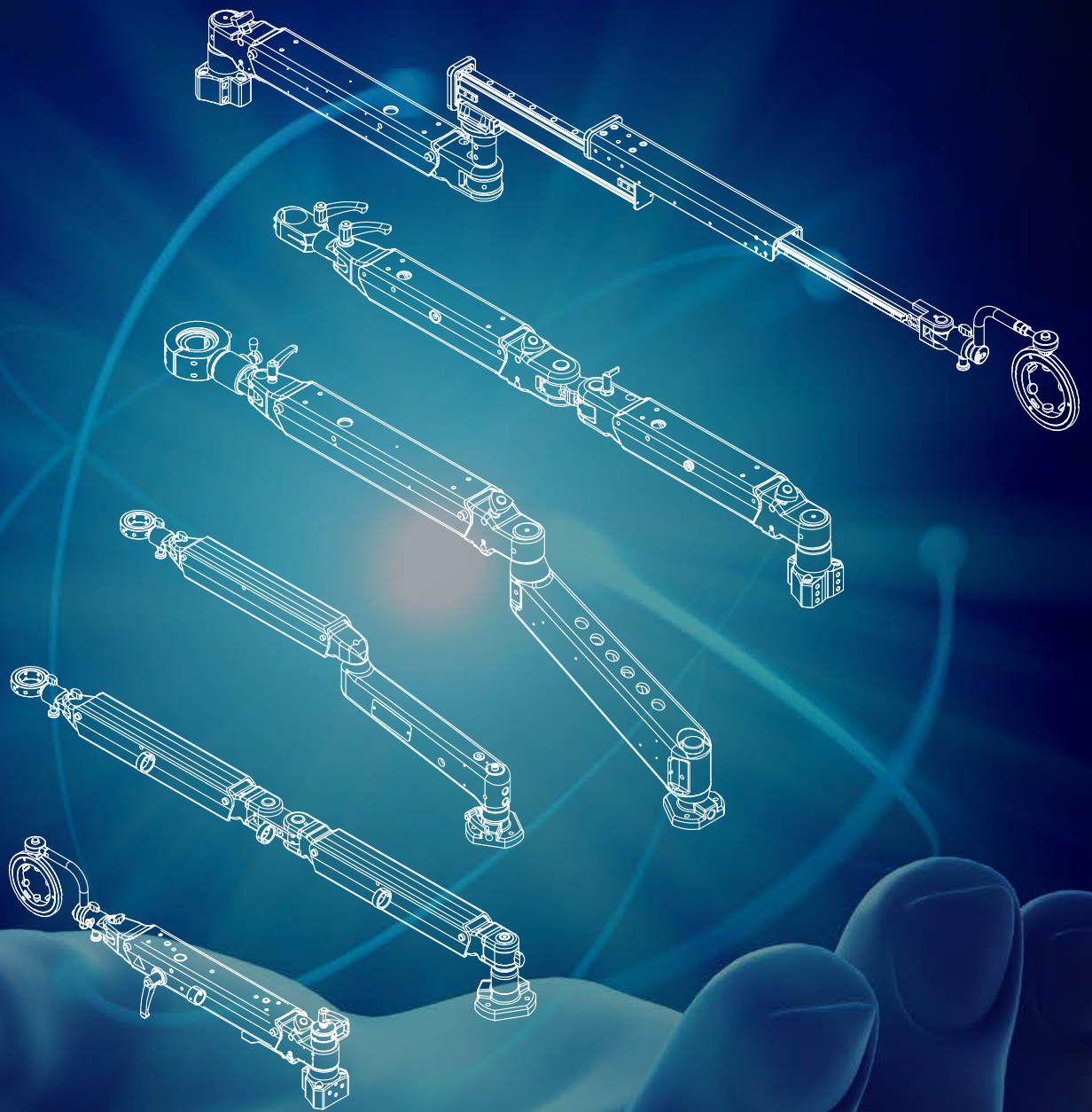


3arm®



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.

TECNOSP/RO
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: <input type="checkbox"/> FLOOR <input type="checkbox"/> WALL <input type="checkbox"/> CEILING
MOUNTING SOLUTIONS: <input type="checkbox"/> MOBILE <input type="checkbox"/> BEAM <input type="checkbox"/> ELEVATOR <input type="checkbox"/> COLUMN <input type="checkbox"/> RAIL <input type="checkbox"/> MAGNET
BRAKES: <input type="checkbox"/> NOT REQUIRED <input type="checkbox"/> MANUAL <input type="checkbox"/> PNEUMATIC <input type="checkbox"/> MANUAL LOCKING BASE <input type="checkbox"/> 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.

