



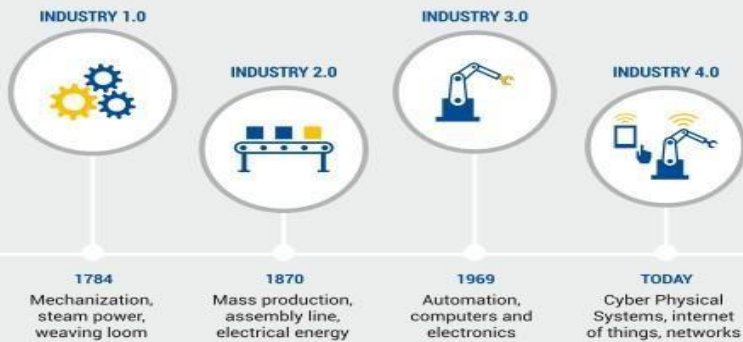
NX Smart Gear Pump Preformers and Extruders

Continuous Running Rubber Preforming Machines



...a lifetime of reliability and support

INDUSTRY 4.0

Barwell BPP NX Smart Gear Pump Continuous Rubber Preformers

The Barwell NX Smart Gear Pump Preformer is a fully automated and highly advanced screw extruder with gear pump technology, specifically designed to provide high levels of control and processing flexibility. The range is ideal for the preforming or extrusion of almost any form of rubber compound.

- Excellent for long continuous production runs or for profile extrusion requiring greater dimensional stability
- Suitable for the production of rubber preforms/blanks, pellets, and also strips and cord extrusions
- A fully automated processing method which reduces user dependence and increases productivity
- Technologically advanced processing providing optimum levels of dimensional stability, product consistency, accuracy and superior quality
- An intelligent process that ensures very high temperature control providing versatility at low temperatures
- Enables extrusion, cutting and check-weighing in one precise and efficient process
- A cost-cutting solution reducing material wastage and labour costs as well as negating the need to pre-heat your rubber on a two-roll mill
- A safe, reliable and user-friendly system

OPTIONS

- Extruder or preformer
- Built in metal detector for material screening
- General Purpose Head or Shoe Sole Head (available on BBP550 or above)
- 800 cuts per minute single rotary knife
- Variable speed die face conveyor helps support long extruded profiles
- 350 bar / 5000 psi operating pressure

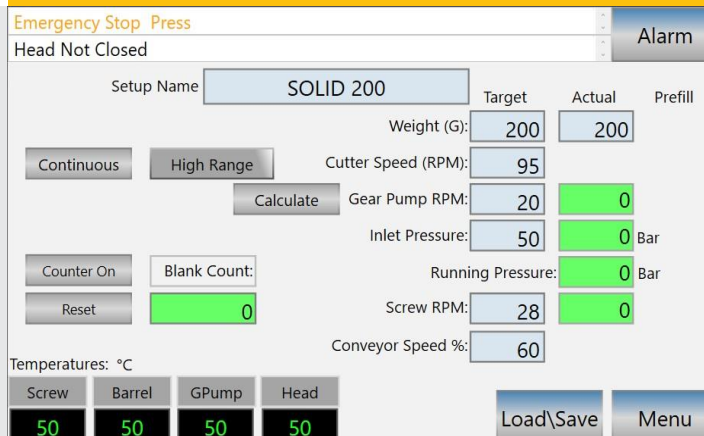
SMART FACTORIES

The modern factory is now moving to what is known as the fourth industrial revolution or Industry 4.0. A smart factory is an environment where automation, data collection, and instant analysis ensures that the monitoring of machine performance improves production quality and efficiency, as well as enabling predictive maintenance and instant trouble-shooting to take place.

BPP-NX machines will help rubber processors to develop smart factories and become more efficient through data analysis and process-driven technology.

