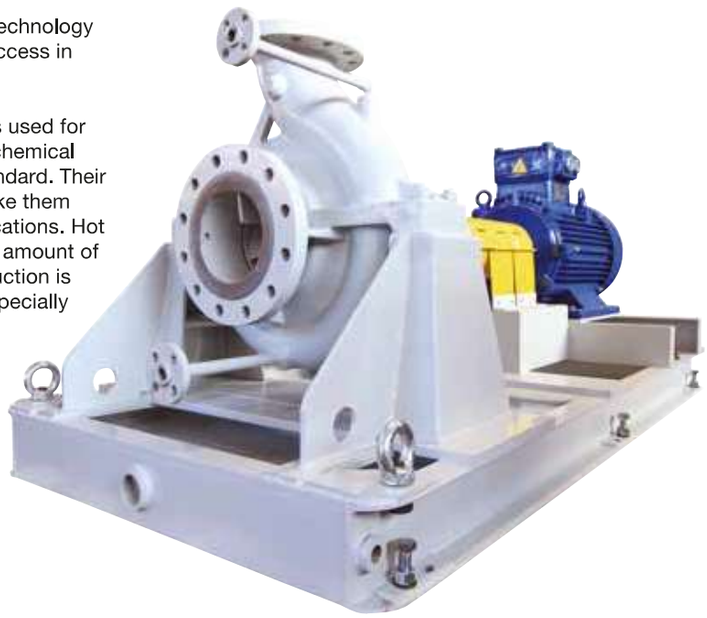
TÜRBOSAN

API-610 PROCESS PUMPS

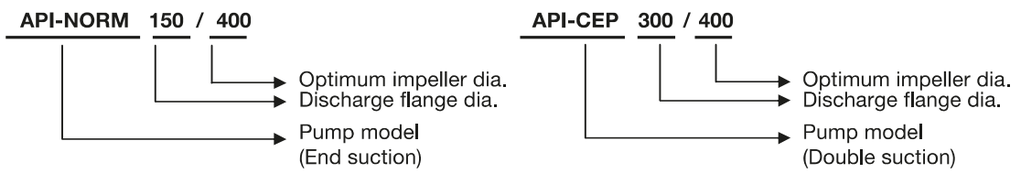
A broad range of products and sophisticated materials technology combined with application know-how are the keys to success in industrial plants .

Türbosan API-Process pumps are special type of pumps used for pumping fluids in complicated processes such as petrochemical processes. They manufactured according to API-610 standard. Their long endurance life, reliable and robust construction make them suitable to meet requirements of most demanding applications. Hot or cold fluids, fluids without particles or fluids with small amount of particles pumped with these pumps. Mechanical construction is different than that of conventional pumps and they are specially designed



Applications :
- Petrochemical plants
- Chemical industry
- Paper industry
- Power plants
- Oil refineries
- Iron and steel industry

Pump designation :



DEFINITIONS PUMP	API-NORM PUMPS	API-CEP PUMPS
Discharge flange diameter (mm)	Ø50 ÷ Ø200	Ø125 ÷ Ø500
Capacity (Q) (m3/h)	Max. 750	Max. 3600
Discharge head (m)	Max. 150	Max. 160
Operating temperature (°C)	-30 ÷ +300	-30 ÷ +300
Speed (rpm)	Max. 3000	Max. 1500

DESIGN SPECIFICATIONS OF API PUMPS :

CASINGS :
- Long life, wear resistant
- Complies with API 610 standart.
- For low capacity values end suction type, for higher capacities double suction type.
- Pump flanges according to ANSI or DIN norms.

IMPELLERS :
- High efficiency, closed type.
- Wide operating range.
- Statically and dynamically balanced according to ISO 1940 class 2.5 .

API-610 PROCESS PUMPS

MECHANICAL SEALS :
- According to API 682 (ISO 21049) single or double cartridge type or special double cartridge type mechanical seals are used.
- Various API / ISO shaft seal cooling systems applicable.

