



SERIES A HEAVY DUTY

# SERIES A

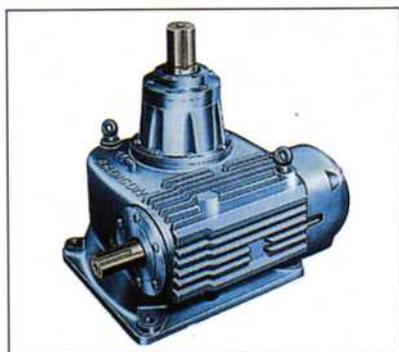
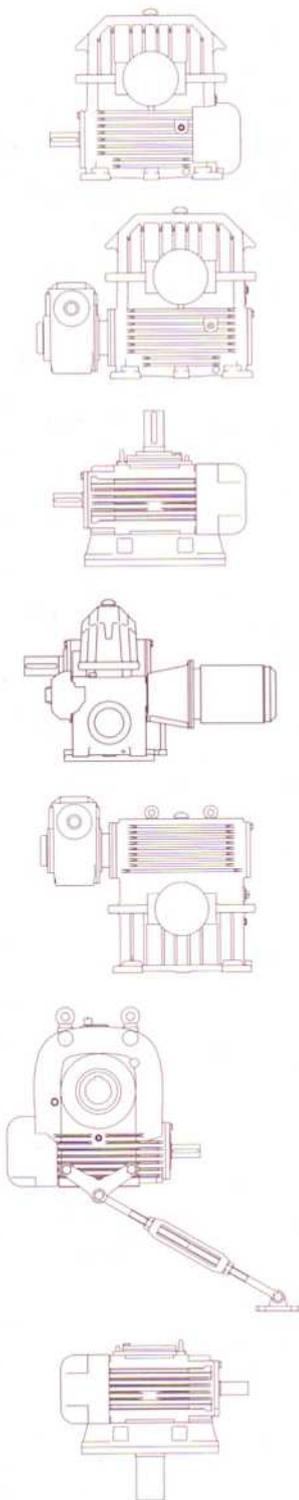


**DAVID BROWN**  
R A D I C O N

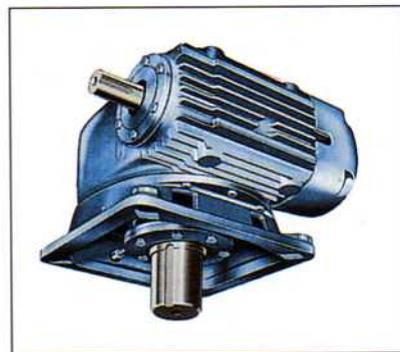
# **RADICON**

The culmination of David Brown's unrivalled expertise in the design and manufacture of power transmission products together with its substantial technical resources resulted in the creation of Series A Heavy Duty single and double reduction worm gear reducers.

Designed for reliability and manufactured to the long established David Brown standards of quality. These quiet running units provide unbeatable levels of performance, versatility and life expectancy to meet the demanding requirements of modern heavy industry.



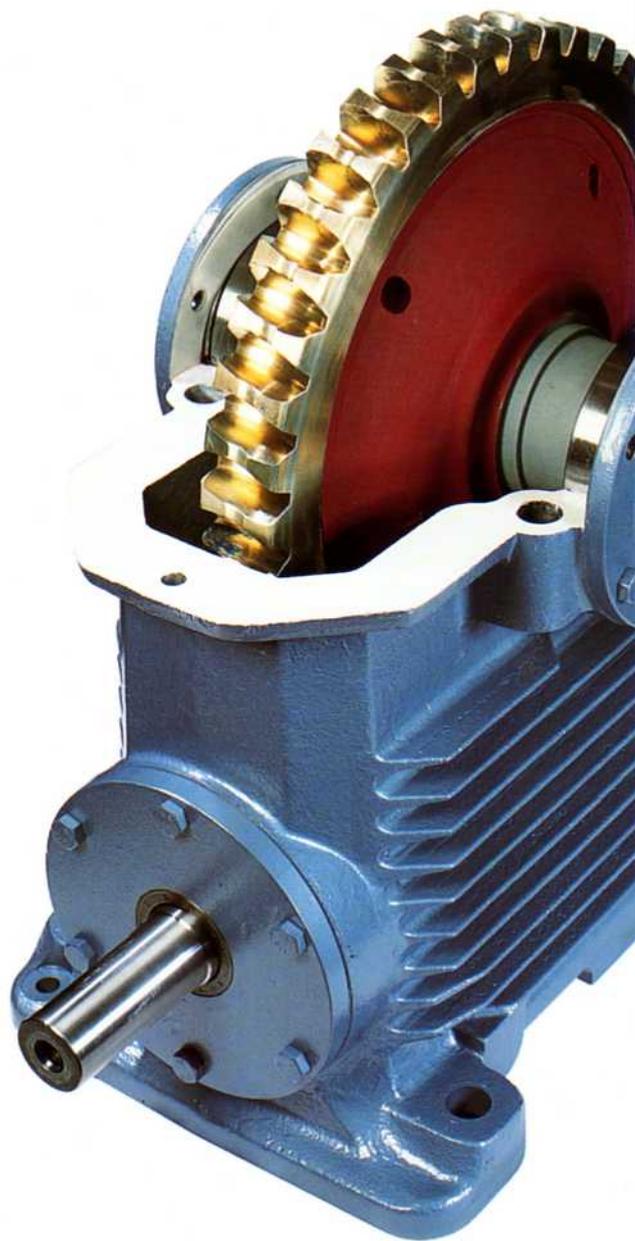
Cooling tower unit.



Heavy duty stirrer unit.

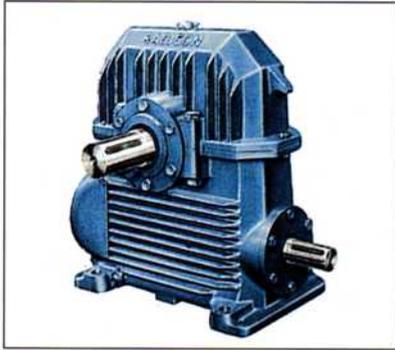


Double reduction over driven reducer unit.



## **SERIES A** HEAVY DUTY WORM GEAR UNITS

Centrifugally cast phosphor bronze rims are welded to cast iron centres.



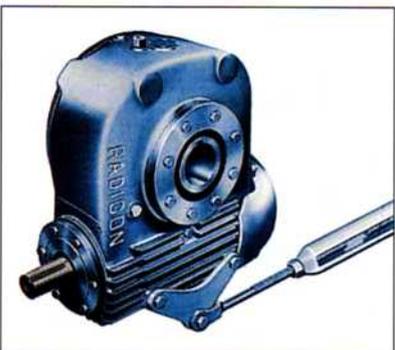
Under driven reducer unit.



Over driven reducer unit.



Vertically driven reducer unit.



Shaft mounted reducer unit with torque arm.

Worm threads are profile round and super finished.

The Radicon story is about a constant drive for perfection. It starts more than a century ago and tells of total dedication and commitment to the development of gear technology, Series A is part of that story.

The David Brown gear organisation was founded in 1860. It produced the world's first commercial worm gearbox in 1903 and so helped to establish a marketplace it has led ever since.

The organisation rapidly became a master of its craft. Notable credits included the introduction of a patented involute helicoidal worm thread form in 1912, followed later by the development of phosphor bronze materials for wormwheels which have become virtually standard throughout the industry.

The division got its title in 1933 with the introduction of worm gearbox units with cooling fans and ribbed casings. This brought unprecedented performance in dissipation of generated heat and gave rise to the name of Radicon - **RAD**iation and **CON**vection. That name has since become respected in gear circles throughout the world.

The passage of time has seen constant refinement, accumulating expertise and scientific progress, but the organisation's pioneering spirit remains unchanged as technological barriers are crossed one after the other. The Series A is a result of that progress and spirit.

Series A Heavy Duty units are available for transmitting output torque up to 100,000 Nm with reduction ratios for 5:1 to 70:1 in single stage or up to 4200:1 in two stage form. In addition to the Heavy Duty range there are four additional sizes of Mid-Range models with output capabilities to 10,000 Nm and a further six smaller sizes extending the range even further with capacities up to 1,000 Nm in the Junior range.

Units offer outstanding reliability meeting almost all arduous industrial applications. Units are offered in underdriven, overdriven and vertical gearcase designs in single and two stage configuration. Their reliability and high load carrying capacity gives unrivalled performance and is marked by quiet operation and long life.

Vertical mounted units with output flange and output shaft vertical down have drywell arrangements as standard to eliminate a head of oil on the low speed shaft seal and prevent oil leakage. All units can be supplied with holdbacks. Shaft extensions can be supplied with metric or imperial dimensions.

The worm and wheel represents the quality of gearing that typify Radicon's traditions and ensure a long and trouble free operational life. The robust gearcase design with cooling fins and cooling fan ensure maximum thermal capacity minimising operational temperature.

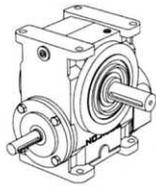
Where an application requires a heavy duty right angle drive there is no better solution than a Series A

*Technical excellence...Commercial vision*

# ALL PRODUCTS IN THE RADICON RANGE

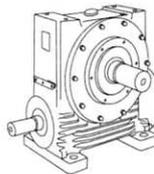
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## SERIES A - JUNIOR



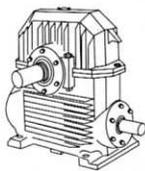
Power capacity to 11 kW  
Output torque capacity to 1,000 Nm  
Sizes 280, 410, 510, 610, 730 and 860  
Foot, flange and shaft mounting

## SERIES A - MID RANGE



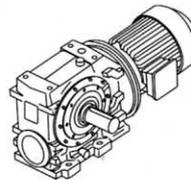
Power capacity to 140 kW  
Output torque capacity to 10,000 Nm  
Sizes 1002, 1252, 1602 and 2002  
Foot, flange and shaft mounting

## SERIES A - HEAVY DUTY



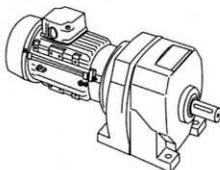
Power capacity to 835 kW  
Output torque capacity to 100,000 Nm  
Sizes 10, 12, 14, 17, 20 and 24  
Foot, flange and shaft mounting

## SERIES C



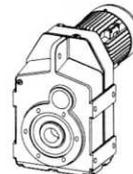
Power capacity to 45 kW  
Output torque capacity to 10,000 Nm  
Sizes 03, 04, 05, 06, 07, 08, 09 and 10  
Foot, flange and shaft mounting

## SERIES M



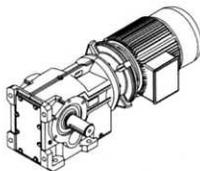
Power capacity to 90 kW  
Output torque capacity to 11,000 Nm  
Sizes 03, 04, 06, 07, 08, 09, 10, 13 and 14  
Foot and flange mounting

## SERIES F



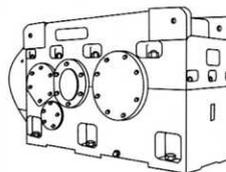
Power capacity to 45 kW  
Output torque capacity to 7,200 Nm  
Sizes 04, 06, 07, 08, 09 and 10  
Foot, flange and shaft mounting

## SERIES K



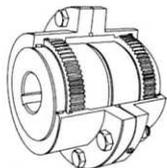
Power capacity to 90 kW  
Output torque capacity to 12,300 Nm  
Sizes 08, 09, 10 and 12  
Foot, flange and shaft mounting

## SERIES H



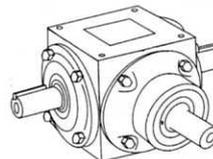
Power capacity to 8300 kW  
Output torque capacity to 128,000 Nm  
Sizes 140, 160, 180, 200, 225, 250, 280,  
315, 355, 400 and 450  
Single, double and triple parallel and  
right angle shaft  
Foot and shaft mounting

## SERIES X



Nylicon low cost couplings to  
55 mm dia. bore  
610 Series Cone-Ring type to  
355 mm dia. bore  
620 Series Gear type to  
540 mm dia. bore  
Sadiguard Torque limiters for overload  
protection, to 115 mm dia. bore

## SERIES R



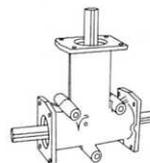
Power capacity to 265 kW  
Output torque capacity to 1,265 Nm  
Sizes 120, 160, 200, 260 and 350  
Output shaft and shaft mounting

## SERIES S



Load capacity to 100 tonnes  
Sizes 0.5, 1, 2.5, 5, 10, 25,  
50 and 100

## SERIES T



Power capacity to 15 kW  
Output torque capacity to 132 Nm  
Sizes 1, 2, 3, 4 and 5

General Description _____	1
Unit Designations _____	2
Explanation and use of Ratings and Service Factors _____	3
Load Classification by Applications _____	4
Moments of Inertia _____	5
Lubrication _____	6 - 8
Selection Procedure _____	9 - 10
Unit Types _____	11
Shaft Handings & Rotations _____	12
Output Options _____	13
Exact Ratios _____	14
Overhung and Axial Loads on Shafts _____	15 - 16
Ratings - Input Power / Output Torque	
Synthetic Oil _____	18 - 38
Mineral Oil _____	39 - 59
Dimension Sheets - Speed Reducers _____	60 - 76
<b>MOTORISED</b>	
Motorised Moments of Inertia _____	79
Motorised Exact Ratios _____	80
Motorised Ratings - Input Power / Output Torque	
Synthetic Oil _____	81 - 82
Mineral Oil _____	83 - 84
Dimension Sheets - Geared Motors _____	85 - 86
Agitator Units Selection _____	87
Shipping Specification _____	88

9611

### **Single Reduction Units (worm)**

This range is offered in 3 basic unit types. Under-driven worm, over-driven worm and vertically mounted with output shaft. The units provide power capacity up to 839 kW in 6 sizes from size 10 to size 24 with worm gear centres from 254mm to 609mm. All are offered with a choice of 14 standard ratios from 5:1 to 70:1. Motorised versions of all units are also available.

All units are fitted with high capacity taper roller bearings for generous overhung loads, position action oil seals, oil level sight glass and drain holes. Flange mounted units with vertical downshaft have drywells fitted as standard to eliminate a head of oil on the low speed shaft seal and prevent oil leakage. Upper and lower speed shaft bearings are grease lubricated when drywells are fitted. All units can be supplied with holdbacks. Shaft extensions can be supplied with metric or inch dimensions.

### **Double Reduction Units (worm/worm)**

Double reduction worm units are constructed using two single reduction worm gear units connected together. All options of unit type and variant are available in double reduction with standard ratios extended to 4,200:1.

### **Shaft Mounted Single Reduction Worm Gear Units**

Shaft mounted units can be mounted directly on to the driven shaft dispensing with connecting couplings and baseplates along with alignment of the unit and motor. Motorised units are available. Standard and special torque arms are available on request.

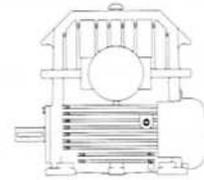
### **Single Reduction Stirrer Units**

Stirrer units are offered in standard and heavy duty versions. The heavy duty version incorporating an extended bearing housing to accommodate a larger lower bearing and increased shaft size thus adding extra unit capacity to absorb higher shaft and bearing loads imposed during stirrer applications. Standard features also include top motor mount plate and brackets for V-belt drive, motor flange for direct drive. Drywells are fitted as standard to all units.

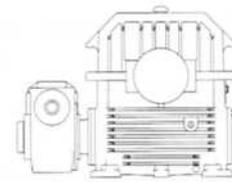
### **Single Reduction Cooling Tower Units**

Standard cooling tower fan drives are available in 5 sizes. Size 10 to size 20. The design includes an extended wheelshaft and housing with the wheelshaft supported by standard taper roller bearings. Wheelshaft extensions are manufactured to suit customer requirements and fan hubs. Non standard ratios are available. Lubrication is entirely self contained. Gears and lower bearings dip in the oil bath. Oil is pumped to the top wheelshaft bearings by means of a built in mechanical oil pump. Two oilseals are fitted on both the wheelshaft and wormshaft and wheelshaft extensions incorporate a grease chamber. All exposed parts other than the shaft extensions are fitted with corrosion resistant paint. Units are supplied with BSP plugs fitted to oil filler drain and ventilator points suitable for connections to the outsides of the towers. If necessary David Brown Radicon can supply the necessary piping required by customers.

*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.*



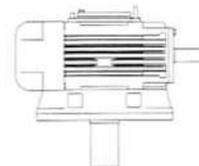
**Single Reduction Units (worm)**



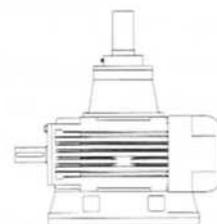
**Double Reduction Units (worm/worm)**



**Shaft Mounted Unit with Torque Arm**



**Heavy Duty Stirrer Unit**



**Cooling Tower Unit**

EXAMPLES

N	U		10"	10	-	L
CN	O		14"	20	-	R
CN	V	S	10"	30	-	
CN	U	DM	20"	150	-	LR

**TYPE**

- CN - METRIC SHAFT EXTENSIONS AND KEYWAYS
- N - IMPERIAL SHAFT EXTENSIONS AND KEYWAYS
- A - AMERICAN INCH SHAFT EXTENSIONS AND KEYWAYS

**MOUNTING POSITION**

- U - UNDERDRIVEN
- O - OVERDRIVEN
- V - VERTICAL OUTPUT SHAFT

**VERSION**

- S - SHAFT MOUNT ( STATE IF TORQUE ARM IS REQUIRED )
- D - DOUBLE REDUCTION ( WORM/WORM )
- M - MOTORISED FITTED WITH FLANGE ADAPTER FOR UNITS MOUNTING POSITION V
- HDST - HEAVY DUTY STIRRER UNIT
- CT - COOLING TOWER UNIT

**UNIT SIZE (centres)**

- 10 ( 254.0 mm 10" )
- 12 ( 304.8 mm 12" )
- 14 ( 355.6 mm 14" )
- 17 ( 431.8 mm 17" )
- 20 ( 508.0 mm 20" )
- 24 ( 609.6 mm 24" )

**RATIO**

SINGLE REDUCTION UNITS 5/1 THROUGH 70/1  
 DOUBLE REDUCTION WORM / WORM 75/1 THROUGH 4200/1  
 See Page 14 for exact ratios or use nominal ratings from selection tables

**SHAFT HANDING**

- R - RIGHT HAND
- L - LEFT HAND
- D - DOUBLE EXTENSION
- X - VERTICALLY UP
- Y - VERTICALLY DOWN

See Page 12 for illustrations of shaft handings and rotations

9612

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

Two types of Service Factor must be considered:- Mechanical Service Factor  $F_m$  and Thermal Service Factors  $F_t$ ,  $F_p$  and  $F_d$

### Mechanical ratings and service factor $F_m$

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 times per day.

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

Mechanical Service Factor  $F_m$  (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 5 opposite, which are used in deciding the appropriate Service Factor  $F_m$  from Table 1.

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

For units subject to frequent stop/start overloads in excess of 10 times per day, refer to David Brown Radicon.

For applications where high inertia loads are involved e.g. crane travel drives, slewing motion etc., unit selection should be referred to David Brown engineers.

### Thermal ratings and service factors

The Thermal ratings are a measure of the gear units ability to dissipate heat. If they are exceeded the lubricant may overheat and breakdown, resulting in gear failure.

Thermal factors are for units with fans fitted, un-fanned units to be referred to DB Radicon Applications department.

To select motorised units the reducer rating tables should be used, pages 17 - 59, referring to the relevant input speed equivalent to motor speed

Catalogue thermal limitations are based on the unit operating continuously in an environment with an ambient temperature equal to 20°C and in mounting position CNU. The thermal rating is affected by ambient temperature, duration of running per hour and mounting position. To account for these varying conditions, the service factors given in tables 2, 3 and 4 should be applied to the catalogue thermal ratings as follows:-

$$T_{therm} = T_t \times F_t \times F_p \times F_d$$

- $T_t$  = Catalogue output torque thermal rating (Nm)
- $T_{therm}$  = Allowable output torque thermal rating (Nm)
- $F_t$  = Service factor for ambient temperature (see Table 2)
- $F_p$  = Service factor for different mounting positions (see Table 3)
- $F_d$  = Thermal service factor for duration of running (see Table 4)

### Double Reduction Units

For double reduction units the factors given in tables 2, 3 and 4 apply. The input shaft speed referred to in table 4 should now be the input speed of the primary unit.

### General

When selecting units, use actual load required to be transmitted, not rating of prime mover. Wherever possible use required output torque (Nm).

Catalogue also gives input power rating (kW), being power required from mover allowing for gear unit efficiency. When units transmit less than rated output torque, required input power may be reduced pro-rata to decide capacity of prime mover.

**Table 1. Mechanical service factor  $F_m$**

Prime mover	Duration of service-hrs per day	Load classification-driven machine		
		Uniform	Moderate Shock	Heavy Shock
Electric motor, steam turbine or hydraulic motor	Under 3	0.80	1.00	1.50
	3 to 10	1.00	1.25	1.75
	Over 10	1.25	1.50	2.00
Multi-cylinder internal combustion engine	Under 3	1.00	1.25	1.75
	3 to 10	1.25	1.50	2.00
	Over 10	1.50	1.75	2.25
Single cylinder internal combustion engine	Under 3	1.25	1.50	2.00
	3 to 10	1.50	1.75	2.25
	Over 10	1.75	2.00	2.50

**Table 2. Thermal service factor  $F_t$**

Ambient temperature °C	-30	-20	-10	0	10	20	30	40	50
Factor $F_t$	1.65	1.52	1.39	1.26	1.14	1.0	0.86	0.73	0.60

**Table 3. Thermal service factor  $F_p$  (Single Reduction units)**

Output Speed (Rev / min)	Mounting Position				
	CNU	CNV	CNO		
			10	12	14
0 to 10	1.00	0.90	1.00	0.97	0.84
12.5 & 15	1.00	0.90	0.97	0.89	0.76
20	1.00	0.90	0.90	0.82	0.72
25 & 30	1.00	0.90	0.82	0.75	0.68
40	1.00	0.90	0.75	0.69	0.64
50	1.00	0.90	0.69	0.63	0.59
60	1.00	0.90	0.63	0.59	0.53
>60	1.00	0.90	0.58	0.52	0.48

**Table 4. Thermal service factor  $F_d$**

Input shaft speed (Rev/min)	Unit Size	% Running time per hour					
		>60	>50 - 60	>40 - 50	>30 - 40	>20 - 30	<20
250	10 & 12	1.00	1.39	1.61	1.77	2.04	2.43
	14 - 24	1.00	1.37	1.54	1.72	1.96	2.33
480	10 & 12	1.00	1.34	1.50	1.66	1.88	2.21
	14 - 24	1.00	1.31	1.45	1.59	1.79	2.10
725	10 & 12	1.00	1.29	1.41	1.55	1.72	2.02
	14 - 24	1.00	1.26	1.37	1.49	1.65	1.92
960	10 & 12	1.00	1.25	1.36	1.47	1.63	1.89
	14 - 24	1.00	1.22	1.31	1.40	1.54	1.77
1160	10 & 12	1.00	1.22	1.31	1.40	1.54	1.77
	14 - 24	1.00	1.20	1.27	1.34	1.47	1.65
1450	10 & 12	1.00	1.20	1.27	1.34	1.47	1.65
	14 - 24	1.00	1.16	1.20	1.27	1.37	1.51
1750	10 & 12	1.00	1.16	1.20	1.27	1.37	1.51
	14 - 24	1.00	1.12	1.15	1.19	1.29	1.38
2900	10 & 12	1.00	1.03	1.04	1.05	1.07	1.09
	14 - 24	1.00	1.02	1.02	1.02	1.03	1.04



9611

**MOMENTS OF INERTIA (Kg cm<sup>2</sup>) Referred to Input Shaft**

**SINGLE REDUCTION**

RATIO	10	12	14	17	20	24
5.00	683.67	1573.31	3303.47	9153.25	20099.78	33676.06
7.50	385.95	885.42	1780.01	4900.61	10301.27	19384.07
10.00	290.11	651.43	1261.85	3356.83	7010.82	12976.47
12.50	227.78	499.49	1038.09	2642.77	4935.10	9317.53
15.00	201.45	458.70	887.14	2148.56	4393.73	7767.24
20.00	162.58	373.49	678.69	1782.87	3303.90	5706.66
25.00	161.11	350.06	650.69	1624.45	3159.80	5353.98
30.00	149.87	326.85	562.61	1495.44	2815.65	4368.50
40.00	146.04	318.27	614.08	1200.42	2346.30	3371.96
50.00	140.16	313.16	601.95	1296.92	2117.51	3010.05
60.00	137.96	308.87	510.22	1200.96	3030.54	4201.59
70.00	122.10	275.36	547.69	1137.80	2794.46	3350.14

**DOUBLE REDUCTION**

RATIO	10	12	14	17	20	24
75.00	61.20	116.99	133.24	333.28	855.16	1865.96
100.00	59.72	113.75	125.31	319.22	811.57	1783.54
125.00	59.67	112.86	124.24	313.13	805.81	1769.43
150.00	59.24	111.97	120.89	308.17	792.04	1730.01
200.00	33.35	60.68	63.84	151.04	323.74	684.03
225.00	42.31	71.53	75.61	186.02	422.56	917.28
250.00	33.33	60.44	63.55	149.39	322.23	680.36
300.00	33.21	60.19	62.63	148.05	318.61	670.10
350.00	58.18	110.01	120.32	294.42	791.19	1689.28
375.00	26.03	51.75	53.14	104.80	215.64	481.49
400.00	23.95	51.32	52.04	98.83	167.61	378.57
450.00	25.98	51.64	52.73	104.25	214.05	476.91
500.00	23.94	51.26	51.98	98.45	167.24	377.66
600.00	33.09	60.01	62.09	144.99	320.87	668.36
625.00	24.35	46.25	46.75	88.42	165.11	354.50
700.00	32.92	59.66	62.48	144.33	318.38	659.49
750.00	24.33	46.21	46.60	88.21	164.54	352.92
800.00	23.90	51.19	51.89	97.44	165.13	372.53
900.00	25.93	51.56	52.48	103.00	215.04	476.13
1000.00	21.02	46.40	46.59	83.07	147.95	321.33
1200.00	23.88	51.17	51.64	97.45	166.90	374.68
1250.00	20.42	41.39	41.51	75.24	141.12	314.27
1400.00	23.84	51.09	51.73	97.30	166.29	372.48
1500.00	20.41	41.39	41.48	75.19	140.99	313.88
1600.00	21.01	46.38	46.57	82.81	147.44	320.09
1750.00	19.26	42.88	42.94	68.35	122.46	275.69
1800.00	19.69	40.04	40.11	70.95	138.36	309.04
2000.00	20.41	41.38	41.50	75.07	140.80	313.48
2100.00	23.46	52.79	53.09	100.36	151.51	326.40
2400.00	21.00	46.38	46.50	82.81	147.87	320.61
2500.00	20.41	41.38	41.49	75.11	140.71	313.33
2800.00	20.99	46.36	46.53	82.77	147.72	320.08
3000.00	20.41	41.38	41.46	75.07	141.07	313.81
3500.00	20.40	41.36	41.47	75.04	140.98	313.47
3600.00	19.68	40.04	40.09	70.86	138.42	309.00
4200.00	19.68	40.03	40.10	70.85	138.35	308.76

$GD^2 \text{ (Kg cm}^2\text{)} = 4 \times \text{Moment of Inertia (Kg cm}^2\text{)}$

Radicon Heavy Duty Units are despatched without oil. The David Brown oil grade is stamped on the nameplate and the oil level should be taken to the middle of the sight glass. These are determined from the operating speed of the gearbox and the ambient temperature which if not given when ordering will be assumed to be 1450 rev/min input and 0 to 30°C ambient temperature using a polyglycol synthetic oil. Oil grades and oil levels should therefore always be checked before installation, instructions are provided with each unit despatched. Details of David Brown approved lubricants, synthetic and mineral, are given in tables 5,6,7 and 8.

To determine the David Brown oil grade refer to Table 1

**TABLE 1 OIL GRADES**

Unit Size	Ambient Temperature °C	Input Speeds (Rev/min)							
		Below 200		201 to 500		501 to 1000		1001 to 1750	
		Ratio Range							
		5/1 to 15/1	20/1 to 70/1	5/1 to 15/1	20/1 to 70/1	5/1 to 15/1	20/1 to 70/1	5/1 to 15/1	20/1 to 70/1
SIZE 10 - 14	-30°C to 10°C	7 (9)	6 (9)	5 (7)	6 (8)	3 (5)	4 (6)	3 (5)	3 (5)
	-10°C to 30°C	8 (9)	8 (9)	6 (8)	7 (8)	5 (6)	5 (7)	4 (6)	4 (6)
	20°C to 50°C	9 (9)	9 (9)	7 (9)	8 (9)	5 (7)	6 (8)	5 (7)	5 (7)
SIZE 17 - 24	-30°C to 10°C	9 (9)	7 (9)	5 (7)	5 (7)	4 (6)	4 (6)	4 (6)	4 (6)
	-10°C to 30°C	8 (9)	8 (9)	5 (7)	6 (7)	4 (6)	4 (6)	4 (6)	4 (6)
	20°C to 50°C	9 (9)	9 (9)	6 (8)	7 (8)	5 (7)	5 (7)	5 (7)	5 (7)

Mineral oil grades are given in brackets.

**OIL CAPACITY (Litres)**

To determine the oil capacity refer to the appropriate table 2, 3 or 4. Oil capacities are only approximate and units should be filled to the middle of the sight glass. Please see dimension pages for sight glass positions. Do not overfill as excess will cause overheating and leakage.

**TABLE 2 LUBRICANT QUANTITY Litres SINGLE REDUCTION**

Oil capacities given are for units running above 300 rev/min input, figures in brackets are for units running at 300 rev/min and below.

Unit Type	Size of Unit					
	10	12	14	17	20	24
CNU	18 (30)	30 (43)	41 (75)	56.8 (102)	68 (155)	105 (273)
CNO	10 (16)	15 (24)	24 (39)	-	-	-
CNV	18 (24)	30 (39)	50 (61)	109 (127)	146 (160)	-

**TABLE 3 LUBRICANT QUANTITY Litres DOUBLE REDUCTION**

The lubricant grade used in the primary unit should be that selected for the secondary unit. See exact ratios for primary ratio, to calculate oil grade. Oil capacities are for overdriven primary units running above 100 rev/min, Figures in brackets are for units running at 100 rev/min and below. Secondary unit oil capacities for CNU, CNO and CNV are for secondary units running at 300 rev/min input and below.

Unit Type	Unit stage	Size of Unit					
		10	12	14	17	20	24
CNUD	Primary	4 (6.6)	7 (13)	7 (13)	11 (22)	11 (22)	15 (24)
	Secondary	30	43	75	102	155	273
CNOD	Primary	4 (6.6)	7 (13)	7 (13)	-	-	-
	Secondary	16	24	39	-	-	-
CNVD	Primary	4 (6.6)	7 (13)	7 (13)	11 (22)	11 (22)	-
	Secondary	24	39	61	127	160	-

**TABLE 4 MOTORISED UNITS LUBRICANT QUANTITY Litres TRIPLE REDUCTION**

Motorised triple reduction worm units use a helical-worm primary unit. Oil capacities are given for underdriven primary units running at all input speeds. Secondary unit oil capacities can be taken from table 3.

Unit Type	Unit stage	Size of Unit					
		10	12	14	17	20	24
CNUD	Primary	4.6	6.0	6.0	12	-	-
CNOD	Primary	4.6	6.0	6.0	-	-	-
CNVD	Primary	4.6	6.0	6.0	12	-	-

9810

**TABLE 5 APPROVED SYNTHETIC LUBRICANTS**
**Type G** Polyglycol based synthetic lubricants with Anti-Wear or EP additives.

SUPPLIER	LUBRICANT RANGE	Refer to notes page 7	DAVID BROWN GRADE NUMBERS						
			3G	4G	5G	6G	7G	8G	9G
			OIL SUPPLIERS' CORRESPONDING DESIGNATIONS						
Batoyle Freedom Group	Helicol W	b		* (-15)					
Boxer Services Limited	Boxergear W	b		150 (-15)	220 (-31)	320 (-31)	460 (-28)		
BP Oil International Limited	Energyn SG-XP	b			220 (-31)		460 (-34)	680 (-28)	
Caltex	Synlube CLP	b		150 (-37)	220 (-34)	320 (-31)	460 (-28)	680 (-31)	
	Synthetic Gear Lubricant	b		* (-25)					
Carl Bechem GmbH	Berusynth EP	b	100 (-31)	150 (-26)	220 (-25)	320 (-25)	460 (-25)	680 (-28)	1000 (-28)
Castrol International	Alphasyn PG	b		150 (-34)	220 (-34)	320 (-31)	460 (-28)		
Esso/Exxon	Glycolube	b		150 (-25)	220 (-25)	320 (-25)	460 (-23)		
Fina	Cirkan S	b		150 (-40)	220 (-43)	320 (-43)	460 (-37)		
	Giran S	b		150 (-49)	220 (-46)	320 (-43)	460 (-40)		
Fuchs Lubricants (UK) Plc	Renogear PGW	b		120 (-23)					
Fuchs Mineraloelwerke GmbH	Renolin PG	b	100 (-31)	150 (-34)	220 (-34)	320 (-34)	460 (-34)	680 (-28)	1000 (-28)
Inspec UK	Breox Ind Lubricant Sw	b		150 (-25)	220 (-25)	320 (-25)	460 (-23)		
	Breox Oil Soluble Ind Lub	b			220 (-23)				
	Breox Worm Gear Lube	b		65 (-25)					
Klüber Lubrication	Klübersynth GH6	b	100 (-30)	150 (-30)	220 (-25)	320 (-25)	460 (-20)	680 (-20)	1000 (-20)
Kuwait Petroleum International	Q8 Gade	b			220 (-22)	320 (-22)	460 (-22)		
Mobil Oil Company Limited	Glygoyle	b		22 (-25)	30 (-22)	HE320 (-37)	HE460 (-35)		
Optimol Ölwerke GmbH	Optiflex A	b		150 (-31)	220 (-28)	320 (-28)	460 (-28)	680 (-28)	1000 (-25)
Shell Oils	Tivela	b		SA (-25)	SB (-25)	SC (-25)	SD (-23)		
Texaco Limited	Synlube CLP	b		150 (-37)	220 (-34)	320 (-31)	460 (-28)	680 (-31)	
Tribol GmbH	Tribol 800	b	100 (-37)	150 (-37)	220 (-27)	320 (-25)	460 (-25)	680 (-25)	1000 (-23)

**TABLE 6 APPROVED SYNTHETIC LUBRICANTS**
**Type H** Polyalphaolefin based Synthetic, suitable for use in worm gear applications, do not contain EP additives.

**When using these lubricants mineral ratings should be used.** If in doubt consult David Brown Radicon Engineers.

SUPPLIER	LUBRICANT RANGE	Refer to notes page 7	DAVID BROWN GRADE NUMBERS						
			3H	4H	5H	6H	7H	8H	9H
			OIL SUPPLIERS' CORRESPONDING DESIGNATIONS						
BP Oil International Limited	Energyn HTX	b			220 (-31)	320 (-31)	460 (-25)		
Esso	Teresso SHP	b		150 (-37)	220 (-37)	320 (-31)	460 (-25)		
Exxon	Terestic SHP	b	100 (-40)	150 (-34)	220 (-32)	320 (-30)	460 (-22)		
Fina	Cirkan P	b		150 (-49)	220 (-46)	320 (-46)	460 (-40)		
Mobil Oil Company Limited	SHC 600 Series			629 (-37)	630 (-37)	632 (-37)	634 (-34)	636 (-29)	639 (-31)
Shell Oils	Omala RL		100 (-52)	150 (-49)	220 (-43)	320 (-40)	460 (-37)	680 (-34)	1000 (-31)

**Notes:**

- These lubricants may have their working life reduced if used at elevated temperatures. Consult oil supplier when the normal operating temperature exceeds 80°C.
- These lubricants should **not** be used in units fitted with trailing sprag or holdback devices without prior agreement with the manufacturer; the additives, or the base fluids may modify the coefficient of friction which these devices depend on.

**DANGER**

Numbers in brackets indicate recommended minimum operating temperature in °C.

**THE UNIT MUST NOT RUN BELOW THIS TEMPERATURE.**

**TABLE 7 APPROVED MINERAL LUBRICANTS**
**Type M** Straight mineral oils (sometimes with mild additive treatments).

SUPPLIER	LUBRICANT RANGE	Refer to notes page 7	DAVID BROWN GRADE NUMBERS				
			5M	6M	7M	8M	9M
OIL SUPPLIERS' CORRESPONDING DESIGNATIONS							
Batoyle Freedom Group	Cronus	a	220 (-4)	320 (-4)			
Boxer Services Limited	Volga	a	220 (-4)	320 (-4)	460 (-4)	680 (-4)	1000 (+2)
BP Oil International Limited	Energol CS & DC	a	CS220 (-4)	CS320 (-4)	CS460 (-4)	CS680 (-4)	DCW1000 (-1)
Caltex	Rando		220 (-10)	320 (-4)			
Carl Bechem GmbH	Staroil CBT		220 (-13)	320 (-16)	460 (-10)	680 (-7)	
Castrol International	Cresta	a			V (-4)		SHS (-4)
	Magna	a	220 (-13)	320 (-4)			
Esso	Canthus TK	a					1000 (+2)
	Teresso		220 (-13)	320 (-7)	460 (-4)		
Exxon	Teresstic		220 (-12)	320 (-5)	460 (-4)		
Fina	Cirkan	a	220 (-9)	320 (-9)	460 (-12)	680 (-9)	
Fuchs Lubricants (UK) Plc	Renolin GP	b	220 (-7)	320 (-3)	460 (-2)		
Fuchs Mineraloelwerke GmbH	Renolin DTA		220 (-13)	320 (-7)			
Klüber Lubrication	Crucolan		220 (-5)	320 (-5)	460 (-5)		
Kuwait Petroleum International	Q8 Verdi		220 (-19)	320 (-7)	460 (-7)		
Lubrication Engineers Inc	Almasol Pure Mineral Oil		401 (-13)				
	Monolec Turbine Oil	b	6406 (-18)	6407 (-13)			
	Multilec Industrial Oil		6806 (-10)	6807 (-10)			
Petromin Lubricating Oil Co.	Turbine Oil		C220 (-1)	C320 (+2)	C460 (+2)		
Shell Oils	Vitrea / Vitrea M	a	220 (-1)	320 (-1)	460 (-1)	680 (-1)	
Texaco Limited	Regal EP		220 (-1)	320 (-1)	460 (-1)		

**TABLE 8 APPROVED MINERAL LUBRICANTS**
**Type A** Mineral oils containing mild EP or Anti-Wear additives.

SUPPLIER	LUBRICANT RANGE	Refer to notes page 7	DAVID BROWN GRADE NUMBERS				
			5A	6A	7A	8A	9A
OIL SUPPLIERS' CORRESPONDING DESIGNATIONS							
Ampol Limited	Tecoma	b	220 (-4)	320 (-4)			
Batoyle Freedom Group	Apollo	b	220 (-2)	320 (-2)	460 (-2)	680 (-1)	1000 (-1)
Caltex	Rando HD	b	220 (-7)				
Carl Bechem GmbH	Staroil Nr	b	220 (-7)				
Castrol International	Alpha ZN	b	220 (-4)	320 (-4)	460 (-4)		
Engen Petroleum Limited	Gencirc	b	220 (-1)	320 (-1)			
Fuchs Lubricants (UK) Plc	Centigear	b	F (-1)	G (-1)	H (+1)		
Fuchs Mineraloelwerke GmbH	Renolin CLP	b	106 (-16)	108 (-10)	110 (-10)	112 (-10)	
Mobil Oil Company Limited	DTE		BB (-7)	AA (+2)	HH (+2)		
Omega Manufacturing Division	Omega 670	b	SAE90 (-4)		SAE140 (-4)		
	Omega 680	b	SAE90 (-17)				
Sasol Oil (Pty) Limited	Rubis		220 (-1)				
Shell Oils	Tellus	b	220 (-1)	320 (-1)			
Total	Cortis ZS	b	220 (-4)	320 (-4)			
Tribol GmbH	Tribol 770	b	779 (-2)				

**DANGER**

Numbers in brackets indicate recommended minimum operating temperature in °C.

**THE UNIT MUST NOT RUN BELOW THIS TEMPERATURE.**

9701

### EXAMPLE APPLICATION DETAILS

Absorbed power of driven machine = 27 kW  
 Output speed of gearbox or Input speed of machine = 20 rev/min  
 Application = Heavy duty, non uniformly fed bucket conveyor  
 Duration of service (hours per day) = 10 hrs  
 Motor speed = 3 phase electric motor, 4 pole, 1450 rev/min  
 David Brown mounting position = Underdriven type CNU  
 Ambient temperature = 20°C  
 Running time (%) = 100%

### 1 DETERMINE RATIO OF GEARBOX REQUIRED

$$\frac{\text{Motor speed}}{\text{Gearbox output speed}} = \frac{1450}{20} = 72$$

Refer to exact ratios (page 14) for nearest standard ratio = 70:1

### 3 DETERMINE REQUIRED MECHANICAL OUTPUT TORQUE CAPACITY OF GEARBOX

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

$$\frac{27 \times 9550}{20} = 12893 \text{ Nm}$$

$$\text{Required mechanical output torque} = \text{Absorbed output torque} \times F_m$$

$$12893 \times 1.25 = 16116 \text{ Nm}$$

### 2 DETERMINE MECHANICAL SERVICE FACTOR (Fm)

Refer to Load Classification by Application, table 5, page 4

Application = Heavy duty, non uniformly fed, bucket conveyor

<b>Conveyors-heavy duty not uniformly fed</b>		
apron	M	M = Moderate shock loading
assembly belt	M	
bucket chain	M	
	M	
	M	

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

Duration of service (hours per day) = 10hrs

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

Therefore mechanical service factor (Fm) = 1.25

### 4 DETERMINE SIZE OF GEAR BOX REQUIRED

Refer to ratings tables, Input speed = 1450 rev/min (synthetic oil), therefore refer to page 21.

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY	SIZE OF UNIT				
			10	12	14	17	
70.0	20.71	Mechanical	Input Power kW	21.60	34.70	48.60	83.40
			Output Torque Nm	8100	13200	18400	32100
		Thermal	Input Power kW	20.80	31.00	43.50	63.70
			Output Torque Nm	7800	11800	16400	24200
			Efficiency %	81	83	82	82

Mechanical output torque capacity must be equal or more than required mechanical output torque capacity of gear box.  
 Required mechanical output torque capacity = 16116 Nm. At a 70:1 ratio, nominal output speed 20.71 a CNU14 unit has a mechanical output torque capacity of 18400 Nm. Therefore the unit is acceptable

### 5 DETERMINE EXACT RATIO OF GEARBOX

Refer to exact ratios table, page 14

Nominal Ratio	Size 10	Size 12	Size 14	Size 17
	Exact Ratio	Exact Ratio	Exact Ratio	Exact Ratio

70.0	70	70	70	70
------	----	----	----	----

Exact ratio = 70.0:1

### 6 CHECK THERMAL CAPACITY OF GEARBOX SELECTED DETERMINE THERMAL OUTPUT TORQUE CAPACITY (Tt)

Refer to ratings tables

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY	SIZE OF UNIT				
			10	12	14	17	
70.0	20.71	Mechanical	Input Power kW	21.60	34.70	48.60	83.40
			Output Torque Nm	8100	13200	18400	32100
		Thermal	Input Power kW	20.80	31.00	43.50	63.70
			Output Torque Nm	7800	11800	16400	24200
			Efficiency %	81	83	82	82

Tt = 16400 Nm

Go to point 7

**7 DETERMINE THERMAL SERVICE FACTOR (Ft)**

Refer to table 2, page 3  
Ambient temperature = 20°C

Ambient temperature °C	-30	-20	-10	0	10	20
Factor Ft	1.65	1.52	1.39	1.26	1.14	1.0

Ft = 1.0

**8 DETERMINE THERMAL SERVICE FACTOR (Fp)**

Refer to table 3, page 3  
Mounting position = D  
Nominal output speed (rev/min) = 20.71

Unit Output Shaft Speed (Rev / min)	Mounting	
	CNU	CNV
0 to 100	1.0	0.90
12.5 & 15	1.0	0.90
20	1.0	0.90

Fp = 1.0

**9 DETERMINE THERMAL SERVICE FACTOR (Fd)**

Refer to table 4, page 3  
% running time = 100

Input shaft speed (Rev / min)	Unit Size	% Running time per hour	
		>60	>50 - 60
1450	10 & 12	1.00	1.20
	14 - 24	1.00	1.16

Fd = 1.00

**10 DETERMINE ALLOWABLE OUTPUT TORQUE THERMAL RATING (T<sub>therm</sub>)**

T<sub>therm</sub> = T<sub>t</sub> x F<sub>t</sub> x F<sub>p</sub> x F<sub>d</sub>  
 = 16400 x 1.0 x 1.0 x 1.0  
 = 16400 Nm

Thermal output torque capacity (T<sub>therm</sub>) must be equal or more than absorbed output torque to drive machine  
 Absorbed output torque = 12893 Nm (see step 3) T<sub>therm</sub> = 16400 Nm  
 Therefore unit is acceptable

**11 DETERMINE REQUIRED POWER OF ELECTRIC MOTOR**

Refer to ratings tables to determine gear unit efficiency

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY	SIZE OF UNIT				
			10	12	14	17	
70.0	20.71	Mechanical	Input Power kW	21.60	34.70	48.60	83.40
			Output Torque Nm	8100	13200	18400	32100
		Thermal	Input Power kW	20.80	31.00	43.50	63.70
			Output Torque Nm	7800	11800	16400	24200
		Efficiency %	81	83	82	82	

Efficiency % = 75      Required motor power =  $\frac{\text{Absorbed power of driven machine} \times 100}{\text{Efficiency}}$  =  $\frac{27 \times 100}{82}$  = 32.93 kW

The next largest standard motor power available is selected 37 kW

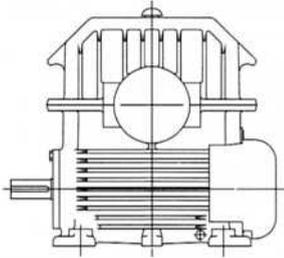
**12 CHECK OVERHUNG LOADS**

If sprocket, gear, etc is mounted on the input or output shaft then refer to Overhung loads procedure, page 16

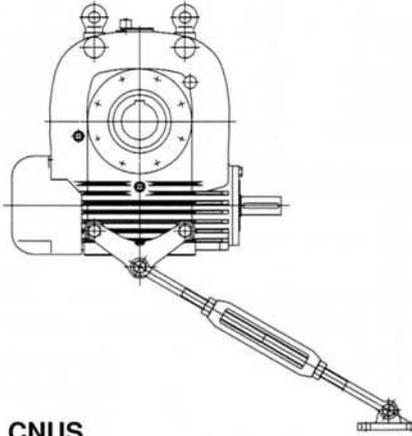
- NOTE: If any of the following conditions occur then consult David Brown Radicon Application Engineers:-
- a) Inertia of the Driven Machine (Referred to motor speed) >1.0  
Inertia of Gear Unit plus Motor
  - b) Ambient temperature is above 50°C
- or
- c) The unit is required without a fan

9610

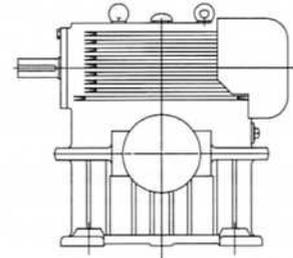
### SINGLE REDUCTION UNITS



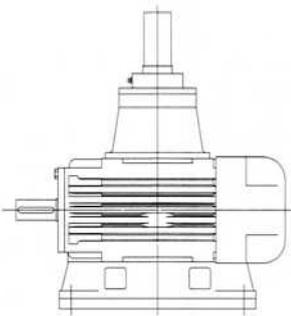
**CNU**  
UNDERDRIVEN



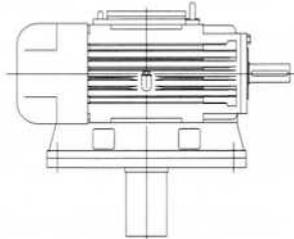
**CNUS**  
UNDERDRIVEN  
SHAFT MOUNT (WITH TORQUE  
ARM)



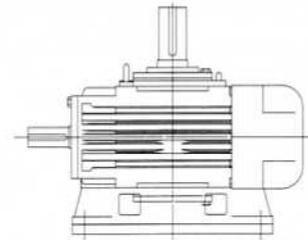
**CNO**  
OVERDRIVEN



**CNV-CT**  
VERTICAL OUTPUT SHAFT  
COOLING TOWER UNIT

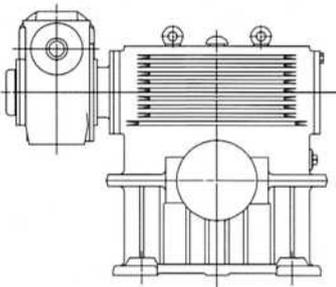


**V-HDST**  
VERTICAL OUTPUT SHAFT  
HEAVY DUTY STIRRER UNIT

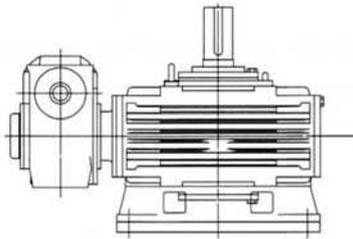


**CNV**  
VERTICAL OUTPUT SHAFT

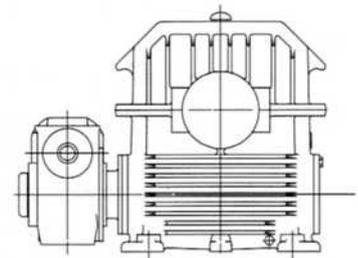
### DOUBLE REDUCTION UNITS



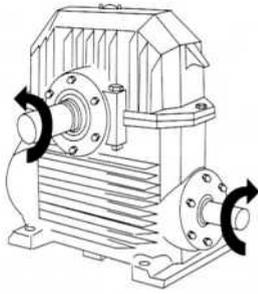
**CNOD**  
OVERDRIVEN  
DOUBLE REDUCTION (WORM/  
WORM)



**CNVD**  
VERTICAL OUTPUT SHAFT  
DOUBLE REDUCTION (WORM/  
WORM)



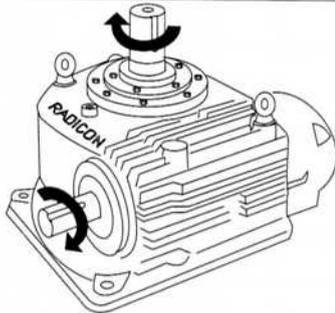
**CNUD**  
UNDERDRIVEN  
DOUBLE REDUCTION (WORM/  
WORM)



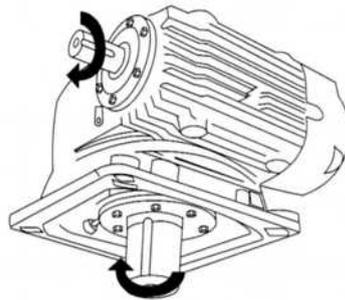
U Type, Shaft Handing L



O Type, Shaft Handing R



V Type, Shaft Handing LX

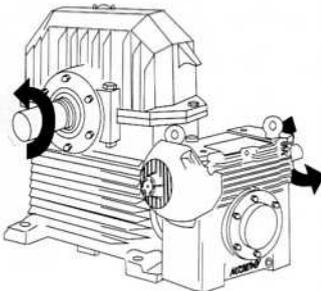


V Type, Shaft Handing LY

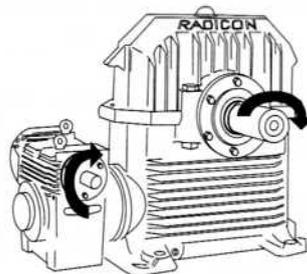
## SINGLE REDUCTION UNITS

Shaft handing is determined by considering the unit in its correct U, O or V mount position, then looking at the end of the input shaft, or at the motor if motorised. The relative position of the output shaft decides the shaft handing ie R or L (right hand side or left hand side respectively)

For V type units with output shaft upwards a suffix is introduced ie RX or LX. Similarly with output shaft downwards a suffix Y is introduced ie RY or LY. Output shafts for units handed LX and LY rotate in the opposite directions to those shown for units handed RX and RY, relative to the input shaft rotation indicated



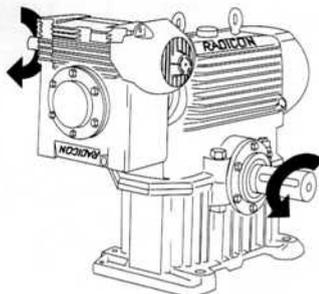
UD Type, Shaft Handing R/L



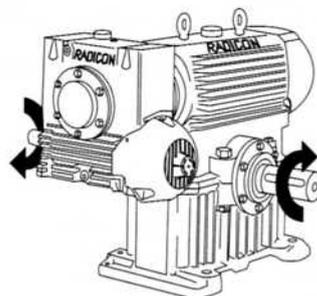
UD Type, Shaft Handing R/R

## DOUBLE REDUCTION UNITS (worm/worm)

Shaft handing is determined by considering the unit in its correct U, O or V mount position, then looking directly at the primary unit which will have its input shaft to either right or left. The positions of first the input shaft and then the output shaft relative to the viewed position decide the handing ie R/R, L/R, R/L or L/L. Shaft mount units should be specified R/S or L/S.

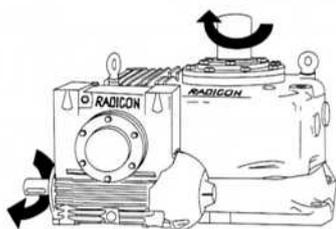


OD Type, Shaft Handing L/R

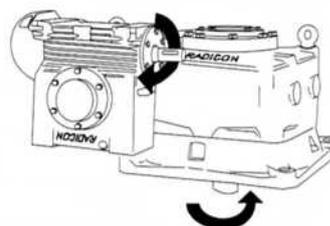


OD Type, Shaft Handing 2L/R

Double worm reduction units are usually assembled with the primary unit in the O position to ensure clearance underneath. However the primary unit can be assembled in the U position, and the handing is prefixed by 2 eg 2R/R, 2L/R, 2R/L or 2L/L; with the output shafts rotating in the opposite direction relative to the input shaft rotation indicated.



VD Type, Shaft Handing 2L/RX

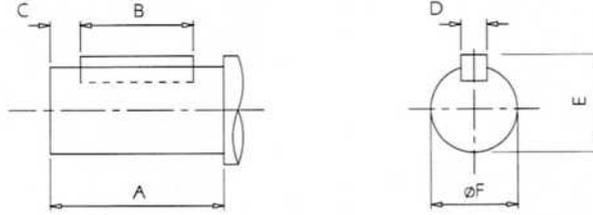


VD Type, Shaft Handing R/RX

For V type units with output shaft upwards a suffix is introduced eg R/RX, L/RX, R/LX or L/LX. Similarly with output shaft downwards a suffix Y is introduced eg R/RX, L/RX, R/LX or L/LX rotate in the opposite direction to those shown for units handed RX and RY, relative to the input shaft rotation indicated.

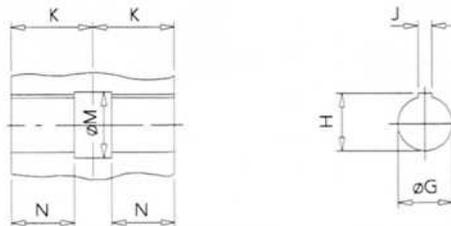
9610

## OUTPUTSHAFT OPTIONS



SIZE OF UNIT	TYPE OF OUTPUTSHAFT	DIMENSIONS IN MM (IMPERIAL & AMERICAN SHAFTS IN INCHES)					
		A	B	C	D	E	øF
10	CN - Metric	152	118	16	22.000 21.948	94.500 94.148	85.035 85.013
	N - Imperial	6.00"	5.06"	-	0.877" 0.875"	3.509" 3.499"	3.2500" 3.2491"
	A - American	6.00"	5.375"	-	0.752" 0.750"	3.578" 3.570"	3.2500" 3.2491"
12	CN - Metric	171	135	17.5	25.000 24.948	105.500 105.148	95.035 95.013
	N - Imperial	6.75"	5.75"	-	1.003" 1.000"	4.063" 4.053"	3.7500" 3.7491"
	A - American	6.75"	5.8125"	-	0.877" 0.875"	4.132" 4.124"	3.7500" 3.7491"
14	CN - Metric	191	148	21	32.000 31.938	134.000 133.638	120.035 120.013
	N - Imperial	7.50"	7.63"	-	1.253" 1.250"	4.860" 4.850"	4.5000" 4.4991"
	A - American	7.50"	7.75"	-	1.003" 1.000"	4.937" 4.928"	4.5000" 4.4991"
17	CN - Metric	203	144	23	36.000 35.938	155.500 155.138	140.040 140.015
	N - Imperial	8.00"	8.00"	-	1.503" 1.500"	5.904" 5.894"	5.5000" 5.4990"
	A - American	8.00"	8.125"	-	1.253" 1.250"	6.046" 6.037"	5.5000" 5.4990"
20	CN - Metric	241	180	25	40.000 39.938	187.500 187.138	170.040 170.015
	N - Imperial	9.50"	9.50"	-	1.753" 1.750"	7.013" 7.003"	6.5000" 6.4990"
	A - American	9.50"	9.625"	-	1.504" 1.500"	7.156" 7.146"	6.5000" 6.4990"
24	CN - Metric	355	235	27.5	45.000 44.938	210.000 209.638	190.046 190.017
	N - Imperial	14.0"	12.500"	-	2.003" 2.000"	8.060" 8.050"	7.5000" 7.4988"
	A - American	14.0"	12.625"	-	1.754" 1.750"	8.514" 8.504"	7.5000" 7.4988"

## OUTPUTBORE OPTIONS



SIZE OF UNIT	TYPE OF OUTPUTBORE	DIMENSIONS IN MM (AMERICAN SHAFTS IN INCHES)					
		G	H	J	K	M	N
10	CN - Metric	110.071 110.035	116.6 116.4	28.026 27.972	165	133.3	127
	A - American	4.3335"	4.59"	1.103"	6.5"	5.25"	5.0"
12	CN - Metric	130.083 130.043	137.6 137.4	32.032 31.970	185	152.0	152
	A - American	5.1214"	5.417"	1.261"	7.25"	6.00"	6.0"
14	CN - Metric	160.084 160.043	169.7 169.4	40.030 39.970	220	187.0	178
	A - American	6.3025"	6.681"	1.576"	8.6875"	7.375"	7.0"

**SINGLE REDUCTION (worm)**

Nominal Ratio	10	12	14	17	20	24
5 . 0	5.000	5.000	4.909	5.000	5.000	5.083
7 . 5	7.500	7.500	7.500	7.500	7.500	7.500
1 0 .	9.750	9.800	9.800	10.00	9.833	9.833
1 2 .	12.75	12.50	12.75	12.50	12.75	12.60
1 5 .	14.67	14.67	14.75	14.75	14.75	14.75
2 0 .	19.67	19.67	19.67	19.67	19.67	19.67
2 5 .	24.50	25.00	24.50	24.67	24.67	25.00
3 0 .	29.50	29.50	30.50	29.50	29.50	29.50
4 0 .	40.00	40.00	40.00	40.00	40.00	39.50
5 0 .	50.00	50.00	50.00	50.00	49.50	49.50
6 0 .	60.00	60.00	60.00	60.00	60.00	60.00
7 0 .	70.00	70.00	70.00	70.00	70.00	70.00

**DOUBLE REDUCTION (worm/worm) \***

Nominal Ratio	Primary & Secondary Nominal Ratio	10	12	14	17	20	24
75.00	5 x 15	75.17	75.17	75.59	75.22	73.75	73.75
100.00	5 x 20	100.8	100.8	100.8	100.3	98.33	98.33
125.00	5 x 25	125.6	128.1	125.6	125.8	123.3	125.0
150.00	5 x 30	151.2	151.2	156.3	150.4	147.5	147.5
200.00	10 x 20	191.8	192.7	192.7	192.7	191.8	192.7
225.00	7.5 x 30	218.3	223.4	230.9	223.4	221.3	221.3
250.00	10 x 25	238.9	245.0	240.1	241.7	240.5	245.0
300.00	10 x 30	287.6	289.1	298.9	289.1	287.6	289.1
350.00	5 x 70	358.8	358.8	358.8	357.0	350.0	350.0
375.00	15 x 25	379.8	366.7	359.3	378.2	361.8	366.7
400.00	20 x 20	383.5	403.2	403.2	403.2	386.8	386.8
450.00	15 x 30	457.3	432.7	447.3	452.3	432.7	432.7
500.00	20 x 25	477.8	512.5	502.3	505.7	485.1	491.7
600.00	10 x 60	585.0	588.0	588.0	588.0	585.0	588.0
625.00	25 x 25	612.5	612.5	600.3	604.3	604.3	625.0
700.00	10 x 70	682.5	686.0	686.0	686.0	682.5	686.0
750.00	25 x 30	737.5	722.8	747.3	722.8	722.8	737.5
800.00	20 x 40	780.0	820.0	820.0	820.0	786.7	776.8
900.00	15 x 60	930.0	880.0	880.0	920.0	880.0	880.0
1000.00	40 x 25	980.0	1000.	980.0	986.7	986.7	1000.
1200.00	20 x 60	1170.	1230.	1230.	1230.	1180.	1180.
1250.00	50 x 25	1225.	1250.	1225.	1233.	1233.	1250.
1400.00	20 x 70	1365.	1435.	1435.	1435.	1377.	1377.
1500.00	50 x 30	1475.	1475.	1525.	1475.	1475.	1475.
1600.00	40 x 40	1600.	1600.	1600.	1600.	1600.	1580.
1750.00	70 x 25	1715.	1750.	1715.	1727.	1727.	1750.
1800.00	60 x 30	1770.	1770.	1830.	1770.	1770.	1770.
2000.00	50 x 40	2000.	2000.	2000.	2000.	2000.	1975.
2100.00	30 x 70	2100.	2100.	2100.	2100.	2065.	2065.
2400.00	40 x 60	2400.	2400.	2400.	2400.	2400.	2400.
2500.00	50 x 50	2500.	2500.	2500.	2500.	2475.	2475.
2800.00	40 x 70	2800.	2800.	2800.	2800.	2800.	2800.
3000.00	50 x 60	3000.	3000.	3000.	3000.	3000.	3000.
3500.00	50 x 70	3500.	3500.	3500.	3500.	3500.	3500.
3600.00	60 x 60	3600.	3600.	3600.	3600.	3600.	3600.
4200.00	60 x 70	4200.	4200.	4200.	4200.	4200.	4200.

