FORM•MASTER SHEAR™

Ultra-Shear High Performance Button Cutter

AHB TOOLING & MACHINERY, INC.
COMPLETE METALWORKING SOLUTIONS
(800) 991-4225
ISO Certified
www.ahbinc.com
customerservice@ahbinc.com

Insert Style:
RJLT (MOTN, MON, MONLL)
RJLW (MOTN)
RJET (MOFN)

Face Mills:
1A7E (8 mm IC insert) NEW
1A7G (10 mm IC insert)
1A7H (12 mm & .500" IC insert)
1A7K (16 mm IC insert)
1A7M (20 mm & .750" IC insert)

End Mills:
15B8E (8 mm IC insert) NEW
15B1A (10 mm IC insert)
15B1B (12 mm IC insert)
15B4H (.500" IC insert)

Grades:
IN2035, IN7035, IN2530, IN2540, IN2505, IN2504, IN10K

Applications:
Die & Mold
Aero Space
General Machining

PRODUCT ANNOUNCEMENT • UPDATE • 2018

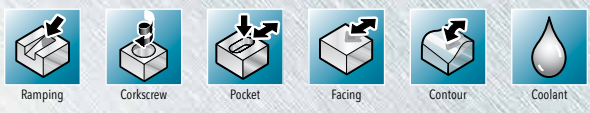
Features and Benefits

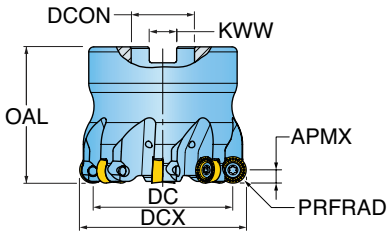
- Face mills, end mills and modular cutting options
- Coarse and fine-pitch cutter
- 8 mm, 10 mm, 12 mm, 16 mm, 20 mm, .500" & .750" IC button sizes
- Well-designed insert geometries promote longer tool life
- Wide range of insert edge preparations to address all applications
- Premium milling grades to cut all materials
- Strong clamping screw for secure and stable insert seating
- Anti-rotating insert clamping
- Robust thick inserts for added strength
- Ultra-reliable machining performance at high feed rates

