

PRODUCT NEWS

PN-E-020

SERIES EXPANSION

KALIP TEKNİK

SIC-EVO

THE EVOLUTION OF
HIGH PERFORMANCE SHOULDER MILLING



進化した。 SIC-EVO

Indexable End Mill SSV type

SSV type

- Facemill $\phi 40 - \phi 125$
- Modular head $\phi 25 - \phi 40$
- End Mill $\phi 25 - \phi 40$



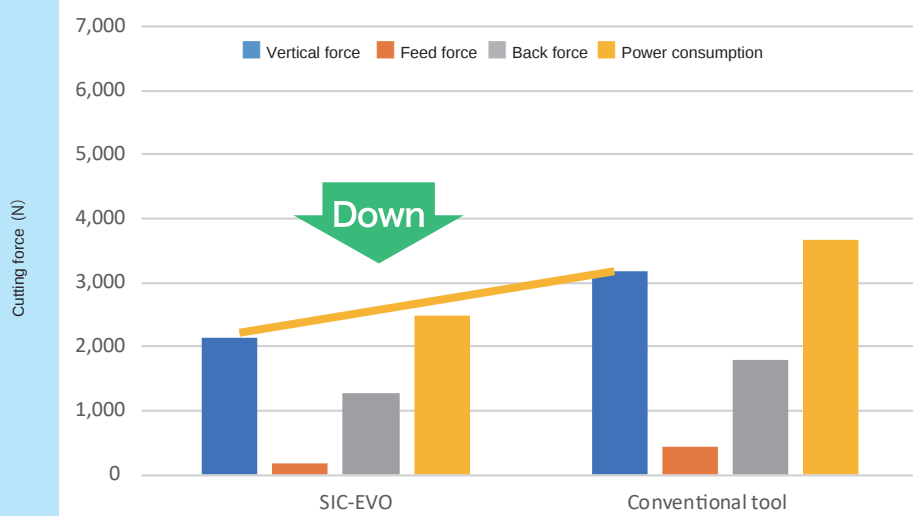
Qm Mill $\phi 10 - \phi 32$
Qm Max $\phi 16 - \phi 42$

KALIP TEKNİK

www.kalipteknik.com.tr

[illegible]

Cutting force comparison



Material : 1.1213

• Tool dia. : $\phi 25$

• Cutting conditions :

$V_c=200\text{m/min}$, $f_z=0.1\text{mm/t}$

$a_p=15\text{mm}$, $a_e=1\text{mm}$

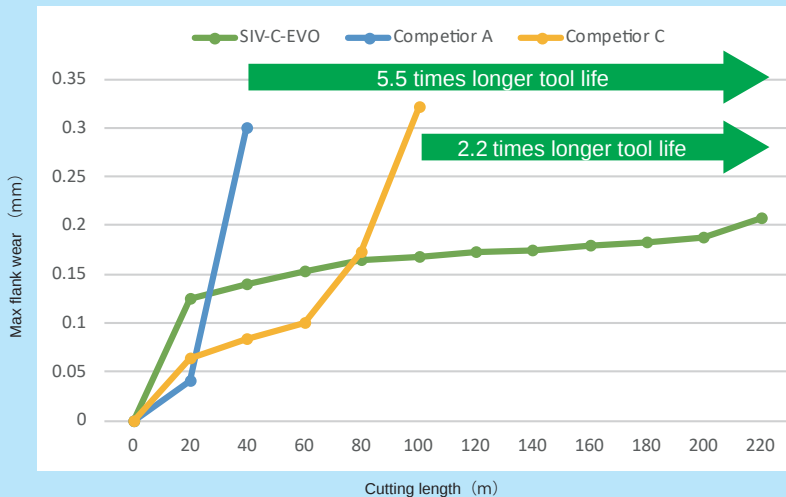
Test by one insert

Down cut,

Air blow (internal)

Achieved low cutting force

Tool life comparison



Material : 1.2311

• Tool dia. : $\phi 25$

• Cutting conditions :

