

I, Usage and Application

SL-U2 series of spiral screen is mainly used in industry of coal dressing, electricity generation, cement, oil refining, fertilizer, etc. Its function is to screen and separate dry&wet coal, not only to have good performance in screening dry material , but also to avoid sieve hole blocked in screening wet material especially fine size with moisture. It has high rate of screening which is new equipment in sieving wet, stick, fine coal.

II, Working Principle

Screen of spiral sieve are formed by one row of parallel arranged screw shaft. Screw shaft includes steep-lead left-hand thread and right-hand thread, they take each half of screen surface. When the machine starts, screw shaft would move in spiral direction, material would be pushed in by threaded bar of screw, then passed through screen holes which are formed by threaded bar or groove with adjacent threaded bar or groove.

Screw shaft has a high rotation speed, material moving speed on screen can be 0.5-1 s/m, so this equipment has big capacity. Meantime, when block material slides on screw surface, it can wash out wet powder which is stick to its surface. That means no matter how much moisture material contains, after sieved, the screen surface would always be clean, screen holes will also not be blocked. When screening, material would always be on different radial location of screw shaft, when screw shaft rotates, because of different linear speed of material, it can make material screened loosely, also after several times sieve, material rolls and falls through which makes it has very high efficiency of screening. This working principle is definitely different from vibrating screen equipment which has controlled screen area for decades of years.

Vibrating screen tosses material by vibration, but when occurring wet and sticky material, powder would easily form a layer and block screen holes which would make 100% sieve much different. Especially for 8, 10, 13mm screen holes, the machine cannot even have screen classification. Besides, the moving power also comes from material itself when the screen inclines, material would be moved slowly and passively, by this way, working efficiency is surely very low. It is called passive screen. But for spiral sieve, it pushes material to move forward by rotation of screw, screen hole is dynamic which can make screen through rate in a high level, it is called positive screen. What's more, adjacent two screws which forms screen holes have contrary linear direction when forming holes' projection direction. Material rolls and moves by a pair of couple function, not by function of squeezing, so there will not be new crushing situation.

III, Features

This spiral screen is formed by 2 sets, 3 sets or more than 3 sets of same unit, each set forms by ladder type and connected by transition plate. The unit includes frame, driving box, motor and screw shaft. Screen surface is formed by a row of screw shaft which has right-hand (left-hand) big lead screw, surface is firm and durable, it also has big feeding rate. Front part of spiral screw is supported by shaft stool of frame, back part is connected by rigidity coupling and driving box. Electric motor drives the driving box via V-belt, then screw shaft could have much power to do the screening. Besides, in order to avoid overloading, there are safety protection device in both mechanical and electrical parts., If doing combination with different unit which is higher than grade 3, then we would get several screened product, this makes sieve process easier. It has features as below:

- ① High rate for through screen;
- ② Wet sticky coal will not block screen hole;

- ③ No vibration, low noise;
- ④ Fast moving speed, big capacity (2 times bigger than vibrating screen);
- ⑤ Sieve surface is sturdy and durable;
- ⑥ No new crushing;
- ⑦ When used in electricity station, full closed product can protect better environment of coal production system ;

IV, Detailed Instruction For End Product

0-100mm standard series of screen technical feature

Item	Standard series	Area (M2)	Capacity (T/h)	Efficiency (%)	Feeding Size (mm)	Feeding Moisture (%)	Inclination angle of screen (Degree)	Units (pcs)	Dimension L×W×H (M)	Weight (t)	Motor Power (Kw)
1	SL—U ₂ 100/2.5—C	15	≤2000	90	0~500	No Limitation	0	4	7.6×3.5×3	24.4	11×8
2	SL—U ₂ 100/2.5—B	11.25	≤1600	90				3	5.8×3.5×2.3	18.3	11×6

