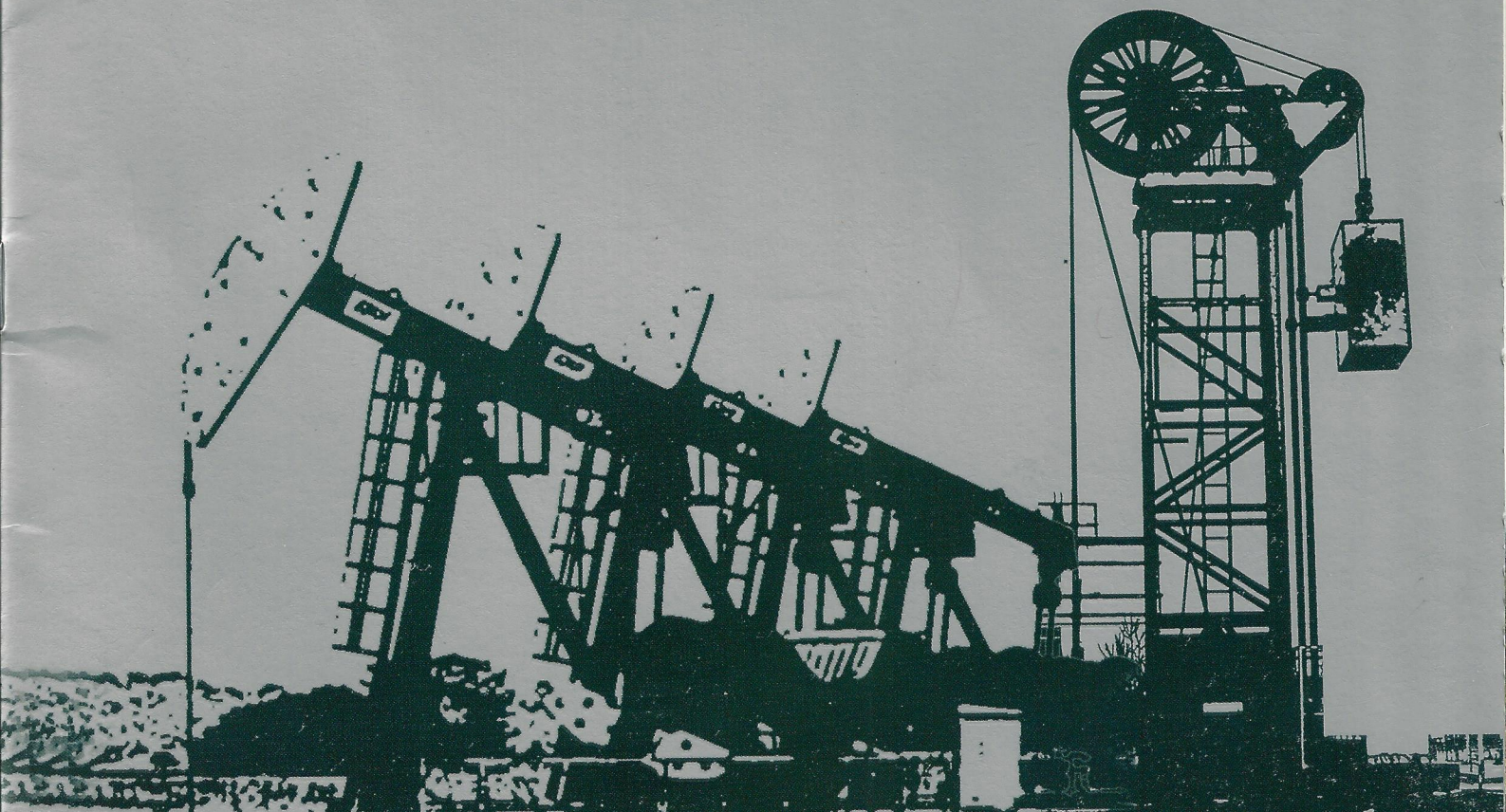




SHANDONG KERUI
PETROLEUM EQUIPMENT
Pumping unit series



CORPORATE PROFILE



Shandong Hengye Petroleum New Technology Co., Ltd. is affiliated with the Shandong Kerui Holding Group. devotes itself to the R&D and manufacture of oil recovery equipment. Its products are sold to a dozen of countries and regions, such as America, Russia, Colombia, Uzbekistan, Hungary, Venezuela, etc. In China, the company provides long service to the three large petroleum and petrochemical enterprises, including CNPC, Sinopec and CNOOC.

