

AVK Valves & Hydrants for Fire Fighting



AVK Builds Long Life and Good Economy into your Fire Fighting Systems



Fire Fighting range includes:

Gate Valves,
OS&Y Gate Valves,
Hydrants,
Post Indicators.



AVK SVMC

AVK Saudi Valves Manufacturing Co. Ltd. (AVK SVMC) is a part of the International AVK Group which has more than 20 factories worldwide. AVK SVMC has its head office in Jeddah, KSA and also sales offices in Riyadh and Khobar. AVK SVMC is producing a wide range of valves, fittings and fire hydrants according to BS, AWWA, DIN. Products are approved according to UL and FM and are ISO 9001:2000 certified.

The AVK product range is approved by all major clients in Saudi Arabia such as Aramco, Ministry of Water & Electricity, Royal Commission, Marafiq, SWCC, SABIC, Civil Defense, Ma'aden etc. Products produced at AVK SVMC are also exported to all the GCC countries, the Middle East, Europe and Asia.

Product development

Market proximity has always been at the core of AVK's strategy; close contact with the end-user ensures close monitoring of the market and constant adaptation and development of the product programme to meet with market requirements.

This takes place in our development department in Europe, an advanced technology centre, where ideas and suggestions from across the world are gathered and where existing products are continually updated and tested.

In co-operation with the end user, new products are field tested before the final market launch, thus achieving the best result in the individual markets.



UL Listed and FM Approved

Fire plays a decisive part in our development as human beings. Under control it is invaluable, but out of control it can be devastating.

Brave firemen risk their lives to extinguish fires. They rely fully on their equipment to function perfectly when needed. Therefore it is crucial that the products installed are highly reliable, are easy to maintain and last a lifetime. AVK is a leading suppliers of high quality hydrants and valves for fire fighting and sprinkler systems. Our unique design and wide product range is based on the needs of customers worldwide. We offer a wide range of high quality valves and hydrants which, along with a series of accessories, build the optimum solution.

The complete fire fighting package complies with international standards and consists of hydrants, NRS post indicator valves, hand wheel operated OS&Y gate valves, post and wall indicators, all UL listed and FM approved. Furthermore AVK holds VDS approval for NRS hand wheel operated gate valves.

A wide range of accessories helps completing the wide product package from AVK.

If luck runs out it is crucial that the products can be repaired quickly and efficiently without any down time. Maintenance and repair shall be completed without the use of special tools.

Besides repair kits for our hydrants AVK has of a number of accessories, such as extension spindles, street covers and different stem caps, which supplements and completes our high quality valves and hydrants.



Gate Valves

Series Number	21/60	45/5C	45/00
Description	AVK Resilient Seat Wedge Gate Valve, PN10/16/ANSI	AVK OS&Y Rising Stem, Resilient Gate Valve, PN16 / ANSI	AVK Non-Rising Stem Post Indicator Seat Wedge Gate Valve, PN16 / ANSI
Application	For use with water and neutral liquids.	For use with water and neutral liquids.	For use with water and neutral liquids.
Main Features	- Stem cap as standard. - Ductile iron wedge, fully vulcanised with EPDM. - Fully corrosion resistant construction. - Fusion bonded epoxy coated. - Body bonnet bolts sealed with hot melt. - Bosses for sampling. - Full bore	- Fully rubber coated wedge. - Full bore. - Low torque operation. - UL-Listed, FM-approved.	- Fully rubber coated wedge. - UL Listed, FM Approved. - Full bore. - Low torque operation.
Main Options	- Handwheel. - Electric actuation. - Bevel or spur gearboxes. - Drilling to ISO 7005-2 (EN 1092-2:1997, DIN 2501). - Alternate flange drillings. - CTC.	- Low zinc bronze stem material. - CTC.	- Bonnet Bolts Option a): Stainless Steel - A4 - Grade 316 sealed with hot melt - Gland Bolts Option a): Stainless Steel - A4 - Grade 316 - CTC.
Size	DN 50-400	DN 65-300	DN 100-300
Max Working Pressure	16 Bar (1.6 mpa)	16 Bar (1.6 mpa)	16 Bar (1.6 mpa)
Temperature Range	-10°C to +70°C.	-10°C to +70°C.	-10°C to +70°C.
Body Material	Ductile Iron GJS-500-7 to EN 1563.	Ductile Iron GJS-500-7 to EN 1563.	Ductile Iron GJS-500-7 to EN 1563.
Applicable Standards	BS 5163: part 1 & 2 type B. BS EN 1074-1 & 2. BS EN 1092-2. ANSI B16.42 ANSI B 16.1	AWWA C509 (OS&Y) API 598 ANSI B16.42 ANSI B 16.1	AWWA C509 (NRS) API 598 ANSI B16.42 ANSI B 16.1
Product Picture			

Hydrants

Post Indicators

27/00	29	24/90	34
AVK Dry barrel fire hydrant	AVK Underground Fire Hydrant, PN16	AVK Wet Barrel Fire Hydrant	AVK Indicator Post/Wall Post For Gate Valves
For use with water and neutral liquids.	For use with water and neutral liquids.	For use with water and neutral liquids.	For use with water and neutral liquids.
- UV-resistant coating - UL/FM approved - Excellent outlet flow - Corrosion resistance FBE coating - Bronze and SS 316 internals - NST threaded outlets 4"-4 1/2" & 5" Stortz - Special coating options - Inlet sizes 4" & 6" with duck foot bend inlet flanges to PN 16 RF and ANSI FF	- Fully maintainable. - Ductile iron construction. 2 1/2" London round thread gunmetal outlet. - Exceeds flow requirements. - Corrosion resistant construction. - Universal drilled inlet flange. - Inlet is of a proprietary type. - Auto-frost drain valve as standard. - Draining stopper. - Low weight design.	- Excellent outlet flow - Corrosion resistance FBE coating - UL / FM - Special coating options - UV resistant coating	- Fusion bonded epoxy coating. - Easily readable open/close marking. - Easy to install. - Designed to fit post indicator gate valves. - UV Resistant coating
Serviceable under pressure 360 degree nozzle section rotation UL/FM approved Traffic breakable flange Pumper nozzle 4" BS 336 8" duck foot ANSI	Fixed or loose stopper. PN 25 version. Outlet options: Gunmetal or stainless steel to BS 750 round thread or Instantaneous.	NST threaded / outlets 2-2 1/2" and 1 - 4 or 4 1/2" and 5" Stortz Inlet sizes 4" & 6" with breakable flanges to ANSI FF Pumper nozzle 4" BS 336	Bolting materials a) Stainless steel - A2 - Grade 304. b) Stainless steel - A4 - Grade 316. Post Indicator lengths to various bury depths.
DN 100-150	DN 80	DN 80, 100 and 150	DN 100-300
250 PSI	16 Bar. (1.6 mpa)	16 Bar. (1.6 mpa)	
-10°C to +70°C.	-10°C to +70°C.	+5°C to +70°C	
Ductile Iron ASTM A536	Ductile Iron BS EN 1563 EN-GJS-500-7.	Ductile Iron ASTM A536	Steel
AWWA 502	BS 750:2006 Type 2. BS EN 1092-2 PN 10/16. BS 10 Table D/E. WRAS No. 0210153.	AWWA 503	UL 789. FM class number 1110.
  	 	  	  

Hydrants

Gate valves

Series Number	27/46	06/35	45/4X
Description	AVK dry barrel fire hydrant	AVK resilient seat wedge gate valve with Pin Indicator	AVK resilient seat wedge gate valve
Application	For use with water and neutral liquids	For use with water and neutral liquids	For use with water and neutral liquids
Main Features	- NST threaded 2" x 2 1/2", 1x 4" NST pumper nozzle - Excellent outlet flow - Corrosion resistance FBE coating - Inlet 4" or 6" - UV resistant coating	- Pin Indicator - Corrosion resistant FBE coating - Fully rubber coated wedge - Vds approved	- Wrench nut - Fully rubber coated wedge - Full bore - Corrosion resistant FBE - UL Listed / FM Approved - ANSI body with flat face drilled to PN 16
Main Options	360 degree nozzle section rotation - Traffic breakable flange	- Spindle in AISI 316 - Bolts A4 - AISI 316	
Size	DN 100-150	DN 50-300	DN 100-300
Max Working Pressure	200 PSI	PN 16	250 PSI
Temperature Range	-10 C° - +70 C°	-10 C° - +70 C°	-10 C° - +70 C°
Body Material	Ductile iron, ASTM A536	Ductile iron BS EN 1563 EN GJS 500-7 (DIN 3352 Part 4)	Ductile iron
Applicable Standards			AWWA C509 BS EN 1092-2
Product Picture			

AVK Dry Barrel Fire Hydrants are Designed for High Performance

AVK dry barrel fire hydrants meet or exceed AWWA C-502 and are all UL listed and FM approved. Both types of fire hydrants are designed for high performance, easy repair and minimum end user costs for labor and inventory.

Series 27

Series 27 are available in a modern design. All the AVK hydrants offer a numerous features including:

- Hydrant serviceable under pressure
- Light-weight, inexpensive hydrant tools available
- Ductile iron nozzle section, barrel section and base
- High pressure rating - 17.2 bar (250 PSI)
- Electrostatically applied polyester coating
- 360 degree nozzle section rotation possible
- Removable nozzles secured with external stainless steel allen screw
- Travel stop nut in the nozzle section for additional safety
- Pumper nozzle can be changed from 4" - 4 1/2"
- Nozzles available in NST or BS 336
- Traffic flange designed for easy repair
- Stainless steel traffic coupling designed for longer operational life and high corrosion resistance
- Extensions available in lengths from 6" - 60", Bury depths 13'
- Patented AVK main valve design
- Ductile iron core fully encapsulated with rubber. Completely corrosion resistant (stop pins of stainless steel)
- 5 1/4" valve opening for high flow rating
- Bronze drain channel
- Inlet shoe can be easily changed - available in most configurations



Post Indicators



Post or wall indicators are mounted end to end with the extension spindle connecting the valve. It is mounted in places where direct access is impossible. It could be gate valves mounted on a water ring main in a factory area, such as oil refineries, chemical plants or airports.

The post indicator indicates if the mating valve is in open or closed position. According to government regulations it must be easy for firemen to see if the valve is open or closed, even at a long distance. The post indicator signs OPEN AND SHUT are mounted on the target according to clear locations and according to valve size.



