

CUSTOM ENGINEERED CYLINDERS

Designed For Your
Application





Texas Hydraulics Inc. has been serving the market since 1968 as a custom manufacturer of fluid power components. We are a leading manufacturer of custom welded hydraulic cylinders in the United States and we maintain our place as a leader in the industry by providing cost effective, quality products and efficient services.



TEXAS HYDRAULICS HEADQUARTERS TEMPLE, TEXAS

Application Engineers are ready to work with you on-site

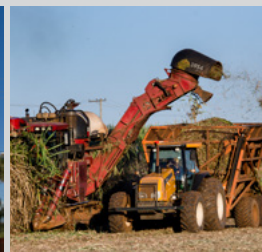
in the field and as your internal design coordinator ensuring that we provide you with cylinder solutions that maximize your competitive edge.

Technical Account Managers are your primary point of contact

and bring engineering expertise with over 100 years combined experience designing and applying cylinders.

Customer Service Representatives are highly trained professionals

who understand your business requirements and work to optimize the commercial and logistical requirements of your company. Each CS Rep works directly with you, bringing a combined total of over 60 years experience, serving as your voice inside Texas Hydraulics, Inc. Together with the rest of our team, they actively coordinate all aspects of order fulfillment from raw material scheduling, through introduction to delivery and inventory management.



HYDRAULIC CYLINDERS | SOLUTION FOR A WORLD IN MOTION

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HYDRAULIC CYLINDERS MARKET

UTILITIES

If it has anything to do with water, power, electric, sewer, cable, or gas; you can bet that there is a Texas Hydraulics manufactured cylinder somewhere in the mix. We design, build, and produce cylinders for the majority of aerial man-lift, digger derrick, cable handler, insulator washer, and telephone pole driver manufacturers.



PUBLIC SERVICES

When it comes to public service applications, no one has a wider and in-depth knowledge that the engineering team at Texas Hydraulics. We supply hydraulic systems to most of the major ladder fire-truck manufacturers in the world. If it has to work all the time, every time, then Texas Hydraulics is your hydraulic solutions partner.



TRANSPORTATION

Whether you build vehicle mounted wheelchair lifts, tailgate lifts, terminal trucks, or transport trailers, Texas Hydraulics is your mobile motion solutions partner. From fully integrated hydraulic tailgate lift applications and failsafe cylinders for wheelchair lifts, to position sensing lift cylinders for trucks and trailers, Texas hydraulics has a field proven design ready for your application.



HYDRAULIC CYLINDERS MARKET

■ MATERIAL HANDLING

From telehandlers to rough terrain cranes, knuckle booms to scissor lifts, Texas Hydraulics supplies hydraulic systems in a wide range of material handling applications. We have designed, manufactured, and currently produce cylinders for boom lift, boom extension, steering, counterweight, outrigger out-and-down jack systems, and track extend applications.



■ MINING

Since 1968, Texas Hydraulics has been the mining industry's choice for engineered hydraulic cylinders. When your customer demands highly productive 24/7 operation, let Texas Hydraulics develop the rugged, cutting-edge solutions that deliver results all day, every day.



