

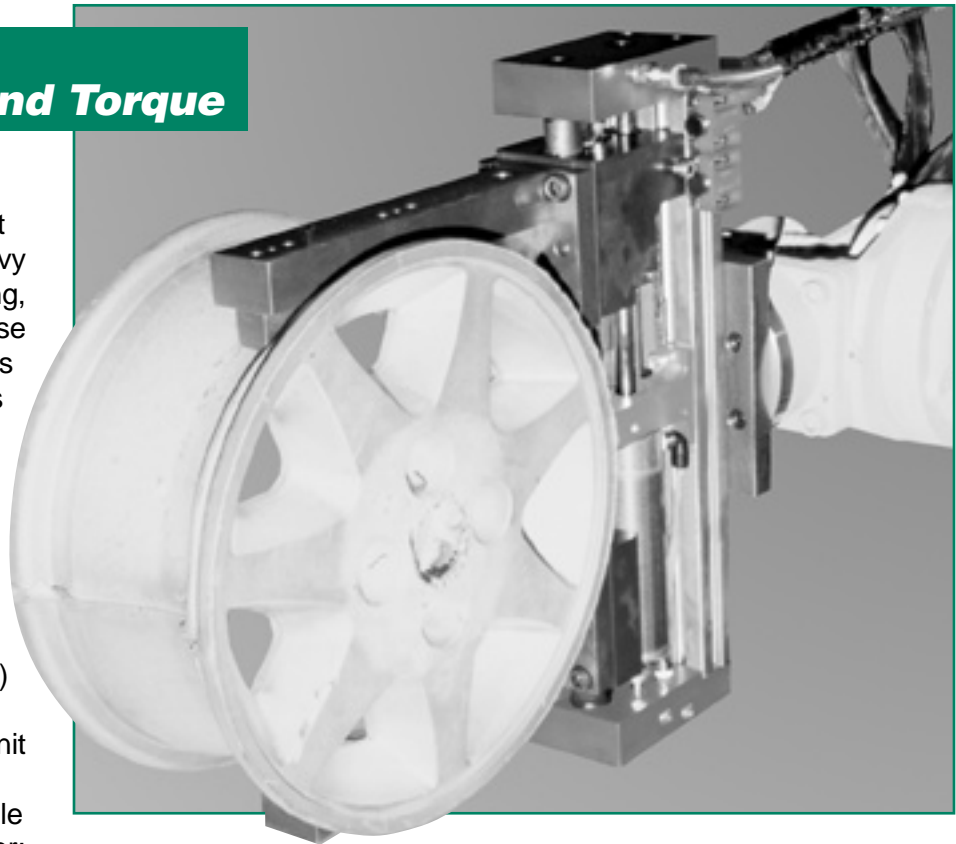
Parallel Opening/Closing Type Gripper

# XRAY<sup>®</sup> Series

2 Finger 450N, 1250N, 2500N

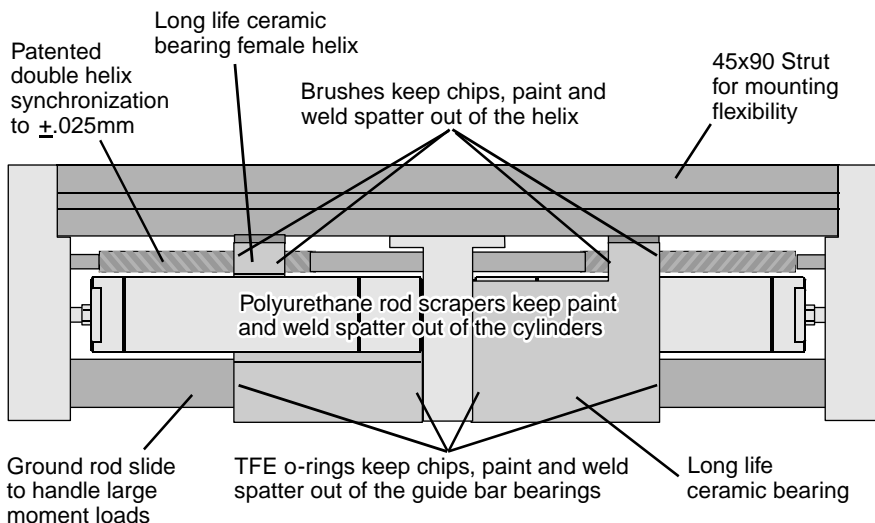
## XRAY Grippers – Extreme Force and Torque