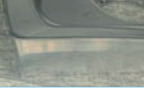
$V_c=150\text{m/min}$, $f_z=0.3\text{mm/t}$

$a_p=14\text{mm}$, $a_e=1\text{mm}$

Test by one insert

Down cut,

Air blow (internal)

Cutting length	40m	80m	100m	180m
Competitor A				
Competitor C				
DIJET				

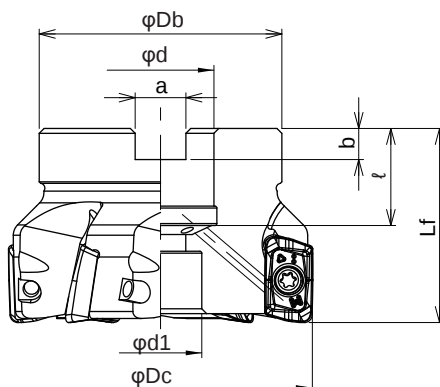
Possible to stable roughing!

Line up



● Facemill type

● Through coolant hole



Type	Cat. No.	Stock	No. of inserts	Dimensions								Set bolt	Weight (kg)	Applicable Inserts
				ϕDc	L_f	ϕDb	ϕd	$\phi d1$	a	b	ℓ			
Metric Bore	SSV-4040R-16	●	4	40	40	35	16	14	8.4	5.6	18	M8	0.20	 ZOMT1605**ZER-PM ZOET1605**ZFR-NL
	SSV-5050R-22	●	5	50	40	47	22	16	10.4	6.3	20	M10	0.33	
	SSV-6063R-22	●	6	63	40	50	22	17	10.4	6.3	20	M10	0.52	
	SSV-6063R-27	●	6	63	50	60	27	20	12.4	7	22	M12×1.75×30★	0.75	
	SSV-7080R-27	●	7	80	50	60	27	20	12.4	7	22	M12×1.75×30★	1.08	
	SSV-8100R-32	●	8	100	50	85	32	26	14.4	8	25	M16×2×30★	1.95	
	SSV-8125R-40	●	8	125	63	100	40	32	16.4	9	32	M20×2.5×40★	3.73	

Note) 1. All cutters are supplied without inserts.
 2. All cutters are supplied without wrench & MOLY.
 3. ★ mark shows :these cutter bodies are equipped with the set bolt because of the specified bolt size.
 Except for these cutter bodies, please use the set bolt equipped with arbor.

Parts	
Clamp screw	Wrench (not be included)
DSW-4075H	A-15T

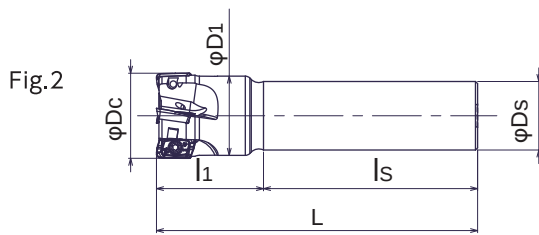
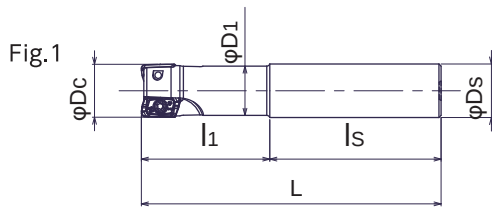
Clamp screw	Recommended torque (N·m)
DSW-4075H	3.6

Please scan the QR code for recommended cutting conditions





Endmill type ● Without coolant hole



Cat. No.	Stock	No. of inserts	Dimensions						Fig.	Applicable Inserts	Parts
			φDc	l1	ls	L	φD1	φDs			Wrench
SSV-2025-60-S25+A	●	2	25	60	80	140	23	25	1	ZOMT1605**ZER-PM ZOET1605**ZFR-NL	A-15
SSV-2025-100-S25+A	●	2	25	100	80	180	23	25	1		
SSV-3032-70-S32+A	●	3	32	70	80	150	29	32	1		
SSV-3032-120-S32+A	●	3	32	120	80	200	29	32	1		
SSV-4040-50-S32+A	●	4	40	50	100	150	37	32	2		
SSV-4040-50L-S32+A	●	4	40	50	150	200	37	32	2		

Note)1. All cutters are supplied without inserts.
2. All cutters are supplied without wrench & MOLY.

