ROTO-TECH

Positive drive

ROTO TECH
BEVEL GEARBOX CATALOG

MAKE IN INDIA

ROTOTRANS INDIA Pvt. Ltd.

An ISO 9001-2015 Certified Company

www.rototransindia.com

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Positive drive

BEVEL GEAR BOX (Spiral and straight type)

If you need high precision Right angle reducer at a reasonable cost & you value innovation & excellent service, take a close look at our product line. We offer variety of right angle Bevel Gearbox with good design & installation time. Minimize space requirements & maximize your machine performance.

Rototech offers widest range of products & also we offer tailor made Gearbox

- Quick delivery on standard gearboxes marked in our literature
- Excellent technical assistance from our inside application engineer and trained network outside sales engineers
- 3D models and 2-D drawings configured on demand
- 100% inspection and quality controls on every gearbox shipped from Rototech

Salient features of Bevel Gearbox

- Gear set manufactured from case hardened steel with high surface hardness and core strength
- Gears are produced as per Gleason method
- Quiet in operation
- Pre-loaded bearings, all gearbox face machined , all faces with tapped mounting holes
- Hardened Solid and hollow shafts
- Stainless steel gearbox offers corrosion free, food industry compliance
- Aluminum alloy, carbon steel, SG Iron casting- housings are available
- One –off customized solutions to meet your specific application

Spiral Bevel gearbox & product variants

-Standard version both L and T type model starts from 35 frame up to 200 frame

- Hollow Shaft (input) which eliminates intermediate coupling
- Input flange with bellows coupling

Models

- RTT035, RTT045,RTT060,RTT090, RTT120, RTT150, RTT200
- RTL035,RTL045,RTL060, RTL090,RTL120,RTL150,RTL200
- Ratios offered 1:1,1:2, 1:3, 1:4,
- On demand ratio 1:5

Torque -12 Nm to 220 Nm
Input Speed – 1000 rpm to 3000 rpm
Efficiency- 90%
Sound level – 68-70 dB
Lubrication – Synthetic Oil / food grade grease/synthetic grease – OR depends on customer requirements
Mounting – universal type
Surface treatment – Electro polish for Stainless steel, epoxy/ED coating for Aluminum, steel, cast iron housing
Seals – double lip Viton seals to prevent oil leakage / dust entry
Bearings – taper roller type to accommodate both radial and axial load

1.ORDERING CODE

RTT 28 S A 1 090 B5 B3 .....

OPTIONS
LO (RAN 28 … RAN 48)
PV (RAN 8 … RAN 48) + (RAN 1 ... RAN 2)

