

Troubleshooting Guide for INJECTION MOLDING Phenolic & Granular Polyester

CORRECTIONS	PROBLEM												
	Mold Temperature	Injection Pressure	Holding Pressure	Injection Speed	Barrel Temperature	Screw Speed	Screw Back Pressure	Clamp Pressure	Shot Size	Hold Time	Cure Time	Refer to Comment Sheet	
Ball & Socket	3D	2I	2I	1D								4A	
Bulge Opposite Insert	3I				4I		4I					1B & 2C	
Cure Blister	2I			4D	1I		1I				3I		
Dull Appearance	1I				2I		2I					3E & 4Y	
Flash - Excessive	4I	2D	2D		3I		3I	6I	1D			5F	
Flow Lines	4D	2I	2I	1I	5D		5D			3I		6A	
Hard Spots	4D	2D	2D	3D	1D		1D					5H	
Injection Too Slow		1I		2I	3I		3I					4K	
Mold Staining	4I	5D	5D	6D	3I		3I	7D				1U & 2Y	
Mottled Surface Appearance	3D				2D		2D		1I				
Nonfills or Short Shots	4D	3I	3I		2I		2I		1I			5U & 6G	
Nozzle Freezes Up	1D				2D		2D					3H	
Orange Peel	3I	1I	1I	4D	2I		2I						
Rubbery Parts or Runner	1I				2I		2I					3AA	
Screw Does Not Go "Home"		2I	2I		5D		5D		3D			1J, 4W & 6K	
Screw Pickup is Erratic					1I	2D	1I					3M & 4G	
Screw Pickup is Too Slow					2D	1I	2D					3T	
Part Shrinkage - Excessive	2I	1I	1I		3I		3I				5I	4U	
Part Shrinkage - Insufficient	1D		2D								4D	3V	
Sink Marks	2I	3I	3I	4D					1I			5U	
Skin Blisters	3D			1D					2D			4U	
Sprue Sticking		3D	2D									1N, 4H & 5X	
Sticking in Mold	3I		2D						4D		6I	1P & 5E	
Subgates Sticking in Mold												1BB, 2CC & 3DD	
Trapped Gas	6D	5D	5D	4D	3D		3D	7D				1EE 2U & 8Z	
Warpage When Ejected												1P, 2E, 3R & 4V	
Warpage After Cooling	1I			3D	2I		2I				5I	4U, 6S & 7A	
Wood Screwing					2D	3D	1I						

Legend: Number = Priority I = Increase D = Decrease Other Letters = Comment ID

Injection Molding Troubleshooting Guide

Randy Kerkstra, Steve Brammer



Injection Molding Troubleshooting Guide:

Injection Molding Troubleshooting Guide, 3rd Ed. Jay W. Carender, 2011-11-04 The IM Troubleshooting Guide was originally prepared in 1996 as a 48 page convenient pocket sized resource for use in Injection Molding This information is most useful by personnel who work in the injection molding field including press operators technicians engineers etc This 3rd ED is at 104 pages and includes selected extra pages from other APEBOOKS that are helpful in process set up and troubleshooting This book includes many useful definitions and tips for troubleshooting molding problems both process and tooling related The book was written based on many years of process engineering The solutions for correcting process problems are listed in the best order to solve the problem based on factors such as ease timeliness to perform versus cost to implement and always considering effectiveness to solve problem It is also useful to identify a common set of definitions for each department to use when discussing these common molding defects Tips are often provided as to which defects may be process correctable versus those requiring product or mold changes An introduction to DOE and dimensional nominalization is made but discussed in greater detail in some of the other booklets written by this author for injection molding these are listed later in this book a total of six books have been written for injection molding

