

**5328 NW State Road 45
Newberry, FL 32669-1089
Phone: 352-472-3323
Fax: 352-472-2830
Email: easternirrsupply@hughes.**



**2224 Marshall Street
Lubbock, TX 79415
Phone: 806-747-0004
800-900-9975
Fax: 806-747-2706
Email: escosales@irrigationdistributors.com**



SWiSH
Inc.

**189 North Rita
Stephenville, TX 76401
Phone: 254-965-4505
Fax: 254-968-4075
Email: swish@irrigationdistributors.com.**



**303 Industrial Lane
Pocatello, ID 83201
Phone: 208-232-0644
888-642-0644
Fax: 208-232-0694**

SPECIAL INSTRUCTIONS:

NAME:	PURCHASE ORDER #:	DATE:
SHIP TO:	SOLD TO:	DATE NEEDED:
		SHIP BY:

[illegible]

PIVOT DATA FORM

WISH CO

Fax: (303) 364-5055

WISH NE

Fax: (402) 549-2183

Dealer Info:

Person Placing Order: _____

Sold to: _____

PO#: _____ Date: _____

Ship to: _____

Existing System Specifications

Pivot Manufacturer: _____

Model: _____ Year _____

Serial #: _____ Linear: _____ Cornerarm: _____

Irrigator's Name: _____

System # or Legal: _____

Inside Pipe Coating: _____

Retro Fit Design:

Max Field Elevation: Above _____ Below Pivot _____

Regulators: Manufacturer: _____ Model: _____

Nominal pressure rating (psi): _____

Drops: Length or Ground clearance (ft): _____

Drop pipe nominal diameter (in): _____

Drop pipe material: _____

Weights: _____

gpm: _____ psi at: _____ top: _____ or end of pivot: _____

Endgun Model: _____

_____ End Gun Valve: _____ Booster Pump HP: _____

_____ Booster at tower with _____ Diameter Pipe: _____

Timer @ 100%, last tower travels _____ ft/min.

Motor HP: _____ Motor RPM: _____ Center ratio RPM: _____

Tire size: _____ Wheel gear box ratio: _____

Sprinkler Package:**Sprays:**

_____ Nelson D3000 Sprays _____ Concave

_____ Senninger LDN Sprays _____ Flat

_____ Senninger Super Sprays _____ Convex

_____ Senninger LEPA _____ Chemigation

_____ Nelson D3000 Part Circle _____ Smooth

_____ Senninger Fan Spray _____ Deep Groove

_____ Hose Drag

Others:

_____ Nelson R3000 Rotators

_____ Nelson S3000 Spinners

_____ Nelson N3000 Nutators

_____ Senninger IWOB

Plates:

_____ U4 Blue

_____ D6 Purple

_____ Low Angle Blue

_____ Low Angle

_____ Barb Base

_____ U6 White

_____ D6 Yellow

_____ Standard Angle

_____ NPT Base

_____ D4 Green

_____ D4 Gray

_____ High Angle Green

_____ D8 Orange

_____ D6 Red

Impacts:

_____ RB L36H 10° (plastic)

_____ RB LAPS 10° (brass)

_____ Senninger 6° (plastic)

_____ Nelson F44AAB 8° (plastic)

Nozzles

_____ CDS Nozzles (RB)

_____ Spiral Vane (Senn)

_____ Diffuser Noz (Nel)

_____ Flow Control (Nel)

_____ Straight Bone (RB)

_____ Straight Vane (Senn)

_____ Taper Bone (Nel)

Ship:

_____ Print Out

_____ Nozzles Only

_____ Bushings

_____ Sprinklers

_____ Drops

_____ Couplings

_____ Regulators

_____ Goosenecks

_____ Nipples

_____ Endgun

_____ Plugs

_____ Gauge

_____ Endgun Valve

_____ Endgun Nozzle

_____ Clamps

_____ Boombacks

_____ Weights

_____ Other

Span	Length	Pipe O.D.	Sprinkler Spacing	Outlets per Span
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
C				
OH				
Total Length		Total No. of Outlets		

HOSE & CLAMP SELECTION GUIDE

Unless you know from experience, it's difficult to know which clamp and size works best for your needs. While experience is the best teacher, the tables provided below have been developed from comparing manufactures data which relate to hose OD and clamp ranges. We encourage you to review this information for yourself, found in section 3. Please keep in mind, that while there is only one clamp part number indicated per hose part number and size, there are in fact several different types of clamps and sizes to select from that might work well for your application. Please let us know if you have any questions and if we can assist you in selecting the right clamp for your needs.

