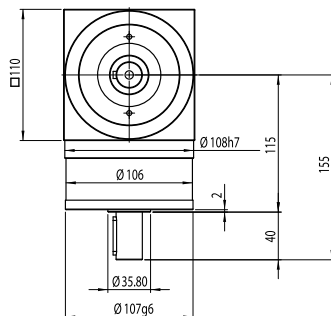
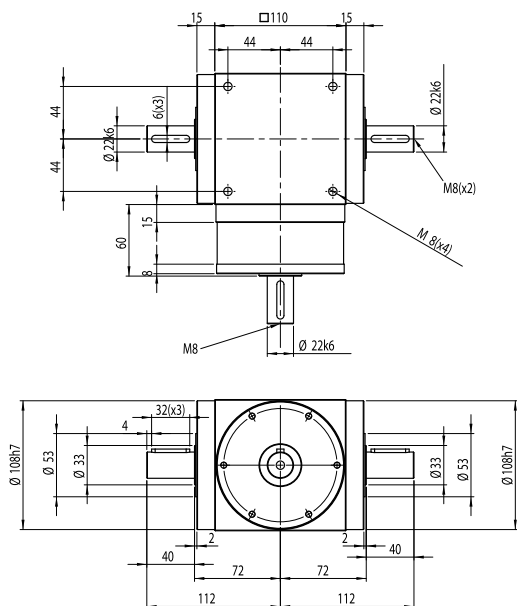
Spiral Bevel Gearbox
18, 22 and 32mm solid shaft

- 80-260 Nm, 5 Arcmin
- Ratio 1:1, 2:1, 3:1, 1:3, 1:2
- 304 Stainless Steel, Carbon Steel, Cast Iron
- Heat Treated and Lapped Gears (low noise and reduced backlash)
- Double Lip Oil Seal (wash-down)
- High Load Ball Bearing (Radial and Axial)
- 12 month warranty

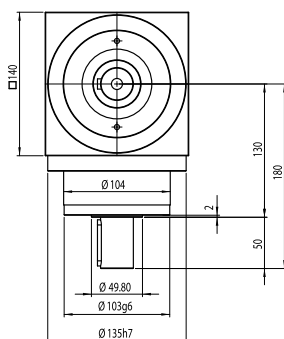
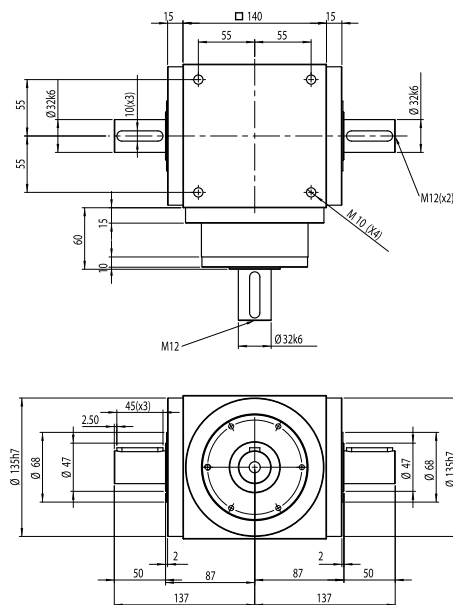
Model	Shaft Diameter mm (inches)	Torque Nm (@3000 rpm) Ratio 3/2/1	Backlash Arcmin	Radial Load N	Axial Load N	Inertia Kg.cm ²	Weight* Kg
RT18/RTT18	18 (0.708)	50/65/75	6	1450	725	3.16	7.2
RT22/RTT22	22 (0.866)	120/150/150	7	2100	1015	7.7	11
RT32/RTT32	32 (0.1.25)	270/330/360	7	2700	1210	17.06	14

* Dry Weight

Additional reduction ratio made to order. Metric shaft units can be made with Inch shaft options.



