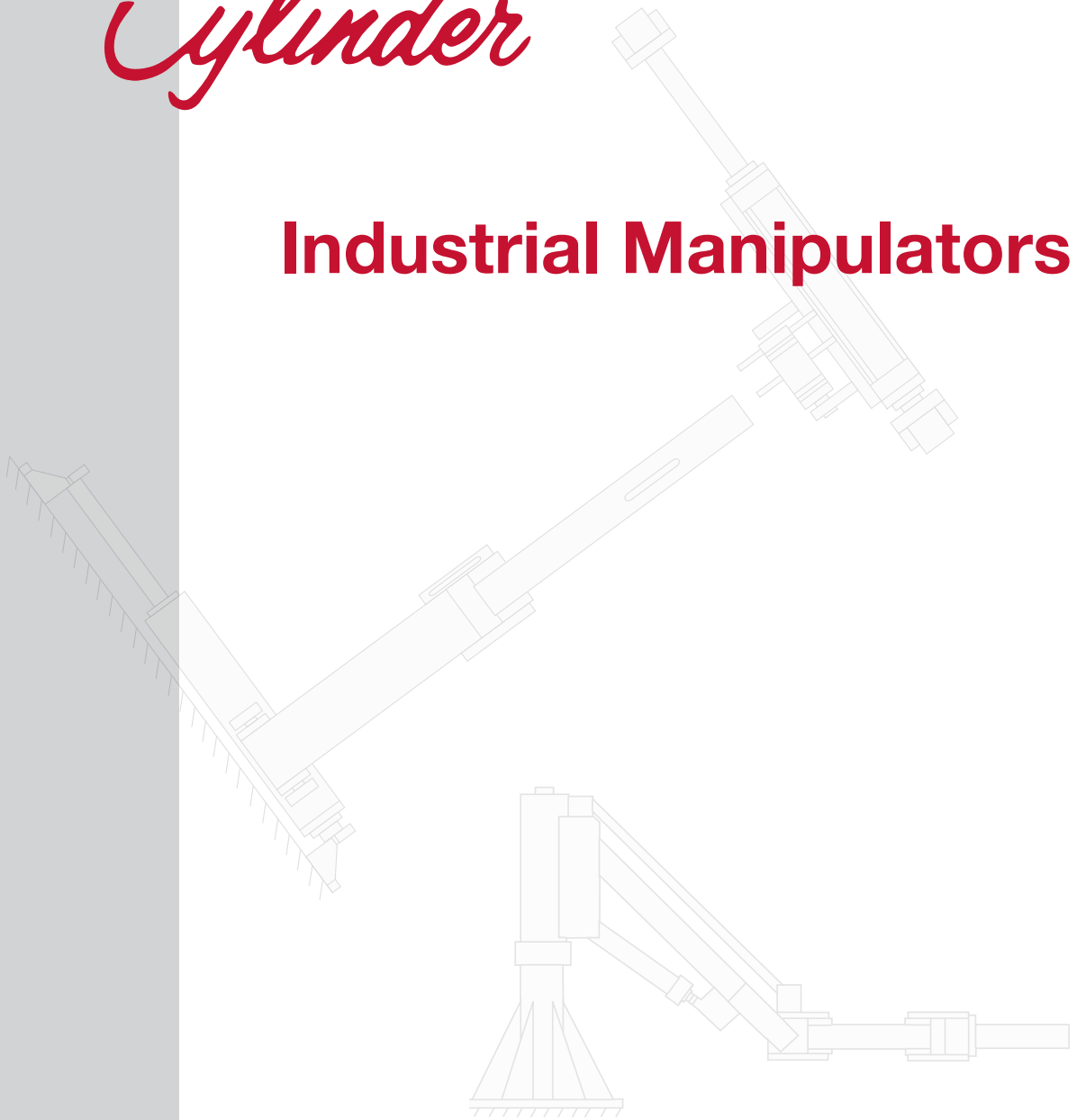


Industrial Manipulators



Pow'r Arm™ and Pow'r Reach™ Industrial Manipulators

from *Milwaukee Cylinder* provide safe and efficient means to lift and locate loads up to 2,000 lbs. They use hydraulic power to lift, and manual operator movement to locate the load. Pow'r Arm™ units are typically mounted to a vertical surface at a machine or press to aid the operator in loading heavy tooling, dies or work pieces of up to 2000 lbs. Pow'r Reach™ provides greater vertical travel and reach for loads up to 750 lbs. Mounting options include floor mount, dolly mount, and overhead mount.