The XRAY concept was developed for applications that impart high acceleration to heavy objects or require extremely long, precisely positioned jaws. These applications put extreme stress on the gripper. XRAY grippers use a ceramic bearing system to isolate the precision jaw positioning system from jaw torque and force. The ceramic bearing rail allows the grippers to be small and lightweight while delivering jaw force in excess of 2500N (560 pounds) and to tolerate jaw torque of 1200NM (880 ft-lb). Multiple unit arrays and special strokes are facilitated by the XRAY's flexible architecture. XRAYs truly deliver:



**“Twice The Force... Half The Size”**

## Patented Synchronous Technology – Extended Life



The synchronous XRAY utilizes U.S. patent numbers 4,591,199 and 5,657,973. The force and synchronizing double helix are independent systems. The double helix works only to center the part to  $.025\text{mm}$  ( $\pm 0.001$  inches). All of the gripping force is provided by two pistons that are driven pneumatically. The independence of the force and synchronization systems provides precision over the typical 10,000,000+ cycle life of the unit.

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## **Rugged Construction – Low Cost of Ownership**

XRAY takes advantage of dynamic developments in both material science and automation technology to offer new horizons of toughness and cost efficiency. The cost of ownership of the XRAY is minimized by the use of off-the-shelf stainless steel cylinders. These cylinders include magnetic sensing rings for enhanced flexibility.

Harsh environments like casting, welding and machining are tolerated due to seals on the helix and guide bar. The standard seals on the cylinders are supplemented with polyurethane rod wipers in the ZAYTRAN designed nuts that mount the cylinders to the center section. By eliminating boots and covers ZAYTRAN has minimized the weight and allowed the dirt and grime to fall out of the gripper. For welding environments specially plated aluminum covers are available that will keep the weld spatter from attaching to the cylinder rods.

Unparalleled rigidity is achieved by combining a 32mm ground rod and ZAYTRAN's proprietary ceramic bearing technology. Anti-rotation of the jaw mounting system is achieved with polyamide imide bearings running in guides that are precision machined in the extruded backbone of the system.

All of these moving members are lubricated for the life of the XRAY.

The application flexibility of the XRAY is extended by the use of an extruded aluminum backbone that provides multiple options for mounting the gripper and mounting sensors to the gripper as well as reducing the weight of the gripper.



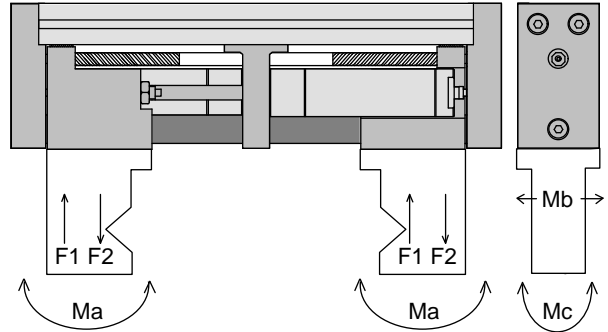
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## Jaw Torque and Force

| MODEL            | Ma : Nm<br>(ft.-lbs.) | Mb : Nm<br>(ft.-lbs.) | Mc : Nm<br>(ft.-lbs.) | F1 : kg<br>(lbs.) | F2 : kg<br>(lbs.) |
|------------------|-----------------------|-----------------------|-----------------------|-------------------|-------------------|
| XRAY-450         | 225<br>(165)          | 225<br>(165)          | 160<br>(117)          | 224<br>(492)      | 136<br>(305)      |
| XRAY-1250        | 550<br>(405)          | 600<br>(440)          | 550<br>(405)          | 670<br>(1,500)    | 450<br>(1,000)    |
| Tandem XRAY-1250 | 1,100<br>(810)        | 1,200<br>(880)        | 1,100<br>(810)        | 1,340<br>(3,000)  | 900<br>(2,000)    |

