

AGS TOOL #:
DESCRIPTION:
TOOL SHOP:

SECTION I: PLAQUES			
Required		Completed By 0	Approved By AGS
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>1) Mold identification plaque: Mount on the operator side of the mold, screw into a pocket of sufficient length & width to accept the plaque. The pocket is to be deep enough so that the plaque is recessed from the outer mold surface by a minimum 1/16 inch.</p> <p>1a) Tool Number provided by AGS: 1b) Part Description provided by AGS: 1c) Part Number provided by AGS: 1d) Number of cavities provided by AGS: 1e) Customer Name provided by AGS: 1f) Weight in pounds for stationary mold half provided by tool shop. 1g) Weight in pounds for moving mold half provided by tool shop. 1h) Total mold weight in pounds provided by tool shop. 1i) Length of ejector stroke provided by tool shop. 1j) Mold manufacturer name provided by tool shop. 1k) Mold manufacturer's job number provided by tool shop.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p>initials</p> <p>_____</p> <p>date</p>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>2) Waterline plaque: Mount opposite of the operator (non-operator) side of the mold, screw into a pocket of sufficient length & width to accept the plaque. The pocket is to be deep enough so that the plaque is recessed from the outer mold surface by a minimum 1/16 inch.</p> <p>2a) A drawing of the core and cavity block viewed from the parting line surface with the location and I.D. of each cooling circuit.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p>initials</p> <p>_____</p> <p>date</p>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>3) Hot Runner plaque: Mount on the hot runner connector toward the parting line (not toward the press platen) so that it can be read when the mold is in the press.</p> <p>3a) A drawing from the parting line showing and identifying each location of the hot drops and manifold section(s).</p> <p>3b) A wiring plaque describing the size and location of the heaters and thermocouples to the components of the system and a listing of the heater by size, wattage, and manufacturer description. This plaque is to include how the heaters and thermocouples are wired to their appropriate receptacles.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p>initials</p> <p>_____</p> <p>date</p>

SECTION II: CIRCUIT AND MOLD PLATE IDENTIFICATION			
Required	All stampings are to be a minimum 0.005" deep and use letters/numbers that are large enough to be readable from arms length.	Completed By 0	Approved By AGS
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>1) Waterline circuits:</p> <p>1a) Each waterline connection is to be identified with a number on each end of the "IN" or "OUT" circuit (eg. "IN1", "OUT1", "IN2", "OUT2").</p> <p>1b) Each waterline circuit is to be tested for flow and to check for leaks.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p>initials</p> <p>_____</p> <p>date</p>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>2) Hydraulic circuits:</p> <p>2a) Each hydraulic connection is to be identified with a number on each end of the "SET" or "PULL" circuit (eg. "SET1", "PULL1", "SET2", "PULL2").</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p>initials</p> <p>_____</p> <p>date</p>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>3) Other circuits:</p> <p>3a) Other connections are to be identified with their purpose and a number on each end of their corresponding circuit (eg. "AIR IN1", "AIR OUT1", "GAS IN1", "GAS OUT1").</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p>initials</p> <p>_____</p> <p>date</p>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>4) Mold plates:</p> <p>4a) Each plate must be numbered as defined by the final mold design drawing and must also have "0" stamped on the upper top operator side corner in the position as the mold is hung in the press.</p> <p>4b) "TOP" must be stamped on the mold.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p>initials</p> <p>_____</p> <p>date</p>