MOUNTING POSITION
B3 (default); **B6**; **B7**; **B8**; **V5**; **V6**

MOTOR MOUNTING
B5

INPUT CONFIGURATION

090, **100**, **112**, **132**, **160**, **180**
solid input shaft

GEAR RATIO

ARRANGEMENT **A**, **B**, **C**, **D**, **E**, **F**

OUTPUT SHAFT single shaft
D *double extended shaft*

FRAME SIZE
8, 15, 18.14, 20, 20CAVO, 24, 25, 28, 38, 48
1, 2, 2R

GEARBOX TYPE **RTT**

RTT D A ... HS B3

RTT D A ... HS B3

RTT D A ... HS B3

RTT D A ... HS B3

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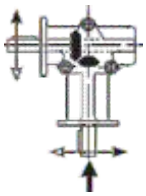
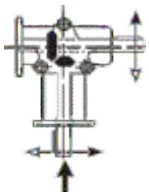
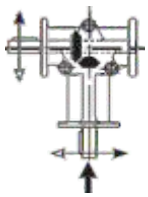
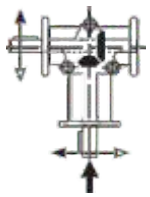
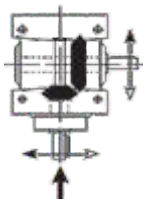
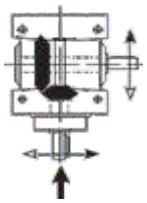
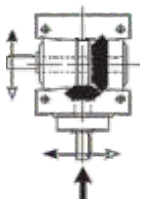
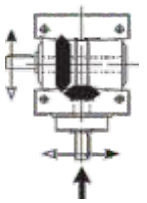
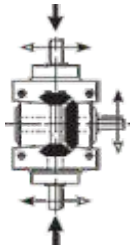
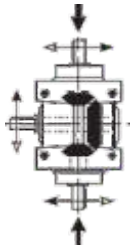
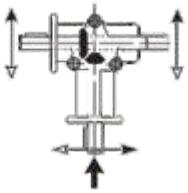
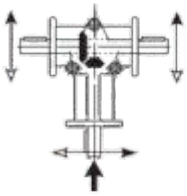
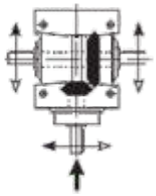
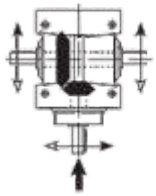
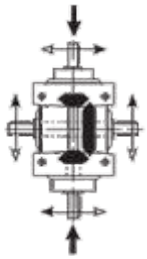
Gear options **LO**
Gear units type RTT28, RTT38 and RAN 48, typically supplied unlubricated, are factory filled with oil.

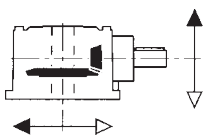
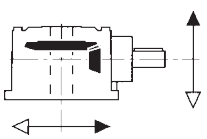
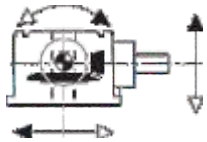
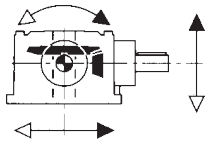
PV
Standard oil seals are replaced with oil seals in Viton compound, recommended for operation at higher temperatures.

ARRANGEMENT

	RTT8 … RTT15		RTT18.14 ; RTT 20 ; RTT20CAVO ; RTT 25	
S				
	A	**B**	**A**	**B**

	RTT24 ; RTT28 ; RTT38 ; RTT48					
S						
	A	**B**	**C**	**D**	**E**	**F**

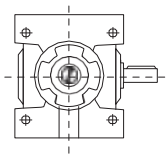
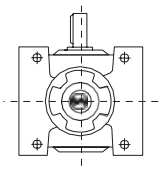
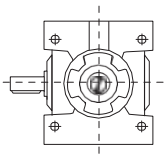
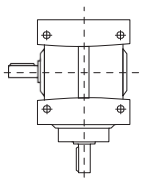
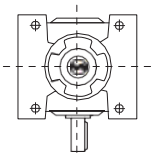
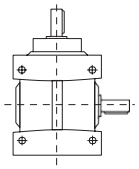
D					
	A	**A**	**A**	**B**	**C**

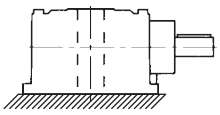
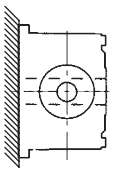
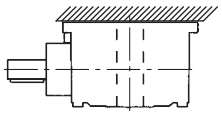
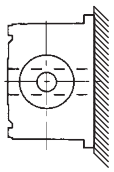
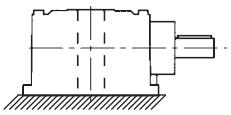
	RTT1 ; RTT2 ; RTT2R	RTT2 ; RTT2R		RTT1 ; RTT2 ; RTT2R	RTT2 ; RTT2R
/			**D**		
	A	**B**		**A**	**B**