LAYFLAT HOSE & CLAMPS

NU-FLO™

Hose Part No.	Size	Clamp Part No.
BLUENF075X300	3/4"	H1000C
BLUENF100X300	1"	H1200C
BLUENF125X300	1-1/4"	94100-0150
BLUENF150X300	1-1/2"	94100-0162
BLUENF200X300	2"	94100-0225
BLUENF250X300	2-1/2"	94100-0275
BLUENF300X300	3"	94100-0325
BLUENF400X300	4"	95130-0425
BLUENF500X300	5"	95130-0525
BLUENF600X300	6"	95130-0625
BLUENF800X300	8"	95130-0825

VINYLFLOW™

Hose Part No.	Size	Clamp Part No.
VF150X300	1-1/2"	94100-0162
VF200X300	2"	94100-0225
VF250X300	2-1/2"	94100-0275
VF300X300	3"	94100-0325
VF400X300	4"	95130-0425
VF500X300	5"	95130-0525
VF600X300	6"	95130-0625
VF800X300	8"	95130-0825
VF1000X300	10"	95130-1044
VF1200X300	12"	HSS224
VF1400X300	14"	HSS224
VF1600X300	16"	STBC1665L

IRONSIDES™

Hose Part No.	Size	Clamp Part No.
IS150X300	1-1/2"	94100-0175
IS200X300	2"	94100-0225
IS250X300	2-1/2"	94100-0275
IS300X300	3"	94100-0325
IS400X300	4"	95130-0425
IS600X300	6"	95130-0625
IS800X300	8"	95130-0825

SPIRAFLEX® BLUE

Hose Part No.	Size	Clamp Part No.
53756404803000	1-1/2"	94100-0175
53756406403000	2"	94100-0225
53756408003000	2-1/2"	94100-0275
53756410703000	3"	94100-0325
53756412303000	4"	95130-0425
53756415503000	6"	95130-0625
53756418703000	8"	95130-0825

SPIRAFLEX® RED

Hose Part No.	Size	Clamp Part No.
53752104803000	1-1/2"	94100-0175
53752106403000	2"	94100-0225
53752108003000	2-1/2"	94100-0275
53752110703000	3"	94100-0325
53752112303000	4"	95130-0450
53752115503000	6"	95130-0644

SF-50 BRICK RED

Hose Part No.	Size	Clamp Part No.
SF-50-400X300	4"	95130-0425
SF-50-600X300	6"	95130-0625
SF-50-800X300	8"	95130-0825

DISCHARGE HOSE & CLAMPS

KLEARON™

Hose Part No.	Size	Clamp Part No.
K010-0305	3/16"	MAH4
K010-0406	1/4"	MAH4
K010-0609	3/8"	H600C
K010-0811	1/2"	H600C
K010-1216	3/4"	H1000C
K010-1620	1"	H1600C

CLEARBRAID®

Hose Part No.	Size	Clamp Part No.
K3150-08	1/2"	H800C
K3150-12	3/4"	H1200C
K3150-16	1"	H1600C

EVA TRANSLUCENT

Hose Part No.	Size	Clamp Part No.
K4350-06	3/8"	H600C
K4350-08	1/2"	H800C
K4350-12	3/4"	H1000C
K4350-16	1"	H1600C

KURI TEC® GENERAL PURPOSE

Hose Part No.	Size	Clamp Part No.
K1154-04	1/4"	MAH4
K1154-16	1"	H1600C

POLYAIR® MULTI-PURPOSE

Hose Part No.	Size	Clamp Part No.
K1134-08	1/2"	H800C
K1134-10	5/8"	H1000C
K1134-12	3/4"	H1200C
K1134-16	1"	H1600C

HORIZON®

Hose Part No.	Size	Clamp Part No.
56900912700200	1/2"	H800C
56900919100200	3/4"	H1200C
56901225400200	1"	H1600C
56901131800200	1-1/4"	94100-0175
56901138100200	1-1/2"	94100-0200
53604006400300	2"	94100-0250

GORILLA®

Hose Part No.	Size	Clamp Part No.
56903512700200	1/2"	H1000C
56903519100200	3/4"	H1200C
56903525400200	1"	H2000C
56903531800200	1-1/4"	94100-0175
56903538100200	1-1/2"	94100-0200
53644606410000	2"	94100-0275

PLICORD® VERSIFLO™ 125 PSI

Hose Part No.	Size	Clamp Part No.
54252710701000	3"	94100-0325
54252712301000	4"	95130-0425
54252715501000	6"	95130-0625