WEAR RINGS:
- Casing and impeller can be fitted with wear rings. Impeller wear ring is optionally available upon request.
- Wear rings are replacable.
- Made of durable, surface hardened material.

SHAFTS :
- Heavy duty type shafts are used.
- Large shaft diameters for achiving low deflection.
- Available in different material grades.

BEARINGS:
- Heavy duty type two off 7300 series bearings with 40° angle of contact.
- Norm series pumps have 1 off NU 300 series bearing on impeller side, Cep series pumps have 1 off 6300 C3 series heavy duty type bearing on non drive end.
- Bearing housings are heavy duty type, stable and designed according to API 610.
- Bearings are oil lubricated. For high temperature applications additional cooling systems applied.
- Bearing frame material of split case pumps is same as pump casing material.

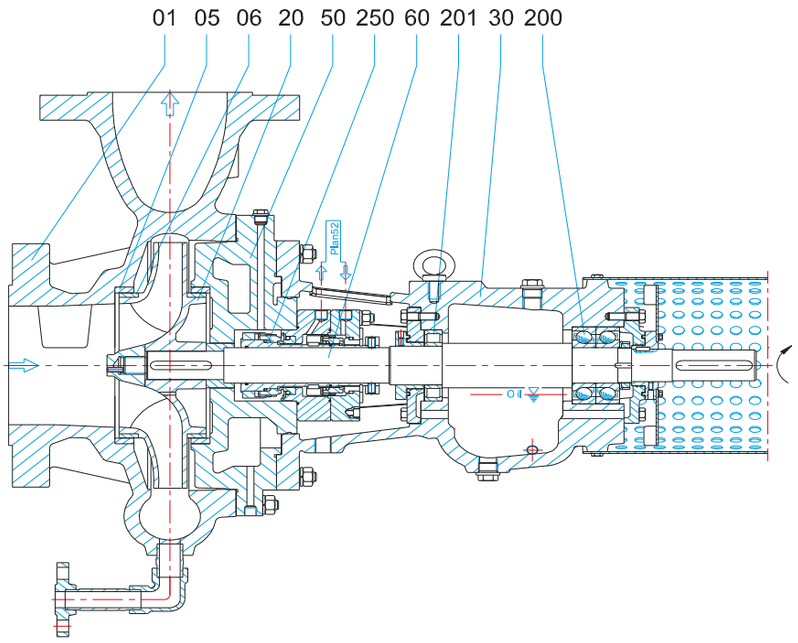
BASE PLATES :
- Base plates are heavy duty type and have leakage collection reservoirs and lifting rings according to API specifications. They are of sheet metal construction.

COMPONENT	API MATEARIAL CLASSIFICATIONS				
	S1	S-8	C6	*A-8*	D1
Volute casing	EN-10213 A216GrWCB (1.0619)	EN-10213 (A216 WCB) (1.0619)	A743GrCA15 (1.4008)	A351GrF8M (1.4408)	Duplex 1.4517 EN 10213-4
Impeller	Cast iron EN-632-250 GG 25	AISI 316 (1.4401)	A743GrCA15 (1.4008)	A351GrF8M (1.4408)	Duplex 1.4517 EN 10213-4
Casing wear ring	Cast iron EN-632-250 GG 25	AISI 316 (1.4401)	AISI 420 (1.4021)	AISI 316 (1.4401)	Duplex 1.4517 EN 10213-4
Stuffing box	EN-10213 A216GrWCB (1.0619)	EN-10213 (A216 WCB) (1.0619)	A743GrCA15 (1.4008)	A351GrF8M (1.4408)	Duplex 1.4517 EN 10213-4
Shaft	AISI 420 (1.4021)	AISI 316 (1.4401)	AISI 420 (1.4021)	AISI 316 (1.4401)	AISI 316 (1.4401)
Bearing housing	Cast iron EN-632-250 GG 25	Ductile cast iron EN-GJL-400-15 GGG-40	Ductile Cast iron EN-GJL-400-15 GGG-40	Ductile Cast iron EN-GJL-400-15 GGG-40	Ductile Cast iron EN-GJL-400-15 GGG-40
Casing studs	AISI 4140 (42CrMo4) 1.7225	AISI 4140 (42CrMo4) 1.7225	AISI 4140 (42CrMo4) 1.7225	AISI 4140 (42CrMo4) 1.7225	AISI 316 (1.4401)
Mechanical seals	**API 682**				

Other materials defined in API 610 available on request.