Page

**Pow'r Arm™
Manipulators**

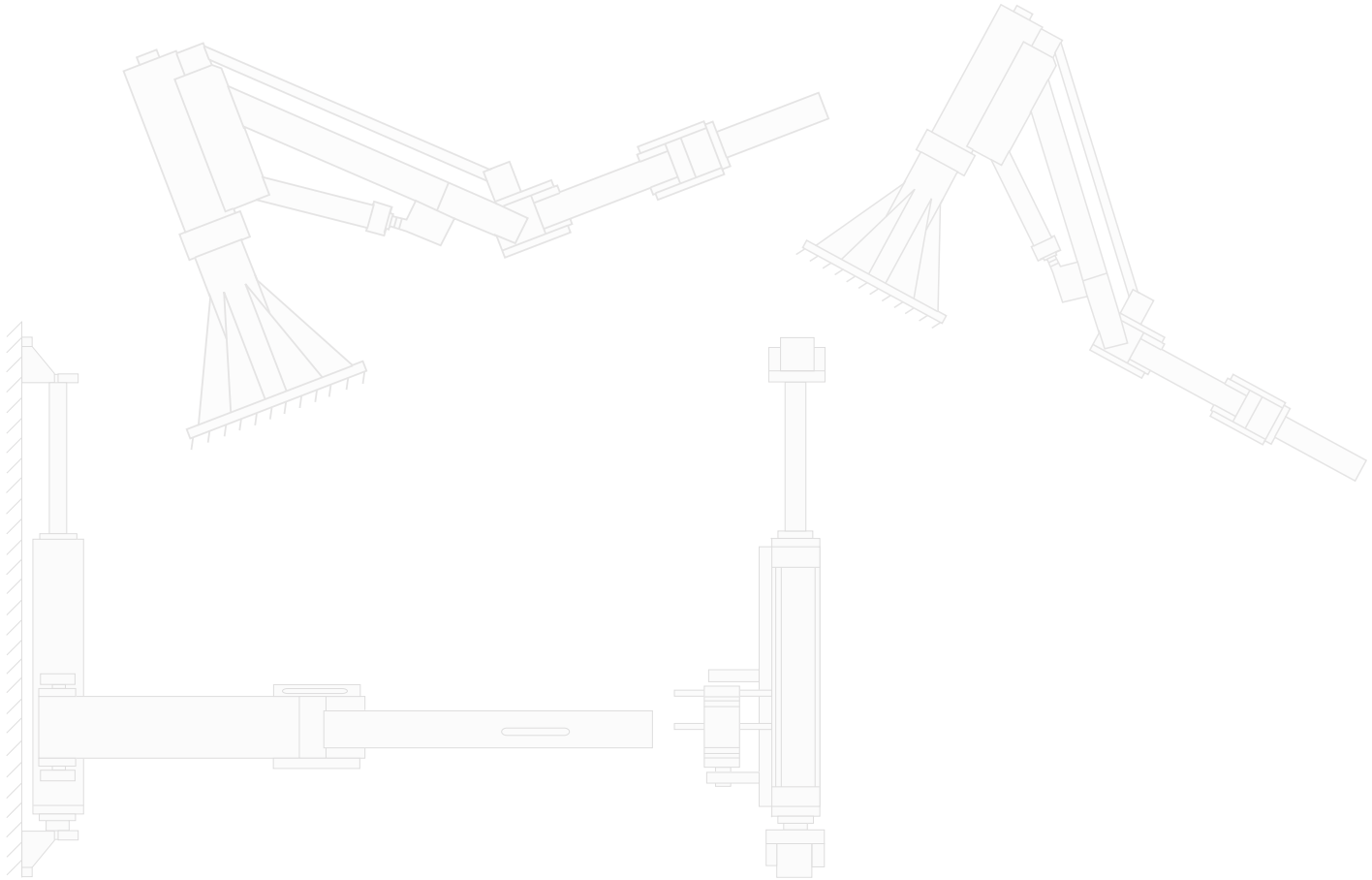
Features & Benefits
Technical Information

