

BRING BACK YOUR BEST



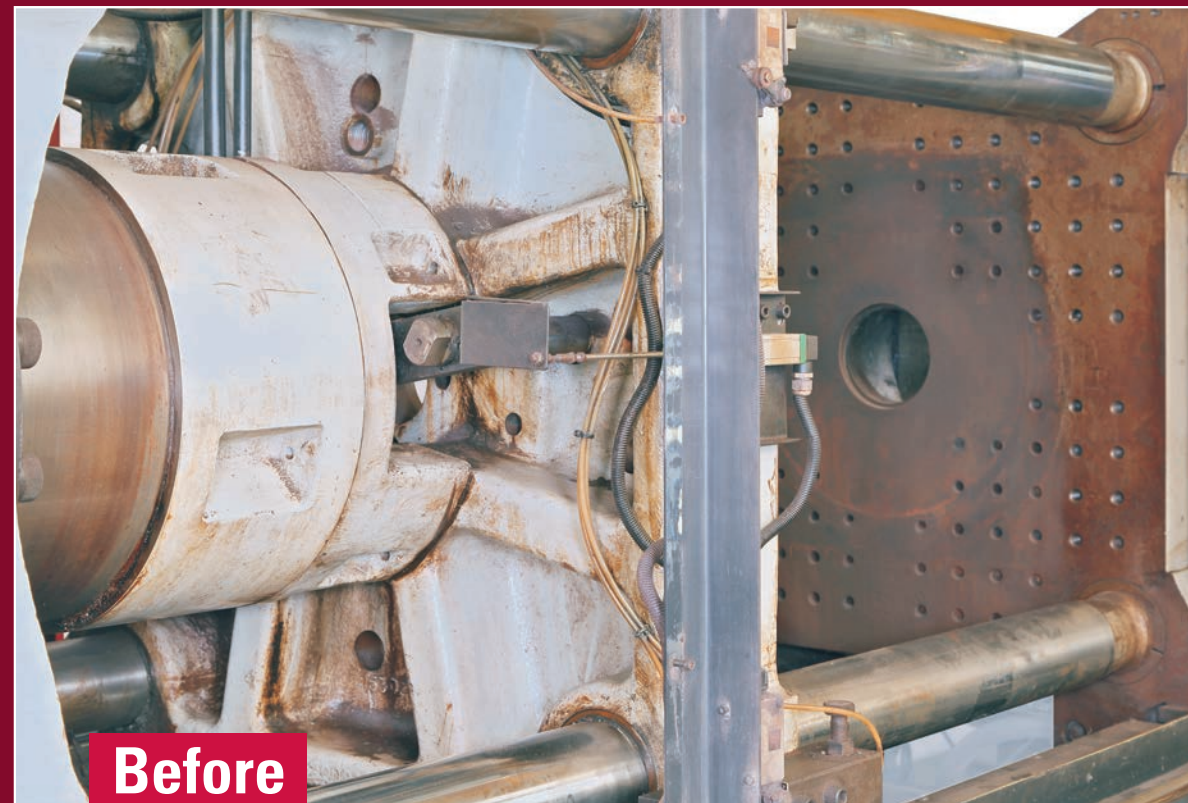
RETROFIT AND REBUILD

Milacron is committed to deliver the service support to its customers throughout the life cycle of the Milacron supplied injection molding machine.

Milacron India Retrofitment Team can help you to bring new life to your older machine by Retrofitment / Refurbishment. We can restore your older machine to optimum operating condition using the latest technology for the cost much lower than the new machine.

MILACRON'S TECHNICAL SERVICE TEAM WORKS WITH YOU

- To review condition of old machine
- Understand your needs
- Evaluate present performance
- Will explain countable and uncountable benefits

