





Valve Solutions & Services for the Energy Industry

resser Inc., Masoneilan Operations, with 25 manufacturing units worldwide, supported by an integrated network of sales offices, provides the widest range of valve solutions and services for every application in the energy and process control industries.

INNOVATIVE SOLUTIONS

Dresser Masoneilan continues to develop new solutions for a broad range of applications. Innovative valve, actuator, instrumentation and software products are being designed to offer customers greater value through improved capabilities and reduced costs. Dresser Masoneilan's research and development efforts combine the latest cutting edge technologies with the breadth and depth of real world applications experience.

TECHNICAL LEADERSHIP

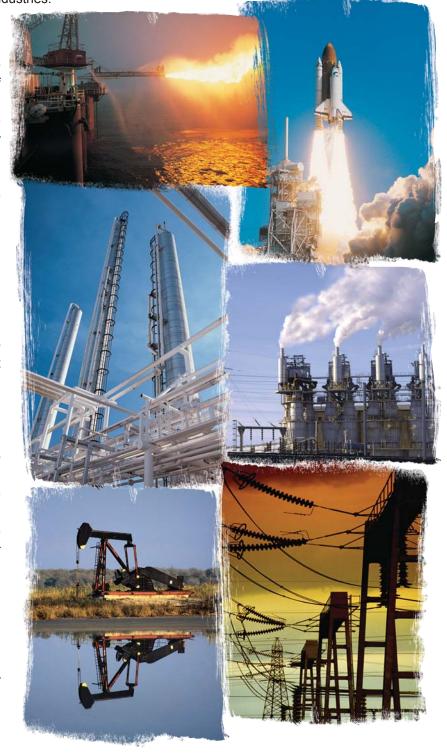
Dresser Masoneilan offers over 100 years of innovation and technology leadership to solve the most difficult applications without compromise.

COMPLETE SOLUTIONS

Dresser Masoneilan offers a broad portfolio of products including control valves, actuators, pressure regulators, pressure relief valves, and field instrumentation. This breadth of offering allows us to serve our customers as a single source supplier for major international projects.

AFTERMARKET SUPPORT

To achieve complete customer satisfaction, Dresser Masoneilan has established a global network of fully authorized repair and service centers.



OULA LIFEY

Masoneilan

Masoneilan's Engineered Products Group offers support that no other major valve manufacturer can match. Our group of dedicated designers and applications engineers provide superior quality special service solutions and custom engineered valves.

With our advanced manufacturing and planning systems, we control a network of outstanding suppliers to support our manufacturing. This provides our customers with the highest quality products and most dependable deliveries in the industry. We guarantee the rapid response and quick turnaround of a specialty shop, along with the quality and performance

Masoneilan has implemented the Resident Engineer Program to facilitate effective up-front design support. program is focused on providing onsite technical assistance early in the design process, resulting in the reduction or elimination of costly design changes later in the project cycle. Our engineers and technical representatives will give you prompt recommendations and quotations. And we'll back that up with prompt fulfillment, excellent field service and ongoing support.

of a worldwide corporation.

Masoneilan offers complete project management support and product implementation services. Our promise is to provide you with a wide range of integrated products and solutions in a timely and cost effective manner.

Masoneilan has developed user-friendly software programs for sizing and selecting valve solutions. These programs use up-to-date industry standards and calculation methods, providing specific recommendations and automated error checking. These tools significantly reduce the time required to accurately specify and configure products.

The applications highlighted in this brochure are just a sample of the resources and products we make available to you. When your requirements exceed the capabilities of conventional valves, due to high temperature, high pressure, erosion, excessive velocity or pressure drop, Masoneilan can and will provide the proper equipment.

GLOBAL CAPABILITIES

Masoneilan's efforts are focused to provide support to our worldwide customers throughout a product's life-cycle. The backbone of this support system is a global infrastructure of sales offices, manufacturing operations, and technical resources.

LOCAL SUPPORT

Masoneilan provides factory certified support for all products through a customer focused program of local service centers.

This global support network consists of Masoneilan

Authorized Repair Centers (MARC) and field service technicians. All of these factory-trained resources provide OEM components, experience, knowledge and technology to support all of your MRO needs worldwide, including hands on training and on site

hands-on training and on-site support.