Post Indicator Valves

The post indicator valves are used for under-ground installation in fire fighting systems. The post indicator flange is incorporated in the top gland giving a compact design.

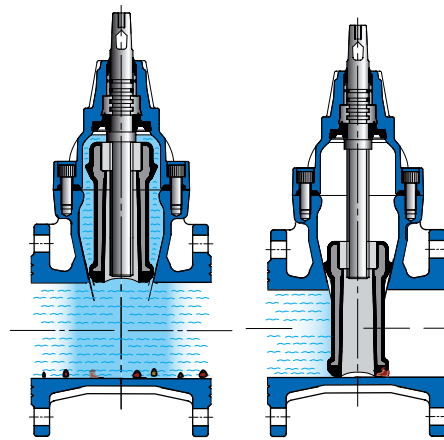
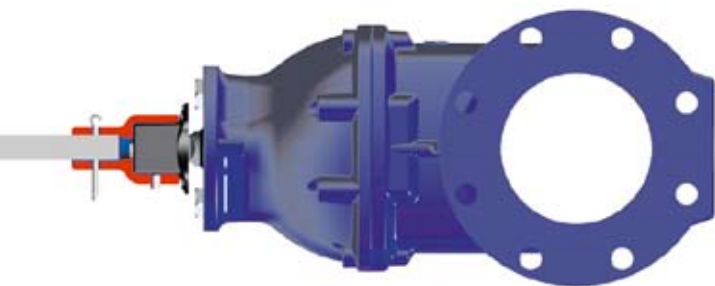
The post indicator indicates the position of the wedge, whether it is open or closed.

The basic valve construction is, like valves for water supply, characterized by a fully rubber coated wedge, full and straight bore and low torque operation.

The valves are available with flanges. Various flange drillings in DN 100-300 (4" - 12").



Picture: MINIMAX GmbH



Resilient seated gate valves

A published test from City of Roseville, US, has proved that impurities up to Ø 8.7 mm can be handled by a DN 150 mm valve without any problems. The same test has also proved that the unique AVK rubber quality (EDK 70) is the only rubber quality which instantly returns to the original shape when the valve is opened again.



AVK fire hydrants

Series 27 and Series 24



Series 27/00 dry barrel fire hydrant is primarily designed for frost areas, where the water main is located below ground frost zone.

The series 27/00 dry barrel hydrant has two drain outlets located just above the water main level. The main valve disc is designed with the purpose of flushing the drain channels for soil and other impurities during opening. These impurities could lead to damage of the main valve disk. After turning the operation key 2 to 3 times the drain will stop flushing and the barrel will be filled with water, which will flow directly into the hoses and pumper hose or whatever is connected. Furthermore when the hydrant is closed after service the barrel will drain the water through the drain holes in the base. Therefore it is important to make sure that the base is surrounded by gravel allowing the hydrant to drain and flush without washing off the soil. If not, this could result in undermining of the pavement.

Series 24 wet barrel fire hydrant is designed for non frost areas.

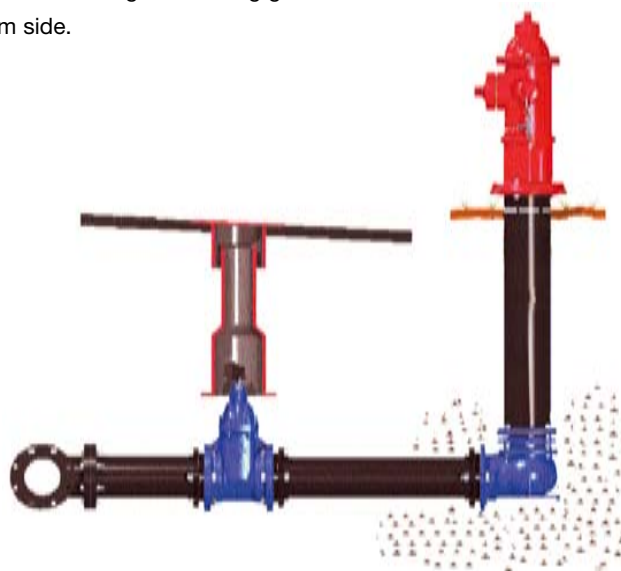
The series 24 wet barrel hydrant is designed with the shut-off device directly at the outflow nozzle for hose or pumper connection. This means that the hydrant is constantly filled with water and thus under pressure.

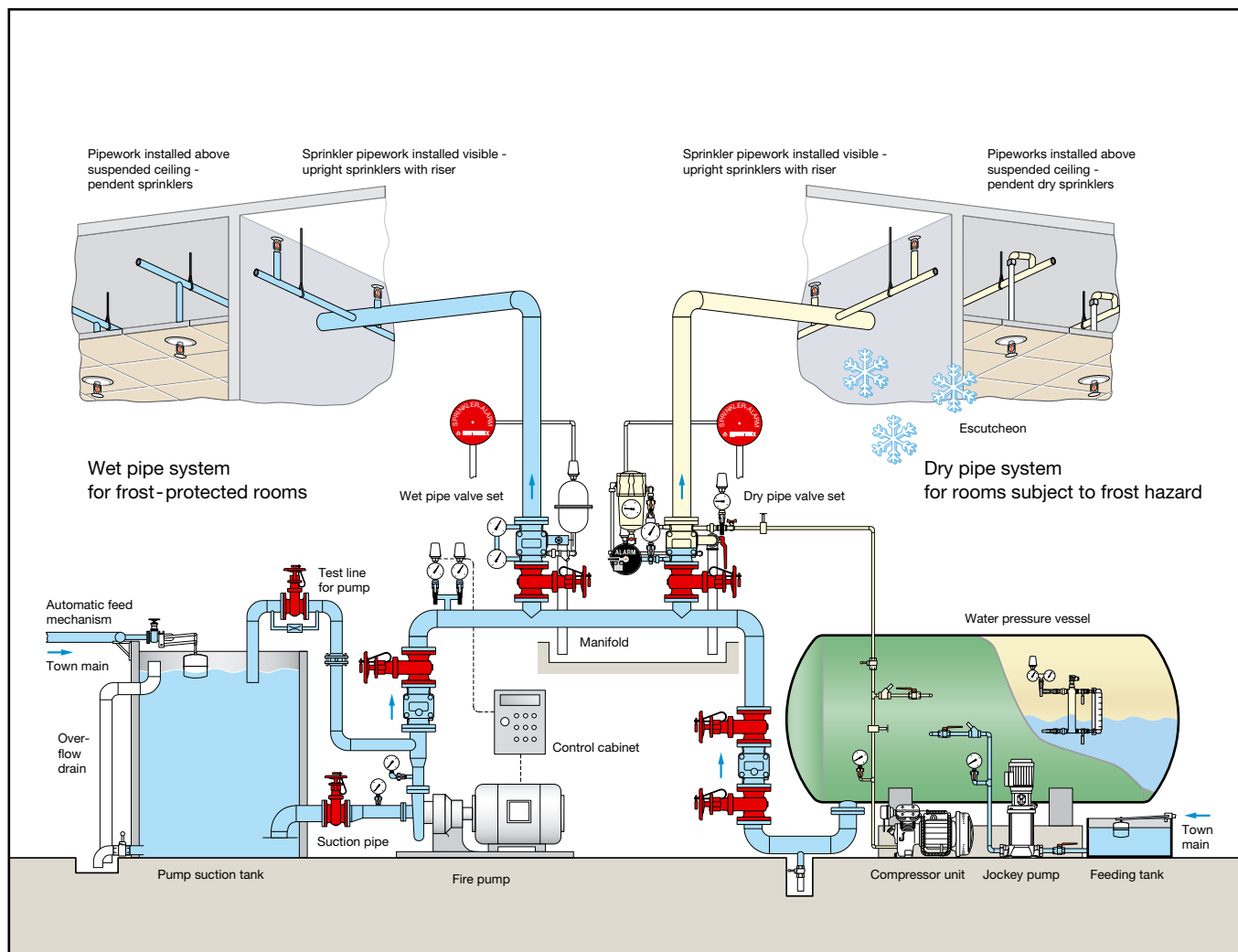
The hydrant is mounted directly on the water main, giving full water pressure instantaneously when needed.

Only after 1/8 turns on the stem the water starts to flow, and after 12 turns the full flow capacity can be held against the fire.

The hydrant is not for use where the temperature may come below 0°C, due to the risk of frost bursting.

In order to service and maintain the hydrant, we recommend installing an isolating gate valve on the upstream side.





Picture: MINIMAX GmbH



Series 45 (AWWA)

Gate Valves Series 06/35 (DIN),



Picture: MINIMAX GmbH

AVK resilient seated gate valves are designed with a fully vulcanised rubber wedge - internally and externally.

With this design no iron parts are exposed to the medium and the excellent rubber vulcanisation prevents creeping corrosion underneath the rubber. The rubber is vulcanized onto the wedge by AVK GUMMI A/S, one of Europe's leading manufacturers of high technology moulded rubber components.

The high quality of AVK rubber is characterized by:

- Smell and taste response characteristics highly suitable for the food industry
- Very low deformation ensuring optimum sealing
- High impact resistance preventing corrosion
- Low friction ensuring low closing torques
- EPDM rubber for water supply

Series 06/35 - The light weight flanged gate valve is very suitable for use in fire fighting systems as an isolating gate valve for maintenance purpose.

The pin indicator indicates the wedge position. Micro switches for remote indication of the wedge in open or closed position are available as an optional extra.

The basic valve construction is, like valves for water supply, characterized by a fully rubber coated wedge, full and straight bore and 3 independent stem seals.

- GGG-50 (EN 1563, GJS-500)
- Face to face to DIN 3202, F4
- DN 50 - 300
- VdS-approved

Series 45 - The OS&Y or NRS gate valves with flanges are used in above ground installations. Due to the rising stem it is easy to recognize the valve position, open or closed, even at a distance.

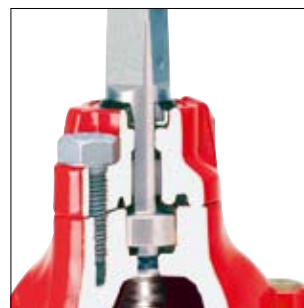
The basic valve design is, like valves for water supply, characterized by a fully rubber coated wedge, full and straight bore.