Member IMC Group
Ingersoll Cutting Tools

SERIES 1A7E, 1A7G, 1A7H, 1A7K, 1A7M FACEMILLS

BUTTON CUTTERS

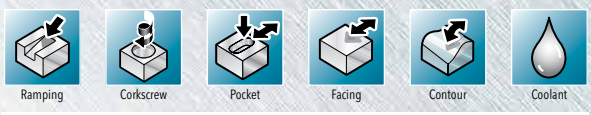


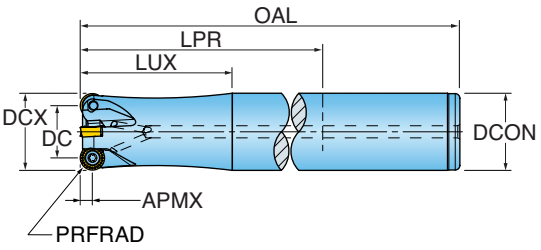


Part Number	DCX Cutting Dia. Max.	DC Cutting Diameter	APMX Depth of Cut Max.	OAL Overall Length	ZEFF Effective Teeth	DCON Bore Diameter	KWW Keyway	PRFRAD Profile Radius	RMPX Ramp Angle Max.	CSP Coolant	Insert Series
METRIC INSERT I.C.											
NEW 1A7E-20R01	2.000	1.691	0.16	1.63	8	0.750	0.312	0.157	2	Yes	RJLT08
1A7G-20R01	2.000	1.608	0.20	1.63	6	0.750	0.312	0.197	5	Yes	RJLT10
1A7H-20R01	2.000	1.533	0.24	1.57	5	0.750	0.312	0.236	6	Yes	RJLT12
1A7H-25R01	2.500	2.031	0.24	1.57	5	0.750	0.312	0.236	4	Yes	RJLT12
1A7H-30R01	3.000	2.530	0.24	1.75	6	1.000	0.375	0.236	3	Yes	RJLT12
1A7H-40R01	4.000	3.529	0.24	2.50	7	1.500	0.625	0.236	2	Yes	RJLT12
1A7H-50R01	5.000	4.528	0.24	2.50	8	1.500	0.625	0.236	1.75	No	RJLT12
1A7H-60R01	6.000	5.528	0.24	2.50	9	1.500	0.625	0.236	1.5	No	RJLT12
1A7K-20R01	2.000	1.387	0.32	1.57	4	0.750	0.312	0.315	1	Yes	RJLT16
1A7K-25R01	2.500	1.878	0.32	1.57	5	0.750	0.312	0.315	5	Yes	RJLT16
1A7K-30R01	3.000	2.373	0.32	1.75	5	1.000	0.375	0.315	5	Yes	RJLT16
1A7K-40R01	4.000	3.730	0.32	2.50	7	1.500	0.625	0.315	3.5	Yes	RJLT16
1A7K-50R01	5.000	4.372	0.32	2.50	7	1.500	0.625	0.315	2.5	No	RJLT16
1A7K-60R01	6.000	5.372	0.32	2.50	7	1.500	0.625	0.315	2	No	RJLT16
1A7M-25R01	2.500	1.723	0.39	2.00	4	0.750	0.312	0.394	2	Yes	RJLT20
1A7M-30R01	3.000	2.220	0.39	2.00	5	1.000	0.375	0.394	7	Yes	RJLT20
1A7M-40R01	4.000	3.217	0.39	2.50	6	1.500	0.625	0.394	4.5	Yes	RJLT20
1A7M-50R01	5.000	4.223	0.39	2.50	7	1.500	0.625	0.394	3.5	No	RJLT20
1A7M-60R01	6.000	5.215	0.39	2.50	7	1.500	0.625	0.394	2.5	No	RJLT20
INCH INSERT I.C.											
1A7H-20RE50	2.000	1.506	0.25	1.57	5	0.750	0.312	0.250	6	Yes	RJLT13
1A7H-30RE50	3.000	2.502	0.25	1.75	6	1.000	0.375	0.250	4	Yes	RJLT13
1A7H-40RE50	4.000	3.501	0.25	2.50	7	1.500	0.625	0.250	2.5	Yes	RJLT13
1A7M-30RE75	3.000	2.257	0.38	1.98	5	1.000	0.374	0.375	7	Yes	RJLT19
1A7M-40RE75	4.000	3.254	0.38	2.48	6	1.500	0.625	0.375	5	Yes	RJLT19
1A7M-60RE75	6.000	5.252	0.38	2.38	8	1.500	0.625	0.375	2.5	No	RJLT19