MAINTENANCE MANAGEMENT SERVICES

Masoneilan also provides integrated programs, such as ValvKeep II, to help manage the support of your installed equipment. These programs are location specific and include plant surveys, data management, scheduling and planning of maintenance, repairs, and overhauls. Historical data and trends can be managed using an asset management system to maximize efficiency of overall equipment support.

OEM PARTS

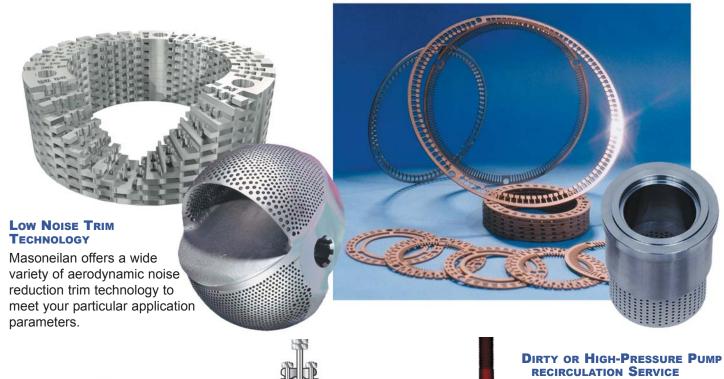
Masoneilan fully understands that quick response in obtaining replacement parts and overhaul services is a critical factor in maintaining a smoothly operating plant. As a result, Masoneilan has placed extremely high importance on this customer need within our global aftermarket program.

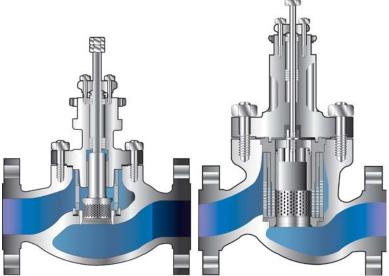
FIELD SUPPORT SERVICES

Masoneilan's comprehensive product documentation is designed to address questions regarding installation, start-up and troubleshooting. Masoneilan also provides highly proficient technical field support whenever necessary to keep your processes tuned to perfection. This includes up-front design engineering support, product application assistance, and post installation analysis to ensure maximum performance efficiencies.

TRIM TECHNOLOGY

Legendary Reliable and Versatile Multi-Step Designs





CLEAN OR LOW-PRESSURE PUMP RECIRCULATION SERVICE

Masoneilan offers a wide selection of single and double stage trims in unbalanced and balanced globe valve configurations. These designs are based on drilled hole technology, and are recommended for relatively clean service applications. balanced and unbalanced anti-cavitation options are available with metal-to-metal seating to meet ANSI Class V shutoff performance standards.

Masoneilan's LINCOLNLOG trim is designed for application in high pressure and / or dirty pump recirculation service. The

LINCOLNLOG permits particles up to one tenth of the valve size to pass through the trim without affecting valve operation. Various material options are available for services that include hydrogen sulfide (H2S), ammonia (NH3), amines, or dirty fluids.

ANSI Class V and VI shutoff are available.

ACTUATION

Masoneilan revolutionized automatic diaphragm control valves over 30 years ago with the introduction of the multi-spring style actuator. The 87/88 remains the premier spring diaphragm actuator in the control valve industry.

For long strokes or high thrust requirements, large pneumatic cylinders can also be provided, with or without spring return. Cylinder, piston and end plate materials may be selected to suit the working environment.

For high performance systems, we offer a complete line of electrohydraulic actuators. These are equipped with servo-valve controls and LVDT feedback with high pressure filtration. These actuators have cycle times as low as 50 ms. and thrust levels up to several thousand pounds.

These pneumatic and EHA actuators may be equipped with pressure switches, safety lock devices, solenoid override, and a multitude of failsafe and super response accessory packages. Specialized controls and other custom-engineered features are available.





Multi-Spring Diaphragm 87/88



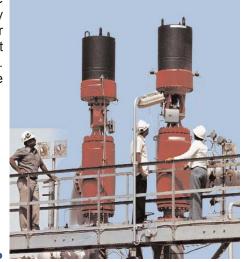




HYDROCARBON PROCESSING

COMPRESSOR RECYCLE • COLUMN DEPRESSURIZATION • VENT TO FLARE

Masoneilan provides various fabricated angle designs to meet applications with flow capacity and noise attenuation requirements beyond conventional globe valve capabilities. The Masoneilan 72000 Series is designed for precise capacity control, while efficiently minimizing noise and outlet velocities. These valves are available with a number of different instrument packages to meet various specifications, including fast response and controlled depressurization with backup air or nitrogen. Masoneilan's patented V-Log energy management trim is also available to handle the industries most demanding applications.