142
143

**Pow'r Reach™
Manipulators**

Features & Benefits
Technical Information

144
145



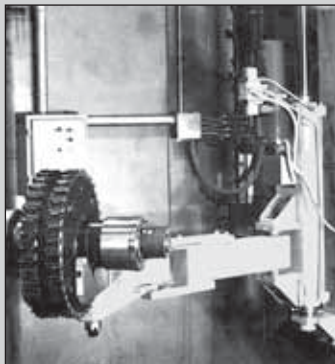


Safe, convenient positioning of loads up to 2,000 lbs.

- Quick, easy lifting and positioning of heavy dies, tooling and parts
- One-man control — saves time and labor
- Mounts directly on machine, I-beam or vertical surface
- Vertical travel is easily controlled with 8.0 ft remote pendant push-button control
- Articulated arm simplifies positioning of load, folds away for convenient storage
- Metering orifice slows downward motion
- 2-speed control permits fast movement and precise positioning of load

Features

- Hydraulic power to lift, operator movement to locate the load
- 12 inch and 24 inch vertical travel
- Electric powered, self-contained, stand-alone hydraulic power unit controls vertical travel with manual horizontal positioning of the load by the operator
- Lift speeds of 22 in/min. to 117 in/min.



Large and complex cutters are often impossible to handle without some mechanical assistance. The Pow'r Arm™ was adapted for this specific application.



In automated forging processes, hot metal blanks are fed automatically into a progressive die. Each die segment may weigh several hundred pounds and must be handled quickly, easily and safely.



Large shear blades are used to cut steel bars and billets. When these blades become worn the Pow'r Arm™ performs speedy removal and replacement of the blades safely with minimal disruption to the process.

MPA-Series Pow'r Arm™ Technical Data

POWER SUPPLY

Pow'r Arm includes a complete, self-contained, stand-alone power supply. It consists of a pump, motor, coupling, coupling adapter, hydraulic reservoir and controls.

The electric-hydraulic units have a pre-set relief valve to prevent overloads and a check valve which retards descent of the load if the power fails. Pressure settings for relief valves are set as shown in the "Hydraulic Specifications" table to the right.

▼ Hydraulic Specifications

| Model Number | Pressure Rating (psi) | System Fluid Capacity (gal) | Vertical Travel Speed (in/min) |
|--------------|-----------------------|-----------------------------|--------------------------------|
| MPA-25 | 300 | 2.0 | 117 |
| MPA-50 | 300 | 2.0 | 54 |
| MPA-100 | 300 | 2.0 | 37 |
| MPA-200 | 300 | 2.0 | 22 |

▼ Electrical Specifications

| AC | | Phase | Amps |
|---------|-------|-------|------|
| Voltage | Hz | | |
| 115* | 60/50 | 1 | 9 |
| 220 | 60/50 | 1 | 7 |
| 440 | 60/50 | 3 | 3.5 |

* STD. - Unless otherwise specified.