Note:
Ratio: 1~3
Spiral Gears: Hardened and Lapped Condition
Housing: Stainless Steel
Lubrication: Life time grease filled



Note:
Ratio: 1~5
Spiral Gears: Hardened and Lapped Condition
Housing: Stainless Steel
Lubrication: Life time grease filled



RTT 25.4

RTTH 25.4



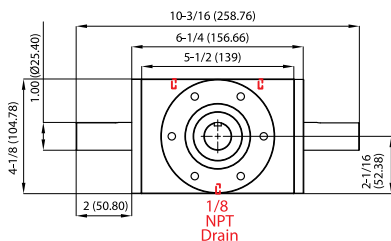
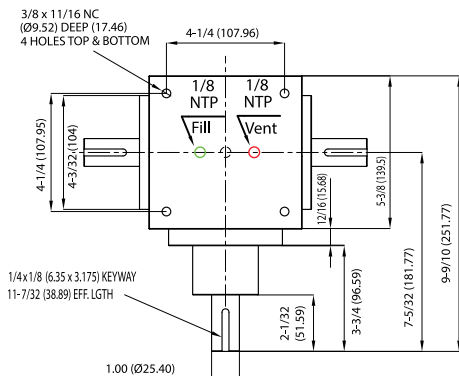
Spiral Bevel Gearbox

25.4mm (1 inch) Solid or Hollow Shaft

- 180 Nm, 5 Arcmin
- Ratio 1:1, 2:1, 3:1, 1:3, 1:2
- 304 Stainless Steel, Carbon Steel, Cast Iron
- Heat Treated and Lapped Gears (low noise and reduced backlash)
- Double Lip Oil Seal (wash-down)
- High Load Ball Bearing (Radial and Axial)
- 12 month warranty

Hollow, 3-Shaft or Right-angle (Inch shaft option)

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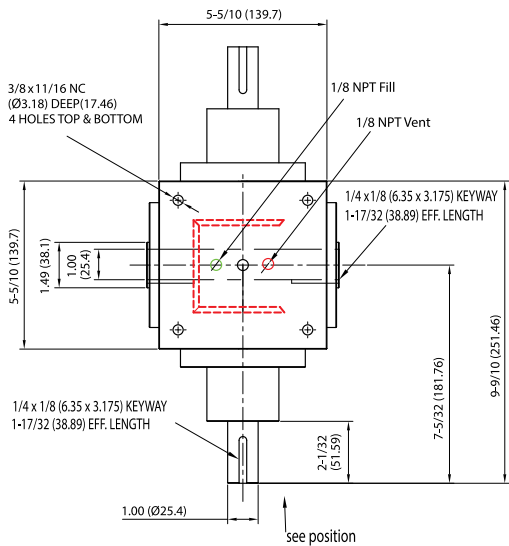
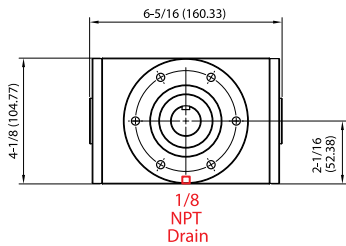
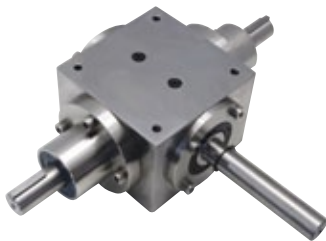


Model	Shaft Diameter mm (inches)	Torque Nm (@3000 rpm) Ratio 2/1	Backlash Arcmin	Radial Load N	Axial Load N	Inertia Kg.cm ²	Weight* Kg
RTT25.4	25.4 (1)	90/105	6	2100	1050	7.7	17.2
RTTH25.4	25.4 (1)	91/106	7	2100	1050	7.7	17.9

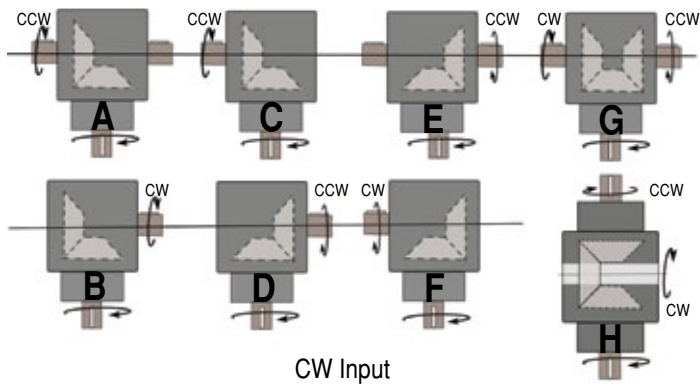
* Dry Weight

Additional reduction ratio made to order. Metric shaft units can be made with Inch shaft options.

