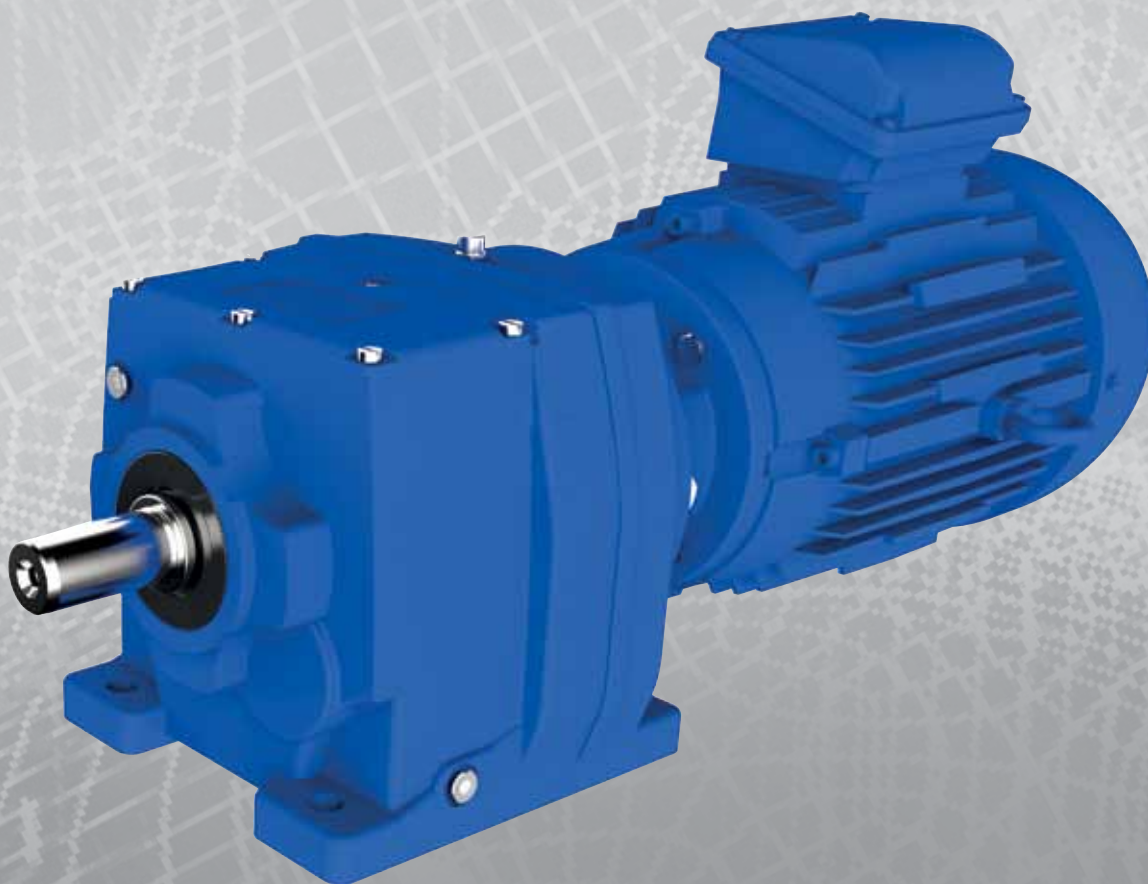


R Series Inline Helical Gear Units



RENOLD
Superior Gear Technology

ATEX Compliance Assured



Total compliance with the ATEX Directive safeguarding the use of industrial equipment in potentially explosive atmospheres is assured for users of our geared products.

Certification is available for standard gearboxes and geared motors with badging displaying the CE Mark and the Ex mark, name and location of the manufacturer, designation of series or type, serial number, year of manufacture, Ex symbol and equipment group/category.

ATEX directive 94/9/EC (also known as ATEX 95 or ATEX 100A) and the CE Marking Directive are enforced in all EC member states. Compliance is compulsory for designers, manufacturers or suppliers of electrical and non-electrical equipment for use in potentially explosive atmospheres created by the presence of flammable gases, vapours, mists or dusts.

