



**VARVEL<sup>®</sup>**  
MOTION CONTROL SINCE 1955



technology made in Italy



**RD**

Since 1955 Varvel has been making speed reducers and variators for light industry applications. Reliable partner in power transmission equipment offers also customized solutions always according to a socially responsible company values. Modularity and flexibility lead Varvel products by a unique kit form, common to all gearbox series. This feature allows distributors an easier job to set up required products in few minutes.

## Technology Made in Italy



## *Technologie Made in Italy*

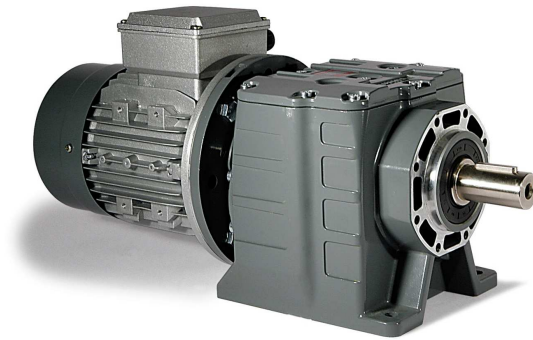
*Depuis 1955 Varvel projette et réalise réducteur et variateur mécaniques dédiés à la petite et moyenne industrie. Partner fiable dans la production et la vente d'organes de transmission grâce à un très bon niveau de service, Varvel offre également des solutions personnalisées tout en respectant les valeurs de l'entreprise socialement responsable. Modularité et flexibilité guide la conception des produits Varvel en réalisant des kits communs pour toutes les familles de réducteurs, favorisant ainsi l'activité des distributeurs et revendeurs qui peuvent réaliser en quelques minutes le produit sur demande du client.*

## *Tecnología Made in Italy*

*Desde 1955 Varvel proyecta y fabrica reductores y variadores de velocidad para aplicaciones de pequeña y mediana potencia. Socio fiable para la producción y venta de órganos de transmisión gracias a un elevado nivel de servicio, ofrece también soluciones personalizadas actuando con el respeto a los valores de la empresa socialmente responsable. Modularidad y flexibilidad guían el diseño de los productos Varvel mediante la realización de kits comunes a toda la familia de reductores, facilitando así la gestión de los distribuidores y revendedores que pueden configurar en pocos minutos el producto solicitado por cada cliente.*



# Helical Gearboxes RD



## Helical Gearboxes RD

### PRODUCT DESCRIPTION

#### Multipurpose housing

Foot & Foot/Flange Mountings  
One housing for 2- & 3-stages

#### Housing & Covers

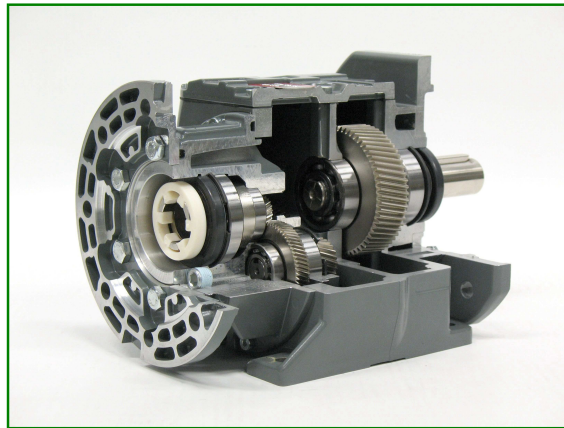
Aluminium die cast (5 sizes)  
Cast iron (2 sizes)

#### Gearing

20MnCr5 alloy steel  
Case hardened  
Profile ground or shaved

#### Bearings

Ball or roller types  
according to sizes  
and technical requirements



#### Input

NEMA and IEC  
motor adapters and  
Universal elastic coupling

#### Oil seals

Nitrile Butadiene Rubber -NBR  
as standard;  
Viton and Silicon on request

#### Output

Solid shafts  
imperial and metric

#### Lubrication

Synthetic long-life oil Grade ISO VG 320  
No oil plugs  
In-house filling

### CONTENTS

Product Description .....	2-3
Symbols & Formulae .....	3
Order Designation .....	4
Mounting Positions .....	5
Service Factors .....	6-8
External Loads .....	9
<b>Ratings</b>	
RD 02 - 03 .....	10
RD 12 - 13 .....	11
RD 22 - 23 .....	12
RD 32 - 33 .....	13
RD 42 - 43 .....	14
RD 52 - 53 .....	15
RD 62 - 63 .....	16
Input Arrangements.....	17

#### Dimensions

RD 02 - 03 .....	18-19
RD 12 - 13 .....	20-21
RD 22 - 23 .....	22-23
RD 32 - 33 .....	24-25
RD 42 - 43.....	26-27
RD 52 - 53.....	28-29
RD 62 - 63.....	33-31

#### General Information

Components, 2- and 3-stages .....	32
Conversion Factors .....	32

## Helical Gearboxes RD

### PRODUCT DESCRIPTION

The helical gearboxes Series RD feature a one-piece cast housing complete with inner support to accommodate 2 or 3 gear stages into the same casing. Manufactured to latest ISO engineering design specifications the housing is checked by computer-aided structural analysis for deflection and stress distribution.

Significant strains caused by the effects of torque and external loads do not deflect the monolithic ribwork of the housing, which significantly improves the integrity of the sealed surfaces.

The helical gearboxes Series RD are manufactured in B3 base mounted configuration; they can be easily converted to B5 flange mounting by fitting of the appropriate additional adaptor flange onto the footed body.

Single-setup machining on state-of-the-art CNC production lines, the most recent calculation techniques and process controls give superior operational reliability, maximum output torques, high overhung and thrust load capacity, and long working life-time.

### SYMBOLS & FORMULAS

D	[in]	Transmission element PCD	
F <sub>r</sub>	[lb]	Application overhung load (OHL)	
F <sub>r1</sub>	[lb]	Catalogue input overhung load (input OHL)	
F <sub>r2</sub>	[lb]	Catalogue output overhung load (output OHL)	
F <sub>r2b(x)</sub>	[lb]	Permissible OHL at position 'X' on output shaft, bearing lifetime condition	
F <sub>r2s(x)</sub>	[lb]	Permissible OHL same as F <sub>r2b(x)</sub> , shaft bending and torsional stress condition	
SF		Service factor	$FS = \frac{M_2}{M_{(app)}}$
i <sub>n</sub>		Nominal reduction ratio	
i <sub>r</sub>		Actual reduction ratio	
J <sub>1</sub>	[ft <sup>2</sup> -lb]	Gearbox moment of inertia at input shaft	
J <sub>2</sub>	[ft <sup>2</sup> -lb]	Application moment of inertia	
J <sub>m</sub>	[ft <sup>2</sup> -lb]	Motor moment of inertia	
k <sub>(a)</sub>		Mass acceleration factor	
k <sub>(t)</sub>		Transmission element factor	
Lub H/V	[pt]	Lubricant [pt]: H = horizontal mounting / V = vertical mounting	
M <sub>2</sub>	[in-lb]	Gearbox maximum output torque	$M_2 = \frac{1800 * P_1 * \eta}{n_2}$
M <sub>(app)</sub>	[in-lb]	Application torque	
n <sub>1</sub>	[RPM]	Input speed	
n <sub>2</sub>	[RPM]	Output speed	
P <sub>1</sub>	[HP]	Input power @ 60Hz	$P_1 = \frac{M_2 * n_2}{1800 * \eta}$
W	[lb]	Weight: mounting B3-H & average reduction ratio	
η		Efficiency: 0.96 - 2-stage units 0.94 - 3-stage units	

## Helical Gearboxes RD

### ORDER DESIGNATION

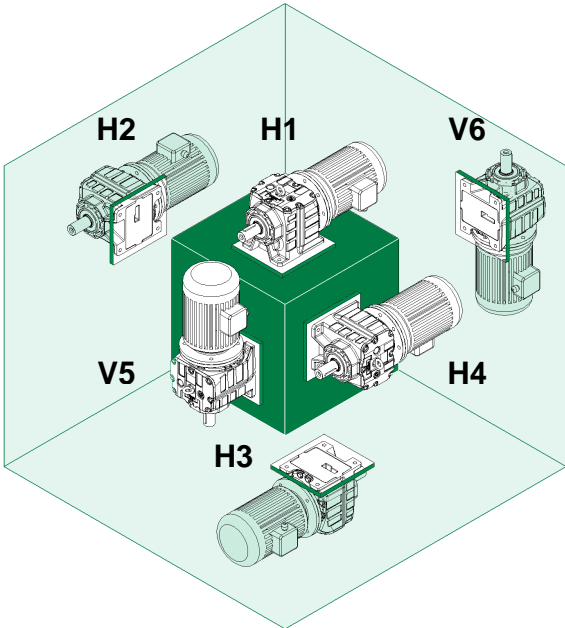
Example: FRD32/B3-H4 31.5 N56 AU35

F	RD	52	B3-H4	31.5	N56	AU	DFU
	<div style="border: 1px solid black; padding: 5px; text-align: center;">TYPE</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">RD - Helical gearbox</div>		<div style="border: 1px solid black; padding: 5px; text-align: center;">MOUNTING POSITION</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Page 5 B3 - Foot mounting B5 - Flange mounting</div>				<div style="border: 1px solid black; padding: 5px; text-align: center;">OUTPUT FLANGE mm</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">120 140 160 ... 300 350</div>
INPUT TYPE	SIZE		REDUCTION RATIO 1:		MOTOR ADAPTER	OUTPUT SHAFT DIA.	
	A)	B)	A)	B)	NEMA	in	
<b>M</b> - Motorized Unit	02	03	2.5	40	N42	0.625"	
<b>F</b> - Motor Flange	12	13	3.15	50	N48	0.750"	
<b>S</b> - Without Mtr Flange	22	23	4.0	63	N56	1.000"	
<b>nil</b> - Solid input	32	33	5.0	80	N140	1.250"	
	42	43	6.3	100	N180	1.375"	
	52	53	8.0	125	N200	1.625"	
	62	63	10.0	160		2.125"	
			12.5	200			
			16.0	250			
			20.0	315			
			25.0	400			
			31.5	500			
			40	630			
			50				
			63				
A) - 2-stages B) - 3-stages							

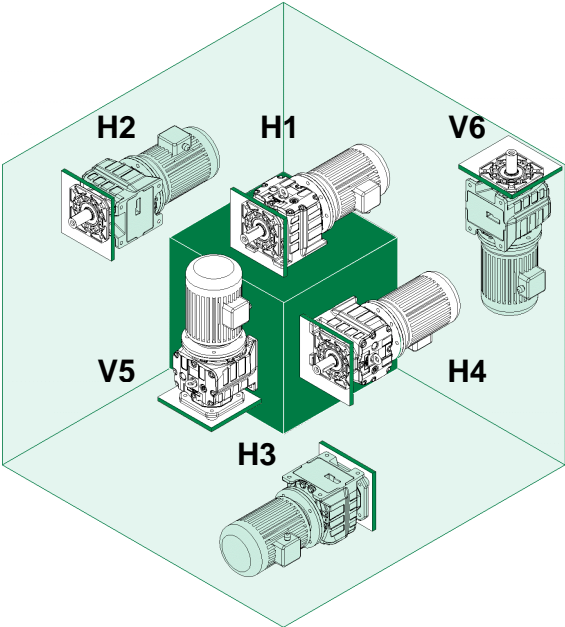
# Helical Gearboxes RD

## MOUNTING POSITIONS

**B3**  
Foot mounting



**B5**  
Flange mounting



## Helical Gearboxes RD

### SERVICE FACTORS

#### SERVICE FACTOR of the gearbox

Service factor SF1.0 is meant as typical of 8 hours/day operation, with uniform load, starts/ stops lower than 60 per hour and ambient temperature between 60 and 95 °F.

The ratio between gearbox maximum output torque  $M_2$  of each reduction ratio - listed in gearbox RD ratings, pages 10 to 16 - and application torque  $M_{(app)}$  states the service factor to be bigger than the Application factors listed below.