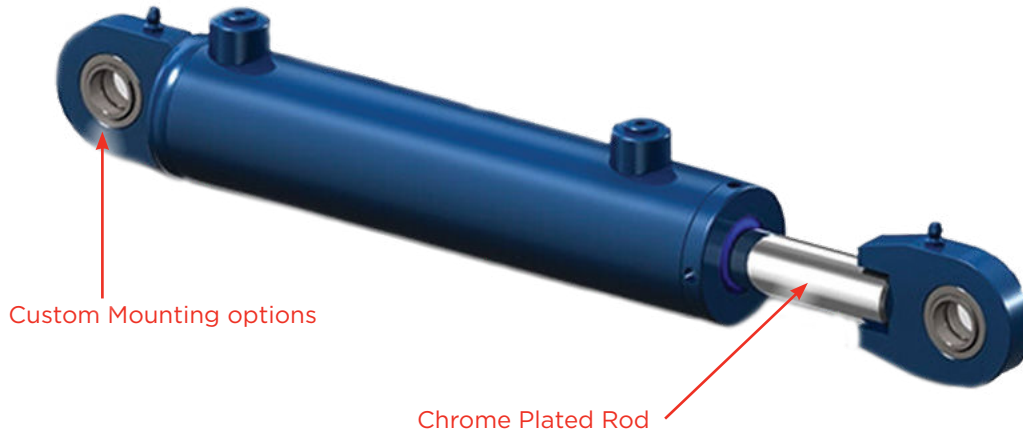
■ WASTE & REFUSE

The waste and refuse industry applications are rough on all systems, including hydraulics. That is why when partnering with a cylinder supplier; Texas Hydraulics is the right choice. We have designed and currently build cylinders that get pounded day-in and day-out in waste and recycling applications. From side loader tilt and grab cylinders, to front and rear loader lift and gate cylinders, Texas Hydraulics has a field proven design for your application.



STANDARD HYDRAULIC CYLINDERS

OUR STANDARD CYLINDERS come with minimal modifications. Both double and single-acting designs are available. They feature durable chrome plated rod, piston sealing, and standard or custom mounting. Our standard cylinders can be customized with a variety of options including position sensing, valve integration, nickel plating for increased corrosion resistance, and induction hardened rod.



APPLICATION EXAMPLES

- UTILITIES
- MATERIAL HANDLING
- OIL & GAS
- AGRICULTURE
- PUBLIC SERVICES
- DEFENSE
- TRANSPORTATION

PRODUCT DESCRIPTION

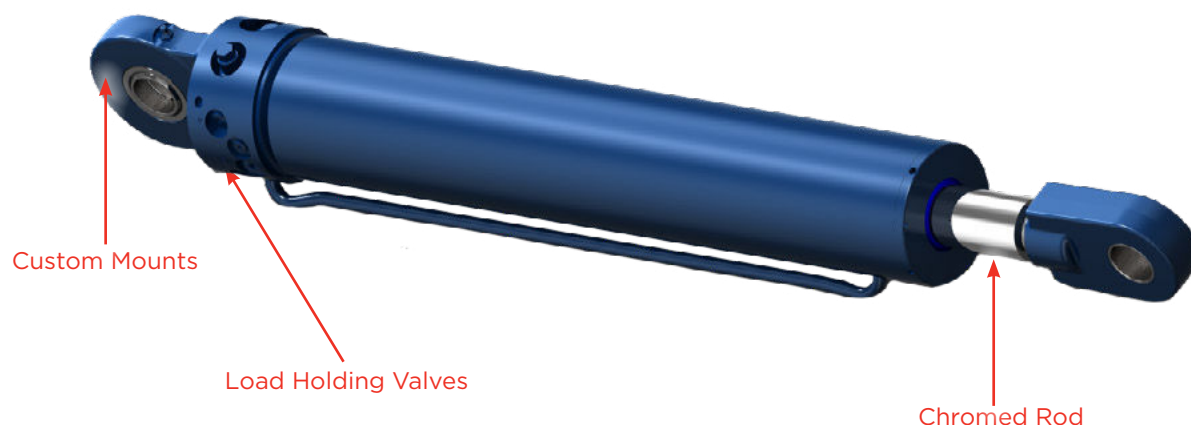
- Counterbalance
- Overload protection
- Regenerative circuits
- Load locking
- Sequence control
- Flow control / velocity fuse
- Thermal protection
- Master / slave circuits
- Directional control
- Pressure control
- Proportional flow

OPTIONAL FEATURES

- Eliminates hoses and tubing from the manifold block
- Reduces the use of and cost of additional purchased parts
- Streamlined for a better fit, a better aesthetic
- Appearance, and increased clearances on the equipment
- Prevents contamination during machine assembly
- Stroke cushioning
- Armor Rod® plating 700 HR NSS rating

VALVE INTEGRATED HYDRAULIC CYLINDERS

OUR VALVE INTEGRATION OPTION eliminates hoses and tubing from the manifold block, reducing the use and cost of additional purchased parts and preventing contamination during machine assembly. Valve integrated cylinders are streamlined for a better fit, better appearance, and increased clearance on equipment.



