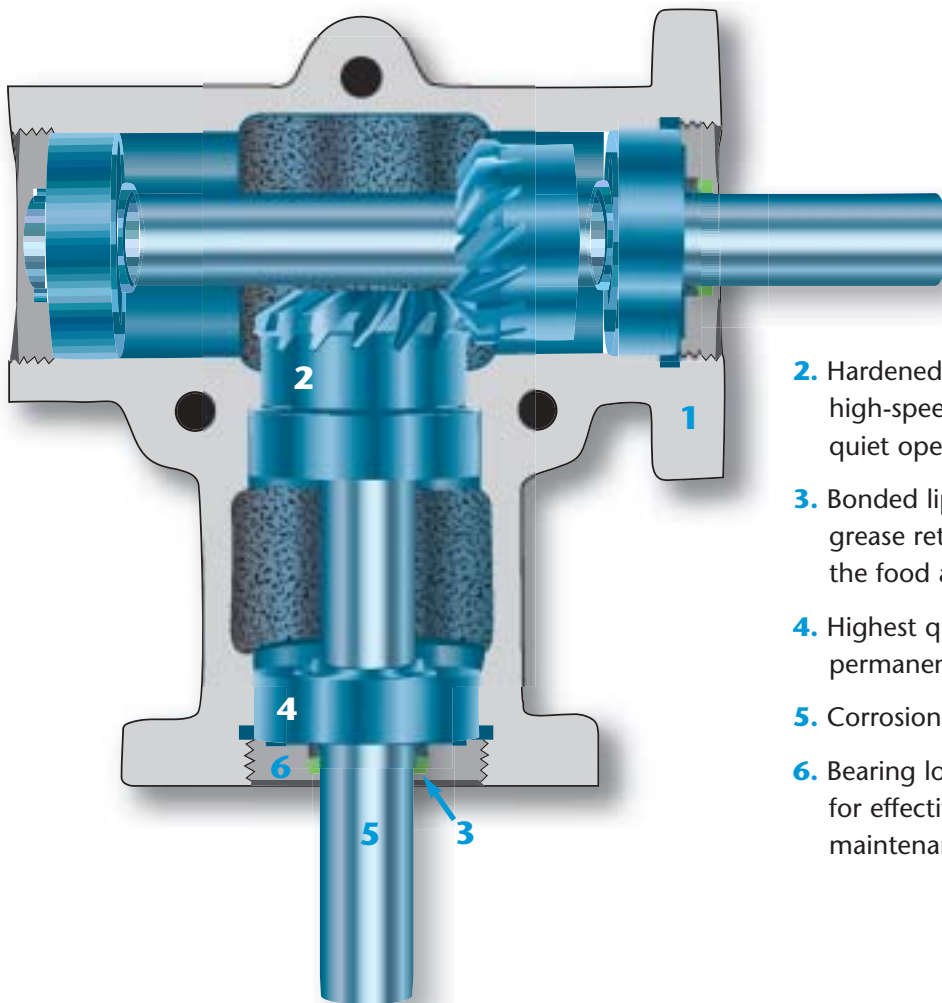
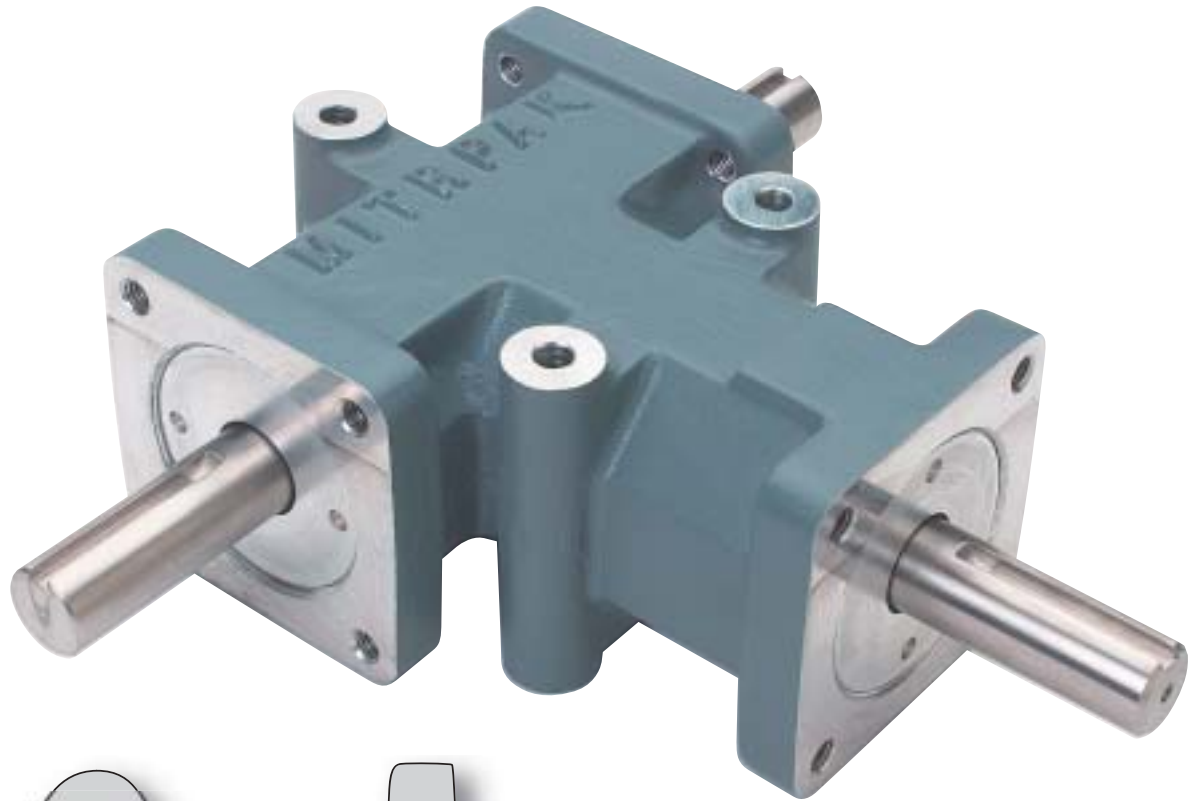


