

Technical specifications:

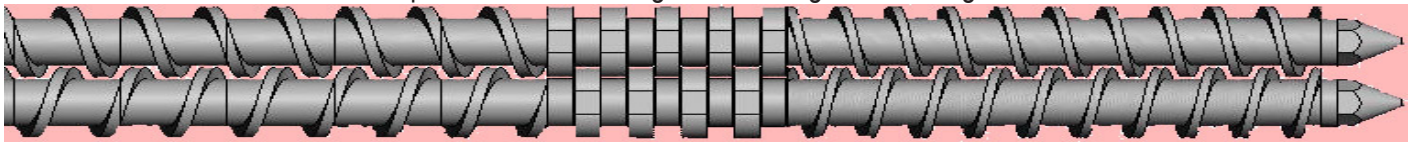
The Universal extrusion system offers a common (multi-flex) platform which can be reconfigured as a:

- single screw extruder,
- fully intermeshing co-rotating twin screw extruder,
- fully intermeshing counter rotating twin screw extruder,
- tangential co-rotating twin screw extruder,
- tangential counter rotating twin screw extruder.

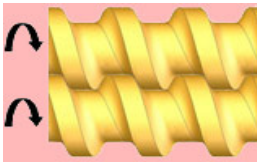
The standard configuration utilizes twin screws with a nominal diameter of 40mm. The length of the machine is variable in 5/1 L/D sections up to 40/1 maximum, with 25/1 being standard. However, depending on the nature of the application the extruder can be custom designed in other sizes.



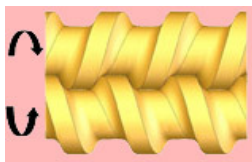
Example of counter-rotating intermeshing screw configuration



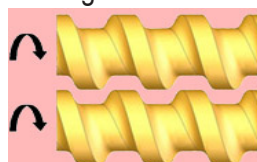
Other configurations available



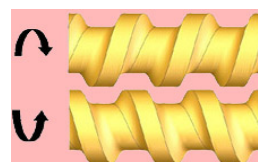
Fully intermeshing
co-rotating



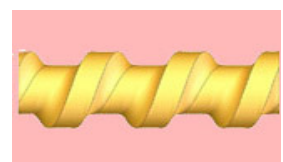
Fully intermeshing
counter rotating



Tangential
co-rotating



Tangential
counter rotating



Single screw

The 40mm Universal features barrel sections that are both horizontally and vertically split. The barrel can be separated at the horizontal split line and the entire upper barrel section opened via the hydraulic power unit for ease of cleaning and maintenance. This also allows for easy access to change out and re-configure the agitator assemblies. The barrel sections are electrolysis nickel-plated on the exterior surfaces to aid in cleaning and to prevent corrosion of the components.

Data Acquisition:

A data acquisition and control system is provided. This state-of-the-art open architecture PC based data acquisition and control system includes full instrumentation to monitor and control zone temperatures and the screw speed, and monitor product temperatures, process pressures and screw torque.



The software allows remote operation of the unit as well as remote data collection; either wireless or via the internet.

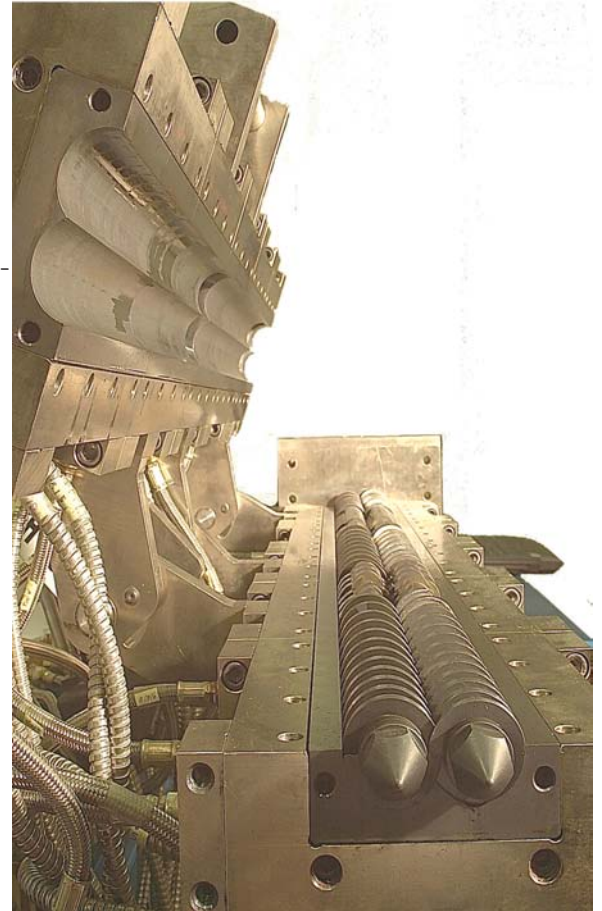


World's Most Versatile Extruder
40 mm Universal Extrusion Platform

MODEL MU-40

Features and Benefits:

- **Versatility in the number of screws:**
Same extrusion platform provides single or twin screw extrusion
- **Versatility in rotational directions of the screws in twin screw extrusion:**
Co-rotating or counter-rotating
- **Versatility in the degree of intermesh between the two screws:**
Any degree of intermesh from fully-intermeshing to tangential for both the co and counter-rotating twin screw extrusion
- **Versatility in length:**
Ability to decrease or increase the length of the extruder to suit your immediate application
- **Versatility in feed, devolatilization and sensor locations:**
Ability to change the locations of the feed ports, the devolatilization port and the locations of the sensors to fit your daily needs.
- **Splittable barrel:**
Ability to collect samples and study your degree of fill profile easily, rapid hydraulic opening of the barrel sections
- **PC based control and data acquisition:**
No more captive PLC's , always stay current, do your own programming
- **Control remotely using wireless or internet access:**
Run the unit from anywhere and collect your data at any location in the world on the fly.
- **Designs based on mathematical modeling of the processing of your own material:**
Custom design and manufacture for your material, a first in the industry
- **Explosion proof version:**
For energetics and other precarious materials including some types of pharmaceutical precursors
- **General purpose platform:**
For running inert materials which do not require explosion proofing



Material Processing & Research, Inc.

MP&R is a privately owned company, specializing in computer modeling/simulation and design of equipment for highly filled materials used in energetics, ceramics, magnetics, pharmaceutical, personal care, composites, polymers, rubber, batteries and food industries. Since 1992 MP&R has completed numerous government and commercial contracts to supply computer modeling, rheological characterization, design methodologies for dies and mixer/extruders for processing of highly filled materials. MP&R has also supplied custom equipment, including specialized continuous processors and parts, dies for extrusion and co-extrusion, rheometers and other related hardware.

MP&R's technology strengths include rheological characterization of complex fluids, computer modeling/simulation of continuous mixers/extruders and extrusion dies.

MP&R's 'Universal' is a highly flexible 40mm extrusion system that incorporates co and counter rotation with single or twin screws.....on a common platform.

MP&R's 'Mini' 7.5mm mixer/extruder is the world's smallest co-rotating twin screw.

MP&R also supplies on-line and off-line rheometers including the squeeze flow rheometer, capillary and slit rheometers.

All can be customized to meet specific customer requirements.

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