



installation for **pharmaceutical**
coating and
film coating
..... **IDA-XP**

**as your products are so valuable,
we put all of our expertise into coating them...**



necessary quality...

A complete range of installations, specially designed for the sugar coating and aqueous or solvent film coatings, is offered in 7 capacities from 15 to 1,000 kg.

This new generation machine integrates GMP rules in its concept.

The IDA XP were carefully designed:

- To optimize the coatings in performance and quality.
- To insure an efficient cleaning in place.
- For a reduced maintenance.
- For an automatic management of the process and follow up of the production.

We are also offering turnkey projects, technical and processes assistance, operators training and qualification by a team of specialists.

DUMOULIN also manufactures for the pharmaceutical industry installations for large production (up to 3 metric tons) for coating of gum and to obtain homeopathic granules)

The IDA XP range can also be used for the film coating of vegetable, flower and cereal seeds.



IDA-XP RANGE	15XP	30XP	100XP	150XP	250XP	380XP	500XP	1000XP
USEFUL VOLUME (in liters)	24	45	134	200	330	500	670	1350
BATCH SIZE (kg - min/max)	7/15	15/30	50/100	75/150	125/250	190/380	250/500	500/1000

loading - unloading

LOADING

Several possibilities are offered

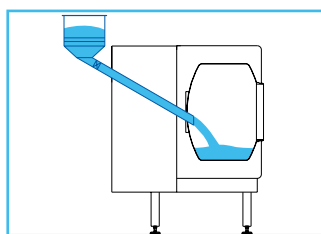
- **From the front side:**

- manual loading with adjustable hopper,
- mechanical loading with hopper.

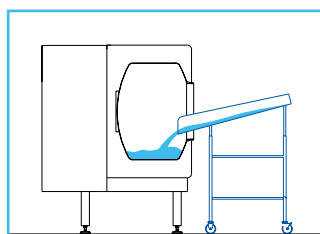
- **From the rear:**

This system allows the physical separation between product inlet and product outlet.

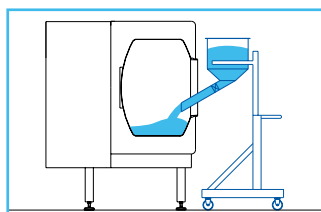
- automatic loading with buffer hopper,
- automatic loading by means of negative pressure inside the drum, distance for exhaust up to 10 m.



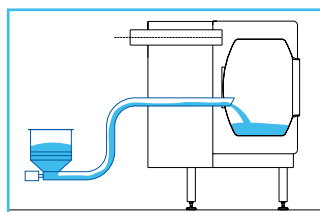
Chargement automatique par trémie tampon.



Chargement manuel.



Chargement mécanisé.



Chargement automatique par mise en dépression.

UNLOADING

Simply done by reversing the rotation of the drum without the addition of devices inside the drum.

Two specially designed scoops inside the drum allow a gentle unloading of fragile products with a constant and adjustable flow, without risk of damage to the tablets.

Two possible options:

- Semi automatic by adjustment of a hopper
- Automatic direct unloading in container.



air treatment

A totally insulated group generates conditioned air for the process, the unit is made in one piece and comprises:

- pre-filter,
- heating coil, (with optional: pre heating, dehumidifier, humidifier, post cooling and post heating),
- air blower with variable flow,
- finishing filter.

For coating with sugar a by pass in between the pan inlet and the outlet air is provided.

Ventilation in the pan

The IDA XP drums offer a maximum perforated surface allowing an optimal exchange between the tablets and the drying air.

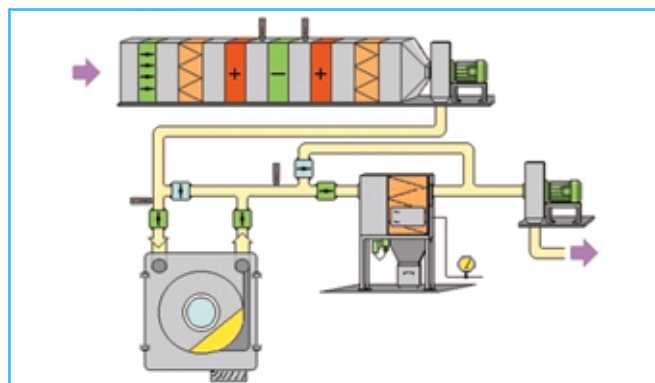
Outlet of the air is done underneath the bed of tablets by means of a hood tangential to the drum. The hood position is controlled by a pneumatic device providing an excellent seal and easy access via the automatic elevation of this unit.