The company has obtained the pumping unit production license, ISO9001 quality control system certificate and API 11E certificate. The flexible automatic reversing pumping unit, researched, designed and developed by the company has achieved the national patent.

The company has variety of advanced equipment in machining, welding, heat treatment, numerical control cutting, CO₂ automatic protection welding machine, etc. It is equipped with physical and chemical laboratory, measuring room and advanced inspection equipment. Meanwhile, The company is strong in R&D and design capacity, equipped with 20 senior engineers, 100 engineers together with Solidworks three-dimensional design software, motion simulation software and finite-element analysis software.

Pumping unit product series mainly include:

- ✔ Flexible Automatic Reversing Intelligent Pumping Unit
- ✔ API C Series Conventional Beam-pumping Unit
- ✔ API M Series Front-mounted Pumping Unit
- ✔ API F Series Low Profile Pumping Unit
- ✔ API B Series Beam-balanced Pumping Unit
- ✔ API RM Series Reverse Mark Pumping Unit
- ✔ Double Horsehead Pumping Unit
- ✔ Adjustable Diameter and Changeable Torque Beam Pumping Unit
- ✔ Downward Bias Barbell Beam Pumping Unit

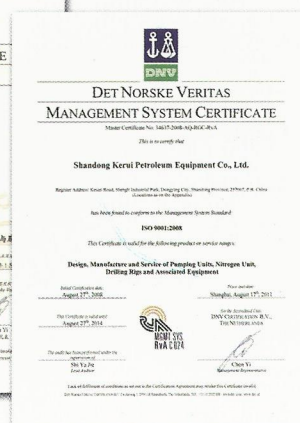
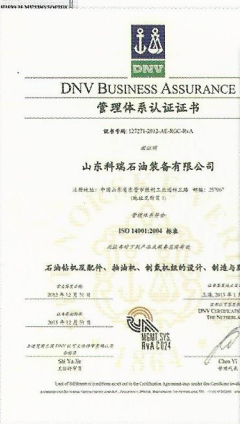
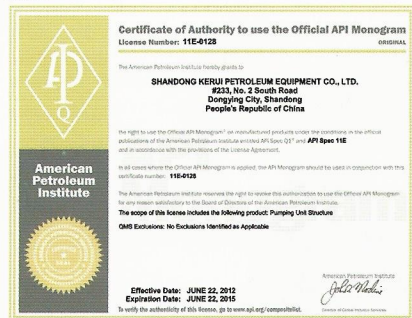
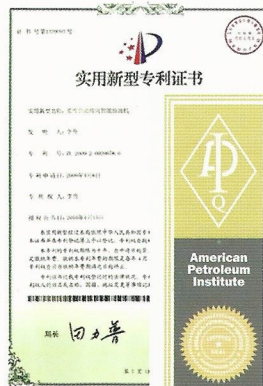
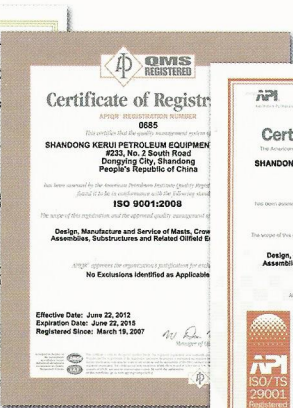
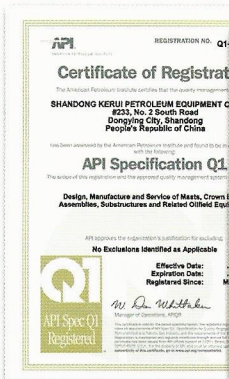


QUALITY CERTIFICATION

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Product Overview

Flexible Automatic Reversing Intelligent Pumping Unit

Flexible automatic reversing intelligent pumping unit is a brand new tower structure pumping unit that taking use of the changing moment arm curve to realize the flexible auto reversing, which makes the whole system safe and stable, as well as low energy consumption and high system efficiency. The product accords with SY/T6729-2008 Chinese non-beam pumping unit standard and other related standard.



