

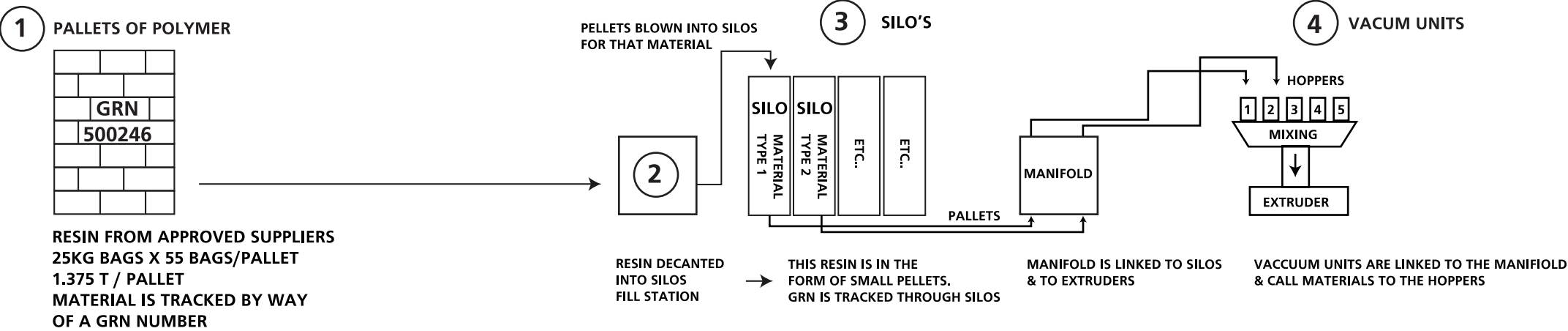


# MANUFACTURING PROCESS FLEXIBLE FILM

www.browpharmapak.com

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## BLOWN FILM TOWER

EXTRUSION

NIPS TO ORIENTATE FILM

12M

THE EXTRUDER APPLIES HEAT & PRESSURE TO MELT & MIX THE RESINS & FORCE THE NOW LIQUID POLYMER UP THROUGH THE DIE FACE.

COMPRESSED AIR IS THEN USED TO MOVE THE MOLTEN PLASTIC POLYMER COMING OUT OF THE DIE FACE, UP INTO THE TOWER.

THIS AIR ALSO COOLS THE FILM OVER THE HEIGHT OF THE TOWER AND CHANGES THE POLYMER FROM A LIQUID INTO A SOLID FILM.

THE FILM IS THEN ORIENTATED AND ALIGNED USING A COMPLEX SYSTEM BEFORE IT COMES BACK DOWN THE TOWER TO BE WOUND ONTO REELS.

WINDERS

ROLLS OF FILM OR SHEETING

HOPPER/ BLENDER

DIE

EXTRUDER

**5** COMPUTERISED MANUAL  
HANDLING SYSTEM TELLS WHICH  
HOPPER TO FILL FROM WHICH SILO

**6** MATERIAL HANDLING  
THIS SYSTEM TELLS HOW MUCH MATERIAL FROM EACH  
HOPPER IS TO BE DROPPED INTO THE BLENDERS MIXING  
CHAMBER TO GET THE CORRECT % MIX OF MATERIALS

MIX NO: XYZ  
60% HOPPER 1  
20% HOPPER 2  
20% HOPPER 3  
8% HOPPER 4  
2% HOPPER 5  
100%

**7** RECIPES (MIXES)  
THESE ARE HELD IN OUR ERP JCB PRODUCTION SYSTEM

**8** CUSTOMER SPECIFICATIONS  
THESE ARE HELD ON OUR JCB PRODUCTION SYSTEM WHICH HOLD  
DIMENSIONS REQUIRED BY CUSTOMER, THE MIX REFERENCE, ETC.  
EACH CUSTOMER CAN HAVE MANY DIFFERENT SPECIFICATIONS  
WHICH ARE UNIQUE TO THEM.

**9** BATCH SPECIFICATION  
BATCHES OF EACH SPECIFICATION ARE CREATED FOR OUR PRODUCTION  
TEAM TO MAKE – WE GIVE EACH BATCH A WORKS ORDER NUMBER.