RTTH 25.4



Ordering Information



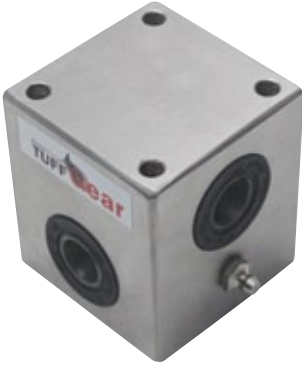
Spiral Bevel Gearbox Part Number and Ordering Information

RTT18-A-S1:2

RT = Right-angle
RTT = 3 Shaft style
RTTH = Hollow

A,B,C = Output Shaft Rotation
Ratio Reducer: 1:1, 1:2, 1:3
Ratio Increaser: S1:2, S1:3

Hollow Cross-Shaft Gearbox

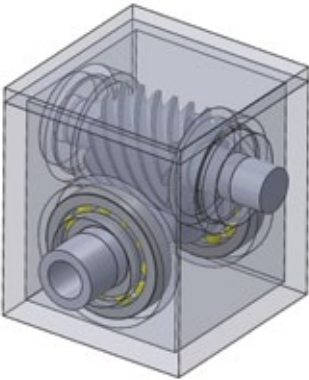


Gearbox for OEM Machinery

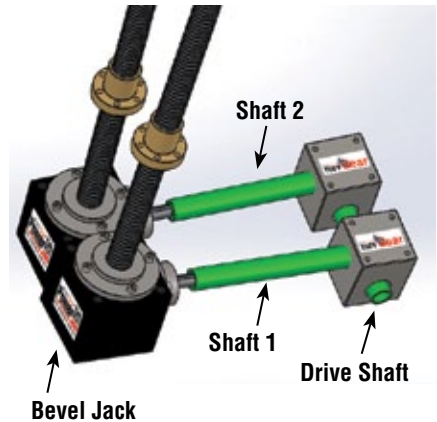
304 Stainless Steel, Hollow cross-shaft gearbox for precision control and low installation cost on packaging and food machinery. The unique design of the cross shaft gear at 90 degrees allows flexibility in design and hardware.

- Reduce the use of shaft coupling and gears.
- Compact design. 3.2" x 2.75" housing with 1/4"x 20 tapped holes.
- 304 Stainless Steel
- 5/8" keyed, Hollow
- 1" center
- 5Nm
- 1200 rpm
- **Available - Right-Hand or Left-Hand Rotation**

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Unique Cross Gear Design



Save Time and Hardware

Best in gear class. Made Tuff!

TUFF-GEAR High Precision Compact Servo Gearbox



**Shafted Bevel-Planetary
Speed Reducer**



**Hollow Bevel-Planetary
Speed Reducer**

- Right-angle Bevel-Planetary
- 7-Gearbox sizes
- Ratios from 1-200
- Hollow and Shafted Output
- 1 arcmin backlash
- Provided with motor adaptor plate
- 3D models available upon request

WS gearhead Type (1) (3) includes In-Line input type		R-WS42S RT40		R-WS60H RT60		R-WS70H RT60		R-WS90H RT90		R-WS120H RT120		R-WS150H RT120		R-WS180H RT150	
Nominal Output Torque	Lb-in/Nm	121/13.7		234/26.4		390/44.1		1172/132		1953/220		3906/441		7030/793	
Max Acceleration Torque	Lb-in/Nm	3 Times Nominal Output Torque													
Emergency Stop Torque	Lb-in/Nm	3.4 Times Nominal Output Torque - Minimum of 1000 times during life of gearhead.													
Max input/output Speed	rpm	1500/1500		3000/500		3000/600		3000/500		3000/400		3000/400		3000/250	
Gear ratio NOTE: (2) (4)	L	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
Standard Backlash (max) (5)	arcmin	6	8	5	7	3	5	3	5	3	5	3	5	3	5
Reduced Backlash (max) (5)	arcmin					1	3	1	3	1	3	1	3	1	3
Max. radial load (6)	Lb/N	2169/245		4340/490		7464/843		12151/1373		21699/2452		30378/3432		47738/5394	
Max. axial force	Lb/N	1085/118		2169/445		3732/422		6075/686		10849/1226		15189/1716		22650/2697	
Allowable input shaft diameter	mm	5 to 9		6.35 to 14		6.35 to 14		11 to 24		19 to 35		19 to 35		20 to 38	
Rated life	Hours	>10,000 - at permissible input speed and Nominal Output Torque													
Operating Temperature Range	°C	-10°C to +40°C ambient - 90°C max. operating case temperature													
Sound level	dB (A)	62	62	65	65	65	65	65	65	65	65	70	65	70	65
Mounting POS & Lubrication		All Positions - Lubricated for life (synthetic grease)													
Direction of rotation		Motor and gearhead shaft opposite directions													
Protection class		IP54													
Gearhead Inertia	Kg-cm ²	0.049		0.127		0.127		1.247		2.274		2.274		10.19	
Efficiency at full load	%	85% for 1 stage and 80% for 2 stage													
Weight	Kg	1	1.1	1.7	2	2.2	2.5	5.7	6.8	12.5	14.8	17	18.3	52.1	52.8
No-load running torque	Nm	0.05		0.3		0.3		0.6		1.2		1.2		1.45	