Spiral Bevel, Right Angle Gear Drives



MITRPAK

Features



1. Aluminum alloy housing for maximum strength, rugged service and effective heat dissipation.

2. Hardened high alloy steel spiral bevel gears for high-speed, high-load capacities and smooth, quiet operation.

3. Bonded lip grease seals provide positive grease retention recommended for usage in the food and drug industries.

4. Highest quality, metric, double-shielded, permanently lubricated ball bearings.

5. Corrosion-resistant, stainless steel shafts.

6. Bearing locknuts permit simple adjustment for effective meshing of gears and on-site maintenance.

General Information

For over 30 years MITRPAK Gear Drives have set the standard for reliable operation with features not found on competitive gear drives.

Today MITRPAK Spiral Bevel Gear Drives are operating worldwide in the most demanding applications. For precise, reliable power transmission backed by extraordinary customer service contact MITRPAK Power Transmission Products.

Versatility: All have multiple flange and body mounting surfaces. Special materials, shaft extensions, and other modifications can be designed into any unit. (See back page for example)

Durability: MITRPAK units utilize double-shielded, permanently greased standard metric series ball bearings, hardened alloy steel spiral bevel gears and aluminum alloy housings for maximum strength and heat dissipation. Stainless steel shafts are standard.

Economy: MITRPAK'S packaged concept eliminates the need for engineering, research, drawings, patterns, castings, fixtures, gauges, assembly, and extensive quality control and testing operations.

Efficiency: MITRPAK's unique gear meshing assembly provides the ultimate in quiet, vibration-free performance.

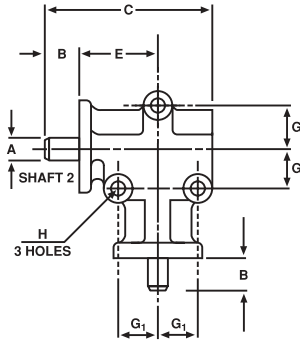
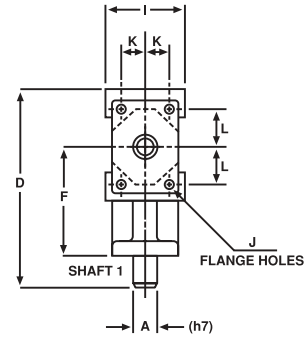
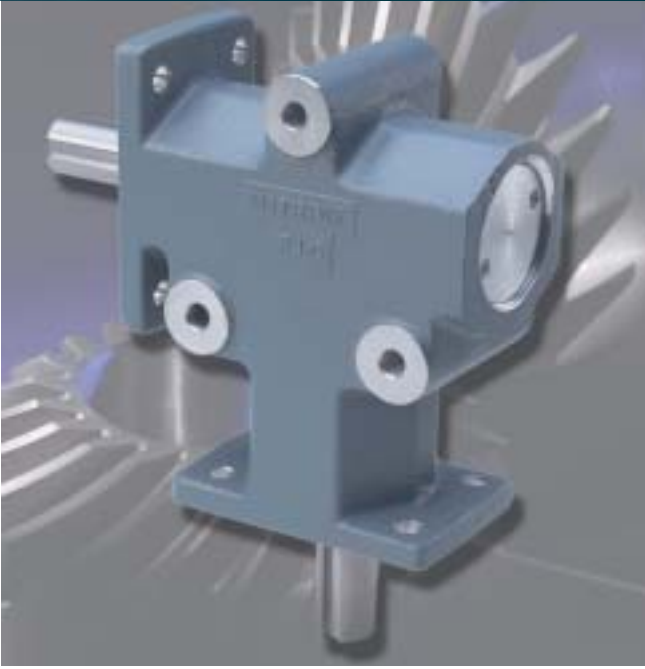
Lubrication: MITRPAK units are shipped completely enclosed, sealed and lubricated for life with EXXON NEBULA EP-O. The operating temperature of this grease is -65°F to +250°F. Bonded lip grease seals provide positive grease retention (recommended for food and drug equipment).