= input

2.MOUNTING POSITION

RTT 8 ; RTT 15 ; RTT 18.14 ; RTT 20 ; RTT 20CAVO ; RTT 24 ; RTT 25
B3

RTT 28 ; RTT 38 ; RTT 48					
					
B3	**B6**	**B8**	**B7**	**VA**	**VB**

RTT 1 ; RTT 2...A ; RTT 2R...A				RTT 2...B
				
B3	**B6**	**B8**	**B7**	**B3**

3.LUBRICATION

RTT gear units of frame sizes **8, 15, 18.14, 20, 20CAVO** and **25** are packed with "long life" synthetic grease.
Units type **RTT 24**, **RTT 1**, **RTT 2** and **RTT 2R** are factory filled with "long life" synthetic oil. In the absence of contamination, periodical oil changes are not required.
Gear units therefore do not feature filler, level and drain plugs with the exception of units type RTT 1, RTT 2 and RTT 2R on which a sight glass for the visual inspection of the oil level is present. Operation of gear units is permitted at ambient temperatures between -20°C and +40°C. However, for temperatures between -20°C and -10°C unit may only start up after it has been progressively and evenly preheated, or otherwise initially operated unloaded. Load may then be connected to the output shaft when the gear unit has reached temperature of -10°C, or higher.
If, for any reason, the original oil charge required replacement the following chart provides the approximate oil quantity to be filled:

	[Kg]	
RTT 8	0.008	GADUS S5 V142W 00
RTT 15	0.050	
RTT 18.14	0.080	
RTT 20	0.15	
RTT 20CAVO	0.15	
RTT 25	0.22	
RTT 24	0.85	OMALA S4 WE 320
RTT 1	0.50	
RTT 2	0.80	
RTT 2R	2.9	

RTT units size **28, 38** and **48** instead feature filler, drain and level plugs and are supplied unlubricated. It will be the Customer' care to fill them with oil prior to putting them into service. The chart here after shows the indicative quantity of oil to be filled in, referred to mounting position B3 only. When filling the gear unit, exclusive reference to center line of the sight glass must be made.

Remark
As mounting position generally affects the oil quantity, it is mandatory that the mounting position is specified at the time of order.

	[l]	
RTT 28	1.7	OMALA S4 WE 320
RTT 38	3.0	
RTT 48	4.5	

4 - OVERHUNG LOADS

External transmissions keyed onto input and/or output shaft generate loads that act radially onto same shaft. Resulting shaft loading must be compatible with both the bearing and the shaft capacity. Namely shaft loading ($[R_{c1}]$ for input shaft, $[R_{c2}]$ for output shaft), must be equal to or lower than admissible overhung load capacity for shaft under study ($[R_{n1}]$ for input shaft, $[R_{n2}]$ for output shaft). OHL capability listed in the rating chart section.

In the formulas given below, index (1) applies to parameters relating to input shaft, whereas index (2) refers to output shaft. The load generated by an external transmission can be calculated with close approximation through the following equations:

$$R_{c1}[N] = \frac{2000 \times M_1[Nm] \times K_r}{d\,[mm]} \quad ; \quad R_{c2}[N] = \frac{2000 \times M_2[Nm] \times K_r}{d\,[mm]} \qquad (6)$$

where:

$M_{1\text{-}2}$[Nm] = torque applied to shaft

d [mm] = pitch diameter of part keyed on to shaft

$K_r = 1$ chain transmission

$K_r = 1.25$ gear transmission

A comparison of shaft loading with catalogue OHL ratings should verify the following condition:

Rc_1 s; Rn_1 [input shaft] or

Rc_2 s; Rn_2 [output shaft]

THRUST LOADS, [A_{n1}], [A_{n2}]

Permissible thrust loads on in- put [A_{n1}] and output [A_{n2}] shafts are obtained from the radial loading for the shaft under consideration [R_{n1}] and [R_{n2}] through the following equation:

$$A_{n1} = R_{n1} \times 0.2$$
$$A_{n2} = R_{n2} \times 0.2 \quad (7)$$

The thrust loads calculated through these formulas apply to thrust forces occurring simultaneously to time as rated radial loads.
In the only case that no over- hung load acts on the shaft the value of the admissible thrust load [A_n] amounts to 50% of rated OHL [R_n] on same shaft. Where thrust loads exceed permissible value or largely prevail over radial loads, contact Roto-tech for an in-depth analysis of the application.