GASIFIER BLACK-WATER PRESSURE LETDOWN • SEPARATOR BOTTOMS LETDOWN • SYNGAS DEPRESSURIZATION • SLURRY PUMP RECIRCULATION

The Masoneilan 73000 Series sweep angle control valve provides a field-proven solution for slurry applications. The heavy stem-guided configuration eliminates the fluid chambers above the valve plug typically associated with top-guided designs. This significantly reduces the potential problems due to coking and buildup of particulate around the guide areas. The valve body is designed to minimize fluid momentum change and surface erosion. High efficiency and maintainability are achieved through retention of the seat ring by using the piping system line flange. This design is also available in a direct vessel mount configuration. Trim options include tungsten carbide, ceramic, and solid Stellite.

HIGH PRESSURE SLURRY LETDOWN

Masoneilan's coal slurry letdown valve offering has been designed using advanced engineering techniques, including trim materials of tungsten carbide. This valve has been designed to drop reactor pressure for second generation coal liquefaction processes. As a result, it can handle pressure drops over 2000 psi, temperatures in the 900-1000°F range, and services such as a flashing hydrocarbon containing coal ash fines and char. The severe erosion potential in this type of service has

caused conventional valves to fail in a matter of days. Masoneilan has successfully designed valves that compensate for erosion and provide years of trouble free service.

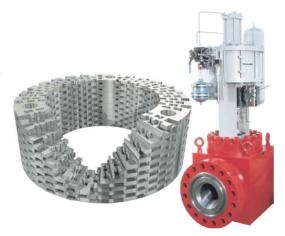


HOT HIGH-PRESSURE SEPARATOR LETDOWN ● POWER RECOVERY TURBINE BYPASS

The Masoneilan 77000 Series LodB multi-step control valve is designed primarily for high-pressure compressible fluid applications. It effectively controls erosion, vibration, and high noise conditions making it an ideal solution for hot high-pressure flashing hydrocarbon services. The 77000 Series is an extremely rugged design that includes top and bottom plug guiding, short operating strokes, and multistep energy management trim.

REACTOR / SEPARATOR / FRACTIONATOR / STRIPPER DEPRESSURIZATION TO FLARE HEADER

Masoneilan's newest energy management trim design, the V-Log, reduces pressure in controlled stages through a series of discrete flow channels. The V-LOG combines right angle turns with intermediate expansions and contractions to achieve efficient pressure reduction within a very compact design. It can be packaged within cast globe, forged or fabricated angle valve bodies, providing design flexibility for capacity and outlet velocity control. Noise reductions in the 35 to 40 dBA range are achievable with this valve and trim combination.





COKER FRACTIONATOR BOTTOMS • VISBREAKER LETDOWN • FCCU / RFCCU SLURRY BOTTOMS

The Masoneilan 71000 Series has been used successfully as the main letdown valve for gasifiers. This control valve features large body cavities which limit fluid velocities prior to reaching the throttling area, thereby reducing the potential for body erosion. Maximum throat efficiency is achieved with the streamlined body contours and venturi outlet. The 71000 Series is an extremely rugged design, which features heavy plug guiding for vibration free operation.

AMINE BOOSTER PUMP RECIRCULATION • CHARGE PUMP RECIRCULATION • SOUR WATER LETDOWN • COLD HIGH-PRESSURE SEPARATOR LETDOWN • HIGH- PRESSURE AMINE CONTACTOR LETDOWN • WASHWATER PRESSURE CONTROL • BOTTOMS PUMP RECIRCULATION

The Masoneilan 78200 and 18200 Series LincolnLog valves were originally introduced in 1988 and have become the premier high pressure multi-step letdown solution in the hydrocarbon processing industry. The LincolnLog is ideally constructed for safe operation with dirty fluids, and is designed for use in pressure letdown applications up to 10000 psi. Other features include a trim option for corrosive environments, an unbalanced design for high temperature applications, and a flow-to-close configuration for flashing fluids.