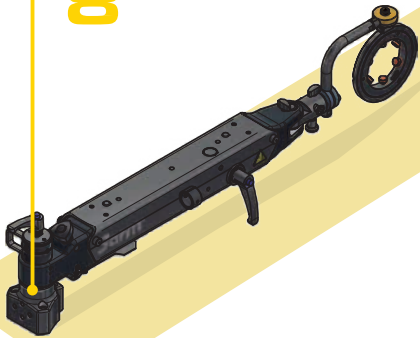
INDEX

Markets and Applications **6**

The Versatile Ergonomic Solution **7**

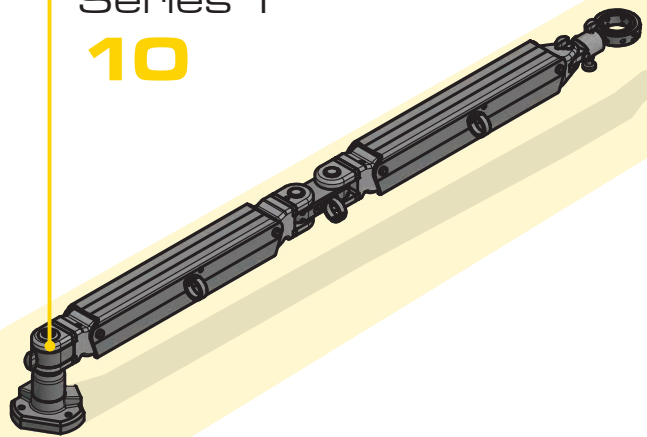
Series 0

8



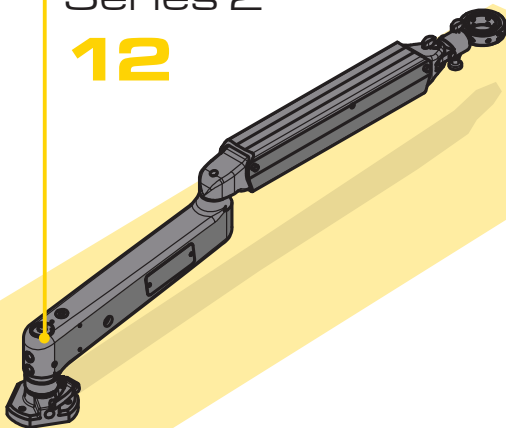
Series 1

10



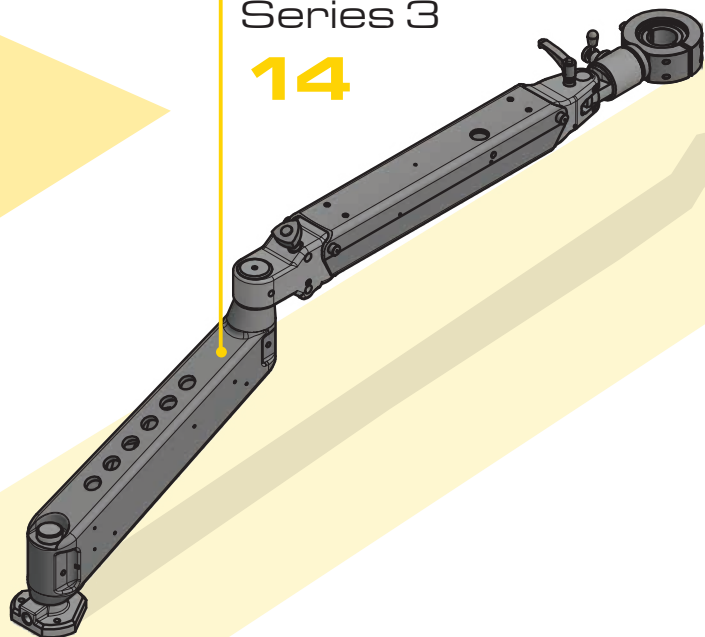
Series 2

12



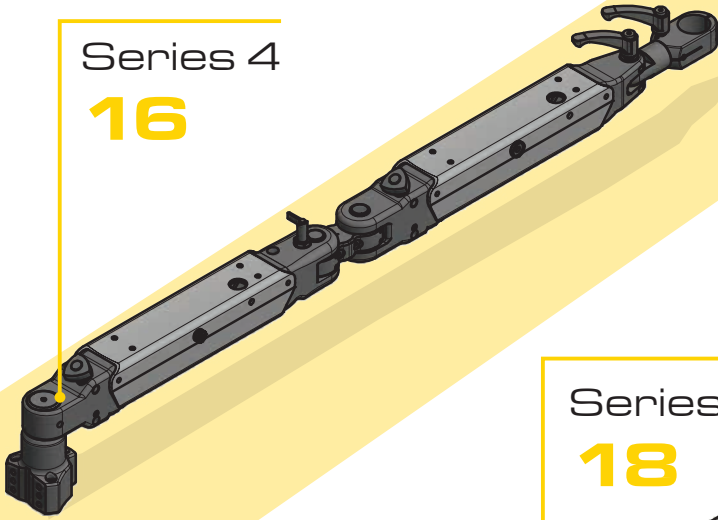
Series 3

14



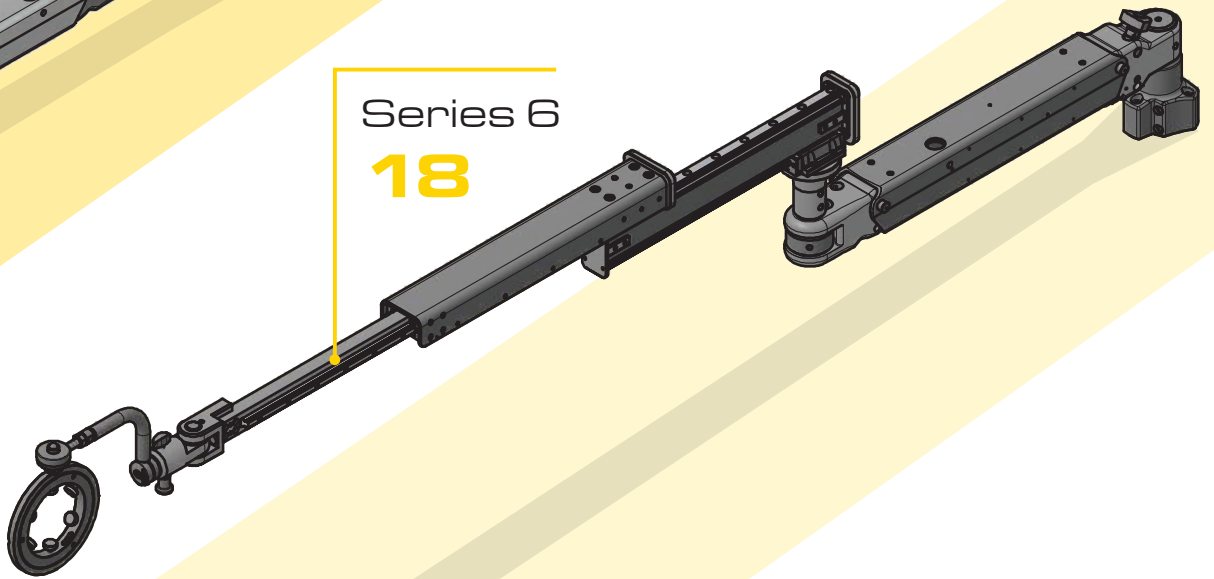
Series 4

16



Series 6

18



Smart Arm

20



Head Members + Brakes **22**

System Solutions **24**

Worker Injury **26**

Prevent the Problem **27**

INDUSTRIES
SERVED



