

CPEN

Stainless Steel Pumps

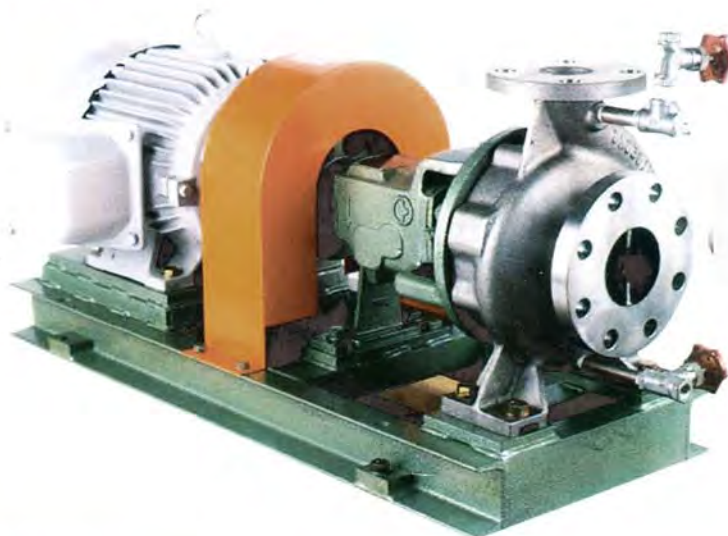


 TORISHIMA PUMP

**COMPACT
HIGH EFFICIENCY FOR ECONOMICAL
ENERGY-SAVING DESIGN**



CPEN is a new model of Stainless Steel Semi-process Pump with stable pump performance, high efficiency and low NPSH required

