

# UNIVERSAL MULTISHOT™ SYSTEMS



CONVERT YOUR  
STANDARD PRESS TO A  
MULTISHOT MACHINE



Products are covered by one or all of these patents: U.S. Patent 6,352,427, U.S. Patent 6,994,810, U.S. Patent 6,402,504 B1, U.S. Patent 6,709,251 (other patents pending)

# | ABOUT US

Universal Multishot™ Systems began operations in 1998 when traditional sources of molding machines could not react quickly enough to our expanding multiple material tooling and sampling needs. We needed high speed injection units to serve our customers' range of molding operations - covering presses from 40 tons to over 1200 tons. Rather than making due, MGS engineers began building our own stand-alone portable injection units and rotational mechanisms to test and validate the two-component tooling systems we were building for our custom molding customers.

Our in-house units quickly earned a reputation amongst our customers as the most effective and flexible solution. In preference of being locked into the screw sizes and barrel configurations of an OEM two-shot machine, MGS UMS™ equipment was developed to be portable and flexible, enabling you to move it from press to press as needed. Our equipment is available in a wide range of sizes and is built to convert a standard injection molding machine into a multishot machine – in a matter of hours.

Today, MGS is uniquely positioned as the total solutions provider - offering injection units, rotary platens, two & four sided rotary stacks, high speed rotary spindle systems, two / three / four stage indexing systems and hot runner controllers.

Whether used as part of a development project or for long-term production molding, UMS™ equipment is conducive to robust, repeatable and reliable processes that will effectively expand your capacities and capabilities.

Universal Multishot™ Systems is a division of MGS Mfg. Group. Founded in 1982, MGS is a leading global provider of optimized manufacturing solutions for high precision plastic products. With more than 1,400 employees at 10 facilities here and abroad, MGS is the ideal partner to meet your greatest challenges and make your program successful.







MOLD MOUNTED [M] SERIES



VERTICAL [V] SERIES



# UMS™ SERVO PORTABLE INJECTION UNITS

HORIZONTAL [H] SERIES





## UMS™ MOLD MOUNTED [M] SERIES

Mold mounted units bolt directly to the mold offering precise process control and flexible use. Easily moves from mold to mold or press to press with compliant Robot Interface.

## UMS™ VERTICAL [V] SERIES

Our vertical units mount on all injection molding machine platens, saving valuable floor space. The unit can easily be transported between multiple injection molding machines to make every press in your facility multishot capable.



**UMS™ E24 VERTICAL  
PORTABLE INJECTION  
UNIT**

- Closed Loop Injection Speed, Pressure and Position Control
- CPM3V Hardened Screw and D2 Lined Barrel with Ceramic Heaterbands
- Portable Technology:  
Move from Machine to Machine  
Flexible Asset Allocation  
Independent Integration

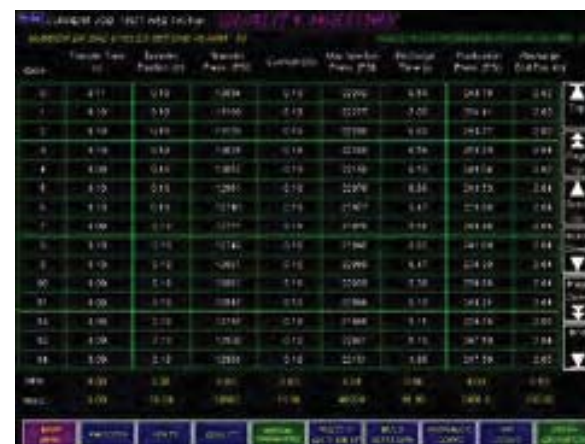
## UMS™ HORIZONTAL [H] SERIES

MGS self-supported horizontal portable injection units offer large shot capacity and solve low ceiling challenges. The H series have the same performance features as the vertical units and can be built with screw and barrel sizes to suit your specific application.

## OPERATOR INTERFACE

Human Machine Interface (HMI) - Injection Unit Controls PanelView HMI Display

- Easy to use color touch screen display
- 30 set-up recipes
- Data download to USB interface
- Screen capture to USB
- On-screen trouble shooting guide



## QUALITY DISPLAY PAGE

- 15 cycles displayed at all times
- 1,000 cycles of process history
- Select 8 of 26 parameter values
- Graphic Injection - Velocity / Position / Pressure Curves
- Scatter plot graphics for trend analysis (servo model only)

MGS portable injection units use either standard SPI or Euromap 67 robot interface – enabling seamless communication with the base machine's primary injection unit and robotics.