API-610 PROCESS PUMPS

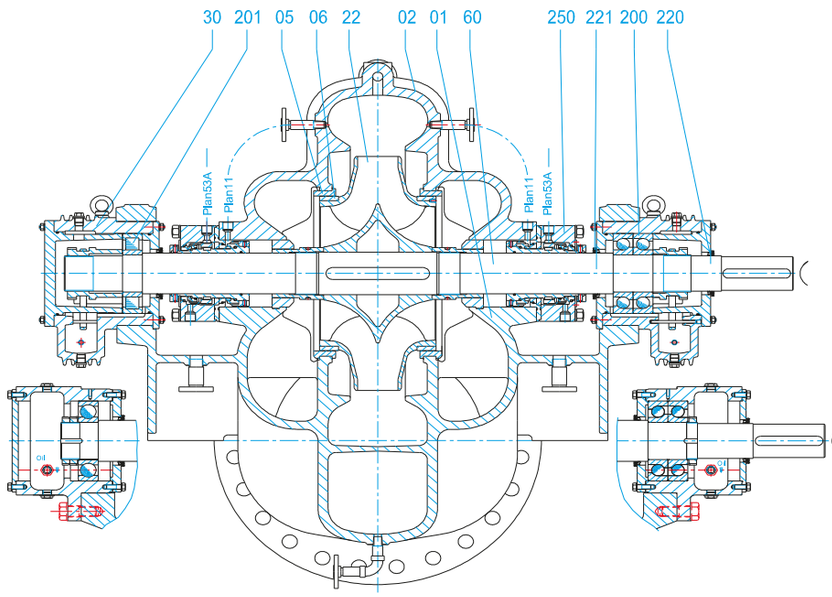
API NORM PUMPS:



API NORM PUMPS PARTS LIST

01	Volute
05	Wear ring (Casing)
06	Wear ring (Impeller)
20	Impeller
30	Bearing housing
50	Stuffing box
60	Pump shaft+
200	Bearing 7300 series
201	Bearing NU300 series
250	Mechanical seal (API-682)

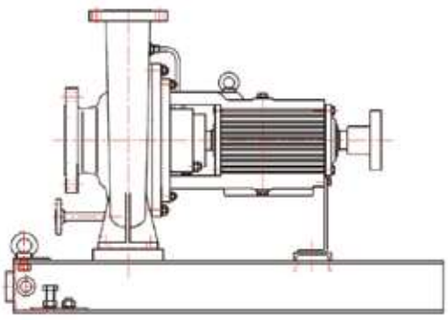
API CEP PUMPS:



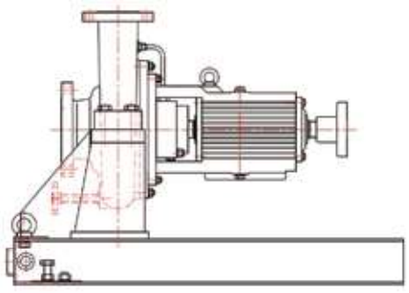
API CEP PUMPS PARTS LIST

01	Casing
02	Casing cover
05	Wear ring (Casing)
06	Wear ring (Impeller)
22	Impeller
30	Bearing housing
60	Pump shaft
200	Bearing 7300 series
201	Bearing NU300 series
220-21	Labtecta ring
250	Mechanical seal (API-682)