Exhaust and filtration

Exhaust air is filtered using a de-dusting unit with automatic pneumatic de-clogging cartridge filters. An optional final Hepa type filtration can also be added.

A by pass for the filter protects the filter cartridges during the pan cleaning cycle.

The constant negative pressure in the pan is automatically insured by the regulation of the inlet and outlet air flows.

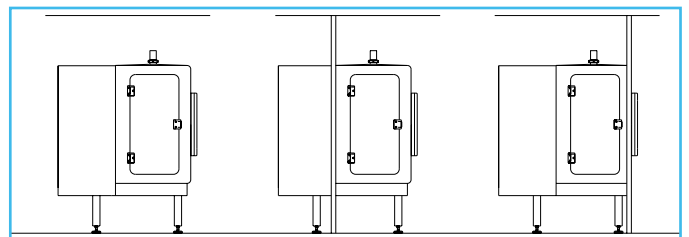
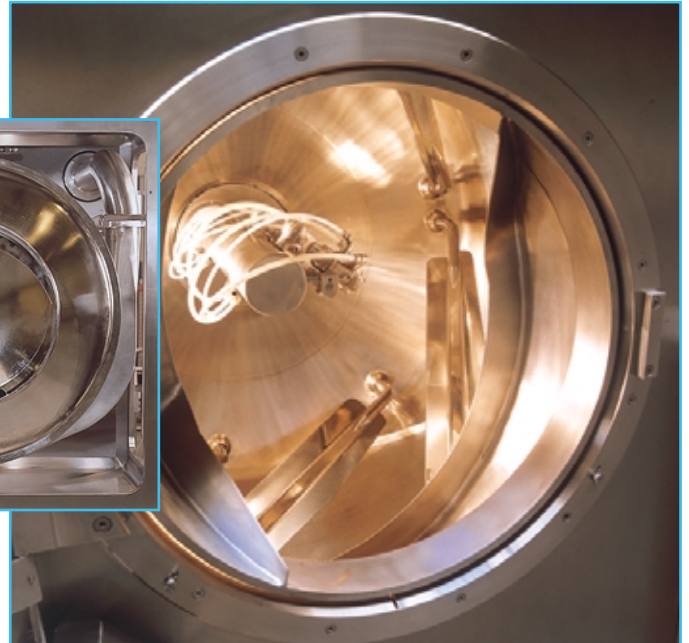


the pan

IDA XP are built in respect of GMP rule using maximum care in the concept, study and construction.

Results:

- Complete partition between the mechanical side and the process side.
- Elimination of angles and "dead space" in order to make the cleaning easier.
- Perfect access to the process area via large side doors and a front window sealed using special inflated seals.
- Design of the drum facilitates the coatings by means of shallow bed depth of tablets.
- Mixing baffles which are swiveling and removable to fit all types of tablets.
- Possibility to be installed embedded semi embedded or just as it is.
- 100 % built in stainless steel
- Optional thermal insulation of the process area.
- Overhanging drum avoiding any support in the process area.
- The type 30 XP can by means of an option easily receive a 15 XP interchangeable drum by means of a large front side-opening door of the pan and a specific trolley.



spraying



Multi-heads pump with clogging control for aqueous film coating.

IDA XP can be used in any kind of coating.

The aqueous film coating is done by means of air spray with low-pressure peristaltic type pump using single or multi heads.

The organic film coating is done by means of airless spray with a high-pressure pump with pneumatic motor.

Coating with sugar syrup is done by means of air spray or airless with a medium pressure pump.

For these different systems, multiple options and ancillary equipment are available such as the tanks for the preparation of the solutions.

Control and regulation of the liquid flow for the complete set of nozzles or on each individual spraying gun. Also detection of nozzle blockage is incorporated.

Our installations are equipped with an automatic telescopic spraying bar allowing an easy access for maintenance, adjustment of the guns and quick change for the type of spray.