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SECTION III: SAFETY STRAPS			
Required		Completed By 0	Approved By AGS
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>1) Safety straps:</p> <p>1a) Two (2) safety straps made from C.R.S (cold roll steel). One safety strap should be located on the top and the second strap should be located on the operator side as the mold is hung in the press.</p> <p>1b) The thickness of the strap shall be compatible with the mold weight.</p> <p>1c) The width of the strap shall be a minimum of three times the clearance holes drilled for the two bolts that shall hold the strap in place.</p> <p>1d) The safety strap on the top of the mold must have a 7/8-14 threaded hole to accommodate a dedicated storage location for the nozzle.</p> <p>1e) The strap shall be permanently affixed to the stationary half of the mold by a standard socket head cap screw, screwed in to the mold base or plate leaving a minimum of .030" clearance so the safety strap can swing freely. The screw is to be locked in place by a cone point set screw threaded in at the parting line at a right angle to lock the socket head screw in place. The socket head screw shall be made non-removable by filling the head with weld.</p> <p>1f) A hole on the movable half of the mold shall be drilled and tapped to accept a socket head screw that will hold the safety strap in place. A similar hole shall be drilled and tapped on the stationary half so that the strap can be rotated 90 degrees and bolted to the stationary half when the mold is in use.</p> <p>1g) The safety straps shall be identified with the AGS tool number and painted with bright yellow enamel paint.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="text-align: center; margin-top: 20px;"> <hr style="width: 50%; margin: 0 auto;"/> initials </div> <div style="text-align: center; margin-top: 20px;"> <hr style="width: 50%; margin: 0 auto;"/> date </div>