FEATURES

- Cutter Pulse option to Start/Stop the Knife over a time period to enable Profiles to be easily cut to length
- For many applications, accuracy up to 0.5% can be achieved depending on material characteristics
- Includes Weigh Scales Loopback for Automatic Weight Adjustment
- Ability to allow direct remote access to the machine's control panel for solving urgent problems from anywhere in the world
- 240 bar / 3500 psi operating pressure
- Two speed gearbox to give higher cutting torque and speeds for large and small blanks (this is standard on 320 models and above)
- Data capture which stores process information for recording process control data on a Flash Card. Can be viewed via an Ethernet connection
- Variable speed added to standard conveyor – useful when preforming thin large O rings
- Provides Process Engineers with vital information and data from all points in the manufacturing process to aid decision-making and identify key areas that require development
- Omron 9" (230mm) Touch screen user interface (Multi-language with password protection)
 - 5000 product database on removable "Flash memory"
 - Prompt and error messages with Alarm history (for faults)

Emergency Stop Press Alarm

Head Not Closed

Setup Name: SOLID 200

Parameter	Target	Actual	Prefill
Weight (G)	200	200	
Cutter Speed (RPM)	95		
Gear Pump RPM	20	0	
Inlet Pressure	50	0	Bar
Running Pressure		0	Bar
Screw RPM	28	0	
Conveyor Speed %	60		

Temperatures: °C

Component	Temperature (°C)
Screw	50
Barrel	50
GPump	50
Head	50

Buttons: Counter On, Blank Count: 0, Reset, Calculate, Load/Save, Menu

ENHANCED SAFETY

Health and safety is a primary concern for those responsible for machine maintenance and operator safety.

Barwell machines are manufactured with safety in mind and are supplied with a number of features to ensure safe operation.

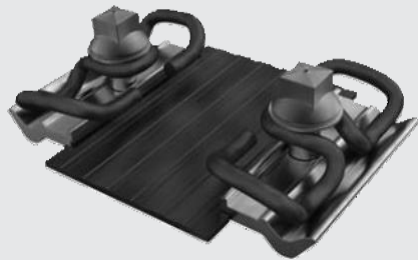
Barwell machines are compliant with CE regulations.



APPLICATIONS

Barwell Gear Pump extruders and preformers help companies to process products in a number of industries and sectors.

- Footwear
- Sports and leisure
- Rail
- Automotive
- Pharmaceutical
- Construction
- Agricultural
- Aerospace
- IT and communication
- Military
- Ring and oil seal
- General rubber goods
- Material screening
- Pelletizing
- Extrusion profiling



SUPPORT

Barwell is committed to provide a lifetime of reliability and support through superior machine quality and expert service. As the designer and original manufacturer, we are best positioned to assist customers to get the best out of their machine.

- Machine specification and application advice
- Technical assistance
- Commissioning and installation
- Training packages
- Preventative maintenance and emergency repair
- Supply of genuine Barwell spares and consumables to ensure optimum performance

Regular servicing is an investment and will reduce processing time and cost, improve production quality and increase machine life.

barwellSupport
Advice | Spares | Service 

PROCESSING MATERIAL FLEXIBILITY

- CR
- EPDM
- NBR
- HNBR
- SBR
- FKM
- ACM
- EVA
- And many more

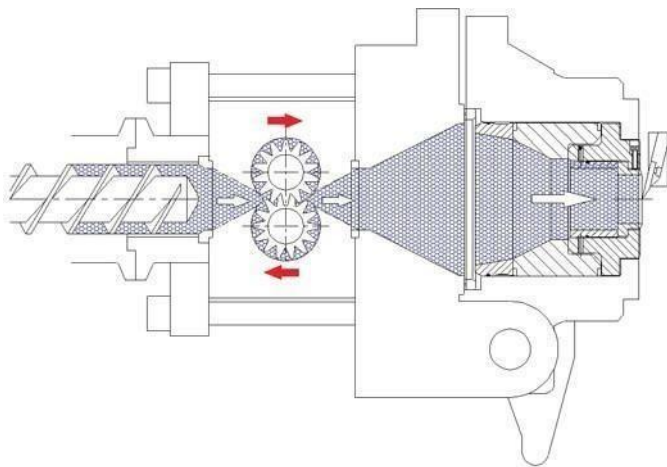




HOW DOES THE BARWELL GEAR PUMP PREFORMER WORK?

Excellent for the processing of sensitive materials

Material is delivered to the gear pump by a screw extruder which masticates the material prior to entry into the gear pump. The masticated material is pulled into the pump by the intermeshing gear teeth at a constant rate, irrespective of screw rotation speed, ensuring the gear pump cavity remains full at all times. Minimal shear is generated in the gear pump so increases in material temperature are kept to a minimum - important when processing temperature sensitive materials.