■ APPLICATION EXAMPLES

- UTILITIES
- MATERIAL HANDLING
- OIL & GAS
- AGRICULTURE
- PUBLIC SERVICES
- DEFENSE
- TRANSPORTATION

■ PRODUCT DESCRIPTION

- Counterbalance
- Overload protection
- Regenerative circuits
- Load locking
- Sequence control
- Flow control / velocity fuse
- Thermal protection
- Master / slave circuits
- Directional control
- Pressure control
- Proportional flow

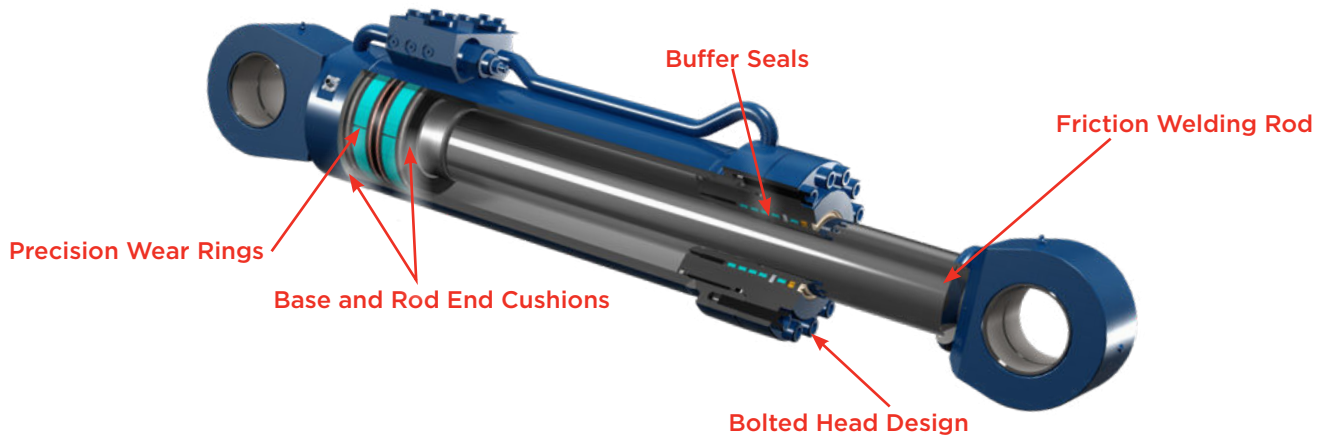
■ OPTIONAL FEATURES

- Eliminates hoses and tubing from the manifold block
- Reduces the use of and cost of additional purchased parts
- Streamlined for a better fit, a better aesthetic
- Appearance, and increased clearances on the equipment
- Prevents contamination during machine assembly

Please see Page 13 for Cylinder Dead Length.

CONSTRUCTION GRADE HYDRAULIC CYLINDERS

OUR CONSTRUCTION GRADE CYLINDERS are designed for extreme duty applications. They have a high cycle fatigue resistance, forged end mounts, chrome plating, and induction hardened rod. A bolted head design allows for easier serviceability, and the buffer seals help to extend rod seal life. It is ideal for applications in construction, earth moving, forestry, demolition, and mining.



■ APPLICATION EXAMPLES

- **CONSTRUCTION**
- **DEMOLITION**
- **EARTH MOVING**
- **MINING**
- **FORESTRY**
- **INFRASTRUCTURE**

■ PRODUCT DESCRIPTION

- Cylinder designed for extreme duty applications
- Bolted head design for serviceability
- High cycle fatigue resistance
- Friction welded rod mounts available
- Forged end mounts
- Chrome plated and induction hardened rod
- Base and rod end cushions with fast start
- Buffer seals to extend rod seal life
- Precision wear rings on piston and rod
- 4 Piece high pressure piston sealing system
- O-ring boss or 4-bolt flange porting
- 5000 Psi (345 bar) continuous
- 6000 Psi (415 bar) intermittent
- 120 Ft/min rod speed (37 m/min)
- -35 To 220 degrees Fahrenheit (-37°C to 104°C) continuous