POWER GENERATION

To meet the most demanding power plant requirements, Masoneilan Engineered Products Group offers heavy-duty axial-flow and multi-stage valves for severe service power industry applications.

78200/18200 Series LINCOLNLOG

Controls high-pressure liquids without cavitation, erosion, vibration or excessive noise. The trim features an axial flow path that eliminates high pressure drop across the valve seat, allowing for long-term bubble tight shutoff. LincolnLog valves are the standard in power plants globally for high pressure boiler feedwater applications such as:

- Boiler Feed Pump Recirculation
- Reheat/Superheat Spray Water Attemperation
- Startup Feedwater Control

High Pressure SE-20 Forged Body Valves

provides flexibility to customize a solution for your particular severe service application.

Additional severe service features:

- 1 or 2 Stage LodB Trim
- V-Log Trim
- Labyrinth Style Trim (prevents flashing/cavitation damage)
- ANSI Class V Shutoff
- Hung Cage (resist thermal growth/shock)
- Expanded Outlet (reduces outlet velocities)
- Extended Bonnet

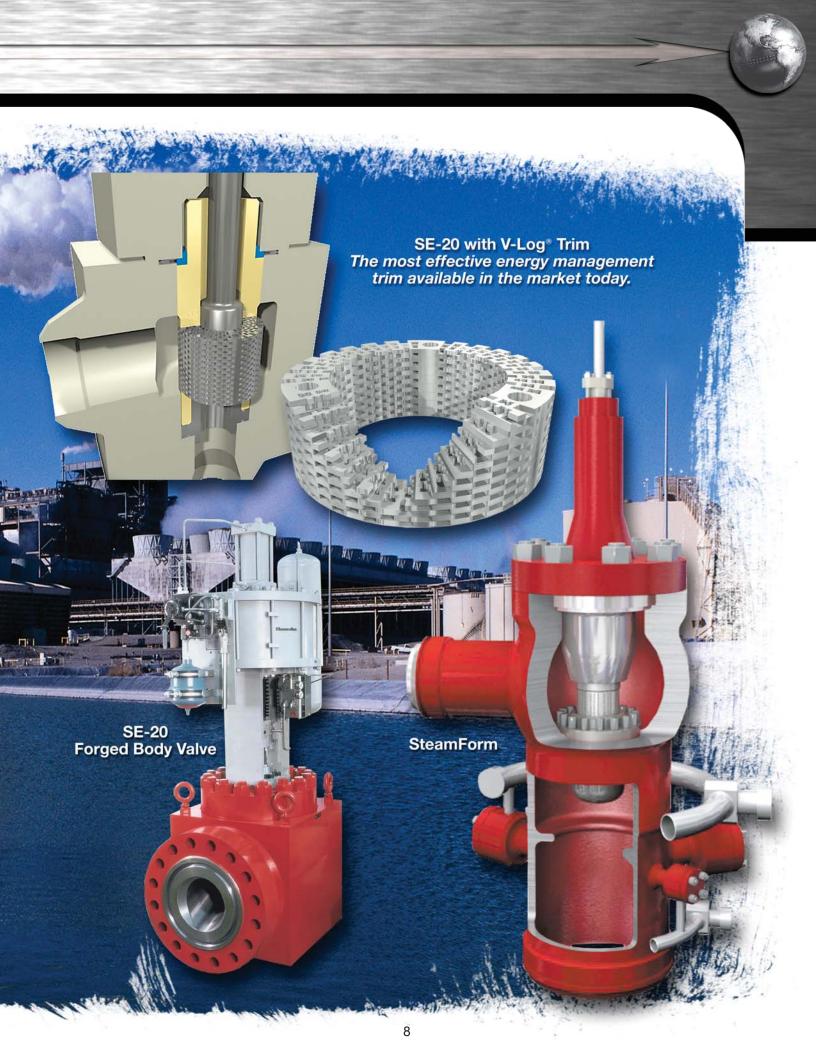
Typical Applications:

- Auxiliary Steam Pressure Reducing Valve
- Steam Vent to atmosphere
- Soot Blower Pressure Reducing Valve
- 207/BE/P Supercritical Startup Valves
- Turbine Bypass
- Steam Pressure Reducing Valve

SteamForm

Utilizing patented fluid flow conditioning technology and a unique nozzle arrangement, Masoneilan's new and improved SteamForm product line easily satisfy the most demanding steam conditioning and pressure reduction applications. Each valve is customized and engineered for your particular service.





