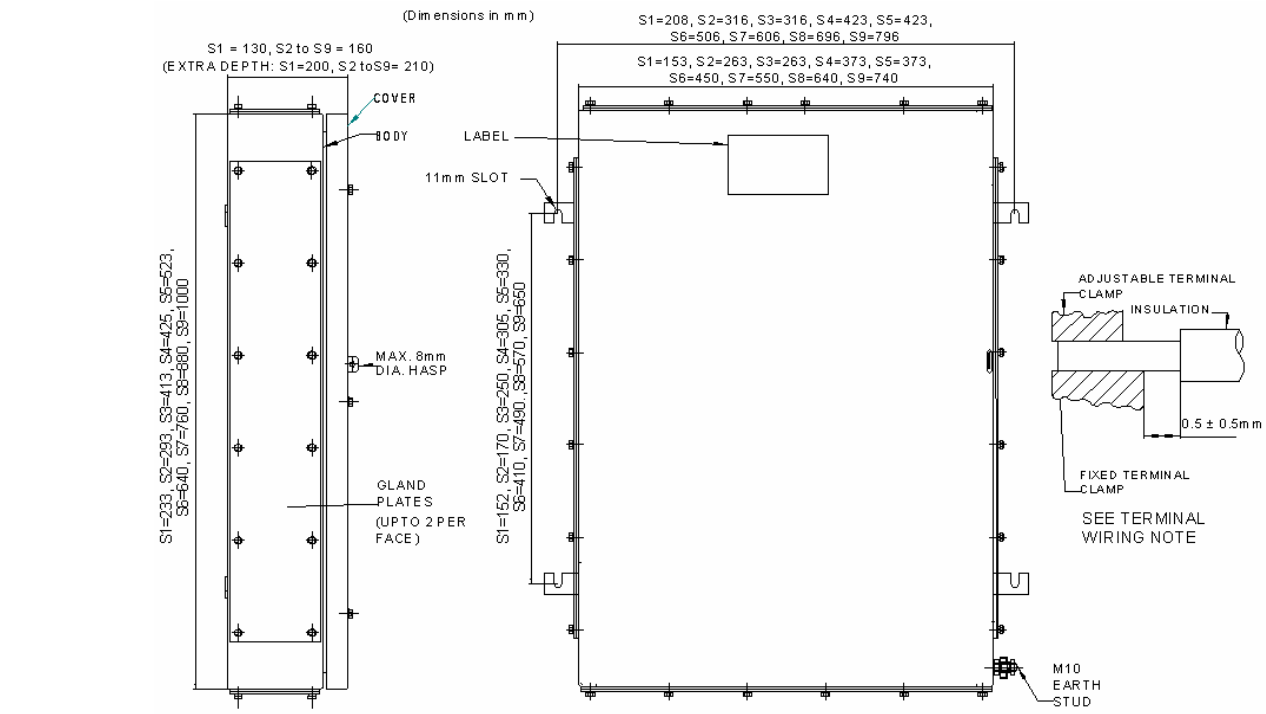
INSTALLATION & SAFETY DATA SHEET
TYPE SIZE 1 TO SIZE 9 JUNCTION BOX
(S1 to S9 Stainless Steel or MS1 to MS9 Mild Steel)

IMPORTANT : THIS DOCUMENT SHOULD BE READ CAREFULLY BEFORE COMMENCING INSTALLATION



ZONES OF USE OF TERMINAL BOX
CAT II 2G for use in Zone 1. Areas as defined in BS EN 60079-14.
CAT II 2D for use in Zone 21 or 22. Areas defined in EN 50281-1-2
CAT II 3D for use in Zone 22. Areas as defined in EN 50281-1-2 (Non-Conductive Dusts)

SERVICE TEMPERATURE : -40°C to +80°C

MINIMUM INSTALLATION TEMPERATURE : -5°C

CERTIFICATION MARKING :
STANDARD JUNCTION BOX S1 to S9 or MS1 to MS9 (Including when fitted with EMC gasket and/or breather/drains that satisfy IP6*) :
Ⓔx II 2 GD. T EExe II T* Tamb *** BAS01ATEX2106X - IP 6***