**10** EXTRUSION  
A BATCH OF FILM IS MADE ON THE EXTRUDER, e.g. 5 TONNES UNDER  
WORKS ORDER E19782. THE RESIN POLYMER PELLETS ARE CONVERTED  
INTO ROLLS OF FILM IN OUR 12M EXTRUSION TOWERS WHICH HOUSE  
OUR VARIOUS EXTRUDERS. REFER TO THE DRAWING OF OUR BLOWN  
FILM PROCESS FOR ONE OF OUR EXTRUSION LINES



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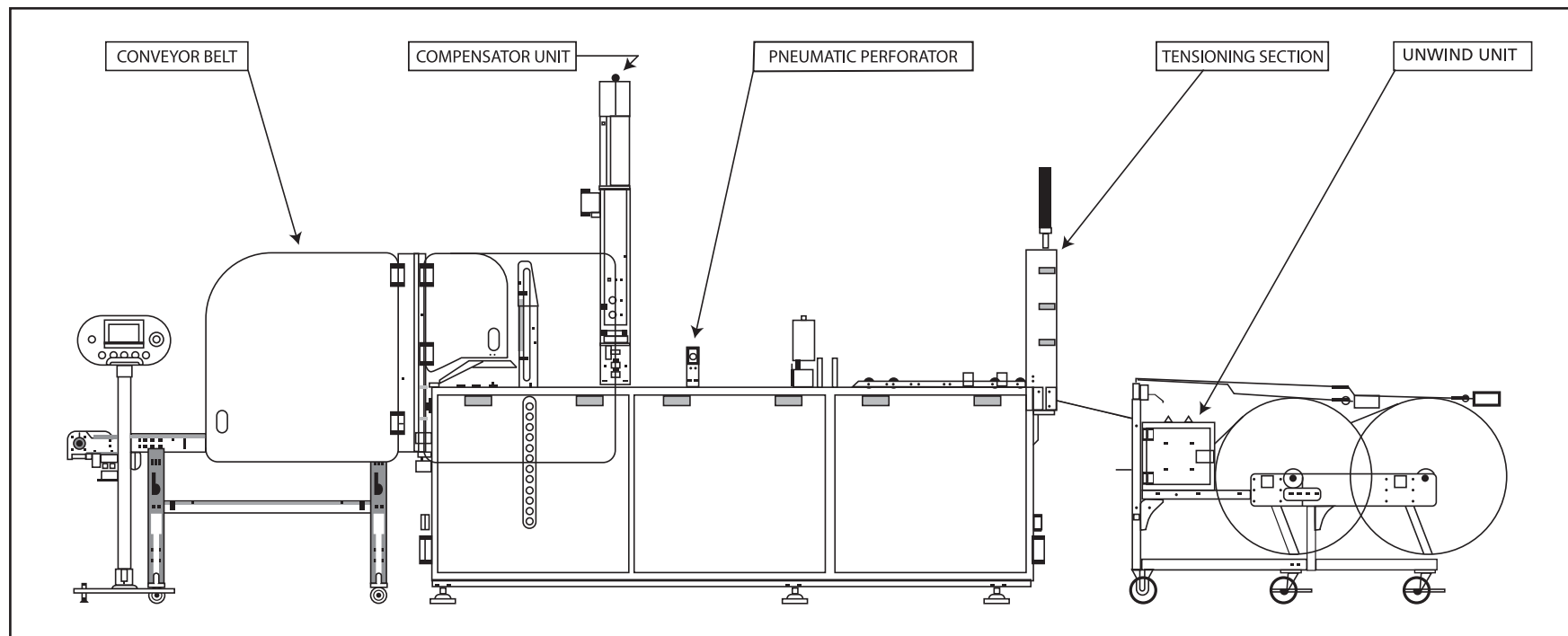
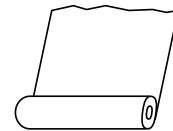
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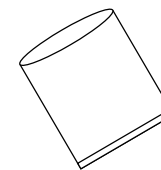
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- 11 THE REELS OF FILM CAN GO ON FOR FURTHER PROCESSING OR CAN BE SOLD AS CONTINUOUS FILM STRAIGHT TO OUR CUSTOMERS.
- 12 THE ROLLS OF FILM THAT GO ON FOR FURTHER PROCESSING, MOVE TO OUR CONVERSION DEPARTMENTS. DEPENDING ON THE SPECIFICATION & CUSTOMER, FILM WILL EITHER MOVE TO:
  1. OUR GENERAL CONVERSION DEPT – PRIMARILY FOR FOOD OR INDUSTRIAL APPLICATIONS
  2. OUR PHARMA CONVERSION DEPT – FOR HIGHER RISK MEDICAL & PHARMACEUTICAL APPLICATIONS
- 13 MACHINERY IS USED TO PRINT THE FILM (IF REQUIRED) AND CONVERT THE FILM INTO BAGS OR SHEETS USING CUTTING & WELDING PROCESSES
- 14 A TYPICAL BAG MACHINE IS SHOWN BELOW  
ROLLS OF FILM ARE LOADED ONTO THE BACK OF THE MACHINE



- 15 THE FINAL PRODUCT IS A BAG OR SHEET WHICH IS MADE FROM CUTTING THE ROLLS OF TUBING OR SHEETING USING CUTTERS & SEALING HEADS.



- 16 BAGS ARE PACKED AS TO CUSTOM REQUIREMENTS BEFORE BEING SHIPPED ON PALLETS

