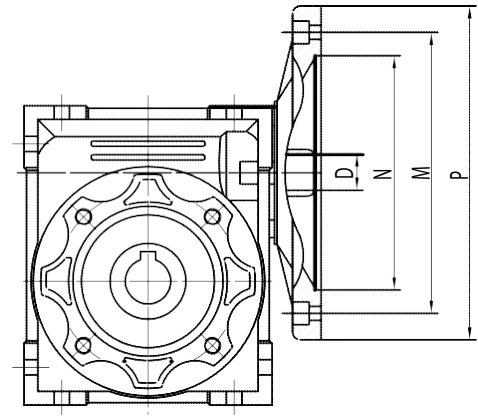
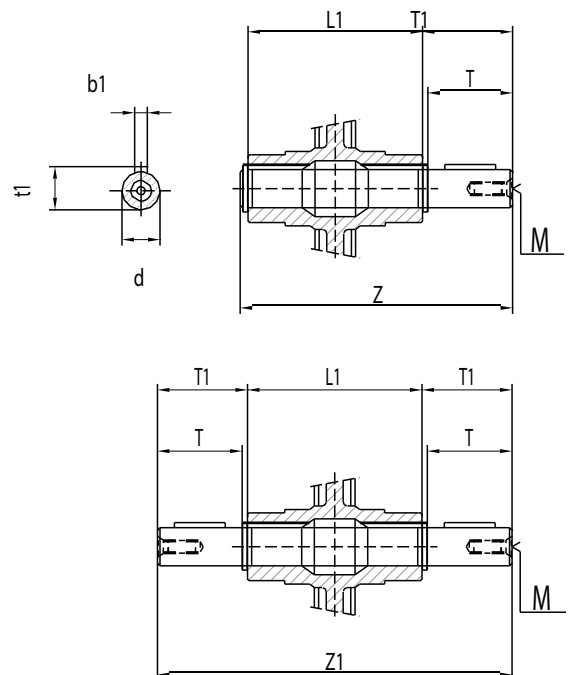
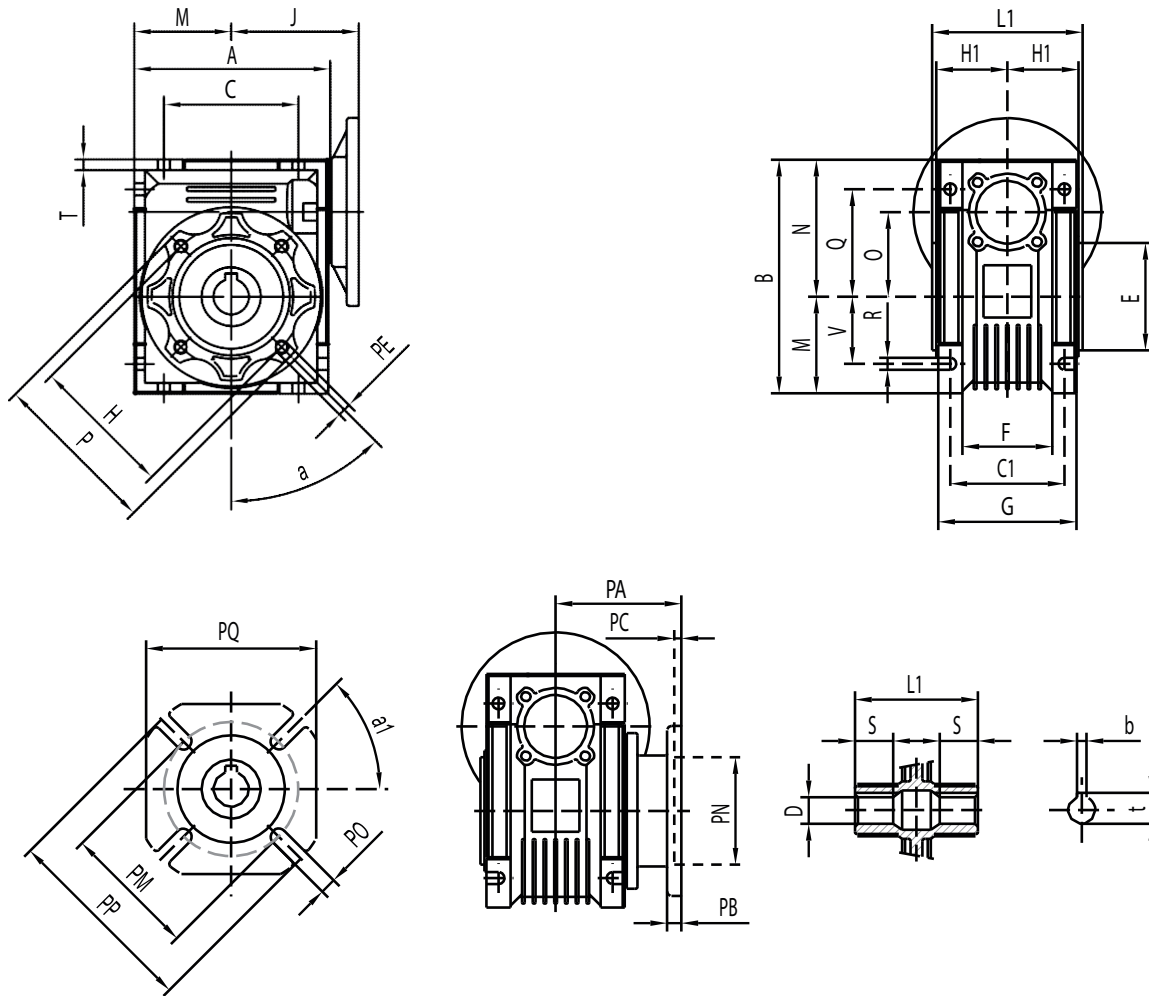