SECTION IV: MOLD HANDLING																																																										
Required		Completed By 0	Approved By AGS																																																							
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>1) Mold handling holes and eye bolt:</p> <p>1a) A 1-1/4" hole with a 1-1/4-7 eye bolt (McMaster Carr #3014T57 or PPE #3125 or equivalent) must be located on the top of the mold at its center of gravity to ensure that the mold lifts level. If the center of gravity is located on the parting line, a bridge bar with a 1-1/4-7 eyebolt must be used. The eyebolt must include a jam nut (McMaster-Carr #9049A140 or equivalent).</p> <p>1b) All holes must be drilled and tapped to allow handling of each half of the mold and each individual mold plate.</p> <p>1c) The locations of the holes are to be placed with respect to the balance point of the plates or mold half.</p> <p>1d) Mold handling holes must be drilled and tapped per the table below:</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 20%;">WEIGHT TO BE</th> <th colspan="2" style="width: 20%;">TOP AND BOTTOM</th> <th colspan="2" style="width: 20%;">SIDES</th> <th rowspan="2" style="width: 30%;">MINIMUM THREAD DEPTH OF EYE BOLT HOLES</th> </tr> <tr> <th>POUNDS</th> <th>MINIMUM HOLE SIZE ϕ</th> <th>MINIMUM NUMBER OF HOLES</th> <th>MINIMUM HOLE SIZE ϕ</th> <th>MINIMUM NUMBER OF HOLES</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0-500</td> <td style="text-align: center;">0.50"</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0.50"</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1.25"</td> </tr> <tr> <td style="text-align: center;">500-2,000</td> <td style="text-align: center;">0.75"</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0.75"</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1.50"</td> </tr> <tr> <td style="text-align: center;">2,000-4,000</td> <td style="text-align: center;">0.75"</td> <td style="text-align: center;">2</td> <td style="text-align: center;">0.75"</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1.50"</td> </tr> <tr> <td style="text-align: center;">4,000-8,000</td> <td style="text-align: center;">1.00"</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1.00"</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1.50"</td> </tr> <tr> <td style="text-align: center;">8,000-12,000</td> <td style="text-align: center;">1.00"</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1.00"</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1.50"</td> </tr> <tr> <td style="text-align: center;">12,000-20,000</td> <td style="text-align: center;">1.50"</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1.50"</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3"</td> </tr> <tr> <td style="text-align: center;">20,000-40,000</td> <td style="text-align: center;">1.50"</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1.50"</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3"</td> </tr> </tbody> </table>	WEIGHT TO BE	TOP AND BOTTOM		SIDES		MINIMUM THREAD DEPTH OF EYE BOLT HOLES	POUNDS	MINIMUM HOLE SIZE ϕ	MINIMUM NUMBER OF HOLES	MINIMUM HOLE SIZE ϕ	MINIMUM NUMBER OF HOLES	0-500	0.50"	1	0.50"	1	1.25"	500-2,000	0.75"	1	0.75"	1	1.50"	2,000-4,000	0.75"	2	0.75"	2	1.50"	4,000-8,000	1.00"	1	1.00"	1	1.50"	8,000-12,000	1.00"	2	1.00"	2	1.50"	12,000-20,000	1.50"	1	1.50"	1	3"	20,000-40,000	1.50"	2	1.50"	2	3"	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="text-align: center; margin-top: 20px;"> <hr style="width: 50%; margin: 0 auto;"/> initials </div> <div style="text-align: center; margin-top: 20px;"> <hr style="width: 50%; margin: 0 auto;"/> date </div>		
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SECTION V: CONNECTIONS			
Required		Completed By 0	Approved By AGS
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>1) Mold water connections:</p> <p>1a) The mold shall be fitted with male Jiffy connectors with Teflon tape.</p> <p>1b) Mold waterline connectors shall be mounted below the surface of the mold in a counterbored hole whose diameter is sufficient to allow the easy connection and disconnection of the mating female connector.</p> <p>1c) Waterlines on the top of the mold should be avoided whenever possible. If required, waterlines on top of mold are to be fitted with a drain groove connecting each countersunk waterline connector hole to allow for drainage of drips so that slight leakage will be directed away from the cavity surface.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p style="text-align: center;">initials</p> <p>_____</p> <p style="text-align: center;">date</p>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>2) Water manifold connections:</p> <p>2a) Water manifolds will be attached to the top of each half of the mold.</p> <p>2b) The "TO MOLD" manifold will be plumbed with a AGS supplied female connector and the "FROM MOLD" manifold will be plumbed with a AGS supplied male connector.</p> <p>2c) AGS supplied connectors will be plumbed perpendicular to the top of the mold.</p> <p>2d) The water manifolds shall be fitted with male Jiffy connectors with Teflon tape.</p> <p>2e) The mold will be plumbed to the manifolds with proper lengths of hoses and female Jiffy connectors.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p style="text-align: center;">initials</p> <p>_____</p> <p style="text-align: center;">date</p>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>3) Hydraulic connections:</p> <p>3a) Each hydraulic circuit shall be plumbed with a female connector (Parker H3-63) to the set side of the circuit and male connector (Parker H3-62) to the pull side of the circuit.</p> <p>3b) Confirmation of the movement of the hydraulic circuit shall be done with limit switch(es) that confirms the full set and full pull position of the moving member.</p> <p>3c) When core sequences are required, the correct sequencing valves shall be purchased and mounted on the tool.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p style="text-align: center;">initials</p> <p>_____</p> <p style="text-align: center;">date</p>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>4) Electronic connections:</p> <p>4a) All electric circuits are to be terminated in an appropriately approved housing and adequately labeled as to power requirements.</p> <p>4b) All electrical wires are to be insulated with a material sufficient to provide appropriate electrical insulation and protection for its prescribed application. For example, where the heater is a circuit, mica/fiberglass insulation will provide sufficient insulation in a high temperature environment. Insulation on limit switch(es) for hydraulics shall be oil and water resistant.</p> <p>4c) Electrical connection to the molding machine for the hydraulic "SET" limit switch(es) will be NEMA #ML-1 style</p> <p>4d) Electrical connection to the molding machine for the hydraulic "PULL" limit switch(es) will be NEMA #ML-3 style.</p> <p>4e) Core pull and set are 10 pin connectors. Female (Allied #3219 or equivalent) must be mounted on mold. Mating male (Allied #10.1920) and hood (Allied #10.0409 or equivalent). For core set use pins 1 and 2. For core pull use pins 5 and 6.</p> <p>4f) Electrical connection to the molding machine for the ejector confirmation switch(es) will be NEMA #ML-2 style connected for a normally open switch using the black and white wires. White is common.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>_____</p> <p style="text-align: center;">initials</p> <p>_____</p> <p style="text-align: center;">date</p> <p>_____</p> <p style="text-align: center;">date</p>

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SECTION VI: OTHER MOLD FEATURES