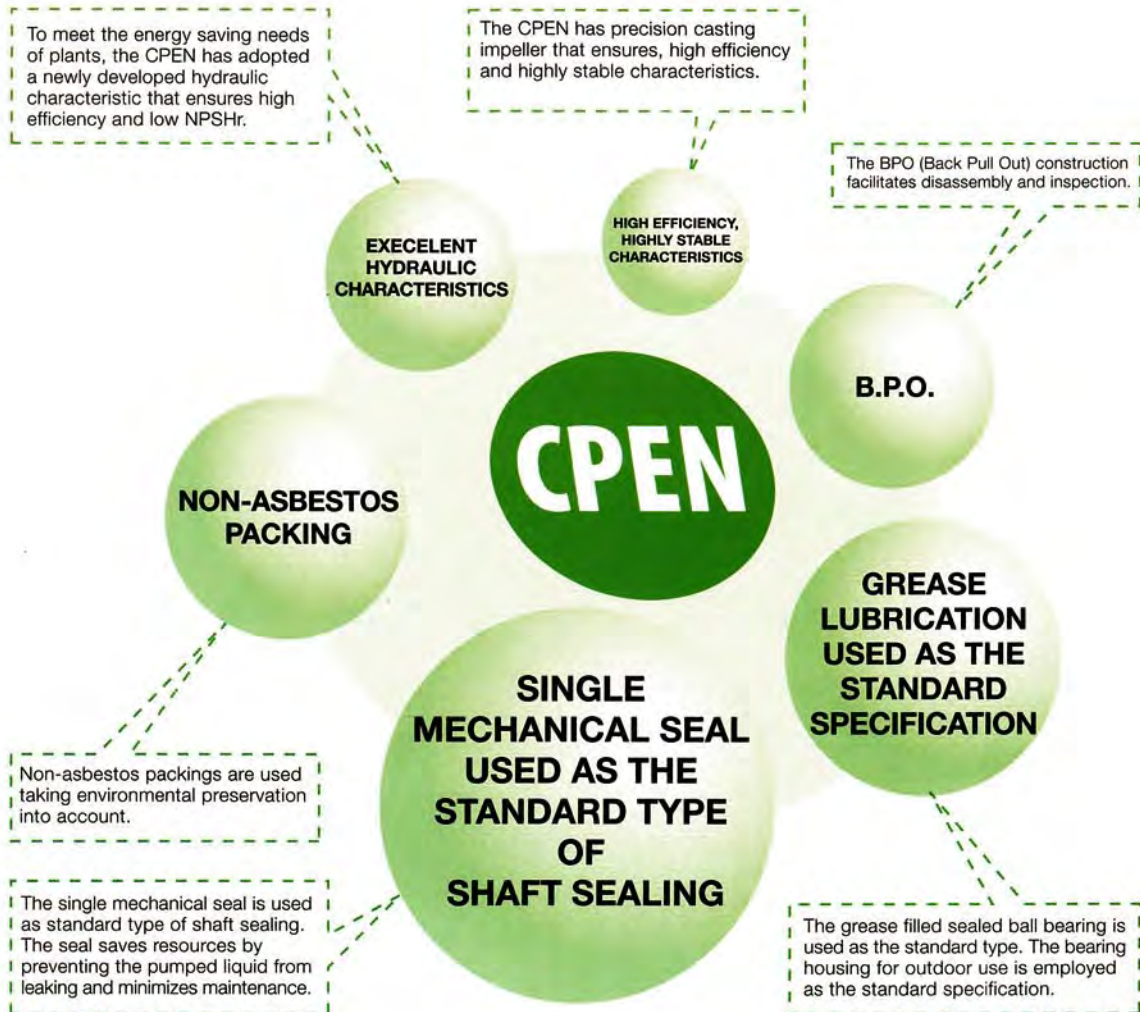


Applicable Liquid

- Clean Water
- Hot Water
- Pure Water
- Brine
- Sea Water
- Alkaline Liquid
- Acid liquid
- Solvent
- Oil
- Caustic Soda
- etc.

Standard Specifications

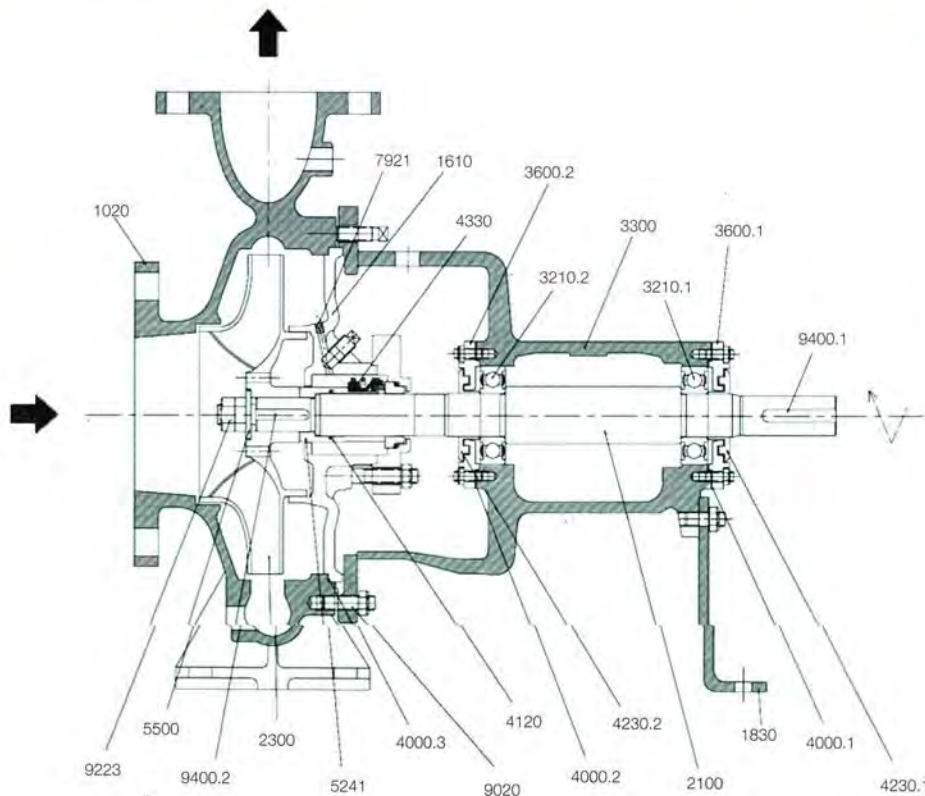
Size	:	DN 40 to 200 mm
Capacity	:	Up to 240m ³ /hr (4m ³ /min)
Total head	:	Up to 88 m
Operating temperature:		-10 up to 70°C (standard) -15 up to 140°C (optional)



