

during normal business hours as well as after hours during emergency operations. The City spent on average less than \$250,000 each year on the previous contract.

The proposed contract is a 1 year contract, with the option to renew the contract in 1 year increments for an additional 5 years. The Carson City Public Works Department is requesting authorization for the Public Works Director to renew the contract each year with a not to exceed amount of \$250,000 each year for a total of \$1,500,000 over the course of 6 years.

NOTICE TO BIDDERS was published in the Reno Gazette Journal and posted on NGEM on September 10, 2020. One bid was opened at approximately 11:30 am on October 2, 2020, via online Cisco Webex bid opening. Present during the bid opening were; Rod Smith, WNS and Carol Akers, Carson City Purchasing and Contracts Administrator.

Proposals were received from one bidder. Staff recommends award to WNS as the lowest responsive and responsible bidder pursuant to NRS Chapter 332.

Applicable Statute, Code, Policy, Rule or Regulation

NRS Chapter 332

Financial Information

Is there a fiscal impact? Yes

If yes, account name/number: 5203502-500625 Water Utility Fund - Operating Supplies
5103201-500625 Wastewater Utility Fund - Operating Supplies
5053702-500625 Stormwater Utility Fund - Operating Supplies
2563038-500625 Street Maintenance Fund - Operating Supplies
1013904-500625 General Fund - Landfill Operating Supplies

Is it currently budgeted? Yes

Explanation of Fiscal Impact: Public Works will purchase these items on an as-needed basis for their inventory from the following Public Works Operating Supplies Accounts. The available Fiscal Year (FY) 2021 budget is as follows:

5203502-500625 Water:	\$90,000.00
5103201-500625 Wastewater:	\$98,000.00
5053702-500625 Stormwater:	\$25,000.00
2563038-500625 Streets:	\$35,000.00
1013904-500625 Landfill:	\$50,000.00

The budgets for FYs 2022 through 2027 may vary as approved by the Board of Supervisors.

Alternatives

Do not approve the award and provide alternative direction to staff.

Attachments:

[Western_Nevada_Supply-Proposal.pdf](#)

Board Action Taken:

Motion: _____	1) _____	Aye/Nay
	2) _____	_____

(Vote Recorded By)

CARSON CITY PURCHASING AND CONTRACTS
201 North Carson Street, Suite 2
Carson City, NV 89701
775-283-7362 / FAX 887-2286
<http://www.carson.org/bids>
NOTICE TO BIDDERS

REQUEST FOR BID #20300164
Warehouse Inventory Parts

RELEASE DATE: September 10, 2020

Carson City Purchasing and Contracts, on behalf of the Public Works Department, is accepting bids for water, sewer, storm drain, streets and landfill inventory material/parts and shall be submitted in accordance with the Documents and Requirements as set forth in the formal "Request for Bid."

BIDS must be submitted electronically via the online bidding system (NGEM). The link can be found through the Carson City's website <http://www.carson.org/bids> by 11:00 a.m. on October 2, 2020. Bids received after the date and time set for receipt will not be accepted.

ADDENDA: All addenda can be found through the link on Carson City's website. It is each proposer's responsibility to ensure that they have received all addenda prior to submission of their proposal.

BID OPENING AND ACKNOWLEDGMENT will be held online via webex meeting at 11:30 a.m. on October 2, 2020, meeting information will be issued through an addendum. Bidders, their representatives, and all other interested persons may be present during the bid opening. A tabulation of the **BID RESPONSES** will be posted through the link on Carson City's website <http://www.carson.org/bids> within 48 hours.

AWARD RECOMMENDATION will be made by the Carson City Purchasing and Contracts Department. You are encouraged to visit the City's website for that recommendation or contact Carol Akers at CAkers@carson.org for the recommendation.

APPEAL BY UNSUCCESSFUL BIDDER must be submitted in writing to Carson City Purchasing and Contracts Administrator within five (5) working days after the City makes a recommendation to award the contract and must be in compliance with Nevada Revised Statute (NRS) 332.

AWARD will be made by the Carson City Board of Supervisors and is tentatively scheduled for Thursday, November 19, 2020, and their decision is final. The Carson City Board of Supervisors meeting will be held in the Sierra Room of the Carson City Community Center, 851 E. William Street, Carson City, NV 89701 beginning at 8:30 a.m.

CARSON CITY PURCHASING AND CONTRACTS SPECIFICATIONS

SCOPE:

Carson City Purchasing and Contracts, on behalf of the Public Works Department, is accepting bids for water, sewer, storm drain, streets and landfill inventory material/parts.

Bids shall be based upon the information provided in this **REQUEST FOR BIDS**.

GENERAL:

These **SPECIFICATIONS** shall be considered as the minimum standard acceptable to Carson City. Any deviations, modifications, and/or alternates proposed to the **SPECIFICATIONS** shall be recorded on the **EXCEPTION SUMMARY**. Failure to do so may be justification for rejection of the **BID RESPONSE**. Bidder must indicate the line number corresponding to the item and a detailed description of the deviation, modification, and/or alternate. Failure to note deviations, modifications, and/or alternates on the **EXCEPTION SUMMARY** shall be interpreted to convey that Bidder will perform in the manner described and/or specified in the **SPECIFICATIONS**.

The use of the name of a manufacturer in the **SPECIFICATIONS** does not restrict Bidder to that manufacturer's product specifications, unless otherwise stated in this **REQUEST FOR BID**. The reference is used to indicate the principle specifications, operating characteristics, or quality of products which have been approved by Carson City as being acceptable for its use. Bids on equivalent products or other manufacturers will be considered provided they meet the principal operating and service quality requirements of the **SPECIFICATIONS** stated herein including qualitative/quantitative preferences. Carson City will be the sole judge on equivalent quality/quantity and specification allowances/tolerances. Bidder may be required to submit current detailed Product-Application Specifications and related literature, product UL Listing information, and other typical test data on the product(s). This information will be used for evaluation purposes.

Only new product(s) of current design and manufacture shall be proposed and accepted under this **REQUEST FOR BID**. Bidding of demonstrator or used product(s) shall be specifically prohibited. Product(s) and/or materials(s) furnished by Bidder having serious defects, corrosion, or scratches which tend to present an "other than new" appearance shall be promptly replaced or such defects promptly corrected by Bidder at no cost to Carson City. Should Carson City receive any product(s) and/or material(s) not conforming to the requirements of this **REQUEST FOR BID**, they shall be returned and replaced at Bidder's expense.

Technical specifications and literature illustrating Bidder's proposed product(s) shall be submitted and marked as "**Exhibit A**". Failure to do so may be justification for rejection of the **BID RESPONSE**.

CARSON CITY PURCHASING AND CONTRACTS SPECIFICATIONS

All product(s) and/or materials proposed and furnished must comply with the most current O.S.H.A., N.O.S.H.A., E.P.A., Federal, State, and local laws, regulations, ordinances, and/or statutes applicable thereto. See Attachment B.

A letter from the manufacturer certifying that Bidder is an authorized representative of the manufacturer for the product(s) and/or materials being proposed and that any warranty requirements provided for herein will be performed favorably in their behalf shall be submitted and marked as "**Exhibit B**". Failure to do so may be justification for rejection of the **BID RESPONSE**.

TECHNICAL SPECIFICATIONS:

All items will be ordered on an as-needed basis.

No guarantee is given that any specific quantities will be ordered.

All items bid shall meet the current "Carson City Standard Details for Public Works Construction" in addition to all other standard details listed.

"Carson City Standard Details for Public Works Construction" can be found on the Carson City website located <https://www.carson.org/government/departments-a-f/community-development/development-engineering-division/details-for-public-works-construction>.

All items shall conform to the American Water Works Association standards and all applicable ANSI, ASTM, MSS SP 60 standards.

CONTRACT TERM:

This Contract shall not become effective until and unless approved by the Carson City Board of Supervisors.

The term of this Contract will be from December 1, 2020 through December 31, 2021.

Carson City shall reserve the right to renew this Contract for five (5) years, subject to negotiation.

Bidder shall guarantee the pricing through December 31, 2021.

ESCALATION AND DE-ESCALATION:

Product(s) supplied pursuant to the provisions of this **REQUEST FOR BID** shall be subject to escalation and/or de-escalation of prices as indicated herein; (i.e., conditions brought

CARSON CITY PURCHASING AND CONTRACTS SPECIFICATIONS

about due to market fluctuation may result in such changes). Escalation and/or de-escalation shall be as set forth by the following provisions:

Base Price:

For purposes of this **REQUEST FOR BID** and bid / contract award, the base price shall be established by Bidder's **BID RESPONSE**. This price, once the **BID RESPONSE** is opened and bid / contract award made, shall not be changed except as provided by the conditions stipulated herein.

De-escalation:

Adjustments decreasing the "Base Price" shall be concurrent with Bidder's price from his supplier(s). Should Bidder have legal access to more than one supplier, he shall be aggressive in his endeavor to obtain the lowest responsive and responsible supplier capable of providing products that meet or exceed the requirements of this **REQUEST FOR BID**. Bidder shall promptly notify Carson City Purchasing and Contracts via e-mail of the adjusted price, product involved, and the date of effect.

Escalation:

Adjustments increasing the "Base Price" may be concurrent with Bidder's price from his supplier(s), provided Bidder can substantiate the necessity for such an adjustment, and that it is consistent with market conditions. Should Bidder have legal access to more than one supplier, he shall be aggressive in his endeavor to obtain the lowest responsive and responsible supplier capable of providing products that meet or exceed the requirements of this **REQUEST FOR BID**. Bidder shall promptly notify Carson City Purchasing and Contracts via e-mail of the adjusted price, product involved, and the date of effect. Notification shall be prior to the distribution of, or commitment to distribute, any product(s) affected by such an adjustment.

In the event, price adjustments are inconsistent with market conditions, and in the opinion of Carson City Purchasing and Contracts, the best interest of the Carson City, would be served by a re-bid to the competitive market, Carson City reserves the right to waive the notification requirements of this agreement and terminate the bid / contract award without regard to the thirty (30) day written notice. The method necessary for such notice of termination shall be at the discretion of Carson City Purchasing and Contracts.

WARRANTIES AND GUARANTIES:

Bidder agrees that any warranty or guarantee provided Carson City shall not be considered as the exclusive remedy of Carson City for any default in any respect by Bidder, but such warranty or guarantee shall be considered to be in addition to any right or remedy allowed by this **REQUEST FOR BID**, law, equity, or statute.

CARSON CITY PURCHASING AND CONTRACTS SPECIFICATIONS

Bidder warrants that all deliverables and work product under this **REQUEST FOR BID** shall be completed in a workmanlike manner consistent with standards in the trade, profession, or industry; shall conform to or exceed the **SPECIFICATIONS**; and shall be fit for ordinary use, of good quality, with no material defects. A copy of Bidder's warranty indicating the terms, conditions, and limitations shall be submitted and marked as **'EXHIBIT C'**. Warranty shall be specific as to whether or not this warranty is of a standard nature, or if it is being modified to meet or satisfy the requirements of this **REQUEST FOR BID**. Failure to do so may be justification for rejection of the **BID RESPONSE**.

Bidder guarantees that he will have full legal right of all processes, programs, methods, and techniques employed under the performance of this **REQUEST FOR BID**, and agrees to pay all rents, fees, and royalties of every description on any and all patents or patent rights, or copyrights, covering said processes, programs, methods, or techniques. Bidder guarantees to observe and comply with all federal, state, local, and municipal laws, ordinances, rules, and regulations in any way affecting this **REQUEST FOR BID**. Bidder guarantees to comply with all provisions of federal, state, and local regulations to ensure that no employee or applicant for employment is discriminated against because of race, religion, color, sex, sexual preference, marital status, age, handicap, or national origin. Bidder guarantees to be in compliance with Immigration and Naturalization Laws regarding eligibility of their employees or subcontractors to work in the United States. Bidder guarantees that any and all prices which he may charge under the terms of this **REQUEST FOR BID**, do not and will not, violate any existing federal, state, or municipal laws or regulations concerning price discrimination and/or price fixing. Bidder agrees to indemnify, exonerate, and hold Carson City harmless from liability for any such violation now and throughout the term of the bid / contract award.

DELIVERY SCHEDULE:

Bidder shall provide delivery **F.O.B. Carson City Public Works, 3303 Butti Way, Building 13, Carson City, Nevada C/O Tom Gordon, Warehouse Supply Coordinator.**

Bidder shall delivery to Carson City not less than twice each working day Monday through Friday.

Delivery shall be within one (1) working day from date order is placed.

All prices shall be **F.O.B. Carson City**. No additional charges for freight, packaging, handling, insurance, etc., shall be allowed. Bidder shall be responsible for all shipping charges for items returned due to error and/or unacceptable condition.

At time of delivery, Bidder shall provide a delivery invoice or within 48 hours of delivery, Bidder shall email an invoice to Public Works Fiscal Analyst at cnicholas@carson.org which

CARSON CITY PURCHASING AND CONTRACTS SPECIFICATIONS

Carson City will use for the purpose of paying Bidder. Bidder shall not mail a duplicate invoice unless specifically requested by Carson City.

DEFAULT OF CONTRACT:

Should Bidder fail to deliver the product(s) and/or perform the service(s) bid in accordance with this **REQUEST FOR BID**, Carson City may declare Bidder in default of contract and recover all damages, costs and fees (including Attorney's fees) allowable by law.

In the event of default by Bidder, Carson City may, at its option, pursue one or all of the following alternatives including: procure the product(s) and/or service(s) from another source and hold the defaulting Bidder responsible for an excess cost occasioned thereby, assess a penalty of 5% of the total awarded bid amount, commence with Surety and/or Performance Bond proceedings, debar the defaulting Bidder for not less than one year, or pursue other applicable legal remedies.

If necessity requires the use of materials or supplies not conforming to the **SPECIFICATIONS**, they may be accepted and payment shall be made at a proper adjustment in price.

DEFAULT OF CONTRACT:

Should Bidder fail to deliver the product(s) and/or perform the service(s) bid in accordance with this **REQUEST FOR BID**, Carson City may declare Bidder in default of contract and recover all damages, costs and fees (including Attorney's fees) allowable by law.

In the event of default by Bidder, Carson City may, at its option, pursue one or all of the following alternatives including: procure the product(s) and/or service(s) from another source and hold the defaulting Bidder responsible for an excess cost occasioned thereby, assess a penalty of 5% of the total awarded bid amount, commence with Surety and/or Performance Bond proceedings, debar the defaulting Bidder for not less than one year, or pursue other applicable legal remedies.

If necessity requires the use of materials or supplies not conforming to the **SPECIFICATIONS**, they may be accepted and payment shall be made at a proper adjustment in price.

***** END OF SPECIFICATIONS *****

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

These **TERMS & CONDITIONS** shall be considered as the minimum standard acceptable to Carson City. Any deviations, modifications, and/or alternates proposed to the **TERMS & CONDITIONS** shall be recorded on the **EXCEPTION SUMMARY**. Failure to do so may be justification for rejection of the **BID RESPONSE**. Bidder must indicate the line number corresponding to the item and a detailed description of the deviation, modification, and/or alternate. Failure to note deviations, modifications, and/or alternates on the **EXCEPTION SUMMARY** shall be interpreted to convey that Bidder will perform in the manner described and/or specified in the **TERMS & CONDITIONS**.

NOTICE OF RIGHTS:

Carson City reserves the right to accept or reject any or all bids or portions thereof, received by reason of this **REQUEST FOR BID**.

Carson City shall not be liable for any costs incurred by Bidders prior to the bid / contract award by the Carson City Board of Supervisors.

Carson City reserves the right to waive any irregularities and/or informalities in the submitted **BID RESPONSE**. Should Carson City elect to waive a right it will not constitute an automatic waiver of that right in the future nor will it impact any other right or remedy.

Carson City reserves the right to accept or reject any or all deviations, modifications and/or alternates offered, based solely on the value of said deviations, modifications and/or alternates to Carson City.

Carson City reserves the right to require such surety as may be deemed necessary for the protection of Carson City or to ensure the satisfactory performance of Bidder in accordance with this **REQUEST FOR BID**.

Carson City reserves the right to withhold bid / contract award for a period of sixty (60) calendar days from the date set for **BID OPENING AND ACKNOWLEDGMENT** which is indicated on page one of this **REQUEST FOR BID**.

Carson City reserves the right to award in whole or in part, by item, group of items, or by section where such action would serve Carson City's best interest. However, Bidder may record in the **EXCEPTION SUMMARY** that his **BID RESPONSE** must be awarded by Carson City on the basis of "**ALL OR NOTHING**".

Carson City reserves the right to issue a Contract or Purchase Order document without further discussion or negotiations with Bidder provided the bid / contract award is made within sixty (60) calendar days from the date set for **BID OPENING AND ACKNOWLEDGMENT** which is indicated on page one of this **REQUEST FOR BID**.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

Carson City reserves the right to require Bidder to provide an on-site demonstration at no cost to Carson City.

SALES/USE TAX EXEMPT STATUS:

Pursuant to Nevada Revised Statute 372.325 and related statutes, CARSON CITY CONSOLIDATED MUNICIPALITY has been granted sales/use tax exempt status. Direct purchase of tangible personal property made by CARSON CITY CONSOLIDATED MUNICIPALITY is exempt from sales/use tax.

JOINDER OR MUTUAL USE OF CONTRACT:

Pursuant to Nevada Revised Statute 332.195 (1), local governments and the State of Nevada may join or use the contracts of local governments located within or outside this State with the authorization of the contracting vendor. Carson City is not liable for the obligations of the governmental entity which joins or uses this Contract. Carson City shall be held harmless in any and all transactions between the successful bidder and other participating governmental entities.

QUESTIONS:

All questions must be directed, in writing via e-mail, to Carol Akers, Purchasing and Contracts Administrator, CAkers@carson.org at least four (4) working days prior to the date set for **BID OPENING AND ACKNOWLEDGMENT** which is indicated on page one of this **REQUEST FOR BID**.

You must indicate that these questions pertain to **REQUEST FOR BID #20300164**. You must indicate what line number(s) your question(s) references. You must provide a contact person, their title and their e-mail address.

Questions and answers will be posted through the link on Carson City's website <http://www.carson.org/bids> at least two (2) working days prior to the date set for **BID OPENING AND ACKNOWLEDGMENT** which is indicated on page one of this **REQUEST FOR BID**.

Any communication with other Carson City personnel regarding this **REQUEST FOR BID** may result in the rejection of your firm's **BID RESPONSE**.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

REQUEST FOR BID ERRORS:

Bidders shall notify Carol Akers, Purchasing and Contracts Administrator, in writing via e-mail, of any perceived conflicts, errors, or discrepancies in this **REQUEST FOR BID** as soon as possible so that corrective addenda may be furnished to all Bidders. Any addenda issued prior to the date and time set for the receipt of **SEALED BIDS** which is indicated on page one of this **REQUEST FOR BID** shall be made part of this **REQUEST FOR BID**.

All addenda must be signed, placed in date and time order, submitted, and marked as "**EXHIBIT D**". Failure to do so may be justification for rejection of the **BID RESPONSE**.

All addenda can be found through the link on Carson City's website <http://www.carson.org/bids>. It is each Bidder's responsibility to ensure that they have received all addenda prior to submission of their sealed bid.

TELEPHONE:

Bidder shall maintain telephone service such that Carson City may contact or leave a message for Bidder at any time. Bidder shall provide advance notice to Carson City Purchasing and Contracts of any change in telephone number.

BID RESPONSE, CONTRACT, AND DISPOSITION:

The contents of the **BID RESPONSE** including all **EXHIBITS** submitted by Bidder and accepted by Carson City shall become part of the contractual obligation and incorporated by reference into any ensuing Contract. All bids shall become the property of Carson City and shall not be returned to Bidder. Any information submitted in the **BID RESPONSE** that Bidder desires to be held proprietary shall be labeled as such. Carson City Purchasing and Contracts shall make the final determination regarding which information, if any, shall be held proprietary pursuant to Nevada Revised Statutes 332.025 and 332.061.

PREPARATION OF BID RESPONSE:

LINE ITEMS in NGEM

Responses shall be submitted on-line using NGEM. All line item description and information are in the NGEM system under the "**LINE ITEMS**" tab. You can obtain help by clicking on "Help" in the upper right corner of the NGEM website page for Supplier Tutorials on how to respond to a Bid and how to retract a response.

If you need additional help on your submission, you may call the Purchasing Department at (775) 283-7362.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

BID RESPONSE pages 29-36 supplied by Carson City Purchasing and Contracts in accordance with this **REQUEST FOR BID**. All expenses incurred as a result of **BID RESPONSE** preparation shall be the responsibility of Bidder and shall not be chargeable to Carson City.

In the upper right-hand corner of the **BID RESPONSE** including all exhibits, Bidder shall initial and date each page. Failure to do so may be justification for rejection of the **BID RESPONSE**

Bidder shall respond to each item listed on the **BID RESPONSE**. If additional space is required to respond to an item, Bidder shall indicate on company letterhead the item number as well as the additional information to be provided and mark as "**Exhibit E**". Supplemental materials may be provided and shall be marked as "**Exhibit F**". All the blank spaces shall be completed.

Bidders are expected to examine all documents of this **REQUEST FOR BID**. Failure to do so will be at Bidder's risk.

Bidders are urged to proofread their **BID RESPONSE** carefully for any errors. Failure to do so will be at Bidder's risk.

The **BID RESPONSE** shall contain signatures where required. Signatures shall be signed in longhand by an individual duly authorized to commit Bidder. An unsigned **BID RESPONSE** may be disqualified.

Order of Documents to be uploaded under "Response Attachments" tab in NGEM: Bidder may merge **BID RESPONSE** and all Exhibits into one (1) pdf document or upload each **BID RESPONSE** and Exhibits individually.

The items shall be placed in the following order. Bids may be disqualified from further consideration if Bidder does not conform to this requirement.

1st - BID RESPONSE pages 29-36

2nd - "Exhibit A" - Technical Specifications and literature illustrating Bidder's proposed product(s).

3rd - "Exhibit B" - A letter from the manufacturer certifying that Bidder is an authorized representative of the manufacturer for the product(s) being proposed and that any warranty requirements provided for herein will be performed favorably in their behalf.

4th - "Exhibit C" - A copy of Bidder's warranty, indicating the terms, conditions, and limitations of said warranty.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

5th - "Exhibit D" - All addenda must be signed and placed in date and time order.

6th - "Exhibit E" - **BID RESPONSE** additional space on company letterhead, if needed.

7th - "Exhibit F"- Supplemental materials, if needed.

8th - "Exhibit G" - **EXCEPTION SUMMARY** additional space on company letterhead, if needed.

MODIFICATION OF BIDS:

Bids may be modified by retracting and modifying the bid through the NGEM portal any time prior to the date and time set for receipt of **SEALED BIDS** which is indicated on page one of this **REQUEST FOR BID**. Notice of modification by telephone, facsimile, or e-mail will not be accepted and will be disregarded if received. Notice of modification received after the date and time set for receipt of **SEALED BIDS** will not be considered.

WITHDRAWAL OF BIDS:

Bids may be withdrawn without penalty by retracting the bid through the NGEM portal any time prior to the date and time set for receipt of **SEALED BIDS** which is indicated on page one of this **REQUEST FOR BID**.

BID EVALUATION:

The evaluation of bids and the determination as to the quality of the product(s) and/or service(s) offered shall be the responsibility of Carson City and will be based on information furnished by Bidder as well as other information obtained. Responses to this **REQUEST FOR BID** will be the primary source of information used in the evaluation process.

Carson City reserves the right to perform an investigation to determine the ability of Bidder to perform in accordance with the provisions of this **REQUEST FOR BID**. Carson City may contact any current users of a Bidder's product(s) and/or service(s); solicit information from any available source concerning any aspect of the bid; and seek and review any other information it deems pertinent to the evaluation process.

Carson City reserves the right to meet with bidders to discuss or clarify their **BID RESPONSES**, to request additional information, and to allow corrections of errors or omissions. All expenses incurred as a result of said meeting shall be the responsibility of Bidder and shall not be chargeable to Carson City.

Deviations, modifications, and/or alternates to this **REQUEST FOR BID** shall be given

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

consideration in the evaluation process, provided each deviation, modification and/or alternate shall be recorded on the **EXCEPTION SUMMARY**.

The following categories will be evaluated in the selection process:

- **Quality of the product(s) or service(s)**
- **Delivery Schedule**
- **Warehouse/Store Location**

COLLUSION:

Pursuant to Nevada Revised Statute 332.820 (1), any agreement or collusion among bidders or prospective bidders in restraint of freedom of competition by agreement to bid a fixed price, or otherwise, shall render the bids of such bidders void.

ADVANCE DISCLOSURES:

Pursuant to Nevada Revised Statute 332.820 (2), advance disclosures of proprietary information or any other information to any particular bidder which would give that particular bidder any advantage over any other interested bidder in advance of the opening of bids, whether in response to advertising or an informal request for bids, made or permitted by a member of the governing body or an employee or representative thereof, shall operate to void all bids received in response to that particular request for bids.

REJECTION OF BID:

Pursuant to Nevada Revised Statute 332.075, any or all bids received in response to a request for bids may be rejected by the governing body or its authorized representative if such governing body or its authorized representative determines that any such bidder is not responsive or responsible or that the quality of the services, supplies, materials, equipment or labor offered does not conform to requirements or if the public interest would be served by such a rejection.

AWARD OF CONTRACT:

Carson City will award the bid / contract to the lowest responsive and responsible bidder(s), as determined by Carson City pursuant to the provisions of Chapter 332 of the Nevada Revised Statutes.

Pursuant to Nevada Revised Statute 332.065 (1), the lowest responsive and responsible may be judged on the basis of (a) Price; (b) Conformance to the specifications; (c) Qualifications, (d) Past performance; (e) Performance or delivery date; (f) Quality and utility of services, supplies, materials, or equipment offered and the adaptability of those services,

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supplies, materials or equipment to the required purpose of the contract; (g) The best interest of the public; and (h) Such other criteria as may be set forth by the governing body or its authorized representative in the advertisement or request for bids, as applicable, that pertains to the contract.

Pursuant to Nevada Revised Statute 332.065 (2), the governing body or its authorized representative (a) shall give preference to recycled products if: (1) The product meets the applicable standards; (2) The product can be substituted for a comparable nonrecycled product; and (3) The product costs no more than a comparable nonrecycled product.

Pursuant to Nevada Revised Statute 332.085, in determining the responsibility of any bidder, the governing body or its authorized representative shall consider the possession of and limit on any required license of the bidder; and may consider the financial responsibility of the bidder; experience of the bidder; adequacy of the equipment of the bidder; past performance of the bidder; performance or delivery date; and ability of the bidder to perform the contract.

Prompt payment discounts will be considered in bid / contract award recommendation only if discount period is fifteen (15) or more calendar days. Discount period will be computed from the date Carson City acknowledges that the delivery and/or performance meets the requirements of this **REQUEST FOR BID** or from the date the correct invoice is received by the appropriate Carson City department/division accounts payable clerk, whichever is the latter date. Payment is deemed to be made on the date payment is mailed to Bidder.

Should identical low, responsive and responsible bids be received from two (2) or more Bidders; the Purchasing and Contracts Administrator, shall notify all parties involved in the tie and may, at her option, exercise one of the following tie breaking methods unless another alternative is apparent and prudent: (1) Tie Bid (two vendors): The Purchasing and Contracts Administrator, with a witness present, may flip a coin with heads representing Bidder whose tie bid was first received by Carson City. If the toss is heads, the recommendation will be to this Bidder; if tails, the recommendation will be made in favor of the second tied Bidder. (2) Tie Bid (two or more vendors): Should there be two or more low, responsive and responsible tie bids where representatives of Bidders wish to participate in the tie breaking process, the Purchasing and Contracts Administrator shall set a mutually agreed upon time where, in her office, she shall shuffle a new deck of playing cards and have each Bidder's representative cut the cards. The tie Bidder who cuts the highest card (with Ace high) shall be recommended for bid / contract award.

A Purchase Order or Contract mailed or otherwise furnished by Carson City Purchasing and Contracts to Bidder is a binding contract without further action by either party.

Pursuant to Nevada Revised Statute 332.095, no contract awarded may be assigned to

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any other person without the consent of the governing body or its authorized representative. No contract awarded or any portion thereof may be assigned to any person who was declared by the governing body or its authorized representative not to be a responsible person to perform the particular contract.

Bidders will receive written notification of the Bidder(s) who has been recommended to be awarded this **REQUEST FOR BID**.

Pursuant to Nevada Revised Statute 332.065 (3), if after the lowest responsive and responsible bidder has been awarded the contract, during the term of the contract he does not supply goods or services in accordance with the bid specifications, or if he repudiates the contract, the governing body or its authorized representative may reaward the contract to the next lowest responsive and responsible bidder without requiring that new bids be submitted. Reawarding the contract to the next lowest responsive and responsible bidder is not a waiver of any liability of the initial bidder awarded the contract.

APPEAL BY UNSUCCESSFUL BIDDER:

Pursuant to Nevada Revised Statute 332.068, a person who submits a bid on a contract that is required to be advertised pursuant to paragraph (a) subsection 1 of Nevada Revised Statute 332.039 may, after the bids are opened and within the period specified by the governing body or its authorized representative, file with the governing body or its authorized representative a notice of protest regarding the awarding of the contract.

Should an unsuccessful Bidder choose to appeal the recommendation, Bidder shall do so by providing a notice of protest which must include a written statement setting forth with specificity the reasons the person filing the notice believes the applicable provisions of law were violated to the Purchasing and Contracts Administrator, within five (5) working days after the City makes a recommendation to award the contract.

A person filing a notice of protest may be required by the governing body or its authorized representative, at the time the notice of protest is filed, to post a bond with a good and solvent surety authorized to do business in this State or submit other security, in a form approved by the governing body or its authorized representative, to the governing body or its authorized representative who shall hold the bond or other security until a determination is made on the protest. A bond posted or other security submitted with a notice of protest must be in an amount equal to the lesser of: Twenty-Five percent (25%) of the total value of the bid submitted by the person filing the notice of protest; or Two Hundred Fifty Thousand Dollars (\$250,000.00).

A notice of protest filed in accordance with the provisions of this section operates as a stay of action in relation to the awarding of any contract until a determination is made by the governing body or its authorized representative on the protest.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

A person who submits an unsuccessful bid may not seek any type of judicial intervention until the governing body or its authorized representative has made a determination on the protest and awarded the contract.

A governing body or its authorized representative is not liable for any costs, expenses, attorney's fees, loss of income or other damages sustained by a person who submits a bid, whether or not the person files a notice of protest pursuant to this section.

If the protest is upheld, the bond posted or other security submitted with the notice of protest must be returned to the person who posted the bond or submitted the security. If the protest is rejected, a claim may be made against the bond or other security by the governing body or its authorized representative in an amount equal to the expenses incurred by the governing body or its authorized representative because of the unsuccessful protest. Any money remaining after the claim has been satisfied must be returned to the person who posted the bond or submitted the security.

No protest shall be considered unless these procedures have been followed.

TIMELINESS OF BILLING SUBMISSION:

The parties agree that timeliness of billing is of the essence to the bid / contract award and recognize that Carson City is on a fiscal year which is defined as the period beginning July 1 and ending June 30 of the following year. All billings for dates of service prior to July 1 must be submitted to Carson City no later than the first Friday in August of the same year. Any billing submitted after the first Friday in August will subject Bidder to an administrative fee not to exceed \$100.00. The parties hereby agree this is a reasonable estimate of the additional costs to Carson City of processing the billing as a stale claim and that this amount will be deducted from the stale claim payment due to Bidder.

PAYMENT:

Carson City agrees to provide payment to Bidder within thirty (30) calendar days from the date Carson City acknowledges that the delivery and/or performance meets the requirements of this **REQUEST FOR BID** or from the date the correct, complete, and descriptive invoice in the awarded amount is received by the appropriate Carson City department/division accounts payable clerk, whichever is the latter date.

Discount period will be computed from the date Carson City acknowledges that the delivery and/or performance meets the requirements of this **REQUEST FOR BID** or from the date the correct, complete, and descriptive invoice is received by the appropriate Carson City department/division accounts payable clerk, whichever is the latter date. Payment is

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

deemed to be made on the date payment is mailed to Bidder.

PRICE REDUCTIONS:

In the event that during the term of the bid / contract award Bidder shall reduce any or all prices charged to any or all customers other than Carson City for the same product(s) and/or service(s) of the equivalent quantity, quality, delivery, performance and warranty, as said product(s) and/or service(s) specified herein, Bidder shall make an equivalent reduction for Carson City.

LIQUIDATED DAMAGES:

Liquidated damages shall not cover or preclude Carson City from claiming and collecting damages on account of delay, price changes, loss of other contracts, loss of income, and the inability of Carson City to fulfill other damages direct or consequential arising out of the failure of Bidder to perform under the terms, conditions and requirements of this

REQUEST FOR BID.

NOTICE:

All notices or other communications required or permitted to be given under this **REQUEST FOR BID** shall be in writing and shall be deemed to have been duly given if delivered personally in hand, by e-mail with simultaneous regular mail, by telephonic facsimile with simultaneous regular mail, or by certified mail, return receipt requested, postage prepaid on the date posted, and addressed to the other party at the address specified below.

Notice to Bidder shall be addressed to the contact person listed in **BIDDER INFORMATION.**

Notice to Carson City shall be addressed to:

Carson City-Executive Office
Purchasing and Contracts Department
Carol Akers, Purchasing and Contracts Administrator
201 North Carson Street Suite 2
Carson City, NV 89701
775-283-7362 / FAX 887-2286
CAkers@carson.org

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

CONTRACT TERMINATION:

Termination Without Cause:

Any discretionary or vested right of renewal notwithstanding, this **REQUEST FOR BID** may be terminated upon written notice by mutual consent of both parties or unilaterally by either party without cause.

Termination for Nonappropriation:

Nevada Revised Statute 360.800 (1) (a) provides for the termination if the governing body fails to appropriate money for the ensuing fiscal year for payment of the amounts then due. Carson City may terminate this Contract, and Bidder waives any and all claim(s) for damages, effective immediately upon receipt of written notice (or any date specified therein) if for any reason the funding is not appropriated or is withdrawn, limited, or impaired.

Cause Termination for Default or Breach:

A default or breach may be declared with or without termination. This bid / contract award may be terminated by either party upon thirty (30) calendar days written notice of default or breach to the other party as follows: (1) If Bidder fails to provide or satisfactorily perform any of the conditions, work, deliverables, goods, or services called for by this **REQUEST FOR BID** within the time requirements specified in this **REQUEST FOR BID** or within any granted extension of those time requirements; or (2) If any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by Bidder to provide the goods or services required by this **REQUEST FOR BID** is for any reason denied, revoked, debarred, excluded, terminated, suspended, lapsed, or not renewed; or (3) If Bidder becomes insolvent, subject to receivership, or becomes voluntarily or involuntarily subject to the jurisdiction of the bankruptcy court; or (4) If Carson City materially breaches any material duty under this **REQUEST FOR BID** and any such breach impairs Bidder's ability to perform; or (5) If it is found by Carson City that any quid pro quo or gratuities in the form of money, services, entertainment, gifts, or otherwise were offered or given by Bidder, or any agent or representative of Bidder, to any officer or employee of Carson City with a view toward securing a contract or securing favorable treatment with respect to awarding, extending, amending, or making any determination with respect to the performing of such contract; or (6) If it is found by Carson City that Bidder has failed to disclose any material conflict of interest relative to the performance of this **REQUEST FOR BID**.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

Time to Correct:

Termination upon a declared default or breach may be exercised only after service of formal thirty (30) calendar days written notice, and the subsequent failure of the defaulting party within fifteen (15) calendar days of that notice to provide evidence, satisfactory to the aggrieved party, showing that the declared default or breach has been corrected.

Winding Up Affairs Upon Termination:

In the event of termination of this bid / contract award for any reason, the parties agree that the provisions of this paragraph survive termination: (1) the parties shall account for and properly present to each other all claims for fees and expenses and pay those which are undisputed and otherwise not subject to set off under this bid / contract award. Neither party may withhold performance of winding up provisions solely based on nonpayment of fees or expenses accrued up to the time of termination; (2) Bidder shall satisfactorily complete work in progress at the agreed rate (or a pro rata basis if necessary) if so requested by Carson City; (3) Bidder shall execute any documents and take any actions necessary to effectuate an assignment of this bid / contract award if so requested by Carson City; (4) Bidder shall preserve, protect, and promptly deliver into Carson City's possession all proprietary information in accordance with **Carson City Ownership of Proprietary Information**.

REMEDIES:

Except as otherwise provided for by law or this **REQUEST FOR BID**, the rights and remedies of the parties shall not be exclusive and are in addition to any other rights and remedies provided by law or equity, including, without limitation, actual damages, and to a prevailing party reasonable attorneys' fees and costs. The parties agree that, in the event a lawsuit is filed and a party is awarded attorney's fees by the court, for any reason, the amount of recoverable attorney's fees shall not exceed the rate of \$125 per hour. Carson City may set off consideration against any unpaid obligation of Bidder to Carson City.

LIMITED LIABILITY:

Carson City will not waive and intends to assert available Nevada Revised Statutes Chapter 41 liability limitations in all cases. Contract liability of both parties shall not be subject to punitive damages. Liquidated damages shall not apply unless otherwise specified in the incorporated attachments. Damages for any Carson City breach shall never exceed the amount of funds appropriated for payment under this **REQUEST FOR BID**, but not yet paid to Bidder, for the fiscal year budget in existence at the time of the breach.

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Bidder's tort liability shall not be limited.

FORCE MAJEURE:

Neither party shall be deemed to be in violation of this **REQUEST FOR BID** if it is prevented from performing any of its obligations hereunder due to strikes, failure of public transportation, civil or military authority, act of public enemy, accidents, fires, explosions, or acts of God, including, without limitation, earthquakes, floods, winds, or storms. In such an event the intervening cause must not be through the fault of the party asserting such an excuse, and the excused party is obligated to promptly perform in accordance with the terms of the bid / contract award after the intervening cause ceases.

INDEMNIFICATION:

To the extent permitted by law, including, but not limited to, the provisions of Nevada Revised Statutes Chapter 41, each party shall indemnify, hold harmless and defend, not excluding the other's right to participate, the other party from and against all liability, claims, actions, damages, losses, and expenses, including but not limited to reasonable attorney's fees and costs, arising out of any alleged negligent or willful acts or omissions of the indemnifying party, its officers, employees and agents. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of the indemnity which would otherwise exist as to any party or person described in this paragraph.

