

M.W.A WELDING (THAILAND) CO.,LTD. บริษัท เอ็ม.ดับบลิว.เอ. เวลดิ้ง (ประเทศไทย) จำกัด

# alkitronic

The Manuals

### where sockets will not fit ...

#### alkitronic<sup>®</sup> Norwolf specialty products

The *alkitronic*<sup>®</sup> Norwolf Missing Link<sup>™</sup>, Model *M-ML* - the most revolutionary manual torque multiplier for applications where standard tools don't fit. The *alkitronic*<sup>®</sup> Norwolf XCE Link<sup>™</sup> is essentially a Missing Link<sup>™</sup> with the ability to turn continuously.

### M-ML

The M-ML torque multiplier fits into tightly confined areas where sockets will not fit. The M-ML, has become standard in the wind industry for generator feet and yaw pucks. Available in 4:1 or 6:1 ratios. It should be emphasized that despite a large gear ratio of 6:1, the M-ML offers an ideal power-to-weight ratio.

### Advantages

- Accurate operates using levers, not gears.
- No overload pins to break creates safer working environment.
- Uses ratchet or non-ratchet wrenches.
- Optional reaction arm permits operator to react on the same plane.
- Input force is same direction as reaction force for maximum operator convenience.

## **XCE Link**

The *alkitronic*<sup>®</sup> Norwolf XCE Link<sup>™</sup> is the ultimate answer for gaining access where standard pneumatic multipliers are too tall or bulky to fit application. Available in 3:1 or 4:1 ratios.

There are two available styles. The standard style has a sliding pin with which to react with any standard torque multiplier. The hub style has a specific splined hub to match the input tool of choice.

## Advantages

- Totally enclosed aluminum housing.
- Available in two styles: pin or hub reaction.
- Continuous rotation for use with any *alkitronic*<sup>®</sup> pneumatic or electric multiplier.
- Available in special configurations.
- Gearless internal design offers long service life.



Application Example: The Missing Link<sup>™</sup> when fitting a coupling in plant construction. The Missing Link<sup>™</sup> fits more applications than any other wrench.



Missing Link™ – the manuel torque multipliers are available with spanner sizes from 22 mm to max. 80 mm and ratios of 4:1, 6:1. The Missing Link™, the most suitable multiplier for every bolting connection.

## Alkitronic M-ML & XCE Link



XCE Link<sup>TM</sup> with hub style to match the input of all alkitronic<sup> $\circ$ </sup> torque tools. Continuous rotation for use with any electric or pneumatic driven torque multiplier.

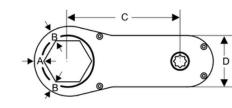


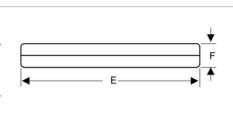
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The Manuals

# **Alkitronic M-ML & XCE Link**

# **Technical Data**







Optional reaction arm

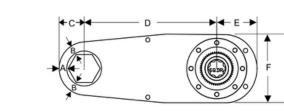
Model Missing Link (M-ML)

SW / AF	22	24	27	30	32	36	41	46	50	55	60	C 151 mm
A mm	13,5	12	11.1	12	11.1	11.1	11.1	11.1	11.1	11.1	11.1	D 70 mm
B mm	15.1	13.5	12.7	13,5	12.7	12.7	12.7	12.7	12.7	12.7	12.7	F 32 mm
E mm	222	222	222	226	226	228	231	234	236	239	242	

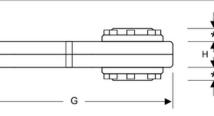
Models alkitronic® M-ML 3/4", Ratio 4:1 - max. 815 Nm/600 ft.lbs input to 3	5,260 Nm/2,405 ft.lbs output
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SW / AF	22	24	27	30	32	36	41	46	50	55	60	65	70	75	80	C 212 mm
A mm	21.3	20.3	18.8	17.3	16.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	D 95 mm
B mm	23.6	22.6	21.1	19.6	18.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	F 45 mm
E mm	309	309	309	309	309	309	312	315	317	320	323	325	328	331	334	

Models a	lkitronic® M-	ML 3/4", Rat	io 6:1 - max.	. 815 Nm/600	) ft.lbs input	to 4,890 Nm	/3,605 ft.lbs	output		
SW / AF	32	36	41	46	50	55	60	65	70	C 355 mm
A mm	23.3	21.3	18.8	16.3	14.3	14.3	14.3	14.3	14.3	D 102 mm F 45 mm
B mm	25.6	23.6	21.1	18.6	16.6	16.6	16.6	16.6	16.6	F 45 mm
E mm	476	476	476	476	476	479	481	484	487	



Model XCE Link



st This thickness is determined by the input drive.