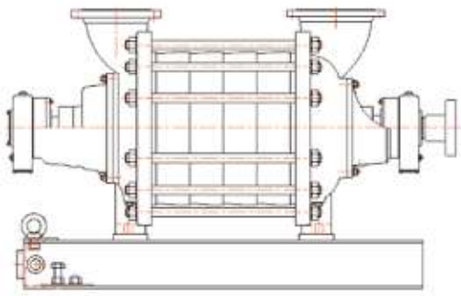
API-610 PROCESS PUMP DESIGNATIONS



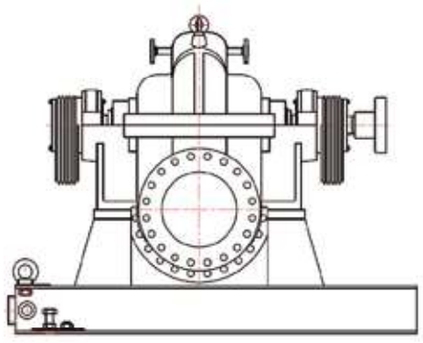
Pump type OH1



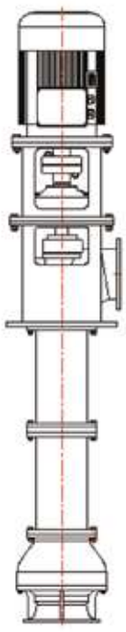
Pump type OH2



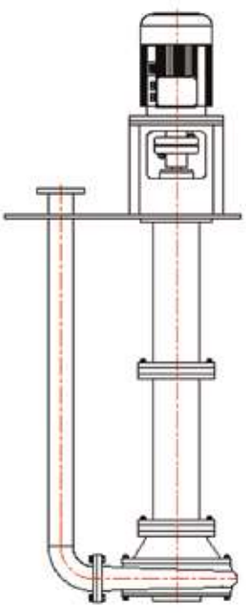
Pump type BB4



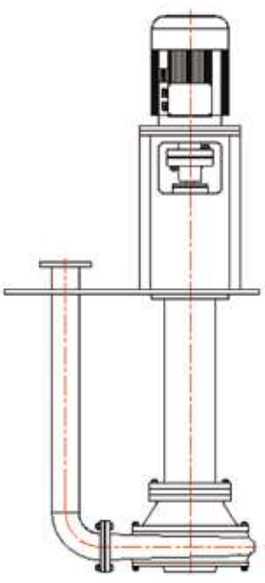
Pump type BB1



Pump type VS3



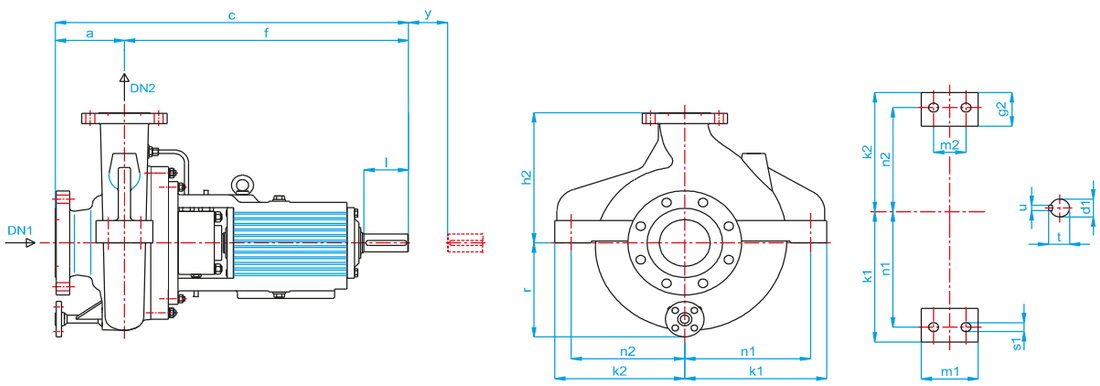
Pump type VS4



Pump type VS5

API-610 PROCESS PUMPS

API NORM SERIES DIMENSIONS TABLE



PUMP SIZE	Weight(kg)	BEARING BRACKET	DN1	DN2	a	f	c	h2	r	d1	l	t	u	y	k1	k2	n1	n2	m1	m2	g2	s1
API- NORM-SN 40-250	190	B09	65	40	130	610	740	225	220	32	80	35	10	100	245	230	220	195	130	70	50	17.5
API- NORM-HD 40/315	235							250						140	265	255	240	215				
API- NORM 50-250	280			50	140		750	225	210					100	230	225	205	180	150	80		
API- NORM-HD 50-250	285		80						220						245	230	22	195				
API- NORM-HD 50-315	295	B12			150	700	850	280		48	110	49	12	140	285	270	260	245	170	90	65	22
API- NORM-HD 65-250	305		100	65				250	240					100	270	250	245	225				
API- NORM-HD 65-315	310							280	240					140	295	265	270	240				
API- NORM-HD 80-250	320		125	80	170		870		255						275	255	250	230				
API- NORM-HD 80-315	330							315	265						350	320	310	280				
API- NORM-EFF 100-250	340			100				280	255					170	290	260	265	235	190	100	80	26
API- NORM 100-315	355	B15			175	820	995	315		60	140	64	18	140	315	300	285	270	180			
API- NORM 100-400	370							355	290						360	340	330	310				
API- NORM 125-250	365	B12	150	125	190	700	890		275	48	110	49	12	170	320	285	295	260	190			