ALTERNATIVE JUNCTION BOX S1/1 to S9/1 or MS1/1 to MS9/1 (When fitted with breather/drains that satisfy IP5*):
Ⓔx II 2G 3D T EExe II T* Tamb *** BAS01ATEX2106X - IP 5***

W = Max Dissipated Wattage. N = No. of Terminals Fitted. F = Combined Terminal Resistance. I = Max Current
NOTE: Combined Terminal Resistance = Resistance of Max Conductor Length (See BS6360 & table below) + Terminal Resistance
$W = N \times F \times I^2$ $N = W / F \times I^2$ $I = \sqrt{W / N \times F}$

BOX TYPE	Maximum Power Dissipation (Watts)																		Max. Cable Length Per Terminal (M)
	T*	T**	T***	T*	T**	T***	T*	T**	T***	T*	T**	T***	T*	T**	T***	T*	T**	T***	
	T6	80°C	-40°C +40°C	T6	80°C	-40°C +55°C	T6	80°C	-40°C +65°C	T5	80°C	-40°C +40°C	T5	80°C	-40°C +55°C	T5	80°C	-40°C +65°C	
Size 1	13.95			8.7			5.2			19.1			13.95			10.4			0.307
Size 2	18.15			11.3			6.8			24.9			18.15			13.6			0.425
Size 3	23.70			14.8			8.8			32.5			23.70			17.7			0.515
Size 4	29.95			18.7			11.2			41.1			29.95			22.4			0.579
Size 5	32.85			20.5			12.3			45.1			32.85			24.6			0.662
Size 6	40.00			25.0			15.0			55.0			40.00			30.0			0.792
Size 7	52.00			23.5			19.5			71.5			52.00			39.0			0.945
Size 8	65.00			40.6			24.3			89.3			65.00			48.7			1.090
Size 9	79.35			49.5			29.7			109.1			79.35			59.5			1.238

TO OPEN THE LID :

1. Disconnect power (isolate all circuits).
2. Unlock padlock (if fitted) and remove.
3. Untighten the M6 lid securing screws.
4. a) Carefully swing the lid back on its hinges ensuring the seal is not displaced or damaged.
   b) The lid may be removed completely by opening to approximately 110° and lifting off.
   c) Ensure correct gasket is fitted for area of use.

TO CLOSE THE LID :

1. Check that the gasket is correctly secured to the underside of the lid and undamaged. If the lid has been removed, completely reverse the procedure at 4 b) ensuring that the correct lid is refitted.
2. Locate and tighten all M6 lid securing screws into the box body.
3. Replace and lock the padlock on the lid, if required.

ENCLOSURE INSTALLATION (EI)

a) The IP rating of the enclosure must be maintained for the area of use (e.g. IP6* for Zone 21 dust environment) by the use of correct arrangement of cable / gland / sealing arrangements and in accordance with the installation codes as detailed in BS EN 60079-14, EN 50281 and these installation instructions.

b) Where other certified components are part of the assembly, the user must take account of any limitations listed on relevant certificates.

c) If an optional Breather / Drain **as listed on the enclosure certificate** is fitted the enclosure must be sited such that the Breather / Drain is pointing vertically downwards from the bottom of the box, and the IP rating of the selected Breather / Drain **shall** match the IP rating of the enclosure.

d) The enclosure may be ready supplied with cable entries. Where the customer drills cable entries they must be installed in accordance with the component certificate BAS01ATEX2105U enclosure limitations these specify a maximum clearance on the entry thread of 0.7mm and where adjacent cable entries are installed sufficient clearance must be maintained to allow for the fitting of sealing / retaining washers and the rotation of the cable gland hexagons.

e) All unused entry apertures must be sealed using a stopping plug **as listed on the enclosure certificate**, and also the IP rating of the junction box shall be maintained for the zone of use.

f) The apparatus must not be modified in anyway without reference to Hawke, as this will invalidate the certification, except for EI d) & e) and TW i) & j).