# UMS™ SERVO E-SERIES SPECS

## PORTABLE TECHNOLOGY & UNIVERSAL INTEGRATION MACHINE TO MACHINE

MODEL		E-MICRO [M,H]	E14 [M,V,H]			E18 [M,V,H]			
SCREW Ø	mm	14	14	16	18	18	20	22	24
INJECTION STROKE	in (mm)	2.0 (50)	4.0 (101)			5.5 (140)			
SHOT VOLUME	in³ (cm³)	0.48 (7.8)	0.95 (15.6)	1.25 (20.4)	1.58 (25.9)	2.17 (35.5)	2.68 (43.9)	3.24 (53.1)	3.86 (63.2)
CALC. CAPACITY PP	oz.	0.2	0.4	0.5	0.7	0.9	1.2	1.4	1.7
CALC. CAPACITY HIPS	oz.	.03	0.5	0.7	0.9	1.2	1.5	1.8	2.1
INJECTION PRESSURE	psi (bar)	26,000 (1793)	36,000 (2483)	27,000 (1862)	22,000 (1517)	39,000 (2690)	37,000 (2552)	35,000 (2414)	30,000 (2069)
INJECTION VELOCITY	in/s (mm/s)	5.5 (140)	7.1 (180)			7.1 (180)			
VOLUMETRIC INJECTION	in³/s (cm³/s)	1.31 (21.5)	1.69 (27.8)	2.21 (36.3)	2.8 (45.9)	2.8 (45.9)	3.46 (56.7)	4.18 (68.6)	4.98 (81.6)
SCREW SPEED	rpm	375	350			350			
DIMENSIONS L x W x H	mm	1080 x 320 x 441 [M]	1405 x 390 x 455 [M]			1538 x 465 x 515 [M]			

## SIGNAL INTEGRATION COMPLIANT ROBOT INTERFACE (E-67,SPI)

E24 [M,V,H]				E36 [V,H]			
24	28	32	36	36	40	45	50
5.5 (140)				10 (254)			
3.9 (63.2)	5.2 (86)	6.9 (112.4)	8.7 (142.2)	15.8 (258.5)	19.5 (319.2)	24.7 (404)	30.4 (498.7)
1.7	2.3	3	3.8	6.8	8.4	10.7	13.2
2.1	2.9	3.8	4.8	8.8	10.8	13.7	16.9
39,000 (2690)	33,000 (2276)	25,000 (1724)	19,000 (1310)	43,000 (2966)	35,000 (2414)	27,000 (1862)	22,000 (1517)
7.1 (180)				5 (127)			
4.98 (81.6)	6.78 (111)	8.85 (145)	11.2 (183.6)	7.9 (129.3)	9.7 (159.6)	12.3 (202)	15.2 (249.4)
350				250			
1918 x 478 x 529 [M]				1623 x 914 x 2461 [V]			



**UMS™ E18 [H] SERIES  
PORTABLE  
INJECTION UNIT**



**UMS™ E18 [V] SERIES  
PORTABLE  
INJECTION UNIT**



**UMS™ E14 [M] SERIES  
PORTABLE  
INJECTION UNIT**

# UMS™ SERVO E-LSR SPECS

MODEL		E-LSR [V,H]		
PLUNGER Ø	mm	9.5	15.9	25.4
INJECTION STROKE	in (mm)	6 (152)		
SHOT VOLUME	in³ (cm³)	0.66 (10.8)	1.85 (30.3)	4.71 (77.2)
INJECTION PRESSURE	psi (bar)	29,000 (2000)	21,000 (1448)	22,750 (1569)
INJECTION VELOCITY	in/s (mm/s)	7.1 (180)		
VOLUMETRIC INJECTION	in³/s (cm³/s)	0.82 (14.2)	2.31 (39.7)	6.18 (77.12)
DIMENSIONS L x W x H	mm	1405 x 390 x 455 [H]		

## OPERATOR INTERFACE

- PanelView HMI display
- 30 set-up recipes
- Control capable for ancillary UMS products
- Pneumatic A & B material delivery and closed-loop recharge sequences
- Includes nozzle shut-off and mold valve gate sequence
- Water-cooled barrel, end cap, and shut-off nozzle
- E-67 Robot Interface