API- NORM-SN 125-250	375														340	295	315	270				
API- NORM 125-315	390	B15			200	820	1020			60	140	64	18		345	315		285	180			
API- NORM-HD 125-315	395								280						355	325	325	295				
API- NORM 125-400	405							400	315						395	370	360	335				
API- NORM 150-315	420		200	150					305						365	330	330	295	200	110	90	33
API- NORM-EFF 150-315	425								320					180	410	360	380	330				
API- NORM 150-400	495								315					170	415	380		345				
API- NORM-HD 150-400	510							450	335						425		385	340				
API- NORM 150-500	595	B17	250	200	230	930	1160	530	390	70	140	67.5	20	250	480	445	435	400	220	120		36
API- NORM-EFF 150-500	595							500								440		395				
API- NORM 200-400	750				250		1180	505	380						450	405	405	360	250	130		
API- NORM 200-500	790							500	420						500	450	455	405				
API- NORM-EFF 200-500	795								390							460		415				
API- NORM 250-400	730		300	250											475	420	430	375				
API- NORM-EFF 250-400	735								400						490		445					
API- NORM 250-450	890							545							500	440	455	395				
API- NORM 250-500	910								430						515	470	470	425				
API- NORM-EFF 250-500	905							500	450						540	475	495	430				
API- NORM 300-400	890	B24	350	300	300	1100	1400	600	500	95	170	100	25	280	610	540	565	495	310	200	100	
API- NORM-EFF 300-400	885							500	430						540	460	495	415				
API- NORM 300-500	920							600	460						560	495	515	450				
API- NORM-EFF 300-500	925								470						575	505	530	460				

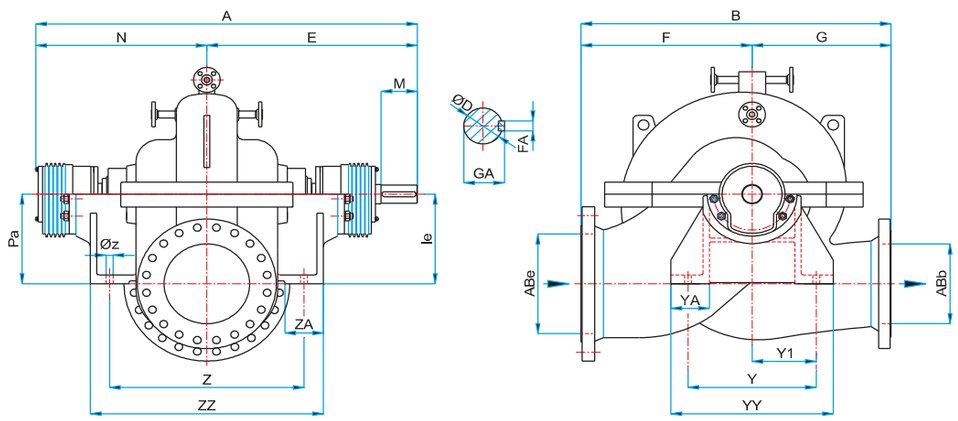
NOTE:

The weights are approximate. It is for general information. Weight varies according to application and material.

Flanges conforming to ANSI B 16.5

Türbosan reserves the right to make any changes in dimensions without giving prior notice.

API CEP SERIES DIMENSIONS TABLE



PUMP TYPE	ABb	ABe	A	B	N	E	F	G	le	Pa	M	D	GA	FA	Y	Y1	YY	YA	Z	ZZ	ZA	Øz	Weight (kg)
ÇEP-EFF 125/300			1245	680	565	680	370	310	200	200					410	205	475	100	570	730	140		405
ÇEP 125/315			1165	740	525	640		370							400	200		95	480	620	105		420
* ÇEP-EFF 125/380	125		1245	850	565	680	450	400	235	235	110	42	45	12			480	100	620	730			570
ÇEP-EFF 125/500		200	1165		525	640			295	250							500	120	530	650	130	23	645
* ÇEP 125/590			1305	950	580	725	525	425	330	330	140	62	66	18	410	205		110	650	795	150		805
ÇEP-EFF 150/300			1320	900	605	715	500	400	200	200		42	45	12	400	200	465	100		790	140		535
ÇEP-EFF 150/360			1305	860	595	710	460				110												600
ÇEP 150/400		250	1275	850	580	695	455	395	230	230		48	51.5	14	360	180			590	750	135		650
ÇEP-EFF 150/410	150	200	1305	900	595	710	450	450	260	260					400				640	780	130		665
ÇEP-EFF 150/500			1385	1030	620	765	600	430	315	315					445	222.5	525	125	680	880	195		950
* ÇEP-EFF 150/600			1355	1050	605	750		450			140	62	66	18	500	250	600	150	670	820	140		1000
ÇEP 150/630		250	1365		615	760			350	245					420	210	500	115	710	865	170		1015
* ÇEP-EFF 150/650			1355		605	750			350	350					500	250	600	150	670	820			1055
ÇEP-EFF 200/320			1345	900	615	730	450		240	240	110	42	45	12	400	200	465	100	690	830	140		690
ÇEP-EFF 200/420	200		1345	930	600	745	500	430	255	255	140	62	66	18	420	210	500	110	670	820			795
ÇEP-EFF 200/530			1500	1100	680	820	600	500	310	310		70	74.5	20	510	255	610	120	800	970	190		1220
ÇEP 200/690			1435	1250	645	790	700	550	400	250	150				500	250	600	150	700	890	160	28	1475
* ÇEP EFF 200/700			1565	1200	710	855	650		350	350							620		880	1060	190		1475
ÇEP 250/315			1320	850	585	835	450	400	225	225					420	210	500	110	620	750	130		1000
ÇEP-EFF 250/320			1465	1100	660	805	600	500	260	260					500	250	600	150	800	970	190		1025
* ÇEP-EFF 250/360		300	1465		660	805			275	275	140	62	66	18	420	210	500	140		950	150		745
ÇEP 250/400			1320	1000	585	735	550	450	225	225								110	620	770	140		810
* ÇEP-EFF 250/490	250		1465	1150	660	805	600	550	300	300					500	250	600	150	780	930	160		850
