Fig.1

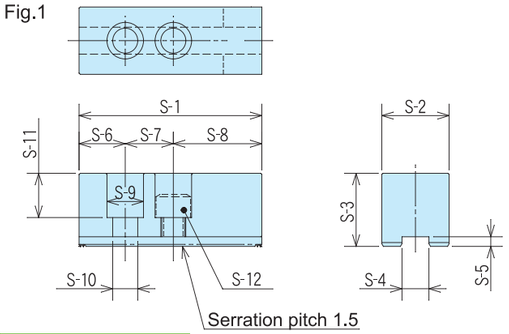
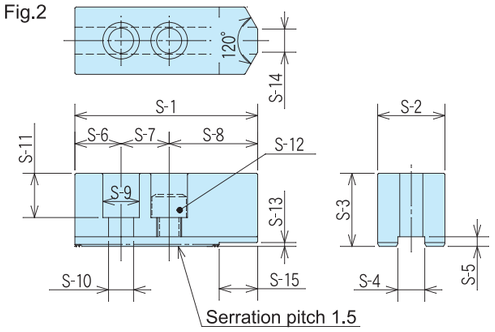


Fig.2



Soft jaw Dimensions

Model	Soft jaw type	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10	S-11	S-12	S-13	S-14	S-15	Fig.
DL206	SB06D1	72.0	31	32	12	5	22.0	20	30	17	11	20	M10x25	2	6	15.0	2
DL208	SB08B1	95.0	35	38	14	5	24.0	25	46	19	13	23	M12x30	2	12	20.0	2
DL210	SB10D1	101.5	45	45	18	5	22.5	30	49	22	15	25	M14x40	3	15	17.5	2
DL212	SB12A1	129.0	50	50	18	5	39.0	30	60	22	15	30	M14x40	—	—	—	1

※SB06D1 is the exclusive soft jaw for DL206, and SB10D1 is for DL210.

Fig.1

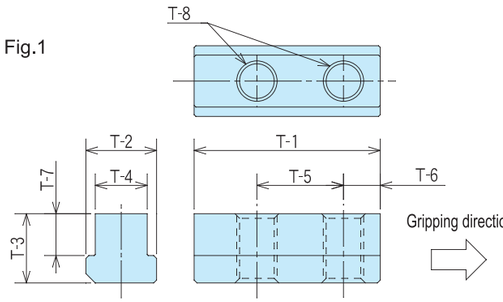
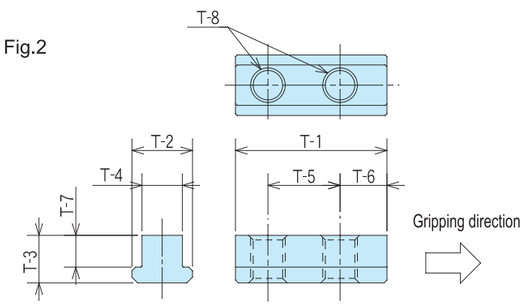


Fig.2



T-nuts Dimensions

Model	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	Fig.
DL206	43.5	17.5	17.2	12	20	8.25	11.0	M10	1
DL208	52.5	21.0	16.5	14	25	16.25	11.0	M12	2
DL210,DL212	64.5	24.5	24.0	18	30	12.75	14.5	M14	1

※Mount the T-nut of DL208 of the side that the distance (dimension T-6) from the tap center to the nut end face is long in the gripping direction side.
※T nuts of DL206, DL210 and DL212 are asymmetry. They can be mounted in only gripping direction in the figure.

KITAGAWA
Machine Tool Accessories
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FNO.4/Printed in Japan 2009.9.2,000