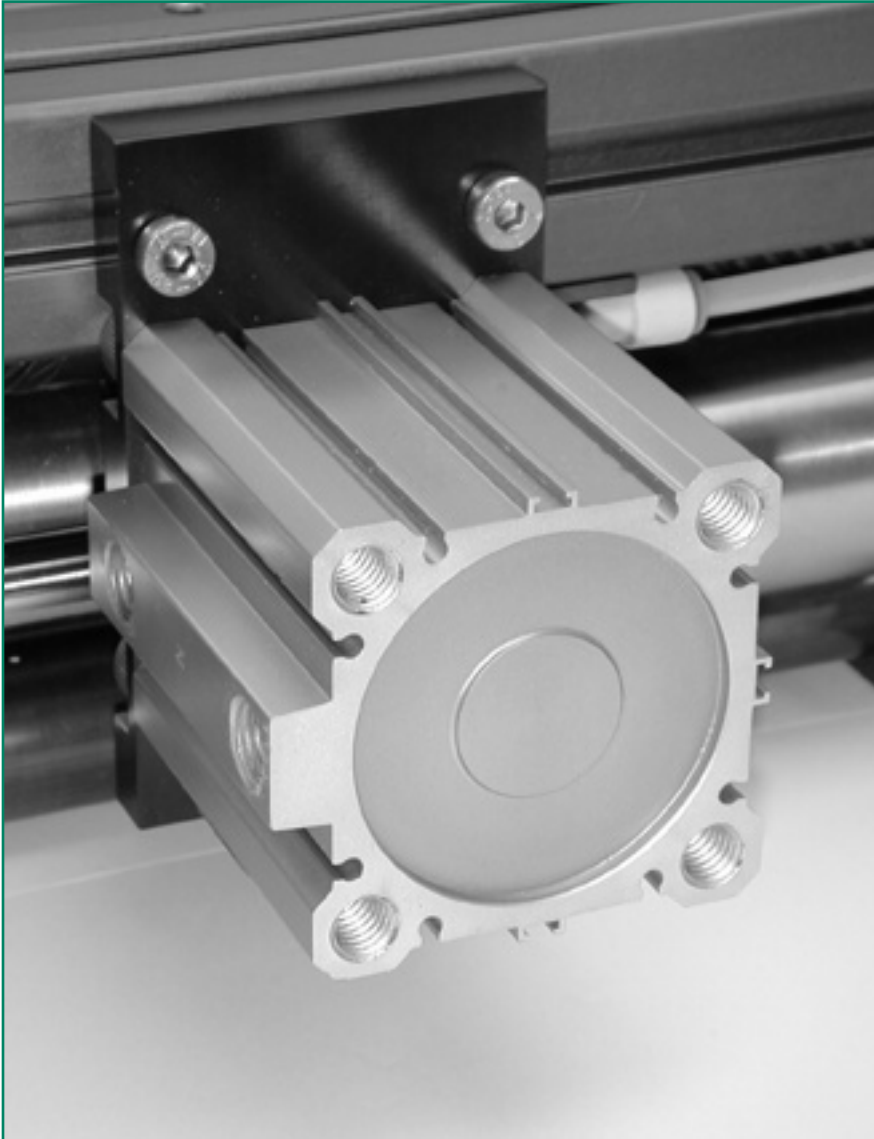


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## **Optional Power-Off Brake**



In applications that require the part be held even when pneumatic power is lost, the Power-Off Brake option provides an excellent solution. When pneumatic pressure is removed from the option a spring is allowed to rotate a collar that engages a collet brake system on the helix. Thus, the jaws are braked in position.

Either an encompassing jaw system or jaws with compliance must be used with this option. Jarring may cause some jaw movement.

## **Accessory Weld Spatter Covers**

These field installable covers protect the cylinder shafts from weld spatter. They are aluminum that has been plated so that weld spatter does not stick.

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## **Accessory Switch Kits**

