



CIP System Rail Car Washing System



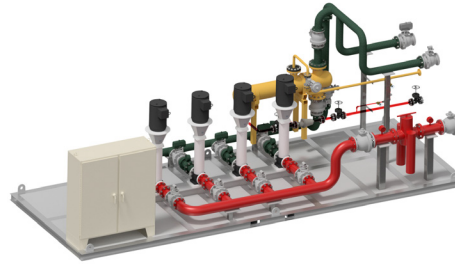
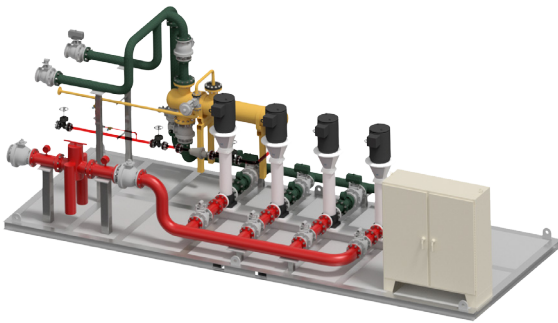
Type: CIP41987

Features

- Master Control Skid
- PLC Controlled
- Oil/Water Separator
- Inert Gas Skid
- Boiler Skid
- Return Pumps
- 1 Tank Skid (16,800 Gallon)
- Chemical Skid
- Tank Cleaning Machines
- Programmable

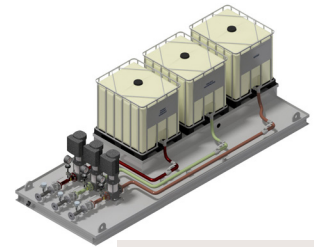
Industries

- Oil Refineries
- Railroad Transportation
- Oil Storage Facilities
- Tank Farms

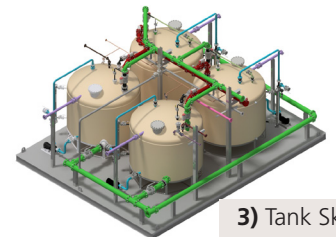


1) CIP Pump Skid

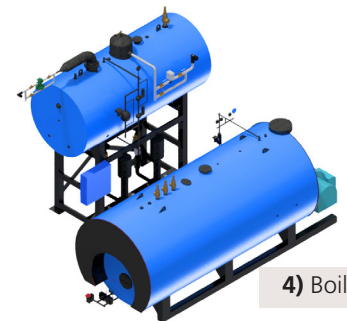
CIP41987 is a Railcar Washing system that is designed to clean six (6) railcars simultaneously and in tandem with water, chemistries, and steam. For Hydrocarbon removal Orbijet's MicroEmulsion Chemistries are available and for cleaning requirements using Caustic Soda our enhancement chemistry ORB3000SC can be used. **CIP41987** has the capability to create a recirculation loop within the tank to be cleaned via the selected tank cleaning machines thus dislodging and mixing the tank bottoms to be carried away via the return pump system to our proprietary solids separation system where the fluid stream is reduced of solids to less than 300 micron. The solids fraction is discharged to holding cars for further treatment or disposal and the aqueous phase is returned to the tank skids for continued recirculation in the tanks to be cleaned until all solids are removed from the tank. Our oil/water separation skid can be engaged for side stream polishing of the aqueous stream thus reducing the oil in water fraction for remediation of the fluid streams and recovery of the oil or microemulsion chemistries can be used for a more complete recovery of the oil and remediation of the solids. The required steam source is supplied via our boiler skid. Tanks are rendered inert with our Nitrogen Gas skid. Each skid frame is uniquely designed for on land use. The majority of the system is PLC controlled from the primary pump skid and connection to other skids are via an RJ45 data highway. Modules that are included with this system are...