CHUCK

KITAGAWA
Machine Tool Accessories

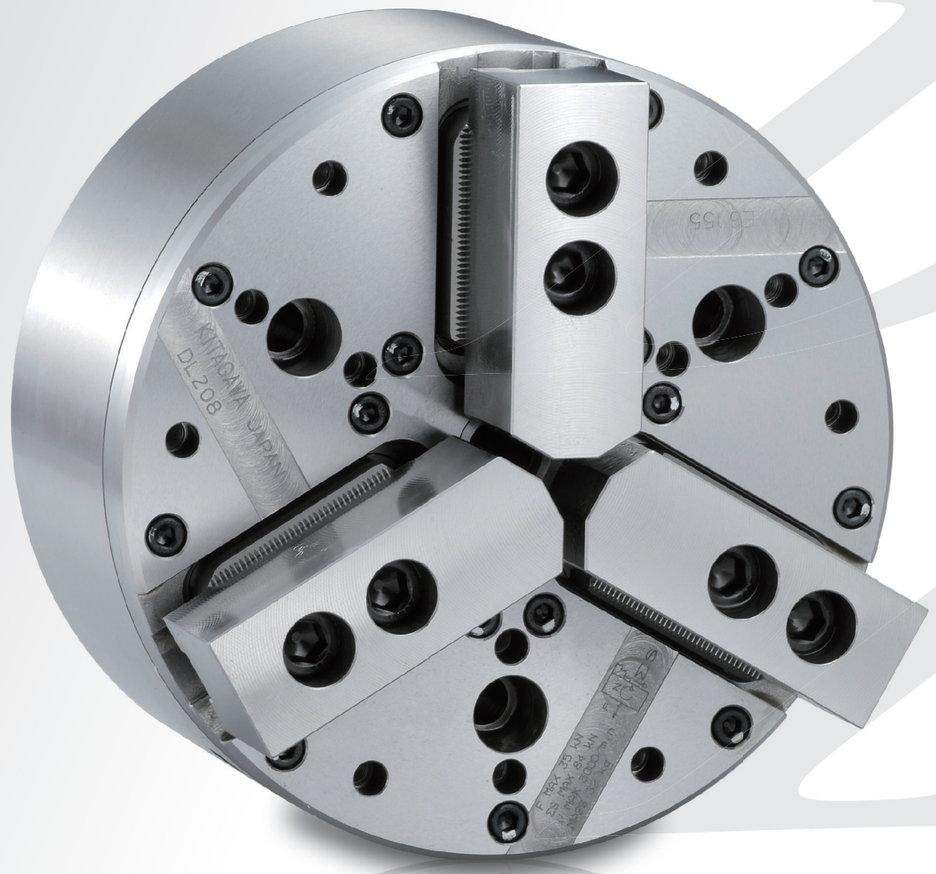
200 series

Dual Lock Chuck

World's First

Version U P

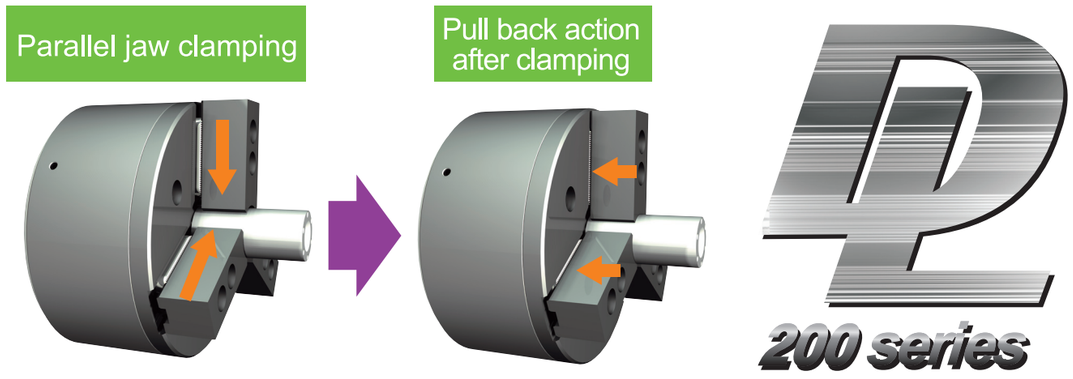
Parallel Jaw Clamp
Pull Back Chuck



CHUCK

Dual Lock Chuck
DL200 series

KITAGAWA
Machine Tool Accessories



World's First

Jaw parallel shift drawing-down chuck

Features

■Innovative Two Step Gripping

Parallel jaw clamping with secondary pull back action for work seating.

■Sealed body design for reduced maintenance

Suitable for automation and volume production.

■Easy jaw forming

Serrated Jaws are used allowing for easy jaw forming by customer.