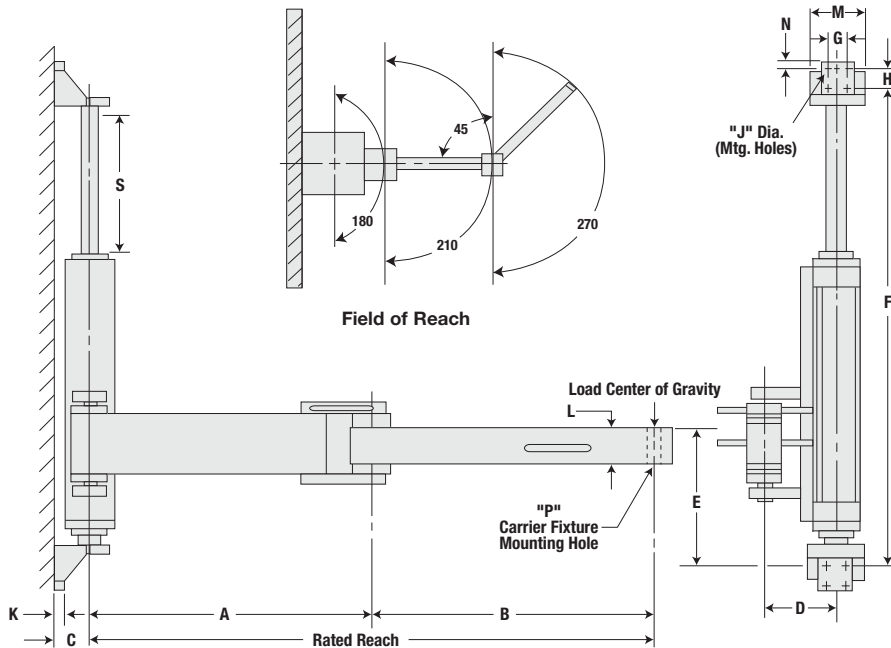
▼ HOW TO ORDER

Example: **MPA - 25 - 12 - 24/24 - 7 - SH - S**

Model No. & Load Capacity _____
 Vertical Travel ("S" from dim. chart below) _____
 Rated Reach ("A" and "B" from dim. chart below) _____
 Seals _____
 Buna (standard) - 7 ; Viton (optional) - 8
 Power Unit (SH = Electric-Hydraulic) _____
 Modification from Standard - S _____
 (If Applicable)

Operating Specs. - Model MPA

| | |
|--------------------------|--------------------------------------|
| Rated Load: | 250-2000 lbs. |
| Working Radius: | 24-36 in. |
| Pump: | 1.5 GPM, 3450 RPM |
| Pressure Rating: | 600 psi |
| Motor: | 0.5 hp, 3450 RPM, C Frame |
| Reservoir Capacity: | 2.0 gal. |
| Lowering Power: | Gravity (Controlled by Needle Valve) |
| Operating Controls: | 2-button Up/Down Pendant |
| Electrical Requirements: | 20 Amps, 115V / 60 Hz |
| Down Speed: | Adjustable with Needle Valve |
| Total Weigh: | 560 lbs. 275-1600 lbs. |



Safety Relief Valve

Relief valves are pre-set at the factory to prevent overloading of the cylinder arm assembly.

Dual Speed Control

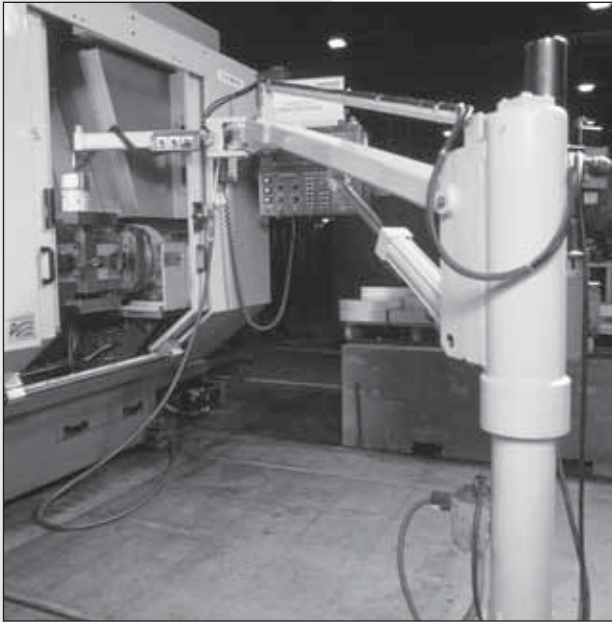
The vertical travel is controlled by a hand held push-button pendant, connected to the hydraulic power unit. Dual speed provides maximum performance and control.

Integrated Hydraulic Controls

All hydraulic controls are integrated into compact manifold packages to minimize space and system hydraulic connections. Controls are designed to provide positive load holding.