- DN 65 - 300 (2 1/2" - 12")
- UL-listed, FM-approved



Standard stem sealing system for water applications to DIN standard.

- NBR wiper ring
- polyamid bearing with 4 O-rings
- EPDM rubber manchette



Standard stem sealing system for water applications to AWWA standard.

- NBR wiper ring
- polyamid bearing with 2 O-rings, exchangeable under pressure with the valve fully opened.
- O-ring protects the antifriction washers

Optional stem material:

- Low zinc bronze

Accessories for Hydrants and Valves



Series 08
AVK Handwheel for
Gate Valves
DN 80-600



Series 04
AVK Stem Cap for
Gate Valves
DN 100-400



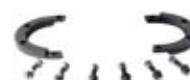
Series 27/70
Extension kit for dry
barrel hydrants



Series 27/75
Traffic section repair
kit for dry barrel
hydrants



Series 2X/30
Tools for dry/wet
barrel hydrants



Series 24/82
Break ring repair
kit for wet barrel
hydrants



Series 24/80
Breakable flange
unit for wet barrel
hydrants



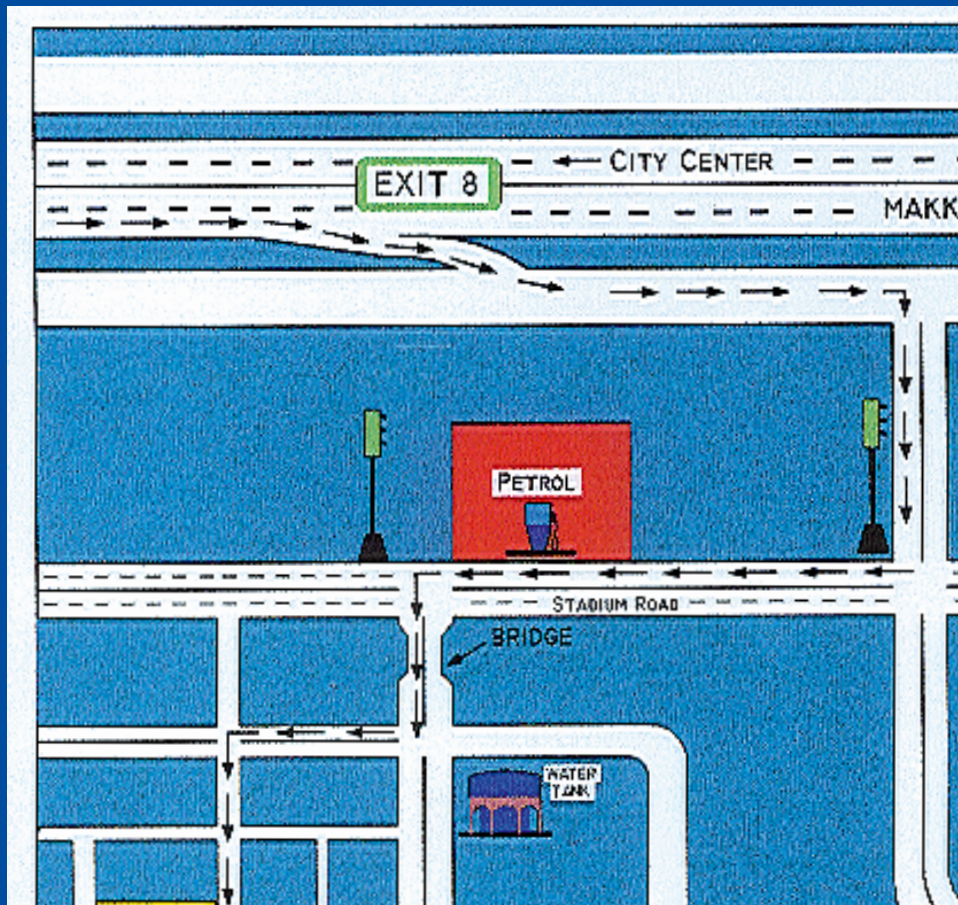
Series 04
T-key for gate valves



Series 04
Extension spindle
for gate valve,
telescopic or fixed
length



Series 08
AVK street cover for
Gate Valves
DN 80-600



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AVK dry barrel hydrants are designed with a traffic flange for easy repair after collision. The hydrant's main valve has a ductile iron core which is fully encapsulated in EPDM rubber. The nozzle section can be rotated 360 degrees. The upper section of the hydrant is repairable under pressure.

Product Description:

Dry barrel hydrant for fire protection application

Standards:

- Designed according to AWWA C502
- Flange drilling to ANSI B 16.42, class 150

Test/Approvals:

- Hydraulic test to FM Class 1510, UL 246 and ULC CAN/ULC-5520-M91
- FM Approved. UL and ULC listed.

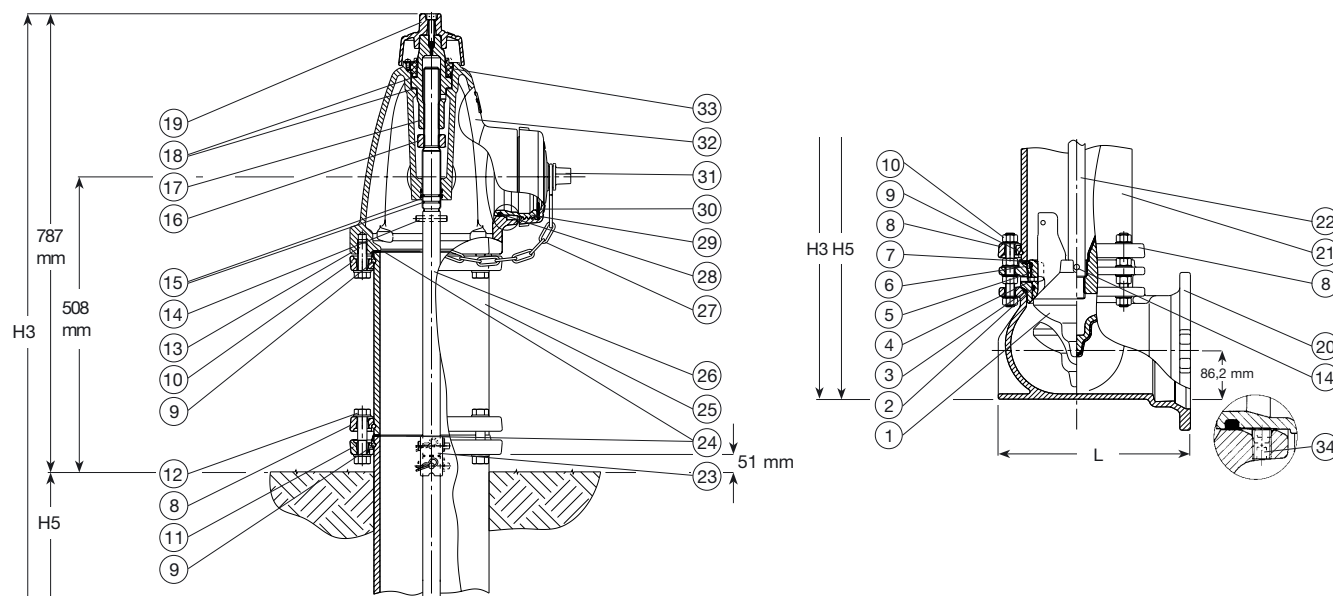
Features:

- UL/ULC listed and FM approved
- Meets or exceeds AWWA C502 (latest)
- High pressure rating (250 psi)
- 2 x 2.5" NST hose nozzles + 1 x 4" NST pumper nozzle
- The breakable flange and stem rod coupling ensure no leaking and easy repair at traffic knock down
- Ductile iron nozzle section, barrel section, bonnet, and base
- 5.25" valve opening for high flow rating
- Hydrant drain easily plugged if required - may be plugged internally or externally
- Extensions available in lengths from 6" to 60"
- Inlet shoe also available in DN 100, and flange drilling also in PN 10/16
- 1 1/2" pentagon operating nut
- Epoxy coating according to DIN 30677-2, GSK approved

Accessories:

Various outlet couplings, landing valves and extension pieces





Component List:

1. Main valve disc	Ductile iron w. EPDM rubber	2. Base gasket	NBR rubber
3. Lower seat O-ring	NBR rubber	4. Drain bushing	Bronze
5. Valve seat ring	Bronze	6. Upper seat O-ring	NBR rubber
7. Lower barrel O-ring	NBR rubber	8. Standpipe flange	Ductile iron
9. Lock ring	Stainless steel	10. Thr. rod/nut	Stainless steel
11. Breakable flange	Ductile iron	12. Bolt and nut	Stainless steel
13. Screw	Stainless steel	14. Seat removal/lock pin	Stainless steel
15. O-rings	NBR rubber	16. Stop nut	Zinc plated steel
17. Stem nut	Bronze	18. Anti friction washer	Polyamide
19. Weather shield	Grey cast iron	20. Base	Ductile iron
21. Lower barrel	Ductile iron	22. Lower stem rod	Acid-resistant stainless steel AISI 316
23. Breakable coupling	Stainless steel	24. Barrel gasket	NBR rubber
25. Upper barrel	Ductile iron	26. Upper stem rod	Acid-resistant stainless steel AISI 316
27. Cap chain	Plated steel	28. Nozzle O-ring	NBR rubber
29. Nozzle	Bronze	30. Cap gasket	NBR rubber
31. Cap	Cast iron	32. Nozzle section	Ductile iron
33. Thrust nut	Bronze	34. Nozzle lock screw	Stainless steel

Reference Nos. and Dimensions:

AVK ref. nos	DN mm	H3 mm	H5 mm	L mm	Theoretical weight kg
27-24-U0204-00008-2	150	1701	914	343	154.0
27-24-U0205-00008-2	150	1854	1067	343	163.0
27-24-U0206-00008-2	150	2006	1219	343	172.0
27-24-U0207-00008-2	150	2159	1372	343	181.0
27-24-U0208-00008-2	150	2311	1524	343	190.0



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Tender Text

Data Sheets

Maintenance



Wet Barrel Fire Hydrants to AWWA C-503-88 - Series 24/60, 24/70 and 24/90

Fire hydrants are often part of the fire fighting projects. They are placed as an extra security outside the buildings in case of need for more water than the sprinklers inside the building are capable of supplying.