Except as otherwise provided below, the indemnifying party shall not be obligated to provide a legal defense to the indemnified party, nor reimburse the indemnified party for the same, for any period occurring before the indemnified party provides written notice of the pending claim(s) or cause(s) of action to the indemnifying party, along with: a written request for a legal defense for such pending claim(s) or cause(s) of action; and a detailed explanation of the basis upon which the indemnified party believes that the claim or cause of action asserted against the indemnified party implicates the culpable conduct of the indemnifying party, its officers, employees, and/or agents.

After the indemnifying party has begun to provide a legal defense for the indemnified party, the indemnifying party shall not be obligated to fund or reimburse any fees or costs provided by any additional counsel for the indemnified party, including counsel through which the indemnified party might voluntarily choose to participate in its defense of the same matter.

After the indemnifying party has begun to provide a legal defense for the indemnified party, the indemnifying party shall be obligated to reimburse the reasonable attorney's fees and costs incurred by the indemnified party during the initial thirty (30) day period of the claim or cause of action, if any, incurred by separate counsel.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

INDEPENDENT CONTRACTOR:

An independent contractor is a natural person, firm or corporation who agrees to perform services for a fixed price according to his or its own methods and without subjection to the supervision or control of the other contracting party, except as to the results of the work, and not as to the means by which the services are accomplished.

It is mutually agreed that Bidder is associated with Carson City only for the purposes and to the extent specified in this **REQUEST FOR BID**, and in respect to performance of the contracted services pursuant to this **REQUEST FOR BID**. Bidder is and shall be an independent contractor and, subject only to the terms of this **REQUEST FOR BID**, shall have the sole right to supervise, manage, operate, control, and direct performance of the details incident to its duties under this **REQUEST FOR BID**.

Nothing contained in this **REQUEST FOR BID** shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for Carson City whatsoever with respect to the indebtedness, liabilities, and obligations of Bidder or any other party.

Bidder shall indemnify and hold Carson City harmless from, and defend Carson City against, any and all losses, damages, claims, costs, penalties, liabilities, expenses arising out of or incurred in any way because of, but not limited to, Bidder's obligations or legal duties regarding any taxes, fees, assessments, benefits, entitlements, notice of benefits, employee's eligibility to work, to any third party, subcontractor, employee, state, local or federal governmental entity.

Neither Bidder nor its employees, agents, or representatives shall be considered employees, agents, or representatives of Carson City.

INSURANCE REQUIREMENTS:

Unless expressly waived in writing by Carson City, Bidder, as an independent contractor and not an employee of Carson City, must carry policies of insurance in amounts specified and pay all taxes and fees incident hereunto. Carson City shall have no liability except as specifically provided in the **REQUEST FOR BID**. Bidder shall not commence work before: (1) Bidder has provided the required evidence of insurance to Carson City Purchasing and Contracts, and (2) Carson City has approved the insurance policies provided by Bidder.

Prior approval of the insurance policies by Carson City shall be a condition precedent to any payment of consideration under this **REQUEST FOR BID** and Carson City's

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

approval of any changes to insurance coverage during the course of performance shall constitute an ongoing condition subsequent this **REQUEST FOR BID**. Any failure of the Carson City to timely approve shall not constitute a waiver of the condition.

Insurance Coverage:

Bidder shall, at Bidder's sole expense, procure, maintain and keep in force for the duration of the **REQUEST FOR BID** the following insurance conforming to the minimum requirements specified below. Unless specifically specified herein or otherwise agreed to by Carson City, the required insurance shall be in effect prior to the commencement of work by Bidder and shall continue in force as appropriate until the latter of: (1) Final acceptance by Carson City of the completion of this **REQUEST FOR BID**; or (2) Such time as the insurance is no longer required by Carson City under the terms of this **REQUEST FOR BID**.

Any insurance or self-insurance available to Carson City shall be in excess of and non-contributing with any insurance required from Bidder. Bidder's insurance policies shall apply on a primary basis. Until such time as the insurance is no longer required by Carson City, Bidder shall provide Carson City with renewal or replacement evidence of insurance no less than thirty (30) calendar days before the expiration or replacement of the required insurance. If at any time during the period when insurance is required by the **REQUEST FOR BID**, an insurer or surety shall fail to comply with the requirements of this **REQUEST FOR BID**, as soon as Bidder has knowledge of any such failure, Bidder shall immediately notify Carson City and immediately replace such insurance or bond with an insurer meeting the requirements.

General Requirements:

Certificate Holder: Each liability insurance policy shall list Carson City c/o Carson City Purchasing and Contracts, 201 N. Carson Street Suite 2, Carson City, NV 89701 as a certificate holder.

Additional Insured: By endorsement to the general liability insurance policy evidenced by Bidder, The City and County of Carson City, Nevada, its officers, employees and immune contractors shall be named as additional insureds for all liability arising from the **REQUEST FOR BID**.

Waiver of Subrogation: Each liability insurance policy shall provide for a waiver of subrogation as to additional insureds.

Cross-Liability: All required liability policies shall provide cross-liability coverage as would be achieved under the standard ISO separation of insureds clause.

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Deductibles and Self-Insured Retentions: Insurance maintained by Bidder shall apply on a first dollar basis without application of a deductible or self-insured retention unless otherwise specifically agreed to by Carson City. Such approval shall not relieve Bidder **OR** from the obligation to pay any deductible or self-insured retention. Any deductible or self-insured retention shall not exceed \$5,000 per occurrence, unless otherwise approved by Carson City.

Policy Cancellation: Except for ten (10) calendar days notice for non-payment of premium, each insurance policy shall be endorsed to state that; without thirty (30) calendar days prior written notice to Carson City Purchasing and Contracts, the policy shall not be canceled, non-renewed or coverage and /or limits reduced or materially altered, and shall provide that notices required by this paragraph shall be sent by certified mail to the address shown.

Approved Insurer: Each insurance policy shall be: (1) Issued by insurance companies authorized to do business in the State of Nevada or eligible surplus lines insurers acceptable to the State and having agents in Nevada upon whom service of process may be made, and (2) currently rated by A.M. Best as AA-VII@ or better.

Evidence of Insurance: Prior to commencement of work, Bidder must provide the following documents to Carson City Purchasing and Contracts, 201 North Carson Street Suite 2, Carson City, NV 89701: (1) Certificate of Insurance: The Acord 25 Certificate of Insurance form or a form substantially similar must be submitted to Carson City Purchasing and Contracts to evidence the insurance policies and coverages required of Bidder. (2) Additional Insured Endorsement: An Additional Insured Endorsement (CG20 10 or C20 26), signed by an authorized insurance company representative, must be submitted to Carson City Purchasing and Contracts to evidence the endorsement of Carson City as an additional insured. (3) Schedule of Underlying Insurance Policies: If Umbrella or Excess policy is evidenced to comply with minimum limits, a copy of the Underlyer Schedule from the Umbrella or Excess insurance policy may be required.

Review and Approval: Documents specified above must be submitted for review and approval by Carson City Purchasing and Contracts prior to the commencement of work by Bidder. Neither approval by Carson City nor failure to disapprove the insurance furnished by Bidder shall relieve Bidder of Bidder's full responsibility to provide the insurance required by this **REQUEST FOR BID**. Compliance with the insurance requirements of this **REQUEST FOR BID** shall not limit the liability of Bidder or its sub-contractors, employees or agents to Carson City or others, and shall be in addition to and not in lieu of any other remedy available to Carson City under this **REQUEST FOR BID** or otherwise. Carson City reserves the right to request and review a copy of any required insurance policy or endorsement to assure compliance with these requirements.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

COMMERCIAL GENERAL LIABILITY INSURANCE:

Minimum Limits required:

Two Million Dollars (\$2,000,000.00) - General Aggregate

Two Million Dollars (\$2,000,000.00) - Products & Completed Operations Aggregate

One Million Dollars (\$1,000,000.00) - Each Occurrence

Coverage shall be on an occurrence basis and shall be at least as broad as ISO 1996 form CG 00 01 (or a substitute form providing equivalent coverage); and shall cover liability arising from premises, operations, independent contractors, completed operations, personal injury, products, civil lawsuits, Title VII actions and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

BUSINESS AUTOMOBILE LIABILITY INSURANCE:

Minimum Limit required:

One Million Dollars (\$1,000,000) per occurrence for bodily injury and property damage

Coverage shall be for "any auto", including owned, non-owned and hired vehicles. The policy shall be written on ISO form CA 00 01 or a substitute providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage.

WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE:

Bidder shall provide workers' compensation insurance as required by Nevada Revised Statutes Chapters 616A through 616D inclusive and Employer's Liability insurance with a minimum limit of \$500,000 each employee per accident for bodily injury by accident or disease.

Bidder may, in lieu of furnishing a certificate of an insurer, provide an affidavit indicating that Bidder is a sole proprietor; that Bidder will not use the services of any employees in the performance of this **REQUEST FOR BID**; that Bidder has elected to not be included in the terms, conditions, and provisions of Nevada Revised Statutes Chapters 616A-616D, inclusive; and that Bidder is otherwise in compliance with the terms, conditions, and provisions of Nevada Revised Statutes Chapters 616A-616D, inclusive.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

BUSINESS LICENSE:

If required, Bidder shall not commence work before Bidder has provided a copy of his Carson City business license to Carson City Purchasing and Contracts.

The Carson City business license shall continue in force until the latter of: (1) final acceptance by Carson City of the completion of this **REQUEST FOR BID**; or (2) such time as the Carson City business license is no longer required by Carson City under the terms of this **REQUEST FOR BID**.

COMPLIANCE WITH LEGAL OBLIGATIONS:

Bidder shall procure and maintain for the duration of this **REQUEST FOR BID** any state, county, city, or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by Bidder to provide the goods or services of this **REQUEST FOR BID**. Bidder will be responsible to pay all taxes, assessments, fees, premiums, permits, and licenses required by law. Real property and personal property taxes are the responsibility of Bidder in accordance with Nevada Revised Statutes 361.157 and 361.159. Bidder agrees to be responsible for payment of any such government obligations not paid by its subcontractors during performance of this **REQUEST FOR BID**. Carson City may set-off against consideration due any delinquent government obligation.

WAIVER OF BREACH:

Failure to declare a breach or the actual waiver of any particular breach of the **REQUEST FOR BID** or its material or nonmaterial terms by either party shall not operate as a waiver by such party of any of its rights or remedies as to any other breach.

SEVERABILITY:

If any provision contained in this **REQUEST FOR BID** is held to be unenforceable by a court of law or equity, this **REQUEST FOR BID** shall be construed as if such provision did not exist and the nonenforceability of such provision shall not be held to render any other provision or provisions of this **REQUEST FOR BID** unenforceable.

ASSIGNMENT/DELEGATION:

To the extent that any assignment of any right under this **REQUEST FOR BID** changes

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

the duty of either party, increases the burden or risk involved, impairs the chances of obtaining the performance of this **REQUEST FOR BID**, attempts to operate as a novation, or includes a waiver or abrogation of any defense to payment Carson City, such offending portion of the assignment shall be void, and shall be a breach of this **REQUEST FOR BID**. Bidder shall neither assign, transfer nor delegate any rights, obligations or duties under this **REQUEST FOR BID** without the prior written approval of Carson City.

CARSON CITY OWNERSHIP OF PROPRIETARY INFORMATION:

Any files, reports, histories, studies, tests, manuals, instructions, photographs, negatives, blue prints, plans, maps, data, system designs, computer programs, computer codes, and computer records (which are intended to be consideration under the bid / contract award), or any other documents or drawings, prepared or in the course of preparation by Bidder (or its subcontractors) in performance of its obligations under this **REQUEST FOR BID** shall be the exclusive property of Carson City and all such materials shall be delivered into Carson City possession by Bidder upon completion, termination, or cancellation of this **REQUEST FOR BID**.

Bidder shall not use, willingly allow, or cause to have such materials used for any purpose other than performance of Bidder's obligations under this **REQUEST FOR BID** without the prior written consent of Carson City. Notwithstanding the foregoing, Carson City shall have no proprietary interest in any materials licensed for use by Carson City that are subject to patent, trademark or copyright protection.

Carson City shall be permitted to retain copies, including reproducible copies, of Bidder's drawings, specifications, and other documents for information and reference in connection with this **REQUEST FOR BID**.

Bidder's drawings, specifications and other documents shall not be used by Carson City or others without expressed permission of Bidder.

PUBLIC RECORDS:

Pursuant to Nevada Revised Statute 239.010, information or documents received from Bidder may be open to public inspection and copying. Carson City will have the duty to disclose unless a particular record is made confidential by law or a common law balancing of interests. Bidder may clearly label individual documents as a "trade secret" or "confidential" in accordance with Nevada Revised Statute 332.061, provided that Bidder thereby agrees to indemnify and defend Carson City for honoring such a designation. The failure to so label any document that is released by Carson City shall constitute a complete waiver of any and all claims for damages caused by any release of the records.

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

CONFIDENTIALITY:

Bidder shall keep confidential all information, in whatever form, produced, prepared, observed or received by Bidder to the extent that such information is confidential by law or otherwise required by this **REQUEST FOR BID**.

FEDERAL FUNDING:

In the event federal funds are used for payment of all or part of this **REQUEST FOR BID**: (1) Bidder certifies, by signing this **REQUEST FOR BID**, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency. (2) This certification is made pursuant to the regulations implementing Executive Order 12549, Debarment and Suspension, 28 C.F.R. pt. 67, § 67.510, as published as pt. VII of the May 26, 1988, Federal Register (pp. 19160-19211), and any relevant program-specific regulations. (3) This provision shall be required of every subcontractor receiving any payment in whole or in part from federal funds. (4) Bidder and its subcontractors shall comply with all terms, conditions, and requirements of the Americans with Disabilities Act of 1990 (P.L. 101-136), 42 U.S.C. 12101, as amended, and regulations adopted thereunder contained in 28 C.F.R. 26.101-36.999, inclusive, and any relevant program-specific regulations. (5) Bidder and its subcontractors shall comply with the requirements of the Civil Rights Act of 1964, as amended, the Rehabilitation Act of 1973, P.L. 93-112, as amended, and any relevant program-specific regulations, and shall not discriminate against any employee or offeror for employment because of race, national origin, creed, color, sex, religion, age, disability or handicap condition (including AIDS and AIDS-related conditions.)

LOBBYING:

The parties agree, whether expressly prohibited by federal law, or otherwise, that no funding associated with this **REQUEST FOR BID** will be used for any purpose associated with or related to lobbying or influencing or attempting to lobby or influence for any purpose the following: (1) Any federal, state, county or local agency, legislature, commission, counsel or board; (2) Any federal, state, county or local legislator, commission member, counsel member, board member, or other elected official; or (3) Any officer or employee of any federal, state, county or local agency; legislature, commission, counsel or board.

GENERAL WARRANTY:

Bidder warrants that all services, deliverables, and/or work product under this **REQUEST**

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

FOR BID shall be completed in a workmanlike manner consistent with standards in the trade, profession, or industry; shall conform to or exceed the specifications as set forth in the incorporated attachments; and shall be fit for ordinary use, of good quality, with no material defects.

PROPER AUTHORITY:

The parties hereto represent and warrant that the person executing this **REQUEST FOR BID** on behalf of each party has full power and authority to enter into this Contract. Bidder acknowledges that this bid / contract award is effective only after approval by the Carson City Board of Supervisors and only for the period of time specified in the **REQUEST FOR BID**. Any services performed by Bidder before this bid / contract award is effective or after it ceases to be effective are performed at the sole risk of Bidder.

ARBITRATION:

Any controversy of claims arising out of or relating to this Contract, or the breach thereof, provided both parties agree, may be settled by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association and judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

GOVERNING LAW; JURISDICTION:

This Contract and the rights and obligations of the parties hereto shall be governed by, and construed according to, the laws of the State of Nevada, without giving effect to any principle of conflict-of-law that would require the application of the law of any other jurisdiction. Bidder consents and agrees to the jurisdiction of the courts of the State of Nevada located in Carson City, Nevada for enforcement of this Contract.

ENTIRE CONTRACT AND MODIFICATION:

Once the Carson City Board of Supervisors has awarded this **REQUEST FOR BID** (which includes the **NOTICE TO BIDDERS, SPECIFICATIONS, TERMS AND CONDITIONS, BID RESPONSE,** and all **EXHIBITS**), their award and this **REQUEST FOR BID** constitutes the entire Contract between Carson City and Bidder and is intended as a complete and exclusive statement of the promises, representations, negotiations, and discussions that may have been made.

Unless an integrated attachment to this Contract specifically displays a mutual intent to amend a particular part of this Contract, general conflicts in language between any such

CARSON CITY PURCHASING AND CONTRACTS TERMS AND CONDITIONS

attachment and this Contract shall be construed consistent with the terms of this Contract.

Unless otherwise expressly authorized by the terms of this Contract, no modification or amendment to this Contract shall be binding upon the parties unless the same is in writing and signed by the respective parties hereto and approved by the Carson City Board of Supervisors.

*** * * END OF TERMS & CONDITIONS * * ***



October 1, 2020

Carson City Purchasing & Contracts
RFB #20300164

BID RESPONSE

Greg Higgins
Waterworks Manager

10-1-20

Date

CARSON CITY PURCHASING AND CONTRACTS BID RESPONSE

Bidder's initials & date GA 10-1-20

BIDDER INFORMATION:

Company Name: Western Nevada Supply Company
 Federal ID No.: 88-0093037
 Mailing Address: 950 South Rock Blvd
 City, State, Zip Code: Sparks, NV 89431
 Complete Telephone Number: 775-359-5800
 Complete Fax Number: 775-359-4649

Contact Person/Title: Greg Higgins/Waterworks Manager
 Mailing Address: 950 South Rock Blvd
 City, State, Zip Code: Sparks, NV 89431
 Complete Telephone Number: 775-359-5800
 Complete Fax Number: 775-359-4649
 E-mail Address: ghiggins@gobluesteam.com

Carson City Municipal Code Section 4.04.010 requires that any business operating within Carson City is required to be in possession of a valid Carson City business license. Be advised that upon award of a contract by Carson City, you must either have a current business license or an exemption letter from the Carson City Development Services Department before commencing business. However, possession of said license is not a prerequisite for bidding.

If Bidder **has** a valid Carson City Business License, please provide number:

BL-003845-2020

Bidder **does not have** a valid Carson City Business License. Bidder contacted a representative of the Carson City Development Services Department at 775-887-2105 and has been informed that **Bidder does need** a Carson City Business License for this **REQUEST FOR BID**. Bidder certifies that he will obtain a Carson City Business License if awarded this **REQUEST FOR BID**.

Signature _____ Date _____

Bidder **does not have** a valid Carson City Business License. Bidder certifies that he has spoken to _____ a representative of the Carson City Development Services Department at 775-887-2105 and has been informed that **Bidder does not need** a Carson City Business License for this **REQUEST FOR BID**.

Signature _____ Date _____

CARSON CITY PURCHASING AND CONTRACTS BID RESPONSE

Bidder's initials & date GLL 10-1-20

DISCLOSURE OF PRINCIPALS:

Individual and/or Partnership:

Owner 1) Name: _____
 Address: _____
 City, State, Zip Code: _____
 Complete Telephone Number: _____

Owner 2) Name: _____
 Address: _____
 City, State, Zip Code: _____
 Complete Telephone Number: _____

Other 1) Title: _____
 Name: _____

Other 2) Title: _____
 Name: _____

Corporation:

State in which Company is incorporated: Nevada
 Date Incorporated: February 1964
 Name of Corporation: Western Nevada Supply Company
 Address: 950 South Rock Blvd
 City, State, Zip Code: Sparks, NV 89431
 Complete Telephone Number: 775-359-4649

President's Name: Richard Reviglio

Vice-President's Name: Rosalie Reviglio

Other 1) Name: _____
 Title: _____

Other 2) Name: _____
 Title: _____

CARSON CITY PURCHASING AND CONTRACTS BID RESPONSE

Bidder's initials & date GH/10-1-20

If Bidder responds **NO** to any of the following questions, Bidder must use the **EXCEPTION SUMMARY** document to record any deviations, modifications, and/or alternates proposed to this **REQUEST FOR BID**. Failure to do so may be justification for rejection of the **BID RESPONSE**. Bidder must indicate the title of document from the top of the page, the page number from the bottom of the page, the item number corresponding to the item, and a detailed description of the deviation, modification, and/or alternate. Failure to note deviations, modifications, and/or alternates on the **EXCEPTION SUMMARY** shall be interpreted to convey that Bidder will perform in the manner described and/or specified in this **REQUEST FOR BID**.

Bidder has read the **SPECIFICATIONS** and certifies that the product(s) and/or service(s) proposed meets or exceeds the requirements of this **REQUEST FOR BID**.

Yes No

Bidder has provided "**Exhibit A**" - Technical Specifications and literature illustrating Bidder's proposed product(s).

Yes No

Bidder has provided "**Exhibit B**" - A letter from the manufacturer certifying that Bidder is an authorized representative of the manufacturer for the product(s) being proposed and that any warranty requirements provided for herein will be performed favorably in their behalf.

Yes No

Bidder agrees that all items will be ordered on an as-needed basis.

Yes No

Bidder agrees that no guarantee is given that any specific quantities will be ordered.

Yes No

Bidder agrees that all items bid shall meet the current "Carson City Standard Details for Public Works Construction" in addition to all other standard details listed.

Yes No

Bidder agrees that all items shall conform to the American Water Works Association standards and all applicable ANSI, ASTM, MSS SP 60 standards.

Yes No

Bidder has provided "**Exhibit C**" - A copy of Bidder's warranty, indicating the terms, conditions, and limitations of said warranty.

Yes No

Bidder agrees that the **CONTRACT TERM** shall be from December 1, 2020 through December 31, 2021.

Yes No

CARSON CITY PURCHASING AND CONTRACTS BID RESPONSE

Bidder's initials & date GH 10-1-20

Bidder agrees that Carson City shall have the right to renew this Contract, for five (5) additional years, subject to negotiation.

Yes No

Bidder guarantees the pricing through December 31, 2021.

Yes No

Bidder agrees that product(s) supplied pursuant to the provisions of this **REQUEST FOR BID** shall be subject to escalation and/or de-escalation of prices.

Yes No

Bidder agrees to provide delivery not less than twice each working day Monday through Friday **F.O.B. Carson City Public Works, 3303 Butti Way, Building 13, Carson City, Nevada** C/O Tom Gordon, Warehouse Supply Coordinator within one (1) working day from date order is placed.

Yes No

Bidder agrees that all prices shall be **F.O.B. Carson City**. No additional charges for freight, packaging, handling, insurance, etc., shall be allowed. Bidder shall be responsible for all shipping charges for items returned due to error and/or unacceptable condition.

Yes No

At time of delivery, Bidder agrees to provide a delivery invoice.

Yes No

Within 48 hours of delivery, Bidder agrees to email an invoice to Public Works Fiscal Analyst at cnicholas@carson.org which Carson City will use for the purpose of paying Bidder.

Yes No

Bidder agrees not mail a duplicate invoice unless specifically requested by Carson City.

Yes No

Bidder agrees that should he fail to deliver the product(s) and/or perform the service(s) bid in accordance with this **REQUEST FOR BID**, Carson City may declare Bidder in default of contract and recover all damages, costs and fees (including Attorney's fees) allowable by law.

Yes No

Bidder agrees that in the event of default by Bidder, Carson City may, at its option, pursue one or all of the following alternatives including: procure the product(s) and/or service(s) from another source and hold the defaulting Bidder responsible for an excess cost occasioned thereby, assess a penalty of 5% of the total awarded bid amount, commence with Surety and/or Performance Bond proceedings, debar the defaulting Bidder for not less than one year, or pursue other applicable legal remedies.

Yes No

CARSON CITY PURCHASING AND CONTRACTS BID RESPONSE

Bidder's initials & date CJF 10-1-20

Bidder agrees that if necessity requires the use of materials or supplies not conforming to the **SPECIFICATIONS**, they may be accepted and payment shall be made at a proper adjustment in price.

Yes No

Bidder has read and agrees to abide by the **TERMS AND CONDITIONS** of this **REQUEST FOR BID**.

Yes No

Bidder has provided "**Exhibit D**" - All addenda must be signed and placed in date and time order.

Yes No

Bidder has provided "**Exhibit E**" - **BID RESPONSE** additional space on company letterhead.

Yes No

Bidder has provided "**Exhibit F**"- Supplemental materials.

Yes No

Bidder agrees that all billings for dates of service prior to July 1 must be submitted to Carson City no later than the first Friday in August of the same year; that a billing submitted after the first Friday in August will subject Bidder to an administrative fee not to exceed \$100.00; and that this amount will be deducted from the stale claim payment due to Bidder.

Yes No

Bidder has read and agrees to abide by the **INSURANCE REQUIREMENTS** for Commercial General Liability Insurance, Business Automobile Liability Insurance, and Workers' Compensation and Employer's Liability Insurance for this **REQUEST FOR BID**.

Yes No

Bidder has provided "**Exhibit G**" - **EXCEPTION SUMMARY** additional space on company letterhead.

Yes No

Bidder agrees that should he fail to deliver the product(s) and/or perform the service(s) bid in accordance with this **REQUEST FOR BID**, Carson City may declare Bidder in default of contract and recover all damages, costs and fees (including Attorney's fees) allowable by law.

Yes No

Bidder agrees that in the event of default by Bidder, Carson City may, at its option, pursue one or all of the following alternatives including: procure the product(s) and/or service(s) from another source and hold the defaulting Bidder responsible for an excess cost occasioned thereby, assess a penalty of 5% of the total awarded bid amount, commence with Surety and/or Performance Bond proceedings, debar the defaulting Bidder for not less

CARSON CITY PURCHASING AND CONTRACTS BID RESPONSE

Bidder's initials & date GH-10-1-20

than one year, or pursue other applicable legal remedies. Yes No

Bidder agrees that if necessity requires the use of materials or supplies not conforming to the **SPECIFICATIONS**, they may be accepted and payment shall be made at a proper adjustment in price. Yes No

MASTERCARD ACCEPTANCE. Bidder agrees to accept MasterCard as a form of payment under this Contract at no additional cost to Carson City. Yes No

CASH DISCOUNT of 2 % may be taken in addition to the price(s) stated for the terms of 15 calendar days. Prompt payment discounts will be considered in award recommendation only if discount period is fifteen (15) or more calendar days. Discount period will be computed from the date Carson City acknowledges that the delivery and/or performance meets the requirements of this **REQUEST FOR BID** or from the date the correct invoice is received by the appropriate Carson City department/division accounts payable clerk, whichever is the latter date. Payment is deemed to be made on the date payment is mailed to Bidder.

Bidder agrees that if cash discount is provided that Bidder shall indicate the discount prices on each invoice. Yes No

CARSON CITY PURCHASING AND CONTRACTS BID RESPONSE

Bidder's initials & date GH 10-1-20

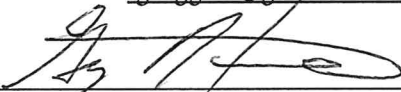
ACKNOWLEDGMENT AND EXECUTION:

STATE OF NEVADA)
) SS
COUNTY OF WASHOE)

I, Greg Higgins (Name of party signing this **BID RESPONSE**), do depose and say: That I am the Bidder or authorized agent of the Bidder; and that I have read and agree to abide by this **REQUEST FOR BID** which includes the following documents: **NOTICE TO BIDDERS**, **SPECIFICATIONS**, **TERMS AND CONDITIONS**, and **BID RESPONSE**.

BIDDER:

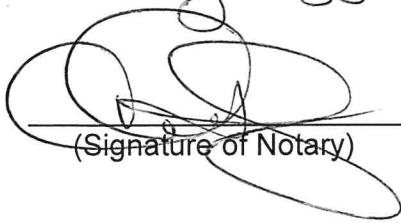
PRINTED NAME OF BIDDER: Greg Higgins
TITLE: Waterworks Manager
FIRM: Western Nevada Supply Company
Address: 950 South Rock Blvd
City: Sparks
State / Zip Code: Nevada, 89431
Telephone Number: 775-359-5800
Fax Number: 775-359-4649
E-mail address: ghiggins@gobluteam.com


(Signature of Bidder)

DATED 10-1-20

Signed and sworn (or affirmed) before me on this 1 day of October, 2020

by Greg Higgins


(Signature of Notary)

(Notary Stamp)



Event Number	20300164 Addendum 1	Organization	Nevada Gov eMarketplace
Event Title	Warehouse Inventory Parts	Workgroup	Carson City, Nevada
Event Description	Carson City Purchasing and Contracts, on be	Event Owner	Carol Akers
Event Type	BID	Email	cakers@carson.org
Issue Date	9/10/2020 07:00:01 AM (PT)	Phone	1 (775) 283-7362
Close Date	10/2/2020 11:00:00 AM (PT)	Fax	1 (775) 887-2286

Responding Supplier	City	State	Response Submitted	Lines Responded	Response Total
Western Nevada Supply	Sparks	NV	10/2/2020 10:37:55 AM (PT)	524	\$131,166.05

Please note: Lines Responded and Response Total only includes responses to specification. No alternate response data is included.

1	Air Release Valve 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$260.00	Crispin	M-8
2	Air Release Valve 3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$260.00	Crispin	M-8
3	Valve-Air Rels FIP x FIP 1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$320.00	APCO	143C.1
4	Valve Air-Vac Rels-Combo 1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$320.00	APCO	143C.1
5	Valve-Air Rels FIP x FIP 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$460.00	APCO	145C.1
6	Valve Air-Vac Rele-Combo 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$460.00	APCO	145C.1
7	Flange-Screwed DI 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$23.00	ANVIL	2CF
8	Flange-Screwed DI 3"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$35.00	ANVIL	3CF
9	Flange-Screwed DI 4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$48.00	ANVIL	4CF
10	Flange-Screwed DI 6"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$75.00	ANVIL	6CF
11	Flange-Screwed DI 8"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$95.00	ANVIL	8CF
12	Flange-Blind DI 3"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$18.50	STAR	3BF
13	Flange-Blind DI 4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		

Western Nevada Supply	1	Ea	\$33.00	STAR	4BF
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14	Flange-Blind DI 6"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$50.00
		STAR	6BF	

15	Flange-Blind DI 8"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$83.00
		STAR	8BF	

16	Flange-Blind DI 10"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$125.50
		STAR	10BF	

17	Flange-Blind DI 12"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$167.50
		STAR	12BF	

18	Flange-Blind DI 16"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$285.00
		STAR	16BF	

19	Clamp-Bell Joint Repair 12"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$445.00
		ROMAC	516-13.60	

20	Clamp-Bell Joint Repair 10"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$407.00
		ROMAC	516-11.40	

21	Clamp-Bell Joint Repair 8"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$356.00
		ROMAC	516-9.30	

22	Clamp-Bell Joint Repair 4"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$206.00
		ROMAC	516-5.00	

23	Clamp-Bell Joint Repair 6"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$243.00
		ROMAC	516-7.10	

24	Valve-Ball FIP x FIP 1/4"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$9.00
		NIBCO	600CSA	

25	Valve-Ball FIP x FIP 3/8"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$9.00
		NIBCO	600CSA	

26	Valve-Ball FIP x FIP 1/2"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$9.00

NIBCO	600CSA
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27	Valve-Ball FIP x FIP 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$13.00

NIBCO	600CSA
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28	Valve-Ball FIP x FIP 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$20.00

NIBCO	600CSA
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29	Valve-Gate FIP X FIP 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$15.50

RED-WHITE	267AB
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30	Valve-Gate FIP x FIP 1 1/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$26.50

RED-WHITE	267AB
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31	Valve-Gate FIP x FIP 1 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$35.00

RED-WHITE	267AB
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32	Valve-Gate FIP X FIP 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$54.50

RED-WHITE	267AB
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33	Valve-Check, FIP x FIP 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$59.00

NIBCO	T413Y-LF
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34	Valve-Check, FIP x FIP 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$68.50

NIBCO	T413Y-LF
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35	Valve-Check FIP X FIP 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$94.00

NIBCO	T413Y-LF
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36	Valve-Check, FIP x FIP 1 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$145.00

NIBCO	T413Y-LF
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37	Valve-Check, FIP x FIP 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$179.50

NIBCO	T413Y-LF
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38	1/4" Brass 45 FIPS x FIPS
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$3.00

MERIT	BRF1445
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39	Elbow-Bend FIP 1/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$2.50

Brand Name	Manufacturing Part #
MERIT	BRF1490

40	Elbow-Bend FIP 3/8"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$2.50

Brand Name	Manufacturing Part #
MERIT	BRF3890

41	Elbow-Bend FIP 1/2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$4.00

Brand Name	Manufacturing Part #
MERIT	BRF1290

42	Elbow-Bend FIP 3/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$5.00

Brand Name	Manufacturing Part #
MERIT	BRF3490

43	Elbow-Bend FIP 1"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$8.00

Brand Name	Manufacturing Part #
MERIT	BRF190

44	Elbow-Bend FIP 1 1/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$13.00

Brand Name	Manufacturing Part #
MERIT	BRF11490

45	Elbow-Bend FIP 1 1/2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$20.00

Brand Name	Manufacturing Part #
MERIT	BRF11290

46	Elbow-Bend FIP 2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$26.00

Brand Name	Manufacturing Part #
MERIT	BRF290

47	Tee-FIP 1/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$3.00

Brand Name	Manufacturing Part #
MERIT	BRF14T

48	Tee-FIP 3/8"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$3.00

Brand Name	Manufacturing Part #
MERIT	BRF38T

49	Tee-FIP 1/2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$4.00

Brand Name	Manufacturing Part #
MERIT	BRF12T

50	Tee-FIP 3/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$7.00

Brand Name	Manufacturing Part #
MERIT	BRF34T

51	Tee-FIP 1"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$10.00

Brand Name	Manufacturing Part #
MERIT	BRF1T

52	Tee-FIP 1 1/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$14.00	MERIT	BRF114T
53	Tee-FIP 1 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$19.00	MERIT	BRF112T
54	Tee-FIP 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$31.00	MERIT	BRF2T
55	Plug-MIP 1/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$2.50	MERIT	BRF14P
56	Plug-MIP 3/8"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$2.50	MERIT	BRF38P
57	Plug-MIP 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$2.50	MERIT	BRF12P
58	Plug-MIP 3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$3.00	MERIT	BRF34P
59	Plug-MIP 1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$3.50	MERIT	BRF1P
60	Plug-MIP 1 1/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$5.50	MERIT	BRF114P
61	Plug-MIP 1 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$7.00	MERIT	BRF112P
62	Plug-MIP 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$11.00	MERIT	BRF2P
63	Cap-FIP 1/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$2.00	MERIT	BRF14CAP
64	Cap-FIP 3/8"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		

Western Nevada Supply	1	Ea	\$2.00	MERIT	BRF38CAP
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65	Cap-FIP 1/2"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$2.50	MERIT	BRF12CAP

66	Cap-FIP 3/4"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$3.00	MERIT	BRF34CAP

67	Cap-FIP 1"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$4.50	MERIT	BRF1CAP

68	Cap-FIP 1 1/4"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$7.00	MERIT	BRF114CAP

69	Cap-FIP 1 1/2"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$9.50	MERIT	BRF112CAP

70	Cap-FIP 2"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$16.00	MERIT	BRF2CAP

71	3/4" Double Vent Cap	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$7.50	BECKETT	34MVC

72	1" Double Vent Cap	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$9.50	BECKETT	1MVC

73	Coupling-FIP 1/4"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$2.50	MERIT	BRF14C

74	Coupling-FIP 3/8"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$2.50	MERIT	BRF38C

75	Coupling-FIP 1/2"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$3.00	MERIT	BRF12C

76	Coupling-FIP 3/4"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$4.00	MERIT	BRF34C

77	Coupling-FIP 1"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$5.50

Brand Name	Manufacturing Part #
MERIT	BRF1C

78	Coupling-FIP 1 1/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$9.00

MERIT	BRF114C
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79	Coupling-FIP 1 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$12.00

MERIT	BRF112C
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80	Coupling-FIP 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$19.50

MERIT	BRF2C
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81	Reducer-Bell, FIP 1/4x3/8"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$2.50

MERIT	BRF3814R
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82	Reducer-Bell, FIP 3/8x1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$3.00

MERIT	BRF1238R
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83	Reducer-Bell, FIP 1/2x3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$4.50

MERIT	BRF3412R
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84	Reducer-Bell, FIP 3/4x1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$7.50

MERIT	BRF134R
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85	Reducer-Bell, FIP 1x1 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$15.00

MERIT	BRF1121R
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86	Reducer-Bell, FIP 3/4 x 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$25.00

MERIT	BRF234R
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87	Reducer-Bell, FIP 1 x 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$25.00

MERIT	BRF21R
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88	Nipple-MIP 1/4 x 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1.00

MERIT	BRN14C
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89	Nipple-MIP 1/4 x 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1.50

MERIT	BRN142
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90	Nipple-MIP 3/8 x 1"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$1.00

Brand Name	Manufacturing Part #
MERIT	BRN38C

91	Nipple-MIP 3/8 x 4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$2.50

Brand Name	Manufacturing Part #
MERIT	BRN384

92	Nipple-MIP 1/2 x 1 1/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$1.50

Brand Name	Manufacturing Part #
MERIT	BRN12112

93	Nipple-MIP 1/2 x 3"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$2.50

Brand Name	Manufacturing Part #
MERIT	BRN123

94	Nipple-MIP 3/4 x 1/2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$1.50

Brand Name	Manufacturing Part #
MERIT	BRN12C

95	Nipple-MIP 3/4 x 6"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$6.00

Brand Name	Manufacturing Part #
MERIT	BRN346

96	Nipple-MIP 1 x CLS			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$3.00

Brand Name	Manufacturing Part #
MERIT	BRN1C

97	Nipple-MIP 1 x 2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$3.50

Brand Name	Manufacturing Part #
MERIT	BRN12

98	Nipple-MIP 1 x 3"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$4.50

Brand Name	Manufacturing Part #
MERIT	BRN13

99	Nipple-MIP 1 1/4 x 3"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$6.50

Brand Name	Manufacturing Part #
MERIT	BRN1143

100	Nipple-MIP 1 1/2 x 3"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$8.00

Brand Name	Manufacturing Part #
MERIT	BRN1123

101	Nipple-MIP 1 1/2 x 6"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$15.00

Brand Name	Manufacturing Part #
MERIT	BRN1126

102	Nipple-MIP 2 x 3"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$10.00

Brand Name	Manufacturing Part #
MERIT	BRN23

103	Nipple-MIP 2"x6"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$19.00	MERIT	BRN26
104	Adaptor-FM Hose x Hose 3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$3.50	PASCO	2142
105	Adaptor-FM Hose x FM Hose SWV 3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$5.00	PASCO	2142
106	Adaptor 1/2" X 3/4 " F hose SWV				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$3.50	PASCO	2144
107	Bushing-FIPxMIP 1/4x3/8"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$2.00	MERIT	BRF3814B
108	Bushing-FIPxMIP 1/4x1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$2.00	MERIT	BRF1214B
109	Bushing-FIPxMIP 3/8x1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$2.00	MERIT	BRF1238B
110	Bushing-FIPxMIP 1/2x3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$2.50	MERIT	BRF3412B
111	Bushing-FIPxMIP 1/2x1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$3.50	MERIT	BRF112B
112	Bushing Brass 3/4 X 1/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$3.00	MERIT	BRF3414B
113	Bushing-FIPxMIP 3/4x1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$4.00	MERIT	BRF134B
114	Bushing-FIPxMIP 3/4x1 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$10.00	MERIT	BRF11234B
115	Bushing-FIPxMIP 3/4x2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		