Automotive



Assembly



Mining



Construction



Aerospace

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.

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.

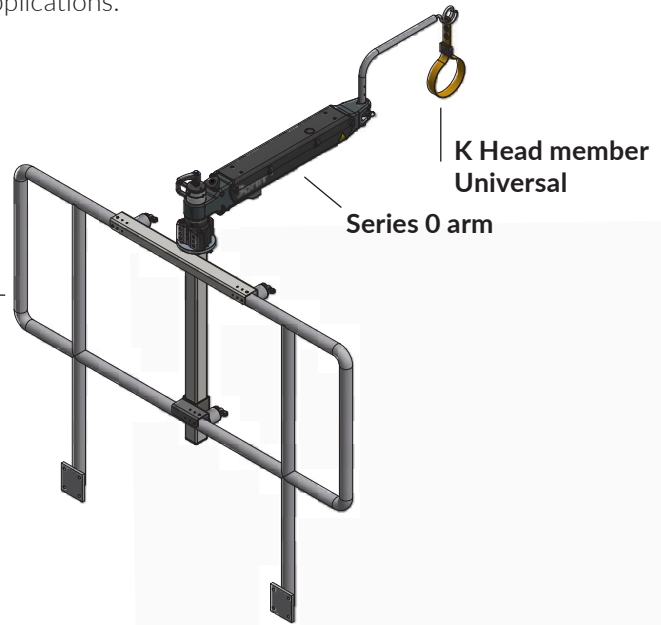
The 3arm® Solution

- 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.



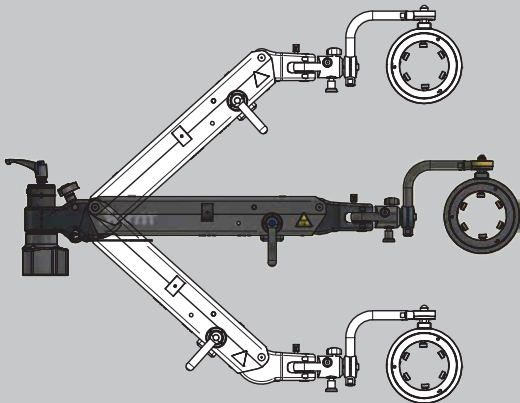
3arm® Solutions

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



REACH		MAX. up to	TORQUE up to
↑ VERT.	→ HORZ.		
1070 mm	925 mm	35 kg	650 Nm
42 in	36 in	77 lbs	479 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