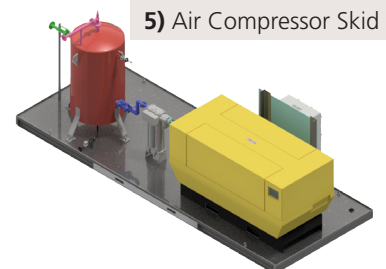
2) Chemical Injection Skid



3) Tank Skid



4) Boiler

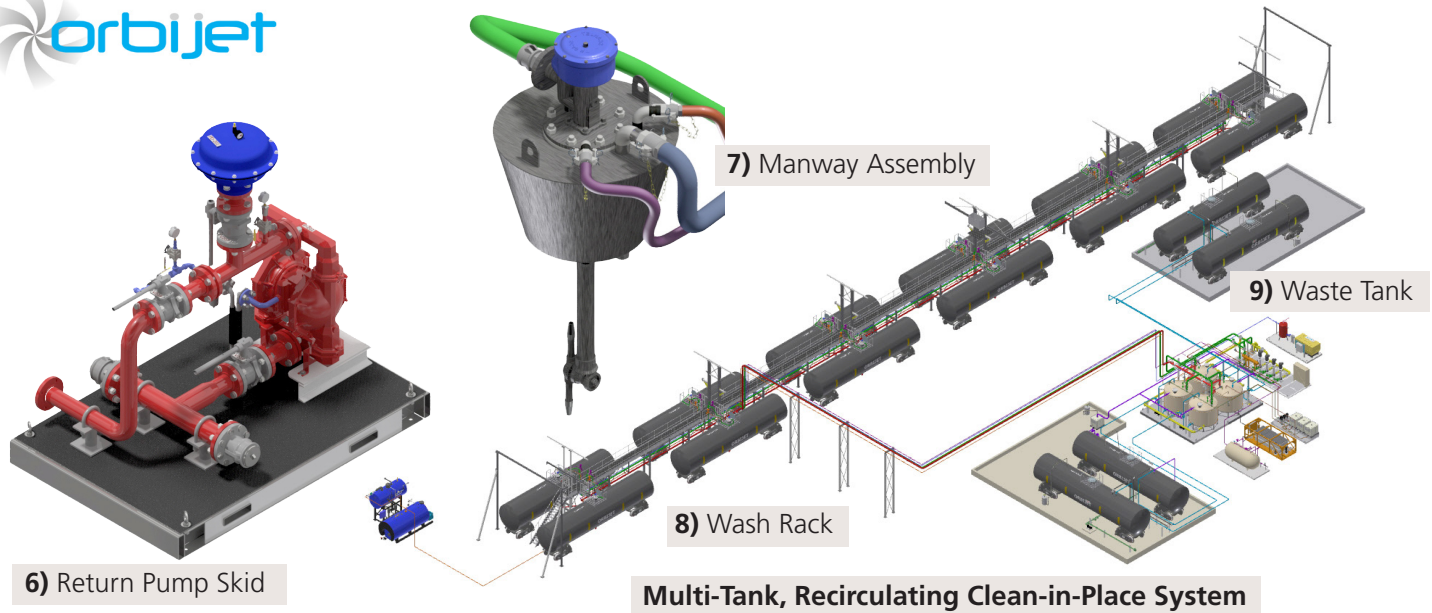


5) Air Compressor Skid

Skid Modules		
Module	Dimensions (Feet/Meters)	Function
1) CIP Pump Skid	17' 3" (5257mm) X 6' 6" (1981mm)	Primary pump and master control skid.
2) Chemical Injection Skid	17' 3" (5257mm) X 6' 6" (1981mm)	To provide chemical recharge for cleaning solution
3) Tank Skid	26' 6 1/2" (8089mm) X 33' 11 1/2" (10350.5mm)	Primary tank skid
4) Boiler Skid	15' 11 9/16" (4866mm) X 22' 5/8" (6721.6mm)	To provide steam to the pump skid
5) Air Compressor Skid	20' (6096mm) X 7' 6 1/2" (2298mm)	To provide shop air for instrumentation and valve automation
6) Return Pump Skid	6' (1828.8mm) X 3' 11 1/2" (1206.5mm)	To recycle used cleaning solution to tank skid
7) Manway Assembly	2' (609.6mm) Dia. X 4' 11 11/16" (1517.15mm)	Railcar Cleaning Assembly
8) Wash Rack	32' 6 1/2" (9918mm) X 402' 7" (117,630mm)	Rail car cleaning station
9) Waste Storage Tanks	Approx. 76' 1 1/2" (23,202mm) X 38' (11,582mm)	Waste storage
10) Inert Gas Skid	20' (6096mm) X 7' 9" (2362mm)	Nitrogen Storage
11) Programmable TCM	10 7/8" (277.4mm) X 4' 11 11/16" (1517.15mm)	Tank Cleaning Machine
12) Oil/water Separator	18' 6 1/2" (5651.25mm) X 7' 1" (2159mm)	Oil Water Separation
13) Vapor Gas Filtration	1' 11 3/16" (589.28mm) X 3' 9 1/16" (1145.3mm)	Volatile Gas Filtration

