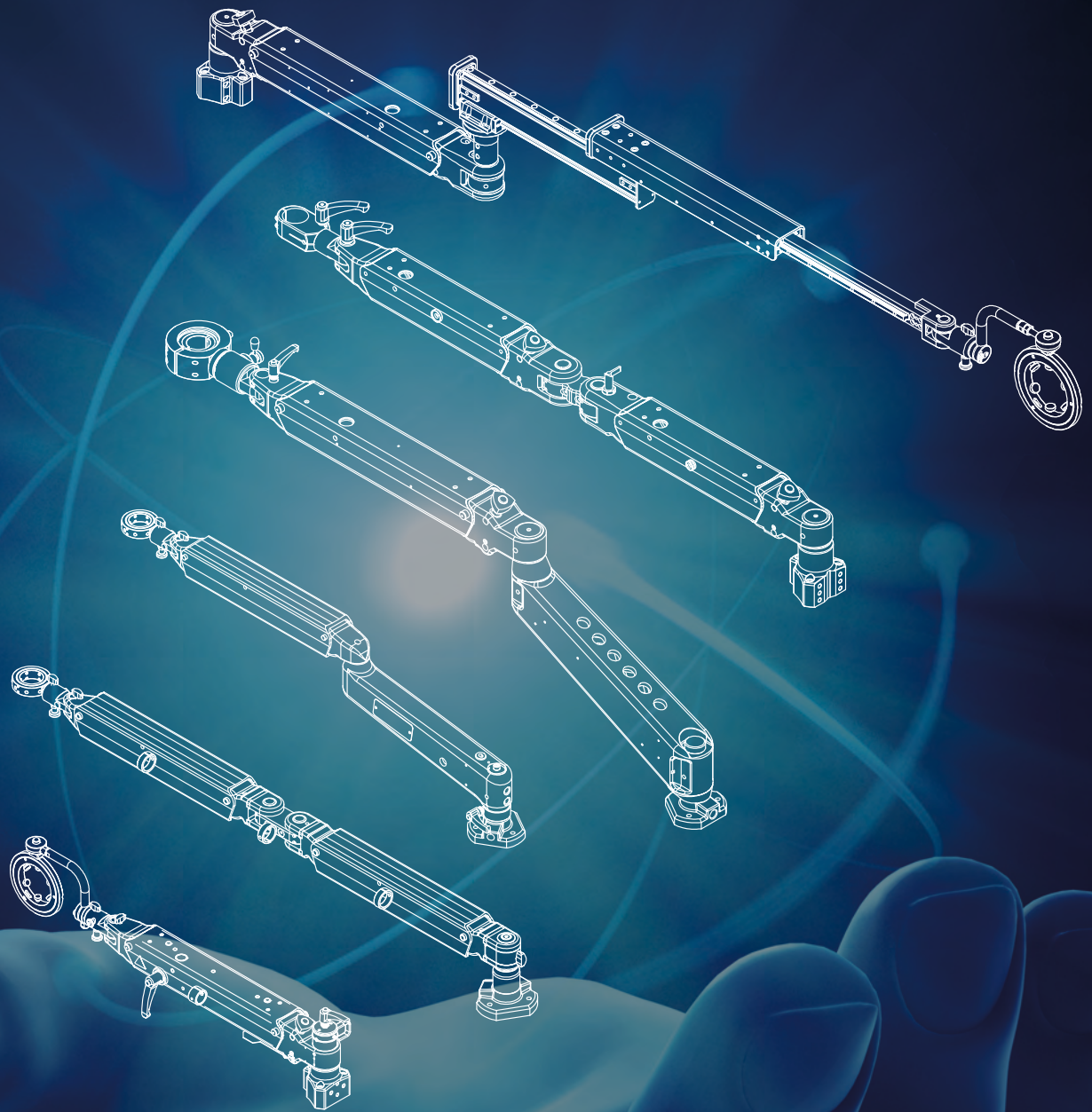


# 3arm®



## ERGONOMIC SOLUTIONS

February 2019



**Roscamat** is a division of the **Tecnospiro Machine Tool Company** located in Sant Joan de Vilatorrada a small village about 40 miles west of Barcelona. The company is family owned and has been in business since 1947. Utilizing a state of the art manufacturing facility and a dynamic engineering staff that has been very innovative in design and inventing new products.

**The 3arm ergonomic arm is the strongest most dependable arm available in the world market place today.** It can be used for assistance in assembly, deburring, off line machining, and all types of lifting operations. Where ever operator fatigue is concern for employee safety, productivity, or quality 3arm has a solution.

**TECNOSPIRO**  
MACHINE TOOL SL

**SAFETY WARNING** 3ARM products are engineered and manufactured with safety in mind. The heat treat specifications exceed or meet all standards. All of the products manufactured by 3ARM are designed to perform without any undue safety issues when caution, common sense and proper safety practices are followed. The use of cutting tools and toolholders is safe when proper application and protection guidelines are observed. Even when these proper precautions are taken, it is possible that fragments of a cutting tool, cutting material, or holding device may be thrown at a very high rate of speed and have potential to cause severe bodily harm. It is imperative that general safety precautions and safety glasses be used at all times.

# Integrating a 3arm® solution

Each 3arm® is customized for your tool and application at the factory to optimize the arm for your process and achieve out-of-the-box performance.

## QUESTIONS:

### WHAT TOOL DO YOU WANT TO HOLD?

TYPE:

MAKE:

MODEL:

ORIENTATION:

WEIGHT:

TOOL DRAWING (3D STP):

### WHAT ARE YOUR APPLICATION REQUIREMENTS?

HORIZONTAL REACH:

VERTICAL REACH:

MOUNTING ORIENTATION:

☐ FLOOR ☐ WALL ☐ CEILING

MOUNTING SOLUTIONS:

☐ MOBILE ☐ BEAM  
☐ ELEVATOR ☐ COLUMN  
☐ RAIL ☐ MAGNET

BRAKES:

☐ NOT REQUIRED  
☐ MANUAL  
☐ PNEUMATIC  
☐ MANUAL LOCKING BASE  
☐ TOOL TRIGGER ACTIVATED

TORQUE:

## Head Member Design

Determine the tools you need to use with your 3arm®. This will also help you select a head member based on the type of application and necessary orientations. To ensure proper fit a 3D STP file of the tool is required.

## Balanced Design

Tool weight is key to determining which arm will suit your application. All of our arms are precision calibrated at the factory to balance the weight of the tool.

## Great Reach

A 3arm® can be base-mounted, ceiling-mounted or wall-mounted. You can easily add precision reach by applying a rail, make it mobile with a trolley or add vertical reach with a mounting column. Check out our solutions system on page 24.

## Integrated Braking

Tool trigger braking of the arm is available. Effortlessly position your tool, stop it in place, release trigger and float it to the next job. (Brakes are necessary for certain applications)

## Handling Force

The durable closed-case design of 3arm® is able to absorb considerable force. Knowing your requirements for torque can help us determine the best 3arm® configuration.

