

GEARBOXES

A

Heavy Duty Wormwheel Gearbox Single Reduction - Ratings at 1450 Rpm Without Motor

Nominal Ratio	Nominal Output Speed rpm	Capacity		Size of Unit				
				A410	A510	A610	A730	A860
5.0	290.00	Mechanical	Input Power kW	1.52	3.26	4.90	6.98	12.10
			Output Torque Nm	46.00	93.00	147.00	223.00	362.00
		Thermal	Input Power kW	2.53	4.11	5.75	12.30	15.30
			Output Torque Nm	78.00	118.00	173.00	394.00	457.00
		Efficiency	88%	91%	91%	93%	94%	
10.0	145.00	Mechanical	Input Power kW	1.32	2.31	3.14	4.42	7.14
			Output Torque Nm	76.00	136.00	175.00	272.00	414.00
		Thermal	Input Power kW	1.70	2.59	4.19	8.78	10.80
			Output Torque Nm	98.00	152.00	234.00	545.00	632.00
		Efficiency	83%	85%	88%	90%	91%	
15.0	96.67	Mechanical	Input Power kW	1.17	1.82	2.75	4.22	6.40
			Output Torque Nm	89.00	143.00	225.00	354.00	541.00
		Thermal	Input Power kW	1.33	2.25	3.00	6.64	8.05
			Output Torque Nm	101.00	178.00	246.00	561.00	683.00
		Efficiency	79%	82%	83%	88%	89%	
20.0	72.50	Mechanical	Input Power kW	* 0.89	1.74	2.76	3.15	4.74
			Output Torque Nm	* 88.00	171.00	281.00	345.00	525.00
		Thermal	Input Power kW	* 1.24	1.49	2.18	5.59	6.74
			Output Torque Nm	* 124.00	146.00	220.00	620.00	751.00
		Efficiency	* 77%	74%	77%	85%	86%	
25.0	58.00	Mechanical	Input Power kW	0.88	1.45	2.28	* 3.17	4.54
			Output Torque Nm	100.00	172.00	280.00	* 418.00	605.00
		Thermal	Input Power kW	0.89	1.34	1.94	* 3.95	4.75
			Output Torque Nm	102.00	158.00	236.00	* 524.00	635.00
		Efficiency	69%	72%	74%	* 80%	81%	
30.0	48.33	Mechanical	Input Power kW	0.77	1.20	1.85	2.68	* 4.06
			Output Torque Nm	102.00	165.00	260.00	415.00	* 638.00
		Thermal	Input Power kW	0.81	1.26	1.75	3.67	* 4.43
			Output Torque Nm	107.00	174.00	246.00	573.00	* 699.00
		Efficiency	67%	70%	71%	78%	* 80%	
40.0	36.25	Mechanical	Input Power kW	0.58	0.91	1.37	* 1.96	* 2.97
			Output Torque Nm	94.00	158.00	241.00	* 384.00	* 594.00
		Thermal	Input Power kW	0.72	1.14	1.53	* 3.14	* 3.81
			Output Torque Nm	119.00	200.00	271.00	* 626.00	* 767.00
		Efficiency	62%	66%	67%	* 74%	* 76%	
50.0	29.00	Mechanical	Input Power kW	0.41	0.70	* 1.07	1.54	* 2.25
			Output Torque Nm	77.00	141.00	* 221.00	362.00	* 535.00
		Thermal	Input Power kW	0.55	0.82	* 1.13	2.35	* 2.73
			Output Torque Nm	107.00	166.00	* 234.00	563.00	* 653.00
		Efficiency	58%	61%	* 63%	71%	* 72%	
60.0	24.17	Mechanical	Input Power kW	0.30	0.49	* 0.77	* 1.18	1.80
			Output Torque Nm	60.00	110.00	* 181.00	* 314.00	490.00
		Thermal	Input Power kW	0.45	0.71	* 0.98	* 1.91	2.27
			Output Torque Nm	94.00	165.00	* 233.00	* 519.00	624.00
		Efficiency	51%	57%	* 59%	* 67%	69%	
70.0	20.71	Mechanical	Input Power kW	0.22	* 0.35	0.58	0.86	1.35
			Output Torque Nm	49.00	* 86.00	147.00	247.00	402.00
		Thermal	Input Power kW	0.38	* 0.58	0.77	1.48	1.76
			Output Torque Nm	91.00	* 149.00	199.00	442.00	533.00
		Efficiency	48%	* 53%	55%	62%	65%	

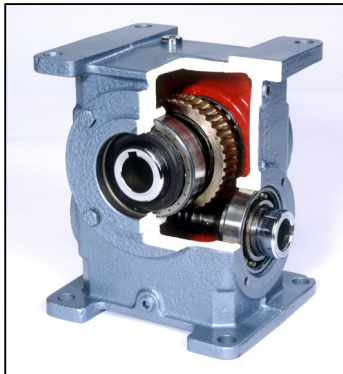
* Non-preferred sizes are shown greyed out - these are only available P.O.A.
Prices for these are typically 3 x standard price for low quantities
Typical delivery lead time is 28 weeks.