**Pure
Simplicity
for holding
tools**

SINGLE FOR SIMPLE APPLICATIONS



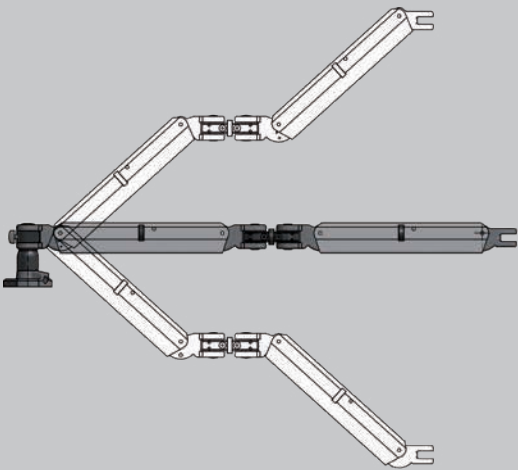
TORQUE RECOMMENDATIONS

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

SERIES 1

REACH		MAX. up to
↑ VERT.	→ HORZ.	
1070 mm	1123 mm	10 kg
44 in	43 in	22 lbs

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

1PL1DS	Floor Mounted
1AM1DS	Ceiling Mounted

COMPATIBLE HEAD MEMBERS

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

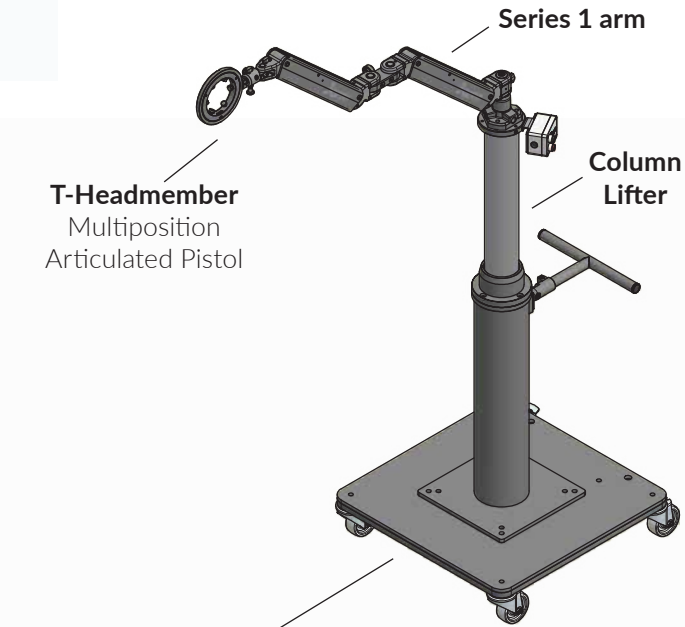
See Headmembers, pg 22

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.



Column Mounted Trolley Cart



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



Light and nimble with great vertical reach

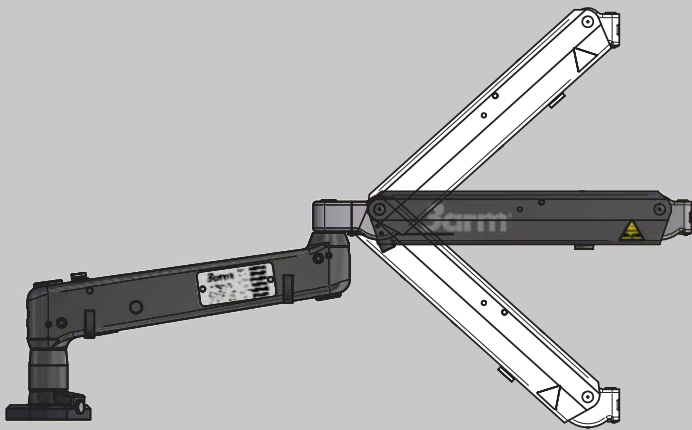


**Dual
Tilting Arms Add
Extra Vertical
Reach**

SERIES 2

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

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	Floor Mounted
BE	Elevating Base
BS	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

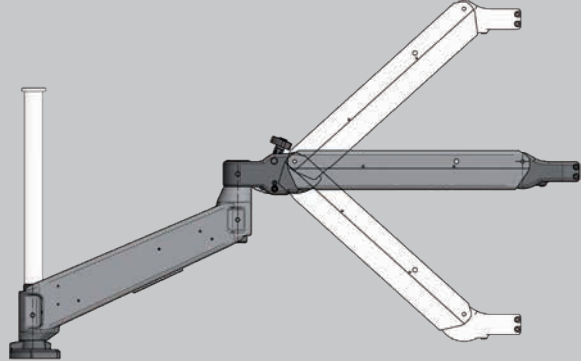
Work	Head Member	Max. Torque	
		Nm	ft-lbs
	VERTICAL		
	B2: Stationary Flat with Ring	120	88
	E2: Flat Articulated with Ring	60	44
	HORIZONTAL		
	B2: Stationary Flat with Ring	90	66
	E2: Flat Articulated with Ring	60	44
	ANY ANGLE		
	E2: Articulated Flat + Ring	60	44

SERIES 3

The Workhorse of the 3arm® Series

REACH		MAX. up to 35 kg	TORQUE up to 650 Nm
↑ VERT. 1070 mm 42 in	→ HORZ. 1725 mm 55 in		

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.



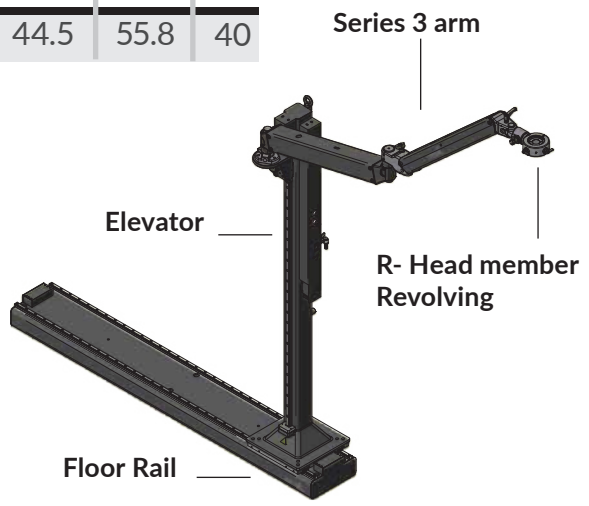
FLOOR MOUNTED/CEILING MOUNTED		REACH mm		MAX Kg	REACH in		MAX LBS
		VERT	HORZ		VERT	HORZ	
A/PSBS	Short Radial + Short Tilting	669	1075	35	26.3	41.7	77
A/PSBM	Short Radial + Long Tilting	1070	1375	21	44.5	53.5	40
A/PLBS	Long Radial + Short Tilting	669	1432	35	26.3	55.9	77
A/PLBM	Long Radial + Long Tilting	1070	1733	21	44.5	67.6	40
ELEVATING BASE							
PEBS	Elevating Radial + Short Tilting	1080	1125	35	26.3	43.7	77
PEBM	Elevating Radial + Long Tilting	1519	1425	21	44.5	55.8	40