**E-LSR [V] SERIES**

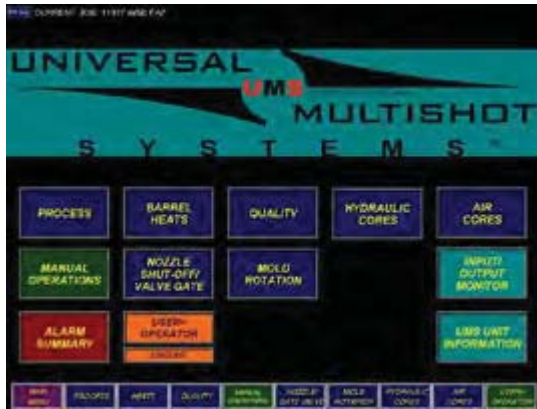


**E-LSR [H] SERIES**



# OPERATOR INTERFACE (HMI)

## MAIN MENU PAGE



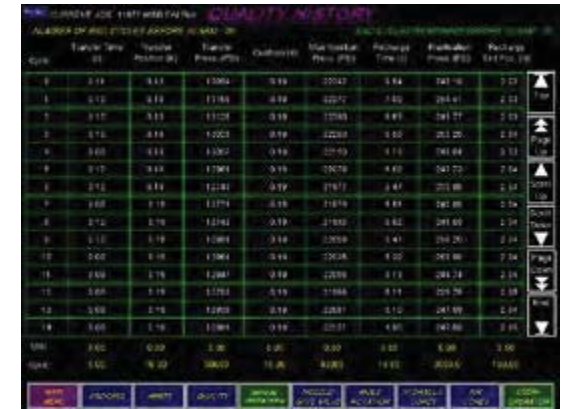
Navigate pages easily

## PROCESS SETTINGS



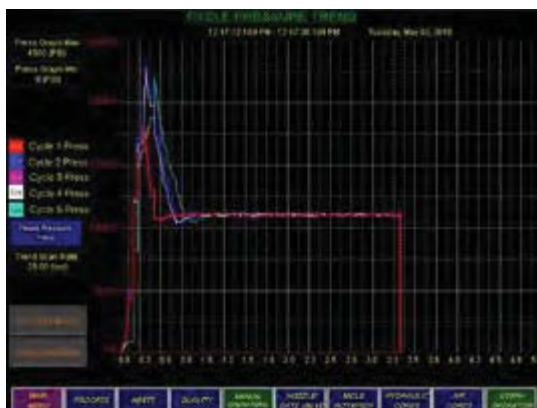
Display set-points and functions

## QUALITY HISTORY



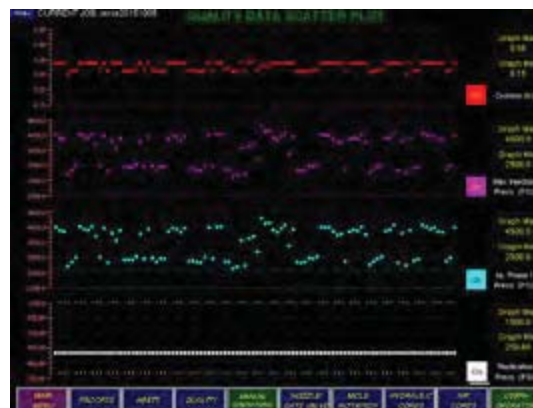
Scroll 1000 cycles of display history; set limits for “Good Part - Bad Part” alarms

## CYCLE PRESSURE GRAPH



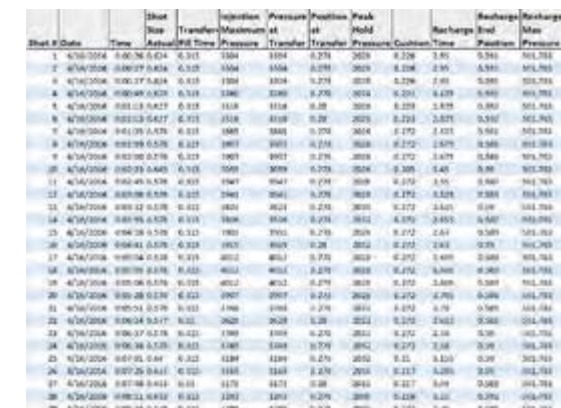
Real time graphic overlay of 5-cycles

## QUALITY DATA SCATTER PLOT



Trend analysis of select parameters

## USB PORT - DATA ACQUISITION



Continuous data access of 26 parameters through USB port.  
Capture and save display images