TERMINAL WIRING (TW)

a) All wiring must be carried out in accordance with the relevant code of practice and / or instructions e.g. BS EN 60079-14 and EN 50281.

b) The voltage and current and maximum dissipated power shown on the label must not be exceeded.

c) When used as a general purpose junction box or marshalling box the circuits carrying currents $\geq$ 1A shall be individually protected against over current such that the protective device operates effectively at no more than 1.45 times the current carrying capacity of the smallest conductor used in that circuit.

d) Where a major portion of the terminals are carrying maximum rated current the temperature at the branching point of the conductors may exceed 70°C. Under these circumstances the installer must ensure that the limiting temperature for the cable insulation used is acceptable e.g. 85°C (T6) or 100°C (T5).

e) The wiring installation must extend to within 1mm of the metal face of the terminal, unless the relevant certificates allows more. (See terminal schedule for limitations).

All leads must be insulated for the appropriate voltage.

f) Not more than one single or multiple stranded lead shall be connected into either side of the terminals, unless the relevant component certificate allows more, or unless the multiple conductors have been previously joined in a suitable manner (for example with an insulated crimped boot lace ferrule, mounted in a vertical position) such that they form a single cohesive item for insertion into the terminal way.

A parallel shaft screwdriver of the correct size should be used.

g) Only those terminals shown on Drg. 2536 terminal schedule attached may be incorporated in the box. The installer must ensure that the conditions of use for the terminals outlined are complied with.

h) All terminal screws used and unused shall be fully tightened down.

i) The installer shall ensure creepage and clearance distances are not reduced, especially between intrinsically safe (is) and non-is circuits (e.g. 50mm clearance).

j) The use of any cross connection devices between adjacent terminal ways shall be in accordance with the requirements of the relevant component certificate listed on Drg. D2536 held on EECS File Number 0500/03/054.

k) Use of the terminal box at ambient temperatures below –20°C is dependant upon the minimum service temperature of the terminals.

l) When connecting a terminal with a conductor that is below the maximum cross section area shown for the terminal, then the maximum amps / pole must be reduced in line with the maximum amps indicated for a terminal equivalent to the conductor size being fitted e.g. for a terminal that can take a maximum conductor size of 10mm^2 at 50 Amps, but is fitted with a 4mm^2 conductor then the current shall be reduced to a maximum a 21 Amps, or the rating on the junction box lid label (whichever is the lowest).

EARTHING

a) Where there is a requirement for bonding of gland plate, this can be achieved by using earth tags in conjunction with cable glands or by use of earth studs. In the case of painted boxes, consideration must be given to the removal of the paint, e.g. under a serrated washer on the inside of the box which may lead to corrosion of the enclosure and potential reduction in earthing protection. This area following installation must be protected against corrosion.

b) The earth leads must be at least equal the cross section of the largest live conductor up to 16mm^2 or a minimum of 0.5 x the maximum cross sectional area of the live conductor above 35mm^2, with a minimum cross sectional area of 16mm^2.

SCHEDULE OF TERMINALS FITTED

SIZE 1 TERMINAL CAPACITY DATA									
Terminal Type	Conductor Size mm^2		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm)
	Min.	Max.		Terminal Qty.	Amps	Terminal Qty.	Amps		
WDU2.5N	0.5	2.5	420	30	13	12	21	0.00258487	10
WDU2.5	0.5	2.5	550	30	13	12	21	0.00247487	10
WDU4	0.5	4	750	25	18	11	28	0.00155527	10
WDU6	0.5	6	550	19	26	10	36	0.00103556	12
WDU10	1.5	10	550	15	38	8	50	0.00063681	12
WDU16	1.5	16	750	13	51	7	66	0.00040305	16
WDU35	2.5	35	750	9	90	6	109	0.00018887	18
SAKK4	0.5	6	275	19	24	14	28	0.00123556	10
SAKK10	0.5	10	275	13	29	4	50	0.00126181	12

