Pneumatic Swarf Conveyance

Swarf Removal

and Handling Systems
Pneumatic Swarf Removal - A modern solution...

Traditional Collection Methods

- Labour Intensive and Cumbersome
- Health and Safety Hazardous
- Environmental Pollution Risk
- Loss of Production Time
- Loss of Expensive Cutting/Cooling Fluids
- High Traffic Movement

The Mayfran Alternative

- Automated collection
- Reduced health and safety risk
- Compact design
- Modular and expandable
- Environmentally friendly
- Energy efficient
- Rapid large distance transfer
Blowing Systems

the lower cost alternative

- Suitable for most pre-processed chip types
- Cost effective swarf transfer
- Suitable for linear multiple machine connections
- Energy efficient design
- Final collection vessel can be filled without the requirement of intermediate equipment.
- Blowing fan and main power requirements are located internally with machining equipment.

Suction Systems

the universal alternative

- Suitable for most pre-processed chip types
- Suitable for large machine shop layouts with multiple machine connections
- Flexible design allows for machine relocation and production facility expansion
- Overhead pipework runs provide cleaner working floor space
- Reduced health and safety risk
- Quick release collection hoppers allow for easier maintenance and machine isolation.
Swarf Blowing Systems and Components

- Supplied in flanged or clamp lengths, long radius bends to reduce friction, various materials of construction are available to suit chip type. Surface finish to customer specification.

- Rotary Airlock to allow product input without air leakage. Supplied with flexible blade tips to cope with the risk of tramp parts. Heavy cast iron version available for high wear applications.

- Heavy duty centrifugal type fan units housed in attenuated enclosure and having energy efficient drives and automatic run & standby changeover facilities.
Air separator of compact design, ideal for areas of restricted head room. Suitable for multiple systems, with easy clean filter screens, access panels and powder coat finish.

Product feed chutes that are suitable for multiple conveyors. Available with pneumatic divertors, sound dampening liners and bin fill level sensing devices.

Briquetter unit with hydraulic power pack, inlet feed screw & PLC control. Available in a wide range of sizes to suit variety of volumes and materials.

Swarf briquettes reduce low weight, high volume materials. Bricks can be collected in swarf skips reducing transport costs.
Supplied in flanged or clamped format to suit application. Long radius, low friction bends manufactured from various materials to suit chip material and type. Powder coated to client choice, hot dip galvanised option for outdoor applications.

Optional MA Type, single shaft Crusher with auto tramp part ejection. The unit crushes bushy swarf as it leaves the machine conveyor and is graded for safe pneumatic transport.

Low volume, high pressure extraction systems would have the purpose made vacuum station. The chips are collected in an intermediate tank designed in such a way as not to bridge and the Swarf is fed into the vacuum system by a worm Gear. Sensors ascertain the fill level of chips in the vacuum station and signal the vacuum system to empty once the fill level has been reached.

Purpose made collection hopper complete with cross flow silencer, auto shut off and sequencing dampers, level sensing, support frame with heavy duty castors and quick release “Cup & Ball” type connection. Unit can be disconnected and pulled clear in case of breakdown or maintenance.
Low volume, high pressure extraction systems would have high pressure extraction fan set or side channel blower depending on design characteristics. The product and air are separated in a filter cyclone with the initial coarse particle separation taking place in the main chamber and the secondary air is passed through a filter cartridge and product is deposited via the rotary valve located at the base of the unit.

Air separation cyclone manufactured in heavy gauge mild steel. High velocity, sectional construction for ease of assembly. Complete with removable wear plates and product level sensing to suit the application.

Rotational feed chute, complete with laser level sensing, rotational drive motor and gear box, radial proximity sensors and product discharge baffle.

High pressure centrifugal fan unit positioned on clean side of cyclone to eliminate wear. Complete with energy efficient drives, attenuated enclosure and standby formats.
Swarf Handling solution for large Component Gantry Milling System

Purpose made multi-ply, self lubricating lip seal complete with spring steel support fingers to enable machine to travel in both X & Y axis without loss of air.

Swarf chip transfer system to deliver swarf from air separator to various collection devices. Run and standby options are available to ensure maximum system uptime is achieved.

Bespoke telescopic sections to allow for vertical Z axis travel complete with linear actuator, precision bearing slideways, gauge length measurement & close tolerance ptfe/nylon air seals.

Tailor made extraction hoods, having a 360 degree annular design, complete with auto opening for tool changing, wear resistant quick release skirts, coolant spray nozzles and quick release removal flanges.
Bulk filling trailers are one of the options available for chip collection. Comprising of reverse onto fill pipework the system has auto fill sensors, trailer changeover divertors, docking steelwork.

Air separation cyclone unit having a heavy duty mild steel construction complete with removable wear liners to suit applications. High velocity, high efficiency design, sectional construction for ease of installation and available with product level and blockage sensing.

High pressure centrifugal fan units positioned on the clean side of the cyclone unit to eliminate impeller wear. Complete with energy efficient drives, attenuated enclosure and run/standby option.
Swarf Processing Systems

Centrifuging Systems

- Centrifuging of chips at source integrated into a swarf blowing system
- Installation features:
  - Centrifuge by-pass divertor
  - VBU 2000 Centrifuge
  - Airflow isolation slide damper
  - Rotary valve
  - Blowline inlet connection

Crushing Systems

- Suction system hopper incorporating optional MA Type Mayfran crusher
- Features:
  - MA3 Crusher
  - Purpose made mobile support frame
  - Feed hopper
  - Auto-slide and sequencing valves
  - Level Sensing
  - Quick release “Cup & Ball” duct connection
Components

- Briquetting unit on aerospace materials
- Features:
  - Feed chute with by-pass diverter
  - Screw feed hopper
  - Hydraulic power pack
  - In-feed magazine
  - Main compression ram
  - Twin briquette out-feed chutes

Electro-Hydraulic lifting equipment
- Features:
  - Coolant drainage system for environmental pollution reduction
  - Designed specifically for lifting of skips and trailers
  - Collection system for coolant re-use
  - Floor guides for easy trailer loading

Processing Systems

Drainage Systems