End Suction Centrifugal Pump

Model GSU

Technical Data

EBARA

EBARA Pumps Americas Corporation

Technical Data

Impeller Diameter and PEI_{CL}

— Not Applicable Model

Model	60 Hz-3500 rpm- 2-Pole					60 Hz-1750 rpm-4-Pole				
	Unit: mm		Unit: in		PEI_{CL}	Unit: mm		Unit: in		PEI_{CL}
	Max	Min	Max	Min		Max	Min	Max	Min	
GSU 32-125.1	140	100	5.51	3.94	0.98	140	100	5.51	3.94	1.00
GSU 32-125	142	106	5.59	4.17	0.97	—	—	—	—	—
GSU 32-160.1	177	126	6.97	4.96	0.96	177	126	6.97	4.96	0.93
GSU 32-160	177	139	6.97	5.47	0.95	177	139	6.97	5.47	0.90
GSU 32-200	219	175	8.62	6.89	0.94	219	170	8.62	6.69	0.99
GSU 32-250	262	198	10.31	7.80	0.91	262	198	10.31	7.80	0.92
GSU 40-125	142	105	5.59	4.13	0.99	142	105	5.59	4.13	0.99
GSU 40-160	177	134	6.97	5.28	0.92	177	134	6.97	5.28	0.99
GSU 40-200	219	172	8.62	6.77	0.93	219	172	8.62	6.77	0.93
GSU 40-250	260	211	10.24	8.31	0.92	260	211	10.24	8.31	0.87
GSU 40-315	—	—	—	—	—	334	263	13.15	10.35	0.80
GSU 50-200	219	171	8.62	6.73	0.90	219	171	8.62	6.73	0.92
GSU 50-250	237	210	9.33	8.27	0.91	270	210	10.63	8.27	0.90
GSU 50-315	—	—	—	—	—	344	277	13.54	10.91	0.89
GSU 65-125	147	120	5.79	4.72	0.98	147	120	5.79	4.72	1.00
GSU 65-250	273	215	10.75	8.46	0.97	273	215	10.75	8.46	0.92
GSU 65-315	—	—	—	—	—	320	261	12.60	10.28	0.88
GSU 80-200	215	170/159	8.46	6.69/6.26	0.98	222	170/159	8.74	6.69/6.26	0.97
GSU 80-315	—	—	—	—	—	334	262	13.15	10.31	0.93
GSU 80-400	—	—	—	—	—	438	335	17.24	13.19	0.93
GSU 100-160	181	149	7.13	5.87	0.99	181	149	7.13	5.87	0.99
GSU 100-200	220	171	8.66	6.73	1.00	220	171	8.66	6.73	0.97
GSU 100-250	—	—	—	—	—	270	210	10.63	8.27	0.92
GSU 100-315	—	—	—	—	—	312	242	12.28	9.53	0.93
GSU 100-400	—	—	—	—	—	412	320	16.22	12.60	0.99
GSU 125-200	201	174	7.91	6.85	0.99	221	174	8.70	6.85	0.96
GSU 125-315	—	—	—	—	—	334	259	13.15	10.20	0.94
GSU 125-400	—	—	—	—	—	424	329	16.69	12.95	0.93

Note: PEI_{CL} is a pump energy index, established by the Department of Energy (DOE), to describe a particular pump energy rating divided by the baseline energy rating.