**MOLD MOUNTED [M] SERIES**



**VERTICAL [V] SERIES**



# UMS<sup>TM</sup> HYDRAULIC PORTABLE INJECTION UNITS

**HORIZONTAL [H] SERIES**





**UMS™ MOLD MOUNTED [M] SERIES** — mounts directly to mold

**UMS™ VERTICAL [V] SERIES** — mounts to press platen

**UMS™ HORIZONTAL [H] SERIES** — non-operator “L” position

- Crescent gear hydraulic pump for quiet operation and long life
- Primary quick disconnect hose connections for fast set-up and removal
- Quick connections of control sequences: valve gates, rotary devices, core sequences, etc.
- Double-rod matched cylinders used to enhance mechanical stability and provide consistent injection performance
- Standard SPI or Euromap 67 robot interface, enabling seamless communication with primary injection machine and robot

**UMS™ [H] SERIES**



**UMS™ [M] SERIES**

**UMS™ HYDRAULIC POWER UNIT [V]**



**UMS™ [V] SERIES**



# UMS™ HYDRAULIC SERIES SPECS

## PORTABLE TECHNOLOGY UNIVERSAL INTEGRATION MACHINE TO MACHINE

MODEL		12M [M,V,H]		18 [M,V,H]				24 [M,V,H]			
SCREW Ø	mm	12	14	16	18	20	22	22	24	28	32
INJECTION STROKE	in (mm)	4.0 (101)		4.0 (101)				4.0 (101)			
SHOT VOLUME	in³ (cm³)	0.70 (11.5)	0.95 (15.6)	1.25 (20.4)	1.58 (25.9)	1.95 (31.9)	2.36 (38.6)	2.36 (38.6)	2.80 (46.0)	3.82 (62.6)	4.99 (81.7)
CALC. CAPACITY PP	oz.	0.3	0.4	0.5	0.7	0.8	1.0	1.0	1.2	1.7	2.2
CALC. CAPACITY HIPS	oz.	0.4	0.5	0.7	0.9	1.1	1.3	1.3	1.6	2.1	2.8
INJECTION PRESSURE	psi (bar)	37,802 (2606)	27,773 (1915)	43,945 (3030)	34,722 (2394)	28,125 (1939)	26,730 (1843)	46,237 (3188)	38,852 (2679)	28,545 (1968)	25,133 (1733)
INJECTION VELOCITY	in/s (mm/s)	5 (127)		5 (127)				5 (127)			
VOLUMETRIC INJECTION	in³/s (cm³/s)	0.88 (14.4)	1.19 (19.6)	1.56 (25.5)	1.97 (32.3)	2.43 (39.9)	2.95 (48.3)	2.95 (48.3)	3.51 (57.5)	4.77 (78.2)	6.23 (102.1)
SCREW SPEED	rpm	350		350				350			

SIGNAL INTEGRATION COMPLIANT ROBOT INTERFACE (E-67,SPI)

ADDITIONAL SIZES AVAILABLE UPON REQUEST

32 [M,V,H]				40 [V,H]			45 [V,H]			60 [V,H]			80 [H]		
28	32	36	40	36	40	44	40	45	50	50	55	60	70	80	90
5.5 (140)				6.5 (165)			10 (250)			11 (280)			12.5 (315)		
5.25 (86.0)	6.86 (112.4)	8.68 (142.2)	10.71 (175.6)	10.26 (168.1)	12.66 (207.5)	15.32 (251.0)	19.48 (319.2)	24.65 (404.0)	30.43 (498.7)	35.0 (573.5)	42.35 (694.0)	50.4 (825.9)	74.56 (1221.9)	97.39 (1595.9)	123.26 (2019.9)
2.3	3.0	3.8	4.6	4.4	5.5	6.6	8.4	10.7	13.2	15.2	18.4	21.8	32.3	42.2	53.4
2.9	3.8	4.8	5.9	5.7	7.0	8.5	10.8	13.7	16.9	19.4	23.5	28.0	41.4	54.0	68.4
39,499 (2723)	30,242 (2085)	27,479 (1895)	24,193 (1668)	29,626 (2043)	23,997 (1655)	19,832 (1367)	34,778 (2398)	27,479 (1895)	22,258 (1535)	35,316 (2435)	29,187 (2012)	24,525 (1691)	31,343 (2161)	23,997 (1655)	20,609 (1421)
5 (127)				5 (127)			5 (127)			5 (127)			5 (127)		
4.77 (78.2)	6.23 (102.1)	7.89 (129.3)	9.74 (159.6)	7.89 (129.3)	9.74 (159.6)	11.78 (193.1)	9.74 (159.6)	12.33 (202.0)	15.22 (249.4)	15.22 (249.4)	18.41 (301.7)	21.91 (359.1)	29.83 (488.8)	38.96 (638.4)	49.3 (807.9)
325				250			215			215			215		