Front Page



Products

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- 2 way outlet
(1 x 2 1/2" and 1 x 4" or 4 1/2")
- 3 way outlet
(2 x 2 1/2" and 1 x 4" or 4 1/2")
- 360 degree rotation possible when assembled with a breakable flange unit
- Removable nozzles
- The hydrants can be supplied with a wide range of nozzle thread specifications
- For special application, series 24/60 with 6" NPT thread for connection to 6" pipe, can be supplied





Front Page



Products

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Description of series 24/60, 24/70 and 24/90 Hydrant for fire fighting, wet barrel

High pressure wet barrel hydrant with 6" flanged inlet or 6" NPT threads.
To AWWA C503-88.

Rated working pressure 200PSI.

Replaceable nozzle outlets 4 1/2" - 4" - 2 1/2", stem nuts and stem seals.
Fusion bonded epoxy inside and out, and then topcoated as per
customer request.

UL-listed.

FM-approved with three outlets.

Like AVK series 24 or approved equivalent.

Optional extra:

Breakable flange unit provides the flexibility of 360 degree rotation.

Break ring repair kit.

Tool kit.

Various colours available upon request.



AMERICAN AVK HIGH PRESSURE WET BARREL HYDRANT 24/Y0

Working pressure 200 PSI, 6" flanged inlet
Meets or exceeds ANSI/AWWA C503
Replaceable nozzles, stem nuts and stem seals
All parts interchangeable, including 4" / 4 1/2" outlets

Tests:

Pressure tested to twice the rated working pressure - 400 PSI

Options:

With/without breakable flange unit
With/without dummy nuts
Painted to customer's request

Accessories:

AVK breakable flange unit assembled with the AVK wet barrel hydrant provides the flexibility of 360° hydrant rotation.
For technical data and dimension, see data sheet for breakable flange unit.

Materials:

Head	Ductile iron
Cap, Dummy nut	Cast iron
Coating	Fusion bonded epoxy, inside and out
Stem	Silicon bronze
Nozzle, Stem nut, Stem bushing, Valve carrier, Valve retainer	Bronze
Valve disc	Carboxylated nitrile rubber
O-rings	Buna "N"
Nozzle locking screws, Cotter pins, Nut	Stainless steel
Cap chain	Zinc plated steel
Cap gasket	Rubber-cork compound



24/70



24/90



Working pressure 200 PSI, 6" flanged inlet
Meets or exceeds ANSI/AWWA C503
Replaceable nozzles, stem nuts and stem seals
All parts interchangeable, including 4" / 4 1/2" outlets

Component list

1. Body

2. Stem nut

3. Locking screw

4. O-ring

5. Dummy nut screw

6. Dummy nut

7. Stem seal O-ring

8. Stem

9. Cap attachment

10. Outlet O-ring
11. Nozzle

12. Cap gasket

13. Cap

14. Cotter pin

15. Nut

16. Retainer O-rings

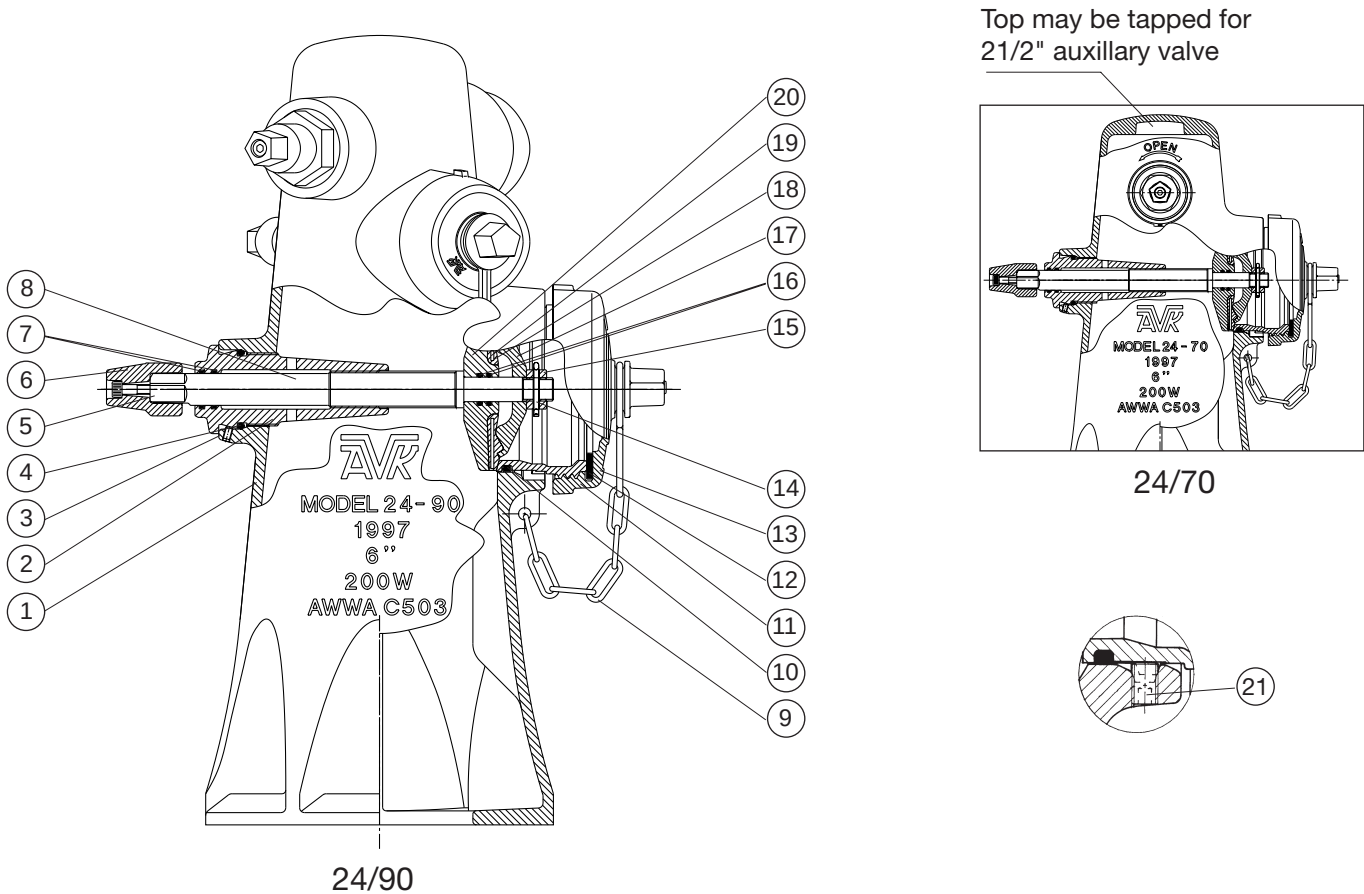
17. Valve retainer

18. Valve disc

19. Disc insert

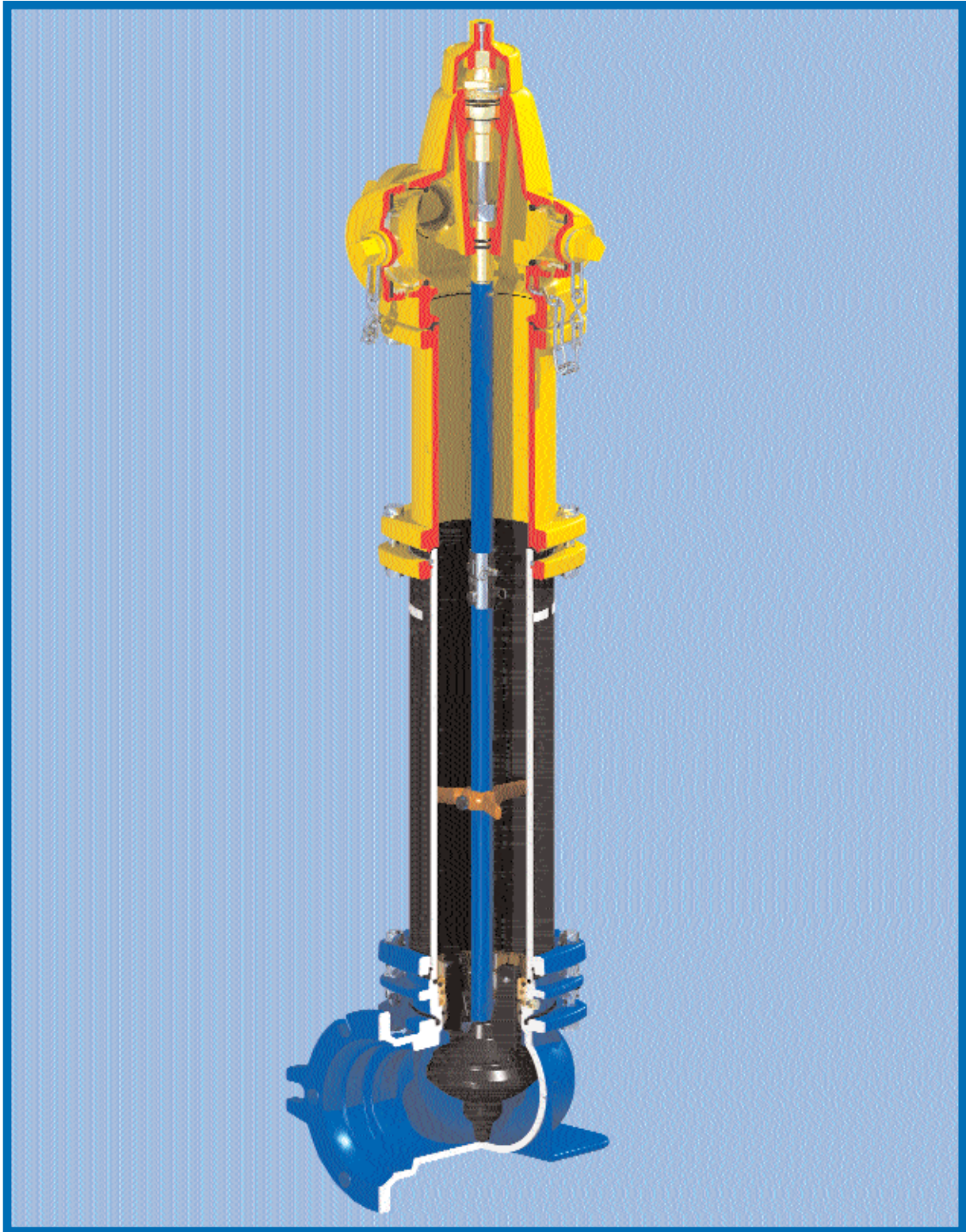
20. Valve carrier

21. Nozzle locking screw



Ref. nos.	Outlets	A	B	C	D	Weight Lbs
24-150-70	1 x 2 1/2" and 1 x 4" / 4 1/2"	14	18 1/2	-	22 1/2	101
Ref. nos.	Outlets	A	B	C	D	Weight Lbs
24-150-90	2 x 2 1/2" and 1 x 4" / 4 1/2"	14	18 3/4	21 3/4	25 3/8	126

With factory assembled breakable unit, add 42 lbs. to shipping weight.