Western Nevada Supply	1	Ea	\$14.50	MERIT	BRF234B
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116	Bushing-FIPxMIP 1x1 1/2"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$8.00	MERIT
					Manufacturing Part #
					BRF1121B

117	Bushing-FIPxMIP 1x2"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$14.50	MERIT
					Manufacturing Part #
					BRF21B

118	Bushing-FIPxMIP 1 1/2x2				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$12.00	MERIT
					Manufacturing Part #
					BRF2112B

119	Stop-Corp, F x MIP 3/4"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$55.50	FORD-MUELLER
					Manufacturing Part #
					B25028

120	Stop-Corp, F x MIP 3/4x1"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	No Bid	
					Manufacturing Part #

121	Stop-Corp, F x MIP 1"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$73.00	FORD-MUELLER
					Manufacturing Part #
					B25028

122	Stop-Corp, Comp x MIP 1 1/2"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$164.50	FORD-MUELLER
					Manufacturing Part #
					B25028

123	Stop-Corp, F x MIP 2"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$272.00	FORD-MUELLER
					Manufacturing Part #
					B25028

124	Stop-Mtr F x YOKE Angle 3/4"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$108.00	FORD-MUELLER
					Manufacturing Part #
					AV91-323W-NL

125	Stop-Mtr F x YOKE Angle 1"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$114.00	FORD-MUELLER
					Manufacturing Part #
					AV91-444W-NL

126	Stop-Mtr F x YOKE 3/4"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$105.00	FORD-MUELLER
					Manufacturing Part #
					B91-323W

127	Stop-Mtr F x YOKE 1"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$110.00	FORD-MUELLER
					Manufacturing Part #
					B91-344W

128	Tee-Service FxFxF 1x1x1"				
					Brand Name
					Manufacturing Part #

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$75.00

FORD-MUELLER	T444-444
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129	Brass Compression Y 1" X 3/4" X 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$94.00

FORD-MUELLER	H15343
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130	Brass Compression Y 1-1/2" x 1" x 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$113.00

FORD-MUELLER	H15343
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131	Check Valve MIPxFIP STR 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$38.00

FORD-MUELLER	HS81
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132	Check Valve FIPxMTR STR 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$49.00

FORD-MUELLER	HS91
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133	Coupling-3P FxF 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$21.50

FORD-MUELLER	H15403
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134	Coupling-3P FxF 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$23.50

FORD-MUELLER	H15403
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135	Coupling-3P FxF 1 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$82.50

FORD-MUELLER	H15403
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136	Coupling-3P FxF 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$111.00

FORD-MUELLER	H15403
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137	Adaptor-Coupling CTS Comp x MIP 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$17.50

FORD-MUELLER	H15428
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138	Adaptor-Coupling CTS Comp x MIP 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$20.50

FORD-MUELLER	H15428
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139	Adaptor-Coupling CTS Comp x MIP 1 1/2
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$57.00

FORD-MUELLER	H15428
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140	Adaptor-Coupling CTS Comp x MIP 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$83.50

FORD-MUELLER	H15428
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141 Adaptor-Coupling CTS Comp x FIP 3/4"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$19.00

Brand Name Manufacturing Part #

FORD-MUELLER	H15451
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142 Adaptor-Coupling CTS Comp x FIP 1"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$27.00

Brand Name Manufacturing Part #

FORD-MUELLER	H15451
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143 Adaptor-Coupling CTS Comp x FIP 1 1/2"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$73.50

Brand Name Manufacturing Part #

FORD-MUELLER	H15451
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144 Adaptor-Coupling CTS Comp x FIP 2"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$87.50

Brand Name Manufacturing Part #

FORD-MUELLER	H15451
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145 Elbow-Service 90 CTS Comp X MIP 3/4"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$18.50

Brand Name Manufacturing Part #

FORD-MUELLER	H15533
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146 Elbow-Service 90 CTS Comp x MIP 1"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$31.50

Brand Name Manufacturing Part #

FORD-MUELLER	H15533
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147 Elbow-Service 90 CTS Comp x MIP 1 1/2"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$93.50

Brand Name Manufacturing Part #

FORD-MUELLER	H15533
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148 Elbow-Service 90 CTS Comp x MIP 2"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$134.00

Brand Name Manufacturing Part #

FORD-MUELLER	H15533
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149 Elbow- Service 90 CTS Comp x FIP 3/4"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$18.00

Brand Name Manufacturing Part #

FORD-MUELLER	H15533
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150 Elbow- Service 90 CTS Comp x FIP 1"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$41.00

Brand Name Manufacturing Part #

FORD-MUELLER	H15533
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151 Elbow- Service 90 CTS Comp x FIP 1 1/2"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$103.50

Brand Name Manufacturing Part #

FORD-MUELLER	H15533
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152 Elbow- Service 90 CTS Comp x FIP 2"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$119.50

Brand Name Manufacturing Part #

FORD-MUELLER	H15533
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153 Nut-Yoke Lock 1"

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$5.50

Brand Name Manufacturing Part #

FORD-MUELLER	YLN-4
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154	Adaptor-Meter 5/8"x3/4" to 3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$15.00	FORD-MUELLER	A23-NL
155	Adaptor-Meter 5/8"x3/4" to 1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$37.00	FORD-MUELLER	A24-NL
156	Adaptors 1 1/2" MTR in Pairs				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$172.00	FORD-MUELLER	A47-NL
157	Adaptor-1 1/2" x 2" MTR in Pairs				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$265.00	FORD-MUELLER	A67-NL
158	Adaptor-1" x 2" MTR in Pairs				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$225.00	FORD-MUELLER	A46-NL
159	Outlet-Yoke Piece 3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$13.50	FORD-MUELLER	C91-23-NL
160	Outlet-Yoke Piece 1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$22.00	FORD-MUELLER	C91-44
161	Expander for Meter 5/8" x3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$28.50	FORD-MUELLER	EC-23
162	Expander for Meter X1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$43.00	FORD-MUELLER	EC-4
163	Flange-Comp WTR MTR 1 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$52.50	FORD-MUELLER	112MF
164	Flange-Comp WTR MTR 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$68.50	FORD-MUELLER	2MF
165	Adaptor-FIPxPVC compression 1/12"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$118.00	FORD-MUELLER	C17-66-NL
166	Adaptor-FIPxPVC compression 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		

Western Nevada Supply	1	Ea	\$132.00	FORD-MUELLER	C17-77-NL
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167	Adaptor-FIPT x PVC 1 1/2"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1.32

Brand Name	Manufacturing Part #
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SPEARS	PF112FA
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168	Adaptor-FIPT x PVC 2"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1.78

Brand Name	Manufacturing Part #
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SPEARS	PF2FA
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169	Flange-S/O Steel Weld 2"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$11.00

Brand Name	Manufacturing Part #
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ALLIED	2RFSO
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170	Flange-S/O Steel Weld FIT 3"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$14.50

Brand Name	Manufacturing Part #
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ALLIED	3RFSO
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171	Flange-S/O Steel Weld FIT 4"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$18.50

Brand Name	Manufacturing Part #
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ALLIED	4RFSO
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172	Flange-S/O Steel Weld FIT 6"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$30.50

Brand Name	Manufacturing Part #
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ALLIED	6RFSO
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173	Flange-S/O Steel Weld FIT 8"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$46.50

Brand Name	Manufacturing Part #
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ALLIED	8RFSO
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174	Flange-S/O Steel Weld FIT 10"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$80.00

Brand Name	Manufacturing Part #
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ALLIED	10RFSO
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175	Flange-S/O Steel Weld FIT 12"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$118.50

Brand Name	Manufacturing Part #
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ALLIED	12RFSO
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176	Flange-S/O Steel Weld FIT 16"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$191.50

Brand Name	Manufacturing Part #
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ALLIED	16RFSO
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177	Flange-S/O Steel Weld FIT 3"x4"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$92.00

Brand Name	Manufacturing Part #
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ALLIED	43RFSO
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178	CaL-VAL PRV #90-01 IPxIP 2" 90G-01APSKC 300# stainless steel trim
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$2,760.00

Brand Name	Manufacturing Part #
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CLA-VAL/Griswold	90G-01
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179	CaL-VAL PRV #90-01 FFX 2" 90G-01APSKC 150# stainless steel trim
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$3,150.00

CLA-VAL/Griswold	90G-01
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180	CaL-VAL PRV #90-01 FXF 4" 90G-01BPYKC 150# stainless steel trim
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$4,040.00

CLA-VAL/Griswold	90G-01
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181	CaL-VAL PRV #90-01 FXF 6" 90G-01BPYKC 150# stainless steel trim
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$5,950.00

CLA-VAL/Griswold	90G-01
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182	CaL-VAL PRV #90-01 FXF 8" 90G-01BPYKC 150# stainless steel trim
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$9,300.00

CLA-VAL/Griswold	90G-01
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183	Coupling 28.35 x 25.80 24" X 30"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$2,054.00

ROMAC	RC400
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184	Adaptor-CPLG 501 Ductile Iron AB Barrel 10"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$80.00

ROMAC	501CR
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185	Adaptor-CPLG 501 Ductile Iron AB Barrel 12"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$96.00

ROMAC	501CR
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186	Coupling -STR Comp Barrel 10"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$80.00

ROMAC	501CR
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187	Coupling End Ring 501 Black 16"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$92.00

ROMAC	501ER
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188	Coupling End Ring 501 Red 16"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$92.00

ROMAC	501ER
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189	Coupling End Ring 501 Yellow 16"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$92.00

ROMAC	501ER
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190	Coupling-STR COMP Barrel 4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$41.50

ROMAC	501CR
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191	Coupling-STR COM End Ring 4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$15.00

ROMAC	501ER
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192	Coupling gasket 4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$7.00

Brand Name	Manufacturing Part #
ROMAC	501G

193	Coupling-STR COMP Barrel 6"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$47.00

Brand Name	Manufacturing Part #
ROMAC	501CR

194	Coupling-STR COMP End-Ring 6"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$25.50

Brand Name	Manufacturing Part #
ROMAC	501ER

195	CPLG-STR COMP Gasket 6"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$11.00

Brand Name	Manufacturing Part #
ROMAC	501G

196	Coupling Barrel 8"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$59.00

Brand Name	Manufacturing Part #
ROMAC	501CR

197	Coupling-8" Ductile Iron End-Ring			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$35.00

Brand Name	Manufacturing Part #
ROMAC	501ER

198	Coupling Gasket 501 8"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$15.00

Brand Name	Manufacturing Part #
ROMAC	501G

199	Coupling End Ring 501 Black 10"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$37.50

Brand Name	Manufacturing Part #
ROMAC	501ER

200	Coupling End Ring 501 Red 10'			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$37.50

Brand Name	Manufacturing Part #
ROMAC	501ER

201	Coupling End Ring 501 Yellow 10"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$37.50

Brand Name	Manufacturing Part #
ROMAC	501ER

202	Coupling Gasket 501 10"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$28.00

Brand Name	Manufacturing Part #
ROMAC	501G

203	Coupling Gasket 501 16"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$48.00

Brand Name	Manufacturing Part #
ROMAC	501G

204	Coupling Comp Barrel 501 16"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$300.00

Brand Name	Manufacturing Part #
ROMAC	501CR

205	Coupling Adapt 501 FCA 10"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$720.00	ROMAC	501FCA
206	Coupling Adapt FCA 12"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$793.50	ROMAC	501FCA
207	Coupling Gasket FCA 16"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$48.00	ROMAC	501G
208	Coupling ADPT FCA 16" OD 18.0				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$1,785.00	ROMAC	RFC400
209	24" Transition coupling 25.80 X 28.52				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$2,054.00	ROMAC	RC400
210	Coupling Adpt 501 FCA 4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$227.00	ROMAC	501FCA
211	Coupling Adpt FCA 6"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$320.00	ROMAC	501FCA
212	Coupling Adpt FCA 501 8"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$397.50	ROMAC	501FCA
213	Valve-M J Gate 4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$483.00	MUELLER-AVK	A2361
214	Valve-M J Gate 6"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$616.00	MUELLER-AVK	A2361
215	Valve-Flanged Gate 3"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$428.00	MUELLER-AVK	A2361
216	Valve-Flanged Gate 4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$479.00	MUELLER-AVK	A2361
217	Valve-Flanged Gate 6"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		

Western Nevada Supply	1	Ea	\$639.00	MUELLER-AVK	A2361
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218	Valve-Flanged Gate 8"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$999.00

Brand Name	Manufacturing Part #
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MUELLER-AVK	A2361
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219	Valve-Flanged Gate 10"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,586.00

Brand Name	Manufacturing Part #
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MUELLER-AVK	A2361
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220	Valve-Flanged Gate 12"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,915.00

Brand Name	Manufacturing Part #
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MUELLER-AVK	A2361
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221	Butterfly Valve FLG X FLG 16"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$3,563.00

Brand Name	Manufacturing Part #
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MUELLER-PRATT	16FFBFV
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222	Tee-Flanged 4"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$129.00

Brand Name	Manufacturing Part #
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STAR	4FT
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223	Tee-Flanged 6"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$160.00

Brand Name	Manufacturing Part #
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STAR	6FT
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224	Tee-Flanged 8"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$267.00

Brand Name	Manufacturing Part #
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STAR	8FT
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225	Tee-Flange 8"x6"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$231.00

Brand Name	Manufacturing Part #
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STAR	86FT
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226	Tee-Flanged 10"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$406.00

Brand Name	Manufacturing Part #
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STAR	10FT
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227	Elbow- Flanged 90° 4"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$79.00

Brand Name	Manufacturing Part #
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STAR	4F90
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228	Elbow- Flanged 90° 6"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$110.00

Brand Name	Manufacturing Part #
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STAR	6F90
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229	Elbow- Flanged 90° 8"
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$179.00

Brand Name	Manufacturing Part #
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STAR	8F90
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230	6" MJ x MJ 90°
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$63.00

STAR	6MJ90
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231	6" MJ x MJ 45°
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$51.00

STAR	6MJ45
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232	Valve - Flanged Check 3"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$288.00

MATCO	3FFCV
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233	Valve - Flanged Check 4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$401.00

MATCO	4FFCV
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234	Valve - Flanged Check 6"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$851.00

MATCO	6FFCV
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235	Valve - Flanged Check 8"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,424.00

MATCO	8FFCV
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236	Valve - Flanged Check 10"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$2,023.00

MATCO	10FFCV
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237	Valve - Flanged Check 12"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$2,727.00

MATCO	12FFCV
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238	Valve - Flanged Butterfly 14"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,995.00

MUELLER-PRATT	14FFBFV
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239	Valve - Push On 4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$464.00

MUELLER-AVK	A2361
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240	Valve- Push X Flange 4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$455.00

MUELLER-AVK	A2361
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241	Elbow- Push On 90° 4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$66.00

STAR	4PO90
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242	Elbow- Push On 90° 6"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$105.00

STAR	6PO90
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243	Elbow- Push On 90° 8"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$156.00

Brand Name	Manufacturing Part #
STAR	8PO90

244	Elbow- Push On 90° 10"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$210.00

Brand Name	Manufacturing Part #
STAR	10PO90

245	Elbow- Push On 90° 12"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$710.00

Brand Name	Manufacturing Part #
STAR	12PO90

246	Push On x Flange Adpt 4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$63.00

Brand Name	Manufacturing Part #
STAR	4POFA

247	Push On x Flange Adpt 6"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$89.00

Brand Name	Manufacturing Part #
STAR	6POFA

248	Push On x Flange Adpt 8"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$120.00

Brand Name	Manufacturing Part #
STAR	8POFA

249	Flange x Flange Di Adpt 3"x4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$49.00

Brand Name	Manufacturing Part #
STAR	43FR

250	Flange x Flange Di Adpt 4"x6"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$76.00

Brand Name	Manufacturing Part #
STAR	64FR

251	Flange x Flange Di Adpt 6"x8"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$123.00

Brand Name	Manufacturing Part #
STAR	86FR

252	Cap-Push On 4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$33.00

Brand Name	Manufacturing Part #
STAR	4POCAP

253	Cap-Push On 6"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$74.00

Brand Name	Manufacturing Part #
STAR	6POCAP

254	Cap-Push On 8"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$77.00

Brand Name	Manufacturing Part #
STAR	8POCAP

255	Cap-Push On 10"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$98.00

Brand Name	Manufacturing Part #
STAR	10POCAP

256	Cap-Push On 12"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$138.00	STAR	12POCAP
257	Elbow- PO 45° 6"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$89.00	STAR	6PO45
258	Elbow-Push On 45° 8"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$130.00	STAR	8PO45
259	Valve-Gate Push On x Flange 4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$455.00	MUELLER-AVK	A2361
260	Valve-Gate Push On x Flange 6"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$599.00	MUELLER-AVK	A2361
261	Valve-Gate Push On X Flange 8"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$945.00	MUELLER-AVK	A2361
262	Valve-Gate Push On X Flange 12"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$1,799.00	MUELLER-AVK	A2361
263	12" Push On X 12" Push On X 6" Flange Tee				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$304.00	STAR	126POFT
264	8" Push On x 8" Push On X 6" Flange Tee				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$179.00	STAR	86POFT
265	Clamp-DBL Lug 3/4" Tap 4x16"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$354.00	ROMAC	CL2T
266	Clamp-Single Lug Tap IP 6 X 12 X 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$400.00	ROMAC	CL2T
267	Clamp- Double Lug Tap IP 6 "X 12" X 1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$400.00	ROMAC	CL2T
268	Clamp-DBL Lug Tap 6x16"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		

Western Nevada Supply	1	Ea	\$400.00	ROMAC	CL2T
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269	Clamp 12"x16" Single Lug	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$332.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL1	

270	Clamp 12"X 30" Single Lug	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$640.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL1	

271	Clamp-Double LUG 4x10"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$180.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

272	Clamp-Double LUG 6x10"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$192.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

273	Clamp-Double LUG 8x10"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$208.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

274	Clamp-Double LUG 8" X 12"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$228.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

275	Clamp-Double LUG 8x16"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$287.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

276	Clamp-Double LUG 10"X 12"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$332.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

277	Clamp-Double LUG 12x10"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$288.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

278	Clamp-Double LUG 12x20"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$527.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

279	Clamp-Double LUG 12x30"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$794.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

280	Clamp-Double LUG 14x16"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$662.00
		Brand Name	Manufacturing Part #	
		ROMAC	CL2	

281	Double Lug Clamp 12" x 30" long	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$794.00

ROMAC	CL2
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282	Double Lug Clamp 12" x 18" long
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$527.00

ROMAC	CL2
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283	Single Lug Clamp 14" x 20" long
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$799.00

ROMAC	CL1
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284	Clamp-Double LUG 16"x 8" long
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$385.00

ROMAC	CL2
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285	Clamp-Double LUG 16"x 16"long
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$672.00

ROMAC	CL2
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286	Single Lug Clamp 18" x 30" long
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,446.00

ROMAC	CL1
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287	Clamp-Double LUG 24" x 20" long
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,726.00

ROMAC	CL2
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288	Clamp Single Lug 6" X 12" long
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$172.00

ROMAC	CL1
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289	Clamp Single Lug 6" X 16" long
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$266.00

ROMAC	CL1
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290	Yoke-Meter Epoxy Coated 5/8" x 3/4" Y202 wintergreen
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$26.65

FORD-MUELLER	Y202
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291	Yoke-Meter Epoxy Coated 1" Y504
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$32.35

FORD-MUELLER	Y504
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292	Gauge Pressure 0-160 2 1/2" Dial Face
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$30.38

MILJOCO	PLF2598LZ07SS
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293	3/4 FM Hose x Swivel 1/4 FMPT
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$6.50

PASCO	3414H
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294	Gauge-Pressure 0-200 2 1/2" Dial Face			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$30.38

Brand Name	Manufacturing Part #
MILJOCO	PLF2598LZ07SS

295	Gauge-Pressure 0-300 2 1/2" Dial Face			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$30.38

Brand Name	Manufacturing Part #
MILJOCO	PLF2598LZ08SS

296	Gauge - Pressure 0-200 4" Dial Face			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$66.25

Brand Name	Manufacturing Part #
MARSH	X32509P

297	Gauge-Well SNDG 0-390 4 1/2" Dial Face			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$110.40

Brand Name	Manufacturing Part #
WIKA	233.34

298	Gauge Pressure 0-200 4 1/2" Dial Face			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$110.40

Brand Name	Manufacturing Part #
WIKA	233.34

299	Snubber-Pressure 1/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$34.00

Brand Name	Manufacturing Part #
MILJOCO	1250-25-B-2

300	4" Grip Ring Restraint			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$51.00

Brand Name	Manufacturing Part #
ROMAC	4GDI

301	6" Grip Ring Restraint			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$59.00

Brand Name	Manufacturing Part #
ROMAC	6GDI

302	8" Grip Ring Restraint			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$84.00

Brand Name	Manufacturing Part #
ROMAC	8GDI

303	10" Grip Ring Restraint			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$120.00

Brand Name	Manufacturing Part #
ROMAC	10GDI

304	12" Grip Ring Restraint			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$163.00

Brand Name	Manufacturing Part #
ROMAC	12GDI

305	Gasket-Ring Fullface Rubber 2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$7.79

Brand Name	Manufacturing Part #
CIR	98206

306	Gasket-Ring Fullface Rubber 3"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$11.80

Brand Name	Manufacturing Part #
CIR	98206

307	Gasket-Ring Fullface Rubber 4"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$12.00
		US PIPE	4FTG
308	Gasket-Ring Fullface Rubber 6"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$16.00
		US PIPE	6FTG
309	Gasket-Ring Fullface Rubber 8"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$21.00
		US PIPE	8FTG
310	Gasket-Ring Fullface Rubber 10"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$24.00
		US PIPE	10FTG
311	Gasket-Ring Fullface Rubber 12"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$26.00
		US PIPE	12FTG
312	Gasket-Ring Fullface Rubber 24"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$94.00
		US PIPE	24FTG
313	Gasket-Ring Fullface Rubber 14"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$44.00
		US PIPE	14FTG
314	Gasket-Ring Fullface Rubber 16"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$54.00
		US PIPE	16FTG
315	Gasket-Tyton DI/CI Rubber 4"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$6.67
		US PIPE	4TJG
316	Gasket-Tyton DI/CI Rubber 6"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$8.34
		US PIPE	6TJG
317	Gasket-Tyton DI/CI Rubber 8"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$11.67
		US PIPE	8TJG
318	Gasket-Tyton DI/CI Rubber 10"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$16.67
		US PIPE	10TJG
319	Gasket-Tyton DI/CI Rubber 12"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM

Western Nevada Supply	1	Ea	\$18.34	US PIPE	12TJG
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320	Gasket-Tyton DI/CI Rubber 16"	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$40.00
		US PIPE	16TJG

321	Gasket-AC/CI Rubber Trans 4"	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$3.42
		US PIPE	4ACWR

322	Gasket-AC/IPS Rubber Trans 4"	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$22.38
		US PIPE	4TJTG

323	Gasket-AC/CI Rubber Trans 6"	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$17.79
		US PIPE	6ACWR

324	Gasket-ACxIPS Rubber Tran 6"	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$27.73
		US PIPE	6TJTG

325	Gasket-AC/CI Rubber Trans 8"	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$5.88
		US PIPE	8ACWR

326	Gasket-AC/IPS Rubber Trans 8"	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$20.47
		US PIPE	8TJTG

327	Gasket-Tyler Grip Tite Rubber	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$3.25
		TYLER	4GTG

328	Gasket-Tyler Grip Tite Rubber	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$4.55
		TYLER	6GTG

329	Gasket-Tyler Grip Tite Rubber	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$7.15
		TYLER	8GTG

330	Gasket-Tyler Grip Tite Rubber	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$8.45
		TYLER	10GTG

331	Gasket-Tyler Grip Tite Rubber	Brand Name	Manufacturing Part #
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$9.10
		TYLER	12GTG

332	Hydrant-WTRS Brake Flg Rpr	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$150.00

HRP	BRK
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333	Hydrant-WTRS Trfc Rpr Kit
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$150.00

HRP	TRK
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334	Hydrant-WTRS Stpipe Ext 6"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$388.00

HRP	6WEX
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335	Hydrant-WTRS Stpipe Ext 12"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$453.00

HRP	12WEX
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336	Hydrant-WTRS Ext Kit 18"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$601.00

HRP	18WEX
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337	Hyd Muler Ext Kit A301006 6"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$310.78

MUELLER	A320-006
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338	Hyd Muler Ext Kit A301010 12"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$365.98

MUELLER	A320-010
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339	Hyd Muler Ext Kit A320-016 18"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$414.58

MUELLER	A320-016
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340	Hyd Muler Sfty Flg Kit A301
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$148.49

MUELLER	A301
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341	Hydrant Muler SFTY FLG KIT A307
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$214.17

MUELLER	A307
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342	Stem Mueller 1987 & later 27 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$182.02

MUELLER	A11
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343	Stem Mueller MOD Cent Muel
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$154.91

MUELLER	A58
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344	Clamp-Band-Aid Redi Standard 12" x 10" long
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$234.00

SMITH-BLAIR	226-1210
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345	Clamp-Redi Standard 12" x 6" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$227.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-126

346	Clamp-Redi Standard 1/2" IP x 3" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$7.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-123

347	Clamp-Redi Standard 3/4 IP x 3" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$7.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-343

348	Clamp-Redi Standard 1" IP x 3" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$7.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-13

349	Clamp-Redi Standard 1 1/4" IP x 3" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$10.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-1143

350	Clamp-Redi Standard 1 1/2" IP x 3" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$10.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-1123

351	Clamp-Redi Standard 2" IP x 3" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$10.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-23

352	Clamp-Redi Standard 1/2" x 6" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$11.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-126

353	Clamp-Redi Standard 3/4" IP x 6" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$11.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-346

354	Clamp-Redi Standard 1" IP x 6" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$11.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-16

355	Clamp-Redi Standard 1 1/4" IP x 6" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$12.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-1146

356	Clamp-Redi Standard 1 1/2" IP x 6" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$12.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-1126

357	Clamp-Redi Standard 2" IP x 6" long			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$12.00

Brand Name	Manufacturing Part #
SMITH-BLAIR	226-26

358	Clamp-Redi Standard 3" steel x 6" long	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$34.00
		SMITH-BLAIR	245-36
359	Clamp-Redi Standard 4" steel x 6" long	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$40.00
		SMITH-BLAIR	245-46
360	Clamp-Redi Standard 6" steel x 6" long	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$47.00
		SMITH-BLAIR	245-66
361	Clamp-Redi Standard 8" steel x 6" long	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$54.00
		SMITH-BLAIR	245-86
362	B1017 Box H/2O loading 10" X 17"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$98.00
		OLDCASTLE	B1017B
363	B1017 X12 H/2O loading Extension 10" x17"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$40.00
		OLDCASTLE	B1017X
364	B1017 -61JH Steel cover H/2O loading 10" x 17"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$140.00
		OLDCASTLE	B1017SL
365	B24 Concrete Box 20 3/4 x 19 1/4	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$42.00
		OLDCASTLE	B24B
366	B24-61D steel checker plate cover	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$191.00
		OLDCASTLE	B24SL
367	B-1730 H/2O loading Box 17 x 30	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$253.00
		OLDCASTLE	B1730B
368	B-1730 X12 H/2O loading extension 17 x 30	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$110.00
		OLDCASTLE	B1730X
369	B-1730 -51JH H/2O loading steel checker plate cover 17 x 30	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		
			\$334.00
		OLDCASTLE	B1730SL
370	Christy Concrete B-52 Box 30x60	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM

Western Nevada Supply	1	Ea	\$230.00	OLDCASTLE	B52B
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371	B-52 Utility Box 30" x 60"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$230.00	OLDCASTLE	B52B

372	B-52 D 2 piece reinforced concrete lid	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$434.00	OLDCASTLE	B52SL

373	Bottom-Plastic ONLY 5/8 x 1"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$41.00	CARSON	1419B

374	Extension-Plastic 5/8 x 1"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$31.00	CARSON	1419X

375	Lid-Plastic 5/8 x 1"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$16.00	CARSON	1419L

376	B-40 Meter Box	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$140.00	OLDCASTLE	B40B

377	B-40 10" Ext	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$102.00	OLDCASTLE	B40X

378	B-40 Lid 1 pc	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$318.00	OLDCASTLE	B40SL

379	FL-36 Fibrelyte Box 17 x 30	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$122.00	OLDCASTLE	FL36B

380	FL-36 Fibrelyte Extension 8"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$80.00	OLDCASTLE	FL36X

381	FL-36 Fibrelyte Lid 17 x 30	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$118.00	OLDCASTLE	FL36L

382	Christy G3 Traffic Valve Box	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price	Brand Name	Manufacturing Part #
Western Nevada Supply	1	Ea	\$44.00	OLDCASTLE	G3B

383	Box-Brooks Valve Lid 10x12"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	No Bid

384	Christy G5 traffic valve Box	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$35.00

OLDCASTLE	G5B
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385	Christy G5C cast iron Lid for traffic valve box	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$25.00

OLDCASTLE	G5L
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386	Christy G5GR10 Grade Ring 1"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$34.00

OLDCASTLE	G5GR10
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387	Christy G5GR15 Grade Ring 1 1/2"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$45.00

OLDCASTLE	G5GR15
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388	Christy G5GR20 Grade Ring 2"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$52.00

OLDCASTLE	G5GR20
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389	Copper setter with by-pass 2" x 18"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,125.00

FORD-MUELLER	106H-1422
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390	Copper setter with by-pass 1 1/2" x 12"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$850.00

FORD-MUELLER	98H-1422
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391	Mueller A12 Stem O Ring	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$8.00

HRP	A12
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392	Mueller A15 Pump Nozzel Gasket	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$14.00

HRP	A15
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393	Mueller A19 Hose Nozzle Gasket	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$5.00

HRP	A19
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394	Mueller Main Valve brass 5-1/4	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$160.00

HRP	A45
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395	Mueller A15 10.5 OZ OIL	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$16.00

HRP	A51
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396	Mueller Hold Down Inter nut		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$67.00

Brand Name	Manufacturing Part #
HRP	A84

397	Mueller Hold Down Outer O Ring		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$8.00

Brand Name	Manufacturing Part #
HRP	A3

398	Mueller Amti-Fric Wash		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$6.00

Brand Name	Manufacturing Part #
HRP	6208

399	Mueller Oil Fill Plug		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$4.00

Brand Name	Manufacturing Part #
HRP	A7

400	Mueller Bonnet Gasket		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$17.00

Brand Name	Manufacturing Part #
HRP	H59

401	Mueller Top Seat O Ring		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$7.00

Brand Name	Manufacturing Part #
HRP	A39

402	Mueller Bottom Seat O Ring		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$9.00

Brand Name	Manufacturing Part #
HRP	A44

403	Mueller Weather Seal		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$7.00

Brand Name	Manufacturing Part #
HRP	A85

404	Strainer-Y 1/2"		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$56.00

Brand Name	Manufacturing Part #
WILKINS	12YBXLC

405	Strainer-Y 3/4"		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$65.00

Brand Name	Manufacturing Part #
WILKINS	34YBXLC

406	PE-Plastic Pipe CTS 3/4" cost per/ft		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$0.35

Brand Name	Manufacturing Part #
ADS	34CTSR

407	PE-Plastic Pipe CTS 1" cost per/ft		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$0.65

Brand Name	Manufacturing Part #
ADS	1CTSR

408	PE-Plastic Pipe CTS 1 1/2" cost per/ft		
Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1.00

Brand Name	Manufacturing Part #
ADS	112CTSR

409	PE-Plastic Pipe CTS 2" cost per/ft				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$1.61	ADS	2CTSR
410	PVC-Schedule 40 1/2" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$5.00	CRESLINE	PP1240
411	PVC-Schedule 40 3/4" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$6.60	CRESLINE	PP3440
412	PVC-Schedule 40 1" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$10.00	CRESLINE	PP140
413	PVC-Schedule 40 1 1/2" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$15.80	CRESLINE	PP11240
414	PVC-Schedule 40 2" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$21.20	CRESLINE	PP240
415	PVC-C-900 Class 235 4" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$66.00	DPC-VT	4DR18
416	PVC-C-900 Class 235 6" X 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$131.00	DPC-VT	6DR18
417	PVC-C-900 Class 235 8" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$226.80	DPC-VT	8DR18
418	PVC-C-900 Class 235 10" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$340.60	DPC-VT	10DR18
419	PVC-C-900 Class 235 12" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$481.00	DPC-VT	12DR18
420	PVC-C-905 Class 235 16" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$965.40	DPC-VT	16DR18
421	PVC-C-900 Class (305) 8" x 20' long				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		

Western Nevada Supply	1	Ea	\$282.80	DPC-VT	8DR14
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422	PVC-C-900 Class (305) 12" x 20' long	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$608.00
		Brand Name	Manufacturing Part #	
		DPC-VT	12DR14	

423	Ductile-Iron Class 350 6" x 20' long	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$324.00
		Brand Name	Manufacturing Part #	
		US PIPE	6DIP	

424	Ductile-Iron Class 350 8" x 20" long	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$396.00
		Brand Name	Manufacturing Part #	
		US PIPE	8DIP	

425	Ductile-Iron Class 350 10" x 20" long	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$486.00
		Brand Name	Manufacturing Part #	
		US PIPE	10DIP	

426	Ductile-Iron Class 350 12" x 20" long	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$648.00
		Brand Name	Manufacturing Part #	
		US PIPE	12DIP	

427	Ductile-Iron Class 350 24" x 20" long	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$1,652.94
		Brand Name	Manufacturing Part #	
		US PIPE	24DIP	

428	Ductile-Iron Class 350 16" x 20" long	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$1,044.00
		Brand Name	Manufacturing Part #	
		US PIPE	16DIP	

429	Coupling-Insert INS x INS 1/2"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$6.00
		Brand Name	Manufacturing Part #	
		LEGEND	12BIC	

430	Coupling-Insert INS x INS 3/4"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$7.00
		Brand Name	Manufacturing Part #	
		LEGEND	34BIC	

431	Coupling-Insert INS x INS 1"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$8.00
		Brand Name	Manufacturing Part #	
		LEGEND	1BIC	

432	Coupling-Insert INS x INS 1 1/2"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$14.00
		Brand Name	Manufacturing Part #	
		LEGEND	112BIC	

433	Coupling-Insert INS x INS 2"	Brand Name	Manufacturing Part #	
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$16.00
		Brand Name	Manufacturing Part #	
		LEGEND	2BIC	

434	Adptr MIP x INSERT 1/2"	Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$4.00

LEGEND	12BIM
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435	Adpter MIP x INSERT 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$6.00

LEGEND	34BIM
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436	Adpter MIP x INSERT 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$7.00

LEGEND	1BIM
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437	Adpter MIP x INSERT 1 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$11.00

LEGEND	112BIM
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438	Adpter MIP x INSERT 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$16.00

LEGEND	2BIM
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439	Elbow- 90 SxS 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$0.45

SPEARS	PF1290
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440	Elbow- 90 SxS 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$0.50

SPEARS	PF3490
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441	Elbow- 90 SxS 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$0.91

SPEARS	PF190
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442	Elbow- 90 SxS 1 1/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1.60

SPEARS	PF11490
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443	Elbow- 90 SxS 1 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1.73

SPEARS	PF11290
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444	Elbow- 90 SxS 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$2.70

SPEARS	PF290
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445	Coupling-SxS 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$0.29

SPEARS	PF12C
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446	Coupling-SxS 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$0.41

SPEARS	PF34C
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447	Coupling-SxS 1"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$0.71

Brand Name	Manufacturing Part #
SPEARS	PF1C

448	Coupling-SxS 1 1/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$0.99

Brand Name	Manufacturing Part #
SPEARS	PF114C

449	Coupling-SxS 1 1/2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$1.06

Brand Name	Manufacturing Part #
SPEARS	PF112C

450	Coupling-SxS 2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$1.61

Brand Name	Manufacturing Part #
SPEARS	PF2C

451	Tee-SxSxS 1/2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$0.56

Brand Name	Manufacturing Part #
SPEARS	PF12T

452	Tee-SxSxS 3/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$0.65

Brand Name	Manufacturing Part #
SPEARS	PF34T

453	Tee-SxSxS 1"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$1.21

Brand Name	Manufacturing Part #
SPEARS	PF1T

454	Tee-SxSxS 1 1/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$1.88

Brand Name	Manufacturing Part #
SPEARS	PF114T

455	Tee-SxSxS 1 1/2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$2.29

Brand Name	Manufacturing Part #
SPEARS	PF112T

456	Tee-SxSxS 2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$3.33

Brand Name	Manufacturing Part #
SPEARS	PF2T

457	Adaptor-Male S x MIP 1/2"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$0.41

Brand Name	Manufacturing Part #
SPEARS	PF12MA

458	Adaptor-Male S x MIP 3/4"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$0.45

Brand Name	Manufacturing Part #
SPEARS	PF34MA

459	Adaptor-Male S x MIP 1"			
	Supplier	QTY	UOM	Unit Price
	Western Nevada Supply	1	Ea	\$0.81

Brand Name	Manufacturing Part #
SPEARS	PF1MA

460	Adaptor-Male S x MIP 1 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$1.32	SPEARS	PF112MA
461	Adaptor-Male S x MIP 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$1.73	SPEARS	PF2MA
462	Adaptor-Female S x FIP 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$0.50	SPEARS	PF12FA
463	Adaptor-Female S x FIP 3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$0.65	SPEARS	PF34FA
464	Adaptor-Female S x FIP 1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$0.75	SPEARS	PF1FA
465	Adaptor-Female S x FIP 1 1/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$1.15	SPEARS	PF114FA
466	Adaptor-Female S x FIP 1 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$1.32	SPEARS	PF112FA
467	Adaptor-Female S x FIP 2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$1.78	SPEARS	PF2FA
468	Cap-Slip 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$0.41	SPEARS	PF12CAP
469	Cap-Slip 3/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$0.47	SPEARS	PF34CAP
470	Cap-Slip 1"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$0.75	SPEARS	PF1CAP
471	Cap-Slip 1 1/4"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		
	Western Nevada Supply	1	Ea	\$1.06	SPEARS	PF114CAP
472	Cap-Slip 1 1/2"				Brand Name	Manufacturing Part #
	Supplier	QTY	UOM	Unit Price		