RTT 1 RTT 2 RTT 2R

These units are specifically designed after the requirements of applications where thrust loads largely prevail, e.g. lifting of heavy structures through screw jacks.
Bearings are therefore proportioned mainly for this duty and their axial load capacities, rated for speed n1=100 min-1 or lower are the Following:

RTT 1 50000N
RTT 2 80000N
RTT 2R 150000N

Should input speed be higher than 100 min-1, kindly seek the advice of technical service.

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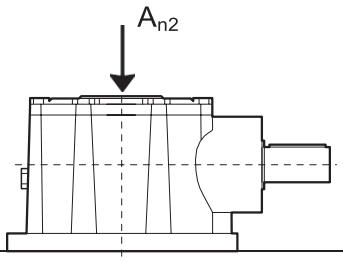
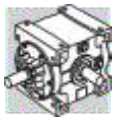
5.NOMINAL RATINGS

n_1 = 1400 min^{-1}						
	i	n_2 [min^{-1}]	Mn_2 [Nm]	Pn_1 [kW]	Rn_1 [N]	Rn_2 [N]
RTT 8	1	1400	2.5	0.38	80	210
	2	700	2.0	0.15	80	260
RTT 15	1	1400	7.4	1.1	250	370
	2	700	6.0	0.45	250	470
RTT 18.14	1	1400	15.0	2.3	320	450
	2	700	12.0	0.90	320	580
RTT 20 **RTT 20CAVO**	1	1400	28	4.2	400	540 280
RTT 20	2	700	20	1.5	400	690
RTT 25	1	1400	39	5.9	800	820
	2	700	34	2.6	800	1030
RTT 24	1	1400	80	12.0	1110	1300
	2	700	80	6.0	1110	1640
	3	460	80	4.0	1110	1900
RTT 28	1	1400	150	23	1800	1650
	2	700	150	11.3	1800	2080
	4	350	150	5.6	1800	2700
	7.7	180	100	1.9	1800	3200
RTT 38	1	1400	300	45	2700	2500
	2	700	300	23	2700	3150
	4	350	300	11.3	2700	4000
	7.7	180	200	3.9	2700	4800
RTT 48	1	1400	600	90	3300	3700
	2	700	600	45	3300	4660
	4	350	550	21	3300	6000
	7.7	180	380	7.3	3300	7100

	i	Mn_2 [Nm]	An_2 [N]	
RTT 1	3	1350	50000	
RTT 2	3	3000	80000	
RTT 2R	3	3000	150000	

Ratings refer todrive speed not exceeding n_1= 100 min^{-1}.