Ex compliant standard gearboxes can be supplied against Groups 2 or 3 for surface industries in designated hazardous location Zones 1 and 2 for gases, vapours and mists; and in Zones 21 and 22 for dusts.

R SERIES

GENERAL DESCRIPTION

R Series inline geared motors and reducers provide a very efficient and compact drive solution to meet most requirements up to 160kW with maximum output torque capacity of 20000Nm.

The range takes advantage of many years of accumulated design expertise, together with the use of high quality materials and components. The end result is a series of speed reducing and geared motors offering high load carrying capacity, high efficiency, quiet running and reliability.

The Range Includes

13 sizes of unit with a ratio coverage of 3.6/1 to 56/1 in double reduction and up to 225/1 in triple reduction and 10000/1 in combined units.

Unit Versions Available

Base or Flange Mounted

Unit type M - Motorised with IEC standard motor (IE2)

Unit type D - Motorised with Compact motor (IE2)

Unit type N - Motorised with NEMA standard motor

Unit type H - Motorised with IEC high efficiency (IE3)

Unit type E - Motorised with NEMA high efficiency motor (PREMIUM)

Unit type G - Unit to allow fitting of a standard IEC motor

Unit type A - Unit to allow fitting of NEMA motor

Unit type R - Reducer unit

Unit type S - Reducer unit with fan kit

Unit type W - Reducer unit with backstop CCW rotation

Unit type X - Reducer unit with backstop CW rotation

Unit type Y - Reducer unit with fan and backstop CW rotation

Unit type Z - Reducer unit with fan and backstop CCW rotation

Design Features Include

Patented standard motor connection (IEC or NEMA).

Ability to fit double oil seal input and output as required.

All units being suitable to fit IEC or NEMA standard motors.

All units are dimensionally interchangeable with other major manufacturers.

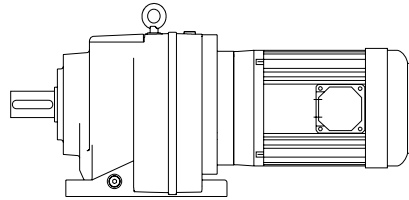
Brake geared motors are available.

Sizes 01, 02, 03, 04, 05, 06 and 07 are all supplied with lubricant.

Sizes 08, 09, 10, 13, 14 and 16 are supplied without lubricant.

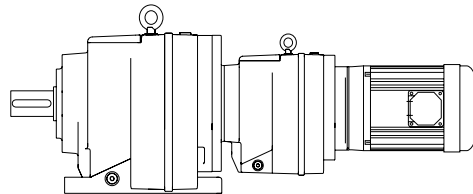
Motorised units can be fitted with a backstop module and reducer units can be fitted with a backstop and fan.

As improvements in design are being made continually this specification is not to be regarded as binding in detail and drawings and capacities are subject to alteration without notice. Certified drawings will be sent on request.



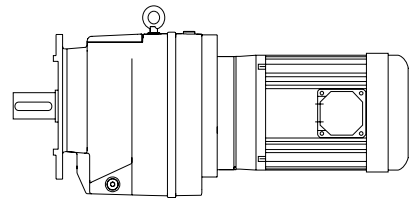
Two stage base mounted motorised

R	0	3	2	2	8	.	0	B	M	C	-	1	A	.	7	5	A	-	-
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



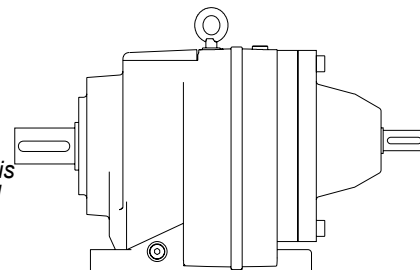
Four stage base mounted motorised

R	0	6	4	2	2	5	0	B	M	C	-	1	A	.	1	8	A	-	-
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



Three stage flange mounted motorised

R	0	6	3	2	1	2	5	L	M	C	-	1	A	.	7	5	A	-	-
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