Orbijet, Inc.
15200 Middlebrook Drive; Suite E
Houston, Texas 77058
United States of America

Phone : +1 281.218.9400
Fax : +1 713.513.5885
Email : eng@orbijet.com
Website : www.orbijet.com

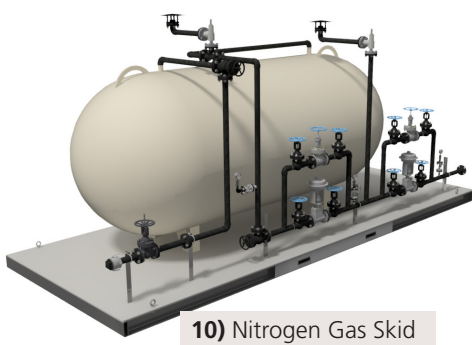


Multi-Tank, Recirculating Clean-in-Place System

Performance Characteristics

Module	Summary	Power Requirements
1) CIP Pump Skid	Pumping capacity of USGPM pending (pending m3/hr); 35 PSIG; VFD controlled; command skid; heat to 150°F	460/230 VAC, 3 Phase, 60 Hz
2) Chemical Injection Skid	3 each 320 Gal Totes; 30 USGPM/8.1m³/hr; 40PSIG/2.75Bar; 5hp	460/230 VAC, 3 Phase, 60 Hz
3) Tank Skid	4 each 4,200 Gallon Solutioning Tanks; complete with valves and pumps	460/230 VAC, 3 Phase, 60 Hz
4) Boiler Skid	Boiler skid to provide steam to the pump skid heat exchanger and/or railcars	460/230 VAC, 3 Phase, 60 Hz
5) Air Compressor Skid	125 PSIG/8.6Bar; 900SCFM/1529m³/hr; 250hp	460/230 VAC, 3 Phase, 60 Hz
6) Return Pump Skid	6 each air driven pump skids; 175 USGPM (39.75m³/hr)	
7) Manway Assembly	CIP Solution; Nitrogen supply; Steam Injection; Vapor Recovery; Self Seating	
8) Wash Rack	12 Bay Railcar Wash Station with Gangway access	
9) Waste Storage Tanks	Capacity 25,000 Gal/94.6m³; 200 USGPM/45.5m³/hr forwarding 32PSI/2.2 Bar; 7.5hp (each)	460/230 VAC, 3 Phase, 60 Hz
10) Inert Gas Skid	Nitrogen inert gas skid to control LEL levels in tank to be cleaned	
11) Tank Cleaning Machine Options	Model SC40RT, SC15, SC45, SC30T (Not included in this system)	
12) Oil/water Separator	Oil/water separator for side stream polishing of surge tanks	460/230 VAC, 3 Phase, 60 Hz
13) Vapor Gas Filtration	55 Gal vertical Cylinder as needed to contain volatile compounds	
14) Drawing Number	41987-03-PID	...

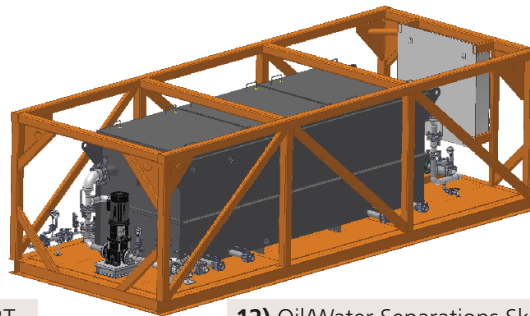
The above characteristics are summary in nature.



10) Nitrogen Gas Skid



11) SC40RT



12) Oil/Water Separations Skid



13) Vapor Recovery

Orbijet, Inc.
15200 Middlebrook Drive; Suite E
Houston, Texas 77058
United States of America

Phone : +1 281.218.9400
Fax : +1 713.513.5885
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Website : www.orbijet.com