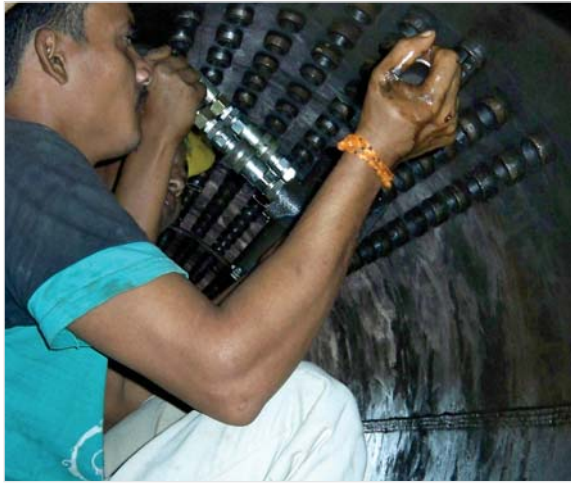


# Tube Expansion Systems



# Subzero

The Tube Expander Company...



High Productivity  
Rugged Construction  
Easy Handling  
Durability and Reliability  
Silent

High Weight / Power Ratio  
Flexibility in Use  
Excellent Tube Rolling Quality  
Minimized Maintenance  
Long Life Lasting



**YOU CAN COMPLETE YOUR BOILER  
ERECTION IN RECORD TIME  
ITS GURANTEED!!!**



# Hydraulic Tube Expansion System

**TUBE RIDER is a hydraulically driven unit which offers automatic tube expansion of boiler tubes to come over the limitation of conventional tube expansion method thereby offering attractive saving in labor, time & money.**

## **SMALLER**

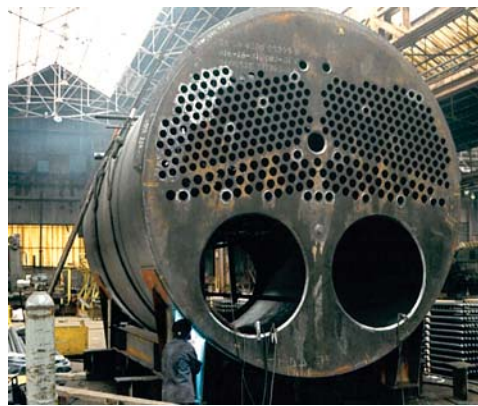
**Because of its drastically reduced weight and size the drive head can be maneuvered easily inside confined spaces such as drums.**

**Jobs are completed faster with far less manual labor, less operator fatigue.**



## **Silent**

**Compared to electrical expansion method, TUBE RIDER offers noiseless operation thereby reducing operator stress & fatigue.**



## **SAFER**

**Drive head is completely hydraulically controlled, so work can be carried out in damp condition with maximum safety. Low voltage required at drive head for switch function (24VDC) creates no danger to operator in steam or water drum tube rolling. Lightness is another safety factor, reducing mishandling by tired operators.**



## **Smoother**

**Fully automatic torque control is transmitted through the expander perfectly and instantly. Unlike other type of expanders roller speed stays constant even under heavy torque. TUBE RIDER extends applicable range for automatic expander. Its expands tubes up to 6" dia. with no loss in efficiency.**

## MOBILE TORQUE CONTROL UNIT

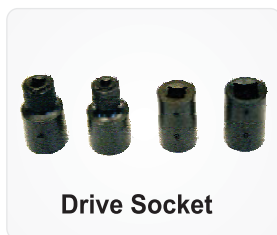


Model	TUBE RIDER-5
Input Electrical	3 Phase, 415V+/- 10%V
Electric Motor	3.7KW / 5HP, 1430 RPM, 50/60 Hz
Control Voltage	24VDC
Max. Working Pressure	100 BAR
Oil Tank Capacity	50 LTR.
Dimensions	L820 x W325 x H985
Weight without Oil	110 KG.

