

# 327319

# Workholding



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## **Retention Knobs** A fit for every machine



TOOLING

YOUR WORLD.

## **Tool Holding**

Collet Chucks, Shrink Fit, End Mill, Shell Mill, Tapping Heads, Drill Chucks, Boring Heads, Right Angle Heads





ER Collets, TG Collets, DA Collets, 5C Collets, R8 Collets, Milling Chuck Collets

## **Cutting Tools**

End Mills, Drills, Taps, Indexables and Indexable Holders

## Measuring & Inspecting

Aron Spindle or Calibration, Layout & Machine Setup, **Dimensional Measuring Tools** 

## Workholding

Vises, Live Centers, Lathe Chucks, **Clamping Kits, Fixturing** 





#### Explore all of our rotary tooling systems.

Sowa Tool offers a large SKU offering of a wide range of quality rotary tooling: End Mill Holders, Collet Chucks & Collets, Shell Mill & Face Mill Holders, Shrink Fit Holders, Tap Holders, Driven Tooling & Angle Heads.





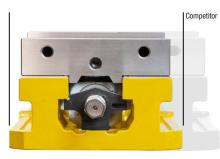
GS160 6" Precision Milling Machine Vise 327320

#### **NEW!** GS100 4" Precision Milling Machine Vise 327319

# Get the Most Out of Your Workspace

With the **GS100G** 4" Precision Milling Machine Vise, a smaller version of the 6" Vise we know you love.

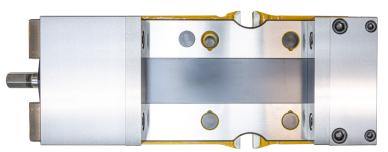
**10 YEAR** WARRANTY



**NARROW BODY STYLE**<sup>\*</sup> to allow more vises on a machine table. \*compared to the competition



A larger, more durable **BEARING PACK** that does not protrude from the end of the vise body.



HOLD DOWN BOLT HOLES allow for easy side by side mounting of multiple vises on a table.



**MATCHED BED HEIGHTS** within  $\pm 0.0005$ " allow for multiple vises to be easily used in parallel.

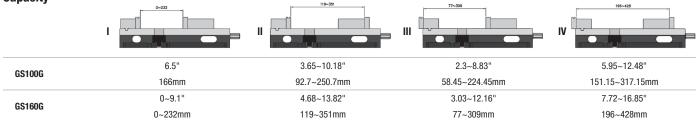
#### GS100G 4" & GS160G 6" Precision Milling Machine Vises

- Larger, more durable bearing pack engineered to deliver a highly Spherical Segment creates an all directional alignment and stable workholding system that is stronger under pressure.
- · A new brush seal design keeps debris from penetrating the nut due to a more efficient chip evacuation system through both the body and ends of the vise, while not compromising on the strength of the body.
- reduces jaw lift of the movable jaw, while the 4-bolt design of the fixed jaw enables stable clamping.
- Reduced stress on body as a result of the pull-type design • features also includes a spindle nut that does not protrude past the end of the body during clamping.

## **GS TOOLING GS100G &** GS160G Vises

are packed with industry-leading

-			-		0		0		_		_						6	\$100G	GS160G
· Des	-			-						NEW!			Part Des	cription				de No.	Code No.
	-	-				10							#2 Main	Screw			32	27321	327322
G				2					-	1			#4 Slidin	g Spindle	Nut		32	27323	327324
9		0	-			-	-	1		1 Transmith			#5 Mova	ble Jaw			32	27325	327326
-	-						THE PARTY	G					#6 Fixed	Jaw			32	27327	327328
			327	320			T	TDOL	Month :				#7 Jaw F	Plate (2pc:	s)		32	27329	327330
					Ø	327	/319	с					#20 bear	i <b>it</b> - Consi ing, #21 c c #19 c-c	o-ring, 2p	segment, oc #10	32	27331	327332
-	-  <sup>J</sup>  -	O(max)		L .	Ĩ		-	U .	-1					Assembly act, #12 ba			32	27333	327334
•	11		×⊢Ţ					-					#14 Slide	e Cover (B	ack)		32	27335	327336
т	-	-			A COLORED	2		6		10			#14 Slide	e Cover (F	ront)			-	327338
			700		2		G			W A	RRANT	Y	#16 Bolt	for Jaw P	late (Pied	ce)	32	27339	327340
	G	-							Y				#17 Bolt	(Long) for	r Fixed Ja	w	32	27341	327342
-	ha .		A			F	-	B B					#18 Bolt	(Short) fo	r Fixed Ja	aw	32	27343	327344
-			U					0	-										(In
Model	Α	В	C	D	Е	F	G	Н	I	J	К	L	М	N	0	т	U	Weight	Code No
GS100G	12.5	5	4	13.7	3.37	1.14	2.56	2.25	1.75	0.55	0.5	3.1	1.24	0.55	6.5	0.69	2.5	30.86lbs	327319
GS160G	16.8	7.3	6	18.4	4.37	1.54	3.56	2.875	2.31	0.725	0.725	4	1.75	0.75	9.1	0.94	3.875	68.34lbs	327320
apacity									110-361										