\* Refer to page 80 for triple reduction motorised units (helical worm / worm)

# **SERIES A** **RADICON**

## **OVERHUNG LOADS (NEWTONS)** **ON OUTPUT SHAFTS**

9610

### Maximum permissible overhung loads

When a sprocket, gear etc. is mounted on the shaft a calculation, as below, must be made to determine the overhung load on the shaft, and the results compared to the maximum permissible overhung loads tabulated. Overhung loads can be reduced by increasing the diameter to the sprocket, gear, etc. If the maximum permissible overhung load is exceeded, the sprocket, gear, etc. should be mounted on a separate shaft, flexibly coupled and supported in its own bearings, or the gear unit shaft should be extended to run in an outboard bearing. Alternatively, a larger gear is often a less expensive solution.

Permissible overhung loads vary according to the direction of rotation. The values tabulated are for the most unfavourable direction with the unit transmitting full rated power and the load P applied midway along the shaft extension. Hence they can sometimes be increased for a more favourable direction of rotation, or if the power transmitted is less than the rated capacity of the gear unit, or if the load is applied nearer to the gear unit case. Refer to David Brown for further details. In any event, the sprocket, gear etc. should be positioned as close as possible to the gear unit case in order to reduce bearing loads and shaft stresses, and to prolong life.

### Overhung load (Newtons)

$$P = \frac{\text{kW} \times 9,500,000 \times K}{N \times R}$$

where

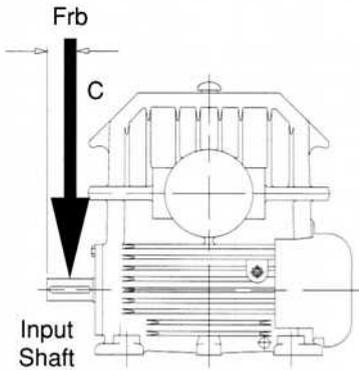
- P = equivalent overhung load (Newtons)
- kW = power transmitted by the shaft (kilowatts)
- N = speed of shaft (rev/min)
- R = pitch radius of sprocket, etc. (mm)
- K = factor

### Overhung member K (factor)

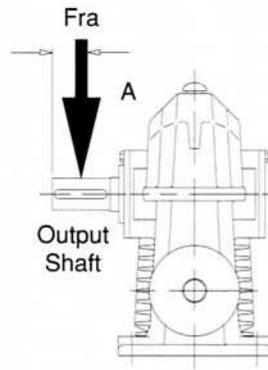
- Chain sprocket\* 1.00
- Spur or helical pinion 1.25
- Vee belt sheave 1.50
- Flat belt pulley 2.00

\* If multistrand chain drives are equally loaded and the outer stand is further than dimension A output or B input refer to David Brown Radicon.

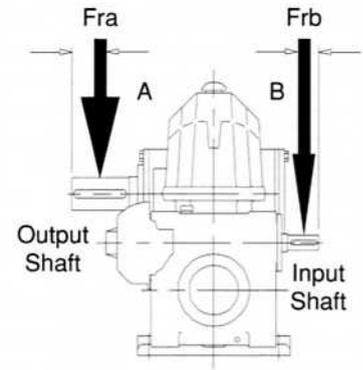
Note: 1 Newton = 0.10197 kg = 0.2248 lbs.



**Single reduction (worm)**



**Double reduction (worm/worm)**



### Distance midway along the shaft extension

Size of unit	Dimension A		Dimension B		Dimension C	
	CN (mm)	N (inches)	CN (mm)	N (inches)	CN (mm)	N (inches)
10	76	3	41	1.615	53.5	2.105
12	85.5	3.375	41	1.615	60.5	2.380
14	95.5	3.75	41	1.615	68.5	2.695
17	101.5	4	41	1.615	91.5	3.600
20	120.5	4.75	41	1.615	105	4.135
24	177.5	7.0	60.5	2.380	118	4.645

**SINGLE REDUCTION  
OVERHUNG LOADS (Fra) & AXIAL THRUST CAPACITIES ON OUTPUTSHAFT  
at 1450 - 960 rev/min**

		OUTPUT REV / MIN							
		290	190	145	96	75	48	24	13
10	OHL (Fra)	37700	42500	47600	48600	49200	48700	50100	50500
	THRUST	24500	29600	36300	44600	51700	64300	68500	68500
12	OHL (Fra)	37300	40900	46700	52900	56400	64200	63800	63400
	THRUST	27800	30100	39600	49900	59100	73500	81500	81500
14	OHL (Fra)	74500	83300	90400	95400	97700	96900	101000	101000
	THRUST	63100	72900	78700	100200	99100	99100	99300	99300
17	OHL (Fra)	80100	87000	98200	110000	118000	141000	148000	149000
	THRUST	74400	77400	94500	112000	127200	130400	134300	135500
20	OHL (Fra)	88400	98200	109000	123000	138000	140100	153000	160860
	THRUST	50700	63000	67800	100000	113000	148000	157000	160000
24	OHL (Fra)	75300	78900	83100	91800	106000	119350	128170	140100
	THRUST	86900	85300	89600	12600	150000	193000	207500	207500

**DOUBLE REDUCTION  
OVERHUNG LOADS (Fra) & AXIAL THRUST CAPACITIES ON OUTPUTSHAFT  
at 1450 - 960 rev/min**

RATIO		UNIT SIZE					
		10	12	14	17	20	24
75	OHL (Fra)	54400	69200	112000	165000	160000	120000
	THRUST	56400	64260	94100	113000	120000	163000
150	OHL (Fra)	57300	73400	116000	171000	162000	124500
	THRUST	65200	78000	94100	113000	120000	163000
200	OHL (Fra)	49200	66200	107000	160000	142700	129700
	THRUST	62260	74260	88900	113000	120000	163000
300	OHL (Fra)	54200	68200	110000	164000	143700	103780
	THRUST	62260	74260	88900	111300	113000	126000
400	OHL (Fra)	46500	60500	95100	145000	102300	77840
	THRUST	62260	84000	87460	83000	111300	126000
600	OHL (Fra)	53800	72300	113000	167000	130700	93400
	THRUST	61600	72060	87460	83000	100600	126000
800	OHL (Fra)	50100	64500	111000	153000	162000	129700
	THRUST	61600	71100	86000	89000	130000	166000
1200	OHL (Fra)	50900	65700	103000	153000	150480	124500
	THRUST	61600	71100	81500	89000	115300	166000
1600	OHL (Fra)	50000	64300	96200	146000	149450	121900
	THRUST	61600	71100	80000	94800	112600	166000
2400	OHL (Fra)	50800	65500	98700	149000	162000	129700
	THRUST	61600	71100	80000	109000	130400	170000
3000	OHL (Fra)	50700	65400	98700	149000	162000	129700
	THRUST	61600	71100	80000	109000	130400	170000
4200	OHL (Fra)	51000	65800	97600	150000	162000	129700
	THRUST	61600	71100	80000	109000	130400	170000

9612

**Use Synthetic ratings when:**

using **synthetic** lubricant type **G**

**Use Mineral ratings when:**

using **mineral** lubricant type **M**

using **mineral** lubricant type **A**

using **synthetic** lubricant type **H**

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	350.00	Mechanical	Input Power kW	153.00	227.00	315.00	566.00	820.00	1080.00
			Output Torque Nm	4040	5980	8140	14900	21600	29100
		Thermal	Input Power kW	125.00	175.00	246.00	313.00	458.00	602.00
			Output Torque Nm	3300	4600	6350	8180	12000	16100
			Efficiency %	97	96	96	96	96	96
7.5	233.33	Mechanical	Input Power kW	113.00	174.00	236.00	488.00	726.00	1030.00
			Output Torque Nm	4440	6850	9250	19200	28700	40700
		Thermal	Input Power kW	108.00	155.00	220.00	289.00	470.00	579.00
			Output Torque Nm	4240	6100	8650	11300	18500	22800
			Efficiency %	96	96	96	96	96	96
10.0	175.00	Mechanical	Input Power kW	79.20	143.00	193.00	406.00	570.00	801.00
			Output Torque Nm	4010	7320	9870	21200	29500	41400
		Thermal	Input Power kW	97.20	140.00	207.00	266.00	452.00	559.00
			Output Torque Nm	4940	7140	10600	13800	23300	28800
			Efficiency %	95	95	96	95	96	96
12.5	140.00	Mechanical	Input Power kW	87.40	116.00	179.00	302.00	403.00	652.00
			Output Torque Nm	5770	7500	11800	19600	26800	43000
		Thermal	Input Power kW	84.10	130.00	177.00	245.00	409.00	508.00
			Output Torque Nm	5550	8450	11700	15800	27200	33400
			Efficiency %	95	95	95	95	96	96
15.0	116.67	Mechanical	Input Power kW	70.80	101.00	186.00	308.00	451.00	562.00
			Output Torque Nm	5340	7660	14200	23500	34700	43200
		Thermal	Input Power kW	78.00	116.00	163.00	226.00	369.00	468.00
			Output Torque Nm	5890	8780	12400	17100	28300	35900
			Efficiency %	94	95	95	94	95	95
20.0	87.50	Mechanical	Input Power kW	67.30	105.00	150.00	261.00	323.00	437.00
			Output Torque Nm	6740	10600	15100	26300	32800	44400
		Thermal	Input Power kW	65.40	95.50	142.00	180.00	327.00	405.00
			Output Torque Nm	6550	9590	14300	18000	33200	41100
			Efficiency %	93	94	94	93	95	95
25.0	70.00	Mechanical	Input Power kW	55.30	82.60	119.00	194.00	293.00	350.00
			Output Torque Nm	6780	10400	14600	24000	36800	44500
		Thermal	Input Power kW	52.00	77.10	116.00	149.00	239.00	309.00
			Output Torque Nm	6370	9680	14400	18300	30000	39200
			Efficiency %	92	92	93	91	93	93
30.0	58.33	Mechanical	Input Power kW	47.00	75.70	108.00	188.00	249.00	304.00
			Output Torque Nm	6840	11100	16400	27700	37100	45300
		Thermal	Input Power kW	44.90	69.30	101.00	131.00	228.00	292.00
			Output Torque Nm	6530	10200	15300	19100	33900	43400
			Efficiency %	90	91	91	91	92	92
40.0	43.75	Mechanical	Input Power kW	41.00	59.00	89.10	130.00	185.00	232.00
			Output Torque Nm	7850	11400	17200	25300	36800	45500
		Thermal	Input Power kW	34.70	52.20	75.40	112.00	165.00	258.00
			Output Torque Nm	6610	10000	14500	21700	32600	50900
			Efficiency %	87	88	88	89	91	91
50.0	35.00	Mechanical	Input Power kW	34.30	52.40	73.80	131.00	124.00	181.00
			Output Torque Nm	7990	12300	17300	31000	29700	43800
		Thermal	Input Power kW	29.10	43.40	62.70	86.60	172.00	221.00
			Output Torque Nm	6740	10200	14600	20100	41800	53700
			Efficiency %	85	86	85	85	89	90
60.0	29.17	Mechanical	Input Power kW	29.10	46.30	62.50	111.00	130.00	157.00
			Output Torque Nm	7910	12800	17300	31000	36100	44100
		Thermal	Input Power kW	25.30	37.40	58.10	77.10	105.00	141.00
			Output Torque Nm	6840	10200	16100	21100	28900	39300
			Efficiency %	83	83	85	84	84	85
70.0	25.00	Mechanical	Input Power kW	24.30	39.10	55.00	95.80	114.00	139.00
			Output Torque Nm	7580	12400	17300	30400	36300	45100
		Thermal	Input Power kW	23.70	35.00	48.80	69.70	93.60	139.00
			Output Torque Nm	7390	11000	15200	21700	29600	45200
			Efficiency %	82	82	82	82	83	85

SINGLE REDUCTION

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	23.33	Mechanical	Input Power kW	27.00	38.60	53.60	91.60	153.00	219.00 (226.00)
			Output Torque Nm	9760	14100	19800	34000	56100	80800 (83400)
		Thermal	Input Power kW	22.50	34.70	50.10	78.70	111.00	162.00
			Output Torque Nm	8140	12700	18500	29200	40700	59700
		Efficiency %	88	89	90	90	91	92	
100.	17.50	Mechanical	Input Power kW	25.00 (25.40)	38.90 (39.60)	53.60	91.60	95.20	164.00
			Output Torque Nm	11900 (12100)	18800 (19100)	26000	44600	45900	79700
		Thermal	Input Power kW	18.90	28.60	42.80	63.10	95.50	138.00
			Output Torque Nm	8990	13700	20800	30500	46000	66800
		Efficiency %	86	87	88	88	90	90	
125.	14.00	Mechanical	Input Power kW	20.60 (20.80)	31.00	44.20	72.70	110.00 (115.00)	133.00 (179.00)
			Output Torque Nm	11900 (12000)	18500	26200	43500	65500 (68600)	80800 (109000)
		Thermal	Input Power kW	15.30	23.30	35.50	52.40	76.90	110.00
			Output Torque Nm	8800	13900	21000	31200	45500	66500
		Efficiency %	84	85	86	87	88	89	
150.	11.67	Mechanical	Input Power kW	17.50 (17.60)	27.00 (28.20)	35.20	68.10 (70.00)	86.40	114.00 (122.00)
			Output Torque Nm	11900 (12000)	18800 (19600)	25500	48100 (49400)	60600	80800 (86700)
		Thermal	Input Power kW	13.30	21.00	30.50	46.90	68.50	102.00
			Output Torque Nm	8990	14500	22100	32900	47900	72100
		Efficiency %	82	84	85	85	87	88	
200.	8.75	Mechanical	Input Power kW	13.70 (15.90)	21.20 (22.30)	32.80	53.20 (57.00)	56.70	87.10 (97.00)
			Output Torque Nm	11900 (13800)	18800 (19800)	29400	48100 (51500)	51800	80800 (90000)
		Thermal	Input Power kW	15.60	23.20	32.90	48.90	74.60	91.70
			Output Torque Nm	13600	20600	29500	44200	68300	85100
		Efficiency %	83	84	85	86	87	88	
225.	7.78	Mechanical	Input Power kW	12.50 (13.80)	18.80 (21.70)	26.30	47.10 (53.90)	63.30	77.40 (89.30)
			Output Torque Nm	11900 (13200)	18800 (21700)	27400	48100 (55100)	65200	80800 (93300)
		Thermal	Input Power kW	12.50	19.30	26.80	40.70	60.60	76.50
			Output Torque Nm	11900	19300	28000	41500	62400	79900
		Efficiency %	80	82	83	84	85	87	
250.	7.00	Mechanical	Input Power kW	11.40 (13.50)	17.20 (20.00)	28.60	43.40 (43.50)	58.50 (69.10)	70.20 (111.00)
			Output Torque Nm	11900 (14200)	18800 (21900)	31200	48100 (48200)	65500 (77500)	80800 (128000)
		Thermal	Input Power kW	12.70	18.90	26.40	37.20	54.10	69.30
			Output Torque Nm	13300	20700	28700	41100	60500	79700
		Efficiency %	80	82	83	84	85	86	
300.	5.83	Mechanical	Input Power kW	9.73 (11.40)	14.80 (17.60)	21.70	37.00 (45.20)	49.70 (51.90)	60.10 (72.80)
			Output Torque Nm	11900 (14000)	18800 (22400)	28700	48100 (58800)	65500 (68500)	80800 (98000)
		Thermal	Input Power kW	11.10	16.80	23.00	34.40	51.10	63.70
			Output Torque Nm	13600	21300	30400	44700	67400	85700
		Efficiency %	78	81	81	82	84	85	
350.	5.00	Mechanical	Input Power kW	8.24	13.00	20.90	29.40	45.00 (52.50)	53.60 (61.60)
			Output Torque Nm	11300	18400	30000	43400	65500 (76600)	80800 (93200)
		Thermal	Input Power kW	7.35	11.10	15.60	24.20	32.00	49.40
			Output Torque Nm	10100	15600	22300	35400	46200	74300
		Efficiency %	70	72	73	75	76	79	
375.	4.67	Mechanical	Input Power kW	7.49 (9.82)	11.90 (14.20)	21.20	28.70 (29.70)	39.90 (48.60)	48.10 (76.00)
			Output Torque Nm	11900 (15700)	18800 (22400)	33500	48100 (49800)	65500 (79800)	80800 (128000)
		Thermal	Input Power kW	10.70	15.30	21.30	28.60	41.80	54.00
			Output Torque Nm	17000	24300	33600	47800	68500	90900
		Efficiency %	77	79	81	81	83	84	
400.	4.38	Mechanical	Input Power kW	7.31 (8.88)	10.90 (11.20)	18.60	27.00 (28.10)	32.50	45.30 (55.80)
			Output Torque Nm	11900 (14500)	18800 (19200)	32500	48100 (50200)	57400	80800 (99700)
		Thermal	Input Power kW	12.30	16.50	22.70	32.80	49.70	60.80
			Output Torque Nm	20100	28600	40000	58700	88100	109000
		Efficiency %	78	78	79	81	84	85	
450.	3.89	Mechanical	Input Power kW	6.42 (7.90)	10.30 (12.30)	16.00	24.50 (32.40)	34.00 (37.90)	41.20 (53.20)
			Output Torque Nm	11900 (14700)	18800 (22400)	30600	48100 (63700)	65500 (73200)	80800 (105000)
		Thermal	Input Power kW	9.29	13.70	18.70	26.90	39.80	50.10
			Output Torque Nm	17400	25000	35800	52700	76800	98300
		Efficiency %	74	77	78	80	82	83	
500.	3.50	Mechanical	Input Power kW	6.12 (8.24)	8.89 (10.60)	16.10 (16.40)	22.10 (23.30)	30.50 (37.80)	36.70 (58.00)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34800)	48100 (50700)	65500 (81300)	80800 (128000)
		Thermal	Input Power kW	9.67	13.30	18.30	24.70	35.40	45.80
			Output Torque Nm	19000	28300	38800	53700	76200	101000
		Efficiency %	75	76	78	79	81	82	
600.	2.92	Mechanical	Input Power kW	5.60 (7.03)	8.50 (10.10)	13.20	20.50 (21.20)	28.00 (39.10)	33.30 (52.40)
			Output Torque Nm	11900 (15100)	18800 (22400)	30300	48100 (49900)	65500 (92000)	80800 (128000)
		Thermal	Input Power kW	6.66	9.28	13.30	20.00	25.50	33.10
			Output Torque Nm	14200	20500	30600	46900	59400	80300
		Efficiency %	67	69	72	73	73	76	
625.	2.80	Mechanical	Input Power kW	4.97 (6.68)	7.59 (9.01)	13.80 (14.00)	18.90 (20.10)	25.10 (31.50)	29.60 (46.70)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34700)	48100 (51200)	65500 (82400)	80800 (128000)
		Thermal	Input Power kW	8.89	12.40	16.90	22.70	31.90	40.60
			Output Torque Nm	21600	31100	42100	57900	83400	111000
		Efficiency %	72	74	76	77	79	80	
700.	2.50	Mechanical	Input Power kW	4.89	7.49 (8.00)	12.70	18.10 (18.50)	24.80 (33.70)	28.90 (37.60)
			Output Torque Nm	11800	18800 (20100)	32400	48100 (49000)	65500 (89600)	80800 (106000)
		Thermal	Input Power kW	6.31	8.84	11.30	16.90	22.60	31.80
			Output Torque Nm	15400	22300	28800	44800	59500	89000
		Efficiency %	65	67	68	71	71	75	
750.	2.33	Mechanical	Input Power kW	4.28 (5.39)	6.59 (7.82)	10.60	16.20 (21.90)	21.40 (24.70)	25.40 (33.90)
			Output Torque Nm	11900 (15100)	18800 (22400)	31800	48100 (65600)	65500 (75800)	80800 (108000)
		Thermal	Input Power kW	7.79	11.10	14.90	21.50	30.60	37.90
			Output Torque Nm	22100	32100	45000	64100	94100	121000
		Efficiency %	69	72	74	75	78	79	
800.	2.19	Mechanical	Input Power kW	4.16 (5.47)	6.10 (6.59)	10.80	14.10	19.60	24.10
			Output Torque Nm	11900 (15800)	18800 (20300)	34200	46800	64700	80700
		Thermal	Input Power kW	6.59	9.21	11.90	17.60	24.30	37.40
			Output Torque Nm	19100	28700	37400	58700	80400	126000
		Efficiency %	67	69	71	74	77	79	

DOUBLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	1.94	Mechanical	Input Power kW	3.77 (4.87)	6.01 (7.12)	9.88	13.80 (15.40)	19.50 (29.60)	23.20 (36.50)
			Output Torque Nm	11900 (15600)	18800 (22400)	32400	48100 (53700)	65500 (100000)	80800 (128000)
		Thermal	Input Power kW	5.42	7.71	10.80	15.70	20.00	26.00
			Output Torque Nm	17400	24300	35600	55100	67000	90700
			Efficiency %	62	65	68	69	70	73
1000.	1.75	Mechanical	Input Power kW	3.34 (4.47)	5.07 (6.01)	9.13 (9.22)	12.40 (13.50)	16.40 (21.00)	19.60 (30.80)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34500)	48100 (52600)	65500 (84500)	80800 (128000)
		Thermal	Input Power kW	7.83	10.80	14.40	18.80	25.90	33.00
			Output Torque Nm	28700	41000	54300	73600	104000	137000
			Efficiency %	67	68	70	72	74	76
1200.	1.46	Mechanical	Input Power kW	3.11 (4.06)	4.56 (5.40)	7.74	10.70 (12.30)	15.10 (23.70)	17.90 (28.20)
			Output Torque Nm	11900 (15700)	18800 (22400)	33700	48100 (55500)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.96	6.76	9.43	13.80	17.10	22.30
			Output Torque Nm	19300	28300	41300	62200	74400	101000
			Efficiency %	60	61	65	67	67	70
1250.	1.40	Mechanical	Input Power kW	2.79 (3.74)	4.21 (4.98)	7.55 (7.60)	10.20 (11.30)	13.60 (17.60)	16.20 (25.50)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34500)	48100 (53100)	65500 (85400)	80800 (128000)
		Thermal	Input Power kW	7.46	10.20	13.30	17.50	24.10	30.40
			Output Torque Nm	32800	46700	61100	83100	118000	153000
			Efficiency %	64	65	68	70	72	73
1400.	1.25	Mechanical	Input Power kW	2.75 (2.82)	4.03 (4.45)	7.04	9.57 (10.80)	13.40 (19.80)	15.60 (22.40)
			Output Torque Nm	11900 (12200)	18800 (20800)	33600	48100 (54500)	65500 (97700)	80800 (117000)
		Thermal	Input Power kW	4.78	6.52	8.05	11.70	15.30	21.70
			Output Torque Nm	21200	31000	38500	59400	74800	113000
			Efficiency %	58	60	61	64	65	69
1500.	1.17	Mechanical	Input Power kW	2.42 (3.13)	3.68 (4.34)	5.80	8.81 (11.80)	11.60 (13.30)	13.90 (18.40)
			Output Torque Nm	11900 (15600)	18800 (22400)	31500	48100 (65100)	65500 (75200)	80800 (107000)
		Thermal	Input Power kW	6.56	9.13	12.00	16.70	23.40	28.70
			Output Torque Nm	33600	48300	66600	92600	134000	169000
			Efficiency %	61	63	65	68	70	72
1600.	1.09	Mechanical	Input Power kW	2.31 (3.01)	3.54 (3.80)	6.20	8.21 (8.24)	10.60	12.90
			Output Torque Nm	11900 (15700)	18800 (20200)	34000	48100 (48300)	64200	80000
		Thermal	Input Power kW	5.40	7.53	9.41	13.70	18.10	27.80
			Output Torque Nm	28900	41200	52200	81200	111000	176000
			Efficiency %	59	61	63	67	69	72
1750.	1.00	Mechanical	Input Power kW	2.14 (2.85)	3.29 (3.89)	5.87 (5.89)	7.73 (8.63)	10.20 (13.40)	12.20 (19.10)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34400)	48100 (53900)	65500 (86600)	80800 (128000)
		Thermal	Input Power kW	6.25	8.78	8.78	15.90	21.80	27.40
			Output Torque Nm	36400	52000	51800	101000	142000	185000
			Efficiency %	59	60	62	66	68	69
1800.	0.97	Mechanical	Input Power kW	2.09 (2.73)	3.19 (3.76)	5.01	7.57 (10.10)	10.00 (11.40)	12.00 (15.80)
			Output Torque Nm	11900 (15800)	18800 (22400)	31500	48100 (65000)	65500 (75100)	80800 (107000)
		Thermal	Input Power kW	6.31	8.79	10.90	15.90	22.20	27.30
			Output Torque Nm	37600	53900	70300	103000	148000	187000
			Efficiency %	59	61	63	66	68	70
2000.	0.88	Mechanical	Input Power kW	1.95 (2.53)	2.96 (3.17)	5.15	6.80 (6.92)	8.77	10.70
			Output Torque Nm	11900 (15700)	18800 (20200)	33900	48100 (48900)	64100	79800
		Thermal	Input Power kW	5.16	7.10	8.84	12.80	16.90	25.80
			Output Torque Nm	33000	47000	59300	92100	126000	198000
			Efficiency %	56	58	60	65	67	69
2100.	0.83	Mechanical	Input Power kW	1.97 (2.06)	3.00 (3.37)	5.30 (5.31)	7.03 (7.91)	9.60 (14.50)	11.00 (15.80)
			Output Torque Nm	11900 (12500)	18800 (21300)	34200 (34300)	48100 (54400)	65500 (99900)	80800 (117000)
		Thermal	Input Power kW	4.30	5.85	7.08	10.20	12.80	18.10
			Output Torque Nm	27200	38000	46200	70800	88500	135000
			Efficiency %	53	55	56	60	61	65
2400.	0.73	Mechanical	Input Power kW	1.77 (2.34)	2.70 (3.18)	4.49	6.18 (7.06)	8.41 (13.10)	9.87 (15.40)
			Output Torque Nm	11900 (16100)	18800 (22400)	33500	48100 (55200)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.12	5.59	7.61	10.90	12.80	16.50
			Output Torque Nm	29100	40500	58000	86200	101000	137000
			Efficiency %	51	53	57	59	59	63
2500.	0.70	Mechanical	Input Power kW	1.68 (2.22)	2.54 (2.99)	4.43 (5.55)	5.90 (6.74)	5.98	8.55
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (43300)	48100 (55300)	51700	77000
		Thermal	Input Power kW	4.45	5.99	7.47	11.80	18.40	22.40
			Output Torque Nm	33400	46400	58800	98300	166000	208000
			Efficiency %	52	54	57	60	64	67
2800.	0.63	Mechanical	Input Power kW	1.57 (1.67)	2.40 (2.74)	4.21 (4.30)	5.53 (6.21)	7.52 (11.50)	8.59 (12.20)
			Output Torque Nm	11900 (12700)	18800 (21700)	34200 (35000)	48100 (54300)	65500 (102000)	80800 (117000)
		Thermal	Input Power kW	4.01	5.44	6.52	9.25	11.50	16.20
			Output Torque Nm	32300	44800	53900	82100	102000	156000
			Efficiency %	50	51	53	57	57	62
3000.	0.58	Mechanical	Input Power kW	1.50 (1.98)	2.27 (2.66)	3.74	5.15 (5.87)	7.05 (11.00)	8.25 (12.90)
			Output Torque Nm	11900 (16100)	18800 (22400)	33500	48100 (55100)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.94	5.29	7.19	10.20	12.00	15.30
			Output Torque Nm	33400	46200	66100	97600	114000	154000
			Efficiency %	48	51	55	57	57	60
3500.	0.50	Mechanical	Input Power kW	1.33 (1.43)	2.02 (2.33)	3.53 (3.65)	4.62 (5.18)	6.31 (9.78)	7.19 (10.20)
			Output Torque Nm	11900 (12900)	18800 (22000)	34200 (35500)	48100 (54200)	65500 (103000)	80800 (117000)
		Thermal	Input Power kW	3.85	5.16	6.16	8.69	10.80	15.20
			Output Torque Nm	37100	51300	61400	93100	115000	175000
			Efficiency %	47	49	51	55	54	59
3600.	0.49	Mechanical	Input Power kW	1.31 (1.72)	1.99 (2.33)	3.26	4.46 (5.07)	6.13 (9.50)	7.16 (11.10)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (55100)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.81	5.11	6.93	9.72	11.50	14.60
			Output Torque Nm	37400	51600	73700	108000	126000	169000
			Efficiency %	46	48	52	55	54	57
4200.	0.42	Mechanical	Input Power kW	1.17 (1.27)	1.77 (2.06)	3.08 (3.22)	4.01 (4.48)	5.49 (8.49)	6.24 (8.83)
			Output Torque Nm	11900 (13100)	18800 (22300)	34200 (35900)	48100 (54100)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.72	5.00	5.94	8.29	10.30	14.40
			Output Torque Nm	41600	57300	68300	103000	127000	194000
			Efficiency %	44	46	48	52	52	56

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	290.00	Mechanical	Input Power kW	139.00	206.00	286.00	516.00	718.00	993.00
			Output Torque Nm	4430	6570	8950	16400	22800	32200
		Thermal	Input Power kW	113.00	160.00	227.00	297.00	418.00	562.00
			Output Torque Nm	3590	5070	7080	9420	13300	18200
7.5	193.33	Mechanical	Input Power kW	102.00	157.00	213.00	441.00	658.00	902.00
			Output Torque Nm	4830	7470	10100	21000	31400	43100
		Thermal	Input Power kW	95.60	138.00	199.00	268.00	421.00	530.00
			Output Torque Nm	4530	6570	9420	12700	20000	25200
10.0	145.00	Mechanical	Input Power kW	71.10	129.00	174.00	365.00	514.00	703.00
			Output Torque Nm	4350	7960	10700	23100	32100	43900
		Thermal	Input Power kW	85.70	125.00	186.00	246.00	403.00	509.00
			Output Torque Nm	5250	7690	11500	15500	25100	31700
12.5	116.00	Mechanical	Input Power kW	78.40	104.00	160.00	271.00	362.00	572.00
			Output Torque Nm	6240	8120	12800	21200	29100	45500
		Thermal	Input Power kW	74.10	116.00	159.00	227.00	364.00	463.00
			Output Torque Nm	5900	9060	12700	17700	29300	36700
15.0	96.67	Mechanical	Input Power kW	63.30	90.60	167.00	276.00	405.00	493.00
			Output Torque Nm	5760	8280	15300	25500	37600	45800
		Thermal	Input Power kW	68.60	103.00	146.00	209.00	328.00	426.00
			Output Torque Nm	6250	9410	13400	19200	30400	39400
20.0	72.50	Mechanical	Input Power kW	60.10	93.90	134.00	234.00	282.00	384.00
			Output Torque Nm	7260	11400	16300	28400	34600	47100
		Thermal	Input Power kW	57.50	84.80	127.00	166.00	290.00	367.00
			Output Torque Nm	6940	10300	15400	20100	35600	45000
25.0	58.00	Mechanical	Input Power kW	49.40	73.80	106.00	173.00	257.00	307.00
			Output Torque Nm	7300	11200	15800	25900	39100	47200
		Thermal	Input Power kW	45.80	68.40	104.00	137.00	215.00	281.00
			Output Torque Nm	6760	10400	15500	20400	32500	43100
30.0	48.33	Mechanical	Input Power kW	42.00	67.60	96.40	168.00	219.00	267.00
			Output Torque Nm	7360	12000	17700	29900	39400	48100
		Thermal	Input Power kW	39.50	61.40	90.10	121.00	205.00	264.00
			Output Torque Nm	6920	10900	16500	21300	36800	47600
40.0	36.25	Mechanical	Input Power kW	36.60	51.50	78.50	116.00	162.00	202.00
			Output Torque Nm	8440	12000	18300	27200	38800	47900
		Thermal	Input Power kW	30.50	46.30	67.40	102.00	148.00	233.00
			Output Torque Nm	7010	10800	15700	23900	35300	55600
50.0	29.00	Mechanical	Input Power kW	30.60	46.70	65.00	114.00	108.00	158.00
			Output Torque Nm	8580	13200	18500	32800	31300	46100
		Thermal	Input Power kW	25.60	38.50	55.90	79.50	153.00	199.00
			Output Torque Nm	7140	10900	15800	22500	45000	58400
60.0	24.17	Mechanical	Input Power kW	25.90	41.20	55.10	97.00	114.00	139.00
			Output Torque Nm	8480	13700	18500	32600	38500	47000
		Thermal	Input Power kW	22.20	33.10	51.70	70.70	94.20	128.00
			Output Torque Nm	7250	10900	17300	23500	31500	43200
70.0	20.71	Mechanical	Input Power kW	21.60	34.70	48.60	83.40	100.00	123.00
			Output Torque Nm	8100	13200	18400	32100	38600	48100
		Thermal	Input Power kW	20.80	31.00	43.50	63.70	83.40	126.00
			Output Torque Nm	7800	11800	16400	24200	31900	49500
			Efficiency %	81	83	82	82	83	85

SINGLE REDUCTION

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	19.33	Mechanical	Input Power kW	23.90	34.10	48.50	83.10	139.00	182.00 (194.00)
			Output Torque Nm	10300	15000	21500	37000	61100	80800 (85900)
		Thermal	Input Power kW	22.80	35.00	50.50	81.70	113.00	140.00
			Output Torque Nm	9880	15400	22400	36400	49700	61900
100.	14.50	Mechanical	Input Power kW	20.90 (22.40)	32.50 (34.80)	46.20	82.30 (83.10)	81.80	138.00 (141.00)
			Output Torque Nm	11900 (12800)	18800 (20100)	27000	48100 (48500)	47300	80800 (82100)
		Thermal	Input Power kW	19.20	28.90	43.30	65.50	105.00	119.00
			Output Torque Nm	10900	16700	25200	38200	60800	69100
125.	11.60	Mechanical	Input Power kW	17.20 (18.30)	26.30 (27.30)	39.00	64.00	91.80 (102.00)	111.00 (158.00)
			Output Torque Nm	11900 (12700)	18800 (19500)	27700	46000	65500 (72600)	80800 (115000)
		Thermal	Input Power kW	15.50	23.60	35.30	50.50	76.40	94.90
			Output Torque Nm	10700	16800	25100	36100	54400	68900
150.	9.67	Mechanical	Input Power kW	14.70 (15.50)	22.60 (24.80)	30.30	56.90 (61.70)	74.30	95.10 (105.00)
			Output Torque Nm	11900 (12600)	18800 (20600)	26300	48100 (52100)	62500	80800 (89300)
		Thermal	Input Power kW	13.50	21.20	30.40	46.80	70.90	87.30
			Output Torque Nm	10900	17600	26400	39400	59600	74100
200.	7.25	Mechanical	Input Power kW	11.50 (13.50)	17.70 (18.50)	28.30	44.50 (47.30)	48.80	72.70 (83.50)
			Output Torque Nm	11900 (14000)	18800 (19600)	30300	48100 (51200)	53400	80800 (92900)
		Thermal	Input Power kW	14.40	21.20	29.30	43.50	65.90	80.90
			Output Torque Nm	15000	22500	31500	47000	72400	90000
225.	6.44	Mechanical	Input Power kW	10.50 (12.10)	15.80 (18.70)	22.70	39.40 (47.20)	53.10 (54.80)	64.60 (77.20)
			Output Torque Nm	11900 (13800)	18800 (22400)	28300	48100 (57800)	65500 (67600)	80800 (96600)
		Thermal	Input Power kW	11.40	17.40	23.80	35.90	53.50	67.00
			Output Torque Nm	13000	20800	29700	43800	66000	83800
250.	5.80	Mechanical	Input Power kW	9.54 (11.80)	14.40 (17.10)	24.80	36.30 (36.90)	48.80 (58.50)	58.60 (92.70)
			Output Torque Nm	11900 (14800)	18800 (22400)	32400	48100 (48900)	65500 (78600)	80800 (128000)
		Thermal	Input Power kW	11.70	17.00	23.60	33.00	47.60	61.00
			Output Torque Nm	14700	22200	30700	43600	63800	84100
300.	4.83	Mechanical	Input Power kW	8.16 (9.87)	12.40 (14.80)	18.70	31.00 (39.30)	41.50 (44.80)	50.20 (62.70)
			Output Torque Nm	11900 (14500)	18800 (22400)	29600	48100 (61100)	65500 (70700)	80800 (101000)
		Thermal	Input Power kW	10.20	15.10	20.50	30.90	45.20	56.80
			Output Torque Nm	15000	22900	32500	48000	71300	91500
350.	4.14	Mechanical	Input Power kW	7.03	11.20 (11.30)	18.40	25.50	37.90 (46.20)	44.80 (53.10)
			Output Torque Nm	11500	18800 (19000)	31400	44800	65500 (80300)	80800 (96100)
		Thermal	Input Power kW	7.50	11.30	14.70	22.40	31.20	43.30
			Output Torque Nm	12300	18900	24900	39300	53600	78100
375.	3.87	Mechanical	Input Power kW	6.28 (8.47)	9.97 (11.80)	18.10 (18.30)	24.00 (25.20)	33.40 (41.10)	40.20 (63.50)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34400)	48100 (50400)	65500 (80800)	80800 (128000)
		Thermal	Input Power kW	9.74	13.90	19.30	25.70	37.40	48.20
			Output Torque Nm	18600	26400	36300	51400	73300	97100
400.	3.63	Mechanical	Input Power kW	6.12 (7.53)	9.10 (9.27)	15.50	22.60 (23.40)	27.10	37.80 (46.40)
			Output Torque Nm	11900 (14700)	18800 (19100)	32500	48100 (49900)	57300	80800 (99500)
		Thermal	Input Power kW	11.30	15.20	20.80	29.80	44.90	54.80
			Output Torque Nm	22200	31600	43600	63800	95300	118000
450.	3.22	Mechanical	Input Power kW	5.39 (6.70)	8.63 (10.30)	13.80	20.60 (27.90)	28.40 (32.60)	34.40 (45.70)
			Output Torque Nm	11900 (14900)	18800 (22400)	31500	48100 (65500)	65500 (75200)	80800 (108000)
		Thermal	Input Power kW	8.51	12.40	16.90	24.20	35.70	44.80
			Output Torque Nm	19000	27200	38700	56800	82300	105000
500.	2.90	Mechanical	Input Power kW	5.13 (6.91)	7.44 (8.84)	13.50 (13.70)	18.50 (19.70)	25.50 (31.90)	30.70 (48.50)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34700)	48100 (51200)	65500 (82200)	80800 (128000)
		Thermal	Input Power kW	8.90	12.30	16.70	22.40	32.00	41.20
			Output Torque Nm	20900	31300	42300	58200	82300	109000
600.	2.42	Mechanical	Input Power kW	4.72 (6.04)	7.15 (8.49)	11.40	17.20 (18.40)	23.60 (34.30)	28.00 (44.10)
			Output Torque Nm	11900 (15300)	18800 (22400)	31300	48100 (51500)	65500 (95700)	80800 (128000)
		Thermal	Input Power kW	6.04	8.38	11.90	17.90	22.60	29.30
			Output Torque Nm	15400	22100	32700	50000	62600	84800
625.	2.32	Mechanical	Input Power kW	4.17 (5.61)	6.36 (7.55)	11.50 (11.70)	15.80 (17.00)	21.00 (26.60)	24.70 (39.10)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34600)	48100 (51800)	65500 (83200)	80800 (128000)
		Thermal	Input Power kW	8.37	11.50	15.50	20.70	28.90	36.80
			Output Torque Nm	24300	34500	46200	63200	90500	121000
700.	2.07	Mechanical	Input Power kW	4.16 (4.16)	6.30 (6.80)	10.80	15.30 (16.10)	20.90 (29.50)	24.30 (32.60)
			Output Torque Nm	11900 (11900)	18800 (20300)	32700	48100 (50700)	65500 (93100)	80800 (109000)
		Thermal	Input Power kW	5.78	8.00	10.20	15.10	20.00	28.30
			Output Torque Nm	16700	24000	30700	47700	62800	94400
750.	1.93	Mechanical	Input Power kW	3.59 (4.57)	5.52 (6.55)	8.85	13.60 (18.40)	17.90 (20.70)	21.20 (28.30)
			Output Torque Nm	11900 (15300)	18800 (22400)	31700	48100 (65400)	65500 (75600)	80800 (108000)
		Thermal	Input Power kW	7.34	10.30	13.70	19.60	27.80	34.40
			Output Torque Nm	24800	35600	49500	70100	102000	132000
800.	1.81	Mechanical	Input Power kW	3.50 (4.60)	5.12 (5.52)	9.09	12.00	16.40	20.10
			Output Torque Nm	11900 (15800)	18800 (20300)	34100	47300	64600	80500
		Thermal	Input Power kW	6.08	8.47	10.80	16.10	22.00	33.90
			Output Torque Nm	21000	31500	40800	63800	87100	137000
			Efficiency %	66	68	69	73	76	78

# B SERIES A RADICON

## RATINGS AT 1450 REV/MIN INPUT (Synthetic Oil)

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	1.61	Mechanical	Input Power kW	3.17 (4.14)	5.05 (5.99)	8.55	11.60 (13.30)	16.40 (25.80)	19.50 (30.70)
			Output Torque Nm	11900 (15700)	18800 (22400)	33300	48100 (55300)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.97	7.05	9.86	14.30	17.90	23.30
			Output Torque Nm	18900	26500	38600	59500	71500	96900
		Efficiency %	61	64	67	68	69	71	
1000.	1.45	Mechanical	Input Power kW	2.81 (3.76)	4.25 (5.04)	7.67 (7.72)	10.40 (11.40)	13.70 (17.80)	16.40 (25.80)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34500)	48100 (53000)	65500 (85300)	80800 (128000)
		Thermal	Input Power kW	7.38	10.10	13.50	17.50	23.90	30.30
			Output Torque Nm	32100	45800	60600	81500	115000	151000
		Efficiency %	66	67	69	71	74	75	
1200.	1.21	Mechanical	Input Power kW	2.62 (3.45)	3.83 (4.54)	6.51	9.04 (10.40)	12.70 (19.90)	15.10 (23.70)
			Output Torque Nm	11900 (15900)	18800 (22400)	33600	48100 (55400)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.63	6.22	8.66	12.60	15.50	20.10
			Output Torque Nm	21500	31000	45100	67600	80100	109000
		Efficiency %	59	61	64	66	66	69	
1250.	1.16	Mechanical	Input Power kW	2.35 (3.14)	3.53 (4.18)	6.34 (6.38)	8.58 (9.53)	11.40 (14.90)	13.60 (21.30)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34400)	48100 (53500)	65500 (86100)	80800 (128000)
		Thermal	Input Power kW	7.05	9.58	11.60	16.30	22.40	28.20
			Output Torque Nm	36900	52400	63200	92400	131000	170000
		Efficiency %	63	65	67	69	71	72	
1400.	1.04	Mechanical	Input Power kW	2.32 (2.39)	3.39 (3.77)	5.98	8.05 (9.09)	11.30 (16.90)	13.10 (18.80)
			Output Torque Nm	11900 (12300)	18800 (21000)	33800	48100 (54500)	65500 (98500)	80800 (117000)
		Thermal	Input Power kW	4.47	6.02	7.40	10.70	13.80	19.70
			Output Torque Nm	23600	34100	42100	64500	80600	123000
		Efficiency %	57	59	60	63	64	68	
1500.	0.97	Mechanical	Input Power kW	2.03 (2.66)	3.08 (3.64)	4.86	7.39 (9.92)	9.73 (11.10)	11.70 (15.40)
			Output Torque Nm	11900 (15800)	18800 (22400)	31500	48100 (65000)	65500 (75100)	80800 (107000)
		Thermal	Input Power kW	6.21	8.59	11.30	15.60	21.80	26.70
			Output Torque Nm	37700	54100	74500	103000	149000	188000
		Efficiency %	60	63	65	67	69	71	
1600.	0.91	Mechanical	Input Power kW	1.95 (2.53)	2.97 (3.19)	5.21	6.88 (6.99)	8.84	10.70
			Output Torque Nm	11900 (15700)	18800 (20200)	33900	48100 (48800)	64100	79900
		Thermal	Input Power kW	5.09	7.06	8.81	12.70	16.70	25.60
			Output Torque Nm	32300	46000	58100	90300	123000	194000
		Efficiency %	58	60	62	66	69	72	
1750.	0.83	Mechanical	Input Power kW	1.80 (2.40)	2.77 (3.27)	4.94 (4.95)	6.50 (7.35)	8.56 (11.40)	10.20 (16.00)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34300)	48100 (54600)	65500 (87800)	80800 (128000)
		Thermal	Input Power kW	5.37	7.66	7.66	14.40	20.40	25.60
			Output Torque Nm	37000	53900	53600	108000	158000	206000
		Efficiency %	59	59	61	65	67	69	
1800.	0.81	Mechanical	Input Power kW	1.76 (2.33)	2.68 (3.16)	4.20	6.36 (8.50)	8.38 (9.56)	10.00 (13.20)
			Output Torque Nm	11900 (16000)	18800 (22400)	31400	48100 (64900)	65500 (74900)	80800 (107000)
		Thermal	Input Power kW	5.99	8.30	9.49	14.90	20.80	25.40
			Output Torque Nm	42400	60600	72500	115000	166000	208000
		Efficiency %	58	60	62	65	67	69	
2000.	0.73	Mechanical	Input Power kW	1.64 (2.13)	2.48 (2.65)	4.33	5.71 (5.88)	7.33	8.88
			Output Torque Nm	11900 (15700)	18800 (20200)	33900	48100 (49600)	64000	79700
		Thermal	Input Power kW	4.88	6.68	8.30	11.90	15.70	24.00
			Output Torque Nm	37100	52700	66200	103000	140000	220000
		Efficiency %	55	58	59	64	66	69	
2100.	0.69	Mechanical	Input Power kW	1.66 (1.75)	2.52 (2.87)	4.47 (4.53)	5.91 (6.65)	8.08 (12.30)	9.24 (13.20)
			Output Torque Nm	11900 (12700)	18800 (21600)	34200 (34700)	48100 (54300)	65500 (101000)	80800 (117000)
		Thermal	Input Power kW	4.05	5.47	6.58	9.42	11.80	16.60
			Output Torque Nm	30400	42300	51000	77700	96500	148000
		Efficiency %	52	54	55	59	60	64	
2400.	0.60	Mechanical	Input Power kW	1.49 (1.98)	2.26 (2.67)	3.77	5.20 (5.93)	7.08 (11.00)	8.28 (13.00)
			Output Torque Nm	11900 (16100)	18800 (22400)	33500	48100 (55100)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.89	5.24	7.15	10.10	11.90	15.20
			Output Torque Nm	32700	45300	64800	95700	112000	151000
		Efficiency %	51	53	56	59	59	62	
2500.	0.58	Mechanical	Input Power kW	1.41 (1.88)	2.13 (2.51)	3.73 (4.68)	4.96 (5.66)	4.99	7.13
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (43200)	48100 (55200)	51600	76800
		Thermal	Input Power kW	4.21	5.64	7.01	11.00	17.20	21.00
			Output Torque Nm	37500	52100	65600	110000	185000	232000
		Efficiency %	51	54	56	59	63	66	
2800.	0.52	Mechanical	Input Power kW	1.32 (1.42)	2.01 (2.33)	3.55 (3.67)	4.65 (5.22)	6.33 (9.82)	7.20 (10.30)
			Output Torque Nm	11900 (12900)	18800 (22000)	34200 (35400)	48100 (54200)	65500 (103000)	80800 (117000)
		Thermal	Input Power kW	3.79	5.12	6.12	8.64	10.70	15.00
			Output Torque Nm	36300	50200	60100	91200	113000	172000
		Efficiency %	49	51	52	56	56	61	
3000.	0.48	Mechanical	Input Power kW	1.26 (1.67)	1.90 (2.24)	3.15	4.33 (4.93)	5.93 (9.23)	6.92 (10.80)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (55000)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.74	4.98	6.77	9.55	11.20	14.20
			Output Torque Nm	37500	51800	73900	109000	126000	170000
		Efficiency %	48	50	54	56	56	59	
3500.	0.41	Mechanical	Input Power kW	1.12 (1.22)	1.69 (1.98)	2.97 (3.11)	3.89 (4.35)	5.31 (8.25)	6.02 (8.55)
			Output Torque Nm	11900 (13100)	18800 (22300)	34200 (35900)	48100 (54100)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.65	4.87	5.79	8.13	10.10	14.10
			Output Torque Nm	41700	57600	68500	104000	127000	195000
		Efficiency %	46	48	50	54	54	58	
3600.	0.40	Mechanical	Input Power kW	1.10 (1.45)	1.67 (1.96)	2.74	3.75 (4.26)	5.15 (8.00)	6.00 (9.36)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (55000)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.62	4.83	6.55	9.15	10.70	13.60
			Output Torque Nm	42100	57900	82700	121000	140000	188000
		Efficiency %	46	47	51	54	54	57	
4200.	0.35	Mechanical	Input Power kW	0.98 (1.08)	1.48 (1.74)	2.59 (2.74)	3.37 (3.76)	4.62 (7.16)	5.23 (7.40)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36300)	48100 (54100)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.54	4.73	5.61	7.80	9.66	13.50
			Output Torque Nm	46900	64600	76500	115000	141000	216000
		Efficiency %	44	46	48	52	51	56	

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	232.00	Mechanical	Input Power kW	124.00	183.00	255.00	460.00	614.00	889.00
			Output Torque Nm	4920	7300	9970	18300	24400	36000
		Thermal	Input Power kW	98.50	141.00	203.00	274.00	371.00	514.00
			Output Torque Nm	3910	5610	7910	10900	14700	20800
			Efficiency %	96	97	96	97	96	97
7.5	154.67	Mechanical	Input Power kW	89.90	139.00	188.00	390.00	583.00	773.00
			Output Torque Nm	5320	8240	11200	23200	34700	46100
		Thermal	Input Power kW	81.70	119.00	173.00	240.00	364.00	471.00
			Output Torque Nm	4830	7080	10300	14200	21700	28000
			Efficiency %	96	96	96	96	97	96
10.0	116.00	Mechanical	Input Power kW	62.50	113.00	153.00	322.00	453.00	602.00
			Output Torque Nm	4780	8740	11800	25400	35300	47000
		Thermal	Input Power kW	73.00	107.00	161.00	220.00	347.00	451.00
			Output Torque Nm	5590	8270	12500	17300	27000	35100
			Efficiency %	95	96	96	96	96	96
12.5	92.80	Mechanical	Input Power kW	68.70	90.70	141.00	237.00	318.00	490.00
			Output Torque Nm	6820	8880	14000	23300	31900	48800
		Thermal	Input Power kW	63.10	99.10	138.00	202.00	313.00	409.00
			Output Torque Nm	6270	9700	13700	19800	31500	40700
			Efficiency %	95	95	95	95	96	96
15.0	77.33	Mechanical	Input Power kW	55.40	79.30	146.00	242.00	353.00	423.00
			Output Torque Nm	6290	9050	16800	27900	40900	49000
		Thermal	Input Power kW	58.30	88.30	127.00	185.00	283.00	376.00
			Output Torque Nm	6630	10100	14500	21300	32700	43600
			Efficiency %	94	95	94	95	95	95
20.0	58.00	Mechanical	Input Power kW	52.50	82.10	117.00	205.00	239.00	329.00
			Output Torque Nm	7910	12400	17800	31100	36600	50500
		Thermal	Input Power kW	48.70	72.60	109.00	148.00	248.00	324.00
			Output Torque Nm	7340	11000	16600	22300	38100	49700
			Efficiency %	93	94	94	93	95	95
25.0	46.40	Mechanical	Input Power kW	43.20	64.40	92.40	151.00	221.00	264.00
			Output Torque Nm	7960	12200	17200	28400	41800	50600
		Thermal	Input Power kW	38.90	58.60	89.80	122.00	188.00	249.00
			Output Torque Nm	7160	11100	16700	22800	35600	47800
			Efficiency %	91	92	92	92	93	93
30.0	38.67	Mechanical	Input Power kW	36.60	59.00	84.10	147.00	188.00	229.00
			Output Torque Nm	8010	13000	19300	32600	42200	51600
		Thermal	Input Power kW	33.60	52.60	77.50	107.00	176.00	233.00
			Output Torque Nm	7320	11600	17700	23700	39500	52600
			Efficiency %	90	91	91	91	92	93
40.0	29.00	Mechanical	Input Power kW	31.90	43.80	67.50	101.00	137.00	171.00
			Output Torque Nm	9160	12700	19600	29600	41000	50700
		Thermal	Input Power kW	25.90	39.70	58.20	89.10	128.00	204.00
			Output Torque Nm	7420	11500	16900	26200	38400	61000
			Efficiency %	87	88	88	89	91	91
50.0	23.20	Mechanical	Input Power kW	26.60	40.60	56.00	97.00	133.00	171.00
			Output Torque Nm	9290	14400	19800	34700	50000	64000
		Thermal	Input Power kW	21.80	33.00	48.30	70.50	102.00	144.00
			Output Torque Nm	7560	11600	17100	25000	35000	48000
			Efficiency %	84	85	86	86	89	90
60.0	19.33	Mechanical	Input Power kW	22.50	35.80	47.50	82.20	116.00	159.00
			Output Torque Nm	9170	14800	19900	34600	49000	63000
		Thermal	Input Power kW	18.90	28.40	44.50	62.50	92.00	128.00
			Output Torque Nm	7670	11700	18600	26000	37000	50000
			Efficiency %	82	83	85	84	85	86
70.0	16.57	Mechanical	Input Power kW	18.70	30.10	41.90	70.70	102.00	140.00
			Output Torque Nm	8740	14300	19800	34000	47000	61000
		Thermal	Input Power kW	17.70	26.50	37.70	55.60	82.00	114.00
			Output Torque Nm	8230	12500	17700	26400	37000	50000
			Efficiency %	81	82	81	82	83	86

SINGLE REDUCTION

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	15.47	Mechanical	Input Power kW	20.50	27.90	43.00	71.80	120.00 (123.00)	147.00 (155.00)
			Output Torque Nm	11000	15100	23600	39800	65500 (67600)	80800 (85400)
		Thermal	Input Power kW	20.30	31.10	44.50	71.90	98.50	125.00
			Output Torque Nm	10900	16900	24400	39800	53800	69000
		Efficiency %	87	87	88	90	90	91	
100.	11.60	Mechanical	Input Power kW	16.90 (19.10)	26.30 (27.90)	39.00	66.50 (71.80)	68.80	111.00 (118.00)
			Output Torque Nm	11900 (13500)	18800 (19900)	28200	48100 (52000)	49400	80800 (85900)
		Thermal	Input Power kW	17.10	25.70	37.80	57.10	88.70	106.00
			Output Torque Nm	12100	18400	27300	41300	63900	77000
		Efficiency %	85	86	87	88	89	90	
125.	9.28	Mechanical	Input Power kW	14.00 (15.70)	21.20 (23.40)	33.40	53.20	74.10 (85.80)	89.50 (136.00)
			Output Torque Nm	11900 (13400)	18800 (20700)	29400	47200	65500 (75900)	80800 (123000)
		Thermal	Input Power kW	13.90	21.00	30.30	43.30	64.40	82.90
			Output Torque Nm	11800	18600	26600	38400	56800	74700
		Efficiency %	82	84	85	86	87	88	
150.	7.73	Mechanical	Input Power kW	11.90 (13.30)	18.30 (21.20)	25.70	46.10 (53.00)	62.80	76.60 (88.50)
			Output Torque Nm	11900 (13300)	18800 (21800)	27500	48100 (55300)	65300	80800 (93400)
		Thermal	Input Power kW	12.10	19.00	26.30	40.00	60.10	75.80
			Output Torque Nm	12100	19400	28100	41700	62500	80000
		Efficiency %	80	83	83	84	86	87	
200.	5.80	Mechanical	Input Power kW	9.29 (11.10)	14.30 (14.80)	23.60	35.90 (37.90)	40.80	58.60 (69.70)
			Output Torque Nm	11900 (14200)	18800 (19500)	31400	48100 (50800)	55300	80800 (96200)
		Thermal	Input Power kW	13.20	18.80	25.90	38.20	57.90	70.30
			Output Torque Nm	17000	24700	34400	51100	78700	97000
		Efficiency %	81	83	84	84	86	87	
225.	5.16	Mechanical	Input Power kW	8.52 (10.30)	12.80 (15.20)	19.10	31.90 (40.20)	42.90 (46.00)	52.20 (64.80)
			Output Torque Nm	11900 (14400)	18800 (22400)	29400	48100 (60800)	65500 (70200)	80800 (100000)
		Thermal	Input Power kW	10.40	15.30	20.90	31.40	46.20	57.80
			Output Torque Nm	14600	22600	32100	47400	70400	89600
		Efficiency %	78	80	81	82	84	85	
250.	4.64	Mechanical	Input Power kW	7.74 (10.10)	11.60 (13.80)	20.80	29.40 (30.30)	39.50 (48.10)	47.40 (75.00)
			Output Torque Nm	11900 (15500)	18800 (22400)	33500	48100 (49600)	65500 (79800)	80800 (128000)
		Thermal	Input Power kW	10.80	15.10	20.90	28.90	41.40	53.30
			Output Torque Nm	16600	24400	33700	47200	68600	91000
		Efficiency %	78	80	81	82	84	85	
300.	3.87	Mechanical	Input Power kW	6.62 (8.13)	10.10 (12.00)	15.70	25.10 (33.00)	33.60 (37.50)	40.60 (52.50)
			Output Torque Nm	11900 (14700)	18800 (22400)	30700	48100 (63300)	65500 (73200)	80800 (105000)
		Thermal	Input Power kW	9.38	13.40	18.40	27.10	39.40	49.50
			Output Torque Nm	17000	25100	35900	52000	76900	98600
		Efficiency %	76	78	79	81	82	84	
350.	3.31	Mechanical	Input Power kW	5.82	9.10 (9.61)	15.30	21.70	30.90 (39.80)	36.40 (45.10)
			Output Torque Nm	11600	18800 (19800)	32000	46900	65500 (84700)	80800 (101000)
		Thermal	Input Power kW	6.80	9.90	12.80	19.40	26.50	37.00
			Output Torque Nm	13700	20500	26700	41600	55900	82200
		Efficiency %	67	70	71	73	73	77	
375.	3.09	Mechanical	Input Power kW	5.10 (6.87)	8.08 (9.60)	14.70 (14.90)	19.50 (20.70)	27.00 (33.70)	32.50 (51.40)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34700)	48100 (51000)	65500 (81900)	80800 (128000)
		Thermal	Input Power kW	8.83	12.70	17.30	22.80	32.90	42.40
			Output Torque Nm	20800	29600	40200	56500	79900	106000
		Efficiency %	75	77	79	79	81	82	
400.	2.90	Mechanical	Input Power kW	4.97 (6.19)	7.37 (7.45)	12.50	18.30 (18.80)	21.80	30.50 (37.40)
			Output Torque Nm	11900 (14900)	18800 (19000)	32400	48100 (49500)	57100	80800 (99200)
		Thermal	Input Power kW	10.40	14.00	18.80	26.80	40.10	48.90
			Output Torque Nm	25200	35800	48800	70900	105000	130000
		Efficiency %	76	77	78	79	82	83	
450.	2.58	Mechanical	Input Power kW	4.38 (5.51)	7.00 (8.32)	11.30	16.70 (22.70)	23.00 (26.60)	27.80 (37.30)
			Output Torque Nm	11900 (15100)	18800 (22400)	31800	48100 (65600)	65500 (75900)	80800 (108000)
		Thermal	Input Power kW	7.72	11.30	15.20	21.60	31.50	39.60
			Output Torque Nm	21200	30500	42900	62600	90000	115000
		Efficiency %	72	75	76	77	80	82	
500.	2.32	Mechanical	Input Power kW	4.17 (5.62)	6.03 (7.17)	11.00 (11.10)	15.00 (16.20)	20.60 (26.20)	24.80 (39.20)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34600)	48100 (51900)	65500 (83200)	80800 (128000)
		Thermal	Input Power kW	8.28	11.30	15.10	20.10	28.50	36.60
			Output Torque Nm	23900	35400	47200	64600	90600	120000
		Efficiency %	73	74	75	77	80	80	
600.	1.93	Mechanical	Input Power kW	3.85 (4.99)	5.83 (6.92)	9.65	14.00 (15.60)	19.20 (29.20)	22.80 (35.90)
			Output Torque Nm	11900 (15500)	18800 (22400)	32400	48100 (53400)	65500 (100000)	80800 (128000)
		Thermal	Input Power kW	5.43	7.53	10.60	15.80	19.70	25.60
			Output Torque Nm	16900	24400	35700	54300	67100	91000
		Efficiency %	64	67	69	71	71	73	
625.	1.86	Mechanical	Input Power kW	3.39 (4.56)	5.16 (6.13)	9.36 (9.45)	12.80 (13.90)	17.00 (21.80)	20.00 (31.60)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34600)	48100 (52400)	65500 (84200)	80800 (128000)
		Thermal	Input Power kW	7.77	10.60	14.20	18.70	26.00	32.90
			Output Torque Nm	27700	39200	52000	70500	100000	134000
		Efficiency %	70	72	74	76	77	79	
700.	1.66	Mechanical	Input Power kW	3.40 (3.43)	5.14 (5.61)	8.93	12.50 (13.60)	17.00 (24.90)	19.80 (27.50)
			Output Torque Nm	11900 (12100)	18800 (20500)	33100	48100 (52500)	65500 (96400)	80800 (113000)
		Thermal	Input Power kW	5.22	7.21	9.04	13.40	17.50	24.80
			Output Torque Nm	18500	26600	33500	51900	67300	102000
		Efficiency %	62	65	66	68	69	72	
750.	1.55	Mechanical	Input Power kW	2.92 (3.76)	4.48 (5.32)	7.17	11.00 (14.90)	14.50 (16.70)	17.20 (22.80)
			Output Torque Nm	11900 (15400)	18800 (22400)	31600	48100 (65300)	65500 (75500)	80800 (108000)
		Thermal	Input Power kW	6.81	9.50	12.60	17.80	25.10	31.00
			Output Torque Nm	28300	40400	55900	78400	114000	147000
		Efficiency %	67	71	72	73	76	77	
800.	1.45	Mechanical	Input Power kW	2.85 (3.74)	4.16 (4.48)	7.39	9.81	13.30	16.20
			Output Torque Nm	11900 (15800)	18800 (20300)	34000	47800	64400	80300
		Thermal	Input Power kW	5.67	7.77	9.81	14.50	19.70	30.40
			Output Torque Nm	24100	35600	45400	71100	96200	152000
		Efficiency %	65	67	68	72	75	78	

DOUBLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY	SIZE OF UNIT						
			10	12	14	17	20	24	
900.	1.29	Mechanical	Input Power kW	2.59 (3.42)	4.12 (4.89)	7.04	9.44 (10.80)	13.40 (21.10)	15.90 (25.00)
			Output Torque Nm	11900 (15900)	18800 (22400)	33700	48100 (55400)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.57	6.37	8.89	12.80	15.90	20.70
			Output Torque Nm	21400	29400	42700	65700	77900	106000
1000.	1.16	Mechanical	Input Power kW	2.29 (3.07)	3.46 (4.10)	6.24 (6.28)	8.45 (9.39)	11.10 (14.60)	13.30 (20.90)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34400)	48100 (53500)	65500 (86100)	80800 (128000)
		Thermal	Input Power kW	6.91	9.45	11.30	16.10	22.00	27.70
			Output Torque Nm	36900	52400	62300	92400	131000	170000
1200.	0.97	Mechanical	Input Power kW	2.14 (2.85)	3.13 (3.70)	5.30	7.37 (8.44)	10.40 (16.30)	12.30 (19.30)
			Output Torque Nm	11900 (16000)	18800 (22400)	33600	48100 (55300)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.28	5.72	7.88	11.40	13.90	18.00
			Output Torque Nm	24300	35000	50400	75300	88000	120000
1250.	0.93	Mechanical	Input Power kW	1.92 (2.57)	2.87 (3.40)	5.17 (5.19)	6.99 (7.85)	9.23 (12.20)	11.00 (17.30)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34300)	48100 (54100)	65500 (87100)	80800 (128000)
		Thermal	Input Power kW	6.13	8.96	9.72	15.10	20.70	25.90
			Output Torque Nm	39200	60200	65000	105000	148000	193000
1400.	0.83	Mechanical	Input Power kW	1.89 (1.98)	2.76 (3.12)	4.94 (4.96)	6.57 (7.40)	9.23 (14.00)	10.60 (15.30)
			Output Torque Nm	11900 (12500)	18800 (21300)	34200 (34400)	48100 (54400)	65500 (99900)	80800 (117000)
		Thermal	Input Power kW	4.15	5.54	6.73	9.72	12.40	17.70
			Output Torque Nm	26900	38600	46900	71800	88700	136000
1500.	0.77	Mechanical	Input Power kW	1.66 (2.21)	2.51 (2.97)	3.96	6.02 (8.07)	7.90 (9.01)	9.45 (12.40)
			Output Torque Nm	11900 (16000)	18800 (22400)	31400	48100 (64900)	65500 (74900)	80800 (107000)
		Thermal	Input Power kW	5.85	8.05	9.72	14.50	20.20	24.60
			Output Torque Nm	43500	62200	78600	118000	170000	213000
1600.	0.73	Mechanical	Input Power kW	1.59 (2.07)	2.42 (2.59)	4.25	5.60 (5.77)	7.16	8.67
			Output Torque Nm	11900 (15700)	18800 (20200)	33900	48100 (49600)	64000	79700
		Thermal	Input Power kW	4.78	6.58	8.18	11.80	15.40	23.60
			Output Torque Nm	37100	52700	66200	103000	140000	220000
1750.	0.66	Mechanical	Input Power kW	1.48 (1.97)	2.26 (2.66)	4.04 (4.05)	5.30 (6.08)	6.97 (9.42)	8.29 (12.90)
			Output Torque Nm	11900 (16100)	18800 (22300)	34200 (34200)	48100 (55400)	65500 (89100)	80800 (127000)
		Thermal	Input Power kW	4.46	6.48	6.48	12.10	17.70	23.70
			Output Torque Nm	37400	55700	55400	112000	169000	235000
1800.	0.64	Mechanical	Input Power kW	1.44 (1.93)	2.18 (2.58)	3.43	5.18 (6.92)	6.82 (7.76)	8.14 (10.70)
			Output Torque Nm	11900 (16100)	18800 (22400)	31400	48100 (64700)	65500 (74800)	80800 (107000)
		Thermal	Input Power kW	5.18	7.80	7.96	13.90	18.90	23.50
			Output Torque Nm	44700	69800	74400	131000	185000	237000
2000.	0.58	Mechanical	Input Power kW	1.34 (1.74)	2.02 (2.16)	3.53	4.65 (4.86)	5.94	7.18
			Output Torque Nm	11900 (15700)	18800 (20100)	33800	48100 (50300)	63800	79500
		Thermal	Input Power kW	4.61	6.27	7.76	11.10	14.50	22.20
			Output Torque Nm	42800	60500	75800	117000	159000	251000
2100.	0.55	Mechanical	Input Power kW	1.35 (1.45)	2.05 (2.37)	3.66 (3.76)	4.82 (5.42)	6.60 (10.20)	7.51 (10.80)
			Output Torque Nm	11900 (12900)	18800 (21900)	34200 (35300)	48100 (54200)	65500 (103000)	80800 (117000)
		Thermal	Input Power kW	3.79	5.09	6.10	8.68	10.70	15.10
			Output Torque Nm	34800	48300	57900	88000	108000	165000
2400.	0.48	Mechanical	Input Power kW	1.22 (1.62)	1.85 (2.18)	3.08	4.24 (4.83)	5.78 (9.02)	6.74 (10.60)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (55000)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.65	4.90	6.67	9.40	10.90	13.90
			Output Torque Nm	37500	51800	73900	109000	126000	170000
2500.	0.46	Mechanical	Input Power kW	1.16 (1.54)	1.74 (2.05)	3.05 (3.82)	4.05 (4.61)	4.04	5.77
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (43200)	48100 (55100)	51500	76700
		Thermal	Input Power kW	3.98	5.29	6.56	10.30	16.00	19.40
			Output Torque Nm	43200	59700	75100	125000	212000	265000
2800.	0.41	Mechanical	Input Power kW	1.08 (1.18)	1.64 (1.92)	2.91 (3.05)	3.80 (4.26)	5.17 (8.06)	5.86 (8.35)
			Output Torque Nm	11900 (13100)	18800 (22300)	34200 (35900)	48100 (54100)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.57	4.78	5.70	8.00	9.85	13.80
			Output Torque Nm	41700	57600	68500	104000	127000	195000
3000.	0.39	Mechanical	Input Power kW	1.03 (1.37)	1.55 (1.83)	2.57	3.54 (4.02)	4.84 (7.55)	5.63 (8.82)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (55000)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.53	4.67	6.35	8.90	10.30	13.10
			Output Torque Nm	43200	59400	84800	124000	143000	193000
3500.	0.33	Mechanical	Input Power kW	0.92 (1.01)	1.38 (1.62)	2.43 (2.58)	3.17 (3.55)	4.34 (6.75)	4.90 (6.96)
			Output Torque Nm	11900 (13300)	18800 (22400)	34200 (36400)	48100 (54100)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.45	4.58	5.43	7.58	9.33	13.10
			Output Torque Nm	48100	66300	78500	118000	144000	221000
3600.	0.32	Mechanical	Input Power kW	0.90 (1.19)	1.36 (1.60)	2.24	3.06 (3.47)	4.21 (6.55)	4.89 (7.64)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (54900)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.43	4.55	6.17	8.55	9.95	12.60
			Output Torque Nm	48700	66700	95200	139000	159000	214000
4200.	0.28	Mechanical	Input Power kW	0.80 (0.89)	1.21 (1.42)	2.13 (2.28)	2.75 (3.07)	3.77 (5.86)	4.25 (6.02)
			Output Torque Nm	11900 (13400)	18800 (22400)	34200 (36800)	48100 (54000)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.37	4.46	5.28	7.30	8.98	12.50
			Output Torque Nm	54300	74400	87800	132000	161000	246000
			Efficiency %	43	45	46	51	50	55

DOUBLE REDUCTION

9611

SINGLE REDUCTION	NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
					10	12	14	17	20	24
5.0	192.00	Mechanical	Input Power kW	111.00	165.00	230.00	416.00	537.00	805.00	
			Output Torque Nm	5350	7950	10900	20000	25800	39500	
5.0	192.00	Thermal	Input Power kW	86.40	126.00	182.00	252.00	333.00	472.00	
			Output Torque Nm	4150	6030	8580	12100	16000	23100	
5.0	192.00		Efficiency %	97	96	97	97	97	97	
7.5	128.00	Mechanical	Input Power kW	80.60	124.00	169.00	350.00	524.00	677.00	
			Output Torque Nm	5760	8910	12100	25100	37700	48800	
7.5	128.00	Thermal	Input Power kW	70.90	104.00	152.00	215.00	319.00	422.00	
			Output Torque Nm	5060	7470	10900	15400	22900	30400	
7.5	128.00		Efficiency %	96	96	96	96	96	97	
10.0	96.00	Mechanical	Input Power kW	55.80	101.00	137.00	288.00	406.00	528.00	
			Output Torque Nm	5150	9430	12700	27400	38200	49700	
10.0	96.00	Thermal	Input Power kW	63.20	93.70	141.00	197.00	303.00	402.00	
			Output Torque Nm	5840	8720	13200	18700	28500	37800	
10.0	96.00		Efficiency %	95	95	95	95	96	96	
12.5	76.80	Mechanical	Input Power kW	61.30	81.00	125.00	212.00	284.00	430.00	
			Output Torque Nm	7340	9560	15100	25100	34500	51700	
12.5	76.80	Thermal	Input Power kW	54.70	86.20	121.00	180.00	273.00	365.00	
			Output Torque Nm	6550	10200	14500	21300	33100	43800	
12.5	76.80		Efficiency %	94	95	94	95	96	96	
15.0	64.00	Mechanical	Input Power kW	49.40	70.70	130.00	216.00	309.00	371.00	
			Output Torque Nm	6770	9730	18100	30100	43300	52000	
15.0	64.00	Thermal	Input Power kW	50.40	76.90	111.00	165.00	247.00	335.00	
			Output Torque Nm	6900	10600	15300	23000	34500	46900	
15.0	64.00		Efficiency %	94	94	94	95	95	95	
20.0	48.00	Mechanical	Input Power kW	46.80	73.10	104.00	182.00	207.00	289.00	
			Output Torque Nm	8500	13400	19100	33400	38300	53500	
20.0	48.00	Thermal	Input Power kW	42.10	63.10	95.40	132.00	216.00	288.00	
			Output Torque Nm	7630	11500	17400	24100	40000	53300	
20.0	48.00		Efficiency %	93	93	93	93	95	95	
25.0	38.40	Mechanical	Input Power kW	38.50	57.40	82.30	135.00	194.00	232.00	
			Output Torque Nm	8540	13100	18500	30500	44400	53700	
25.0	38.40	Thermal	Input Power kW	33.60	51.00	78.40	109.00	166.00	223.00	
			Output Torque Nm	7450	11600	17600	24500	37900	51700	
25.0	38.40		Efficiency %	91	91	92	92	93	93	
30.0	32.00	Mechanical	Input Power kW	32.60	52.50	74.10	131.00	165.00	201.00	
			Output Torque Nm	8580	14000	20400	35100	44800	54800	
30.0	32.00	Thermal	Input Power kW	29.00	45.70	67.50	95.70	153.00	208.00	
			Output Torque Nm	7620	12200	18600	25500	41400	56600	
30.0	32.00		Efficiency %	90	91	91	91	92	93	
40.0	24.00	Mechanical	Input Power kW	28.40	38.10	59.50	89.30	119.00	148.00	
			Output Torque Nm	9800	13300	20800	31800	42900	53000	
40.0	24.00	Thermal	Input Power kW	22.50	34.50	50.90	78.90	113.00	181.00	
			Output Torque Nm	7720	12000	17800	28000	40700	65300	
40.0	24.00		Efficiency %	86	87	88	89	91	91	
50.0	19.20	Mechanical	Input Power kW	23.70	36.10	49.40	84.20	78.90	116.00	
			Output Torque Nm	9910	15300	21100	36300	34600	51100	
50.0	19.20	Thermal	Input Power kW	18.90	28.80	42.30	62.80	114.00	154.00	
			Output Torque Nm	7860	12200	18000	26900	50400	68400	
50.0	19.20		Efficiency %	84	85	86	86	89	89	
60.0	16.00	Mechanical	Input Power kW	20.00	31.80	42.00	71.40	86.70	105.00	
			Output Torque Nm	9760	15800	21100	36200	43900	53800	
60.0	16.00	Thermal	Input Power kW	16.40	24.80	38.90	55.60	73.10	101.00	
			Output Torque Nm	7970	12200	19500	28000	36900	51800	
60.0	16.00		Efficiency %	81	82	84	84	85	86	
70.0	13.71	Mechanical	Input Power kW	16.60	26.50	37.10	61.40	76.20	92.90	
			Output Torque Nm	9280	15100	21100	35500	44200	55200	
70.0	13.71	Thermal	Input Power kW	15.30	23.10	33.00	49.20	64.50	98.70	
			Output Torque Nm	8530	13100	18700	28200	37200	58700	
70.0	13.71		Efficiency %	80	81	81	82	83	85	

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	12.80	Mechanical	Input Power kW	18.00	23.10	38.70	59.50	99.70 (111.00)	122.00 (128.00)
			Output Torque Nm	11600	15100	25500	39500	65500 (72900)	80800 (85000)
		Thermal	Input Power kW	18.60	28.30	39.90	65.00	86.40	113.00
			Output Torque Nm	12000	18500	26300	43200	56700	74500
			Efficiency %	86	87	88	89	89	90
100.	9.60	Mechanical	Input Power kW	14.10 (16.30)	21.90 (23.10)	33.70	55.50 (59.50)	59.30	92.80 (102.00)
			Output Torque Nm	11900 (13700)	18800 (19800)	29100	48100 (51600)	51200	80800 (88900)
		Thermal	Input Power kW	15.70	23.50	33.50	50.30	77.50	95.70
			Output Torque Nm	13300	20100	29000	43500	67000	83400
			Efficiency %	84	86	86	87	88	89
125.	7.68	Mechanical	Input Power kW	11.70 (13.80)	17.80 (20.50)	29.30	45.10	61.90 (72.70)	74.70 (118.00)
			Output Torque Nm	11900 (14100)	18800 (21600)	30800	48000	65500 (77000)	80800 (128000)
		Thermal	Input Power kW	12.70	19.20	26.90	38.10	56.20	72.30
			Output Torque Nm	13000	20300	28300	40400	59400	78200
			Efficiency %	81	83	84	85	86	87
150.	6.40	Mechanical	Input Power kW	9.98 (11.60)	15.30 (18.20)	22.20	38.60 (46.40)	52.50 (54.30)	63.90 (76.40)
			Output Torque Nm	11900 (13900)	18800 (22400)	28400	48100 (58000)	65500 (67700)	80800 (96800)
		Thermal	Input Power kW	11.10	17.00	23.40	35.30	53.10	66.40
			Output Torque Nm	13300	20900	29900	44000	66100	83900
			Efficiency %	79	82	82	83	85	86
200.	4.80	Mechanical	Input Power kW	7.77 (9.39)	12.00 (12.30)	20.30	30.00 (31.50)	34.90	48.90 (59.80)
			Output Torque Nm	11900 (14400)	18800 (19300)	32300	48100 (50400)	56800	80800 (98900)
		Thermal	Input Power kW	12.40	17.10	23.60	34.60	51.90	63.00
			Output Torque Nm	19100	26900	37600	55400	84600	104000
			Efficiency %	80	82	83	84	85	86
225.	4.27	Mechanical	Input Power kW	7.14 (8.72)	10.70 (12.70)	16.50	26.70 (34.70)	35.90 (39.70)	43.60 (55.80)
			Output Torque Nm	11900 (14600)	18800 (22400)	30400	48100 (62700)	65500 (72400)	80800 (104000)
		Thermal	Input Power kW	9.68	13.80	18.90	28.10	41.00	51.70
			Output Torque Nm	16200	24400	34900	50700	74900	96000
			Efficiency %	77	79	80	81	83	84
250.	3.84	Mechanical	Input Power kW	6.48 (8.74)	9.73 (11.60)	17.80 (17.90)	24.60 (25.70)	33.00 (40.70)	39.60 (62.60)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34500)	48100 (50300)	65500 (80800)	80800 (128000)
		Thermal	Input Power kW	9.83	13.70	19.00	25.90	37.00	47.60
			Output Torque Nm	18200	26500	36500	50700	73400	97300
			Efficiency %	77	79	80	81	83	84
300.	3.20	Mechanical	Input Power kW	5.55 (6.90)	8.42 (10.00)	13.50	21.00 (28.40)	28.10 (32.20)	33.90 (45.10)
			Output Torque Nm	11900 (14800)	18800 (22400)	31500	48100 (65100)	65500 (75300)	80800 (108000)
		Thermal	Input Power kW	8.58	12.20	16.60	24.50	35.30	44.30
			Output Torque Nm	18500	27400	38900	56000	82500	106000
			Efficiency %	75	78	78	80	81	83
350.	2.74	Mechanical	Input Power kW	4.96	7.66 (8.18)	13.00	18.80 (19.00)	26.00 (34.90)	30.50 (39.30)
			Output Torque Nm	11800	18800 (20100)	32300	48100 (48600)	65500 (88300)	80800 (104000)
		Thermal	Input Power kW	6.29	8.90	11.40	17.20	23.30	32.90
			Output Torque Nm	15000	21900	28300	44000	58500	87200
			Efficiency %	67	69	70	72	72	76
375.	2.56	Mechanical	Input Power kW	4.27 (5.77)	6.76 (8.04)	12.30 (12.50)	16.30 (17.50)	22.60 (28.50)	27.20 (43.00)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34700)	48100 (51600)	65500 (82800)	80800 (128000)
		Thermal	Input Power kW	8.25	11.70	15.80	20.80	29.80	38.30
			Output Torque Nm	23200	32600	44000	61500	86600	114000
			Efficiency %	74	76	78	78	81	81
400.	2.40	Mechanical	Input Power kW	4.16 (5.24)	6.17 (6.20)	10.50	15.30 (15.60)	18.20	25.50 (31.20)
			Output Torque Nm	11900 (15100)	18800 (18900)	32300	48100 (49200)	56900	80800 (99000)
		Thermal	Input Power kW	9.84	13.00	16.30	24.70	36.70	44.60
			Output Torque Nm	28400	39900	50500	78100	115000	142000
			Efficiency %	75	76	77	78	81	82
450.	2.13	Mechanical	Input Power kW	3.67 (4.67)	5.86 (6.97)	9.45	14.00 (19.00)	19.20 (22.20)	23.30 (31.10)
			Output Torque Nm	11900 (15200)	18800 (22400)	31700	48100 (65500)	65500 (75700)	80800 (108000)
		Thermal	Input Power kW	7.27	10.40	13.90	19.70	28.70	35.80
			Output Torque Nm	23800	33600	47000	68200	97800	125000
			Efficiency %	71	75	75	76	79	81
500.	1.92	Mechanical	Input Power kW	3.50 (4.72)	5.06 (6.01)	9.19 (9.29)	12.60 (13.70)	17.30 (22.10)	20.70 (32.80)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34600)	48100 (52400)	65500 (84100)	80800 (128000)
		Thermal	Input Power kW	7.76	10.50	14.00	18.50	26.00	33.40
			Output Torque Nm	26700	39400	52300	70900	98900	130000
			Efficiency %	72	73	74	76	78	80
600.	1.60	Mechanical	Input Power kW	3.25 (4.24)	4.91 (5.83)	8.35	11.80 (13.50)	16.20 (25.50)	19.10 (30.20)
			Output Torque Nm	11900 (15700)	18800 (22400)	33400	48100 (55000)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.99	6.89	9.67	14.30	17.70	23.00
			Output Torque Nm	18500	26500	38700	58600	71600	97300
			Efficiency %	63	65	68	70	69	72
625.	1.54	Mechanical	Input Power kW	2.85 (3.84)	4.33 (5.14)	7.85 (7.92)	10.70 (11.80)	14.20 (18.40)	16.70 (26.50)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34500)	48100 (52800)	65500 (85000)	80800 (128000)
		Thermal	Input Power kW	7.31	9.95	13.20	17.40	23.90	30.20
			Output Torque Nm	31000	43700	57900	78200	111000	147000
			Efficiency %	69	71	73	75	77	78
700.	1.37	Mechanical	Input Power kW	2.86 (2.92)	4.32 (4.76)	7.59	10.50 (11.80)	14.40 (21.20)	16.60 (23.80)
			Output Torque Nm	11900 (12200)	18800 (20700)	33400	48100 (54100)	65500 (97300)	80800 (116000)
		Thermal	Input Power kW	4.81	6.63	8.25	12.20	15.80	22.40
			Output Torque Nm	20300	29100	36300	55900	72000	109000
			Efficiency %	61	64	64	67	67	71
750.	1.28	Mechanical	Input Power kW	2.46 (3.19)	3.76 (4.47)	6.01	9.23 (12.50)	12.10 (14.00)	14.40 (19.10)
			Output Torque Nm	11900 (15600)	18800 (22400)	31600	48100 (65200)	65500 (75300)	80800 (108000)
		Thermal	Input Power kW	6.42	8.90	11.80	16.60	23.20	28.50
			Output Torque Nm	31700	45100	62300	86900	126000	161000
			Efficiency %	66	70	71	72	75	76
800.	1.20	Mechanical	Input Power kW	2.40 (3.15)	3.50 (3.76)	6.20	8.29 (8.30)	11.10	13.60
			Output Torque Nm	11900 (15800)	18800 (20200)	34000	48100 (48200)	64300	80100
		Thermal	Input Power kW	5.32	7.27	9.13	13.40	18.00	27.90
			Output Torque Nm	26900	39600	50300	78200	105000	166000
			Efficiency %	64	66	67	71	74	76

DOUBLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	1.07	Mechanical	Input Power kW	2.19 (2.91)	3.47 (4.11)	5.91	7.94 (9.12)	11.30 (17.70)	13.30 (21.00)
			Output Torque Nm	11900 (16000)	18800 (22400)	33600	48100 (55300)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.29	5.89	8.19	11.80	14.40	18.80
			Output Torque Nm	23800	32300	46800	71700	84100	114000
			Efficiency %	59	62	65	66	66	69
1000.	0.96	Mechanical	Input Power kW	1.92 (2.58)	2.91 (3.45)	5.25 (5.27)	7.10 (7.96)	9.32 (12.30)	11.10 (17.50)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34300)	48100 (54000)	65500 (86900)	80800 (128000)
		Thermal	Input Power kW	6.48	8.94	9.58	15.10	20.50	25.80
			Output Torque Nm	41200	58900	62900	103000	145000	189000
			Efficiency %	64	65	67	69	72	73
1200.	0.80	Mechanical	Input Power kW	1.81 (2.42)	2.63 (3.12)	4.46	6.20 (7.10)	8.73 (13.70)	10.30 (16.20)
			Output Torque Nm	11900 (16100)	18800 (22400)	33500	48100 (55200)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.03	5.36	7.35	10.60	12.70	16.50
			Output Torque Nm	27200	39000	55900	83000	96000	130000
			Efficiency %	56	58	61	63	64	67
1250.	0.77	Mechanical	Input Power kW	1.62 (2.16)	2.42 (2.87)	4.36 (4.37)	5.88 (6.69)	7.75 (10.40)	9.22 (14.40)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34300)	48100 (54900)	65500 (88200)	80800 (127000)
		Thermal	Input Power kW	5.33	8.33	8.33	14.20	18.90	24.30
			Output Torque Nm	40500	66400	66100	118000	161000	215000
			Efficiency %	60	62	64	67	69	70
1400.	0.69	Mechanical	Input Power kW	1.60 (1.69)	2.32 (2.66)	4.17 (4.24)	5.53 (6.23)	7.78 (11.90)	8.94 (12.80)
			Output Torque Nm	11900 (12600)	18800 (21600)	34200 (34800)	48100 (54300)	65500 (101000)	80800 (117000)
		Thermal	Input Power kW	3.91	5.21	6.27	9.01	11.40	16.20
			Output Torque Nm	30000	43100	51900	79100	96800	148000
			Efficiency %	55	57	57	61	61	66
1500.	0.64	Mechanical	Input Power kW	1.40 (1.87)	2.11 (2.50)	3.33	5.07 (6.78)	6.63 (7.55)	7.92 (10.40)
			Output Torque Nm	11900 (16100)	18800 (22400)	31400	48100 (64700)	65500 (74800)	80800 (107000)
		Thermal	Input Power kW	5.33	7.65	8.33	13.70	18.90	23.10
			Output Torque Nm	47000	70100	79800	132000	189000	238000
			Efficiency %	58	61	62	65	67	70
1600.	0.60	Mechanical	Input Power kW	1.34 (1.74)	2.04 (2.18)	3.58	4.71 (4.91)	5.99	7.25
			Output Torque Nm	11900 (15700)	18800 (20100)	33800	48100 (50200)	63900	79500
		Thermal	Input Power kW	4.54	6.24	7.73	11.10	14.40	22.10
			Output Torque Nm	41900	59300	74200	115000	156000	246000
			Efficiency %	56	58	59	64	67	70
1750.	0.55	Mechanical	Input Power kW	1.24 (1.66)	1.91 (2.23)	3.42	4.47 (5.19)	5.86 (8.02)	6.96 (10.80)
			Output Torque Nm	11900 (16100)	18800 (22100)	34200	48100 (56100)	65500 (90200)	80800 (126000)
		Thermal	Input Power kW	3.88	5.59	5.59	10.40	15.30	22.30
			Output Torque Nm	38600	56800	56500	113000	174000	263000
			Efficiency %	56	57	59	63	65	67
1800.	0.53	Mechanical	Input Power kW	1.22 (1.62)	1.84 (2.18)	2.89	4.37 (5.83)	5.73 (6.51)	6.83 (8.96)
			Output Torque Nm	11900 (16100)	18800 (22400)	31300	48100 (64600)	65500 (74600)	80800 (107000)
		Thermal	Input Power kW	4.51	6.80	6.80	12.00	16.40	22.10
			Output Torque Nm	46000	72000	75100	135000	191000	266000
			Efficiency %	55	58	59	63	65	67
2000.	0.48	Mechanical	Input Power kW	1.13 (1.47)	1.70 (1.82)	2.98	3.91 (4.14)	4.98	6.01
			Output Torque Nm	11900 (15700)	18800 (20100)	33800	48100 (51000)	63700	79300
		Thermal	Input Power kW	4.39	5.96	7.37	10.50	13.70	20.90
			Output Torque Nm	48400	68200	85200	131000	178000	282000
			Efficiency %	53	56	57	62	64	67
2100.	0.46	Mechanical	Input Power kW	1.14 (1.24)	1.73 (2.02)	3.09 (3.22)	4.07 (4.56)	5.56 (8.71)	6.31 (9.03)
			Output Torque Nm	11900 (13000)	18800 (22200)	34200 (35700)	48100 (54200)	65500 (104000)	80800 (117000)
		Thermal	Input Power kW	3.60	4.81	5.75	8.14	10.00	14.10
			Output Torque Nm	39200	54100	64600	97800	119000	183000
			Efficiency %	50	52	53	57	57	62
2400.	0.40	Mechanical	Input Power kW	1.03 (1.37)	1.56 (1.84)	2.60	3.58 (4.07)	4.87 (7.61)	5.67 (8.90)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (55000)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.47	4.64	6.32	8.86	10.20	13.00
			Output Torque Nm	42300	58200	83100	122000	140000	189000
			Efficiency %	48	50	54	56	56	60
2500.	0.38	Mechanical	Input Power kW	0.98 (1.30)	1.47 (1.73)	2.58 (3.23)	3.41 (3.89)	3.39	4.83
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (43100)	48100 (55000)	51400	76500
		Thermal	Input Power kW	3.79	5.03	6.22	9.73	15.10	18.30
			Output Torque Nm	48900	67400	84300	140000	238000	298000
			Efficiency %	49	51	53	57	62	64
2800.	0.34	Mechanical	Input Power kW	0.91 (1.00)	1.38 (1.63)	2.46 (2.60)	3.20 (3.59)	4.36 (6.80)	4.92 (7.02)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36300)	48100 (54100)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.40	4.55	5.40	7.55	9.24	12.90
			Output Torque Nm	47100	64900	76900	116000	142000	217000
			Efficiency %	47	49	50	54	54	59
3000.	0.32	Mechanical	Input Power kW	0.87 (1.16)	1.31 (1.55)	2.17	2.98 (3.39)	4.08 (6.37)	4.74 (7.43)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (54900)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.37	4.45	6.04	8.42	9.74	12.30
			Output Torque Nm	48900	67000	95600	139000	160000	215000
			Efficiency %	46	48	52	54	54	57
3500.	0.27	Mechanical	Input Power kW	0.77 (0.86)	1.16 (1.37)	2.06 (2.21)	2.68 (2.99)	3.66 (5.70)	4.12 (5.85)
			Output Torque Nm	11900 (13400)	18800 (22400)	34200 (36800)	48100 (54000)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.30	4.36	5.16	7.18	8.79	12.30
			Output Torque Nm	54500	74800	88200	133000	161000	247000
			Efficiency %	44	47	48	52	51	56
3600.	0.27	Mechanical	Input Power kW	0.76 (1.01)	1.15 (1.35)	1.89	2.58 (2.93)	3.55 (5.53)	4.11 (6.44)
			Output Torque Nm	11900 (16100)	18800 (22400)	33300	48100 (54800)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.28	4.35	5.89	8.12	9.40	11.90
			Output Torque Nm	55100	75400	107000	156000	178000	239000
			Efficiency %	44	46	49	52	52	55
4200.	0.23	Mechanical	Input Power kW	0.68 (0.76)	1.02 (1.20)	1.80 (1.95)	2.32 (2.59)	3.19 (4.95)	3.58 (5.07)
			Output Torque Nm	11900 (13600)	18800 (22400)	34200 (37200)	48100 (53900)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.23	4.27	5.04	6.92	8.48	11.80
			Output Torque Nm	61600	84300	99000	148000	180000	276000
			Efficiency %	42	44	45	50	49	54

DOUBLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	145.00	Mechanical	Input Power kW	95.10	141.00	197.00	356.00	441.00	691.00
			Output Torque Nm	6030	8980	12300	22700	28100	44900
		Thermal	Input Power kW	69.20	103.00	151.00	216.00	278.00	408.00
			Output Torque Nm	4390	6540	9450	13800	17600	26500
			Efficiency %	96	96	97	97	96	97
7.5	96.67	Mechanical	Input Power kW	68.20	105.00	143.00	297.00	445.00	558.00
			Output Torque Nm	6430	9970	13500	28200	42400	53100
		Thermal	Input Power kW	56.90	84.40	124.00	179.00	259.00	353.00
			Output Torque Nm	5360	7980	11700	17000	24600	33500
			Efficiency %	95	96	96	96	96	96
10.0	72.50	Mechanical	Input Power kW	47.10	85.50	115.00	243.00	334.00	434.00
			Output Torque Nm	5730	10500	14200	30700	41600	54100
		Thermal	Input Power kW	50.50	75.70	114.00	164.00	245.00	334.00
			Output Torque Nm	6150	9300	14100	20600	30400	41500
			Efficiency %	95	95	96	95	96	96
12.5	58.00	Mechanical	Input Power kW	51.70	68.20	106.00	179.00	240.00	354.00
			Output Torque Nm	8160	10600	16800	28000	38500	56300
		Thermal	Input Power kW	43.70	69.20	97.90	150.00	220.00	302.00
			Output Torque Nm	6890	10800	15600	23400	35300	48000
			Efficiency %	94	94	95	95	96	96
15.0	48.33	Mechanical	Input Power kW	41.60	59.60	110.00	182.00	255.00	306.00
			Output Torque Nm	7510	10800	20100	33500	47100	56600
		Thermal	Input Power kW	40.10	61.80	89.50	137.00	199.00	277.00
			Output Torque Nm	7250	11200	16400	25100	36700	51300
			Efficiency %	94	94	94	94	95	95
20.0	36.25	Mechanical	Input Power kW	39.40	61.60	87.90	154.00	167.00	238.00
			Output Torque Nm	9420	14800	21200	37200	40700	58300
		Thermal	Input Power kW	33.40	50.70	76.70	109.00	173.00	237.00
			Output Torque Nm	7980	12200	18500	26300	42300	58000
			Efficiency %	92	93	93	93	94	94
25.0	29.00	Mechanical	Input Power kW	32.40	48.30	69.20	113.00	160.00	191.00
			Output Torque Nm	9450	14500	20500	33900	48300	58500
		Thermal	Input Power kW	26.80	41.00	63.20	90.10	136.00	186.00
			Output Torque Nm	7820	12300	18700	26800	41100	57000
			Efficiency %	90	91	92	92	93	93
30.0	24.17	Mechanical	Input Power kW	27.40	44.10	61.10	110.00	136.00	166.00
			Output Torque Nm	9480	15500	22200	38800	48800	59700
		Thermal	Input Power kW	23.20	36.70	54.30	79.20	123.00	173.00
			Output Torque Nm	7980	12800	19700	27900	43900	62100
			Efficiency %	89	90	90	91	92	93
40.0	18.13	Mechanical	Input Power kW	23.80	30.80	49.30	74.60	96.00	119.00
			Output Torque Nm	10800	14100	22700	35000	45700	56400
		Thermal	Input Power kW	18.00	27.80	41.10	64.70	92.00	149.00
			Output Torque Nm	8090	12700	18900	30200	43700	71000
			Efficiency %	85	87	87	89	90	91
50.0	14.50	Mechanical	Input Power kW	19.90	29.10	41.10	68.10	63.70	93.10
			Output Torque Nm	10900	16200	23000	38600	36800	54300
		Thermal	Input Power kW	15.10	23.20	34.30	51.90	90.90	126.00
			Output Torque Nm	8230	12900	19100	29300	52800	74100
			Efficiency %	83	84	85	86	89	89
60.0	12.08	Mechanical	Input Power kW	16.70	25.00	35.00	57.80	72.00	87.00
			Output Torque Nm	10700	16200	23100	38500	48000	58800
		Thermal	Input Power kW	13.20	20.00	31.40	46.00	60.40	84.60
			Output Torque Nm	8350	12900	20700	30400	40100	57100
			Efficiency %	80	82	83	84	84	85
70.0	10.36	Mechanical	Input Power kW	13.90	21.60	31.00	49.80	63.40	77.20
			Output Torque Nm	10100	16000	23000	37800	48200	60400
		Thermal	Input Power kW	12.30	18.60	26.80	40.40	53.30	82.10
			Output Torque Nm	8890	13800	19900	30500	40400	64300
			Efficiency %	78	80	81	82	82	85

SINGLE REDUCTION

# B SERIES A RADICON

## RATINGS AT 725 REV/MIN INPUT (Synthetic Oil)

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	9.67	Mechanical	Input Power kW	14.20 (14.80)	17.50	33.00	45.20	76.10 (84.00)	93.10 (97.10)
			Output Torque Nm	11900 (12400)	14900	28400	39200	65500 (72300)	80800 (84300)
		Thermal	Input Power kW	16.50	24.90	31.70	55.50	69.20	97.20
			Output Torque Nm	13900	21300	27300	48300	59500	84400
			Efficiency %	85	86	86	88	89	89
100.	7.25	Mechanical	Input Power kW	10.80 (12.80)	16.80 (17.50)	27.10	42.50 (45.20)	47.50	70.80 (81.70)
			Output Torque Nm	11900 (14100)	18800 (19600)	30600	48100 (51100)	53600	80800 (93200)
		Thermal	Input Power kW	14.00	20.50	28.40	42.10	64.50	79.30
			Output Torque Nm	15400	22900	32000	47700	73000	90500
			Efficiency %	83	84	85	86	87	88
125.	5.80	Mechanical	Input Power kW	9.00 (11.30)	13.60 (16.20)	23.80	34.70 (35.40)	47.40 (56.90)	57.10 (90.40)
			Output Torque Nm	11900 (15000)	18800 (22400)	32600	48100 (49000)	65500 (78700)	80800 (128000)
		Thermal	Input Power kW	11.40	16.40	22.80	31.90	46.60	59.90
			Output Torque Nm	15100	22600	31300	44200	64300	84800
			Efficiency %	80	82	83	84	85	86
150.	4.83	Mechanical	Input Power kW	7.69 (9.34)	11.80 (14.00)	17.90	29.60 (37.90)	40.20 (43.60)	48.90 (61.30)
			Output Torque Nm	11900 (14500)	18800 (22400)	29800	48100 (61500)	65500 (71000)	80800 (101000)
		Thermal	Input Power kW	9.94	14.60	19.90	29.90	44.20	55.60
			Output Torque Nm	15400	23300	33100	48600	71900	92000
			Efficiency %	78	80	81	82	84	85
200.	3.63	Mechanical	Input Power kW	5.96 (7.34)	9.17 (9.35)	15.70	23.00 (23.90)	26.90	37.40 (46.00)
			Output Torque Nm	11900 (14700)	18800 (19100)	32500	48100 (49900)	57300	80800 (99500)
		Thermal	Input Power kW	11.00	15.00	20.60	29.80	44.50	54.20
			Output Torque Nm	22200	30700	42700	62500	95000	117000
			Efficiency %	79	81	82	82	84	85
225.	3.22	Mechanical	Input Power kW	5.50 (6.84)	8.20 (9.76)	13.20	20.50 (27.80)	27.50 (31.70)	33.40 (44.60)
			Output Torque Nm	11900 (14900)	18800 (22400)	31700	48100 (65400)	65500 (75500)	80800 (108000)
		Thermal	Input Power kW	8.53	12.10	16.40	24.10	34.90	43.90
			Output Torque Nm	18600	27700	39300	56500	83100	106000
			Efficiency %	75	78	79	80	82	83
250.	2.90	Mechanical	Input Power kW	4.98 (6.73)	7.48 (8.90)	13.70 (13.90)	18.90 (20.10)	25.30 (31.70)	30.30 (48.00)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34700)	48100 (51100)	65500 (82200)	80800 (128000)
		Thermal	Input Power kW	8.69	12.10	16.50	22.40	31.60	40.70
			Output Torque Nm	20900	30600	41400	57000	82000	109000
			Efficiency %	76	78	79	80	82	83
300.	2.42	Mechanical	Input Power kW	4.27 (5.39)	6.48 (7.71)	10.50	16.20 (22.00)	21.50 (24.90)	26.00 (34.80)
			Output Torque Nm	11900 (15100)	18800 (22400)	31800	48100 (65600)	65500 (75800)	80800 (108000)
		Thermal	Input Power kW	7.60	10.80	14.60	21.20	30.30	38.00
			Output Torque Nm	21300	31500	44300	63200	92400	119000
			Efficiency %	74	76	77	78	80	82
350.	2.07	Mechanical	Input Power kW	3.90 (3.91)	5.95 (6.44)	10.30	14.60 (15.40)	20.20 (28.70)	23.60 (31.80)
			Output Torque Nm	11900 (12000)	18800 (20400)	32800	48100 (51000)	65500 (93600)	80800 (109000)
		Thermal	Input Power kW	5.56	7.71	9.81	14.60	19.50	27.70
			Output Torque Nm	17100	24500	31300	48400	63200	95000
			Efficiency %	65	67	68	70	70	74
375.	1.93	Mechanical	Input Power kW	3.29 (4.44)	5.20 (6.19)	9.48 (9.58)	12.50 (13.60)	17.30 (22.20)	20.80 (33.00)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34600)	48100 (52400)	65500 (84000)	80800 (128000)
		Thermal	Input Power kW	7.54	10.50	14.00	18.30	26.00	33.30
			Output Torque Nm	27600	38200	50800	70600	98300	130000
			Efficiency %	72	75	76	77	79	80
400.	1.81	Mechanical	Input Power kW	3.20 (4.09)	4.74	8.03	11.80 (11.90)	13.90	19.50 (23.80)
			Output Torque Nm	11900 (15300)	18700	32200	48100 (48700)	56800	80800 (98600)
		Thermal	Input Power kW	8.59	11.80	12.70	22.20	32.70	39.30
			Output Torque Nm	32300	47200	51000	91300	134000	163000
			Efficiency %	74	74	76	77	80	81
450.	1.61	Mechanical	Input Power kW	2.83 (3.65)	4.51 (5.37)	7.26	10.70 (14.60)	14.80 (17.00)	17.80 (23.80)
			Output Torque Nm	11900 (15400)	18800 (22400)	31600	48100 (65300)	65500 (75500)	80800 (108000)
		Thermal	Input Power kW	6.62	9.39	12.40	17.50	25.10	31.30
			Output Torque Nm	28200	39400	54500	78500	111000	142000
			Efficiency %	70	73	74	75	78	80
500.	1.45	Mechanical	Input Power kW	2.70 (3.64)	3.90 (4.64)	7.09 (7.15)	9.70 (10.70)	13.30 (17.20)	15.90 (25.20)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34500)	48100 (53100)	65500 (85200)	80800 (128000)
		Thermal	Input Power kW	7.08	9.55	12.70	16.60	23.00	29.40
			Output Torque Nm	31600	46400	61400	82600	114000	150000
			Efficiency %	70	71	73	74	77	78
600.	1.21	Mechanical	Input Power kW	2.52 (3.33)	3.80 (4.52)	6.52	9.14 (10.50)	12.60 (19.80)	14.80 (23.40)
			Output Torque Nm	11900 (15900)	18800 (22400)	33600	48100 (55400)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	4.49	6.10	8.52	12.60	15.30	19.80
			Output Torque Nm	21500	30400	44100	66300	79900	109000
			Efficiency %	61	64	67	68	67	70
625.	1.16	Mechanical	Input Power kW	2.20 (2.97)	3.34 (3.97)	6.07 (6.10)	8.29 (9.21)	10.90 (14.30)	12.90 (20.30)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34400)	48100 (53500)	65500 (86000)	80800 (128000)
		Thermal	Input Power kW	6.72	9.10	11.40	15.70	21.50	27.00
			Output Torque Nm	36900	51800	64400	91400	129000	170000
			Efficiency %	67	70	71	73	75	76
700.	1.04	Mechanical	Input Power kW	2.22 (2.29)	3.35 (3.73)	5.97	8.13 (9.19)	11.10 (16.70)	12.80 (18.50)
			Output Torque Nm	11900 (12300)	18800 (21000)	33800	48100 (54500)	65500 (98500)	80800 (117000)
		Thermal	Input Power kW	4.33	5.88	7.26	10.60	13.60	19.40
			Output Torque Nm	23600	33300	41200	63200	80300	123000
			Efficiency %	60	62	63	65	66	70
750.	0.97	Mechanical	Input Power kW	1.90 (2.50)	2.91 (3.45)	4.63	7.12 (9.59)	9.35 (10.70)	11.00 (14.60)
			Output Torque Nm	11900 (15800)	18800 (22400)	31500	48100 (65000)	65500 (75100)	80800 (107000)
		Thermal	Input Power kW	5.91	8.16	10.70	15.00	20.90	25.50
			Output Torque Nm	37700	53500	73600	102000	147000	188000
			Efficiency %	64	68	69	71	74	76
800.	0.91	Mechanical	Input Power kW	1.85 (2.43)	2.70 (2.90)	4.80	6.39 (6.50)	8.50	10.40
			Output Torque Nm	11900 (15700)	18800 (20200)	33900	48100 (48900)	64100	79900
		Thermal	Input Power kW	4.87	6.63	8.28	12.10	16.10	24.80
			Output Torque Nm	31800	46700	59000	91500	122000	192000
			Efficiency %	63	64	65	70	73	75

DOUBLE REDUCTION

# B SERIES A RADICON

## RATINGS AT 725 REV/MIN INPUT (Synthetic Oil)

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	0.81	Mechanical	Input Power kW	1.70 (2.28)	2.69 (3.19)	4.58	6.15 (7.05)	8.75 (13.80)	10.30 (16.30)
			Output Torque Nm	11900 (16100)	18800 (22400)	33600	48100 (55200)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.92	5.34	7.34	10.50	12.70	16.40
			Output Torque Nm	28000	37800	54200	82600	95400	130000
1000.	0.73	Mechanical	Input Power kW	1.49 (2.01)	2.26 (2.67)	4.08 (4.09)	5.50 (6.28)	7.20 (9.70)	8.57 (13.40)
			Output Torque Nm	11900 (16100)	18800 (22300)	34200 (34300)	48100 (55100)	65500 (88600)	80800 (127000)
		Thermal	Input Power kW	5.07	7.50	7.50	13.80	18.00	23.40
			Output Torque Nm	41400	63700	63400	122000	165000	223000
1200.	0.60	Mechanical	Input Power kW	1.40 (1.88)	2.04 (2.42)	3.46	4.81 (5.49)	6.77 (10.60)	7.97 (12.60)
			Output Torque Nm	11900 (16100)	18800 (22400)	33500	48100 (55100)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.70	4.90	6.71	9.59	11.40	14.60
			Output Torque Nm	32200	45900	65700	97000	111000	149000
1250.	0.58	Mechanical	Input Power kW	1.26 (1.69)	1.88 (2.20)	3.38	4.56 (5.29)	5.99 (8.19)	7.12 (11.10)
			Output Torque Nm	11900 (16100)	18800 (22200)	34200	48100 (55900)	65500 (89900)	80800 (126000)
		Thermal	Input Power kW	4.22	6.72	6.72	11.50	15.10	22.20
			Output Torque Nm	41100	69000	68700	123000	167000	254000
1400.	0.52	Mechanical	Input Power kW	1.24 (1.34)	1.81 (2.10)	3.25 (3.36)	4.29 (4.83)	6.04 (9.44)	6.91 (9.92)
			Output Torque Nm	11900 (12900)	18800 (22000)	34200 (35500)	48100 (54200)	65500 (103000)	80800 (117000)
		Thermal	Input Power kW	3.61	4.78	5.73	8.17	10.20	14.40
			Output Torque Nm	35700	51000	61000	92500	112000	171000
1500.	0.48	Mechanical	Input Power kW	1.09 (1.46)	1.64 (1.94)	2.58	3.94 (5.26)	5.13 (5.83)	6.11 (8.02)
			Output Torque Nm	11900 (16100)	18800 (22400)	31300	48100 (64600)	65500 (74600)	80800 (106000)
		Thermal	Input Power kW	4.22	6.72	6.72	11.50	15.10	21.10
			Output Torque Nm	47600	79500	82900	143000	195000	282000
1600.	0.45	Mechanical	Input Power kW	1.04 (1.36)	1.59 (1.69)	2.78	3.65 (3.88)	4.62	5.57
			Output Torque Nm	11900 (15700)	18800 (20100)	33800	48100 (51100)	63700	79300
		Thermal	Input Power kW	4.24	5.80	7.16	10.20	13.20	20.20
			Output Torque Nm	50200	70800	88200	136000	185000	292000
1750.	0.41	Mechanical	Input Power kW	0.97 (1.30)	1.49 (1.73)	2.66	3.47 (4.07)	4.55 (6.35)	5.39 (8.28)
			Output Torque Nm	11900 (16100)	18800 (22000)	34100	48100 (56600)	65500 (91900)	80800 (125000)
		Thermal	Input Power kW	3.11	4.54	4.54	8.39	12.30	18.60
			Output Torque Nm	39500	59100	58900	118000	179000	283000
1800.	0.40	Mechanical	Input Power kW	0.95 (1.27)	1.43 (1.69)	2.24	3.39 (4.51)	4.44 (5.04)	5.28 (6.91)
			Output Torque Nm	11900 (16100)	18800 (22400)	31300	48100 (64500)	65500 (74400)	80800 (106000)
		Thermal	Input Power kW	3.56	5.49	5.49	9.70	13.20	20.00
			Output Torque Nm	46500	74700	77900	140000	197000	311000
2000.	0.36	Mechanical	Input Power kW	0.88 (1.14)	1.32 (1.41)	2.31	3.04 (3.25)	3.85	4.63
			Output Torque Nm	11900 (15600)	18800 (20100)	33700	48100 (51500)	63600	79100
		Thermal	Input Power kW	4.12	5.56	6.72	9.68	12.60	19.30
			Output Torque Nm	58200	81900	99900	156000	212000	336000
2100.	0.35	Mechanical	Input Power kW	0.89 (0.98)	1.35 (1.59)	2.41 (2.56)	3.16 (3.54)	4.32 (6.77)	4.89 (6.98)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36300)	48100 (54100)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.35	4.46	5.31	7.46	9.09	12.70
			Output Torque Nm	46900	64600	76500	115000	140000	214000
2400.	0.30	Mechanical	Input Power kW	0.80 (1.07)	1.22 (1.44)	2.02	2.78 (3.16)	3.79 (5.93)	4.40 (6.91)
			Output Torque Nm	11900 (16100)	18800 (22400)	33300	48100 (54900)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.25	4.33	5.88	8.18	9.38	11.90
			Output Torque Nm	50800	69600	99000	144000	165000	222000
2500.	0.29	Mechanical	Input Power kW	0.76 (1.02)	1.14 (1.35)	2.01 (2.52)	2.66 (3.02)	2.61	3.72
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (43100)	48100 (54900)	51300	76300
		Thermal	Input Power kW	3.57	4.70	5.79	9.02	14.00	16.90
			Output Torque Nm	58800	80900	101000	167000	284000	355000
2800.	0.26	Mechanical	Input Power kW	0.71 (0.80)	1.08 (1.27)	1.92 (2.07)	2.50 (2.79)	3.39 (5.30)	3.81 (5.43)
			Output Torque Nm	11900 (13500)	18800 (22400)	34200 (36900)	48100 (54000)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.19	4.25	5.03	6.97	8.47	11.80
			Output Torque Nm	56700	77600	91400	137000	167000	256000
3000.	0.24	Mechanical	Input Power kW	0.68 (0.91)	1.02 (1.20)	1.69	2.33 (2.64)	3.18 (4.97)	3.68 (5.77)
			Output Torque Nm	11900 (16100)	18800 (22400)	33300	48100 (54800)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.17	4.15	5.64	7.82	8.96	11.30
			Output Torque Nm	58800	80300	114000	166000	189000	254000
3500.	0.21	Mechanical	Input Power kW	0.61 (0.69)	0.91 (1.07)	1.61 (1.75)	2.09 (2.33)	2.85 (4.45)	3.19 (4.53)
			Output Torque Nm	11900 (13600)	18800 (22400)	34200 (37400)	48100 (53900)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.12	4.09	4.82	6.66	8.10	11.30
			Output Torque Nm	65800	90000	105000	158000	191000	294000
3600.	0.20	Mechanical	Input Power kW	0.60 (0.79)	0.90 (1.06)	1.48	2.01 (2.28)	2.77 (4.32)	3.20 (5.01)
			Output Torque Nm	11900 (16100)	18800 (22400)	33300	48100 (54700)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.11	4.08	5.49	7.56	8.69	11.00
			Output Torque Nm	66600	90700	128000	187000	211000	284000
4200.	0.17	Mechanical	Input Power kW	0.53 (0.61)	0.80 (0.94)	1.41 (1.55)	1.81 (2.02)	2.49 (3.87)	2.78 (3.93)
			Output Torque Nm	11900 (13800)	18800 (22400)	34200 (37800)	48100 (53900)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.06	4.02	4.73	6.44	7.86	11.00
			Output Torque Nm	74600	102000	119000	177000	213000	329000
			Efficiency %	41	43	44	48	48	53

DOUBLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	96.00	Mechanical	Input Power kW	74.60	111.00	155.00	280.00	330.00	545.00
			Output Torque Nm	7100	10600	14500	26800	31600	53400
		Thermal	Input Power kW	47.60	72.20	109.00	164.00	204.00	317.00
			Output Torque Nm	4520	6890	10300	15700	19500	31000
			Efficiency %	95	96	97	96	96	97
7.5	64.00	Mechanical	Input Power kW	53.10	82.10	111.00	230.00	340.00	419.00
			Output Torque Nm	7510	11700	15900	32800	48800	60100
		Thermal	Input Power kW	40.30	60.40	89.50	133.00	187.00	262.00
			Output Torque Nm	5700	8580	12700	18900	26700	37600
			Efficiency %	95	95	95	95	96	96
10.0	48.00	Mechanical	Input Power kW	36.60	66.50	89.60	189.00	241.00	327.00
			Output Torque Nm	6680	12300	16600	35900	45000	61300
		Thermal	Input Power kW	35.60	54.10	81.70	121.00	174.00	246.00
			Output Torque Nm	6500	9970	15100	22900	32600	46000
			Efficiency %	94	95	95	95	96	96
12.5	38.40	Mechanical	Input Power kW	40.10	52.90	82.20	139.00	186.00	266.00
			Output Torque Nm	9490	12400	19600	32700	45000	63700
		Thermal	Input Power kW	30.80	49.00	70.00	110.00	157.00	222.00
			Output Torque Nm	7270	11500	16700	25800	37700	53100
			Efficiency %	93	94	94	94	95	95
15.0	32.00	Mechanical	Input Power kW	32.20	46.20	85.10	134.00	192.00	230.00
			Output Torque Nm	8710	12600	23400	37100	53400	64100
		Thermal	Input Power kW	28.70	43.80	63.80	100.00	142.00	203.00
			Output Torque Nm	7760	11900	17500	27600	39300	56600
			Efficiency %	93	93	93	94	94	95
20.0	24.00	Mechanical	Input Power kW	30.40	45.00	67.90	119.00	120.00	180.00
			Output Torque Nm	10900	16200	24600	43100	44000	66000
		Thermal	Input Power kW	23.90	35.90	54.40	79.90	122.00	173.00
			Output Torque Nm	8530	12900	19600	28900	44800	63600
			Efficiency %	91	92	92	92	94	94
25.0	19.20	Mechanical	Input Power kW	25.00	36.20	53.30	87.40	121.00	144.00
			Output Torque Nm	10900	16200	23600	39100	54800	66400
		Thermal	Input Power kW	19.30	29.10	44.90	66.20	97.60	137.00
			Output Torque Nm	8370	13000	19900	29500	44100	63100
			Efficiency %	89	90	91	91	92	93
30.0	16.00	Mechanical	Input Power kW	21.10	31.00	44.40	84.50	103.00	126.00
			Output Torque Nm	10800	16200	24100	44600	55300	67700
		Thermal	Input Power kW	16.70	26.50	38.50	58.20	87.10	127.00
			Output Torque Nm	8540	13800	20800	30600	46500	68700
			Efficiency %	87	89	89	90	91	92
40.0	12.00	Mechanical	Input Power kW	17.40	22.50	37.50	56.50	69.60	86.10
			Output Torque Nm	11600	15300	25700	39500	49400	61100
		Thermal	Input Power kW	13.00	20.20	29.40	46.90	65.60	109.00
			Output Torque Nm	8660	13700	20100	32800	46600	77300
			Efficiency %	84	85	86	88	89	90
50.0	9.60	Mechanical	Input Power kW	14.40	19.70	31.50	49.70	46.30	67.50
			Output Torque Nm	11600	16200	26100	41900	39900	58800
		Thermal	Input Power kW	11.00	16.90	24.60	38.20	63.80	91.90
			Output Torque Nm	8810	13900	20300	32100	55200	80400
			Efficiency %	81	83	83	84	88	88
60.0	8.00	Mechanical	Input Power kW	12.40	16.90	26.00	42.30	55.10	66.40
			Output Torque Nm	11600	16200	25300	41700	54500	66900
		Thermal	Input Power kW	9.59	14.60	22.40	33.80	44.50	63.20
			Output Torque Nm	8930	14000	21800	33300	43900	63600
			Efficiency %	78	80	82	83	83	84
70.0	6.86	Mechanical	Input Power kW	10.40	14.80	23.90	36.50	48.60	59.00
			Output Torque Nm	11100	16200	26200	41000	54800	68700
		Thermal	Input Power kW	8.93	13.50	19.30	29.60	39.30	60.70
			Output Torque Nm	9500	14800	21100	33100	44100	70700
			Efficiency %	76	79	79	80	81	84

SINGLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	6.40	Mechanical	Input Power kW	9.60 (10.60)	11.70	25.80	30.10	51.30 (56.00)	62.70 (64.70)
			Output Torque Nm	11900 (13200)	14700	32900	38700	65500 (71400)	80800 (83300)
		Thermal	Input Power kW	13.20	21.10	21.30	37.20	47.60	72.20
			Output Torque Nm	16400	26600	27100	47900	60600	93100
			Efficiency %	83	84	85	86	87	88
100.	4.80	Mechanical	Input Power kW	7.34 (8.91)	11.40 (11.70)	19.50	28.80 (30.10)	34.10	47.80 (58.60)
			Output Torque Nm	11900 (14500)	18800 (19300)	32500	48100 (50400)	57100	80800 (99200)
		Thermal	Input Power kW	12.10	16.60	21.30	33.70	47.60	62.20
			Output Torque Nm	19700	27400	35500	56300	79700	105000
			Efficiency %	81	82	83	84	86	86
125.	3.84	Mechanical	Input Power kW	6.12 (8.28)	9.27 (11.00)	17.00 (17.20)	23.60 (24.70)	32.10 (39.60)	38.70 (61.20)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34800)	48100 (50400)	65500 (80900)	80800 (128000)
		Thermal	Input Power kW	9.54	13.30	18.40	25.30	36.30	46.90
			Output Torque Nm	18600	27000	37200	51500	74100	98100
			Efficiency %	78	80	81	81	83	84
150.	3.20	Mechanical	Input Power kW	5.24 (6.54)	8.01 (9.54)	13.00	20.20 (27.40)	27.30 (31.50)	33.10 (44.20)
			Output Torque Nm	11900 (14900)	18800 (22400)	31800	48100 (65600)	65500 (75600)	80800 (108000)
		Thermal	Input Power kW	8.32	12.00	16.20	23.90	34.70	43.60
			Output Torque Nm	19000	28100	39700	57000	83300	107000
			Efficiency %	76	78	79	80	82	83
200.	2.40	Mechanical	Input Power kW	4.05 (5.10)	6.21 (6.25)	10.60	15.60 (15.90)	18.10	25.20 (30.90)
			Output Torque Nm	11900 (15100)	18800 (18900)	32300	48100 (49200)	57000	80800 (99000)
		Thermal	Input Power kW	9.56	12.80	15.90	24.70	35.60	44.20
			Output Torque Nm	28300	38900	48800	76200	112000	142000
			Efficiency %	77	79	79	80	83	84
225.	2.13	Mechanical	Input Power kW	3.75 (4.77)	5.58 (6.64)	9.01	13.90 (18.90)	18.70 (21.60)	22.60 (30.30)
			Output Torque Nm	11900 (15200)	18800 (22400)	31700	48100 (65500)	65500 (75700)	80800 (108000)
		Thermal	Input Power kW	7.20	10.10	13.50	19.60	28.10	35.20
			Output Torque Nm	23000	34200	47800	67800	98800	126000
			Efficiency %	73	76	77	78	80	81
250.	1.92	Mechanical	Input Power kW	3.39 (4.59)	5.08 (6.05)	9.28 (9.37)	12.80 (13.90)	17.20 (22.00)	20.50 (32.50)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34600)	48100 (52300)	65500 (84000)	80800 (128000)
		Thermal	Input Power kW	7.56	10.30	13.80	18.40	25.80	33.00
			Output Torque Nm	26700	38400	51000	69300	98500	130000
			Efficiency %	74	76	77	78	80	81
300.	1.60	Mechanical	Input Power kW	2.92 (3.76)	4.41 (5.24)	7.09	11.00 (14.90)	14.60 (16.90)	17.60 (23.50)
			Output Torque Nm	11900 (15400)	18800 (22400)	31600	48100 (65300)	65500 (75500)	80800 (108000)
		Thermal	Input Power kW	6.63	9.24	12.20	17.60	24.90	31.00
			Output Torque Nm	27300	39600	54800	77000	112000	143000
			Efficiency %	71	74	75	76	78	80
350.	1.37	Mechanical	Input Power kW	2.69 (2.75)	4.10 (4.53)	7.25	10.00 (11.30)	13.90 (20.70)	16.20 (23.30)
			Output Torque Nm	11900 (12200)	18800 (20800)	33400	48100 (54400)	65500 (97400)	80800 (117000)
		Thermal	Input Power kW	4.66	6.44	8.00	11.90	15.50	22.00
			Output Torque Nm	20800	29700	37000	56900	72700	110000
			Efficiency %	62	64	65	68	68	72
375.	1.28	Mechanical	Input Power kW	2.25 (3.03)	3.54 (4.21)	6.45 (6.50)	8.53 (9.46)	11.80 (15.40)	14.10 (22.40)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34400)	48100 (53400)	65500 (85700)	80800 (128000)
		Thermal	Input Power kW	6.61	9.11	12.00	15.60	21.80	27.70
			Output Torque Nm	35400	48700	63900	88500	122000	159000
			Efficiency %	70	73	74	75	77	79
400.	1.20	Mechanical	Input Power kW	2.19 (2.84)	3.19	5.46	8.00	9.37	13.20 (16.00)
			Output Torque Nm	11900 (15500)	18500	32100	48100	56500	80800 (98100)
		Thermal	Input Power kW	6.05	8.94	8.94	17.00	23.90	33.50
			Output Torque Nm	33300	52200	52800	103000	145000	206000
			Efficiency %	71	72	73	75	78	80
450.	1.07	Mechanical	Input Power kW	1.94 (2.55)	3.08 (3.66)	4.93	7.33 (9.88)	10.00 (11.50)	12.10 (16.10)
			Output Torque Nm	11900 (15700)	18800 (22400)	31500	48100 (65000)	65500 (75200)	80800 (107000)
		Thermal	Input Power kW	5.81	8.17	10.80	15.00	21.20	26.20
			Output Torque Nm	36200	50300	69300	98700	139000	175000
			Efficiency %	67	71	72	73	76	78
500.	0.96	Mechanical	Input Power kW	1.85 (2.49)	2.67 (3.17)	4.85 (4.87)	6.62 (7.44)	9.01 (11.90)	10.80 (17.10)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34300)	48100 (54100)	65500 (86800)	80800 (128000)
		Thermal	Input Power kW	6.05	8.40	8.94	14.30	19.70	25.00
			Output Torque Nm	39600	59900	63400	105000	144000	187000
			Efficiency %	68	69	71	72	75	76
600.	0.80	Mechanical	Input Power kW	1.74 (2.34)	2.62 (3.11)	4.47	6.27 (7.20)	8.65 (13.60)	10.20 (16.10)
			Output Torque Nm	11900 (16100)	18800 (22400)	33600	48100 (55200)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.92	5.24	7.21	10.50	12.60	16.30
			Output Torque Nm	27200	38000	54400	81000	95600	130000
			Efficiency %	59	61	64	66	65	68
625.	0.77	Mechanical	Input Power kW	1.51 (2.04)	2.29 (2.72)	4.15 (4.16)	5.66 (6.44)	7.46 (10.00)	8.77 (13.80)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34300)	48100 (54800)	65500 (88100)	80800 (127000)
		Thermal	Input Power kW	4.80	8.05	8.05	13.60	18.50	23.20
			Output Torque Nm	38400	67000	66700	116000	164000	215000
			Efficiency %	65	67	69	71	73	74
700.	0.69	Mechanical	Input Power kW	1.53 (1.62)	2.31 (2.64)	4.17 (4.23)	5.59 (6.31)	7.69 (11.80)	8.80 (12.70)
			Output Torque Nm	11900 (12600)	18800 (21500)	34200 (34700)	48100 (54300)	65500 (101000)	80800 (117000)
		Thermal	Input Power kW	3.80	5.09	6.14	8.92	11.30	16.00
			Output Torque Nm	30000	42000	50600	77200	96400	148000
			Efficiency %	57	60	60	63	63	67
750.	0.64	Mechanical	Input Power kW	1.31 (1.76)	1.99 (2.36)	3.16	4.87 (6.54)	6.38 (7.27)	7.52 (9.92)
			Output Torque Nm	11900 (16100)	18800 (22400)	31400	48100 (64800)	65500 (74800)	80800 (107000)
		Thermal	Input Power kW	4.80	7.22	8.05	13.10	18.10	22.00
			Output Torque Nm	44600	69200	80500	130000	188000	238000
			Efficiency %	62	66	67	69	71	73
800.	0.60	Mechanical	Input Power kW	1.28 (1.67)	1.86 (1.99)	3.29	4.37 (4.57)	5.77	7.03
			Output Torque Nm	11900 (15700)	18800 (20100)	33800	48100 (50300)	63900	79500
		Thermal	Input Power kW	4.33	5.86	7.27	10.50	13.80	21.40
			Output Torque Nm	41200	60200	75300	116000	155000	244000
			Efficiency %	60	62	63	67	71	73

DOUBLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	0.53	Mechanical	Input Power kW	1.17 (1.57)	1.85 (2.20)	3.14	4.23 (4.83)	6.02 (9.48)	7.08 (11.20)
			Output Torque Nm	11900 (16100)	18800 (22400)	33500	48100 (55100)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.47	4.67	6.41	9.07	10.80	13.80
			Output Torque Nm	36000	48100	68800	104000	118000	159000
1000.	0.48	Mechanical	Input Power kW	1.03 (1.39)	1.56 (1.82)	2.81	3.78 (4.44)	4.93 (6.83)	5.86 (9.06)
			Output Torque Nm	11900 (16100)	18800 (22100)	34100	48100 (56600)	65500 (91000)	80800 (125000)
		Thermal	Input Power kW	3.63	5.36	5.36	10.20	13.00	20.20
			Output Torque Nm	42900	65900	65600	131000	174000	281000
1200.	0.40	Mechanical	Input Power kW	0.97 (1.30)	1.41 (1.67)	2.38	3.31 (3.77)	4.67 (7.34)	5.48 (8.64)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (55000)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.30	4.35	5.93	8.41	9.81	12.60
			Output Torque Nm	41600	59100	84300	124000	139000	187000
1250.	0.38	Mechanical	Input Power kW	0.87 (1.17)	1.30 (1.51)	2.34	3.15 (3.69)	4.12 (5.79)	4.88 (7.49)
			Output Torque Nm	11900 (16100)	18800 (21900)	34100	48100 (56500)	65500 (92300)	80800 (125000)
		Thermal	Input Power kW	3.08	4.79	4.79	8.35	11.00	16.90
			Output Torque Nm	43200	70700	70400	129000	176000	283000
1400.	0.34	Mechanical	Input Power kW	0.86 (0.95)	1.25 (1.48)	2.25 (2.39)	2.96 (3.32)	4.17 (6.55)	4.75 (6.80)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36400)	48100 (54100)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.23	4.26	5.07	7.15	8.83	12.50
			Output Torque Nm	46400	65900	78000	118000	140000	215000
1500.	0.32	Mechanical	Input Power kW	0.76 (1.01)	1.14 (1.35)	1.79	2.72 (3.62)	3.53 (4.00)	4.19 (5.48)
			Output Torque Nm	11900 (16100)	18800 (22400)	31200	48100 (64400)	65500 (74300)	80800 (106000)
		Thermal	Input Power kW	3.08	4.79	4.79	8.35	11.00	16.90
			Output Torque Nm	50100	81300	84900	150000	206000	330000
1600.	0.30	Mechanical	Input Power kW	0.72 (0.94)	1.10 (1.17)	1.93	2.52 (2.69)	3.16	3.79
			Output Torque Nm	11900 (15600)	18800 (20000)	33700	48100 (51400)	63400	78900
		Thermal	Input Power kW	3.63	5.26	5.36	9.08	11.70	17.90
			Output Torque Nm	62000	92800	95100	176000	238000	378000
1750.	0.27	Mechanical	Input Power kW	0.68 (0.91)	1.04 (1.20)	1.86	2.41 (2.80)	3.15 (4.50)	3.72 (5.64)
			Output Torque Nm	11900 (16100)	18800 (21700)	34000	48100 (56000)	65500 (94200)	80800 (123000)
		Thermal	Input Power kW	2.31	3.28	3.28	6.01	8.93	13.50
			Output Torque Nm	42000	60800	60600	121000	188000	298000
1800.	0.27	Mechanical	Input Power kW	0.66 (0.88)	1.00 (1.18)	1.56	2.35 (3.12)	3.07 (3.47)	3.63 (4.74)
			Output Torque Nm	11900 (16100)	18800 (22400)	31200	48100 (64300)	65500 (74200)	80800 (106000)
		Thermal	Input Power kW	2.62	3.96	3.96	6.92	9.59	14.60
			Output Torque Nm	49200	77100	80500	144000	208000	330000
2000.	0.24	Mechanical	Input Power kW	0.61 (0.79)	0.92 (0.98)	1.61	2.10 (2.24)	2.64	3.16
			Output Torque Nm	11900 (15600)	18800 (20000)	33600	48100 (51300)	63300	78800
		Thermal	Input Power kW	3.08	4.79	4.79	8.35	11.00	16.90
			Output Torque Nm	62400	101000	102000	195000	268000	430000
2100.	0.23	Mechanical	Input Power kW	0.62 (0.70)	0.93 (1.10)	1.58 (1.82)	2.19 (2.45)	2.99 (4.69)	3.36 (4.79)
			Output Torque Nm	11900 (13600)	18800 (22400)	34200 (37200)	48100 (53900)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.06	4.04	4.77	6.63	7.99	11.20
			Output Torque Nm	61600	84300	99000	148000	178000	273000
2400.	0.20	Mechanical	Input Power kW	0.56 (0.74)	0.85 (1.00)	1.40	1.93 (2.19)	2.62 (4.11)	3.03 (4.77)
			Output Torque Nm	11900 (16100)	18800 (22400)	33300	48100 (54700)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.98	3.94	5.34	7.36	8.34	10.50
			Output Torque Nm	66900	91100	130000	188000	212000	285000
2500.	0.19	Mechanical	Input Power kW	0.53 (0.71)	0.80 (0.94)	1.41 (1.76)	1.84 (2.09)	1.79	2.54
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (43000)	48100 (54800)	51100	76000
		Thermal	Input Power kW	3.08	4.32	4.79	8.17	11.00	15.10
			Output Torque Nm	72900	106000	119000	218000	323000	464000
2800.	0.17	Mechanical	Input Power kW	0.49 (0.57)	0.75 (0.88)	1.34 (1.48)	1.73 (1.93)	2.35 (3.68)	2.63 (3.74)
			Output Torque Nm	11900 (13800)	18800 (22400)	34200 (37800)	48100 (53900)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	2.94	3.88	4.57	6.26	7.54	10.50
			Output Torque Nm	74900	102000	119000	178000	214000	330000
3000.	0.16	Mechanical	Input Power kW	0.48 (0.63)	0.71 (0.84)	1.18	1.61 (1.83)	2.21 (3.46)	2.54 (4.00)
			Output Torque Nm	11900 (16100)	18800 (22400)	33200	48100 (54700)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.93	3.82	4.79	7.08	8.05	10.10
			Output Torque Nm	77900	106000	139000	217000	244000	327000
3500.	0.14	Mechanical	Input Power kW	0.42 (0.49)	0.63 (0.75)	1.13 (1.26)	1.45 (1.62)	1.98 (3.10)	2.21 (3.13)
			Output Torque Nm	11900 (13900)	18800 (22400)	34200 (38200)	48100 (53800)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	2.89	3.78	4.43	6.04	7.28	10.10
			Output Torque Nm	87500	119000	138000	206000	247000	381000
3600.	0.13	Mechanical	Input Power kW	0.42 (0.55)	0.63 (0.74)	1.03	1.40 (1.59)	1.93 (3.02)	2.22 (3.48)
			Output Torque Nm	11900 (16100)	18800 (22400)	33200	48100 (54600)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.62	3.78	3.96	6.92	7.86	9.85
			Output Torque Nm	80300	120000	131000	245000	274000	368000
4200.	0.11	Mechanical	Input Power kW	0.37 (0.43)	0.56 (0.66)	0.99 (1.11)	1.26 (1.40)	1.73 (2.70)	1.92 (2.72)
			Output Torque Nm	11900 (14100)	18800 (22400)	34200 (38600)	48100 (53700)	65500 (104000)	80800 (115000)
		Thermal	Input Power kW	2.62	3.74	3.96	5.89	7.12	9.90
			Output Torque Nm	91300	135000	141000	232000	277000	429000
			Efficiency %	38	40	41	46	45	50

DOUBLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	50.00	Mechanical	Input Power kW	50.10	74.70	104.00	189.00	209.00	366.00
			Output Torque Nm	9030	13500	18600	34400	38000	68400
		Thermal	Input Power kW	32.20	48.60	72.70	114.00	150.00	199.00
			Output Torque Nm	5790	8790	13000	20900	27200	37100
			Efficiency %	94	95	95	96	95	96
7.5	33.33	Mechanical	Input Power kW	35.30	54.70	74.40	135.00	218.00	268.00
			Output Torque Nm	9460	14700	20100	36700	59200	73100
		Thermal	Input Power kW	28.60	42.80	63.40	97.50	143.00	164.00
			Output Torque Nm	7670	11500	17100	26400	38800	44900
			Efficiency %	94	94	94	95	95	96
10.0	25.00	Mechanical	Input Power kW	24.20	44.10	59.40	126.00	142.00	209.00
			Output Torque Nm	8350	15400	20800	45200	50400	74500
		Thermal	Input Power kW	25.50	38.50	57.70	88.70	134.00	151.00
			Output Torque Nm	8810	13400	20200	31900	47400	53800
			Efficiency %	93	93	94	94	94	95
12.5	20.00	Mechanical	Input Power kW	26.00	34.80	54.20	91.20	123.00	171.00
			Output Torque Nm	11600	15400	24500	40700	56300	77500
		Thermal	Input Power kW	22.20	35.10	49.60	80.30	120.00	136.00
			Output Torque Nm	9900	15500	22400	35800	54800	61900
			Efficiency %	92	93	93	93	94	95
15.0	16.67	Mechanical	Input Power kW	21.10	30.20	55.60	79.30	123.00	148.00
			Output Torque Nm	10700	15500	28800	41500	64900	78000
		Thermal	Input Power kW	20.50	31.50	45.30	73.20	109.00	124.00
			Output Torque Nm	10400	16200	23500	38300	57100	65700
			Efficiency %	91	92	92	93	93	94
20.0	12.50	Mechanical	Input Power kW	17.30	23.90	40.60	70.30	71.30	115.00
			Output Torque Nm	11600	16200	27600	48100	49300	80400
		Thermal	Input Power kW	17.20	26.00	38.90	58.70	90.50	107.00
			Output Torque Nm	11500	17600	26500	40100	62700	74600
			Efficiency %	89	90	91	91	92	93
25.0	10.00	Mechanical	Input Power kW	14.30	19.30	34.50	55.80	77.00	93.10
			Output Torque Nm	11600	16200	28600	46900	65500	80800
		Thermal	Input Power kW	13.90	21.20	31.20	44.20	65.70	84.70
			Output Torque Nm	11300	17700	25900	37200	55800	73500
			Efficiency %	87	88	89	89	90	91
30.0	8.33	Mechanical	Input Power kW	12.20	16.60	26.60	48.60	64.90	79.60
			Output Torque Nm	11600	16200	26900	48100	65100	80800
		Thermal	Input Power kW	12.10	19.10	26.90	41.20	61.20	77.30
			Output Torque Nm	11500	18600	27300	40700	61300	78400
			Efficiency %	84	87	87	88	89	90
40.0	6.25	Mechanical	Input Power kW	9.44	12.90	22.70	33.60	41.90	51.40
			Output Torque Nm	11600	16200	28800	43800	55400	68400
		Thermal	Input Power kW	9.53	14.60	19.80	30.70	43.30	65.70
			Output Torque Nm	11700	18400	25100	40000	57400	87600
			Efficiency %	80	82	83	85	87	88
50.0	5.00	Mechanical	Input Power kW	7.89	10.70	20.90	30.20	27.90	40.40
			Output Torque Nm	11600	16200	31800	47000	44700	65900
		Thermal	Input Power kW	8.11	12.20	16.40	27.40	44.70	55.60
			Output Torque Nm	11900	18400	25000	42600	71800	90900
			Efficiency %	77	79	80	81	85	86
60.0	4.17	Mechanical	Input Power kW	6.85	9.32	15.90	25.80	36.10	43.30
			Output Torque Nm	11600	16200	28400	46800	65500	80800
		Thermal	Input Power kW	7.14	10.50	15.20	23.20	30.40	39.30
			Output Torque Nm	12100	18300	27200	42100	54900	73200
			Efficiency %	74	76	78	79	79	81
70.0	3.57	Mechanical	Input Power kW	6.00	8.17	15.90	22.30	31.80	37.50
			Output Torque Nm	11600	16200	31800	46000	65500	80800
		Thermal	Input Power kW	6.72	9.97	12.90	19.70	26.70	37.40
			Output Torque Nm	13000	19800	25700	40500	54900	80500
			Efficiency %	72	74	75	77	77	80

SINGLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	3.33	Mechanical	Input Power kW	5.18 (5.62)	6.19	14.50 (14.80)	15.90	27.60 (29.60)	33.70 (34.10)
			Output Torque Nm	11900 (12900)	14500	34200 (34900)	38000	65500 (70100)	80800 (81800)
		Thermal	Input Power kW	8.51	13.60	13.60	23.20	32.20	48.60
			Output Torque Nm	19600	31900	32100	55300	76200	117000
			Efficiency %	80	82	82	83	84	85
100.	2.50	Mechanical	Input Power kW	3.97 (5.01)	6.15 (6.19)	10.50	15.60 (15.90)	18.40	25.70 (31.50)
			Output Torque Nm	11900 (15100)	18800 (18900)	32300	48100 (49200)	57000	80800 (99000)
		Thermal	Input Power kW	8.51	12.80	13.60	23.20	32.20	44.60
			Output Torque Nm	25600	39000	42000	71600	100000	140000
			Efficiency %	78	79	80	80	82	84
125.	2.00	Mechanical	Input Power kW	3.33 (4.50)	5.03 (5.99)	9.20 (9.29)	12.80 (13.90)	17.40 (22.30)	20.90 (33.20)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34600)	48100 (52300)	65500 (84000)	80800 (128000)
		Thermal	Input Power kW	7.47	10.30	13.60	18.40	25.90	33.40
			Output Torque Nm	26900	38500	50600	69200	97800	129000
			Efficiency %	75	76	78	78	80	81
150.	1.67	Mechanical	Input Power kW	2.86 (3.69)	4.36 (5.19)	7.03	11.00 (14.90)	14.80 (17.10)	17.90 (23.90)
			Output Torque Nm	11900 (15400)	18800 (22400)	31600	48100 (65300)	65500 (75500)	80800 (108000)
		Thermal	Input Power kW	6.55	9.18	12.20	17.50	25.00	31.30
			Output Torque Nm	27400	39700	54900	77000	111000	141000
			Efficiency %	72	75	75	76	79	80
200.	1.25	Mechanical	Input Power kW	2.19 (2.85)	3.32	5.68	8.44 (8.46)	9.68	13.60 (16.50)
			Output Torque Nm	11900 (15500)	18500	32100	48100 (48200)	56500	80800 (98200)
		Thermal	Input Power kW	6.31	10.30	10.40	18.10	25.50	33.70
			Output Torque Nm	34500	57600	58100	103000	150000	200000
			Efficiency %	74	76	77	77	80	81
225.	1.11	Mechanical	Input Power kW	2.04 (2.68)	3.03 (3.61)	4.87	7.59 (10.30)	10.10 (11.60)	12.20 (16.30)
			Output Torque Nm	11900 (15700)	18800 (22400)	31500	48100 (65100)	65500 (75200)	80800 (107000)
		Thermal	Input Power kW	5.84	8.04	10.60	15.10	21.20	26.20
			Output Torque Nm	34300	50000	68900	95800	138000	174000
			Efficiency %	70	73	73	74	77	78
250.	1.00	Mechanical	Input Power kW	1.85 (2.50)	2.76 (3.29)	5.04 (5.06)	6.97 (7.80)	9.29 (12.30)	11.10 (17.60)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (34400)	48100 (53800)	65500 (86600)	80800 (128000)
		Thermal	Input Power kW	6.14	8.29	10.40	14.40	19.80	25.10
			Output Torque Nm	39900	56700	71000	99600	140000	183000
			Efficiency %	70	73	74	75	77	78
300.	0.83	Mechanical	Input Power kW	1.59 (2.12)	2.40 (2.85)	3.84	5.99 (8.07)	7.93 (9.08)	9.53 (12.60)
			Output Torque Nm	11900 (15900)	18800 (22400)	31500	48100 (64900)	65500 (75000)	80800 (107000)
		Thermal	Input Power kW	5.40	7.43	9.80	13.80	19.30	23.80
			Output Torque Nm	40800	58600	80700	111000	160000	202000
			Efficiency %	68	71	72	73	75	77
350.	0.71	Mechanical	Input Power kW	1.49 (1.58)	2.27 (2.60)	4.13 (4.19)	5.57 (6.28)	7.78 (12.00)	8.95 (12.90)
			Output Torque Nm	11900 (12700)	18800 (21600)	34200 (34700)	48100 (54300)	65500 (101000)	80800 (117000)
		Thermal	Input Power kW	3.75	5.05	6.10	8.90	11.30	16.20
			Output Torque Nm	30200	42100	50700	77100	95700	147000
			Efficiency %	58	60	60	63	63	68
375.	0.67	Mechanical	Input Power kW	1.23 (1.66)	1.93 (2.29)	3.52 (3.52)	4.65 (5.36)	6.39 (8.67)	7.66 (12.00)
			Output Torque Nm	11900 (16100)	18800 (22300)	34200 (34200)	48100 (55500)	65500 (89000)	80800 (127000)
		Thermal	Input Power kW	4.79	7.48	7.96	12.50	17.30	21.80
			Output Torque Nm	47000	73300	77700	130000	178000	231000
			Efficiency %	67	70	71	72	74	75
400.	0.63	Mechanical	Input Power kW	1.19 (1.54)	1.72	2.97	4.29	5.04	7.16 (8.62)
			Output Torque Nm	11900 (15400)	18100	31900	47200	56100	80800 (97400)
		Thermal	Input Power kW	4.09	5.97	5.97	11.10	17.20	25.30
			Output Torque Nm	41200	63700	64300	123000	192000	287000
			Efficiency %	68	68	70	71	75	76
450.	0.56	Mechanical	Input Power kW	1.06 (1.43)	1.68 (2.00)	2.68	4.00 (5.37)	5.46 (6.22)	6.57 (8.66)
			Output Torque Nm	11900 (16100)	18800 (22400)	31300	48100 (64600)	65500 (74700)	80800 (107000)
		Thermal	Input Power kW	4.79	6.71	7.96	12.10	16.90	20.70
			Output Torque Nm	54600	75800	93800	146000	204000	256000
			Efficiency %	64	68	68	70	73	74
500.	0.50	Mechanical	Input Power kW	1.01 (1.36)	1.46 (1.72)	2.66	3.62 (4.26)	4.90 (6.78)	5.88 (9.13)
			Output Torque Nm	11900 (16100)	18800 (22100)	34100	48100 (56500)	65500 (90700)	80800 (126000)
		Thermal	Input Power kW	4.09	5.97	5.97	11.10	15.90	20.00
			Output Torque Nm	48800	77400	77000	148000	213000	276000
			Efficiency %	65	66	67	69	72	73
600.	0.42	Mechanical	Input Power kW	0.96 (1.30)	1.45 (1.72)	2.46	3.47 (3.96)	4.79 (7.55)	5.61 (8.87)
			Output Torque Nm	11900 (16100)	18800 (22400)	33400	48100 (55000)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	3.23	4.27	5.84	8.40	9.82	12.60
			Output Torque Nm	40500	56100	80000	117000	135000	182000
			Efficiency %	55	58	60	62	61	64
625.	0.40	Mechanical	Input Power kW	0.84 (1.13)	1.26 (1.47)	2.28	3.11 (3.65)	4.08 (5.72)	4.79 (7.37)
			Output Torque Nm	11900 (16100)	18800 (21900)	34100	48100 (56600)	65500 (92000)	80800 (125000)
		Thermal	Input Power kW	3.26	5.41	5.41	9.58	13.90	18.90
			Output Torque Nm	47200	81900	81500	149000	225000	320000
			Efficiency %	61	64	65	67	70	71
700.	0.36	Mechanical	Input Power kW	0.85 (0.94)	1.28 (1.52)	2.32 (2.45)	3.10 (3.48)	4.27 (6.73)	4.85 (6.97)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36200)	48100 (54100)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	3.16	4.18	4.98	7.14	8.84	12.50
			Output Torque Nm	45200	62400	74000	112000	136000	209000
			Efficiency %	54	56	56	59	59	64
750.	0.33	Mechanical	Input Power kW	0.72 (0.97)	1.10 (1.30)	1.73	2.68 (3.58)	3.49 (3.96)	4.11 (5.38)
			Output Torque Nm	11900 (16100)	18800 (22400)	31200	48100 (64400)	65500 (74300)	80800 (106000)
		Thermal	Input Power kW	3.26	5.41	5.41	9.58	13.90	18.00
			Output Torque Nm	54700	94100	98200	174000	263000	357000
			Efficiency %	58	62	63	65	68	70
800.	0.31	Mechanical	Input Power kW	0.70 (0.92)	1.03 (1.09)	1.81	2.40 (2.57)	3.13	3.80
			Output Torque Nm	11900 (15600)	18800 (20000)	33700	48100 (51400)	63500	79000
		Thermal	Input Power kW	3.66	4.93	5.97	8.64	11.30	17.40
			Output Torque Nm	63300	91800	112000	175000	230000	364000
			Efficiency %	57	58	59	64	68	70

DOUBLE REDUCTION

Bracketed figures indicate a unit with two keys at 90° in the wheel hub only

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	0.28	Mechanical	Input Power kW	0.65 (0.87)	1.03 (1.22)	1.73	2.34 (2.66)	3.34 (5.26)	3.91 (6.18)
			Output Torque Nm	11900 (16100)	18800 (22400)	33300	48100 (54800)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.92	3.89	5.29	7.42	8.67	11.10
			Output Torque Nm	54800	72400	103000	154000	171000	230000
		Efficiency %	52	54	57	58	58	61	
1000.	0.25	Mechanical	Input Power kW	0.57 (0.77)	0.87 (1.00)	1.56	2.10 (2.44)	2.73 (3.94)	3.24 (4.91)
			Output Torque Nm	11900 (16100)	18800 (21700)	34000	48100 (55800)	65500 (94700)	80800 (123000)
		Thermal	Input Power kW	2.51	3.66	3.66	6.63	9.32	13.50
			Output Torque Nm	53400	80500	80100	153000	225000	341000
		Efficiency %	55	57	58	61	64	65	
1200.	0.21	Mechanical	Input Power kW	0.54 (0.72)	0.79 (0.93)	1.32	1.84 (2.08)	2.59 (4.08)	3.03 (4.78)
			Output Torque Nm	11900 (16100)	18800 (22400)	33300	48100 (54700)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.81	3.68	5.01	6.99	8.01	10.20
			Output Torque Nm	63900	90100	128000	186000	204000	275000
		Efficiency %	49	51	54	56	56	59	
1250.	0.20	Mechanical	Input Power kW	0.49 (0.65)	0.73 (0.83)	1.31	1.76 (2.02)	2.30 (3.35)	2.72 (4.10)
			Output Torque Nm	11900 (16100)	18800 (21500)	33900	48100 (55500)	65500 (95900)	80800 (122000)
		Thermal	Input Power kW	2.09	3.19	3.19	5.44	7.85	11.20
			Output Torque Nm	52400	84000	83600	151000	226000	337000
		Efficiency %	52	54	55	58	60	62	
1400.	0.18	Mechanical	Input Power kW	0.48 (0.55)	0.69 (0.82)	1.26 (1.39)	1.65 (1.84)	2.32 (3.64)	2.62 (3.74)
			Output Torque Nm	11900 (13700)	18800 (22400)	34200 (37800)	48100 (53900)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	2.77	3.63	4.28	5.95	7.23	10.20
			Output Torque Nm	71600	101000	118000	176000	207000	319000
		Efficiency %	48	49	50	53	54	59	
1500.	0.17	Mechanical	Input Power kW	0.42 (0.57)	0.64 (0.76)	1.00	1.52 (2.01)	1.97 (2.22)	2.33 (3.03)
			Output Torque Nm	11900 (16100)	18800 (22400)	31100	48100 (64000)	65500 (73900)	80800 (105000)
		Thermal	Input Power kW	2.09	3.19	3.19	5.44	7.85	11.20
			Output Torque Nm	60600	96400	101000	175000	264000	393000
		Efficiency %	50	52	53	56	59	62	
1600.	0.16	Mechanical	Input Power kW	0.40 (0.52)	0.62 (0.65)	1.08	1.40 (1.49)	1.75	2.09
			Output Torque Nm	11900 (15600)	18800 (20000)	33600	48100 (51200)	63100	78500
		Thermal	Input Power kW	2.51	3.66	3.66	6.63	9.32	13.50
			Output Torque Nm	76800	115000	115000	231000	343000	517000
		Efficiency %	48	50	51	56	59	62	
1750.	0.14	Mechanical	Input Power kW	0.38 (0.51)	0.59 (0.67)	1.06	1.36 (1.55)	1.77 (2.57)	2.09 (3.12)
			Output Torque Nm	11900 (16100)	18800 (21400)	33800	48100 (55000)	65500 (95900)	80800 (121000)
		Thermal	Input Power kW	1.58	2.20	2.20	3.96	6.48	9.14
			Output Torque Nm	51400	71400	71100	143000	243000	359000
		Efficiency %	48	47	49	54	56	58	
1800.	0.14	Mechanical	Input Power kW	0.37 (0.50)	0.56 (0.66)	0.88	1.32 (1.74)	1.72 (1.94)	2.03 (2.64)
			Output Torque Nm	11900 (16100)	18800 (22400)	31000	48100 (64000)	65500 (73800)	80800 (105000)
		Thermal	Input Power kW	1.80	2.66	2.66	4.53	6.82	9.69
			Output Torque Nm	60400	91900	95900	168000	263000	390000
		Efficiency %	48	50	51	54	56	59	
2000.	0.13	Mechanical	Input Power kW	0.34 (0.44)	0.52 (0.55)	0.91	1.17 (1.25)	1.47	1.75
			Output Torque Nm	11900 (15500)	18800 (19900)	33500	48100 (51100)	63000	78300
		Thermal	Input Power kW	2.09	3.19	3.19	5.44	7.85	11.20
			Output Torque Nm	75200	120000	120000	227000	344000	510000
		Efficiency %	45	48	48	54	56	59	
2100.	0.12	Mechanical	Input Power kW	0.35 (0.41)	0.52 (0.62)	0.95 (1.06)	1.23 (1.37)	1.67 (2.63)	1.86 (2.65)
			Output Torque Nm	11900 (14000)	18800 (22400)	34200 (38500)	48100 (53700)	65500 (104000)	80800 (116000)
		Thermal	Input Power kW	2.68	3.53	4.13	5.66	6.71	9.37
			Output Torque Nm	96500	131000	152000	226000	267000	413000
		Efficiency %	43	45	45	49	50	55	
2400.	0.10	Mechanical	Input Power kW	0.31 (0.42)	0.48 (0.56)	0.79	1.08 (1.22)	1.48 (2.31)	1.70 (2.67)
			Output Torque Nm	11900 (16100)	18800 (22400)	33200	48100 (54500)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.51	3.47	3.66	6.36	7.12	8.93
			Output Torque Nm	100000	142000	157000	289000	322000	432000
		Efficiency %	41	43	46	49	48	52	
2500.	0.10	Mechanical	Input Power kW	0.30 (0.40)	0.45 (0.53)	0.80 (0.99)	1.04 (1.17)	1.00	1.41
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (42800)	48100 (54600)	50800	75600
		Thermal	Input Power kW	2.09	3.19	3.19	5.44	7.85	11.20
			Output Torque Nm	87500	139000	140000	259000	413000	615000
		Efficiency %	42	44	45	48	54	57	
2800.	0.09	Mechanical	Input Power kW	0.28 (0.33)	0.42 (0.50)	0.76 (0.87)	0.97 (1.08)	1.32 (2.08)	1.47 (2.08)
			Output Torque Nm	11900 (14200)	18800 (22400)	34200 (39100)	48100 (53700)	65500 (104000)	80800 (115000)
		Thermal	Input Power kW	2.51	3.44	3.66	5.42	6.45	8.99
			Output Torque Nm	114000	160000	169000	274000	326000	505000
		Efficiency %	40	42	42	46	46	51	
3000.	0.08	Mechanical	Input Power kW	0.27 (0.36)	0.40 (0.48)	0.66	0.91 (1.03)	1.25 (1.96)	1.43 (2.25)
			Output Torque Nm	11900 (16100)	18800 (22400)	33100	48100 (54500)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.09	3.19	3.19	5.44	6.97	8.70
			Output Torque Nm	98200	156000	163000	296000	374000	501000
		Efficiency %	39	41	44	46	46	49	
3500.	0.07	Mechanical	Input Power kW	0.24 (0.28)	0.36 (0.42)	0.64 (0.74)	0.82 (0.91)	1.12 (1.76)	1.24 (1.75)
			Output Torque Nm	11900 (14400)	18800 (22400)	34200 (39500)	48100 (53600)	65500 (104000)	80800 (115000)
		Thermal	Input Power kW	2.09	3.19	3.19	5.28	6.32	8.78
			Output Torque Nm	112000	177000	175000	320000	378000	586000
		Efficiency %	38	39	40	44	44	49	
3600.	0.07	Mechanical	Input Power kW	0.24 (0.31)	0.36 (0.42)	0.58	0.79 (0.89)	1.10 (1.72)	1.26 (1.97)
			Output Torque Nm	11900 (16100)	18800 (22400)	33100	48100 (54400)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	1.80	2.66	2.66	4.53	6.82	8.59
			Output Torque Nm	97500	148000	155000	283000	418000	567000
		Efficiency %	37	38	41	44	43	47	
4200.	0.06	Mechanical	Input Power kW	0.21 (0.25)	0.32 (0.37)	0.56 (0.65)	0.71 (0.79)	0.99 (1.54)	1.09 (1.53)
			Output Torque Nm	11900 (14500)	18800 (22400)	34200 (39800)	48100 (53500)	65500 (104000)	80800 (115000)
		Thermal	Input Power kW	1.80	2.66	2.66	4.53	6.26	8.69
			Output Torque Nm	111000	168000	166000	315000	428000	665000
		Efficiency %	36	37	38	42	41	46	

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	350.00	Mechanical	Input Power kW	129.00	191.00	265.00	477.00	820.00	913.00
			Output Torque Nm	3370	4980	6780	12400	21400	24300
		Thermal	Input Power kW	94.60	132.00	186.00	237.00	345.00	455.00
			Output Torque Nm	2460	3430	4740	6110	8940	12000
		Efficiency %	95	95	95	94	95	95	
7.5	233.33	Mechanical	Input Power kW	95.30	147.00	199.00	411.00	611.00	909.00
			Output Torque Nm	3700	5710	7710	16000	23900	35600
		Thermal	Input Power kW	81.80	117.00	167.00	219.00	356.00	438.00
			Output Torque Nm	3170	4550	6460	8420	13800	17000
		Efficiency %	95	95	95	94	95	95	
10.0	175.00	Mechanical	Input Power kW	66.90	121.00	163.00	342.00	480.00	689.00
			Output Torque Nm	3340	6100	8230	17700	24500	35200
		Thermal	Input Power kW	73.70	106.00	157.00	202.00	342.00	423.00
			Output Torque Nm	3690	5340	7930	10300	17400	21500
		Efficiency %	94	94	94	93	95	95	
12.5	140.00	Mechanical	Input Power kW	74.00	97.70	151.00	255.00	340.00	593.00
			Output Torque Nm	4810	6250	9840	16300	22300	38600
		Thermal	Input Power kW	64.00	98.80	135.00	186.00	310.00	386.00
			Output Torque Nm	4150	6320	8760	11800	20300	25000
		Efficiency %	93	94	93	93	94	94	
15.0	116.67	Mechanical	Input Power kW	60.00	85.80	157.00	261.00	381.00	517.00
			Output Torque Nm	4450	6380	11800	19600	28900	39200
		Thermal	Input Power kW	59.40	88.20	124.00	172.00	273.00	354.00
			Output Torque Nm	4410	6570	9290	12800	20600	26700
		Efficiency %	93	93	93	92	94	94	
20.0	87.50	Mechanical	Input Power kW	57.20	89.20	127.00	222.00	289.00	415.00
			Output Torque Nm	5620	8800	12600	21900	28900	41600
		Thermal	Input Power kW	50.10	73.10	108.00	138.00	236.00	290.00
			Output Torque Nm	4900	7180	10700	13400	23500	28900
		Efficiency %	91	92	92	90	93	93	
25.0	70.00	Mechanical	Input Power kW	47.20	70.20	101.00	165.00	256.00	356.00
			Output Torque Nm	5630	8620	12200	20000	31500	44500
		Thermal	Input Power kW	40.10	59.30	86.10	111.00	166.00	215.00
			Output Torque Nm	4770	7250	10300	13200	20300	26500
		Efficiency %	89	90	89	88	91	90	
30.0	58.33	Mechanical	Input Power kW	40.00	64.20	91.50	160.00	236.00	309.00
			Output Torque Nm	5650	9180	13500	22900	34500	45300
		Thermal	Input Power kW	34.80	53.40	75.30	102.00	159.00	203.00
			Output Torque Nm	4890	7610	11100	14300	23100	29400
		Efficiency %	87	89	89	87	90	90	
40.0	43.75	Mechanical	Input Power kW	34.50	54.00	75.90	109.00	160.00	235.00
			Output Torque Nm	6360	10100	14200	20500	30800	45300
		Thermal	Input Power kW	27.10	40.60	53.90	79.10	114.00	181.00
			Output Torque Nm	4960	7530	9930	14700	21800	34600
		Efficiency %	84	85	84	85	88	89	
50.0	35.00	Mechanical	Input Power kW	28.80	43.90	61.80	119.00	125.00	185.00
			Output Torque Nm	6420	9900	13900	27100	29400	43600
		Thermal	Input Power kW	22.90	33.80	44.50	68.10	121.00	155.00
			Output Torque Nm	5050	7550	9860	15100	28500	36400
		Efficiency %	81	82	81	81	87	87	
60.0	29.17	Mechanical	Input Power kW	24.40	38.70	57.30	97.40	135.00	163.00
			Output Torque Nm	6300	10200	15200	26000	36200	44100
		Thermal	Input Power kW	20.00	29.00	42.00	60.10	75.20	101.00
			Output Torque Nm	5130	7520	11000	15500	19600	26600
		Efficiency %	78	79	80	79	80	80	
70.0	25.00	Mechanical	Input Power kW	20.10	32.30	47.70	80.90	117.00	144.00
			Output Torque Nm	5930	9680	14200	24500	35700	45200
		Thermal	Input Power kW	18.90	27.70	35.10	50.80	66.90	99.90
			Output Torque Nm	5540	8230	10300	14800	19900	30600
		Efficiency %	77	78	77	76	78	80	

SINGLE REDUCTION

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	23.33	Mechanical	Input Power kW	23.40	33.30	45.10	77.20	129.00	190.00
			Output Torque Nm	8140	11800	16100	27700	45800	68300
		Thermal	Input Power kW	17.50	26.90	38.80	60.80	85.80	125.00
			Output Torque Nm	6080	9470	13800	21800	30400	44600
			Efficiency %	85	86	86	87	88	89
100.	17.50	Mechanical	Input Power kW	22.10	34.40	45.10	77.20	97.40	162.00
			Output Torque Nm	10100	15900	21100	36200	45500	76500
		Thermal	Input Power kW	14.80	22.30	33.30	49.00	73.90	104.00
			Output Torque Nm	6720	10300	15500	22800	34400	48900
			Efficiency %	83	84	85	85	87	88
125.	14.00	Mechanical	Input Power kW	18.20	27.00	38.40	63.00	99.50	138.00 (154.00)
			Output Torque Nm	10000	15400	21800	36100	57000	80800 (90300)
		Thermal	Input Power kW	12.10	18.40	27.50	38.40	55.90	79.00
			Output Torque Nm	6590	10400	15500	21800	31800	45800
			Efficiency %	79	81	82	83	85	85
150.	11.67	Mechanical	Input Power kW	15.40	24.50	34.50	60.50	89.30	118.00 (126.00)
			Output Torque Nm	9880	16200	23800	40800	60200	80800 (86100)
		Thermal	Input Power kW	10.60	16.60	23.80	36.60	52.50	72.50
			Output Torque Nm	6730	10900	16300	24500	35100	49200
			Efficiency %	77	80	80	82	83	84
200.	8.75	Mechanical	Input Power kW	14.50 (14.60)	22.30 (22.50)	29.90	52.40	58.40	90.50 (99.70)
			Output Torque Nm	11900 (12000)	18800 (19000)	25500	45300	51200	80800 (89100)
		Thermal	Input Power kW	12.30	16.90	23.60	35.10	53.10	65.00
			Output Torque Nm	10100	14200	20100	30200	46500	57900
			Efficiency %	78	80	81	82	84	85
225.	7.78	Mechanical	Input Power kW	12.20	19.00	26.80	46.90	65.80	80.70 (92.30)
			Output Torque Nm	10900	17900	26400	45500	64700	80800 (92500)
		Thermal	Input Power kW	9.90	14.10	19.50	29.40	43.50	54.90
			Output Torque Nm	8790	13200	19100	28400	42500	54600
			Efficiency %	75	77	78	79	81	82
250.	7.00	Mechanical	Input Power kW	12.00	17.60	25.10	41.10	61.20 (64.20)	73.40 (99.00)
			Output Torque Nm	11800	18200	25900	43200	65500 (68600)	80800 (109000)
		Thermal	Input Power kW	9.75	13.70	19.10	26.50	38.30	49.70
			Output Torque Nm	9540	14000	19600	27700	40700	54500
			Efficiency %	75	76	78	79	81	82
300.	5.83	Mechanical	Input Power kW	10.10	15.80 (16.00)	22.50	39.20 (39.50)	52.20 (54.10)	63.00 (75.50)
			Output Torque Nm	11600	18800 (19000)	28100	48100 (48500)	65500 (67800)	80800 (97100)
		Thermal	Input Power kW	8.52	12.30	16.70	25.00	36.50	45.80
			Output Torque Nm	9690	14600	20700	30500	45400	58500
			Efficiency %	72	75	76	77	79	81
350.	5.00	Mechanical	Input Power kW	7.68	12.20	17.80	29.70	44.40	57.00 (65.30)
			Output Torque Nm	9640	15800	23500	40700	59900	80800 (92800)
		Thermal	Input Power kW	6.08	9.11	11.90	18.00	23.90	36.50
			Output Torque Nm	7560	11700	15400	24300	31700	50900
			Efficiency %	64	66	66	69	69	73
375.	4.67	Mechanical	Input Power kW	8.06 (8.81)	12.70 (13.50)	19.20	30.40	42.20 (48.60)	50.60 (75.20)
			Output Torque Nm	11900 (13000)	18800 (19900)	28300	47900	65500 (75500)	80800 (120000)
		Thermal	Input Power kW	7.83	11.30	15.40	20.50	29.70	38.50
			Output Torque Nm	11600	16600	22700	32100	45900	61300
			Efficiency %	71	73	75	76	78	80
400.	4.38	Mechanical	Input Power kW	7.85 (9.14)	11.40	18.60	28.70 (28.70)	33.80	47.60 (57.80)
			Output Torque Nm	11900 (13900)	18400	30500	48100 (48200)	56500	80800 (98300)
		Thermal	Input Power kW	8.96	12.10	16.40	23.60	35.40	43.30
			Output Torque Nm	13600	19500	26900	39500	59200	73500
			Efficiency %	72	73	75	76	79	80
450.	3.89	Mechanical	Input Power kW	6.96 (7.44)	11.10 (12.20)	17.00	26.20 (29.20)	36.00 (39.80)	43.50 (55.50)
			Output Torque Nm	11900 (12800)	18800 (20700)	30300	48100 (53600)	65500 (72300)	80800 (103000)
		Thermal	Input Power kW	6.91	10.10	13.60	19.50	28.50	35.80
			Output Torque Nm	11800	17100	24100	35500	51600	66300
			Efficiency %	68	72	73	74	77	78
500.	3.50	Mechanical	Input Power kW	6.63 (7.57)	9.60 (10.80)	15.40	23.70 (25.00)	32.40 (39.60)	38.90 (61.40)
			Output Torque Nm	11900 (13600)	18800 (21200)	30300	48100 (50700)	65500 (80300)	80800 (128000)
		Thermal	Input Power kW	7.21	9.84	13.30	17.80	25.40	32.80
			Output Torque Nm	13000	19200	26100	36000	51100	67900
			Efficiency %	69	70	72	73	76	77
600.	2.92	Mechanical	Input Power kW	6.20 (6.24)	9.34 (9.72)	14.00	22.30 (22.90)	30.40 (34.00)	35.90 (49.10)
			Output Torque Nm	11900 (12000)	18800 (19500)	29400	48100 (49600)	65500 (73200)	80800 (111000)
		Thermal	Input Power kW	5.08	7.06	9.90	14.80	18.80	24.40
			Output Torque Nm	9690	14000	20700	31700	40000	54300
			Efficiency %	60	62	65	67	67	69
625.	2.80	Mechanical	Input Power kW	5.43 (6.49)	8.24 (9.60)	13.70	20.30 (21.60)	26.80 (33.70)	31.50 (49.70)
			Output Torque Nm	11900 (14300)	18800 (22000)	31400	48100 (51200)	65500 (82400)	80800 (128000)
		Thermal	Input Power kW	6.68	9.17	12.30	16.40	22.90	29.20
			Output Torque Nm	14700	21000	28300	38800	55800	74700
			Efficiency %	66	68	70	72	74	75
700.	2.50	Mechanical	Input Power kW	5.09	8.03	11.80	19.40	27.10 (28.90)	31.20 (40.40)
			Output Torque Nm	11000	18200	27100	47100	65500 (70100)	80800 (105000)
		Thermal	Input Power kW	4.87	6.76	8.53	12.60	16.80	23.40
			Output Torque Nm	10500	15200	19400	30100	40100	60100
			Efficiency %	58	60	61	64	64	69
750.	2.33	Mechanical	Input Power kW	4.71 (5.50)	7.19 (8.53)	11.40	17.50 (21.30)	23.00 (26.20)	27.10 (35.70)
			Output Torque Nm	11900 (14000)	18800 (22400)	31300	48100 (58700)	65500 (74800)	80800 (107000)
		Thermal	Input Power kW	5.90	8.24	11.00	15.70	22.10	27.40
			Output Torque Nm	15000	21600	30300	43100	63000	81500
			Efficiency %	63	66	68	70	72	74
800.	2.19	Mechanical	Input Power kW	4.60 (5.56)	6.72 (7.18)	11.60	15.40	20.80	25.40
			Output Torque Nm	11900 (14500)	18800 (20100)	33300	46800	63900	79600
		Thermal	Input Power kW	5.03	6.91	8.83	12.90	17.50	27.00
			Output Torque Nm	13100	19300	25100	39200	53600	84700
			Efficiency %	61	63	64	68	71	74

DOUBLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	1.94	Mechanical	Input Power kW	4.22 (4.63)	6.68 (7.49)	10.70	15.10 (16.70)	21.40 (26.00)	25.20 (37.50)
			Output Torque Nm	11900 (13100)	18800 (21100)	31800	48100 (53300)	65500 (79700)	80800 (121000)
		Thermal	Input Power kW	4.20	5.88	8.15	11.80	14.90	19.20
			Output Torque Nm	11900	16400	24000	37100	45000	61100
		Efficiency %	56	58	61	63	63	66	
1000.	1.75	Mechanical	Input Power kW	3.71 (4.81)	5.61 (6.46)	10.00	13.60 (14.80)	17.80 (22.90)	21.20 (32.50)
			Output Torque Nm	11900 (15600)	18800 (21700)	34000	48100 (52600)	65500 (84500)	80800 (125000)
		Thermal	Input Power kW	5.90	8.10	10.70	13.80	18.90	24.10
			Output Torque Nm	19200	27400	36300	49000	69500	92000
		Efficiency %	60	61	64	66	68	70	
1200.	1.46	Mechanical	Input Power kW	3.51 (4.01)	5.13 (6.07)	8.58	11.90 (13.60)	16.70 (21.40)	19.70 (30.90)
			Output Torque Nm	11900 (13700)	18800 (22400)	33400	48100 (55000)	65500 (84300)	80800 (128000)
		Thermal	Input Power kW	3.88	5.21	7.16	10.40	12.80	16.60
			Output Torque Nm	13200	19100	27700	41700	49900	67800
		Efficiency %	53	55	58	60	61	63	
1250.	1.40	Mechanical	Input Power kW	3.13 (4.19)	4.68 (5.33)	8.31	11.30 (12.40)	14.90 (19.30)	17.70 (26.80)
			Output Torque Nm	11900 (16100)	18800 (21500)	33900	48100 (53100)	65500 (85400)	80800 (124000)
		Thermal	Input Power kW	5.66	7.67	9.25	12.90	17.70	22.30
			Output Torque Nm	22000	31300	37800	55200	78100	103000
		Efficiency %	57	59	61	63	65	67	
1400.	1.25	Mechanical	Input Power kW	3.12 (3.19)	4.55 (5.03)	7.42	10.70 (12.00)	15.00 (18.30)	17.10 (24.50)
			Output Torque Nm	11900 (12200)	18800 (20800)	31200	48100 (54100)	65500 (80500)	80800 (116000)
		Thermal	Input Power kW	3.76	5.04	6.19	8.88	11.50	16.20
			Output Torque Nm	14500	20900	25900	39700	50000	76200
		Efficiency %	51	53	53	57	58	63	
1500.	1.17	Mechanical	Input Power kW	2.73 (3.54)	4.11 (4.86)	6.38	9.77 (12.90)	12.80 (14.40)	15.20 (19.80)
			Output Torque Nm	11900 (15600)	18800 (22400)	31000	48100 (64100)	65500 (74000)	80800 (106000)
		Thermal	Input Power kW	5.02	6.92	9.04	12.50	17.30	21.10
			Output Torque Nm	22500	32300	44400	61700	89100	113000
		Efficiency %	54	57	58	61	64	66	
1600.	1.09	Mechanical	Input Power kW	2.62 (3.38)	3.99 (4.24)	6.92	9.11 (9.15)	11.50	13.80
			Output Torque Nm	11900 (15600)	18800 (20000)	33600	48100 (48300)	63300	78700
		Thermal	Input Power kW	4.18	5.77	7.17	10.20	13.30	20.40
			Output Torque Nm	19400	27600	34800	53900	73800	118000
		Efficiency %	52	54	56	60	63	66	
1750.	1.00	Mechanical	Input Power kW	2.42 (3.23)	3.73 (4.18)	6.18	8.63 (9.64)	11.30 (14.90)	13.40 (20.10)
			Output Torque Nm	11900 (16100)	18800 (21200)	31700	48100 (53900)	65500 (86600)	80800 (122000)
		Thermal	Input Power kW	4.35	6.15	6.15	11.30	16.10	20.30
			Output Torque Nm	22000	31600	31600	63600	94100	123000
		Efficiency %	53	53	55	59	62	63	
1800.	0.97	Mechanical	Input Power kW	2.37 (3.10)	3.59 (4.24)	5.55	8.45 (11.10)	11.10 (12.50)	13.20 (17.10)
			Output Torque Nm	11900 (15800)	18800 (22400)	31000	48100 (64000)	65500 (73800)	80800 (105000)
		Thermal	Input Power kW	4.85	6.70	7.56	11.90	16.50	20.20
			Output Torque Nm	25100	36000	42500	68300	98500	125000
		Efficiency %	52	54	56	59	61	63	
2000.	0.88	Mechanical	Input Power kW	2.23 (2.86)	3.36 (3.55)	5.78	7.60 (7.73)	9.58	11.50
			Output Torque Nm	11900 (15500)	18800 (19900)	33500	48100 (48900)	63100	78500
		Thermal	Input Power kW	4.01	5.47	6.78	9.57	12.50	19.10
			Output Torque Nm	22100	31400	39500	61000	83000	132000
		Efficiency %	49	51	53	58	60	63	
2100.	0.83	Mechanical	Input Power kW	2.26 (2.37)	3.43 (3.86)	5.95	7.97 (8.89)	10.90 (14.20)	12.30 (17.40)
			Output Torque Nm	11900 (12500)	18800 (21300)	33400	48100 (53900)	65500 (86600)	80800 (116000)
		Thermal	Input Power kW	3.40	4.58	5.53	7.83	9.83	13.70
			Output Torque Nm	18300	25500	31000	47200	59100	90600
		Efficiency %	46	48	49	53	53	58	
2400.	0.73	Mechanical	Input Power kW	2.04 (2.61)	3.10 (3.66)	5.10	7.02 (7.94)	9.55 (13.80)	11.10 (17.40)
			Output Torque Nm	11900 (15500)	18800 (22400)	33200	48100 (54600)	65500 (95800)	80800 (128000)
		Thermal	Input Power kW	3.26	4.39	5.91	8.34	9.84	12.50
			Output Torque Nm	19500	27100	38700	57500	67400	91700
		Efficiency %	45	46	50	52	52	56	
2500.	0.70	Mechanical	Input Power kW	1.94 (2.57)	2.92 (3.44)	5.10 (5.55)	6.70 (7.57)	6.55	9.32
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (37400)	48100 (54600)	50800	75700
		Thermal	Input Power kW	3.51	4.68	5.80	9.03	13.80	16.80
			Output Torque Nm	22300	31000	39200	65600	110000	139000
		Efficiency %	45	47	49	53	57	60	
2800.	0.63	Mechanical	Input Power kW	1.82 (1.94)	2.77 (3.17)	4.89 (4.99)	6.33 (7.04)	8.59 (11.80)	9.66 (13.70)
			Output Torque Nm	11900 (12700)	18800 (21700)	34200 (35000)	48100 (53700)	65500 (91300)	80800 (116000)
		Thermal	Input Power kW	3.19	4.30	5.13	7.14	8.89	12.40
			Output Torque Nm	21700	30000	36000	54600	67800	104000
		Efficiency %	43	44	46	50	50	55	
3000.	0.58	Mechanical	Input Power kW	1.74 (2.31)	2.62 (3.09)	4.28	5.90 (6.64)	8.08 (12.10)	9.35 (14.60)
			Output Torque Nm	11900 (16100)	18800 (22400)	33100	48100 (54500)	65500 (99500)	80800 (128000)
		Thermal	Input Power kW	3.15	4.18	5.62	7.86	9.27	11.70
			Output Torque Nm	22300	30800	44000	64900	75600	102000
		Efficiency %	42	44	47	50	50	53	
3500.	0.50	Mechanical	Input Power kW	1.56 (1.68)	2.34 (2.71)	4.12 (4.27)	5.32 (5.90)	7.28 (10.40)	8.15 (11.50)
			Output Torque Nm	11900 (12900)	18800 (22000)	34200 (35500)	48100 (53600)	65500 (94800)	80800 (115000)
		Thermal	Input Power kW	3.09	4.10	4.88	6.75	8.41	11.60
			Output Torque Nm	24800	34200	40900	61700	76200	117000
		Efficiency %	40	42	43	47	47	52	
3600.	0.49	Mechanical	Input Power kW	1.53 (2.03)	2.31 (2.72)	3.75	5.13 (5.77)	7.07 (10.90)	8.17 (12.70)
			Output Torque Nm	11900 (16100)	18800 (22400)	33100	48100 (54400)	65500 (103000)	80800 (128000)
		Thermal	Input Power kW	3.06	4.07	5.45	7.55	8.92	11.20
			Output Torque Nm	25000	34400	49000	72000	83400	113000
		Efficiency %	40	41	45	48	47	50	
4200.	0.42	Mechanical	Input Power kW	1.37 (1.49)	2.07 (2.42)	3.62 (3.79)	4.64 (5.13)	6.38 (9.36)	7.13 (10.00)
			Output Torque Nm	11900 (13100)	18800 (22300)	34200 (35900)	48100 (53500)	65500 (97700)	80800 (115000)
		Thermal	Input Power kW	3.01	4.00	4.74	6.49	8.10	11.20
			Output Torque Nm	27800	38200	45400	68500	84100	129000
		Efficiency %	38	40	41	45	45	49	

DOUBLE REDUCTION

Bracketed figures indicate a unit with two keys at 90° in the wheel hub only

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY	SIZE OF UNIT						
			10	12	14	17	20	24	
5.0	290.00	Mechanical	Input Power kW	117.00	174.00	241.00	434.00	718.00	835.00
			Output Torque Nm	3690	5470	7460	13700	22600	26800
		Thermal	Input Power kW	85.30	120.00	171.00	225.00	315.00	425.00
			Output Torque Nm	2680	3790	5280	7030	9870	13600
			Efficiency %	95	96	96	95	95	96
7.5	193.33	Mechanical	Input Power kW	86.00	133.00	180.00	372.00	554.00	825.00
			Output Torque Nm	4030	6220	8420	17500	26100	39000
		Thermal	Input Power kW	72.30	105.00	150.00	203.00	318.00	400.00
			Output Torque Nm	3380	4900	7030	9460	14900	18800
			Efficiency %	95	94	95	94	95	95
10.0	145.00	Mechanical	Input Power kW	60.20	109.00	147.00	308.00	433.00	622.00
			Output Torque Nm	3630	6630	8940	19200	26700	38400
		Thermal	Input Power kW	65.00	94.50	141.00	187.00	305.00	385.00
			Output Torque Nm	3920	5750	8590	11600	18800	23700
			Efficiency %	94	94	94	94	95	95
12.5	116.00	Mechanical	Input Power kW	66.40	87.60	136.00	229.00	305.00	534.00
			Output Torque Nm	5200	6760	10700	17700	24200	42000
		Thermal	Input Power kW	56.40	87.70	121.00	172.00	276.00	351.00
			Output Torque Nm	4410	6770	9490	13300	21900	27500
			Efficiency %	93	94	93	94	94	94
15.0	96.67	Mechanical	Input Power kW	53.70	76.80	141.00	234.00	342.00	464.00
			Output Torque Nm	4800	6900	12800	21200	31300	42500
		Thermal	Input Power kW	52.30	78.40	111.00	159.00	246.00	322.00
			Output Torque Nm	4680	7040	10100	14300	22400	29400
			Efficiency %	93	93	94	93	94	94
20.0	72.50	Mechanical	Input Power kW	51.10	79.80	114.00	199.00	259.00	372.00
			Output Torque Nm	6050	9490	13600	23700	31200	45000
		Thermal	Input Power kW	44.00	64.80	96.90	127.00	212.00	264.00
			Output Torque Nm	5190	7690	11500	15000	25500	31800
			Efficiency %	91	92	92	91	93	93
25.0	58.00	Mechanical	Input Power kW	42.10	62.80	90.00	147.00	229.00	313.00
			Output Torque Nm	6070	9290	13100	21600	34100	47200
		Thermal	Input Power kW	35.20	52.60	76.90	101.00	150.00	196.00
			Output Torque Nm	5060	7760	11200	14600	22100	29300
			Efficiency %	89	90	90	89	91	91
30.0	48.33	Mechanical	Input Power kW	35.70	57.30	81.60	143.00	211.00	272.00
			Output Torque Nm	6080	9890	14600	24700	37200	48100
		Thermal	Input Power kW	30.60	47.40	67.00	93.40	142.00	184.00
			Output Torque Nm	5180	8140	11900	16000	24800	32300
			Efficiency %	87	88	88	88	90	90
40.0	36.25	Mechanical	Input Power kW	30.80	48.20	67.70	96.70	142.00	205.00
			Output Torque Nm	6830	10900	15200	22000	33200	47700
		Thermal	Input Power kW	23.80	36.00	48.20	71.90	102.00	163.00
			Output Torque Nm	5250	8060	10700	16200	23600	37800
			Efficiency %	84	85	84	86	88	89
50.0	29.00	Mechanical	Input Power kW	25.70	39.10	55.00	106.00	110.00	161.00
			Output Torque Nm	6880	10600	15000	29100	31100	45900
		Thermal	Input Power kW	20.20	30.00	39.70	62.40	108.00	140.00
			Output Torque Nm	5350	8100	10700	16800	30500	39700
			Efficiency %	80	82	82	82	87	87
60.0	24.17	Mechanical	Input Power kW	21.80	34.50	50.90	86.50	119.00	144.00
			Output Torque Nm	6750	10900	16300	27900	38500	47000
		Thermal	Input Power kW	17.60	25.80	37.40	54.10	67.60	91.40
			Output Torque Nm	5430	8070	11800	17000	21400	29300
			Efficiency %	78	79	80	80	80	81
70.0	20.71	Mechanical	Input Power kW	17.90	28.70	42.40	71.70	104.00	127.00
			Output Torque Nm	6340	10400	15200	26200	38300	48200
		Thermal	Input Power kW	16.60	24.50	31.30	45.70	60.10	90.10
			Output Torque Nm	5850	8790	11100	16200	21700	33600
			Efficiency %	76	78	77	77	78	81