## TUBE EXPANSION DRIVE HEAD

Type	TED-112		TED-212		TED-300		TED-400		TED-600		
Socket	3/8" & 1/2"		1/2" & 3/4"		1/2", 3/4" & 1"		3/4" & 1"		1"		
RPM	480		105		84		62		11		
Tube Range	Mini	Max	Mini	Max	Mini	Max	Mini	Max	Mini	Max	
Tube OD	inch	Ø 3/4	Ø 1.1/2	Ø 1.1/2"	Ø 2.1/2	Ø 1.1/2	Ø 3	Ø 2	Ø 4	Ø 4	Ø 6
	mm	Ø 19.0	Ø 38.1	Ø 38.1	Ø 63.5	Ø 38.1	Ø 76.2	Ø 50.8	Ø 101.6	100	150
Tube Thickness	inch	1/16	3/32	1/16	1/8	1/8	5/32	9/64	1/4	1/4	3/8
	mm	1.65	2.77	1.65	3.17	3.2	4.0	3.5	6.35	6.3	9.5
Tube Sheet Thickness	inch	13/16	1.1/4	1.1/2	1.3/8	1.1/4	1.25/32	2	2.9/16"	2	4
	mm	20	32	12	34.9	32	45	50.8	60	50.8	101.6
Dimension (mm)	762 X 254 X 254		762 X 254 X 254		762 X 254 X 254		762 X 254 X 254		762 X 254 X 254		
Weight - kg (lbs)	9.2 (20)		10.0 (22)		11.0 (24)		11.5 (26)		11.5 (26)		

### STANDARD ACCESSORIES



Remote Control cable and Hydraulic hoses can be supplied for other length on request.

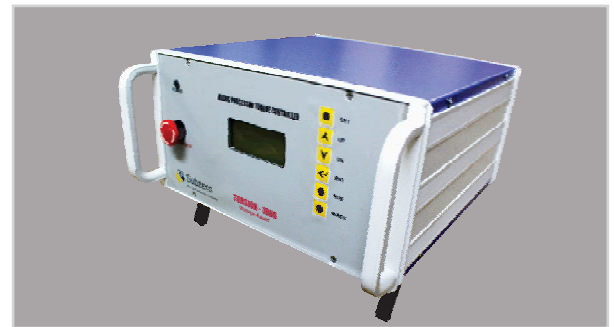


TORSION-1800 IS WATTAGE based Electronic Controller. Compact, light weight, durable & solid state. It is designed to provide accurate wattage /torque control for SUBZERO electric tube expansion drive.

## Electronic Torque Control Unit

### Specification

Volts	230
HZ	50/60 Hz
Amp	12
Wattage Adjustment	1 increments
Weight	7.5 kg



**TORSION- 1800** is wattage based Electronic controller using the latest Microcontrollers which reduce number of components . Specially designed to give fast and uniform tube expansion.

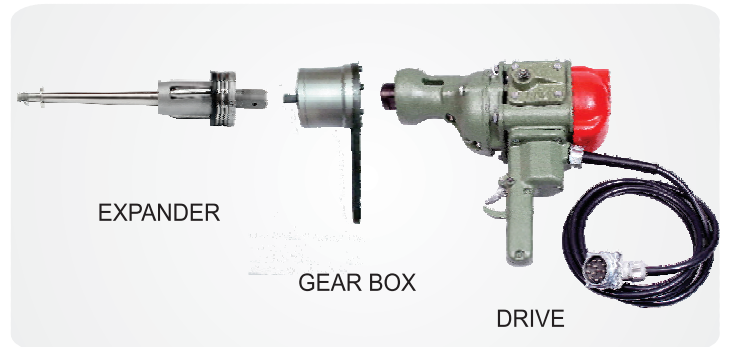
TORSION 1800 is a “Wattage” based Digital Torque Controller which uses multiple microcontroller Chips for controlling power and managing displays. Many useful features have been incorporated to improve the job quality & to enhance the drive life.