ÇEP 250/500			1320	1050	585	735	550	500	240	240					420	210	500	110	620	775	140		920
ÇEP-EFF 250/620			1595	1200	725	870	650	550	370	370		70	74.5	20	500	250	600	150	910	1090	180		1530
ÇEP 250/630		400	1755	1205	785	970	695	510	390	390	210	95	100.4	25	590	295	715	175	876	1075	235		1725
* ÇEP-EFF 250/800		300	1880	1500	850	1030	800	700	425	425	170	90	95						980	1195	190		2105
ÇEP 300/315		350	1425	1095	640	785	585	510	315	315		62	66	18	450	225	550	125	780	910	140		1130
ÇEP 300/400			1425	1005	640	785	505	500	250	250	140	70	74.5	20	500	250	610	160	680	860	160		980
ÇEP-EFF 300/450	300	400	1570	1200	715	855	650	550	310	310					490	245		180	880	1060	190	33	1380
ÇEP 300/500		350	1495	1130	675	820	580		320	320					500	250		165	780	950	165		1225
ÇEP-EFF 300/560		400	1935	1350	875	1060	700	650	350	350	170	90	95	25	640	320	760	180	1000	1250	220		2130
ÇEP-EFF 300/720			1950	1400	885	1065	750		400	400					590	295	715	175	1070	1270	190		2530
ÇEP-EFF 350/360		400	1625	1250	740	885	700	550	325	325					500	250	600	150	900	1100	180		1475
ÇEP 350/400			1505	1100	680	825	600	500	315	315	140	70	74.5	20					800	970			1545
ÇEP-EFF 350/450		500	1805	1500	830	975	850	650	400	400					640	320	760	180	1060	1310	190	28	2530
ÇEP 350/500	350	400	1505	1200	680	825	650	550	355	355					500	250	600	150	800	965			1490
ÇEP-EFF 350/520			2095	1500	955	1140	850	650	400	400					640	320	760	180	1180	1420	235		1470
* ÇEP-EFF 350/580			2100	1550	960	1140		700			170	90	95	25									1500
* ÇEP-EFF 350/720			2010	1600	915	1095	850	750	405	405					680	340	800	175	1290	1080	190	33	3035
ÇEP 400/500		500	1645	1230	750	895	680	550	355	355	140	70	74.5	20				160	930	1110	180	28	2475
* ÇEP-EFF 400/520			2130	1550	975	1155	850	700	400	400					640	320	760		1260	1450	190		2515
ÇEP-EFF 400/600	400		2060	1550	940	1120	800	750	395	395									1100	1380	240		3520
ÇEP 400/630			1785	1450	800	985	800	650	450	450					600	300	770	180	910	1085	180		2185
* ÇEP-EFF 400/700			2090	1750	955	1135	1000	750	405	405	170	90	95	25	640	320	760		1150	1400	240	33	3395
ÇEP 500/500			1910	1455	865	1045	800	655	450	450									1000	1200	180		2600
ÇEP-EFF 500/600	500	600	2130	1900	975	1155	1100	800	455	455					680	340	800		1260	1450	190		4120
ÇEP-EFF 500/700			2205	2100	1015	1090	1200	900										200	1350	1550	200		5520