SINGLE REDUCTION

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	19.33	Mechanical	Input Power kW	20.70	29.50	40.90	70.00	117.00	173.00
			Output Torque Nm	8620	12500	17500	30200	49900	74600
		Thermal	Input Power kW	17.80	27.20	37.40	62.40	85.30	108.00
			Output Torque Nm	7380	11500	15900	26900	36300	46300
			Efficiency %	84	85	85	87	88	88
100.	14.50	Mechanical	Input Power kW	19.50	30.40	40.90	70.00	83.70	143.00 (144.00)
			Output Torque Nm	10600	16800	22900	39300	46900	80800 (81200)
		Thermal	Input Power kW	15.00	22.30	31.20	47.40	73.90	89.20
			Output Torque Nm	8160	12300	17400	26600	41300	50200
			Efficiency %	82	83	84	85	86	87
125.	11.60	Mechanical	Input Power kW	16.10	23.80	33.90	55.60	87.90	115.00 (136.00)
			Output Torque Nm	10500	16200	23000	38200	60300	80800 (95600)
		Thermal	Input Power kW	12.30	17.90	25.40	36.10	53.90	67.80
			Output Torque Nm	8000	12100	17200	24600	36700	47200
			Efficiency %	79	80	82	82	84	85
150.	9.67	Mechanical	Input Power kW	13.60	21.60	30.40	53.50	76.90	98.80 (108.00)
			Output Torque Nm	10400	17000	25100	43100	62000	80800 (88600)
		Thermal	Input Power kW	10.80	15.90	22.00	33.80	50.80	62.00
			Output Torque Nm	8190	12400	18100	27000	40700	50400
			Efficiency %	76	78	80	81	82	84
200.	7.25	Mechanical	Input Power kW	12.10 (12.70)	18.70 (18.80)	26.90	46.60 (47.20)	50.30	75.70 (85.90)
			Output Torque Nm	11900 (12500)	18800 (18900)	27400	48100 (48600)	52800	80800 (91800)
		Thermal	Input Power kW	11.10	15.20	21.10	31.20	46.90	57.80
			Output Torque Nm	10800	15300	21500	32100	49200	61500
			Efficiency %	77	79	80	81	83	84
225.	6.44	Mechanical	Input Power kW	10.70	16.70	23.50	41.30	55.80 (57.00)	67.60 (80.00)
			Output Torque Nm	11400	18700	27600	47700	65500 (66900)	80800 (95700)
		Thermal	Input Power kW	8.88	12.70	17.30	26.00	38.20	48.10
			Output Torque Nm	9390	14200	20300	29900	44600	57300
			Efficiency %	74	76	77	78	80	82
250.	5.80	Mechanical	Input Power kW	10.20 (10.50)	15.30 (15.40)	22.00	36.10	51.30 (56.30)	61.40 (86.90)
			Output Torque Nm	11900 (12300)	18800 (19000)	27100	45200	65500 (71800)	80800 (115000)
		Thermal	Input Power kW	8.82	12.40	17.10	23.50	33.80	43.80
			Output Torque Nm	10300	15200	20900	29300	42900	57300
			Efficiency %	74	76	77	78	80	81
300.	4.83	Mechanical	Input Power kW	8.77 (8.88)	13.30 (14.00)	19.70	32.90 (34.70)	43.80 (46.80)	52.70 (65.20)
			Output Torque Nm	11900 (12100)	18800 (19800)	29200	48100 (50700)	65500 (69900)	80800 (100000)
		Thermal	Input Power kW	7.71	11.10	15.00	22.30	32.30	40.50
			Output Torque Nm	10500	15600	22200	32400	48100	61800
			Efficiency %	72	74	75	76	79	80
350.	4.14	Mechanical	Input Power kW	6.77	10.80	15.80	26.20	39.20	47.80 (56.40)
			Output Torque Nm	10100	16500	24600	42600	62800	80800 (95700)
		Thermal	Input Power kW	6.05	8.50	11.00	16.50	23.00	32.00
			Output Torque Nm	8940	12900	17000	26500	36200	53500
			Efficiency %	63	64	65	68	68	73
375.	3.87	Mechanical	Input Power kW	6.78 (7.69)	10.70 (11.70)	16.70	25.60 (26.50)	35.40 (42.40)	42.40 (65.60)
			Output Torque Nm	11900 (13500)	18800 (20600)	29500	48100 (49800)	65500 (78600)	80800 (125000)
		Thermal	Input Power kW	7.23	10.30	13.90	18.40	26.60	34.40
			Output Torque Nm	12700	18000	24500	34500	49100	65400
			Efficiency %	70	72	74	75	77	79
400.	3.63	Mechanical	Input Power kW	6.59 (7.96)	9.52 (10.60)	16.30	23.90	28.20	39.80 (48.20)
			Output Torque Nm	11900 (14400)	18300 (21500)	32000	47800	56400	80800 (98000)
		Thermal	Input Power kW	8.33	11.10	15.00	21.50	31.90	39.00
			Output Torque Nm	15100	21400	29300	42800	63900	79200
			Efficiency %	71	72	74	75	79	80
450.	3.22	Mechanical	Input Power kW	5.86 (6.49)	9.30 (10.60)	14.70	22.00 (25.40)	30.20 (34.30)	36.40 (47.80)
			Output Torque Nm	11900 (13200)	18800 (21500)	31100	48100 (55600)	65500 (74300)	80800 (106000)
		Thermal	Input Power kW	6.37	9.18	12.30	17.60	25.60	32.00
			Output Torque Nm	13000	18500	26100	38200	55300	70900
			Efficiency %	67	71	72	73	76	78
500.	2.90	Mechanical	Input Power kW	5.58 (6.60)	8.07 (9.43)	13.40	19.90 (21.20)	27.20 (34.00)	32.60 (51.50)
			Output Torque Nm	11900 (14100)	18800 (22000)	31400	48100 (51200)	65500 (82200)	80800 (128000)
		Thermal	Input Power kW	6.65	9.03	12.20	16.20	22.90	29.50
			Output Torque Nm	14200	21100	28400	39000	55100	73100
			Efficiency %	68	69	70	72	75	77
600.	2.42	Mechanical	Input Power kW	5.25 (5.47)	7.89 (8.51)	12.20	18.80 (20.00)	25.70 (29.90)	30.30 (43.10)
			Output Torque Nm	11900 (12400)	18800 (20300)	30500	48100 (51200)	65500 (76200)	80800 (116000)
		Thermal	Input Power kW	4.65	6.38	8.91	13.30	16.70	21.60
			Output Torque Nm	10500	15100	22100	33700	42100	57200
			Efficiency %	59	61	64	65	65	68
625.	2.32	Mechanical	Input Power kW	4.58 (5.66)	6.92 (8.10)	11.90	17.10 (18.30)	22.50 (28.60)	26.50 (41.30)
			Output Torque Nm	11900 (14800)	18800 (22000)	32500	48100 (51800)	65500 (83200)	80800 (127000)
		Thermal	Input Power kW	6.24	8.50	11.40	15.00	20.80	26.50
			Output Torque Nm	16400	23100	31000	42200	60400	80800
			Efficiency %	64	67	69	71	73	74
700.	2.07	Mechanical	Input Power kW	4.46	6.99 (7.03)	10.30	16.80 (17.10)	22.90 (25.50)	26.30 (35.20)
			Output Torque Nm	11400	18800 (18900)	28200	48100 (48900)	65500 (72900)	80800 (108000)
		Thermal	Input Power kW	4.48	6.13	7.68	11.30	14.90	20.90
			Output Torque Nm	11500	16400	20700	32100	42100	63700
			Efficiency %	57	59	60	63	63	67
750.	1.93	Mechanical	Input Power kW	3.97 (4.79)	6.04 (7.17)	9.54	14.70 (18.60)	19.30 (21.90)	22.70 (29.90)
			Output Torque Nm	11900 (14500)	18800 (22400)	31300	48100 (60800)	65500 (74600)	80800 (107000)
		Thermal	Input Power kW	5.52	7.64	10.10	14.40	20.20	24.90
			Output Torque Nm	16700	23900	33200	46900	68500	88400
			Efficiency %	62	65	67	68	71	73
800.	1.81	Mechanical	Input Power kW	3.88 (4.85)	5.66 (6.04)	9.94	13.00	17.50	21.30
			Output Torque Nm	11900 (15000)	18800 (20100)	33800	47300	63700	79400
		Thermal	Input Power kW	4.64	6.36	8.08	11.80	15.90	24.60
			Output Torque Nm	14300	21200	27300	42600	58000	91800
			Efficiency %	60	62	63	67	70	73

DOUBLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	1.61	Mechanical	Input Power kW	3.57 (4.05)	5.64 (6.55)	9.38	12.80 (14.60)	18.10 (22.80)	21.30 (32.80)
			Output Torque Nm	11900 (13600)	18800 (21900)	33000	48100 (54900)	65500 (82600)	80800 (125000)
		Thermal	Input Power kW	3.87	5.37	7.43	10.70	13.40	17.30
			Output Torque Nm	12900	17800	26000	40000	48000	65300
		Efficiency %	54	57	60	62	62	65	
1000.	1.45	Mechanical	Input Power kW	3.13 (4.19)	4.72 (5.39)	8.42	11.40 (12.60)	14.90 (19.40)	17.80 (27.10)
			Output Torque Nm	11900 (16100)	18800 (21500)	33900	48100 (53000)	65500 (85300)	80800 (124000)
		Thermal	Input Power kW	5.57	7.60	9.67	12.80	17.50	22.10
			Output Torque Nm	21500	30600	39000	54200	76600	101000
		Efficiency %	59	60	62	65	68	69	
1200.	1.21	Mechanical	Input Power kW	2.97 (3.51)	4.33 (5.13)	7.24	10.10 (11.50)	14.10 (18.70)	16.60 (26.10)
			Output Torque Nm	11900 (14100)	18800 (22400)	33300	48100 (54900)	65500 (87300)	80800 (128000)
		Thermal	Input Power kW	3.59	4.79	6.58	9.51	11.60	15.00
			Output Torque Nm	14500	20900	30200	45300	53600	73000
		Efficiency %	52	54	57	59	59	63	
1250.	1.16	Mechanical	Input Power kW	2.64 (3.54)	3.95 (4.46)	7.00	9.51 (10.60)	12.50 (16.40)	14.80 (22.40)
			Output Torque Nm	11900 (16100)	18800 (21300)	33800	48100 (53500)	65500 (86100)	80800 (123000)
		Thermal	Input Power kW	5.15	7.22	8.06	12.10	16.40	20.70
			Output Torque Nm	23700	34900	39100	61300	86500	113000
		Efficiency %	56	58	60	62	65	66	
1400.	1.04	Mechanical	Input Power kW	2.64 (2.72)	3.84 (4.28)	6.49	9.04 (10.10)	12.70 (16.00)	14.40 (20.60)
			Output Torque Nm	11900 (12300)	18800 (21000)	32300	48100 (54000)	65500 (83300)	80800 (116000)
		Thermal	Input Power kW	3.49	4.65	5.69	8.13	10.50	14.70
			Output Torque Nm	15900	22900	28200	43100	53900	82300
		Efficiency %	50	52	52	56	57	62	
1500.	0.97	Mechanical	Input Power kW	2.31 (3.02)	3.46 (4.10)	5.38	8.24 (10.90)	10.70 (12.10)	12.80 (16.60)
			Output Torque Nm	11900 (15800)	18800 (22400)	31000	48100 (64000)	65500 (73800)	80800 (105000)
		Thermal	Input Power kW	4.76	6.51	8.06	11.70	16.10	19.60
			Output Torque Nm	25200	36100	46900	68500	98900	125000
		Efficiency %	53	56	57	60	63	65	
1600.	0.91	Mechanical	Input Power kW	2.22 (2.86)	3.37 (3.57)	5.84	7.68 (7.79)	9.61	11.60
			Output Torque Nm	11900 (15500)	18800 (19900)	33500	48100 (48800)	63100	78500
		Thermal	Input Power kW	3.94	5.41	6.72	9.49	12.30	18.90
			Output Torque Nm	21700	30700	38700	59800	81400	129000
		Efficiency %	51	53	54	59	62	65	
1750.	0.83	Mechanical	Input Power kW	2.05 (2.74)	3.15 (3.51)	5.53	7.29 (8.22)	9.53 (12.70)	11.30 (16.80)
			Output Torque Nm	11900 (16100)	18800 (21000)	33600	48100 (54400)	65500 (87800)	80800 (121000)
		Thermal	Input Power kW	3.75	5.38	5.38	9.89	15.10	18.90
			Output Torque Nm	22300	32700	32700	65700	105000	137000
		Efficiency %	51	52	54	58	60	62	
1800.	0.81	Mechanical	Input Power kW	2.01 (2.66)	3.03 (3.58)	4.68	7.13 (9.34)	9.34 (10.50)	11.10 (14.30)
			Output Torque Nm	11900 (16000)	18800 (22400)	30900	48100 (63400)	65500 (73600)	80800 (105000)
		Thermal	Input Power kW	4.34	6.34	6.60	11.20	15.50	18.80
			Output Torque Nm	26500	40400	44000	76200	110000	138000
		Efficiency %	51	53	55	58	60	62	
2000.	0.73	Mechanical	Input Power kW	1.89 (2.42)	2.83 (2.99)	4.88	6.41 (6.60)	8.04	9.63
			Output Torque Nm	11900 (15500)	18800 (19900)	33500	48100 (49600)	62900	78200
		Thermal	Input Power kW	3.81	5.16	6.37	8.95	11.70	17.80
			Output Torque Nm	24800	35100	44000	67800	92200	147000
		Efficiency %	48	50	52	57	59	62	
2100.	0.69	Mechanical	Input Power kW	1.92 (2.03)	2.90 (3.30)	5.16 (5.20)	6.74 (7.50)	9.18 (12.40)	10.30 (14.70)
			Output Torque Nm	11900 (12700)	18800 (21600)	34200 (34500)	48100 (53800)	65500 (89500)	80800 (116000)
		Thermal	Input Power kW	3.20	4.29	5.14	7.23	9.02	12.50
			Output Torque Nm	20400	28300	34100	51700	64300	98700
		Efficiency %	45	47	48	52	52	58	
2400.	0.60	Mechanical	Input Power kW	1.73 (2.28)	2.62 (3.09)	4.30	5.93 (6.70)	8.08 (12.10)	9.35 (14.70)
			Output Torque Nm	11900 (16000)	18800 (22400)	33100	48100 (54500)	65500 (98900)	80800 (128000)
		Thermal	Input Power kW	3.08	4.12	5.56	7.79	9.12	11.60
			Output Torque Nm	21900	30200	43100	63700	74200	101000
		Efficiency %	44	45	49	51	51	55	
2500.	0.58	Mechanical	Input Power kW	1.64 (2.18)	2.46 (2.90)	4.32 (4.85)	5.66 (6.39)	5.49	7.80
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (38600)	48100 (54500)	50700	75500
		Thermal	Input Power kW	3.33	4.42	5.46	8.47	12.90	15.70
			Output Torque Nm	25100	34700	43600	72900	123000	155000
		Efficiency %	44	46	48	52	57	59	
2800.	0.52	Mechanical	Input Power kW	1.54 (1.66)	2.33 (2.71)	4.14 (4.28)	5.35 (5.94)	7.27 (10.30)	8.14 (11.50)
			Output Torque Nm	11900 (12900)	18800 (22000)	34200 (35400)	48100 (53600)	65500 (94200)	80800 (115000)
		Thermal	Input Power kW	3.02	4.04	4.82	6.68	8.26	11.40
			Output Torque Nm	24300	33500	40000	60500	74700	115000
		Efficiency %	42	44	45	49	49	54	
3000.	0.48	Mechanical	Input Power kW	1.48 (1.96)	2.22 (2.61)	3.61	4.98 (5.61)	6.83 (10.60)	7.88 (12.30)
			Output Torque Nm	11900 (16100)	18800 (22400)	33000	48100 (54400)	65500 (103000)	80800 (128000)
		Thermal	Input Power kW	2.99	3.94	5.30	7.38	8.66	10.90
			Output Torque Nm	25100	34500	49200	72300	83700	113000
		Efficiency %	41	43	46	49	49	52	
3500.	0.41	Mechanical	Input Power kW	1.32 (1.44)	1.98 (2.32)	3.49 (3.66)	4.50 (4.98)	6.15 (9.06)	6.86 (9.66)
			Output Torque Nm	11900 (13100)	18800 (22300)	34200 (35900)	48100 (53500)	65500 (97800)	80800 (115000)
		Thermal	Input Power kW	2.94	3.88	4.60	6.33	7.84	10.80
			Output Torque Nm	27900	38400	45500	68600	84200	129000
		Efficiency %	39	41	43	46	46	51	
3600.	0.40	Mechanical	Input Power kW	1.30 (1.72)	1.95 (2.30)	3.17	4.34 (4.87)	5.98 (9.31)	6.89 (10.80)
			Output Torque Nm	11900 (16100)	18800 (22400)	33000	48100 (54300)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.91	3.85	5.17	7.12	8.34	10.50
			Output Torque Nm	28100	38500	54900	80400	92400	125000
		Efficiency %	39	41	44	47	46	49	
4200.	0.35	Mechanical	Input Power kW	1.16 (1.28)	1.74 (2.05)	3.07 (3.25)	3.92 (4.34)	5.40 (8.16)	6.00 (8.42)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36300)	48100 (53400)	65500 (101000)	80800 (115000)
		Thermal	Input Power kW	2.87	3.79	4.49	6.10	7.58	10.40
			Output Torque Nm	31300	43000	50800	76300	93200	143000
		Efficiency %	37	39	40	44	44	49	

DOUBLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	232.00	Mechanical	Input Power kW	104.00	154.00	215.00	387.00	614.00	748.00
			Output Torque Nm	4100	6080	8310	15300	24200	30000
		Thermal	Input Power kW	74.40	107.00	153.00	207.00	280.00	388.00
			Output Torque Nm	2920	4190	5910	8110	11000	15500
7.5	154.67	Mechanical	Input Power kW	75.90	117.00	159.00	329.00	491.00	732.00
			Output Torque Nm	4430	6860	9300	19300	28900	43200
		Thermal	Input Power kW	61.80	90.30	131.00	181.00	275.00	356.00
			Output Torque Nm	3610	5280	7650	10600	16200	20900
10.0	116.00	Mechanical	Input Power kW	52.80	95.70	129.00	271.00	382.00	549.00
			Output Torque Nm	3980	7280	9820	21100	29400	42400
		Thermal	Input Power kW	55.40	81.40	122.00	167.00	263.00	341.00
			Output Torque Nm	4170	6180	9300	12900	20200	26200
12.5	92.80	Mechanical	Input Power kW	58.20	76.80	119.00	201.00	268.00	469.00
			Output Torque Nm	5690	7400	11700	19400	26600	46200
		Thermal	Input Power kW	48.10	75.30	105.00	153.00	237.00	310.00
			Output Torque Nm	4690	7250	10300	14800	23500	30400
15.0	77.33	Mechanical	Input Power kW	47.00	67.20	124.00	205.00	300.00	408.00
			Output Torque Nm	5240	7540	14000	23200	34300	46700
		Thermal	Input Power kW	44.50	67.30	96.40	141.00	215.00	285.00
			Output Torque Nm	4960	7540	10900	15900	24500	32600
20.0	58.00	Mechanical	Input Power kW	44.70	69.80	99.60	174.00	227.00	326.00
			Output Torque Nm	6600	10400	14800	25900	34200	49300
		Thermal	Input Power kW	37.30	55.50	83.50	113.00	184.00	233.00
			Output Torque Nm	5490	8220	12400	16700	27700	35100
25.0	46.40	Mechanical	Input Power kW	36.90	54.90	78.60	129.00	201.00	268.00
			Output Torque Nm	6610	10100	14300	23600	37300	50600
		Thermal	Input Power kW	30.00	45.10	66.60	88.60	131.00	174.00
			Output Torque Nm	5360	8300	12100	16100	24200	32500
30.0	38.67	Mechanical	Input Power kW	31.20	50.10	71.30	125.00	185.00	233.00
			Output Torque Nm	6610	10800	15900	26900	40600	51600
		Thermal	Input Power kW	26.00	40.60	57.90	82.90	124.00	163.00
			Output Torque Nm	5480	8700	12800	17700	27100	35800
40.0	29.00	Mechanical	Input Power kW	26.90	42.10	59.00	84.10	124.00	173.00
			Output Torque Nm	7420	11800	16600	24000	36200	50500
		Thermal	Input Power kW	20.30	30.90	41.90	62.90	89.10	144.00
			Output Torque Nm	5560	8610	11700	17800	25800	41600
50.0	23.20	Mechanical	Input Power kW	22.40	34.10	47.90	91.90	93.10	136.00
			Output Torque Nm	7460	11500	16300	31700	33000	48600
		Thermal	Input Power kW	17.20	25.90	34.50	55.30	92.80	122.00
			Output Torque Nm	5670	8690	11600	18700	32800	43500
60.0	19.33	Mechanical	Input Power kW	19.00	30.00	44.30	75.20	103.00	124.00
			Output Torque Nm	7300	11800	17700	30300	41400	50600
		Thermal	Input Power kW	15.00	22.30	32.30	47.30	59.20	80.80
			Output Torque Nm	5750	8660	12800	18700	23500	32600
70.0	16.57	Mechanical	Input Power kW	15.60	25.00	36.80	62.10	90.40	110.00
			Output Torque Nm	6840	11200	16500	28400	41600	51900
		Thermal	Input Power kW	14.10	21.10	27.20	40.20	52.60	79.30
			Output Torque Nm	6170	9390	12000	18000	23700	37100
			Efficiency %	76	77	77	78	78	81

SINGLE REDUCTION

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	15.47	Mechanical	Input Power kW	17.90	25.50	36.30	62.10	104.00	151.00 (154.00)
			Output Torque Nm	9200	13300	19200	33200	55000	80800 (82400)
		Thermal	Input Power kW	15.90	24.20	32.00	53.10	74.40	96.40
			Output Torque Nm	8150	12600	16900	28300	39200	51400
		Efficiency %	83	84	85	86	87	88	
100.	11.60	Mechanical	Input Power kW	16.80	26.20	36.30	62.10	70.60	115.00 (121.00)
			Output Torque Nm	11300	17900	25100	43100	48900	80800 (85100)
		Thermal	Input Power kW	13.50	19.20	26.90	40.50	63.00	77.40
			Output Torque Nm	9040	13100	18600	28100	43600	54100
		Efficiency %	81	82	83	84	85	86	
125.	9.28	Mechanical	Input Power kW	13.90	20.50	29.20	47.90	75.80	93.10 (117.00)
			Output Torque Nm	11200	17200	24400	40600	64200	80800 (102000)
		Thermal	Input Power kW	10.90	15.50	21.80	30.80	45.50	59.30
			Output Torque Nm	8780	13000	18200	25900	38300	51200
		Efficiency %	78	80	81	81	83	84	
150.	7.73	Mechanical	Input Power kW	11.70	18.60	26.20	46.10	65.10	79.80 (91.40)
			Output Torque Nm	11000	18000	26500	45700	64700	80800 (92600)
		Thermal	Input Power kW	9.52	13.80	19.00	28.90	43.00	54.30
			Output Torque Nm	8910	13300	19200	28500	42600	54700
		Efficiency %	75	77	79	80	82	83	
200.	5.80	Mechanical	Input Power kW	9.87 (10.90)	15.10	23.60	37.80 (38.50)	42.10	61.20 (71.90)
			Output Torque Nm	11900 (13100)	18700	29700	48100 (48900)	54600	80800 (95000)
		Thermal	Input Power kW	9.90	13.60	18.70	27.40	41.00	50.20
			Output Torque Nm	12000	16800	23400	34700	53100	66100
		Efficiency %	76	78	79	80	82	83	
225.	5.16	Mechanical	Input Power kW	9.14 (9.16)	13.60 (14.20)	20.10	33.80 (35.30)	45.30 (48.00)	54.80 (67.30)
			Output Torque Nm	11900 (11900)	18800 (19700)	29000	48100 (50300)	65500 (69500)	80800 (99400)
		Thermal	Input Power kW	7.88	11.20	15.20	22.60	33.00	41.50
			Output Torque Nm	10200	15400	21900	32000	47500	61000
		Efficiency %	72	75	76	77	79	81	
250.	4.64	Mechanical	Input Power kW	8.30 (8.98)	12.40 (13.10)	18.80	30.80	41.60 (48.00)	49.80 (74.20)
			Output Torque Nm	11900 (12900)	18800 (19900)	28400	47500	65500 (75500)	80800 (121000)
		Thermal	Input Power kW	7.87	11.00	15.10	20.60	29.40	38.00
			Output Torque Nm	11300	16600	22800	31700	46000	61400
		Efficiency %	73	75	76	77	79	80	
300.	3.87	Mechanical	Input Power kW	7.15 (7.57)	10.80 (11.90)	16.60	26.80 (29.60)	35.60 (39.30)	42.80 (54.70)
			Output Torque Nm	11900 (12600)	18800 (20700)	30300	48100 (53200)	65500 (72400)	80800 (104000)
		Thermal	Input Power kW	6.91	9.85	13.30	19.60	28.20	35.30
			Output Torque Nm	11500	17100	24200	35000	51700	66500
		Efficiency %	70	73	74	75	77	79	
350.	3.31	Mechanical	Input Power kW	5.83	9.25	13.60	22.60	33.50 (33.90)	39.10 (48.20)
			Output Torque Nm	10500	17400	25800	44800	65500 (66300)	80800 (100000)
		Thermal	Input Power kW	5.35	7.51	9.58	14.30	19.60	27.40
			Output Torque Nm	9650	14000	18100	28100	37700	56200
		Efficiency %	61	63	64	67	67	71	
375.	3.09	Mechanical	Input Power kW	5.53 (6.54)	8.70 (9.96)	14.20	20.80 (22.10)	28.70 (35.80)	34.40 (54.50)
			Output Torque Nm	11900 (14100)	18800 (21500)	30800	48100 (51000)	65500 (81900)	80800 (128000)
		Thermal	Input Power kW	6.57	9.24	12.50	16.40	23.50	30.30
			Output Torque Nm	14200	20000	27000	37800	53500	71100
		Efficiency %	69	72	73	74	76	78	
400.	2.90	Mechanical	Input Power kW	5.37 (6.70)	7.67	13.30	19.20	22.80	32.30 (38.90)
			Output Torque Nm	11900 (14900)	18100	31800	47300	56100	80800 (97600)
		Thermal	Input Power kW	7.69	10.20	13.60	19.30	28.60	34.80
			Output Torque Nm	17100	24100	32700	47500	70600	87200
		Efficiency %	70	71	72	74	77	79	
450.	2.58	Mechanical	Input Power kW	4.78 (5.52)	7.57 (9.00)	12.00	17.90 (21.60)	24.60 (28.10)	29.60 (39.10)
			Output Torque Nm	11900 (13800)	18800 (22400)	31400	48100 (58100)	65500 (74900)	80800 (107000)
		Thermal	Input Power kW	5.79	8.28	11.10	15.70	22.70	28.40
			Output Torque Nm	14500	20600	28800	42000	60400	77400
		Efficiency %	66	70	70	72	75	77	
500.	2.32	Mechanical	Input Power kW	4.55 (5.62)	6.57 (7.67)	11.40	16.20 (17.50)	22.10 (28.00)	26.50 (41.40)
			Output Torque Nm	11900 (14700)	18800 (22000)	32800	48100 (51900)	65500 (83200)	80800 (127000)
		Thermal	Input Power kW	6.13	8.27	11.00	14.60	20.40	26.30
			Output Torque Nm	16100	23700	31700	43100	60500	80200
		Efficiency %	66	68	70	71	74	75	
600.	1.93	Mechanical	Input Power kW	4.31 (4.68)	6.47 (7.28)	10.50	15.40 (16.90)	21.10 (25.60)	24.80 (36.90)
			Output Torque Nm	11900 (13000)	18800 (21200)	31900	48100 (53000)	65500 (79700)	80800 (121000)
		Thermal	Input Power kW	4.19	5.70	7.94	11.80	14.60	18.90
			Output Torque Nm	11600	16500	24100	36500	45000	61300
		Efficiency %	57	60	63	64	64	67	
625.	1.86	Mechanical	Input Power kW	3.74 (4.82)	5.64 (6.53)	10.10	13.90 (15.10)	18.30 (23.50)	21.50 (33.20)
			Output Torque Nm	11900 (15400)	18800 (21800)	33900	48100 (52400)	65500 (84200)	80800 (125000)
		Thermal	Input Power kW	5.80	7.84	10.40	13.60	18.70	23.80
			Output Torque Nm	18600	26200	34800	47000	66900	89500
		Efficiency %	63	66	68	69	72	73	
700.	1.66	Mechanical	Input Power kW	3.81 (3.82)	5.73 (6.00)	8.86	13.80 (14.60)	18.80 (21.80)	21.60 (29.80)
			Output Torque Nm	11900 (11900)	18800 (19700)	29400	48100 (51000)	65500 (76200)	80800 (112000)
		Thermal	Input Power kW	4.05	5.50	6.84	10.00	13.10	18.30
			Output Torque Nm	12700	18000	22600	34800	45200	68500
		Efficiency %	56	58	59	62	61	66	
750.	1.55	Mechanical	Input Power kW	3.25 (4.08)	4.93 (5.85)	7.76	12.00 (15.80)	15.70 (17.80)	18.50 (24.20)
			Output Torque Nm	11900 (15100)	18800 (22400)	31200	48100 (63300)	65500 (74300)	80800 (106000)
		Thermal	Input Power kW	5.13	7.05	9.27	13.10	18.20	22.40
			Output Torque Nm	19000	27000	37300	52400	76100	98100
		Efficiency %	60	64	65	67	70	72	
800.	1.45	Mechanical	Input Power kW	3.18 (4.14)	4.62 (4.93)	8.12	10.70	14.20	17.20
			Output Torque Nm	11900 (15600)	18800 (20000)	33700	47800	63500	79100
		Thermal	Input Power kW	4.30	5.84	7.35	10.60	14.20	22.00
			Output Torque Nm	16200	23900	30400	47300	63900	102000
		Efficiency %	58	60	61	66	69	72	

DOUBLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	1.29	Mechanical	Input Power kW	2.94 (3.46)	4.62 (5.49)	7.78	10.50 (11.90)	14.90 (19.50)	17.40 (27.50)
			Output Torque Nm	11900 (14100)	18800 (22400)	33400	48100 (54900)	65500 (86200)	80800 (128000)
		Thermal	Input Power kW	3.54	4.86	6.71	9.60	11.90	15.30
			Output Torque Nm	14400	19700	28700	44000	52200	70900
		Efficiency %	53	56	59	61	61	64	
1000.	1.16	Mechanical	Input Power kW	2.57 (3.45)	3.86 (4.37)	6.88	9.34 (10.40)	12.20 (16.00)	14.50 (21.80)
			Output Torque Nm	11900 (16100)	18800 (21300)	33800	48100 (53500)	65500 (86100)	80800 (123000)
		Thermal	Input Power kW	5.23	7.09	8.16	11.90	16.00	20.20
			Output Torque Nm	24700	34900	40200	61300	86500	113000
		Efficiency %	57	59	61	63	66	68	
1200.	0.97	Mechanical	Input Power kW	2.44 (3.00)	3.55 (4.21)	5.92	8.25 (9.37)	11.60 (16.00)	13.60 (21.40)
			Output Torque Nm	11900 (14700)	18800 (22400)	33300	48100 (54700)	65500 (90900)	80800 (128000)
		Thermal	Input Power kW	3.32	4.41	6.01	8.64	10.40	13.50
			Output Torque Nm	16400	23500	33700	50400	58800	80200
		Efficiency %	51	52	56	58	58	61	
1250.	0.93	Mechanical	Input Power kW	2.17 (2.91)	3.23 (3.62)	5.72	7.78 (8.74)	10.20 (13.50)	12.10 (18.00)
			Output Torque Nm	11900 (16100)	18800 (21100)	33700	48100 (54100)	65500 (87100)	80800 (121000)
		Thermal	Input Power kW	4.30	6.77	6.81	11.20	15.20	19.00
			Output Torque Nm	24000	40100	40200	69700	98200	128000
		Efficiency %	54	57	58	61	63	65	
1400.	0.83	Mechanical	Input Power kW	2.17 (2.27)	3.15 (3.56)	5.55	7.41 (8.28)	10.40 (13.70)	11.80 (16.80)
			Output Torque Nm	11900 (12500)	18800 (21300)	33600	48100 (53900)	65500 (86700)	80800 (116000)
		Thermal	Input Power kW	3.24	4.29	5.20	7.39	9.43	13.20
			Output Torque Nm	18100	25900	31400	47900	59200	90800
		Efficiency %	49	51	51	55	55	60	
1500.	0.77	Mechanical	Input Power kW	1.90 (2.52)	2.84 (3.36)	4.40	6.75 (8.83)	8.77 (9.83)	10.40 (13.50)
			Output Torque Nm	11900 (16000)	18800 (22400)	30900	48100 (63300)	65500 (73600)	80800 (105000)
		Thermal	Input Power kW	4.30	6.12	6.81	10.90	14.90	18.10
			Output Torque Nm	27700	41400	48300	78000	112000	142000
		Efficiency %	52	55	56	59	62	64	
1600.	0.73	Mechanical	Input Power kW	1.82 (2.35)	2.76 (2.92)	4.79	6.28 (6.47)	7.81	9.37
			Output Torque Nm	11900 (15500)	18800 (19900)	33500	48100 (49600)	62900	78200
		Thermal	Input Power kW	3.71	5.06	6.26	8.79	11.40	17.40
			Output Torque Nm	24800	35100	44000	67800	92200	147000
		Efficiency %	50	52	53	58	61	64	
1750.	0.66	Mechanical	Input Power kW	1.69 (2.27)	2.59 (2.86)	4.55	5.98 (6.68)	7.80 (10.50)	9.23 (13.60)
			Output Torque Nm	11900 (16100)	18800 (20800)	33600	48100 (53900)	65500 (89100)	80800 (120000)
		Thermal	Input Power kW	3.13	4.57	4.57	8.34	13.10	17.60
			Output Torque Nm	22500	33800	33700	67600	111000	156000
		Efficiency %	50	50	52	57	59	61	
1800.	0.64	Mechanical	Input Power kW	1.66 (2.22)	2.48 (2.94)	3.84	5.84 (7.58)	7.63 (8.53)	9.04 (11.70)
			Output Torque Nm	11900 (16100)	18800 (22400)	30800	48100 (62700)	65500 (73400)	80800 (105000)
		Thermal	Input Power kW	3.62	5.57	5.57	9.61	13.80	17.40
			Output Torque Nm	26700	43200	45100	79900	120000	157000
		Efficiency %	49	52	53	57	59	61	
2000.	0.58	Mechanical	Input Power kW	1.55 (1.99)	2.32 (2.45)	4.01	5.25 (5.49)	6.54	7.82
			Output Torque Nm	11900 (15500)	18800 (19800)	33400	48100 (50300)	62700	78000
		Thermal	Input Power kW	3.60	4.85	5.98	8.34	10.80	16.50
			Output Torque Nm	28500	40300	50300	77200	105000	167000
		Efficiency %	47	49	51	56	58	61	
2100.	0.55	Mechanical	Input Power kW	1.58 (1.69)	2.37 (2.75)	4.25 (4.38)	5.53 (6.15)	7.54 (10.60)	8.44 (12.00)
			Output Torque Nm	11900 (12900)	18800 (21900)	34200 (35300)	48100 (53700)	65500 (93000)	80800 (115000)
		Thermal	Input Power kW	3.00	3.99	4.78	6.68	8.23	11.40
			Output Torque Nm	23300	32200	38600	58400	71600	110000
		Efficiency %	44	46	47	50	51	56	
2400.	0.48	Mechanical	Input Power kW	1.42 (1.90)	2.15 (2.54)	3.53	4.87 (5.49)	6.63 (10.30)	7.65 (12.00)
			Output Torque Nm	11900 (16100)	18800 (22400)	33000	48100 (54400)	65500 (103000)	80800 (128000)
		Thermal	Input Power kW	2.90	3.86	5.20	7.24	8.42	10.60
			Output Torque Nm	25100	34500	49200	72300	83700	113000
		Efficiency %	42	44	47	50	50	53	
2500.	0.46	Mechanical	Input Power kW	1.35 (1.80)	2.02 (2.39)	3.55 (4.13)	4.65 (5.23)	4.47	6.33
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (40000)	48100 (54400)	50600	75300
		Thermal	Input Power kW	3.15	4.15	5.12	7.91	12.00	14.50
			Output Torque Nm	28800	39700	49800	83000	140000	176000
		Efficiency %	43	45	47	50	56	58	
2800.	0.41	Mechanical	Input Power kW	1.27 (1.38)	1.91 (2.25)	3.42 (3.58)	4.39 (4.87)	5.97 (8.82)	6.65 (9.39)
			Output Torque Nm	11900 (13100)	18800 (22300)	34200 (35900)	48100 (53500)	65500 (97800)	80800 (115000)
		Thermal	Input Power kW	2.85	3.79	4.51	6.20	7.62	10.50
			Output Torque Nm	27900	38400	45500	68600	84200	129000
		Efficiency %	41	43	43	48	48	53	
3000.	0.39	Mechanical	Input Power kW	1.22 (1.62)	1.82 (2.15)	2.97	4.09 (4.60)	5.61 (8.76)	6.45 (10.10)
			Output Torque Nm	11900 (16100)	18800 (22400)	33000	48100 (54300)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.83	3.71	4.98	6.90	8.02	10.10
			Output Torque Nm	28800	39500	56300	82400	94600	128000
		Efficiency %	39	42	45	48	47	51	
3500.	0.33	Mechanical	Input Power kW	1.09 (1.20)	1.62 (1.91)	2.88 (3.06)	3.70 (4.09)	5.06 (7.72)	5.61 (7.89)
			Output Torque Nm	11900 (13300)	18800 (22400)	34200 (36400)	48100 (53400)	65500 (101000)	80800 (115000)
		Thermal	Input Power kW	2.79	3.65	4.32	5.91	7.28	10.00
			Output Torque Nm	32100	44000	52000	78100	95400	147000
		Efficiency %	38	40	41	45	45	50	
3600.	0.32	Mechanical	Input Power kW	1.07 (1.42)	1.61 (1.89)	2.61	3.57 (4.00)	4.92 (7.67)	5.64 (8.84)
			Output Torque Nm	11900 (16100)	18800 (22400)	32900	48100 (54200)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.77	3.64	4.88	6.67	7.77	9.75
			Output Torque Nm	32400	44300	63000	91800	105000	142000
		Efficiency %	38	39	43	45	45	48	
4200.	0.28	Mechanical	Input Power kW	0.96 (1.07)	1.43 (1.69)	2.54 (2.72)	3.23 (3.56)	4.44 (6.91)	4.91 (6.88)
			Output Torque Nm	11900 (13400)	18800 (22400)	34200 (36800)	48100 (53300)	65500 (104000)	80800 (115000)
		Thermal	Input Power kW	2.73	3.59	4.24	5.72	7.07	9.72
			Output Torque Nm	36100	49400	58200	87100	106000	163000
		Efficiency %	36	38	39	43	43	48	

Bracketed figures indicate a unit with two keys at 90° in the wheel hub only

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY	SIZE OF UNIT						
			10	12	14	17	20	24	
5.0	192.00	Mechanical	Input Power kW	93.90	139.00	194.00	350.00	537.00	678.00
			Output Torque Nm	4460	6630	9070	16700	25600	32900
		Thermal	Input Power kW	65.20	94.80	137.00	190.00	251.00	356.00
			Output Torque Nm	3090	4500	6400	9010	11900	17200
			Efficiency %	95	95	96	95	95	96
7.5	128.00	Mechanical	Input Power kW	68.10	105.00	142.00	295.00	441.00	659.00
			Output Torque Nm	4800	7430	10100	21000	31400	47000
		Thermal	Input Power kW	53.70	79.00	115.00	163.00	241.00	319.00
			Output Torque Nm	3780	5570	8130	11500	17100	22600
			Efficiency %	94	95	95	95	95	95
10.0	96.00	Mechanical	Input Power kW	47.20	85.60	115.00	243.00	342.00	493.00
			Output Torque Nm	4290	7860	10600	22900	31800	45900
		Thermal	Input Power kW	48.00	71.10	107.00	149.00	229.00	304.00
			Output Torque Nm	4360	6520	9840	14000	21300	28200
			Efficiency %	94	94	94	94	95	95
12.5	76.80	Mechanical	Input Power kW	52.00	68.50	106.00	179.00	240.00	420.00
			Output Torque Nm	6120	7970	12600	20900	28700	49900
		Thermal	Input Power kW	41.60	65.50	91.90	137.00	207.00	277.00
			Output Torque Nm	4890	7610	10900	15900	24800	32700
			Efficiency %	93	93	94	93	94	94
15.0	64.00	Mechanical	Input Power kW	41.90	60.00	110.00	183.00	269.00	365.00
			Output Torque Nm	5640	8110	15100	25100	37000	50400
		Thermal	Input Power kW	38.40	58.60	84.30	126.00	187.00	254.00
			Output Torque Nm	5160	7920	11500	17200	25800	35100
			Efficiency %	92	93	93	93	94	94
20.0	48.00	Mechanical	Input Power kW	39.90	62.30	88.80	155.00	202.00	291.00
			Output Torque Nm	7080	11100	15900	27900	36800	53200
		Thermal	Input Power kW	32.20	48.30	72.90	101.00	163.00	209.00
			Output Torque Nm	5710	8610	13100	18000	29500	37900
			Efficiency %	91	91	92	91	93	93
25.0	38.40	Mechanical	Input Power kW	32.90	48.90	70.10	115.00	179.00	236.00
			Output Torque Nm	7100	10900	15400	25400	40100	53700
		Thermal	Input Power kW	25.90	39.30	58.50	78.80	116.00	156.00
			Output Torque Nm	5580	8700	12800	17300	25900	35200
			Efficiency %	88	89	90	89	91	91
30.0	32.00	Mechanical	Input Power kW	27.90	44.60	63.50	111.00	165.00	205.00
			Output Torque Nm	7090	11600	17000	29000	43700	54700
		Thermal	Input Power kW	22.50	35.30	50.70	73.70	109.00	145.00
			Output Torque Nm	5710	9110	13500	19100	28800	38600
			Efficiency %	86	88	88	88	90	91
40.0	24.00	Mechanical	Input Power kW	24.00	37.50	52.50	74.70	110.00	150.00
			Output Torque Nm	7930	12600	17800	25700	38800	52800
		Thermal	Input Power kW	17.60	26.90	36.80	55.80	78.50	127.00
			Output Torque Nm	5790	9020	12400	19000	27400	44500
			Efficiency %	83	84	85	86	88	89
50.0	19.20	Mechanical	Input Power kW	20.00	30.30	42.60	81.70	80.90	118.00
			Output Torque Nm	7960	12300	17400	33900	34500	50800
		Thermal	Input Power kW	14.90	22.60	30.40	49.20	81.30	109.00
			Output Torque Nm	5890	9130	12300	20100	34700	46600
			Efficiency %	79	81	81	82	87	87
60.0	16.00	Mechanical	Input Power kW	16.90	26.70	39.30	66.70	90.60	109.00
			Output Torque Nm	7770	12600	18900	32300	43900	53800
		Thermal	Input Power kW	13.10	19.50	28.40	41.90	52.60	72.30
			Output Torque Nm	5980	9110	13500	20000	25200	35200
			Efficiency %	76	78	80	80	80	82
70.0	13.71	Mechanical	Input Power kW	13.90	22.20	32.60	55.00	79.90	96.80
			Output Torque Nm	7270	11900	17500	30200	44200	55200
		Thermal	Input Power kW	12.20	18.40	23.90	35.60	46.70	70.70
			Output Torque Nm	6390	9800	12700	19200	25400	39900
			Efficiency %	75	76	76	77	78	81

SINGLE REDUCTION

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	12.80	Mechanical	Input Power kW	15.80	22.50	32.70	56.00	93.80	126.00 (130.00)
			Output Torque Nm	9680	14000	20700	35800	59500	80800 (83100)
		Thermal	Input Power kW	14.60	21.80	28.30	46.80	65.20	84.00
			Output Torque Nm	8930	13600	17800	29900	41300	53700
		Efficiency %	82	83	84	85	86	87	
100.	9.60	Mechanical	Input Power kW	14.80	23.00	32.70	56.00	61.00	96.20 (105.00)
			Output Torque Nm	11800	18800	27000	46500	50600	80800 (88000)
		Thermal	Input Power kW	12.40	17.20	24.00	36.00	55.10	67.60
			Output Torque Nm	9890	14000	19800	29800	45700	56700
		Efficiency %	80	81	82	83	85	86	
125.	7.68	Mechanical	Input Power kW	12.20	18.00	25.70	42.20	64.70 (66.60)	77.90 (103.00)
			Output Torque Nm	11700	18000	25600	42600	65500 (67500)	80800 (107000)
		Thermal	Input Power kW	9.82	13.80	19.40	27.10	39.70	51.70
			Output Torque Nm	9390	13800	19300	27300	40000	53500
		Efficiency %	77	78	80	81	82	83	
150.	6.40	Mechanical	Input Power kW	10.30	16.30 (16.30)	23.00	40.50	55.10 (56.40)	66.80 (79.10)
			Output Torque Nm	11500	18800 (18800)	27000	47900	65500 (67000)	80800 (95800)
		Thermal	Input Power kW	8.57	12.40	17.00	25.50	37.80	47.50
			Output Torque Nm	9550	14300	20400	30000	44700	57300
		Efficiency %	74	77	77	79	81	82	
200.	4.80	Mechanical	Input Power kW	8.28 (9.48)	12.50	20.80	31.70 (32.00)	36.10	51.20 (61.80)
			Output Torque Nm	11900 (13700)	18500	31300	48100 (48500)	56000	80800 (97500)
		Thermal	Input Power kW	9.05	12.40	16.90	24.60	36.70	44.90
			Output Torque Nm	13000	18300	25300	37300	56900	70800
		Efficiency %	75	77	78	79	81	82	
225.	4.27	Mechanical	Input Power kW	7.69 (8.01)	11.40 (12.40)	17.40	28.40 (30.90)	37.90 (41.50)	45.90 (58.10)
			Output Torque Nm	11900 (12400)	18800 (20500)	30000	48100 (52400)	65500 (71600)	80800 (102000)
		Thermal	Input Power kW	7.16	10.10	13.70	20.20	29.30	36.80
			Output Torque Nm	11100	16600	23500	34100	50400	64700
		Efficiency %	71	74	75	76	78	80	
250.	3.84	Mechanical	Input Power kW	6.98 (7.84)	10.40 (11.50)	16.40	26.20 (26.90)	34.90 (41.90)	41.70 (64.80)
			Output Torque Nm	11900 (13400)	18800 (20700)	29500	48100 (49400)	65500 (78600)	80800 (126000)
		Thermal	Input Power kW	7.27	10.00	13.70	18.60	26.30	34.00
			Output Torque Nm	12400	18100	24600	34000	49200	65600
		Efficiency %	72	74	75	76	78	79	
300.	3.20	Mechanical	Input Power kW	6.02 (6.61)	9.06 (10.40)	14.30	22.50 (25.80)	29.80 (33.80)	35.80 (47.10)
			Output Torque Nm	11900 (13100)	18800 (21500)	31200	48100 (55300)	65500 (74300)	80800 (106000)
		Thermal	Input Power kW	6.38	8.98	12.10	17.60	25.30	31.60
			Output Torque Nm	12600	18600	26200	37700	55400	71100
		Efficiency %	69	72	73	74	77	78	
350.	2.74	Mechanical	Input Power kW	5.12	8.12	12.00	19.90	28.40 (29.90)	32.90 (42.10)
			Output Torque Nm	10900	18000	26900	46600	65500 (69100)	80800 (104000)
		Thermal	Input Power kW	4.85	6.77	8.58	12.70	17.30	24.20
			Output Torque Nm	10400	15000	19100	29600	39400	59000
		Efficiency %	60	62	62	66	65	70	
375.	2.56	Mechanical	Input Power kW	4.66 (5.70)	7.31 (8.60)	12.40	17.50 (18.80)	24.10 (30.40)	28.90 (45.40)
			Output Torque Nm	11900 (14600)	18800 (22100)	31900	48100 (51600)	65500 (82800)	80800 (128000)
		Thermal	Input Power kW	6.13	8.52	11.50	15.00	21.30	27.50
			Output Torque Nm	15800	21900	29500	41200	57800	76800
		Efficiency %	68	71	72	73	75	77	
400.	2.40	Mechanical	Input Power kW	4.52 (5.70)	6.40	11.10	16.00	19.00	27.00 (32.50)
			Output Torque Nm	11900 (15100)	18000	31700	46900	56000	80800 (97300)
		Thermal	Input Power kW	7.22	9.50	12.30	17.80	26.20	31.80
			Output Torque Nm	19100	26800	35100	52200	77200	95200
		Efficiency %	69	70	71	73	77	78	
450.	2.13	Mechanical	Input Power kW	4.03 (4.82)	6.37 (7.57)	10.10	15.10 (18.80)	20.60 (23.50)	24.80 (32.70)
			Output Torque Nm	11900 (14300)	18800 (22400)	31300	48100 (60200)	65500 (74700)	80800 (107000)
		Thermal	Input Power kW	5.41	7.65	10.20	14.30	20.60	25.70
			Output Torque Nm	16100	22600	31600	45700	65500	83900
		Efficiency %	65	69	70	71	74	76	
500.	1.92	Mechanical	Input Power kW	3.84 (4.90)	5.53 (6.40)	9.94	13.60 (14.90)	18.50 (23.70)	22.20 (34.40)
			Output Torque Nm	11900 (15300)	18800 (21800)	33900	48100 (52400)	65500 (84100)	80800 (126000)
		Thermal	Input Power kW	5.76	7.74	10.20	13.40	18.70	24.00
			Output Torque Nm	18000	26400	35000	47300	66000	87400
		Efficiency %	65	67	68	70	73	74	
600.	1.60	Mechanical	Input Power kW	3.65 (4.10)	5.47 (6.37)	9.15	13.00 (14.70)	17.80 (22.50)	20.90 (32.40)
			Output Torque Nm	11900 (13400)	18800 (21900)	33000	48100 (54500)	65500 (82700)	80800 (126000)
		Thermal	Input Power kW	3.86	5.22	7.25	10.70	13.20	17.00
			Output Torque Nm	12600	17900	26100	39400	48100	65500
		Efficiency %	56	59	62	63	63	66	
625.	1.54	Mechanical	Input Power kW	3.16 (4.21)	4.75 (5.45)	8.54	11.70 (12.80)	15.40 (19.90)	18.00 (27.60)
			Output Torque Nm	11900 (16000)	18800 (21600)	33900	48100 (52800)	65500 (85000)	80800 (124000)
		Thermal	Input Power kW	5.47	7.35	9.70	12.60	17.30	21.80
			Output Torque Nm	20800	29200	38600	51900	73500	98000
		Efficiency %	62	65	66	68	71	72	
700.	1.37	Mechanical	Input Power kW	3.23 (3.29)	4.84 (5.25)	7.77	11.60 (12.80)	15.90 (19.20)	18.20 (25.90)
			Output Torque Nm	11900 (12200)	18800 (20400)	30400	48100 (52900)	65500 (79000)	80800 (115000)
		Thermal	Input Power kW	3.74	5.05	6.26	9.11	11.80	16.60
			Output Torque Nm	13900	19600	24400	37500	48300	73500
		Efficiency %	54	57	57	60	60	65	
750.	1.28	Mechanical	Input Power kW	2.74 (3.57)	4.15 (4.93)	6.53	10.10 (13.50)	13.20 (14.90)	15.50 (20.30)
			Output Torque Nm	11900 (15600)	18800 (22400)	31100	48100 (64200)	65500 (74100)	80800 (106000)
		Thermal	Input Power kW	4.84	6.62	8.70	12.20	16.80	20.60
			Output Torque Nm	21300	30200	41600	58000	83800	108000
		Efficiency %	59	63	64	66	69	71	
800.	1.20	Mechanical	Input Power kW	2.69 (3.49)	3.90 (4.15)	6.84	9.11 (9.12)	11.90	14.40
			Output Torque Nm	11900 (15600)	18800 (20000)	33600	48100 (48200)	63300	78900
		Thermal	Input Power kW	4.04	5.47	6.83	9.83	13.10	20.20
			Output Torque Nm	18100	26500	33600	52000	69900	111000
		Efficiency %	57	59	60	65	68	71	

DOUBLE REDUCTION

Bracketed figures indicate a unit with two keys at 90° in the wheel hub only

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	1.07	Mechanical	Input Power kW	2.49 (3.03)	3.91 (4.64)	6.57	8.85 (10.10)	12.60 (17.10)	14.70 (23.20)
			Output Torque Nm	11900 (14600)	18800 (22400)	33300	48100 (54800)	65500 (89200)	80800 (128000)
		Thermal	Input Power kW	3.32	4.50	6.19	8.84	10.80	14.00
			Output Torque Nm	16000	21700	31400	48000	56300	76600
		Efficiency %	52	55	58	59	60	63	
		Efficiency %	52	55	58	59	60	63	
1000.	0.96	Mechanical	Input Power kW	2.17 (2.91)	3.26 (3.66)	5.80	7.88 (8.84)	10.30 (13.60)	12.20 (18.20)
			Output Torque Nm	11900 (16100)	18800 (21100)	33700	48100 (54000)	65500 (86900)	80800 (121000)
		Thermal	Input Power kW	4.74	6.73	7.04	11.10	15.00	18.80
			Output Torque Nm	26500	39300	41100	68300	96300	126000
		Efficiency %	56	58	60	62	65	67	
		Efficiency %	56	58	60	62	65	67	
1200.	0.80	Mechanical	Input Power kW	2.07 (2.62)	3.00 (3.56)	5.01	6.98 (7.91)	9.81 (14.00)	11.50 (18.10)
			Output Torque Nm	11900 (15200)	18800 (22400)	33200	48100 (54600)	65500 (94000)	80800 (128000)
		Thermal	Input Power kW	3.14	4.14	5.61	8.01	9.60	12.30
			Output Torque Nm	18300	26100	37300	55400	64100	87100
		Efficiency %	49	51	54	56	57	60	
		Efficiency %	49	51	54	56	57	60	
1250.	0.77	Mechanical	Input Power kW	1.84 (2.47)	2.74 (3.04)	4.84	6.58 (7.40)	8.60 (11.50)	10.20 (15.10)
			Output Torque Nm	11900 (16100)	18800 (20900)	33600	48100 (54200)	65500 (88200)	80800 (120000)
		Thermal	Input Power kW	3.74	5.85	5.85	10.10	13.90	17.90
			Output Torque Nm	24700	40900	40800	74500	107000	143000
		Efficiency %	53	55	57	60	62	64	
		Efficiency %	53	55	57	60	62	64	
1400.	0.69	Mechanical	Input Power kW	1.84 (1.95)	2.66 (3.05)	4.79 (4.86)	6.27 (7.00)	8.80 (12.00)	9.96 (14.20)
			Output Torque Nm	11900 (12600)	18800 (21600)	34200 (34700)	48100 (53800)	65500 (89600)	80800 (116000)
		Thermal	Input Power kW	3.06	4.04	4.85	6.85	8.68	12.20
			Output Torque Nm	20200	28800	34700	52600	64500	99100
		Efficiency %	48	50	50	54	54	59	
		Efficiency %	48	50	50	54	54	59	
1500.	0.64	Mechanical	Input Power kW	1.60 (2.15)	2.40 (2.85)	3.72	5.71 (7.40)	7.40 (8.28)	8.77 (11.30)
			Output Torque Nm	11900 (16100)	18800 (22400)	30800	48100 (62700)	65500 (73400)	80800 (105000)
		Thermal	Input Power kW	3.74	5.83	5.85	10.10	13.90	17.00
			Output Torque Nm	28500	46600	48900	86100	124000	158000
		Efficiency %	51	53	55	57	60	63	
		Efficiency %	51	53	55	57	60	63	
1600.	0.60	Mechanical	Input Power kW	1.54 (1.98)	2.34 (2.47)	4.05	5.30 (5.53)	6.57	7.86
			Output Torque Nm	11900 (15500)	18800 (19800)	33400	48100 (50200)	62700	78000
		Thermal	Input Power kW	3.53	4.81	5.93	8.28	10.70	16.30
			Output Torque Nm	27900	39400	49300	75700	103000	163000
		Efficiency %	49	50	52	57	60	63	
		Efficiency %	49	50	52	57	60	63	
1750.	0.55	Mechanical	Input Power kW	1.44 (1.92)	2.20 (2.41)	3.86	5.07 (5.62)	6.59 (9.03)	7.78 (11.40)
			Output Torque Nm	11900 (16100)	18800 (20600)	33500	48100 (53500)	65500 (90200)	80800 (119000)
		Thermal	Input Power kW	2.73	3.96	3.96	7.18	11.40	16.30
			Output Torque Nm	23200	34400	34400	68600	114000	171000
		Efficiency %	48	49	51	55	58	60	
		Efficiency %	48	49	51	55	58	60	
1800.	0.53	Mechanical	Input Power kW	1.40 (1.88)	2.11 (2.50)	3.25	4.95 (6.37)	6.44 (7.19)	7.62 (9.81)
			Output Torque Nm	11900 (16100)	18800 (22400)	30700	48100 (62200)	65500 (73200)	80800 (104000)
		Thermal	Input Power kW	3.15	4.79	4.79	8.28	12.10	16.40
			Output Torque Nm	27500	43800	45800	81200	124000	176000
		Efficiency %	48	51	52	55	58	60	
		Efficiency %	48	51	52	55	58	60	
2000.	0.48	Mechanical	Input Power kW	1.32 (1.69)	1.97 (2.07)	3.40	4.44 (4.68)	5.51	6.56
			Output Torque Nm	11900 (15400)	18800 (19800)	33300	48100 (50700)	62500	77800
		Thermal	Input Power kW	3.44	4.62	5.69	7.89	10.20	15.50
			Output Torque Nm	32200	45300	56400	86500	117000	187000
		Efficiency %	45	48	49	54	57	60	
		Efficiency %	45	48	49	54	57	60	
2100.	0.46	Mechanical	Input Power kW	1.34 (1.46)	2.01 (2.36)	3.61 (3.76)	4.68 (5.20)	6.38 (9.28)	7.12 (10.10)
			Output Torque Nm	11900 (13000)	18800 (22200)	34200 (35700)	48100 (53600)	65500 (95900)	80800 (115000)
		Thermal	Input Power kW	2.86	3.78	4.51	6.28	7.69	10.60
			Output Torque Nm	26200	36100	43000	64900	79200	122000
		Efficiency %	43	45	45	49	50	55	
		Efficiency %	43	45	45	49	50	55	
2400.	0.40	Mechanical	Input Power kW	1.21 (1.61)	1.83 (2.16)	2.99	4.13 (4.64)	5.62 (8.80)	6.47 (10.20)
			Output Torque Nm	11900 (16100)	18800 (22400)	33000	48100 (54300)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.77	3.67	4.94	6.84	7.90	9.94
			Output Torque Nm	28200	38700	55100	80700	92800	125000
		Efficiency %	41	43	46	49	49	52	
		Efficiency %	41	43	46	49	49	52	
2500.	0.38	Mechanical	Input Power kW	1.15 (1.53)	1.71 (2.03)	3.02 (3.61)	3.94 (4.43)	3.76	5.32
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (41100)	48100 (54300)	50400	75100
		Thermal	Input Power kW	3.02	3.96	4.88	7.51	11.40	13.70
			Output Torque Nm	32600	44700	55900	93000	158000	197000
		Efficiency %	42	44	46	49	54	57	
		Efficiency %	42	44	46	49	54	57	
2800.	0.34	Mechanical	Input Power kW	1.07 (1.19)	1.62 (1.92)	2.91 (3.08)	3.73 (4.12)	5.06 (7.70)	5.62 (7.92)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36300)	48100 (53400)	65500 (101000)	80800 (115000)
		Thermal	Input Power kW	2.72	3.61	4.28	5.86	7.17	9.89
			Output Torque Nm	31400	43100	51000	76600	93600	144000
		Efficiency %	40	42	42	46	46	52	
		Efficiency %	40	42	42	46	46	52	
3000.	0.32	Mechanical	Input Power kW	1.03 (1.38)	1.55 (1.83)	2.52	3.47 (3.90)	4.76 (7.44)	5.46 (8.56)
			Output Torque Nm	11900 (16100)	18800 (22400)	32900	48100 (54200)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.71	3.54	4.76	6.54	7.57	9.49
			Output Torque Nm	32500	44500	63300	92200	105000	142000
		Efficiency %	39	41	44	46	46	50	
		Efficiency %	39	41	44	46	46	50	
3500.	0.27	Mechanical	Input Power kW	0.92 (1.03)	1.38 (1.62)	2.45 (2.63)	3.14 (3.47)	4.29 (6.70)	4.74 (6.66)
			Output Torque Nm	11900 (13400)	18800 (22400)	34200 (36800)	48100 (53300)	65500 (104000)	80800 (115000)
		Thermal	Input Power kW	2.67	3.49	4.13	5.61	6.88	9.46
			Output Torque Nm	36300	49600	58400	87500	106000	164000
		Efficiency %	37	39	40	44	44	49	
		Efficiency %	37	39	40	44	44	49	
3600.	0.27	Mechanical	Input Power kW	0.91 (1.21)	1.37 (1.61)	2.21	3.03 (3.39)	4.17 (6.51)	4.78 (7.49)
			Output Torque Nm	11900 (16100)	18800 (22400)	32900	48100 (54100)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.66	3.49	4.67	6.36	7.36	9.19
			Output Torque Nm	36600	50000	70900	103000	117000	158000
		Efficiency %	36	38	42	44	44	47	
		Efficiency %	36	38	42	44	44	47	
4200.	0.23	Mechanical	Input Power kW	0.81 (0.92)	1.22 (1.43)	2.16 (2.35)	2.74 (3.02)	3.77 (5.87)	4.15 (5.81)
			Output Torque Nm	11900 (13600)	18800 (22400)	34200 (37200)	48100 (53200)	65500 (104000)	80800 (114000)
		Thermal	Input Power kW	2.63	3.45	4.06	5.45	6.70	9.19
			Output Torque Nm	40900	55900	65400	97800	118000	183000
		Efficiency %	35	37	38	42	42	47	
		Efficiency %	35	37	38	42	42	47	

DOUBLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	145.00	Mechanical	Input Power kW	80.20	119.00	166.00	299.00	441.00	582.00
			Output Torque Nm	5030	7480	10300	18900	27800	37400
		Thermal	Input Power kW	52.30	77.80	114.00	163.00	209.00	308.00
			Output Torque Nm	3270	4880	7050	10300	13100	19700
			Efficiency %	95	95	96	96	95	96
7.5	96.67	Mechanical	Input Power kW	57.70	89.10	121.00	251.00	375.00	561.00
			Output Torque Nm	5360	8310	11300	23500	35300	52900
		Thermal	Input Power kW	43.10	63.90	93.90	135.00	196.00	266.00
			Output Torque Nm	4000	5950	8760	12600	18400	25000
			Efficiency %	94	94	94	94	95	95
10.0	72.50	Mechanical	Input Power kW	39.90	72.40	97.50	206.00	290.00	418.00
			Output Torque Nm	4780	8760	11800	25500	35600	51400
		Thermal	Input Power kW	38.40	57.50	86.70	124.00	185.00	252.00
			Output Torque Nm	4590	6950	10500	15400	22700	31000
			Efficiency %	93	94	94	94	95	95
12.5	58.00	Mechanical	Input Power kW	43.90	57.80	89.70	152.00	203.00	356.00
			Output Torque Nm	6800	8870	14000	23400	32100	55800
		Thermal	Input Power kW	33.30	52.60	74.50	114.00	167.00	229.00
			Output Torque Nm	5150	8060	11600	17500	26400	35900
			Efficiency %	92	93	93	93	94	94
15.0	48.33	Mechanical	Input Power kW	35.40	50.60	93.20	154.00	227.00	308.00
			Output Torque Nm	6260	9020	16800	27900	41300	56400
		Thermal	Input Power kW	30.70	47.10	68.20	104.00	151.00	210.00
			Output Torque Nm	5420	8390	12200	18800	27500	38400
			Efficiency %	91	92	92	93	94	94
20.0	36.25	Mechanical	Input Power kW	33.70	52.50	74.80	131.00	168.00	242.00
			Output Torque Nm	7850	12400	17700	31000	40400	58200
		Thermal	Input Power kW	25.70	38.80	58.70	83.50	132.00	174.00
			Output Torque Nm	5970	9110	13900	19700	31600	41700
			Efficiency %	90	91	91	91	92	93
25.0	29.00	Mechanical	Input Power kW	27.70	41.20	59.00	96.60	151.00	195.00
			Output Torque Nm	7850	12000	17000	28100	44600	58500
		Thermal	Input Power kW	20.70	31.60	47.50	65.30	94.80	129.00
			Output Torque Nm	5850	9200	13700	18900	27900	38600
			Efficiency %	88	88	89	89	91	91
30.0	24.17	Mechanical	Input Power kW	23.50	37.60	53.30	93.40	139.00	170.00
			Output Torque Nm	7830	12800	18800	32100	48400	59700
		Thermal	Input Power kW	18.00	28.40	41.00	60.90	89.60	121.00
			Output Torque Nm	5980	9620	14400	20800	31200	42300
			Efficiency %	86	87	87	88	90	90
40.0	18.13	Mechanical	Input Power kW	20.20	31.50	44.10	62.60	92.50	121.00
			Output Torque Nm	8720	13900	19600	28300	42700	56100
		Thermal	Input Power kW	14.10	21.70	30.00	45.80	64.20	104.00
			Output Torque Nm	6060	9530	13200	20600	29500	48100
			Efficiency %	82	83	84	85	87	89
50.0	14.50	Mechanical	Input Power kW	16.80	25.50	35.70	68.40	65.40	95.40
			Output Torque Nm	8720	13500	19100	37200	36600	54000
		Thermal	Input Power kW	12.00	18.30	24.80	40.70	66.10	89.40
			Output Torque Nm	6170	9650	13200	21900	37000	50500
			Efficiency %	78	80	81	82	86	87
60.0	12.08	Mechanical	Input Power kW	14.20	22.40	32.90	55.70	75.50	90.70
			Output Torque Nm	8480	13700	20600	35400	48000	58800
		Thermal	Input Power kW	10.50	15.90	23.10	34.50	43.70	60.60
			Output Torque Nm	6260	9660	14400	21600	27400	38900
			Efficiency %	75	77	79	79	79	81
70.0	10.36	Mechanical	Input Power kW	11.60	18.60	27.30	45.90	66.70	80.60
			Output Torque Nm	7910	13000	19100	33000	48300	60400
		Thermal	Input Power kW	9.84	14.80	19.50	29.40	38.70	58.90
			Output Torque Nm	6660	10300	13600	20800	27600	43800
			Efficiency %	73	75	76	77	77	81

SINGLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	9.67	Mechanical	Input Power kW	13.00	17.80	27.90	45.80	79.00 (80.10)	96.40 (98.20)
			Output Torque Nm	10400	14500	22900	38100	65500 (66400)	80800 (82300)
		Thermal	Input Power kW	13.00	18.60	24.00	39.60	52.30	69.30
			Output Torque Nm	10400	15100	19700	32900	43200	58000
			Efficiency %	81	82	82	84	85	86
100.	7.25	Mechanical	Input Power kW	11.50 (12.20)	17.70 (17.80)	26.90	44.60 (45.80)	48.90	73.70 (84.00)
			Output Torque Nm	11900 (12600)	18800 (18800)	28900	48100 (49400)	53000	80800 (92100)
		Thermal	Input Power kW	10.70	14.70	20.40	30.20	45.80	56.50
			Output Torque Nm	11100	15600	21900	32500	49600	61900
			Efficiency %	78	80	81	81	84	85
125.	5.80	Mechanical	Input Power kW	9.61 (10.00)	14.50 (14.80)	21.10	34.80	49.70 (54.90)	59.80 (85.10)
			Output Torque Nm	11900 (12400)	18800 (19200)	27300	45600	65500 (72200)	80800 (115000)
		Thermal	Input Power kW	8.47	12.00	16.50	22.80	33.00	42.80
			Output Torque Nm	10500	15500	21200	29700	43200	57700
			Efficiency %	75	77	78	79	81	82
150.	4.83	Mechanical	Input Power kW	8.26 (8.46)	12.60 (13.40)	18.90	31.40 (33.40)	42.40 (45.50)	51.30 (63.70)
			Output Torque Nm	11900 (12200)	18800 (20000)	29500	48100 (51100)	65500 (70200)	80800 (100000)
		Thermal	Input Power kW	7.42	10.70	14.50	21.50	31.50	39.60
			Output Torque Nm	10700	15900	22600	32800	48400	62200
			Efficiency %	72	75	76	77	79	81
200.	3.63	Mechanical	Input Power kW	6.38 (7.72)	9.54	16.40	24.30	27.90	39.30 (47.60)
			Output Torque Nm	11900 (14400)	18300	32000	47900	56400	80800 (98000)
		Thermal	Input Power kW	8.08	10.90	14.70	21.30	31.50	38.50
			Output Torque Nm	15100	20900	28700	42000	63700	79100
			Efficiency %	74	76	77	78	80	81
225.	3.22	Mechanical	Input Power kW	5.96 (6.55)	8.82 (10.20)	14.00	21.90 (25.30)	29.20 (33.30)	35.30 (46.50)
			Output Torque Nm	11900 (13100)	18800 (21600)	31300	48100 (55500)	65500 (74600)	80800 (107000)
		Thermal	Input Power kW	6.34	8.84	11.90	17.40	25.00	31.30
			Output Torque Nm	12700	18800	26500	38000	55800	71500
			Efficiency %	69	72	73	74	77	78
250.	2.90	Mechanical	Input Power kW	5.39 (6.39)	8.05 (9.34)	13.30	20.20 (21.50)	26.90 (33.70)	32.10 (50.90)
			Output Torque Nm	11900 (14100)	18800 (21800)	31200	48100 (51100)	65500 (82200)	80800 (128000)
		Thermal	Input Power kW	6.44	8.83	11.90	16.10	22.60	29.10
			Output Torque Nm	14200	20600	27800	38200	54900	73000
			Efficiency %	70	72	74	75	77	78
300.	2.42	Mechanical	Input Power kW	4.66 (5.39)	7.00 (8.34)	11.20	17.40 (21.10)	23.00 (26.30)	27.60 (36.50)
			Output Torque Nm	11900 (13800)	18800 (22400)	31300	48100 (58300)	65500 (74800)	80800 (107000)
		Thermal	Input Power kW	5.66	7.91	10.60	15.30	21.80	27.20
			Output Torque Nm	14500	21200	29800	42400	61900	79600
			Efficiency %	67	71	71	73	75	77
350.	2.07	Mechanical	Input Power kW	4.23	6.60 (6.69)	9.90	16.00 (16.40)	22.20 (24.80)	25.60 (34.30)
			Output Torque Nm	11500	18800 (19000)	28400	48100 (49300)	65500 (73200)	80800 (109000)
		Thermal	Input Power kW	4.29	5.89	7.39	10.90	14.50	20.40
			Output Torque Nm	11700	16700	21100	32500	42500	64100
			Efficiency %	58	60	60	63	64	68
375.	1.93	Mechanical	Input Power kW	3.61 (4.65)	5.66 (6.57)	10.10	13.50 (14.70)	18.60 (23.80)	22.20 (34.50)
			Output Torque Nm	11900 (15400)	18800 (21800)	33600	48100 (52400)	65500 (84000)	80800 (126000)
		Thermal	Input Power kW	5.58	7.69	10.20	13.20	18.60	23.90
			Output Torque Nm	18500	25600	33900	47000	65600	86900
			Efficiency %	66	69	70	71	74	75
400.	1.81	Mechanical	Input Power kW	3.50 (4.47)	4.90	8.57	12.30	14.60	20.80 (24.90)
			Output Torque Nm	11900 (15300)	17700	31600	46400	55700	80800 (96800)
		Thermal	Input Power kW	6.61	8.65	9.70	16.00	23.40	28.00
			Output Torque Nm	22700	31500	35800	60800	89500	109000
			Efficiency %	67	68	69	71	75	76
450.	1.61	Mechanical	Input Power kW	3.13 (3.93)	4.93 (5.87)	7.80	11.70 (15.40)	15.90 (18.10)	19.10 (25.10)
			Output Torque Nm	11900 (15000)	18800 (22400)	31200	48100 (63400)	65500 (74400)	80800 (106000)
		Thermal	Input Power kW	4.93	6.91	9.10	12.70	18.10	22.50
			Output Torque Nm	18900	26400	36400	52500	74500	95200
			Efficiency %	63	67	68	69	72	74
500.	1.45	Mechanical	Input Power kW	2.98 (3.99)	4.29 (4.90)	7.71	10.60 (11.70)	14.30 (18.60)	17.10 (26.20)
			Output Torque Nm	11900 (16000)	18800 (21500)	33900	48100 (53100)	65500 (85200)	80800 (124000)
		Thermal	Input Power kW	5.26	7.06	9.30	12.10	16.60	21.10
			Output Torque Nm	21200	31100	41000	54900	75900	99800
			Efficiency %	63	65	66	68	72	73
600.	1.21	Mechanical	Input Power kW	2.85 (3.37)	4.27 (5.08)	7.20	10.10 (11.60)	13.90 (18.50)	16.30 (25.70)
			Output Torque Nm	11900 (14100)	18800 (22400)	33300	48100 (54900)	65500 (87100)	80800 (128000)
		Thermal	Input Power kW	3.45	4.63	6.40	9.37	11.40	14.70
			Output Torque Nm	14500	20400	29600	44400	53400	72900
			Efficiency %	54	57	60	61	61	64
625.	1.16	Mechanical	Input Power kW	2.46 (3.31)	3.69 (4.19)	6.61	9.08 (10.10)	11.90 (15.60)	13.90 (21.10)
			Output Torque Nm	11900 (16100)	18800 (21300)	33800	48100 (53500)	65500 (86000)	80800 (123000)
		Thermal	Input Power kW	5.04	6.74	8.13	11.40	15.50	19.50
			Output Torque Nm	24700	34500	41700	60600	85600	113000
			Efficiency %	60	63	65	67	69	71
700.	1.04	Mechanical	Input Power kW	2.52 (2.60)	3.78 (4.21)	6.39	9.08 (10.20)	12.50 (15.80)	14.10 (20.30)
			Output Torque Nm	11900 (12300)	18800 (21000)	32000	48100 (54000)	65500 (83200)	80800 (116000)
		Thermal	Input Power kW	3.35	4.50	5.53	7.99	10.20	14.40
			Output Torque Nm	15900	22400	27600	42200	53700	82200
			Efficiency %	53	55	55	58	59	63
750.	0.97	Mechanical	Input Power kW	2.14 (2.81)	3.23 (3.84)	5.06	7.85 (10.40)	10.20 (11.50)	12.00 (15.60)
			Output Torque Nm	11900 (15800)	18800 (22400)	31000	48100 (64000)	65500 (73800)	80800 (105000)
		Thermal	Input Power kW	4.47	6.07	7.97	11.00	15.20	18.50
			Output Torque Nm	25200	35600	49000	67800	97700	125000
			Efficiency %	57	61	62	64	67	69
800.	0.91	Mechanical	Input Power kW	2.09 (2.72)	3.04 (3.22)	5.32	7.07 (7.19)	9.14	11.10
			Output Torque Nm	11900 (15500)	18800 (19900)	33500	48100 (48900)	63100	78500
		Thermal	Input Power kW	3.71	5.00	6.23	8.89	11.70	18.00
			Output Torque Nm	21300	31200	39300	60600	80700	128000
			Efficiency %	55	57	58	63	67	69

DOUBLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	0.81	Mechanical	Input Power kW	1.94 (2.49)	3.05 (3.63)	5.11	6.90 (7.83)	9.81 (14.00)	11.50 (18.10)
			Output Torque Nm	11900 (15300)	18800 (22400)	33200	48100 (54600)	65500 (93800)	80800 (128000)
		Thermal	Input Power kW	3.04	4.09	5.56	7.89	9.55	12.30
			Output Torque Nm	18800	25300	36200	55100	63700	86600
1000.	0.73	Mechanical	Input Power kW	1.70 (2.28)	2.55 (2.83)	4.53	6.15 (6.91)	7.97 (10.70)	9.43 (14.00)
			Output Torque Nm	11900 (16100)	18800 (20900)	33600	48100 (54100)	65500 (88600)	80800 (120000)
		Thermal	Input Power kW	3.76	5.59	5.59	9.96	13.40	17.10
			Output Torque Nm	26800	41700	41600	78400	111000	148000
1200.	0.60	Mechanical	Input Power kW	1.62 (2.15)	2.35 (2.79)	3.91	5.45 (6.16)	7.66 (11.50)	8.92 (14.10)
			Output Torque Nm	11900 (15900)	18800 (22400)	33100	48100 (54500)	65500 (98600)	80800 (128000)
		Thermal	Input Power kW	2.89	3.79	5.14	7.28	8.59	11.00
			Output Torque Nm	21500	30700	43800	64600	73500	99700
1250.	0.58	Mechanical	Input Power kW	1.44 (1.94)	2.14 (2.35)	3.77	5.15 (5.73)	6.70 (9.16)	7.91 (11.60)
			Output Torque Nm	11900 (16100)	18800 (20700)	33500	48100 (53600)	65500 (89900)	80800 (119000)
		Thermal	Input Power kW	2.99	4.74	4.74	8.04	11.20	16.30
			Output Torque Nm	25100	42400	42300	75600	111000	167000
1400.	0.52	Mechanical	Input Power kW	1.44 (1.55)	2.08 (2.43)	3.76 (3.89)	4.90 (5.45)	6.88 (9.82)	7.75 (11.00)
			Output Torque Nm	11900 (12900)	18800 (22000)	34200 (35500)	48100 (53600)	65500 (94000)	80800 (115000)
		Thermal	Input Power kW	2.83	3.72	4.45	6.23	7.77	10.90
			Output Torque Nm	23900	34000	40600	61400	74100	114000
1500.	0.48	Mechanical	Input Power kW	1.26 (1.69)	1.88 (2.23)	2.90	4.47 (5.73)	5.77 (6.43)	6.81 (8.76)
			Output Torque Nm	11900 (16100)	18800 (22400)	30700	48100 (61900)	65500 (73100)	80800 (104000)
		Thermal	Input Power kW	2.99	4.74	4.74	8.04	11.20	15.60
			Output Torque Nm	28900	48500	50700	87300	129000	187000
1600.	0.45	Mechanical	Input Power kW	1.21 (1.56)	1.83 (1.93)	3.18	4.14 (4.36)	5.09	6.07
			Output Torque Nm	11900 (15400)	18800 (19800)	33300	48100 (50700)	62500	77700
		Thermal	Input Power kW	3.31	4.49	5.53	7.65	9.77	14.90
			Output Torque Nm	33400	47000	58500	89600	121000	193000
1750.	0.41	Mechanical	Input Power kW	1.13 (1.52)	1.73 (1.87)	3.03	3.97 (4.35)	5.16 (7.20)	6.07 (8.77)
			Output Torque Nm	11900 (16100)	18800 (20400)	33400	48100 (52900)	65500 (91900)	80800 (117000)
		Thermal	Input Power kW	2.20	3.23	3.23	5.82	9.17	13.20
			Output Torque Nm	23700	35800	35700	71100	117000	177000
1800.	0.40	Mechanical	Input Power kW	1.10 (1.48)	1.65 (1.96)	2.54	3.87 (4.92)	5.03 (5.59)	5.93 (7.61)
			Output Torque Nm	11900 (16100)	18800 (22400)	30600	48100 (61400)	65500 (72900)	80800 (104000)
		Thermal	Input Power kW	2.53	3.90	3.90	6.71	9.76	14.00
			Output Torque Nm	28000	45400	47400	84200	128000	193000
2000.	0.36	Mechanical	Input Power kW	1.04 (1.33)	1.54 (1.62)	2.66	3.48 (3.65)	4.28	5.08
			Output Torque Nm	11900 (15400)	18800 (19800)	33200	48100 (50600)	62300	77500
		Thermal	Input Power kW	2.99	4.33	4.74	7.33	9.40	14.30
			Output Torque Nm	35400	54300	59900	103000	139000	222000
2100.	0.35	Mechanical	Input Power kW	1.05 (1.16)	1.58 (1.87)	2.84 (3.01)	3.67 (4.07)	5.00 (7.60)	5.55 (7.84)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36300)	48100 (53400)	65500 (100000)	80800 (115000)
		Thermal	Input Power kW	2.67	3.53	4.18	5.77	7.01	9.67
			Output Torque Nm	31300	43000	50800	76300	92300	142000
2400.	0.30	Mechanical	Input Power kW	0.95 (1.27)	1.44 (1.70)	2.35	3.24 (3.63)	4.40 (6.90)	5.05 (7.95)
			Output Torque Nm	11900 (16100)	18800 (22400)	32900	48100 (54100)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.61	3.43	4.62	6.34	7.26	9.09
			Output Torque Nm	33800	46100	65600	95500	109000	147000
2500.	0.29	Mechanical	Input Power kW	0.90 (1.21)	1.34 (1.59)	2.38 (2.94)	3.10 (3.47)	2.92	4.12
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (42500)	48100 (54100)	50300	74800
		Thermal	Input Power kW	2.86	3.71	4.56	7.00	10.60	12.70
			Output Torque Nm	39100	53500	66500	110000	188000	235000
2800.	0.26	Mechanical	Input Power kW	0.85 (0.95)	1.28 (1.51)	2.29 (2.47)	2.93 (3.23)	3.97 (6.22)	4.39 (6.17)
			Output Torque Nm	11900 (13500)	18800 (22400)	34200 (36900)	48100 (53300)	65500 (104000)	80800 (115000)
		Thermal	Input Power kW	2.57	3.39	4.00	5.44	6.60	9.07
			Output Torque Nm	37700	51500	60500	90600	110000	169000
3000.	0.24	Mechanical	Input Power kW	0.82 (1.09)	1.21 (1.43)	1.98	2.73 (3.06)	3.74 (5.85)	4.27 (6.71)
			Output Torque Nm	11900 (16100)	18800 (22400)	32900	48100 (54000)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.57	3.32	4.46	6.11	7.00	8.73
			Output Torque Nm	39100	53200	75500	110000	124000	168000
3500.	0.21	Mechanical	Input Power kW	0.73 (0.82)	1.08 (1.28)	1.93 (2.11)	2.47 (2.72)	3.37 (5.27)	3.71 (5.20)
			Output Torque Nm	11900 (13600)	18800 (22400)	34200 (37400)	48100 (53200)	65500 (104000)	80800 (114000)
		Thermal	Input Power kW	2.53	3.29	3.87	5.23	6.36	8.73
			Output Torque Nm	43700	59600	69600	104000	125000	194000
3600.	0.20	Mechanical	Input Power kW	0.72 (0.96)	1.07 (1.27)	1.74	2.38 (2.65)	3.28 (5.13)	3.74 (5.87)
			Output Torque Nm	11900 (16100)	18800 (22400)	32800	48100 (53900)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.53	3.29	3.90	5.95	6.84	8.52
			Output Torque Nm	44000	59900	75100	123000	139000	187000
4200.	0.17	Mechanical	Input Power kW	0.64 (0.73)	0.96 (1.13)	1.71 (1.88)	2.15 (2.37)	2.97 (4.63)	3.25 (4.54)
			Output Torque Nm	11900 (13800)	18800 (22400)	34200 (37800)	48100 (53100)	65500 (104000)	80800 (114000)
		Thermal	Input Power kW	2.51	3.26	3.83	5.09	6.23	8.54
			Output Torque Nm	49400	67100	78300	117000	140000	217000
			Efficiency %	34	36	36	40	40	45

DOUBLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	96.00	Mechanical	Input Power kW	63.10	93.70	131.00	236.00	330.00	459.00
			Output Torque Nm	5920	8830	12100	22400	31300	44500
		Thermal	Input Power kW	35.90	54.60	82.50	124.00	154.00	239.00
			Output Torque Nm	3370	5140	7650	11700	14500	23200
			Efficiency %	94	95	95	95	95	96
7.5	64.00	Mechanical	Input Power kW	45.00	69.50	94.30	196.00	294.00	424.00
			Output Torque Nm	6260	9720	13200	27600	41500	60000
		Thermal	Input Power kW	30.60	45.70	67.80	100.00	141.00	198.00
			Output Torque Nm	4250	6380	9490	14100	19900	28000
			Efficiency %	93	94	94	94	95	95
10.0	48.00	Mechanical	Input Power kW	31.10	56.40	75.90	160.00	226.00	326.00
			Output Torque Nm	5560	10200	13800	29900	41700	60300
		Thermal	Input Power kW	27.10	41.10	62.00	91.90	132.00	186.00
			Output Torque Nm	4850	7440	11300	17100	24300	34300
			Efficiency %	92	93	93	94	94	94
12.5	38.40	Mechanical	Input Power kW	34.20	45.00	69.80	118.00	158.00	270.00
			Output Torque Nm	7910	10300	16300	27300	37500	63600
		Thermal	Input Power kW	23.50	37.30	53.30	83.60	119.00	169.00
			Output Torque Nm	5430	8550	12500	19300	28200	39700
			Efficiency %	91	92	92	93	93	94
15.0	32.00	Mechanical	Input Power kW	27.50	39.30	72.40	120.00	177.00	234.00
			Output Torque Nm	7260	10500	19500	32500	48200	64100
		Thermal	Input Power kW	22.00	33.50	48.70	76.40	108.00	155.00
			Output Torque Nm	5800	8910	13100	20600	29400	42300
			Efficiency %	90	91	92	92	93	93
20.0	24.00	Mechanical	Input Power kW	26.10	40.70	58.00	101.00	122.00	183.00
			Output Torque Nm	9060	14300	20500	35900	43700	66000
		Thermal	Input Power kW	18.40	27.60	41.70	61.30	93.40	128.00
			Output Torque Nm	6380	9640	14700	21600	33500	46300
			Efficiency %	89	89	90	90	92	92
25.0	19.20	Mechanical	Input Power kW	21.50	31.90	45.60	74.70	117.00	148.00
			Output Torque Nm	9020	13800	19600	32500	51500	66300
		Thermal	Input Power kW	15.00	22.50	34.10	48.00	69.20	96.50
			Output Torque Nm	6260	9730	14600	20800	30400	43200
			Efficiency %	86	87	88	88	90	90
30.0	16.00	Mechanical	Input Power kW	18.10	29.00	41.10	72.00	106.00	129.00
			Output Torque Nm	8950	14600	21500	36900	55300	67700
		Thermal	Input Power kW	13.00	20.60	29.30	44.70	65.10	89.00
			Output Torque Nm	6390	10400	15300	22800	33800	46600
			Efficiency %	84	86	86	87	88	89
40.0	12.00	Mechanical	Input Power kW	15.60	23.40	34.00	48.00	70.90	88.10
			Output Torque Nm	9900	15200	22300	32300	48700	60700
		Thermal	Input Power kW	10.30	15.90	21.80	33.40	46.40	76.30
			Output Torque Nm	6490	10300	14200	22400	31700	52500
			Efficiency %	79	81	82	84	86	88
50.0	9.60	Mechanical	Input Power kW	13.00	19.60	27.50	51.80	47.70	69.40
			Output Torque Nm	9840	15300	21600	41700	39600	58400
		Thermal	Input Power kW	8.74	13.40	18.00	29.90	47.30	64.90
			Output Torque Nm	6600	10400	14100	23900	39300	54600
			Efficiency %	76	78	79	80	84	85
60.0	8.00	Mechanical	Input Power kW	10.90	17.20	25.30	42.70	58.10	69.50
			Output Torque Nm	9550	15500	23300	40000	54500	66900
		Thermal	Input Power kW	7.71	11.70	16.60	25.40	32.10	45.60
			Output Torque Nm	6690	10500	15200	23500	29900	43500
			Efficiency %	73	75	77	78	78	80
70.0	6.86	Mechanical	Input Power kW	8.95	14.30	21.00	35.20	51.50	61.90
			Output Torque Nm	8860	14500	21500	37200	54900	68700
		Thermal	Input Power kW	7.22	10.90	14.20	21.60	28.70	43.90
			Output Torque Nm	7120	11100	14500	22600	30200	48400
			Efficiency %	71	73	73	75	76	79

SINGLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	6.40	Mechanical	Input Power kW	9.71	11.90	21.90	30.60	53.70 (56.80)	65.30 (65.50)
			Output Torque Nm	11400	14200	26500	37500	65500 (69200)	80800 (81000)
		Thermal	Input Power kW	10.00	15.10	16.10	28.20	35.90	54.30
			Output Torque Nm	11700	18000	19500	34500	43800	67100
			Efficiency %	79	80	81	82	83	84
100.	4.80	Mechanical	Input Power kW	7.83 (9.05)	11.90	20.10	30.40 (30.60)	35.30	50.00 (60.50)
			Output Torque Nm	11900 (13800)	18500	31600	48100 (48400)	56300	80800 (97900)
		Thermal	Input Power kW	8.76	12.00	16.10	24.00	35.90	44.20
			Output Torque Nm	13300	18700	25400	37900	57300	71300
			Efficiency %	76	78	79	79	82	82
125.	3.84	Mechanical	Input Power kW	6.59 (7.48)	9.92 (11.00)	15.80	25.10 (26.00)	33.90 (41.00)	40.80 (63.60)
			Output Torque Nm	11900 (13500)	18800 (20900)	29800	48100 (49800)	65500 (79100)	80800 (126000)
		Thermal	Input Power kW	7.03	9.75	13.30	18.10	25.80	33.40
			Output Torque Nm	12700	18400	25100	34600	49600	66100
			Efficiency %	72	74	76	76	78	80
150.	3.20	Mechanical	Input Power kW	5.68 (6.31)	8.62 (9.97)	13.80	21.60 (25.00)	29.00 (33.10)	35.00 (46.20)
			Output Torque Nm	11900 (13200)	18800 (21700)	31400	48100 (55700)	65500 (74700)	80800 (107000)
		Thermal	Input Power kW	6.18	8.73	11.70	17.20	24.80	31.10
			Output Torque Nm	13000	19000	26700	38300	55900	71700
			Efficiency %	70	73	73	74	77	79
200.	2.40	Mechanical	Input Power kW	4.37 (5.51)	6.40	11.10	16.30	18.90	26.70 (32.10)
			Output Torque Nm	11900 (15100)	18000	31800	47000	56000	80800 (97300)
		Thermal	Input Power kW	7.00	9.26	12.20	17.70	25.90	31.40
			Output Torque Nm	19100	26100	34700	51000	76900	95000
			Efficiency %	71	73	75	75	78	79
225.	2.13	Mechanical	Input Power kW	4.09 (4.86)	6.04 (7.20)	9.61	15.00 (18.70)	20.00 (22.80)	24.10 (31.80)
			Output Torque Nm	11900 (14200)	18800 (22400)	31300	48100 (60000)	65500 (74700)	80800 (107000)
		Thermal	Input Power kW	5.37	7.39	9.86	14.20	20.20	25.20
			Output Torque Nm	15700	23000	32100	45400	66100	84600
			Efficiency %	67	70	71	72	74	76
250.	1.92	Mechanical	Input Power kW	3.71 (4.74)	5.51 (6.40)	9.86	13.80 (15.00)	18.40 (23.50)	21.90 (34.00)
			Output Torque Nm	11900 (15300)	18800 (21800)	33700	48100 (52300)	65500 (84000)	80800 (126000)
		Thermal	Input Power kW	5.57	7.54	10.00	13.30	18.40	23.70
			Output Torque Nm	18000	25700	34100	46200	65700	87200
			Efficiency %	67	70	72	72	74	76
300.	1.60	Mechanical	Input Power kW	3.21 (4.00)	4.80 (5.72)	7.61	11.90 (15.60)	15.70 (17.90)	18.80 (24.70)
			Output Torque Nm	11900 (14900)	18800 (22400)	31200	48100 (63000)	65500 (74400)	80800 (106000)
		Thermal	Input Power kW	4.92	6.77	8.93	12.80	17.90	22.30
			Output Torque Nm	18400	26600	36600	51500	74700	95600
			Efficiency %	65	68	69	70	73	75
350.	1.37	Mechanical	Input Power kW	3.04 (3.11)	4.60 (5.03)	7.47	11.20 (12.30)	15.50 (18.70)	17.70 (25.30)
			Output Torque Nm	11900 (12200)	18800 (20500)	30700	48100 (53300)	65500 (79300)	80800 (116000)
		Thermal	Input Power kW	3.61	4.90	6.07	8.87	11.60	16.30
			Output Torque Nm	14200	20000	24900	38100	48700	74100
			Efficiency %	55	57	57	60	60	65
375.	1.28	Mechanical	Input Power kW	2.49 (3.36)	3.88 (4.42)	6.98	9.29 (10.30)	12.70 (16.60)	15.20 (23.10)
			Output Torque Nm	11900 (16100)	18800 (21400)	33900	48100 (53400)	65500 (85700)	80800 (123000)
		Thermal	Input Power kW	4.91	6.70	8.82	11.30	15.70	20.00
			Output Torque Nm	23700	32500	42900	58700	81000	106000
			Efficiency %	63	66	68	69	72	73
400.	1.20	Mechanical	Input Power kW	2.41 (3.06)	3.32	5.86	8.27	9.88	14.20 (16.90)
			Output Torque Nm	11900 (15200)	17500	31400	45600	55300	80800 (96200)
		Thermal	Input Power kW	4.73	6.97	6.97	12.40	18.40	24.00
			Output Torque Nm	23500	37000	37400	68500	103000	137000
			Efficiency %	65	66	67	69	73	74
450.	1.07	Mechanical	Input Power kW	2.16 (2.84)	3.39 (4.04)	5.33	8.03 (10.70)	10.90 (12.30)	13.10 (17.00)
			Output Torque Nm	11900 (15700)	18800 (22400)	31000	48100 (64000)	65500 (73900)	80800 (106000)
		Thermal	Input Power kW	4.35	6.02	7.92	10.90	15.40	18.90
			Output Torque Nm	24200	33500	46200	65700	92500	117000
			Efficiency %	61	64	65	67	70	72
500.	0.96	Mechanical	Input Power kW	2.06 (2.78)	2.96 (3.32)	5.29	7.28 (8.18)	9.79 (13.00)	11.70 (17.60)
			Output Torque Nm	11900 (16100)	18800 (21100)	33700	48100 (54100)	65500 (86800)	80800 (122000)
		Thermal	Input Power kW	4.68	6.24	6.97	10.50	14.20	18.00
			Output Torque Nm	27400	39900	44500	69300	95400	124000
			Efficiency %	61	62	64	66	69	71
600.	0.80	Mechanical	Input Power kW	1.99 (2.52)	2.97 (3.53)	4.98	7.03 (7.98)	9.69 (13.80)	11.30 (17.80)
			Output Torque Nm	11900 (15200)	18800 (22400)	33200	48100 (54700)	65500 (93800)	80800 (128000)
		Thermal	Input Power kW	3.02	4.00	5.44	7.89	9.45	12.10
			Output Torque Nm	18300	25400	36300	54100	63800	87000
			Efficiency %	51	54	57	58	58	61
625.	0.77	Mechanical	Input Power kW	1.71 (2.30)	2.55 (2.84)	4.55	6.26 (7.06)	8.18 (11.00)	9.58 (14.20)
			Output Torque Nm	11900 (16100)	18800 (20900)	33600	48100 (54300)	65500 (88100)	80800 (120000)
		Thermal	Input Power kW	3.80	5.88	5.88	9.97	13.50	16.90
			Output Torque Nm	26800	43700	43600	76800	108000	143000
			Efficiency %	57	61	62	64	67	68
700.	0.69	Mechanical	Input Power kW	1.76 (1.86)	2.63 (3.01)	4.76 (4.79)	6.31 (7.04)	8.69 (11.80)	9.79 (14.00)
			Output Torque Nm	11900 (12600)	18800 (21500)	34200 (34400)	48100 (53800)	65500 (89400)	80800 (116000)
		Thermal	Input Power kW	2.95	3.91	4.70	6.73	8.53	12.00
			Output Torque Nm	20200	28100	33800	51400	64300	98900
			Efficiency %	50	52	53	56	56	60
750.	0.64	Mechanical	Input Power kW	1.49 (2.00)	2.23 (2.66)	3.48	5.42 (7.06)	7.03 (7.87)	8.24 (10.70)
			Output Torque Nm	11900 (16100)	18800 (22400)	30800	48100 (62800)	65500 (73400)	80800 (105000)
		Thermal	Input Power kW	3.80	5.41	5.88	9.68	13.30	16.00
			Output Torque Nm	30800	46000	52300	86300	124000	158000
			Efficiency %	54	59	60	62	65	67
800.	0.60	Mechanical	Input Power kW	1.46 (1.88)	2.11 (2.23)	3.68	4.88 (5.10)	6.25	7.55
			Output Torque Nm	11900 (15500)	18800 (19800)	33400	48100 (50300)	62700	78000
		Thermal	Input Power kW	3.31	4.45	5.49	7.76	10.10	15.60
			Output Torque Nm	27500	40000	50000	76800	102000	162000
			Efficiency %	53	55	56	60	64	67

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	0.53	Mechanical	Input Power kW	1.36 (1.82)	2.12 (2.52)	3.54	4.79 (5.41)	6.82 (10.40)	7.94 (12.50)
			Output Torque Nm	11900 (16100)	18800 (22400)	33100	48100 (54400)	65500 (101000)	80800 (128000)
		Thermal	Input Power kW	2.71	3.60	4.88	6.86	8.15	10.40
			Output Torque Nm	24100	32100	45800	69200	78400	106000
1000.	0.48	Mechanical	Input Power kW	1.19 (1.60)	1.78 (1.95)	3.15	4.28 (4.72)	5.52 (7.64)	6.51 (9.47)
			Output Torque Nm	11900 (16100)	18800 (20500)	33400	48100 (53200)	65500 (91000)	80800 (118000)
		Thermal	Input Power kW	2.75	4.08	4.08	7.22	9.76	14.30
			Output Torque Nm	28100	43600	43600	81700	116000	179000
1200.	0.40	Mechanical	Input Power kW	1.13 (1.52)	1.64 (1.95)	2.71	3.79 (4.27)	5.33 (8.39)	6.19 (9.78)
			Output Torque Nm	11900 (16100)	18800 (22400)	33000	48100 (54300)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.59	3.38	4.57	6.41	7.45	9.48
			Output Torque Nm	27800	39300	56000	81900	91900	124000
1250.	0.38	Mechanical	Input Power kW	1.01 (1.36)	1.50 (1.63)	2.64	3.59 (3.93)	4.66 (6.54)	5.48 (7.90)
			Output Torque Nm	11900 (16100)	18800 (20400)	33400	48100 (52700)	65500 (92300)	80800 (117000)
		Thermal	Input Power kW	2.20	3.43	3.43	5.86	8.23	12.00
			Output Torque Nm	26300	43500	43500	79000	116000	178000
1400.	0.34	Mechanical	Input Power kW	1.00 (1.11)	1.45 (1.72)	2.63 (2.80)	3.42 (3.79)	4.79 (7.32)	5.37 (7.61)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36400)	48100 (53400)	65500 (100000)	80800 (115000)
		Thermal	Input Power kW	2.55	3.33	3.96	5.48	6.76	9.42
			Output Torque Nm	30900	43800	51700	77700	92700	143000
1500.	0.32	Mechanical	Input Power kW	0.89 (1.19)	1.32 (1.57)	2.03	3.12 (3.93)	4.01 (4.45)	4.72 (6.04)
			Output Torque Nm	11900 (16100)	18800 (22400)	30600	48100 (60800)	65500 (72700)	80800 (104000)
		Thermal	Input Power kW	2.20	3.43	3.43	5.86	8.23	12.00
			Output Torque Nm	30200	49700	52000	91100	136000	207000
1600.	0.30	Mechanical	Input Power kW	0.85 (1.09)	1.28 (1.35)	2.22	2.89 (3.03)	3.51	4.17
			Output Torque Nm	11900 (15400)	18800 (19700)	33200	48100 (50400)	62200	77300
		Thermal	Input Power kW	2.75	4.08	4.08	6.87	8.72	13.30
			Output Torque Nm	39500	61100	61500	116000	156000	250000
1750.	0.27	Mechanical	Input Power kW	0.80 (1.07)	1.23 (1.32)	2.15	2.79 (3.02)	3.61 (5.16)	4.24 (6.03)
			Output Torque Nm	11900 (16100)	18800 (20100)	33200	48100 (52100)	65500 (94200)	80800 (116000)
		Thermal	Input Power kW	1.64	2.36	2.36	4.22	6.74	9.72
			Output Torque Nm	25100	36600	36600	73100	123000	187000
1800.	0.27	Mechanical	Input Power kW	0.78 (1.04)	1.16 (1.38)	1.79	2.72 (3.40)	3.52 (3.89)	4.12 (5.26)
			Output Torque Nm	11900 (16100)	18800 (22400)	30500	48100 (60400)	65500 (72500)	80800 (103000)
		Thermal	Input Power kW	1.88	2.83	2.83	4.83	7.17	10.40
			Output Torque Nm	29600	46700	48800	86100	135000	205000
2000.	0.24	Mechanical	Input Power kW	0.73 (0.93)	1.09 (1.14)	1.87	2.43 (2.54)	2.96	3.50
			Output Torque Nm	11900 (15400)	18800 (19700)	33100	48100 (50300)	62000	77000
		Thermal	Input Power kW	2.20	3.43	3.43	5.86	8.23	12.00
			Output Torque Nm	37000	60800	61200	118000	175000	267000
2100.	0.23	Mechanical	Input Power kW	0.74 (0.84)	1.11 (1.31)	2.00 (2.17)	2.57 (2.84)	3.50 (5.49)	3.85 (5.42)
			Output Torque Nm	11900 (13600)	18800 (22400)	34200 (37200)	48100 (53200)	65500 (104000)	80800 (114000)
		Thermal	Input Power kW	2.45	3.21	3.79	5.17	6.21	8.52
			Output Torque Nm	40900	55900	65400	97800	117000	181000
2400.	0.20	Mechanical	Input Power kW	0.67 (0.90)	1.01 (1.20)	1.65	2.27 (2.54)	3.09 (4.84)	3.52 (5.55)
			Output Torque Nm	11900 (16100)	18800 (22400)	32800	48100 (53900)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.40	3.15	4.08	5.74	6.50	8.10
			Output Torque Nm	44300	60200	82500	124000	139000	188000
2500.	0.19	Mechanical	Input Power kW	0.64 (0.85)	0.95 (1.12)	1.68 (2.07)	2.17 (2.43)	2.02	2.84
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (42400)	48100 (53900)	50000	74400
		Thermal	Input Power kW	2.20	3.43	3.43	5.86	8.23	11.40
			Output Torque Nm	42600	70000	70500	132000	209000	305000
2800.	0.17	Mechanical	Input Power kW	0.60 (0.68)	0.90 (1.06)	1.62 (1.78)	2.05 (2.26)	2.79 (4.37)	3.05 (4.28)
			Output Torque Nm	11900 (13800)	18800 (22400)	34200 (37800)	48100 (53100)	65500 (104000)	80800 (114000)
		Thermal	Input Power kW	2.38	3.12	3.67	4.92	5.91	8.11
			Output Torque Nm	49700	67500	78600	117000	141000	218000
3000.	0.16	Mechanical	Input Power kW	0.58 (0.77)	0.86 (1.02)	1.39	1.92 (2.14)	2.63 (4.12)	2.98 (4.69)
			Output Torque Nm	11900 (16100)	18800 (22400)	32700	48100 (53800)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.20	3.08	3.43	5.57	6.33	7.84
			Output Torque Nm	47400	69800	81900	142000	160000	215000
3500.	0.14	Mechanical	Input Power kW	0.51 (0.59)	0.76 (0.90)	1.37 (1.53)	1.74 (1.91)	2.37 (3.72)	2.59 (3.62)
			Output Torque Nm	11900 (13900)	18800 (22400)	34200 (38200)	48100 (53000)	65500 (104000)	80800 (114000)
		Thermal	Input Power kW	2.20	3.06	3.43	4.78	5.77	7.89
			Output Torque Nm	53700	78400	87000	135000	162000	251000
3600.	0.13	Mechanical	Input Power kW	0.51 (0.68)	0.76 (0.90)	1.23	1.68 (1.87)	2.32 (3.62)	2.62 (4.12)
			Output Torque Nm	11900 (16100)	18800 (22400)	32700	48100 (53700)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	1.88	2.83	2.83	4.83	6.24	7.71
			Output Torque Nm	46200	72700	76700	141000	180000	242000
4200.	0.11	Mechanical	Input Power kW	0.45 (0.53)	0.68 (0.80)	1.22 (1.37)	1.52 (1.67)	2.09 (3.27)	2.28 (3.17)
			Output Torque Nm	11900 (14100)	18800 (22400)	34200 (38600)	48100 (52900)	65500 (104000)	80800 (114000)
		Thermal	Input Power kW	1.88	2.83	2.83	4.70	5.69	7.76
			Output Torque Nm	52300	82300	81300	152000	182000	282000
			Efficiency %	31	33	34	38	38	42

DOUBLE REDUCTION

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED REV / MIN	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
5.0	50.00	Mechanical	Input Power kW	42.60	63.30	88.40	160.00	209.00	311.00
			Output Torque Nm	7520	11300	15500	28700	37400	57400
		Thermal	Input Power kW	24.40	36.80	55.00	86.60	113.00	150.00
			Output Torque Nm	4300	6530	9640	15500	20200	27600
7.5	33.33	Mechanical	Input Power kW	30.10	46.50	63.20	131.00	197.00	271.00
			Output Torque Nm	7880	12300	16700	35000	52800	72900
		Thermal	Input Power kW	21.80	32.50	48.10	73.80	108.00	124.00
			Output Torque Nm	5710	8550	12700	19600	28800	33400
10.0	25.00	Mechanical	Input Power kW	20.60	37.60	50.50	107.00	143.00	212.00
			Output Torque Nm	6960	12800	17400	37700	49800	74400
		Thermal	Input Power kW	19.50	29.30	43.90	67.50	101.00	115.00
			Output Torque Nm	6560	10000	15100	23800	35300	40100
12.5	20.00	Mechanical	Input Power kW	22.60	29.70	46.20	78.10	105.00	174.00
			Output Torque Nm	9800	12800	20400	34100	46900	77400
		Thermal	Input Power kW	17.00	26.80	36.30	61.20	90.90	104.00
			Output Torque Nm	7380	11600	16000	26700	40700	46200
15.0	16.67	Mechanical	Input Power kW	18.10	25.90	47.80	79.00	117.00	150.00
			Output Torque Nm	8940	12900	24100	40400	60100	77900
		Thermal	Input Power kW	15.80	24.10	32.60	54.20	75.80	94.80
			Output Torque Nm	7780	12100	16400	27600	38900	49000
20.0	12.50	Mechanical	Input Power kW	17.00	24.70	37.90	66.40	72.40	118.00
			Output Torque Nm	11000	16200	25000	44200	48800	80300
		Thermal	Input Power kW	13.30	19.40	27.30	41.20	63.60	78.10
			Output Torque Nm	8620	12700	18000	27300	42800	53000
25.0	10.00	Mechanical	Input Power kW	14.00	20.10	29.70	48.70	76.30	95.80
			Output Torque Nm	10900	16200	23800	39600	62900	80800
		Thermal	Input Power kW	10.90	15.60	22.10	31.30	45.80	59.50
			Output Torque Nm	8440	12600	17700	25300	37600	50100
30.0	8.33	Mechanical	Input Power kW	11.80	17.40	26.60	46.90	66.60	82.10
			Output Torque Nm	10700	16200	25900	44600	64500	80800
		Thermal	Input Power kW	9.50	13.90	19.20	29.30	43.30	54.70
			Output Torque Nm	8610	12900	18700	27800	41800	53700
40.0	6.25	Mechanical	Input Power kW	10.00	13.60	22.10	31.00	43.20	52.80
			Output Torque Nm	11600	16200	26600	38600	54900	67800
		Thermal	Input Power kW	7.38	10.60	14.30	21.70	30.40	46.80
			Output Torque Nm	8510	12600	17100	26900	38400	60000
50.0	5.00	Mechanical	Input Power kW	8.47	11.50	17.90	31.80	29.00	41.80
			Output Torque Nm	11600	16200	25600	46700	44300	65300
		Thermal	Input Power kW	6.28	8.91	11.90	19.90	31.80	39.80
			Output Torque Nm	8580	12500	17000	29100	48700	62100
60.0	4.17	Mechanical	Input Power kW	7.16	10.00	16.40	27.30	38.50	45.80
			Output Torque Nm	11200	16200	27400	46500	65500	80800
		Thermal	Input Power kW	5.51	7.81	11.10	17.00	22.00	28.50
			Output Torque Nm	8580	12500	18500	28700	37100	50000
70.0	3.57	Mechanical	Input Power kW	5.83	8.85	13.70	22.90	33.90	39.80
			Output Torque Nm	10300	16200	25300	43800	65100	80800
		Thermal	Input Power kW	5.25	7.38	9.55	14.30	19.40	27.20
			Output Torque Nm	9280	13500	17500	27300	37000	54900
			Efficiency %	66	68	69	71	71	75

SINGLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
75.0	3.33	Mechanical	Input Power kW	5.55 (5.75)	6.33	14.70	16.30	29.20 (30.20)	34.80
			Output Torque Nm	11900 (12400)	13900	32500	36600	65500 (67600)	79100
		Thermal	Input Power kW	6.48	10.30	10.30	17.60	24.40	36.80
			Output Torque Nm	13900	22700	22900	39500	54600	83700
		Efficiency %	75	76	77	78	79	81	
100.	2.50	Mechanical	Input Power kW	4.28 (5.41)	6.33	11.00	16.30	19.10	27.20 (32.80)
			Output Torque Nm	11900 (15100)	18000	31800	47000	56000	80800 (97400)
		Thermal	Input Power kW	6.48	9.20	10.30	17.60	24.40	31.70
			Output Torque Nm	18100	26200	29700	50700	71400	94100
		Efficiency %	72	74	75	75	78	79	
125.	2.00	Mechanical	Input Power kW	3.63 (4.65)	5.45 (6.33)	9.78	13.80 (15.00)	18.60 (23.90)	22.40 (34.80)
			Output Torque Nm	11900 (15300)	18800 (21800)	33700	48100 (52300)	65500 (84000)	80800 (126000)
		Thermal	Input Power kW	5.49	7.48	9.93	13.30	18.60	23.90
			Output Torque Nm	18100	25800	34200	46200	65200	86400
		Efficiency %	68	70	72	72	74	76	
150.	1.67	Mechanical	Input Power kW	3.14 (3.93)	4.75 (5.66)	7.53	11.90 (15.60)	15.90 (18.10)	19.20 (25.20)
			Output Torque Nm	11900 (14900)	18800 (22400)	31200	48100 (62900)	65500 (74400)	80800 (106000)
		Thermal	Input Power kW	4.85	6.71	8.87	12.70	18.00	22.50
			Output Torque Nm	18500	26600	36700	51500	74100	94700
		Efficiency %	66	69	69	70	73	75	
200.	1.25	Mechanical	Input Power kW	2.40 (3.05)	3.41	6.03	8.69	10.20	14.50 (17.30)
			Output Torque Nm	11900 (15200)	17500	31400	45800	55400	80800 (96300)
		Thermal	Input Power kW	4.87	7.45	8.01	13.60	19.50	24.00
			Output Torque Nm	24300	38400	41800	71600	106000	134000
		Efficiency %	68	70	71	72	74	76	
225.	1.11	Mechanical	Input Power kW	2.26 (2.97)	3.33 (3.96)	5.25	8.29 (11.00)	11.00 (12.40)	13.20 (17.20)
			Output Torque Nm	11900 (15700)	18800 (22400)	31000	48100 (64100)	65500 (73900)	80800 (106000)
		Thermal	Input Power kW	4.34	5.89	7.76	11.00	15.30	18.90
			Output Torque Nm	23000	33400	45900	63800	91600	116000
		Efficiency %	63	66	67	68	70	72	
250.	1.00	Mechanical	Input Power kW	2.04 (2.76)	3.03 (3.41)	5.44	7.61 (8.51)	10.10 (13.30)	12.00 (18.10)
			Output Torque Nm	11900 (16100)	18800 (21200)	33800	48100 (53800)	65500 (86600)	80800 (122000)
		Thermal	Input Power kW	4.55	6.08	7.99	10.40	14.20	18.10
			Output Torque Nm	26700	37800	49700	65900	92700	122000
		Efficiency %	64	66	68	68	71	72	
300.	0.83	Mechanical	Input Power kW	1.77 (2.36)	2.65 (3.15)	4.16	6.58 (8.69)	8.63 (9.71)	10.30 (13.40)
			Output Torque Nm	11900 (15900)	18800 (22400)	30900	48100 (63600)	65500 (73700)	80800 (105000)
		Thermal	Input Power kW	4.04	5.48	7.19	10.10	14.00	17.10
			Output Torque Nm	27300	39000	53600	73800	106000	134000
		Efficiency %	61	64	65	66	69	71	
350.	0.71	Mechanical	Input Power kW	1.71 (1.82)	2.59 (2.97)	4.71 (4.74)	6.29 (7.03)	8.78 (11.90)	9.96 (14.20)
			Output Torque Nm	11900 (12700)	18800 (21600)	34200 (34400)	48100 (53800)	65500 (89200)	80800 (116000)
		Thermal	Input Power kW	2.90	3.87	4.66	6.71	8.56	12.10
			Output Torque Nm	20300	28200	33900	51400	63800	97900
		Efficiency %	51	53	53	56	56	61	
375.	0.67	Mechanical	Input Power kW	1.38 (1.86)	2.15 (2.38)	3.82	5.13 (5.74)	6.98 (9.48)	8.34 (12.30)
			Output Torque Nm	11900 (16100)	18800 (20800)	33600	48100 (53900)	65500 (89000)	80800 (120000)
		Thermal	Input Power kW	3.74	5.53	6.03	9.12	12.50	15.80
			Output Torque Nm	32700	48700	53100	85800	117000	153000
		Efficiency %	59	62	64	65	68	69	
400.	0.63	Mechanical	Input Power kW	1.33 (1.68)	1.80	3.22	4.47	5.37	7.77 (9.15)
			Output Torque Nm	11900 (15100)	17100	31100	44500	54800	80800 (95200)
		Thermal	Input Power kW	3.13	4.48	4.48	7.82	12.10	17.20
			Output Torque Nm	28200	42800	43300	78100	124000	179000
		Efficiency %	61	62	63	65	69	70	
450.	0.56	Mechanical	Input Power kW	1.20 (1.62)	1.88 (2.23)	2.93	4.44 (5.74)	6.00 (6.71)	7.17 (9.27)
			Output Torque Nm	11900 (16100)	18800 (22400)	30800	48100 (62200)	65500 (73200)	80800 (105000)
		Thermal	Input Power kW	3.66	4.99	6.03	8.88	12.30	15.00
			Output Torque Nm	36700	50300	63600	96500	135000	170000
		Efficiency %	57	61	62	63	66	68	
500.	0.50	Mechanical	Input Power kW	1.14 (1.54)	1.65 (1.80)	2.92	4.04 (4.47)	5.40 (7.47)	6.46 (9.43)
			Output Torque Nm	11900 (16100)	18800 (20500)	33400	48100 (53200)	65500 (90700)	80800 (118000)
		Thermal	Input Power kW	3.13	4.48	4.48	7.82	11.50	14.50
			Output Torque Nm	33000	51400	51400	93400	140000	182000
		Efficiency %	57	58	60	62	65	67	
600.	0.42	Mechanical	Input Power kW	1.12 (1.51)	1.66 (1.98)	2.77	3.94 (4.44)	5.45 (8.59)	6.32 (9.99)
			Output Torque Nm	11900 (16100)	18800 (22400)	33000	48100 (54300)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.51	3.28	4.44	6.35	7.44	9.45
			Output Torque Nm	27100	37300	53100	77900	89600	121000
		Efficiency %	48	50	53	54	54	57	
625.	0.40	Mechanical	Input Power kW	0.96 (1.29)	1.42 (1.55)	2.52	3.49 (3.83)	4.54 (6.36)	5.30 (7.67)
			Output Torque Nm	11900 (16100)	18800 (20400)	33400	48100 (52800)	65500 (92000)	80800 (117000)
		Thermal	Input Power kW	2.60	3.85	3.85	6.59	9.66	13.80
			Output Torque Nm	32800	51200	51100	91400	140000	211000
		Efficiency %	53	57	58	60	62	64	
700.	0.36	Mechanical	Input Power kW	0.99 (1.09)	1.47 (1.75)	2.68 (2.84)	3.55 (3.94)	4.90 (7.44)	5.48 (7.77)
			Output Torque Nm	11900 (13200)	18800 (22400)	34200 (36200)	48100 (53400)	65500 (99700)	80800 (115000)
		Thermal	Input Power kW	2.47	3.23	3.84	5.43	6.73	9.39
			Output Torque Nm	30100	41500	49100	73900	90200	139000
		Efficiency %	46	49	49	52	51	56	
750.	0.33	Mechanical	Input Power kW	0.83 (1.12)	1.25 (1.49)	1.93	3.03 (3.83)	3.91 (4.34)	4.56 (5.84)
			Output Torque Nm	11900 (16100)	18800 (22400)	30600	48100 (61000)	65500 (72800)	80800 (104000)
		Thermal	Input Power kW	2.60	3.85	3.85	6.59	9.66	13.20
			Output Torque Nm	37600	58500	61200	105000	163000	235000
		Efficiency %	51	54	56	58	61	63	
800.	0.31	Mechanical	Input Power kW	0.82 (1.05)	1.18 (1.24)	2.06	2.72 (2.86)	3.43	4.12
			Output Torque Nm	11900 (15400)	18800 (19700)	33200	48100 (50500)	62200	77300
		Thermal	Input Power kW	2.83	3.78	4.48	6.45	8.26	12.70
			Output Torque Nm	42000	60800	72600	115000	151000	241000
		Efficiency %	49	51	51	56	60	63	

DOUBLE REDUCTION

# B SERIES A RADICON

## RATINGS AT 250 REV/MIN INPUT (Mineral Oil)

9611

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT					
				10	12	14	17	20	24
900.	0.28	Mechanical	Input Power kW	0.76 (1.03)	1.19 (1.42)	1.97	2.69 (3.02)	3.84 (6.05)	4.45 (7.03)
			Output Torque Nm	11900 (16100)	18800 (22400)	32900	48100 (54100)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.29	3.02	4.07	5.66	6.60	8.34
			Output Torque Nm	36400	48000	68200	102000	113000	152000
1000.	0.25	Mechanical	Input Power kW	0.67 (0.90)	1.01 (1.08)	1.78	2.42 (2.61)	3.11 (4.45)	3.66 (5.20)
			Output Torque Nm	11900 (16100)	18800 (20100)	33200	48100 (51900)	65500 (94100)	80800 (115000)
		Thermal	Input Power kW	1.86	2.70	2.70	4.67	6.53	9.39
			Output Torque Nm	33700	50700	50600	93500	138000	209000
1200.	0.21	Mechanical	Input Power kW	0.64 (0.86)	0.93 (1.10)	1.53	2.14 (2.39)	3.00 (4.73)	3.47 (5.49)
			Output Torque Nm	11900 (16100)	18800 (22400)	32800	48100 (53900)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	2.23	2.89	3.89	5.38	6.14	7.75
			Output Torque Nm	42400	59500	84500	122000	135000	181000
1250.	0.20	Mechanical	Input Power kW	0.58 (0.77)	0.86 (0.91)	1.50	2.04 (2.18)	2.64 (3.77)	3.10 (4.37)
			Output Torque Nm	11900 (16100)	18800 (19900)	33100	48100 (51500)	65500 (93900)	80800 (114000)
		Thermal	Input Power kW	1.50	2.29	2.29	3.84	5.55	7.84
			Output Torque Nm	31700	51000	51000	91200	138000	206000
1400.	0.18	Mechanical	Input Power kW	0.57 (0.65)	0.82 (0.98)	1.50 (1.65)	1.93 (2.13)	2.71 (4.26)	3.01 (4.23)
			Output Torque Nm	11900 (13700)	18800 (22400)	34200 (37800)	48100 (53100)	65500 (104000)	80800 (114000)
		Thermal	Input Power kW	2.20	2.87	3.37	4.60	5.58	7.76
			Output Torque Nm	47500	66700	77800	116000	136000	210000
1500.	0.17	Mechanical	Input Power kW	0.50 (0.68)	0.75 (0.89)	1.15	1.77 (2.18)	2.28 (2.51)	2.67 (3.39)
			Output Torque Nm	11900 (16100)	18800 (22400)	30400	48100 (59300)	65500 (72200)	80800 (103000)
		Thermal	Input Power kW	1.50	2.29	2.29	3.84	5.55	7.84
			Output Torque Nm	36300	58200	60900	105000	161000	239000
1600.	0.16	Mechanical	Input Power kW	0.48 (0.62)	0.73 (0.77)	1.27	1.64 (1.69)	1.97 (2.94)	2.42 (3.38)
			Output Torque Nm	11900 (15300)	18800 (19600)	33000	48100 (50100)	61700 (93500)	80800 (113000)
		Thermal	Input Power kW	1.86	2.70	2.70	4.67	6.53	9.39
			Output Torque Nm	47100	70500	70900	139000	207000	314000
1750.	0.14	Mechanical	Input Power kW	0.45 (0.61)	0.71 (0.75)	1.24	1.60 (1.69)	2.07 (2.94)	2.42 (3.38)
			Output Torque Nm	11900 (16100)	18800 (19700)	33000	48100 (51000)	65500 (93500)	80800 (113000)
		Thermal	Input Power kW	1.14	1.59	1.59	2.81	4.65	6.50
			Output Torque Nm	30600	42600	42600	85100	149000	219000
1800.	0.14	Mechanical	Input Power kW	0.44 (0.59)	0.67 (0.79)	1.02	1.55 (1.90)	2.01 (2.21)	2.35 (2.98)
			Output Torque Nm	11900 (16100)	18800 (22400)	30300	48100 (58900)	65500 (72000)	80800 (103000)
		Thermal	Input Power kW	1.29	1.91	1.91	3.19	4.88	6.84
			Output Torque Nm	35700	54700	57200	99800	160000	237000
2000.	0.13	Mechanical	Input Power kW	0.42 (0.53)	0.62 (0.65)	1.07	1.38 (1.44)	1.67 (2.78)	2.01 (3.16)
			Output Torque Nm	11900 (15300)	18800 (19600)	32900	48100 (50000)	61600 (93500)	76400 (128000)
		Thermal	Input Power kW	1.50	2.29	2.29	3.84	5.55	7.84
			Output Torque Nm	44300	70800	71200	135000	207000	309000
2100.	0.12	Mechanical	Input Power kW	0.42 (0.49)	0.63 (0.75)	1.15 (1.29)	1.47 (1.61)	1.99 (3.13)	2.17 (3.04)
			Output Torque Nm	11900 (14000)	18800 (22400)	34200 (38500)	48100 (52900)	65500 (104000)	80800 (114000)
		Thermal	Input Power kW	2.18	2.84	3.32	4.46	5.27	7.21
			Output Torque Nm	63900	86400	99900	148000	175000	271000
2400.	0.10	Mechanical	Input Power kW	0.38 (0.51)	0.58 (0.69)	0.94	1.30 (1.44)	1.77 (2.78)	2.01 (3.16)
			Output Torque Nm	11900 (16100)	18800 (22400)	32600	48100 (53600)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	1.86	2.70	2.70	4.67	5.62	6.95
			Output Torque Nm	60100	89700	94700	176000	211000	284000
2500.	0.10	Mechanical	Input Power kW	0.37 (0.49)	0.55 (0.65)	0.97 (1.19)	1.24 (1.38)	1.14 (2.78)	1.60 (3.16)
			Output Torque Nm	11900 (16100)	18800 (22400)	34200 (42200)	48100 (53600)	49700 (93500)	73900 (128000)
		Thermal	Input Power kW	1.50	2.29	2.29	3.84	5.55	7.84
			Output Torque Nm	50800	81200	81700	151000	248000	368000
2800.	0.09	Mechanical	Input Power kW	0.34 (0.40)	0.52 (0.61)	0.94 (1.07)	1.18 (1.29)	1.60 (2.51)	1.74 (2.43)
			Output Torque Nm	11900 (14200)	18800 (22400)	34200 (39100)	48100 (52800)	65500 (104000)	80800 (113000)
		Thermal	Input Power kW	1.86	2.70	2.70	4.30	5.12	7.01
			Output Torque Nm	68000	102000	100000	179000	213000	331000
3000.	0.08	Mechanical	Input Power kW	0.33 (0.44)	0.50 (0.59)	0.80	1.10 (1.22)	1.51 (2.38)	1.71 (2.70)
			Output Torque Nm	11900 (16100)	18800 (22400)	32600	48100 (53500)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	1.50	2.29	2.29	3.84	5.55	6.85
			Output Torque Nm	56400	89900	94900	171000	244000	328000
3500.	0.07	Mechanical	Input Power kW	0.29 (0.35)	0.44 (0.52)	0.80 (0.91)	1.00 (1.09)	1.37 (2.15)	1.48 (2.06)
			Output Torque Nm	11900 (14400)	18800 (22400)	34200 (39500)	48100 (52700)	65500 (104000)	80800 (113000)
		Thermal	Input Power kW	1.50	2.29	2.29	3.84	5.07	6.92
			Output Torque Nm	63800	102000	100000	189000	247000	384000
3600.	0.07	Mechanical	Input Power kW	0.29 (0.39)	0.44 (0.52)	0.71	0.97 (1.07)	1.34 (2.10)	1.52 (2.39)
			Output Torque Nm	11900 (16100)	18800 (22400)	32500	48100 (53500)	65500 (104000)	80800 (128000)
		Thermal	Input Power kW	1.29	1.91	1.91	3.19	4.88	6.83
			Output Torque Nm	55200	84300	89100	162000	242000	370000
4200.	0.06	Mechanical	Input Power kW	0.26 (0.31)	0.39 (0.46)	0.71 (0.82)	0.88 (0.96)	1.22 (1.90)	1.31 (1.82)
			Output Torque Nm	11900 (14500)	18800 (22400)	34200 (39800)	48100 (52600)	65500 (104000)	80800 (113000)
		Thermal	Input Power kW	1.29	1.91	1.91	3.19	4.88	6.84
			Output Torque Nm	62500	95400	94000	179000	268000	430000
			Efficiency %	44	47	50	51	51	54

DOUBLE REDUCTION

## REDUCER UNIT DIMENSIONS

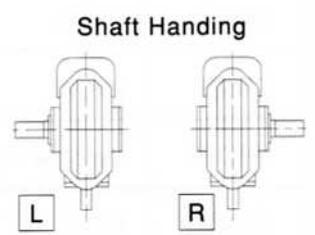
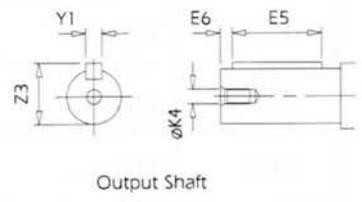
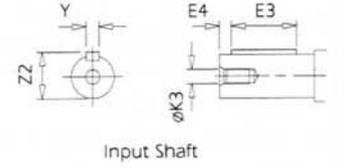
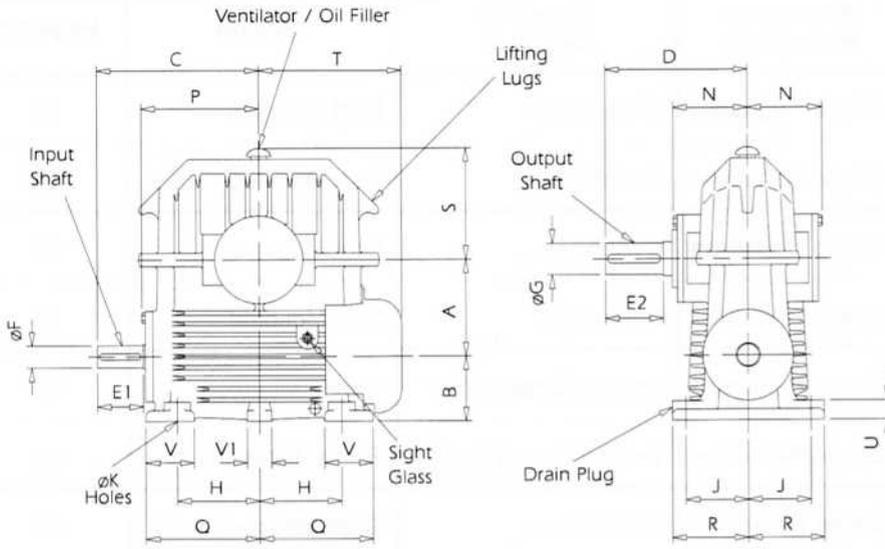
Designation	Type of Shaft & Keyway	Number of Reductions	Mounting Position	Version	Page No
CNU	Metric	Single Reduction	Underdriven	Foot Mounted	61
NU	Imperial	Single Reduction	Underdriven	Foot Mounted	62
CNO	Metric	Single Reduction	Overdriven	Foot Mounted	63
NO	Imperial	Single Reduction	Overdriven	Foot Mounted	64
CNV	Metric	Single Reduction	Vertical Output Shaft	Flange Mounted	65
NV	Imperial	Single Reduction	Vertical Output Shaft	Flange Mounted	66
CNUS	Metric	Single Reduction	Underdriven	Shaft Mounted	67
CNVS	Metric	Single Reduction	Vertical Output Shaft	Flange/Shaft Mounted	68
VHDST	Metric & Imperial	Single Reduction	Vertical Output Shaft	Heavy Duty Stirrer	69
CNVCT	Metric	Single Reduction	Vertical Output Shaft	Cooling Tower	70
CNUD	Metric	Double Reducion	Underdriven	Foot Mounted	71
NUD	Imperial	Double Reducion	Underdriven	Foot Mounted	72
CNOD	Metric	Double Reducion	Overdriven	Foot Mounted	73
NOD	Imperial	Double Reducion	Overdriven	Foot Mounted	74
CNVD	Metric	Double Reducion	Vertical Output Shaft	Flange Mounted	75
NVD	Imperial	Double Reducion	Vertical Output Shaft	Flange Mounted	76