With this innovative creation, tube expansion is made easy with greater accuracy and all this can be achieved with fingertips.

## Features

- Automatically detects the connected Drive.
- Microcontroller based circuits
- User Friendly Software with all protections.
- Fully Solid state. Short Circuit and Over Load Protection.
- SMD devices used for the Electronic circuits.
- Military Grade Output connectors.
- Precise control for Torque by selecting the Wattage.
- Soft Start for all drives. Additional smooth control by selecting the slow ramp in both Forward and Reverse.
- Drive Parameters automatically seals the upper limit.
- Trip Time adjustable from 2 Sec to 10 Sec
- Adjustable Reverse Time
- Adjustable Pause Time from 1sec to 100 Sec.
- Plug in type Industrial grade connectors for PCB – reducing the number of interconnections.
- 64KB Flash Memory and 1KB RAM Built In.
- Low Power 8 Bit Micro Controller.

## Electric Expansion Drive



Voltage	Drive Model	Suitable tube OD range	Chuck Square Size	Weight KG
230	Drive - 1	1/4" – 3/8"	1/4" - 3/8"	2.0
	Drive - 2	1st Speed 3/8" – 1/2" 2nd Speed 1/2" – 5/8"	3/8"	2.5
	Drive - 3	1/2" – 3/4"	3/8" & 1/2"	8.5
	Drive - 4	3/4" – 1.1/2"	3/8" & 1/2"	12.0
	Drive - 5	1st Speed 5/8" – 3/4" 2nd Speed 3/4" – 1"	3/8" & 1/2"	7.5
	Drive - 6	1st Speed 1" - 1.1/2" 2nd Speed 1.1/2" - 2"	1/2" & 3/4"	8.5
	Drive - 7 (Drive 3 + Gearbox)	GB-1 1" - 1.1/2" GB-2 1.1/2" - 2"	1/2", 3/4" & 1"	16.0
	Drive - 8 (Drive 4 + Gearbox)	GB-1 2"-2.1/2" GB-2 2.1/2"-4"	3/4" & 1"	19.5
	Drive - 9 (Drive5 + Gearbox)	1.1/2" - 3"	1/2", 3/4" & 1"	15
	Drive - 10 (Drive6 + Gearbox)	2" - 5"	3/4"	16

GB - Gear Box

## TUBE EXPANSION ACCESSORIES



**Application :** Use to free operator from handling drives.

Universal telescopic shaft is connected to the rolling motor by Morse taper locking. The balancing is obtained directly from the Rolling motor & operator's safety is guaranteed by protection Placed on all the rotating parts. Spindle has wide radius of action With an expansion of about 400mm for an arc of 60 degree. It is Available in different dimensions &

### TELESCOPIC SHAFT

MODEL	Max. Tube OD	Morse Taper	Close / Expanded Length (MM)	Weight KG	Square Drive
STS - 1	32	2MT	650/1000	9.0	1/2"
STS - 2	32	3MT	950/1350	9.0	1/2"
STS - 3	76	3MT	665/1060	14.0	3/4"
STS - 4	120	4MT	710/1175	20.0	1"



TUBE EXPANSION TROLLY



BALANCE ARM

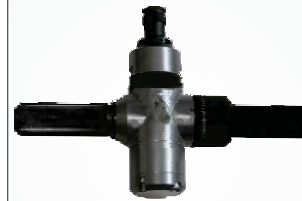
# Pneumatic Expansion Drive



**TYPHOON 12**  
O.D. 3/8 - 1/2"



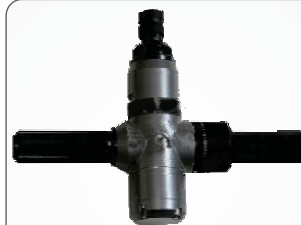
**TYPHOON 58**  
O.D. 3/8 - 5/8"



