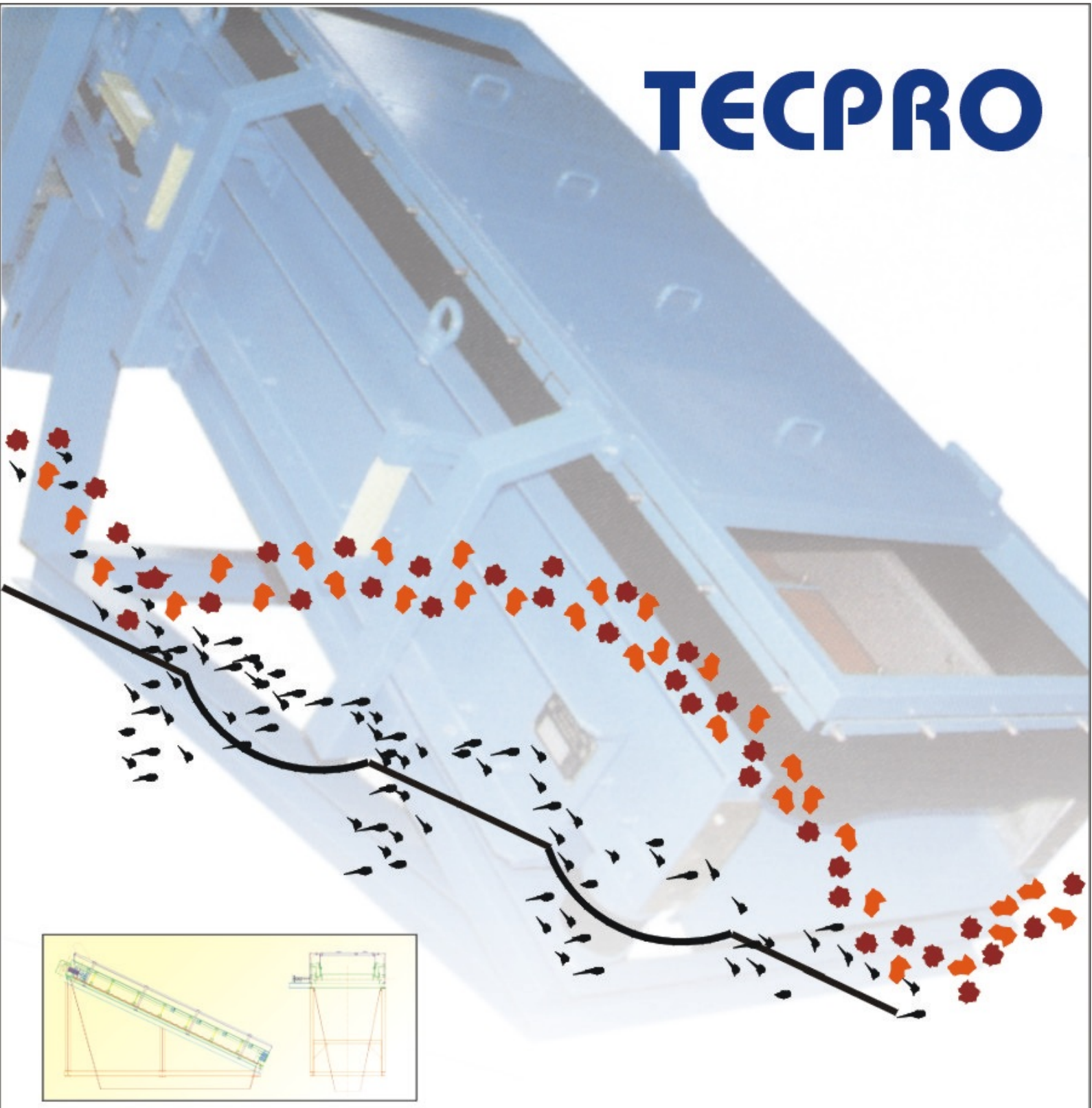
TECPRO



FLIP – FLOW SCREENS

Under License from:

HEIN, LEHMANN
TRENN- UND FÖRDERTECHNIK GmbH
GERMANY

PRODUCT DIVISION, TECPRO SYSTEMS LTD.