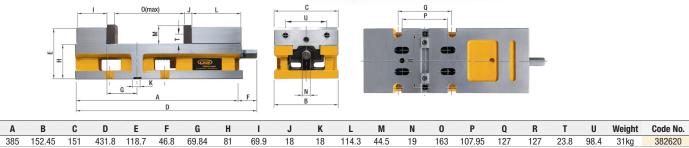


#### **GSV60 6" Versatile Vise**

- 6" vise with 6-1/2" opening
- High accuracy vise for single station CNC centres specially • designed to prevent workpiece lift
- 2 operating positions for Vertical Machine Centres: Upright & Lay Down
- 1 operating position for Horizontal Machine Centres: Horizontal
- Bed height: 81mm ±0.012mm (3.189" ±0.0005") •
- Material: FCD-60 •
- Weight: 68lbs / 31kg

#### LIFETIME WARRANTY!

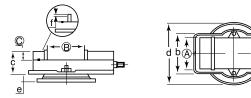




#### TOOLING YOUR WORLD.

#### GS675 6" Precision Milling Machine Vise

- Vises are matched (Bed Height: 2.875")
- An integral key and large fasteners reduce deflection by 50%
- 4-jaw plate positions allow extra capacity with the jaw plates in the outside position
- The swivel base is graduated 360° in one degree increments
- Chip cover protects leadscrew from damage
- The quality movable jaw does not lift off the bed, and the deflection of the stationary jaw is minimized



Model	Jaw Width A	Jaw Open B	C	0.A.L.	b	C	d	е	f	Plain Ship Wt	Code No.
GS675	6	7.5	1.77	17.2	9.13	4.6	12	1.65	0.39	80lbs	327275M
Jaw Plate	s (2pcs)										327330
Swivel Ba	se Only										327280
Replacement Handle									327334		
Main Scre	w, Collar	& Collar	· Set So	crew for	GS675						327284
Chip Cove	r										327338
Vise Nut for GS675									327288		
Jaw Plate	Screws (	4pcs)									327286
Ball Beari	ng Thrust	Collar									327292

#### GS Plain Base Modular Vises



Manufactured under rigid quality control. As a result of the high standard construction, GS Vises can be depended upon to maintain their accuracy under the most severe operating conditions. The modular design and the concept of interchangeability makes possible a wide variety of set up combinations.

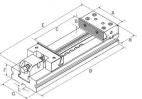
- High accuracy
- Unlimited clamping range
- High quality alloy steel
  High clamping pressure
- High clamping pressureNo jaw lift
- All vises are matched

(Inch)

(Inch)

Model	Jaw Width (A)	Opening (C)	Jaw Height (B)	Code No.
1	4	4	1.2	382005
2	5	6	1.6	382010
3	6	8	1.97	382015
3	6	12	1.97	382017
4	7	8	2.4	382020
4	7	12	2.4	382025
4	7	16	2.4	382030
4	7	20	2.4	382032
5	8	8	2.6	382035
5	8	12	2.6	382040
5	8	16	2.6	382045
5	8	20	2.6	382050
5	8	24	2.6	382052
6	12	8	3.2	382055
6	12	12	3.2	382060
6	12	16	3.2	382065
6	12	20	3.2	382070
6	12	24	3.2	382075
6	12	28	3.2	382080
6	12	32	3.2	382085