AMERICAN AVK COMPANY

SERIES 2700 DRYBARREL HYDRANT

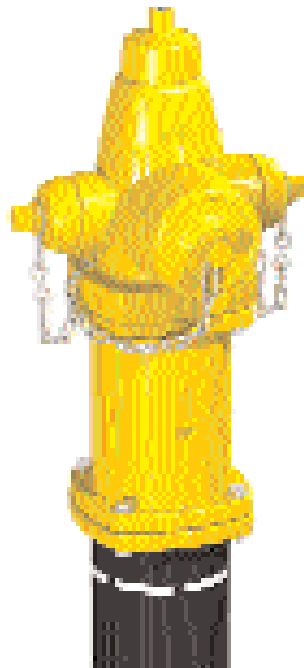


FIELD MAINTENANCE INSTRUCTION MANUAL

For American AVK 250 P.S.I. High Pressure Dry Barrel Hydrant Series 2700

**Illustrated Parts Breakdown
And
Instructions For:**

- Parts List
- Installation
- Pressure Testing
- Drainage Test
- External Drain Plugging
- Internal Drain Plugging
- Main Valve and Seat Removal
- Routine Maintenance
- Operating Mechanism Lubrication
- Lower Barrel and Base Removal
- Drain Ring Replacement
- Nozzle Replacement
- Traffic Repairs
- Adding Extension Kits
- Tool Requirements
- Miscellaneous Information



Subject to change without notice
American AVK / 5-4-99



Model 2700 Dry Barrel Hydrant
Standard Configuration

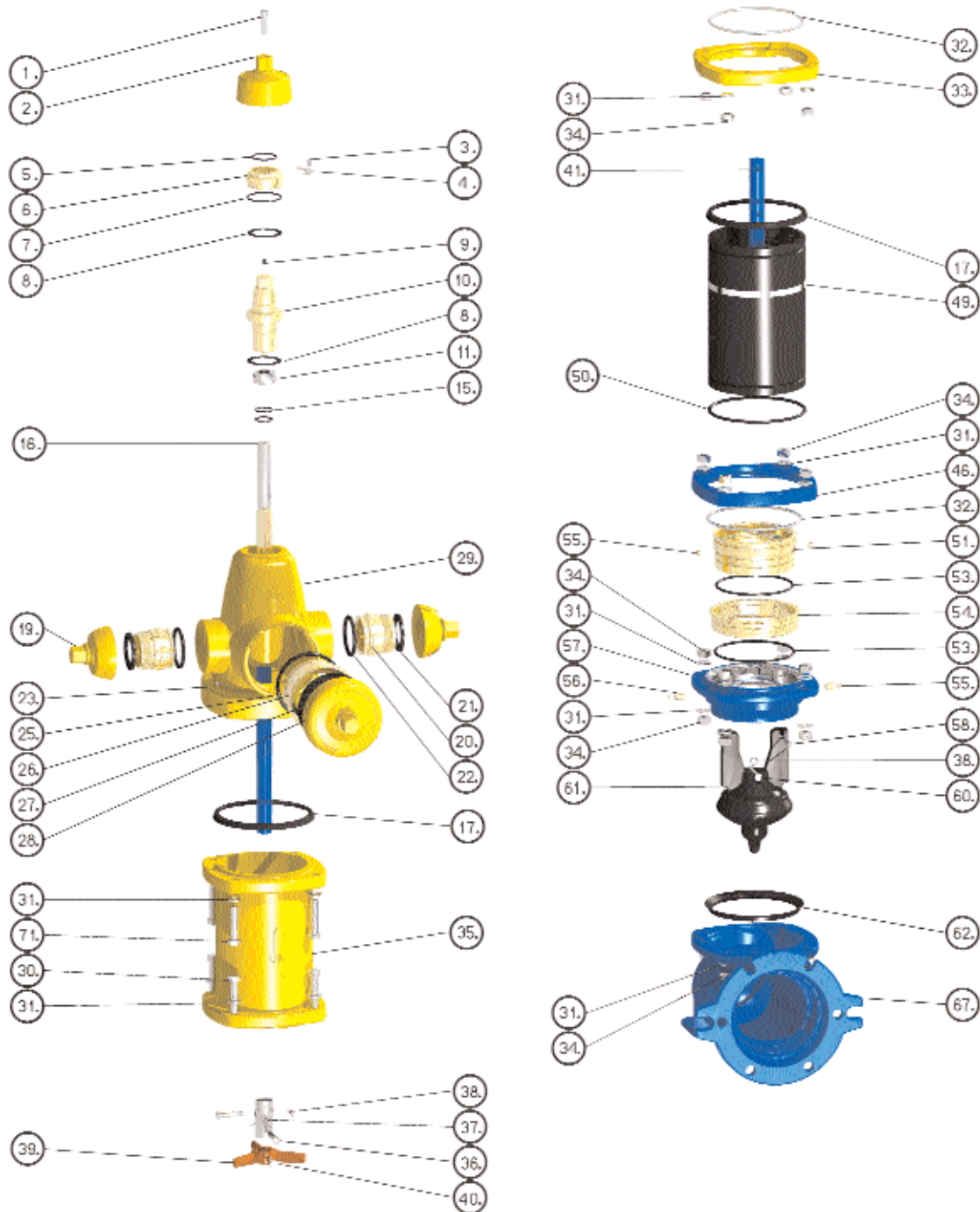


Fig. 1





Item Number:	Description:	AAVK Part Number:	Material:
1.	Weathershield Bolt	27-003-09	304 Stainless
2.	Weathershield	27-150-46XXX	Grey Iron, ASTM126, Class "B"
3.	Lock Plate Screw	27-003-20	304 Stainless
4.	Lock Plate	27-150-68	304 Stainless
5.	Inner Thrust Nut O-ring	25-150-46	NBR
6.	Thrust Nut	27-150-3100	Copper Alloy, C 35330
7.	Outer Thrust Nut O-ring	27-001-01	NBR
8.	Anti- Friction Washer	27-150-2200	Nylon
9.	Lubrication Hole Seal	27-150-32	NBR
10.	Operating Nut	27-150-45XX	Copper Alloy, C 35330
11.	Stop Nut	27-002-02-X	Zinc Plated Steel
12.	Bonnet Bolt	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
13.	Bonnet Washer	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
14.	Bonnet	27-150-8190	Ductile Iron, ASTM A536
15.	Stem Seal O-rings	27-001-07	NBR
16.	Upper Stem Rod	27-150-280X0, 27-150-989X0	Epoxy Coated Steel, 304
17.	Barrel Gasket	27-150-94	NBR
18.	Bonnet Nut	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
19.	Hose Nozzle Cap	27-075-35-XX-XXX	Grey Iron, ASTM A126, "B"
20.	Hose Nozzle	27-075-83XX	Copper Alloy, C 84400
21.	Hose Nozzle Cap Gasket	27-150-42	NBR
22.	Hose Nozzle O-ring	27-001-09	NBR
23.	Nozzle Retaining Screw	24-150-36	304 Stainless
24.	Chain Set		Zinc Plated Steel
25.	Pumper Nozzle O-ring	27-001-10	NBR
26.	Pumper Nozzle	27-XXX-83XX	Copper Alloy, C 84400
27.	Pumper Cap Gasket	27-150-43, Storz O-ring Opt.	NBR
28.	Pumper Cap	27-XXX-35XX-XXX	Grey Iron, ASTM A126, "B"
29.	Nozzle Section	27-150-02090(Mod)27-150-82090(Nost.)	Ductile Iron, ASTM A536
30.	Nozzle Section Bolt	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
31.	Nozzle Section Washer	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
32.	Lock Ring	27-150-14	304 Stainless
33.	Breakable Flange	27-150-0790	Ductile Iron, ASTM A536
34.	Nozzle Section Nut	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
35.	Upper Barrel	27-150-27, 27-150-61-XX-X-Ext.)	Ductile Iron, ASTM A536
36.	Coupler Pin	27-004-09	420 Stainless
37.	Breakable Stem Rod Coupling	27-150-26	304 Stainless
38.	Spring Pin	27-150-23	304 Stainless
39.	Spider	27-150-73	Polyuethan
40.	Spider Bolt	01-016-5	304 Stainless
41.	Lower Stem Rod	27-150-96XX-X-X	Epoxy Coated Steel
42.	Extension Coupling	27-150-24	304 Stainless
43.	Extension Barrel	27-150-61-XX-X-X	Ductile Iron, ASTM A536
44.	Upper/Ext. Barrel Bolt	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
45.	Upper/Ext. Barrel Washer	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
46.	Standpipe Flange	27-150-06	Ductile Iron, ASTM A536
47.	N/A		
48.	Extension Stem Rod	27-150-72-X	Epoxy Coated Steel
49.	Lower Barrel	27-150-61-XX-X-X	Ductile Iron, ASTM A536
50.	Lower Barrel O-ring	27-001-04	NBR
51.	Valve Seat Ring	27-150-0900	Copper Alloy, C 83600
52.	N/A		
53.	Valve Seat O-ring	27-001-02	NBR
54.	Drain Ring	27-150-0800	Copper Alloy, C 83600
55.	Brass Plug	27-006-00	Copper Alloy, C 36000
56.	Brass Fitting	27-006-01	Copper Alloy, C 36000
57.	Main Valve Flange	27-150-0501	Ductile Iron, ASTM A536
58.	Stop Pin	27-150-3700	304 Stainless
59.	N/A		
60.	Main Valve Disc Retaining Pin	27-004-10	420 Stainless
61.	Main Valve Disc/Hydro Flow Valve	27-150-344X	EPDM, Encapsulated Duct.Iron
62.	Base Gasket	27-150-88	NBR
63.	Straight Inlet	27-150-59	Ductile Iron, ASTM A536
64.	Stud Bolt	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
65.	N/A		
66.	N/A		
67.	Base	27-1XX-XX-XX	Ductile Iron, ASTM A536
68.	N/A		
69.	Thrust Bearing Race		Hardened Steel
70.	Thrust Bearing		Hardened Steel
71.	Modern Nozzle Section Bolt	Optional Zinc Plated or Stainless	Zinc Plate, 304, 316
72.	Base Gasket		NBR
73.	Storz Cap O-ring		EPDM
74.	Cap/Cable Assembly		



INSTALLATION (See Typical Dry Barrel Hydrant Installation Figure)

1. American AVK Hydrants are designed to deliver optimum flow with low head loss and should only be connected to water mains of proper size to handle fire flows.
2. The Pumper Nozzle (#25) should always face the street to provide a quick connection for the Fire Department.
3. The traffic section (Breakable Flange, (#33) should be set so it remains 2" above grade.
4. The Hydrant should be restrained to the pipe with proper blocking or a restraining joint system.
5. Provide proper drainage for the hydrant with 1/3 cubic yard of 1/4" to 1/2" gravel fill to 6" above drains. Cover the gravel with plastic to prevent soil from clogging the drain area.