Required		Completed By 0	Approved By AGS
<input type="checkbox"/> Yes <input type="checkbox"/> No	1) Interlock and die locks: 1a) The mold shall be designed to interlock the cavity and core to prevent the cavities from shifting. 1b) When core and cavity interlock is not feasible or ineffective, the mold shall be fitted with die locks of sufficient size and placed in locations where shifting of the cavities will be minimized. 1c) Parting line locks must not be located where they may catch falling parts, runners, debris etc...	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	2) Leader pins: 2a) The mold shall be fitted with leader pins to obtain initial alignment during the mold closed phase of operation. The mold shall contain a minimum of four (4) leader pins. 2b) The leader pins shall be mounted in the corners of the mold. One leader pin shall be offset or of a different size to eliminate the possibility of mis-assembly of the two halves. 2c) The leader pin shall be of sufficient diameter to allow the mold half with the leader pins to be placed in a manner where the mold is standing on the leader pins, without damage or distortion. 2d) All leader pin bushings are to be through holes so that the hole cannot fill with material and made of self lubricating material or bronze to minimize galling and excess wear on the leader pins. No steel bushings. 2e) Additional leader pins shall be installed on the other side of the mold from the primary leader pins to protect any standing horn pins or contoured parting line from damage when the mold half is placed face down.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	3) Standoffs: 3a) The mold shall be fitted with standoffs, rails, or similar protective mechanisms that allow the mold half or entire mold to be placed face down on any surface without damage to the external hydraulic cylinders, limit switches, sensing pins, or other protrusions that exceed beyond the outside of the mold base surface. 3b) Standoffs are to be placed in such a manner so that the mold or mold half will not tip over.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	4) Springs: 4a) Springs shall be installed in the ejector plate system to return the plate. 4b) All springs shall be pocketed and have a mechanical stop so that is cannot be over compressed. 4c) The mold is to be designed so that the spring has some prelaod and a maximum compression no more than 30%.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	5) Slides: 5a) Slides shall be locked in place with double wedge locks to avoid movement after the mold is closed during mold operation. 5b) All slides shall be spring loaded with postive hold backs to avoid the mechanism from accidently moving forward, to keep the slide held in position to accept the mating horn pin, and to prevent the slide from being out of position if it is mounted vertically in the mold. 5c) All slide action mechanisms must incorporate wear plates fitted with grease groves, lubrication lines, and/or grease fittings on the outside of the mold.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	6) Stop Buttons: 6a) The ejector plate shall be fitted with positive stop buttons. 6b) Use larger diameter taper lock plates (progressive Components TLP75 or equivalent) in place of standard stop buttons.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date

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SECTION VI: OTHER MOLD FEATURES