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

COMPATIBLE HEAD MEMBERS

ALL

See Headmembers, pg 22

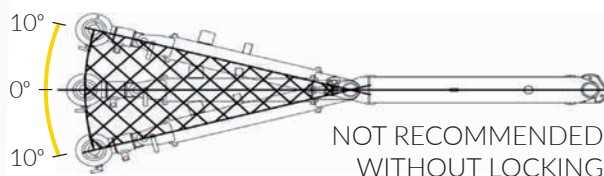


See Brakes, pg 22

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		
	B3: Stationary Flat with Ring	650	479
	E3: Flat Articulated with Ring	120	88
	R3: Revolving	300	221
	HORIZONTAL		
	B3: Stationary Flat with Ring	250	184
	E3: Flat Articulated with Ring	120	88
	R3: Revolving	250	184
	ANY ANGLE		
	E3: Flat Articulated with Ring	120	88
	R3: Revolving	200	147

3arm® Solutions

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

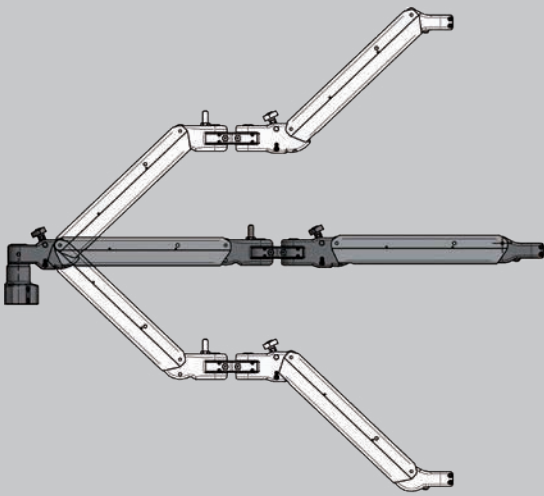
See More Solutions, pg 24

*Series 3 - LOCKING RECOMMENDED

SERIES 4

REACH		MAX. up to	TORQUE up to
↑ VERT.	→ HORZ.		
1340 mm	1555 mm	24 kg	300 Nm
52 in	57 in	53 lbs	220 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	
A/DS	Short Arm	1020	1220	19	40	48	43
A/DM	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

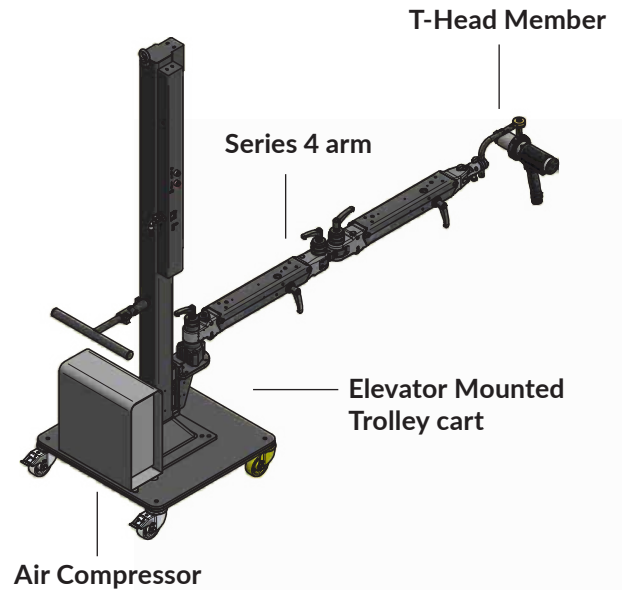
L92 Tool Trigger Activated

See Brakes, pg 22

3arm® Solutions

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

See More Solutions, pg 24



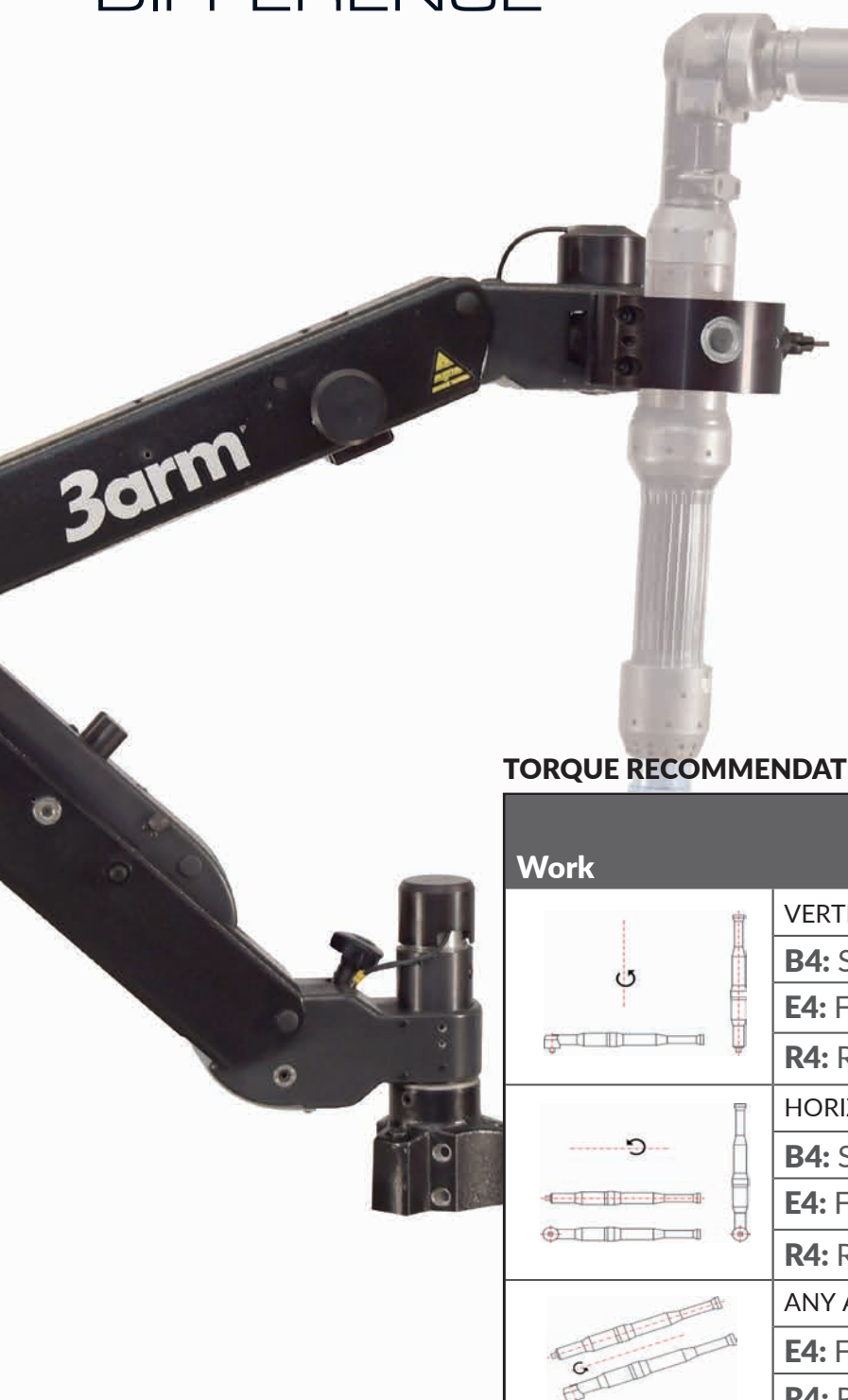
**Dual Tilting
Arms Expand
the Range of
Movement**

