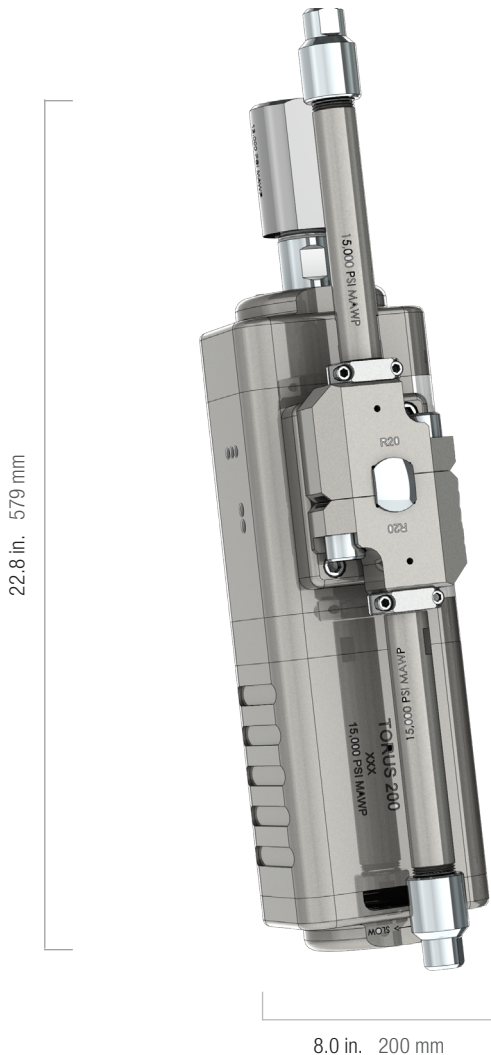


TORUS TR-200

High Flow 3-D Tank and Vessel Cleaning



The Torus TR-200 is the industry's most powerful 3-D tool on the market. It is capable of delivering flows up to 220 gpm (830 l/min). Applying higher flows allows contractors to remove thicker deposits and deliver longer and harder hitting jets from further distances. This is ideal for cleaning large tanks, removing coke deposits, and other hard to handle applications and materials.

Today's cleaning environments demand hands-free automated technology. When the Torus TR-200 is combined with positioning equipment in chemical and power plants, these challenges are met.

COMPETITIVE ADVANTAGES

- Small entry diameter and light weight enable easy transport, setup, storage, and access to more tanks and vessels
- If the arms hit an internal obstruction while in operation, the Torus simply stops rotating without damaging the gear mechanism
- Side by side field trials prove that the Torus TR-200 experiences less pressure loss than competitive tools on the market — less pressure loss equals more power delivered to the cleaning surface and greater productivity
- Constructed from 3 primary solid stainless steel sections for unsurpassed durability
- Positioning devices and extensions help adapt the Torus TR-200 to specific needs

FEATURES	BENEFITS
<ul style="list-style-type: none"> • Interchangeable couplings and manifolds 	<ul style="list-style-type: none"> • One tool can be adapted to a wide range of pressures and flows
<ul style="list-style-type: none"> • External speed control 	<ul style="list-style-type: none"> • If you need to change the speed of rotation while on the job for precise material removal, it is easy to adjust without opening the tool or removing it from the hose
<ul style="list-style-type: none"> • Easy access high pressure seals and external grease fittings 	<ul style="list-style-type: none"> • Reduced downtime for regular maintenance
<ul style="list-style-type: none"> • Field repairable 	<ul style="list-style-type: none"> • No need to send to factory means reduced downtime and no freight fees

TORUS TR-200 TOOL OVERVIEW

QUESTIONS TO ASK THE CUSTOMER

- What size and length of hose are you using?
- What pressure and flow are you operating?
- Are extensions required? See *Nozzles and Extensions* for availability.
- Do you need a pulling ring?

OTHER INFORMATION

We recommend a service kit be purchased with each new tool —tank cleaning applications are demanding jobs requiring little downtime and quick turnaround. Keeping inexpensive service kits on hand ensures success.