Parts
Clamp screw

DSW-4075H

Clamp screw	Recommended torque (N·m)
DSW-4075H	3.6

Please scan the QR code for recommended cutting conditions

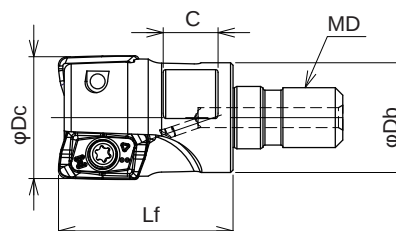
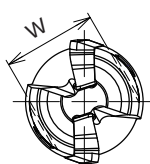


Line up



Modular head type

- Through coolant hole



Cat. No.	Stock	No. of inserts	Dimensions						Applicable Inserts
			ϕD_c	L_f	ϕD_b	MD	C	W	
SSV-2025-M12	●	2	25	35	22	M12	11	19	 ZOMT1605**ZER-PM ZOET1605**ZFR-NL
SSV-3032-M16	●	3	32	43	29	M16	12	22	
SSV-3035-M16	□	3	35	43	29	M16	12	22	
SSV-4040-M16	●	4	40	43	29	M16	12	22	

Note) 1. All cutters are supplied without inserts.
2. All cutters are supplied without wrench & MOLY.

Parts	
Clamp screw	Wrench (not be included)
	
DSW-4075H	A-15

Clamp screw	Recommended torque (N·m)
DSW-4075H	3.6

Please scan the QR code for recommended cutting conditions

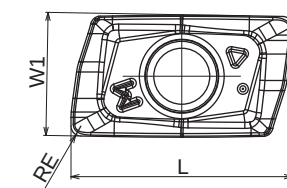


● Inserts

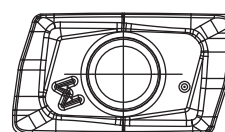
for steel



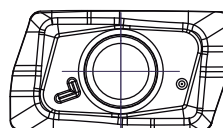
JC8050



JC8118



for aluminum alloy

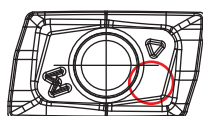


Cat. No.	Tolerance	PVD Coated		Un-Coated	Dimensions			
		JC8118	JC8050		L	W1	S	RE
ZOMT160504ZER-PM	M	●	●		18	10	4.7	0.4
ZOMT160508ZER-PM	M	●	●		18	10	4.7	0.8
ZOMT160516ZER-PM	M	●	●		18	10	4.7	1.6
ZOMT160520ZER-PM	M	●	●		18	10	4.7	2.0
ZOMT160530ZER-PM	M	●	●		18	10	4.7	3.0
NEW ZOET160508ZFR-NL	E			●	18	10	4.7	0.8

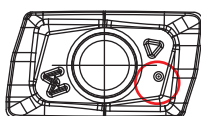
Note) 10 inserts per case.

● Discrimination of corner radius for insert.

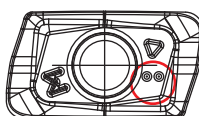
Each corner radius shows discrimination mark on the insert surface.



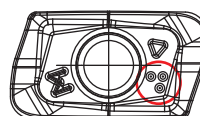
ZOMT160504ZER-PM



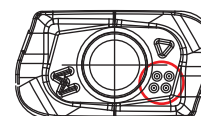
ZOMT160508ZER-PM



ZOMT160516ZER-PM



ZOMT160520ZER-PM

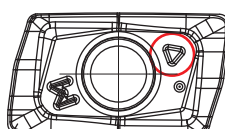


ZOMT160530ZER-PM

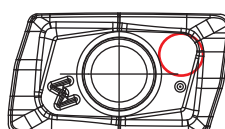
● Discrimination of grade for insert.