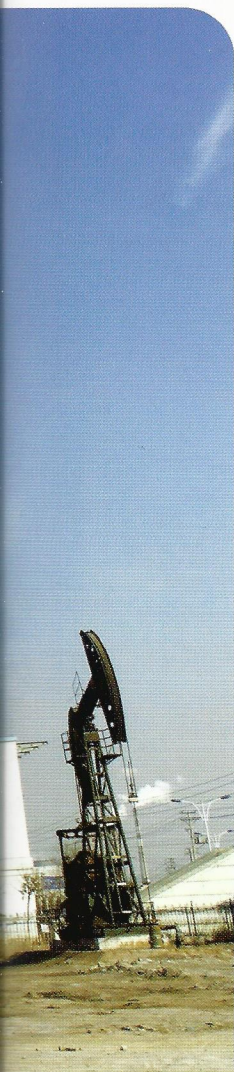
Technical parameters

Model	WCYJT12-6-30Z	WCYJT22-6-105Z	
Max. polished rod load(kN)	120	220	
Balance type	Gravity symmetrical balance	Gravity symmetrical balance	
Stroke frequency	0 ~ 2.5min ⁻¹ stepless adjustment	0 ~ 2.5min ⁻¹ stepless adjustment	
Stroke(m)	0 ~ 6m stepless adjustment	0 ~ 6m stepless adjustment	
Motor	Model	Y2-225M-6	Y2-315M-6
	Power(kw)	30	90
	Rotate speed(rpm)	980	980

Note: On customers' request, 12~22 or larger types are available.

Performance and advantage

- Safe and stable: This type of pumping unit has no impact while reversing. The center of the gravity of the whole unit is inside the tower, it has a good stability. It is able to automatically protect to avoid any accident when the sucker rod broken.
- Full torque design: Safe operation under the conditions of up stroke load is full load, down stroke load is 0. This pumping unit is specially fit for the thickened oil, low yield, hyposmosis, sand and paraffin oil well condition.
- The adjustment convenience for stroke and stroke frequency: The adjustment of the length and frequency of stroke is achieved through adjusting the stroke length button and frequency of stroke button inside the control cabinet, the stroke in the scope of 0 ~ 6 meters can be adjusted randomly; the frequency of stroke in the scope of 0 ~ 2.5min⁻¹ can be adjusted randomly, also the going up speed and down speed of the polish rod can be adjusted separately which will meet different well conditions.
- It's system efficiency is high, the flexible automatic reversing intelligent pumping unit's transmission line is short, the whole machine's mechanical efficiency can be 85% in theory; The start time of the stroke's lower dead point is adjustable, thus to enhance the sucker pump's depth ratio, and the pump's efficiency is enhanced; This machine has a low SPM, long stroke, so the stroke loss can be reduced, the whole machine's efficiency is enhanced, the energy consumption is reduced, the system's efficiency can be 43% in theory.
- With the function of solving the pump stuck issue by itself, this pumping unit's stroke can be adjusted willfully in 0 ~ 6 m, and it can work safely when the up stroke load is full and the down stroke load is 0, so it can avoid the sand jamming site, and after running a period of time, the sand jamming will be solved. So the workover cost and the loss caused by production stoppages will be saved.
- Adopting the motor For/Reversal rotation to achieve the reverse, the reversal time is adjustable, the time is 3s ordinary. By using the idle reversing technology, the reverse impact is eliminated and the motor needn't work when reversing, so the efficiency can increase about 5%; The interval of workover can be prolonged about 1.5-2 times; It can save operation cost about 10-20 thousands USD annually, it doesn't include the loss of off production and pollution.





API C Series Conventional Beam-pumping Unit

API C series beam-pumping unit adopts crank balance. It is the most common and most widely used ground power equipment in rod pumping work. Our product accords with API Spec 11E Specifications for Pumping Units and Chinese petroleum industry standard SY/T5044-2003 and other related standards.

Performance and advantage

- ✔ Modularization and virtual manufacturing technology have been adopted in the process of designing. Product structure has been optimized, and the parts are of high standardization, universalization, and serialization.
- ✔ Finite-element analysis has been adopted to the key structure to realize stable performance and high reliability.
- ✔ The reducer adopts symmetrical involute gear transmission or double circular arc herringbone gear transmission, with good sealing, low noise, smooth running and reliable durability.
- ✔ The unit has the characteristics of simple operation, easy maintenance and long service life.