Size	Motor Frame	N		M		P	5	7.5	10	15	20	25	30	40	50	60	80	100
		B5	B14	B5	B15	B5	B14											
030	56B5/B14	80	50	100	65	120	80	9	9	9	9	9	9	9	9	9	9	-
	63B5/B14	95	60	115	75	140	90	11	11	11	11	11	11	11	11	11	-	-
040	56B5	80	-	100	-	120	-	-	-	-	-	-	-	-	9	9	9	9
	63B5/B14	95	60	115	75	140	90	11	11	11	11	11	11	11	11	11	11	11
	71B5/B14	110	70	130	85	160	105	14	14	14	14	14	14	14	-	-	-	-
050	63B5	95	-	115	-	140	-	-	-	-	-	-	-	-	11	11	11	11
	71B5/B14	110	70	130	85	160	105	14	14	14	14	14	14	14	14	14	14	-
	80B5/B14	130	80	165	100	200	120	19	19	19	19	19	19	19	-	-	-	-
063	71B5/B14	110	70	130	85	160	105	-	-	-	-	-	-	-	14	14	14	14
	80B5/B14	130	80	165	100	200	120	-	19	19	19	19	19	19	19	19	19	-
	90B5/B14	130	95	165	115	200	140	-	24	24	24	24	24	24	-	-	-	-
075	71B5	110	-	130	-	160	-	-	-	-	-	-	-	-	-	14	14	14
	80B5/B14	130	80	165	100	200	120	-	-	-	-	19	19	19	19	19	19	19
	90B5/B14	130	95	165	115	200	140	-	24	24	24	24	24	24	-	-	-	-
	100B5/B14	180	110	215	130	250	160	-	28	28	28	-	-	-	-	-	-	-
	112B5/B14	180	110	215	130	250	160	-	28	28	28	-	-	-	-	-	-	-
090	80B5/B14	130	80	165	100	200	120	-	-	-	-	-	-	-	19	19	19	19
	90B5/B14	130	95	165	115	200	140	-	24	24	24	24	24	24	24	24	-	-
	100B5/B14	180	110	215	130	250	160	-	28	28	28	28	28	28	-	-	-	-
	112B5/B14	180	110	215	130	250	160	-	28	28	28	28	28	28	-	-	-	-
110	80B5	130	-	165	-	200	-	-	-	-	-	-	-	-	-	-	19	19
	90B5	130	-	165	-	200	-	-	-	-	-	24	24	24	24	24	24	24
	100B5	180	-	215	250	-	-	28	28	28	28	28	28	28	28	28	-	-
	112B5	180	-	215	250	-	-	28	28	28	28	28	28	28	28	28	-	-
	132B5	230	-	265	300	-	-	38	38	38	38	-	-	-	-	-	-	-
130	90B5	130	-	165	-	200	-	-	-	-	-	-	-	-	-	24	24	24
	100B5	180	-	215	-	250	-	-	-	-	-	28	28	28	28	28	28	28
	112B5	180	-	215	-	250	-	-	-	-	-	28	28	28	28	28	28	28
	132B5	230	-	265	-	300	-	-	38	38	38	38	38	38	-	-	-	-
150	100B5	180	-	215	-	250	-	-	-	-	-	-	-	-	28	28	28	28
	112B5	180	-	215	-	250	-	-	-	-	-	-	-	-	28	28	28	28
	132B5	230	-	265	-	300	-	-	-	-	38	38	38	38	38	38	-	-
	160B5	250	-	300	-	350	-	-	42	42	42	42	42	-	-	-	-	-