▼ DIMENSIONAL CHART

| Load Cap. (lbs) | Model No. | Dimensions (in) | | | | | | | | | | | | | | | Wt. |
|-----------------|-----------|-----------------|-------|------|-------|-------|-------|------|------|-----|------|------|-------|------|-------------|-------|------|
| | | A | B | C | D | E | F | G | H | J | K | L | M | N | P | S | |
| 250 | MPA-25 | 24.00 | 24.00 | 3.75 | 5.88 | 11.25 | 39.38 | 1.75 | 1.75 | .43 | .50 | 3.00 | 3.75 | .50 | .753/755 | 12.00 | 275 |
| 500 | MPA-50 | 24.00 | 24.00 | 4.50 | 7.25 | 17.43 | 77.38 | 4.00 | 2.00 | .56 | 1.00 | 4.00 | 8.00 | 1.00 | 1.003/1.005 | 24.00 | 750 |
| 1000 | MPA-100 | 30.00 | 30.00 | 5.50 | 8.50 | 19.15 | 75.81 | 4.50 | 3.50 | .68 | 1.25 | 5.00 | 8.00 | 1.00 | 1.503/1.505 | 24.00 | 975 |
| 2000 | MPA-200 | 36.00 | 36.00 | 6.50 | 10.75 | 22.75 | 78.12 | 6.00 | 4.00 | .81 | 1.50 | 6.00 | 10.00 | .75 | 1.503/1.505 | 24.00 | 1600 |

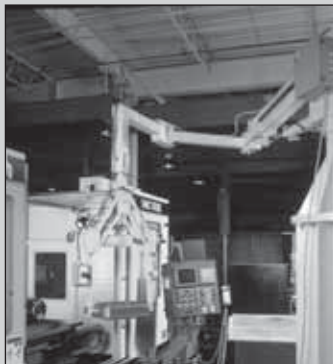


For fast, easy lifting and precise positioning of tombstones, vises and materials

- Available in 250 lbs or 750 lbs capacity
- 58-inch vertical travel, 8.5 foot reach, 350 degree rotation
- One-man control – saves time and labor
- Low column profile for maneuverability
- Two-speed pendant control permits fast movement and precise positioning
- Special bearings prevent drifting of load

Standard Features

- 58" vertical travel
- Self-contained hydraulic power unit for lifting with manual horizontal power
- Rapid up speed - Full 58 inches travel in 15 seconds
- Vented reservoir with sintered metal breather filter
- Buna cylinder seals are standard; Viton seals available upon request



Parts are selected from pallets and moved to working stations. The smooth, positive hydraulic control of the Pow'r Reach™ permits picking and positioning of expensive parts safely and precisely.



Portable dolly-mounted Pow'r Reach™ provides flexibility to accommodate a wide variety of applications. For stability, a counterweight is welded to the column of these models.



A Pow'r Reach™ is used to position parts in machining centers. It is useful and effective because of the ease and convenience with which the heavy parts are handled.

MPR-Series Pow'r Reach™ Technical Data

POWER SUPPLY

All Pow'r Reach™ units include a complete self-contained electric-hydraulic power supply mounted on the column. The standard power supply is driven by a single-phase electric motor. Standard voltages, frequencies and motor specifications are in the table below. Custom configurations are available upon request.

▼ HOW TO ORDER

Example: **MPR - 25 - SH - 7 - S**

Model No. & Load Capacity _____

Power Supply _____

SH - Electric / Hydraulic (standard)

SAH - Air / Hydraulic (MPR-25 only)

Seals _____

Buna (standard) -7 Viton (optional) -8

Modification from standard -S _____

(if applicable)

| Operating Specifications | Model MPR-25 | Model MPR-75 |
|--|-------------------------------------|--|
| Rated Load: | 250 lbs. | 750 lbs |
| Working Radius: | 102.00 in. | 103.50 in. |
| Pump: | 1.5 GPM, 3450 RPM | 2.8 GPM, 1750 RPM |
| Pressure Rating: | 600 psi | 600 psi |
| Motor: | 0.5 hp, 3450 RPM, C Frame | 1.5 hp, 1750 RPM, C Frame |
| Reservoir Capacity: | 2.0 gal. | 3.0 gal. |
| Lowering Power: | Gravity, Controlled by Needle Valve | Hydraulic Power Unit |
| Operating Controls: | 2-button Up & Down Pendant Control | Joystick, Variable Speed Control Proportional Valve |
| Electrical Requirements: | 20 Amps, 115V / 60 Hz | 30 Amps, 220V / 60 Hz |
| Down Speed: | Adjustable with Needle Valve | Joystick Variable Speed Control |
| Mounting Data | | |
| Mounting Bolt-Pull-Out Force: | 4000 lbs. Minimum | 7000 lbs. Minimum |
| Total Weight, Floor-Mounted Pow'r Reach: | 560 lbs. | 1183 lbs. |