Main technical parameters

NO.	Model	Rated polished rod capacity (lb)	Stroke (in)	Rated torque of reducer (lbf • in)
1	C-1280D-470-240	47,000	240、211、181	1280,000
2	C-1280D-427-216	42,700	216、185、155	1280,000
3	C-1280D-427-192	42,700	192、165、138	1280,000
4	C-1280D-365-192	36,500	192、165、138	1280,000
5	C-912D-470-240	47,000	240、211、181	912,000
6	C-912D-427-216	42,700	216、185、155	912,000
7	C-912D-427-192	42,700	192、165、138	912,000
8	C-912D-365-192	36,500	192、165、138	912,000
9	C-912D-305-192	30,500	192、165、138	912,000
10	C-912D-365-168	36,500	168、144、120	912,000
11	C-912D-305-168	30,500	168、144、120	912,000
12	C-912D-427-144	42,700	144、120、100	912,000
13	C-640D-305-192	30,500	192、165、138	640,000
14	C-640D-305-168	30,500	168、144、121	640,000
15	C-640D-365-144	36,500	144、120、100	640,000
16	C-640D-305-144	30,500	144、120、100	640,000
17	C-640D-256-144	25,600	144、120、100	640,000
18	C-640D-305-120	30,500	120、102、85	640,000
19	C-456D-305-168	30,500	168、144、121	456,000
20	C-456D-305-144	30,500	144、120、100	456,000
21	C-456D-256-144	25,600	144、120、100	456,000
22	C-456D-365-120	36,500	120、102、85	456,000
23	C-456D-305-120	30,500	120、102、85	456,000
24	C-456D-256-120	25,600	120、102、85	456,000
25	C-320D-256-144	25,600	144、120、100	320,000
26	C-320D-256-120	25,600	120、100、85	320,000
27	C-320D-213-120	21,300	120、100、85	320,000
28	C-320D-305-100	30,500	100、85、70	320,000
29	C-320D-256-100	25,600	100、85、70	320,000
30	C-320D-213-86	21,300	86、74、62	320,000

NO.	Model	Rated polished rod capacity (lb)	Stroke (in)	Rated torque of reducer (lbf • in)
31	C-228D-213-120	21,300	120、100、85	228,000
32	C-228D-173-100	17,300	100、86、72	228,000
33	C-228D-246-86	24,600	86、74、61	228,000
34	C-228D-213-86	21,300	86、74、61	228,000
35	C-228D-200-74	20,000	74、64、54	228,000
36	C-228D-173-74	17,300	74、64、54	228,000
37	C-160D-173-86	17,300	86、74、62	160,000
38	C-160D-200-74	20,000	74、64、54	160,000
39	C-160D-173-74	17,300	74、64、54	160,000
40	C-160D-143-74	14,300	74、64、54	160,000
41	C-160D-173-64	17,300	64、54、44	160,000
42	C-114D-119-86	11,900	86、72、59	114,000
43	C-114D-143-74	14,300	74、62、51	114,000
44	C-114D-173-64	17,300	64、54、44	114,000
45	C-114D-143-64	14,300	64、52、40	114,000
46	C-114D-133-54	13,300	54、45、36	114,000
47	C-80D-119-64	11,900	64、53、42	80,000
48	C-80D-133-54	13,300	54、45、36	80,000
49	C-80D-119-54	11,900	54、45、36	80,000
50	C-80D-133-48	13,300	48、40、32	80,000
51	C-80D-109-48	10,900	48、37、25	80,000
52	C-57D-76-54	7,600	54、41、28	57,000
53	C-57D-109-48	10,900	48、37、25	57,000
54	C-57D-95-48	9,500	48、37、25	57,000
55	C-57D-89-42	8,900	42、33、23	57,000
56	C-57D-76-42	7,600	42、33、23	57,000
57	C-40D-76-48	7,600	48、37、25	40,000
58	C-40D-89-42	8,900	42、33、23	40,000
59	C-40D-76-42	7,600	42、33、23	40,000
60	C-40D-89-36	8,900	36、28、20	40,000
61	C-25D-67-36	6,700	36、28、20	25,000
62	C-25D-56-36	5,600	36、28、20	25,000
63	C-25D-53-30	5,300	30、20	25,000



API M Series Front-mounted Pumping Unit

API M Front-mounted pumping unit adopts crank-balance. The special structure reduces horsehead acceleration during upstroke, thus reducing static torque peak, increasing load capacity and saving energy. It is widely used in oil fields throughout the world. Our product accords with API Spec 11E Specifications for Pumping Units and Chinese petroleum industry standard SY/T5044-2003 and other related standards.

Performance and advantage

- The gear reducer lies at the front of samson post. Impact structure, convenient operation and maintenance, longer service life;
- Good balance effect reduces maximum torque of gear reducer. Energy-saving, smooth and stable operation;
- The load carrying capacity is more reasonable; it is not easy for pitman arm or equalizer get fatigue damage; less mechanical wear and lower noise.