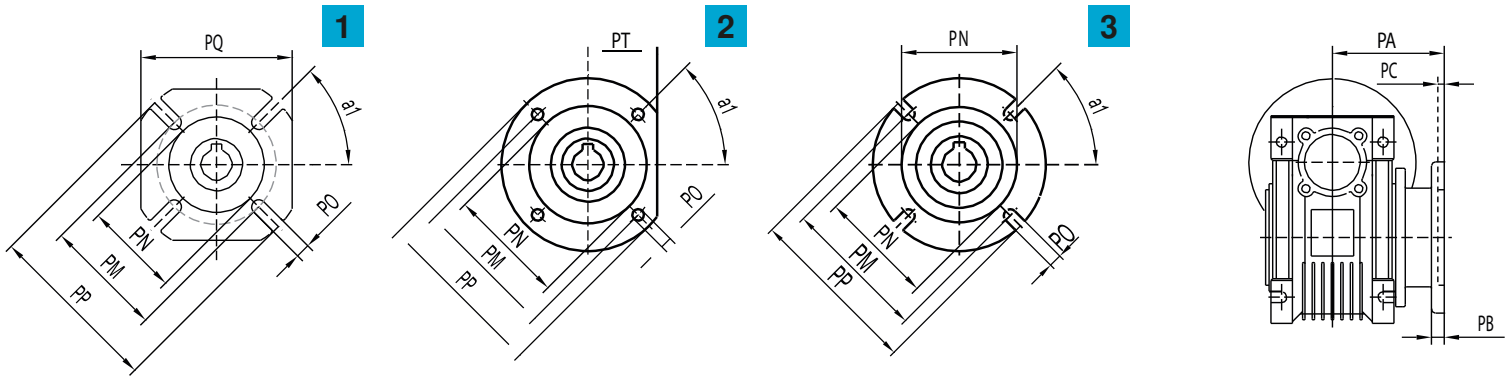
Size	Output Shaft Dimensions (SS, DS) Metric								
	d	T	T1	L1	Z	Z1	M	b1	t1
030	14(g6)	30	32.5	63	102	128	M6	5	16
040	18(h6)	40	43	78	128	164	M6	6	20.5
050	25(h6)	50	53.5	92	153	199	M10	8	28
063	25(h6)	50	53.5	12	173	219	M10	8	28
075	28(h6)	60	63.5	20	192	247	M10	8	31
090	35(h6)	80	84.5	40	234	309	M12	10	38
110	42(h6)	80	84.5	55	249	324	M16	12	45
130	45(h6)	80	85	70	265	340	M16	14	48.5
150	50(h6)	82	87	200	297	374	M16	14	53.5





