

Improving Flatwork Ironer Production and Quality

How can flatwork ironer production and quality be improved, and once improved, maintained ?

Maximizing ironer production and quality depends on three major factors

- 1) proper and efficient heat transfer in the flatwork ironer itself
- 2) proper contact between the piece being ironed and the heated chest
- 3) an efficient vacuum system to remove evaporated moisture.

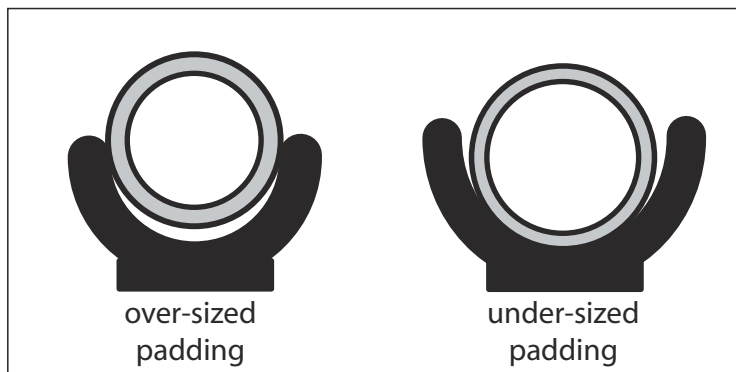
The first and the third factor are influenced by the design of the ironer, about which very little can be done, by the temperature and quality of the heating medium, ex. : steam or thermal fluid, by the type and maintenance of the system delivering the heating medium to the ironer, ex. : piping, steam traps and/or thermal fluid pumps, and by the type and maintenance of the vacuum fans and ductwork. In most laundries these items are well monitored and maintained, and improvements are made when necessary.

On the other hand the second factor, proper contact between the pieces being ironed and the heated chest, is the most often misunderstood, most neglected, and most difficult to maintain once correct, and therefore oftentimes the area where most improvements can be made.

Doesn't timely replacement of ironer pads and covers accomplish proper contact ?

Not necessarily, and in fact, probably not, at least not for long. The reasons are twofold. First the bare roll and the heated chest are not perfectly cylindrical, but rather are distorted with hills and valleys, so a great deal of resiliency is necessary to hold the piece being ironed against the chest at all places.

Second, all types of padding except springs, ex. : steel mesh, steel wool, felt, woven textiles, and needlefelt, rapidly compress and wear with use, resulting in a decreased roll size and corresponding loss of contact with the chest.



The manufacturer of the ironer in use claims to turn both the rolls and the chest on lathes – how can it be that they are not cylindrical ?

If that is indeed the case, the roll might very well be, but heating an ironer chest and subjecting the heated chamber to higher than atmospheric pressures ex. : steam pressure, causes the chest to “open” at the top, and results in a shape that is no longer cylindrical, but distorted. The bracing of the chest may also cause bowing out of the chest in the spaces between the bracing causing more distortion.

How much wear or compacting is necessary before loss of production occurs ?

The university of Krefeld in Germany has scientifically proven that a deep-chest European style ironer such as all new ironer being built today will lose 28 % of its production capacity when the padding wears out or compresses a mere of 1.5 mm (1/16") in radius!

This results in a reduction of ironing speed from 30 m/min to 21.6 m/min (100 ft/min to 72 ft/min). Obviously a good padding system must compensate for this and for the chest distortion, and that is why SPRINGPRESS was developed.

What is Springpress ?



The developers of SPRINGPRESS were aware of the above problems, and reasoned that a highly resilient spring underpadding combined with a thin, strong top covering would be the ideal solution to the problem.

Individual springs are difficult and labour intensive to install, so they developed SPRINGPRESS, a flat metal strip providing the base around which a continuous wire is formed into springs. The result is a long metal strip with individual springs mounted on it which can be simply spiralled onto a bare ironer roll to provide a complete spring covering.

All the materials used to manufacture SPRINGPRESS are the finest attainable, and it is available in either galvanized or stainless steel. Two turns of a thin needled textile padding is then placed over the SPRINGPRESS to complete the covering of the roll.

What does the Springpress system do that other systems can't do ?

In short, SPRINGPRESS provides an individual spring undercovering that is "live" - soft enough to compress on high spots or when material or buttons provide extra thickness, yet resilient enough to fill in the low spots.

This live action of compressing and expanding of SPRINGPRESS keeps the top-covering (padding) in constant contact with the heated chest, no matter how distorted it may be or how much the padding has compressed or worn, something no other padding system can do.