## WARRANTY

3arm-America® arms carry a full one year warranty of the arm against manufacturer defects. The warranty does not cover any damage caused by overloads, improper use and handling, and using the arm for anything other than its intended use. Our warranty covers labor and parts during the one year period.



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The Versatile Ergonomic Solution **7**

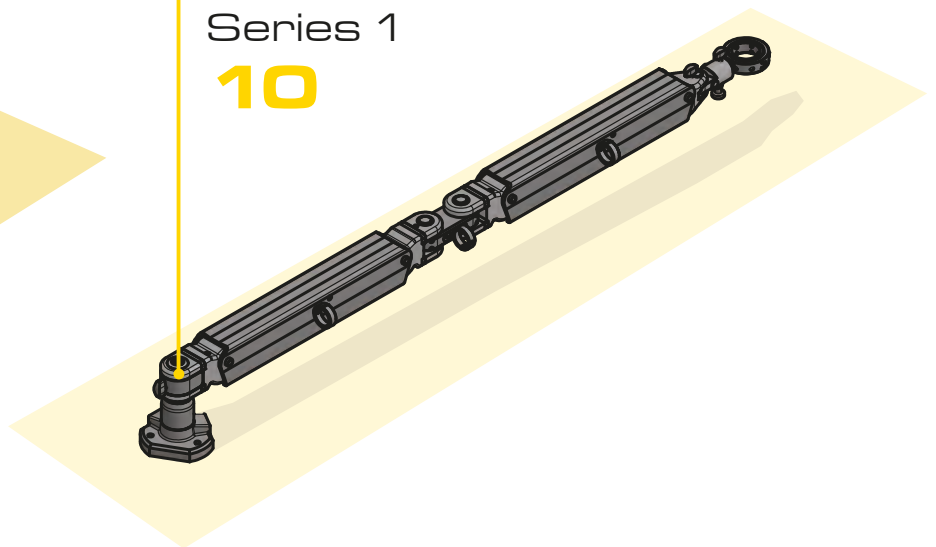
Series 0

**8**



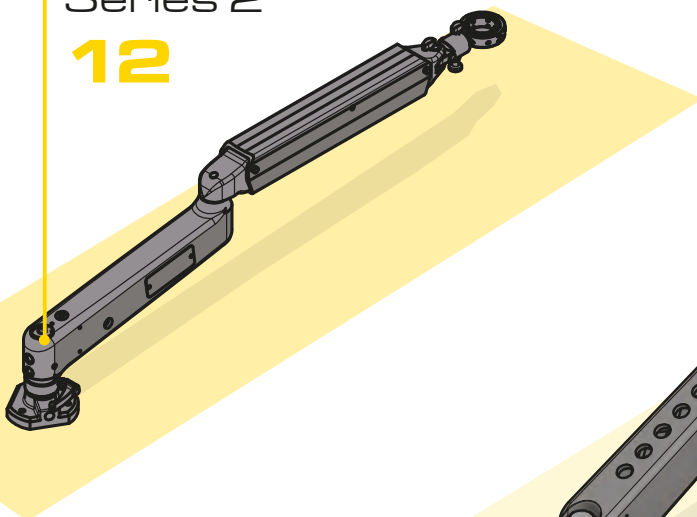
Series 1

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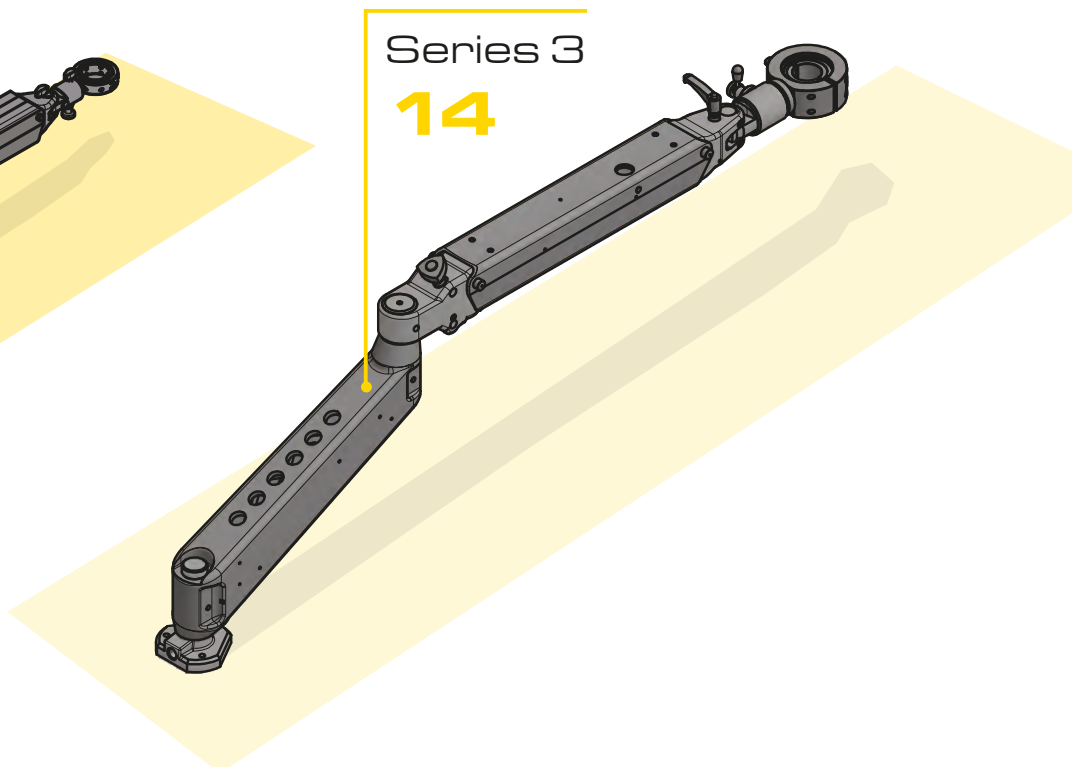
Series 2

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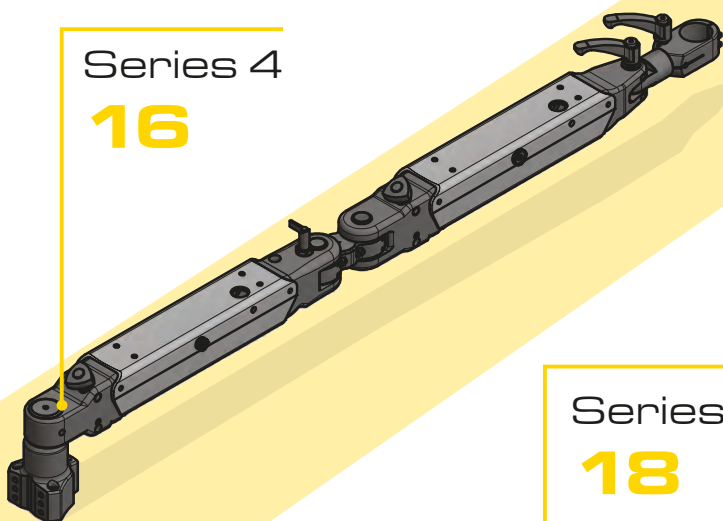
Series 3

