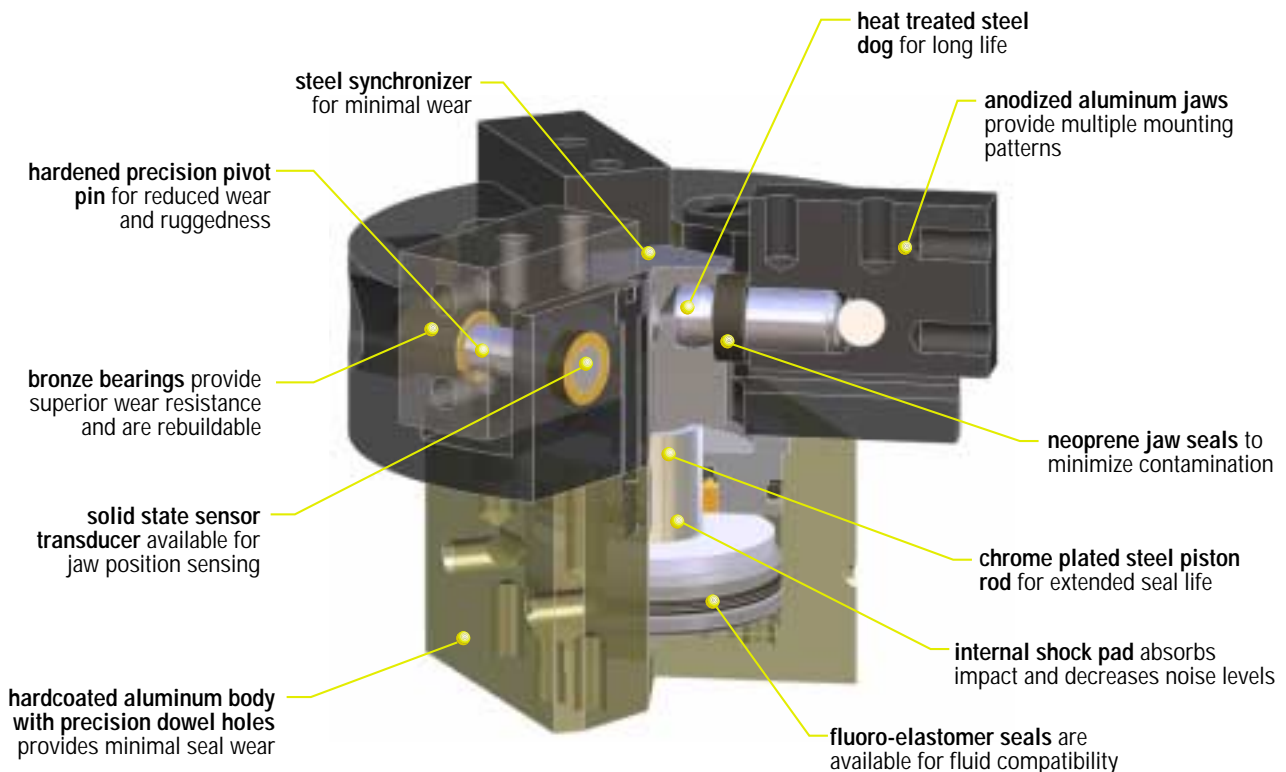


8600 3 JAW



**RUGGED BODY AND JAW
DESIGN WITHSTANDS HIGH
IMPACT AND SHOCK LOADS**



8600 3 jaw

Major Benefits

- Rugged body and jaw design withstands high impact and shock loads
- Four total sizes available in both imperial and metric versions
- Close tolerance jaw mechanism minimizes jaw play
- Hardened steel pivot mechanism
- 1-2 day shipping
- 5 million cycles minimum rated life with standard seals

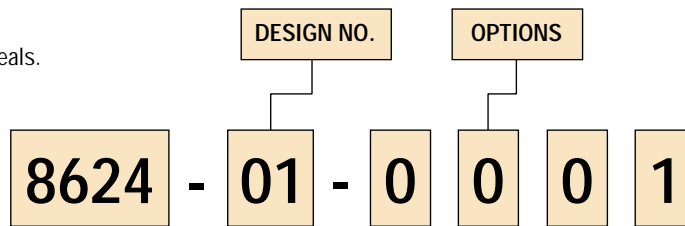
Industry Uses

- Assembly machine builders
- Packaging
- Light bulb manufacturing

ORDERING DATA: SERIES 8600 3 JAW GRIPPERS

TO ORDER SPECIFY:

Model, Design No., Options, and Seals.



SIZE	BORE SIZE		IMPERIAL MODEL	METRIC MODEL
	mm	(in)	3 JAW ANGULAR	3 JAW ANGULAR
2	25.4	(1.0)	8624 - Size 2	8625 - Size 2
3	38	(1.5)	8634 - Size 3	8635 - Size 3
4	51	(2.0)	8644 - Size 4	8645 - Size 4
5	76	(3.0)	8654 - Size 5	8655 - Size 5

OPTIONS
0 - None
3 - Hall Sensor
4 - Sensor Ready

OPTIONS
1 - Buna-N (Standard)
2 - Fluoro-Elastomer

SEALS
1 - Buna-N (Standard)
2 - Fluoro-Elastomer

NOTE: Sensor must be used with a PHD Set Point Module which is ordered separately. See Switches and Sensors section for information and ordering data.