TOOL SPECIFICATIONS

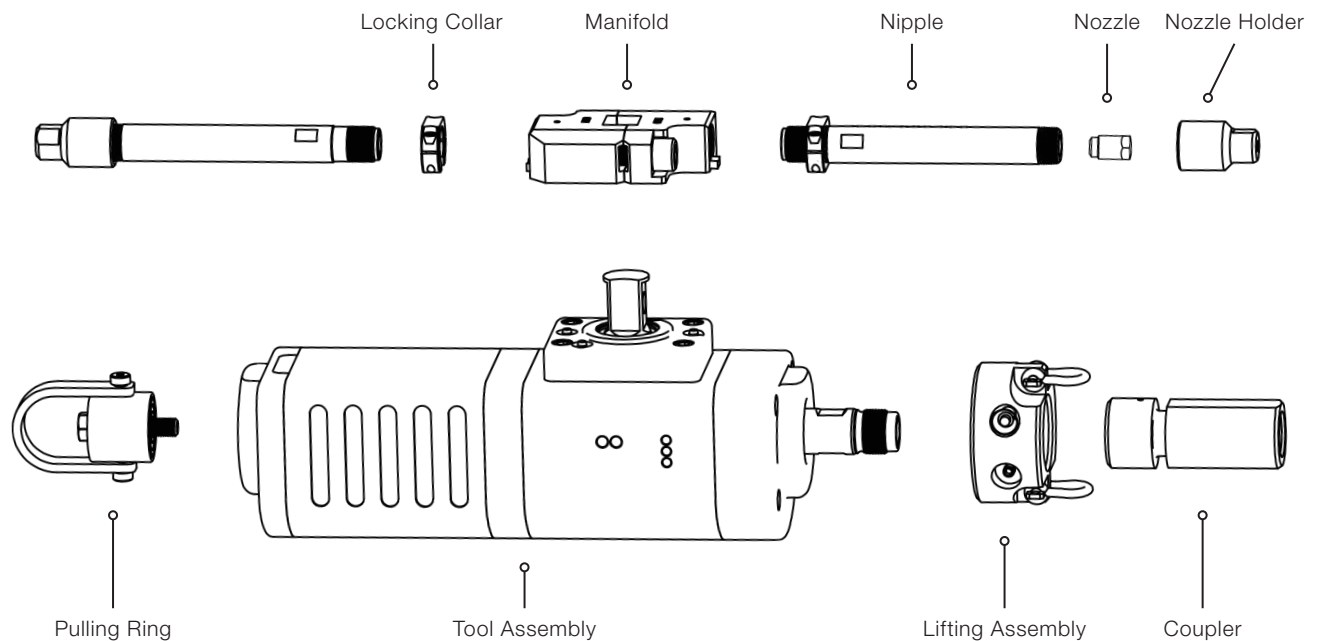
PART ID	TR-200
Pressure Range	8–15k psi 550–1000 bar
Flow Range	50–220 gpm 190–830 l/min
Power Range	30–1900 hp
Cycle Time	10–88 min
Rotation Speed	Adjustable
Inlet Connections	P16 (up to 10k psi MAWP) M16 (up to 15k psi MAWP)
Manifold Port Size	G16
Port Size	3/4 NPT (P12)
Nozzle Type	OC8
Diameter	8.0 in. 200 mm
Length	22.8 in. 579 mm
Weight	100 lb 45 kg
Maximum Water Temperature	160 °F 70 °C

*Includes manifold, 8-inch nipples and pulling ring

Visit our website for tool resources including operation and maintenance videos:

WWW.STONEAGETOOLS.COM

TORUS TR-200 TOOL CONFIGURATION



A complete Torus TR-200 tool configuration requires the following components:

1. Torus TR-200 tool, supplied with:
 - 2 x 8-inch nipples
 - 2 x locking collars
 - 2 x nozzle holders
 - Inlet lifting assembly
 - Protective case
2. 2 x OC8 nozzles
3. Manifold suited to pressure and flow
4. Appropriate hose coupler

The following items may also be required:

- Suitable hose adapter

To configure a Torus TR-200 tool, the following information should be obtained:

- Pump pressure and flow
- Hose length and ID
- Hose end fitting

TORUS TR-200 TOOL CONFIGURATION

ORDERING A STANDARD PACKAGE

StoneAge offers standardized Torus TR-200 tool packages for the most commonly used configurations. All Torus TR-200 tool packages come fully assembled and include: 1. Torus TR-200 tool with 8-inch nipples, 2. Manifold suitable for pressure and flow being used, 3. Carbide nozzles appropriate for specified jetting, 4. Coupling to required hose connection.

The following table shows the configurations of standard Torus TR-200 tool packages:

MAXIMUM PRESSURE	PACKAGE CONTENTS	PACKAGE PART ID
15k psi 1000 bar	1 x TR-200 tool with 2 x 8-in. nipples 1 x Manifold assembly 2 x OC8 carbide nozzles 1 x Hose coupler	TR-200-PKG

When ordering a standard Torus TR-200 package, you should specify:

1. Package Part ID
2. Pump pressure and flow
3. Hose length and ID
4. Hose end connection

FOR EXAMPLE:

QTY	PART ID	DESCRIPTION
1	TR-200-PKG	10,000 psi 150 gpm, 100 ft 1" ID hose, 1 NPT Male end

ORDERING BY LINE ITEM

Custom packages can be configured by following the steps outlined below.
Contact StoneAge Customer Service for questions about specific applications.