SERIES 15B8E, 15B1B, 15B4H ENDMILLS

BUTTON CUTTERS

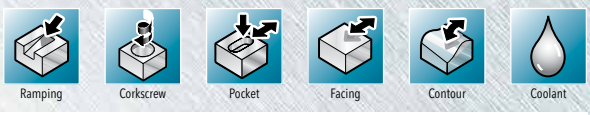


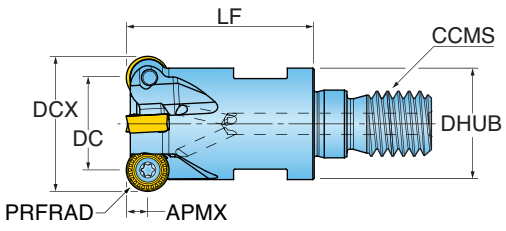


Part Number	DCX Cutting Dia. Max.	DC Cutting Dia.	APMX Depth of Cut Max.	OAL Overall Length	LPR Protruding Length	LUX Usable Length Max.	ZEFF Effective Teeth	DCON Shank Diameter	PRFRAD Profile Radius	RMPX Ramp Angle Max.	CSP Coolant	Insert Series
METRIC INSERT I.C.												
NEW 15B8E-06011S6R01	0.625	0.320	0.16	4.00	1.16	1.13	2	.625 Cyl.	0.157	3.5	Yes	RJLT08
NEW 15B8E-07014S7R01	0.750	0.438	0.16	4.50	1.43	1.40	2	.750 Cyl.	0.157	4	Yes	RJLT08
NEW 15B8E-10020S1R01	1.000	0.686	0.16	6.00	2.00	2.03	4	1.000 Cyl.	0.157	6	Yes	RJLT08
15B1B02404480R00	24 mm (.945)	0.481	0.24	4.00	1.75	1.55	2	1.000 Weldon	0.236	2.5	Yes	RJLT12
15B1B-1001780R01	1.000	0.534	0.24	4.50	1.75	1.57	2	1.000 Weldon	0.236	3	Yes	RJLT12
15B1B-10020S1R01	1.000	0.534	0.24	6.00	2.00	1.82	2	1.000 Cyl.	0.236	3	Yes	RJLT12
15B1B-1202781R01	1.250	0.780	0.24	5.00	2.75	2.55	3	1.250 Weldon	0.236	5	Yes	RJLT12
15B1B-12020S9R01	1.250	0.780	0.24	6.00	2.00	1.80	3	1.250 Cyl.	0.236	5	Yes	RJLT12
15B1B-1502386R01	1.500	1.028	0.24	5.00	2.34	2.15	4	1.500 Weldon	0.236	6.5	Yes	RJLT12
15B1B-15020S5R01	1.500	1.028	0.24	6.00	2.00	1.80	4	1.500 Cyl.	0.236	6.5	Yes	RJLT12
INCH INSERT I.C.												
15B4H-1001780RE50	1.000	0.510	0.25	4.50	1.75	1.50	2	1.000 Weldon	0.25	1	No	RJLT13
15B4H-10020S1RE50	1.000	0.510	0.25	6.00	2.00	1.78	2	1.000 Cyl.	0.25	1	No	RJLT13
15B4H-1202781RE50	1.250	0.750	0.25	5.00	2.75	2.58	3	1.250 Weldon	0.25	9.5	Yes	RJLT13
15B4H-12020S9RE50	1.250	0.750	0.25	6.00	2.00	1.86	3	1.250 Cyl.	0.25	9.5	Yes	RJLT13
15B4H-1502386RE50	1.500	1.000	0.25	5.00	2.34	2.15	4	1.500 Weldon	0.25	6.5	Yes	RJLT13
15B4H-15020S5RE50	1.500	1.000	0.25	6.00	2.00	1.84	4	1.500 Cyl.	0.25	6.5	Yes	RJLT13