Two stage base mounted reducer

R	0	7	2	2	7	1	.	B	R	C	-	1	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

* Typical unit designations

R SERIES

UNIT DESIGNATION

Series	Size of Unit		No of Reductions	Revision Version	Nominal Overall Ratio			Unit Version	Type of Unit	Output Shaft	Motor Adaptor	Mounting Position	Geared Motor Power		No of Motor Poles	Additional Motor Features	Additional Gearbox Features		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Example*

R	0	3	2	2	8	.	0	B	M	C	-	1	A	.	7	5	A	-	-
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

1 - R Series

Range

2, 3 - Size of Unit

Through

4 - No of Reductions

Through

5 - Revision Version

6, 7, 8 - Nominal Overall Ratio

eg

9 - Unit Version

- Base Mounted
- B5 (D) Flange Mounted (entry dependant on flange size)
- B14 (C) Flange Mounting
- Base and B14 (C) Flange Mounting (Special Orders Only)

10 - Type of Unit

- Motorised with IEC standard motor
- Motorised with Compact Motor
- Motorised with NEMA standard motor
- Motorised with IEC high efficiency motor
- Motorised with NEMA high efficiency motor
- Unit to allow fitting of IEC motor (customer own motor)
- Unit to allow fitting of NEMA motor (customer own motor)
- Reducer unit
- Reducer unit with fan kit
- Reducer unit with backstop CCW rotation
- Reducer unit with backstop CW rotation
- Reducer unit with fan and backstop CW rotation
- Reducer unit with fan and backstop CCW rotation

20 - Additional Gearbox Features

Double Oil Seal, Motorised Backstop Etc

eg

19 - Additional Motor Features

eg

For Types Without Motor

Enter

18 - No of Motor Poles

No motor

	50 Hz	60 Hz
4 Pole (Std) 1500 rpm	<input type="text" value="A"/>	1800 rpm <input type="text" value="B"/>
4 Pole (High) 1500 rpm	<input type="text" value="K"/>	1800 rpm <input type="text" value="L"/>
6 Pole (Std) 1000 rpm	<input type="text" value="C"/>	1200 rpm <input type="text" value="D"/>
6 Pole (High) 1000 rpm	<input type="text" value="M"/>	1200 rpm <input type="text" value="N"/>
2 Pole 3000 rpm	<input type="text" value="E"/>	3600 rpm <input type="text" value="F"/>
8 Pole 750 rpm	<input type="text" value="G"/>	900 rpm <input type="text" value="H"/>

Dual speed or special motor

15, 16, 17 - Geared Motor Powers

Motor Power Required

eg

For reducer and non standard

motor types enter

13, 14 - Mounting Position

eg

12 - Motor Adaptor For Unit Types Column 10 Entries M, N, H, E, G or A

For All Other Types Enter

11 - Output Shaft

- Standard

- Inch

* This Page May Be Photocopied Allowing The Customer To Enter Their Order.

R SERIES

EXPLANATION & USE OF RATINGS & SERVICE FACTORS

A gear unit selection is made by comparing actual loads with catalogue ratings. Catalogue ratings are based on a standard set of loading conditions, whereas actual load conditions vary according to type of application. Service Factors are therefore used to calculate an equivalent load to compare with catalogue ratings.

i.e. Equivalent Load = Actual Load x Service Factor

Mechanical Ratings and Service Factors Fm and Fs

Mechanical ratings measure capacity in terms of life and/or strength, assuming 10 hr/day continuous running under uniform load conditions.

Catalogue ratings allow 100% overload at starting, braking or momentarily during operation up to 10 hours per day.

The unit selected must therefore have a catalogue rating at least equal to half maximum overload.

Mechanical Service Factor Fm (Table 1) is used to modify the actual load according to daily operating time, and type of loading.

Load characteristics for a wide range of applications are detailed in Table 3 opposite, which are used in deciding the appropriate Service Factor Fm from Table 1.

If overloads can be calculated, or accurately assessed, actual loads should be used instead of Fm.

For units subjected to frequent stop/starts overloads in excess of 10 times/day multiply factor Fm x Factor Fs (table 2).

For applications where units are to operate in extremely dusty or moist/humid atmospheres unit selection should be referred to application engineering.