Models a	lkitronic	® XCE Lir	nk - 3/4",	Ratio 3:1	I - max. 1	,150 Nm/	/850 ft.lb	s input t	o 3,450 N	lm/2545	ft.lbs ou	tput		
SW / AF	24	27	32	36	41	46	50	55	60	65	70	. 75	80	D 156 m
A mm	10	11	11	12	12	13	13	14	14	15	15	16	16	E 60 m
B mm	11	11	12	12	13	13	14	14	15	15	16	16	17	F 102 m H 38 m
C mm	25	27	30	33	36	40	42	46	49	53	56	59	63	H 30 M
G mm	241	243	246	249	252	256	258	262	265	269	272	275	279	
Models a	lkitronic	® XCE Lir	nk - 1", Ra	tio 3:1-	max. 2,4	40 Nm/1	800 ft.lb	s input t	o 7,320 N	m/5,400	ft.lbs ou	Itput		
SW / AF	50	55	60	65	70	75	80	90	100	105	110	115	120	D 208 m
A mm	13	14	14	15	15	16	16	17	18	19	20	20	21	E 80 m
B mm	14	14	15	15	16	16	17	18	19	19	20	20	21	F 137 m
C mm	42	46	49	53	56	59	63	70	76	80	83	87	90	H 51 m
• •														
G mm	330	334	337	341	344	347	351	358	364	368	371	375	378	
-	330					•							378	
G mm	330					•							378 <b>80</b>	D 196 m
G mm Models a	330 Ikitronic	® XCE Lir	nk - 3/4",	Ratio 4:	1- max.1	l,150 Nm	/850 ft.lb	os input t	o 4,600 N	lm/3,395	5 ft.lbs ou	utput		D 196 m E 60 m
G mm Models a SW / AF	330 Ikitronic 24	® XCE Lir 27	nk - 3/4", 32	Ratio 4: 36	1 - max. 1 41	l,150 Nm. 46	/850 ft.lb 50	os input t 55	o 4,600 N 60	lm/3,395 65	5 ft.lbs ou 70	utput 75	80	E 60 m F 102 m
G mm Models a SW / AF A mm	330 Ikitronic 24 10	e® XCE Lir 27 11	nk - 3/4", 32 11	Ratio 4: 36 12	1 - max. 1 41 12	<b>1,150 Nm</b> <b>46</b> 13	/850 ft.lb 50 13	os input t 55 14	o 4,600 M 60 14	Im/3,395 65 15	<b>5 ft.lbs o</b> u <b>70</b> 15	<b>115</b> 16	<b>80</b> 16	E 60 m
G mm Models a SW / AF A mm B mm	330 Ikitronic 24 10 11	e® <b>XCE Lir</b> <b>27</b> 11 11	<b>nk - 3/4",</b> <b>32</b> 11 12	Ratio 4: 36 12 12	<b>1 - max.</b> 1 41 12 13	<b>46</b> 13 13	<b>/850 ft.lb</b> 50 13 14	<b>55</b> 14 14	o 4,600 M 60 14 15	Im/3,395 65 15 15	<b>5 ft.lbs o</b> <b>70</b> 15 16	<b>11 put</b> 75 16 16	<b>80</b> 16 17	E 60 m F 102 m
G mm Models a SW / AF A mm B mm C mm	330 <b>Ikitronic</b> 24 10 11 25 281	<b>27</b> 11 11 27 283	<b>32</b> 11 12 30 286	Ratio 4: 36 12 12 33 289	1 - max. 1 41 12 13 36 292	<b>46</b> 13 13 40 296	<b>/850 ft.lb</b> <b>50</b> 13 14 42 298	<b>55</b> 14 14 46 302	<b>60</b> <b>60</b> 14 15 49 305	Im/3,395 65 15 15 53 309	<b>70</b> 15 16 56 312	<b>75</b> 16 16 59 315	<b>80</b> 16 17 63	E 60 m F 102 m