SERIES 15B8E, 15B1A, 15B1B, 15B4H MODULAR ENDMILLS

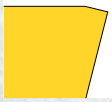
BUTTON CUTTERS





Part Number	DCX Cutting Dia. Max.	DC Cutting Dia.	APMX Depth of Cut Max.	LF Functional Length	DHUB Hub Dia.	ZEFF Effective Teeth	CCMS Connection Code	PRFRAD Profile Radius	RMPX Ramp Angle Max.	CSP Coolant	Insert Series	Wrench Size
METRIC INSERT I.C.												
NEW 15B8E-06090X5R01	0.628	0.320	0.16	0.91	0.50	2	M8	0.157	3	Yes	RJLT08	10 mm
NEW 15B8E-07011X6R01	0.750	0.438	0.16	1.18	0.70	2	M10	0.157	4	Yes	RJLT08	15mm
NEW 15B8E-10013X7R01	1.000	0.686	0.16	2.44	0.82	4	M12	0.157	6	Yes	RJLT08	17mm
NEW 15B8E-12016X8R01	1.250	0.935	0.16	1.69	1.13	5	M16	0.157	5	Yes	RJLT08	22mm
NEW 15B8E-15015X8R01	1.500	1.185	0.16	1.50	1.13	5	M16	0.157	3.5	Yes	RJLT08	22mm
15B1A02030X6R00	20 mm (.787)	10 mm (.393)	0.20	1.18	0.71	2	M10	0.197	4	Yes	RJLT10	15mm
15B1A02535X7R02	25 mm (.984)	15 mm (.590)	0.20	1.38	0.83	2	M12	0.197	4	Yes	RJLT10	17mm
15B1A02535X7R00	25 mm (.984)	15 mm (.590)	0.20	1.38	0.83	3	M12	0.197	4	Yes	RJLT10	17mm
15B1A-10137X7R01	1.000	0.607	0.20	1.38	0.82	2	M12	0.197	4	Yes	RJLT10	17mm
15B1A-10137X7R02	1.000	0.607	0.20	1.38	0.82	3	M12	0.197	4	Yes	RJLT10	17mm
15B1A-12169X8R01	1.250	0.858	0.20	1.69	1.13	4	M16	0.197	10	Yes	RJLT10	22mm
15B1B024044X7R00	24 mm (.945)	12.21 mm (.481)	0.24	1.50	0.82	2	M12	0.236	2.5	Yes	RJLT12	17mm
15B1B-10015X7R01	1.000	0.534	0.24	1.50	0.82	2	M12	0.236	3	Yes	RJLT12	17mm
15B1B-12015X8R01	1.250	0.780	0.24	1.50	1.13	3	M16	0.236	5	Yes	RJLT12	22mm
15B1B-15015X8R01	1.500	1.028	0.24	1.50	1.13	3	M16	0.236	6	Yes	RJLT12	22mm
INCH INSERT I.C.												
15B4H-10015X7RE50	1.000	0.510	0.25	1.50	0.82	2	M12	0.250	1	No	RJLT13	17mm
15B4H-12015X8RE50	1.250	0.750	0.25	1.50	1.13	3	M16	0.250	9.5	Yes	RJLT13	22mm
15B4H-15015X8RE50	1.500	1.000	0.25	1.50	1.13	3	M16	0.250	6.5	Yes	RJLT13	22mm

INSERTS



Part Number	Description	IC Inscribed Circle Diameter	S Thickness (To Cutting Edge)	Grade IN2505	IN2504	IN2540	IN2530	IN2035	IN7035	IN10K
NEW RJLT0803MON	Precision, Pos - 4 mm R	8 mm	0.126	•			•	•	•	
NEW RJLT0803MOTN	Standard, Pos - 4 mm R	8 mm	0.126	•	•				•	
NEW RJLW0803MOTN	Heavy Duty, Flt - 4 mm R	8 mm	0.126	•	•					
RJLT1004MON	Precision, Pos - 5mm R	10 mm	0.157	•			•	•	•	
RJLT1004MONLL	Precision, Pos - 5mm R	10 mm	0.157						•	
RJLT1004MOTN	Standard, Pos - 5mm R	10 mm	0.157	•	•		•	•	•	
RJLW1004MOTN	Heavy Duty, Flt - 5mm R	10 mm	0.157	•	•		•			
RJET1004MOFN	Grd/Pol for Al - 5mm R	10 mm	0.157							•
RJLT1204MON	Precision, Pos - 6mm R	12 mm	0.189	•			•	•	•	
RJLT1204MONLL	Precision, Pos - 6mm R	12 mm	0.189					•	•	
RJLT1204MOTN	Standard, Pos - 6mm R	12 mm	0.189	•	•	•	•	•	•	
RJLW1204MOTN	Heavy Duty, Flt - 6mm R	12 mm	0.189	•		•	•			
RJET1204MOFN	Grd/Pol for Al - 6mm R	12 mm	0.189							•
RJLT1304MON	Precision, Pos - .250 inch R	0.500	0.189	•			•		•	
RJLT1304MONLL	Precision, Pos - .250 inch R	0.500	0.189					•		
RJLT1304MOTN	Standard, Pos - .250 inch R	0.500	0.189	•	•		•			
RJLW1304MOTN	Heavy Duty, Flt - .250 inch R	0.500	0.189	•						
RJET1605MOFN	Grd/Pol for Al - 8mm R	16 mm	0.24							•
RJLT1605MON	Precision, Pos - 8mm R	16 mm	0.24	•			•	•	•	
RJLT1605MOTN	Heavy Duty, Flt - 8mm R	16 mm	0.24	•		•	•	•		
RJLW1605MOTN	Heavy Duty, Flt - 8mm R	16 mm	0.24	•	•	•		•		
RJET1605MOFN	Grd/Pol for Al - 8mm R	1 6mm	0.24							•
RJLT1907MON	Precision, Pos - .375 inch R	0.750	0.275	•			•			
RJLT1907MONLL	Precision, Pos - .375 inch R	0.750	0.275				•			
RJLT1907MOTN	Heavy Duty, Flt - .375 inch R	0.750	0.275	•			•			
RJLW1907MOTN	Heavy Duty, Flt - .375 inch R	0.750	0.275	•						
RJLT2007MON	Precision, Pos - 10mm R	20 mm	0.275	•			•	•	•	
RJLT2007MOTN	Heavy Duty, Flt - 10mm R	20 mm	0.275	•		•	•			
RJLW2007MOTN	Heavy Duty, Flt - 10mm R	20 mm	0.275	•						

