QUICK-COIL SYSTEMS

COIL CHANGE SYSTEMS FOR LEAN MANUFACTURING PROCESS

QUICK CHANGEOVER FOR DIES, MOLDS AND COILS

www.dimeco.com
SOLUTIONS FOR “LEAN MANUFACTURING”
dies flow management

Thanks to our 20 years of experience in changeover optimization, we can bring you the optimal solution to your process.

APPLICATION FIELD
The Dimeco equipment are well suited to O.E.M. and job-shops wishing to enhance the efficiency of their production units by applying the LEAN principles. They are mainly designed to load and unload dies on stamping press, but can also be suitable for applications in other similar activity. Our wide range of equipment allows us to offer competitive solutions to customers with several presses as well as to customers with only 1 or 2 machines. We offer solutions up to 20 tons for Dies handling, and up to 35 tons for coils handling.

WHAT IS LEAN MANUFACTURING?
LEAN MANUFACTURING is a trend to produce without waste. It uses several approach such as 5S, VSM, Taktime et SMED.

WHY TO APPLY LEAN MANUFACTURING METHODOLOGY ?
The aim of the LEAN methodology is to maximize added value and to eliminate wastes. Direct gains are immediately made by using simple methods such as SMED. Indeed SMED optimizes change-over time and thus improve productivity.

OPERATOR SAFETY AND MEANS:
Our equipment makes handling safe for machines and operators as no manual action is required. The machine safety is also improved as all movements of truck are controlled through a PLC dictating movements in regards to the situation of the truck. Coil tilting is achieved without damaging the inside or outside of coils : Coil quality is fully preserved.

PROFITABILITY
In addition to productivity and safety benefits, the saving becomes higher when handling noble materials. The material saving issued by a respectful handling makes the equipment payback very quick.

FLEXIBILITY
One die handling truck, allows to replace a 10 tons die-set in less than 6 minutes without manual action. This truck can be used for the whole workshop.

FINANCING SOLUTION : TO RENT
SOME OF OUR EQUIPMENT SUCH AS MOBILE Tiltmatic® are classified as handling machines. Therefore, they are available for purchase but also for rent. The lease can be supported by the company that currently maintains your handling equipment.

the above catalogue shows our equipment dedicated to die change process for LEAN MANUFACTURING
SAFETY AND DIRECTION OF DELIVERY

Most of “narrow” coils (strip width < 500mm) are delivered on flat that is to say with coil axis in a vertical position. The “large” coils are delivered with coil axis in a horizontal position. Most of those coils are used on decoilers with horizontal axis. For narrow coils, it is absolutely necessary to tilt them before loading on the decoiler. This operation must be achieved using suitable means. For the large coils of several tons weight, the handling is a dangerous and long operation that must be achieved with specific means.

“VSM” : VALUE STREAM MAPPING :

The application of the VSM method to the coil delivery mode highlights several considerations. By example we should select a very common flow in workshop i.e.:

Step 1 : coils delivery in the press workshop with a forklift truck.
Step 2 : Tilting and loading coil on the decoiler with a jib crane or a travelling crane.

In this flow 2 problems are highlighted:
- It is necessary to have 2 equipment available, forklift truck and crane.
- Coil tilting operation with a crane is VERY DANGEROUS.
COILS TILTER-LOADER

100% safety: no more manual intervention for handling/unloading coil delivered on vertical axis

ADVANTAGES OF THE SOLUTION:
- The coil is pre-loaded while the press line runs.
- Coilt tilting is fully controlled: safety is improved.
- Coilt tilting is achieved without damaging the inside or outside of coils: coil quality is fully preserved.
- The Tiltmatic® can raise or lay down coils so unfinished coils are stored the same as new coils.
- The coil is held by a spur in-between the mandrel jaws: only 2 electrical movements are required within Tiltmatic®: translation and rotation.
- The mandrel expansion allows to collect or to drop the coil.

Step N°1
Coil loading on the Tiltmatic® by a forklift truck.