THE RIGHT ANGLE ...

MAKES ALL THE DIFFERENCE



Extended vertical reach with uncompromised strength



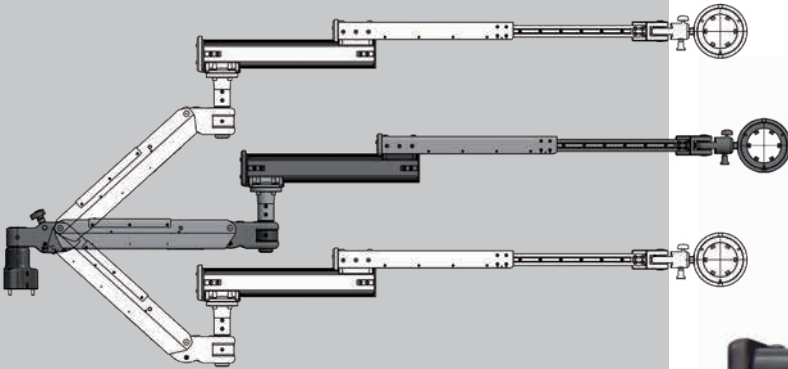
TORQUE RECOMMENDATIONS

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

*Series 4 - LOCKING REQUIRED

SERIES 6

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



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	DESCRIPTION	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



Extended horizontal reach spans more than 2M.



TORQUE RECOMMENDATIONS

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

*Series 6 - LOCKING REQUIRED

THE ENCODER

SmartControl

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

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

Precision programming of jobs that define fastening position and sequence.