**14**



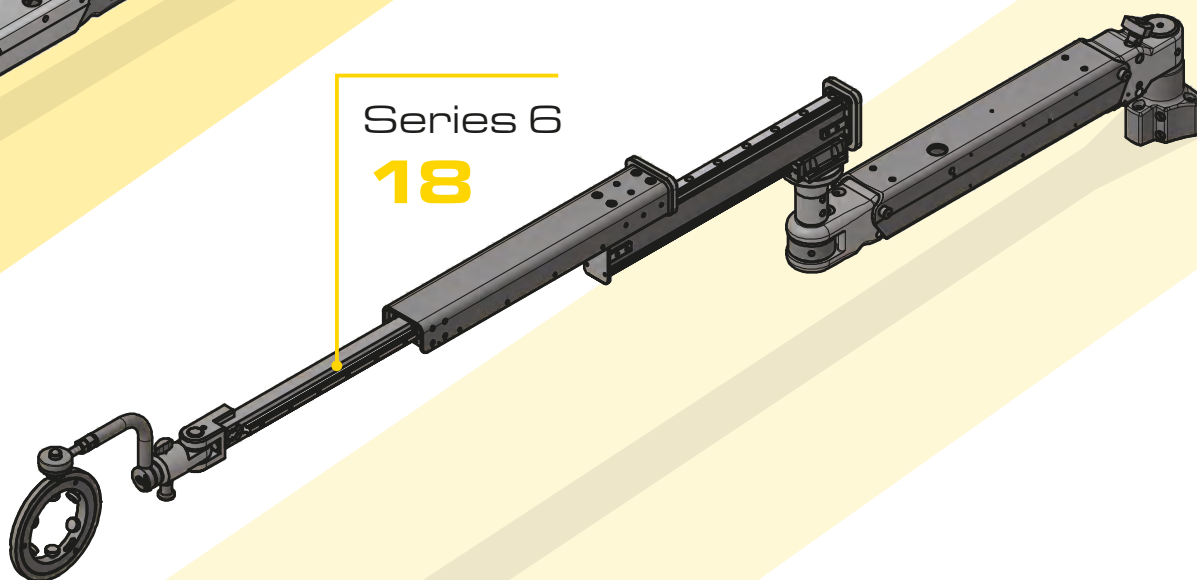
Series 4

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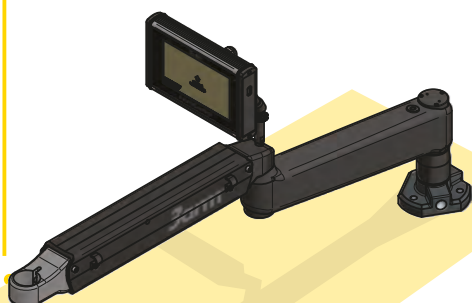
Series 6

**18**



Smart Arm

**20**



Head Members + Brakes **22**

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Worker Injury **26**

Prevent the Problem **27**

# INDUSTRIES SERVED



**Automotive**



**Assembly**



**Mining**



**Construction**



**Aerospace**

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## Versatility and Productivity

3arm® has been designed to keep weightless any tool and device up to 77 lbs, with different working areas, including more than 29 head systems and be fixed in any position according its accessories and having more than 1 million combinations available.

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## Ergonomic Safety

The weightlessness and the skill to absorb a considerable tool torque reaction depending on the headmember and the option to lock the arm in any position and movement helps to prevent the operator fatigue and injuries, giving them high work sensitivity and increasing productivity.

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## The 3arm® Solution

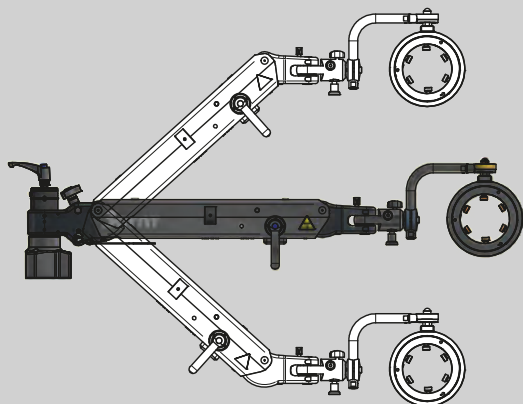
- Allows the full range of motion required to complete any task efficiently and safely.
- Permits use of heavy tools more accurately.
- Eliminates tool weight, providing not only an ergonomic benefit, but also increasing productivity.
- Reduces operator fatigue and the chance of injury due to strain.
- Holds any tool up to 35 Kg, keeping the tool weightless, while eliminating possible damage caused by dropping the tool.



# SERIES 0

REACH		MAX. up to	TORQUE up to
↑ VERT.	→ HORZ.		
<b>1070</b> mm	<b>925</b> mm	<b>35</b> kg	<b>650</b> Nm
<b>42</b> in	<b>36</b> in	<b>77</b> lbs	<b>479</b> ft-lb

A single tilting arm for the most simple applications. Three different arm lengths, all the brake options and headmembers offers versatility for any kind of tool.



FLOOR MOUNTED / CEILING MOUNTED		REACH		MAX LBS	REACH		MAX LBS
		VERT	HORZ		VERT	HORZ	
SN/ST DS	Extra Short Tilting	500	510	30	19,8	20	65
SN/ST BS	Short Tilting	669	625	35	26,3	24,3	77
SN/ST BM	Large Tilting	1070	925	21	44,5	36,4	43