1. "S" suffix indicates solid shaft - Model 42 is available only with shaft output in single stage ratio L1 and 2 stage ratio L2
2. Gear ratio available for R-WS42S L- L1 (single stage): 4, 5, 7, 10 – L2 (2 stage): 12, 15, 16, 20, 21, 25, 28, 30, 35, 40, 49, 50, 70
3. "H" suffix - Hollow shaft and option for solid shaft
4. R-WS60 to R-WS180 ratios: L1 (single) - 6, 8, 10, 14, 20; L2 (2 stage) -18, 24, 30,32, 40, 50, 56, 60, 70, 80, 98, 100, 140, 200
5. At 3 percent of rated load
6. At distance of one half of one coupling length from the end of the gearhead shaft

TUFF-GEAR High Precision RT In-Line Planetary Reducer



**Provided with Motor
Adaptor Plate**

Performance		Stages	Ratio	RT40	RT60	RT90	RT120	RT150
Nominal output Torque	Lb-in/Nm	1	3	*	265/30	1115/126	2247/254	4425/500
			4	147/15	362/41	1141/129	2336/264	4593/519
			5	157/16	371/42	1247/141	2601/294	4681/529
			7	137/14	345/39	1159/131	2079/235	4336/490
			9	*	265/30	1115/126	2168/245	4425/500
			10	115/13	327/37	1088/123	1646/186	3637/411
		2	12	115/13	265/30	1115/126	2247/254	4425/500
			15	141/16	362/41	1247/141	2247/254	4425/500
			16	133/15	371/42	1141/129	2336/264	4593/519
			20	133/15	371/42	1247/141	2336/264	4593/519
			21	133/15	265/30	1115/126	2247/254	4425/500
			25	141/16	371/42	1247/141	2601/294	4681/529
			28	141/16	371/42	1141/129	2336/264	4593/519
			30	115/13	362/41	1115/126	2601/294	4425/500
			35	150/17	265/30	1247/141	2601/294	4681/529
			40	141/16	371/42	1141/129	2336/264	4593/519
			49	124/14	362/41	1159/131	2079/235	4336/490
			50	141/16	371/42	1247/141	2601/294	4681/529
			70	133/15	345/39	1159/131	2079/235	4336/490
			100	115/13	327/37	1088/131	1646/186	3637/411
Max. Acceleration Torque	Lb-in/Nm	1,2	3-100	3 times Nominal Output Torque				
E-Stop Torque	Lb-in/Nm	1,2	3-100	3.4 times Nominal Output Torque				
Permissible Input Speed < 3000 (P1)	rpm	1,2	3-100	1000	1000	1000	1000	1000
Low Backlash (P1)	arcmins	1	3-10	1	1	1	1	1
		2	12-100	≤1	≤1	≤1	≤1	≤1
Permissible Input Speed 3000 + (P1)	rpm	1,2	3-100	3000	3000	3000	3000	3000
Standard Backlash	arcmin	1	3-10	15	5	5	6	6
		2	12-100	30	10	9	11	11
Max. Radial Force (mid-shaft)	lbs/N	1,2	3-100	154/686	242/1078	777/3459	1024/4557	1378/6134
Max. Axial Force	lbs/N	1,2	3-100	77/343	124/539	386/1729	512/2278	669/3067
Allowable Input Shaft Diameter	mm	1	3-100	5-9	6.35-14	11-24	19-35	20-38
Rated Life at rated output Torque	Hours	1,2	3-100			10000		
Operating Temperature	°C	1,2	3-100	-10°C to + 40°C ambient -90°C max. case temperature				
Sound level	dB (A)	1	3-10	62	62	65	65	70
		2	12-100	62	62	65	65	65
Lubrication		1,2	3-100	Synthetic Grease				
Protection Class			3-100	IP54				
Gearhead Inertia	Kg*cm²	1	3-10	0.049	0.127	1.247	2.275	10.19
		2	12-100	0.049	0.127	1.247	2.275	10.19
Efficiency at full load	%	1,2	3-100	95% for stage 1 and 90% for stage 2				
Weight	kg	1	3-10	0.4	1.1	3.3	6.8	13.8
		2	12-100	0.5	1.3	4.5	8.3	14
Non-load running torque	Lb-in/Nm	1	3-10	0.44/0.05	2.3/0.3	5.3/0.6	10.7/1.2	12.8/1.45
		2	12-100	0.43/0.05	2.3/0.3	5.3/0.6	5.3/0.6	10.7/1.2
Output shaft diameter	mm			13	14 & 16	22	32	40