PRESSURE TESTING

American AVK Hydrants are factory tested to 400 PSI. Should a field test be required it may be done in the following manner.

1. Remove one of the hose caps (#19) and fill the hydrant slowly and allow the hydrant to fill with water.
2. Install a hydrant test cap with gauge and bleed off the remaining air.
3. Tighten the nozzle caps and open the hydrant to full line pressure.
4. If a higher test pressure is needed (max. 200 PSI working pressure), it can be reached by connecting a pressure test pump to the hydrant's Pumper Nozzle (#25).

DRAINAGE TEST

1. Remove one of the Hose Caps (#19) and fill the hydrant with water.
2. With the hydrant in the closed position, place the palm of one hand over the open Hose Nozzle (#20). As the water drains from the hydrant it should create a noticeable vacuum indicating proper drainage.
3. For further instructions refer to the AWWA M-17 Hydrant Manual, Chapter 4.3.

EXTERNAL DRAIN PLUGGING

American AVK offers the option of External or Internal Drain Facility Plugging.

1. For external plugging, visually verify for factory installed plugs or screw two Brass Plugs (#55) into the Brass Fittings (#56) located on the Main Valve Flange (#57) using a 3/16" hexagon key. prior to installation.

INTERNAL DRAIN PLUGGING

1. For internal plugging, refer to the warnings and steps 1 through 7 in the **MAIN VALVE AND SEAT** section.
2. After removing the main valve assembly, screw in two Brass Plugs (#55) into the Valve Seat Ring (#51) using a 3/16" hexagon key.(Fig. 2)
3. Inspect the main valve assembly prior to re-installation. Replace any damaged items and install by reversing steps 1 through 7 of the **MAIN VALVE AND SEAT** section.

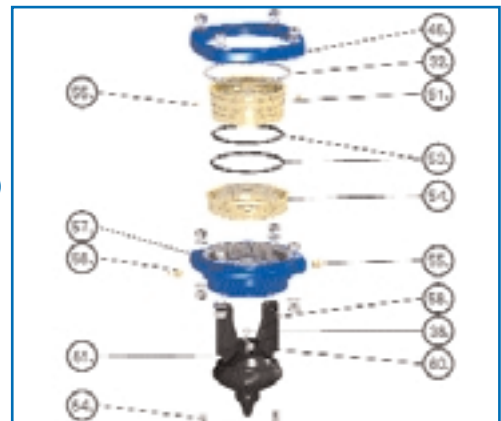
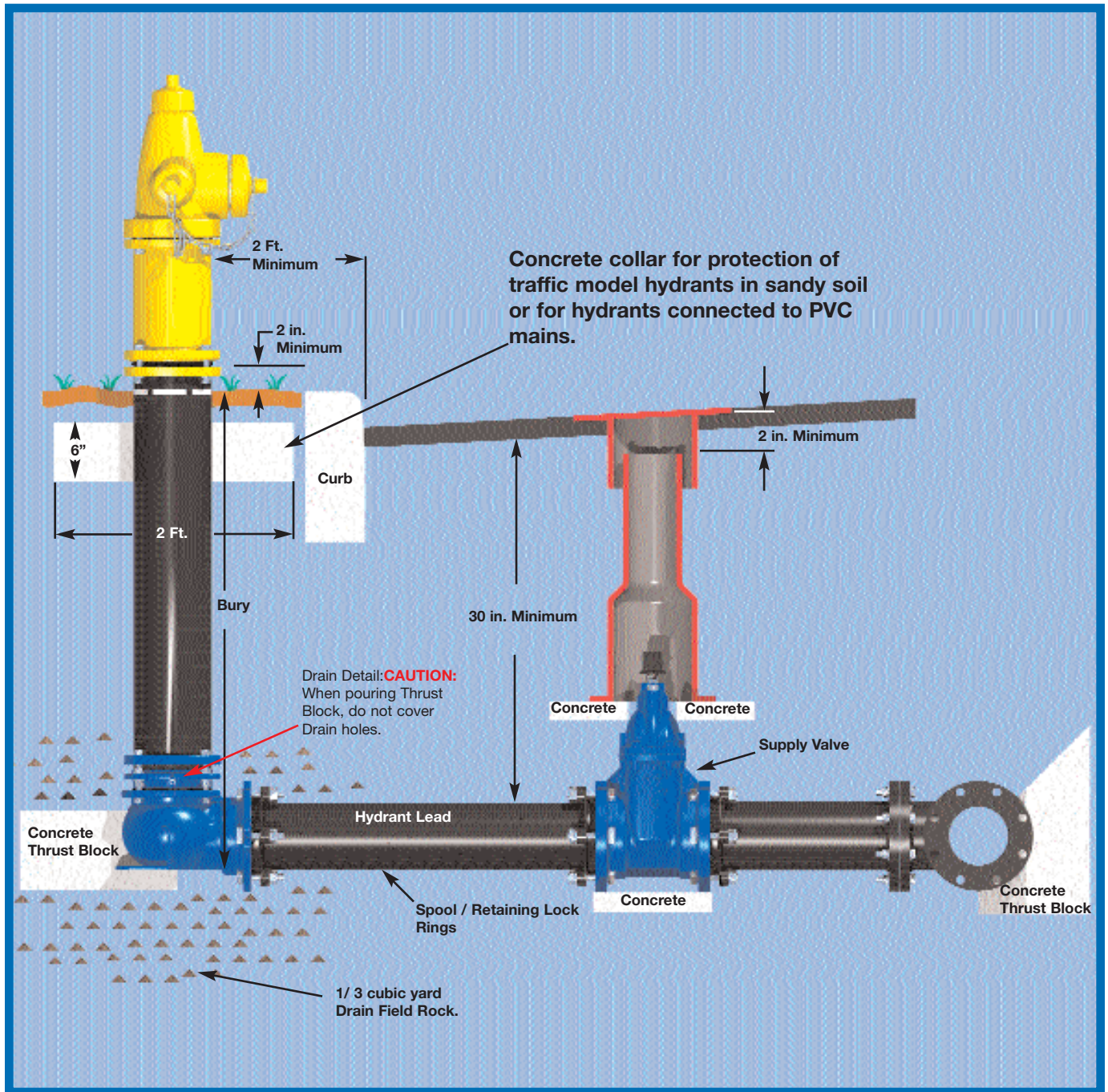


Fig. 2





TYPICAL DRY BARREL HYDRANT INSTALLATION



ROUTINE MAINTENANCE

Hydrants are primarily used for fire suppression, however they may also be of service in the temporary sale of water to contractors and for street and sewer cleaning equipment.

American AVK Dry Barrel Hydrants are factory tested and lubricated and require minimum maintenance, but all fire hydrants should be inspected for obvious damage, opened fully and flowed, at least once a year.

WARNING: All hydrants should be in the fully closed position while not in use. Any partial opening will cause the drains to flush under full line pressure and could wash out the drain bed and any restraints designed to hold the hydrant in place.

MAIN VALVE AND SEAT

AVK Hydrants are designed to allow all internal components to be easily removed without displacing installation.

WARNING: On a partially disassembled hydrant under line pressure, pressing down on the stem could force open the Main Valve Disc (#61) and allow it to slam shut, creating a water hammer. If the intention is to remove the Main Valve Disc (#61) first locate and be sure the supply valve is closed. Relieve the pressure on the Main Valve Disc (#61) by momentarily opening and then closing the hydrant. **Reopen the supply valve.**

1. Remove the Weathershield Retaining Bolt (#1) with a 5/16" hexagon key. Lift off the Weathershield (#2).
2. Remove the Lock Plate Screw (#3) and Lock Plate (#4) with a 7/64" or (3mm), hexagon key. Using the AVK operating wrench, or a large adjustable wrench, unscrew the Thrust Nut (#6) counterclockwise.
3. Remove the Operating Nut (#10) using the AVK operating wrench. Turn counterclockwise for "Open Left Hydrants", and clockwise for "Open Right", hydrants.
4. Remove the Stop Nut (#11) with the deep socket located at the end of the AVK seat wrench.
5. Remove the four Nozzle Section Bolts (#71) and associated hardware, connecting the Nozzle Section (#29) to the Standpipe Flange (#46) and lift the Nozzle Section (#29) over the Upper Stem Rod (#16) and set aside. Remove the four Nozzle Section Bolts (#30) and associated hardware. Carefully lift the Upper Barrel (#35) and associated components off of the lower assembly and set the Breakable Flange (#33) aside for later assembly.

NOTE: To avoid pollution of oil from the oil reservoir in the bonnet (#14), press the oil saver sleeve (Fig. 3, with the stop ring placed downward) over the Upper Stem Rod (#16) during the disassembly. During reassembly inspect the Stem Seal O-rings (#15) and the Barrel Gasket (#17) for damage.

6. To remove the Valve Seat Ring (#51) and Main Valve Assembly, Slide the AVK Seat Wrench (Fig. 4, Detail "A") over the Upper Stem Rod (#16) and engage the seat removal pin. Turn the tool counterclockwise until the Valve Seat Ring has disengaged from the Drain Ring (#54).