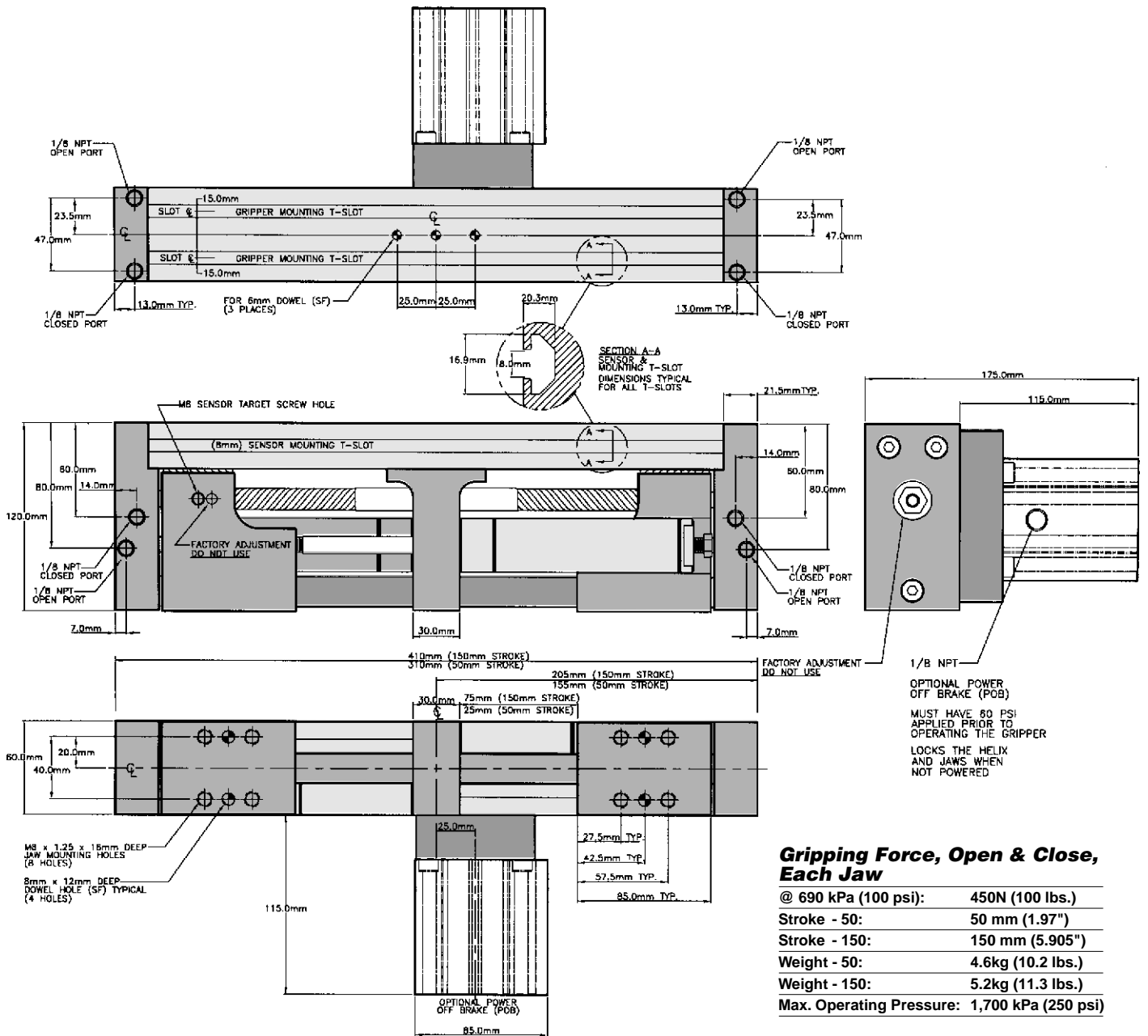


# Parallel Opening/Closing Type Gripper

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**XRAY-450-50/150**



### Gripping Force, Open & Close, Each Jaw

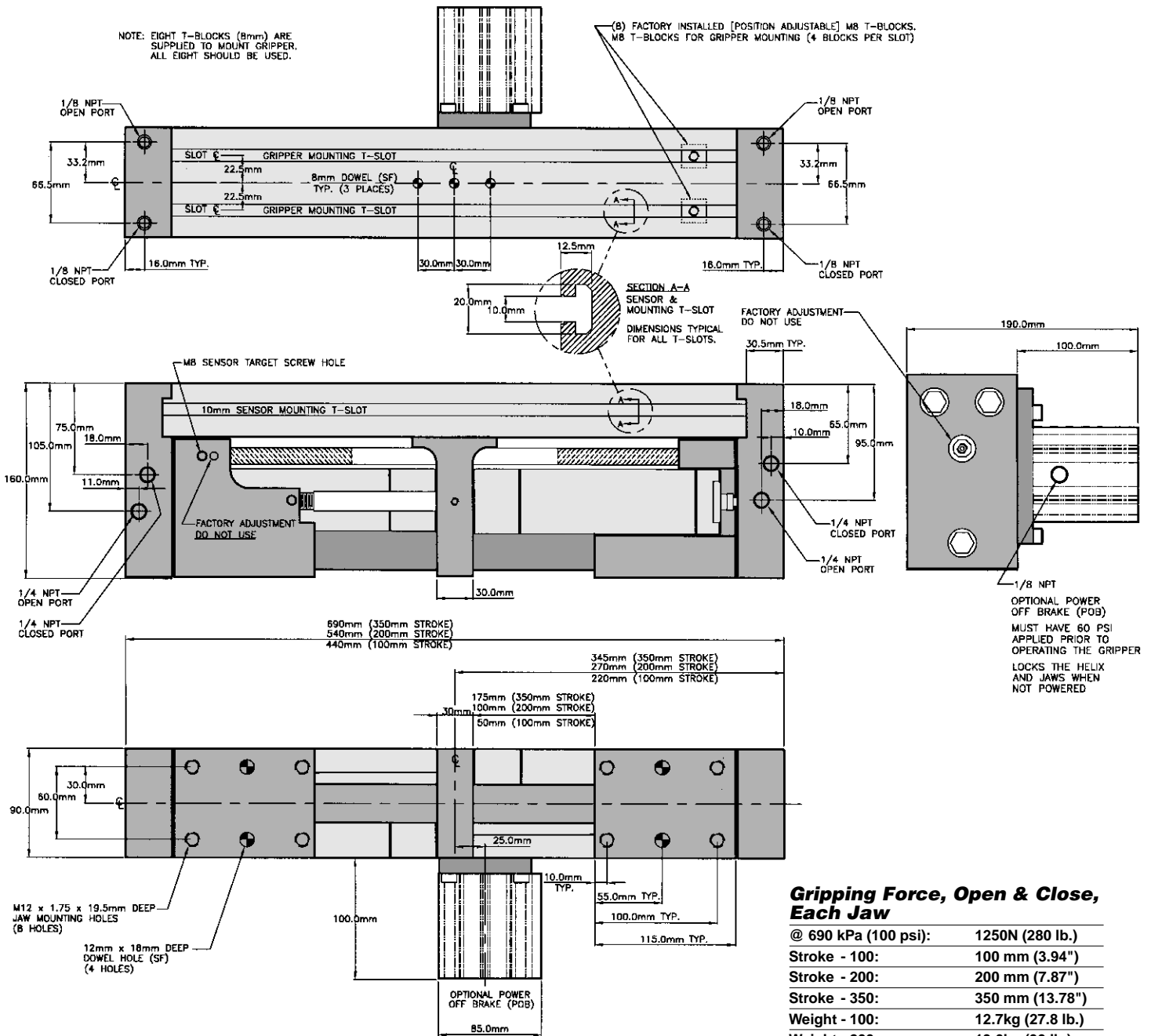
|                          |                     |
|--------------------------|---------------------|
| @ 690 kPa (100 psi):     | 450N (100 lbs.)     |
| Stroke - 50:             | 50 mm (1.97")       |
| Stroke - 150:            | 150 mm (5.905")     |
| Weight - 50:             | 4.6kg (10.2 lbs.)   |
| Weight - 150:            | 5.2kg (11.3 lbs.)   |
| Max. Operating Pressure: | 1,700 kPa (250 psi) |