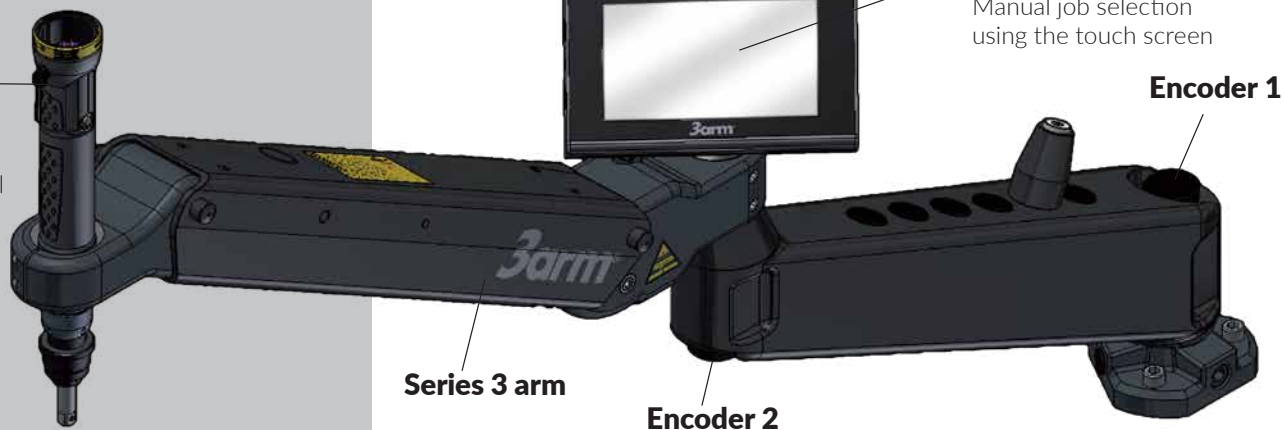
USB Connection

Import/Export BMP images and jobs

Internal memory for up to 30 jobs, and 50 fastening positions

Tool

Factory customized for your tool



Touch Screen

Manual job selection using the touch screen

Encoder 1

Series 3 arm

Encoder 2

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

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

COMPATIBLE HEADMEMBERS

B, BA, C, E, EA

See Headmembers, pg 22

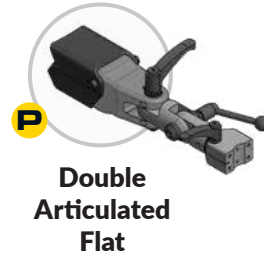
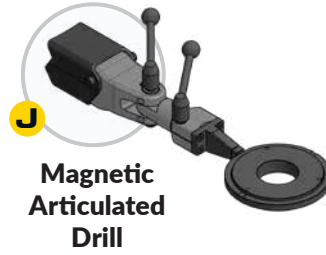
Quickly and easily
create new sequences

Increase productivity
and safety

Adaptable headmember
for a wide variety of tools

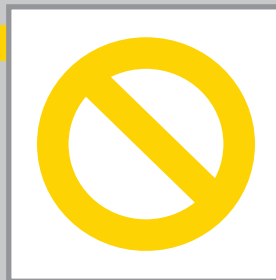


HEAD MEMBERS



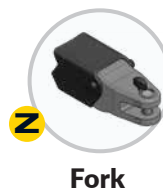
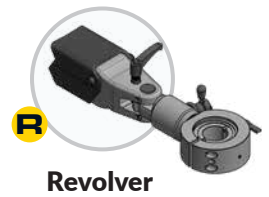
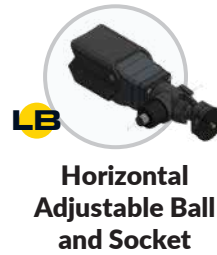
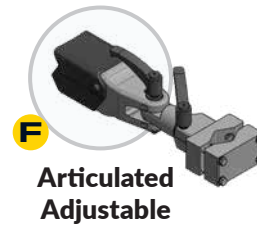
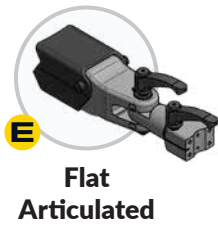
BRAKES

L00
No Brakes



L11
Manual Brakes

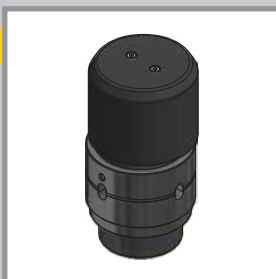




Custom
Ask us about a
custom toolholding
solution.

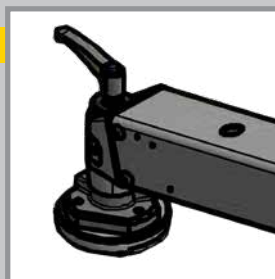
L22

Pneumatic
Brakes



L50

Manual
Locking
Base

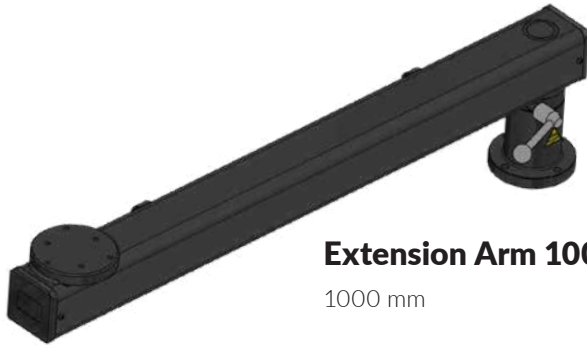


L92

Pneumatic,
brakes
activated
from the
tool trigger



MOUNTING SOLUTIONS



Extension Arm 1000

1000 mm

« Add reach to your build with a Swing Beam

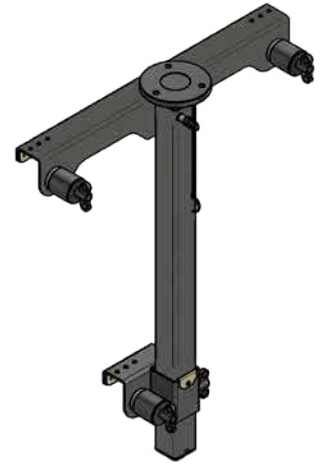


Arm Limiting Base



Extension Arm 500

500 mm



Balustrade Support

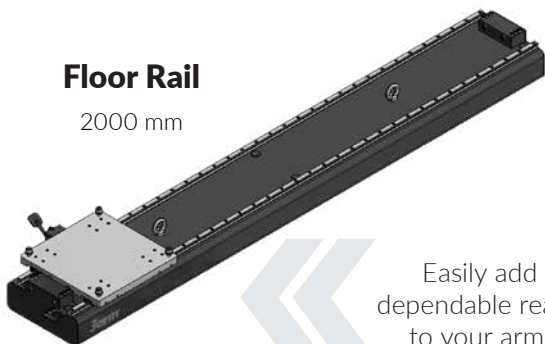
We will engineer the perfect solution for your application