Step N°2
Coil revolution by hydraulic cylinder.

Step N°3
Translation of Tiltmatic® and mandrel expansion. Once the mandrel is expanded, the Tiltmatic® can be moved back in order to be released from the coil.

Stock saving
Increase security
Area saving

Thanks to the use of fixed Tiltmatic®, coil tilting or lifting is done safely. Moreover, only one standard forklift truck is required to supply the press line.
**ADAPTABLE TO YOUR DECOILERS**

The Tiltmatic® is compatible with most of the decoilers available on the market. In case of incompatibility, we can adapt the Tiltmatic® to your decoiler sizes.

**NARROW COILS LOADING**

When the decoiler must be loaded with both large and narrow coils, it may be necessary to load narrow coils in 2 steps. This operation is not harmful as it takes less than one minute.

**DIRECTION OF UNWINDING**

During coil packaging operation, your supplier chooses to deliver coil to clockwise or anti-clockwise orientation.

The fixed Tiltmatic® cannot reverse the coil, it is then necessary to work with your supplier so that the coils are delivered with the right orientation.

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**Positioning of the coil in the core axis**

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<table>
<thead>
<tr>
<th>Model</th>
<th>Coil</th>
<th>Decoiler</th>
<th>Tiltmatic®</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>weight</td>
<td>W</td>
<td>Do*</td>
</tr>
<tr>
<td></td>
<td>max (kg)</td>
<td>max (mm)</td>
<td>max (mm)</td>
</tr>
<tr>
<td>TILT FIX 30.500</td>
<td>3 000</td>
<td>500</td>
<td>1900 → 2500</td>
</tr>
<tr>
<td>TILT FIX 45.500</td>
<td>4 500</td>
<td>500</td>
<td>1900 → 2500</td>
</tr>
<tr>
<td>TILT FIX 65.500</td>
<td>6 500</td>
<td>500</td>
<td>1850 → 2450</td>
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<tr>
<td>TILT FIX 80.500</td>
<td>8 000</td>
<td>500</td>
<td>1800 → 2400</td>
</tr>
<tr>
<td>TILT FIX 100.500</td>
<td>10 000</td>
<td>500</td>
<td>1800 → 2400</td>
</tr>
</tbody>
</table>

Do* max : is dedicated by the height of the axis of the reel mandrel "H"  
T mini ** : for coil outer diameter (Do) 1800 mm and coil width (W) 500 mm.
Step N°1
coil pick-up by the mobile Tiltmatic® on the storage rack.

Step N°2
coil rotation on the mobile Tiltmatic®.

Step N°3
Then the operator can place the coil on the decoiler as simply as it puts a pallet on a palette rack.

MOBILE COILS TILTER-LOADER
Tiltmatic® mobile

Only one equipment to load & unload all the coils in a workshop without manual action

ADVANTAGES OF THE SOLUTION
- Coil tilting is fully controlled: safety is improved
- The mobile Tiltmatic® can be used for all the press lines in a workshop: only 1 device is required so space.
- The Tiltmatic® can raise or lay down coils so unfinished coils are stored the same as new coils.
- Coil tilting is achieved without damaging the inside or outside of coils: coil quality is fully preserved.
- The Tiltmatic® requires a qualification to be driven (pedestrian operator).
- The lifting cylinders allows to drop the coil on the mandrel jaws and also allow to load decoilers with different heights.

When using mobile Tiltmatic®, there is no more need of additional forklift truck or travelling crane, the mobile Tiltmatic® is the only required device.

Safety is guaranteed during the coil tilting as it is directly controlled by operator.
DRIVING
The basic version is for pedestrian driver, but we can offer alternatives for standing or sitting drivers.

SECURITY
The Tiltmatic® mobile is controlled by PLC dictating all movements in regards the truck situation.

DIRECTION OF UNWINDING
The mobile Tiltmatic® cannot reverse the coil, it is then necessary to work with your supplier so that the coils are delivered with the right orientation.