Provides precise control over dimensional stability

The material is then compressed at the outlet point at a constant rate enabling precise control over dimensional stability. The constant rpm of the gear pump and monitoring and regulation of inlet pressure help overcome extruder pulsing. This assists during strip feed changeover. The gear pump is independently driven but controls the screw rpm by means of inlet pressure monitoring. Without a gear pump the pressure build up and extrusion uniformity is directly influenced by the screw rotation and compound variations. When a gear pump is incorporated into the system line these variations are monitored at the pump inlet and adjustments made automatically to maintain constant output flow.

Constant pressure ensures extrusion quality

Whilst the pressure at the inlet varies (due to material changes, variations in feed etc.), the pressure at the outlet of the gear pump remains constant. This ensures improved extrusion quality and tight control of extrudate dimensions.

Greater control over plasticising effect helps the processing of difficult materials

By keeping the gear pump rpm constant, it is possible to influence the plasticising effect on materials by changing the screw rpm. Increasing the screw rpm increases the inlet pressure and also the compound temperature as greater mastication is achieved during the dwell time in the extruder barrel. This has significant advantages when processing difficult materials that need additional mastication to achieve output requirements.

Material flow through the gear pump is generally linear and therefore entirely dependent on the gear pump rotation speed. Increasing the gear pump rpm will automatically adjust the screw feed accordingly, maintaining the inlet pressure and cavity fill. This linear effect is not influenced by varying material characteristics.



Technical Data BPP NX Smart Gear Pump Preformer

barwell Gear Pump-NX

24/7 Smart Performers

If you are gearing up for increased business or have long production runs, a Gear Pump Preformer will provide you with continuous 24/7 production capability for your preforming. It will also reduce your machine set-up time and negate the need to pre-heat rubber on a two-roll mill, when compared to using ram preformer which is the preferred solution for batch production preforming.



Machine Information					
Model	BPP70NX	BPP180NX	BPP320NX	BPP550NX	BPP1200NX
Length (mm)	3070	3400	4000	4700	5900
Width (mm)	1890	2160	2332	2332	2750
Height / Centre Height (mm)	2190 / 1080	2190 / 1080	2190 / 1080	2190 / 1080	2190 / 1080
Weight Gear Pump Head / Screw Extruder (Kg)	1500 / 1500	1770 / 2000	2170 / 2750	3000 / 5000	3800 / 7000
Max Output Kg/hr	70	180	320	550	1200
Pressure (bar)	350	350	240/350	240/350	240/350
Head Options	GP	GP	GP	GP / SH	GP / SH
Max Gear Pump / Screw RPM	50 / 55	50 / 55	40 / 50	36 / 45	30 / 42
Screw Size 12:1 LD	65mm	75mm	90mm	120mm	150mm
Cutter Speeds (RPM) Standard Options	20-200 / 50-500	20-200 / 50-500	15-100 & 95-500 - 12-65 & 50-285	15-100 & 95-500 / 12-65 & 50-285	15-100 & 95-500 / 12-65 & 50-285
Cutter Speeds (RPM) Upgraded Options	—	—	80-800	80-800	80-800
Heating / cooling zones	3	4	4	4	4
Water Supply at 25°C (L/min)	105	140	175	175	175
Maximum Die Size Standard / Option (mm)	64 / —	64 / 140	140 / 190	140 / 190	190 / —
Maximum Blank Weight (g)	100	300	2000	2000	2000
Conveyor Width Standard / Wide (mm)	200 / 600	200 / 600	460 / 850	460 / 850	460 / 850
Oil Reservoir (Litres)	—	—	20	20	20
Screw Motor / Gear Pump Motor Power (Kw)	22 / 1.5	37 / 5.5	55 / 7.5	75 / 11	150 / 30
Total Power (Kw)	42	60	85	110	200
Strip Size Width x Thickness (mm)	60 x 7	70 x 7	100 x 7	130 x 8	180 x 10

All data is calculated with the machine being run under recommended operating conditions. It is recommended that tests are conducted during the machine specification stage to ensure that the machine will meet your requirements. Barwell recommends that as much information as possible is given before any purchase to ensure that the most appropriate machine is specified. Accuracy is based on a 10g blank weight and appropriate material preparation.





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