OIL & GAS PRODUCTION

rom the desert of Saudi Arabia to the North Slope of Alaska, our heavy-duty, multi-stage valves have proven highly effective and dependable on oil and gas production platforms. The unique axial-flow trim design combines the benefits of both high throttling resistance, and large flow passages to meet the high pressure drops and dirty flow streams many offshore applications require.

The multi-step trim also provides protection against cavitation and reduces fluid velocities preventing erosion from entrained particles. Minimal trim parts, low maintenance, and low cost of ownership are all trademarks of the LINCOLNLOG design.



LINCOLNLOG

Typical Applications:

- Water Injection Pump Recirculation
- Produced / Waste Water Injection Well Control
- High Pressure Oil Separator Letdown
- Methanol Injection Pump Recirculation



Our high-pressure gas valves are designed for smooth, quiet letdown of dirty wellhead gas. These high performance valves offer significant cost savings in a variety of configurations tailored to your site-specific process requirements.

- Stellite clad top and bottom guiding surfaces for corrosion and vibration resistance
- Stainless steel, multi-stage trim is Stellite coated to minimize noise and hydrate formation
- Corrosion resistant, forged carbon steel bodies with Inconel overlays
- Force amplifying toggle actuators enhance positive spring closure to over 10,000 psi
- Tungsten Carbide trim upgrade



V-Log Trim LodB with up to 40 Stages

72000 Series

Actuator

Arrangement

Superior Design

for Wellhead Choke Application

Typical Applications:

- Compressor Recycle
- Vent to Flare
- Gas Depressurization
- V-Log Trim eliminates Hydrate Formation
- V-Log Trim significantly reduces velocity through the valve





72000 Series
Expanded Outlet Fabricated Angle

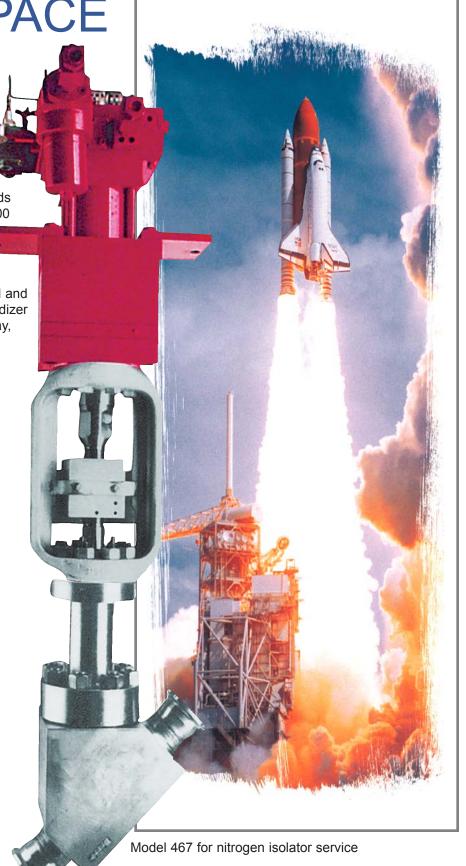


AFB. In the 1960's, we provided over 20,000 valves to the aerospace industry. Most of these valves are still being used today on every launch from Cape Canaveral.

Masoneilan has also supplied the control and shutoff valves used on the fuel and oxidizer loading systems for the space shuttle. Today, we continue to provide vacuum jacketed, cryogenic and extremely high temperature control valves in support of the aerospace program.



Sterile test / production facilities



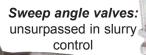
MINERAL PRODUCTION

Masoneilan's sweep angle valve has proven to be one of the best for controlling slurries. Specially designed stem guiding eliminates fluid chambers over the plug, minimizing problems caused by coking and buildup of particulate matter in the guide areas.

Flushing and purge connections may also be provided, offering maximum protection for guide regions. High capacity and ease of maintenance are achieved through retention of the seat ring by the systems' mating flange.

The valve design minimizes erosive attack by limiting both the velocity of the process stream and fluid impingement along body walls.

The sweep angle valve is also suitable for direct vessel mounting. It may be furnished with stellite or carbide trim, extended seats for discharge into the vessel and spool pieces with internal hard-facing or lining.