Maintenance: Bearing locknuts provide for efficient, economical, effective maintenance in the field.

Ratings: MITRPAK units are rated in accordance with AGMA Class 1 service conditions in industrial applications (1.0 service factor).

Special Applications: Units for food processing industries are available with housing and bearing locknuts hardcoated (hardcoating is an electrochemical penetrating process; no flaking or peeling). Shafting is of 300 Series stainless steel. Bearings and units are packed with food-grade lubricant which meets the requirements for use under FDA regulation section 121.2553 and carries the U.S.D.A. "AA" rating for applications in which incidental food contact may occur. Bonded lip grease seals provide positive grease retention.

Right Angle Units



MODEL	A(f6)	B	C	D	E	F	G ₁	G ₂	H	I	J	K	L	SHIPPING WEIGHT
R-061 & R-062	.375	.625	3.562	3.875	1.625	2.187	.812	.812	.193 DIA.	1.500	.166 DIA.	.500	.750	2 lbs.
R-081 & R-082	.500	1.000	4.375	4.937	1.875	2.875	.875	.875	.265 DIA.	1.750	.265 DIA.	.562	1.125	3 lbs.
R-101 & R-102	.625	1.500	5.359	6.250	2.125	3.250	1.125	1.125	.265 DIA.	2.125	.265 DIA.	.687	1.125	4 lbs.
R-121 & R-122	.750	1.750	6.969	7.937	2.875	4.375	1.375	1.375	.328 DIA.	2.625	.328 DIA.	.812	1.375	8 lbs.
R-161 & R-162*	1.000	2.750	9.250	11.000	3.250	6.000	1.750	2.750	.390 DIA.	4.000	.375-16	1.500	1.500	20 lbs.

* Note: R-161 & R-162 have three flanges. Output shaft is cut off at one flange, dependent upon required shaft rotation.

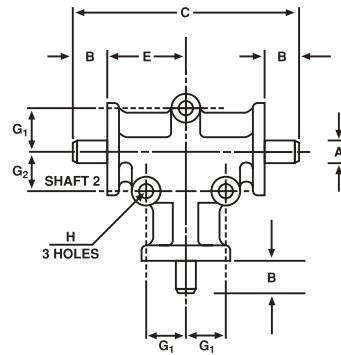
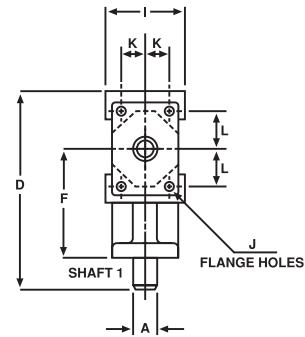
RATIO/MODEL	Input Shaft R.P.M.	Recommended H.P.	Torque in Inch Pounds	Ultimate Static Torque*	Overhung Load Cap.
1:1 RATIO MODEL R-061	100	.05	33	160 Inch Pounds	25 Lbs.
	300	.16	33		
	500	.26	33		
	1000	.50	31.5		
	2000	.87	27.6		
	3000	1.25	27.6		
	4000	1.75	26.3		
1:1 RATIO MODEL R-081	100	.08	50	275 Inch Pounds	35 Lbs.
	300	.25	50		
	500	.41	50		
	1000	.75	47		
	2000	1.37	43		
	3000	2.00	42		
	4000	2.50	39		
1:1 RATIO MODEL R-101	100	.16	101	610 Inch Pounds	50 Lbs.
	300	.47	99		
	500	.75	95		
	1000	1.37	87		
	2000	2.43	77		
	3000	3.37	71		
	4000	4.12	65		
1:1 RATIO MODEL R-121	100	.30	189	1400 Inch Pounds	100 Lbs.
	300	.81	171		
	500	1.33	167		
	800	2.00	158		
	1000	2.33	147		
	2000	4.25	134		
	3000	5.50	116		
1:1 RATIO MODEL R-161	20	.20	630	5100 Inch Pounds	160 Lbs.
	50	.50	630		
	100	1.00	630		
	300	2.75	578		
	500	4.12	520		
	1000	7.75	488		
	2000	13.00	410		