DISCHARGE HOSE & CLAMPS CONTINUED

ALFAGOMMA® T253AA 150 PSI

Hose Part No.	Size	Clamp Part No.
T253AA150X100	1-1/2"	94100-0175
T253AA200X100	2"	94100-0238
T253AA250X100	2-1/2"	94100-0275
T253AA300X100	3"	94100-0350
T253AA400X100	4"	95130-0425
T253AA600X100	6"	95130-0625
T253AA662X100	6-5/8"	95130-0706
T253AA800X100	8"	95130-0844
T253AA1000X100	10"	95130-1044
T253AA1200X50	12"	DB1275

NOVAFLEX 2150

Hose Part No.	Size	Clamp Part No.
2150BE-01250-00	1-1/4"	94100-0150
2150BE-01500-00	1-1/2"	94100-0175
2150BE-02000-00	2"	94100-0225
2150BE-00250-00	2-1/2"	94100-0275
2150BE-03000-00	3"	94100-0325
2150BE-03500-00	3-1/2"	94100-0375
2150BE-04000-00	4"	95130-0425
2150BE-05000-00	5"	95130-0525
2150BE-06000-00	6"	95130-0625
2150BE-06250-00	6-5/8"	95130-0706
2150BE-08000-00	8"	95130-0844
2150BE-08625-00	8-5/8"	95130-0918
2150BE-10000-00	10"	95130-1044
2150BE-10750-00	10-3/4"	DB1125
2150BE-12000-00	12"	DB1275
2150BE-12750-00	12-3/4"	DB1360

PLICORD® HD 4 PLY

Hose Part No.	Size	Clamp Part No.
54243712301000	4"	95130-0450
54243713101000	4-1/2"	95130-0500
54243713901000	5"	95130-0550
549806155320	6"	95130-0644
54143716505400	6-5/8"	95130-0725
541806187320	8"	95130-0856
54143719805400	8-5/8"	95130-0918
541806219340	10"	95130-1062
54143725105400	12"	DB1275

SUCTION HOSE & CLAMPS

SPIRAFLEX® 1500

Hose Part No.	Size	Clamp Part No.
58641202401000	3/4"	H1000C
58641203201000	1"	H1600C
58641204001000	1-1/4"	94100-0162
58641204801000	1-1/2"	SDBC-1.5
58641206401000	2"	SDBC-2
58641208001000	2-1/2"	SDBC-2.5
58641210701000	3"	SDBC-3
58641212301000	4"	SDBC-4
58641215501000	6"	SDBC-6
58641218700600	8"	SDBC-8

TIGERFLEX BW "BLUE WATER"

Hose Part No.	Size	Clamp Part No.
BW075X100	3/4"	H1000C
BW100X100	1"	H1600C
BW125X100	1-1/4"	94100-0162
BW150X100	1-1/2"	SDBC-1.5
BW200X100	2"	SDBC-2
BW250X100	2-1/2"	SDBC-2.5
BW300X100	3"	SDBC-3
BW400X100	4"	SDBC-4
BW500X100	5"	SDBC-5
BW600X100	6"	SDBC-6

TIGERFLEX TG "TIGER GREEN"

Hose Part No.	Size	Clamp Part No.
TG200X100	2"	SDBC-2
TG300X100	3"	SDBC-3
TG400X100	4"	SDBC-4
TG600X100	6"	SDBC-6

PLICORD® "CON-AG"

Hose Part No.	Size	Clamp Part No.
54215904001000	1-1/4"	94100-0175
54215904801000	1-1/2"	SDBC-1.5
54215906401000	2"	SDBC-2
54215908001000	2-1/2"	SDBC-2.5
54215910701000	3"	SDBC-3
54215912301000	4"	SDBC-4
54215915501000	6"	SDBC-6

ALFAGOMMA® T202AA/T203AA/T204AA

Hose Part No.	Size	Clamp Part No.
T202AA200X100	2"	SDBC-2
T202AA300X100	3"	SDBC-3
T202AA400X100	4"	SDBC-4
T204AA600X25	6"	SDBC-6
T204AA800X25	8"	SDBC-8
T203AA1000X20	10"	SDBC-10
T203AA1200X20	12"	SDBC-12

NUTRIFLO® FOOD TRANSFER

Hose Part No.	Size	Clamp Part No.
58642104801000	1-1/2"	SDBC-1.5
58642106401000	2"	SDBC-2
58642110701000	3"	SDBC-3
58642112301000	4"	SDBC-4