Western Nevada Supply	1	Ea	\$1.15	SPEARS	PF112CAP
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473	Cap-Slip 2"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$1.39	SPEARS
					Manufacturing Part #
					PF2CAP

474	Bush SxS 1/2" x 3/4"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$0.47	SPEARS
					Manufacturing Part #
					PF3412B

475	Bush SxS 3/4" x 1"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$0.85	SPEARS
					Manufacturing Part #
					PF134B

476	Bush SxS 1" x 1 1/4"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$1.15	SPEARS
					Manufacturing Part #
					PF1141B

477	Bush SxS 1 1/2" x 1"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$1.22	SPEARS
					Manufacturing Part #
					PF1121B

478	Bush SxS 2" x 1"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$2.02	SPEARS
					Manufacturing Part #
					PF21B

479	Bush SxS 1 1/2" x 2"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$2.02	SPEARS
					Manufacturing Part #
					PF2112B

480	ELL-45 SxS 1/2"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$0.75	SPEARS
					Manufacturing Part #
					PF1245

481	ELL-45 SxS 3/4"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$1.15	SPEARS
					Manufacturing Part #
					PF3445

482	PVC Compression Coupling 3/4"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$1.40	NDS
					Manufacturing Part #
					PF34CC

483	PVC Compression Coupling 1"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$1.81	NDS
					Manufacturing Part #
					PF1CC

484	PVC Compression Coupling 1 1/4"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea	\$2.10	NDS
					Manufacturing Part #
					PF114CC

485	PVC Compression Coupling 1 1/2"				
	Supplier	QTY	UOM	Unit Price	Brand Name
	Western Nevada Supply	1	Ea		NDS
					Manufacturing Part #

Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$2.90

NDS	PF112CC
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486	PVC Compression Coupling 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$4.03

NDS	PF2CC
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487	PVC Compression Coupling 2 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$9.17

NDS	PF212CC
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488	PVC Compression Coupling 4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$19.08

NDS	PF4CC
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489	IPS SLIP FIX 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$2.42

NDS	PF34SF
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490	IPS SLIP FIX 1"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$2.81

NDS	PF1SF
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491	IPS SLIP FIX 1 1/2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$5.50

NDS	PF112SF
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492	IPS SLIP FIX 2"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$8.40

NDS	PF2SF
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493	PVC Ball Check Valve FIP x FIP 3/4"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$32.90

ASAHI	T21 1601
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494	Service Saddle Epxy coated ductile iron 4.50 - 5.40 4"x 1" tap
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$56.00

ROMAC	202NS
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495	Service Saddle-Epxy coated ductile iron 4.50 - 5.40 4"x 2" tap
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$68.00

ROMAC	202NS
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496	Service Saddle-Epxy coated ductile iron 6.63 - 7.50 6"x 1" tap
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$64.00

ROMAC	101N
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497	Service Saddle-Epxy coated ductile iron 6.63 - 7.50 6"x 2" tap
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$74.00

ROMAC	101N
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498	Service Saddle-Epxy coated ductile iron 8.63 - 9.62 8"x 1" tap
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$77.00

Brand Name	Manufacturing Part #
ROMAC	101N

499	Service Saddle-Epxy coated ductile iron 8.63 - 9.62 8"x 2" tap
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$90.00

Brand Name	Manufacturing Part #
ROMAC	101N

500	Service Saddle-Epxy coated ductile iron 11.10 - 12.12 10"x 1" tap
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$84.00

Brand Name	Manufacturing Part #
ROMAC	101N

501	Service Saddle-Epxy coated ductile iron 11.10 - 12.12 10"x 2" tap
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$100.00

Brand Name	Manufacturing Part #
ROMAC	101N

502	Service Saddle-Epxy coated ductile iron 13.20 - 14.38 12"x 1" tap
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$107.00

Brand Name	Manufacturing Part #
ROMAC	101N

503	Service Saddle-Epxy coated ductile iron 13.20 - 14.38 12"x 2" tap
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$118.00

Brand Name	Manufacturing Part #
ROMAC	101N

504	Service Saddle-Epxy coated ductile iron 17.40 - 18.90 16"x 1" tap
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$242.00

Brand Name	Manufacturing Part #
ROMAC	101N

505	Service Saddle-Epxy coated ductile iron 17.40 - 18.90 16"x 2" tap
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$257.00

Brand Name	Manufacturing Part #
ROMAC	101N

506	Stainless Steel Tapping Sleeve with ductile iron flange 6.89-7.30 6"x
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$570.00

Brand Name	Manufacturing Part #
ROMAC	SST

507	Stainless Steel Tapping Sleeve with ductile iron flange 7.10-7.30 6"x
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$757.00

Brand Name	Manufacturing Part #
ROMAC	SST

508	Stainless Steel Tapping Sleeve with ductile iron flange 6.90-7.10 6"x
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$757.00

Brand Name	Manufacturing Part #
ROMAC	SST

509	Stainless Steel Tapping Sleeve with ductile iron flange 8.62-9.06 8"
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$585.00

Brand Name	Manufacturing Part #
ROMAC	SST

510	Stainless Steel Tapping Sleeve with ductile iron flange 8.62-9.06 8"
Supplier	QTY UOM Unit Price
Western Nevada Supply	1 Ea \$600.00

Brand Name	Manufacturing Part #
ROMAC	SST

511	Stainless Steel Tapping Sleeve with ductile iron flange 9.04-9.45 8"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$600.00
		ROMAC	SST
512	Stainless Steel Tapping Sleeve with ductile iron flange 8.62-9.06 8"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$964.00
		ROMAC	SST
513	Stainless Steel Tapping Sleeve with ductile iron flange 9.04-9.45 8"	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$964.00
		ROMAC	SST
514	Stainless Steel Tapping Sleeve with ductile iron flange 10.73-11.13	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$821.00
		ROMAC	SST
515	Stainless Steel Tapping Sleeve with ductile iron flange 11.79-12.19	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$821.00
		ROMAC	SST
516	Stainless Steel Tapping Sleeve with ductile iron flange 10.73-11.13	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$993.00
		ROMAC	SST
517	Stainless Steel Tapping Sleeve with ductile iron flange 11.79-12.19	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$993.00
		ROMAC	SST
518	Stainless Steel Tapping Sleeve with ductile iron flange 12.90-13.30	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$1,785.00
		ROMAC	SST
519	Stainless Steel Tapping Sleeve with ductile iron flange 13.98-14.38	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$821.00
		ROMAC	SST
520	Stainless Steel Tapping Sleeve with ductile iron flange 12.50-12.90	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$998.00
		ROMAC	SST
521	Stainless Steel Tapping Sleeve with ductile iron flange 13.98-14.38	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$998.00
		ROMAC	SST
522	Stainless Steel Tapping Sleeve with ductile iron flange 13.98-14.38	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM
	Western Nevada Supply	1	Ea
	Unit Price		\$1,892.00
		ROMAC	SST
523	Stainless Steel Tapping Sleeve with ductile iron flange 17.40-17.80	Brand Name	Manufacturing Part #
	Supplier	QTY	UOM

Western Nevada Supply	1	Ea	\$1,625.00	ROMAC	SST
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524	Stainless Steel Tapping Sleeve with ductile iron flange 17.15-17.55
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,885.00

ROMAC	SST
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525	Stainless Steel Repair Clamp 13.65-14.65 12" X 18"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,178.00

ROMAC	SS3
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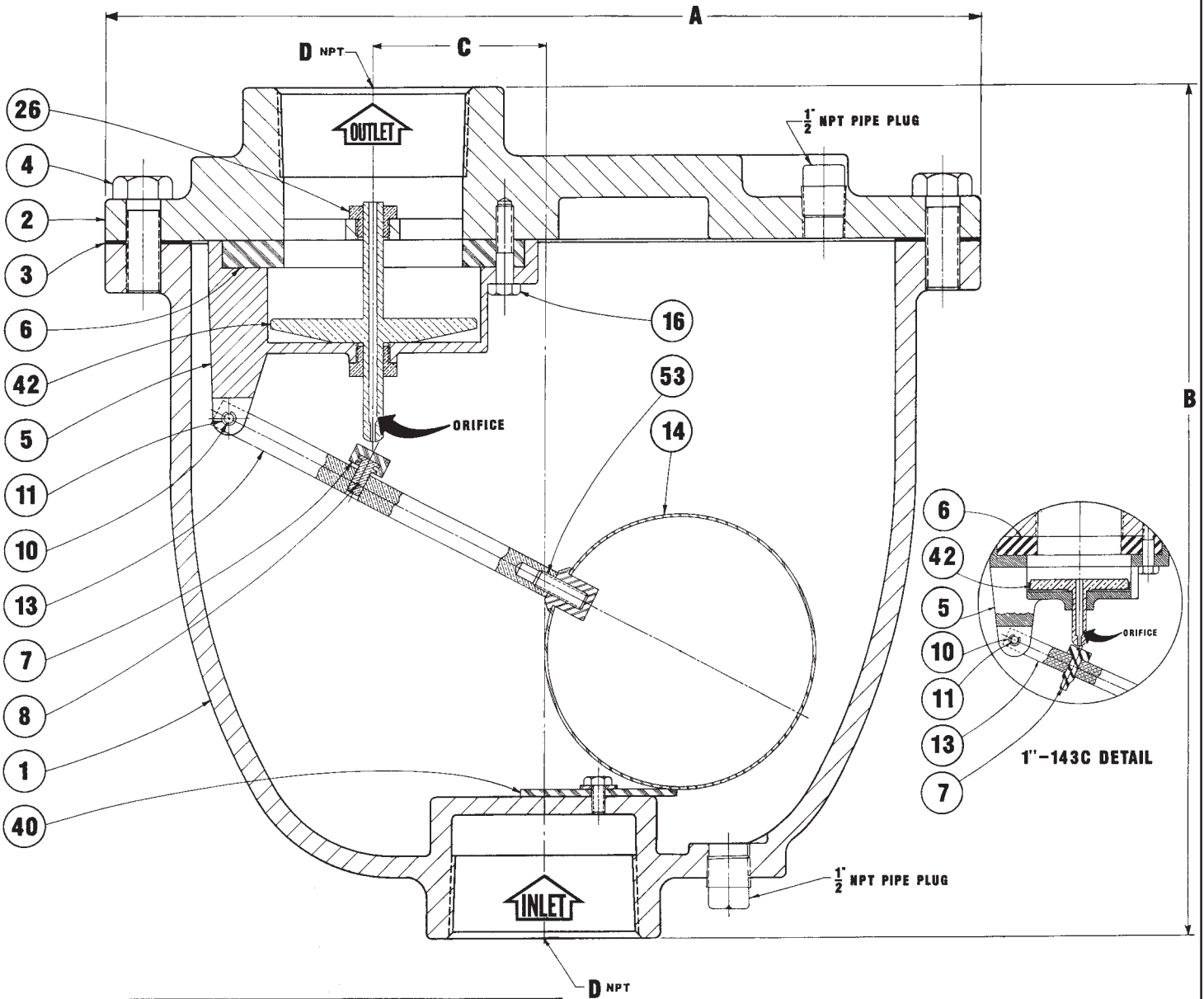
526	Stainless Steel Repair Clamp 13.65-14.65 12" x 30"
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Brand Name	Manufacturing Part #
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Supplier	QTY	UOM	Unit Price
Western Nevada Supply	1	Ea	\$1,707.00

ROMAC	SS3
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COMBINATION AIR VALVE



DET	DESCRIPTION	MATERIAL
1	BODY	CAST IRON ASTM A126 GR. B
2	COVER	CAST IRON ASTM A126 GR. B
3	COVER GASKET	LEXIDE (non-asbestos)
4	COVER BOLTS	STEEL ASTM A307 GR. B
5	LEVERAGE FRAME ¹	CAST IRON ASTM A126 GR. B
6	SEAT	BUNA-N
7	NEEDLE	BUNA-N
8	NEEDLE PIN ²	STAINLESS STEEL ASTM A581 T416 H.T.
10	LEVER PIN	STAINLESS STEEL ASTM A581 T303
11	RETAINING RING	STAINLESS STEEL PH15-7Mo
13	FLOAT LEVER	BRASS ASTM B16
14	FLOAT	STAINLESS STEEL ASTM A240 T304
16	LEVERAGE FRAME SCREW	STAINLESS STEEL 18-8
26	GUIDE BUSHING	BRASS ASTM B16
40	BUMPER ASSEMBLY	BUNA-N
42	PLUG	BRASS ASTM B124
53	FLOAT RETAINING SCREW	STAINLESS STEEL 18-8

¹ STANDARD MATERIAL ON SIZE 1" AND 2" IS DELRIN ASTM D2133 AND GUIDE BUSHING IS NOT REQUIRED ON THE FRAME.
² NEEDLE PIN IS NOT REQUIRED ON SIZES 1" AND 2".

AVAILABLE WITH 125 LB. OR 250 LB. FLANGE INLET
 SPECIFY WORKING PRESSURE _____ PSI
 DESIGN FOR 300 PSI MAX. NON-SHOCK SERVICE

SIZES	MODEL No	A	B	C	D	WIDTH	LARGE ORIFICE	SMALL ORIFICE	APPROX. WT., LB.
1"	143C	11	10	2 1/2	1	7	1	5/64	35
2"	145C	14	12 3/16	3	2	8	2	3/32	75
3"	147C	16	15 7/16	3 1/8	3	10	3	3/32	100
4"	149C	18	17 1/16	3 3/4	4	11	4	3/32	170

CERTIFIED BY: _____

DATE: _____

DATE
09-01-03



DRWG. NO.
S-140C



October 1, 2020

Carson City Purchasing & Contracts
RFB #20300164

Exhibit A

Product Submittal Information attached.



Greg Higgins
Waterworks Manager

10-1-20

Date

APCO[®] SPECIFICATIONS

SERIES 140C COMBINATION AIR VALVES

Combination Air Valve (single body, double orifice) allows large volumes of air to escape out the larger diameter air vacuum orifice when filling a pipeline and closes water tight when the liquid enters the valve. During large orifice closure, the smaller diameter air release orifice will open to allow small pockets of air to escape automatically and independently of the large orifice.

The large air & vacuum orifice shall also allow large volumes of air to enter through the orifice during pipeline drainage to break the vacuum. The body inlet must be baffled to protect the lower float from direct contact of the rushing air and water to prevent premature valve shut-off. The top large orifice plug must be protected in similar manner for the same purpose.

The Buna-N seat must be fastened to the valve cover without distortion, for drop tight shut-off. The float shall be heavy stainless steel, hermetically sealed, designed to withstand a minimum of 1000 psi (static). The top plug shall be center guided thru hex bushings for positive shut-off.

Valve exterior to be painted Universal Primer for high resistance to corrosion.

The cross sectional area of the discharge orifice must be equal to the cross sectional area of the valve inlet size.

All materials of construction shall be certified in writing to conform to A.S.T.M. specifications as follows:

Body & Cover	Cast iron	ASTM A126 Gr.B
Float*	Stainless Steel	ASTM A240 T304
Needle & Seat	Buna-N	
Plug	Brass	ASTM B124
Leverage Frame [1" & 2"]	Delrin	ASTM D4181
[3" & 4"]	Cast iron	ASTM A126 Gr. B

* **Float design may vary on certain sizes**

Note: Other materials available.

Valve to be APCO Series 140C Combination Air Valve, as manufactured by Valve & Primer Corporation, Schaumburg, Illinois, U.S.A.

Submittal Sheet for Crispin AR Series

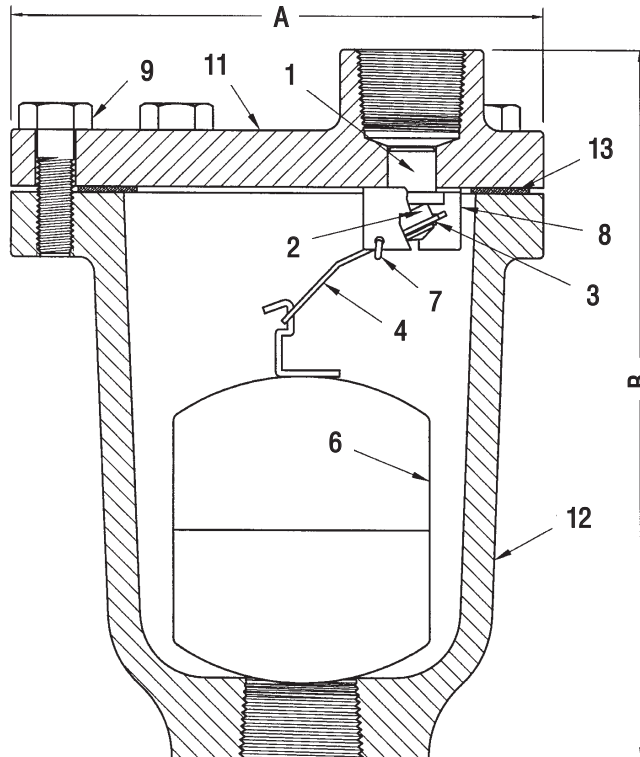


SUBMITTAL SHEET FOR AR SERIES

1/2"–1" Pressure Air Release (AR)

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001



Parts List

ITEM	DESCRIPTION	MATERIAL	ASTM
1	SEAT	STAINLESS STEEL	A240
2	VALVE BUTTON	BUNA-N RUBBER	D2000
3	BUTTON CLIP	STAINLESS STEEL	A240
4	VALVE LEVER	STAINLESS STEEL	A240
6	FLOAT	STAINLESS STEEL	A240
7	PIN	STAINLESS STEEL	A193
8	HINGE BUTT	STAINLESS STEEL	A240
9	BOLT	STEEL	A307
11	FLANGE	CAST IRON	A126 CL.B
12	BODY	CAST IRON	A126 CL.B
13	GASKET	ARMSTRONG N-8092	N/A

Specifications

The valve(s) shall be installed at high points in the line to vent the accumulation of air and other gases with the line under pressure.

The valve(s) shall have a 5/64" orifice with valve sealing faces of stainless steel and Buna-N rubber. Valves which use a needle valve to seal the orifice shall not be acceptable.

The valve(s) shall be Crispin-Multiplex Model _____ Pressure Air Release Valve(s) as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, PA.

Valve construction shall be _____" NPT screwed, cast iron body and top flange with stainless steel float and trim.

Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	WEIGHT
AR5	1/2" NPT	1/2" NPT	4.25	5.50	5
AR8	3/4" NPT	1/2" NPT	4.25	5.50	5
AR10	1" NPT	1/2" NPT	4.25	5.50	5

Orifice

DIAMETER	MAX. PRESSURE	DISCHARGE RATE
5/64	150 PSIG	9.6 SCFM
5/64	300 PSIG	18.4 SCFM

	Dimensions	Material	Galvanizing	Thread	Pressure Rating	Federal/Other
M.I. Fittings						
Class 150/PN 20	ASME B16.3•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.3•	ASME B16.3***
Class 300/PN 50	ASME B16.3•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.3•	
M.I. Unions						
Class 150/PN 20	ASME B16.39•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.39•	ASME B16.39***
Class 250	ASME B16.39•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.39•	
Class 300/PN 50	ASME B16.39•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.39•	
Cast Iron Threaded Fittings						
Class 125	ASME B16.4•	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1+	ASME B16.4•	ASME B16.4■
Class 250	ASME B16.4•	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1+	ASME B16.4•	ASME B16.4■
C. 1. Plugs and Bushings						
	ASME B16.14•	ASTM A- 126 (A)	ASTM A-153	ASME B1.20.1+	ASME B16.4•	WW-P-471
C. 1. Drainage Threaded Fittings						
	ASME B16.12•	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1+	ASME B16.12•	
C. 1. Flanges and Flanged Fittings						
Class 125 (1"-12")	ASME B16.1•	ASTM A- 126 (A) or (B)	ASTM A-153	ASME B1.20.1+	ASME B16.10	ASME B16.1•
Class 125 (14"-up)	ASME B16.1•	ASTM A-126 (B)	ASTM A-153	ASME B1.20.1+	ASME B16.10	ASME B16.1•
Class 250 (11"-12")	ASME B16.1•	ASTM A- 126 (A) or (B)	ASTM A-153	ASME B1.20.1+	ASME B16.10	ASME B16.1•
Class 250 (14"-up)	ASME B16.1•	ASTM A-126 (B)	ASTM A-153	ASME B1.20.1+	ASME B16.10	ASME B16.1•
Forged Steel Threaded Fittings						
Class 2000, 3000, 6000	ASME B16.11•	ASTM A105, ASTM A182, ASTM A350		ASME B1.20.1+	ASME B16.11•	
Pipe Nipples						
Steel Pipe - Welded	ASTM A733	ASTM A53 Type F or Type E		ASME B1.20.1+		WWN 351
Steel Pipe - Seamless (High Temp.)	ASTM A733	ASTM A106 Gr. B		ASME B1.20.1+		WWN 351
Brass		ASTM B43				WWN 351
<p>*The Standard •an American National Standard (ANSI) +ASME B1.20.1 was ANSI B2.1 ■Formerly WW-P-501 **Formerly WW-P-521 ***Formerly WW-U-531</p>						



Ductile Iron MJ Compact Fittings

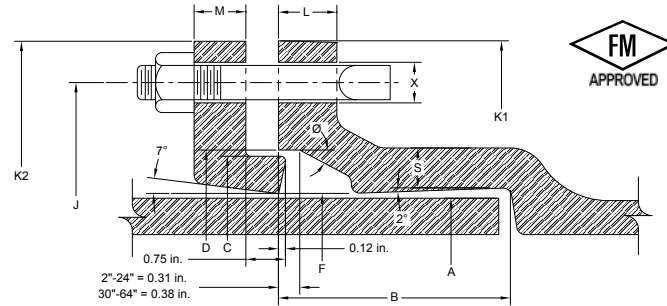
ANSI/AWWA C153/A21.53

GENERAL SPECIFICATIONS

- MATERIAL: Ductile Iron per ASTM A536
PRESSURE: 350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" sizes and 150 PSI rating for 54" - 64" sizes
TESTING: In accordance with ANSI/AWWA C153/A21.53, ANSI/AWWA C111/A21.11, UL and FM requirements
LAYING LENGTH: In accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
DEFLECTION: 2"-4"=8° | 6"=7° | 8"-12"=5° | 14"-16"=3 1/2° | 18"-24"=3° | 30"-64"=2°
WEIGHTS: Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
FLANGES: Flanged ends on fittings match ANSI/AWWA C115/A21.15 and ANSI B16.1 class 125 flanges
CEMENT LINING: In accordance with ANSI/AWWA C104/A21.4 -- size 2" - 3" single thickness and sizes 4" - 64" double thickness
COATING: Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C153/A21.53
GASKETS: SBR in accordance with ANSI/AWWA C111/A21.11
T-BOLTS/NUTS: Low alloy steel in accordance with ANSI/AWWA C111/A21.11
APPROVALS: 3" - 12" UL/ULC Listed | 2" and greater are UL/ANSI/NSF Standards 61 and 372 | 3" - 16" FM APPROVED. Please consult factory for detail listing and approvals.
DIMENSIONS: All dimensions are in inches unless noted otherwise.
INSTALLATION: Per ANSI/AWWA C600 and C111 using DIP conforming to C150/C151 and PVC pipe conforming to C900/C905



SUBMITTAL INFORMATION
PROJECT NAME:
ENGINEER:
CONTRACTOR:
SPEC. SECTION:



MECHANICALJOINT DIMENSIONS

Table with 15 columns: NOM. SIZE, A DIA., B, C DIA., D DIA., F DIA., J DIA., K1 DIA., K2 DIA., L, M, S, Ø, X DIA., and BOLTS (SIZE, NO.). Rows range from size 2 to 64.

SIZE RANGE (Please specify):
Size Range _____

LINING OPTIONS (Please check one):
Standard: Cement-lined and asphalt seal coat per ANSI/AWWA C104/A21.4 and UL/NSF-61
Optional: FBE (Fusion Bonded Epoxy) per ANSI/AWWA C116/A21.15 and UL/NSF-61 - ID & OD Only
Optional: P401 (Protecto 401) Ceramic Epoxy - sewer applications only. Not NSF-61
Optional: Other (specify) _____

COATING OPTIONS (Please check one):
Standard: Asphaltic seal coat per ANSI/AWWA C104/A21.4
Optional: FBE (Fusion Bonded Epoxy) per ANSI/AWWA C116/A21.15 and UL/NSF-61 - ID & OD Only
Optional: Other (specify) _____



REV1701
* REGISTERED TRADEMARK OF STAR PIPE PRODUCTS

STAR PIPE PRODUCTS
HOUSTON CORPORATE TOLL FREE 1-800-999-3009 FAX 281-558-9000
www.starpipeproducts.com



Ductile Iron Flanged Fittings

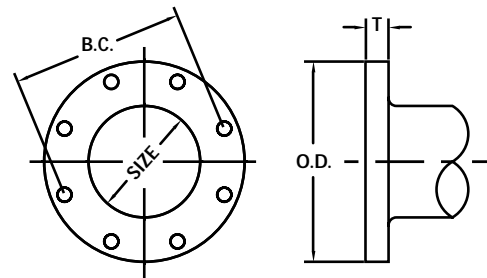
ANSI/AWWA C110/A21.10

GENERAL SPECIFICATIONS

- MATERIAL:** Ductile iron per ASTM A536
- PRESSURE:** 250 PSI rating for 1" - 48" sizes and 150 PSI rating for 54" - 64"
- TESTING:** In accordance with ANSI/AWWA C110/A21.10, UL and FM requirements
- LAYING LENGTH:** 2" - 48" sizes in accordance with ANSI/AWWA C110/A21.10 and ANSI B16.1 and 54" - 64" sizes in accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
- WEIGHTS:** Are in pounds, unless noted otherwise and do not include accessories, cement lining and coatings
- DRILLING:** In accordance with ANSI/AWWA C110/A21.10, ANSI/AWWA C153/A21.53 and ANSI B16.1 Class 125 Flanges
- CEMENT LINING:** In accordance with ANSI/AWWA C104/A21.4 -- sizes 1" - 3" single thickness and sizes 4" - 64" double thickness
- COATING:** Asphaltic seal coat inside in accordance with ANSI/AWWA C104/A21.4 and prime coat outside
- APPROVALS:** 2" - 12" Underwriters Laboratories and ULC Listed and Factory Mutual approved for 300 PSI rating. Please consult factory for detail listing and approvals. 2" and greater are UL/NSF-61.
- DIMENSIONS:** All dimensions are in inches unless noted otherwise.
- INSTALLATION:** Per ANSI/AWWA C110 and C111



SUBMITTAL INFORMATION	
PROJECT NAME:	<input type="text"/>
ENGINEER:	<input type="text"/>
CONTRACTOR:	<input type="text"/>
SPEC. SECTION:	<input type="text"/>



NOM. SIZE	O.D.	B.C.	T	BOLT HOLE DIA.	BOLTS	
					SIZE	NO.
1	4.25	3.12	0.44	0.62	1/2 x 2	4
1 1/2	5.00	3.88	0.56	0.62	1/2 x 2	4
2	6.00	4.75	0.62	0.75	5/8 x 2 1/4	4
2 1/2	7.00	5.50	0.69	0.75	5/8 x 2 1/2	4
3	7.50	6.00	0.75	0.75	5/8 x 2 1/2	4
4	9.00	7.50	0.94	0.75	5/8 x 3	8
5	10.00	8.50	0.94	0.88	3/4 x 3	8
6	11.00	9.50	1.00	0.88	3/4 x 3 1/2	8
8	13.50	11.75	1.12	0.88	3/4 x 3 1/2	8
10	16.00	14.25	1.19	1.00	7/8 x 4	12
12	19.00	17.00	1.25	1.00	7/8 x 4	12
14	21.00	18.75	1.38	1.13	1 x 4 1/2	12
16	23.50	21.25	1.44	1.13	1 x 4 1/2	16
18	25.00	22.75	1.56	1.25	1 1/8 x 5	16
20	27.50	25.00	1.69	1.25	1 1/8 x 5	20
24	32.00	29.50	1.88	1.38	1 1/4 x 5 1/2	20
30	38.75	36.00	2.12	1.38	1 1/4 x 6 1/2	28
36	46.00	42.75	2.38	1.63	1 1/2 x 7	32
42	53.00	49.50	2.62	1.63	1 1/2 x 7 1/2	36
48	59.50	56.00	2.75	1.63	1 1/2 x 8	44
54	66.25	62.75	3.00	2.00	1 3/4 x 8 1/2	44
60	73.00	69.25	3.12	2.00	1 3/4 x 9	52
64	80.00	76.00	3.38	2.00	1 3/4 x 9	52

SIZE RANGE (Please specify):

Size Range _____

LINING OPTIONS (Please check one):

- Standard: Cement-lined and asphalt seal coat per ANSI/AWWA C104/A21.4 and UL/NSF-61
- Optional: FBE (Fusion Bonded Epoxy) per ANSI/AWWA C116/A21.15 and UL/NSF-61 - ID & OD Only
- Optional: P401 (Protecto 401) Ceramic Epoxy - sewer applications only. Not NSF-61
- Optional: Other (specify) _____

COATING OPTIONS (Please check one):

- Standard: Red Prime Coat
- Optional: Asphaltic seal coat per ANSI/AWWA C104/A21.4
- Optional: FBE (Fusion Bonded Epoxy) per ANSI/AWWA C116/A21.15 and UL/NSF-61 - ID & OD Only
- Optional: Other (specify) _____



Lead-Free* Bronze Ball Valves

Features: Silicon Performance Bronze® Alloy • Two-Piece Body • Full Port • Blowout-Proof Stem



NSF/ANSI 61
NSF/ANSI 372

Approvals: MSS SP-110 • NSF/ANSI-61-8 Commercial Hot 180°F (includes annex F and G) and NSF/ANSI-372

Size range: 1/4" - 2"

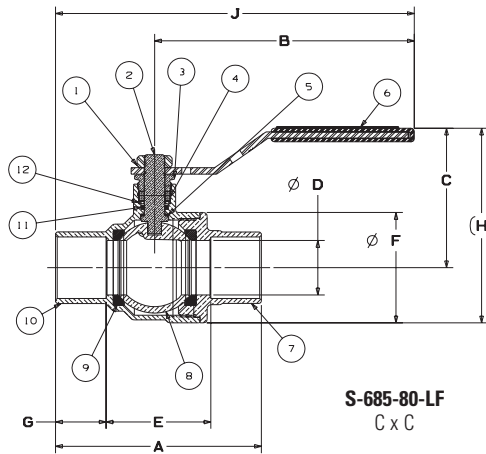
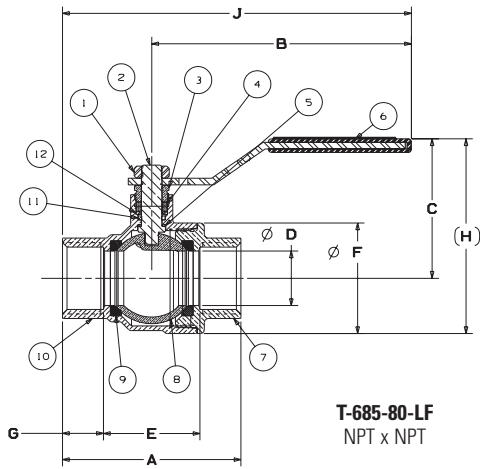
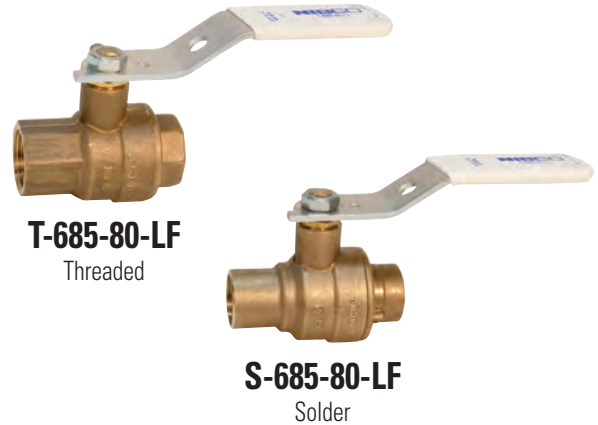
Pressure rating: 600 PSI non-shock cold working pressure

Maximum pressure / temperature: 100 PSI at 300° F

Lead-free* markings: Double oval in body casting, white handle and blue hang tag

MATERIAL LIST

PART	SPECIFICATION
1. Handle	Steel, Plated
2. Nut, Handle	Steel, Plated
3. Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing, Stem	Virgin PTFE
5. Washer, Flat	430 Stainless
6. O-Ring (Stem Seal)	EPDM
7. Washer, Thrust	Reinforced PTFE
8. Stem	Silicon Bronze ASTM B371 Alloy C69300
9. Body	Silicon Bronze ASTM B283 Alloy C69300
10. Seat Ring	Virgin PTFE
11. Ball	Silicon Bronze ASTM B283 Alloy C69300
12. End Piece	Silicon Bronze ASTM B283 Alloy C69300



DIMENSIONS—WEIGHTS—QUANTITIES

SIZE	A	B	C	D	E	F	G	J	T-685-80-LF	S-685-80-LF	Master	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.	Lbs. Kg.	Ctn Qty.	
1/4	8 1.98	50 3.95	100 1.95	50 0.31	8 1.09	28 1.24	31 0.42	11 4.93	125 0.52	0.24	— —	24
3/8	10 1.98	50 3.95	100 2.01	51 0.50	13 1.09	28 1.24	31 0.40	10 4.93	125 0.49	0.22	0.46 0.21	24
1/2	15 2.22	56 3.95	100 2.01	51 0.50	13 1.00	25 1.24	31 0.61	15 5.06	129 0.47	0.21	0.46 0.21	80
3/4	20 2.66	68 4.76	121 2.30	58 0.75	19 1.42	36 1.64	42 0.63	16 6.09	155 0.70	0.32	0.69 0.31	60
1	25 3.27	83 4.76	121 2.56	65 1.00	25 1.77	45 2.03	52 0.75	19 6.4	163 1.10	0.50	1.12 0.51	40
1-1/4	32 3.56	90 6.75	171 3.07	78 1.25	32 2.01	51 2.38	60 0.76	19 8.51	216 1.69	0.77	1.66 0.75	4
1-1/2	40 3.98	101 6.75	171 3.31	84 1.50	38 2.44	62 2.89	73 0.77	20 8.73	222 2.58	1.17	2.71 1.23	2
2	50 4.52	115 6.75	171 3.56	90 2.00	51 2.94	75 3.6	91 0.79	20 9.01	229 4.37	1.98	4.62 2.1	8

WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

*Weighted average lead content ≤ 0.25%

Class 125 Bronze Check Valves

Horizontal Swing • Regrinding Type • Y-Pattern
• Renewable Seat and Disc

125 PSI/8.6 Bar Saturated Steam to 353° F/178° C
200 PSI/13.8 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-80

MATERIAL LIST

PART	SPECIFICATION
1. Bonnet	Bronze ASTM B 62
2. Body	Bronze ASTM B 62
3. Hinge Pin	Bronze ASTM B 140 Alloy C31400 or B 134 Alloy C23000
4. Disc Hanger	Bronze ASTM B 62 or 304 Stainless Steel ¼" thru ¾" sizes
5. Hanger Nut	Bronze ASTM B 16
6. Disc Holder	Bronze ASTM B 62
7. Seat Disc	Water, Oil or Gas (Buna-N) (W) Steam (PTFE) (Y) Bronze ASTM (B) FKM (V) B 62 C83600
8. Seat Disc Nut	Bronze ASTM B 16 or B 62
9. Hinge Pin Plug	Bronze ASTM B 140 Alloy C31400 (not shown)
10. Seat Disc Washer*	ASTM B 98 Alloy C65500 or ASTM B 103

* Sizes ¾", 1", 1¼", 1½" and 2" only.

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						T-413		S-413		Master Ctn. Qty.
	A	B	C	T-413	S-413	Lbs.	Kg.	Lbs.	Kg.		
In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.		
¼ 8	2.13 54	1.63 41	1.38 35	0.50 0.23	0.23 0.51	0.23 0.51	0.23 0.51	0.23 0.51	0.23 0.51	50	
⅜ 10	2.13 54	1.63 41	1.31 33	0.47 0.22	0.22 0.48	0.22 0.48	0.22 0.48	0.22 0.48	0.22 0.48	50	
½ 15	2.44 62	1.69 43	1.50 38	0.55 0.25	0.25 0.55	0.25 0.55	0.25 0.55	0.25 0.55	0.25 0.55	50	
¾ 20	2.94 75	1.88 48	1.88 48	0.90 0.41	0.41 0.88	0.40 0.88	0.40 0.88	0.40 0.88	0.40 0.88	50	
1 25	3.56 90	2.31 59	2.25 57	1.46 0.66	0.66 1.48	0.67 1.48	0.67 1.48	0.67 1.48	0.67 1.48	30	
1¼ 32	4.19 106	2.69 68	2.75 70	2.17 0.99	0.99 2.22	1.01 2.22	1.01 2.22	1.01 2.22	1.01 2.22	20	
1½ 40	4.50 114	2.94 75	1.13 79	2.95 1.34	1.34 3.00	1.36 3.00	1.36 3.00	1.36 3.00	1.36 3.00	10	
2 50	5.25 133	3.94 100	3.75 95	4.79 2.17	2.17 4.87	2.21 4.87	2.21 4.87	2.21 4.87	2.21 4.87	10	
2½* 65	8.00 203	5.06 129	5.06 129	11.48 5.21	5.21 10.48	4.76 10.48	4.76 10.48	4.76 10.48	4.76 10.48	5	
3* 80	9.25 235	6.25 159	6.25 159	17.53 7.96	7.96 15.29	6.94 15.29	6.94 15.29	6.94 15.29	6.94 15.29	4	

Ordering: T-413 and S-413 normally furnished with Bronze Disc (T-413-B) or (S-413-B).
Both available with PTFE Steam Disc (T-413-Y), (S-413-Y), or CWP Disc (T-413-W), (S-413-W) or 300° F 67 PSI steam FKM Disc (T-413-V).