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



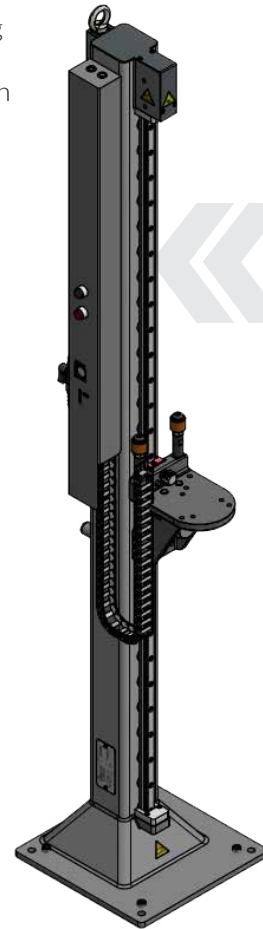
Mounting Column

From 400 to 1400 mm



Trolley with Column

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



Achieve extreme vertical reach with an Elevator

Elevator

1500 mm
2000 mm
2500 mm



Lifter

300 / 500 mm

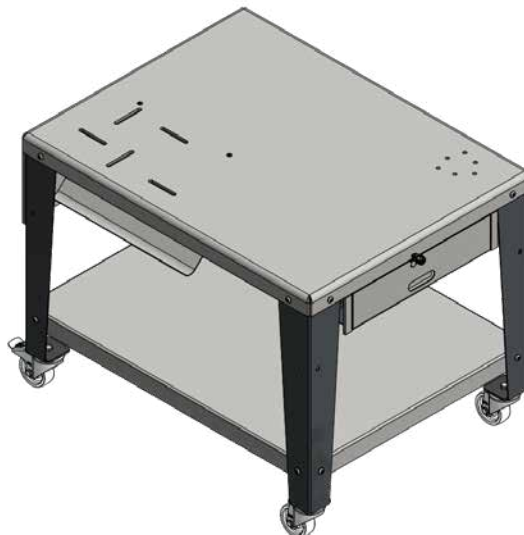
Add even more vertical reach to your Column

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

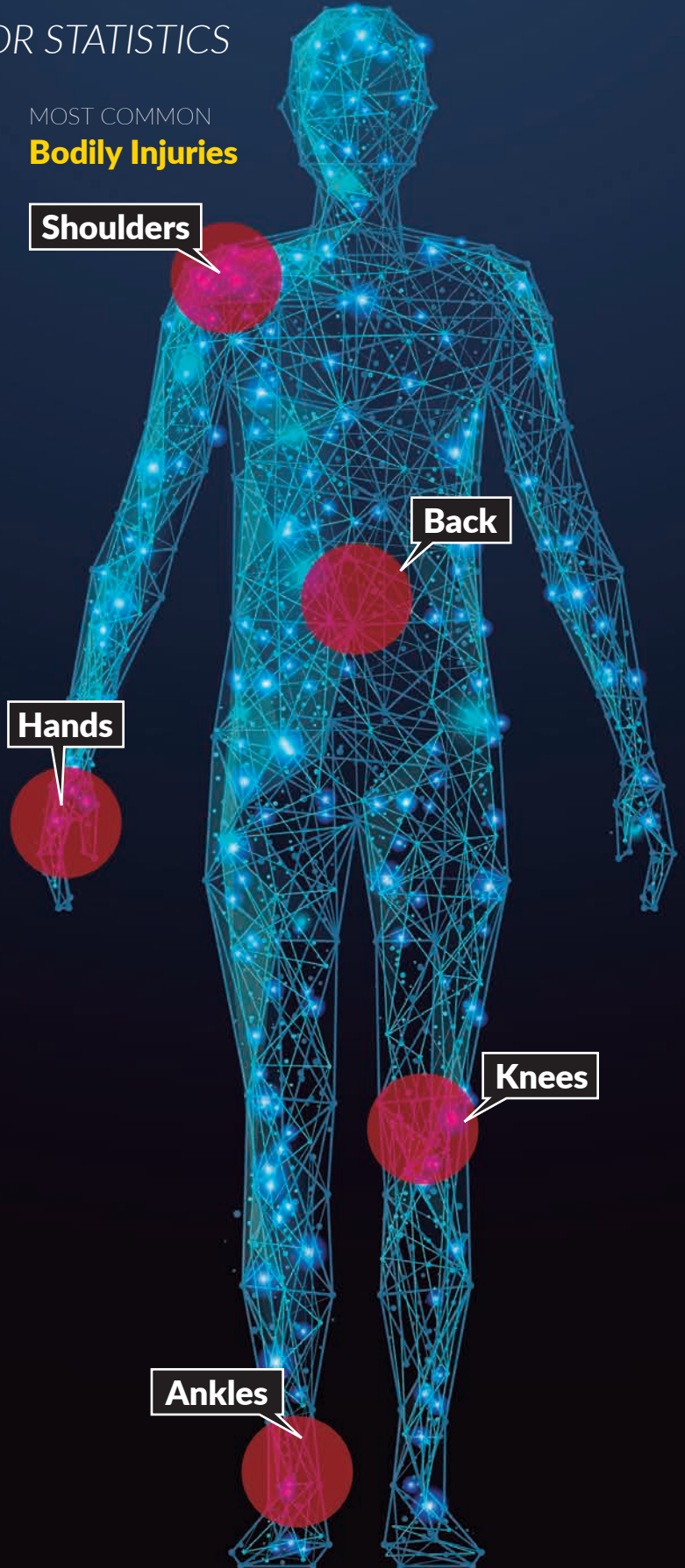
Shoulders

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



TECNOSPIRO
MACHINE TOOL S.L.

Tecnospiro Machine Tool, S.L.

Tel. +34 93 8764359
Pl. Pla dels Vinyats, B
08250 St.Joan de Vilatorrada Barcelona
3ARM@ www.3arm.net
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.



© Tecnospiro Machine Tool S.L.
Modifications reserved
Edition: February 2019