SET POINT MODULES

PART NO.	DESCRIPTION
9800-01-0300	4.5-24 VDC, Sink Type Output
9800-01-0400	4.5-24 VDC, Source Type Output

See Switches and Sensors section for information.



CUSTOM GRIPPERS ARE AVAILABLE. PLEASE CONSULT PHD.

ENGINEERING DATA: SERIES 8600 3 JAW GRIPPERS

SPECIFICATIONS	SERIES 8600 3 JAW
OPERATING PRESSURE STANDARD UNIT	20 psi min to 150 psi max [1.4 bar min to 10 bar max] air
OPERATING TEMPERATURE	-20° to +180°F [-28° to +82°C]
RATED LIFE	5 million cycles minimum with standard seals
GRIP BACKLASH	Within .2° per jaw
GRIP REPEATABILITY	Within .002 in [0.05 mm] of original centered position
LUBRICATION	Factory lubricated for rated life
MAINTENANCE	Field repairable

GRIPPER NO.	DISPLACEMENT		GRIPPER WEIGHT		GRIP FORCE FACTOR G_F			
					EXTERNAL GRIP		INTERNAL GRIP	
	in ³	cm ³	lb	kg	IMPERIAL	METRIC	IMPERIAL	METRIC
862x	.170	2.79	1.43	0.65	.43	705	.59	941
863x	.415	6.80	2.74	1.24	1.18	1946	1.43	2346
864x	1.074	17.60	5.25	2.38	3.18	5221	3.69	6061
865x	3.286	53.86	9.90	4.49	10.07	16502	11.34	18581

NOTE: Maximum load that grippers can handle will vary based on size of part being picked up, shape of part, texture of part, speed at which part is transferred, working pressure, shape of fingers, etc. PHD recommends that the fingers of jaws be tooled or machined to conform to the shape of the part being gripped.

GRIP FORCE CALCULATION EQUATIONS:

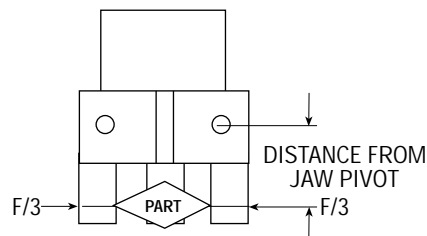
IMPERIAL:

$$\text{TOTAL GRIP FORCE [lb]} = \frac{(\text{Pressure [psi]} \times G_F)}{\text{Distance from jaw pivot (in)}}$$

METRIC:

$$\text{TOTAL GRIP FORCE [N]} = \frac{(\text{Pressure [bar]} \times G_F)}{\text{Distance from jaw pivot (mm)}}$$

NOTE: Gripping force is defined as the maximum value at which the jaws will not move from their gripping position. The above figures are based on actual measured results; figures may vary slightly due to friction. Gripping force is proportional to input pressure.



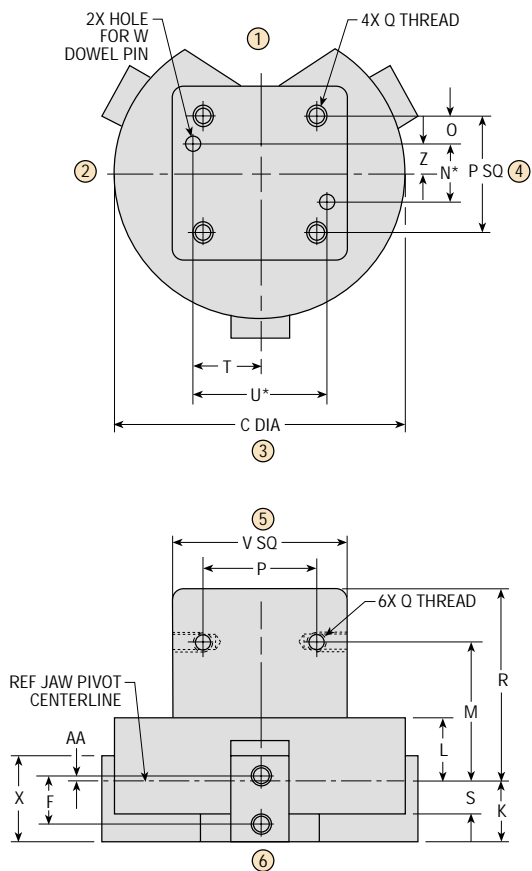
F = Total Grip Force

SIZING AND APPLICATION ASSISTANCE

See PHD Product Sizing Catalog for specific and complete sizing information.
Online sizing assistance is available at: www.phdinc.com/apps/sizing

