

## 1. Features and Usage Range

The main body of TA(DD) elevator is made of high-strength alloy steel, processed by special heat treatment as to obtain the good plasticity and tenacity. It is designed in accordance with API Spec 8C for Drilling and Production Hoisting Equipment. Its residual deformation is not more than 0.2% through the max. Test load, and no damage and deformation happen through Non-Destructive Examination after twenty-four hours.

It is a center latch square shoulder elevator, and meets with the requirements in the professional standard:GB/T19190 Petroleum and Natural Gas Industries-Drilling and Production Equipment -Hoisting Equipment. It is designed on the basis of theory of uniform strength and equipped with the safety device of spring valve. The TA(DD) elevator is reasonable in design, convenient in operation and reliable in safety.

The TA(DD) type elevator is a lifting tool utilized in the drilling and repairing of oil well, applicable to drill pipe, drill collar, tubing or casing.

## 2. Main Technical Parameter

**Drill Collar Elevator**

Collar O.D	Elevator Recess Dia.	Elevator Bore Dia. (d1)		Max. Working Load	
		in	mm	KN	tons
2 <sup>7</sup> / <sub>8</sub>	—	2 <sup>9</sup> / <sub>16</sub>	65.09	315 585 900 1350 2250	35 65 100 150 250
3 <sup>1</sup> / <sub>8</sub>	—	2 <sup>13</sup> / <sub>16</sub>	71.56		
3 <sup>1</sup> / <sub>2</sub>	—	3 <sup>3</sup> / <sub>16</sub>	81		
4 <sup>1</sup> / <sub>8</sub>	3 <sup>11</sup> / <sub>16</sub>	3 <sup>13</sup> / <sub>16</sub>	96.84		
4 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>8</sub>	111.13		
5	4 <sup>1</sup> / <sub>2</sub>	4 <sup>5</sup> / <sub>8</sub>	117.48		
5 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	4 <sup>7</sup> / <sub>8</sub>	123.83		
5 <sup>1</sup> / <sub>2</sub>	5	5 <sup>1</sup> / <sub>8</sub>	130.18	1350 2250	150 250
5 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	133.35		
6	5 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	139.70		
6 <sup>1</sup> / <sub>4</sub>	5 <sup>5</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>4</sub>	146.05		
6 <sup>1</sup> / <sub>2</sub>	5 <sup>7</sup> / <sub>8</sub>	6	152.40		
6 <sup>3</sup> / <sub>4</sub>	6	6 <sup>3</sup> / <sub>16</sub>	157.16		
7	6 <sup>1</sup> / <sub>4</sub>	6 <sup>7</sup> / <sub>16</sub>	163.51		
7 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	6 <sup>11</sup> / <sub>16</sub>	169.86		
7 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>	6 <sup>15</sup> / <sub>16</sub>	176.21		
7 <sup>3</sup> / <sub>4</sub>	7	7 <sup>3</sup> / <sub>16</sub>	182.56		

8	7 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>16</sub>	188.91		
8 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>	7 <sup>11</sup> / <sub>16</sub>	195.26		
8 <sup>1</sup> / <sub>2</sub>	7 <sup>3</sup> / <sub>4</sub>	7 <sup>15</sup> / <sub>16</sub>	201.61		
9	8 <sup>1</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	212.73		
9 <sup>1</sup> / <sub>2</sub>	8 <sup>5</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	225.43		
9 <sup>3</sup> / <sub>4</sub>	8 <sup>7</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>8</sub>	231.78		
10	9 <sup>1</sup> / <sub>8</sub>	9 <sup>3</sup> / <sub>8</sub>	238.13		
10 <sup>3</sup> / <sub>4</sub>	9 <sup>5</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>8</sub>	257.18		
11	10 <sup>1</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>	263.53		
11 <sup>1</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>8</sub>	10 <sup>5</sup> / <sub>8</sub>	269.88		

### Drill Pipes Elevators

Specification	Bore diameter(mm)			Rated load KN(tons)	Drill pipe size and type	
	GB Standard		API Standard		in	mm
	Top bore	Bottom bore	Top and bottom bore diameter			
2 <sup>3</sup> / <sub>8</sub> EU	69	63	—	900(100)	2 <sup>3</sup> / <sub>8</sub> EU	60.3
2 <sup>7</sup> / <sub>8</sub> EU	86	76	85.73		2 <sup>7</sup> / <sub>8</sub> EU	73.0
3 <sup>1</sup> / <sub>2</sub> EU	103	92	103.19		3 <sup>1</sup> / <sub>2</sub> EU	88.9
4IU	110	105	109.54	1125(125)	4IU	101.6
4EU	118	105	122.24		4EU	101.6
4 <sup>1</sup> / <sub>2</sub> IU	122	118	122.24	1350(150)	4 <sup>1</sup> / <sub>2</sub> IU	114.3
4 <sup>1</sup> / <sub>2</sub> IEU	122	118	122.24		4 <sup>1</sup> / <sub>2</sub> IEU	114.3
4 <sup>1</sup> / <sub>2</sub> EU	134	118	134.94	2250(250)	4 <sup>1</sup> / <sub>2</sub> EU	114.3
5IEU	134	131	134.94		5IEU	127.0
5 <sup>1</sup> / <sub>2</sub> IEU	149	144	149.23		5 <sup>1</sup> / <sub>2</sub> IEU	139.7

NOTE: IU-Internal Upset drill rod,  
 EU-External Upset drill rod,  
 IEU-Internal & External Upset drill pipe.