3	SL—U ₂ 100/2—B	9	≤1200	90				3	5.8×3×2.3	16.8	7.5×6
4	SL—U ₂ 100/2—A	6	≤800	85				2	4×3×1.6	11.2	7.5×4
5	SL—U ₂ 100/1.5—B	6.75	≤700	90				3	5.8×2.5×2.3	14.4	5.5×6
6	SL—U ₂ 100/1.5—A	4.5	≤500	85				2	4×2.5×1.6	9.6	5.5×4

0-80mm standard series of screen technical feature

Item	Standard series	Area (M ²)	Capacity (T/h)	Efficiency (%)	Feeding Size	Feeding Moist	Inclination angle	Units (pcs)	Dimension L×W×H (M)	Weight (t)	Motor Power (Kw)
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					(mm)	ure (%)	of screen (Degree)				
1	SL—U ₂ 80/2.5—C	15	≤1500	90	0~500	No limitation	0	4	7.6×3.5×3	24.4	11×8
2	SL—U ₂ 80/2.5—B	11.25	≤1200	90				3	5.8×3.5×2.3	18.3	11×6
3	SL—U ₂ 80/2—B	9	≤1000	90				3	5.8×3×2.3	16.8	7.5×6
4	SL—U ₂ 80/2—A	6	≤700	85				2	4×3×1.6	11.2	7.5×4
5	SL—U ₂ 80/1.5—B	6.75	≤600	90				3	5.8×2.5×2.3	14.4	5.5×6
6	SL—U ₂ 80/1.5—A	4.5	≤400	85				2	4×2.5×1.6	9.6	5.5×4

0-50mm standard series of screen technical feature

Item	Standard series	Area (M2)	Capacity (T/h)	Efficiency (%)	Feeding Size	Feeding Moist	Inclination angle	Units (pcs)	Dimension L×W×H (M)	Weight (t)	Motor Power (Kw)
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					(mm)	ure (%)	of screen (Degree)				
1	SL—U ₂ 50/2.5—C	15	≤1300	90	0~500	No limitation	0	4	7.6×3.5×3	22	11×8
2	SL—U ₂ 50/2—C	12	≤1000	90				4	7.6×3×3	18	7.5×8
3	SL—U ₂ 50/2—B	9	≤700	90				3	5.8×3×2.3	13.5	7.5×6
4	SL—U ₂ 50/2—A	6	≤500	85				2	4×3×1.6	9	7.5×4
5	SL—U ₂ 50/1.5—B	6.75	≤400	90				3	5.8×2.5×2.3	10.8	5.5×6
6	SL—U ₂ 50/1.5—A	4.5	≤300	85				2	4×2.5×1.6	7.2	5.5×4

0-40mm standard series of screen technical feature

Item	Standard series	Area (M ²)	Capacity (T/h)	Efficiency (%)	Feeding Size	Feeding Moist	Inclination angle	Units (pcs)	Dimension L×W×H (M)	Weight (t)	Motor Power (Kw)
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					(mm)	ure (%)	of screen (Degree)				
1	SL—U ₂ 40/2.5—C	15	≤1100	90	0~500	No limitation	0	4	7.6×3.5×3	22	11×8
2	SL—U ₂ 40/2.5—B	11.25	≤900	85				3	5.8×3.5×2.3	16.5	11×6
3	SL—U ₂ 40/2—C	12	≤800	90				4	7.6×3×2.3	18	7.5×8
4	SL—U ₂ 40/2—B	9	≤600	90				3	5.8×3×2.3	13.5	7.5×6
5	SL—U ₂ 40/2—A	6	≤400	85				2	4×3×1.6	9	7.5×4
6	SL—U ₂ 40/1.5—B	6.75	≤300	90				3	5.8×2.5×2.3	10.8	5.5×6
7	SL—U ₂ 40/1.5—A	4.5	≤200	85				2	4×2.5×1.6	7.2	5.5×4