Table 1. Mechanical Service Factor (Fm)

Prime Mover	Duration of Service Hours per day	Load Classification-Driven Machine		
		Uniform mass acceleration factor ≤ 0.2	Moderate mass acceleration factor ≤ 3	Heavy mass acceleration factor ≤ 10
Electric Motor, Steam Turbine or Hydraulic Motor	< 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	> 10	1.25	1.50	2.00
Multi-cylinder Internal Combustion Engine	< 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	> 10	1.50	1.75	2.25
Single-cylinder Internal Combustion Engine	< 3	1.25	1.50	2.00
	3 - 10	1.50	1.75	2.25
	> 10	1.75	2.00	2.50

Mass acceleration factor = $\frac{\text{all external moments of inertia}^*}{\text{moment of inertia of driving motor}}$

* calculated with reference to the motor speed

Table 2. Number of Starts Factor (Fs)

Start / Stops per hour (1)	1	5	10	40	60	≥ 200
Factor Fs	1.00	1.03	1.06	1.10	1.15	1.20

Note: Intermediate values are obtained by linear interpolation

R SERIES

LOAD CLASSIFICATION BY APPLICATION

Load Classifications - U =Uniform Load M =Moderate Shock Load H =Heavy Shock Load † =Consult our Engineers

Agitators		Elevators		Machine Tools		Pumps	
Pure liquids	U	Bucket - Uniform load	U	Bending roll	M	Centrifugal proportioning	U
Liquids and solids	M	Bucket - Heavy load	M	Punch press	H	Proportioning	M
Liquids variable density	M	Bucket - Continuous	U	Notching press	H	Reciprocating	
		Centrifugal discharge	U	Plate planer	H	Single acting 3+ cylinders	M
Blowers		Escalators	U	Other machine tools		Double acting 2+ cylinders	M
Centrifugal	U	Freight	M	Main drive	M	Single acting 1 & 2 cylinders	†
Lobe	M	Gravity discharge	U	Aux drive	U	Double acting 1 cylinder	†
Vane	U	Passenger lifts	†			Rotary- gear type	U
				Metal mills		Rotary- lobe type/ vane	U
Brewing & distilling		Fans		Carriage/main drive	M	Sand muller	M
Bottling machinery	M	Centrifugal	U	Draw bench	M		
Brew Kettles	M	Cooling towers		Dryer	M	Sewage treatment	
Cookers	M	Induced draft	†	Flattening machinery	M	Bar screen	U
Mash tubs	M	Forced draft	†	Pinch drive	M	Chemical feeder	U
Scale hopper	M	Fan - Large diameter induced draft	M	Reversing slitters	M	Collector	U
		Fan - Light, small diameter	M	Scrubber rolls	M	Dewatering screw	M
				Table conveyors		Mixers	M
Can filling machinery	M	Feeders		Group drives	H	Scum breaker	M
		Apron	M	Individual drives	H	Thickness	M
Crane knife	M	Belt	U	Table conveyors- reversing	H	Vacuum filters	M
		Disc	U	Wire draw	M		
Car dumper	M	Reciprocating	H	Wire roll	M	Screens	
		Screw	M			Air washing	U
Car puller	M			Mills		Rotary, stone or gravel	M
		Food industry		Cement kiln	H	Traveling water intake	U
Clarifier	U	Cereal cooker	U	Dryer, Cooler	H		
		Dough mixer	M	Kiln (other)	H	Slab pushers	M
Classifier	M	Meat grinder	M	Rod plain	H		
		Meat slicer	M	Rod wedge bar	H	Slewing	H
Clay wokring machinery				Rotary/ Ball	H		
Brick press	H	Generators - not welding	U	Tumbling barrel	H	Steering gear	†
Briquette machine	H						
Clay working machinery	M	Hammer mills	H	Mixers		Stokers	U
Plug mill	M			Concrete	M		
		Hoists		Cons density	U	Sugar industry	
Compressors		Heavy duty	H	Variable density	M	Can knife	M
Centrifugal	U	Medium duty	M			Crusher	M
Lobe	M	Skip hoist	M	Oil industry		Mills	M
Reciprocating				Chiller's	M		
Multi cylinder	M	Laundry		Oil well pump	M	Textile industry	
Single cylinder	H	Tumbler	M	Filter press	M	Batchers	
		Washer	M	Rotary kiln	M	Calenders	M
Conveyors- Light duty uniform load						Cards	M
Apron	U	Line shafts		Paper industry		Dry cans	M
Assembly	U	Heavy duty	M	Agitator (mixer)	M	Dryers	M
Belt	U	Light duty	U	Barker (hydraulic)	M	Dyeing machinery	M
Bucket	U			Barker (mechanical)	H	Knitting machinery	M
Chain	U	Lumber industry		Barking drum	H	Looms	M
Flight	U	Barkers	M	Beater & Pulper	M	Mangles	M
Oven	U	Burner conveyor	H	Bleacher	U	Nappers	M
Screw	U	Chain/ Drag saw	H	Calendnders	M	Pads	M
		Chain transfer	H	Calenders- super	H	Range drive	M
Conveyors - Heavy duty uniform load		Chain way transfer	H	Converting machine	M	Slashers	M
Apron	M	De- barking drum	H	Conveyors	U	Soapers	M
Assembly	M	Edger feed	M	Couch	M	Spinners	M
Belt	M	Gang feed	M	Cutters - plates	H	Tenter frame	M
Bucket	M	Green chain	M	Cylinders	M	Washers	M
Chain	M	Live roll	H	Dryers	M	Winders	M
Flight	M	Log deck	H	Felt stretcher	M		
Live roll	†	Log haul	H	Felt whipper	H	Windlass	†
Oven	M	Log turning	H	Jordans	M		
Reciprocating	M	Log conveyer	H	Log haul	H		
Screw	M	Of bearing roll	M	Machine real	M		
Shaker	M	Planer feed chaines	M	Presses	M		
		Planer hoist	M	Stock chest	M		
Cranes	†	Re-saw conveyer	M	Suction roll	M		
		Roll cases	H	Washers & thickeners	M		
Crusher		Slab conveyer	H	Winders	M		
Ore	H	Sorting table - triple hoist	M			Printing presses	†
Stone	H	Triple hoist - Drive /conveyor	M				
Sugar	H	Transfer conveyer	M	Pullers			
		Transfer roll	M	Barge haul	H		
Dredger	M	Tray drive	M				
Cable reals	M	Trimmer feed	M				
Conveyors	M	Waster conveyer	M				
Cutter head drive	H	Small waste conveyer (belt)	U				
Pumps	M	Small waste conveyer (chain)	U				
Screen drive	H						
Stackers	M						
Winches	M						