MECHANICAL SEAL SELECTION TABLE (CPEN)

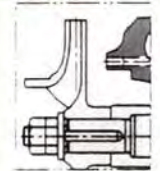
LIQUID HANDLED	LIQUID TEMP. t (°C)	PRESSURE PW (kgf/cm ² G)	MECHANICAL SEAL TYPE	FLUSHING METHODE	REMARKS
TYPE A Fresh water, sea water, aqueous solutions, oils, sodium hypochlorite, light acid	-10 ≤ t ≤ 70	0 ~ 10	(Silicon carbide/ Silicon carbide/Viton) Metal : SS 316	Self Flushing	TGI Standard (Single unbalance)
TYPE B Hot water, Caustic soda ≤ 10% of concentration	-10 ≤ t ≤ 140	0 ~ 10	(Carbon/Ceramic/ EPDM) Metal : SS 316	Self Flushing	TGI Standard (Single unbalance)
TYPE C Brine type refrigerants	-15 ≤ t	0 ~ 10	(Silicar/Carbon/TTV) Metal : SS 316	Self Flushing	Customized (Single unbalance) TTV = Teflon
Slurry liquids [Less than 3% of slurry concentration]	TYPE A	-15 ≤ t ≤ 140	(Silicar/Carbon/TTV)	Self Flushing	Customized
	TYPE B	-15 ≤ t ≤ 140	(Silicar/Carbon/TTV)		
	Electrode position Coating liquid	-40 ≤ t ≤ 140	0 ~ 10	External Flushing & Draining	Customized (Double unbalance)
	TYPE A TYPE B TYPE C		0 ~ 10		

Sectional drawing (Shaft seal : mechanical seal, Bearing : grease lubrication)



without balancing ring

(25-100 • 25-125
32-100 • 32-125
40-100 only)

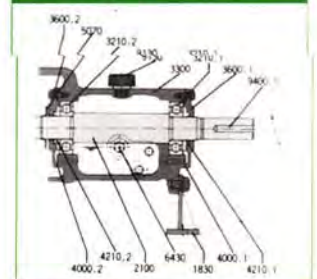


Volute casing setting bolt hole

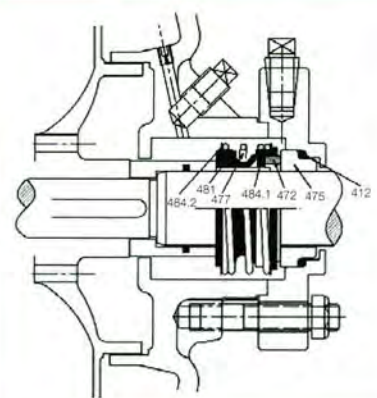
(25-100 • 25-125
32-100 • 32-125
40-100 only)