Why does Springpress come in different heights and tensions ?

Each brand of flatwork ironer is manufactured to a different set of engineering specifications concerning the space available for the roll covering between the bare roll and the chest, and the pressure the roll exerts on the chest as it irons.

In addition, different methods of bracing the chest, the thickness of the materials used, and the quality of the manufacturing process all have an effect on how far the chest opens when heated and under pressure, as well as how distorted it becomes. Lastly, the method of providing stretch of the material as it is being ironed also differs between manufacturers.

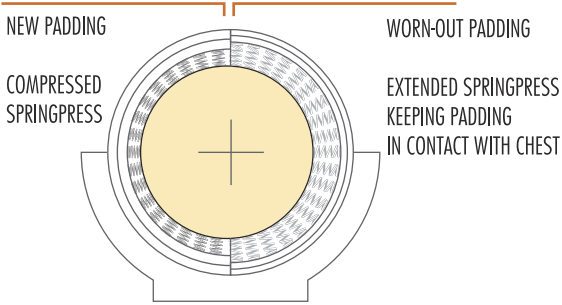
All these factors influence the height and the resilience of the SPRINGPRESS necessary to properly fill the gap between bare roll and chest, as well as the spring tension required to create the live action needed to keep the padding in contact with the heated chest. Careful measurements and monitoring by SPRINGPRESS engineers on more than 100,000 ironer rolls has provided a catalogue of information as to the proper height and tension to use on every different type of ironer roll.

How does the Springpress system actually work ?

One of the real secrets to SPRINGPRESS's success is in the calculation of the tension of the spring.

A properly covered SPRINGPRESS roll will have the recommended roll diameter before the addition of the textile padding, and therefore be overpadded after the textile is installed. As the padded roll is lowered into the chest, the SPRINGPRESS will partially compress to make room for the textile padding. This compression of the SPRINGPRESS makes it possible for it to lengthen to fill in the low places or valleys due to chest distortion.

Since the compression is only partial, SPRINGPRESS will compress more as it passes over the hills or high places of the chest. SPRINGPRESS therefore not only takes on the proper size of the chest, but the distorted shape of the chest as well.

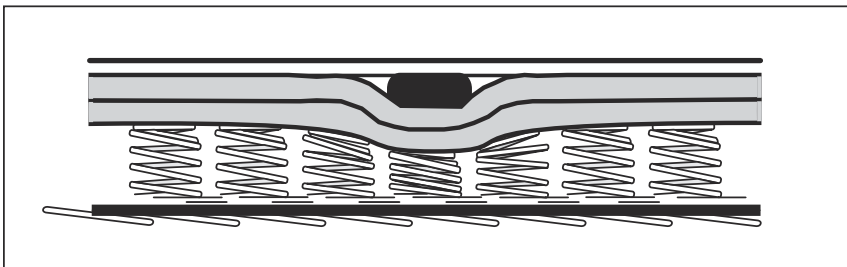


Naturally, as the roll is lowered and the SPRINGPRESS compresses, the textile padding will tighten up on the roll since its base diameter is smaller. Indication that the SPRINGPRESS system is working properly can be seen when the roll is later lifted out of the chest. At this time the natural resiliency of the SPRINGPRESS will cause it to extend to its original height, and the textile padding will be seen opening up as this happens.

Because of this action, SPRINGPRESS will always compensate for wear and/or compression of the textile padding until it is completely worn out and must be replaced.

Is Springpress able to provide uniform ironing pressure ?

Obviously SPRINGPRESS cannot provide more pressure than is available from the ironer, but definitely provides uniform pressure over all parts of the ironing surface. One roll of an 800 mm (32") diameter ironer roll covered with SPRINGPRESS contains over 60,000 individual springs. This assures extremely local elasticity to allow for hems and buttons, while the area next to the hems or buttons will also be in contact with the heated chest and be ironed properly. No type of padding system has better elasticity than that of a coil spring!



If the top covering tightens up on the Springpress when the roll is lowered into the chest, what assures that it will loosen again when the roll is raised ?

The tension of the SPRINGPRESS has been calculated to be strong enough to force the padding to open up again once the pressure is off the ironer and/or the roll is lifted from the chest, providing that only two turns of padding has been applied over the SPRINGPRESS. If more than two turns of padding is applied over the SPRINGPRESS there is a danger that the padding will not open up again and the SPRINGPRESS will remain compressed.