Application	Load duration (hrs/day)			Application	Load duration (hrs/day)		
	< 3	3 - 10	> 10		< 3	3 - 10	> 10
<b>Agitators (mixers)</b>				<b>Elevators</b>			
Pure liquids	1.00	1.00	1.25	Bucket	1.00	1.25	1.50
Liquids and solids	1.00	1.00	1.50	Centrifugal discharge	1.00	1.00	1.25
Liquids - variable density	1.00	1.25	1.50	Escalators	1.00	1.00	1.25
<b>Blowers</b>				Freight	1.00	1.25	1.50
Centrifugal	1.00	1.00	1.25	Gravity discharge	1.00	1.00	1.25
Lobe	1.00	1.25	1.50	<b>Extruders</b>			
Vane	1.00	1.25	1.50	General	1.50	1.50	1.50
<b>Brewing and distilling</b>				Plastics			
Bottling machinery	1.00	1.25	1.25	Variable speed drive	1.50	1.50	1.50
Brew kettles - continuous duty	1.25	1.25	1.25	Fixed speed drive	1.75	1.75	1.75
Cookers - continuous duty	1.25	1.25	1.25	Rubber			
Mash tubs - continuous duty	1.25	1.25	1.25	Continuous screw operation	1.75	1.75	1.75
Scale hopper - frequent starts	1.25	1.25	1.25	Intermittent screw operation	1.75	1.75	1.75
<b>Can filling machine</b>	1.00	1.00	1.25	<b>Fans</b>			
<b>Car dumpers</b>	1.50	1.75	2.00	Centrifugal	1.00	1.00	1.25
<b>Car pullers</b>	1.00	1.25	1.50	Cooling towers	2.00	2.00	2.00
<b>Clarifiers</b>	1.00	1.00	1.25	Forced draft	1.25	1.25	1.25
<b>Classifiers</b>	1.00	1.25	1.50	Induced draft	1.50	1.50	1.50
<b>Clay working machinery</b>				Industrial and mine	1.50	1.50	1.50
Brick press	1.50	1.75	2.00	<b>Feeders</b>			
Briquette machine	1.50	1.75	2.00	Apron	1.00	1.25	1.50
Pug mill	1.00	1.25	1.50	Belt	1.00	1.25	1.50
<b>Compactors</b>	2.00	2.00	2.00	Disc	1.00	1.00	1.25
<b>Compressors</b>				Reciprocating	1.50	1.75	2.00
Centrifugal	1.00	1.00	1.25	Screw	1.00	1.25	1.50
Lobe	1.00	1.25	1.50	<b>Food industry</b>			
Reciprocating, multi-cylinder	1.50	1.50	1.75	Cereal cooker	1.00	1.00	1.25
Reciprocating, single-cylinder	1.75	1.75	2.00	Dough mixer	1.25	1.25	1.50
<b>Conveyors</b>				Meat grinders	1.25	1.25	1.50
- General purpose				Slicers	1.25	1.25	1.50
Uniformly loaded or fed	1.00	1.00	1.25	<b>Generators and excitors</b>	1.00	1.00	1.25
- Heavy duty				<b>Hammer mills</b>	1.75	1.75	2.00
Not uniformly fed	1.00	1.25	1.50	<b>Hoists</b>			
- Reciprocating or shaker	1.50	1.75	2.00	Heavy duty	1.25	1.75	2.00
<b>Crusher</b>				Medium duty	1.25	1.25	1.50
Stone or ore	1.75	1.75	2.00	Skip hoist	1.25	1.25	1.50
<b>Dredges</b>				<b>Laundry</b>			
Cable reels	1.25	1.25	1.50	Tumblers	1.25	1.25	1.50
Conveyors	1.25	1.25	1.50	Washers	1.50	1.50	2.00
Cutter head drives	2.00	2.00	2.00	<b>Lumber industry</b>			
Pumps	2.00	2.00	2.00	Barkers			
Screen drives	1.75	1.75	2.00	Spindle feed	1.25	1.25	1.50
Stackers	1.25	1.25	1.50	Main drive	1.75	1.75	1.75
Winches	1.25	1.25	1.50	Conveyors			
				Burner	1.25	1.25	1.50
				Main or heavy duty	1.50	1.50	1.50
				Main log	1.75	1.75	2.00
				Re-saw, merry-go-round	1.25	1.25	1.50



## Helical Gearboxes RD

### SERVICE FACTORS

Application	Load duration (hrs/day)			Application	Load duration (hrs/day)		
	< 3	3 - 10	> 10		< 3	3 - 10	> 10
Conveyors				Mixers			
Slab	1.75	1.75	2.00	Concrete	1.25	1.25	1.50
Transfer	1.25	1.25	1.50	Paper mills			
Chains				Agitator (mixer)	1.50	1.50	1.50
Floor	1.50	1.50	1.50	Agitator for pure liquors	1.25	1.25	1.25
Green	1.50	1.50	1.75	Barking drums	2.00	2.00	2.00
Cut-off saws				Barkers -mechanical	2.00	2.00	2.00
Chain	1.50	1.50	1.75	Beater	1.50	1.50	1.50
Drag	1.50	1.50	1.75	Breaker stack	1.25	1.25	1.25
Debarking drums	1.75	1.75	2.00	Calendar	1.25	1.25	1.25
Feeds				Chipper	2.00	2.00	2.00
Edger	1.25	1.25	1.50	Chip feeder	1.50	1.50	1.50
Gang	1.75	1.75	1.75	Coating rolls	1.25	1.25	1.25
Trimmer	1.25	1.25	1.50	Conveyors			
Log deck	1.75	1.75	1.75	Chip, bark, chemical	1.25	1.25	1.25
Log hauls - incline - well type	1.75	1.75	1.75	Log (including slab)	2.00	2.00	2.00
Log turning devices	1.75	1.75	1.75	Couch rolls	1.25	1.25	1.25
Planer feed	1.25	1.25	1.50	Cutter	2.00	2.00	2.00
Planer tilting hoists	1.50	1.50	1.50	Cylinder molds	1.25	1.25	1.25
Rolls -live-off bearings - roll cases	1.75	1.75	1.75	Dryers			
Sorting table	1.25	1.25	1.50	Paper machine	1.25	1.25	1.25
Tipple hoist	1.25	1.25	1.50	Conveyor type	1.25	1.25	1.25
Transfers				Embosses .	1.25	1.25	1.25
Chain	1.50	1.50	1.75	Extruder	1.50	1.50	1.50
Crane way	1.50	1.50	1.75	Fourdrinier rolls (includes lump breaker, dandy roll, wire turning, and return rolls)	1.25	1.25	1.25
Tray drives	1.25	1.25	1.50	Jordan	1.50	1.50	1.50
Veneer lathe drives	1.25	1.25	1.50	Kiln drive	1.50	1.25	1.50
Metal mills				Mt Hope roll	1.25	1.50	1.25
Draw bench carriage and main drive	1.25	1.25	1.50	Paper rolls	1.25	1.25	1.25
Runout table				Platter	1.50	1.50	1.50
Non-reversing				Presses - felt and suction	1.25	1.25	1.25
Group drives	1.50	1.50	1.50	Pulper	2.00	2.00	2.00
Individual drives	2.00	2.00	2.00	Pumps - vacuum	1.50	1.50	1.50
Reversing	2.00	2.00	2.00	Reel (surface type)	1.25	1.25	1.25
Slab pushers	1.50	1.50	1.50	Screens			
Shears	2.00	2.00	2.00	Chip	1.50	1.50	1.50
Wire drawing machine	1.25	1.25	1.50	Rotary	1.50	1.50	1.50
Wire winding machine	1.25	1.50	1.50	Vibrating	2.00	2.00	2.00
Metal strip processing machinery				Size press	1.25	1.25	1.25
Bridles	1.25	1.25	1.50	Super calendar	1.25	1.25	1.25
Coilers and uncoilers	1.00	1.00	1.25	Thickener (AC motor)	1.50	1.50	1.50
Edge trimmers	1.00	1.25	1.50	(DC motor)	1.25	1.25	1.25
Flatteners	1.25	1.25	1.50	Washer (AC motor)	1.50	1.50	1.50
Loopers (accumulators)	1.00	1.00	1.25	(DC motor)	1.25	1.25	1.25
Pinch rolls	1.25	1.25	1.50	Wind and unwind stand	1.00	1.00	1.25
Scrap choppers	1.25	1.25	1.50	Winders (surface type)	1.25	1.25	1.25
Shears	2.00	2.00	2.00	Yankee dryers	1.25	1.25	1.25
Slitters	1.00	1.25	1.50	Plastics industry			
Mills, rotary type				Primary processing			
Ball and rod	2.00	2.00	2.00	Intensive internal mixers			
Spur ring gear	2.00	2.00	2.00	Batch mixers	1.75	1.75	1.75
Helical ring gear	1.50	1.50	1.50	Continuous mixers	1.50	1.50	1.50
Direct connected	2.00	2.00	2.00	Batch drop mill - two smooth rolls	1.25	1.25	1.25
Cement kilns	1.50	1.50	1.50	Continuous feed, holding and blend mill	1.25	1.25	1.50
Dryers and coolers	1.50	1.50	1.50	Compounding mill	1.25	1.25	1.25
				Calendars	1.50	1.50	1.25

## Helical Gearboxes RD

### SERVICE FACTORS

Application	Load duration (hrs/day)			Application	Load duration (hrs/day)		
	< 3	3 - 10	> 10		< 3	3 - 10	> 10
Plastics industry				Sand muller	1.25	1.25	1.50
Secondary processing				Sewage disposal equipment			
Blow molders	1.50	1.50	1.50	Bar screens	1.25	1.25	1.25
Coating	1.25	1.25	1.25	Chemical feeders	1.25	1.25	1.25
Film	1.25	1.25	1.25	Dewatering screens	1.50	1.50	1.50
Pipe	1.25	1.25	1.25	Scum breakers	1.50	1.50	1.50
Pre-plasticizers	1.50	1.50	1.50	Slow or rapid mixers	1.50	1.50	1.50
Rods	1.25	1.25	1.25	Sludge collectors	1.25	1.25	1.25
Sheet	1.25	1.25	1.25	Thickeners	1.50	1.50	1.50
Tubing	1.25	1.25	1.50	Vacuum filters	1.50	1.50	1.50
Pullers -barge haul	1.25	1.25	1.50	Screens			
Pumps				Air washing	1.00	1.00	1.25
Centrifugal	1.00	1.00	1.25	Rotary - stone or gravel	1.25	1.25	1.50
Proportioning	1.25	1.25	1.00	Travelling water intake	1.00	1.00	1.25
Reciprocating				Sugar industry			
Single acting, three or more cylinders	1.25	1.25	1.50	Beet slicer	2.00	2.00	2.00
Double acting, two or more cylinders	1.25	1.25	1.50	Cane knives	1.50	1.50	1.50
Rotary				Crushers	1.50	1.50	1.50
Gear type	1.00	1.00	1.25	Mills (low speed end)	1.75	1.75	1.75
Lobe	1.00	1.00	1.25	Textile industry			
Vane	1.00	1.00	1.25	Batchers	1.25	1.25	1.50
Rubber industry				Calendars	1.25	1.25	1.50
Intensive internal mixers				Cards	1.25	1.25	1.50
Batch mixers	1.75	1.75	1.75	Dry cans	1.25	1.25	1.50
Continuous mixers	1.50	1.50	1.50	Dryers	1.25	1.25	1.50
Mixing mill - two smooth rolls (if corrugated rolls are used, then use the same selection factors that are used for a cracker warmer).	1.50	1.50	1.50	Dyeing machinery	1.25	1.25	1.50
Batch drop mill - two smooth rolls	1.50	1.50	1.50	Looms	1.25	1.25	1.50
Cracker warmer - two rolls; one corrugated roll	1.75	1.75	1.75	Mangles	1.25	1.25	1.50
Cracker - two corrugated rolls.	2.00	2.00	2.00	Nappers	1.25	1.25	1.50
Holding, feed and blend mill - two rolls	1.25	1.25	1.25	Pads	1.25	1.25	1.50
Refiner - two rolls	1.50	1.50	1.50	Slashers	1.25	1.25	1.50
Calendars	1.50	1.50	1.50	Soapers	1.25	1.25	1.50
				Spinners	1.25	1.25	1.50
				Tenter frames	1.25	1.25	1.50
				Washers	1.25	1.25	1.50
				Winders	1.25	1.25	1.50

This application guide is given by way of an example and therefore, may not include all the possible cases.

Should the application not be referable to any of the listed cases, the table below gives two service factors - one referred to both load type and work duration, and another one to starts and stops number of the duty cycle - of which the product is the gearbox oversizing coefficient in order to have a torque good enough to perform the required work.

Application: Conveyor 1000 in-lb @ 84 RPM - uniform load - 24 hrs/day →  $F_1 = 1.4$ ; 60 start/stops per hour →  $F_2 = 1.0$ ;

Required torque  $1000 \times 1.4 \times 1.0 = 1400$  in-lb

Gearbox to select FRD22 1/20 (84 RPM) 1683 in-lb (gearbox service factor SF1.7 = 1683 in-lb : 1000 in-lb)

#### SERVICE FACTOR

$$SF = F_1 \times F_2$$

$F_1$  = Load & time factor  
 $a$  = Uniform load  
 $b$  = Variable load  
 $c$  = Shock load  
 $F_2$  = Running factor  
 $d$  = Start/stops per hour

$F_1$	$a$	$b$	$c$	$F_2$	$d$
3 - 4 hrs	0.8	1.0	1.5	6	0.8
8 - 10 hrs	1.0	1.2	1.8	60	1.0
10 - 24 hrs	1.4	1.6	2.0	120	1.2

## Helical Gearboxes RD

### EXTERNAL LOADS

#### OHL - OVERHUNG LOADS - OUTPUT [lb]

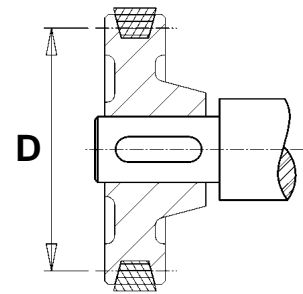
Overhung (radial) loads have to be checked with the rating factor  $F_{r2}$  given in the selection tables.