# Parallel Opening/Closing Type Gripper

# XRAY® Series

2 Finger 450N, 1250N, 2500N

## XRAY-1250-100/200



### Gripping Force, Open & Close, Each Jaw

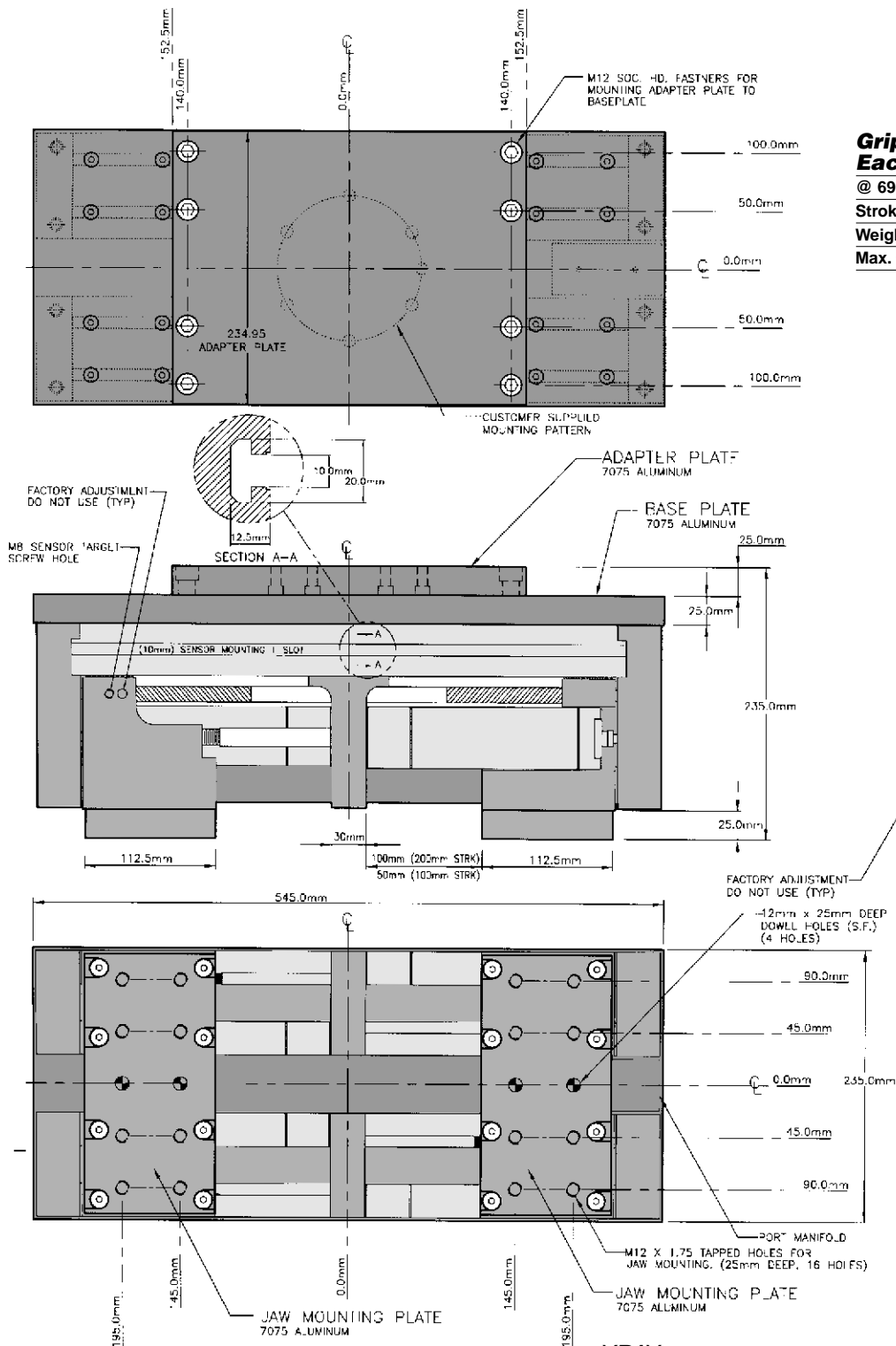
|                          |                     |
|--------------------------|---------------------|
| @ 690 kPa (100 psi):     | 1250N (280 lb.)     |
| Stroke - 100:            | 100 mm (3.94")      |
| Stroke - 200:            | 200 mm (7.87")      |
| Stroke - 350:            | 350 mm (13.78")     |
| Weight - 100:            | 12.7kg (27.8 lb.)   |
| Weight - 200:            | 13.6kg (30 lb.)     |
| Weight - 350:            | 15.1kg (33.3 lb.)   |
| Max. Operating Pressure: | 1,700 kPa (250 psi) |

# Parallel Opening/Closing Type Gripper

# XRAY<sup>®</sup> Series

2 Finger 450N, 1250N, 2500N

## XRAY-Tandem-1250-200



### Gripping Force, Open & Close, Each Jaw

|                          |                     |
|--------------------------|---------------------|
| @ 690 kPa (100 psi):     | 2500N (560 lbs.)    |
| Stroke:                  | 200 mm (7.87")      |
| Weight:                  | 44.4kg (98 lbs.)    |
| Max. Operating Pressure: | 1,700 kPa (250 psi) |