If the padding is not fastened to the Springpress, what prevents it from moving ?

The friction of the 60,000 individual springs is enough to hold the padding in position. If for any reason the padding should begin to move it indicates a severe problem with the washing or rinsing process, or with the ironer alignment, and in these cases even fastening the padding in some way would not help to keep it in place.

Must the textile padding be purchased only from Springpress ?

Definitely not ! Needled textiles of all types, materials and weights are available throughout the world from many different manufacturers. You may purchase the padding from whomever you wish, but normally your SPRINGPRESS dealer will have valuable experience concerning which manufacturer supplies the most cost effective textile padding.

Do the individual springs tend to lay over in the direction of the rotation of the ironer roll ?

No, because the springs themselves are not subjected to any lateral forces. Since two turns of padding are placed over the SPRINGPRESS, the under laver which is in contact with the springs has no movement so cannot influence the springs. In addition, every spring that comprises SPRINGPRESS is attached to the strip in two different places, which gives it tremendous stability.

If a surgical tool should accidentally pass through the ironer, what damage will occur ?

The SPRINGPRESS would probably not be damaged at all because the springs would compress completely in the area where the tool passes, and the remarkable resiliency of the spring will cause it to extend to its full height afterwards.

This can be demonstrated by folding a towel four times and passing it through the ironer, then following it with a napkin.

The SPRINGPRESS will resume its proper height and iron the napkin perfectly.

If an accident should occur that would tear off or otherwise damage the SPRINGPRESS, repairs can be made without special tools or know-how.

What damage would occur if the ironer is accidentally run in reverse ?

Again, there would be no damage to the SPRINGPRESS, although the padding could easily be damaged.

How will installing Springpress effect the vacuum system of the flatwork ironer ?

In nearly all cases the SPRINGPRESS system will improve the vacuum system. SPRINGPRESS is designed so that the strip is elevated from the bare roll, providing full access to each vacuum hole. In addition, the thin top covering of textile padding allows a free flow of air through it. In many cases the vacuum fans and/or dampers may have to be reset to prevent too much vacuum from cooling down the roll.

How is Springpress installed ?

Your SPRINGPRESS supplier has a factory-trained engineering staff to install SPRINGPRESS in the laundry. Most installations can be completed without loss of production time.

At the same time the engineers will inspect and make necessary adjustments to your ironer vacuum, pressure, and/or chest alignment.

How is the top covering installed ?

The roll is lifted out of the chest and a new piece of textile padding is placed in the chest under the roll. The piece is stretched tight and straight across the roll, the roll is lowered into the chest and then rotated twice. Any excess padding over exactly two turns is trimmed off. Ironing can begin immediately, no running-in period is required.

The recommended padding is a needled molleton, polyester or Nomex , 800 g/sqm to 1,000 g/sqm, wide enough for the ironer + 15 cm on both sides and long enough for exactly two turns.

Is Springpress worth the price ?

Due to increased and maintained contact of the piece being ironed with the heated surface of the chest, efficiency of ironing and increased production will return the cost of a SPRINGPRESS installation in less than one year in most cases. The SPRINGPRESS system is so well accepted that over 85 % of new ironers sold in the world are equipped with SPRINGPRESS as the original padding system, and over 100,000 rolls have been covered so far.

How does Springpress compare with laminated padding systems ?

Laminated leaf-type spring padding systems are designed to operate in much the same way as SPRINGPRESS, however there are some decided disadvantages to the leaf spring system.

First, a leaf spring has much less elasticity than a coil spring, so the range of differences in high and low spots that they can accommodate is much less, and a severe high spot will cause a permanent flattening of the leaf spring.

Second, since each leaf spring rests on another which rests on another etc., a high spot that compresses one leaf spring will also compress many many others that it rests on, and cause a dish area where contact is not made with the heated surface and ironing is not done.

Third, laminated springpadding systems are often two and three times as expensive as SPRINGPRESS.

Fourth, tests have proven that laminated spring systems have 3 times as many heat bridges than coil springs, causing heat to be transferred to the bare roll where it is not needed.

Fifth, coil spring system has an open area just underneath the padding where it maximizes the evacuation of the vapours.

Sixth, the top covering that goes over laminated springs must often be purchased only from the laminated spring supplier.

Will Springpress work on my shallow chest ironer ?

Absolutely. Hundreds of shallow chest rolls have been retrofitted with SPRINGPRESS in the last few years, and in most cases the increase in production has been in the neighbourhood of 30% above previous figures.



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