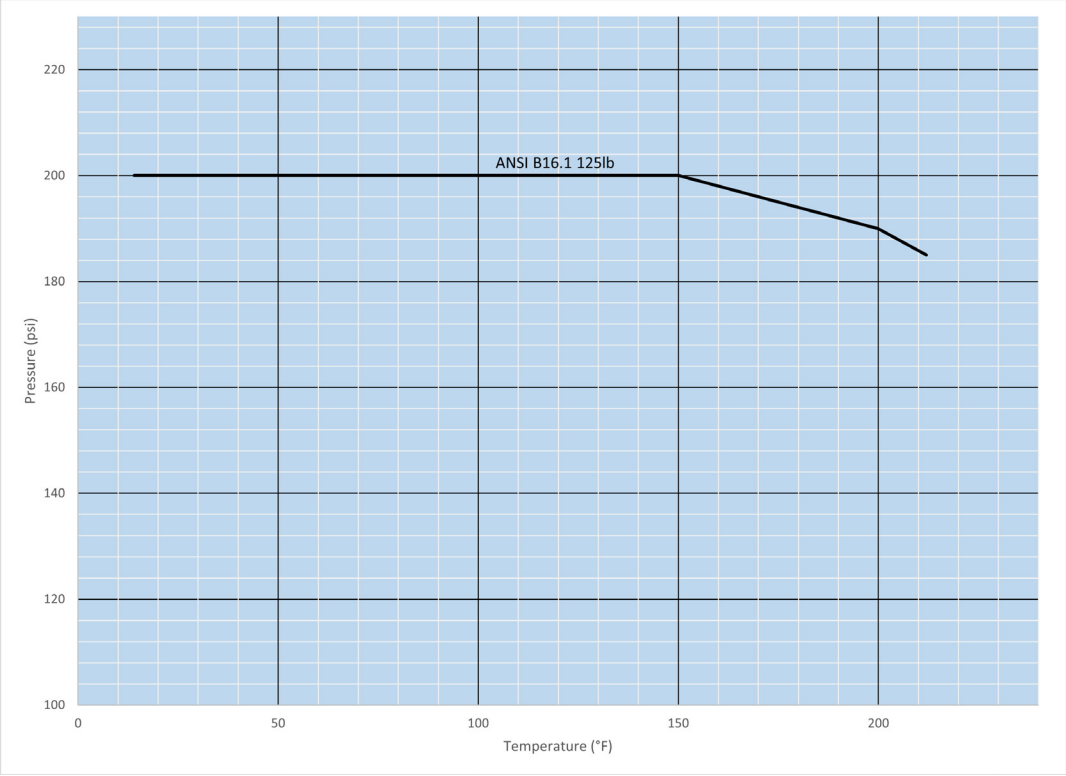
Shaft No. and Shaft Diameter

Model	Shaft No.	At Coupling (mm)	At Radial Bearing (mm)	At Thrust Bearing (mm)	At Mech. Seal (mm)
GSU 32-125.1	230	24	30	30	28
GSU 32-125	230	24	30	30	28
GSU 32-160.1	230	24	30	30	28
GSU 32-160	230	24	30	30	28
GSU 32-200	230	24	30	30	28
GSU 32-250	230	24	30	30	28
GSU 40-125	230	24	30	30	28
GSU 40-160	230	24	30	30	28
GSU 40-200	230	24	30	30	28
GSU 40-250	230	24	30	30	28
GSU 40-315	240	32	40	40	38
GSU 50-200	230	24	30	30	28
GSU 50-250	230	24	30	30	28
GSU 50-315	240	32	40	40	38
GSU 65-125	230	24	30	30	28
GSU 65-250	240	32	40	40	38
GSU 65-315	240	32	40	40	38
GSU 80-200	240	32	40	40	38
GSU 80-315	240	32	40	40	38
GSU 80-400	250	42	50	50	48
GSU 100-160	240	32	40	40	38
GSU 100-200	240	32	40	40	38
GSU 100-250	240	32	40	40	38
GSU 100-315	240	32	40	40	38
GSU 100-400	250	42	50	50	48
GSU 125-200	240	32	40	40	38
GSU 125-315	250	42	50	50	48
GSU 125-400	250	42	50	50	48

Maximum Allowable Pressure

1. Maximum Allowable Working Pressure (MAWP)

Pressure casing material	Liquid temperature	Max. allowable working pressure	Flange standard
Cast iron	14°F to 212°F	200 psi (13.8 bar)	ANSI B16.1 125lb



2. Maximum Allowable Suction Pressure (MASP)

a. Mechanical Seal Application

Maximum Allowable Suction Pressure (MASP) must be smaller than the difference between the Maximum Allowable Working Pressure (MAWP) and Pump Shut-off Pressure (PSP), as follows. However, MASP shall not exceed 174 psi (12 bar).

MASP < MAWP — PSP

[PSP (in psi) = 0.433 x Pump Shut-off Head (in ft) x Liquid Density (in SG)]

Interchangeability Chart

Interchangeability Chart

Model	Shaft No.	Impeller	Ball Bearing	Deflector	Case Wear Ring	Cover Wear Ring	O-ring (for casing)	Mechanical Seal
GSU 32-125.1	230	Depends on each model	A	A	A	A	A	A
GSU 32-125	230		A	A	A	A	A	A
GSU 32-160.1	230		A	A	A	A	A	A
GSU 32-160	230		A	A	A	A	A	A
GSU 32-200	230		A	A	A	A	B	A
GSU 32-250	230		A	A	A	A	C	A
GSU 40-125	230		A	A	B	B	A	A
GSU 40-160	230		A	A	B	B	A	A
GSU 40-200	230		A	A	B	B	B	A
GSU 40-250	230		A	A	B	B	C	A
GSU 40-315	240		B	B	C	C	D	B
GSU 50-200	230		A	A	C	C	B	A
GSU 50-250	230		A	A	C	C	C	A
GSU 50-315	240		B	B	D	D	D	B
GSU 65-125	230		A	A	D	D	A	A
GSU 65-250	240		B	B	D	D	C	B
GSU 65-315	240		B	B	E	E	D	B
GSU 80-200	240		B	B	E	E	B	B
GSU 80-315	240		B	B	F	F	D	B
GSU 80-400	250		C	C	F	F	E	C
GSU 100-160	240		B	B	F	G	A	B
GSU 100-200	240		B	B	G	H	B	B
GSU 100-250	240		B	B	G	H	C	B
GSU 100-315	240		B	B	G	I	D	B
GSU 100-400	250		C	C	H	J	E	C
GSU 125-200	240		B	B	H	H	B	B
GSU 125-315	250		C	C	J	K	D	C
GSU 125-400	250		C	C	J	L	E	C

Note: The same letters in the same vertical column are interchangeable.