DIMENSIONS: SERIES 8600 3 JAW GRIPPERS

8600 3 jaw



LETTER DIM	MODEL NUMBER							
	8624 in	8625 mm	8634 in	8635 mm	8644 in	8645 mm	8654 in	8655 mm
B	1.246	31.5	1.587	40.5	2.022	51.5	2.594	66.0
C	3.000	76.0	3.750	95.0	4.750	120.5	6.250	159.0
D	.500	13.0	.750	19.0	.875	22.0	1.000	25.5
E	.020	0.5	.231	6.0	.187	5.0	.063	1.5
F	.437	11.0	.625	16.0	.750	19.0	1.000	25.5
G	10-24 x .28 DP	M5 x 0.8 x 7.0 DP	1/4-20 x .38 DP	M6 x 1 x 9.5 DP	5/16-18 x .44 DP	M8 x 1.25 x 11.0 DP	3/8-16 x .56 DP	M10 x 1.5 x 14.0 DP
H	1.057	27.0	1.250	32.0	1.625	41.0	2.312	59.0
J	.550	14.0	.906	23.0	1.000	25.5	1.118	28.5
K	.640	16.5	.813	20.5	.968	24.5	1.200	30.5
L	.813	20.5	.816	21.0	.940	24.0	1.246	31.5
M	1.563	40.0	1.788	45.5	2.025	51.5	2.619	66.5
N*	.7000	17.78	.7500	19.05	1.1250	28.57	1.7500	44.45
O	.275	7.0	.375	9.5	.312	8.0	.500	13.0
P	1.250	31.5	1.500	38.0	1.750	44.5	2.750	70.0
Q	10-24 x .38 DP	M5 x 0.8 x 9.5 DP	1/4-20 x .38 DP	M6 x 1.0 x 9.5 DP	5/16-18 x .44 DP	M8 x 1.25 x 11.0 DP	3/8-16 x .56 DP	M10 x 1.5 x 14.0 DP
R	2.188	55.5	2.476	63.0	2.900	73.5	3.806	96.5
S	.307	8.0	.434	11.0	.560	14.0	.754	19.0
T	.687	17.5	.875	22.0	1.094	27.5	1.562	39.5
U*	1.3750	34.92	1.7500	44.45	2.1880	55.57	3.1250	79.37
V	1.750	44.5	2.250	57.0	2.750	70.0	4.000	101.5
W	5/32 x .187 DP	4.0 x 5.0	3/16 x .250 DP	5.0 x 6.5	1/4 x .250 DP	7.0 x 6.5	5/16 x .312 DP	8.0 x 8.0
X	.875	22.0	1.125	28.5	1.375	35.0	1.700	43.0
Y	1.188	30.0	1.500	38.0	1.875	47.5	2.430	62.0
Z	.350	8.5	.375	9.5	.562	14.0	.875	22.0
AA	.017	0.5	.062	1.5	.095	2.5	.150	4.0
CC	.375	9.5	.410	10.5	.440	11.0	.570	14.5
DD	.625	16.0	.690	17.5	.895	23.0	1.240	31.5

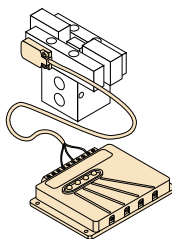
- NOTES:**
- * TOLERANCE IS ± 0.0005 [± 0.012]
 - NUMBERS IN [] ARE FOR METRIC UNITS AND ARE IN mm
 - CIRCLED NUMBERS INDICATE POSITION.
 - JAW MOVEMENT SHOWS MINIMUM AMOUNT OF JAW ROTATION. JAWS MAY OPEN 3° OR CLOSE 3° BEYOND STATED MINIMUM ROTATION.

OPTIONS & ACCESSORIES: SERIES 8600 3 JAW GRIPPERS



3 4 SENSOR/TRANSDUCER

PHD offers a solid-state sensor transducer option -3 and -4 along with a Set Point Module for sensing four or more positions throughout the jaw travel. The Set Point Module allows independent adjustment of each sensing position and is available for 4.5 to 24 VDC NPN or PNP.



SET POINT MODULES

PART NO.	DESCRIPTION
9800-01-0300	4.5-24 VDC, Sink Type Output
9800-01-0400	4.5-24 VDC, Source Type Output

See Switches and Sensors section for information.

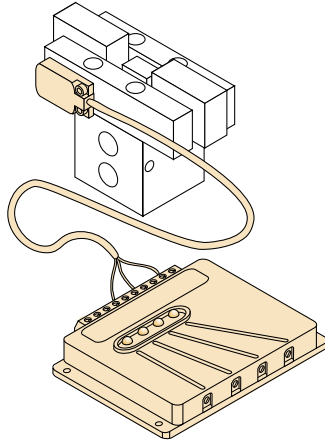
OPTIONS & ACCESSORIES: SERIES 8600 3 JAW GRIPPERS

3

4

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