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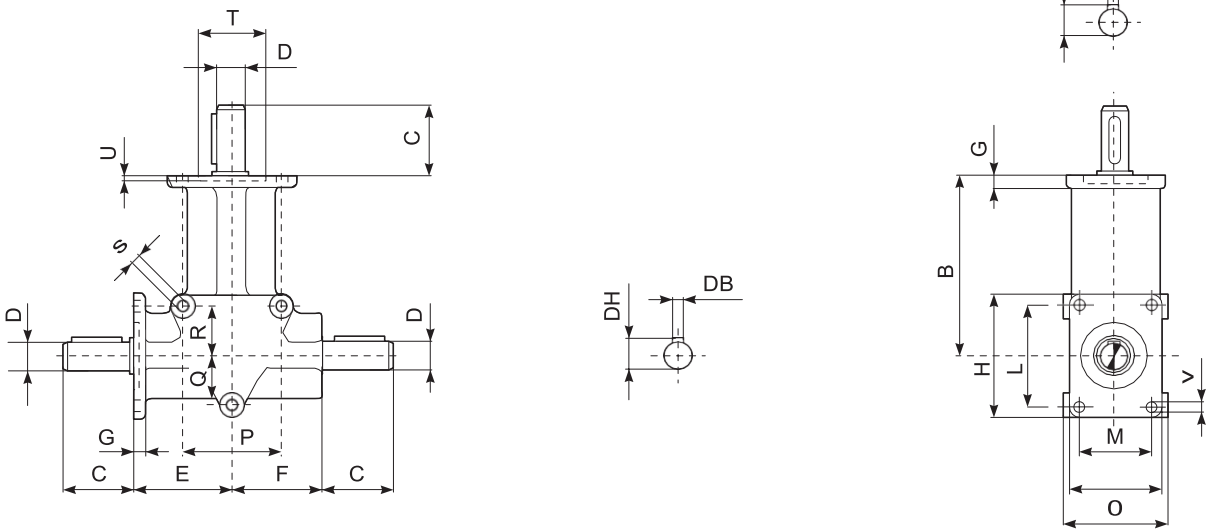
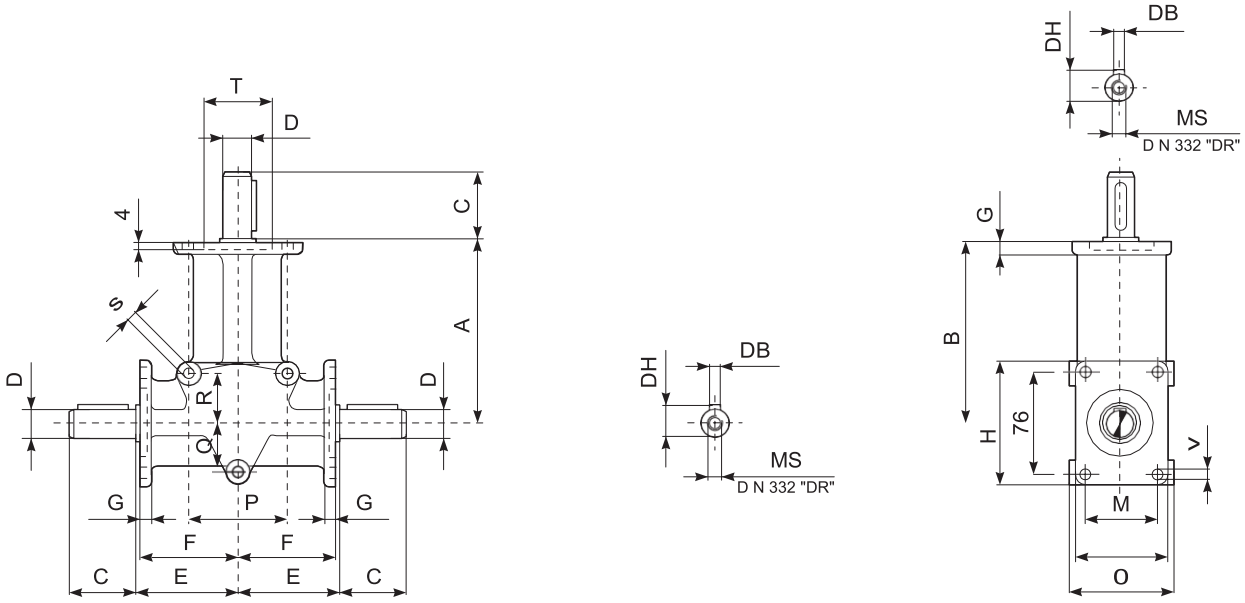
6.DIMENSIONS