## Parallel Opening/Closing Type Gripper

# XRAY® Series

2 Finger 450N, 1250N, 2500N

### Ordering Information XRAY-450-50/150

| <b>Gripper</b>   |       |                 |                |
|------------------|-------|-----------------|----------------|
| Order Number     | Brake | Force, Each Jaw | Stroke         |
| XRAY-450-50      | No    | 450N (100lbs.)  | 50mm (1.97")   |
| XRAY-450-50-POB  | Yes   | 450N (100lbs.)  | 50mm (1.97")   |
| XRAY-450-150     | No    | 450N (100lbs.)  | 150mm (5.905") |
| XRAY-450-150-POB | Yes   | 450N (100lbs.)  | 150mm (5.905") |

| <b>Accessories</b> |                                      |                   |
|--------------------|--------------------------------------|-------------------|
| Order Number       | Description                          | Applicable Models |
| X-COV-450-50       | Field Installed, Weld Spatter Covers | XRAY-450-50       |
| X-COV-450-150      | Field Installed, Weld Spatter Covers | XRAY-450-150      |
| X-COV-450-50-POB   | Field Installed, Weld Spatter Covers | XRAY-450-50       |
| X-COV-450-150-POB  | Field Installed, Weld Spatter Covers | XRAY-450-150      |
| X-KIT-450-6.5MM    | Holder Only, To Mount 6.5mm Prox.    | All Models        |
| X-KIT-450-12MM     | Holder Only, To Mount 12mm Prox.     | All Models        |
| X-KIT-450-18MM     | Holder Only, To Mount 18mm Prox.     | All Models        |

### Ordering Information XRAY-1250-100/200

| <b>Gripper</b>    |       |                 |                |
|-------------------|-------|-----------------|----------------|
| Order Number      | Brake | Force, Each Jaw | Stroke         |
| XRAY-1250-100     | No    | 1250N (280lbs.) | 100mm (3.94")  |
| XRAY-1250-100-POB | Yes   | 1250N (280lbs.) | 100mm (3.94")  |
| XRAY-1250-200     | No    | 1250N (280lbs.) | 200mm (7.87")  |
| XRAY-1250-200-POB | Yes   | 1250N (280lbs.) | 200mm (7.87")  |
| XRAY-1250-350     | No    | 1250N (280lbs.) | 350mm (13.78") |
| XRAY-1250-350-POB | Yes   | 1250N (280lbs.) | 350mm (13.78") |

| <b>Accessories</b>     |                                   |                          |
|------------------------|-----------------------------------|--------------------------|
| Order Number           | Description                       | Applicable Models        |
| X-KIT-1250-100-COV     | Weld Spatter Covers               | XRAY-1250-100            |
| X-KIT-1250-200-COV     | Weld Spatter Covers               | XRAY-1250-200            |
| X-KIT-1250-350-COV     | Weld Spatter Covers               | XRAY-1250-350            |
| X-KIT-1250-100-COV-POB | Weld Spatter Covers               | XRAY-1250-100-POB        |
| X-KIT-1250-200-COV-POB | Weld Spatter Covers               | XRAY-1250-200-POB        |
| X-KIT-1250-350-COV-POB | Weld Spatter Covers               | XRAY-1250-350-POB        |
| X-KIT-1250-6.5MM       | Holder Only, To Mount 6.5mm Prox. | All Tandem & 1250 Models |
| X-KIT-1250-12MM        | Holder Only, To Mount 12mm Prox.  | All Tandem & 1250 Models |
| X-KIT-1250-18MM        | Holder Only, To Mount 18mm Prox.  | All Tandem & 1250 Models |

### Ordering Information XRAY-Tandem-1250-200

| <b>Gripper</b>       |       |                 |               |
|----------------------|-------|-----------------|---------------|
| Order Number         | Brake | Force, Each Jaw | Stroke        |
| Tandem XRAY-1250-200 | No    | 2500N (560lbs.) | 200mm (7.87") |

| <b>Accessories</b> |                                   |                          |
|--------------------|-----------------------------------|--------------------------|
| Order Number       | Description                       | Applicable Models        |
| X-KIT-1250-6.5MM   | Holder Only, To Mount 6.5mm Prox. | All Tandem & 1250 Models |
| X-KIT-1250-12MM    | Holder Only, To Mount 12mm Prox.  | All Tandem & 1250 Models |
| X-KIT-1250-18MM    | Holder Only, To Mount 18mm Prox.  | All Tandem & 1250 Models |

The right to change designs and specifications without notice is reserved. All data and dimensions in catalogs have been thoroughly checked for accuracy; however, responsibility for possible errors or omissions is not assumed. A one-year limited warranty is provided for this product by ZAYTRAN, Inc. Please view this limited warranty at: [www.grippers.com/warranty.htm](http://www.grippers.com/warranty.htm)