* Calculated on 1000 Cycle Basis

RATIO/MODEL	Input Shaft R.P.M.	Recommended H.P.	Torque in Inch Pounds	Ultimate Static Torque*	Overhung Load Cap.
2:1 RATIO MODEL R-062	100	.03	33	60 Inch Pounds	25 Lbs.
	300	.07	30		
	500	.12	30		
	1000	.23	28		
	2000	.40	25		
	3000	.50	21		
	4000	.65	20		
2:1 RATIO MODEL R-082	100	.04	50	130 Inch Pounds	35 Lbs.
	300	.12	50		
	500	.18	45		
	1000	.36	45		
	2000	.65	40		
	3000	.87	36		
	4000	1.15	36		
2:1 RATIO MODEL R-102	100	.06	75	210 Inch Pounds	50 Lbs.
	300	.18	75		
	500	.30	75		
	1000	.56	70		
	2000	1.06	66		
	3000	1.50	63		
	4000	2.00	63		
2:1 RATIO MODEL R-122	100	.10	126	540 Inch Pounds	100 Lbs.
	300	.30	126		
	500	.50	126		
	1000	1.00	126		
	2000	1.75	110		
	3000	2.50	105		
	4000	3.15	99		
2:1 RATIO MODEL R-162	50	.19	478	2170 Inch Pounds	160 Lbs.
	100	.38	478		
	200	.75	472		
	300	1.00	420		
	500	1.66	418		
	1000	3.25	409		
	2000	5.75	362		

* Calculated on 1000 Cycle Basis

Three Way Units



MODEL	A(f6)	B	C	D	E	F	G ₁	G ₂	H	I	J	K	L	SHIPPING WEIGHT
T-061 & T-062	.375	.625	4.500	3.875	1.625	2.187	.812	.812	.193 DIA.	1.500	.166 DIA.	.500	.750	2 lbs.
T-081 & T-082	.500	1.000	5.750	4.937	1.875	2.875	.875	.875	.265 DIA.	1.750	.265 DIA.	.562	1.125	3 lbs.
T-101 & T-102	.625	1.500	7.250	6.250	2.125	3.250	1.125	1.125	.265 DIA.	2.125	.265 DIA.	.687	1.125	4 lbs.
T-121 & T-122	.750	1.750	9.250	7.937	2.875	4.375	1.375	1.375	.328 DIA.	2.625	.328 DIA.	.812	1.375	8 lbs.
T-161 & T-162	1.000	2.750	12.000	11.000	3.250	6.000	1.750	2.750	.390 DIA.	4.000	.375-16	1.500	1.500	20 lbs.

* Note: Shaft size and tolerance per ANSI B 4.1

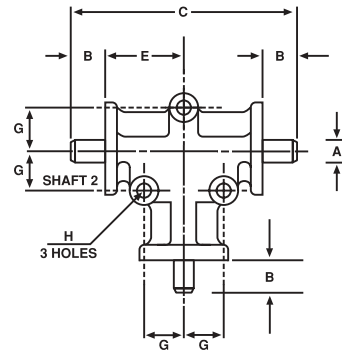
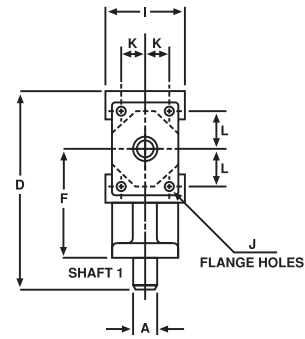
RATIO/MODEL	Input Shaft R.P.M.	Recommended H.P.	Torque in Inch Pounds	Ultimate Static Torque*	Overhung Load Cap.
1:1 RATIO MODEL T-061	100	.05	33	160 Inch Pounds	25 Lbs.
	300	.16	33		
	500	.26	33		
	1000	.50	31.5		
	2000	.87	27.6		
	3000	1.25	27.6		
1:1 RATIO MODEL T-081	100	.08	50	275 Inch Pounds	35 Lbs.
	300	.25	50		
	500	.41	50		
	1000	.75	47		
	2000	1.37	43		
	3000	2.00	42		
1:1 RATIO MODEL T-101	100	.16	101	610 Inch Pounds	50 Lbs.
	300	.47	99		
	500	.75	95		
	1000	1.37	87		
	2000	2.43	77		
	3000	3.37	71		
1:1 RATIO MODEL T-121	100	.30	189	1400 Inch Pounds	100 Lbs.
	300	.81	171		
	500	1.33	167		
	800	2.00	158		
	1000	2.33	147		
	2000	4.25	134		
1:1 RATIO MODEL T-161	20	.20	630	5100 Inch Pounds	160 Lbs.
	50	.50	630		
	100	1.00	630		
	300	2.75	578		
	500	4.12	520		
	1000	7.75	488		