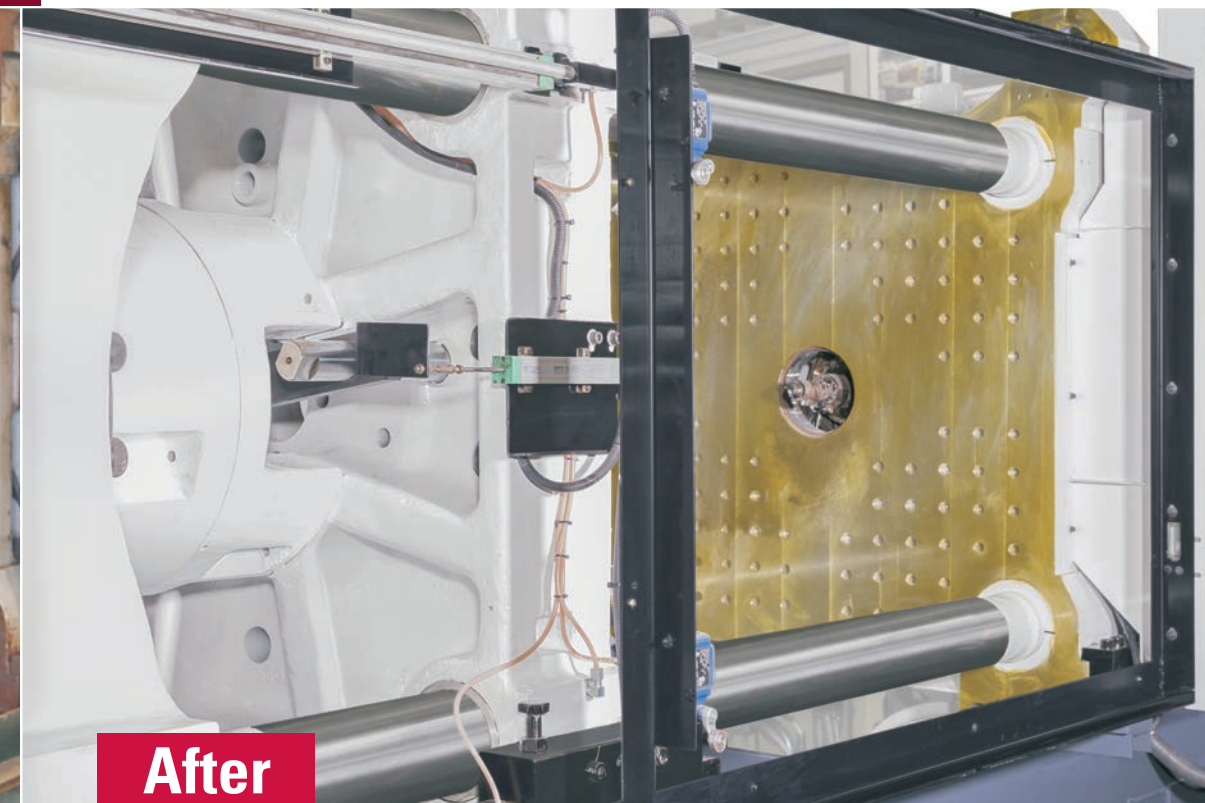


Before

KEY CHALLENGES

- Reduced productivity
- Reduced reliability
- Outdated controls
- Energy losses
- Increased maintenance costs
- Major capital investment on new equipments

In older machines, maintenance issues or halts in production can quickly translate into unacceptable financial losses. You can avoid downtime problems by relying on Milacron's Retrofitment & Rebuild Services.

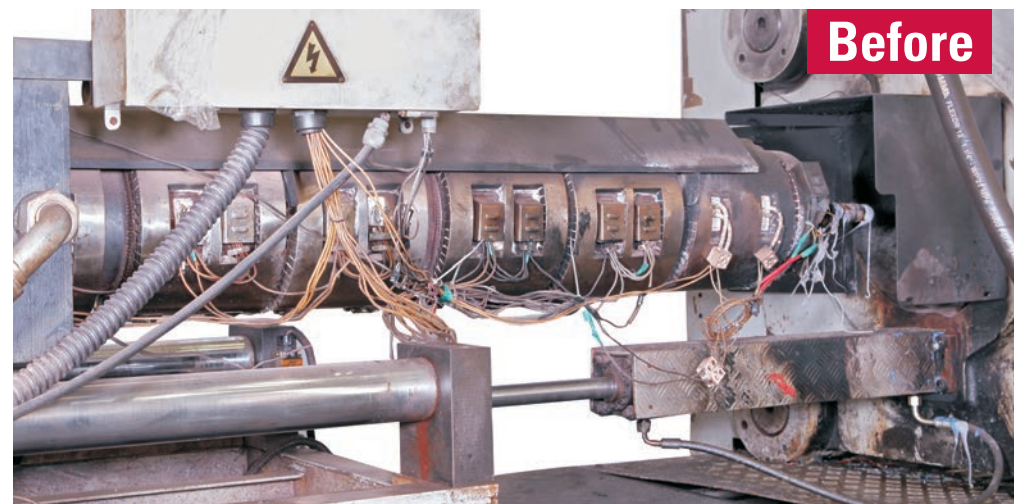


After

HOW CUSTOMER WILL BE BENEFITTED?