Each transmission element fitted on the gearbox output shaft gives its own transmission element factor  $k_{(t)}$  according to the following table.

##### - Application OHL

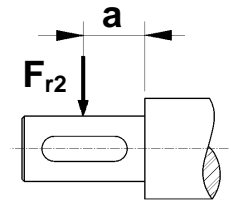
$k_{(t)}$	Transmission Element	
1.15	Gear	- Tooth No. < 17
1.40	Chain sprocket	- Tooth No. < 13
1.25	Chain sprocket	- Tooth No. < 20
1.00	Chain sprocket	- Tooth No. > 20
2.50	V-belt pulley	
1.25	Toothed belt pulley	

$$F_r = \frac{2 * M_2}{D} * k_{(t)}$$



##### - Catalogue OHL at mid shaft $F_{r2} \geq F_r$ Catalogue value to be greater than application OHL

RD	0	1	2	3	4	5	6
a [inch]	0.69	0.79	0.98	1.18	1.38	1.57	1.97
a [mm]	17.5	20	25	30	35	40	50



##### - OHL offset from gearbox centre \* or \*\* values as appropriate to be greater than application OHL

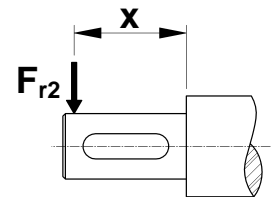
$$F_{r2b(x)} \geq F_r$$

$$F_{r2b(x)} = F_{r2} * \frac{c}{x + b}$$

$$F_{r2s(x)} \geq F_r$$

$$F_{r2s(x)} = F_{r2} * \frac{a}{x}$$

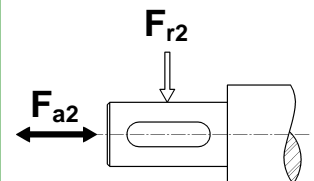
RD	0	1	2	3	4	5	6
a [inch]	0.69	0.79	0.98	1.18	1.38	1.57	1.97
b [inch]	0.61	0.91	0.94	1.06	1.22	1.46	1.54
c [inch]	1.30	1.69	1.93	2.24	2.60	3.03	3.50



#### AXIAL LOADS - OUTPUT

Axial load values are assumed to be 20% of OHL, either on tensile and compressive stress, besides OHL itself.

$$F_{a2} = F_{r2} * 0.2$$



## RD02 & RD03

## Helical Gearboxes RD

### SELECTION

1800 RPM

440 in-lb	$i_n$	$i_r$	$n_2$	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1 \times 10^{-4}$	NEMA SIZES		
	nominal	actual	[RPM]	[in-lb]	[HP]	[lb]	[lb]	[lb x ft <sup>2</sup> ]	42	48	56
RD02 2s	2,5	2.568	654	266	3.05	*	97	12.4608		G5	G5
	3,15	3.277	512	292	2.63	*	94	10.5434		G5	G5
	4,0	4.256	395	319	2.21	*	97	9.2169		G5	G5
	5,0	5.276	318	336	1.89	*	117	8.5121		G5	G5
	6,3	6.253	281	425	2.04		8	10.1946		G5	G5
	8,0	7.979	210	434	1.63		25	9.1504		G5	G5
	10,0	10.362	162	443	1.31		39	8.3911		G5	G5
	12,5	12.844	131	443	1.04		47	7.9758		G5	G5
	16,0	16.320	103	451	0.82		55	7.6364		G5	G5
	20,0	21.533	78	451	0.64		61	7.3706		G5	G5
	25,0	26.747	62	460	0.52		66	7.2259		G5	G5
	31,5	30.222	55	460	0.45		67	7.1642		G5	G5
	35,5	34.675	48	310	0.27		143	7.3303		G5	G5
	40	43.070	40	310	0.22		145	7.1974		G5	G5
50	48.667	35	310	0.18		146	7.1428		G5	G5	
RD03 3s	40	36.892	44	460	0.37		17	7.2734	G3	G3	
	50	47.074	36	460	0.30		33	15.2610	G3	G3	
	63	61.135	28	460	0.23		47	15.0498	G3	G3	
	80	75.782	22	460	0.18		56	14.9478	G3	G3	
	100	96.288	18	460	0.15		63	14.8789	G3	G3	
	125	127.047	13	460	0.12		70	14.8362	G3	G3	
	160	157.805	11	460	0.08		75	14.8172	G3	G3	
	180	178.311	9.5	460	0.08		77	14.8101	G3	G3	
	200	204.583	8.3	319	0.05		82	14.8338	G3	G3	
	250	254.113	6.6	319	0.03		84	14.8172	G3	G3	
	280	287.133	5.9	319	0.03		85	14.8101	G3	G3	
	315	324.444	5.2	319	0.03		85	15.3346	G3	G3	
<p><b>2s &amp; 3s</b> - Number of reduction stages  * - Recommended input in-line coupling drive  G3, G5 - Elastic coupling 'G type' input</p>											
RD	Lub. H		Lub. V		Weight						
	US qt	litres	US qt	litres	lb	kg					
02	0.21	0.20	0.30	0.28	6.7	3.0					
03	0.32	0.30	0.40	0.38	7.2	3.2					

## Helical Gearboxes RD

## RD12 & RD13

1800 RPM

SELECTION

885 in-lb	$i_n$	$i_r$	$n_2$	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1 \times 10^{-4}$	NEMA SIZES	
	nominal	actual	[RPM]	[in-lb]	[HP]	[lb]	[lb]	[lb x ft <sup>2</sup> ]	56	140
RD12 2s	2.5	2.534	672	398	4.19	*	292	26.4641	G5	G5
	3.15	3.081	534	398	3.70	*	315	22.1452	G5	G5
	4	4.011	420	443	3.08	*	337	18.2510	G5	G5
	5	5.073	336	487	2.60	*	360	15.9753	G5	G5
	6.3	6.686	264	797	3.45	*	382	19.8315	G5	G5
	8	8.129	210	797	2.87	*	405	17.6578	G5	G5
	10	10.581	168	797	2.23	*	427	15.6027	G5	G5
	12.5	13.384	132	797	1.78	*	427	14.3213	G5	G5
	16	16.309	108	797	1.48	4	427	13.5500	G5	G5
	20	20.391	84	797	1.19	12	427	12.8975	G5	G5
	25	26.522	66	841	0.94	17	449	12.3659	G5	G5
	31.5	32.653	54	841	0.77	22	449	12.0740	G5	G5
	40	39.083	42	620	0.45	133	449	12.3018	G5	G5
	50	48.118	36	620	0.37	142	449	12.0313	G5	G5
63	61.670	26	620	0.28	144	449	11.8059	G5	G5	
RD13 3c	40	40.103	42	841	0.64	27	337	12.4988	G5	
	50	52.201	36	841	0.49	47	360	36.8319	G5	
	63	66.028	26	841	0.39	61	382	36.5305	G5	
	80	80.432	22	885	0.32	72	405	36.3858	G5	
	100	100.596	17	885	0.27	79	427	36.2790	G5	
	125	130.843	13	885	0.20	90	449	36.2125	G5	
	160	165.075	11	885	0.17	92	449	46.1793	G5	
	200	206.460	8.4	885	0.13	94	449	46.0915	G5	
	250	268.538	6.6	885	0.10	97	449	46.0393	G5	
	315	330.615	5.4	885	0.08	101	449	46.0155	G5	
	400	395.719	4.2	620	0.05	108	494	46.0393	G5	
	500	487.197	3.4	620	0.03	110	494	46.0155	G5	
	630	624.413	2.6	620	0.03	115	494	46.0013	G5	
<b>2s &amp; 3s</b> - Number of reduction stages * - Recommended input in-line coupling drive G5 - Elastic coupling 'G type' input										
RD	Lub. H		Lub. V		Weight					
	US qt	litres	US qt	litres	lb	kg				
12	0.53	0.50	0.74	0.70	10.8	4.8				
13	0.53	0.50	0.90	0.85	10.8	4.8				

## RD22 & RD23

## Helical Gearboxes RD

### SELECTION

1800 RPM

1770 in-lb	$i_n$	$i_r$	$n_2$	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1 \times 10^{-4}$	NEMA SIZES			
	nominal	actual	[RPM]	[in-lb]	[HP]	[lb]	[lb]	[lb x ft <sup>2</sup> ]	56	140	180	
RD22 2s	2.5	2.548	672	752	8.36	*	247	82.0335	G6	G6	G6	
	3.15	3.133	534	797	7.33	*	303	68.8062	G6	G6	G6	
	4	3.917	420	885	6.29	*	337	58.9889	G6	G6	G6	
	5	5.013	336	929	5.23	*	382	51.7702	G6	G6	G6	
	6.3	6.717	264	1549	6.92	*	416	64.6605	G6	G6	G6	
	8	8.267	210	1593	5.68	*	449	57.3373	G6	G6	G6	
	10	10.333	168	1593	4.59	*	472	51.6491	G6	G6	G6	
	12.5	13.227	132	1593	3.64	*	494	47.2899	G6	G6	G6	
	16	16.29	108	1637	2.98	*	517	44.6748	G6	G6	G6	
	20	20.667	84	1682	2.38	*	539	42.5343	G6	G6		
	25	26.729	66	1682	1.86		9	562	40.8969	G6	G6	
	31.5	31.477	54	1682	1.59		11	584	40.1921	G6	G6	
	40	39.388	42	1239	0.89		162	652	39.4019	G6		
	50	50.758	36	1239	0.69		166	685	39.7650	G6		
63	62.127	26	1239	0.57		171	719	39.2429	G6			
RD23 3s	40	40.759	42	1770	1.26		31	517	41.5305	G5	G5	
	50	52.172	36	1770	0.99		63	539	61.0084	G5	G5	
	63	64.256	26	1770	0.80		85	562	60.4887	G5		
	80	81.519	22	1770	0.65		103	584	60.1256	G5		
	100	105.431	17	1770	0.50		124	607	59.8717	G5		
	125	124.159	13	1770	0.42		133	629	59.7886	G5		
	160	164.938	11	1770	0.32		97	652	73.5617	G5		
	200	209.25	8.4	1770	0.25		117	674	73.3007	G5		
	250	270.63	6.6	1770	0.20		130	719	73.1275	G5		
	315	318.704	5.4	1770	0.17		135	787	73.0800	G5		
	400	398.802	4.2	1239	0.10		157	787	73.1109	G5		
	500	513.92	3.4	1239	0.07		164	787	73.0658	G5		
630	629.039	2.6	1239	0.07		171	787	73.0492	G5			
<b>2s &amp; 3s</b> - Number of reduction stages * - Recommended input in-line coupling drive G5, G6 - Elastic coupling 'G type' input												
RD	Lub. H		Lub. V		Weight							
	US qt	litres	US qt	litres	lb	kg						
22	0.85	0.80	1.06	1.0	17.8	7.9						
23	0.85	0.80	1.32	1.25	19.1	8.5						

## Helical Gearboxes RD

## RD32 & RD33

1800 RPM

SELECTION

3720 in-lb	$i_n$	$i_r$	$n_2$	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1 \times 10^{-4}$	NEMA SIZES		
	nominal	actual	[RPM]	[in-lb]	[HP]	[lb]	[lb]	[lb x ft <sup>2</sup> ]	56	140	180
RD32 2s	2.5	2.697	672	1682	17.58	187	472	179.416	G6	G6	G6
	3.15	3.324	534	1814	15.39	191	494	140.133	G6	G6	G6
	4	4.160	420	1947	13.19	198	517	111.032	G6	G6	G6
	5	5.331	336	2080	10.98	202	562	89.5560	G6	G6	G6
	6.3	6.261	264	3275	15.61	207	607	125.695	G6	G6	G6
	8	7.717	210	3275	12.79	220	697	104.767	G6	G6	G6
	10	9.658	168	3319	10.34	231	809	88.4525	G6	G6	G6
	12.5	12.375	132	3363	8.16	240	854	75.8043	G6	G6	G6
	16	16.451	108	3452	6.24	249	899	77.1023	G6	G6	G6
	20	19.362	84	3452	5.35	249	944	68.9319	G6	G6	G6
	25	25.255	66	3496	4.16	258	1011	56.5898	G6	G6	G6
	31.5	33.214	54	3540	2.82	272	1056	53.2699	G6	G6	G6
	40	38.571	42	2522	1.84	310	1101	55.8874	G6	G6	G6
	50	50.727	36	2522	1.42	312	1124	52.8617	G6	G6	
63	63.333	26	2522	1.16	315	1124	51.1888	G6	G6		
RD33 3s	40	38.063	42	3717	2.82	22	899	56.5945	G6	G6	
	50	48.772	36	3717	2.23	79	921	114.444	G6	G6	
	63	64.836	26	3717	1.69	130	944	123.789	G6	G6	
	80	76.310	22	3717	1.46	155	989	119.072	G6	G6	
	100	99.535	17	3762	1.12	187	1011	111.027	G6	G6	
	125	130.903	13	3762	0.85	196	1034	110.643	G6		
	160	167.799	11	3762	0.67	191	1056	162.119	G6		
	200	197.495	8.4	3762	0.57	202	921	157.598	G6		
	250	257.602	6.6	3806	0.44	209	966	149.530	G6		
	315	307.214	5.4	3806	0.37	213	1011	149.656	G6		
	400	393.429	4.2	2567	0.18	258	1124	149.807	G6		
	500	517.418	3.4	2567	0.15	263	1124	149.591	G6		
	630	646.000	2.6	2567	0.12	270	1124	149.499	G6		
<b>2s &amp; 3s</b> - Number of reduction stages <b>G6</b> - Elastic coupling 'G type' input											
RD	Lub. H		Lub. V		Weight						
	US qt	litres	US qt	litres	lb	kg					
32	1.4	1.3	1.9	1.8	30.3	13.5					
33	1.7	1.6	2.2	2.1	32.6	14.5					