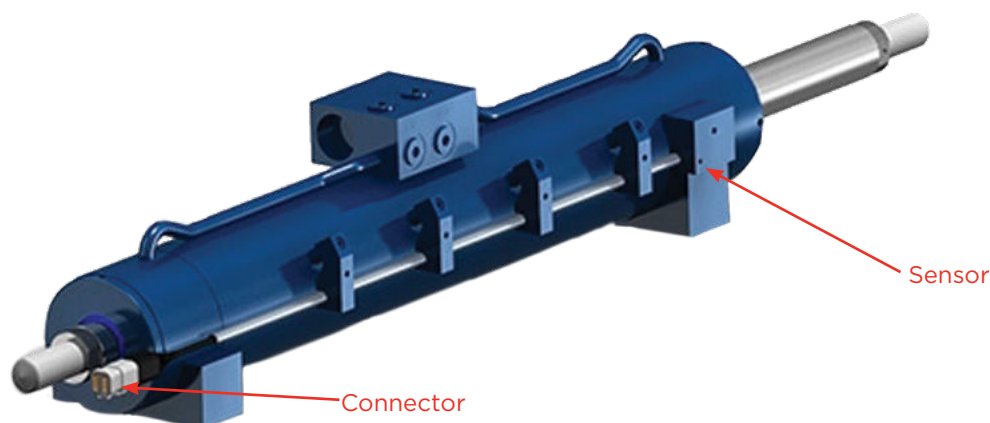
■ OPTIONAL FEATURES

- Alternate output types for tighter control: digital, CAN-bus
- Variable voltage

Please see Page 13 for Cylinder Dead Length.

POSITION SENSING HYDRAULIC CYLINDERS

POSITION SENSING TECHNOLOGY is ideal for applications that require a high level of accuracy and repeatability. Our position sensor equipped cylinders feature high performance contact-less sensing with an analog voltage output proportional to the cylinder stroke.



■ APPLICATION EXAMPLES

POSITION SENSING TECHNOLOGY IS IDEAL FOR APPLICATIONS THAT REQUIRE A HIGH LEVEL OF ACCURACY AND REPEATABILITY.

■ PRODUCT DESCRIPTION

- High performance contact-less sensing
- Analog voltage output proportional to cylinder stroke
- Standard Deutsch connection
- Linear, absolute measurement
- Electromagnetic compatibility: immunity against electromagnetic hf-fields up to 200 v/m
- Stroke range: 2"-60" / 50 mm - 1,500 mm
- Output direct analog: 0-5v
- Accuracy: 0.04%
- Repeatability: 0.005%
- Input power: 12/24v
- Minimum cylinder bore diameter: 2.25" / 60 Mm
- Minimum rod diameter: 1" / 25 mm
- Operating pressures up to 5,000 psi / 350 bar
- M12 connector

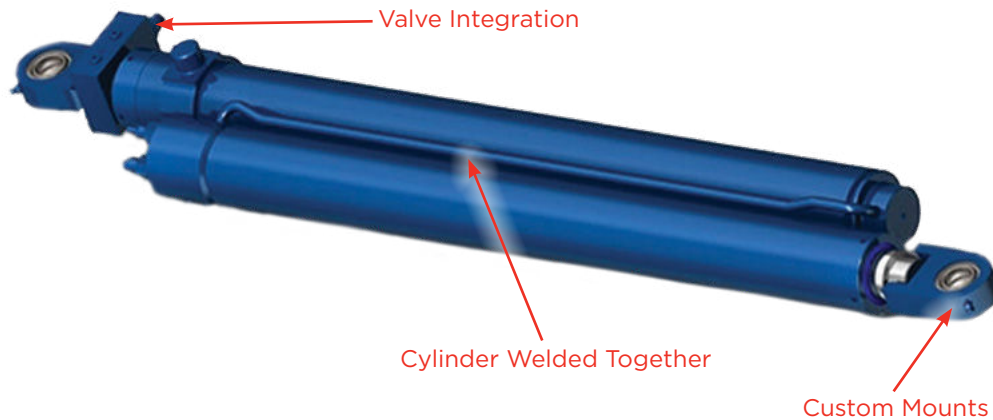
■ OPTIONAL FEATURES

- Alternate output types for tighter control: Digital, CAN-bus
- Variable voltage or current output
- Additional linear position connector types available
- Position sensing technology available on multiple THI cylinder styles



PIGGY-BACK HYDRAULIC CYLINDERS

THE PIGGY-BACK CYLINDER DESIGN enables a longer stroke with a shorter overall length. Piggy-back cylinders are designed for applications that require a long extend with a short retraction area. It is suitable for both high and low pressure situations, and the absence of hoses and fittings eliminates leaks.