Bearing : Oil lubrication

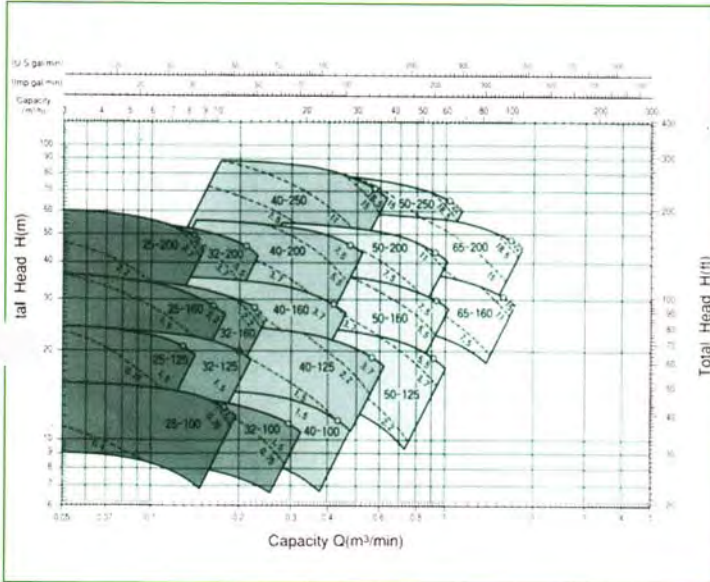


1020	Volute casing	4230.1	Labyrinth ring		
1610	Casing cover	4230.2	Labyrinth ring		
1830	Support foot	4330	Mechanical seal	472	Seal Face
2100	Shaft	5241	Seal sleeve	481	Bellows
2300	Impeller	5500	Washer	484.2	"I"-ring
3210.1	Ball bearing	6430	Oil gauge		(Spring Collar)
3210.2	Ball bearing	7921	Orifice	484.1	"I"ring
3300	Bearing housing	9020	Stud bolt		(Spring Collar)
3600.1	Bearing cover	9130	Plug	477	Spring
3600.1	Bearing cover	9233	Hard lock nut	475	Seat
4000.1	Flat gasket	9400.1	Key	412	O-ring or Cup
4000.2	Flat gasket	9400.2			Rubber
4000.3	Flat gasket				
4120	O-ring				
4210.1	Oil seal				
4210.2	Oil seal				

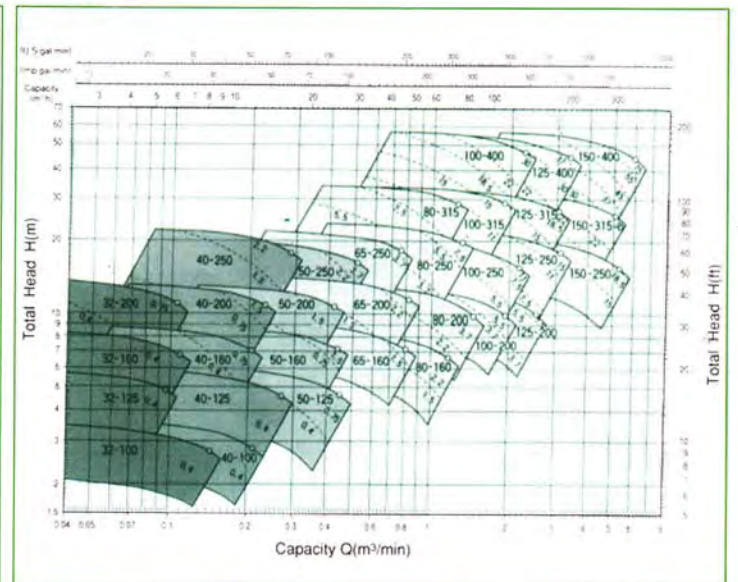


Selection Charts (50Hz)