- Improve machine efficiency
- Increase uptime
- Reduce wastage / scrap
- Reduce cycle time
- Reduce material usage
- Reduce maintenance cost
- Reduce spare parts budget
- Maintain MTBF (mean time between failures)
- Maintain MTTR (mean time to repair)

CONTROL RETROFITMENT / UPGRADATION



CONTROL FEATURES:

- Process monitoring with graphically displayed minimum, maximum and average values
- Graphical display of 22 parameters for the last 1000 cycles
- Summary of last 3,000 alarms with date and time
- Configurable multilevel password with operator's name
- Customized set up menu
- High / Low limit display for each adjustable parameter
- Time precision 0.01 sec
- Change log menu: logs last 100 set points with time and date
- Internal memory for up to 80 mold data storage
- Over view screen with graphical display of machine functions
- 1000 alarm history with date and time log
- USB port
- Axis wise graphical cycle time analysis
- Batch counter with option to turn-off the motor
- Mold data / process data / change log saving to external USB Device
- Auto shut down
- Barrel heating, including heating energy indicator and monitoring
- Statistical process control (SPC) with Graphics
- Process Mode: Functions with its co-functions on a single key press
- I/O Diagnosis – Analog & Digital

The new generation of Endura control retrofit systems from Milacron offers plastics processors a cost-effective way to rejuvenate their old machines.

With the machinery and applications expertise of the Milacron Installation Team, the retrofit process can be completed onsite.

WHY REPLACE YOUR OUTDATED CONTROLS?

- Increase Profitability
- Increase Efficiency
- Reduce Cycle Time
- Reduce Manpower Cost
- Reduce Spare Parts Inventory

SCOPE OF CONTROL RETROFITMENT:

- Replacement of older Control System with new 10.4" color TFT Display Control System with alpha numeric keys.
- Complete replacement of new electrical enclosure with all electrical panel devices like Circuit Breakers, SSRs, Scanner Card, SMPS, Isolation Transformer for control safety, relays etc.
- Control system with Modular I/Os.
- Replacement of old, damaged and aged heating wiring with new fiber glass cables with new junction box with neat and clean routing.

- Heater current display to monitor heater bands.
- Core and air ejection interface upto 2 stages.
- Auto mold height adjustment monitoring position device.
- Additional safety of heating circuit through heating contactor.
- Complete replacement of wiring harness inside and outside with LED z4 connectors.
- Add on options like under voltage / over voltage protection circuit, UPS for uninterrupted power supply to controls, robot interface, mold gate interface etc.

SERVO RETROFITMENT / CONVERSION

Nowadays power saving concept using servo systems on Injection Molding Machines have made machines more economic and user friendly. Consequently old machines are becoming burden on user.

Milacron, is committed to the promotion of the energy conservation technology of the injection molding machine, strives to help customers to promote efficiency and create value, explores the current and future demands of customers, and customizes the servo system with cost to performance ratio by virtue of the professional skills.

To implement energy saving system in old Injection molding machine we replace old electrical motor (Induction motor) with new servo system.

WHY SERVO SYSTEMS ARE BETTER?

High energy saving: In an ideal working state, compared with conventional injection molding machines, their energy saving can reach 50% with servo system.

Better molding stability: Compared with conventional injection molding machines, repeatability is greatly improved due to servo motor close-loop control.

Quick response: Due to faster acceleration time of servo motor, the response time is faster by 10 to 15 % compare to induction motor.

Quiet & low noise: The machine runs with low noise and will be much quieter in a low speed.