## RD42 & RD43

## Helical Gearboxes RD

### SELECTION

1800 RPM

6200 in-lb	$i_n$	$i_r$	$n_2$	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1 \times 10^{-4}$	NEMA SIZES		
	nominal	actual	[RPM]	[in-lb]	[HP]	[lb]	[lb]	[lb x ft <sup>2</sup> ]	56	140	180
RD42 2s	2.5	2.489	672	2655	29.67	110	517	442.880	G6	G6	G6
	3.15	3.111	534	2832	25.65	119	562	355.386	G6	G6	G6
	4	3.960	420	3363	23.80	126	607	292.287	G6	G6	G6
	5	4.830	336	3540	20.62	130	674	256.478	G6	G6	G6
	6.3	6.286	264	5487	25.48	225	697	323.587	G6	G6	G6
	8	7.857	210	5487	20.62	240	787	279.045	G6	G6	G6
	10	10.000	168	5487	16.43	256	831	245.158	G6	G6	G6
	12.5	12.199	132	5487	13.41	265	1034	224.819	G6	G6	G6
	16	15.223	108	5753	11.06	272	1281	208.049	G6	G6	G6
	20	19.643	84	5753	9.55	281	1303	194.297	G6	G6	G6
	25	24.478	66	5753	7.04	285	1348	185.728	G6	G6	G6
	31.5	29.643	54	5753	5.87	288	1371	180.469	G6	G6	G6
	40	41.538	42	3983	2.51	355	1573	184.038	G6	G6	
	50	50.303	36	3983	2.01	357	1685	179.318	G6	G6	
63	62.963	26	3983	1.84	357	1798	175.272	G6	G6		
RD43 3s	40	41.875	42	6196	4.19	90	1124	178.414	G6	G6	
	50	51.084	36	6196	3.52	144	1146	234.833	G6	G6	
	63	63.747	26	6196	2.51	193	1169	243.924	G6	G6	
	80	82.254	22	6196	2.85	240	1169	238.775	G6	G6	
	100	102.502	17	6196	1.84	272	1191	230.578	G6	G6	
	125	124.129	13	6196	1.51	294	1214	230.118	G6	G6	
	160	160.689	11	6196	1.17	281	1236	281.371	G6	G6	
	200	207.341	8.4	6196	1.01	261	1258	276.767	G6	G6	
	250	258.379	6.6	6196	0.67	290	1303	268.723	G6		
	315	312.297	5.4	6196	0.59	312	1348	268.770	G6		
	400	438.462	4.2	4071	0.37	362	1573	268.936	G6		
	500	530.976	3.4	4071	0.20	371	1685	268.723	G6		
630	664.609	2.6	4071	0.18	375	1798	268.604	G6			
<b>2s &amp; 3s</b> - Number of reduction stages <b>G6</b> - Elastic coupling 'G type' input											
RD	Lub. H		Lub. V		Weight						
	US qt	litres	US qt	litres	lb	kg					
42	2.3	2.2	3.2	3.0	45.0	20.0					
43	2.3	2.2	3.6	3.4	48.3	21.5					



# Helical Gearboxes RD

# RD52 & RD53

1800 RPM

SELECTION

11,500 in-lb	$i_n$	$i_r$	$n_2$	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1 \times 10^{-4}$	NEMA SIZES			
	nominal	actual	[RPM]	[in-lb]	[HP]	[lb]	[lb]	[lb x ft <sup>2</sup> ]	56	140	180	210
RD52 2s	2.5	2.557	672	5576	54,75	169	765	620,027	G8	G8	G8	G8
	3.15	3.241	534	6107	48,31	178	833	497,531	G8	G8	G8	G8
	4	3.926	420	6638	46,70	191	900	409,206	G8	G8	G8	G8
	5	4.840	336	7523	43,16	196	1013	359,064	G8	G8	G8	G8
	6.3	6.454	264	10267	44,12	338	1035	552,680	G8	G8	G8	G8
	8	8.185	210	10356	35,11	360	1170	390,673	G8	G8	G8	G8
	10	9.915	168	10444	29,15	383	1238	343,212	G8	G8	G8	G8
	12.5	12.222	132	10533	23,83	401	1553	314,759	G8	G8	G8	G8
	16	15.452	108	10621	19,00	410	1913	291,266	G8	G8	G8	G8
	20	20.298	84	10798	14,65	421	1958	272,021	G8	G8	G8	G8
	25	25.989	66	10887	11,59	428	2025	260,156	G8	G8	G8	G8
	31.5	31.429	54	10975	9,66	432	2048	252,657	G8	G8	G8	G8
	40	40.476	42	7523	5,15	540	2363	257,664	G8	G8	G8	
	50	53.333	36	7523	3,86	551	2520	251,043	G8	G8		
63	66.667	26	7523	3,06	563	2700	245,372	G8	G8			
RD53 3s	40	39.333	42	11241	8,05	158	1710	249,786	G8	G8	G8	
	50	47.984	36	11329	6,60	218	1755	328,760	G8	G8	G8	
	63	59.878	26	11418	5,48	290	1755	341,504	G8	G8	G8	
	80	77.262	22	11506	4,19	362	1778	334,290	G8	G8	G8	
	100	96.280	17	11506	3,38	410	1778	322,804	G8	G8		
	125	129.800	13	11506	2,58	446	1823	322,163	G8	G8		
	160	157.143	11	11506	2,09	326	1845	393,924	G8	G8		
	200	195.824	8.4	11506	1,77	394	1890	387,469	G8	G8		
	250	264.000	6.6	11506	1,29	434	1958	376,221	G8	G8		
	315	332.308	5.4	7966	0,72	473	2025	376,292	G8			
	400	402.424	4.2	7966	0,56	540	2363	376,506	G8			
	500	503.704	3.4	7966	0,48	563	2520	376,221	G8			
	630	629.630	2.6	7966	0,40	574	2700	376,055	G8			
<b>2s &amp; 3s</b> - Number of reduction stages <b>G8</b> - Elastic coupling 'G type' input												
RD	Lub. H		Lub. V		Weight							
	US qt	litres	US qt	litres	lb	kg						
52	4.8	4.5	5.8	5.5	110	49						
53	4.8	4.5	6.9	6.5	117	52						

## RD62 & RD63

## Helical Gearboxes RD

### SELECTION

1800 RPM

20,350 in-lb	$i_n$	$i_r$	$n_2$	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1 \times 10^{-4}$	NEMA SIZES			
	nominal	actual	[RPM]	[in-lb]	[HP]	[lb]	[lb]	[lb x ft <sup>2</sup> ]	56	140	180	210
RD62 2s	2.5	2.616	642	11506	117.34	247	1146	1594.37	G8	G8	G8	G8
	3.15	3.318	506	12391	100.57	258	1258	1279.40	G8	G8	G8	G8
	4	4.019	418	14161	97.22	274	1348	1052.23	G8	G8	G8	G8
	5	4.955	340	15931	92.86	285	1506	923.325	G8	G8	G8	G8
	6.3	6.571	256	17702	78.45	490	1551	1421.21	G8	G8	G8	G8
	8	8.333	202	17702	61.35	526	1753	1004.55	G8	G8	G8	G8
	10	10.095	167	18587	53.14	562	1865	882.580	G8	G8	G8	G8
	12.5	12.444	136	18587	43.08	584	2315	809.348	G8	G8	G8	G8
	16	15.733	107	18587	34.03	596	2877	748.978	G8	G8	G8	G8
	20	20.667	82	18587	25.98	607	2921	699.500	G8	G8	G8	G8
	25	24.615	68	18587	21.79	618	3034	668.911	G8	G8	G8	G8
	31.5	33.200	50	19649	16.76	640	3079	649.690	G8	G8	G8	G8
	40	40.500	42	14161	10.06	764	3528	662.528	G8	G8	G8	G8
50	49.800	34	14161	8.21	775	3775	645.537	G8	G8	G8	G8	
63	56.000	30	14161	7.21	787	4045	630.990	G8	G8	G8	G8	
RD63 3s	40	39.708	42	19472	14.42	202	2562	642.286	G8	G8	G8	G8
	50	48.948	35	19472	11.73	315	2629	845.394	G8	G8	G8	G8
	63	61.884	28	19472	9.22	420	2629	878.118	G8	G8	G8	G8
	80	81.289	20	20357	7.38	539	2674	859.585	G8	G8	G8	G8
	100	104.082	16	20357	6.20	584	2674	830.088	G8	G8	G8	
	125	125.867	13	20357	5.70	629	2697	828.427	G8	G8	G8	
	160	157.333	11	20357	4.69	472	2764	1012.93	G8	G8	G8	
	200	201.571	8.3	20357	3.02	562	2832	996.367	G8	G8	G8	
	250	265.600	6.4	20357	2.35	629	2921	967.392	G8	G8		
	315	332.000	5.0	20357	1.84	674	3034	967.582	G8	G8		
	355	373.333	3.7	20357	2.68	787	3528	968.175	G8	G8		
	450	448.000	3.7	20357	1.34	809	3775	967.392	G8	G8		
560	560.000	3.0	20357	1.17	831	4045	966.965	G8	G8			
<b>2s &amp; 3s</b> - Number of reduction stages <b>G8</b> - Elastic coupling 'G type' input												
RD	Lub. H		Lub. V		Weight							
	US qt	litres	US qt	litres	lb	kg						
62	7.4	7.0	9.5	9.0	139	62						
63	7.4	7.0	11.6	11.0	157	70						

## Helical Gearboxes RD

### INPUT ARRANGEMENT

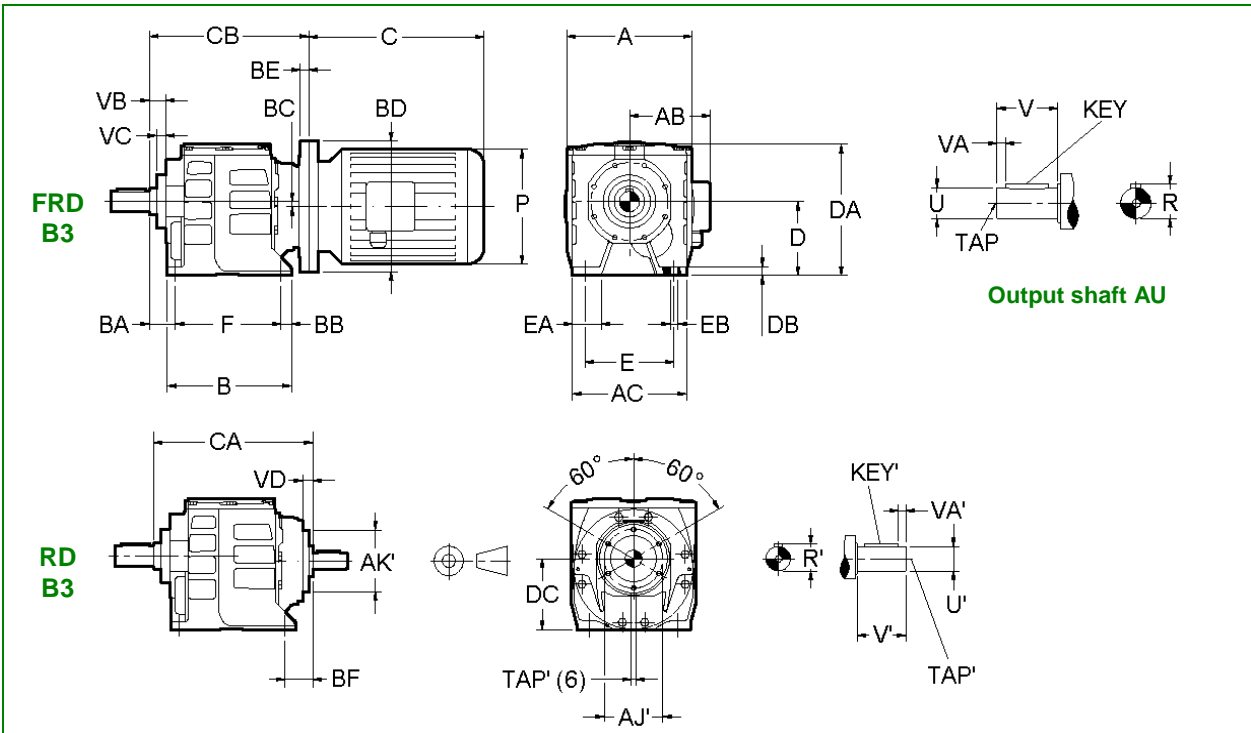
NEMA INPUT														
FRD NEMA	02	03	12	13	22	23	32	33	42	43	52	53	62	63
42		G3												
48		G3												
56	G5		G5	G5	G6	G5	G6	G6	G6	G6	G8	G8	G8	G8
140			G5		G6	G5	G6	G6	G6	G6	G8	G8	G8	G8
180					G6		G6		G6	G6	G8	G8	G8	G8
210													G8	
G3, G5, G6, G8 = Elastic coupling 'G' input														
IEC INPUT														
FRD IEC	02	03	12	13	22	23	32	33	42	43	52	53	62	63
56	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>										
63	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>										
71	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>						
80	<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
90			<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
100					<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
112					<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
132									<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
160											<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>	
180											<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> = IEC with G-Coupling (standard) <input checked="" type="checkbox"/> = IEC with quill input (on demand)														