2-Pole

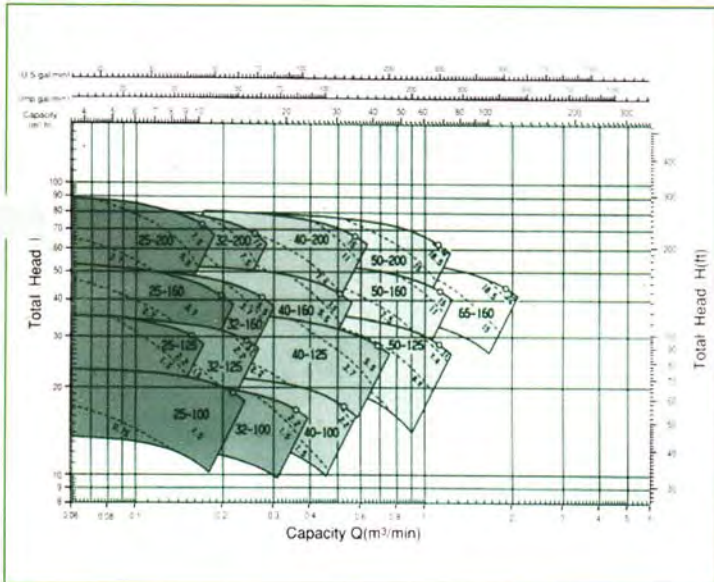


4-Pole

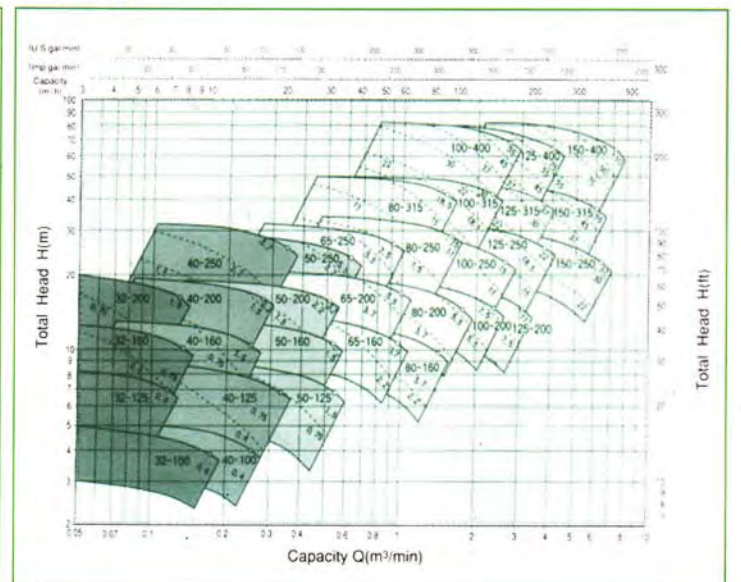


Selection Charts (60Hz)

2-Pole



4-Pole



MATERIALS AND CONSTRUCTION

Materials				
No.	Designation		Material	
			Standard	Option
1020	Volute casting		SCS13	SCS14
1610	Casing cover	For single mechanical seal	SUS F304*1)	SUS F316*1)
		For gland packing or double mechanical seal	SCS13	SCS14
1830	Support foot		FC200	
2100	Shaft		SUS304	SCS316, SUS329J1
2300	Impeller		SCS13	SS14
3300	Bearing housing		FC250	
3600.1/2	Bearing cover	Grease lubrication	ADC12*2)	
		Oil lubrication	FC200	
4000.1/2	Flat gasket	Grease lubrication	Tombo #1995	
		Oil lubrication	Tombo #1630	
4000.3	Flat gasket		Teflon	Tombo #1995
4120	O-ring	For packing sleeve	Viton B	EPDM
4120.1		For seal cover	Viton B	
4210.1/2	Oil seal	Oil lubricant	Rubber	
4230.1/2	Labyrinth ring	Grease lubricant	Plastic	
4520	Gland	Shaft seal: Gland packing	SCS13	SCS14
4540	Gland bush	Shaft seal: Gland packing	SUS304	SUS316
4580	Lantern ring	Shaft seal: Gland packing	SUS304	SUS316
4610	Gland packing	Shaft seal: Gland packing	PAN carbon fiber	PTFE containing graphite, JM-CT-2
4630	Apron	Shaft seal: Gland packing	SUS304	SUS316
5070	Deflector	Shaft seal: Gland packing	SUS304	SUS316
5240	Packing sleeve	For double mechanical seal	SUS304	SUS316
		For Gland packing	SUS304	SUS316, SUS304HCr, SUS316HCr
5241	Seal sleeve		SUS304	SUS316
5500	Washer		SUS304	SUS316
6430	Oil gauge	Oil lubrication	C3602 BEHCr	
6480	Drip pan		SUS304	
7921	Orifice	Shaft seal: mechanical seal	SUS304	SUS316
9020	Stud bolt		SUS304	
9021	Grand bolt	Shaft seal: Gland packing	SUS304	SUS316
9130	Plug		6NR	
9233	hard lock nut		SUS304	SUS316
9400.1	Key		S45C	
9400.2	Key		SUS304	SUS316