STEP 1 TOOL SELECTION

MAXIMUM PRESSURE	MAXIMUM FLOW	TOOL PART ID
15k psi 1000 bar	220 gpm 830 l/min	TR-200

STEP 2 MANIFOLD AND NOZZLE SELECTION

The table below shows manifold and nozzle size selection guidelines for common jetting scenarios:

OC8 CARBIDE NOZZLE SIZE												
PRESSURE & FLOW	Nozzle Size	.085	.095	.105	.125	.145	.165	.175	.190	.200	.215	
	8k psi 550 bar				76 288 R75	100 379 R60	130 492 R45	146 553 R35	172 651 R30	190 719 R25	218 825 R20	gpm l/min Manifold
	10k psi 700 bar			60 227 R75	84 318 R60	112 424 R45	146 553 R35	164 621 R30	192 727 R25	212 803 R20		gpm l/min Manifold
	12k psi 830 bar		52 197 R75	66 250 R60	92 348 R45	124 469 R35	160 606 R30	178 674 R25	210 795 R20			gpm l/min Manifold
	15k psi 1000 bar	48 182 R75	60 227 R60	72 273 R45	102 386 R35	138 522 R30	178 674 R25	200 757 R20				gpm l/min Manifold

The Torus TR-200 requires two OC8 nozzles, sized as indicated. The complete Manifold Part ID is **TR200 240-XXX**, where XXX is the R-value specified above.

FOR EXAMPLE:

A pump with 10k psi, 84 gpm would require a **TR200 240-R60** manifold and 2 x **OC8 .125** carbide nozzles.

For most accurate manifold and nozzle size selection, use the StoneAge Jetting App:

JETTING.STONEAGETOOLS.COM

TORUS TR-200 TOOL CONFIGURATION

STEP 3 COUPLER SELECTION

Select the correct coupler based on the maximum working pressure and inlet connection required.

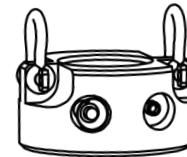
MAXIMUM PRESSURE	INLET CONNECTION	COUPLER PART ID
10k psi 700 bar	1 NPT Female	TR200 230-P16
15k psi 1000 bar	1 MP Female	TR200 230-MP16

PLEASE NOTE: When flows dictate two inlet hoses (exceeding 100 gpm/380 l/min per 1-inch/25mm hose), a "Y" inlet connection will be required. Please contact your StoneAge Customer Service for options.

STEP 4 LIFTING ASSEMBLY

The Torus TR-200 comes with a heavy duty and versatile lifting assembly. It includes two quick release pins, two ring attachments and your choice of P16 or MP16 coupling.

DESCRIPTION	PART ID	WEIGHT
Lift assembly for Torus TR-200	TR200 190	4.5 lb 2.0 kg



STEP 5 EXTENSION NIPPLES

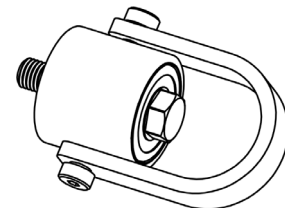
The Torus TR-200 is supplied two standard 8-inch (203 mm) extension nipples. Longer nipples can be supplied and custom lengths are available on request.

NIPPLE LENGTH	PART ID
8 in. 203 mm	SA 366-G16P12-8-0
36 in. 914 mm	SA 366-G16P12-36-0

STEP 6 PULLING RING

A pulling ring is available for the Torus TR-200. It is fitted to the opposite end of the tool from the hose inlet.

DESCRIPTION	PART ID	WEIGHT
Pulling ring for Torus TR-200	HC 090	2.0 lb 0.9 kg



STEP 7 MAINTENANCE RESOURCES

TOOL	SERVICE KIT	SEAL KIT	OVERHAUL KIT	MANUAL
TR-200	TR200 600	TR200 602	TR200 610	PL 557

Kit components and tool maintenance/assembly videos are available on our website:

WWW.STONEAGETOOLS.COM

For questions or help with a specific application, configuration or tool repairs, please contact StoneAge Customer Service.

When ordering a Torus TR-200 tool by line item, the Dealer should specify:

1. Tool Part ID
2. Manifold Part ID
3. Nozzle Part IDs
4. Coupler Part ID
5. Part IDs for any hose adapters, accessories or maintenance items

FOR EXAMPLE:

Torus TR-200 for 1000 Bar 80 l/min for hose with M24 end. Pulling ring and service kit.

QTY	PART ID	DESCRIPTION
1	TR-200	Torus 200 Assembly (Case Included)
1	TR200-230-M24	Coupling M24
1	TR200 240-R45	Manifold Assembly G16
2	OC8 105	Carbide Nozzle
1	HC 090	Pulling Ring
1	TR200 600	Service Kit