# INTEGRATION OPTIONS & PRODUCTS

## OPERATOR INTERFACE (HMI)

One HMI controls all products

- Portable Injection Unit
- Control ancillary UMS™ equipment
  - Rotary Platen / Index Plate / Stack / Spindle(s)
  - Vacuum Unit
  - Hot runner controls on HMI display



**UMS™ HMI HOT RUNNER  
DISPLAY INTERFACE**



**PEDESTAL (freestanding)**



**PENDANT (mounted)**

## MOLD VACUUM UNIT

22–25" HG

14" x 16" x 8" Panel





**AUXILIARY HYDRAULIC POWER UNIT -  
VARIABLE FREQUENCY DRIVE (VFD)**  
5-20HP; 10-30GPM



**HORIZONTAL SLIDE PLATE WITH [M] SERIES**



**UNIVERSAL ROTARY  
STACK FRAME**



Without Bolster Plates

With Bolster Plates

**UMS™ ROTARY PLATEN**  
Standard or Performance  
Servo or Hydraulic



# CUSTOMIZED EQUIPMENT DESIGNED AND BUILT FOR YOUR SPECIFIC PRODUCT APPLICATIONS



MGS Injection Machine with  
Interchangeable Tooling System

- Servo Hybrid Platform



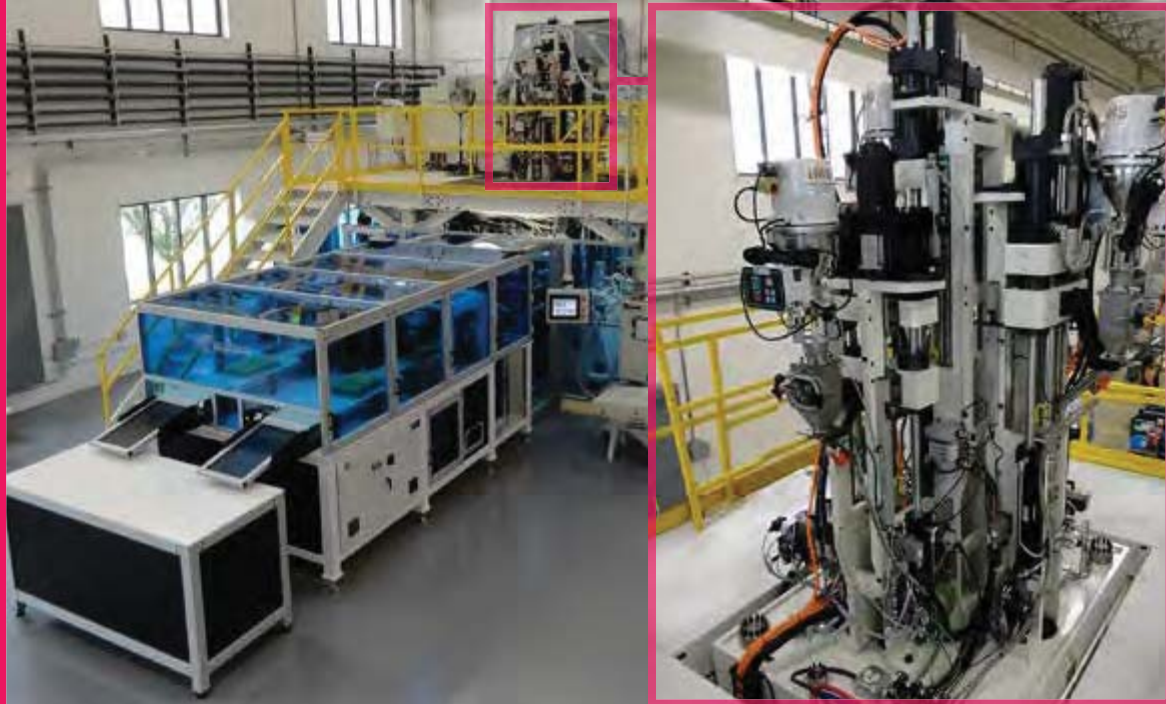
UMS™ Large Capacity Vacuum Unit

- 120 gallon tank reservoir
- Remote manifold control plate



Epoxy Dispensing System

- Multiple position (8x) injection
- Rotary turntable



MGS 200 TON VERTICAL MULTISHOT (4-SHOT) INJECTION  
MOLDING MACHINE WITH INTEGRATED MGS AUTOMATION CELL

## | CONTACT US

We invite you to take a tour of our Universal Multishot™ Systems facility. Send your RFQ/RFP and allow us to prove MGS UMS™ portable injection units, rotary technologies and specialty molding equipment is precisely the right choice for your application.



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