ALFAGOMMA® BLACK PETROLEUM

Hose Part No.	Size	Clamp Part No.
T605AA200X100	2"	SDBC-2
T605AA300X100	3"	SDBC-3

COMMON ABBREVIATIONS

ASTM	=	American Society of Testing Materials
AWWA	=	American Water Works Assn.
CTS	=	Copper Tube Size
DWV	=	Drain, Waste & Vent
FGHT	=	Female Garden Hose Thread
FNPT	=	Female National Pipe Thread
FIPT	=	Femal Iron Pipe Thread
GHT	=	Garden Hose Thread

HDPE	=	High Density Polyethylene
IPS	=	Iron Pipe Size
IPT	=	Iron Pipe Thread
MGHT	=	Male Garden Hose Thread
MIPT	=	Male Iron Pipe Thread
MNPT	=	Male National Pipe Thread
NH	=	National Hose Thread
NPSH	=	National Pipe Straight Hose

NPSM	=	National Pipe Straight Mechanical
NPT	=	National Pipe Tapered
NSF	=	National Sanitation Foundation
NST	=	National Hose Thread also known as National Standard Thread
PIP	=	Plastic Irrigation Pipe
PSI	=	Pounds Per Square Inch

FLOW

1 GAL. /MIN.	.002228 CU. FT./SEC
1 GAL. /MIN.	.13368 CU. FT./MIN
1 GAL. /MIN.	8.0208 CU. FT./HR
1 GAL. /MIN.	.0044192 ACRE FT./24 HRS
1 GAL. /MIN.	.06309 LTRS./SEC.
1 GAL. /MIN.	3.78533 LTRS./MIN.
1 CU. FT./SEC	448.83 GPM
1 CU. FT./SEC	.992 ACRE IN./HR
1 CU.FT./SEC	.0283 CU. MTR/SEC.
1 CU. MTR/MIN.	664.2 GPM
1 LTR./SEC	15.852 GPM
1 ACRE IN/HR	452.57 GPM
1 ACRE FT./DAY	226.3 GPM
1 MIL. GAL/DAY	694.4 GPM

VOLUME

1 OUNCE	16 GRAMS
1 QUART	32 OUNCES
1 QUART	2 PINTS
1 QUART	.9463 LITERS
1 GALLON	4 QUARTS
1 GALLON	.833 IMPERIAL GALLON
1 GALLON	231 CUBIC INCHES
1 GALLON	0.13368 CUBIC METERS
1 GALLON	.00379 CUBIC METERS
1 GALLON	3.7854 LITERS
1 MIL. GAL.	3.06989 ACRE FEET
1 LITER	1.057 QUARTS
1 LITER	2.113 PINTS
1 LITER	.2642 GALLONS
1 LITER	.03501 CUBIC FEET
1 LITER	61.02 CUBIC INCHES
1 ACRE INCH	27,154 GALLONS
1 ACRE FOOT	325,851 GALLONS
1 ACRE FOOT	43,560 CUBIC FEET
1 CUBIC FOOT	1,728 CUBIC INCHES
1 CUBIC FOOT	7.48052 GALLONS
1 CUBIC FOOT	28.32 LITERS
1 CUBIC YARD	27 CUBIC FEET
1 CUBIC YARD	202 GALLONS
1 CUBIC METER	264.2 GALLONS
1 CUBIC METER	1,000 LITERS

AREA

1 SQ. INCH	6.4516 SQ. CENTM.
1 SQ. FOOT	144 SQ. INCHES
1 SQ. FOOT	.0929 SQ. MTR
1 SQ. YARD	9 SQ. FEET
1 SQ. METER	10.76 SQ. FEET
1 SQ. ROD	272.25 SQ. FEET
1 SQ. ROD	30.25 SQ. YARDS
1 SQ. MILE	640 ACRES
1 SQ. MILE	2.5899 SQ. KILOMETERS
1 ACRE	43,560 SQ FEET
1 ACRE	4,840 SQ. YARDS
1 ACRE	208.7 FT. SQUARE
1 ACRE	160 SQ. RODS
1 ACRE	.405 HECTARES
1 ACRE	.0040469 SQ KILOMETERS
1 SECTION	640 ACRES
1 HECTARE	10,000 SQ. METERS
1 HECTARE	107,639 SQ. FEET
1 HECTARE	11,959.9 SQ. YDS
1 HECTARE	2.4711 ACRES
1 SQ KILOMETER	.3861 SQ MILES
1 SQ KILOMETER	247.104 ACRES

