## SOUL-Woodworth

### SWING TYPE [Pull-Back Action]

## **UBL** Compensating type Chuck



The UBL Compensating type Chuck clamps with jaws spaced along the circumference of the work-pieces with equally distributed power at standard of between centers or the boss hole based.

We design many kinds of chucking types of both center or boss hole based. The UBL Compensating type Chuck is particularly excellent in terms of cost performance, corresponding to complex shape of the work-pieces, high-load operation, high-precision operation and maintainability. We are available to design custom-made special jaws, fixed center, standard pins, dynamic balancing and combination type according to operating accuracy, operating conditions, the shape of clamping portion or any other requirements.



### Practical examples



Example] Crank shaft journal grinding

 Suitable for the difficult grinding operation in concentricity to both center holes as the standard.

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### Specification of standard type

### Adapters to be fixed to the end of machine spindle and top tools such as jaws, fixed centers are available. • The type of long stroke chuck is also standerdized.

### Standard dimensions

Model No.	А	B min.	С	D (	(1)	Е	F			
	100		00.10	A2-NUSE	Ividx.	50.0	10.0			
UBL-6	162 41.1		30.16	96.8	104.6	59.2	19.3			
UBL-8	200	45.0	31.75	113.6	126.3	70.0	23.3			
UBL-10	254	58.0	41.27	141.2	148.0	86.6	29.1			
UBL-12	300	58.0	41.27	141.2	148.0	86.6	29.1			
UBL-15	381	83.0	57.16	152.2	174.0	96.1	32.4			
UBL-18	457	120.7	88.90	152.4	174.0	96.1	32.4			
UBL-21	533	120.7	88.90	157.2	174.0	96.1	32.4			
Medal Na			J	L	а	b	P			
Model No.				Clamp position	Str	oke	1			
UBL-6	30.170	) +0.005 0	M16	95.8	5.1	6.2	73.15			
UBL-8	31.760	) +0.003 -0.002	M16	112.0	8.0	6.4	88.95			
UBL-10	41.285	5 ±0.0025	M18	131.5	8.0	9.5	112.70			
UBL-12	41.285	5 ±0.0025	M18	131.5	8.0	9.5	133.27			
UBL-15	57.160	) <sup>±0.005</sup>	M24	155.4	10.3	12.0	171.45			

M24

M24

155.4

155.4

10.3

10.3



**Compensating type** 

### Standard specifications

UBL-18

UBL-21

	Standard clamping force	Cylinder critical force	Jaw stroke (Dia.) mm	Standard clamping range mm		Basic rotation speed	Dia of jaw revise	Chuck weight	Body	GD <sup>2</sup>
Model No.	kN (kgf)	kN (kgf)		O.D.	I.D.	min <sup>-1</sup>	mm	kg	$N \cdot m^2$ (kgf $\cdot m^2$ )	
UBL-6	64.7 (6,600)	21.6 (2,200)	7.9	12.7~120	70~152	3,000	1.5	18.0	1.47	(0.15)
UBL-8	85.3 (8,700)	28.4 (2,900)	9.5	16.0~152	76~203	2,800	2.0	27.0	4.70	(0.48)
UBL-10	105.8 (10,800)	35.3 (3,600)	12.7	50.0~203	85~235	2,500	2.3	45.0	12.05	(1.23)
UBL-12	105.8 (10,800)	35.3 (3,600)	12.7	63.0~241	127~305	2,000	2.3	67.5	23.72	(2.42)
UBL-15	161.7 (16,500)	53.9 (5,500)	15.8	76.0~317	165~381	1,600	3.2	84.5	83.20	(8.49)
UBL-18	161.7 (16,500)	53.9 (5,500)	15.8	89.0~394	241~457	1,200	3.2	120.0	148.67	(15.17)
UBL-21	161.7 (16,500)	53.9 (5,500)	15.8	162.0~470	317~533	900	3.2	120.0	245.00	(25.00)

12.0

12.0

209.55

247.65

(1) Fitting portion and bolt holes of adapters are to be machined depending on the machine spindle.

+0.01

0 +0.01

88.900

88.900

st Dimensions are the same for both 3 jaws and 2 jaws applications. For 2 jaws types, UBL-6 to UBL-15 are readily available.

 $\star$  In the 2 jaws application, standard clamping force and actuator's critical force tensile are 60%.

\* Rotating speed and draw bar thrust are different, depending on the operation conditions These speed and propulsive force are shown by us.

### Specifications of spring-center





#### Standard dimensions

Model No.	Ант	В	С	D	E	F	G	L Clamp position	a Str	b oke	J max.	S	Т	d min.	e min.
UBL-6	140	40	97.3	78	5	M14 P2.0	3-M10 P.C.D.104.8	94.9	5.1	6.2	27.1	50	38.1	20	34
UBL-8	180	50	113.7	90	5	M14 P2.0	3-M12 P.C.D.133.4	109.7	5.3	9.0	34.9	60	44.4	20	38
UBL-10	190	58	139.2	110	5	M18 P2.5	3-M12 P.C.D.133.4	130.9	8.0	9.5	42.7	70	57.1	35	49
UBL-12	260	70	139.2	110	5	M18 P2.5	3-M16 P.C.D.171.4	130.9	8.0	9.5	56.2	70	57.1	35	49