### Tubing Elevators

Tubing Type	Type	Tubing O.D	Dia. of Bore		Max. Load	
		in	d1	d2	tons	KN
NU	1.05	1.05	28.58	28.58	35	315
	1.315	1.315	35.31	35.31		
	1.66	1.66	44.04	44.04	65	585
	1.90	1.90	50.39	50.39		
	2 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	62.31	62.31	100	900
	2 <sup>7</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	75.01	75.01		
	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	90.88	90.88	250	2250
	4	4	103.58	103.58		
	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	116.66	116.66	350	3150
	5	5	129.36	129.36		

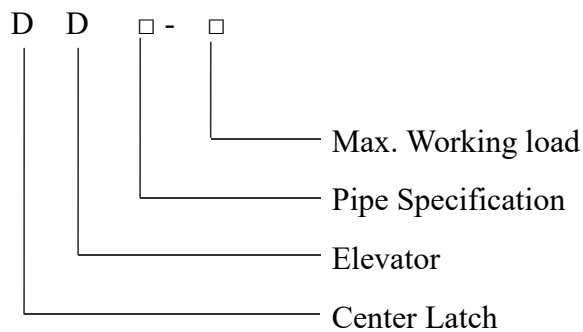
EU	1.05EU	1.05EU	36.12	36.12		
	1.315EU	1.315EU	40.08	40.08		
	1.66EU	1.66EU	48.82	48.82		
	1.90EU	1.90EU	55.96	55.96		
	2 <sup>3</sup> / <sub>8</sub> EU	2 <sup>3</sup> / <sub>8</sub> EU	68.66	68.66		
	2 <sup>7</sup> / <sub>8</sub> EU	2 <sup>7</sup> / <sub>8</sub> EU	81.36	81.36		
	3 <sup>1</sup> / <sub>2</sub> EU	3 <sup>1</sup> / <sub>2</sub> EU	98.02	98.02		
	4 EU	4 EU	110.72	110.72		
	4 <sup>1</sup> / <sub>2</sub> EU	4 <sup>1</sup> / <sub>2</sub> EU	123.42	123.42		

Note: According to table 1C of API Spec 8C , the dia. of bottom bore(d2) of the upset tubing elevator could be processed the same as the dia. of top bore(d1).

### Casing Elevators

Specification	Top and bottom bore diameter(mm)		Rated load KN(tons)	External diameter of casings	
	GB Standard	API Standard		in	mm
4 <sup>1</sup> / <sub>2</sub>	117	116.69	900(100) 1350(150) 2250(250) 3150(350)	4 <sup>1</sup> / <sub>2</sub>	114.30
4 <sup>3</sup> / <sub>4</sub>	123	123.04		4 <sup>3</sup> / <sub>4</sub>	120.65
5	130	130.18		5	127.00
5 <sup>1</sup> / <sub>2</sub>	143	142.88		5 <sup>1</sup> / <sub>2</sub>	139.70
5 <sup>3</sup> / <sub>4</sub>	149	149.23		5 <sup>3</sup> / <sub>4</sub>	146.05
6	156	155.58		6	152.40
6 <sup>5</sup> / <sub>8</sub>	171	171.45		6 <sup>5</sup> / <sub>8</sub>	168.28
7	181	180.98		7	177.80
7 <sup>5</sup> / <sub>8</sub>	198	197.64		7 <sup>5</sup> / <sub>8</sub>	193.68
7 <sup>3</sup> / <sub>4</sub>	201	200.81		7 <sup>3</sup> / <sub>4</sub>	196.85
8 <sup>5</sup> / <sub>8</sub>	223	223.04		8 <sup>5</sup> / <sub>8</sub>	219.80
9	233	232.56		9	228.60
9 <sup>5</sup> / <sub>8</sub>	248	248.44		9 <sup>5</sup> / <sub>8</sub>	244.48
9 <sup>7</sup> / <sub>8</sub>	255	254.79		9 <sup>7</sup> / <sub>8</sub>	250.83
10 <sup>3</sup> / <sub>4</sub>	278	277.83		10 <sup>3</sup> / <sub>4</sub>	273.05
11 <sup>3</sup> / <sub>4</sub>	303	303.23		11 <sup>3</sup> / <sub>4</sub>	298.45

### 3. Type Formation and Its Representative Meaning



## 4. Instruction

1. Select elevator, which correspond with the spec of drill collar.
2. Before operation, check operation adaptability of elevator when shutting or opening, and reach ability for latch, and its latch whether be clipped or not. If there are abnormal phenomena, quickly remove it.
3. When operating if elevator clips drill collar, check each part whether reach or not. Especially the latch assembly should be reliable It can be operated for lifting or lowering only at the case of eight clipping of each latch.
4. Each main part is checked strictly though flaw detection before dispatch; after usage for a period or reparation, check each main part whether flaw or vestige happens, if happens, do not use it.
5. Elevator should vertical hang in working.
6. Over-max load (total of moving load and non-moving load) is forbidden.
7. Use is strictly forbidden when the elevator is found to have cracks or excessively worn-out surfaces of load-bearing(the total worn-out quantity $\geq$ 2mm).

## 5. Maintenance

- 1、 Before usage, put it at dry, venting place to prevent from rusting and damaging.
- 2、 After usage, clean oil dirt at elevator, check each part whether flew, vestige happens or not, and coat clean lubricating grease, and put it at dry place in house.

**The elevator must not be welded and repaired without the technical information of our corporation.**



In case the repairing factory conduct strict and proper maintenance and inspection in conformity with standard **API RP 8B** “Recommended Practice for Procedures for Inspection , Maintenance , Repair and Remanufacture of Hoisting Equipment”.

**When elevator grip pipe, latch lock must be in correct place to prevent it from skidding.**

Don't select the spare parts manufactured by other companies. Otherwise our company is not responsible for quality question.