R SERIES

SELECTION PROCEDURE FOR MOTORISED UNITS

EXAMPLE APPLICATION DETAILS

Absorbed power of driven machine = 0.7 kW
 Output speed of gearbox or Input speed of machine = 63 rev/min
 Application = Uniformly loaded belt conveyor
 Duration of service (hours per day) = 24hrs
 Mounting position = 1
 Ambient temperature = 20°C
 Running time (%) = 100%

2 DETERMINE REQUIRED OUTPUT TORQUE AT GEARBOX OUTPUTSHAFT

$$\frac{\text{Absorbed output torque}}{\text{Gearbox output speed}} = \frac{\text{Absorbed power} \times 9550}{\text{Gearbox output speed}}$$

$$\frac{0.7 \times 9550}{63} = 106 \text{ Nm}$$

1 DETERMINE MECHANICAL SERVICE FACTOR (Fm)

Refer to Load Classification by Application, table 3, page 4
 Application = Uniformly loaded belt conveyor

Conveyors-uniformly loaded or fed		U = Uniform load
apron assembly	U	
belt	U	
bucket	U	
chain	U	

Refer to mechanical service factor (Fm), table 1, page 3

Duration of service (hours per day) = 24hrs

Prime mover	Duration of service-hrs per day	Load classification-drive	
		Uniform	Moderate
Electric motor, steam turbine or hydraulic motor	< 3	0.80	1.00
	3 - 10	1.00	1.25
	>10	1.25	1.50

Therefore mechanical service factor (Fm) = 1.25

If the unit is subject to frequent start/stops Fm must be multiplied by factor Fs (see table 2 page 3)

3 SELECT GEARED MOTOR

Refer to selection table one motor size larger than absorbed power.
 Absorbed power = 0.7 kW, therefore refer to 0.75 kW selection table.