■ APPLICATION EXAMPLES

- JACK/OUTRIGGER EXTEND
- CHUTES
- BOOM EXTENDER
- DAMP APPLICATIONS
- WRECKER/TOW VEHICLES

■ PRODUCT DESCRIPTION

- For applications requiring short overall lengths and consistent load capabilities or speed.
- Longer stroke with shorter overall length
- Designed for applications that require a long extend with a short retraction area.
- Interchangeable seals on the same bore size
- High pressure and low pressure applications
- Provides consistent load and speed capabilities

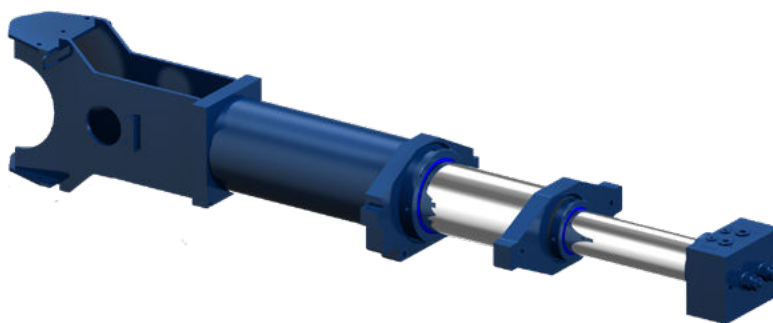
■ OPTIONAL FEATURES

- Rod or tube ported
- Out and down functionality
- Valve integration
- Cushions
- Hollow tubes
- Sequencing

Please see Page 13 for Cylinder Dead Length.

TELESCOPIC HYDRAULIC CYLINDERS

THE TEXAS HYDRAULICS TELESCOPIC CYLINDER is designed for applications that require a long stroke and a short length. An internally threaded head makes it easier to remove head and rod seal without using special tools or retaining rings. The redundant rod sealing improves sealing and pressure capabilities as well as providing a buffer for pressure spikes.



■ APPLICATION EXAMPLES

- UTILITIES
- MATERIAL HANDLING
- PUBLIC SERVICES
- OIL & GAS
- AGRICULTURE
- DEFENSE
- TRANSPORTATION

■ PRODUCT DESCRIPTION

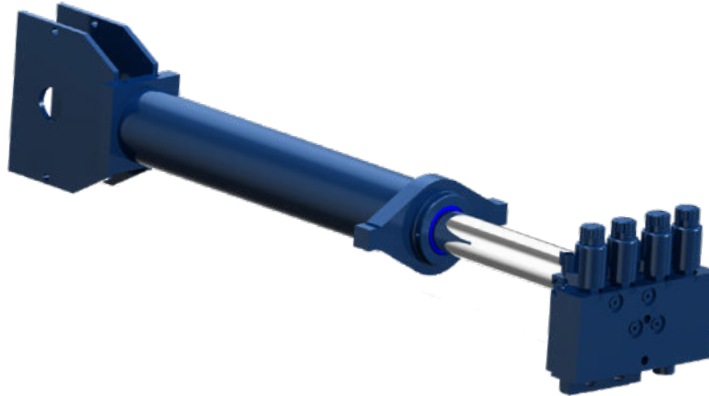
- Operating pressures up to 5000 psi
- Heavy chrome-increased corrosion resistance and durability
- Tight tolerance bearings for improved alignment and reliability
- Tapered head design for tighter radial clearances
- Bores range from 3.50" To 22.00"
- Up to five stages available
- 400"+ Stroke per stage, dependent on bore sizes
- Rod fed double and single acting available
- High pressure sealing

■ OPTIONAL FEATURES

- Custom mounting for flexibility
- Skip sleeve option- for a higher retract force
- Valve integration
- Independent double acting stages

ELECTRONIC ADVANCED SUB-SYSTEM INTEGRATED (EAS-i) Actuator

THE TEXAS HYDRAULICS' EAS-i ACTUATOR is a self-contained system, which controls cylinder motion to perform a programmed function or to respond to an input. The EAS-i Actuator can provide closed-loop feedback on pressure, temperature, cycles, angle, velocity and/or position from the actuator to the on-board controller and can be customized to your system.