#### **Modular Vise Specs**



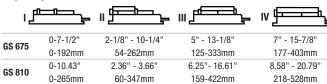
				G	X			(Inch)
Vise Size	Code No.	D	E	F	G	н	I	Kgs
4 x 4	382005	10.63	12.5	1.378	2.95	3.07	0.628	6.8
5 x 6	382010	13.583	16.4	1.575	3.8	3.04	0.64	12.9
6 x 6	382015	16.535	20.86	1.968	4.92	3.574	0.64	25.5
6 x 12	382017	20.472	20.86	1.968	4.92	3.574	0.64	29
7 x 8	382020	17.913	24.80	2.283	5.8	3.876	0.64	37
7 x 12	382025	21.85	24.80	2.283	5.8	3.876	0.64	42
7 x 16	382030	25.787	24.80	2.283	5.8	3.876	0.64	47
7 x 20	382032	29.724	24.80	2.283	5.8	3.876	0.64	52
8 x 8	382035	19.488	28.74	2.756	6.8	4.536	0.64	64
8 x 12	382040	23.425	28.74	2.756	6.8	4.536	0.64	69
8 x 16	382045	27.362	28.74	2.756	6.8	4.536	0.64	74
8 x 20	382050	31.299	28.74	2.756	6.8	4.536	0.64	79
8 x 24	382052	35.236	28.74	2.756	6.8	4.536	0.64	84
12 x 8	382055	21.063	32.67	3.07	7.67	4.74	0.64	95
12 x 12	382060	25.000	32.67	3.07	7.67	4.74	0.64	105
12 x 16	382065	28.937	32.67	3.07	7.67	4.74	0.64	115
12 x 20	382070	32.874	32.67	3.07	7.67	4.74	0.64	125
12 x 24	382075	36.811	32.67	3.07	7.67	4.74	0.64	135
12 x 28	382080	40.748	32.67	3.07	7.67	4.74	0.64	145
12 x 32	382085	44.685	32.67	3.07	7.67	4.74	0.64	155

#### Parts For GS 8" Precision Milling Machine Vises

TOOLING

Description	Code No.
Main Screw, Collar & Collar Set Screw	327306
Ball Bearing Thrust Collar	327292
Needle Bearing Thrust Collar	327307
Chip Cover	327308
Vise Nut	327309
Jaw Plate Screws (4pcs)	327312

#### Capacity



GS810 8" Precision Milling Machine Vise
Vises are matched (Bed Height: 3.310")
<ul> <li>An integral key and large fasteners reduce deflection by 50%</li> </ul>
4-jaw plate positions allow extra capacity     with the jaw plates in the outside position
The swivel base is graduated 360° in one degree increments
Chip cover protects leadscrew from damage
The other quality movable jaw does not lift off the bed, and the deflection of the stationary jaw is minimized
e (Inch)
Jaw Jaw Plain Width Open Ship Model A. B. C. O.A.L. b. c. d. e. f. Wt. Code No.

	Width	Open								Ship	
Model	Α	B	C	0.A.L.	b	C	d	е	f	Wť	Code No.
GS810	8	10.0	2.25	21.8	11.62	5.55	15.0	1.85	0.43	158lbs	327300
Swivel B	ase Only										327310
Jaw Plat	es										327311
Replace	nent Har	ndle									327305

#### Parts & Accessories For GS Modular Vises





Mechanical Blocking Device

Swivel Base



Extension Base



Moveable Jaw

Section and Base



Fixed Jaw Section and Base

Part	#1	#2	#3	#4	#5	#6
Description	Code No.	#2 Code No.	Code No.	Code No.	Code No.	Code No.
Swivel Base	382380	382385	382390	382395	382400	382405
Extension Base	382260	382265	382270	382275	382280	382285
Mechanical Blocking Device	382470	382475	382480	382485	382490	382495
Moveable Jaw	382412	382417	382422	382427	382432	382437
Fixed Jaw	382410	382415	382420	382425	382430	382435
Main Screw	382850	382852	382854	382856	382859	382860
T-Wrench	382820	382822	382824	382826	382828	382830
Box Wrench	382874	382876	382878	382880	382882	382884
Vise Holding Jaws (Pair)	382685	382690	382695	382700	382705	382710
Positioning Keys	382655	382660	382665	382670	382675	382680
Work Stop	382770	382775	382780	382785	382790	382795
Jaw Plate for Fixed Jaw	382862	382864	382866	382868	382870	382872
Jaw Plate for Moveable Jaw	382863	382865	382867	382869	382871	382873
Lock Screw for Blocking Device	382471	382476	382481	382486	382491	382496
	M6x1 x 25mm	M12x1 x 25mm	M14x2 x 35mm	M12x1.75 x 40mm	M20x2.5 x 60mm	M20x2.5mm x 50mm
	382472		382482			
	M8x1.25 x 25mm		M12x1.75 x 30mm			
Chrome Locking Ball for	382473					
Blocking Device	9/16" dia.					
Pre-Assembled Groups						
Overall Length	5.5"	6.30"	9"	10"	12"	13.75"
Leadscrew Overhang	2.08"	2.3"	2.8"	2.0"	3"	2.16"
Moveable Jaw Section and Base Assembly	382290	382295	382300	382305	382310	382315