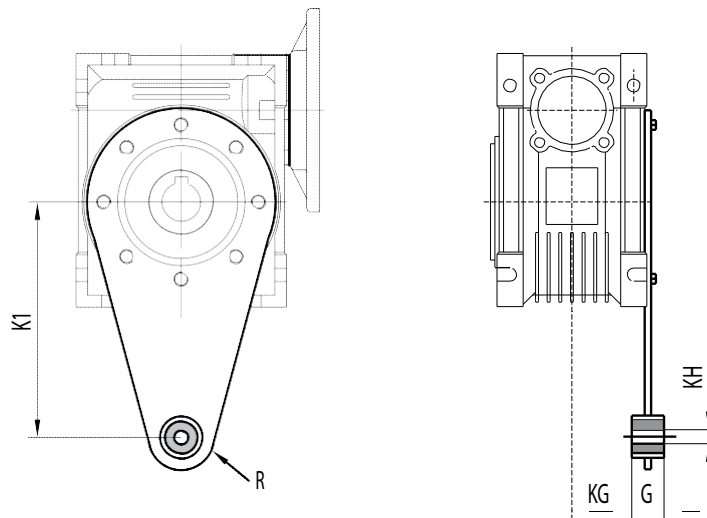
Size	A	B	C	C1	D	E	F	G	H	H1	J	L1	M	N	O	P	Q	R
030	81	97	54	44	14(h8)	55(h8)	32	56	65	29	55	63	40	57	30	75	44	6.5
040	101	121.5	70	60	18(h8)	60(h8)	43	71	75	36.5	70	78	50	71.5	40	87	55	6.5
050	121	144	80	70	25(h8)	70(h8)	49	85	85	43.5	80	92	60	84	50	100	64	8.5
063	146	174	100	85	25(h8)	80(h8)	67	103	95	53	95	112	72	102	63	110	80	8.5
075	174	205	120	90	28(h8)	95(h8)	72	112	115	57	115.5	120	86	119	75	140	93	11.5
090	208	238	140	100	35(h8)	110(h8)	74	130	130	67	129.5	140	103	135	90	160	102	13
110	252.5	295	170	115	42(h8)	130(h8)	-	144	165	74	160	155	127.5	167.5	110	200	125	14
130	292.5	335	200	120	45(h8)	180(h8)	-	155	215	81	180	170	147.5	187.5	130	250	140	16
150	340	400	240	145	50(h8)	180(h8)	-	185	215	96	210	200	170	230	150	250	180	18

Size	S	T	V	PA	PB	PC	PE	PM	PN	PO	PP	PQ	b	t	a	a1	kg
030	21	5.5	27	54.5	6	4	M6 (n=4)	68	50(h8)	6.5(n=4)	80	70	5	16.3	0°	45°	1.2
040	26	6.5	35	67	7	4	M6 (n=4)	75	60(h8)	9(n=4)	110	95	6	20.8	45°	45°	2.3
050	30	7	40	90	9	5	M8 (n=4)	85	70(h8)	11(n=4)	125	110	8	28.3	45°	45°	3.5
063	36	8	50	82	10	6	M8 (n=8)	150	115(h8)	11(n=4)	180	142	8	28.3	45°	45°	6.2
075	40	10	60	111	13	6	M8 (n=8)	165	130(h8)	14(n=4)	200	170	8	31.3	45°	45°	9
090	45	11	70	111	13	6	M10 (n=8)	175	152(h8)	14(n=4)	210	200	10	38.3	45°	45°	13
110	50	14.5	85	131	15	6	M10 (n=8)	230	170(h8)	14(n=8)	280	260	12	45.3	45°	45°	35
130	60	16	100	140	15	7	M12 (n=8)	255	180(h8)	16(n=8)	320	290	14	48.8	45°	22.5°	48
150	72.5	18	120	155	15	7	M12 (n=8)	255	180(h8)	18(n=8)	320	290	14	53.8	45°	22.5°	