	B	C	D h6	E	F	G	H	I	L	M	O	P	Q	R	S	T h7	U	V	DB	DH	Kg
RTT 8	60	15	8	34	27	5	40	32	30	22	33	32	16	16	5.2	22	2.5	4.2	-	-	0.3
RTT 15	90	35	15	52	37	7	66	50	52	36	52	48	24	24	8.3	35	3.5	6.2	5	17	1.0

RTT 20 RTT 25



	A	B	C	D h6	E	F	G	H	I	M	O	P	Q	R	S	T h7	V	DB	DH	Kg
RTT 20	142.5	140	50	20	77.5	75	8	96	74	54	76	76	38	38	9	52	8.5	6	22.5	3.2
RTT 25	152.5	150	60	25	82.5	80	12	98	98	76	100	90	45	70	12.5	62	10.5	8	28	5.0

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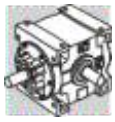
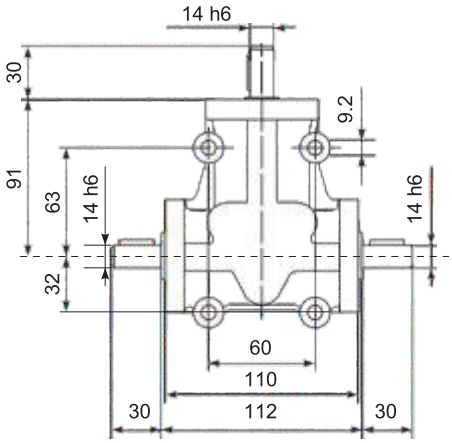
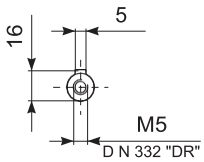
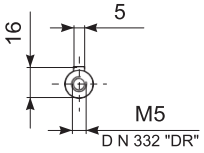
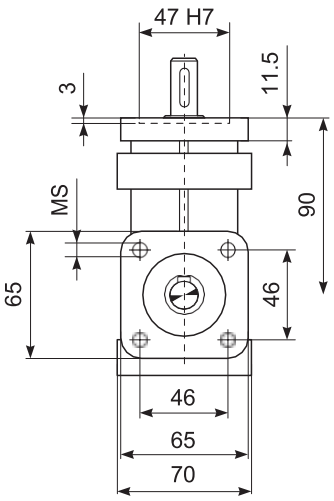