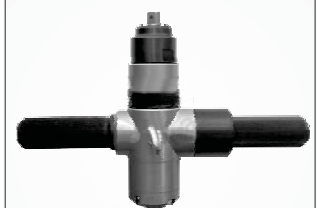
**TYPHOON 34**  
O.D. 1/2 - 3/4"



**TYPHOON 134**  
O.D. 1 1/8" - 1 1/2"



**TYPHOON 114**  
O.D. 1" - 1 1/4"



**TYPHOON 100**  
O.D. 5/8 - 1"



**TYPHOON 212**  
O.D. 1 1/2" - 2"



**TYPHOON 300**  
O.D. 2 - 3"



**TYPHOON 400** O.D. 2"- 4"

**Typhoon series Right-Angle-Pneumatic-Rolling-Motor for boiler tubes.**

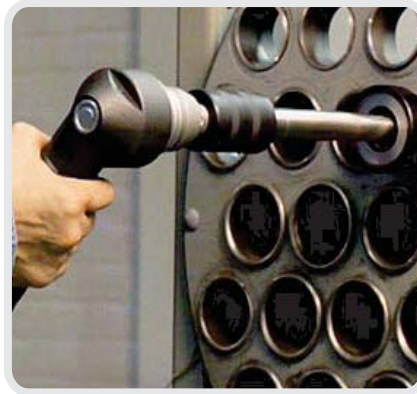
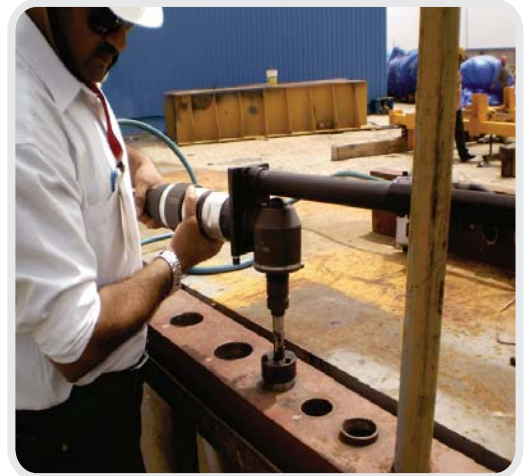
**The Typhoon** is pneumatic torque controlled motor designed for the expansion of Heat Exchangers, Boiler tubes in Steam and Mud Drums, Fire Tube Boilers and similar equipment. Four machines are available offering expansion of tubes of nominal sizes 3/4" to 4" OD.

The Typhoon's torque control systems has been specifically designed and engineered to ensure precise repeat expansion, preventing under or over expansion of the tubes.

Each machines is supplied with carrying case, instruction manual and drive coupling.

## Features

- Safe compared to any conventional method of expansion available as on date.
- No electric / fire hazard.
- Torque Controlled to ensure repeatability.
- Highest power to weight ratio compare all other method of expansion.
- Easy to adjust torque setting for various tube sizes.
- Light weight and Robust construction
- Ergonomic wrist-roll throttle control.



MODEL	TUBE CAPACITY	CHUCK SIZE	FREE SPEED RPM	MAX TORQUE (NM)	LENGTH MM	WEIGHT (kg)
TYPHOON 12	3/8 - 1/2"	1/4" & 3/8"	1200	4.0	220	1.5
TYPHOON 58	3/8 - 5/8"	3/8"	700	8.5	225	1.6
TYPHOON 34	1/2 - 3/4"	3/8"	700	24	400	4.2
TYPHOON 100	5/8 - 1"	3/8" & 1/2"	500	36	400	4.5
TYPHOON 114	1" - 1 1/4"	3/8" & 1/2"	200	60	400	4.6
TYPHOON 134	1 1/8" - 1 1/2"	1/2"	220	100	480	5.8
TYPHOON 212	1 1/2" - 2"	3/4"	145	170	485	6.0
TYPHOON 300	2 - 3"	3/4"	80	410	935	10.0
TYPHOON 400	2" - 4"	3/4" & 1"	38	500	630	10.0