Required		Completed By 0	Approved By AGS
<input type="checkbox"/> Yes <input type="checkbox"/> No	7) Wear plates: 7a) All areas prone to wear are to have easily replaceable wear plates fitted with grease grooves, lubrication lines, and/or grease fittings on the outside of the mold. 7b) Wear plates shall be made of bronze alloy material that will minimize galling.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	8) Ejector pins and ejector system: 8a) All ejector pins, stripper plates, rings, and blades shall be hardened or nitrided. 8b) All ejectors must be flush to 0.002" below the mold surface to make sure parts do not stick to ejectors. 8c) Ejectors should be located on the lowest possible position on the part so they will not catch the part as it is being ejected (Z-axis). Distances between ejectors should not be larger than the plastic part after it shrinks. 8d) Guided ejector plate pins are to be located securely at both ends. 8e) Return pins are to be drilled and tapped. 8f) A clear, plastic cover must be mounted on top of the ejector box rails to help keep dust and debris out. 8g) When required, ejector confirmation switch is to be mounted opposite operator (non-operator) side of mold. Switch must not be mounted to the bottom of the mold.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	9) Knock out pads: 9a) Pads are to be bolted on the ejector plate to accept the knock out rods and must be securely mounted to the ejector system. Use Progressive Components PKO-Puck Series (PKP) or equivalent. Do not use hex type. 9b) These pads are to be recessed 1/8" from the platen, protruding through the clamp plate to accept the knock out rods. 9c) These pads are to have a 5/8"-11 NC threaded hole a minimum of 15/16" deep.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	10) Vents: 10a) All cavities shall have full perimeter vents of a depth and land width (appropriate to the material without flashing) flowing to a .100" wide by .100" deep channel. 10b) Vents shall mate with a secondary channel of approximately the same size and dimensions that will vent to the parting line edge to atmosphere. 10c) Blind pockets or deep ribs may require passive vents or venting channels in to blind areas to assure fill without burning.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	11) Mold edges: 11a) The mold's outside edges shall be filed or radiused to be free of sharp edges on all sides by use of a 45° X 1/16" chamfer or 1/8" radius.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	12) Conventional runner and gates: 12a) The runner shall be full round, each half in each side of the mold with sharp edges at parting line. 12b) Maximum allowable runner mismatch shall be .002". 12c) The ideal diameter of the runner shall be 1.5-2.0 times the nominal wall stock. 12d) All runners are to have cold slug wells. All turns in runner must have a generous radius. 12e) The runner shall be balanced as to size or cavity pressure through physical balance or computer simulation. 12f) The gate geometry shall be a tunnel or submarine gate unless specifically authorized to be different by AGS. 12g) The gate location shall be determined to optimize cavity fill either by computer simulation or experienced personnel and must be approved by AGS. 12h) The gate cross section shall be 80% of the nominal wall thickness unless otherwise specified by AGS. 12i) High volume tools, where erosion or excess wear on the runner and gate system is anticipated shall use runner plates and gate inserts in preference to cutting the runner and gate in to the parent mold steel. Runner plates shall be made of hardened steel. Gate inserts shall also be made of hardened steel unless the abrasive nature of the material requires the use of machineable ceramic.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date

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SECTION VI: OTHER MOLD FEATURES

Required		Completed By 0	Approved By AGS
<input type="checkbox"/> Yes <input type="checkbox"/> No	13) Hot runners: 13a) The manifold plate is to be slotted for easy removal of the manifold without having to remove the wiring. 13b) Manifolds are to have insulation around the heated members of the mold to minimize heat transfer to the cooled tool plates. 13c) Safety straps to pull and reassemble the hot runner plate are also to be built per Section III of the AGS Tooling Standard. 13d) Gate vestige for hot runners recessed into the part must not exceed dimple height.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	14) Clamp slots: 14a) Clamp plate should be 1-3/8" thick with clamp slots located along the entire operator and non-operator side of the mold. 14b) Clamp slots to fit within platen hole mounting pattern to allow standard clamps to hold mold safely onto platen.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	15) Pry slots: 15a) All plates shall have pry slots in the corner to open the mold and allow easy separation during maintenance. Minimum 1" long by 5/8" wide.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	16) Sprue bushing: 16a) The sprue bushing must be bolted to prevent rotation with at least one 10-32 screw. Where required the sprue bushing should be keyed to assure proper alignment with the gate runner system. 16b) The sprue bushing radius must be 1/2" (0.500") unless otherwise specified by AGS. 16c) The sprue bushing orifice must be approved by AGS. 16d) The sprue bushing must be flush with clamp plate.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date
<input type="checkbox"/> Yes <input type="checkbox"/> No	17) Mold design drawings: 17a) A copy of the final mold design (including any engineering changes) must be provided in both paper and electronic versions. 17b) The design must be complete for the full construction of the mold. The mold design must include an overlay of the mold using the primary designated injection molding machine with corresponding tie bar spacing, platen spacing, clamping holes, and ejector pattern. 17c) The bill of materials (BOM) must be included in the mold design drawing that specifies material description, amount required, supplier name, supplier address, and drawing notation for the location(s) of the material. 17d) The design must include recommended maintenance and a spare parts list required to assure precision, accuracy, and readiness through the life of the mold.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ initials _____ date

SECTION VII: MISCELLANEOUS DESIGN AND CONSTRUCTION NOTES

Steel: Double draw when hardening and stamp hardness (eg. 48) and stamp type (eg. H-13) on all tool steels. All steel must be demagnetized prior to delivery to AGS.

Sprue Puller: Slug must not be excessive.