RTT 18.14



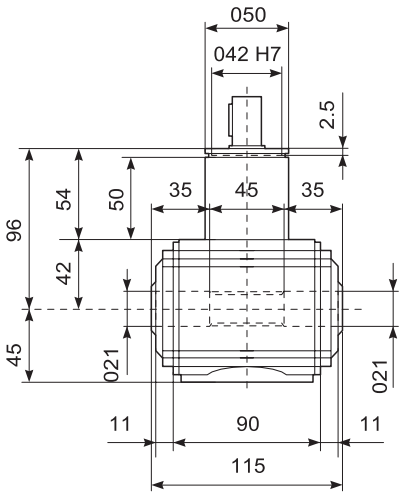


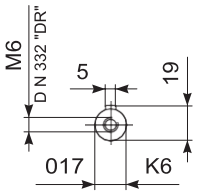


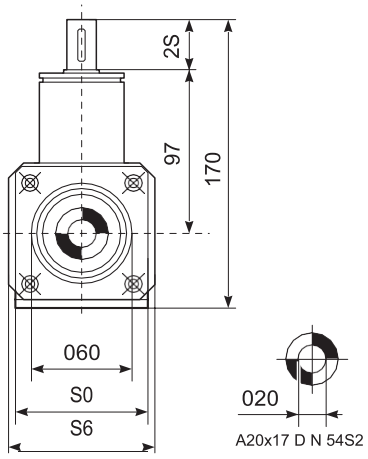


Kg 1.8

RTT 20CAVO

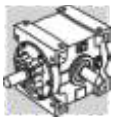


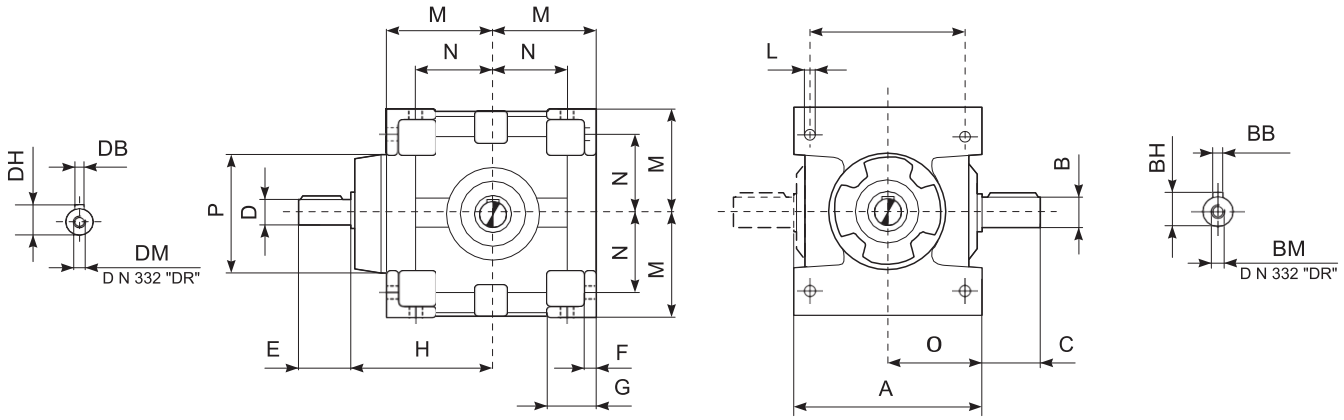




Kg 3.4

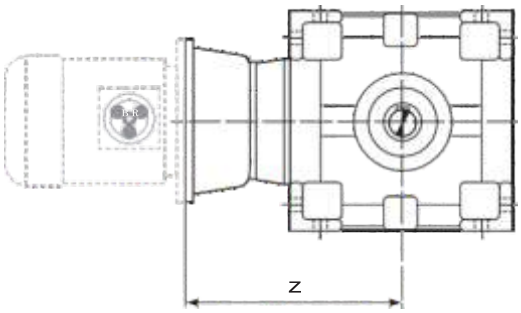
RTT 24 RTT 28 RTT 38 RTT 48





	A	F	G	H	I	L	M	N	O	P f7	Kg
RTT 24	150	10	45	116	125	9	80	50	75	120	12
RTT 28	180	11	45	136	150	11.5	100	70	90	160	20
RTT 38	210	15	60	170	175	14	120	85	105	190	38.5
RTT 48	240	20	70	213	200	16	140	95	120	240	63

	B h6	C	D h6		E		DB		DH		DM		BB	BH	BM
			i = 1	i ◡ 2	i = 1	i ◡ 2	i = 1	i ◡ 2	i = 1	i ◡ 2	i = 1	i ◡ 2			
RTT 24	24	50	24	19	50	40	8	6	27	21.5	M8	M6	8	27	M8
RTT 28	28	60	28	24	60	50	8	8	31	27	M10	M8	8	31	M10
RTT 38	38	80	38	28	80	60	10	8	41	31	M12	M10	10	41	M12
RTT 48	48	110	48	38	110	80	14	10	51.5	41	M16	M12	14	51.5	M16



	Z					
	RTT 28		RTT 38		RTT 48	
	i = 1	i ◡ 2	i = 1	i ◡ 2	i = 1	i ◡ 2
090	271	239	317	317	-	-
100 - 112	271	251	317	297	397	397
132	291	271	337	317	417	377
160	-	-	363	343	407	407
180	-	-	-	-	407	407