Each grade shows discrimination mark on the insert surface.

JC8050



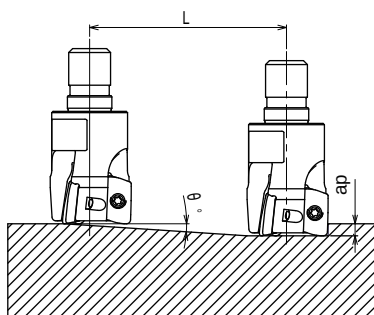
JC8118



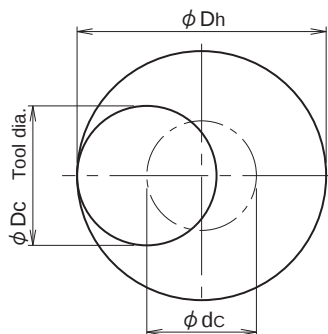
Discrimination mark of insert grade

Attention for profile milling

Ramping



Helical interpolation



● Calculation of tool pass dia.

$$\phi dc = \phi Dh - \phi Dc$$

Tool pass dia. Bore dia. Tool dia.

● Depth of cut per one circuit should not exceed max. depth of cut $\bar{a}_p$.

● Down cutting is recommended, so tool pass rotation should be counterclockwise.

- In case of ramping and helical interpolation, apply 80% or less feed speed from standard cutting condition table.
- In case of drilling, apply 50% or less Z axis feed speed from standard cutting condition.
- In case of helical interpolation, recommend wet cutting by coolant through the tool.
- Long consecutive chips may come out in case of drilling, confirm the safe condition sufficiently.

ZOMT160504ZER-PM

Cat. No.	Tool dia. (mm)	Eff. Cutting dia. (mm)	Max. depth of cut (mm)	Ramping		Helical interpolation		Max. drilling depth(mm)
				Max. ramping angle θ°	Total cutting length at Max. $\bar{a}_p$	Min. bore dia. Dh min (mm)	Max. bore dia. Dh max (mm)	
SSV-2025-**	25	23.9	1.5	6.2	13.8	30	48.4	1.6
SSV-3032-**	32	30.9	1.5	4.4	19.5	44	62.4	1.6
SSV-3035-M16	35	33.9	1.5	4.3	19.9	50	68.4	1.6
SSV-4040-**	40	38.9	1.5	3.6	23.8	60	78.4	1.6
SSV-5050R-**	50	48.9	1.5	2.4	35.8	80	98.4	1.4
SSV-6063R-**	63	61.9	1.5	1.7	50.5	106	124.4	1.4
SSV-7080R-**	80	78.9	1.5	1.2	71.6	140	158.4	1.4
SSV-8100R-**	100	98.9	1.5	0.9	95.5	180	198.4	1.4
SSV-8125R-**	125	123.9	1.5	0.65	132.2	230	248.4	1.4

ZOMT160508ZER-PM

Cat. No.	Tool dia. (mm)	Eff. Cutting dia. (mm)	Max. depth of cut (mm)	Ramping		Helical interpolation		Max. drilling depth(mm)
				Max. ramping angle θ°	Total cutting length at Max. $\bar{a}_p$	Min. bore dia. Dh min (mm)	Max. bore dia. Dh max (mm)	
SSV-2025-**	25	23.1	1.5	6.4	13.4	30	47.6	1.6
SSV-3032-**	32	30.1	1.5	4.4	19.5	44	61.6	1.6
SSV-3035-M16	35	33.1	1.5	4.3	19.9	50	67.6	1.6
SSV-4040-**	40	38.1	1.5	3.6	23.8	60	77.6	1.6
SSV-5050R-**	50	48.1	1.5	2.4	35.8	80	97.6	1.4
SSV-6063R-**	63	61.1	1.5	1.7	50.5	106	123.6	1.4
SSV-7080R-**	80	78.1	1.5	1.2	71.6	140	157.6	1.4
SSV-8100R-**	100	98.1	1.5	0.9	95.5	180	197.6	1.4
SSV-8125R-**	125	123.1	1.5	0.65	132.2	230	247.6	1.4