* Calculated on 1000 Cycle Basis

RATIO/MODEL	Input Shaft R.P.M.	Recommended H.P.	Torque in Inch Pounds	Ultimate Static Torque*	Overhung Load Cap.
2:1 RATIO MODEL T-062	100	.03	33	60 Inch Pounds	25 Lbs.
	300	.07	30		
	500	.12	30		
	1000	.23	28		
	2000	.40	25		
	3000	.50	21		
2:1 RATIO MODEL T-082	100	.04	50	130 Inch Pounds	35 Lbs.
	300	.12	50		
	500	.18	45		
	1000	.36	45		
	2000	.65	40		
	3000	.87	36		
2:1 RATIO MODEL T-102	100	.06	75	210 Inch Pounds	50 Lbs.
	300	.18	75		
	500	.30	75		
	1000	.56	70		
	2000	1.06	66		
	3000	1.50	63		
2:1 RATIO MODEL T-122	100	.10	126	540 Inch Pounds	100 Lbs.
	300	.30	126		
	500	.50	126		
	1000	1.00	126		
	2000	1.75	110		
	3000	2.50	105		
2:1 RATIO MODEL T-162	50	.19	478	2170 Inch Pounds	160 Lbs.
	100	.38	478		
	200	.75	472		
	300	1.00	420		
	500	1.66	418		
	1000	3.25	409		

* Calculated on 1000 Cycle Basis

Counter-Rotating Units



MODEL	A(f6)	B	C	D	E	F	G	H	I	J	K	L	SHIPPING WEIGHT
C-061 & C-062	.375	.625	4.500	3.875	1.625	2.187	.812	.193 DIA.	1.500	.166 DIA.	.500	.750	2 lbs.
C-081 & C-082	.500	1.000	5.750	4.937	1.875	2.875	.875	.265 DIA.	1.750	.265 DIA.	.562	1.125	3 lbs.
C-101 & C-102	.625	1.500	7.250	6.250	2.125	3.250	1.125	.265 DIA.	2.125	.265 DIA.	.687	1.125	4 lbs.
C-121 & C-122	.750	1.750	9.250	7.937	2.875	4.375	1.375	.328 DIA.	2.625	.328 DIA.	.812	1.375	8 lbs.

RATIO/MODEL	Input Shaft R.P.M.	Recommended H.P.	Torque in Inch Pounds	Ultimate Static Torque*	Overhung Load Cap.
1:1 RATIO MODEL C-061	100	.05	32	170 Inch Pounds	16 Lbs.
	300	.14	29		
	500	.22	28		
	1000	.42	26		
	2000	.75	24		
	3000	1.12	24		
	4000	1.37	22		
1:1 RATIO MODEL C-081	100	.08	48	330 Inch Pounds	24 Lbs.
	300	.24	48		
	500	.37	47.3		
	1000	.75	47.2		
	2000	1.33	42.0		
	3000	1.75	36.7		
	4000	2.37	37.4		
1:1 RATIO MODEL C-101	100	.17	107	630 Inch Pounds	33 Lbs.
	300	.45	94		
	500	.75	94		
	1000	1.37	87		
	2000	2.50	79		
	3000	3.50	74		
	4000	4.12	65		
1:1 RATIO MODEL C-121	100	.30	189	1400 Inch Pounds	45 Lbs.
	300	.81	171		
	500	1.33	167		
	800	2.00	158		
	1000	2.33	147		
	2000	4.25	134		
	3000	5.50	116		