Always select from 4 POLE selection table in the first instance as this offers a more economical solution.

Required output speed of gearbox = 63 rev/min - Choose the nearest speed = 65 rev/ min

0.75 kW

4 POLE

N2	i	M2 Nm	Fm	N	UNIT DESIGNATION	kg	Motor Frame Size
Output Speed	Ratio	Output Torque	Service Factor	Overhung Load	Column Entry <input type="text" value="1"/> - <input type="text" value="20"/> Spaces to be filled when entering order	Weight of Base Mount Unit	Motor Frame Size
178	8.00	40	3.47	3417	R02228.0_M_...75A--	30	80
156	9.09	45	3.14	3425	R02229.0_M_...75A--	30	80
127	11.15	55	2.65	3506	R022211_M_...75A--	30	80
115	12.37	61	2.45	3565	R022212_M_...75A--	30	80
101	14.05	69	2.22	3734	R022214_M_...75A--	30	80
89	15.97	79	2.04	3926	R022216_M_...75A--	30	80
81	17.58	87	1.86	4000	R022218_M_...75A--	30	80
70	20.23	100	1.61	4000	R022220_M_...75A--	30	80
65	21.99	109	1.48	4000	R022222_M_...75A--	30	80
54	26.40	130	1.24	4000	R022228_M_...75A--	30	80

4 CHECK OUTPUT TORQUE

Output torque (M2) of selected unit must be equal or more than required output torque at gearbox outputshaft.

Required output torque at gearbox outputshaft = 106 Nm

0.75 kW

4 POLE

N2	i	M2 Nm	Fm	N	UNIT DESIGNATION	kg	Motor Frame Size
Output Speed	Ratio	Output Torque	Service Factor	Overhung Load	Column Entry <input type="text" value="1"/> Through <input type="text" value="20"/> Spaces to be filled when entering order	Weight of Base Mount Unit	Motor Frame Size
178	8.00	40	3.47	3417	R02228.0_M_...75A--	30	80
156	9.09	45	3.14	3425	R02229.0_M_...75A--	30	80
127	11.15	55	2.65	3506	R022211_M_...75A--	30	80
115	12.37	61	2.45	3565	R022212_M_...75A--	30	80
101	14.05	69	2.22	3734	R022214_M_...75A--	30	80
89	15.97	79	2.04	3926	R022216_M_...75A--	30	80
81	17.58	87	1.86	4000	R022218_M_...75A--	30	80
70	20.23	100	1.61	4000	R022220_M_...75A--	30	80
65	21.99	109	1.48	4000	R022222_M_...75A--	30	80
54	26.40	130	1.24	4000	R022228_M_...75A--	30	80

Go to point 5

R SERIES

SELECTION PROCEDURE FOR MOTORISED UNITS

5 CHECK SERVICE FACTOR

Service factor (Fm) of selected unit must be equal or more than required service factor.

Required service factor of gearbox = 1.25

0.75 kW		N2	i	M2 Nm	Fm	N	UNIT DESIGNATION	kg	
4 POLE		Output Speed	Ratio	Output Torque	Service Factor	Overhung Load	Column Entry <input type="text" value="1"/> Through <input type="text" value="20"/> Spaces to be filled when entering order	Weight of Base Mount Unit	Motor Frame Size
	178	8.00	40	3.47	3417		R02228.0_M_-.75A--	30	80
	156	9.09	45	3.14	3425		R02229.0_M_-.75A--	30	80
	127	11.15	55	2.65	3506		R022211_M_-.75A--	30	80
	115	12.37	61	2.45	3565		R022212_M_-.75A--	30	80
	101	14.05	69	2.22	3734		R022214_M_-.75A--	30	80
	89	15.97	79	2.04	3926		R022216_M_-.75A--	30	80
	81	17.58	87	1.86	4000		R022218_M_-.75A--	30	80
	70	20.23	100	1.61	4000		R022220_M_-.75A--	30	80
	65	21.99	109	1.48	4000		R022222_M_-.75A--	30	80
	54	26.40	130	1.24	4000		R022228_M_-.75A--	30	80

Selected unit's service factor (Fm) = 1.48 therefore unit is acceptable.