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Heavy Duty Wormwheel Gearbox

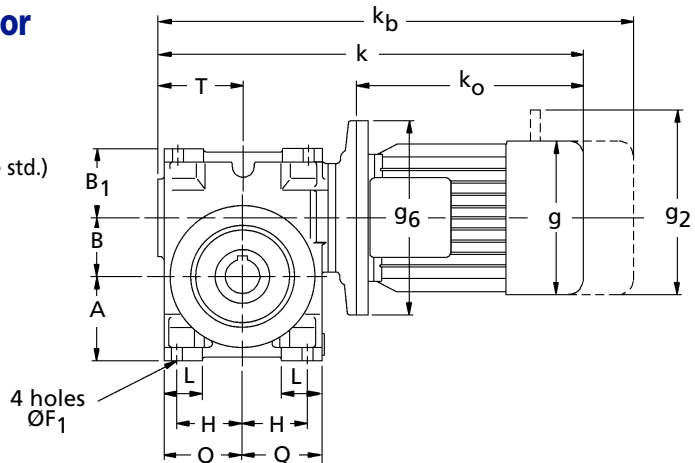
20Nm – 638Nm Motor & Shaft Input Versions



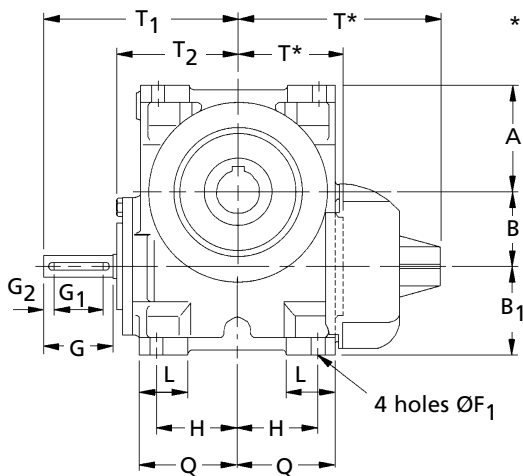
WM Type Includes motor

Motor Spec.

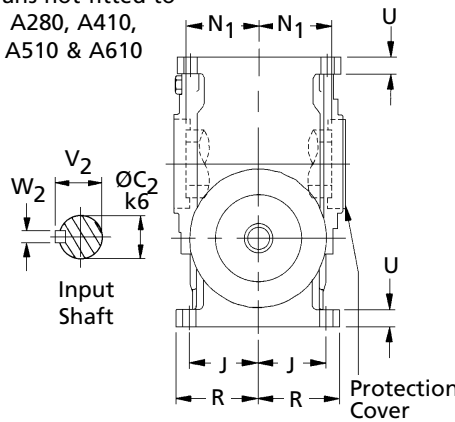
Type: Cage Rotor
 Enclosure: IP55, TEFC (IC0141)
 Rating: S1 (max. cont.)
 Supply: 3PH 50Hz 380-415V (4 pole std.)
 Installation Class: F
 Temp Rise Class: B



Standard type shaft input bore output



* Fans not fitted to
 A280, A410,
 A510 & A610



Part Number	A	B	B ₁	ØC	ØC ₂	ØF ₁	G	G ₁	G ₂	H	J	L	N ₁	Q	R
A410	66	41.3	59.7	22	16	11.5	41	31	6.5	58.5	49.0	32	50	69.0	60.0
A510	74	50.8	61.2	25	16	11.5	48	35	6.5	57.0	52.0	35	56	67.0	62.0
A610	87	60.3	71.7	35	18	11.5	57	44	7.0	66.0	56.0	40	64	80.0	67.0
A730	105	73.0	80.0	40	22	13.5	70	57	7.0	81.0	70.0	45	77	95.0	84.0
A860	117	85.7	92.3	50	25	17.5	83	62	7.0	90.0	79.0	55	93	108.0	97.0

Part Number	T	T ₁	T ₂	U	V	V ₂	W	W ₂	Weight without motor kg
A410	62	109.5	68	10 ^{-0.1}	24.9 ^{-0.130}	18.0 ^{±0.015}	6 ^{-0.030}	5	7.4
A510	75	133.4	86	12 ^{-0.2}	28.5 ^{-0.130}	18.0 ^{±0.018}	8 ^{-0.030}	5	11.2
A610	86	158.8	100	14 ^{-0.2}	38.5 ^{-0.130}	20.5 ^{±0.018}	10 ^{-0.030}	6	16.0
A730	197	190.5	122	16 ^{-0.2}	43.5 ^{-0.130}	24.5 ^{±0.021}	12 ^{-0.030}	6	29.0
A860	227	219.1	132	18 ^{-0.2}	54.0 ^{-0.190}	28.0 ^{±0.021}	14 ^{-0.036}	8	45.0

Material

Casing: Cast Iron. **Wheel:** Centrifugally cast phosphor bronze welded onto cast iron hub. **Worm:** Hardened steel - threads profile ground.
Lubrication: Synthetic oil - for input speed <500rpm, extra lubricant must be added. **Ambient Temperature Range:** 0°C to +40°C.