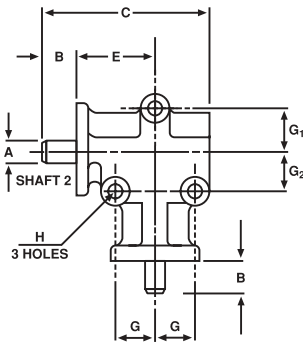
* Calculated on 1000 Cycle Basis

RATIO/MODEL	Input Shaft R.P.M.	Recommended H.P.	Torque in Inch Pounds	Ultimate Static Torque*	Overhung Load Cap.
2:1 RATIO MODEL C-062	200	.03	21	55 Inch Pounds	16 Lbs.
	300	.05	21		
	500	.07	17		
	1000	.12	15		
	2000	.25	15		
	3000	.37	15		
	4000	.50	15		
2:1 RATIO MODEL C-082	200	.05	34	116 Inch Pounds	24 Lbs.
	300	.08	33		
	400	.10	32		
	500	.13	32		
	1000	.25	31		
	2000	.50	31		
	3000	.75	31		
2:1 RATIO MODEL C-102	100	.05	63	192 Inch Pounds	33 Lbs.
	300	.14	58		
	500	.21	52		
	1000	.37	46		
	2000	.74	46		
	3000	1.00	42		
	4000	1.25	39		
2:1 RATIO MODEL C-122	100	.10	126	540 Inch Pounds	45 Lbs.
	300	.30	126		
	500	.50	126		
	1000	1.00	126		
	2000	1.75	110		
	3000	2.50	105		
	4000	3.15	99		

* Calculated on 1000 Cycle Basis

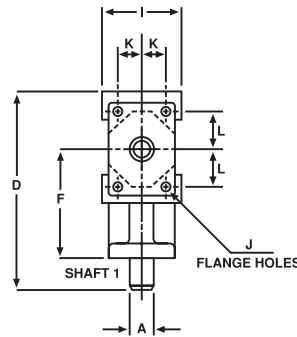
"HA" Series

"HAR" Series



(Right Angle)

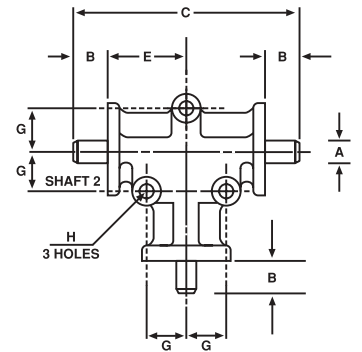
Refer to page 7 for shaft rotation.



(All Units)

Refer to page 7 for shaft rotation.

"HAT" Series



(Three Way)

MODEL	A(f6)	B	C	D	E	F	G	H	I	J	K	L	SHIPPING WEIGHT
HAR-101 & HAR-102	.625	1.500	5.375	6.062	2.125	3.250	.937	.265 DIA.	2	.265 DIA.	.687	.937	4 lbs.
HAT-101 & HAT-102	.625	1.500	7.250	6.062	2.125	3.250	.937	.265 DIA.	2	.265 DIA.	.687	.937	4 lbs.
HAR-121 & HAR-122	.750	2.000	7.344	8.937	3	5	1.500	.328 DIA.	3	.328 DIA.	1.125	1.500	9 lbs.
HAT-121 & HAT-122	.750	2.000	10.000	8.937	3	5	1.500	.328 DIA.	3	.328 DIA.	1.125	1.500	9 lbs.

RATIO/MODEL	Input Shaft R.P.M.	Recommended H.P.	Torque in Inch Pounds	Ultimate Static Torque*	Overhung Load Cap.
1:1 RATIO MODEL HAR-101	100	.16	101	610 Inch Pounds	50 Lbs.
	300	.47	99		
	500	.75	95		
	1000	1.37	87		
	2000	2.43	77		
	3000	3.37	71		
	4000	4.12	65		
1:1 RATIO MODEL HAR-121	100	.30	189	1400 Inch Pounds	100 Lbs.
	300	.81	171		
	500	1.33	167		
	800	2.00	158		
	1000	2.33	147		
	2000	4.25	134		
	3000	5.50	116		
1:1 RATIO MODEL HAT-101	100	.16	101	610 Inch Pounds	50 Lbs.
	300	.47	99		
	500	.75	95		
	1000	1.37	87		
	2000	2.43	77		
	3000	3.37	71		
	4000	4.12	65		
1:1 RATIO MODEL HAT-121	100	.30	189	1400 Inch Pounds	100 Lbs.
	300	.81	171		
	500	1.33	167		
	800	2.00	158		
	1000	2.33	147		
	2000	4.25	134		
	3000	5.50	116		