Injection Molding Advanced Troubleshooting Guide Randy Kerkstra, Steve Brammer, 2021-04-06 This highly practical troubleshooting guide solves injection molding problems systematically and quickly The rigorous but user friendly approach employs the authors proven STOP methodology considering molding process mold machine and material 4M s as possible sources of part defects Importantly the interaction between tooling processing and material is emphasized allowing successful resolution of difficult problems where by the books approaches fail Starting from troubleshooting methodology and tools there is a focused discussion of key areas impacting troubleshooting in particular the 4M s followed by an in depth troubleshooting guide for various molding defects structured logically by type of problem solution Insightful case studies throughout show the strengths of the STOP method to get real processes to run smoothly and reliably producing quality parts with optimal cycle time and cost Drawing on a wealth of hands on experience this book serves as an ideal reference to be consulted at the machine or as a learning and training manual suitable for both beginners and experienced molders With valuable information on robust process windows cycle time evaluations scrap savings and runners gates with no existing standard in the industry no other book provides the unique insights found here The 2nd edition is updated with new discussion and case studies on topics including additive manufactured inserts unmelts buildup burns cycle time gloss variation and read through

Injection Molding Advanced Troubleshooting Guide Randy Kerkstra, Steve Brammer, 2018 This highly practical troubleshooting guide solves problems at the machine systematically and quickly Drawing on a wealth of hands on experience from the authors who have built strong reputations in the field the book is structured by type of problem solution Thus it is an ideal reference to be consulted at the machine Included is valuable information on robust process windows cycle

time evaluations scrap savings and runners gates with no existing standard in the industry No other book provides the unique insights found here Troubleshooting Injection Moulding Vanessa Goodship,2004 Annotation Injection moulding is one of the most commonly used processing technologies for plastics materials Proper machine set up part and mould design and material selection can lead to high quality production This review outlines common factors to check when preparing to injection mould components so that costly mistakes can be avoided This review examines the different types of surface defects that can be identified in plastics parts and looks at ways of solving these problems Useful flow charts to illustrate possible ways forward are included Case studies and a large b257 of figures make this a very useful report

Injection Molding Troubleshooting Guide ,1996 Injection Molding Handbook D.V. Rosato,Marlene G.

Rosato,2012-12-06 This third edition has been written to thoroughly update the coverage of injection molding in the World of Plastics There have been changes including extensive additions to over 50% of the content of the second edition Many examples are provided of processing different plastics and relating the results to critical factors which range from product design to meeting performance requirements to reducing costs to zero defect targets Changes have not been made that concern what is basic to injection molding However more basic information has been added concerning present and future developments resulting in the book being more useful for a long time to come Detailed explanations and interpretation of individual subjects more than 1500 are provided using a total of 914 figures and 209 tables Throughout the book there is extensive information on problems and solutions as well as extensive cross referencing on its many different subjects This book represents the *ENCYCLOPEDIA* on IM as is evident from its extensive and detailed text that follows from its lengthy Table of CONTENTS and INDEX with over 5200 entries The worldwide industry encompasses many hundreds of useful plastic related computer programs This book lists these programs ranging from operational training to product design to molding to marketing and explains them briefly but no program or series of programs can provide the details obtained and the extent of information contained in this single sourcebook *Troubleshooting Manufacturing Processes* LaRoux K.

Gillespie,1988 *Handbook of Plastic Processes* Charles A. Harper,2006-08-28 An outstanding and thorough presentation of the complete field of plastics processing *Handbook of Plastic Processes* is the only comprehensive reference covering not just one but all major processes used to produce plastic products helping designers and manufacturers in selecting the best process for a given product while enabling users to better understand the performance characteristics of each process The authors all experts in their fields explain in clear concise and practical terms the advantages uses and limitations of each process as well as the most modern and up to date technologies available in their application Coverage includes chapters on Injection molding Compression and transfer molding Sheet extrusion Blow molding Calendering Foam processing Reinforced plastics processing Liquid resin processing Rotational molding Thermoforming Reaction injection molding Compounding mixing and blending Machining and mechanical fabrication Assembly finishing and decorating Each chapter details a

particular process its variations the equipment used the range of materials utilized in the process and its advantages and limitations Because of its increasing impact on the industry the editor has also added a chapter on nanotechnology in plastics processing