POWER

1 HORSEPOWER	33,000 FT.LBS./MIN
1 HORSEPOWER	746 WATTS
1 HORSEPOWER	.746 KILOWATTS
1 HORSEPOWER	42.44 BTU/MIN.
1 KILOWATT	56.92 BTU/MIN.
1 KILOWATT	1.341 HORSEPOWER
1 KILOWATT HR.	3,413 BTU

LENGTH

1 CENTIMETER	.3937 INCHES
1 INCH	2.54 CENTIMETERS
1 CUBIT	18 INCHES
1 FOOT	.3048 METERS
1 METER	39.37 INCHES
1 METER	1.09361 YARDS
1 YARD	.91440 METERS
1 ROD	16.5 FEET
1 ROD	5.5 YARDS
1 CHAIN	4 RODS
1 CHAIN	66 FEET
1 MILE	320 RODS
1 MILE	5,280 FEET
1 MILE	1.609 KILOMETERS
1 KILOMETER	3280.84 FEET
1 KILOMETER	.62137 MILES

WEIGHT

1 US GALLON WATER	8.3357 LBS.
1 CU. FT. WATER	62.3354 LBS.
1 IMPERIAL GALLON	10.0 LBS.
1 GRAM	.033818 FLUID OUNCES
1 FLUID OUNCE	29.57 GRAMS
1 LITER	2.2 LBS.
1 POUND	16 OUNCES
1 GRAM	.03527 OUNCES
1 OUNCE	28.35 GRAMS
1 KILOGRAM	2.2046 LBS.
EARTH, UNDISTURBED	100 LBS./CU.FT.
CONCRETE (PLAIN)	140 LBS./CU.FT.
CONCRETE (REINF.)	150 LBS./CU.FT.

PRESSURE

1 PSI	2.309 FT. OF HEAD
1 PSI	144 LBS./SQ.FT.
1 PSI	.06804 ATMOSPHERES
1 PSI	.0689 BARS
1 PSI	6.895 KILOPASCALS
1 PSI	703.1 KG./SQ. MTR.
1 KILOGRAM/SQ. CM.	14.223 PSI
1 ATMOSPHERE	14.6963 PSI
1 ATMOSPHERE	1.033 KG./SQ.CM.
1 BAR	14.50 PSI
1 BAR	2,089 LBS./SQ.FT.
1 BAR	.9869 ATMOSPHERES
1 FT. WATER	.8826 IN. OF MERCURY
1 FT. WATER	304.8 KG./SQ.FT.
1 FT. WATER	.0295 ATMOSPHERES
1 FT. WATER	62.3554 LBS./SQ.FT.
1 FT. WATER	.4335 PSI

VELOCITY

1 FT./SEC.	.681818 MI./HR.
1 FT./SEC.	.3048 MTR./SEC.
1 FT./SEC.	1.09728 KM./HR.
1 MI./HR.	1.4666 FT./SEC.
1 MI./HR.	.44704 MTR./SEC.
1 MI./HR.	1.609344 KM./HR.
1 MTR./SEC.	3.28084 FT./SEC.
1 MTR./SEC	2.2369 MI./HR.
1 MTR./SEC	3.6 KM./HR.
1 KM./HR	.91134 FT./SEC.
1 KM/ HR	.62137 MI./HR.
1 KM./HR.	.2777 MTR./SEC.