RT60 to RT120 available in single or double stage 9:1 ratio C = 2πiR, A circle with 1/πi has a C of 2
 180 degree = π radians. 1/60 of 1 degree = 1 arcmin. When we say 1 arcmin, which is 1/60 = 0.016 degree

Powerlift-Ball Screw, Bevel Gear Jack



Bevel Gear Jack makes easy movement for all kinds of lifting and position applications.



- Machined Aluminum Housing, Acme or Ball lifting Screw
- Rotating, Translating - Lifting Heights from 1-10 foot
- Ratio 1-1, 1-2. Load capacity 1/2 Ton, 1 Ton, 1.5 Ton, 2.5 Ton
- Single or Multi-Input shaft sizes: 10mm, 15mm, 20mm, 25mm



**Upright
Translating**



**Inverted
Translating**



**Upright
Rotating**



Multi-Shaft Translating



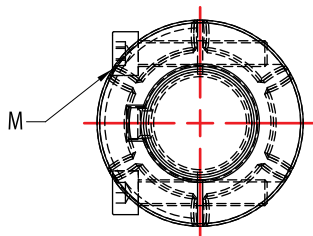
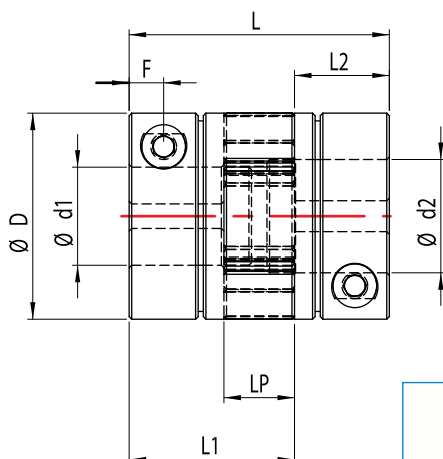
Advantages: In-Line Connection, Low Ratio, Fast Adjustment

Model	R-PL16	R-PL20	R-PL25	R-PL32
Rated Dynamic Load (N)	1000	2000	3000	5000
Screw Diameter and Lead	16,5 16,10 16,16	20,5 20,10 20,20	30,5 30,10 30,25	32,5 32,10 32,20 32,32
Input Shaft Diameter (mm)	10	15	20	25
Gear Ratio	1:1 2:1	1:1 2:1	1:1 2:1	1:1 2:1
Max Input Power (kW)	0.75	1.5	2.5	4
Max Input Speed (rpm)	1000	1000	1000	1000
Efficiency (%)	45	45	45	45
Housing Material	6061 Aluminum Alloy			

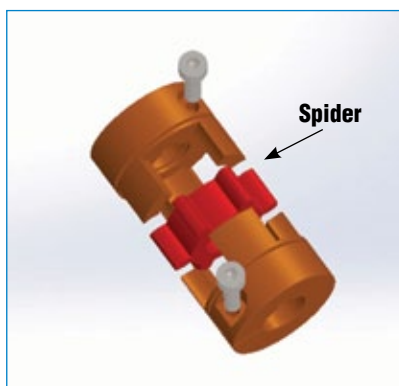
Ordering: R-PL16 - C-2 (Shown)
Model - Style - Ratio