* Class 150 (433) furnished for these sizes.

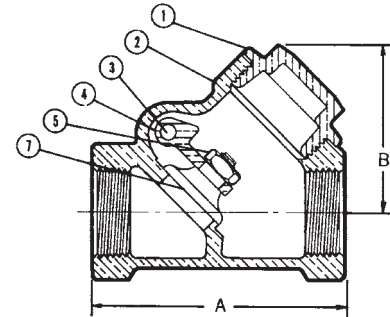
For detailed Operating Pressure, refer to Pressure Temperature Chart on page 113.



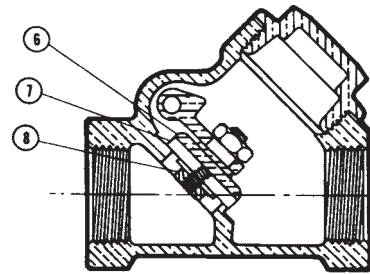
T-413
Threaded



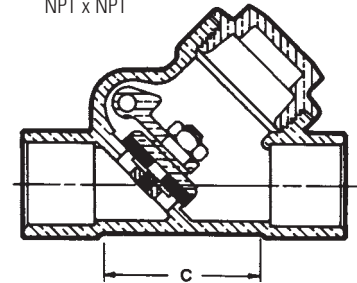
S-413
Solder



T-413-B
NPT x NPT



T-413-Y
NPT x NPT



S-413-W
C x C

NIBCO® Check Valves may be installed in both horizontal and vertical lines with upward flow or in any intermediate position. They will operate satisfactorily in a declining plane (no more than 15°).

Warning – Do Not Use For Reciprocating Air Compressor Service.



Figure # 267
Brass Gate Valve (1/2"-4")

Product Features

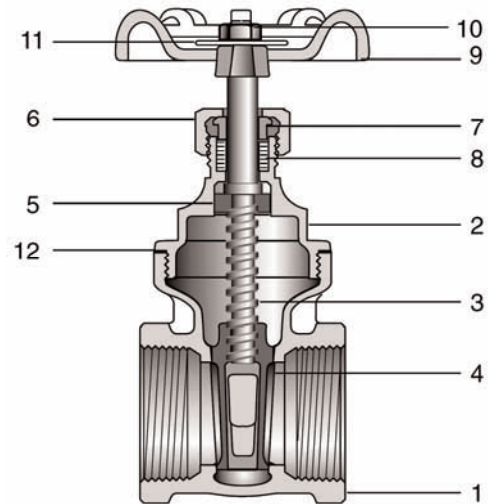
- 200# WOG
- Brass Body
- Non-Rising Stem
- Solid Disc
- Threaded Ends
- Inserted bonnet



Pressure/Temperature Ratings	
200# WOG	212 degrees F. max temp.

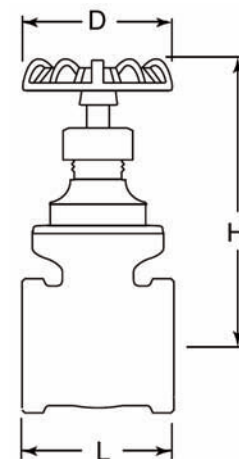
Materials & Specifications

Item	Description	Material	Specification
1	Body	Brass	B584 C85400
2	Bonnet	Brass	B584 C85400
3	Stem	Brass	B124
4	Disc	Brass	B124
5	Lock Nut	Brass	B124
6	Gland nut	Brass	B124
7	Gland	Brass	B124
8	Packing	PTFE	-
9	Handwheel	Aluminum	-
10	Nut	Steel	A36
11	Tag	Aluminum	-
12	Gasket	PTFE	-



Dimensions, Weights (inches-lbs.) & Valve Data

Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
D	.5	.68	.9	1.1	1.37	1.73	2.22	2.71	3.42
H	2.75	3.15	3.62	4.37	4.84	5.43	6.85	7.91	9.29
L	1.65	1.77	2.02	2.16	2.3	2.49	3.22	3.77	4.0
Wt.- lbs.	.5	.63	.94	1.44	1.88	2.56	5.56	6.88	12.44



RED-WHITE VALVE CORP. 20600 Regency Lane • Lake Forest, CA 92630
tel: 949.859.1010 • fax: 949.859.7200 • www.redwhitevalvecorp.com



December 18, 2013

To our valued customer:

We hereby certify that to the best of our knowledge and belief all brass nipples manufactured by Merit Brass Company in Cleveland, Ohio conform to specification ASTM B687-88.

Nipples are threaded with American Standard taper pipe threads (NPT) in accordance with screw-threaded standard for Federal Services Handbook H-28.

Brass nipples have a weighted average lead content of $\leq .25\%$ and are in compliance with lead content requirements for lead free plumbing as defined by the U.S. Safe Drinking Water Act.

Sincerely,

Alan Lipp,

Chief Operating Officer



P.O. Box 43127 • One Merit Drive • Cleveland, OH 44143

Phone: 216 261 9800 • Toll Free: 800 726 9800 • Fax: 800 726 9880 • www.meritbrass.com • www.mbwebXpress.com



2013
BRONZE
PARTNER



To Our Valued Customer:

To the best of our knowledge, when we distribute S.A. brand brass fittings manufactured by Siam Fittings Co. Bangkok Thailand, they comply with the following standards:

	SPECIFICATIONS
DIMENSION	ANSI/ASME B16.15 ASME B16.14 A-A-59617 MSS-SP-106
THREADS	ANSI/ASME B1.20.1
MATERIAL	ASTM B62-93 (C83600) Cu=84.0-86.0% Sn=4.0-6.0% Pb=4.0-6.0% Zn=4.0-6.0%

Sincerely,

MERIT BRASS COMPANY

Marc Schlessinger
President

ISO 9001:2000

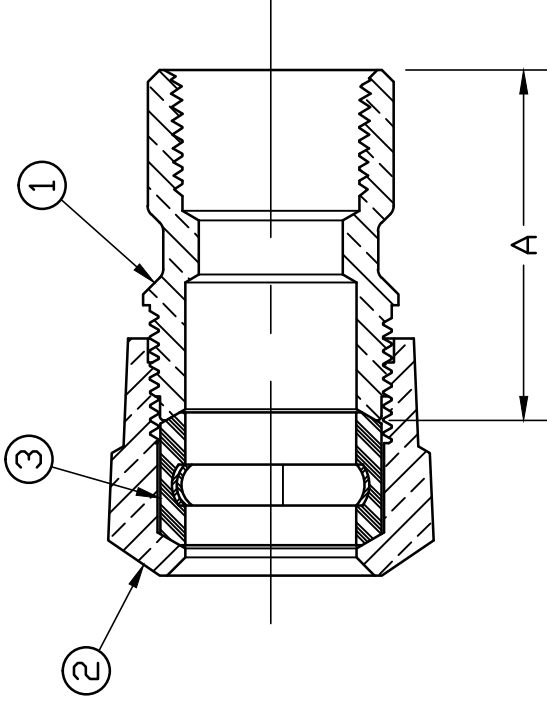


Certificate No. 8375

P.O. Box 43127 • One Merit Drive • Cleveland, OH 44143

Phone: 216 261 9800 • Toll Free: 800 726 9800 • Fax: 800 726 9880 • www.meritbrass.com

No.	DESCRIPTION	MATERIAL
1	SPUD	CAST LOW LEAD BRASS ALLOY
2	CONN. NUT	CAST BRASS ASTM B62 ALLOY C83600
3	CTS GSKT SUB	SBR D2000 - GSKT 410ss - BAND



SIZE	A
1/2"	1.564
1/2" x 3/4"	1.900
5/8" x 3/4"	1.750
3/4"	1.965
3/4" x 1/2"	1.825
3/4" x 1"	1.766
1"	2.094
1" x 3/4"	1.625
1" x 1-1/4"	2.516
1-1/4"	2.469
1-1/4" x 1"	2.194
1-1/2"	2.500
1-1/2" x 1"	2.880
2"	2.562
2" x 1-1/2"	2.265

NOTE: ALL WETTED PARTS ARE LOW LEAD BRASS ALLOY

FILEPATH: PRODD-ENG\MUELLER\ASYSUBMITTALS\H15451N

DRFTR	JGarvin	9/17/09
CHKR		
ENGR		
MGR		
BY		DATE
STK No:		
MAT'L:		

UNLESS OTHERWISE NOTED THIRD ANGLE PROJECTION

SURFACE PREPARATION:
 BREAK CORNER(S) --- .000
 SURFACE FINISH --- 000 RMS
 TOLERANCE(S):
 LINEAR --- ± .000
 ANGULAR --- ± 0°00'

REF. No. SCALE
 NONE

DWG NUMBER
H15451N
442-MRKTG

TITLE TO AND OWNERSHIP OF THIS ENGINEERING DATA REMAINS IN Mueller Co. NO USE IS TO BE MADE OF THIS DATA EXCEPT AS SPECIFICALLY AUTHORIZED BY Mueller Co. ASSENT ON THE PART OF THE RECIPIENT TO THESE CONDITIONS IS PRESUMED

REV	ECR	DESCRIPTION	DATE	BY	CHKR

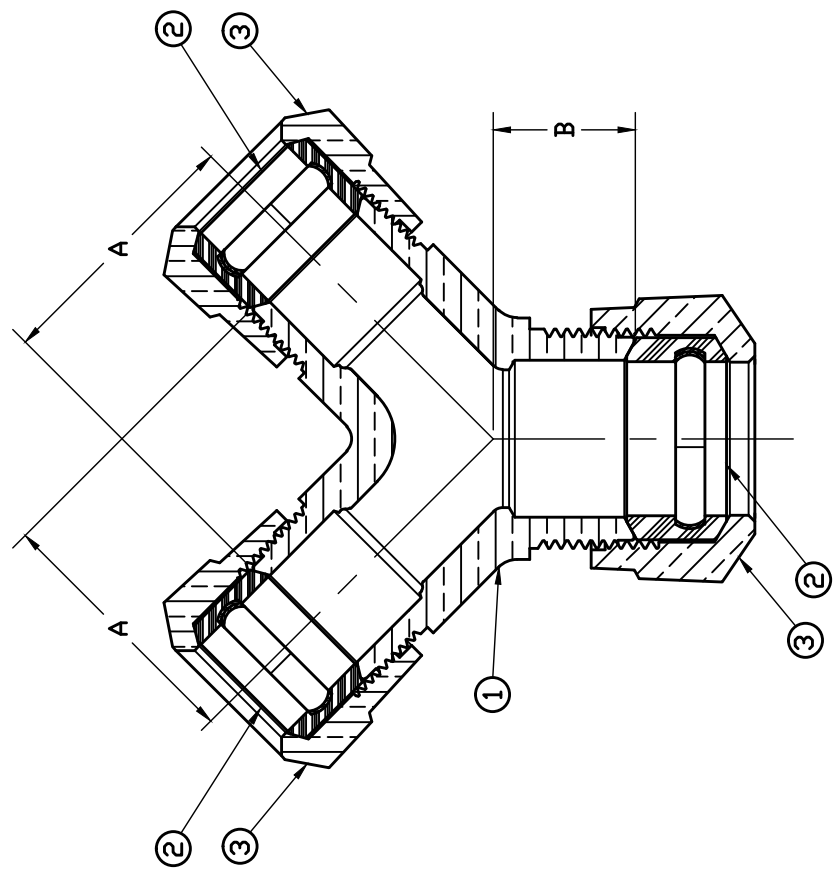
PER EST NO: DXXXX EST FIN WT = 0.0000 lbs

DESCR: STRAIGHT LLB SERVICE FITTING
(110 CTS X FIP)

DWG NUMBER
H15451N

No.	DESCRIPTION	MATERIAL DESCRIPTION
1	BRANCH CONN	CAST LOW LEAD BRASS ALLOY
2	GASKET	ASTM D2000 (SBR)&410 STAINLESS STL
3	CONN NUT	CAST BRASS ASTM B62 ALLOY C83600

VALVE SIZE	A	B
3/4"x1"	1.91	1.03
1"x1-1/2"	2.38	1.40
1"x2"	2.38	1.59



NOTE: ALL WETTED PARTS ARE LOW LEAD BRASS ALLOY

FILEPATH: PRODD-ENGMUELLER\ASYSUBMITTALS\H15343N

DRFTR	Garvin	12/21/09	Mueller Co.		THIRD ANGLE PROJECTION
CHKR					UNLESS OTHERWISE NOTED
ENGR					SURFACE PREPARATION:
MGR					BREAK CORNER(S) --- .000
					SURFACE FINISH --- XX RMS
					TOLERANCE(S):
					LINEAR ----- ± .000
					ANGULAR ----- ± 0°00'
			BY	DATE	REF. No.
			STK No		SCALE
			MAT'L		
			DESCR.		
REV	ECR	DESCRIPTION	DATE	BY	CHKR
PER EST NO:	DXXXX	EST FIN WT = 0.0000 lbs			
Y-BRANCH CONNECTION					PART NUMBER
LOW LEAD BRASS (110CTS ENDS)					H15343N

PART NUMBER
H15343N
42-MRKTG

Pressure Reducing Valves



Model 90-01/690-01

- Sensitive and Accurate Pressure Control
- Easy Adjustment and Maintenance
- Tamper Resistant
- Optional Check Feature
- Fully Supported Frictionless Diaphragm

The Cla-Val Model 90-01/690-01 Pressure Reducing Valve automatically reduces a higher inlet pressure to a steady lower downstream pressure, regardless of changing flow rate and/or varying inlet pressure. This valve is an accurate, pilot-operated regulator capable of holding downstream pressure to a predetermined limit. When downstream pressure exceeds the pressure setting of the control pilot, the main valve and pilot valve close drip-tight.

If a check feature is added, and a pressure reversal occurs, the downstream pressure is admitted in the main valve cover chamber, closing the valve to prevent return flow.

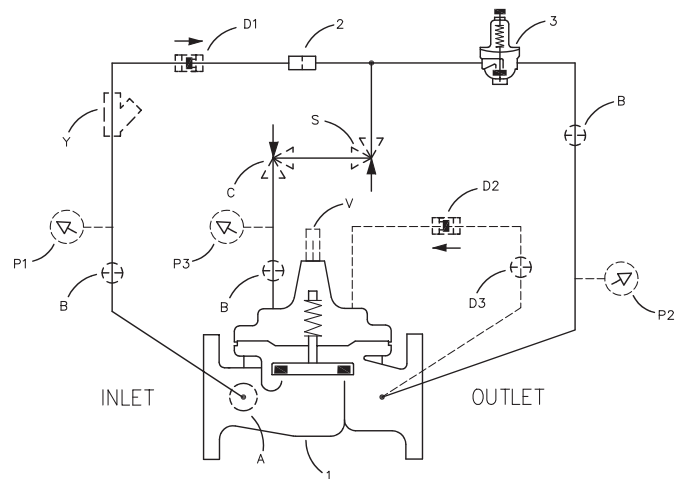
Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	X58 Restriction Fitting
3	CRD Pressure Reducing Control

Optional Features

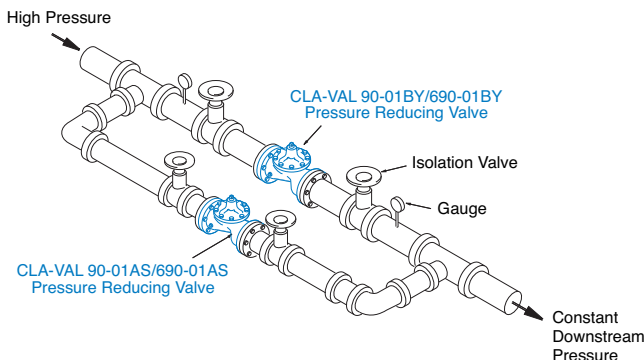
Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valves with Isolation Valve
P	X141 Pressure Gauge
S	CV Flow Control (Opening)
V	X101 Valve Position Indicator
Y	X43 "Y" Strainer

*The closing speed control (optional) on this valve should always be open at least three (3) turns off its seat.



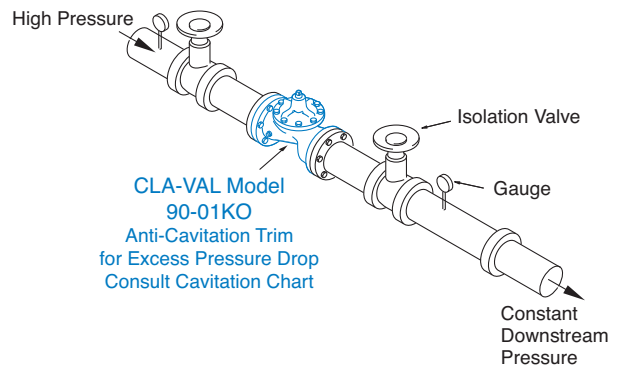
Typical Applications

Typical applications include pressure reducing valve station using Model 90-01BY/690-01BY and Model 90-01AS/690-01AS in parallel to handle wide range of flow rates. Larger Model 90-01BY/690-01BY valve meets requirements of peak loads and smaller Model 90-01AS/690-01AS handles low flows.



Cla-Val Model 90-01KO/690-01KO Pressure Reducing Valve with Anti-Cavitation Trim provides for optimum downstream pressure control while reducing noise and eliminating damage associated with cavitation.

See Cavitation Guide to determine if the valve is a candidate for the KO Anti-Cavitation Trim.



Model 90-48/690-48

Pressure Reducing Valve with Low Flow By-Pass

The Cla-Val Model 90-48/690-48 Pressure Reducing Valve with Low Flow By-Pass automatically reduces a higher inlet pressure to a steady lower downstream pressure, regardless of changing flow rate. The low flow by-pass capability is achieved by using the Cla-Val Model CRD-40 Direct Acting Pressure Reducing Valve as an integral part of the main valve. By doing this, space is saved and installation and maintenance become much easier.

The pressure reducing valve is hydraulically operated and controlled by a Cla-Val CRD pilot control, which senses pressure at the main valve outlet. An increase in outlet pressure forces the CRD pilot control to close and a decrease in outlet pressure opens the control. This causes the main valve cover pressure to vary, modulating the main valve, thereby, maintaining constant outlet pressure.

The Model CRD-40 low flow pressure reducing by-pass is preset to a higher pressure than the CRD pilot control. The CRD-40 responds to pressure changes at the main valve outlet. When the CRD closes, the Model CRD-40 remains open, allowing low flow to by-pass the main valve. The CRD-40 closes when the flow decreases and the downstream pressure reaches its set-point.

The Cla-Val Model 90-48/690-48 is not a substitute for a low flow bypass valve in all cases. This valve is commonly used in buildings where 1-15 gpm low flows are common in off peak usage. The bypass on this valve is limited to the body tapping size on the main valve.

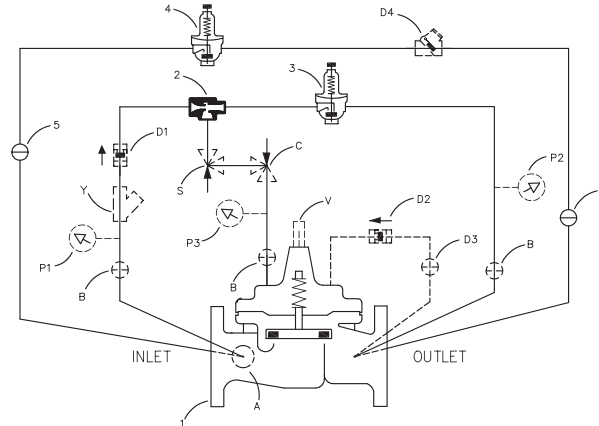
Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	X47A Ejector
3	CRD Pressure Reducing Control
4	CRD-40 Pressure Reducing Valve
5	CK2 (Isolation Valve)

Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valves with Isolation Valve
P	X141 Pressure Gauge
S	CV Flow Control (Opening)*
V	X101 Valve Position Indicator
Y	X43 "Y" Strainer

*The closing speed control (optional) on this valve should always be open at least three (3) turns off its seat.



If a check feature is added, and a pressure reversal occurs, the downstream pressure is admitted in the main valve cover chamber closing the valve to prevent return flow.

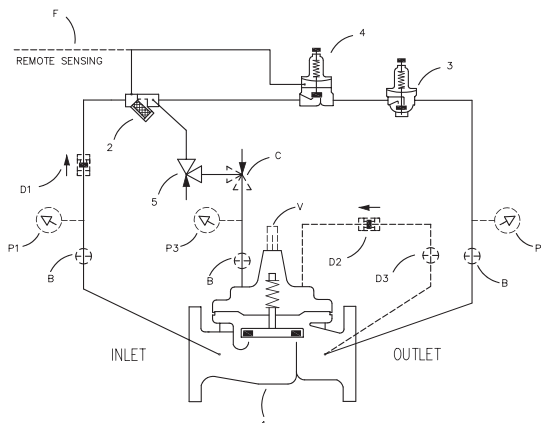
Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	X44A Strainer & Orifice
3	CRD Pressure Reducing Control
4	CRL Pressure Relief Control
5	CV Flow Control (Opening)

Optional Features

Item	Description
B	CK2 (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valves With Isolation Valve
F	Remote Pilot Sensing
P	X141 Pressure Gauge
V	X101 Valve Position Indicator

* The closing speed control (optional) on this valve should always be open at least three (3) turns off its seat.



Model 92-01/692-01

Combination Pressure Reducing and Pressure Sustaining Valve

The Cla-Val Model 92-01/692-01 Combination Pressure Reducing and Pressure Sustaining Valve automatically performs two independent functions. It maintains a constant downstream pressure, regardless of fluctuating demand and sustains the upstream pressure to a pre-determined minimum.

The pressure reducing control responds to slight variations in downstream pressure and immediately repositions the main valve to maintain the desired downstream pressure. The pressure sustaining control is normally held open by the upstream pressure, but modulates should the pressure drop to the control set-point. This, in turn, modulates the main valve to sustain the desired upstream pressure.

If a check feature is added, and a pressure reversal occurs, the downstream pressure is admitted into the main valve cover chamber and the valve closes to prevent return flow.



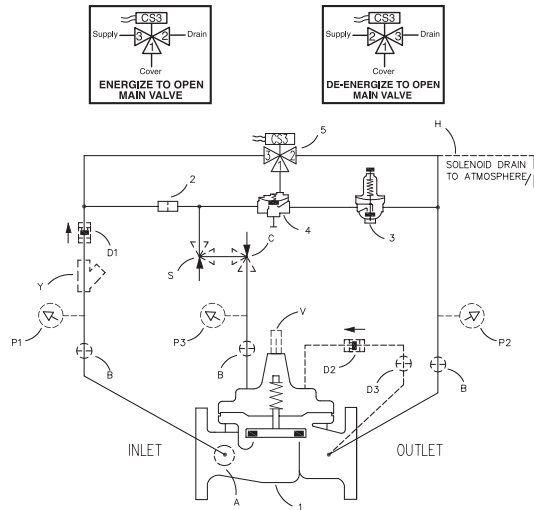
Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	X58C Restriction Assembly
3	CRD Pressure Reducing Control
4	100-01 Hytrol (Reverse Flow)
5	CS3 Solenoid Control

*The closing speed control (optional) on this valve should always be open at least three (3) turns off its seat.

Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valves with Isolation Valve
H	Solenoid Drain To Atmosphere
P	X141 Pressure Gauge
S	CV Flow Control (Opening)
V	X101 Valve Position Indicator
Y	X43 "Y" Strainer



Model 93-01/693-01

Pressure Reducing and Solenoid Shut-Off Valve

The Cla-Val Model 93-01/693-01 Combination Pressure Reducing and Solenoid Shut-Off Valve consists of a Cla-Val Hytrol main valve, a reducing control, and a solenoid control connected to the main valve. This valve automatically reduces higher inlet pressure to a steady lower downstream pressure, regardless of changing flow rate and/or varying inlet pressure.

The 93-01/693-01 is an accurate, pilot-operated regulator capable of holding downstream pressure to a pre-determined delivery pressure. When downstream pressure exceeds the pressure setting of the control pilot, the pilot valve and main valve close drip-tight. A solenoid control is provided to intercept the operation of the pressure reducing control and close the main valve. This valve is furnished either normally open (de-energized to open), or normally closed (energized to open). Pressure setting adjustment is made with a single adjusting screw.

If a check feature is added, and a pressure reversal occurs, the downstream pressure is admitted in the main valve cover chamber, closing the valve to prevent return flow.

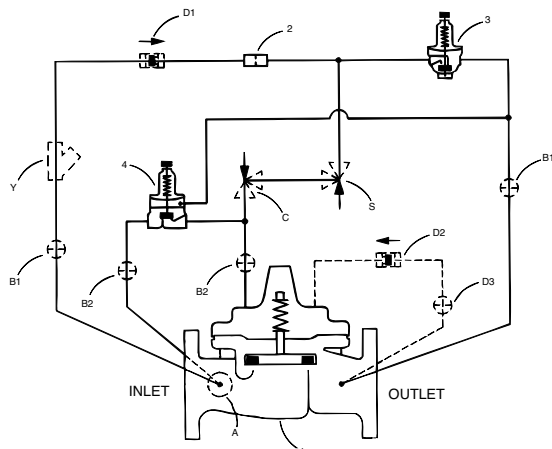
Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	X58C Restriction Assembly
3	CRD Pressure Reducing Control
4	CRL Pressure Relief Control

* The closing speed control (optional) on this valve should always be open at least three (3) turns off its seat.

Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valves with Isolation Valve
F	Remote Pilot Sensing
P	X141 Pressure Gauge
S	CV Flow Control (Opening)
V	X101 Valve Position Indicator
Y	X43 "Y" Strainer



Model 94-01/694-01

Combination Pressure Reducing and Surge Control Valve

The Cla-Val Model 94-01/694-01 Combination Pressure Reducing and Surge Control Valve automatically reduces a higher inlet pressure to a steady lower downstream pressure, regardless of changing flow rate and/or varying inlet pressure.

This valve is an accurate, pilot-operated control valve capable of holding downstream pressure to a predetermined limit. When downstream pressure rapidly exceeds the pressure setting of the pressure reducing control pilot, the surge pilot (CRL) will open quickly to prevent a rapid pressure rise downstream.

If a check feature is added, and a pressure reversal occurs, the downstream pressure is admitted in the main valve cover chamber closing the valve to prevent return flow.

Pressure Ratings (Recommended Maximum Pressure - psi)

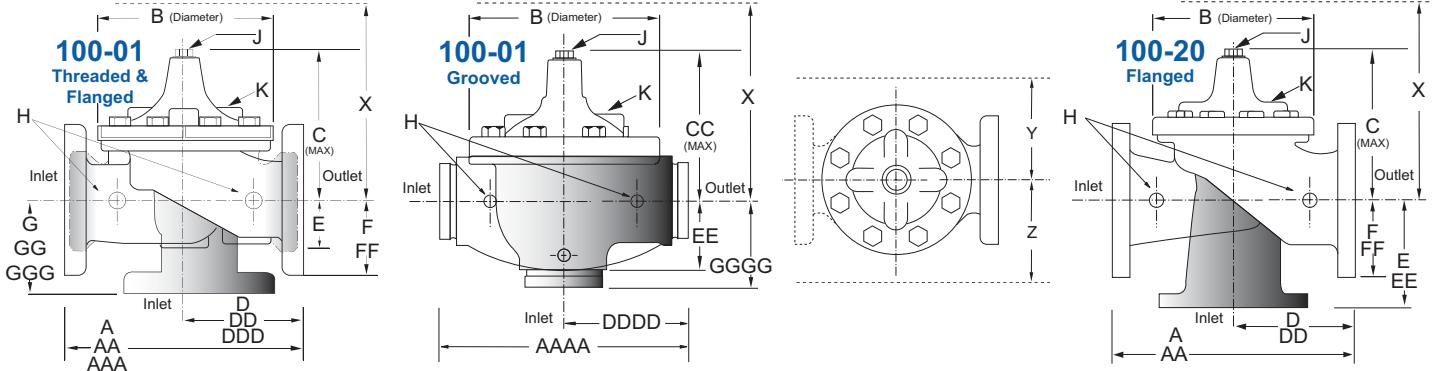
Valve Body & Cover		Pressure Class				
		Flanged		Grooved	Threaded	
Grade	Material	ANSI Standards*	150 Class	300 Class	300 Class	End‡ Details
ASTM A536	Ductile Iron	B16.42	250	400	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400	400
ASTM B62	Bronze	B16.24	225	400	400	400

Note: * ANSI standards are for flange dimensions only.
 Flanged valves are available faced but not drilled.
 ‡ End Details machined to ANSI B2.1 specifications.
Valves for higher pressure are available; consult factory for details

Materials

Component	Standard Material Combinations		
Body & Cover	Ductile Iron	Cast Steel	Bronze
100-01 Available Sizes	1" - 36"	1" - 16"	1" - 16"
100-20 Available Sizes	3" - 48"	3" - 16"	3" - 16"
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze
Trim: Disc Guide, Seat & Cover Bearing	Bronze is Standard Stainless Steel is Optional		
Disc	Buna-N® Rubber		
Diaphragm	Nylon Reinforced Buna-N® Rubber		
Stem, Nut & Spring	Stainless Steel		

For material options not listed, consult factory.
 Cla-Val manufactures valves in more than 50 different alloys.



Model 100-01 Dimensions (Full Internal Port) (In Inches)

Note: The top two flange holes on valve size 36 are threaded to 1 1/2"-6 UNC.

Valve Size (Inches)	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	30	36
A Threaded	7.25	7.25	7.25	9.38	11.00	12.50	—	—	—	—	—	—	—	—	—	—	—	—
AA 150 ANSI	—	8.00	8.50	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00	39.00	41.38	46.00	52.00	61.50	63.00	76.00
AAA 300 ANSI	—	—	9.00	10.00	11.62	13.25	15.62	21.00	26.38	31.12	35.50	40.50	43.50	47.64	53.62	63.24	64.50	76.00
AAAA Grooved End	—	—	8.50	9.00	11.00	12.50	15.00	20.00	25.38	—	—	—	—	—	—	—	—	—
B Dia.	5.62	5.62	5.62	6.62	8.00	9.12	11.50	15.75	20.00	23.62	28.00	32.75	35.50	41.50	45.00	53.16	56.00	66.00
C Max.	5.50	5.50	5.50	6.50	7.56	8.19	10.62	13.38	16.00	17.12	20.88	24.19	25.00	39.06	41.90	43.93	54.60	61.50
CC Max. Grooved End	—	—	4.75	5.75	6.88	7.25	9.31	12.12	14.62	—	—	—	—	—	—	—	—	—
D Threaded	3.25	3.25	3.25	4.75	5.50	6.25	—	—	—	—	—	—	—	—	—	—	—	—
DD 150 ANSI	—	—	4.00	4.75	5.50	6.00	7.50	10.00	12.69	14.88	17.00	19.50	20.81	—	—	30.75	—	—
DDD 300 ANSI	—	—	4.25	5.00	5.88	6.38	7.88	10.50	13.25	15.56	17.75	20.25	21.62	—	—	31.62	—	—
DDDD Grooved End	—	—	—	4.75	—	6.00	7.50	—	—	—	—	—	—	—	—	—	—	—
E	1.12	1.12	1.12	1.50	1.69	2.06	3.19	4.31	5.31	9.25	10.75	12.62	15.50	12.95	15.00	17.75	21.31	24.56
EE Grooved End	—	—	2.00	2.50	2.88	3.12	4.25	6.00	7.56	—	—	—	—	—	—	—	—	—
F 150 ANSI	—	2.25	2.50	3.00	3.50	3.75	4.50	5.50	6.75	8.00	9.50	10.50	11.75	15.00	16.50	19.25	22.50	25.60
FF 300 ANSI	—	—	3.06	3.25	3.75	4.13	5.00	6.25	7.50	8.75	10.25	11.50	12.75	15.00	16.50	19.25	24.00	25.60
G Threaded	1.88	1.88	1.88	3.25	4.00	4.50	—	—	—	—	—	—	—	—	—	—	—	—
GG 150 ANSI	—	—	4.00	3.25	4.00	4.00	5.00	6.00	8.00	8.62	13.75	14.88	15.69	—	—	22.06	—	—
GGG 300 ANSI	—	—	4.25	3.50	4.31	4.38	5.31	6.50	8.50	9.31	14.50	15.62	16.50	—	—	22.90	—	—
GGGG Grooved End	—	—	—	3.25	—	4.25	5.00	—	—	—	—	—	—	—	—	—	—	—
H NPT Body Tapping	.375	.375	.375	.375	.50	.50	.75	.75	1	1	1	1	1	1	1	1	2	2
J NPT Cover Center Plug	.25	.25	.25	.50	.50	.50	.75	.75	1	1	1.25	1.5	2	1.5	1.5	1.5	2	2
K NPT Cover Tapping	.375	.375	.375	.375	.50	.50	.75	.75	1	1	1	1	1	1	1	1	2	2
Stem Travel	0.4	0.4	0.4	0.6	0.7	0.8	1.1	1.7	2.3	2.8	3.4	4.0	4.5	5.1	5.63	6.75	7.5	8.5
Approx. Ship Wt. Lbs.	15	15	15	35	50	70	140	285	500	780	1165	1600	2265	2982	3900	6200	7703	11720
X Pilot System	11	11	11	13	14	15	17	29	31	33	36	40	40	43	47	68	79	85
Y Pilot System	9	9	9	9	10	11	12	20	22	24	26	29	30	32	34	39	40	45
Z Pilot System	9	9	9	9	10	11	12	20	22	24	26	29	30	32	34	39	42	47

Model 100-20 Dimensions (Reduced Internal Port) (In Inches)

Note: The top two flange holes on valve sizes 36 thru 48 are threaded to 1 1/2"-6 UNC.

Valve Size (Inches)	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
A 150 ANSI	10.25	13.88	17.75	21.38	26.00	30.00	34.25	35.00	42.12	48.00	48.00	63.25	65.00	76.00	94.50
AA 300 ANSI	11.00	14.50	18.62	22.38	27.38	31.50	35.75	36.62	43.63	49.62	49.75	63.75	67.00	76.00	94.50
B Dia.	6.62	9.12	11.50	15.75	20.00	23.62	27.47	28.00	35.44	35.44	35.44	53.19	56.00	66.00	66.00
C Max.	7.00	8.62	11.62	15.00	17.88	21.00	20.88	25.75	25.00	31.00	31.00	43.94	54.60	61.50	61.50
D 150 ANSI	—	6.94	8.88	10.69	CF*	CF*	CF*	CF*	CF*	CF*	CF*	—	—	—	—
DD 300 ANSI	—	7.25	9.38	11.19	CF*	CF*	CF*	CF*	CF*	CF*	CF*	—	—	—	—
E 150 ANSI	—	5.50	6.75	7.25	CF*	CF*	CF*	CF*	CF*	CF*	CF*	—	—	—	—
EE 300 ANSI	—	5.81	7.25	7.75	—	—	—	—	—	—	—	—	—	—	—
F 150 ANSI	3.75	4.50	5.50	6.75	8.00	9.50	11.00	11.75	15.88	14.56	17.00	19.88	25.50	28.00	31.50
FF 300 ANSI	4.12	5.00	6.25	7.50	8.75	10.25	11.50	12.75	15.88	16.06	19.00	22.00	27.50	28.00	31.50
H NPT Body Tapping	.375	.50	.75	.75	1	1	1	1	1	1	1	1	2	2	2
J NPT Cover Center Plug	.50	.50	.75	.75	1	1	1.25	1.25	2	2	2	2	2	2	2
K NPT Cover Tapping	.375	.50	.75	.75	1	1	1	1	1	1	1	1	2	2	2
Stem Travel	0.6	0.8	1.1	1.7	2.3	2.8	3.4	3.4	4.5	4.5	4.5	6.5	7.5	8.5	8.5
Approx. Ship Wt. Lbs.	45	85	195	330	625	900	1250	1380	1500	2551	2733	6500	8545	12450	13100
X Pilot System	13	15	27	30	33	36	36	41	40	46	55	68	79	85	86
Y Pilot System	10	11	18	20	22	24	26	26	30	30	30	39	40	45	47
Z Pilot System	10	11	18	20	22	24	26	26	30	30	30	39	42	47	49

The dark shaded portion of the chart illustrates the region where cavitation damage may occur. The lighter shaded portion is where significant cavitation noise and vibration may occur. Operating conditions inside the dark shaded area is permissible for infrequent periods of short duration. The guide is for modulating service valves. For on/off valves, consult factory.

The chart is based on cavitation index (sigma) values as defined by Utah State University Water Research Laboratory.

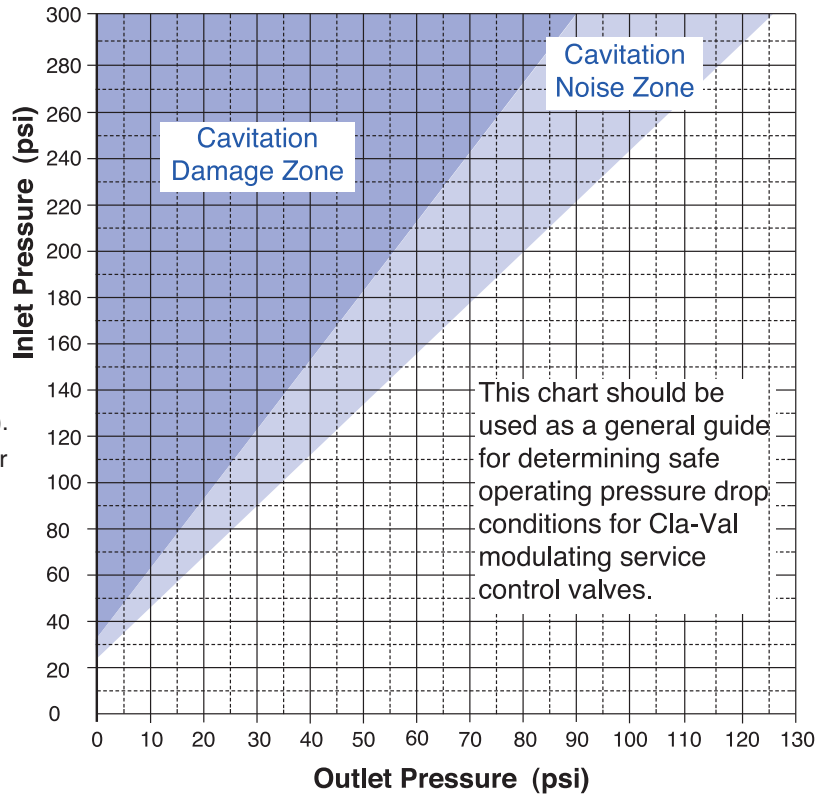
$$\sigma = \frac{(P_2 - P_v)}{(P_1 - P_2)} \quad \text{where}$$

σ = cavitation index, P_1 = inlet pressure (psi),
 P_2 = outlet pressure (psi), P_v = water vapor pressure (psig).