■ APPLICATION EXAMPLES

- UTILITIES
- MATERIAL HANDLING
- ROAD SERVICE
- OIL & GAS
- AGRICULTURE
- DEFENSE
- TRANSPORTATION

■ PRODUCT FEATURES

- On-board electronic controller
- Input system which feeds into controller with secondary input capability
- Hydraulic cylinder designed to match application requirements
- Easily programmable logic
- Equipment function synchronization and sequencing
- Work envelope control
- Speed/acceleration control (Electronic cushion/velocity control)
- Position, velocity, temperature, cycles and pressure feedback devices
- Parallel/series system capability (Lift/steer - rotate/tilt - etc.)
- Hydraulic integrated circuit (HIC) valve manifold utilizing load holding, flow, pressure, proportional and directional control cartridge valves
- Links to the various data transfer lines in the main control system (J1939 and CAN-bus)

■ PRODUCT ADVANTAGES

- Simplified electro-hydraulic systems
- Fully tested, plug-and-play solution
- Control solution designed around application and desired function
- Highly flexible and modular
- Easy troubleshooting and repair
- Increased stiffness and control due to valve proximity
- Provides simple, local feedback
- Decreased number of leak points
- Lower heat generation and improved efficiency through optimized pressure drops
- Decreased part numbers and less inventory control required
- Allows for improved performance and reliability in various environments

CYLINDER DEAD LENGTH

The charts below show the standard cylinder dead length in inches, it does not include end mounts or stroke. Add 1" to for every 10" of stroke beyond 40". For base end mounted valve block add 1.75" for up to 15 GPM, 2.00" for up to 30 GPM and 2.38" for up to 60 GPM. Any required cushion length is additive. Standard bore-rod combinations and lengths are shown, please consult Texas Hydraulics for availability of sizes not shown, or if the shorter lengths are required. These dimensions are for reference only, some applications may require more dead length than shown.

MEDIUM-HEAVY DUTY CYLINDERS

	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	5.00	5.50	6.00	6.50	7.00	8.00	9.00	10.00
0.75	4.75																		
0.88	4.75																		
1.00	4.88	4.88	5.00																
1.13	4.88	4.88	5.00																
1.25	5.00	5.13	5.25	5.75	6.38	6.50	6.88												
1.38	5.31	5.31	5.31	5.75	6.38	6.50	6.88	6.88											
1.50	6.00	5.63	5.63	5.75	6.38	6.50	6.88	6.88	7.13										
1.63		5.75	5.75	5.88	6.38	6.50	6.88	6.88	7.13	7.13									
1.75		6.00	6.00	6.19	6.38	6.50	7.00	6.88	7.25	7.25									
2.00				7.25	6.75	6.88	7.13	7.00	7.38	7.38	7.63	8.13							
2.25						6.88	7.13	7.13	7.38	7.38	7.63	8.38							
2.50							7.38	7.13	7.38	7.38	7.63	8.50	8.88						
2.75								7.38	7.38	7.38	7.88	8.75	8.88	9.13	9.13				
3.00									7.63	7.63	8.00	8.75	9.00	9.13	9.13				
3.25											8.25	8.75	9.00	9.25	9.25	9.63	9.88		
3.50											8.50	8.88	9.25	9.50	9.50	9.63	9.88		
3.75												8.88	9.50	9.75	9.75	10.13	10.13		
4.00												8.88	9.50	9.75	9.75	10.13	10.13	12.00	12.00
4.50																12.25	10.38	12.25	12.25
5.00																	10.38	12.50	12.50
5.50																		12.50	12.50
6.00																		13.00	13.00

LIGHT-MEDIUM DUTY CYLINDERS

	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75
0.50	3.44											
0.63		3.75	4.00									
0.75		3.75	4.13	4.25	4.13							
0.88			4.13	4.25	4.25							
1.00				4.38	4.38	4.38	4.50					
1.13					4.38	4.38	4.50					
1.25					5.00	4.50	4.75	4.88	5.13	5.13	5.25	
1.38					5.00	4.75	5.00	4.88	5.13	5.13	5.25	5.25
1.50						5.00	5.00	5.00	5.13	5.13	5.25	5.25
1.63						5.50	5.50	5.50	5.38	5.38	5.38	5.38
1.75								6.00	5.50	5.50	5.50	5.50
2.00									6.00	5.50	5.75	
2.25										6.00	6.00	
2.50												6.25





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