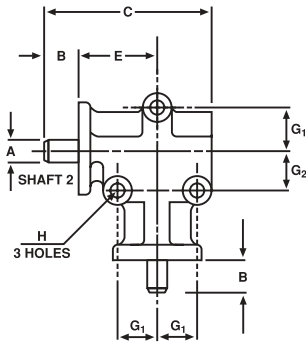
* Calculated on 1000 Cycle Basis

RATIO/MODEL	Input Shaft R.P.M.	Recommended H.P.	Torque in Inch Pounds	Ultimate Static Torque*	Overhung Load Cap.
2:1 RATIO MODEL HAR-102	100	.06	75	210 Inch Pounds	50 Lbs.
	300	.18	75		
	500	.30	75		
	1000	.56	70		
	2000	1.06	66		
	3000	1.50	63		
	4000	2.00	63		
2:1 RATIO MODEL HAR-122	100	.10	126	540 Inch Pounds	100 Lbs.
	300	.32	126		
	500	.57	126		
	1000	1.00	126		
	2000	1.75	110		
	3000	2.50	105		
	4000	3.15	99		
2:1 RATIO MODEL HAT-102	100	.06	75	210 Inch Pounds	50 Lbs.
	300	.18	75		
	500	.30	75		
	1000	.56	70		
	2000	1.06	66		
	3000	1.50	63		
	4000	2.00	63		
2:1 RATIO MODEL HAT-122	100	.10	126	540 Inch Pounds	100 Lbs.
	300	.32	126		
	500	.57	126		
	1000	1.00	126		
	2000	1.75	110		
	3000	2.50	105		
	4000	3.15	99		

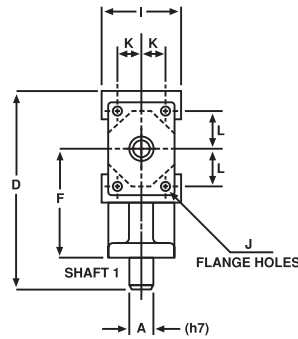
* Calculated on 1000 Cycle Basis

Note: These units are totally interchangeable with the following:
 Anglgear • Hub City • Browning • Boston Gear

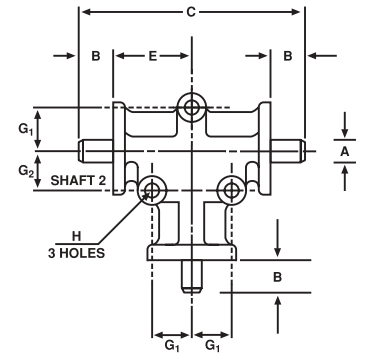
Metric Series



(Right Angle)



(All Units)



(Three Way & Counter-Rotating)

MODEL	A(h7)	B	C	D	E	F	G ₁	G ₂	H	I	J	K	L	SHIPPING WEIGHT
R-061-M & R-062-M	8	16	90	98	41	56	20.6	20.6	4.90	38.1	4.20	12.7	19.1	0.9 Kg
R-081-M & R-082-M	11	25	111	125	48	73	22.2	22.2	6.73	44.5	6.73	14.3	28.6	1.4 Kg
R-101-M & R-102-M	14	38	136	159	54	83	28.6	28.6	6.73	54.0	6.73	17.5	28.6	1.8 Kg
R-121-M & R-122-M	19	44	177	202	73	111	34.9	34.9	8.33	66.7	8.33	20.6	34.9	3.6 Kg
R-161-M & R-162-M	24	70	235	279	83	152	44.5	69.9	9.90	101.6	M11x1.5	38.1	38.1	9.1 Kg

MODEL	A(h7)	B	C	D	E	F	G ₁	G ₂	H	I	J	K	L	SHIPPING WEIGHT
T-061-M & T-062-M	8	16	114	98	41	56	20.6	20.6	4.90	38.1	4.20	12.7	19.1	0.9 Kg
T-081-M & T-082-M	11	25	146	125	48	73	22.2	22.2	6.73	44.5	6.73	14.3	28.6	1.4 Kg
T-101-M & T-102-M	14	38	184	159	54	83	28.6	28.6	6.73	54.0	6.73	17.5	28.6	1.8 Kg
T-121-M & T-122-M	19	44	235	202	73	111	34.9	34.9	8.33	66.7	8.33	20.6	34.9	3.6 Kg
T-161-M & T-162-M	24	70	305	279	83	152	44.5	69.9	9.90	101.6	M11x1.5	38.1	38.1	9.1 Kg