ZOMT160516ZER-PM

Cat. No.	Tool dia. (mm)	Eff. Cutting dia. (mm)	Max. depth of cut (mm)	Ramping		Helical interpolation		Max. drilling depth(mm)
				Max. ramping angle θ°	Total cutting length at Max. $\dot{a}_p$	Min. bore dia. Dh min (mm)	Max. bore dia. Dh max (mm)	
SSV-2025-**	25	21.5	1.5	6.7	12.8	28	46	1.5
SSV-3032-**	32	28.5	1.5	4.7	18.2	42	60	1.5
SSV-3035-M16	35	31.5	1.5	4.6	18.6	48	66	1.5
SSV-4040-**	40	36.5	1.5	3.8	22.6	58	76	1.5
SSV-5050R-**	50	46.5	1.5	2.5	34.4	78	96	1.4
SSV-6063R-**	63	59.5	1.5	1.8	47.7	104	122	1.4
SSV-7080R-**	80	76.5	1.5	1.2	71.6	138	156	1.4
SSV-8100R-**	100	96.5	1.5	0.9	95.5	178	196	1.4
SSV-8125R-**	125	121.5	1.5	0.65	132.2	228	246	1.4

ZOMT160520ZER-PM

Cat. No.	Tool dia. (mm)	Eff. Cutting dia. (mm)	Max. depth of cut (mm)	Ramping		Helical interpolation		Max. drilling depth(mm)
				Max. ramping angle θ°	Total cutting length at Max. $\dot{a}_p$	Min. bore dia. Dh min (mm)	Max. bore dia. Dh max (mm)	
SSV-2025-**	25	20.7	1.5	6.9	12.4	27	45.2	1.5
SSV-3032-**	32	27.7	1.5	4.7	18.2	41	59.2	1.5
SSV-3035-M16	35	30.7	1.5	4.6	18.6	47	65.2	1.5
SSV-4040-**	40	35.7	1.5	3.8	22.6	57	75.2	1.5
SSV-5050R-**	50	45.7	1.5	2.5	34.4	77	95.2	1.4
SSV-6063R-**	63	58.7	1.5	1.8	47.7	103	121.2	1.4
SSV-7080R-**	80	75.7	1.5	1.2	71.6	137	155.2	1.4
SSV-8100R-**	100	95.7	1.5	0.9	95.5	177	195.2	1.4
SSV-8125R-**	125	120.7	1.5	0.65	132.2	227	245.2	1.4

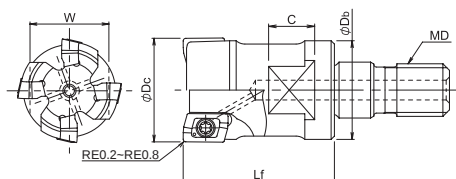
ZOMT160530ZER-PM

Cat. No.	Tool dia. (mm)	Eff. Cutting dia. (mm)	Max. depth of cut (mm)	Ramping		Helical interpolation		Max. drilling depth(mm)
				Max. ramping angle θ°	Total cutting length at Max. $\dot{a}_p$	Min. bore dia. Dh min (mm)	Max. bore dia. Dh max (mm)	
SSV-2025-**	25	18.7	1.5	7.2	11.9	25	43.2	1.5
SSV-3032-**	32	25.7	1.5	4.8	17.9	39	57.2	1.5
SSV-3035-M16	35	28.7	1.5	4.7	18.2	45	63.2	1.5
SSV-4040-**	40	33.7	1.5	3.9	22.0	55	73.2	1.5
SSV-5050R-**	50	43.7	1.5	2.5	34.4	75	93.2	1.4
SSV-6063R-**	63	56.7	1.5	1.8	47.7	101	119.2	1.4
SSV-7080R-**	80	73.7	1.5	1.3	66.1	135	153.2	1.4
SSV-8100R-**	100	93.7	1.5	0.95	90.5	175	193.2	1.4
SSV-8125R-**	125	118.7	1.5	0.65	132.2	225	243.2	1.4