### Standard specifications

	Standard clamping force	Cylinder critical force	Jaw stroke	Standard clamping range mm		Basic rotation speed	Dia of jaw revise	Chuck weight	Body GD <sup>2</sup>
Model No.	kN (kgf)	kN (kgf)	(Dia.) mm	O.D.	I.D.	min <sup>-1</sup>	mm	kg	$N \cdot m^2$ (kgf $\cdot m^2$ )
UBL-6	64.7 (6,600)	21.6 (2,200)	7.9	12.7~120	70~152	3,000	1.5	18.0	1.47 (0.15)
UBL-8	85.3 (8,700)	28.4 (2,900)	9.5	16.0~152	76~203	2,800	2.0	27.0	4.70 (0.48)
UBL-10	105.8 (10,800)	35.3 (3,600)	12.7	50.0~203	85~235	2,500	2.3	45.0	12.05 (1.23)
UBL-12	105.8 (10,800)	35.3 (3,600)	12.7	63.0~241	127~305	2,000	2.3	67.5	23.72 (2.42)

\* Dimensions are the same for both 3 jaws and 2 jaws applications. For 2 jaws types, UBL-6 to UBL-15

are readily available. \* In the 2 jaws application, standard clamping force and actuator's critical force tensile are 60%.

\* Rotating speed and draw bar thrust are different, depending on the operation conditions. These speed and propulsive force are shown by us.



UBL 6JAW CENT & COMP PAT.P

Swing-type Combination Design Chuck

Only 1 unit of chuck can machine various shaft work-pieces without change-over in NC lathe.

The UBL 6JAW CENT & COMP Chuck is a swing type combination chuck which contains CENT Centralizing and COMP Compensating features in 1 unit of chuck.

※ Jaw-Escaping type Chuck & Face Driver is also available for machining of the whole circumstance of shaft work-pieces.



Set the height of the stopper so the shaft work-piece does not interfere to the jaw and the fixed center in next operation. And clamp with reference to the end face of the work-piece and the circumstance of big diameter by UBL 3JAW CENT [Centralizing].

The carbide inserts are attached on the top of the jawpieces to correspond to bigger cutting torque.



clamping the small diameter (already finished portion in OP-1) by UBL 3JAW COMP [compensating] with reference to the both center by fixed center and tail center.

The jaw is hardened type not to scratch the finished surface.

## **UBL** ON-OFF type

### [Switchable between Centralizing and Compensating]

Generally, work-pieces using the clamping part as a reference and those using a both holes or both centers as a reference requires different chucks. The ON-OFF types are designed as ball-lok chucks to accommodate such varied needs, by enabling easy and quick switching between the "centralizing type / centripetal type" and the "compensating type / center offset type" with an L-wrench. The UBL ON-OFF types are standardized from 10" and 12" types [ 3-jaws and 2-jaws ] ; therefore, dimensions, specifications and major parts, are common in consideration of their interchangeability.





# Quick (change) Jaw for UBL Chuck

### Time saving to jaw changes has been realized

...... These jaws can be also used for presently using chucks.

- Suitabilities to many kinds of work-pieces.
  - Stable clamping can be obtained, as back face is supported by base jaws.
  - No need of L-wrench, tools, etc...
  - These jaws can be used for UBL Chucks which have already delivered.
  - Exchange of jaws can be made within only 1 minute.





inner clamping for special type [inner, outer, common types]

## **UNIVERSAL BALL-LOK POWER CHUCKS**



## **UBL** Serration Jaw type

[Registered Design]

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For many kinds of work-pieces and small lot production

- This Serration Jaw type installation way is the same as general power chucks.
- Able to form the jaws by using the Jaw Forming Ring.
- Able to change current UBL Chuck to be Serration Jaw type.
- Able to use commercial soft jaw\* (\*Need discussions to adjust the T-nut width.)



#### Attention:

- 1. Please make notch of jaw bottom corner portion when soft top jaw is made.
- 2. Please reduce cutting conditions when soft top jaw not only use clamp jaw but also use for stopper. Please prepare
- stopper (locator) separately if it cannot get parallelism accuracy for work-piece.
  This UBL Serration model has repeatability accuracy within 0.03 T.I.R. so if need more high precision for your operation, recommend to use our Pin-Arbor series.





### Fitting

It is possible to replace top jaw of the UBL Chuck, and therefore top soft jaws shall be shaved into suitable shape for particular work-pieces. Replaceable inserts shall be fitted to these top jaws to increase life of them and reduce their inventory. There are two available types of insert, (Angle-Lok style and Round style) both of them can be easily replaced.

## **Carbide Insert for UBL Chuck**

"High durability" "High clamping torque" "Easy exchange"



### **Component parts**

### ATTENTION

Please note that quality such as part material, heat treatment, dimensions and accuracy of UBL chuck is not standardized with any suppliers except FORKARDT.

### Centralizing type 3JAW



 Although the adjust bolt for jaw actuator is not attached to standard UBLs, some are attached depending on chucking design.

 The housing and actuator for 2 jaw chuck are different from in case of 3 jaw chuck.

• [ ] means another name. Your requests or orders without the name in such [ ] are acceptable.

### **ATTENTION !**

Please pay special attention that if the length of the jaw bolts are not appropriate, it might cause the damage to T-nut and the deformation of jaw actuator.







## Compensating type 3JAW



- Only the parts of the Compensating type shown in this figure are different from those of the Centralizing type. Also, a different type of pressure cap spring is employed by the Compensating type. All the other parts are the same with the Centralizing type.
- As for the 2 jaw model, different types of housing and actuator are employed.