0-25mm standard series of screen technical feature

Item	Standard series	Area (M2)	Capacity (T/h)	Efficiency (%)	Feeding Size (mm)	Feeding Moisture (%)	Inclination angle of screen (Degree)	Units (pcs)	Dimension L×W×H (M)	Weight (t)	Motor Power (Kw)
1	SL—U ₂ 25/2.5—C	15	≤800	90	0~500	No limitation	0	4	7.6×3.5×3	22	11×8
2	SL—U ₂ 25/2.5—B	11.25	≤700	85				3	5.8×3.5×2.3	16.5	11×6
3	SL—U ₂ 25/2—C	12	≤600	90				4	7.6×3×3	18	7.5×8
4	SL—U ₂ 25/2—B	9	≤450	90				3	5.8×3×2.3	13.5	7.5×6
5	SL—U ₂ 25/2—A	6	≤350	85				2	4×3×1.6	9	7.5×4
6	SL—U ₂ 25/1.5—B	6.75	≤300	90				3	5.8×2.5×2.3	10.8	5.5×6
7	SL—U ₂ 25/1.5—A	4.5	≤200	85				2	4×2.5×1.6	7.2	5.5×4

0-20mm standard series of screen technical feature

Item	Standard series	Area (M2)	Capacity (T/h)	Efficiency (%)	Feeding Size (mm)	Feeding Moisture (%)	Inclination angle of screen (Degree)	Units (pcs)	Dimension L×W×H (M)	Weight (t)	Motor Power (Kw)																																																														
1	SL—U ₂ 20/2.5—C	15	500	90	0~200	>8	0	4	7.6×3.5×3	22	11×8																																																														
			600			<8						2	SL—U ₂ 20/2.5—B	11.25	400	85	>8	3	5.8×3.5×2.3	16.5	11×6	500	<8	3	SL—U ₂ 20/2—C	12	350	90	>8	4	7.6×3×2.3	18	7.5×8	450	<8	4	SL—U ₂ 20/2—B	9	300	90	>8	3	5.8×3×2.3	13.5	7.5×6	400	<8	5	SL—U ₂ 20/2—A	6	250	80	>8	2	4×3×1.6	9	7.5×4	300	<8	6	SL—U ₂ 20/1.5—B	6.75	200	90	>8	3	5.8×2.5×2.3	10.8	5.5×6	250	<8	7	SL—U ₂ 20/1.5—A
2	SL—U ₂ 20/2.5—B	11.25	400	85		>8		3	5.8×3.5×2.3	16.5	11×6																																																														
			500			<8						3	SL—U ₂ 20/2—C	12	350	90	>8	4	7.6×3×2.3	18	7.5×8	450	<8	4	SL—U ₂ 20/2—B	9	300	90	>8	3	5.8×3×2.3	13.5	7.5×6	400	<8	5	SL—U ₂ 20/2—A	6	250	80	>8	2	4×3×1.6	9	7.5×4	300	<8	6	SL—U ₂ 20/1.5—B	6.75	200	90	>8	3	5.8×2.5×2.3	10.8	5.5×6	250	<8	7	SL—U ₂ 20/1.5—A	4.5	150	80	>8	2	4×2.5×1.6	7.2	5.5×4				
3	SL—U ₂ 20/2—C	12	350	90		>8		4	7.6×3×2.3	18	7.5×8																																																														
			450			<8						4	SL—U ₂ 20/2—B	9	300	90	>8	3	5.8×3×2.3	13.5	7.5×6	400	<8	5	SL—U ₂ 20/2—A	6	250	80	>8	2	4×3×1.6	9	7.5×4	300	<8	6	SL—U ₂ 20/1.5—B	6.75	200	90	>8	3	5.8×2.5×2.3	10.8	5.5×6	250	<8	7	SL—U ₂ 20/1.5—A	4.5	150	80	>8	2	4×2.5×1.6	7.2	5.5×4																
4	SL—U ₂ 20/2—B	9	300	90		>8		3	5.8×3×2.3	13.5	7.5×6																																																														
			400			<8						5	SL—U ₂ 20/2—A	6	250	80	>8	2	4×3×1.6	9	7.5×4	300	<8	6	SL—U ₂ 20/1.5—B	6.75	200	90	>8	3	5.8×2.5×2.3	10.8	5.5×6	250	<8	7	SL—U ₂ 20/1.5—A	4.5	150	80	>8	2	4×2.5×1.6	7.2	5.5×4																												
5	SL—U ₂ 20/2—A	6	250	80		>8		2	4×3×1.6	9	7.5×4																																																														
			300			<8						6	SL—U ₂ 20/1.5—B	6.75	200	90	>8	3	5.8×2.5×2.3	10.8	5.5×6	250	<8	7	SL—U ₂ 20/1.5—A	4.5	150	80	>8	2	4×2.5×1.6	7.2	5.5×4																																								
6	SL—U ₂ 20/1.5—B	6.75	200	90		>8		3	5.8×2.5×2.3	10.8	5.5×6																																																														
			250			<8						7	SL—U ₂ 20/1.5—A	4.5	150	80	>8	2	4×2.5×1.6	7.2	5.5×4																																																				
7	SL—U ₂ 20/1.5—A	4.5	150	80		>8		2	4×2.5×1.6	7.2	5.5×4																																																														