## MOTORISED UNIT DIMENSIONS

Number of Reductions	Page No
Single Reduction	85
Triple Reduction	86

9610

**CN** **U**  - FOOT MOUNTED



Units can be supplied with double outputshafts

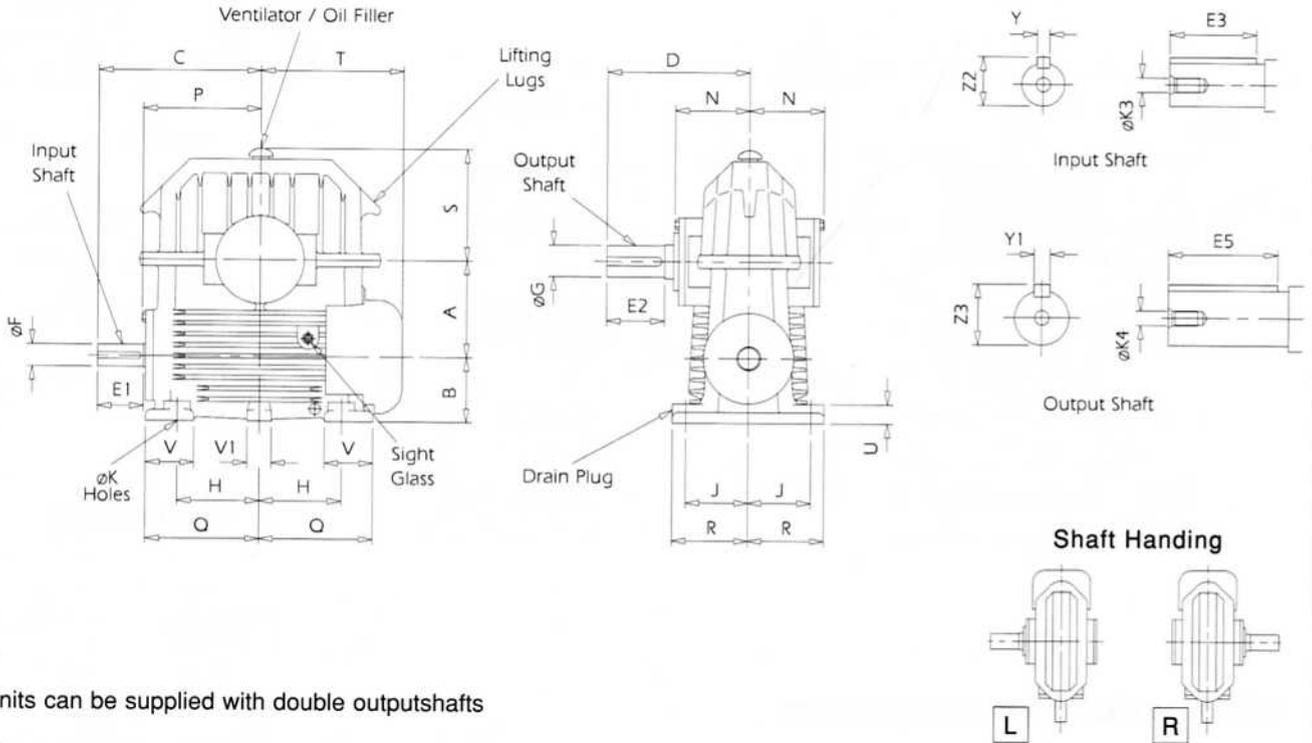
Dimensions E1 and E2 are useable lengths of shaft extensions

SIZE	A	B	C	D	E1	E2	E3	E4	E5	E6	øF	øG
10	254.0	171	425	375	107	152	94	13	118	16	55.030	85.035
											55.011	85.013
12	304.8	190	495	413	121	171	92	14	135	17.5	60.030	95.035
											60.011	95.013
14	355.6	216	571	483	137	191	105	15	148	21	75.030	120.035
											75.011	120.013
17	431.8	254	698	546	183	203	118	16	144	23	80.030	140.040
											80.011	140.015
20	508.0	292	813	610	210	241	132	19	180	25	100.035	170.040
											100.013	170.015
24	609.6	330	940	711	236	355	152	19	235	27.5	110.035	190.046
											110.013	190.017

SIZE	H	J	øK	øK3	øK4	N	P	Q	R	S	T	U
10	216	165	32 4 Holes	M20 x 43 Deep	M24 x 50	197	310	298	200	294	375	51
12	260	184	35 4 Holes	M20 x 43 Deep	M24 x 50	213	366	356	222	348	438	57
14	298	216	41 4 Holes	M20 x 43 Deep	M30 x 63	254	425	413	260	399	515	63
17	381	254	41 6 Holes	M24 x 52 Deep	M30 x 63	300	505	502	298	477	629	76
20	444	292	48 6 Holes	M24 x 52 Deep	M36 x 74	317	594	584	356	554	749	89
24	546	317	41 6 Holes	M30 x 63 Deep	M36 x 74	340	695	686	368	670	876	38

SIZE	V	V1	Y	Y1	Z2	Z3
10	127	63	16.000	22.000	59.00	94.500
			15.957	21.948	58.71	94.148
12	152	76	18.000	25.000	64.00	105.500
			17.957	24.948	63.69	105.148
14	178	89	20.000	32.000	79.50	134.000
			19.948	31.938	79.19	133.638
17	190	127	22.000	36.000	85.00	155.500
			21.948	35.938	84.69	155.138
20	229	152	28.000	40.000	106.00	187.500
			27.948	39.938	105.69	187.138
24	229	152	28.000	45.000	116.00	210.000
			27.948	44.938	115.69	209.638

**N** **U**    - FOOT MOUNTED



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

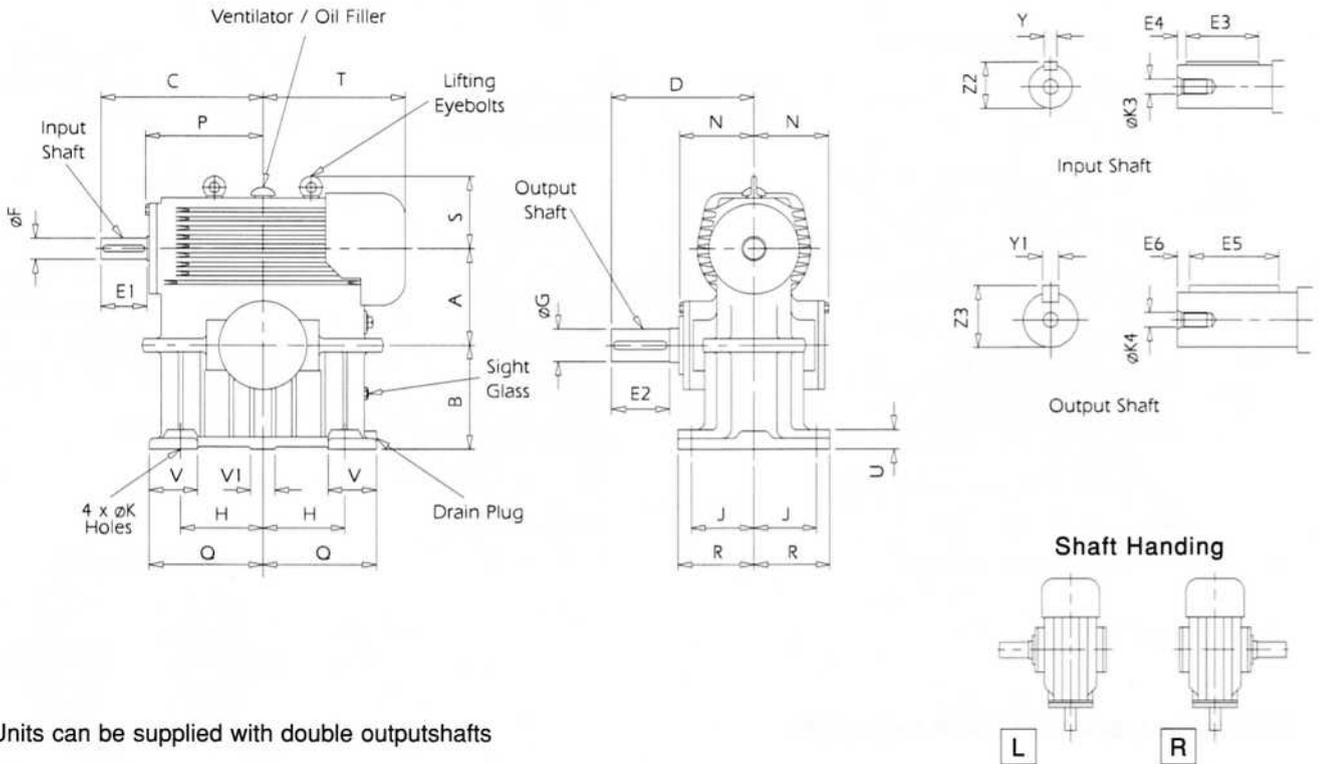
SIZE	A	B	C	D	E1	E2	E3	E5	øF	øG
10	10	6.75	16.75	14.75	4.21	6.00	3.19	5.06	2.2500	3.2500
									2.2493	3.2491
12	12	7.50	19.50	16.25	4.76	6.75	3.19	5.75	2.5000	3.7500
									2.4993	3.7491
14	14	8.50	22.50	19.00	5.39	7.50	5.38	7.63	3.0000	4.5000
									2.9993	4.4991
17	17	10.0	27.50	21.50	7.20	8.00	5.56	8.00	3.2500	5.5000
									3.2491	5.4990
20	20	11.5	32.00	24.00	8.27	9.50	6.50	9.50	4.0000	6.5000
									3.9991	6.4990
24	24	13.0	37.00	28.00	9.29	14.0	7.38	12.50	4.5000	7.5000
									4.4991	7.4988

SIZE	H	J	øK	øK3	øK4	N	P	Q	R	S	T	U
10	8.50	6.50	1.250 4 Holes	M20 x 43 Deep	M24 x 50	7.75	12.19	11.75	7.88	11.56	14.88	2.00
12	10.25	7.25	1.375 4 Holes	M20 x 43 Deep	M24 x 50	8.38	14.39	14.00	8.75	13.69	17.38	2.25
14	11.75	8.50	1.625 4 Holes	M20 x 43 Deep	M30 x 63	10.0	16.75	16.25	10.25	15.69	20.50	2.50
17	15.00	10.00	1.625 6 Holes	M24 x 52 Deep	M30 x 63	11.81	19.89	19.75	11.75	19.25	24.75	3.00
20	17.50	11.50	1.875 6 Holes	M24 x 52 Deep	M36 x 74	12.50	23.37	23.00	14.00	22.31	29.50	3.50
24	21.50	12.50	1.625 6 Holes	M30 x 63 Deep	M36 x 74	13.38	27.38	27.00	14.50	26.00	34.50	1.50

SIZE	V	V1	Y	Y1	Z2	Z3
10	5.0	2.5	0.627	0.877	2.431	3.509
			0.625	0.875	2.422	3.499
12	6.0	3.0	0.627	1.003	2.681	4.063
			0.625	1.000	2.672	4.053
14	7.0	3.5	0.752	1.253	3.203	4.860
			0.750	1.250	3.194	4.850
17	7.5	5.0	0.877	1.503	3.506	5.904
			0.875	1.500	3.498	5.894
20	9.0	6.0	1.002	1.753	4.311	7.013
			1.000	1.750	4.302	7.003
24	9.0	6.0	1.253	2.003	4.860	8.060
			1.250	2.000	4.850	8.050

9610

**CN** **O**  - FOOT MOUNTED



Units can be supplied with double outputshafts

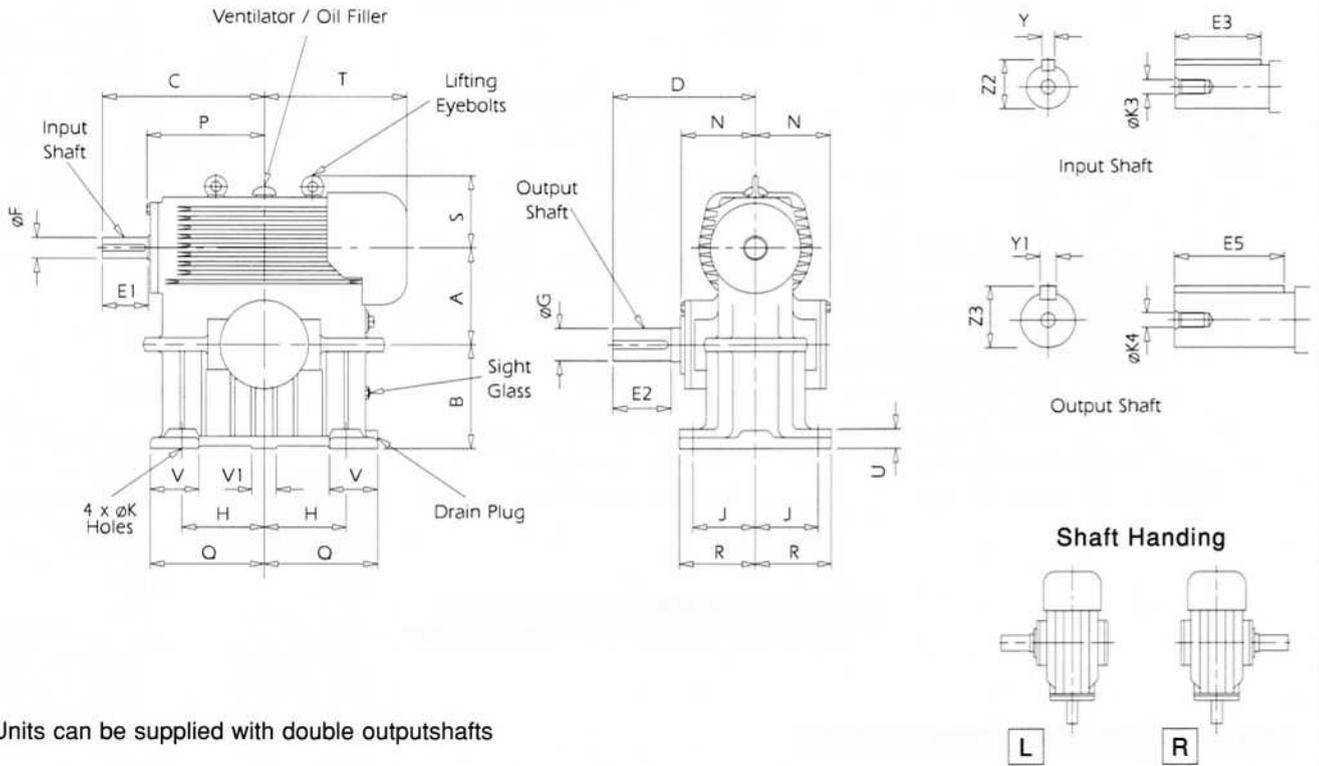
Dimensions E1 and E2 are useable lengths of shaft extensions

SIZE	A	B	C	D	E1	E2	E3	E4	E5	E6	$\phi F$	$\phi G$
10	254.0	273	425	375	107	152	94	13	118	16	55.030	85.035
											55.011	85.013
12	304.8	330	495	413	121	171	92	14	135	17.5	60.030	95.035
											60.011	95.013
14	355.6	381	571	483	137	191	105	15	148	21	75.030	120.035
											75.011	120.013

SIZE	H	J	$\phi K$	$\phi K3$	$\phi K4$	N	P	Q	R	S	T	U
10	216	165	32	M20 x 43 Deep	M24 x 50	197	310	298	200	182	384	51
			4 Holes									
12	260	184	35	M20 x 43 Deep	M24 x 50	213	366	356	222	237	448	57
			4 Holes									
14	298	216	41	M20 x 43 Deep	M30 x 63	254	425	413	260	278	524	63
			4 Holes									

SIZE	V	V1	Y	Y1	Z2	Z3
10	127	63	16.000	22.000	59.00	94.500
			15.957	21.948	58.71	94.148
12	152	76	18.000	25.000	64.00	105.500
			17.957	24.948	63.69	105.148
14	178	89	20.000	32.000	79.50	134.000
			19.948	31.938	79.19	133.638

**N** **O**  - FOOT MOUNTED



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

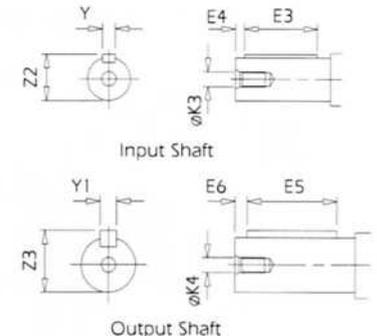
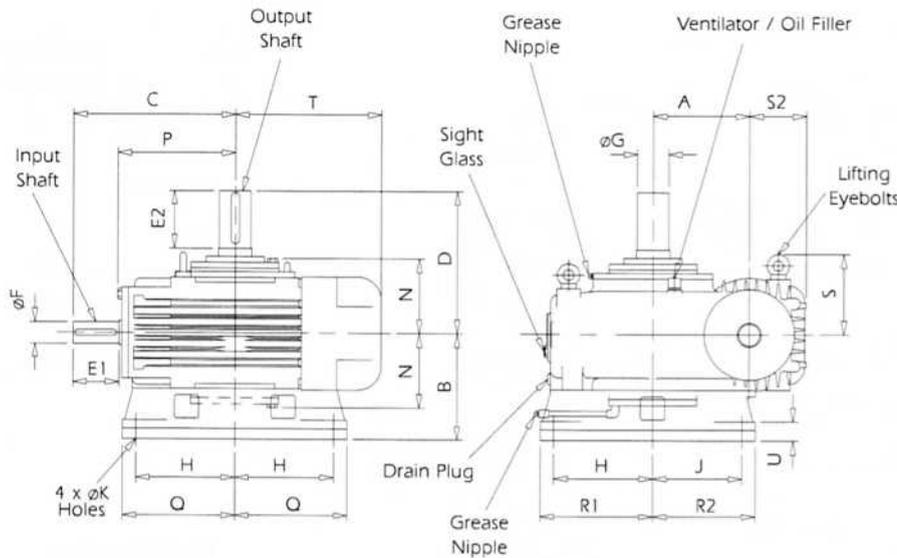
SIZE	A	B	C	D	E1	E2	E3	E5	øF	øG
10	10	10.75	16.75	14.75	4.21	6.00	3.19	5.06	2.2500	3.2500
									2.2493	3.2491
12	12	13.00	19.50	16.25	4.76	6.75	3.19	5.75	2.5000	3.7500
									2.4993	3.7491
14	14	15.00	22.50	19.00	5.39	7.50	5.38	7.63	3.0000	4.5000
									2.9993	4.4991

SIZE	H	J	øK	øK3	øK4	N	P	Q	R	S	T	U
10	8.50	6.50	1.250 4 Holes	M20 x 43 Deep	M24 x 50	7.75	12.19	11.75	7.88	7.14	15.13	2.00
12	10.25	7.25	1.375 4 Holes	M20 x 43 Deep	M24 x 50	8.38	14.39	14.00	8.75	9.33	17.63	2.25
14	11.75	8.50	1.625 4 Holes	M20 x 43 Deep	M30 x 63	10.0	16.75	16.25	10.25	10.93	20.63	2.50

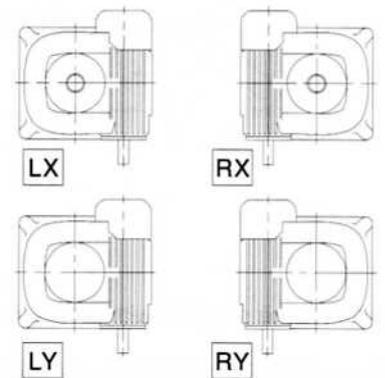
SIZE	V	V1	Y	Y1	Z2	Z3
10	5.0	2.5	0.627	0.877	2.431	3.509
			0.625	0.875	2.422	3.499
12	6.0	3.0	0.627	1.003	2.681	4.063
			0.625	1.000	2.672	4.053
14	7.0	3.5	0.752	1.253	3.203	4.860
			0.750	1.250	3.194	4.850

9610

**CN** **V**  - FLANGE MOUNTED



**Shaft Handling**



X Denotes slow speed shaft vertically up  
Y Denotes slow speed shaft vertically down

Units can be supplied with double outputshafts

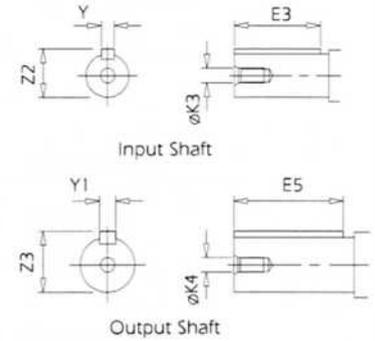
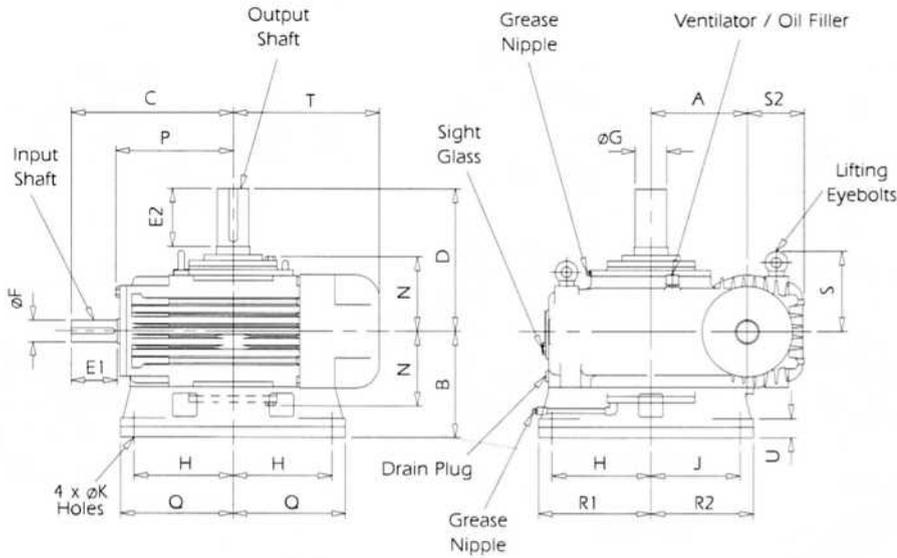
Dimensions E1 and E2 are useable lengths of shaft extensions

SIZE	A	B	C	D	E1	E2	E3	E4	E5	E6	øF	øG
10	254.0	279	425	375	107	152	94	13	118	16	55.030 55.011	85.035 85.013
12	304.8	305	495	413	121	171	92	14	135	17.5	60.030 60.011	95.035 95.013
14	355.6	330	571	483	137	191	105	15	148	21	75.030 75.011	120.035 120.013
17	431.8	406	698	546	183	203	118	16	144	23	80.030 80.011	140.040 140.015
20	508.0	432	813	610	210	241	132	19	180	25	100.035 100.013	170.040 170.015

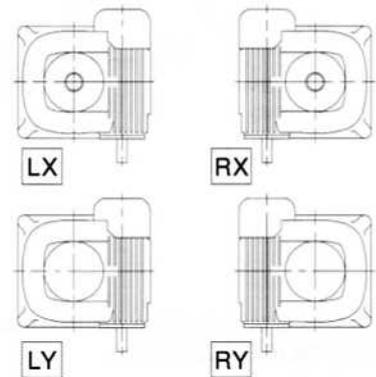
SIZE	H	J	øK	øK3	øK4	N	P	Q	R1	R2	S	S2
10	260	235	32 4 Holes	M20 x 43 Deep	M24 x 50	197	310	295	295	270	212	149
12	317	267	35 4 Holes	M20 x 43 Deep	M24 x 50	213	366	356	356	305	247	169
14	356	305	41 4 Holes	M20 x 43 Deep	M30 x 63	254	425	403	403	352	300	187
17	432	432	41 4 Holes	M24 x 52 Deep	M30 x 63	300	505	502	502	502	-	254
20	521	521	41 4 Holes	M24 x 52 Deep	M36 x 74	317	594	597	597	597	-	283

SIZE	T	U	Y	Y1	Z2	Z3
10	384	51	16.000 15.957	22.000 21.948	59.00 58.71	94.500 94.148
12	450	57	18.000 17.957	25.000 24.948	64.00 63.69	105.500 105.148
14	526	63	20.000 19.948	32.000 31.938	79.50 79.19	134.000 133.638
17	629	76	22.000 21.948	36.000 35.938	85.00 84.69	155.500 155.138
20	749	89	28.000 27.948	40.000 39.938	106.00 105.69	187.500 187.138

**N** **V**    - FLANGE MOUNTED



### Shaft Handing



X Denotes slow speed shaft vertically up  
Y Denotes slow speed shaft vertically down

Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

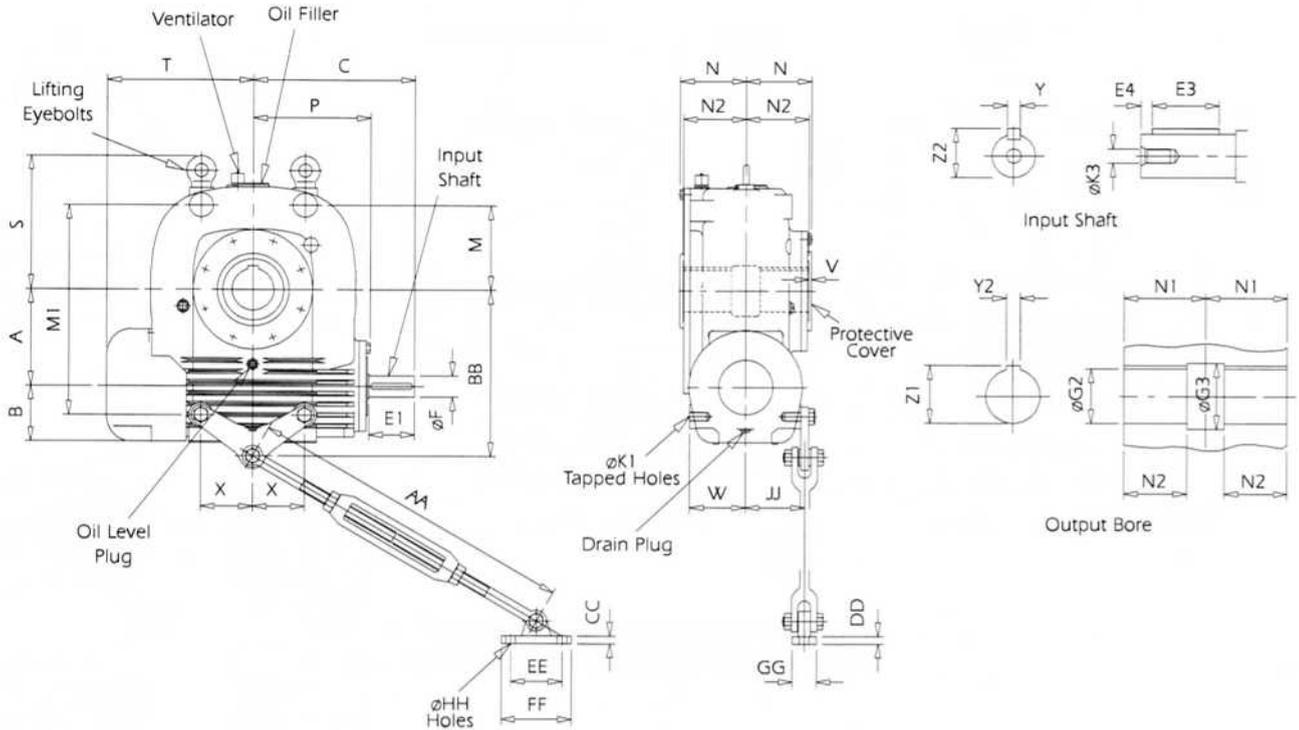
SIZE	A	B	C	D	E1	E2	E3	E5	øF	øG
10	10	11.0	16.75	14.75	4.21	6.00	3.19	5.06	2.2500 2.2493	3.2500 3.2491
12	12	12.0	19.50	16.25	4.76	6.75	3.19	5.75	2.5000 2.4993	3.7500 3.7491
14	14	13.0	22.50	19.00	5.39	7.50	5.38	7.63	3.0000 2.9993	4.5000 4.4991
17	17	16.0	27.50	21.50	7.20	8.00	5.56	8.00	3.2500 3.2491	5.5000 5.4990
20	20	17.0	32.00	24.00	8.27	9.50	6.50	9.50	4.0000 3.9991	6.5000 6.4990

SIZE	H	J	øK	øK3	øK4	N	P	Q	R1	R2	S	S2
10	10.25	9.25	1.250 4 Holes	M20 x 43 Deep	M24 x 50	7.75	12.19	11.63	11.63	10.63	8.33	5.88
12	12.50	10.50	1.375 4 Holes	M20 x 43 Deep	M24 x 50	8.38	14.39	14.00	14.00	12.00	9.70	6.63
14	14.00	12.00	1.625 4 Holes	M20 x 43 Deep	M30 x 63	10.0	16.75	15.88	15.88	13.88	11.80	7.38
17	17.00	17.00	1.625 4 Holes	M24 x 52 Deep	M30 x 63	11.81	19.89	19.75	19.75	19.75	-	10.00
20	20.50	20.50	1.625 4 Holes	M24 x 52 Deep	M36 x 74	12.50	23.37	23.50	23.50	23.50	-	11.13

SIZE	T	U	Y	Y1	Z2	Z3
10	15.13	2.00	0.627 0.625	0.877 0.875	2.431 2.422	3.509 3.499
12	17.69	2.25	0.627 0.625	1.003 1.000	2.681 2.672	4.063 4.053
14	20.69	2.50	0.752 0.750	1.253 1.250	3.203 3.194	4.860 4.850
17	24.75	3.00	0.877 0.875	1.503 1.500	3.506 3.498	5.904 5.894
20	29.50	3.50	1.002 1.000	1.753 1.750	4.311 4.302	7.013 7.003

9810

**CN** **U** **S** - SHAFT MOUNTED



The torque arm must be mounted so that it is loaded in TENSION. The angle between torque arm and high speed shaft MUST NOT EXCEED 30°.

It is recommended that the torque arm is fitted on the side of the unit adjacent to the driven machine. Two torque arms must be fitted for reversing applications. Units must be locked axially when mounted in position.

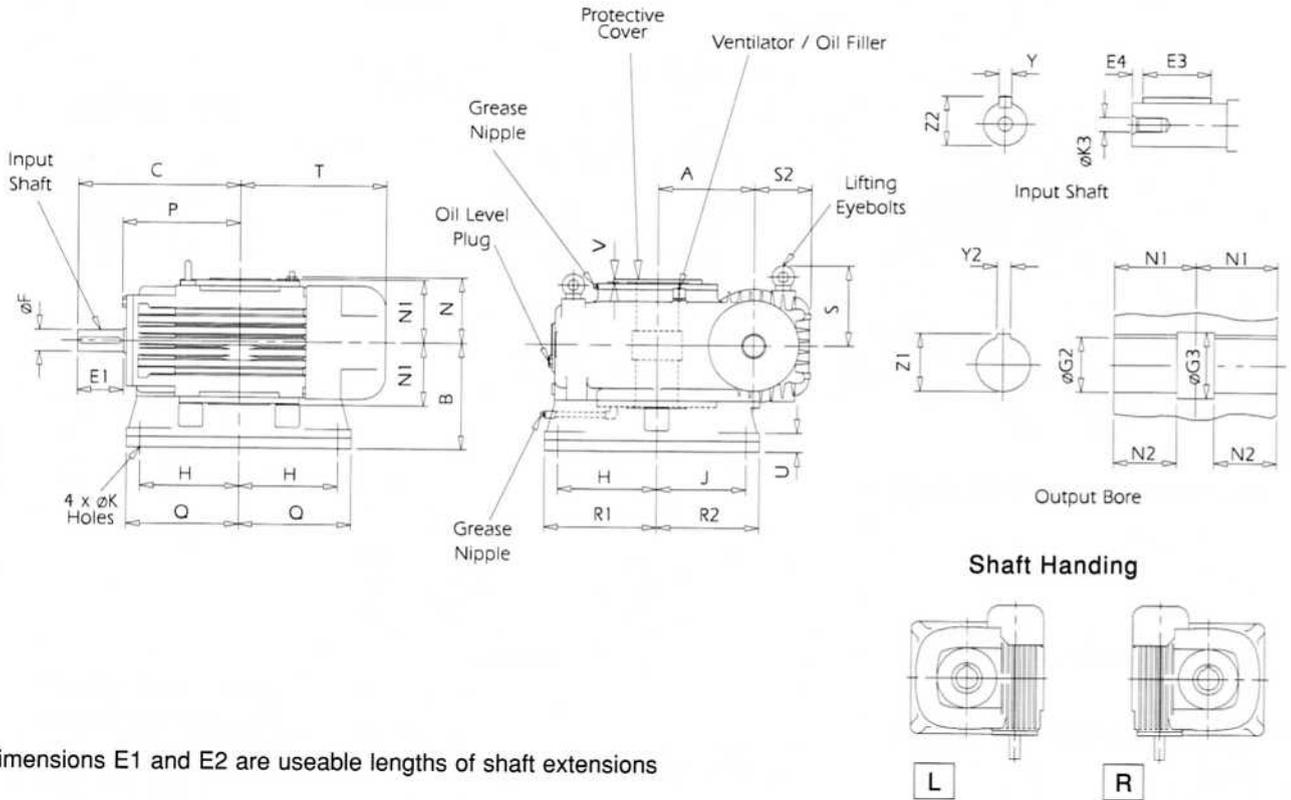
SIZE	A	B	C	E1	E3	E4	øF	øG2	øG3	øK1	øK3	M
10	254.0	150	425	107	94	13	55.030	110.071	133.3	M24 x 43	M20 x 43	222
							55.011	110.035				
12	304.8	168	495	121	92	14	60.030	130.083	152.0	M24 x 43	M20 x 43	260
							60.011	130.043				
14	355.6	187	571	137	105	15	75.030	160.084	187.0	M30 x 55	M20 x 43	295
							75.011	160.043				

SIZE	M1	N	N1	N2	P	S	T	V	W	X	Y	Y2
10	552	172	165	127	310	352	384	8	146	136	16.000	28.026
											15.957	27.972
12	656	194	185	152	366	399	450	7	162	175	18.000	32.032
											17.957	31.970
14	749	230	220	178	425	471	526	7	194	206	20.000	40.030
											19.948	39.970

SIZE	Z1	Z2	AA	BB	CC	DD	EE	FF	GG	HH	JJ
10	116.6	59.00	864 - 1016	438	60	20	135	185	64	26	156
	116.4	58.71									
12	137.6	64.00	864 - 1016	508	60	20	135	185	64	26	172
	137.4	63.89									
14	169.7	79.50	864 - 1016	584	70	22	165	225	84	33	206
	169.4	79.19									

Dimensions E1 and E2 are useable lengths of shaft extensions

**CN** **V** **S** - FLANGE/SHAFT MOUNTED



Dimensions E1 and E2 are useable lengths of shaft extensions

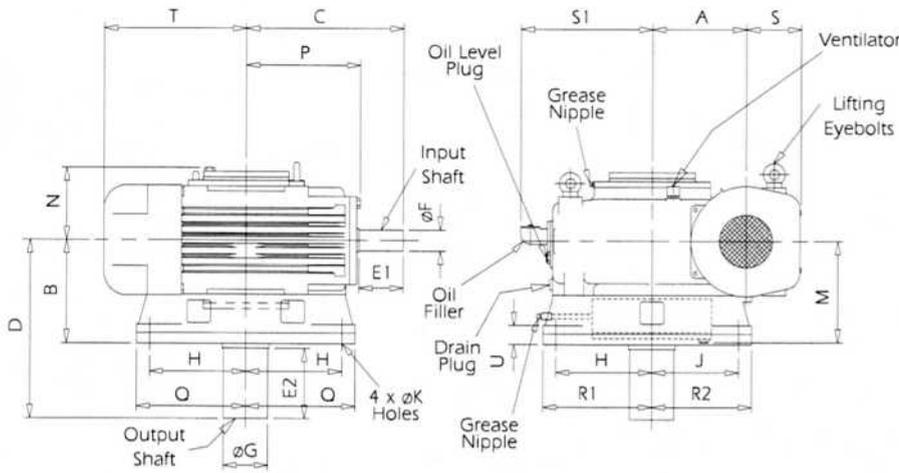
SIZE	A	B	C	E1	E3	E4	$\phi F$	$\phi G2$	$\phi G3$	H	J	K
10	254.0	279	425	107	94	13	55.030	110.071	133.3	260	235	31.7
							55.011	110.035				
12	304.8	305	495	121	92	14	60.030	130.083	152.0	317	267	34.9
							60.011	130.043				
14	355.6	330	571	137	105	15	75.030	160.084	187.0	356	305	41.3
							75.011	160.043				

SIZE	$\phi K3$	N	N1	N2	P	Q	R1	R2	S	S2	T	U	V
10	M20 x 43	172	165	127	310	295	295	270	212	149	384	51	8
12	M20 x 43	194	185	152	366	356	356	305	247	169	450	57	7
14	M20 x 43	230	220	178	425	403	403	352	300	187	526	63	7

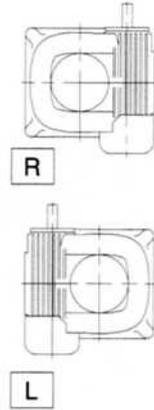
SIZE	Y	Y2	Z1	Z2
10	16.000	28.026	116.6	59.00
	15.957	27.972	116.4	58.71
12	18.000	32.032	137.6	64.00
	17.957	31.970	137.4	63.69
14	20.000	40.030	169.7	79.50
	19.948	39.970	169.4	79.19

9610

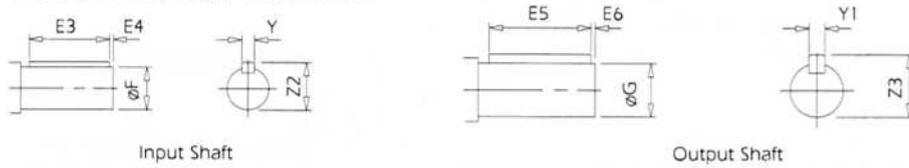
**V** **HDST** - HEAVY DUTY STIRRER



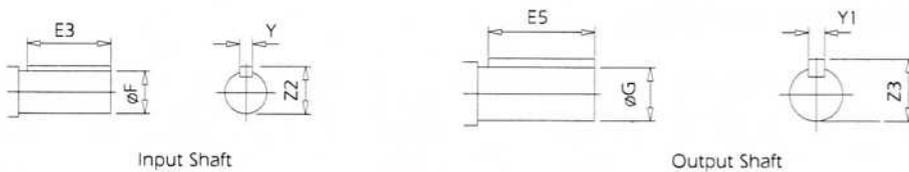
### Shaft Handling



### Shaft Dimensions, CNV-HDST



### Shaft Dimensions, NV-HDST



Dimensions E1 and E2 are useable lengths of shaft extensions

### Types NV and CNV, common dimensions (mm)

SIZE	A	B	C	D	H	J	K	M	N	P	Q	R1	R2	S	S1	T	U
10	254.0	279	425	483	260	235	32 x 4 holes	273	194	308	295	295	270	149	356	375	51
12	304.8	305	495	546	317	267	35 x 4 holes	314	216	364	356	356	305	165	406	440	57
14	355.6	330	571	610	356	305	41 x 4 holes	317	254	425	403	403	352	184	452	516	64

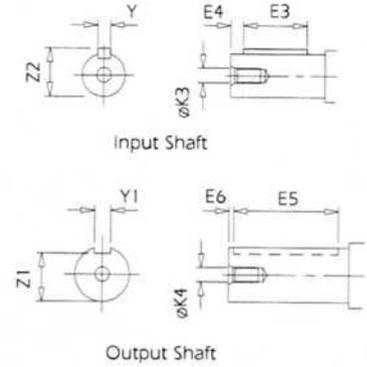
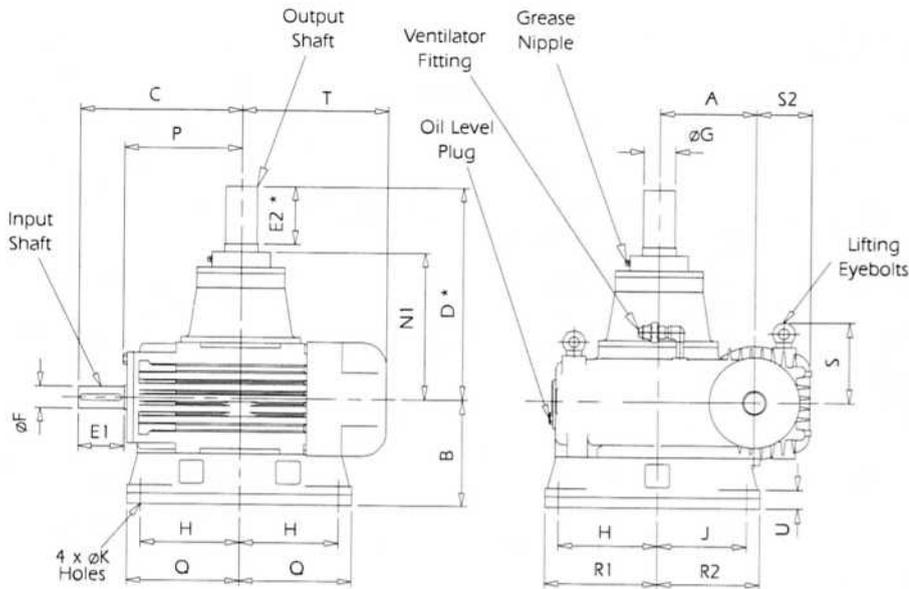
### Type CNV, Shaft dimensions (mm)

SIZE	E1	E2	E3	E4	E5	E6	F	G	Y	Y1	Z2	Z3
10	107	191	94	13	148	21	55.030	120.035	16.000	32.000	59.5	127.00
							55.011	120.013	15.957	31.938	59.3	126.69
12	121	203	92	14	144	23	60.030	140.040	18.000	36.000	64.6	148.00
							60.011	140.015	17.957	35.938	64.4	147.57
14	137	241	105	15	180	25	75.030	170.040	20.000	40.000	80.1	179.00
							75.011	170.015	19.948	39.938	79.9	178.57

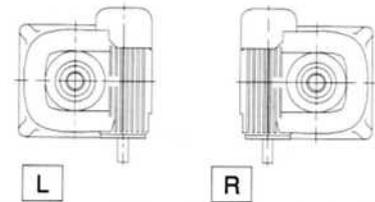
### Type NV, Shaft dimensions (inches)

SIZE	E1	E2	E3	E5	F	G	Y	Y1	Z2	Z3
10	4.21	7.5	3.19	7.625	2.2500	4.5000	0.627	1.253	2.431	4.861
					2.4993	4.4991	0.625	1.250	2.422	4.851
12	4.76	8.0	3.19	8.00	2.5000	5.5000	0.627	1.503	2.681	5.907
					2.4993	5.4990	0.625	1.500	2.672	5.895
14	5.39	9.5	5.38	9.50	3.0000	6.5000	0.752	1.753	3.203	7.016
					2.9993	6.4990	0.750	1.750	3.194	7.004

**CN** **V** **CT** - COOLING TOWER



### Shaft Handling



\* To suit customers requirements for fan hubs

Units are supplied with BSP plugs fitted to, oil filler, drain and ventilator points suitable for connections to outside of towers.

Lubrication is entirely self contained. Gears and lower bearings dip in the oil bath whilst oil is pumped to the top wheelshaft bearing by means of a built-in mechanical oil pump.

SIZE	A	B	C	E1	E3	E4	E5	E6	øF	øG	H	J
10	254.0	279	425	107	94	13	140	5	55.030	85.035	260	235
									55.011	85.013		
12	304.8	305	495	121	92	14	160	5	60.030	95.035	317	267
									60.011	95.013		
14	355.6	330	571	137	105	15	180	5	75.030	120.035	356	305
									75.011	120.013		

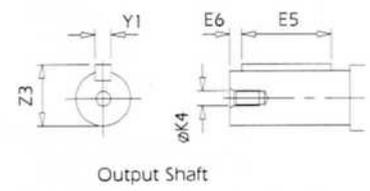
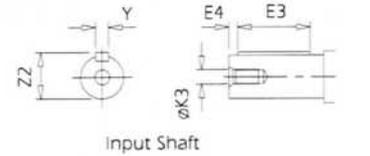
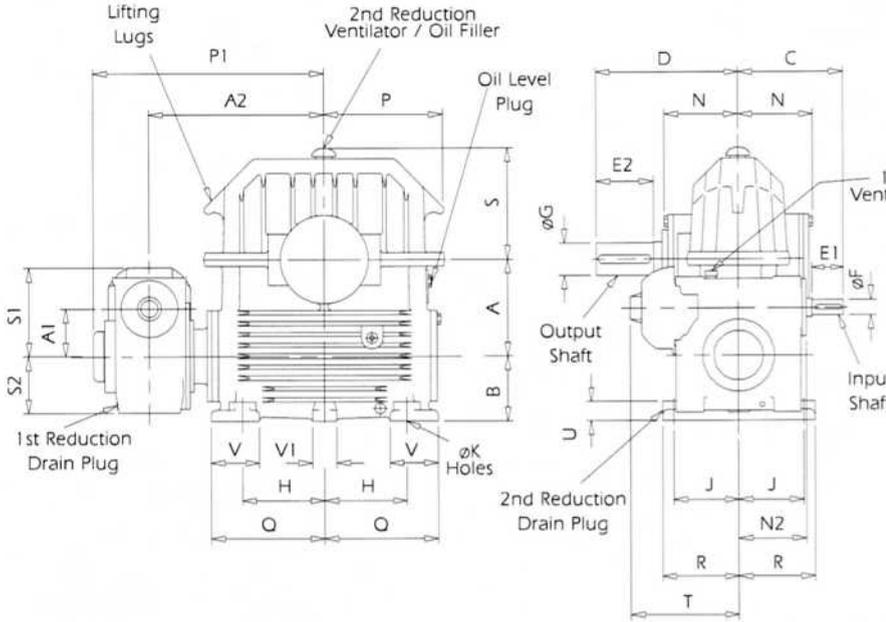
SIZE	K	øK3	øK4	N1	P	Q	R1	R2	S	S2	T	U
10	32	M20 x 43	M24 x 50	386	310	295	295	270	212	149	384	51
12	35	M20 x 43	M24 x 50	419	366	356	356	305	247	169	450	57
14	41	M20 x 43	M30 x 63	470	425	403	403	352	300	187	526	63

SIZE	Y	Y1	Z1	Z2
10	16.000	21.978	76.0	59.00
	15.957	21.926	75.8	58.71
12	18.000	24.978	86.0	64.00
	17.957	24.926	85.8	63.69
14	20.000	31.974	109.0	79.50
	19.948	31.912	108.8	79.19

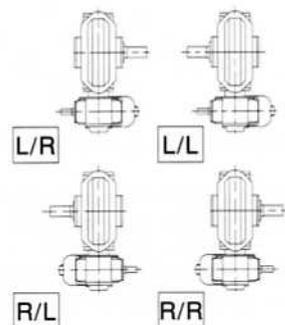
Dimensions E1 and E2 are useable lengths of shaft extensions

9610

**CN** **U** **D** - FOOT MOUNTED



**Shaft Handing**



Units can be supplied with double outputshafts

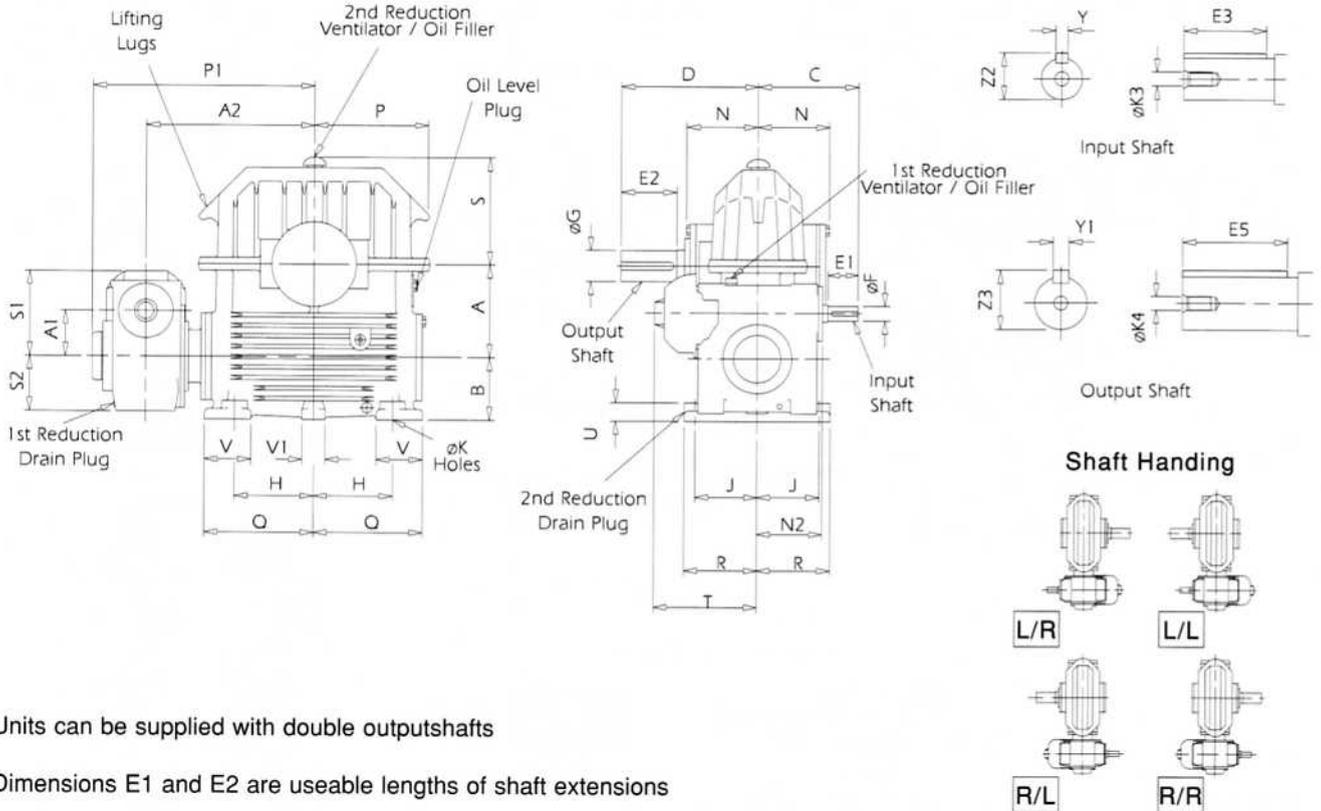
Dimensions E1 and E2 are useable lengths of shaft extensions

SIZE	A	A1	A2	B	C	D	E1	E2	E3	E4	E5	E6	øF
10	254.0	125	460	171	275	375	82	152	58	9	118	16	40.018 40.002
12	304.8	160	545	190	310	413	82	171	56	10	135	17.5	45.018 45.002
14	355.6	160	605	216	310	483	82	191	56	10	148	21	45.018 45.002
17	431.8	200	695	254	345	546	82	203	56	10	144	23	50.018 50.002
20	508.0	200	800	292	345	610	82	241	56	10	180	25	50.018 50.002
24	609.6	304.8	950	330	495	711	121	355	92	14	235	27.5	60.030 60.011

SIZE	øG	H	J	øK	øK3	øK4	N	N2	P	P1	Q	R	S
10	85.035 85.013	216	165	32 4 Holes	M12 x 25	M24 x 50	197	185	318	606	298	200	294
12	95.035 95.013	260	184	35 4 Holes	M12 x 25	M24 x 50	213	215	368	708	356	222	348
14	120.035 120.013	298	216	41 4 Holes	M12 x 25	M30 x 63	254	215	432	768	413	260	399
17	140.040 140.015	381	254	41 6 Holes	M12 x 25	M30 x 63	300	255	521	868	502	298	477
20	170.040 170.015	444	292	48 6 Holes	M12 x 25	M36 x 74	317	255	610	973	584	356	554
24	190.046 190.017	546	317	41 6 Holes	M20 x 43	M36 x 74	340	255	695	1144	686	368	670

SIZE	S1	S2	T	U	V	V1	Y	Y1	Z2	Z3
10	233	150	282	51	127	63	12.000 11.957	22.000 21.948	43.00 42.71	94.500 94.148
12	278	177	317	57	152	76	14.000 13.957	25.000 24.948	48.50 48.21	105.500 105.148
14	278	177	317	63	178	89	14.000 13.957	32.000 31.938	48.50 48.21	134.000 133.638
17	332	230	353	76	190	127	14.000 13.957	36.000 35.938	53.50 53.21	155.500 155.138
20	332	230	353	89	229	152	14.000 13.957	40.000 39.938	53.50 53.21	187.500 187.138
24	470	340	438	38	229	152	18.000 17.957	45.000 44.938	64.00 63.69	210.000 209.638

**N U D** - FOOT MOUNTED



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

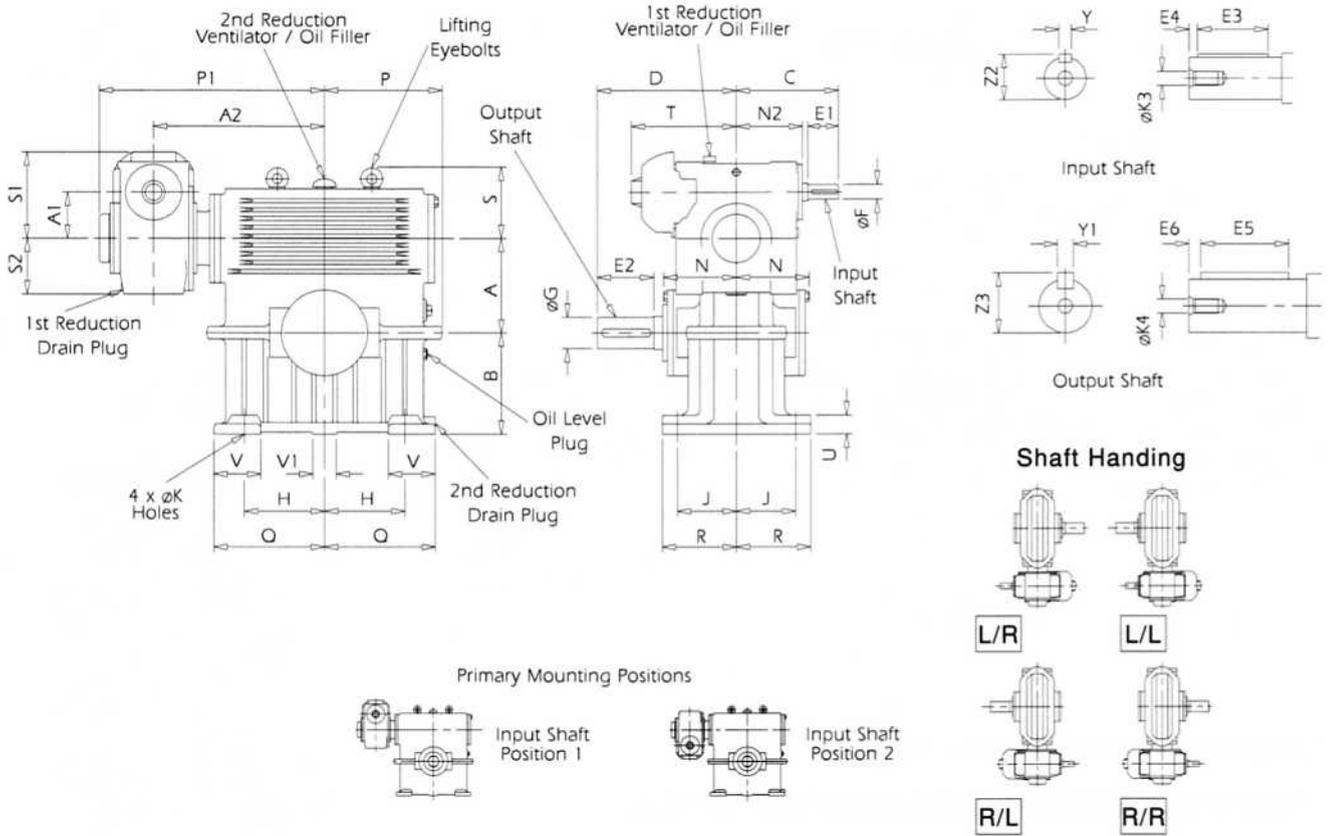
SIZE	A	A1	A2	B	C	D	E1	E2	E3	E5	øF	øG
10	10	4.92	18.11	6.75	10.83	14.75	3.23	6.00	2.495	5.06	1.6250 1.6244	3.2500 3.2491
12	12	6.30	21.45	7.50	12.20	16.25	3.23	6.75	2.500	5.75	1.8750 1.8744	3.7500 3.7491
14	14	6.30	23.81	8.50	12.20	19.00	3.23	7.50	2.500	7.63	1.8750 1.8744	4.5000 4.4991
17	17	7.87	27.36	10.0	13.58	21.50	3.23	8.00	2.500	8.00	2.0000 1.9993	5.5000 5.4990
20	20	7.87	31.50	11.5	13.58	24.00	3.23	9.50	2.500	9.50	2.0000 1.9993	6.5000 6.4990
24	24	12.00	37.40	13.0	19.50	28.00	4.76	14.0	3.190	12.50	2.5000 2.4993	7.5000 7.4988

SIZE	H	J	øK	øK3	øK4	N	N2	P	P1	Q	R	S
10	8.50	6.50	1.250 4 Holes	5/8" UNF x 1.25 Deep	7/8" UNF x 1.75 Deep	7.75	7.28	12.50	23.86	11.75	7.88	11.56
12	10.25	7.25	1.375 4 Holes	5/8" UNF x 1.25 Deep	7/8" UNF x 1.75 Deep	8.38	8.46	14.50	27.87	14.00	8.75	13.69
14	11.75	8.50	1.625 4 Holes	5/8" UNF x 1.25 Deep	1" UNF x 2.0 Deep	10.0	8.46	17.00	30.24	16.25	10.25	15.69
17	15.00	10.00	1.625 6 Holes	5/8" UNF x 1.25 Deep	1" UNF x 2.0 Deep	11.81	10.04	20.50	34.17	19.75	11.75	19.25
20	17.50	11.50	1.875 6 Holes	5/8" UNF x 1.25 Deep	1.1/4" UNF x 2.5 Deep	12.50	10.04	24.00	38.31	23.00	14.00	22.31
24	21.50	12.50	1.625 6 Holes	M20 x 43	1.1/4" UNF x 2.5 Deep	13.38	14.39	28.75	45.04	27.00	14.50	26.00

SIZE	S1	S2	T	U	V	V1	Y	Y1	Z2	Z3
10	9.17	5.91	11.10	2.00	5.0	2.5	0.377 0.375	0.877 0.875	1.793 1.785	3.509 3.499
12	10.94	6.97	12.48	2.25	6.0	3.0	0.502 0.500	1.003 1.000	2.093 2.085	4.063 4.053
14	10.94	6.97	12.48	2.50	7.0	3.5	0.502 0.500	1.253 1.250	2.093 2.085	4.860 4.850
17	13.07	9.06	13.90	3.00	7.5	5.0	0.502 0.500	1.503 1.500	2.219 2.211	5.904 5.894
20	13.07	9.06	13.90	3.50	9.0	6.0	0.502 0.500	1.753 1.750	2.219 2.211	7.013 7.003
24	18.50	13.39	17.38	3.50	9.0	6.0	0.627 0.625	2.003 2.000	2.681 2.672	8.060 8.050

9610

**CN** **O** **D** - FOOT MOUNTED



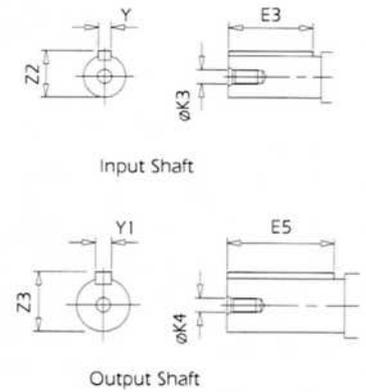
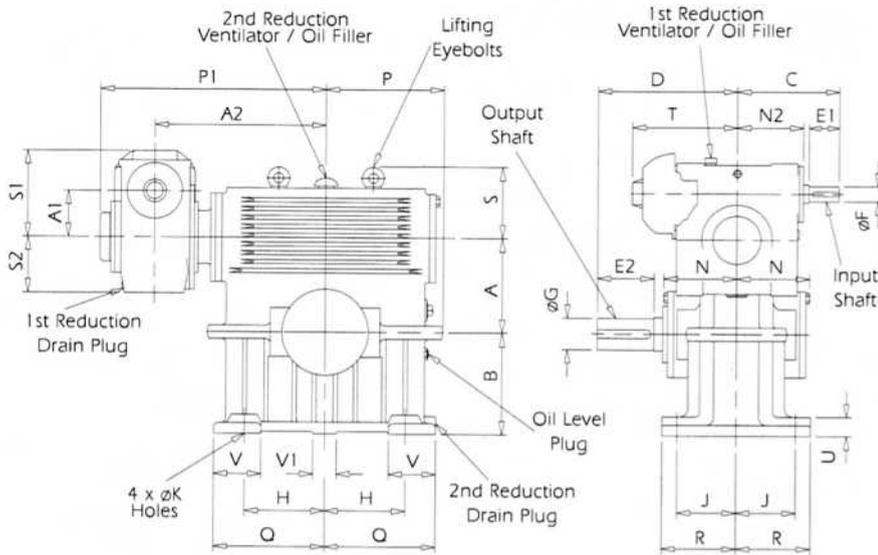
Dimensions E1 and E2 are useable lengths of shaft extensions