HIGH PRESSURE SLURRY LETDOWN

Masoneilan's coal slurry letdown valve design has been constructed using state-of-the-art methods, including trim parts of tungsten carbide. This valve has been designed to drop reactor pressure for second generation coal liquefaction processes. As a result, it can handle pressure drops over 2000 psi, temperatures in the 900-1000°F range, and services such as a flashing hydrocarbon



containing coal ash fines and char. The severe erosion characteristic of

this type of service has caused conventional valves to fail in a matter of days. Masoneilan has successfully designed valves that compensate for erosion, and provide many years of trouble free operation.

SMART TECHNOLOGY

Masoneilan provides microprocessor-based field instrumentation helping you realize tangible cost savings from initial installation and set-up through on-going maintenance and life-cycle support. The Smart Valve Interface (SVI) and Fieldbus Valve Positioner (FVP) digital valve positioners and controllers provide high performance process control with value-added benefits, such as compatibility with existing analog systems, on-board diagnostics and improved process yield.



ADVANCED DIGITAL TECHNOLOGY

Smart Valve Interface (SVI) is an intelligent digital PID valve positioner and PID process controller. SVI offers advanced control technology for pneumatically actuated valves, providing higher precision, greater flexibility and ease of use. ValVue is a communication software tool used to configure, calibrate and perform valve diagnostics with the SVI utilizing HART communications protocol.

Fieldbus Valve Positioner (FVP) and PID (proportional integral derivative) process controller offers highly advanced control technology for pneumatically actuated valves, providing higher precision and greater flexibility. A Fieldbus version of ValVue FF (FOUNDATION Fieldbus) software is also available for local or remote communication.

ADVANCED DIAGNOSTICS

ValScope's valve diagnostic system provides advanced capabilities for accessing key operating information and characteristics of control valves.

ValScope is a portable microprocessor-based system, which can be used to perform diagnostics and calibration of pneumatic valve systems or subassemblies, such as I/P transducers, valve positioners and actuators. The embedded software provides information on critical valve parameters, including bench set, valve stroke, friction, etc.



Valve Data Management Software Country Charles Country Country

RELATIONAL DATABASE POWER

ValvKeep provides relational database power to give you unsurpassed information on all facets of maintenance record keeping with regards to pressure relief devices, control/process valves, pumps / compressors and vessels. ValvKeep allows the user to generate and analyze data *plus* create a multitude of reports.

ValvKeep affords the user a unique opportunity to become proactive with respect to OSHA Process Safety Management. ValvKeep helps with record keeping, inspection frequency, historical data, recognized procedures and OSHA inspections. Many of the features in ValvKeep were specifically designed to address the many needs of the OSHA/EPA requirements.

SERVICE & REPAIR

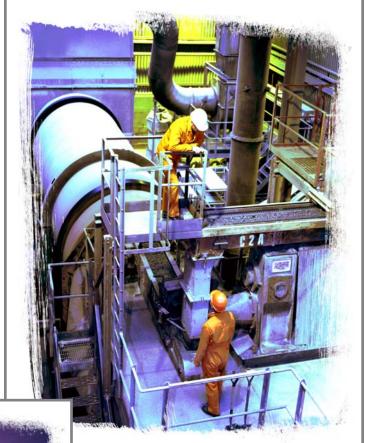
Masoneilan devotes extensive resources to its service and repair efforts. In fact, our people take just as much pride in this work as in the design and manufacture of new valves.

REBUILT VALVES: FULL PERFORMANCE AT LESS COST

The valves we rebuild play an integral part in our growing reputation as the industry leader in total valve solutions. Using genuine Masoneilan parts and quality workmanship, we can quickly and completely rebuild your valve for as little as 50% of the replacement cost.

REPAIRS: "ORIGINAL OR BETTER"

All Masoneilan repair work is performed in strict accordance with factory specifications and blueprints. Because of this, and our total quality program, we can back your refurbished valve with the same guarantee - one full year - as our new products.



FIELD SERVICE: READY WHEN YOU ARE

Our team of seasoned, factory-trained field service representatives are always available for on-site repair, start-up assistance, and training. Whether your needs are for a routine turnaround, general maintenance or emergency service, our skilled experts will be there to give you a quick assessment and take the action necessary to keep your process running smoothly.



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