0-13mm standard series of screen technical feature

Item	Standard series	Area (M2)	Capacity (T/h)	Efficiency (%)	Feeding Size (mm)	Feeding Moisture (%)	Inclination angle of screen (Degree)	Units (pcs)	Dimension L×W×H (M)	Weight (t)	Motor Power (Kw)
1	SL—U ₂ 13/2.5—C	15	400	90	0~200	>8	0	4	7.6×3.5×3	22	11×8
			450			<8					
2	SL—U ₂ 13/2.5—B	11.25	350	90	0~200	>8	0	3	5.8×3.5×2.3	16.5	11×6
			400			<8					
3	SL—U ₂ 13/2—C	12	300	90	0~200	>8	0	4	7.6×3×3	18	7.5×8
			350			<8					
4	SL—U ₂ 13/2—B	9	250	90	0~200	>8	0	3	5.8×3×2.3	13.5	7.5×6
			300			<8					
5	SL—U ₂ 13/2—A	6	150	85	0~200	>8	0	2	4×3×1.6	9	7.5×4
			180			<8					
6	SL—U ₂ 13/1.5—C	9	200	90	0~200	>8	0	4	7.6×2.5×3	14.4	5.5×8

			250			<8					
7	SL—U ₂ 13/1.5—B	6.75	120	90		>8		3	5.8×2.5×2.3	10.8	5.5×6
			150			<8					
8	SL—U ₂ 13/1.5—A	4.5	100	85		>8		2	4×2.5×1.6	7.2	5.5×4

0-10mm standard series of screen technical feature

Item	Standard series	Area (M ²)	Capacity (T/h)	Efficiency (%)	Feeding Size (mm)	Feeding Moisture (%)	Inclination angle of screen (Degree)	Units (pcs)	Dimension L×W×H (M)	Weight (t)	Motor Power (Kw)
1	SL—U ₂ 10/2.5—C	15	300	90	0~200	>8	0	4	7.6×3.5×3	22	11×8
			350			<8					
2	SL—U ₂ 10/2.5—B	11.25	250	90		>8		3	5.8×3.5×2.3	16.5	11×6
			300			<8					
3	SL—U ₂ 10/2—C	12	200	90		>8		4	7.6×3×3	18	7.5×8
			250			<8					
4	SL—U ₂ 10/2—B	9	150	90		>8		3	5.8×3×2.3	13.5	7.5×6

			200			<8					
5	SL—U ₂ 10/2—A	6	120	85		>8		2	4×3×1.6	9	7.5×4
			150			<8					
6	SL—U ₂ 10/1.5—C	9	150	90		>8		4	7.6×2.5×3	14.4	5.5×8
			200			<8					
7	SL—U ₂ 10/1.5—B	6.75	100	90		>8		3	5.8×2.5×2.3	10.8	5.5×6
			130			<8					
8	SL—U ₂ 10/1.5—A	4.5	60	85		>8		2	4×2.5×1.6	7.2	5.5×4