G mm Models a SW / AF A mm B mm C mm G mm	330 <b>Ikitronic</b> 24 10 11 25 281	<b>27</b> 11 11 27 283	<b>32</b> 11 12 30 286	Ratio 4: 36 12 12 33 289	1 - max. 1 41 12 13 36 292	<b>46</b> 13 13 40 296	<b>/850 ft.lb</b> <b>50</b> 13 14 42 298	<b>55</b> 14 14 46 302	<b>60</b> <b>60</b> 14 15 49 305	Im/3,395 65 15 15 53 309	<b>70</b> 15 16 56 312	<b>75</b> 16 16 59 315	<b>80</b> 16 17 63	E 60 m F 102 m H 38 m
G mm Models a SW / AF A mm B mm C mm G mm Models a	330 Ikitronic 24 10 11 25 281 Ikitronic	2* XCE Lir 27 11 11 27 283 2* XCE Lir	<b>3/4",</b> <b>32</b> 11 12 30 286 <b>nk - 1", Ra</b>	Ratio 4: 36 12 12 12 33 289 atio 4:1-	1 - max. 1 41 12 13 36 292 max. 2,4	<b>46</b> 13 13 40 296 <b>40 Nm/1</b>	<b>/850 ft.lb</b> <b>50</b> 13 14 42 298 <b>,800 ft.lb</b>	<b>55</b> 14 14 14 46 302 <b>5 input t</b>	o 4,600 M 60 14 15 49 305 o 9,760 M	Im/3,395 65 15 15 53 309 m/7,200	5 ft.lbs ou 70 15 16 56 312 ft.lbs ou	<b>75</b> 16 16 59 315 <b>tput</b>	<b>80</b> 16 17 63 319	E 60 m F 102 m H 38 m D 262 m E 80 m
G mm Models a SW / AF A mm B mm C mm G mm Models a SW / AF	330 Ikitronic 24 10 11 25 281 Ikitronic 50	2° XCE Lir 27 11 11 27 283 2° XCE Lir 55	nk - 3/4", 32 11 12 30 286 nk - 1", Ra 60	Ratio 4: 36 12 12 12 33 289 atio 4:1- 65	1 - max. 1 41 12 13 36 292 max. 2,4 70	<b>46</b> 13 13 40 296 <b>40 Nm/1</b> <b>75</b>	/850 ft.lb 50 13 14 42 298 ,800 ft.lb 80	os input t 55 14 14 46 302 s input t 90	o 4,600 N 60 14 15 49 305 o 9,760 N 100	65 15 15 53 309 m/7,200 105	5 ft.lbs ou 70 15 16 56 312 ft.lbs ou 110	<b>75</b> 16 16 59 315 <b>15</b> <b>15</b>	80 16 17 63 319 120	E 60 m F 102 m H 38 m D 262 m E 80 m F 137 m
G mm Models a SW / AF A mm B mm C mm G mm Models a SW / AF A mm	330 <b>Ikitronic</b> 24 10 11 25 281 <b>Ikitronic</b> 50 13	* XCE Lir 27 11 11 27 283 * XCE Lir 55 14	nk - 3/4", 32 11 12 30 286 nk - 1", Ra 60 14	Ratio 4: 36 12 12 33 289 atio 4:1- 65 15	1 - max. 1 41 12 13 36 292 max. 2,4 70 15	<b>1,150 Nm</b> <b>46</b> 13 13 40 296 <b>40 Nm/1</b> <b>75</b> 16	/850 ft.lb 50 13 14 42 298 ,800 ft.lb 80 16	os input t 55 14 14 46 302 s input t 90 17	o 4,600 N 60 14 15 49 305 o 9,760 N 100 18	Mm/3,398 65 15 15 53 309 m/7,200 105 19	5 ft.lbs ou 70 15 16 56 312 ft.lbs ou 110 20	<b>75</b> 16 16 59 315 <b>15</b> <b>15</b> <b>15</b> 20	<b>80</b> 16 17 63 319 <b>120</b> 21	E 60 m F 102 m H 38 m D 262 m E 80 m