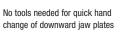
#### **Prismatic Jaws**



Model No.	Code No.
#3	382890
#4	382892
#5	382894

#### Modular Vise w/ Quick Interchangeable Pulldown Jaws









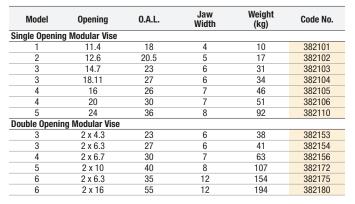
Description	Code No.
6 x 8 Modular Vise	382896
Pair Soft Jaws	382897

#### GS Modular Vises — Single & Double Opening

#### High accuracy No length limitations

- No length limitations
   Unlimited clamping ra
- Unlimited clamping range
- No jaw lift
- High quality alloy steel
- Low profile
- High clamping pressure
- All vises are matched
- Mechanical and pneumohydraulic
- blocking devices







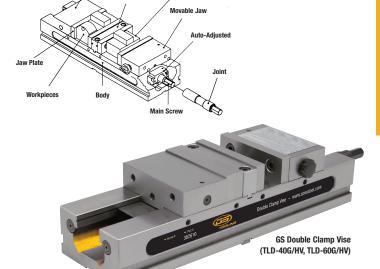
Double Opening Vise

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#### **Double Clamp Vise**

- Double clamp set one handle can simultaneously operate two moveable jaws and clamps 2 workpieces of same or different size or one large workpiece
- This model can increase efficiency and productivity of CNC machines
- The movable jaw ANTI-LIFT mechanism provides alignment to workpiece without jaw lift
- There are 6 kinds of clamping ways to meet workpieces of different shapes and sizes
- The whole body is precisely ground and height tolerance is within  $\pm 0.025 \text{mm}$ (±0.001"), therefore several vises can be lined up for production
- The vise is made of FDC-80.000 psi (55kg/cm<sup>2</sup>) Ductile iron, and slide ways are hardened to 45HRC
- The rigid construction prevents base distortion
- Precision made to high accuracy standard



P: Resultant 45° component force forces the workpiece down while clamping

Π

f

215mm (8.4")

275mm (10.8")

Workpieces

Movable Jaw

**ANTI-LIFT Mechanism** 

N: Gravity

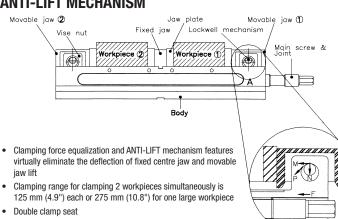
M: Jaws forward movement force

F: Direction of jaw movement

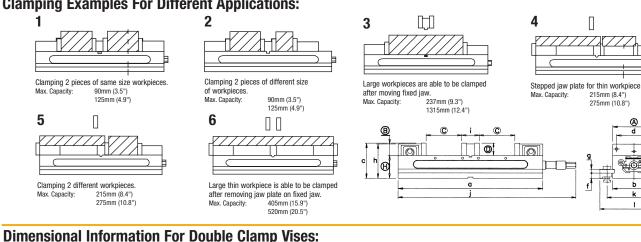
Fixed Jav

#### Model No. Code No. 4" - TLD-40G/HV 382610 6" - TLD-60G/HV 382600

#### **ANTI-LIFT MECHANISM**



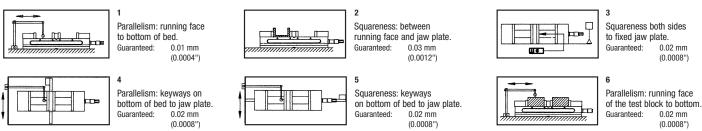
#### **Clamping Examples For Different Applications:**