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**DRIVING**

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**Model** | **Coil** | **Decoiler** | **Tiltmatic**
---|---|---|---
**weight max (kg)** | **W max (mm)** | **Do* max (mm)** | **Di (mm)** | **H (mm)** | **E (mm)** | **D (mm)**
TILT MOB 15.300 | 1 500 | 300 | 1 300 | 508 | 1 100 → 1 500 | 850 | 1 715
TILT MOB 30.500 | 3 000 | 500 | 1 300 | 508 | 1 100 → 1 500 | 1 050 | 2 020
TILT MOB 45.500 | 4 500 | 500 | 1 400 | 508 | 1 100 → 1 500 | 1 050 | 2 020
TILT MOB 65.500 | 6 500 | 500 | 1 500 | 508 | 1 100 → 1 500 | 1 050 | 2 250
TILT MOB 80.500 | 8 000 | 500 | 1 700 | 508 | 1 100 → 1 500 | 1 050 | 2 250
TILT MOB 100.500 | 10 000 | 500 | 1 800 | 508 | 1 100 → 1 500 | 1 400 | 2 400

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* Do Max depends on the height of the axis of the reel mandrel "H"
COIL TILTING STATION

Stand alone station to perform safe tilting operation.

BENEFITS OF THE SOLUTION
- Coil tilting is fully controlled: safety is improved.
- Coil tilting is achieved without damaging the inside and outside of coils: coil quality is fully preserved.

TECHNICAL DATA
- Integrated hydraulic power pack.
- Coil holder/support designed for loading by a forklift and unloading by a crane.
- Mobile part equipped with safety edge system to avoid the risk of the operator being crushed.

Crane hook with end stop helps driver for coil positioning align with center of gravity.
On specific customer requirement, we are able to design customized solution.

### Maximum Coil Dimensions

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Weight</th>
<th>Outer ø</th>
<th>Height</th>
<th>Length</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIR L 30 150x100</td>
<td>3000</td>
<td>1500</td>
<td>1000</td>
<td>2580</td>
<td>1200</td>
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<tr>
<td>VIR L 50 180x100</td>
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<td>1800</td>
<td>1000</td>
<td>2780</td>
<td>1200</td>
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<tr>
<td>VIR L 80 180x100</td>
<td>8000</td>
<td>1800</td>
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<td>2780</td>
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<tr>
<td>VIR L 100 180x100</td>
<td>10000</td>
<td>1800</td>
<td>1000</td>
<td>2780</td>
<td>1200</td>
</tr>
</tbody>
</table>
Prepare your coils while the line runs and ease the loading on the decoiler!

ADVANTAGES OF THE SOLUTION
- Providing coil to the line often use a travelling crane or a forklift. The loading “V” allows to do this operation while the line works.
- Thanks to the hydraulic elevation, the loading “V” facilitates the coil insertion on the decoiler mandrel.
- Its big elevation stroke allows loading/unloading coils of large and small diameter in one go.
- Operator does not need any driving license.

Step N°1
Coil drop by travelling crane or forklift while the line operates.

Step N°2
Coil translation and level adjustment.

Step N°3
Loading coil on the decoiler mandrel.

Coil-Car® CCS
Fixed loading “V” for mobile decoiler.

Coil-Lifter® CLF
Mobile loading “V” for fixed decoiler.

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WEIGHT MONITORING OPTION
In option, we can integrate a system to measure coil weight.

ANCILLARIES
- For coil-car version, we offer the rails for translation (price per meter).
- For narrow coils, safety bars to prevent coil tilting are offered: simple model BCME and heavy duty model for difficult applications (BCMD).
- Support (BCMS) is used to store the safety bars when not in use.

CONTROL AND POWER SUPPLY
As basic version, our Coil-Cars® are delivered without hydraulic powerpack and control box. We offer them as options.

MOTORIZATION
As basic version the Coil-Cars®, translation is performed by hydraulic motor (TH version). As option, we can offer an electrical translation (TE version).