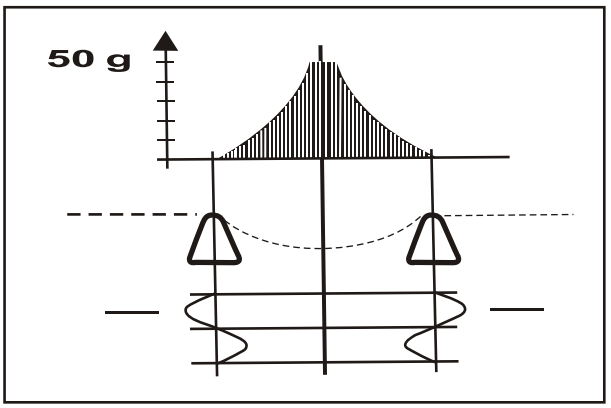
FLIP FLOW SCREENS :

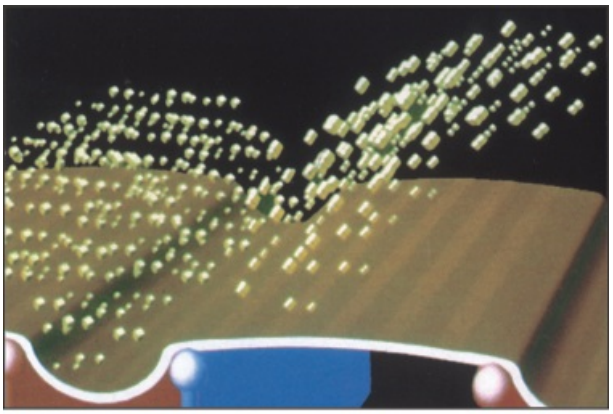
A high amount of energy is required for sizing or classifying fine cut materials and near cut size grains with high moisture content. This energy can only be provided by the kinetic energy of the throw. The actual sizing process occurs at the moment of impact of grain on to the screen bottom. In case of humid bulk material, high adhering forces generated between the particles make the grains impossible to pass through the hole in conventional screening method (ie. the so-called Thick Layer Screening).

The high energy required for throw cannot be generated by drop energy. This can be done by raising acceleration to the level of 50g. But this is impossible by moving the whole frame construction. The technique is to move only the screen mat, which is described as a direct excited screen bottom. The machine consists of two sets of moving cross members connected to an inner frame system and an outer frame alternately and both independently to a drive consisting of shaft fitted with eccentric bearings. The alternated frames excite the mat enabling the mat to generate high energy and throw required.

Hence the acceleration and mechanical stress of the frame systems is low but the acceleration of the screen mats is about 40-50g. This multiplies the energy charges to the particle.

During the stretch and relax cycles (8-16 times a second) the opening of polyurethane elastic screen mats gets elongated, thereby, totally eliminating plugging and clogging effect.

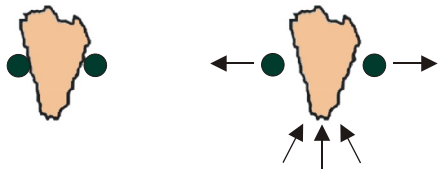




SCREENING PROBLEMS

During screening operations, problems will arise due to blocking of apertures

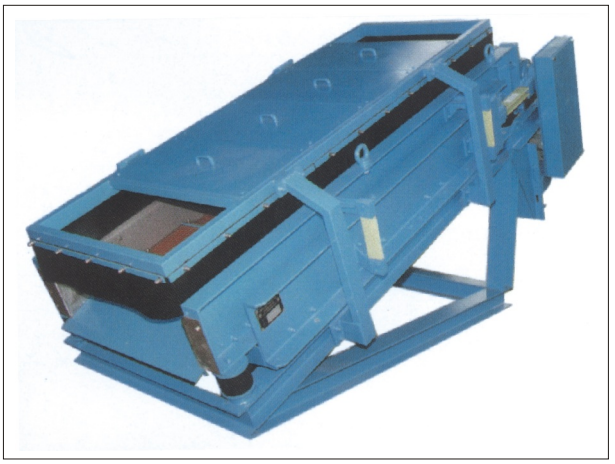
PEGGING : Clogging of apertures due to conical shaped particles which get stuck in the screen panel.