NO.	Model	Rated polished rod capacity (lb)	Stroke (in)	Rated torque of reducer (lbf · in)
1	M-912D-365-168	36,500	168、149、130	912,000
2	M-912D-305-192	30,500	192、168、144	912,000
3	M-640D-365-168	36,500	168、149、130	640,000
4	M-456D-305-168	30,500	168、149、130	456,000
5	M-456D-256-144	25,600	144、128、112	456,000
6	M-320D-305-120	30,500	120、104、88	320,000
7	M-228D-256-120	25,600	120、104、88	228,000
8	M-228D-173-100	17,300	100、84、68	228,000
9	M-160D-173-86	17,300	86、72、58	160,000



API F Series Low Profile Pumping Unit

API F Low Profile Pumping Unit is a new type of non-beam pumping unit. It adopts flexible transmission and can be folded. This is a new type of ground power equipment in rod pumping work. Our product accords with API Spec 11E Specifications for Pumping Units and Chinese petroleum industry standard SY/T5044-2003 and other related standards.

Performance and advantage

- ✔ Flexible transmission of rotary drum and belt reduces impact load and extends service life of gear reducer; Unique phased cranks and complete crank balance have a good energy saving effect.
- ✔ The gear reducer adopts symmetrical divided-flow double arc herringbone gear. It is featured with better seal, lower noise, steady and reliable running.
- ✔ Mass-to-volume ratio of overall unit is low. It can be folded to make it convenient to install and transport.
- ✔ It has simple structure, convenient operation and maintenance, and better cost performance.

NO.	Model	Rated polished rod capacity (lb)	Stroke (in)	Rated torque of reducer (lbf · in)
1	F-320D-256-120	25,600	120、102、84	320,000
2	F-320D-256-100	25,600	100、86、74	320,000
3	F-320D-246-86	24,600	86、74、62	320,000
4	F-228D-143-100	14,300	100、86、74	228,000
5	F-228D-246-86	24,600	86、74、62	228,000
6	F-228D-213-74	21,300	74、64、54	228,000
7	F-160D-173-86	17,300	86、74、62	160,000
8	F-160D-200-74	20,000	74、64、54	160,000



API B Series Beam-balanced Pumping Unit

API B series pumping unit is a kind of light-weight beam-pumping unit. It adopts beam balance and is widely used as ground power equipment in rod pumping work. Our product accords with API Spec 11E Specifications for Pumping Units and Chinese petroleum industry standard SY/T5044-2003 and other related standards.

Performance and advantage

- ✔ Simple structure, convenient operation and maintenance, long service life.
- ✔ Involute or double arc herringbone gear reducer works smoothly and stably.
- ✔ Light-weighted, convenient to install and transport.
- ✔ Suitable for the oil-pumping work of lower stroke length, light load and shallow well.

NO.	Model	Rated polished rod capacity (lb)	Stroke (in)	Rated torque of reducer (lbf · in)
1	B-80D-76-64	7,600	64、54、49	80,000
2	B-80D-76-54	7,600	54、45、41	80,000
3	B-80D-109-48	10,900	48、41、37	80,000
4	B-80D-109-42	10,900	42、35、32	80,000
5	B-57D-76-54	7,600	54、45、41	57,000
6	B-57D-109-48	10,900	48、41、37	57,000
7	B-57D-109-42	10,900	42、35、32	57,000
8	B-40D-76-48	7,600	48、40、36	40,000
9	B-40D-89-42	8,900	42、35、32	40,000
10	B-40D-76-42	7,600	42、35、32	40,000
11	B-40D-89-36	8,900	36、31、27	40,000



API RM Series Reverse Mark Pumping Unit

API RM Reverse Mark Pumping Unit is similar in appearance to conventional pumping unit. It adopts phased crank, and is widely used as energy efficient pumping unit in rod pumping work. Our product accords with API Spec 11E Specifications for Pumping Units and Chinese petroleum industry standard SY/T5044-2003 and other related standards.

Performance and advantage

- Modularization and virtual manufacturing technology have been adopted in the process of designing. It is similar in appearance and motion characteristics as conventional pumping unit.
- The reducer adopts symmetrical involute gear transmission or double circular arc herringbone gear transmission, with good sealing, low noise, smooth running and reliable durability.
- Phase angle on crank reduces maximum torque peak of gear reducer; increase crank angle between two limit positions to improve dynamic performance, reduce motor power; obvious energy-saving effect.
- The structure is optimized; the parts are of high standardization, universalization, and serialization. Operation simple, ease of maintenance and long service life.