Safety Relief Valve

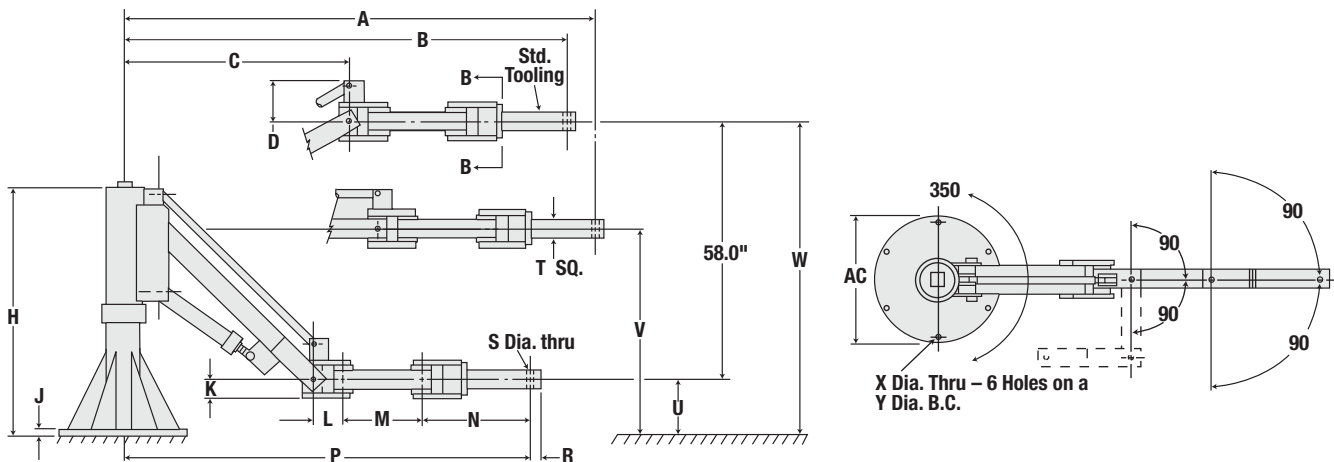
Relief valves are pre-set at the factory to prevent overloading of the cylinder arm assembly.

Dual Speed Control

Standard on the MPR-25 for maximum performance and control. Variable speed proportional control is standard on the MPR-75 and optional on the MPR-25.

Integrated Hydraulic Controls

All hydraulic controls are integrated into compact manifold packages to minimize space and system hydraulic connections. Controls are designed to provide positive load holding.



▼ DIMENSIONAL CHART

| Load Cap. (lbs) | Model No. | Dimensions (in) | | | | | | | | | | | | | | | | | | | |
|--------------------|-----------|-----------------|-------|-------|------|-------|------|------|------|-------|-------|-------|------|-------------|------|-------|-------|-------|-----|-------|-------|
| | | A | B | C | D | H | J | K | L | M | N | P | S | R | T | U | V | W | X | Y | AC |
| 250 | MPR-25 | 102.00 | 95.50 | 47.50 | 7.50 | 53.00 | .75 | 3.50 | 5.00 | 19.00 | 24.00 | 88.00 | 1.62 | .755/.753 | 3.00 | 12.50 | 46.50 | 70.50 | .56 | 18.00 | 22.00 |
| 750 | MPR-75 | 103.50 | 97.06 | 49.06 | 8.75 | 55.50 | 1.00 | 4.00 | 6.50 | 17.50 | 24.00 | 89.50 | 2.00 | 1.005/1.003 | 4.00 | 12.50 | 46.50 | 70.50 | .84 | 26.00 | 28.00 |