# RD02 & RD03

# Helical Gearboxes RD

## DIMENSIONS

## FOOT MOUNTING



Gear-case flange input	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 02 - 03	3.94	3.78	4.53	0.81	0.43	0.18	6.10	2.36	4.37	0.26	3.15	0.91	0.35	3.74	0.39	0.35
	100	96	115	20.5	11	4.5	155	60	111	6.5	80	23	9	95	10	9

Note: CB: max. length with the biggest input flange  
 AB, BD, C, P: according to specific motor manufacturer dimensions

Output shaft	R	U ∅ h6	V	VA	KEY	TAP	
AU 0.625 imperial	0.705	0.625	1.38	0.20	$\frac{3}{16} \times \frac{3}{16} \times 1 \frac{1}{16}$	$\frac{1}{4} - 20 \times 0.63$	Standard Imperial
AU 17 metric	0.75	0.67	1.38	0.20	---	---	Standard Metric
	19	17	35	5	5 x 5 x 25	M6 x 16	
AU 20 metric	0.89	0.79	1.57	0.20	---	---	Optional Metric
	22.5	20	40	5	6 x 6 x 30	M6 x 16	

Gear-case shaft input	AJ'	AK' ∅ g6	BF RD02	BF RD03	CA RD02	CA RD03	DC	R'	U' ∅ h6	V'	VA'	VD	KEY'	TAP'
RD 02 - 03	2.36	2.05	0.98	1.10	5.51	5.63	2.19	0.49	0.43	0.91	0.16	2.36	---	---
	60	52	25	28	140	143	55.5	12.5	11	23	4	13	4 x 4 x 15	M5 x 12.5

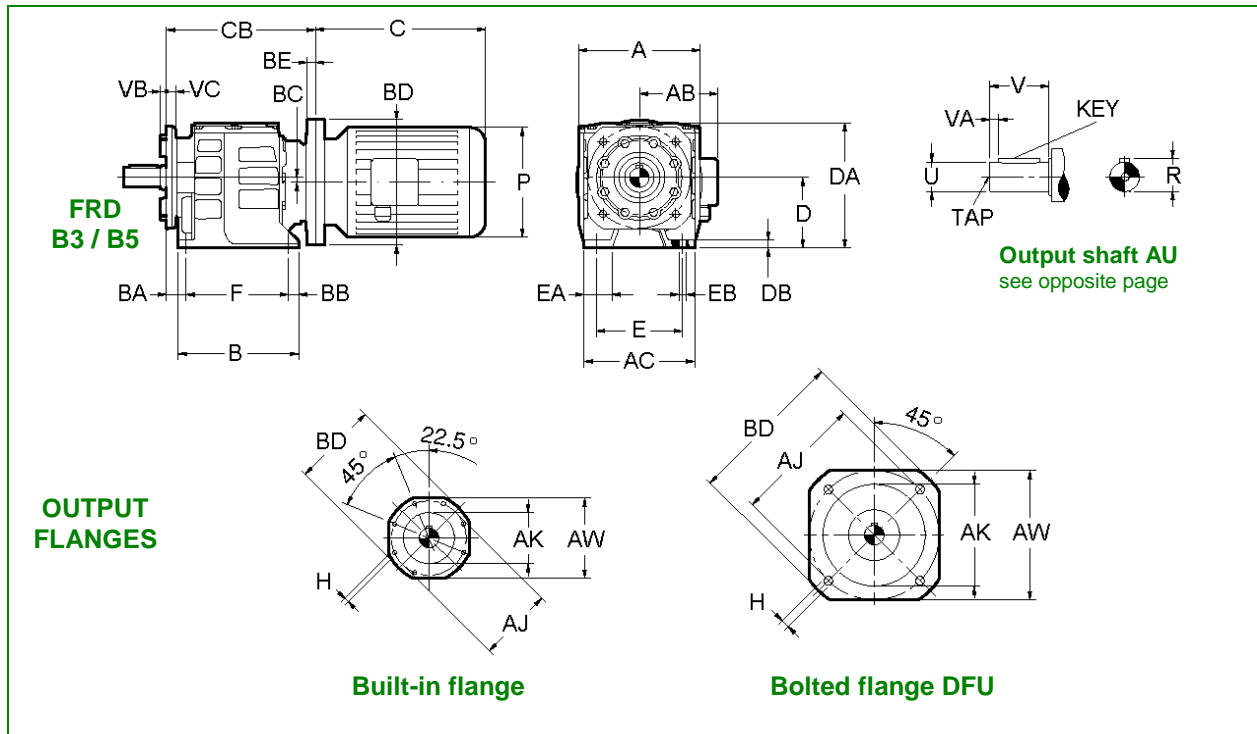
Dimensions are inch / mm

# Helical Gearboxes RD

# RD02 & RD03

## FLANGE MOUNTING

## DIMENSIONS



**FRD B3 / B5**

**OUTPUT FLANGES**

**Built-in flange**

**Bolted flange DFU**

**Output shaft AU**  
see opposite page

Gear-case	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 02 - 03	3.94	3.78	4.53	1.18	0.43	0.18	6.10	2.36	4.37	0.26	3.15	0.91	0.35	3.74	0.12	0.39
	<b>100</b>	<b>96</b>	<b>115</b>	<b>20.5</b>	<b>11</b>	<b>4.5</b>	<b>155</b>	<b>60</b>	<b>111</b>	<b>6.5</b>	<b>80</b>	<b>23</b>	<b>9</b>	<b>95</b>	<b>3</b>	<b>10</b>

Note: CB: max. length with the biggest input flange  
AB, BD, C, P: according to specific motor manufacturer dimensions

Output flange	AJ	AK	AW □	BD	H thread / bore
Built-in flange	2.95 <b>75</b>	2.36 <b>60<sub>g6</sub></b>	3.23 <b>82</b>	3.39 <b>84</b>	--- <b>M6 x 14 (7)</b>
DFU120	3.94 <b>100</b>	3.15 <b>80<sub>h7</sub></b>	3.94 <b>100</b>	4.72 <b>120</b>	∅ 0.28 (4) <b>∅ 7 (4)</b>
DFU140	4.63 <b>115</b>	3.74 <b>95<sub>h7</sub></b>	4.53 <b>115</b>	5.51 <b>140</b>	∅ 0.35 (4) <b>∅ 9 (4)</b>
DFU160	6.12 <b>130</b>	4.33 <b>110<sub>h7</sub></b>	6.12 <b>130</b>	6.30 <b>160</b>	∅ 0.35 (4) <b>∅ 9 (4)</b>

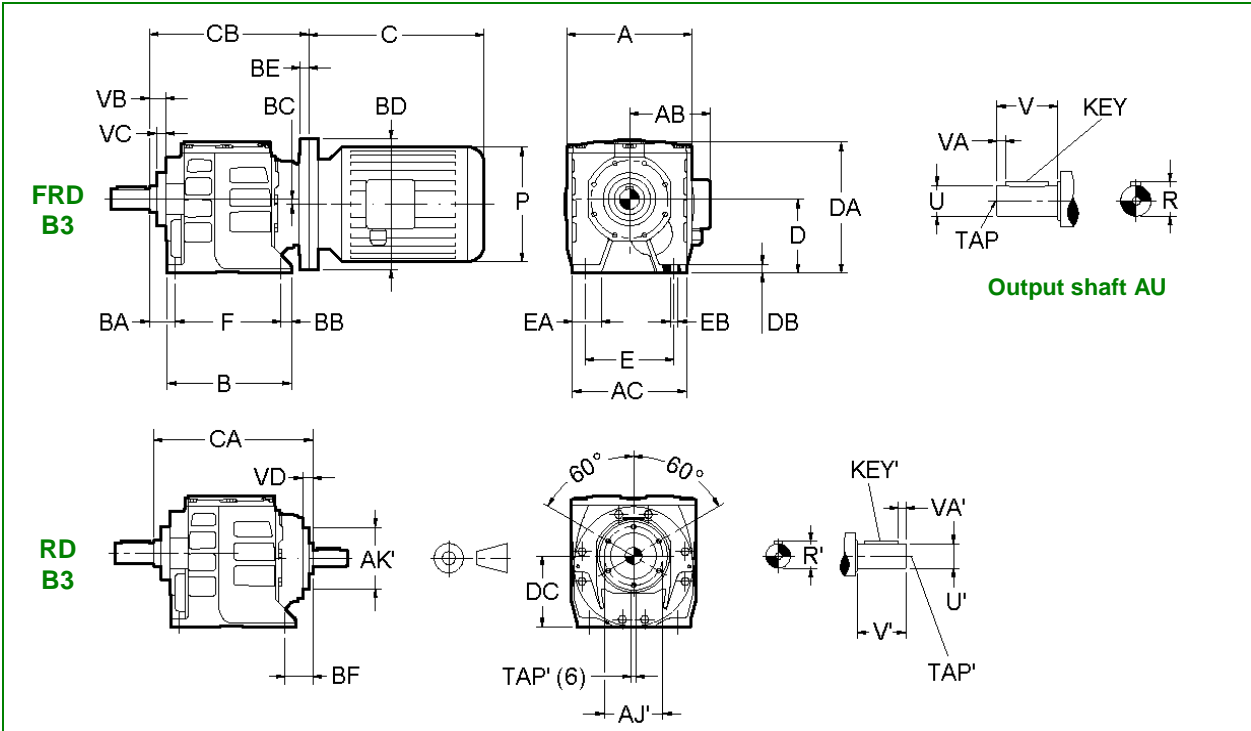
Dimensions are inch / mm

# RD12 & RD13

# Helical Gearboxes RD

## DIMENSIONS

## FOOT MOUNTING



Gear-case flange input	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD12 - 13	5.51	5.31	5.20	0.71	0.45	0.20	6.89	2.95	5.17	0.31	4.33	1.50	0.35	4.33	0.39	0.35
	140	135	132	18	11.5	5	175	75	131	8	110	38	9	110	10	9

Note: CB: max. length with the biggest input flange  
 AB, BD, C, P: according to specific motor manufacturer dimensions

Output shaft	R	U ∅ h6	V	VA	KEY	TAP	
AU 0.75 imperial	0.83	0.75	1.57	0.25	$\frac{3}{16} \times \frac{3}{16} \times 1 \frac{1}{16}$	$\frac{1}{4} - 20 \times 0.63$	Standard Imperial
AU 20 metric	0.89	0.79	1.57	0.20	---	---	Standard Metric
AU 25 metric	1.10	0.98	1.97	0.20	---	---	Optional Metric
	28	25	50	5	8 x 7 x 40	M6 x 16	

Gear-case shaft input	AJ'	AK' ∅ g6	BF RD12	BF RD13	CA RD12	CA RD13	DC	R'	U' ∅ h6	V'	VA'	VD	KEY'	TAP'
RD12 - 13	2.76	2.36	0.91	1.30	5.94	6.34	2.76	0.63	0.55	1.18	0.10	0.51	---	---
	70	60	23	33	151	161	70	16	14	30	2.5	13	5 x 5 x 25	M6 x 12