<table>
<thead>
<tr>
<th>Modèle (kg)</th>
<th>S (mm)</th>
<th>PMB* (mm)</th>
<th>CCS SV</th>
<th>CCS RM</th>
<th>PMB* (mm)</th>
<th>Coil-Lifter CLF</th>
<th>D* (mm)</th>
<th>E (mm)</th>
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</thead>
<tbody>
<tr>
<td>3 000</td>
<td>615</td>
<td>473</td>
<td>615</td>
<td>473</td>
<td>615</td>
<td>413</td>
<td>555</td>
<td>1074</td>
</tr>
<tr>
<td>4 500</td>
<td>615</td>
<td>473</td>
<td>615</td>
<td>473</td>
<td>615</td>
<td>413</td>
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<td>1074</td>
</tr>
<tr>
<td>6 500</td>
<td>625</td>
<td>483</td>
<td>625</td>
<td>483</td>
<td>625</td>
<td>423</td>
<td>565</td>
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</tr>
<tr>
<td>8 000</td>
<td>625</td>
<td>483</td>
<td>625</td>
<td>483</td>
<td>625</td>
<td>423</td>
<td>565</td>
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<tr>
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<td>-</td>
<td>680</td>
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<td>1630</td>
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<tr>
<td>35 000</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1250</td>
</tr>
</tbody>
</table>

*BDP : Bottom Dead Point : only for simple “V” model
*D : only for hydraulic translation model
Dimensions of other models on request.
several coils are permanently available for the production line.

ADVANTAGES
several coils are permanently available for the production line. Coils can be loaded on the Multi-Coil® store while the line works. The store can move long distance to be loaded with coils directly in the coils storage area.

ONLY ONE COIL-LIFTER
The store is moving above the Coil-lifter. The store locates the selected coil + “V” support over the the Coil-Lifter.

OPTION
Cover of plastic on loading “V” in order to not damage the first turn of the coils.

Multi-Coil® 4x10 tons, for moveable decoiler

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CONSTRUCTION
This design is specially suitable for existing installations. The translation of the Coil-Car is used to place the Coil on the mandrel but also to collect the “coil + V support” in the store.

AS OPTION
Powered rolls are fitted on the Loading “V” to facilitate the insertion of material into the straightener.
Ideal way to store coils for current production!

**COILS CONTAINERS**

**ADVANTAGES OF THE SOLUTION**
Rotobloc-PSP Containers allows coil stacking up to 3 levels:
- Handling is made with a simple forklift.
- Coils are stored safely.
- Standard model for coils.
- Other models on request.

Supplying your workshop with coils becomes as simple as moving a pallet.

Store safely your coils along your line

**SUPPORT FOR COILS STORAGE ON FLOOR**

**ADVANTAGES OF THE SOLUTION**
- No installation, 3 meters module are delivered as one piece.
- Separation bars are adjustable to be located as close as possible to the coil.

Modular storage solution for narrow and wide coil

**MODULAR STORAGE SYSTEM ON FLOOR FOR COILS**

**ADVANTAGES OF THE SOLUTION**
- Narrow coils are safely stored lengthwise.
- Large coils can be stacked crosswise.
- Modular construction: the area separators or corners are easily moveable.
STORAGE SURFACE IMPROVED

Optimized storage surface

Easy access to all your coils and minimum space requirement

ADVANTAGES
- Storage up to 6 meters high allows to optimize the storage surface.
- Without suitable means, coils of different references are often stacked on each other. To match with FIFO is not possible as it is necessary to move several coils to get the selected reference. The use of storage racks allows to access easily to any coil.
- Thanks to their rigid construction, our storage racks have a very big capacity: up to 70 tons per side frame.
- Based on our standard modules, we adapt our storage racks to your coils dimensions as well as to your workshop.

contact@rotobloc-psp.com

Extra-large coils holder
3x11 tons

Extra-large coils holder
5x10 tons

Extra-large coils holder
2 cells located back to back

Extra-large coils holder
anti slippage surface

contact@dimeco.com
Handling and storage tool and molds

Press shop automation

Equipment for press environment

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