The dark shaded portion is below σ of 0.5 and the lighter shaded area is below σ of 0.8. The chart is to be used for typical valve operating conditions below 40% open at standard water temperature and elevation below 1000 feet.

More accurate cavitation conditions are determined from the **Cla-CAV** analysis program including static and dynamic inlet and outlet pressures, flow range, elevation, water temperature, and service conditions. If operation is inside the shaded areas, the **Cla-CAV** analysis can be used to determine whether added back pressure from an orifice plate, a second valve in series, or adding **KO** Anti-Cavitation trim (see 100-01KO data sheet) is necessary. Contact your Cla-Val representative for a free analysis.

Cavitation Zones 100-01/100-20



This chart should be used as a general guide for determining safe operating pressure drop conditions for Cla-Val modulating service control valves.

This chart should be used as a general guide for determining safe operating pressure drop conditions for Cla-Val modulating service control valves.

Valve 1 100-01 100-20

Valve size: 6"

Maximum flow rate: 1000 gpm

Minimum flow rate: 500 gpm

Static inlet pressure: 120 psi

Static outlet pressure: 25 psi

Elevation above S.L.: 500 ft

Water temperature: 60 deg F

Dynam. inlet pressure: 120.0 psi

Dynam outlet pressure: 25.0 psi

Back pressure orifice: Single

Orifice backpressure: 61.9 psi

Orifice discharge to: Downstream piping

100-01 100-20

Valve operation

Continuous (>50%)

Avoid operation near (within 10%) cavitation damage level of 1.0.

For a more detailed cavitation analysis or if operation will be outside of the above chart, request a **Cla-CAV** computer analysis. **Cla-CAV** can evaluate what options best solve any potential cavitation problem. In the example shown, a 6 inch 100-01 modulating service valve requires an orifice plate downstream to prevent damaging cavitation. For wider flow range service, either an extra valve in series or the addition of **KO** Anti-Cavitation trim to the valve may be necessary (see 100-01KO data sheet). Consult factory for a free analysis for wide open or modulating service valves.

No damage

Caution - near damage

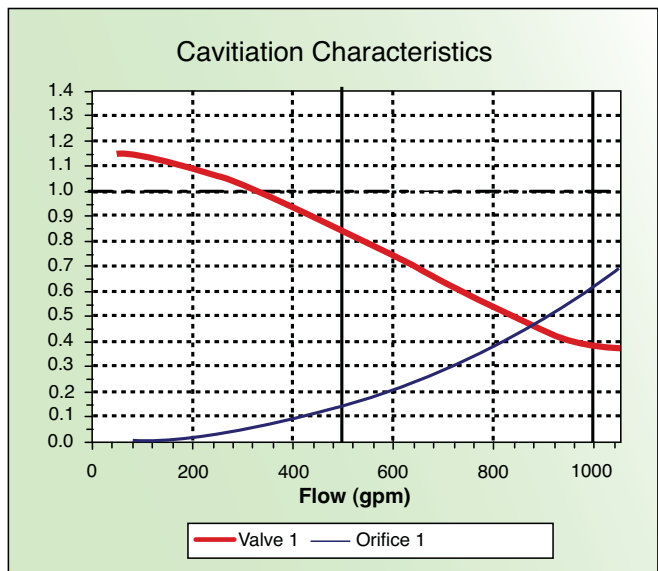
Damaging cavitation

Valve damage occurs <20 psi.

Valve entrance velocity: 6", 11.1 fps, 120.0 psi

6" 100-01 2.80" (3/16)

Valve 1	Flow Rate GPM	Inlet (psi)	Outlet (psi)	% Open	Pipe Vel. (ft/s)	Cav Damage
	50	120.0	25.1	9.1	0.6	Yes
	250	120.0	27.3	19.9	2.8	Yes
	500	120.0	34.2	24.9	5.6	No
	750	120.0	45.8	30.7	8.3	No
	1000	120.0	61.9	37.2	11.1	No



If the lines go above 1.0 there will be cavitation damage.

90 Series Valve Selection	100-01 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes																		
	Inches	1	1¼	1½	2	2½	3	4	6	8	10	12	14	16	18	20	24	30	36
	mm	25	32	40	50	65	80	100	150	200	250	300	350	400	450	500	600	750	900
Basic Valve 100-01	Pattern	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G	G	G, A	G	G
	End Detail	T	T, F	T, F, Gr*	T, F, Gr	T, F, Gr*	T, F, Gr	F, Gr	F, Gr*	F, Gr*	F	F	F	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	55	93	125	210	300	460	800	1800	3100	4900	7000	8400	11000	14000	17000	25000	42000	50000
	Maximum Intermittent	68	120	160	260	370	580	990	2250	3900	6150	8720	10540	13700	17500	21700	31300	48000	62500
	Minimum	1	1	1	1	2	2	4	10	15	35	50	70	95	120	150	275	450	650
Suggested Flow (Liters/Sec)	Maximum	3.5	6	8	13	19	29	50	113	195	309	442	530	694	883	1073	1577	2650	3150
	Maximum Intermittent	4.3	7.6	10	16	23	37	62	142	246	387	549	664	863	1104	1369	1972	3028	3940
	Minimum	.03	.03	.03	.06	.09	0.13	0.25	0.63	0.95	2.2	3.2	4.4	6.0	7.6	9.5	17.4	28.4	41.0

100-01 Series is the full internal port Hytrol. For Lower Flows Consult Factory *Globe Grooved Only

690 Series Valve Selection	100-20 Pattern: Globe (G), Angle (A), End Connections: Flanged (F) Indicate Available Sizes															
	Inches	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
	mm	80	100	150	200	250	300	350	400	450	500	600	750	900	1000	1200
Basic Valve 100-20	Pattern	G	G, A	G, A	G, A	G	G	G	G	G	G	G	G	G	G	G
	End Detail	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	260	580	1025	2300	4100	6400	9230	9230	16500	16500	16500	28000	33500	33500	33500
	Minimum	1	2	4	10	15	35	50	50	95	95	95	275	450	450	450
Suggested Flow (Liters/Sec)	Maximum	16	37	65	145	258	403	581	581	1040	1040	1040	1764	2115	2115	2115
	Minimum	.06	.13	.25	.63	.95	2.2	3.2	3.2	6.0	6.0	6.0	17.4	28.4	41.0	41.0

100-20 Series is the reduced internal port size version of the 100-01 Series. For Lower Flows Consult Factory

90 Series/690 Series Pilot System Specifications

Temperature Range, and Materials Apply to all 90 Series/690 Series

Temperature Range
Water: to 180°F

Materials

Standard Pilot System Materials

- Pilot Control: Bronze ASTM B62
- Trim: Stainless Steel 303
- Rubber: Buna-N® Synthetic Rubber

Optional Pilot System Materials

- Pilot systems are available with optional Aluminum, Stainless Steel or Monel materials.
- Note: Available with remote sensing control.

Pilot System Adjustment Ranges

Model 90-01/690-01

- CRD Pilot**
- 2 to 30 psi
- 15 to 75 psi
- 20 to 105 psi
- 30 to 300 psi *

Model 90-48/690-48

- CRD Pilot**
- 2 to 30 psi
- 15 to 75 psi
- 20 to 105 psi
- 30 to 300 psi *

- CRD-40 Pilot**
- 15 to 150 psi

Model 92-01/692-01

- CRD Pilot**
- 2 to 30 psi
- 15 to 75 psi
- 20 to 105 psi
- 30 to 300 psi *

- CRL Pilot**
- 0 to 75 psi
- 20 to 200 psi *
- 100 to 300 psi
- 250 to 600 psi

Model 93-01/693-01

- CRD Pilot**
- 2 to 30 psi
- 15 to 75 psi
- 20 to 105 psi
- 30 to 300 psi *

- Solenoid Pilot**
- 24, 48, 120, 240, 480 - 60 Hz VAC
- 6, 12, 24, 120, 240 VDC

Model 94-01/694-01

- CRD Pilot**
- 2 to 30 psi
- 15 to 75 psi
- 20 to 105 psi
- 30 to 300 psi *

- CRL Pilot**
- 0 to 75 psi
- 20 to 200 psi *
- 100 to 300 psi
- 250 to 600 psi

*Supplied unless otherwise specified Other ranges available, please consult factory

501 & RC501 COUPLINGS AND REDUCING COUPLINGS

SUBMITTAL INFORMATION



MATERIALS

CASTINGS

The end rings and center rings are cast from ductile (nodular) iron, meeting or exceeding ASTM A 536.

GASKETS

Gaskets are made from virgin Styrene Butadiene Rubber (SBR) compounded for water and sewer service in accordance with ASTM D 2000 MBA 710. Other compounds available for petroleum, chemical, or high temperature service.

BOLTS AND NUTS

5/8 inch, High strength low alloy steel trackhead bolts. National coarse rolled thread and heavy hex nuts. Steel meets AWWA C111 composition specifications. Stainless steel bolts and nuts available on request.

COATINGS

Shop coat applied to cast parts for corrosion protection in transit. Fusion bonded epoxy, liquid epoxy and other coatings available on request.

PRESSURE

When properly installed on a pipe that is within the correct outside diameter range, couplings in the Romac Style 501 line can be used at working pressures up to 260 psi. Higher working pressures available for specific applications.

STANDARD

Romac 501 couplings meet the specifications set forth in the AWWA Standard C219 coupling spec.

SIZES & RANGES

See catalog.

1/17

Document # 20-8-0005

This information is based on the best data available at the date printed above. Please check with Romac for any updates or changes.

FCA501 FLANGED COUPLING ADAPTER

SUBMITTAL INFORMATION



STANDARD

Romac 501 couplings meet the specifications set forth in the AWWA Standard C219 coupling spec.

MATERIALS

CASTINGS

The end ring and flanged body are cast from ductile (nodular) iron, meeting or exceeding ASTM A 536.

FLANGE

Compatible with ANSI Class 125 and 150 bolt circles.

GASKETS

Gaskets are made from virgin Styrene Butadiene Rubber (SBR) compounded for water and sewer service in accordance with ASTM D 2000 MBA 710. Other compounds available for petroleum, chemical, or high temperature service.

BOLTS AND NUTS

High strength low alloy steel trackhead and T-head bolt National coarse rolled thread and heavy hex nuts. Steel meets AWWA C111 composition specifications. The 10" size uses electro-galvanized mild steel flange bolts and nuts with a hex head, and ductile iron through bolts. The 12" size uses electro-galvanized mild steel flange bolts and nuts with a hex head, and mild steel through bolts (AWWA C111 composition specifications). All above nuts and bolts are corrosion resistant. Stainless steel bolts and nuts available on request.

COATINGS

Shop coat applied to cast parts for corrosion protection in transit. Fusion bonded epoxy, liquid epoxy and other coatings available on request.

PRESSURE

When properly installed on a pipe that is within the correct outside diameter range, the FCA 501 couplings can be used at working pressures up to 260 psi.

ANCHOR PINS

Anchor pins to restrain fitting available as option.

SIZES & RANGES

See Catalog.

1/17

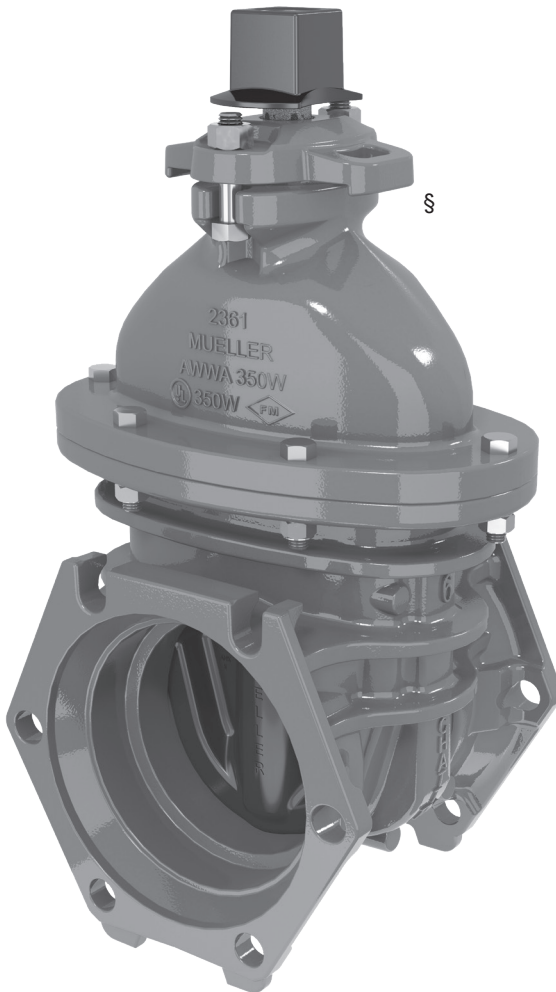
Document # 20-8-0006

This information is based on the best data available at the date printed above. Please check with Romac for any updates or changes.

Mueller 2300 Series Resilient Wedge Gate Valves

Mueller Resilient Wedge Gate Valves have features to make them easier to operate, preserve sealing capability, and interior coating integrity for many years of reliable service. In addition to popular end connection options, Mueller brand RW valves can be ordered with Mueller's exclusive AquaGrip® System that incorporates an o-ring sealed compression connection and integral pipe restraint in one "ready to use" easy and quick to install package.

Mueller 2"-12" 2300 Series Resilient Wedge Gate Valve Features



6" shown

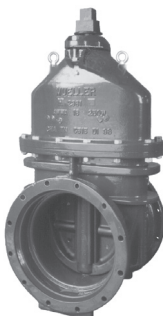
- **350 PSIG (2400 kPa/24 barg) Maximum Working Pressure** – Hydrostatically tested at 700 psig (4800 kPa/48 barg).
- **Dual-Purpose Lifting Lugs** – new dual-purpose lifting lugs provide stability for the valve box. Accommodates strap or hooks; provides valve box alignment, eliminating need for valve box adapter.+
- **American Made Quality** – factory in Chattanooga, TN with ISO 9001 certification. Certified to ANSI/NSF 61 & 372. Manufactured and tested in compliance with ANSI/AWWA Standard C515 or C509. UL 262 Listed and FM 1120/1130 Approved.
- **Ductile Iron Construction** - Valve body, bonnet, disc, stuffing box, & op nut.
- **T-Head Bolt Retention** – improved T-head bolt retention feature eliminates need for anti-rotation bolts.
- **Triple O-ring Seals** – two above thrust collar and one below, retain lubricant in this critical area. Top two are replaceable with valve fully open and under pressure. Fourth O-ring serves as dirt seal.
- **Two-Anti-Friction Washers With Lubrication** – made of polymer, one above and one below the thrust collar, reduce operating torque to open or close valve.
- **STEM** – forged manganese bronze bar stock is upset, then machined to form a thrust collar for superior strength in this critical area.
- **Guide Cap Bearings** – made of polymer and snapped over rubber covered wedge guides, provide bearing surfaces that protect both wedge and interior body coating from wear and aid in easy operation – even the largest valves installed horizontally. Rollers, tracks and scrapers are not needed.
- **Smooth, Oversized Water Way** – full, round, unobstructed flow way accommodates full size cutters, provides superior flow characteristics and reduces pumping costs.**
- **Mueller Pro-Guard® Fusion Bonded Epoxy Coating** – 10 mils* thick protects all inside and outside iron surfaces, and complies with AWWA C550.
- **316 Stainless Steel Fasteners**
- **Integral Legs** – stands upright for easier handling and storage.
- **10-Year Limited Warranty** – assured reliability (see separate Mueller Warranty document for terms).
- **Designed For Potable Water Applications**

*Nominal

**16" valve requires 1/2" undersized cutter, 54" valve requires 48" cutter

Mueller 14" – 54" 2361 Series Resilient Wedge Gate Valve Features

In addition to all the features of the smaller 2361 series valves, large size Mueller 2361 series RW valves offer these features:



- **Stem** – 18"-54" manganese bronze casting with integral thrust collar.

SIZE	AWWA C515 WORKING PRESSURE	UL WORKING PRESSURE	FM WORKING PRESSURE
14"-16"	250	250	250
18"-24"	250	175 x	250
30"-54"	250	-	-

x UL Listed without gearing
- Certified to NSF 61 & 372

A2361 RESILIENT WEDGE GATE VALVES, 350psi



1. GENERAL CLASSIFICATION

- 1.1 Mueller® Resilient Wedge Gate Valves comply with ANSI/AWWA C515.
- 1.2 Mueller Resilient Wedge Gate Valves are approved by Factory Mutual Research Corporation (FM).
- 1.3 Mueller Resilient Wedge Gate Valves are listed by Underwriters Laboratories, Inc. (UL). Valves with actuators are not listed.
- 1.4 Mueller Resilient Wedge Gate Valves are tested and certified to ANSI/NSF Standard 61 & 372.
- 1.5 Mueller Resilient Wedge Gate Valves are suitable for potable water applications.
- 1.6 Mueller Resilient Wedge Gate Valves are iron body, fully encapsulated resilient wedge type.
- 1.7 Mueller Resilient Wedge Gate Valves are manufactured in the U.S.A. at an ISO9001 Certified factory.

2. SIZE RANGE, WORKING TEMPERATURE, AND WORKING PRESSURE

- 2.1 **Sizes:** 3" to 12".
- 2.2 **Working Temperature:** 33°F minimum to 170°F maximum working temperature.
- 2.3 **Working Pressure:** 350psi for AWWA, UL and FM.

3. TYPE OF VALVE

- 3.1 Resilient Wedge Gate Valves are non-rising stem type.
- 3.2 NRS Resilient Wedge Gate Valves feature O-ring stem seals.
- 3.3 Resilient Wedge Gate Valves are available to either open left or open right.
- 3.4 Resilient Wedge Gate Valves have a 2" square wrench nut complying with AWWA C515. Optional hand wheels are available.
- 3.5 **Resilient Wedge Gate Valves are offered with the following end connections:**
 - 3.5.1 **Flanged Ends** with flange drilling complying to ASME B16.1 Class 125 (ISO PN10/PN16 drilling optional). Per ANSI/AWWA C111, working pressure above 250psi requires the use of a special gasket rated for the higher pressure.
 - 3.5.2 **Mechanical Joint Ends** complying with ANSI/AWWA C111/A21.11.
- 3.6 **Resilient Wedge Tapping valves are offered with the following end connections:**
 - 3.6.1 Inlet flange machined specifically for mating with Tapping Sleeves and Crosses. Raised ring on flange face complies with MSS SP-60. Drilling complies with ASME B16.1 Class 125 flange.
 - 3.6.2 Standard Mechanical Joint outlet connection complies with ANSI/AWWA C111/A21.11 and is precision machined for proper alignment of Mueller® Drilling Machines.

A2361 RESILIENT WEDGE GATE VALVES, 350psi



4. MATERIAL SPECIFICATIONS

- 4.1 **Cap screw** – Stainless Steel Type 316.
- 4.2 **Wrench nut** – Ductile Iron, ASTM A-536.
- 4.3 **Handwheel** – Cast Iron, ASTM A-126, Class B.
- 4.4 **Stuffing box** – Ductile Iron, ASTM A-536.
- 4.5 **Stem O-rings** – Nitrile, ASTM D2000.
- 4.6 **Anti-friction washers** – Acetal.
- 4.7 **Stem** – Manganese Bronze, CDA Alloy C67600.
- 4.8 **Bonnet** – Ductile Iron, ASTM A-536.
- 4.9 **Bonnet seal** – O-ring, Nitrile, ASTM D2000.
- 4.10 **Stuffing box bolts & nuts** – Stainless Steel Type 316.
- 4.11 **Bonnet bolts & nuts** – Stainless Steel Type 316.
- 4.12 **Disc nut** – Bronze, ASTM B-584 Alloy C89833.
- 4.13 **Guide cap bearings** – Acetal.
- 4.14 **Disc** – 3" Cast Iron, ASTM A-126, Class B
4"-12" Ductile Iron, ASTM A-536.
- 4.15 **Disc encapsulated** – SBR ASTM D2000.
- 4.16 **Body** – Ductile Iron, ASTM A-536.
- 4.17 **Coating** – inside and outside of valve fully coated Mueller PRO-GARD® Fusion Bonded Epoxy - coating complies with ANSI/AWWA C550 and valve is certified to ANSI/NSF Standard 61 & 372.

5. DESIGN FEATURES

- 5.1 **Flow way** – fully unobstructed, oversized flow-way. The sealing mechanism is withdrawn from the flow-way in a full open position. No pockets in bottom of flow-way to trap sediment or debris. The flow-way will permit passage of full-sized shell cutters.
- 5.2 **Bronze Disc Nut** – on all valves.
- 5.3 **Anti-Friction Washers** on non-rising stem valves – located above and below the thrust collar portion of the stem to reduce friction and provide more effective conversion of operating torques into seating loads.
- 5.4 **Stem** for non-rising stem valves, with O-ring Seals – One O-ring is located below the thrust collar of the stem and two are located above the thrust collar, the upper most serving as a dirt seal. The O-rings and thrust collar are factory lubricated. The two primary O-rings seal the thrust collar area from outside contaminants and water, and retain an ample amount of lubricant on the thrust collar and anti-friction washers to reduce operating torque and wear.
- 5.5 **Stem** – The threads on the bronze stem are Acme form threads for strength and efficiency. The stem thrust collar is made integral with the stem -- and is formed by a heat upset operation.
- 5.6 **Upper Stem O-ring Replacement** – The two O-rings above the thrust collar of all Mueller Resilient Wedge Gate Valves can be replaced with the valve in the fully open position, under

A2361 RESILIENT WEDGE GATE VALVES, 350psi



pressure, with no leakage.

- 5.7 **Corrosion Resistance** – all inside and outside cast iron surfaces are coated with Mueller PRO-GARD® Epoxy Coating, 10 mils nominal. Mueller PRO-GARD® Epoxy Coating is non-toxic and imparts no taste to water. Valves comply with ANSI/AWWA C550 and are certified to ANSI/NSF Standard 61 & 372.

6. OPTIONAL FEATURES

- 6.1 Mueller A-2361 350psi Resilient Wedge Gate Valves can be furnished with the following optional designs or features:
 - 6.1.1 **Gearing** – Bevel and Spur gearing available. Bevel geared valves are for horizontal installations; spur geared for vertical. Geared valves provide an additional bearing to support the extreme end of the stem.
 - 6.1.2 **Position indicator** – Available for NRS valves 3” and larger.
 - 6.1.3 **Stem** – Silicon bronze - ASTM B98 C66100; 304 Stainless Steel or 316 Stainless Steel.
 - 6.1.4 **Disc encapsulation and O-rings** – EPDM ASTM D2000.

7. TEST PRESSURE

- 7.1 The pressure test on each Mueller Resilient Wedge Gate Valve meets the requirements of AWWA Standard C515 for Resilient Seated Valves.
 - 7.1.1 Each Mueller Resilient Wedge Gate Valve is subjected to two pressure tests. The seat test is at the working pressure of AWWA valves and 1-1/2 times working pressure of UL Listed valves. Shell tests are at two times the working pressure.
 - 7.1.2 Pressure tests at the working pressure shall show NO leakage past the seat from either side of the wedge or at the flange joints. Pressure tests at twice the working pressure shall show NO leakage through the metal or flange joints.
 - 7.1.3 Test pressures are as follows: 525psi seat test, 700psi shell test.



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2361 SERIES RESILIENT WEDGE GATE VALVES



1. GENERAL CLASSIFICATION

- 1.1 Mueller® Resilient Wedge Gate Valves comply with ANSI/AWWA C515 where applicable.
- 1.2 Mueller Resilient Wedge Gate Valves 14" thru 24" are approved by Factory Mutual Research Corporation (FM) and are listed by Underwriters Laboratories, Inc. (UL). Valves with actuators are not listed.
- 1.3 Mueller Resilient Wedge Gate Valves are tested and certified to ANSI/NSF Standard 61 & 372.
- 1.4 Mueller Resilient Wedge Gate Valves are suitable for potable water applications.
- 1.5 Mueller Resilient Wedge Gate Valves are iron body, fully encapsulated resilient wedge type.
- 1.6 Mueller Resilient Wedge Gate Valves are manufactured in the U.S.A. at an ISO9001 Certified factory.

2. SIZE RANGE, WORKING TEMPERATURE & WORKING PRESSURE

- 2.1 **Sizes:** 14" – 54"
- 2.2 **Working Temperature:** 33° F minimum to 170° F maximum.
- 2.3 **Working Pressure**
 - 2.3.1 14" thru 54" valves - 250 psi for AWWA.
 - 2.3.2 14" thru 16" valves - 250 psi for UL/FM.
 - 2.3.3 18" thru 24" valves - 175 psi for UL, 250 psi for FM

3. TYPE OF VALVE

- 3.1 Mueller Resilient Wedge Gate Valves are non-rising stem or post indicator type (PIV – 14" thru 30").
- 3.2 Mueller NRS Resilient Wedge Gate Valves are offered with O-ring stem seals.
- 3.3 Mueller Resilient Wedge Gate Valves are offered to either open left or open right.
- 3.4 Mueller Resilient Wedge Gate Valves with a 2" square wrench nut complying with AWWA C515. Optional hand wheels are available.
- 3.5 Mueller Resilient Wedge Gate Valves of the non-rising stem type and post indicator type are offered with the following end connections:
 - 3.5.1 Flanged Ends with flange drilling complying to ANSI B16.1 Class 125 (ISO PN10/PN16 drilling optional).
 - 3.5.2 Standard Mechanical Joint Ends (14" thru 48") for cast iron pipe or ductile iron pipe with end dimensions complying with ANSI/AWWA C111/A21.11.
 - 3.5.3 Slip-On Joint Ends* (14" thru 16") complete with Mueller Slip-On Gasket, complying with ANSI/AWWA C111/A21.11. Fits plain end of classes 150, 200 and 250 cast iron; ductile iron and classes 150 and 200 cast iron O.D. PVC**.

**Design and dimensions of the joint are manufactured under license of U.S. Pipe and Foundry Company.
 **When using DI O.D. PVC pipe, the gaskets supplied by Mueller Co. must be used with this valve connection.*

- 3.6 Mueller Resilient Wedge Tapping valves (14" thru 48") have an inlet flange complying with ANSI B16.1 Class 125, and are offered with a Standard Mechanical Joint outlet end with dimensions complying with ANSI/AWWA C111/A2.11.

2361 SERIES RESILIENT WEDGE GATE VALVES



4. MATERIAL SPECIFICATIONS

- 4.1 **Cap screw** - Steel, SAE J429 Grade 2 Zinc Plated.
- 4.2 **Wrench nut** – Cast Iron, ASTM A-126, Class B.
- 4.3 **Handwheel** – Cast Iron, ASTM A-126, Class B.
- 4.4 **Stuffing box**
 - 4.4.1 14" thru 24" sizes – Ductile Iron, ASTM A-536.
 - 4.4.2 30" thru 54" sizes - Hot Rolled Steel, ASTM A36.
- 4.5 **Stem O-rings**
 - 4.5.1 14" thru 16" Nitrile, ASTM 2000.
 - 4.5.2 18" thru 54" EPDM ASTM 2000
- 4.6 **Anti-friction washers** – Acetal Copolymer.
- 4.7 **Stem**
 - 4.7.1 14" thru 16" sizes – Manganese Bronze, CDA Alloy C67600.
 - 4.7.2 18" thru 54" sizes – Bronze, ASTM B-584, Alloy C86400.
- 4.8 **Bonnet** - Ductile Iron, ASTM A-536.
- 4.9 **Bonnet seal**
 - 4.9.1 4" thru 16" sizes – O-ring, Nitrile, ASTM D2000.
 - 4.9.2 18" thru 54" sizes - O-ring, EPDM, ASTM D2000.
- 4.10 **Stuffing box bolts & nuts** – Type 316 Stainless Steel ASTM F593 (bolt), ASTM F594 (nut).
- 4.11 **Bonnet bolts & nuts** – Type 316 Stainless Steel ASTM F593 (bolt), ASTM F594 (nut).
- 4.12 **Disc nut** – Bronze, ASTM B62 CDA 83600.
- 4.13 **Guide cap bearings** – Acetal Copolymer.
- 4.14 **Disc** - Ductile Iron, ASTM A-536.
- 4.15 **Disc encapsulated**
 - 4.15.1 14" thru 16" sizes – SBR ASTM D2000.
 - 4.15.2 18" thru 54" sizes – EPDM, ASTM D2000.
- 4.16 **Body** – Ductile Iron, ASTM A-536.
- 4.17 **Coating** – Inside and outside of valve fully coated - coating complies with ANSI/AWWA C550 and is certified to ANSI/NSF Standard 61 & 372.
 - 4.17.1 14" thru 36" sizes - Mueller PRO-GARD[®] Fusion Bonded Epoxy.
 - 4.17.2 42" thru 54" sizes - Mueller HP Epoxy.

2361 SERIES RESILIENT WEDGE GATE VALVES



5. DESIGN FEATURES

- 5.1 **14" thru 48" sizes** - fully unobstructed, oversized (except 16" which is same size) flow way. The sealing mechanism is withdrawn from the flow way in a full open position. No pockets in bottom of flow way to trap sediment or debris. The flow way will permit passage of full-sized shell cutters (except 16" which requires undersized cutter). 54" valves will use a 48" full-sized shell cutter.
- 5.2 **Bronze Disc Nut** - all valves.
- 5.3 **Anti-Friction Washers on non-rising stem valves** – Are located above and below the thrust collar portion of the stem to reduce friction and provide more effective conversion of operating torques into seating loads.
- 5.4 **Stem for non-rising stem valves, with O-ring Seals** – One O-ring is located below the thrust collar of the stem and two are located above the thrust collar. The O-rings and thrust collar are factory lubricated. The two primary O-rings seal the thrust collar area from outside contaminants and water, and retain an ample amount of lubricant on the thrust collar and anti-friction washers to reduce operating torque and wear.
- 5.5 **Stem** – The threads on the bronze stem are Acme form threads for strength and efficiency. The stem thrust collar is made integral with the stem -- and is formed by a heat upset operation for valves 14" thru 16" in size; cast in place for 18" and larger valves.
- 5.6 **Upper Stem O-ring Replacement** – The two O-rings above the thrust collar of all Mueller Resilient Wedge Gate Valves can be replaced with the valve in the fully open position, under pressure, with no leakage.
- 5.7 **Corrosion Resistant** – 14" thru 36" sizes - all inside and outside cast iron surfaces are coated with Mueller PRO-GARD[®] Epoxy Coating, 10 mils nominal. Mueller PRO-GARD[®] Epoxy Coating is non-toxic and imparts no taste to water. 42" thru 54" sizes - all inside and outside cast iron surfaces coated with Mueller HP Epoxy Coating. Both coatings comply with ANSI/AWWA C550 and valves are certified to ANSI/NSF Standard 61 & 372.

6. OPTIONAL FEATURES

- 6.1 Mueller 2361 Series Resilient Wedge Gate Valves can be furnished with the following optional designs or features:
 - 6.1.1 **Gearing** – Bevel and Spur gearing available on valves. Valves 30" and larger gearing is required. Bevel geared valves are for horizontal installations; spur geared for vertical. Geared valves provide an additional bearing to support the extreme end of the stem.
 - 6.1.2 **Bypass valve** – Valves 18" or larger. The bypass valves are non-rising stem Mueller[®] Series 2362 Resilient Wedge Valves. The bypass size and location comply with Section 24 of AWWA C500. For 16" valves, bypasses are available on flanged ends, mechanical joint ends and flange x mechanical joint ends only.
 - 6.1.3 **Position indicator.**
 - 6.1.4 **Bolts and nuts** – Stainless Steel, Type 316.
 - 6.1.5 **Stem** – Silicon bronze - Valves 14" thru 16" ASTM B98 C66100; 18" and larger ASTM B763 C99400 or C99500. 304 Stainless Steel or 316 Stainless Steel.
 - 6.1.6 **Disc encapsulation** – 14" thru 16" sizes – EPDM ASTM D2000.

2361 SERIES RESILIENT WEDGE GATE VALVES



7. TEST PRESSURE

- 7.1 The pressure test on each Mueller Resilient Wedge Gate Valve meets the requirements of AWWA Standard C515 for Resilient Seated Valves.
 - 7.1.1 Each Mueller Resilient Wedge Gate Valve is subjected to two pressure tests. The seat test is at the working pressure of AWWA valves and 1-1/2 times working pressure of UL Listed valves. Shell tests are at two times the working pressure.
 - 7.1.2 Pressure tests at the working pressure shall show NO leakage past the seat from either side of the wedge or at the flange joints. Pressure tests at twice the working pressure shall show NO leakage through the metal or flange joints.
 - 7.1.3 Test pressures are as follows: 14" thru 16" – 375 psi seat test, 500 psi shell test; 18" thru 54" – 275 psi seat test, 500 psi shell test.



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Resilient Wedge Gate Valves



Series 25 Resilient Wedge Gate Valve

Meets or Exceeds the AWWA C509 Standard

WIPER RING

To prevent impurities from entering into the stem seals and to protect the o-rings

DUCTILE IRON GLAND FLANGE

Will not break or crack even if the valve is over-torqued in the closed direction

STAINLESS STEEL STEM — STANDARD

- LEAD FREE
- Threads rolled in a separate cold pressing process to enhance strength
- Rolled threads ensure smooth thread edges and low operating torques
- Twice the yield strength required by AWWA eliminates bent and broken stems
- Bronze stem available

FULLY ENCAPSULATED WEDGE

Ductile iron core fully encapsulated in EPDM rubber with an integral low zinc bronze stem nut for optimum corrosion protection and precision wedge tracking

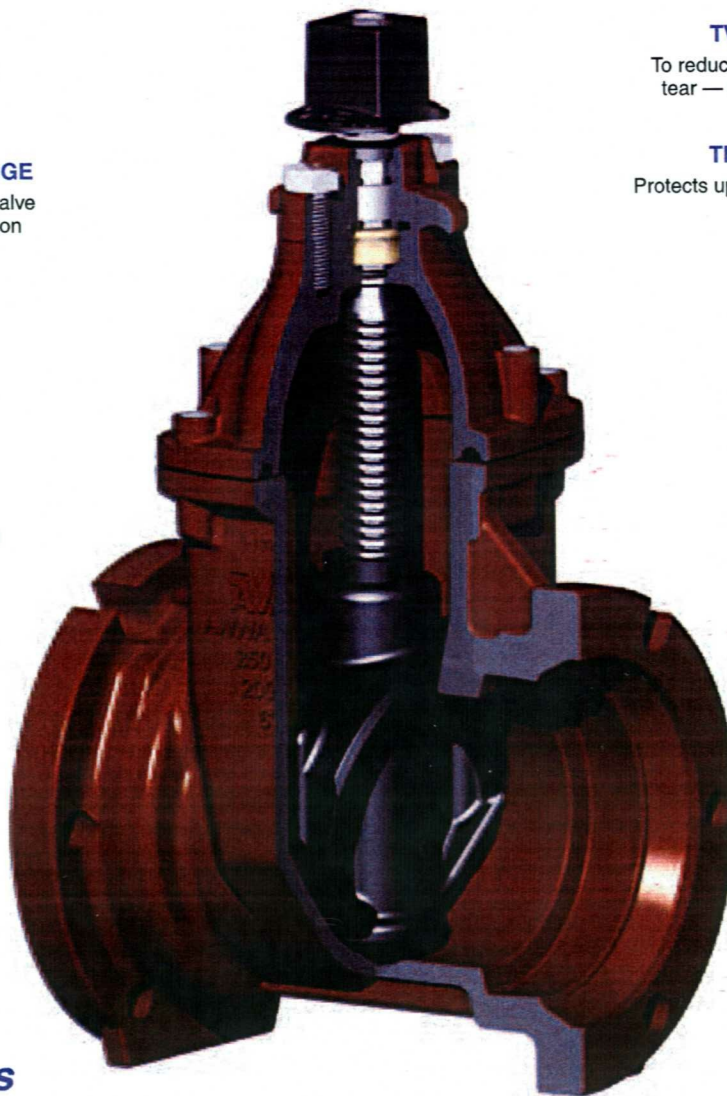
**American
AVK
Commitment:
Quality Products
— Delivered On Time**

High Quality:

- Products are proudly MADE IN AMERICA
- Tested to AWWA, UL, ULC and FM requirements
- Certified to NSF61 by UL
- All products are covered by a ten (10) year warranty

Product Range:

- All standard end configurations available
- Size range: NRS gate valves 1"-24"
- Size range: OS&Y gate valves 2 1/2" - 12"
- Size range: post indicator gate valves 4"-12"
- GENUINE Class 250 psi resilient wedge gate valves available — NRS 4"-12"
- 18"-24" NRS Resilient Wedge Gate Valves utilizing the exclusive AVK PowerSaver® feature for reduced operating torque



TWO O-RING STEM SEALS

To reduce friction and prevent wear and tear — replaceable under full pressure

THIRD O-RING STEM SEAL

Protects upper stem seals from impurities entering from the water way

STAINLESS STEEL BOLTS — STANDARD

Gland bolts and bonnet bolts supplied in stainless steel for superior corrosion resistance

COUNTERSUNK BONNET BOLTS

Each bolt capped with hot melt to isolate the bolts from internal or external corrosive elements

O-RING BONNET GASKET

Reusable heavy-duty gasket wraps each bolt to prevent corrosion

COATING TO AWWA C550

Electrostatically applied fusion bonded epoxy coating inside and outside for excellent corrosion resistance

100% TESTING

All valves tested to 250 PSI/500 PSI



Another AVK Innovation Series 18 Combi-Tee Valve:

- Push-on or MJ connection
Sizes: ● 6"x6" ● 8"x6" ● 12"x6"
- Time saving installation and competitive pricing
- Designed for lateral hydrant installations off main lines
- Main line laying length to AWWA C-110
- Gate valves to AWWA C-509
- Epoxy coated inside and out to AWWA C-550

American AVK Company Locations To Serve You:

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Fax: (775) 783-7502

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Dallas, TX
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Fax: (775) 783-7502

AVK
AMERICAN AVK COMPANY
www.americanavk.com

SST™ STAINLESS STEEL TAPPING SLEEVE

SUBMITTAL INFORMATION



INTENDED USE

The Romac Style SST is recommended for tapping Plastic, Cast Iron, Ductile Iron, Steel, Asbestos Cement and other pipe materials.