Other info.

Output Torque Guide Using Standard Motor: Motor speeds x 9550 = input torque. Input torque x exact ratio x efficiency = guide output torque (Nm).
 To choose the most suitable option, please provide full details of application. WM Type has 3 phase motor fitted.
 Units can be supplied with single and double output shafts. Dimension G is the useable length of shaft extension.

Ordering

When ordering, add nominal ratio to end of part number, eg. A610WM-80A-30 = 30:1 ratio

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Product information updated 1st April 2011 and subject to change. Please contact Sales for the latest prices and availability.

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Heavy Duty Wormwheel Gearbox

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Standard 4 pole 3 phase Motors	Gearbox Output Speed Depends on Motor and Ratio Chosen									
	A410		A510		A610		A730		A860	
	k	k _b	k	k _b	k	k _b	k	k _b	k	k _b
63	-	-	-	-	-	-	-	-	-	-
71	354	395	385	426	-	-	-	-	-	-
80	379	429	405	455	430	480	471	521	-	-
90S/L	-	-	445	504	470	529	511	570	537	596
100/112	-	-	-	-	544	612	581	649	607	675
132	-	-	-	-	-	-	-	-	676	747

Standard 4 pole 3 phase Motors	All Sizes					
	kW	k ₀	g	g ₁	g ₂	g ₆
63	0.12, 0.18	185	122	101	160	140
71	0.25, 0.37	210	137	107	167	160
80	0.55, 0.75	230	158	118	190	200
90S/L	1.10, 1.50	270	177	149	218	200
100	2.20, 3.00	340	197	159	238	250
112	4,00	340	197	159	238	250
132	5.50, 7.50	402	253	184	288	300

Nominal Ratio Column Entry	Exact Ratios				
	A410	A510	A610	A730	A860
5.0	5.250:1	4.800:1	5.000:1	5.200:1	4.833:1
10.0	10.500:1	10.500:1	9.667:1	10.330:1	9.667:1
15.0	14.500:1	14.500:1	15.000:1	14.500:1	14.500:1
20.0	* 19.500:1	20.000:1	19.500:1	19.500:1	19.500:1
25.0	25.000:1	25.000:1	25.000:1	* 25.000:1	25.000:1
30.0	30.000:1	30.000:1	30.000:1	30.000:1	* 30.000:1
40.0	40.000:1	40.000:1	40.000:1	* 40.000:1	* 40.000:1
50.0	50.000:1	50.000:1	* 50.000:1	50.000:1	* 50.000:1
60.0	60.000:1	60.000:1	* 60.000:1	* 60.000:1	60.000:1
70.0	70.000:1	* 70.000:1	70.000:1	70.000:1	70.000:1

* Non-preferred ratios are shown greyed out - these are only available P.O.A.

Prices for these are typically 3 x standard price for low quantities.

Typical delivery lead time is 28 weeks.

Motor Kw	Price Table			
	A410		A510	
Shaft In	A410	£P.O.A	A510	£P.O.A
0.12	-	-	-	-
0.18	-	-	-	-
0.25	A410WM-71A	£P.O.A	A510WM-71A	£P.O.A
0.37	A410WM-71B	£P.O.A	A510WM-71B	£P.O.A
0.55	A410WM-80A	£P.O.A	A510WM-80A	£P.O.A
0.75	A410WM-80B	£P.O.A	A510WM-80B	£P.O.A
1.10	-	-	A510WM-90S	£P.O.A
1.50	-	-	A510WM-90L	£P.O.A

Motor Kw	Price Table					
	A610		A730		A860	
Shaft In	A610	£P.O.A	A730	£P.O.A	A860	£P.O.A
0.55	A610WM-80A	£P.O.A	A730WM-80A	£P.O.A	-	-
0.75	A610WM-80B	£P.O.A	A730WM-80B	£P.O.A	-	-
1.10	A610WM-90S	£P.O.A	A730WM-90S	£P.O.A	A860WM-90S	£P.O.A
1.50	A610WM-90L	£P.O.A	A730WM-90L	£P.O.A	A860WM-90L	£P.O.A
2.20	A610WM-100LA	£P.O.A	A730WM-100LA	£P.O.A	A860WM-100LA	£P.O.A
3.00	A610WM-100LB	£P.O.A	A730WM-100LB	£P.O.A	A860WM-100LB	£P.O.A
4.00	A610WM-112M	£P.O.A	A730WM-112M	£P.O.A	A860WM-112M	£P.O.A
5.50	-	-	-	-	A860WM-132SA	£P.O.A
7.50	-	-	-	-	A860WM-132MA	£P.O.A