Polymer Gears Sabu Thomas, Miroslav Huskić, Hanna J. Maria, Jože Tavčar, 2024-11-16 Polymer Gears discusses polymer gear design and their efficient mechanical properties light weight and low noise during operation As plastic gears are replacing metallic gears in traditional and new applications there is still lack of material characterization and complex relations between different geometric and operating parameters Thus polymer gear design remains an open challenge This book serves as a comprehensive and professional guide on the topic providing readers with current developments carried out in the field of plastic gears production characterization and applications This will include material development tribological properties simulations and processing methods Current developments carried out in the field of plastic gear production Presents the characterization of plastic gear production Includes applications of plastic gear production and development Provides updates on tribological properties simulations and processing methods

Plastics Institute of America Plastics Engineering, Manufacturing & Data Handbook D.V. Rosato, Nick R. Schott, Marlene G. Rosato, 2001-11-30 This book provides a simplified practical and innovative approach to understanding the design and manufacture of plastic products in the World of Plastics The concise and comprehensive information defines and focuses on past current and future technical trends The handbook reviews over 20 000 different subjects and contains over 1 000 figures and more than 400 tables Various plastic materials and their behavior patterns are reviewed Examples are provided of different plastic products and relating to them critical factors that range from meeting performance requirements in different environments to reducing costs and targeting for zero defects This book provides the reader with useful pertinent information readily available as summarized in the Table of Contents List of References and the Index

Handbook of Polymer Degradation S. Halim Hamid, 2000-06-30 Covers recent advances in polymer degradation and stabilization Focuses on the basics of photo and bio degradability Delineates special and general environmental parameters such as solar irradiation temperature and agrochemical exposure Surveys plastic waste disposal strategies such as recycling incineration chemical recovery by pyrolysis and source reduction

Handbook of Molded Part Shrinkage and Warpage Jerry Fischer, 2012-12-31 How easy life would be if only moldings were the same size and shape as the mold But they never are as molders toolmakers designers and end users know only too well Shrinkage means that the size is always different warpage often changes the shape too The effects are worse for some plastics than others Why is that What can you do about it The Handbook of Molded Part Shrinkage and Warpage is the first and only book to deal specifically with this fundamental problem Jerry Fischer's Handbook explains in plain terms why moldings shrink and warp shows how additives and reinforcements change the picture sets out the effect of molding process conditions and explains why you never can have a single correct shrinkage value It goes on to demonstrate how to alleviate the problem through careful design of the molded

part and the mold and by proper material selection It also examines computer aided methods of forecasting shrinkage and warpage And most important of all the Handbook gives you the data you need to work with Authoritative and rooted in extensive industrial experience the expert guidance contained in this handbook offers practical understanding to novices and new insights to readers already skilled in the art of injection molding and mold making Contains the answers to common problems and detailed advice on how to control mold and post mold shrinkage and warpage Case Studies illustrate and enrich the text Data tables provide the empirical data that is essential for success but hard to come by **Quality**

Management in Plastics Processing Robin Kent,2016-11-30 Quality Management in Plastics Processing provides a structured approach to the techniques of quality management also covering topics of relevance to plastics processors The book s focus isn t just on implementation of formal quality systems such as ISO 9001 but about real world practical guidance in establishing good quality management Ultimately improved quality management delivers better products higher customer satisfaction increased sales and reduced operation costs The book helps practitioners who are wondering how to begin implementing quality management techniques in their business focus on key management and technical issues including raw materials processing and operations It is a roadmap for all company operations from people product design sales marketing and production all of which are impacted by and involved in the implementation of an effective quality management system Readers in the plastics processing industry will find this comprehensive book to be a valuable resource Helps readers deliver better products higher customer satisfaction and increased profits with easily applicable guidance for the plastics industry Provides engineers and technical personnel with the tools they need to start a process of continuous improvement in their company Presents practical guidance to help plastics processing companies organize stimulate and complete effective quality improvement projects SPE/ANTEC 1998 Proceedings Spe,1998-03-31 Annotation More than 700 presentations at ANTEC 98 the Annual Technical Conference of the Society of Plastics Engineers comprise an encyclopedic compilation of the newest plastics technology available This is the single most comprehensive annual presentation of new plastics technology