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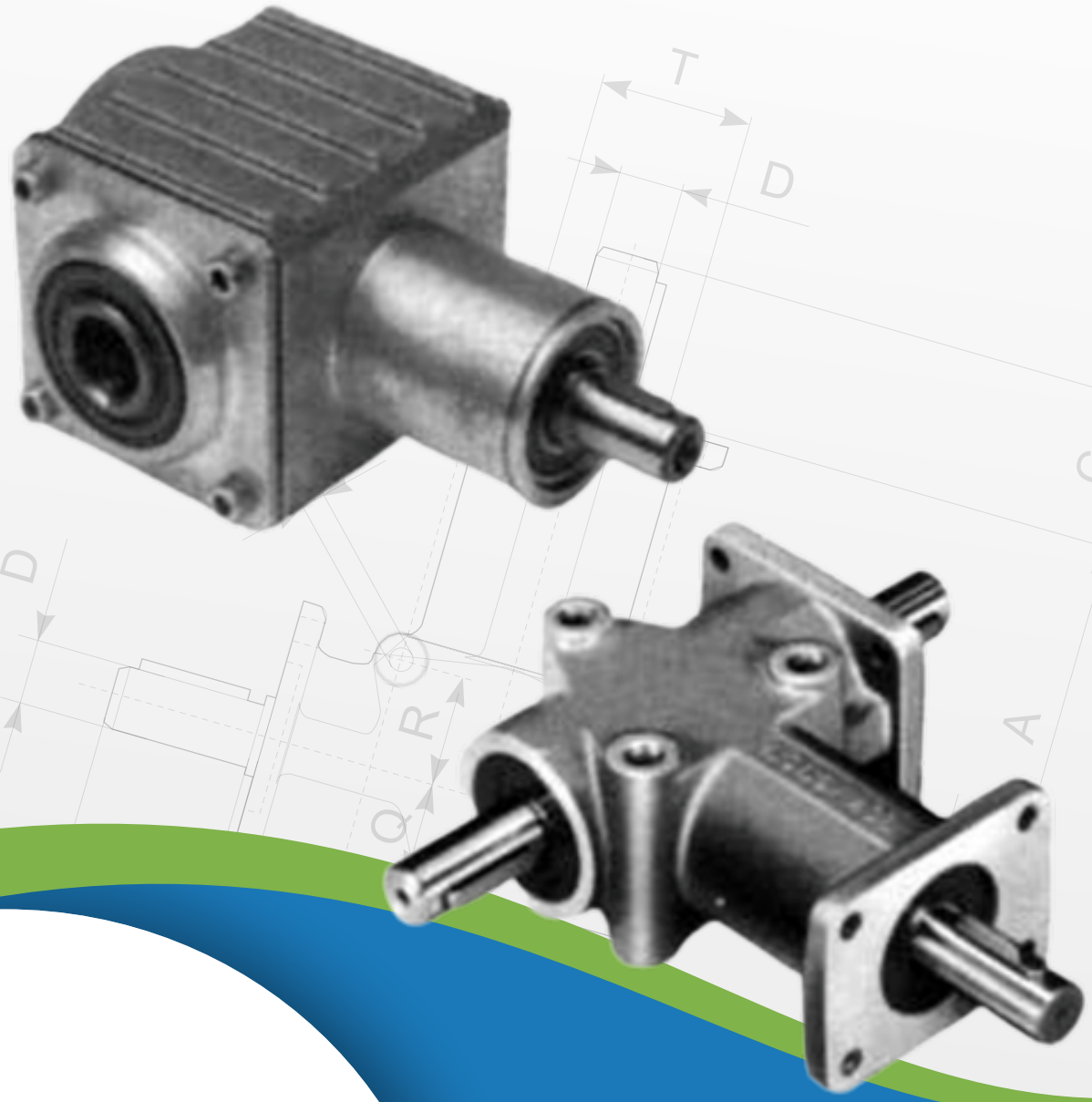

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