MATERIALS

FLANGE

Ductile (nodular) iron meets or exceeds ASTM A536, Grade 65-45-12. 304 Stainless Steel optional. ANSI class 125 and 150 drillings and recessed to accept tapping valves.

STAINLESS STEEL

Meets or exceeds ASTM A 240 type 304 UNS designated S30400.

OUTLET

304L Stainless Steel, heavy gauge. Fused to shell by GMAW weld on the outside and GTAW weld on the inside.

SHELL

Stainless Steel, heavy gauge. Top half is 304L. Back half is 304.

SIDEBARS & LUGS

304 Stainless Steel, heavy gauge. Sidebars GTAW welded to form permanent fusion with shell. Lugs GMAW welded to Sidebars.

TEST PORT & TEST PLUG

304 Stainless Steel. Test port is 3/4 inch FNPT. Test Plug is 3/4" MNPT Hex Head Plug. Plug threads are coated to prevent galling.

BOLTS

304 Stainless Steel. 4.60 to 6.60 inch sleeves use 1/2" UNC rolled thread, 6" - 12" sleeves use 5/8" UNCE rolled thread. Bolts are GMAW welded to Sidebars.

WELDS

GMAW and GTAW weld processes. 308L Stainless Steel filler wire used as appropriate. Flange weld is GMAW type proprietary process. All welds passivated for enhanced corrosion resistance.

PRESSURE

When properly installed, the Romac Style SST Tapping Sleeve can work at the pressure ratings shown here.

PIPE SIZE	WORKING PRESSURE	TEST PRESSURE
4" - 8"	250 psi	312 psi
10" - 24"	200 psi	300 psi

STANDARD

The Romac Style SST style tapping sleeves meet all requirements set forth in the MSS SP-124 and AWWA C223.

NUTS

304 Stainless Steel, heavy hex. 4 inch nominal size sleeves use 1/2" UNC threads, 6 inch nominal size and larger sleeves use 5/8" UNC threads. Nuts coated to prevent galling.

WASHERS

304 Stainless Steel and Plastic Flat Washers. 4 inch nominal size sleeves use 1/2", 6 inch nominal and larger use 5/8" washers. Plastic washer prevents galling between nut or stainless steel Washer and Lifter Bar on all sizes.

ARMORS

304 Stainless Steel, heavy gauge.

LIFTER BARS

304 Stainless Steel. Lip curved to hold position while tightening. Heavy gauge serves as bearing surface for nuts.

GASKETS

Virgin Styrene Butadiene Rubber (SBR) compounded for water and sewer service in accordance with ASTM D 2000. Specially designed grid pattern and tapered ends to assure seal around full circumference of pipe. Reinforced ring at outlet provides hydrodynamic seal. Other compounds available for petroleum, chemical or high temperature service. **Romac can provide a NSF certified gasket on request.**

10/01/2019

Document # 15-8-0004

SIZES & RANGES

SEE CATALOG.

This information is based on the best data available at the date printed above. Please check with Romac for any updates or changes.

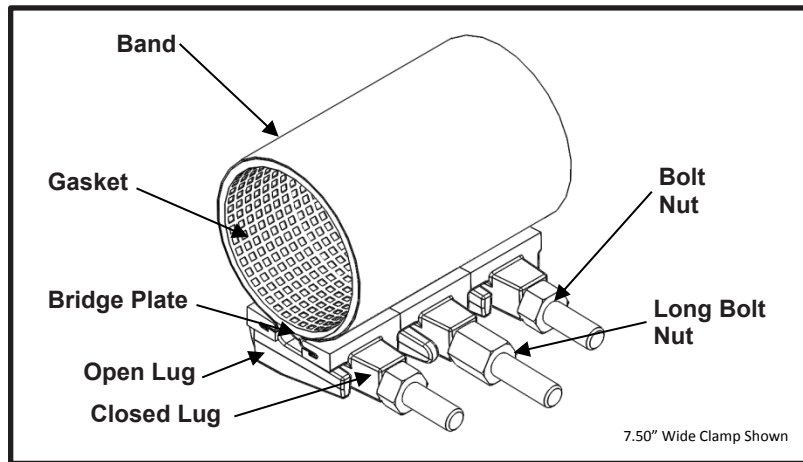


www.romac.com
21919 20th Avenue SE • Suite 100 • Bothell, WA 98021
Phone (425) 951-6200 • 1-800-426-9341 • Fax (425) 951-6200

SPECIFICATION

FULL CIRCLE[®] REPAIR CLAMP

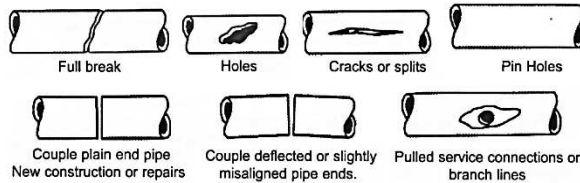
MODEL 226



APPLICATIONS

- **Typical Uses**

- Repair leaks due to complete breaks, splits, or holes
- Joining pipes of the same diameter
- Examples:



- **Standard Pipe Sizes**

- 2" to 14" nominal

- **Standard Widths**

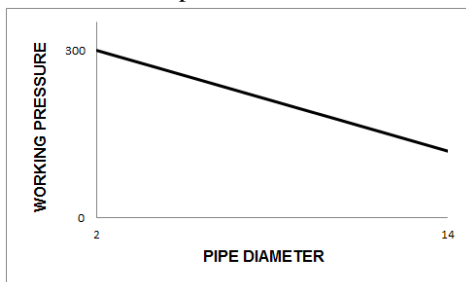
- 7.5", 10.0", 12.5", 15.0", 20.0", 25.0", 30.0"

- **Type of Pipe**

- Carbon Steel, Stainless Steel, Ductile Iron, PVC, HDPE DR17 or thicker (with use of spring washers), Asbestos Cement, Copper, Aluminum

- **Working Pressure**

- Up to 300 psi depending on type of pipe, type of repair, pipe diameter, service conditions and installation workmanship





SPECIFICATION

FULL CIRCLE[®] REPAIR CLAMP

MODEL 226

MATERIALS

- **Band**
 - Type 304 Stainless Steel per ASTM A240
 - Band Thickness: 24 gauge thick for clamps 4.50" diameter and smaller
20 gauge thick for clamps 4.80" diameter and larger
 - Hemmed ends for lug removal in tight applications
- **Lugs**
 - Cast using Ductile Iron 80-55-06 per ASTM A536
 - Flexi-Coat[®] fusion bonded epoxy finish
 - Slot cast in lug to capture band hem
 - Designed for drop in replaceable bolts
 - One open loop lug and one closed loop lug. The bolts do not have to be removed to install clamp, preventing lost hardware
 - Long interlocking fingers allow for up to 0.40 inches of range in clamp
 - Interchangeable lugs allow combining smaller diameter clamps to create larger diameter clamps
 - Mutually supporting sliding fingers assures proper bolt alignment and permits maximum clamping without bending bolts
- **Gasket**
 - Nitrile (Buna-N) per ASTM D2000
 - Gasket Thickness: 0.192" thickness for clamps 4.50" diameter and smaller
0.218" thickness for clamps 4.80" diameter and larger
 - Certified to NSF/ANSI 61-G & 372
 - Compounded to resist water, oil, natural gas, acids, alkalies, most (aliphatic) hydrocarbon fluids, and many other chemicals
 - Temperature range: -20°F to +180°F
 - Full 360° gridded face gasket provides maximum pipe support, reinforcement, and sealing pressure
 - Tapered ends allow for full circumferential sealing
- **Bridge Plate**
 - Type 304 Stainless Steel quarter-hard per ASTM A240
 - Molded and recessed into gasket
 - Preformed for uniform distribution of gasket pressure over the entire pipe circumference
- **Bolts**
 - HSLA Carbon Steel per AWWA C111/A21.11
 - 5/8"-11UNC x 6.00" long, Track Head Oval Neck
 - Fe/Zn coated per ASTM F1941-10
 - Rolled threads for improved physical characteristics, greater thread accuracy, and smooth surface finish
 - Drop in replaceable bolts
- **Long Bolts**
 - HSLA Carbon Steel per AWWA C111/A21.11
 - 5/8"-11UNC x 6.88" long, Track Head Oval Neck
 - Fe/Zn coated per ASTM F1941-10
 - Rolled threads for improved physical characteristics, greater thread accuracy, and smooth surface finish
 - Used on clamps 4.50" diameter and smaller to facilitate the initial clamp installation
 - Drop in replaceable bolts
- **Nuts**
 - HSLA Carbon Steel per AWWA C111/A21.11
 - 5/8"-11UNC, Heavy Hex Semi-Finished
 - Fe/Zn coated per ASTM F1941-10



SPECIFICATION

FULL CIRCLE[®] REPAIR CLAMP

MODEL 226

- **Long Nuts**

- HSLA Carbon Steel per AWWA C111/A21.11
- 5/8"-11UNC x 1.00" long, Heavy Hex Semi-Finished
- Fe/Zn coated per ASTM F1941-10
- Used to provide hand tightening during initial clamp installation

LISTINGS

- Certified to NSF/ANSI 61-G & 372
- Meets applicable AWWA C230 standards

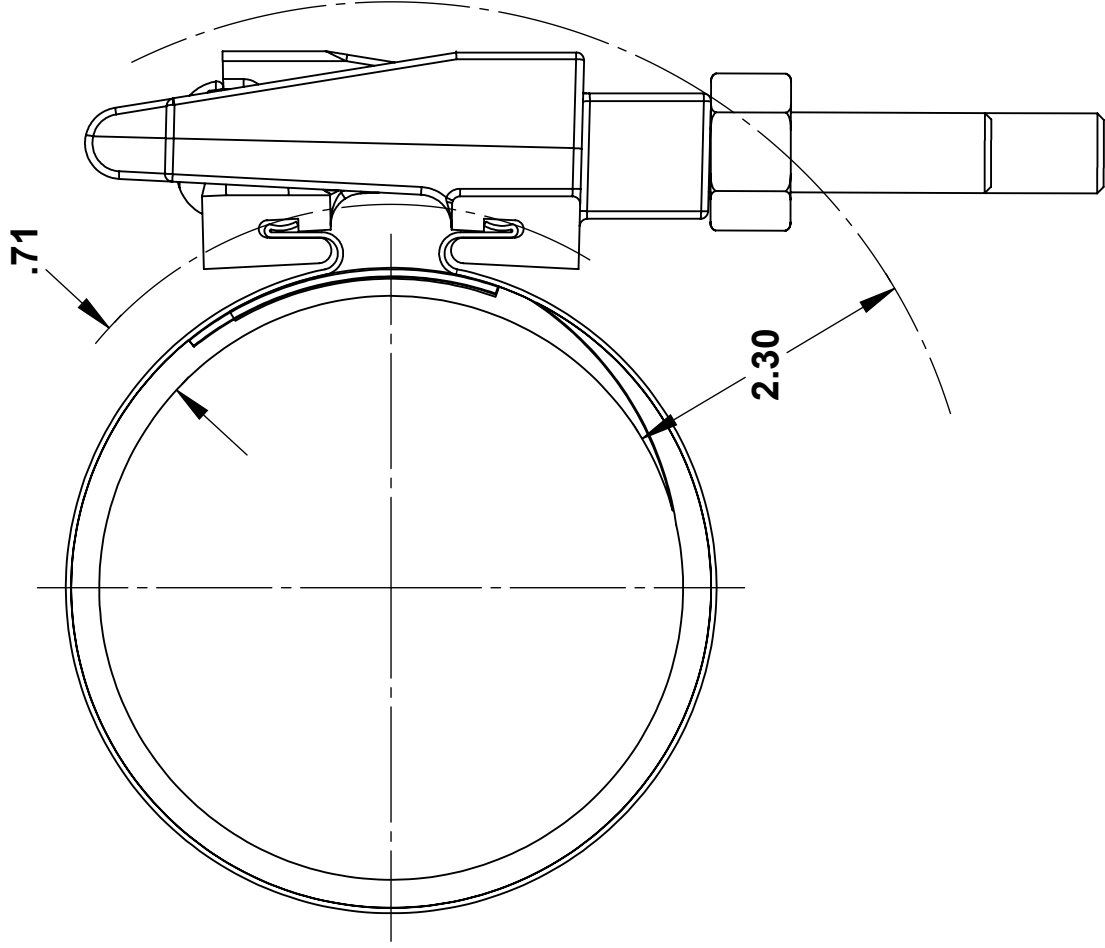
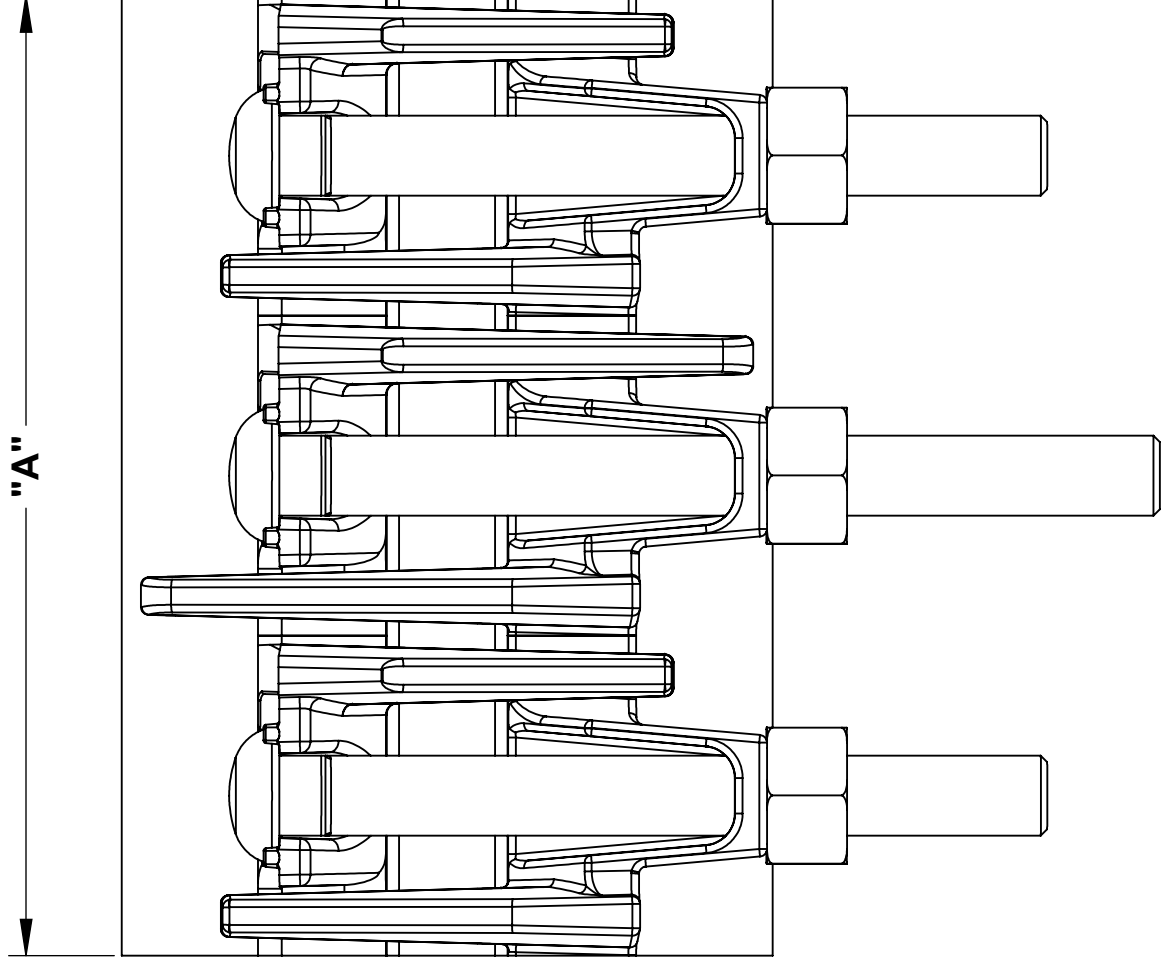
OPTIONS

- Type 316 Stainless Steel band
- Type 304 Stainless Steel hardware with fluoropolymer coated nuts to prevent galling
- Type 316 Stainless Steel hardware with fluoropolymer coated nuts to prevent galling
- Alternative gasket material (e.g. Viton, EPDM, etc.)
- Spring washers for use of clamp on HDPE pipe
- Offset gaskets to allow for repairing longer cracks using multiple clamps
- Conductivity feature

NOTES

- This product **does not** restrain the pipe from pulling out of the fitting
- Spring washers **are required** when this product is used on DR17 or thicker HDPE pipe (Not recommended for use on HDPE pipe DR 17 or thinner)
- Pipe stiffeners **are required** when this product is used to join HDPE and thin wall PVC pipe
- Full Circle[®] is a registered trademark of Smith-Blair Inc.
- These product specifications were correct at the time of publication and are subject to change without notice
- See the Smith-Blair[®] web site for part numbers and ordering information
- See the Smith-Blair[®] web site for warranty information
- See the Smith-Blair[®] web site for corrosion warnings

30 Globe Ave, Texarkana, AR 71854
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NOTES:

1. LONG OVAL NECK BOLTS ONLY PROVIDED ON CLAMPS 4.50" DIAMETER AND SMALLER
2. SEE SMITH-BLAIR CATALOG FOR AVAILABLE PIPE DIAMETER AND WIDTH COMBINATIONS AS SOME COMBINATIONS ARE NOT AVAILABLE
3. 7.50" WIDE CLAMP SHOWN OTHER SIZES SIMILAR

A	BOLT QUANTITY			LONG NUT QUANTITY	SOCKET SIZE
	SHORT	LONG	TOTAL		
7.50	2	1	3	1	1-1/16"
10.00	2	2	4	2	
12.50	3	2	5	2	
15.00	4	2	6	2	
20.00	8	-	8	3	
25.00	10	-	10	4	
30.00	12	-	12	4	

CERTIFIED TO NSF/ANSI 61-G & 372

TOLERANCES U.N.O. XX= ±.03 XXX= ±.015 FRACTIONS= 1/16 ANGLES= 1° MACH. FIN=	NOTES: REMOVE BURRS AND SHARP EDGES DO NOT SCALE DWG.	APP'D	DATE
ALL DIMENSIONS ARE IN INCHES.	SCALE: N/A	CK'D	DATE
		DRN	DATE
		CHD	DATE
			5/18/15

TITLE
SPECIFICATION
FULL CIRCLE® REPAIR CLAMP
MODEL 226

SMITH-BLAIR, Inc. TEXARKANA, ARKANSAS	P/N N/A	DWG. NO. SPEC_226.DRW	1 OF 1 SHEET 2/19/16 REV.
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ADS POTABLE WATER SERVICE TUBING (CTS) PIPE SPECIFICATIONS

Scope

This specification describes ADS Potable Water Service Tubing (CTS) pipe SDR 9 for use in potable water service applications.

Pipe Requirements

ADS potable water service tubing shall meet the requirements of ASTM D2737, AWWA C901 and NSF Standards 14 and 61. Pipe dimensions shall meet Copper Tubing Size (CTS) standards.

Material Properties

Tubing material shall be high-density polyethylene conforming to the minimum requirements of cell classification 445574E as defined and described in ASTM D3350. The resin shall have a material designation code of PE4710 by the Plastic Pipe Institute.

Disinfection/Maintenance

The active chlorine content of disinfecting solutions shall not exceed 12%. All disinfecting solution must be flushed from all lines within the system. Industry accepted procedures, like ANSI/AWWA C651 *Disinfecting Water Mains*, should be followed for both new and repaired potable water lines.

Installation

Installation is similar to other flexible tubing/pipe products. Methods including direct bury, plowing or pulling are applicable per local, state or federal guidelines for the application.

Tubing Properties

		3/4"	1"	1 1/4"	1 1/2"	2"
SDR 9	Outside Diameter, in (mm)	0.875 ±0.004 (22.2 ±0.10)	1.125 ±0.005 (28.6 ±0.13)	1.375 ±0.005 (34.9 ±0.13)	1.625 ±0.006 (41.3 ±0.15)	2.125 ±0.006 (54.0 ±0.51)
	Wall Thickness, in (mm)	0.097 +0.010 (2.5 +0.25)	0.125 +0.012 (3.2 +0.30)	0.153 +0.015 (3.9 +0.38)	0.181 +0.018 (4.6 +0.46)	0.236 +0.024 (6.0 +0.61)
	Pressure Rating @ 73°F, psi (kPa)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	250 (1724)
	Weight, gm/ft (gm/m)	46 ±2 (151 ±7)	78 ±3 (256 ±10)	125 ±4 (410 ±13)	162 ±4 (531 ±13)	275 ±5 (902 ±16)

C900 PVC PRESSURE PIPE

4"-12" SPECIFICATION DATA

Diamond (C900) PVC Pipe (4" through 12") is made of 12454 compound per ASTM D1784, in accordance with the dimensional, chemical, and physical requirements of AWWA C900.

Diamond (C900) PVC Pipe bears the mark of NSF, International (NSF) and the listing of Underwriters Laboratory, Inc. (UL). Some factory locations produce C900 bearing the mark of the Canadian Standards Association (CSA) and NSF14.

Diamond (C900) PVC Pipe utilizes a gasket, per ASTM F477, to seal the integral bell socket to the spigot of the next joint (which conforms to the requirements of ASTM D3139.) Each male end is beveled to facilitate joint assembly, and the spigot is referenced marked to ensure proper insertion depth. Diamond furnished lubricant is to be used in the joining process. Specialty gaskets may be available upon request.

PHYSICAL PROPERTIES OF PVC 12454:

Property	ASTM Test	Minimum
Specific Gravity	D792	1.40
Tensile Strength, psi	D638	7,000
Tensile Modulus, psi	D638	400,000
IZOD Impact Strength	D256	.65ft., lb./in.

SHORT FORM Specification for Diamond C900 PVC Water Pipe

Diamond C900 PVC Water Pipe shall be made of compounds conforming to ASTM D1784 with a cell classification of 12454. Diamond C900 shall meet all the dimensional, chemical, and physical requirements as outlined in AWWA C900 and will be supplied in 20 and 22 foot laying lengths. Joints shall meet the requirements of ASTM D3139 and shall be formed using Rieber Technology. Gaskets shall meet the requirements of ASTM F477.

Potable water pipe shall be manufactured from National Sanitation Foundation (NSF) approved compounds.

C900™

AWWA C900 SPECIFICATION DATA. SUPPLIED IN 20 AND 22 FOOT LAYING LENGTHS.

Nominal Pipe Size in. (mm)	A Outside Dia. Inches	B Bell Dia. Inches	C Approximate Bell Depth Inches	D Assembly Mark 1 Inches *	E Assembly Mark 2 Inches *	t C900 DR-14 305 psi Min Wall Inches	t C900 DR-18 235 psi Min Wall Inches	t C900 DR-25 165 psi Min Wall Inches
4" (100)	4.800	6-1/2"	6	4-1/4"	5-1/4"	0.343	0.267	0.192
6" (150)	6.900	9-1/4"	6.5	4-5/8"	5-5/8"	0.493	0.383	0.276
8" (200)	9.050	11-3/4"	7	5-1/8"	6-1/8"	0.646	0.503	0.362
10" (250)	11.100	14-1/4"	7.5	5-3/4"	6-3/4"	0.793	0.617	0.444
12" (300)	13.200	16-3/4"	8	6-1/8"	7-1/8"	0.943	0.733	0.528

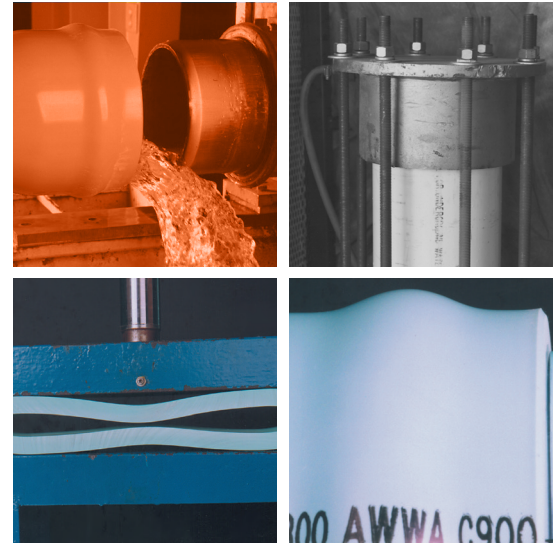
Prices are subject to a firm policy of "Price in effect at time of shipment on regular purchases"

*Possession of this page does not constitute an offer of sale"

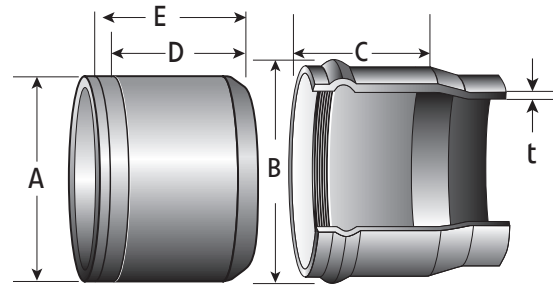
*Tolerance of +/- 1/4" allowed

EXTREME TESTING CONDITIONS

C900 PVC pressure pipe, available in pressure ratings for a wide range of water transfer applications (Available in sizes from 4" through 12")



RIEBER JOINT ILLUSTRATION



VINYLTECH AWWA C900 BLUE

TECHNICAL DATA SUBMITTAL (4" - 12")



CONFORMANCE

These specifications designate the requirements for manufacturing and installing Vinyltech AWWA C900 PVC Pressure Pipe for potable water (4"-12").

ANSI/AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4" Through 60" (100mm Through 1,500mm)

AWWA C605 - Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water

ASTM D1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds

ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals

ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

NSF/ANSI 61, Annex G - Drinking Water Systems Components-Health Effects

FM 1612 - Approval Standard for Polyvinyl Chloride (PVC) Pipe and Fittings for Underground Fire Protection

UL 1285 - Standard for Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented Polyvinyl Chloride (PVCO) for Underground Fire Service

PIPE COMPOUND

The pipe shall be extruded from compounds meeting (PVC 1120) the requirements of Cell Classification 12454, as defined in ASTM D1784, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds. The PVC shall also be listed by the National Sanitation Foundation (NSF) for use in potable water.

PIPE

Vinyltech pipe shall be manufactured in accordance with AWWA C900.

GASKET JOINT

The gasket shall be reinforced with a steel band and meet the requirements of ASTM F477. Vinyltech pipe shall have an integral bell end with a locked-in factory installed gasket and shall meet the joint requirements of ASTM D3139.

MARKING

The pipe shall be marked in accordance with AWWA C900.

QUALITY CONTROL

Each length of the pipe including the bell shall be hydrostatically tested in accordance with AWWA C900. The pipe shall meet all additional test requirements as described in AWWA C900. Our full-time quality assurance staff continually administers a rigid program of tests to maintain the production of the best pipe products available.

INSTALLATION

Recommended installation procedures of Vinyltech Corporation are outlined in AWWA C605, Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water. The AWWA Manual M23, PVC Pipe Design and Installation, is also an invaluable resource guide for design and installation.

TAPPING

The consistent success of tapping PVC pressure pipe is contingent upon the use of proper procedures and equipment. Vinyltech recommends strict compliance with the requirements as specified in AWWA C605.

ASSEMBLING THE PIPE

Assembly of Vinyltech PVC water pipe is easily accomplished. A depth of entry mark is on each spigot end to serve as a visual check for rapid, accurate joint inspection. **Do not over insert.**

- 1) Remove any mud, sand, or other foreign matter from the belled and spigot ends of the pipe. Carefully clean the gasket area.
- 2) With a clean applicator (a brush or hand) lubricate the entire surface of the pipe from the spigot end to the depth of entry mark and the contact surface of the gasket with **Vinyltech Brand Lubricant**.
- 3) Brace the bell to avoid disturbing the already installed joints. Align the pipe, insert the spigot into the bell and push.
- 4) **Do not insert past the entry mark line.**



VINYLTECH • 201 S. 61st Avenue • Phoenix, AZ 85043 • 602 233-0071 • Fax: 602 272-4847 • www.vtpipe.com



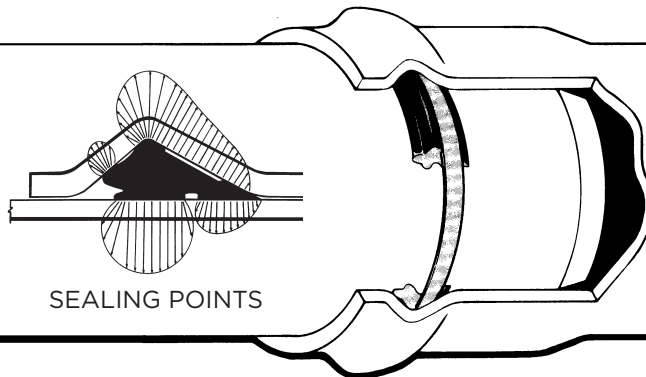
AN OTERTAIL COMPANY

C900 DR 18 Pressure Class 235

NOMINAL SIZE		OUTER DIAMETER (IN)	MINIMUM WALL (IN)	FEET PER LIFT	LIFTS PER TRUCK	APPROX WEIGHT (LB/100')
(IN)	(mm)					
4	100	4.800	0.267	1020	16	251.6
6	150	6.900	0.383	440	16	521.2
8	200	9.050	0.503	200	20	903.0
10	250	11.100	0.617	240	12	1364.4
12	300	13.200	0.733	60-80	28	1935.8

C900 DR 14 Pressure Class 305

NOMINAL SIZE		OUTER DIAMETER (IN)	MINIMUM WALL (IN)	FEET PER LIFT	LIFTS PER TRUCK	APPROX WEIGHT (LB/100')
(IN)	(mm)					
4	100	4.800	0.343	1020	16	317.5
6	150	6.900	0.493	440	16	658.7
8	200	9.050	0.646	200	20	1139.7
10	250	11.100	0.793	240	12	1722.3
12	300	13.200	0.943	60-80	28	2445.5



The Rieber Sealing System

The Rieber system provides a proven pipe joint with an excellent track record in the field. It is the fastest growing system in the world because of its many advantages.

- Factory installed, locked-in gasket
- The pipe bell forms over the gasket, making a perfect fit
- Avoids the possibility of installing the wrong gasket
- Reduces installation problems
- The locked-in gasket eliminates gasket roll-out during joining
- The gasket is molded vs. extruded and spliced
- Works equally well under pressure or vacuum
- Three sealing points achieved vs. two
- **LEAK-PROOF JOINTS**
- **“THE WORLDS BEST JOINT”**

VINYLTECH AWWA C900 BLUE

TECHNICAL DATA SUBMITTAL (14" - 24")



CONFORMANCE

These specifications designate the requirements for manufacturing and installing Vinyltech AWWA C900 PVC Pressure Pipe for potable water (14"-24").

ANSI/AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4" Through 60" (100mm Through 1,500mm)

AWWA C605 - Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water ASTM D1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds

ASTM D1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds

ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals

ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

NSF/ANSI 61, Annex G "Drinking Water Systems Components-Health Effects"

PIPE COMPOUND

The pipe shall be extruded from compounds meeting (PVC1120) the requirements of Cell Classification 12454, as defined in ASTM D1784, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds. The PVC shall also be listed by the National Sanitation Foundation (NSF) for use in potable water.

PIPE

Vinyltech pipe shall be manufactured in accordance with AWWA C900.

GASKET JOINT

The gasket shall be reinforced with a steel band and meet the requirements of ASTM F477. Vinyltech pipe shall have an integral bell end with a locked-in factory installed gasket and shall meet the joint requirements of ASTM D3139.

MARKING

The pipe shall be marked in accordance with AWWA C900.

QUALITY CONTROL

Each length of the pipe including the bell shall be hydrostatically tested in accordance with AWWA C900. The pipe shall meet all additional test requirements as described in AWWA C900. Our full-time quality assurance staff continually administers a rigid program of tests to maintain the production of the best quality pipe products available.

INSTALLATION

Recommended installation procedures of Vinyltech Corporation are outlined in AWWA C605, Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water. The AWWA Manual M23, PVC Pipe-Design and Installation, is also an invaluable resource guide for design and installation.

TAPPING

The consistent success of tapping PVC pressure pipe is contingent upon the use of proper procedures and equipment. Vinyltech recommends strict compliance with the requirements as specified in AWWA C605.

ASSEMBLING THE PIPE

Assembly of Vinyltech PVC water pipe is easily accomplished. A depth of entry mark is on each spigot end to serve as a visual check for rapid, accurate joint inspection. **Do not over insert.**

- 1) Remove any mud, sand, or other foreign matter from the belled and spigot ends of the pipe. Carefully clean the gasket area.
- 2) With a clean applicator (a brush or hand) lubricate the entire surface of the pipe from the spigot end to the depth of entry mark and the contact surface of the gasket with **Vinyltech Brand Lubricant**.
- 3) Brace the bell to avoid disturbing the already installed joints. Align the pipe, insert the spigot into the bell and push.
- 4) **Do not insert past the entry mark line.**



C900 DR 25 Pressure Class 165

NOMINAL SIZE		OUTER DIAMETER (IN)	MINIMUM WALL (IN)	FEET PER LIFT	LIFTS PER TRUCK	APPROXIMATE WEIGHT (LB/100')
(IN)	(mm)					
14	350	15.3	0.612	120	12	1935
16	400	17.4	0.696	40/60	20	2575
18	450	19.5	0.78	40/60	20	3165
*20	500	21.6	0.864	80	8	3900
*24	600	25.8	1.032	60	6	5600

C900 DR 21 Pressure Class 200

NOMINAL SIZE		OUTER DIAMETER (IN)	MINIMUM WALL (IN)	FEET PER LIFT	LIFTS PER TRUCK	APPROXIMATE WEIGHT (LB/100')
(IN)	(mm)					
14	350	15.3	0.729	120	12	2210
16	400	17.4	0.829	40/60	20	2883
18	450	19.5	0.929	40/60	20	3635
*20	500	21.6	1.029	80	8	4468
*24	600	25.8	1.229	60	6	6420

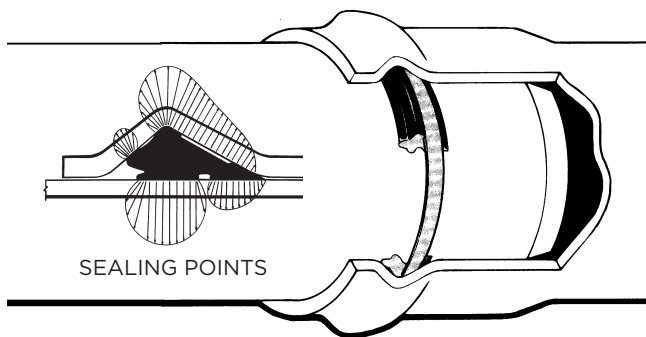
C900 DR 18 Pressure Class 235

NOMINAL SIZE		OUTER DIAMETER (IN)	MINIMUM WALL (IN)	FEET PER LIFT	LIFTS PER TRUCK	APPROXIMATE WEIGHT (LB/100')
(IN)	(mm)					
14	350	15.3	0.85	120	12	2650
16	400	17.4	0.967	40/60	20	3475
18	450	19.5	1.083	40/60	20	4340
*20	500	21.6	1.200	80	8	5350
*24	600	25.8	1.433	60	6	7650

C900 DR 14 Pressure Class 305

NOMINAL SIZE		OUTER DIAMETER (IN)	MINIMUM WALL (IN)	FEET PER LIFT	LIFTS PER TRUCK	APPROXIMATE WEIGHT (LB/100')
(IN)	(mm)					
14	350	15.3	1.093	120	12	3300
16	400	17.4	1.243	40/60	20	4450
*18	450	19.5	1.393	40/60	20	5341
*20	500	21.6	1.543	80	8	6566

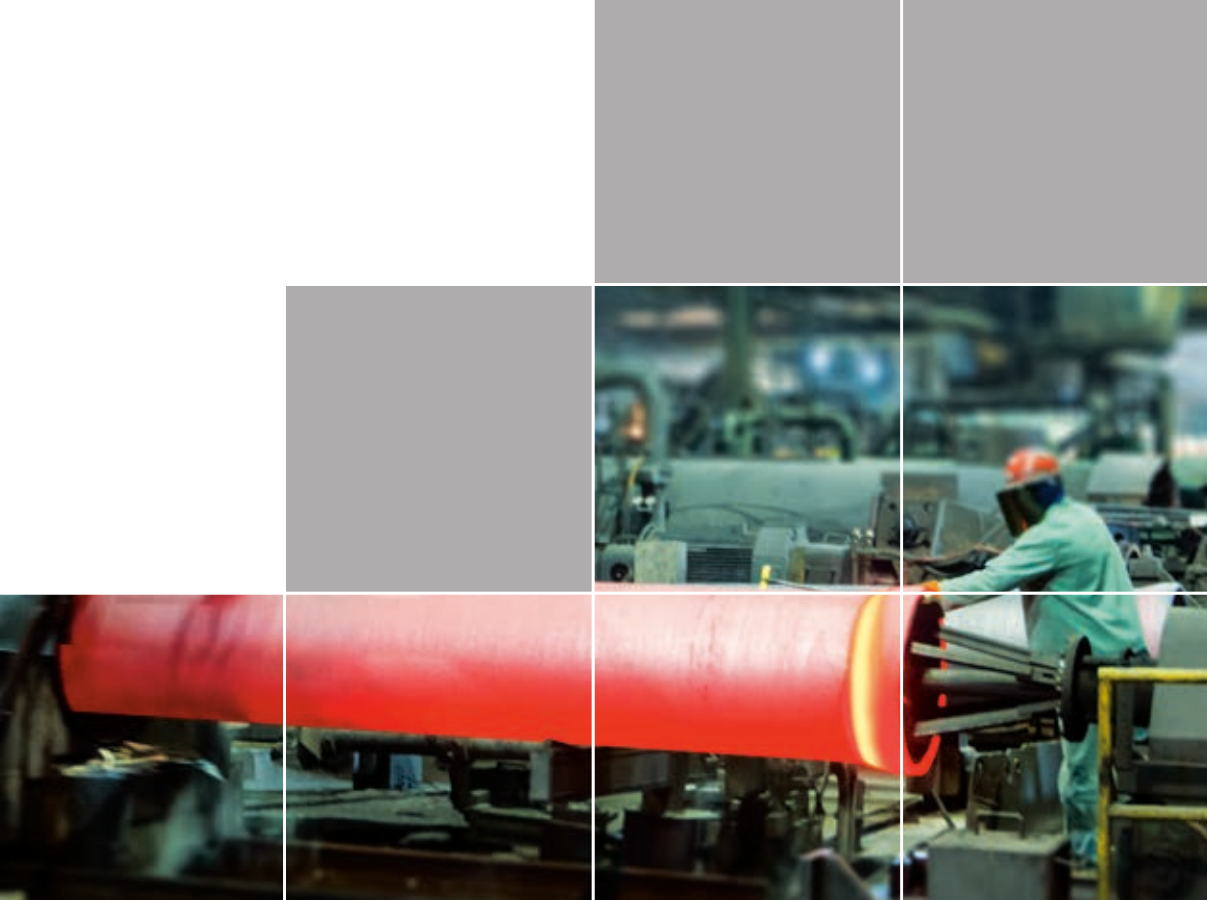
*Northern Pipe Products



The Rieber Sealing System

The Rieber system provides a proven pipe joint with an excellent track record in the field. It is the fastest growing system in the world because of its many advantages.