Advantage 1

Increased gripping options

KITAGAWA introduce the worlds 1st chuck with two stage gripping action.
Parallel jaw clamping with secondary pull back action for work seating.
Jaws do not protrude in the Z Axis unlike conventional pull back chucks. This allows for improved gripping on difficult areas.
The gripping range is extended up the chuck OD allowing a wider range of workpieces to be machined.
Productivity is improved due to corresponding to flexible machining at back and forth operation.

Advantage 2

Ideal for volume production machining

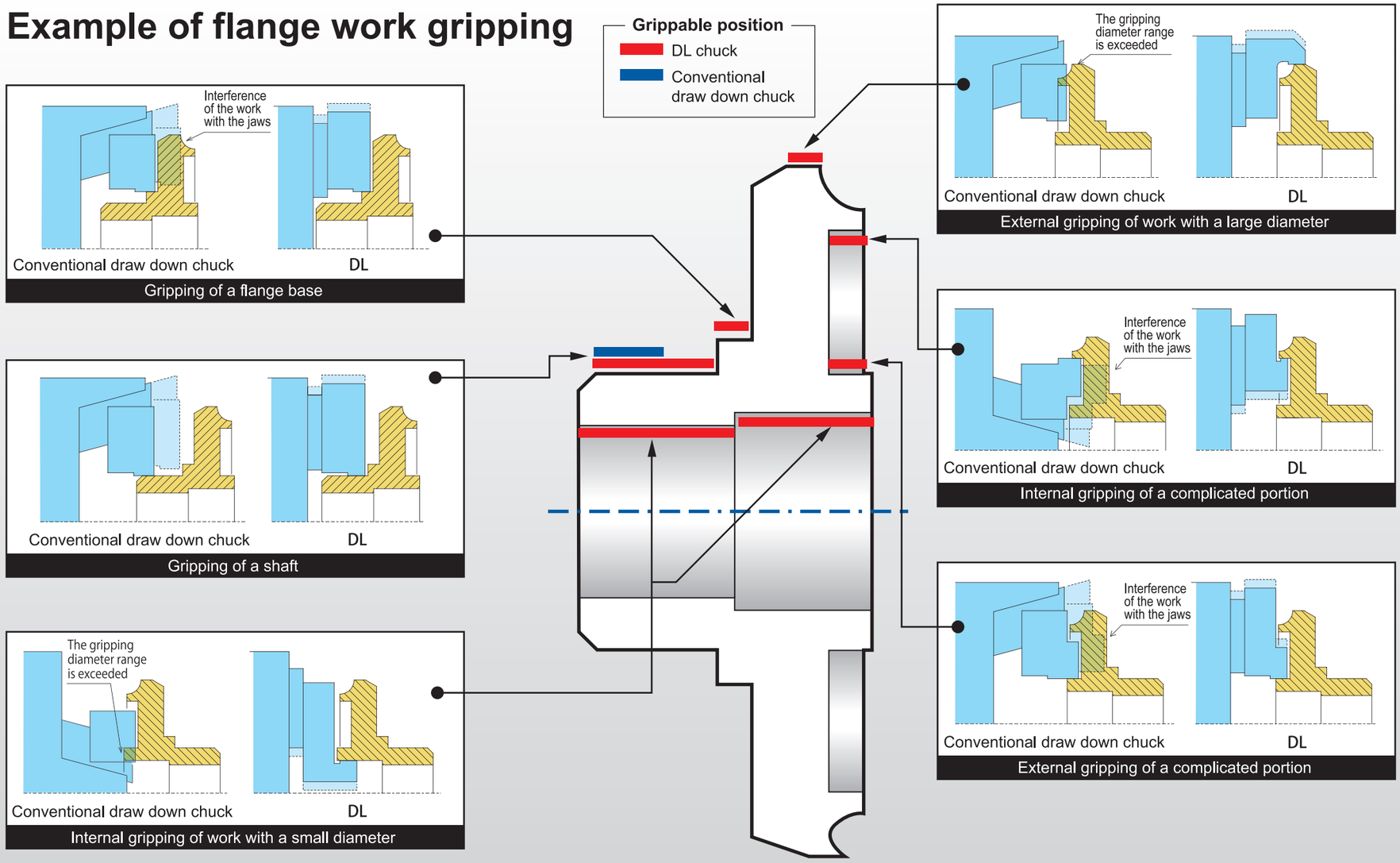
Dust proof sealed body design for long life. Suitable for automation and volume production.