SIZE 2 TERMINAL CAPACITY DATA									
Terminal Type	Conductor Size mm^2		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm) or BOLT SIZE
	Min.	Max.		Terminal Qty.	Amps	Terminal Qty.	Amps		
WDU2.5N	0.5	2.5	420	60	9	11	21	0.00345925	10
WDU2.5	0.5	2.5	550	60	9	12	21	0.00334925	10
WDU4	0.5	4	750	50	13	11	28	0.00209925	10
WDU6	0.5	6	550	42	17	10	36	0.001399	12
WDU10	1.5	10	550	36	24	8	50	0.00085275	12
WDU16	1.5	16	750	28	34	7	66	0.00053875	16
WDU35	2.5	35	750	20	60	6	109	0.0002507	18
WDU70N	10	70	750	8	117	3	167	0.0001639	22
WFF35 (c/w cover)	2.5	35	1100	6	107	5	109	0.0002627	Bolt size M6
SAKK4	0.5	6	275	42	16	14	28	0.001599	10
SAKK10	0.5	10	275	36	18	4	50	0.00147775	12

SIZE 3 TERMINAL CAPACITY DATA									
Terminal Type	Conductor Size mm^2		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm) or BOLT SIZE
	Min.	Max.		Terminal Qty.	Amps	Terminal Qty.	Amps		
WDU2.5N	0.5	2.5	420	112	7	13	21	0.00412615	10
WDU2.5	0.5	2.5	550	112	7	13	21	0.00401615	10
WDU4	0.5	4	750	94	10	12	28	0.00251415	10
WDU6	0.5	6	550	72	14	10	36	0.0016762	12
WDU10	1.5	10	550	56	20	9	50	0.00101745	12
WDU16	1.5	16	750	48	27	8	66	0.00064225	16
WDU35	2.5	35	750	36	47	6	109	0.00029786	18
WDU70N	10	70	750	14	94	4	167	0.00018802	22
WFF35 (c/w cover)	2.5	35	1100	11	83	6	109	0.00030986	Bolt size M6
SAKK4	0.5	6	275	72	13	16	28	0.0018762	10
SAKK10	0.5	10	275	48	17	5	50	0.00164245	12

SIZE 4 TERMINAL CAPACITY DATA									
Terminal Type	Conductor Size mm^2		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm) or BOLT SIZE
	Min.	Max.		Terminal Qty.	Amps	Terminal Qty.	Amps		
WDU2.5N	0.5	2.5	420	168	6	14	21	0.00460039	10
WDU2.5	0.5	2.5	550	168	6	15	21	0.00449039	10
WDU4	0.5	4	750	141	8	13	28	0.0028091	10
WDU6	0.5	6	550	108	12	12	36	0.00187332	12
WDU10	1.5	10	550	84	17	10	50	0.00113457	12
WDU16	1.5	16	750	72	24	9	66	0.00071585	16
WDU35	2.5	35	750	54	40	7	109	0.000331396	18
WDU70N	10	70	750	30	69	5	167	0.000205172	22
WDU**70**/95	16	70	750	15	96	3	202	0.000215172	30
WDU70/**95**	16	95		15	107	4		0.000171747	
WDU**120**/150	35	120	1100	9	149	3	234	0.000148587	35
WDU120/**150**		150		9	158	4		0.000131796	
WFF35 (c/w cover)	2.5	35	1100	11	89	7	109	0.000343396	Bolt size M6
WFF70 (c/w cover)	2.5	70	1100	9	134	5	167	0.000185172	Bolt size M8
WFF120 (c/w cover)	6	120	1100	7	198	5	234	0.000108587	Bolt size M10
SAKK4	0.5	6	275	108	11	18	28	0.00207332	10
SAKK10	0.5	10	275	93	13	6	50	0.00175957	12