## COMPATIBLE HEAD MEMBERS

All

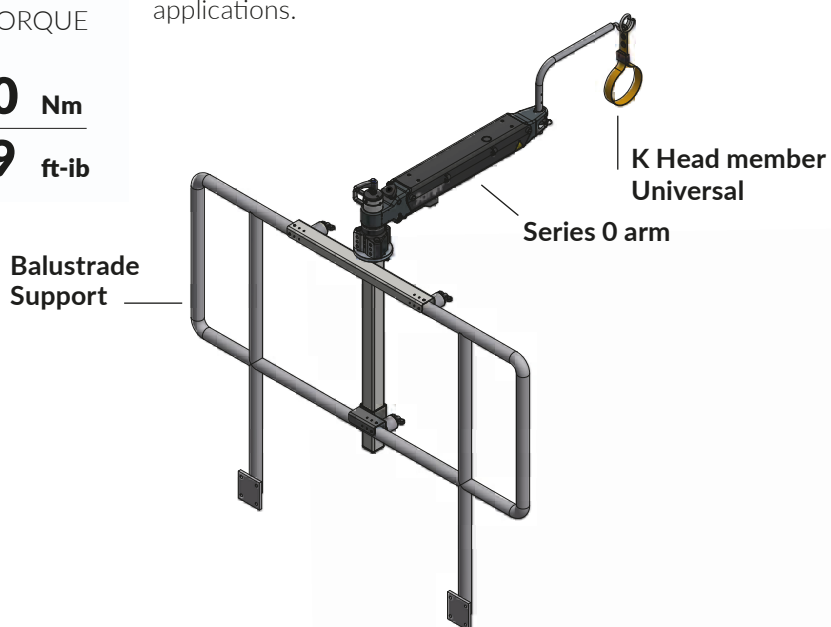
See Headmembers, pg 22

## BRAKE OPTIONS

- L00** No brakes
- L11** Manual
- L22** Pneumatic
- L50** Manual Locking Base
- L92** Tool Trigger Activated

## 3arm® Solutions

The Balustrade Support for lifters and this simple 3arm fits perfectly construction & electrical applications.



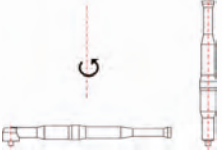
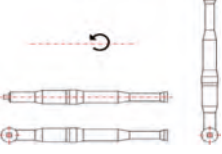
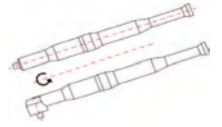
Pure  
Simplicity  
for holding  
tools



# SINGLE FOR SIMPLE APPLICATIONS



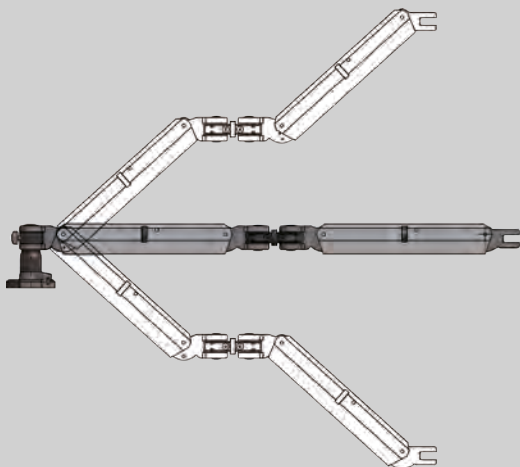
## TORQUE RECOMMENDATIONS

Work	Head Member	Max. Torque	
		Nm	ft-lbs
	VERTICAL		
	<b>B3:</b> Stationary Flat with Ring	<b>650</b>	<b>479</b>
	<b>E3:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R3:</b> Revolving	<b>300</b>	<b>221</b>
	HORIZONTAL		
	<b>B3:</b> Stationary Flat with Ring	<b>250</b>	<b>184</b>
	<b>E3:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R3:</b> Revolving	<b>250</b>	<b>184</b>
	ANY ANGLE		
	<b>E3:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R3:</b> Revolving	<b>200</b>	<b>147</b>

# SERIES 1

REACH		MAX. up to
↑ VERT.	→ HORZ.	
<b>1070<sub>mm</sub></b>	<b>1123<sub>mm</sub></b>	<b>10<sub>kg</sub></b>
<b>44<sub>in</sub></b>	<b>43<sub>in</sub></b>	<b>22<sub>lbs</sub></b>

Series 1 arms are capable of the most difficult operations and positions required. The innovative connections between the parts of the arm allow completely free movement of rolling up, down and sideways



## ORIENTATION

<b>1PL1DS</b>	Floor Mounted
<b>1AM1DS</b>	Ceiling Mounted

## COMPATIBLE HEAD MEMBERS

**B, BA, C, E, EA, F, G, K, N, T**

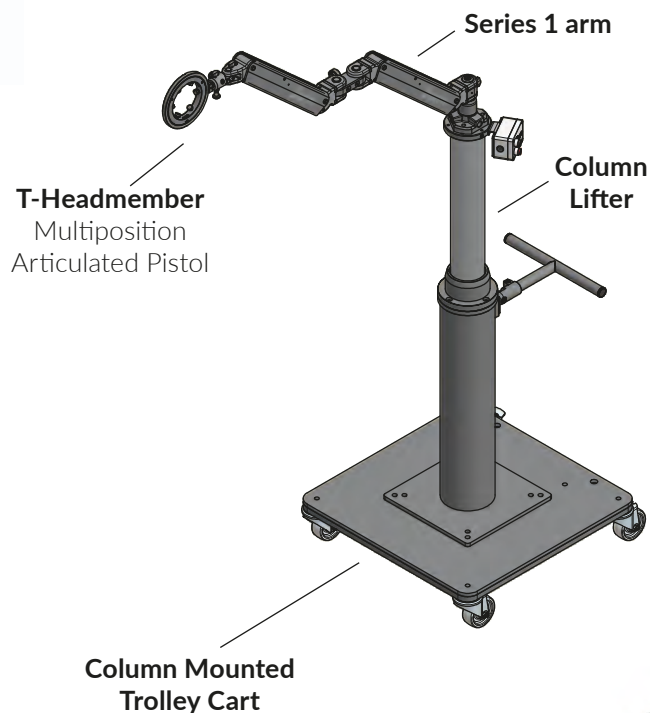
*See Headmembers, pg 22*

## BRAKE OPTIONS

**L00** No brakes

## 3arm® Solutions

A Trolley Column with Lifter can add the mobility needed for your application and add even more vertical reach at the same time.



COME AT IT ...  
**FROM ANY  
DIRECTION**



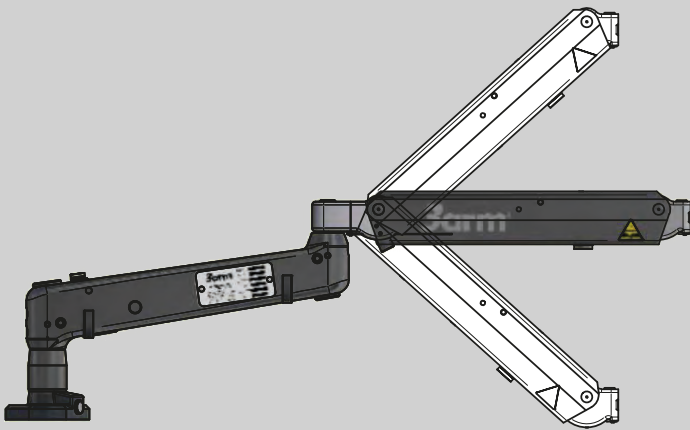
Light and nimble with great vertical reach

**Dual  
Tilting Arms Add  
Extra Vertical  
Reach**

# SERIES 2

REACH			
↑ VERT.	→ HORZ.	MAX.	TORQUE
<b>530</b> mm	<b>860</b> mm	up to <b>10</b> kg	up to <b>120</b> Nm
<b>22</b> in	<b>34</b> in	<b>22</b> lbs	<b>88</b> ft-lb

A combination radial arm and tilting arm, each capable of 360° rotation. Two arms of different length give you the ability to reach separate working areas. A range of headmembers options offer solutions for a wide variety of tools and devices.