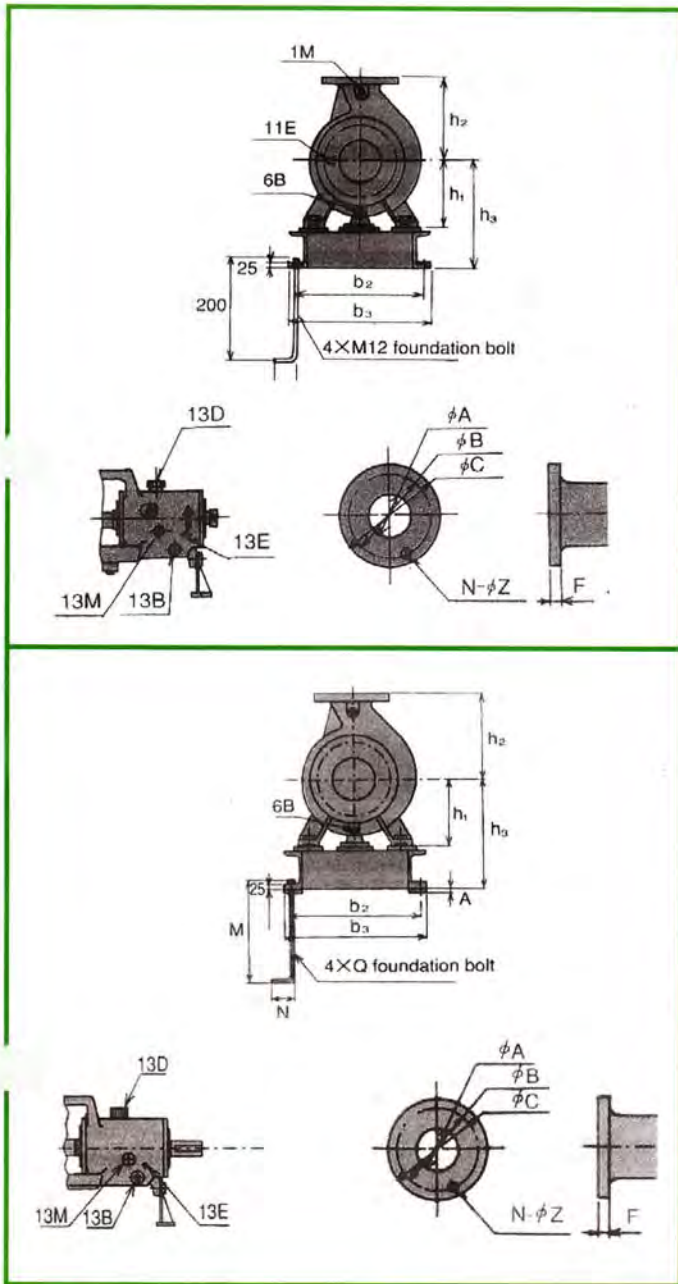
*1) SCS13 and SCS14 for 80-315, 100-315, 150-250, 125-315, 150-315, 100-400, 125-400 and 150-400