Advantage 3

Easy jaw forming

Serrated Jaws are used allowing for easy jaw forming by customer.

Example of flange work gripping

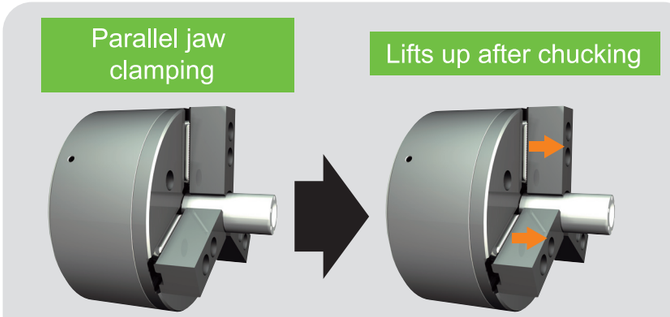


Dual Lock Chuck
DL200 series

Introduction example 1

Conventional

Standard wedge-type chuck



Machining work = Eccentric, thin, or imbalanced-thick work

Work seating cannot be checked
because of insufficient fitting of work

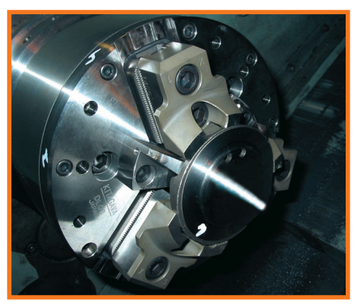
To check work seating the use of a draw down chuck is preferred.
This is not always possible due to the gripping position so a Conventional Parallel gripping chuck is used in these cases.

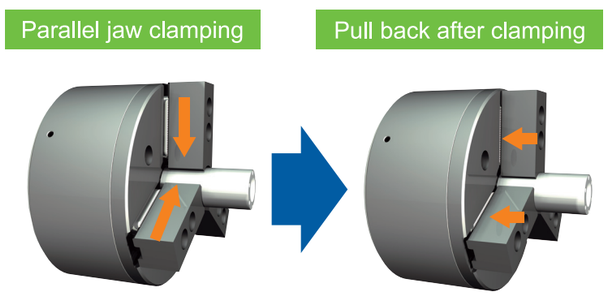
The end face accuracy is unstable

DL chuck

Change to the KITAGAWA DL chuck

Advantage





■Stable accuracy

The accuracy of parallelism and flatness is stabilized, thus **improving the Cpk value.** ※Cpk value = Process capability index

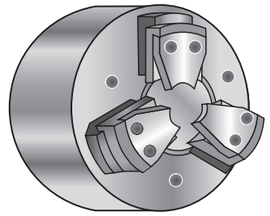
Improved productivity

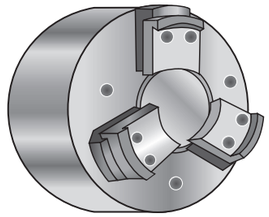
■Reduced machining defect ratio

■Automation by the seating confirmation function

Introduction example 2

Conventional Conventional Pull Back chuck





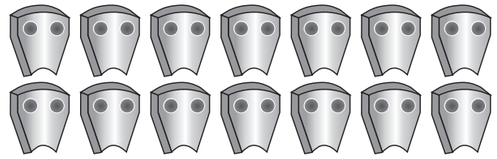
■Necessity of the jaw setup time

Because of dedicated jaws, the top jaws are changed for each work.

Before 18 minutes

■High jig cost

For each work, as many as **14 top jaws** are required.



DL chuck

Advantage 1

■Reduced jaw setup time

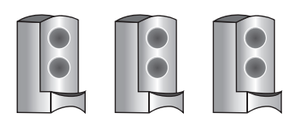
Serrated top jaws allow easy adjustment for different parts.

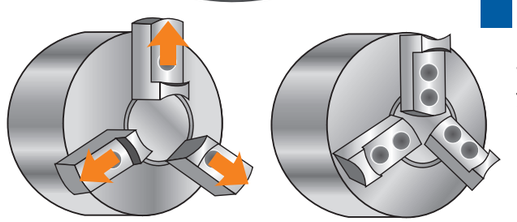
After 3 minutes

Advantage2

■Reduced tooling cost

Jaws can be reversed or stepped to accommodate multiple parts.