Dimensions are inch / mm

# Helical Gearboxes RD

# RD12 & RD13

## FLANGE MOUNTING

## DIMENSIONS

**FRD B3 / B5**

**OUTPUT FLANGES**

**Built-in flange**

**Bolted flange DFU**

**Output shaft AU**  
see opposite page

Gear-case	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD12 - 13	5.51	5.31	5.20	0.71	0.45	0.20	6.89	2.95	5.16	0.31	4.33	1.50	0.35	4.33	0.12	0.35
	<b>140</b>	<b>135</b>	<b>132</b>	<b>18</b>	<b>11.5</b>	<b>5</b>	<b>175</b>	<b>75</b>	<b>131</b>	<b>8</b>	<b>110</b>	<b>38</b>	<b>9</b>	<b>110</b>	<b>3</b>	<b>9</b>

Note: CB: max. length with the biggest input flange  
AB, BD, C, P: according to specific motor manufacturer dimensions

Output flange	AJ	AK	AW □	BD	H thread / bore
Built-in flange	2.95 <b>75</b>	2.24 <b>60<sub>g6</sub></b>	3.23 <b>82</b>	3.31 <b>84</b>	--- <b>M6 x 14 (7)</b>
DFU120	3.94 <b>100</b>	3.15 <b>80<sub>h7</sub></b>	3.94 <b>100</b>	4.72 <b>120</b>	∅ 0.28 (4) <b>∅ 7 (4)</b>
DFU140	4.53 <b>115</b>	3.74 <b>95<sub>h7</sub></b>	4.53 <b>115</b>	5.51 <b>140</b>	∅ 0.35 (4) <b>∅ 9 (4)</b>
DFU160	6.12 <b>130</b>	4.33 <b>110<sub>h7</sub></b>	5.12 <b>130</b>	6.30 <b>160</b>	∅ 0.35 (4) <b>∅ 9 (4)</b>

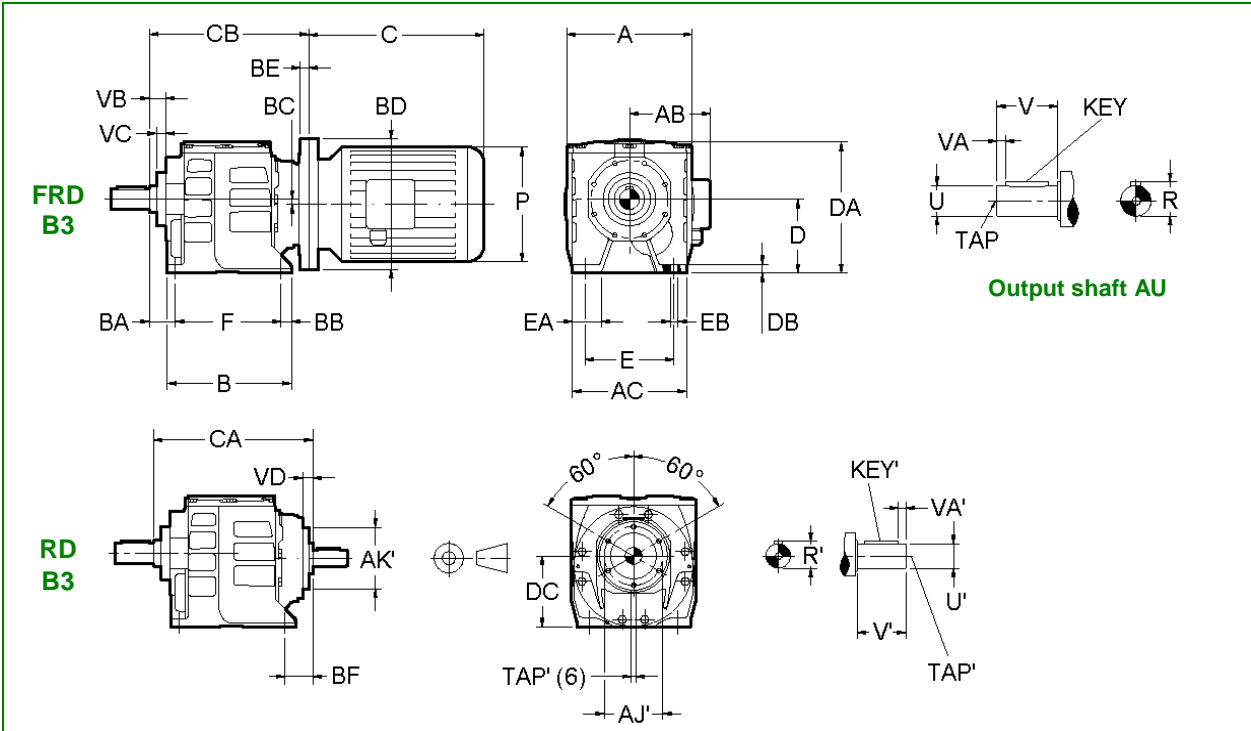
Dimensions are inch / mm

# RD22 & RD23

# Helical Gearboxes RD

## DIMENSIONS

## FOOT MOUNTING



Gear-case flange input	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 22 - 23	6.10	5.51	6.02	0.98	0.51	0.24	8.58	3.54	6.22	0.39	4.33	1.46	0.35	5.12	0.51	0.43
	155	140	153	25	13	6	218	90	158	10	110	37	9	130	13	11

Note: CB: max. length with the biggest input flange  
 AB, BD, C, P: according to specific motor manufacturer dimensions

Output shaft	R	U ∅ h6	V	VA	KEY	TAP	
AU 1.0 imperial	1.11	1.0	1.97	0.26	$\frac{1}{4} \times \frac{1}{4} \times 1 \frac{5}{16}$	$\frac{3}{8} - 16 \times 0.87$	Standard Imperial
AU 25 metric	1.10	0.98	1.97	0.30	---	---	Standard Metric
AU 30 metric	1.30	1.18	2.36	0.39	---	---	Optional Metric
	33	30	60	10	8 x 7 x 40	M10 x 22	

Gear-case shaft input	AJ'	AK' ∅ g6	BF RD22	BF RD23	CA RD22	CA RD23	DC	R'	U' ∅ h6	V'	VA'	VD	KEY'	TAP'
RD 22 - 23	3.35	2.76	1.38	2.09	7.48	8.19	3.31	0.85	0.75	1.57	0.20	0.61	---	---
	85	70	35	53	190	208	84	21.5	19	40	5	15.5	5 x 5 x 30	M8 x 10

Dimensions are inch / mm



# Helical Gearboxes RD

# RD22 & RD23

## FLANGE MOUNTING

## DIMENSIONS

**FRD B3 / B5**

**OUTPUT FLANGES**

**Built-in flange**

**Bolted flange DFU**

**Output shaft AU**  
see opposite page

Gear-case	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 22 - 23	6.10	5.51	6.02	0.98	0.51	0.24	8.58	3.54	6.22	0.39	4.33	1.46	0.35	5.12	0.12	0.47
	<b>155</b>	<b>140</b>	<b>153</b>	<b>25</b>	<b>13</b>	<b>6</b>	<b>218</b>	<b>90</b>	<b>158</b>	<b>10</b>	<b>110</b>	<b>37</b>	<b>9</b>	<b>130</b>	<b>3</b>	<b>12</b>

Note: CB: max. length with the biggest input flange  
AB, BD, C, P: according to specific motor manufacturer dimensions

Output flange	AJ	AK	AW □	BD	H thread / bore
Built-in flange	3.75 <b>95</b>	2.56 <b>65<sub>g6</sub></b>	4.02 <b>102</b>	4.25 <b>108</b>	--- <b>M6 x 10 (8)</b>
DFU140	4.53 <b>115</b>	3.75 <b>95<sub>h7</sub></b>	4.53 <b>115</b>	5.51 <b>140</b>	∅ 0.35 (4) <b>∅ 9 (4)</b>
DFU160	5.12 <b>130</b>	4.33 <b>110<sub>h7</sub></b>	5.12 <b>130</b>	6.30 <b>160</b>	∅ 0.35 (4) <b>∅ 9 (4)</b>
DFU 200	6.50 <b>165</b>	5.12 <b>130<sub>h7</sub></b>	6.50 <b>165</b>	7.87 <b>200</b>	∅ 0.43 (4) <b>∅ 11 (4)</b>

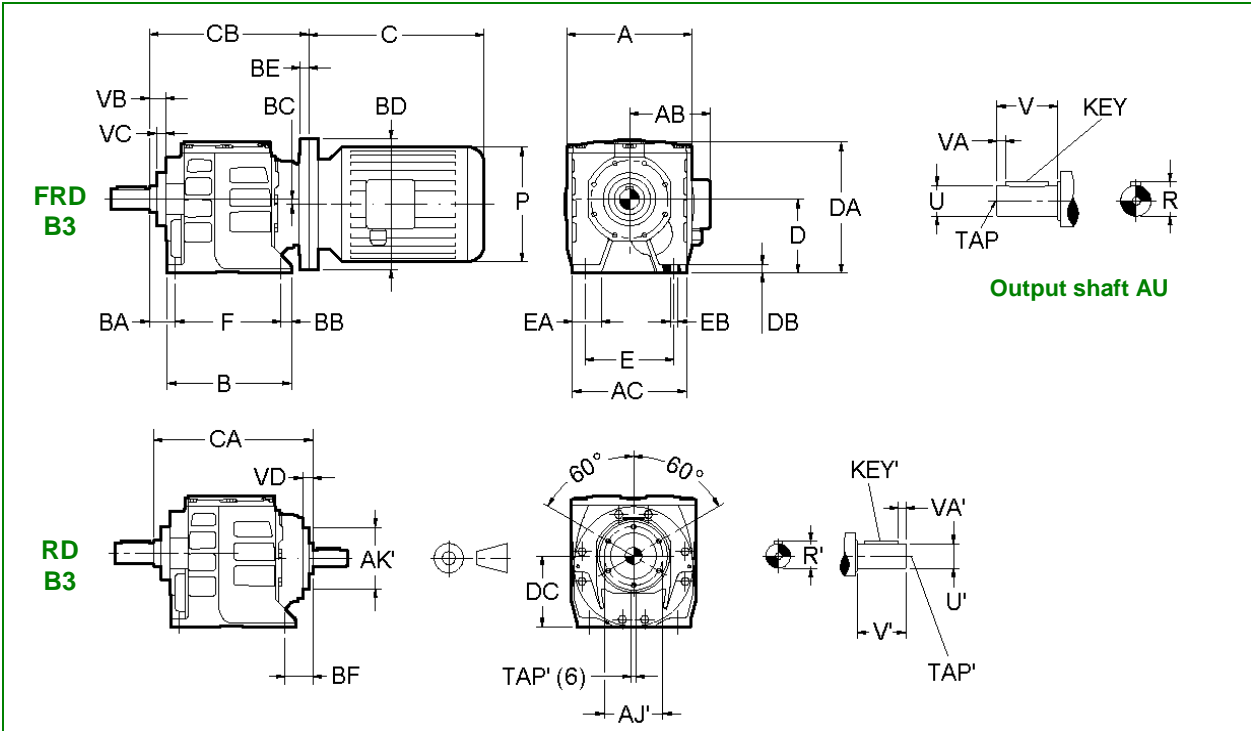
Dimensions are inch / mm

# RD32 & RD33

# Helical Gearboxes RD

## DIMENSIONS

## FOOT MOUNTING



Gear-case flange input	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ø	F	VB	VC
FRD 32 - 33	7.48	6.81	7.68	1.18	0.59	0.33	10.31	4.53	7.80	0.55	5.31	1.73	0.45	6.50	0.51	0.43
	190	173	195	30	15	8.5	262	115	198	14	135	44	11.5	165	13	11

Note: CB: max. length with the biggest input flange  
 AB, BD, C, P: according to specific motor manufacturer dimensions

Output shaft	R	U ø h6	V	VA	KEY	TAP	
AU 1.25 imperial	1.36	1.25	2.36	0.26	$\frac{1}{4} \times \frac{1}{4} \times 1 \frac{1}{16}$	$\frac{1}{2} - 13 \times 1.12$	Standard Imperial
AU 30 metric	1.30	1.18	2.36	0.39	---	---	Standard Metric
AU 35 metric	1.50	1.38	2.76	0.39	---	---	Optional Metric
	38	35	70	10	10 x 8 x 50	M10 x 22	

Gear-case shaft input	AJ'	AK' ø g6	BF RD32	BF RD33	CA RD32	CA RD33	DC	R'	U' ø h6	V'	VA'	VD	KEY'	TAP'
RD 32 - 33	3.35	2.76	0.98	2.28	8.98	9.96	4.19	1.06	0.94	1.97	0.20	0.61	---	---
	85	70	25	58	228	253	106.5	27	24	50	5	15.5	8 x 7 x 40	M8 x 15