Handbook of Polyester Molding Compounds and Molding Technology Raymond W. Meyer,2012-12-06 Injection Molding Handbook Donald V. Rosato,D.V. Rosato,1995 This is an extensively revised and reorganized edition of the acknowledged standard work in the field of injection molding *Search of Excellence, ANTEC 91* Society of Plastic Engineers,1991-05-01 **Proceedings of the 2022 Annual Technology, Applied Science and Engineering**

Conference (ATASEC 2022) Rosa Andrie Asmara,Arie Rachmad Syulistyo,Muhmmad Shulhan Khairy,Vivi Nur Wijyaningrum,Indrazno Siradjuddin,Septian Enggar Sukmana,2023-02-10 This is an open access book The 4th Annual Technology Applied Science and Engineering Conference ATASEC 2022 is an annual reputable event organized with a motivation to provide an excellent international platform for the academicians researchers engineers industrial participants and research students around the world to share their research findings ATASEC 2022 was performed online using Zoom

platform on September 15th 16th 2022 ATASEC 2022 theme is Science Technology Innovative Academic and Vocational Research Towards Product Development Through Industrial and Educational Cooperation It addresses researchers and industries from all areas of advanced technology and science It provides an international forum to present advances in the state of the art identify emerging research topics and together define the future of these exciting research domains The conference will be enriched with renowned keynote speakers Plastics Processing Data Handbook D.V. Rosato,2012-12-06 This comprehensive book provides guidelines for maximizing plastics processing efficiency in the manufacture of all types of products using all types of plastics A practical approach is employed to present fundamental yet comprehensive coverage of processing concepts The information and data presented by the many tables and figures interrelate the different variables that affect injection molding extrusion blow molding thermoforming compression molding reinforced plastics molding rotational molding reaction injection molding coining casting and other processes The text presents a great number of problems pertaining to different phases of processing Solutions are provided that will meet product performance requirements at the lowest cost Many of the processing variables and their behaviors in the different processes are the same as they all involve basic conditions of temperature time and pressure The book begins with information applicable to all processes on topics such as melt softening flow and controls all processes fit into an overall scheme that requires the interaction and proper control of systems Individual processes are reviewed to show the effects of changing different variables to meet the goal of zero defects The content is arranged to provide a natural progression from simple to complex situations which range from control of a single manual machine to simulation of sophisticated computerized processes that interface with many different processing functions *Injection Molding: A Comprehensive Guide to Processing, Materials, and Troubleshooting* Pasquale De Marco,2025-04-24 *Injection Molding A Comprehensive Guide to Processing Materials and Troubleshooting* provides a comprehensive guide to injection molding covering all aspects of the process from material selection and mold design to process optimization and troubleshooting It offers a valuable resource for engineers technicians and professionals in the manufacturing industry who seek to deepen their understanding of injection molding and improve their skills in this field This book stands out with its focus on troubleshooting injection molding problems It provides a systematic approach to identifying and resolving common issues including material related mold related and process related defects Real world case studies are included to illustrate the troubleshooting process and help readers apply the concepts to practical scenarios In addition to the core injection molding process the book explores advanced techniques such as multi component injection molding insert molding gas assisted injection molding water assisted injection molding and in mold labeling These techniques are gaining popularity due to their ability to produce complex parts with high quality and efficiency One of the key strengths of this book is its focus on the latest developments and trends in injection molding It discusses Industry 4.0 and its impact on the injection molding industry as well as sustainable practices and emerging

research areas This information helps readers stay up to date with the latest advancements and challenges in the field With its comprehensive coverage practical insights and focus on troubleshooting and advanced techniques Injection Molding A Comprehensive Guide to Processing Materials and Troubleshooting is an essential resource for anyone involved in injection molding It is a valuable addition to the libraries of engineers technicians and professionals seeking to improve their knowledge and skills in this dynamic and ever evolving industry If you like this book write a review on google books

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