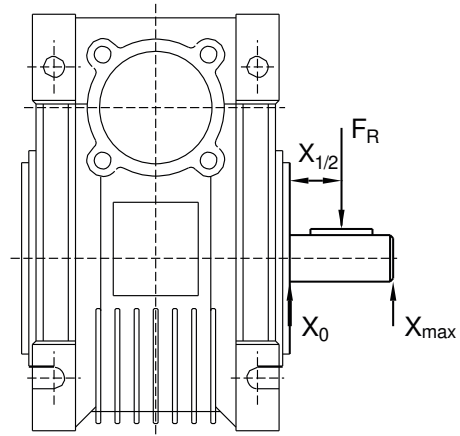
Size	030	040	050	063	075	090	110	130	150
FA	1	1	1	1	1	1	1	1	1
FB	-	1	1	1	3	2	1	-	-
FC	-	2	2	2	-	3	-	-	-

Size	PA	PB	PC	PN	PM	PO	PP	PQ	a1	PA	PB	PC	PN	PM	PO	PP	PQ	PT	a1	PA	PB	PC	PN	PM	PO	PP	PT	a1
	FA									FB									FC									
030	54.5	6	4	50	68	6.5(n=4)	80	70	45°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
040	67	7	4	60	75	9(n=4)	110	95	45°	97	7	4	60	75	9(n=4)	110	95	-	45°	80	9	5	95	115	9.5(n=4)	140	56	45°
050	90	9	5	70	85	11(n=4)	125	110	45°	120	9	5	70	85	11(n=4)	125	110	-	45°	89	10	5	110	130	9.5(n=4)	160	66	45°
063	82	10	6	115	150	11(n=4)	180	142	45°	112	10	6	115	150	11(n=4)	180	142	-	45°	98	10	5	130	165	11(n=4)	200	80	45°
075	111	13	6	130	165	14(n=4)	200	170	45°	90	13	6	130	130	11(n=4)	130	-	-	45°	-	-	-	-	-	-	-	-	-
090	111	13	6	152	175	14(n=4)	210	200	45°	122	18	6	180	215	14(n=4)	250	-	105	45°	110	17	6	130	165	11(n=4)	200	-	45°
110	131	15	6	170	230	14(n=8)	280	260	45°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
130	140	15	6	180	255	16(n=8)	320	290	22.5°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	155	15	6	180	255	18(n=8)	320	290	22.5°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Size	030	040	050	063	075	090	110	130	150
K1	85	100	100	150	200	200	250	250	250
G	14	14	14	14	25	25	30	30	30
KG	24	31.5	38.5	49	47.5	57.5	62	69	84
KH	8	10	10	10	20	20	25	25	25
R	15	18	18	18	30	30	35	35	35

i	n2	030	040	040	063	075	090	110	130
5	280	599	1149	1586	2062	2428	2687	3389	4433
7.5	186	691	1325	1829	2378	2799	3098	3908	5112
10	140	758	1454	2007	2609	3072	3400	4288	5610
15	94	868	1665	2298	2988	3518	3893	4910	6424
20	70	954	1829	2525	3283	3865	4277	5395	7057
25	56	1033	1981	2735	3556	4187	4633	5844	7645
30	47	1088	2087	2881	3745	4410	4880	6155	8052
40	35	1204	2309	3188	4145	4880	5401	6812	8912
50	28	1296	2485	3431	4461	5252	5812	7331	9590
60	24	1381	2649	3658	4756	5599	6196	7815	10224
80	18	1516	2907	4014	5218	6144	6799	8576	11219
100	14	1638	3142	4338	5639	6639	7348	9268	12124