■Modular head MPM type

G-Body

Through coolant hole



■Parts

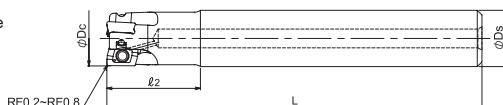
Clamp screw	Wrench (Not be included)
DSW-1840H	A-06
Clamp screw	Recommended torque
DSW-1840H	0.4

Cat. No.	Stock	No. of inserts	Dimensions (mm)						Applicable inserts
			φDc	Lf	φDb	MD	C	W	
MPM-2010-M6	●	2	10	18	9.5	M6	6.5	8	ZOMT0602**ZER-PL
MPM-2011-M6	●		11		9.7	M6			
MPM-3012-M6	●	3	12	20	11.2	M6			
MPM-3013-M6	●		13		11.5	M6			
MPM-3015-M8	□	4	15	23	14	M8	8	12	
MPM-4016-M8	●		16		15	M8			
MPM-4017-M8	●		17			M8			
MPM-4018-M8	□		18			M8			
MPM-5020-M10	●	5	20	30	19	M10	9	14	
MPM-5021-M10	●		21			M10			
MPM-6025-M12	●	6	25	35	23.6	M12	10	17	
MPM-7030-M16	●	7	30	43	29	M16	12	22	
MPM-8032-M16	●	8	32			M16			

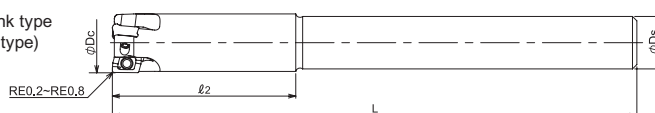
■END mill type

Through coolant hole

●Regular type
(PME type)



●Long shank type
(PME-LS type)

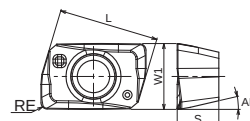


Type	Cat. No.	Stock	No. of inserts	Dimensions (mm)					Applicable inserts
				φD _C	ℓ ₂	L	φD ₁	φD _S	
Regular type	PME2010S10	●	2	10	20	80	9.3	10	ZOMT0602**ZER-PL
	PME3012S12	●	3	12			10.3	12	
	PME3014S12	●		14			11.2		
Long shank type	PME2011S10-LS	●	2	11	33	120	12.2	10	
	PME3013S12-LS	●	3	13	39		13.15	12	
	PME3014S12-LS	●		14	42				

Note) 1. All cutters are supplied without inserts.
2. All cutters are supplied without wrench & MOLY.

Shoulder milling insert for steel (ZOMT0602 * * ZER-PL)

recommended cutting conditions



QM mill



QM max

■Inserts

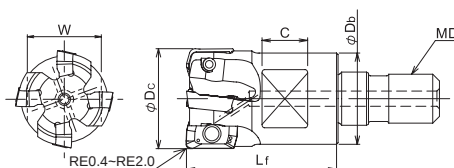
Cat. No.	Tolerance	JC8050	JC8118	Dimensions (mm)				
				RE	L	W1	S	AN
ZOMT060202ZER-PL	M	●	●	0.2	6.62	4.3	2.7	13°
ZOMT060204ZER-PL		●	●	0.4	6.62	4.3	2.7	13°
ZOMT060208ZER-PL		●	●	0.8	6.62	4.3	2.7	13°

Note) 10 inserts per case.