*2) FC200 for 150-250, 125-315, 150-315, 100-400, 125-400 and 150-400

Bearing No.		
(In case of grease lubrication) Non contact double rubber sealed, deep groove ball bearing		
Shaft size	Bearing No. JIS B1521	
CN25	6305UUC3	
CN35	6307UUC3	
CN45	6309UUC3	
CN65	6313UUC3	
(In case of oil lubrication) Open type deep groove ball bearing		
Shaft size	Bearing No. JIS B1521	Oil seal JIS B2402
CN25	6305C3	G25385
CN35	6307C3	G35485
CN45	6309C3	G45606
CN65	6313C3	G65886
Note) Comparison table of shaft size to pump size		
Shaft size	Pump size	
CN25	25-100, 32-100, 40-100, 25-125, 32-125, 40-125, 50-125, 25-160, 32-160, 40-160, 50-160, 25-200, 32-200, 40-200	
CN35	65-160, 80-160, 50-200, 65-200, 80-200, 100-200, 125-200, 40-250, 50-250, 65-250, 80-250	
CN45	100-250, 125-250, 80-315, 100-315	
CN65	150-250, 125-315, 150-315, 100-400, 125-400, 150-400	

DIMENSIONS CHART

(unit: mm)



Flange Dimensions

(unit: mm)

DN	ϕA	ϕB	ϕC	F	N- ϕZ
25	25	90	125	14	4-19
32	32	100	135	16	4-19
40	40	105	140	16	4-19
50	50	120	155	16	4-19
65	65	140	175	18	4-19
80	80	150	185	18	8-19
100	100	175	210	18	8-19
125	125	210	250	20	8-23
150	150	240	280	22	8-23
200	200	290	330	22	12-23

Pump Sizes	Pump Dimensions							Wt. kgf
	DN ₁	DN ₂	a	d ₁ k ₆	f	h ₁	h ₂	
25-100	40	25	70	24	360	112	132	30
25-125	40	25	70	24	360	112	132	30
32-100	50	32	70	24	360	112	140	30
32-125	50	32	80	24	360	112	140	31
40-100	65	40	80	24	360	112	140	32
25-160	40	25	80	24	360	132	160	32
32-160	50	32	80	24	360	132	160	33
40-125	65	40	80	24	360	132	160	35
40-160	65	40	80	24	360	132	165	36
50-125	80	50	90	24	360	132	165	36
25-200	40	25	80	24	360	160	180	41
32-200	50	32	80	24	360	160	180	41
40-200	65	40	80	24	360	160	180	42
50-160	80	50	90	24	360	160	180	40
50-200	80	50	90	32	470	160	200	56
65-160	100	65	100	32	470	160	200	56
40-250	65	40	90	32	470	180	225	71
50-250	80	50	90	32	470	180	225	72
65-200	100	65	100	32	470	180	225	62
80-160	125	80	100	32	470	180	225	62
80-200	125	80	110	32	470	180	250	69
65-250	100	65	100	32	470	120	250	76
100-200	125	100	110	32	470	120	280	78
80-250	125	80	110	32	470	225	265	83
125-200	150	125	125	32	470	225	300	99
100-250	125	100	125	42	470	225	280	104
125-250	150	125	140	42	470	250	315	109
80-315	125	80	125	42	470	250	315	110
100-315	125	100	140	42	470	250	315	120
100-400	125	100	140	48	530	280	335	140
125-315	150	125	140	48	530	280	335	140
150-250	200	150	160	48	530	280	375	160
125-400	150	125	140	48	530	315	400	155
150-315	200	150	160	48	530	315	400	165
150-400	200	150	160	48	530	315	450	170

Auxiliary connections dimensions and designations

Application	Symbol	Designation	Standard Type
Grease or Oil Lubrication	1M	Pressure Gauge	With PT Plug
	6B	Draining	With PT Plug
	8B	Draining	RP 1/2
	11E	Flushing	With PT Plug
Oil Lubrication Only	13B	Oil Draining	With PT Plug
	13D	Oil Flushing/Air Vent	With Plug
	13E	Constant Level Oiler	With Plug
	13M	Oil Gauge	With Oil Gauge

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