## ORIENTATION

<b>B</b>	Floor Mounted
<b>BE</b>	Elevating Base
<b>BS</b>	Ceiling Mounted

## COMPATIBLE HEAD MEMBERS

**B, BA, C, E, EA, F, G, K, N**

*See Headmembers, pg 22*

## BRAKE OPTIONS

**L00** No brakes



**An Excellent  
Assembly  
Solution for  
Small Work  
Areas**



# THE PERFECT BALANCE ... IN YOUR WORK



A compact multi-purpose arm for use when brakes are not required



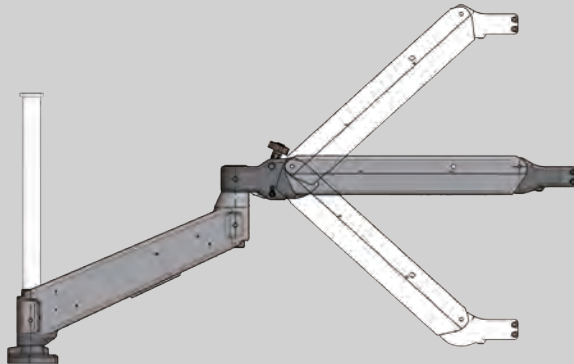
## TORQUE RECOMMENDATIONS

Work	Head Member	Max. Torque	
		Nm	ft-lbs
	VERTICAL		
	<b>B2:</b> Stationary Flat with Ring	<b>120</b>	<b>88</b>
	<b>E2:</b> Flat Articulated with Ring	<b>60</b>	<b>44</b>
	HORIZONTAL		
	<b>B2:</b> Stationary Flat with Ring	<b>90</b>	<b>66</b>
	<b>E2:</b> Flat Articulated with Ring	<b>60</b>	<b>44</b>
	ANY ANGLE		
	<b>E2:</b> Articulated Flat + Ring	<b>60</b>	<b>44</b>

# SERIES 3

REACH		MAX. up to <b>35</b> kg	TORQUE up to <b>650</b> Nm
↑ VERT.	→ HORZ.		
<b>1070</b> mm	<b>1725</b> mm		
<b>42</b> in	<b>55</b> in	<b>77</b> lbs	<b>479</b> ft-lb

The most popular 3arm® due to versatility. Features “turning & tilting” brake locking systems (pneumatic or manual) allowing the operator to immobilize the arm, in a fixed position, on all axes simultaneously or separately.



FLOOR MOUNTED/CEILING MOUNTED		REACH mm		MAX Kg	REACH in		MAX LBS
		VERT	HORZ		VERT	HORZ	
<b>A/PSBS</b>	Short Radial + Short Tilting	669	1075	35	26.3	41.7	77
<b>A/PSBM</b>	Short Radial + Long Tilting	1070	1375	21	44.5	53.5	40
<b>A/PLBS</b>	Long Radial + Short Tilting	669	1432	35	26.3	55.9	77
<b>A/PLBM</b>	Long Radial + Long Tilting	1070	1733	21	44.5	67.6	40

ELEVATING BASE		MAX Kg	REACH in		MAX LBS
			VERT	HORZ	
<b>PEBS</b>	Elevating Radial + Short Tilting	35	26.3	43.7	77
<b>PEBM</b>	Elevating Radial + Long Tilting	21	44.5	55.8	40

## BRAKE OPTIONS

- L00** No brakes
- L11** Manual
- L22** Pneumatic
- L50** Manual Locking Base
- L92** Tool Trigger Activated

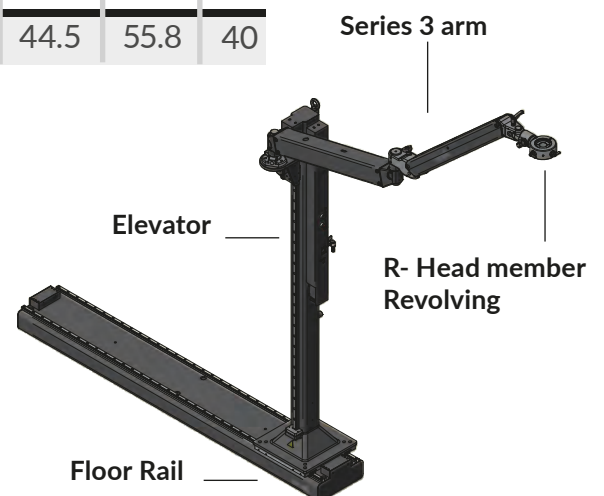
See Brakes, pg 22

## COMPATIBLE HEAD MEMBERS

**ALL**

See Headmembers, pg 22

The  
Workhorse  
of the 3arm®  
Series



## THE CAPABILITY TO ... CARRY THE WEIGHT



Long reach and the ability to carry the heaviest loads



### TORQUE RECOMMENDATIONS

Work	Head Member	Max. Torque	
		Nm	ft-lbs
	VERTICAL		
	<b>B3:</b> Stationary Flat with Ring	<b>650</b>	<b>479</b>
	<b>E3:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R3:</b> Revolving	<b>300</b>	<b>221</b>
	HORIZONTAL		
	<b>B3:</b> Stationary Flat with Ring	<b>250</b>	<b>184</b>
	<b>E3:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R3:</b> Revolving	<b>250</b>	<b>184</b>
	ANY ANGLE		
	<b>E3:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R3:</b> Revolving	<b>200</b>	<b>147</b>

### 3arm® Solutions

The Floor Rail plus the Elevator provides a big working area for your application.

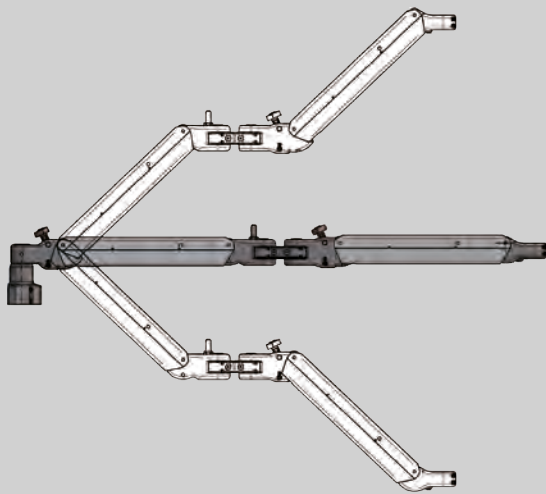
See More Solutions, pg 24

\*Series 3 - LOCKING RECOMMENDED

# SERIES 4

REACH		MAX. up to	TORQUE up to
↑ VERT.	→ HORZ.		
<b>1340</b> mm	<b>1555</b> mm	<b>24</b> kg	<b>300</b> Nm
<b>52</b> in	<b>57</b> in	<b>53</b> lbs	<b>220</b> ft-lb

The innovative connections between the parts of the arm allow completely free movement of rolling up, down and sideways. Capable of reaching the most difficult positions or work with weightless precision.