CASE STUDY - 1

Machine	Delta Servo - 400
Article	Grip Rear KTCJ
Segment	Automotive
Material	Nylon GF
Part weight (gm)	610
Runner weight (gm)	34
Total weight (gm)	644
Cycle Time (Sec)	65
Cooling Time (Sec)	40
Refilling Time (Sec)	11
Shots / Hour	55
Unit consumption / Hour	11.5
Material consumed / Hour (Kg)	35.42
Unit / Kg after Servo conversion	0.32
Average Unit / Kg before Servo conversion	0.70
Power Saving after Servo Retrofitment	53 %

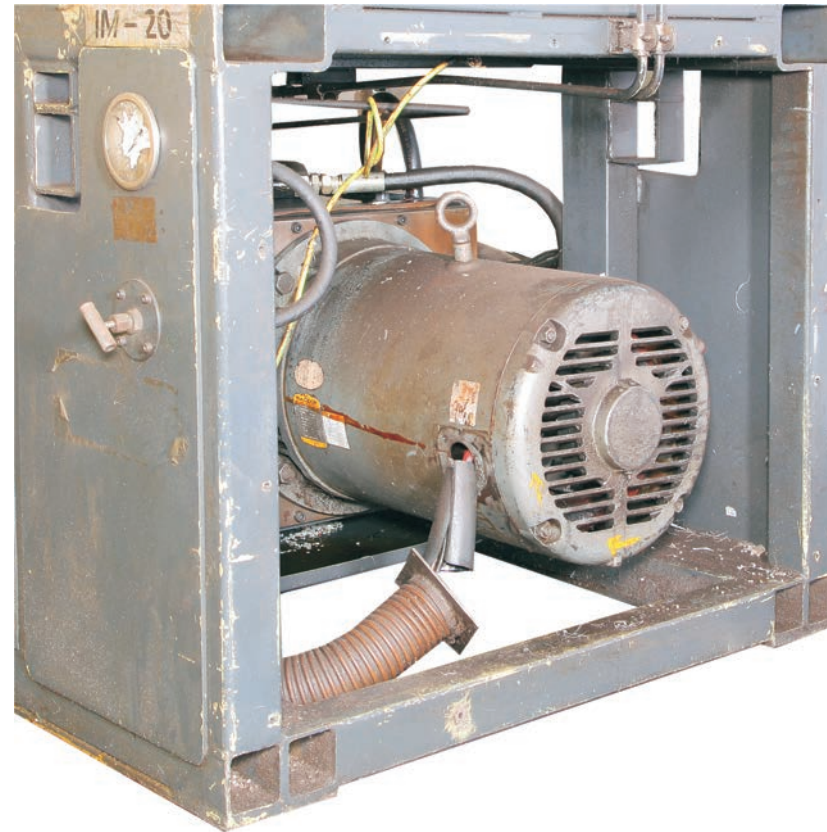
CASE STUDY - 2

Omega 150	Before Retrofitment	After Retrofitment
Article	3 mm Pad	3 mm Pad
Segment	Railways	Railways
Material	EVA	EVA
Shot Weight (gm)	168	168
Cycle Time (Sec)	37	37
No. of Cavities	1	1
No. of Cycles / Hour	97	97
Material consumed / Hour (Kg)	16.3	16.3
Energy consumed / Hour	10.4 Units	4.8 Units
Unit consumed / Kg (After)	0.63 Kwh / Kg	0.29 Kwh / Kg
Power Saving after Servo Retrofitment		54 %