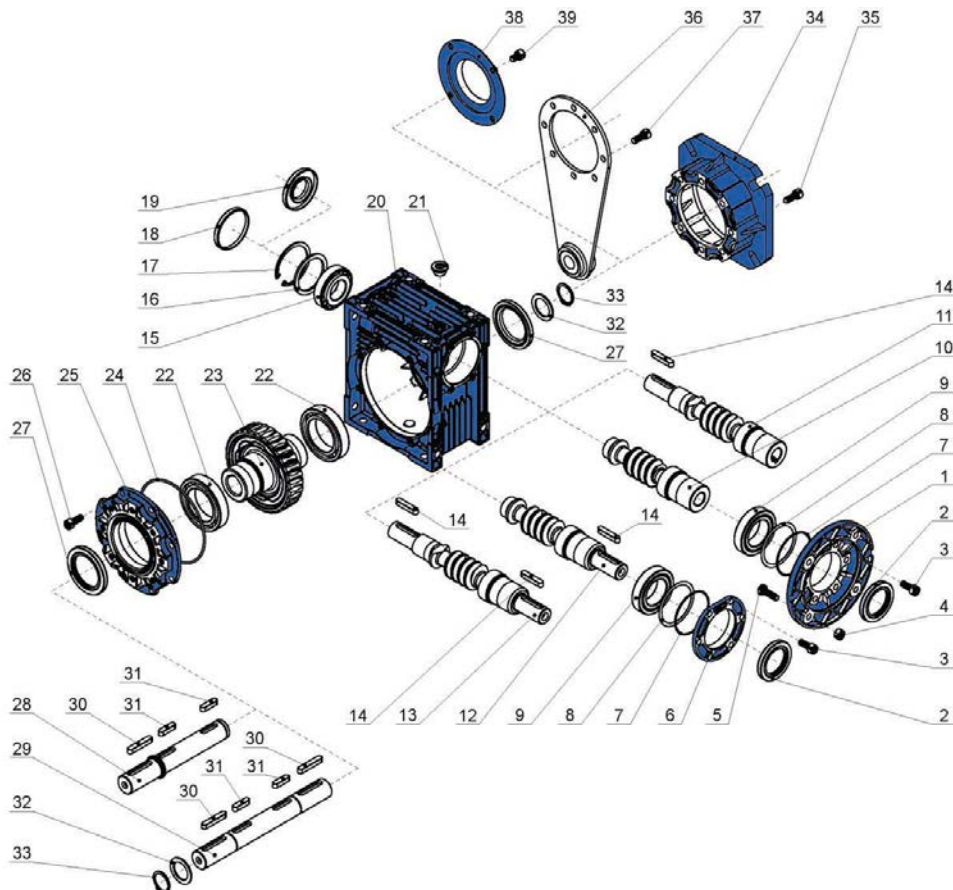


The information in the table above shows the permissible loading force on the midpoint of output shaft.

When the reducer is with double output shafts, the resultant radial force at the edge of the shaft should not exceed the values specified in the table above.

The maximum axial thrust permitted is 1/5 of radial force while the radial force and axial force are affected together.

AMRV: Worm Reduction Gearbox Exploded View



- | | | | |
|---------------------------------|-------------------------|----------------------------------|----------------------------------|
| 1 Flange PAM | 11 Double ext. PAM worm | 21 Plug cock | 31 Parallel key |
| 2 Oli seal | 12 RV worm | 22 Bearing | 32 SB Gasket |
| 3 Hexagon socket head cap screw | 13 Double ext. RV worm | 23 Worm wheel | 33 Circlip for shaft |
| 4 Hexagon nuts | 14 Parallel key | 24 O-ring | 34 Output flange |
| 5 Hexagon bolt | 15 Bearing | 25 Bearing support cover | 35 Hexagon socket head cap screw |
| 6 Gear unit cover | 16 Gasket | 26 Hexagon socket head cap screw | 36 Torque arm |
| 7 O-ring | 17 Circlip for hole | 27 Oli seal | 37 Hexagon socket head cap screw |
| 8 Spacer shim | 18 Cap | 28 single output shaft | 38 Protection cap |
| 9 Bearing | 19 Oli seal | 29 Double output shaft | 39 Hexagon socket head cap screw |
| 10 PAM worm | 20 Casing | 30 Parallel key | |