TECHNICAL INFORMATION

Material		Brinnell Hardness	SFM	Feed per Tooth	Grade	IN2505	IN2504	IN2540	IN2530	IN2035	IN7035	IN10K	Coolant
Aluminum	6061-T6, 7075-T6		1300-1650	.0075 - .047								1	Yes
Cast Iron	Gray	190-220	360 - 690	.005 - .022		1			2				No
	Nodular	140-200	390 - 690			1			2				
Steel	Low Carbon 1018-8620	85-175	721 - 985	.005 - .024		1			2				No
	High Carbon F-6180	175 - 225	490 - 820	.005 - .024		1			2				
	Alloyed Steel 4140	275-325	325 - 590	.005 - .022		1		3	2				
	Tool Steel P20-H13	200-320	275 - 775	.005 - .040		1		3	2				
	Hardened Tool Steels	320-630	250 - 450	.005 - .030		2	1	3					
Stainless Steel	300 Series, 304, 316	-	360 - 600	.005 - .025		4			3	2	1		Optional
	400 Series 15-5 PH, 17-4 PH	-	360 - 720	.003 - .025		4			3	2	1		
	13-8 PH	-	200 - 600	.003 - .020					3	2	1		
Nickel Alloys	Inconel 600, 706, 718	-	80 - 150	.003 - .012					3	2	1		YES
Titanium	903, Hastelloy	-	115 - 195	.003 - .015					3	2	1		YES