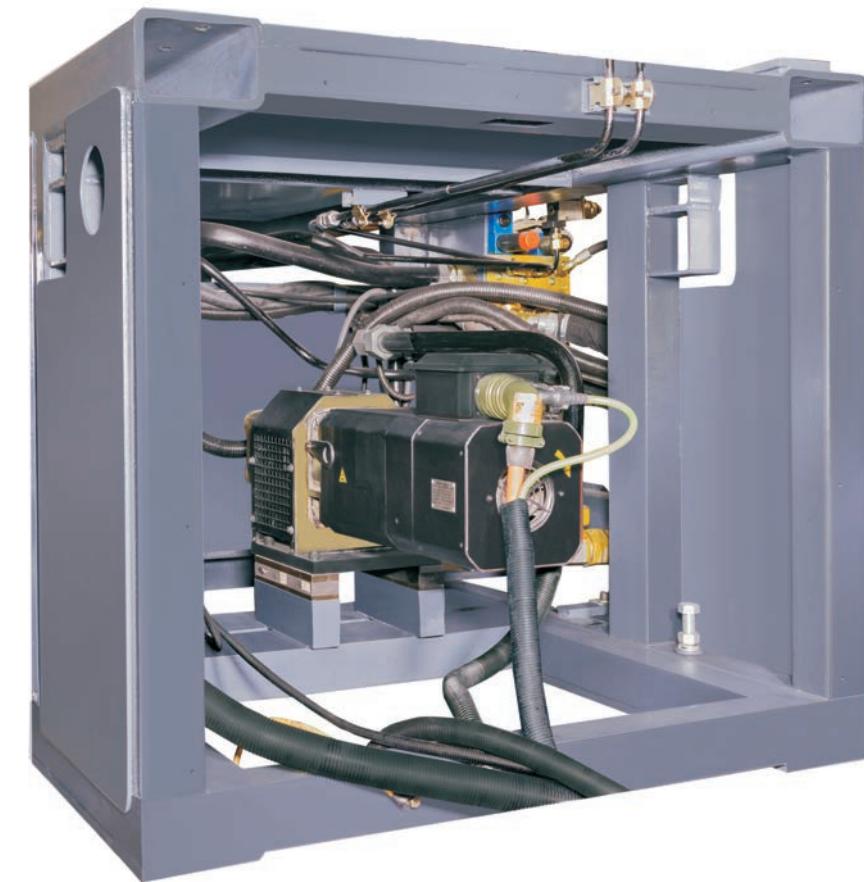
CASE STUDY - 3

Machine	Omega 660 T (Std)	Omega Servo 660 T
Article	Chair (2.2 Kg)	Chair (2.2 Kg)
Segment	Furniture	Furniture
Material	Reprocessed Material - PP	Reprocessed Material - PP
Frame	C 100	C 100
Connected Load (Motor + Heater)	136.4 KW (75 KW + 61.9 KW)	123.8 KW (61.9 KW + 61.9 KW)
Cycle Time (Sec)	47	47
Mode (High Base)	Auto	Auto
Cooling Time (Sec)	25	25
Cooling Mode	Cooling Tower	Cooling Tower
Refill Time (Sec)	17.42	17.42
Energy Consumption / Hour	69 KWH	47 KWH
Energy Consumption / Kg	0.42 KWH / Kg	0.29 KWH / Kg
Power Saving after Servo Retrofitment		32 % Saving compare to Std.

Before



After



Product Advantage

Significant reduction in energy consumption and therefore reduced energy cost

Excellent regulation characteristics

Higher efficiency than a controlled asynchronous motor with fix or variable pump

Power pack sizing and testing with internal gear pump for optimal system design

Less heat entering the system, thus allowing a smaller cooling system

Lower noise generation

Power factor improvement

Customer Benefit

Amortization of any higher initial costs for servo motor and servo drive usually within 2 year* (* Based on Application & Segment)