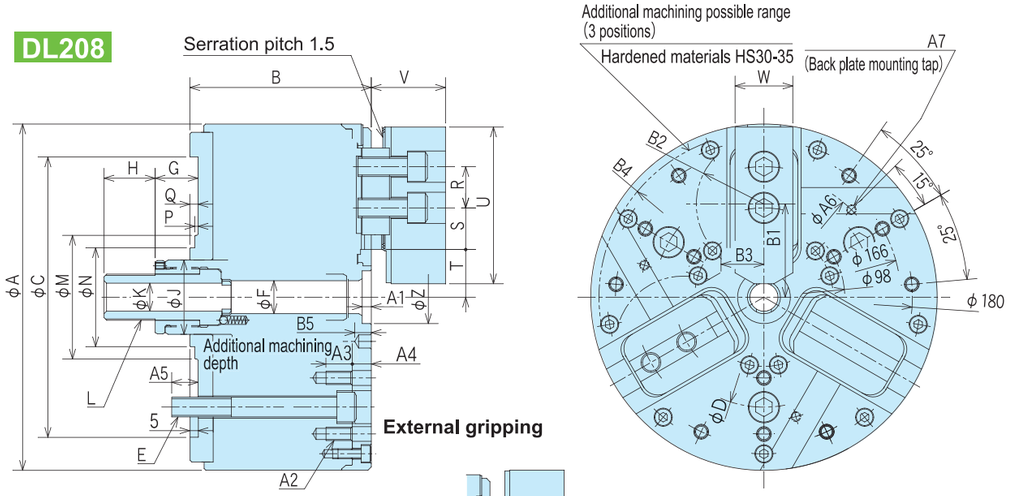
▲Change of the jaw positions

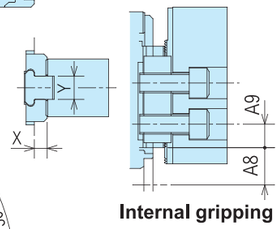
CHUCK

Dual Lock Chuck
DL200 series

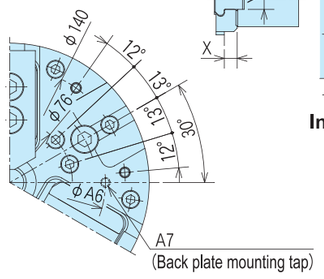
KITAGAWA
Machine Tool Accessories

DL208

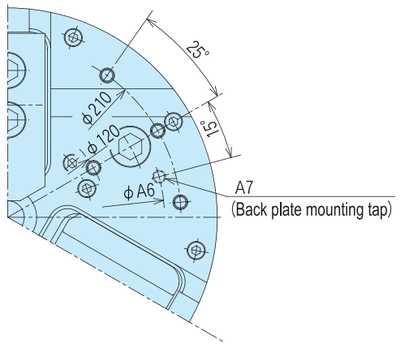




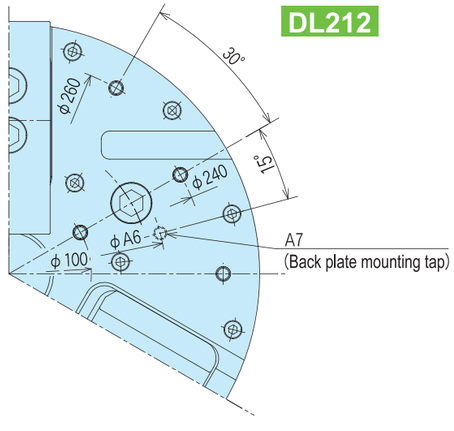
DL206



DL210



DL212



Model	Jaw stroke diameter mm	Plunger stroke mm	Max. input kN (kgf)		Max. static gripping force kN (kgf)		Max. speed min⁻¹	Net weight (with standard jaws) kg	Moment of inertia kg·m²
			External gripping	Internal gripping	External gripping	Internal gripping			
DL206	5.8	11.5	19 (1937)	12.6 (1285)	54 (5506)	36.0 (3671)	6000	18	0.080
DL208	7.2	11.5	35 (3569)	23.0 (2345)	84 (8566)	56.0 (5710)	5000	30	0.135
DL210	9.0	14.0	50 (5099)	33.0 (3365)	110 (11217)	73.3 (7478)	4000	52	0.410
DL212	9.0	14.0	50 (5099)	33.0 (3365)	110 (11217)	73.3 (7478)	3000	74	0.880