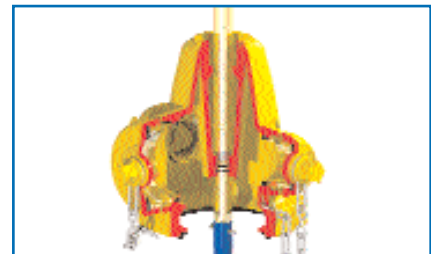
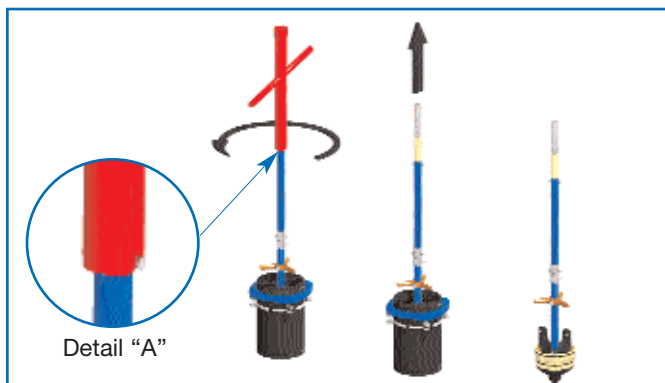


Fig. 3
Oil Saver Installation



Main Valve and Seat Assembly Removal

Fig. 4

7. Remove tool and set aside. Lift and remove the Upper Stem Rod / Lower Stem Rod and Main Valve Assembly from the Lower Barrel (#49).



MAIN VALVE AND SEAT (Continued)

8. Inspect the Main Valve Disc (#61), Valve Seat Ring (#51), Valve Seat O-rings (#53) for damage. Replace if necessary.
9. If any of the above parts are to be replaced, clamp the Lower Stem Rod (#41) in a standard pipe vise. (See Fig. 5) Remove the Stop Pins (#58) from the Main Valve Disc (#61) and slide the Valve Seat Ring (#51) off the ears of the Main Valve Disc. To disconnect the Main Valve Disc from the Lower Stem Rod (#41) remove the Spring Pin (#38) from the Main Valve Disc retaining Pin (#60).

OPERATING MECHANISM LUBRICATION (Fig.6)

WARNING: On a partially disassembled hydrant under line pressure, pressing down on the stem could force open the Main Valve Disc (#61) and allow it to slam shut, creating a water hammer. To prevent this during routine maintenance, first locate and be sure the supply valve is closed. Relieve the pressure on the Main Valve Disc (#61) by momentarily opening and then closing the hydrant. **Reopen the supply valve.**

OIL SERVICING

The factory filled oil reservoir in the hydrant top ensures ease of hydrant operation. Refilling is performed by removing the Weathershield bolt (#1) with a 5/16" or (8mm) hexagon key. Remove the Weathershield (#2) and Lubrication Hole Seal (#9). Refill oil reservoir. Replace Lubrication Hole Seal and Weathershield/Weathershield Bolt. This should be done after any repairs or at least once every 4-5 years.

GREASE SERVICING

Refilling is performed by removing the Weathershield bolt (#1) with a 8mm or 5/16" hexagon key. Remove the Weathershield (#2). Remove the Lock Plate Screw (#3) with a 3/16" hexagon key, and remove the Lock Plate (#4). Use the AVK Operating Wrench and remove the Thrust Nut (#6) and set aside. Use the AVK Operating Wrench and remove the Operating Nut (#10). Refill lubricant reservoir with a food grade grease. Verify that there is one Anti-Friction Washer (#8) on each side of the Operating Nut thrust shoulder and re-install the Operating Nut. Inspect the O-Rings (#5 and #7) on the Thrust Nut (#6). Replace if damaged. Re-install the Thrust Nut and secure with the Lock Plate and Lock Plate Screw. Re-install the Weathershield and secure with the Weathershield Bolt.

The seals are oil-resistant O-rings.

Lubricants: Oil or grease, use FDA approved food grade. Factory installed lubricants are as follows:

Oil	MOBIL DTE FM 32
Grease	Oil Research Inc. 151 Food Grease Lubricant

LOWER BARREL AND BASE (Fig. 7)

The Lower Barrel (# 49) may be replaced by removing the four Nuts (#34) and Washers (#31) from the top of the Stud Bolts (#64) with a 15/16" or (24mm) wrench. Slide the Standpipe Flange (#46) off of the Stud Bolts and remove the Lower Barrel.

The Base may be removed or re-positioned in 90 degree increments by removing the four Nuts (#34) and Washers (#31) from under the Base retaining flange with a 15/16" or (24mm) wrench.

NOTE: Inspect all gaskets and O-rings for damage prior to reassembly. Remember to lubricate all O-rings and threaded surfaces during assembly and, if necessary, to refill the lubricant reservoir in the hydrant head/bonnet.

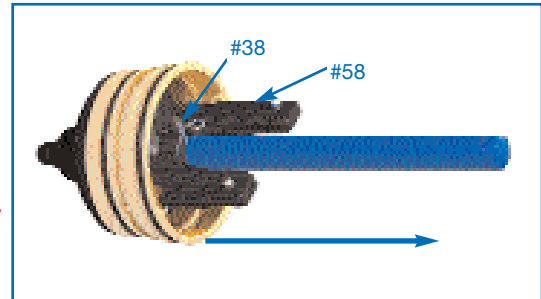


Fig. 5
Valve Seat Ring Removal

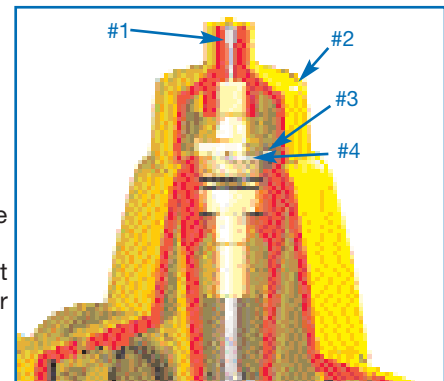


Fig. 6
Operating Mechanism
Lubrication

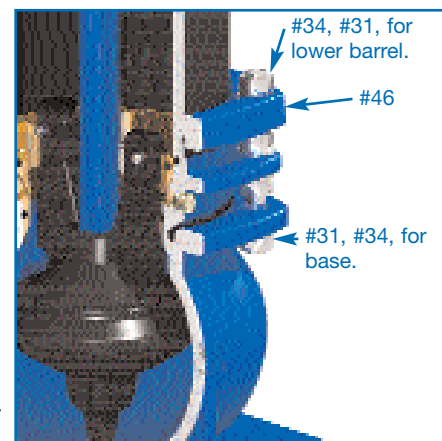


Fig. 7
Lower Barrel and Base Removal

DRAIN RING REPLACEMENT

If Drain Ring (#54) replacement is required on an installed hydrant, excavation will be required. It is the American AVK Company's position that this procedure "**NOT BE ATTEMPTED**" in the field.

However, if this procedure is insisted upon, contact American AVK Company or an authorized representative for detailed disassembly procedures and safety precautions.

NOZZLE REPLACEMENT (Fig.8)

CAUTION: Prior to nozzle replacement, ensure that the hydrant is in the fully closed position.

The Pumper and Hose Nozzles are field replaceable as follows:

1. Remove the Hose Nozzle Cap (#19), or Pumper Nozzle Cap (#28) with an American AVK operating wrench (for 1 1/2" pentagon operating nuts) or an adjustable hydrant wrench for other operating nut sizes and configurations.
2. Remove the Nozzle Retaining Screw (#23) with a 5mm or 3/16" hexagon key.
3. Rotate the nozzle 40 degrees in a clockwise direction to align the nozzle lugs with the outlet lug openings.

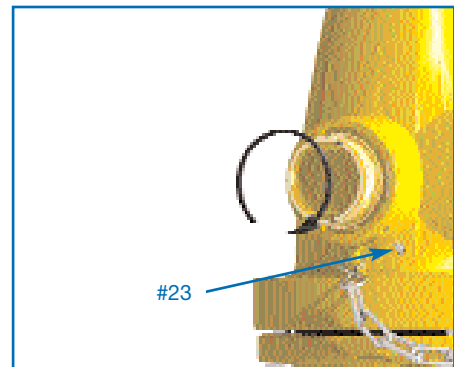


Fig.8
Nozzle Replacement

NOTE: Inspect all gaskets and O-rings for damage before reassembly. Lubricate all O-rings and threaded surfaces with an EPA food grade grease and secure the Nozzle Retaining Screws with Locktite (type 242) or equivalent type thread locking compound.

TRAFFIC REPAIR (Fig.9)

AVK Dry Barrel Hydrants feature a safety Breakable Flange (#33) and Breakable Stem Rod Coupling (#37) design. This allows the hydrant head assembly to be struck by a vehicle and "Break Away" reducing the impact to the water main. In the event the hydrant head assembly has been broken away, the following repairs will be necessary.

WARNING: On a partially disassembled hydrant under line pressure, pressing down on the stem could force open the Main Valve Disc (#61) and allow it to slam shut, creating a water hammer. In the event of a vehicle collision or break away, locate and be sure the supply valve is closed. After reassembly, relieve the pressure on the Main Valve Disc (#61) by momentarily opening and then closing the hydrant. **Reopen the supply valve.**

1. Remove the hardware (#30,31,34) from the Breakable Flange (#33). Slide the Lock Ring (#32) off of the Lower Barrel(#49).
2. Remove the Spring Pins (#38) from the Coupler Pins (#36) in the Upper Stem Rod (#16) and Lower Stem Rod (#41). Remove and discard the broken Breakable Coupling (#37).
3. Remove the Upper Stem Rod (#16) from the hydrant head assembly by following the Warnings and steps 1 through 4 in the **MAIN VALVE AND SEAT** section.
4. Re-connect the Upper Stem Rod (#16) to the Lower Stem Rod (#41) with new Coupler Pins (#36), new Breakable Stem Rod Coupling (#37), and secure with Spring Pins (#38).
5. Slide a new Breakable Flange (#33) over the Lower Barrel (#49). **WARNING:** Be sure the Breakable Flange(#33) is "right side up" (See Fig.10) . Slide a new Lock Ring (#32) into the groove on the Lower Barrel.