Rated output power P_N (kW)	Nominal efficiency (%) for IE1 50Hz			Nominal efficiency (%) for IE2 50Hz			Nominal efficiency (%) for IE3 50Hz		
	2 Pole	4 Pole	6 Pole	2 Pole	4 Pole	6 Pole	2 Pole	4 Pole	6 Pole
0.75	75.0	73.0	69.0	77.4	79.6	75.9	80.7	82.5	78.9
1.1	77.0	75.0	72.0	79.6	81.4	78.1	82.7	84.1	81.0
1.5	79.0	78.0	76.0	81.3	82.8	79.8	84.2	85.3	82.5
2.2	81.0	80.0	79.0	83.2	84.3	81.8	85.9	86.7	84.3
3	83.0	82.0	81.0	84.6	85.5	83.3	87.1	87.7	85.6
4	85.0	84.0	82.0	85.8	86.6	84.6	88.1	88.6	86.8
5.5	86.0	96.0	84.0	87.0	87.7	86.0	89.2	89.6	88.0
7.5	87.0	87.0	86.0	88.1	88.7	87.2	90.1	90.4	89.1
11	88.0	88.0	87.5	89.4	89.8	88.7	91.2	91.4	90.3
15	89.0	89.0	89.0	90.3	90.6	89.7	91.9	92.1	91.2
18.5	90.0	90.5	90.0	90.9	91.2	90.4	92.4	92.6	91.7
22	90.5	91.0	90.0	91.3	91.6	90.9	92.7	93.0	92.2
30	91.2	92.0	91.5	92.0	92.3	91.7	93.3	93.6	92.9
37	92.0	92.5	92.0	92.5	92.7	92.2	93.7	93.9	93.3
45	92.3	92.8	92.5	92.9	93.1	92.7	94.0	94.2	93.7
55	92.5	93.0	92.8	93.2	93.5	93.1	94.3	94.6	94.1
75	93.0	93.8	93.5	93.8	94.0	93.7	94.7	95.0	94.6
90	93.8	94.2	93.8	94.1	94.2	94.0	95.0	95.2	94.9
110	94.0	94.4	94.0	94.3	94.5	94.3	95.2	95.4	95.1
132	94.5	94.6	94.2	94.6	94.7	94.6	95.4	95.6	95.4
160	94.6	94.7	94.5	94.8	94.8	94.8	95.6	95.8	95.6

Maximum safe rpm

Safe running speeds for squirrel-cage induction motors. Unless the name plate states otherwise, all AmTecs 3 phase induction motors smaller than 315 frame, can safely run continuously at the speed in the following table.

Frame Size	2 Pole	4 Pole	6 Pole
≤ 100	5200	3600	2400
112	5200	3600	2400
132	4500	2700	2400
160	4500	2700	2400
180	4500	2700	2400
200	4500	2300	1800
225	3600	2300	1800
250	3600	2300	1800
280	3600	2300	1800
315	3600	2300	1800

Note: Motors can run above the rated speed when used in conjunction with a frequency inverter. However, noise and vibration will increase. It can be necessary to have the motors corrected to support continued running above the speeds stated above. Prolonged running at higher speed will effect the bearing life and where applicable the re-greasing intervals.

Maximum A-weighted sound power level

Maximum A-weighted sound power level, LwA in dB, at no-load.

For single speed three-phase cage induction motors IC01, IC11, IC21, IC411, IC511, IC611

Frame size	2 Pole	4 Pole	6 Pole	8 Pole
	2 Pole	4 Pole	6 Pole	8 Pole
	Sound pressure LWA (dB)	Sound pressure LWA (dB)	Sound pressure LWA (dB)	Sound pressure LWA (dB)
90	78	66	63	63
100	82	70	64	64
112	83	72	70	70
132	85	75	73	71
160	87	77	73	72
180	88	80	77	76
200	90	83	80	79
225	92	84	80	79
250	92	85	82	80
280	94	88	85	82
315	98	94	89	88
355	100	95	94	92

Note 1: Motors with cooling method IC01, IC11, IC21 may present higher sound Power levels: 2 and 4 poles +7dB(A), - 6 and 8 poles +4dB(A).

Note 2: Sound power levels for 2 and 4 poles, frame sizes greater than 315 are valid for unidirectional fans. All other sound Power levels are valid for bidirectional fans.

Note 3: The values for 60 Hz motors should be increased as follows : 2 poles +5dB(A) ; 4, 6 and 8 poles +3dB(A).