TEMPERATURE CONVERSION

-459° to 0°			1° to 60°			61° to 290°			300° to 890°			900° to 3000°		
C	C F	F	C	C F	F	C	C F	F	C	C F	F	C	C F	F
-273	-459.4		-17.2	1	33.8	16.1	61	141.8	149	300	572	482	900	1652
-268	-450		-16.7	2	35.6	16.7	62	143.6	154	310	590	488	910	1670
-262	-440		-16.1	3	37.4	17.2	63	145.4	160	320	608	493	920	1688
-257	-430		-15.6	4	39.2	17.8	64	147.2	166	330	626	499	930	1706
-251	-420		-15.0	5	41.0	18.3	65	149.0	171	340	644	504	940	1724
-246	-410		-14.4	6	42.8	18.9	66	150.8	177	350	662	510	950	1742
-240	-400		-13.9	7	44.6	19.4	67	152.6	182	360	680	516	960	1760
-234	-390		-13.3	8	46.4	20.0	68	154.4	188	370	698	521	970	1778
-229	-380		-12.8	9	48.2	20.6	69	156.2	193	380	716	527	980	1796
-223	-370		-12.2	10	50.0	21.1	70	158.0	199	390	734	532	990	1814
-218	-360		-11.7	11	51.8	21.7	71	159.8	204	400	752	538	1000	1832
-212	-350		-11.1	12	53.6	22.2	72	161.6	210	410	770	549	1020	1868
-207	-340		-10.6	13	55.4	22.8	73	163.4	216	420	788	560	1040	1904
-201	-330		-10.0	14	57.2	23.3	74	165.2	221	430	806	571	1060	1940
-196	-320		-9.4	15	59.0	23.9	75	167.0	227	440	824	582	1080	1976
-190	-310		-8.9	16	60.8	24.4	76	168.8	232	450	842	593	1100	2012
-184	-300		-8.3	17	62.6	25.0	77	170.6	238	460	860	604	1120	2048
-179	-290		-7.8	18	64.4	25.6	78	172.4	243	470	878	616	1140	2084
-173	-280		-7.2	19	66.2	26.1	79	174.2	249	480	896	627	1160	2120
-169	-273	-459.4	-6.7	20	68.0	26.7	80	176.0	254	490	914	638	1180	2156
-168	-270	-454	-6.1	21	69.8	27.2	81	177.8	260	500	932	649	1200	2192
-162	-260	-436	-5.6	22	71.6	27.8	82	179.6	266	510	950	660	1220	2228
-157	-250	-418	-5.0	23	73.4	28.3	83	181.4	271	520	968	671	1240	2264
-151	-240	-400	-4.4	24	75.2	28.9	84	183.2	277	530	986	682	1260	2300
-146	-230	-382	-3.9	25	77.0	29.4	85	185.0	282	540	1004	693	1280	2336
-140	-220	-364	-3.3	26	78.8	30.0	86	186.8	288	550	1022	704	1300	2372
-134	-210	-346	-2.8	27	80.6	30.6	87	188.6	293	560	1040	732	1350	2462
-129	-200	-328	-2.2	28	82.4	31.1	88	190.4	299	570	1058	760	1400	2552
-123	-190	-310	-1.7	29	84.2	31.7	89	192.2	304	580	1076	788	1450	2642
-118	-180	-292	-1.1	30	86.0	32.2	90	194.0	310	590	1094	816	1500	2732
-112	-170	-274	-0.6	31	87.8	32.8	91	195.8	316	600	1112	843	1550	2822
-107	-160	-256	0.0	32	89.6	33.3	92	197.6	321	610	1130	871	1600	2912
-101	-150	-238	0.6	33	91.4	33.9	93	199.4	327	620	1148	899	1650	3002
-96	-140	-220	1.1	34	93.2	34.4	94	201.2	332	630	1166	927	1700	3092
-90	-130	-202	1.7	35	95.0	35.0	95	203.0	338	640	1184	954	1750	3182
-84	-120	-184	2.2	36	96.8	35.6	96	204.8	343	650	1202	983	1800	3272
-79	-110	-166	2.8	37	98.6	36.1	97	206.6	349	660	1220	1010	1850	3362
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-62	-80	-112	4.4	40	104.0	37.8	100	212.0	366	690	1274	1093	2000	3632
-57	-70	-94	5.0	41	105.8	43	110	230	371	700	1292	1121	2050	3722
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-29	-20	-4	7.8	46	114.8	71	160	320	399	750	1382	1260	2300	4172
-23	-10	14	8.3	47	116.6	77	170	338	404	760	1400	1288	2350	4262
-17.8	0	32	8.9	48	118.4	82	180	356	410	770	1418	1316	2400	4352
			9.4	49	120.2	88	190	374	416	780	1436	1343	2450	4442
			10.0	50	122.0	93	200	392	421	790	1454	1371	2500	4532
			10.6	51	123.8	99	210	410	427	800	1472	1399	2550	4622
			11.1	52	125.6	100	212	413.6	432	810	1490	1427	2600	4712
			11.7	53	127.4	104	220	428	438	820	1508	1454	2650	4802
			12.2	54	129.2	110	230	446	443	830	1526	1482	2700	4892
			12.8	55	131.0	116	240	464	449	840	1544	1510	2750	4982
			13.3	56	132.8	121	250	482	454	850	1562	1538	2800	5072
			13.9	57	134.6	127	260	500	460	860	1580	1566	2850	5162
			14.4	58	136.4	132	270	518	466	870	1598	1593	2900	5252
			15.0	59	138.2	138	280	536	471	880	1616	1621	2950	5342
			15.6	60	140.0	143	290	554	477	890	1634	1649	3000	5432