FLOOR MOUNTED / CEILING MOUNTED		REACH mm		MAX Kg	REACH in		MAX LBS
		VERT	HORZ		VERT	HORZ	
<b>A/DS</b>	Short Arm	1020	1220	19	40	48	43
<b>A/DM</b>	Long Arm	1340	1555	24	52	57.5	53

## COMPATIBLE HEAD MEMBERS

**ALL**

See Headmembers, pg 22

## BRAKE OPTIONS

**L00** No brakes

**L11** Manual

**L22** Pneumatic

**L50** Manual Locking Base

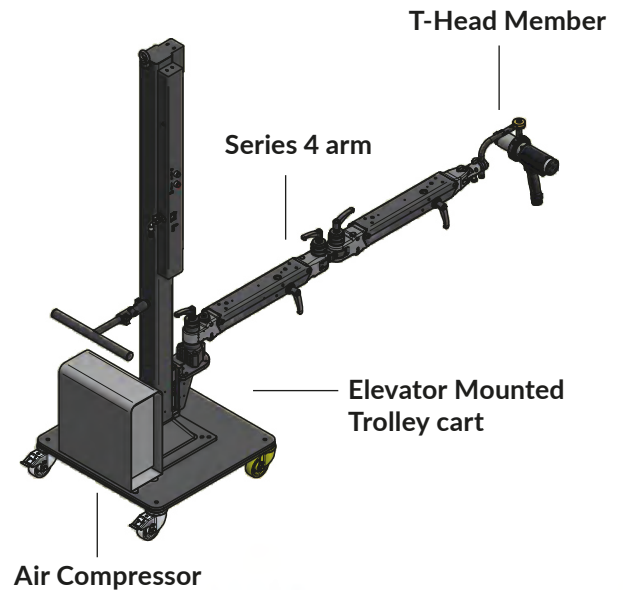
**L92** Tool Trigger Activated

See Brakes, pg 22

## 3arm® Solutions

A Trolley Elevator plus the Compressor makes your application fully mobile.

See More Solutions, pg 24



**Dual Tilting  
Arms Expand  
the Range of  
Movement**




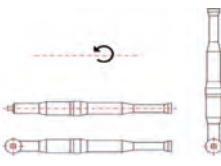
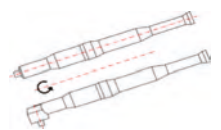
# THE RIGHT ANGLE ... MAKES ALL THE DIFFERENCE



Extended vertical reach with uncompromised strength



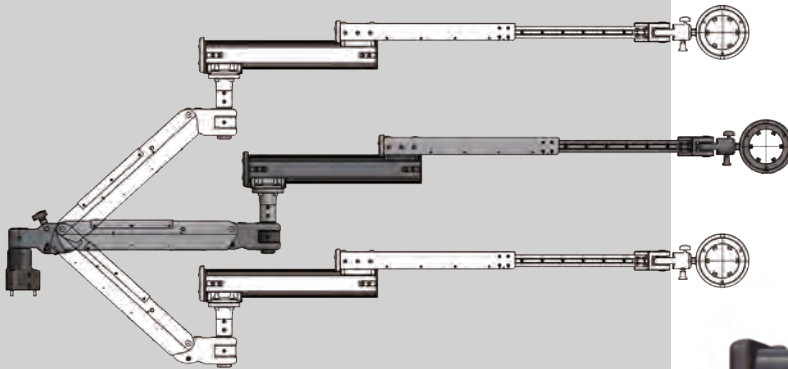
## TORQUE RECOMMENDATIONS

Work	Head Member	Max. Torque	
		Nm	ft-lbs
	VERTICAL		
	<b>B4:</b> Stationary Flat with Ring	<b>300</b>	<b>221</b>
	<b>E4:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R4:</b> Revolving	<b>300</b>	<b>221</b>
	HORIZONTAL		
	<b>B4:</b> Stationary Flat with Ring	<b>250</b>	<b>184</b>
	<b>E4:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R4:</b> Revolving	<b>250</b>	<b>184</b>
	ANY ANGLE		
	<b>E4:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R4:</b> Revolving	<b>200</b>	<b>147</b>

\*Series 4 - LOCKING REQUIRED

# SERIES 6

REACH		MAX. up to <b>18 kg</b> <b>40 lbs</b>	TORQUE up to <b>300 Nm</b> <b>220 ft-lb</b>
↑ VERT.	→ HORZ.		
<b>669 mm</b> <b>26 in</b>	<b>2095 mm</b> <b>82 in</b>		



An extendable arm with ball linear guideways attached to a pendulum base arm, both capable of 360° rotation. A compact arm that offers versatility for any type of tool. The telescopic top arm allows the user to work on hard to reach areas comfortably, quickly and safely. Built for a wide variety of applications.



FLOOR MOUNTED/ CEILING MOUNTED		REACH mm		MAX Kg	REACH in		MAX LBS
		VERT	HORZ		VERT	HORZ	
SC	Short Arm	669	1747	18	26	68	40
SM	Long Arm	669	2095	10	26	82	22

## DESCRIPTION

**BPRASC** Series 6 Short

**BPRASM** Series 6 Long

## COMPATIBLE HEAD MEMBERS

**SC: ALL SM: N, T only**

See Headmembers, pg 22

## BRAKE OPTIONS

**V800 V1200**

**L00** No brakes

**L22** Pneumatic

**L92** Tool trigger Activated

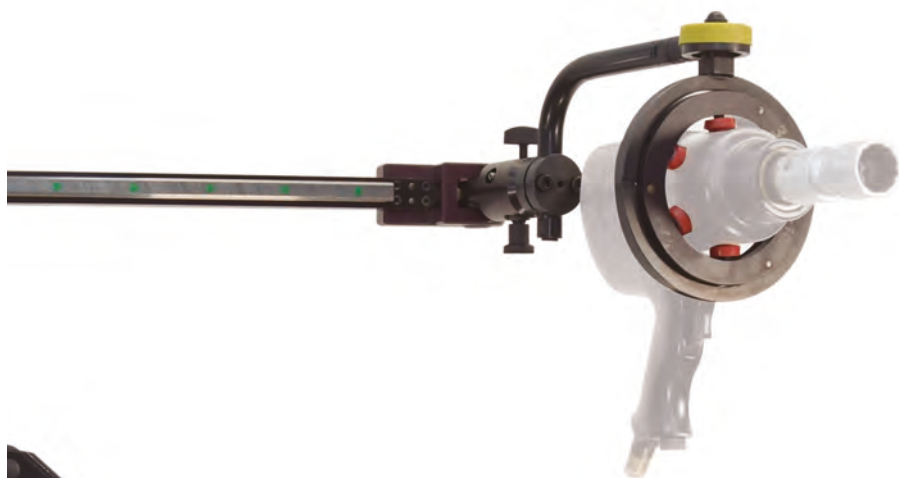
Get Your  
Tool into  
Tight Spaces  
Safely

# EVERYTHING ... WITHIN REACH

**3arm®**



Extended horizontal reach spans more than 2M.