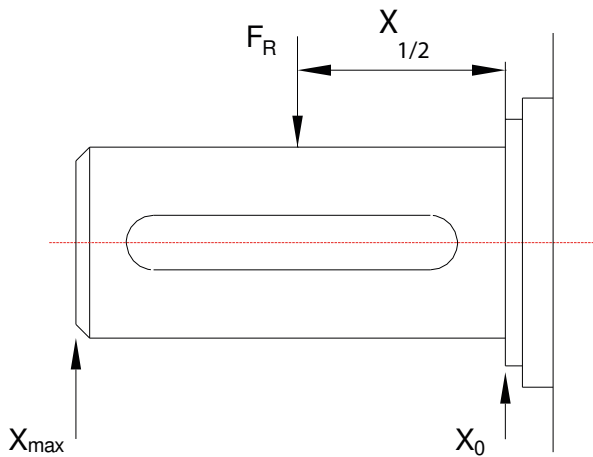
Maximum Expected increase over no load condition

Maximum expected increase, over no-load condition, in A-weighted sound power levels, LWA in dB, for rated load condition.

Frame Size	2 Pole	4 Pole	6 Pole	8 Pole
90 -160	2	5	7	8
180-200	2	4	6	7
225-280	2	3	6	7
315	2	3	5	6
355	2	2	4	5

Note 1: This table provides the maximum expected increment at rated load conditions to be added to any declared no-load value.

Note 2: the values apply to both 50 Hz and 60 Hz supplies.



The following table gives the permissible radial forces in Newtons, assuming zero axial force. This table shows loadings for standard ball bearings. For higher radial loads than given a reinforced bearing should be fitted.

The Values are based on normal operating conditions at 50Hz and calculated at 20,000 working hours for 2 pole and 40,000 working hours for 4, 6, and 8 pole motors. At 60Hz the values should be reduced by 10%.

The minimum pulley diameter can be calculated with the following formula:

$$D = \frac{1.9 \times 10^7 \times k \times P_N}{n_N \times F_R}$$

- D = Diameter of the pulley (mm)
- P_N = Power of the motor (kW)
- n_N = Motor rated speed (r/min)
- k = Belt tension factor, k=2.5 for V-belt
- F_R = Permissible radial force (N)

Frame size	Pole	Maximum radial force (F_R)		
		X0	X 1/2	X Max
56	2	250	180	100
56	4	250	180	100
63	2	260	300	230
63	4	260	300	230
71	2	470	400	320
71	4	470	400	320
71	6	470	400	320
80	2	670	610	550
80	4	730	650	590
80	6	830	750	680
80	8	920	820	750
90	2	740	660	590
90	4	800	710	630
90	6	920	810	730
90	8	1010	890	800
100	2	1030	920	820
100	4	1110	990	890
100	6	1270	1130	1020
100	8	1400	1240	1120
112	2	1490	1330	1200
112	4	1600	1430	1290
112	6	1840	1640	1480
112	8	2020	1800	1630
132	2	2160	1900	1690
132	4	2330	2040	1820
132	6	2670	2340	2080
132	8	2940	2570	2290
160	2	2800	2440	2170
160	4	3000	2630	2330
160	6	3440	3010	2670
160	8	3850	3410	3060
180	2	3930	3500	3150
180	4	4240	3770	3390
180	6	4890	4390	3980
180	8	5380	4830	4380
200	2	4480	4050	3700
200	4	4820	4360	3980
200	6	5520	5000	4560
200	8	6080	5500	5020
225	2	5000	4540	4160
225	4	5360	4720	4210
225	6	6180	5480	4920
225	8	6750	5940	5310
250	2	5680	5100	4620
250	4	6120	5490	4980
250	6	7000	6280	5700
250	8	7710	6920	6270
280	2	5620	5080	4640
280	4	7790	7050	6430
280	6	8920	8060	7360
280	8	9820	8880	8100
315	2	7370	6840	6390
315	4	9150	8370	7720
315	6	10480	9590	8830
315	8	11530	10550	9720
355*	2	16330	15390	8730
355*	4	28300	25860	14290
355*	6	32400	29600	16350
355*	8	35660	32500	18000