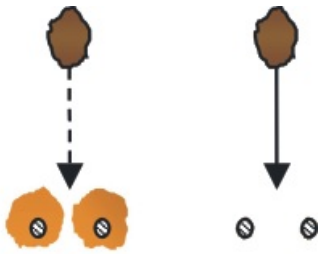
Prevention:

1.By means of high acceleration forces which eject the wedged particles.

2. Use of flexible "breathing" screen panels allowing the particle to pass through or releasing it during the acceleration phase



BLINDING : Blocking of apertures due to a build up of fine, moist material



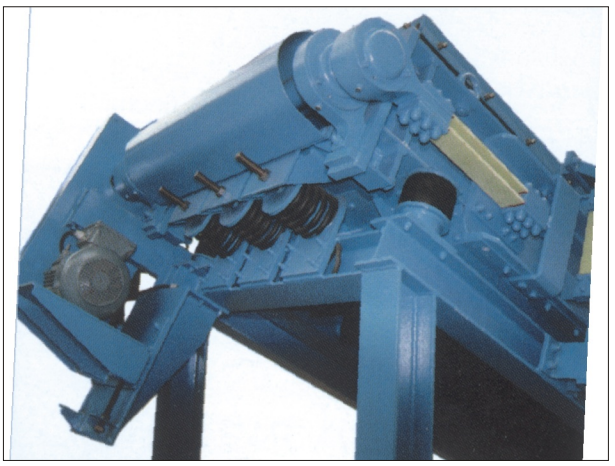
Prevention

-By using screen panels made of Polyurethane, rubber etc. Which have anti-adhesive properties

-High acceleration forces

(Acceleration power > adhesive strength)

-Flexing screen panels causing caked material to break-up



FLIP FLOW SCREEN CONSTRUCTION -
The drive, screen frames, support and mats

The screen consists of two screen frames, inner and outer.
The frames are counter currently oscillated by the eccentric shaft.
The circular movement of the drive shaft is transformed into oscillation of the screen frames by means of thrust rod springs.

Helical springs are arranged between the inner screen frame and the support jack. They ensure that the machine is kept in the correct position to the angle of inclination.

The outer screen frame is suspended from the inner frame by guide springs, permitting horizontal movement. The inner screen case is supported on the wedge shaped jack by means of rubber insulated springs.

The cross beams supporting the elastic screen mats are alternately connected to the inner and outer screen case.

The movement of the screen frames results in a change of spacing between the cross bars and the screen mats are tensioned and detensioned from 8-16 times per second.

Damp and sticky materials are blinding over the apertures of the screen panels.

Wedged shaped particles get jammed in the apertures.
This problem increases with a reduction to the cut point.
Effective sizing is not possible any longer.

LIWELL®- screening machines are especially designed to solve such screening problems. They combine a number of individual solutions to one complete solution:

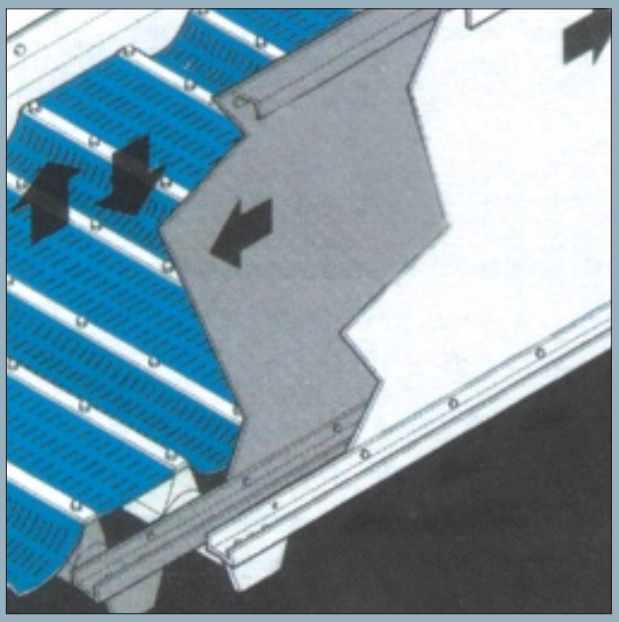
· Wet screening or drying of the material is superfluous, water and energy consumption are avoided.
· Very accurate sizing by using highly wear resistant polyurethane screen panels means a reduction of misplaced material rates and thus optimizes the product quality.
· The high costs of cleaning screen decks and consequential production loss are avoided.