VIEW A

Model No.	Α	В	C	D	а	b	C	d	е	f	g	h	H	i	j	k	I	Guide Block	Weight (kg/lb)
TLD-40G	103	33	90	38	405	104	101.5	63.5	17.5	13	31	96.5	63.5	55	430	143	195	18	20
(TLD-40HV)	4.05	1.29	3.54	1.49	15.9	4.09	3.99	2.5	0.68	0.51	1.22	3.79	2.5	2.16	16.9	5.62	7.67	0.709	44
TLD-60G	152	41.5	125	44.5	520	154	123.5	98.42	23.8	18	16	126.5	82.55	64	639	193	245	18	48
(TLD-60HV)	5.98	1.6	4.9	1.75	20.47	6	4.98	3.87	0.94	0.7	0.63	4.86	3.25	2.52	25.15	7.59	9.64	0.709	105.6

#### TLD-40G, TLD-60G; match vise, TLD-40HV, TLD-60H (horizontal and vertical 2 way) Inspection Specification:

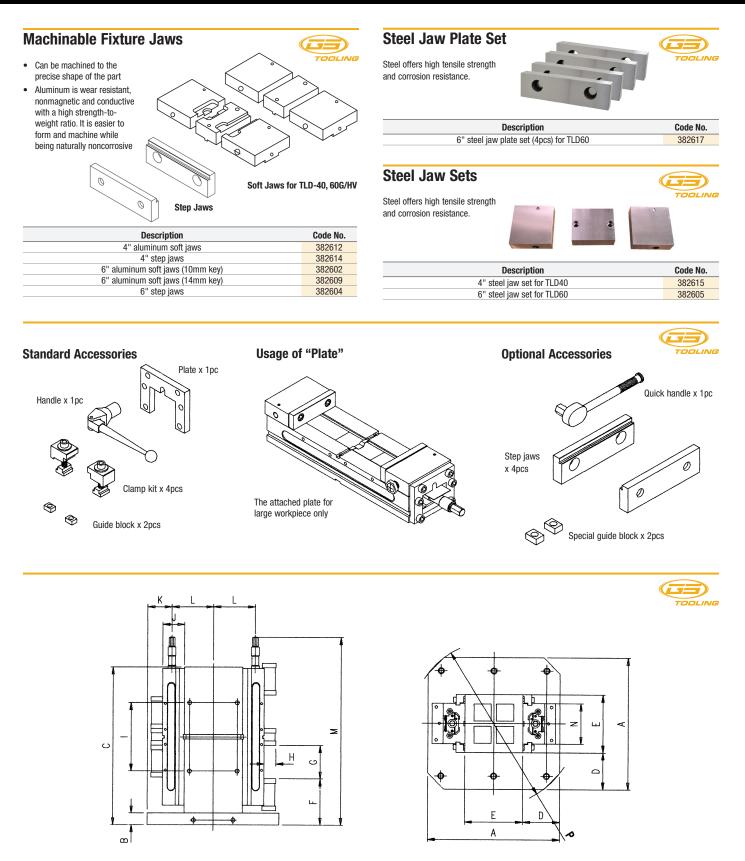


Order online at www.SowaTool.com or call 1-800-265-8221.

(mm/in.)

7 *Sowa* 

# Workholding, Clamping & Fixturing



#### **Jig Block Dimensional Specifications**

Model NO.	Use Vise	Pallet Size	A	В	C	D	E	F	G	н	I	J	К	L	М	N	Р	Weight (kg/lb)
GS-40-4C	TLD-40	400 x 400	400	40	500	110	180	168	90	38	203	63.5	75.5	124.5	543	104	506	118
GS-40-4C	TLD-40	400 x 400	15.74	1.57	19.68	4.33	7.08	6.61	3.54	1.49	7.99	2.5	2.907	4.90	21.3	4.09	19.92	259.6
GS-60-4C	TLD-60	500 x 500	500	45	600	140	220	175	125	44.5	260	82.5	92	158	714	154	628	233
GS-60-4C	TLD-60	500 x 500	19.68	1.77	23.62	5.51	8.66	6.88	4.92	1.75	10.23	3.25	3.62	6.25	28.11	6.02	24.72	512.6

(mm/in.)

#### GS Multi-Tasking Modular Vises for 5-Axis Machining Centers

The MULTI-TASKING range of vises has been specially designed for 5-axis machines. Working on 5 sides of the workpiece, it allows the best optimization of the machining cycle. Thanks to the compact design this kind of vise can be installed on all machining centres. The use of GRIP jaws is strongly recommended with multitasking vises.