Alternatively a R03 unit could be selected which has a greater service factor

0.75 kW		N2	i	M2 Nm	Fm	N	UNIT DESIGNATION	kg	
4 POLE		Output Speed	Ratio	Output Torque	Service Factor	Overhung Load	Column Entry <input type="text" value="1"/> Through <input type="text" value="20"/> Spaces to be filled when entering order	Weight of Base Mount Unit	Motor Frame Size
	156	9.09	45	3.76	2707		R03229.0_M_-.75A--	30	80
	127	11.15	55	3.28	2667		R032211_M_-.75A--	30	80
	115	12.37	61	3.07	2749		R032212_M_-.75A--	30	80
	101	14.05	69	2.81	2935		R032214_M_-.75A--	30	80
	89	15.97	79	2.63	3148		R032216_M_-.75A--	30	80
	81	17.58	87	2.42	3284		R032218_M_-.75A--	30	80
	70	20.23	100	2.11	3496		R032220_M_-.75A--	30	80
	65	21.99	109	1.94	3603		R032222_M_-.75A--	30	80
	54	26.40	130	1.63	3366		R032228_M_-.75A--	30	80

Selected unit's service factor (Fm) = 1.94 therefore unit is acceptable.

6 CHECK OVERHUNG LOADS

If sprocket, gear, etc is mounted on the outputshaft then refer to Overhung Loads Procedure, page 93, and compare with allowable overhung load (N) of selected unit

Allowable overhung load (N) must be equal or more than calculated overhung load (P)

0.75 kW		N2	i	M2 Nm	Fm	N	UNIT DESIGNATION	kg	
4 POLE		Output Speed	Ratio	Output Torque	Service Factor	Overhung Load	Column Entry <input type="text" value="1"/> Through <input type="text" value="20"/> Spaces to be filled when entering order	Weight of Base Mount Unit	Motor Frame Size
	156	9.09	45	3.76	2707		R03229.0_M_-.75A--	30	80
	127	11.15	55	3.28	2667		R032211_M_-.75A--	30	80
	115	12.37	61	3.07	2749		R032212_M_-.75A--	30	80
	101	14.05	69	2.81	2935		R032214_M_-.75A--	30	80
	89	15.97	79	2.63	3148		R032216_M_-.75A--	30	80
	81	17.58	87	2.42	3284		R032218_M_-.75A--	30	80
	70	20.23	100	2.11	3496		R032220_M_-.75A--	30	80
	65	21.99	109	1.94	3603		R032222_M_-.75A--	30	80
	54	26.40	130	1.63	3366		R032228_M_-.75A--	30	80

NOTE: If any of the following conditions occur then consult Application Engineering:-
a) Mass acceleration factor > 10
b) Ambient temperature is above 40°C

R SERIES

UNIT VERSIONS

Unit Versions Column 9 Entry

- B** - Base Mounted
- E** - Flange mount with B14 (C) Flange Mounting

Flange Mounted

Letter Entry Depends on Flange Diameter See tables below

Flange Diameter	Column 9 Entry	Flange Diameter	Column 9 Entry
120	H	300	P
140	J	350	R
160	K	450	S
200	L	550	T
250	N	660	U

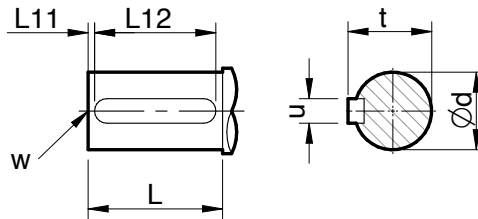
Size				Flange Dia	Column 9 Entry
Double	Triple	Quadruple	Quintuple		
R0122	R0132	-	-	120	H
				140	J
				160	K
				200	L
R0222	R0232	-	-	120	H
				140	J
				160	K
				200	L
R0322	R0332	R0342	R0352	120	H
				140	J
				160	K
				200	L
R0422	R0432	R0442	R0452	140	J
				160	K
				200	L
				250	N
R0522	R0532	R0542	R0552	140	J
				160	K
				200	L
				250	N
R0622	R0632	R0642	R0652	200	L
				250	N
				300	P
R0722	R0732	R0742	R0752	200	L
				250	N
				300	P
R0822	R0832	R0842	R0852	300	P
				350	R
R0922	R0932	R0942	R0952	350	R
				450	S
R1022	R1032	R1042	R1052	350	R
				450	S
R1322	R1322	R1342	R1352	450	S
				550	T
R1422	R1422	R1342	R1452	450	S
				550	T
R1622	R1632	R1642	R1652	550	T
				660	U