Easy replacement of electronic - hydraulic variable pump

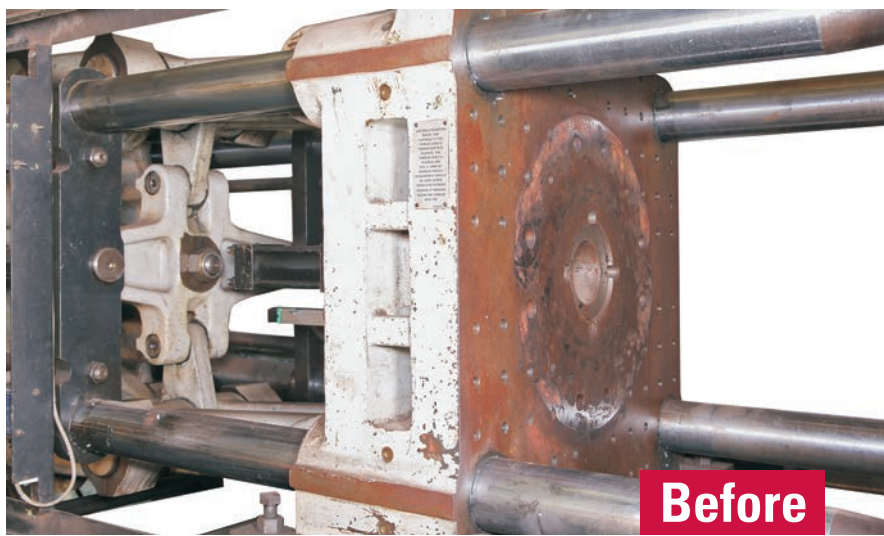
Minimal operating cost

Optimal configuration with respect to costs, noise and energy efficiency

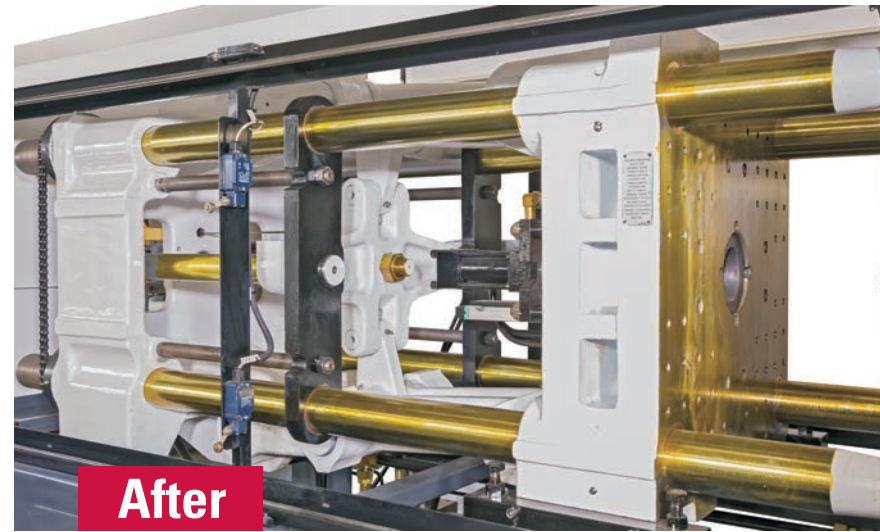
More compact machine design and additional cost reduction due to less cooling demand

Less effort required for noise insulation

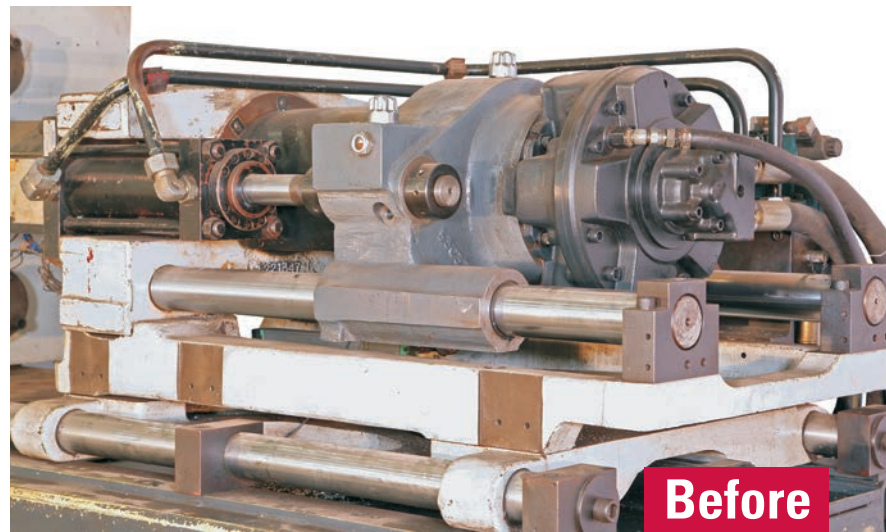
Reduce unwanted heating of cables, transformers etc,