3D drawings available upon request

Zero-Backlash-Jaw Shaft Coupling



- **6061T6 Aluminum or 304 Stainless Steel**
- Bi-directional loading
- Shock Absorber
- Shaft End-play
- High Load Capacity



Zero-Backlash-Jaw Shaft Coupling

Ordering: Model#-bore1kw-Bore2kw
JC1422-5mmkw-1/2"kw



JC Setscrew and Clamp Dimensions

Model	Bore Max (Ød1-Ød2)		ØD	L	L1	L2	Spider Thickness LP	F	M		Wrench Torque
	Set Screw-Clamp								Set Screw	Clamp	Clamp
	inch	mm	mm	mm	mm	mm	mm	mm	metric	metric	Nm
JC1422	0.25	6.3	14	22	14.3	7.7	6.6	3.8	M3	M2.5	0.8
JC2025	0.39	10	20	25	16.7	8.1	8.6	4.6	M3	M3	1.2
JC2030	0.39	10	20	30	19.3	10.7	8.6	5.4	M3	M3	1.2
JC2530	0.47	12	25	30	20.8	9.2	11.6	4.6	M4	M4	2.5
JC2534	0.47	12	25	34	22.8	11.2	11.6	5.6	M4	M4	2.5
JC3035	0.63	16	30	35	23.0	12.1	10.9	5.9	M8	M4	2.5
JC3040	0.63	16	30	40	25.0	14.1	10.9	7	M8	M4	2.5
JC4050	0.94	24	40	50	32.1	18.4	13.7	6.7	M8	M5	7
JC4055	0.94	24	40	55	34.5	20.8	13.7	7.2	M10	M5	7
JC4066	0.94	24	40	66	40.0	26.3	13.7	8	M10	M5	7
JC5549	1.26	32	55	49	32.0	15.9	16.1	6.5	M10	M6	12
JC5578	1.26	32	55	78	46.4	30.3	16.1	10.3	M10	M6	12
JC6580	1.57	40	65	80	48.5	31.8	16.7	14	M10	M8	20
JC6590	1.57	40	65	90	53.5	36.8	16.7	11.9	M10	M8	20
JC80114	1.77	45	80	114	68.0	45.5	22.5	15.5	M10	M8	20
JC95126	2.17	55	95	126	74.5	50.5	24	15	M10	M10	30
JC105x140	2.36	60	105	140	83.2	56.8	26.4	21	M10	M10	40
JC120x160	2.56	65	120	160	93.7	66.3	27.4	26	M12	M12	75

Zero-Backlash-Jaw Shaft Coupling

Technical Data

Model	Rated Torque		Max RPM		Dynamic Torsional	Radial	Weight	Moment of inertia kgcm ²
	Nm		Set Screw	Clamp	Stiffness Nm/rad	Stiffness N/mm	g	
JC1422	80 Shore A	1.8	28000	22500	52	125	10	0.011
	92 Shore A	3	28000	22500	95	262	10	0.011
	98 Shore A	5	28000	22500	155	518	10	0.011
JC2025	80 Shore A	1.8	15900	12700	180	153	15	0.062
	92 Shore A	3	15900	12700	344	336	15	0.062
	98 Shore A	5	15900	12700	513	604	15	0.062
JC2030	80 Shore A	2	11900	9550	1030	582	19	0.39
	92 Shore A	3	11900	9550	1720	1120	19	0.39
	98 Shore A	5	11900	9550	2580	2010	33	0.39
JC2534	92 Shore A	8	8850	6950	4296	1480	33	1.6
	98 Shore A	10	8850	6950	6189	2560	42	1.6
JC3035	92 Shore A	10	7350	5850	6876	1780	42	3.8
	98 Shore A	12.5	7350	5850	10314	3200	42	3.8
JC3040	92 Shore A	10	5950	4750	13752	2350	60	10
	98 Shore A	12.5	5950	4750	21486	4400	60	10
JC4050	92 Shore A	15	5000	4000	14490	2430	115	22.8
	98 Shore A	17	5000	4000	48000	5570	115	22.8
JC4055	92 Shore A	15	4550	3600	18055	2580	127	46
	98 Shore A	17	4550	3600	55925	5930	127	46
JC4066	92 Shore A	15	3950	3150	21850	2980	154	85.25
	98 Shore A	17	3950	3150	59500	6686	154	85.25
JC5549	92 Shore A	42	4550	3600	18055	2580	241	46
	98 Shore A	45	4550	3600	55925	5930	241	46
JC5578	92 Shore A	42	3950	3150	21850	2980	341	85.25
	98 Shore A	45	3950	3150	59500	6686	341	85.25
JC6580	92 Shore A	102	3950	3150	21850	2980	433	85.25
	98 Shore A	108	3950	3150	59500	6686	433	85.25
JC6590	92 Shore A	102	3950	3150	21850	2980	583	85.25
	98 Shore A	108	3950	3150	59500	6686	583	85.25
JC80114	92 Shore A	142	3950	3150	21850	2980	1000	85.25
	98 Shore A	145	3950	3150	59500	6686	1000	85.25
JC95126	92 Shore A	210	3950	3150	21850	2980	1650	85.25
	98 Shore A	250	3950	3150	59500	6686	1650	85.25
JC105X140	92 Shore A	280	3950	3150	21850	2980	1700	90.25
	98 Shore A	300	3950	3150	59500	6686	1700	90.25
JC120X160	92 Shore A	360	3950	3150	24000	2980	1750	95.25
	98 Shore A	380	3950	3150	59500	6686	1750	95.25