Nominal Dimension of Parts

Nominal Dimension of Parts

Model	Shaft No.	Case Wear Ring (mm)	Cover Wear Ring (mm)	O-ring (for casing) (mm)	Ball Bearing
GSU 32-125.1	230	76	76	3.53 x 183.74	6306ZZ
GSU 32-125	230	76	76	3.53 x 183.74	6306ZZ
GSU 32-160.1	230	76	76	3.53 x 183.74	6306ZZ
GSU 32-160	230	76	76	3.53 x 183.74	6306ZZ
GSU 32-200	230	76	76	3.53 x 234.54	6306ZZ
GSU 32-250	230	76	76	3.53 x 278.99	6306ZZ
GSU 40-125	230	88	88	3.53 x 183.74	6306ZZ
GSU 40-160	230	88	88	3.53 x 183.74	6306ZZ
GSU 40-200	230	88	88	3.53 x 234.54	6306ZZ
GSU 40-250	230	88	88	3.53 x 278.99	6306ZZ
GSU 40-315	240	100	100	3.53 x 355.19	6308ZZ
GSU 50-200	230	100	100	3.53 x 234.54	6306ZZ
GSU 50-250	230	100	100	3.53 x 278.99	6306ZZ
GSU 50-315	240	116	116	3.53 x 355.19	6308ZZ
GSU 65-125	230	116	116	3.53 x 183.74	6306ZZ
GSU 65-250	240	116	116	3.53 x 278.99	6308ZZ
GSU 65-315	240	132	132	3.53 x 355.19	6308ZZ
GSU 80-200	240	132	132	3.53 x 234.54	6308ZZ
GSU 80-315	240	148	148	3.53 x 355.19	6308ZZ
GSU 80-400	250	148	148	5.33 x 456.06	6310ZZ
GSU 100-160	240	148	153	3.53 x 183.74	6308ZZ
GSU 100-200	240	158	158	3.53 x 234.54	6308ZZ
GSU 100-250	240	158	158	3.53 x 278.99	6308ZZ
GSU 100-315	240	158	162	3.53 x 355.19	6308ZZ
GSU 100-400	250	168	168	5.33 x 456.06	6310ZZ
GSU 125-200	240	168	158	3.53 x 234.54	6308ZZ
GSU 125-315	250	188	178	3.53 x 355.19	6310ZZ
GSU 125-400	250	188	188	5.33 x 456.06	6310ZZ

Noise Data

Noise Data

Model	60 Hz	
	3500 rpm (2-Pole)	1750 rpm (4-Pole)
	Overall Sound Pressure Level dB(A)	
GSU 32-125.1	66	54
GSU 32-125	68	—
GSU 32-160.1	70	58
GSU 32-160	72	58
GSU 32-200	74	62
GSU 32-250	75	65
GSU 40-125	70	58
GSU 40-160	73	62
GSU 40-200	77	65
GSU 40-250	80	67
GSU 40-315	—	71
GSU 50-200	78	67
GSU 50-250	80	69
GSU 50-315	—	73
GSU 65-125	74	62
GSU 65-250	84	71
GSU 65-315	—	74
GSU 80-200	83	71
GSU 80-315	—	77
GSU 80-400	—	80
GSU 100-160	80	67
GSU 100-200	85	72
GSU 100-250	—	74
GSU 100-315	—	77
GSU 100-400	—	80
GSU 125-200	85	73
GSU 125-315	—	79
GSU 125-400	—	82

Selection of Shaft Seal

Mechanical seal selection of conical type (*1)

Description		Standard
Liquid temperature		14～212°F
Materials (*2)		Cer / C / NBR
Max. Allowable operating pressure (*3)(*4)	Shaft No. 230, 240, 250	0～174 psi (0～12 bar)

(*1) This table shows only the EBARA standard type mechanical seal. If you want mechanical seal with other types or material combinations, please contact factory.
(*2) Cer: ceramic / C: carbon
(*3) These value show the allowable range of mechanical seal itself.
(*4) Calculation of Pbox is based on below equation.

Pbox = (0.05 x T.H.) + Ps
Pbox: Box pressure
T.H.: Total head in pressure (differential pressure)
Ps: Suction pressure