## TORQUE RECOMMENDATIONS

Work	Head Member	Max. Torque	
		Nm	ft-lbs
	VERTICAL		
	<b>B6:</b> Stationary Flat with Ring	<b>300</b>	<b>221</b>
	<b>E6</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R6:</b> Revolving	<b>300</b>	<b>221</b>
	HORIZONTAL		
	<b>B6:</b> Stationary Flat with Ring	<b>250</b>	<b>184</b>
	<b>E6:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R6:</b> Revolving	<b>250</b>	<b>184</b>
	ANY ANGLE		
	<b>E6:</b> Flat Articulated with Ring	<b>120</b>	<b>88</b>
	<b>R6:</b> Revolving	<b>200</b>	<b>147</b>

\*Series 6 - LOCKING REQUIRED

[www.3arm.net](http://www.3arm.net)

**19**

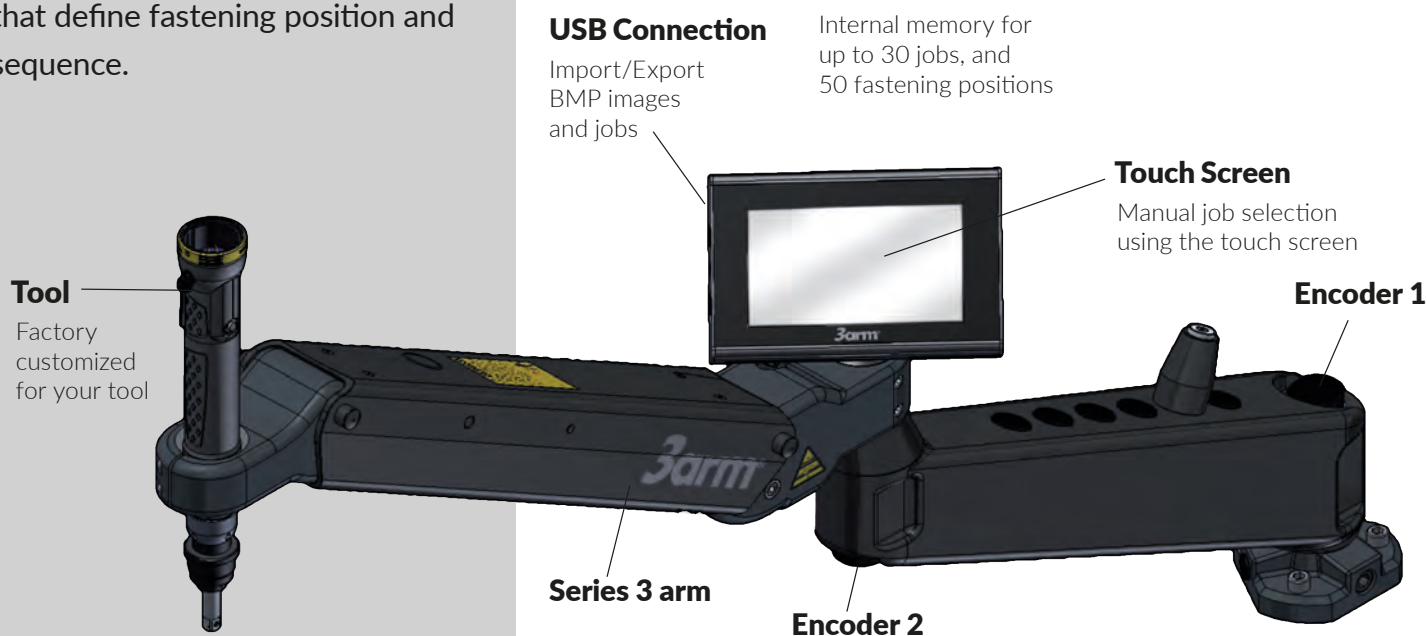
# THE ENCODER

**SmartControl**

Encoder SmartControl system integration  
available on Series 2 and 3 3arm®

REACH		MAX. up to	TORQUE up to
↑ VERT.	→ HORZ.		
<b>1070</b> mm	<b>1725</b> mm	<b>35</b> kg	<b>650</b> Nm
<b>42</b> in	<b>55</b> in	<b>77</b> lbs	<b>479</b> ft-lb

Precision programming of jobs that define fastening position and sequence.



## Versatile

- Additional programs previously created to add or modify fastening positions and modify the precision parameters and programming of torque (the fastening sequence cannot be edited)
- Possibility of working with up to 7 different fastening programs in the same job
- Communication with the tool controller to select the different fastening programs (I/O)
- Communication with the tool controller to enable or block the functioning of the tool (I/O)
- Communication with the tool controller to receive the correct/incorrect fastening signal (I/O)
- Counting of parts remaining to complete the current job and parts completed
- Configuration in 3 languages (Spanish, English and French)
- Possibility of password protection for the system
- Possibility of inlaying a representative BMP image into the jobs
- Identifier (overprinted message) of jobs finished correctly

### DESCRIPTION

<b>BS/BB2+L80</b>	Series 2 Base
<b>A/PSBS+L80</b>	Series 3, Short + Short
<b>A/PSBM+L80</b>	Series 3, Short + Long
<b>A/PLBS+L80</b>	Series 3, Long + Short
<b>A/PLBM+L80</b>	Series 3, Long + Long