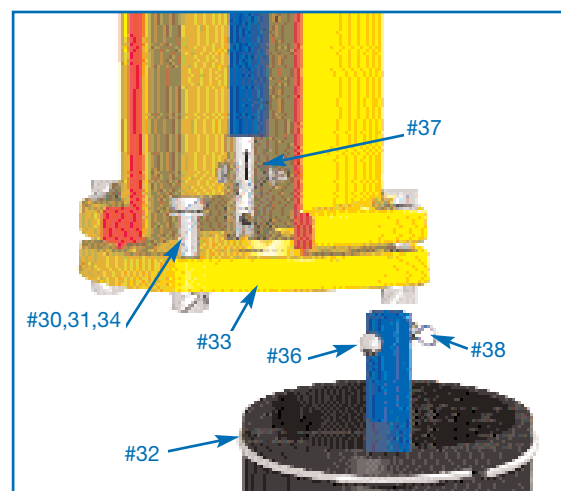


Fig. 9
Traffic Repair Detail

NOTE:The Breakable Stem Rod Coupling should be replaced with the arrow pointing up. (See Fig. 9)



TRAFFIC REPAIR (Fig.9)Continued

6. Clean the hydrant's nozzle section and Lower Barrel flange face and install a new Barrel Gasket (#17).
7. Lift the hydrant nozzle section assembly (#29) over the Upper Stem Rod (#16) and carefully place the assembly on the Lower Barrel and Barrel Gasket (#17). Check for correct alignment of the Barrel Gasket and re-install the nozzle section mounting hardware. Torque the mounting hardware to 110 foot pounds. (Bonnet Bolts (#12) to 65 foot pounds.
8. Re-install nozzle section assembly by reversing steps 1 through 4 of the **MAIN VALVE AND SEAT** section.

ADDING EXTENSION KITS (Figs.10,11)

American AVK Hydrants have the capability of adjusting the Lower Barrel to the proper height due to changes in the finished grade.

Extension Kits are available from 6" to 60" in 6" increments. (Longer upon request)

WARNING: On a partially disassembled hydrant under line pressure, pressing down on the stem could force open the Main Valve Disc (#61) and allow it to slam shut, creating a water hammer. If the intention is to remove the Main Valve Disc (#61) first locate and be sure the supply valve is closed. Relieve the pressure on the Main Valve Disc (#61) by momentarily opening and then closing the hydrant. **Reopen the supply valve.**

The installation is performed as follows:

1. Remove the Weathershield Retaining Bolt (#1) with an 5/16" or (8mm) hexagon key. Lift off the Weathershield (#2).
2. Remove the Lock Plate Retaining Screw (#3) and Lock Plate (#4) with a 7/64" or (3mm) hexagon key. Using the AVK operating wrench, or a large adjustable wrench, unscrew the Thrust Nut (#6) counterclockwise.
3. Remove the Operating Nut (#10) using the AVK operating wrench. Turn counterclockwise for "Open Left Hydrants", and clockwise for "Open Right Hydrants".
4. Remove the Stop Nut (#11) with the deep socket located at the end of the AVK seat wrench.
5. Remove the four Nozzle Section Bolts (#71) and associated hardware, connecting the Nozzle Section (#29) to the Standpipe Flange (#46) with a 15/16" or (24mm) wrench. Lift the Nozzle Section (#29) over the Upper Stem Rod (#16) and set aside. Remove the four Nozzle Section Bolts (#30) and associated hardware. Carefully lift the Upper Barrel (#35) and associated components off of the lower assembly and set the Breakable Flange (#33) aside for later assembly.
6. Remove the lower Spring Pin (#38) and slide the lower Coupler Pin (#36) from the Lower Stem Rod (#41). Disconnect the Upper Stem Rod (#16) and the Breakable Stem Rod Coupling (#37) from the Lower Stem Rod (#41) and place in a safe location.
7. Slide the Spider (#39) down over the Extension Stem Rod (#48) and align the Spider Retaining Bolt (#40) with the prepared hole. Tighten the Spider Retaining Bolt with a 11/16" or (17mm) wrench, taking care not to strip out the threads.
8. Install the Extension Stem Rod (#48) on the Lower Stem Rod (#41) with new Spring Pin (#38), Coupler Pin (#36) and Extension Stem Rod Coupling (#42).
9. Clean Lower Barrel (#49) face and install new Standpipe Flange (#46) and Barrel Gasket (#17) on Lower Barrel (#49). Slide Standpipe Flange (#46) and Breakable Flange (#33) on to Extension Barrel (#43)(See "Detail C") Place Lock Rings (#32) into Extension Barrel grooves. Lift Extension Barrel (#43) over Extension Stem Rod (#48) and place on Barrel Gasket (#17)/ Lower Barrel (#49). Check for correct location of Barrel Gasket (#17) and loosely install bolts and associated hardware (#45) through the two Standpipe Flanges (#46) connecting the Extension Barrel (#43) to the Lower Barrel (#49).
10. Connect Upper Stem Rod (#16) to Extension Stem Rod (#48) with Spring Pin (#38) and Coupler Pin (#36) and Breakable Stem Rod Coupling (#37). Position the groove of the Breakable Stem Rod Coupling (#37) on the bottom, arrow pointing up.(See "Detail B")
11. Place new Barrel Gasket (#17) on top of the Extension Barrel (#43). Clean the mating gasket sealing surface on the bottom of the Nozzle Section (#29). Lift the Nozzle Section (#29) over the Upper Stem Rod (#16) and place on Barrel Gasket (#17) and Extension Barrel (#43). Check for correct position of Barrel Gasket. Install Nozzle Section Bolts (#30) and associated hardware. Torque to 110 foot pounds.
12. Re-install Bonnet and Nozzle Section assembly by reversing steps 1 through 5.



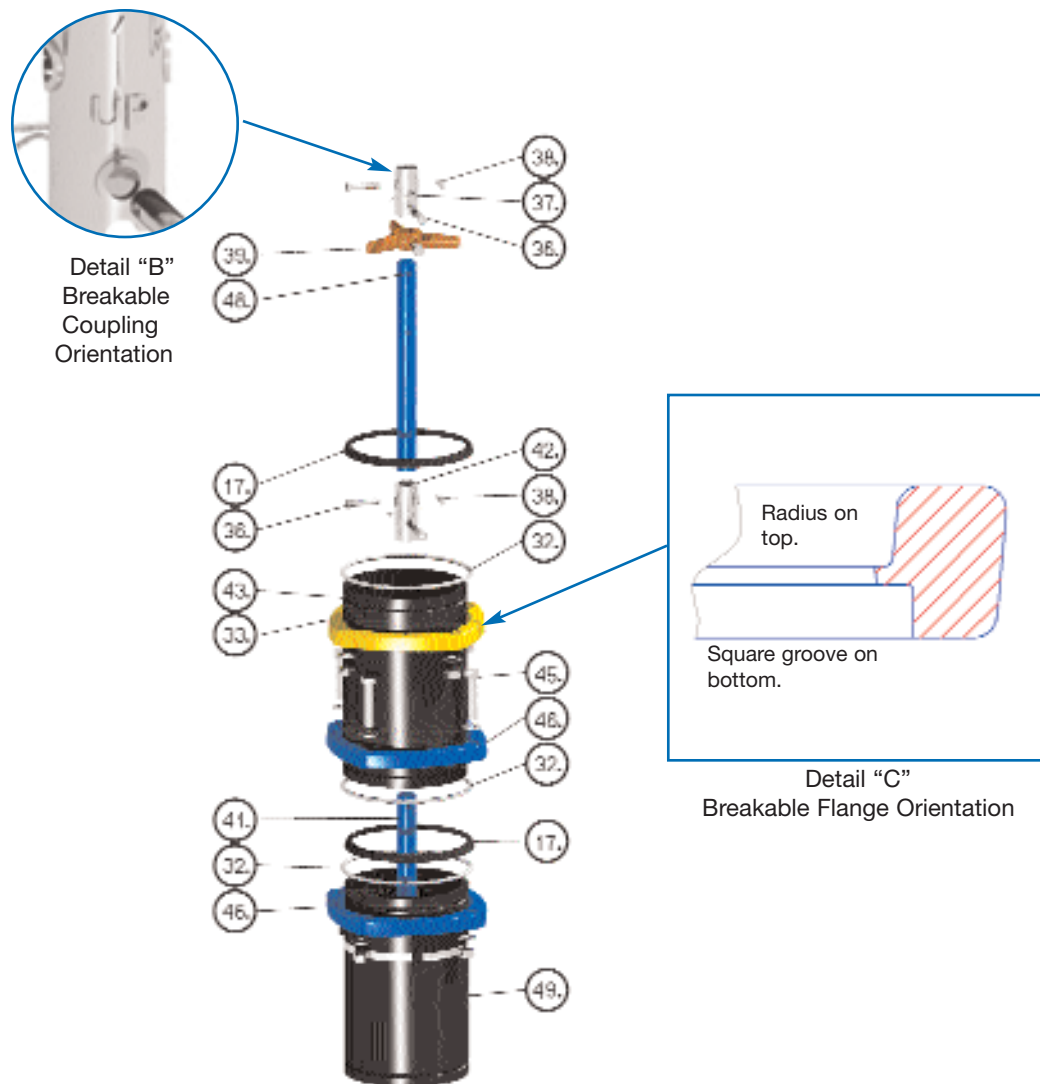


Fig.10
Adding Extension Kits



AMERICAN AVK HYDRANT TOOL REQUIREMENTS (Fig. 11)

American AVK offers a standard toll kit for routine maintenance requirements. The kit is comprised of the following AVK specific tools.

1. Complete Tool Kit Set Part Number: 27-150-30-000
2. AVK Seat Wrench: Part Number: 27-150-30-100
For use in removal and replacement of the **MAIN VALVE/ SEAT ASSEMBLY**.
One of the major benefits of the AVK design is that only one universal wrench is required regardless of bury depth.
3. AVK Oilsaver Adapter Part Number: 27-150-30-300
4. AVK Operating Wrench Part Number: 27-150-30-200



Fig. 11
AVK Tool Kit

METRIC AND INCH WRENCH REQUIREMENTS FOR AMERICAN AVK HYDRANTS

PART	INCH SIZE	METRIC SIZE
Weathershield Retaining Bolt (Allen)	5/16"	8mm
Lock Plate Retaining Screw (Allen)	5/32"	4mm
Nozzle Retaining Screw	3/16"	5mm
Bonnet Bolts and Nuts	3/4"	19mm
All other Bolts and Nuts	15/16"	24mm

MISCELLANEOUS INFORMATION