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

FACEMILL HARDWARE

Cutter Number	Insert Series	 Screw	 Driver	 Driver Bit	 Retention Bolt	 (Optional) Coolant Bolt
NEW 1A7E-20R01	RJLT08	SM30-065-00	DS-T09W	-	SD06-46	SD-06-89
1A7G-20R01	RJLT10	SM35-087-70	DS-A00T	BLD T15/S7	SD06-46	SD-06-89
1A7H-20R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7	SD06-46	SD-06-89
1A7H-25R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7	SD06-46	SD-06-89
1A7H-30R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7	SD08-46	SD-08-92
1A7H-40R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7	SD-12-82	SD-12-99
1A7H-50R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7	SD-12-82	-
1A7H-60R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7	SD-12-82	-
1A7H-20RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7	SD06-46	SD-06-89
1A7H-30RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7	SD08-46	SD-08-92
1A7H-40RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7	SD08-46	SD-08-92
1A7K-20R01	RJLT16	SM50-113-20	DS-A00T	BLD T20/S7	SD06-46	SD-06-89
1A7K-25R01	RJLT16	SM50-113-20	DS-A00T	BLD T20/S7	SD06-46	SD-06-89
1A7K-30R01	RJLT16	SM50-113-20	DS-A00T	BLD T20/S7	SD08-46	SD-08-92
1A7K-40R01	RJLT16	SM50-113-20	DS-A00T	BLD T20/S7	SD-12-82	SD-12-99
1A7K-50R01	RJLT16	SM50-113-20	DS-A00T	BLD T20/S7	SD-12-82	-
1A7K-60R01	RJLT16	SM50-113-20	DS-A00T	BLD T20/S7	SD-12-82	-
1A7M-30RE75	RJLT19	SM60-135-R0	DS-A00T	BLD T25/S7	SD08-46	SD-08-92
1A7M-40RE75	RJLT19	SM60-135-R0	DS-A00T	BLD T25/S7	SD12-82	SD-12-99
1A7M-60RE75	RJLT19	SM60-135-R0	DS-A00T	BLD T25/S7	SD12-82	-
1A7M-25R01	RJLT20	SM60-135-R0	DS-A00T	BLD T25/S7	SD06-46	SD-06-89
1A7M-30R01	RJLT20	SM60-135-R0	DS-A00T	BLD T25/S7	SD08-46	SD-06-89
1A7M-40R01	RJLT20	SM60-135-R0	DS-A00T	BLD T25/S7	SD-12-82	SD-12-99
1A7M-50R01	RJLT20	SM60-135-R0	DS-A00T	BLD T25/S7	SD-12-82	-
1A7M-60R01	RJLT20	SM60-135-R0	DS-A00T	BLD T25/S7	SD-12-82	-

ENDMILL HARDWARE

Cutter Number	Insert Series	Screw	Driver	Driver Bit
NEW 15B8E-06011S6R01	RJLT08	SM30-065-00	DS-T09W	-
NEW 15B8E-07014S7R01	RJLT08	SM30-065-00	DS-T09W	-
NEW 15B8E-10020S1R01	RJLT08	SM30-065-00	DS-T09W	-
NEW 15B8E-06090X5R01	RJLT08	SM30-065-00	DS-T09W	-
NEW 15B8E-07011X6R01	RJLT08	SM30-065-00	DS-T09W	-
NEW 15B8E-10013X7R01	RJLT08	SM30-065-00	DS-T09W	-
NEW 15B8E-12016X8R01	RJLT08	SM30-065-00	DS-T09W	-
NEW 15B8E-15015X8R01	RJLT08	SM30-065-00	DS-T09W	-
NEW 15B1A02030X6R00	RJLT10	SM35-087-70	DS-A00T	BLD T15/S7
15B1A02535X7R02	RJLT10	SM35-087-70	DS-A00T	BLD T15/S7
15B1A-10137X7R01	RJLT10	SM35-087-70	DS-A00T	BLD T15/S7
15B1A-10137X7R02	RJLT10	SM35-087-70	DS-A00T	BLD T15/S7
15B1A-12169X8R01	RJLT10	SM35-087-70	DS-A00T	BLD T15/S7
15B1B02404480R00	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B-1001780R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B-10020S1R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B-1202781R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B-12020S9R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B-1502386R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B-15020S5R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B024044X7R00	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B-10015X7R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B-12015X8R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B1B-15015X8R01	RJLT12	SM40-093-20	DS-A00T	BLD T15/S7
15B4H-10015X7RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7
15B4H-12015X8RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7
15B4H-1001780RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7
15B4H-10020S1RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7
15B4H-1202781RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7
15B4H-12020S9RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7
15B4H-1502386RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7
15B4H-15020S5RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7
15B4H-15015X8RE50	RJLT13	SM40-093-20	DS-A00T	BLD T15/S7