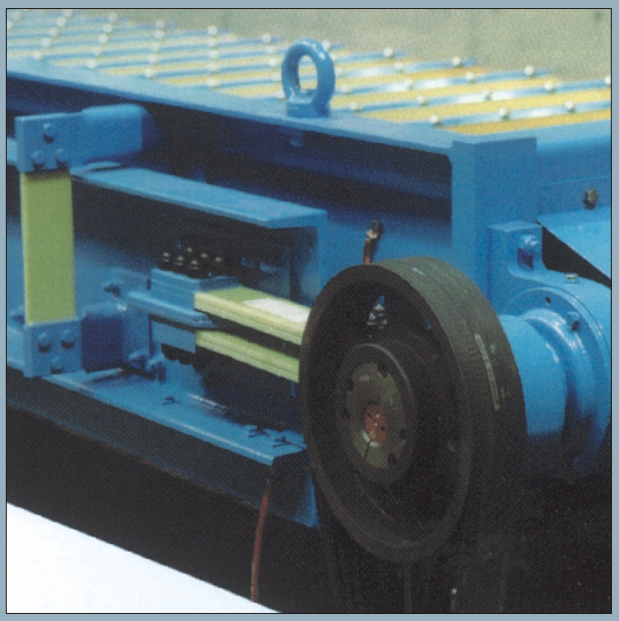
This concept combines maximum technical standard with minimum operation cost

More than 40 years ago, with the construction of the first Flip-Flow screening machine, HEIN, LEHMANN introduced a revolutionary new concept for classifying materials.

LIWELL®-screening machines are the result of continual technical development of this concept. They combine application-orientated practical innovation with the experience of more than 2000 successfully operating machines. The HEIN, LEHMANN name has become synonymous with the best product of the industry.

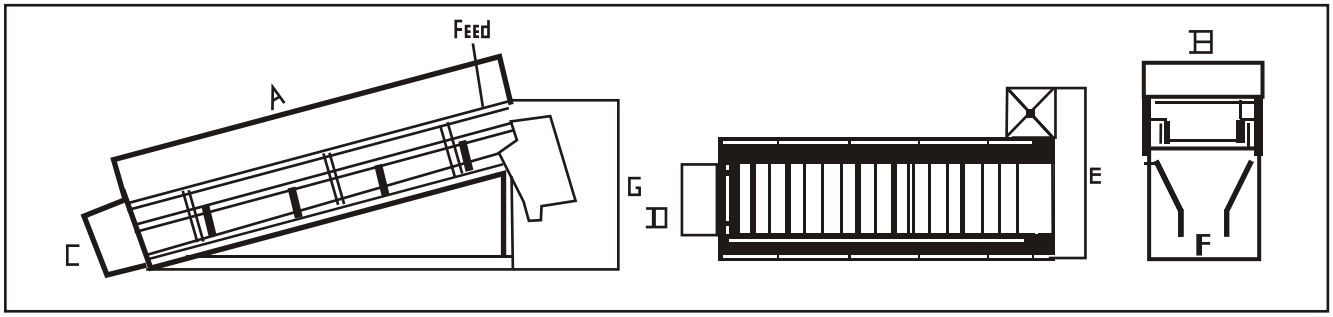
Tecpro joins hands with Hein, Lehmann as a licensed manufacturer of the Flip Flow Screens to provide this state of the art equipment in India.