S I Z E 5 TERMINAL CAPACITY DATA									
Terminal Type	Conductor Size mm^2		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm) or BOLT SIZE
	Min.	Max.		Terminal Qty.	Amps	Terminal Qty.	Amps		
WDU2.5N	0.5	2.5	420	228	5	14	21	0.00521542	10
WDU2.5	0.5	2.5	550	228	5	14	21	0.00510542	10
WDU4	0.5	4	750	192	7	13	28	0.00319182	10
WDU6	0.5	6	550	144	10	11	36	0.00212896	12
WDU10	1.5	10	550	120	14	10	50	0.00128646	12
WDU16	1.5	16	750	96	20	9	66	0.0008113	16
WDU35	2.5	35	750	72	34	7	109	0.00037489	18
WDU70N	10	70	750	40	60	5	167	0.00022742	22
WDU**70**/95	16	70	750	15	96	3	202	0.00023742	30
WDU70/**95**	16	95		15	107	4		0.00018777	
WDU**120**/150	35	120	1100	12	130	3	234	0.00016129	35
WDU120/**150**		150		12	138	4		0.00014209	
WFF35 (c/w cover)	2.5	35	1100	15	75	7	109	0.00038689	Bolt size M6
WFF70 (c/w cover)	2.5	70	1100	12	114	5	167	0.00020742	Bolt size M8
WFF120 (c/w cover)	6	120	1100	9	173	4	234	0.00012129	Bolt size M10
SAKK4	0.5	6	275	144	9	17	28	0.00232896	10
SAKK10	0.5	10	275	104	12	6	50	0.00191146	12

S I Z E 6 TERMINAL CAPACITY DATA									
Terminal Type	Conductor Size mm^2		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm) or BOLT SIZE
	Min.	Max.		Terminal Qty.	Amps	Terminal Qty.	Amps		
WDU2.5N	0.5	2.5	420	380	4	14	21	0.00617872	10
WDU2.5	0.5	2.5	550	380	4	14	21	0.00606872	10
WDU4	0.5	4	750	320	5	13	28	0.00379112	10
WDU6	0.5	6	550	240	8	12	36	0.00252936	12
WDU10	1.5	10	550	200	11	10	50	0.00152436	12
WDU16	1.5	16	750	160	16	9	66	0.0009608	16
WDU35	2.5	35	750	120	27	7	109	0.000443008	18
WDU70N	10	70	750	50	55	5	167	0.000262256	22
WDU**70**/95	16	70	750	19	87	3	202	0.000272256	30
WDU70/**95**	16	95		19	99	4		0.000212856	
WDU**120**/150	35	120	1100	16	117	4	234	0.000181176	35
WDU120/**150**		150		16	125	4		0.000158208	
WFF35 (c/w cover)	2.5	35	1100	38	48	7	109	0.000455008	Bolt size M6
WFF70 (c/w cover)	2.5	70	1100	16	101	5	167	0.000242256	Bolt size M8
WFF120 (c/w cover)	6	120	1100	12	153	5	234	0.000141176	Bolt size M10
WFF185 (c/w cover)	10	185	1100	9	212	4	307	0.000984872	Bolt size M12
WFF300 (c/w cover)	25	300	1100	9	236	2	452	0.000675992	Bolt size M16
SAKK4	0.5	6	275	240	7	18	28	0.00272936	10
SAKK10	0.5	10	275	173	10	7	50	0.00214936	12

S I Z E 7 TERMINAL CAPACITY DATA									
Terminal Type	Conductor Size mm^2		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm) or BOLT SIZE
	Min.	Max.		Terminal Qty.	Amps	Terminal Qty.	Amps		
WDU2.5N	0.5	2.5	420	600	3	16	21	0.00731245	10
WDU2.5	0.5	2.5	550	600	3	16	21	0.00720245	10
WDU4	0.5	4	750	550	4	14	28	0.00449645	10
WDU6	0.5	6	550	380	6	13	36	0.0030006	12
WDU10	1.5	10	550	300	9	11	50	0.00180435	12
WDU16	1.5	16	750	250	13	10	66	0.00113675	16
WDU35	2.5	35	750	190	22	8	109	0.00052318	18
WDU70N	10	70	750	93	42	6	167	0.00030326	22
WDU**70**/95	16	70	750	23	84	4	202	0.00031326	30
WDU70/**95**	16	95		23	96	5		0.000242385	
WDU**120**/150	35	120	1100	20	112	4	234	0.000204585	35
WDU120/**150**		150		20	121	5		0.00017718	
WFF35 (c/w cover)	2.5	35	1100	46	45	8	109	0.00053518	Bolt size M6
WFF70 (c/w cover)	2.5	70	1100	40	67	6	167	0.00028326	Bolt size M8
WFF120 (c/w cover)	6	120	1100	15	145	5	234	0.000164585	Bolt size M10
WFF185 (c/w cover)	10	185	1100	11	203	4	307	0.00011365	Bolt size M12
WFF300 (c/w cover)	25	300	1100	11	227	2	452	0.0000767945	Bolt size M16
SAKK4	0.5	6	275	380	6	20	28	0.0032006	10
SAKK10	0.5	10	275	160	11	8	50	0.0024293500	12