NOTE:
The weights are approximate. It is for general information. Weight varies according to application and material.
Flanges conforming to ANSI B 16.5
(*) Pumps in project phase
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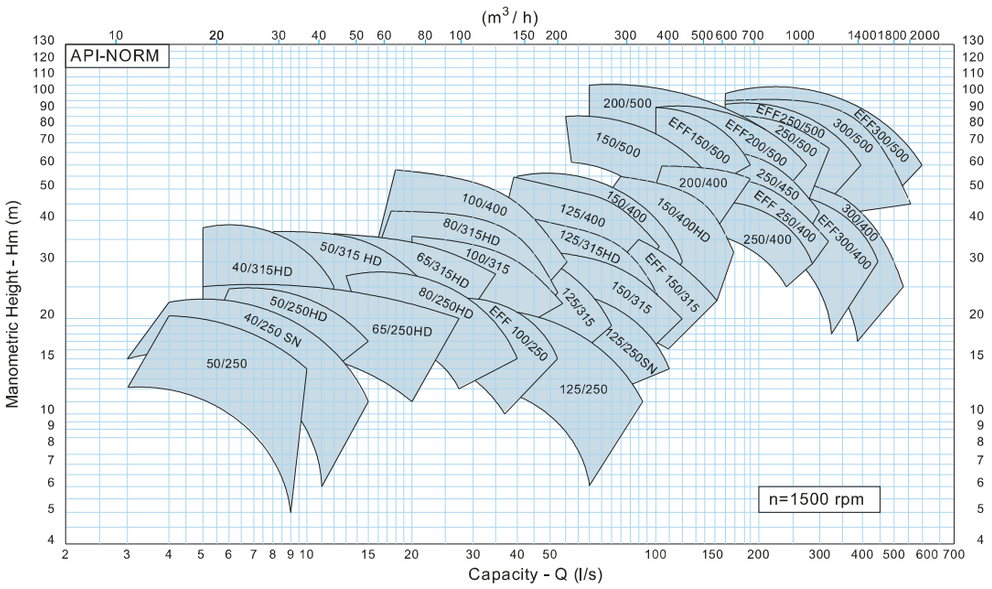
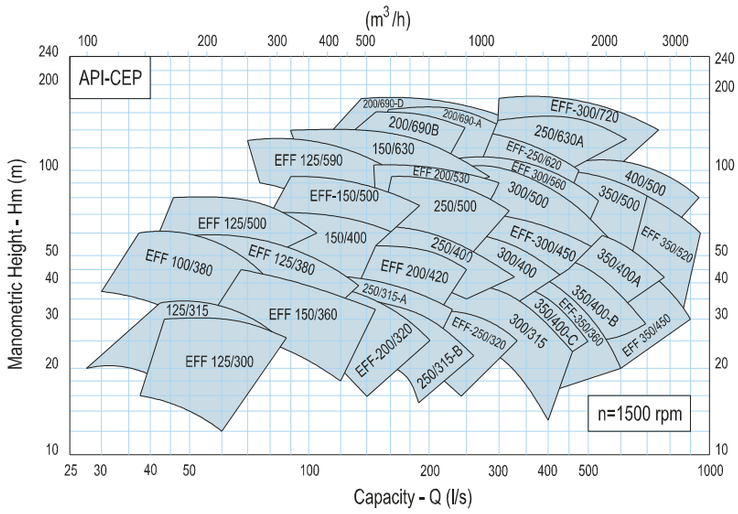
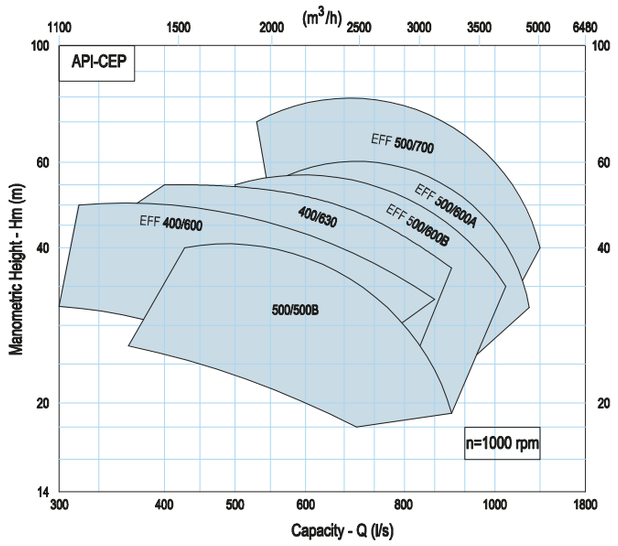
API-610 PROCESS PUMPS

API - NORM SERIES PUMPS PERFORMANCE CURVES



API - DOUBLE SUCTION SPLIT CASE PUMPS PERFORMANCE CURVES