The bar allows the pumping of different fluids with an outlet on the rear of the pan leaving totally free access on front of the pan.



cleaning in place - CIP

Well designed to ensure maximum efficiency with standard equipment.
The IDA XP has three separate cleaning networks.

- one inside the drum,
- one outside the drum,
- one in the exhaust hood.

The cleaning can be done with fresh water or by recycling.

The drum can be maintained in paddling, this operation can be improved by the possibility of ultrasonic device addition.

A pressurized water system and additional cleaning ingredient with selection of cold, hot and de-mineralized water can be also proposed.

The air treatment unit guarantees the complete and rapid drying of the drum.



control systems

IDA PROG 3:

Control system consisting of an operator equipped with a touch sensitive screen, which is used to enter and view production recipes (a maximum of 9 recipes).

- The coating cycle may be run in automatic mode via the operator terminal or in manual mode using the push buttons and switches located on the control cabinet.
- The loading, product storage, unloading and washing phases are controlled in manual mode only.



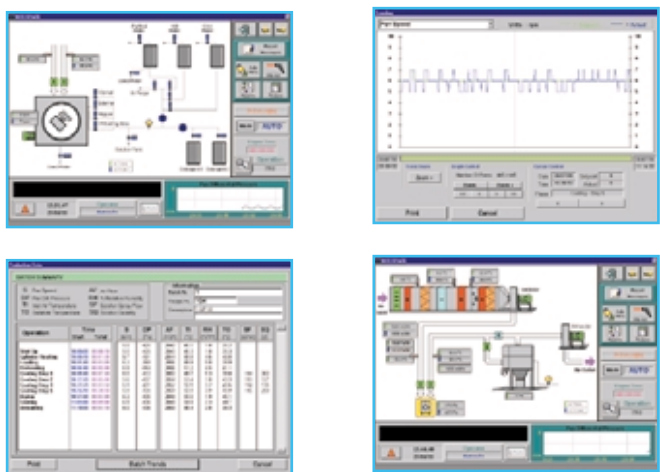
Écran de contrôle IDA prog 6.

IDA PROG 6:

Supervisory, Control And Data Acquisition (SCADA) system runs in the Windows environment. The loading, coating storage, unloading and washing phases are integrated in the automatic cycle but can also be achieved in the manual mode.

Animated synoptic views permit the visualization and control of the installation, alarm management and creation of production recipe

This system also has the possibility to network with other control systems. Also included is a Recipe Builder Module to create production recipes (unlimited number of recipes) and the Report Generator Module which enables the creation of production reports with historical trends and alarm logging.



qualifications and validations

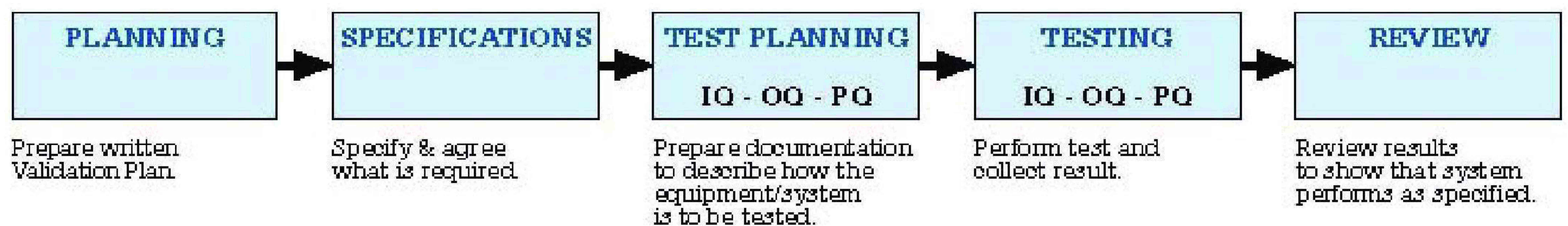
Validation is applied to many aspects of pharmaceutical manufacture; including equipment, computers, processes and cleaning.

In each case Dumoulin produce documented evidence, which provides a high degree of assurance that all parts of the installation will consistently work correctly when brought into use.

General validation activities are shown in Fig 1.

This shows the general philosophy of Dumoulin validation with a logical progression from specification through design, preparation of written test plans, performance of tests and review of results.

general validation activities



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