MODEL	A(h7)	B	C	D	E	F	G ₁	G ₂	H	I	J	K	L	SHIPPING WEIGHT
C-061-M & C-062-M	8	16	114	98	41	56	20.6	20.6	4.90	38.1	4.20	12.7	19.1	0.9 Kg
C-081-M & C-082-M	11	25	146	125	48	73	22.2	22.2	6.73	44.5	6.73	14.3	28.6	1.4 Kg
C-101-M & C-102-M	14	38	184	159	54	83	28.6	28.6	6.73	54.0	6.73	17.5	28.6	1.8 Kg
C-121-M & C-122-M	19	44	235	202	73	111	34.9	34.9	8.33	66.7	8.33	20.6	34.9	3.6 Kg

All Dimensions in Millimeters.

Engineering Data: Same as corresponding right angle, three way, and counter-rotating inch series units

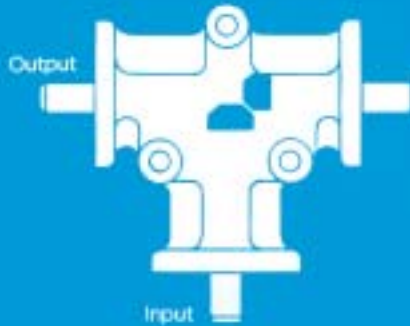
Selection of Units

Model "R" & "HAR"



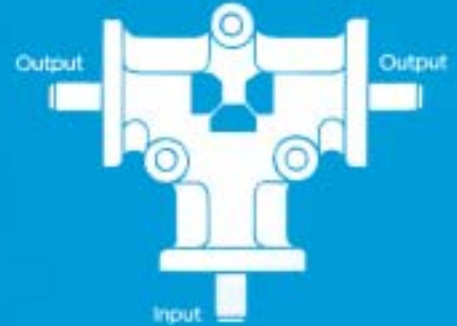
(Right Angle)

Model "T" & "HAT"



(Three Way)

Model "C"



(Counter-Rotating)

Example: R061 – C2

Model:

R & HAR (Right Angle Unit)
T & HAT (Three Way Unit)
C (Counter-Rotating)

Shaft Diameter:

(Standard)

$\frac{3}{8}$ " Dia. = 06

$\frac{1}{2}$ " Dia. = 08

$\frac{5}{8}$ " Dia. = 10

$\frac{3}{4}$ " Dia. = 12

1" Dia. = 16

Ratio:

1 to 1 RATIO = 1

2 to 1 RATIO = 2

Rotation of Output Shaft:

("R" and "HAR" series only.)

C1 (Same as input)

C2 (Reverse of input)

Note: All Models Are Reversible

Keyway Dimensions for Inch Gear Drives

$\frac{3}{8}$ " Dia. – none

$\frac{1}{2}$ " Dia. – $\frac{1}{8}$ " x $\frac{1}{16}$ "

$\frac{5}{8}$ " Dia. – $\frac{3}{16}$ " x $\frac{3}{32}$ "

$\frac{3}{4}$ " Dia. – $\frac{3}{16}$ " x $\frac{3}{32}$ "

1" Dia. – $\frac{1}{4}$ " x $\frac{1}{8}$ "

Keyway Dimensions for Metric Gear Drives (N9)

8mm Dia. – none

11mm Dia. – 4mm x 2.5mm

14mm Dia. – 5mm x 3mm

19mm Dia. – 6mm x 3.6mm

24mm Dia. – 8mm x 4mm

MITRPAK Power Transmission Products

P.O. Box 327

38 River Road, Uxbridge, MA 01569

800-648-7725

508-278-2422 • FAX 508-278-7863

FAX 800-346-0018

www.mitrpak.com

E-Mail: sales@mitrpak.com

Custom Units



Fax us your custom design specifications and our engineers will respond immediately.

**CAD and 3-D Files available at
www.mitropak.com**

Distributed by:

Guarantee

MITRPAK will replace, F.O.B. shipping point, any units which within one year of shipping date prove to be defective as to material or workmanship. No other guarantees shall be implied, and we can assume no responsibility beyond that expressed above. It is recommended that units in need of repair be returned to the factory where experienced personnel can conduct and guarantee the work. Local MITRPAK distributors will be glad to assist in the return of MITRPAK units when required.

MITRPAK®

An employee-owned company

Power Transmission Products
P.O. Box 327, 38 River Road, Uxbridge, MA 01569
sales@mitropak.com • www.mitropak.com

Catalog # 3-02