Use of Shims: No shims shall be used in tool construction, maintenance, or repair unless specifically authorized by AGS.

Blind Pockets: All blind pockets shall have .030" minimum radius on all wall intersections unless otherwise stated in the part drawing.

Inserts: Jack screws must not use the same hole as the holding screw for the insert.

Lube: Proper surfaces must be lubed.

Mold Base: Tubular dowels must be used.

Hydraulic Cylinders: All hydraulic cylinders shall be fitted with a “T” fitting in preference to a threaded connection to the moving member it actuates. Hydraulic cylinder connecting rod flats to be of a nominal size and width to allow a standard wrench fit.

Welding: All welding shall be approved by AGS before it is done. Welding is to be done to avoid brittle or unstable welds.

Ribs and Corners: Ribs to have maximum draft and corners to have maximum radii allowed by final math data/drawing.

O-Rings: Grooves must be cut to proper depth per manufacturer's recommendations to prevent tearing.

Part Number Identification: When multi cavity tooling is built, each cavity must have a unique identification on the cavity surface so that it is molded in to the part. The size and location of the identification will be specified by AGS during final mold design review.

Confirmation Safety Switches: Some molds have slides, pins, blades, sleeves, or stripper rings placed in front of hydraulic mechanisms such as, but not limited to, side cores. If the mold has mechanisms that can inadvertently actuate the hydraulic mechanisms and cause damage to other components, the mechanism shall have some confirming safety mechanism (such as ejector confirmation switch) to assure no interference or damage can occur in normal operation. If the mold has slides that will be damaged by the premature action of the ejector plate the mold shall be fitted with a plaque on the side of the ejector plate stating “Damage will occur if ejectors are moved forward before mold is fully open”.

Cavity Finish: Unless otherwise specified, the cavity will be finished with an SPI # A3 finish with final polishing to be in the line of draw. The core shall be finished to an SPI # B3 finish with the final polishing being done at 90° to the line of draw. Polishing standards and samples are available through SPE/SPI.

Texture Finish: If the part is to have a textured finish, the cost of texturing shall be quoted separately from the construction of the tool. It is recognized that the aesthetics of texturing is highly judgmental. Because of this, the tooling source can only be held liable for the accuracy of the placement and depth of the texture, not the final ‘look’ of the textured part.

Wherever possible the texture is to be specified from a test plaque supplied by the texturing source.

A section of the cavity steel is to be sent to the texturing facility for a test texture to assure the texturing will be sufficient for the need of AGS before the cavity is constructed. This sample, or an impression of it shall be sent to AGS for approval before texturing is initiated. It is recognized that some cavity materials do not lend themselves to etching or etch unevenly. If the test sample shows a problem in even texturing, the cavity material should be immediately replaced before cavity construction occurs. The replacement metal should be re-tested until it is acceptability for texturing has been demonstrated.

SPECIFIC DESIGN REQUIREMENTS/RESPONSIBILITIES

Part Shrinkage: Parts shrinkage is to be determined by AGS and specified on the mold design. It is understood that the part may not shrink in accordance with the material suppliers’ recommendation due to mold construction, mold design, and processing. It is the responsibility of the tooling builder to execute the build of the mold in compliance to the shrinkage specifications of the design that have been supplied by AGS.

Preliminary Mold Design Approval: A preliminary mold design consisting of a plan view and assembly view of both core and cavity must be submitted for before the design is detailed. Steel for all plates cannot be ordered until the preliminary design has been approved by AGS.

Final Mold Design Approval: Final mold design must be complete enough for the full construction of the mold. AGS must approve the final mold design before final construction can be commenced. Rough machining of the pockets, squaring of the plates, and preliminary handling holes can be machined before final design completion. Any additional construction steps must be authorized by AGS without final mold design approval.

NON-COMPLIANCE/DEVIATIONS

It is understood that certain designs may not lend themselves to compliance to these or other design/construction specifications. AGS must be notified in writing for the reasons for non-compliance. AGS must provide the affected parts with written approval for deviation from AGS requirements. Failure to comply with this section can result in legal action.