S I Z E 8 TERMINAL CAPACITY DATA									
Terminal Type	Conductor Size mm^2		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm) or BOLT SIZE
	Min.	Max.		Terminal Qty.	Amps	Terminal Qty.	Amps		
WDU2.5N	0.5	2.5	420	852	3	17	21	0.0083869	10
WDU2.5	0.5	2.5	550	852	3	17	21	0.0082769	10
WDU4	0.5	4	750	720	4	16	28	0.0051649	10
WDU6	0.5	6	550	540	5	14	36	0.0034472	12
WDU10	1.5	10	550	438	8	12	50	0.0020697	12
WDU16	1.5	16	750	360	11	11	66	0.0013035	16
WDU35	2.5	35	750	364	17	9	109	0.00059916	18
WDU70N	10	70	750	108	41	6	167	0.00034212	22
WDU**70**/95	16	70	750	56	57	4	202	0.00035212	30
WDU70/**95**	16	95		56	65	5		0.00027037	
WDU**120**/150	35	120	1100	46	78	5	234	0.00022677	35
WDU120/**150**		150		46	85	6		0.00019516	
WFF35 (c/w cover)	2.5	35	1100	84	35	8	109	0.00061116	Bolt size M6
WFF70 (c/w cover)	2.5	70	1100	46	66	7	167	0.00032212	Bolt size M8
WFF120 (c/w cover)	6	120	1100	36	98	6	234	0.00018677	Bolt size M10
WFF185 (c/w cover)	10	185	1100	13	197	5	307	0.00128019	Bolt size M12
WFF300 (c/w cover)	25	300	1100	13	221	3	452	0.000085509	Bolt size M16
SAKK4	0.5	6	275	540	5	22	28	0.0036472	10
SAKK10	0.5	10	275	380	7	9	50	0.0026947	12

S I Z E 9 TERMINAL CAPACITY DATA									
Terminal Type	Conductor Size mm^2		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm) or BOLT SIZE
	Min.	Max.		Terminal Qty.	Amps	Terminal Qty.	Amps		
WDU2.5N	0.5	2.5	420	1155	2	18	21	0.00948358	10
WDU2.5	0.5	2.5	550	1155	2	19	21	0.00937358	10
WDU4	0.5	4	750	980	3	17	28	0.00584718	10
WDU6	0.5	6	550	735	5	15	36	0.00390304	12
WDU10	1.5	10	550	595	7	13	50	0.00234054	12
WDU16	1.5	16	750	490	10	12	66	0.0014737	16
WDU35	2.5	35	750	371	17	9	109	0.000676712	18
WDU70N	10	70	750	172	34	7	167	0.000381784	22
WDU**70**/95	16	70	750	64	56	4	202	0.000391784	30
WDU70/**95**	16	95		64	64	6		0.000298934	
WDU**120**/150	35	120	1100	54	76	5	234	0.000249414	35
WDU120/**150**		150		54	82	6		0.000213512	
WFF35 (c/w cover)	2.5	35	1100	96	34	9	109	0.000688712	Bolt size M6
WFF70 (c/w cover)	2.5	70	1100	81	52	7	167	0.000361784	Bolt size M8
WFF120 (c/w cover)	6	120	1100	42	94	6	234	0.000209414	Bolt size M10
WFF185 (c/w cover)	10	185	1100	32	131	5	307	0.000142686	Bolt size M12
WFF300 (c/w cover)	25	300	1100	32	147	3	452	0.0000944038	Bolt size M16
SAKK4	0.5	6	275	735	5	24	28	0.00410304	10
SAKK10	0.5	10	275	517	7	10	50	0.00296554	12