Typical applications for Flip-Flow-screens

- Coke at 3 mm with 18 % moisture
- Lignite at 6 mm with 50 % moisture
- Coal at 6 mm with 15 % moisture
- Lime stone at 3 mm with 5 % moisture
- Iron ore at 5 mm with 10 % moisture
- Raw sand at 3 mm with 6 % moisture
- Compost at 10 mm with 40 % moisture
- Slag at 3 mm with 5 % moisture
- Salt at 5 mm with 3 % moisture
- Building rubble at 5 mm with 10 % moisture



LIWELL- screening machines type LF

dimensions and weights single deck machines

Machine type	screen surface m²	weight kg	power kW	A mm	B mm	C mm	D mm	E mm	F mm
LF 1,0 - 2,52/ 8 ED	2,52	2.100	5,5	3.555	1.678	675	1.000	1.774	1.570
LF 1,0 - 3,78/12 ED	3,78	2.600	7,5	4.815	1.678	675	1.000	1.774	1.570
LF 1,0 - 5,04/16 ED	5,04	3.400	11,0	6.075	1.678	675	1.000	1.774	1.570
LF 1,0 - 6,30/20 ED	6,30	4.000	11,0	7.335	1.678	675	1.000	1.774	1.570
LF 1,5 - 3,78/12 ED	5,67	2.900	11,0	4.815	2.178	675	1.500	2.274	2.070
LF 1,5 - 5,04/16 ED	7,56	3.600	15,0	6.075	2.178	675	1.500	2.274	2.070
LF 1,5 - 6,30/20 ED	9,45	4.300	18,5	7.335	2.178	675	1.500	2.274	2.070
LF 2,0 - 5,04/16 ED	10,08	3.900	18,5	6.075	2.678	675	2.000	2.774	2.570
LF 2,0 - 6,30/20 ED	12,60	4.600	22,0	7.335	2.678	675	2.000	2.774	2.570
LF 2,0 - 7,56/24 ED	15,12	5.100	30,0	8.595	2.678	675	2.000	2.774	2.570
LF 2,0 - 8,82/28 ED	17,64	9.300	37,0	10.070	2.710	1070	2.000	3.895	2.650
LF 2,5 - 5,04/16 ED	12,60	11.700	30,0	6.730	3.388	1535	2.500	4.975	3.580
LF 2,5 - 6,30/20 ED	15,75	12.500	37,0	7.990	3.388	1535	2.500	4.975	3.580
LF 2,5 - 7,56/24 ED	18,90	13.900	37,0	9.250	3.388	1535	2.500	4.975	3.580
LF 2,5 - 8,82/28 ED	22,05	15.700	45,0	10.510	3.388	1535	2.500	4.975	3.580
LF 3,0 - 6,30/20 ED	18,90	13.500	37,0	7.990	3.888	1535	3.000	5.475	4.080
LF 3,0 - 7,56/24 ED	22,68	15.300	45,0	9.250	3.888	1535	3.000	5.475	4.080
LF 3,0 - 8,82/28 ED	26,46	16.800	45,0	10.510	3.888	1535	3.000	5.475	4.080

All technical data are approximate values.

For detailed planning please ask for individual dimension sheets

To enable our experienced engineering staff to recommend the installation best suited to specific applications, answers to as many of the following questions as possible will result in a prompt and accurate solution to your screening requirements

1. Material to be screened
2. Maximum feed dimension
3. Approximate feed size analysis
4. Moisture content
5. Stickiness
6. Bulk Density
7. Separation sizes required
8. Friability
9. Abrasive characteristics
10. Do you intend close circuit operation?
11. Capacity desired in tons per hour

OUR OTHER PRODUCTS AT A GLANCE

1. Single Roll Crushers, Double Roll Crushers, (Smooth & Toothed), Reversible Impact Mill, Impact Hammer Crushers, Roller Screen, Ball Mills in technical collaboration with **M/s. FAM Magdeburger Föderanlagen und Baumaschinen GmbH, Germany.**
2. Aggregate Crushing and Screening plants, Cone Crushers, Vertical Shaft Impactors (Zenturbo), Jaw Crushers, in technical collaboration with **M/s. MASCHINENFABRIK LIEZEN UND GIESSEREI Ges.m.b.H., Austria.**
3. Pipe conveyors with **M/s. Koch Transporttechnik GmbH, Germany.**
4. Vibrating Screens (Circular and linear motion), Vibrating Feeders, Reciprocating Feeders, Apron Feeders in technical collaboration with **M/s PEYTEC Aschauer & Peyfuss OEG, AUSTRIA.**
5. Turnkey Projects - Fuel and Ash handling systems for Coal, Biomass, Bagasse based power plants, Raw Material handling system for steel, cement, paper, industry etc.

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