FORMULAS FOR CALCULATING

VOLUME OF A-

CUBE	AREA OF BASE x HEIGHT
PYRAMID	1/3 AREA OF BASE x HEIGHT
SPHERE	DIAMETER CUBED x .5236

AREA OF A-

CIRCLE	RADIUS SQUARED x 3.1416
SQUARE	ONE SIDE SQUARED
TRIANGLE	1/2 BASE x HEIGHT
RECTANGLE	LENGTH x WIDTH
PARALLELOGRAM	BASE x HEIGHT

CIRCUMFERENCE OF A-

CIRCLE	DIAMETER x 3.1416
--------	-------------------

ELEVATION VS. PRESSURE

1 FT. OF RISE OR FALL	= .4335 PSI
1 PSI. OF RISE OR FALL	= 2.309 FT.

FRICTION LOSS FOR 100 FT. OF PIPE (HAZEN-WILLIAMS)

$$F = 0.2086 \left(\frac{100}{C} \right)^{1.85} \times \frac{Q^{1.85}}{D^{4.8655}}$$

WHERE:

F = PRESSURE LOSS IN FT. OF HEAD/100 FT.
 C = COEFFICIENT OF INSIDE PIPE ROUGHNESS
 Q = FLOW IN GALLONS PER MINUTE
 D = INSIDE PIPE DIAMETER IN INCHES

TO CONVERT ABOVE INFO. INTO PSI

$$\text{PSI} = \frac{F}{2.309}$$

F = Elevation Change (In Feet)

VELOCITY

$$V = \frac{\text{GPM}}{2.45 \times \text{ID}^2}$$

WHERE:

V = VELOCITY IN FEET PER SECOND
 GPM = GALLONS PER MINUTE
 ID = INSIDE PIPE DIAMETER IN INCHES

POWER

$$\text{(BHP) BRAKE HORSE POWER} = \frac{\text{GPM} \times \text{TDH (FT.)}}{3960 \times \text{PUMP EFFICIENCY}}$$

$$\text{PUMP EFFICIENCY} = \frac{\text{GPM} \times \text{TDH (FT.)}}{3960 \times \text{BHP TO PUMP}}$$

GPM = GALLONS PER MINUTE

TDH = TOTAL DYNAMIC HEAD (IN FEET)

PRECIPITATION RATE

$$\text{APPLICATION RATE (INCHES/HOUR)} = \frac{(\text{GPM/SPKLR.})96.25}{S \times L}$$

S = SPKLR. SPACING ALONG LATERALS IN FT.
 L = SPACING BETWEEN LATERALS IN FEET

NEW NOZZLE FLOWS

$$Q_{\text{NEW}} = \sqrt{\frac{P_{\text{NEW}}}{P_{\text{OLD}}}} \times Q_{\text{OLD}}$$

WHERE:

Q = FLOW P = PSI

FRACTIONS TO DECIMALS TO MILLIMETERS

Fractions	Decimals	Millimeters
1/64	0.015625	0.397
1/32	0.03125	0.794
3/64	0.046875	1.191
1/16	0.0625	1.588
5/64	0.078125	1.984
3/32	0.09375	2.381
7/64	0.109375	2.778
1/8	0.1250	3.175
9/64	0.140625	3.572
5/32	0.15625	3.969
11/64	0.171875	4.366
3/16	0.1875	4.763
13/64	0.203125	5.159
7/32	0.21875	5.556
15/64	0.234375	5.953
1/4	0.2500	6.350
17/64	0.265625	6.747
9/32	0.28125	7.144
19/64	0.296875	7.541
5/16	0.3125	7.938
21/64	0.328125	8.334
11/32	0.34375	8.731
23/64	0.359375	9.128
3/8	0.3750	9.525
25/64	0.390625	9.922
13/32	0.40625	10.319
27/64	0.421875	10.716
7/16	0.4375	11.113
29/64	0.453125	11.509
15/32	0.46875	11.906
31/64	0.484375	12.303
1/2	0.500	12.700
33/64	0.515625	13.097
17/32	0.53125	13.494
35/64	0.546875	13.891
9/16	0.5625	14.288
37/64	0.578125	14.684
19/32	0.59375	15.081
39/64	0.609375	15.478
5/8	0.6250	15.875
41/64	0.640625	16.272
21/32	0.65625	16.669
43/64	0.671875	17.066
11/16	0.6875	17.463
45/64	0.703125	17.859
23/32	0.71875	18.256
47/64	0.734375	18.653
3/4	0.7500	19.050
49/64	0.765625	19.447
25/32	0.78125	19.844
51/64	0.796875	20.241
13/16	0.8125	20.638
53/64	0.828125	21.034
27/32	0.84375	21.431
55/64	0.859375	21.828
7/8	0.8750	22.225
57/64	0.890625	22.622
29/32	0.90625	23.019
59/64	0.921875	23.416
15/16	0.9375	23.813
61/64	0.953125	24.209
31/32	0.96875	24.606
63/64	0.984375	25.003
1	1.000	25.400