■Modular head MQX type

G-Body

Through coolant hole

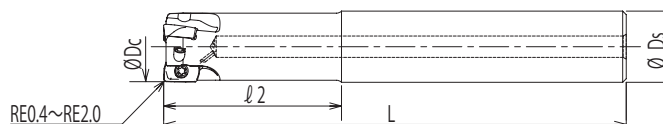


Clamp screw	Recommended torque
TSW-2556H	1.1
DSW-2563H	

Cat. No.	Stock	No.of inserts	Dimensions (mm)						Parts		Applicable inserts	
			φDc	Lf	φDb	MD	C	W	Clamp screw	Wrench (Not be included)		
MQX-2016-M8	●	2	16	23	14	M8	8	12	TSW-2556H	A-08	ZPMT1003**ZER-NL ZPMT1003**ZER-PL ZPMT1003**ZER-SL	
MQX-2017-M8	●		17			M8						
MQX-3020-M10	●	3	20	30	18	M10	9	14				
MQX-4020-M10	●	4	21			M10						
MQX-4021-M10	●					M10						
MQX-4025-M12	●	5	25	35	22.5	M12	10	17				
MQX-5025-M12	●					M12						
MQX-4026-M12	□	4	26			M12						
MQX-5026-M12	●	5	28			23.6			M12			
MQX-5028-M12	□			30	43		29	12	22			
MQX-5030-M16	□			32								M16
MQX-5032-M16	●	6	35	32		14						26
MQX-6032-M16	●											
MQX-6035-M16	●				M16							
MQX-6035-M16	●	6	40	32	M16	14	26					
MQX-6040-M16	●							M16				
MQX-7040-M16	●	7	42		M16							
MQX-6042-M16	●	6										

■END mill type

Through coolant hole



Cat. No.	Stock	No. of inserts	Dimensions (mm)				Parts		Applicable inserts
			φDc	l2	L	φDs	Clamp screw	Wrench (Not be included)	
QXPS2016S16+A	●	2	16	30	100	16	TSW-2556H	A-08	ZPMT1003**ZER-NL ZPMT1003**ZER-PL ZPMT1003**ZER-SL
QXPS3020S20+A	●	3	20	50	130	20			
QXPS4025S25+A	●	4	25	60	140	25	DSW-2563H		

Note) 1. All cutters are supplied without inserts.
2. All cutters are supplied without wrench & MOLY.

for Aluminum alloy
(ZPMT1003**ZER-NL)



Polished

for steel
(ZPMT1003**ZER-PL)



for Ti-alloy
(ZPMT1003**ZER-SL)



■Inserts

Type	Cat. No.	Tolerance	PVD coated					Uncoated	Cermet	Dimensions (mm)				
			JC8118	DH102	JC7518	JC8050	DS118			L	S	W1	RE	AN
Shoulder milling insert for aluminium alloy	ZPMT100304ZER-NL	M						●		10.08	3.4	6	0.4	11°
	ZPMT100308ZER-NL	M						●		10.08	3.4	6	0.8	11°
	ZPMT100320ZER-NL	M						●		10.08	3.4	6	2.0	11°
Shoulder milling insert for steel	ZPMT100304ZER-PL	M	●	●		●			●	10.08	3.4	6	0.4	11°
	ZPMT100308ZER-PL	M	●	●		●			●	10.08	3.4	6	0.8	11°
	ZPMT100320ZER-PL	M	●	●		●			●	10.08	3.4	6	2.0	11°
Shoulder milling insert for Ti-alloy	ZPMT100304ZER-SL	M			●		●			10.08	3.4	6	0.4	11°
	ZPMT100308ZER-SL	M			●		●			10.08	3.4	6	0.8	11°
	ZPMT100320ZER-SL	M			●		●			10.08	3.4	6	2.0	11°

Note) 10 inserts per case.

● : Standard stock items

□ : Stock in Japan

◎ : Soon be stocked



JQA-2089



JQA-EM1580

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