NO.	Model	Rated polished rod capacity (lb)	Stroke (in)	Rated torque of reducer (lbf · in)
1	RM-912D-365-192	36,500	192、158、127	912,000
2	RM-640D-305-168	30,500	168、139、111	640,000
3	RM-640D-256-144	25,600	144、119、96	640,000
4	RM-456D-305-120	30,500	120、100、80	456,000
5	RM-456D-256-120	25,600	120、100、80	456,000
6	RM-320D-256-144	25,600	144、119、96	320,000
7	RM-320D-213-120	21,300	120、100、80	320,000
8	RM-228D-256-100	25,600	100、83、67	228,000
9	RM-228D-173-74	17,300	74、62、51	228,000



Double Horsehead Pumping Unit

Double horsehead pumping unit is a kind of energy-saving product with long stroke and low stroke frequency. It is suitable for the recovery of moderate and low viscosity oil and high water-cut crude oil. The product accords with Chinese petroleum industry standard SY/T5044-2003 and other related standards.

Performance and advantage

- ✔ It adopts reducing arc-shaped back walking beam and flexible connection between walking beam and equalizer. Advantages of conventional pumping unit are retained.
- ✔ Long stroke length, small dynamic load, little torque fluctuation, high efficiency, low energy consumption, smooth work and easy to start.
- ✔ The stroke length is increased by 70% around, energy consumption reduced by 20~30% and power reduced by 50%, compared with conventional pumping unit of the same model.

NO.	Model	Rated polished rod capacity (kN)	Stroke (m)	Frequency (min^{-1})	Rated torque of reducer ($\text{kN}\cdot\text{m}$)
1	CYJS6-2.5-26HB	60	2.5/2.1/1.8	5/7/9	26
2	CYJS8-3-37HB	80	3/2.5/2.1	5/7/9	37
3	CYJS10-5-48HB	100	5/4.2/3.6	3/4/5	48
4	CYJS12-5-53HB	120	5/4.2/3.6	3/4/5	53



Adjustable Diameter and Changeable Torque Beam Pumping Unit

Adjustable diameter and changeable torque beam pumping unit is technical innovation based on beam pumping unit. It changed traditional balance type and has good balance effect. The product accords with Chinese petroleum industry standard SY/T5044-2003 and other related standard.

Performance and advantage

- ✔ Walking beam achieves crank offset balance with the unique design. It is simple to adjust. The weight box is close to ground as horsehead reaches the top dead point, which is easy to add or subtract the small counterweight of weight box.
- ✔ It is in good balance, adjusting the balance precisely according to load peak value.
- ✔ Locking up walking beam and samson post while adjusting stroke. It changes the situation of low security, high labor intensity and being assisted by crane.

NO.	Model	Rated polished rod capacity(kN)	Stroke (m)	Frequency (min^{-1})	Rated torque of reducer ($\text{kN}\cdot\text{m}$)
1	CYJY5-2.1-18HY	50	2.1/1.7/1.4	3/4/5	18
2	CYJY6-2.5-26HY	60	2.5/2.1/1.8	4/5/6	26
3	CYJY8-3-37H Y	80	3/2.5/2.0	4/5/6	37
4	CYJY10-3-53HY	100	3/2.5/2.1	4/5/6	53



Downward Bias Barbell Beam Pumping Unit

Downward bias barbell beam pumping unit is similar in structure to conventional pumping unit. Downward bias barbell rigid device is added on the basis of conventional pumping unit. It is widely used in rod pumping work. The product accords with Chinese petroleum industry standard SY/T5044-2003 and other related standard.

Performance and advantage

- ✔ Smooth change of gear reducer torque; torque peak is reduced; obvious energy-saving effect.
- ✔ Working condition of gear reducer is improved; service ability is increased and service life of equipment is extended.
- ✔ It integrates all the advantages of conventional pumping unit, and is featured with stable performance, simple structure, convenient operation and maintenance.

NO.	Model	Rated polished rod capacity(kN)	Stroke (m)	Frequency (min ⁻¹)	Rated torque of reducer (kN·m)
1	CYJY5-2.1-18HF	50	2.1/1.7/1.4	3/4/5	18
2	CYJY6-2.5-26HF	60	2.5/2.1/1.8	4/5/6	26
3	CYJY8-3-37HF	80	3/2.5/2.0	4/5/6	37
4	CYJY10-3-53HF	100	3/2.5/2.1	4/5/6	53

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