SIZE	A	A1	A2	B	C	D	E1	E2	E3	E4	E5	E6	øF
10	254.0	125	460	273	275	375	82	152	58	9	118	16	40.018
													40.002
12	304.8	160	545	330	310	413	82	171	56	10	135	17.5	45.018
													45.002
14	355.6	160	605	381	310	483	82	191	56	10	148	21	45.018
													45.002

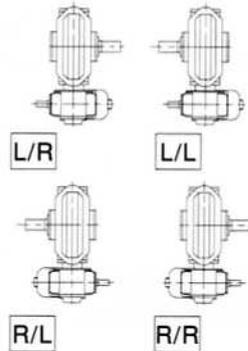
SIZE	øG	H	J	øK	øK3	øK4	N	N2	P	P1	Q	R	S
10	85.035	216	165	32	M12 x	M24 x	197	185	318	606	298	200	182
	85.013			4 Holes	25	50							
12	95.035	260	184	35	M12 x	M24 x	213	215	367	708	356	222	237
	95.013			4 Holes	25	50							
14	120.035	298	216	41	M12 x	M30 x	254	215	432	768	413	260	278
	120.013			4 Holes	25	63							

SIZE	S1	S2	T	U	V	V1	Y	Y1	Z2	Z3
10	233	150	282	51	127	63	12.000	22.000	43.00	94.500
							11.957	21.948	42.71	94.148
12	278	177	317	57	152	76	14.000	25.000	48.50	105.500
							13.957	24.948	48.21	105.148
14	278	177	317	63	178	89	14.000	32.000	48.50	134.000
							13.957	31.938	48.21	133.638

**N O D** - FOOT MOUNTED



### Shaft Handling



Units can be supplied with double outputshafts

### Primary Mounting Positions



Dimensions E1 and E2 are useable lengths of shaft extensions

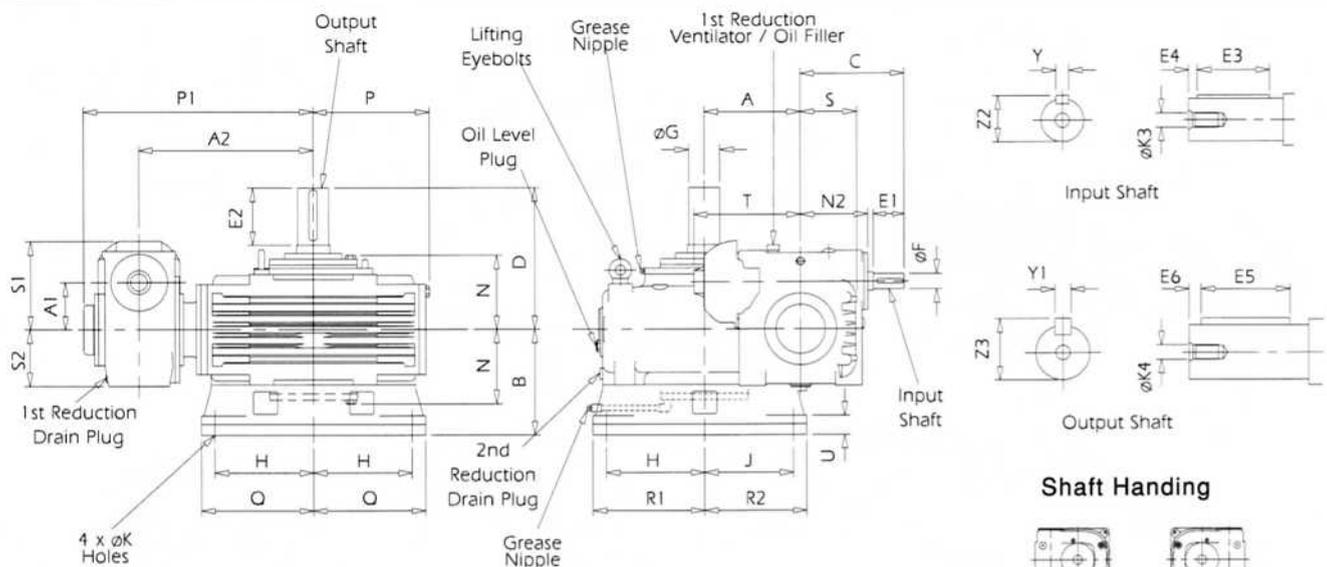
SIZE	A	A1	A2	B	C	D	E1	E2	E3	E5	øF	øG
10	10	4.92	18.11	10.75	10.83	14.75	3.23	6.00	2.495	5.06	1.6250	3.2500
											1.6244	3.2491
12	12	6.30	21.45	13.00	12.20	16.25	3.23	6.75	2.500	5.75	1.8750	3.7500
											1.8744	3.7491
14	14	6.30	23.81	15.00	12.20	19.00	3.23	7.50	2.500	7.63	1.8750	4.5000
											1.8744	4.4991

SIZE	H	J	øK	øK3	øK4	N	N2	P	P1	Q	R	S
10	8.50	6.50	1.250 4 Holes	5/8" UNF x 1.25 Deep	7/8" UNF x 1.75 Deep	7.75	7.28	12.50	23.86	11.75	7.88	7.14
12	10.25	7.25	1.375 4 Holes	5/8" UNF x 1.25 Deep	7/8" UNF x 1.75 Deep	8.38	8.46	14.50	27.87	14.00	8.75	9.33
14	11.75	8.50	1.625 4 Holes	5/8" UNF x 1.25 Deep	1" UNF x 2.0 Deep	10.0	8.46	17.00	30.24	16.25	10.25	10.93

SIZE	S1	S2	T	U	V	V1	Y	Y1	Z2	Z3
10	9.17	5.91	11.10	2.00	5.0	2.5	0.377	0.877	1.793	3.509
							0.375	0.875	1.785	3.499
12	10.94	6.97	12.48	2.25	6.0	3.0	0.502	1.003	2.093	4.063
							0.500	1.000	2.085	4.053
14	10.94	6.97	12.48	2.50	7.0	3.5	0.502	1.253	2.093	4.860
							0.500	1.250	2.085	4.850

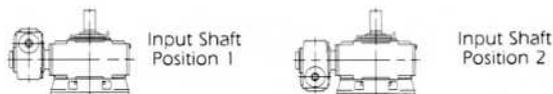
9610

**CN** **V** **D** - FLANGE MOUNTED

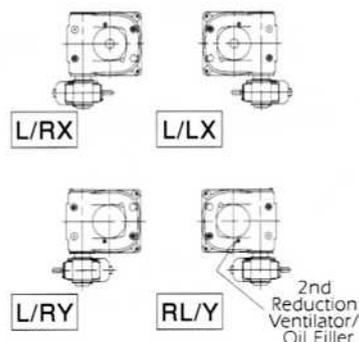


X Denotes slow speed shaft vertically up  
Y Denotes slow speed shaft vertically down

Primary Mounting Positions



Shaft Handing



Units can be supplied with double outputshafts

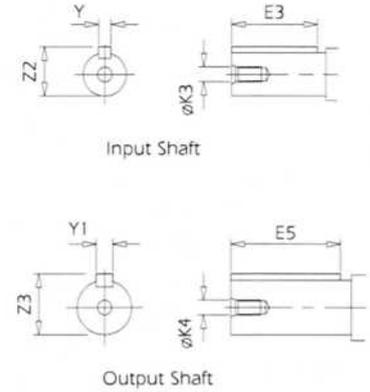
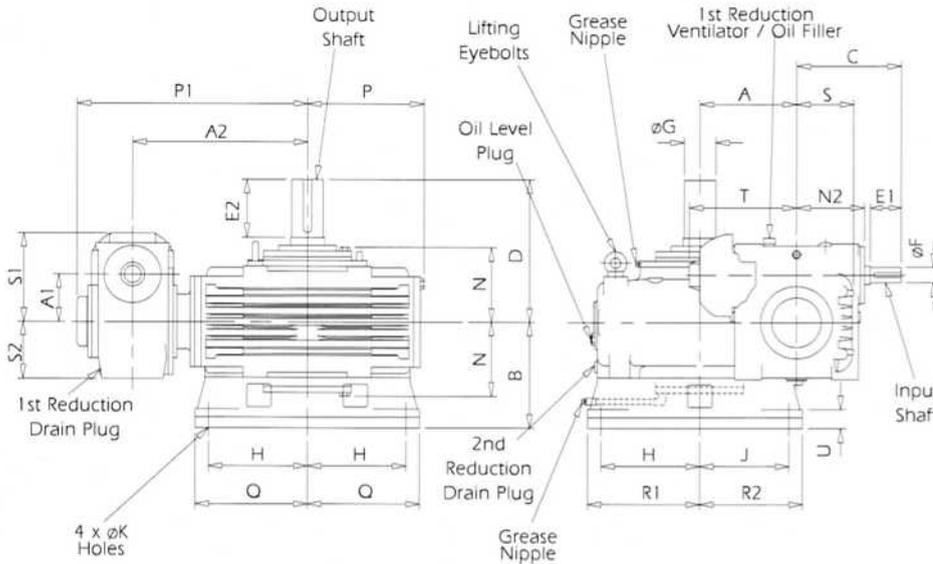
Dimensions E1 and E2 are useable lengths of shaft extensions

SIZE	A	A1	A2	B	C	D	E1	E2	E3	E4	E5	E6	øF
10	254.0	125	460	279	275	375	82	152	58	9	118	16	40.018 40.002
12	304.8	160	545	305	310	413	82	171	56	10	135	17.5	45.018 45.002
14	355.6	160	605	330	310	483	82	191	56	10	148	21	45.018 45.002
17	431.8	200	695	406	345	546	82	203	56	10	144	23	50.018 50.002
20	508.0	200	800	432	345	610	82	241	56	10	180	25	50.018 50.002

SIZE	øG	H	J	øK	øK3	øK4	N	N2	P	P1	Q	R1	R2
10	85.035 85.013	260	235	32	M12 x 25	M24 x 50	197	185	318	606	295	295	270
12	95.035 95.013	317	267	35	M12 x 25	M24 x 50	213	215	368	708	356	356	305
14	120.035 120.013	356	305	41	M12 x 25	M30 x 63	254	215	432	768	403	403	352
17	140.040 140.015	432	432	41	M12 x 25	M30 x 63	300	255	521	868	502	502	502
20	170.040 170.015	521	521	41	M12 x 25	M36 x 74	317	255	610	973	597	597	597

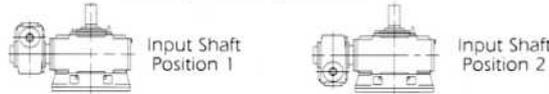
SIZE	S	S1	S2	T	U	Y	Y1	Z2	Z3
10	149	233	150	282	51	12.000 11.957	22.000 21.948	43.00 42.71	94.500 94.148
12	169	278	177	317	57	14.000 13.957	25.000 24.948	48.50 48.21	105.500 105.148
14	187	278	177	317	63	14.000 13.957	32.000 31.938	48.50 48.21	134.000 133.638
17	254	332	230	353	76	14.000 13.957	36.000 35.938	53.50 53.21	155.500 155.138
20	283	332	230	353	89	14.000 13.957	40.000 39.938	53.50 53.21	187.500 187.138

**N** **V** **D** - FLANGE MOUNTED

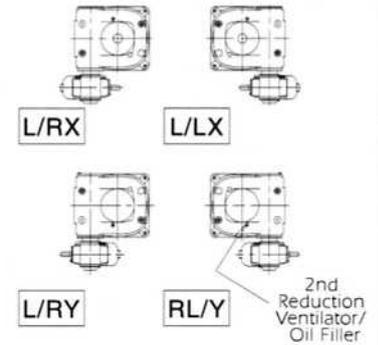


X Denotes slow speed shaft vertically up  
Y Denotes slow speed shaft vertically down

Primary Mounting Positions



Shaft Handling



Units can be supplied with double outputshafts

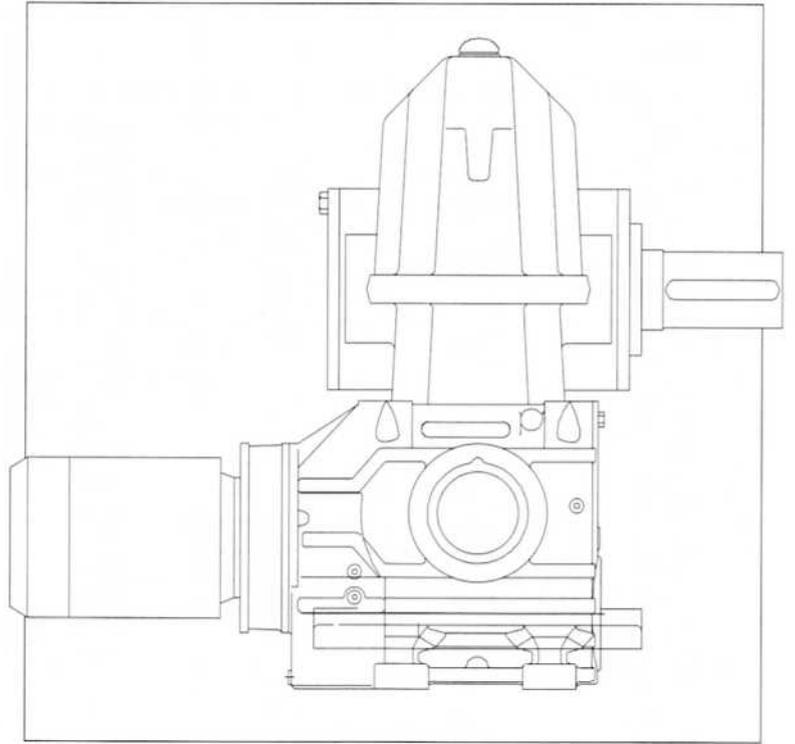
Dimensions E1 and E2 are useable lengths of shaft extensions

SIZE	A	A1	A2	B	C	D	E1	E2	E3	E5	øF	øG
10	10	4.92	18.11	11.0	10.83	14.75	3.23	6.00	2.495	5.06	1.6250 1.6244	3.2500 3.2491
12	12	6.30	21.45	12.0	12.20	16.25	3.23	6.75	2.500	5.75	1.8750 1.8744	3.7500 3.7491
14	14	6.30	23.81	13.0	12.20	19.00	3.23	7.50	2.500	7.63	1.8750 1.8744	4.5000 4.4991
17	17	7.87	27.36	16.0	13.58	21.50	3.23	8.00	2.500	8.00	2.0000 1.9993	5.5000 5.4990
20	20	7.87	31.50	17.0	13.58	24.00	3.23	9.50	2.500	9.50	2.0000 1.9993	6.5000 6.4990

SIZE	H	J	øK	øK3	øK4	N	N2	P	P1	Q	R1	R2
10	10.25	9.25	1.250 4 Holes	M20 x 43 Deep	M24 x 50	7.75	7.28	12.50	23.86	11.63	11.63	10.63
12	12.50	10.50	1.375 4 Holes	M20 x 43 Deep	M24 x 50	8.38	8.46	14.50	27.87	14.00	14.00	12.00
14	14.00	12.00	1.625 4 Holes	M20 x 43 Deep	M30 x 63	10.0	8.46	17.00	30.24	15.88	15.88	13.88
17	17.00	17.00	1.625 4 Holes	M24 x 52 Deep	M30 x 63	11.81	10.04	20.50	34.17	19.75	19.75	19.75
20	20.50	20.50	1.625 4 Holes	M24 x 52 Deep	M36 x 74	12.50	10.04	24.00	38.31	23.50	23.50	23.50

SIZE	S	S1	S2	T	U	Y	Y1	Z2	Z3
10	5.88	9.17	5.91	11.10	2.00	0.377 0.375	0.877 0.875	1.793 1.785	3.509 3.499
12	6.63	10.94	6.97	12.48	2.25	0.502 0.500	1.003 1.000	2.093 2.085	4.063 4.053
14	7.38	10.94	6.97	12.48	2.50	0.502 0.500	1.253 1.250	2.093 2.085	4.860 4.850
17	10.00	13.07	9.06	13.90	3.00	0.502 0.500	1.503 1.500	2.219 2.211	5.904 5.894
20	11.13	13.07	9.06	13.90	3.50	0.502 0.500	1.753 1.750	2.219 2.211	7.013 7.003





# MOTORISED

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## **B** SERIES A

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## RADICON®

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9701

**MOMENTS OF INERTIA (Kg cm<sup>2</sup>) Referred to Input Shaft**
**TRIPLE REDUCTION (helical worm/worm)**

<b>RATIO</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>17</b>	<b>20</b>
75.00	93.65	279.49	289.10	543.65	601.45
100.00	92.62	277.10	285.58	532.35	568.61
125.00	52.88	176.09	180.12	314.88	339.93
150.00	32.59	121.99	124.26	191.44	205.95
200.00	91.51	274.75	279.48	516.24	540.53
225.00	35.86	132.10	133.80	202.93	210.11
250.00	32.19	121.02	122.38	185.38	191.53
300.00	52.02	174.10	176.09	303.01	313.53
350.00	46.26	157.59	159.17	262.31	270.47
375.00	46.29	163.33	163.98	255.20	258.72
400.00	91.17	274.17	278.72	511.06	524.04
450.00	35.64	131.63	132.58	199.74	204.55
500.00	32.02	120.64	121.40	182.64	186.77
600.00	13.89	24.72	24.87	31.54	32.39
625.00	46.22	163.17	163.62	254.38	256.79
700.00	46.14	157.40	158.91	260.57	264.93
750.00	16.76	32.49	32.66	48.35	49.30
800.00	31.98	120.56	121.31	181.50	184.58
900.00	35.58	131.51	132.43	198.72	201.29
1000.00	31.96	120.55	121.28	181.76	183.97
1200.00	31.96	120.54	121.05	181.50	186.42
1250.00	16.76	32.44	32.56	48.12	48.77
1400.00	41.54	148.87	149.22	224.22	225.22
1500.00	16.76	32.43	32.53	48.07	48.63
1600.00	21.85	94.52	94.81	121.35	122.16
1750.00	41.54	148.86	149.11	224.10	226.33
1800.00	17.94	35.63	35.78	54.42	55.02
2000.00	29.78	116.43	116.60	163.38	163.88
2100.00	14.23	26.10	26.15	34.77	35.05
2400.00	13.85	24.62	24.66	31.00	31.21
2500.00	16.75	32.43	32.54	47.98	48.33
2800.00	22.95	98.53	98.62	125.59	125.83
3000.00	16.75	32.42	32.51	47.94	48.72
3500.00	16.75	32.41	32.52	47.92	48.62
3600.00	14.23	26.10	26.16	34.73	34.90
4200.00	14.23	26.10	26.14	34.71	35.09

 $GD^2 \text{ (Kg cm}^2\text{)} = 4 \times \text{Moment of Inertia (Kg cm}^2\text{)}$

**TRIPLE REDUCTION (helical worm/worm)**

Nominal Ratio	Primary & Secondary Nominal Ratio	10	12	14	17	20
75.00	8 x 10	75.75	78.13	78.13	79.51	78.18
100.00	8 x 12.5	99.06	99.66	101.7	99.39	101.4
125.00	12 x 10	119.3	120.6	120.6	120.8	118.8
150.00	20 x 7.5	148.2	149.1	149.1	144.7	144.7
200.00	8 x 25	190.4	199.3	195.3	196.1	196.1
225.00	18 x 12.5	224.4	222.4	226.9	223.4	227.9
250.00	20 x 12.5	251.9	248.5	253.5	241.2	246.0
300.00	12 x 25	299.8	307.6	301.4	298.0	298.0
350.00	14 x 25	333.4	345.2	338.3	338.4	338.4
375.00	25 x 15	358.9	377.4	379.6	372.7	372.7
400.00	8 x 50	388.5	398.6	398.6	397.5	393.6
450.00	10 x 25	431.1	444.9	436.0	440.8	440.8
500.00	20 x 25	484.0	497.0	487.1	475.9	475.9
600.00	80 x 7.5	573.8	578.8	578.8	597.8	597.8
625.00	25 x 25	599.5	643.4	630.5	623.3	623.3
700.00	14 x 50	680.5	690.5	690.5	686.0	679.1
750.00	50 x 15	722.5	725.9	730.0	715.5	715.5
800.00	20 x 40	790.3	795.2	795.2	771.8	771.8
900.00	18 x 50	879.9	889.7	889.7	893.5	884.6
1000.00	20 x 50	987.8	994.0	994.0	964.7	955.0
1200.00	20 x 60	1185.	1193.	1193.	1158.	1158.
1250.00	50 x 25	1207.	1237.	1213.	1197.	1197.
1400.00	28 x 50	1361.	1444.	1444.	1435.	1421.
1500.00	50 x 30	1453.	1460.	1509.	1431.	1431.
1600.00	32 x 50	1589.	1571.	1571.	1593.	1577.
1750.00	28 x 60	1633.	1733.	1733.	1722.	1722.
1800.00	45 x 40	1746.	1782.	1782.	1746.	1746.
2000.00	40 x 50	1976.	2079.	2079.	2018.	1998.
2100.00	71 x 30	2054.	2062.	2132.	2041.	2041.
2400.00	80 x 30	2257.	2277.	2354.	2351.	2351.
2500.00	50 x 50	2463.	2475.	2475.	2426.	2401.
2800.00	56 x 50	2730.	2883.	2883.	2943.	2913.
3000.00	50 x 60	2956.	2969.	2969.	2911.	2911.
3500.00	50 x 70	3448.	3464.	3464.	3396.	3396.
3600.00	71 x 50	3482.	3495.	3495.	3459.	3424.
4200.00	71 x 60	4179.	4194.	4194.	4151.	4151.

9701

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT				
				10	12	14	17	20
75.0	19.33	Mechanical	Input Power kW	20.30	36.40	36.50	60.50	63.80
			Output Torque Nm	8610	16200	16200	27700	29000
		Thermal	Input Power kW	24.60	35.20	49.30	76.20	88.50
			Output Torque Nm	10500	15600	22100	35100	40400
100.	14.50	Mechanical	Input Power kW	20.30	29.40	36.50	53.40	63.80
			Output Torque Nm	11100	16400	20900	30300	37400
		Thermal	Input Power kW	21.50	32.50	42.70	69.70	88.50
			Output Torque Nm	11800	18200	24500	39700	52000
125.	11.60	Mechanical	Input Power kW	15.60	27.80	28.30	45.40	50.20
			Output Torque Nm	10300	18800	19200	31200	34200
		Thermal	Input Power kW	15.70	22.90	32.20	50.40	63.00
			Output Torque Nm	10400	15400	21900	34700	43100
150.	9.67	Mechanical	Input Power kW	11.70	21.20	21.20	31.90	37.90
			Output Torque Nm	9440	17500	17600	26000	31100
		Thermal	Input Power kW	10.90	15.80	21.80	34.70	41.80
			Output Torque Nm	8860	13000	18100	28200	34300
200.	7.25	Mechanical	Input Power kW	12.20	18.10	25.50	45.10	60.30
			Output Torque Nm	11900	18800	26500	47800	65500
		Thermal	Input Power kW	13.90	20.20	28.50	43.30	60.90
			Output Torque Nm	13600	21000	29700	45900	66200
225.	6.44	Mechanical	Input Power kW	9.96	15.10	22.70	30.70	39.70
			Output Torque Nm	11900	18200	28100	38100	50700
		Thermal	Input Power kW	9.65	14.70	19.40	31.30	42.90
			Output Torque Nm	11500	17800	24000	38800	54900
250.	5.80	Mechanical	Input Power kW	8.92	13.50	21.20	29.20	37.90
			Output Torque Nm	11900	18200	29200	38900	52100
		Thermal	Input Power kW	8.61	13.20	17.40	29.00	39.80
			Output Torque Nm	11500	17800	23900	38800	54800
300.	4.83	Mechanical	Input Power kW	7.94	12.00	19.10	30.50	40.50
			Output Torque Nm	11900	18800	30200	48100	65500
		Thermal	Input Power kW	8.86	13.10	18.60	28.60	40.30
			Output Torque Nm	13300	20600	29200	45100	65100
350.	4.14	Mechanical	Input Power kW	7.19	10.70	17.80	27.00	35.90
			Output Torque Nm	11900	18800	31300	48100	65500
		Thermal	Input Power kW	7.98	11.70	16.60	25.20	35.60
			Output Torque Nm	13300	20500	29100	44800	64700
375.	3.87	Mechanical	Input Power kW	6.68	9.95	17.40	24.60	31.20
			Output Torque Nm	11900	18800	33700	48100	61800
		Thermal	Input Power kW	11.30	16.70	19.50	35.90	38.00
			Output Torque Nm	20600	32100	37900	70900	75600
400.	3.63	Mechanical	Input Power kW	6.99	10.50	14.90	25.10	23.70
			Output Torque Nm	11900	18800	27600	48100	47400
		Thermal	Input Power kW	8.40	12.20	16.50	26.40	41.60
			Output Torque Nm	14500	22200	30600	50600	84800
450.	3.22	Mechanical	Input Power kW	5.65	8.45	15.00	21.10	28.00
			Output Torque Nm	11900	18800	33700	48100	65500
		Thermal	Input Power kW	6.21	9.13	12.90	19.40	27.40
			Output Torque Nm	13100	20300	28800	44300	64000
500.	2.90	Mechanical	Input Power kW	5.06	7.62	13.80	19.60	26.10
			Output Torque Nm	11900	18800	34200	48100	65500
		Thermal	Input Power kW	5.54	8.19	11.60	18.00	25.40
			Output Torque Nm	13100	20200	28700	44200	63800
600.	2.42	Mechanical	Input Power kW	4.09	6.27	8.79	12.30	14.00
			Output Torque Nm	11900	18800	26500	38700	44100
		Thermal	Input Power kW	2.96	4.23	5.84	8.72	12.00
			Output Torque Nm	8600	12600	17500	27300	37700
625.	2.32	Mechanical	Input Power kW	4.37	6.38	11.30	15.90	20.90
			Output Torque Nm	11900	18800	34200	48100	65500
		Thermal	Input Power kW	7.95	11.70	16.30	24.60	34.40
			Output Torque Nm	22300	35500	50000	75900	109000
700.	2.07	Mechanical	Input Power kW	4.16	6.28	10.50	15.10	15.40
			Output Torque Nm	11900	18800	32600	48100	51700
		Thermal	Input Power kW	4.83	7.10	9.56	15.30	24.30
			Output Torque Nm	14000	21400	29500	48700	82300
750.	1.93	Mechanical	Input Power kW	3.32	5.09	9.15	12.80	17.40
			Output Torque Nm	11900	18800	34200	48100	65500
		Thermal	Input Power kW	3.30	4.90	6.58	10.80	14.80
			Output Torque Nm	11900	18000	24500	40500	55600
800.	1.81	Mechanical	Input Power kW	3.47	5.26	9.28	12.60	16.90
			Output Torque Nm	11900	18800	34100	47100	65300
		Thermal	Input Power kW	3.89	5.80	7.85	13.70	19.30
			Output Torque Nm	13400	20800	28700	51200	74600
			Efficiency %	66	68	70	74	76

TRIPLE REDUCTION

NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT				
				10	12	14	17	20
900.	1.61	Mechanical	Input Power kW	3.29	4.97	8.73	11.90	12.30
			Output Torque Nm	11900	18800	34200	48100	52700
		Thermal	Input Power kW	3.76	5.53	7.45	11.80	18.70
			Output Torque Nm	13700	21000	29000	47800	81200
1000.	1.45	Mechanical	Input Power kW	2.95	4.48	7.88	11.10	11.40
			Output Torque Nm	11900	18800	34200	48100	52700
		Thermal	Input Power kW	3.35	4.96	6.68	10.90	17.30
			Output Torque Nm	13600	20900	28800	47500	80900
1200.	1.21	Mechanical	Input Power kW	2.61	3.96	6.67	9.60	13.00
			Output Torque Nm	11900	18800	33600	48100	65500
		Thermal	Input Power kW	2.98	4.38	6.21	9.82	12.30
			Output Torque Nm	13700	20900	31300	49200	61900
1250.	1.16	Mechanical	Input Power kW	2.16	3.23	5.85	8.25	11.00
			Output Torque Nm	11900	18800	34200	48100	65500
		Thermal	Input Power kW	2.28	3.36	4.76	7.32	10.40
			Output Torque Nm	12600	19500	27800	42600	61700
1400.	1.04	Mechanical	Input Power kW	2.38	3.48	5.97	8.15	8.27
			Output Torque Nm	11900	18800	34200	48100	52500
		Thermal	Input Power kW	4.44	6.47	8.63	13.60	21.40
			Output Torque Nm	23500	36900	50500	82600	141000
1500.	0.97	Mechanical	Input Power kW	1.86	2.81	4.47	7.09	9.39
			Output Torque Nm	11900	18800	31500	48100	65500
		Thermal	Input Power kW	2.00	3.05	4.15	6.49	9.32
			Output Torque Nm	12800	20400	29200	44000	65000
1600.	0.91	Mechanical	Input Power kW	1.91	2.93	5.18	6.95	7.13
			Output Torque Nm	11900	18800	34200	48100	52400
		Thermal	Input Power kW	2.11	3.16	4.26	6.66	10.60
			Output Torque Nm	13200	20300	28000	46000	78900
1750.	0.83	Mechanical	Input Power kW	2.12	3.11	5.07	7.13	9.52
			Output Torque Nm	11900	18800	33600	48100	65500
		Thermal	Input Power kW	3.98	5.75	8.10	12.30	15.20
			Output Torque Nm	23800	37100	55300	86000	107000
1800.	0.81	Mechanical	Input Power kW	1.67	2.48	4.38	6.01	7.86
			Output Torque Nm	11900	18800	33900	48100	64700
		Thermal	Input Power kW	1.80	2.63	3.56	6.15	8.71
			Output Torque Nm	12900	19900	27500	49200	71800
2000.	0.73	Mechanical	Input Power kW	1.68	2.48	4.28	5.94	5.99
			Output Torque Nm	11900	18800	34200	48100	52300
		Thermal	Input Power kW	3.09	4.54	6.06	9.72	15.40
			Output Torque Nm	22900	36200	49400	80800	139000
2100.	0.69	Mechanical	Input Power kW	1.35	2.03	3.23	5.09	6.74
			Output Torque Nm	11900	18800	31400	48100	65500
		Thermal	Input Power kW	1.43	2.18	2.97	4.59	6.60
			Output Torque Nm	12700	20100	28800	43300	64100
2400.	0.60	Mechanical	Input Power kW	1.24	1.85	2.94	4.46	5.90
			Output Torque Nm	11900	18800	31400	48100	65500
		Thermal	Input Power kW	1.31	1.98	2.70	4.00	5.76
			Output Torque Nm	12600	20100	28700	43100	63800
2500.	0.58	Mechanical	Input Power kW	1.28	1.93	3.42	4.72	4.80
			Output Torque Nm	11900	18800	34200	48100	52200
		Thermal	Input Power kW	1.38	2.03	2.74	4.42	7.06
			Output Torque Nm	12900	19800	27200	44900	77400
2800.	0.52	Mechanical	Input Power kW	1.25	1.83	3.17	4.18	4.23
			Output Torque Nm	11900	18800	34200	48100	52100
		Thermal	Input Power kW	2.27	3.31	4.42	6.72	10.70
			Output Torque Nm	22500	35500	48500	79100	137000
3000.	0.48	Mechanical	Input Power kW	1.14	1.71	2.87	4.12	5.67
			Output Torque Nm	11900	18800	33400	48100	65500
		Thermal	Input Power kW	1.22	1.79	2.54	3.97	5.01
			Output Torque Nm	12900	19600	29500	46300	57700
3500.	0.41	Mechanical	Input Power kW	1.01	1.52	2.71	3.68	5.06
			Output Torque Nm	11900	18800	34200	48100	65500
		Thermal	Input Power kW	1.16	1.69	2.21	3.62	4.60
			Output Torque Nm	13900	21000	27700	47200	59300
3600.	0.40	Mechanical	Input Power kW	0.93	1.40	2.49	3.41	3.44
			Output Torque Nm	11900	18800	34200	48100	52000
		Thermal	Input Power kW	0.98	1.45	1.95	3.12	5.00
			Output Torque Nm	12600	19400	26700	44000	76200
4200.	0.35	Mechanical	Input Power kW	0.83	1.25	2.09	2.97	4.11
			Output Torque Nm	11900	18800	33400	48100	65500
		Thermal	Input Power kW	0.87	1.27	1.82	2.80	3.54
			Output Torque Nm	12600	19200	28900	45300	56300
			Efficiency %	52	54	57	59	58

TRIPLE REDUCTION

9701

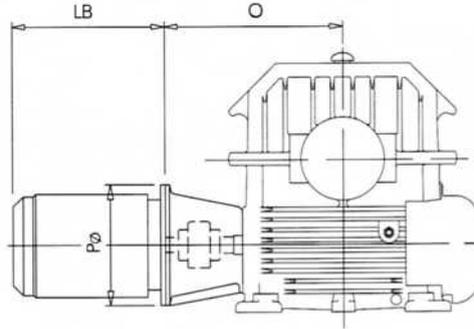
NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT				
				10	12	14	17	20
75.0	19.33	Mechanical	Input Power kW	17.30	30.90	30.90	54.20	54.00
			Output Torque Nm	6990	13100	13200	23900	23700
		Thermal	Input Power kW	19.20	27.50	38.30	59.20	67.30
			Output Torque Nm	7810	11600	16500	26200	29600
			Efficiency %	81	82	83	84	85
100.	14.50	Mechanical	Input Power kW	17.30	26.30	30.90	54.20	54.00
			Output Torque Nm	8990	14000	16900	29600	30400
		Thermal	Input Power kW	16.90	25.40	33.40	54.20	67.30
			Output Torque Nm	8810	13600	18300	29700	38100
			Efficiency %	80	82	82	83	84
125.	11.60	Mechanical	Input Power kW	13.30	24.10	24.10	42.60	42.50
			Output Torque Nm	8290	15500	15600	28100	27900
		Thermal	Input Power kW	12.30	17.90	25.00	39.20	48.00
			Output Torque Nm	7690	11500	16200	25800	31500
			Efficiency %	80	81	82	83	84
150.	9.67	Mechanical	Input Power kW	9.95	18.10	18.10	32.20	32.20
			Output Torque Nm	7620	14200	14200	25100	25200
		Thermal	Input Power kW	8.56	12.30	17.00	26.80	31.90
			Output Torque Nm	6540	9600	13400	20800	25000
			Efficiency %	78	79	80	81	82
200.	7.25	Mechanical	Input Power kW	12.70	18.50	26.10	42.70	54.00
			Output Torque Nm	11700	18100	25800	43000	55800
		Thermal	Input Power kW	11.20	16.20	22.70	34.50	48.20
			Output Torque Nm	10200	15700	22300	34400	49600
			Efficiency %	73	74	76	77	80
225.	6.44	Mechanical	Input Power kW	10.60	14.80	19.30	31.60	33.70
			Output Torque Nm	11900	17000	22700	37400	41100
		Thermal	Input Power kW	7.63	11.60	15.20	24.50	33.40
			Output Torque Nm	8550	13200	17800	28800	40700
			Efficiency %	76	78	78	80	81
250.	5.80	Mechanical	Input Power kW	9.47	13.70	18.10	30.00	32.20
			Output Torque Nm	11900	17400	23500	38200	42200
		Thermal	Input Power kW	6.82	10.40	13.70	22.70	31.00
			Output Torque Nm	8520	13200	17700	28700	40600
			Efficiency %	75	78	77	80	81
300.	4.83	Mechanical	Input Power kW	8.51	12.80	19.20	31.80	42.50
			Output Torque Nm	11900	18800	28400	47400	65000
		Thermal	Input Power kW	7.15	10.50	14.80	22.80	31.90
			Output Torque Nm	9940	15400	21800	33600	48500
			Efficiency %	70	72	74	75	77
350.	4.14	Mechanical	Input Power kW	7.71	11.50	17.60	28.70	38.00
			Output Torque Nm	11900	18800	29100	48100	65500
		Thermal	Input Power kW	6.45	9.41	13.20	20.10	28.10
			Output Torque Nm	9890	15300	21700	33400	48200
			Efficiency %	70	72	74	75	77
375.	3.87	Mechanical	Input Power kW	7.16	10.40	15.00	25.80	26.70
			Output Torque Nm	11900	18300	27000	47600	49700
		Thermal	Input Power kW	9.11	13.40	15.10	28.50	29.30
			Output Torque Nm	15300	23800	27200	52700	54700
			Efficiency %	70	71	72	75	76
400.	3.63	Mechanical	Input Power kW	7.63	11.40	16.10	27.10	24.90
			Output Torque Nm	11900	18800	27500	48100	46900
		Thermal	Input Power kW	7.02	10.20	13.60	21.60	33.50
			Output Torque Nm	10900	16700	23000	38000	63700
			Efficiency %	61	62	64	67	73
450.	3.22	Mechanical	Input Power kW	6.09	9.06	14.60	22.50	29.80
			Output Torque Nm	11900	18800	30600	48100	65500
		Thermal	Input Power kW	5.02	7.34	10.30	15.50	21.70
			Output Torque Nm	9750	15100	21400	32900	47600
			Efficiency %	68	70	72	73	76
500.	2.90	Mechanical	Input Power kW	5.47	8.18	13.50	20.90	27.70
			Output Torque Nm	11900	18800	31300	48100	65500
		Thermal	Input Power kW	4.49	6.59	9.27	14.40	20.20
			Output Torque Nm	9700	15000	21300	32800	47400
			Efficiency %	68	70	72	73	75
600.	2.42	Mechanical	Input Power kW	4.21	6.73	7.63	12.80	13.20
			Output Torque Nm	11400	18800	21400	37500	38900
		Thermal	Input Power kW	2.34	3.33	4.60	6.82	9.34
			Output Torque Nm	6280	9220	12800	19900	27500
			Efficiency %	71	73	73	74	75
625.	2.32	Mechanical	Input Power kW	4.76	6.92	11.80	17.10	22.40
			Output Torque Nm	11900	18800	32800	48100	65500
		Thermal	Input Power kW	6.53	9.56	13.30	20.00	27.70
			Output Torque Nm	16600	26400	37200	56600	81300
			Efficiency %	63	64	67	69	71
700.	2.07	Mechanical	Input Power kW	4.60	6.89	10.90	16.50	16.40
			Output Torque Nm	11900	18800	30700	48100	51100
		Thermal	Input Power kW	4.05	5.91	7.91	12.60	19.60
			Output Torque Nm	10400	15900	22000	36300	61400
			Efficiency %	57	59	61	64	70
750.	1.93	Mechanical	Input Power kW	3.59	5.47	9.84	13.40	18.30
			Output Torque Nm	11900	18800	34200	47100	64600
		Thermal	Input Power kW	2.64	3.89	5.22	8.55	11.60
			Output Torque Nm	8720	13300	18000	29800	40900
			Efficiency %	69	72	72	74	75
800.	1.81	Mechanical	Input Power kW	3.83	5.77	10.10	13.70	18.00
			Output Torque Nm	11900	18800	33800	47100	64400
		Thermal	Input Power kW	3.22	4.77	6.43	11.10	15.50
			Output Torque Nm	9950	15400	21200	38000	55300
			Efficiency %	59	62	63	67	70

TRIPLE REDUCTION

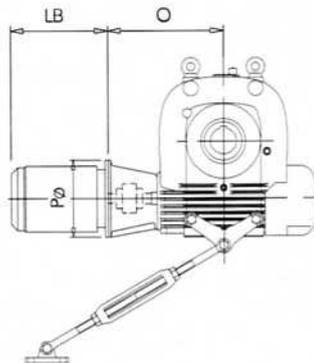
NOMINAL RATIO	NOMINAL OUTPUT SPEED	CAPACITY		SIZE OF UNIT				
				10	12	14	17	20
900.	1.61	Mechanical	Input Power kW	3.66	5.48	9.08	13.00	13.10
			Output Torque Nm	11900	18800	32200	48100	52000
		Thermal	Input Power kW	3.15	4.61	6.17	9.70	15.10
			Output Torque Nm	10200	15600	21500	35500	60300
			Efficiency %	56	58	59	62	68
1000.	1.45	Mechanical	Input Power kW	3.30	4.96	8.39	12.10	12.20
			Output Torque Nm	11900	18800	32800	48100	52000
		Thermal	Input Power kW	2.81	4.13	5.54	8.99	14.00
			Output Torque Nm	10100	15500	21300	35200	60000
			Efficiency %	55	57	59	62	68
1200.	1.21	Mechanical	Input Power kW	2.94	4.43	7.35	10.60	14.40
			Output Torque Nm	11900	18800	33300	48100	65500
		Thermal	Input Power kW	2.53	3.69	5.19	8.15	10.20
			Output Torque Nm	10200	15400	23100	36500	45900
			Efficiency %	52	53	57	59	59
1250.	1.16	Mechanical	Input Power kW	2.38	3.53	6.31	8.96	11.90
			Output Torque Nm	11900	18800	33800	48100	65500
		Thermal	Input Power kW	1.86	2.72	3.84	5.87	8.28
			Output Torque Nm	9270	14400	20400	31300	45300
			Efficiency %	63	65	67	68	69
1400.	1.04	Mechanical	Input Power kW	2.67	3.88	6.69	9.03	8.91
			Output Torque Nm	11900	18800	34200	48100	51700
		Thermal	Input Power kW	3.80	5.51	7.32	11.40	17.60
			Output Torque Nm	17500	27500	37600	61500	105000
			Efficiency %	50	51	54	56	62
1500.	0.97	Mechanical	Input Power kW	2.07	3.09	4.83	7.75	10.20
			Output Torque Nm	11900	18800	31000	48100	65500
		Thermal	Input Power kW	1.65	2.48	3.37	5.24	7.48
			Output Torque Nm	9420	15000	21400	32300	47700
			Efficiency %	60	63	64	65	68
1600.	0.91	Mechanical	Input Power kW	2.16	3.28	5.80	7.72	7.68
			Output Torque Nm	11900	18800	34200	48100	51600
		Thermal	Input Power kW	1.78	2.64	3.54	5.50	8.63
			Output Torque Nm	9710	14900	20600	33900	58100
			Efficiency %	52	55	56	59	65
1750.	0.83	Mechanical	Input Power kW	2.40	3.50	5.65	7.96	10.70
			Output Torque Nm	11900	18800	33200	48100	65500
		Thermal	Input Power kW	3.45	4.96	6.91	10.40	12.90
			Output Torque Nm	17700	27600	41200	64100	79300
			Efficiency %	46	47	51	53	54
1800.	0.81	Mechanical	Input Power kW	1.88	2.77	4.82	6.62	8.47
			Output Torque Nm	11900	18800	33500	48100	63700
		Thermal	Input Power kW	1.50	2.18	2.94	5.00	7.04
			Output Torque Nm	9430	14600	20100	36100	52800
			Efficiency %	55	57	58	63	65
2000.	0.73	Mechanical	Input Power kW	1.91	2.79	4.84	6.64	6.50
			Output Torque Nm	11900	18800	34200	48100	51400
		Thermal	Input Power kW	2.66	3.88	5.16	8.18	12.70
			Output Torque Nm	17000	26800	36600	59900	103000
			Efficiency %	48	49	52	55	60
2100.	0.69	Mechanical	Input Power kW	1.51	2.25	3.51	5.61	7.38
			Output Torque Nm	11900	18800	30800	48100	65500
		Thermal	Input Power kW	1.18	1.78	2.42	3.72	5.31
			Output Torque Nm	9260	14700	21100	31700	46900
			Efficiency %	58	61	62	63	66
2400.	0.60	Mechanical	Input Power kW	1.38	2.05	3.20	4.93	6.48
			Output Torque Nm	11900	18800	30800	48100	65500
		Thermal	Input Power kW	1.08	1.61	2.20	3.25	4.64
			Output Torque Nm	9220	14700	21000	31500	46600
			Efficiency %	57	61	62	63	65
2500.	0.58	Mechanical	Input Power kW	1.46	2.18	3.86	5.30	5.21
			Output Torque Nm	11900	18800	34200	48100	51300
		Thermal	Input Power kW	1.16	1.70	2.28	3.65	5.75
			Output Torque Nm	9410	14500	19900	32800	56800
			Efficiency %	50	52	54	56	62
2800.	0.52	Mechanical	Input Power kW	1.43	2.08	3.62	4.72	4.62
			Output Torque Nm	11900	18800	34200	48100	51200
		Thermal	Input Power kW	1.96	2.84	3.78	5.68	8.87
			Output Torque Nm	16600	26200	35800	58400	101000
			Efficiency %	46	48	50	53	58
3000.	0.48	Mechanical	Input Power kW	1.31	1.96	3.23	4.65	6.43
			Output Torque Nm	11900	18800	33100	48100	65500
		Thermal	Input Power kW	1.05	1.51	2.13	3.31	4.18
			Output Torque Nm	9420	14300	21600	33800	42100
			Efficiency %	46	48	52	53	53
3500.	0.41	Mechanical	Input Power kW	1.16	1.74	3.12	4.20	5.78
			Output Torque Nm	11900	18800	34200	48100	65500
		Thermal	Input Power kW	1.00	1.44	1.88	3.04	3.86
			Output Torque Nm	10100	15300	20200	34500	43200
			Efficiency %	45	47	47	51	50
3600.	0.40	Mechanical	Input Power kW	1.07	1.60	2.84	3.85	3.75
			Output Torque Nm	11900	18800	34200	48100	51100
		Thermal	Input Power kW	0.83	1.21	1.63	2.59	4.08
			Output Torque Nm	9200	14100	19400	32100	55700
			Efficiency %	48	51	52	54	60
4200.	0.35	Mechanical	Input Power kW	0.96	1.43	2.36	3.39	4.70
			Output Torque Nm	11900	18800	33000	48100	65500
		Thermal	Input Power kW	0.75	1.08	1.53	2.34	2.96
			Output Torque Nm	9190	14000	21100	33000	40900
			Efficiency %	45	47	50	52	51

TRIPLE REDUCTION

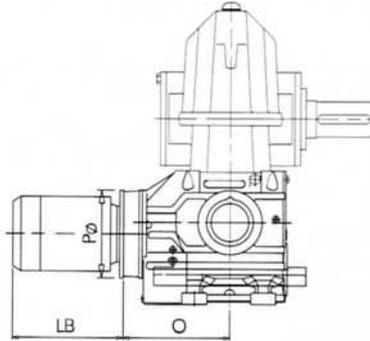
9610



SIZE OF UNIT	MOTOR FRAME SIZE	O	P	LB max	DB COUPLING
10	180	538	350	613	61204
	200	538	400	613	61204
	225	568	450	690	61204
	250	568	550	690	61205
12	200	608	400	613	61204
	225	638	450	690	61204
	250	638	550	690	61205
	280	668	550	820	61206
14	225	714	450	690	61206
	250	714	550	690	61206
	280	744	550	820	61206
17	250	841	550	690	61206
	280	871	550	820	61206
	315	871	660	962	61207



SIZE OF UNIT	MOTOR FRAME SIZE	O	P	LB max	DB COUPLING
10	180	538	350	613	61204
	200	538	400	613	61204
	225	568	450	690	61204
	250	568	550	690	61205
12	200	608	400	613	61204
	225	638	450	690	61204
	250	638	550	690	61205
	280	668	550	820	61206
14	225	714	450	690	61206
	250	714	550	690	61206
	280	744	550	820	61206



SIZE OF UNIT	MOTOR FRAME SIZE	O	P	LB max
10	80	302	200	230
	90S/L	302	200	270
	100/112	308	250	340
	132	308	300	402
	160/180M	338	350	538
12	80	358	200	230
	90S/L	358	200	270
	100/112	364	250	340
	132	364	300	402
	160/180M	399	350	538
	180L	399	350	613
	200	399	400	613
14	225	426	450	690
	80	358	200	230
	90S/L	358	200	270
	100/112	364	250	340
	132	364	300	402
	160/180M	399	350	538
	180L	399	350	613
	200	399	400	613
17	225	426	450	690
	100/112	402	250	340
	132	402	300	402
	160/180M	437	350	538
	180L	437	350	613
	200	437	400	613

Primary unit handed as shown only

9610

**AGITATOR UNIT, VERSION** V - HDST

Based on the standard Radicon Series A Heavy Duty Range, the Agitator unit incorporates an extended bearing housing to accommodate a larger bottom bearing and increased shaft size, thereby enhancing the units capacity to absorb the high bending loads imposed during stirrer applications.

It is recommended that as much as possible of the following information be given on enquiry to enable us to check and advise on the correct size of unit for a given duty.

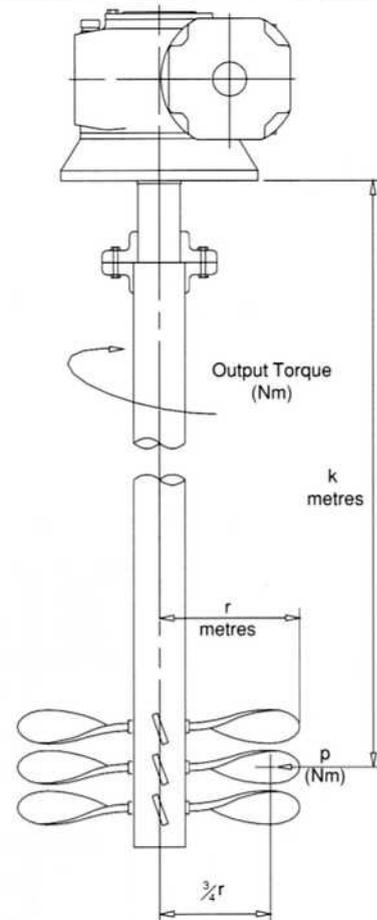
- 1 Quantity.
- 2 kW power or torque required at stirrer shaft.
- 3 Type of prime mover and kW power of prime mover.
- 4 Speed or range of speeds of stirrer shaft.
- 5 Total operating time per day with full details of any loading cycles.
- 6 Nature of medium to be stirred, i.e. constant or variable density.
- 7 Dimensions of the stirrer shaft, including length from the centre of the paddle to the top of the shaft, paddle diameter and shaft extension diameter.
- 8 Weight and thrust from paddle and direction of thrust.
- 9 Details of any abnormal operating conditions, e.g. ambient temperatures, humidity, etc.
- 10 Whether coupling or other ancillary equipment are required.

The following selection procedure applies.

**Selection**

- 1 Check the Radicon unit power capacity from ratings tables on pages 21 - 44.
- 2 Calculate the bending moment (m) at the Radicon output shaft.  

$$m = pk = \frac{\text{output torque}}{0.75r} \times k = \text{Nm}$$
- 3 Check the calculated bending moment against the shaft and bearing limitations shown in Tables 1 and 2.
- 4 Check from Table 3 the capacity of the unit to accept any specified axial thrust load.



**Shaft Stress Limitations**

Table 1 Allowable bending moment at the output shaft bottom bearing (Nm).

Output Shaft Torque (Nm)	Standard Units				Heavy Duty Stirrer Units		
	10	12	14	17	10	12	14
1500	9560				19500		
2200	9460	13330			19450	30870	
3500	9160	13120	27030		19310	30780	55240
5300	8480	12660	26800	42800	19000	30590	55230
8000	6710	11550	26300	42480	18280	30150	55000
10000	4250	10310	25780	42160	17530	29700	54750
12000		8570	25130	41760	16560	29130	54440
14000		5870	24350	41300		28460	54080
17000			22870	40440			53440
20000				39400			
25000				37200			

**Bearing Limitations \***

Table 2 Allowable bending moment at the output shaft bottom bearing (Nm).

Output Shaft Speed (rev/min)	Standard Units				Heavy Duty Stirrer Units		
	10	12	14	17	10	12	14
280	9400	10100	22590	23480	25700	28980	29100
190	11080	11830	27260	32730	29720	33710	34400
125	12240	12930	30600	37900	32570	37070	38150
84	14960	16230	37500	46650	39070	44720	46720
56	17090	18790	43560	53850	44140	50680	53390
37	20320	22440	58040	63680	51540	59400	63150
25	23340	26360	59230	73080	58720	67850	72610
20 & less	24340	27100	62490	77130	61290	70870	76000

\* Bearing Limitations are based on 10,000 hrs L<sub>10</sub> life. For other lives multiply by the following factors:

Required Life (hrs)	5,000	10,000	25,000	50,000	100,000
Factor	1.23	1	0.76	0.62	0.50

Table 3 Allowable Axial Thrust on Output Shaft (kN)

Output Shaft Speed (rev/min)	Standard Units				Heavy Duty Units - Towards Gearbox			Heavy Duty Units - Away from Gearbox		
	10	12	14	17	10	12	14	10	12	14
280	6.6	8.4	15.0	8.5	6.6	8.4	15.0	28.0	32.5	28.8
190	10.4	12.1	23.8	25.5	10.4	12.1	23.8	34.8	39.5	39.4
125	13.3	14.9	30.2	37.4	13.3	14.9	30.2	39.7	44.6	47.1
84	20.6	24.0	45.1	53.6	20.6	24.0	45.1	51.8	59.0	65.0
56	25.6	30.7	55.8	64.7	25.6	30.7	55.8	60.4	69.7	78.1
37	32.5	38.8	68.4	80.3	32.5	38.8	68.4	72.7	83.8	96.8
25	38.4	46.7	81.5	94.7	38.4	46.7	81.5	83.8	97.6	101
20 and less	40.1	48.3	86.3	99.8	40.1	48.3	86.3	87.4	101	116

The above axial thrusts may be applied in addition to the bending moment. Higher axial thrusts can be applied but the allowable bending moment would be reduced. Consult David Brown Radicon in such cases.

**SINGLE REDUCTION**

Unit Size	10							12						
Unit Type	U	O	V	US	VS	HDST	CT	U	O	V	US	VS	HDST	CT
Unit Weight	345	345	400	481	578	475	520	500	500	590	701	862	702	767
Weight Packed	450	450	480	594	715	570	624	600	600	690	844	1180	842	920
Volume Packed (m <sup>3</sup> )	0.42	0.42	0.73	0.54	0.63	0.78	0.90	0.83	0.83	0.83	0.76	0.89	1.18	1.30

Unit Size	14							17			20			24
Unit Type	U	O	V	US	VS	HDST	CT	U	V	CT	U	V	CT	U
Unit Weight	810	810	870	980	1210	1035	1131	1372	1390	1807	1984	2075	2698	2922
Weight Packed	930	930	1015	1234	1510	1242	1357	1500	1575	2169	2263	2545	3237	3400
Volume Packed (m <sup>3</sup> )	1.06	1.06	1.34	1.08	1.26	1.56	1.76	1.72	1.78	2.98	2.84	3.20	3.70	4.22

**DOUBLE REDUCTION**

Unit Size	10			12			14			17		20		24
Unit Type	UD	OD	VD	UD	OD	VD	UD	OD	VD	UD	VD	UD	VD	UD
Unit Weight	440	440	493	640	640	730	950	950	1010	1584	1602	2196	2287	3240
Weight Packed	557	557	587	758	758	848	1088	1088	1173	1658	1820	2505	2805	3950
Volume Packed (m <sup>3</sup> )	0.88	0.92	0.85	1.28	1.31	1.13	1.63	1.69	1.67	2.39	2.34	3.20	3.62	5.11

ALL WEIGHTS IN KG      ALL WEIGHTS EXCLUDE LUBRICANT

NOTE: For shipping specification of motorised units add weight and volume of motors and motor adaptors to the figures shown above.



## IMPORTANT

### Product Safety Information

**General** - The following information is important in ensuring safety. It **must** be brought to the attention of personnel involved in the selection of David Brown Radicon Limited power transmission equipment, those responsible for the design of the machinery in which it is to be incorporated and those involved in its installation, use and maintenance.

David Brown power transmission equipment will operate safely provided it is selected, installed, used and maintained properly. As with any power transmission equipment **proper precautions must** be taken as indicated in the following paragraphs, to ensure safety.

**Potential Hazards** - these are **not** necessarily listed in any order of severity as the degree of danger varies in individual circumstances. It is important therefore that the list is studied in its entirety:-

- 1) Fire/Explosion
  - (a) Oil mists and vapour are generated within gear units. It is therefore dangerous to use naked lights in the proximity of gearbox openings, due to the risk of fire or explosion.
  - (b) In the event of fire or serious overheating (over 300 °C), certain materials (rubber, plastics, etc.) may decompose and produce fumes. Care should be taken to avoid exposure to the fumes, and the remains of burned or overheated plastic/rubber materials should be handled with rubber gloves.
- 2) Guards - Rotating shafts and couplings must be guarded to eliminate the possibility of physical contact or entanglement of clothing. It should be of rigid construction and firmly secured.
- 3) Noise - High speed gearboxes and gearbox driven machinery may produce noise levels which are damaging to the hearing with prolonged exposure. Ear defenders should be provided for personnel in these circumstances. Reference should be made to the Department of Employment Code of Practice for reducing exposure of employed persons to noise.
- 4) Lifting - Where provided (on larger units) only the lifting points or eyebolts must be used for lifting operations (see maintenance manual or general arrangement drawing for lifting point positions). Failure to use the lifting points provided may result in personal injury and/or damage to the product or surrounding equipment. Keep clear of raised equipment.
- 5) Lubricants and Lubrication
  - (a) Prolonged contact with lubricants can be detrimental to the skin. The manufacturer's instruction must be followed when handling lubricants.
  - (b) The lubrication status of the equipment must be checked before commissioning. Read and carry out all instructions on the lubricant plate and in the installation and maintenance literature. Heed all warning tags. Failure to do so could result in mechanical damage and in extreme cases risk of injury to personnel.
- 6) Electrical Equipment - Observe hazard warnings on electrical equipment and isolate power before working on the gearbox or associated equipment, in order to prevent the machinery being started.
- 7) Installation, Maintenance and Storage
  - (a) In the event that equipment is to be held in storage, for a period exceeding 6 months, prior to installation or commissioning, David Brown Radicon Limited must be consulted regarding special preservation requirements. Unless otherwise agreed, equipment must be stored in a building protected from extremes of temperature and humidity to prevent deterioration.  
  
The rotating components (gears and shafts) must be turned a few revolutions once a month (to prevent bearings brinelling).
  - (b) External gearbox components may be supplied with preservative materials applied, in the form of a "waxed" tape overwrap or wax film preservative. Gloves should be worn when removing these materials. The former can be removed manually, the latter using white spirit as a solvent.  
  
Preservatives applied to the internal parts of the gear units do not require removal prior to operation.
  - (c) Installation must be performed in accordance with the manufacturer's instructions and be undertaken by suitably qualified personnel.
  - (d) Before working on a gearbox or associated equipment, ensure that the load has been removed from the system to eliminate the possibility of any movement of the machinery and isolate power supply. Where necessary, provide mechanical means to ensure the machinery cannot move or rotate. Ensure removal of such devices after work is complete.
  - (e) Ensure the proper maintenance of gearboxes in operation. Use only the correct tools and David Brown Radicon Limited approved spare parts for repair and maintenance. Consult the Maintenance Manual before dismantling or performing maintenance work.
- 8) Hot Surfaces and Lubricants
  - (a) During operation, gear units may become sufficiently hot to cause skin burns. Care must be taken to avoid accidental contact.
  - (b) After extended running the lubricant in gear units and lubrication systems may reach temperatures sufficient to cause burns. Allow equipment to cool before servicing or performing adjustments.
- 9) Selection and Design
  - (a) Where gear units provide a holdback facility, ensure that back-up systems are provided if failure of the holdback device would endanger personnel or result in damage.
  - (b) The driving and driven equipment must be correctly selected to ensure that the complete machinery installation will perform satisfactorily, avoiding system critical speeds, system torsional vibration, etc.
  - (c) The equipment must not be operated in an environment or at speeds, powers, torques or with external loads beyond those for which it was designed.
  - (d) As improvements in design are being made continually the contents of this catalogue are not to be regarded as binding in detail, and drawings and capacities are subject to alterations without notice.

The above guidance is based on the current state of knowledge and our best assessment of the potential hazards in the operation of the gear units.

Any further information or clarification required may be obtained by telephoning or writing to:

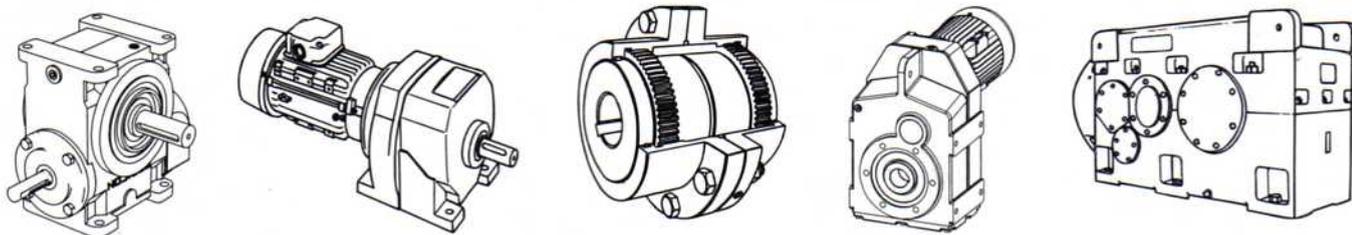
**DAVID BROWN RADICON LIMITED**  
PARK GEAR WORKS, HUDDERSFIELD, ENGLAND HD4 5DD  
TELEPHONE: 01484 422180

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- 2. NORTHERN**  
Park Gear Works,  
Huddersfield HD4 5DD.  
Tel: 01484 465610 Fax: 01484 465586
- 3. SOUTHERN**  
Unit 9, Barratt Way, Tudor Road,  
Wealdstone, Harrow HA3 5QF.  
Tel: 0181 861 0232 Fax: 0181 861 1897
- 4. SERVICENTRE**  
Pallion Gear Works,  
Sunderland SR4 6RF.  
Tel: 0191 510 9999 Fax: 0191 565 8657



SERIES A HEAVY DUTY



# DAVID BROWN

R A D I C O N

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