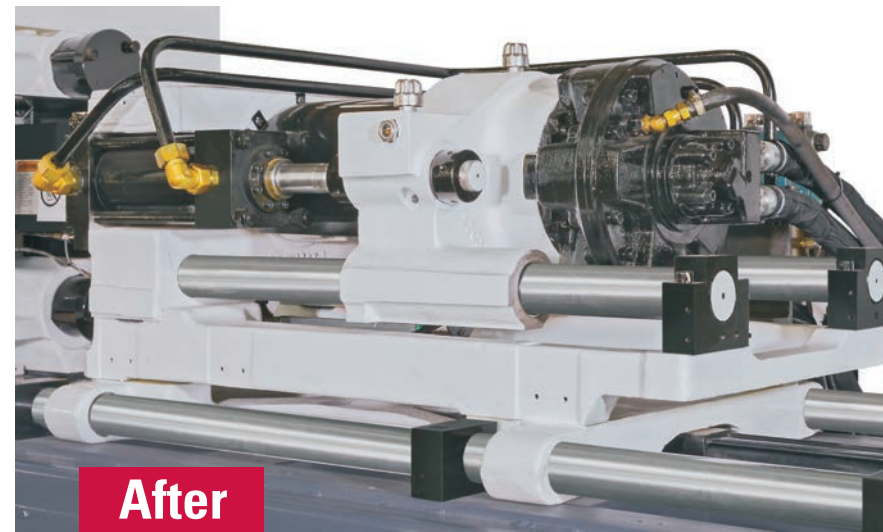
Before



After



Before



After

MACHINE REFURBISHMENT / RECONDITIONING

Aging machines lead to increasing maintenance cost, unpredictable breakdowns and hence, a drop in performance.

Why Reconditioning/Refurbishment is required?

Clamp unit of the machine is having moving parts and tend to wear in their life span. Replacement of these parts is necessary to avoid adverse effect of wear and tear on other components of the machine (like cylinder seals, mechanical alignments, bushes etc.)

How Milacron Reconditioning is different?

- Milacron Technical Service Team evaluates the machine for the required reconditioning at site and submit the report to Technical Team at Manufacturing Plant for reconditioning.
- Once Machine is received at Milacron works, Retrofit and Refurbishment Team inspects the same and prepares detailed scope of work.

- Machine is disassembled completely and all individual parts are inspected for their dimensional condition and then decisions are taken for replacement or rework.

Scope and Activities of Milacron Refurbishment / Reconditioning:

- Visual inspection of machine to recommend the scope of work to be carried out.
- Complete strip down of the machine.
- Base levelling and base scrapping. (base scrapping in case of disturbed machine level)
- Machining of stationary and moving platens on CNC machine, helicoil installations for the damaged mold mounting holes and tie bar polishing etc.
- Thorough inspection of critical parts.
- Replacement of all worn-out and failed parts based on inspection.

- Rebuilding of machine with painted parts.
- Realignment of the machine to achieve best accuracy.
- Final run-off/testing and painting of the machine.
- Recommissioning and trial at customer's place.

Direct and Indirect Benefits of Refurbishment and Reconditioning

- Restore complete functionality and original performance - next to new machine performance of the clamp unit.
- Better reliability with reduced breakdown.
- Cost effective solutions to eliminate quality, obsolescence and productivity issues.
- Reduce mold wear and tear due to toggle misalignments.
- Prevent further wearing out of parts.

- Elimination of frequent breakdowns due to maintenance issues.
- Saving on maintenance cost
- Elimination of wearing out of mold and internal parts.
- Reduce rejections

Injection Unit Refurbishment

Milacron Technical Service Team evaluates the condition of major components based on following criteria in injection unit refurbishment.

- Recurring issues faced by customer
- Any complaint related to plasticizing output.
- Molding/processing issues in machine.
- Weight consistency issues in molded product.

According to customer need and based on evaluation, Milacron offers refurbishment solution.



MILACRON®

Ferromatik Milacron India Pvt. Ltd.

93/2 & 94/1, Phase-I, G.I.D.C. Vatva, Ahmedabad - 382445, Gujarat, India.

☎ +91-79-61341700, +91-79-25890081

📠 +91-79-25830125

✉ salesfmi@milacron.com

🌐 www.milacron.com

CIN No. U74999GJ1995FTC025783

BENGALURU +91-80-2340 8984/85 CHANDIGARH +91-172-508 6633 CHENNAI +91-44-2378 3648/0456/3318 COIMBATORE +91-89398 88192 HYDERABAD +91-40-6704 5159 / 5160 KERALA +91-94477 21221
KOLKATA +91-33-2282 2593/2909 MUMBAI +91-22 4005 5459/60/61/62/66 NEW DELHI +91-11-4630 1115/16/17 PUNE +91-20-3049 0990/91 VAPI +91-756-741 1133