Dimensions are inch / mm

# Helical Gearboxes RD

# RD32 & RD33

## FLANGE MOUNTING

## DIMENSIONS

**FRD B3 / B5**

**OUTPUT FLANGES**

**Built-in flange**

**Bolted flange DFU**

**Output shaft AU**  
see opposite page

Gear-case	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 32 - 33	7.48	6.81	7.68	1.18	0.59	0.33	10.31	4.53	7.80	0.55	5.31	1.73	0.45	6.50	0.14	0.47
	<b>190</b>	<b>173</b>	<b>195</b>	<b>30</b>	<b>15</b>	<b>8.5</b>	<b>262</b>	<b>115</b>	<b>198</b>	<b>14</b>	<b>135</b>	<b>44</b>	<b>11.5</b>	<b>165</b>	<b>3.5</b>	<b>12</b>

Note: CB: max. length with the biggest input flange  
AB, BD, C, P: according to specific motor manufacturer dimensions

Output flange	AJ	AK	AW □	BD	H thread / bore
Built-in flange	4.53 <b>115</b>	3.35 <b>85<sub>g6</sub></b>	4.92 <b>125</b>	4.72 <b>130</b>	--- <b>M8 x 18 (8)</b>
DFU160	5.12 <b>130</b>	4.33 <b>110<sub>h7</sub></b>	5.31 <b>135</b>	6.30 <b>160</b>	∅ 0.35 (4) <b>∅ 9 (4)</b>
DFU 200	6.50 <b>165</b>	5.12 <b>130<sub>h7</sub></b>	6.50 <b>165</b>	7.87 <b>200</b>	∅ 0.43 (4) <b>∅ 11 (4)</b>
DFU 250	8.47 <b>215</b>	7.09 <b>180<sub>h7</sub></b>	8.47 <b>215</b>	9.84 <b>250</b>	∅ 0.51 (4) <b>∅ 13 (4)</b>

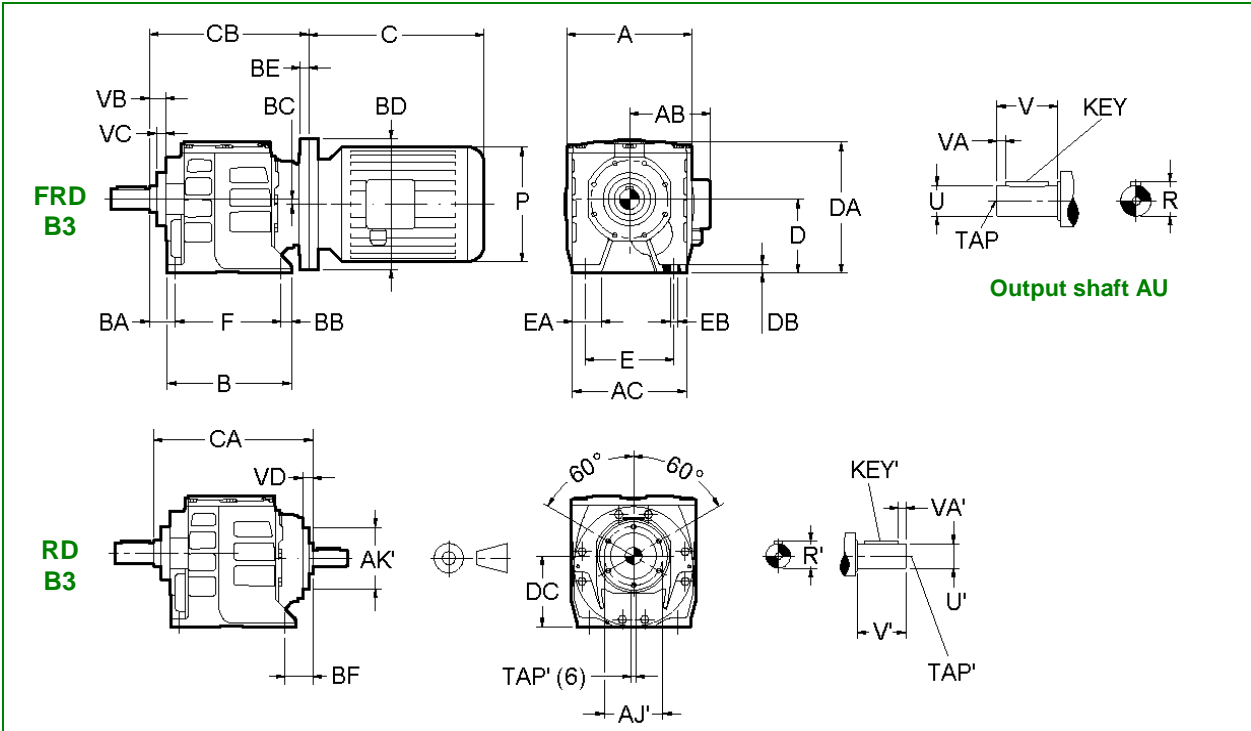
Dimensions are inch / mm

# RD42 & RD43

# Helical Gearboxes RD

## DIMENSIONS

## FOOT MOUNTING



Gear-case flange input	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ø	F	VB	VC
FRD 42 - 43	8.46	7.68	8.70	1.18	0.51	0.37	13.03	5.12	8.74	0.59	5.91	1.97	0.53	7.68	0.59	0.51
	215	195	221	30	13	9.5	331	130	222	15	150	50	13.5	195	15	13

Note: CB: max. length with the biggest input flange  
 AB, BD, C, P: according to specific motor manufacturer dimensions

Output shaft	R	U ø h6	V	VA	KEY	TAP	
AU 1.375 imperial	1.51	1.375	2.76	0.34	$\frac{5}{16} \times \frac{5}{16} \times 1 \frac{13}{16}$	$\frac{1}{2} - 13 \times 1.12$	Standard Imperial
AU 35 metric	1.50	1.38	2.76	0.39	---	---	Standard Metric
	<b>38</b>	<b>35</b>	<b>70</b>	<b>10</b>	<b>10 x 8 x 50</b>	<b>M12 x 28</b>	
AU 40 metric	1.69	1.57	3.15	0.39	---	---	Optional Metric
	<b>43</b>	<b>40</b>	<b>80</b>	<b>10</b>	<b>12 x 8 x 60</b>	<b>M12 x 28</b>	

Gear-case shaft input	AJ'	AK' ø g6	BF RD42	BF RD43	CA RD42	CA RD43	DC	R'	U' ø h6	V'	VA'	VD	KEY'	TAP'
RD 42 - 43	3.94	3.15	1.57	3.15	10.43	12.01	4.74	1.23	1.10	2.36	0.20	0.61	---	---
	<b>100</b>	<b>80</b>	<b>40</b>	<b>80</b>	<b>265</b>	<b>305</b>	<b>120.5</b>	<b>31</b>	<b>28</b>	<b>60</b>	<b>5</b>	<b>15.5</b>	<b>8 x 7 x 50</b>	<b>M8 x 16</b>

Dimensions are inch / mm

# Helical Gearboxes RD

# RD42 & RD43

## FLANGE MOUNTING

## DIMENSIONS

**FRD B3 / B5**

**OUTPUT FLANGES**

**Built-in flange**

**Bolted flange DFU**

**Output shaft AU**  
see opposite page

Gear-case	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 42 - 43	8.46	7.68	8.70	1.18	0.51	0.37	13.03	5.12	8.74	0.59	5.91	1.97	0.53	7.68	0.16	0.55
	<b>215</b>	<b>195</b>	<b>221</b>	<b>30</b>	<b>13</b>	<b>9.5</b>	<b>331</b>	<b>130</b>	<b>222</b>	<b>15</b>	<b>150</b>	<b>50</b>	<b>13.5</b>	<b>195</b>	<b>4</b>	<b>14</b>

Note: CB: max. length with the biggest input flange  
AB, BD, C, P: according to specific motor manufacturer dimensions

Output flange	AJ	AK	AW □	BD	H thread / bore
Built-in flange	5.12	3.74	5.60	5.71	--- <b>M8 x 18 (8)</b>
DFU200	6.50	5.12	6.50	7.87	∅ 0.43 (4) <b>∅ 11 (4)</b>
DFU250	8.46	7.09	8.46	9.84	∅ 0.53 (4) <b>∅ 13.5 (4)</b>
DFU 300	10.43	9.06	10.43	11.81	∅ 0.66 (4) <b>∅ 17 (4)</b>

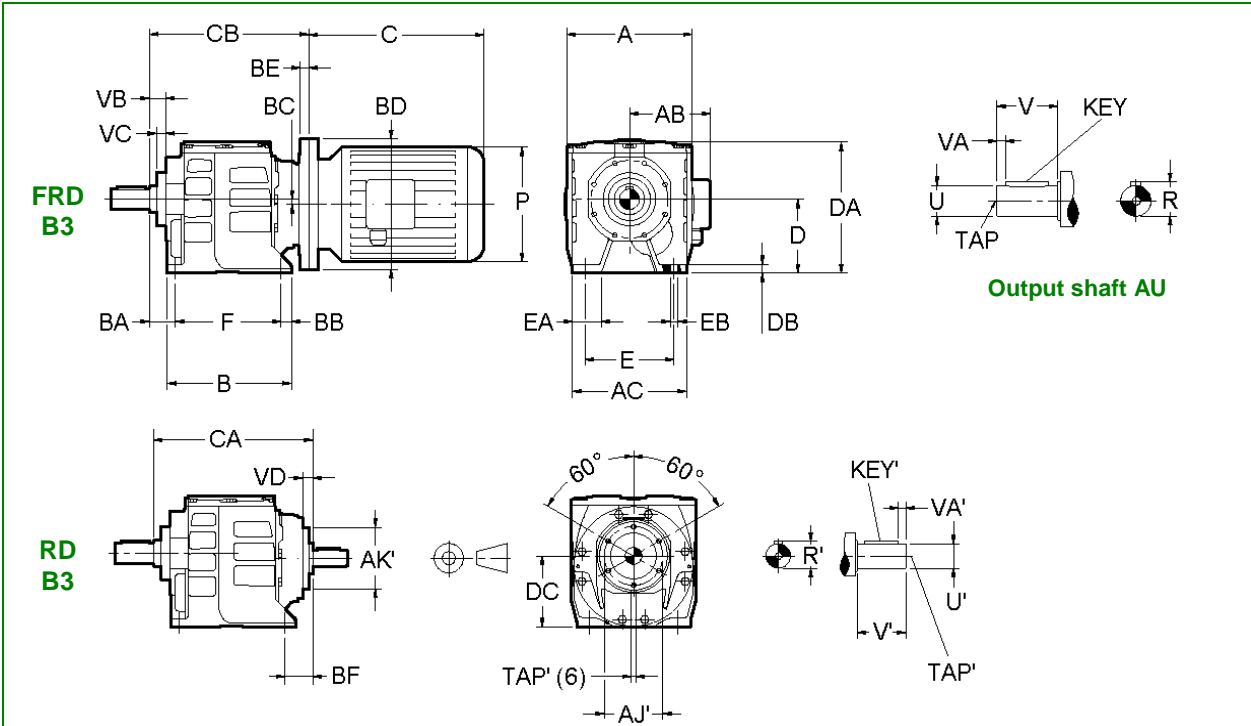
Dimensions are inch / mm

# RD 52 & RD53

# Helical Gearboxes RD

## DIMENSIONS

## FOOT MOUNTING



Gear-case flange input	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 52 - 53	11.18	10.0	10.0	1.38	0.71	0	13.9	5.51	10.04	0.79	6.69	3.03	0.71	8.07	0.71	0.55
	284	254	254	35	18	0	353	140	255	20	170	77	18	205	18	14

Note: CB: max. length with the biggest input flange  
 AB, BD, C, P: according to specific motor manufacturer dimensions

Output shaft	R	U ∅ h6	V	VA	KEY	TAP	
AU 1.625 imperial	1.79	1.625	3.15	0.38	$\frac{3}{8} \times \frac{3}{8} \times 2 \frac{1}{4}$	$\frac{5}{8} - 11 \times 1.38$	Standard Imperial
AU 40 metric	1.69	1.57	3.15	0.39	---	---	Standard Metric
AU 50 metric	2.11	1.97	3.94	0.20	---	---	Optional Metric
	53.5	50	100	5	14 x 9 x 90	M16 x 36	

Gear-case shaft input	AJ'	AK' ∅ g6	BF	---	CA RD52	CA RD53	DC	R'	U' ∅ h6	V'	VA'	VD	KEY'	TAP'
RD 52 - 53	5.51	4.72	3.22	---	12.68	12.68	5.51	1.61	1.50	3.15	0.39	0.87	---	---
	140	120	82	---	322	322	140	41	38	80	10	22	10 x 8 x 60	M12 x 28

Dimensions are inch / mm

# Helical Gearboxes RD

# RD 52 - 53

## FLANGE MOUNTING

## DIMENSIONS

**FRD B3 / B5**

**OUTPUT FLANGES**

**Built-in flange**

**Bolted flange DFU**

**Output shaft AU**  
see opposite page

Gear-case	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 52 - 53	11.18	10.0	10.0	1.38	0.71	0	13.9	5.51	10.04	0.79	6.69	3.03	0.71	8.07	0.16	0.67
	<b>284</b>	<b>254</b>	<b>254</b>	<b>35</b>	<b>18</b>	<b>0</b>	<b>353</b>	<b>140</b>	<b>255</b>	<b>20</b>	<b>170</b>	<b>77</b>	<b>18</b>	<b>205</b>	<b>4</b>	<b>17</b>