Shaft Sleeve: Aluminum, Anodize Elastomer: Polyurethane

Size 14, 20, 25 and 30 are 2 jaw couplings

Zero-Backlash-Encoder (EF-30) Coupling



Aluminum Hub 1

Center isolating plastic

Aluminum Hub 2

Rototime® **Encoder Flex** Coupling is a low inertia, electrical isolation coupling for encoder. Designed to flex in angular and axial direction with zero backlash. Constructed of two side hubs made of aluminum and a center elastomer (plastic) seated on press fitted pins.

Flexible shaft couplings are designed to absorb shaft misalignment. Shaft misalignment causes bearing failure.

Couplings become the lower cost safety element to minimize expensive repairs, such as motor or encoder.

Operate with confidence with zero backlash encoder couplings designed with low inertia to absorb misalignment.

- Advance Encoder Coupling
Designed to Protect Sensitive Electronic from Electrical Current.
- Low Inertia
- Axial and Angular Misalignment Function to Prevent Bearing Failure.
- No Maintenance
- 0.6 Nm, 12,000 rpm
- Bore from 1/32-1/2 inch, 3-14 mm
- Length: 22 mm
- Diameter: 30 mm
- Weight: 12 grams

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Zero-Backlash Disc & Jaw Couplings



DC- 55 x 72



JC-30 x 40*

No Shaft Connections are Perfect

ROTOTIME® Flexx-Trans™ SHAFT COUPLING

Reduce Motor and Gearbox failure with Zero Backlash Shaft Couplings and save on maintenance cost.

Flexible shaft couplings are designed to absorb shaft misalignment. Shaft misalignment causes bearing failure on motor, gearbox and timing devices.

Couplings become the lower cost safety standard to minimize expensive repairs.

Operate with confidence with Zero Backlash Shaft Couplings to absorb misalignment.

- Absorb Misalignment
- Prevent Expensive Damage to Devices (Motor, Gearbox, Pump)
- Higher Speed and Torque Capacity
- 0.4 mm – 60 mm Bore Range
- 0.4 – 540 Nm
- 3000 - 10,000 RPM
- Metric/Inch Bore Sizes
- OEM Drop-in
- Many Different Sizes

Rotary Motion Control Products for Printing, Packaging, Converting, Medical, and Food Packaging Machinery.

Vision

At Rototime, we are dedicated to making precision timing control phase shifter, spiral bevel gearbox and flexible shaft couplings, products that are made without error. The products we offer decreases setup time, reduces machine breakdown, run at optimum capacity, and reduces energy loss.

Value

Our products are made with highest quality material with low environmental impact at a reasonable price. We believe in creating value for customers by innovating and improving our products and providing before and after sales support. A long term business relationship built on trust, respect and continued responsible partnership.

Quality in printing, packaging, converting, medical, oil/gas and food process machinery are increased with Zero maintenance products.

Core Ethics: Value... Integrity... Improvement

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Custom Engineered
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