- Factory installed, locked-in gasket
- The pipe bell forms over the gasket, making a perfect fit
- Avoids the possibility of installing the wrong gasket
- Reduces installation problems
- The locked-in gasket eliminates gasket roll-out during joining
- The gasket is molded vs. extruded and spliced
- Works equally well under pressure or vacuum
- Three sealing points achieved vs. two
- **LEAK-PROOF JOINTS**
- **"THE WORLDS BEST JOINT"**



TYTON JOINT® Pipe

DUCTILE IRON

PIPE <

- FABRICATION
- RESTRAINED JOINTS
- FITTINGS
- GASKETS
- COATINGS & LININGS



ANSI/AWWA STANDARDS

ANSI/AWWA C151/A21.5, Ductile Iron Pipe, Centrifugally Cast for Water.

Ductile Iron Tyton Joint Pipe is centrifugally cast in metal molds in accordance with ANSI/AWWA C151/A21.5.

The asphaltic outside coating is in accordance with ANSI/AWWA C151/A21.51.

As specified in ANSI/AWWA C151/A21.51, pipe weights have been calculated using standard barrel weights and weights of bells being produced.

ANSI/AWWA C104/A21.4, Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.

The cement-mortar lining and inside coating are in accordance with ANSI/AWWA C104/ A21.4. Special linings and/or coatings can be furnished for specific conditions.

ANSI/AWWA C111/A21.11, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

Tyton Gaskets are furnished in accordance with ANSI/AWWA C111/A21.11.

ANSI/AWWA C105/A21.5, Polyethylene Encasement for Ductile Iron Pipe Systems.

If specifiers and users believe that corrosive soils will be encountered where our products are to be installed, please refer to ANSI/AWWA C105/A21.5, for proper external protection procedures.

ASTM A746-03 "Standard specification for Ductile Iron Gravity Sewer Pipe."**ASTM A716-08 "Standard Specification for Ductile Iron Culvert Pipe."****ASTM A536 "Standard Specification for Ductile Iron Castings."**

Tyton Joint is U.S. Pipe's trademark for pipe with a push-on type connection. Simplicity, sturdiness and watertightness are built into the system by design. Convincing proof of its worldwide acceptance is shown by the fact that more than 95% of the pipe now sold by U.S. Pipe is Tyton Joint.

Tyton Joint Pipe is available in sizes 3" through 64". Sizes 3" through 42" are available in nominal 18-foot laying lengths. 4" through 30" sizes, along with sizes 48" through 64", are available in nominal 20-foot laying lengths.

Tyton Joint Pipe in sizes 4" through 36" are UL listed, and sizes 4" through 16" are FM Approved.

When Tyton Joint Pipe is used for bridge crossings or other above-ground installations, each length of pipe must be supported in a manner to restrict both vertical and horizontal movement.

A Tyton Gasket is the only accessory required when installing Tyton Joint Pipe. It is a circular rubber gasket that has a modified bulb shape in cross section. Gaskets are furnished in accordance with ANSI/AWWA C111/A21.1. Composition and dimensions of the gasket have been carefully engineered to ensure a watertight and lasting seal. The standard Tyton Gasket is manufactured of SBR — styrene butadiene rubber. Gaskets of special elastomers may be ordered for special applications. The gasket contour and bell socket contour ensure that the gasket will remain seated during proper assembly of the pipe. When joint restraint is required for push-on joint pipe, two options are available from U.S. Pipe. For joint restraint of 4" through 24", Field Lok 350 Gaskets may be used. Field Lok 350 Gaskets are rated for 350 psi in sizes 4" through 24". In addition, for 4" through 36" sizes, TR Flex Pipe and Fittings may be used, and for 30" through 64" sizes, HP Lok Pipe and Fittings may be used. TR Flex Pipe and Fittings are rated for working pressures for 350 psi in 4" through 24" sizes, 250 psi in sizes 30" through 36". For HP Lok Pipe and Fittings, the working pressure is 350 psi for 30" through 64". For higher pressure applications contact your U.S. Pipe representative. Complete details on Field Lok 350 Gaskets, TR Flex Pipe and Fittings, and HP Lok Pipe and Fittings can be found on our website, www.uspipe.com.

NOTE: U.S. Pipe qualifies for Federal Procurement under Public Law No. 94-580, Section 6002, known as the Resource Recovery Act of 1976, since, due to modern technology, recycled iron and steel scrap are used to a large degree in our Ductile Iron Pipe production.

The plain end of the pipe is furnished beveled or with a quarter ellipse on the edge to allow assembly. More than 40 years of successful experience have proved its sealing capabilities. Hydrostatic tests have shown that the system will withstand pressures far in excess of rated pressures.

NOTE: Each of the following is a nationally recognized standards organization: American National Standards Institute (ANSI), American Water Works Association (AWWA), American Society for Testing and Materials (ASTM), Underwriters Laboratories (UL), National Fire Protection Association (NFPA), National Sanitation Foundation (NSF), Factory Mutual (FM)

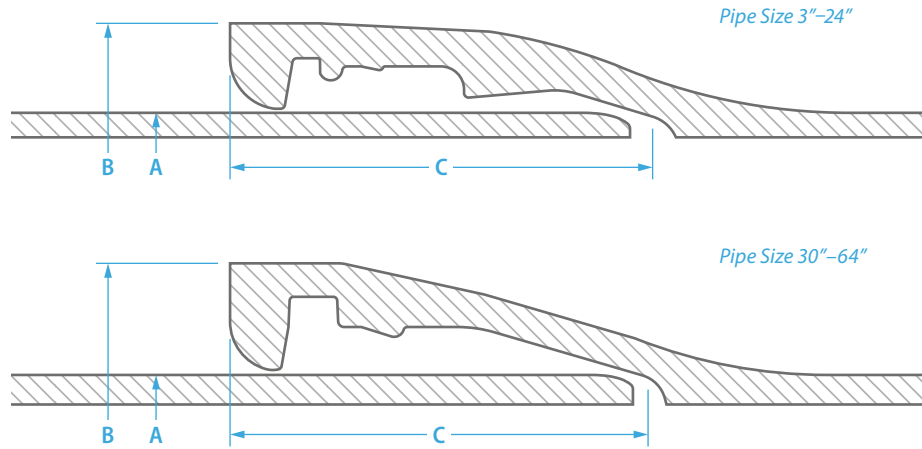
SPECIFICATIONS

Pipe Diameter

TYTON JOINT® PIPE

SIZE	INCH	
	PIPE DIAMETER	
	Minimum	Maximum
3	3.90	4.02
4	4.74	4.86
6	6.84	6.96
8	8.99	9.11
10	11.04	11.16
12	13.14	13.26
14	15.22	15.35
16	17.32	17.45
18	19.42	19.55
20	21.52	21.65
24	25.72	25.85
30	31.94	32.08
36	38.24	38.38
42	44.44	44.58
48	50.74	50.88
54	57.46	57.60
60	61.51	61.65

NOTE: For accuracy, a diameter tape graduated in 100th's must be used. Above table based on ANSI/AWWA C151/A21.51 guidelines for push-on joints.



INCHES			
SIZE	PIPE OUTER DIAMETER	BELL OUTER DIAMETER	SOCKET DEPTH
	A	B	C
3	3.96	5.56	3.00
4	4.80	6.52	3.15
6	6.90	8.66	3.38
8	9.05	10.82	3.69
10	11.10	12.91	3.75
12	13.20	15.05	3.75
14	15.30	17.67	5.00
16	17.40	19.79	5.00
18	19.50	21.91	5.00
20	21.60	24.03	5.50
24	25.80	28.21	5.95
30	32.00	35.40	6.55
36	38.30	41.84	7.00
42	44.50	49.36	7.90
48	50.80	55.94	8.60
54	57.56	63.38	9.40
60	61.61	67.38	10.10
64	65.67	71.56	10.65

NOTE: Actual bell configuration may vary from illustration shown. Subject to manufacturing tolerances.

INCHES							
SIZE	OUTSIDE DIAMETER	NOMINAL THICKNESS					CASTING TOLERANCES
		Pressure Class ^a					
		150	200	250	300	350	
3	3.96	—	—	—	—	—	^c
4	4.80	—	—	—	—	0.25 ^b	0.05
6	6.90	—	—	—	—	0.25 ^b	0.05
8	9.05	—	—	—	—	0.25 ^b	0.05
10	11.10	—	—	—	—	0.26	0.06
12	13.20	—	—	—	—	0.28	0.06
14	15.30	—	—	0.28	0.30	0.31	0.07
16	17.40	—	—	0.30	0.32	0.34	0.07
18	19.50	—	—	0.31	0.34	0.36	0.07
20	21.60	—	—	0.33	0.36	0.38	0.07
24	25.80	—	0.33	0.37	0.40	0.43	0.07
30	32.00	0.34	0.38	0.42	0.45	0.49	0.07
36	38.30	0.38	0.42	0.47	0.51	0.56	0.07
42	44.50	0.41	0.47	0.52	0.57	0.63	0.07
48	50.80	0.46	0.52	0.58	0.64	0.70	0.08
54	57.56	0.51	0.58	0.65	0.72	0.79	0.09
60	61.61	0.54	0.61	0.68	0.76	0.83	0.09
64	65.67	0.56	0.64	0.72	0.80	0.87	0.09

NOTE: Per ANSI/AWWA C150/A21.50 the thickness in the above table includes the 0.08" service allowance and the casting tolerance by size ranges. Dimensions and weights of Special Classes (Thickness Classes) are found on pages 13, 14, 15 and 16.

^aPressure Classes are defined as the rated water pressure of the pipe in psi. The thickness shown is adequate for the rated water working pressure plus a surge allowance of 100 psi. Calculations are based on a minimum yield strength of 42,000 and a 2.0 safety factor times the sum of the working pressure and 100 psi surge allowance.

^bPresently these are the lowest nominal thickness available in these sizes.

^cSee thickness class for 3".

INCHES SIZE	PSI PRESSURE CLASS	INCHES		BARREL WEIGHT PER FOOT	POUNDS	
		THICKNESS	OUTSIDE DIAMETER ^a		WEIGHT PER LAYING LENGTH ^b	
					18-FOOT	20-FOOT
3	—	—	—	—	—	—
4	350	0.25	4.80	10.9	205	230
6	350	0.25	6.90	16.0	305	335
8	350	0.25	9.05	21.1	400	445
10	350	0.26	11.10	27.1	515	570
12	350	0.28	13.20	34.8	660	730
14	250	0.28	15.30	40.4	780	865
14	300	0.30	15.30	43.3	920	1010
14	350	0.31	15.30	44.7	860	945
16	250	0.30	17.40	49.3	950	1050
16	300	0.32	17.40	52.5	1010	1115
16	350	0.34	17.40	55.8	1065	1175
18	250	0.31	19.50	57.2	1095	1210
18	300	0.34	19.50	62.6	1195	1320
18	350	0.36	19.50	66.2	1260	1390
20	250	0.33	21.60	67.5	1285	1420
20	300	0.36	21.60	73.5	1395	1540
20	350	0.38	21.60	77.5	1465	1620
24	200	0.33	25.80	80.8	1550	1710
24	250	0.37	25.80	90.5	1725	1905
24	300	0.40	25.80	97.7	1855	2050
24	350	0.43	25.80	104.9	1985	2195
30	150	0.34	32.00	103.5	2005	2210
30	200	0.38	32.00	115.5	2220	2450
30	250	0.42	32.00	127.5	2595	2690
30	300	0.45	32.00	136.5	2810	2870
30	350	0.49	32.00	148.4	2685	3110
36	150	0.38	38.30	138.5	2945	—
36	200	0.42	38.30	152.9	2940	—
36	250	0.47	38.30	170.9	3265	—
36	300	0.51	38.30	185.3	3525	—
36	350	0.56	38.30	203.2	3845	—

Table continued on next page. ▶

NOTE: Thicknesses and dimensions of 3" through 64" ductile iron pipe conform to ANSI/AWWA C151/A21.51. Weights may vary from the standard because of differences in bell weights.

^aTolerance of O.D. of spigot end: 3–12 in., ±0.06 in.; 14–24 in., +0.05 in., -0.08 in.; 30–48 in., +0.08 in., -0.06 in.; 54–64 in., +0.04 in., -0.10 in.

^bIncluding bell; calculated weight of pipe rounded off to nearest 5 lbs.
^cSee thickness class for 3".

SPECIFICATIONS

Pressure Class (Thickness, Dimension & Weight)

TYTON JOINT® PIPE

INCHES		INCHES		POUNDS		
SIZE	PRESSURE CLASS	THICKNESS	OUTSIDE DIAMETER ^a	BARREL WEIGHT PER FOOT	WEIGHT PER LAYING LENGTH ^b	
					18-FOOT	20-FOOT
42	150	0.41	44.50	173.8	3505	—
42	200	0.47	44.50	198.9	3960	—
42	250	0.52	44.50	219.9	4335	—
42	300	0.57	44.50	240.7	4710	—
42	350	0.63	44.50	265.7	5160	—
48	150	0.46	50.80	—	—	4950
48	200	0.52	50.80	—	—	5525
48	250	0.58	50.80	—	—	6095
48	300	0.64	50.80	—	—	6670
48	350	0.70	50.80	—	—	7240
54	150	0.51	57.56	—	—	6430
54	200	0.58	57.56	—	—	7190
54	250	0.65	57.56	—	—	7945
54	300	0.72	57.56	—	—	8700
54	350	0.79	57.56	—	—	9455
60	150	0.54	61.61	—	—	7305
60	200	0.61	61.61	—	—	8120
60	250	0.68	61.61	—	—	8935
60	300	0.76	61.61	—	—	9860
60	350	0.83	61.61	—	—	10665
64	150	0.56	65.67	—	—	8100
64	200	0.64	65.67	—	—	9090
64	250	0.72	65.67	—	—	10080
64	300	0.80	65.67	—	—	11065
64	350	0.87	65.67	—	—	11925

NOTE: Thicknesses and dimensions of 3" through 64" ductile iron pipe conform to ANSI/AWWA C151/A21.51. Weights may vary from the standard because of differences in bell weights.

^aTolerance of O.D. of spigot end: 3–12 in., ±0.06 in.; 14–24 in., +0.05 in., -0.08 in.; 30–48 in., +0.08 in., -0.06 in.; 54–64 in., +0.04 in., -0.10 in.

^bIncluding bell; calculated weight of pipe rounded off to nearest 5 lbs.

INCHES		INCHES		POUNDS		
SIZE	THICKNESS CLASS	THICKNESS	OUTSIDE DIAMETER	BARREL WEIGHT PER FOOT	WEIGHT PER LENGTH	WEIGHT PER LENGTH
					18-FOOT LAYING LENGTH	20-FOOT LAYING LENGTH
3	54	0.34	3.96	11.8	220	—
3	55	0.37	3.96	12.8	240	—
3	56	0.40	3.96	13.7	255	—
4	51	0.26	4.80	11.3	215	235
4	52	0.29	4.80	12.6	235	260
4	53	0.32	4.80	13.8	260	285
4	54	0.35	4.80	15.0	280	310
4	55	0.38	4.80	16.1	300	330
4	56	0.41	4.80	17.3	320	355
6	50	0.25	6.90	16.0	305	335
6	51	0.28	6.90	17.8	335	370
6	52	0.31	6.90	19.6	370	410
6	53	0.34	6.90	21.4	400	445
6	54	0.37	6.90	23.2	435	480
6	55	0.40	6.90	25.0	465	515
6	56	0.43	6.90	26.7	495	550
8	50	0.27	9.05	22.8	430	475
8	51	0.30	9.05	25.2	475	525
8	52	0.33	9.05	27.7	520	575
8	53	0.36	9.05	30.1	560	620
8	54	0.39	9.05	32.5	605	670
8	55	0.42	9.05	34.8	650	720
8	56	0.45	9.05	37.2	690	765
10	50	0.29	11.10	30.1	570	630
10	51	0.32	11.10	33.2	625	690
10	52	0.35	11.10	36.2	680	750
10	53	0.38	11.10	39.2	730	810
10	54	0.41	11.10	42.1	785	870
10	55	0.44	11.10	45.1	840	930
10	56	0.47	11.10	48.0	890	990

Table continued on next page. ▶

NOTE: Thicknesses and dimensions of 3" through 64" ductile iron pipe conform to ANSI/AWWA C151/A21.51. Weights may vary from the standard because of differences in bell weights.

^aTolerance of O.D. of spigot end: 3–12 in., ±0.06 in.; 14–24 in., +0.05 in., -0.08 in.; 30–48 in., +0.08 in., -0.06 in.; 54–64 in., +0.04 in., -0.10 in.

^bIncluding bell; calculated weight of pipe rounded off to nearest 5 lbs.

SPECIFICATIONS

Thickness Class (*Thickness, Dimension & Weight*)

TYTON JOINT® PIPE

INCHES		INCHES		POUNDS		
SIZE	THICKNESS CLASS	THICKNESS	OUTSIDE DIAMETER	BARREL WEIGHT PER FOOT	WEIGHT PER LENGTH	WEIGHT PER LENGTH
					18-FOOT LAYING LENGTH	20-FOOT LAYING LENGTH
12	50	0.31	13.20	38.4	725	800
12	51	0.34	13.20	42.0	790	875
12	52	0.37	13.20	45.6	855	945
12	53	0.40	13.20	49.2	920	1015
12	54	0.43	13.20	52.8	985	1090
12	55	0.46	13.20	56.3	1045	1160
12	56	0.49	13.20	59.9	1110	1230
14	50	0.33	15.30	47.5	910	1005
14	51	0.36	15.30	51.7	985	1090
14	52	0.39	15.30	55.9	1060	1170
14	53	0.42	15.30	60.1	1135	1255
14	54	0.45	15.30	64.2	1210	1340
14	55	0.48	15.30	68.4	1285	1420
14	56	0.51	15.30	72.5	1360	1505
16	50	0.34	17.40	55.8	1065	1175
16	51	0.37	17.40	60.6	1150	1275
16	52	0.40	17.40	65.4	1240	1370
16	53	0.43	17.40	70.1	1325	1465
16	54	0.46	17.40	74.9	1410	1560
16	55	0.49	17.40	79.7	1495	1655
16	56	0.52	17.40	84.4	1580	1750
18	50	0.35	19.50	64.4	1225	1355
18	51	0.38	19.50	69.8	1325	1465
18	52	0.41	19.50	75.2	1420	1570
18	53	0.44	19.50	80.6	1520	1680
18	54	0.47	19.50	86.0	1615	1785
18	55	0.50	19.50	91.3	1710	1895
18	56	0.53	19.50	96.7	1805	2000

Table continued on next page. ▶

NOTE: Thicknesses and dimensions of 3" through 64" ductile iron pipe conform to ANSI/AWWA C151/A21.51. Weights may vary from the standard because of differences in bell weights.

^aTolerance of O.D. of spigot end: 3–12 in., ±0.06 in.; 14–24 in., +0.05 in., -0.08 in.; 30–48 in., +0.08 in., -0.06 in.; 54–64 in., +0.04 in., -0.10 in.

^bIncluding bell; calculated weight of pipe rounded off to nearest 5 lbs.

INCHES		INCHES		POUNDS		
SIZE	THICKNESS CLASS	THICKNESS	OUTSIDE DIAMETER	BARREL WEIGHT PER FOOT	WEIGHT PER LENGTH	WEIGHT PER LENGTH
					18-FOOT LAYING LENGTH	20-FOOT LAYING LENGTH
20	50	0.36	21.60	73.5	1395	1540
20	51	0.39	21.60	79.5	1505	1660
20	52	0.42	21.60	85.5	1610	1780
20	53	0.45	21.60	91.5	1720	1900
20	54	0.48	21.60	97.5	1825	2020
20	55	0.51	21.60	103.4	1935	2140
20	56	0.54	21.60	109.3	2040	2260
24	50	0.38	25.80	92.9	1765	1955
24	51	0.41	25.80	100.1	1895	2095
24	52	0.44	25.80	107.3	2025	2240
24	53	0.47	25.80	114.4	2155	2385
24	54	0.50	25.80	121.6	2285	2530
24	55	0.53	25.80	128.8	2415	2670
24	56	0.56	25.80	135.9	2540	2815
30	50	0.39	32.00	118.5	2275	2510
30	51	0.43	32.00	130.5	2490	2750
30	52	0.47	32.00	142.5	2705	2990
30	53	0.51	32.00	154.4	2920	3228
30	54	0.55	32.00	166.3	3135	3466
30	55	0.59	32.00	178.2	3350	3704
30	56	0.63	32.00	190.0	3560	3940
36	50	0.43	38.30	156.5	3010	—
36	51	0.48	38.30	174.5	3330	—
36	52	0.53	38.30	192.4	3655	—
36	53	0.58	38.30	210.3	3975	—
36	54	0.63	38.30	228.1	4295	—
36	55	0.68	38.30	245.9	4615	—
36	56	0.73	38.30	263.7	4935	—

Table continued on next page. ►

NOTE: Thicknesses and dimensions of 3" through 64" ductile iron pipe conform to ANSI/AWWA C151/A21.51. Weights may vary from the standard because of differences in bell weights.

^aTolerance of O.D. of spigot end: 3–12 in., ±0.06 in.; 14–24 in., +0.05 in., -0.08 in.; 30–48 in., +0.08 in., -0.06 in.; 54–64 in., +0.04 in., -0.10 in.

^bIncluding bell; calculated weight of pipe rounded off to nearest 5 lbs.

SPECIFICATIONS

Thickness Class (*Thickness, Dimension & Weight*)

TYTON JOINT® PIPE

INCHES		INCHES		POUNDS		
SIZE	THICKNESS CLASS	THICKNESS	OUTSIDE DIAMETER	BARREL WEIGHT PER FOOT	WEIGHT PER LENGTH	WEIGHT PER LENGTH
					18-FOOT LAYING LENGTH	20-FOOT LAYING LENGTH
42	50	0.47	44.50	198.9	3960	—
42	51	0.53	44.50	224.0	4410	—
42	52	0.59	44.50	249.1	4860	—
42	53	0.65	44.50	274.0	5310	—
42	54	0.71	44.50	298.9	5760	—
42	55	0.77	44.50	323.7	6205	—
42	56	0.83	44.50	348.4	6650	—
48	50	0.51	50.80	—	—	5430
48	51	0.58	50.80	—	—	6095
48	52	0.65	50.80	—	—	6765
48	53	0.72	50.80	—	—	7430
48	54	0.79	50.80	—	—	8095
48	55	0.86	50.80	—	—	8755
48	56	0.93	50.80	—	—	9415
54	50	0.57	57.56	—	—	7080
54	51	0.65	57.56	—	—	7945
54	52	0.73	57.56	—	—	8810
54	53	0.81	57.56	—	—	9670
54	54	0.89	57.56	—	—	10530
54	55	0.97	57.56	—	—	11390
54	56	1.05	57.56	—	—	12240

NOTE: Thicknesses and dimensions of 3" through 64" ductile iron pipe conform to ANSI/AWWA C151/A21.51. 60" and 64" classified as pressure class only. Weights may vary from the standard because of differences in bell weights.

^aTolerance of O.D. of spigot end: 3–12 in., ±0.06 in.; 14–24 in., +0.05 in., -0.08 in.; 30–48 in., +0.08 in., -0.06 in.; 54–64 in., +0.04 in., -0.10 in.

^bIncluding bell; calculated weight of pipe rounded off to nearest 5 lbs.

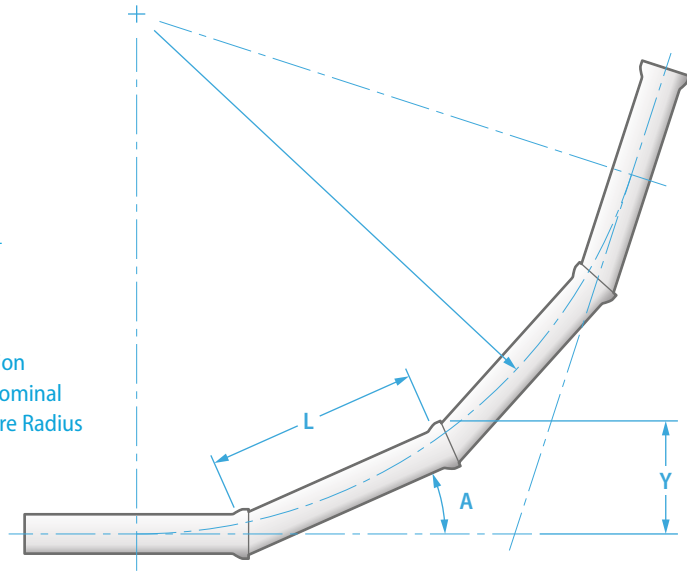
$$R = \frac{L}{2 \times \text{Tangent} \left(\frac{A}{2} \right)}$$

Where

A = Angle of Deflection

L = Laying Length Nominal

R = Pipeline Curvature Radius



INCHES SIZE	DEGREES MAXIMUM JOINT DEFLECTION	INCHES DEFLECTION/OFFSET - "Y"		FEET RADIUS PRODUCED BY SUCCESSION OF JOINTS	
		18 FT. LENGTH	20 FT. LENGTH	18 FT. LENGTH	20 FT. LENGTH
3	5	19	21	206	229
4	5	19	21	206	229
6	5	19	21	206	229
8	5	19	21	206	229
10	5	19	21	206	229
12	5	19	21	206	229
14	5	19	21	206	229
16	5	19	21	206	229
18	5	19	21	206	229
20	5	19	21	206	229
24	5	19	21	206	229
30	5	19	21	206	229
36	5	19	—	206	—
42	4	15	—	258	—
48	4	—	17	—	287
54	4	—	17	—	287
60	4	—	17	—	287
64	4	—	17	—	287

NOTE: Illustration above not to scale. Angles have been exaggerated for display purposes.



PVC SCHEDULE 40 FITTINGS

40-2-0604

Performance Engineered & Tested



SPEARS® Schedule 40 PVC fitting designs combine years of proven experience with computer generated stress analysis to yield the optimum physical structure and performance for each fitting. Material reinforcement is uniformly placed in stress concentration areas for substantially improved pressure handling capability. Resulting products are subjected to numerous verification tests to assure the very best PVC fittings available.

Full 1/4" Through 12" Availability

Spears® comprehensive line of PVC fittings offers a variety of injection molded configurations in Schedule 40 sizes 1/4" through 12" conforming to ASTM D 2466.

Exceptional Chemical & Corrosion Resistance

Unlike metal, PVC fittings never rust, scale, or pit, and will provide many years of maintenance-free service and extended system life.

High Temperature Ratings

PVC thermoplastic can handle fluids at service temperatures up to 140°F (60°C), allowing a wide range of process applications, including corrosive fluids.

Lower Installation Costs

Substantially lower material costs than steel alloys or lined steel, combined with lighter weight and ease of installation, can reduce installation costs by as much as 60% over conventional metal systems.

Higher Flow Capacity

Smooth interior walls result in lower pressure loss and higher volume than conventional metal fittings.

Additional Fabricated Configurations through 36"

Extra large, hard-to-find, and custom configurations are fabricated from NSF Certified pipe. Fittings are engineered and tested to provide full pressure handling capabilities according to Spears® specifications.

PVC Valves

SPEARS® PVC Valve products are available for total system compatibility and uniformity; see SPEARS® THERMOPLASTIC VALVES PRODUCT GUIDE & ENGINEERING SPECIFICATIONS (V-4).

Advanced Design Specialty Fittings

Spears® wide range of innovative, improved products include numerous metal-to-plastic transition fittings and unions with Spears® patented special reinforced (SR) plastic threads.

Sample Engineering Specifications

All PVC Schedule 40 fittings shall be produced by Spears® Manufacturing Company from PVC Type I cell classification 12454, conforming to ASTM D 1784. All injection molded PVC Schedule 40 fittings shall be Certified for potable water service by NSF International and manufactured in strict compliance to ASTM D 2466. All fabricated fittings shall be produced in accordance with Spears® General Specifications for Fabricated Fittings.



Quality Systems Certificate No. 293
Corporate Facilities, Sylmar, CA
Assessed to ISO 9001: 2000

PROGRESSIVE PRODUCTS FROM SPEARS® INNOVATION & TECHNOLOGY

Visit our web site: www.spearsmfg.com

PVC Thermoplastic Pipe Temperature Pressure De-Rating

To determine the maximum internal pressure rating at an elevated temperature, simply multiply the pipe pressure rating at 73°F by the percentage specified for the desired temperature.

System Operating Temperature °F (°C)	73 (23)	80 (27)	90 (32)	100 (38)	110 (43)	120 (49)	130 (54)	140 (60)
PVC	100%	90%	75%	62%	50%	40%	30%	22%

NOTE: Valves, Unions and Specialty Products have different elevated temperature ratings than pipe.

PVC Basic Physical Properties

Properties	ASTM Test Method	PVC
Mechanical Properties, 73°F		
Specific Gravity, g/cm ³	D 792	1.41
Tensile Strength, psi	D 638	7,200
Modulus of Elasticity, psi	D 638	440,000
Compressive Strength, psi	D 695	9,000
Flexural Strength, psi	D 790	13,200
Izod Impact, notched, ft-lb/in	D 256	.65
Thermal Properties		
Heat Deflection Temperature, °F at 66 psi	D 648	165
Thermal Conductivity, BTU/hr/sq ft/°F/in	C 177	1.2
Coefficient of Linear Expansion, in/in/°F	D 696	3.1 X 10 ⁵
Flammability		
Limiting Oxygen Index, %	D 2863	43
UL 94 rating	94V-0	
Other Properties		
Water Absorption, % 24 hr.	D 570	.05
Industry Standard Color	White / Dark Gray	
ASTM Cell Classification	D 1784	12454
NSF Potable Water Approved	Yes	

PVC Chemical Resistance

PVC is generally inert to most mineral acids, bases, salts and paraffinic hydrocarbon solutions. For more information on PVC chemical resistance refer to the Chemical Resistance of Rigid Vinyls Based on Immersion Test, published by the GEON[®] Company.

NOT FOR USE WITH COMPRESSED AIR OR GAS

Spears[®] Manufacturing Company DOES NOT RECOMMEND the use of thermoplastic piping products for systems to transport or store compressed air or gases, or the testing of thermoplastic piping systems with compressed air or gases in above and below ground locations. The use of our product in compressed air or gas systems automatically voids any warranty for such products, and its use against our recommendation is entirely the responsibility and liability of the installer.

WARNING: DO NOT USE COMPRESSED AIR OR GAS TO TEST ANY PVC OR CPVC THERMOPLASTIC PIPING PRODUCT OR SYSTEM, AND DO NOT USE DEVICES PROPELLED BY COMPRESSED AIR OR GAS TO CLEAR SYSTEMS. THESE PRACTICES MAY RESULT IN EXPLOSIVE FRAGMENTATION OF SYSTEM PIPING COMPONENTS CAUSING SERIOUS OR FATAL BODILY INJURY.



SPEARS[®] MANUFACTURING COMPANY • CORPORATE OFFICE

15853 Olden St., Sylmar, CA 91342 • PO Box 9203, Sylmar, CA 91392
(818) 364-1611 • www.spearsmfg.com



PACIFIC SOUTHWEST

15860 Olden St.
Sylmar (Los Angeles), CA 91342
(818) 364-1611 • (800) 862-1499
Fax (818) 367-3014

ROCKY MOUNTAIN

4880 Florence St.
Denver, CO 80238
(303) 371-9430 • (800) 777-4154
Fax (303) 375-9546

UTAH

5395 West 1520 South
Salt Lake City, UT 84104
(303) 371-9430 • (800) 777-4154
Fax (303) 375-9546

SOUTHEAST

4205 Newpoint Pl. Suite 100
Lawrenceville (Atlanta), GA 30043
(678) 985-1263 • (800) 662-6326
Fax (678) 985-5642

MIDWEST

1 Gateway Ct. Suite A
Bolingbrook (Chicago), IL 60440
(630) 759-7529 • (800) 662-6330
Fax (630) 759-7515

NORTHWEST

4103 C St. NE Suite 200
Auburn (Seattle), WA 98002
(253) 939-4433 • (800) 347-7327
Fax (253) 939-7557

SOUTH CENTRAL

4250 Patriot Dr. Suite 300
Grapevine (Dallas), TX 76051-2317
(972) 691-4003 • (800) 441-1437
Fax (972) 691-4404

NORTHEAST

590 Industrial Dr. Suite 100
Lewisberry (Harrisburg), PA 17339-9532
(717) 938-8844 • (800) 233-0275
Fax (717) 938-6547

FLORIDA

9563 Parksouth Court
Orlando, FL 32837
(407) 843-1960 • (800) 327-6390
Fax (407) 425-3563

INTERNATIONAL SALES

15853 Olden St.
Sylmar (Los Angeles), CA 91342
(818) 364-1611 • Fax (818) 898-3774



October 1, 2020

Carson City Purchasing & Contracts
RFB #20300164

Exhibit B

Most manufacturers do not have formal distributorship contracts. The authorization letters provided herein are specific to those we do have contracts with.

Greg Higgins
Waterworks Manager

10-1-20

Date

Corporate Headquarters

950 S. Rock Blvd. • Sparks, NV 89431
tel 775.359.5800 • 800.648.1230 • fax 775.359.4649



October 1 , 2020

To: Western Nevada Supply
950 S Rock Blvd
Sparks, NV 89431

RE: Authorized Distributor

To Whom It May Concern,

Western Nevada Supply is an authorized distributor for Diamond Plastics Corp.

Thank You,

Liz Gadson
Manufacturer's Representative for Diamond Plastics



1526 Parkway Dr. Folsom, CA 95630

Date: October 1, 2020

RE: Western NV Supply

To Whom It May Concern,

This letter is to inform you that Western Nevada Supply is an authorized representative and distributor of Mueller products. Mueller's standard warranty will apply to all material.

I would like to thank you and feel free to call with any comments, questions or concerns.

Sincerely,

Josh Swanson
N. CA/NV Sales Rep.
916-802-8772
jswanson@muellercompany.com



October 1, 2020

To Whom It May Concern:

Western Nevada Supply Co is an authorized dealer for Romac products.

If you have any questions or concerns, please feel free to reach out to me.

Thank you!

A handwritten signature in cursive script that reads 'Jessica Davis'.

Jessica (JR) Davis

Romac | Sales Liaison
21919 20th Ave SE, Suite 100
Bothell, Washington 98021

Dir: 425.951.6223

Fax: 425.951.6201

Quotes / Orders: 800.426.9341

www.romac.com



October 1, 2020

To: Western Nevada Supply

RE: Authorized Distributor for Star Pipe Products

This letter is to certify that Western Nevada Supply in Sparks, NV, is an authorized distributor for Star Pipe Products.

If you have any further questions, please feel free to contact me.

Sincerely,

Jason O'Nan

*Jason O'Nan
Vice President
Star Pipe Products*

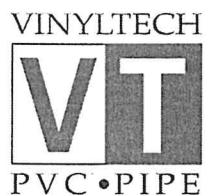


STAR® PIPE PRODUCTS

4018 WESTHOLLOW PARKWAY HOUSTON, TEXAS 77082-4604
www.starpipeproducts.com

T: 281.558.3000
F: 281.558.9000





Telephone: 602.233.0071
Sales Fax: 602.272.4847
Administrative Fax: 602.233.9152

201 South 61st Avenue
Phoenix, Arizona 85043

September 29, 2020

Western Nevada Supply
950 S. Rock Blvd
Sparks, NV 86431

RE: Western Nevada Supply is a partner and stocking distributor of Vinyltech PVC pipe Products.

Sincerely,
Vinyltech Corporation



Brent Hildyard, Vice President
Cc: Mr. Dan Ewart, DES





October 1, 2020

Carson City Purchasing & Contracts
RFB #20300164

Exhibit C

Product Warranty, terms, and conditions are different with each manufacturer we represent. Listed herein are the websites to each manufacturer where all Warranty information can be found.

Greg Higgins
Waterworks Manager

10-1-20

Date

<u>Manufacturer</u>	<u>Website</u>
ADS	www.ads-pipe.com
APCO/Dezurik	www.dezurik.com
Anvil	www.anvilintl.com
Allied	www.alliedfit.com
AVK	www.americanavk.com
Cla-Val	www.cla-val.com
Crispin	www.crispinvalve.com
Diamond Plastics	www.dpcpipe.com
Matco Norca	www.matconorca.com
Mueller	www.muellerwp.com
NDS	www.ndspro.com
Nibco	www.nibco.com
Red-White	www.redwhitevalvecorp.com
Romac	www.romac.com
Smith-Blair	www.smith-blair.com
Spears	www.spearsmfg.com
Star	www.starpipeproducts.com
US Pipe	www.uspipe.com
Vinyltech	www.vtpipe.com



October 2, 2020

Carson City Purchasing & Contracts
RFB #20300164

Exhibit D

Addendum #1 received and signed.

Greg Higgins
Waterworks Manager

10-2-20

Date

CARSON CITY PURCHASING AND CONTRACTS
201 North Carson Street, Suite 2
Carson City, NV 89701
775-283-7362/FAX 887-2286
<https://carson.org/bids>
REQUEST FOR BID
BID #20300164
Warehouse Inventory Parts

October 1, 2020

Addendum No. 1

The City will hold the bid opening via webex meeting, the link is provided below.

Bid Opening Live Video

Bid opening will begin at **11:30am** on **October 2, 2020**.

<https://carsoncity.webex.com/carsoncity/j.php?MTID=mff649d06a32a57bbf7993bd1f1712e8d>

Meeting number: 146 222 5956

Password: RHbcNPDT633

A handwritten signature in black ink, followed by the date "10-2-20" written in a similar cursive style.

**Only the names of the companies that submit a bid will be read
at the time of the bid opening.**