Note: CB: max. length with the biggest input flange  
AB, BD, C, P: according to specific motor manufacturer dimensions

Output flange	AJ	AK	AW □	BD	H thread / bore
Built-in flange	6.50	5.12	7.09	7.48	---
	<b>165</b>	<b>130</b>	<b>180</b>	<b>190</b>	<b>M10 x 25 (8)</b>
DFU 250	8.46	7.09	8.46	9.84	∅ 0.53 (4)
	<b>215</b>	<b>180</b>	<b>215</b>	<b>250</b>	<b>∅ 13.5 (4)</b>
DFU 300	10.43	9.06	10.43	11.81	∅ 0.69 (4)
	<b>265</b>	<b>230</b>	<b>265</b>	<b>300</b>	<b>∅ 17.5 (4)</b>
DFU 350	11.81	9.84	11.81	13.78	∅ 0.69 (4)
	<b>300</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>∅ 17.5 (4)</b>

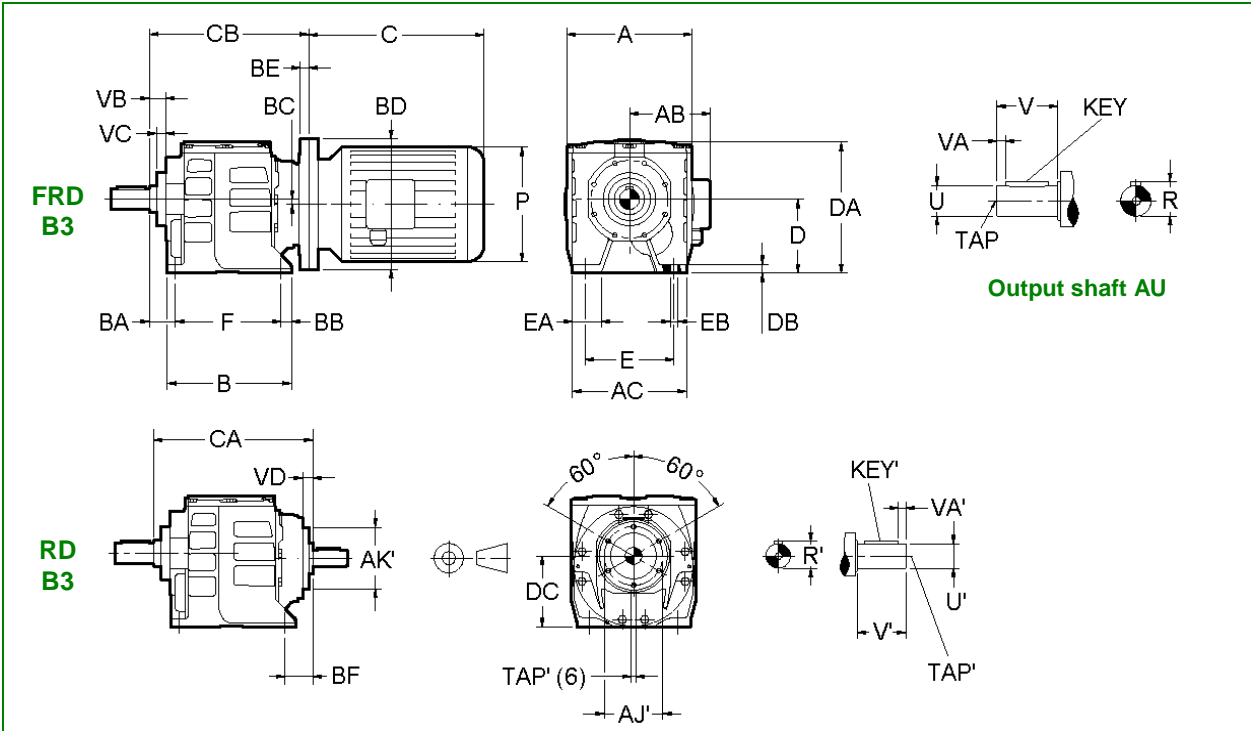
Dimensions are inch / mm

# RD62 & RD63

# Helical Gearboxes RD

## DIMENSIONS

## FOOT MOUNTING



Gear-case flange input	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 62 - 63	13.39	11.81	12.01	1.57	1.02	0	16.14	7.09	11.89	0.94	8.46	3.23	0.71	10.24	0.71	0.55
	<b>340</b>	<b>300</b>	<b>305</b>	<b>40</b>	<b>26</b>	<b>0</b>	<b>410</b>	<b>180</b>	<b>302</b>	<b>24</b>	<b>215</b>	<b>82</b>	<b>18</b>	<b>260</b>	<b>18</b>	<b>14</b>

Note: CB: max. length with the biggest input flange  
 AB, BD, C, P: according to specific motor manufacturer dimensions

Output shaft	R	U ∅ h6	V	VA	KEY	TAP	
AU 2.125 imperial	2.35	2.125	3.94	0.64	$\frac{1}{2} \times \frac{1}{2} \times 2 \frac{5}{8}$	$\frac{3}{4} - 101 \times 1.61$	Standard Imperial
AU 50 metric	2.11	1.97	3.94	0.20	---	---	Standard Metric
	<b>53.5</b>	<b>50</b>	<b>100</b>	<b>5</b>	<b>14 x 9 x 90</b>	<b>M16 x 38</b>	
AU 60 metric	2.52	2.36	4.72	0.20	---	---	Optional Metric
	<b>64</b>	<b>60</b>	<b>120</b>	<b>5</b>	<b>18 x 11 x 110</b>	<b>M20 x 42</b>	

Gear-case shaft input	AJ'	AK' ∅ g6	BF	---	CA RD62	CA RD63	DC	R'	U' ∅ h6	V'	VA'	VD	KEY'	TAP'
RD 62 - 63	5.51	4.72	3.12	---	14.92	14.92	7.09	2.03	1.89	3.94	0.39	0.87	---	---
	<b>140</b>	<b>120</b>	<b>79</b>	---	<b>379</b>	<b>379</b>	<b>180</b>	<b>51.5</b>	<b>48</b>	<b>100</b>	<b>10</b>	<b>22</b>	<b>14 x 9 x 80</b>	<b>M16 x 36</b>

Dimensions are inch / mm



# Helical Gearboxes RD

# RD62 & RD63

## FLANGE MOUNTING

## DIMENSIONS

**FRD B3 / B5**

**OUTPUT FLANGES**

**Built-in flange**

**Bolted flange DFU**

**Output shaft AU**  
see opposite page

Gear-case	A	AC	B	BA	BB	BC	CB	D	DA	DB	E	EA	EB ∅	F	VB	VC
FRD 62 - 63	13.39	11.81	12.01	1.57	1.02	0	16.14	7.09	11.89	0.94	8.46	3.23	0.71	10.24	0.16	0.67
	<b>340</b>	<b>300</b>	<b>305</b>	<b>40</b>	<b>26</b>	<b>0</b>	<b>410</b>	<b>180</b>	<b>302</b>	<b>24</b>	<b>215</b>	<b>82</b>	<b>18</b>	<b>260</b>	<b>4</b>	<b>17</b>

Note: CB: max. length with the biggest input flange  
AB, BD, C, P: according to specific motor manufacturer dimensions

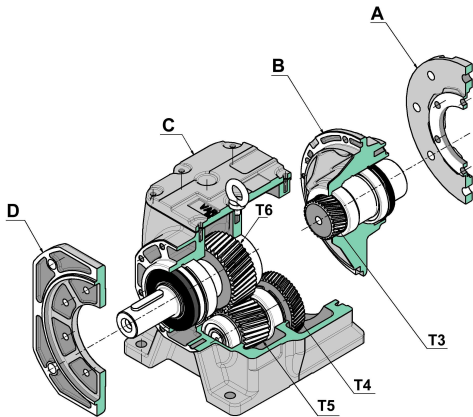
Output flange	AJ	AK	AW □	BD	H thread / bore
Built-in flange	6.50	5.12	7.09	7.48	---
	<b>165</b>	<b>130</b>	<b>180</b>	<b>190</b>	<b>M10 x 25 (8)</b>
DFU 250	8.46	7.09	8.46	9.84	∅ 0.53 (4)
	<b>215</b>	<b>180</b>	<b>215</b>	<b>250</b>	<b>∅ 13.5 (4)</b>
DFU 300	10.43	9.06	10.43	11.81	∅ 0.69 (4)
	<b>265</b>	<b>230</b>	<b>265</b>	<b>300</b>	<b>∅ 17.5 (4)</b>
DFU 350	11.81	9.84	11.81	13.78	∅ 0.69 (4)
	<b>300</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>∅ 17.5 (4)</b>

Dimensions are inch / mm

# Helical Gearboxes RD

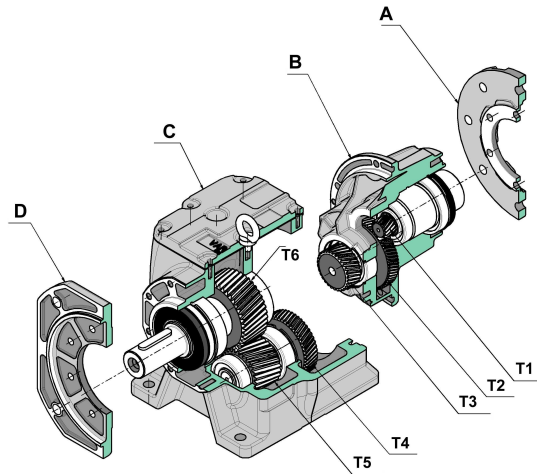
## COMPONENTS & CONVERSION FACTORS

**Two Stage Gearbox**



A - IEC motor flange  
 B - 2 stage input cover & T3 gear  
 C - Housing & T4, T5, T6 gears  
 D - Output flange

**Three Stage Gearbox**



A - IEC motor flange  
 B - 3 stage input cover & T1, T2, T3 gears  
 C - Housing & T4, T5, T6 gears  
 D - Output flange

**Imperial**

**CONVERSIONS**

**Metric**

1 lb = 4.45 N  
 1 lb = 0.454 kg  
 1 oz = 0.028 kg

HP (60Hz) = kW (50Hz) x 1.341 x 1.2  
 HP (50Hz) = kW (50Hz) x 1.341  
 HP = in-lb x RPM : (113,350 x eff. )

1 in-lb = 0.113 Nm  
 1 ft-lb = 1.355 Nm  
 ft-lb = 108 x k x HP x eff. x ratio  
 in-lb = 9 x k x HP x eff. x ratio  
 (where **k** = motor pole #, i.e. 2, 4, 6, 8)

1 pt (US) = 0.47 litre

**Mass & Force**

**Power**

**Torque**

**Volume**

1 N = 0.225 lb  
 1 kg = 2.205 lb  
 1 kg = 35.27 oz

kW (50Hz) = HP (60Hz) x 0.745 x 0.833  
 kW (50Hz) = HP (50Hz) x 0.745  
 kW = Nm x RPM : (9550 x eff. )

1 Nm = 8.851 in-lb  
 1 Nm = 0.738 ft-lb  
 Nm = 9550 x kW x eff. : RPM

1 litre = 2.13 pt (US)

To the scope of intensifying our commitment to society, Varvel since 2004 started an ongoing support programme with three non-profit institutions: UNICEF (United Nations Children's Fund), MSF (Médecins sans Frontières) and ANT (National Cancer Association). Environmental respect and protection are also part of Varvel's values and this is why Varvel certified in 2001 its Environmental System to standard UNI EN ISO 14001.



## A socially responsible company



## *Une entreprise socialement responsable*

*Pour renforcer son investissement dans la société depuis 2004 Varvel a entrepris un programme de soutien constant auprès de 3 associations ONG: UNICEF (Fonds des Nations unies pour l'enfance), MSF (médecins sans frontière) et ANT (Association Italienne contre les tumeurs). Le respect et la tutelle de l'environnement font également partie des nos valeurs pour cela depuis 2001 Varvel ha obtenu la certification du système de management environnemental suivant la norme UNI EN ISO 14001.*

## *Una empresa socialmente responsable*

*Para reforzar su compromiso con la sociedad, desde el 2004 Varvel ha iniciado un programa de ayuda continuada a 3 asociaciones sin ánimo de lucro.: UNICEF (Fondo de las Naciones Unidas para la Infancia), MSF (Médicos sin Fronteras) y ANT (Asociación contra el Cáncer). También el respeto y cuidado del ambiente forman parte de los valores Varvel y por ello desde el 2001 Varvel ha certificado el Sistema Ambiental según la normativa UNI EN ISO 14001.*

## Other catalogues



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MOTION CONTROL SINCE 1955

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