1) 0.001" = 0.0254 mm

1mm = 0.03937"

TECHNICAL RESOURCES

TO CALCULATE	EQUATION	EXAMPLE
AREA IRRIGATED BY A CENTER PIVOT	$AC = \frac{(PL + EGR)^2}{13866}$ AC = ACRES IRRIGATED PL = PIVOT LENGTH (FT.) EGR = END GUN RADIUS (FT.)	FIND THE ACREAGE IRRIGATED BY A 1000' PIVOT WITH AN END GUN WITH A 130' RADIUS $AC = \frac{(1000 + 130)^2}{13866}$ AC = 92 ACRES
HOURS PER PIVOT REVOLUTION	$HPR = \frac{0.105 (LTD)}{GS}$ HPR = HOURS PER REVOLUTION (HR.) LTD = DISTANCE TO LAST TOWER (FT.) GS = TOWER GROUND SPEED (FT./MIN)	FIND THE AMOUNT OF TIME NEEDED FOR THE PIVOT ABOVE TO COMPLETE A REVOLUTION IF THE LAST TOWER MOVES AT 10.2 FT. PER. MINUTE. THE 1000 FOOT LENGTH INCLUDES A 40 FOOT END BOOM. LTD = 1000 FT. - 40 FT. = 960 FT. $HPR = \frac{0.105(960)}{10.2}$ HPR = 9.9 HOURS PER REVOLUTION
AMOUNT OF WATER APPLIED BY A CENTER PIVOT	$D = \frac{(30.64 Q HPR)}{(PL + EGR)^2}$ D = DEPTH OF WATER APPLIED (IN.) Q = FLOWRATE (GPM) HPR = HOURS PER REVOLUTION (HR.) PL = PIVOT LENGTH (FT.) EGR = END GUN RADIUS (FT.)	DETERMINE THE AMOUNT OF WATER APPLIED FOR THE 1000 FOOT PIVOT CONSIDERED ABOVE AT 700 GPM. $D = \frac{30.64 (700) (9.9)}{(1000 + 130)^2}$ $D = \frac{212,365}{1,276,900}$ D = 0.17 INCH
REQUIRED FLOW FOR A GIVEN PIVOT SPRINKLER	$Q_s = \frac{DFP (Q/AC) SS}{6933}$ Qs = SPRINKLER FLOWRATE (GPM) DFP = DISTANCE FROM THE PIVOT (FT.) Q = TOTAL PIVOT FLOWRATE (GPM) AC = ACRES IRRIGATED BY PIVOT SS = SPRINKLER SPACING (FT.)	DETERMINE THE FLOWRATE REQUIRED BY A SPRINKLER LOCATED 750 FEET FROM THE PIVOT, IF THE SPRINKLER SPACING AT THAT POINT IS 17 FEET. $Q_s = \frac{(750) (700/92) (17)}{6933}$ $Q_s = \frac{97,011}{6933}$ Qs = 14.0 GPM
CALCULATING NOZZLE FLOWRATE WITH CHANGING PRESSURE	$Q_1 / Q_2 = (P_1)^{1/2} / (P_2)^{1/2}$ $Q_2 = Q_1 (P_2 / P_1)^{1/2}$ Q₁ = KNOWN NOZZLE FLOW (GPM) Q₂ = NOZZLE FLOW TO DETERMINE (GPM) P₁ = PRESSURE (PSI) FOR Q₁ P₂ = PRESSURE (PSI) FOR Q₂	DETERMINE THE FLOWRATE OF A #30 3TN NOZZLE AT 15 PSI, KNOWING THE FLOW @ 10 PSI IS 4.94 GPM $Q_2 = 4.94 (15/10)^{1/2}$ Q2 = 6.05 GPM

NOTE: THE INFORMATION PRINTED ON THIS PAGE IS SUPPLIED COURTESY OF NELSON IRRIGATION CORPORATION, AND HAS BEEN EXTRACTED FROM NELSON'S BROCHURE ENTITLED "CENTER PIVOT SPRINKLER DESIGN - TECHNICAL APPLICATION GUIDE." THIS BROCHURE IS AN EXCELLENT SOURCE MANUAL FOR YOUR SALES PEOPLE. PLEASE LET US KNOW IF YOU NEED ONE.

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