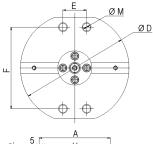
- Self-centering or eccentric
- Eccentric jaw adjustment in steps of 2mm
- Highest accuracy in positioing and alignment (±0.02mm) due to ground rack teeth on both the base and the fixed jaws
- Minimum deflection
- · Solid, rigid construction and maximum clamping ratio to the total length
- Positioning through ground holes or keyways
- All case hardened to 60HRC for durability



Type 1 & 2



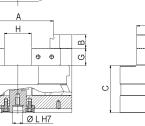
Type 3 Vise shown with riser

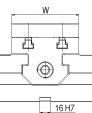


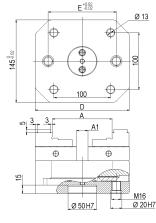
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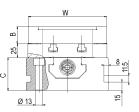




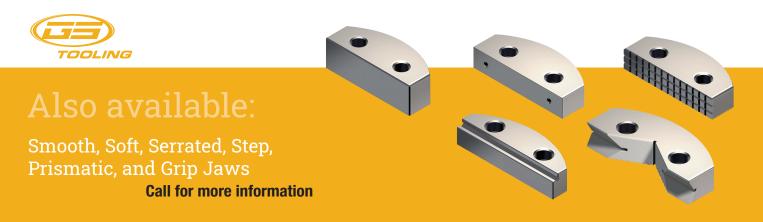








	Type 1	Type 2	Type 3x166	Type 3x266
Code No.	382520	382522	382524	382526
A	74	104	108	208
A1	-	-	20	60
W	74	99	138	138
В	15	20	30	30
С	50	70	58	58
øD/D	120	160	166	266
E	5	35	120	200
F	92	120	-	-
G	20	25	-	-
Н	20	40	-	-
øL H7	20	20	-	-
M	9	11	-	-
kg	4.9	11	13	20
kŇ	16	20	30	30



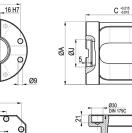
# Workholding, Clamping & Fixturing

### Steel Risers Allow greater access to machine hard to reach areas of the workpiece





Type 3 x 266



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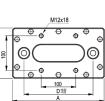




Type 1



	E 0.00 L1			230 % DIN 179C
	•		- 21	
₹, °(		) 0		
	⊖ ø13∕	ٽھ		116 20H7



Model	Α	В	C	D	E	L	L1	М	M1	ØJ	kg	Code No
Type 1	119	-	130	-	-	92	-	35	-	50 H7	6	382521
Type 2	158	-	130	-	-	120	-	35	-	50 H7	10	382523
Type 3x166	166	145	145	120	120	140	60	126	70	50 H7	14	382525
Type 3x266	266	125	145	200	200	240	160	125	80	-	21.5	382527

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L1

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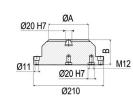
## Aluminum Risers Allow greater access to machine hard to reach areas of the workpiece

Type 1 & 2

Type 3 x 166







D

A Ø20 H7

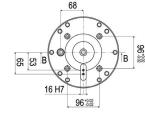
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M12

Ø20 H7

С

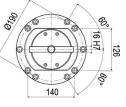
Ø11

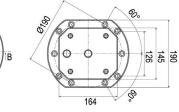


96+0.02

0

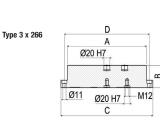
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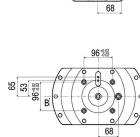




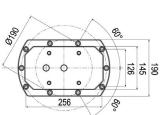


Type 3 x 166





65 53 96<sup>+0.02</sup>



Model	Α	В	C	D	kg	Code No	Model	Α	В	C	D	kg	Code
Type 1	Ø120	50	-	-	3	382531	Type 3 x 166	166	50	230	190	3.8	382
Type 1	Ø120	75	-	-	4.5	382532	Type 3 x 166	166	75	230	190	5.3	382
Type 1	Ø120	100	-	-	5.4	382533	Type 3 x 166	166	100	230	190	6.8	382
Type 2	Ø160	50	-	-	3.5	382534	Type 3 x 266	266	50	310	286	5.8	382
Type 2	Ø160	75	-	-	4.9	382535	Type 3 x 266	266	75	310	286	8.3	3825
Type 2	Ø160	100	-	-	6.4	382536	Type 3 x 266	266	100	310	286	10.7	382

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