R SERIES

OUTPUT SHAFT OPTIONS

Outputshaft Options

* Inch shaft has an open ended keyway, therefore no 'L11' dimension is required.



Column 11 Entry

C Standard

N Inch

Outputshaft options - double, triple, quadruple and quintuple reduction

Size	Output shaft	Column 11 entry	Dimensions in mm (inch shaft in inches)						
			ød	L	L11	L12	t	u	w
R01	Standard	C	20.015 / 20.002	40	4	32	22.5	6	M6 x 16
	Inch *	N	0.7500"/0.7495"	1.575"	-	1.38"	0.829"	0.19"	0.25" UNF x 0.63"
R02	Standard	C	25.015 / 25.002	50	4	40	28	8	M10 x 22
	Inch *	N	1.0000"/0.9995"	1.969"	-	1.68"	1.106"	0.25"	0.25" UNF x 0.71"
R03	Standard	C	25.015 / 25.002	50	4	40	28	8	M10 x 22
	Inch *	N	1.0000"/0.9995"	1.969"	-	1.68"	1.106"	0.25"	0.25" UNF x 0.71"
R04	Standard	C	30.015 / 30.002	60	4	50	33	8	M10 x 22
	Inch *	N	1.2500"/1.2495"	2.362"	-	2.12"	1.359"	0.25"	0.375" UNF x 0.86"
R05	Standard	C	35.018 / 35.002	70	7	60	38	10	M12 x 28
	Inch *	N	1.3750"/1.3745"	2.756"	-	2.53"	1.507"	0.31"	0.375" UNF x 0.75"
R06	Standard	C	35.018 / 35.002	70	7	60	38	10	M12 x 28
	Inch *	N	1.3750"/1.3745"	2.756"	-	2.53"	1.507"	0.31"	0.375" UNF x 0.75"
R07	Standard	C	40.018 / 40.002	80	5	70	43	12	M16 x 36
	Inch *	N	1.6250"/1.6240"	3.150"	-	2.53"	1.784"	0.38"	0.625" UNF x 1.25"
R08	Standard	C	50.018 / 50.002	100	10	80	53.5	14	M16 x 36
	Inch *	N	2.1250"/2.1240"	3.937"	-	3.00"	2.338"	0.5"	0.75" UNF x 1.50"
R09	Standard	C	60.030 / 60.011	120	5	100	64	18	M20 x 42
	Inch *	N	2.3750" / 2.3740"	4.72"	-	4.00"	2.65"	0.625"	0.75" UNF 1.65"
R10	Standard	C	70.030 / 70.011	140	7	110	74.5	20	M20 x 42
	Inch *	N	2.875" / 2.874"	5.51"	-	5.00"	3.20"	0.75"	0.75" UNF 1.65"
R13	Standard	C	90.035 / 90.013	170	5	140	95	25	M24 x 50
	Inch *	N	3.625" / 3.624"	6.69"	-	6.30"	4.01"	0.875"	1.0" UNF 1.97"
R14	Standard	C	110.035 / 110.013	210	10	180	116	28	M24 x 3.0, 50
	Inch *	N	4.000" / 3.999"	8.27"	-	8.00"	4.44"	1.00"	1.0" UNF 1.97"
R16	Standard	C	120.035 / 120.13	210	5	200	127	32	M24 x 50
	Inch *	N	5.000" / 4.999"	8.27"	-	8.00"	5.50"	1.25"	1.0" UNF x 1.97"