Model	Gripping range with standard jaw mm	Standard jaw	Gripping range with option jaw mm	Optional jaw	Compatible cylinder	Max. pressure MPa (kgf/cm²)		Min. input kN (kgf)	Min. pressure MPa (kgf/cm²)
						External gripping	Internal gripping		
DL206	ϕ25～ϕ140	SB06D1	ϕ25～ϕ158	SB06B1	Y1020R	2.7 (27.5)	1.7 (17.3)	5.0 (510)	0.9 (9.2)
DL208	ϕ30～ϕ210	SB08B1	—	—	Y1225R	3.4 (34.7)	2.1 (21.4)	6.2 (632)	0.8 (8.2)
DL210	ϕ40～ϕ234	SB10D1	ϕ40～ϕ254	SB12A1 (note8)	Y1530R	3.4 (34.7)	2.3 (23.5)	10.0 (1020)	0.9 (9.2)
DL212	ϕ90～ϕ304	SB12A1	—	—	Y1530R	3.4 (34.7)	2.3 (23.5)	10.0 (1020)	0.9 (9.2)

Model	A	B	C	D	E	F	G max.	G min.	H	J	K	L	M	N	P	Q	R	S max.	S min.
DL206	169	105	140	104.8	3-M10	20	34.0	22.5	30.0	42	17	M26×1.5	—	55	—	7	20	14.25	8.25
DL208	210	110	170	133.4	3-M12	20	37.5	26.0	31.0	45	17	M28×1.5	75	60	2	5	25	25.25	16.25
DL210	254	132	220	171.4	3-M16	20	38.5	24.5	39.5	50	17	M30×1.5	—	65	—	5	30	26.25	12.75
DL212	304	132	220	171.4	3-M16	50	33.5	19.5	44.5	75	17	M30×1.5	—	—	—	—	30	26.25	12.75

Model	T max.	T min.	U	V	W	X	Y	Z	A1	A2	A3	A4	A5	A6	A7	A8max.	A8min.	A9max.	A9 min.
DL206	23.7	20.8	72.0	41.5	31	10.3	12	32	4.0	3×7-M6	12	10.5	15	116	3-M6	23.7	20.8	21.25	15.25
DL208	28.9	25.3	95.0	45.0	35	7.8	14	32	5.5	3×4-M8	16	11.5	16	150	3-M6	26.2	22.6	20.25	11.25
DL210	32.8	28.3	101.5	59.0	45	14.7	18	35	5.5	3×4-M8	16	14.0	24	190	3-M8	29.7	25.2	35.25	21.75
DL212	57.8	53.3	129.0	64.0	50	14.7	18	50	14.0	3×4-M8	16	14.0	24	190	3-M8	54.7	50.2	35.25	21.75

※Specification and appearance may be changed for modification without prior notice.

Model	B1	B2	B3	B4	B5
DL206	47.0	R32	24	R79	MAX 9
DL208	56.5	R42	27	R100	MAX 10
DL210	68.0	R49	33	R120	MAX 12
DL212	93.0	R49	33	R145	MAX 12

■ Precautions on use

1. Grip work with the end face put on the locater.
2. Do not use this product with the T-nut protruding from the end face of the master jaws.
3. When switching between the external gripping and the internal gripping, be sure to remove the front cover to turn the master jaws 180 degrees.
4. The amount by which work is drawn down varies depending on the gripping conditions such as the work gripping diameter, the jaw rigidity, and the jaw gripping height. When work is distorted by excessive drawing or is not drawn down, some adjustment or replacement of the internal parts may be required. In this case, contact us.
5. Additional machining to the chuck surface is to be limited to a pin hole(s). In this case, take care not to penetrate the front cover. Tapped hole and counterbored hole parts are excluded from the additional machining range.
6. Use a cover mounting tap for a locator mounting tap of DL206.
7. When optional jaws are used for DL206 and DL210, additional jaw machining may be required.
8. For an optional jaw for DL210, use SB12A1 for standard 12 inch. chuck. Be careful about the jaw type.
9. If you have any question, contact us.