0-8mm standard series of screen technical feature

Item	Standard series	Area (M2)	Capacity (T/h)	Efficiency (%)	Feeding Size (mm)	Feeding Moisture (%)	Inclination angle of screen (Degree)	Units (pcs)	Dimension L×W×H (M)	Weight (t)	Motor Power (Kw)
1	SL—U ₂ 8/2.5—C	15	250	90	0~200	>8	0	4	7.6×3.5×3	22	11×8
			300			<8					

2	SL—U ₂ 8/2.5—B	11.25	200	90	>8	3	5.8×3.5×2 .3	16.5	11×6
			250		<8				
3	SL—U ₂ 8/2—C	12	200	90	>8	4	7.6×3×3	18	7.5×8
			250		<8				
4	SL—U ₂ 8/2—B	9	120	90	>8	3	5.8×3×2.3	13.5	7.5×6
			200		<8				
5	SL—U ₂ 8/2—A	6	100	85	>8	2	4×3×1.6	9	7.5×4
			130		<8				
6	SL—U ₂ 8/1.5—C	9	120	90	>8	4	7.6×2.5×3	14.4	5.5×8
			150		<8				
7	SL—U ₂ 8/1.5—B	6.75	80	90	>8	3	5.8×2.5×2 .3	10.8	5.5×6
			100		<8				
8	SL—U ₂ 8/1.5—A	4.5	50	85	>8	2	4×2.5×1.6	7.2	5.5×4

Common used combined screen detailed technical features

Item	Main Technical Feature	Screen Hole (mm)	Unit	Total Unit Number	Capacity (T/h)	Efficiency (%)	Screen Area (M ²)	Feeding Moisture (%)	Screen Inclination (Degree)	Dimension L×W×H(M)	Weight (t)	Motor Power (Kw)
1	13	13	2	4	≤400	70	7.5	No Limitation	0	7.6×3.5×3	22	11×8
	SL—U ₂ 25/2.5—C	25	1			80	3.75					
	50	50	1			80	3.75					
2	13	13	2	4	≤300	70	6			7.6×3×3	18	7.5×8
	SL—U ₂ 25/2—C	25	1			80	3					
	50	50	1			80	3					
3	13	13	2	4	≤250	70	4.5			7.6×2.5×3	14.4	5.5×8
	SL—U ₂ 25/1.5—C	25	1			80	2.25					
	50	50	1			80	2.25					
4	13	13	2	3	≤300	70	7.5			5.8×3.5×2.3	16.5	11×6
	SL—U ₂ 25/2.5—B	25	1			80	3.75					
5	13	13	2	3	≤250	70	6			5.8×3×2.3	13.5	7.5×6
	SL—U ₂ 25 /2—B	25	1			80	3					

6	13	13	2	3	≤2	70	4.5				5.8×2.5× 2.3	10.8	5.5×6
	SL—U ₂ 25/1.5—B	25	1		00	80	2.25						
7	13	13	2	3	≤3	70	7.5				5.8×3.5× 2.3	16.5	11×6
	SL—U ₂ 50/2.5—B	50	1		00	80	3.75						
8	13	13	2	3	≤2	70	6				5.8×3×2. 3	13.5	7.5×6
	SL—U ₂ 50/2—B	50	1		50	80	3						
9	13	13	2	3	≤2	70	4.5				5.8×2.5× 2.3	10.8	5.5×6
	SL—U ₂ 50/1.5—B	50	1		00	80	2.25						
10	25	25	2	3	≤4	85	7.5				5.8×3.5× 2.3	16.5	11×6
	SL—U ₂ 50/2.5—B	50	1		50	83	3.75						
11	25	25	2	3	≤4	85	6				5.8×3×2. 3	13.5	7.5×6
	SL—U ₂ 50 /2—B	50	1		00	83	3						
12	25	25	2	3	≤3	85	4.5				5.8×2.5× 2.3	10.8	5.5×6
	SL—U ₂ 50/1.5—B	50	1		00	83	2.25						