### COMPATIBLE HEADMEMBERS

**B, BA, C, E, EA**

See Headmembers, pg 22



**Quickly and easily  
create new sequences**

**Increase productivity  
and safety**

**Adaptable headmember  
for a wide variety of tools**



# HEAD MEMBERS



**B**  
Vertical  
Flat



**BA**  
Vertical with  
Ring



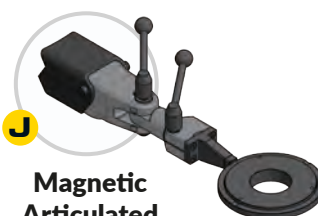
**C**  
Vertical  
Adjustable



**G**  
Quick  
Change



**H**  
Heavy-Duty  
Applications



**J**  
Magnetic  
Articulated  
Drill



**K**  
Universal  
Strap



**M**  
Constant  
Pressure  
Support



**N**  
Multiposition  
Articulated



**P**  
Double  
Articulated  
Flat



**Q**  
Heavy-Duty  
Multiposition  
Articulated



**SN**  
Giraffe  
Multiposition



**SQ**  
Heavy-Duty  
Giraffe  
Multiposition

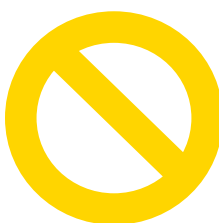


**SR**  
Giraffe  
Revolver

## BRAKES

**L00**

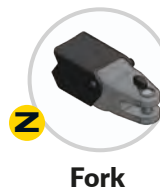
No Brakes



**L11**

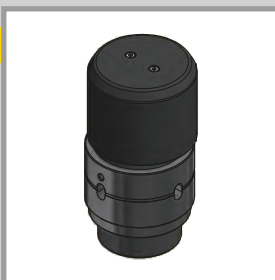
Manual  
Brakes



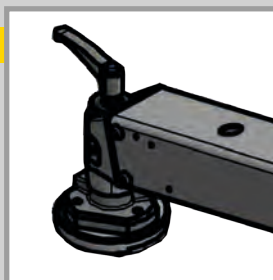


**Custom**  
Ask us about a custom toolholding solution.

**L22**  
Pneumatic Brakes



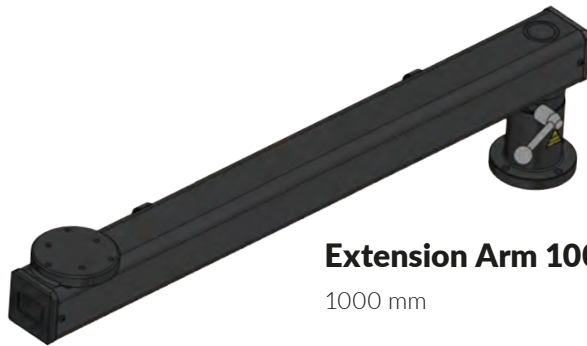
**L50**  
Manual Locking Base



**L92**  
Pneumatic, brakes activated from the tool trigger



# MOUNTING SOLUTIONS



**Extension Arm 1000**

1000 mm

Add reach to  
your build with a  
Swing Beam



**Arm Limiting Base**



**Extension  
Arm 500**

500 mm



**Balustrade  
Support**

## We will engineer the perfect solution for your application

Our experts will ensure your 3arm® build is properly balanced with your accessory.

### More Reach

**Floor Rail**

2000 mm



Easily add  
dependable reach  
to your arm.

**Linear Guide**

2000 mm



A ceiling or wall  
mounted beam  
conserves floorspace  
and can help eliminate  
trip hazards.



## Vertical Reach

Custom sizes available

**3arm®**



**Mounting Column**

From 400 to 1400 mm



**Trolley with Column**

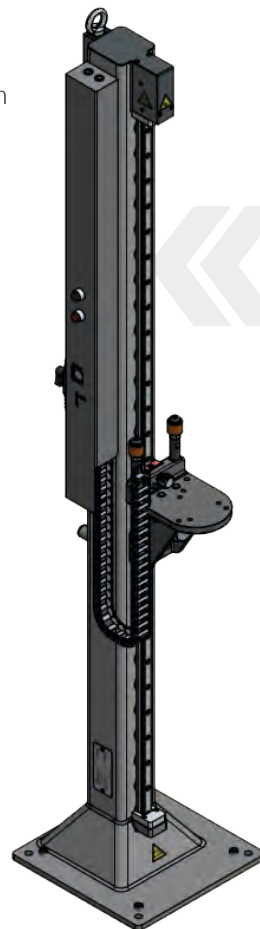
Add mobility and reach by mounting your 3arm® on a Trolley with Column



**Lifter**

300 / 500 mm

Add even more vertical reach to your Column



Achieve extreme vertical reach with an Elevator

**Elevator**

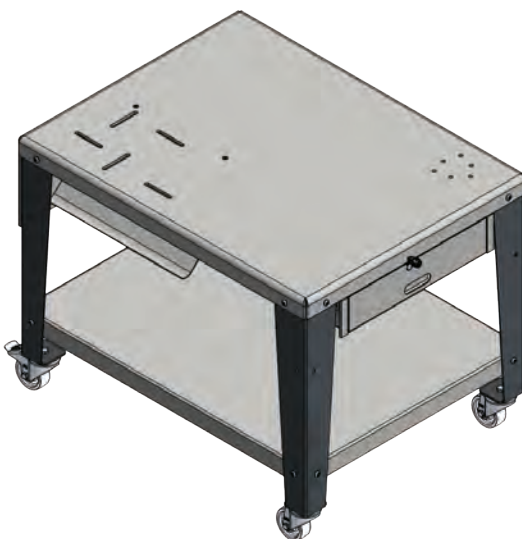
1500 mm  
2000 mm  
2500 mm

## Mobile Work Space

Custom sizes available

**Large Table**

1100x850 mm



# Manufacturing Industry Worker INJURY

SOURCE: U.S. BUREAU OF LABOR STATISTICS

MOST COMMON

## Type of Injury



Sprains and Strains



Cuts and Lacerations



Fractures

MOST COMMON

## Cause of Injury



Overexertion



Repetitive Motions



Struck, Cut or Caught by Equipment

MOST COMMON

## Bodily Injuries

Shoulders

Back

Hands

Knees

Ankles

IF INJURY NECESSITATES

## Missed Work

25% MISS

**31**  
DAYS  
OR MORE

MEDIAN  
MISSED

**7**  
DAYS

ONLY

**16%**  
MISSED  
**1 DAY**  
OR FEWER

THE COST

## of Worker Injury

EMPLOYERS SPEND

**MORE THAN**  
**\$2000**  
ANNUALLY  
PER EMPLOYEE

MORE THAN

**60%**  
OF WORKER INJURY  
IS POTENTIALLY  
PREVENTABLE

# PREVENT THE PROBLEM WITH

APPLYING

## Ergonomics



Weightload is Taken Off  
of the Worker



Worker Can Be More  
Productive with Less Strain



Eliminate the Most Common  
Causes of Worker Injury

WORKER

## Safety



Worker's Limbs are Kept at a  
Safe Distance from Hazards



Get the Tool into Tight Spaces,  
While Keeping Workers Safe.



Eliminate the High Costs of  
Worker Injury

# WE SERVICE WHAT WE MANUFACTURE

[www.3arm.net](http://www.3arm.net)



**TECNOSPIRO**  
MACHINE TOOL SL

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[3arm@3arm.net](mailto:3arm@3arm.net)

## *Customer Commitment*

*To work hard everyday to be regarded in the metal working marketplace as a supplier that is friendly, helpful and easy to do business with - EVERYDAY, EVERYTIME.*

*To offer innovative high quality solutions at a competitive price.*

*To be receptive & proactive in identifying solutions for our customers needs & requirements.*



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